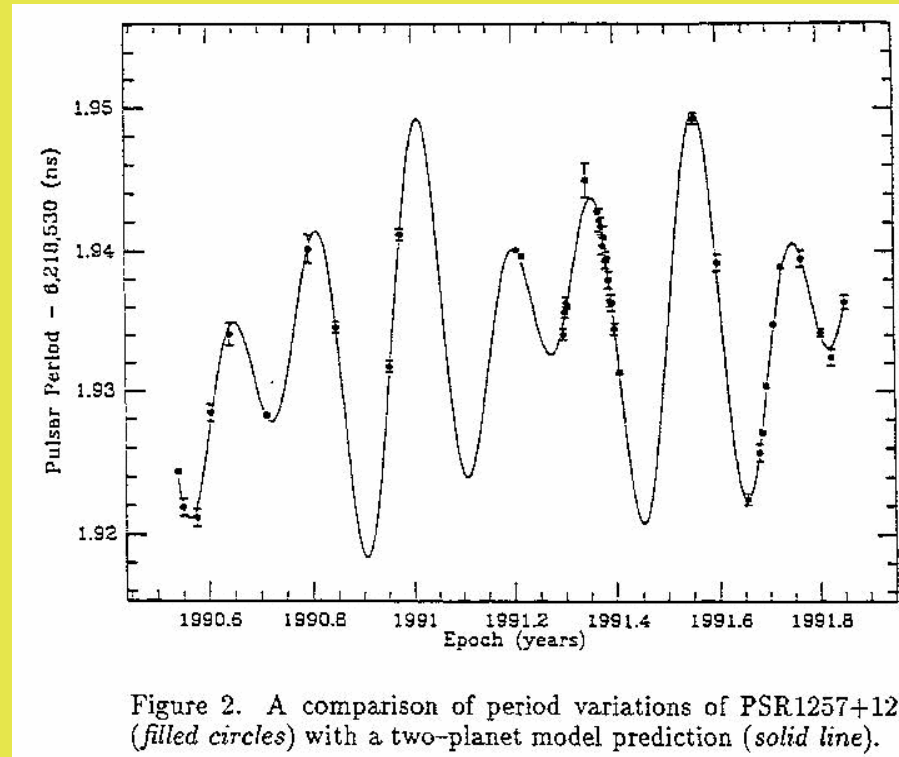




Planety wokół odległych gwiazd

- Wojtek Pych
- Centrum Astronomiczne M. Kopernika
 - Warszawa

Pierwsze odkrycie Aleksander Wolszczan 1991 r.



- A planetary system around the millisecond pulsar PSR1257+12
 - 1992, Nature vol. 355, str. 145-147

