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New southern galaxies with active nuclei. II.*

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Abstract. — This paper contains a list of new AGN candidates identified from the examination of 3500 optical spectra contained in the database of the Southern Sky Redshift Survey Extension (SSRS2). The classification of galaxies was done using standard diagnostics and a total of (5) Seyfert 1, (12) Seyfert 2 and (10) LINERs were found. We also present a list of 60 galaxies for which we could not secure a definite classification, but which might present some level of nuclear activity.

Key words: galaxies: active; Seyfert: redshifts — surveys

1. Introduction

A considerable effort has been undertaken to understand the physical processes generating the phenomena observed in active galactic nuclei (AGN), where a vast amount of energy is produced on short timescales in a small volume of the parent galaxy. In order to understand the underlying physical mechanism responsible for the phenomenon, different observational techniques must be used such as time monitoring and multiwavelength studies. Equally important to explain these phenomena, is the availability of large number of observed objects covering a wide range in redshift, local density regimes and levels of nuclear activity, given the great variety of behavior presented by active galaxies. This fact provides an important motivation for a systematic search for new candidates. In addition to the surveys especially designed to find new AGN candidates, active galaxies can also be identified as a by-product of the various ongoing redshift surveys of galaxies, where several thousands of spectra are accumulated in a systematic fashion following well defined selection criteria. An additional advantage of this procedure is that the relation of the AGNs with their surrounding environment may be established. Because these redshift surveys are directed at studying the properties of galaxies and structures of galaxies on large scales, they should allow us to determine some of the statistical properties of AGNs, as the parent samples are relatively unbiased towards this kind of object. One of these properties is, for instance, the population density of active galaxies relative to normal ones, which is still not well known, but which might hold some important clues on the evolution of galaxies, their contribution to the X-ray background and to evaluate the possibility of using AGNs as tracers of galaxy distributions (e.g. Huchra & Burg 1992; Osterbrock & Martel 1993).

In this paper we report the results of a search for galaxies which could be hosts of active nuclei, using the database of the Southern Sky Redshift Survey, SSRS (e.g., da Costa et al. 1988, 1991) as well as its extensions (Fairall et al. 1992; Huchra et al. 1993), and SSRS2 (da Costa et al. 1994). The fact that this survey is not specifically aimed at measuring AGNs has the appealing point that it allows an easier detection of low-luminosity AGNs relative to the conventional low-dispersion objective-prism surveys. This paper is a follow up of the work by Maia et al. (1987), where the first SSRS AGN candidates were catalogued, and provides the groundwork for a study of the spatial distribution of active nuclei in the SSRS survey. The data reported here have been collected during the last 6 years and consist mainly of galaxies in both galactic caps in the region $|b| > 30$ and $\delta < 0$. We discuss the observational procedures in Sect. 2, and present the results in Sect. 3.

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*Based on observations carried out at Cerro Tololo Interamerican Observatory, Chile; European Southern Observatory, Chile; Complejo Astronomico El Leoncito, Argentina; and Laboratório Nacional de Astrofísica, Brazil

**Visiting Astronomer CTIO. CTIO is operated by AURA Inc., under contract to the NSF

Table 1. List of AGN candidates observed at LNA and CASLEO

Catalogue Name (1)	Other Name (2)	RA (1950) (3)	Dec (1950) (4)	m_B (5)	ref. (6)	Type (7)	Obs. (8)	$V_\odot$ km/s (9)	M_B (10)	$log(L_{IR})$ $L_\odot$ (11)	R$_1$ (12)	R$_2$ (13)	Emiss. Type (14)	Comments (15)
00283-0929	MCG-02-02-035	00 28 21.4	-09 29 02	15.28	2	S0 *	cas	5940	-17.9		3.44		SL:	1,2,4
00539-3531	ESO 351-G23	00 53 57.0	-35 31 00	16.06	1	Sa	cas	14494	-19.1	9.67	1.56		SL:	1,2
00560-3655	ESO 351-G25	00 56 01.0	-36 55 48	15.28	1	Sb	cas	10416	-19.2		1.58		SL:	3
01169-1557	MCG-03-04-046	01 16 57.6	-15 57 44	15.26	2	SBb *	lna	15234	-20.0	10.21	1.42	12.43	S2	3
01220-2422	MCG-04-04-007	01 22 01.6	-24 22 25	15.22	2	SB(s)b	cas	11196	-19.4	10.10	0.84		SL?	2
01369-0939	NGC 640	01 36 55.7	-09 39 15	15.45	2	S...*	cas	7490	-18.3	9.48	1.27	28.62	S2	2
02077-0917		02 07 43.5	-09 17 43	15.23	2	Sa *	cas	12492	-19.6	9.99	0.93	3.37	S2	2,4
02406-0859	NGC 1071	02 40 40.8	-08 59 08	15.41	2	SB(rs)a	cas	11303	-19.2		0.90		SL:	2,4
02568-3508	ESO 356-G23	02 56 48.0	-35 08 54	15.49	1	SB0-a	cas	11010	-19.1		1.89		SL:	2
03414-3154		03 41 27.1	-31 54 04	14.90	2	S...*	cas	9515	-19.4	9.30	0.76	3.54	S2	3,4
04119-3207	ESO 420-G13	04 11 54.0	-32 07 54	13.31	1	S0(r)	cas	3618	-18.8	10.26	0.80	3.31	S2	2
04303-3030	ESO 421-G09	04 30 20.0	-30 30 18	15.28	1	S(r)a	cas	16481	-20.2	10.35	0.63	2.94	Li	3
04392-3739	ESO 304-G11	04 39 14.1	-37 39 52	15.62	1	Sa	cas	12229	-19.2		0.67	5.76	S2	3,4
04593-1614	MCG-03-13-051	04 59 21.0	-16 14 00			SB(s)b	lna	6683		9.63	1.42		SL:	2
09400-0328	NGC 2974	09 40 00.0	-03 28 00			E4	cas	1851		8.27	2.86		SL?	1,2,4
10192-0312	MCG+00-27-002	10 19 12.0	-03 12 00			E *	cas	12245					S1	2,4
10398-1724	MCG-03-27-026	10 39 51.0	-17 24 35			S0 pec	cas	6192			1.31	28.26	S2	2
14095-2652	ESO 511-G10	14 09 31.0	-26 52 24	13.53	1	Sb-c	lna	6740	-19.9	9.84	1.20		SL:	2
20200-3846	ESO 340-G22	20 20 01.0	-38 46 30	15.76	1	SBa	lna	16808	-19.7	9.96	0.79	3.57	S2	2
20211-2337	ESO 528-G01	20 21 10.0	-23 37 36	16.14	1	Sc	cas	16552	-19.3		0.94	4.65	S2	2
21063-3825		21 06 18.9	-38 25 23	14.87	2	Sa *	cas	13934	-20.2	9.94	1.27	2.01	Li	2
22514-3720	ESO 406-G18	22 51 27.0	-37 20 54	15.17	1	S0	cas	17157	-20.4	10.32	0.92	1.14	Li	2
23413-0818	MCG-01-60-025	23 41 18.0	-08 18 42	15.05	2	SBb *	cas	10337	-19.4		1.63		SL?	1,2,4

