

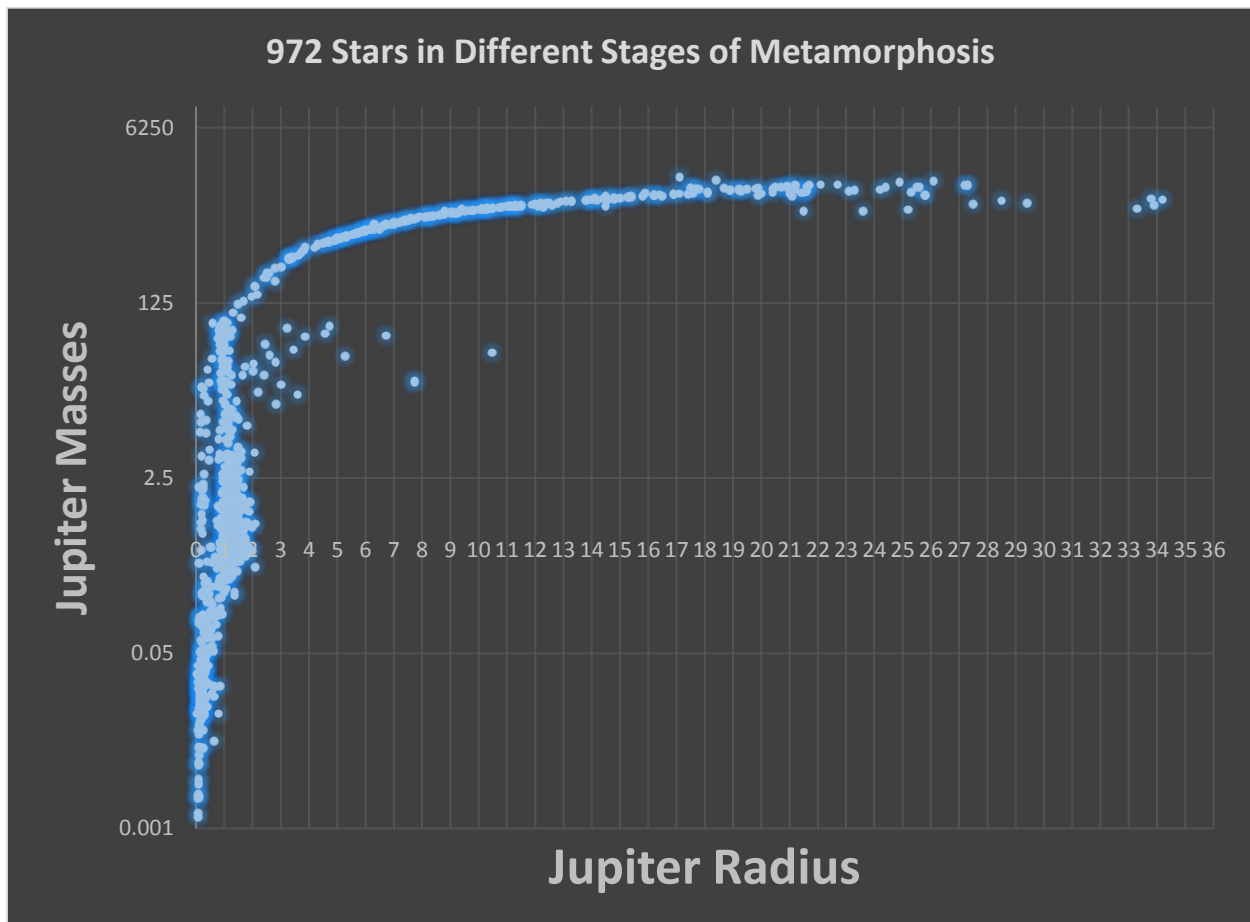
# 972 Stars in Different Stages of Metamorphosis

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*Abstract: A simple graph is provided on  $\log_{10}$  scale for masses that young hot stars become colder older smaller stars, mislabeled "planets/brown dwarfs/exoplanets" by the establishment. The data is freely available online and is sourced in this paper.*

The graph is self-explanatory, stars lose mass and shrink on a continuous basis, becoming life hosting worlds to the bottom left, after billions of years of evolutionary sequences. The radii and masses of the stars are referenced against Jupiter, as Jupiter is a good middle ground star just exiting its brown dwarf stages of evolution, but not too evolved as to host life as of yet. This graph will be strengthened more when the TESS data comes back, and the author includes even more brown dwarfs that are already directly observed. I can't remember who said it, but the authority of 10,000 is no match against the simple reasoning of a single individual. The book of stellar metamorphosis:

