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PERSONNEL MOVEMENTS

STAFF

ARRIVALS

Europe

JANSSON, Jill, S, Secretary, 1.2.1981
BAUDET, Loic, F, Optical Technician, 1.4.1981
BUZZONI, Bernard, Optical Technician, transfer from Chile to Europe, 1.4.1981
BIEREICHEL, Peter, D, Software Engineer, 1.4.1981
COIGNET, Gilbert, F, Electronics Technician, 1.4.1981
DIETL, Ottomar, D, Maintenance Technician, 1.4.1981
STEC, Frédéric, F, Electronics Technician, 1.4.1981
VERSCHUREN, Rita, B, Secretary, 1.4.1981
MÜLLER, Karel, DK, Adm. Assistant (Accounting), 1.5.1981
LJUNG, Bo, S, Electronics Engineer, 16.5.1981
WIRENSTRAND, Hans, S, Systems Programmer, 11.5.1981

Chile

ROUCHER, Jacques, F, Electronics Technician, 1.2.1981

DEPARTURES

Europe

GRIP, Rolf, S, Technical Assistant (Mech.), 31.5.1981
WENSVEEN, Martinus, NL, Optical Technician, 28.2.1981

Chile

BECHMANN, Erling, DK, Foreman (Electro-mech.), 31.3.1981

ASSOCIATES

ARRIVALS

Europe

GAHM, Gösta, S, (part-time) 1.1.1981

DEPARTURES

Europe

CHINCARINI, Guido, I, 15.1.1981

FELLOWS

ARRIVALS

Europe

MOTCH, Christian, F, 1.1.1981
LUND, Glenn, New Zealand, 15.3.1981

The Ionized Gas of M33 as Seen with a 6 m, F/1 Telescope

G. Courtès and J.P. Sivan, Laboratoire d'Astronomie Spatiale, CNRS, Marseille, and J. Boulesteix and H. Petit, Observatoire de Marseille

With few exceptions, the ionized hydrogen regions in a galaxy are extended sources emitting only a few lines of very faint intensity. The use of a narrow interference filter (to select one of the most intense lines) in combination with a focal reducer design (to increase the illumination of the focal plane) at the focus of a large telescope is the best way to obtain deep photographs of the ionized hydrogen features in nearby galaxies (Courtès, G.: 1973, *Vistas in Astronomy* **14,** 81). It should be noted that in this optical arrangement, the filter is not set in the small f-number beam of the focal reducer, but in the lower aperture beam of the telescope, thus making possible the use of very selective interference filters (which accept a very narrow angular field). This method has been extensively used for several years by Courtès and his co-workers at the 1.93 m telescope of Haute-Provence Observatory, at the Palomar 200 inch telescope, and, more recently, at the 3.6 m telescope of ESO.

As previously discussed (Courtès, G.: 1965, IAU Symposium No. 27, A25), when an f/1 focal reducer is attached at the focus of a 2 m class telescope (for instance the f/5 Newtonian focus of the 1.93 m telescope of Haute-Provence), the illumination of the photographic emulsion is increased (by a factor of 25 in this example), but the spatial resolution is unavoidably degraded (a pixel size of 20 microns corresponds to 2.1 seconds of arc). On the contrary, when an f/1 focal reducer is used in combination with a 4 m class telescope or, *a fortiori,* with a larger telescope, the equivalent focal length becomes long enough for the minimum image diameter to be determined mainly by the seeing instead of by the resolving power of the emulsion. In the case of the f/8 Cassegrain focus of the ESO 3.6 m telescope (a project of such an instrument has been designed by M. Leluyer for the 3.6 m ESO telescope), the illumination of the detector is increased by a factor of 64 and the limiting angular resolution is near 1 second of arc for a pixel of 20 microns (Boulesteix, J., Courtès, G., Laval, A., Monnet, G., Petit, H.; 1974, Proceedings of ESO/SRC/CERN Conference on Research Programmes for the New Large Telescopes, 221).

One of the most important results that have been obtained when applying these techniques to the study of the ionized gas of nearby spiral galaxies, is the discovery of a general, diffuse Hα emission in the spiral arms and, sometimes, over the entire galactic disk. (Carranza, G., Courtès, G., Georgelin, Y. P., Monnet, G., Pourcelot, A., Astier, N.: 1968, *Annales d'Astrophysique,* **31,** 63; Monnet, G.: 1971, *Astronomy and Astrophysics,* **12,** 379). In our Galaxy also, the interstellar medium is ionized outside of the condensed, classical H II regions. The presence of a