

Rodolfo Calanca, Angelo Angeletti



**TERRE DEL CIELO  
WORLDS OF THE SKY  
Project**






**EXTRASOLAR PLANET TRANSITS OBSERVATION  
OSSERVAZIONE TRANSITI PIANETI EXTRASOLARI**




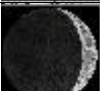
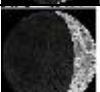



**Maggio – Dicembre 2010**


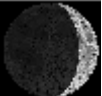
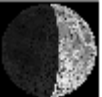




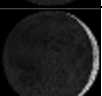
**TERRE DEL CIELO – WORLDS OF THE SKY PROJECT**  
**OSSERVAZIONE TRANSITI PIANETI EXTRASOLARI**  
**EXTRASOLAR PLANET TRANSITS Project**  
**MAGGIO – DICEMBRE 2010**

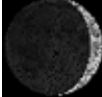


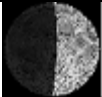
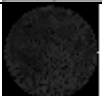
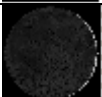
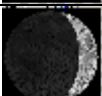
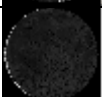
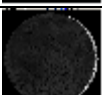
Web site data: <http://var2.astro.cz/ETD/index.php> (Czech Astronomical Society)

Geographical coord: Long.: 13° E; lat.: 43° N

N.	DATE (GG/MM/AA)	Begin INIZIO (UT/h,A)	FASE CENTRALE Center (UT/h,A)	End FINE (DATE/UT/h,A)	Fraction Moon illumi- nated FRAZ. ILLUMINA TA LUNA	Moon elon- gation ELONG. LUNA	Moon Phase	Planet OGGETTO
1	05.05.2010	20:43(45°,E)	22:20(62°,E)	05.05 23:57(80°,E)	53%	82°		HD149026b
2	09.05.2010	21:59(85°,NW)	23:10(76°,NW)	10.05 00:03(67°,NW)	17%	122°		HAT-P-3b
3	10.05.2010	20:33(58°,SE)	22:5(69°,S)	10.05 23:37(65°,SW)	10%	138°		WASP-14b
4	13.05.2010	21:19(63°,SW)	21:50(57°,W)	13.05 22:21(52°,W)	0%	111°		GJ436b
5	14.05.2010	21:53(49°,E)	22:31(56°,E)	14.05 23:10(63°,E)	0%	114°		TrES-3b

N.	DATE (GG/MM/AA)	Begin INIZIO (UT/h,A)	FASE CENTRALE Center (UT/h,A)	End FINE (DATE/UT/h,A)	Fraction Moon illumi- nated FRAZ. ILLUMINA TA LUNA	Moon elon- gation ELONG. LUNA	Moon Phase	Planet OGGETTO
6	07.06.2010	21:55(68°,NW)	22:57(58°,NW)	07.06 23:59(48°,NW)	23%	119°		HAT-P-3b
7	09.06.2010	20:38(83°,W)	21:48(70°,W)	09.06 22:59(58°,W)	8%	111°		HAT-P-12b
8	14.06.2010	20:19(41°,E)	21:34(54°,E)	14.06 22:49(68°,E)	8%	123°		TrES-1b
9	15.06.2010	21:18(55°,NE)	22:3(62°,NE)	15.06 22:48(70°,NE)	15%	112°		TrES-2b
10	16.06.2010	20:26(44°,NE)	22:28(64°,NE)	17.06 0:29(83°,NE)	24%	116°		HAT-P-7b
11	17.06.2010	21:2(50°,E)	22:17(64°,E)	17.06 23:32(77°,SE)	35%	118°		TrES-1b
12	18.06.2010	21:46(64°,E)	22:55(76°,SE)	19.06 0:3(83°,S)	43%	106°		WASP-3b
13	03.07.2010	21:16(60°,NE)	23:16(79°,NE)	04.07 1:16(79°,NW)	65%	67°		KEPLER-6b

N.	DATE (GG/MM/AA)	Begin INIZIO (UT/h,A)	FASE CENTRALE Center (UT/h,A)	End FINE (DATE/UT/h,A)	Fraction Moon illumi- nated FRAZ. ILLUMINA TA LUNA	Moon elon- gation  ELONG. LUNA	Moon Phase	Planet OGGETTO
14	12.07.2010	21:59 (82°, SE)	23:08 (79°, SW)	13.07 0:16 (68°, W)	2%	123°		WASP-3b
15	15.07.2010	20:41 (75°, E)	22:09 (84°, SW)	15.07 23:36 (70°, W)	22%	105°		HAT-P-5b
16	17.07.2010	21:57 (82°, SW)	22:36 (75°, W)	17.07 23:15 (68°, W)	44%	86°		TrES-3b
17	30.07.2010	23:26 (57°, W)	0:05 (51°, W)	31.07 00:44 (44°, W)	81%	87°		TrES-3b
18	03.09.2010	20:36 (53°, E)	21:39 (65°, E)	03.09 22:43 (75°, SE)	27%	94°		WASP-10b
19	06.09.2010	22:49 (77°, SE)	23:53 (78°, SW)	07.09 00:57 (69°, SW)	4%	132°		WASP-10b
20	07.09.2010	21:20 (68°, NW)	22:05 (60°, NW)	07.09 22:50 (53°, NW)	1%	111°		TrES-2b
21	10.09.2010	20:04 (82°, NW)	22:06 (62°, NW)	11.09 0:07 (43°, NW)	9%	103°		HAT-P-7b

N.	DATE (GG/MM/AA)	Begin INIZIO (UT/h,A)	FASE CENTRALE Center (UT/h,A)	End FINE (DATE/UT/h,A)	Fraction Moon illumi- nated FRAZ. ILLUMINA TA LUNA	Moon elon- gation ELONG. LUNA	Moon Phase	Planet OGGETTO
22	11.09.2010	20:41(63°,W)	21:49(51°,W)	11.09 22:58(38°,W)	17%	83°		WASP-3b
23	17.09.2010	20:31(63°,E)	22:12(81°,E)	17.09 23:53(81°,W)	75%	82°		HAT-P-6b
24	07.10.2010	19:55(59°,E)	21:49(77°,SE)	07.10 23:42(72°,SW)	0%	159°		WASP-1b
25	14.10.2010	19:49(74°,E)	21:30(88°,W)	14.10 23:11(70°,W)	50%	85°		HAT-P-6b
26	06.11.2010	22:38(59°,W)	0:20(42°,NW)	07.11 02:01(26°,NW)	0%	130°		HAT-P-6b
27	07.11.2010	19:19(79°,S)	20:23(74°,SW)	07.11 21:27(63°,W)	4%	114°		WASP-10b
28	10.11.2010	19:07(86°,E)	<b>20:48(76°,W)</b>	10.11 22:30(58°,W)	24%	89°		HAT-P-6b
29	04.12.2010	18:56(79°,S)	20:50(62°,W)	04.12 22:43(42°,W)	1%	132°		WASP-1b
30	07.12.2010	18:25(83°,W)	20:06(65°,W)	07.12 21:48(47°,W)	5%	93°		HAT-P-6b

# GJ436b

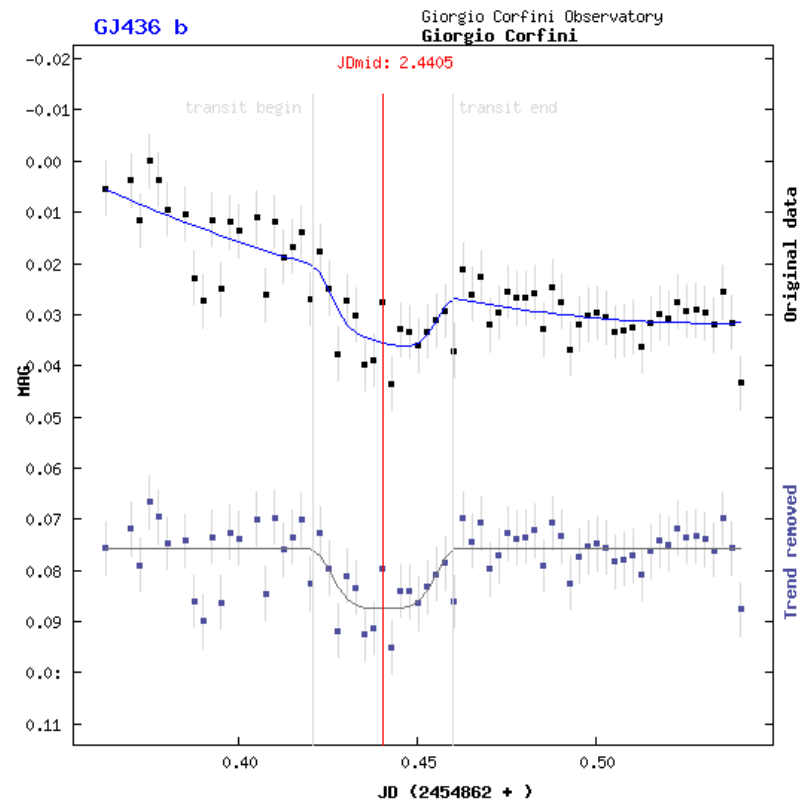
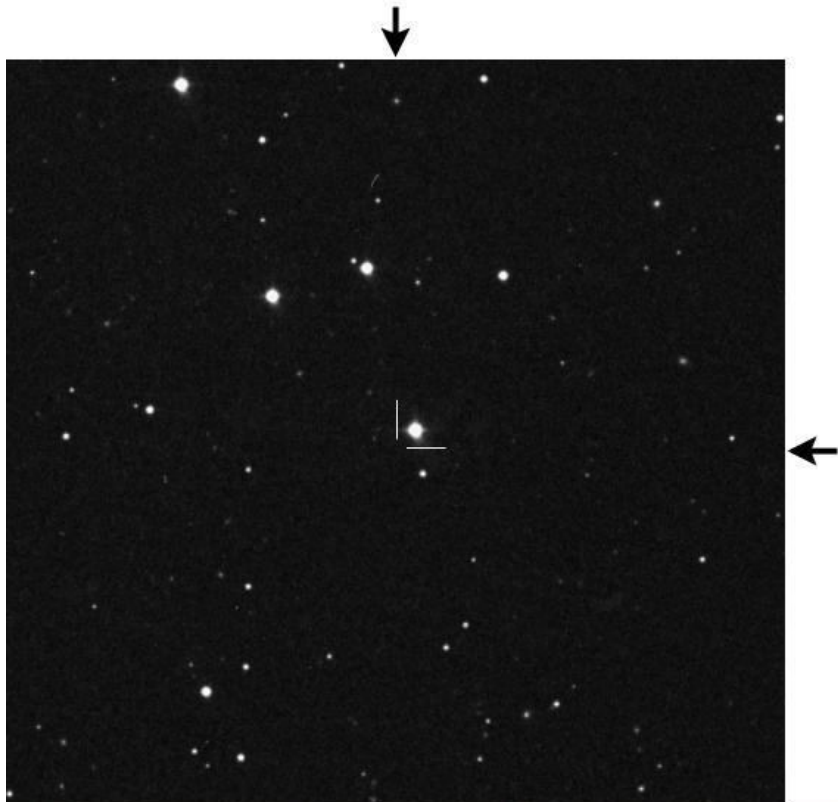
<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1261494774>

