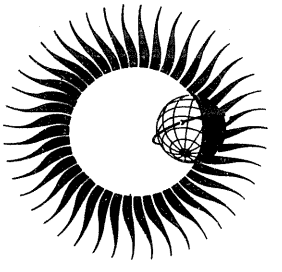
REPORT UAG - 43

WORLD DATA CENTER A
for
Solar-Terrestrial Physics

CATALOG OF OBSERVATION TIMES OF GROUND–BASED SKYLAB–COORDINATED SOLAR OBSERVING PROGRAMS



May 1975

WORLD DATA CENTER A

National Academy of Sciences

2101 Constitution Avenue, N.W. Washington, D.C. U.S.A., 20418

World Data Center A consists of the Coordination Office

and seven subcenters:

World Data Center A
Coordination Office
National Academy of Sciences
2101 Constitution Avenue, N.W.
Washington, D.C., U.S.A. 20418
Telephone (202) 389-6478

Glaciology:
World Data Center A:
Glaciology
U.S. Geological Survey
1305 Tacoma Avenue South
Tacoma, Washington, U.S.A. 98402
Telephone (206) 593-6506

Longitude and Latitude
World Data Center A:
Longitude and Latitude
U.S. Naval Observatory
Washington, D.C., U.S.A. 20390
Telephone (202) 254-4023

Meteorology (and Nuclear Radiation):
World Data Center A:
Meteorology
National Climatic Center
Federal Building
Asheville, North Carolina, U.S.A. 28801
Telephone (704) 258-2850

Oceanography:
World Data Center A:
Oceanography
National Oceanic and
Atmospheric Administration
Washington, D.C., U.S.A. 20235
Telephone (202) 634-7249

Rockets and Satellites:
World Data Center A:
Rockets and Satellites
Goddard Space Flight Center
Code 601
Greenbelt, Maryland, U.S.A. 20771
Telephone (301) 982-6695

Seismology, Tsunamis, Gravimetry, Earth Tides, Recent Movements of the Earth's Crust, Magnetic Measurements, Paleomagnetism and Archeomagnetism, Volcanology, Geothermics:
World Data Center A:
Solid-Earth Geophysics
Environmental Data Service, NOAA
Boulder, Colorado, U.S.A. 80302
Telephone (303) 499-1000 Ext. 6311

Solar-Terrestrial Physics (Solar and Interplanetary Phenomena, Ionospheric Phenomena, Geomagnetic Variations, Magnetospheric and Interplanetary Magnetic Phenomena, Flare-Associated Events, Aurora, Cosmic Rays, Airglow):
World Data Center A
for Solar-Terrestrial Physics
Environmental Data Service, NOAA
Boulder, Colorado, U.S.A. 80302
Telephone (303) 499-1000 Ext. 6467

Notes:

(1) World Data Centers conduct international exchange of geophysical observations in accordance with the principles set forth by the International Council of Scientific Unions. WDC-A is established in the United States under the auspices of the National Academy of Sciences.

(2) Communications regarding data interchange matters in general and World Data Center A as a whole should be addressed to: World Data Center A, Coordination Office (see address above).

(3) Inquiries and communications concerning data in specific disciplines should be addressed to the appropriate subcenter listed above.

WORLD DATA CENTER A
for
Solar-Terrestrial Physics

REPORT UAG - 43

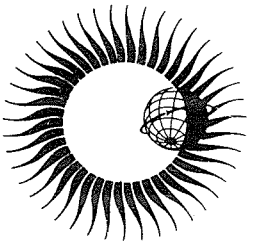
CATALOG OF OBSERVATION TIMES OF GROUND–BASED SKYLAB–COORDINATED SOLAR OBSERVING PROGRAMS

compiled by

Helen E. Coffey
World Data Center A for
Solar–Terrestrial Physics
NOAA, Boulder, Colorado 80302 USA

May 1975

Published by World Data Center A for
Solar-Terrestrial Physics, NOAA, Boulder, Colorado
and printed by
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
ENVIRONMENTAL DATA SERVICE
Asheville, North Carolina, USA 28801



SUBSCRIPTION PRICE: $25.20 a year; $12.00 additional for foreign mailing; single copy price varies.* Checks and money orders should be made payable to the Department of Commerce, NOAA. Remittance and correspondence regarding subscriptions should be sent to the National Climatic Center, Federal Building, Asheville, NC 28801, Attn: Publications.

*PRICE THIS ISSUE $3.00

TABLE OF CONTENTS

		Page
SECTION I.	Introduction	1
	Report on the Ground-Based Programs	1
	Brief Synopsis of Data in Sections II and III	2
	Apollo Telescope Mount Joint Observing Programs (JOPs) on board SKYLAB	3
	Summary of Suggested JOP Interfacing from some Observatories	4
	Acknowledgements	5
SECTION II.	Program Details with Tables of Variables	6
	Category 1.1) Full Disk Solar Observations Table 1.1	6
	1.2) Full Disk Solar Observations (continued) Table 1.2	20
	2.1) Localized Small-Scale Observations Table 2.1	32
	2.2) Localized Small-Scale Observations (continued) Table 2.2	44
	3.1) Magnetograms Table 3.1	53
	4.1) Coronagraphs Table 4.1	65
	5.1) Prominences Table 5.1	82
	6.1) Solar Radio Observations Table 6.1	93
	7.1) X-ray and SFD Measurements	101
III.	Descriptive Program Information Submitted without Observing Time Data	101
IV.	Other Sources of SKYLAB Period Data	103
V.	Some SKYLAB Period Data:	
	Charts of flare observations for July 29 and September 7, 1973	106
	Nançay East-West Solar Scans (169 MHz, 408 MHz and 9400 MHz)	109
	Johns Hopkins University Applied Physics Lab Solar Radio Emission Spectral Observations (565-1000 MHz)	151
APPENDIX:	ATM Investigating Teams and Collaborators	155
	SKYLAB/ATM Coordinated Ground-Based Observations DAILY FORM	159

CATALOG OF OBSERVATION TIMES OF GROUND-BASED SKYLAB-COORDINATED SOLAR OBSERVING PROGRAMS

compiled by

Helen E. Coffey
World Data Center A for
Solar-Terrestrial Physics
NOAA, Boulder, Colorado 80302 U.S.A.

I. INTRODUCTION

Solar physicists around the world collaborated in an international effort to provide extensive ground-based coverage of solar activity during the SKYLAB Apollo Telescope Mount (ATM) program. This ground-based coverage provided invaluable assistance to the SKYLAB experimenters by alerting them to possible interesting observing intervals. It is also proving useful in reducing the myriad amount of SKYLAB/ATM data, to fill in times when SKYLAB was not observing, to supplement the SKYLAB data in order to optimize the interpretation of solar phenomena, and to aid in determining interesting periods for study.

This international collaboration has brought together the expertise of many scientists to deal with an unprecedented collection of excellent solar observations. We attempt here to provide a useful reference guide for this extraordinary research effort.

This catalog of observations of ground-based SKYLAB-coordinated programs has been compiled from the SKYLAB/ATM COORDINATED GROUND-BASED OBSERVATIONS DAILY FORMS (see Appendix) sent in to the World Data Center A (WDC-A) for Solar-Terrestrial Physics by the observatories and from descriptions of programs received from the ground-based experimenters. It includes the complete program information provided by the experimenters. In separate tables all variables of the programs are listed, such as the times of the observations made each day by these experimenters, both during SKYLAB manned mission dates as well as during the intervening periods. It covers the period May 28, 1973 to February 3, 1974. In some cases periods before and after the SKYLAB mission are included for a comprehensive coverage of solar activity evolution during the entire SKYLAB period.

The aim has been towards being precise in the type and duration of the observations. Information on the availability and format of the data is also included. This is not a data compilation of events, but rather of types of observations and observing periods for which data can be made available.

Due to the amount of detail received, no attempt has been made to contact experimenters about discrepancies or missing data information, such as listing field of view estimates with no solar coordinates. We trust enough information on each program was submitted to give a working knowledge or at least a starting point for obtaining data in the different categories.

For data which can be easily copied, we strongly encourage that experimenters send copies to WDC-A for Solar-Terrestrial Physics. This will facilitate their maximum usage in conjunction with the analysis of the SKYLAB spacecraft data. Such data, along with other pertinent data which are received routinely and are held in the WDC-A for Solar-Terrestrial Physics archives, are referenced in this catalog. Appropriate data which have already been published in *Solar-Geophysical Data* or other publications, when known, are also referenced. Some data, not regularly available, taken during the SKYLAB mission and forwarded to WDC-A for Solar-Terrestrial Physics appear in Section V of this Report.

Report on the Ground-Based Programs

The period of this report begins on May 28, 1973, when the astronauts of the first SKYLAB manned mission commenced check-out procedures on the Apollo Telescope Mount (ATM) experiments, and extends to February 3, 1974, the end of the third ATM manned program on SKYLAB. Several automatic experiments were run on SKYLAB during the unmanned periods June 22 to July 27, 1973 and September 26 to November 15, 1973. Actual SKYLAB manned mission dates are: May 28 to June 21, 1973; July 28 to September 25, 1973; and November 16, 1973 to February 8, 1974. ATM manned operations cover the periods May 29 to June 18, 1973, August 7 to September 21, 1973 and November 26, 1973 to February 3, 1974.

Detailed information on the ground-based programs and tables of observing times and other variables such as seeing, positions of measurements, wavelength changes, etc., for the different kinds of observations are presented in Section II. Following, in Section III, is the information received on those programs for which descriptive texts only are available. In Section IV other sources of data for the SKYLAB period are listed. Section V includes some data, not regularly available, taken during the SKYLAB mission and forwarded to WDC-A for Solar-Terrestrial Physics. In the Appendix a list of the ATM investigating teams is given, along with their collaborators, reproduced from the NASA publication *SKYLAB and the Sun*.

Brief Synopsis of Data in Sections II and III

Due to the amount of information received, Full Disk Solar Observations were separated into two categories, Category 1.1 and 1.2. Stations appear to be placed arbitrarily in either of these two categories. This is the result of a decision to reuse the Table 1 which appeared in the "Preliminary Catalog of Ground-Based Skylab-Coordinated Solar Observing Programs for the period May 28 to July 26, 1973", a special booklet circulated in September 1973, to participants in the SKYLAB program. Stations are listed by longitude in each category. Users are asked to consider both categories when interested in Full Disk Observations. A similar situation occurs in the Localized Small-Scale Observations, Categories 2.1 and 2.2.

The following lists the station and type of data which appear in Sections II and III of this Report:

SECTION II Category 1.1) Full Disk Solar Observations (stations listed by longitude)

- 1.1.1 Tel Aviv H-alpha (1/3 solar disk) photoheliograms
- 1.1.2 Lockheed Ca II (8542 Å) filtergrams
- 1.1.3 Big Bear H-alpha filtergrams
- 1.1.4 Kitt Peak $Ca^{+}K$ (3933 Å), H-alpha (6562 Å) and CN (3883 Å) spectroheliograms
- 1.1.5 Kitt Peak Fe I (5233 Å) magnetograms
- 1.1.6 Kitt Peak He I (10830 Å) spectroheliograms

Category 1.2) continuation of Full Disk Solar Observations (stations listed by longitude)

- 1.2.1 Lockheed H-alpha disk measurements
- 1.2.2 Sacramento Peak (He I D_3 (5875 Å) spectroheliograms; H-alpha (6563 Å) "; Ca K (3934 Å) ")

Category 2.1) Localized Small-Scale Observations (stations listed by longitude)

- 2.1.1 Crimea H-alpha cinematograms
- 2.1.2 Big Bear H-alpha - 0.5 Å, H-alpha, and Ca K cinematograms
- 2.1.3 Big Bear H-alpha and Ca K (1/6 solar disk) cinematograms
- 2.1.4 Mt. Lemmon infrared photometry

Category 2.2) continuation of Localized Small-Scale Observations (stations listed by longitude)

- 2.2.1 Culgoora H-alpha filtergrams
- 2.2.2 Lockheed H-alpha filtergrams and H-alpha ± 8 Å spectra
- 2.2.3 Lockheed H-alpha Doppler measurements
- 2.2.4 Lockheed He I D_3 (5876 Å) large scale
- 2.2.5 Sacramento Peak universal birefringent filter observations (43 wavelengths)
- 2.2.6 Sacramento Peak D_3 (5875 Å), H-alpha (6563 Å), and Ca K + 0.38 Å (3934 + 0.38 Å) spectroheliograms

Category 3.1) Magnetograms (stations listed by longitude)

- 3.1.1 Crimea small scale magnetograms
- 3.1.2 Sayan Mountain sunspot group magnetograms
- 3.1.3 " " solar center magnetograms
- 3.1.4 Big Bear small scale magnetograms
- 3.1.5 Kitt Peak polar scans
- 3.1.6 " " area scan reports
- 3.1.7 Sacramento Peak sunspot group magnetograms

Brief Synopsis of Section II continued

Category 4.1) Coronagraphs (stations listed by longitude)

4.1.1. Mauna Loa 6200 Å white light coronagraphs
4.1.2 Sacramento Peak λλ3550-9000 Å coronal active regions
4.1.3 " " coronagraphs: 6" at 5303 Å
4.1.4 Sacramento Peak 5303 Å coronagraph
4.1.5 " " SJC-1 filtergram λ6563 Å
SJC-2 filtergram λλ6563, 6375, 6374, 5303 Å
Spectra: λλ8024, 7892, 7059, 6703, 6563, 6374, 5875, 5694, 5445, 5411, 5303, 4686, 4412 Å

Category 5.1) Prominences (stations listed by longitude)

5.1.1 Oslo λλ3967, 6563 Å filtergram / spectra
5.1.2 Mauna Loa 6563 Å filtergram / coronagraph
5.1.3 Kitt Peak spectra of bright quiescent prominences
5.1.4 Kitt Peak 10830 Å spectra
5.1.5 Sacramento Peak 16" coronagraph / photographic spectra

Category 6.1) Solar Radio Observations (stations listed by longitude)

6.1.1 Nançay Solar Radio Observatory (3 cm, 408 MHz, 169 MHz)
6.1.2 Dwingeloo (200-213 MHz, 234-246 MHz and 282-315 MHz)
6.1.3 Crimea (1.9, 2.5, 3.5 and 10 cm)
6.1.4 Toyokawa (3.2, 8, 15, and 30 cm)
6.1.5 Clark Lake (15-2.5 m)
6.1.6 University of Colorado (37.5-3.75 m (8-80 MHz))
6.1.7 Harvard Radio Astronomy Station, Ft. Davis (10-4000 MHz)
6.1.8 Johns Hopkins Applied Physics Lab. (565-1000 MHz)

Category 7.1) X-Ray and SFD Measurements

7.1.1 SOLRAD 9 and 10 solar X-rays
7.1.2 Sacramento Peak SFD measurements of impulsive 10-1030 Å flux enhancements from flares

SECTION III Descriptive Program Information Submitted without Observing Time Data (stations listed by longitude)

Big Bear . . . . . Full disk white light pictures
" " . . . . . 10830 Å filtergrams
Related Program: Pasadena H-alpha cinematograms (2/3 solar disk)

Sacramento Peak . . . . . He I and Ca II spectra for chromospheric plage data

The University of Chicago . . . Rocket X-ray spectra

Loiyengalani, Kenya . . . . . Near infrared photography of the outer corona during 1973 solar eclipse

Apollo Telescope Mount Joint Observing Programs (JOPs) on board SKYLAB

A list of the ATM Joint Observing Programs (JOPs) on board SKYLAB and the suggested JOP interfacing we received with some of the ground-based observing program inputs is given below. The JOP list is extracted from the NASA SL-3 Second Skylab Mission ATM JOP Summary Sheets prepared by EVA and Experiments Branch, Crew Procedures Division, NASA, Lyndon B. Johnson Space Center, Houston, Texas, July 9, 1973. The ATM Missions Operation Log will be available from the National Space Science Data Center (NSSDC) in late 1975. To list all JOP observing times here is beyond the scope of this report. For example, 205 hours of observing time were scheduled for the second SKYLAB manned mission alone. WWV broadcasted every hour (at 22 minutes after the hour), as did WWVH (at 25 and 27 minutes after the hour), the scheduled SKYLAB observing times for the previous four hours and the following eight hours. This message was updated every four hours and was also transmitted through the International Ursigram and World Days Service (IUWDS) Regional Warning Centers.

JOP1 . . . . .Chromospheric Network: A. Near Solar Center
B. Within 2 Arc-Min of Limb
C. At Limb
D. Short Term Evolution
E. Spicules at Limb

JOP2 . . . . .Active Regions: A. Rapidly Developing
B. Long Term Evolution - Disk
C. Long Term Evolution - Limb
D. Structure
E. Sunspots
F. Chromospheric Velocities
G. Ellerman Bombs

JOP3 . . . . .Flares

JOP4 . . . . .A. Prominences
B. Filaments

JOP5 . . . . .Limb Profile Studies

JOP6 . . . . .Synoptic Observations

JOP7 . . . . Atmospheric Extinction

JOP8 . . . . .Coronal Transients

JOP9 . . . . .Solar Wind

JOP10 . . . .Lunar Libration Clouds

JOP11 . . . .Chromospheric Oscillations and Heating

JOP12 . . . .Calibrations

JOP13 . . . .Night Sky Objects

JOP14 . . . .Solar Eclipse (First manned mission)

JOP15 . . . .A. Coronal Holes on the Disk
B. Coronal Holes on the Limb
C. Evolution of Coronal Hole
D. Coronal Hole Velocities

JOP16 . . . .Disk Transients

JOP17 . . . .A. Structure of XUV and X-Ray Bright Spot
B. Short and Long Term Evolution of Bright Spot

An additional JOP for the third manned SKYLAB mission was Comet Observations.

Summary of Suggested JOP Interfacing From Some Observatories

For aid in locating program details in this catalog, the category reference in Section II is listed here also.

JOP	STATION AND PROGRAM	CATEGORY
JOP1 . . .	Sac Peak full disk spectroheliograms - He D_3, H-alpha, Ca K	1.2.2
	Culgoora H-alpha filtergrams	2.2.1
	Lockheed Multi-slit spectrograph - H-alpha	2.2.2
	H-alpha Doppler filtergrams	2.2.3
	D_3 He I large scale filtergrams	2.2.4
	Sac Peak UBF	2.2.5
JOP2 . . .	Lockheed H-alpha full disk	1.2.1
	Multi-slit spectrograph - H-alpha	2.2.2
	H-alpha Doppler filtergrams	2.2.3
	He I D_3 large scale filtergrams	2.2.4
	Sac Peak UBF	2.2.5
	D_3, H-alpha and Ca K+0.38Å spectroheliograms	2.2.6
JOP2C. . .	Sac Peak λλ3550-9000 Å coronal active regions	4.1.2
	coronographs	4.1.3
	filtergrams / spectra	4.1.5
JOP2E. . .	Sac Peak magnetic fields in sunspots	3.1.7

Summary of JOP interfacing continued

JOP	STATION AND PROGRAM	CATEGORY
JOP3 . . .	Lockheed H-alpha full disk and He I D_3 limb	1.2.1
	Multi-slit spectrograph - H-alpha	2.2.2
	H-alpha Doppler filtergrams	2.2.3
	He I D_3 large scale filtergrams	2.2.4
	Clark Lake Radio observations	6.1.5
JOP4 . . .	Lockheed H-alpha full disk	1.2.1
	Multi-slit spectrograph - H-alpha	2.2.2
	H-alpha Doppler filtergrams	2.2.3
	He I D_3 large scale filtergrams	2.2.4
	Sac Peak coronographs, prominence spectra and filtergrams	5.1.5
JOP5 . . .	Lockheed H-alpha full disk	1.2.1
	Multi-slit spectrograph - H-alpha	2.2.2
	H-alpha Doppler filtergrams	2.2.3
	He I D_3 large scale filtergrams	2.2.4
	Sac Peak UBF	2.2.5
JOP6 . . .	Lockheed H-alpha full disk	1.2.1
	Sac Peak full disk spectroheliograms - He D_3, H-alpha, Ca K	1.2.2
	UBF	2.2.5
	coronographs	4.1.3
	5303Å coronagraph	4.1.4
	Clark Lake Radio observations	6.1.5
JOP8. . .	Sac Peak coronographs	4.1.3
	Clark Lake Radio Observations	6.1.5
JOP9 . . .	Clark Lake Radio observations	6.1.5
JOP10. . .	Sac Peak UBF	2.2.5
JOP11. . .	Sac Peak full disk spectroheliograms - He D_3, H-alpha, Ca K	1.2.2
	Lockheed Multi-slit spectrograph - H-alpha	2.2.2
	H-alpha Doppler filtergrams	2.2.3
	He I D_3 large scale filtergrams	2.2.4
	Sac Peak UBF	2.2.5
JOP15. . .	Sac Peak UBF	2.2.5
JOP16. . .	Sac Peak full disk spectroheliograms - He D_3, H-alpha, Ca K	1.2.2
	D_3, H-alpha, Ca K +0.38Å spectroheliograms	2.2.6
JOP17. . .	Sac Peak full disk spectroheliograms - He D_3, H-alpha, Ca K	1.2.2

Acknowledgements

We particularly would like to thank all the participating observatories for making this compilation possible. We especially recognize the usefulness of the ATM/alert message code transmitted through the WWV Time and Frequency Broadcasts and the IUWDS Regional Warning Centers which enabled this international effort to take place.

We would also like to thank Dr. Robert O. Doyle of Harvard College Observatory who headed the Coordinated Observing Program, and Patrick S. McIntosh and J. Virginia Lincoln of NOAA for their efforts in drafting a SKYLAB/ATM Coordinated Ground-based Observation Daily Form. Also, we thank May Starr, Alice McRae and Carol Weathers for typing the manuscript, Chuck Shanks for the drafting involved, and the various NOAA personnel who reviewed the manuscript.

II. PROGRAM DETAILS with Tables of Variables

Program variables are given in the Tables, e.g., times of observations, seeing conditions, position measurements, etc. Symbols are used in the tables to flag additional information about individual observations. The symbol codes are found in the footnotes at the end of each table.

CATEGORY 1.1) FULL DISK SOLAR OBSERVATIONS
Stations listed by longitude

1.1.1 STATION: Tel Aviv Solar Observatory N32 E34
PROGRAM: Ground-based 5-inch photoheliograph in H-alpha of 1/3 solar disk

OBSERVING TIMES OF H-ALPHA CINEMATOGRAMS: see Table
DATA FORMAT AVAILABLE: Direct scientist-to-scientist

INVESTIGATOR: Harold Zirin
California Institute of Technology
354-33
Pasadena, California USA 91109

1.1.2 STATION: Lockheed Solar Observatory N34 E242
PROGRAM: Ground-based filtergram; full disk Ca II (8542 Å) measurements

OBSERVING TIMES AND RATES: see Table
WAVELENGTHS: Ca II (8542 Å)
MEASUREMENTS: Full disk
FILM TYPE: SO 392
IMAGE SCALE OF ORIGINAL: Image diameter ∿ 16 mm
QUALITY: see Table
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
Direct scientist-to-scientist

INVESTIGATOR: H. Ramsey
Lockheed-California Company
Solar Physics, Bldg. 243, Pl. 2
Burbank, California USA 91503

1.1.3 STATION: Big Bear Solar Observatory N34 E243
PROGRAM: Ground-based full disk H-alpha pictures taken with Fabry-Perot filter using the Singer-Link telescope

OBSERVING TIMES AND RATES: every 10 seconds; for times see Table
DATA FORMAT AVAILABLE: Direct scientist-to-scientist

INVESTIGATOR: Harold Zirin
California Institute of Technology
354-33
Pasadena, California USA 91109

1.1.4 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based full disk spectroheliograms (After August 11, 1973, a 900x1200 arcsec area is scanned).

OBSERVING TIMES AND RATES: Scan rates are approximately 2 minutes; see Table for observing times
WAVELENGTHS: $Ca^{+}K$ (3933 Å) ($\Delta\lambda$ = .10 Å); H-alpha (6562 Å) ($\Delta\lambda$ = .10 Å); CN (3883 Å) ($\Delta\lambda$ = .12 Å)
FILM TYPE: II O, II F
IMAGE SCALE OF ORIGINAL: 11.2 cm; after August 11, 1973, 37.3 cm
QUALITY: see Table
DATA FORMAT AVAILABLE: Prints
to World Data Centers

INVESTIGATORS: Bruce Gillespie, J. Harvey, and W. C. Livingston
Kitt Peak National Observatory
P.O. Box 26732
950 North Cherry Avenue
Tucson, Arizona USA 85726

1.1.5 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based full disk magnetograms using vacuum telescope unless otherwise noted in Table

OBSERVING TIMES: see Table (UT = MST + 7 hours)
WAVELENGTHS: Fe I (5233 Å) unless otherwise noted in Table
QUALITY: Generally fine, unless otherwise noted in Table
EQUIPMENT FAILURES: see Table
OTHER PERTINENT INFORMATION: see Table
DATA FORMAT AVAILABLE: Prints / Digitized (tape)

INVESTIGATORS: Bruce Gillespie, J. Harvey, and W. C. Livingston
Kitt Peak National Observatory
P.O. Box 26732
950 North Cherry Avenue
Tucson, Arizona USA 85726

1.1.6 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based Helium spectroheliogram; 512 channel magnetograph, vacuum telescope

OBSERVING TIMES AND RATES: one observation/day; for times see Table (UT = MST + 7 hours)
WAVELENGTHS: He I 10830 Å
MEASUREMENTS: Full disk
QUALITY: generally good
DATA FORMAT AVAILABLE: Prints / Digitized (tape)
to World Data Centers

INVESTIGATORS: Bruce Gillespie, J. Harvey, and W. C. Livingston
Kitt Peak National Observatory
P.O. Box 26732
950 North Cherry Avenue
Tucson, Arizona USA 85726

TABLE 1.1

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK Hα UT	1.1.4 KITT PEAK Ca^+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Mar 28								
29								
30							0840 #	
							1149 #	
Apr 1								
2								
3							1030 W #	
							1126 W #	
4							1013 W #	
							1104 W #	
5							0833 W $ #	
6							1021	
7								
8								
9							?? C	
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23				?? P				
24							1423 P	
							0936 G ##	
25							0845 B %	
							0848	
26					?? P		1201	
27					1630F		0846	
28								
29								
30								
May 1							1413	
2					2110FP		0911	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK Hα UT	1.1.4 KITT PEAK Ca+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
May 3								
4							1012 C	
5				?? P	2230P	?? P	1300 W	
6				?? P	?? P	?? P	0815	
7				1630P	∿1900P	∿2100P	0910	
8				2230FP	∿1600PF	∿1600FP	1047	
9				1551P	1629P	?? P	1042	
10				1640FP	1625FP	1610FP	1131	
				1708FP			1612	
11				1450F	1541F	1635F	0918	
							1434	
12					1640FP	1625FP	0745	
							0916	
13				?? F			1045	
14				1601FP	1613FP	∿1630FP	0839	
15				∿1630FP	∿1600FP	∿1705FP	0811	
16				1550P	1645P		0716	
17				1750F	1730F	1705F	??	
18				∿1600FG	1550FG	1556FG	1018	
19				1705F	1730F		0954	
20				2147FV	2123FV	2133FV	1014 $	
							1121	
21				1703FG	1625FG	1550FG	0940	
					1645FG			
22					1548G	1515G	0915	
23				1459F	1523F	1553F		
24				1631G	1602G	1616G	1310	
25				1542FG	1515FG	1526FG	1038 C	
26				1531F	1602F	1614F	0835	
27					1330FP	1950FP	1021	
						?? FP		
28	0720-1340		1302-0040	1449P	1513F	1501F	0941	
29	0655-1310		1339-0047	1543P	1842P	1914P	1148 $	
30			1313-0023	1612FP	1553FP	1531FP	1045	
31	0700-1525		1450-0213				1004	
June 1	0650-1515		1400-0126				0848 *	
2	0730-1500		1338-0105	2034FP	1403FP	2010FP	0745	
3	0620-1530		1318-0231	1604F	1732F	1643F	1430	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK Hα UT	1.1.4 KITT PEAK Ca^+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115 WMT)
June 4	0620-1520		1313-0140	1459P	1427P	1444P	1254	
5	0605-1560		1334-1900				1217 C	
6	0545-1520		1514-2102	1433F	1457F	1508F	1515 C	
7	0645-1300		1437-0245	1705P	1625P	1645P	0932 $	
8	0810-1530		1319-1908	2138FP	2111FP	2126FP	~1200 1240	
9	0613-1500		1351-0230				1145	
10	0645-1505		1318-0159				1200	
11	0558-1226		1816-0215	1727FP	2145FP	1847FP 2127FP	0954 PC 1503 G	
12	0650-0925		1339-2100					
13	0640-1340		1525-2225					
14	0645-1500			1506FG	1426FG	1442FG	0723	
15	0705-1330		1400-2042	1435PV	1626PV	1550PV	0807	
16	0525-1515		1325-1912				0919	
17	0520-1515		1315-0230				1031	
18	0640-0800		1315-0240				0855	
19	0705-1505		1332-0247				0845	
20	0727-1345		1335-0248		1710FPV 2008FPV	2110FPV	0849	
21	0700-1500		1301-0229	2145P	1820P		1013	
22	0641-1500		1315-0047	1620FPV 1630FPV	2030FPV 1820FPV		0936 W	
23			1423-0203				0959 W	
24	0719-1500		1333-0226		1752F 1800F		0815 W	
25	0644-1503		1316-0230		1615FP	1645FP	0908	
26	0730-1410		1410-0230		1630G	1645G	0936	
27	0713-1525		1308-0218	1655P	1630P		1131 0904	
28	0709-1445		1303-0220		1630P	1700P	0947	
29	0615-1145		1344-0250				0820	
30			1307-0223				1558 0956C	
July 1	0710-1433		1330-0235				1101 0724	
2	0737-1445		1311-0215		1630FP	1710FP	0940	
3	0707-1407		1315-0218	1705FP	1600FP	1650FP	1029 BC	
4			1610-0140				0954 1053	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK Hα UT	1.1.4 KITT PEAK Ca^+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
July 5	0808-1504		1426-0222		1610PV	1639PV	0926	
6	0704-1158		1402-0223		1615FP	1600FP	0828 $ 0919 C	
7					?? P		0732	
8	0805-1343		1330-0050				0752 $ 0849 P	
9	0741-1445		1312-0200	1630F	1545F	1600F	0839	
10	0711-1455		1324-0217				1047 $ 1534	
11	0713-1520		1334-0218				1328 C 1429 C	
12	0725-1508		1309-0215		?? PC ?? PC		0926 PC	
13	0746-1202		1347-0100					
14			1330-0141		?? PCV ?? PCV		0757 C	
15	0709-1443		1327-0212		?? VPC		1301 VP $	
16	0710-1340		1410-0101				0756 0856	
17	0719-1444		1352-0235				0646	
18	0711-1451		1331-0230				0744	
19	0631-1453		1606-0234				0655	
20	0647-0800		1321-0032				0749	
21			1325-0212				0803	
22	0713-1418		1340-0034		?? FP ?? FP		0804	
23	0755-1316		1329-0047		1630P	1645P	0935	
24	0748-1345		1345-0204	1745P	1645P	1550P 1600P	0728	
25	0722-1500		1343-0215	1555F	1635F	1640F	0828	
26	0756-1452		1312-0057	?? FP	1600FP	1615FP	0811	
27	0749-1145		1345-0144				1339	
28			1512-2101				1247 C 1423 $	
29	0710-1343		1321-0212				0920 C	
30	0729-1309		1322-0130					
31	0809-1430				1720P		0808	
Aug 1	0734-1334				1645F 1650F		1027 C $	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	1.1.4 KITT PEAK Ca+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Aug 2	0736-1240		1315-2038	1625FP	1530FP	1540FP	0723	
3	0735-1113			1630F	1735F		0715 C	
							0820	
4					1800F		0755 C	
							0854	
5	0746-1439				1610FG		0733	
6	0701-1555				1645FP	2115FP	0654	
7	0814-1412				1600FG	1620FG	0813	
8	0744-1500	2025 -2421+G ✓			1640F	1620F	0732	
9	0733-1323	1830±-2230 G		1655FG	1550FG	1610FG	0732	
10	0731-1213	1632±-1950±F			1655F	1610F	0906	
11		1710±-2155±F			∿2300GE(E)		0810	
					∿2300GE(W)			
12	0737-1416	1701±-2013±PF					1140 $	
13	0741-1448						0830 C	
14	0741-1405				1500GE(W)		0853	
15	0749-1338	2026 -2257 G			1615FG(W)		1014	
16	0721-1445							
17	0740-1106	1814 -1910 F					0735 ##	
							0852	
18		1640 -1830 F			1740PF(E)		∿0800 ##	
		2102 -2200 F			1715PF(E)		0852	
19	0755-1328	1642 -1845±G					0853	
20	0745-1334				1503VP(E)		0955	
21	0748-1328			2110FG(c)	1715FG(c)		0720	
				?? FG(c)	1745FG(c)			
22	0745-1503				1745P(E)		0739	
23	0717-1515	1755 -2150 F			1745P(E)		1047 $ %	
							1510 C	
24	0741-1133	1742 -2005 G		1550FG(E)	1720FG(E)		0731	
25		1642 -1900 FG					0802 $	
							1430 W	
26	0746-1103			1426FG(W)	1542FG(E)		0900	
27	0742-1455	1631 -1750 F			1715P(E)	2035P(E)	0832	
		2125 -2401 F						
28	0736-1435	1549 -1940 F			1655FP(c)	1610FP(c)	0821	
		2035 -2137 P						
29	0747-1432	1709 -2350 G			1605F(E)	1640F(E)	0901 ##	
30	0730-1359	1607 -2418 G			1620F(E)		0850	
					1635F(E)			

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	Ca^+ K UT	CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Aug 31	0738-1139	1950 -2342 F		~1655FP(3W) ~1655FP(2E)	~1540FP(3E)		0739	
Sept 1		1700 -1950 F 2124 -2200 F					0749	
2	0804-1401	1620 -1710 F 1731 -2210 F					0700	
3	0759-1317						0902	
4	0746-1315	2101 -2437 F			1615FV(c)	1650FV(c)	0819	
5	0752-1415	1808 -2332 G					0924	
6	0819-1345	1610 -1841 F 1920 -2307 F			1640FV(N) 1655FV(S)	1555FV(N) 1605FV(S)	~0810 ## 0930	
7	0747-1020	1645 -2145±F	1719-2202	1504FP(W)	1446FP(W)	1521FP(W)	0731	
8		1709 -2100 F	1500-0108	1500PFV(W)	1530PFV(W)	1630PFV(W)		
9	0820-1310	1737 -2151 F	1612-0108				1508 $	
10	0801-1515	1840 -2210 F	1522-1858	?? P(W)	1615P(W)	1815P(W)	0932	
11	0659-1507		1410-2120				0837 % 1328 $	
12	0716-1304	1550 -2257 F✓	1440-2015		1620P(W) 1630P(W)		1145 VP $ %	
13		2035 -2224 F	1443-1727		1840PF(E)			
14	0756-1118	1850 -2145 F	1430-1710				0925 m	
15		2138 -2220 F	1609-2250					
16	0831-1500	1945 -2145 F	1641-1933				0900 P % 1240 P % **	
17	0805-1202	1648 -1840 F 1857 -2130 F	1517-0044	1715F(c) 1835F(c)		1657F(E) 1850F(E)	1205 m	
18	0746-1448		1447-2133		1640FG(E)	1550FG(E)	1150 FG% **	
19	0729-1249						1133 m	
20	0808-1447			1625PF(E)	1605PF(E)	1625PF(E)	0930 FG % **	
21	0742-1123	1642 -1834 F	1600-2100	1613FG(c)		1525FG(c)	0845 G % **	
22			1557-2230				1630 G % **	
23	0753-1440		1435-2017					
24	0736-1453		1606-2333		1630VP(E)	1645VP(E)	0940 G % **	
25	0714-1450		1430-1646				0915 G % **	
26					1625VP(E)	1640VP(E)		
27					1600P(c)	1615P(c)	1330 M **	
28					1530FP(c)	1547FP(c) 1647FP(E)	1636 ** ##	
29								
30								

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	1.1.4 KITT PEAK Ca+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Oct 1				1625FG(c)	1605FG(c)	1655FG(c)	0841 $ m 1156 m	
2							1647 $ m	
3					2118F(c)	2200F(c)	1145 C m	
4							0741 m	
5							1102 G W m	
6							1106 W	
7							1028 $ W	
8							1130 P $	
9								
10							0809VP m	
11								
12							1430 ** #	
13							1030 ** #	
14							0955 ** #	
15							0759 ** #	
16					1625FP(W)	1645FP(W)	0826 ** #	
17					1620FP(W)	1600FP(W)	1415 ** #	
18					1655P (W)		1445 ** #	
					1730P (W)			
19					~1645FP	1550FP(E)	0930 ** #	
20							0904 #	
21							0917 ** #	
22					1610G (E)	2215F (E)	0858 ** #	
23					1600FG(E)	1625FG(E)	1005 **	
24					2040P (E)	2055P (E)	0930 ##	
							1540	
25					1830F (c)	1800F (c)	1310 **	
26					1610FV(c)	1625FV(c)	1655 ** $	
27							1533 **	
28							0815 ** $ %	
							0940 ** $ %	
							1008 **	
29								
30					1855P (W)		1015 W **	
31					1625FV(W)	1610FV(W)		
Nov 1								
2								
3								
4							1059 ## m	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	1.1.4 KITT PEAK Ca^+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Nov 5							0719 m	
6								
7								
8								
9				1830VP(E)	1625FP(E)			
10							1258 **	
11							0952 **	
12								
13				~1630F (E)				
14				1715FP(E)	1810FP(E)	1835FP(E)	1629 ** VP $	
15							~1000G **	
16					1600G (E)	1625G (E)	0920 m	
17							0926 m	
18	0718-1300						1010 m	
19	1110-1300							
20	0701-1045			~1845VP(E)	~1800VP(W)		1013 P m	
21			1919-2111				0824 m	
							1001 NP	
							1106 SP $	
22								
23			2219-0000					
24							1132 m	
25	0737-1307		1615-2044					
26			2137-0006					
27			1641-0010		~1800FG(c)		0916	
28			1610-0008				0842 P	
29	1100-1300			1845F (W)	1630F (W)	1805F (W)	0903	
30	0739-1052			1645FG(W)	1835FG(W)		0814 $	
							0915 C	
Dec 1							1144	
2			1539-0010				1048 P	
3	0748-1318		1627-2158	2025VP(W)	1725VP(W)		1407 NP $	
							0841	
4	0850-1410			1735P (W)	1815P (W)	1835P (W)	1546 PC $	
5	0749-1314		1549-2355		1810F (E)	1640F (E)	1011 SP	
							1116 NP	
							0822 %	
							0906 C	
6			1545-2007		1630VP(E)	1650VP(E)	0856	
							1024 NP	
							1131 SP $	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	Ca^+ K UT	CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Dec 7			1938-0015		~1730F (E)	~1625P (E)	0910	
8			1549-0004				0837 C m	
9			1540-0017				1155 m	
10	0758-1140		1547-0017	2130FP(E)	2145FP(E)	1640FP(E)	0948 $ m	
11			1630-1801					
12			1545-2158					
13	0716-0851		1545-2339	1830FP(E) 1845FP(W)	1545FP(c)	1605FP(c)	1130 m	
14	0716-1101		1605-0025				1054 C m	
							1257 C m	
15			1555-2220		?? P (c)		1600 $	
							1630 $	
16			1533-0010					
17			1558-1747		2105P (E)	2130P (E)	0935 GC m	
18			1600-2343	1750F (E)	1655F (E)	1655F (E)	0835 MG W m	
19	0740-1255		1627-2328	~1600P (E)			1035 G m	
20	0853-1309		1610-2305				0835 G m	
21	0747-1143		1530-2146				0907 VG m	
22			1541-2300				1332 W m	
23	0828-1226		1540-2251					
24			1540-2115				1106 P m	
							1255 m	
25								
26			1551-0002				0939 C m	
27							0902 W m	
28			1924-2047				0902 VG C m	
29							0901 C m	
30			1600-0013				0950 C m	
31							0857 C $ m	
							?? %%	
1974								
Jan 1							0924 W m	
2			1630-0028					
3							1428 FC $ m	
4							1328 FC m	
5								
6							1304 C m	
7								
8								

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1974	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	Ca^+ K UT	$\overline{CN}$ UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Jan 9								
10								
11							0851 C m	
12			2300-0010				1562 C m	
13			1830-0030				1532 G m	
14			1754-0018	1655G (E)	1645G (E)	1825G (E)	0941 G m	
15			1600-0001	1600F (E) 1610F (W)	1645F (W)	∿1700F (W)	0900 G m	
16			1551-2308	1635FG(W)	1655FG(W) 1810 (c)	1840FG(c)	0853 G m	
17			2205-0023				1607 PC m	
18			1549-1922		1825P (E)	1705G (c)	1020 C m	
19			1537-1930				1029 G m	
20							1438 GC m	
21								
22					1615VP(W)	1640VP(W)	0834 m	
23					2100P (W)	2045P (W)	1039 PC m	
							1252 m	
24			1624-0019		1555P (E)	1605P (E)	0833 M $ m	
25			1547-2129				0833 m	
26			1536-2005				1000 W m	
27			1643-0005				1006 m	
28			1602-2227				0902 $ m	
							1007 G $ m	
29					1550FP(E)	1620FP(E)	1159 ## m	1140 NP
							∿1000 %%	
30			1718-0015				0850 GC ## m	
							0945 C m	
							1300 VG m (NRL)	
31			1718-0015				0847 $ % m	1130
							0939 m	1300
							1410 %%	(Prominences)
Feb 1			1628-1850				0810 $ m	
							∿1010 $ %%	
							∿1100 %%	
							∿1300 %%	
2			1628-0007				0830 P ## m	1100
							0953 %% ∞	
3			1556-0001				1012 P m	
4			1548-0036				0920 F ## m	1400
							1030 %%	1450

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1974	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	1.1.4 KITT PEAK Ca+ K UT	1.1.4 KITT PEAK CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Feb 5			1541-0011				0935 $ m 1510 %%	1350
6							1130 %%	1425
7			1550-2350				1310 %%	1015
8			1541-0030				1015 %%	1100
9							1121 PC m	1257
10							1141 m	
11								
12								
13							1424 $ m	
14					1605P (c)		0926 m	
15					1605F (W) 1615F (E)		1033 m	
16								
17								
18								
19								
20								
21								
22								
23								
24								
25					1615F (W) 1625F (E)			
26					1818FP(E)		0942G m	
27					1555FG(c)			
28					1610FG(E) 1610F (E) 1625F (W)			
Mar 1							1645 %%	
2								
3								
4								
5								
6							1159PC ## m	
7							0838 W m	

See page 19 for Footnotes.

TABLE 1.1 (Continued)

FULL DISK SOLAR OBSERVATIONS

Date 1974	1.1.1 TEL AVIV Hα 1/3 Disk UT	1.1.2 LOCKHEED Ca II 8542Å UT	1.1.3 BIG BEAR Hα UT	1.1.4 KITT PEAK (Note: From Aug. 11, 1973 on, 900 x 1200 arc sec area.) Hα UT	Ca^+ K UT	CN UT	1.1.5 KITT PEAK Magnetograms Fe I 5233Å MST (115° WMT)	1.1.6 KITT PEAK He 10830Å MST (115° WMT)
Mar 8								
9								
10							1409 P m	
11							0726 P m	
12								
13								
14								
15								

Footnotes:

1.1.2

✓ = 30 sec rate.

1.1.4

(c) = Center of the sun.
(E) = East scan.
(W) = West scan.
(N) = North scan.
(S) = South scan.

1.1.5

* = New scale on original film used hereafter. (June 1, 1973)
** = Mg 5173A.
$ = Equipment failure, some problems in data.
# = Polarity reversed.
= Tape only.
% = Negative only.
%% = Fe I 8688A, 512 channel vacuum telescope.
m = 40 channel main telescope.
∞ = Best full disk magnetogram ever taken. (Feb. 2, 1974)
NP = North Pole.
SP = South Pole.

Seeing:

B = Bad image,
C = Clouds.
F = Fair.
FG = Fair to Good.
FP = Fair to Poor.
FV = Fair, Variable.
G = Good.
GE = Good to Excellent.
M = Mediocre.
MG = Mediocre to Good.
P = Poor.
PF = Poor to Fair.
PV = Poor, Variable.
V = Variable.
VP = Very Poor.
W = Wind shake.

CATEGORY 1.2) FULL DISK SOLAR OBSERVATIONS (Cont'd.)
Stations listed by longitude

1.2.1 STATION: Lockheed Solar Observatory N34 E242
PROGRAM: Ground-based H-alpha full disk filtergrams (6563 Å)

OBSERVING TIMES AND RATES: 15 sec photos unless otherwise noted in Table 1 (see Table 1 for observing times)
FILM TYPE: SO 392
IMAGE SCALE OF ORIGINAL: Image diameter about 16 mm
QUALITY: See Table 1
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
Direct scientist-to-scientist
JOPs: 2, 3, 4, 5, 6

INVESTIGATOR: Mr. H. Ramsey
Lockheed-California Company
Solar Physics, Bldg. 243, Pl. 2
Burbank, California USA 91503

1.2.2 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based full disk spectroheliograms at He I D_3 (5875 Å) ± 0 Å; H-alpha (6563 Å) - 4.31 Å, ± 0 Å, + 0.5 Å; Ca K (3934 Å) ± 0 Å, + 0.38 Å

OBSERVING TIMES AND RATES: see Table 1
MEASUREMENTS: Scan 1.2 solar diameters
SPECTRAL BANDPASS IN Å: H-alpha - 4.31 Å (0.025 Å)
H-alpha ± 0 Å (0.098 Å)
H-alpha + 0.5 Å (0.068 Å)
Ca K ± 0 Å (0.514 Å)
Ca K + 0.38 Å (0.214 Å)
He I D_3 ± 0 Å (0.18 Å in the D_3, H-alpha - 4.31 Å, Ca K and D_3, H-alpha, Ca K runs; 0.314 Å in the D_3, H-alpha, Ca K + 0.38 Å runs)
FILM TYPE: SO 392, 2568, Linograph shellburst = all in D19 68°F
IMAGE SCALE OF ORIGINAL: 4" solar image
QUALITY: see Table 1
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
JOPs: 6, occasionally 1, 11

INVESTIGATOR: Dr. George Simon, Dr. Jacques Beckers
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

TABLE 1.2

FULL DISK SOLAR OBSERVATIONS

	1.2.1	1.2.2							
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)							
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K	
Date 1973	Hα (6563 Å) Time (UT) Rate	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
May 29		8684	1329 F	8685	1333 F	8686	1338 F		
		8687	1442 P	8688	1446 P	8689	1451 P		
30		8693	1445 G	8694	1452 G	8695	1518 G		
31		8699	2037 VP	8700	2052 VP				
June 1									
2		8710	1337 F	8711	1341 F	8712	1347 F	8719-8721	1639-1651 FPβ
								8722-8724	1700-1708 FPβ
								8725-8727	1719-1728 FPβ
3		8734	1421 F	8735	1430 F	8736	1435 F		
4		8746	1344 F	8747	1349 F	8748	1354 F	8749-8751	1901-1907 FP√
								8752-8754	2008-2014 FP√
								8755-8760	2144-2207 FP√
5		8771	1438 P	8772	1441 P	8773	1449 P		
		8774	1913 FP	8777	1931 FP	8776	1925 FP		
		8778	1937 FP	8779	1941 FP	8780	1948 FP		
6		8791	1418 F	8792	1422 F	8793	1428 F		
		8794	2011	8795	2014	8796	2018		
7									
8		8811	1405 P	8812	1411 P	8813	1454 P		
9		8817	1348 G	8818	1353 G	8819	1359 G		
10		8827	1313	8828	1317	8829	1335		
		8830	1339	8835	1607 F	8836	1614 F		
		8834	1604 F	8839	2101 F*	8840	2104 F		
		8838	2057 F	8842	2205 P*	8843	2213 P		
		8841	2202 P						
11		8851	1417 G	8852	1421 G	8853	1427 G		
		8854	1809 P	8855	1812 P	8856	1818 P		
		8857	2113 P	8858	2115 P	8859	2121 P		
12		8860	0022	8861	0024	8862	0028		
13		8872	1413 VP	8873	1931 VP	8876	2028 VP		
		8874	2016 VP	8875	2020 VP				
14		8880	1330 FG	8881	1337 FG	8882	1343 FG**		
15		8889	1341 F	8890	1346 F	8891	1353 F		
		8892	1419 VP	8893	1422 VP	8894	1427 VP		
16	1654-2425 F	8899	1334	8900	1337	8901	1343		
		8905	1425	8906	1430	8907	1453		
		8908	1557 FP	8909	1559 FP	8910	1604 FP		
		8911	1802 P	8912	1804 P	8913	1810 P		
		8914	2115 FP	8915	2118 FP	8916	2124 FP		
17	1505-1820 F	8925	1401 G	8926	1405 G	8927	1411 G		
		8928	1615 P	8929	1618 P	8930	1624 P†		
		8931	2045 P	8932	2049 P	8933	2055 P		
18	1525-1615	8941	1412 FG	8942	1417 FG	8943	1422 FG		
		8944	1426 FG						
19	1539-1630-30s								
20	1450-2531 PF-60s	8957	1349 P	8958	1355 P	8959	1403 P**		
		8963	2202 P	8964	2209P	8965	2215 P		
21	1522-2248 G-30s	8966	1303 F	8967	1308 F	8968	1314 F		
	2249-2527 G								
22	1546-2215 FG-30s	8982	1403 G	8983	1407 G	8984	1414 G†		
						8985	1418 G†		
23	1528-2255 FP-30s	8990	1325	8991	1329	8992	1335		
	2335-2627 B	8996	1950 P	8997	1954 P	8998	1959 P		
24	1512-2547 IP-30s	9006	1421 GF	9007	1425 GF	9008	1430 GF		
		9009	2327 P	9010	2329 P	9011	2335 P		
25	Random	9015	1347 G	9016	1354 G	9017	1401 G		

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATORIES

	1.2.1	1.2.2							
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), $H\alpha$ (6563 Å) and Ca K (3934 Å)							
		D_3, $H\alpha$-4.31 Å and Ca K		$H\alpha$, D_3 and Ca K + 0.38 Å		$H\alpha$ + 0.5 Å		D_3, $H\alpha$ and Ca K	
Date 1973	$H\alpha$ (6563 Å) Time (UT) Rate	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
June 26	Random	9021	1324 G	9022	1330 G	9023	1337 G		
27	"	9033 A	1414 F	9034	1422 F	9035	1435 F		
		9033 B	1430 F	9040	2341 FP	9041	2347 FP		
		9039	2302 FP						
28	"	9049	1642 P	9050	1652 P	9051	1703 P		
		9052	2127 P	9053	2131 P	9054	2137 P		
29	"	9062	1411	9063	1415	9064	1421		
		9069	2053 P	9070	2057 P				
30	"	9075	1427 F	9076	1430 F	9077	1437 F		
		9078	1441 F	9080	1642 F	9081	1649 F		
		9079	1639 F						
July 1	"								
2		9094	1435 G	9095	1440 G	9096	1447 G		
3		9103	1333 G	9104	1338 G	9105	1345 G		
4		9113	1323	9115	1331	9116	1337		
		9114	1327						
5		9124	1327	9125	1331	9126	1339		
6		9137	1348 FP	9138	1352 FP	9139	1358 FP		
		9140	2059						
7		9144	1400 F	9145	1406 F	9146	1415 F		
8									
9									
10									
11		9159	1607	9160	1610	9161	1618		
		9162	2322	9163	2327	9164	2331		
12		9171	1358 F	9172	1402 F	9173	1408 F		
13		9177	1944 P	9178	1956 P	9176	2002 P		
		9177	2002 P						

No data July 14 through August 1, 1973. Table continued on next page.

