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The Asiago Database on Photometric Systems

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Abstract. The Asiago Database on Photometric Systems (ADPS) is a compilation of basic information and reference data on 215 photometric systems (1386 bands in all), both from the ground and space, and covering the UV, optical and IR wavelength ranges. Paper I is available in book format (Moro & Munari 2000). It censed only the information available from the literature. Paper II (Fiorucci & Munari 2002) presents an homogeneous derivation and calibration of band and reddening parameters for all systems with known band transmission profiles (178 systems for a total of 1251 bands). Following papers in the ADPS project will include calibration of relations sensitive to physical quantities (like T_{eff}, $\lg g$, [Fe/H], E_{B-V}, etc.) and homogeneous transformation equations for all systems with known band transmission profiles. The ADPS project web page is http://ulisse.pd.astro.it/ADPS/

Key words. Photometric systems – GAIA

1. Introduction

The *Asiago Database on Photometric Systems* (ADPS) is a long term project to cense, document and analyze existing photometric systems in the UV, optical and IR spectral domains, both for the ground-based and space varieties. It has originated from the necessity to address the legacy of existing systems during the design phase of the photometric system for the GAIA Cornerstone mission by ESA (Munari 1999; Perryman et al. 2001), but since than it has developed into an independently sailing project. The ADPS Paper I offered a compilation of basic information and reference data on 201 photometric systems (14 systems were added later), available in book format (Moro & Munari 2000) as well as electronically (http://ulisse.pd.astro.it/ADPS). Only data from the literature were used, with all information traceable back to the original source. The extensive literature survey carried out in Paper I proved how poorly documented was the majority of the systems. For example, simple statistics about information provided by literature on band and reddening parameters for the 201 censed systems shows that:

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VBLUW - Walraven and Walraven - 1960

Classification of early-type stars.

GENERAL INFORMATION

AUTHORS T. Walraven and J. H. Walraven
TELESCOPE 0.91m (reflector), Leiden Southern Station, Union Obs., South-Africa
DETECTOR 1P21 (for *V*, *B*, *L* and *U* bands) and Lallemand cell (for the *W* band), refrigerated
MAIN ARTICLE Walraven, Th., Walraven J. H. 1960, BAN 15, 67

SYSTEM DESCRIPTION

BANDS DESCRIPTION				FLUX CALIBRATION [112]
band	λ_{peak} (Å) [178], pg. 78	λ_{eff} (Å) [178], pg. 78	FWHM (Å) [191]	F_λ (erg cm^{-2} s^{-1} Å^{-1})
W	3270	3255	150	2.12 10^{-11}
U	3670	3633	260	1.61 10^{-11}
L	3900	3838	140	1.52 10^{-11}
B	4295	4325	420	1.23 10^{-11}
V	5450	5467	850	6.73 10^{-12}

The *W*, *U*, *B* and *V* bands are obtained in a spectro-photometer by redirecting to separate photomultipliers portions of the spectrum geometrically selected by a filter of quartz and Iceland spar (which transmits a spectrum of bright bands at regular intervals separated by dark regions. Quartz prisms are used as a cross-disperser to separate the bright bands and redirect them via a quartz collector lens to four individual photomultipliers).
The L band is more conventionally obtained via standard filter photometry with UG2 (2mm) + WG2 (2mm) placed in front of a fifth photomultiplier (1P21) [313].
The 0.91m telescope and the Walraven photometrer were moved in 1979 from the Leiden Station in South Africa (Harteheespoortdam) to ESO - La Silla. As a result the passbands of the system slighly changed [306]

ZERO POINT: Magnitudes and colors of HD 144470 = ω^1 Sco (B1V) are:
$V = 1.1760$, $(V-B) = -0.0025$, $(B-U) = +0.0052$, $(U-W) = -0.0020$, $(B-L) = +0.0039$. [191]

SYSTEM ANALYSIS

COLOR INDICES AND PARAMETERS [50]

$(V-B)$: sensitive to reddening.

$(B-U)$: measures the Balmer jump. Temperature indicator for O and B stars.

$(B-L)$: depends mainly on gravity.

$(U-W)$: measures the slope of the Balmer continuum. Both gravity and temperature dependent.

REDDENING-FREE PARAMETERS [50]

$[B-U] = (B-U) - 0.61\,(V-B)$ $[U-W] = (U-W) - 0.45\,(V-B)$

$[B-L] = (B-L) - 0.39\,(V-B)$

REDDENING RATIOS [191], [306], [50]

$E(B-U)\,/\,E(V-B) = 0.62$ $E(U-W)\,/\,E(V-B) = 0.45$ $E(B-L)\,/\,E(V-B) = 0.41$

$E(L-U)\,/\,E(V-B) = 0.22$ $E(B-V)_{Johnson}\,/\,E(V-B) = 2.255$

$A(V)\,/\,E(V-B) = 3.16 - 0.12\,E(V-B)$

Fig. 1. Example of a documentation card (first of two pages) for a single system from ADPS Paper I (Moro & Munari 2000).

