

International Council of Scientific Unions

SPECIAL COMMITTEE

ON

SOLAR-TERRESTRIAL PHYSICS

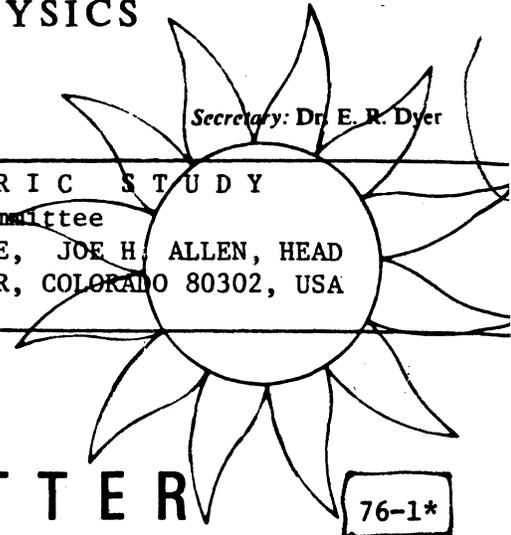
Jan

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INTERNATIONAL MAGNETOSPHERIC STUDY
 J. G. Roederer, Chairman IMS Steering Committee
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IMS NEWSLETTER

CONTENTS

Program plans for January 1976	Page 2
Program Plans for February 1976	3
Program Plans for March 1976	4
Notes from National IMS Contacts	4
General News on IMS	5
Calendar of GBR Campaigns	6

*This first Newsletter is a only prototype of the succeeding issues, both as to content (information exchange is difficult in the holiday season) and format (no time to make a dummy). Next month the TIMSCIE Office (our short name) will try to do better on both, with the cooperation of IMS contacts and participants -- and Father Time!
 --J.H.A.

FOR TIMSCIE Office: Telex 45897 Solterwarn BDR; Cable SOLTERWARN BDR (USA)

PROGRAM PLANS FOR JANUARY 1976

Special IMS Periods

Jan 2, 1600UT to Jan 4, 1700UT Vela 5B, Vela 6A cross neutral sheet; Hawkeye 1 in cusp
Jan 13, 0000UT to Jan 13, 1200UT IMP-H, Vela 5B cross magnetopause
Jan 25, 1200UT to Jan 26, 2300UT IMP-J, IMP-H cross magnetopause; IMP-H, Vela 5B, Vela 6A cross
neutral sheet
Jan 28, 0000UT to Jan 28, 1200UT IMP-J, IMP-H cross magnetopause

GBR* Campaigns: (numbers refer to program details in IMS Bulletin No. 2 or in references below)

Jan 1 to Jan 31; #0522; Truttse; Moscow; Aircraft - Night flight, airglow photometers
Jan 1 to Jan 31; A-1; Offerman; Aresonillo; Rockets (many) - Aeronomy experiments
Jan 1 to Jan 31; A-2; Multi-nation; Andoya; Rockets (2) - e-gun, E-field, particles
Jan 1 to Jan 31; #0474; Rees; Kiruna; Rocket - Chemical release, E&B-fields, particles
Jan 15 to Feb 13; #303; Stoker, SANAE; Balloons - X-rays, photometers; continue through Antarctic winter
Jan 16 to Jan 22; #0193; Hiraio; Kago; Rockets (2) - 0600 LT, 336 km, 1400 LT, 206 km, HP, IEP, Lang Probe
Jan 16 to Jan 22; #0429; Tohmatsu; Kagoshima; Rocket - 0600 LT, 336 km
Jan 16 to Jan 22; #0258; Obayashi; Kagoshima; Rockets (2) - 0600 LT, 336 km, 1400 LT, 206 km
Jan 17 to Jan 22; #0416; Miyatake; Kagoshima; Rocket - 1400 LT, 206 km
Jan 17 to Jan 22; #0435; Kaneda; Kagoshima; Rocket - 1400 LT, 206 km
Jan 17 to Jan 22; #0417; Kato; Kagoshima; Rocket - 1400 LT, 206 km
Jan 17 to Jan 22; A-3; N. Kawashima (same address as #0258); Kagoshima; Rocket - 1400 LT, 206 km
Jan 17 to Jan 22; A-4; T. Itoh (Same address as #0258); Kagoshima; Rocket - 1400 LT, 206 km
Jan 17 to Jan 22; A-5; J. Nakamura, College of Gen. Educ., Univ. Tokyo; Kagoshima; Rocket - 1400 LT, 206 km
Jan 17 to Jan 22; A-6; T. Ozio; Kagoshima; Rocket - 1400 LT, 206 km
Jan 20 to Feb 5; #0400; Berning; Poker Flat; Rocket - Dark sky, aurora, tracking test
Jan 20 to Feb 13; #0531; Lazutin; Kiruna, Apatity; Balloons - complex experiments of SAMBO 1-type
Jan 21 to Feb 6; A-7; Evans; Poker Flat, Rocket - Complex experiment, low altitude dynamics
Jan 21 to Feb 10; A-8; Winckler; Poker Flat; Rocket - ECHO IV Program, complex experiment
Jan 1, 8, 15, 22, 29; #0342; Kulkarni; Aspendale; Balloons - Weekly program, ozonesonde
Jan 1, 2, . . . , 31; #0458; Charakchyan; Mirny, Murmansk, Moscow, Alma Ata; Balloons - Daily, cosmic rays

