

VizieR: Catalogs and associated data

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- 1) VizieR
- 2) Associated data



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What is VizieR? - I



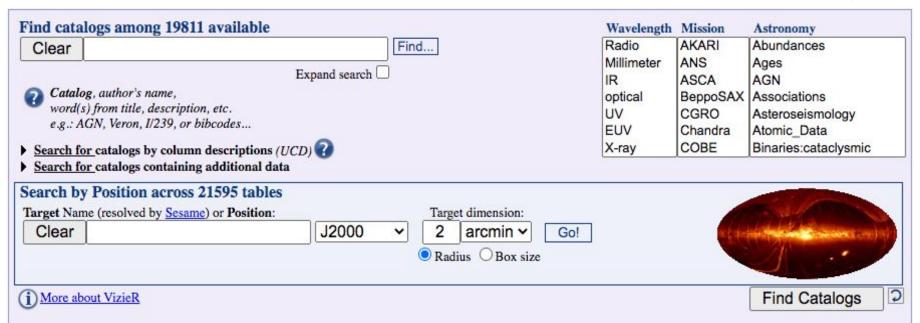
The VizieR **service** provides unified access to a very large collection (>19,800) of astronomical catalogues & associated data:

- Reference catalogues & surveys of astronomical sources at all wavelengths (e.g. GAIA, SDSS, Pan-STARRS, 2MASS, Dark Energy Survey, UCAC, WISE, ...)
- Tables from papers published in the major astronomical journals (1100-1200 cats/yr)
- Diversity of astronomical data: astronomical sources, spectra, polarization data, but also models (evolutionary, populations, synthetic spectra, ...), statistical analyses, compilations, ...

What is VizieR? - II

VizieR can be queried:

- By catalog name
- By wavelength, Mission name, object type / process, ...
- By keyword (galaxies, quasars, ISM, ...)
- By column description
- By position, through ALL catalogs (>50 years of observations)



Meta data

The metadata describes the data:

- Type of data (catalog, spectra, light curves etc...)
- Units
- Wavelengths / filters / bands / instrument
- Magnitude system, Coordinates system
- Since 2018: time system
- ... with <u>homogenized descriptions</u>, using VizieR conventions

Goal: **Discoverability**, reusability (FAIR), platform for higher level services (phot. Viewer, associated data, ...) = added value

J/A+A	V549/A133/	lable3 p										
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2	J0019+7327	004 940222	-06.393149	2010-07-02	2415.0	400	48	mly	mly	mir		2
2	J0050-0979	012 (20	*13.438338	2009-08-22	1101 0	9.3	2301.6	14.9	1653.4	0.4	48	1
4P	J0108+0135	012.072136	-09.484781	2010-07-23	1191.9	0.7	1224.7	1.4	1051.2	4.0		10
5P	J0108+0135 J0125-0005	017.161546	+01.583421	2010-07-23	434.1	1.0	200 n	1.4	123.7	4.0	-4112	
6P	J0125-0005 J0137+3309	021.370182	-00.098870	2010-07-23		13.6	3909.3	25,4	2736.1	0.0	115.2	0
770	J0137+3309 J0137+3309	024,420833	+33.159722	2000 08 22		4.8			787.1	3.0	2295.3	
7.5	J0137+3309 J0137+3309	024.422081	+33 150750	2009-08-27	5537.1	0.1	3267.0	0.1	1234.9	3.9	24511	_
						0.4	3290.7	0.3	1424.3		400.14	- 4
2P	J0137+3309 J0137+3309	024,422081	433 150250	2010-07-02	5440.2	20.8	3278.5	21.3	858.1		441.00	
10 P	J0137+3309	024 422081	+33 150040	2010-07-23	5438.7	20,8			858.9		41.40	
11 P	J0137+3300	024 422001	+33.139759	2010-08-03	5434.5	20.8						
								21.3	858.1 858.4		200.00	
127	J0137+3309	024.422081	+33.159759	2010-09-20	5440.3	21,0	20173	213				
A.C.A.	2012/172009	1029,922U81	+33.159750	2010.00.24	E421 A	21.4		-	858.8			4
4.7.4	2012/13/09	1024.422081	+33.159759	2010-10-20	5424.3	21.2			858.5			5
121	JU137+3309	024.422081	+33.159759	2010-11-09	5302.7	24.5			860.7		9180	5
107	30137+3309	024.422081	+33.159759	2010-11-20	5403.8	21.9			860.5 858.9			5
179	J0137+3309	024,422081	+33,159750	2010-11-27	5185.6	23.5	3316.1	22.0		-	41.00	3
187	J0217+7349	034 378389	+73.825728	2009-08-27	4751 2	10	4255 6	4.24	861.8		674.0	5
	J0217+7349						4533.0	4.2				17
	J0217+7349 J0217+7349				2014.4	19.9		-	2244.3			14
					1100 0	4.2		-	2284.8			10
211	J0228+6721	0.57.208548	+67.330841	2010-09-20	1108.8	4.3	21102.01	127.0	903.6			
221	J0319+4130	049.950667	+41.511695	2010-09-07	14333.1	30.1	2004 6	13/10	2843.4			18
231	J0336+3218	054.125448	+32.308151	2010-09-07	0004.5	22.0	2095.6	13.0	8246.94			-
241	10359+5057	059.873947	+50.963934	2010-09-20	8834.3	33.8			2233.3		111111	15
267	10418+3801	064.588654	+38.026611	2010-09-20	2827.4	19.6						0
							4800 C	0.5*				o
400	10422-0120	IN65 81 5792	-01.342611	2009-11-03	3966.9	0.5	4398.9		5651.52			-1
6/1	J0423-0120 J0423-0120	065.815836	-01.342518	2010-09-07			-	STATE OF THE PARTY.	-			ä
281	30423-0120	000-3710000	-01245218	7010-03-01								
	10423-0120	065.815836					4395.9	120	8585.7			