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATORIES

	1.2.1	1.2.2									
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)									
		D_3, Hα-4.31 Å and Ca K			Hα, D_3 and Ca K + 0.38 Å			Hα + 0.5 Å		D_3, Hα and Ca K	
Date 1973	Hα (6563 Å) Time (UT) Rate	Scan No.	Time (UT)		Scan No.	Time (UT)		Scan No.	Time (UT)	Scan No.	Time (UT)
Aug 2		9278	1509 P✓		9282	2308 *F✓		9277	1355 F†	9275	1341 F†
		9281	2305 F✓					9280	1518 P✓	9276	1348 F†
								9283	2311 F✓		
3		9288	1409 F		9289	1353 F		9290	1359 F		
		9291	1623 P✓		9293	2030 *G✓		9294	2039 G✓		
		9292	2019 G✓		9296	2317 *F†✓		9297	2320 F†✓		
		9295	2315 F†✓								
4		9301	1352 G		9302	1358 G		9303	1405 G		
5		9308	1326 G✓		9309	1330 G✓		9310	1336 G✓		
		9311	1847 F		9312	1850 F		9313	1857 F		
6		9314	0027 F		9315	0031 F		9316	0037 F		
		9321	1331 F		9322	1335 F		9323	1340 F		
7		9329	1336 P		9330	1340 P		9331	1345 P		
8		9337	1337 FG		9338	1340 FG		9339	1347 FG		
9		9340	0034 F		9341	0037 F		9342	0043 F		
		9346	1359 G		9347	1403 G		9348	1408 G		
10		9353	0034 G		9354	0039 G		9355	0045 G		
		9359	1442 F		9360	1607 F		9361	1645 F		
		9362	2151 FP#		9363	2157 FP#		9364	2202 FP#		
11		9368	1353 G		9369	1359 G		9370	1406 G		
		9374	2215 P#		9375	2322 P#		9376	2400 P#		
12			1324			1324			1324		
			1337 #			1337 #			1337 #		
		9387	1437 F		9388	1441 F		9389	1446 F		
			1707 P#			1707 P#			1707 P#		
		9393	2014 P		9394	2019 P			2240 P		
			2240 P			2240 P					
13		9401	1401 G		9402	1407 G		9403	1414 G		
		9404	1533 GF✓✓		9405	1537 *GF✓✓		9406	1540 GF✓✓		
		9407	1550 F✓✓		9408	1550 *F✓✓		9409	1550 F✓✓		
		9410	1611 F✓✓		9411	1611 *F✓✓		9412	1611 F✓✓		
		9413	1630 F✓✓		9414	1630 *F✓✓		9415	1630 F✓✓		
		9416	1807 P✓✓		9417	1807 *P✓✓		9418	1807 P✓✓		
		9419	1842 VP✓✓		9420	1842 *VP✓✓		9421	1842 VP✓✓		
		9423	1930 VP✓✓		9424	1930 *VP✓✓		9425	1930 VP✓✓		
		9425	2010 VP✓✓		9427	2040 *VP$✓✓		9428	2040 VP✓✓		
		9426	2040 VP$✓✓								
14		9432	1336 F		9433	1340 F		9434	1345 F		
15		9435	1713 Pβ		9436	1717 Pβ		9441	1737 P✓✓		
		9438	1726 P✓✓		9439	1729 *P✓✓		9444	1745 P✓✓		
		9442	1745 P✓✓		9443	1745 *P✓✓		9447	2015 P✓✓		
		9445	2015 P✓✓		9446	2015 *P✓✓		9450	2045 P✓✓		
		9448	2045 P✓✓		9449	2045 *P✓✓		9455	2115 P✓✓		
		9453	2115 P✓✓		9454	2115 *P✓✓					
16		9459	1331 F#		9460	1331 F#		9461	1331 F#		
		9462	1348 G		9463	1352 G		9464	1357 G		
17		9465	1315 P✓		9466	1319 *P✓		9467	1322 P✓		
		9468	1330 FP✓		9469	1330 *FP✓		9470	1330 FP✓		
		9474	1420 FP✓		9475	1420 *FP✓		9476	1420 FP✓		
		9477	1430 F		9478	1433 F		9479	1439 F		
		9480	1445 F✓		9481	1445 *F✓		9482	1445 F✓		
		9483	1825 F		9484	1825 F		9485	1825 F		
18		9488	1402 F		9489	1405 F		9490	1412 F		
		9492	1832 κ		9493	1834 *κ		9494	1837 κ		
		9495	1915 FPκ		9496	1915 *FPκ		9497	1915 FPκ		
		9498	2015 FPκ		9499	2015 *FPκ		9500	2015 FPκ		
		9501	2100 FPκ		9502	2100 *FPκ		9503	2100 FPκ		
		9504	2340 FP		9505	2340 FP		9506	2340 FP		
19		9510	1337		9511	1341		9512	1347		
		9513	1610 Fβ		9514	1613 *Fβ		9515	1617 Fβ		
		9516	1630 Fβ		9517	1630 *Fβ		9518	1630 Fβ		

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATORIES

	1.2.1	1.2.2						
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)						
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K
Date 1973	Hα (6563 Å) Time (UT) Rate	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No. Time (UT)
Aug 20								
21		9522	1457 F	9523	1507 F	9524	1514 F	
		9525	1526 FP✓	9526	1531 *FP✓	9527	1539 FP✓	
22		9530	1351 FP	9531	1356 FP	9532	1403 FP	
		9533	1415 P✓	9534	1418 *P✓	9535	1422 P✓	
		9536	1435 F✓	9537	1435 *F✓	9538	1435 F✓	
		9539	1540 F✓	9540	1540 *F✓	9541	1540 F✓	
		9542	1610 F✓	9543	1610 *F✓	9544	1610 F✓	
		9545	1715 F-✓	9546	1715 *F-✓	9547	1715 F-✓	
		9548	1740 F-✓	9549	1740 F-✓	9550	1740 F-✓	
23		9554	1340 G	9555	1344 G	9556	1350 G	
		9557	1815 P	9558	1815 P	9559	1815 P	
24								
25		9571	1350 P	9572	1354 P	9573	1359 P	
26			0015 P		0015 P		0015 P	
		9580	1341	9581	1344	9582	1351	
		5883	1945 P	5884	1945 P	5885	1945 P	
		5888	2310 F-	5889	2310 F-	5890	2310 F-	
		9591	2355 F	9592	2355 F	9593	2355 F	
27		9597	1404 FG	9598	1408 FG	9599	1413 FG	
28								
29								
30		9604	2334 PC	9605	2339 P	9606	2344 P	
		9607	2349 P					
31		9611	1921 PCB	9612	1925 PCB	9613	1932 PCB	
Sept 1		9617	1527 F	9618	1531 F	9619	1536 F	
2		9620	0025 P	9621	0030 P	9622	0035 P	
		9626	1345 F	9627	1345 F	9628	1345 F	
		9629	1601 P	9630	1601 P	9631	1601 P	
		9632	2231 P	9633	2231 P	9634	2231 P	
3		9635	0017 P	9636	0020 P	9637	0027 P	
		9640	1341 F	9641	1341 F	9642	1341 F	
		9643	1844 P	9644	1844 P	9645	1844 P	
4		9646	0018 P	9647	0022 P	9648	0027 P	
		9652	1355 F	9653	1355 F	9654	1355 F	
		9655	2330 P	9656	2330 P	9657	2330 P	
		9658	2330 P					
5		9662	1357 P	9663	1403 P	9664	1410 P	
		9665	1519 PFβ	9666	1522 *PFβ	9667	1527 PFβ	
		9668	1540 Pβ	9669	1540 *Pβ	9670	1540 Pβ	
		9671	1610 Pβ	9672	1610 *Pβ	9673	1610 Pβ	
		9674	2000 F	9675	2000 F	9676	2000 F	
		9677	2200 F	9678	2200 F	9679	2200 F	
6		9684	1413 P	9685	1418 P	9686	1424 P	
		9687	1520 P	9688	1520 P	9689	1520 P	
7		9696	2315 F	9697	2319 F	9698	2324 F	
8		9699	1344 G	9700	1349 G	9701	1357 G	
		9706	1450 G	9707	1450 G	9708	1450 G	
		9709	1935 F-	9710	1935 F-	9711	1935 F-	
9		9714	1358 G	9715	1402 G	9716	1407 G	
		9717	1550 F	9718	1550 F	9719	1550 F	
10								
11		9720	1727 Pβ	9721	1740 *Pβ	9722	1748 Pβ	
		9725	1910 Pβ	9726	1910 *Pβ	9727	1910 Pβ	
		9728	2000 P	9729	2000 P	9730	2000 P	
		9731	2211 FP	9732	2215 FP	9733	2220 FP	

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATORIES

	1.2.1	1.2.2								
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)								
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K	
Date 1973	Hα (6563 Å) Time (UT) Rate	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
Sept 12		9737	1347 F	9738	1350 F	9739	1356 F		
		9740	1815 P	9741	1815 P	9742	1815 P		
		9743	2136 P	9744	2136 P	9745	2136 P		
13		9749	1354 F	9750	1401 F	9751	1407 F		
		9752	2040 FP	9753	2040 FP	9754	2040 FP		
		9755	2215 F	9756	2215 F	9757	2215 F		
14	1908-2233 F-30s	9761	1357 F	9762	1400 F	9763	1407 F		
15	2042-2428 F-30s	9768	1435 G	9769	1439 G	9770	1447 G		
		9771	1930 P	9772	1930 P	9773	1930 P		
		9774	2100 P	9775	2100 P	9776	2100 P		
16	1705-2240*F-30s	9778	1729 P	9779	1747 P	9780	1755 P		
		9781	2140 P	9782	2140 P	9783	2140 P		
17	1528-1730 F-30s	9784	1354 G	9785	1359 G	9786	1407 G		
		9790	1607 Fβ	9791	1610*Fβ	9792	1614 Fβ		
		9793	1635 Fβ	9794	1635*Fβ	9795	1635 Fβ		
		9796	1700 Fβ	9797	1700*Fβ	9798	1700 Fβ		
		9799	1750 Pβ	9800	1750*Pβ	9801	1750 Pβ		
		9802	1815 Pβ	9803	1815*Pβ	9804	1815 Pβ		
		9805	1840 Pβ	9806	1840*Pβ	9807	1840 Pβ		
		9808	2200 P	9809	2200 P	9810	2200 P		
18	1549- ?? F-30s	9811	1721 Pβ	9812	1724*Pβ	9813	1727 Pβ		
		9816	1800 Pβ	9817	1800*Pβ	9818	1800 Pβ		
		9819	1840 Pβ	9820	1840*Pβ	9821	1840 Pβ		
		9822	1905 Pβ	9823	1905*Pβ	9824	1905 Pβ		
		9825	1930 Pβ	9826	1930*Pβ	9827	1930 Pβ		
19	1608-2316 F-60s	9831	1503 F	9832	1507 F	9833	1515 F		
		9834	1810 F	9835	1810 F	9836	1810 F		
		9837	2100 P	9838	2100 P	9839	2100 P		
		9840	2245 P	9841	2245 P	9842	2245 P		
20	1621-2308 F-60s	9846	1359 F	9847	1403 F	9848	1409 F		
		9849	1730 FG	9850	1730 FG	9851	1730 FG		
		9852	2205 F	9853	2205 F	9854	2205 F		
21	1638-2334 F-60s	9858	1540 Gβ	9859	1542*Gβ	9860	1547 Gβ		
		9861	1555 Pβ	9862	1555*Pβ	9863	1555 Pβ		
		9864	1608 P	9865	1612 P	9869	1655 Pβ		
		9867	1655 Pβ	9868	1655*Pβ	9872	1710 Pβ		
		9870	1710 Pβ	9871	1710*Pβ	9875	1825 P		
		9873	1825 P	9874	1825 P	9878	2200 P		
		9876	2200 P	9877	2200 P				
22		9881	1353 F	9882	1357 F	9883	1402 F		
		9884	1755 P	9885	1755 P	9886	1755 P		
23	1602-1752 F-60s	9890	1412 F	9891	1417 F	9892	1422 F		
	1752-1836 P-15s								
	1836-2330VB-30s								
24		9896	1359 F	9897	1403 F	9898	1408 F		
25		9902	1532 PF	9904	1545 PF	9905	1551 PF		
		9903	1535 PF						
26		9909	1600 F	9910	1603 F	9911	1608 F		
27		9915	2315 P	9916	2321 P				
28		9921	1359 GF	9922	1404 GF	9923	1409 GF		
29	1558-0027 30s	9927	1353 F	9928	1357 F	9929	1402 F		
30	1522-2240 30s	9933	1414 FP	9934	1418 FP	9935	1423 FP		
		9936	2330 P	9937	2330 P	9938	2330 P		
Oct 1	1726-0048 30s	9942	1351 F	9943	1355 F	9944	1400 F		
2	2012-0039 60s	9948	1413 F	9949	1417 F	9950	1422 F		
3	1534-0130 30s	9954	2052 VP	9955	2055 VP	9956	2101 VP		
4	1453-2200 30s	9961	1421 P	9962	1425 P	9963	1431 P		
5	1556-0016 30s								

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATIONS

	1.2.1		1.2.2							
	LOCKHEED Full Disk Filtergrams		SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)							
			D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K	
Date 1973	Hα (6563 Å) Time (UT)	Rate	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
Oct 6										
7			9977	1521 FPN	9975	1512 FP	9976	1518 FP	9974	1509 FP**
8			9981	1421 F	9982	1425 F	9983	1431 F		
			9992	2100	9993	2100	9994	2100		
9	1529-2345	30s	9998	1418 FP	9999	1422 FP	10000	1430 FP		
			10001	1650 ✓	10002	1653*✓	10003	1657		
			10006	1730 P✓	10007	1730*P✓	10008	1730 P		
			10009	1824 P✓	10010	1824*P✓	10011	1824 P✓		
			10012	1906 P✓	10013	1906*P✓	10014	1906 P✓		
			10015	1955 ✓	10016	1955*✓	10017	1955 ✓		
			10019	2034 FP✓	10020	2034*FP✓	10021	2034 FP✓		
			10022	2125 FP✓	10023	2125*FP✓	10024	2125 FP✓		
			10025	2206 ✓	10026	2206*✓	10027	2206 ✓		
			10028	2254 ✓	10029	2254*✓	10030	2254 ✓		
			10031	2334 F✓	10032	2334*F✓	10033	2334 F✓		
10	1606-2408	30s	10037	1424 P✓	10038	1427*P✓	10039	1434 P✓		
			10040	1516 P✓	10041	1516*P✓	10042	1516 P✓		
			10043	1600 P✓	10044	1600*P✓	10045	1600 P✓		
11	1526-2352	30s	10049	1359 F	10050	1403 F	10051	1408 F		
12	1533-0100	60s	10055	1425 F	10056	1429 F	10057	1435 F		
			10058	1744 P✓	10059	1747*P✓	10060	1750 P✓		
			10061	1830 P✓	10062	1830*P✓	10063	1830 P✓		
			10064	1913 P✓	10065	1913*P✓	10066	1913 P✓		
			10067	1959 P✓	10068	1959*P✓	10069	1959 P✓		
			10070	2130 P✓	10071	2130*P✓	10072	2130 P✓		
			10073	2220 P✓	10074	2220*P✓	10075	2220 P✓		
13	1618-2000	60s	10079	1437 F	10080	1441 F	10081	1448 F		
			10082	1552 F✓	10083	1557*F✓	10084	1601 F✓		
			10085	1719 FP✓	10086	1719*FP✓	10087	1719 FP✓		
			10088	1836 P✓	10089	1836*P✓	10090	1836 P✓		
			10091	2048 P✓	10092	2048*P✓	10093	2048 P✓		
			10094	2144 P✓	10095	2144*P✓	10096	2144 P✓		
			10097	2314 P✓	10098	2314*P✓	10099	2314 P✓		
14	1645-2320	60s	10103	1448 F✓	10104	1453 F✓	10105	1500 F✓		
			10106	1617 P✓	10107	1617 P✓	10108	1617 P✓		
15	1545-2340	30s	10109	1431 G	10110	1419 G	10111	1427 G		
			10115	2340 P	10116	2340 P	10117	2340 P		
16	1547-2243	60s	10123	1459 P	10124	1501P	10125	1508 P		
17	1525-2348	30s	10130	1436 G	10131	1440 G	10132	1445 G		
18	1829-0120	30s	10137	1425 F	10138	1429 F	10139	1434 F		
19	1610-0000	30s	10142	1541 F	10143	1546 F	10144	1552 F		
			10145	2320 P	10146	2320 P	10147	2320 P		
20	1630-2300	60s	10151	1453 FG	10152	1458 FG	10153	1505 FG		
			10154	2319 F	10155	2319 F	10156	2319 F		
21	1909-2242	30s	10160	1458	10161	1504	10162	1510		
			10163	1614 P✓	10164	1618*P✓	10164	1627 P✓		
			10165	1650 P✓	10166	1650*P✓	10167	1650 P✓		
			10168	1800 PF✓	10169	1800*PF✓	10170	1800 PF✓		
			10171	1830 PF✓	10172	1830*PF✓	10173	1830 PF✓		
			10174	1957 P✓	10175	1957*P✓	10176	1957 P✓		
			10177	2100 P✓	10178	2100*P✓	10179	2100 P✓		
			10180	2135 F-✓	10181	2135*F-✓	10182	2135 F-✓		
			10183	2227 F-✓	10184	2227*F-✓	10185	2227 F-✓		
			10186	2323 P	10187	2323 P	10188	2323 P		
22			10192	1458 F	10193	1501 F	10194	1507 F		
			10195	1547 F✓	10196	1550*F✓	10197	1553 F✓		
			10198	1728 P✓	10199	1728*P✓	10200	1728 P✓		
			10201	1835 P✓	10202	1835*P✓	10203	1835 P✓		
			10204	1912 P✓	10205	1912*P✓	10206	1912 P✓		
			10207	2014 P✓	10208	2014*P✓	10209	2014 P✓		

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATIONS

	1.2.1		1.2.2									
	LOCKHEED Full Disk Filtergrams		SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)									
			D_3, Hα-4.31 Å and Ca K			Hα, D_3 and Ca K + 0.38 Å			Hα + 0.5 Å		D_3, Hα and Ca K	
Date 1973	Hα (6563 Å) Time (UT)	Rate	Scan No.	Time (UT)		Scan No.	Time (UT)		Scan No.	Time (UT)	Scan No.	Time (UT)
Oct 22			10210	2044 P✓		10211	2044*P✓		10212	2044 P✓		
			10213	2142 P✓		10214	2142*P✓		10215	2142 P✓		
			10216	2217 P✓		10217	2217*P✓		10218	2217 P✓		
23			10222	1443 F		10223	1447 F		10224	1452 F		
			10225	1502 F✓		10226	1505*F✓		10227	1508 F✓		
			10228	1624 P✓		10229	1624*P✓		10230	1624 P✓		
			10231	1658 P✓		10232	1658*P✓		10233	1658 P✓		
			10234	1758 P✓		10235	1758*P✓		10236	1758 P✓		
			10237	1830 P✓		10238	1830*P✓		10239	1830 P✓		
			10240	1930 P✓		10241	1930*P✓		10242	1930 P✓		
			10243	2006 P✓		10244	2006*P✓		10245	2006 P✓		
			10246	2100 P✓		10247	2100*P✓		10248	2100 P✓		
			10249	2137 P✓		10250	2137*P✓		10251	2137 P✓		
			10252	2233 P✓		10253	2233*P✓		10254	2233 P✓		
24	1524-0025	30s	10257	1430 F		10258	1434 F		10259	1439 F		
25	1535-2225	30s	10260	1435 F		10261	1443 F		10262	1450 F		
26	1752-0331	30s	10267	1415 F		10268	1422 F		10269	1429 F		
27	1558-2328	30s	10273	1457 F		10274	1503 F		10275	1515 F		
			10277	1603 Fϕ		10278	1605 Fϕ		10283	1635 Fϕ		
			10281	1631 Fϕ		10282	1633 Fϕ					
28	1658-2403	G-30s	10287	1451 G		10288	1456 G		10289	1502 G		
29	1551- ??	F-30s	10290R	1503 FG		10291	1450 FG		10292	1457 FG	10290	1444 FG**
			10295	1528 F✓		10296	1531*F✓		10297	1537 F✓		
			10298	1610 F✓		10299	1610*F✓		10300	1610 F✓		
			10301	1650 FP✓		10302	1650*FP✓		10303	1650 FP✓		
			10304	1743 P✓		10305	1743*P✓		10306	1743 P✓		
			10307	1910 P✓		10308	1910*P✓					
			10309	1939 P✓		10310	1939*P✓					
			10311	2020 P✓		10312	2020*P✓					
			10313	2203 P✓		10314	2203*P✓					
30	1716-2445	F-30s	10318	1451 F-		10319	1457 F-		10320	1506 F-		
31	1612-2408	F-30s	10324	1430 G		10325	1434 G		10326	1439 G		
Nov 1	1628-2218	VB-30s	10330	1436 FG		10331	1440 FG		10332	1445 FG		
2												
3			10336	2119 P		10337	2123 P		10338	2129 P		
4	1719-2331	F-60s										
5	1648-2440	F-60s	10346	1440 P		10347	1444 P		10348	1450 P		
6	1623-2355	F-60s	10352	1514 G		10353	1520 G		10354	1527 G		
7	1604-2252	F-60s	10358	1605 FG		10359	1610 FG		10360	1617 FG		
8	2059-2307	F-60s	10378	1616 FP		10379	1622 FP		10380	1628 FP		
9	1655-∿2210	FB-60s	10396	1425 F+β		10397	1429 F+β		10398	1438 F+β		
						10400	1523*F β				10399	1519 F $$ § β
						10402	1610*F+β				10401	1610 F+$$ § β
						10404	1706*F-β				10403	1706 F-$$ § β
						10406	1801*P β				10405	1801 P $$ § β
						10408	1910*P β				10407	1910 P $$ § β
						10410	2002*P β				10409	2002 P $$ § β
						10412	2105*P β				10411	2105 P $$ § β
						10414	2218*P β				10413	2218 P $$ § β
						10416	2255*P β				10415	2255 P $$ § β
10	1659-2355	FP-30s				10424	1501*F β				10423	1458 F $$ § β
						10426	1601*F β				10425	1601 F $$ § β
						10428	1657*F β				10427	1657 F $$ § β
11	1805-2057	VB-30s	10432	1438 G		10433	1446 G		10434	1451 G	10435	1500 P $$ § β
						10436	1503*P β				10437	1644 F $$ § β
						10438	1644*F β				10439	1707 P $$ § β
						10440	1707*P β				10441	1803 P $$ § β
						10442	1803*P β				10443	1858 P $$ § β
						10444	1858*P β				10445	1956 P $$ § β

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATIONS

Date 1973	1.2.1 LOCKHEED Full Disk Filtergrams Hα (6563 Å) Time (UT) Rate	1.2.2 SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)							
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K	
		Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
Nov 11				10446	1956*P β			10447	2104 P $$ § β
				10448	2104*P β			10449	2200 P $$ § β
				10450	2200*P β			10451	2309 P $$ § β
				10452	2309*P β				
12	1922-2004 FB-60s	10456	1441 F	10457	1445 F	10458	1450 F		
13		10462	1555 P	10463	1600 P	10464	1606 P		
14									
15	2231- ??	10465	1442 P	10466	1447 P	10467	1453 P		
		10472	1535 G	10473	1535 G	10474	1535 G		
16		10478	1457 G	10479	1501 G	10480	1506 G		
17		10484	1522 G	10485	1529 G	10486	1536 G		
18									
19	1648-2355 P-60s								
20	1653-2400+F-60s								
21	1640-1953 FP-60s	10499	1532 F	10500	1537 F	10501	1550 F		
22		10513	1537 G	10514	1543 G	10515	1549 G		
23									
24	1642-1810 F-30s	10531	1539 G	10532	1547 G	10533	1558 G		
	1810-2026 FP-15s	10534	2011 P ϕ	10535	2013 P ϕ	10536	2017 P % δ ϕ		
25	1639-2232 P-60s								
26	1917-2354 F-30s								
27	1624-2400 F-30s	10540	1512 P	10541	1516 P	10542	1522 P		
28	1641-2400+F-30s	10546	1440 F+	10547	1444 F+	10548	1449 F+	10549	1752 P § β
				10550	1755*P β			10551	1825 P § β
				10552	1825*P β				
29	1628-2223 P-60s	10556	1447 FP	10557	1438 FP	10558	1444 FP		
30	1727-2355 F-60s	10562	1553 P	10563	1557 P	10564	1604 P		
Dec 1		10571	1542 G	10572	1549 G	10573	1556 G		
2	1644-2345 F-15s	10576	1504 G	10577	1510 G	10578	1517 G		
3	1703-1802 FB-30s								
	2101-2230 FB-30s								
4		10582	1550 P	10583	1555 P	10584	1604 P		
5	1704-2351 F-30s	10585	1446 G	10586	1451 G	10587	1457 G		
		10591	1655 P	10592	1655 P	10593	1655 P		
		10594	1750 F	10595	1750 F	10596	1750 F		
6	1614-2345 F-30s	10600	1509 F	10601	1512 F	10602	1520 F		
		10603	1900 P	10604	1900 P	10605	1900 P		
7	2150-2355 FP-30s	10609	1504 F	10610	1508 F	10611	1513 F	10612	2228 P § ✓
				10613	2232*P ✓			10614	2303 P § ✓
				10615	2307*P ✓				
8	1623-2000±F-30s								
	2155-2344 F-30s	10616	1923 FG	10617	1927 FG	10618	1932 FG		
9	1635-2340 F-30s	10625	1537 F	10626	1541 F	10627	1549 F		
		10628	1800 P	10629	1800 P	10630	1800 P		
		10631	1940 P	10632	1940 P	10633	1940 P		
		10634	2140 P	10635	2140 P	10636	2140 P		
		10637	2240 P	10638	2240 P	10639	2240 P		
10	1623-1912 F-30s	10643	1507 F	10644	1509 F	10645	1514 F		
	1925-2345 F-30s	10646	1544 F	10647	1544 F	10648	1544 F		
		10649	1851 P	10650	1851 P	10651	1851 P		
11		10655	1629 P	10656	1635 P	10657	1644 P		
		10658	2255 P ✓	10659	2255 P ✓	10660	2255 P ✓		
12	1849-2054 F-30s	10664	1611 F	10665	1615 F	10666	1623 F		
	2140-2330 F-60s	10667	2220 FP	10668	2220 FP	10669	2220 FP		
13		10673	1724 P	10674	1728 P	10675	1732 P		
14	1643-2325 F-30s	10679	1618 P	10680	1623 P	10681	1632 P		
		10682	1734 P	10683	1734 P	10684	1734 P		
		10685	2010 VP	10686	2010 VP	10690	2220 P+		
		10687	2220 P+	10688	2220 P+				

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATIONS

	1.2.1	1.2.2							
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875Å), Hα(6563Å) and Ca K (3934Å)							
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K	
Date 1973	Hα (6563Å) Time (UT Rate	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
Dec 15	1629-2338 F-30s	10693	1503 F	10694	1506F	10695	1511 F	10696	1708 F § K
		10700	2008 FP	10697	1711*F K	10702	2008 FP	10698	1737 F § K
				10699	1740*F K				
				10701	2008 FP				
16	1807-2327 F-30s	10706	1543 F	10707	1546 F	10708	1551 F		
		10709	2000 P	10710	2000 P	10711	2000 P		
17	1620-2355 F-15s	10715	1954 P	10716	1958 P	10717	2007 P		
18	1632-2350 B-30s	10721	1557 P	10722	1601 P	10723	1609 P		
19		10724	2107 F	10725	2055 F	10726	2102 F		
20	1624-2030 VB-15s	10734	1539 F	10735	1543 F	10736	1548 F		
	2114-1400 VB-15s	10737	2204 F	10738	2204 F				
21	1653-1701 VB-30s	10742	1518 F	10743	1522 F	10744	1528 F		
	1738-1850 VB-30s	10746	2250 P	10747	2250 P	10748	2250 P		
22	2016-2110 VB-30s	10752	1540 G	10753	1544 G	10754	1552 G		
23									
24	1618-2235 VB-30s								
25		10758	1537 F	10759	1541 F	10760	1547 F		
26	1657-2235 F-30s	10764	1955 P	10765	1959 P	10766	2004 P		
27		10770	2119 P	10771	2122 P	10772	2128 P		
28		10775	1544 P	10776	1549 P	10777	1554 P		
		10778	2250 F	20780	2250 F	10781	2250 F		
29	1642-2043 VB-30s	10784	1652 FG	10785	1658 FG	10786	1704 FG		
	2113-2127 VB-30s	10787	2257 P	10788	2257 P	10789	2257 P		
30		10793	1547 F	10794	1551 F	10795	1600 F		
31	1640-2006 VB-30s	10799	1811 P	10800	1817 P	10801	1822 P		
	2029-2235 VB-30s								
1974									
Jan 1		10805	1610 P	10806	1614 P	10807	1621 P		
2	1728-2415+F-60s								
3									
4		10808	1914 P	10809	1918 P	10810	1923 P		
5									
6		10817	2154 P	10818	2157 P	10819	2203 P		
7									
8									
9	1935-2025 FB-30s								
10	1713-2042 FB-30s	10827	2210 F+	10828	2214 F+	10829	2221 F+		
11		10832	1606 P	10833	1610 P	10834	1615 P		
12	1756-1902 FB-15,30s	10838	1539 F	10839	1542 F	10840	1548 F		
	1952-2107 FB-15s								
13	1625-2208 PF-30s	10843	2024 F	20844	2029 F	10845	2035 F		
14	1630-2400 F-30s	10849	1509 F	10850	1513 F	10851	1518 F		
		10852	1819 F K	10853	1822*F K	10854	1827 F K		
		10855	2112 F-	10856	2117 F-	10857	2124 F-		
15	1646-2045 F-30s	10861(R)	1710 G	10862	1659 G	10863	1705 G		
	2045-2410 F-10,15s	10864	1918 F	10865	1923 F	10866	1929 F		
16		10870	1549 F	10871	1553 F	10872	1559 F		
		10873	1707 F	10874	1707 F	10875	1707 F		
		10876	1820 G	10877	1820 G	10878	1820 G		
		10879	2000 G	10880	2000 G	10881	2000 G		
		10882	2130 FP	10883	2130 FP	10884	2130 FP		
		10885	2312 P	10886	2312 P				
17		10890	1600 G	10891	1606 G	10892	1613 G		
		10893	1802 F	10894	1802 F	10895	1802 F		
		10896	1933 F	10897	1933 F	10898	1933 F		
		10899	2100 F-	10900	2100 F-	10901	2100 F-		
18	1914-2226 FP-30s								

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATIONS

Date 1974	LOCKHEED Full Disk Filtergrams Hα (6563 Å) Time (UT) Rate	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)							
	1.2.1	1.2.2							
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38 Å		Hα + 0.5 Å		D_3, Hα and Ca K	
		Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
Jan 19	1935 + (Visual) B	10905	1730 P	10906	1735 P	10907	1742 P		
		10908	1930 GN	10909	1930*G	10910	1930 G		
		10911	2013 FP	10912	2013 FP	10913	2013 FP		
		10914	2240 P	10915	2240 P	10916	2240 P		
20		10920	1627 F	10921	1630 F	10922	1637 F		
		10923	1750 F	10924	1750 F	10925	1750 F		
21	1636-2200+F-30s	10929	1506 G	10930	1510 G	10931	1515 G		
22	1638-2354 P-30s	10935	1720 P	10939	1740*VPβ	10937	1729 P	10936	1724 P
		10942	1922 P φ	10942	1813*VPβ			10938	1737 VP $ § β
				10943	1924 P φ			10941	1809 VP $ § β
23	1717-2400+F-30s	10944	1501 F β	10945	1507 F β	10946	1512 F β		
		10950	1608 β	10951	1608 β	10952	1608 β		
24	1637-2400+F-30s								
25	1635-2400+F-30s	10959	1508 P	10960	1511 P	10962	1522 P		
		10964	1921 P	10965	1921 P	10966	1921 P		
		10967	2315 VP	10968	2315 VP				
26		10972	1612 FG	10973	1617 FG	10974	1624 FG		
		10977	2312 P	10978	2312 P	10979	2312 P		
27	1627-2246F-30s								
28	1626-2219VBF-30s	10983	1545 F+χ	10984	1549 F+χ	10985	1554 F+χ		
	2256-2316VBF-30s	10988	1633 P χ	10989	1633 P χ	10990	1633 P χ		
		10993	1723 F χ	10994	1723 F χ	10995	1723 F χ		
		11000	1937 F-χ	11001	1937 F-χ	11002	1937 F-χ		
		11005	2020 P χ	11006	2020 P χ	11007	2020 P χ		
		11010	2113 P+χ	11011	2113 P+χ	11012	2113 P+χ		
		11015	2246 P χ	11016	2246 P χ	11017	2246 P χ		
29	1727-1817 FB-60s	11023	1510 P			11025	1519 P	11024	1514 P
		11026	2300 P			11028	2300 P	11027	2300 P
30	1850-2415 F-60s	11032	1459	11033	1503	11034	1509		
31	1635-2254 FP-30s	11038	1527 G $$	11039	1531 G	11040	1536 G	11041	1908 F § β
				11042	1911*F β				
Feb 1		11046	1607 F			11048	1618 F	11047	1612 F
		11051	1841 F			11053	1841 F	11052	1841 F
		11054	2019 F			11056	2019 F	11055	2019 F
		11057	2223 F			11059	2223 F	11058	2223 F
		11060	2319 P			11062	2319 P	11061	2319 P
2	1628-2425F-30s	11066	1606 F	11067	1610 F	11068	1617 F		
		11071	1755 P	11072	1755 P	11073	1755 P		
		11074	2302 VP	11075	2302 VP	11076	2302 VP		
3	1624-2248 F-30s	11080	1517 F	11081	1520 F	11082	1525 F		
4	1533-1555 F-30s	11092	1537 F+√	11091	1525*P √	11094	1537 F+√	11090	1520 P § √
	1625-2445±F-30s			11093	1537 F+√			11095	1608 G § √
				11096	1608*G √			11097	1702 F § √
				11098	1702*F √			11099	1845 F § √
				11100	1845*F √			11101	2208 P+§ √
				11102	2008*P+√			11103	2058 P § √
				11104	2058*P √			11105	2205 F § √
				11106	2205*F √			11107	2257 F § √
				11108	2257*F √				
5	1636-2400±F-60s	11112	1518 G √	11113	1525 G √	11114	1531 G √	11115	1540 GF§ √
				11116	1544*GF√			11117	1654 GF§ √
				11118	1658*GF√			11119	1808 F § √
				11120	1808*F √			11121	1909 F § √
				11122	1909*F √			11123	2000 F-§ √
				11124	2000*F-√			11125	2058 F-§ √
				11126	2058*F-√			11127	2208 F § √
				11128	2208*F √			11129	2258 F § √
				11130	2258*F √				

See page 31 for Footnotes.

TABLE 1.2 (continued)

FULL DISK SOLAR OBSERVATIONS

	1.2.1	1.2.2						
	LOCKHEED Full Disk Filtergrams	SAC PEAK Full Disk Spectroheliograms 1.2 solar diameters at He I D_3 (5875 Å), Hα (6563 Å) and Ca K (3934 Å)						
		D_3, Hα-4.31 Å and Ca K		Hα, D_3 and Ca K + 0.38Å		Hα + 0.5 Å		D_3, Hα and Ca K
Date 1974	Hα (6563 Å) Time (UT) Rate	Scan No.	Time (UT)	Scan	Time (UT)	Scan No.	Time (UT)	Scan No.	Time (UT)
Feb	6 1700-2445 P-60s 7 1529-2430 F-30s	11134 11139	1949 P 2053 χ	11135 11143 11144	1957 P 2107*P √√ 2153*P √√	11141	2100 χ	11140 11142 11145	2056 χ 2105 P § √√ 2156 P § √√

Notes:

June 15 - Flare at 1419 UT.
June 16 - Flare RV=.31 PA=40° at 1425 UT, D_3 absorption, possible emission.
Aug. 17 - Subflare on center of disk at ∿1433 UT.
Aug. 23 - Subflare at ∿1815 UT.
Sept. 5 - Small sublare RV=.6 PA=255° at ∿ 2000 UT.
Oct. 9 - Small flare at ∿2034 UT.
Imp I flare at ∿2334 UT.
Oct. 27 - Flare RV=.8 PA=100° at ∿1600 UT.
Nov. 24 - Imp I flare maximum at 2008 UT RV=.7 PA=125°.
Jan. 22, 1974 - Subflare RV=.9 PA=275° at ∿1922 UT.

Footnotes:

√ = JOP 1
√√ = JOP 1 and 11
β = JOP 11
κ = JOP 17
φ = JOP 16
χ = JOP 25
† = Hα also.
** = No Hα.
* = Hα only.
$ = No Ca K.
$$ = No D_3.
N = No Ca K or D_3.
# = Rocket shot support.
% = Ca K also.
δ = D_3 also.
§ = Hα + 0.625Å

Seeing Conditions:

B = Bad.
C = Clouds.
F = Fair.
F- = Fair (-).
FG = Fair to Good.
FP = Fair to Poor.
G = Good.
GF = Good to Fair.
IP = Intermittent, Poor.
P = Poor.
PF = Poor to Fair.
VP = Very Poor.

EXAMPLE: IP-30s means intermittent operation, poor seeing conditions, 30 second rate for observations.

CATEGORY 2.1) LOCALIZED SMALL-SCALE OBSERVATIONS
Stations listed by longitude

2.1.1 STATION: Crimean Astrophysical Observatory N44 E34
PROGRAM: Ground-based small-scale H-alpha cinematographic observations

OBSERVING TIMES: see Table
MEASUREMENTS: see Table

INVESTIGATOR: Professor A. B. Severny
Crimean Astrophysical Observatory
P/O Nauchny, Crimea, 334413 USSR

2.1.2 STATION: Big Bear Solar Observatory N34 E243
PROGRAM: Simultaneous cinematograms in three wavelengths

OBSERVING TIMES AND RATES: Pictures normally taken every ten seconds, but less often during poor seeing; for times see Table.
WAVELENGTHS: H-alpha - 0.5 Å, H-alpha + 0.0 Å, Ca K
MEASUREMENTS: 4.2x5.6 arcmin
DATA FORMAT AVAILABLE: Direct scientist-to-scientist

INVESTIGATOR: Harold Zirin
California Institute of Technology
354-33
Pasadena, California USA 91109

2.1.3 STATION: Big Bear Solar Observatory N34 E243
PROGRAM: Cinematograms in two wavelengths

OBSERVING TIMES AND RATES: Pictures normally taken every ten seconds, but less often during poor seeing; for times see Table.
WAVELENGTHS: H-alpha + 0.0 Å, Ca K
MEASUREMENTS: 1/6 solar disk; some H-alpha observations of 1/10 solar disk
DATA FORMAT AVAILABLE: Direct scientist-to-scientist

INVESTIGATOR: Harold Zirin
California Institute of Technology
354-33
Pasadena, California USA 91109

2.1.4 STATION: Mt. Lemmon, Tucson, Arizona N32 E249
PROGRAM: Ground-based infrared photometry

OBSERVING TIMES AND RATES: see Table
WAVELENGTHS: see Table
MEASUREMENTS: see Table
DATA FORMAT AVAILABLE: Strip charts

INVESTIGATOR: H. Hudson
University of California at San Diego
Department of Physics
La Jolla, California USA 92037

TABLE 2.1

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	2.1.1 Crimea Hα Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	2.1.3 Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
May 28			1302-0030	1302-2105	1302-0030						
29			1444-0103		1443-1808						
30			1313-0024	1313-0024	1350-0024						
31			1450-0158	1450-0159	1450-0214			Submillimeter Tests			
June 1			1330-0126	1330-0126	1330-0126			Submillimeter Tests			3'
2			1334-0105	1310-0105	1310-0105			Submillimeter Tests			3'
3			1328-0231	1328-0231	1328-0203						
4			1327-0130	1327-0146	1327-0000					20μ	23"
5	0714-0719	S12 W35	1305-1909	1305-2140	1305-1900						
	0744	S12 W35									
	0814-0817	S12 W35									
	1237-1239	S12 W35									
6	1047-1051	CS	1315-2129	1315-2102				Submillimeter Tests			3'
	1113-1114	S12 W40									
	1350-1402	CS									
	1438-1447	CS									
	1525-1529	S12 W47									
	1532-1534	N14 E34									
	1535-1600	N14 E34									
7	0350-0401	N05 W74	1431-0215	1431-0245	1939-0215						
	0656-0703	CS									
	0825-0837	S12 W55									
	0956-1017	N14 E24									
	0953-0955	CS									
	1128-1143	N14 E23									
8	0611-0620	CS	1424-0207	1623-0207	1622-0207						
	0649-0654	CS									
	0757-0809	N13 E65									
	0936-0937	N13 E64									
	0940-0942	N13 E64									
	1405-1413	CS									
	1447-1530f	N14 E63									
9	0535-0553	CS	1338-0230	1338-0230	1330-0230			1530-1840	CS	20μ	23"
	0609-0616	CS						2000-2100	CS	20μ	23"
	0706-0720	CS						2200M	N15 E46	20μ	23"
	0746-0807	CS									
	0844-0905	N14 E51									
	1006-1019	N14 E50									
	1026-1038	N14 E50									
	1143-1220	N14 E48									
10	0358-0408	N14 E40	1327-0154	1327-0154	1327-0154			1630-1745M		8μ	10"
	0436-0448	N14 E39						also 12, 18 and 22μ			
	0614-0622	CS						1745-1845	CS	8μ	10"
	0747-0752	CS						also 12, 18 and 22μ			

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	2.1.1 Crimea Hα Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	2.1.3 Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
June 10 (cont.)	0921-0925	S12 W90						2200-0100M		8μ	10"
	0944-0949	S12 W90						also 12, 18 and 22μ			
	1105-1112	S12 W90									
	1122-1132	S12 SW90									
	1244-1252	CS									
	1539-1550	CS									
June 11	0409-0418	N20 E89	1812-0205	1812-0205	1812-0205			1450-1650M		8.6μ	10"
	0440-0443	N20 E89						also 10.8, 12.2, 18, and 22μ			
	0542-0551	CS									
	0620-0623	CS									
	0718-0758	CS									
	0850-0855	N15 E24									
	0916-0921	N15 E24									
	1022-1058	N15 E23									
12	0356-0359	CS	1339-2100	1339-2100	1339-2100						
	0516-0519	CS									
	0653-0659	CS									
	0806-0807	CS									
13	1549-1550	CS	1355-0200	1355-0200	1335-2225						
14			1308-0010	1308-0010	1308-0100			1550-1730M	N16 W18		10"
								1800M	N12 E35		10"
								2200-2300M	N16 W18	8.6μ	10"
								also 10.8, 12.2, 18 and 22μ			
15			1400-0237	1914-0108	1400-2025			1620-1800M	N16 W31		10"
								1900-2440M	N14 E40	8.6μ	10"
								also 10.8, 12.2, 18 and 22μ			
16			1325-0154	1325-0053	1325-2144			1515-1750M	N17 W37	8.6μ	10"
								also 10.8, 12.2, 18 and 22μ			
17	0440-0447	S15 W90	1321-0230	1321-0230				1830-0100M	N13 E11	20μ	23"
	0754-0756	S15 W90						1500-1900	N13 E00	20μ	100"
	0918-0923	S15 W90						2000-0030	N13 E00	submm	180"
	1317-1322	N12 E28									
	1542-1546	CS									
	1546-1553	N12 W06									
18	0402-0409	CS	1325-0243	1325-0243				1445-0100	N19 W12	submm	3'
	0530-0539	CS									
	0614-0628	N12 W14									
	0710-0740	N12 W14									
	0710-0740	CS									
	1016-1020	CS									
	1141-1157	N22 W14									
	1205-1231	N20 E17									
	1624-1631	N08 E08									

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	2.1.1 Crimea Hα Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	2.1.3 Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
June 19	0453-0456	N12 W23	1332-0239	1332-0240	1951-0227			1545-1633M	S02 E77	20μ	8"
	0633-0636	N12 W24						1850-0130M	S09 E61	22μ	10"
	0759-0811	N12 W25									
20			1333-0240	1333-0244	1334-0227			1530-0018M	S02 E60	22μ	10"
21			1310-2240	1310-0229	1328-0229						
22	1204-1243	CS	1315-0047	1315-0202	1315-2300			1526-2253M	S07 E31	22μ	10"
	1204-1243	S05 E26									
	1504-1525	S06 E25									
23	1503-1507	N15 W83	1423-0226	1423-0203	1423-0226						
	1620-1627	N15 W83									
24	1403-1433	CS	1348-0214	1348-0120	1348-0222						
25	1335-1341	CS	1327-0213	1327-0234	1327-0222			1555-2320	S08 W20	20μ	8"
26			1348-0214	1328-0230	1340-0214						
27	0446-0448	CS	1329-0045	1329-0218	1329-0218						
28			1449-0221	1309-0224	1332-0224						
29	1535-1546	S07 W70	1335-0118	1335-0108	1335-0108						
30			1307-0221	1307-0223	1327-0223						
July 1	1421-1425	N30 E90	1329-0235	1329-0129	1327-0235						
	1425-1429	N13 E67									
2			1320-0215	1320-0215	1320-0215						
3			1326-0216	1326-0214	1326-0212						
4	1350-1356	N12 E13	1331-0220	1331-0220	1415-0220						
	1511-1529	N12 E12									
	1537-1545	N12 E12									
5	0417-0445	N12 E05	1415-0222	1415-0222	1415-0222						
	0543-0546	CS									
	1005-1008	CS									
	1434-1435	N12 E01									
	1519-1523	N12 E01									
6	0257-0301	N12 W07	1332-0220	1332-0215	1332-0215						
	0416-0450	N12 W08									
	0416-0450	CS									
7	0401-0405	CS	1316-0223	1316-0223	1315-0223						
	0407-0411	CS									
8	1352-1430	CS	1325-0218	1325-2304	1325-0180						
9			1318-0007	1318-0215	1318-2339						
10			1324-0120	1324-0218	1314-0050						
11	1034-1040	CS	1330-2300	1330-0218	1330-0148						

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	2.1.1 Crimea Hα Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	2.1.3 Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
July 12	1304-1306	CS	1445-0140	1410-0217	1523-0214						
	1444-1453	N12 W90									
	1500-1511	N12 W90									
13	1313-1318	CS	1337-0016	1337-0100	1337-2311						
14	1336-1340	CS	1331-0120	1331-0120	1331-0120						
15			1345-0005	1339-0212	1408-0005						
16			1419-0101	1419-0103	1419-0217						
17			1357-0225	1359-0230	1359-0122						
18			1324-0115	1324-0200	1324-0200						
19			1325-0213	1325-0230	1325-0230						
20			1324-0127	1330-0048	1324-0032						
21			1340-0212	1340-0212	1345-0212						
22			1340-0034	1340-0034	1340-2317						
23			1338-0203	1338-0203	1348-0047						
24			1435-0141	1450-0204	1422-2231						
25			1355-0145	1355-0214	1400-0147						
26			1345-0110	1345-0057	1405-0145						
27			1335-0128	1335-0128	1335-2258						
28			1416-0200	1335-0210	1431-0137						
29			1333-0150	1333-0212	1340-0150						
30			1334-0130	1334-0130	1334-0130						
31			1347-1857	1347-1857	1347-1857						
Aug. 1											
2			1740-2038	1500-2038	1510-2038						
3											
4											
5	0704-0713	CS									
	0803-0817	CS									
6	0643-0707	N14 W61									
	0643-0707	CS									
	0804-0808	N06 W15									
7	0627-0634	CS									
	0825-0831	N23 W70									
	1209-1212	CS									
	1327-1343	CS									
8						2225-0024					
9						1420-0017					
10	0636-0659	N09 W62				1415-2350					

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	2.1.3 Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Aug. 11						1415-0020					
12						1535-1845					
13											
14						1400-0023					
15	1454-1459	N27 E12				1420-1338					
16	0620-0709	CS				1418-0017					
	0713-0742	CS									
	0800-0806	N27 E02									
	0849-0852	N27 E02									
	1400-1419	CS									
17	0516-0527	N00 E07				1400-0026					
18	0653-0658	CS				1436-2055					
	0722-0724	CS									
19	0843-0845	CS				1437-0021					
20	1357-1401	CS									
	1404-1409	CS									
	1427-1440	CS									
21	0655-0710	CS				1521-2343					
	0812-0821	CS									
	0903-0910	CS									
	1002-1004	CS									
	1326-1334	CS									
	1450-1601	CS									
	1339-1407	N14 E28									
22	0532-0540	CS				1435-0010					
	0619-0621	CS									
	0657-0659	CS									
	0823-0825	S30 E42									
23						1427-0020					
24	0634-0638	N50 W09				1428-2400					
	0642-0659	N50 W09									
	0705-0711	CS									
	0712-0720	CS									
	0820-0830	N52 E22									
	0846-0855	N50 W09									
25	1222-1233f	CS				1400-0002					
26						1432-0018					
27	0630-0639	CS				1438-1952					
	0640-0739	N30 W74									
	0708-0719	N30 W74									
	0907-0911	N30 W74									
	1102-1112	N30 W75									

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Big Bear Hα 1/6 disk UT	2.1.3 Big Bear Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Aug. 27 (cont.)	1229-1239	CS									
	1344-1348	CS									
	1354-1358	N13 W57									
	1417-1423	N13 E41									
	1425-1430	N15 E31									
28	1229-1232	S31 W48									
	1415-1420	CS									
	1445-1446	N15 E09									
	1522-1526	N15 E09									
29	0639-0644	CS				1507-2215					
	0650-0718	CS									
	0812-0912	CS									
	1306-1311	S30 W58									
	1352-1410	CS									
	1412-1415	S12 E75									
	1416-1440	S12 E75									
	1444-1447	S12 E75									
	1501-1508	S12 E75									
30	0606-0615	CS									
	0621-0628	CS									
	0631-0740	CS									
	0742-0745	N13 W90									
	0803-0808	N13 W90									
31					2246-2416	1750-0005					
Sept. 1					1545-2411	1645-0003					
2					1617-2111	1710-2355					
3					1616-2035	1805-0000					
4					1728-2238	1750-2355					
5	1232-1236	CS		1537-1930		1350-1700					
	1448-1451	N14 E07									
6	1135-1142	S17 W34				1700-2000					
	1213-1243	S17 W34									
	1428-1449	N14 W05									
	1455-1501	N14 W05									
	1508-1515	CS									
7	1410-1423f	N14 W20		1640-0140		1708-2350					
	1425-1436	N14 W20									
	1436-1509	N14 W20									
8	1315-1326	CS		1500-0108		1700-2350					
	1329-1334	CS									
	1343-1346	CS									
	1409-1419	CS									
	1420-1423	CS									

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	2.1.1 Crimea Hα Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Big Bear Hα 1/6 disk UT	2.1.3 Big Bear Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Sept. 9	1118-1137	S15 W73		1614-0108		1640-2355					
	1147-1203	S15 W72									
	1228-1304	CS									
	1327-1411	S13 W18									
	1417-1515	S13 W16									
10	0845-0851	CS		1522-1858		1651-2200					
	1054-1059	S12 W33									
	1111-1128	S11 W44									
	1324-1330	N02 W26									
	1332-1339	S13 W27									
	1341-1347	S16 W47									
	1349-1405	N01 W45									
	1406-1411	S20 W90									
	1420-1423	S12 W35									
	1425-1430	S12 W35									
	1431-1434	S12 W35									
	1443-1448	S12 W35									
	1457-1459	S16 W90									
11	0902-0954	S16 W90		1359-2120		1733-2356					
	1124-1139	S38 W00									
12				1440-2015		1655-2012					
13				1444-1726		1650-2357					
14	0749-0753	CS		1420-1700		1657-2358					
	1026-1055	S12 W80									
	1251-1300	S14 W85									
15	0617-0618	S15 W65		1610-2250		1823-2350					
16	0716-0742	CS		1642-2154		1700-2353					
17	1156-1159	S10 E31		1452-0044		1635-0000					
	1204-1213	S10 E30									
	1326-1332	β									
	1336-1341	β									
	1358	β									
18				1443-2325		1610-2300					
19	0847-0900	CS		1456-0116		1730-2355					
	0917-0921	S03 W28									
	0933-0939	S03 W28									
	1032-1038	S03 W28									
	1046-1059	S03 W28									
	1151-1153	CS									
	1214-1220	N16 W25									
20						1830-2356					

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Big Bear Hα 1/6 disk UT	2.1.3 Big Bear Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Sept. 21	0728-0730	CS		1517-1923		1655-1837					
	0731-0732	CS									
	0741-0743	CS									
	0746-0749	CS									
	0921-0925	N19 W03									
22	0718-0724	N14 E66		1426-2230		1710-2352					
	0726-0727	N14 E66									
23	0659-0712	E limb		1435-2040		1710-2322					
24	0656-0706	N10 E32		1426-2332		1758-2400					
	1358-1413	N13 E23									
25	0655-0657	CS				1702-2204					
	0756-0813	CS									
26	1325-1337	CS									
	1342-1345	CS									
	1338-1340	CS									
27	1409-1418	CS									
	1433-1439	N00 E90									
28	1335-1338	CS									
	1348-1355	N10 W25									
	1725-1731	N10 W25									
29											
30											
Oct. 1	1307-1316	CS									
	1318-1321	CS									
2	1415-1417	CS									
3	0540-0543	CS									
	0545-0547	CS									
4											
5											
6											
7											
8											
9											
10											
11	1353-1358	CS									
12											
13											
14											
15											

No data October 16 to November 20.

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Big Bear Hα 1/6 disk UT	2.1.3 Big Bear Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Nov. 21				1918-2100							
22											
23				2210-2350							
24				1710-1947							
25				1620-2044							
26				2125-0006							
27				1649-0010							
28											
29											
30				1623-0008							
Dec. 1											
2				1530-0010							
3				1626-2326							
4											
5				1546-2355							
6				1545-2007			1710-0050				
7				1938-0015			1907-2210				
8				1550-0003							
9				1540-0017			1812-2325				
10				1548-0017		2022-0017*	1715-2215				
11				1640-1807							
12				1555-2158							
13				1547-2339							
14				1605-0025							
15				1613-2220							
16				1533-0010		1945-0010*	1800-2200				
17				1557-0015		2022-2130*					
18				1600-0000			1700-2318				
19				1627-2328		1726-1810*	1750-2240				
20				1610-2305		1937-2244*	1630-2135				
21				1530-2146			1725-2107				
22				1544-0002			1947-2303				
23				1540-2251							
24				1540-2115			1810-2100				
25											
26				1551-0002			1755-2240				
27				1536-1645							
28				1933-2047							

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCALIZED SMALL-SCALE OBSERVATIONS

Date 1973	2.1.1 Crimea Hα UT	Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	2.1.2 Big Bear Hα 4.2x5.6 arc min UT	2.1.2 Big Bear Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	2.1.3 Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Dec. 29											
30				1755-0013							
31							2015-2200				
1974 Jan. 1											
2				1630-0028		2020-0028*	1750-2147				
3											
4											
5											
6											
7											
8											
9											
10						1733-0034*	1659-2048				
11						2115-2315*					
12				2000-2210			1630-1930				
13				1830-0030							
14				1754-0018		1838-2313*	1730-2332				
15				1602-0001		1617-0014*	1726-2300				
16				1556-2308		1954-0011*					
17				2225-0023							
18				1639-1922		1911-2130*					
19				1544-1930							
20											
21							1645-2310				
22							1745-1911				
23							1825-2300				
24							1648-2322				
25				1604-1641		1918-2230*	1600-2100				
26				1839-2005							
27				1643-0005			1725-2110				
28				1618-2227			1625-2345				
29							1730-1918				
30				1916-0044							
31				1718-0015			1650-2140				
Feb. 1				1631-0029							
2				2122-2252			1941-2057				
3				1600-0001			1937-2245				

See page 43 for Footnotes.

TABLE 2.1 (Continued)

LOCAL SMALL-SCALE OBSERVATIONS

Date 1974	2.1.1 Crimea Hα UT	Position	2.1.2 Big Bear Hα-0.5Å 4.2x5.6 arc min UT	Hα 4.2x5.6 arc min UT	Ca K 4.2x5.6 arc min UT	2.1.3 Hα 1/6 disk UT	Ca K 1/6 disk UT	2.1.4 Mt. Lemmon Infrared Photometry UT	Position	λ	Field of View
Feb. 4											
5				1552-0036 1617-0011			1845-2350				
6											
7				1549-2350							
8				1547-0030							
9											
10											

FOOTNOTES:

2.1.1

CS = Center of Sun
f = flare occurred
β = spicule at North Pole

2.1.3

* = 1/10 disk measurement

2.1.4

CS = Center of Sun
M = Mapping

CATEGORY 2.2) LOCALIZED SMALL-SCALE OBSERVATIONS (Cont'd.)
Stations Listed by Longitude

2.2.1 STATION: Culgoora S30 E150
PROGRAM: Ground-based high-resolution H-alpha filtergrams obtained at H-alpha line center by means of computer controlled 1/8 Å filter and a 30 cm chromospheric telescope. Normal intention is to make λ-sequences at seven wavelengths in the H-alpha line, not just H-alpha + 0 Å. For equipment capabilities, see Loughhead et al., Solar Phys., 4, 185 (1968) and Bray and Winter, Solar Phys., 15, 309 (1970).

OBSERVING TIMES AND RATES: 1 frame per minute (see Table 2 for observing times)
MEASUREMENTS: 3.6 x 4.6 arc minutes
FILM TYPE: Kodalith Pan
IMAGE SCALE OF ORIGINAL: 1 mm = 11.4 arc sec
QUALITY: Spatial resolution, 1 arc sec; spectrally pure photographs free from parasitic light.
DATA FORMAT AVAILABLE: Prints
Direct scientist-to-scientist
JOPs: These observations are designed to complement XUV observations of the quiet chromospheric network obtained from SKYLAB.

INVESTIGATOR: Dr. R. J. Bray
National Standards Laboratory, CSIRO
University Grounds, City Road
Chippendale, New South Wales 2008 Australia

2.2.2 STATION: Lockheed Solar Observatory N34 E242
PROGRAM: Ground-based Filtergram / Spectra - about 30 parallel H-alpha spectra separated by 20 arc sec; Spectral range per slit: H-alpha ± 8 Å;
Filtergram: H-alpha slit jaw photograph, 1 Å passband

OBSERVING TIMES AND RATES: 15 sec photo (see Table 2 for observing times)
MEASUREMENTS: about 10 x 7.5 arc min
SLIT: about 1 arc sec each, always oriented N-S in plane of sky
SPECTRAL DISPERSION: 9 Å/mm
FILM TYPE: SO 392
IMAGE SCALE OF ORIGINAL: Image diameter about 7.5 cm
QUALITY: see Table 2
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
Direct scientist-to-scientist
JOPs: 1, 2, 3, 4, 5, 11

INVESTIGATOR: S. Martin
Lockheed-California Company
Solar Physics, Bldg. 243, Pl. 2
Burbank, California USA 91503

2.2.3 STATION: Lockheed Solar Observatory N34 E242
PROGRAM: Ground-based filtergram H-alpha Doppler - H-alpha - 0.6 Å and H-alpha + 0.6 Å simultaneously

OBSERVING TIMES AND RATES: 15 sec photo (see Table 2 for observing times)
MEASUREMENTS: about 10 x 7.5 arc min
FILM TYPE: SO 392
IMAGE SCALE OF ORIGINAL: Image diameter about 7.5 cm
QUALITY: see Table 2
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
Direct scientist-to-scientist
JOPs: 1, 2, 3, 4, 5, 11

INVESTIGATOR: Mr. H. E. Ramsey
Lockheed-California Company
Solar Physics, Bldg. 243, Pl. 2
Burbank, California USA 91503

2.2.4 STATION: Lockheed Solar Observatory N34 E242
PROGRAM: Ground-based filtergram He I D_3 (5876 Å)

OBSERVING TIMES AND RATES: 15 sec photo unless otherwise noted in Table 2 (see Table 2 for observing times)
MEASUREMENTS: about 8 x 6 arc min
FILM TYPE: SO 392
IMAGE SCALE OF ORIGINAL: Image diameter about 10 cm
QUALITY: see Table 2
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
Direct scientist-to-scientist
JOPs: 1, 2, 3, 4, 5, 11

INVESTIGATOR: Mr. H. E. Ramsey
Lockheed-California Company
Solar Physics, Bldg. 243, Pl. 2
Burbank, California USA 91503

2.2.5 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based filtergrams; 43 wavelength universal birefringent filter (H-alpha ±, H-beta ±, etc.), occasional H-alpha ± 1 5/8 Å measurements.