Jan 20, 0400UT to Jan 22, 2000UT; #0004; Bauer; Iono. Incoherent Scatter Network; Surface - Tidal Studies
Jan through Feb; A-9; (van der Westhuysen); South Atlantic Ocean; Surface - ship 'RSA' voyages South
Africa to Gough, Sanae, Marion, and return carrying neutron monitor
Jan through Feb; A-10; (van der Westhuysen); Pacific Ocean; Surface - freighter Durban to Hong Kong,
Japan, and return - neutron monitor
(we have not fully collated available information on Surface campaigns)

Notes on Program Plans for January 1976

Refined Times of Special IMS Periods for January.

The start and end times of the periods listed above and in the SCOSTEP Special Announcement shift one hour in some cases as a result of a recomputation by Vette using a 3-dimensional model magnetosphere. The refined UT times of the periods are (changed times underlined): Jan 2 1600 to Jan 4 1600; Jan 13 0000 to Jan 13 1300; Jan 25 1300 to Jan 26 2400; Jan 27 2300 to Jan 28 1300.

A-1; Offerman, part of the Germany Aeronomy rocket program. Launches near Huelva, Spain of 20 Skua, 2 Skylark II, 2 Petrel, 1 Nike-Apache, and 1 Skua IV.

A-2; CCOG Circula Letter Nr. 6, Feb. 75, pg. 9, W. Stoffregen, Alvagen 29A, S-752 45 UPPSALA, Sweden. Simultaneous launches: upper rocket carries e-gun that fires down along field line, lower rocket has experiments to measure particles and fields. Participating countries: USA, UK, Norway, Austria.

*GBR stands for Ground-based, Balloon and Rocket experiments; also includes aircraft and ship cruises.

#0531; Lazutin, is one part of a multi-nation program for launching balloons from Kiruna (ESRANGE) to drift Eastwards. Other participants are Zhulin, USSR; Falthammar, Sweden; Riedler, Austria; Parks, USA; Treilhou, France. Studies of Auroral X-rays.

A-7; Evans and Bernstein (for address see Program #0170), Investigation of low altitude (< 2000 km) auroral particle acceleration mechanisms.

A-8; J.R. Winckler, School of Physics and Astronomy, Univ. of Minnesota, Minneapolis, Minnesota, 55455, USA. Black Brant V-C into evening quiet-arc conditions. High power e-gun, particle detectors, photometers, E-fields, plasma. Investigate dynamics of electron beam in magnetosphere, beam/plasma interactions in ionosphere. Simultaneous TV auroral imagery from ground. A continuing series.

A-9, A-10; O.A. van der Westhuysen, Secretary, SANCGASS, S. African CSIR, P. O. Box 395, Pretoria, S. Africa.

#0450; Johnstone, has been shifted to Feb 76 and a second rocket launch at Andoya added.

#0004; Bauer, is part of Ionospheric Incoherent Scatter Network (IISN) (URSI WGG 2). Co-ordinated Incoherent Scatter radar observations at St. Santin, Arecibo, Jicamarca, Millstone and Chatanika.