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		and	flux densities	ce coordinate	es mi	AAA	549A 13	rinsky+	2013)		
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2	J0019+7327	004 04022	-06.393149	2010-07-02	TALES	400	de	mly	mly Fi	SQ mls	V
	J0050.0020	Oto con	T13/438338	2009,09 22	11011			14.0	16534		
4 P	J0050-0929 J0108+0135	012.672156	-09.484781	2010.07.22	1191.9	0.7	1224.7	1.4*	1051.2	1,503.5	
50	10126 0004	017.161546	+01.583421	2010-07-23	254.1	1.0	209.9	1.4	1001.2	901,9	
60	J0108+0135 J0125-0005 J0137+3309	021.370182	-00.098870	2010-07-23	3558.8	13.6	3909.3	25.4	123.7 %	Hes	10
						9.5		2014	2736.1 13.6		
ZP	J0137+3309 J0137+3309	024,422081	+33 150750	2009-08-27	5537.1	0.1	3267.0	0.1*	787.1 3.9		
						0.4	3290.7	0.3*	1234.9 0.1	444.14	- "
21	J0137+3309 J0137+3309 J0137+3309	024 422091	+22.150000	2010-07-02	5440.2	20.8	3278.5	21.3	1266.6 5.7	44114	0.
10 P	J0137+3309 J0137+3309	024.422001	+33.139759	2010-07-23	5438.7	20,8		41.0	858.1 4.3	41,400	
117	1013743300	024.422081	+33.159759	2010-08-03	5434.5	20.8			858.9 4.3	-47.0	4
								21.2	858.1 4.3		-4
14.1	J0137+3309	024.422081	+33.159759	2010-09-20	5440 3	21.0	PE17.3	61.3	858.4 4.3		-4
6.4C, A	2013/13309	1024.4ZZU81	+33.150750	2010.00.24	£421.0	21.4		-	858.8 4.3		4
4.7.4	2013/1300	1024.422081	+33.159759	2010.10.20	5424.3	21.4		-	858.5 4.3		5
121	JU13/+3309	024.422081	+33.159759	2010-11-09	5302.7	24.5			860.7 4.3		5
161	J0137+3309	024.422081	+33.159759	2010-11-20	5403.9	21.0		-	860.5 4.5		5
171	J0137+3309	024 422081	+33 150750	2010-11-20	\$105.6	22.6	22161	22.0	858.9 4.3		-5
181	J0217+7349	034 379390	±73 935739	2000 00 27	4262.0	40	3310.1	23.0	861.8 4,4		5
	J0217+7349						4233.0	4.2*	2974.5 14.2		17
						14.9		_	2244.3 11.1		14
	J0217+7349							_	2284.8 11.3		16
21	J0228+6721	037.208548	+67.350841	2010-09-20	1108.8	43			903.6 4.5		0
22	J0319+4130	049.950667	+41.511695	2010-09-07	14555.1	36.1	21103.0	137.0	18627.692.4		18
231	J0336+3218	054.125448	+32.308151	2010-09-07		***	2095.6	13.0	2843.4 14.1		52
241	10350+505	050 873947	+50.963934	2010-09-20	8834.3	33.8			8246.940.9 2233.3 11.1	110000	15
261	10418+3801	064 588654	+38.026611	2010-09-20	2821.4	19.6			8505.0 0.1		0
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400	0.10423-0120	065.815792	-01.342611	2009-11-03	3966.9	0.5	4398.9	0.5*	5651.5 28.0		-1
47	J0423-0120 J0423-0120	065.815836	-01.342518	2010-09-07			6200.0	40.2	-		
28	30423-0120	000.012020	ALC: ATOTAL	10:40-02:01				40.2			
	10423-0120	065.815836	OLDSELL				4398.9	150			

