

# IUWDS International Geophysical Calendar for 1967

**1967 JANUARY**

S	M	T	W	T	F	S
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	31				

**1967 FEBRUARY**

S	M	T	W	T	F	S
			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				

**1967 MARCH**

S	M	T	W	T	F	S
			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	31	

**1967 APRIL**

S	M	T	W	T	F	S
						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						

**1967 MAY**

S	M	T	W	T	F	S
	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	31			

**1967 JUNE**

S	M	T	W	T	F	S	
					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		

**1967 JULY**

S	M	T	W	T	F	S
						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	31					

**1967 AUGUST**

S	M	T	W	T	F	S
		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	31		

**1967 SEPTEMBER**

S	M	T	W	T	F	S
					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

**1967 OCTOBER**

S	M	T	W	T	F	S
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	31				

**1967 NOVEMBER**

S	M	T	W	T	F	S
			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		

**1967 DECEMBER**

S	M	T	W	T	F	S
					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
31						

**1968 JANUARY**

S	M	T	W	T	F	S
	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	31			

17 Regular World Day (RWD)

9 Day of Solar Eclipse

3 Day with unusual meteor shower activity

13-14 World Geophysical Interval (WGI)

15 Quarterly World Day (QWD) also a PRWD and RGD

18 Priority Regular World Day (PRWD)

4 Regular Geophysical Day (RGD)

TABLE OF WORLD DAYS MARKED ON THE CALENDAR

1967	RWD	PRWD	QWD	RGD	WGI	ECL.	METEORS
Jan.	17, 18, 19	18	—	4, 11, 18, 25	—	—	3-4
Feb.	14, 15, 16	15	15	1, 8, 15, 22	13-26	—	—
Mar.	14, 15, 16	15	—	1, 8, 15, 22, 29	—	—	—
Apr.	11, 12, 13	12	—	5, 12, 19, 26	—	—	22
May	9, 10, 11	10	10	3, 10, 17, 24, 31	8-21	9	4-6
June	13, 14, 15	14	—	7, 14, 21, 28	—	—	6-10
July	18, 19, 20	19	—	5, 12, 19, 26	—	—	28-30
Aug.	15, 16, 17	16	16	2, 9, 16, 23, 30	14-27	—	10-14
Sep.	19, 20, 21	20	—	6, 13, 20, 27	—	—	—
Oct.	17, 18, 19	18	—	4, 11, 18, 25	—	—	20-21
Nov.	14, 15, 16	15	15	1, 8, 15, 22, 29	13-26	2	16-17
Dec.	12, 13, 14	13	—	6, 13, 20, 27	—	—	12-14 22-23

SEE OTHER SIDE

# IUWDS International Geophysical Calendar for 1967

## EXPLANATIONS

1. **Purpose.** The International Geophysical Calendar designates days and intervals selected for special attention for geophysical observations, experiments, data interchange or analyses. It is thus a framework for worldwide and interdisciplinary coordination in those programs where it is not practical or meaningful to carry out the same work for each and every day. The Calendar serves mainly the branches of geophysics dealing with the earth's atmosphere. A principal use is for the coordination of the sampling of the many phenomena which vary significantly during the course of a year. The Calendar is prepared by the International Ursigram and World Days Service (IUWDS) with the advice of the spokesmen for the various scientific disciplines, especially for the suggested scientific programs recommended to be carried out for the days or intervals marked on the Calendar (see paragraphs 11 to 16 below). In addition it is common practice for individual geophysical stations or groups of stations to arrange some of their plans of observations according to the Calendar. Thus geophysicists can expect that their colleagues in other countries, in other laboratories and in other geophysical disciplines will tend to be making increased efforts for the days and intervals marked on the Calendar; the amount of geophysical data in existence, at the World Data Centers and elsewhere, will accordingly be greater for Calendar days.

2. **Universal Time (UT)** is the standard of time for all world days on the Calendar, i.e., each begins at 0000 UT and ends at 2400 UT.

3. **Regular Geophysical Days (RGD)** are each Wednesday throughout the year. This weekly sampling schedule is particularly designed for the purposes of the meteorological program but has also been adopted for some other geophysical programs.