PROGRAM PLANS FOR FEBRUARY 1976

Special IMS Periods

Feb 8, 1500OUT to Feb 9, 2000OUT

IMP-J, Vela 5B, Vela 6A in neutral sheet

Feb 21, 2000OUT to Feb 23, 0400OUT

IMP-J, Hawkeye 1, Magnetopause; IMP-H, Vela 6A Magnetopause

GBR Campaigns: (numbers refer to program details in IMS Bulletin No. 2 or in references below)

--- to Feb 5; #0400; Berning; Poker Flat; Rocket - Dark sky, aurora, tracking test
--- to Feb 13; #303; Stoker, SANA; Balloons - X-rays, photometers; continue through Antarctic winter
--- to Feb 13; #0531; Lazutin; Kiruna, Apatity; Balloons - complex experiments of SAMBO 1-type
--- to Feb 6; A-7; Evans; Poker Flat, Rocket - Complex experiment, low altitude dynamics
--- to Feb 10; A-8; Winckler; Poker Flat; Rocket - ECHO IV Program, complex experiment
Feb 1 to Feb 29; #0522; Truttse; Moscow; Aircraft - Night flights, airglow
Feb 1 to Mar 31; #0159; Chanin (Tulinov); Heiss Island; Rocket - spectrometer
Feb 1 to Feb 29; #0152; Bryant; Kiruna; Rockets(2) - new launches, added program
Feb 1 to Feb 29; #0474; Rees; Kiruna; Rocket - complex observations
Feb 1 to Feb 29; #0450; Johnstone; Andoya; Rockets (2) - night launch, plasma studies
Feb 1 to Feb 29; #0100; McEwen; Ft. Churchill; Rocket - Spectrometers, photometers.
Feb 8 to Feb 29; #0404; Cloutier; Poker Flat; Rockets (2) - E & B fields; particles
Feb 10; #0427; Kamada; Syowa; Rocket - 0300 LT, 210 km
Feb 10; #0217; Oya; Syowa; Rocket - 0300 LT, 210 km
Feb 10; A-4; T. Itoh; Syowa; Rocket - 0300 LT, 210 km
Feb 10; A-11; S. Miyazaki (same address as #0185); Syowa; Rockets (2) - 0300 LT, 210 Km; 2000 LT, 130 km
Feb 10; #0218; Kodama; Syowa; Rocket - 2000 LT, 130 km
Feb 10; #0429; Tohmatsu; Syowa; Rocket - 2000 LT, 130 km
Feb 19 - Mar 10; #0164; Davis; Poker Flat; Rocket - Quiet time, multiple Barium release
Feb 19 - Mar 5; #0400; Berning; Poker Flat; Rockets - 3 programs; Aircraft - doubtful
Feb 23 - Mar 5; #0328; Tinsley (Christensen); Poker Flat; Rocket - complex exper.
Feb 5, 12, 19, 26; #0342; Kulkarni; Aspendale; Balloons - ozonesonde
Feb 1, 2, . . . , 29; #0458; Charakhyan; Mirny, Murmansk, Moscow, Alma Ata; Balloon - daily launches, cosmic rays

--- through Feb; A-9; (van der Westhuysen); South Atlantic Ocean; Surface - ship 'RSA' voyages South Africa to Gough, Sanae, Marion, and return carrying neutron monitor
--- through Feb; A-10; (van der Westhuysen); Pacific Ocean; Surface - freighter Durban to Hong Kong, Japan, and return - neutron monitor
Feb 17, 0400OUT to Feb 19, 2000OUT; #0004; Bauer; IISN; Surface - F-layer studies
Feb through April; A-12; Crochet; Addis Ababa; Surface - E fields in equatorial ionos.
(we have not fully collated available information on Surface campaigns)

Notes on Program Plans for February 1976

#0152; new program of Kiruna (ESRANGE) launches.
For details contact D.A. Bryant (see IMS Bulletin No. 2).
#0450; Johnstone Jan launch moved to Feb and second launch added.
#0400; Berning, Blank, Ulwick, and others. E-region studies, 3 programs; (1) Through and over bright auroral arc, CO₂ IR emissions with following TMA release for neutral wind. (2) e⁻ beam gun, 3 kv at 1 amp, up field line, apogee 110 km, SWIR radiometers, photometers, spectrometer, impedance probe, + ion mass spec. E-region during quiet magnetosphere. (3) Very high resolution IR interferometer/spectrometer carried into auroral break-up. Balloon and aircraft coordinated observations now unlikely.
#0328; (Tinsley) Project Scientist is A. B. Christensen. FERRET program launch carries: EUV, ion mass spect., ion and electron probes, photometers, and magnetometer.
A-12; Crochet, coherent radar described in "French Contribution to the IMS," August 1975, item GR-4. Contact P. Simon, DASOP, Observatoire, 92190 Meudon.

