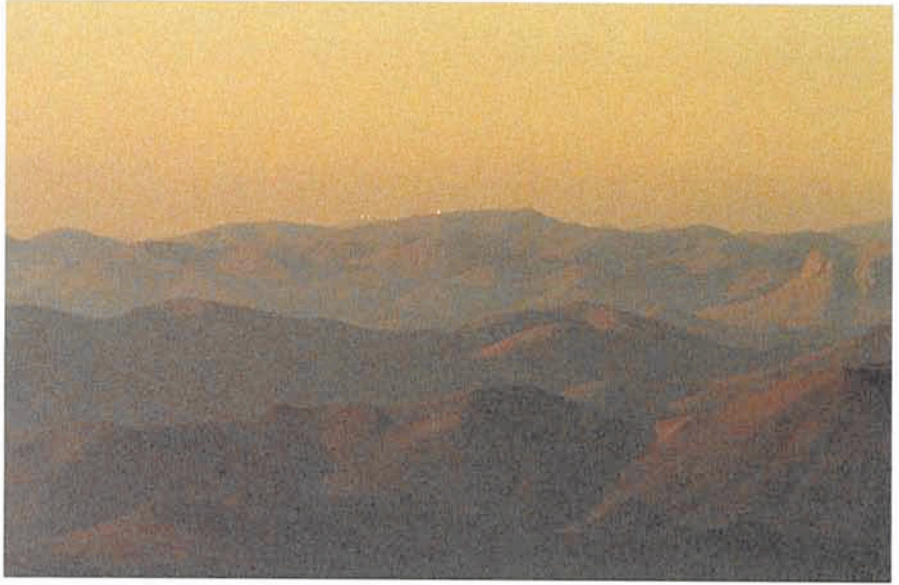


A Distant View of La Silla

W. C. KEEL, University of Alabama, USA

The domes and related structures on La Silla are prominent features of the Atacama landscape as seen for many kilometres, and would be for many more were it not for the intervening Andean foothills. Under proper conditions, they may be seen (with the unaided eye) for even greater distances. Possibly the most distant normally occupied vantage point (barring a SPOT image) is from the Inter-American Observatory on Cerro Tololo, about 103 km south-southwest of La Silla. For month-long periods twice a year (when the sun's declination is about -10°) the domes at ESO are prominent shortly before sunset, as shown in the photograph taken in mid-October of 1988. Five structures are prominent with another two visible on the original print. Part of La Silla is hidden behind a foreground mountain, identified in the *Mapa Físico de Chile* as Cerro El Pozo (east of Almirante Latorre); its presence accounts for the greater difficulty of locating Cerro Tololo from La Silla, even using binoculars.



is the apparent sun horizontal, and second how much difference in the times of sunset is there between La Silla and Tololo?

The dip of the horizon from the altitude of ESO is about 1.6 degrees, and at this time of year the sun requires about 435 seconds to traverse this vertical distance solely from geometrical considerations. An additional time between the sun at 90 degrees zenith distance and apparent sunset is produced by atmospheric refraction, which produces a deceleration of the apparent sun amounting to about 160 seconds for typical meteorological conditions; most of the refraction seen at sunset arises in the last few degrees above the horizon. Finally, apparent sunset at Cerro Tololo is 80 seconds later than at La Silla due to the small longitude difference. Adding these up, the horizontal-sun condition is satisfied from about 13 to 11 minutes before apparent sunset on Cerro Tololo, in good agreement with what we actually see. The reflections are bright for somewhat longer than the 2 minutes expected from the sun's angular size and a perfectly smooth surface, presumably due to the roughness of the corrugated metal used for the cylindrical sections of some of the telescope buildings. (Unfortunately for sunset watchers on La Silla, most of the domes at Cerro Tololo have rectangular base structures and thus any reflections will be visible for only a couple of days each year; furthermore they are at unfavourable orientations for catching sunlight as seen from almost due north).