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3 J0050-0929	1	J122904.24 J122855.66 J122854.39	+015315.2	197.260381					6/8		the g	Bag	W3mag	
₫₽ J0108+0135	3	J122855.66	+015441 1	107.207696	+01.887558	0.637	0.2/3	m	15.451	0.052	15.214		- 07	Hing.
∑P J0125-0005	4	J122855.66 J122854.39 J122854.14	+015506 p	187.231933	+01.911430	0.037	0.388	m	16,408	0.102	16.000	0.126		0.29
6P J0137+3309									16.855	0.146	16.421		-	
ZP J0137+3309	6	J122845.69 J122844.46	L015451.4	187.225603	+01.914284	1 392	0.238	m	13.216	0.046	15 111	0 110	12.544	
8P J0137+3309	7	J122844 46	+013433.9	187.190380	+01.915530	0.206	0.400	m_						
2P J0137+3309	8	J122844.46 J122849.04	+015450.3	187.185272	+01.913979	1.003	0.189		14.785	0.039	14 702	0.095	12.511	_
LOP J0137+3309		J122849.04 J122847.00	+015417.7	187.204369	+01.904939	0.002	0.919	m	10.000	0.153	16.831	01033	12.207	
LL P J0137+3309	1/	J122847.00 J122853.00	+015441.6	187.195854	+01.911573	0.392	0.944	m	16.897	0.155	16 686		12.115	
12 P J0137+3309	10	J122853.00 J122847.39	+015530.4	187.220856	+01 925131	1 114	0.443	m	16.116	0.083	15 701	0.197	11.663 (0.24
	Щ	J122847.39 J122851.54	+015458.3	187.197478	+01.916203	0.565	0.626	m	16.990	0.172	16.178		12.422	124
13 P J0137+3309									16.214	0.091	16.105		12 154	
14P J0137+3309			TU10044.1	187.209034	401 978917	0.464	0.4101		16.375	0.102	15.936	0.238	12.609	
15 P J0137+3309	4.3	31 EE CP 2 3 1 F	P+013321.2	187.189180	401 0225en	0.386	0.0001		16.024	0.077	15.5321	0.169	12,4360	0.470
16 P J0137+3309	1.3	J122852.47	7+015505.7	187 218636	401 019369	0.430	0.262	m	15.330	0.049	15.4621			
17P J0137+3309	10	J122852.19	0+015458 O	187 217474	+01.916200	0.436	0.393	m	15.874					
18P J0217+7349	1 12	J122927.79	+015443.8	187 365800	101.910122	1.202	0.303		15.564			0.133		
19 P J0217+7349	15	J122924.23	34015425 1	187 350080	+01.912107	1.293	0.071	m	16.968		16.081	100	12.631	_
20P J0217+7349	20	J122927.51									16.7290		12.325	-
21 P J0228+6721	2/	J122927.17							16.287		- CONTRACTOR OF			
22 P J0319+4130		J122927.1							17.104			r-action (12.562	
23 P J0336+3218	3 2	J122928.39 J122932.89	9+013319.0	107.300299	101.922101	0.445	0.4071	m			15.5080	153	12.633	
24 P J0359+5057	2	J122932.89 J122932.73	9+013028.3	187.387082	+01.941204	0.445	0.8061		16.7971				12,569	
25 P J0418+3801		J122932.7.	3+013010.0	187.380399	+01.937931	0.854	0.3151	m	15.918				11.6960	235
26P J0423-0120		J122934.7.	3+015658.2	187.394713	01.949320	0.587	0.5401	m	16.2661		16.2340	295	12.470	
27P J0423-0120	2	5J122934.7.	3+015624.5	187.389748	+01.940144	0.994	0.882	m	16.9050		16.3520	328	12.592	
28 P J0423-0120	2	5J122933.5. 6J122936.2	1+015646.0	187,400909	101,940117	0.622	0.572	m	16.4120	0.104	15.9150	229	11.877	-8
Annual Statement	2	6J122936.2 7J122906.9	5+015311.9	187.278900	+01.000007	6000E	02151	411	6.4120	104				
27E J0423-0120 28E J0423-0120	S.	ALTE ATTATO		16X4410A60	461320020				6.9050					
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			ine WISE	All-Sky do	clease (Cutri	+ 2012					
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2 J0019+7327	1	J122902.49 J122904.24 J122855.66	+015316.0	1 (ive	deg	arcsec	BTCSec	Wlmag g	W2mas		_
3 J0050-0929	2	J122904.24	+01531630	187.260381	+01.887784	0.200		-	Dag Too	W3mag	2
₫₽ J0108+0135	3	J122855.66	1015315.2	187.267696	+01.887550	0.299	0.275 Im	15.451 057	400 400	mag 1	Dieg
5P J0125-0005	4	J122904.24 J122855.66 J122854.39 J122854.14	1015441.1	187.231933	+01.911430	0.037	0.588 Im	16.408 100	10-2140.126		0.29
6P J0137+3309	5	J122854 14	1013306.8	187.226636	+01 918556	0.972	0.879 Im	16.85503	***************************************	12.639	
ZP J0137+3309									16.471 15.111 0.118	12.544	
8P J0137+3309									16.267		
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2P J0137+3309	0	J122849.04	+0154177	100 00	101.313919	1.002	0.919 Tm	16 0000	14.7920,093		
LQP J0137+3309	2	J122847.00	+0154416	197 105054	101.304939	0.992	0.944 Im	16 8070 166	16.686	12.207	
// P J0137+3309	10	J122853.00	+015530.4	197 220054	101.9115/3	0,478	0.443 Im	16.1160.083	15.701 0.197	12.115	
12 P J0137+3309	11	J122847.39 J122851.54	+015458 3	187 107470	+01.925131	1.114	1.020 Im	16.990 0.172	16.178	11.663 0.	.24
13 P J0137+3309	12	J122851.54	+015510 8	197 214766	+01.916203	0.565	0.525 Im	16.2140.091	16.105	12.422	-
14P J0137+3309	13	J122850 17	+0155441	107.214/00	+01.922193	0.628	0.572 Im	16.375 0.102	15.9360.238	12.609	-
15 P J0137+3309	14	J122850.17	10155313	187.209034	+01.928917	0.454	0.418 Im		15.532 0.169		426
16 P J0137+3309	10	J122845.40	1.015505.0	187.189180	+01.922580	0.286	0.262 Im	15.330 0.049	15.462 0.161	12.281	
17P J0137+3309	1.0	J122852.47	+015305.7	187.218636	+01.918268	0.438	0.393 Im	15 9740 071	16.036 0.259	11.853	
/8P J0217+7349	10	J122852.19	+015458.0	187.217474	+01.916122	0.339	0.305 Im	15.564 0.058	15.269 0.133		
19 P J0217+7349	L	J122927.79						17.243 0.212	16.081	12.631	
20 P J0217+7349	Lo	J122924.23						16.968 0.170	16.729 0.486	12.325	
21 P J0228+6721	12	J122927.51							16.241 0.312	12.580	
22 P J0319+4130	Z 23	J122927.17								12.572	
23 P J0336+3218	. 21	J122928.39	+015519.8	187.368299	+01.922181	1.252	1.154 lm	17.1040.191		12.562	-
	21 27	J122932.89	+015628.5	187.387082	+01.941264	0.445	0.407 lm		15.508 0.153	12.633	-
24 P J0359+5057	2	1122022 73	L-0156166	187.386399	+01.937951	0.896	0.806 Im	16.797 0.147		12.569	220
25 P J0418+3801		VIII 22024 72	1.015658 2	187 394715	+01.949520	0.334	0.313	123100711		12.470	42
26 P J0423-0120			. O. C.C. 4 E	197 390749	440144	U.387	0.540	10.7000000			
27 P J0423-0120										11.877	
28 P J0423-0120	2	6 J122936.21 7 J122906.95	5+015311.9	187.278966	+01.886659	0.622	0.572 m	16.4120.104	-		rife.
28 2 30423-0120	<u> 2</u>	71122900.9.	7+01331113	20023-024	Can money	6/955	0515TH	16.4120.104			
		1122906,95	+015311.9	187.278966	4012401E1		Dept.	16,905 0,159			
	002.87	3132906,31			+01.940144						
	00129										
	020 8	\$75582FF									

