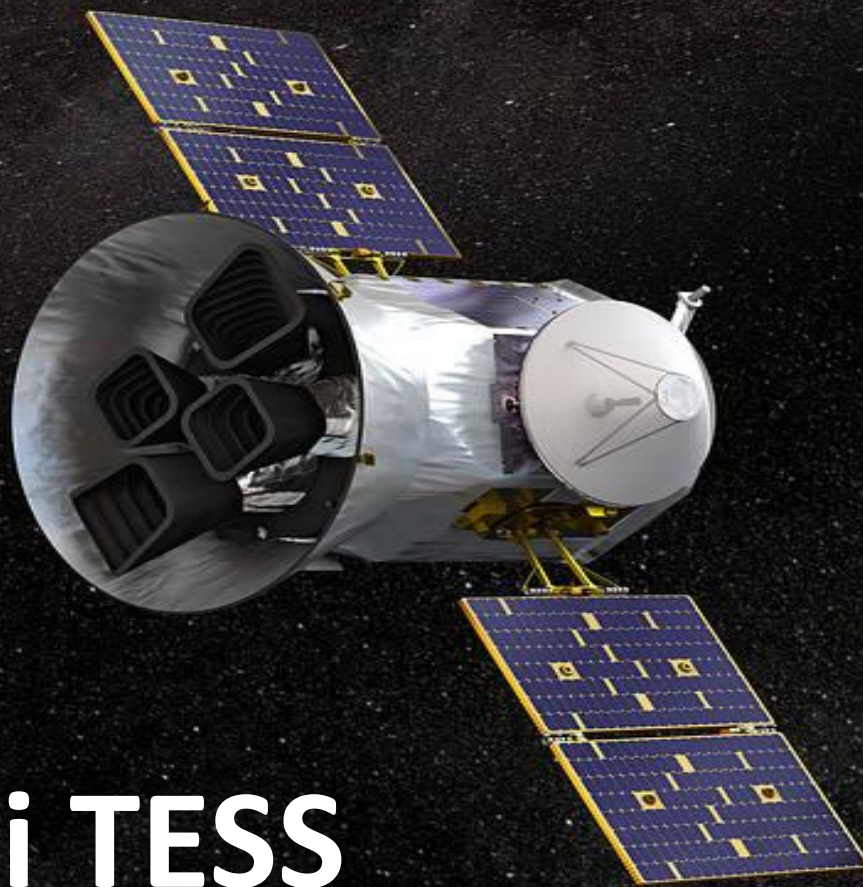


Příprava follow-up pozorování pro misi TESS

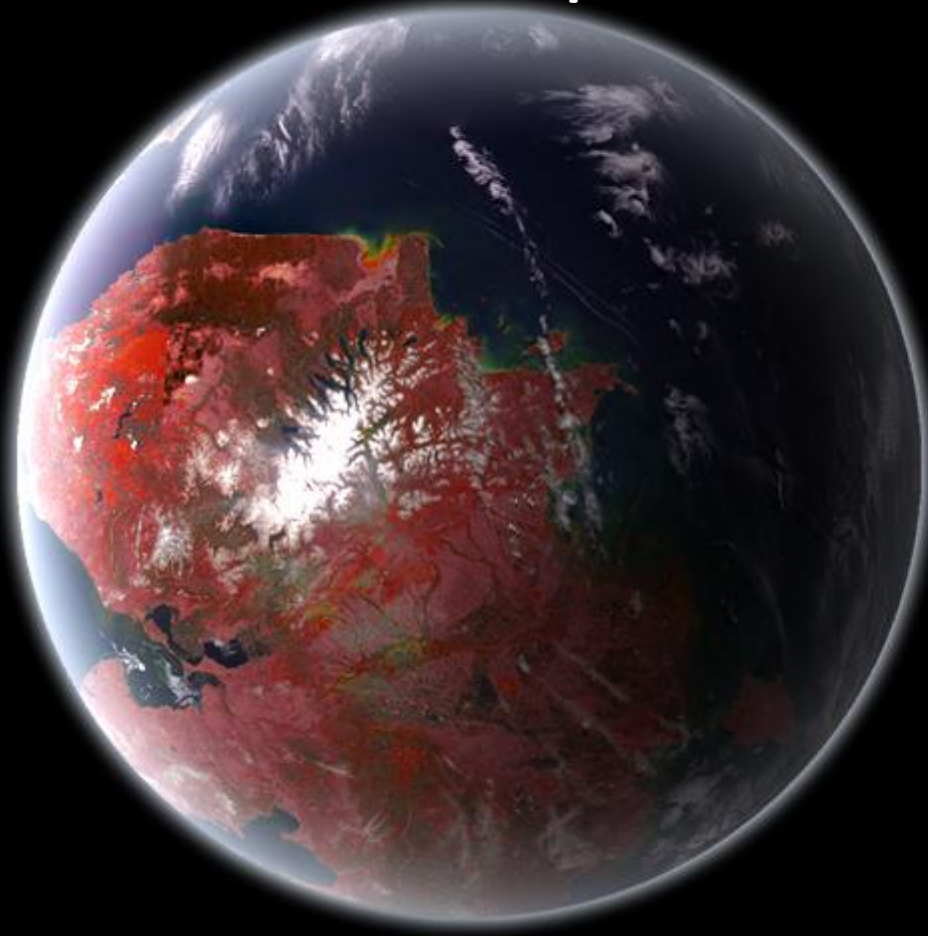


Autoři: Michal Mikeska, Barbora Nováčková