RELATIONS WITH OTHER SYSTEMS [50], [306]

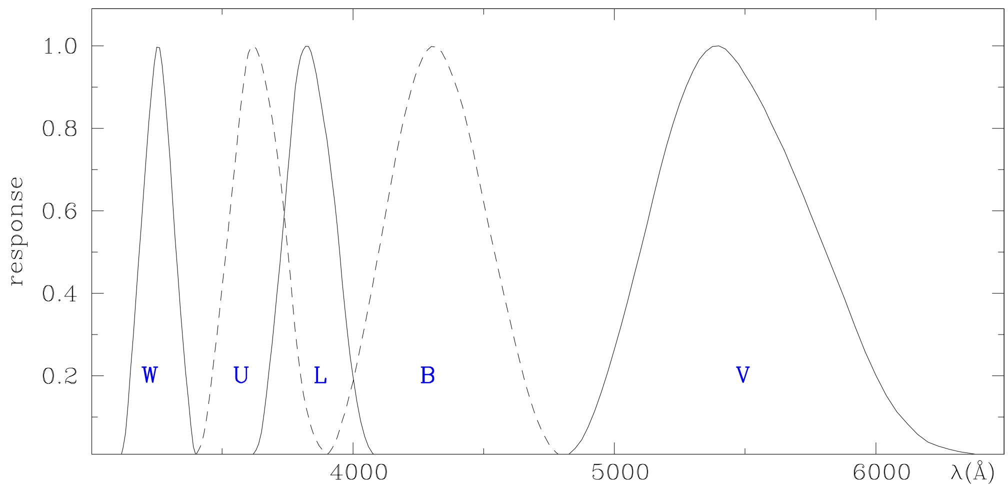
UBV - Johnson and Morgan - 1953

$(V-B)$	=	$0.0062 + 0.3873\,(B-V)_J$	for $(V-B) < 0.15$
$(V-B)$	=	$-0.0195 + 0.4744\,(B-V)_J$	for $(V-B) > 0.10$

RGU - Trefzger - 1983

V	=	$0.963\,G - 0.448\,(G-R) + 0.455$
$(B-V)$	=	$0.451\,(G-R) + 0.196\,(U-G) - 0.092$

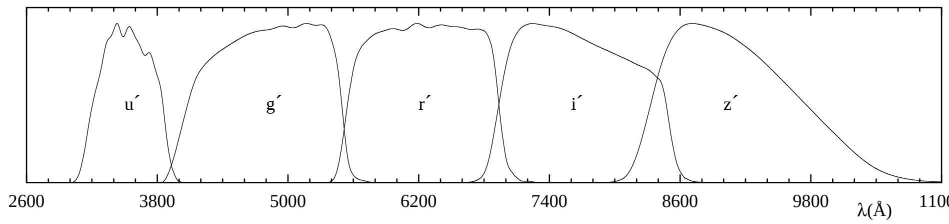
TRANSMISSION CURVES [191]