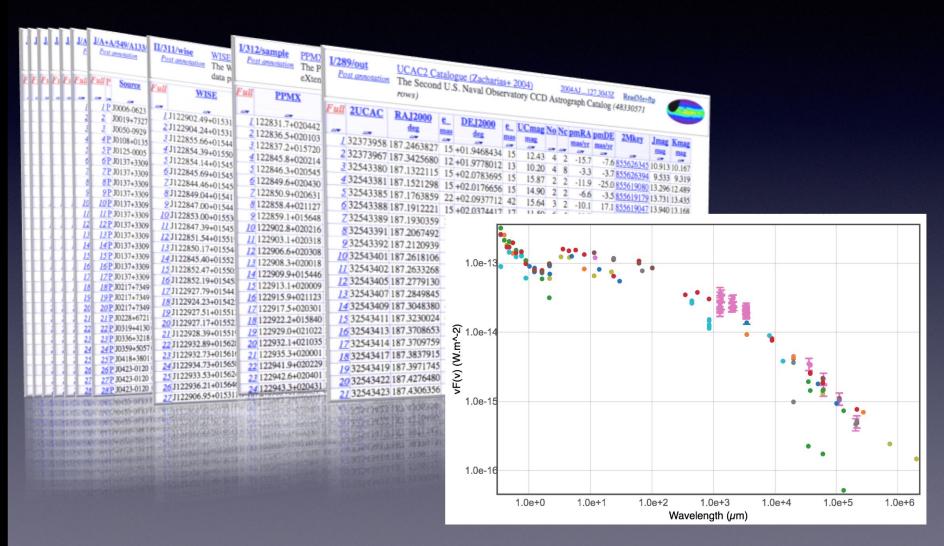
J/A+/	A/549/A133/	II			. II	1/21													
Pour	onnotation .	M/3	11/wise	WI	92	W31	2/sample	e PPM	Catalog of PMX Catalog ided) (18088										
		1.0	est granoso	tion The	e W	Po	st annotan	on The P	PMX Catalog of ded) (18088	positions an	d ann								
Full P				dat				eXter	ded) catalo	g (Position	and D	motion	s (Roe	ser+ 20	000 0				
THE P	Source	Full				Full		- Trice	ided) (18088	919 rows)	mu riot	er Moti	ons	2	OSA&A	eadVie+f	lp g		
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LP	J0006-0623	A.W		-00	- 1	6W			deg	DEJ2000	pmRA mas/yr	nmhr	-						
2	J0019+7327	1	J12290	2.49+01	531	1	122831	7,030	div.	deg	mas/yr	mas/vr	Cmag	Rmag	Jmag	Hmae	Kman	W. S. T	
3	J0050-0929	- 6	J12290	4.24401	52.	2	122836	1+020442	187.132204	+02.078360	1.04	4/8	400	mag	mag	mag	Bag	Nobs P	Sub
4P	J0108+0135	_ 2	J12285	5.66+01	544	2	122020	3+020103	187.132204	+02.017671	0.00	-19.32 9.78	14.960	15.331	13.206	12.610	OW.	OF 10	- 400
5 P	J0125-0005	- 2	J12285	4 30401	550	-	12204-	2+015720	187.152120	+01.955664	-8.78	9.78	14.140	14,810	13.731	13.435	12.489	3	Q
6P	J0137+3309	2	J12285	4.14+019	5.45														Q
ZP	J0137+3309	0	J12284	5.69+01	545	2	122846.	3+020545	187.191214	+02.095850	18.02								S
8 P	J0137+3309	L Z	J12284	4.46+01	545	_		OTUZUM MI	187 206740	- 55 comment		4.00.1	14.430	14.934	17.70%	11 045	to man		5
	J0137+3309	8	J12284	9.04+01	541		144030	3+020031	187.212086	403 topcos	200 000	* 4400	14-740	13,432	13.967	13 5161	12 440		0
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	J0137+3309	10	J12285	3.00+01	553	Z	144839.	1+015648	187.246371	401 046943	2.22	-1.10	15.180	16,410	14.689	14 158 1	12 647		Ö
	J0137+3309	11	J12284	7.39+01	545	10	122902.	8+020216	187.261792	±01.940842		-3.81	13.520	12,733	10.913	10.228	10.167		5
	J0137+3309	12	J12285	1.54+01	551	11	122903.	1+020318	187.263319	±02.037813	30.13	-17.79	14.170	14.689	12.804	12.1761	12.070	4P	
	30137+3309	1.3	J12285	50.17+01	554	12	122906	6+020308	187.277891	+02 062200	-26.47	-1.04	12.880	13.276	12.374	12.124	12.056	5	0
	J0137+3309	14	J12284	5.40+01	552	13	122908	3+0200018	187.284975	+02.032398	-11.01	-1.95	12.880	13.838	11.766	11.047	9.976		Q
	J0137+3309	15	J12285	52.47+01	550:				187.291603			-34.37						6	S
	J0137+3309	10	J12285	52.19+01	545				187.304846			-12.08							0
	J0217+7349	12	J12292	27.79+01	544	_			187.316628			-20.53	14.470					3 4	0
	J0217+7349 J0217+7349	18	J12292	24.23+01	542				187.323008				14.670	-	-				0
	D0217+7349 D0228+6721	15	J12292	27.51+01	5512								10.500					5	S
	J0228+6721 J0319+4130			27.17+01					187.342567				12.250					5	s
	J0336+3218	21		28.39+01		19	122929	.0+021024	187.370974	+02.172922		-17.82	14.560	15.167	13.965	13,625 1	3.618	4	
	J0359+5057	24		32.89+01		20	122932	.1+021033	187.383795	+02-170470	18 08	7.09	15,500	14.989	13.961	3.6891	3.815	3	
	P J0418+3801	2.		32.73+01		21	122935	3+020001	187.397194	+02.000412	4 57	-14.01	15.130	16.169	14.651	[4.199]	4.251	2	
261	P J0423-0120	VIII 24	J12293	34.73+01	5651	22	122941	.9+020229	187.424703	+02.041400		7 16	13.010	13.551	12.400	2,053	1.991	5P	
271	P J0423-0120	2	5J1229	33.53+01	362	2.3	122942	.6+020401	187.427639	+02.000933	-10.31	10.43	13.670	14.035	13,023	2.7411	2.028	5 P.	
281	P J0423-0120	2	6J1229	36.21+01	15040	24	122943	3+02043	187.430630	10/4150:10	A 12/21.	10 47	1.011	+8923			5.628		
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J/A+A/549/A133/	II/311/wise Wice	1/312/	
Post annotation	Post general WISE	Post association Post associa	
	Post annotation The W	Post annotation The PPAN Catalog of positions and pro-	
Full'P Source	data p	Post association The PPMX Catalog (Position and Proper motions (Roeser + 2008) eXtended) (18088919 rows) ReadMeshp eXtended) (18088919 rows)	
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2 J0019+7327	LJ122902.49+01531		
3 J0050-0929	£3144904 24401824		bs P sub
4P J0108+0135	23122855.66401544		W 10 AW
5P J0125-0005	#J122854 30+01550	2 122837 2+015720 187.155009 +01.955664 -63.80 47.07 14.67013 13 23 4 4 122845 8+020214 187 10324	3 Q
6P J0137+3309	2 1122854 14401848		4 <u>0</u>
ZP J0137+3309	QJ122845,69+01545	5 122846.3+020545 187.193033 +02.095850 18.93 +1.72 4.894 11.130 11.511 9.931 9.373 9.286	3 5
8P J0137+3309	ZJ122844,46+01545	2 ************************************	7 S
2P J0137+3309	8J122849.04+01541	2 122030.34020631 187 212086 ±02 100002 10 17.720 13.432 13.967 13.51613.440	- 100
10P J0137+3309	2J122847.00+01544	0 122858 44021127 197 242640 . op . o	3 <u>Q</u> 6 S
// P J0137+3309	10 J122853.00+01553	9 122859 1+015648 197 246271 010000 -201 -1.10 15.180 16.410 14.689 14 158 13 647	3 0
12 P J0137+3309	// J122847.39+01545	20 122002 8 . 020215 107 0 107 107 107 107 107 107 107 107 1	4 5
L3 P J0137+3309	12 J122851 54+01551	1 122002 1 022212 122 122 122 122 122 12	4PO
14P J0137+3309	13 J122850 17+01554	12 122006 6 020320 107.203319 +02.033157 -26.47 -1.04 12.880 13.276 12.374 12.124 12.056	5 0
