Systemic and Transitsearch

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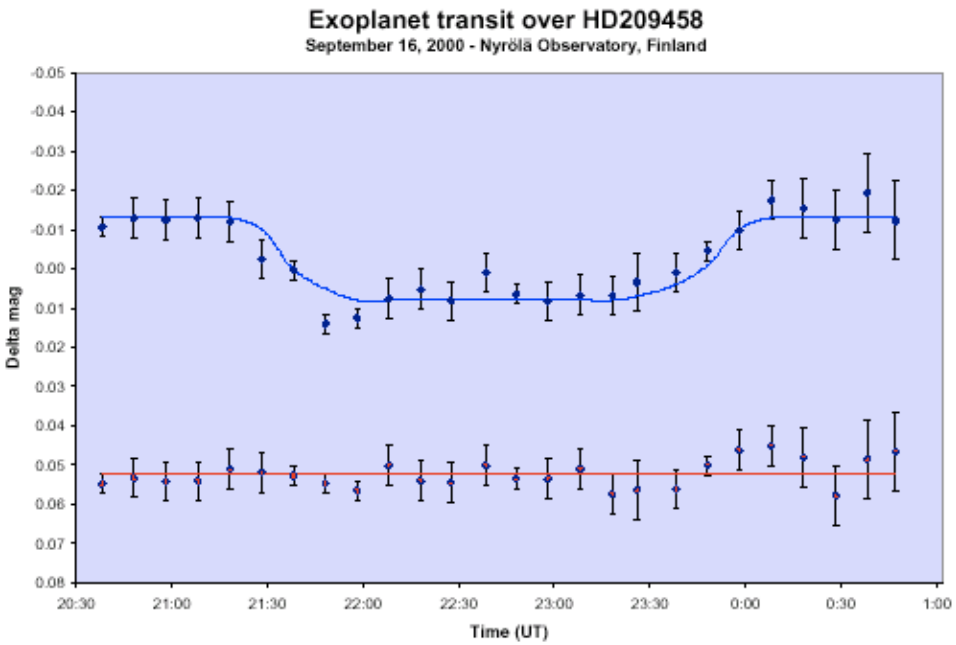
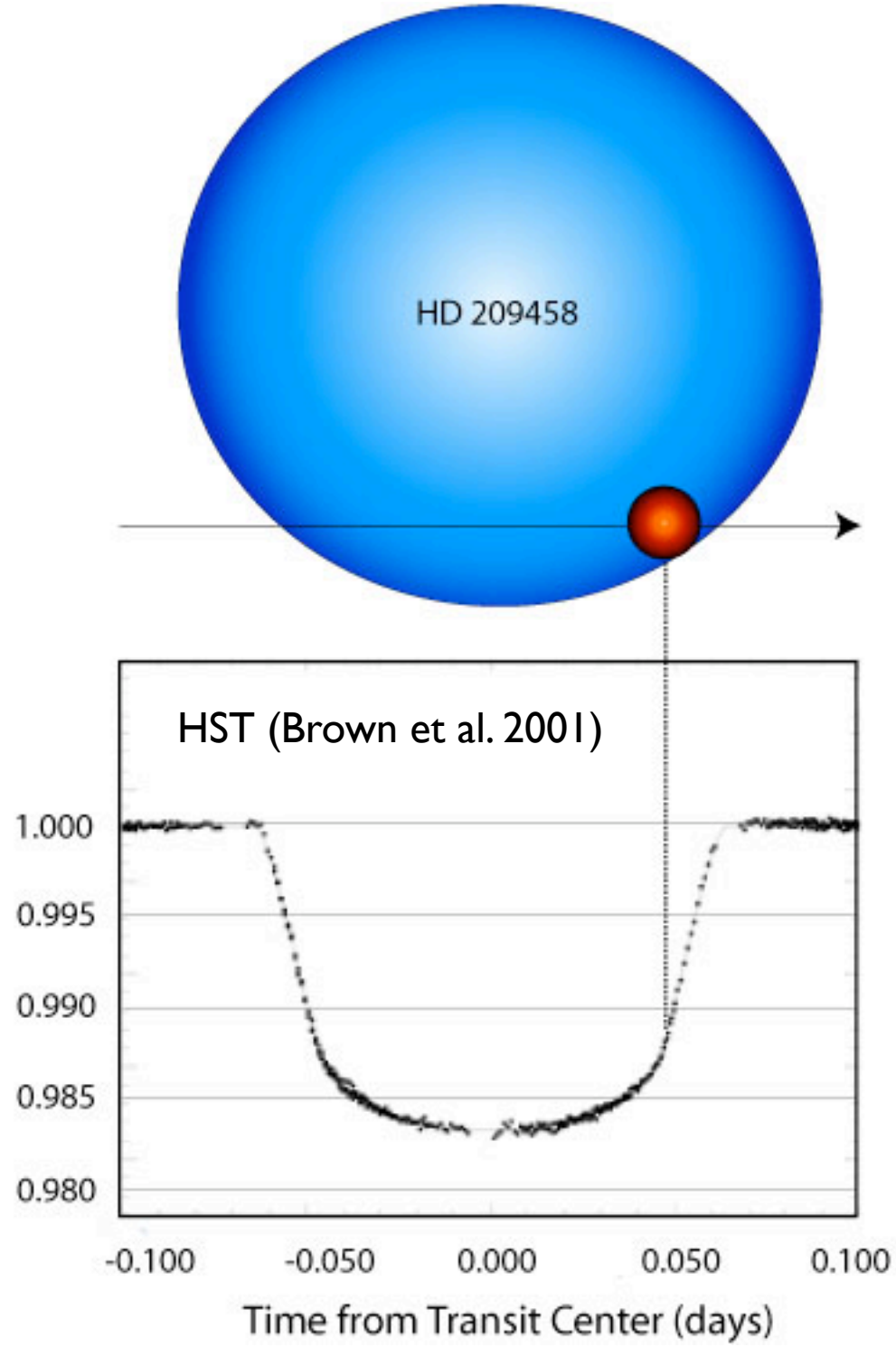
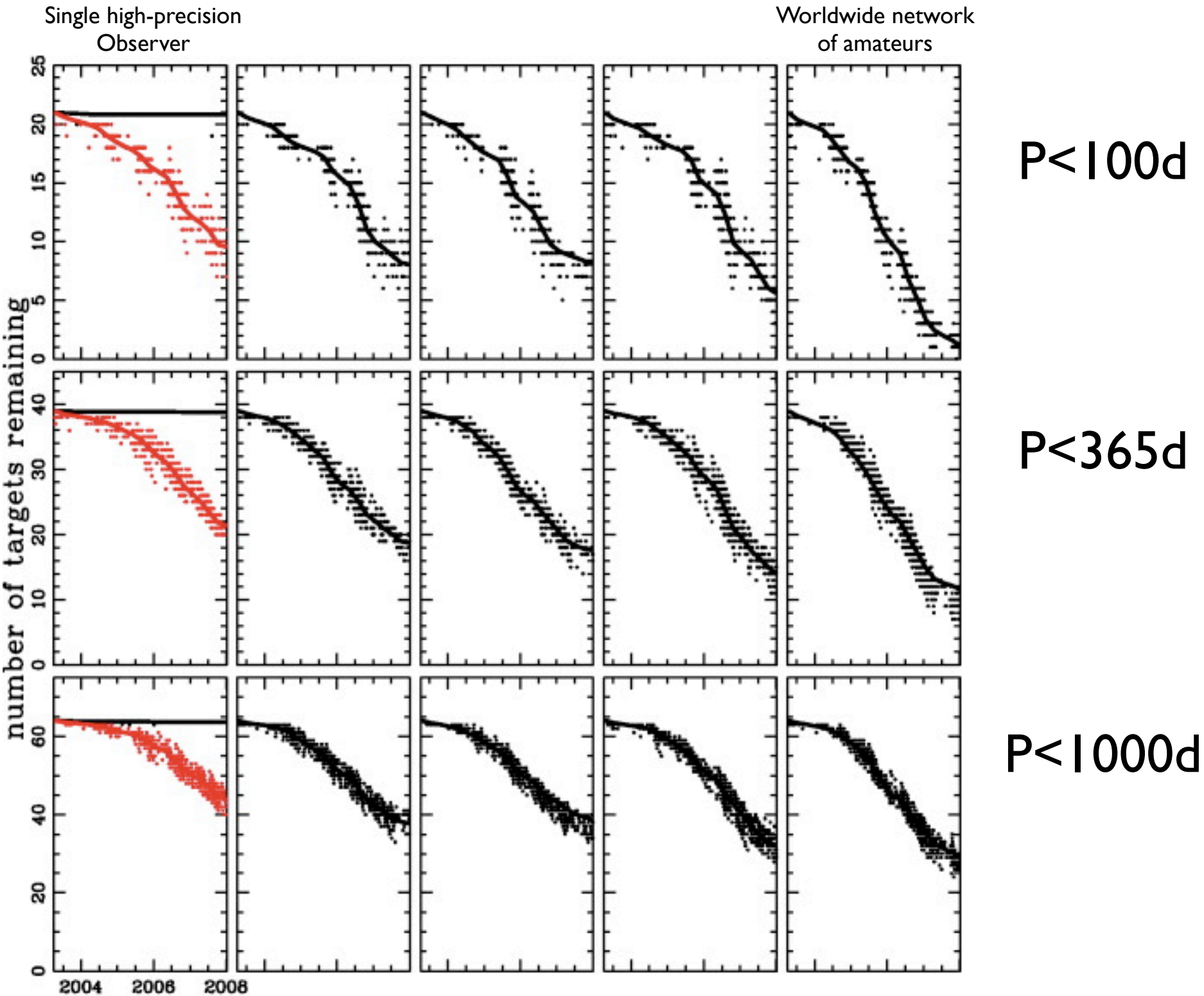
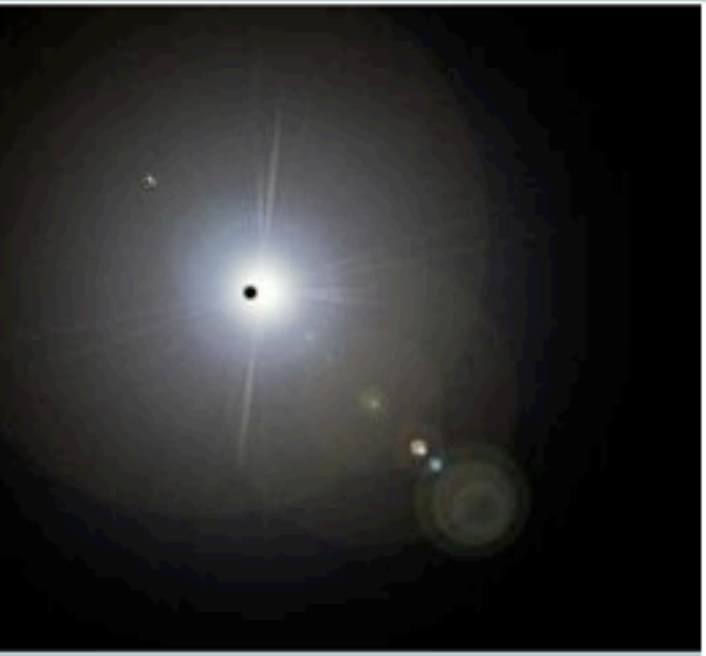
Stefano Meschiari
Aaron Wolf

