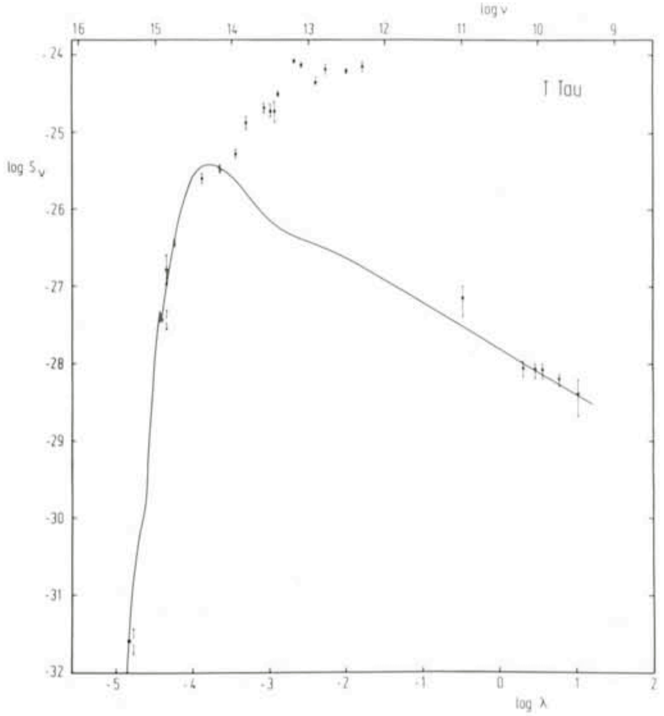

Fig. 2: *Observed energy distribution of T Tauri. The solid line represents the computed contribution of the photosphere and of the gaseous envelope. The units of S_ν are W m^{-2} Hz^{-1}, λ is in cm, ν in Hz.*

not been attempted yet... So far, we have contented ourselves with less ambitious, but more realistic, projects.

The most recent of these programmes involved the collaboration of P. Bastien, L. V. Kuhi and myself and was concerned with simultaneous polarimetry, photometry (both at La Silla) and spectrophotometry (at Lick Observatory) of a few stars known for their variable polarization. The goal of this programme, conducted last February, is to try to get clues to the polarization origin. The difficulties which arose this time were not of instrumental, but of a human nature: a mean streptococcus knocked me out at the beginning of the observing run. Fortunately, part of the time could be saved by the kindness of the French cooperants, particularly Auguste Le Van Suu, who agreed to perform the photometric observations. The data are now being reduced.

Although it is apparent from what was said above that coordinated observations are often much more difficult to organize and to conduct than more classical programmes involving only one observer, they are potentially very rewarding. In the *Messenger* **14**, 4, B. Wolf and myself reported observations of two young stars, S CrA and CoD −35°10525, simultaneously at La Silla (spectroscopy) and at San Pedro Martyr, Mexico (13-colour photometry), and a more detailed account of this work has been published recently (*Astron. Astrophys. Suppl.* **47,** 419). The body of observational facts gained during this joint observing run was crucial toward the development of a new and very promising model in which the T Tauri phenomenon is identified with the stellar corona's struggle for expansion into the dense circumstellar medium which still surrounds these young stars (cf. Bertout, 1982, Proc. 3rd European IUE Conference). My conclusion must therefore remain optimistic: it may well be that coordinated observations represent the best way to make further, decisive progress in our understanding of pre-main-sequence evolution.

Visiting Astronomers

October 1, 1982 – April 1, 1983

Observing time has now been allocated for period 30 (October 1, 1982–April 1, 1983). As usual, the demand for telescope time was much greater than the time actually available.

The following list gives the names of the visiting astronomers, by telescope and in chronological order. The complete list, with dates, equipment and programme titles, is available from ESO-Garching.

3.6 m Telescope

Oct. 1982: Melnick/Terlevich, Crane/West/Kruszewski, Shaver/Robertson, Mouchet/Motch/Bonnet-Bidaud, Westerlund/Lindgren, Azzopardi/Breysacher/Lequeux/Maeder/Westerlund, Ulrich/Boisson/Péquignot, Dennefeld, Epchtein/Braz/Nguyen-Quang-Rieu, Koornneef/Lequeux, Engels.

Nov. 1982: Engels, Sibille/Chelli/Léna/Foy/Perrier, Ortolani/Gratton, de Vegt, Chevalier/Ilovaisky/Hurley/Motch, Alcaíno/Liller, Thé/Alcaíno, Marano/Braccesi/Zitelli/Zamorani, Bonoli/Battistini/Fusi, Pecci/Marano, Azzopardi, Azzopardi/Breysacher/Lequeux/Maeder/Westerlund, Wouterloot/Brand.