Table 2. List of AGN candidates observed at ESO and CTIO

Catalogue Name (1)	Other Name (2)	RA (1950) (3)	Dec (1950) (4)	m_B (5)	ref. (6)	Type (7)	Obs. (8)	$V_\odot$ km/s (9)	M_B (10)	$log(L_{IR})$ $L_\odot$ (11)	R$_1$ (12)	R$_2$ (13)	Emiss. Type (14)	Comments (15)
00108-2652	ESO 472-IG21	00 10 48.0	-26 52 18	15.13	1	Double	eso	17122	-20.4	8.27	0.73		SL:	1,2
00125-2929	ESO 410-G04	00 12 35.0	-29 29 18	14.89	1	Sb	ctio	7399	-18.8	7.56	0.77		SL?	2,4
00171-1423		00 17 11.6	-14 23 57	15.42	2	Sb(r) *	eso	12622	-19.5	7.93	1.25		SL:	1,2,4
00564-2834		00 56 27.6	-28 34 23	15.31	2	Sa *	ctio	17709	-20.3	8.18	0.77		SL?	2
01252-2522		01 25 15.3	-25 22 50	15.35	2	Sa *	ctio	12656	-19.5		0.81		SL?	2
01284-2737	ESO 413-G08	01 28 29.0	-27 37 18	15.11	1	Sa	ctio	5612	-18.0	9.70	0.79	0.90	Li	2
01376-2812	ESO 413-G15	01 37 38.0	-28 12 18	15.65	1	Sb	ctio	16825	-19.8	8.46	1.27		SL?	2,4
01485-2717		01 48 35.0	-27 17 10	15.45	2	Sab *	eso	16835	-20.0		0.83		SL?	1,2
01491-2015		01 49 07.0	-20 15 26	15.42	2	Sa *	eso	14865	-19.8	7.60	1.02		SL?	1,2,4
01504-2538		01 50 27.4	-25 38 26	15.17	2	Sa *	ctio	12486	-17.2		0.98		SL?	2
01525-2823	ESO 414-IG09N	01 52 32.0	-28 23 38	16.49	1	Double	ctio	16945	-19.0	10.21	0.94		SL?	3,4
02110-2957	ESO 415-G07	02 11 04.0	-29 57 27	15.04	1	S0	ctio	10368	-19.4	7.58	0.83		SL?	2
02147-2348	ESO 478-G20	02 14 46.7	-23 48 24	15.73	1	Sa	eso	11403	-18.9		1.00		SL?	1,3,4
02147-2354		02 14 47.4	-23 54 45	15.24	2	S0-a *	eso	9818	-19.1		1.09		SL?	1,2,4
02163-2243	ESO 478-G24	02 16 22.0	-22 43 30	15.97	1	S0-a	ctio	9835	-18.4		1.07		SL?	3
02247-2308		02 24 43.3	-23 08 09	15.02	2	Sa *	ctio	10178	-19.4		1.20		SL?	2
02260-2621		02 26 00.4	-26 21 18	15.39	2	Sb *	ctio	17483	-20.2		0.89		SL?	2
02418-2623	ESO 479-G30	02 41 51.0	-26 23 54	15.48	1	S0	ctio	10532	-19.0	7.76	1.46		SL:	1,2
02425-2443	ESO 479-G31	02 42 34.0	-24 43 30	14.76	1	S0	ctio	7053	-18.9		2.04	1.89	Li	1,3
02440-2631	ESO 479-G35	02 44 01.0	-26 31 00	14.79	1	S0	ctio	6760	-18.7	9.14	1.72		SL?	2
02444-2710	ESO 479-G39	02 44 26.0	-27 10 54	14.73	1	Sb	ctio	7109	-18.9	7.89	0.74	1.48	Li	2
02468-2845	ESO 416-G26	02 46 48.0	-28 45 00	14.58	1	S...	ctio	6838	-18.8		2.18		SL?	1
02469-3122	ESO 416-G28	02 46 58.0	-31 22 47	14.27	1	Sc	eso	5838	-18.9	9.44	1.66		SL?	2
02592-1106		02 59 16.8	-11 06 28	15.46	2	Sa-b *	eso	9337	-18.7	9.48	0.93		SL?	1,2,4
03000-2347		03 00 00.2	-23 47 05	14.93	2	S0-a *	eso	10515	-19.5	9.92	1.11		SL:	3