Examining the photograph once

more, the 3.6-m dome is the brightest (far right), as befits the large size of the support building. One can also identify (left to right) the small cluster of domes dominated by the Dutch 90-cm, the ESO 1.5-m, the ESO 1.0-m and Danish 1.5-m (both rather faint), and the ESO/MPI 2.2-m. It is fitting that visibility phenomena of this kind may be understood with some of the astronomical observer's most basic methods.

STAFF MOVEMENTS

Arrivals

Europe:

- FERRARO, Francesco (I), Fellow
- KÄUFL, Hans Ulrich (D), Infrared Instrumentation Scientist
- PASIAN, Fabio (I), Fellow (Senior Archive Scientist ST-ECF)

Departures

Europe:

- BUYTENDIJK, Felice (NL), Receptionist
- GROTE, Rainer (CH), Projekt Draughtsman
- MEYLAN, Georges (CH), Fellow
- SCHNEIDER, Karin (D), Secretary
- VAN RIJN, Gunilla (NL), Administrative Assistant

Chile:

- HAGSTRÖM, Magne (S), Associate (Microwave Engineer SEST)
- OLBERG, Michael (D), Telescope Software scientist

Since CTIO and ESO are at comparable elevations, to a good approximation the condition for reflection off a vertical surface is that the sun should have an apparent zenith distance of 90 degrees at La Silla. This astronomical condition can be tested from the known situation of the observatories and the known time of visibility relative to the apparent sunset at Tololo. First, how long before apparent sunset at La Silla