Dec. 1982: Ulfbeck/Christensen/Hviid/Thomsen, Collin-Souffrin/Ulrich, Hawkins/Meisenheimer/Röser, Pakull/Motch/Ilovaisky/van Paradijs, de Ruiter/Zuiderwijk, Witzel/Biermann/Fricke, Israel/Koornneef, Koornneef/Israel/de Graauw, Rouan/Leger.

Jan. 1983: Rouan/Leger, Lindblad/Jörsäter, Fusi Pecci/Battistini/Buonanno/Corsi, Grewing/Schulz-Lüpertz, Geyer/Nelles/Hopp, Bergeron, Danziger/de Ruiter/Kunth/Lub/Griffith, Henrichs/van Paradijs/Pakull/Motch/Ilovaisky/Chevalier, D'Odorico/Gillet/Moorwood, Moorwood/Glass, Moorwood/Salinari.

Feb. 1983: Moorwood/Salinari, Landini/Salinari/Moorwood/Oliva, Weigelt, Möllenhoff, Richter/Huchtmeier/Materne, Bertola/Galletta, Ardeberg/Lindgren/Nissen, Persi/Ferrari-Toniolo/Tapia/Carrasco/Roth, Groot/Thé/Lamers/Hearn, Motch/Mouchet/Ilovaisky/Maraschi.

March 1983: Motch/Mouchet/Ilovaisky/Maraschi, Eichendorf, Tarenghi, Ardeberg/Lindgren/Nissen, Kunth, Reimers/Koester, Motch/Pakull/Ilovaisky, Jörgensen/Norgaard-N. de Loore/Burger/van Dessel, Cetty-Véron.

1.4 m CAT

Oct. 1982: Gillet, Barbuy, Spite, F. and M., Gratton/Ortolani.

Nov. 1982: Brand/de Vries/Habing/Wouterloot/de Graauw/Israel/van de Stadt.

Dec. 1982: Pallavicini/Pakull, Ferlet/Dennefeld, Ferlet/Dennefeld/Gry/Vidal-Madjar, Ferlet/Maurice, Querci, F. and M.

Jan. 1983: Querci, F. and M., Querci, F. and M./Bouchet, Querci, F. and M./Yerele, Pohl, Baade, Louise/Maurice, Holweger/Kovacs.

Feb. 1983: Holweger/Kovacs, Floquet/Faraggiana/Gerbaldi, Danks/Lambert, Ardeberg/Maurice, Andersen/Gustafsson/Nissen.

March 1983: Andersen/Gustafsson/Nissen, Nissen, Reimers/Hempe, Ardeberg/Maurice, Ruiz/Melnick.

1.5 m Spectrographic Telescope

Oct. 1982: Chmielewski, Spite, F. and M., Bues/Rupprecht, Melnick/Quintana, Rafanelli/Schulz, Dennefeld/Stasinska, Trefzger/Grenon.

Nov. 1982: Caplan/Deharveng, Fricke/Kollatschny/Schallwich/Yorke, Alloin/Pelat.

Dec. 1982: Duerbeck/Seitter, Pakull/Motch/Ilovaisky/van Paradijs, Lub/de Ruiter, Moffat/Seggewiss, Wargau/Rahe/Drechsel.

Jan. 1983: Wargau/Rahe/Drechsel, Grewing/Krämer/Schulz-Lüpertz, Grewing/Schulz-Lüpertz, Schoembs/Barwig/La Dous/Stolz, Materne/Hopp, Kohoutek, Pauls/Kohoutek, Leitherer/Bastian, Rufener/Waelkens.

Feb. 1983: Rufener/Waelkens, Milano/Russo/Smaldone/Vittone, Boisson, Dumont/Maurice, Viotti/Giangrande/Altamore, Wolf/Appenzeller/Stahl, Kudritzki/Heber/Hamann/Hunger/Simon.

March 1983: Kudritzki/Heber/Hamann/Hunger/Simon, Praderie/Felenbok/Talavera/Catala, Ardeberg/Maurice, Galletta/Bettoni, G., Véron, de Loore/Burger/Breysacher/van Dessel, de Loore/Burger/van Dessel/Stalio, Lodén.