GENERAL NEWS

ISS satellite is still scheduled to be launched by Japan in February 1976. It is the first spacecraft dedicated to IMS. The planned orbit is circular at 1000 km with inclination 70°. It will carry various detectors as detailed in the supplement to the 1975 Report on Active and Planned Spacecraft and Experiments, July 75, NSSDC/WDC A-R&S 75-06.

Prognoz-4 was launched by USSR December 22, according to the Spacewarn Bulletins. It may be added to the list of satellites "useful" to IMS. Inclination 66.5°, 634 km perigee, 199,000 km apogee (32.2 RE), period 95 hours 40 min, Solar wind plasma, electric and magnetic fields.

The TIMS Central Information Exchange Office appreciates receiving many types of detailed program information such as the CCOG Circular Letters, the French IMS Contribution report, and flight plan reports for individual rocket campaigns. A summary list of launch schedules for the Poker Flat range has been most helpful. We request that participants in IMS share such information with this office even though it may be preliminary and subject to revision.

PROGRAM PLANS FOR MARCH 1976

Special IMS Periods

Mar 2, 0700OUT to Mar 4, 0200OUT IMP-J, Neutral Sheet; IMP-H, Vela 6A - Magnetopause

Mar 6, 0300OUT to Mar 7, 1500OUT Multiple Boundary Crossings

Mar 18, 1400OUT to Mar 19, 2400OUT Multiple Boundary Crossings

GBR Campaigns: (numbers refer to program details in IMS Bulletin No. 2 or in references below)

--- to Mar 5: #0400; Berning; Poker Flat; Rockets - 3 programs; Aircraft - doubtful

--- to Mar 5: #0328; Tinsley (Christensen); Poker Flat; Rocket - complex exper.

--- to Mar 10; #0164; Davis; Poker Flat; Rocket - Quiet time, multiple Barium release

--- to Mar 31; #0159; Chanin (Tulinov); Heiss Island; Rocket - spectrometer

Mar 17 to Apr 3; #0305, 0308; Studeman, Theile; Kiruna, Andoya; Rocket - Complex program

Mar 17 - Apr 1; A-13; Heikkila; Ft. Churchill; Rocket - E, B-fields, particles, (see #0356)

Mar 18 to Apr 4; #0356; Sheldon; Ft. Churchill; Rocket - X-rays, E fields, (see A-13)

Mar 17 to Apr 3; #0164; Davis; N. Polar Region; Aircraft - video of aurora, coordinated PORCUPINE

Mar 18 to Apr 4; A-14; Peek; Poker Flats; Rockets - Barium injection, coordinated

Mar 18 to Apr 4; #0149; Bullough; Poker Flat; Rockets - VLF meas., coordinated (see #0356)

Mar to Apr; #0400; Berning; Poker Flat; Rocket - e- accelerator, moon down

Mar 4, 11, 18, 25; #0342; Kulkarni, Aspendale; Balloons - ozonesonde

Mar 1, 2, . . . , 31; #0458; Charakchyan; Mirny, Murmansk, Moscow, Alma Ata; Balloons - daily launch, cosmic rays

--- through April; A-12; Crochet; Addis Ababa; Surface - E fields in equatorial ionos.

Mar 16-18; #0004; Bauer; IISN; Surface - Gravity waves and plasma

Mar-Apr; A-12; Crochet; Djibouti; Surface - E fields in equatorial ionosphere
(we have not fully collated available information on Surface campaigns)

Notes on Program Plans for March 1976

#0305, 0308; Studeman, Theile - 2 programs in IMS Bulletin 2. Part of many experiments carried on PORCUPINE rocket.