OBSERVING TIMES AND RATES: 2.5 minutes unless otherwise noted in Table; for times see Table
MEASUREMENTS: 150x200π field of view
FILM TYPE: Kodak 2568 or SO 392 -- 35 mm film
IMAGE SCALE OF ORIGINAL: 8", 10", or 22"
QUALITY: see Table
DATA FORMAT AVAILABLE: Original film
Direct scientist-to-scientist
JOPs: 1, 2, 5, 6, 10, 11, 15

INVESTIGATORS: J. Beckers, W. J. Wagner, G. Simon, and D. Rust
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

2.2.6 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based spectroheliogram; active region spectroheliograms at 5875 A (D_3), 6563 Å (H-alpha), and 3934 Å + 0.38 Å (Ca K + 0.38 Å)

OBSERVING TIMES AND RATES: 10 minute rate normal, continuous during flares; for times see Table
WAVELENGTHS: D_3 ± 0.0 (5875 Å), H-alpha ± 0.0 (6563 Å), and Ca K + 0.38 Å (3934 Å)
MEASUREMENTS: 18x24 arcmin
SPECTRAL BAND PASS: D_3 = 0.161 Å; H-alpha = 0.135 Å; Ca K = 0.214 Å
FILM TYPE: 2568 developed in D-19 at 68°
SO392 and Linagraph Shellburst developed in Processor GAF 7'/M at 76°
IMAGE SCALE OF ORIGINAL: 4" solar image
QUALITY: see Table
DATA FORMAT AVAILABLE: Prints of flares
Direct scientist-to-scientist
JOPs: 2 usually, 16 during flares

INVESTIGATOR: David Rust
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349
currently at American Science and Engineering
955 Massachusetts Ave
Cambridge, Massachusetts USA 02139

TABLE 2.2

LOCALIZED SMALL-SCALE FILTERGRAM OBSERVATIONS

Date 1973	2.2.1 CULGOORA Filtergrams Hα line center 3.6x4.6 arc min TIME UT	2.2.2 LOCKHEED FILTERGRAMS Hα Multi-slit Spectrograph 10x7.5 arc min UT	2.2.3 LOCKHEED FILTERGRAMS Hα Doppler (Hα± 0.6 Å) 10x7.5 arc min UT	2.2.4 LOCKHEED FILTERGRAMS Large Scale He I D_3 (5876 Å) 8x6 arc min UT Rate	2.2.5 SAC PEAK FILTERGRAMS Hα±, Hβ±, D_2±, B_1±, D_3, 4384±, 4227± 150 x 200π UT	Position Angle or Coordinates	Radius vector
May 28							
29							
30		1559-1855 P 2040-2446 P	1559-1855 P 2040-2446 P	1523-1626 P			
31							
June 1							
2							
3	0059-0200 @ S05 W31	1611-2036 IP	1611-2036 IVP	1511-2116 IVP-30s			
4				1520-1740 F-30s	1832:30-1902:20 2015:30-2037:55	345.1° 343.0	0.151 P✓ 0.152 P✓✓
5					2146:00-2225:54 0045:00-0114:54	346.0 N10 E00	0.150 P P✓✓
6				1722-1833 G-15-30s	2000:00-2029:53		PB
7		1604-2259 FG	1604-2259 FG	1528-2542 G			
8		1621-2155 G	1621-1825 G 1900-2155 G	1500-2520 FG-15-30s			
9				1551-2150 IPB-30s			
10		1635-2110 FG	1635-2110 FG	1514-2230 PG-30s	1933:00-1945:23 2025:00-2124:57 2158:00-2220:25	N28 E67 N28 E67 N28 E67	P P P
11		1738-2201 F	1738-2201 F	1826-1841 F- 5s 1841-2500 F-30s	2101:30-2158:00 2352:04-0042:08		P§ P§
12		1613-2059 F 2119-2430 F	1612-2059 F 2120-2430 F	1544-1900 F-30s 2051-2422 F-30s	1613:00-1756:00	N10 E90	F**
13		1549-1900 V 1943-2254 V	1549-2254 F	1534-? PF 1940-2311 PF			
14							
15		1730-2313 F	1730-2313 F	1432-2450 F			
16		1620-2355 F	1620-1940 F 1956-2355 F	1509-2425 F	1658:30-1756:00 2240:30-2335:00 0027:00-0122:00	N15 W90 N15 W90 N15 W90	P** P** P**
17				1505-1820 F-30s 2115-2337	2023:45-2110:30	N14 W02	F§
18				1501-1620 F 1715-1845 F 1905-2225 F			
19		1548-2400 *	1548-2400	1536-2238 F			
20		1525-2415	1525-2415 *	1450-1824 PG-30s 1824-2412 PG 2412-2532 PG-30s			
21		1559-2300	1559-1630 2135-2507	1521-2527 FG	1435:30-1516:00	S06 E35	F§§
22		2141-2220	1608-1730 2141-2220	1544-2035 PB 2130-2237 PB-30s			
23		1715-2210	1715-2210	1520-2240 F 2240-2246 F-30s			
24				1504-2547 I			
25		1604-2300 F	1604-<1900 F	1511-2620 F			
26		1517-2512 G	1545-2512 G	1551-1636 G 1636-2508 G-30s			
27		1600-2432 F	1600-2432 F	1511-2602 F-30s			
28		1610-2215 F	∿1610-<1650 F ∿ - ∿ 1900 F	1444-1907 15s 30s 1907-2532 G-30s			
29		1540-2032 F+	1540-2032 F+	1445-1526 F-30s 1526-2146 F 2146-2436 F-30s			
30		1758-2052 F+	1758-2052 F+	1519-2350 F-30s			

See page 47 for Footnotes.

TABLE 2.2 (continued)

Date 1973	2.2.1 CULGOORA Filtergrams Hα line center 3.6x4.6 arc min TIME UT	2.2.2 Hα Multi-slit Spectrograph 10x7.5 arc min UT	2.2.3 LOCKHEED FILTERGRAMS Hα Doppler (Hα± 0.6 Å) 10x7.5 arc min UT	2.2.4 Large Scale He I D_3 (5876 Å) 8x6 arc min UT Rate	2.2.5 SAC PEAK FILTERGRAMS Hα±, Hβ±, D_2±, B_1±, D_3, 4384±, 4227± 150 x 200π UT	Position Angle	Radius vector
July 1		1610-1810 F+	1610-1810 F	1505-2500			
2		1755-2040 G	1755-2040 G	1528-2558 G-30s			
3		1523-1950 G	1523-2054 G 2137-2243 G	1453-2438 G-30s			
4							
5		1615-2030 F	1615-2030 F	1505-2002 F-30s 2027-2604 F-30s			
6		1710-2231 F	1710-2231 F	1654-2505 F-30s			
7		1716-2005 F	1716-2005 F 2055-2113 F	1551-2417 F-30s			
8		1558-1725 F	1558-1700 F 1727-2135 F 2350-2402 F	1534-2500 F-30s			
9		1607-2005 G	1609-2247 G	1501-2011 PG 2011-2425 PG-30s			
10		1552-2204 G	1552-2204 G	1519-2325 FG-30s			
11		2037-2125 F	2037-2125 F	1442-2405 F-30s			
12				1500-2145 F-30s			
13				1725-2302 PF-30s			
14				1710-2250 PF-60s			
15				1527-2420 F-60s			
16				1518-1928 FP-60s 2056-2254 FP-60s			
17				1521-2315 F-60s			
18							
19				1458-2347 F-60s			
20				1535-2240 F-60s			
21				1514-2415 PF-60s			
22				1510-2400 PF-60s			

No observations these programs July 23-31.

Footnotes:

* = Unknown short period outage
√ = STDS on Film
√√ = exposures did not remain constant
§ = Hα±, B_1± only
** = λ scan through Hα
30 sec rate/cycle
Film type SO 392
§§ = 3933 Å 4 densities/8 sec rate
(plage to umbra)
Film type 5375
∿ 8" sun

Seeing:
B = Bad
F = Fair
F+ = Fair +
FG = Fair to Good
G = Good
I = Intermittent Operation
P = Poor
PB = Poor to Bad
V = Variable

EXAMPLE: PG-30s means poor to good seeing conditions, 30 second rate for observations.

TABLE 2.2 (Continued)

LOCALIZED SMALL-SCALE FILTERGRAM OBSERVATIONS

Date 1973	2.2.2	2.2.3	2.2.4	2.2.5			2.2.6
		LOCKHEED FILTERGRAMS		SAC PEAK FILTERGRAMS			
	Hα Multi-Slit Spectrograph 10x7.5 arc min UT	Hα Doppler (Hα± 0.6 Å) 10x7.5 arc min UT	Large Scale He I D_3 (5876Å) 8x6 arc min UT Rate	Universal Filter 43 λ UBF (Hα±, Hβ±, etc.) UT	Rate	Position	D_3, Hα, Ca K+0.38Å SO# UT
Aug. 1			1535-2457 F-60S				
2			1455-2507 F-60S				
3			1518-2532 F-60S				463 1430-1600P
4			1513-2250 VB-60S				464 1430-1650P
5			1704-2415± F -15S				465 1350-1840P 466 1910-2320P
6			1634+-2500± FV-15S				
7			1634+-2457 FV-15,30S				467 1400-2420F
8			1558 -1728 FG-30S 1728 -2305 FG-15S				468 1410-2400P
			2305 -2437 FG-30S				
9			1502 -1735 FG-30S 1735 -2235 FG-15S				
			2235 -2446 FG-30S				
10	1632-1950F		1502 -2415 F -30S				470 1655-1740P
11	1707-2155F	1707-2155F	1513 -2332 PF-15S 2332 -2500 PF-60S				
12	1700-2013F	1700-2013F	1504 -2237 PF-30S 2237 -2303 PF-60S				
13							
14	1936-2410F	1936-2410F	1959 -2300 F -30S				
15	2025-2257G	2026-2257G	2019 -2255 G -15S	1730:30-1815 2024 -2040	P -30S		
16			1459 -2500+ F -30S	1837 -1843#	PC-30S	N09 W90	
				1948 -2000#	PC-30S	N09 W90	
				2004 -2019#	PC-30S	N09 W90	
17	1814-1910F	1814-1910F	1502 -2413 F -30S				
18	1640-1850G 2102-2200G	1640-1850G 2102-2200G	1517 -2306 G -30S 2306 -2500 P -60S				
19	1642-1903G	1642-1903G	1504 -2502 G -30S				
20							
21	1824-2113G	1824-2113G	1811 -2108 G -30S	1458 -1532:50 F		CS	
22	1709-2150F	1709-2150F	1720 -2210+ FG-60S				
23	1742-2005G	1742-2005G					
24	1642-1906FG	1642-1906FG					
25							
26							
27	1631-2100F 2135-2401F	1631-1745F 1949-2401F	2346 -2405 F				
28	1549-2352G	1549-2352G	1518 -1756 F -30S 1756 -2004 G -15S 2004 -2358 F -30S				
29	1550-2220G 2250-2435G	1550-2435GI	1533 -2445 G -15S				
30	1607-2328G	1607-2328GI	1514 -2328 G -15S				
31	2000-2342F	2000-2342FI	1640 -2240 F -15S	1553:30-1654:17*	PC-30S	Pr.SW limb	
Sept. 1	1700-1950F 2124-2200F	1700-1950F 2124-2200F	1620 -2148 FP-15S 2148 -2320 P -30S	1345:30-1347:40*	FPC-30S	Pr.SW limb	471 1659-2400P
				1349:30-~1359*	FPC-30S	Pr.SW limb	
				1502:30-1728:18*	FPC-30S	Pr.SW limb	
				1824:30-1840:30*	FPC-30S	Pr.SW limb	
2	1620-1642F 1702-2210F	1620-1905FI 1925-2210FI	1504 -2515± FP-15S				472 1400-2300PI
3							
4	2101-2437F	2101-2437F	2043 -2432 F -15S				473 1400-2350F
5	1800-2332G	1800-2332G	1853 -2156 F -15S				474 1430-2300F 475 1740-2150FI

See page 51 for Footnotes.

TABLE 2.2 (Continued)

LOCALIZED SMALL-SCALE FILTERGRAM OBSERVATIONS

Date 1973	2.2.2 LOCKHEED FILTERGRAMS Hα Multi-Slit Spectrograph 10x7.5 arc min UT	2.2.3 LOCKHEED FILTERGRAMS Hα Doppler (Hα± 0.6 Å) 10x7.5 arc min UT	2.2.4 LOCKHEED FILTERGRAMS Large Scale He I D_3 (5876Å) 8x6 arc min UT	Rate	2.2.5 SAC PEAK FILTERGRAMS Universal Filter 43 λ UBF (Hα±, Hβ±, etc.) UT	Rate	Position	2.2.6 SAC PEAK FILTERGRAMS D_3, Hα, Ca K+0.38Å SO#	UT
Sept. 6	1610-1925F 1950-2307F	1610-2307F	1511-2306	F -15S				476	1650-1850F
7	1645-2205F	1645-~2200F	1632-2354	F -30S					
8	1709-2100F	1709-2100F	1716-2429	F -30S				477	1520-1930P
								477	2120-2340P
9	1737-2155F	1737-2155F	1606-2418	PF-30S				478	1413-1545F
10	1840-2210F	1840-2210F	1805-2224	F -30S					
11									
12	1550-2257F	1550-~2045F	1535-2250±	F -15S				480	1404-2330PI
13	2035-2224F	2035-2224F	1827-2301	F -15S					
14	1850-2145F	1850-2145F	1908-2233	F -30S					
15	2135-2218F	2135-2218F	1836-2428	F -30S					
16	1945-2025F 2043-2145F	1945-2145F	1703-2245	F -30S					
17	1648-2130F	1648-2130F	1528-2324	F -30S	1607:00-1711:00	F -30S	CS γ		
					1740:30-1850:00	F -30S	CS γ		
18			1549-~1715±	F -60S	1728:00-1809:00	FP-30S	CS γ		
19									
20									
21	1640-1834F	1640-1834F	1855-2334	G -60S	1551 -1740	P -30S			
22									
23			1614-1752	F -60S					
			1752-1836	P -15S					
			1836-2330	VB-30S					
24								482	1415-2320P
25									
26					1726 -1742	P -30S	(large active		
					1750 -1820	P -30S	region)		
27									
28					1927 -2033#	FP-30S	Pr.E limb		
					2224 -2255#	FP-30S	Pr.E limb		
29			1518-0027	G -30S					
30			1533-2240	G -30S					
Oct. 1			1736-0048	F -30S				488	1410-2300F
2								489	1434-2310P
3								490	1457-1808PI
								490	2043
								490	2047
4	2403-2446	2403-2446	2404-2446	F					
5									
6									
7									
8									
9					2144 -2212	FP	CS		
10					2249 -2344	FP	CS		
11					1456 -1543*	FP	ss 64°-304°		
12					1444 -1527*	F	ss 35°-275°		
					1741:30-1833:55	FP	N30 W30		
					1905:00-2007:24	FP	N30 W30		
					2212:00-2314:23	FP	N30 W30		
13					1551:00-1618:26	PF	CS		
					1650:00-1750:25	PF	CS		
					1827:30-1924:58	PF	CS		
					2149:00-2233:57	PF	CS		
					2305:00-2359:58	PF	CS		

See page 51 for Footnotes.

TABLE 2.2 (Continued)

LOCALIZED SMALL-SCALE FILTERGRAM OBSERVATIONS

Date 1973	2.2.2 LOCKHEED FILTERGRAMS Hα Multi-Slit Spectrograph 10x7.5 arc min UT	2.2.3 LOCKHEED FILTERGRAMS Hα Doppler (Hα± 0.6 Å) 10x7.5 arc min UT	2.2.4 LOCKHEED FILTERGRAMS Large Scale He I D_3(5876Å) 8x6 arc min UT	Rate	2.2.5 SAC PEAK FILTERGRAMS Universal Filter 43 λ UBF (Hα±, Hβ±, etc.) UT	Rate	Position	2.2.6 SAC PEAK FILTERGRAMS D_3, Hα, Ca K+0.38Å SO#	UT
Oct. 14									
15	No data October 16-24.								
Oct. 25	1804-2228	1804-2228	1813-2225	30S					
26								494	1516-2310F
27			1608-1731	15S				495	1917-2230P
28			1704-2403	G -30S				496	1513-2310P
29									
30	No data October 31 - November 27.							497	1620-2300P
Nov. 28					1747 -1835	F -30S	S10 W10		
29									
30									
Dec. 1									
2								505	1610-2100P
3									
4					1618 -2056	P*	S09 W90 κ		
5					1510 -1518	FP $	N15 W90 κ		
					1827 -1840	FP $	N15 W90 κ		
					2047 -2059	FP $	N15 W90 κ		
6									
7									
8			1641-2344	F -30S					
9			1650-2340	F -30S	1633:40-1710:30	P	S90 E00 β		
					1802:30-1845:00	P	S90 E00 β		
10			1954-2345	F -30S					
	No data December 11-15.								
16									
17	1902-2345F	1729-2345F	1935-2320	F -15S	1709 -1801	FG	S17 E64		
18	1710-1915B	1710-1915B	1727-1909	B -30S					
19					1943:26-2008:00	VPC-2min RV=1	PA=76.3° $		
					2109:35-2116:15	VPC-2min RV=1	PA=76.3° $		
20	2004-2015VB	2004-2015VB	1810-2015	VB-15S	1562:43-1556:00	P -45S	NP $$		
	2121-2324VB	2121-2230VB			1643:47-1700:00	P -45S	NP $$		
					1954:02- ??	P	S17 E23		
21			1745-1850	VB-30S					
22			2036-2110	VB-30S					
23								508	1700-1840P
24			1752-2235	VB-30S					
25									
26		1833-2200VB	1724-2057	VB-30S					
27									
28					1728:52-1803:51	P	S17 W85		
29					2200:53-2248:49	P	S17 W85		
30					2120:03-2159:20	PC	S18 W90 $$		
31									
1974 Jan. 1					1724 -1809		N15 W90 $		
2									
3									
4									
5									

See page 51 for Footnotes.

TABLE 2.2 (Continued)

LOCALIZED SMALL-SCALE FILTERGRAM OBSERVATIONS

Date 1974	2.2.2 LOCKHEED FILTERGRAMS Hα Multi-Slit Spectrograph 10x7.5 arc min UT	2.2.3 LOCKHEED FILTERGRAMS Hα Doppler (Hα± 0.6 Å) 10x7.5 arc min UT	2.2.4 LOCKHEED FILTERGRAMS Large Scale He I D_3 (5876Å) 8x6 arc min UT	Rate	2.2.5 SAC PEAK FILTERGRAMS Universal Filter 43 λ UBF (Hα±, Hβ±, etc.) UT	Rate	Position	2.2.6 SAC PEAK FILTERGRAMS D_3, Hα, Ca K+0.38Å SO#	UT
Jan. 10									
11									
12			2025-2107	FB-15S					
13			1756-2209	F -30S					
14			2224-2400+	F -30S					
15			1706-2110	F -30S	2027:30-2140:00F				
			2110-2310	F -10,15S					
			2310-2410	F -30S					
16					1717:00-1744:30P		S12.1 E61.0		
					1829:00-1919:00P		S11.4 W30.3		
17									
18			1945-2226	FP-30S					
19									
20									
21			1714-2200+	F -30S					
22					1730:00-1810:00P-30S		S13.4 W36.4γ		
23					1529:00-1610:00P-30S		N 5.9 W73.2α		
24			1952-2327	F -30S					
25			1650-2215	F -30S					
26									
27		1834-2146F	2016-2238	F -30S					
28	2025-2235VBF	1826-1855F 2025-2235F	1755-2232	VBF-30S					
29									
30									
31	1815-2217FP	1827-2217F	1655-2215	FP-30S					
Feb 1									
2	1844-2205F	1844-2205F	1652-2210	F -30S					
3	1738-1946F	1735-1946F	1652-2135	FP-30S					
4			1846-2308	F -30S					

FOOTNOTES:

2.2.5
Sac Peak UBF:

α = Hα±, Hβ±, B_1 ±, D_2±
β = α and 4388±, 4226±
γ = α and 5230±, 5383±
$ = Hα, some D_3
$$ = Hα±, Hβ±, D_3±
* = Hα±
# = Hα± 1 5/8Å

CS = Center of Sun
κ = 180 x 250 arc sec
NP = North Pole
PA = Position Angle
RV = Radius Vector
ss = spicule survey

2.2.6
Small Scale
Sac Peak - D_3, Hα, Ca K+0.38Å

Flares Observed:

Date 1973		UT	RV	PA
Sept.	1	1830	.7	145°
	2	2200	.6	160°
	3	1503	.7	100°
		1624	.3	10°
		1720	.7	100°
		2040	.7	100°
		2320	.7	100°
	4	1512	.5	88°
		1558	.4	210°
		1645	.5	88°
	5	1845	.1	85°
		2019	.6	250°
	6	1705	.6	120°
	8	2230	.3	180°
	9	1454	.6	245°
	12	1956	.85	280°
	24	1759	.00	CS

Seeing:

B = Bad
F = Fair
FB = Fair to Bad
FG = Fair to Good
FI = Fair, Intermittent Observations
FP = Fair to Poor
FPC = Fair to Poor, Clouds
FV = Fair, Variable
G = Good
P = Poor
PC = Poor, Clouds
PF = Poor to Fair
PI = Poor, Intermittent Observations
VB = Very Bad
VBF = Very Bad to Fair
VPC = Very Poor, Clouds

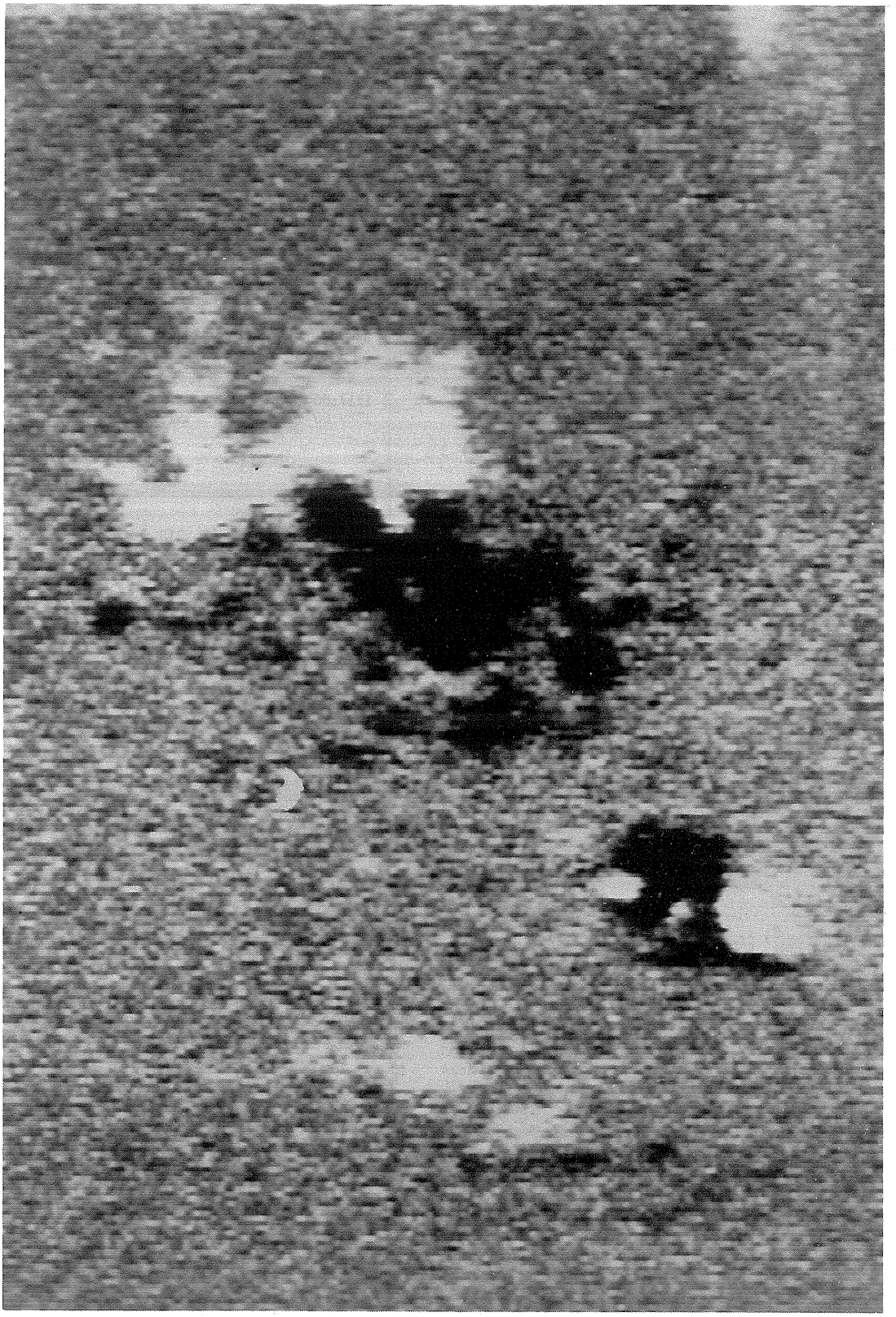


Fig. 1. Sample magnetogram of solar active regions taken at Sayan Mountain Observatory (IRKUTSK). Image scale is 2 arcsec/min.

CATEGORY 3.1) MAGNETOGRAMS
Stations listed by longitude

3.1.1 STATION: Crimean Astrophysical Observatory N44 E34
PROGRAM: Magnetic field observations

OBSERVING TIMES AND RATES: see Table
MEASUREMENTS: see Table

INVESTIGATOR: Professor A. B. Severny
Crimean Astrophysical Observatory
P/O Nauchny, Crimea, 334413 USSR

3.1.2 STATION: Sayan Mountain Observatory (Irkutsk) N52 E104
PROGRAM: Ground-based sunspot group magnetograms - longitudinal photospheric magnetic fields. Field intensity is represented as negative film with light as negative (-) polarity, gray as neutral, and dark as positive (+). Response is 0-270 G; noise is ± 15 G. (see Figure 1. for example)

OBSERVING TIMES: see Table
WAVELENGTH: Fe II (5233Å), Fe I (5250Å)
MEASUREMENTS: 4x2 arcsec
SPECTRAL DISPERSION: 0.3 Å/mm
IMAGE SCALE OF ORIGINAL: 16.4 cm solar image, 2 arcsec/min
DATA FORMAT AVAILABLE: Duplicate negatives
Direct scientist-to-scientist and to World Data Centers

INVESTIGATORS: V. Stepanov
V. Grigoryev
SibIZMIR
P/B 4, Irkutsk 33 USSR

3.1.3 STATION: Sayan Mountain Observatory (Irkutsk) N52 E104
PROGRAM: Ground-based solar center magnetograms. Field intensity is represented as negative film with light as negative (-) polarity, gray as neutral, and dark as positive (+). Response is 0-270 G; noise is ± 15 G.

OBSERVING TIMES AND RATES: 5 minute rate; for times see Table
WAVELENGTH: Fe I (5250Å)
MEASUREMENTS: 400x600 arcsec
SPECTRAL DISPERSION: 0.3 Å/mm
IMAGE SCALE OF ORIGINAL: 16.4 cm solar image, 2 arcsec/min
DATA FORMAT AVAILABLE: Duplicate negatives
Direct scientist-to-scientist and to World Data Centers

INVESTIGATORS: V. Stepanov
V. Grigoryev
SibIZMIR
P/B 4, Irkutsk 33 USSR

3.1.4 STATION: Big Bear Solar Observatory N34 E243
PROGRAM: Ground-based video magnetograms

OBSERVING TIMES AND RATES: See Table for times; taken continuously of the same region observed by the three chromospheric cameras.
WAVELENGTH: Fe I (5324.191 Å)
MEASUREMENTS: 4.2x5.6 arcmin
DATA FORMAT AVAILABLE: Direct scientist-to-scientist

INVESTIGATOR: Harold Zirin
California Institute of Technology
354-33
Pasadena, California USA 91109

3.1.5 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based magnetograms (polar scans); high sensitivity scans of polar regions for correlation with coronal plumes.

OBSERVING TIMES AND RATES: see Table (UT = 115°WMT + 7 hours)
WAVELENGTHS: Fe I (5233 Å)
MEASUREMENTS: Field of view = 1000x400 arcsec
QUALITY: see Table
DATA FORMAT AVAILABLE: Prints / Digitized (tape)

INVESTIGATORS: J. Harvey, W. C. Livingston
Kitt Peak National Observatory
P.O. Box 26732
950 North Cherry Avenue
Tucson, Arizona USA 85726

3.1.6 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based magnetograms (area scan reports); high resolution scans of selected areas for correlation with X-ray features.

OBSERVING TIMES AND RATES: see Table (UT = 115°WMT + 7 hours)
WAVELENGTHS: Fe I (5233 Å)
MEASUREMENTS: Active regions unless otherwise noted (see Table)
QUALITY: see Table
OTHER PERTINENT INFORMATION: see Table
DATA FORMAT AVAILABLE: Prints / Digitized (tape)
Direct scientist-to-scientist

INVESTIGATORS: J. Harvey, W. C. Livingston
Kitt Peak National Observatory
P.O. Box 26732
950 North Cherry Avenue
Tucson, Arizona USA 85726

3.1.7 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based filtergram / spectra / magnetogram - Magnetic fields in sunspots: Spectra 5576 Å and 6173 Å; slit jaw filtergrams at 5200 Å and 5800 Å

OBSERVING TIMES AND RATES: 10 sec rate (see Table 3 for observing times)
MEASUREMENTS: see Table 3
SLIT: about 1.0 arc second per slit width
SPECTRAL DISPERSION: 5576 Å (8.7 Å/mm); 6173 Å (7.7 Å/mm)
FILM TYPE: IVE, linagraph drift survey, 649 G H
IMAGE SCALE OF ORIGINAL: 10" image
QUALITY: see Table 3
DATA FORMAT AVAILABLE: Direct scientist-to-scientist
JOPs: 2E

INVESTIGATOR: Dr. Jacques Beckers
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

TABLE 3.1

MAGNETOGRAMS

	3.1.1	3.1.2					3.1.3	3.1.4	3.1.5	3.1.6				3.1.7
	Crimea	Sayan 5250 Å						Big Bear	Kitt Peak Fe I 5233 Å					Sac Peak
Date 1973	Longitudinal Component Position Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #		Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT	SPO# RV PA
May 18											0942F	N10 E35	250x150	1		
											0948F	N10 E35	375x300	1		
19											0924F	N10 E20	375x300	1		
20											0912G	N10 E10	375x375	1/2		
21																
22											0806G	N10 W20	375x350	1		
23											0741F$	N10 W40	310x300	1/2		
24																
25											0953VG	N00 E00	625x350	1		
26																
27																
28																
29																
30																
31																
Jun 1																
2																
3		0153	S12 W20	M363	1											
4										1401N						
										1443S						
5										1528Wch						
6	N15 E40 47															
7	N14 E26 47															
	N06 E08 48															
	CS															
8	N15 E65 50															
	(0330-0540 UT)															
	CS															
	(0650-0855 UT)															
	50															
	(0900-0945 UT)															
9	N14 E52 50	2345	N15 E42	M379	25					1248N						
	CS									1348Stp						
10	N14 E38 50	0016	N15 E42	M379	26						1657Q	N00 E00	600x600	2		
	(1050-1230 UT)	0040	N15 E42	M379	27						?? Q	N00 E00	600x600	2		
	CS	0142	N15 E42	M379	28											
	(1330-1400 UT)	0218	N15 E42	M379	30											
		0308	N15 E42	M379	32											
		0847	N15 E42	M379	34											
		0935	N15 E42	M379	36											
		0237	S15 E41	M380	31											
		0333	S15 E41	M380	33											
		0912	S15 E41	M380	35											
		0945	S15 E41	M380	37											
11	N16 E25 50														2132:10- 2205:20F	3377 .38 35°
	CS															
12	N16 E12 50	0049	N15 E14	M379	38											
	(0620-0730 UT)	0125	N15 E14	M379	39											
	CS	0153*	N15 E14	M379	41											
	(0800-0900 UT)	0200	N15 E14	M379	42											
		0116	S16 E14	M380	40											
		0301	S16 E14	M380	44											

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1	3.1.2				3.1.3		3.1.4	3.1.5	3.1.6				3.1.7
	Crimea	Sayan 5250 Å						Big Bear	Kitt Peak Fe I 5233 Å					Sac Peak
Date 1973	Longitudinal Component Position Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT SPO# RV PA
Jun 13		0618*	N15 E00	M379	47									
		0649	N15 E00	M379	49									
		0327	N11 E59	M387A	45									
		0600	N11 E59	M387A	46a									
		0605*	N11 E59	M387A	46b									
14		1042	N11 E45	M387A	48				1129PN					
		1055	N11 E45	M387A	50									
		1110	N11 E45	M387A	51									
		2300	N11 E45	M387A	52									
		2308	N11 E45	M387A	53									
		2332	N11 E45	M387A	54									
		2340	N11 E45	M387A	55									
15		0913	N15 W25	M379	74	0554	62		1556PN	0724BQ	N00 E00	250x250	1	
		0002	N12 E35	M387A	56	0662	64		1616PS	1010-1525G	N15 E25	500x500	2-32-~10	
		0228	N12 E35	M387A	57	0649	66							
		0350	N12 E35	M387A	58									
		0407	N12 E35	M387A	59									
		0418	N12 E35	M387A	60									
		0544	N12 E35	M387A	61									
		0615	N12 E35	M387A	63									
		0641	N12 E35	M387A	65									
		0711	N12 E35	M387A	67									
		0735	N12 E35	M387A	68									
		0809	N12 E35	M387A	69									
		0819	N12 E35	M387A	70									
		0840	N12 E35	M387A	71									
		0849	N12 E35	M387A	72									
		0905	N12 E35	M387A	73									
		0931	N12 E35	M387A	75									
16									1124N	1028F	N20 E15	500x400	1	
									1205S	1052M	N20 W50	250x300	1	
17	(0355-0440 UT)									1300FQ	SE quad	400x250	2	
18	N12 W06 55	0335	N12 W05	M387A	76					0715F	N15 E00	400x400	1	
	CS	2345	S15 E70	M397A	77a				1335N					
		2350	S15 E70	M397A	77b				1456S					
19	N13 W23 55	0000	N12 W17	M387A	78				1015N	0734G	N10 W30	375x350	1	
	CS	0045	N12 W17	M387A	80				1054S	0801G	S05 E70	375x350	1	
		0127	N12 W17	M387A	81b									
		0132	N12 W17	M387A	82									
		0217	N12 W17	M387A	84									
		0030	S15 E70	M397A	79a									
		0035	S15 E70	M397A	79b									
		0120	S15 E70	M397A	81a									
		0205	S15 E70	M397A	83a									
		0211	S15 E70	M397A	83b									
		0308	S15 E70	M397A	85a									
		0320	S15 E70	M397A	85b									
20	S08 E53 57									0755G	S05 E50	375x350	1	
	CS									0814G	N10 W40	375x350	1	
21														
22	S08 E24 57													
	CS													
23														
24	S03 E09 58													
	S08 W06 57													
25	CS													

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1		3.1.2				3.1.3		3.1.4	3.1.5	3.1.6				3.1.7			
	Crimea		Sayan 5250 Å						Big Bear	Kitt Peak Fe I 5233 Å					Sac Peak			
Date 1973	Longitudinal Component Position	Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT	SPO#	RV	PA
Jun 26			0938	S08 W25	M397A	87					0730-0835G	S05 W30	375x350	1-12-6				
			0955	S08 W25	M397A	88					0846F	N00 W30	375x250	1				
			1005	S08 W25	M397A	89					0855F	S10 W10	375x250	1				
			1024	S08 W25	M397A	90					0902F	S10 W35	375x250	1				
			1036	S08 W25	M397A	91												
27	S12 W20	59									1158Q	N00 E00	250x100	2				
	S08 W43	57									1240Q	N00 E00	250x100	2				
	S03 W30	58									1309Q	N00 E00	250x100	2				
28	S03 W47	58									1148-161CQ	N00 E00	250x100	2-8-29				
29	S08 W73	57								1319GN	0753-0757FQ	N00 E00	25x25	½-14-				
	S13 W50	59								1357GN								
										1437GS								
										1514GS								
30	N12 E70	64								1423PS								
	S08 E63	63																
Jul 1	N13 E57	64																
	CS, Poles																	
2	N13 E44	64																
	CS, Poles																	
3	N13 E27	64							1304-0210		1613-1733F	N10 E25	375x300	2-22-4	2237:50-2254:00F	3392	.4	80°
	CS																	
4	N13 E16	64							1247-2157		1206-1823F	N10 E10	375x300	2-110-4	1357:00-1427:10P	3392	.25	55°
	CS, Poles														1520:50-1554:00F	3392	.26	55°
															1722:10-1748:00F	3392	.26	55°
5	N13 E05	64							1553-0006		1034-1646PF	N10 E00	375x300	2-∿110-4	1512:20-1700:45FI	3392	.16	359°
	Poles														2017:30-2019:00P	3392	.16	359°
6	N12 W08	64							1642-0043		0759F	N15 W15	375x300	2	1403:20-1431:10FI	3392	.27	305°
											0807F	N00 E05	375x300	2	1527:30-1549:00P	3392	.27	305°
											0814F	S10 W20	375x300	2	1738:10-1750:00PI	3392	.27	305°
											1023-1525F	N10 W15	375x300	2-∿70-4	1854:30-1859:50PI	3392	.27	305°
															1925:00-1934:30P	3392	.27	305°
															2203:10-2207:50P	3392	.27	305°
7	N12 W22	64							1643-2404						1446:10-1454:50F+	3392	.5	290°
	NO1 W01	65													1707:20-1709:40F+	3392	.5	290°
8	N12 W33	64							1508-0045									
	NO1 W12	65																
	Poles																	
9	N12 W49	64							0132-1957		0949-1017F	N10 W55	375x300	2-8-4				
	NO2 W26	65																

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

Date 1973	3.1.1 Crimea Longitudinal Component Position	Region	3.1.2 Sayan 5250 Å Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	3.1.3 Solar Center 400x600 arcsec UT	Mag #	3.1.4 Big Bear Fe I 5324.191 Å 4.2x5.6 arcmin UT	3.1.5 Kitt Peak Polar Scans 115°WMT	3.1.6 Fe I 5233 Å Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	3.1.7 Sac Peak Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT	SPO#	RV	PA
Jul 10	N12 W64	64																
	Poles, CS																	
11																		
12	CS																	
13																		
14		68																
	CS, Poles																	
15	S11 W45	68																
16	S11 W58	68																
	CS, Poles																	
17	S12 W28	69																
	S06 E09	70																
18	*S12 W46	69																
	S06 W04	70																
	N18 E46	72																
19																		
20																		
21																		
22										0913N								
										0956S								
23																		
24										0933N	1124F	N00 E00	1250x1000	2				
										1017S	1300F$	N00 E00	1250x1000	2				
25																		
26											1003-1023δ	N10 W20	375x300	2-10-				
											1045-1346F	N10 W20	375x300	2-90-~3				
27																		
28																		
29																		
30																		
31																		
Aug 1																		
2										0830N½								
										0910N*								
										0947S*								
3																		
4																		
5	N05 E11	79																
6	N05 W01	79									0822-1543	N05 W10	375x300	2-~100-~4$$				
											1616FG	N05 W10	375x300	1				
											1634FG	N05 W10	375x300	1				
7										0915N*	0744M	N10 W25	375x250	1				
										0954S*	1044	N00 E00	1250x1000	2				
											1235	N00 E00	1250x1000	2				
8										0830N*	0718P	N05 W35	375x300	2				
										0910S*	1027PC	N00 E00	1250x1000	2				
9										0841N*								
										0922S*								
10	N07 W59	79								1100N*								
										1141S*tp								

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1		3.1.2				3.1.3		3.1.4	3.1.5	3.1.6				3.1.7			
	Crimea		Sayan 5250 Å						Big Bear	Kitt Peak Fe I 5233 Å					Sac Peak			
Date 1973	Longitudinal Component Position	Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT	SPO#	RV	PA
Aug 11										1400N*✓	0702EQ	N00 E00	500x300	1				
										1436S*✓	0719EQ	N10 W20	500x300	1				
										1539N*	0738E	S05 W10	500x300	1				
										1620S*								
12																		
13							0058	95		1030GN								
							0110	96		1129PS								
							0305%	97										
							0316#	98										
							0351	99										
							0500#	101										
							0512%	102										
14	CS						0400#	104		1119N*								
							0419%	103										
							0448#	105										
15										1152N*	1305Cδ	N08 E26	300x300	2				
											1309Cδ	N08 E26	300x300	2				
											1317Cδ	N08 E26	300x300	2				
											1322Cδ	N08 E26	300x300	2				
											1327Cδ	N08 E26	300x300	2				
											1348Cδ	N08 E26	750x400	2				
											1402Cδ	N08 E26	750x400	2				
16																		
17							0501	112										
18										1130N*								
										1240S*								
19	N12 E56	81																
	CS																	
20	CS		0158	N15 E43	M488	114												
			0815	N15 E43	M423	115												
			0833	N15 E43	M423	116												
21	CS										0819G$	N00 E00	1000x1000	2				
22	CS																	
23																		
24										1002N*								
										1110S*tp								
25	N12 W25	81								1115S*✓								
	CS									1233N*✓								
26	N12 W38	81								0951S*	0726GC	N15 W45	400x350	1	1614:40- 1619:40F	3413	.68	96°
	N15 E51	84								1259N*	0806C	N10 E35	450x400	1	1633:40- 1643:00F	3413	.68	96°
										1410S								
27	N02 E28	86								0953N*								
	N15 E38	84								1106CS*								
										1245GS*								
28	CS									0926S*					1514:40- 1523:20F	3413	.33	83°
										1030CN*								
29	N02 E01	86								1014S*	0816G	N00 E00	625x500	1				
30	N02 W12	86	0207	N16 W02	M501	118	0722#	123		0952S*	0750G	N10 W15	625x500	1				
			0237	N16 W02	M501	119	0731%	124			1512- 1649	N15 W10	125x100	2-14-				
			0347	N16 W02	M501	121												
			0351	N16 W02	M501	122												
			0207	N03 W13	M503	118												
			0237	N03 W13	M503	119												

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1		3.1.2				3.1.3		3.1.4	3.1.5	3.1.6				3.1.7			
	Crimea		Sayan 5250 Å						Big Bear	Kitt Peak Fe I 5233 Å								
Date 1973	Longitudinal Component Position	Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT	SPO#	RV	PA
Aug 30			0351	N03 W13	M503	122												
			0136	S15 E60	M507	117a												
			0147	S15 E60	M507	117b												
			0253	S15 E60	M507	120a												
			0302	S15 E60	M507	120b												
31	N02 W27	86	0821	N16 W15	M501	127	0740	126										
			0821	N03 W25	M503	127												
			0730	S15 E50	M507	125												
Sep 1	S15 E36	90																
2	S15 E23	90	0225	N16 W41	M501	130a												
	CS		0128	S15 E24	M507	128												
			0228	S13 W26	M509	130b												
			0206	N14 E51	M510	129												
			0225	N05 W33	M511	130a												
3											0804P	S15 E35	250x250	1				
											0813P	S15 E05	375x350	1				
											0826P	N05 E35	375x350	1				
											0838P	N10 W05	250x250	1				
											1119-1429	S18 E39	375x400	2-31-6				
4										1403N*					1627:00-1632:30F	3426	.34	89°
										1605S*					1649:20-1659:00F	3426	.34	89°
5	N14 E14	92																
	N22 W25	94																
6	N13 W00	92																
	CS																	
7	N14 W13	92	0255	S14 W42	M507	132a				0831N*								
	CS		0257	S14 W42	M507	132b				0915PS*								
			0240	N13 W15	M510	131a												
8			0436	S15 W57	M507	136b												
			0738	S15 W57	M507	142b												
			0334	N13 W26	M510	133a												
			0338	N13 W26	M510	133b												
			0401	S19 W18	M512	134b												
			0459	S19 W18	M512	137												
			0417	S11 E04	M513	135a												
			0420	S11 E04	M513	135b												
			0459	S11 E04	M513	137												
9	S13 W14	98	0203	S19 W29	M512	148												
	CS	99																
10	S10 W41	100																
	S12 W26	98																
	CS																	
11	S10 W55	100	0032	N13 W67	M510	152a	0149	154										
			0035	N13 W67	M510	152b												
			0254	N13 W67	M510	156a												
			0257	N13 W67	M510	156b												
			0823	N13 W67	M510	159a												
			0837*	N13 W67	M510	159b												
			0044	S10 W52	M520	153												
			0305	S10 W52	M520	157												
			0331	S10 W52	M520	158												
			0928	S10 W52	M520	161												
			0955*	S10 W52	M520	162												

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1		3.1.2				3.1.3		3.1.4	3.1.5	3.1.6		3.1.7
	Crimea		Sayan 5250 Å						Big Bear	Kitt Peak Fe I 5233 Å			Sac Peak
Date 1973	Longitudinal Component Position	Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) fov 115°WMT	Position (arcsec) P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT SPO# RV PA
Sep 11			0044	S12 W36	M513	153							
			0157	S12 W36	M513	155							
			0305	S12 W36	M513	157							
			0928	S12 W36	M513	161							
			0955*	S12 W36	M513	162							
			1005*	S12 W36	M513	163							
12			0142	N12 W82	M510	166a	0055#	164					
			0329	N12 W82	M510	168a	0110%	165					
			0148	S10 W68	M520	166b	0304	167					
			0332	S10 W68	M520	168b							
13							0325	171					
14	CS												
15	CS		0336	N13 E67	M525	174a	0426#	176					
							0442%	177					
16	N12 W20	102											
	CS												
17	N14 E55	101	0247	N13 E54	M525	178a	0305	178					
	CS		0250	N13 E54	M525	178b							
			0329	N13 E54	M525	180							
			0332	N13 E54	M525	180b							
			0413	N13 E54	M525	181a							
			0506	N13 E54	M525	181b							
			0910	N13 E54	M525	182a							
			0913	N13 E54	M525	182b							
18			0113	N13 E39	M525	183a							
			0116	N13 E39	M525	183b							
			0140	N13 E39	M525	184a							
			0143	N13 E39	M525	184b							
			0201	N13 E39	M525	185a							
			0206	N13 E39	M525	185b							
			0235	N13 E39	M525	186a							
			0237	N13 E39	M525	186b							
			0244	N13 E39	M525	187a							
			0247	N13 E39	M525	187b							
			0310	N13 E39	M525	188a							
			0313	N13 E39	M525	188b							
			0324	N13 E39	M525	189a							
			0327	N13 E39	M525	189b							
			0421	N13 E39	M525	190b							
			0434	N13 E39	M525	191a							
			0437	N13 E39	M525	191b							
			0504	N13 E39	M525	192b							
			0514	N13 E39	M525	193a							
			0517	N13 E39	M525	193b							
			0700	N13 E39	M525	194a							
			0704	N13 E39	M525	194b							
			0710	N13 E39	M525	195a							
			0720	N13 E39	M525	195b							
			0740	N13 E39	M525	196a							
			0753	N13 E39	M525	196b							
			0800	N13 E39	M525	197a							
			0803	N13 E39	M525	197b							
			0823	N13 E39	M525	198a							
			0840	N13 E39	M525	199a							
			0852	N13 E39	M525	199b							
			0930	N13 E39	M525	200a							
			0934	N13 E39	M525	200b							

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1 Crimea		3.1.2 Sayan 5250 Å				3.1.3		3.1.4	3.1.5	3.1.6		3.1.7
			Sunspot Groups 4 x 2 arcsec				Solar Center 400x600 arcsec		Big Bear Fe I 5324.191 Å 4.2x5.6 arcmin	Kitt Peak Polar Scans	Area Scans (active regions) Fe I 5233 Å		Sac Peak Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å
Date 1973	Longitudinal Component Position	Region	UT	Position	MM #	Mag #	UT	Mag #	UT	115°WMT	115°WMT Position	fov (arcsec) P-N-T	UT SPO# RV PA
Sep 19	N14 E28	101	0128	N13 E26	M525	201a							
			0134	N13 E26	M525	201b							
20			0202	N13 E13	M525	202a							
			0206	N13 E13	M525	202b							
			0241	N13 E13	M525	203a							
			0245	N13 E13	M525	203b							
21													
22	N14 E57	108											
	CS												
23	N13 E44	108											
24													
25	N13 E19	108											
26	N14 E05	108											
	CS												
27	N14 W10	108											
28	N14 W22	108											
29													1732:30- 3439 .6 310° 1740:50P
													1933:30- 3439 .6 310° 1941:40P
													2059:00- 3439 .6 310° 2105:00P
													2252:00- 3439 .6 310° 2302:00P
30													1531:40- 3439 .79 308° 1541:40P
													1647:10- 3438- .79 308° 1655:40P 3439
													1900:30- 3438- .79 308° 1906:40P 3439
													2039:30- 3438- .79 308° 2046:20P 3439
													2215:00- 3438- .79 308° 2224:00P 3439
Oct 1	CS												1439:00- 3447 .35 100° 1444:00F
													1603:00- 3447 .35 100° 1608:00F
													1738:00- 3447 .35 100° 1741:30F
2	N13 E13	113											
	CS												
3	**N13 E00	113											
	S13 W04	112											
4													
5	CS												
6	*N12 W40	113											
7													
8													
9													
10	CS												
11	CS												
12													
13	CS												

Abbreviated headings and symbols deciphered on page 64.

TABLE 3.1 continued

MAGNETOGRAMS

	3.1.1	3.1.2			3.1.3		3.1.4	3.1.5	3.1.6				3.1.7			
	Crimea	Sayan 5250 Å					Big Bear	Kitt Peak Fe I 5233 Å					Sac Peak			
Date 1973	Longitudinal Component Position Region	Sunspot Groups 4 x 2 arcsec UT	Position	MM #	Mag #	Solar Center 400x600 arcsec UT	Mag #	Fe I 5324.191 Å 4.2x5.6 arcmin UT	Polar Scans 115°WMT	Area Scans (active regions) 115°WMT	Position	fov (arcsec)	P-N-T	Sunspot Groups Spectra 5576, 6173 Å Filtergram 5200, 5800 Å UT	SPO#	RV	PA
Oct 14	CS															
15	No data October 16 - 27.															
28														1739:00-1743:00P	3452	.35	233°
														1824:20-1828:40P	3452	.35	233°
29																	
30														1523:20-2220:40F	3452#	.65	265°
	No data October 31 - November 27.															
Nov 28										1044-1459F	S10	N05	400x400 2-66-4			
29										1010$Q	N00	E00	1250x1000 2			
										1530Q	N00	E00	1250x1000 2			
30										1021Q	N00	E00	1250x1000 2			
Dec 1																
2																
3																
4																
5										1320F$Q	N00	E00	1250x1000 2			
										1449FQ	N00	E00	1250x1000 2			
6										1408VGQ	N00	E00	1250x1000 2			
7										1155VGQ	N00	E00	1250x1000 2			
8																
9																
10																
	No data December 11 - 17.															
18										0948P$	S20	E50	375x350 1			
	No data December 19 - 25.															
26									1048N 1142S							
27										1415	N00	E00	1250x1000 2			
28										1104	N00	E00	1250x1000 2			
29										1003	N00	E00	1250x1000 2			
30																
31																
1974	No data January 1 - 14, 1974.															
Jan 15									1049N 1345Stp	1502G	N00	E00	1250x1000 2			
16																
17																
18																
19									1136N 1245S							
20																
21																
22										1043P	N00	E00	1250x1000 2			
23										1346P	N00	E00	1250x1000 2			
24									1504N	1057G	N00	E00	1250x1000 2			
25										1048F	N00	E00	1250x1000 2			

Abbreviated headings and symbols deciphered on page 64.

Table 3.1 (continued)

FOOTNOTES

Seeing Conditions:

B = Bad
C = Clouds
F = Fair
F+ = Fair (+)
FG = Fair to Good
FI = Fair, Intermittent
G = Good
GC = Good, some clouds
I = Intermittent
M = Mediocre
P = Poor
PC = Poor, clouds
PI = Poor, Intermittent
VG = Very Good

3.1.1

CS = Center of the sun
* = Transverse component also
** = Transverse component only

3.1.2; 3.1.3

MM # = McMath #
Mag # = Sayan Magnetogram #
= 2.5 towards N from solar center
% = 2.5 towards S from solar center
* = 5233 Å

3.1.5

N = North Pole (geocentric)
S = South Pole (geocentric)
* = heliocentric - offset for P-angle
✓ = 5173 Å, low sensitivity
½ = only half the normal run
tp = tracking poor
ch = coronal hole
W = West limb

3.1.6

$ = Equipment failure - some problems in the data
Q = Quiet region
$$ = Many frames lost due to clouds and guiding
M = Mediocre seeing
δ = NRL JOP
fov = field of view
P-N-T:
P = area in arcsec of the probes
N = number of frames
T = times between frames

3.1.7

= 8 observing periods
SPO# = Sac Peak Obs. #
RV = radius vector
PA = position angle

CATEGORY 4.1) CORONAGRAPHS
Stations listed by longitude

4.1.1 STATION: Mauna Loa, Hawaii N21 E204
PROGRAM: Ground-based coronagraph. Two white light coronagraphs (K-coronameter and coronal activity monitor), having spatial resolution of about one arcmin.

OBSERVING TIMES AND RATES: Generally 1700-0300 UT daily, weather permitting (see Table)
WAVELENGTHS: 6200 Å
OTHER PERTINENT INFORMATION: Point-by-point photoelectric scans around the limb of the sun at ten concentric heights (in the range 1.1 to 2 $R_\odot$) to measure the intensity of the white light ("K") corona. A full set, producing a two-dimensional "picture" of the corona, is accomplished in 2-3 hours. Program is repeated throughout day as weather conditions permit.
DATA FORMAT AVAILABLE: Computer plot
Direct scientist-to-scientist

INVESTIGATOR: Richard Hansen
National Center for Atmospheric Research
High Altitude Observatory
P.O. Box 1470
Boulder, Colorado USA 80302

4.1.2 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based filtergram / 16 inch coronagraph / photographic spectra - coronal active regions; Graded height spectra of forbidden coronal lines. Fiducial filtergrams at λλ5303, 6374, 6563 Å. Absolute photometry of spectra.

OBSERVING TIMES AND RATES: See table for times and the number of different heights at which spectra were taken.
WAVELENGTHS: λλ3550-9000 Å if H-alpha loops are observed; λλ4500-9000 Å if no H-alpha loops are observed.
MEASUREMENTS: Field of view = 8x6 arcmin
Radius vector = 1.0
Position angle (geocentric) - see Table
SLIT: Straight slit parallel to limb
100μ (2π) x 24.5mm (480π)
SPECTRAL DISPERSION: λ3900 (∿1.64 Å/mm); λ5300 (∿2.5 Å/mm); λ6400 (∿5.4 Å/mm)
FILM TYPE: λλ3550-6000 Å 103-aD
λλ6000-9000 Å 2481
IMAGE SCALE OF ORIGINAL: 20 π/mm
QUALITY: see Table
OTHER PERTINENT INFORMATION: see Table
DATA FORMAT AVAILABLE: Direct scientist-to-scientist
JOPs: 2C

INVESTIGATOR: William J. Wagner
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

4.1.3 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based filtergram / coronagraph / spectra (photographic) 6" coronagraph for 5303 Å filtergrams for complete limb survey and/or movie; 4" coronagraph for 5303 and 6374 Å spectral surveys and/or movie.