Pulsar
1257+12

Planet 2
0.36 AU
≥3.4 Earths

50,000,000 km

Planet 1
0.19 AU
≥0.015 Earth

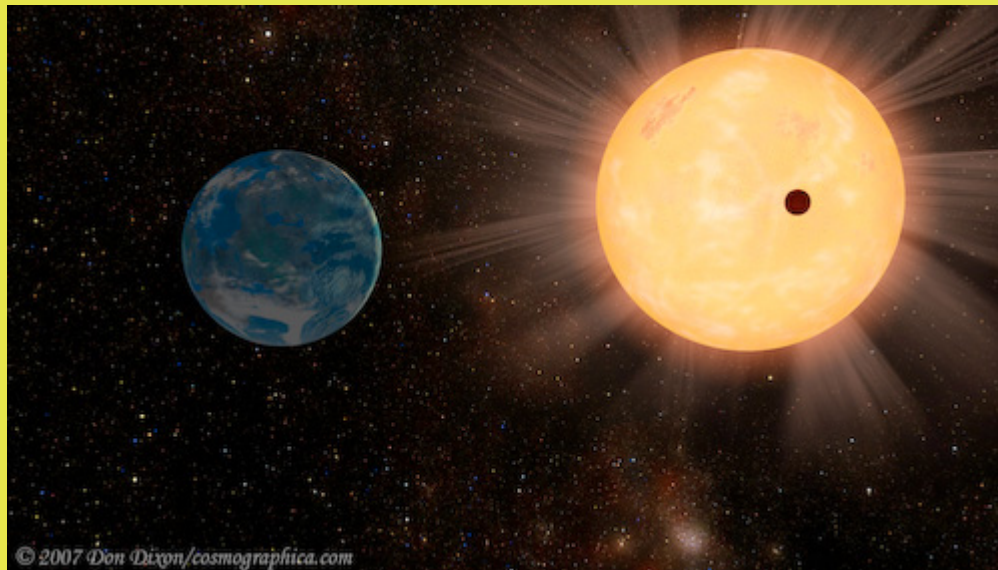
Planet 3
0.47 AU
≥2.8 Earths

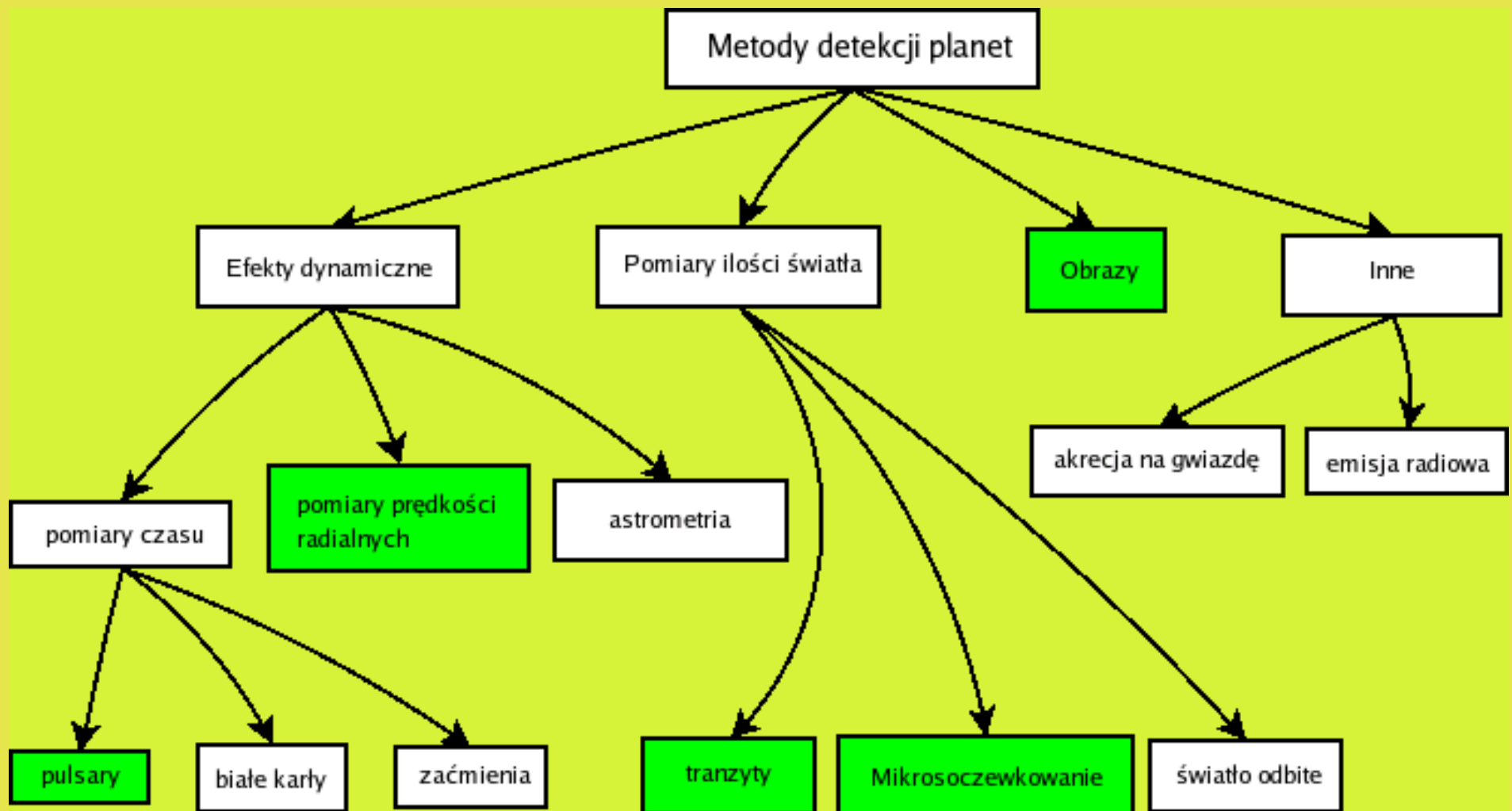
Sun

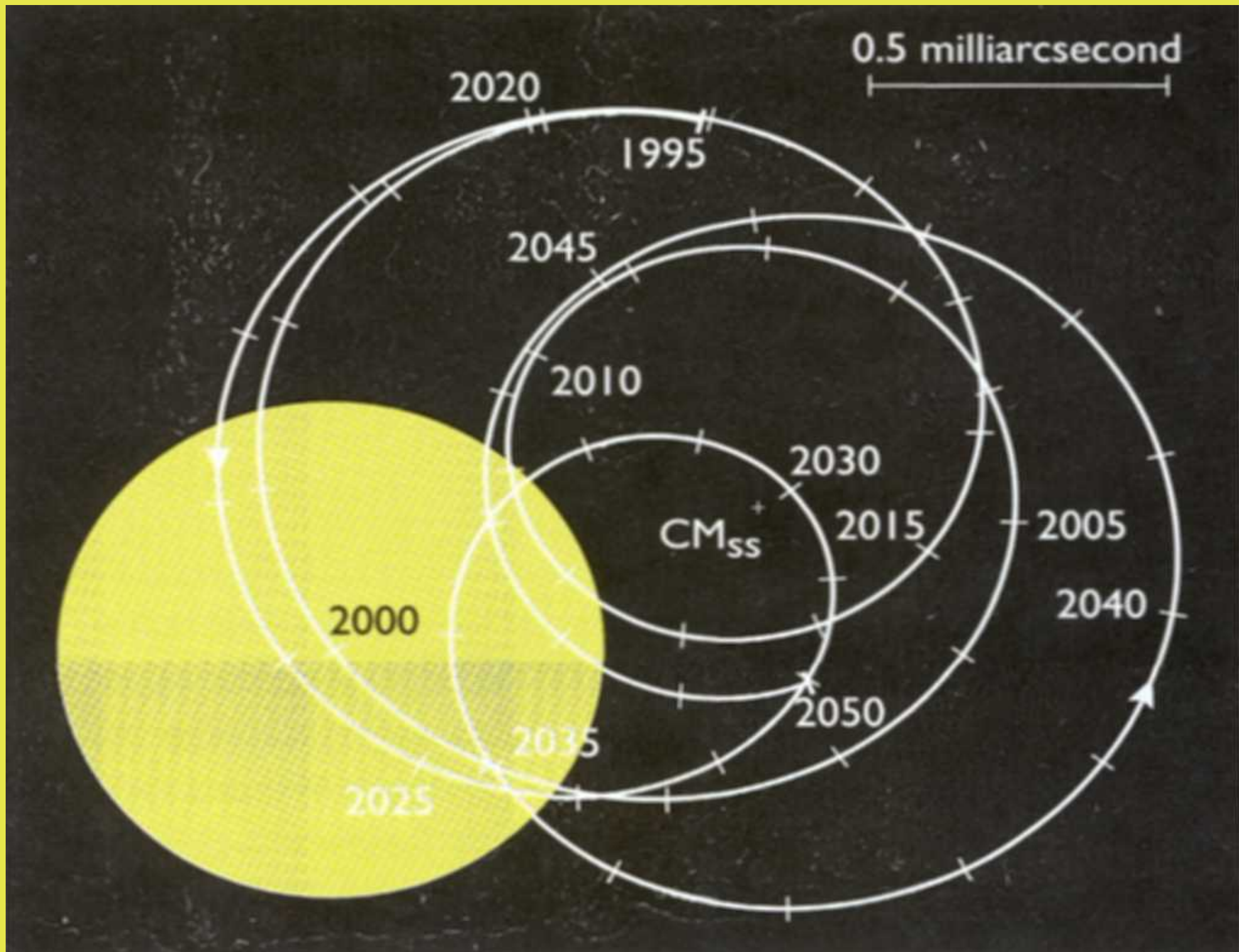
Mercury
0.387 AU
0.055 Earth

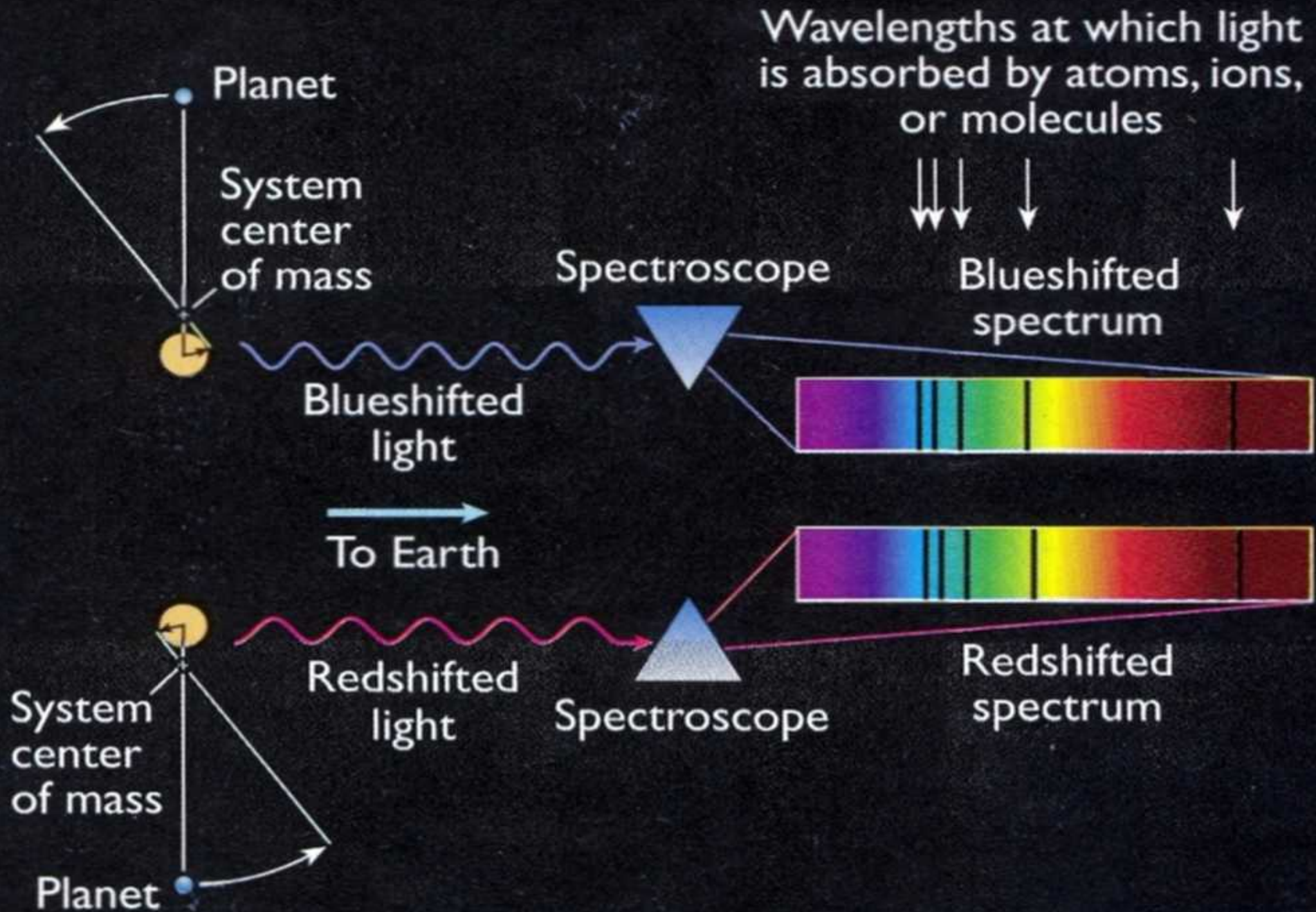
Venus
0.723 AU
0.815 Earth

W jaki sposób odkryć odległą planetę?



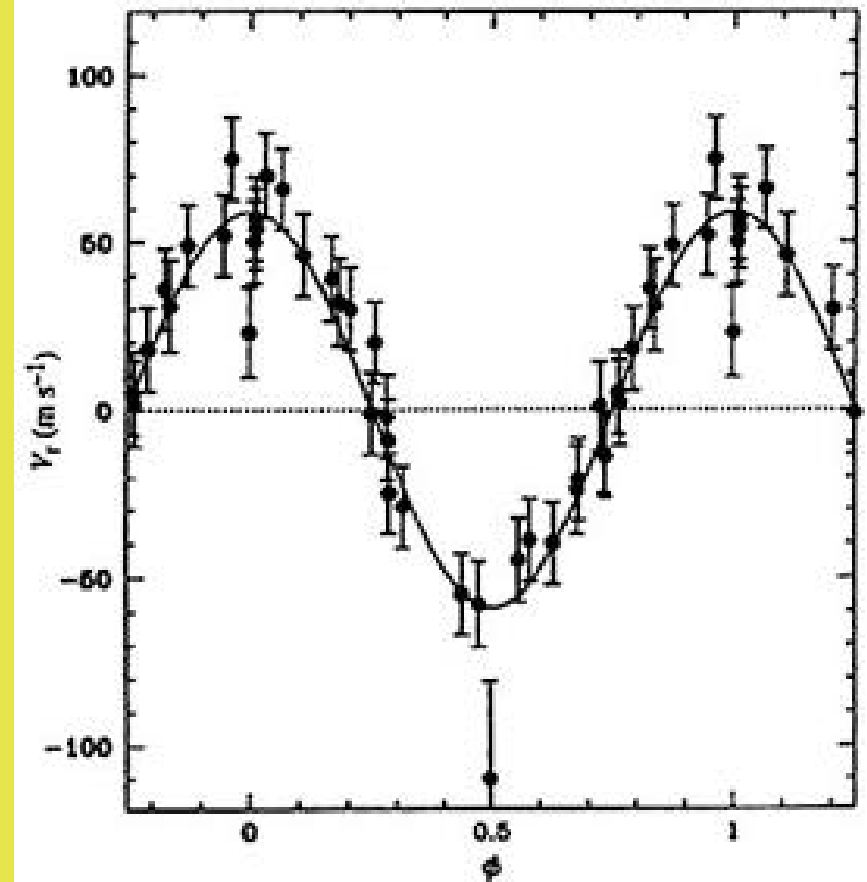
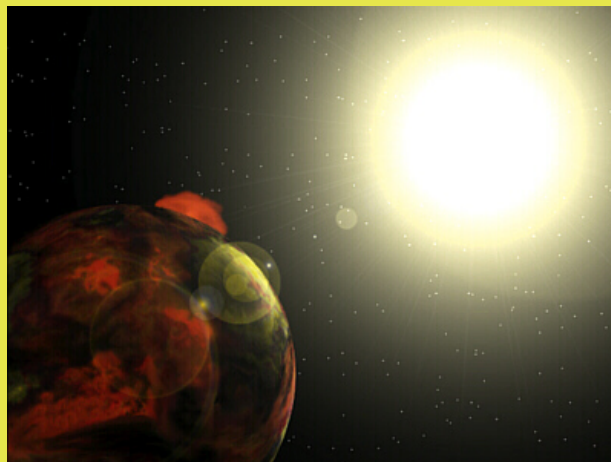




