The tail that extends to the north from Comet d'Arrest on this ESO Schmidt photograph is not *anomalous; it is a typical, straight gas-tail, pointing away from the Sun. The line to the left of the comet head is a meteor trail.*

The circumstances of this photo are peculiar and illustrate the work with a large Schmidt telescope in a good climate. On the night between October 19 and 20, 1976, ESO night assistant Guido Pizarro obtained several plates for the ESO (B) Survey of the Southern Sky. Each plate was exposed for one hour on blue-sensitive IIa-O emulsion with an ultraviolet-cutting filter GG 385. Immediately after the plate of field No. 352 (R.A. = 01^h13^m; Decl. = –35°00') came out of the water-rinse in the darkroom, Guido was seen running downstairs in great excitement. He had noticed the beautiful image of a bright comet and having no prior knowledge of the position of the known comets, he could not know that it was actually Comet d'Arrest that had accidentally been caught on the plate. It was no fun for the ESO astronomer on duty to tell Guido that "his" comet war already known, but he took it as a man and is still perfectly confident that the day will come when the first real "Comet Pizarro" is found.

considerably longer exposure. On January 22, 1977 Dr. Schuster took the second, 90-minute exposure, using a panchromatic emulsion in combination with a RG 630 filter. Although by then the comet's image became much smaller in size and fainter in brightness, its densitometer tracing showed a well-pronounced extension in the expected direction—the existence of the anomalous tail was confirmed. The scan is now being calibrated and it will shortly be used to calculate the production rate of large dust particles from Comet d'Arrest—the first positive step in the search for a source of the interplanetary dust cloud.

Drs. Schuster and Sekanina both look forward to their continuing collaboration. Their next target is Periodic Comet Encke, for which a successful search for an anomalous tail at the forthcoming apparition must be conducted within a few days in mid-October 1977—the only period when the comet is sufficiently far away from the Sun in the sky to allow long exposures and, simultaneously, the anti-tail projection conditions are favourable.

Optical Identification of a Strong Southern Radio Source

There is good reason to believe that one of the strongest, so far unidentified southern radio sources has finally been photographed with the ESO Schmidt and 3.6-m telescopes.

Fig. 1.— *Reproduction of the radio map of G 309.8 + 1.8/G 309.6 + 1.7 at 408 MHz by Shaver and Goss* (Austr. J. Phys. Astrophys. Suppl., **14,** *104, 1970) with the position of the ESO object indicated as an open circle.*