## GJ436 b (Leo)

RA (J2000): 11 42 10.01, DE (J2000): +26 42 37,

V = 10.68 mag, dV = 0.009 mag, duration = 62 minutes

Per =  d, T0(HJD) =

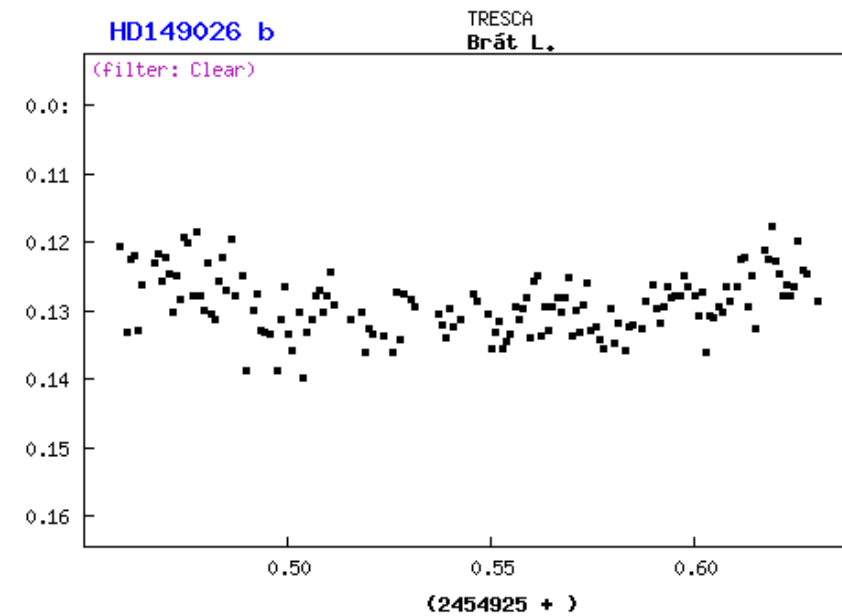


# HD149026b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1238972537>

## HD149026 b (Her)

RA (J2000): 16 30 29, DE (J2000): +38 20 50,  
V = 8.15 mag, dV = 0.003 mag, duration = 194.4 minutes  
Per =  d, T0(HJD) =

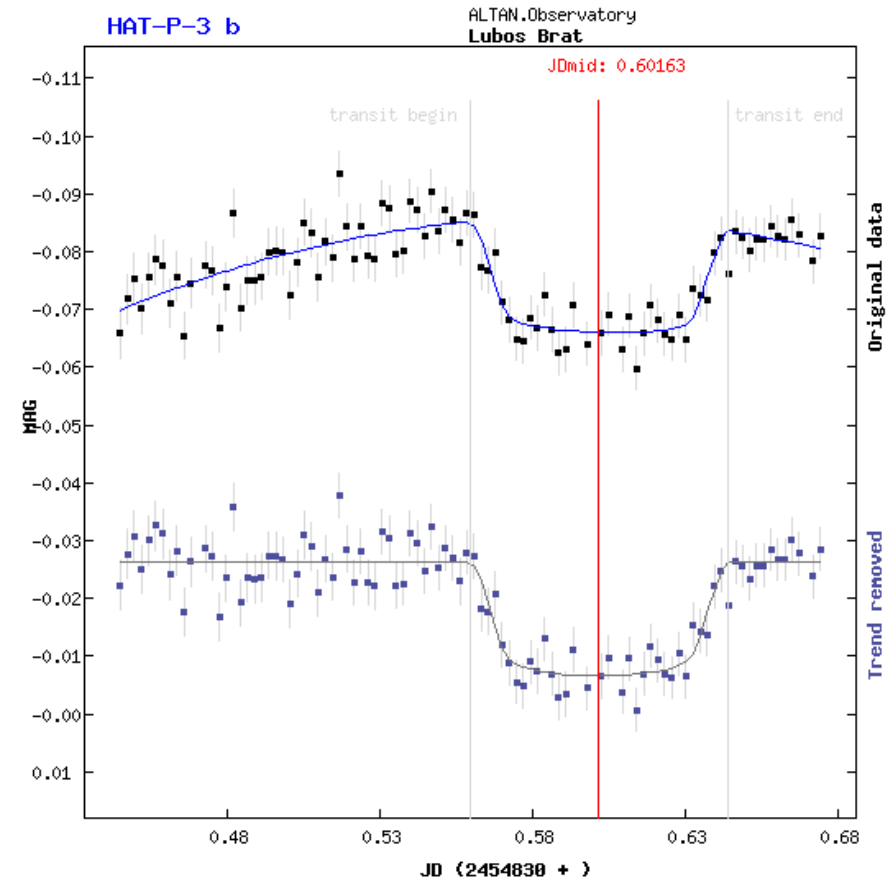
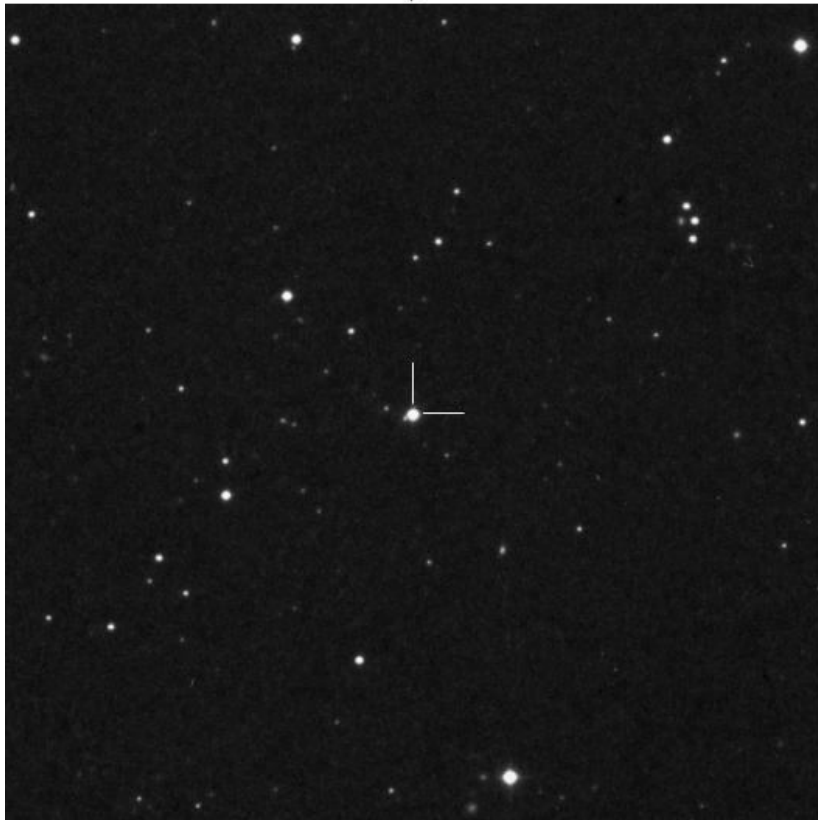


# HAT-P-3b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1230610896>

## HAT-P-3 b (UMa)

RA (J2000): 13 44 23, DE (J2000): +48 01 43,  
V = 11.86 mag, dV = 0.014 mag, duration = 123.5 minutes  
Per =  d, T0(HJD) =