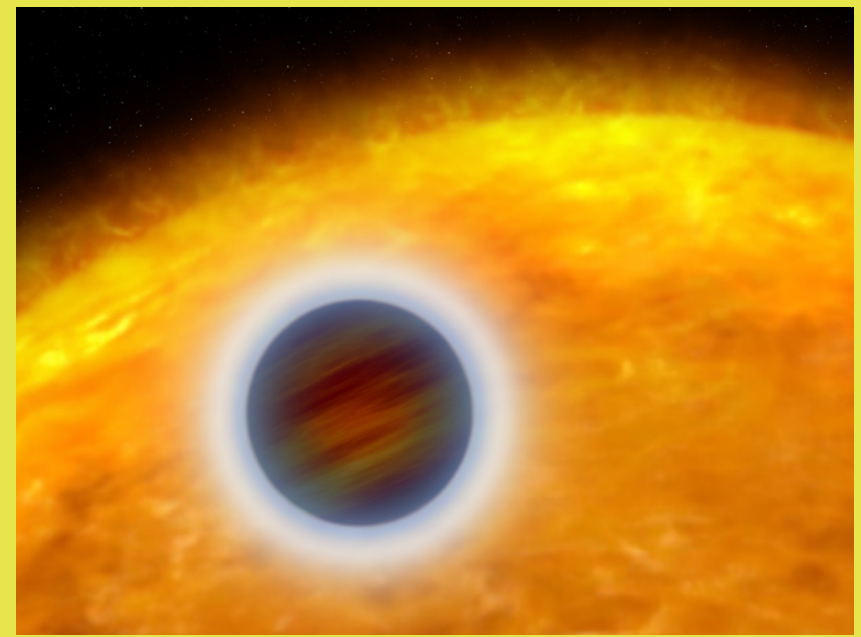
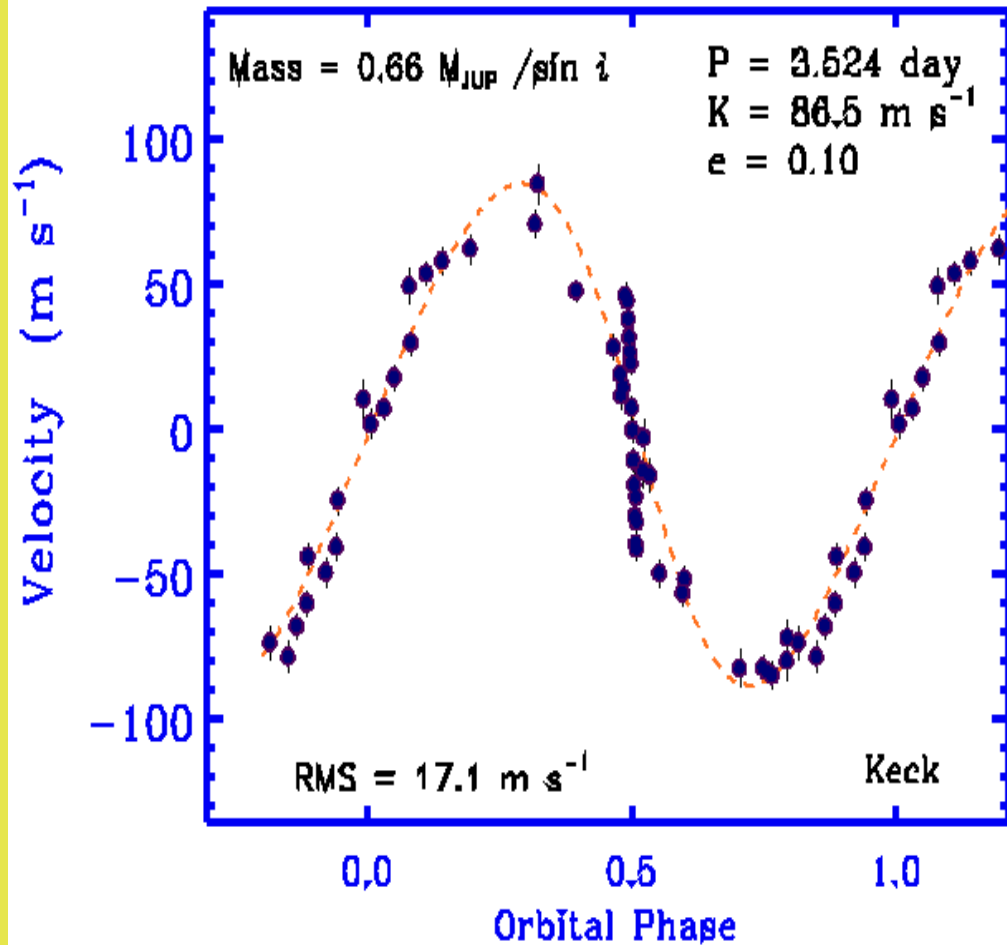


Pierwsza planeta wokół gwiazdy podobnej do Słońca

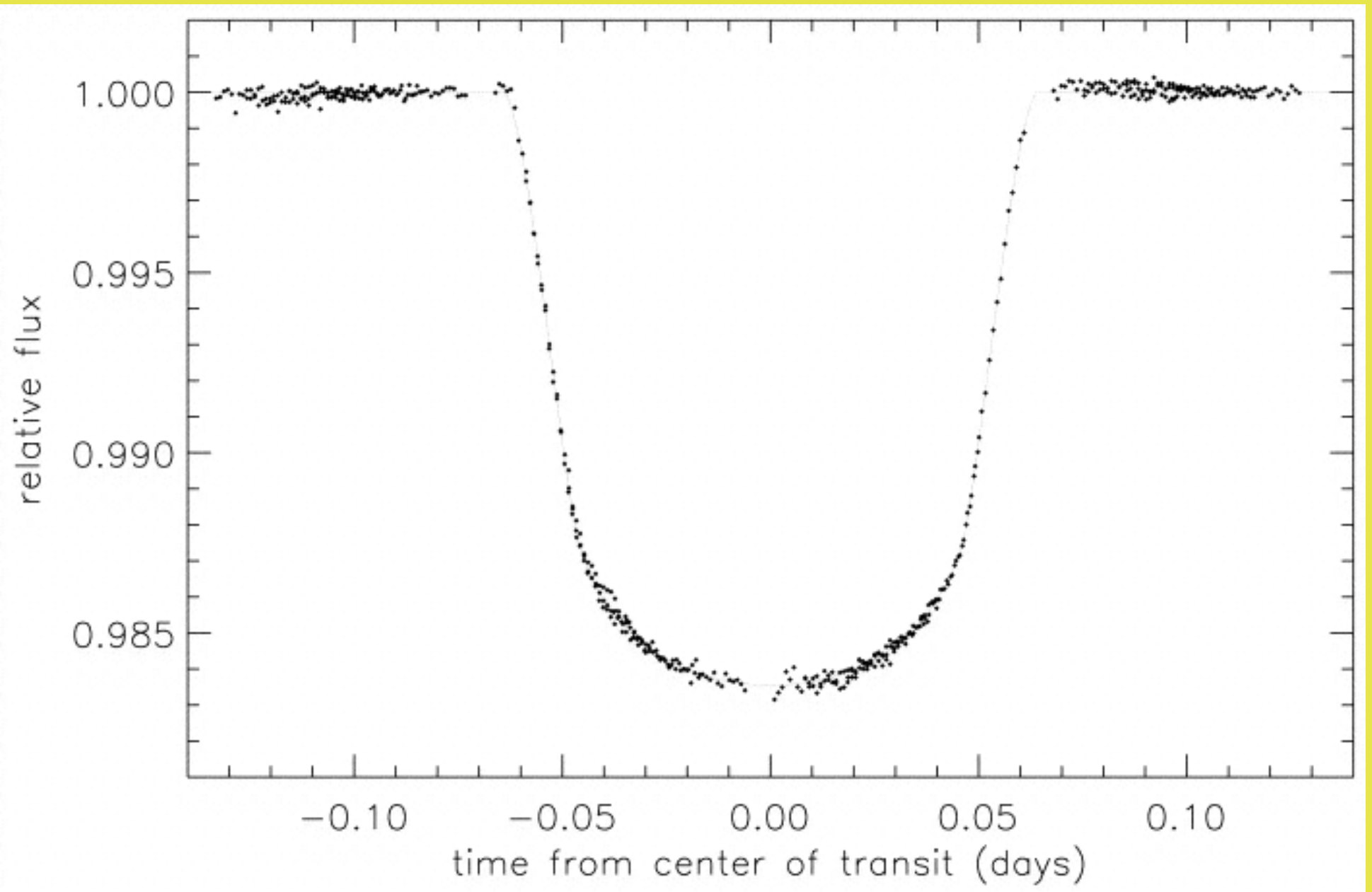
Name:	51 Peg b
M.sini:	0.46 M_J
Semi-major axis:	0.0512 AU
Orbital period:	4.23 d.
Eccentricity:	0.013
Omega (deg):	31
T_peri (JD-2450000):	68.89
Inclination:	-