Garant: Daniel Dupkala

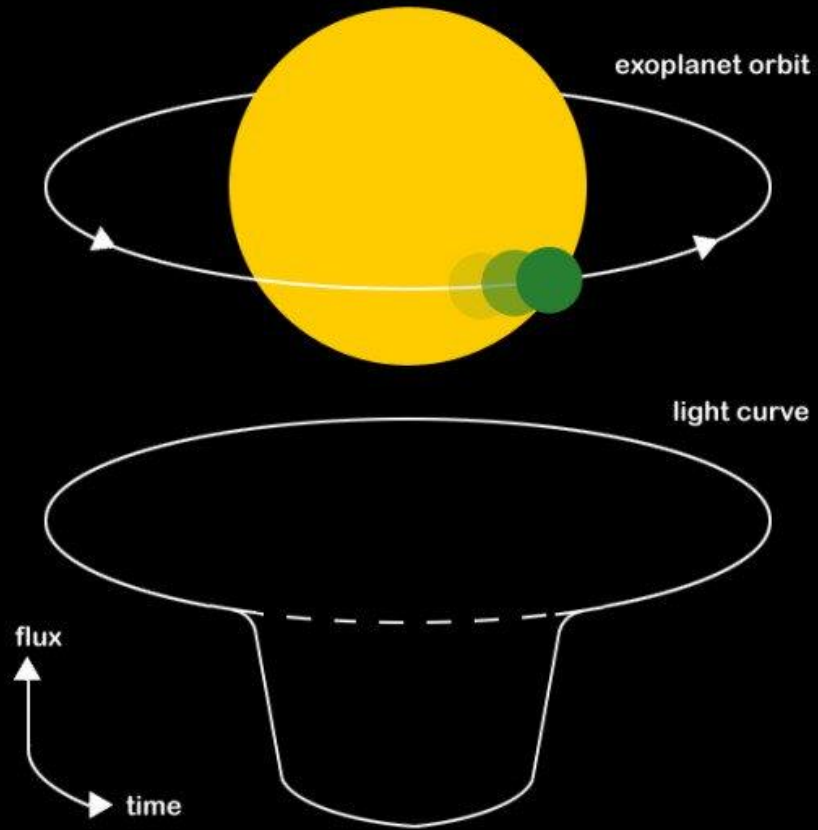
Exoplanety

- Planeta
- 3793
- 2837
- Kepler
- Metody



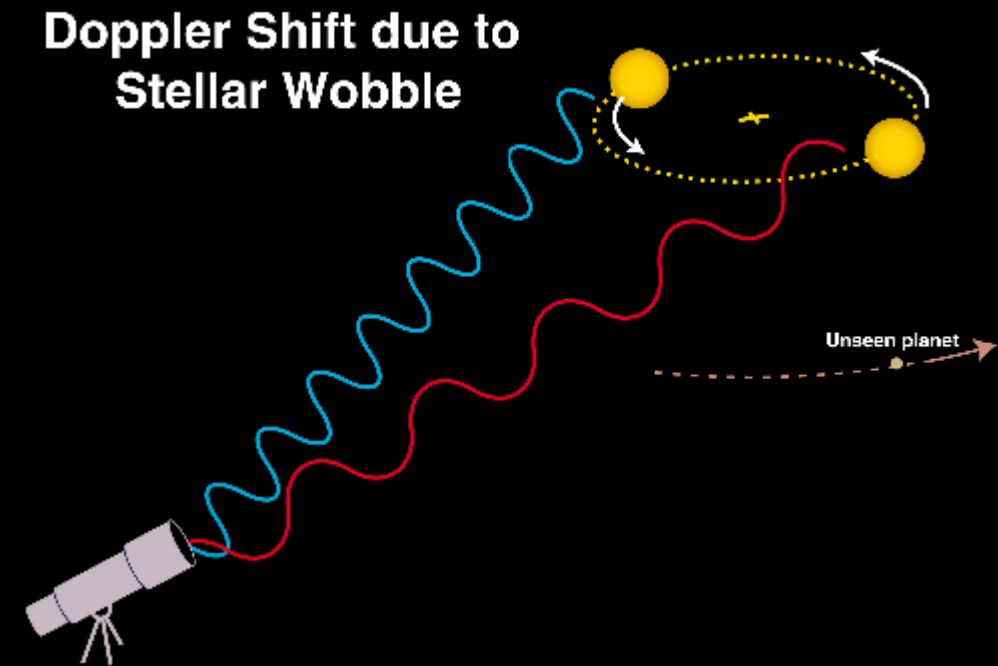
Metody

- Tranzitní metoda



[3]