On Sept. 16, 2000, Arto Oksanen and a group of collaborators in Nyrola, Finland observed the transit of HD 209458b with a 16-inch Meade LX200 and an SBIG ST7E. This observation was reported in Sky and Telescope. They had demonstrated that small-telescope observers could be usefully deployed for photometric follow-up of planets that have been detected by the Doppler method.






Single high-precision Observer
Worldwide network of amateurs
number of targets remaining
0
5
10
15
20
25
0
10
20
30
40
0
20
40
60
2004
2006
2008
P<100d
P<365d
P<1000d



Transitsearch is part of the systemic collaboration. Visit us on the web at **oklo**.org.

Watch the Skies!

Nearly 300 extrasolar planets have been detected in orbit around nearby stars. The discovery that some of these planets can be observed in transit has added an additional element of excitement to the quest for alien solar systems. Furthermore, the past decade has seen the introduction of highly affordable small telescopes equipped with sensitive CCD detectors. Many amateur astronomers own observatories which, when properly configured, are capable of reliably detecting the periodic dimming that occurs when a close-in giant planet passes in front of its parent star as seen from Earth. This technique has been used by amateurs worldwide to detect planetary transits.

Transitsearch enables experienced amateur astronomers to observe and discover transiting extrasolar planets. Our strategy is to observe candidate planet-bearing stars at the dates and times when transits are expected to possibly occur.

Observers worldwide are encouraged to participate. Our campaigns are often carried out in collaboration with the American Association of Variable Star Observers, who maintain campaign websites with discussion groups, sky charts, observing tips, photometric curves, and other information. The transitsearch candidates site provides up-to-date ephemeris and transit search results for a wide variety of candidate stars.

TRANSITSEARCH

Candidates

Click on the Ephemeris links to see tables of predicted transit times.

Star	Planet	Period (days)	P (%)	R.A.	DEC.	Depth (%)	Next Center (UT)	Window	Ephemeris	Results
OGLE-TR56	b	1.212	100.0	17:57	-29:32	1.59	03:41 Jul 27, 2007	out	Ephemeris	Results
TrES-3___	b	1.306	100.0	17:52	+37:33	2.98	04:36 Jul 27, 2007	out	Ephemeris	Results
HD41004B_	b	1.328	13.3	06:00	-48:14	8.80	07:39 Jul 27, 2007	out	Ephemeris	Results
OGLETR113	b	1.432	100.0	10:52	-61:27	2.28	06:39 Jul 28, 2007	out	Ephemeris	Results
OGLETR132	b	1.690	100.0	10:50	-61:57	0.80	02:24 Jul 27, 2007	out	Ephemeris	Results
GJ876____	d	1.938	6.9	22:53	-14:15	0.35	19:30 Jul 28, 2007	out	Ephemeris	Results
HD86081__	b	2.138	17.3	09:56	-03:48	1.00	22:42 Jul 27, 2007	out	Ephemeris	Results
WASP-2___	b	2.152	100.0	20:31	+06:26	2.01	13:02 Jul 28, 2007	out	Ephemeris	Results
HD189733_	b	2.219	100.0	20:01	+22:43	2.63	23:54 Jul 28, 2007	out	Ephemeris	Results
HD212301_	b	2.246	17.3	22:27	-77:43	0.97	07:23 Jul 27, 2007	out	Ephemeris	Results
TrES-2___	b	2.471	100.0	19:07	+49:19	1.69	10:27 Jul 29, 2007	out	Ephemeris	Results
WASP-1___	b	2.520	100.0	00:21	+31:59	1.54	04:02 Jul 29, 2007	out	Ephemeris	Results
HD73256__	b	2.549	12.1	08:36	-30:02	1.80	22:44 Jul 28, 2007	out	Ephemeris	Results
XO-2_____	b	2.616	100.0	07:48	+50:14	1.15	10:20 Jul 28, 2007	out	Ephemeris	Results
GJ436____	b	2.644	100.0	11:42	+26:42	0.83	08:42 Jul 28, 2007	out	Ephemeris	Results
55cancri_	e	2.817	10.1	08:53	+28:20	0.065	15:11 Jul 27, 2007	out	Ephemeris	Results
HD63454__	b	2.818	11.4	07:39	-78:16	2.08	21:47 Jul 27, 2007	out	Ephemeris	Results
HD149026_	b	2.876	100.0	16:30	+38:21	0.29	15:23 Jul 28, 2007	out	Ephemeris	Results
HAT-P-3__	b	2.900	100.0	13:48	+45:00	1.34	03:36 Jul 27, 2007	out	Ephemeris	Results
HD83443__	b	2.986	13.9	09:37	-43:16	1.18	03:44 Jul 29, 2007	out	Ephemeris	Results
HD46375__	b	3.024	13.5	06:33	+05:28	1.38	02:22 Jul 28, 2007	out	Ephemeris	Results
TrES-1___	b	3.030	100.0	19:04	+36:38	1.93	11:07 Jul 29, 2007	out	Ephemeris	Results
HD179949_	b	3.093	13.3	19:16	-24:11	1.05	23:52 Jul 28, 2007	out	Ephemeris	Results
HD187123_	b	3.097	13.5	19:47	+34:25	1.08	02:19 Jul 28, 2007	out	Ephemeris	Results
OGLE-TR10	b	3.101	100.0	17:51	-29:53	1.03	20:24 Jul 27, 2007	out	Ephemeris	Results
tau_boo__	b	3.312	16.3	13:47	+17:27	0.57	02:24 Jul 29, 2007	out	Ephemeris	Results

