

*May:* Benvenuti/Porceddu/Krelowski, Franchini/Covino/Alcalá/Chavarria/Terranegra/Ferluga/Stalio/Pasquini, Gosset, van Dishoeck/Black, Gosset, Nussbaumer/Schmutz/Schmid, Pottasch/Sahu K.C.

*June:* Pottasch/Sahu K.C., Pottasch/Parthasarathy, Sabbadin/Cappellaro/Turatto/Salvadori, Faraggiana/Castelli/Molaro/Gerbaldi, Pallavicini/Duncan/Randich/Tagliaferri, Pallavicini/Randich.

*July:* Ferlet/Vidal-Madjar/Dennefeld, Lagrange-Henri/Jaschek M./Jaschek C., Lagrange-Henri/Bouvier/Gomez/Bertout, Sembach/Crane/Danks/Savage, Pogodin, van Paradijs/Verbunt/Zwaan/Rutten/Schrijver/Schmitt/van Kerkwijk/Piters, Nussbaumer/Schmutz/Schmid.

*August:* Nussbaumer/Schmutz/Schmid, Bossi/Guerrero/Scardia, Favata/Sciortino/Micela, Monai/Molaro/Vladilo, Jorissen/Lambert/Tomkin, da Silva/Vasques.

*September:* da Silva/Vasques, Pols/van den Heuvel/Piters/Coté/Waters, Nussbaumer/Schmutz/Schmid.

### 1-m Photometric Telescope

*April:* van der Hucht/Thé/Williams, Hron, Courvoisier/Bouchet/Blecha, Tagliaferri/Cutispoto/Giommì/Pallavicini/Pasquini, Weiss/Schneider/Kuschnig/Rogl, Le Bertre et al. (5-006-45K).

*May:* Le Bertre et al. (5-006-45K), Courvoisier/Bouchet/Blecha, Di Martino/Mottola/Gonano/Neukum, Di Martino/Mottola/Gonano/Hoffmann/Neukum, Barucci/Fulchignoni/Harris/De Angelis/Foryta/Burchi/Dotto/Rotundi/Di Martino, Courvoisier/Bouchet/Blecha, Habing et al. (5-007-45K).

*June:* Habing et al. (5-007-45K), Cayrel/Buser, Fulchignoni/Barucci/De Angelis/Burchi/Dotto/Ferrari/Foryta/Roques, Richichi/Lisi/Di Giacomo, Le Bertre et al. (5-006-45K).

*July:* Le Bertre et al. (5-006-45K), Courvoisier/Bouchet/Blecha, Terzan, Liller/Alcaino/Alvarado/Wenderoth.

*August:* Augusteijn/van Paradijs, Hainaut/Detal/Pospieszalska-Surdej/Schils/Surdej/West, Habing et al. (5-007-45K), Prugniel/Rampazzo/Combes/Sulentic/Zhonggi.

*September:* Prugniel/Rampazzo/Combes/Sulentic/Zhonggi, Rampazzo/Prugniel/Combes/Sulentic/Zhonggi, Lorenzetti/Molinari.

### 50-cm ESO Photometric Telescope

*April:* Haefner/Pietsch/Schwarzenberg-Czerny, Arlot/Thuillot/Descamps/Vu/Colas, Surdej/Detal/Hainaut/Pospieszalska-Surdej/Schils, Arlot/Thuillot/Descamps/Vu/Colas.

*May:* Franchini/Covino/Alcalá/Chavarria/Terranegra/Ferluga/Stalio/Pasquini, Arlot/Thuillot/Descamps/Vu/Colas.

*June:* Arlot/Thuillot/Descamps/Vu/Colas, Thé/Westerlund/Fluks, Thé/de Winter/Bibo.

*July:* Arlot/Thuillot/Descamps/Vu/Colas, Lorenz/Drechsel/Mayer, Bruch/Schwarzenberg-Czerny, Debehogne/Lagerkvist/Magnusson/Di Martino/Zappalà/De Campos/Cutispoto.

*August:* Debehogne/Lagerkvist/Magnusson/Di Martino/Zappalà/De Campos/Cutispoto, Luthardt/Bues, Hainaut/Detal/Pospieszalska-Surdej/Schils/Surdej/West.

*September:* Poretti/Antonello/Mantegazza, Leitherer/Drissen/Nota/Robert/Schmutz.

### GPO 40-cm Astrograph

*April:* Kohoutek/Bönnhardt.

*June:* Seitter/Aniol/Duerbeck/Tsvetkov/Tsvetkova, Debehogne/Machado, Caldeira/Vieira/Netto/Zappalà/De Sanctis/Lagerkvist/Mourao/Protitch-Benishek/Javanshir/Woszczyk/Lopez.

