## The K2 Halo Photometry Campaign

Benjamin J. S. Pope,  $^{1,2}$  Timothy R. White,  $^3$  Daniel Huber,  $^{4,5,6}$  Timothy R. Bedding,  $^{7,6}$  Conny Aerts,  $^{8,9}$  Tabetha Boyajian,  $^{10}$  Orlagh L. Creevey,  $^{11}$  and friends

<sup>1</sup>Center for Cosmology and Particle Physics, Department of Physics, New York University, 726
Broadway, New York, NY 10003, USA

<sup>2</sup>NASA Sagan Fellow

<sup>3</sup>Research School of Astronomy and Astrophysics, Mount Stromlo Observatory, The Australian National University, Canberra, ACT 2611, Australia

<sup>4</sup>Institute for Astronomy, University of Hawaii, 2680 Woodlawn Drive, Honolulu, HI 96822, USA

<sup>5</sup>SETI Institute, 189 Bernardo Avenue, Mountain View, CA 94043, USA

<sup>6</sup>Stellar Astrophysics Centre, Department of Physics and Astronomy, Aarhus University, DK-8000 Aarhus C, Denmark

<sup>7</sup>Sydney Institute for Astronomy, School of Physics A28, The University of Sydney, NSW 2006, Australia

 <sup>8</sup> Instituut voor Sterrenkunde, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium
 <sup>9</sup> Department of Astrophysics, IMAPP, Radboud University Nijmegen, P.O. Box 9010, NL-6500 GL Nijmegen, The Netherlands

 $^{10}Department\ of\ Physics\ and\ Astronomy,\ Louisiana\ State\ University,\ 202\ Nicholsom\ Hall,\ Baton\ Rouge,\ LA\ 70803,\ USA$ 

 $^{11}\,Universit\'e$  Côte d'Azur, Observatoire de la Côte d'Azur, CNRS, Laboratoire Lagrange, Bd de l'Observatoire, CS 34229, 06304 Nice cedex 4, France

(Received January 1, 2019; Revised January 7, 2019; Accepted February 22, 2019)

Submitted to ApJ

## ABSTRACT

K2 bright stars.  $\bigcirc$ 

- 1. INTRODUCTION
- 2. HALO PHOTOMETRY
  - 3. SAMPLE
  - 4. DISCUSSION
  - 5. CONCLUSIONS

## ACKNOWLEDGEMENTS

We would like to thank Will Farr for his very helpful comments on the halo method.

Corresponding author: Benjamin J. S. Pope **10** @fringetracker benjamin.pope@nyu

This work was performed in part under contract with the Jet Propulsion Laboratory (JPL) funded by NASA through the Sagan Fellowship Program executed by the NASA Exoplanet Science Institute. TRW acknowledges the support of the Australian Research Council (grant DP150100250) and the Villum Foundation (research grant 10118).

BJSP acknowledges being on the traditional territory of the Lenape Nations and recognizes that Manhattan continues to be the home to many Algonkian peoples. We give blessings and thanks to the Lenape people and Lenape Nations in recognition that we are carrying out this work on their indigenous homelands.

This research made use of NASA's Astrophysics Data System; the SIMBAD database, operated at CDS, Strasbourg, France; the IPython package (Pérez & Granger 2007); SciPy (Jones et al. 2001); and Astropy, a community-developed core Python package for Astronomy (Astropy Collaboration et al. 2013). Some of the data presented in this paper were obtained from the Mikulski Archive for Space Telescopes (MAST). STScI is operated by the Association of Universities for Research in Astronomy, Inc., under NASA contract NAS5-26555. Support for MAST for non-HST data is provided by the NASA Office of Space Science via grant NNX13AC07G and by other grants and contracts.

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Table 1. All stars observed with halo photometry in K2.