Predicted Transit Epochs: HAT-P-3__ b

Observed Transit Duration: 123.5 Minutes

Begin Transit Window						PREDICTED CENTRAL TRANSIT All Times UT						End Transit Window					
						HJD	Year	M	D	H	M						
2454221.61	2007	5	1	2	43	2454221.66	2007	5	1	3	49	2454221.70	2007	5	1	4	55
2454224.51	2007	5	4	0	18	2454224.56	2007	5	4	1	24	2454224.60	2007	5	4	2	30
2454227.41	2007	5	6	21	54	2454227.46	2007	5	6	23	0	2454227.50	2007	5	7	0	6
2454230.31	2007	5	9	19	29	2454230.36	2007	5	9	20	35	2454230.40	2007	5	9	21	42
2454233.21	2007	5	12	17	5	2454233.26	2007	5	12	18	11	2454233.30	2007	5	12	19	17
2454236.11	2007	5	15	14	40	2454236.16	2007	5	15	15	46	2454236.20	2007	5	15	16	53
2454239.01	2007	5	18	12	16	2454239.06	2007	5	18	13	22	2454239.10	2007	5	18	14	29
2454241.91	2007	5	21	9	51	2454241.96	2007	5	21	10	58	2454242.00	2007	5	21	12	4
2454244.81	2007	5	24	7	27	2454244.86	2007	5	24	8	33	2454244.90	2007	5	24	9	40
2454247.71	2007	5	27	5	2	2454247.76	2007	5	27	6	9	2454247.80	2007	5	27	7	15
2454250.61	2007	5	30	2	38	2454250.66	2007	5	30	3	44	2454250.70	2007	5	30	4	51
2454253.51	2007	6	2	0	13	2454253.56	2007	6	2	1	20	2454253.60	2007	6	2	2	27
2454256.41	2007	6	4	21	49	2454256.46	2007	6	4	22	55	2454256.50	2007	6	5	0	2
2454259.31	2007	6	7	19	24	2454259.36	2007	6	7	20	31	2454259.40	2007	6	7	21	38
2454262.21	2007	6	10	17	0	2454262.25	2007	6	10	18	7	2454262.30	2007	6	10	19	14
2454265.11	2007	6	13	14	35	2454265.15	2007	6	13	15	42	2454265.20	2007	6	13	16	49
2454268.01	2007	6	16	12	10	2454268.05	2007	6	16	13	18	2454268.10	2007	6	16	14	25
2454270.91	2007	6	19	9	46	2454270.95	2007	6	19	10	53	2454271.00	2007	6	19	12	1
2454273.81	2007	6	22	7	21	2454273.85	2007	6	22	8	29	2454273.90	2007	6	22	9	36
2454276.71	2007	6	25	4	57	2454276.75	2007	6	25	6	4	2454276.80	2007	6	25	7	12
2454279.61	2007	6	28	2	32	2454279.65	2007	6	28	3	40	2454279.70	2007	6	28	4	48
2454282.51	2007	7	1	0	8	2454282.55	2007	7	1	1	16	2454282.60	2007	7	1	2	23
2454285.41	2007	7	3	21	43	2454285.45	2007	7	3	22	51	2454285.50	2007	7	3	23	59
2454288.31	2007	7	6	19	19	2454288.35	2007	7	6	20	27	2454288.40	2007	7	6	21	35
2454291.20	2007	7	9	16	54	2454291.25	2007	7	9	18	2	2454291.30	2007	7	9	19	10
2454294.10	2007	7	12	14	30	2454294.15	2007	7	12	15	38	2454294.20	2007	7	12	16	46
2454297.00	2007	7	15	12	5	2454297.05	2007	7	15	13	13	2454297.10	2007	7	15	14	22
2454299.90	2007	7	18	9	41	2454299.95	2007	7	18	10	49	2454300.00	2007	7	18	11	57
2454302.80	2007	7	21	7	16	2454302.85	2007	7	21	8	25	2454302.90	2007	7	21	9	33
2454305.70	2007	7	24	4	52	2454305.75	2007	7	24	6	0	2454305.80	2007	7	24	7	8
2454308.60	2007	7	27	2	27	2454308.65	2007	7	27	3	36	2454308.70	2007	7	27	4	44
2454311.50	2007	7	30	0	3	2454311.55	2007	7	30	1	11	2454311.60	2007	7	30	2	20
2454314.40	2007	8	1	21	38	2454314.45	2007	8	1	22	47	2454314.50	2007	8	1	23	55
2454317.30	2007	8	4	19	14	2454317.35	2007	8	4	20	22	2454317.40	2007	8	4	21	31
2454320.20	2007	8	7	16	49	2454320.25	2007	8	7	17	58	2454320.30	2007	8	7	19	7

TRANSITSEARCH

HOME

Candidate Assignment Algorithm

Block

Longitude: ○ East ● West — 120 Degrees 00 Minutes

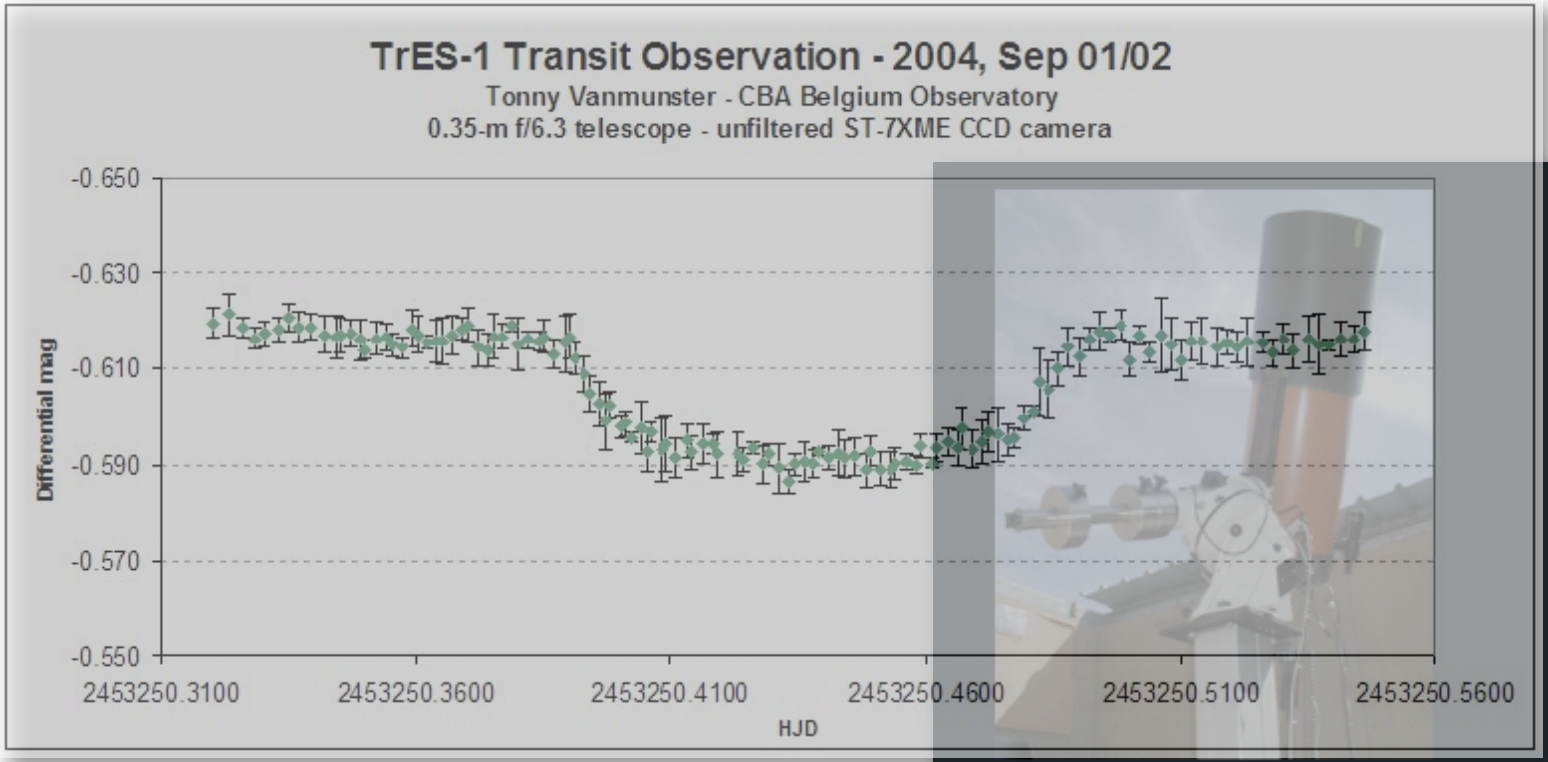
Latitude: ● North ○ South — 37 Degrees 00 Minutes

Date (of local start time): 07 / 27 / 2007 (Month / Day / Year)

Local Start Time: (24 hour clock) 22 : 00 Local End Time: (24 hour clock) 03 : 00

Submit

Star Name	Right Ascension	Declination	'Rise Time'	'Set Time'	Transit Probability
HD219828_b	23:19	18:39	23:05	07:53	0.039
HD187123_b	19:47	34:25	18:53	05:01	0.022
Ups_And__b	1:37	41:25	00:26	11:08	0.011
TrES-3___b	17:52	37:33	16:50	03:13	0.0027
HD149143_b	16:33	2:5	17:10	00:16	0.0020
HD188753Ab	19:55	41:52	18:43	05:27	9.4E-4
HD149026_b	16:30	38:21	15:26	01:53	9.0E-5



CBA Belgium Observatory features two CCD-equipped 0.35-m (14 inch) Celestron Schmidt-Cassegrain telescopes on computerized mounts