<http://vixra.org/pdf/1711.0206v3.pdf>



Star	Radius	Mass
Kepler-138b	0.047	0.00021
Kepler-453b	0.553	0.00063
TRAPPIST-1d	0.069	0.00129
Kepler-70b	0.068	0.0014
TRAPPIST-1e	0.082	0.00195
Kepler-138d	0.108	0.00201
Kepler-70c	0.077	0.0021
TRAPPIST-1f	0.093	0.00214
TRAPPIST-1b	0.097	0.00267
K2-239c	0.089	0.0028
Earth	0.09	0.003
K2-239d	0.098	0.0041
TRAPPIST-1g	0.101	0.00422
TRAPPIST-1c	0.094	0.00434
K2-239b	0.098	0.0044
Gliese 1132 b	0.103	0.0051
Kepler-78b	0.105	0.006
Kepler-11b	0.161	0.006
Kepler-11f	0.222	0.006
Kepler-177b	0.259	0.006
Kepler-138c	0.107	0.0062
Kepler-51b	0.633	0.007
K2-229b	0.102	0.0082
Kepler-406c	0.076	0.009
Kepler-114c	0.143	0.009
Kepler-11c	0.256	0.009
Kepler-101c	0.112	0.01
Kepler-414b	0.153	0.011
Kepler-307c	0.196	0.01145
Kepler-114d	0.226	0.012
Kepler-60c	0.17	0.01211
Kepler-48b	0.168	0.0124
Kepler-29c	0.28	0.01259
Kepler-80e	0.143	0.01299
Kepler-62c	0.048	0.013
Kepler-289d	0.239	0.013
Kepler-79e	0.311	0.013
Kepler-51c	0.803	0.013
Kepler-60d	0.178	0.01309
Kepler-60b	0.153	0.01318

HD 219134 c	0.135	0.01372
Kepler-36b	0.133	0.014
K2-240c	0.16	0.014
Kepler-29b	0.299	0.01419
Kepler-105c	0.117	0.01447
Kepler-10b	0.132	0.0145
HD 219134 b	0.143	0.01491
K2-155b	0.138	0.015
K2-155d	0.146	0.015
Kepler-223e	0.41	0.0151
Kepler-21b	0.146	0.01598
K2-141b	0.135	0.016
K2-240b	0.18	0.016
Kepler-1655b	0.1974	0.016
Kepler-223c	0.307	0.01605
Kepler-26b	0.248	0.01611
K2-131b	0.152	0.017
COROT-7b	0.141	0.018
COROT-24b	0.33	0.018
Kepler-68b	0.208	0.01878
Kepler-99b	0.132	0.019
Kepler-92c	0.232	0.019
Kepler-350c	0.277	0.019
Kepler-305c	0.294	0.019
Kepler-79c	0.332	0.019
Kepler-79d	0.639	0.019
Kepler-26c	0.243	0.01951
Gliese 1214 b	0.254	0.0197
Kepler-406b	0.128	0.02
K2-155c	0.174	0.02
Kepler-87c	0.548	0.02
LHS 1140 b	0.128	0.0209
Kepler-80c	0.244	0.02121
Kepler-80d	0.136	0.02124
Kepler-454b	0.211	0.02152
Kepler-80b	0.238	0.0218
Kepler-18b	0.178	0.022
Kepler-68c	0.089	0.02265
HD 219134 f	0.117	0.02297
Kepler-100b	0.118	0.023
Kepler-289b	0.192	0.023

Kepler-11d	0.278	0.023
K2-141c	0.624	0.023
Kepler-223b	0.267	0.02328
Kepler-307b	0.217	0.02341
Kepler-177c	0.633	0.024
Kepler-51d	0.865	0.024
HD 97658 b	0.209	0.02473
Kepler-48d	0.182	0.025
Kepler-36c	0.328	0.025
Kepler-11e	0.374	0.025
Kepler-223d	0.467	0.02517
55 Cancri e	0.17	0.02542
HD 106315 b	0.207	0.0255
Kepler-131c	0.075	0.026
K2-106b	0.136	0.0263
Kepler-338e	0.139	0.027
Kepler-88b	0.337	0.027
K2-111b	0.17	0.0271
Kepler-102e	0.198	0.028
WASP-47e	0.162	0.02863
Kepler-62b	0.117	0.03
Kepler-25b	0.242	0.0302
Kepler-20b	0.167	0.03052
Kepler-103b	0.301	0.031
K2-38c	0.216	0.03115
Kepler-37b	0.029	0.03146
Kepler-20d	0.245	0.03168
K2-32d	0.306	0.03241
Kepler-89b	0.153	0.033
Kepler-106c	0.223	0.033
Kepler-305b	0.321	0.033
Kepler-79b	0.31	0.0343
K2-95b	0.31	0.03458
Kepler-417b	0.206	0.035
Kepler-106e	0.228	0.035
Kepler-30b	0.348	0.036
Kepler-113b	0.162	0.037
HIP 116454 b	0.226	0.037
Kepler-37c	0.067	0.03776
K2-38b	0.138	0.03776
COROT-22b	0.435	0.038