OBSERVING TIMES AND RATES: 6" coronagraph 5303 Å limb survey Δ 45° P.A. (see Table 3 for observing times); limb movie at one P.A. (see Table 3 for observing time and rate);
4" coronagraph - spectrograms limb survey 5303 and 6374 Å (see Table 3); limb spectral movie 5303 Å
MEASUREMENTS: 6" coronagraph movies: 60° of P.A. x 0.7 $r_\odot$
4" coronagraph spectra: 60° of P.A. at 15 arc sec above solar limb
SLIT: Curved, tangential; 60° position angle x 2300 km = 3.1 arc sec integrated height in corona
SPECTRAL DISPERSION: about 1.7 Å/mm
FILM TYPE: Filtergram 049-1(4-J); Spectrogram 103aF.
IMAGE SCALE OF ORIGINAL: Filtergram about 1.9" = 48 mm; Spectra 1.5" = 38 mm
QUALITY: see Table 3
DATA FORMAT AVAILABLE: Direct scientist-to-scientist
JOPs: 2C, 6, 8

INVESTIGATOR: Dr. William J. Wagner, and H. DeMastus
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

4.1.4 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based coronagraph

OBSERVING TIMES AND RATES: see Table
WAVELENGTHS: 5303 Å
MEASUREMENTS: 1.5π
SLIT: 1.5π
SPECTRAL DISPERSION IN A/mm: 10,000 = Δλ/Δ
FILM TYPE: photoelectric
IMAGE SCALE OF ORIGINAL: 100 mm
QUALITY: see Table
DATA FORMAT AVAILABLE: Digitized (card)
Direct scientist-to-scientist
JOPs: 6

INVESTIGATOR: Richard R. Fisher
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

4.1.5 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based coronagraph / filtergram / spectra
SJC-1 filtergrams: λ6563 Å
SJC-2 filtergrams: λλ6374, 6563, 6375, 5303 Å
Spectra: λλ8024, 7892, 7059, 6703, 6374, 5694, 5303, 5445, 5411, 4686, 4412, 6563, 5875 Å

OBSERVING TIMES: see Table
MEASUREMENTS: 28° of solar limb;
Radius vector = 1.0+;
for Position Angle (geocentric) see Table
SLIT: 0.86π
SPECTRAL DISPERSION: 2-7 Å/mm
FILM TYPE: 103-H-alpha, 103-AF, 2481
IMAGE SCALE OF ORIGINAL: 4"
QUALITY: see Table
DATA FORMAT AVAILABLE: Direct scientist-to-scientist
JOPs: 2C

INVESTIGATOR: Richard R. Fisher
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

TABLE 4.1

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Rθ=1.15(a), 1.24(b),1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
May 28	1700-0300					1447(a) 1457(b) 1509(c) 1524(a)		
29	1700-0300					1427(a) 1843(a)		
30	No Obs.					1444(a)		
31	1700-0300							
June 1	1700-0300							
2	No Obs.			1518-1522(a) 1553-1605(b) 1517-1533(c)		1359(a) 1415(b) 1429(c)		
3	No Obs.			1413-1420m(a) 1414-1429(b) 1435-1501(c)		1401(a) 1413(b) 1427(c)		
4	1700-0300			1522-1526(a) 1615-1627(b) 1513-1530(c)		0029(a) 0040(b) 0053(c) 1439(a) 1451(b) 1502(c)		
5	1700-0300					1435(a) 1445(b) 1459(c)		
6	No Obs.							
7	No Obs.					1648(a) 1709(b) 1721(c)		
8	1700-0300							
9	1700-0300					1542(a) 1555(b) 1608(c) 1627(c)		
10	1700-0300					1522(a) 1533(b) 1547(c)		
11	1700-0300					1457(a) 1510(b) 1522(c)	1843-2022FG	66° a
12	1700-0300							
13	1700-0300							

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Rø 1.15(a), 1.35(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
June 14	1700-0300					1427(a) 1440(b) 1454(c)		
15	1700-0300					1751(a) 1804(b) 1817(c)		
16	1700-0300					1637(a) 1648(b) 1737(c)		
17	1700-0300					2307(a) 2319(b) 2331(c) 1531(a) 1544(b) 1557(c) 1741(a) 1753(b) 1805(c)		
18	No Obs.					1515(a) 1529(b) 1544(c)		
19	No Obs.					1650(a) 1704(b) 1718(c)		
20	1700-0300					1741(a) 1753(b) 1808(c)		
21	1700-0300							
22	No Obs.					1454(a) 1507(b) 1520(c)		
23	1700-0300					1439(a) 1451(b) 1505(c)		
24	1700-0300					1507(a) 1518(b) 1534(c)		
25	1700-0300					1545(a) 1557(b) 1612(c)		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Re=1.15(a), 1.35(b),1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
June 26	No Obs.					1527(a) 1540(b) 1553(c)		
27	1700-0300					1751(a) 1804(a) 1818(c)		
28	1700-0300					1623(a) 1634(b) 1648(c)		
29	1700-0300					1717(a) 17--(b) 1730(c)		
30	No Obs.					2321(a) 2332(b) 2345(c) 2355(c) 1622(a) 1632(b) 1647(c) 1704(a)		
July 1	1700-0300							
2	1700-0300					1600(a)		
3	1700-0300					1635(a) 1648(b) 1702(c)		
4	1700-0300					1612(a) 1623(b) 1637(c)		
5	1700-0300							
6	1700-0300							
7	1700-0300					1750(a) 1803(b) 1838(c)		
8	1700-0300					1752(a) 1805(b) 1819(c)		
9	1700-0300							
10	1700-0300							
11	1700-0300							
12	1700-0300							
13	1700-0300							
14	No Obs.							
15	No Obs.							

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Rø=1.15(a), 1.24(b),1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
July 16	1700-0300							
17	1700-0300							
18	1700-0300							
19	1700-0300					1805(a)		
						1817(b)		
						1829(c)		
20	1700-0300					1526(a)		
						1538(b)		
						1550(c)		
21	1700-0300					1515(a)		
						1527(b)		
						1540(c)		
22	1700-0300							
23	No Obs.							
24	1700-0300					1649(a)		
						1702(b)		
						1716(c)		
25	1700-0300					1816(a)		
						1828(b)		
						1840(c)		
26	1700-0300							
27	1700-0300							
28	1700-0300							
29	1700-0300							
30	1700-0300			1414-1419(a)		1724(a)		
				1421-1433(b)		1727(b)		
						1803(c)		
31	1700-0300							
Aug. 1	1700-0300							
2	1700-0300			1439-1443(a)				
				1449-1507(c)				
				1542-1551(b)				
3	1700-0300			1449-1452(a)		2017(a)		
				1454-1526(b)		2029(b)		
						2042(c)		
4	1700-0300							
5	1700-0300			1430-1436(a)		1412(a)		
				1520-1532(b)		1424(b)		
				1437-1453(c)		1436(c)		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Aug. 6	1700-0300			1430-1442(b) 1523-1540(c) 1610-1627(c) 1640-1651(b)				
7	1700-0300			1445-1504(b)				
8	1700-0300							
9	1700-0300					1541(a)		
10	No Obs.					1652(a)		
11	No Obs.			1423-1429(a) 1542-1547(a) 1435-1447(b) 1541-1558(c) 1551-1559:30m(a)		1442(a) 1458(b) 1512(c)		
12	1700-0300	1550-1604F 8h (sky=40x10^{-6} $B_\odot$ seeing = 1 5303, 6374Å only weak region)	283°	1504-1521(b) 1422-1446(c)		1415(a) 1427(b) 1439(c)		
13	1700-0300			1408-1414(a) 1420-1651:40m(a) 1413-1428(b) 1505-1650:20m(b)	30,35 sec.int.	1439(a) 1455(b) 1508(c)		
14	1700-0300					1457(a) 1509(b) 1521(c)		
15	1700-0300							
16	1700-0300							
17	1700-0300					1520(a) 1531(b) 1545(c)		
18	1700-0300					1447(a) 1459(b) 1611(c)		
19	No Obs.					1417(a) 1428(b) 1441(c)		
20	No Obs.							
21	1700-0300							
22	No Obs.			1659-1706(a) 1706-1852m(a) 1706-1720(b)	2/min	1640(a) 1653(b)		
23	No Obs.			1730-1852m(b) 1440-1445(a) 1446-2039m(a) 1434-1450(b) 1505-1939m(b)	3/min 30,35 sec.			

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1,SJC-2) RV=1.0+ UT	PA
Aug. 24	1700-0300			1431-1436(a) 1631-1934m(a) 1431-1446(b) 1630-1934m(b)	35 sec.	1435(a) 1447(b) 1500(c)		
25	1700-0300			1619-1623(a) 1441-1454(b)		1541(a) 1552(b) 1604(c)		
26	1700-0300							
27	1700-0300			1435-1441(a) 1611-1742m(a) 1538-1613(b) 1624-1742m(b)	1/35 sec.	1509(a) 1520(b) 1532(c)		
28	No Obs.							
29	1700-0300							
30	1700-0300							
31	1700-0300	1950-2118F 6h	98°					
Sept. 1	1700-0300	sky=50x10^{-6} B⊙ seeing=1 Region cool Weak λ5303 see also 6374, 7892.				1713(a) 1725(b) 1738(c)		
2	No Obs.					1518(a) 1529(b) 1543(c)		
3	1700-0300					1535(a) 1547(b) 1559(c)		
4	1700-0300					1529(a) 1542(b) 1713(c)		
5	1700-0300					1639(a) 1647(b) 1700(c)		
6	1700-0300					1545(a) 1558(b) 1610(c)		
7	1700-0300							
8	1700-0300			1709-1723(b) 1736-1753(c)		0008(a) 0019(b) 1540(a) 1552(b) 1605(c)		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT Rate	4.1.4 SAC PEAK 5303Å R/Rø=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT PA
Sept. 9	1700-0300			1610(a) 1620(b) 1635(c)	
10	1700-0300				
11	1700-0300				
12	1700-0300		1434-1442(a) 1507-2126m(a) Various 1436-1451(b) 1520-2004m(b)	1442(a) 1454(b) 1509(c)	
13	No Obs.			1427(a) 1437(b) 1449(c)	
14	No Obs.			1430(a) 1444(a) 2238(a)	
15	1700-0300			1559(a) 1611(b) 1623(c)	
16	1700-0300				
17	1700-0300			1507(a) 1519(b) 1532(c)	
18	1700-0300				
19	1700-0300			2003(a) 2011(b) 2025(c)	
20	1700-0300				
21	1700-0300		1746-1751(a) 1804-1825m(a) 1750-1813(b)		
22	No Obs.		1614-1634(b)		
23	1700-0300		1548-1556(a) 1558-1856m(a) Various 1523-1535(b) 1607-1855m(b)	1517(a) 1532(b) 1545(c)	
24			1715-1719(a) 1722-1954m(a) Various 1610-1623(b) 1727-1827m(b) 1853-1954m(b)	1700(a) 1712(b) 1723(c)	
25	1700-0300		1541-1546(a) 1547-2001m(a) Various 1548-2001m(b)	1847(a) 1857(b) 1910(c)	

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Sept. 26	1700-0300			1654-1658(a) 1700-2120m(a) 1703-2121m(b)		1642(a) 1654(b) 1707(c)		
27	1700-0300	1555-1650G 9h	133°	1531-1535(a)				
28	1700-0300	(sky=18 seeing=1 good forbidden lines)		1448-1452(a) 1457-2124m(a) 1501-2122m(b)	30,40,50,35 sec.	1454(a) 1505(b) 1518(c)		
29	1700-0300					1531(a) 1543(b) 1554(c)		
30	1700-0300							
Oct. 1	1700-0300			1526-1529(a) 1524-1537(b)		1456(a) 1508(b) 1518(c)		
2	1700-0300					1515(a) 1529(b) 1541(c)		
3	1700-0300	1502-1514F 4h	307°					
4	1700-0300	(sky=65x10^{-6} B$_\odot$ seeing=1 strong λ5303				1642(a) 1653(b)		
5	1700-0300	very weak other lines)				1706(c)		
6	No Obs.							
7	1700-0300					1630(a) 1642(b) 1655(c)		
8	No Obs.					1447(a) 1459(b) 1513(c)		
9	1700-0300	1537-1707G 8h	281°	1537-1541(a)		1444(a)		
10	No Obs.	(sky=50 seeing=2 Good active corona, many[vis] lines,surge		1542-2051m(a) 1546-1716m(b)	30,35 sec.	1457(b) 1508(c)		
11	No Obs.	occurred during run)		1505-1509(a) 1513-2129m(a) 1544-2052m(b)	45,50 sec.	1501(a) 1513(b) 1527(c)		
12	1700-0300					1537(a) 1549(b) 1601(c)		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT PA
Oct. 13	1700-0300			1545(a) 1558(b) 1613(c)	
14	1700-0300			1528(a) 1541(b) 1554(c)	
15	1700-0300		1449-1453(a) 1622-1949m(a) 30,40 sec. 1618-1630(b)	1558(a) 1611(b) 1624(c)	2031-2150VP 130°a
16	No Obs.		1526-1532(a) 1533-1821m(a) 35,45 sec. 1535-1821m(b)	1520(a) 1536(b) 1548(c)	
17	1700-0300			1459(a) 1512(b) 1523(c)	
18	1700-0300		1457-1503(a)		
19	1700-0300		1502-1508(a)	1713(a) 1724(b) 1737(c)	
20	No Obs.			1524(a)	
21	No Obs.			1611(a) 1542(b) 1555(c)	
22	1700-0300				
23	1700-0300		1526-1532(a) 1534-2024m(a) 45,50 sec. 1540-1830m(b)		
24	No Obs.		1516-1519(a) 1638-2023m(a) Various 1526-1538(b) 1656-2024m(b)		
25	1700-0300		1724-1735(b)		
26	1700-0300		1814-1828(b)		
27	1700-0300				
28	1700-0300			1555(a) 1608(b) 1621(c)	
29	1700-0300		1551-1556(a) 1558-1924m(a) 1554-1608(b) 1620-1637(c)		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Rø=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Oct. 30	No Obs.					1740(a) 1753(b) 1806(c)		
31	No Obs.					1504(a) 1515(b) 1527(c)		
Nov. 1	1700-0300					1542(a) 1619(b)		
2	1700-0300							
3	1700-0300							
4	No Obs.							
5	No Obs.			1527-1531(a) 1538-2133m(a) 1541-2053m(b)	Various	1515(a) 1525(b) 1539(c)		
6	1700-0300			1511-1515(a) 1517-2016m(a) 1515-2016m(b)		1605(a) 1614(b)		
7	1700-0300							
8	No Obs.							
9	No Obs.			1510-1517(a) 1518-2112m(a) 1525-1539(b) 1553-1609(c)		1629(a) 1640(b) ~1652(c)		
10	No Obs.					1600(a) 1612(b) 1624(c)		
11	1700-0300					1450(a) 1502(b) 1514(c)		
12	No Obs.			1516-1522(a) 1526-2105m(a) 1554-1608m(b) 1524-1539(c)		1520(a) 1532(b) 1545(c)		
13	No Obs.			1525-1532(a) 1718-2056m(a) 1530-1550(b)		1541(a) 1551(b) 1604(c)		
14	No Obs.							
15	1700-0300			1629-1635(a) 1614-1628(b) 1921-1938(c)		1557(a) 1609(b) 1622(c)		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Nov. 16	1700-0300			1931-1936(a) 1718-1732m(b) 1649-1706(c)				
17	1700-0300					1539(a) 1551(b) 1603(c)		
18	No Obs.							
19	No Obs.							
20	No Obs.							
21	No Obs.			1641-1645(a) 1647-1727m(a) 1650-1727m(b)				
22	No Obs.			1511-1517(a) 1519-1753m(a) 1517-1752m(b) 1821-1827		1708(a) G 1720(b) G 1732(c) G		
23	No Obs.							
24	1700-0300					2045(a) P 2058(b) P 2112(c) P		
25	1700-0300							
26	No Obs.							
27	No Obs.					1552(a) VP 1605(b) VP 1616(c) VP		
28	No Obs.			1534-1542(a) 1543-1551(a) 1552-2123m(a) 1553-2042m(b)		1600(a) G 1612(b) G 1624(c) G		
29	No Obs.					1650(a) G 1702(b) G 1714(c) G		
30	No Obs.					2107(a) G 2120(b) G 2134(c) G	1758-1950F	275° b
Dec. 1	No Obs.					1838(a) F 1853(b) F		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Ro=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Dec 2	No Obs.	1810-1850 11h	289°	1653-1659(a) 1701-1737m(a) 1702- ? m(b)				
3	1700-0300	sky=35x10^{-6} $B_\odot$ seeing = 1+ Double 5303 regions						
4	1700-0300	in fov Weak coronal rain and surges.		1536-1542(a) 1729-2108m(a) 1733->2028m(b)		1805(a) G 1817(b) G	1847-2015F-	275° b
5	1700-0300	Weak [vis] lines, esp. in higher stages.		1543-1550(a) 1551-2108m(a) 1552->1913m(b)		1550(a) G 1617(b) G		
6	1700-0300			1531-1537(a) 1538-2105m(a) 1542->1827m(b)		1834(a) F		
7	1700-0300							
8	No Obs.							
9	1700-0300					1633(a) G 1645(b) G		
10	No Obs.			1531-1539(a) 1721-2111m(a) 1557->1909m(b)				
11	No Obs.			1527-1534(a) 1537-2114m(a) 1653->1938m(b)		1806(a) G		
12	1700-0300			1537-1542(a) 1544-2038m(a)		1647(a) G 1701(b) G 1706(c) G		
13	1700-0300					1740(a) G 1751(b) G 1804(c) G		
14	1700-0300					1711(a) F		
15	1700-0300					2153(a) G 2205(a) G		
16	1700-0300							
18	1700-0300							
19	1700-0300							
20	1700-0300			1523-1529(a)		1633(a) G 1642(b) G		
21	1700-0300			1529-1534(a) 1539-2118m(a) 1539->2000m(b)		1614(a) G 1625(b) G		

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1973	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/Rø=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Dec. 22	1700-0300			1528-1534(a) 1536- ? m(a) 1539- ? m(b)		1623(a) G 1635(b) G		
23	1700-0300							
24	No Obs.							
25	1700-0300							
26	1700-0300					2102(a) G 2113(b) G		
27	1700-0300			1834-1841(a) 1940-2125m(a) 1945- ? m(b)		2047(a) G 2058(b) G		
28	1700-0300			1736-1742(a) 1746-1930m(a) 1746- ? m(b)		1727(a) F 1745(b) F		
29	No Obs.					1838(b) G 1851(c) G 1908(a) G		
30	No Obs.							
31	No Obs.					1905(a) G 1928(b) G 1943(a) G		
1974								
Jan. 1	1700-0300			1632-1636(a)		1835(b) F 1851(c) F 1903(a) F		
2	1700-0300							
3	1700-0300							
4	No Obs.					2051(a) G 2103(b) P 2115(c) P		
5	No Obs.							
6	1700-0300							
7	No Obs.							
8	1700-0300							
9	No Obs.							
10	1700-0300					2241(a) P		
11	1700-0300			1809-1816(a) 1817-2105m(a) 1817- ? m(b)		1759(a) F 1812(b) F 1823(c) F 1838(a) F	1858-2008F+	112° b

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1974	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT	PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT	Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT	PA
Jan. 12	1700-0300			1614-1620(a) 1621-1715m(a) 1621- ? m(b)		1620(a) G 1632(b) G 1645(c) G		
13	1700-0300			1536-1541(a) 1544-2104m(b) 1544->1953m(b)		1602(a) G 1614(b) G 1626(c) G	2101-2216F-	104° c
14	1700-0300			1649-1656(a) 1852-2127m(a) 1856->1958m(b)		1617(a) G 1628(b) G 1640(c) G		
15	No Obs.			1540-1547(a) 1551-2129m(a) 1555->2013(b) 1532-1539(a) 1541-1919m(a) 1542->1828m(b)		1923(a) G 1937(b) G 1949(c) G	1510-1918F-	278° d*
16	1700-0300					1649(a) G 1700(b) G 1713(c) G		
17	1700-0300							
18	1700-0300							
19	1700-0300							
20	1700-0300							
21	No Obs.			1623-1631(a) 1841-2104m(a)				
22	1700-0300							
23	1700-0300					1627(a) G 1638(b) G 1651(c) G		
24	1700-0300							
25	1700-0300			1738-2013m(a) 1745->1844m(b)		1544(a) 1557(b) 1609(c)	1900-2245FC	247° e
26	1700-0300			1527-1533(a) 1534-2052m(a) 1534->2019m(b)		1641(a) G 1654(b) G 1708(c) G		
27	1700-0300							
28	No Obs.							
29	1700-0300			1842-1850(a) 1851-2135m(a) 1846->1956m(b)		1559(a) G 1634(b) G 1646(c) G		
30	1700-0300							

See page 81 for Footnotes.

TABLE 4.1 (continued)

CORONAGRAPHS

Date 1974	4.1.1 MAUNA LOA 6200Å UT	4.1.2 SAC PEAK Filtergrams: λλ3550-9000Å (Hα loops) λλ4500-9000Å (No Hα loops) UT PA	4.1.3 SAC PEAK 6" filtergram λ5303Å(a) 4" spectrogram λ5303Å(b) 4" spectrogram λ6374Å(c) UT Rate	4.1.4 SAC PEAK 5303Å R/R⊙=1.15(a), 1.24(b), 1.55(c) UT	4.1.5 SAC PEAK Spectra and Filtergrams (SJC-1, SJC-2) RV=1.0+ UT PA
Jan. 31	1700-0300		1517-1523(a) 1525-2157m(a)	1559(a) G 1610(b) G 1622(c) G	
Feb. 1	1700-0300		1543-1549(a)	1558(a) G 1610(b) G 1621(c) G	
2	1700-0300			1524(a) G 1537(b) G 1549(c) G	
3	1700-0300			1610(a) G	
4	1700-0300		1519-1529(a) 1530-2212m(a) 1530->2042m(b)	1635(a) F 1657(c) F	
5	1700-0300			1600(a) F 1627(c) F	
6	1700-0300				
7	1700-0300				
8	1700-0300		1740-1747(a)		
9	No Obs.				
10	No Obs.				
11	No Obs.				
12	No Obs.				
13	No Obs.				
14	1700-0300				
15-30	1700-0300				
31	1700-0300				
Mar. 1	1700-0300				
2	1700-0300				
3	No Obs.				
4	No Obs.				
5	No Obs.				
6	1700-0300				
7	1700-0300				
8	1700-0300				
9	1700-0300				
10	No Obs.				

Footnotes:

4.1.2

h = number of different heights
fov = field of view

4.1.3

m = movie

4.1.5

Spectra only:

a = 8024,7892,7059, 6703,6374,5303Å
b = a + 5694Å
c = b + 5445,5411, no 7059Å
d = b + 5445,5411, 4686,4412Å
e = d + 6563,5875Å

* = 5303Å for SJC-1 filtergram

Seeing Conditions:

F = Fair
FG = Fair to Good
G = Good
P = Poor
VP = Very Poor

CATEGORY 5.1) PROMINENCES
Stations listed by longitude

5.1.1 STATION: Oslo Solar Observatory N60 E11
PROGRAM: Ground-based filtergram / spectra; spectral observations in the Ca II H line and corresponding H-alpha slit jaw pictures.

OBSERVING TIMES AND RATES: Approximately one frame 1-2 minutes
WAVELENGTHS: λλ3967, 6563 Å
MEASUREMENTS: Approximately 300x300 arcsec
SLIT: 1.4 arcsec
SPECTRAL DISPERSION: 10.3 mm/A
FILM TYPE: 103-0 Kodak
IMAGE SCALE OF ORIGINAL: 7.2 arcsec per mm
QUALITY: see Table
OTHER PERTINENT INFORMATION: see Table
DATA FORMAT AVAILABLE: Original film / Prints / Microphotometry / Computer plot
Direct scientist-to-scientist

INVESTIGATOR: Dr. O. Engvold
Institute of Theoretical Astrophysics
University of Oslo
P.O. Box 1029
Blindern, Oslo 3, Norway

5.1.2 STATION: Mauna Loa, Hawaii N21 E204
PROGRAM: Ground-based filtergram / coronagraph. Cinemaphotography of prominences around the sun (full field) to a height of one radius above the solar limb.

OBSERVING TIMES AND RATES: Generally 1700-0300 UT daily (see Table). Normal cadence 5 minutes, but increased to 1 minute or 15 seconds if warranted.
WAVELENGTHS: 6563 Å (10 Å half width)
MEASUREMENTS: Full limb
FILM TYPE: SO392
IMAGE SCALE OF ORIGINAL: 28 mm diameter solar image on 70 mm film
DATA FORMAT AVAILABLE: Prints
Direct scientist-to-scientist

INVESTIGATOR: Richard Hansen
National Center for Atmospheric Research
High Altitude Observatory
P.O. Box 1470
Boulder, Colorado USA 80302

5.1.3 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based high-dispersion spectra of bright quiescent prominences taken with slit placed normal to limb at wavelengths H-alpha (6562 Å), He D_3 (5876 Å), Ca^+K (3933 Å), Ca^+ (8542 Å), and possibly H-beta, H-gamma, H-delta, H_8 + He (3889 Å), Ca^+ (8489, 8662 Å). High dispersion (5 mm/Å) photographic spectra are obtained of selected, dense, quiescent prominences. The spectra are taken with the slit placed normal to the limb and stepped across the prominence in 2.5 or 5.0 arc sec intervals.

OBSERVING TIMES AND RATES: see Table 3
MEASUREMENTS: see Table 3
SPECTRAL DISPERSION: H-alpha (.174 Å/mm); Ca^+K (.10 Å/mm); Ca^+ λ8542 (.30 Å/mm)
FILM TYPE: II F, III O, 1 N, 4089 image intensifier
IMAGE SCALE OF ORIGINAL: 2.5 arc sec/mm
QUALITY: see Table 3
DATA FORMAT AVAILABLE: Prints
Direct scientist-to-scientist

INVESTIGATOR: W. C. Livingston
Kitt Peak National Observatory
P.O. Box 4130
950 North Cherry Avenue
Tucson, Arizona USA 85717

5.1.4 STATION: Kitt Peak Observatory N32 E249
PROGRAM: Ground-based He I (10830 Å) spectra - Photoelectric spectrum scans taken in a raster pattern covering selected regions. An area of several minutes dimension is raster scanned with an aperture of 2.4 or 4.8 arc sec square. At each point in the raster a short spectrum scan is made covering the helium lines 10829 and 10830 Å. The observations are later reduced to maps of relevant physical parameters as functions of position on the sun.

OBSERVING TIMES AND RATES: see Table 3
MEASUREMENTS: see Table 3
QUALITY: see Table 3
DATA FORMAT AVAILABLE: Digitized (tape)
Direct scientist-to-scientist

INVESTIGATOR: J. Harvey
Kitt Peak National Observatory
P.O. Box 4130
950 North Cherry Avenue
Tucson, Arizona USA 85717

5.1.5 STATION: Sacramento Peak Observatory N33 E254
PROGRAM: Ground-based filtergram / 16-inch coronagraph / photographic spectra; limb prominences, graded height prominence spectra, fiducial filtergrams at λλ6563, 6374, 5303 Å. Absolute photometry of spectra.

OBSERVING TIMES AND RATES: see Table for times and number of different heights at which spectra were taken.
WAVELENGTHS: λλ3550-9000 Å
MEASUREMENTS: Field of view = 8x6 arcmin
Radius vector = 1.0
Position angle (geocentric) - see Table
SLIT: Straight slit parallel to limb
100μ (2π) x 24.5 mm (480π)
SPECTRAL DISPERSION: λ3900 (∿1.64 Å/mm); λ5300 (∿2.5 Å/mm); λ6400 (∿5.4 Å/mm)
FILM TYPE: λλ3550-6000 Å 103-aD
λλ6000-9000 Å 2481
IMAGE SCALE OF ORIGINAL: 20π/mm
QUALITY: see Table
OTHER PERTINENT INFORMATION: see Table
DATA FORMAT AVAILABLE: Direct scientist-to-scientist
JOPs: 4

INVESTIGATOR: William J. Wagner
Sacramento Peak Observatory
Air Force Cambridge Research Laboratories
Sunspot, New Mexico USA 88349

TABLE 5.1

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky ($\times 10^{-6} B_{\odot}$)	Seeing
May 28			1700-0300									
29			1700-0300									
30			No Obs.									
31			1700-0300									
June 1			1700-0300									
2			No Obs.									
3			No Obs.	1345-1450G	226°	1-4,8	1510-1615G	S30 W90	1455-1730G	9h 243°	40	1
									1455-2014FG	m 243°	40	1
									(Active and quiescent prominences, bright coronal [VIS] lines.			
4			1700-0300									
5			1700-0300									
6			No Obs.									
7			No Obs.									
8			1700-0300									
9			1700-0300	2323-2341	46°	8						
10	0810F	N20 E90	1700-0300									
11			1700-0300									
12			1700-0300						1650-1805G	14h 69°	300	1+
									1442-1805FG	m (λ6563)	300	1+
									(Huge arch prominences)			
13			1700-0300									
14			1700-0300									
15			1700-0300									
16			1700-0300	1418-1453	90.8°	1-4						
				1502-1505	275.5°	1-4						
17			1700-0300	1515-1525	243.7°	1-4	1541-1700	N10 W03 (active region)				
18			No Obs.									
19			No Obs.									
20			1700-0300									
21			1700-0300									
22			No Obs.									
23			1700-0300									
24			1700-0300									
25			1700-0300									
26			No Obs.									

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky ($x10^{-6}B_{\odot}$)	Seeing
27			1700-0300									
28			1700-0300									
29			1700-0300									
30			No. Obs.									
July 1			1700-0300									
2			1700-0300									
3			1700-0300									
4			1700-0300									
5			1700-0300									
6			1700-0300									
7			1700-0300									
8			1700-0300									
9			1700-0300									
10			1700-0300									
11			1700-0300						0004-0023F	7h	125°	150	1-
12			1700-0300						(Small vertical prominence,				
13			1700-0300						shows few weak lines.)				
14			No Obs.										
15			No Obs.										
16			1700-0300									
17			1700-0300									
18			1700-0300									
19			1700-0300									
20			1700-0300									
21			1700-0300									
22			1700-0300									
23			No Obs.									
24			1700-0300									
25			1700-0300									
26			1700-0300									
27			1700-0300	2255C	253°	1,3						
				2354C	249°	1,3						
28			1700-0300									
29			1700-0300									
30			1700-0300									
31			1700-0300									
Aug 1			1700-0300									
2			1700-0300									
3			1700-0300									
4			1700-0300									
5			1700-0300									

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky (x10^{-6}B$_{\odot}$)	Seeing
Aug 6			1700-0300									
7			1700-0300									
8			1700-0300									
9			1700-0300									
10			No Obs.	1420G	225°	1,3						
				1500G	120°	1,3						
				1520G	113°	1,3						
11			No Obs.									
12			1700-0300				1448-1600G	S10 W90 (c)				
							1615-1655G	CS (c)				
13			1700-0300									
14			1700-0300	1420-1536VG	243°	1-7,9,10						
				1420-#	243°	1-7,9,10						
15			1700-0300	1530-1600	280°	1,3						
				1530C	280°	1,3						
16			1700-0300						1820-1839FC	1h	298°	95 1-
17			1700-0300									
18			1700-0300									
19			No Obs.									
20			No Obs.				1815-1855G	N14 E02 ch				
21			1700-0300				1755GF	S30 E50 f				
							1723GF	N12 W13 ch				
22			No Obs.				2228GF	N12 W13 ch				
23			No Obs.									
24			1700-0300									
25			1700-0300									
26			1700-0300									
27			1700-0300									
28			No Obs.									
29			1700-0300									
30			1700-0300									
31			1700-0300	1615-1630G	241°	1-4,8,9,11			2208-2310F	4h	266°	25 1+
				1615 ##	242°	1-4,9			1632-1731F	4h	265°	56 1
									(Rather dense prominence, showing continuum.			
Sept 1			1700-0300				1600	S30 W90	1551-1618G	7h	268°	65 2-
							1617(a)	S30 W90	(Quiescent prominence showing continuum.			
							1635(b)	S30 W90				
2			No Obs.	1540-1720F	255°,76°	1-5,7,9,10	1653	S30 W90				
				1540	255°	1-5,7,9,10						
				1720	76°	1-5,7,9,10						
3			1700-0300									
4			1700-0300									
5			1700-0300									

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky (x10^{-6}B$_\odot$)	Seeing
Sept 6			1700-0300									
7			1700-0300									
8			1700-0300									
9			1700-0300									
10			1700-0300									
11			1700-0300									
12			1700-0300	2359 %	284°	1,3						
13			No Obs.									
14			No Obs.									
15			1700-0300						1710-1825G (Tall active prominence)	10h 147°	80	1+
16			1700-0300									
17			1700-0300									
18			1700-0300									
19			1700-0300									
20			1700-0300									
21			1700-0300									
22			No Obs.									
23			1700-0300									
24			1700-0300						1434-1550F (Low, thin quiescent prominence, not much emission however.)	6h 87°	60	1-
25			1700-0300									
26			1700-0300									
27			1700-0300									
28			1700-0300						2133-2243F	9h 85°	18	1-
									1701-1843G (2 prominences, nice spectral differences.)	10h 84,96°	19	1
29			1700-0300									
30			1700-0300									
Oct 1			1700-0300									
2			1700-0300									
3			1700-0300									
4			1700-0300	1620	287°	1-4,9						
5			1700-0300						1541-1608P (2 prominences, one high tenuous, one low and dense.)	7h 314;294°	120	1
6			No Obs.									
7			1700-0300									
8			No Obs.									

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT PA λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT PA Sky (x10^{-6}B$_\odot$) Seeing
Oct 9		1700-0300			1537-1707G 8h 281° 50 2- (Caught a large surge rising next to a quiescent prominence. SKYLAB observed also.)
10		No Obs.			
11		No Obs.			
12		1700-0300			
13		1700-0300			
14		1700-0300			
15		1700-0300			
16		No Obs.			
17		1700-0300			
18		1700-0300	1512 96° 1,3 1630 60° 1,3		
19		1700-0300			
20		No Obs.			
21		No Obs.			
22		1700-0300			
23		1700-0300			
24		No Obs.			
25		1700-0300			
26		1700-0300			
27		1700-0300			
28		1700-0300			
29		1700-0300			
30		No Obs.			
31		No Obs.			
Nov 1		1700-0300			
2		1700-0300			
3		1700-0300			
4		No Obs.			
5		No Obs.			
6		1700-0300			
7		1700-0300			
8		No Obs.	1548 time 67° 3 1710 series 1800 of 44 1847 spectra		1532-1541E 8h 104° 20 1 2207-2300E 8h 104° 20 1 (Large arch prominence 40,000 km high.)
9		No Obs.			
10		No Obs.			
11		1700-0300			
12		No Obs			
13		No Obs.			

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky ($x10^{-6}B_{\odot}$)	Seeing
Nov 14			No Obs.									
15			1700-0300									
16			1700-0300									
17			1700-0300									
18			No Obs.									
19			No Obs.									
20			No Obs..									
21			No Obs.									
22			No Obs.									
23			No Obs.									
24			1700-0300									
25			1700-0300									
26			No Obs.									
27			No Obs.									
28			No Obs.									
29			No Obs.									
30			No Obs.						1530-1630GE	15h	318°	15	2
									(Large quiescent prominence shows continuum in green region. P35 in NOAA #s.				
Dec 1			No Obs.	1605W	303°	1-3,6,7			1615-1730G	11h	333°	31	2
				1655W	274°	1-3,6,7			(Bright, dense quiescent (P37 in NOAA #s), may have continuum in blue λ's.				
				1752W	296°	1-3,6,7							
2			No Obs.						1617-1730E	13h	328°	30	1+
									(Tall dense prominence (P37), continuum throughout visible spectrum				
3			1700-0300										
4			1700-0300										
5			1700-0300						2013-2103G	4h	301°	15	1-
									2013-2103G	7h	331°	15	1-
									(2 prominences, continuum λλ 4387, 4686 at 301°, less at 331°.				
6			1700-3000										
7			1700-0300										
8			No Obs.										
9			1700-0300	1555	69°	1-3,5,7,8							
				1708	262°	1-3,5,7,8							
				1730 $	255°	1-3,5,7,8							
10			No Obs.										
11			No Obs.										
12			1700-0300										

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1973	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky ($x10^{-6}B_0$)	Seeing
13			1700-0300									
14			1700-3000									
15			1700-0300									
16			1700-0300									
17			1700-0300									
18			1700-0300	1800 $$	~30°	1-3			1530-1644F	12h	65° 170	1
									(Huge prominence, very few weak lines.)			
19			1700-0300									
20			1700-0300									
21			1700-0300									
22			1700-0300									
23			1700-0300									
24			No Obs.									
25			1700-0300									
26			1700-0300									
27			1700-0300									
28			1700-0300									
29			No Obs.									
30			No Obs.									
31			No Obs.									
1974 Jan 1			1700-0300						1517-1640GE	14h	286° 50	1+
									(Tall dense prominence showed continuum weak He lines.)			
2			1700-0300									
3			1700-0300									
4			No Obs.									
5			No Obs.									
6			1700-0300									
7			No Obs.									
8			1700-0300									
9			No Obs.									
10			1700-0300									
11			1700-0300									
12			1700-0300						2007-2122GE	11h	58° 15	1
									(Coronal and prominence lines, λλ 4686,7281,4387, trace of continuum)			
13			1700-0300						1720-1828FG	7h	44° 14	1
14			1700-0300						1536-1904P	5h	278° 16	1
15			No Obs.						(Post-flare loops. Coronal line program run - λλ 4686,4471,4387,4713, weak 5303.			

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1974	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky ($x10^{-6}B_{\odot}$)	Seeing
Jan 16			1700-0300									
17			1700-0300									
18			1700-0300									
19			1700-0300									
20			1700-0300									
21			No Obs.									
22			1700-0300									
23			1700-0300									
24			1700-0300									
25			1700-0300									
26			1700-0300									
27			1700-0300									
28			No Obs.									
29			1700-0300									
30			1700-0300									
31			1700-0300									
Feb 1			1700-0300						1701-1800E	10h	48°	15 1
									1930-2030E	10h	48°	15 1
									(Very dense prominence, visual continuum. Very rich in weak lines in early run, continuum in entire visible region.			
2			1700-0300						1648-1725P	6h	44°	50 1
									(Very low prominence.)			
3			1700-0300									
4			1700-0300									
5			1700-0300									
6			1700-0300									
7			1700-0300									
8			1700-0300									
9			No Obs.									
10			No Obs.									
11			No Obs.									
12			No Obs.									
13			No Obs.									
14			1700-0300									
15			1700-0300									
16			1700-0300									
17			1700-0300									
18			1700-0300									
19			1700-0300									
20			1700-0300									

See page 92 for Footnotes.

TABLE 5.1 (continued)

PROMINENCES

Date 1974	5.1.1 OSLO Ca II and Hα UT	Position	5.1.2 MAUNA LOA 6563 Å (10A half width) UT	5.1.3 KITT PEAK High Dispersion Spectra UT	PA	λ Key (See Footnotes)	5.1.4 KITT PEAK He I 10830 Å UT	Position	5.1.5 SAC PEAK λλ 3550-9000 Å UT	PA	Sky ($\times 10^{-6} B_{\odot}$)	Seeing
Feb 21			1700-0300									
22			1700-0300									
23			1700-0300									
24			1700-0300									
25			1700-0300									
26			1700-0300									
27			1700-0300									
28			1700-0300									
Mar 1			1700-0300									
2			1700-0300									
3			No Obs.									
4			No Obs.									
5			No Obs.									
6			1700-0300									
7			1700-0300									
8			1700-0300									
9			1700-0300									
10			No Obs.									

Footnotes:

\# = Observed by A. Bean on ATM; also have magnetogram of prominence.
= ATM object.
$ = Magnetogram also
$$ = Large prominence that erupted.
% = Active prominence possibly connected with coronal transient.

m = Movies
h = Number of different heights

(a) = Also Ca II λ 8542 Å
(b) = Ca II K λ 3934 Å
(c) = λλ 10830, 8542, 3934 Å

ch = Coronal hole
CS = Center of the sun
F = Filament

Seeing Conditions:

C = Cloudy
E = Excellent
F = Fair
FC = Fair to Cloudy
FG = Fair to Good
G = Good
GE = Good to Excellent
P = Poor
VG = Very Good
W = Windy

5.1.3

Key to Wavelengths:

1 = Hα (6563 Å)
2 = He D_3 (5876 Å)
3 = Ca^+ K (3933 Å)
4 = Ca^+ (8542 Å)
5 = Hβ
6 = Hγ
7 = Hδ
8 = H_8 + He (3889 Å)
9 = Ca^+ (8498 Å)
10 = Ca^+ (8662 Å)
11 = He I (10830 Å)

CATEGORY 6.1) SOLAR RADIO OBSERVATIONS
Stations listed by longitude

6.1.1 STATION: Meudon Observatory, Nançay, France N44 E02
PROGRAM: Ground-based 408 and 169 MHz East-West Interferometer. Scale of flux is arbitrary. Shows sources of noise storms (408, 169 MHz) and sources of the slowly varying component (3 cm, 408 MHz, 169 MHz)

OBSERVING TIMES AND RATES: 1030-1300 UT; 1 picture every 4 minutes
DATA FORMAT AVAILABLE: Recording on paper

INVESTIGATOR: Dr. M. Pick
D.A.S.O.P.
Radioastronomie
Observatoire de Paris
92190 Meudon, France

6.1.2 STATION: Dwingeloo Radio Observatory N52 E06
PROGRAM: Ground-based spectra and polarization; 60-channels dynamic spectra, intensity and polarization, for 200-213 MHz, 234-246 MHz, and 282-315 MHz. Resolution: 1 MHz, 0.02 seconds; Range: 15 dB over the quiet sun level, calibrated; Threshold: 1 flux unit (10^{-22} W/m^{2}Hz).

OBSERVING TIMES AND RATES: 0700-1600 UT, occasionally local sunrise-sunset during selected periods.
MEASUREMENTS: Full disk
QUALITY (NOISE LEVEL): 1 flux unit
DATA FORMAT AVAILABLE: Prints

INVESTIGATOR: C. Slottje
Solar Radio Observatory
Netherlands Foundation for Radioastronomy
Dwingeloo, Netherlands

6.1.3 STATION: Crimean Astrophysical Observatory N44 E34
PROGRAM: Ground-based solar radio observations on 1.9, 2.5, and 3.5 cm. Intensity and polarization measurements; also, total flux observations on 10 cm.

OBSERVING TIMES: see Table
MEASUREMENTS: angular resolutions are 3.5 to 6.0 arcmin. For positions, see Table

INVESTIGATOR: Professor A. B. Severny
Crimean Astrophysical Observatory
P/O Nauchny, Crimea, 334413 USSR

6.1.4 STATION: Toyokawa Observatory N35 E137
PROGRAM: Ground-based radio scans and total flux
3.2 and 8 cm radio strip scans:

A precise observation is made around local noon (0250 UT average) with 1.1' fan-beam interferometers. Data are punched on a paper tape, processed by a computer, and displayed as corrected scan curves. Two curves corresponding to two frequencies are drawn on a common sheet, but the scale of brightness for 3.2 cm is compressed to a half of that for 8 cm.

Scan curves are taken for each 2 hours before and after local noon. Scans for 3.2 cm are made every 3 minutes by a simple drift of the sun, but scans for 8 cm are made every 10 seconds by a swept-lobe scheme.

A drift scan curve of 0.4 minutes resolution for 8 cm (sometimes also for 3.2 cm) is available when a strong isolated region exists on the sun.

Processed daily scan curves will be sent to WDC-A for the ATM intervals, but other information can be supplied on request.

Total flux observations on 3.2, 8, 15, and 30 cm:
Observations are made on a routine basis. Daily flux values, event tables, and also intensity-time profiles of outstanding events will be sent to WDC-A.

OBSERVING TIMES AND RATES: Radio scans: 0050-0450 UT
Total flux: 2200-0800 UT
MEASUREMENTS: Full disk
DATA FORMAT AVAILABLE: Tabulation / Strip charts
Direct scientist-to-scientist and to World Data Centers

INVESTIGATOR: H. Tanaka, Director
Toyokawa Observatory
Nagoya University
Toyokawa, 442 Japan

Also: S. Enome, M. Ishiguro

6.1.5 STATION: Clark Lake Radio Observatory N33 E244
PROGRAM: Ground-based perpendicular fan beam multi-frequency radio observations.
Angular resolution 3 to 15 arc minutes; 15 to 2.5 m observations.

OBSERVING TIMES AND RATES; 2 sweeps/second 20-120 MHz (see Table 4 for observing times)
MEASUREMENTS: Full disk
SPECTRAL DISPERSION: 7×10^8 Å/mm
DATA FORMAT AVAILABLE: Prints
Direct scientist-to-scientist
JOPs: 3, 6, 8, 9

INVESTIGATOR: Prof. M. R. Kundu
Astronomy Program
University of Maryland
College Park, Maryland USA 20742

6.1.6 STATION: University of Colorado Radio Astronomy Observatory N40 E255
PROGRAM: Ground-based dynamic radio spectra (interferometric, swept-frequency radio spectrograph); 37.5 m to 3.75 m (8-80 MHz) continuously swept coverage. Occasional special Jupiter tracks during daylight hours have been suspended to support the SKYLAB mission. Real-time spectral data are provided to the Space Environment Services Center of NOAA by means of a remote facsimile machine located at the Forecast Center.

OBSERVING TIMES AND RATES: Sunrise to sunset (local) daily during manned ATM periods (see Table 4 for Off Times)
MEASUREMENTS: Full disk
SPECTRAL DISPERSION: 1.35 m/mm
FILM TYPE: Kodak Plus-X, 35 mm, Type PX 417
IMAGE SCALE OF ORIGINAL: 2.88 MHz/mm average on frequency (transverse) axis; 27.3 sec/mm on time (longitudinal) axis
QUALITY: Normal sky noise unless otherwise noted
DATA FORMAT AVAILABLE: Duplicate negatives / Prints
Scientist-to-scientist and to World Data Centers

INVESTIGATOR: James W. Warwick
Department of Astro-Geophysics
University of Colorado
Boulder, Colorado USA 80302

Also: James C. Dodge

6.1.7 STATION: Harvard Radio Astronomy Station, Fort Davis, Texas N30 E257
PROGRAM: Summaries of solar radio bursts recorded in the frequency range 10-4000 MHz. The equipment used at the Station has been described by Thompson (Ap. J., 133, 643, 1961) and by Maxwell (Solar Phys., 16, 224, 1971). At 100 MHz the intensity ranges listed as 1, 2, and 3 correspond approximately to 5-50, 50-500, and > $500 \times 10^{-22} Wm^{-2}Hz^{-1}$.

OBSERVING TIMES AND RATES: continuous sunrise to sunset observations
MEASUREMENTS: Full disk

INVESTIGATOR: Alan Maxwell
Harvard Radio Astronomy Station
Fort Davis, Texas USA 79734

6.1.8 STATION: Applied Physics Laboratory, Johns Hopkins University N39 E283
PROGRAM: Swept frequency measurements are made in the frequency range of 565-1000 MHz at a rate of 100 times per second. An instrumental description has been given by Gotwols and Phipps (Solar Phys., 26, 386, 1972). The dynamic spectrum is recorded both on magnetic tape and continuously moving film traveling at 0.8 in min^{-1}. This rate of film travel will allow only 0.2 s to be resolved. The films are inspected for significant events and the corresponding magnetic tapes are permanently saved. All magnetic tapes containing bursts are replayed and rephotographed at an increased film transport rate (14.8 in min^{-1}). This transport rate permits each sweep of the received to be resolved on the film.

The intensity ranges listed as 1, 2, and 3 correspond approximately to 25-65, 65-650, and > $650 \times 10^{-22} Wm^{-2}Hz^{-1}$. The times of observations are listed, but breaks shorter than two minutes are not tabulated. The spectral type follows the notation given in *Solar-Geophysical Data*, Descriptive Text, February 1973. However, Arabic rather than Roman numerals are used. In addition, intermediate drift bursts ($\dot{\nu}$ = 30-100 MHz/sec) are designated as type 6.

Copies of the spectra may be obtained from B. L. Gotwols.

INVESTIGATOR: B. L. Gotwols
The Johns Hopkins University
Applied Physics Laboratory
8621 Georgia Avenue
Silver Spring, Maryland USA 20910

Table 6.1

SOLAR RADIO OBSERVATIONS

	6.1.1	6.1.2	6.1.3		6.1.4		6.1.5	6.1.6	6.1.7	6.1.8
DATE 1973	NANÇAY 9400 (3cm), 408 and 169 MHz (UT)	DWINGELOO 200-213 MHz 234-246 MHz 282-315 MHz (UT)	CRIMEA Intensity and Circular Polarization 1.9, 2.5, 3.5 cm 3.5 x 6.0 arcmin (UT) Position	CRIMEA Total Flux 10 cm (UT)	TOYOKAWA RADIO SCANS 3.2, 8 cm (UT)	TOYOKAWA TOTAL FLUX 3.2, 8, 15, 30 cm (UT)	CLARK LAKE (20 MHz-120 MHz) 15-2.5m (UT)	UNIV. OF COLORADO 8-80 MHz (37.5-3.75m) (UT)	HARVARD 10 MHz-4000 MHz (UT)	APPLIED PHYSICS LAB 565 MHz-1000 MHz (UT)
May 28	1030-1300	0700-1600		Daily Obs.	0050-0450	2200-0800	1600-2400	Sunrise-Sunset 1615-1619 OT	Sunrise-Sunset	1224-1929
29	"	"		"	"	"	1600-2400	0014-0028 OT	"	1638-1956
30	"	"		"	"	"	1900-2400	2330-2400 $	"	
31	"	"		"	"	"	1600-2400	0234-1130 $ 1616-1705 OT 1909-2323 $	"	1206-1957
Jun 1	"	"	0900 CS 1050 N15W62 1259 CS	"	"	"	1600-2400	Sunrise-Sunset	"	1157-1955
2	"	"		"	"	"	1600-2400	"	"	
3	"	"		"	"	"	0314-0402	"	"	1231-1906
4	"	"		"	"	"	0414-0502	1341-1349 OT	"	1234-1453 1459-1751 1822-2019
5	"	"		"	"	"	1512-0208NA	Sunrise-Sunset	"	
6	"	"	0739 S12W38 0818 S12W38 0912 S12W38 1045 CS 1059 S12W40 0830 S12W55 1004 CS	"	"	"	1351-0218NA	1616-1617 OTδ 1627-1627 OTδ 1810-1812 OTδ 1813-1815 OTδ	"	
7	"	"		"	"	"	1400-2236NA	" ts	"	
8	"	"		"	"	"	1603-0218NA	"	"	
9	"	"		"	"	"	1511-0218**	"	"	1231-1926
10	"	"		"	"	"	1420-0218NA	"	"	1156-1918
11	"	"		"	"	"	1518-0218NA	0139-0210 OTδ	"	1219-1955
12	"	"		"	"	"	1612-0218NA	1130-1205 % 1956-2001 OT	"	1245-1516 1523-2000 2004-2047
13	"	"		"	"	"	1518-0208	Sunrise-Sunset ts	"	1201-1950*
14	"	"		"	"	"	1435-0209	" ts	"	1201-1432 1503-1953
15	"	"		"	"	"	1445-0218	2051-2142 OT	"	1208-1954*
16	"	"		"	"	"		0800-2400 %	"	1224-1535* 1539-1926*
17	"	"		"	"	"	1540-0218	0000-1130 %	"	1203-1926
18	"	"		"	"	"		Sunrise-Sunset	"	1220-1440 1510-1952
19	"	"		"	"	"		"	"	
20	"	"		"	"	"		"	"	
21	"	"		"	"	"		"	"	1226-1507 1510-1952
22	"	"		"		"		0900-1600 %	"	1159-1930
23	"	"		"		"			"	1238-1852
24	"	"		"		"			"	
25	"	"		"		"			"	1214-1356 1433-1746
26	"	"		"		"			"	
27	"	"		"		"			"	
28	"	"		"		"			"	
29	"	"		"		"			"	1858-1920*
30	"	"		"		"			"	1202-1819* 1855-1931* 1214-1918*

See page 100 for Footnotes.

Table 6.1 continued

DATE 1973	6.1.1 NANÇAY 9400 (3cm), 408 and 169 MHz (UT)	6.1.2 DWINGELOO 200-213 MHz 234-246 MHz 282-315 MHz (UT)	6.1.3 CRIMEA Intensity and Circular Polarization 1.9, 2.5, 3.5 cm 3.5 x 6.0 arcmin (UT) Position	CRIMEA Total Flux 10 cm (UT)	6.1.4 TOYOKAWA RADIO SCANS 3.2, 8 cm (UT)	TOYOKAWA TOTAL FLUX 3.2, 8, 15, 30 cm (UT)	6.1.5 CLARK LAKE (20 MHz-120 MHz) 15-2.5m (UT)	6.1.6 UNIV. OF COLORADO 8-80 MHz (37.5-3.75m) (UT)	6.1.7 HARVARD 10 MHz-4000 MHz (UT)	6.1.8 APPLIED PHYSICS LAB 565 MHz-1000 MHz (UT)
Jul 1	1030-1300	0700-1600		Daily Obs		2200-0800			Sunrise-Sunset	1210-1925
2	"	"		"		"			"	1238-1530
										1600-1953
3	"	"		"		"			"	
4	"	"		"		"			"	
5	"	"		"		"			"	
6	"	"		"		"			"	1155-1920
7	"	"		"		"			"	1229-1449
										1456-1930
8	"	"		"		"			"	1217-1930
9	"	"		"		"			"	1211-1752
										1820-1938
10	"	"		"		"			"	
11	"	"		"		"			"	
12	"	"		"		"			"	1154-1251
										1307-1432
										1502-1805
										1832-1916
										1938-1954
13	"	"		"		"			"	1156-1918
14	"	"		"		"			"	1139-1845
15	"	"		"		"			"	1131-1849
16	"	"		"		"			"	1243-1334
										1357-1649
										1809-1947
17	"	"		"		"			"	
18	"	"		"		"			"	
19	"	"		"		"			"	
20	"	"		"		"			"	
21	"	"		"		"			"	1129-1725
22	"	"		"		"			"	1126-1237
										1250-1855
23	"	"		"		"			"	1226-1314
										1352-1544
										1547-1731
										1825-2000
24	"	"		"		"			"	
25	"	"		"		"			"	
26	"	"		"		"			"	1209-1458
27	"	"				"			"	
28	"	"				"		Sunrise-Sunset$ 2200 0T ts	"	
29	"	"				"		Sunrise-Sunset$	"	1128-1856
30	"	"				"		"	"	1219-1600
										1656-1726
										1751-1829
										1901-1955
31	"	"				"		"	"	

See page 100 for Footnotes.

Table 6.1 continued

	6.1.1	6.1.2	6.1.3		6.1.4		6.1.5	6.1.6	6.1.7	6.1.8
DATE 1973	NANÇAY 9400 (3cm), 408 and 169 MHz (UT)	DWINGELOO 200-213 MHz 234-246 MHz 282-315 MHz (UT)	CRIMEA Intensity and Circular Polarization 1.9, 2.5, 3.5 cm 3.5 x 6.0 arcmin (UT) Position	CRIMEA Total Flux 10 cm (UT)	TOYOKAWA RADIO SCANS 3.2,8 cm (UT)	TOYOKAWA TOTAL FLUX 3.2, 8, 15, 30 cm (UT)	CLARK LAKE (20 MHz-120 MHz) 15-2.5m (UT)	UNIV. OF COLORADO 8-80 MHz (37.5-3.75m) (UT)	HARVARD 10 MHz-4000 MHz (UT)	APPLIED PHYSICS LAB 565 MHz-1000 MHz (UT)
Aug 1	1030-1300	0700-1600				2200-0800		Sunrise-Sunset$	Sunrise-Sunset	1155-1446 1729-1811
2	"	"				"		" $ ts	"	1911-1955 1203-1329 1554-1732
3	"	"				"		" $	"	1801-1955 1244-1423
4	"	"				"		2100-2400 0Tts$	"	1130-1842
5	"	"				"		Sunrise-Sunset$	"	1132-1416 1423-1845
6	"	"				"		Sunrise-2100 $	"	1214-1712 1740-1920
7	"	"				"		Sunrise-Sunset	"	
8	"	"				"		"	"	
9	"	"				"		"	"	1151-1450 1456-1727 1844-1945
10	"	"				"		"	"	1156-1657 1723-1748 1805-1826 1855-1943
11	"	"				"		"	"	1134-1845
12	"	"				"		"	"	1137-1847
13	"	"				"		"	"	1218-1406 1412-1700 1803-1941
14	"	"				"		"	"	
15	"	"				"		"	"	
16	"	"				"		"	"	1203-1533 1603-1952
17	"	"				"		"	"	1157-1429 1436-1643 1820-1958
18	"	"				"		"	"	1149-1845
19	"	"				"		"	"	1151-1244 1254-1844
20	"	"				"		"	"	1217-1247 1318-1449 1637-1925
21	"	"				"		"	"	
22	"	"				"		"	"	
23	"	"				"		"	"	1156-1418 1450-1524 1550-1812 1842-1954
24	"	"				"		"	"	1201-1454 1519-1535
25	"	"				"		"	"	

See page 100 for Footnotes.