Table 2. continued

Catalogue Name (1)	Other Name (2)	RA (1950) (3)	Dec (1950) (4)	m_B (5)	ref. (6)	Type (7)	Obs. (8)	$V_\odot$ km/s (9)	M_B (10)	$log(L_{IR})$ $L_\odot$ (11)	R_1 (12)	R_2 (13)	Emiss. Type (14)	Comments (15)
03089-2530	ESO 481-G04	03 08 59.0	-25 30 36	15.26	1	Sa	ctio	11686	-19.4		0.81		SL?	2,4
03100-2523		03 10 03.6	-25 23 26	15.35	2	Sa *	ctio	6482	-18.1	9.38	0.82		SL:	2,4
03232-2551	ESO 481-G26	03 23 15.0	-25 51 18	15.57	1	Sb	ctio	12587	-19.3	7.95	0.83		SL?	1,2
03272-2818	ESO 418-G06	03 27 15.0	-28 18 12	14.83	1	Sb	ctio	11415	-19.8	7.90	0.70		SL?	1,2
03289-0518		03 28 54.1	-05 18 40	14.65	2	Sb •	ctio	3937	-17.7		1.97		SL?	1,3
03349-2524	ESO 482-G14	03 34 55.0	-25 24 48	15.54	1	S(r)a	ctio	13103	-19.4	7.73	1.29	3.29	S2	3
03578-2506		03 57 48.5	-25 06 15	15.47	2	Sa *	ctio	18213	-20.2				SL?	1,2
03580-0917		03 58 01.2	-09 17 35	15.45	2	Sb-c *	eso	9654	-18.8		1.12		SL?	2
04230-2920		04 23 01.0	-29 20 54	15.39	2	Sb-c *	eso	22080	-20.7		1.16		SL?	1,2
04276-2652	ESO 484-G26	04 27 39.0	-26 52 48	14.96	1	Sa	eso	4099	-17.5	10.97	0.93		SL?	2,4
10184-0441		10 18 26.0	-04 41 54			Sb *	eso	11890			1.01		SL:	1,2
10358-0951		10 35 51.0	-09 51 23			SBb *	eso	8710				2.85	S1	2
10485-1009		10 48 30.0	-10 09 27			SBa-b *	eso	8245		7.69	0.66	1.76	L?	2
10582-0618		10 58 14.0	-06 18 35			Sb •	eso	8998		7.59	1.08	3.83	S2	3
11203-0718		11 20 19.0	-07 18 51			Sa(r) *	eso	6628			0.77	2.07	Li	3
12489-1356		12 48 54.0	-13 56 57			Sa *	eso	4298		9.28	1.03	0.85	S1	2
12540-0632		12 54 00.0	-06 32 51			Sa *	eso	1373			0.84	2.02	Li	3
13076-0711		13 07 41.0	-07 11 18			S...*	eso	6713		9.56	1.17	21.37	S2	3
13267-2324	ESO 509-G29	13 26 45.0	-23 24 30	15.39	1	N	eso	9144	-18.8	8.06	0.89	1.70	Li	2
13284-2508	ESO 509-G38	13 28 28.0	-25 08 42	14.75	1	S...	eso	7787	-19.1	9.66			S1	2
13300-1013		13 30 00.0	-10 13 29			SBb *	eso	6639			0.53	0.32	S1	2
13477-0812		13 47 42.0	-08 12 29			Sb-c *	eso	11089			0.91		SL?	1,2
13586-2219	ESO 578-G15	13 58 38.0	-22 19 48	15.25	1	Sb	eso	10828	-19.3		0.83		SL?	1,2
14309-0741		14 30 56.0	-07 41 53			E *	eso	12682			0.75		SL?	1,2,4
21049-3002		21 04 59.7	-30 02 17	15.10	2	S0 *	ctio	5751	-18.1	7.23	0.99		SL:	2,4

2. Observations

The observations reported here were made at four different sites. The data collected at the 1.6 m telescope of the Laboratório Nacional de Astrofísica (LNA), Brasópolis, Brazil, used the Observatório Nacional intensified photon-counting Reticon detector described by da Costa et al. (1984), who also discuss the reduction procedures. A 6 Å mean resolution was obtained for a 4700−7100 Å spectral range. This detector was also used on the 2.15 m telescope of the Complejo Astronomico El Leoncito (CASLEO), San Juan, Argentina, but having a slightly larger spectral coverage (4450−7100 Å). The remaining data were collected at the Cerro Tololo Interamerican Observatory (CTIO) 1.5 m telescope using a CCD with 421 × 576 pixels and the European Southern Observatory (ESO) Spectroscopic 1.52 m telescope, with a Ford CCD with 2048 × 2048 pixels. The spectral coverage depends on the epoch, but in general was in the range 3900−7100 Å for ESO and 4800−7000 Å for CTIO. The CTIO mean resolution was about 8 Å, while for ESO data it is ≈ 4 Å.

As the survey was designed to measure redshifts of galaxies, most of the emission-line spectra have a low signal-to-noise ratio in the continuum, particularly in the case of data obtained with the intensified reticon, as it allowed examination of the spectra in real-time during the acquisition process. Nevertheless, for the majority of galaxies the quality of the spectra is suitable for the identification of features characteristic of AGNs. We should also note that because of time constraints spectrophotometric standards where not observed systematically, and, as a result, very few of our spectra can be flux calibrated. This is particularly important for data obtained with the intensified reticon. However, as the aim of this work is to provide a *list* of AGN *candidates* for future and more detailed work, these limitations should not be excessively restrictive.

