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New and misclassified Planetary Nebulae

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Altogether 86 objects discovered in the period 1991-1994 have been accepted by the author as new PN (Table 1). In Appendices A and B to this table the lists of possible pre-PN as well as of possible post-PN, respectively, are given. Table 2 presents 6 misclassified objects which we suggest removing from CGPN.

Key words: Key words: catalogues - planetary nebulae: general stars: emission-line, post-AGB, pre-WD

AAA subject classification: 134

This fifth supplement to the "Catalogue of Galactic Planetary Nebulae" (CGPN - Perek,Kohoutek, 1967) covers the period 1991-1994 and contains four lists. In Table 1 we present 86 new PN, their PK designations, names and equatorial coordinates together with the references of their discovery as PN (!). An asterix affixed to the gallactic number means again an uncertain classification (suspected or possible PN); the letter F means the existence of a finding chart.

The summary of the main properties of a PN and of a central star (Paper III) was used. We believe that the mean values given there are still valid, although some "limits" (in parentheses) of the data have to be changed. This concerns mainly PN with very young central stars (stellar temperature down to $\approx$ 20000 K, gravity down to log g $\approx$ 3-4, variable spectrum) as well as old PN (diameter of the main nebular body up to $\approx$ 2.5 pc). Besides, large exp. velocity up to $\approx$ 300 km/s was measured for the nebular outer structure.

There exist objects which are evolutionarily before and after the stage of PN and as in Paper IV they have not been regarded as new PN (Table 1).

The list of possible pre-PN is given in Appendix A to Table 1. This list is a continuation of the Appendix to Table 1 given in the last Supplement (Paper IV). It contains 147 objects which are in transition phase between AGB and PN.

The list of possible post-PN is given in Appendix B to Table 1. In that list there are 69 stars on the evolutionary way to WD and already without nebulae.

Great effort has been made during the last years in investigating the pre-PN and post-PN, and our appendices should support further studies of these important stages of the stellar evolution.

In Table 2 we suggest removing 6 objects from the Catalogue or from the previous Supplements (Papers I,II,III,IV) as misclassified PN. Again, we did not remove objects which belong to some groups mentioned in Paper IV: mainly symbiotic stars and objects having Hα emission lines only.

Our number of PN differs slightly from that given in SECGPN (Acker et al., 1992) which can be explained by different classification criteria used (see Paper II and III), especially concerning the classification of some objects simultaneously as PN and symbiotic stars (SS). The catalogue of symbiotic stars (Allen, 1984) contains 144 objects. Originally 60 of them were classified as PN; until now 17 were removed as misclassified for different reasons, so that 43 objects are in CGPN still among PN. In SECGPN there are 8 among true and probable PN, and 2 among possible PN. The best example of PN classified also as SS is BI Cru, for which Schwarz and Corradi (1992) found a large bipolar nebula. The name "symbiotic planetary nebulae" would be appropriate for such objects.

The designation of the objects as misclassified PN is difficult and somewhat questionable even if the morphology and the spectra of the nebulae are known. A better nomenclature - what is a PN - would be desirable.

Note: The poster having the same title as this article appeared at the IAU Symp. No.180 (Planetary Nebulae), Groningen, The Netherland, August 1996 - the abstract will be published in the proceedings to this symposium.

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Table 1: New Planetary Nebulae (1991-1994)

PK Design.		Name	R.A. (1950)	Dec.		Discovery as PN	Remarks
			h m	° '			
124+02.1	*	KLSS 2–7	00:59.20	+65:30.5		Kerber al. (1994)	R
129−05.1		KLSS 2–8	01:36.83	+56:19.6		Kerber al. (1994)	R
160−02.1		WSLS 1	04:33.83	+42:41.2	F	Weinberger al. (1994)	
173+03.1	*	Pu 2	05:39.20	+36:07.7	F	Purgathofer (1980)	R
193−04.1		KLSS 1–5	05:54.28	+15:25.2		Kerber al. (1994)	R
240−19.1	*	KLSS 1–9	06:22.76	−33:03.1		Kerber al. (1994)	R
228−11.1	*	KLSS 1–7	06:35.47	−18:54.8		Kerber al. (1994)	R
197+05.1		KLSS 1–6	06:40.53	+16:51.8		Kerber al. (1994)	R
217−00.1	*	MaC 1–1	06:56.24	−03:37.0	F	MacConnell (1978); new García–Lario al. (1993)	R
238−01.1	*	KLSS 1–8	07:31.31	−23:19.6		Kerber al. (1994)	R
251−03.1		CSST 1	07:55.33	−35:58	F	Cappellaro al. (1991)	
257−05.1		KLSS 1–10	08:03.85	−41:47.9		Kerber al. (1994)	R
251+00.1		CSST 2	08:11.38	−32:52	F	Cappellaro al. (1991)	R
257−02.1		Vo 2	08:14.38	−39:42.6		Volk (1988)	R
260−03.1		WRA 16–20	08:21.96	−43:03.0		Wray (1966)	R
264−03.1		WRA 17–20	08:32.83	−46:15.3		Wray (1966)	R
260+00.1		Vo 3	08:40.43	−40:33.3		Volk (1988)	R
286−06.2		WRA 17–40	10:05.46	−64:07.1		Wray (1966)	R
280+01.1		KLSS 1–12	10:08.70	−53:41.1		Kerber al. (1994)	R
292+01.3		WRA 16–93	11:28.50	−59:00.5		Wray (1966)	R
299+00.1	*	BI Cru	12:20.67	−62:21.6		Schwarz, Corradi (1992)	R
310+01.1		Vo 4	13:49.91	−60:19.1		Volk (1988)	R
309−02.1	*	MaC 1–2	13:50.77	−64:44.7	F	MacConnell (1978)	R
312−00.1	*	V 417 Cen	14:12.22	−61:40.0		Van Winckel al. (1994)	
85+52.1	*	PG 1520+525	15:20.33	+52:32.8		Jacoby, Van De Steene (1993)	
326+00.1	*	WRA 16–185	15:41.16	−53:52.7		Wray (1966)	R
52+50.1	*	BD+33 2642	15:50.05	+33:05.8		Napiwotzki (1993)	
329−02.3		HeFa 1	16:08.63	−54:15.9		Henize, Fairall (1983)	R
346+14.1	*	KLSS 1–14	16:11.78	−30:24.2		Kerber al.(1994)	R
348+04.1		KLSS 1–15	16:54.62	−35:20.1		Kerber al.(1994)	R
332−09.1	*	CPD−56 8032	17:04.80	−56:51.0		prob. Webster, Glass (1974)	R
358+07.2		TaJu 8	17:09.4	−26:22		Thompson al. (1991)	R