The Astrophysical Journal, 621:1072-1078, 2005 March 10
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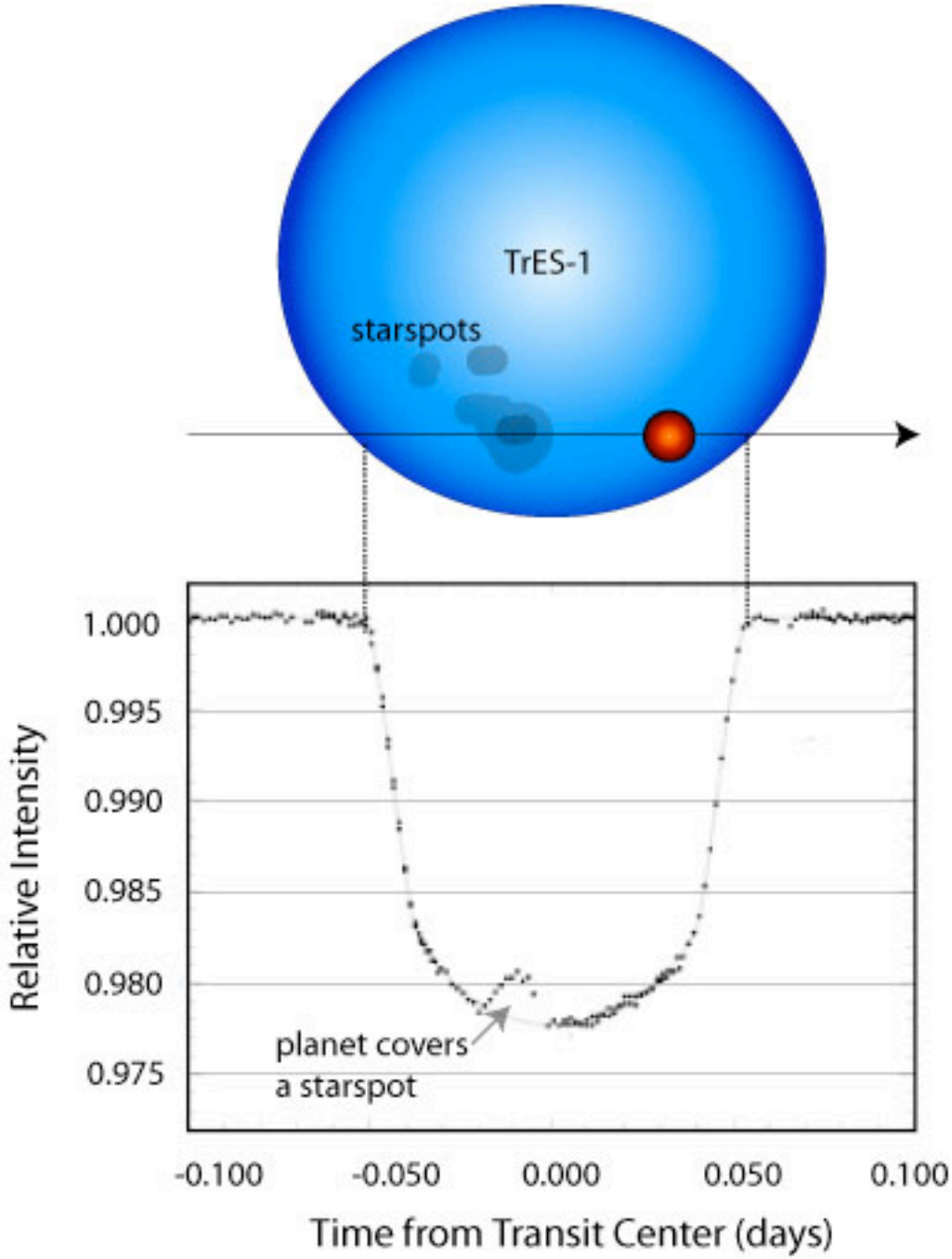
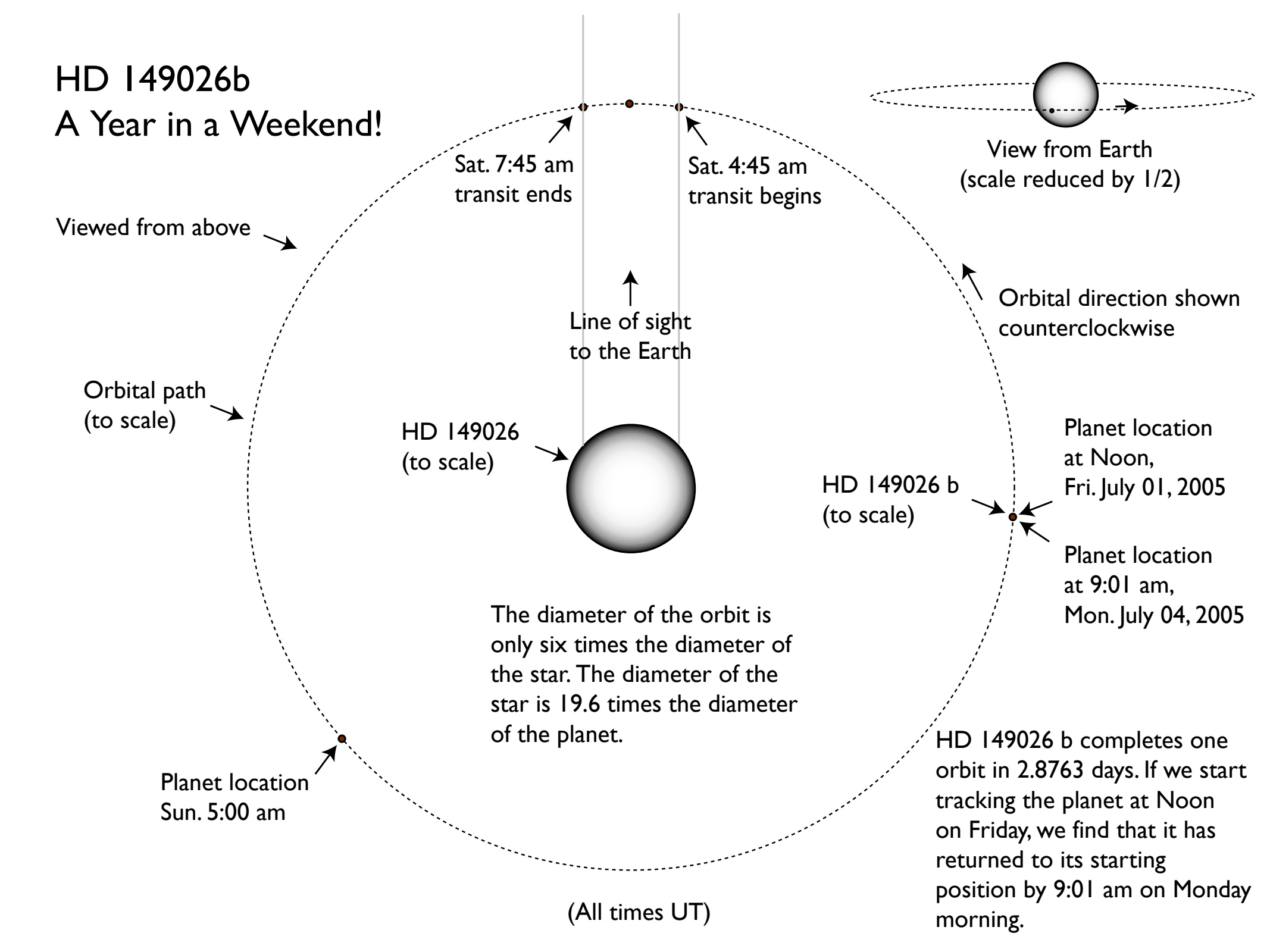
A Comparison of Observationally Determined Radii with Theoretical Radius Predictions for Short-Period Transiting Extrasolar Planets

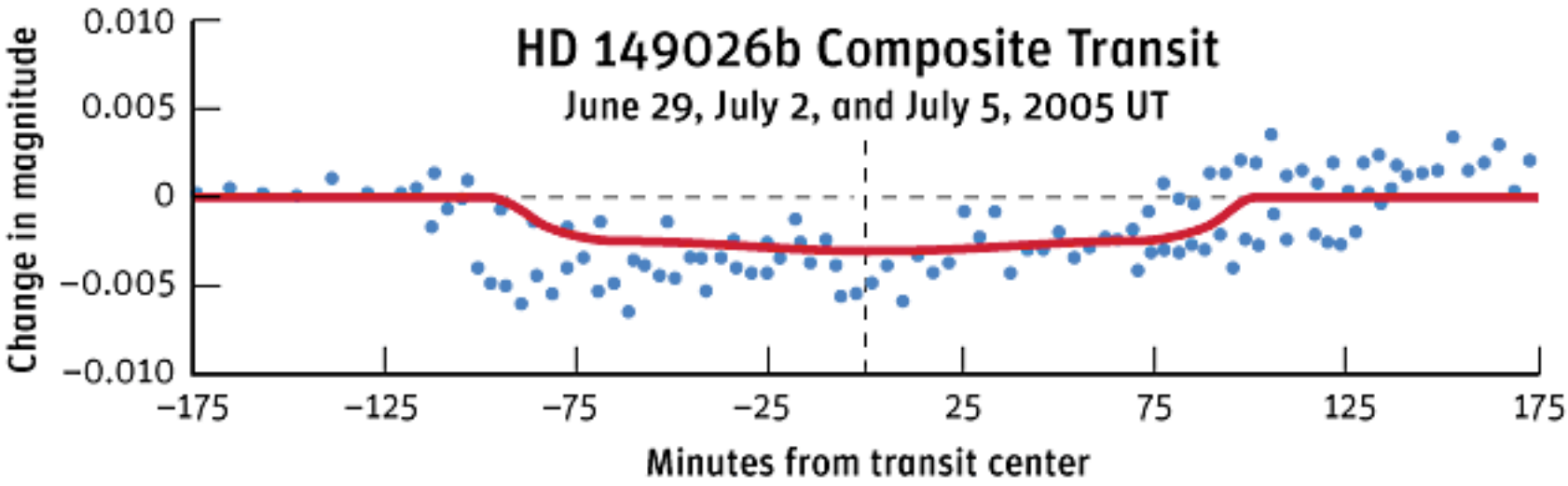
Gregory Laughlin ,[1] Aaron Wolf ,[1] Tonny Vanmunster ,[2] Peter Bodenheimer ,[1] Debra Fischer ,[3] Geoff Marcy ,[4] Paul Butler ,[5] and Steve Vogt [1]



HST showed that the amateurs were indeed seeing something interesting -- starspots!