3. Results

About 3500 new spectra in the SSRS database were visually examined and an attempt was made to separate those with emission-lines features typical of HII regions from those with AGN characteristics. We have used for this purpose the diagnostics proposed by Baldwin et al. (1981) who use the ratio of forbidden to permitted line intensities to delineate the regions occupied by conventional HII regions; by low-ionization nuclear-emission regions (LINERs, Heckman 1980); or Seyfert-like activity. Although different combinations of line intensities may be used, for our spectra uncalibrated in flux it is convenient to use lines which are close to each other. Therefore AGN candidates were selected primarily on the basis of

Table 2. continued

Catalogue Name (1)	Other Name (2)	RA (1950) (3)	Dec (1950) (4)	m_B (5)	ref. (6)	Type (7)	Obs. (8)	$V_{\odot}$ km/s (9)	M_B (10)	$log(L_{IR})$ $L_{\odot}$ (11)	R_1 (12)	R_2 (13)	Emiss. Type (14)	Comments (15)
21108-2724		21 10 50.3	-27 24 30	15.39	2	Sb-c *	ctio	10878	-19.2		0.70		SL?	2,4
21112-2616	ESO 530-G25	21 11 14.0	-26 16 06	15.35	1	Sa	ctio	8051	-18.5	9.72	0.83		SL?	2
21128-2311		21 12 51.6	-23 11 55	15.41	2	S...*	ctio	10439	-19.0		1.92		SL?	1
21154-2733	ESO 464-G31N	21 15 29.0	-27 33 41			Sa? pec	ctio	11084		10.50	0.70		SL?	4
21313-2723		21 31 23.4	-27 23 29	14.93	2	S...*	ctio	19695	-20.9		1.02		SL?	2
21319-2957		21 31 59.6	-29 57 13	14.95	2	S0 *	ctio	6048	-18.3	9.22	0.73		SL?	
21598-2820		21 59 50.8	-28 20 07	15.18	2	S0 *	ctio	7211	-18.5		0.99		SL?	3
22054-2518	ESO 532-G21	22 05 25.0	-25 18 24	14.65	1	Sb	ctio	5558	-18.4	8.96	0.89		SL?	2
22055-3421	ESO 404-G32	22 05 33.0	-34 21 06	15.17	1	S...	ctio	4431	-17.4	9.26	0.79		SL:	4
22326-2520	ESO 533-G51	22 32 41.0	-25 20 06	14.54	1	Sa	ctio	10039	-19.8		1.18		SL?	1
22333-2759		22 33 20.6	-27 59 03	14.98	2	Sa-b *	ctio	8113	-18.9	9.45	0.93	1.23	Li	2,4
23394-3929		23 39 26.9	-39 29 37	15.42	2	SBb *	ctio	12795	-19.5		0.97		S1	2
23432-2400		23 43 16.7	-24 00 33	15.48	2	Sb-c *	ctio	9984	-18.9	8.38	0.82		SL?	2
23440-2121		23 44 03.1	-21 21 17	15.44	2	Sb(r) *	ctio	18101	-20.2		1.04		SL?	2
23466-2918	ESO 471-G23	23 46 40.0	-29 18 30	14.97	1	Sa	ctio	10308	-19.5	9.65	1.02		SL?	2

the ratio between the equivalent widths of the contiguous [NII]λ6583 and Hα.

Spectra with ratio $R_1 \equiv$ [NII]λ6583 / Hα > 0.7 were assumed to be either Seyfert or LINERs. The separation between these two classes was made whenever possible based on the measured ratio $R_2 \equiv$ [OIII]λ5007 / Hβ and following the criteria that galaxies with $R_2 < 3$ were LINERs and those with $R_2 > 3$ were Seyferts. The lack of blue sensitivity makes this diagnostic less reliable and sometimes subjective.

Our classification should be regarded as tentative also because no corrections were applied to the spectra due to line blending, interstellar reddening and the underlying stellar absorption. For instance, in some galaxies the presence of strong Balmer absorption will conceal the Hβ emission-line in the spectra, making it difficult to separate a LINER from a Seyfert 2 spectrum. One should also have in mind that the classical definition of LINERs does not immediately imply an AGN-like activity as it has been shown that LINERs with weak [OI]λ6300 relative to Hα ($< 1/6$) can be accounted for by a photoionization model (Filippenko & Terlevich 1992).

Taking into consideration the above remarks we have adopted the following classification scheme: 1) S1 - objects with broad Balmer lines typical of Seyfert 1 galaxies; 2) S2 - galaxies with $R_1 > 0.7$ and $R_2 > 3$; 3) Li - galaxies with $R_1 > 0.7$ and $R_2 < 3$; 4) SL: - galaxies with visible [OIII]λ5007 lines but undetected Hβ; 5) SL? - galaxies with $R_1 > 0.7$ but no visible [OIII]λ5007 and Hβ; 6) L? - galaxies with $R_1 \sim 0.7$ and $R_2 < 3$. To further aid the reader, for each galaxy we point out in the tables the possible presence of Hβ in absorption, the strength of [OI]λ6300 line relative to Hα and spectra with poor sky subtraction.

About 2% of the objects examined in the SSRS database presented characteristics of AGN galaxies. After a first selection, the literature was searched for any previous reference of nuclear activity of the candidate galaxies. For this purpose we used the 6th edition of *A Catalogue of Quasars and Active Nuclei* by Véron-Cetty & Véron (1993), as well as the literature covering the remaining period of the aforementioned catalogue up to December 1994. Finally, the NASA/IPAC Extragalactic Database was searched.

We have also carried out a search of the *IRAS Faint Source Catalog* to find possible infrared (IR) counterparts of the objects in our final list. For those with IR detection, the far-infrared luminosity was calculated. The IRAS counterparts were searched using an adapted version of a program for matches on *The Green Bank Sky Maps and Radio Source Catalog* CD-ROM, produced by NRAO. All the matches with values of M (maximum normalized position difference) smaller than 3.5 were accepted. The optical size of the galaxies and error ellipses of IRAS sources were taken into account. A significant fraction of the Seyfert galaxies have IR counterparts (≈60%). They are not the typical ultraluminous IR galaxies ($L_{\rm FIR} \geq 10^{12}\ L_{\odot}$), being instead low-luminosity IR objects ($L_{\rm FIR} < 10^{11}\ L_{\odot}$).

The resulting list of candidates with no previous reference of AGN activity is presented in Table 1 (for CASLEO and LNA observations) and in Table 2 (for ESO and CTIO). The tables contain the following information:

Column (1): The identification based on 1950.0 equatorial coordinates. For ESO galaxies we used the coordinates given by Lauberts & Valentijn (1989), for the remaining objects the coordinates of the STScI *Guide Star Catalog* (Lasker et al. 1990) precessed to Epoch 1950.0.