15 P J0137+3309	14 J122845 40+01552	2 13 13 23 20 20 20 20 20 20 20 20 20 20 20 20 20	Q
16 P J0137+3309	15 J122852 47+01550	2 122906.34020018 187.284973 +02.003243 -12.81 -34.37 12.000 12.454 11.345 10.996 10.924	6 \$
17 P J0137+3309	16 J122852 19+01545	122909.9+013446 187.291603+01.912876 -4.71 -12.0814.92013.49511.64511.01110.850	3 <u>Q</u>
18P J0217+7349	17 J122927 79+01544	122913.1+020009187.304846+02.002561	3 <u>Q</u>
19P J0217+7349		16 122915.9+021123 187.316628 +02.189749 17.04 -20.53 13.670 14.292 12.797 12.322 12.294	4 <u>Q</u>
20 P J0217+7349		17 122917.5+020301 187.323008 +02.050420 25.49 12.54 14.670 15.312 13.708 13.206 13.070	3 <u>Q</u> 5 S
21 P J0228+6721		2 18 122922.2+015840 187.342567.+01.977797 -3.04 -7.5410.50010.180 9.533 9.334 9.319	5 5
22 P J0319+4130 23 P J0336+3218		19 122929.0+021022 187.370974 +02.172922 0.51 2.6212.25012.669 11.739 11.467 11.416	4 0
24P J0359+5057	22 J122932.89+01562	20 122932.1+021032 187.383795 +02.176478 -32.87 -17.82 14.560 15.167 13.965 13.625 13.618 21 20 122932.1+021035 187.383795 +02.176478 -32.87 -17.82 14.560 15.167 13.965 13.625 13.618 21 20 122932.1+021032 187.393795 +02.176478 -32.87 -17.82 14.560 15.167 13.965 13.625 13.618	3 Q
25 P J0418+3801	253122932.73+01301	1(2/122935 3+020001 187.397194 +02.000412 -18.98 7.0913.30014.0014.281	2 0
26 P J0423-0120	24 1122934./3+01303		5PQ
27 P J0423-0120	25 J122933.53+01562	24 22 122042 6+020401 187.427639 +02.066933 6.47 7.10 200 14.035 13.023 12.241 12.628	5P.0
28 P J0423-0120	26 1122936.21+01564	24 122943 3+020431 187.430630 +02.075472 15.0504227 11.0504 15.050	
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28E J0423-0120	0 - Kthr35806,95+01531	2010年中央发展的1010年1010年1010年1010年1010年11日至22年10月10日在2010年10日第二日日日日日日日日日日日日日日日日日日日日日	
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				Po.	2/Out	UCAC2 C	atele	gue (Zacharia								
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/ P J0006-0623	COV .		ALAZA.	Full	2UCAC	,				, ccb	Astrog	graph Cat	alog (483	30571		
2 J0019+7327	LJ122902.49+01531	/ 122921		10.00	2UCAC	RAJ2000	0									91
3 J0050-0929	6J144904 24401624	0.1000	7+020442		600	deg	mas	DEJ2000	e_U	Cmag ?	No Ne	nmP A	mDE 23			
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6P J0137+3309	23122854.14+01545	1	3+020214	3	32543380	187.3425680	12	+01.9778012	13	10.20		-15.7	-7.6 <u>8556</u>	626345	10.913 10.167	
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10P J0137+3309	2J122847.00+01541	8 122858	4+021122			10/.1/03839	77	103 0037714	41.00	15.64		-0.0	-37 8330	019179	13.731 13.435	
// P J0137+3309	10 J122853.00+01553	2122859	1+015649		25247700	107.1912221	15	402 0374417	17	11.50			-0.5 esc	519047	13.940 13.168	
12 P J0137+3309	11 J122847 39+01545	10 122902	84020216	4	22542204	187.1930359	20	+02.0958381	15	14.65		-6.6	-9.5 8556	610046	9.931 9.286 12.706 11.779	
L3 P J0137+3309	12 J122851.54+01551	11 122903	1+020210	-	32343391	187.2067492	15	+02.0750853	18	15.35	2 2	-9.0	-31859	519094	13.967 13.440	
14 P J0137+3309	13 J122850.17+01554	12 122906		2	32343392	187.2120939	15	+02.1086914	21	12.35	4 3	-10.5	5.88556	519024	11.559 11.233	
15 P J0137+3309 16 P J0137+3309	77.017.040.040.40101007	13122908		10	32543401	187.2618106	15	+02.0378100	35	14.42	3 2	-11.4	-18.9 8556	526490	12.804 12.070	
17P J0137+3309	123122032.47+01330	14 122909				187.2633268				13.23	4 2	-24.5			12.374 12.056	
18P J0217+7349	103122032.19+01343	15177914	1+020009			187.2779130		+02.0523862	7	12.58	4 4	-2.3			11.766 9.976	
19 P J0217+7349	1/31/2/9/1/9+01344		9+021123			187.2849845				12.39				_	11.345 10.924	
20 P J0217+7349	10 1122027 51 -01551		5+020301			187.3048380				14.85			and the same of the same of		13.731 13.281	
21 P J0228+6721	20 1122027 17+01552		2+015840			187.3230024				15.29					13.708 13.070	
22 P J0319+4130	21 1122028 30+01551	19 122929	0+021022		32543413	187.3708653	3 15	+02.1805292	47	15.38					14.027 13.419	
23 P J0336+3218 24 P J0359+5057	223122932.89+01302	20 122932	1+021035	17	32543414	187.3709759	18	+02.1729225	15	12.54		-5.4			11.739 11.416 13.965 13.618	
25 P J0418+3801	233122932./3401301	1 21 122935	3+020001	18	32543417	187.3837915	5 15	+02.1764856	15	15.06			208556	41315	3.961 13.815	
26 P J0423-0120	24 1122934./3+01303	22 122941	.9+020229	10	32543419	187.3971745	5 27	+02.0004175	21		3 2	-8.9	-7.08556	41203	2.400 11.991	
27 P J0423-0120	25 1122933 53401302		.6+020401	2/	22543422	187 4276480	15	+02.0669528	5 13	13.38			2.4 8556	411871	3.023 12.628	_
28 P J0423-0120	26 J122936.21+01564 27 J122906.95+01531	24 122943	3+020431	21	32543423	187.4306350	6 30	+02.0754737	31	14.13	1	No. of Concession, Name of Street, or other			3.023.12.628	
28 2 10423-0120 (01 22002A	STATE	PA VANDAN	187 4306350	386	±02.0754737		14:13	42	-12.5				
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					22543477	187.3709755 987.3109755										