Table 6.1 continued

DATE 1973	6.1.1 NANÇAY 9400 (3cm), 408 and 169 MHz (UT)	6.1.2 DWINGELOO 200-213 MHz 234-246 MHz 282-315 MHz (UT)	6.1.3 CRIMEA Intensity and Circular Polarization 1.9, 2.5, 3.5 cm 3.5 x 6.0 arcmin (UT) Position	CRIMEA Total Flux 10 cm (UT)	6.1.4 TOYOKAWA RADIO SCANS 3.2,8 cm (UT)	TOTAL FLUX 3.2, 8, 15, 30 cm (UT)	6.1.5 CLARK LAKE (20 MHz-120 MHz) 15-2.5m (UT)	6.1.6 UNIV. OF COLORADO 8-80 MHz (37.5-3.75m) (UT)	6.1.7 HARVARD 10 MHz-4000 MHz (UT)	6.1.8 APPLIED PHYSICS LAB 565 MHz-1000 MHz (UT)
Aug 26	1030-1300	0700-1600						Sunrise-Sunset	Sunrise-Sunset	
27	"	"				"		1655-1715 OT	"	
28	"	"				"		Sunrise-Sunset	"	
29	"	"				"		"	"	
30	"	"				"		0127-0210 OT	"	1213-1955
31	"	"				"		1608-1635 OT Sunrise-Sunset %	"	1204-1219 1225-1941
Sept 1	"	"				"		" %	"	1204-1526 1747-1925
2	"	"				"		" %	"	1209-1219 1422-1535
3	"	"				"		" %	"	
4	"	"				"		" %	"	
5	"	"				"		" %	"	
6	"	"				"		" %	"	1215-1226 1346-1359 1422-1458 1622-1647 1746-1844 1930-1946
7	"	"				"		" %	"	1211-1320 1519-1937
8	"	"				"		" %	"	
9	"	"				"		Sunrise-1700 %	"	1217-1918
10	"	"				"			"	1225-1443 1510-1748
11	"	"				"		2325-2400 OT	"	
12	"	"				"		0000-0205 OT	"	
13	"	"				"			"	1215-1338 1341-1457 1615-1810 1818-1944
14	"	"				"		Sunrise-Sunset 1950-2145 $	"	1208-1423 1454-1938
15	"	"				"		Sunrise-Sunset	"	1206-1846
16	"	"				"		"	"	1512-1727
17	"	"				"		"	"	1217-1422 1502-1642 1657-1950
18	"	"				"		"	"	
19	"	"				"		"	"	
20	"	"				"		"	"	1522-1638
21	"	"				"		"	"	1206-1413 1442-1510 1601-2017
22	"	"				"		"	"	1216-1404 1424-1924
23	"	"				"		"	"	1220-1919
24	"	"				"		"	"	1339-1425 1451-1708 1730-1813

See page 100 for Footnotes.

Table 6.1 continued

DATE 1973	6.1.1 NANÇAY 9400 (3cm), 408 and 169 MHz (UT)	6.1.2 DWINGELOO 200-213 MHz 234-246 MHz 282-315 MHz (UT)	6.1.3 CRIMEA Intensity and Circular Polarization 1.9, 2.5, 3.5 cm 3.5 x 6.0 arcmin (UT) Position	CRIMEA Total Flux 10 cm (UT)	6.1.4 TOYOKAWA RADIO SCANS 3.2, 8 cm (UT)	TOYOKAWA TOTAL FLUX 3.2, 8, 15, 30 cm (UT)	6.1.5 CLARK LAKE (20 MHz-120 MHz) 15-2.5m (UT)	6.1.6 UNIV. OF COLORADO 8-80 MHz (37.5-3.75m) (UT)	6.1.7 HARVARD 10 MHz-4000 MHz (UT)	6.1.8 APPLIED PHYSICS LAB 565 MHz-1000 MHz (UT)
Sept 25	1030-1300	0700-1600						Sunrise-Sunset	Sunrise-Sunset	
26	"	"				"			"	
27	"	"				"			"	
28	"	"				"			"	
29	"	"				"			"	
30	"	"				"			"	
Oct 1	"	"				"			"	1242-1404
2	"	"				"			"	
3	"	"				"			"	
4	"	"				"			"	
5	"	"				"			"	1502-1846 1850-1946
6	"	"				"			"	
7	"	"				"			"	
8	"	"				"			"	
9	"	"				"			"	
10	"	"				"			"	
11	"	"				"			"	For additional data see Table in Section V page 151.
12	"	"				"			"	

Footnotes:

6.1.3

CS = center of the sun, intensity only

6.1.6

NA = No Activity
OT = Off Time
** = 0054-0058 numerous III's
* = bursts
ts = thunderstorm activity
$ = tracking problems
% = 5 min. markers incorrect
δ = 40-80 MHz

NOTE: Similar observations continue through February, 1974, in Categories 6.1.1, 6.1.2, 6.1.4 and 6.1.7.
Sunrise to sunset observations were made November 16, 1973 - February 8, 1974 in Category 6.1.6.

CATEGORY 7.1) X-RAY AND SFD MEASUREMENTS

7.1.1 STATION: SOLRAD 9 and 10
PROGRAM: Satellite ionization chamber measurements of solar X-ray emission at 0.5-3 Å, 1-5 Å, 1-8 Å, 8-20 Å, and 1-20 Å

OBSERVING TIMES AND RATES: see *Solar-Geophysical Data*, Descriptive Text, February 1973
MEASUREMENTS: Full disk
DATA FORMAT AVAILABLE: Tabulation for specified time intervals / computer plots

INVESTIGATOR: Robert W. Kreplin
Naval Research Laboratory, Code 7125
Washington, D. C. USA 20375

7.1.2 STATION: Sacramento Peak Observatory
PROGRAM: Ground-based SFD measurements of impulsive 10-1030 Å flux enhancements from solar flares. Observing SFDs (Sudden Frequency Deviations) at Sac Peak on the 5, 10, and 15 MHz signals from WWV and computing the 10-1030 Å energy flux enhancement of solar flares from the SFD data.

OBSERVING TIMES AND RATES: Continuous
MEASUREMENTS: Full disk
QUALITY: Fair
DATA FORMAT AVAILABLE: Digitized (card / tape) / Computer plot / Tabulation to World Data Centers

INVESTIGATOR: Richard F. Donnelly
NOAA Space Environment Lab.
Boulder, Colorado USA 80302

Note: SFD data results from Sacramento Peak Observatory: Boulder, Colorado; Leicester, England; Huntsville, Alabama: and Hawaii are available in *Report UAG-36, "An Atlas of Extreme Ultraviolet Flashes of Solar Flares Observed Via Sudden Frequency Deviations during the ATM-SKYLAB Missions."*

III. DESCRIPTIVE PROGRAM INFORMATION SUBMITTED WITHOUT OBSERVING TIME DATA

Big Bear Solar Observatory:

a.) Full disk white light pictures every 30 minutes.

b.) Spectra are taken from time to time as well.

c.) Some filtergrams in λ10830 are also planned.

Pasadena: H-alpha cinematograms of about 2/3 of the disk are taken with a 5-inch telescope when Big Bear is cloudy and Pasadena is clear.

INVESTIGATOR: Harold Zirin
California Institute of Technology
354-33
Pasadena, California USA 91109

Sacramento Peak:

Studies of the Physical Properties of Chromospheric Plages by Means of their He I and Ca II Spectra.

In this coordinated observing program observations will be obtained in the He I 584, 537, and 591 Å lines and continuum by the HCO Spectrometer on ATM simultaneous with ground-based observations at Sacramento Peak Observatory of the He I 5876 and 10830 Å lines and several lines of Ca II. These observations will be of rasters centered on chromospheric plages and quiet regions and possibly on quiescent prominences off the limb. The purposes of this program are to understand the mechanism by which the He I spectrum is excited in these structures and to use the He I and Ca II spectra to determine the physical properties of these structures.

INVESTIGATOR: Jeffrey L. Linsky
Joint Institute for Laboratory Astrophysics
University of Colorado
Boulder, Colorado USA 80302

The University of Chicago:

Two rocket experiments will be launched in late August and late November to observe X-ray spectra of active region features with spectral resolving power in the range 1000 to 5000 and spatial resolution of ten arc seconds. The wavelength range from 5 to 25 Å will be covered with calibrated crystal spectrometers.

INVESTIGATOR: Richard L. Blake
The University of Chicago
Department of Astronomy and Astrophysics
1100-14 East 58th Street
Chicago, Illinois USA 60637

Near Infrared Photography of the Outer Corona during 1973 Solar Eclipse:
Site: Loiyengalani, Kenya

The objective of this experiment is to record the total brightness, structural details and polarization of the outer coronal features (2.5 $R_\odot$ to 20 $R_\odot$) at the 1973 Solar Eclipse. Functionally, these observations are carried out with a 200 mm f/2.9 Dallmeyer lens and the following complimentary equipment:

1.) External occulting disk 1.5 m in front of the objective that
   a.) completely occults the bright inner corona (1.0 $R_\odot$ to 2.0 $R_\odot$),
   and b.) vignets the intermediate corona (2.0 $R_\odot$ to 10.0 $R_\odot$).

2.) Wratten 87 and HR polaroids (P_1, P_2, P_3, $\Delta\theta = 60°$) that transmit only Near Infrared ($\lambda > 7500$ Å) thereby filtering out much Rayleigh scattered skylight, and

3.) Kodak Aerographic Infrared film exposed in a Beattie 70 mm magazine.

During the 4min57sec of totality, the following exposures will be taken:
48sec: w87; 24 sec: P_1, P_2, P_3, w87; 12sec: P_1, P_2, P_3.

Data are available on magnetic tape; graphs to be published.

	Camera #1	Camera #2
Coronal Coverage	1 $R_\odot$ -3.5 $R_\odot$	2.5 $R_\odot$ -20 $R_\odot$
Focal length	178 cm	20 cm
Aperture	11.1 cm	6.9 cm
Focal ratio	f/16	f/2.9
Polaroids (3x60°)	HN38	HR
Film (70mm)	Linagraph Shellburst	Aerographic IR (2424)
Compensation for Brightness Range	3 exposure sequences	2 exposure sequences + external occulting disk

INVESTIGATOR: Carl G. Lilliequist
High Altitude Observatory
University of Colorado
Boulder, Colorado USA 80302

SECTION IV

OTHER SOURCES OF SKYLAB PERIOD DATA

Data Available: Some SKYLAB period data available in publication form are cited here. A list of solar periodicals is given, along with addresses of the responsible institutions. The WDC-A for Solar-Terrestrial Physics publishes the Toyokawa, Ottawa and Penticton radio data in its monthly publication, *Solar-Geophysical Data*. The WDC-A for Solar-Terrestrial Physics also receives most of the periodicals when they become available:

Periodicals

Argentina: *Solar Radio Emission 408 MHz Data*,
Observatorio de Fisica Cosmica, 3226 Mitre, San Miguel (FCGSM)
Buenos Aires, Argentina (monthly)

Belgium: *Observations Photospheriques Solaires - Nombre de Wolf (Uccle, Belgium)*
Observations Chromospheriques Solaires - Eruptions, Proturberances (Uccle)
Bulletin d'Observations: Activite Solaire - Observations Radioelectriques Solaires - 600 MHz (Humain, Belgium)
Observatoire Royal de Belgique, Ave. Circulaire 3, Brussels, Belgium (monthly)

Canada: *Solar Noise Observations at 2800 Mc/s (Ottawa - ARO) and 2700 Mc/s (Penticton - DRAO)*
Series C Monthly Report, National Research Council, Radio Astronomy Section
Ottawa 7, Ontario, Canada

China: *Report on Sunspot Observations*
Taiwan Provincial Weather Bureau Observatory, Taipei, Taiwan, China (quarterly)

England: *Photoheliographic Results, Greenwich Royal Observatory Bulletins*
Royal Greenwich Observatory, Herstmonceux Castle, Hailsham, Sussex, England (annually)

France: *Carte Synoptiques de la Chromosphere Solaire*
Observatoire de Paris, 92 Meudon, France (monthly)

Germany: *Daily Maps of the Sun*
Fraunhofer Institut, Freiburg i/Breisgau, Germany (twice monthly)
Daily Mean Value of Solar Flux Density
Heinrich-Hertz Institut, 1199 Berlin-Adlershof, Rudower Chaussee 5, Germany (monthly)

Italy: *Osservazion Solari, Solar Flux and Distinctive Events*
Osservatorio Astronomico Di Trieste
Solar Phenomena - Monthly Bulletin and Photographic Supplement
Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly)
Photographic Journal of the Sun
Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly) (27 day rotation)

Japan: *Bulletin of Solar Phenomena*
Tokyo Astronomical Observatory, Tokyo, Japan (quarterly)
Monthly Report of Solar Radio Emission
Radio Astronomy Section, Research Institute of Atmospherics, Nagoya University
Toyokawa, Japan
Solar Radio Emission
Tokyo Astronomical Observatory, University of Tokyo, Mitaka, Japan (monthly)
Solar Activity Chart
WDC-C2, Toyokawa Observatory, Nagoya University, Toyokawa, Japan (annually)

Lebanon *Solar Photospheric Observations*
Monthly Bulletin, Astronomical Section, Lee Observatory
American University of Beirut, Lebanon (monthly)

Netherlands: *Solar Radio Noise Observations - Stations Nera and Paramaribo*
Sonnenborgh Observatory, Servaas Bolwerk 15, Utrecht, Netherlands (monthly)

Switzerland: *IAU Quarterly Bulletin on Solar Activity*
Eidgen Sternwarte, Zurich, Switzerland

Union of Soviet Socialist Republics:
СОЛНЕЧЫЕ ДАННЫЕ *(Solar Data)*
USSR Academy of Science (monthly)

United States of America:
AFCRL Geophysics and Space Data Bulletin
AFCRL, L. G. Hanscom Field, Bedford, Massachusetts, USA (quarterly)
Preliminary Report and Forecast of Solar-Geophysical Activity
Space Environment Services Center, NOAA, Boulder, Colorado, 80302 USA (weekly)
Solar Radio Flux Observed at University Park
Pennsylvania Radio Astronomy Observatory, Pennsylvania State University
University Park, Pennsylvania, USA (quarterly)
Solar-Geophysical Data
NOAA, Boulder, Colorado 80302 USA (monthly)

Solar-Geophysical Data: The following index gives the SGD issue in which the various types of solar data appear. The index covers the SKYLAB period plus one month before and after this period (April 1973-March 1974). Page numbers follow the SGD issue number. The letter "B" refers to the Comprehensive Report, Part II, of SGD.

SOLAR DATA INDEX TO *SOLAR-GEOPHYSICAL DATA* DURING THE SKYLAB PERIOD

	Type of Data	1973 Apr		May		June		July		Aug		Sep		Oct		Nov		Dec		1974 Jan		Feb		Mar	
A.	Solar and Interplanetary Phenomena		p.																						
A.1	Sunspot Drawings	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.2a	Zürich Provisional Relative Sunspot Numbers R_Z	345	7	346	7	347	7	348	7	349	7	350	7	351	7	352	7	353	7	354	7	355	7	356	7
A.2b	Zürich Final Sunspot Numbers R_Z	355	6	355	6	355	6	355	6	355	6	355	6	355	6	355	6	355	6						
A.2c	American Relative Sunspot Numbers R_A'	345	7	346	7	347	7	348	7	349	7	350	7	351	7	352	7	353	7	354	7	355	7	356	7
A.3a	Mt. Wilson Magnetograms	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots	346	90	347	86	348	84	349	88	350	90	351	86	352	86	353	86	354	86	355	86	356	80	357	88
A.4	Hα Spectroheliograms	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.5	Calcium Plage Drawings - McMath (or Catania)	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.5a	Calcium Plage (McMath) and Sunspot Regions	346	90	347	86	348	84	349	88	350	90	351	86	352	86	353	86	354	86	355	86	356	80	357	88
A.5b	McMath Daily Calcium Plage Index	346	96	347	92	348	90	349	95	350	95	351	91	352	93	353	92	354	91	355	92	356	86	357	96
A.6	Hα Synoptic Charts	---		---		348	22	349	25	350	27	351	25	352	23	353	25	354	23	355	23	356	23	357	25
A.7b	Coronal Line Emission	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.7c	White-Light Corona (NRL OSO-7, 1971-083A)	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.7d	Solar EUV Spectroheliogram Fe XV 284 Å (GSFC OSO-7, 1971-083A)	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.7e	Solar XUV Coronagrams (NRL OSO-7, 1971-083A)	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	---		---		---	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)	345	7	346	7	347	7	348	7	349	7	350	7	351	7	352	7	353	7	354	7	355	7	356	7
A.8ac	2800 MHz - Daily Values of Adjusted Solar Flux (ARO-Ottawa)	345	7	346	7	347	7	348	7	349	7	350	7	351	7	352	7	353	7	354	7	355	7	356	7
A.8g	Daily Values of Adjusted Solar Flux (AFCRL)	345	7	346	7	347	7	348	7	349	7	350	7	351	7	352	7	353	7	354	7	355	7	356	7
A.9a	9.1 cm Radio Maps of the Sun (Stanford)	346	30	347	24	348	24	349	26	350	28	---		---		---		---		---		---		---	
A.9b	2.1 cm Radio Maps of the Sun (Fleurs)	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	---		---		---	
A.9c	8.6 mm Radio Maps of the Sun (Prospect Hill)	---		---		---		---		350	28	351	26	353B	54	353	6	354	24	356B	56	356	24	---	
A.10a	169 MHz - Interferometric Observations (Nancay)	345	15	346	15	347	13	348	13	349	13	350	14	351	13	352	13	353	13	354	13	355	13	356	12
A.10c	21 cm East-West Solar Scans (Fleurs)	345	17	346	17	347	15	348	15	349	15	351	107	351	15	353	104	353	15	354	15	355	15	356	14
A.10d	43 cm East-West Solar Scans (Fleurs)	345	18	346	18	347	16	348	16	349	16	351	108	351	16	353	105	353	16	354	16	355	16	356	15
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)	345	16	346	16	347	14	348	14	349	14	350	15	351	14	352	14	353	14	354	14	355	14	356	13
A.11aa	Solar X-ray Radiation (Explorer 37 or 44)	346	97	347	93	348	91	349	96	350	96	351	92	352	94	353	93	354	92	355	93	356	87	364B	57
A.11ab	Solar X-ray Radiation (Explorer 37 or 44) Graphs	350B	67	351B	61	352B	30	353B	26	354B	21	355B	37	356B	24	357B	21	358B	20	359B	18	364B	44	365B	84
A.11f	Solar X-ray Spectroheliograms (GSFC OSO-7,1971-083A)	346	30	347	24	348	24	349	26	350	28	351	26	352	24	353	26	354	24	355	24	356	24	357	26
A.12aa	Solar Protons (Explorer 41 or 43) Daily hourly values	353B	76	353B	82	---		---		---		---		---		---		---		---		---		---	
A.12ab	Solar Protons (Explorer 41 or 43) Graphs	353B	76	353B	82	---		---		---		---		---		---		---		---		---		---	
A.12ba	Cosmic Ray Protons (Pioneers 6 & 7)	---		346	26	347	20	---		349	20	350	20	---		352	17	353	20	---		---		356	17
A.12bb	Cosmic Ray Protons (Pioneers 8 and 9)	345	27	346	27	347	21	348	19	349	21	350	21	351	20	352	18	353	21	354	19	355	19	356	18
A.13a	Solar Wind (Pioneers 6 & 7)	---		346	26	347	20	---		349	20	350	20	---		352	17	353	20	---		---		356	17
A.17	Interplanetary Magnetic Field (Pioneer 8)	---		346	27	347	21	---		349	21	350	21	---		---		353	21	354	19	---		---	
A.17	Interplanetary Magnetic Field (Pioneer 9)	345	27	346	27	347	21	348	19	349	21	350	21	351	20	352	18	353	21	354	19	355	19	356	18
A.17c	Inferred IP Magnetic Field	348	20	348	20	348	20	348	20	349	22	350	22	351	21	352	19	353	22	354	20	355	20	356	19
A.18	Interplanetary Electric Field (Pioneer 8)	---		346	27	347	21	---		349	21	350	21	---		---		353	21	354	19	---		---	
A.18	Interplanetary Electric Field (Pioneer 9)	345	27	346	27	347	21	348	19	349	21	350	21	351	20	352	18	353	21	354	19	355	19	356	18
C.	Flare-Associated Events																								
C.1a	Optical Observations Flares	345	10	346	10	347	10	348	10	349	10	350	10	351	10	352	10	353	10	354	10	355	10	356	10
C.1ba	Optical Observations Flares (Including Standardized Data)	350B	4	351B	4	352B	4	353B	4	354B	4	355B	4	356B	4	357B	4	358B	4	359B	4	360B	4	361B	4
C.1d	Flare Patrol Observations	350B	29	351B	27	352B	19	353B	16	354B	14	355B	22	356B	15	357B	12	358B	13	359B	12	360B	12	361B	10
C.1e	Flare Indices (by day)	350B	28	351B	21	352B	14	353B	11	354B	10	355B	16	356B	12	357B	9	358B	10	359B	9	360B	10	361B	8
C.1f	Flare Index by Region	351B	82	352B	63	353B	51	354B	45	355B	61	356B	51	357B	45	358B	45	359B	45	360B	29	361B	22	362B	47
C.3	Solar Radio Waves - Fixed Frequencies - Outstanding Occurrences	350B	30	351B	28	352B	20	353B	17	354B	15	355B	23	356B	16	357B	13	358B	14	359B	13	360B	13	361B	11
	Solar Radio Waves - Fixed Frequencies - Selected	345	19	346	19	347	17	348	17	349	17	350	16	351	17	352	15	353	17	354	17	355	17	356	16
C.3t	43.25, 80 and 160 MHz Selected Bursts (Culgoora)	346	119	347	111	348	105	349	109	350	106	351	106	352	105	353	102	354	101	355	103	356	98	357	103
C.4	Solar Radio Spectral Observations	346	104	347	100	348	97	349	101	350	100	351	97	352	99	353	97	354	96	355	98	356	91	357	99
C.5c	Solar X-ray Radiation (Explorer 37)	346	99	347	95	348	93	349	98	350	98	351	94	352	96	353	95	354	94	355	95	356	89	---	
C.6	Sudden Ionospheric Disturbances	346	100	347	97	348	94	349	99	350	99	351	95	352	97	353	96	354	95	355	96	356	90	357	97
H.	Miscellaneous																								
H.60	IUWDS Alert Decisions	345	5	346	5	347	5	348	5	349	5	350	5	351	5	352	5	353	5	354	4	355	4	356	4
H.62	Abbreviated Calendar Record	351B	82	352B	56	353B	44	354B	38	355B	54	356B	44	357B	38	358B	38	359B	38	360B	22	361B	16	362B	40

NOAA Data: The Space Environment Forecast Center, NOAA, Boulder, Colorado, 80302, USA, is presently microfilming all available data pertaining to the SKYLAB period received at the Center. Generally, these data will include:

Calcium observations from McMath, Haleakala, Catania, Sac Peak and Kitt Peak Observatories
Solar Magnetic Fields from Aerospace, Big Bear, Sac Peak, Kitt Peak and Mt. Wilson observatories
Coronal intensities from Mauna Loa and Sac Peak observatories
Sweep Frequency Radio Data from Culgoora and Sagamore Hill observatories
Also, OSO-7 X-ray and EUV maps and ATS-1 proton data from GSFC, NRL OSO-7 EUV maps, and SOLRAD X-ray fluxes

All other pertinent data received are also being included. These data are available to interested persons at the cost of producing a copy of the microfilmed data.

Coronal hole maps dervived from the OSO-7 GSFC EUV spectroheliograms for the SKYLAB period are expected to be available shortly in a NOAA Technical Report. Also, a 24-hour sun movie is being prepared for SKYLAB period by the Space Environment Laboratory. /.

NOAA Technical Memorandum ERL SEL-33, "A Correlation of Ground-Based Data for 17-21 August 1973", by Joseph M. Kunches became available in October 1974. During the time period covered by this report SKYLAB was conducting a study to determine solar wind parameters.

Report UAG-36, An Atlas of Extreme Ultraviolet Flashes of Solar Flares Observed Via Sudden Frequency Deviations during the ATM SKYLAB Missions, by R. F. Donnelly, E. L. Berger, Lt. J. C. Busman, B. Henson, T. B. Jones, G. M. Lerfald, K. Najita, W. M. Retallack and W. J. Wagner, prepared by the NOAA Space Environment Laboratory and issued through the WDC-A for Solar-Terrestrial Physics, was published in October 1974. Another report, *Report UAG-40, H-Alpha Synoptic Charts of Solar Activity for the Period of SKYLAB Observations May, 1973 - March 1974*, by Patrick S. McIntosh, was published in February 1975.

ATM Data: It is expected that all SKYLAB/ATM scientific data will be stored at the National Space Science Data Center (NSSDC) by late 1975. These will include the ATM Missions Operation Log. Requests for copies of these data should be made to:

National Space Science Data Center
Code 601.4
Goddard Space Flight Center
Greenbelt, Maryland 20771 USA

Harvard College Observatory is preparing an Hα Atlas compiled from data taken by the Hα telescopes on board SKYLAB. This Atlas is to be available to the ATM/SKYLAB Principal Investigators. For further information, contact:

Daryl Torgerson
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts, 02138 USA

SECTION V

SOME SKYLAB PERIOD DATA

Detailed Charts of Flare Patrols and Observations for July 29 and September 7, 1973

We present here graphical representations of the flare patrol data for the two most active days during the SKYLAB mission from data of 33 solar observatories reporting to WDC-A for Solar-Terrestrial Physics.

There is a separate chart for each of the days July 29 and September 7, 1973 and a separate line for each observatory. The observatories are in order of longitude with a numerical code to key to the observatories listed in the Table below.

In the charts, observation times are indicated by an open box, where C, V, and P indicate patrol is cinematographic, visual or visual with some photographs, respectively. Lines with arrows indicate nighttime at each of the stations. Sunrise and sunset are only approximate, depending on where in the 15° time zone the station lies.

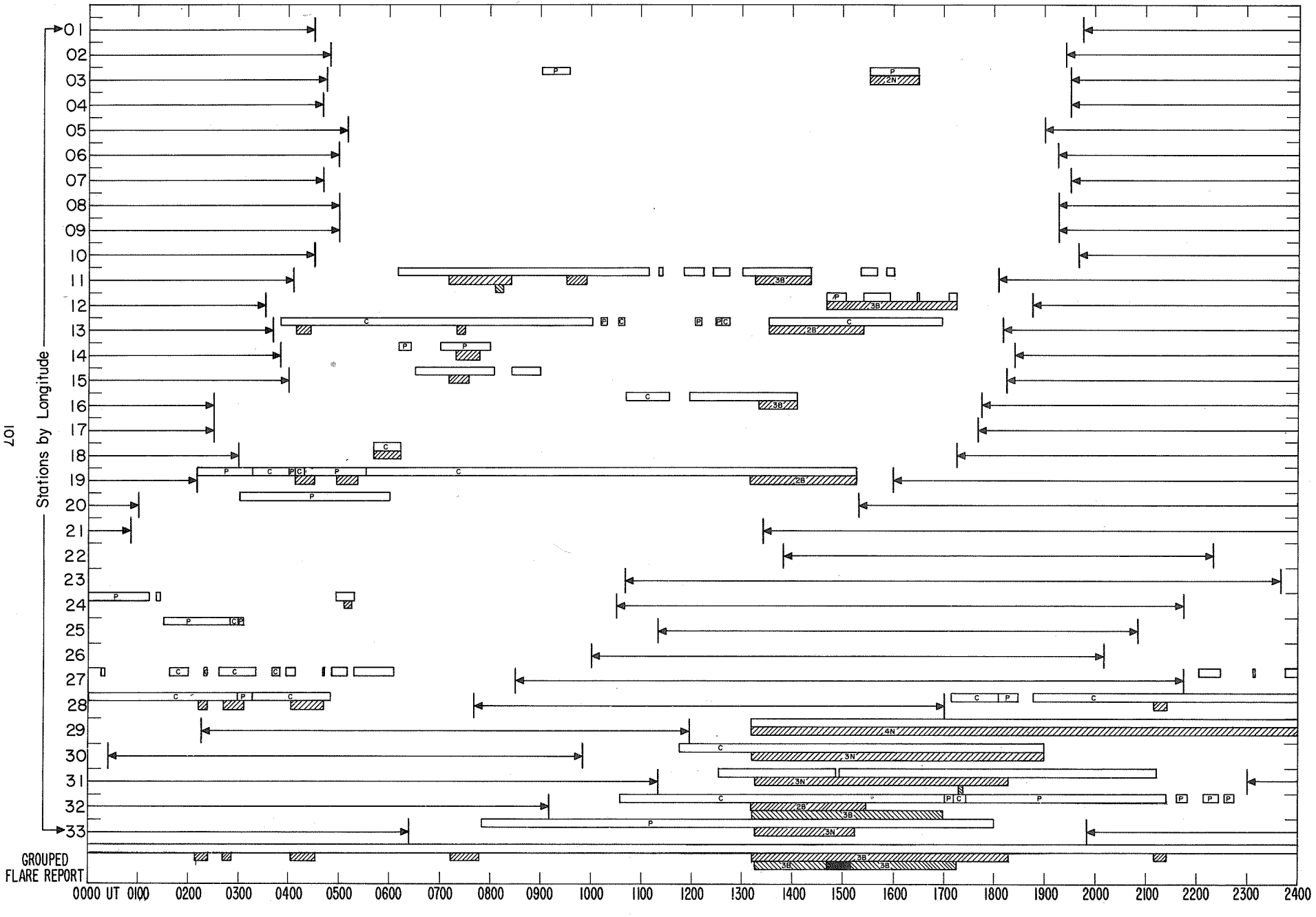
Reported flares are shown by a cross-hatched area below the open boxes. Flares with importance ≥ 1F are marked with the importance rating. Any second flare reported at the same time is shown with reversed cross-hatched area. Due to lack of space, if there were three flares whose durations overlap, the overlapping period of the second and third is simply blackened in.

The bottom line gives the same information for the flare patrol network as a whole. The flare data are the "Grouped Flare Reports" from *Solar-Geophysical Data*.

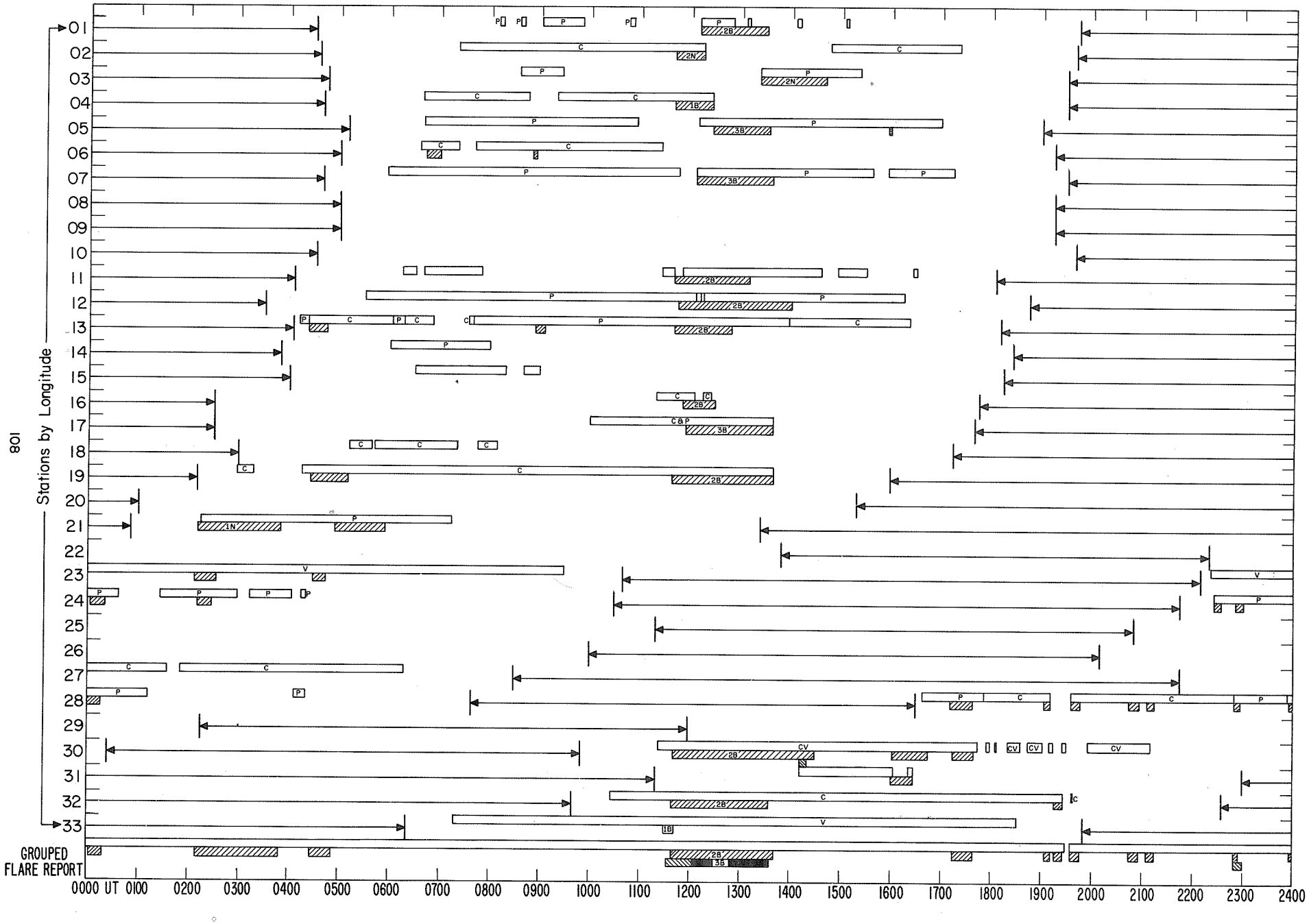
Table of Observatories

01	Herstmonceux	N50 E00	18	Abastumani	N41 E42
02	Meudon	N49 E02	19	Tehran	N35 E51
03	Locarno	N46 E08	20	Tashkent	N41 E69
04	Zürich	N47 E08	21	Kodaikanal	N10 E77
05	Arcetri	N34 E11	22	Siberie	N52 E104
06	Monte Mario	N41 E12	23	Carnarvon	S25 E114
07	Wendelstein	N47 E12	24	Manila	E14 E121
08	Capri-F	N40 E14	25	Voroshilov	N43 E132
09	Capri-S	N40 E14	26	Mitaka	N35 E139
10	Ondrejov	N49 E14	27	Culgoora	S30 E147
11	Catania	N37 E15	28	Palehua	N21 E204
12	Upice	N50 E16	29	Boulder	N40 E255
13	Athens 1,2	N37 E23	30	McMath	N42 E277
14	Bucharest	N44 E26	31	Huancayo	S12 E285
15	Istanbul	N41 E28	32	Ramey	N18 E292
16	Kiev	N50 E30	33	Gran Canaria	N28 E345
17	Kharkov	N50 E36			

SOLAR FLARE OBSERVATIONS FOR JULY 29, 1973



SOLAR FLARE OBSERVATIONS FOR SEPTEMBER 7, 1973



801

Nançay East-West Solar Scans

East-West solar scans from Nancay covering the SKYLAB period are reproduced on the following pages. The scale of flux is arbitrary. These data permit the identification both of sources of noise-storms (408 MHz and 169 MHz) and of sources of the slowly varying component (9400 MHz, 408 MHz and 169 MHz).

169 MHz data:

The main lobes are parallel to the meridian plane: the half power width is 3.7 minutes of arc in the East-West direction. The main lobes are about 1° apart. The records give the strip intensity distribution from the center of the disk to 30 arcmin to the West and East.

Each noisy region is reported on a chart which is published in *Solar-Geophysical Data*. The broad humps of weak intensity are from thermal origin.

The absolute calibration was difficult to determine during the period May to November 1973. For several days the uncertainty may reach 25%. Anyone who would like to deduce any absolute flux values from these data is kindly requested to contact the radioheliograph group (Mrs. Lantos) at Meudon Observatory.

408 MHz data:

The half power is 1.7 arcmin in the East-West direction. The main lobes are about 50 arcmin apart.

The noisy regions and the sources of thermal emission are both observed.

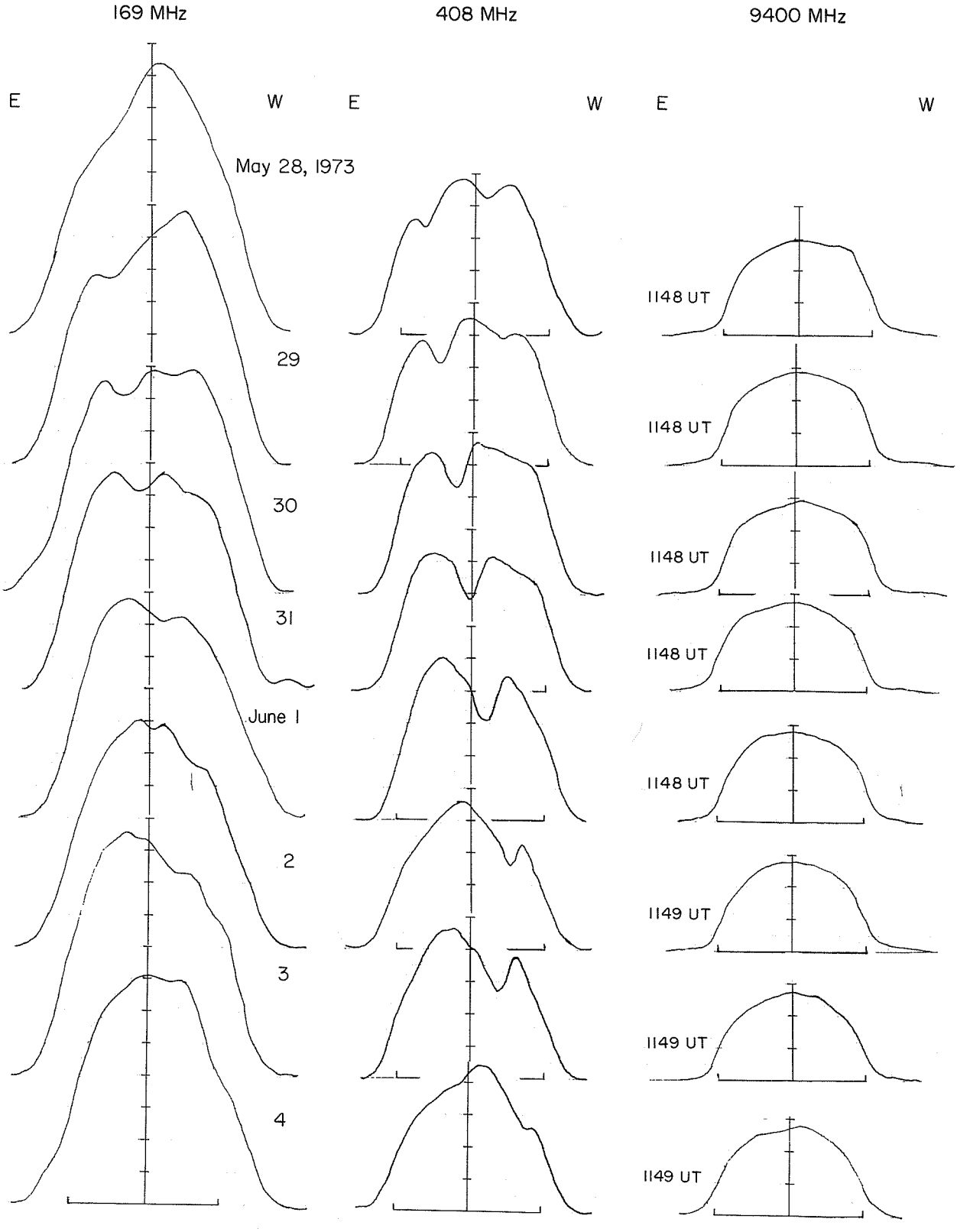
9400 MHz data:

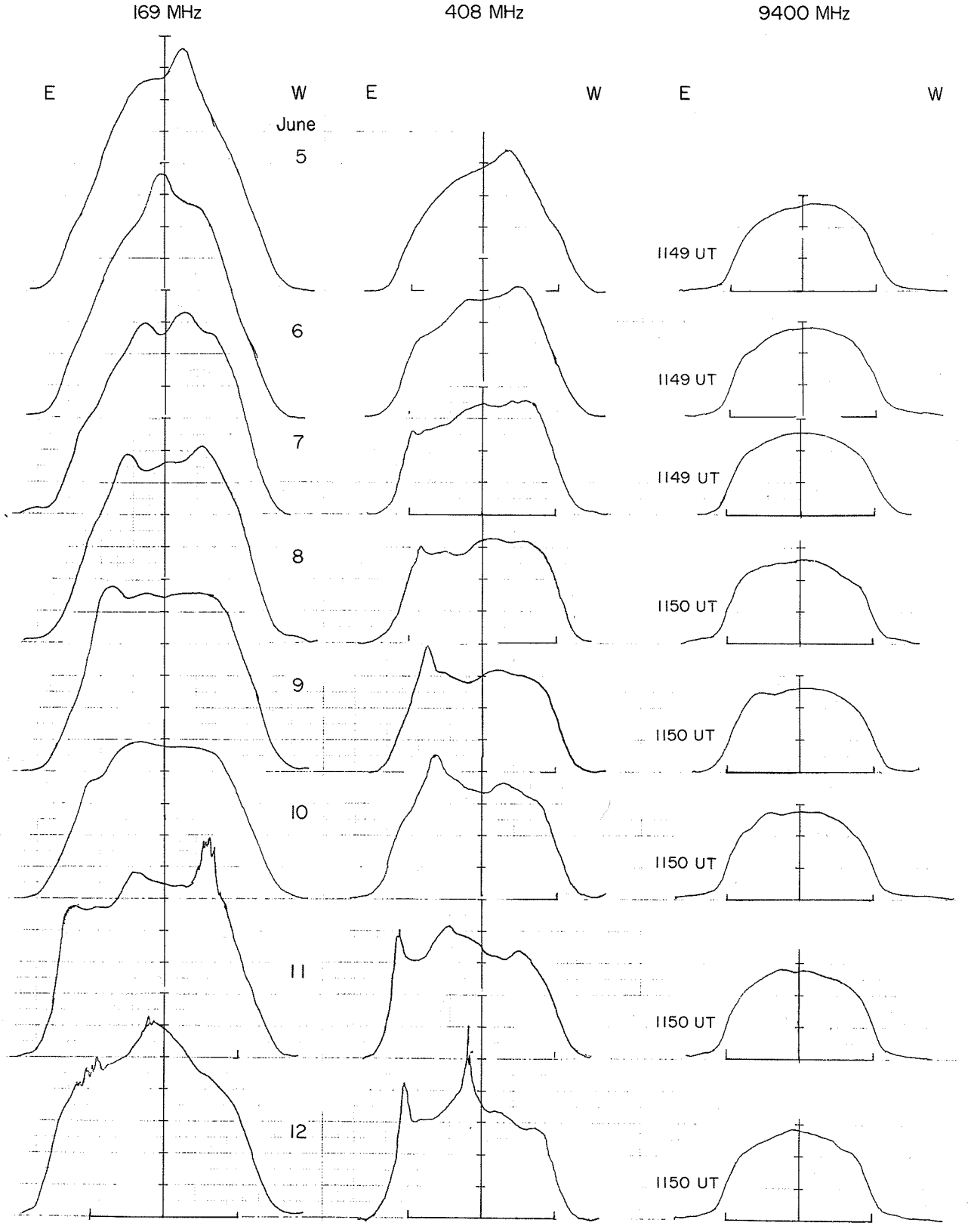
The half power is 3.5 arcmin in the East-West direction. The main lobes are about 1 degree of arc apart.

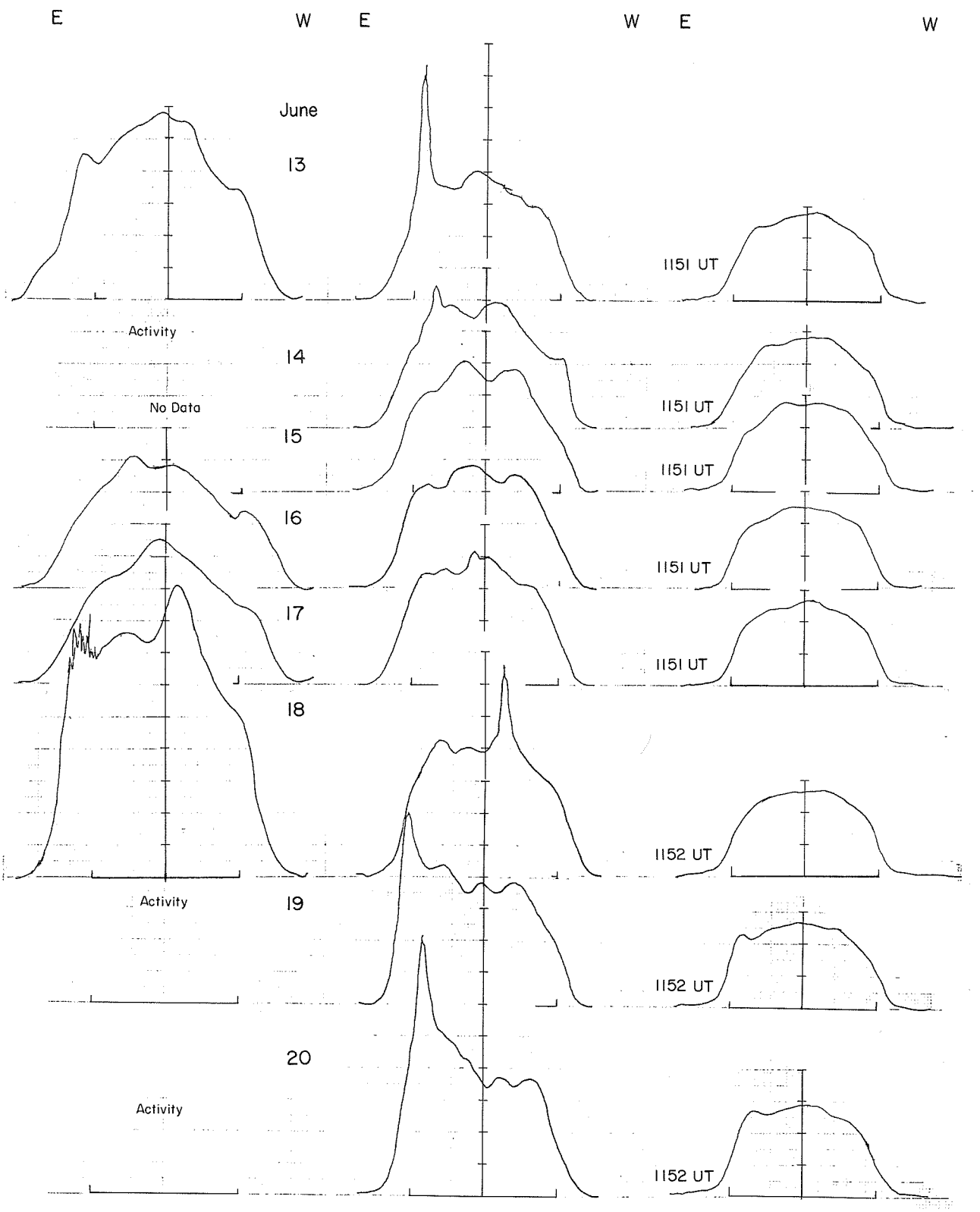
NOTE: Data baseline for all frequencies is shown most clearly on the 9400 MHz daily scans.

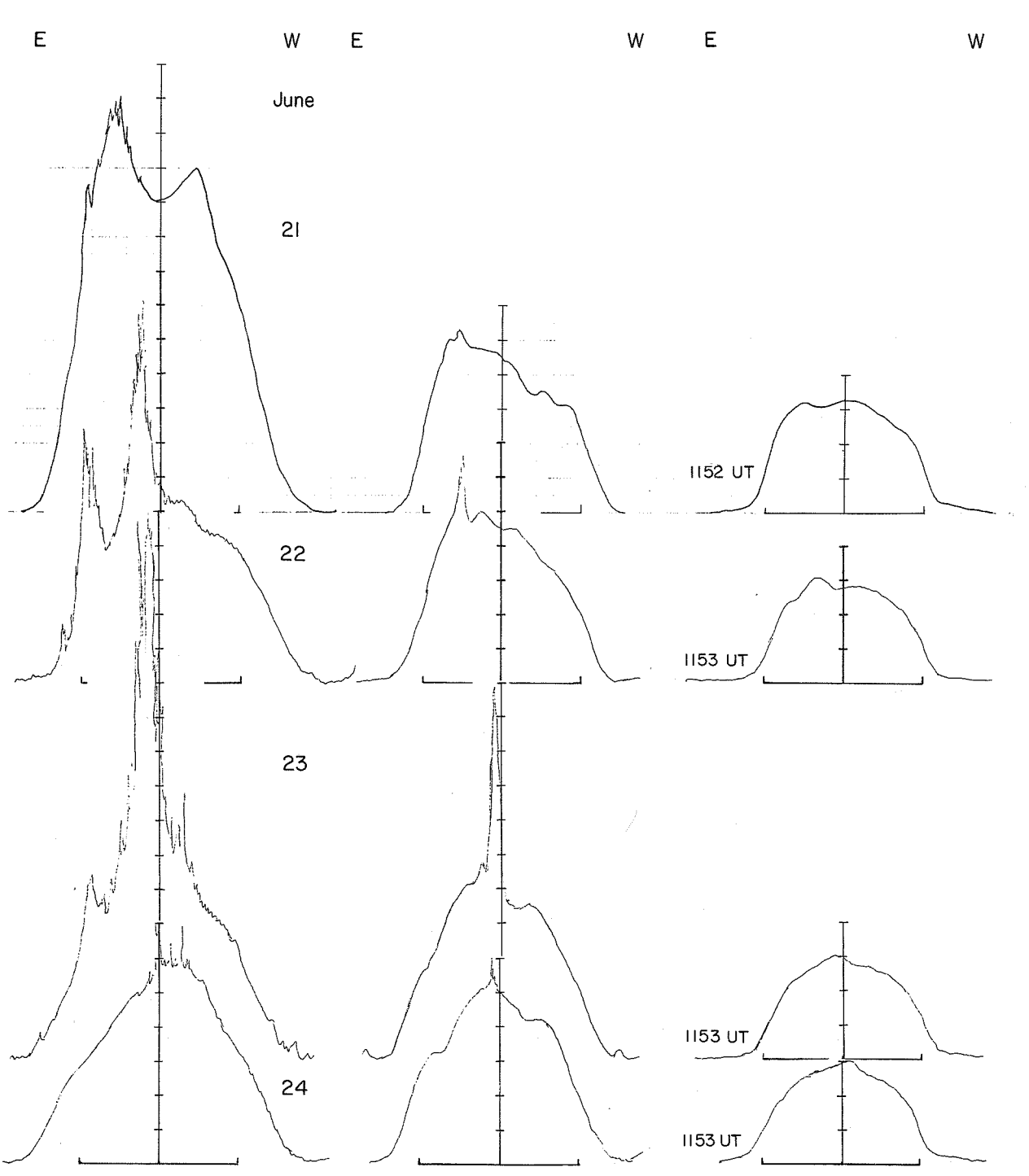
EAST-WEST SOLAR SCANS
Nançay, France

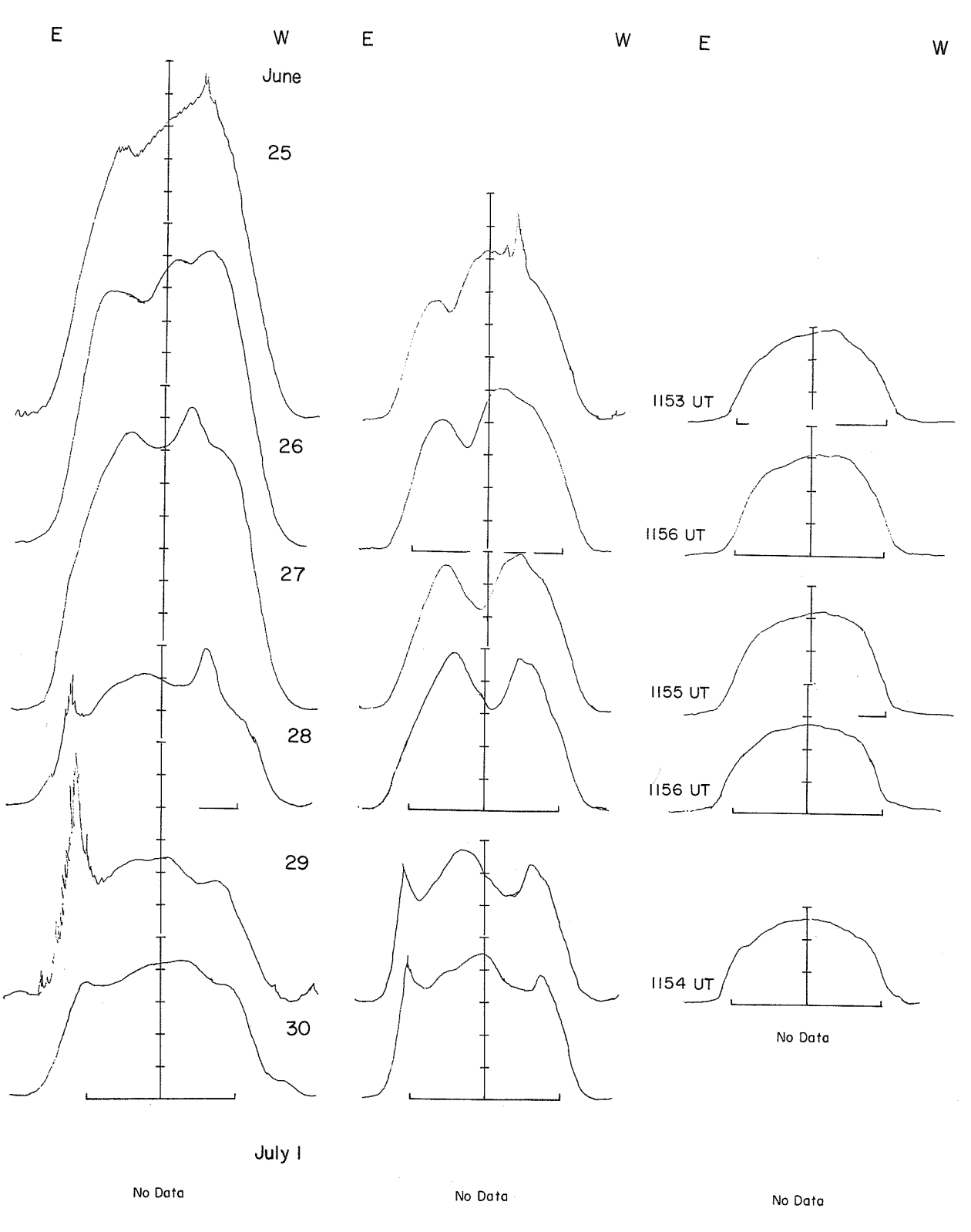
MAY 28, 1973 - FEBRUARY 8, 1974

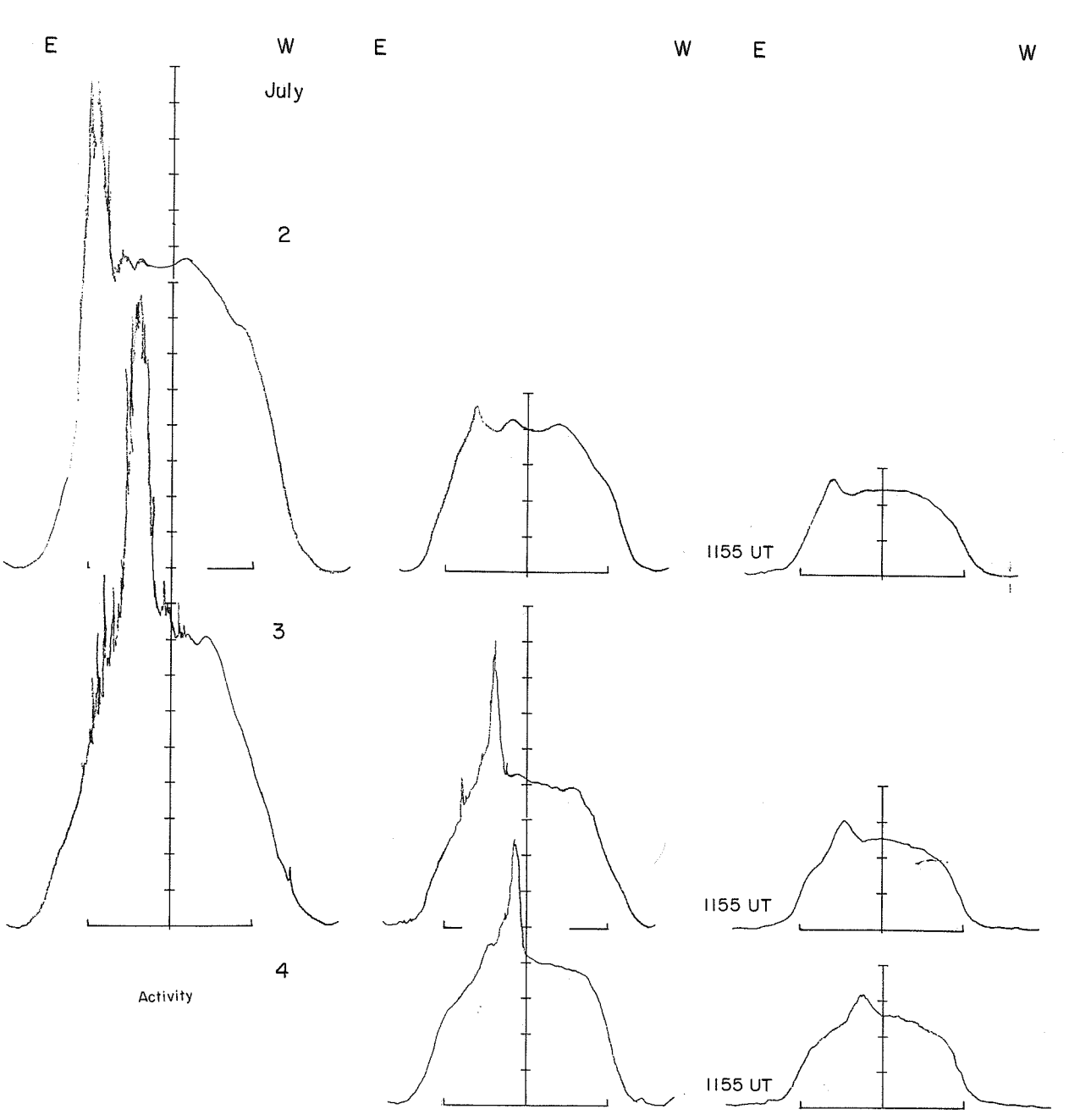


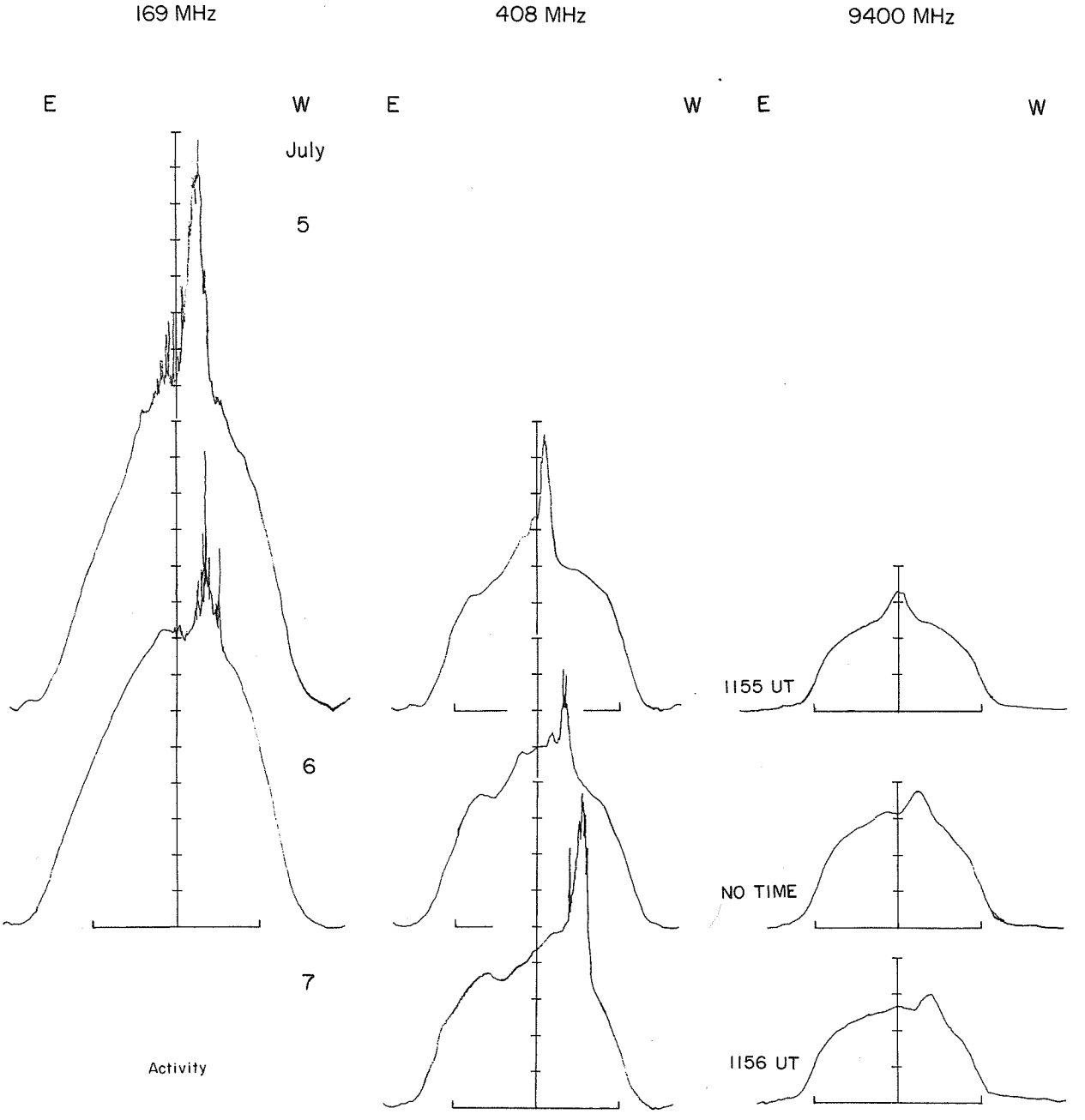

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
June
5
6
7
8
9
10
11
12
1149 UT
1149 UT
1149 UT
1150 UT
1150 UT
1150 UT
1150 UT
1150 UT