K2-32c	0.269	0.03807
Kepler-37d	0.173	0.03839
Kepler-20c	0.272	0.04012
Kepler-238f	0.178	0.042
Gliese 3470 b	0.346	0.043
Kepler-62d	0.174	0.044
Kepler-48c	0.242	0.04597
Kepler-350d	0.25	0.047
Kepler-89c	0.385	0.049
HD 219134 d	0.144	0.05088
Kepler-131b	0.215	0.051
Kepler-276d	0.25	0.051
BD+20 594 b	0.199	0.05129
K2-32b	0.458	0.05191
Kepler-276c	0.259	0.052
Kepler-18d	0.623	0.052
K2-110b	0.2312	0.0525
WASP-47d	0.331	0.05286
Kepler-10c	0.21	0.054
Neptune	0.346	0.054
Kepler-18c	0.49	0.054
HD 106315 c	0.385	0.056
Kepler-396c	0.473	0.056
HAT-P-26b	0.565	0.059
Kepler-19b	0.197	0.064
K2-229c	0.181	0.067
Gliese 436 b	0.372	0.07
Kepler-56b	0.581	0.07
Kepler-30d	0.785	0.073
Kepler-4b	0.357	0.077
Kepler-25c	0.464	0.0774
Kepler-11g	0.297	0.079
HAT-P-11b	0.422	0.081
K2-10b	0.343	0.08495
K2-236b	0.546	0.085
COROT-24c	0.44	0.088
Kepler-328b	0.205	0.09
Kepler-414c	0.269	0.094
Kepler-117b	0.719	0.094
K2-105b	0.369	0.09439
Kepler-128b	0.101	0.097

K2-27b	0.4	0.09722
K2-98b	0.384	0.10131
Kepler-128c	0.101	0.105
Kepler-62f	0.126	0.11
Kepler-89e	0.585	0.11
HD 89345 b	0.66	0.11
Kepler-62e	0.144	0.113
Kepler-122f	0.156	0.113
Kepler-22b	0.212	0.113
Kepler-103c	0.459	0.114
Kepler-145b	0.236	0.117
WASP-139b	0.8	0.117
Kepler-279d	0.277	0.118
HATS-7b	0.563	0.12
WASP-107b	0.94	0.12
Kepler-328c	0.482	0.124
K2-39b	0.509	0.12522
Kepler-35b	0.728	0.127
WASP-156b	0.51	0.128
HATS-8b	0.873	0.138
CoRoT 223977153 b	0.57	0.15
Kepler-279c	0.384	0.155
Kepler-101b	0.51	0.16
Kepler-9c	0.823	0.171
HATS-46b	0.903	0.173
Kepler-282e	0.277	0.177
WASP-127b	1.37	0.18
Kepler-416b	0.221	0.183
K2-108b	0.471	0.18689
Kepler-282d	0.219	0.192
KELT-11b	1.37	0.195
HAT-P-18b	0.995	0.197
Kepler-277c	0.3	0.202
Kepler-92b	0.313	0.202
Kepler-413b	0.388	0.211
HAT-P-12b	0.959	0.211
K2-140b	1.093	0.211
COROT-8b	0.57	0.22
Kepler-34b	0.764	0.22
K2-261b	0.85	0.223
HATS-5b	0.912	0.237

Kepler-396b	0.312	0.238
WASP-29b	0.792	0.244
Kepler-145c	0.385	0.25
Kepler-425b	0.978	0.25
Kepler-9b	0.842	0.252
WASP-69b	1.057	0.26
HATS-43b	1.18	0.261
HAT-P-38b	0.825	0.267
COROT-25b	1.08	0.27
WASP-131b	1.22	0.27
Kepler-277b	0.261	0.275
WASP-117b	1.021	0.2755
WASP-126b	0.96	0.28
WASP-39b	1.27	0.28
Kepler-427b	1.23	0.29
HAT-P-19b	1.132	0.292
WASP-83b	1.04	0.3
WASP-21b	1.07	0.3
HAT-P-51b	1.293	0.309
WASP-151b	1.13	0.31
WASP-20b	1.462	0.311
HATS-6b	0.998	0.319
Kepler-16b	0.754	0.333
Kepler-89d	1.005	0.334
Kepler-426b	1.09	0.34
HAT-P-67b	2.085	0.34
HAT-P-44b	1.242	0.352
HD 149026 b	0.813	0.368
Kepler-54c	0.11	0.37
Kepler-415b	0.108	0.377
Kepler-63b	0.545	0.378
WASP-49b	1.115	0.378
WASP-63b	1.43	0.38
Kepler-38b	0.384	0.384
K2-139b	0.808	0.387
HATS-50b	1.13	0.39
WASP-153b	1.55	0.39
K2-232b	1	0.398
HD 63454 b	1.098	0.398
WASP-132b	0.87	0.41
Kepler-289c	1.034	0.42