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/ D troops	are .	E)E		PPM	X.	E 10		The Secon				tory CCI) Astr	ograph C	atalog (4)	ReadMes	ftp	
2 J0019+7327	1J122902.4	O. O.	-GW	COV.		r uu	2UCAC	RAJ2000	_	-					- 6140	330371		
3 J0050-0929	2J122904.2	9+01531		122831.7+0	20442	400		deg	2	DEJ200	0 e	UCman	No. N					
4P J0108+0135	3 J122855.6	6+01531	_ 4	122836.5+0	20103		32373060		mas 400	deg	mas	UCmag	730 14	c pmRA	pmDE	2MP	Jimag Km.	-
SP J0125-0005	±J122854 3	Q401550	- 2	122837.2+(15720	2	32272045	187.2463827	15	+01.9468	400		400 40	- OF	mas/vr		mag mag	1000
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ZP J0137+3309	QJ122845.6	9+01545	_ 5	122846.3+(020545									8 -3.3		676304	9.533 9.3	67
8P J0137+3309	ZJ122844.4	6+01545	Ω.	122849.6+0	020430								-			55619	9333 93	3.00
2P J0137+3309	8J122849.0	4+01541	Z	122850.9+0	020631			10/-1/03834	2 77	102 0022			-		-3.5 85	55619179	13.731 13.4	35
LQP J0137+3309	2J122847.0	00+01544	8	122858.4+0	021127	6	32543388	187.1912221	15	±02.0937	112 42			2 -10.1	17.1 85	55619047	13.940 13.10	69
// P J0137+3309		00+01553	2	122859.1+0	015648	2	32543389	187.1930359	20	+02.03/4	11/ 1/	11.50			-9.5 8	55619149	9.931 9.29	86
12 P J0137+3309 13 P J0137+3309	11 J122847.3	9+01545		122902.8+0	020216	8	32543391	187.2067492	15	±02.0936.	261 13	14.65	-	- 470	-3.5 85	55619046	12.706 11.77	79
14P J0137+3309	12 J122851.5	54+01551	_	122903.1+0		9	32543392	187.2120939	15	+02.07300	333 18	15.35	-		-3.185	55619084	13.967 13.44	40
15 P J0137+3309	13 J122850.1 14 J122845.4	17+01554		122906.6+		10	32543401	187.2618106	15	+02.1080	100 20	12.35		3 -10.5	5.885	55619024	11.559 11.23	33
16 P J0137+3309	15 J122852.4	17-01552	14	122908.3+		11	32543402	187.2633268	15	+02.03/8	100 33	14.42		2 -11.4			12.804 12.07	
17P J0137+3309	16 J122852.1		1.4	122909.9+				187.2779130						2 -24.5	A.16. 22		12.374 12.05	
18P J0217+7349	17 J122927.7		12	122913.1+						+02.0523				4 -2.3			11.766 9.97	
19 P J0217+7349	18 I122924 2		16	122915.9+				187.2849845						3 -12.8		_	11.345 10.92	
20 P J0217+7349	19 J122927.5		1.7	122917.5+		1		187.3048380						2 -18.6	and the same of the same of the same of		13.731 13.28 13.708 13.07	
21 P J0228+6721 22 P J0319+4130	20 J122927.1	17+01552		122922.2+				187.3230024						2 -10.2 2 -11.0			14.027 13.41	
23 P J0336+3218	21 J122928.3		19	122929.0+	021022			187.3708653						2 -5.4			11.739 11.41	
24 P J0359+5057	22 3122932.8		20	122932.1+	021035	L	32543414	187.3709759	9 18	+02.1729	225 15			2 -12.0			13.965 13.61	
25 P J0418+3801	253122932.		21	122935.3+	020001	13	32543417	187.3837915	5 15	+02.1764	830 13	22.000		2 -18.2		5641315	13.961 13.81	5
26 P J0423-0120	24 3122934.	73+01565	22	122941.9+	020229	1 1	32543419	187.397174	5 27	+02.0004	1/3 41		_	2 -8.9	-7.085	5641203	12.400 11.99	1
27 P J0423-0120	25 J122933.5 26 J122936.2	21+01564	2.3	122942.6+	020401	20	32543422	187.4276480	0 15	+02.0669	028 13				2.4 85	5641187	13.023 12.62	8
28 P J0423-0120	26 J122936.5 27 J122906.5	95+01531	24	122943.3+	020431	2	32543423	187.4306350	6 30	+02.0754	/3/ 31	14.13	1	152				
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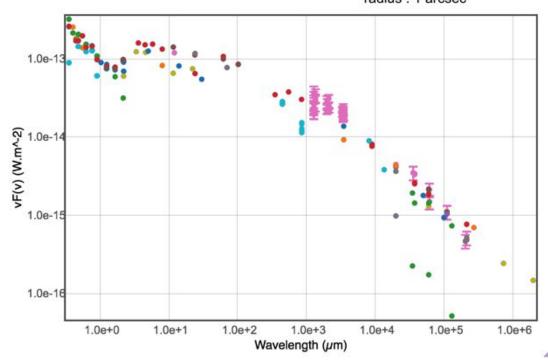
VizieR Photometry viewer