W		*U*				*L*				*B*				*V*			
λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ	λ (Å)	ϒ
3100	0.000	3380	0.000	3700	0.787	3590	0.000	3910	0.727	3870	0.000	4285	0.990	4775	0.000	5575	0.847
3110	0.000	3390	0.004	3710	0.742	3600	0.003	3920	0.676	3880	0.001	4300	0.998	4800	0.001	5600	0.812
3120	0.025	3400	0.010	3720	0.691	3610	0.006	3930	0.621	3890	0.004	4320	0.997	4825	0.009	5625	0.779
3130	0.061	3410	0.020	3730	0.636	3620	0.011	3940	0.562	3900	0.008	4340	0.985	4850	0.024	5650	0.746
3140	0.130	3420	0.033	3740	0.575	3630	0.020	3950	0.496	3910	0.014	4360	0.960	4875	0.045	5675	0.709
3150	0.215	3430	0.058	3750	0.512	3640	0.035	3960	0.425	3920	0.023	4380	0.929	4900	0.076	5700	0.671
3160	0.300	3440	0.097	3760	0.444	3650	0.064	3970	0.356	3930	0.035	4400	0.893	4925	0.115	5725	0.633
3170	0.388	3450	0.142	3770	0.373	3660	0.108	3980	0.299	3940	0.051	4420	0.850	4950	0.161	5750	0.594
3180	0.475	3460	0.192	3780	0.306	3670	0.157	3990	0.246	3950	0.071	4440	0.800	4975	0.209	5775	0.554
3190	0.565	3470	0.245	3790	0.249	3680	0.215	4000	0.198	3960	0.092	4460	0.744	5000	0.264	5800	0.514
3200	0.652	3480	0.300	3800	0.200	3690	0.274	4015	0.138	3970	0.112	4480	0.683	5025	0.320	5840	0.451
3210	0.736	3490	0.356	3810	0.159	3700	0.336	4030	0.090	3980	0.136	4500	0.621	5050	0.380	5880	0.388
3220	0.817	3500	0.415	3820	0.127	3710	0.401	4045	0.053	3990	0.161	4520	0.562	5075	0.441	5920	0.321
3230	0.893	3510	0.475	3830	0.100	3720	0.468	4060	0.028	4000	0.186	4540	0.504	5100	0.504	5960	0.258
3240	0.956	3520	0.535	3840	0.076	3730	0.538	4075	0.012	4015	0.228	4560	0.445	5125	0.568	6000	0.201
3250	0.997	3530	0.596	3850	0.058	3740	0.609	4090	0.004	4030	0.273	4580	0.390	5150	0.634	6040	0.152
3260	0.995	3540	0.657	3860	0.043	3750	0.684	4105	0.000	4045	0.320	4600	0.335	5175	0.699	6080	0.113
3270	0.953	3550	0.721	3870	0.031	3760	0.759			4060	0.368	4620	0.282	5200	0.759	6120	0.084
3280	0.889	3560	0.784	3880	0.023	3770	0.832			4075	0.419	4640	0.230	5225	0.811	6160	0.058
3290	0.814	3570	0.846	3890	0.015	3780	0.900			4090	0.471	4660	0.181	5250	0.860	6200	0.039
3300	0.725	3580	0.901	3900	0.007	3790	0.945			4105	0.523	4680	0.138	5275	0.902	6240	0.029
3310	0.628	3590	0.948	3910	0.002	3800	0.974			4120	0.575	4700	0.101	5300	0.938	6280	0.022
3320	0.534	3600	0.982	3920	0.000	3810	0.990			4135	0.627	4725	0.063	5325	0.967	6320	0.016
3330	0.444	3610	0.995			3820	0.999			4150	0.682	4750	0.034	5350	0.986	6360	0.012
3340	0.359	3620	1.000			3830	0.998			4165	0.733	4775	0.015	5375	0.998	6400	0.008
3350	0.285	3630	0.993			3840	0.985			4180	0.781	4800	0.003	5400	1.000	6440	0.004
3360	0.211	3640	0.978			3850	0.961			4195	0.824	4825	0.000	5425	0.992	6480	0.000
3370	0.144	3650	0.956			3860	0.929			4210	0.863			5450	0.975		
3380	0.080	3660	0.929			3870	0.891			4225	0.898			5475	0.955		
3390	0.028	3670	0.898			3880	0.855			4240	0.929			5500	0.930		
3400	0.005	3680	0.865			3890	0.815			4255	0.954			5525	0.904		
3410	0.000	3690	0.827			3900	0.775			4270	0.976			5550	0.876		

Fig. 2. Second and final page of the documentation card described in Fig. 1

Sloan DSS - Fukugita et al. - 1996



u′				*B3*	*Vega*	*Sun*	*K2*	*M2*	*Carbon*
$\lambda_c = 3530$	$\lambda_\circ = 3521$	$\lambda_{peak} = 3431$	$\lambda_{gauss} = 3519$	3504	3551	3538	3593	3636	3525
WHM = 642	W10% = 831	W80% = 437	FWHM = 555	[599]	[602]	[565]	[517]	[448]	[498]
$W_\circ = 590$	$\frac{A(\lambda)}{A(V)}\big\vert_{5.0} = 1.36\ {}^{1.34}_{1.40}$	$a = {}^{0.934}_{0.944}$	$b = {}^{2.036}_{1.972}$ *B3*	*WN*	*WC*	PN_{Ne}	PN^{Ne}	*Nova*	*WDA*
$\mu = 201$	$\frac{A(\lambda)}{A(V)}\big\vert_{3.1} = 1.61\ {}^{1.58}_{1.69}$	$a = {}^{0.942}_{0.949}$	$b = {}^{1.985}_{1.934}$ *Sun*	3489	3500	3642	3533	3517	3481
$I_{asym} = 0.01$	$\frac{A(\lambda)}{A(V)}\big\vert_{2.1} = 1.95\ {}^{1.88}_{2.08}$	$\frac{A(\lambda)}{E(B-V)}$:	$(4.946, 0.067)^{r=0.99}_{B3}$	$(5.271, 0.091)^{r=1.00}_{Sun}$		$(5.888, 0.075)^{r=1.00}_{M2}$			
$I_{kurt} = -0.88$	$\lambda_{eff} = 3521.5 + 41.9 \times E(B-V)$ r=1.00			$W_{eff} = 600.1 - 38.8 \times E(B-V)$ r=−0.98					
	$\lambda_{eff}(T) = 3472 + 145 \times \theta + 77 \times \theta^2 - 55 \times \theta^3$			$W_{eff}(T) = 556 + 263 \times \theta - 562 \times \theta^2 + 193 \times \theta^3$					