WASP-67b	1.4	0.42
K2-60b	0.683	0.426
Kepler-77b	0.96	0.43
Kepler-422b	1.15	0.43
Kepler-12b	1.754	0.432
Wasp 144 b	0.85	0.44
Kepler-7b	1.622	0.441
KELT-6b	1.18	0.442
WASP-94Ab	1.72	0.452
WASP-52b	1.27	0.46
COROT-5b	1.388	0.467
WASP-113b	1.409	0.475
WASP-13b	1.389	0.477
WASP-31b	1.549	0.478
WASP-96b	1.2	0.48
COROT-28b	0.955	0.484
WASP-6b	1.23	0.485
WASP-17b	1.991	0.486
WASP-11b	1.005	0.487
HAT-P-46b	1.284	0.493
TrES-4b	1.838	0.494
Kepler-32c	0.178	0.5
WASP-101b	1.41	0.5
Kepler-45b	0.96	0.505
WASP-60b	0.86	0.514
WASP-118b	1.44	0.514
COROT-26b	1.26	0.52
HAT-P-1b	1.319	0.525
HATS-10b	0.969	0.526
WASP-42b	1.122	0.527
HAT-P-65b	1.89	0.527
HATS-27b	1.5	0.53
PH1b	0.551	0.531
Kepler-238e	0.5	0.534
HAT-P-17b	1.01	0.534
COROT-16b	1.17	0.535
WASP-80b	0.999	0.538
WASP-15b	1.428	0.542
HATS-13b	1.212	0.543
HATS-44b	1.067	0.56
Kepler-41b	1.29	0.56



WASP-88b	1.7	0.56
HAT-P-25b	1.19	0.567
Kepler-56c	0.874	0.57
WASP-62b	1.39	0.57
WASP-56b	1.092	0.571
WASP-157b	1.065	0.574
K2-30b	1.039	0.579
WASP-25b	1.22	0.58
HAT-P-55b	1.182	0.582
WASP-70Ab	1.164	0.59
WASP-34b	1.22	0.59
Kepler-8b	1.416	0.59
HAT-P-3b	0.827	0.591
Kepler-423b	1.192	0.595
HATS-53b	1.34	0.595
XO-2Nb	1.019	0.597
HAT-P-39b	1.571	0.599
WASP-124b	1.24	0.6
HATS-25b	1.26	0.613
HAT-P-40b	1.73	0.615
WASP-22b	1.199	0.617
HAT-P-27b	1.02	0.62
OGLE-TR-10b	1.25	0.62
HAT-P-28b	1.212	0.626
WASP-55b	1.335	0.627
Kepler-74b	0.96	0.63
HATS-39b	1.57	0.63
WASP-90b	1.63	0.63
WASP-54b	1.653	0.636
WASP-57b	1.05	0.644
HATS-26b	1.75	0.65
HATS-29b	1.251	0.653
Kepler-15b	0.96	0.66
HAT-P-43b	1.281	0.662
Kepler-6b	1.304	0.668
HAT-P-4b	1.274	0.671
HATS-28b	1.194	0.672
KELT-10b	1.399	0.679
HAT-P-24b	1.242	0.685
WASP-84b	0.942	0.694
HATS-45b	1.286	0.7

HATS-30b	1.175	0.706
HAT-P-30b	1.34	0.711
Kepler-49c	0.227	0.72
COROT-4b	1.19	0.72
WASP-35b	1.32	0.72
WASP-81b	1.429	0.729
K2-29b	1.19	0.73
TrES-1b	1.067	0.752
HAT-P-54b	0.944	0.76
HAT-P-33b	1.686	0.762
HATS-51b	1.41	0.768
HAT-P-29b	1.107	0.778
HAT-P-9b	1.4	0.78
HAT-P-66b	1.59	0.783
Kepler-23b	0.17	0.8
HAT-P-41b	1.685	0.8
WASP-92b	1.461	0.805
Lupus-TR-3b	0.89	0.81
Kepler-91b	1.367	0.81
NGTS-1b	1.33	0.812
HAT-P-52b	1.009	0.818
HATS-9b	1.065	0.837
COROT-9b	1.05	0.84
K2-115b	1.115	0.84
K2-107b	1.44	0.84
WASP-142b	1.53	0.84
Kepler-435b	1.99	0.84
COROT-29b	0.9	0.85
HATS-11b	1.51	0.85
HAT-P-13b	1.272	0.851
WASP-1b	1.483	0.854
WASP-16b	1.008	0.855
K2-238b	1.3	0.86
WASP-59b	0.775	0.863
KELT-8b	1.86	0.867
HATS-31b	1.64	0.88
WASP-23b	0.962	0.884
WASP-44b	1.14	0.889
WASP-58b	1.37	0.89
WASP-78b	1.7	0.89
HAT-P-45b	1.426	0.892