1 m Photometric Telescope

Oct. 1982: Kubiak/Smak, Bues/Rupprecht, Kubiak/Smak, Bues/Rupprecht, Mouchet/Motch/Bonnet-Bidaud, Beck/Wielebinski/Schnur, Westerlund/Lundgren, Nguyen-Quang-Rieu/Lebertre/Epchtein.

Nov. 1982: Nguyen-Quang-Rieu/Lebertre/Epchtein, Engels, Alcaíno, Marano/Braccesi/Zitelli/Zamorani, Liller, Thé/Alcaíno, Richtler.

Dec. 1982: Brosche/Geyer/Lentes/Hänel, Geyer/Hänel, Westerlund/Thé/de Jong, Fusi Pecci/Battistini/Buonanno/Corsi, Habets/Thé/v. d. Heuvel, Mouchet/Motch/Bonnet-Bidaud.

Jan. 1983: Mouchet/Motch/Bonnet-Bidaud, Mauder, Schallwich/Fricke/Mattila/Schnur, Beuermann/Krautter, Ritter/Vogt, Drechsel/Rahe/Wargau.

Feb. 1983: Drechsel/Rahe/Wargau, D'Odorico/Gillet/Moorwood, Landini/Salinari/Moorwood/Oliva, Moorwood/Salinari, Persi/Ferrari-Toniolo/Grasdalen, Eichendorf, Motch/Mouchet/Ilovaisky/Maraschi.

March 1983: Motch/Mouchet/Ilovaisky/Maraschi, Lindroos, Lauberts, de Loore/Burger/van Dessel, Lauberts, van der Hucht/Thé.

50 cm ESO Photometric Telescope

Oct. 1982: Liller, Beck/Wielebinski/Schnur, Moreno/Carrasco.

Nov. 1982: Thé/Alcaíno, Caplan/Deharveng.

Dec. 1982: Westerlund/Thé/de Jong, Schoembs/Barwig/La Dous/Stolz, Habets/Thé/v. d. Heuvel.

Jan. 1983: Habets/Thé/v. d. Heuvel, Moreno/Carrasco, Schallwich/Fricke/Mattila/Schnur, Schober.

Feb. 1983: Schober, Milano/Mancuso/Russo/Severino/Smaldone/Vittone, Milano/Russo/Smaldone/Vittone, Wolf/Appenzeller/Stahl, Groot/Thé/Lamers/Hearn, Lindroos.

March 1983: Lindroos, Doazan/Thomas/Bourdonneau, Lagerkvist/Rickman, Moreno/Carrasco.

GPO 40 cm Astrograph

Nov. 1982: Duflot.

Dec. 1982: Amieux.

Jan. 1983: Mauder.

Feb. 1983: Debehogne/Mourao.

March 1983: Dettmar/Gieseking.

1.5 m Danish Telescope

Oct. 1982: Prévot, Imbert.

Nov. 1982: Imbert, Ardeberg/Lindgren, Quintana, Fricke/Loose/Thuan, Arp/Kruszewski/Pedersen/Surdej/Swings, Crane/West/Kruszewski, Danziger/Shaver/Pedersen, Sol.

Dec. 1982: Lyngå/Wramdemark.

Jan. 1983: Lyngå/Wramdemark, Hawkins/Meisenheimer/Röser, Lindblad/Jörsäter, Chevalier/Ilovaisky/Hurley/Motch, Pedersen/Pizzichini, Ortolani/Gratton, Louise/Maurice.

Feb. 1983: Andersen/Nordström/Olsen, Mayor/Burki.

March 1983: Mayor/Burki, Mayor/Mermilliod, Tarenghi, Jörgensen/Norgaard-N., Motch/Pakull/Ilovaisky, Shaver/Robertson, Krautter/Reipurth.

50 cm Danish Telescope

Oct. 1982: Kubiak.

Nov. 1982: Vanbeveren.

Dec. 1982: Maitzen/Weiss/Hensberge.

Jan. 1983: Maitzen/Vogt, Nelles, Baade.

Feb. 1983: Baade.

90 cm Dutch Telescope

Nov. 1982: Trefzger/Blaauw/Pel, Seggewiss/Nelles.

Dec. 1982: Mouchet/Motch/Bonnet-Bidaud.

Jan. 1983: Mouchet/Motch/Bonnet-Bidaud, Habets/Thé/v. d. Heuvel, Greve/van Genderen/Danziger, Beuermann/Krautter/Ritter/Vogt.

Feb. 1983: Groot/Thé/Lamers/Hearn.