g′				*B3*	*Vega*	*Sun*	*K2*	*M2*	*Carbon*
$\lambda_c = 4788$	$\lambda_\circ = 4803$	$\lambda_{peak} = 5173$	$\lambda_{gauss} = 4820$	4683	4708	4817	4903	5015	5100
WHM = 1411	W10% = 1641	W80% = 1111	FWHM = 1245	[1238]	[1271]	[1318]	[1230]	[1057]	[1004]
$W_\circ = 1325$	$\frac{A(\lambda)}{A(V)}\big\vert_{5.0} = 1.12\ {}^{1.10}_{1.13}$	$a = {}^{1.011}_{1.015}$	$b = {}^{0.656}_{0.486}$ *B3*	*WN*	*WC*	PN_{Ne}	PN^{Ne}	*Nova*	*WDA*
$\mu = 419$	$\frac{A(\lambda)}{A(V)}\big\vert_{3.1} = 1.19\ {}^{1.16}_{1.20}$	$a = {}^{1.015}_{1.016}$	$b = {}^{0.507}_{0.371}$ *Sun*	4696	4706	4943	4767	4923	4716
$I_{asym} = -0.12$	$\frac{A(\lambda)}{A(V)}\big\vert_{2.1} = 1.28\ {}^{1.24}_{1.30}$	$\frac{A(\lambda)}{E(B-V)}$:	$(3.804, -0.006)^{r=-0.78}_{B3}$	$(3.949, 0.009)^{r=0.95}_{Sun}$		$(4.281, -0.000)^{r=-0.08}_{M2}$			
$I_{kurt} = -1.04$	$\lambda_{eff} = 4807.4 + 142.3 \times E(B-V)$ r=1.00			$W_{eff} = 1371.8 - 208.0 \times E(B-V)$ r=−0.99					
	$\lambda_{eff}(T) = 4647 + 312 \times \theta + 241 \times \theta^2 - 173 \times \theta^3$			$W_{eff}(T) = 1156 + 909 \times \theta - 1424 \times \theta^2 + 387 \times \theta^3$					

r′				*B3*	*Vega*	*Sun*	*K2*	*M2*	*Carbon*
$\lambda_c = 6242$	$\lambda_\circ = 6253$	$\lambda_{peak} = 6191$	$\lambda_{gauss} = 6247$	6160	6168	6220	6256	6307	6365
WHM = 1387	W10% = 1565	W80% = 1248	FWHM = 1262	[1282]	[1294]	[1335]	[1341]	[1315]	[1251]
$W_\circ = 1343$	$\frac{A(\lambda)}{A(V)}\big\vert_{5.0} = 0.88\ {}^{0.88}_{0.89}$	$a = {}^{0.947}_{0.938}$	$b = {}^{-0.205}_{-0.224}$ *B3*	*WN*	*WC*	PN_{Ne}	PN^{Ne}	*Nova*	*WDA*
$\mu = 407$	$\frac{A(\lambda)}{A(V)}\big\vert_{3.1} = 0.83\ {}^{0.84}_{0.85}$	$a = {}^{0.941}_{0.933}$	$b = {}^{-0.218}_{-0.235}$ *Sun*	6220	6124	6531	6432	6444	6156
$I_{asym} = -0.01$	$\frac{A(\lambda)}{A(V)}\big\vert_{2.1} = 0.77\ {}^{0.77}_{0.79}$	$\frac{A(\lambda)}{E(B-V)}$:	$(2.615, 0.020)^{r=0.99}_{B3}$	$(2.770, 0.028)^{r=1.00}_{Sun}$		$(3.099, 0.013)^{r=0.98}_{M2}$			
$I_{kurt} = -1.09$	$\lambda_{eff} = 6253.4 + 91.0 \times E(B-V)$ r=1.00			$W_{eff} = 1370.2 - 106.1 \times E(B-V)$ r=−0.98					
	$\lambda_{eff}(T) = 6145 + 139 \times \theta + 156 \times \theta^2 - 80 \times \theta^3$			$W_{eff}(T) = 1255 + 289 \times \theta - 183 \times \theta^2 - 109 \times \theta^3$					

i′				*B3*	*Vega*	*Sun*	*K2*	*M2*	*Carbon*
$\lambda_c = 7704$	$\lambda_\circ = 7667$	$\lambda_{peak} = 7242$	$\lambda_{gauss} = 7635$	7573	7584	7620	7649	7732	7653
WHM = 1532	W10% = 1756	W80% = 1005	FWHM = 1291	[1322]	[1335]	[1359]	[1369]	[1340]	[1453]
$W_\circ = 1374$	$\frac{A(\lambda)}{A(V)}\big\vert_{5.0} = 0.66\ {}^{0.66}_{0.68}$	$a = {}^{0.818}_{0.812}$	$b = {}^{-0.487}_{-0.503}$ *B3*	*WN*	*WC*	PN_{Ne}	PN^{Ne}	*Nova*	*WDA*
$\mu = 453$	$\frac{A(\lambda)}{A(V)}\big\vert_{3.1} = 0.61\ {}^{0.61}_{0.64}$	$a = {}^{0.814}_{0.808}$	$b = {}^{-0.497}_{-0.513}$ *Sun*	7582	7625	7495	7608	7623	7582
$I_{asym} = 0.14$	$\frac{A(\lambda)}{A(V)}\big\vert_{2.1} = 0.54\ {}^{0.54}_{0.58}$	$\frac{A(\lambda)}{E(B-V)}$:	$(1.906, 0.020)^{r=0.99}_{B3}$	$(2.028, 0.026)^{r=1.00}_{Sun}$		$(2.260, 0.016)^{r=0.99}_{M2}$			
$I_{kurt} = -1.05$	$\lambda_{eff} = 7666.9 + 78.9 \times E(B-V)$ r=1.00			$W_{eff} = 1391.2 - 65.7 \times E(B-V)$ r=−0.97					
	$\lambda_{eff}(T) = 7562 + 101 \times \theta + 123 \times \theta^2 - 52 \times \theta^3$			$W_{eff}(T) = 1310 + 144 \times \theta - 9 \times \theta^2 - 104 \times \theta^3$					