WASP-123b	1.318	0.899
WASP-79b	2.09	0.9
KELT-4Ab	1.699	0.902
WASP-28b	1.213	0.907
WASP-48b	1.396	0.907
KELT-15b	1.443	0.91
WASP-2b	1.071	0.915
COROT-12b	1.44	0.917
Kepler-54b	0.187	0.92
XO-1b	1.21	0.92
HATS-32b	1.249	0.92
WASP-76b	1.83	0.92
WASP-98b	1.144	0.922
WASP-41b	1.18	0.94
Kepler-412b	1.341	0.941
HATS-34b	1.43	0.941
WASP-68b	1.24	0.95
WASP-74b	1.56	0.95
KELT-12b	1.78	0.95
WASP-7b	1.33	0.96
Kepler-539b	0.747	0.97
K2-99b	1.29	0.97
Kepler-49b	0.243	0.98
WASP-129b	0.93	1
Jupiter	1	1
Kepler-44b	1.09	1
WASP-45b	0.992	1.002
OGLE-TR-182b	1.13	1.01
Kepler-87b	1.204	1.02
WASP-26b	1.281	1.028
Kepler-424b	0.89	1.03
OGLE-TR-211b	1.36	1.03
COROT-1b	1.49	1.03
HAT-P-42b	1.28	1.044
HAT-P-35b	1.332	1.054
HAT-P-6b	1.33	1.057
HAT-P-5b	1.26	1.06
WASP-19b	1.392	1.069
WASP-75b	1.27	1.07
HATS-14b	1.039	1.071
WASP-24b	1.3	1.071

HATS-3b	1.381	1.071
KPS-1b	1.03	1.09
Kepler-418b	1.2	1.1
K2-97b	1.31	1.1
Kepler-55c	0.197	1.11
COROT-19b	1.29	1.11
WTS-2b	1.363	1.12
WASP-95b	1.21	1.13
WASP-133b	1.21	1.16
HAT-P-37b	1.178	1.169
OGLE-TR-132b	1.2	1.18
KELT-18b	1.57	1.18
WASP-121b	1.865	1.183
XO-5b	1.14	1.19
HATS-33b	1.23	1.192
TrES-2b	1.247	1.197
WASP-47b	1.15	1.21
WASP-4b	1.33	1.216
WASP-138b	1.09	1.22
HATS-35b	1.464	1.222
WASP-130b	0.89	1.23
WASP-119b	1.4	1.23
WASP-82b	1.67	1.24
OGLE-TR-113b	1.093	1.26
WASP-85Ab	1.24	1.265
Kepler-428b	1.08	1.27
WASP-64b	1.271	1.271
WASP-104b	1.137	1.272
KELT-7b	1.533	1.28
KELT-14b	1.743	1.284
K2-113b	0.93	1.29
Qatar-1b	1.143	1.294
WASP-174b	1.3	1.3
COROT-13b	0.885	1.308
KELT-17b	1.525	1.31
WASP-97b	1.13	1.32
HATS-4b	1.02	1.323
HATS-17b	0.777	1.338
WASP-91b	1.03	1.34
HATS-2b	1.168	1.345
HAT-P-50b	1.288	1.35

Kepler-28c	0.303	1.36
Kepler-59c	0.177	1.37
Kepler-447b	1.65	1.37
Kepler-58b	0.248	1.39
OGLE-TR-56b	1.363	1.39
K2-22b	0.223	1.4
K2-260b	1.552	1.42
Kepler-420Ab	0.94	1.45
WASP-50b	1.153	1.468
WASP-93b	1.597	1.47
HATS-23b	1.86	1.47
WASP-12b	1.9	1.47
KELT-3b	1.345	1.477
HAT-P-53b	1.318	1.484
Kepler-55b	0.217	1.49
WASP-103b	1.528	1.49
Kepler-28b	0.321	1.51
WASP-136b	1.38	1.51
Kepler-1647b	1.059	1.51968
HAT-P-8b	1.5	1.52
KELT-2Ab	1.286	1.522
WASP-72b	1.27	1.5461
WASP-65b	1.112	1.55
WASP-5b	1.087	1.58
HATS-40b	1.58	1.59
Kepler-24b	0.214	1.6
Kepler-24c	0.25	1.6
K2-237b	1.65	1.6
HAT-P-7b	1.491	1.682
HAT-P-49b	1.413	1.73
WASP-77Ab	1.21	1.76
K2-34b	1.35	1.76
WASP-114b	1.339	1.769
K2-31b	1.06	1.774
WASP-43b	0.93	1.78
XO-4b	1.33	1.78
TrES-5b	1.194	1.79
WASP-105b	0.96	1.8
WASP-37b	1.16	1.8
HAT-P-36b	1.264	1.832
Kepler-117c	1.101	1.84