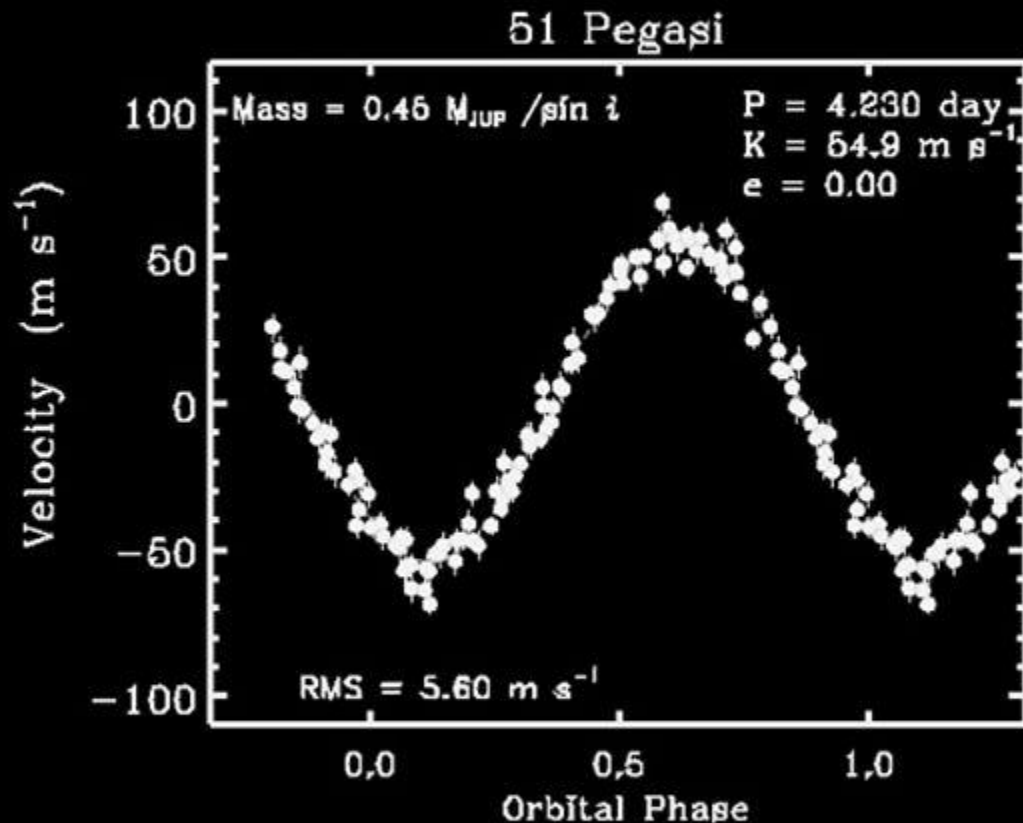
- Měření radiální rychlosti



[4]

Velocity curve for 51 Pegasus

(Mayor & Queloz, 1996)



- Mass of the planet is only a lower limit because the plane of the planet's orbit is uncertain ($M \sin i = 0.47 M_J$ in this case)

Kepler

- 2009
- 1,4 m
- 9-16 mag
- opravy



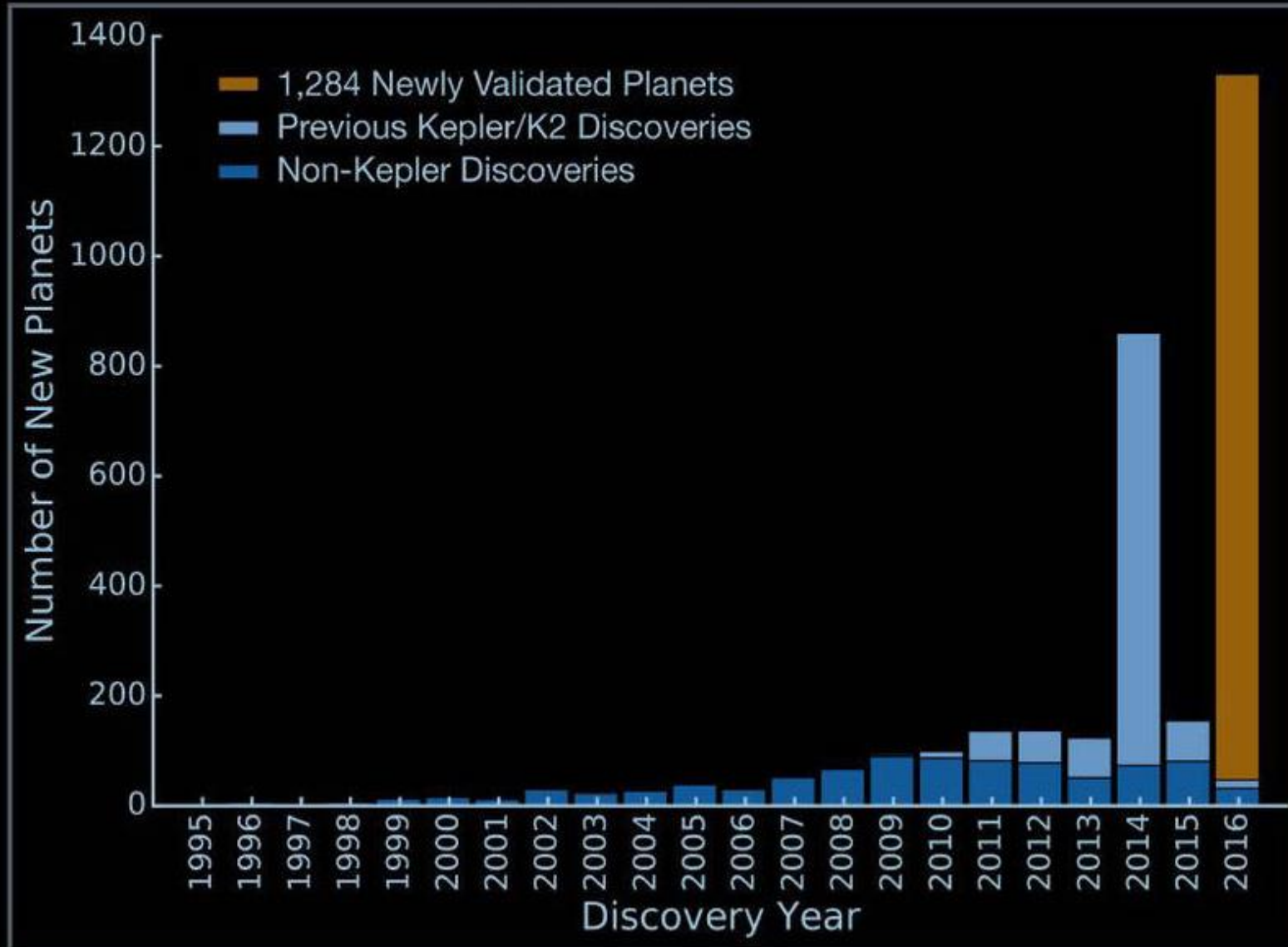
[5]



[6]

