International Geophysical Calendar 1988

(See other side for information on use of this Calendar)

	S	M	T	W	T	F	S
						1	2
	3	4	5	6	7	8	9
JANUARY	10	11	12+	13+	14+	15+	16+
	17	18	(19)	(20)*	(21)*	22	23
	24	25	26	27	28	29	30
	31	1	2	3	4	5	6
FEBRUARY	7	8	9	10	11	12	13
	14	15	(16)	(17)*	(18)*	19	20
	21	22	23	24	25	26	27
	28	29	1	2	3	4	5
MARCH	6	7	8	9	10	11	12
	13	14	15	16◇+	17*+	[18]+	19*
	20+	21	22	23	24	25	26
	27	28	29	30	31	1	2
	3	4	5	6	7	8	9
APRIL	10	11	12+	13+	14	15	16
	17	18	(19)*	(20)*	(21)	22	23
	24	25	26	27	28	29	30
	1	2	3	4	5	6	7
MAY	8	9	10	11	12	13	14
	15	16	(17)*	(18)*	(19)	20	21
	22	23	24	25	26	27	28
	29	30	31	1	2	3	4
JUNE	5	6	7	8	9	10	11
	12	13+	14*+	15◇*	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		
	S	M	T	W	T	F	S

	S	M	T	W	T	F	S
						1	2
	3	4	5	6	7	8	9
JULY	10	11	(12)+	(13)*+	(14)*	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	31	1	2	3	4	5	6
AUGUST	7	8	9	10	11	12	13
	14	15	(16)*	(17)*	(18)	19	20
	21	22	23	24	25	26	27
	28	29	30	31	1	2	3
SEPTEMBER	4	5	6	7	8	9	10
	[11]	12+	(13)*+	14◇*	(15)	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	1
OCTOBER	2	3	4	5	6	7	8
	9	10	(11)*	(12)*	(13)	14	15
	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
NOVEMBER	30	31	1	2	3	4	5
	6	7	(8)	(9)*+	(10)*+	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	1	2	3
DECEMBER	4	5+	6+	7+	8+	9+	10+
	11	12	(13)*	14◇*	(15)	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
	1	2	3	4	5	6	7
1989 JANUARY	8	9	10	11*	12*	13	14
	15	16	(17)	(18)	(19)	20	21
	22	23	24	25	26	27	28
	29	30	31				
	S	M	T	W	T	F	S

(19) Regular World Day (RWD)

(20) Priority Regular World Day (PRWD)

◇16 Quarterly World Day (QWD) also a PRWD and RWD

6 Regular Geophysical Day (RGD)

[14 15] World Geophysical Interval (WGI)

12+ Incoherent Scatter Coordinated Observation Day and Coordinated Tidal Observation Day

[11] Day of Solar Eclipse

[13 14] Airglow and Aurora Period

20* Dark Moon Geophysical Day (DMGD)

NOTES:

1. Days with unusual meteor shower activity are: Northern Hemisphere Jan 3,4; Apr 21-22; May 3-4; Jun 8-12; Jul 27-29; Aug 10-13; Oct 20-21; Nov 1-4, 16-18; Dec 12-15, 21-22, 1988; Jan 2-4, 1989. Southern Hemisphere May 3-4; Jun 8-12; Jul 26-30; Oct 20-21; Nov 1-4, 16-18; Dec 5-7, 12-15, 1988.

2. Middle Atmosphere Cooperation (MAC) began 1 Jan 1986 and runs through 1988.

3. Day intervals that IMP 8 satellite is in the solar wind (begin and end days are generally partial days): 30 Dec 1987-5 Jan 1988; 11-18 Jan; 24-31 Jan; 6-13 Feb; 19-25 Feb; 2-9 Mar; 15-21 Mar; 27 Mar-3 Apr; 9-16 Apr; 21-28 Apr; 3-11 May; 16-24 May; 29 May-6 Jun; 11-18 Jun; 24 Jun-1 Jul; 6-14 Jul; 18-26 Jul; 31 Jul-7 Aug; 12-20 Aug; 25 Aug-1 Sep; 6-14 Sep; 19-27 Sep; 2-10 Oct; 14-22 Oct; 26 Oct-4 Nov; 8-16 Nov; 20-28 Nov; 3-11 Dec; 16-24 Dec; 29 Dec-5 Jan 1989.

