

International Geophysical Calendar for the International Years of the Quiet Sun, 1964 and 1965

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 world-wide 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. For many geophysical programs, the Committee for the International Years of the Quiet Sun 1964-65 (IQSY) has made recommendations on work to be carried out for the days or intervals marked on the Calendar (see paragraphs 12 to 17 below). It is also common 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.

This abbreviated explanation of the International Geophysical Calendar is adapted from IQSY Manual No. 1, World Days Program, issued 1963 by the IQSY Secretariat, 6 Cornwall Terrace, London NW 1, Great Britain. The Manual should be consulted for full details on the Calendar and other IQSY world days such as solar and geophysical Alerts and the Retrospective World Intervals.

2. **Universal Time (U.T.)** 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 IQSY 1964-1965. This weekly sampling schedule is particularly designed for the purposes of the meteorological program of IQSY 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 IQSY are 14 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. Some of the WGI are considered of higher priority than others in certain programs. 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 deliberately made different from year to year so that in due course a WGI will cover the time of seasonal change of each of various geophysical phenomena.

8. **Solar Eclipses**, whether total, annular or partial, are marked on the Calendar. Geophysical stations in the eclipse zones 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 IQSY Manual for the World Days Program or any standard astronomical ephemeris or year-book.

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), magnetic calm (MAGCALME), solar flare (SOFLARE), solar activity (SOLACTIVITY), solar calm (SOLCALME), cosmic ray event (COSMIC EVENT), and sudden and unusual stratospheric warmings (STRAT-WARM). These Alerts are issued by the IQSY-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 world-wide Alerts once daily soon after 0400 UT (as from Oct. 1963). 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. The IQSY Manual for the World Days Program contains full details, including recommended scientific programs. Selections of **Retrospective World Intervals**, after a delay of a few weeks or 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); DEMA KOKUBUNJI (JAPAN); NIZMIR MOSCOW (USSR); IONOSPHERE DARMSTADT (G.F.R.) or CNETAGI BAGNEUX (FRANCE) or AGI NEDERHORSTDENBERG (NETHERLANDS).

11. **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. The 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.

Suggested Scientific Programs for World Days and Intervals on the Calendar

(The following material is adapted from recommendations of the CIG-IQSY Committee, IInd Assembly, Rome, March 1963 (see IQSY Notes No. 3, 1963, issued by IQSY Secretariat) or its Reporters or spokesmen for the various scientific disciplines. Any supplementary recommendations will appear in future issues of IQSY Notes).

12. **Meteorology**—Particular efforts should be made to obtain the maximum quantity of data on the **RGD**—each Wednesday, UT. Rocket ascents and ozone- and radiation-sonde ascents should be made on these days. Maximum altitude balloon ascents should be made at 0000 and 1200 UT.

During **WGI** the following observations should be made at all appropriate stations: (a) on all days: two maximum altitude balloon soundings; (b) on Mondays and Fridays: two maximum altitude balloon soundings, one ozone sounding, one radiation sounding, one rocket sounding; (c) on Wednesdays: at least two and preferably four maximum altitude balloon soundings, one radiation sounding, one ozone sounding, at least one and preferably two rocket soundings. **Note:** where Meteorological Services and Institutes have difficulty in carrying out the recommended programs during all **WGIs**, priority should be given to the **WGI** in October 1964 and March 1965. Stations which are able to carry out the recommended program during only one **WGI** should choose October 1964 if in the Southern Hemisphere and March 1965 if in the Northern Hemisphere.

13. **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 of the IQSY will undertake the same program without regard to the IQSY 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: 1964 Jan. 1, from 0000 to 0400 UT; Jan. 8, from 0100 to 0500 UT; Jan. 15, from 0200 to 0600 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 IQSY 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).

Attention is called to the opportunity which the expected quiet conditions of the IQSY period may provide for a profitable study of the geomagnetic effect of **solar eclipses**, marked on the Calendar.