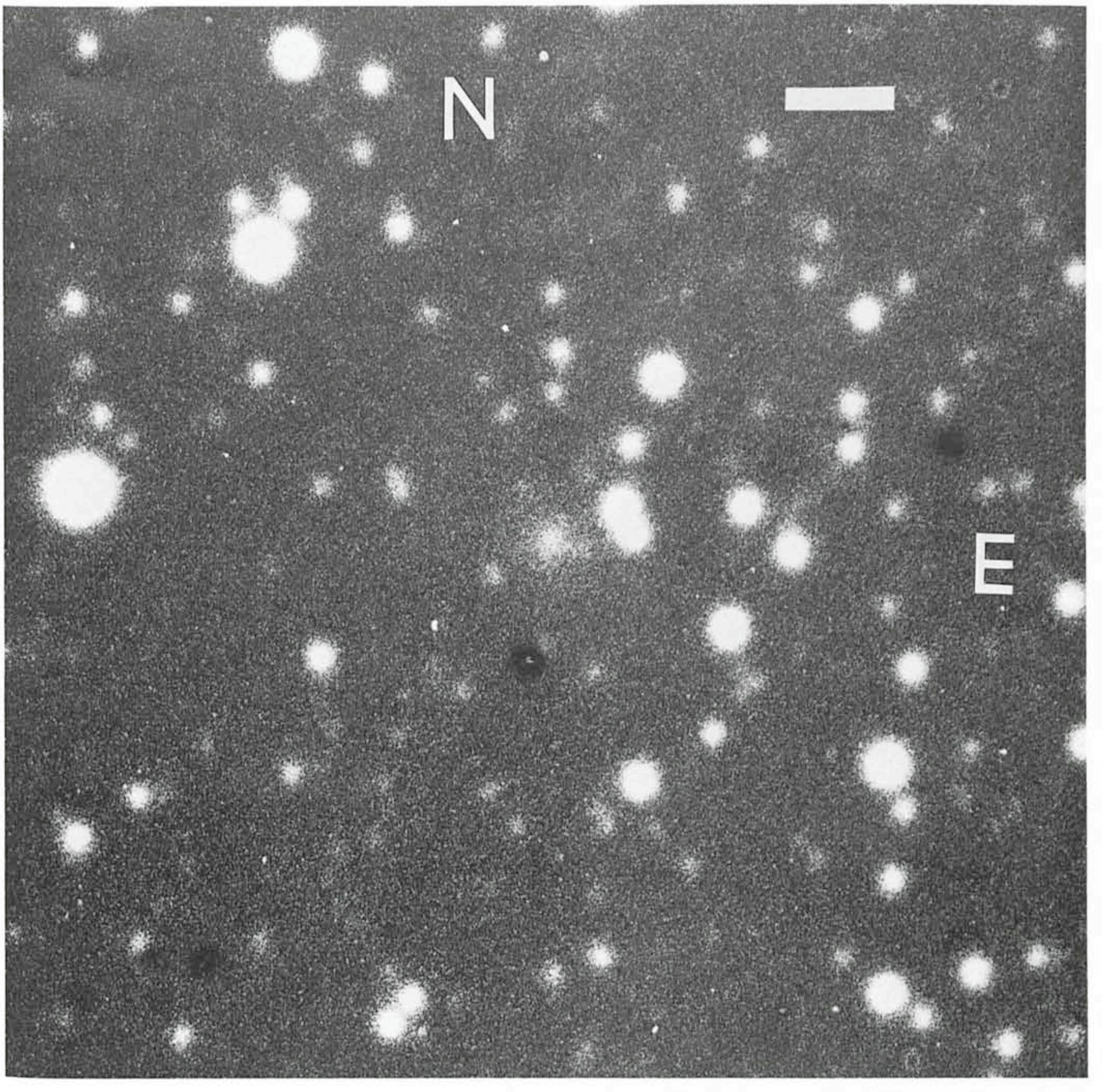


Fig. 2. — *Enlargement from plate No. 591 obtained by Dr. S. Laustsen with the ESO 3.6-m telescope on March 16, 1977. Emulsion and filter: H_2O-sensitized IV-N + RG 10 (7000–9000 Å). Exposure 40 min. The scale is indicated with the small bar which has a length of 10 arcseconds. The central, diffuse image is clearly non-stellar and has a diameter of about 10" on the original plate. The dark spots are sensitization marks which are virtually impossible to avoid on infrared plates. The seeing deteriorated during the exposure, from about 1" to 3".*

The radio source in question will be well known to most radio astronomers: G 309.8 + 1.8/G 309.6 + 1.7. It has about ten other designations, MHR 29, Milne 27/28, etc. . . . and has been observed by Australian radio astronomers for more than a decade. The G 309.8 + 1.8 source is the stronger of the two with 136.5 f.u. at 408 MHz. It is a double source and from the structure and spectral index, it appears to be extragalactic. However, due to its proximity to the galactic equator, it has until now defied optical identification. As mentioned in another article in this issue of the *Messenger* (p. 1), there are only few "windows" that allow us to look through the obscuring dust layers in the galactic plane and nature did not provide us one for the present radio source.

The interstellar extinction (obscuration) is strongly wavelength-dependent in the sense that blue light is absorbed much more than red light and the extinction is even less in the infrared. Very deep blue-sensitive plates were taken with the ESO Schmidt telescope in the direction of MHR 29 but nothing could be seen at the position of the radio source except galactic stars. It soon became obvious that the only hope lay in the infrared, and on March 11, 1977 a 90-min Schmidt exposure was obtained on sensitized IV-N infrared emulsion (7000–9000 Å). This emulsion is normally much slower than the standard astronomical infrared emulsion I-N, but by careful treatment (water + very quick dry), IV-N becomes quite a bit faster than I-N. This infrared Schmidt plate was carefully scrutinized by ESO astronomers H.-E. Schuster and R.M. West and they agreed that a very faint, apparently *non-stellar* object was seen right on top of the radio position.