HD 149026b
A Year in a Weekend!
Sat. 7:45 am
transit ends
Sat. 4:45 am
transit begins
View from Earth
(scale reduced by 1/2)
Viewed from above
Line of sight
to the Earth
Orbital direction shown
counterclockwise
Orbital path
(to scale)
HD 149026
(to scale)
HD 149026 b
(to scale)
Planet location
at Noon,
Fri. July 01, 2005
Planet location
at 9:01 am,
Mon. July 04, 2005
The diameter of the orbit is only six times the diameter of the star. The diameter of the star is 19.6 times the diameter of the planet.
Planet location
Sun. 5:00 am
HD 149026 b completes one orbit in 2.8763 days. If we start tracking the planet at Noon on Friday, we find that it has returned to its starting position by 9:01 am on Monday morning.
(All times UT)

Transitsearch.org observer Ron Bissinger



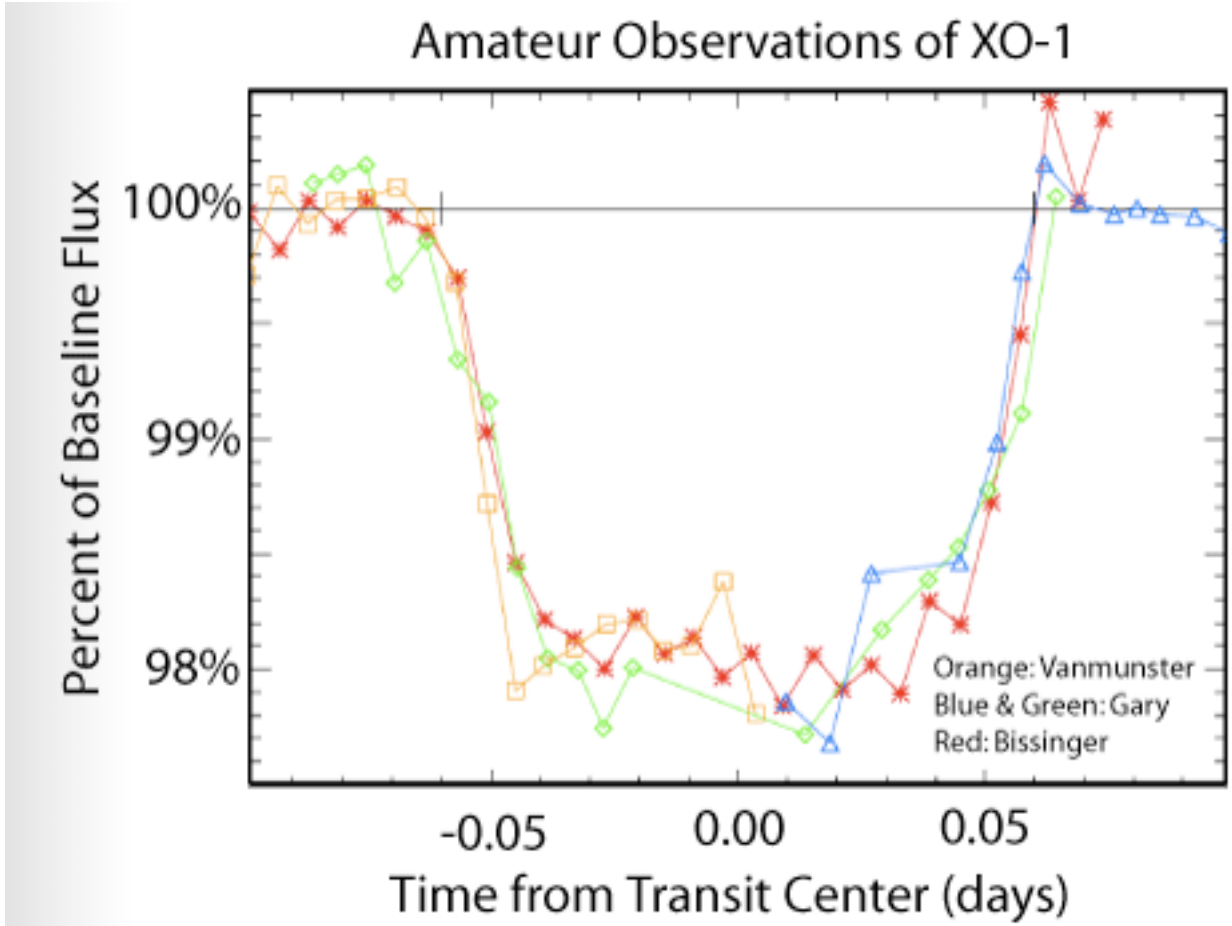
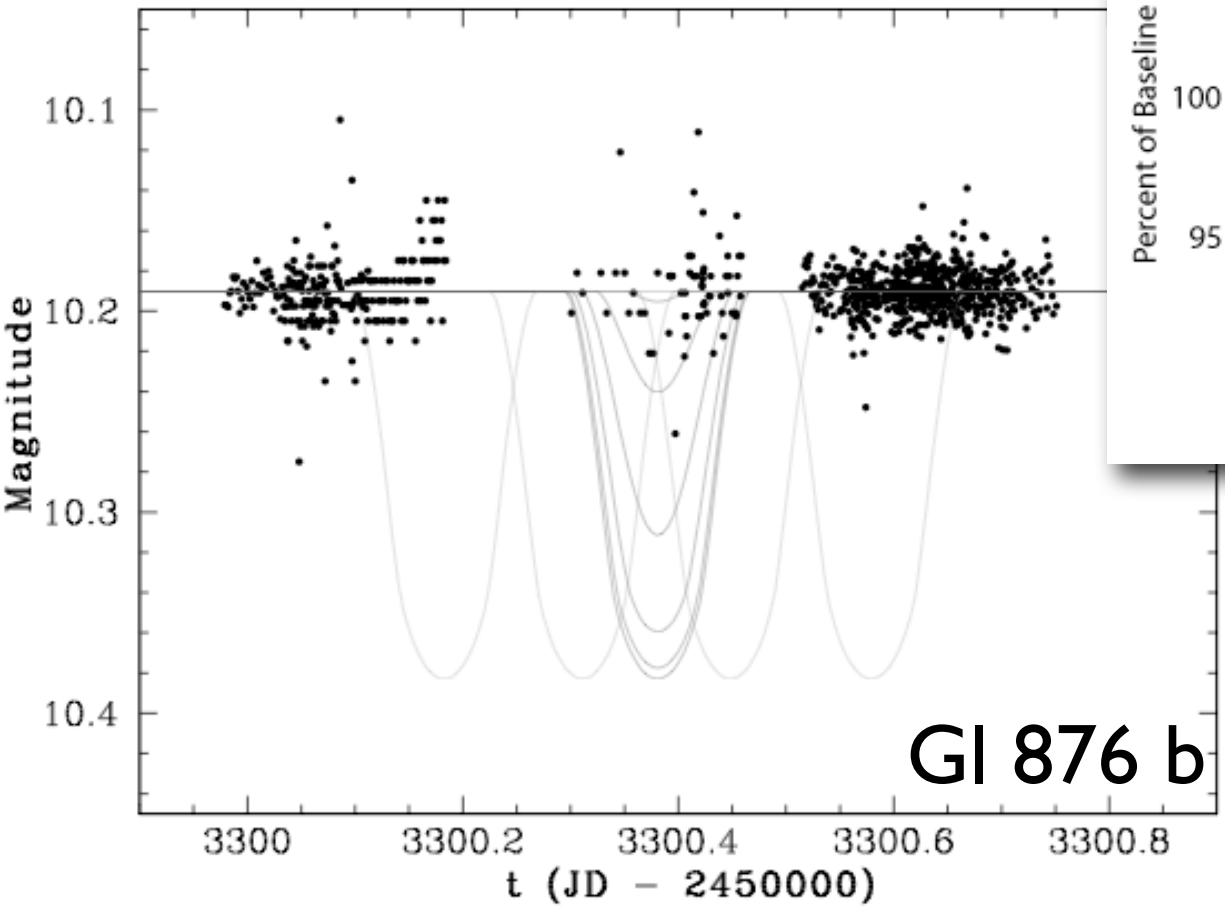
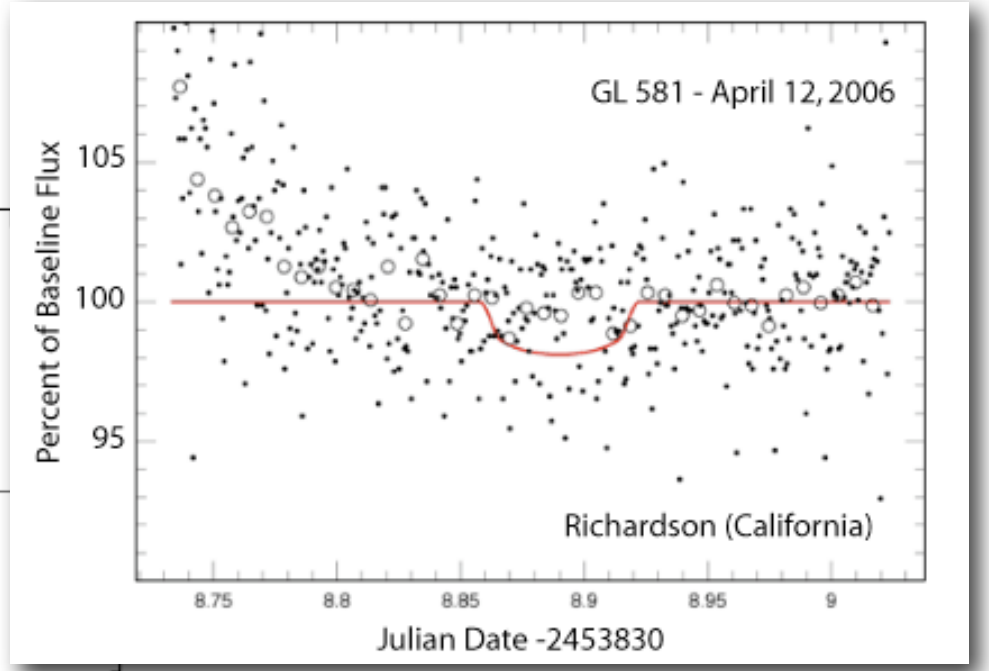