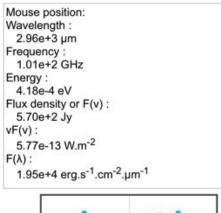
share +

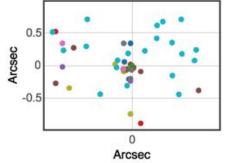
Target 3c273
Radius (in arcsec) 1
submit



3c273 (12 29 6.695+02 03 8.662), radius: 1 arcsec







Added value (continued, non-exhaustive)

Durability of storage / archive, availability

Multi-site backups and mirrors

Diversity of access modes, interoperability

VO protocols and tools, TAP, Topcat, Aladin, Python astroquery, ...

Indexation (metadata), curation / validation by CDS documentalists Fluid cross-catalog navigation and visualization

- Links to original samples and between tables
- Visualizations of data in tables highlights your data / results

Digital Objects Identifiers

Improve traceability and discoverability, citeability of your dataset

Help CDS help you



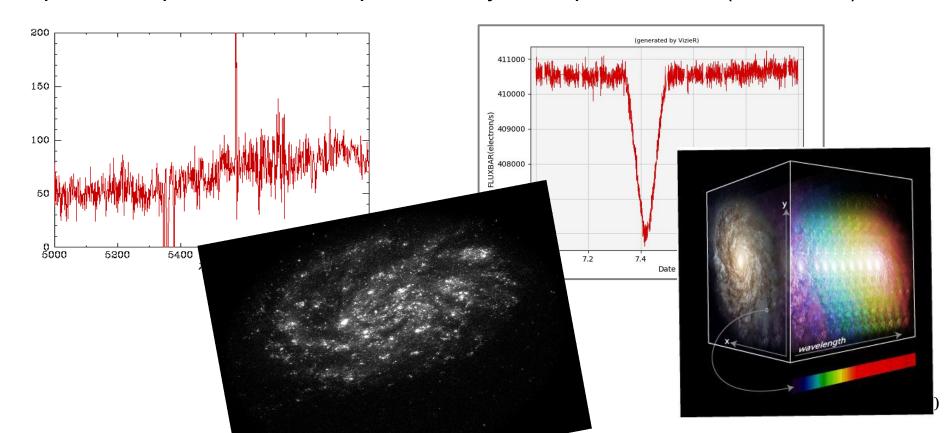
- VizieR submit page: https://cdsarc.unistra.fr/vizier.submit/
- Check the "make your data visible" brochure: http://cdsarc.u-strasbg.fr/submit/Make_your_data_visible.pdf
- In general, a few simple rules to help smooth the process=> get your data online:
 - Avoid object names truncations
 - Use existing names, use CDS dictionary: http://cds.u-strasbg.fr/Dic
 - Provide coordinates, as often as possible.
 - One quantity per column! don't mix:
 - Limits and errors
 - Different f Iters in same column
 - Different units
- => Electronic tables need not / should not be an exact copy of paper table

FAIR Associated data publication

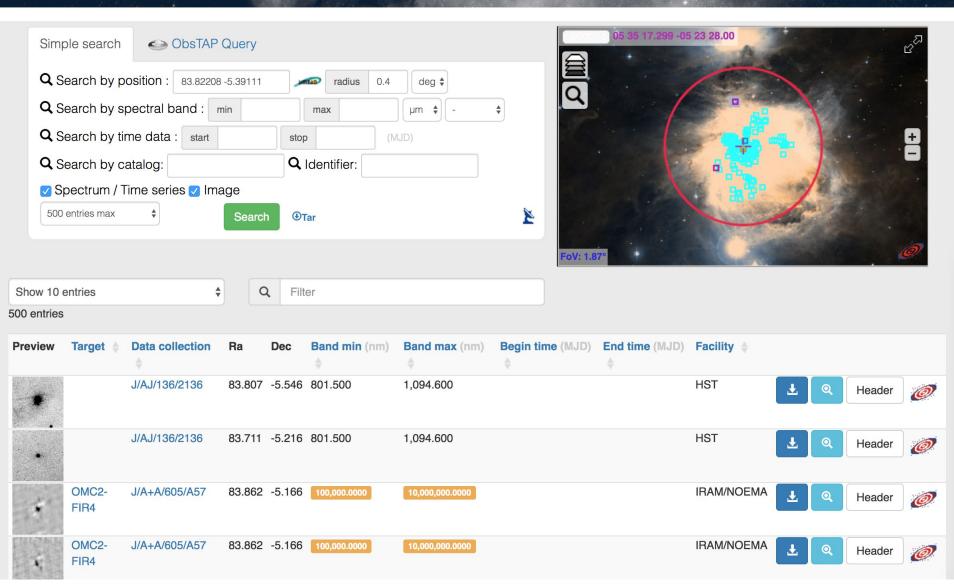
Data management plans increasingly require publication of the data used to produce the article tables: images, spectra, data cubes, time series...

