and lifted the piece up through the shaft to the observing floor. A few pieces, or sub-assemblies, weighed more than 30 tons. The heaviest one, the assembled horseshoe, weighed about 40 tons and was, with great care, used as a test load, before the crane was entrusted with the task to lift the piece into place.

Thanks to the fact that a pre-assembly was made in Europe, the assembly work on La Silla went through pretty smoothly. Problems were mainly encountered in areas where tests could not be completed in Europe, and then, as one could expect, in the inferface between building and telescope. Some of the problems gave rise to a few days' extra work. Nothing more important was encountered so far.

During the last days of July, the telescope was turned around both polar axis and declination axis by means of a simple motor control box.

The control system for the telescope has been installed in the building, and the cabling, which is a huge job, is well advanced. August is going to be a busy month for the Electronics Group; and in September we expect to install the main mirror and start with the Hartmann tests. The aluminizing plant ist being installed these days. But about these activities we shall report later.

PROFILE OF A VISITOR'S PROGRAMME:

OH/IR Sources

Astronomers from the Max Planck Institute for Radioastronomy (MPI) in Bonn, Fed. Rep. of Germany, have recently succeeded in measuring infrared (IR) radiation from OH radio sources (emission from the hydroxyl radical). Dr. W. A. Sherwood reports about the significant progress made in this exciting programme:

In July 1968 Wilson and Barrett at MIT discovered OH radio emission from some infrared (IR) stars. The rate of detection for prime candidates was about 10 %, but later the rate fell to 5 % in a larger sample. My colleagues at MPI have also searched for OH in IR stars selected to have very late spectral types, extreme red colours and large amplitude variations in the infrared from 1 μ to 20 μ and have had a very high success rate in a small sample. The reason for the small sample ist that the criteria are almost mutually exclusive: for the spectral type to be known, the object must be visible, implying less than extreme reddening. In addition very few objects have been sufficiently observed for the criteria to be met.

There are predominantly two types of OH radio emission associated with IR stars: one of the main lines (1665 or 1667 MHz) or the satellite line at 1612 MHz is the strongest. The OH emission associated with the latter type shows the following characteristics:

1. The line profile is usually split into two components separated by 10 to 50 km/s^{-1}.
2. There is no polarization.
3. There is no radio continuum source.
4. Line components are narrow having widths between 1 and 6 km/s^{-1}.
5. Most sources vary (OH and IR apparently in phase).

Early in the 1970s OH mapping surveys at 1612 MHz were started. What we now wondered was whether all OH sources having these criteria also had IR stars. Up to the 1973 IAU General Assembly in Sydney, searches for the IR stars had largely been unsuccessful for two reasons: the uncertainty in the radio coordinates for the new OH sources was too large and the wavelength of 2.2 μ used for the IR search was too short. The high brightness temperature in contrast to the low temperature derived from the line width implied maser excitation. The lack of a radio continuum source suggested to us that the infrared pumping mechanism rather than another mechanism, such as collisional excitation, was a possibility. The pump could operate at 2.8 μ, 35 μ or at longer wavelengths. Since the IR stars in which OH emission had been discovered were bright at 2.2 μ, the 2.8 μ mechanism was considered to be the likely one and searches were made at the 2.2 μ atmospheric window. On the other hand, Georg Schultz noticed that the IR sources with OH had a larger infrared excess at 3.5 μ than at 2.2 μ, and because, too, our equipment initially wasn't very sensitive, he made a successful pilot survey without filter to detect sources which are brighter at wavelengths longer than 2.2 μ.

In order to make firm identifications of the OH sources with IR stars, it was necessary to improve the accuracy of the radio coordinates to ±10–15 arcseconds using the 100 m telescope at Effelsberg. It was also necessary to improve the method of determining the optical coordinates on the ESO 1 m telescope on La Silla—in the infrared one requires an astrometric photometric telescope, since the objects can only be found by scanning or setting on accurately-known positions. The effort pays off in increased efficiency, meaning more observing time. Our day-time success is a result of this effort and was reported by Willem Wamsteker of ESO in the June 1976 issue of the *Messenger*.

Using the ESO 1 m telescope and infrared equipment developed by Ernst Kreysa, we scanned at 3.8 μ 30 sources from the list of Anders Winnberg. Before our run in July 1976 we had discovered 50 % of the expected number of IR sources. The Table shows that the detection rate is clearly a function of the brightness of the OH sources. In July with more sensitive equipment we detected a few more sources but the 100 % level may require the use of the ESO 3.6 m telescope.

FREQUENCY OF DETECTING OH SOURCES SEARCHED AT 3.8 μ

No. of OH sources scanned	With OH flux (1612 MHz) $\times 10^{-26}$ watt $m^{-2}Hz^{-1}$	With IR counterpart	% with IR counterpart	Without IR counterpart
5	≦ 16 f.u.	4	80	1
10	≦ 12 f.u.	8	80	2
15	≦ 10 f.u.	9	60	6
15	< 10 f.u.	6	40	9
Total 30		15	50	15