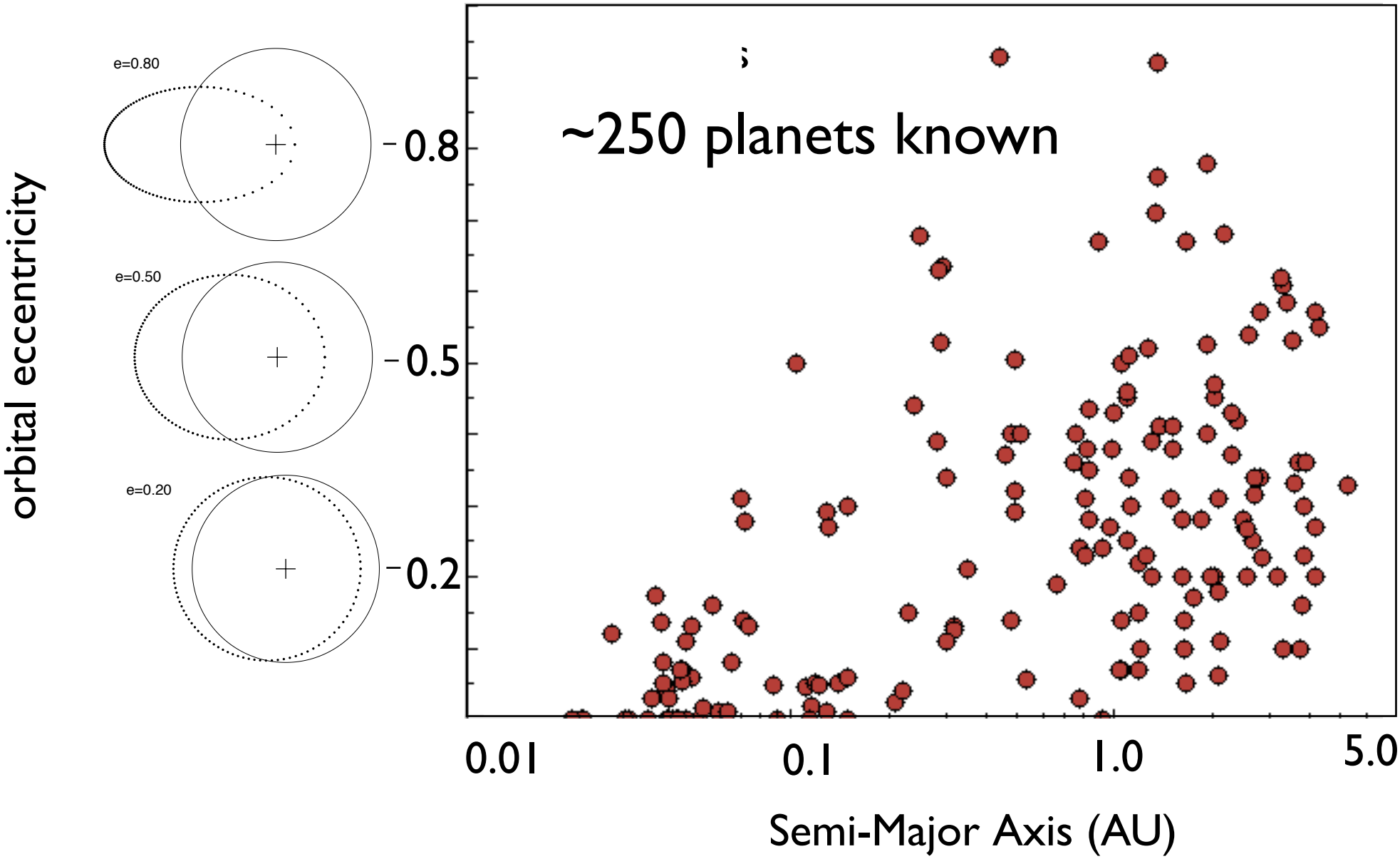
Figure adapted from the McCollough et al. paper.

Transitsearch volunteers are now contributing to successful search efforts such as the X0 wide-field survey





Ongoing transitsearch campaigns are run jointly with AAVSO, who provide "back-end" coordination of photometry submission and archiving. We've ruled out transits for a number of planet-bearing stars.



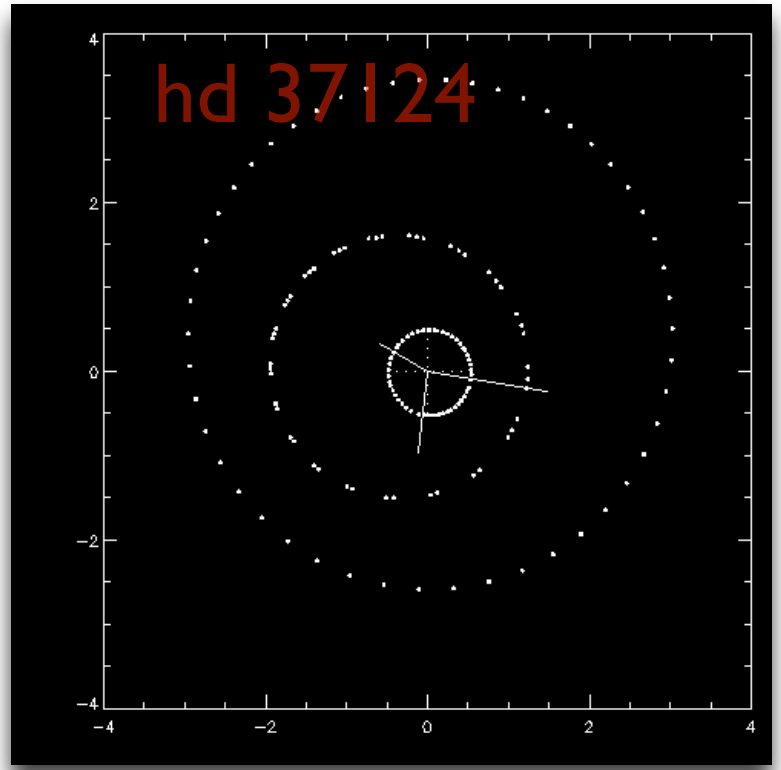
Nobody remembers who discovered the 200th asteroid, but we do remember and appreciate the Kirkwood Gaps.