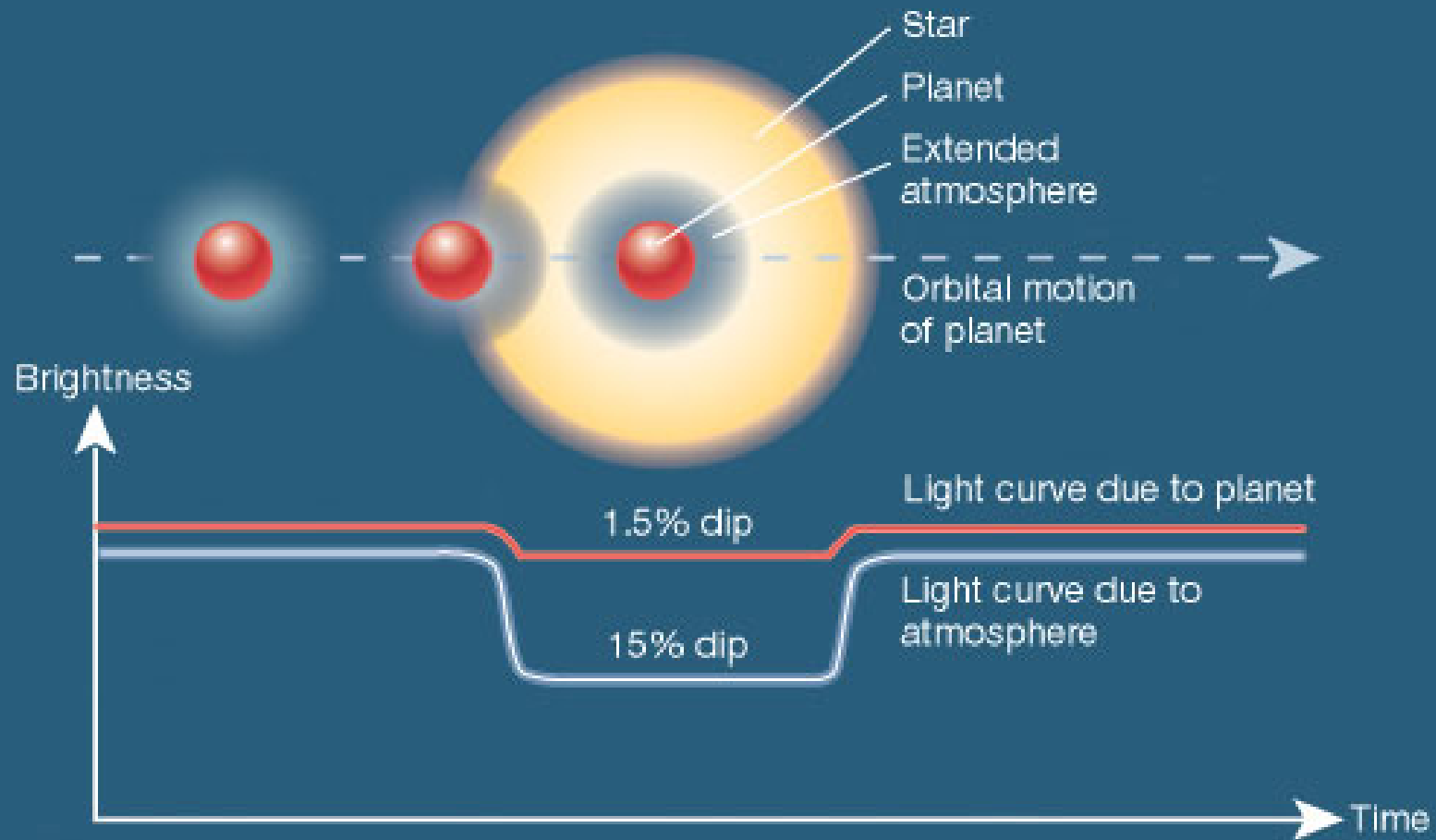


HD209458



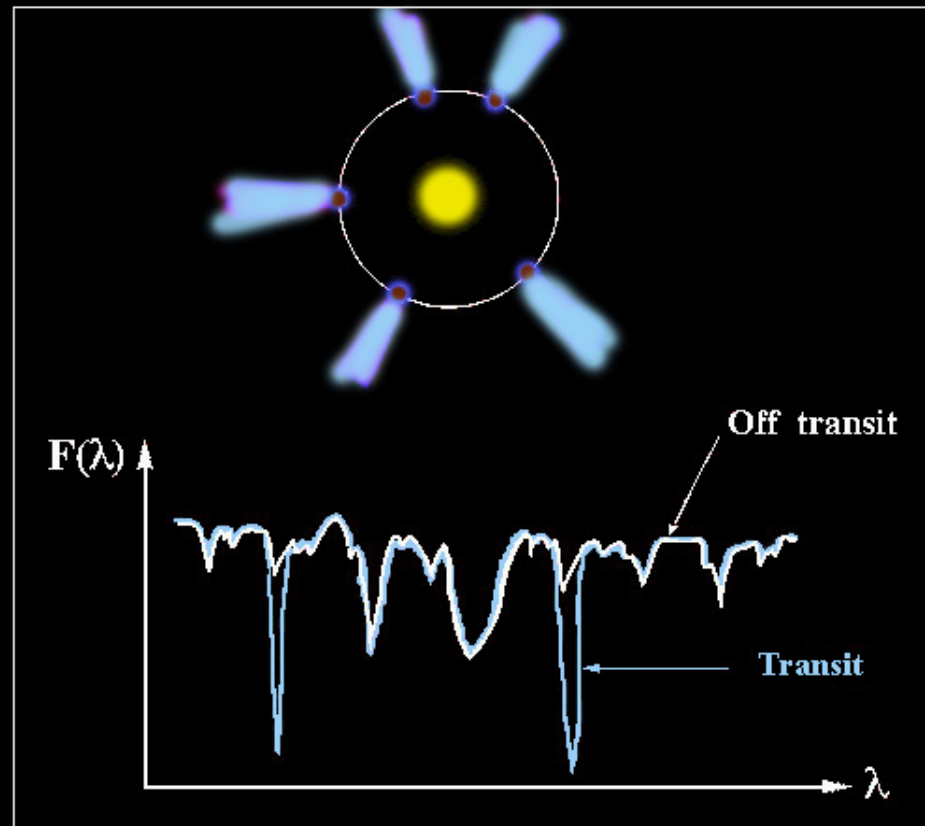
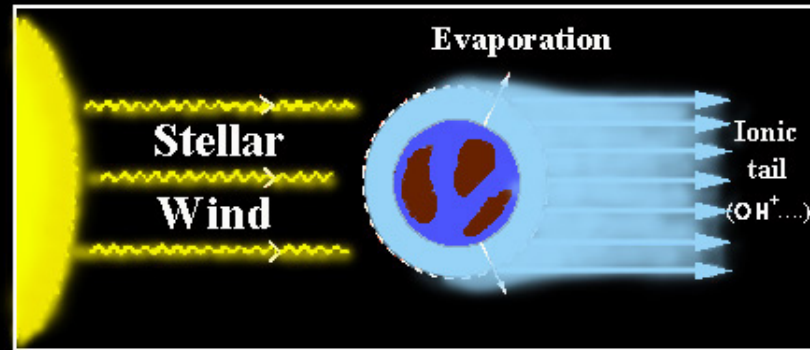
Name:	HD 209458 b
M.sin<i>i</i>:	$0.69 \pm 0.05 M_{\text{J}}$
Radius	$1.43 \pm 0.04 R_{\text{Jup}}$
Semi-major axis:	0.045 AU
Orbital period:	$3.524738 \pm 0.000015 \text{ d.}$
Eccentricity:	0.0
Omega (deg):	83
T_{peri} (JD-2450000):	1585.85
Inclination:	86.1 ± 0.1