Exoplanet Discoveries Through the Years

As of May 10, 2016



Kandidáti

EPIC označení	Viditelnost (měsíc)	Pozorování	Doba oběhu ve dnech	Hloubka tranzitu	Vmag	Délka expozice	HD název
EPIC 204763194	-	ne	2.32	0,54	9.973	2x 1800s	HD 143191
EPIC 201705526	1.-3.	ano	18.10	0,78	9.938	2x 800s	
EPIC 201270464	1.-4.	ano	1.58	0,86	9.392	2x 1800s	HD 98575
EPIC 201534540	-	ne	2.72	1,49	8.197	2x 1200s	HD 99458
EPIC 202059377	jaro	ano	1.58	2,49	8.700	2x 1200s	HD 46882
EPIC 205050711	-	ne	4.30	2,61	10.588	2x 1800s	
EPIC 210925707	10.-12.	ano	1.69	4,59	9.519	2x 1800s	HD 23765
EPIC 211993818	1.-3.	ano	8.99	4,86	7.218	2x 1200s	HD 70826

NASA EXOPLANET ARCHIVE

NASA EXOPLANET SCIENCE INSTITUTE

[Home](#)[About Us](#)[Data](#)[Tools](#)[Support](#)[Login](#)[Select Columns](#) [Download Table](#) [Plot Table](#) [View Documentation](#) [User Preferences](#)

K2 Candidates

	   Row ID	  EPIC Name	  Reference Link	  Exoplanet Archive Disposition	  K2 Campaign	  Orbital Period [days]	  Transit Depth [percent]	  Ratio of Distance to Stellar Radius	  Ratio of Candidate to Stellar Radius	  Kepler-band [mag]	  Ks-band (2MASS) [mag]	
				like 'C%'								
☒	1	EPIC 201110617 ⓘ	Mayo et al. 2018	CONFIRMED	10	0.813149 ^{+0.000050} _{-0.000049}		4.420602 ^{+0.671284} _{-1.136381}	0.017041 ^{+0.001393} _{-0.001141}	12.947	10.391±0.0228	
☒	2	EPIC 201111557 ⓘ	Mayo et al. 2018	CANDIDATE	10	2.302368 ^{+0.000105} _{-0.000103}		12.619867 ^{+2.838328} _{-8.0188}	0.016925 ^{+0.006744} _{-0.001481}	11.363	9.220±0.0193	
☒	3	EPIC 201126503 ⓘ	Vanderburg et al. 2016	CANDIDATE	1	1.1947488	0.448		0.06005	17.275	14.230±0.070	
☒	4	EPIC 201127519 ⓘ	Mayo et al. 2018	CANDIDATE	10	6.178369 ^{+0.000195} _{-0.000172}		17.277258 ^{+1.123995} _{-2.0457}	0.115111 ^{+0.004916} _{-0.003363}	11.558	9.430±0.0212	
☒	5	EPIC 201130233 ⓘ	Mayo et al. 2018	CONFIRMED	10	0.365257±0.000029		1.876041 ^{+0.317378} _{-0.379151}	0.011049 ^{+0.001432} _{-0.000971}	12.604	10.980±0.0226	
☒	6	EPIC 201132684 ⓘ	Mayo et al. 2018	CONFIRMED	10	10.062106 ^{+0.002270} _{-0.002228}		17.602997 ^{+2.857394} _{-5.8263}	0.027075 ^{+0.002746} _{-0.001971}	11.678	9.974±0.0209	
☒	7	EPIC 201155177 ⓘ	Crossfield et al. 2016	CONFIRMED	1	6.68796±0.00093			0.0304±0.0028	14.632	12.284±0.019	
☒	8	EPIC 201155177 ⓘ	Vanderburg et al. 2016	CONFIRMED	1	6.6874352	0.137		0.03239	14.632	12.284±0.019	
☒	9	EPIC 201166680 ⓘ	Mayo et al. 2018	CANDIDATE	10	18.105490 ^{+0.010083} _{-0.012897}		26.263676 ^{+5.294142} _{-8.9409}	0.015719 ^{+0.001734} _{-0.001181}	10.897	9.591±0.0209	
☒	10	EPIC 201176672 ⓘ	Crossfield et al. 2016	CANDIDATE	1	79.9999±0.0098			0.18±0.011	13.980	11.604±0.023	
☒	11	EPIC 201182911 ⓘ	Vanderburg et al. 2016	CANDIDATE	1	0.99656225 ^{+0.000015} _{-0.000015}	35.5		0.6256	15.516	12.335±0.027	
☒	12	EPIC 201197348 ⓘ	Vanderburg et al. 2016	CANDIDATE	1	14.912381	0.252		0.04445	15.135	12.424±0.027	
☒	13	EPIC 201205469 ⓘ	Vanderburg et al. 2016	CONFIRMED	1	3.4712850	0.638		0.07773	14.887	11.577±0.024	
☒	14	EPIC 201205469 ⓘ	Crossfield et al. 2016	CONFIRMED	1	3.47114±0.00021			0.066±0.0036	14.887	11.577±0.024	
☒	15	EPIC 201205469 ⓘ	Dressing et al. 2017	CONFIRMED	1	3.47134±0.00016		13.51	0.074±0.002	14.887	11.577±0.024	
☒	16	EPIC 201208431 ⓘ	Vanderburg et al. 2016	CONFIRMED	1	10.003610	0.146		0.03485	14.409	11.571±0.023	
☒	17	EPIC 201208431 ⓘ	Dressing et al. 2017	CONFIRMED	1	10.00339 ^{+0.00100} _{-0.00099}		27.72	0.034±0.001	14.409	11.571±0.023	
☒	18	EPIC 201208431 ⓘ	Montet et al. 2015	CONFIRMED	1	10.00329±0.00159		27.79±0.72		14.409	11.571±0.023	
☒	19	EPIC 201208431 ⓘ	Crossfield et al. 2016	CONFIRMED	1	10.0044±0.0011			0.0349±0.0041	14.409	11.571±0.023	

