at Tenerife with the 1.5 m Flux Collector by P. Meikle of the Imperial College London.

Thanks to this big international effort we were able to combine observations in different wavelength regions of each source and to study possible binary phase dependent variations in these binaries, a study which would not have been possible without this collaboration. At this moment we can already say that the collaboration has been successful and the first results of the reduction of all this material nears completion. We certainly hope to continue this collaboration in future. *G. Hammerschlag-Hensberge*

A Compact Group of Galaxies: Klemola 25

The cluster Klemola 25 was discovered by A. Klemola in 1969 and was included in a recent general study of nearby clusters of galaxies. A 3.6 m prime focus plate (fig. 1), shows this remarkable, compact group of galaxies. At first sight it is not unlike a more distant version of Stephan's Quintet. The four central galaxies form a tight circle, approximately 3 arcmin in diameter.

Three of the galaxies are clearly ellipticals and the fourth appears to be a barred spiral, its spiral arms stretching around the two nearest members. Two small galaxies can be seen outside the group. The lower one appears to be an edge-on spiral, and the other an elliptical.

Spectra taken with the IDS at the ESO 3.6 m and with the Carnegie tube spectrograph at the CTIO 4 m show all the galaxies, unlike Stephan's Quintet, to have similar velocities of about 15,000 km s^{-1}. Adopting $H_0 = 55$ km s^{-1} Mpc^{-1}, this puts the group at a distance of approximately 270 Mpc. The group diameter is therefore roughly 230 kpc. The cluster, besides having a striking appearance, is then incredibly compact and certainly worthy of further study. *Anthony C. Danks*

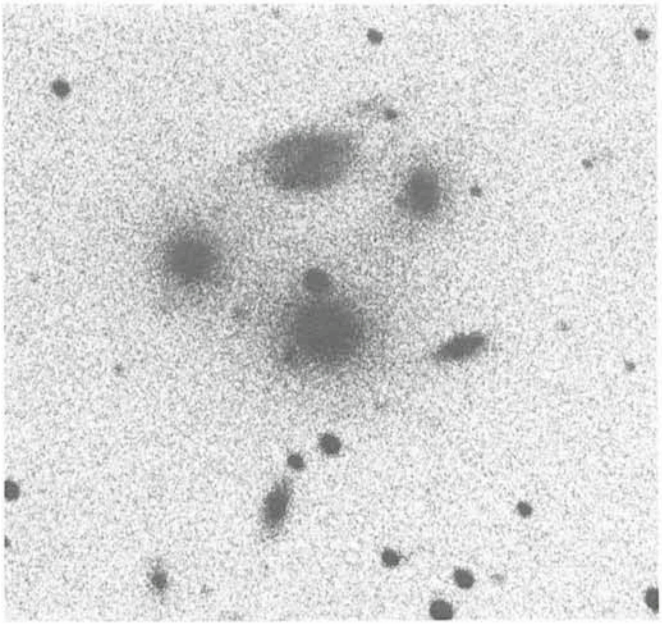

Fig. 1: *This plate of the group of galaxies Klemola 25 was obtained by Dr. Danks at the prime focus of the 3.6 m telescope on 103a–O emulsion behind a GG 385 filter. Plate No. 1565, exposure time: 60 minutes.*

Correction

A photo of a galaxy field in which a supernova had been discovered was shown on page 24 in *Messenger* No. 15. The scale was wrongly indicated. It should have been 1 arcmin/cm.

European Astronomers Discuss the Use of the Space Telescope

A workshop on "Astronomical Uses of the Space Telescope" was held in Geneva on February 12–14, 1979. This workshop was organized jointly by ESA (European Space Agency) and ESO and took place in the main auditorium at CERN.

The Space Telescope is a telescope of 2.4 m diameter which will be placed in orbit in late 1983 by the Space Shuttle. The telescope will be, at least during the first years, dedicated to observations between 1100 Å and 10000 Å. For the astronomer, the most important parts of the telescope are the spectrographs, the cameras and the photometer which will be placed on board. These instruments will make it possible to carry out observations which are absolutely impossible to do from the ground: observations in the ultraviolet and observations with an angular resolution of ~ 0.1 arcsec. From the ground it is not possible to observe with an angular resolution better than 1 arcsec, not because of the telescopes, but because of the atmospheric turbulence.

The possibility of observing in the ultraviolet has several advantages: (i) it nearly doubles the range of wavelengths where precise spectrographic observations can be made, (ii) it permits to measure the intensity and profile of lines in the ultraviolet which are very important for our understanding of various objects, like, for instance, stars, gas clouds and Seyfert galaxy nuclei, and (iii) it increases the contrast between a normal stellar population and the high-frequency non-thermal radiation often emitted by galaxies which are radio emitters.

The possibility of observing with a high angular resolution permits to study structure on a scale 10 times better than from the ground. However, the most important of the characteristics of the Space Telescope is that, with its cameras, it will be possible to see objects which are one hundred times fainter than those that can be observed with the best ground-based telescopes. This has obvious advantages for the study of stars, nearby galaxies, etc.... but above all it will permit to explore and study the Universe at distances 10 times larger than can be done now from the ground.