Name         EPIC         RA (J2000)         Dec (J2000)         Spectral           (deg)         (deg)         Type           Ascella         200062593         285.65184         -29.879815         A2.5Va	V mag 2.585 2.88 3.31	Campaign 7
Ascella 200062593 285.65184 -29.879815 A2.5Va	2.585 2.88	
	2.88	
		-
Albaldah 200062592 287.441295 -21.024023 F2II-III	3.31	7
tau Sgr $200062591$ $286.733938$ $-27.671395$ K1.5IIIb		7
ksi $2 \text{ Sgr}$ $200062590$ $284.432465$ $-21.106731$ $G8/K0II/III$	3.51	7
omi Sgr $200062589$ $286.17119$ $-21.741407$ G9IIIb	3.77	7
52 Sgr 200062585 294.176404 -24.885019 B8/9V	4.598	7
Ainalrami 200062588 283.542904 -22.744355 K1II	4.845	7
psi Sgr $200062584$ $288.884973$ $-25.257284$ $K0/1III+A/F$	4.85	7
43 Sgr 200062587 289.409117 -18.953224 G8II-III	4.878	7
nu2 Sgr 200062586 283.779491 -22.671559 K3-II-III:CN1Ba1	4.98	7
eps Psc 200068392 15.736117 7.889231 G9IIIbFe-2	4.28	8
Revati 200068393 18.43412 7.574624 A7IV	5.187	8
80 Psc 200068394 17.091325 5.648604 F2V	5.5	8
42 Cet 200068399 19.951281 -0.509707 G8IV+A(8)	5.87	8
33 Cet 200068395 17.639603 2.445331 K4/5III	5.942	8
60 Psc 200068396 11.848427 6.740724 G8III	5.961	8
73 Psc 200068397 16.219136 5.656351 K5III	6.007	8
WW Psc 200068398 14.957207 6.483094 M2.5III	6.14	8
HR 243 200068400 12.826105 3.38449 G8/K0II/III	6.368	8
HR 161 200068401 9.377393 3.135111 K3III	6.407	8
HR 6766 200069361 272.021137 -28.457424 G7:IIIbCN-1CH-3.5HK+1	4.56	9
HR 6842 200069360 274.513094 -27.04213 K3II	4.627	9
4 Sgr 200069357 269.947601 -23.815818 A0	4.724	9
11 Sgr 200069358 272.931094 -23.701391 K0III	4.98	9
7 Sgr 200069362 270.713151 -24.282028 F2II-III	5.34	9
15 Sgr 200069359 273.80418 -20.728554 O9.7Iab	5.37	9
HR 6838 200069363 274.298269 -17.37435 K2III	5.75	9
Y Sgr 200069364 275.34515 -18.859826 F8II	5.75	9
HR 6716 200069365 270.476773 -22.780204 B0Iab/b	5.77	9
HR 6681 200069366 269.079263 -15.812584 A0V	5.929	9
$9 \text{ Sgr} \qquad 200069368  270.968745  -24.361063 \qquad \qquad O4V((f))z$	5.97	9
16 Sgr 200069367 273.803883 -20.388154 O9.5III	6.02	9
HR 6825 200069369 273.877872 -18.661964 ApSi	6.15	9
63 Oph 200069370 268.725668 -24.886798 O8II((f))	6.2	9
HR 6679 200069373 268.97931 -18.801918 A1V	6.469	9