z′				*B3*	*Vega*	*Sun*	*K2*	*M2*	*Carbon*
$\lambda_c = 9038$	$\lambda_\circ = 9115$	$\lambda_{peak} = 8717$	$\lambda_{gauss} = 9018$	9022	9046	9057	9086	9136	9076
WHM = 1408	W10% = 2212	W80% = 845	FWHM = 1326	[1379]	[1390]	[1400]	[1412]	[1410]	[1562]
$W_\circ = 1411$	$\frac{A(\lambda)}{A(V)}\big\vert_{5.0} = 0.48\ {}^{0.48}_{0.50}$	$a = {}^{0.677}_{0.670}$	$b = {}^{-0.622}_{-0.613}$ *B3*	*WN*	*WC*	PN_{Ne}	PN^{Ne}	*Nova*	*WDA*
$\mu = 536$	$\frac{A(\lambda)}{A(V)}\big\vert_{3.1} = 0.45\ {}^{0.45}_{0.48}$	$a = {}^{0.673}_{0.665}$	$b = {}^{-0.617}_{-0.611}$ *Sun*	9027	9016	8894	9022	9068	8993
$I_{asym} = 0.48$	$\frac{A(\lambda)}{A(V)}\big\vert_{2.1} = 0.42\ {}^{0.41}_{0.45}$	$\frac{A(\lambda)}{E(B-V)}$:	$(1.417, 0.018)^{r=0.99}_{B3}$	$(1.512, 0.023)^{r=1.00}_{Sun}$		$(1.702, 0.015)^{r=0.99}_{M2}$			
$I_{kurt} = -0.39$	$\lambda_{eff} = 9113.4 + 73.5 \times E(B-V)$ r=1.00			$W_{eff} = 1422.0 - 42.8 \times E(B-V)$ r=−0.97					
	$\lambda_{eff}(T) = 8997 + 88 \times \theta + 105 \times \theta^2 - 36 \times \theta^3$			$W_{eff}(T) = 1357 + 91 \times \theta + 24 \times \theta^2 - 76 \times \theta^3$					

Fig. 3. Example of a card from ADPS Paper II (Fiorucci & Munari 2002), that computes band and reddening parameters for all censed systems with known band transmission profiles. Various wavelengths and widths for the pure profile are given, together with moments of 2^{nd}, 3^{rd} and 4^{th} order, followed by effective wavelengths and widths for a selection of input normal spectra (B3, Vega, Sun, K2, M2, Carbon) and peculiar ones (Wolf-Rayet of C and N type, planetary nebulae of high and low electron density, novae in nebular stage, white dwarfs of hydrogen type). Then A(λ)/A(V) is provided for different extinction laws, as well as A(λ)/E(B-V) for R_V=3.1 and three different input spectra (B3, Sun, M2). Cardelli et al. (1989) a and b reddening coefficients are computed for E(B-V)=0.0 and E(B-V)=1.0 and for B3 and Sun input spectra. The behavior of effective λ and width with E_{B-V} are given for the R_V=3.1 case. Finally, polynomial fits are provided for the behavior of effective wavelength and width upon black-body temperature.

