

# International Geophysical Calendar 1998 (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				1	2	3	4	JULY
	4	5	6	7	8	9	10	5	6	7	8	9	10	11	
	11	12	13	14	15	16	17	12	13	14	15	16	17	18	
	18	19	20+	21+	22	23	24	19	20	21	22*	23 <sup>N</sup>	24	25	
	25	26	27*	28 <sup>N</sup>	29	30	31	26	27	28	29	30	31	1	AUGUST
FEBRUARY	1	2	3	4	5	6	7	2	3	4	5	6	7	8	
	8	9	10	11	12	13	14	9	10	11	12	13	14	15	
	15	16	17	18	19	20	21	16	17	18+	19*	20*	21	22 <sup>N</sup>	
	22	23	24	25*	26 <sup>N</sup>	27	28	23	24	25	26	27	28	29	
MARCH	1	2	3	4	5	6	7	30	31	1	2	3	4	5	SEPTEMBER
	8	9	10	11	12	13	14	6	7	8	9	10	11	12	
	15	16	17	18	19	20	21	13	14	15	16	17	18	19	
	22	23+	24+	25+	26+	27+	28 <sup>N</sup>	20 <sup>N</sup>	21+	22*	23*	24+	25+	26	
APRIL	29	30	31	1	2	3	4	27	28	29	30	1	2	3	OCTOBER
	5	6	7	8	9	10	11	4	5	6	7	8	9	10	
	12	13	14	15	16	17	18	11	12	13	14	15	16	17	
	19	20	21	22*	23*	24	25	18	19+	20 <sup>N</sup>	21*	22*	23	24	
	26 <sup>N</sup>	27+	28+	29+	30	1	2	25	26	27	28	29	30	31	
MAY	3	4	5	6	7	8	9	1	2	3	4	5	6	7	NOVEMBER
	10	11	12	13	14	15	16	8	9	10	11	12	13	14	
	17	18	19	20*	21*	22	23	15	16+	17+	18*	19 <sup>N</sup> +	20	21	
	24	25 <sup>N</sup>	26+	27+	28+	29	30	22	23	24	25	26	27	28	
JUNE	31	1	2	3	4	5	6	29	30	1	2	3	4	5	DECEMBER
	7	8	9	10	11	12	13	6	7	8+	9+	10	11	12	
	14	15	16	17	18	19	20	13	14	15	16*	17*	18 <sup>N</sup>	19	
	21	22	23*	24*	25	26	27	20	21	22	23	24	25	26	1999
	28	29	30					27	28	29	30	31	1	2	JANUARY
	S	M	T	W	T	F	S	3	4	5	6	7	8	9	
								10	11	12	13*	14*	15	16 <sup>N</sup>	
								17	18	19	20	21	22	23	
								24	25	26	27	28	29	30	
								31							
									S	M	T	W	T	F	S

13 Regular World Day (RWD)

18 Priority Regular World Day (PRWD)

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

7 Regular Geophysical Day (RGD)

12 13 World Geophysical Interval (WGI)

6 + Incoherent Scatter Coordinated Observation Day

26 Day of Solar Eclipse

22 23 Airglow and Aurora Period

27\* 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; 4-6 May; 6-11, 27-29 Jun; 11-14 Aug; 21-23 Oct; 16-19 Nov; 13-15, 22-24 Dec 1998; 3-5 Jan 1999. Southern Hemisphere 4-6 May; 6-11, 27-29 Jun; 27 Jul-2 Aug; 21-23 Oct; 16-19 Nov; 13-15 Dec 1998. These can be studied for their own geophysical effects or may be "geophysical noise" to other experiments. Particular attention is drawn to the Leonid shower which is expected to produce storm conditions of thousands to tens of thousands of visual meteors per hour at approximately 17 UT +/- 4 h on Nov 17, 1998.
- GAW (Global Atmosphere Watch) - early warning system for changes in greenhouse gases, ozone layer, and long range transport of pollutants. (See Explanations.)
- ISCS (International Solar Cycle Studies) - SCOSTEP Project. Observing Program 1998-2002: Study of processes associated with the rising and maximum phase of the solar cycle. (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: 20-21 Jan DATABASE; 23-27 Mar MLTCS/CADITS; 27-29 Apr WLS; 26-28 May POLITE; 23-24 Jun DATABASE; 18-19 Aug DATABASE; 21-25 Sep MLTCS/CADITS; 19-21 Oct WLS; 16-19 Nov POLITE; 8-9 Dec DATABASE

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@eiscat.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);

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.) **26 February 1998 (total) eclipse** with totality visible in the Pacific Ocean from the Galápagos to Colombia and Panama, in Venezuela, in the islands of Aruba and Curaçao, and across the Caribbean to Antigua, Montserrat, and Guadeloupe. Totality up to 4 min 8 s. Partial phases visible in U.S. southeast of line drawn approx. from San Diego to Chicago and as far south as northern Chile, Bolivia, and northern half of Brazil. Partially eclipsed sunset seen from Portugal, northwestern Spain, and West Africa; partially eclipsed sunrise seen from east coast of island of Hawaii.

b.) **21-22 August 1998 (annular) eclipse**, with annularity visible in parts of Sumatra, peninsular Malaysia, and northern Borneo. Partial phases visible in southern China, SE Asia, southern Japan, and extending to the south past Australia and New Zealand.

(Description by Dr. Jay Pasachoff, Williams College, Chair of IAU WG on Solar Eclipses, [jmp@williams.edu](mailto: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](mailto: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>.

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 1998 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)9414 8331, e-mail [richard@ips.gov.au](mailto: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@gndc.noaa.gov](mailto:hcoffey@gndc.noaa.gov).**

The calendar is available on-line at <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 7 January 1998 at 0000 UT, 14 January at 0600 UT, 21 January at 1200 UT, 28 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 **WGI**s 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](mailto: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** — **WGI**s.

**All Programs** — Appropriate intensive observations during unusual meteor activity.

**Meteorology** — Especially on **RGDs**. On **WGI**s 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**.

**ISCS (International Solar Cycle Studies)** — SCOSTEP Project. 1998-2002 observations and analyses of underlying and resulting processes associated with the rising and maximum phase of the solar cycle. Contacts: S.T. Wu, Univ of Alabama, Huntsville Dept Mech Eng & Ctr for Space Plasma & Aeron Res, Huntsville, AL 35899 USA (205)895-6413, Fax (205)895-6328, [wu@cspar.uah.edu](mailto:wu@cspar.uah.edu), V. Obridko, IZMIRAN, Solar Physics Dept, 142092 Troitsk, Moscow, Russia. 095-334-0926; Fax 095-334-0124, [obridko@lars.izmiran.troitsk.su](mailto:obridko@lars.izmiran.troitsk.su).

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