# HAT-P-5b

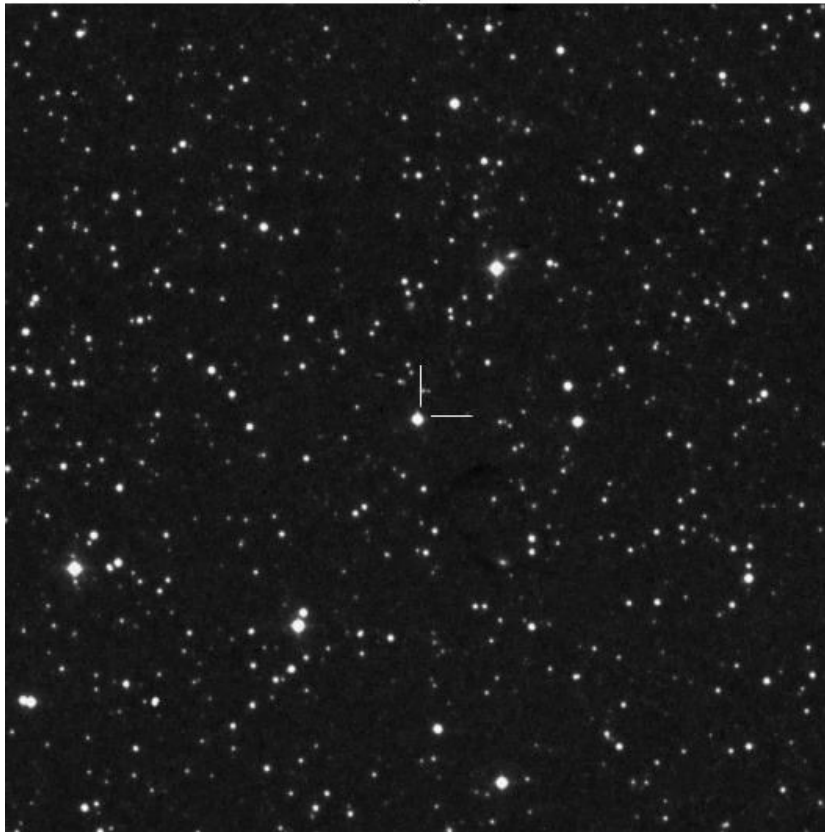
<http://var2.astro.cz/ETD/etd.php?STARNAME=HAT-P-5&PLANET=b>

## HAT-P-5 b (Lyr)

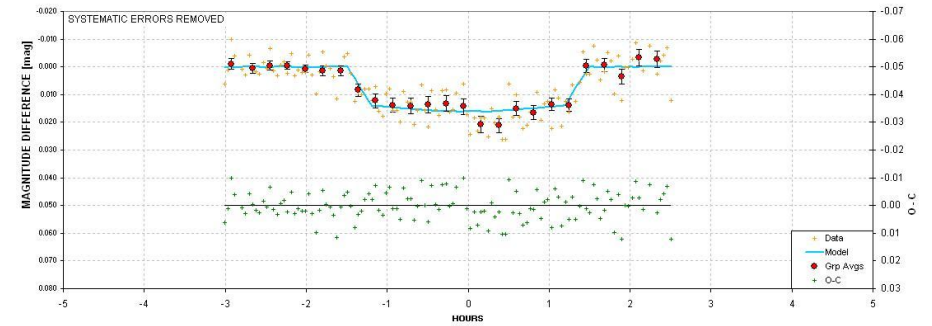
RA (J2000): 18 17 37.30, DE (J2000): +36 37 16.6,  
V = 12 mag, dV = 0.014 mag, duration = 175 minutes

Per =  d, T0(HJD) =

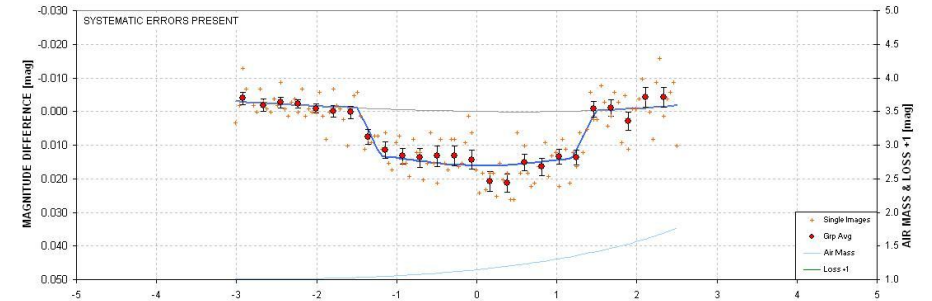
<http://brucegary.net/AXA/HATP5/hatp5.htm>



15' x 15' image from the Digitized Sky Survey at the STScI Archive



Object:	HATP5	HJD mid:	2455036.4912	UT mid:	23.725	L [hr]:	2.98	Depth:	16.1	Fp:	0.20	F2:	0.86	Aperture:	12-inch	Trend:	1.34	Early:	0.7 min
TransDate:	23-Jul-2009	±:	0.0015	±:	0.037	±:	0.08	±:	1.5	±:	0.06	±:	0.21	Exposure:	120 seconds	AMC:	3.4	±:	2.2 min
Band:	R	Prior Info:	2456036.4917	23.736	2.92	15.3	0.25	0.86	HJD:	4715.8172	Object #:	19							
Observer:	SRDOC (SG2)	CROATIA	V-mag:	12.03	±:	0.16	±:	2.0	±:	0.10	±:	0.20	Period:	2.7884741	ObsnStartDate:	2009	7	23	

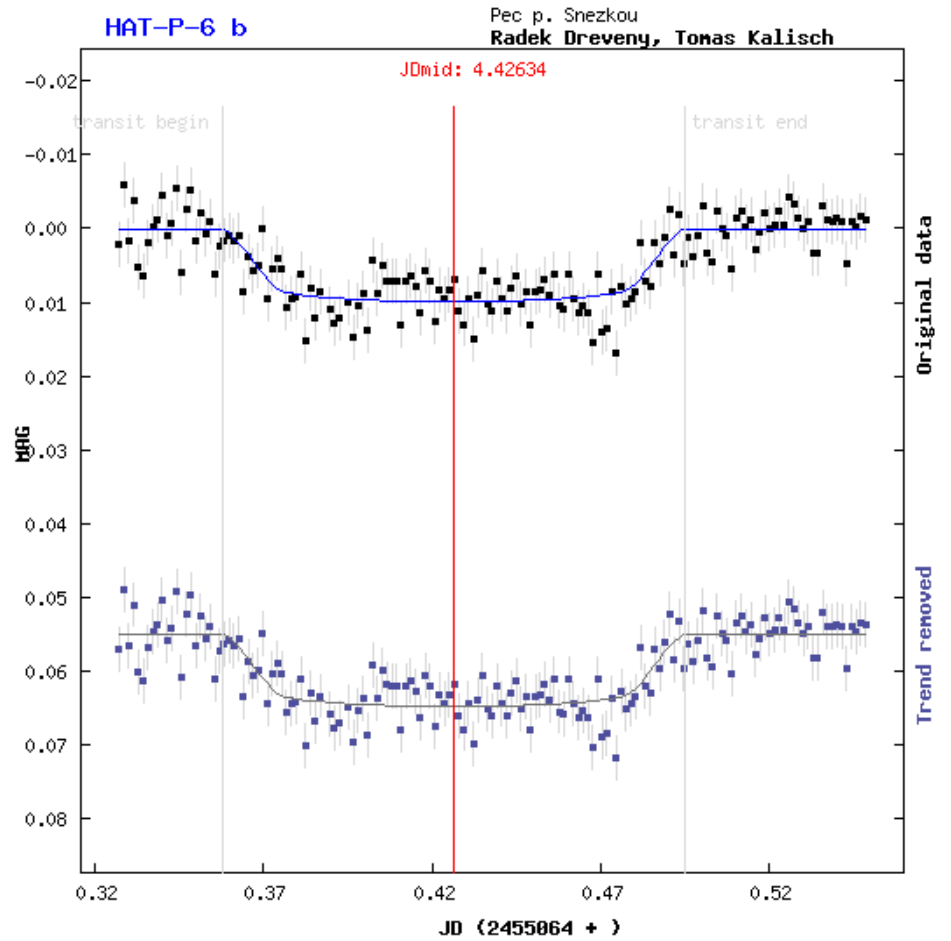
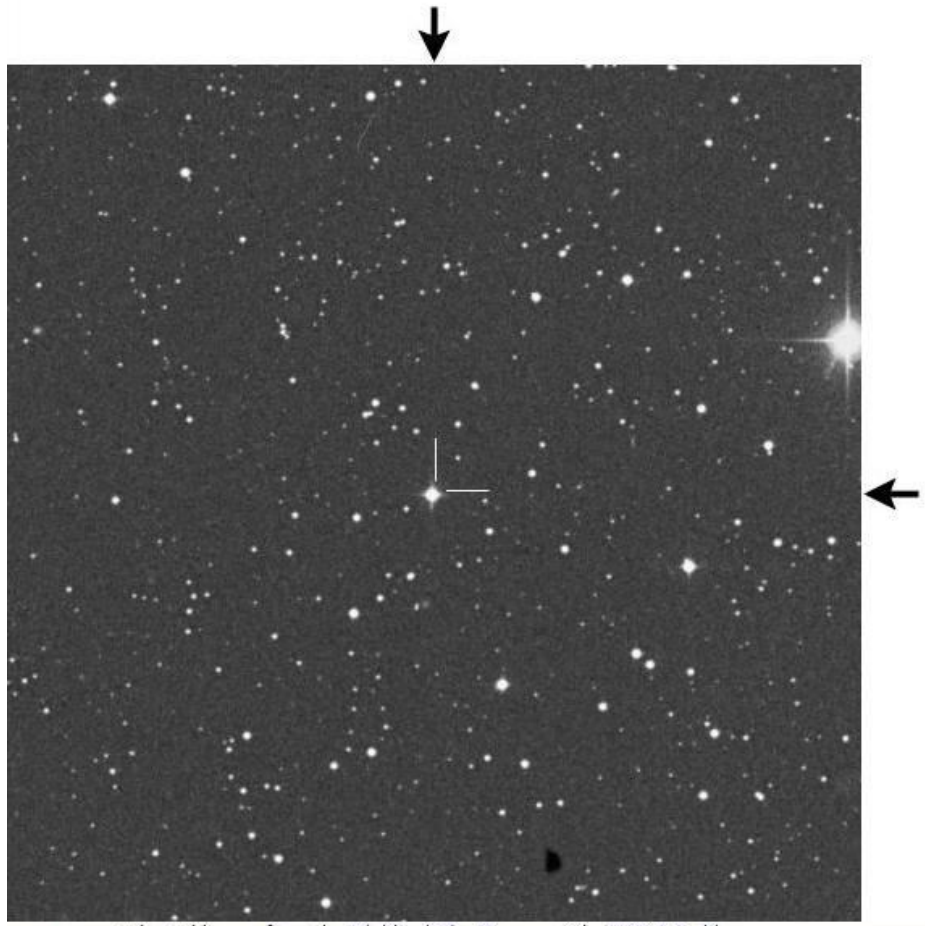