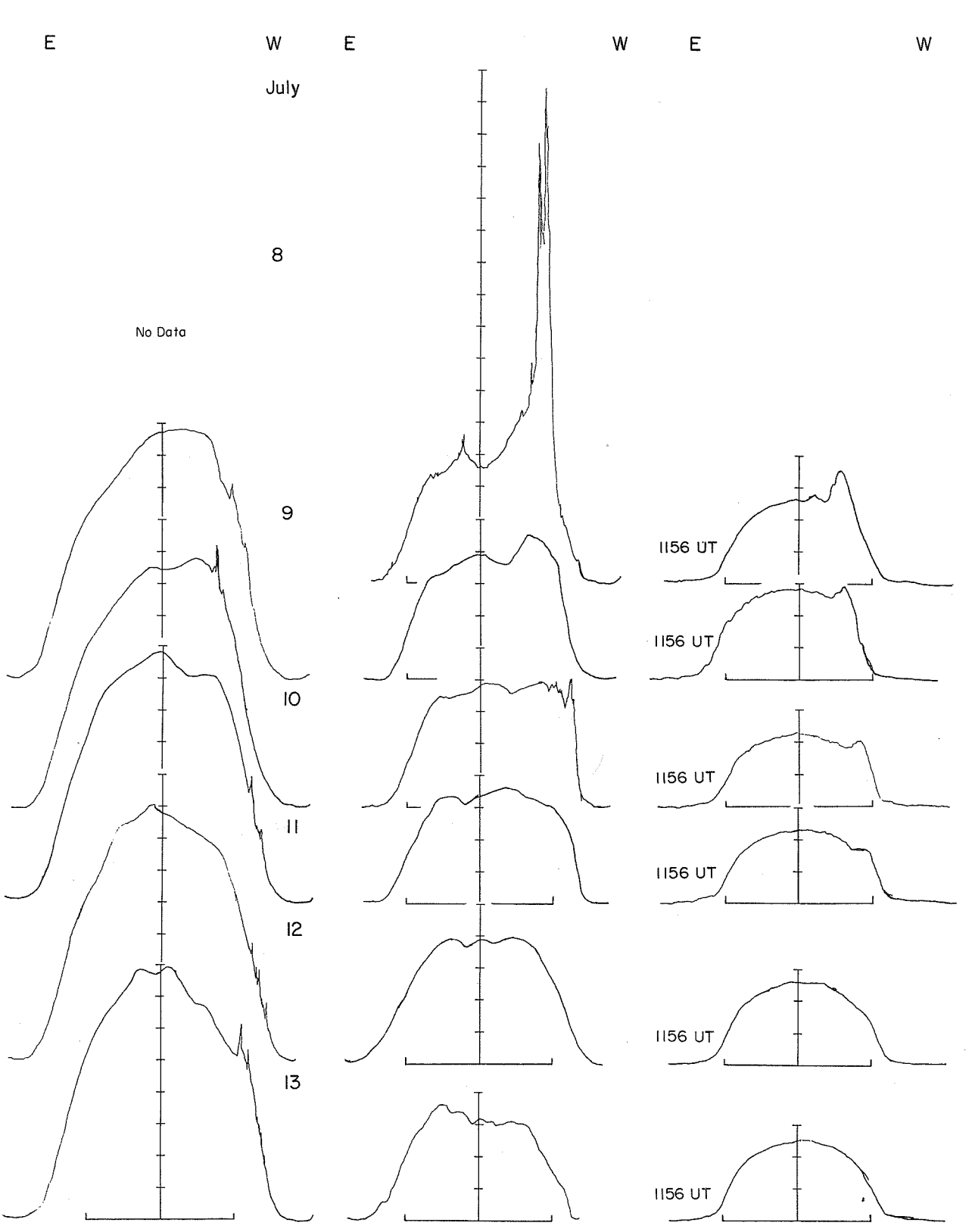

169 MHz.
408 MHz
9400 MHz
E
W
E
W
E
W
June
13
1151 UT
Activity
14
No Data
1151 UT
15
1151 UT
16
1151 UT
17
1151 UT
18
1152 UT
Activity
19
1152 UT
20
Activity
1152 UT

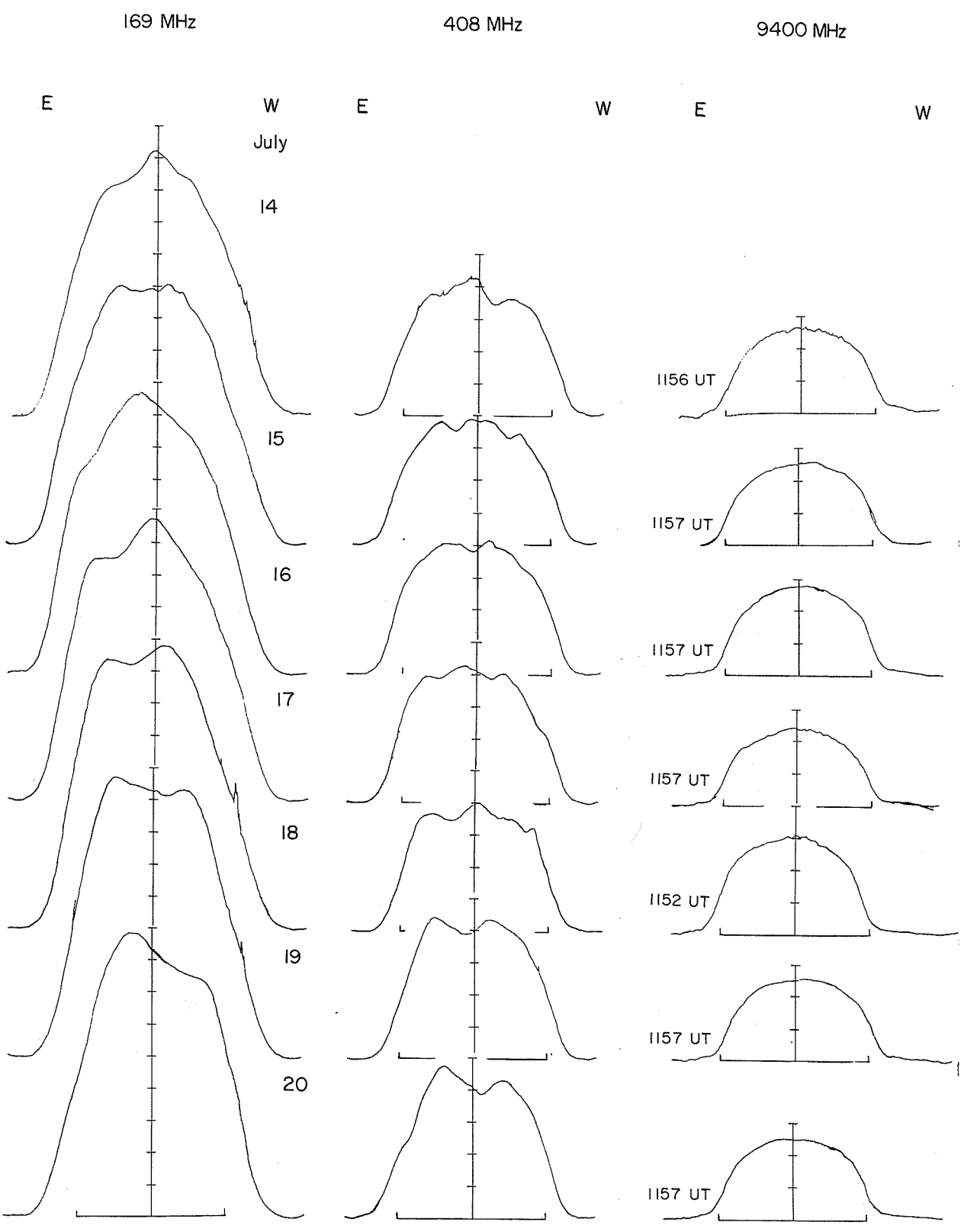

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
June
21
22
23
24
1152 UT
1153 UT
1153 UT
1153 UT

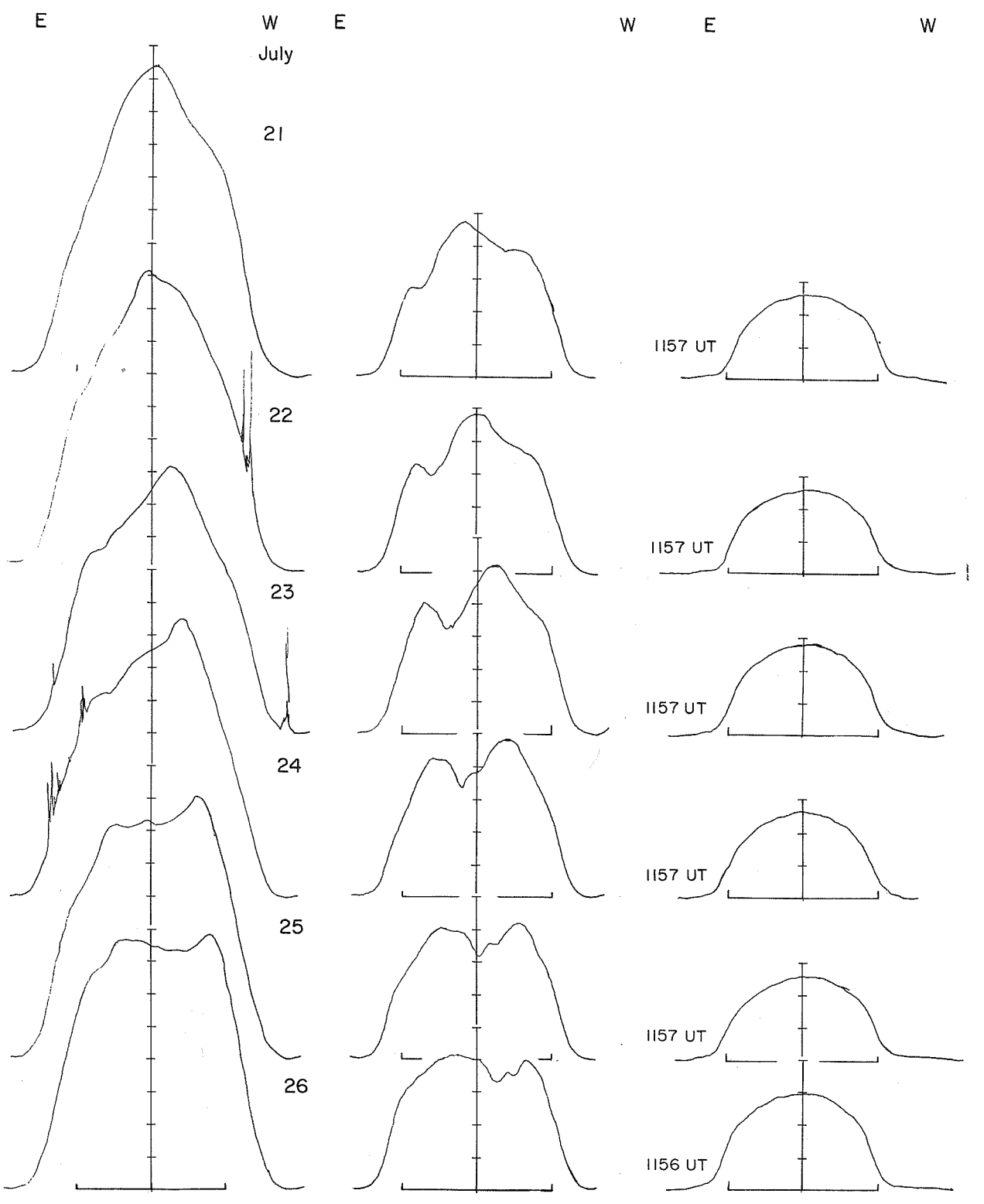

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
June
25
26
27
28
29
30
1153 UT
1156 UT
1155 UT
1156 UT
1154 UT
No Data
July 1
No Data
No Data
No Data

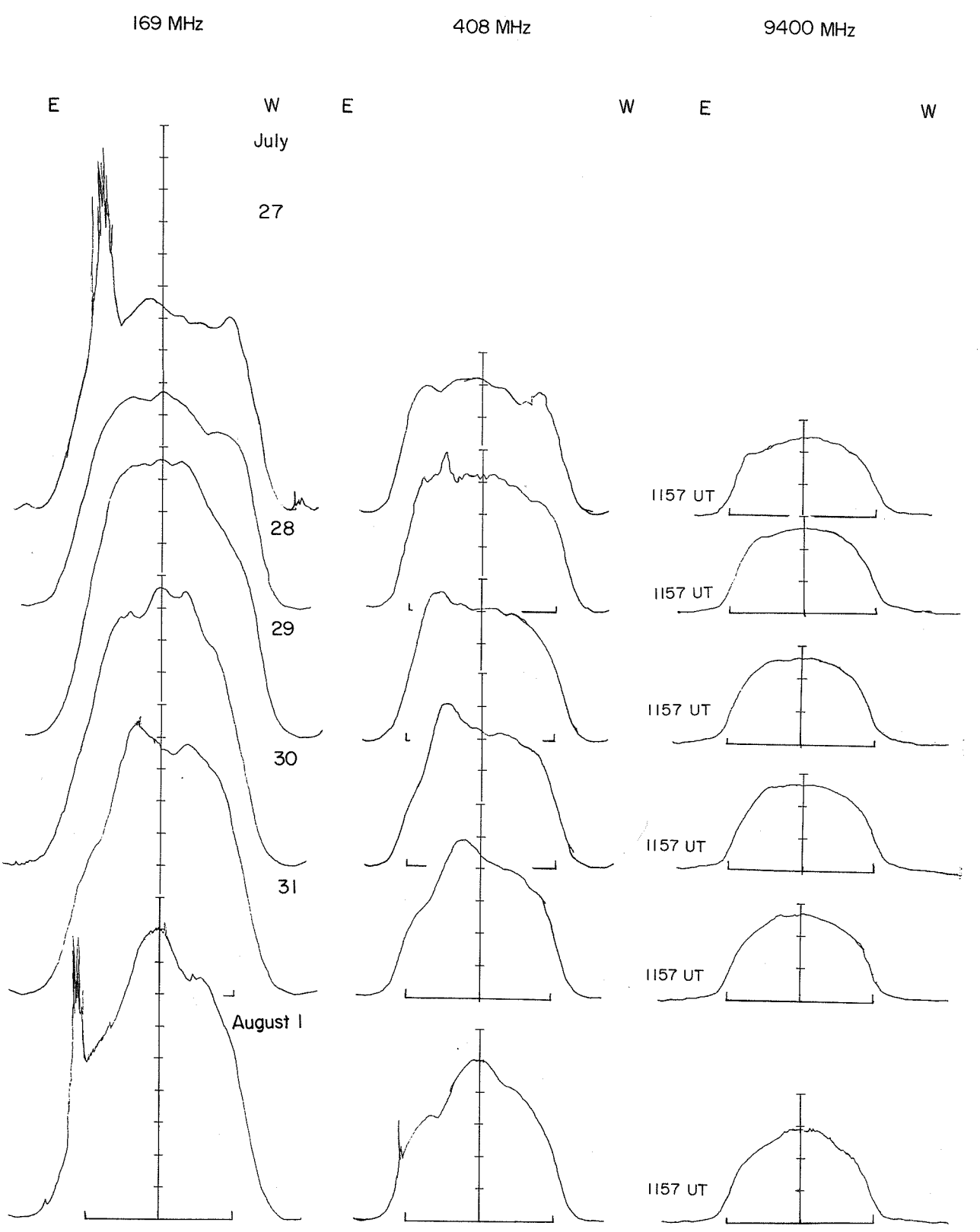

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
July
2
3
4
Activity
1155 UT
1155 UT
1155 UT

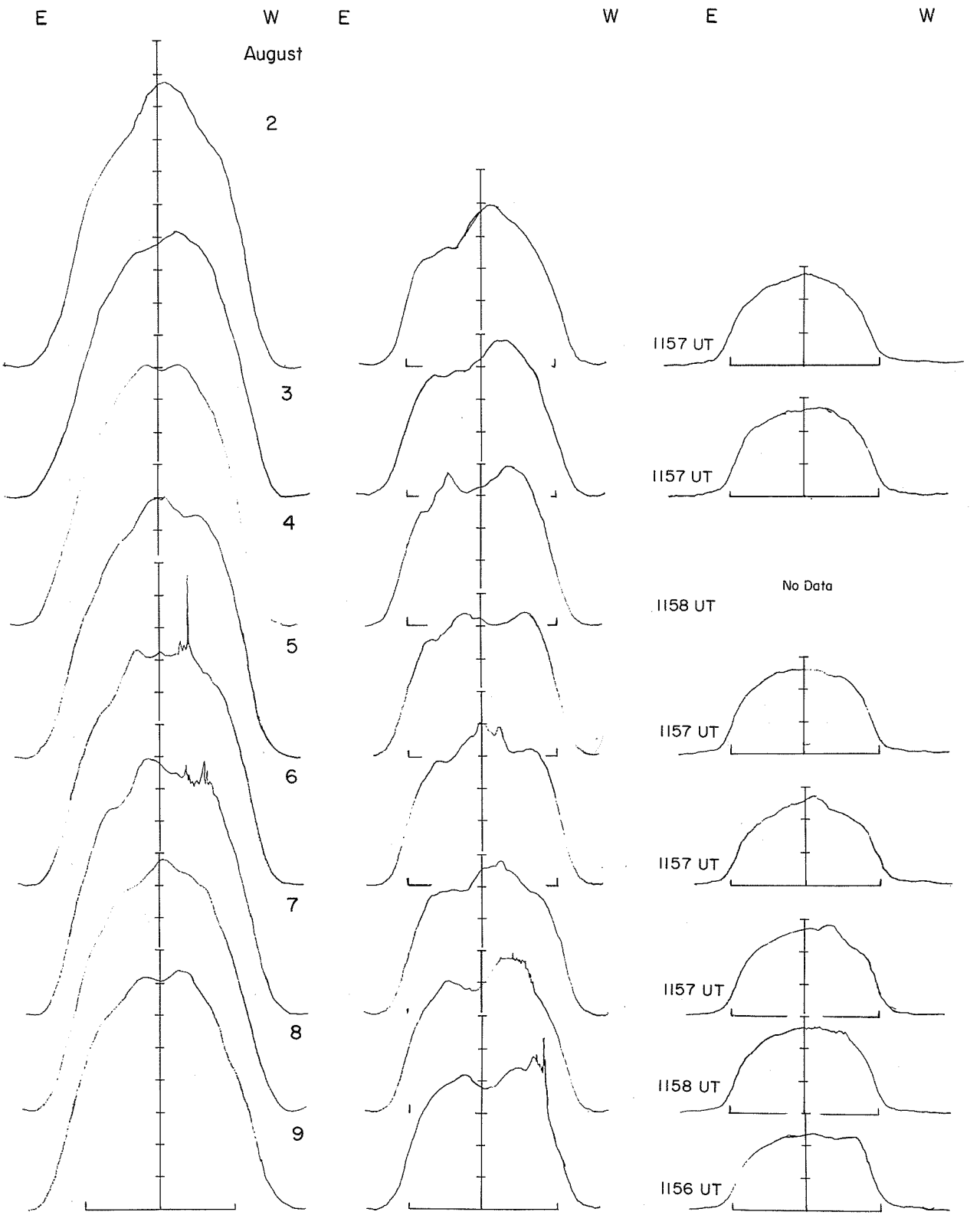

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
July
5
6
7
Activity
1155 UT
NO TIME
1156 UT

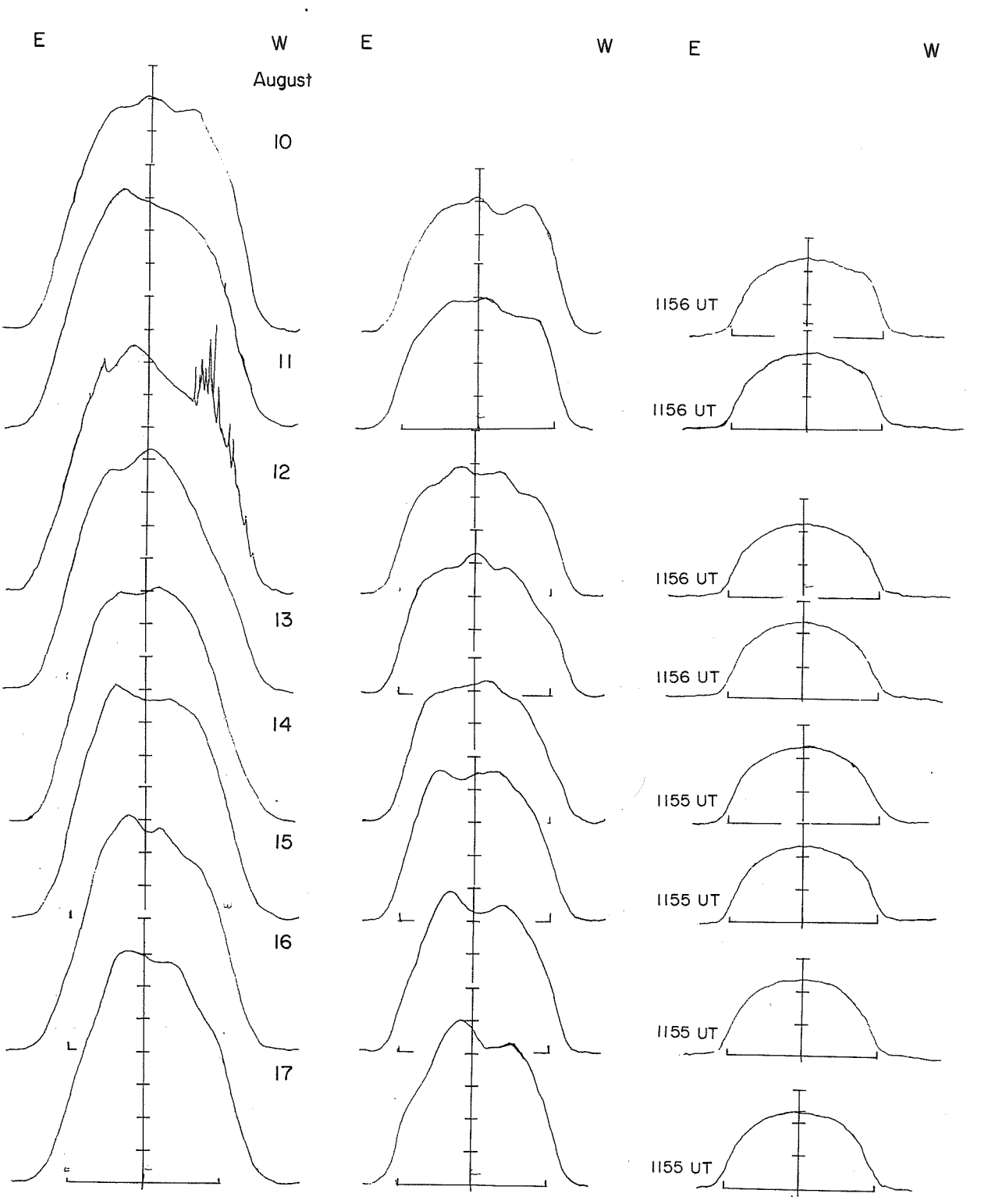

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
July
8
No Data
9
10
11
12
13
1156 UT
1156 UT
1156 UT
1156 UT
1156 UT
1156 UT

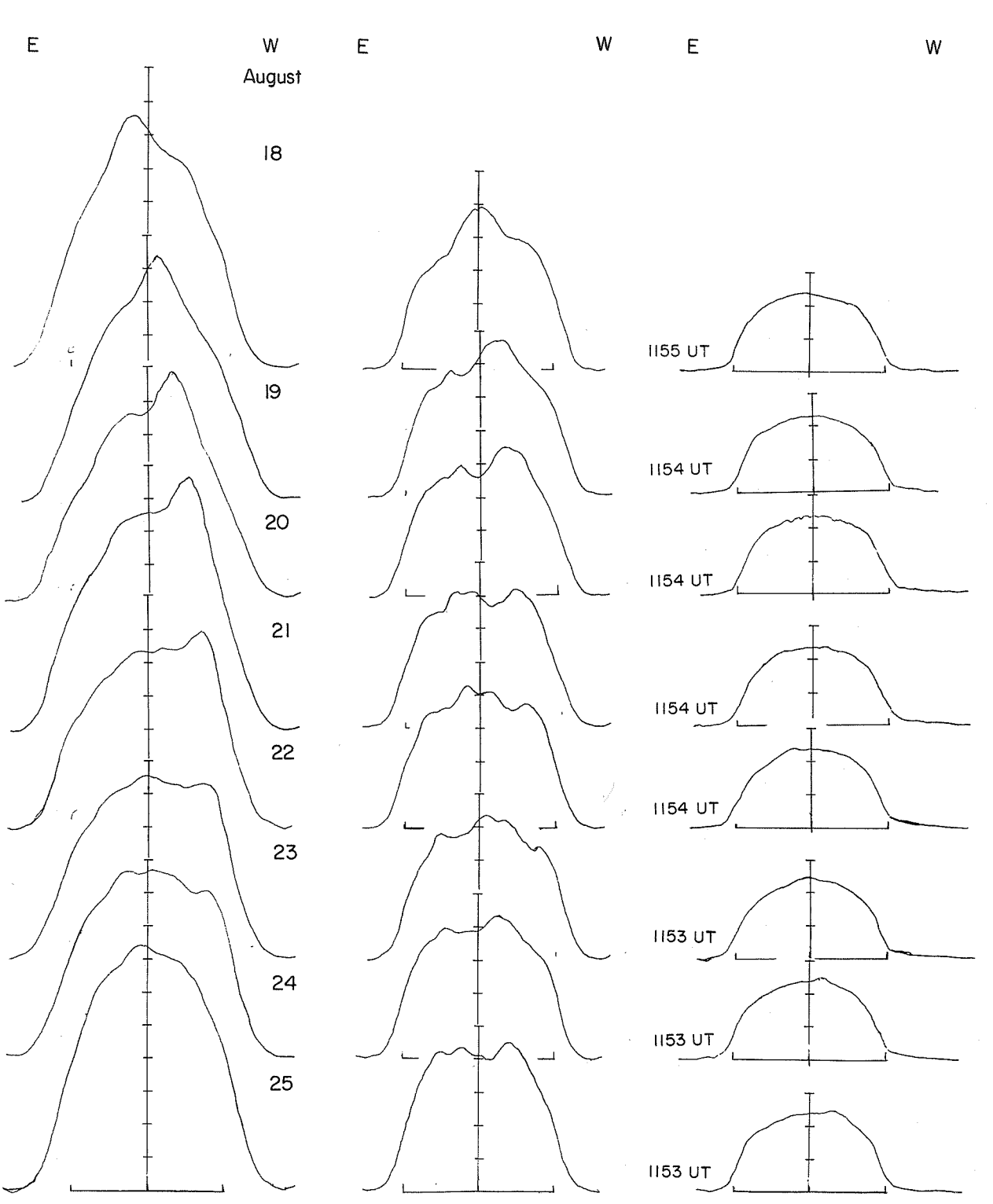

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
July
14
15
16
17
18
19
20
1156 UT
1157 UT
1157 UT
1157 UT
1152 UT
1157 UT
1157 UT

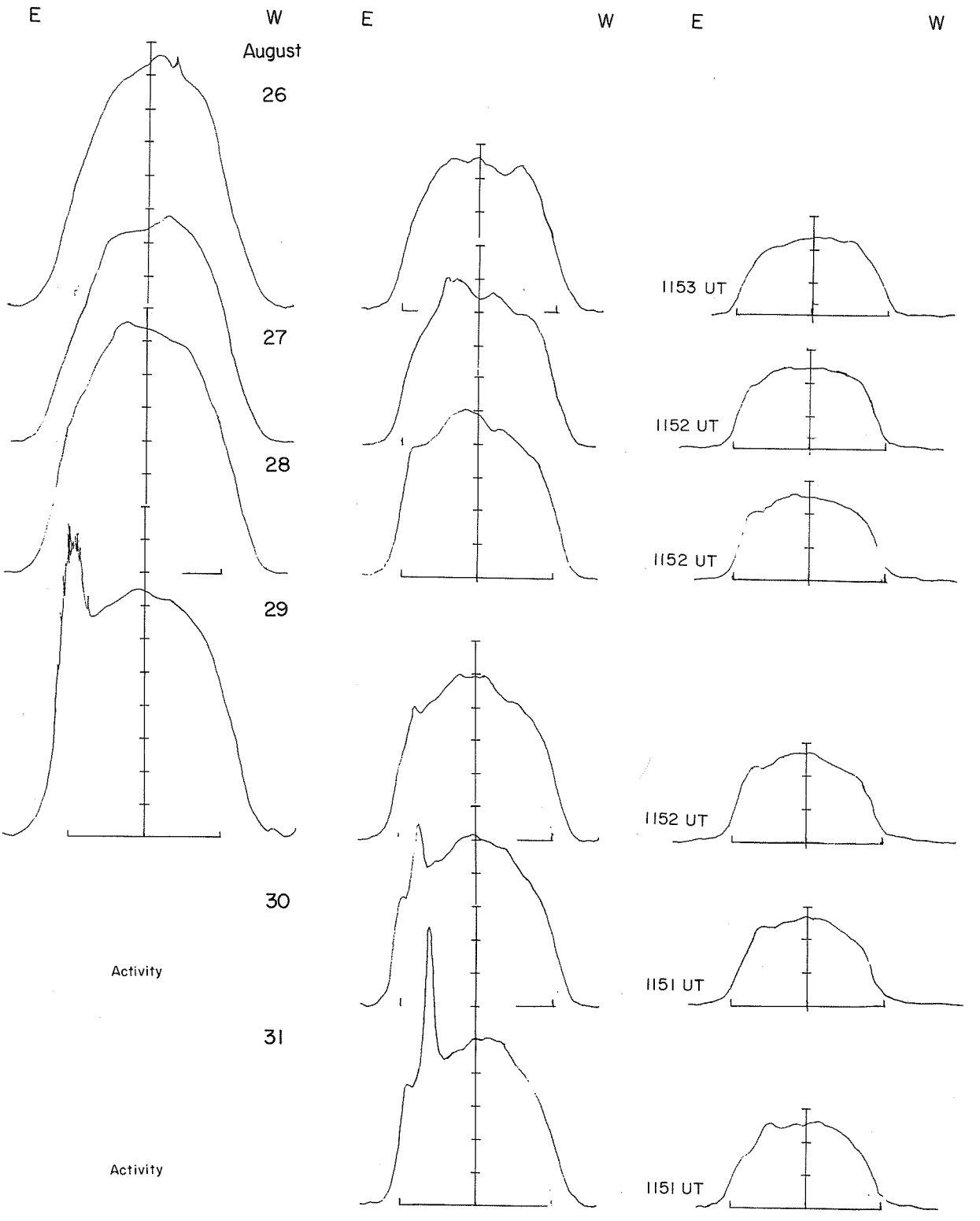

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
July
21
22
23
24
25
26
1157 UT
1157 UT
1157 UT
1157 UT
1157 UT
1156 UT

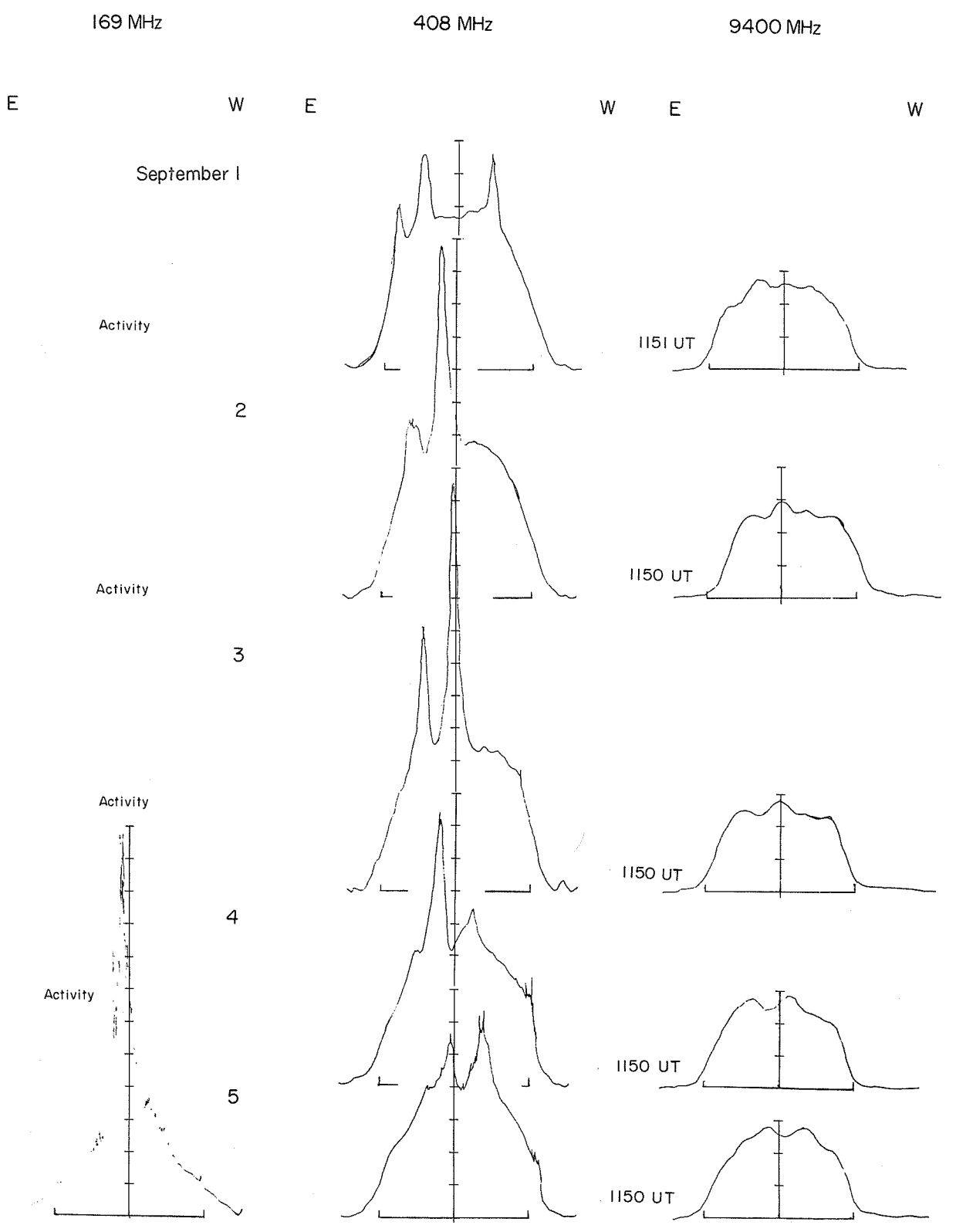

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
July
27
28
29
30
31
August 1
1157 UT
1157 UT
1157 UT
1157 UT
1157 UT
1157 UT

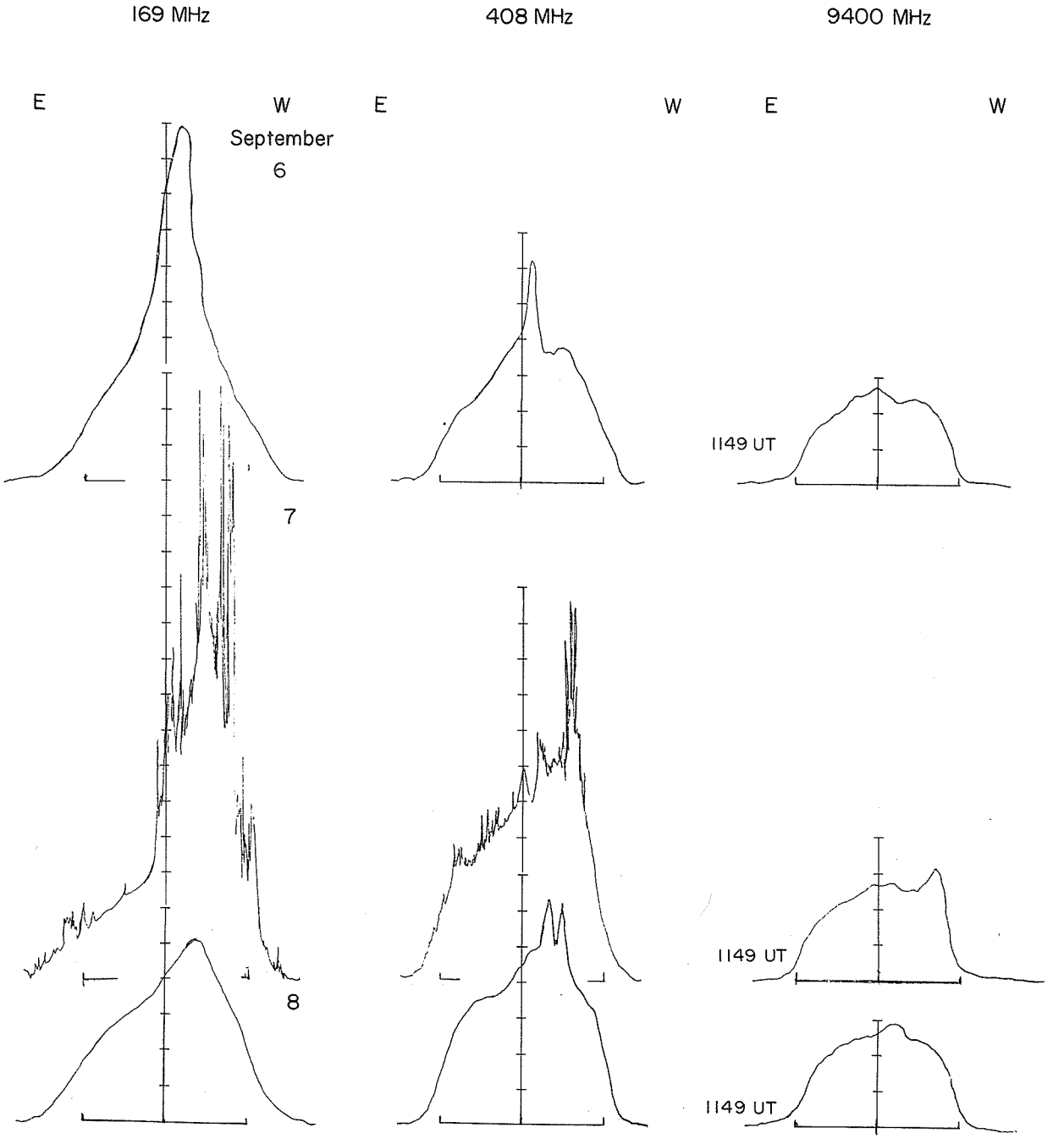

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
August
2
3
4
5
6
7
8
9
1157 UT
1157 UT
No Data
1158 UT
1157 UT
1157 UT
1157 UT
1158 UT
1156 UT

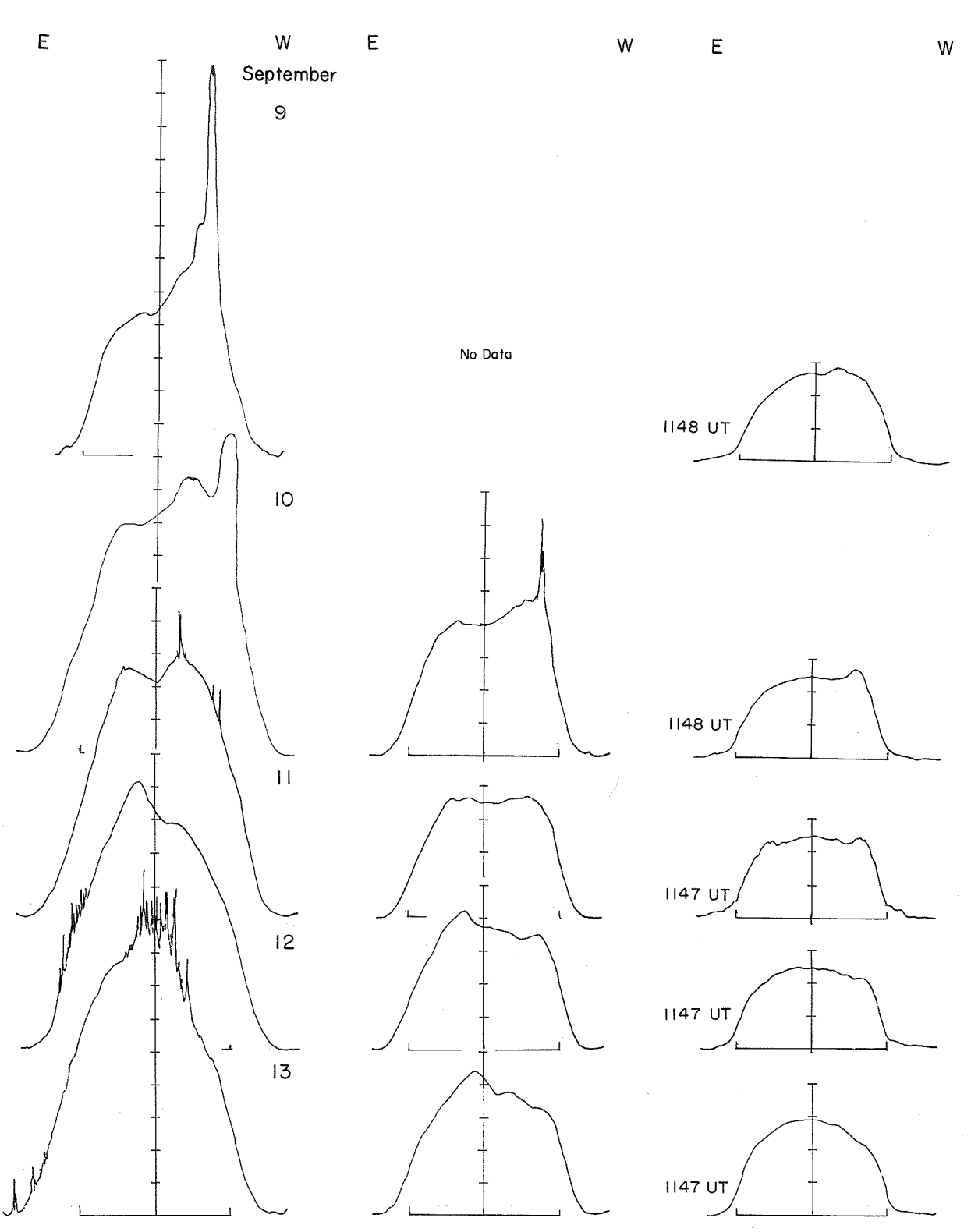

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
August
10
11
12
13
14
15
16
17
1156 UT
1156 UT
1156 UT
1156 UT
1155 UT
1155 UT
1155 UT
1155 UT

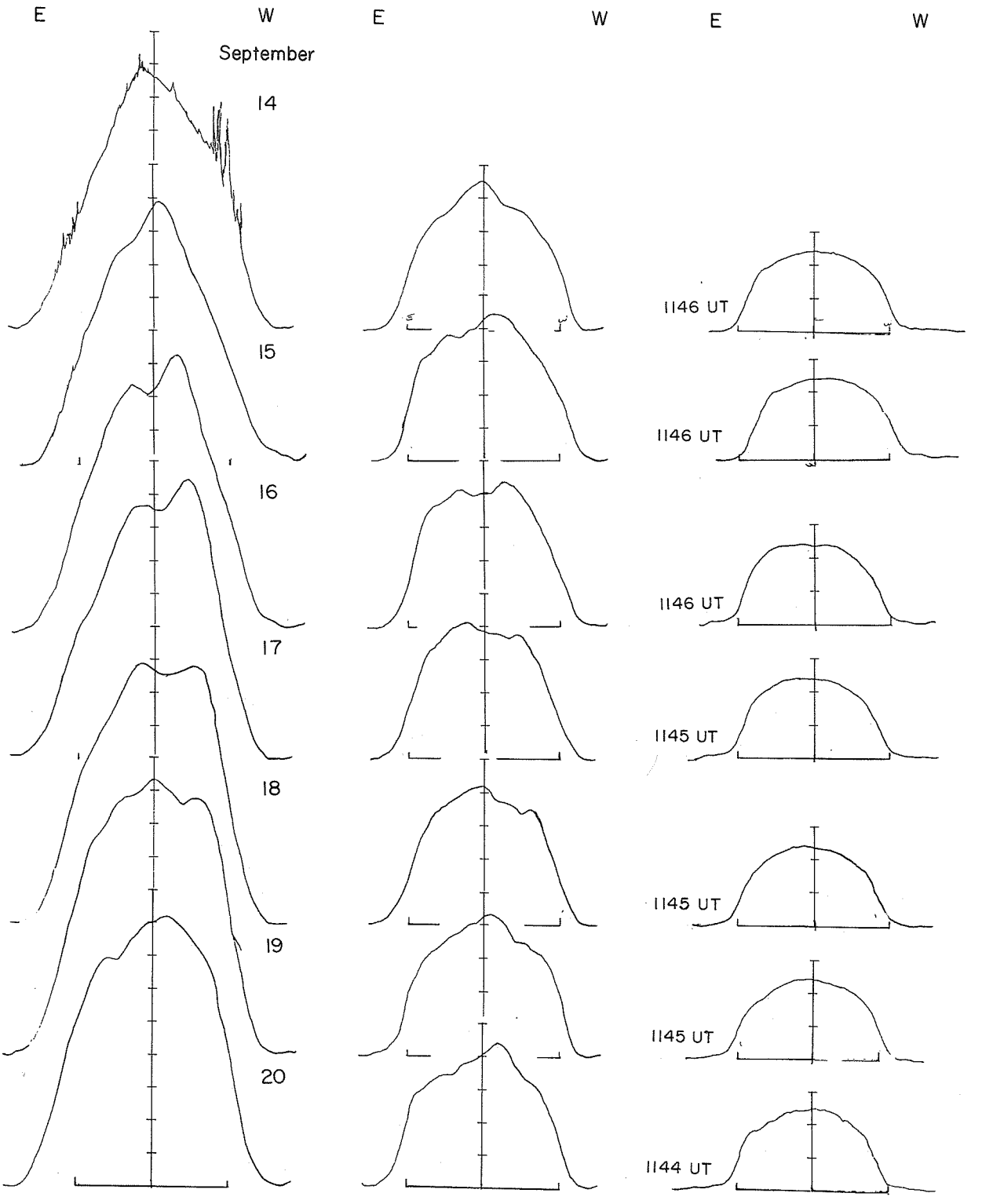

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
August
18
19
20
21
22
23
24
25
1155 UT
1154 UT
1154 UT
1154 UT
1154 UT
1153 UT
1153 UT
1153 UT

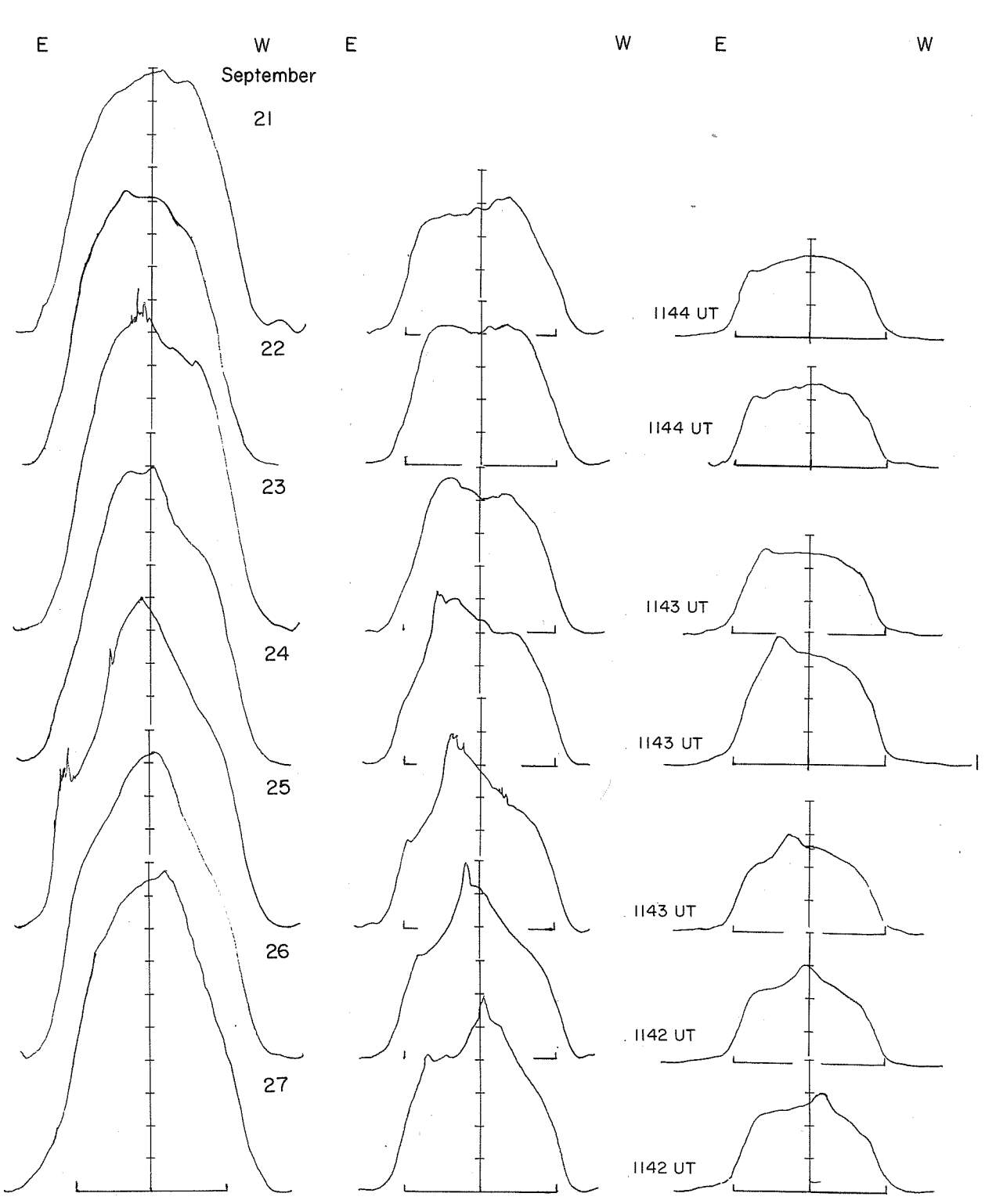

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
August
26
27
28
29
30
Activity
31
Activity
1153 UT
1152 UT
1152 UT
1152 UT
1151 UT
1151 UT