*July:* Debehogne/Machado, Caldeira/Vieira/Netto/Zappalà/De Sanctis/Lagerkvist/Mourao/Protitch-Benishek/Javanshir/Woszczyk/Lopez.

*August:* Elst.

*September:* Vidal-Madjar et al.

### 1.5-m Danish Telescope

*April:* Nordström/Andersen, Jørgensen/Rasmussen/Franx, Danziger/Bouchet/Gouiffes, Lucy/Fransson/Mazzali/Della Valle, Quintana/Ramirez, D'Onofrio, Caon/Capacciolo/Ferrario, Bergvall/Rönneback, Ortolani/Barbuy/Bica, Mayor et al. (5-001-43K).

*May:* DANISH TIME, Duquenois/Mayor, Waelkens/Mayor.

*June:* Moffat/Pirola, van der Klis/Penninx/Kuulkers/van Paradijs, Infante/Melnick/Lucey/Terlevich/Lahav/Lynden-Bell, Grebel/Richtler. DANISH TIME.

*July:* DANISH TIME, Mermilliod/Mayor, Ardeberg/Lindgren/Lundström.

*August:* Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Barbieri et al. (2-007-43K), Lindgren, Azzopardi/Lequeux/Reiberoit, Shanks/Fong/Metcalf, DANISH TIME.

*September:* DANISH TIME, Mayor et al. (5-001-43K), Danziger/Bouchet/Gouiffes, Lucy/Fransson/Mazzali/Della Valle.

### 50-cm Danish Telescope

*April:* DANISH TIME.

*May:* Mennickent/Vogt/Covarrubias, Maitzen, Leone/Catalano/Jenkner.

*June:* Mantegazza/Ferro, Group for Long Term Photometry of Variables.

*July:* Sinachopoulos, Group for Long Term Photometry of Variables.

*August:* Favata/Sciortino/Micela, Ardeberg/Lindgren/Lundström, Group for Long Term Photometry of Variables.

*September:* Group for Long Term Photometry of Variables.

### 90-cm Dutch Telescope

*April:* Rifatto/Bussoletti/Mennella/Buson/Zeilinger/Colangeli/DUTCH TIME.

*May:* DUTCH TIME.

*June:* Wendker/Heske, Houdebine/Butler/Mathioudakis/Panagi/Foing/Char/Jankov/Rodono, Augusteijn/van Paradijs.

*August:* Ferrari/Bucciarelli/Massone/Koornneef/Lasker/Le Poole/Postman/Siciliano/Lattanzi, Schuecker/Cunow, DUTCH TIME.

*September:* DUTCH TIME

### SEST

*May:* Israel, Wu, Israel.

*July:* Wielebinski, Becker, Casoli, Wild, Freudling, Huchtmeier, Dupraz, van Woerden, Eckart, van der Blik.

*August:* F. Combes, Mauersberger, Franceschini, Andreani, Danziger, Henkel, Cas-tets, Zinnecker, Bronfman, Krügel, Pollacco, Bertout.

## Minor Planet Named after Guido and Oscar Pizarro!

A minor planet in the solar system has recently been named after two night assistants at the ESO La Silla observatory as a well-deserved recognition of their great efforts to serve astronomers in the ESO member countries and beyond. In the January 30, 1991 issue of the *Minor Planet Circulars*, the following text appears on page 17658:

"(4609) Pizarro = 1988 CT3  
Discovered 1988 Feb. 13 by E.W. Elst at the European Southern Observatory.

Named in honour of Guido and Oscar Pizarro, who operate the ESO 1-m Schmidt telescope and who exposed the plates on which this minor planet was discovered. For almost 20 years the two brothers have been renowned for

their patient and effective work with the telescope. They took the plates for the two ESO sky surveys and have taken several thousand plates for general programmes, including many specifically for the detection and follow-up of comets and minor planets. Citation prepared by H.-E. Schuster at the request of the discoverer."



Minor planet "Pizarro" moves in an elliptical orbit with a mean distance of 465 million kilometres, i.e. between Mars and Jupiter. One revolution takes

about 5 ½ years. Once the orbit had been established by means of the observations in 1988, it turned out that images of this minor planet had also

been measured earlier; a single observation was made already in 1969 at the Crimean Observatory. "Pizarro" measures about 10 kilometres across.