# HAT-P-6b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1251027413>

## HAT-P-6 b (And)

RA (J2000): 23 39 05.85, DE (J2000): +42 27 57.5,  
V = 10.5 mag, dV = 0.010 mag, duration = 202.8 minutes  
Per =  d, T0(HJD) =

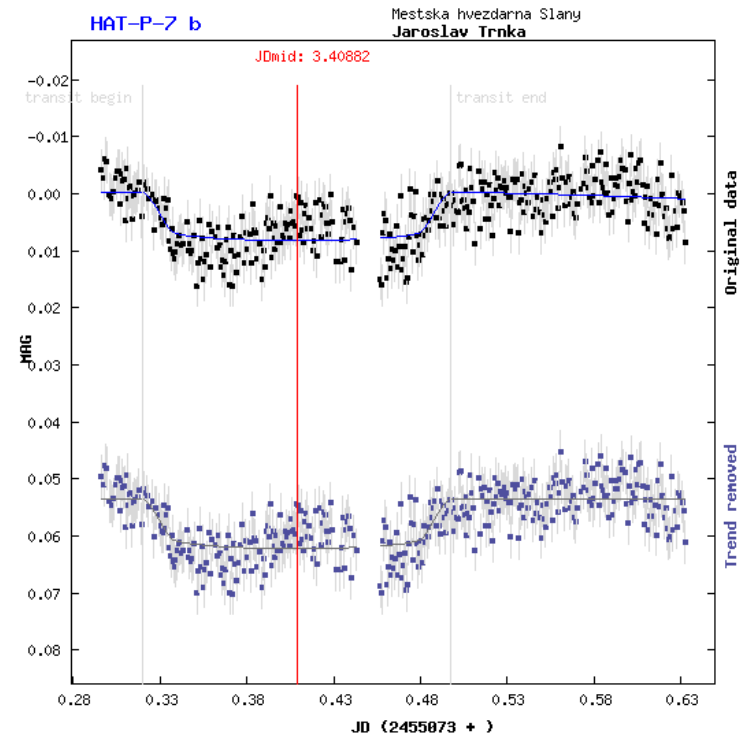
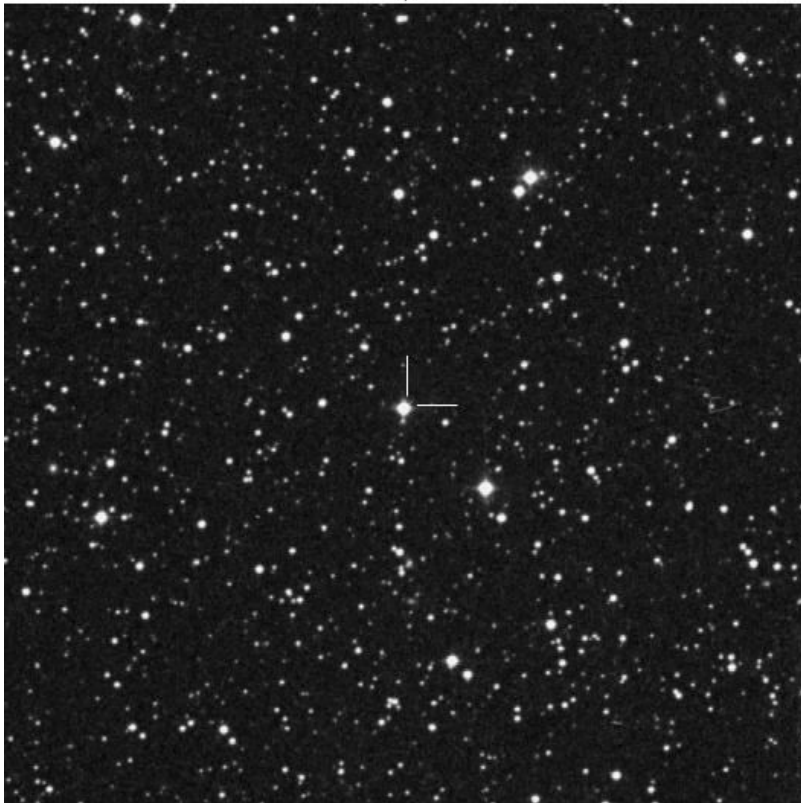


# HAT-P-7b

<http://brucegary.net/AXA/HATP7/hatp7.htm>

## HAT-P-7 b (Cyg)

RA (J2000): 19 28 59.37, DE (J2000): +47 58 10.5,  
V = 10.5 mag, dV = 0.007 mag, duration = 243 minutes  
Per =  d, T0(HJD) =

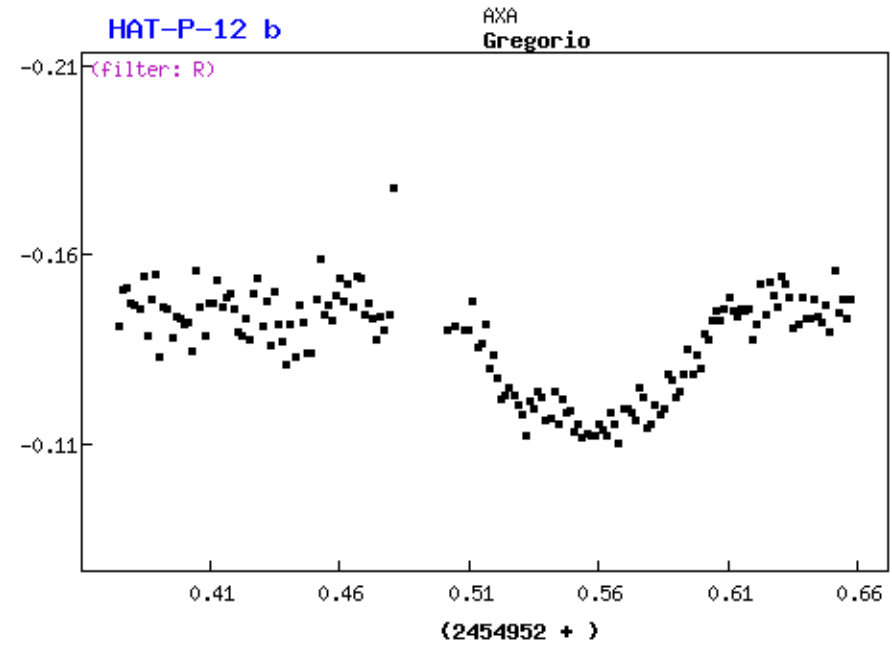
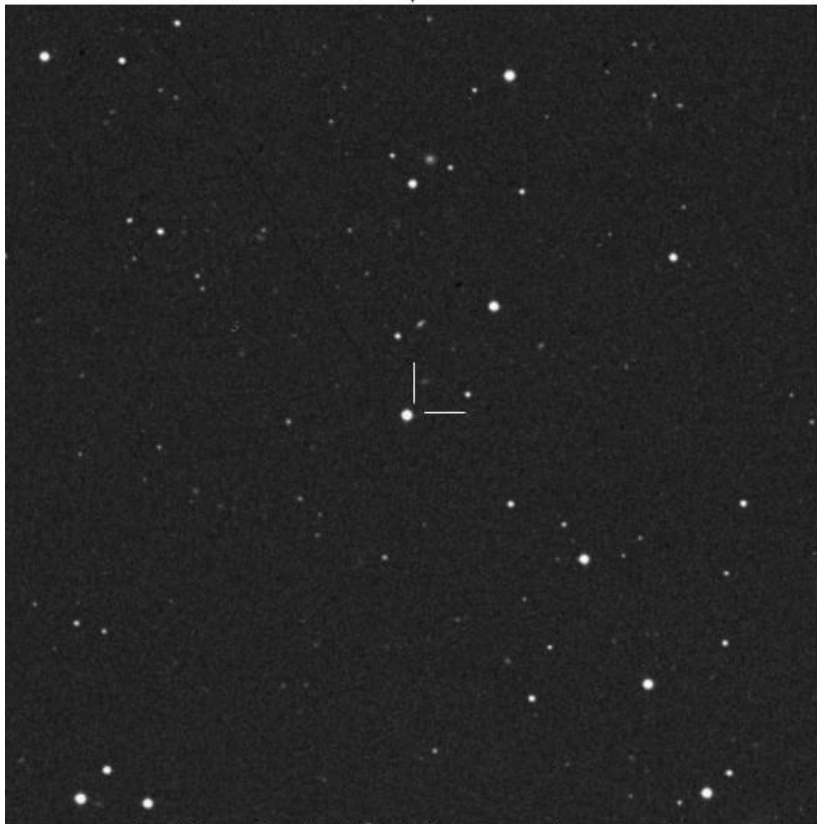


