

# SECTION I

## OBSERVATIONS OF PLANETARY NEBULAE

# NEW AND MISCLASSIFIED PLANETARY NEBULAE

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**ABSTRACT:** Since 1978 85 new objects have been classified as planetary nebulae. They are listed in Table 1 which gives the designations, names, coordinates and the references to the discovery. In the list of misclassified planetary nebulae (Table 2) 33 objects have been included. Principal criteria have been summarized which can help to distinguish planetaries from other objects. They refer to observable properties and are valid only in a statistical sense.

The second supplementary list to the "Catalogue of Galactic Planetary Nebulae" (CGPN - Perek, Kohoutek, 1967) of new planetary nebulae is presented containing 85 discoveries which were published between 1978 and 1981. As in the case of the first supplementary list (Kohoutek, 1978 - discoveries between 1966 and 1977) the designations, names, coordinates and references to the discovery are given in Table 1. An asterisk affixed to the galactic number means an uncertain classification (suspected, possible or probable planetary nebula).

The considerable number of discoveries of PN since the CGPN indicates the large activity in this field, as shown in the following short statistics:

Period:	Number of discoveries:
CGPN ( - 1965)	1036
1966 - 1969	17
1970 - 1973	78
1974 - 1977	132
1978 - 1981	83

The majority of the new planetaries reported in the last period are objects of very low surface brightness and

TABLE 1 NEW PLANETARY NEBULAE (1978-1981)

Design.	Name	R.A. (1950)	Decl.	Discovery	Rem.
120 -5.1	Sh 2-176	0 <sup>h</sup> 28 <sup>m</sup> .9	+57° 01'	Sabbadin, etal. 1977	
124 -7.1	WeSb 1	0 57.93	+54 47.5	Weinberger, Sabbadin 1981	
181 +0.1	Pu 1	5 49.65	+28 05.8	Purgathofer 1978	
228-22.1	DeHt 1	5 53.02	-22 54.4	Dengel, etal. 1980	R
175 +6.1	Pu 2	5 59.20	+36 07.7	Purgathofer 1980	
183 +5.1	WeSb 2	6 13.02	+28 23.2	Weinberger, Sabbadin 1981	
158+17.1	PuWe 1	6 15.38	+55 38.0	Purgathofer, Weinberger 1980	
249-22.1*	ESO-308-08	6 24.35	-41 09.6	Holmberg, etal. 1978	R
239-18.1*	ESO-426-13	6 25.63	-31 09.8	Holmberg, etal. 1978	R
239-12.1*	ESO-427-19	6 53.23	-29 03.5	Holmberg, etal. 1978	R
217 -0.1*	MaC 1-1	6 56.24	-3 37.0	MacConnell 1978	
217 +2.1	Sp 3-1	7 04.3	-3 00	Stephenson 1978	
248-12.1*	ESO-367-03	7 08.60	-37 14.2	Holmberg, etal. 1978	R
242 -3.1*	ESO-429-04	7 33.47	-28 02.5	Holmberg, etal. 1978	R
245 -3.1*	ESO-429-17	7 42.93	-30 10.8	Holmberg, etal. 1978	
241 +0.1*	ESO-493-13	7 46.02	-25 06.4	Holmberg, etal. 1978	R
251 -4.1*	ESO-369-01	7 50.47	-36 18.8	Holmberg, etal. 1978	
254 -6.1*	ESO-311-18	7 52.22	-39 41.6	Holmberg, etal. 1978	R
263 -8.1*	ESO-209-15	8 03.68	-48 14.8	Holmberg, etal. 1978	R
262 -4.1*	ESO-259-06	8 22.25	-45 21.4	Holmberg, etal. 1978	R
265 -4.1*	ESO-259-10	8 32.50	-47 06.3	Holmberg, etal. 1978	R
265 +5.1*	ESO-314-12	9 17.23	-40 58.5	Holmberg, etal. 1978	R
283 +9.1*	ESO-215-04	10 52.48	-48 30.9	Holmberg, etal. 1978	
291+19.1	ESO-320-28	11 49.97	-42 00.9	Holmberg, etal. 1978	R
298+34.1	CTIO 1230-275	12 30.6	-27 32	Smith, etal. 1976	R
339+88.1	LoTr 5	12 53.13	+26 09.7	Longmore, Tritton 1980	
312+25.1	LoTr 6	13 31.20	-36 35.1	Longmore, Tritton 1980	