Table 1: New Planetary Nebulae (1991-1994) - continued

PK Design.		Name	R.A. (1950)	Dec.		Discovery as PN	Remarks
			h m	° '			
354+04.4		Ta 139	17:09.68	−30:36.6	F	Cuisinier al. (1994)	R
355+04.2		Ta 140	17:11.85	−30:17.3	F	Cuisinier al. (1994)	R
331−12.1		CPD−59 6926	17:11.94	−59:26.1		Parthasarathy al. (1993)	R
354+04.3		Ta 233	17:12.65	−31:18.7		Terzan (1992)	R
355+03.4		Ta 137	17:15.84	−30:50.8	F	Cuisinier al. (1993)	R
0+06.2		Trz 41	17:17.30	−24:48.9		Thompson al. (1991)	R
355+02.4		Ta 138	17:21.82	−31:26.0	F	Cuisinier al. (1993)	R
359+05.3		TaJu 19	17:22.2	−26:10		Thompson al. (1991)	R
2+05.2		K 5–3	17:27.64	−23:42.8	F	Kohoutek (1994)	
4+06.3	*	G 4.4+6.4	17:29.00	−21:47.1	F	Xilouris al. (1994)	
357+01.4	*	K 6–2	17:30.63	−30:40.6	F	Kohoutek (1994)	R
353−01.1	*	K 6–3	17:32.12	−34:45.8	F	Kohoutek (1994)	
1+03.1		K 5–5	17:32.27	−25:40.9	F	Kohoutek (1994)	
3+04.1		K 5–6	17:32.48	−23:09.9	F	Kohoutek (1994)	R
3+04.2		K 5–7	17:34.28	−24:01.7	F	Kohoutek (1994)	
0+02.3	*	K 6–4	17:34.57	−27:47.4	F	Kohoutek (1994)	
354−01.1	*	K 6–5	17:35.58	−34:26.0	F	Kohoutek (1994)	
353−02.2		K 5–8	17:35.92	−35:45.4	F	Kohoutek (1994)	
359+01.4	*	K 6–6	17:36.15	−28:13.5	F	Kohoutek (1994)	R
0+01.1	*	K 6–7	17:36.38	−27:26.2	F	Kohoutek (1994)	
0+01.2	*	K 6–8	17:36.51	−27:45.8	F	Kohoutek (1994)	
355−01.2	*	K 6–9	17:36.71	−33:34.0	F	Kohoutek (1994)	
1+02.2		K 5–10	17:38.30	−26:02.4	F	Kohoutek (1994)	
2+02.1		Ta 5	17:39.40	−25:44.1		Terzan (1989)	R
1+01.2	*	K 6–10	17:40.16	−26:43.0	F	Kohoutek (1994)	
2+02.2		Ta 1580	17:40.56	−25:35.4		Terzan (1989)	R
353−03.2	*	K 6–11	17:41.21	−36:12.8	F	Kohoutek (1994)	
2+01.3		K 5–15	17:42.05	−25:42.8	F	Kohoutek (1994)	
2+01.2		Ta 1567	17:42.38	−25:37.0		Terzan (1989)	R
356−02.3	*	K 6–12	17:44.00	−33:14.6	F	Kohoutek (1994)	
4+02.2		IRAS 17445–2412	17:44.47	−24:12.1		Pottasch al. (1988)	R
353−04.2	*	K 6–13	17:44.62	−36:49.1	F	Kohoutek (1994)	
355−03.4		K 5–18	17:45.15	−35:04.6	F	Kohoutek (1994)	
3+01.1		Ta 2111	17:45.40	−24:40.5		Terzan (1989)	R
5+02.2		K 5–19	17:46.81	−23:26.9	F	Kohoutek (1994)	
356−03.5		K 5–20	17:46.89	−33:13.4	F	Kohoutek (1994)	
359−01.4	*	IRAS 17486–3001	17:48.61	−30:01.8		Ratag al. (1990)	R
358−02.6	*	K 6–16	17:48.76	−31:17.1	F	Kohoutek (1994)	
1−00.4	*	K 6–17	17:48.99	−28:01.6	F	Kohoutek (1994)	
5−01.1	*	IRAS 18023–2513	18:02.30	−25:12.9		Pottasch al. (1988)	R
353−12.1		WRA 16–411	18:23.18	−40:31.7		Wray (1966)	R
11−07.1	*	V 348 Sgr	18:37.33	−22:57.4	F	prob. Pollacco al. (1990)	
32−00.1		CBSS 2	18:51.54	−00:23.8	F	Cappellaro al. (1994)	
32−01.1		CBSS 1	18:53.67	−01:37.9	F	Cappellaro al. (1994)	
33−02.2		CBSS 3	18:57.72	−00:18.3	F	Cappellaro al. (1994)	
3+01.1	*	KLSS 1–1	19:20.70	+18:36.4		Kerber al. (1994)	R
55+01.1		KLSS 1–2	19:24.49	+20:23.2		Kerber al. (1994)	R
60+01.2		IRAS 19367+2458	19:36.78	+24:58.6	F	Hu, Dong (1992)	R
65+03.1		TuWe 1	19:41.82	+30:06.8		Tamura, Weinberger (1993)	
29−21.1	*	LSIV -12 111	19:59.05	−12:49.6		prob. Conlon al. (1993)	R
359−33.1		CD−41 13967	20:16.09	−41:41.0		McCarthy al. (1991)	R
80−10.1	*	RXJ 2117+34	21:15.06	+33:59.8		Werner al. (1993)	R
110+01.1	*	IRAS 22568+6141	22:56.85	+61:41.6	F	Manchado al. (1989)	R
120+18.1	*	Sh 2–174	23:42.95	+80:40.2		Napiwotzki, Schönberner (1993)	R