There will be two cameras on the Space Telescope. One is the *Wide Field/Planetary Camera* which will be equipped with the most efficient detector: a charged couple device or CCD, and it will be optimized to have the largest field possible and still have the good angular resolution of 0.1 arcsec. The other camera, the *Faint Object Camera*, is optimized to use the ultimate angular resolution of the Space Telescope and therefore to detect and to measure the faintest objects. An important feature of this camera is that a portion of the field that is isolated by a slit of dimensions 1 x 0.1 arcsec can be observed with a grating. With this long-slit spectrograph it will be possible to observe nearly one hundred adjacent regions at a time. This advantage is not shared by the two other spectrographs on board because, being equipped with linear detectors—instead of two-dimensional detectors like the cameras—they can see only one region at a time.

One of these two spectrographs is designed for a high wavelength resolution study of relatively bright objects whereas the other will give medium to low wavelength resolution on faint objects. The photometer is designed to give the possibility to measure extremely rapid flux variations; variations on time scales as small as 20 microseconds will be detected; such observations are completely impossible from the ground because of the turbulence of the atmosphere.

The Space Telescope is built jointly by NASA and ESA. Among the scientific instruments, ESA is responsible for the design and construction of the Faint Object Camera. The ESA astronomers will have at least 15 % of the observing time on the Space Telescope and will be able to use any of the instruments on board for their observing programmes.

There were several reasons to hold a workshop on the Space Telescope at this time:

First, make people aware that the Space Telescope is a reality for the European astronomical community and present technical information on the instruments. Second, start a discussion of a number of astrophysical problems of current interest, taking into account the new types of observations which will soon be possible. Hopefully these discussions will continue among astronomers back at their home institutions and result in identification of the important problems which can most benefit from Space Telescope observations. Moreover, these discussions will help in deciding which ground-based observations should be done between now and 1983 in preparation of the Space Telescope observations. Third, a workshop is a meeting place where discussions start and develop but also where collaboration between astronomers or groups of astronomers is initiated.

The Proceedings of the Workshop are now being edited and should be available before the summer. The next issue of the *Messenger* will bring more details about the outcome of this important meeting. *M.-H. Ulrich*

Instrumentation Schedule

This is the up-dated 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.

Triplet Adaptor (M. Tarenghi, M. Ziebell). Target date: June 1979. The components are:
- two 3-lens correctors for prime focus
- an adaptor with tv for acquisition and guiding
- a remote-controlled shutter and changer for 4 filters
- a remote-controlled changer for 8 plates (3 magazines); plate size is 240 x 240 mm.

More details are published on p. 26 of this *Messenger*.

4 cm McMullan Camera (W. Richter). Target date: October 1979.
- Electronographic camera as developed by McMullan. Can be used behind triplet adaptor in prime focus.

Coudé Echelle Scanner (CES) (D. Enard, J. Andersen [Copenhagen], A. Danks). Target date: mid 1980.
- Instrument to record very high resolution digital spectra (up to 100,000) on a 1876-channel-DIGICON detector. Double-pass scanning mode permitting calibrations on bright objects with very clean instrumental profile.

For more details see p. 37 and *Messenger* No. 11.

Coudé Auxiliary Telescope (CAT) (T. Andersen, M. Dennefeld). Target date: mid 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.

Infrared Top-End (R. Grip, P. Salinari). Target date: mid 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.

Cassegrain Echelle Spectrograph (CASPEC) (M. le Luyer, 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.

More details will be published in the next *Messenger*.

Compared to the schedule which was published three months ago three dates have changed: The target date for the Triplet Adaptor is delayed one month due to operational reasons (observation schedule). The target date for the Coudé Echelle Scanner is delayed half a year due to difficulties during design and manufacture, and the target date for the Infrared Top-End is delayed half a year to give priority to the development of the Infrared Photometer for the Cassegrain focus of the 3.6 m telescope. *W. Richter*

INFORMATION FOR VISITING ASTRONOMERS

Spectrograph Gratings on La Silla

The gratings listed in the table below are now available on La Silla for the Boller and Chivens spectrographs on either the 3.6 m or 1.5 m telescopes.

Grooves per mm	Grating Blaze Angle		1st Order Central Disp. λ Å/mm		2nd Order Central Disp. λ Å/mm	
225	5°	12′	7280	298	3640	149
300	4°	18′	4550	220		
300	8°	38′	9100	228	4550	114
400	4°	30′	3640	171		
400	9°	~~42′~~ 44′	7703	172	3852	86
400	13°	54′	10920	175	5460	88[1]
600	8°	38′	4550	114		
600	13°	00	6825	116	3412	58
600	13°	00	6825	116	3412	58
600	17°	27′	9100	118	4550	59[2]
900	21°	06′	7280	78	3640	39
1200	26°	45′	6825	60	3412	30
1200	36°	52′	9100	58	4550	29

[1] Not yet mounted in grating cell.
[2] At present still used in ESO TP Geneva for Reticon tests.

Since all gratings can be used with any of the spectrographs, it can happen that one grating is requested by various visiting astronomers simultaneously. In this situation the 3.6 m observer has priority. *G. Schnur, M. J. de Jonge*