   There will not be total IMP 8 data monitoring coverage during these intervals. (Information kindly provided by the WDC-A for Rockets and Satellites, NASA GSFC, Greenbelt, MD 20771 U.S.A.).

4. + Incoherent Scatter programs start at 1600 UT on the first day of the intervals indicated, and end at 1600 UT on the last day of intervals.

5. Incoherent Scatter world days: 880112-16 GISMOS (GITCAD, WAGS); 880316-20 GITCAD (SUNDIAL, WAGS); 880412-13 WAGS; 880613-14 WAGS; 880712-13; 880912-13; 881109-10 WAGS; 881205-10 LTCS (SUNDIAL, GITCAD).

   GISMOS = Global Ionospheric Simultaneous Measurements of Substorms;
   GITCAD = Global Ionosphere--Thermosphere Coupling and Dynamics;
   LTCS = Lower Thermosphere Coupling Study;
   SUNDIAL = Coordinated study of the ionosphere/magnetosphere;
   WAGS = Worldwide Acoustics Gravity Wave Study.

OPERATIONAL EDITION, September 1987

EXPLANATIONS

This Calendar continues the series begun for the IGY years 1957-58, and is issued annually to recommend dates for solar and geophysical observations which cannot be carried out continuously. Thus, the amount of observational data in existence tends to be larger on Calendar days. The recommendations on data reduction and especially the flow of data to **World Data Centers (WDCs)** in many instances emphasize Calendar days. The Calendar is prepared by the **International Ursigram and World Days Service (IUWDS)** with the advice of spokesmen for the various scientific disciplines.

The **Solar Eclipses** are:

a.) ****17-18 March (total)**** beginning in Indonesia (totality lasts 3 minutes 46 seconds in parts of Indonesia, the Southern Philippines, and a track 109 miles wide across the N. Pacific Ocean ending off the south coast of Alaska), moving across E. Asia, N.W. Australia, New Guinea, Micronesia, W. Hawaiian Islands and ending in the extreme NW of N. America.

b.) *11 September (annular)* beginning in extreme E. Africa (Somalia), moving across S. Asia, Indonesia, Australia (except extreme NE), New Zealand and part of Antarctica. Annular eclipse path over Indian Ocean lasts 7 minutes.

Meteor Showers (selected by P.M. Millman, Ottawa) include important visual showers and also unusual showers observable mainly by radio and radar techniques. The dates for Northern Hemisphere meteor showers are: Jan 3, 4; Apr 21-22; May 3-4; Jun 8-12; Jul 27-29; Aug 10-13; Oct 20-21; Nov 1-4, 16-18; Dec 12-15, 21-22, 1988; and Jan 2-4, 1989. The dates for Southern Hemisphere meteor showers are: May 3-4; Jun 8-12; Jul 26-30; Oct 20-21; Nov 1-4, 16-18; and Dec 5-7, 12-15, 1988.

Definitions:

Time = Universal Time **(UT);**

Regular Geophysical Days **(RGD)** = each Wednesday;

Regular World Days **(RWD)** = Tuesday, Wednesday and Thursday near the middle of the month (see calendar);

Priority Regular World Days **(PRWD)** = the Wednesday **RWD;**

Quarterly World Days **(QWD)** = **PRWD** in the **WGI;**

World Geophysical Intervals **(WGI)** = 14 consecutive days each season (see calendar);

ALERTS = occurrence of unusual solar or geophysical conditions, broadcast once daily soon after 0400 UT;

STRATWARM = stratospheric warmings;

Retrospective World Intervals **(RWI)** = intervals selected by MONSEE for study.

For more detailed explanations of the definitions, please see one of the following or contact H. Coffey (address below): *Solar-Geophysical Data,* November issue; *URSI Information Bulletin; COSPAR Information Bulletin; IAGA News; IUGG Chronicle; WMO Bulletin; IAU Information Bulletin; Solar-Terrestrial Environmental Research in Japan; Journal of the Radio Research Laboratories* (Japan); *Geomagnetism and Aeronomy* (USSR); *Journal of Atmospheric and Terrestrial Physics* (UK); *EOS Magazine* (AGU/USA).

Priority recommended programs for measurements *not made continuously* — (in addition to unusual **ALERT** periods):

Aurora and Airglow — Observation periods are New Moon periods, especially the 7 day intervals on the calendar;

Atmospheric Electricity — Observation periods are the **RGD** each Wednesday, beginning on 6 January 1988 at 0000 UT, 13 January at 0600 UT, 20 January at 1200 UT, 27 January at 1800 UT, etc. Minimum program are **PRWDs**.