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

Remarks

0+06.2	Discovery as diff. object Terzan (1985), F.
2+01.2	K 5–16, F; confirmed SECGPN (002.8+01.8, Te 1567), F.
2+02.1	K 5–11, F; confirmed SECGPN (002.3+02.2, Te 5), F.
2+02.2	K 5–13, F; confirmed SECGPN (002.6+02.1, Te 1580), F.
3+01.1	K 6–14, F; confirmed SECGPN (003.9+01.6, Te 2111), F.
3+04.1	IRAS 17324–2309; PM 1–159 (Preite–Martinez, 1988).
4+02.2	SECGPN: PBOZ 16 (poss. PN); confirmed Kohoutek (1994): K 5–17, F.
5−01.1	Confirmed SECGPN (005.4–01.9, PBOZ 34), F.
29−21.1	See Kilkenny, Pauls (1990).
53+01.1	See Kerber, Weinberger (1995), No.14.
55+01.1	See Kerber, Weinberger (1995), No.15.
60+01.2	SECGPN (060.4+01.5, PM 1–310, HuDo 1), F.
80−10.1	Discovered indep. by Kawaler, Appleton (1992); see Motch et al. (1993), F; see Appleton et al. (1993), F.
110+01.1	SECGPN (110.1+01.9, PM 1–339), F.
120+18.1	Coord. correspond to the central star GD 561, for Sh 2–174: RA = 23 42.6, D = +80 23 (1900); see Tweedy, Napiwotzki (1994), F.
124+02.1	See Kerber, Weinberger (1995), No.1.
129−05.1	See Kerber, Weinberger (1995), No.2.
173+03.1	Wrong design. 175+06.1 was calculated in Suppl.2 because of wrong RA given in Purgathofer (1980); both the correct design. 173+03.1 and the correct RA are given in this Supplement and they should be used for Pu 2; SECGPN (173.5+03.2), F.
193−04.1	See Kerber, Weinberger (1995), No.3, F.
197+05.1	See Kerber, Weinberger (1995), No.7.
217−00.1	IRAS 06562–0337; new PN in S2, misclassified in S4 according to Acker et al. (1987) who concluded, that it is not a PN but Hα emiss. line star.
228−11.1	See Kerber, Weinberger (1995), No.6.
238−01.1	See Kerber, Weinberger (1995), No.8, F.
240−19.1	See Kerber, Weinberger (1995), No.5.
251+00.1	Discovered indep. by Neckel, Vehrenberg (1990), F.
257−02.1	Confirmed SECGPN (257.1–02.6, Vo 2, PM 1–38, IRAS 08143–3942), F.
257−05.1	See Kerber, Weinberger (1995), No.9.
260+00.1	Confirmed SECGPN (260.7+00.9, Vo 3, PM 1–41, IRAS 08355–4027 ?), F.
260−03.1	Confirmed SECGPN (260.7–03.3, Wray 16–20), F.
264−03.1	Confirmed SECGPN (264.4–03.6, Wray 17–20), F.
280+01.1	See Kerber, Weinberger (1995), No.11, F.
286−06.2	Confirmed SECGPN (286.2–06.9, Wray 17–40), F.
292+01.3	Confirmed SECGPN (292.7+01.9, Wray 16−93, IRAS 11285–5900).
299+00.1	See Corradi, Schwarz (1993).
309−02.1	Confirmed SECGPN (309.5–02.9, MaC 1–2), F.
310+01.1	Confirmed SECGPN (310.4+01.3, Vo 4, IRAS 13499–6019), F.
326+00.1	See Noumaru, Ogura (1993), F; SECGPN: rejected as HII reg.?
329−02.3	Not identical with WRA 17–75 according to coordinates; confirmed SECGPN (329.5–02.2, Wray 17–75), F.
331−12.1	SAO 244567=IRAS 17119–5926=He 3–1357; color-selected PPN cand. (Volk, Kwok, 1989); see Bobrowsky (1994).
332−09.1	Prob. original discovery WRA 15–1621 (Wray, 1966); confirmed SECGPN (332.9–09.9, He 3–1333), F.
346+14.1	See Kerber, Weinberger (1995), No.12.
348+04.1	See Kerber, Weinberger (1995), No.13.
353−12.1	Confirmed SECGPN (353.7–12.8, Wray 16–411, IRAS 18232–4031), F.
354+04.3	Confirmed Acker et al.(1992a).
354+04.4	Discovery as diff. object by Terzan (priv. communication to Cuisinier et al. (1994)).
355+04.2	Discovery as diff. object by Terzan (priv. communication to Cuisinier et al. (1994)).
355+03.4	Very prob. =Th 3–5 (PK 355+3.1) which lies close to Ta 137; identif. in The (1964) wrong?; Th 3–5 rejected in SECGPN because "no em.-line object detected" (Acker et al., 1987); discovery of Ta 137 as diff. object by Terzan (priv. comm. to Cuisinier et al. (1993)).
355+02.4	Discovery as diff. object by Terzan (priv. communication to Cuisinier et al. (1993)).
357+01.4	IRAS 17307–3040; GPS 357.141+1.219 (Helfand et al., 1992).
358+07.2	SECGPN (358.0+07.5, TeJu 8), F; discovery as diff. object by Terzan, Ju (1980), F.
359+05.3	SECGPN (359.8+05.2, TeJu 19), F; discovery as diff. object by Terzan, Ju (1980), F.
359+01.4	WR 99; SECGPN: LuSt1, rejected as symbiotic star.
359−01.4	SECGPN: RPZM 2–43 (poss. PN); see Kohoutek (1994): K 6–15, F.
359−33.1	He 3–1863; prob. original discovery Thackeray (1977); confirmed SECGPN (359.2–33.5, CRBB 1, IRAS 20160–4140), F.