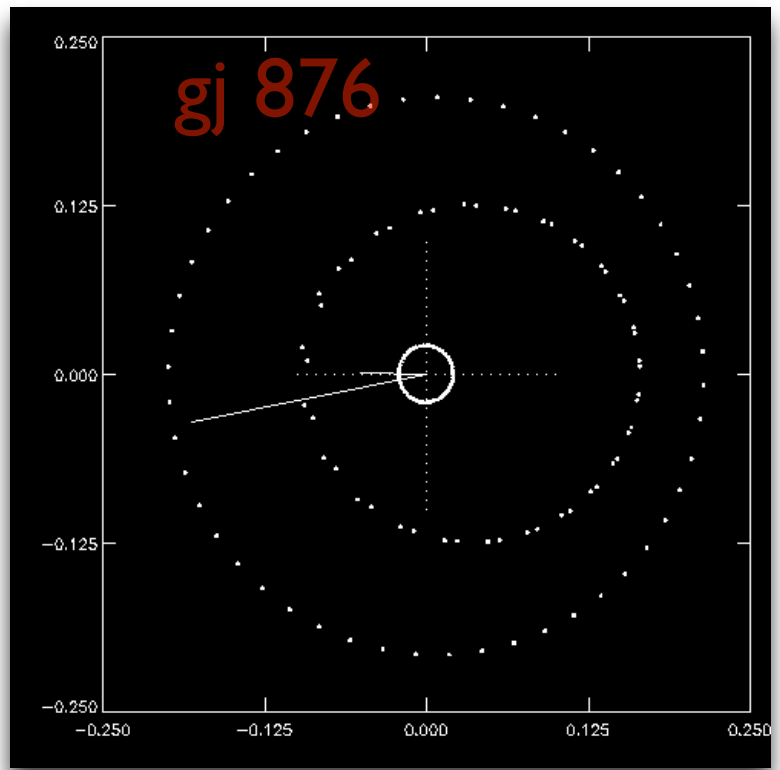
Interesting Questions

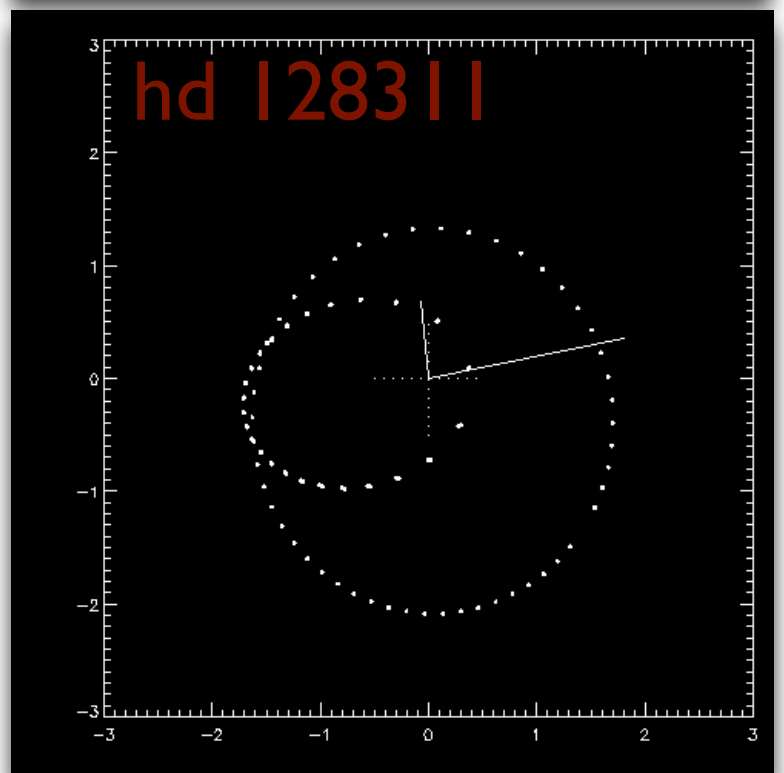
Can we develop better characterization of multiple-planet interacting systems?

What is the real a-e distribution?

When will we know how our solar system fits into the galactic planetary census?







Many of these questions can be addressed by a large-scale Monte Carlo simulation -- systemic

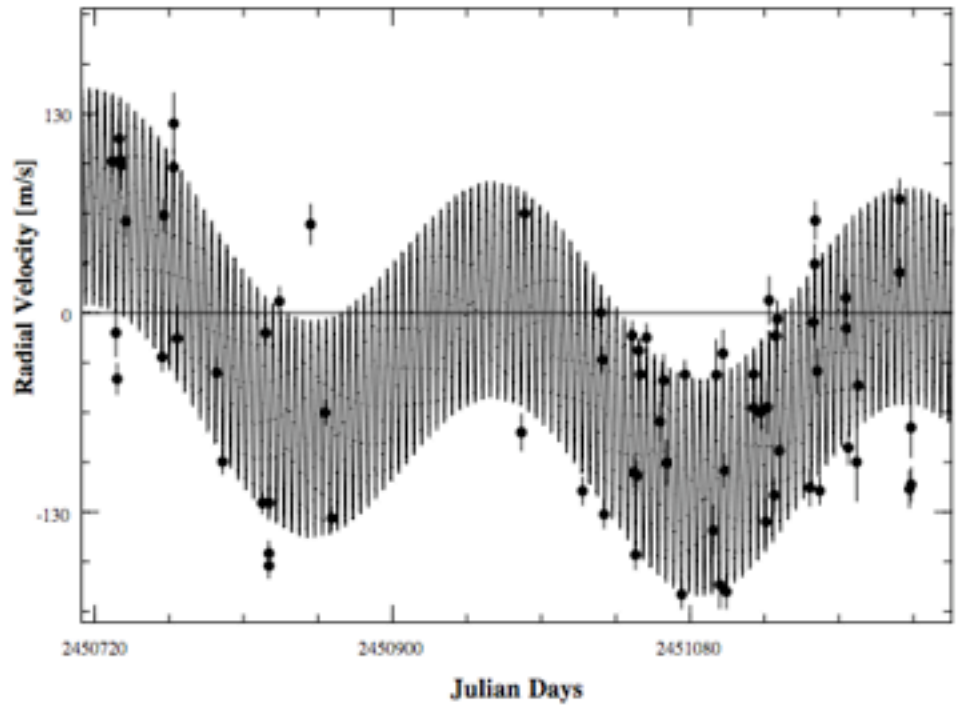
1. 100,000 star catalog based on Hipparcos. Take all known stellar properties, and scramble RA.

2. Create synthetic planetary systems for these stars. Try to be absolutely as creative as possible. Idea is to be able to draw subset distributions after the fact.

3. Integrate each system for one million years to sort out severe dynamical instabilities. (Assume Inelastic collisions).

4. Observe these systems. Our "TAC" program uses realistic cadences, S/N, Earth location, weather, etc. to generate radial velocity data sets that are similar to those obtained by the major observatories and teams HARPS, Keck, HET, etc.

5. Provide interface and tools for public participation.



Real Star System: upsand_4datasets_B06L

Systemic Jr System: systemicJR_001

Integration Method: Simple Keplerian Advancement

POLISH | SONIFY | STOP | REDRAW

Set crvSamplePoints: 25000 Keep Old Params

Orbital view

+ | - | >

Palette

Fit properties >

χ^2	7.555
RMS [m/s]	24.523
Jitter [m/s]	22.492

Velocity Offsets
(Telescopes relative to: upsand_B06L.vels)

Stellar Offset	4.05
upsand_AFOE99.vels	-3.29
upsand_ELODIE04.vels	-4.93
upsand_HJS06.vels	-21.26

Zoom 0.929

Scroll 0.169

Period [days]	Mass [MJupiter]	Mean Anomaly [deg]	Eccentricity	Long Peri [deg]
4.617204	0.6896	56.813	0.0026	4.493
241.038952	2.1237	266.010	0.0001	1.317
1,255.585123	3.5302	98.580	0.0000	6.048
100.000000	1.0000	0.000	0.0000	0.000
100.000000	1.0000	0.000	0.0000	0.000