**Table 2.** All stars observed with halo photometry in K2 (cont'd).

HD 165784         200069371         272.161183         -21.44927         A2Iab         6.58           HD 161083         200069374         266.100216         -22.194983         F0V         6.58           5 Sgr         200069372         270.048298         -24.284432         K0III         6.64           HD 167576         200069378         274.239359         -27.716096         K1III         6.66           HR 6773         200069380         272.225749         -25.473139         B3/5IV         6.71	paign
HD 165784 200069371 272.161183 -21.44927 A2Iab 6.58 HD 161083 200069374 266.100216 -22.194983 F0V 6.58 5 Sgr 200069372 270.048298 -24.284432 K0III 6.64 HD 167576 200069378 274.239359 -27.716096 K1III 6.66 HR 6773 200069380 272.225749 -25.473139 B3/5IV 6.71	
HD 161083 200069374 266.100216 -22.194983 F0V 6.58 5 Sgr 200069372 270.048298 -24.284432 K0III 6.64 HD 167576 200069378 274.239359 -27.716096 K1III 6.66 HR 6773 200069380 272.225749 -25.473139 B3/5IV 6.71	
5 Sgr       200069372       270.048298       -24.284432       K0III       6.64         HD 167576       200069378       274.239359       -27.716096       K1III       6.66         HR 6773       200069380       272.225749       -25.473139       B3/5IV       6.71	9
HD 167576 200069378 274.239359 -27.716096 K1III 6.66 HR 6773 200069380 272.225749 -25.473139 B3/5IV 6.71	9
HR 6773 200069380 272.225749 -25.473139 B3/5IV 6.71	9
,	9
HD 163296 200071159 269.088907 -21.956371 A1Vep 6.85	9
· · · · ·	9
HD 165052 200069379 271.293504 -24.398154 O5.5:Vz+O8:V 6.87	9
17 Sgr 200069375 274.147867 -20.544369 G8/K0III 6.886	9
HD 169966 200069376 277.029565 -22.999934 G8/K0III 6.97	9
HD 162030 200069377 267.489563 -24.207101 K1III 7.02	9
Porrima 200084004 190.41486 -1.449475 F1V+F0mF2V 2.74	10
Zaniah 200084005 184.97638 -0.667183 A2IV 3.9	10
21 Vir 200084006 188.444462 -9.452253 B9V 5.48	10
FW Vir 200084007 189.593819 1.854722 M3+IIICa0.5 5.71	10
HR 4837 200084008 190.908208 -1.57638 G8III 5.918	10
HR 4591 200084009 180.256803 -1.768302 K1III 6.316	10
HR 4613 200084010 181.499356 -3.131519 G8/K0III 6.364	10
HD 107794 200084011 185.814177 -4.974539 K0III 6.46	10
tet Oph 200128906 260.502159 -24.999975 OB 3.26	11
44 Oph 200128907 261.592348 -24.17599 kA5hA9mF1III 4.153	11
45 Oph 200128908 261.837707 -29.868083 F5III-IV 4.269	11
51 Oph 200128909 262.85357 -23.963494 A0V 4.81	11
36 Oph 200129035 258.83327 -26.604429 K2V+K1V 5.03	11
omi Oph 200128910 259.502324 -24.286539 5.2	11
26 Oph 200129034 255.039748 -24.989128 F3V 5.731	11
HR 6472 200128911 261.174968 -21.441283 K0III 5.83	11
HR 6366 200128913 257.196761 -30.403635 Fm dD 5.911	11
HR 6365 200128912 257.062511 -17.608806 K0III 5.977	11
191 Oph 200128914 261.275705 -24.243761 K0III 6.171	11
kap Psc $200164167$ $351.732716$ $1.255165$ $A2VpSrCrSi$ $4.94$	12
83 Aqr 200164168 346.291555 -7.693773 F0V 5.47	12
24 Psc 200164169 358.231585 -3.155866 K0II/III 5.94	12
HR 8759 200164170 345.382614 -4.711516 G5II/III 5.933	12
14 Psc 200164171 353.53746 -1.247154 A2II 5.87	12
HR 8921 200164172 352.25226 -9.266444 K4/5III 6.191	12