# HAT-P-12b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1251749265>

## HAT-P-12 b (CVn)

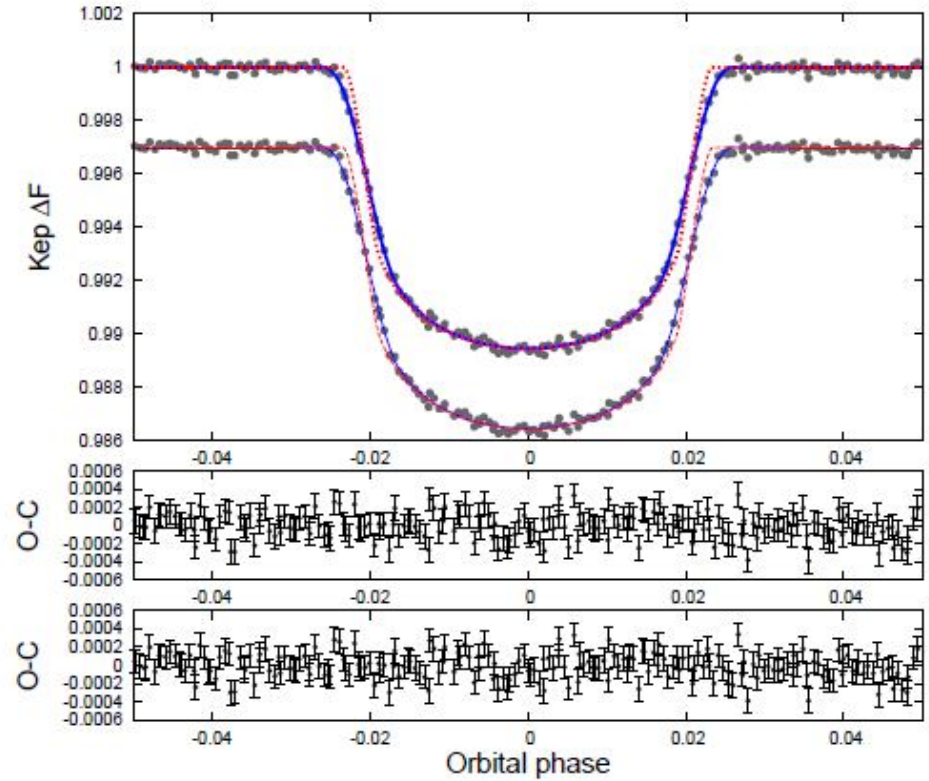
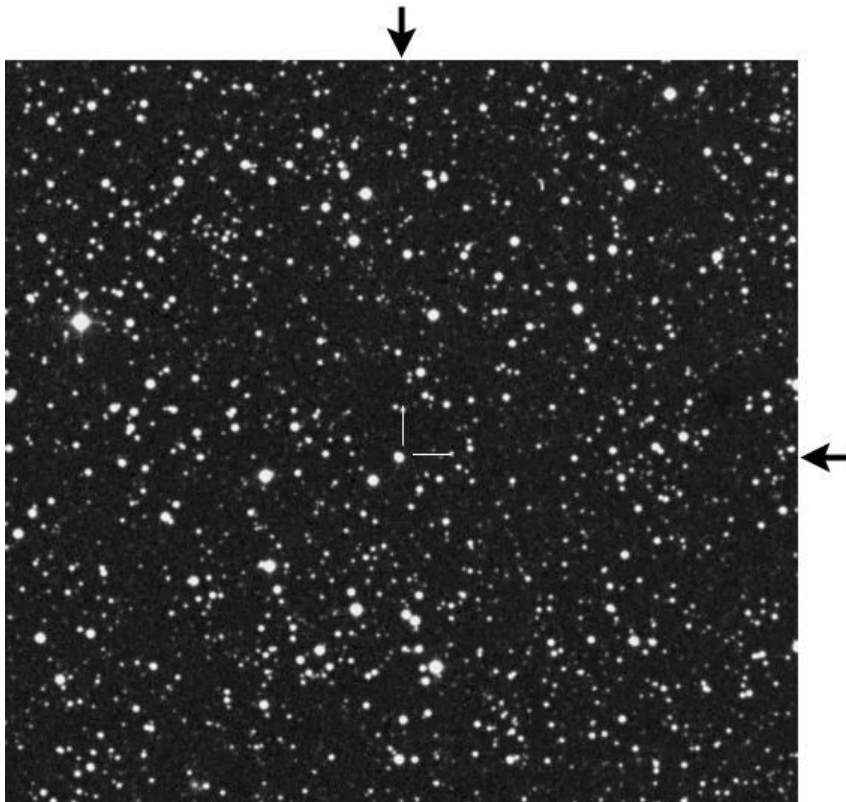
RA (J2000): 13 57 33.684, DE (J2000): +43 29 37.35,  
V = 12.8 mag, dV = 0.020 mag, duration = 140.3 minutes  
Per =  d, T0(HJD) =



# KEPLER-6b

## Kepler-6 b (Cyg)

RA (J2000): 19 47 20.9, DE (J2000): +48 14 23.8,  
V = 13.8 mag, dV = 0.011 mag, duration = 240 minutes  
Per =  d, T0(HJD) =

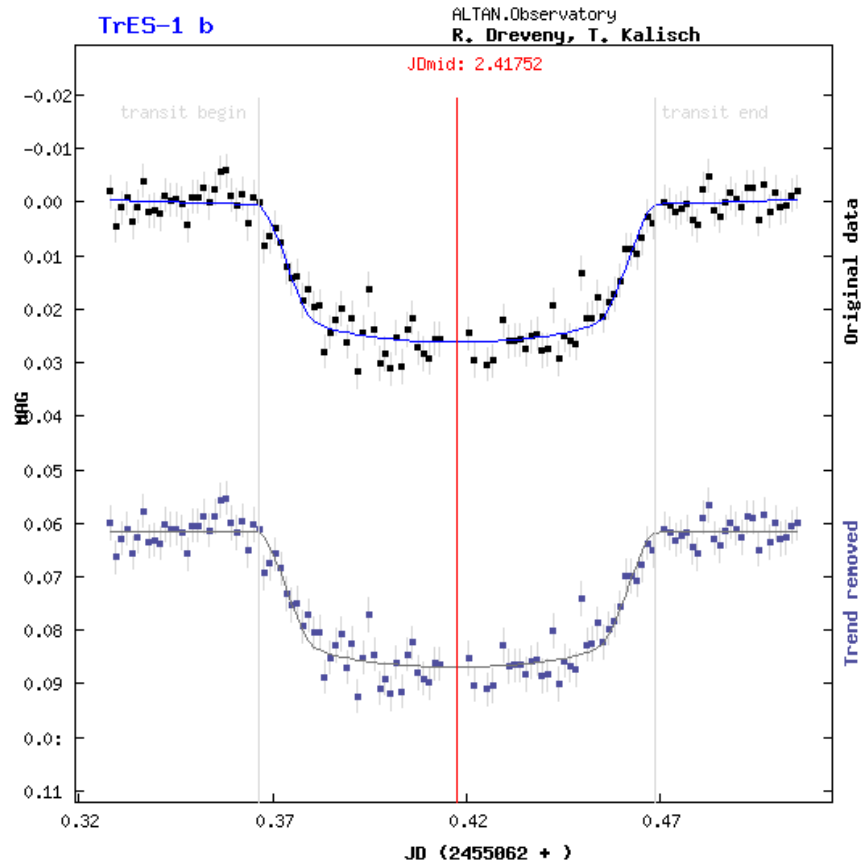
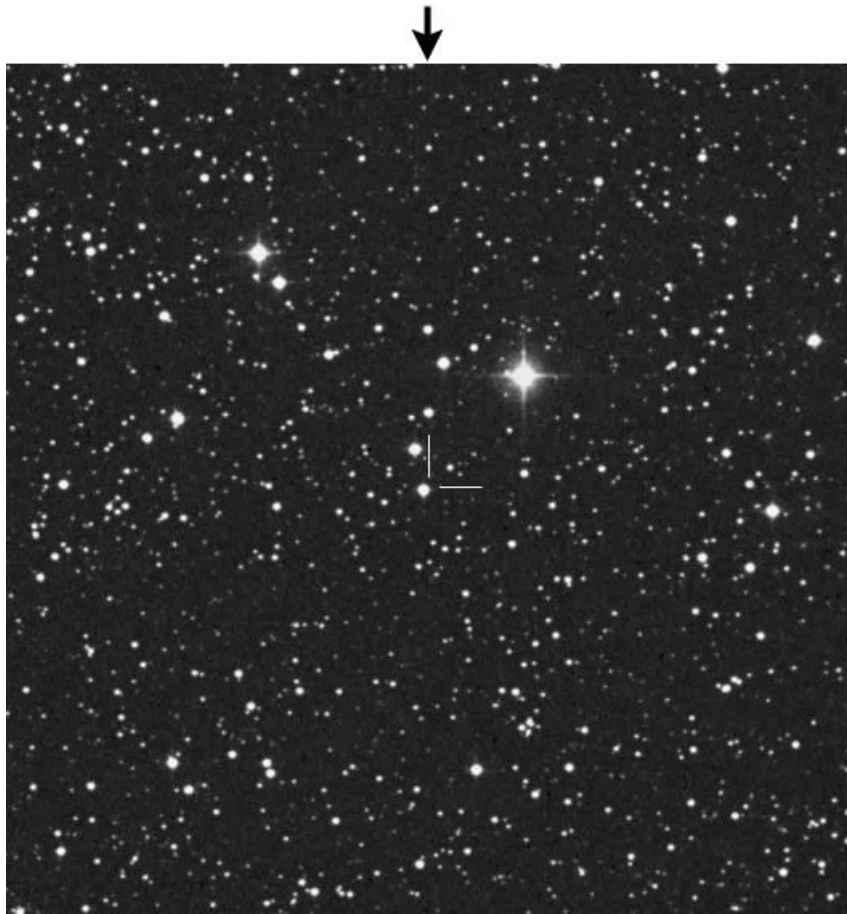


# TrES-1b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1250847262>

TrES-1 b (Lyr)

RA (J2000): 19 04 09.844, DE (J2000): +36 37 57.54,  
V = 11.79 mag, dV = 0.021 mag, duration = 149.8 minutes  
Per =  d, T0(HJD) =