Tail

Close orbit planet (51 Peg)



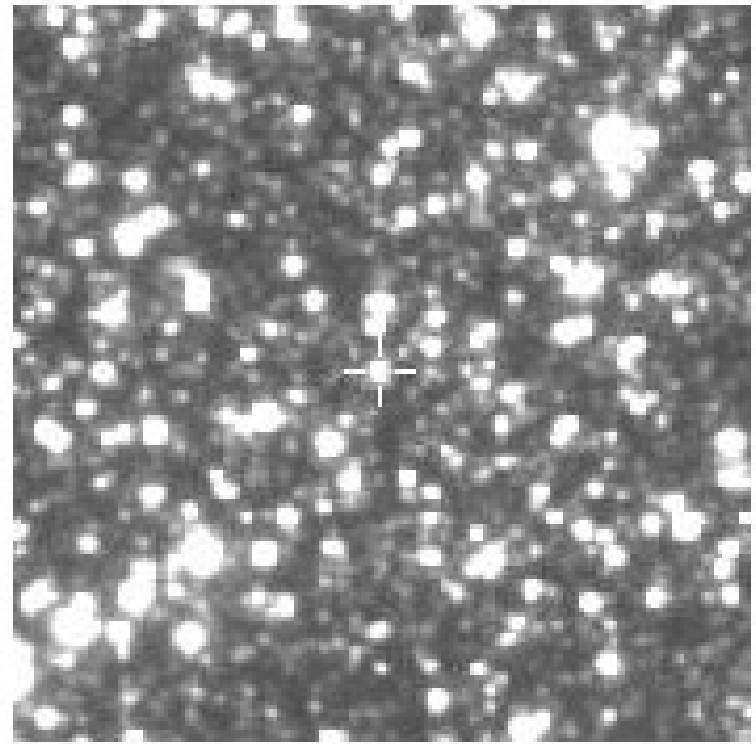
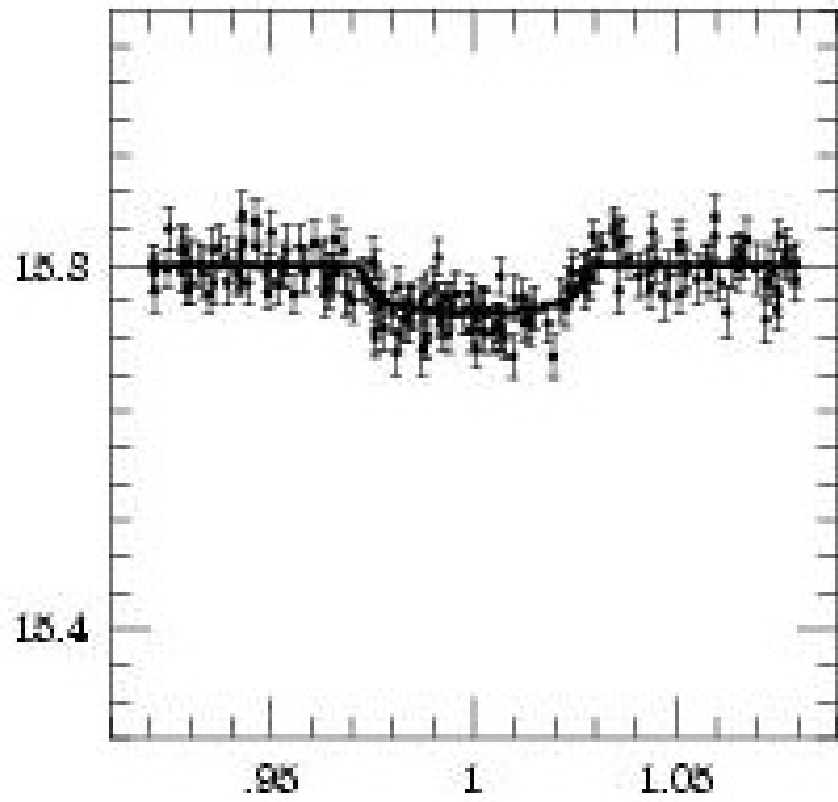
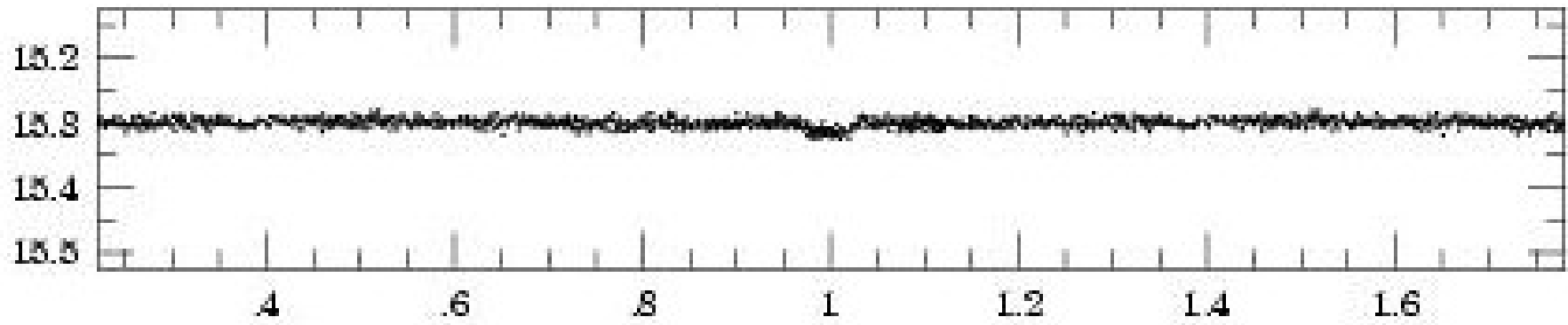


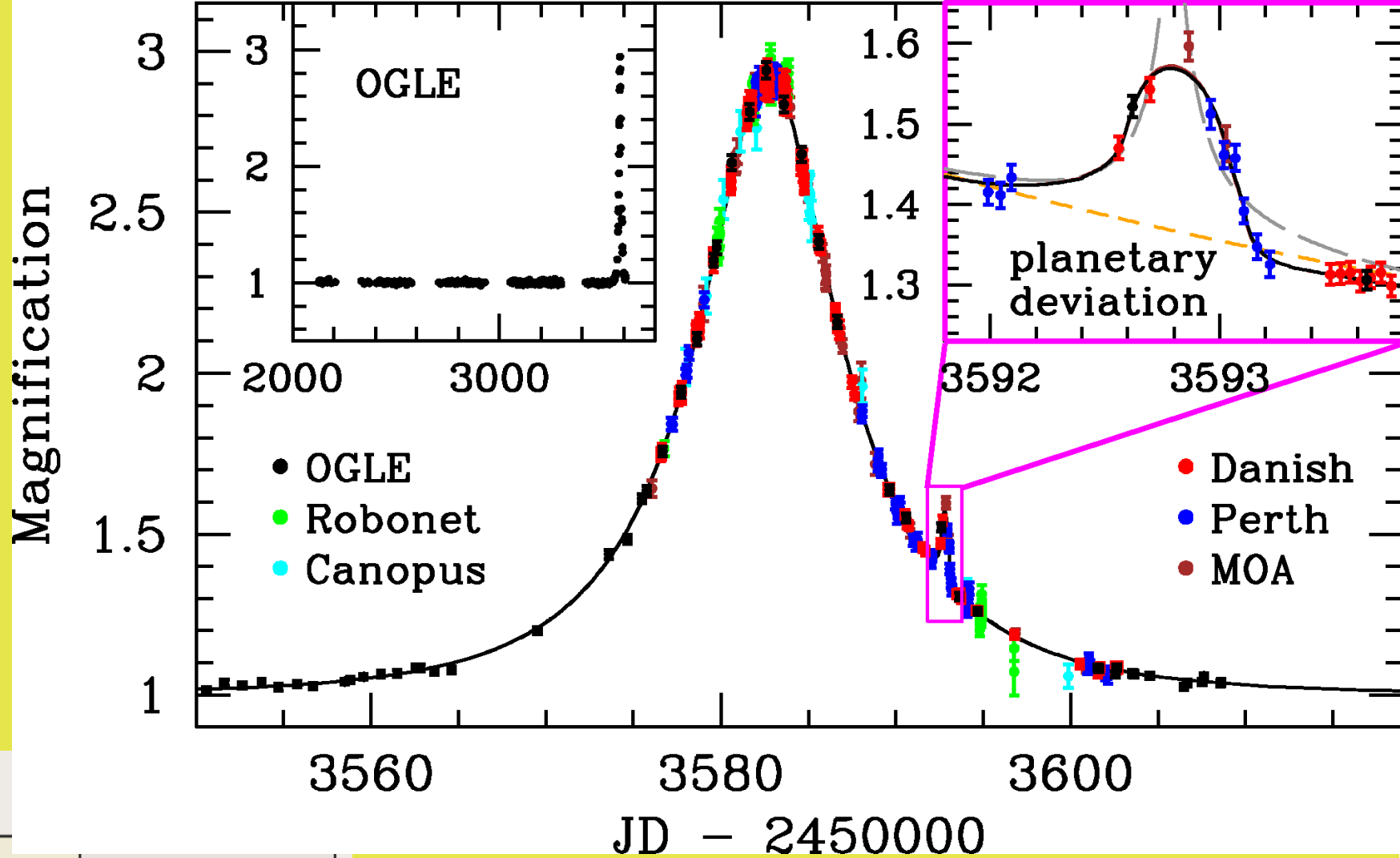
OGLE

200
obiektów z
tranzytami

6 planet
potwierdzonych
spektroskopowo

OGLE-TR-56 P=1.21190 (days)