Design.	Name	R.A. (1950)	Decl.	Discovery	Rem.
310 -5.1	LoTr 7	14 <sup>h</sup> 11 <sup>m</sup> 35	-67°18'0	F Longmore, Tritton 1980	
315 +5.2	LoTr 8	14 18.52	-54 48.6	F Longmore, Tritton 1980	
315 -1.1	LoTr 9	14 37.43	-61 07.1	F Longmore, Tritton 1980	
316 -1.1	LoTr 10	14 42.47	-61 01.2	F Longmore, Tritton 1980	
327+14.1*	ESO-328-04	14 58.15	-41 43.1	Holmberg, etal. 1978	R
329+12.1*	ESO-328-40	15 14.32	-42 26.4	Holmberg, etal. 1978	R
313-12.1	LoTr 11	15 15.97	-72 03.3	F Longmore, Tritton 1980	
341+17.1*	ESO-450-16	15 45.58	-31 58.1	Holmberg, etal. 1978	R
325 -1.1	VB 2	15 47.3	-56 12	F van den Bergh 1979	
326 -1.2	VB 3	15 49.0	-56 15	F van den Bergh 1979	
343+16.1*	ESO-451-03	15 55.92	-31 03.3	Holmberg, etal. 1980	R
346+19.1*	ESO-515-19	15 56.92	-27 05.9	Lauberts, etal. 1981	R
345+10.1*	ESO-390-05	16 21.13	-34 08.2	Holmberg, etal. 1978	R
347 +7.1*	ESO-391-02	16 38.50	-34 11.6	Holmberg, etal. 1978	
343 +3.1	SuWt 3	16 40.95	-39 57.8	F West, Schuster 1980	
339 -0.1*	VB 1	16 41.8	-46 03	F van den Bergh 1978	R
339 -3.1*	MaC 1-3	16 57.72	-47 41.2	F MacConnell 1978	
7+10.1*	MaC 1-4	17 23.74	-16 46.0	F MacConnell 1978	
358 +3.9	Ae 2-B	17 24.63	-28 08.6	F Allen 1979	
357 +2.8	Ae 2-D	17 26.27	-29 44.8	F Allen 1979	
359 +3.4	Ae 2-E	17 27.10	-27 28.1	F Allen 1979	
358 +2.4	Ae 2-F	17 27.34	-28 33.7	F Allen 1979	
1 +4.1*	MaC 1-5	17 28.98	-24 42.6	F MacConnell 1978	
359 +2.5	Ae 2-G	17 29.22	-28 12.4	F Allen 1979	
357 +1.2	Ae 2-H	17 30.07	-30 24.4	F Allen 1979	
359 +2.6	Ae 2-I	17 31.08	-27 54.0	F Allen 1979	
0 +2.1	Ae 2-J	17 32.45	-27 22.2	F Allen 1979	
357 +1.3	TrBr 4	17 32.52	-30 19.6	F Terzan, etal. 1978	
359 +2.7	Ae 2-K	17 33.09	-27 58.9	F Allen 1979	