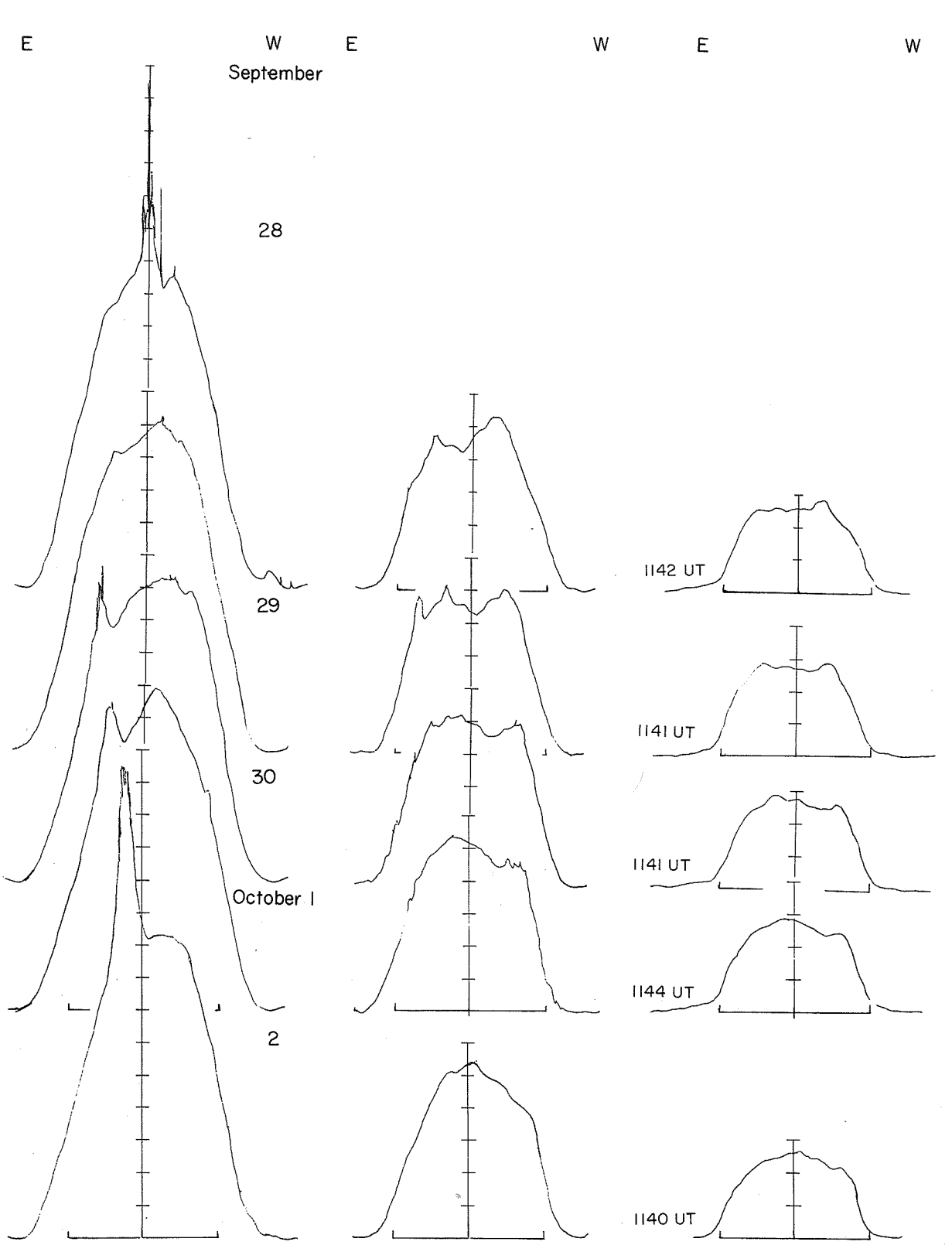

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
September I
Activity
1151 UT
2
Activity
1150 UT
3
Activity
1150 UT
4
Activity
1150 UT
5
1150 UT

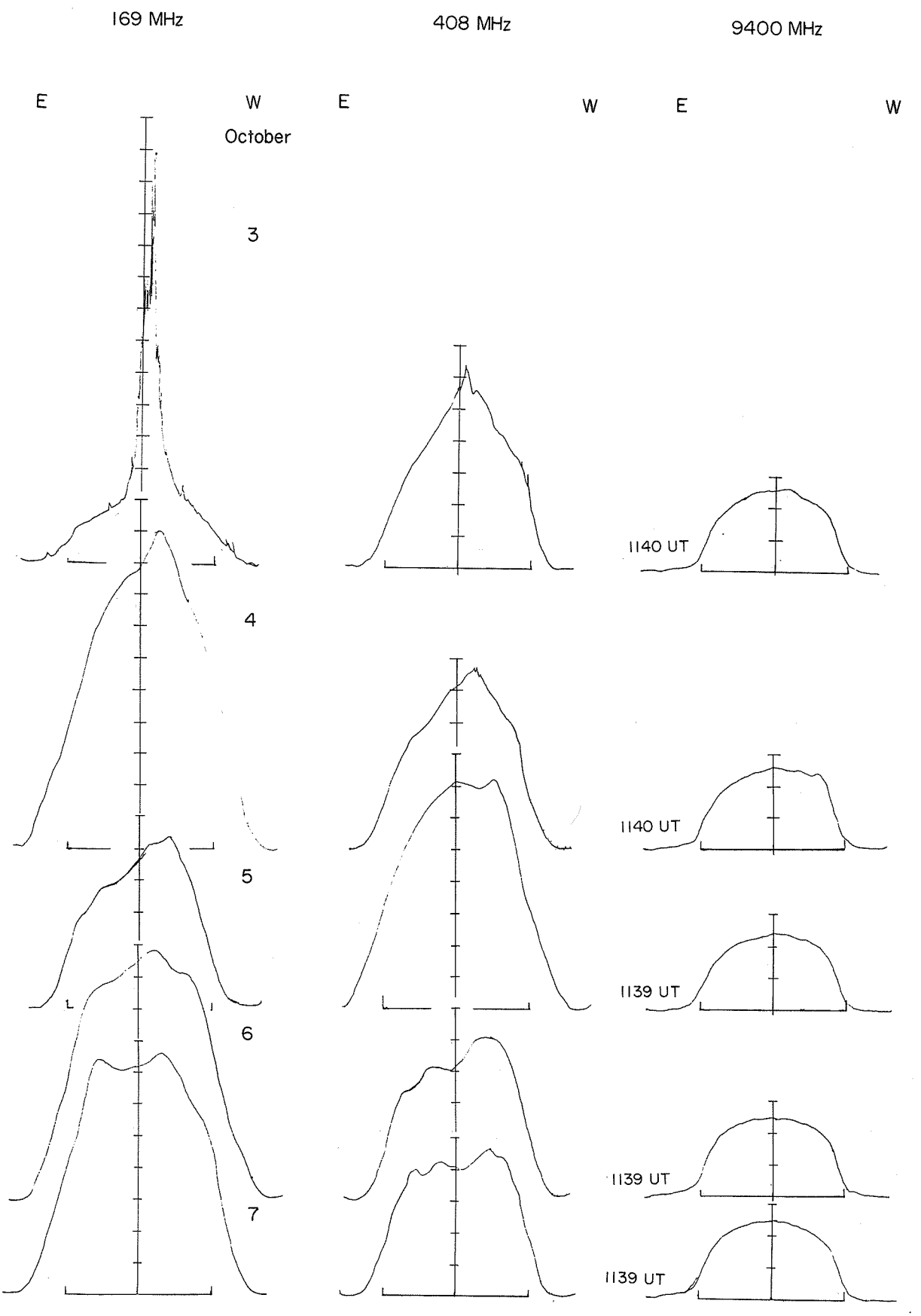

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
September
6
7
8
1149 UT
1149 UT
1149 UT

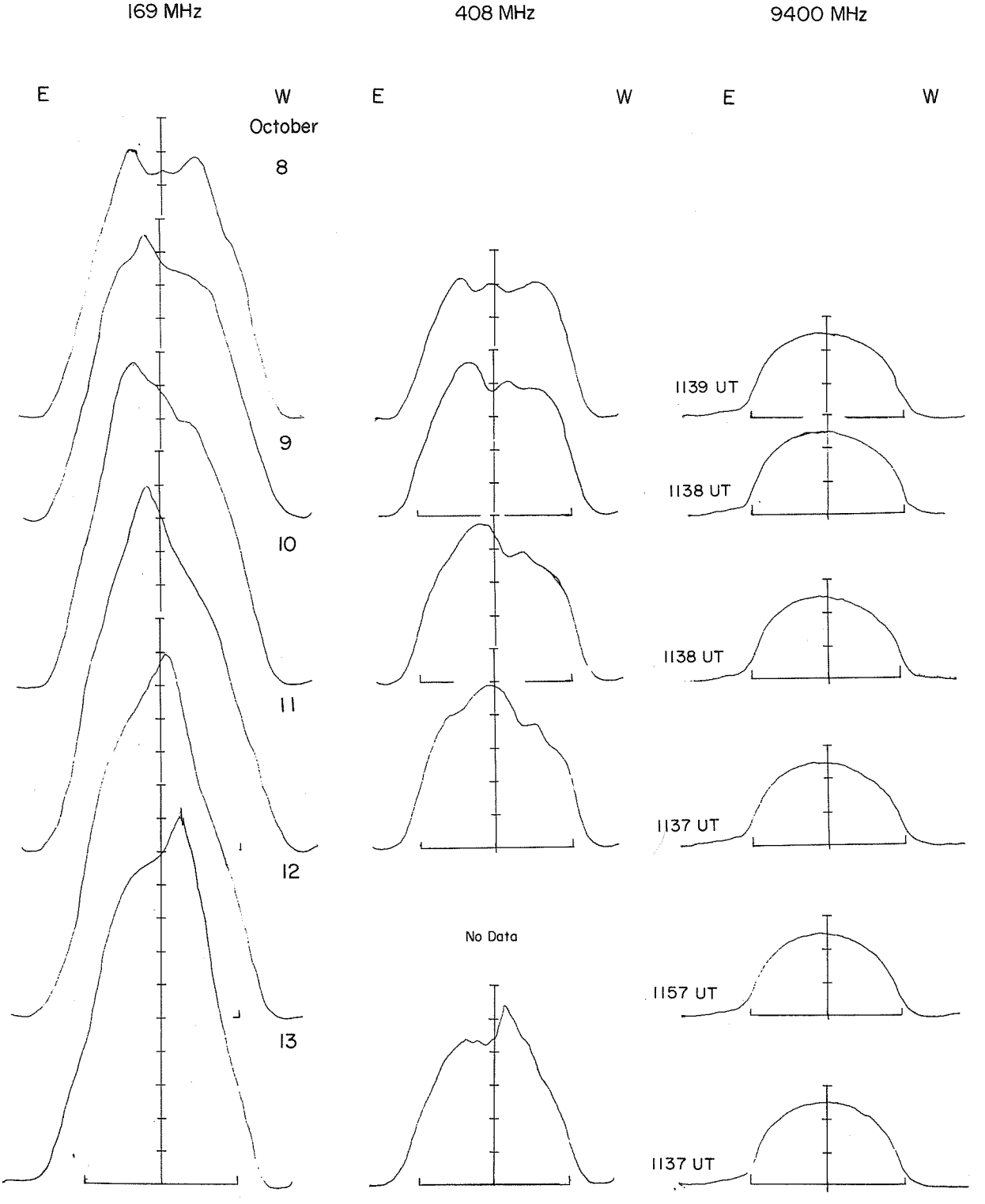

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
September
9
10
11
12
13
No Data
1148 UT
1148 UT
1147 UT
1147 UT
1147 UT

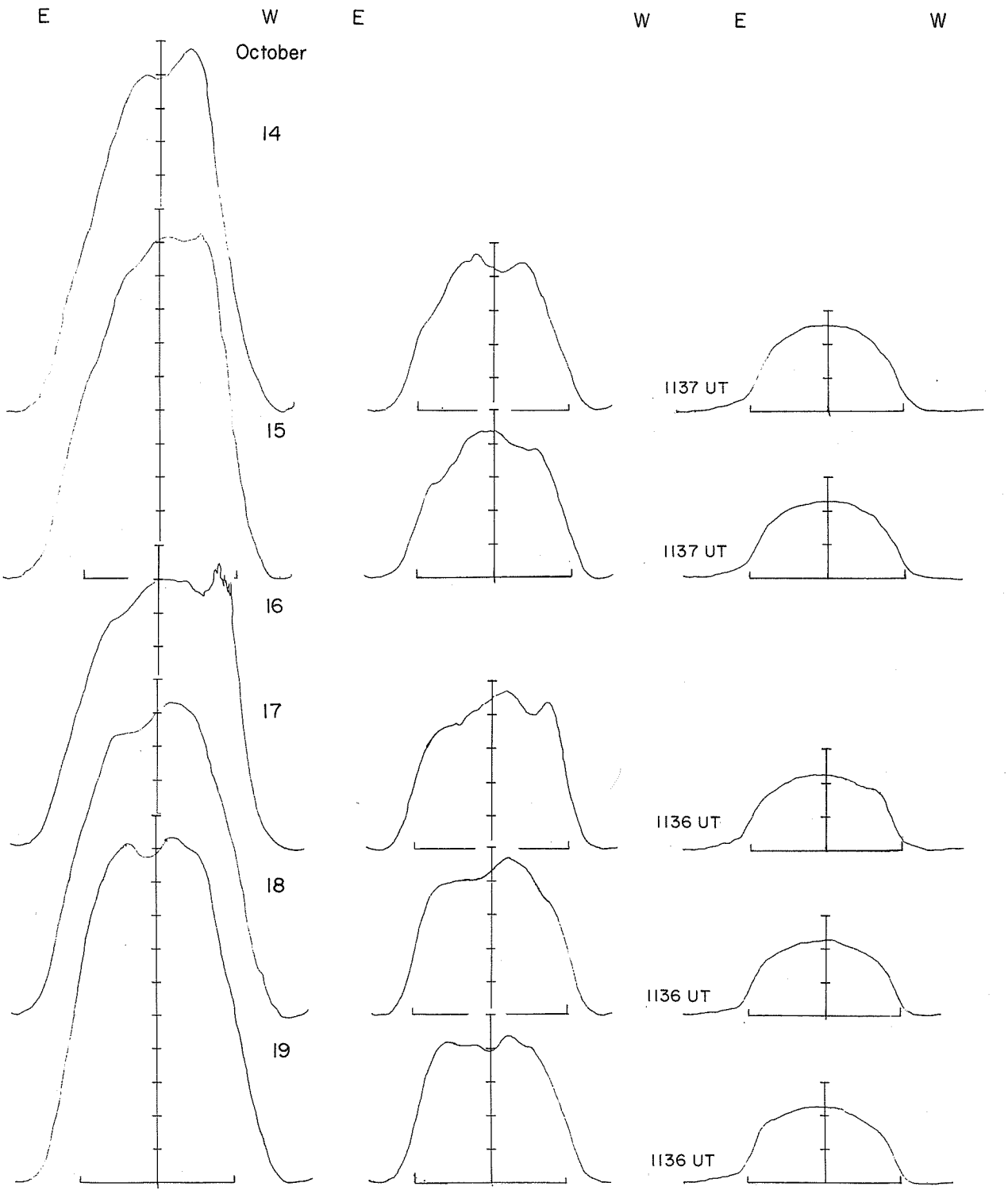

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
September
14
15
16
17
18
19
20
1146 UT
1146 UT
1146 UT
1145 UT
1145 UT
1145 UT
1144 UT

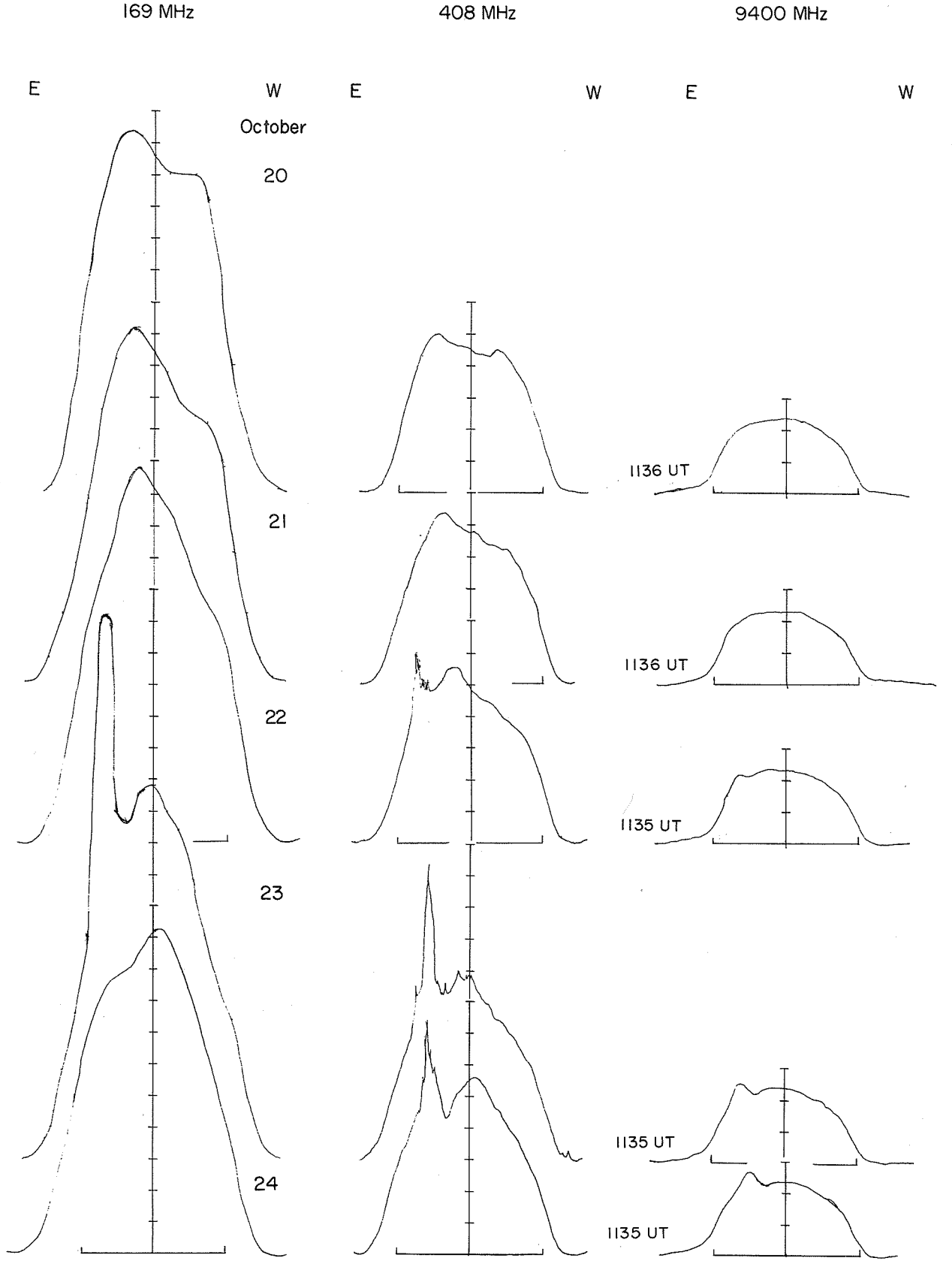

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
September
21
22
23
24
25
26
27
1144 UT
1144 UT
1143 UT
1143 UT
1143 UT
1142 UT
1142 UT

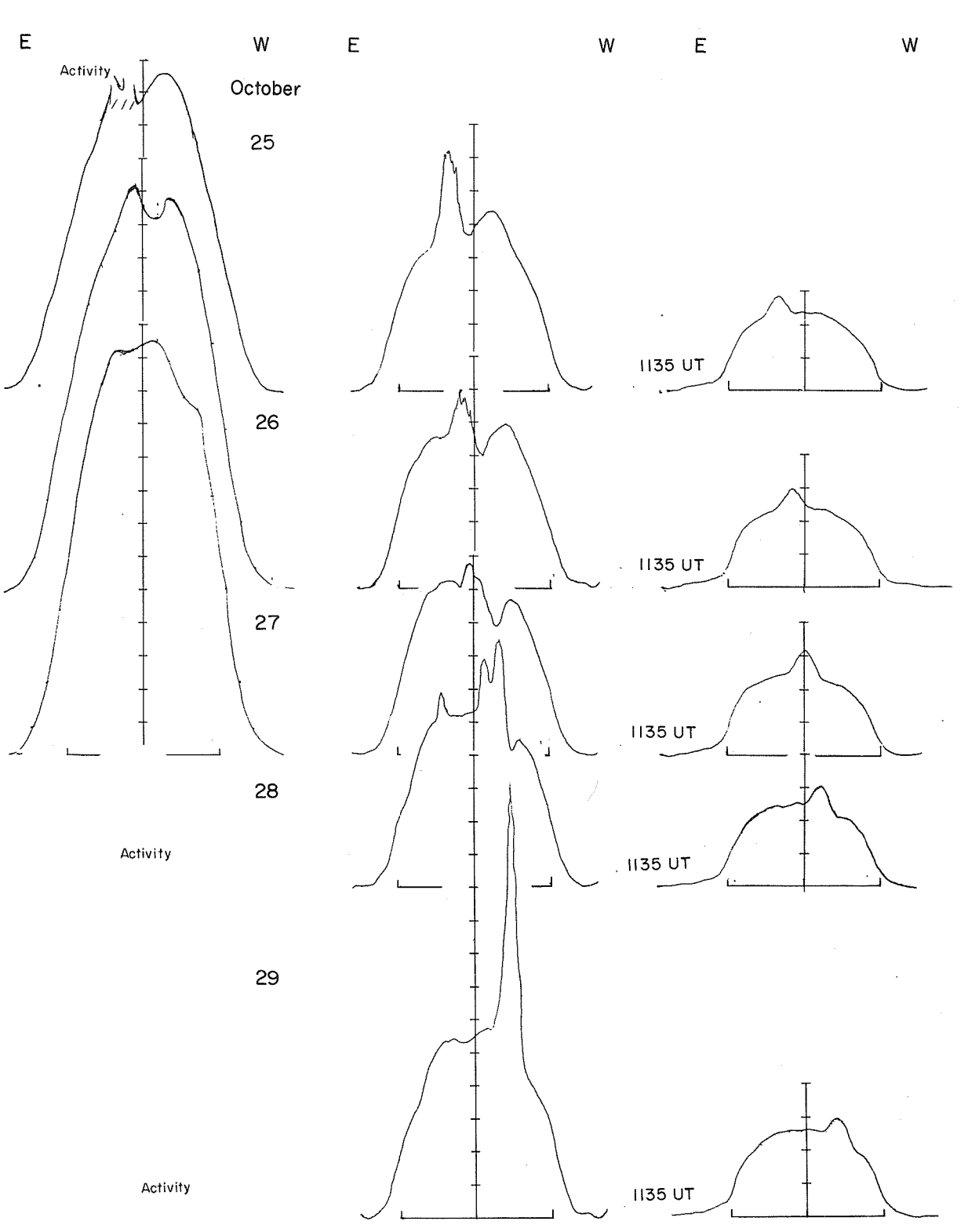

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
September
28
29
30
October 1
2
1142 UT
1141 UT
1141 UT
1144 UT
1140 UT

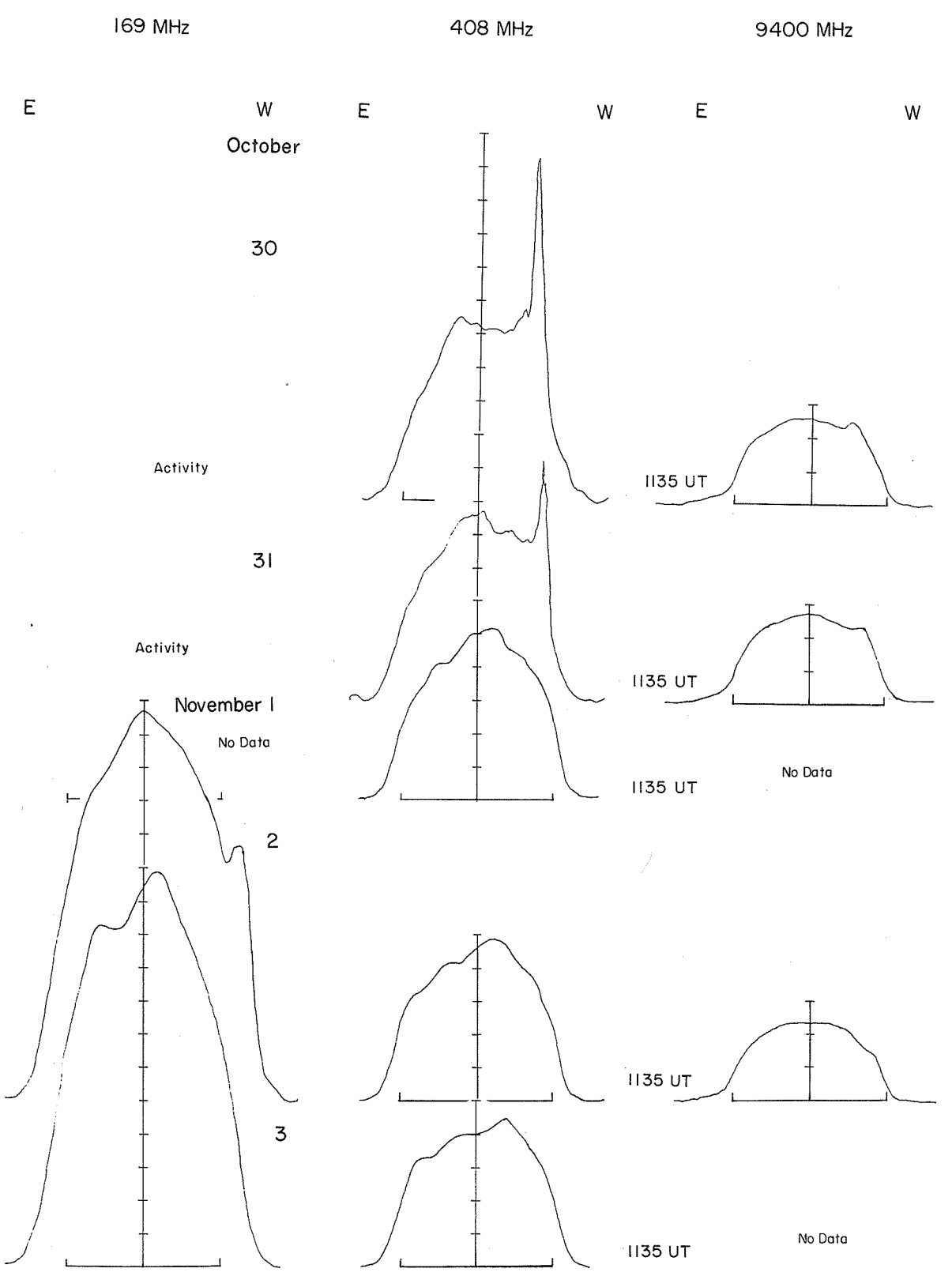

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
October
3
4
5
6
7
1140 UT
1140 UT
1139 UT
1139 UT
1139 UT

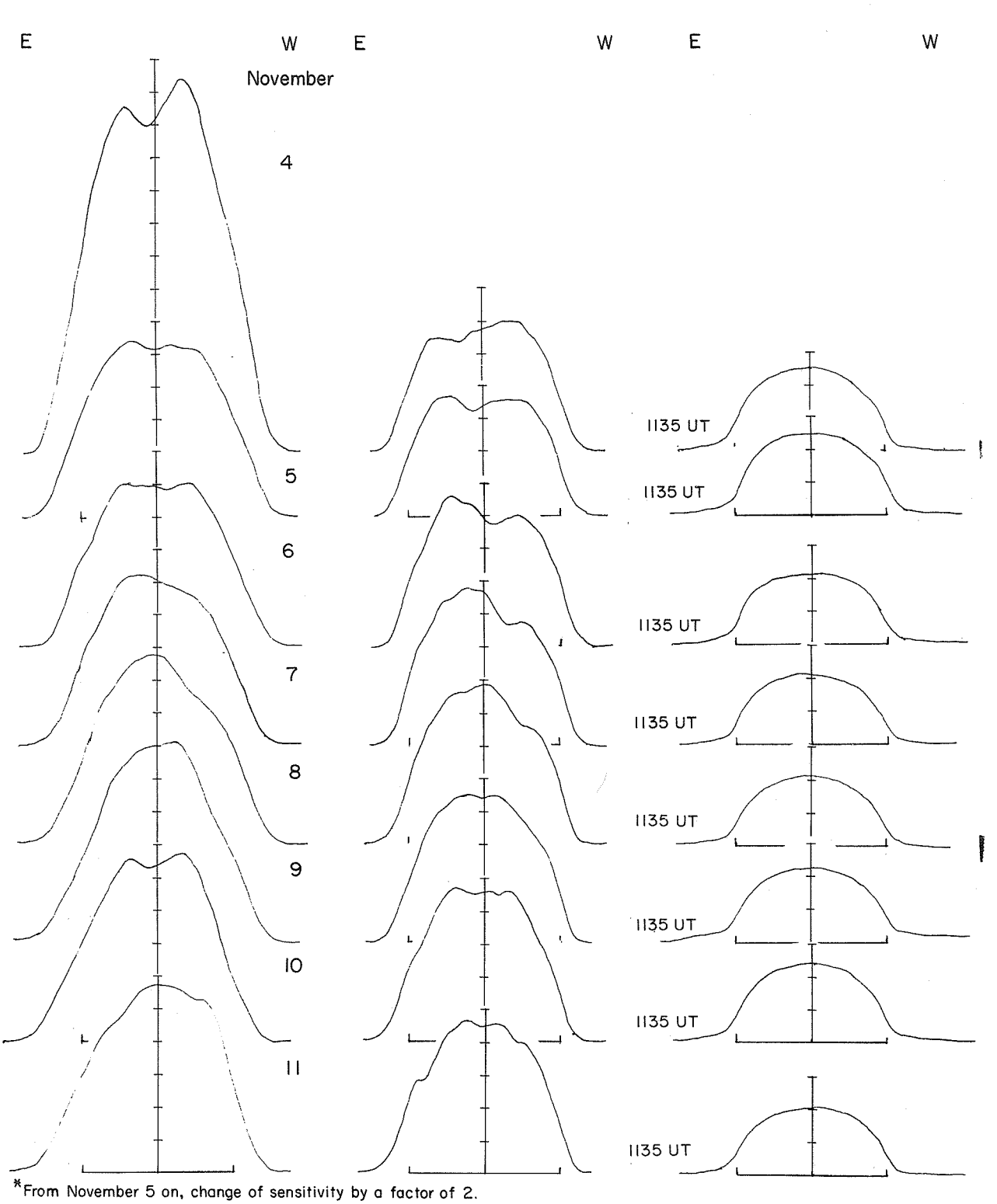

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
October
8
9
10
11
12
13
1139 UT
1138 UT
1138 UT
1137 UT
No Data
1157 UT
1137 UT


169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
October
14
15
16
17
18
19
1137 UT
1137 UT
1136 UT
1136 UT
1136 UT

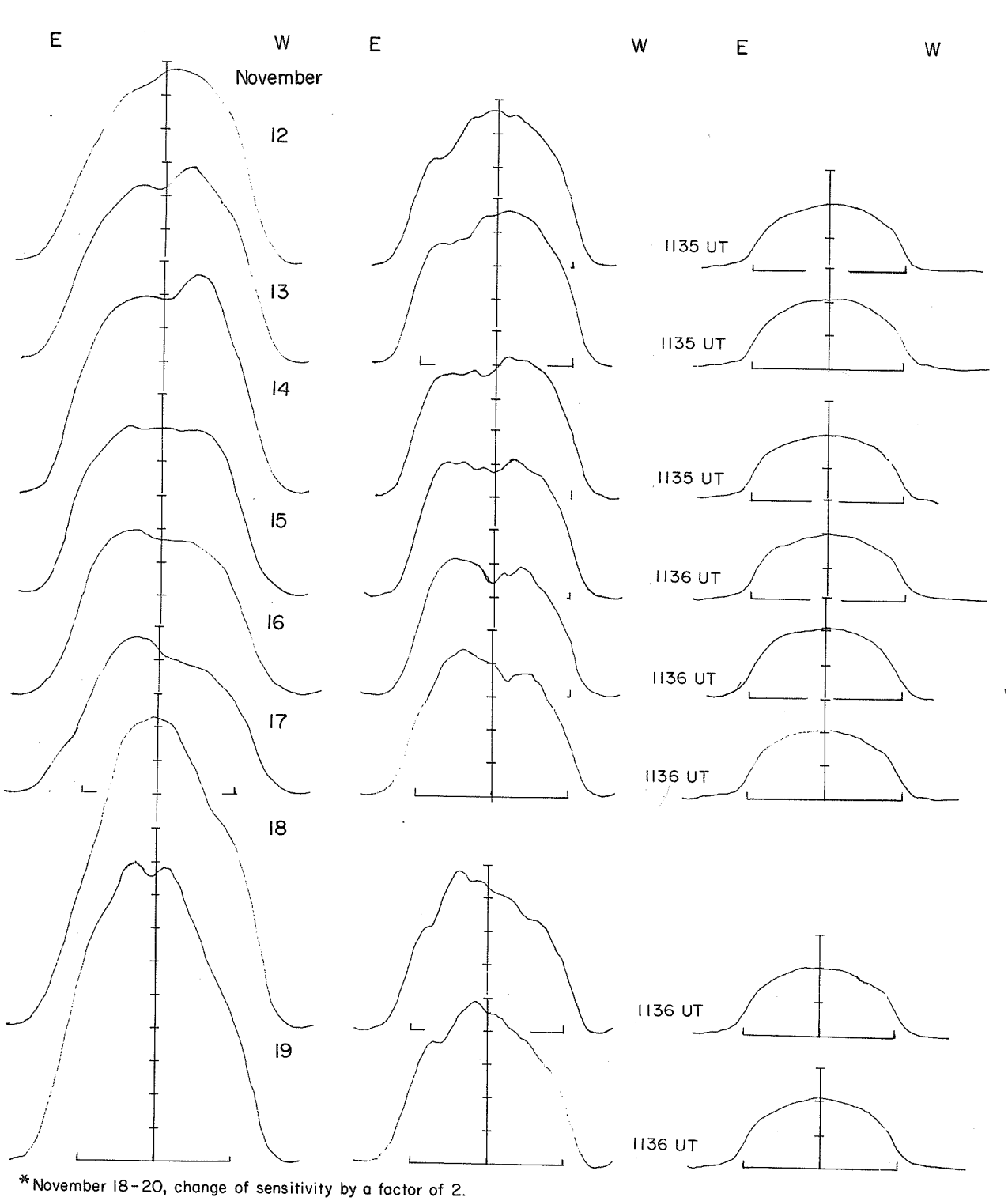

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
October
20
21
22
23
24
1136 UT
1136 UT
1135 UT
1135 UT
1135 UT


169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
Activity
October
25
26
27
28
29
1135 UT
1135 UT
1135 UT
1135 UT
1135 UT
Activity
Activity

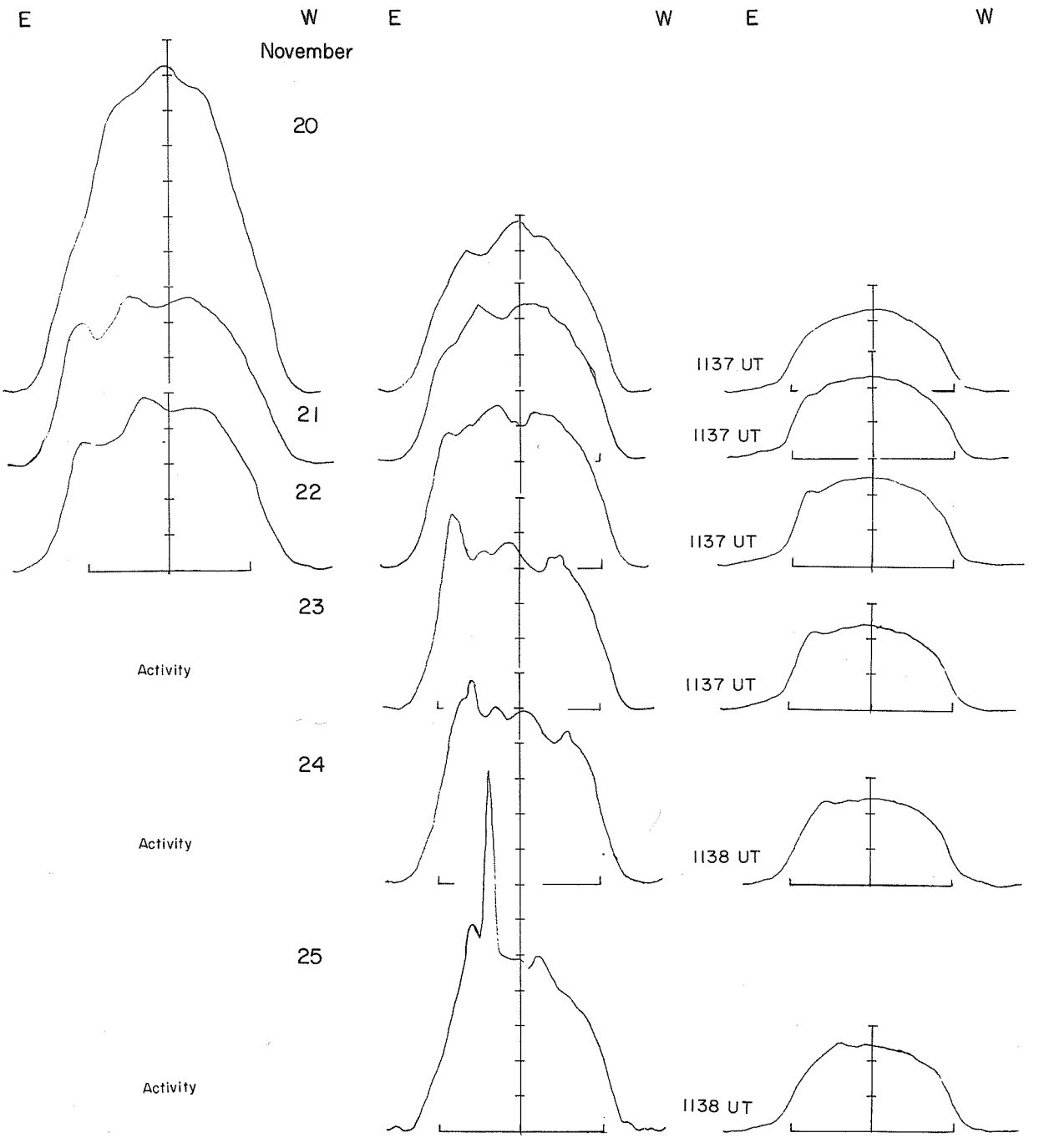

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
October
30
Activity
1135 UT
31
Activity
1135 UT
November 1
No Data
No Data
2
1135 UT
3
1135 UT
No Data

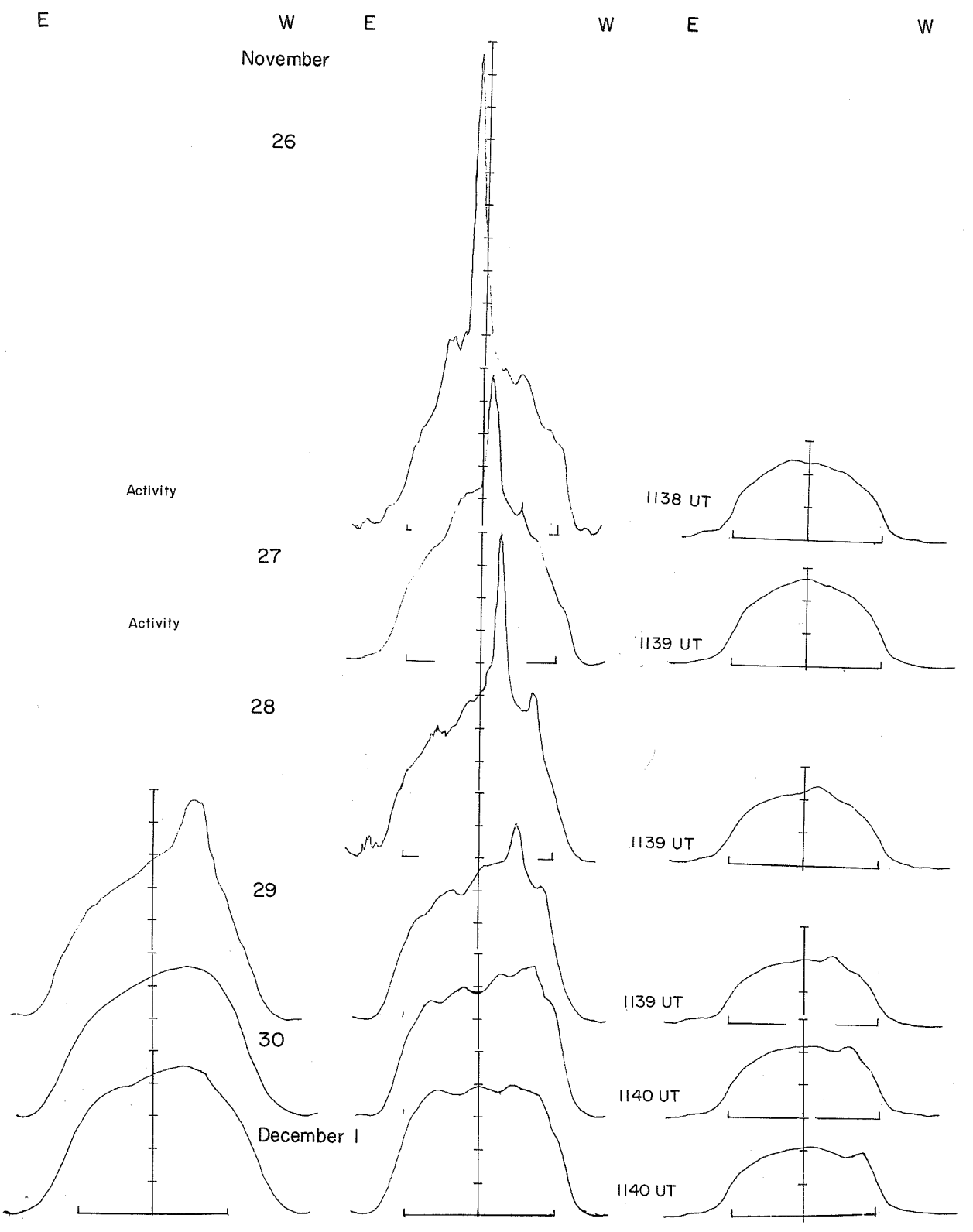


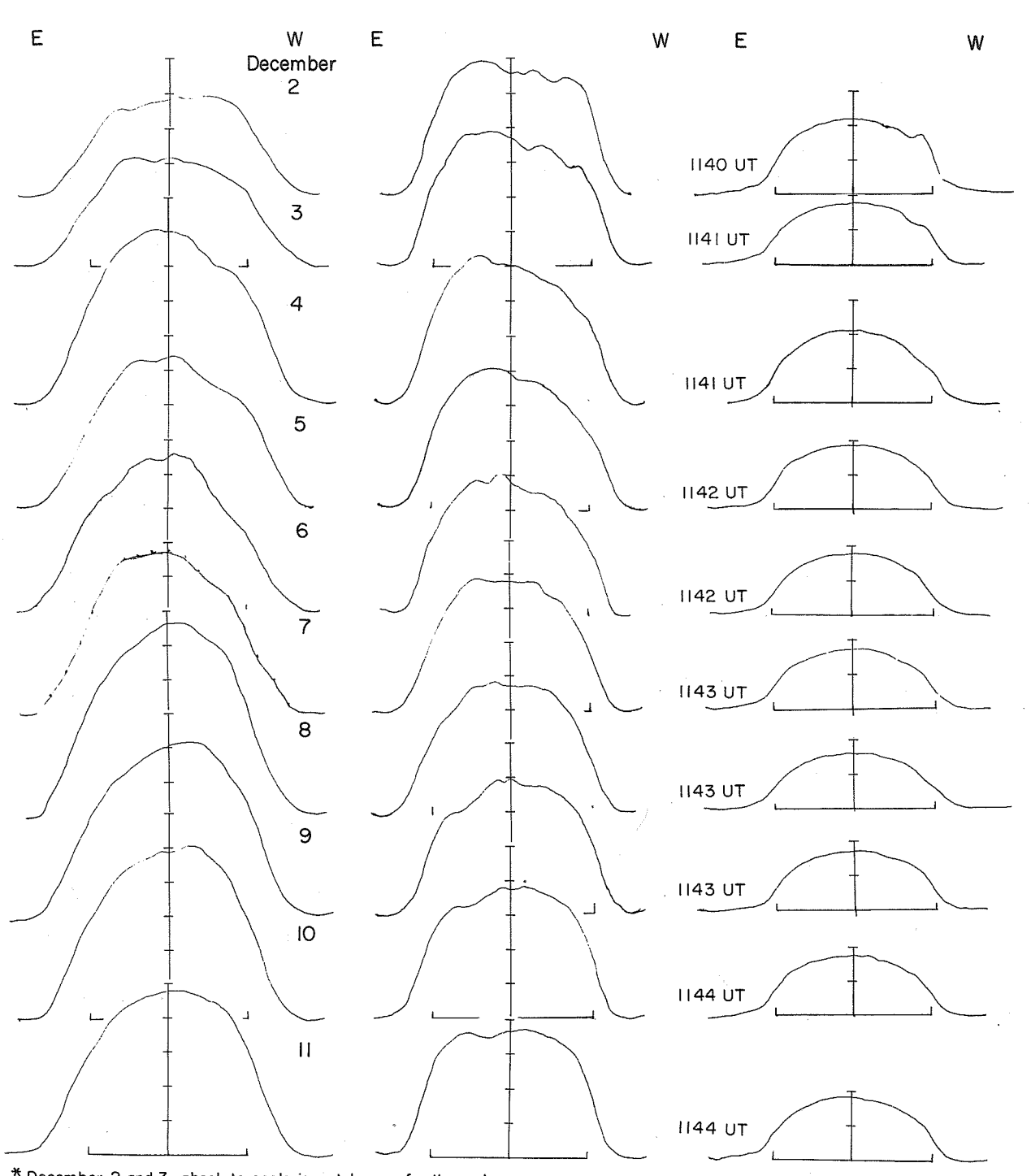
*From November 5 on, change of sensitivity by a factor of 2.



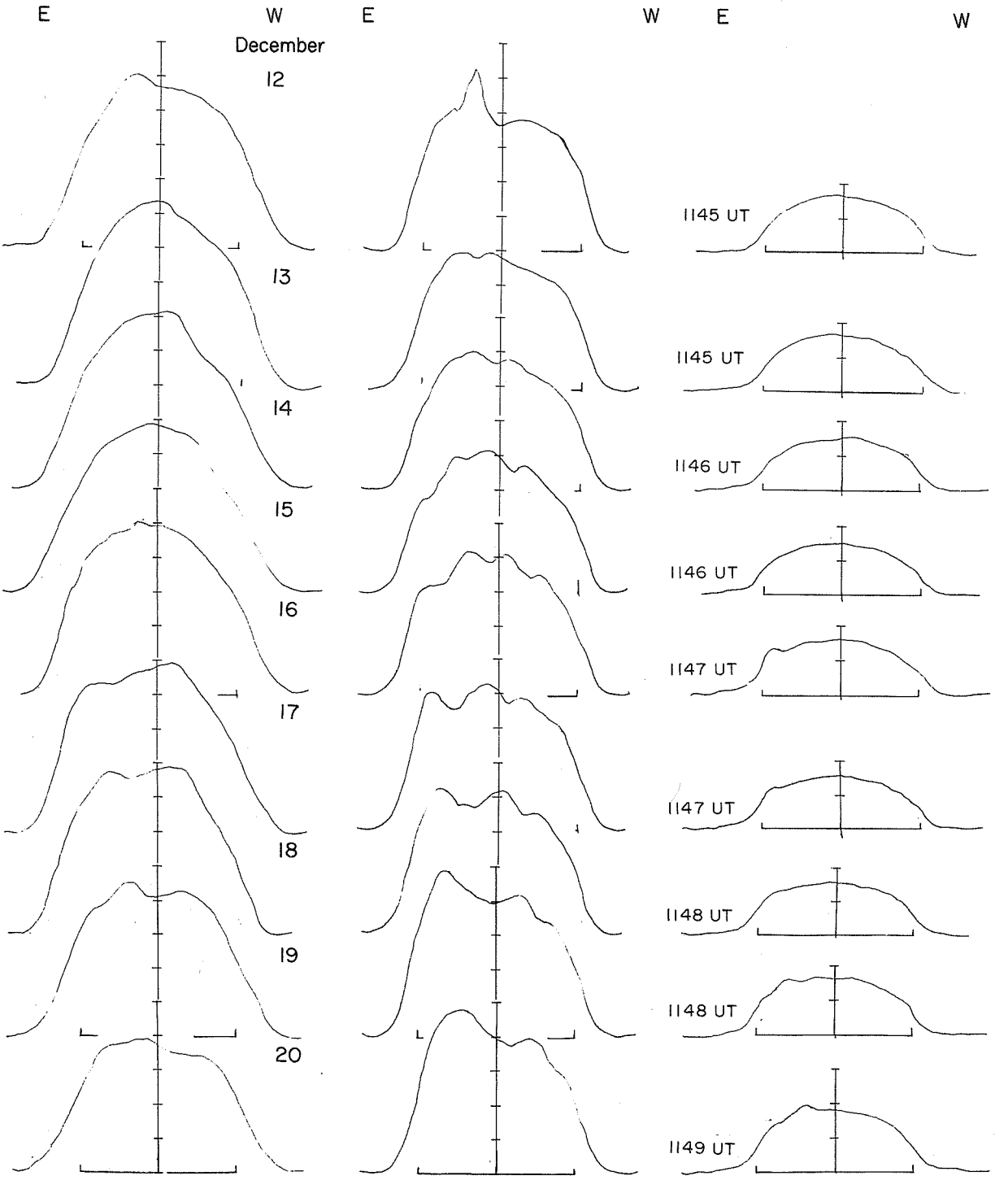
*November 18-20, change of sensitivity by a factor of 2.