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WRA	Wray J.D., 1966, Thesis, Northwestern University, Illinois, U.S.A. (and to CPD–56 8032)
G 4.4	Xilouris K.M., Papamastorakis J., Sokolov N., Paleologou E., Reich W., 1994, A&A 290, 639.

Appendix A to Table 1: Possible Pre-Planetary Nebulae (1991-1994)

Name	R.A. (1950)	Dec.	Remarks and references
	h m s	° ' "	
IRAS 04296+3429	04:29:40.3	+34:29:53	Likely between AGB and PN (Kwok et al.,1989); see Meixner et al.(1994).
IRAS 04505−1006	04:50:35.3	−10:06:54	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 05113+1347	05:11:18.1	+13:47:04	PPN candidate (Kwok, 1993).
IRAS 05381+1012	05:38:11.0	+10:12:56	PPN candidate (Kwok, 1993).
HD 46703	06:33:49.3	+53:33:36	SAO 25845; F supergiant as PPN candidate (Tamura et al.,1993).
IRAS 06472−3713	06:47:13.9	−37:13:08	ST Pup; color-selected PPN candidate (Volk, Kwok, 1989, Table 3).
IRAS 06530−0213	06:53:00.9	−02:13:35	PPN candidate (Kwok, 1993).
IRAS 06562−0337	06:56:14.8	−03:37:03	In the transition phase post-AGB to PN (Manchado et al.,1994).
IRAS 07134+1005	07:13:25.3	+10:05:09	SAO 96709=HD 56126; color-selected PPN candidate (Volk, Kwok, 1989, Table 3); likely between AGB and PN (Kwok et al.,1989).
IRAS 07331+0021	07:33:07.1	+00:21:40	AI CMi; color-selected PPN candidate (Volk, Kwok, 1989, Table 3).
IRAS 08005−2356	08:00:32.5	−23:56:16	PPN ass. with low-latitude F-type supergiant (Slijkhuis et al.,1991).
IRAS 09032−3953	09:03:12.4	−39:53:10	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 10194−5625	10:19:24.1	−56:25:23	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 10197−5750	10:19:44.8	−57:50:32	AFGL 4104; color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 10481−6930	10:48:08.8	−69:30:03	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 11000−6153	11:00:02.6	−61:53:33	SAO 251227=HD 95767; F0Ib star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); PPN candidate (Volk, Kwok, 1989, Table 1).
IRAS 11065−6026	11:06:33.5	−60:26:35	He 3-591; color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 11385−5517	11:38:33.7	−55:17:48	SAO 239288=HD 101584=CP-54 4707; F0Iape star with far-IR excess (Parthasarathy, Pottasch, 1986); PPN candidate (Volk, Kwok, 1989, Table 1).
IRAS 12222−4652	12:22:12.4	−46:52:30	SAO 223420=HD 108015; F3Ib star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); PPN candidate (Volk, Kwok, 1989, Table 1).
IRAS 12262−6417	12:26:13.6	−64:17:02	Possible PN from near-IR obs. (Persi et al.,1993).
IRAS 12302−6317	12:30:15.6	−63:17:06	Possible PN from near-IR obs. (Persi et al.,1993).
IRAS 12316−6401	12:31:42.0	−64:01:43	Possible PN from near-IR obs. (Persi et al.,1993).
IRAS 12538−2611	12:53:48.6	−26:11:22	HR 4912=HD 112374; PPN candidate (Volk, Kwok, 1989, Table 1); see also Luck et al.(1983).
IRAS 13416−6243	13:41:36.6	−62:43:11	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 13428−6232	13:42:49.6	−62:32:59	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 15373−5308	15:37:22.7	−53:08:43	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 15373−4220	15:37:22.9	−42:20:14	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 15452−5459	15:45:17.1	−54:59:41	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 15465+2818	15:46:31.7	+28:18:29	R CrB; PPN candidate (Volk, Kwok, 1989, Table 1); see Gillett et al.(1986).
IRAS 15532−4210	15:53:16.3	−42:10:41	SAO 226389=HD 142527=He 3-1119; F6IIIe star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); PPN cand. (Volk, Kwok, 1989, T.1).
IRAS 15556−2248	15:55:38.9	−22:48:42	SAO 183986=HD 143006=He 3-1126; G5(I)e star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); PPN cand. (Volk, Kwok, 1989, T.1).
HD 144432	16:03:53.6	−27:35:08	SAO 184124=He 3-1141; F0IIIe star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988).
IRAS 16115−5044	16:11:31.1	−50:44:53	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 16275−2638	16:27:32.2	−26:38:27	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 16279−4757	16:27:56.4	−47:57:43	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 16399−6247	16:39:58.8	−62:47:52	SAO 253680=-62 5428; F2 star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988).
IRAS 16434−2244	16:43:28.9	−22:44:19	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 16581−2039	16:58:11.0	−20:39:53	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 16582−1919	16:58:18.6	−19:20:29	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17074−4549	17:07:25.8	−45:49:16	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 17086−2403	17:08:40.2	−24:03:48	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17088−4221	17:08:48.2	−42:21:34	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 17097−3210	17:09:43.8	−32:11:02	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 17111−2328	17:11:06.7	−23:28:01	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17112−1918	17:11:10.7	−19:18:45	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17127−2428	17:12:41.3	−24:27:55	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17150−3224	17:15:04.6	−32:24:15	G2I, bipolar reflection nebula, young PPN (Hu et al.,1993).
IRAS 17169−2528	17:16:57.4	−25:28:31	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).