Design.	Name	R.A. (1950)	Decl.	Discovery	Rem.
359 +1.3	19 W 32	17 <sup>h</sup> 35. <sup>m</sup> 87	-28°55.0'	Wouterloot, Dekker 1979	R
0 +2.2*	ESO-520-13	17 36.25	-27 14.3	Holmberg, etal. 1978	
27+16.1*	DeHt 2	17 39.18	+3 08.4	F Dengel, etal. 1980	
357 -2.1	Ae 2-M	17 44.52	-32 19.8	F Allen 1979	
358 -2.3*	MaC 1-7	17 48.15	-31 13.0	F MacConnell 1978	
358 -2.4	Ae 2-O	17 48.50	-32 02.4	F Allen 1979	
0 -1.7	Ae 2-Q	17 50.23	-29 16.5	F Allen 1979	
358 -2.5	Ae 2-R	17 50.38	-31 25.0	F Allen 1979	
358 -3.3*	MaC 1-8	17 52.79	-31 38.0	F MacConnell 1978	
13 +5.2*	MaC 1-9	17 53.03	-14 06.4	F MacConnell 1978	
28+10.1	WeSb 3	18 03.46	+0 22.3	F Weinberger, Sabbadin 1981	
5 -2.2*	MaC 1-10	18 06.12	-25 05.2	F MacConnell 1978	
3-4.10*	ESO-456-64	18 07.40	-27 51.5	F Holmberg, etal. 1978	R
0 -6.1*	ESO-456-73	18 09.37	-32 06.8	F Holmberg, etal. 1978	
8 -2.1*	MaC 1-11	18 11.82	-22 44.9	F MacConnell 1978	
21 +2.1*	MaC 1-12	18 18.62	-8 33.2	F MacConnell 1978	
22 +1.1*	MaC 1-13	18 25.85	-8 45.4	F MacConnell 1978	
9 -6.1*	ESO-522-29	18 26.00	-23 53.3	F Lauberts, etal. 1981	R
44+10.1*	We 3-1	18 31.77	+14 46.9	F Weinberger 1978	
20 -3.1*	MaC 1-14	18 38.40	-13 14.6	F MacConnell 1978	
31 -0.1	WeSb 4	18 48.09	-0 06.8	F Weinberger, Sabbadin 1981	
19 -8.1*	MaC 1-15	18 54.37	-15 33.3	F MacConnell 1978	
23 -7.1*	MaC 1-16	18 58.56	-12 02.7	F MacConnell 1978	
30 -7.1*	MaC 1-17	19 10.29	-5 26.5	F MacConnell 1978	
19-13.1*	DeHt 3	19 14.17	-18 07.0	F Dengel, etal. 1980	
48 -1.1*	DeHt 4	19 24.12	+13 13.6	F Dengel, etal. 1980	
58 -5.1	WeSb 5	19 59.48	+19 46.3	F Weinberger, Sabbadin 1981	
111+11.1*	DeHt 5	22 18.36	+70 40.9	F Dengel, etal. 1980	
110 -1.1	WeSb 6	23 10.89	+59 01.5	F Weinberger, Sabbadin 1981	

## REMARKS

- 3-4.10 Nebulous oval.  
 9 -6.1 Faint ring around stellar centre.  
 228-22.1 Discovered indep. by Longmore, Tritton (1980), F.  
 239-12.1 PN or galaxy, starlike centre.  
 239-18.1 PN or galaxy, starlike centre.  
 241 +0.1 Starlike centre.  
 242 -3.1 PN or galaxy.  
 248-12.1 PN or galaxy, starlike centre.  
 249-22.1 Starlike centre.  
 254 -6.1 PN or galaxy.  
 262 -4.1 PN or galaxy. LoTr 2, F.  
 263 -8.1 PN or galaxy.  
 265 +5.1 PN or galaxy.  
 265 -4.1 LoTr 3, F.  
 291+19.1 LoTr 4, confirmed by Longmore, Tritton (1980), F.  
 298+34.1 See also Hawley (1981).  
 327+14.1 Starlike centre.  
 329+12.1 Starlike centre.  
 339 -0.1 G 339.2-0.4, orig. classif. by Clark, etal. (1973)  
 as radio SNR.  
 341+17.1 PN or galaxy.  
 343+16.1 PN or galaxy, starlike centre.  
 345+10.1 PN or galaxy.  
 346+19.1 B star in ring.  
 359 +1.3 Confirmed by Isaacman, etal. (1980), F.

\* Possible planetary nebula. F Finding chart. R Remarks.

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TABLE 2 MISCLASSIFIED PLANETARY NEBULAE

Design.	Name	Remarks and references
0 -0.1	Bl 3-4	H $\alpha$ only, in RCW 141 but perhaps not related (Sanduleak, 1976) No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
0 -0.2	Bl 3-22	Faint H $\alpha$ , RCW 139? (Sanduleak, 1976) No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
0 -1.3	Bl 0	H $\alpha$ only (Sanduleak, 1976) No emission (Allen, 1979)
0 -1.4	Bl 3-14	Unresolved, H $\alpha$ only (Webster, 1975) Symbiotic star (Allen, 1979) Not a PN (Kohoutek, 1982)
1 +0.1	Bl 3-2	Only H $\alpha$ in emission and cont. (Sanduleak, 1976) No emission (Allen, 1979)
1 -0.1	Bl 3-11	Not a PN (Vorontsov-Velyaminov, et al. 1973) Be pec (Sanduleak, 1976; Allen, 1979)