Preferably in reduced form rather than raw (available at telescope archive).

Important aspect of results reproducibility and open science (FAIRness)



VizieR Associated data web page



Associated data: indexation, metadata

Indexation of the associated data

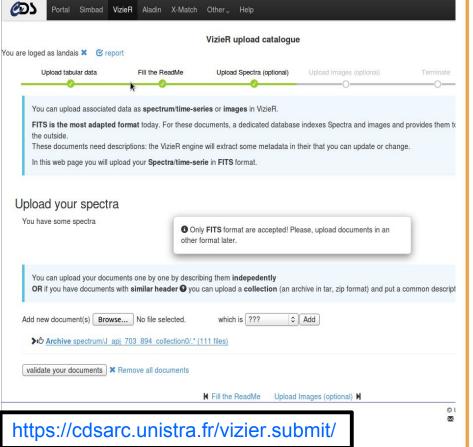
Improving the associated data visibility with indexation and meta-data based on the ObsCore Data model (VO).

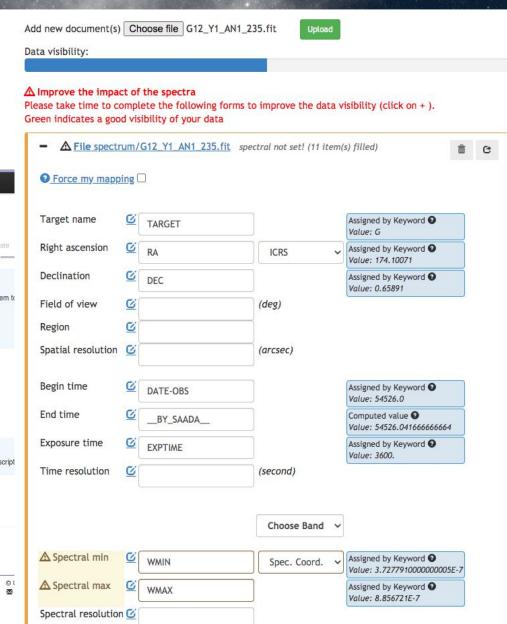
Critical metadata

- Position RA, DEC (WCS mandatory)
- Spectral range, time of observation
- Target name
- Instrument / Facility
- FITS standard => metadata may exist, but:
 - non-unique, ambiguous keywords
 - Can be inaccurate (tel positions, spectral coverage)
- => Mapping supervised by authors and/or CDS documentalists

Associated data: mapping by authors

Tentative metadata is generated automatically, to be completed/corrected by author upon submission





Associated data: FITS validator

FITS Validator

This service is an add-on of the VizieR upload service based on the Saada engine. It establishes the compatibility of a FITS resource (spectra/image) with the ObsCore Data Model of the Virtual Observatory.

Understanding the validation

The validation service makes a mapping between FITS header and the ObsCore DataModel using standardized FITS keywords (and the most popular WCS projections (including the TNX WCS (IRAF)). Other WCS projections or incomplete WCS header are not resolved by the service.



Test your FITS spectrum/image

Put Fits

Choose file G12_Y1_AN1_235.fit

Test

HDU 0 ~

Fits detection

Extension (hdu) default

Position

Keywords

Spectral

Keywords

Instument AAOMEGA-2dF (INSTRUME)

Facility AAT (TELESCOP)

Time 54526.0 (DATE-OBS) 54526.04166666664

WCS report:

No WCS spatial axis found Keyword CTYPE2 not found

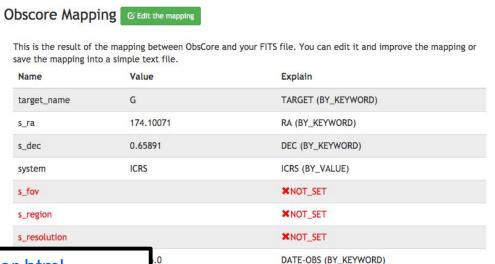
No WCSDIM kw: not an Iraf spectra

No regular WCS spectral axis found: Keyword CTYPE2 not found

No time projection found in wcs

No WCS polarization axis found Keyword CTYPE2 not found

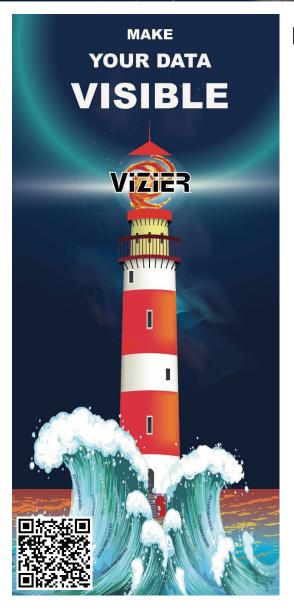
	ader description	
HDU 0 Show 25 ×	entries	Search:
Card	Description	Value
ALT	Altitude at start of observation in deg	50.88063
ALTITUDE	Telescope height above sea level in m	1164.
BITPIX	number of bits per data pixel	-32
BSCALE	True_value = BSCALE * FITS_value + BZERO	1.
BZERO	True_value = BSCALE * FITS_value + BZERO	0.
CATAID	ID of GAMA target in InputCatA (-1 for calibrat	6808
CD1_1	WCS transformation matrix element	1.035938131186



https://cdsarc.unistra.fr/vizier.submit/fitsvalidator.html

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Summary



Publishing data / associated data in VizieR

- Is an important step in enabling open data / open science / FAIR paradigm
- Associated data is full of promise but is a huge challenge because of data heterogeneity
- CDS has developed:
 - Improved submission interface for your catalogs
 - new, dedicated tools for indexing and accessing associated data, still evolving
- But this is still the beginning:
 - Proper indexation is the responsibility of authors and documentalists working together
 - authors please help by doing your part,
 reward = increased impact of your research!
 (VizieR > 500,000 queries/day)