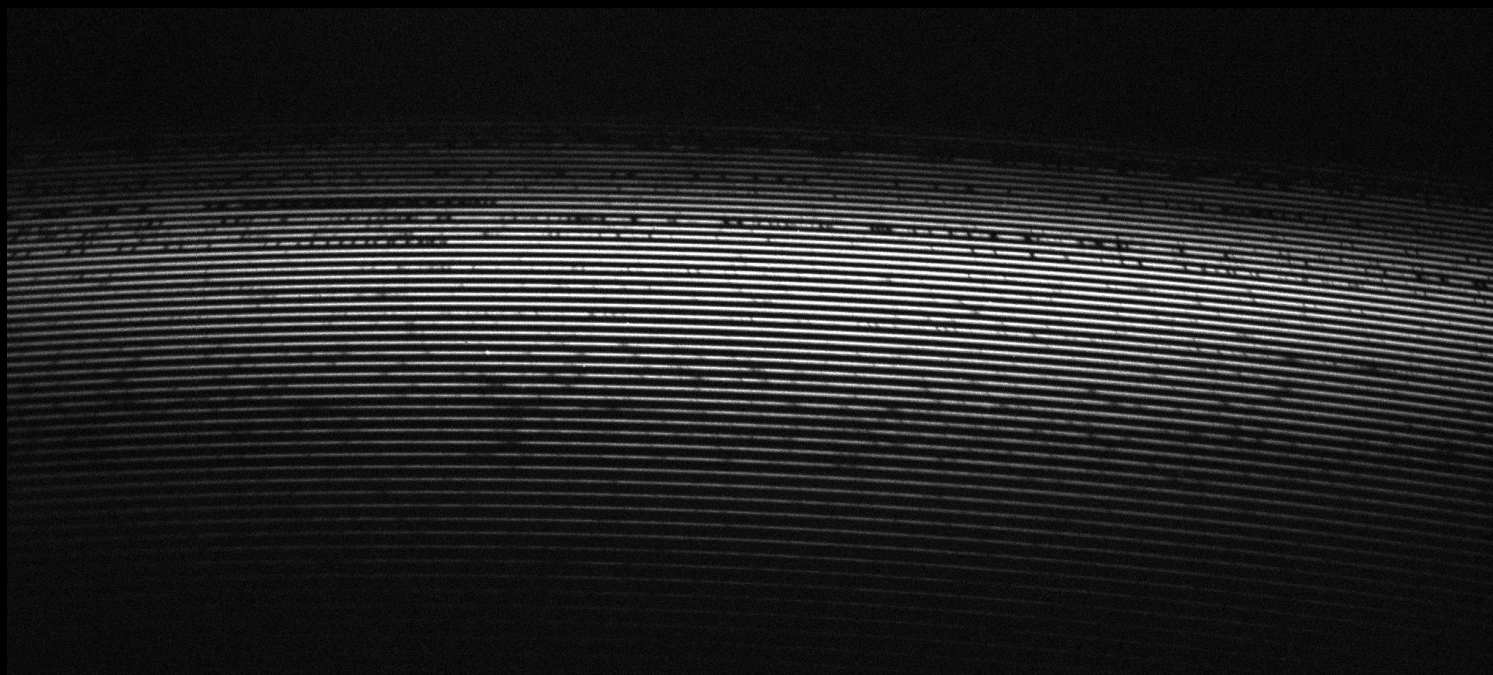
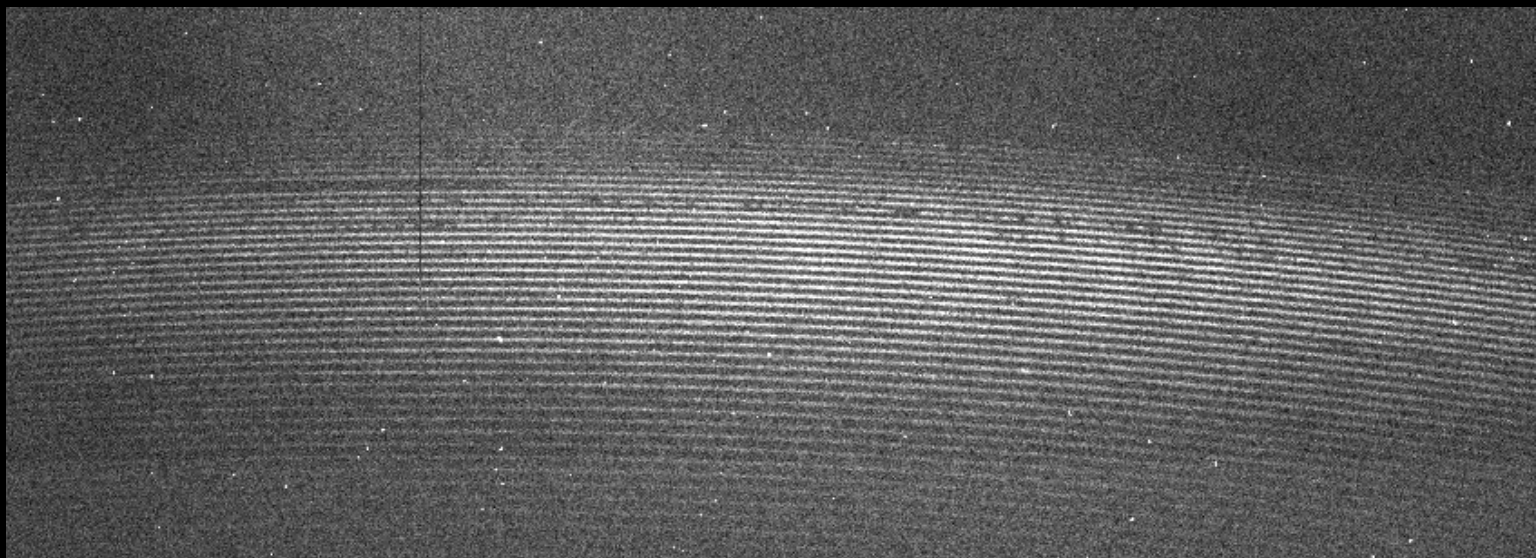
Showing records 1 to 14 of 1339 (1417 total)