K2-114b	0.942	1.85
HAT-P-57b	1.413	1.85
HATS-1b	1.302	1.855
WASP-73b	1.16	1.88
HATS-42b	1.4	1.88
K2-77b	0.205	1.9
WASP-135b	1.3	1.9
WASP-46b	1.174	1.91
TrES-3b	1.336	1.91
WASP-106b	1.085	1.925
HAT-P-15b	1.072	1.946
HATS-18b	1.337	1.98
WASP-3b	1.4	1.98
Kepler-47b	0.27	2
Kepler-30c	1.097	2.01
Kepler-76b	1.36	2.01
WASP-100b	1.69	2.03
Kepler-59b	0.098	2.05
WASP-61b	1.24	2.06
HAT-P-23b	1.224	2.07
Kepler-5b	1.426	2.111
WASP-53b	1.074	2.132
HAT-P-22b	1.08	2.147
HATS-15b	1.105	2.17
HAT-P-31b	1.07	2.171
HAT-P-56b	1.466	2.18
Kepler-58c	0.255	2.19
Kepler-40b	1.17	2.2
HAT-P-14b	1.15	2.232
HATS-52b	1.382	2.24
WASP-71b	1.46	2.242
WASP-8b	1.038	2.244
COROT-21b	1.3	2.26
POTS-1b	0.941	2.31
WASP-66b	1.39	2.32
COROT-11b	1.43	2.33
WASP-36b	1.327	2.361
HATS-12b	1.35	2.38
NGTS-3Ab	1.48	2.38
COROT-17b	1.02	2.43
WASP-140b	1.44	2.44

HATS-24b	1.487	2.44
Kepler-17b	1.31	2.45
Qatar-2b	1.254	2.494
Kepler-419b	0.96	2.5
WASP-141b	1.21	2.69
WASP-38b	1.094	2.691
Kepler-23c	0.285	2.7
Kepler-419 b	1.11	2.71
HATS-22b	0.953	2.74
COROT-10b	0.97	2.75
KELT-16b	1.415	2.75
WASP-99b	1.1	2.78
COROT-23b	1.05	2.8
Kepler-433b	1.45	2.82
Kepler-434b	1.13	2.86
KELT-9b	1.891	2.88
COROT-6b	1.166	2.96
S Ori 70	1.6	3
WASP-10b	1.08	3.15
K2-145b	1.235	3.216
HD 17156 b	1.02	3.22
Kepler-43b	1.219	3.23
HATS-16b	1.3	3.27
HAT-P-34b	1.197	3.328
COROT-18b	1.31	3.47
COROT-2b	1.466	3.47
WASP-32b	1.18	3.6
K2-33b	0.45	3.7
MASCARA-1b	1.5	3.7
SWEEPS-04	0.81	3.8
KELT-21b	1.586	3.91
HD 80606 b	0.98	3.94
WTS-1b	1.49	4.01
HAT-P-21b	1.024	4.063
Kepler-32b	0.196	4.1
WASP-33b	1.497	4.1
HAT-P-16b	1.289	4.193
COROT-20b	0.84	4.24
Qatar-3b	1.096	4.31
Qatar-5b	1.107	4.32
XO-6b	2.07	4.4

OGLE2-TR-L9 b	1.61	4.5
Kepler-31c	0.473	4.7
WASP-120b	1.473	4.85
TWA 27B	1.5	5
Kepler-432b	1.145	5.41
WASP-89b	1.04	5.9
Kepler-46b	0.808	6
Qatar-4b	1.135	6.1
DT Virginis c	1.22	6.28536
Kepler-31d	0.348	6.8
Kepler-57c	0.138	6.95
HR 8799 b	1.2	7
UGPS J072227.51-054031.2	1.21	7
HAT-P-20b	0.867	7.246
WASP-14b	1.281	7.341
COROT-14b	1.09	7.6
Cha J110913-773444	1.8	8
Kepler-14b	1.136	8.4
Kepler-52b	0.187	8.7
HAT P 2 b	0.951	8.74
HAT-P-2b	1.157	9.09
Kepler-27b	0.357	9.11
Kepler-13b	1.512	9.28
SWEEPS-11	1.13	9.7
HATS-41b	1.33	9.7
HR 8799 c	1.2	10
HR 8799 d	1.2	10
KOI-12b	1.43	10
Kepler-75b	1.05	10.1
COROT-27b	1.007	10.39
Kepler-52c	0.164	10.41
WASP-18b	1.165	10.43
HD 114762 b	1.11	10.98
GU Piscium b	1.265	11.3
XO-3b	1.217	11.79
WISE 0458+6434 b	1.01	13
WISEP J014807.25-720258.7	1.04	13
C69-Sub-001	2.84	13
Kepler-27c	0.437	13.8
2MASS J02192210-3925225 b	1.44	13.9
WISEP J014656.66+423410.0	0.97	14