14. **Ionosphere**—For the vertical incidence sounding program, the summary recommendations are (a) soundings to be made at 5-minute intervals or less 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 h_p , q_c 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 ionograms for **PRWDs** are to be sent to WDCs; (e) stations in the eclipse zone should take continuous observations on solar eclipse days and special observations on adjacent days in accordance with detailed recommendations in the IQSY World Days or Ionosphere Manuals.

For the ionospheric drifts program, observations are made 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.

For the ionospheric absorption program, diurnal hourly observations are made on all **RWDs** and hourly tabulations sent to WDCs. Continuous observations on **solar eclipse** days, where possible, for stations in eclipse zone.

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.

All programs should take notice of the days of unusual **meteor shower** activity in case unusual ionospheric phenomena are noted.

15. **Solar Activity**—Observatories are invited to issue and send to the WDCs of all IQSY 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.

The total **solar eclipse** of May 30, 1965 will be characterized by long duration (about 4 minutes) on the central line. It is recommended that comprehensive solar observations be made of this eclipse, both optical and radio.

16. **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.

17. **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.

TABLE OF WORLD DAYS MARKED ON THE CALENDAR

1964					1965										
1964	RWD	PRWD	QWD	RGD	WGI ECL. Meteors	1965	RWD	PRWD	QWD	RGD	WGI ECL. Meteors				
Jan.	14, 15, 16	15	15	1, 8, 15, 22, 29	13-26	14	3-4	Jan.	12, 13, 14	13	13	6, 13, 20, 27	11-24	—	3
Feb.	18, 19, 20	19	—	5, 12, 19, 26	—	—	—	Feb.	16, 17, 18	17	—	3, 10, 17, 24	—	—	—
Mar.	17, 18, 19	18	—	4, 11, 18, 25	—	—	—	Mar.	16, 17, 18	17	17	3, 10, 17, 24, 31	8-21**	—	—
Apr.	14, 15, 16	15	15	1, 8, 15, 22, 29	13-26	—	21-22	Apr.	20, 21, 22	21	—	7, 14, 21, 28	—	—	21-22
May	19, 20, 21	20	—	6, 13, 20, 27	—	—	4-5	May	18, 19, 20	19	—	5, 12, 19, 26	—	30	4-5
June	16, 17, 18	17	—	3, 10, 17, 24	—	10	4-8	June	15, 16, 17	16	16	2, 9, 16, 23, 30	14-27	—	4-8
July	14, 15, 16	15	15	1, 8, 15, 22, 29	13-26	9	28-30	July	20, 21, 22	21	—	7, 14, 21, 28	—	—	28-30
Aug.	18, 19, 20	19	—	5, 12, 19, 26	—	—	9-13	Aug.	17, 18, 19	18	—	4, 11, 18, 25	—	—	10-14
Sep.	22, 23, 24	23	—	2, 9, 16, 23, 30	—	—	—	Sep.	14, 15, 16	15	15	1, 8, 15, 22, 29	13-26	—	—
Oct.	20, 21, 22	21	21	7, 14, 21, 28	12-25*	—	19-21	Oct.	19, 20, 21	20	—	6, 13, 20, 27	—	—	19-21
Nov.	17, 18, 19	18	—	4, 11, 18, 25	—	—	15-17	Nov.	16, 17, 18	17	—	3, 10, 17, 24	—	23	15-17
Dec.	15, 16, 17	16	—	2, 9, 16, 23, 30	—	3-4	12-14, 22	Dec.	14, 15, 16	15	15	1, 8, 15, 22, 29	13-26	—	12-14, 22-23

* Priority WGI, particularly Southern Hemisphere

** Priority WGI, particularly Northern Hemisphere

This Calendar for 1964 and 1965 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-IQSY Committee and its Reporters and spokesmen for the various scientific disciplines. Similar Calendars have been issued annually beginning with the IGY, 1957-58, and have been published in various widely available scientific publications.

INTERNATIONAL YEARS OF THE QUIET SUN

Issued by the International Ursigram and World Days Service under the auspices of U.R.S.I.