Column (2): Galaxy identification in the ESO, NGC or MCG catalogues if available.

Columns (3) and (4): Equatorial coordinates for epoch 1950.0 taken from Lauberts & Valentijn (1989), for objects in the ESO catalogue. For the non-stellar objects listed in the STScI *Guide Star Catalog* that were observed as part of the SSRS2, and which are not contained in the Lauberts & Valentijn (1989) catalogue, the published coordinates were precessed from Epoch 2000.0 to 1950.0. The precision in the coordinates is $\approx 3''$ for ESO galaxies (Lauberts 1982) and $\approx 1''$ for STScI (Lasker et al. 1990).

Columns (5) and (6): – The apparent B magnitude, m_B, and its reference given by Lauberts & Valentijn (1989) for ESO galaxies (coded as 1), or derived from the STScI instrumental magnitudes to correspond to a blue magnitude measured within B=26 mag/arcsec^2 isophote according to Alonso et al. (1993), coded as "2" in Col. 6.

Column (7): Morphological type quoted by Lauberts & Valentijn (1989) whenever available. For objects indicated with an asterisk, the morphological classification is based on a visual inspection of the field in the CD-ROMs of the STScI *Digitized Sky Survey.*

Column (8): Observatory where the spectrum was obtained.

Column (9): Heliocentric velocity, $V_\odot$, in km/s.

Column (10): Absolute blue magnitude, M_B, derived from the Hubble distance of the galaxy using the measured redshift and $H_0 = 75$ km s^{-1} Mpc^{-1}.

Column (11): Total far-infrared luminosity between $\sim$40 μm and $\sim$120 μm, $L_{\rm FIR}$, in $L_\odot$, computed following Lonsdale et al. (1985):

$$L_{\rm FIR} = 3.95\ 10^5 (2.58 f_{60} + f_{100}) \times d^2,$$

where f_{60} and f_{100} are the 60 μm and 100 μm infrared flux densities, in Jy, from the *IRAS Faint Source Catalog* and d, is the distance in Mpc.

Columns (12) and (13): R_1 and R_2 as defined in the text.

Column (14): Emission type, where the different symbols used to identify the type of emission are as discussed above.

Column (15): Comments to the table where (1) indicates evidence of strong Hβ absorption; (2) and (3) indicate the estimated strength of the [OI] λ6300 line relative to Hα with (2) denoting weak [OI] λ6300 line (roughly $< 1/6$ of the Hα line) and (3) strong [OI] λ6300; (4) poor sky subtraction.

The spectra for galaxies listed in Tables 1 and 2 are displayed in Figs. 1 and 2 respectively, with fluxes in arbitrary units. For a few spectra it was possible to use a spectrophotometric standard star to remove the detector response. These objects are identified in the figures by an asterisk next to their names. For the remaining galaxies, we tried to remove the instrumental response by fitting the continuum and dividing the spectrum by the fit. The spectra show a large range of signal to noise ratios (S/N).

The modest FIR emission of objects in our catalogue seems to be compatible (at least in the case of Seyferts), with the fact that the nuclear activity is also modest. This may be a consequence of the selection criteria used to generate the sample of objects (diameter or magnitude limited sample), instead of characteristics that are more common to AGNs like bright nucleus, prominent emission in the blue band, among others. So far we have examined about 5000 spectra including the previous work of Maia et al. (1987). The percentual proportion of AGN galaxies in the SSRS sample is approximately 2%, and will be the subject of a study of the AGN phenomena in that sample which we expect to report in the future.

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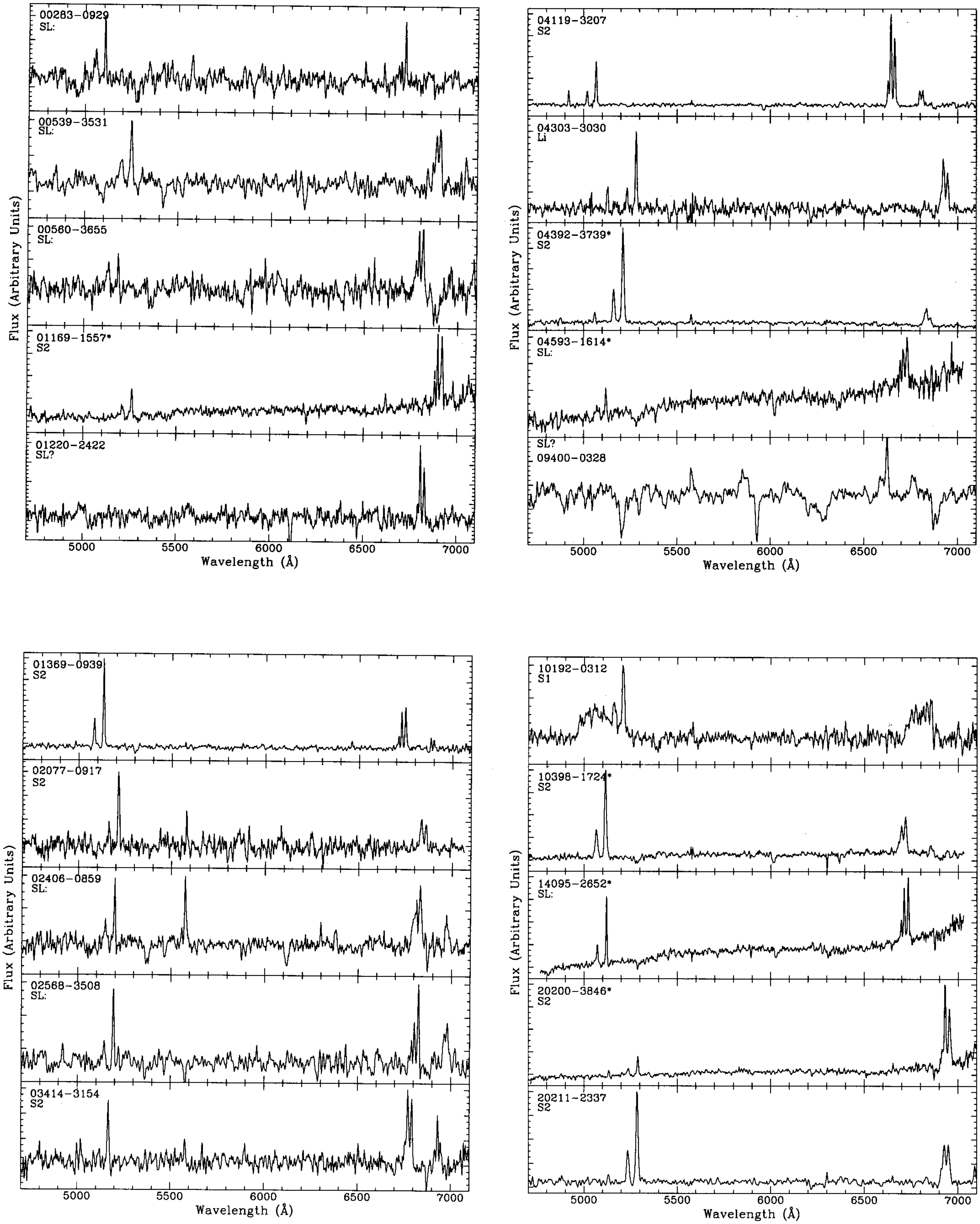