Design.	Name	Remarks and references
1 -0.2	B1 3-3	No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
1 -0.3	B1 3-19	Be star (Allen, 1979) Not a PN (Kohoutek, 1982)
1 -1.1	B1 M	H $\alpha$ only (Sanduleak, 1976) No emission (Allen, 1979)
65-27.2	CiPg	No [O III] emission in M 15 detected except for Ps 1 (Aurière, etal. 1978) Peterson's identification of enhanced H $\alpha$ core emission with a PN unlikely (Phillips, etal. 1978)
74 +1.1	M 1-76	IR spectrum quite unusual, may be high- ly reddened P Cygni-type star (Bidel- man, Krumenaker, 1972) Not a PN but a BQ[] star (Sabbadin, Bianchini, 1979)
176 -0.1	NGC 1985	Not a emission nebula (Purgathofer, Perinotto, 1980) Reflection nebula around a F1(V) star (Sabbadin, Hamzaoglu, 1981)
248 +8.1	He 2-10	Dwarf em. galaxy (Allen, etal. 1976) Emission line dwarf galaxy, d = 10 Mpc (D'Odorico, Rosa, 1981)
328-17.1	He 2-269	Dwarf emission galaxy (IC 4662) (Pastoriza, 1970)
356 +1.1	Th 3-21	No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
356 -2.2	M 1-27	VLE? (Sanduleak, 1976) Be star with [N II], VLE (Allen, 1979)
357 +3.3	Th 3-17	H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979)
357 +3.5	Th 3-16	H $\alpha$ only (Sanduleak, 1976) Be star (Allen, 1979)
357 +2.1	Ap 1-1	No emission (Allen, 1979)
357 +2.3	Th 3-20	Only faint H $\alpha$ (Sanduleak, 1976) Symbiotic star (Allen, 1979)
357 -3.1	He 2-294	Faint H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979)
358 +3.5	Th 3-18	Faint H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979)



Design.	Name	Remarks and references
358 +2.1	Ap 1-3	No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
358 +2.3	Th 3-29	H $\alpha$ only (Sanduleak, 1976) Little or no [O III] (Allen, 1979) Not a PN (Kohoutek, 1982)
358 +1.2	Th 3-31	Faint H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979) Not a PN (Kohoutek, 1982)
358 -0.1	B1 3-5	Early M star (Allen, 1979) Not a PN (Kohoutek, 1982)
358 -1.2	Sa 3-80	H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979)
358 -2.2	B1 3-6	H $\alpha$ only (Sanduleak, 1976) No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
359 +2.1	Th 3-30	H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979) Not a PN (Kohoutek, 1982)
359 +2.2	Ap 1-5	No emission (Allen, 1979) Not a PN (Kohoutek, 1982)
359 +2.4	Th 3-32	Be star with [N II] (Allen, 1979) Not a PN (Kohoutek, 1982)
359 +1.2	Th 3-36	M star (Allen, 1979) Not a PN (Kohoutek, 1982)
359 -2.1	B1 L	H $\alpha$ only (Webster, 1975) H $\alpha$ only (Sanduleak, 1976) Symbiotic star (Allen, 1979)

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of large angular dimensions which it was still possible to find on the Palomar Observatory Sky Atlas (15 objects), or discovered in the ESO/SRC Southern Sky Survey (34 objects). They increase substantially the statistics of near-by planetaries, which is important for determining the space density, the total number, and the birth-rate of planetaries in our Galaxy.

It is recommended that 33 objects be removed from the CGPN, the classification of which as emission-line stars of various types, symbiotic stars, reflection nebulae or emission galaxies seems now to be more or less guaranteed. The present list of misclassified planetary nebulae (Table 2) includes only a small fraction of all doubtful objects which still can be found in various lists of planetaries and in the CGPN. This is not surprising as - as we should remember - one of the main aims of the CGPN was to provoke further and more detailed observations just in order to enable a reliable classification of PN. The list of confirmed PN is indeed very desirable, but it can only result from sufficient observational data as well as from a necessary theory which would interpret the observations and give a correct picture of a PN in any evolutionary stage.