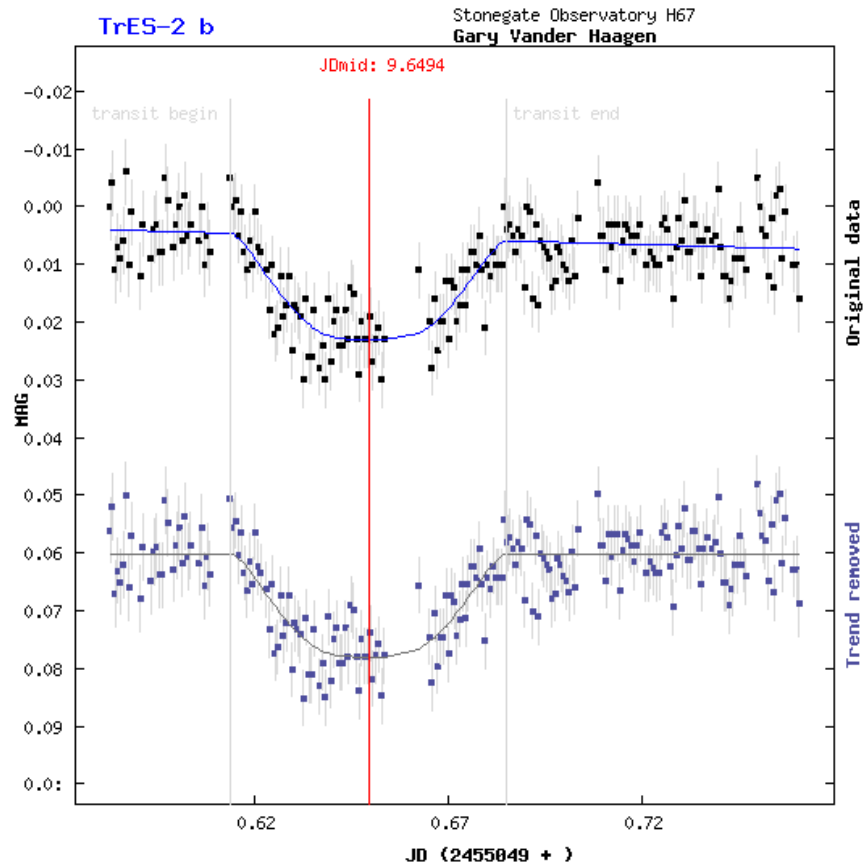
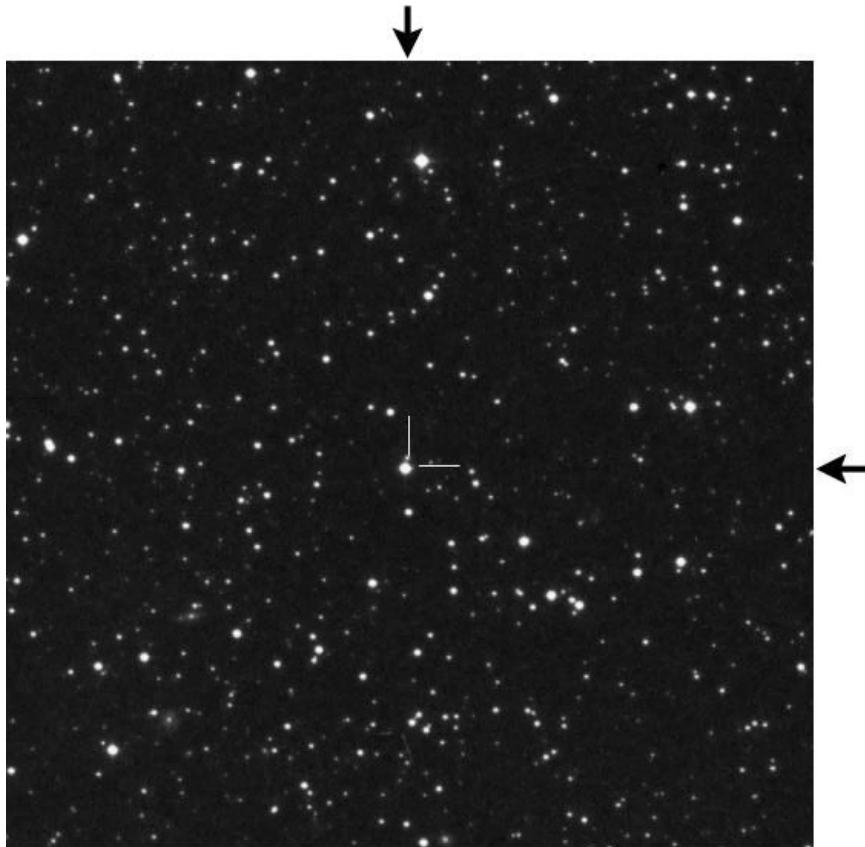


# TrES-2b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1249554171>

## TrES-2 b (Dra)

RA (J2000): 19 07 14, DE (J2000): +49 18 59,  
V = 11.41 mag, dV = 0.018 mag, duration = 90 minutes  
Per =  d, T0(HJD) =

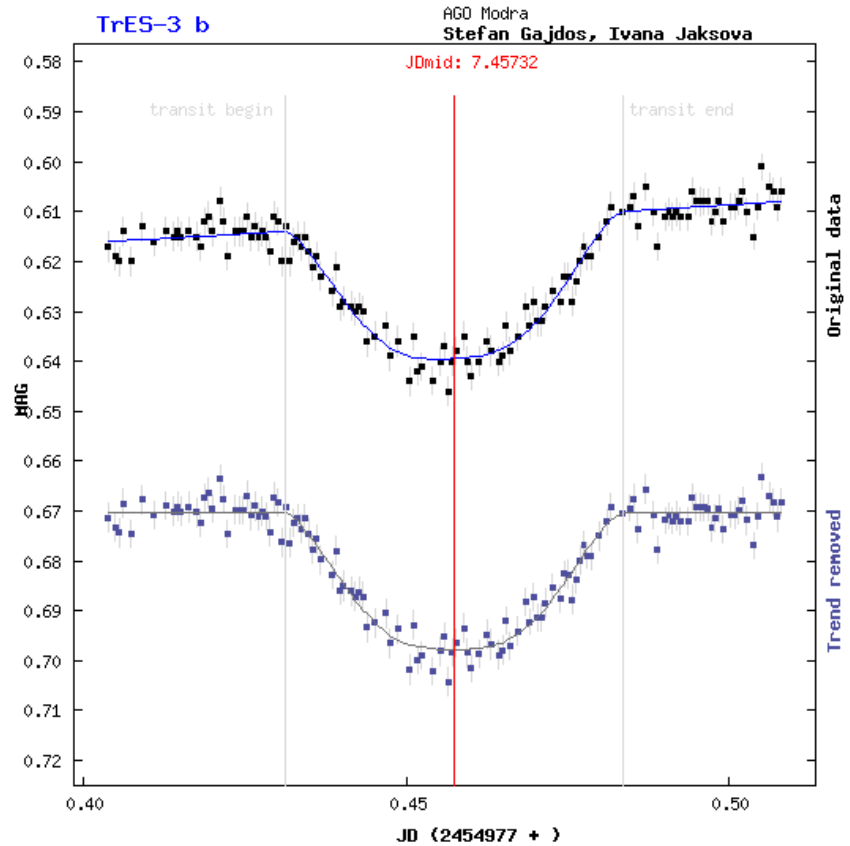
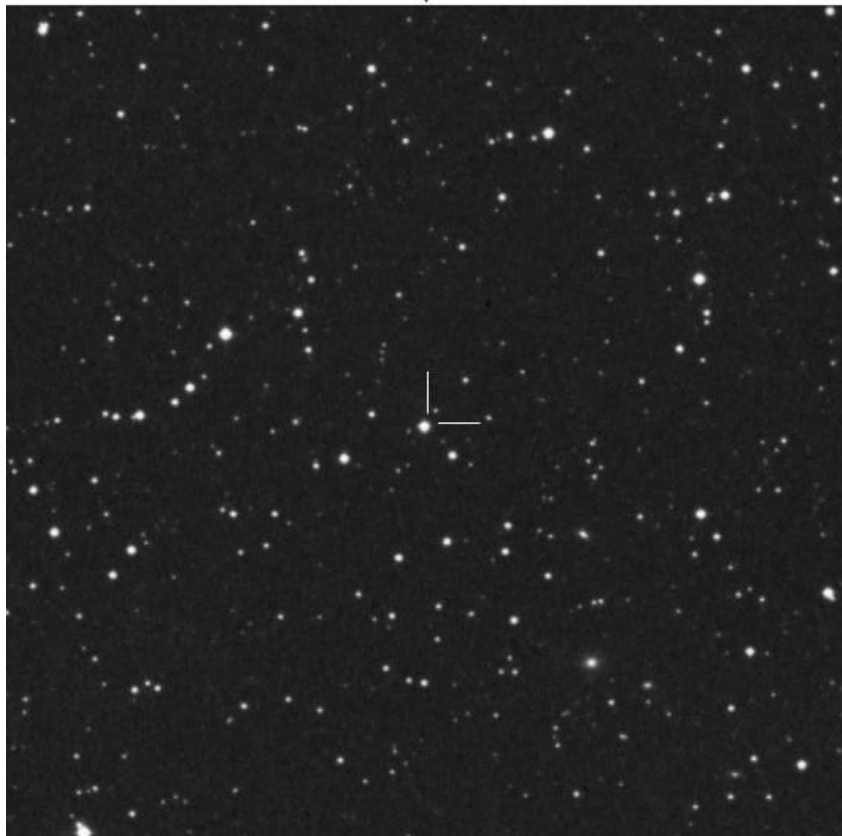


# TrES-3b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1269648158>

## TrES-3 b (Her)

RA (J2000): 17 52 07, DE (J2000): +37 32 46,  
V = 12.4 mag, dV = 0.029 mag, duration = 77.4 minutes  
Per =  d, T0(HJD) =

