ROYAL ASTRONOMICAL SOCIETY OF CANADA
Planetary Section

SPECIAL INSTRUCTIONS FOR OBSERVING JUPITER

Instruction Sheet No 1 contains information regarding drawings of Jupiter and estimates of the intensity and conspicuousness of the planet's belts and zones. The present sheet describes two important quantitative programs: the timing of satellite phenomena and central meridian transits.

SATELLITE PHENOMENA

Observations have shown that the phenomena of Jupiter's satellites predicted in the Observer's Handbook are frequently in error by several minutes. The exact nature of these variations from theory has yet to be determined; timings to the nearest tenth of a minute of occultations, eclipses, and transits can therefore be of value.

Observations should be recorded on Form No 2. The satellite, type of phenomenon, and predicted time should be recorded in the appropriate places from the Handbook or Ephemeris. The observed times of first and second contact should be recorded in the centre section of the form. In order to distinguish clearly times of interior and exterior contacts, a high magnification is recommended. Note should be made on the back of the form if anything unusual is observed.

CENTRAL MERIDIAN TRANSITS

The timing of transits should form the major part of every observer's Jupiter program. The nature of this work is described in the Journal for April 1962, p.p.79-80 (copies available from the writer). The following additional information will be found useful by the prospective transit observer.

Form No 3 or its equivalent should be used to record observations. Universal Time is preferred since it usually avoids a change of date during a night's observations. Transits should be assigned consecutive serial numbers through a given apparition. The description should begin with a two-letter code indicating whether the marking is dark (D) or bright (W) and whether it is the preceding end (p), centre (c), or following end (f) which is on the C.M.; this should be followed by a more detailed description using the nomenclature given overleaf. The location is given in terms of the belts and zones. At first the beginner may find it helpful to supplement his descriptions with a simple sketch. Observers are urged to calculate the spot longitudes themselves using the central meridian tables in the Handbook and the ancillary tables given below. To be of fullest value, observations should be submitted fortnightly.

To keep errors to a minimum, one eyepiece should be used consistently, and an attempt made to keep the line of the observer's eyes parallel to the belts. The observer should record only features of which he is absolutely certain; erroneous observations only make the longitude charts more difficult to interpret.

Change of Longitude in Given Intervals of Time

System I:

h	o
1	36.6
2	73.2
3	109.7
4	146.3
5	182.9
6	219.5
7	256.1
8	292.7
9	329.2
10	5.8

m	o
10	6.1
20	12.2
30	18.3
40	24.4
50	30.5
60	36.6

m	o
1	0.6
2	1.2
3	1.8
4	2.4
5	3.0
6	3.7
7	4.3
8	4.9
9	5.5
10	6.1

System II:

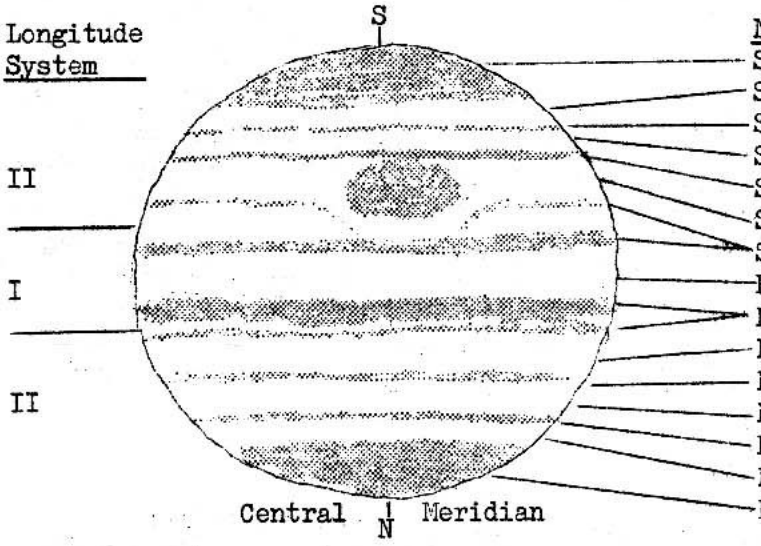
h	o
1	36.3
2	72.5
3	108.8
4	145.1
5	181.3
6	217.6
7	253.8
8	290.1
9	326.4
10	2.6

m	o
10	6.0
20	12.1
30	18.1
40	24.2
50	30.2
60	36.3

m	o
1	0.6
2	1.2
3	1.8
4	2.4
5	3.0
6	3.6
7	4.2
8	4.8
9	5.4
10	6.0

NOMENCLATURE

Belts and Zones. The following nomenclature and abbreviations are generally accepted among Jupiter observers. It should be noted that during a given apparition not all the belts and zones shown in the diagram may be visible. Also, more belts may be detectable north of the NNTB (or south of the SSTB); these should be designated NNNTB, etc. North and south components of a divided belt are indicated by NEBn, NEBs, etc.



Name	Abbreviation
South Polar Region	SPR
South South Temperate Zone	SSTZ
South South Temperate Belt	SSTB
South Temperate Zone	STeZ
South Temperate Belt	STB
South Tropical Zone	STrZ
South Equatorial Belt	SEB
Equatorial Zone	EZ
North Equatorial Belt	NEB
North Tropical Zone	NTrZ
North Temperate Belt	NTB
North Temperate Zone	NTeZ
North North Temperate Belt	NNTB
North North Temperate Zone	NNTZ
North Polar Region	NPR

Surface Features. The following nomenclature, proposed by Budine and Reese in 1960 (Strolling Astronomer, Vol. 14, p.p.18-21), has been found extremely useful:

DARK MARKINGS (D)

Darker section of belt (sect.):

Condensation (cond.):

Elong. cond. :

Rod :

Projection (proj.): low:

tall:

Veil (or Shading):

Festoon (fest.):

Loop fest.: (or Garland)

Column (col.):

Disturbance (Dist.):

BRIGHT MARKINGS (W)

Oval:

Nodule:

Bay:

Notch:

Gap:

Rift:

Streak:

Patch:

Other common abbreviations: v=very, L=large, Sm.=small, conspic.= conspicuous, indef.=indefinite, RS=Red Spot, RSH=Red Spot Hollow, ft=faint, ?= timing uncertain, est.=estimated.

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July 13, 1962.