A-13; Heikkila (see also #0328 Tinsley), particles, spect., photom., fields, other exper. launch into diffuse aurora. Coordinated with #0356 Sheldon ARCAS launch at Ft. Churchill.

#0356; Sheldon - Note, Siple programs postponed. See U.S. Coordinator's notes.

#0164; Davis, aircraft measurements in coordination with PROCUPINE program.

A-14; Peek, LASL-U. Alaska launches coord. with #0149 Bullough rockets, #0288 Rycroft Whistler observations, and New Zealand conjugate studies.

Chatanika radar will operate in conjunction with many Poker Flat Launches.

SPECIAL IMS PERIODS FOR REST OF 1976

Jan 23	1400OUT	to	Jun 26	1700OUT
Jul 7	0700	to	Jul 8	1900
Jul 9	2000	to	Jul 10	0800
Jul 22	0600	to	Jul 22	1800
Jul 31	2000	to	Aug 3	0400
Nov 26	1100	to	Nov 26	2300
Dec 3	0800	to	Dec 3	2000
Dec 6	0600	to	Dec 8	1800
Dec 30	0200	to	Dec 31	1300

The International Geophysical Calendar for 1976 has been distributed. The TIMSCIE Office can obtain additional copies from IUWDS. The IMS Satellite Situation Center plans to re-issue the calendar overprinted with the Special IMS Periods.

NOTES FROM NATIONAL IMS CONTACTS

South Africa. van der Westhuysen notified us that aurora and geomagnetic programs under #0224, Kuhn, are now responsibility of P.R. Sutcliffe (same address). Airglow programme now under Gledhill (see #0457). Zeeman's airglow programme (#0370) terminated. Aircraft flights postponed until possibly Sept. 76. S. African ship cruises to carry IMS experiments, see monthly program plans.

USSR. Migulin advises: will soon send information on Intercosmos-14 satellite which has been in operation since late 1975 and on complex programs to be carried out during this satellite operation.

USA. R.H. Manka provides the following information:

(1) Siple Station, Antarctica, has just been closed, due to an outbreak of hepatitis. The NSF Office of Polar Programs intends to reopen Siple during the coming Austral Summer of 1976-77. The U.S. Academy of Sciences and Government IMS Panels recently completed reports on Siple showing the importance of Siple to the IMS.

(2) The spacecrafts, SOLRAD 11A, B are planned for launch February 24, 1976. They will be at 20RE (21RE geocentric) on opposite sides of the earth and carry several energetic particle experiments as well as solar UV, EUV, and x-ray monitoring.

(3) Hardware procurement for the new US-Canadian IMS Magnetometer Network is underway. Proposals are now being received at the National Science Foundation for the operation of U.S. portions of the network.

GENERAL NEWS

This Newsletter gives up-dated information on plans for measurements throughout the world for the IMS program. It is intended to assist the coordination of efforts of the more than 900 experimenters now listed in the IMS Directory of Participants. The Newsletter is compiled by the Temporary IMS Central Information Exchange Office (TIMSCIE Office) with the assistance of regional and national contacts for the IMS and directly or indirectly the IMS experimenters themselves.

The information in the newsletter will emphasize the specific plans for the next few months. It will emphasize the status of "campaigns" (rocket, aircraft, balloon and eventually ground-based) rather than details of continuous observations. It will give summary information on satellite configurations and experiments as provided by the IMS Satellite Situation Center. The IMS Newsletter is intended to provide a stimulus for coordination or self-coordination between satellite and GBR* experiments and among the nearly 1500 GBR experiments themselves.

The information contained may not be authoritative, since some comes from secondary, tertiary or collateral sources. At best the information gives intentions, not commitments. Any corrections will appear in later issues.

Distribution of Newsletter. The Newsletter (intended to appear monthly) is being sent to all investigators and co-investigators listed in the IMS Directory (IMS Bulletin No. 2 and No. 3 (in press)). It also goes to others such as members of national IMS groups whose names have been provided. Any others may ask the TIMSCIE Office to be put on the mailing list.