Appendix A to Table 1: Possible Pre-Planetary Nebulae (1991-1994) - continued

Name	R.A. (1950)	Dec.	Remarks and references
	h m s	° ' "	
IRAS 17178−2600	17:17:48.4	−26:00:00	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17230−1832	17:23:04.9	−18:32:15	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17245−3951	17:24:35.6	−39:51:17	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 17276−2342	17:27:38.2	−23:42:47	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17277−3506	17:27:43.6	−35:06:37	HD 319896=-35 11646=He 3-1418; F8e star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); PPN cand. (Volk, Kwok, 1989, T.1).
IRAS 17281−3100	17:28:08.7	−31:00:00	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17291−2402	17:29:11.9	−24:02:45	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17301−2538	17:30:07.6	−25:38:21	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17307−1739	17:30:39.0	−17:38:51	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17311−4924	17:31:11.2	−49:24:25	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 17318−2739	17:31:50.0	−27:39:18	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17322−2540	17:32:16.4	−25:40:53	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17323−2424	17:32:20.0	−24:23:59	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17333−1731	17:33:21.7	−17:31:11	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17361−2358	17:36:15.2	−23:57:43	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17369−2329	17:36:57.2	−23:29:20	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17374−2426	17:37:25.2	−24:26:09	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17399−2136	17:39:57.0	−21:36:51	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17404−2713	17:40:28.9	−27:13:18	Possibly in transition from AGB to PN (van der Veen et al.,1989); PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17405−2535	17:40:33.6	−25:35:18	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17415−2801	17:41:33.6	−28:01:55	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17416−2755	17:41:37.0	−27:55:10	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17418−2713	17:41:51.9	−27:13:33	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17422−2301	17:42:14.4	−23:00:05	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17423−1755	17:42:18.8	−17:55:36	BQ[ ], between post-AGB and PN (Riera et al.,1994).
IRAS 17426−2508	17:42:35.5	−25:08:03	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17436+5003	17:43:41.3	+50:03:48	SAO 30548=BD+50 2457=HD 161796; V 814 Her; F3Ib star with far-IR excess (Parthasarathy, Pottasch, 1986); possible PPN (Likkel et al.,1987); PPN candidate (Hrivnak et al.,1989); color-selected PPN candidate (Volk, Kwok, 1989, Table 1,3,4); F supergiant as PPN candidate (Tamura et al.,1993); see Hawkins et al.(1994).
IRAS 17441−2411	17:44:04.6	−24:11:57	AFGL 5385; possibly in transition from AGB to PN (van der Veen et al., 1989); color-selected PPN candidate (Volk, Kwok, 1989, Table 4); PPN candidate (Kwok, 1993).
IRAS 17453−2503	17:45:18.8	−25:03:44	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17454−2440	17:45:24.0	−24:40:30	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17465−2350	17:46:31.6	−23:50:23	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17466−2431	17:46:35.5	−24:31:23	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17477−2452	17:47:41.7	−24:51:44	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17487−1922	17:48:47.2	−19:22:58	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 17497−2618	17:49:46.8	−26:17:47	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17500−2405	17:50:05.5	−24:04:48	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17506−2424	17:50:39.4	−24:22:45	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17508−2421	17:50:47.4	−24:22:01	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17510−2211	17:51:03.7	−22:10:45	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17524−2321	17:52:25.0	−23:22:40	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17526−2509	17:52:38.7	−25:10:00	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17532−2252	17:53:13.5	−22:52:38	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17534+2603	17:53:24.0	+26:03:24	SAO 85545=BD+26 3120=HD 163506; 89 Her; F2Ibe star with far-IR excess (Parthasarathy, Pottasch, 1986); possible PPN (Likkel et al.,1987); PPN candidate (Volk, Kwok, 1989, Table 1); F supergiant as PPN candidate (Tamura et al.,1993).
IRAS 17552−1841	17:55:17.9	−18:41:17	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17568−2002	17:56:50.1	−20:02:06	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17570−1855	17:57:00.7	−18:55:36	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17582−2332	17:58:16.4	−23:33:13	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).