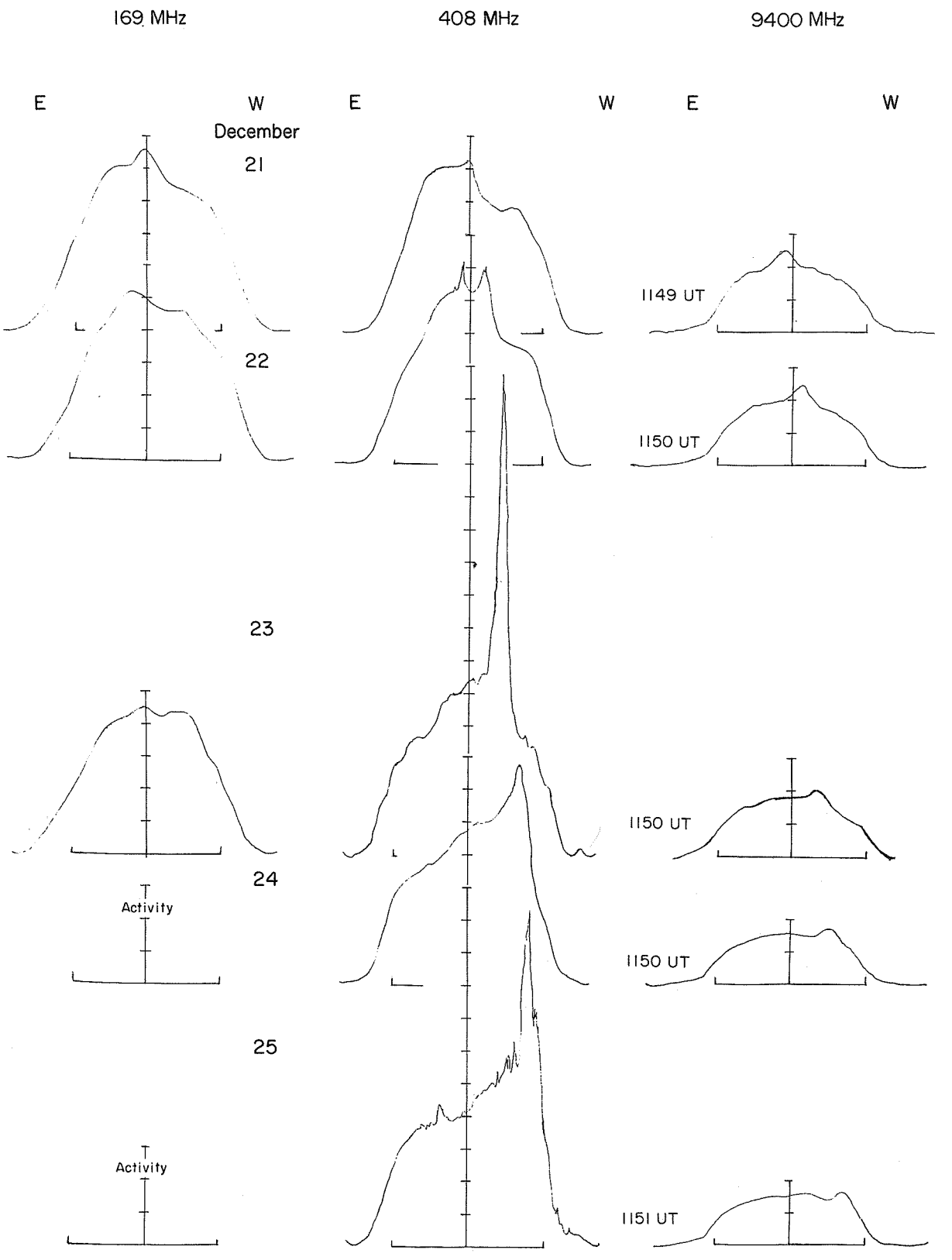

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
November
20
21
22
23
Activity
24
Activity
25
Activity
1137 UT
1137 UT
1137 UT
1137 UT
1138 UT
1138 UT

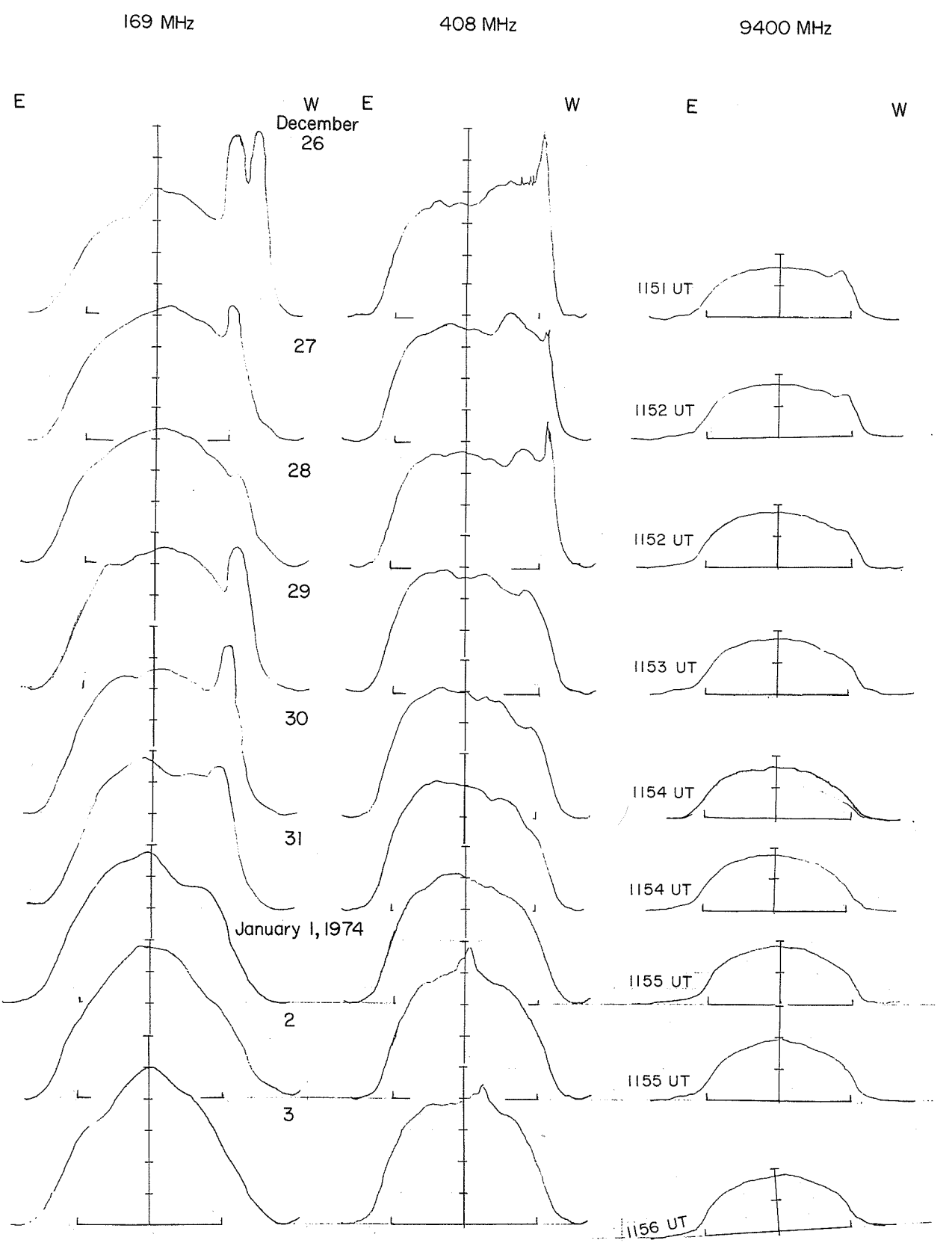

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
November
26
Activity
1138 UT
27
Activity
1139 UT
28
1139 UT
29
1139 UT
30
1140 UT
December 1
1140 UT

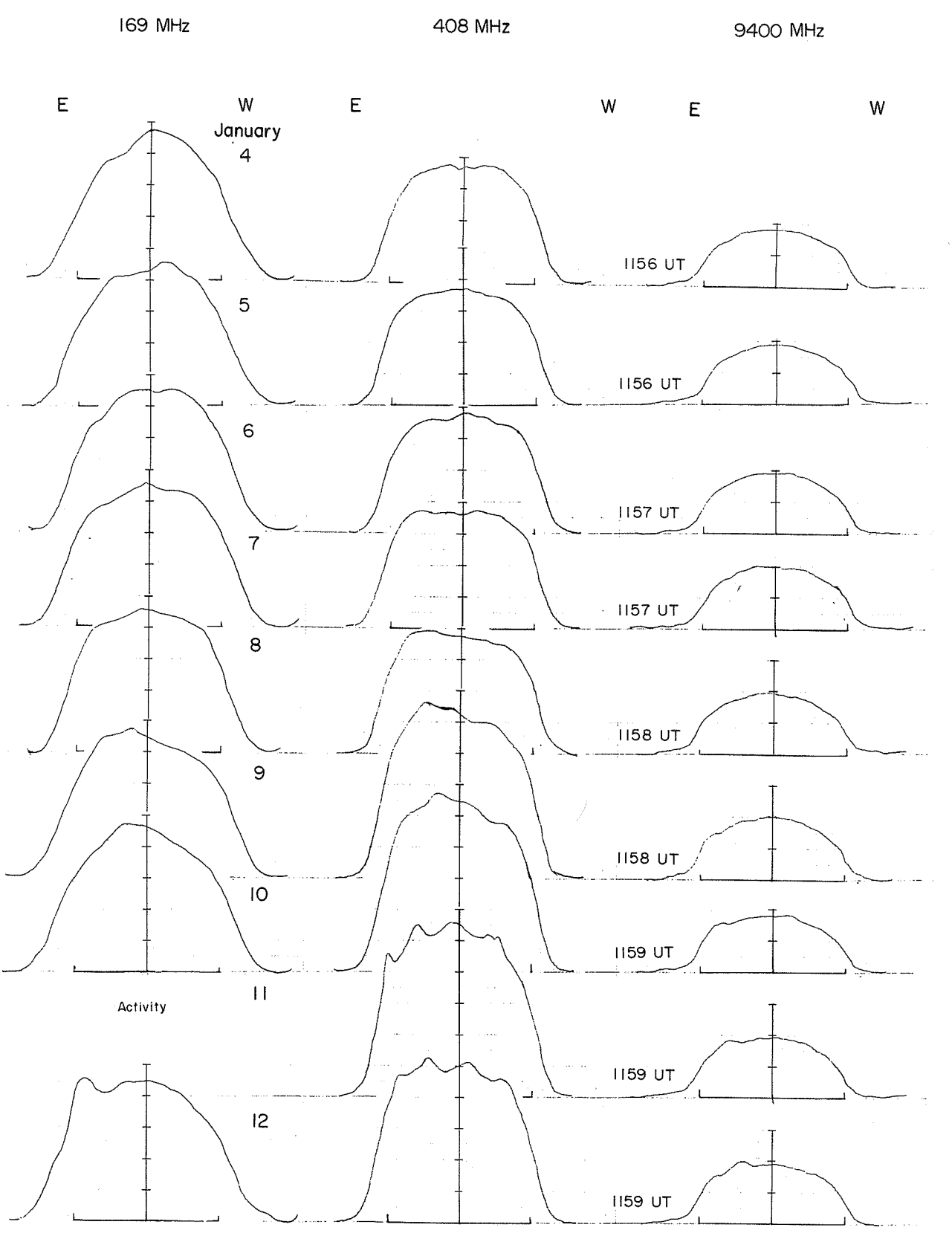


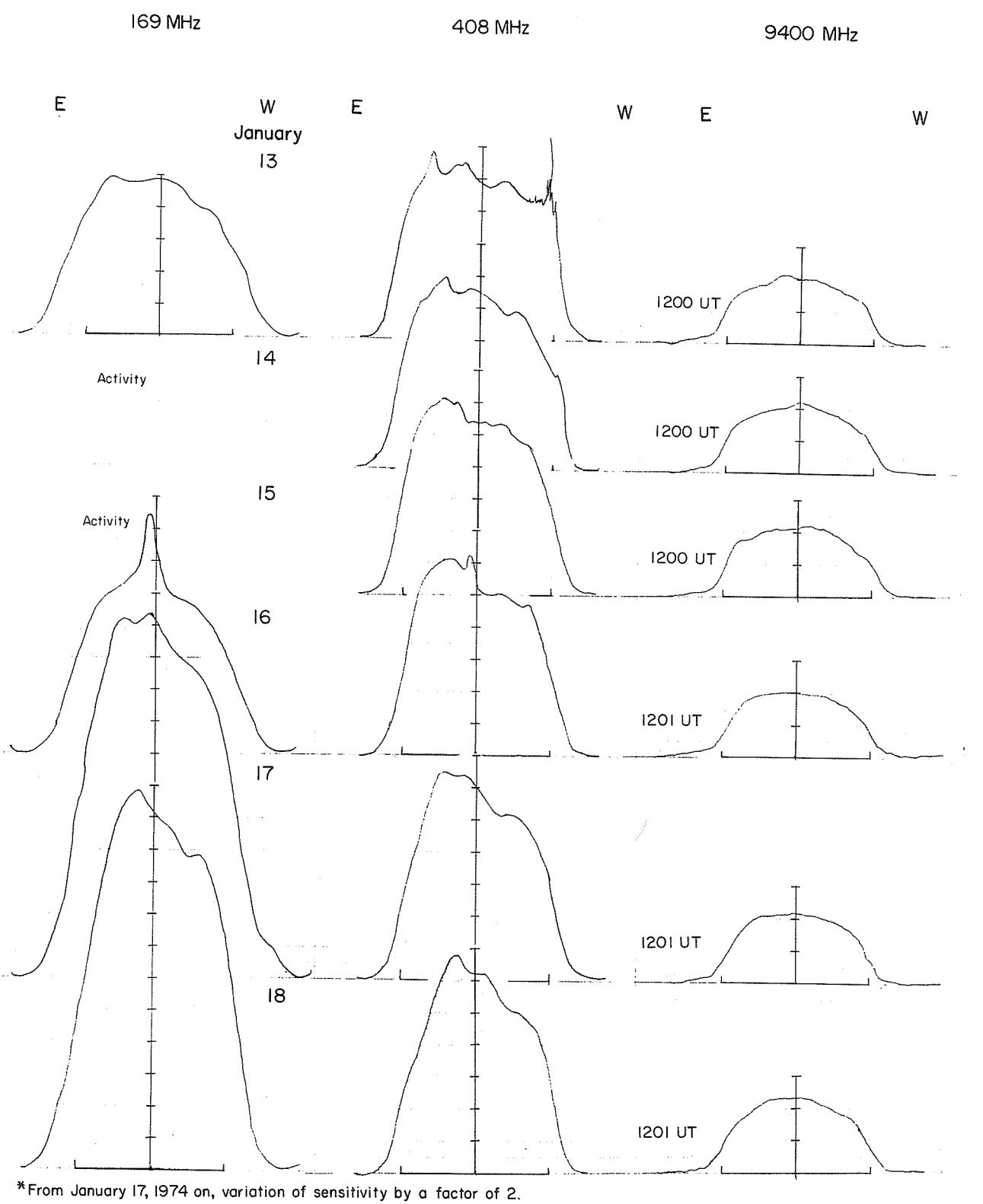
* December 2 and 3, absolute scale is not known for these days.


169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
December
12
13
14
15
16
17
18
19
20
1145 UT
1145 UT
1146 UT
1146 UT
1147 UT
1147 UT
1148 UT
1148 UT
1149 UT

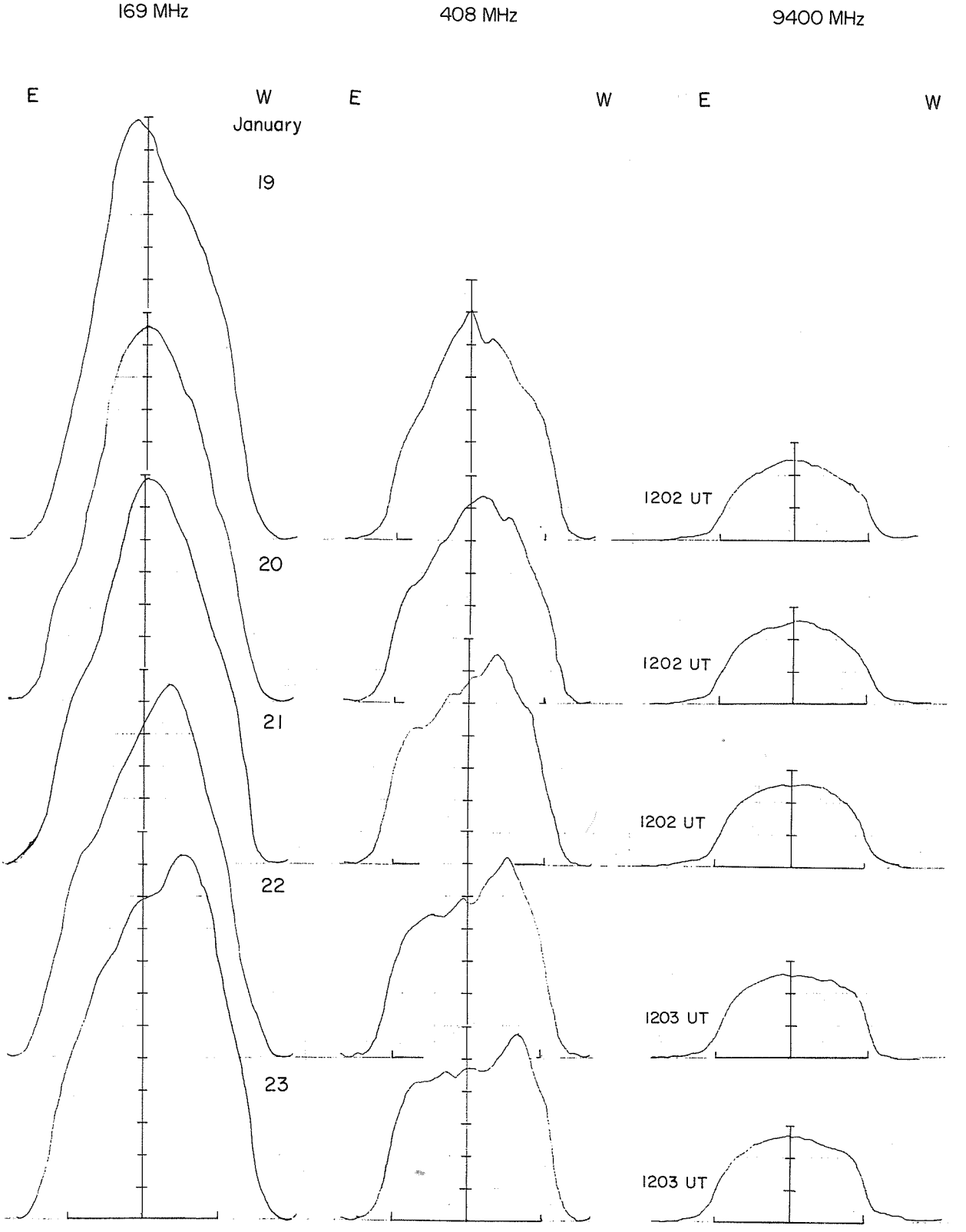

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
December
21
22
23
24
25
1149 UT
1150 UT
1150 UT
1150 UT
1151 UT
Activity
Activity

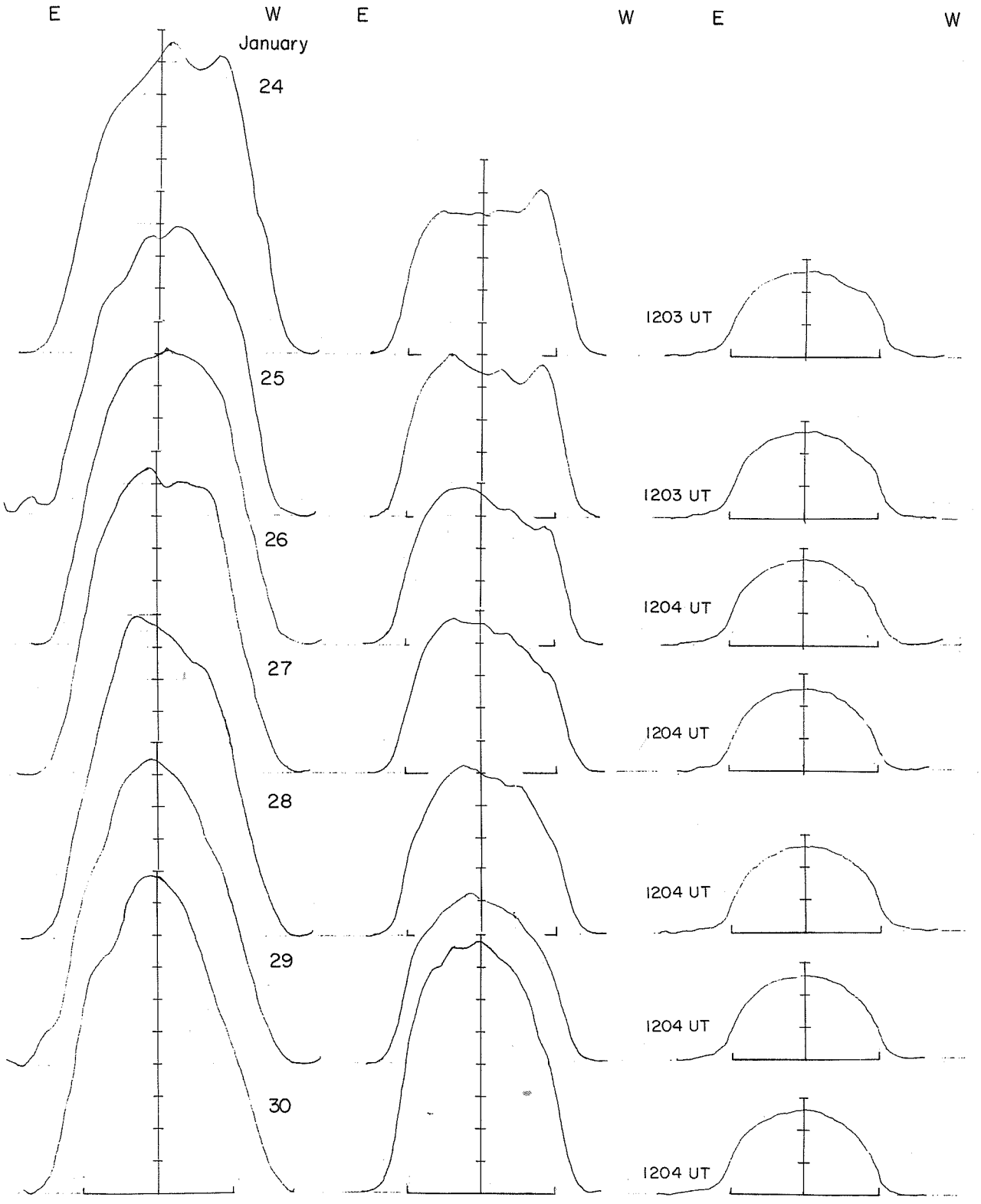

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
December
26
27
28
29
30
31
January 1, 1974
2
3
1151 UT
1152 UT
1152 UT
1153 UT
1154 UT
1154 UT
1155 UT
1155 UT
1156 UT

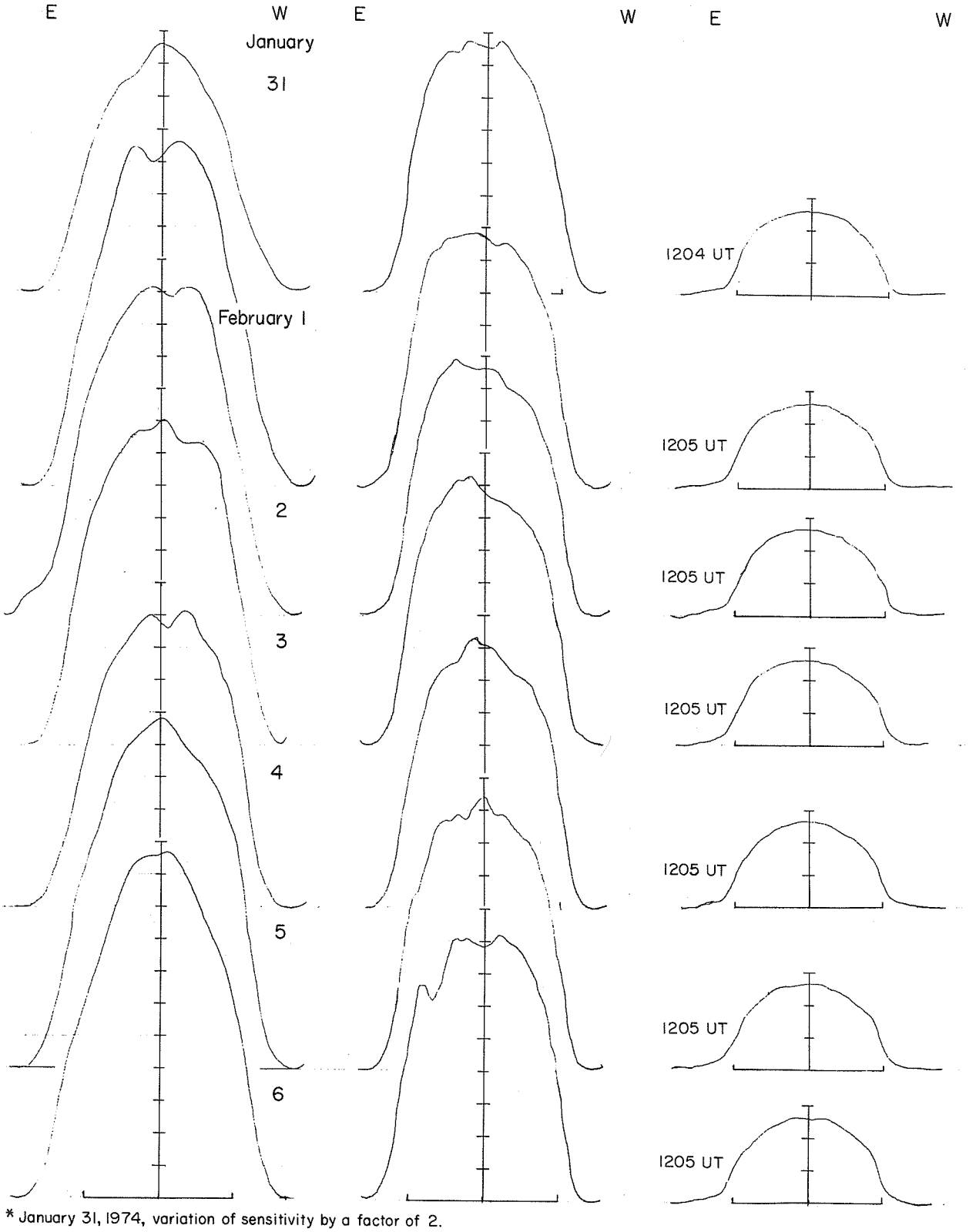

169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
January
4
1156 UT
5
1156 UT
6
1157 UT
7
1157 UT
8
1158 UT
9
1158 UT
10
1159 UT
11
Activity
1159 UT
12
1159 UT



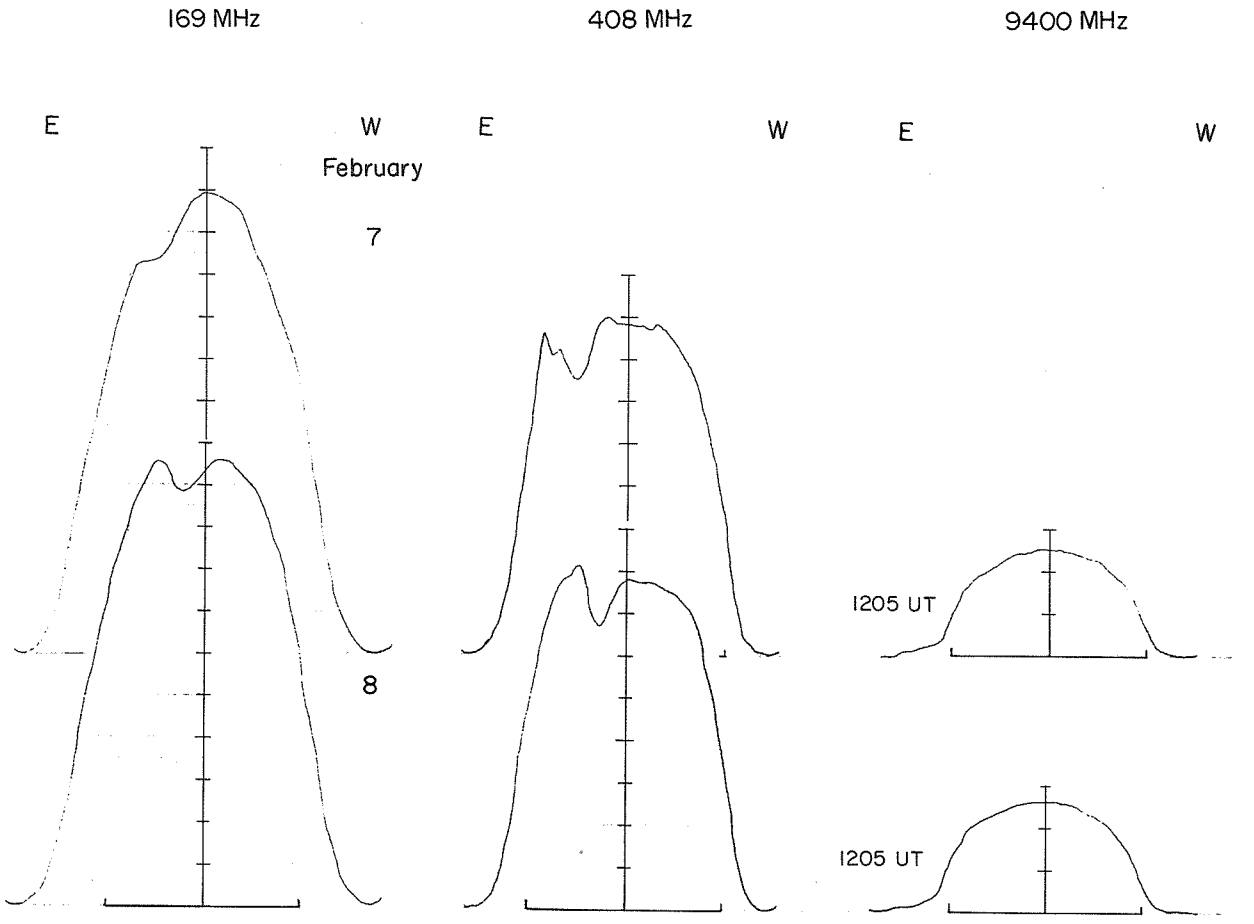
*From January 17, 1974 on, variation of sensitivity by a factor of 2.


169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
January
19
20
21
22
23
1202 UT
1202 UT
1202 UT
1203 UT
1203 UT


169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
January
24
25
26
27
28
29
30
1203 UT
1203 UT
1204 UT
1204 UT
1204 UT
1204 UT
1204 UT



* January 31, 1974, variation of sensitivity by a factor of 2.


169 MHz
408 MHz
9400 MHz
E
W
E
W
E
W
February
7
8
1205 UT
1205 UT

The Johns Hopkins University, Applied Physics Laboratory,
Solar Radio Emission Spectral Observations (565-1000 MHz)

(See Category 6.1.8 in Section II for more information)

A Guide for Classification of Solar Radio Bursts
Observed with the APL Spectrograph[1] (565-1000 MHz)

TABLE I - Description of the various types of spectra

SPECTRAL TYPE	APL SYMBOL	DESCRIPTION AND COMMENTS
I	1	Storm bursts
II	2	Slow drift bursts
III	3	Fast drift bursts; $\dot{\nu}$> 100 MHz/sec
IV	4	Prolonged continuum
V	5	Brief continuum (normally following type III bursts)
-	6	Intermediate drift bursts; $\dot{\nu} \sim$ 30-100 MHz/sec
UNCLF	UNCLF	Unclassified activity.

TABLE II - Symbols appended to the spectral type

SYMBOL	DESCRIPTION
P	Pulsations
G	Small group (< 10) of bursts
GG	Large group ($\geq$ 10) of bursts
C	Underlying continuum
U	U-shaped burst of type III
RS	Reverse-slope burst
DP	Drifting pair
N	Intermittent activity in this period

TABLE III - Intensity Scale

SYMBOL	FLUX DENSITY $X10^{-22}$ Wm^{-2} Hz^{-1}
1	25 - 65
2	65 - 650
3	> 650

1 Gotwols, B. L. and Phipps J., 1972, Solar Phys. 26, 386.

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS (565-1000 MHz)

Johns Hopkins University Applied Physics Laboratory

1973 DATE	TIMES OF OBS. (UT) START	END	BURSTS START(UT)	END(UT)	INT.	TYPE	REMARKS
MAY							
17	1749	2026	1749.0E	1750.5	2	3GG	
			1825.3	1827.1	2	3GG	
			1827.9	1828.5	1	3GG	
			1915.3	1917.9	3	3GG	
18	1203	1958	1527.4	1531.6	2	4P	
19	1210	1926					
20	1211	1936	1654.3	1654.4	1	3G	
21	1211	1453					
	1714	1749					
	1754	1852					
	1855	1955					
24	1345	1415					
	1424	1558					
	1601	1957					
25	1201	1635					
	1639	1816					
	1823	1959					
26	1155	1310					
	1322	1619					
	1639	1718					
	1725	1927					
27	1205	1543	1331.2	1331.6	1	3G	
	1550	1931	1606.2	1607.0	2	3GG	
28	1224	1929					
29	1638	1956					
31	1206	1957					
JUNE							
01	1157	1955					
03	1231	1906					
04	1234	1453					
	1459	1751					
	1822	2019					
09	1231	1926					
10	1156	1918					
11	1219	1955					
12	1245	1516					
	1523	2000					
	2004	2047					
13	1201	1950	1322.0	1322.0	2	UNCLF	NARROW BANDWIDTH
14	1201	1432					
	1503	1953					
15	1208	1954	1409.3	1409.4	2	3G	
16	1224	1535	1422.0	1426.0	3	4P	
	1539	1926	1427.9	1428.4	2	3G	
17	1203	1926					
18	1220	1440					
	1510	1952					
21	1226	1507					
	1510	1956					
22	1159	1930					
23	1238	1852					
25	1214	1356					
	1433	1746					
28	1858	1920	1858.9	1859.7	2	3GG	
29	1202	1819	1310.0	1311.5	2	3G	
	1855	1931	1515.4	1517.4	2	4P	
			1908.6	1909.5	1	4	
30	1214	1918	1516.3	1518.8	3	3GG	

1973 DATE	TIMES OF OBS. (UT) START	END	BURSTS START(UT)	END(UT)	INT.	TYPE	REMARKS
JULY							
01	1210	1925					
02	1238	1530					
	1600	1953					
06	1155	1920					
07	1229	1449					
	1456	1930					
08	1217	1930					
09	1211	1752	1650.3	1650.3	2	3U	
	1820	1938					
12	1154	1251					
	1307	1432					
	1502	1805					
	1832	1916					
	1938	1954					
13	1156	1918					
14	1139	1945					
15	1131	1849					
16	1243	1334					
	1357	1649					
	1809	1947					
21	1129	1725					
22	1126	1237					
	1250	1855					
23	1226	1314					
	1352	1544					
	1547	1731					
	1825	2000					
26	1209	1458					
29	1128	1856	1309	1353	2	4	
30	1219	1600					
	1656	1726					
	1751	1829					
	1901	1955					
AUG.							
01	1155	1446					
	1729	1811					
	1911	1955					
02	1203	1329					
	1554	1732					
	1801	1955					
03	1244	1423					
04	1130	1842					
05	1132	1416					
	1423	1845					
06	1214	1712					
	1740	1920					
09	1151	1450	1151.0E	1151.8	3	3GU	
	1456	1727	1153.4	1154.1	1	UNCLF	
	1844	1945	1414.9	1415.9	2	3GU	
			1550.4	1552.6	2	3GGU	
10	1156	1657					
	1723	1748					
	1805	1826					
	1855	1943					
11	1134	1845					
12	1137	1847					
13	1218	1406					
	1412	1700					
	1803	1941					
16	1203	1533					
	1603	1952					

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS (565-1000 MHz)

Johns Hopkins University Applied Physics Laboratory

1973 DATE	TIMES OF OBS. (UT) START	END	BURSTS START(UT)	END(UT)	INT.	TYPE	REMARKS
AUG.							
17	1157	1429					
	1436	1643					
	1820	1958					
18	1149	1845					
19	1151	1244					
	1254	1844					
20	1217	1247					
	1318	1449					
	1637	1925					
23	1156	1418					
	1450	1524					
	1550	1812					
	1842	1954					
24	1201	1454					
	1519	1535					
30	1213	1955	1503.5	1503.8	1	3G	
31	1204	1219					
	1225	1941					
SEP.							
01	1204	1526					
	1747	1925					
02	1209	1219					
	1422	1535					
06	1215	1226					
	1346	1359					
	1422	1458					
	1622	1647					
	1746	1844					
	1930	1946					
07	1211	1320	1218.9	1223.4	2	3GG	
	1519	1937	1823.1	1823.3	1	UNCLF	
09	1217	1918					
10	1225	1443	1635.7	1635.7	2	3	
	1510	1748					
13	1215	1338					
	1341	1457					
	1615	1810					
	1818	1944					
14	1208	1423					
	1454	1938					
15	1206	1846					
16	1512	1727					
17	1217	1422					
	1502	1642					
	1657	1950					
20	1522	1638					
21	1206	1413					
	1442	1510					
	1601	2017					
22	1216	1404					
	1424	1924					
23	1220	1919	1749.9	1750.0	2	3G	
24	1339	1425	1759.1	1759.2	1	3G	
	1451	1708					
	1730	1813					
OCT							
01	1242	1404					
05	1502	1846					
	1850	1946					
12	1224	1944	1450.8	1450.9	1	3	
13	1217	1927					

1973 DATE	TIMES OF OBS. (UT) START	END	BURSTS START(UT)	END(UT)	INT.	TYPE	REMARKS
OCT.							
14	1216	1925					
15	1631	1755					
	1829	2000					
18	1251	1955					
19	1219	1332					
	1405	1930					
20	1227	1923					
21	1219	1830					
22	1243	1945					
25	1232	1318	1552.8	1553.0	1	3G	
	1352	1505					
	1540	1948					
26	1224	1447					
	1450	1945					
27	1224	1742	1550.0	1550.0	2	UNCLF	
			1555.5	1559.1	2	6GRS	
			1607	1633	2	4	
28	1227	1839					
	1845	1938					
	1950	2056					
NOV.							
16	1308	1342					
	1408	1428					
	1511	1600					
17	1351	2023					
18	1308	1321					
	1324	1336					
19	1323	1439					
	1737	1838					
	1914	2026					
20	1333	1345					
	1405	1423					
	1708	1803					
	2014	2047					
24	1324	1351					
	1814	1847					
	1852	2020					
25	1303	1340					
27	1406	1914					
	1917	2106					
28	1431	2107					
29	1308	2031	1750.7	1750.7	1	3	
30	1305	1726					
DEC.							
01	1307	1916					
02	1318	2004					
03	1327	1602					
	1632	2040					
04	1319	1431	1349.0	1349.0	2	3	
	1623	2050	1949.6	1950.9	1	3G	
			1950.0	1950.1	1	3RS	
05	1323	1411					
	1424	1612					
	1620	1655					
	1745	1941					
	2008	2040					
06	1325	1714					
	1718	1930					
	2016	2046					
07	1305	2020					

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS (565-1000 MHz)

Johns Hopkins University Applied Physics Laboratory

1973 DATE	TIMES OF OBS. (UT) START	END	BURSTS START(UT)	END(UT)	INT.	TYPE	REMARKS
DEC.							
08	1313	2015					
09	1332	2014					
10	1325	2030					
11	1330	1432					
12	1512	1545					
	1938	2110					
13	1318	1342					
	1521	1907					
	1910	2040					
14	1301	1600					
	1603	1734					
15	1258	1434					
15	1820	2023					
16	1301	1411					
17	1619	1923					
	1927	2020					
18	1328	1949					
	2020	2048					
19	1322	1921					
20	1318	2030					
21	1314	1619					
	1624	1935					
22	1309	1922					
23	1303	1503					
	1542	1931					
24	1322	2110	1521.2	1521.3	3	3G	
26	1327	2050					
27	1715	2057					
28	1311	1906					
30	1335	1516					
	1553	2027					
31	1310	1540					
	1545	1600					
	1604	1959					
JAN. 1974							
01	1418	2122					
02	1343	2052					
03	1322	1808					
04	1316	1422					
	1432	1605					
	1620	1818					
	2009	2043					
05	1318	1945					
06	1330	2027					
07	1313	1935					
09	1429	1746					
10	1504	1957					
	2031	2046					
11	1319	1354					
	1449	1712					
	1716	1852					
12	1304	1822					
	1826	1947					
13	1311	1945					

1974 DATE	TIMES OF OBS. (UT) START	END	BURSTS START(UT)	END(UT)	INT.	TYPE	REMARKS
JAN.							
14	1312	1726					
	1819	1942					
	2007	2040					
15	1307	1733					
	1759	1945					
17	1305	2100					
18	1304	1321					
	1935	2054					
19	1312	1949					
20	1320	1606					
	1614	1929					
21	1307	1335					
	1341	1640					
	1648	1748					
	1829	1841					
	1859	1921					
22	1305	1800					
	1835	1900					
	1928	2048					
23	1344	1522					
	1526	1702					
	1712	1832					
	1929	1946					
	1950	2055					
24	1310	1340					
	1344	1425					
	1505	1538					
	1617	1800					
	1829	2053					
25	1316	1411					
	1417	1548					
	1702	1729					
	1758	2040					
26	1309	1937					
27	1305	1942					
28	1304	1738					
	1809	2029					
30	1417	1909					
	1912	2105					
31	1819	1956					
FEB.							
01	1303	1709					
	1812	2038					
02	1308	1552					
	1558	2033					
03	1324	2034					
04	1303	1733					
	1801	2029					
05	1302	1411					
	1428	1654					
	1729	1845					
	1849	2039					
06	1332	1439					
	1444	1628					
	1658	2039					
07	1305	1600					
	1628	2040					

APPENDIX

ATM INVESTIGATING TEAMS

Experiment S052, White Light Coronagraph

Dr. Robert M. MacQueen (Principal Investigator)
High Altitude Observatory
National Center for Atmospheric Research
Boulder, Colorado 80302 USA

Also: R. Broussard, A. Csoeke-Poeckh, J. T. Gosling (Co-investigator), E. G. Hildner (Co-investigator), R. Munro (Co-investigator), A. I. Poland (Co-investigator), and C. Ross

Experiment S054, X-ray Spectrographic Telescope

Dr. Riccardo Giacconi
American Science and Engineering, Inc.
Cambridge, Massachusetts 02139 USA

Also: Giuseppe Vaiana (Principal Investigator), R. Chase, T. Davis, L. Gollub, S. Kahler, A. S. Krieger, R. Petrasso, K. Silk, and A. Timothy

Experiment S055, UV Scanning Polychromator Spectroheliometer

Dr. E. Edward Reeves (Principal Investigator)
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts 02138 USA

Also: R. Doyle, A. Dupree, P. Foukal, L. Goldberg, M. C. E. Huber, R. Noyes, W. Parkinson, E. Schmahl, J. G. Timothy, J. E. Vernazza, and G. L. Withbroe

Experiment S056, Hi-Resolution X-ray Telescopes

Dr. J. Milligan (Principal Investigator)
Marshall Space Flight Center
Huntsville, Alabama 35812 USA

Also: G. Chapman, A. C. deLoach (Co-investigator), E. Frazier, R. Hoover, T. Janssens, J. McGuire, D. McKencie, J. Underwood (Principal Scientist), A. Walker, and R. Wilson

Experiment S082A, Coronal Spectroheliograph
Experiment S082B, Chromospheric Spectrograph

Dr. R. Tousey (Principal Investigator)
U. S. Naval Research Laboratory
4555 Overlook Ave., S. W.
Washington, D. C. 20390 USA

Also: D. Bohlin, G. Brueckner, W. Crockett, T. Makes, R. Mason, O. Moe, K. Nicolas, G. D. Purcell, V. Scherrer, R. Schumacher, N. Sheeley, M. VanHoosier and K. Widing

Experiment S020, X-ray/UV Solar Photography

Dr. Richard Tousey
U. S. Naval Research Laboratory
4555 Overlook Ave., S. W.
Washington, D. C. 20390 USA

H-Alpha Telescopes

E. Edward Reeves
Harvard College Observatory
60 Garden Street
Cambridge, Massachusetts 02138 USA

COLLABORATORS AFFILIATED WITH EXPERIMENT S052 (HAO WHITE LIGHT CORONAGRAPH)

M. Altschuler (HAO, NCAR)
Deconvolution of coronal structures

S. Bame (Los Alamos Scientific Laboratory)
Interplanetary observations of solar wind with IMP 6, IMP 7, and Mariner/Venus/ Mercury probes

H. Bridge (Center for Space Research, MIT)
Interplanetary observations of solar wind with Explorer 47

H. Courten (Dowling College, New York)
Search for comets at time of the 30 June 1973 eclipse

A. Dollfus (Paris Observatory)
Balloon-borne coronagraph observations near the eclipse of 30 June 1973

G. Dulk (University of Colorado/CSIRO,Australia)
Observations of metric radio bursts

W. Erickson (University of Maryland)
Metric wavelength studies of coronal emission

R. Fisher (Sacramento Peak Observatory)
Observations of Fe XIV emission in corona

R. Hansen (HAO, NCAR)
K-coronameter observations of inner corona

A. Maxwell (Harvard University)
Spectra of metric radio bursts

Gordon Newkirk (HAO, NCAR)
Density structures of corona and correlation with radio bursts

G. Pneuman (HAO, NCAR)
Energy balance in coronal structures

J. Rankin (Iowa State University)
Coronal electron densities determined by observations of pulsar

B. Rickett (University of California, San Diego)
Interplanetary scintillation measurements

K. Sheridan (CSIRO, Australia)
Radioheliograph observations of metric solar bursts

H. Schmidt (Max Planck Institute for Physics and Astrophysics, Munich, Germany)
Perihelion passage of comet Kohoutek

W. Wagner (Sacramento Peak Observatory)
Coronal cinematography of Fe XIV

COLLABORATORS AFFILIATED WITH EXPERIMENT S054 (MIT X-RAY SPECTROGRAPHIC TELESCOPE)

L. Acton (Lockheed Research Lab., Palo Alto, CA)
Rocket X-ray spectroscopy

M. Altschuler (HAO, NCAR, Boulder, Colo.)
Coronal structures

R. Blake (Univ. of Chicago, Chicago, Ill.)
Rocket X-ray spectroscopy

R. Bracewell (Stanford Univ., Palo Alto, Calif.)
Radio astronomy

R. Catura (Lockheed Res. Lab., Palo Alto, Calif.)
Rocket X-ray spectroscopy

R. T. Hansen (HAO, NCAR, Boulder, Colo.)
White Light Coronal data

J. Harvey (Kitt Peak Nat'l Obs., Tucson, Ariz.)
Correlation of magnetic field and X-ray structure

R. Howard (Hale Obs., Pasadena, Calif.)
Correlation of magnetic field and X-ray structure

W. Livingston (Kitt Peak Nat'l Obs., Tucson Ariz.)
Correlation of magnetic field and X-ray structure

G. A. Newkirk (HAO, NCAR, Boulder, Colo.)
Coronal structures

M. Oda (Tokyo Astronomical Obs., Tokyo, Japan)
Solar flare studies

G. W. Pneuman (HAO, NCAR, Boulder, Colo.)
Coronal structures

J. A. Pounds and J. H. Parkinson (Univ. of Leicester, Leicester, England)
Rocket X-ray spectroscopy

G. Righini (Arcetri Astrophysical Obs., Florence, Italy)
Magnetic field separator and chromospheric models of X-ray emitting structures

E. Roelof (Applied Physics Lab, Johns Hopkins U.)
Interplanetary extension of the corona

Z. Svestka (American Science and Engineering, Cambridge, Mass.)
Type III Bursts in active regions

COLLABORATORS AFFILIATED WITH EXPERIMENT S054 (MIT X-RAY SPECTROGRAPHIC TELESCOPE) - (Continued)

J. Jeffries (Univ. of Hawaii, Honolulu, Hawaii)
Coronal Observation of active regions/forbidden line intensity ratios

M. Landini (Arcetri Astrophysical Obs., Florence, Italy)
Models of X-ray emission structures

A. Lazarus (MIT, Cambridge, Mass.)
Solar wind studies

T. Takakura (Tokyo Astronomical Obs., Tokyo, Japan)
Solar flare studies

J. Wilcox (Stanford Univ., Palo Alto, Calif.)
Solar sector structure

J. B. Zirker (Univ. of Hawaii, Honolulu, Hawaii)
Coronal Observation of active regions/forbidden line intensity ratios

COLLABORATORS AFFILIATED WITH EXPERIMENT S055 (HCO UV SCANNING POLYCHROMATOR SPECTROHELIOMETER)

J. M. Beckers (Sacramento Peak Obs., Sunspot, N.M.)
Chromospheric oscillations and quiet sun extension of the network into corona

A. Gabriel (Aru Culham Lab., Abingdon, U.K.)
Line identification and abundances; 1973 eclipse

D. N. Hall (Kitt Peak Nat'l Obs., Tucson, Ariz.)
Chromospheric oscillations; excitation of helium in network; prominences and active regions

R. T. Hansen (HAO, NCAR, Boulder, Colo)
Coronal transients

J. W. Harvey (Kitt Peak Nat'l Obs., Tucson,Ariz.)
Excitation of helium in network; prominences and active regions

R. D. Hudson (Johnson Space Center, Houston,Tex.)
Structure of terrestrial atmosphere

J. Jeffries (Univ. of Hawaii, Honolulu, Hawaii)
Solar prominences

C. Jordan (Aru Culham Lab., Abingdon, U.K.)
Line identification and abundances; 1973 eclipse

W. C. Livingston (Kitt Peak Nat'l Obs., Tucson, Ariz.)
Solar prominences

G. A. Newkirk (HAO, NCAR, Boulder, Colo.)
Coronal transients

R. W. Nicholls (York Univ., Canada)
1973 eclipse and lunar observations

R. Norton (NOAA, Boulder, Colo.)
Structure of terrestrial atmosphere

F. Q. Orrall (Univ. of Hawaii, Honolulu, Hawaii)
Solar prominences

G. Simon (Sacramento Peak Obs., Sunspot, N. M.)
Chromospheric oscillations; quiet sun extension of network into corona

C. Slaughter (Kitt Peak Nat'l Obs., Tucson,Ariz.)
Chromospheric oscillations

R. J. Speer (Aru Culham Lab., Abingdon, U.K.)
1973 solar eclipse

E. Tandberg-Hanssen (Marshall Space Flight Center, Huntsville, AL.)
Solar prominences

J. B. Zirker (Univ. of Hawaii, Honolulu, Hawaii)
Solar prominences

COLLABORATORS AFFILIATED WITH EXPERIMENT S056 (MSFC HI-RESOLUTION X-RAY TELESCOPES)

L. Acton and R. Catura (Lockheed Res. Lab., Palo Alto, Calif.)
Rocket X-ray Spectroscopy of coronal regions

R. Blake (Univ. of Chicago, Chicago, Ill.)
Rocket X-ray spectroscopy of coronal regions

D. W. Datlowe and L. Peterson (Univ. of California, San Diego, Calif.)
Studies of hard X-ray flares with OSO-7

G. Elwert (Univ. of Tuebingen, Tuebingen, West Germany)
Structure of active regions

W. Glencross (Univ. College London, London, England)
Evolution of active regions

D. S. Intriligator (Calif. Inst. of Tech., Pasadena, Calif.)
Relationship between coronal X-ray structure, interplanetary sector structure and solar wind

J. H. Parkinson and J. A. Pounds (Univ. of Leicester, Leicester, England)
Rocket X-ray spectroscopy of coronal regions

D. Rust (American Science and Engineering, Cambridge, Mass.)

J. B. Zirker (Univ. of Hawaii, Honolulu, Hawaii)

A. B. Walker (Aerospace Corp., Los Angeles, Calif.)
Rocket X-ray spectroscopy of coronal regions

COLLABORATORS AFFILIATED WITH EXPERIMENT S082A and S082B (NRL CORONAL SPECTROHELIOGRAPH AND CHROMOSPHERIC SPECTROGRAPH)

C. Brown (NRL, Wash., D. C.)
Atmospheric model calculations; distribution of Ozone and NO_x

G. Doschek (NRL, Wash., D. C.)
Flare studies

B. Edlén (Lund, Sweden)
Identification of XUV emission lines

A. Green (Univ. of Florida, Gainesville, Fla.)
Solar spectrum from 2000A to 3000A relating to Ozone

F. Hudson (Sandia Corp., Albuquerque, N. M.)
Atmospheric model calculations; distribution of Ozone and NO_x

R. Kelly (Naval Post-Grad. School, Monterey, CA)
Identification of lines of XUV solar spectrum

R. Kreplin (NRL, Wash., D. C.)
Comparison of SOLRAD and ATM data

J. Linsky (Univ. of Colo., Boulder, Colo.)
Model solar atmosphere calculations

M. Longmire (Western Kentucky Univ.)
Distribution of O_2 in earth atmosphere from observations of Schumann-Runge band

R. Meier (NRL, Wash., D. C.)
Distribution of Hydrogen and Oxygen in earth atmosphere

D. Prinz (NRL, Wash., D. C.)
Distribution of Hydrogen and Oxygen in earth atmosphere

G. Simon (Sacramento Peak Obs., Sunspot,New Mexico)
Chromospheric network studies

R. A. Skrivanek (AFCRL, Bedford, Mass.)
Chromospheric network studies, XUV Flare observation studies

S. Tilford (NRL, Wash., D. C.)
Distribution of Ozone and NO_x and Atmospheric model calculations

J. Zirker (Univ. of Hawaii, Honlulu, Hawaii)
Flare and active region studies

SKYLAB/ATM

COORDINATED GROUND-BASED OBSERVATIONS

DAILY FORM

Send to:

J. Virginia Lincoln, DF63
World Data Center A
for Solar-Terrestrial Physics
NOAA
Boulder, Colorado 80302

Date

1. Station _____ 2. Investigator _____

3. Type: Ground-based / Satellite / Rocket
4. Program: Filtergram / Spectroheliogram / Coronagraph / Spectra / Magnetogram / Velocity Measurements / Other
Specifics:

5. Observing Times and Rates:

6. Wavelengths:

7. Measurements: Full disk / Field of view in arc sec and center of field by position angle and radius vector or by heliocentric coordinates

7a. Measurements intended for coordination with JOP(s):
8. Slit (Dimensions in arc sec; Position as in item 7 plus orientation):

9. Spectral Dispersion in A/mm:

10. Film Type:

11. Image Scale of Original Film:

12. Data Format Available:
A. Original film / Duplicate negatives / Prints
Microphotometry / Photoelectric scan / Digitized (card/tape)/
Computer plot / Strip charts / Tabulation / Other
B. Direct scientist-to-scientist / through World Data Centers

13. Quality (Subjective or scattered light or noise level):

14. Equipment Failure Details:

15. Other Pertinent Information:

UAG Series of Reports

Prepared by World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Colorado, U.S.A.

These reports are for sale through the National Climatic Center, Federal Building, Asheville, NC 28801, Attn: Publications. Subscription price: $25.20 a year; $12.00 additional for foreign mailing; single copy price varies. These reports are issued on an irregular basis with 6 to 12 reports being issued each year. Therefore, in some years the single copy rate will be less than the subscription price, and in some years the single copy rate will be more than the subscription price. Make check or money order payable to: Department of Commerce, NOAA.

Some issues are now out of print and are available only on microfiche as indicated. Requests for microfiche should be sent to World Data Center A for Solar-Terrestrial Physics, NOAA, Boulder, Co 80302, with check or money order made payable to Department of Commerce, NOAA.

UAG-1 "IQSY Night Airglow Data", price $1.75.
UAG-2 "A Reevaluation of Solar Flares, 1964-1966", price 30 cents.
UAG-3 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 6 July 1966 through 8 September 1968", microfiche only, price 45 cents.
UAG-4 "Abbreviated Calendar Record 1966-1967", price $1.25.
UAG-5 "Data on Solar Event of May 23, 1967 and its Geophysical Effects", price 65 cents.

UAG-6 "International Geophysical Calendars 1957-1969", price 30 cents.
UAG-7 "Observations of the Solar Electron Corona: February 1964-January 1968", price 15 cents.
UAG-8 "Data on Solar-Geophysical Activity October 24-November 6, 1968", price (includes Parts 1 and 2) $1.75.
UAG-9 "Data on Cosmic Ray Event of November 18, 1968 and Associated Phenomena", price 55 cents.
UAG-10 "Atlas of Ionograms", price $1.50.

UAG-11 "Catalogue of Data on Solar-Terrestrial Physics" (now obsolete).
UAG-12 "Solar-Geophysical Activity Associated with the Major Geomagnetic Storm of March 8, 1970", price (includes Parts 1-3) $3.00.
UAG-13 "Data on the Solar Proton Event of November 2, 1969 through the Geomagnetic Storm of November 8-10, 1969", price 50 cents.
UAG-14 "An Experimental, Comprehensive Flare Index and Its Derivation for 'Major' Flares, 1955-1969", price 30 cents.
UAG-15 "Catalogue of Data on Solar-Terrestrial Physics" (now obsolete).

UAG-16 "Temporal Development of the Geographical Distribution of Auroral Absorption for 30 Substorm Events in each of IQSY (1964-65) and IASY (1969)", price 70 cents.
UAG-17 "Ionospheric Drift Velocity Measurements at Jicamarca, Peru (July 1967-March 1970)", microfiche only, price 45 cents.
UAG-18 "A Study of Polar Cap and Auroral Zone Magnetic Variations", price 20 cents.
UAG-19 "Reevaluation of Solar Flares 1967", price 15 cents.
UAG-20 "Catalogue of Data on Solar-Terrestrial Physics" (now obsolete).

UAG-21 "Preliminary Compilation of Data for Retrospective World Interval July 26 - August 14, 1972", price 70 cents.
UAG-22 "Auroral Electrojet Magnetic Activity Indices (AE) for 1970", price 75 cents.
UAG-23 "U.R.S.I. Handbook of Ionogram Interpretation and Reduction", price $1.75.
UAG-24 "Data on Solar-Geophysical Activity Associated with the Major Ground Level Cosmic Ray Events of 24 January and 1 September 1971", price (includes Parts 1 and 2) $2.00.
UAG-25 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-41 MHz, 9 September 1968 through 9 December 1971", price 35 cents.

UAG-26 "Data Compilation for the Magnetospherically Quiet Periods February 19-23 and November 29 - December 3, 1970", price 70 cents.
UAG-27 "High Speed Streams in the Solar Wind", price 15 cents.
UAG-28 "Collected Data Reports on August 1972 Solar-Terrestrial Events", price (includes Parts 1-3) $4.50.
UAG-29 "Auroral Electrojet Magnetic Activity Indices AE (11) for 1968", price 75 cents.
UAG-30 "Catalogue of Data on Solar-Terrestrial Physics", price $1.75.

UAG-31 "Auroral Electrojet Magnetic Activity Indices AE (11) for 1969", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, February 1974, 142 pages, price 75 cents.

UAG-32 "Synoptic Radio Maps of the Sun at 3.3 mm for the Years 1967-1969", by Earle B. Mayfield and Kennon P. White III, San Fernando Observatory, Space Physics Laboratory and Fred I. Shimabukuro, Electronics Research Laboratory, Laboratory Operations, The Aerospace Corporation, El Segundo, California, 90245, April 1974, 26 pages, price 35 cents.

UAG-33 "Auroral Electrojet Magnetic Activity Indices AE(10) for 1967", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, May 1974, 142 pages, price 75 cents.

UAG-34 "Absorption Data for the IGY/IGC and IQSY", compiled and edited by A. H. Shapley, National Geophysical and Solar-Terrestrial Data Center, NOAA, Boulder, Colorado, U.S.A., W. R. Piggott, Science Research Council, Slough, U.K., and K. Rawer, Arbeitsgruppe für Physikalische Weltraumforschung, Freiburg, G.F.R., June 1974, 381 pages, price $2.00.

UAG-35 "Catalogue of Digital Geomagnetic Variation Data at World Data Center A for Solar-Terrestrial Physics", prepared by Environmental Data Service, NOAA, Boulder, Colorado, July 1974, 20 pages, price 20 cents.

UAG-36 "An Atlas of Extreme Ultraviolet Flashes of Solar Flares Observed Via Sudden Frequency Deviations During the ATM-SKYLAB Missions", by R. F. Donnelly and E. L. Berger, NOAA Space Environment Laboratory, Lt. J. D. Busman, NOAA Commissioned Corps, B. Henson, NASA Marshall Space Flight Center, T. B. Jones, University of Leicester, UK, G. M. Lerfald, NOAA Wave Propagation Laboratory, K. Najita, University of Hawaii, W. M. Retallack, NOAA Space Environment Laboratory, and W. J. Wagner, Sacramento Peak Observatory, October 1974, 95 pages, price 55 cents.

UAG-37 "Auroral Electrojet Magnetic Activity Indices AE(10) for 1966", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, December 1974, 142 pages, price 75 cents.

UAG-38 "Master Station List for Solar-Terrestrial Physics Data at WDC-A for Solar-Terrestrial Physics", by R. W. Buhmann, World Data Center A for Solar-Terrestrial Physics, Juan D. Roederer, University of Denver, Denver, Colorado, M. A. Shea and D. F. Smart, A.F.C.R.L., Hanscom AFB, Massachusetts, December 1974, 110 pages, price $1.60.

UAG-39 "Auroral Electrojet Magnetic Activity Indices AE(11) for 1971", by Joe Haskell Allen, Carl C. Abston and Leslie D. Morris, National Geophysical and Solar-Terrestrial Data Center, Environmental Data Service, February 1975, 144 pages, price $2.05.

UAG-40 "H-Alpha Synoptic Charts of Solar Activity For the Period of Skylab Observations, May, 1973-March, 1974", by Patrick S. McIntosh, NOAA Environmental Research Laboratory, February 1975, 32 pages, price 56 cents.

UAG-41 "H-Alpha Synoptic Charts of Solar Activity During the First Year of Solar Cycle 20 October, 1964 - August, 1965", by Patrick S. McIntosh, NOAA Environmental Research Laboratory, and Jerome T. Nolte, American Science and Engineering, Cambridge, Massachusetts, March 1975, 25 pages, price 48 cents.

UAG-42 "Observations of Jupiter's Sporadic Radio Emission in the Range 7.6-80 MHz 10 December 1971 through 21 March 1975", by James W. Warwick, George A. Dulk, and Anthony C. Riddle, Department of Astro-Geophysics, University of Colorado, Boulder, Colorado 80302, April 1975, 49 pages, price $1.15.

UAG-43 "Catalog of Observation Times of Ground-Based Skylab-Coordinated Solar Observing Programs", compiled by Helen E. Coffey, World Data Center A for Solar-Terrestrial Physics, May 1975, 159 pages.

USCOMM-NOAA-ASHEVILLE--5-30-75--500