ESO COUNCIL DECISIONS

At its last meeting on November 26, 1980, the ESO Council took a number of decisions; among them we note:

— The approval of the ESO plans to submit a proposal to ESA to host the Space Telescope European Coordinating Facility.

— The approval of the 1981 budget, including 5 million DM for the installation on La Silla of the Max-Planck-Gesellschaft 2.2 m telescope.

— Professor P. Ledoux was elected President of Council from July 1, 1981. Professor J.-F. Denisse will continue as President until that time.

— Mr. H. Grage was elected Chairman of the Finance Committee for the year 1981.

— Professor B. Westerlund was elected Chairman of the Observing Programmes Committee for 1981. Professor Hunger was Chairman of the OPC in 1980.

— Professor P. Lena was reconfirmed as Chairman of the Scientific Technical Committee.

— The inauguration of the ESO Headquarters in Garching will take place on May 5, 1981.

List of Preprints Published at ESO Scientific Group

September—November 1980

118. M. Azzopardi, J. Breysacher and G. Muratorio: Spectroscopy of the Small Magellanic Cloud Emission Line Star Hen S 18. *Astronomy and Astrophysics,* Research Note. October 1980.
119. J. Bergeron, T. Maccacaro and C. Perola: Far UV Study on the Non-thermal Activity in the Narrow Line Galaxies NGC 4507 and NGC 5506. *Astronomy and Astrophysics.* October 1980.
120. L. Martinet and P. Magnenat: Invariant Surfaces and Orbital Behaviour in Dynamical Systems with 3 Degrees of Freedom. *Astronomy and Astrophysics.* October 1980.
121. S. D'Odorico, P. Benvenuti, M. Dennefeld, M. A. Dopita and A. Greve: Astrophysical Interpretation of the λλ 1200—7300 Å Emission Line Spectrum of a Filament in the Cygnus Loop Supernova Remnant. *Astronomy and Astrophysics,* Main Journal. November 1980.
122. M.-H. Ulrich: 3C 273: A Review of Recent Results. *Space Science Reviews.* November 1980.
123. G. Chincarini, M. Tarenghi and C. Bettis: Observations of Galaxies in the Southern Cluster CA 0340—538. *Astronomy and Astrophysics.* November 1980.
124. R. Schoembs and N. Vogt: High-time Resolution Spectroscopy of VW Hydri and WX Hydri. *Astronomy and Astrophysics,* Main Journal. November 1980.
125. W. Eichendorf, A. Heck, J. Isserstedt, J. Lub, M. Pakull, B. Reipurth and A. M. van Genderen: On the Nature of the 125-day Cepheid V 810 Cen (= HR 4511): IUE Spectra. *Astronomy and Astrophysics.* November 1980.

The Density of the Broad-Line Emission Region in Seyfert 1 Galaxies

M. P. Véron and P. Véron, ESO

One of the characteristics of Seyfert 1 nuclei and quasars is the presence in their spectrum of broad permitted lines or broad wings to the permitted lines. The forbidden lines show no such wings. Because broad He I and He II lines appear in the spectra of quasars and Seyfert 1 galaxies, it seems very likely that ions such as O^{+}, O^{++} or Ne^{++} actually do exist in the broad-line region and that the forbidden lines are suppressed by collisional de-excitation in a region with electron densities $Ne > 10^{7} - 10^{+8}$ cm^{-3} (Souffrin, 1969, *Astronomy and Astrophysics,* **1,** 305; Anderson 1970, *Astrophysical Journal,* **162,** 743). Some class 1 Seyfert 1 galaxies and low redshift quasars exhibit an anomalously strong He I λ 5876 Å line; this has been believed to show an unusually large helium-to-hydrogen abundance ratio; however, in a high-density nebula, the He I triplet line intensities are significantly enhanced by electron collisional excitation. Theoretical and observational evidence shows that the gas which gives rise to the broad He I lines is characterized by $Ne \sim 5 \times 10^{9}$ cm^{-3} and $T \sim 15{,}000°$ K with normal abundance (Netzer 1978, *Ap. J.,* **219,** 822; Feldman and MacAlpine 1978, *Ap. J.,* **221,** 486).

On the other hand, the presence of a broad [C III] λ 1909 Å line in the spectrum of almost every QSO where it should be observable sets an upper density limit $Ne \lesssim 10^{10}$ cm^{-3} (Osterbrock 1970, *Ap. J.,* **160,** 25); this line has also been observed in the UV spectrum of the Seyfert 1 galaxy NGC 4151 (Boksenberg et al. 1978, *Nature,* **275,** 404).

It has become customary to assume that the density of the dense region in all quasars and Seyfert 1 nuclei was the same, in the range $10^{8.5} - 10^{9.5}$ cm^{-3}. However, both higher and lower values have been suggested; in the case of the QSO Q1011 + 25 (= TON 490) which has a redshift z = 1.63, the lines of CIII at 977 and 1909 Å have been observed (the first one with the International Ultraviolet Explorer) with an intensity ratio of 1.4 which corresponds to $Ne \sim 19^{9}$ cm^{-3} if Te = 30,000° K and to $Ne = 3 \times 10^{10}$ cm^{-3} if Te = 15,000° K (Nussbaumer and Schild 1979, *Astronomy and Astrophysics,* Letters, **75,** L17).

ANNOUNCEMENT
of an ESO Conference in Garching
24–27 March 1981

ESO is organizing a conference on

Scientific Importance of High Angular Resolution at Infrared and Optical Wavelengths

to be held in the ESO building in Garching on 24–27 March 1981

The Scientific Organizing Committee: M. H. Ulrich, Chairman – A. Boksenberg – D. Dravins – A. Labeyrie – P Léna – G. Weigelt.