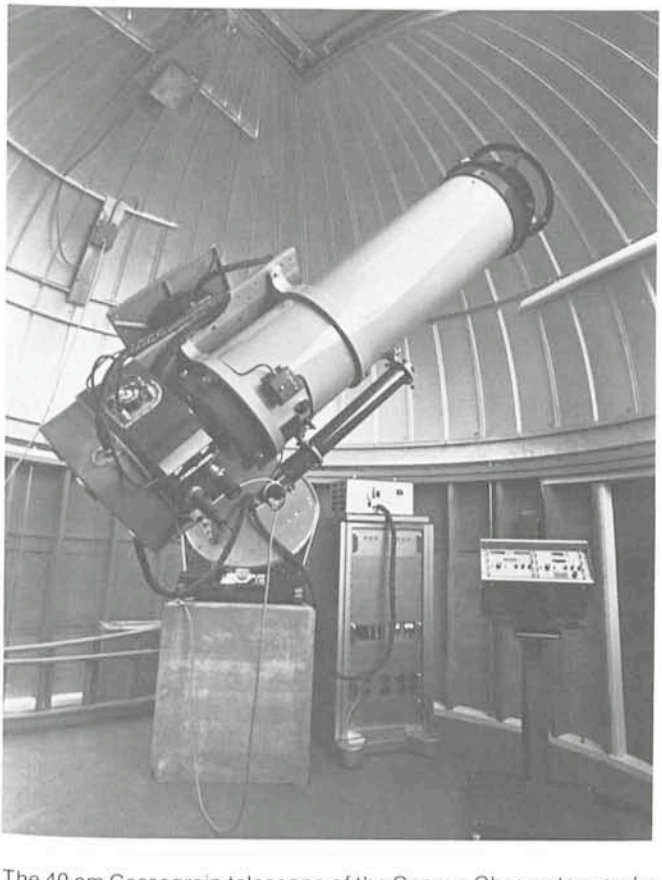
Multicoulor photometry for a few objects suggests that our sample of OH/IR objects are redder than the previously known ones. Some of the sources are up to 100 times fainter at 2.2 μ than they are at 3.7 μ. In at least two objects the intensity appears to be still rising even at 20 μ. Winnberg's OH survey yielded the most sources within 1/2° of the galactic plane. The IR magnitudes and colours plus the local standard-of-rest velocities indicate that the new objects are reddened distant objects, perhaps more luminous on the average than the objects first found by Wilson and Barrett.

At this stage we may divide our research into two parts: the specific and the general study of OH/IR sources. In the specific study we note that the OH survey ist statistically complete between $18° \leqq l \leqq 50°$ with $|b| \leqq 1°$ and in order to analyse the data the IR observations ought to be as complete as possible: 100 % of all the IR sources, extended wavelength coverage (1 μ to 35 μ from the earth) and increased resolution in both wavelength and time. We have OH and IR observations at 6-month intervals extending over 18 months and know that the sources vary. The variation (phase and amplitude) contains information about the pumping mechanism, mass loss and the density of the dust cloud surrounding the star. We hope to derive the absolute luminosity, distance and reddening of each system.

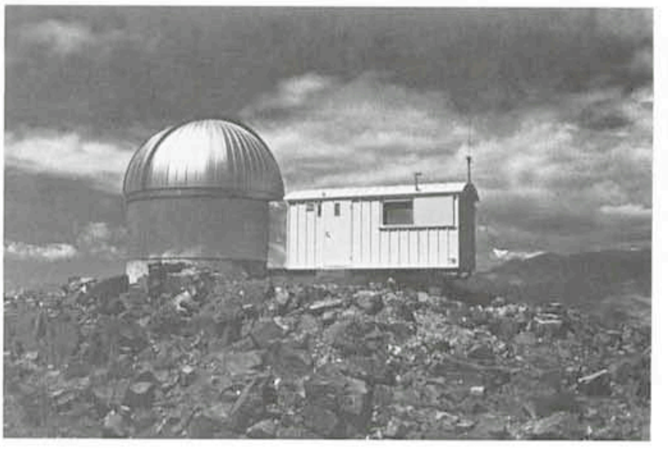
In the general study the OH/IR sources are probes in the study of the dynamics of the Milky Way. We are working with Dutch and German astronomers in identifying the IR counterparts of those high-velocity OH/IR sources found near the galactic centre. This project is complimentary to the one described by Blaauw in the June 1976 issue of the *Messenger*. Combining IR distances with OH radial velocities will allow a detailed study of the gravitational potential and mass distribution of the central part of the Galaxy while the McCormick Areas Programme is a study of the "local" galactic evolution.

Swiss Astronomers on La Silla

Last year saw the installation of a Swiss telescope on La Silla and the arrival of the first observers. Here Dr. F. Rufener, of the Geneva Observatory, tells about the telescope and some of the observing programmes which are being carried out:



The 40 cm Cassegrain telescope of the Geneva Observatory on La Silla. The photoelectric photometer is at the Cassegrain focus.



The Geneva Observatory station on La Silla.

Following a convention established in 1974, the Council of ESO has authorized the Geneva Observatory to set up a provisional observing station on La Silla. It has an Ash-dome of 4.60 m diameter which is linked to a working-site hut. This hut was shipped to La Silla as a container and consists of a sheltered observation post, a workbench with emergency repairs equipment and a kitchenette. The dome protects the equatorial table on which a Cassegrain telescope of 40 cm aperture and 7.20 m focal length has been mounted. The controls of the equatorial table allows an accurate setting by the reading of the digital display of the celestial coordinates (right ascension and declination). A special control panel situated near the strip-chart recorder offers the observer offsetting facilities (small-angle displacement of the telescope).

The Telescope

The telescope is equipped with a classical photoelectric photometer on which UBV B_1 B_2 V_1 G filters of the photometric system of the Geneva Observatory have been mounted. The acquisition procedure is very simple; measures in direct