

International Geophysical Calendar 1997 (Final)

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

	S	M	T	W	T	F	S		S	M	T	W	T	F	S	
JANUARY				1	2	3	4				1	2	3	4	5	JULY
	5	6 ⁺	7 ⁺	8 ⁺	9 ⁺	10 ⁺	11		6	7	8*	9*	10	11	12	
	12	13	14*	15*	16	17	18		13	14	15	16	17	18	19	
	19	20	21	22	23	24	25		20	21	22	23	24	25	26	
	26	27	28	29	30	31	1		27	28	29	30	31	1	2	AUGUST
FEBRUARY	2	3	4	5	6	7	8		3	4	5*	6*	7	8	9	
	9	10	11*	12*	13	14	15		10	11	12	13	14	15	16	
	16	17	18	19	20	21	22		17	18	19	20	21	22	23	
	23	24	25	26	27	28	1		24	25	26	27	28	29	30	
MARCH	2	3	4	5	6	7	8		31	1	2	3	4	5	6	SEPTEMBER
	9	10	11*	12*	13	14	15		7	8	9	10	11	12	13	
	16	17	18	19	20	21	22		14	15	16	17	18	19	20	
	23	24	25	26	27	28	29		21	22	23	24	25	26	27	
APRIL	30	31	1	2	3	4	5		28	29	30	1	2	3	4	OCTOBER
	6	7	8 ⁺	9 ⁺	10 ⁺	11	12		5	6	7*	8*	9	10	11	
	13	14	15	16	17	18	19		12	13	14	15	16	17	18	
	20	21	22	23	24	25	26		19	20	21*	22*	23*	24	25	
	27	28	29	30	1	2	3		26	27	28	29	30	31	1	NOVEMBER
MAY	4	5	6	7	8	9	10		2	3	4*	5*	6	7	8	
	11	12	13*	14*	15	16	17		9	10	11	12	13	14	15	
	18	19	20	21	22	23	24		16	17	18	19	20	21	22	
	25	26	27	28	29	30	31		23	24	25	26	27	28	29	
JUNE	1	2	3 ⁺	4 ⁺	5 ⁺	6 ⁺	7		30	1	2*	3*	4 ⁺	5	6	DECEMBER
	8	9	10	11	12	13	14		7	8	9	10	11	12	13	
	15	16	17	18	19	20	21		14	15	16	17	18	19	20	
	22	23 ⁺	24 ⁺	25 ⁺	26 ⁺	27 ⁺	28		21	22	23	24	25	26	27	
	29	30							28	29	30*	31*	1	2	3	1998
	S	M	T	W	T	F	S		4	5	6	7	8	9	10	JANUARY
									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	

21 Regular World Day (RWD)

22 Priority Regular World Day (PRWD)

19 Quarterly World Day (QWD)
also a PRWD and RWD

1 Regular Geophysical Day (RGD)

10 11 World Geophysical Interval (WGI)

6 + Incoherent Scatter Coordinated Observation Day

8 Day of Solar Eclipse

9 10 Airglow and Aurora Period

14* Dark Moon Geophysical Day (DMGD)

NOTES on other dates and programs of interest:

- Days with significant meteor shower activity are: Northern Hemisphere 3-5 Jan; 21-23 Apr; 3-6 May; 6-11, 27-29 Jun; 11-14 Aug; 21-23 Oct; 16-19 Nov; 13-15, 22-24 Dec 1997; 3-5 Jan 1998. Southern Hemisphere 3-6 May; 6-11, 27-29 Jun; 27 Jul-2 Aug; 21-23 Oct; 16-19 Nov; 13-15 Dec 1997. These can be studied for their own geophysical effects or may be "geophysical noise" to other experiments. The International Leonid Watch focuses on the Leonid shower with enhanced rates in 1997 and possible meteor storms in 1998 and 1999; 1997 maximum is expected 1100 UT 17 Nov.
- GAW (Global Atmosphere Watch) – early warning system for changes in greenhouse gases, ozone layer, and long range transport of pollutants. (See Explanations.)
- SOLTIP (Solar connection with Transient Interplanetary Processes). Observing Program 1990-1997: solar-generated phenomena and their propagation throughout the heliosphere. (See Explanations.)
- FLARES22 (FLARE REsearch at solar cycle 22 max). Observing Program 1990-1997: basic physical processes of transient solar activity and its coupling with solar-terrestrial environment. (See Explanations.)
- + Incoherent Scatter Coordinated Observations Days (see Explanations) starting at 1600 UT on the first day of the intervals indicated, and ending at 1600 UT on the last day of the intervals: 6-10 Jan 1997 MLTCS/CADITS; 11-12 Mar SUNDIAL; 8-10 (7-11, 14-18, 28-2) Apr WLS ("floating" campaign tied to recurrent solar activity. One period will be selected in month prior to this campaign. Instruments which must finalize schedules earlier should plan to operate on 8-10 Apr); 3-6 Jun POLITE; 23-27 Jun MLTCS/CADITS; 2-3 Sep DATABASE; 21-23 Oct WLS; 4-5 Nov DATABASE; and 2-4 Dec POLITE

where CADITS = Coupling and Dynamics of the Ionosphere-Thermosphere System (Contacts are C. Fesen – fesen@tides.dartmouth.edu; R. Johnson – rjohnson@dexter.sprl.umich.edu);

DATABASE= Incoherent Scatter Database (A. van Eyken – tony@eisat.no);

MLTCS= Mesosphere, Lower-Thermosphere Coupling Study (Same contacts as CADITS);

POLITE=Plasmaspheric Observations of Light Ions in the Topside Exosphere (P. Erickson – pje@hyperion.haystack.edu);

SUNDIAL= Coordinated study of the ionosphere/magnetosphere (E. Szuszczewicz – szuszcz@mclapo.saic.com);

WLS = Wide-Latitude Substorm Dynamics (J. Foster – jcf@hyperion.haystack.edu).