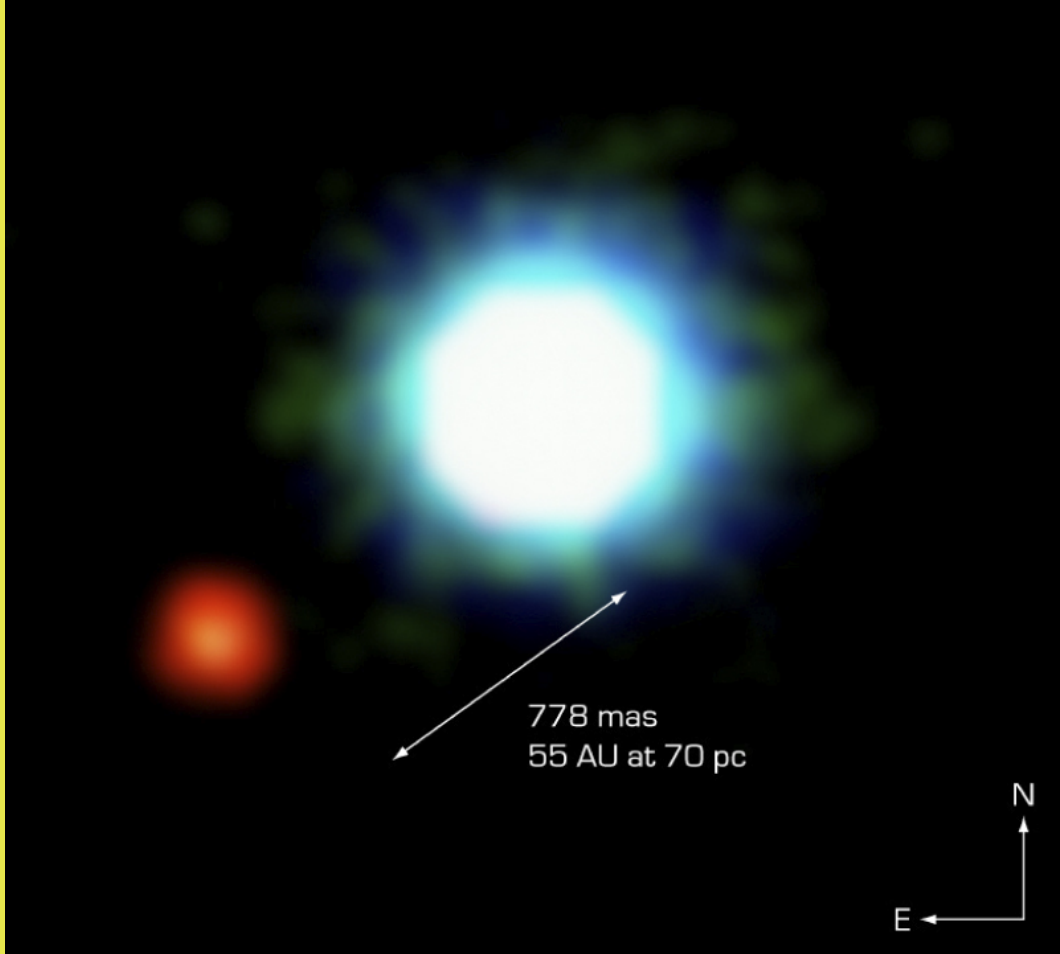




- Basic data :

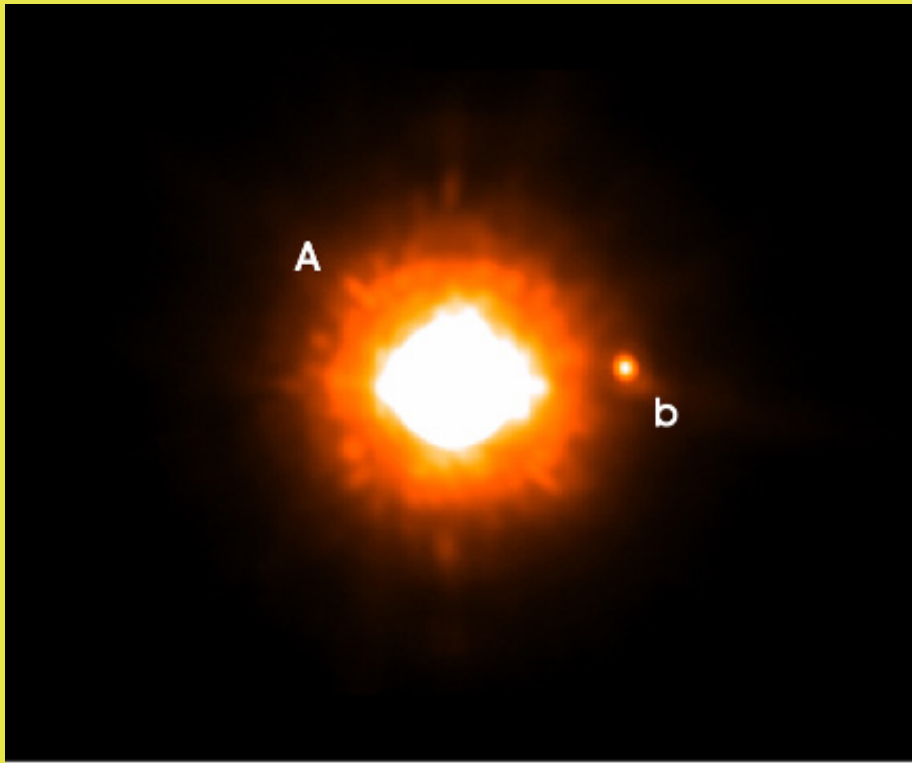
Name	OGLE-05-390L b
Discovered in	2005
Mass	$0.017 M_J$ ref.
*-Planet Dist. (proj.)	$2.1 AU$ ref.
Orbital period	$3500 days$ ref.

2MASSWJ1207334-393254



The Brown Dwarf 2M1207 and its Planetary Companion
(VLT/NACO)

ESO PR Photo 14a/05 (30 April 2005)



The Sub-Stellar Companion to GQ Lupi
(NACO/VLT)

ESO PR Photo 10a/05 (7 April 2005)