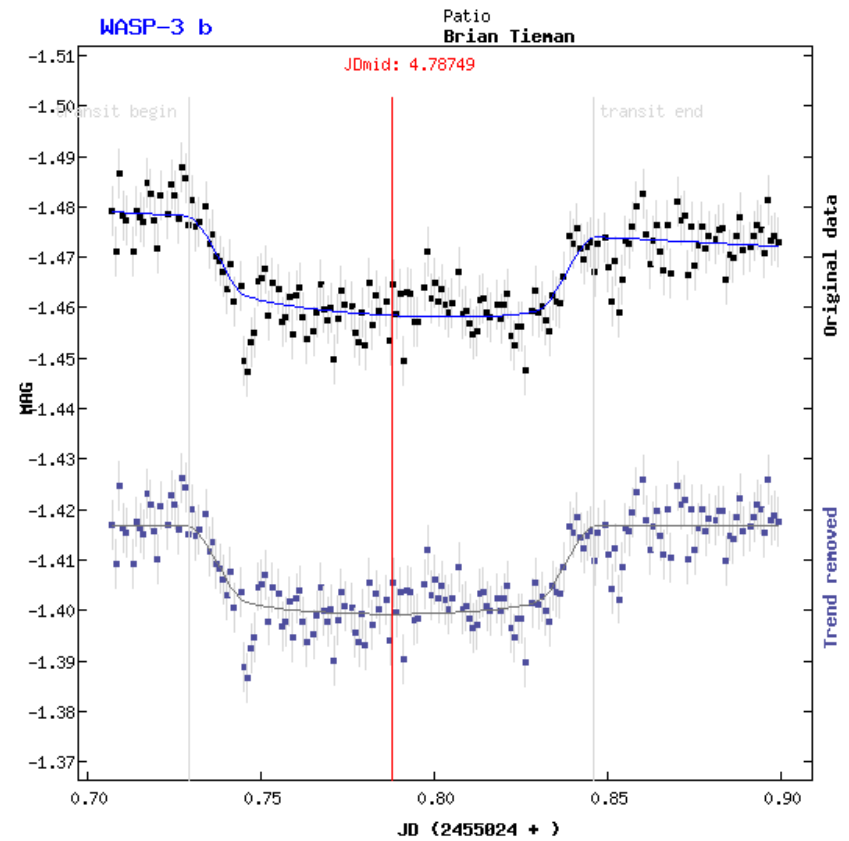


# WASP-3b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1247435420>

## WASP-3 b (Lyr)

RA (J2000): 18 34 31.67, DE (J2000): +35 39 41.9,  
V = 10.64 mag, dV = 0.012 mag, duration = 137 minutes  
Per =  d, T0(HJD) =

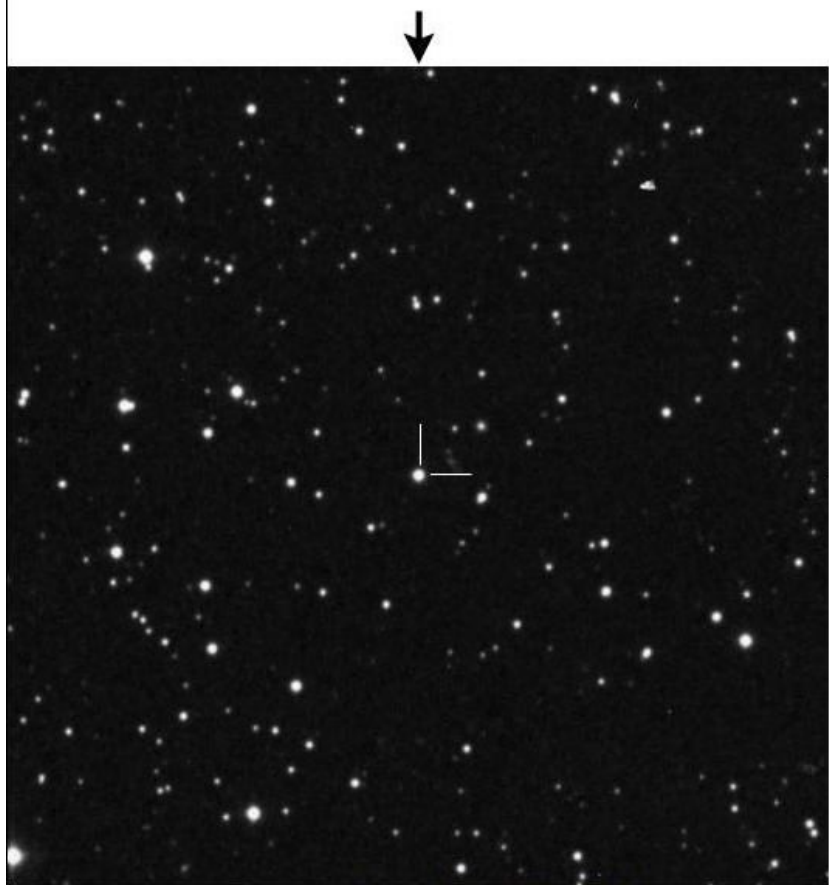


# WASP-10b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1251761114>

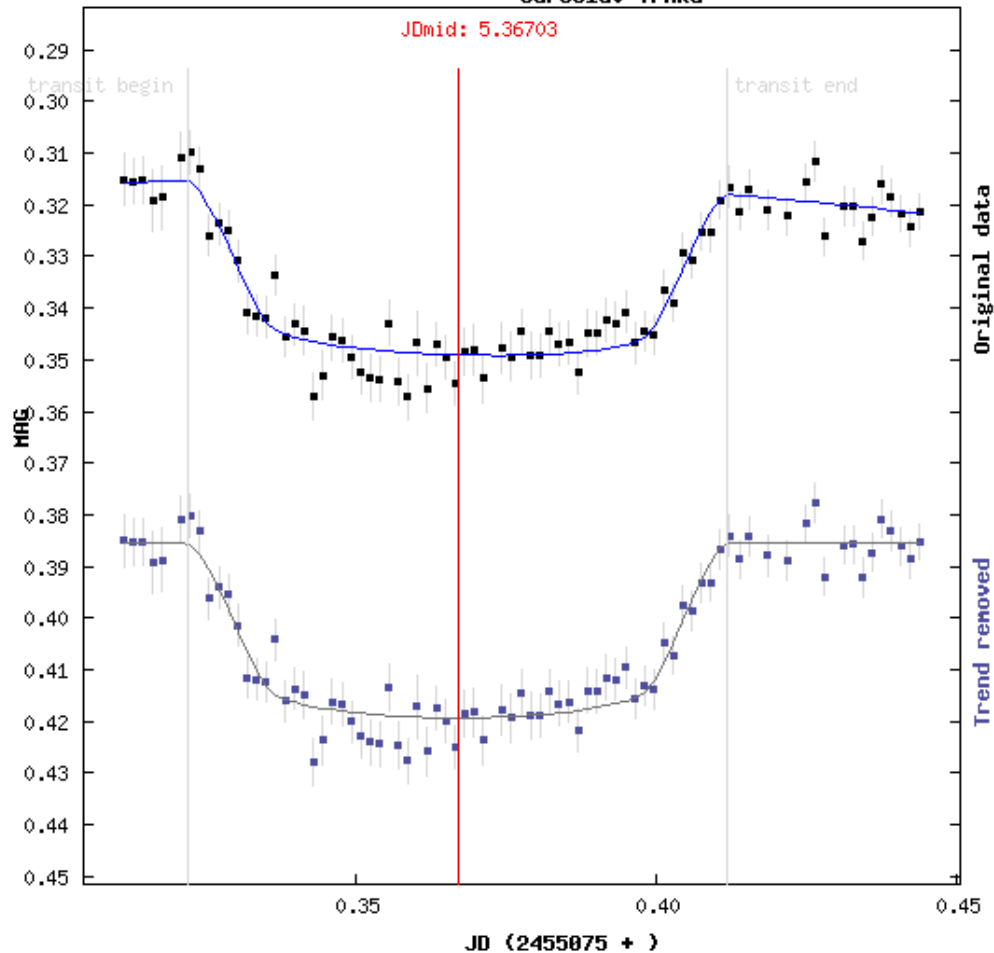
## WASP-10 b (PEG)

RA (J2000) 23 15 58.23, DE (J2000): 31 27 47,1  
V = 12,7 MAG , dV = 0,039 MAG , durata = 127,8 minuti  
Per =  d , T0 (HJD) =