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 Space Environment Service (ISES) with the advice of spokesmen for the various scientific disciplines.

The Solar Eclipses are:

a.) **8-9 March 1997** (total) eclipse with totality visible only in Mongolia north of Ulaan Baator and in eastern Russia. Totality up to 2 min 50 s, though Sun never appears higher than 23° above horizon. Totality in Mongolia is 2 min 25 s with Sun 13° above horizon, then touches Chinese border before continuing into Russia. Partial phases visible throughout Eastern Asia except extreme south, in North Pacific Ocean including Japan, in Arctic regions, Alaska, and Western Canada. Track begins N49 E87, ends N83 W158.

b.) **2 September 1997** (partial) eclipse visible in Australia, New Zealand, western Antarctica, and the ocean between them. Maximum magnitude is 90% of the solar diameter covered.

(Description by Dr. Jay Pasachoff, Williams College jmp@williams.edu with input from Fred Espenak, NASA GSFC.) See <http://umbra.gsfc.nasa.gov/eclipse/predictions/eclipse-paths.html>.

Meteor Showers (selected by R. Hawkes, Mount Allison Univ, Canada (rhawkes@mta.ca)) include important visual showers and also unusual showers observable mainly by radio and radar techniques. The dates are given in Note 1 under the Calendar.

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](#), October issue; [URSI Information Bulletin](#); [COSPAR Information Bulletin](#); [IAGA News](#); [IUGG Chronicle](#); [WMO Bulletin](#); [IAU Information Bulletin](#); [Journal of the Radio Research Laboratories \(Japan\)](#); [Geomagnetism and Aeronomy \(Russia\)](#); [Journal of Atmospheric and Terrestrial Physics \(UK\)](#); [EOS Magazine \(AGU/USA\)](#), WWW homepage <http://www.sec.noaa.gov/ises/ises.html>.

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 1 January 1997 at 0000 UT, 8 Jan-

uary at 0600 UT, 15 January at 1200 UT, 22 January at 1800 UT, etc. Minimum program is 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 ionogram scaled parameters 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. A. P. van Eyken, EISCAT Scientific Assoc., Ramfjordmoen, N-9027 Ramfjordbotn, Norway, URSI Working Group G.5; tel. +47 77692166; Fax +47 77692380; e-mail tony@eiscat.no.

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.

GAW (Global Atmosphere Watch) -- WMO program to integrate monitoring of atmospheric composition. Early warning system of changes in atmospheric concentrations of greenhouse gases, ozone, and pollutants (acid rain and dust particles). WMO, 41 avenue Giuseppe-Motta, P.O. Box 2300, 1211 Geneva 2, Switzerland.

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

FLARES22 (FLARE RESEARCH at the maximum of solar cycle 22) — observations of basic physical processes of transient solar activity and its coupling with the solar-terrestrial environment, including times of the various solar ALERTS. Coordinate satellite and ground-based observations. Contact Dr. M. Hagyard, Marshall Space Flight Center, Code ES52, Huntsville, AL 35812 USA 205-544-7612; e-mail mhagyard@solar.stanford.edu.

SOLTIP (Solar connection with Transient Interplanetary Processes) -- 1990-97 observations and analyses of solar-generated phenomena propagating through heliosphere, including times following the various solar ALERTS. Includes Interplanetary Scintillation observations of radio galaxies and telemetry signals to/from interplanetary spacecraft. Also coordination of spacecraft IMP8, ICE, Giotto, Sakigake, Voyager 1/2, Pioneer 10/11, Ulysses, Relict, Wind, SOHO, Galileo and ACE. Contact Dr. M. Dryer, NOAA R/E/SE, 325 Broadway, Boulder, CO 80303 USA. (303)497-3978; FAX (303)497-3645; e-mail mdryer@sel.noaa.gov.

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

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

This Calendar for 1997 has been drawn up by H.E. Coffey, of the ISES Steering Committee, in association with spokesmen for the various scientific disciplines in SCOSTEP, IAGA, URSI and other ICSU organizations. Similar Calendars are issued annually beginning with the IGY, 1957-58, and are published in various widely available scientific publications.

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Additional copies are available upon request to ISES Chairman, Dr. Richard Thompson, IPS Radio and Space Services, Department of Administrative Services, P.O. Box 5606, West Chatswood, NSW 2057, Australia, Fax number (61)(2)414 8331, e-mail richard@ips.gov.au or ISES Secretary for World Days, Miss Helen Coffey, WDC-A for Solar-Terrestrial Physics, NOAA E/GC2, 325 Broadway, Boulder, Colorado 80303, USA, Fax number (303)497-6513, e-mail hcoffey@ngdc.noaa.gov.

The calendar is available on-line at <http://www.sec.noaa.gov/ises/ises.html>.