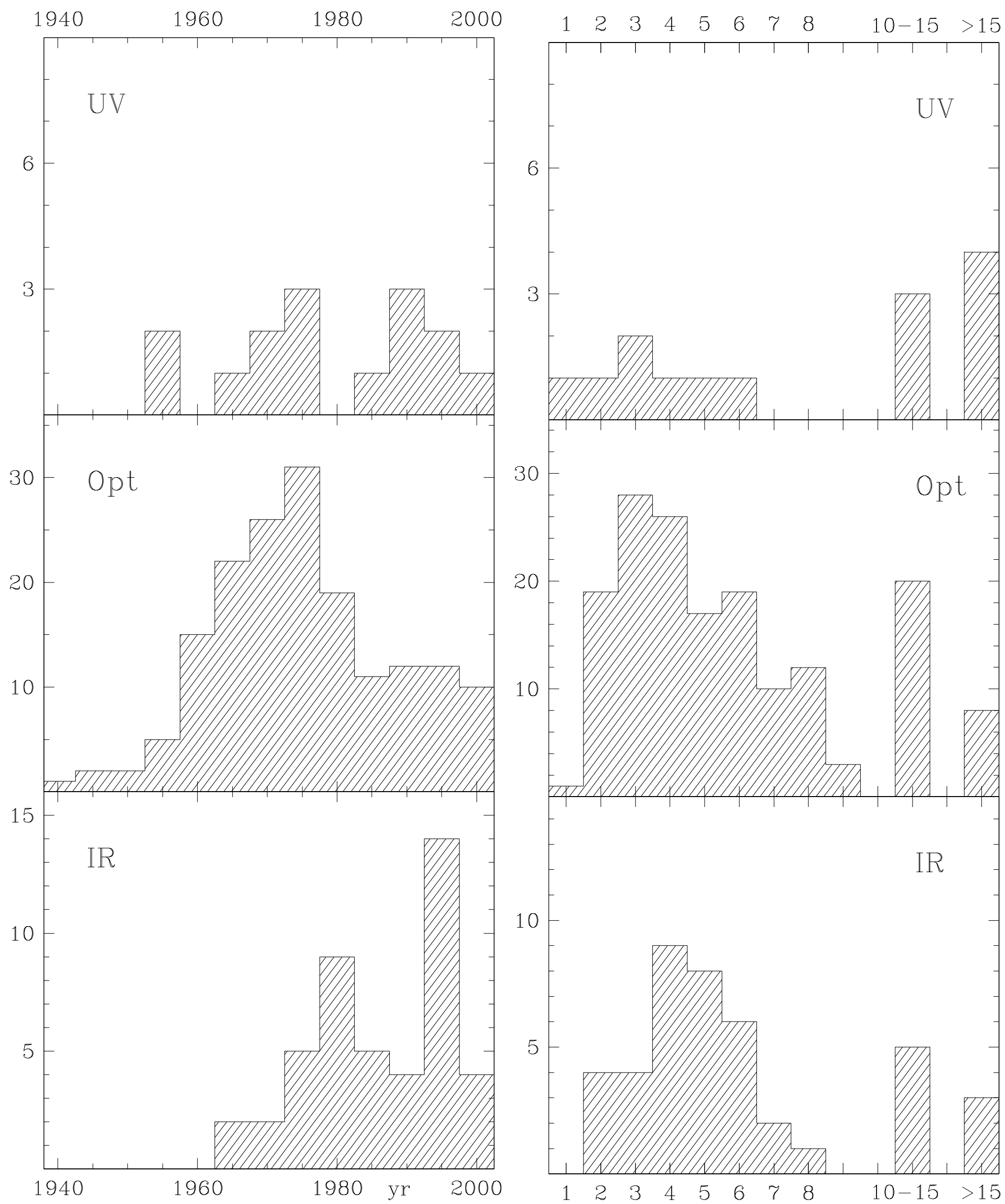


Fig. 4. Left panel: distribution in time of the appearance in literature of new photometric systems, separately for the UV ($\lambda < 3000$ Å), optical ($3000 \leq \lambda \leq 10000$ Å) and IR ($\lambda \geq 1\mu$m) wavelength regions. All the 215 systems censed in the ADPS are included. The UV systems prior to the OAO2 orbiting satellite (1970) are relative to observations performed by Aerobee sounding rockets (UV-55, UV-57 and UV-64). Right panel: distribution of the 215 photometric systems censed in the ADPS as function of the number of bands. Note the large proportion of UV systems with many photometric bands and the lower corresponding number for IR systems.