There was obviously need for confirmation and another ESO astronomer, Dr. S. Laustsen, who was working with the 3.6-m telescope immediately agreed to take a corresponding deep IV-N plate with the large ESO telescope. However, since at that date only a blue-optimized Gascoigne corrector was available, it was not clear whether the 3.6-m would do much better than the Schmidt in the infrared. The first 90-min infrared plate was rather dark because of the nearby Moon, but a second 40-min exposure three days later clearly brought out a non-stellar object as seen on the Schmidt plate. This 3.6-m photo is reproduced here. A further red plate (127-04 + RG 630) barely showed the object, confirming its infrared colour.

Photometric infrared observations were soon after made by Dr. W. Wamsteker of ESO with the 1-m telescope. He detected an infrared source at the same position and the measurements (1.6 to 5 microns) are being reduced. The ESO astronomers are now preparing their observations for publication.

The 1950 position of the optical candidate is R.A. = $13^h43^m23^s.57$; Decl. = $-60°09'30''.1$, i.e. in very good agreement with the most recent radio positions of this source. From the infrared photos there is little doubt that we see the very heavily reddened centre of a galaxy, but further observations are obviously desirable in order to learn more details. It will not be easy to obtain an optical (probably infrared) spectrum but the effort would be worthwhile.

Progress Report 3.6-m Telescope

A piece of good news can be reported: the Cassegrain focus of the 3.6-m telescope is operational. The technical staff around the instrument has, it seems, already acquired a considerable routine in getting a piece of equipment to work. It all went very smoothly with the Cassegrain, the mechanical installation, the electronic control, the optical alignment and tests and finally the astronomical tests and further software development.

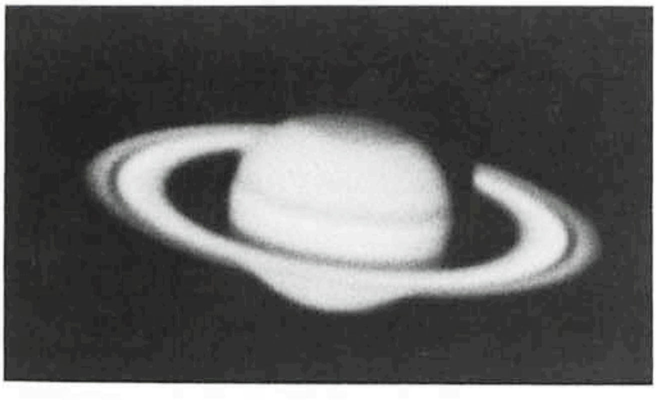
Like for the prime focus we are testing the Cassegrain photographically by a small-field camera. The first photographs were taken during the night of April 19/20 and a good number of test plates have been taken since then. We are entirely satisfied with the performance of the instrument and it seems that the optical specifications have been met with a good margin.

The first Cassegrain instrument, the photometer, will be installed in June. In the meantime we continue mainly in prime focus, which astronomically is more interesting for photographic work.

In prime focus we have by now accumulated some 700 plates of which many are under evaluation by astronomers in the ESO countries.

May 11th, 1977 *S. Laustsen*

Saturn Photographed at the Cassegrain Focus of the ESO 3.6-metre Telescope



This test photo of the giant planet Saturn was obtained by ESO astronomer Dr. S. Laustsen on April 28, 1977. It is one of the first taken in the Cassegrain focus (behind the main mirror). At the time of the exposure, Saturn was only 30° above the La Silla horizon and the seeing was medium, 2". Untreated IIIa-J + GG 385; exposure time 0.06 second.

The distance to Saturn was 9.05 A.U. (1.4 x 10^9 km) and the planet subtended an angle of 18 arcseconds. Total magnitude $+0^m.5$. Original scale 10"/mm.

STAFF MOVEMENTS

Since the last issue of the "Messenger", the following staff movements have taken place:

ARRIVALS

Munich
None

Geneva
None

Chile
Anthony C. Danks, British, astronomer (from July 1, 1977)

DEPARTURES

Munich
None

Geneva
Felix Hoffmann, German, senior technical assistant

Chile
Robert Havlen, American, astronomer
Raúl Villena, Peruvian, senior civil engineer
Manfred Windel, German, technical assistant (mechanical)

ARRIVALS AT SCIENTIFIC GROUP

Takuya Matsuda, Japanese (May 1—July 31, 1977)
Patrice Bouchet, French, "coopérant" in Chile
(from April 1, 1977)