Appendix A to Table 1: Possible Pre-Planetary Nebulae (1991-1994) - continued

Name	R.A. (1950)	Dec.	Remarks and references
	h m s	° ' "	
IRAS 17588−2340	17:58:51.4	−23:40:23	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 17593−2345	17:59:21.6	−23:45:34	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18014−1843	18:01:30.4	−18:44:02	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18018−1543	18:01:52.4	−15:43:48	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18020−2037	18:02:05.2	−20:38:41	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18021−1928	18:02:11.8	−19:28:28	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18025−3906	18:02:35.0	−39:06:16	PPN candidate (Kwok, 1993).
IRAS 18038−1830	18:03:51.5	−18:30:02	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18052−1952	18:05:13.8	−19:52:26	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18058−1626	18:05:49.3	−16:26:28	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18061−1907	18:06:07.7	−19:07:48	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18062+2410	18:06:16.3	+24:10:10	SAO 85766; color-selected PPN candidate (Volk, Kwok, 1989, Table 3).
IRAS 18063−1943	18:06:19.0	−19:43:17	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18063−2010	18:06:21.8	−20:10:55	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18066−2034	18:06:41.7	−20:34:57	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18072−1925	18:07:09.0	−19:25:08	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18071−1727	18:07:11.8	−17:27:28	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 18073−1839	18:07:23.4	−18:39:49	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18084−1737	18:08:28.1	−17:37:45	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18092−2146	18:09:15.3	−21:45:56	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18096+0650	18:09:40.0	+06:50:30	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 18096−1844	18:09:41.6	−18:44:28	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18100−1915	18:10:05.0	−19:15:19	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18135−1456	18:13:32.7	−14:56:18	Possibly in transition from AGB to PN (van der Veen et al.,1989); OH/IR 15.7+0.8 (Lewis, te Lintel Hekkert, 1991).
IRAS 18152−1609	18:15:12.9	−16:09:58	PN-colour IRAS source ass. with radio cont. source (Ratag, Pottasch, 1991).
IRAS 18213−2948	18:21:18.0	−29:48:28	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 18266−1239	18:26:40.5	−12:39:56	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 18327−0715	18:32:47.0	−07:15:40	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 18351−2345	18:35:07.6	−23:45:55	SAO 187072; color-selected PPN candidate (Volk, Kwok, 1989, Table 3).
IRAS 18384−2800	18:38:26.4	−28:00:01	SAO 187137=HD 171894; color-selected PPN candidate (Volk, Kwok, 1989, T.3).
IRAS 18536+0753	18:53:40.6	+07:53:22	Possibly in transition from AGB to PN (van der Veen et al.,1989).
OH 37.1-0.8	18:59:36.3	+03:15:52	OH/IR star (Lewis, te Lintel Hekkert, 1991).
IRAS 19016−2330	19:01:41.9	−23:30:45	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 19067+0811	19:06:43.7	+08:11:41	Possibly in transition from AGB to PN (van der Veen et al.,1989).
IRAS 19114+0002	19:11:24.9	+00:02:19	SAO 124414=BD-0 3679=HD 179821; AFGL 2343; G5Ia star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); possibly in transition from AGB to PN (van der Veen et al.,1989); PPN cand. (Hrivnak et al.,1989); color-selected PPN candidate (Volk, Kwok, 1989, Table 1,3); F supergiant as PPN candidate (Tamura et al.,1993); see Likkel et al.(1987), Arkhipova et al.(1993) and Hawkins et al.(1994).
IRAS 19244+1115	19:24:26.3	+11:15:09	AFGL 2390; IRC+10420; V 1302 Aql; PPN candidate (Hrivnak et al.,1989).
IRAS 19386+0155	19:38:36.5	+01:55:31	Possibly in transition from AGB to PN (van der Veen et al.,1989); A-F supergiant with large IR excess (Arkhipova et al.,1993).
IRAS 19475+3119	19:47:31.9	+31:19:38	PPN candidate (Kwok, 1993).
IRAS 19480+2504	19:48:02.1	+25:04:16	PPN candidate (Kwok, 1993).
IRAS 19493+2905	19:49:21.6	+29:05:18	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4).
IRAS 19500−1709	19:50:00.7	−17:09:38	SAO 163075=HD 187885; F8(I) star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); possible PPN (Likkel et al.,1987); possibly in transition from AGB to PN (van der Veen et al.,1989); color-selected PPN candidate (Volk, Kwok, 1989, Table 1,3,4); PPN candidate (Hrivnak et al., 1989); F supergiant as PPN candidate (Tamura et al.,1993).
IRAS 20000+3239	20:00:02.8	+32:39:07	PPN candidate (Kwok, 1993).
IRAS 20004+2955	20:00:25.9	+29:55:53	V 1027 Cyg; color-selected PPN candidate (Volk, Kwok, 1989, Table 3,4);
V 1853 Cyg	20:46:16.9	+34:16:22	LSII+34 26; post-AGB, birth of PN? (Smith, Lambert, 1994).
IRAS 20572+4919	20:57:17.5	+49:19:29	VES 351; potential PPN (Arkhipova, Ikonnikova, 1994).
IRAS 21153+6842	21:15:22.8	+68:42:18	SAO 19283; color-selected PPN candidate (Volk, Kwok, 1989, Table 3).
IRAS 21537+6435	21:53:44.2	+64:35:39	PPN candidate (Volk, Kwok, 1989, Table 1).
IRAS 22223+4327	22:22:22.9	+43:27:49	DO 41288; PPN candidate (Kwok, 1993).