Fig. 1. Spectra of AGN candidates observed at CASLEO and LNA. Fluxes are in arbitrary units

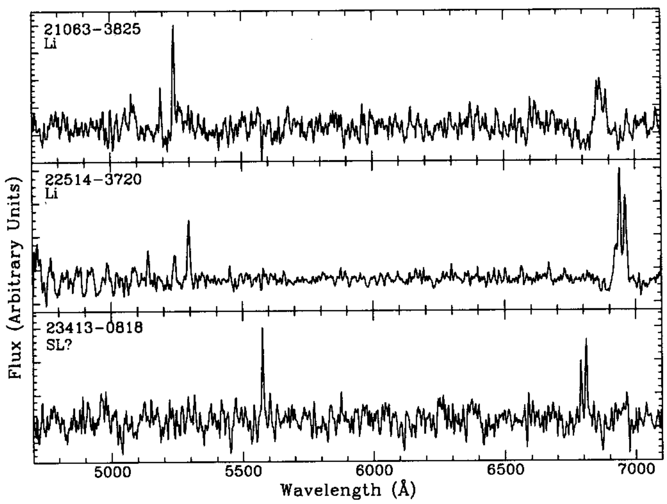


Fig. 1. continued

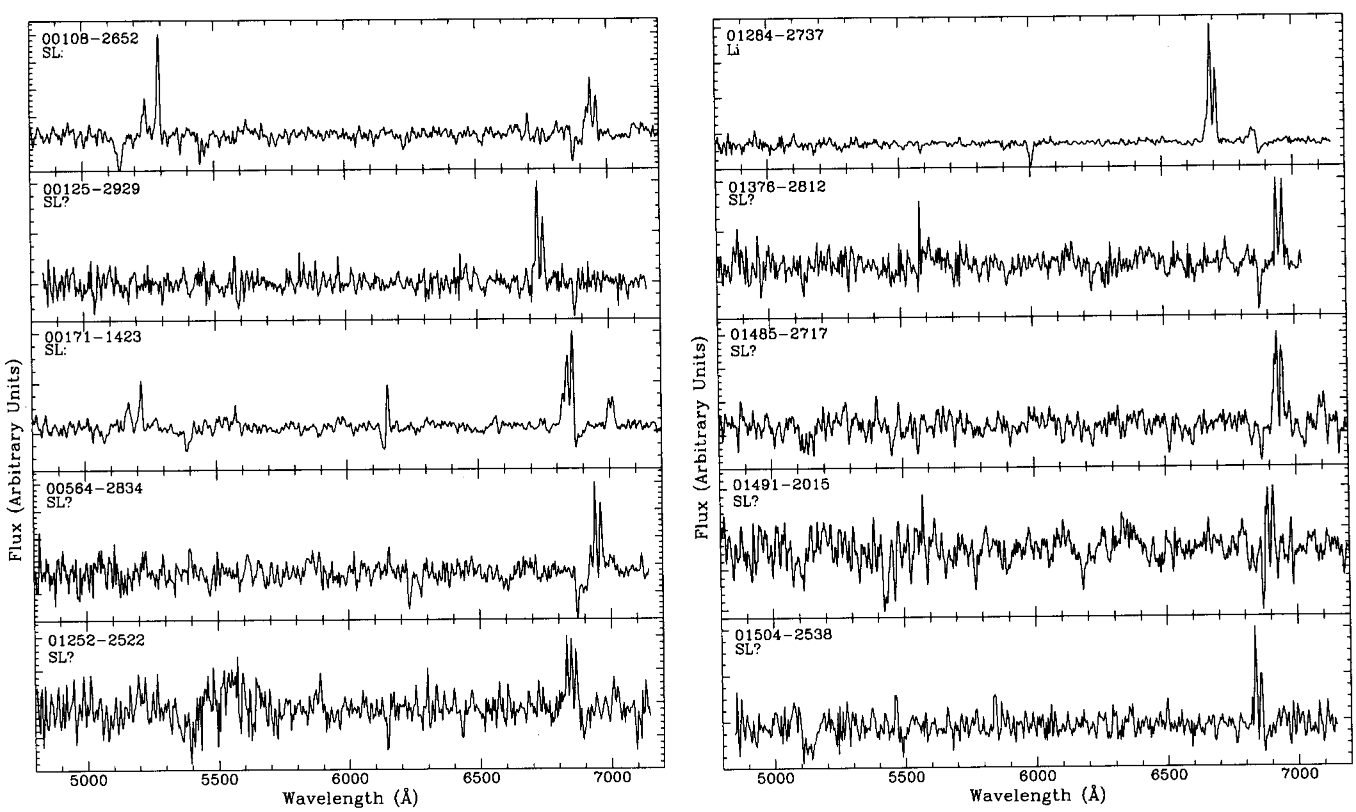
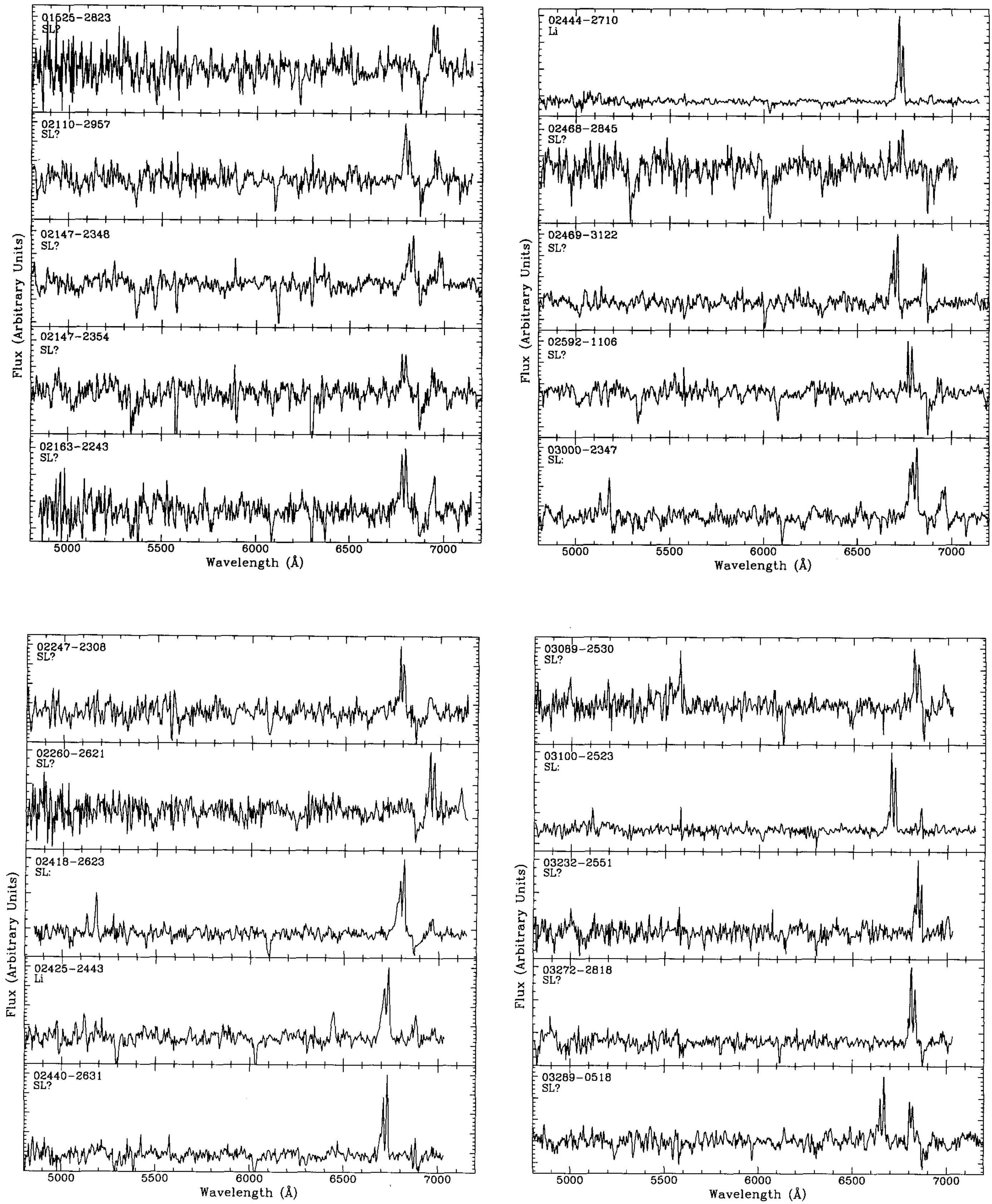