Special IMS Periods for 1976. Each IMS participant should have received the December 1975 Special Announcement issued by the SCOSTEP Secretariat. Its main purpose was to enumerate the Special IMS Periods for 1976 adopted by the IMS Steering Committee. These are periods when two or more existing, high altitude satellites are simultaneously crossing the model magnetospheric boundary, bow shock, cusp or neutral sheet. These very interesting configurations of currently operating key satellites provide opportunities for complementary special measurements by GBR* experimenters, particularly those carrying out "campaigns." The times of these Special IMS Periods are repeated elsewhere in this Newsletter, along with the latest information received on plans for complementary GBR experiments. The Special Announcement also gives information on the status of other satellites of potential interest to IMS experimenters.

Detailed Reports on Satellite Positions. The Satellite Situation Center is issuing several such reports as given below. These reports are automatically sent to a list of requesting experimen-

*GBR stands for Ground-based, Balloon and Rocket experiments, but also includes experiments on aircraft and ship cruises.

ters. Requests should be sent to WDC-A Rockets and Satellites, Code 601, GSFC, Greenbelt, MD 20771.

IMS-SSC Report No. 2	"Predicted Orbit Plots for Hawkeye 1-1976"
No. 3	ditto for IMP-H
No. 4	ditto for IMP-J
No. 5	ditto for Vela 5B
No. 6	"Special IMS Periods for 1976"

IMS Bulletin No. 3. The SCOSTEP Secretary, Dr. Dyer, advises that he expects to distribute this about the end of February. It will contain program details for some 50 new programs and revisions of many more, as a supplement to the IMS Directory of Participants in Bulletin No. 2.

Channels for Sending Updated Information. Participants are urged to send updated information suitable for this Newsletter. Send to your national contact or send directly to TIMSCIE Office (Telex 45897 Solterwarn Boulder); if you send directly, also notify your national contact. Information received at TIMSCIE Office will be automatically shared with SCOSTEP Secretariat, the Satellite Situation Center and with Chairman IMS Steering Committee. Give IMS Program Number and be as specific as possible as to dates. Use Telex for information of imminent interest, mail for items of future interest. Information on new programs will also be sent to SCOSTEP Secretariat for inclusion in future supplements to the IMS Directory.

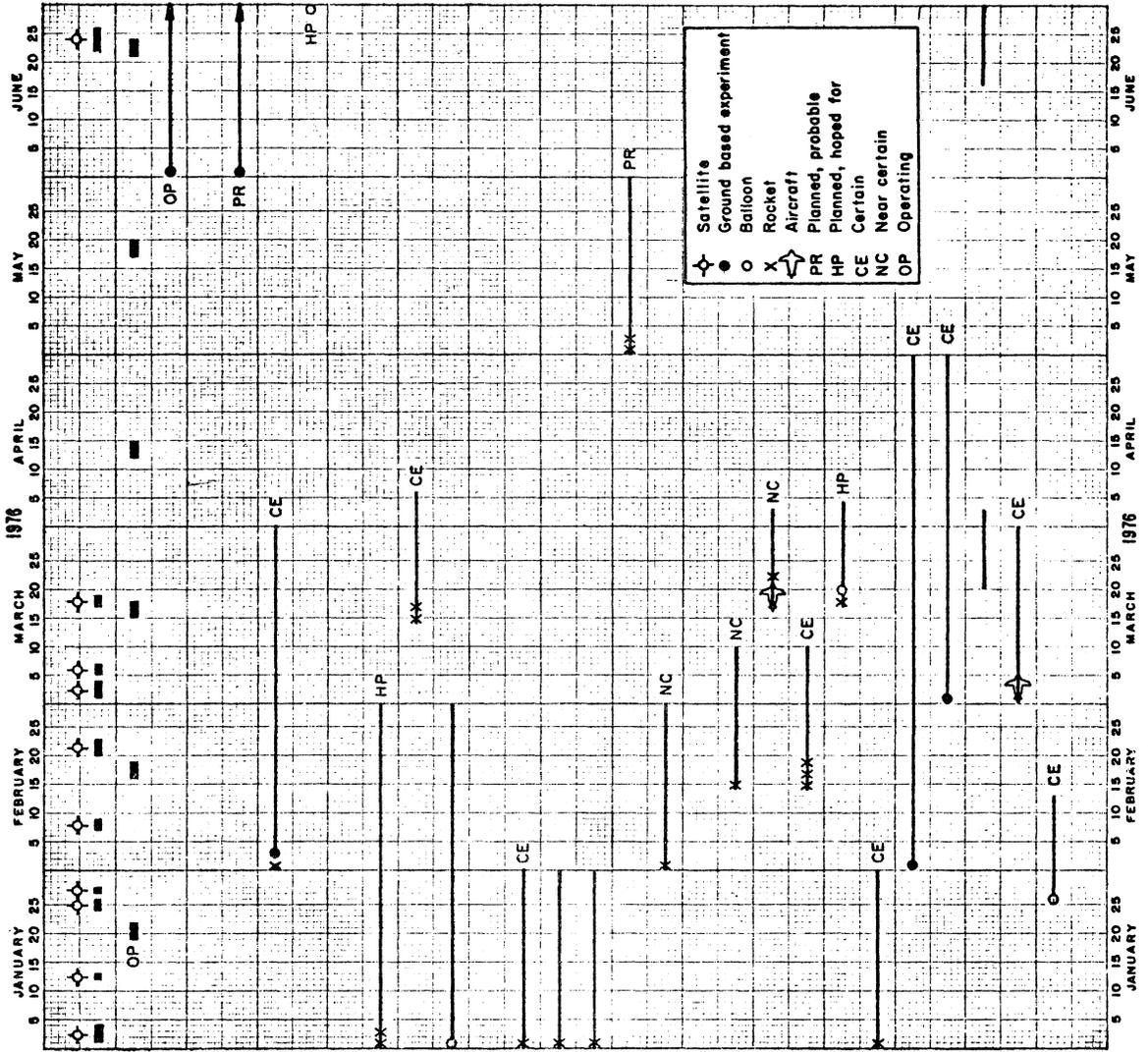
European Regional Information Office. Dr. Paul Simon has agreed to be a focus for information from the European area (Telex 200 590 CNET OBS B MEUDO). He will be active in asking questions on the status of individual programs in Europe and will be sharing information with the TIMSCIE Office for this Newsletter. Many of the ideas on what needs to be done and how to do it have come from Dr. Simon. Meudon and the TIMSCIE Office are in frequent Telex contact.