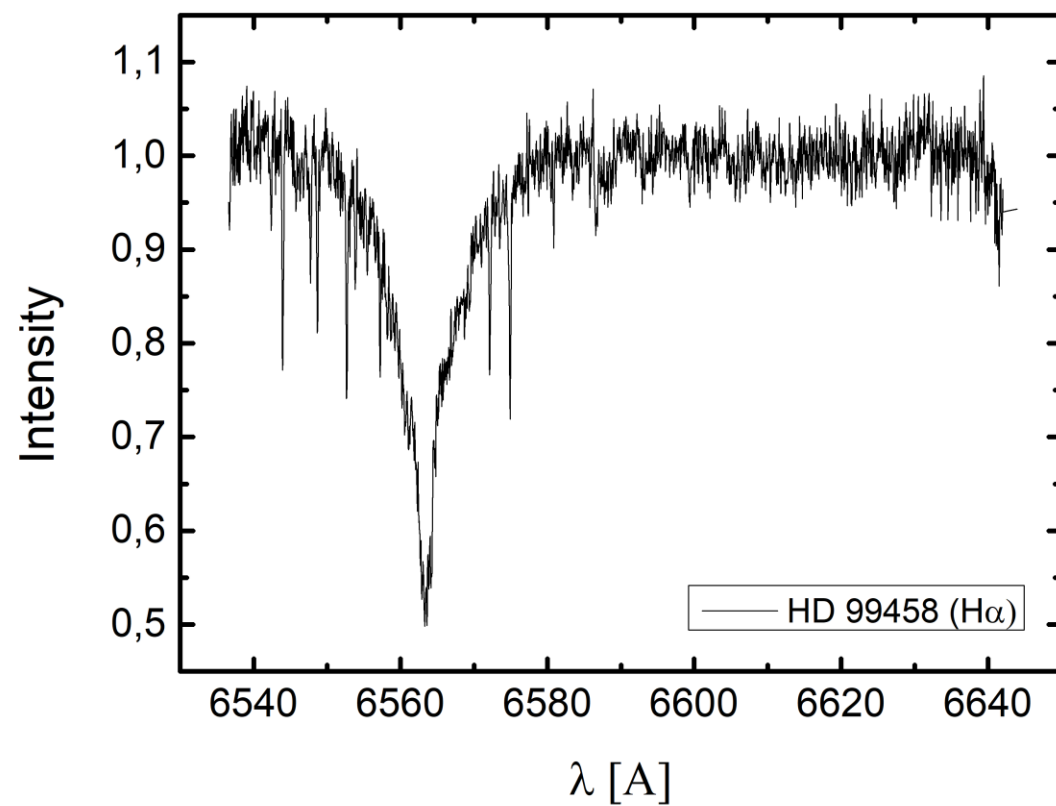
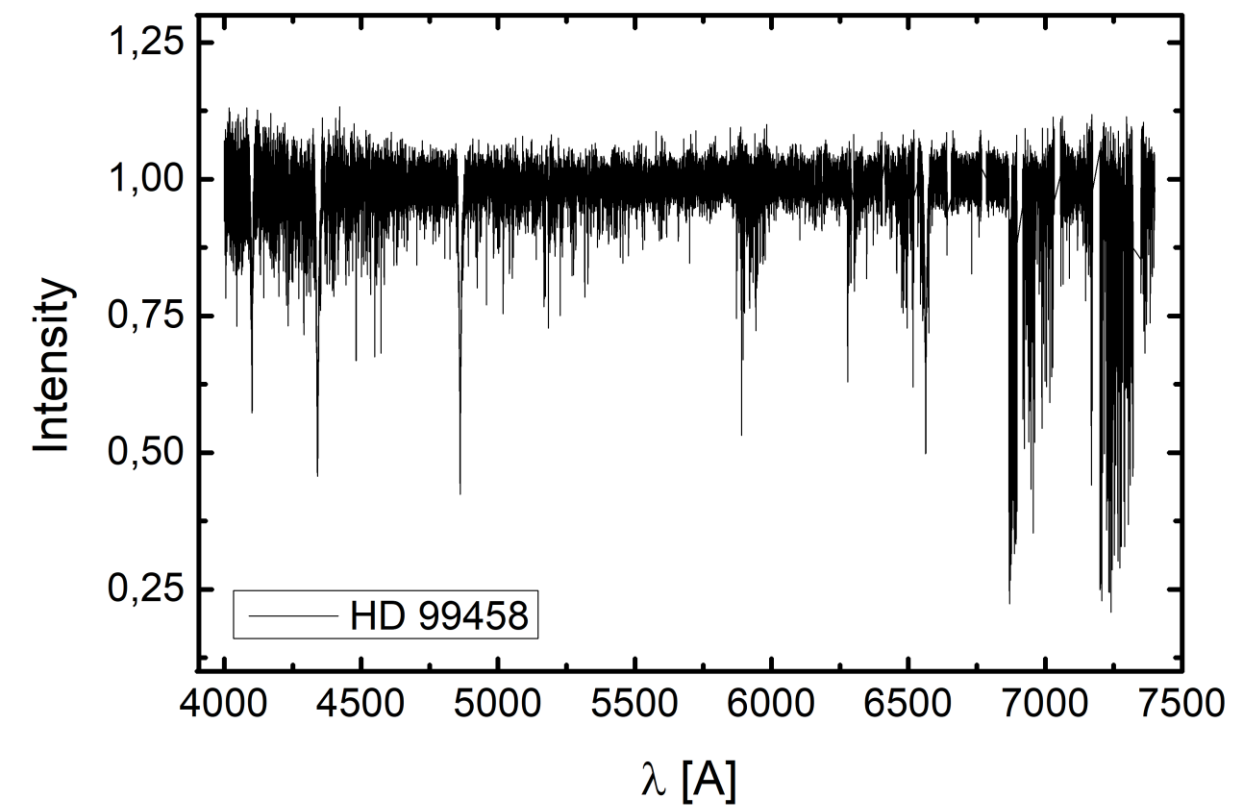
[Clear Checked](#)[Check All](#)[Reset Filters](#)