Planetary nebulae are generally discovered and classified according to their morphology and emission spectrum. They can possibly be mistaken for objects showing some morphological or spectroscopical similarities, but having physical properties very different from those of typical PN. The main criteria which can help to distinguish PN from other objects are summarized below (Table 3); they refer to observable properties (and not to absolute or derived parameters, like mass or luminosity), and one should be careful in applying them because they are valid only in a statistical sense.

The correct classification of extended PN does not in general bring large problems if sufficient observational material is available. On the contrary, the unresolved young planetaries still cannot be reliably recognized due to the incomplete theory of the origin of PN. For such objects the

TABLE 3a

PN mistaken for:	Distinguishing criteria:
Emission-line galaxies	<p>Morphology: non-stellar nucleus unresolved, very bright nucleus (Sy gal.)</p> <p>High galactic latitude (generally)</p> <p>High radial velocity</p> <p>Continuum and em. lines have the same spatial extension</p> <p>Broad em. lines (Sy gal.); <math>H_{\beta}</math> comparable to [OIII] 5007 for narrow-emission-gal. and for Sy 1 gal., <math>H_{\beta}</math>/[OIII] 5007 <math>\sim</math> 0.1 for Sy 2 gal.</p> <p>(Atlas of Seyfert gal.: Khachikian, Weedman, 1974)</p>
Supernova remnants	<p>Morphology: predominantly curved or crisp filaments, fragmentary nebulosities or part-shell structure (see van den Bergh, et al. 1973; van den Bergh, 1978)</p> <p>High expansion velocity (except for very old SNR)</p> <p>Emission-line ratios <math>H_{\alpha}</math>/[NII], <math>H_{\alpha}</math>/[SII], [SII] 6717/6731 (see Sabbadin, D'Odorico, 1976)</p> <p>Great strength of the forbidden lines compared with the H lines</p>
Reflection nebulae	<p>Non-thermal radio spectrum; X-ray source</p>
H II regions (dense, classical, giant)	<p>Morphology: mostly amorphous</p> <p>Continuous spectrum; the nebula is generally bluer than the star; frequently associated with dark nebulae, H II regions, young star clusters</p> <p>Associated with molecular clouds</p> <p>Spectra of lower excitation than PN: [OIII] 5007 + 4959/<math>H_{\beta}</math> &lt; 7, HeII 4686 absent (see Chopinet, L.-Zuckermann, 1976; for a typical spectrum see Terzian, Balick 1974)</p> <p>Emission-line ratios <math>H_{\alpha}</math>/[NII], <math>H_{\alpha}</math>/[SII], [SII] 6717/6731 (see Sabbadin, D'Odorico, 1976)</p> <p>High reddening, strong local obscuration</p> <p>For the IR and radio criteria see Panagia (1978)</p>

TABLE 3b

PN mistaken for:	Distinguishing criteria:
Nebulae associated with WR stars	Morphology: amorphous or shell-structured H II regions, clumpy appearance, thin sheets of gas, filaments, bubbles (for classification see Chu, 1981) WR star (Population I) located at a preferred position inside the nebula
H II regions (compact)	Associated with molecular clouds Spectra of lower excitation than PN: [OIII] 5007 + 4959/H $\beta$ <7, He II 4686 absent (see Chopinet, L.-Zuckermann, 1976)
Type I Symbiotic stars (Z And, AG Peg, CI Cyg)	High reddening, strong local obscuration Classification, criteria for IR and radio observations: see Habing, Israel (1979)
Slow novae (RR Tel, RT Ser, AS 239?)	Composite spectrum (G or later + B + nebular) Absorption lines of a late component visible (CaI, CaII, TiO) Emission lines of HeII, [OIII], [FeIII] or higher ionized atoms present (the width $\lesssim$ 100 km/s) Variability possible (amplitude up to 3 mag) IR photometry: S-type (see Duerbeck, Seitter, 1982) Outburst similarities with classical and recurrent novae (RS Oph); a single nova-like eruption typically of 2-7 mag amplitude; possible mira-like variability TiO absorption in most of the slow novae IR photometry: bright continua of M stars, additional presence of circumstellar dust in some objects (see Allen, 1980)