Kepler-53c	0.283	15.74
HN Peg b	1.1	16
FU Tau B	3.59	16
ULAS J003402.77-005206.7	1.04	17
CT Chamaeleontis b	2.2	17
WISEPA J041022.71+150248.5	0.92	18
Kepler-53b	0.258	18.41
Kepler-57b	0.195	18.86
Kepler 57 b	0.2	18.86
2MASS J01225093-2439505 B	1	19
WISEP J071322.55-291751.9	0.92	20
CFBDS J005910.90-011401.3	1	20
GQ Lupi b	3	20
Kepler-39b	1.24	20.1
2MASS J21402931+1625183 Ab	0.92	20.95
GJ 229 B	0.468	21
C69-Sub-003	7.74	21
COROT-3b	1.01	21.66
HN Pegasi b	1.051	21.9987
WISEP J033515.01+431045.1	0.9	22
WISE 1217+1626 b	0.934	22
WISE 1217+16 A b	0.96	22
Lori-SOC 11	7.74	22
G 196-3 B	1.26	25
L Ori161	1.66	25
TWA 27A	2.4	25
WISEPA J031325.96+780744.2	0.88	26
WISEPC J083641.12-185947.2	0.9	26
Kelt 1b	1.1	27
CD-33 7795 B	2.02	27
KELT-1b	1.11	27.23
Kepler-47c	0.411	28
2MASS J07271824+1710012	0.96	30
HR 2562 b	1.11	30
2MASS J05591914-1404488	1.75	30
2MASS J08503593+1057156 B	1	31
L Ori156	2.04	32
L Ori154	2.81	33
NLTT 41135	1.13	33.7
2MASS J00501994-3322402	0.95	34
2MASS J02431371-2453298	0.97	34

2MASS J04151954-0935066	0.91	35
GJ 1001 B	0.58	36
EPIC 219388192 b	0.937	36.5
2MASS J05352184-0546085 B	5.27	38
L Ori155	2.61	39
SDSSp J111010.01+011613.1	0.92	41
Lori-SOC 13	10.48	41
2MASS J08503593+1057156 A	1	42
GJ 570 D	0.855	42.5
HD 42581 B	1.19	43
L Ori146	3.46	44
GJ 417 C	1	48
2MASS J00345157+0523050	0.83	49
L Ori150	2.44	50
GJ 417 B	1	53
WD 0137-349 B	0.77	56
2MASS J09373487+2931409	0.79	58
LP 349-25 B	1.21	59
L Ori140	3.85	59
CoRoT 33 b	1.1	59.2
COROT-33b	1.1	59.2
LP 944-20	0.85	60
2 MASS J05352184-0546085 A	6.73	60
2MASS J07464256+2000321 B	0.97	63
L Ori134	4.56	63
CoRoT 15 b	1.12	63.4
COROT-15b	1.12	63.4
DENIS-P J025503.5-470050	0.9	65
GJ 1048 B	1.18	65
CFBDS J111807-064016	0.8	68
LP 349-25 A	1.27	68
2MASS J09201223+3517429 A	1	71
2MASS J09201223+3517429 B	1	71
LHS 2397aB	1	71
L Ori143	3.22	71
2MASS J07003664+3157266 A	0.84	74
2MASS J07464256+2000321 A	0.99	74
L Ori131	4.72	74
DENIS-P J0828343-130919	0.93	77
2MASS J06523070+4710348 A	0.59	79
TRAPPIST 1	1.1	80

LP 415-20 B	1	83
DENIS-P J0147327+495448	1	84
Wolf 359	1.6	90
K04533	1.3	100
Proxima Centauri	1.5	122
YZ Cet	1.68	130
Barnard's Star	1.96	144
GJ 1214	2.16	150
Kepler 445	2.1	180
GJ 1132	2.07	181
K2-28	2.8	201
Kepler 42	2.4	220
Kepler 1649	2.5	220
K05327	2.5	240
Kepler 1646	2.6	240
K05662	2.8	270
Kapteyn's Star	3	274
K04290	3	280
K00249	3.3	330
K00249	3.3	330
Kepler 560	3.3	340
K00463	3.3	340
K00463	3.3	340
K06839	3.4	340
K02156	3.4	350
K03119	3.4	350
K03138	3.6	360
K01422	3.7	380
Kepler 249	3.8	400
K00889	3.8	400
K02704	4.2	430
K2-14	3.86	433
K02685	4.3	450
K03144	4.3	460
K04472	4.5	470
K06893	4.6	480
K00886	4.6	480
K06705	4.7	480
K04928	4.7	500
K00781	4.9	510
K02006	4.9	510

K06444	4.9	510
K03094	5	520
K02983	5	530
K00818	5	530
K00251	5.1	530
K00854	5.1	530
K04427	5.2	540
K00812	5.3	540
K02793	5.3	550
K04087	5.3	550
K00314	5.3	560
K00252	5.4	560
K06910	5.5	570
K00247	5.6	580
K04252	5.7	590
K00784	5.7	590
K00778	5.7	600
K02873	5.8	600
K03712	5.8	610
K00227	5.9	620
K00227	5.9	620
K00250	6	620
K00248	6	630
K00739	6	630
K00253	6	640
K00610	6.1	640
K06799	6.2	640
K00455	6.2	650
K00455	6.2	650
K00531	6.2	650
K00430	6.3	650
K00326	6.5	650
K00326	6.5	650
K00736	6.3	660
K00503	6.4	670
K00641	6.5	670
K07034	6.6	690
K03920	6.6	690
K02811	6.7	710
K00222	6.8	720
TW Piscis Austrini	6.3	725