Plán Follow-up pozorování pro 1 noc

- | | |
|----------------------|-----|
| 1. Zero images | 10x |
| 2. Flat images | 10x |
| 3. Comparison images | 4x |
| 4. RV standard star | 2x |
| 5. Main targets | |
| 6. Domeflat images | 10x |

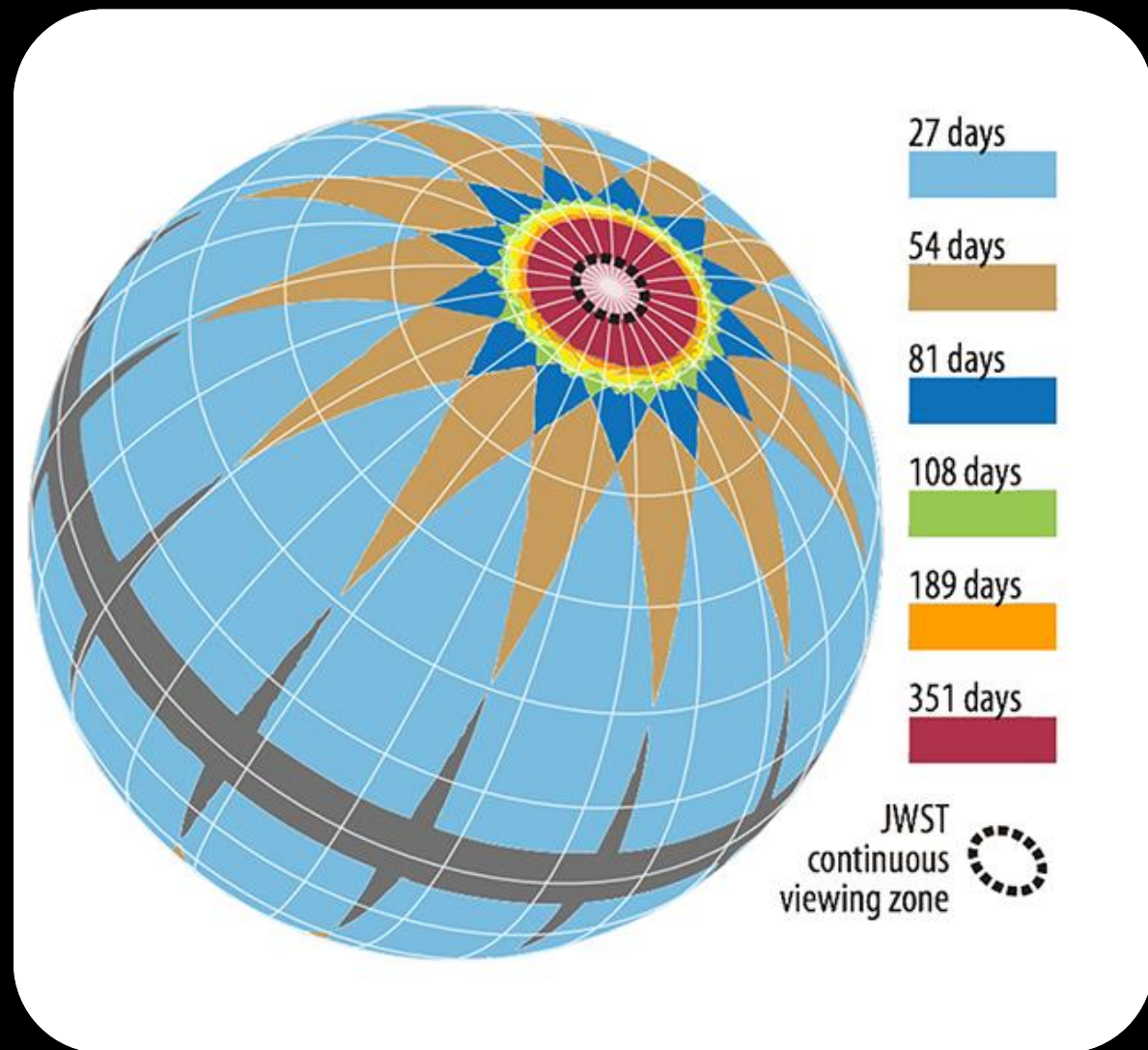






TESS

- 500 000 hvězd
- Tranzit
- 18. duben 2018
- 12 mag



Kepler-22b

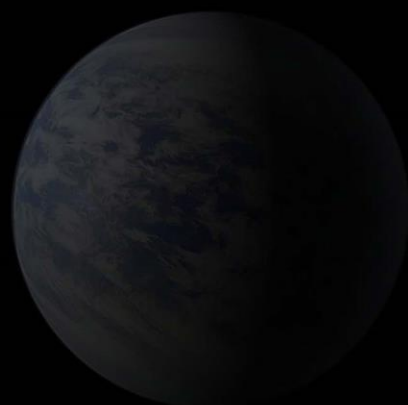
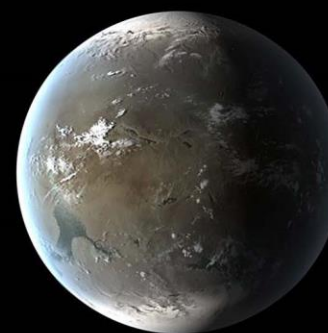
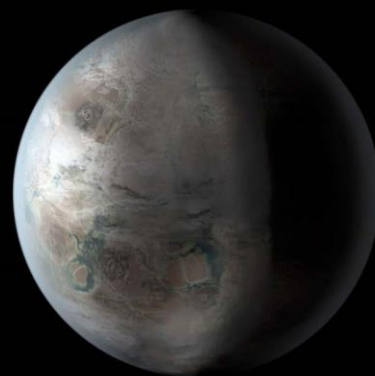
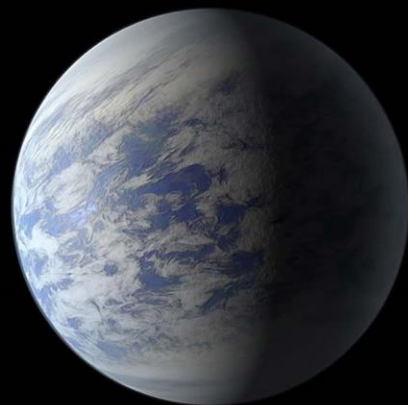
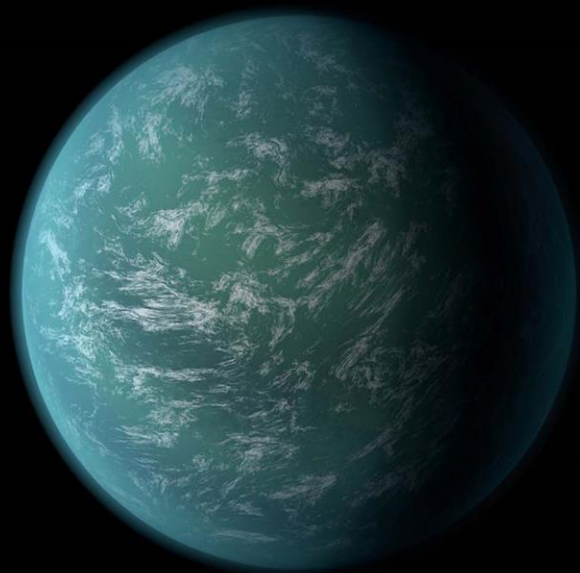
Kepler-69c

Kepler-452b

Kepler-62f

Kepler-186f

Earth



Zdroje informační:

- Informace

- Bozza V., Mancini L., Sozzetti A.: Methods of Detecting Exoplanets, Springer, 1st ed. 2016 edition, B01E6O29RM
- ONLINE: Aldebaran homepage, Exoplanety, (19.6.2018) <https://www.aldebaran.cz/astrofyzika/hvezdy/exoplanets.php>
- Borucki W. J., Rep. Prog. Phys. 79 (2016) 036901 (49pp)
- ONLINE: Petr Kubala, Kepler našel první planetu v rámci nové mise K2 (19.6.2018), <https://www.exoplanety.cz/2014/12/18/kepler-je-definitivne-zpet-nasel-prvni-planetu-v-ramci-nove-mise-k2/>
- ONLINE: Petr Kubala, Kolik exoplanet je v Galaxii? (19.6.2018), <https://www.exoplanety.cz/2012/01/13/kolik-exoplanet-je-v-galaxii/>
- ONLINE: NASA, Spacecraft and Instrument, 2011 (cit. 19.06.2018) https://www.nasa.gov/mission_pages/kepler/spacecraft/index.html
- ONLINE: NASA Exoplanet Archive, K2 Candidates (19.6.2018) <https://exoplanetarchive.ipac.caltech.edu/cgi-bin/TblView/nph-tblView?app=ExoTbls&config=k2candidates>
- ONLINE: WIKIPEDIA contributors (2018, June 13), Transiting Exoplanet Survey Satellite (June 19, 2018) https://en.wikipedia.org/w/index.php?title=Transiting_Exoplanet_Survey_Satellite&oldid=845745600