© European Southern Observatory



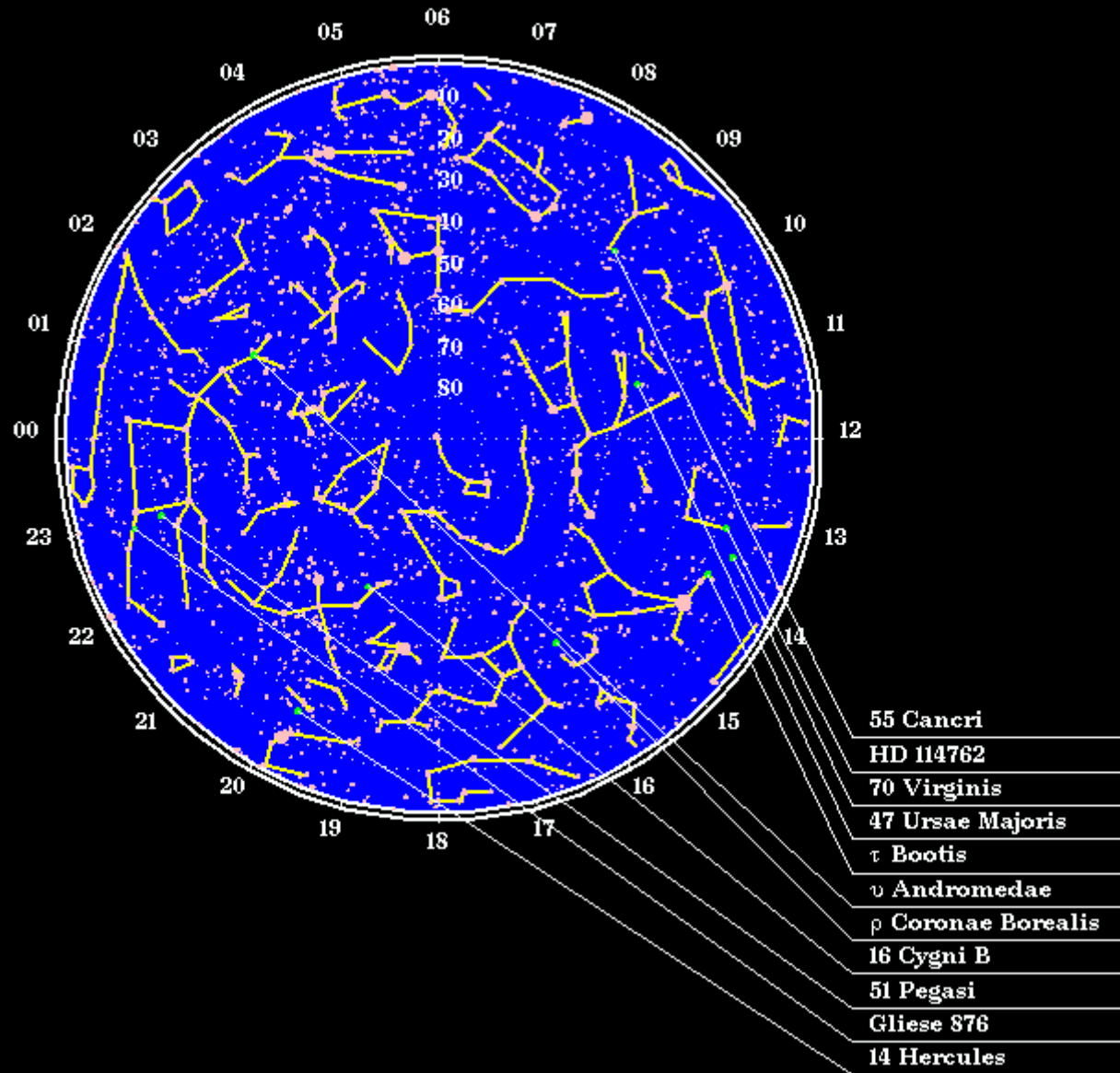
Podsumowanie odkryć

19 listopada 2007 r

Znamy ponad **265** planet poza Układem Słonecznym:

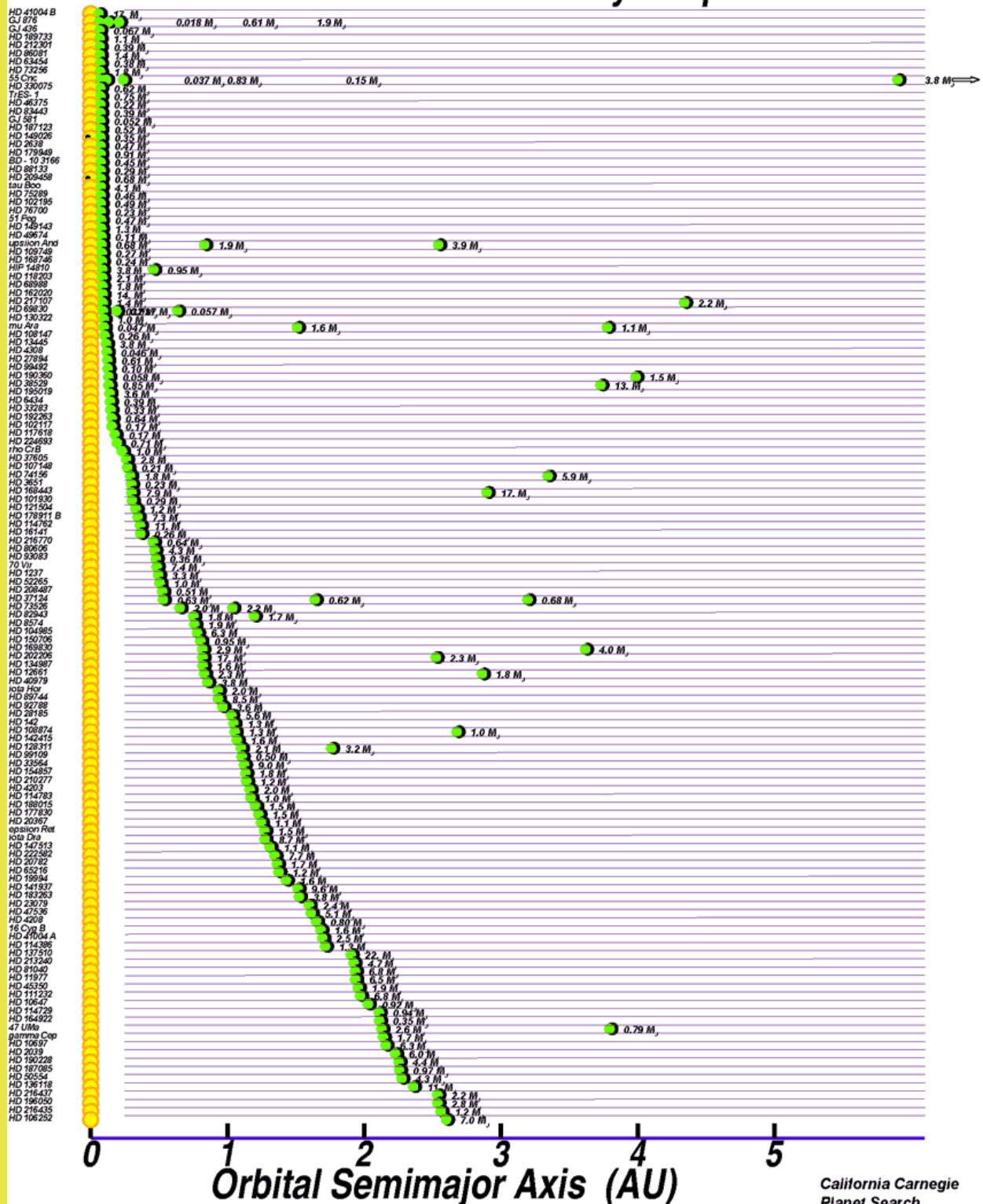
- **251** odkrytych metodą pomiarów prędkości radialnych
- **4** odkryte metodą obserwacji mikrosoczewkowania
- **4** odkryte za pomocą obrazowania
- **4** wokół pulsarów

They are everywhere!