K00241	6.7	730
K00588	6.9	730
K00218	7	730
K06007	7.2	750
K00231	7	760
K04795	7.2	760
K04746	7.3	770
K06904	7.4	770
K04733	7.5	790
K00189	7.5	790
K00082	7.4	800
K06003	7.7	810
K00197	7.6	820
K00245	7.8	830
K00188	8.1	840
K00612	7.9	850
K00216	8.1	850
K06716	8.2	850
K00223	8.2	860
K00226	8.2	860
K00221	8.3	860
K00235	8.3	870
K03932	8.4	870
K07009	8.4	880
K00604	8.6	890
K06004	8.7	900
K00191	8.8	910
K00815	8.8	920
K02874	8.8	920
K00190	9	930
K00195	9.1	930
K00236	9.2	930
K06005	9.2	930
K01334	9	940
K00205	9.1	940
K06918	9.3	950
K03609	9.3	950
K06750	9.3	950
K00215	9.3	950
K06001	9.5	960
K00217	8.8	970

K00064	21.5	970
K00391	23.6	970
K03085	9.6	980
K00234	9.6	980
K03389	9.7	980
K00196	9.7	980
K00213	9.8	980
K00214	9.8	990
Sun	10	1000
K00674	25.2	1000
K06786	10.1	1010
K06880	10.1	1010
K00242	10.1	1010
K06881	10.2	1010
K00220	10.3	1010
K00198	9.4	1020
K00210	10.2	1020
K00237	10.3	1020
K00203	10.1	1030
K06766	10.4	1030
K00239	10.4	1030
K02541	33.3	1030
K00201	10.3	1040
K06757	10.5	1040
K00192	10.5	1040
K07003	10.7	1050
K00230	10.7	1050
K07392	10.8	1060
K00246	12.3	1060
K00194	10.9	1070
K06000	11.2	1070
K07005	11.3	1070
K00211	11	1080
K07289	11.1	1080
K00193	11.1	1080
K00199	11.2	1080
K00232	11.5	1080
K00202	12.1	1080
K00204	14.5	1080
K00229	11.1	1090
K07209	11.3	1090

K00187	11.4	1090
K07258	11.3	1100
K00024	11.5	1100
K00219	12.6	1100
K01894	33.9	1110
K00224	11.9	1120
K07040	12	1120
K00238	12.1	1120
K01221	27.5	1130
K00212	12	1140
K06075	12.3	1140
K00240	12.2	1150
K00209	12.8	1150
K00622	29.4	1150
K04975	12.4	1160
K07272	12.5	1160
K06335	12.9	1190
K00244	13.1	1200
K07093	13.3	1210
K06112	13.3	1210
K06942	13.8	1230
K00371	28.5	1230
K07440	13.8	1240
K07602	14.2	1240
K00233	13.9	1250
K00225	14	1250
K06006	14	1250
K06002	14.1	1250
K01314	34.2	1250
K00200	14.8	1260
K00158	14.6	1270
K00132	14.4	1280
K02533	33.8	1280
K04589	15	1290
Kepler 1104	14.1	1300
K00023	14.8	1310
K04578	14.8	1310
K07559	15.3	1320
K04601	15.3	1330
K07019	15.4	1330
HAT P 34	14.5	1360

K00208	15.4	1360
K05108	15.8	1360
K07206	16.5	1360
K00119	21.1	1360
K00097	19.9	1370
K01487	16.2	1380
K00206	16.2	1380
K00075	25.8	1380
K00075	25.8	1380
K06348	16.2	1390
K07135	16.4	1400
HATS 27	17.4	1415
K07155	16.9	1420
K06119	16.9	1420
K07367	17.1	1430
K02358	20	1430
K06810	21	1430
K01474	15.9	1440
K04538	17.6	1450
K06066	18.1	1450
K01075	18.1	1460
K00121	21.4	1460
K03122	20.4	1470
K04276	21.5	1470
K01924	25.3	1490
K07344	18.1	1500
K06109	19.3	1510
K00098	21.6	1520
K00098	21.6	1520
K02968	23.1	1520
K00320	21.6	1530
K01178	18.9	1540
K00004	23.3	1540
K00076	18.9	1550
K07425	19.2	1550
K06091	19.3	1560
K01620	21.2	1570
K01117	24.2	1570
K00705	19.2	1580
K07290	17.5	1590
K00286	17.8	1590



K06063	19.5	1590
K00089	20.4	1590
K07059	17.7	1600
K06311	17.7	1600
K06177	19.8	1600
K01414	18.7	1610
K07436	19.9	1610
K06068	17.5	1620
K07190	17.5	1630
K07278	20.9	1640
K02956	25.5	1640
K00659	25.6	1640
K06543	20.7	1650
K06138	21.6	1650
K06147	20.5	1660
K03567	20.9	1660
K03203	24.4	1660
K06642	20.9	1680
K06533	21.2	1700
K00366	27.2	1720
K06678	21.7	1730
K00100	27.3	1730
K00100	27.3	1730
K04043	21.2	1740
K01350	22.1	1750
K00287	22.7	1760
K03422	24.9	1840
K00972	26.1	1880
Fomalhaut	18.4	1920
Sirius A	17.11	2063