**Table 3.** All stars observed with halo photometry in K2 (cont'd).

Name	EPIC	RA (J2000)	Dec (J2000)	Spectral	V	Campaign
		(deg)	(deg)	Type	$_{ m mag}$	
81 Aqr	200164173	345.348622	-7.061254	K4III	6.215	12
HR $8897$	200164174	350.883513	0.290695	K4III	6.34	12
Aldebaran	200173843	68.980934	16.509007	K5+III	0.86	13
tet2 Tau	200173845	67.165927	15.87053	A7III	3.41	13
eps Tau	200173844	67.154639	19.179692	G9.5IIICN0.5	3.53	13
tet1 Tau	200173846	67.14417	15.961688	G9IIIFe-0.5	3.84	13
kap1 Tau	200173847	66.342857	22.293035	A7IV-V	4.201	13
del3 Tau	200173849	66.372261	17.926961	A2IV-Vs	4.25	13
tau Tau	200173850	70.557694	22.954783	B3V	4.258	13
ups Tau	200173848	66.577858	22.812849	A8Vn	4.282	13
rho Tau	200173851	68.456844	14.858859	A8V	4.65	13
11 Ori	200173853	76.142365	15.403705	A1VpSiCr	4.661	13
HR 1427	200173855	67.640376	16.193275	A6IV	4.764	13
15 Ori	200173854	77.42463	15.597631	F2IV	4.82	13
75 Tau	200173852	67.110364	16.359293	K1IIIb	4.969	13
97 Tau	200173857	72.84359	18.840322	A7IV-V	5.085	13
HR 1684	200173856	77.923187	16.045798	K5III	5.163	13
kap2 Tau	200173859	66.354939	22.199235	F0Vn	5.264	13
56 Tau	200173861	64.90355	21.772847	A0VpSi	5.346	13
81 Tau	200173860	67.662125	15.691144	$\mathrm{Am}$	5.454	13
53 Tau	200173864	64.859035	21.141481	B9Vsp	5.482	13
HR 1585	200173858	74.343209	17.152963	K1III	5.49	13
80 Tau	200173866	67.536514	15.637471	F0V	5.552	13
51 Tau	200173865	64.597374	21.578461	F0V	5.631	13
HR 1403	200173867	67.004481	21.619624	$\mathrm{Am}$	5.711	13
89 Tau	200173868	69.540041	16.032569	F0V	5.776	13
HR 1576	200173871	73.959576	15.038117	B9V	5.776	13
98 Tau	200173870	74.539067	25.050123	A0V	5.785	13
99 Tau	200173862	74.45255	23.948656	K0III	5.806	13
105  Tau	200173869	76.981141	21.704531	B2Ve	5.92	13
HR 1554	200173874	73.195975	27.897278	F2IVn	5.961	13
HR 1385	200173875	66.238157	19.041326	F4V	5.965	13
HR 1741	200173873	79.811052	20.133961	K0III	6.107	13
HR 1633	200173872	76.090102	21.277497	K0	6.188	13
HR 1755	200173876	80.236334	19.814277	K0III	6.205	13

Table 4. All stars observed with halo photometry in K2 (cont'd).

Name	EPIC	RA (J2000)	Dec (J2000)	Spectral	V	Campaign
		(deg)	(deg)	Type	$_{ m mag}$	
rho Leo	200182931	158.2027987	9.30658596	B1Iab	3.87	14
58 Leo	200182925	165.140102	3.617234	K0.5IIIFe-0.5	4.838	14
48 Leo	200182926	158.700527	6.953542	G8.5IIIFe-1	5.07	14
53 Leo	200182928	162.314054	10.545122	A2V	5.312	14
65 Leo	200182927	166.725448	1.955523	K0III	5.52	14
35  Sex	200182929	160.836978	4.747282	K2II-III+K1II-III	5.79	14
43 Leo	200182930	155.751349	6.541923	K3III	6.08	14
Dschubba	200194910	240.0833554	-22.62170643	B0.3IV	2.32	15
Zubenelhakrabi	200194911	233.8815784	-14.78953551	G8.5III	3.91	15
iot1 Lib	200194912	228.0553761	-19.7917109	B9IVpSi	4.54	15
41 Lib	200194913	234.7273243	-19.30189583	G8III/IV	5.359	15
zet4 Lib	200194914	233.2300896	-16.85284783	B3V	5.499	15
HR 5762	200194915	233.1529208	-19.6704581	A2IV	5.52	15
HR 5806	200194916	234.4501566	-23.1416961	K0III	5.79	15
zet3 Lib	200194917	232.6683426	-16.60946629	K0III	5.806	15
HR 5810	200194918	234.5678373	-21.01632868	K0III	5.816	15
iot2 Lib	200194919	228.3299554	-19.6475503	A2V	6.066	15
HR 5620	200194920	226.6130965	-22.03182838	K0III	6.14	15
28 Lib	200194921	230.2236529	-18.15865908	G8II/III	6.17	15
HD 138810	200194958	233.7482933	-17.13883858	K1(III)(+G)	7.02	15
Asellus Australis	200200356	131.1712467	18.154306	K0+IIIb	3.94	16
Acubens	200200357	134.6217613	11.85770033	kA7VmF0/2III/IVSr	4.249	16
ksi Cnc	200200358	137.3397219	22.04544592	G8.5IIIFe-0.5CH-1	5.149	16
omi1 Cnc	200200360	134.3122908	15.3227667	A5III	5.22	16
eta Cnc	200200359	128.1770667	20.44116292	K3III	5.325	16, 18
$45~\mathrm{Cnc}$	200200728	130.8013754	12.68087381	A3III:+G7III	5.65	16
omi2 Cnc	200200361	134.3966669	15.58128181	F0IV	5.677	16
$50~\mathrm{Cnc}$	200200363	131.7334112	12.10995057	A1Vp	5.885	16, 18
Spica	200213067	201.2982474	-11.16131949	B1V	0.97	17
82 Vir	200213053	205.4032356	-8.70298448	M1+III	5.01	17
76 Vir	200213054	203.2419673	-10.16500253	G8III	5.21	17
68 Vir	200213055	201.6798633	-12.70766332	K5III	5.25	17
80 Vir	200213056	203.8804021	-5.39619162	K0III	5.706	17
HR 5106	200213057	203.6685425	-13.21432544	A0V	5.932	17
HR 5059	200213058	201.5475623	-1.19247178	A8V	5.965	17