Geomagnetic Phenomena — At minimum, need observation periods and data reduction on **RWDs** and during **MAGSTORM Alerts**.

Ionospheric Phenomena — Quarter-hourly ionograms; more frequently on **RWDs**, particularly at high latitude sites; f-plots on **RWDs**; hourly ionograms to **WDCs** on **QWDs**; continuous observations for solar eclipse in the eclipse zone. See Airglow and Aurora.

Incoherent Scatter — Observations on Incoherent Scatter Coordinated Days; also intensive series on **WGIs** or Airglow and Aurora periods. **Special programs**: Dr. V. Wickwar, SRI International, 333 Ravenswood Ave., Menlo Park, CA 94025 U.S.A., URSI Working Group G.5.

Ionospheric Drifts — During weeks with **RWDs**.

Traveling Ionosphere Disturbances — special periods, probably **PRWD** or **RWDs**.

Ionospheric Absorption — Half-hourly on **RWDs**; continuous on solar eclipse days for stations in eclipse zone and conjugate area. Daily measurements during Absorption Winter Anomaly at temperate latitude stations (Oct-Mar Northern Hemisphere; Apr-Sep Southern Hemisphere).

Backscatter and Forward Scatter — **RWDs** at least.

Mesospheric D region electron densities — **RGD** around noon.

ELF Noise Measurements of earth-ionosphere cavity resonances — **WGIs**.

All Programs — Appropriate intensive observations during unusual meteor activity.

Meteorology — Especially on **RGDs**. On **WGIs** and **STRATWARM** Alert Intervals, please monitor on Mondays and Fridays as well as Wednesdays.

Middle Atmosphere Cooperation (MAC) — **RGDs**, **PRWDs** and **QWDs**. For planetary waves and tides monitor at least 10 days centered on **PRWDs** and **QWDs**.

Solar Phenomena — Solar eclipse days, **RWDs**, and during **PROTON/FLARE ALERTS**.

Study of Traveling Interplanetary Phenomena (STIP) — XV = 12-21 Feb 1984 solar GLE; XVI = 20 Apr-4 May 1984 Forbush decrease; XVII = 15 May-30 Jun 1985 alignment of Venus magnetotail with satellites VEGA 1, VEGA 2, MS-T5, PVO, and ICE; XVIII = Sep 1985 Giacobini-Zinner Comet fly-by by ICE; XIX = March 1986 International Halley Watch.
STIP (now in COSPAR's Commission D.1) is reorganizing into disciplinary subgroups. New Intervals will be chosen in cooperation with other international programs, e.g., the International Heliospheric Study (IHS) and the Study of the Transfer of Energy in Plasmas (STEP).

Space Research, Interplanetary Phenomena, Cosmic Rays, Aeronomy — **QWDs**, **RWD**, and Airglow and Aurora periods.

URSI/IAGA Coordinated Tidal Observations Program (CTOP) — Dr. R. G. Roper, School of Geophysical Sci., Geophysical Sci., Georgia Inst. of Tech., Atlanta, GA 30332 U.S.A. has the 1988 CTOP calendar.

The International Ursigram and World Days Service (IUWDS) is a permanent scientific service of the International Union of Radio Science **(URSI)**, with the participation of the International Astronomical Union and the International Union of Geodesy and Geophysics. IUWDS adheres to the Federation of Astronomical and Geophysical Data Analysis Services (FAGS) of the International Council of Scientific Unions (ICSU). The IUWDS coordinates the international aspects of the world days program and rapid data interchange.

This Calendar for 1988 has been drawn up by H.E. Coffey, of the IUWDS Steering Committee, in association with spokesmen for the various scientific disciplines in SCOSTEP, IAGA and URSI. Similar Calendars have been issued annually beginning with the IGY, 1957-58, and have been published in various widely available scientific publications.

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Additional copies are available upon request to IUWDS Chairman, Dr. R. Thompson, IPS Radio and Space Services, Department of Science, P.O. Box 702, Darlinghurst, NSW 2010, Australia, or IUWDS Secretary for World Days, Miss H.E. Coffey, WDC-A for Solar-Terrestrial Physics, NOAA, E/GC2, 325 Broadway, Boulder, Colorado 80303, USA.