Appendix A to Table 1: Possible Pre-Planetary Nebulae (1991-1994) - continued

Name	R.A. (1950)	Dec.	Remarks and references
	h m s	° ' "	
IRAS 22272+5435	22:27:13.4	+54:35:44	SAO 34504=BD+54 2787=HDE 235858; V 354 Lac; K5(I) star with far-IR excess and colours similar to PN (Pottasch, Parthasarathy, 1988); possibly in transition from AGB to PN (van der Veen et al.,1989); likely between AGB and PN (Kwok et al.,1989); color-selected PPN candidate (Volk, Kwok, 1989, Table 1,3,4); see also Hrivnak, Kwok (1991), Arkhipova et al.(1993) and Meixner et al.(1994).
IRAS 22574+6609	22:57:25.1	+66:09:42	PPN candidate (Kwok, 1993).
IRAS 23304+6147	23:30:26.7	+61:47:15	Likely between AGB and PN (Kwok et al.,1989).
IRAS 23321+6545	23:32:06.3	+65:45:15	Color-selected PPN candidate (Volk, Kwok, 1989, Table 4); see also Likkel et al.(1987).

References to Appendix A

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Appendix B to Table 1: Possible Post-Planetary Nebulae (1991-1994)

Name	R.A. (1950)	Dec.	Remarks and references
	h m s	° ' "	
Chavira 137	00:02.0	−24:41	Hot sdO star, no nebula (Méndez et al.,1988); see Chavira (1958).
Chavira 144	00:07.7	−26:29	Hot sdO star, no nebula (Méndez et al.,1988); see Chavira (1958).
LB 1566	00:38.1	−55:18	Hot sdO star, no nebula (Méndez et al.,1988).
PG 0038+199	00:38:57.2	+19:52:51	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 0122+200	01:22:39.9	+20:02:15	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994); no nebulosity (Kwitter et al.,1989).
MCT 0130-1937	01:30:14.8	−19:37:04	PG 1159 type WD, no nebulosity (Demers et al.,1990); PG 1159 type star as pre-white dwarf (Dreizler et al.,1994).
SB 705	01:41.0	−38:48	Hot sdO star, no nebula (Méndez et al.,1988); see Slettebak, Brundage (1971).
LB 3241	02:11.6	−49:59	Hot sdO star, no nebula (Méndez et al.,1988).
PG 0216+032	02:16:43.0	+03:13:08	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 0217+155	02:17:50.8	+15:30:23	sdOB star, no nebulosity (Kwitter et al.,1989).
PG 0226+151	02:26:04.9	+15:07:13	sdOC star, no nebulosity (Kwitter et al.,1989).
HS 0444+0453	04:44:25.5	+04:53:27	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994).
KPD 0549+1948	05:49:41	+19:48.6	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
KPD 0553+1755	05:53:08	+17:55.9	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
HD 49798	06:46:34.8	−44:15:34	SAO 218207; CP-44 1096; hot sdO star, no nebula (Méndez et al.,1988).
HS 0704+6153	07:04:59.2	+61:53:09	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994).
KPD 0720-0003	07:20:20	−00:03.3	Hot sdO star, no nebula (Méndez et al.,1988); see Downes (1986).
LSS 630	07:37:39.6	−27:20:50:	Hot sdO star, no nebula (Méndez et al.,1988); see Stephenson, Sanduleak (1971).
PG 0823+546	08:23:01.0	+54:37:58	sdOC star, no nebulosity (Kwitter et al.,1989).
Ton 320	08:23:58.8	+31:40:03	PG 0823+317; H-rich hot WD, assymetric nebula (Tweedy, Kwitter,1994).
K 345-57	08:59:53.8	+41:29:40	Emission star, no nebulosity (Kwitter et al.,1989); see Noguchi et al.(1980).
KS 292	09:18:20.0	−45:19:09	CPD-45 3655, CD-45 5058, LSS 1275; sdO star in post-AGB, no nebula (Rauch et al.,1991).
PG 0931+691	09:31:43.6	+69:05:25	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 0953+024	09:53:00.0	+02:26:54	Hot sdO star, no nebula (Méndez et al.,1988); no nebula (Kwitter et al.,1989).
CBS 119	09:59:11.4	+34:05.7	Emission star, no nebulosity (Kwitter et al.,1989); see Pesch, Sanduleak (1986).
PG 1030+665	10:30:09.5	+66:32:05	sdOB star, no nebulosity (Kwitter et al.,1989).
PG 1125-055	11:25:42.6	−05:29:56	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1144+005	11:44:01.8	+00:29:10	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994); no nebula (Tweedy, Kwitter, 1994).
PG 1151-029	11:51:41.4	−02:55:24	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994); no nebulosity (Kwitter et al.,1989); no nebula (Tweedy, Kwitter, 1994).
PG 1159-035	11:59:12.3	−03:28:57	GW Vir; PG 1159 type star as pre-white dwarf (Dreizler et al., 1994); no nebula (Méndez et al.,1988); no nebula (Tweedy, Kwitter, 1994).
Feige 55	12:02:05	+60:48:44	LB 2197; PG 1202+608; H-rich WD, no nebula (Tweedy, Kwitter, 1994).
LB 2	12:14.1	+26:45	H-rich WD, no nebula (Tweedy, Kwitter, 1994); see Luyten (1953).
PG 1240+120	12:40:00.3	+12:00:28	Ton 109; sdOB star, no nebulosity (Kwitter et al.,1989).
PG 1249+762	12:49:02.0	+76:09:40	sdOC star, no nebulosity (Kwitter et al.,1989).
HZ 34	12:53.0	+37:49	H-rich WD, no nebula (Tweedy, Kwitter, 1994).
K 494-08	13:01:21.9	+27:02:34	sdO star, no nebulosity (Kwitter et al.,1989); see Noguchi et al.(1980).
PG 1318+062	13:18:13.1	+06:14:40	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1325+054	13:25:50.1	+05:24:23	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1342+444	13:42:22.0	+44:23:35	H-rich WD, no nebula (Tweedy, Kwitter, 1994).
LSE 44	13:49.6	−47:55	Hot sdO star, no nebula (Méndez et al.,1988); see Drilling (1983).
LSE 153	13:50.0	−46:30	Hot sdO star, no nebula (Méndez et al.,1988); see Drilling (1983).
PG 1357+240	13:57:43.8	+23:59:34	LB 705; sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1401+289	14:01:03.1	+28:53:47	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1412+613	14:12:54.7	+61:15:05	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1424+535	14:24:14.9	+53:28:52	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994); no nebulosity (Kwitter et al., 1989), no nebula (Tweedy, Kwitter, 1994).
PG 1425+590	14:25:29.8	+59:00:27	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1427+196	14:27:08.7	+19:34:56	sdOC star, no nebulosity (Kwitter et al.,1989).
H 1504+65	15:04.4	+65:36	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994); no nebula (Tweedy, Kwitter, 1994).
HS 1517+7403	15:17:08.7	+74:03:00	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994).
PG 1520+525	15:20:20.0	+52:32:45	PG 1159 type star, no nebulosity (Kwitter et al.,1989).