TABLE 3c

PN mistaken for:	Distinguishing criteria:
Be and related stars	<p>Spectrum late O to early A, high luminosity (V to III)            Visual spectrum: emission lines of H, sometimes of HeI, FeII, MgII - not HeII, [OIII], [NeIII], [OII]            Brightness variations up to about 1 mag frequent            IR excess reported in about 50% Be stars            No detectable radio emission in normal Be stars (see Seitter, Duerbeck, 1982)</p>
Ke, Me, Ce, Se stars	<p>Mostly long period variables (Mira stars), semiregular, irregular, flare stars            Emission lines of H, CaII, HeI, FeI, FeII, TiII, [SII], sometimes [FeII] - not HeII, [OIII], [NeIII]</p>
Pre-main sequence emission objects	<p>Generally very strong association with interstellar clouds or star formation regions; strong IR sources (see Strom, et al., 1975)</p>
T Tauri stars	<p>Irregular optical variability (range 1-2 mag, FU Ori stars as large as 5 mag)            Spectral types Fe to Me; UV excess; IR excess            Emission lines: H, CaII, FeI, FeII, TiII, [SII] - but not HeII, [OIII]; P Cygni profiles</p>
Herbig Ae, Be stars	<p>Spectral types B1e to F8e            Optical spectrum ranging from those with H only through the rich emission spectrum (V 380 Ori); similar to T Tauri stars</p>
Herbig-Haro objects	<p>Variable "semistellar" patches of nebulosities, sometimes complex structure associated with a single IR source            Very high reddening            Generally low excitation emission spectrum dominated by the B. lines and by [SII] and [OII]; faint continuum</p>

morphological criterium is naturally not applicable, and their spectra may be unlike those of conventional PN. The symbiotic stars of Type II (also called BQ[] stars, e.g. V 1016 Cyg, HM Sge, HBV 475) are frequently regarded as PN in an early evolutionary stage, although some spectral similarities between very young PN and slow novae also exist. More detailed UV, visual and IR spectroscopy, as well as radio observations will be necessary in order to establish definitively the relationship between young PN and various emission line objects.

I would like to encourage the observers operating with appropriate telescopes and measuring facilities to occupy themselves with doubtful PN. We have started a comprehensive programme of a spectroscopic verification of suspected PN, but due to the large number of such objects any help or collaboration would be appreciated.

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- SEATON: Aller mentioned NGC 6302 several times. Is it a PN or a slow nova?
- KOHOUTEK: The classification of this peculiar nebula is very uncertain, but it is still included in the PN.
- TERZIAN: Do you think that NGC 7027 is a PN?
- KOHOUTEK: This nebula really is rather strange but is, I believe, the most investigated object among PN. At present, it would not be advisable to change the classification of NGC 7027. Even more observations have to be awaited, especially of its central star.
- TERZIAN: Do you know if the Southern Sky Atlas has been completely surveyed for PN?
- KOHOUTEK: Longmore (1977) and Longmore and Tritton (1980) published two lists of new planetary nebulae found in the Southern Sky Atlas. I have also discovered some new objects in it, but I am sure that this Atlas still contains many PN which have not yet been found.
- REAY: The lack of new discoveries in the southern sky is probably because no-one has conducted a systematic search for PN on the scale of the searches on the POSS plates.
- FORD: What is known about the emission line object discovered by Peterson near the globular cluster NGC 6401?
- PEIMBERT: Recillas-Cruz and I have obtained spectra of this object in two different observing seasons and we find that it is a symbiotic star that shows H and He lines in emission and an underlying M-type spectrum with Ti O bands in absorption.
- KOHOUTEK: G. Schnur and myself took spectra of this object too and we can confirm Peimbert's result. For this reason, this symbiotic star has not been included in the list of new PN.
- WALSH: Are there plans for a second edition of the Perek and Kohoutek catalogue?
- KOHOUTEK: The second edition of this catalogue is in preparation but not in the same form as the first edition. The new edition will probably contain only data relating to the discovery and the identification of the individual objects, mainly their positions and identification charts.