4. **Regular World Days (RWD)** are three consecutive days each month, always Tuesday, Wednesday, Thursday near the middle of the month. They are intended for observations, experiments or analyses which can or need be made for about 10% of days and which should be spaced (in groups of three days) throughout the year.

5. **Priority Regular World Days (PRWD)** are one day each month—the RWD which are also a RGD (Wednesday). They are for work which can or needs to be done only one day each month throughout the year.

6. **Quarterly World Days (QWD)** are one day in each quarter of the year. They are the PRWD which fall within the World Geophysical Intervals (WGI) and are also a RGD (Wednesday). The QWD serve to coordinate seasonal high-altitude rocket experiments.

7. **World Geophysical Intervals (WGI)** during 1967 are fourteen consecutive days in each season, beginning on the second Monday of the selected months. They always include the three RWD of the month and the QWD for the season. The WGI are intended for intensified programs aimed at the statistics of seasonal variations or the timing of seasonal changes. The schedule of WGI relative to the equinoxes and solstices is usually made different from year to year; however, the schedule for 1967 is similar to 1966 in order to include the solar eclipse of May 9 within a WGI.

8. **Solar Eclipses** are May 9 (partial) observable in North America, Greenland, Iceland, northern Scandinavia, and the north polar regions; and November 2 (total but not central) in a small area in the South Atlantic Ocean just north of Antarctica. Geophysical stations in the eclipse zones and their conjugate areas treat these days as world days and undertake special programs to study eclipse effects on the earth's atmosphere. For maps of the eclipse zones and pertinent details see any standard astronomical ephemeris or yearbook.

9. **Meteor Showers** of special interest are also marked on the Calendar, including some of the important visual showers and also unusual showers observable mainly by radio and radar techniques. Attention is called to these days (selected by P. Millman, Ottawa) in case ionization produced by meteors may account for unusual effects in other geophysical experiments.

10. **"World Days" not appearing on Calendar.** The occurrence of unusual solar or geophysical conditions are announced or forecast through various types of geophysical "Alerts" which are widely distributed by telegram and radio broadcast on a current schedule. The types of Alerts are: magnetic storm (in telegrams MAGSTORM), solar flare (SOF LARE), cosmic ray event (COSMIC EVENT), and sudden and unusual stratospheric warmings (STRATWARM). These Alerts are issued by the IUWDS World Warning Agency or under certain circumstances by one of the solar-geophysical Regional Warning Centers. The meteorological telecommunications network coordinated by WMO carries the worldwide Alerts once daily soon after 0400 UT. Many geophysical stations in the various disciplines increase their programs or carry on special experiments to take advantage of the special solar or geophysical conditions during the period of Alert. Selections of **Retrospective World Intervals**, after a delay of a few months, are also announced by the World Warning Agency. An additional service of the Regional Warning Centers is to notify geophysical and solar stations promptly (**Ursigrams**) with summary details of immediately significant geophysical observations and of major solar events which have important and sometimes long-lasting geophysical effects. The telegraphic addresses of the Regional Warning Centers are as follows: AGIWARN WASHINGTON (USA); DEMPWA TOKYO (JAPAN); NIZMIR MOSCOW (USSR); IONOSPHERE DARMSTADT (GFR) or CNETAGI MEUDON (FRANCE). Associate RWC operate in some other localities.

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 Geodesy and Geophysics. IUWDS adheres to the Federation of Astronomical and Geophysical Services of the International Council of Scientific Unions. The IUWDS coordinates the international aspects of the world days program and rapid data interchange, and also publishes subsequently an annual **Calendar Record** of solar and geophysical indices and events.

This Calendar for 1967 has been drawn up by A. H. Shapley, Chairman, and J. V. Lincoln, Deputy Secretary, of the IUWDS Steering Committee, in close association with the CIG Committee and the Reporters and spokesmen for the various scientific disciplines and COSPAR. Similar Calendars have been issued annually beginning with the IGY, 1957-58, and have been published in various widely available scientific publications.

## RECOMMENDED SCIENTIFIC PROGRAMS OPERATIONAL EDITION

(The following material was reviewed in 1966 by spokesmen for the various scientific disciplines and the 9th Meeting of COSPAR as suitable for coordinated geophysical programs in 1967.)