Appendix B to Table 1: Possible Post-Planetary Nebulae (1991-1994) - continued

Name	R.A. (1950)	Dec.	Remarks and references
	h m s	° ' "	
LSIV -12 1	16:20:57.4	−12:05:36	sdO star, no nebulosity (Kwitter et al.,1989).
PG 1624+382	16:24:31.3	+38:13:53	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1628+554	16:28:07.3	+55:21:47	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 1707+427	17:07:14.1	+42:44:45	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994); no nebulosity (Kwitter et al.,1989).
RE 1738+665	17:38:04.7	+66:55:24	H-rich hot WD, assymetric nebula (Tweedy, Kwitter, 1994); see Barstow et al. (1994).
KPD 1856+2301	18:56:16	+23:01.4	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
KPD 1903+2540	19:03:35	+25:40.9	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
KPD 1938+4220	19:38:03	+42:20.8	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
LSII +18 9	19:41:17.5	+18:17:24	sdO star, no nebulosity (Kwitter et al.,1989).
KPD 2026+2205	20:26:08	+22:05.5	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
KPD 2048+3515	20:48:04	+35:15.9	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
KPD 2104+3407	21:04:13	+34:07.7	sdO star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
PG 2131+066	21:31:39.2	+06:37:35	PG 1159 type star as pre-white dwarf (Dreizler et al.,1994).
KPD 2145+4216	21:45:23	+42:16.9	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
BD+28 4211	21:49.0	+28:38	sdOp star, no nebulosity (Kwitter et al.,1989).
PG 2215+151	22:15:22.5	+15:05:52	sdOC star, no nebulosity (Kwitter et al.,1989).
PG 2304+193	23:04:45.5	+19:16:06	sdOC star, no nebulosity (Kwitter et al.,1989).
KPD 2322+4933	23:22:10	+49:33.9	sdOC star, no nebulosity (Kwitter et al.,1989); see Downes (1986).
PG 2343+267	23:43:20.0	+26:44:55	sdOC star, no nebulosity (Kwitter et al.,1989).

References to Appendix B

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Table 2: Misclassified Planetary Nebulae (1991-1994)

Design. PK	Name	Remarks and references
319−04.1	ESO 135-09	PN?, plate fault? (Lauberts, 1982); not a PN, no em.-line object detected (Acker et al.,1987).
320+00.1	Sa 2-110	WRA 16-160; RCW 87; low density HII region (Bráz et al.,1975); not a PN, HII region (Acker et al.,1987).
321−11.1	ESO 100-12	Galaxy or PN? (Lauberts, 1982); galaxy, not a PN (Acker et al.,1987).
321−11.2	ESO 100-16	Galaxy or PN? (Lauberts, 1982); galaxy?, not a PN (Acker et al.,1987).
357+02.8	Ae 2-D	No em.-line object detected (Acker, Stenholm, 1990); not a PN, 3 stars? (Kohoutek, 1994).
357−02.1	Ae 2-M	No emission-line detected (Acker, Stenholm, 1990); not a PN (Kohoutek, 1994).

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