

20" Bhavnagar Telescope: A Brief History

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The 20" reflector popularly known as the 'Bhavnagar Telescope' has a very interesting and impressive history. This telescope was originally purchased for the Maharaja Takhtasinghji Observatory at Poona where K.D.Naegamvala was the Director during the last decade of the 19th century. A part of the funds for starting the Observatory was provided by the Maharaja Takhtasinghji of Bhavnagar hence it acquired the name 'Bhavnagar Telescope'. After his passing away the Observatory was dismantled and in 1912 the instruments were transferred to Kodaikanal Observatory by an order of 'Government of India'. The 20" telescope was one of the several instruments which came to Kodaikanal. It was a Grubb telescope, the largest telescope in the country at that time. Plans to construct a new building to install the telescope were underway from the time it was acquired. But unfortunately due to several reasons, it was not put into operation until 1951 when Dr A.K.Das took keen interest in commissioning it. The telescope was reassembled by reconstructing some of its missing parts and was used for future stellar work. For a long time this was the principal instrument for stellar observations, the only other telescope being the 8" refractor.

The first scientific results obtained after the Bhavnagar telescope was commissioned are described in Kodaikanal Observatory Bulletin when the Kodaikanal Observatory was invited by the International Mars Committee to join the world wide photographic and visual patrol in 1954. Three papers were published on Mars using the 20" reflector. From 1960 - 1972 nearly 12 papers were published with the help of a spectrograph which was specially built for this telescope by Dr M.K.V.Bappu. Observations made from this telescope were also used for two PhD theses submitted from the Institute.

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Scientific papers from 20" Bhavnagar Telescope

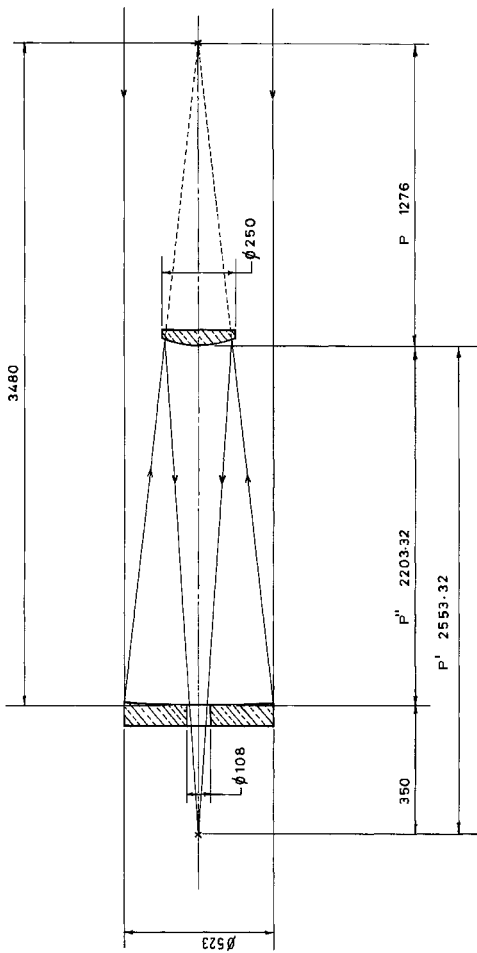
- Bandyopadhyaya, K.K. 1958, Relative intensity distribution on Mars in red lights during the 1954 opposition, Kodaikanal Obs. Bull. No.154. *p.181-197*
- Narayana, J.V. 1958, Observations of Mars during 1954 opposition, Kodaikanal Obs. Bull. No.154. *p.172-179*
- Narayana, J.V. and Visvanathan, N. 1958, Observations of Mars at Kodaikanal during the 1956 opposition, Kodaikanal Obs. Bull. No.154. *p.198-201*
- Ganesh, K.S. 1966, Spectrographic study of Wolf-Rayet Stars. Ph.D. thesis.
- Bappu, M.K.V. and Sivaraman, K.R. 1966, The spectrum of Comet Ikeya-Seki (1965f), Kodaikanal Obs. Bull. No.178.
- Ganesh, K.S. and Bappu, M.K.V. 1967, The Wolf-Rayet binary HD 68273, Kodaikanal Obs. Bull. No.183.
- Bappu, M.K.V. and Sivaraman, K.R. 1970, Comet Ikeya-Seki (1965) and the nature of the interplanetary medium during its opposition. Kodaikanal Obs. Bull. No.187.
- Rajamohan, R. 1972, The absolute magnitude of gamma Velorum, Observatory, 92, 232.
- Natarajan, V. and Rajamohan, R. 1972, Apsidal motion in the binary delta Orionis, Kodaikanal Obs. Bull. No.208.
- Rajamohan, R. 1972, The spectrum of gamma Velorum, Proc. Symp. Spectroscopic Studies of Astrophysical Interest. p.110.
- Rajamohan, R. 1972, Spectroscopy of Scorpio - Centaurus association Proc. Symp. Spectroscopic Studies of Astrophysical Interest. p.121.
- Rajamohan, R. 1975, Some physical aspects of the Scorpio Centaurus association. Ph.D. thesis.
- Doss, A.T. Bhatnagar, A. and Natarajan, V. 1975, Photoelectric and spectrographic studies of Nova Delphini 1967, Kodaikanal Obs. Bull. No.209.
- Rajamohan, R. 1976, A Spectroscopic study of the Scorpio Centaurus association. Pramana 7, 160.

- Bappu, M.K.V. Ganesh, K.S. Scaria, K.K. 1977, The near infrared spectra of Wolf-Rayet stars. Kodaikanal Obs. Bull. 2, 28.
- Singh, M. 1983, A new probable Be star alpha Leo. Inf. Bull. Variable Stars, No.2188.
- Singh, M. 1983, Spectroscopic evidence for short period and high eccentricity of the binary orbit of O Andromedae. Inf. Bull. Variable Stars, No.2284.

20" REFLECTOR TELESCOPE OPTICAL DATA

for F/13 Systems

Primary diameter	' D '	=	523.00 mm
Radius curvature	R_p	=	6960 mm
Focal length of primary	' F ' _p	=	3480 mm
F ratio of primary		=	F/6.65
Back focal length	b	=	350 mm
Cass hole diameter	ϕ	=	108 mm
Secondary diameter	' D '	=	250 mm
Clear aperture	CA	=	240.97 mm
Blank thickness	T	=	25 mm
Amplifying ratio		=	2
Radius of curvature	R_s	=	5106.54 mm
Field of system		=	$\pm 1^\circ$
Cass	P	=	1276.66 mm
	P'	=	2553.32 mm
	P''	=	2203.34 mm
	K	=	- 9.00



20" Reflector telescope f/13 system