Fig. 2. Spectra of AGN candidates observed at CTIO and ESO



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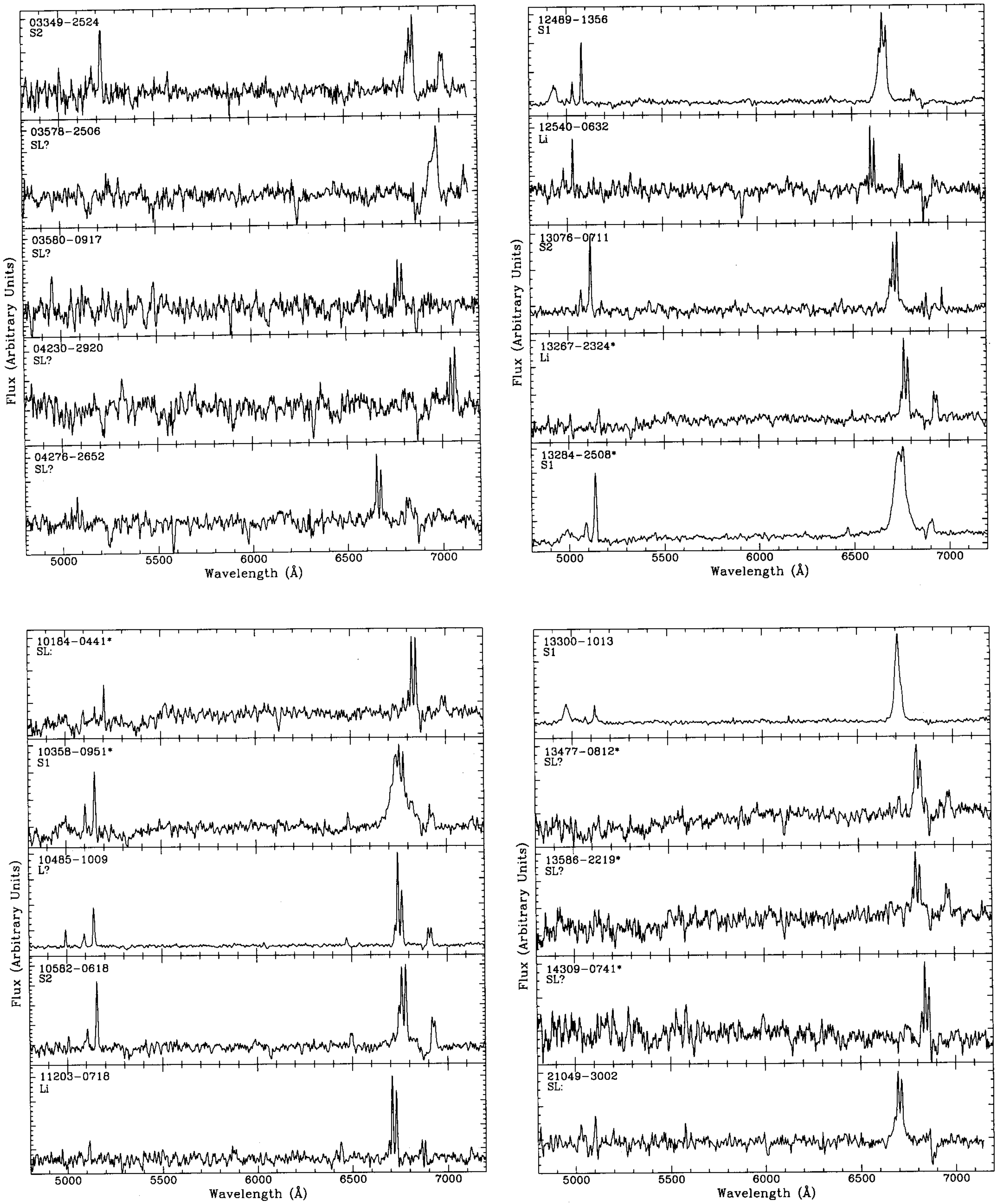

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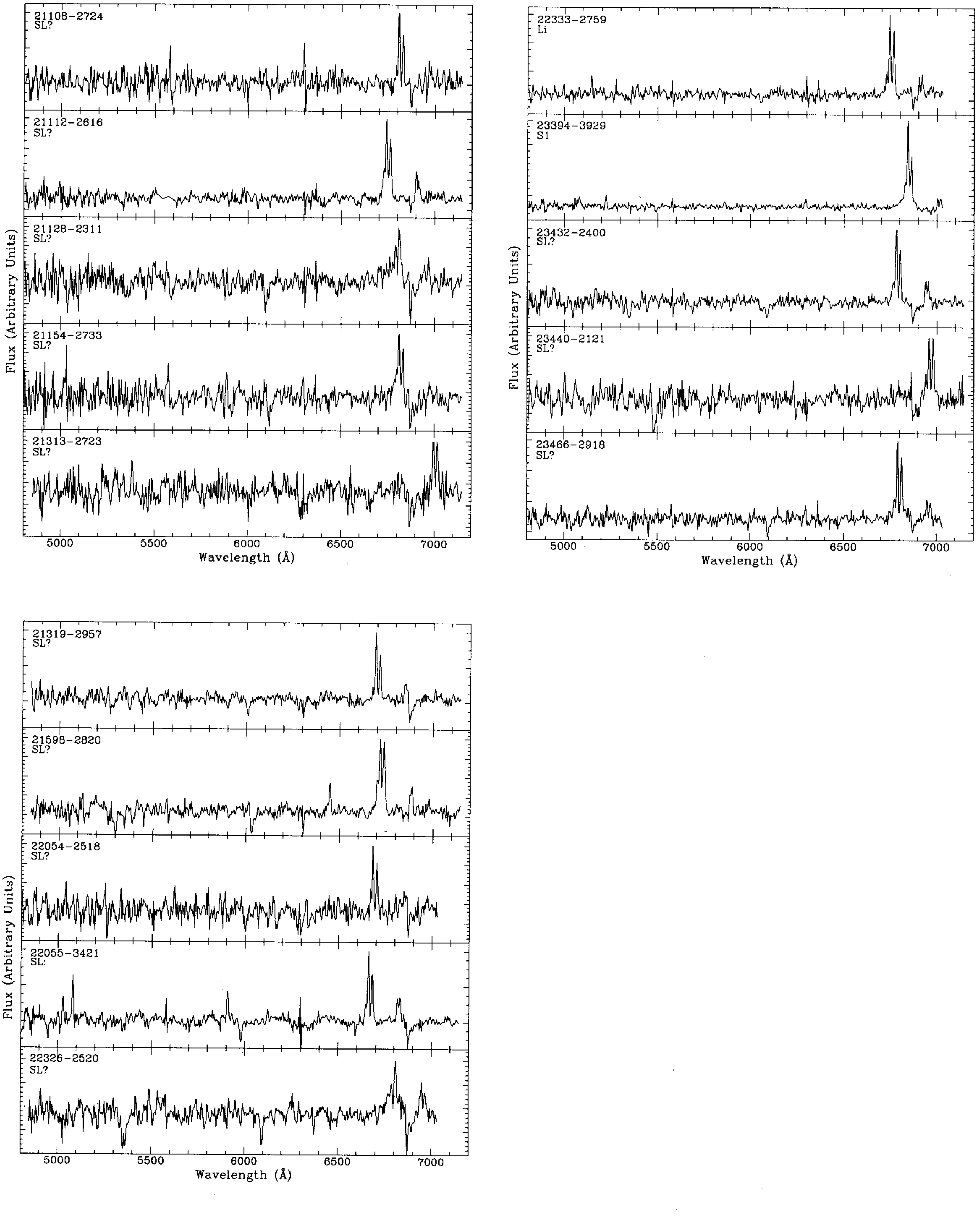

Fig. 2. continued