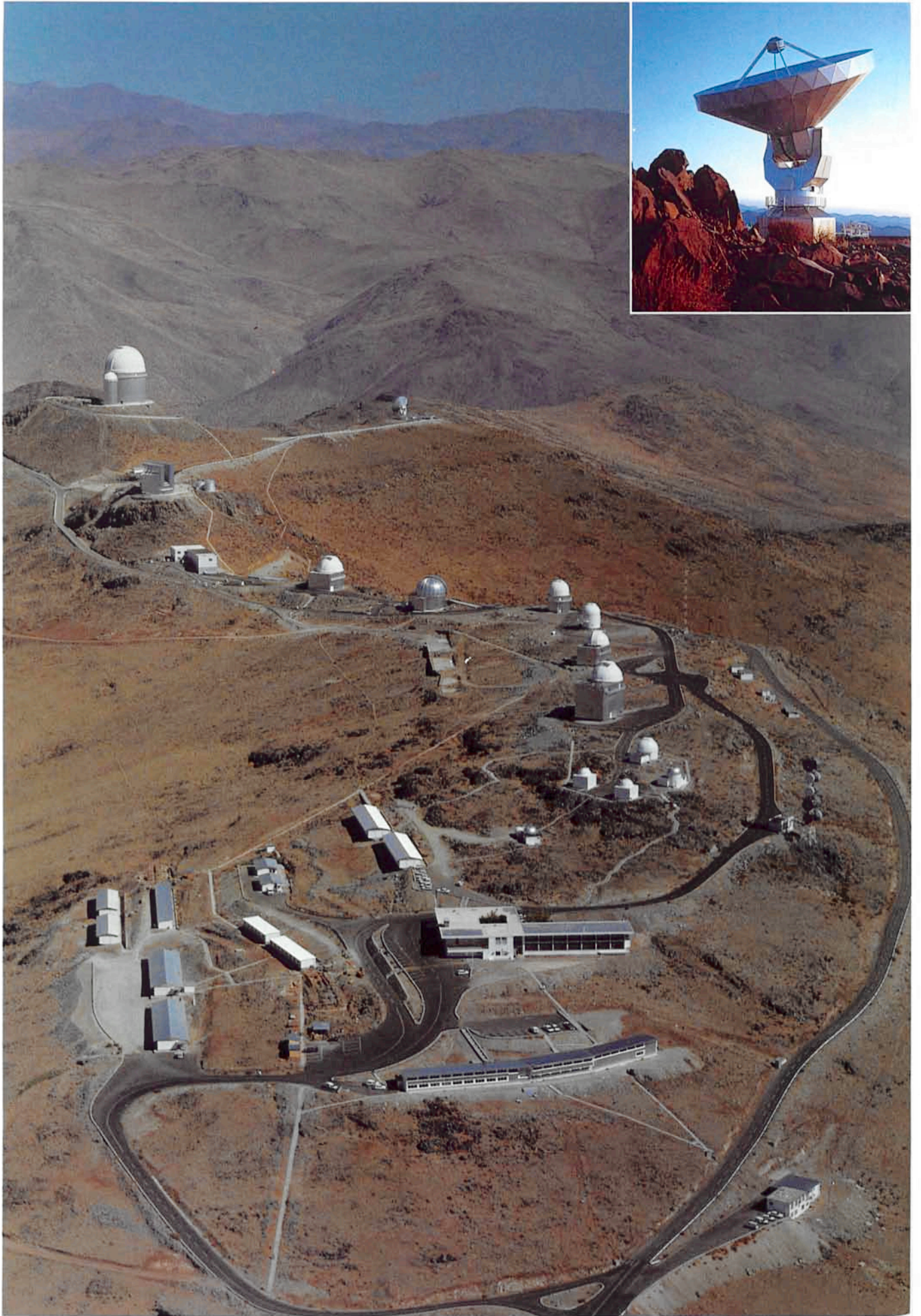




Fig. 2

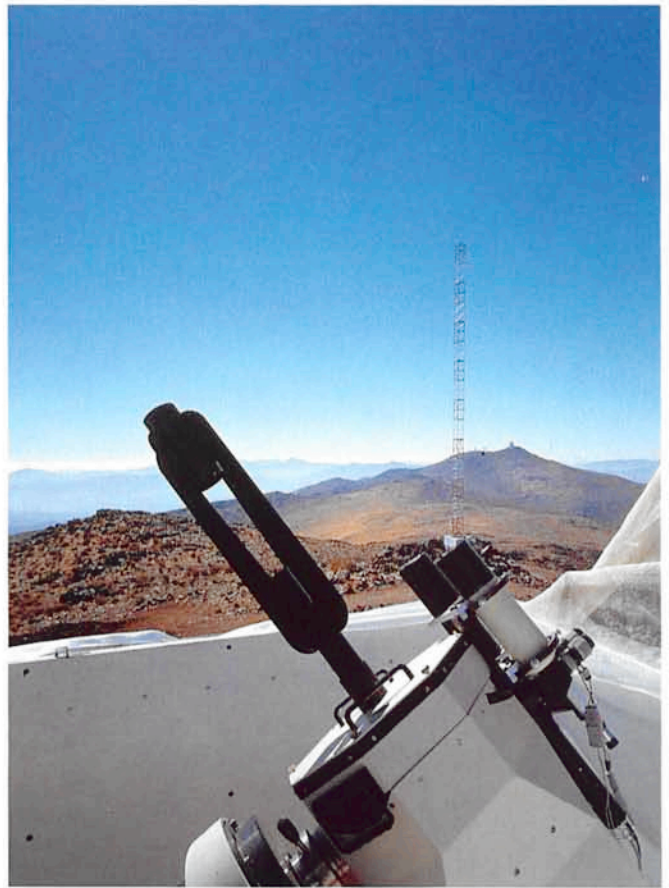


Fig. 4

THE CHANGING SKYLINE OF LA SILLA

The fact that ESO has come a long way since the earliest days, described in the articles by Prof. Blaauw (this and the previous issue of the *Messenger*), is well illustrated by these photographs obtained in mid-December 1988, e.g. of the SEST (Fig. 1), the only instrument of its kind in the southern hemisphere, or of the NTT (Fig. 2), now nearing completion, changing the "skyline" of La Silla (Fig. 3). The seeing monitor (Fig. 4) used for VLT site tests at neighbouring Cerro Vizcachas is an indication of times yet to come.

C. MADSEN



Fig. 3