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J/MNRAS/460/19 Update of INTEGRAL/IBIS AGN catalogue (Malizia+, 2016)

The INTEGRAL/IBIS AGN catalogue: an update.

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=[2016MNRAS.460...19M](#) (SIMBAD/NED BibCode)

ADC_Keywords: Surveys ; Gamma rays ; Active gal. nuclei

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Abstract:

In the most recent IBIS survey based on observations performed during the first 1000 orbits of INTEGRAL, are listed 363 high-energy emitters firmly associated with AGN, 107 of which are reported here for the first time. We have used X-ray data to image the IBIS 90 per cent error circle of all the AGN in the sample of 107, in order to obtain the correct X-ray counterparts, locate them with arcsec accuracy and therefore pinpoint the correct optical counterparts. This procedure has led to the optical and spectral characterization of the entire sample. This new set consists of 34 broad line or type 1 AGN, 47 narrow line or type 2 AGN, 18 blazars and 8 sources of unknown class. These eight sources have been associated with AGN from their positional coincidence with 2MASX/Radio/X-ray sources. Seven high-energy emitters have been included since they are considered to be good AGN candidates. Spectral analysis has been already performed on 55 objects and the results from the most recent and/or best statistical measurements have been collected. For the remaining 52 sources, we report the spectral analysis for the first time in this work. We have been able to obtain the full X-ray coverage of the sample making use of data from Swift/XRT, XMM-Newton and NuSTAR. In addition to the spectral characterization of the entire sample, this analysis has enabled us to identify peculiar sources and by comparing different data sets, highlight flux variability in the 2-10keV and 20-40keV bands.

Description:

In this paper we present the X-ray and optical follow-up work on 107 new AGN recently detected by INTEGRAL. Luckily, we have been able to obtain full X-ray coverage of the entire sample making use of data from Swift/XRT, Newton-XMM and NuSTAR archives or through Swift/XRT follow up observations triggered by us.

File Summary:

FileName	Lrec1	Records	Explanations
ReadMe	80	.	This file
tablea1.dat	178	116	INTEGRAL/IBIS AGN
refs.dat	98	49	References

See also:

- [J/MNRAS/426/1750](#) : INTEGRAL/IBIS AGN catalogue (Malizia+, 2012)
[J/A+A/545/A27](#) : 9yr INTEGRAL/IBIS Gal. Hard X-Ray Survey (Krivonost+, 2012)
[J/ApJS/223/15](#) : 8yr INTEGRAL/IBIS soft gamma-ray source obs. (Bird+, 2016)

Byte-by-byte Description of file: [tablea1.dat](#)

Bytes	Format	Units	Label	Explanations
1	A1	---	n_Name	[c] c for AGN candidate
3- 23	A21	---	Name	Name
24- 25	A2	---	f_Name	[fi] Note on Name (1).
27- 50	A24	---	AName	Alternative name
52- 53	I2	h	RAh	Right ascension (J2000)
55- 56	I2	min	RAm	Right ascension (J2000)
58- 61	F4.1	s	RAS	Right ascension (J2000)
63	A1	---	DE-	Declination sign (J2000)
64- 65	I2	deg	DEd	Declination (J2000)
67- 68	I2	arcmin	DEm	Declination (J2000)
70- 71	I2	arcsec	DEs	Declination (J2000)
73- 79	F7.5	---	z	?= Redshift
82- 95	A14	---	Class	Classification
96- 98	A3	---	n_Class	[eh,] Note on Class (1).
100-107	A8	---	Exp/Inst	Exposure time or instrument name
108	A1	---	n_Exp/Inst	[dg] Note on Exp/Inst (1).
110-114	F5.1	---	Signi	?= XRT detection significance in the 0.3-10keV band (σ)
116	A1	---	l_NH	Limit flag on NH
117-123	F7.2	10+22cm-2	NH	? Intrinsic column density

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124	A1	---	---	[+]
125-131	F7.2	10+22cm-2	E_NH	? Error on NH (upper limit)
132	A1	---	---	[-]
133-138	F6.2	10+22cm-2	e_NH	? Error on NH (lower limit)
140-144	F5.2	---	GAMMA	? GAMMA photon index
145	A1	---	---	[+]
146-149	F4.2	---	E_GAMMA	? Error on GAMMA (upper limit)
150	A1	---	---	[-]
151-154	F4.2	---	e_GAMMA	? Error on GAMMA (lower limit)
155	A1	---	n_GAMMA	[f] f for fixed GAMMA value
157-161	F5.2	10-15W/m2	FS	? Soft (2-10keV) flux
162	A1	---	---	[-]
163	I1	10-15W/m2	bFS	? Lower value of soft flux when interval
165-169	A5	---	n_FS	Note on FS
171	A1	---	l_FH	Limit flag on FH
172-175	F4.2	10-14W/m2	FH	? Hard (20-100keV) flux
177-178	I2	---	Ref	Reference for X-ray spectral parameters, in refs.dat file

Note (1): Notes as follows:

- f = already present in previous IBIS catalogues but only recently identified as active galactic nuclei and hence reported here as new INTEGRAL AGN
- i = two X-ray sources, 1 identified as a Sy 1.2 and 1 AGN candidate, are present in the IBIS error box
- e = new classification in Masetti et al. (in preparation)
- h = the blazar object is blended with a CV but Bassani et al. ([2014A&A...561A.108B](#)) have estimated that the 90 per cent hard X-ray fluxed comes from the AGN
- d = XMM data
- g = NuSTAR data

Byte-by-byte Description of file: [refs.dat](#)

Bytes	Format	Units	Label	Explanations
1- 2	I2	---	Ref	Reference number
4- 22	A19	---	BibCode	BibCode
24- 57	A34	---	Aut	Author's name
59- 98	A40	---	Com	Comments

History:
From electronic version of the journal

(End) Patricia Vannier [CDS] 28-Sep-2017

The document above follows the rules of the [Standard Description for Astronomical Catalogues](#); from this documentation it is possible to generate *f77* program to load files [into arrays](#) or [line by line](#)