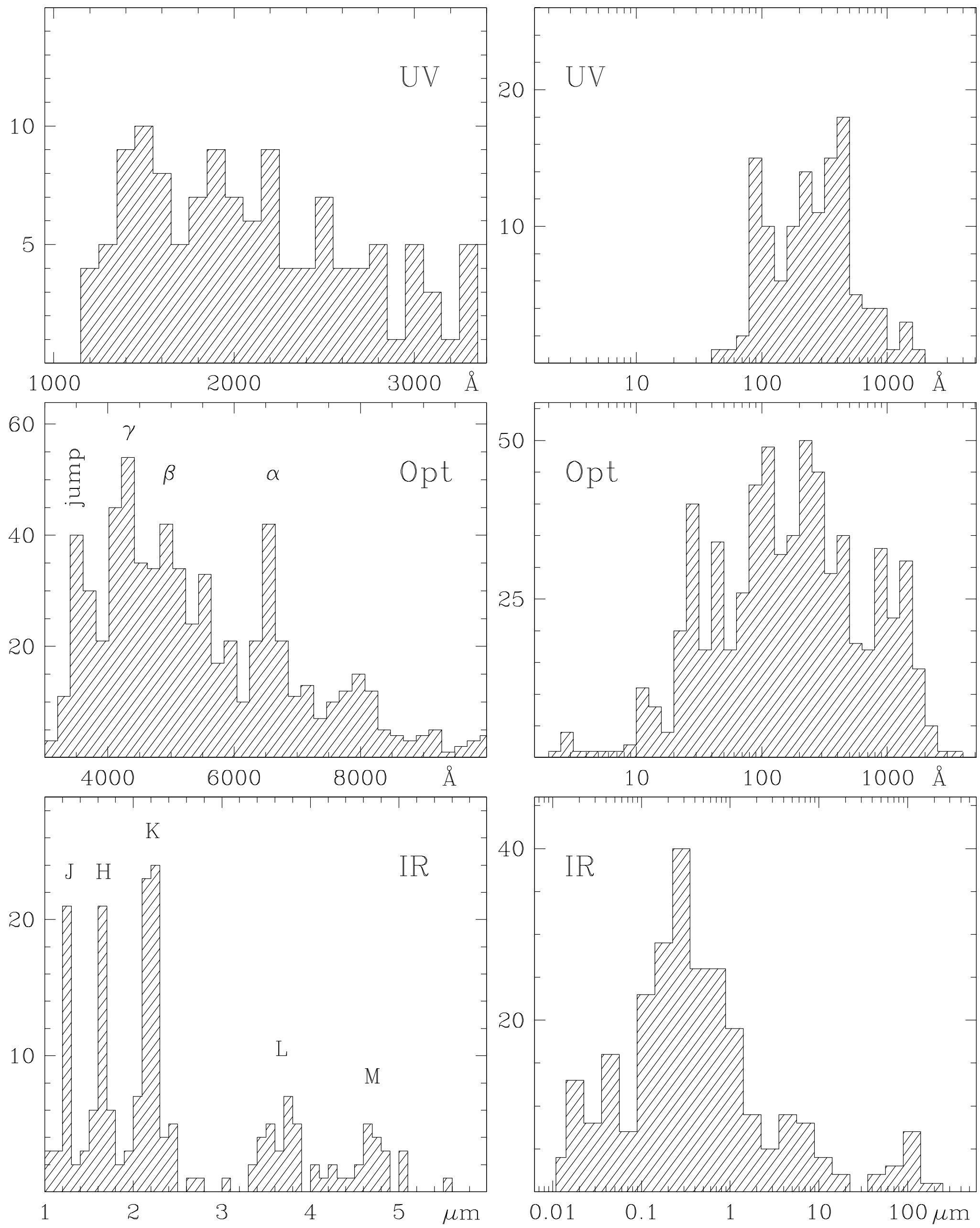


Fig. 5. Left panel: distribution in wavelength of the photometric bands. The placing of the UV bands does not follow recorgnizable patterns, being mainly governed by transmission/sensitivity of available materials. The optical bands tend to cluster toward the more diagnostic blue wavelengths, with peaks in the distribution corresponding to the main hydrogen lines and the Balmer jump. The IR bands are heavily concentrated around the wavelengths of the classical JHKLM bands. Right panel: width distribution of the photometric bands. The UV and optical distributions are more complex and reflects the presence of both narrow interference filters as well as broad ones. The IR distribution is simpler and strongly peaked toward the typical width of Earth's transmission windows in the 1-5 μm range.

