well be that these WR stars really have lower intrinsic luminosities than those stars of similar types previously observed in the LMC. This is now being investigated.

The census of the WR population in the Magellanic Clouds can now probably be considered as quite complete, except, maybe for subclass WC 5 which has possibly escaped our detection due to the technique employed: the width of the λ 4650 emission feature is comparable to the filter passband in this case.

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Breysacher, J. and Westerlund, B.E.: 1978, *Astron. Astrophys.* **67,** 261.

Hindman, J.V., 1967, *Australian J. Phys.* **20,** 147.

Smith, L.F. 1973, IAU Symposium, N°49, 15.

Instrumentation Schedule

This is the up-dated time schedule for the major instruments which are being developed at ESO in Geneva for use on the 3.6 m telescope. See also *Messenger* No. 15, p. 10.

Triplet Adaptor (M. Tarenghi, M. Ziebell). Target date: Sept. 1979. The components are:
- two 3-lens correctors for prime focus
- an adaptor with tv for acquisition and guiding
- a remote-controlled shutter and changer for 4 filters
- a remote-controlled changer for 8 plates (3 magazines); plate size is 240 × 240 mm.

For more details see *Messenger* No. 16.

4 cm McMullan Camera (W. Richter). Target date: October 1979.
- Electronographic camera as developed by McMullan. Can be used behind triplet adaptor in prime focus.

Coudé Echelle Scanner (CES) (D. Enard, J. Andersen [Copenhagen], A. Danks). Target date: mid 1980.
- instrument to record very high resolution digital spectra (up to 100,000) on a 1876-channel-DIGICON detector. Double-pass scanning mode permitting calibrations on bright objects with very clean instrumental profile.

For more details see *Messenger* Nr. 11.

Coudé Auxiliary Telescope (CAT) (T. Andersen, M. Dennefeld). Target date: mid 1980.
- 1.5 m spectroscopic telescope feeding CES of the 3.6 m telescope. Three-mirror alt-alt telescope with f/120 (f/32 after focal reducer). Dall-Kirkham optics with spherical secondary. Direct drive servos without gear.

For more details see *Messenger* No. 10.

Infrared Top-End (R. Grip, P. Salinari). Target date: mid 1980.
- Wobbling secondary mirror with f/35 in Cassegrain focus, new telescope top-ring which puts radiating material away from light beam.

For more details see *Messenger* Nr. 13.

Cassegrain Echelle Spectrograph (CASPEC) (M. le Luyer, J. Melnick). Target date: end 1980.
- Instrument with resolution of 15,000, 30,000 and 60,000 with an SEC-Vidicon detector. Data-reduction process not yet defined in detail.

  More details are published on page 27 in this *Messenger*.

Compared to the schedule which was published three months ago, the target date for the Triplet Adaptor has changed from before to after the holiday period.

NEWS and NOTES

The 100th Anniversary of the Birth of Bernhard Schmidt

Fig. 1: *Bernhard Schmidt (1879–1935).*

The inventor of the so-called "coma-free telescope" was born a hundred years ago, on March 30, 1879, as the son of a poor fisherman on the island of Nargen in the Baltic Sea near Reval in Estonia. Already as a child he experimented scientifically, and he lost his right arm, due to an explosion in his primitive laboratory.

In 1901 he registered as a student of engineering sciences at the Technical High School at Mittweida in Germany. Very soon, however, he gave up his regular studies and became independent as designer and constructor of small optical elements for amateurs. He, himself an outstanding amateur astronomer, is known as one of the first explorers of Nova Persei 1901.

Due to the high quality of his products and the deeply founded knowledge in practical optics, he soon (1904–1913) became an independent collaborator to the Astrophysical Observatory at Potsdam under K. Schwarzschild and later at the Hamburg Observatory at Bergedorf under R. Schorr.

During a long travel to the solar eclipse at Manila he accompanied W. Baade. Maybe inspired by him, he conceived the famous telescope, which in 1930 got its final shape in the "Original Hamburg Schmidt Telescope". This first Schmidt with a free aperture of 36 cm was a real optical sensation. With a hitherto unbelievable F ratio of 1 : 1.75 it covered a field of 15 degrees of diameter, completely free of all optical aberrations, except field curvature. Shortly after Bernhard Schmidt's sudden death in 1935 the Schmidt telescope started its triumphal procession throughout the astronomical world. There is a straight line from the Original Schmidt to the big Hamburg Schmidt and finally to the ESO-Schmidt telescope on La Silla.

On the occasion of his centenary the Hamburg Observatory, in cooperation with the Astronomische Gesellschaft, organized an international meeting of observers with modern Schmidt telescopes, showing the ever-growing importance of the Schmidt telescope as an instrument especially suitable for all kinds of sky surveys.

On March 30, 1979 a small Bernhard Schmidt Museum on the site of the Hamburg Observatory was inaugurated where a number of optical elements and tools made by his own hands have been collected. Most important of all, the original handwritten manuscripts, hitherto unknown, could be shown for the first time to the

public, due to a generous gift of the heirs of R. Schorr. They show that Bernhard Schmidt very carefully studied the theoretical conditions of his problem before he set out to realize the first Schmidt telescope. *A. Behr*