## ESO'S EARLY HISTORY, 1953–1975

### X. The Schmidt Telescope: Design, Construction, the ESO-SRC Agreement and the Onset of Survey Projects\*

#### A. BLAAUW, Kapteyn Laboratory, Groningen, the Netherlands

*"Erlaube mir die Anfrage, ob ihr vielleicht für Spiegelteleskope interessiren, ich --- [möchte] mal sehen, was sich mit einem Spiegel fotografieren lässt, ---"*

From a letter of Bernhard Schmidt to Karl Schwarzschild of May 29, 1904 as quoted in *Abhandlungen Hamburger Sternwarte Band X, Heft 2, p. 50.*

As the last, but by no means the least, of the instruments of ESO's initial programme we turn to the Schmidt telescope. We review its history up to the time in the early 1970's when it began fulfilling its great mission: providing the astronomical community with the southern complement to the Palomar Sky Atlas. But first, a glance at its pre-history is in order.

#### Bernhard Schmidt and Early Developments at Hamburg Observatory

From the beginning, the planning of the Schmidt telescope was, beside the involvement of the Instrumentation Committee, very much a concern of ESO's Director Otto Heckmann himself. In the early 1950's, the Hamburg Observatory had obtained a Schmidt telescope in the acquisition of which Heckmann had been deeply involved. The observatory had special affinity to this type of telescope because it was here that Bernhard Schmidt's invention had been applied first, and thereupon it had deeply affected observational astronomy. Let me, therefore, spend a few lines on these early developments [1].

At the commemoration of Schmidt's hundredth anniversary in 1979, the President of the University of Hamburg in his opening address related that in 1904 Bernhard Schmidt approached the famous astronomer Karl Schwarzschild with the question whether his work in optics might be of interest for Potsdam Observatory and that he much impressed Schwarzschild – and that in 1916 Schmidt contacted the Director of Hamburg Observatory, R. Schorr [2].

Schmidt's ingenuity in optics led to continued association with this observatory under Schorr's direction and encouragement, and in 1931 produced the first instrument of the type we now call "Schmidt Telescope". In the *Messenger* of June 1979, Alfred Behr commemorated Bernhard Schmidt's achievements and showed a picture of the original Schmidt telescope, still at Hamburg Observatory. For the benefit of those readers who are not acquainted with the special properties of this type of telescope, the accompanying box describes its main optical features.

Considerable stimulus for Schmidt's work also seems to have been due to Walter Baade who was a member of the staff of Hamburg Observatory from 1920 to 1931. Schmidt died in 1935, and when in 1936 Baade was nominated for the succession of Schorr as Director, he made it a condition that the Observatory should be equipped with a Schmidt telescope of 80 cm aperture. The Hamburg authorities agreed, and notwithstanding the fact that Baade ultimately preferred to stay at Mt. Wilson Observatory with the prospect of utilizing the more powerful 120-cm Palomar Schmidt, the plans for the Hamburg Schmidt were realized [3]. It was to have a focal length of 240 cm, and a 120 cm diameter spherical primary mirror. In this realization Heckmann played a leading role.

It is no surprise, then, that Heckmann felt that the acquisition of the ESO Schmidt should be very much a matter of his interest and responsibility. Along with the essentially French realization of the 1.5-m telescope, the Dutch one of the 1-m telescope (both described in article IV), and the Danish role in the development of the Telescope Project Division (described in articles VIII and IX), the Schmidt-telescope project may

be considered as the early major instrumental contribution from German side.

#### Planning the ESO Schmidt

At the meeting which marked ESO's beginning, June 21, 1953, Baade suggested that ESO should acquire a copy of the Palomar Schmidt, and thus would be able to soon start its work. The Palomar Schmidt with its 120 cm aperture, fully operational since 1949, certainly met its designer's high expectation for wide-field photography. However, ESO astronomers wanted more: the facility to obtain objective prism spectra. In the 1950's, spectral surveys played an important role in galactic research at many European observatories and it was important to extend these to fainter stars than had been reached so far.

This point was raised for the first time by Heckmann at the July 1958 meeting of the ESO Committee, and taken up again when in November 1961 the Committee requested the recently created Instrumentation Committee to consider an alternative design. This differed from the Palomar Schmidt mainly in that the aperture would be 100 cm – 40 inch – instead of 120 cm, and the diameter of the spherical mirror 160 cm instead of 180 cm, however maintaining the focal length (305 cm) of the Palomar Schmidt and hence its plate scale (approximately 67" per mm). Reason for this modification were the reduced size, and hence the lower weight, of the objective prism and therefore a considerable reduction of the demand on the sturdiness of the telescope tube and lower costs, and an important additional consideration was the smaller chromatic variation that is left after the correcting plate's elimination of the principal part of the spherical

\* Previous articles in this series appeared in the *Messenger* Nos. 54 to 62.