International Geophysical Calendar 1964

1964 JANUARY

S	M	T	W	T	F	S
			△	2	3	4
5	6	7	8	9	10	11
12	13	⑭	⑮	⑯	17	18
19	20	21	△	23	24	25
26	27	28	△	30	31	

1964 FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	△	6	7	8
9	10	11	△	13	14	15
16	17	⑱	⑲	⑳	21	22
23	24	25	△	27	28	29

1964 MARCH

S	M	T	W	T	F	S
1	2	3	△	5	6	7
8	9	10	△	12	13	14
15	16	⑰	⑱	⑲	20	21
22	23	24	△	26	27	28
29	30	31				

1964 APRIL

S	M	T	W	T	F	S
			△	2	3	4
5	6	7	8	9	10	11
12	13	⑭	⑮	⑯	17	18
19	20	21	△	23	24	25
26	27	28	△	30		

1964 MAY

S	M	T	W	T	F	S
					1	2
3	4	5	△	7	8	9
10	11	12	△	14	15	16
17	18	⑱	⑲	⑳	22	23
24	25	26	△	28	29	30
31						

1964 JUNE

S	M	T	W	T	F	S
	1	2	△	4	5	6
7	8	9	△	11	12	13
14	15	⑰	⑱	⑲	19	20
21	22	23	△	25	26	27
28	29	30				

1964 JULY

S	M	T	W	T	F	S
			△	2	3	4
5	6	7	8	9	10	11
12	13	⑭	⑮	⑯	17	18
19	20	21	△	23	24	25
26	27	28	△	30	31	

1964 AUGUST

S	M	T	W	T	F	S
						1
2	3	4	△	6	7	8
9	10	11	△	13	14	15
16	17	⑱	⑲	⑳	21	22
23	24	25	△	27	28	29
30	31					

1964 SEPTEMBER

S	M	T	W	T	F	S
		1	△	3	4	5
6	7	8	△	10	11	12
13	14	15	△	17	18	19
20	21	⑳	㉑	㉒	25	26
27	28	29	△	30		

1964 OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	△	8	9	10
11	12	13	△	15	16	17
18	19	⑳	㉑	㉒	23	24
25	26	27	△	29	30	31

1964 NOVEMBER

S	M	T	W	T	F	S
1	2	3	△	5	6	7
8	9	10	△	12	13	14
15	16	⑰	⑱	⑲	20	21
22	23	24	△	26	27	28
29	30					

1964 DECEMBER

S	M	T	W	T	F	S
	1	△	3	4		5
6	7	8	△	10	11	12
13	14	⑱	⑲	⑲	18	19
20	21	㉒	㉓	㉔	25	26
27	28	29	△	31		

⑰ Regular World Day (RWD)

③ Day of Solar Eclipse

7 Day with unusual meteor shower activity

16 17 World Geophysical Interval (WGI)

⑳ Quarterly World Day (QWD), also a PRWD and RGD

⑱ Priority Regular World Day (PRWD)

△ Regular Geophysical Day (RGD)

+ Priority WGI, particularly Southern Hemisphere

International Geophysical Calendar 1965



1965 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						

1965 FEBRUARY

S	M	T	W	T	F	S
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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

1965 MARCH

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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		

1965 APRIL

S	M	T	W	T	F	S
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1965 MAY

S	M	T	W	T	F	S
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23	24	25	26	27	28	29
30	31					

1965 JUNE

S	M	T	W	T	F	S
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19	20	21	22	23	24	25
26	27	28	29	30		

1965 JULY

S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

1965 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				

1965 SEPTEMBER

S	M	T	W	T	F	S
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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		

1965 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						

1965 NOVEMBER

S	M	T	W	T	F	S
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1965 DECEMBER

S	M	T	W	T	F	S
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5	6	7	8	9	10	11
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19	20	21	22	23	24	25
26	27	28	29	30	31	

1966 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)

☐ Day of Solar Eclipse

7 Day with unusual meteor shower activity

☐☐ World Geophysical Interval (WGI)

◆ Quarterly World Day (QWD), also a PRWD and RGD

Ⓢ Priority Regular World Day (PRWD)

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+ Priority WGI, particularly Northern Hemisphere