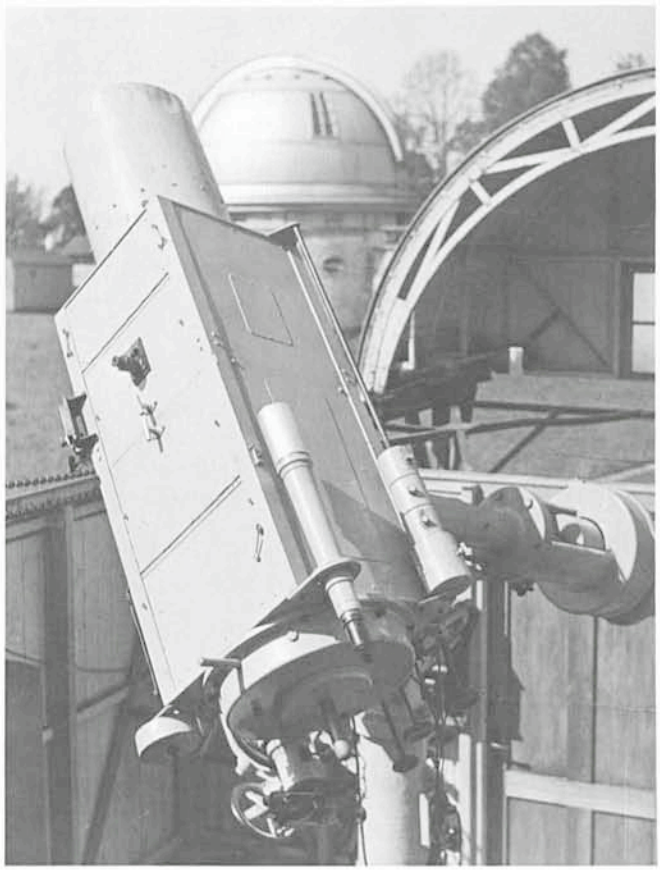

Fig. 2: *The Original Schmidt Telescope at the Hamburg Observatory; f/1.75, 15° field.*

Astronomy in Europe

Professional astronomers sometimes receive letters that begin like this: "Dear Mr. . . ., I am 16 years old and very interested in astronomy. I should like to know how I can become an astronomer . . ."

All astronomers are happy to see examples of deep devotion to the science they like themselves. So most of them answer such letters with kind words of encouragement and an explanation about the study of astronomy at the national universities. But there is one point—and probably the most important of all—the prospects for a successful career in astronomy, that is very difficult to answer. Few sciences have avoided the effects of the present tightening of financial resources, and the number of positions that are available at universities and other research institutions is small. So the letter to the young astronomer-in-spe will have to tell him that he has little hope of ever getting a job in astronomy—unless, of course, he is very brilliant.

But how bad is really the situation? A partial answer is given by a report "A study of manpower in astronomy in the countries represented in the European Science Foundation", that was published by ESF last year. This report, for the first time, assigns quantitative figures to the shortage of posts. It also includes a number of interesting findings concerning the European astronomical community.

The total number of astronomers in the countries that were studied (16 in all, including the 6 ESO countries) is about 2,400. In this connection, an "astronomer" is defined as somebody with a PhD or equivalent competence, working actively as a scientist in a field of astronomy. The corresponding figure in the USA is about 1,400. The European age distribution is peaked near 37 years and about 50 % are in the age group 30–40 years. The number of posts in astronomy (in Europe) that will become vacant due to normal retirement during the forthcoming 15 years is about 350. When taking into account the number of new posts that are likely to be created, an optimistic figure is about 50 new posts per year. This should be compared with the 220 new astronomy PhD's that are produced every year. It is therefore clear that only about 20 % of those who obtain a degree in astronomy will also obtain a permanent position within astronomy.

There is one positive aspect, though: very few people with an astronomy degree are actually without work. It appears that astronomy as such includes so many valuable assets that a candidate will have little difficulty in finding jobs in related fields. Many astronomers teach physics and mathematics in schools and others are employed in industry. The knowledge of practical work in astronomical instrumentation and in particular experience with computers is of value.

Funding of astronomical research has increased by about 40 % (in real terms) between 1970 and 1976, proving the importance of astronomy as a fundamental research discipline in the eyes of budgetary commissions in the various countries. And astronomy is obviously able to attract the best people everywhere. Therefore the present situation is clearly very promising for the science as such, but less so for its many admirers. Fortunately, astronomy can be enjoyed equally well by the scientist in the prime focus cage of the largest telescope in the world and the amateur in his backyard with his home-made reflector. This is a great advantage in comparison with most other sciences, also if we consider that the amateurs still play an important role, first by finding novae and comets and in general by monitoring the skies from all over the world. Perhaps the Olympic motto is also valid in astronomy: "The most important is not to win (i.e. to become a full-time professional), but to participate!"

Echelle Spectrograms

An informal ESO workshop to discuss data-reduction techniques for echelle spectrograms was held in Geneva on March 1–2, 1979.

Astronomers and engineers from all ESO countries already having considerable experience in the treatment of echellograms gathered at ESO-TP to share their experience and to discuss the various difficulties inherent in the reduction of echelle data.

The techniques being used at present to reduce data from the La Silla and Haute-Provence spectrographs, and from IUE and the Utrecht Ultraviolet balloon experiment were discussed in great detail with the aim of familiarizing the ESO astronomers, engineers and computer programmers responsible for the design and construction of the ESO 3.6 m Cassegrain echelle spectrograph (cf. p. 27) with the results of other European groups which operate similar instruments.

The main conclusion from this workshop may be summarized by saying that the extraction of astrophysically useful information from echellograms may be difficult but is by no means impossible!

The workshop was a good starting point for the ESO team responsible for the operation and data reduction of CASPEC. The software is being written in parallel with the hardware construction and should be completed and tested well ahead of the time when CASPEC is put in operation. *J. Melnick*

Proceedings of the ESA/ESO Workshop on Astronomical Uses of the Space Telescope

The Proceedings of this workshop have now been edited and will be available in print by end of May 1979.

The price for the 450-page volume is SFr. 40.– (in Europe) and US$ 20.– (elsewhere), including postage. Please send your order to:

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