the McMath-Hulbert Observatory's isophotometer. Finally, figure 6 shows a ruled surface plot of the data. The segmentation of the arms and the compact nucleus are well depicted.

As the future tendency seems to lean towards even larger amounts of digitized data (e.g. from IUE, Space Telescope, CCD detectors, etc.), appropriate facilities will play an even more important role when dealing with this information. With the number of individuals involved in image processing here, the further expansion and refinement of the systems available seems to be justified and many plans for future improvements are being considered.

Acknowledgements:

The help of Drs. R. Albrecht and A. Schermann of the Institute for Astronomy, Vienna, and the administration and staff of CTIO are gratefully acknowledged for the possibility of obtaining the TV-system. Transfer was made possible by the Max-Planck Institute for Astronomy, Heidelberg, for which one of us (TK) would like to thank Dr. H.-J. Röser and R. Tremmel. We would also like to thank Dr. J. V. Feitzinger for conveying to us information on NGC 1566 prior to publication.

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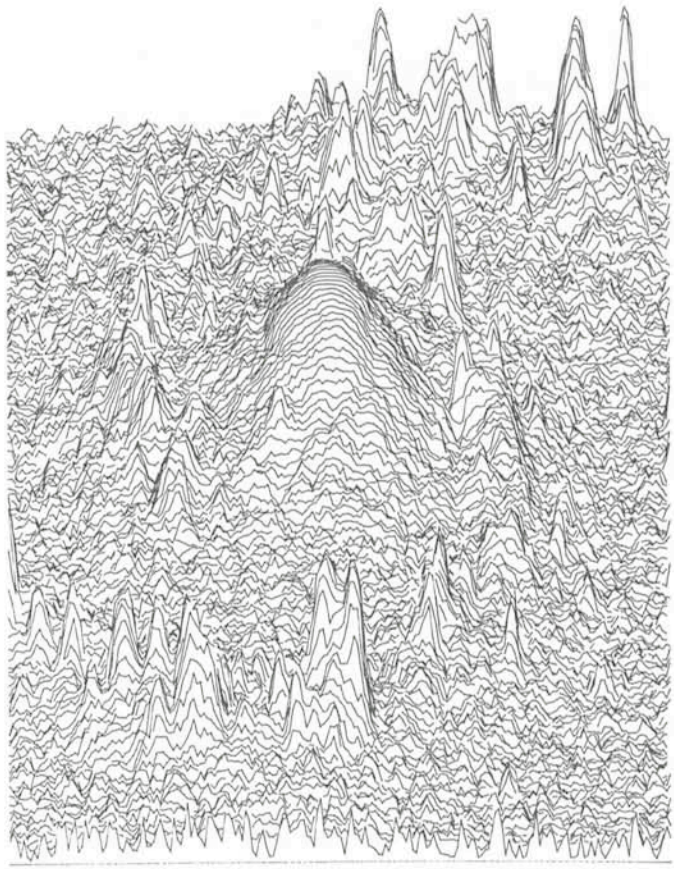


Fig. 6: *A hidden line plot of the smoothed data of NGC 1566. Note the high contrast of the arm structure.*

NEWS AND NOTES

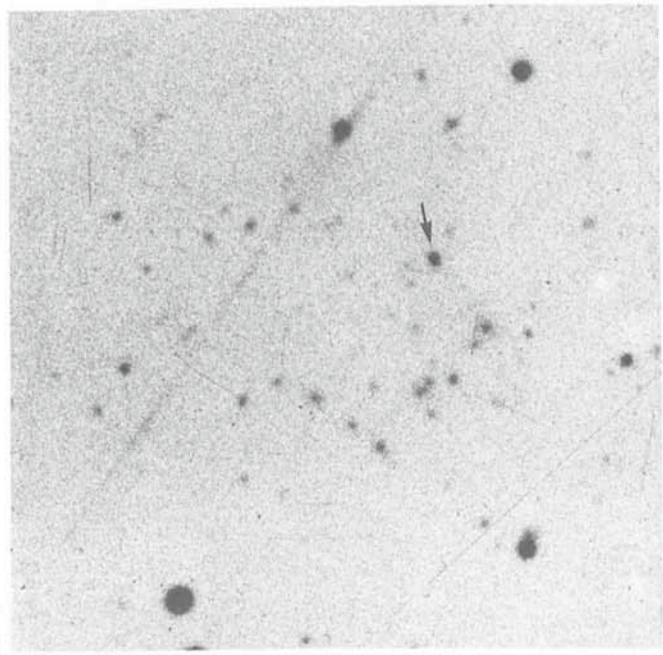
When the Earth was Born

Astronomy offers the unique possibility of looking back in time. Contrary to other sciences, it allows us to see objects as they were a long time ago. This is of course due to the enormous distances in the Universe and the finite velocity of light: around 300,000 $km\,s^{-1}$.

