

THE SCHMIDT TELESCOPE ON CALAR ALTO

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During the last ten years the Max-Planck-Institut für Astronomie (MPIA) has installed four large telescopes at its observatory on Calar Alto, Spain, which is operated jointly with the Spanish National Commission for Astronomy as the German-Spanish Astronomical Center. Figure 1 shows the domes of the 1.2 m, 2.2 m, and 3.5 m telescopes of Ritchey-Chrétien type and the dome of the Schmidt Telescope. They all are Zeiss telescopes, the former three coming from Oberkochen, the latter one from Jena.

Originally, the Schmidt Telescope was built for the Hamburg Observatory and was in operation there since 1955. With the Calar Alto project of the MPIA entering into its stage of realization an agreement was also reached to move this instrument from Bergedorf to the much better observing conditions of Calar Alto. For this purpose, the MPIA erected a new dome building and bought a new fork mounting of Grubb-Parsons adapted to the latitude of the new site.

Regarding the properties of the telescope reference is made to the description of Heckmann (1955). Here, attention will be drawn only to its main characteristics: The free aperture of the correction plate is 80 cm, the spherical mirror has 120 cm diameter and 240 cm focal length corresponding to a field of $5^{\circ}5' \times 5^{\circ}5'$ on the spherically curved photographic plates 24 x 24 cm in size. Figure 2 shows the instrument in its new housing. The telescope is equipped with two objective prisms whose essential parameters are given in Table 1. Like the correction plate they are made up of the Schott glass UBK 7 of high UV transparency.

In 1980 the Schmidt Telescope became operational on Calar Alto. In the meantime more than 500 plates have been taken, most of them by observers of the Hamburg Observatory.

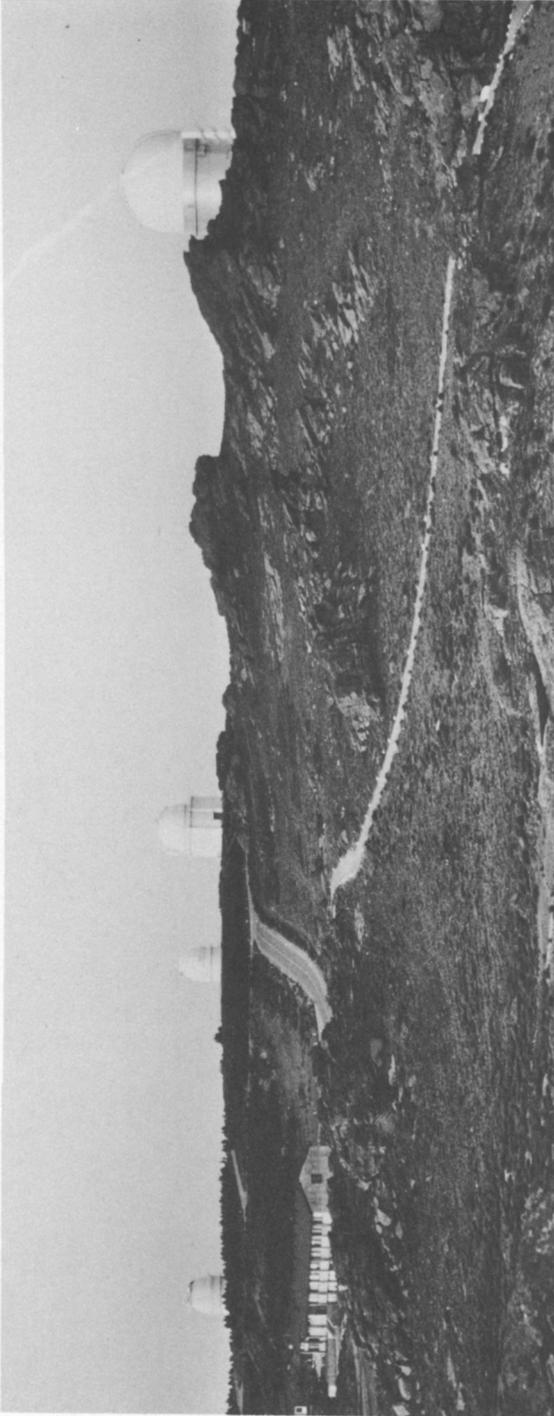


Figure 1. The Calar Alto (West Long. $+2^{\circ}32'7$, Lat. $+37^{\circ}13'4$, Alt. 2168 m) with the domes of (from left to right) Schmidt, 1.2 m, 2.2 m, and 3.5 m telescope. The distance between the Schmidt and the 3.5 m telescope is about 350 m in a roughly north-southern alignment. At left the laboratory building.

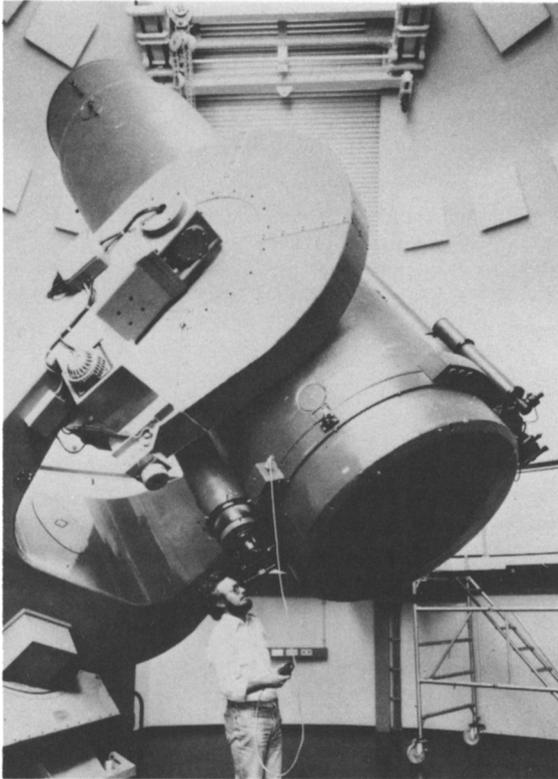


Figure 2. The 80/120 cm f/3 Schmidt Telescope on Calar Alto

Up to now, however, it was not possible for us to operate the telescope in a normal routine way because of several serious technical failures, which led to restrictions and longer interrupts in the use of the telescope. We hope that we soon shall have overcome most of these surprises. Never-

TABLE 1

THE OBJECTIVE PRISMS OF THE CALAR ALTO SCHMIDT TELESCOPE

Refracting Angle	Free Aperture (cm)	Dispersion at H_{γ} H_{α} (nm/mm)		Spectrum Length from H_{γ} to H_{ϵ} (mm)
1°7	80	139	460	0.31
4°0	80	59	195	0.73

theless, many of the direct and spectral plates taken hitherto are of very good quality as is demonstrated e.g. by the contributions to this Colloquium by H. Adorf and H.J. Röser and by L. Kohoutek. Investigations are in progress on the limiting magnitudes attainable with this telescope situated on Calar Alto, where seeing conditions with image diameters in the order of 1 arcsec are a well known phenomenon. So far estimates are showing that for instance with the 1°7 prism and exposures of 1 - 2 hours on baked IIIaJ plates spectral information can still be obtained from starlike objects of apparent magnitude $B = 19^m - 20^m$.

REFERENCE

Heckmann, O.: 1955, Mitt. Astron. Gesellsch. 1954, p. 57.