## WASP-10 b

Mestska hvězdarna Slany  
Jaroslav Trnka

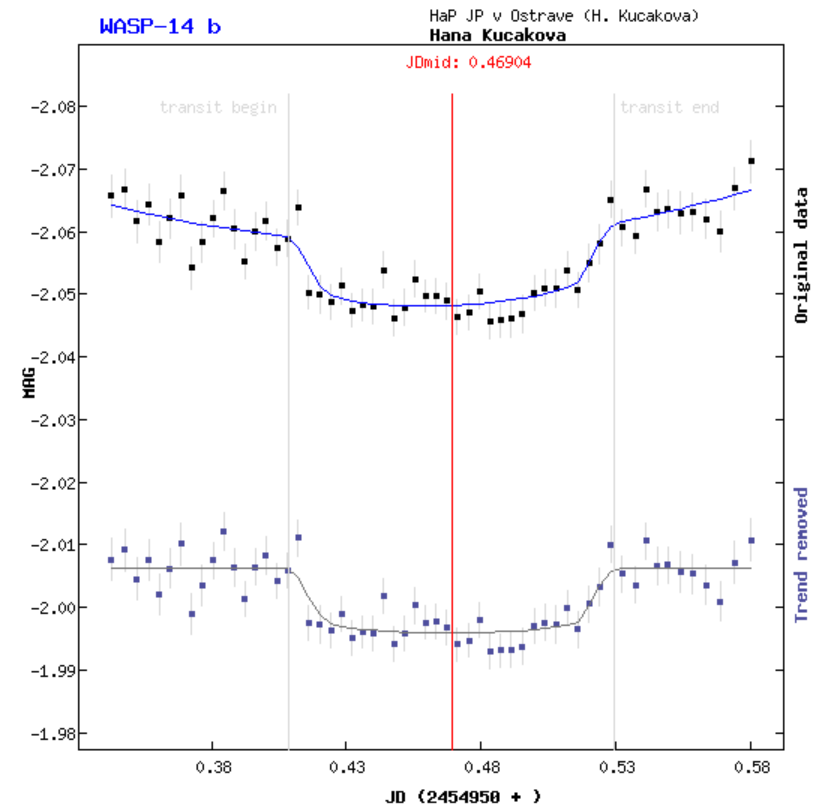
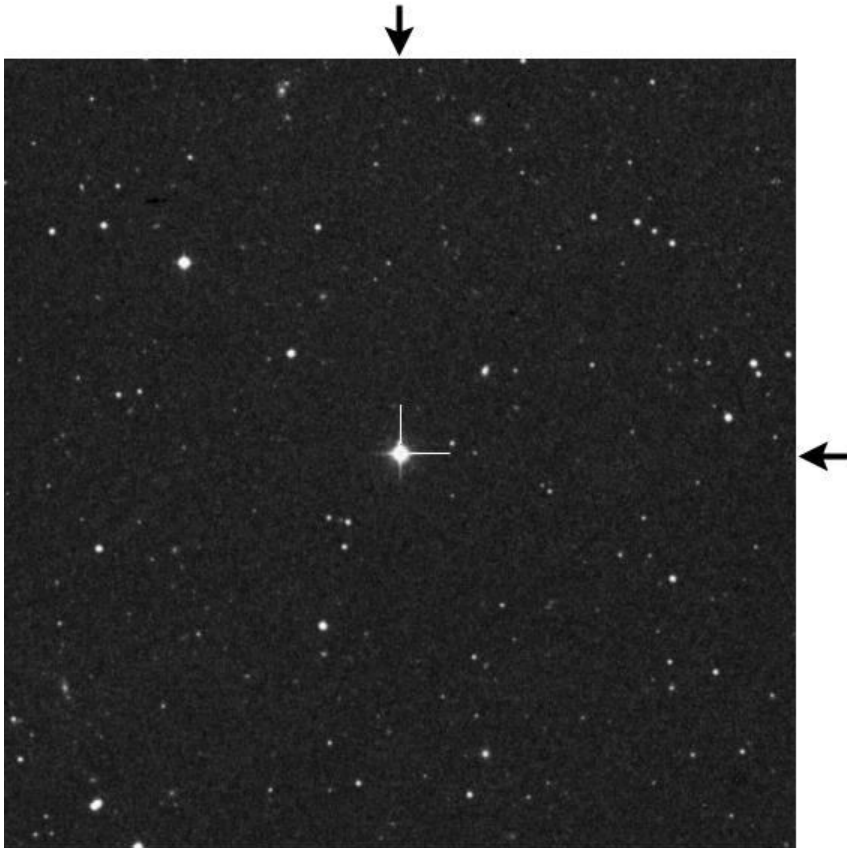


# WASP-14b

<http://var2.astro.cz/EN/tresca/transit-detail.php?id=1241109937>

## WASP-14 b (Boo)

RA (J2000): 14 33 06.35, DE (J2000): +21 53 40.98,  
V = 9.75 mag, dV = 0.011 mag, duration = 183.6 minutes  
Per =  d, T0(HJD) =



## ARCHIVIO CURVE DI LUCE DEI TRANSITI EXTRASOLARI

L'Osservatorio di Brera ha preparato un archivio per la raccolta dei dati e delle immagini riguardanti i transiti dei pianeti extrasolari:

<http://www.brera.inaf.it/interroga/dbServer?cmd=xo3b>

Il dr Stefano Covino dell'Osservatorio di Brera così annuncia la creazione di questa archivio che sarà a disposizione di tutti, professionisti ed amatori:

*Abbiamo messo a punto un database dove si possono memorizzare le informazioni (dati e risultati) riguardanti le osservazioni del transito del pianeta extra-solare che vogliamo seguire. E' possibile memorizzare file FITS o insiemi di file FITS compressi (zip), come anche file di testo o insiemi di file di testo compressi. I risultati della fotometria possono essere comunicati con qualunque formato desideriate ma incoraggiamo l'uso del formato esteso dell'AVVSO (<http://www.aavso.org/observing/submit/extended.shtml>). I dati raccolti saranno disponibili a chiunque ne faccia richiesta e la gestione sarà dell'organizzazione dell'evento "Terre del Cielo". Contattate l'organizzazione per ogni possibile uso di questi dati. Per accedere al database è necessario registrarsi mandando un e-mail a Angelo Angeletti ([angelo.angeletti@virgilio.it](mailto:angelo.angeletti@virgilio.it)), Stefano Covino ([stefano.covino@brera.inaf.it](mailto:stefano.covino@brera.inaf.it)), Rodolfo Calanca ([rodolfo.calanca@gmail.com](mailto:rodolfo.calanca@gmail.com)) e Paolo D'Avanzo ([paolo.davanzo@brera.inaf.it](mailto:paolo.davanzo@brera.inaf.it)).*

Worlds of the Sky  
THE TRANSIT OF THE EXTRA-SOLAR PLANET GJ436b ON THE WEB  
2010 FEBRUARY 20

You are in: [OAB homepage](#) -> Worlds of the Sky Project

Informations about the project "Worlds of the Sky" to the italian web site  
<http://www.crabnebula.it/web/>

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			2010-02-16 21:16:27			

Project promoters

## VERY IMPORTANT: DATABASE EXTRASOLAR TRANSIT LIGHT CURVE

Brera Astronomical Observatory have prepared a database to collect all the available information (data and results) about the extra-solar planet transit. You can upload FITS files, set of zipped FITS files, text files and set of zipped text files:

<http://www.brera.inaf.it/interroga/dbServer?cmd=xo3b>

Results of your photometry can be communicated following any format you like. We anyway encourage you to follow the AVVSO extended format (<http://www.aavso.org/observing/submit/extended.shtml>).

The finally collected data will be available to everybody and managed by the "TERRE DEL CIELO - WORLDS OF THE SKY" organization. You can freely refer to them for any possible use.

In order to access the database you need to register sending an e-mail to Angelo Angeletti ([angelo.angeletti@virgilio.it](mailto:angelo.angeletti@virgilio.it)), Stefano Covino ([stefano.covino@brera.inaf.it](mailto:stefano.covino@brera.inaf.it)), Rodolfo Calanca ([rodolfo.calanca@gmail.com](mailto:rodolfo.calanca@gmail.com)) and Paolo D'Avanzo ([paolo.davanzo@brera.inaf.it](mailto:paolo.davanzo@brera.inaf.it)).

An initiative promoted by: BRERA and PALERMO INAF ASTRONOMICAL OBSERVATORIES - ITALY  
EAN web community  
CRAB NEBULA Astronomical Association  
webzine L'ASTROFILO  
SKYLIVE no-profit Association  
Bareket Observatory - Israel



### ***LINK UTILI PER IL PROGETTO "TERRE DEL CIELO"***

- Il sito dell'Osservatorio INAF di Brera: [www.mi.astro.it](http://www.mi.astro.it)
- Il sito dell'Osservatorio INAF di Palermo: [www.astropa.unipa.it](http://www.astropa.unipa.it)
- Il sito dell'Associazione Crab Nebula: [www.crabnebula.it](http://www.crabnebula.it)
- Il sito SKYLIVE: [www.skylive.it](http://www.skylive.it)
- Il sito dell'Osservatorio di Monte Agliale (Lucca): [www.oama.it](http://www.oama.it)
- Il sito della webzine L'ASTROFILO: [www.astropublishing.com](http://www.astropublishing.com)
- I risultati dell'ultimo ns. progetto sugli extrasolari [www.crabnebula.it/rc/Coelum\\_articoli/Coelum\\_n\\_116\\_pp\\_44-45.pdf](http://www.crabnebula.it/rc/Coelum_articoli/Coelum_n_116_pp_44-45.pdf)
- Angelo Angeletti parla dei transiti negli Atti del 1° Convegno EAN, da p. 36: [www.crabnebula.it/rc/ATTI\\_CONVEGNO\\_CERVAREZZA.pdf](http://www.crabnebula.it/rc/ATTI_CONVEGNO_CERVAREZZA.pdf)
- Procedure per la ricerca dei pianeti extrasolare, articolo su Coelum di R. Calanca: [www.crabnebula.it/rc/Coelum\\_articoli/Coelum\\_n\\_113\\_pp\\_32-37.pdf](http://www.crabnebula.it/rc/Coelum_articoli/Coelum_n_113_pp_32-37.pdf)
- Un manuale utile, scritto a molte mani: [www.crabnebula.it/web/XO-2b/ita/03ita\\_TUTORIAL.pdf](http://www.crabnebula.it/web/XO-2b/ita/03ita_TUTORIAL.pdf)
- Un documento sintetico sui metodi di ripresa dei transiti di R. Calanca: [http://astrofiliatanesi.it/ricerca/esopianeti/n\\_05-calanca.pdf](http://astrofiliatanesi.it/ricerca/esopianeti/n_05-calanca.pdf)
- Un sito di notevole interesse (Associazione Astrofili Catanesi), nel quale troviamo numerose curve di luce di transiti: <http://astrofiliatanesi.it/esopianeti.php>
- Moltissime ed utilissime informazioni sui pianeti in transito nel sito della Czech Astronomical society: <http://var2.astro.cz/ETD/index.php>
- Da consultare anche la pagina dell'AAVSO sugli extrasolari: [www.aavso.org/observing/programs/ccd/transitsearch.shtml](http://www.aavso.org/observing/programs/ccd/transitsearch.shtml)
- Assolutamente da consultare il tutorial di Bruce Gary: [http://brucegary.net/tutorial\\_exoplanet/](http://brucegary.net/tutorial_exoplanet/)
- L'articolo di R. Calanca sul numero di aprile 2010 di L'ASTROFILO: "Osservare pianeti extrasolari col 114": [www.astropublishing.com/](http://www.astropublishing.com/)