Plans vs Actuality. Most of the Newsletter deals with plans for future programs. But it is intended in future issues to exchange information on actualities, such as the dates rockets were actually launched, so that the self-coordination of data or scientific exchange can start. It is hoped experimenters will provide this information to the TIMSCIE Office through the same channels as the planning information.

Through Jan 13, S. Africa, France, Japan, FRG, USSR, Sweden, U.K., Finland, USA, New Zealand, Austria have responded to TIMSCIE Telex inquiries.

CALENDAR OF GBR EXPERIMENTS

On page 6 is the prototype of a calendar for coordination of GBR campaigns. The format was derived by P. Simon of Meudon, and is generally self-explanatory. Abbreviations will be recognized by those who are involved. We have copied his draft except where we had word of data changes or program deletions. It is not fully consistent with program information pages 2,3,4. In the next issue we will try to make it more nearly comprehensive. Comments are invited.



WORLD-WIDE

SSC (VETTE) IMS PERIODS

IISN (BAUER)

IPDYP (CARPENTER)

CONJUGATE POINTS EXPERIMENT

IOELAND (PERRAUT) - SYOWA (HIRASAWA)

HEISS ISLAND (CHANIN-TULINOV) # 0159

SODANKYLA (TANSKANEN) # 0089

KIRUNA

(REES) # 0474

(PORCUPINE) # 0305-0308

(SWEDEN - USSR)

ANDENES

(JOHNSTONE) # 0450

(COG - LETTER 6)

(COG - LETTER 6)

GREENLAND - N. SCAND. (UMSTRUP) # 0311

FORT CHURCHILL (MCEWEN) # 0100

POKER FLAT, ALASKA

(TINSLEY) # 0328

(T.M. DAVIS) # 0164

(BERNING) # 0400

FORT YUKON (SHELDON) # 0356

ARESONILLO, SPAIN (OFFERMAN)

ADDIS ABABA (CROCHET)

DJIBOUTI (CROCHET)

ASHAY

CAPE TOWN (STOKER; KUHN) # 0303, 0226

SANAE, ANTARCTICA (STOKER) # 0303