With the availability of very deep, red plates from the ESO Schmidt telescope for the red part of the joint ESO/SRC Atlas of the Southern Sky, a group of astronomers has now begun to look for very distant clusters of galaxies. A substantial number of hitherto unknown clusters have been discovered and some of them are in the process of being investigated further.

We here show just one example. A cluster was discovered by Dr. I. Semeniuk two years ago (actually on the SRC J plate). Last month, it was possible to obtain a spectrum of the brightest galaxy in this cluster (see the figure) by means of the new Reticon spectrograph at the Cassegrain focus of the 100-inch du Pont telescope at the Las Campanas observatory. Thanks to the excellent telescope and the powerful spectrograph, it was possible to measure the position of several absorption lines in the spectrum of the $20^{m}.5$–$21^{m}.0$ elliptical galaxy (no emission lines were present) and to determine the redshift as $z = 0.30$. The total observing time was just two hours.

Applying the relativistic correction, and under the assumption that the redshift is a result of motion of this object (Doppler effect),



A blue 3.6 m photo of the very distant cluster 0346–454, obtained under mediocre seeing conditions. A faint artificial satellite crossed the field during the exposure. The galaxy for which a spectrum was obtained as described in the text has been indicated.

the recession velocity is found to be around 76,000 $km\,s^{-1}$. Furthermore, with a Hubble constant of 50 $km\,s^{-1}Mpc^{-1}$, the distance becomes 1,500 Mpc, or almost exactly 5×10^9 lightyears.

The Hubble constant is not known with very high accuracy and this calculation may well be wrong by 20 % or even more. Nevertheless, it is thought-evoking to look at this cluster and to remember that the presently estimated age of the Earth is also close to 5×10^9 years. The photons that hit the Reticon spectrograph had been travelling ever since the Earth was formed, just to deliver their message about their place of origin. Without being philosophical, it almost hurts the heart to think about those photons that arrived a few seconds after the shutter had been closed . . .

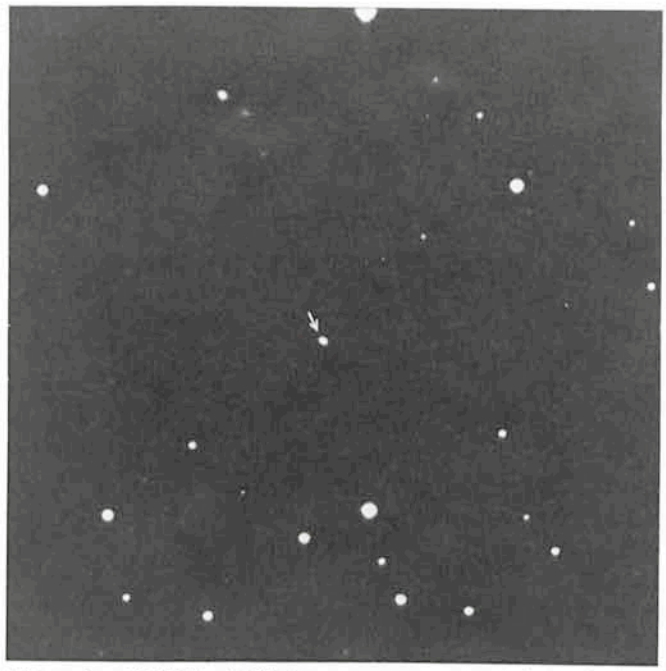
R. West

La Silla in the Sky

Attentive readers of the "Minor Planet and Comet Circulars" from the Minor Planet Bureau will have noticed that the December 1, 1979 issue contains reference to a newly-discovered minor planet, 1976 UH, that has now been numbered (2187) on page 5036 and also named LA SILLA on page 5039.