11. **Meteorology.** Particular efforts should be made to carry out an intensified program on the RGD—each Wednesday, UT. A desirable goal would be the scheduling of meteorological rocket-sondes, ozone sondes and radiometer sondes on these days, together with maximum-altitude rawinsonde ascents at both 0000 and 1200 UT.

During WGI and STRATWARM alert intervals, intensified programs are also desirable, preferably by the implementation of RGD-type programs (see above) on Mondays and Fridays, as well as on Wednesdays.

12. **Geomagnetism.** It has always been a leading principle for geomagnetic observatories that operations should be as continuous as possible. Thus the great majority of stations taking part in the geomagnetic program will undertake the same program without regard to the Calendar. The days marked on the Calendar will be of interest mainly to the following two types of geomagnetic stations: (a) Stations recording quick-run micropulsations (with fast chart speeds) are requested to make such records on every RGD—each Wednesday, UT—according to the following schedule: 1967 Jan. 4 from 1800 to 2200 UT; Jan. 11 from 1900 to 2300 UT; Jan. 18 from 2000 to 0000 UT; etc. The observatories are not obliged to send their recordings to the World Data Centers except by special request (see IQSY World Days Manual under Retrospective World Intervals on Micropulsations). (b) Stations which, in addition to other activities, are equipped for making magnetic observations, but which can not carry out such observations and reductions on a continuous schedule are encouraged to carry out such work at least on RWD (and during times of MAGSTORM Alert).

13. **Ionosphere.** For the vertical incidence sounding program, the summary recommendations are: (a) soundings to be made at five minute intervals or less on RWDs for stations normally making observations every quarter hour or at more frequent intervals; all stations are recommended to make at least quarter hourly observations on RWDs; (b) f-plots are made for high latitude stations and representative stations at lower latitudes for all days (i.e., including RWDs and WGIs); (c) profile parameters hc, qc or recommended similar parameters to be determined and sent to WDCs for RWDs for all stations except those undertaking full profile programs or producing monthly median profiles; (d) copies of hourly ionograms with appropriate scales for PRWDs are to be sent to WDCs; (e) stations in the eclipse zone and its conjugate area should take continuous observations on solar eclipse days and special observations on adjacent days in accordance with detailed recommendations in Ionosphere Manuals. Continuous records of ionospheric parameters are acceptable in place of f-plots at temperate and low latitude stations.

For the ionospheric drifts program, observations are made at least on all RWDs, on all WGIs, on every Wednesday (RGDs) and on every Thursday (day following each RGD). Hourly tabulations for all days mentioned are sent to the WDCs. It is essential that sufficient observations be made to provide representative values of the diurnal variations. Hourly tabulations for this purpose should also be sent to WDCs.

For the ionospheric absorption program, diurnal hourly observations are made at least on all RWDs and hourly tabulations sent to WDCs. Continuous observations on solar eclipse days, where possible, for stations in eclipse zone and its conjugate area. Special efforts should be made to obtain additional absorption measurements at temperate latitude stations during the period of Absorption Winter Anomaly, particularly on days of abnormally high or abnormally low absorption (approximately November-March, Northern Hemisphere; May-September, Southern Hemisphere).

For back-scatter and forward-scatter programs, observations should be made on all RWDs at least.

For topside sounding experiments, it is recommended to send copies of records to WDCs for all RWDs at least.

For ELF noise measurements involving the earth-ionosphere cavity resonances any special effort should be concentrated during the WGI.

It is recommended that more intensive observations in all programs be considered on days of unusual meteor activity.

14. **Solar Activity.** Observatories are invited to issue and send to the WDCs of all disciplines special reports of their regular and any special observations on all solar eclipse days to assist in the interpretation of geophysical observations made in the eclipse zones.

15. **Cosmic Rays, Aeronomy.** Experimenters should take into account that observational effort in other disciplines tends to be intensified on the days marked on the Calendar, and schedule balloon and rocket experiments accordingly if there are no other geophysical reasons for choice.

16. **Space Research.** In view of the variability of the D and E regions of the ionosphere, it is desirable to make rocket measurements of their characteristics on the same day at as many locations as possible. Where feasible, experimenters should endeavor to launch rockets on the **Quarterly World Days (QWD)** since these are also days when there will be maximum support from ground observations.