**Table 5.** All stars observed with halo photometry in K2 (cont'd).

Name	EPIC	RA (J2000)	Dec (J2000)	Spectral	V	Campaign
		(deg)	(deg)	Type	mag	
HR 5810	200194918	234.5678373	-21.01632868	K0III	5.816	15
iot2 Lib	200194919	228.3299554	-19.6475503	A2V	6.066	15
HR 5620	200194920	226.6130965	-22.03182838	K0III	6.14	15
28  Lib	200194921	230.2236529	-18.15865908	G8II/III	6.17	15
HD 138810	200194958	233.7482933	-17.13883858	K1(III)(+G)	7.02	15
Asellus Australis	200200356	131.1712467	18.154306	K0+IIIb	3.94	16
Acubens	200200357	134.6217613	11.85770033	kA7VmF0/2III/IVSr	4.249	16
ksi Cnc	200200358	137.3397219	22.04544592	G8.5IIIFe-0.5CH-1	5.149	16
omi1 Cnc	200200360	134.3122908	15.3227667	A5III	5.22	16
eta $Cnc$	200200359	128.1770667	20.44116292	K3III	5.325	16, 18
$45~\mathrm{Cnc}$	200200728	130.8013754	12.68087381	A3III:+G7III	5.65	16
omi2 Cnc	200200361	134.3966669	15.58128181	F0IV	5.677	16
$50~\mathrm{Cnc}$	200200363	131.7334112	12.10995057	A1Vp	5.885	16, 18
Spica	200213067	201.2982474	-11.16131949	B1V	0.97	17
82 Vir	200213053	205.4032356	-8.70298448	M1+III	5.01	17
76 Vir	200213054	203.2419673	-10.16500253	G8III	5.21	17
68 Vir	200213055	201.6798633	-12.70766332	K5III	5.25	17
80 Vir	200213056	203.8804021	-5.39619162	K0III	5.706	17
HR 5106	200213057	203.6685425	-13.21432544	A0V	5.932	17
HR 5059	200213058	201.5475623	-1.19247178	A8V	5.965	17
gam Cnc	200233186	130.8214508	21.46850022	A1IV	4.652	18
zet Cnc	200233643	123.0530265	17.64776708	F8V+G0V	4.67	18
$60~\mathrm{Cnc}$	200233188	133.98145	11.62602	K5III	5.44	18
$49~\mathrm{Cnc}$	200233189	131.1876504	10.08166753	A1VpHgMnSiEu	5.66	18
HR 3264	200233190	125.08739	20.74772	K1III	5.798	18
$29~\mathrm{Cnc}$	200233192	127.1555775	14.21082345	A5V	5.948	18
HR 3222	200233193	123.2488715	16.51431877	G8III	6.047	18
$21~\mathrm{Cnc}$	200233196	125.9800391	10.63205666	M2III	6.08	18
$25~\mathrm{Cnc}$	200233644	126.45782	17.04627	F5IIIm?	6.1	18
HR 3558	200233195	134.284504	17.14374897	K1III	6.146	18
HR 3541	200233194	133.84534	17.23128	C-N4.5	6.4	18