The dedication reads: "Named after the mountain in the Chilean Atacama desert on top of which is situated the European Southern Observatory." It is interesting to note that the size of the new planet is not too different from the La Silla Mountain, and—in view of the ever-increasing risk of (light and atmospheric) pollution that threatens many observatories (although certainly *not* the ESO establishment at the present time), one wonders whether one is here witnessing an extreme example of very long-term planning?!

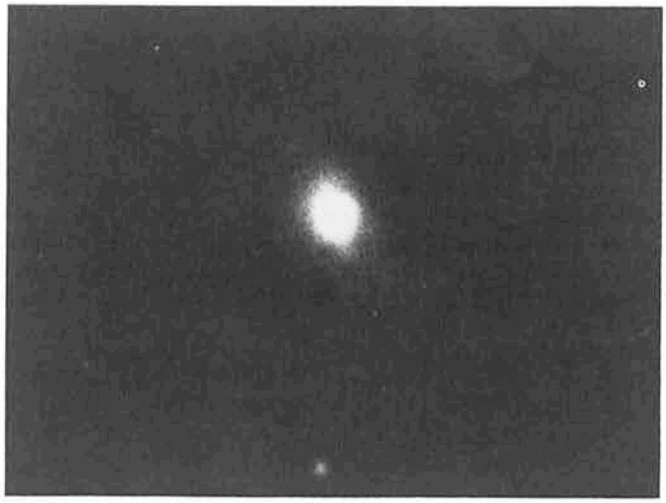
(From our South America correspondent)



Minor planet (2187) = LA SILLA as seen on a recent plate, obtained with the ESO 1 m Schmidt telescope (60 min. IIIa-F + RG 630). The planet was discovered with this telescope on October 24th, 1976 by ESO astronomer R. West.

A New Bright Seyfert 1 Galaxy

Yet another new Seyfert 1 galaxy has been found on the ESO(B) Atlas of the Southern Sky. The object, ESO 012-G21, was first listed in ESO/Uppsala list No. 6 (1978, *Astron. & Astrophys. Suppl.*, **34,** 285) and is here shown in a reproduction from a 30-min electrograph obtained with the 4 cm McMullan camera at the Cassegrain focus of the Danish 1.5 m telescope (La Silla) by Dr. P. Grosbøl.



The galaxy has a rather bright nucleus which is surrounded by diffuse (spiral?) features. UBV photometry was carried out by Dr. C. Sterken with the 61 cm Bochum telescope at La Silla during three nights and a mean apparent magnitude of 14.5 in V was found. Spectra were obtained by Dr. R. West with the 100 inch Las Campanas telescope and the Reticon spectrograph and the redshift was about $z = 0.03$. With a Hubble constant of 50 $km\,s^{-1}$ Mpc^{-1}, this gives an absolute magnitude of $M_v \sim -22$. The galaxy is therefore among the intrinsically most luminous Seyferts and, due to its relatively small distance, it is still possible to investigate in some detail the "fuzz" that surrounds the nucleus.

It is not excluded that ESO 012-G21 has been detected as an X-ray source, but due to confusion around this sky area, further observations are necessary to confirm this.

Instrumentation Schedule

This is an updated 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. Target date is the date of "first light". Regular use starts about half a year later.

Triplet Adapter (M. Tarenghi, M. Ziebell).

First tests on the telescope were made in September 1979. Further tests will be carried out end November 1979 together with the first tests of the

4 cm McMullan Camera (K. Klim).

Regular use of this equipment by visiting astronomers starts in April 1980. For more details see articles in this *Messenger*.

Coudé Echelle Scanner (CES) (D. Enard, J. Andersen (Copenhagen), A. Danks). Target date: June 1980.

Instrument to record very high resolution digital spectra (up to 100,000) on a 1972-channel-DIGICON or Reticon detector. Availability of Digicon is still uncertain. Double-pass scanning mode permitting calibrations on bright objects with very clean instrumental profile. For more details see *Messenger* No. 11, p. 22 and No. 17, p. 32.

Coudé Auxiliary Telescope (CAT) (T. Andersen, M. Dennefeld). Target date: June 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, p. 21 and No. 16, p. 37.

Infrared Top-End (R. Grip, P. Salinari). Target date: November 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* No. 13, p. 23.

Cassegrain Echelle Spectrograph (CASPEC) (M. LeLuyer, 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. For more details see *Messenger* No. 17, p. 27.

W. Richter