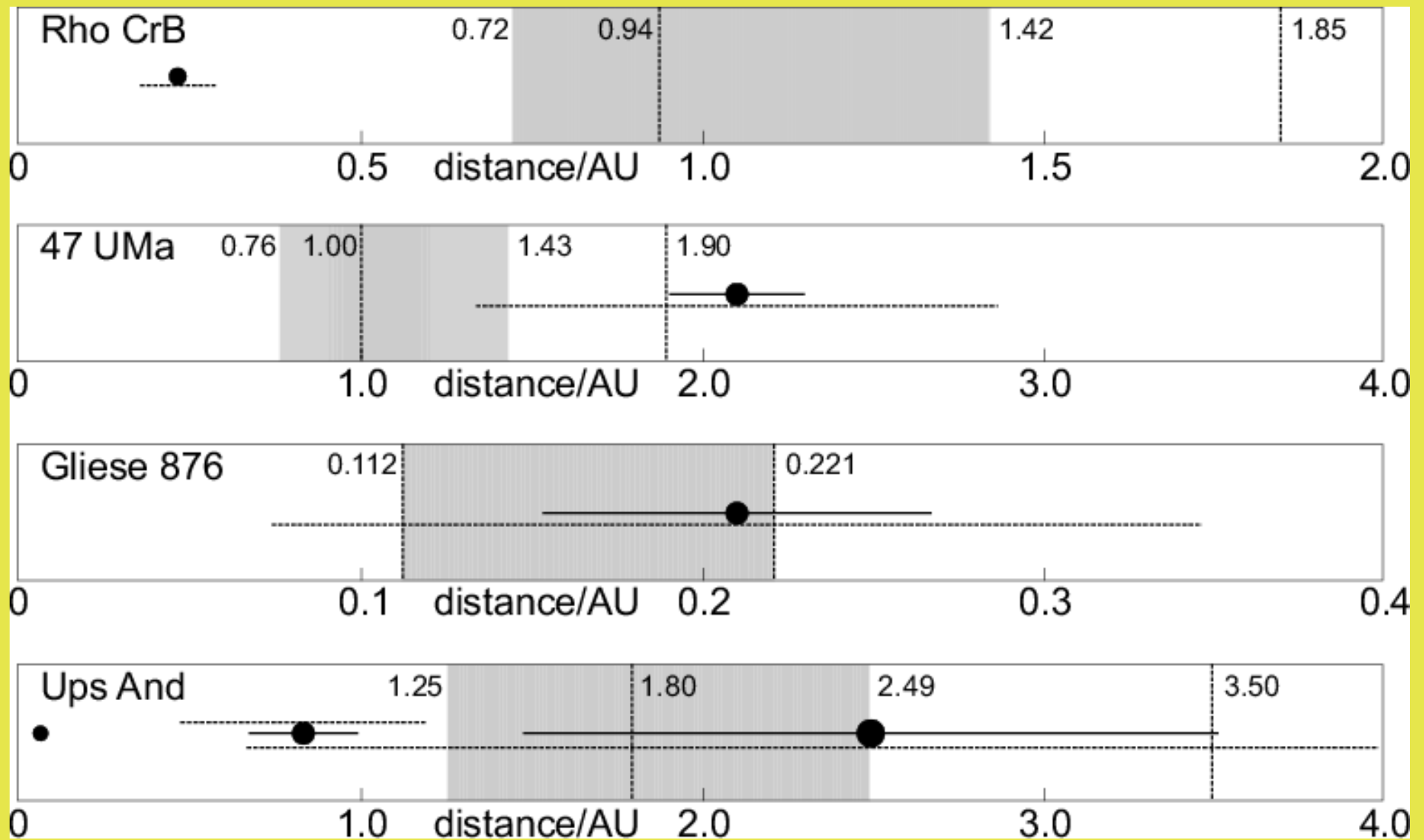


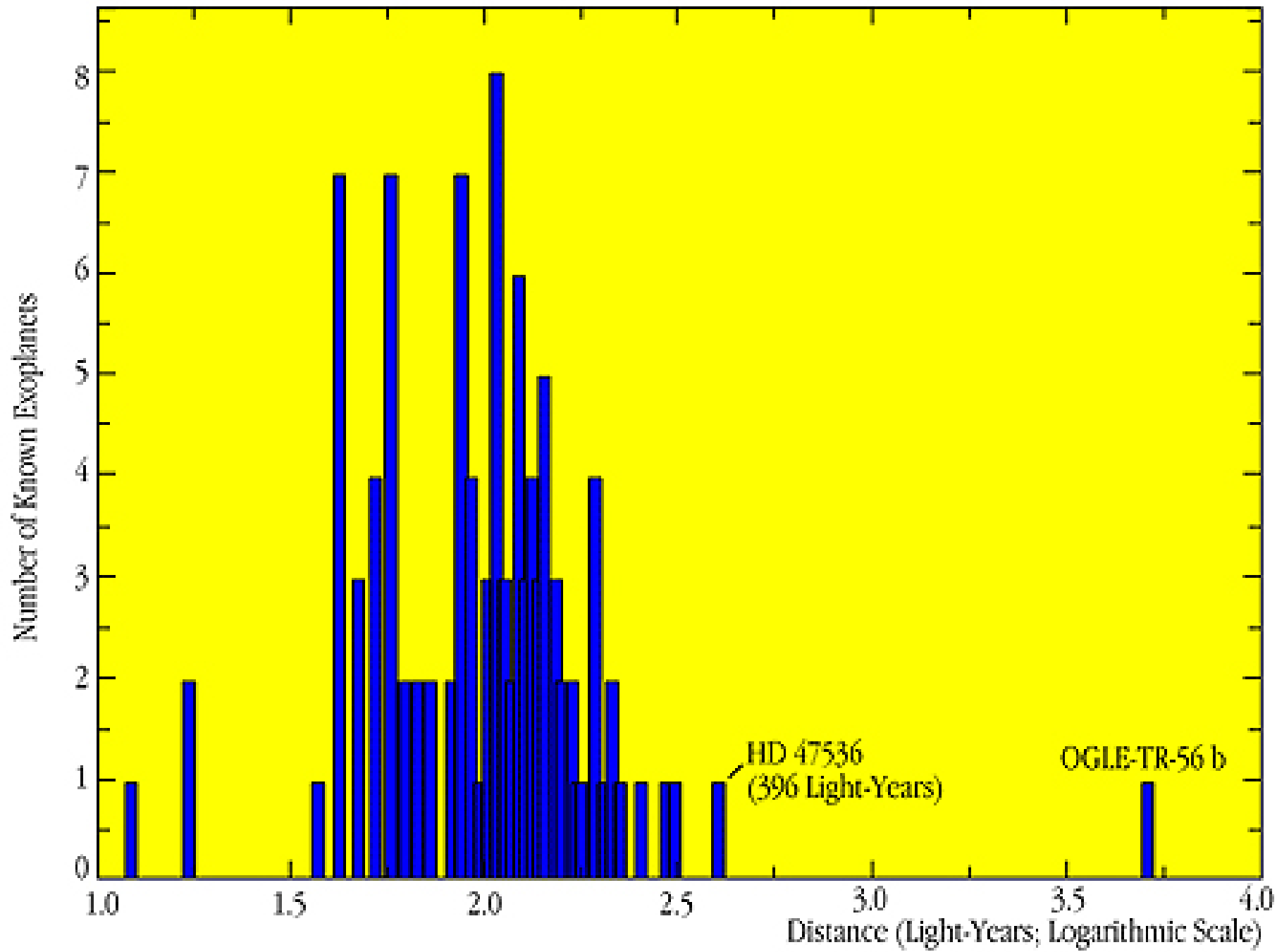
S.G. Korzennik (CfA, © 1997,1998)

The 178 Known Nearby Exoplanets



W. Pych, 2007.11.19





Distribution of Exoplanet Distances



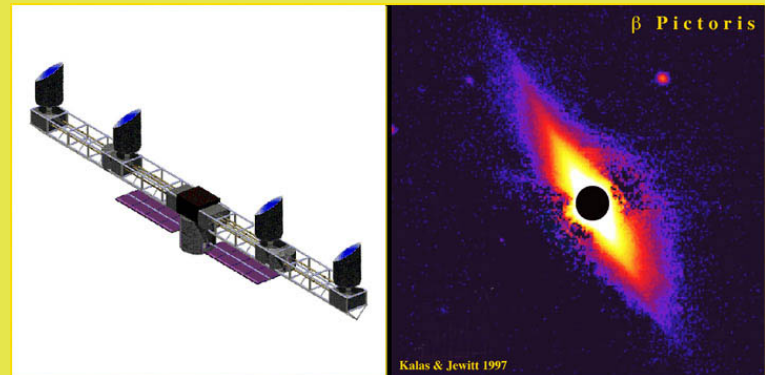
Poszukiwania planet

Projekty naziemne

- 55 trwających
- 2 zakończone
- 14 przygotowywanych
- 21 odniosło sukces
- Liczne potwierdzenia innych odkryć

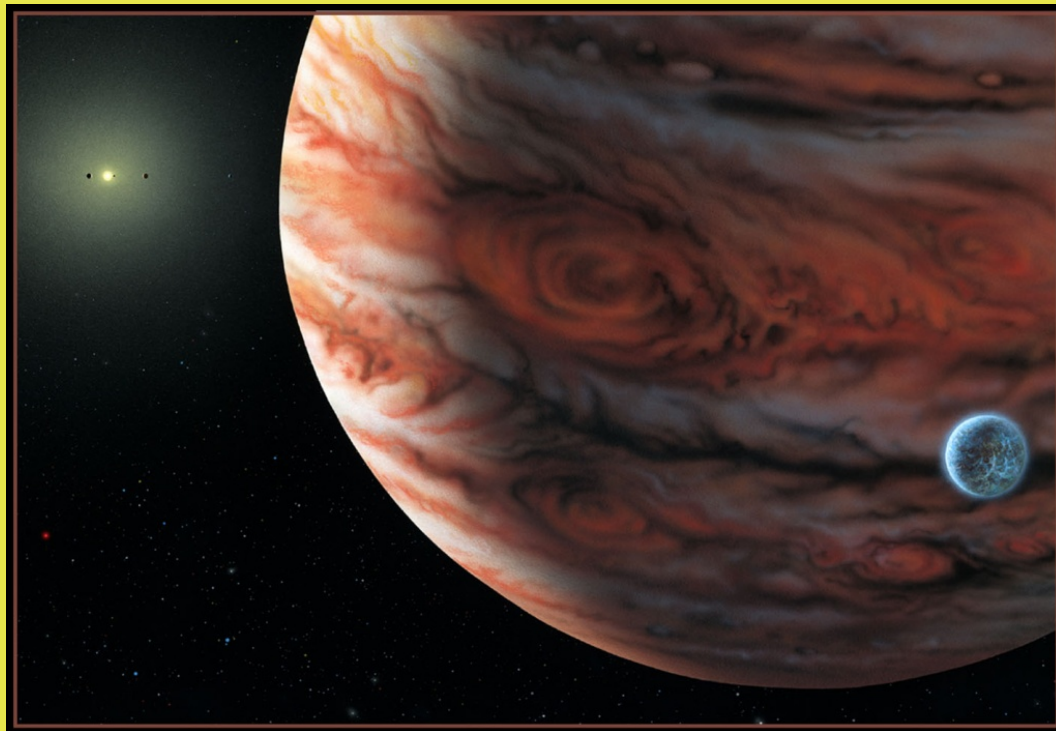
Projekty kosmiczne

- 5 trwających
- 13 przygotowywanych
- 1 odniósł sukces
- 2 potwierdzenia innych odkryć



NOWOŚĆ

6 listopada 2007 – układ 5 planet wokół gwiazdy 55 Cancri



<http://exoplanet.eu/>

