

Table 4

Luminosity function for NGC 581

M_V	Observed number of star	$\phi(M_V)$	$\psi(M_V)$
1	2	3	4
-6.99 to -6.00	1	—	—
-5.99 to -5.00	0	0.0	0.4
-4.99 to -4.00	1	0.0	1.5
-3.99 to -3.00	1	0.1	3.3
-2.99 to -2.00	5	0.3	5.7
-1.99 to -1.00	7	1.2	8.9
-0.99 to 0.00	13	4.6	12.6
0.01 to 1.00	21	15.7	16.9
1.01 to 2.00	23	49.1	21.7
TOTAL	71	71.0	71.0

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The forthcoming eclipse of 1980 is expected to be almost ideal for the purpose of obtaining optical observations of the solar chromosphere and corona. The Sun will be at a convenient altitude, and clear weather is usually prevalent in southern India in mid-February. Many scientific teams are planning to set up their camps for observing this eclipse. New sophisticated techniques of observation are going to be used on this occasion, which may yield new information about the solar chromosphere and corona.

The path of totality is shown in Fig. 1. Among the important places along the path of totality will be the towns of Karwar, Dharwar, Hubli, Raichur, Mahboobnagar, Nalagonda, Gopalpur, Puri and Bhubane-

swar. Some large cities like Hyderabad and Vijayawada will fall just outside this path and thus narrowly miss the total phase. The Japal-Rangapur Observatory of the Osmania University will be in the belt of totality and in a position to observe the total phase.

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Added in press (Editor) : Prof. J. C. Bhattacharyya has been appointed the official national coordinator for this total solar eclipse. Astronomers seeking information should contact him.

TOTAL SOLAR ECLIPSE OF 1980

A total solar eclipse will be visible from India on February 16th 1980. The path of totality will cross the Deccan Peninsula where the duration of totality will range between 2 to 3 minutes.

Over the Earth's surface, the path of totality will begin in the South Atlantic Ocean. Crossing Africa south of the equator, the shadow will sweep over the

Arabian Sea, the southern part of India, the northernmost tip of Bay of Bengal and southeastern Bangladesh. The shadow path will then cross over a small stretch of Eastern India before ending over South China at sunset.

The maximum duration of totality will be 248 seconds just off the east coast of Africa, where the eclipse will be at mid-day. In India, the eclipse will begin first

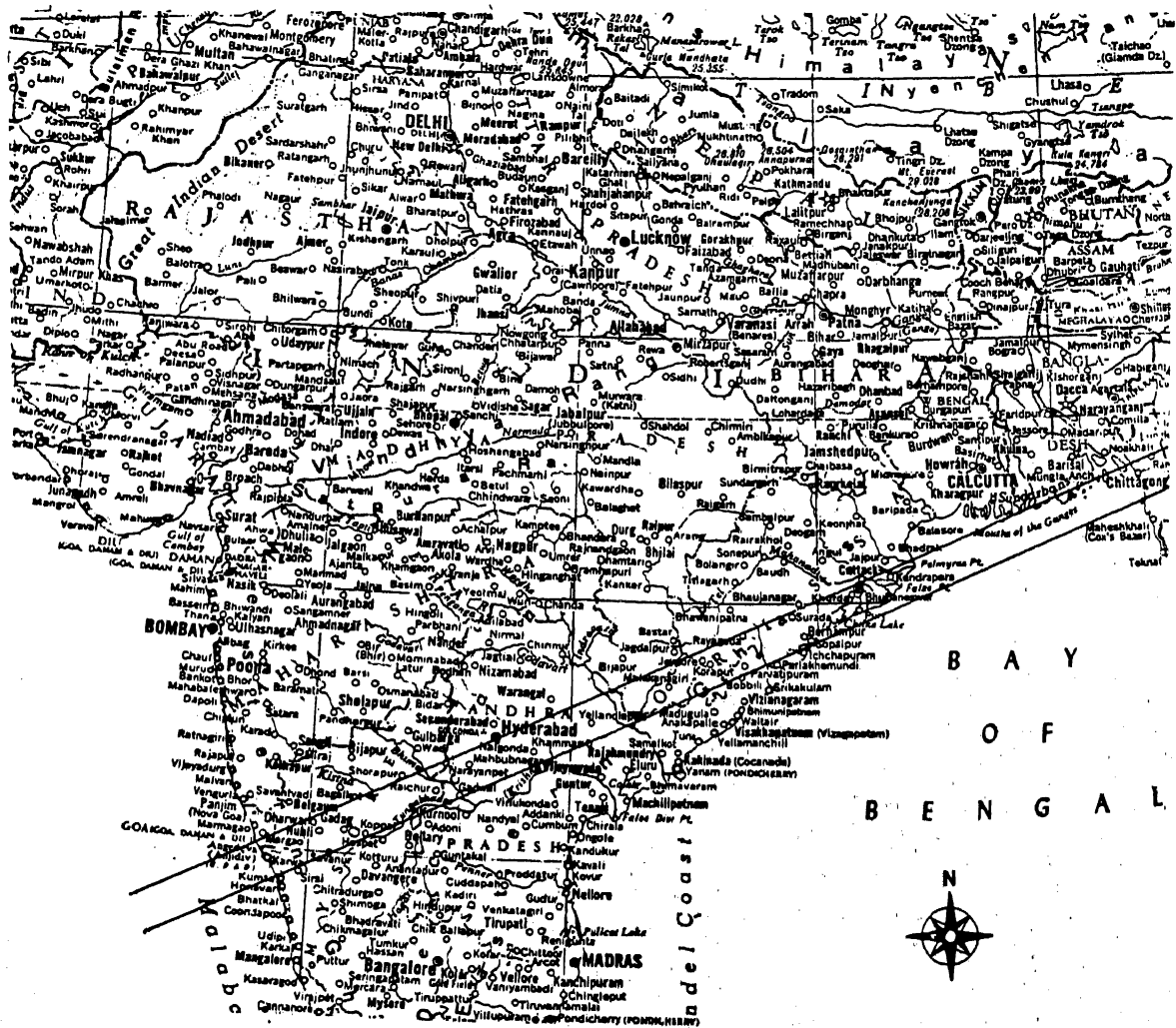


Fig. 1 : Path of total solar eclipse over India

on the west coast near Karwar, where duration of totality is estimated to be nearly three minutes. The width of the path here will be about 130 kms, and time of mid-totality around 1540 hrs I.S.T. From here, the shadow cone will move in a north-easterly direction, passing just south of Hyderabad, it will sweep over Andhra Pradesh and Orissa. The shadow will cross the eastern coastline over Puri at about 1600 hrs and touch the Chittagong coast in Bangladesh a few minutes later. At Puri, the duration of totality will be slightly over 2 minutes with the Sun 20° above the horizon. In Bangladesh and the eastern frontier of India, the elevation will be still lower, and duration shorter.

This is the first total eclipse well observable from India in the twentieth century, which may be utilised for collecting valuable scientific data. There had been only one other in 1954, when the moon's shadow barely touched India at the end of its long traverse, before fading into sunset. However, two more total eclipses will be observable from India in the last decade of the present century. The first of them will occur on October 24, 1995 and the second on August 11, 1999.

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