- ONLINE: astro.cz; Mise TESS odstartovala na oběžnou dráhu. (19.6.2018) <http://www.astro.cz/clanky/exoplanety/novy-lovec-exoplanet-tess-odstartoval-na-obeznou-drahu.htm>

Zdroje mediální:

- Obrázky:

1. TESS, teleskop | Living future. *301 Moved Permanently* [online]. Dostupné z: <http://www.livingfuture.cz/fotografie.php?imgID=10526>
2. [www.wikipedia.org/wiki/Kepler-442b#/media/File:Kepler442b\(comp\).jpg](http://www.wikipedia.org/wiki/Kepler-442b#/media/File:Kepler442b(comp).jpg)
3. [online]. Dostupné z: https://usercontent1.hubstatic.com/13504646_f520.jpg
4. *Exoplanet Orbit Database | Exoplanet Data Explorer* [online]. Dostupné z: <http://exoplanets.org/doppler.html>
5. NASA [online]. Copyright © [cit. 19.06.2018]. Dostupné z: https://www.nasa.gov/sites/default/files/images/700976main_cygnus_CCDgrid_446x248.jpeg
6. *Welcome to Armagh Planetarium* [online]. Copyright © [cit. 18.06.2018]. Dostupné z: <http://www.armaghplanet.com/blog/wp-content/uploads/2012/08/image-of-kepler-satellite.jpg>
7. *405 Not Allowed* [online]. Copyright © [cit. 19.06.2018]. Dostupné z: https://mk0astronomynow9oh6g.kinstacdn.com/wp-content/uploads/2016/05/exoplanet_discoveres_through_the_years_985x687.jpg
8. Největší český dalekohled ponese jméno Luboše Perka | Ostatní | Články | Astronomický informační server astro.cz . *Astronomický informační server astro.cz* [online]. Copyright © 2018 [cit. 19.06.2018]. Dostupné z: <http://www.astro.cz/clanky/ostatni/nejvetsi-cesky-dalekohled-ponese-jmeno-lubose-perka.html>
9. *NAS Home* [online]. Copyright ©07 [cit. 19.06.2018]. Dostupné z: https://www.nas.nasa.gov/SC14/assets/images/content/23_McCauliff_S_TESS_SC14_big.jpg
10. <https://exoplanets.nasa.gov/resources/257/finding-another-earth-candidate-lineup/>
11. [online]. Copyright © [cit. 19.06.2018]. Dostupné z: <https://i.pinimg.com/originals/bf/7a/72/bf7a729d6176f643f1cf0b218940db99.png>

Díky za pozornost