March 1983: Groot/Thé/Lamers/Hearn, v. Paradijs/v. d. Woerd, Cuypers.

61 cm Bochum Telescope

Oct. 1982:	Sterken Group.
Nov. 1982:	Sterken Group.
Dec. 1982:	Sterken Group.
Jan. 1983:	Kohoutek, Sterken Group, Kohoutek, Pauls/Kohoutek, Sterken Group.
Feb. 1983:	Sterken Group.

PERSONNEL MOVEMENTS

STAFF

Arrivals

Europe

KERK, Elizabeth (NL), Administrative Assistant (Personnel), 1. 9. 1982
STOFFER, Christina (CH), Secretary/Typist (Scientific Division), 1. 11. 1982

Chile

GILLIOTTE, Alain (F) Optical Technician (TRS), 13. 9. 1982

Departures

Europe

BUCHER, Beate (D), Secretary (Personnel), 30. 9. 1982
VERSCHUREN, Rita (B), Secretary (Scientific Division), 17. 9. 1982

Chile

SCHNUR, Gerhard (D), Astronomer 30. 9. 1982
LE SAUX, Paul (F), Systems Analyst/Programmer (TRS), 31. 10. 1982

FELLOWS

Arrivals

Europe

RICHTER, Otto-Georg (D), 1. 9. 1982
BANDIERA, Rino (I), 1. 10. 1982
OLIVA, Ernesto (I), 1. 10. 1982

Departures

FERLET, Roger (F), 30. 9. 1982

ASSOCIATES

Arrivals

Europe

FREDRICK, Laurence (USA), 6. 7. 1982
CHEN, Jian Sheng (Chinese), 12. 7. 1982
CHOUDRY, Amar (USA), 1. 9. 1982
LUCY, Leon (UK), 1. 9. 1982
SALVATI, Marco (I), 1. 11. 1982

Departures

Europe

MILLER, Richard (USA), 30. 9. 1982

Observations of Bipolar and Compact H II Regions

T. Neckel, Max Planck Institute for Astronomy, Heidelberg

Several investigations carried out during the last years at the Max Planck Institute for Astronomy in Heidelberg have dealt with the bipolar compact H II region S 106. The essential structural features of this object are: (i) There is only a single exciting star in the centre of the nebula, (ii) this star is surrounded by a disk of dust that we are seeing edge on. This disk of dust divides the nebula into two "lobes". It causes a visual extinction of the central star of about 20 magnitudes, for which reason it can be photographed only at infrared wavelengths (Eiroa, C., Elsässer, H., and Lahulla, J. F. 1979, *Astronomy and Astrophysics* **74,** 89), whereas the light of the central star can get through the disk in the perpendicular direction. A digitized near infrared photograph of S 106 taken by Elsässer and Birkle with the 1.23 m telescope of Calar Alto is shown in Fig. 1.

S 106 is associated with a massive molecular cloud containing OH and H_2O masers. From spectroscopic observations Solf (1980, *Astronomy and Astrophysics* **92,** 51) has shown that the ionized gas is flowing radially toward the polar lobes at supersonic speed. The kinematic age is about $5 \cdot 10^3$ yr. These observations and the structural properties support the idea that S 106 is an H II region in a very early stage of evolution excited by a star recently formed out of a disk-shaped cloud which is probably rotating around an axis perpendicular to it.

Among the H II regions compiled in the Sharpless catalogue there is no other object of the same kind. Only a few objects show some similarity to S 106, for example S 269 and S 270. The distance to S 106 is about 500 pc, and its angular diameter is approximately 2 arcmin; consequently more distant objects of comparable linear size are too small for recognition in available H II catalogues. In order to get—if possible—a more extensive sample of similar objects H. J. Staude and I have carefully searched the Palomar atlas for bipolar and related objects. Since the typical appearance of a bipolar nebula is found only if we are looking edge on onto the disk of dust, "monopolar" nebulae may also be bipolar. The best example is the R Monocerotis nebula, which looks like the southern lobe of S 106. Cantó, Rodriguez, Barral and Carral (1981, *Astrophysical Journal* **244,** 102) have shown that this nebula is bipolar, and that the second lobe is optically obscured by the disk of dust.

At present we have compiled a list of 40 possible bipolar nebulae found on the Palomar atlas. Some of them are very likely genuine bipolar nebulae. Others resemble the R Monocerotis nebula, probably they are halves of bipolar nebulae. During the last 3 years we have carried out several observing programmes in order to get information concerning the nature of these objects. We will now consider the first results for three of them shown in