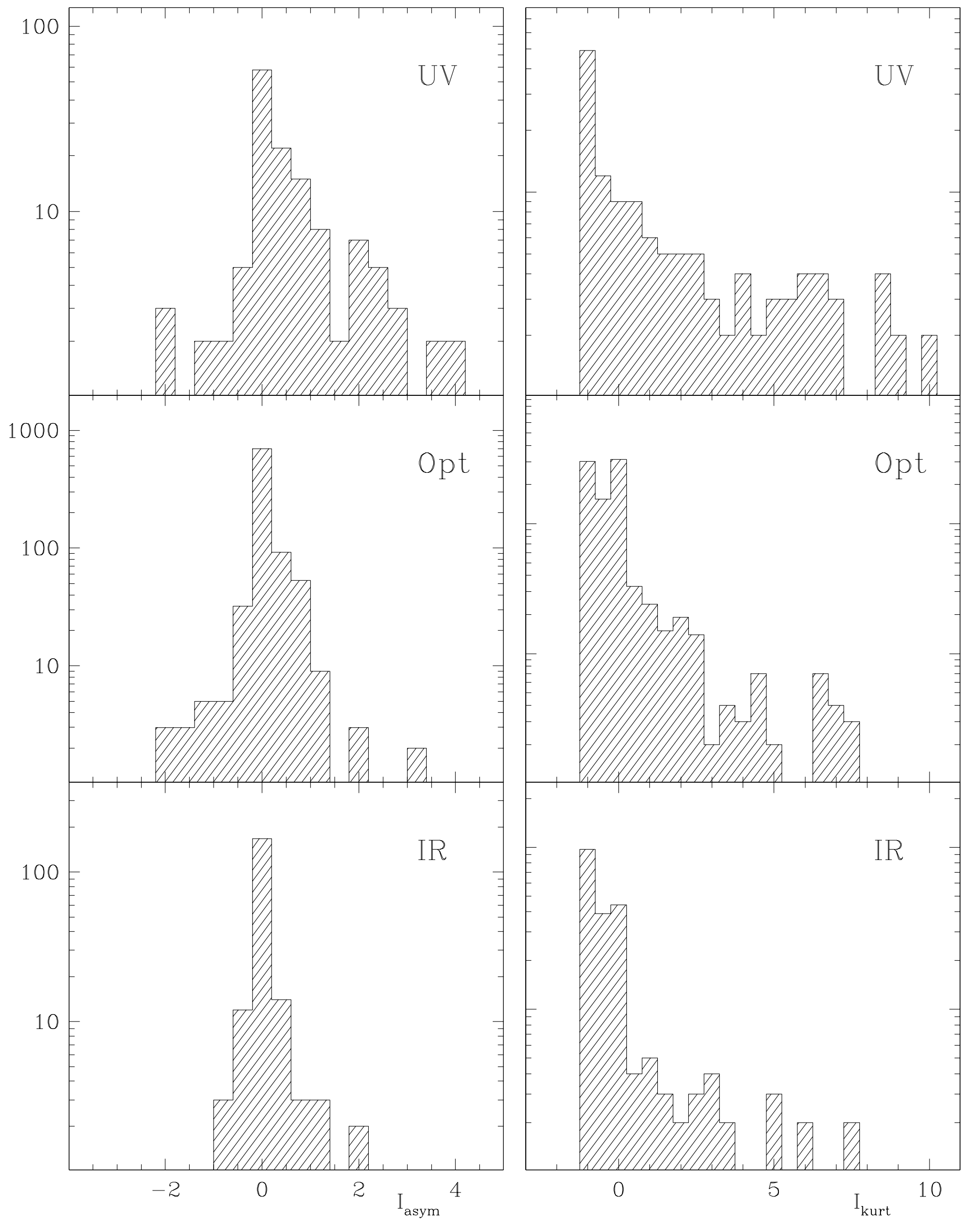


Fig. 6. Left panel: distribution of the the 3^{rd} order moment I_{asym} (or *skewness* index) of the photometric bands for the UV, Optical and IR systems. An $I_{asym} < 0.0$ pertains to a band with an extended blue wing and an $I_{asym} > 0.0$ to a band with an extended red wing. Symmetric profiles are characterized by $I_{asym} = 0.0$. Right panel: distribution of the 4^{th} order momentum I_{kurt} (or *kurtosis* index) for the photometric bands of the systems censed in the APDS. The kurtosis index gives an indication of the balance between the core and the wings of a profile. It is $I_{kurt} = 0.0$ for a Gaussian profile. An $I_{kurt} > 0.0$ indicates a band transmission profile more peaked than a Gaussian, i.e. with more wings than core, and $I_{kurt} < 0.0$ pertains instead to a band with more core than wings. The kurtosis index for a square band is $I_{kurt} = -6/5$, for an equilateral triangular band it is $I_{kurt} = -3/5$, and for an $e^{-|x|}$ profile it is $I_{kurt} = 3$.

(*a*) 24% had no wavelength or bandwidth information or they were in clear conflict with published band transmission curves, (*b*) 28% had poor information, typically just the mean or peak wavelength, (*c*) 44% had decent information (however pertaining typically to systems with square bands or Gaussian interference filters), and only for (*e*) 4% the available informations included effective wavelengths for more than one spectral type (just 2% in the case of effective widths). The situation with reddening parameters is even more depressing. Again, out of the 201 censed systems in Paper I, reddening information were (*i*) completely missing for 78% of them, (*ii*) poorly known for 15% of the systems (typically $A(\lambda)/E_{B-V}$ for just one or two bands), (*iii*) satisfactory for 4%, and (*iv*) complete for only 3% of the censed systems. It goes without saying that further information like transformation equations between systems or calibration into physical parameters (like T_{eff}, $\lg g$, [Fe/H], E_{B-V}) were basically missing for all but a few photometric system. Figures 1 and 2 show a typical two-page documentation card from ADPS Paper I for one of the 201 censed photometric systems.

2. Developments

Planned developments of the ADPS project have been driven by two basic considerations: (*a*) the census of literature information proved how poor is the existing documentation and analysis of the photometric systems, and (*b*) the enormous amount of data collected in the various systems (a fraction of which can be consulted on-line at the *General Catalogue of Photometric Data* (GCPD) maintained by Mermillod et al. (1997) at http://obswww.unige.ch/gcpd/gcpd.html) is hardly of any use if no appropriate calibration relations and transformation equations are available. A first step has been recently completed with ADPS Paper II (Fiorucci & Munari 2002), where complete band and reddening parameters are computed for all photometric systems with known band transmission curves (178 systems for 1251 bands). An example of a documentation card from Paper II is given in Figure 3. The next step in the ADPS project will be a Paper III that will focus on the calibration for each system of diagnostic indexes that maximize the response to one of the basic physical parameters T_{eff}, $\lg g$, [Z/Z$_\odot$], [α/Fe], E_{B-V} while keeping to a minimum the effect of all the others. Later, a Paper IV will follow providing transformation equations between the censed photometric systems and, finally, a Paper V will intercompare the performances of the censed systems. A few figures of statistical content about the 215 systems and 1386 bands so far censed in the ADPS. Figure 4 shows the distribution with time of the appearance of new photometric systems in the literature and their distribution as function of the number of bands. Figure 5 presents the the wavelength and width distribution of the photometric bands. Finally, Figure 6 gives the distribution of the 3^{rd} and 4^{th} order moments (asymmetry or skewness index and kurtosis index) of the photometric bands.

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