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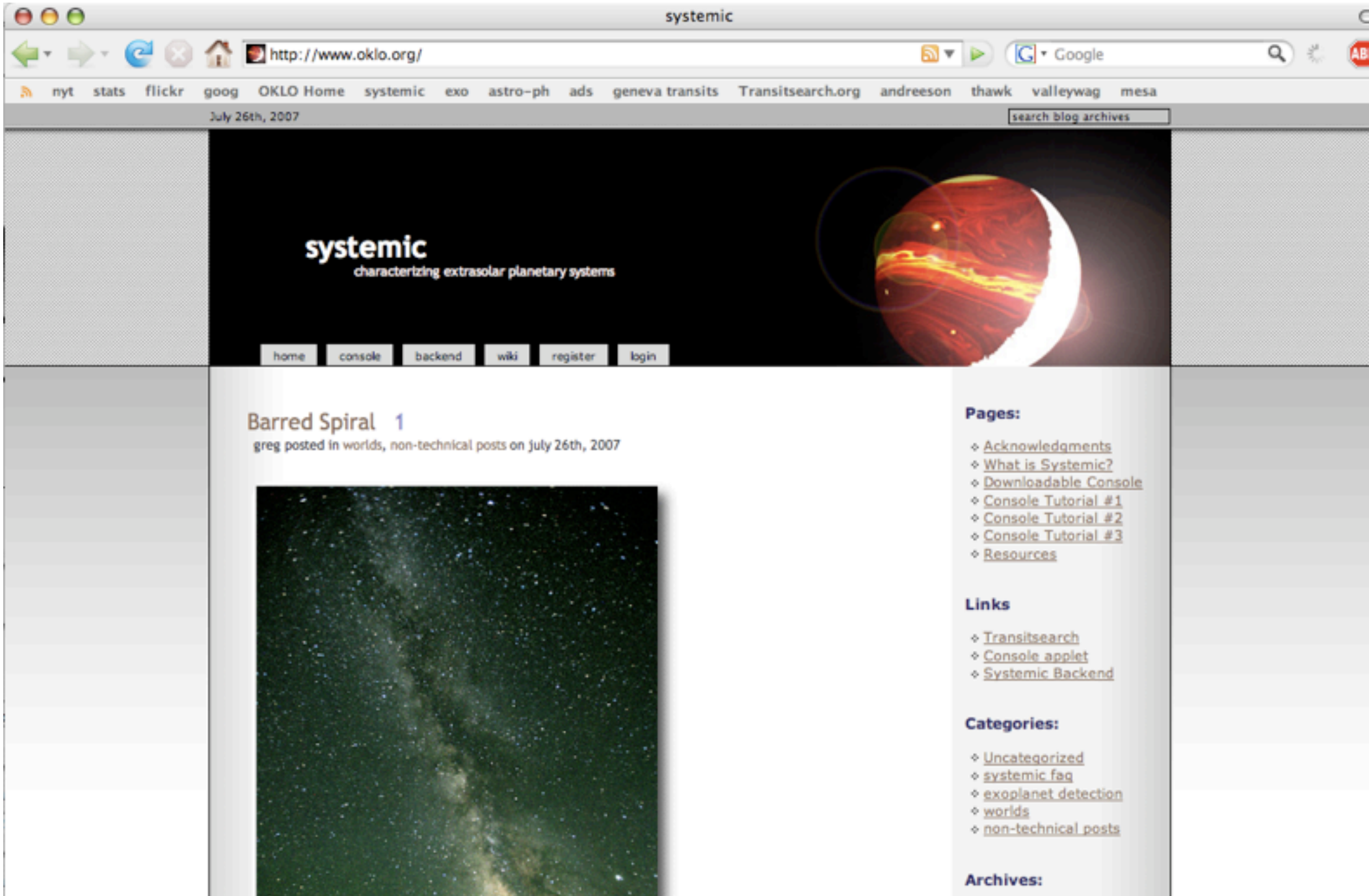
systemic
http://www.oklo.org/
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nyt stats flickr goog OKLO Home systemic exo astro-ph ads geneva transits Transitsearch.org andreeson thawk valleywag mesa
July 26th, 2007
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characterizing extrasolar planetary systems
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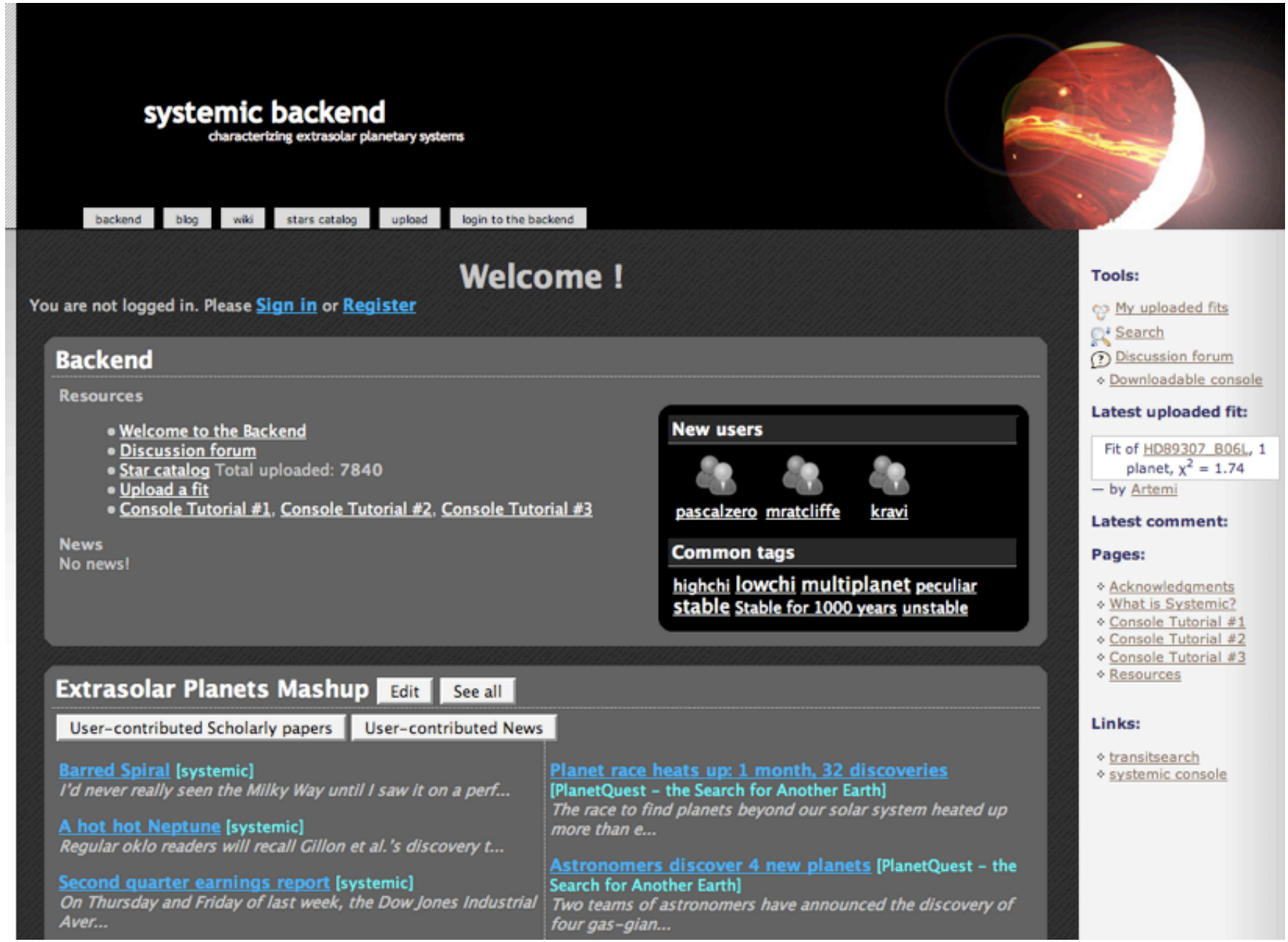
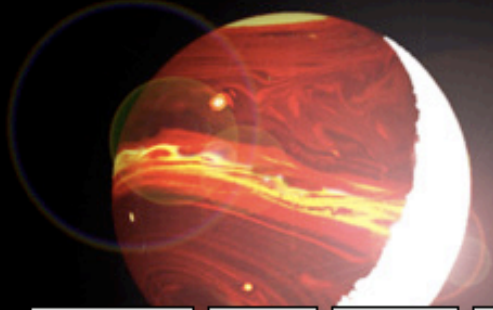
Barred Spiral 1
greg posted in worlds, non-technical posts on july 26th, 2007
Pages:
Acknowledgments
What is Systemic?
Downloadable Console
Console Tutorial #1
Console Tutorial #2
Console Tutorial #3
Resources
Links
Transitsearch
Console applet
Systemic Backend
Categories:
Uncategorized
systemic faq
exoplanet detection
worlds
non-technical posts
Archives:

We have developed a collaborative "backend" for the systemic project website which aggregates the distributed effort. It's fully functioning, and has access to all of the published radial velocity data on which the known extrasolar planets are based.



systemic backend

characterizing extrasolar planetary systems



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greg's page | people | settings

Choose catalog

» Real stars

» Systemic Jr.

greg's Messages

Inbox (104)

Outbox (52)

Colleagues re

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My uploaded fi

Search

Discussion foru

Downloadable c

Latest uploaded

Fit of HD89307_I
planet, χ^2 =

— by Artemi

Latest commen

Stars catalog

Catalog view: Real stars sorted by: Star name – Search

Star	# of uploads	Last upload on	by	Best on	by
14Her K0V star.	67	2007-07-17 02:23:30	schneidi	2007-03-01 20:49:31	EricFDiaz
14Her_B06K K0V star.	33	2007-04-25 11:14:55	ColSmeghead	2007-03-01 21:32:36	EricFDiaz
14Her_B06K_3datasets K0V star.	53	2007-06-28 14:39:12	luis	2007-03-01 21:22:14	EricFDiaz
14Herb K0V star.	10	2007-05-06 04:17:03	petej	2007-02-26 08:15:30	EricFDiaz
16cygB G3V star.	31	2007-06-18 23:58:20	Artemi	2006-10-08 22:51:43	EricFDiaz
16cygB_B06L G3V star.	27	2007-04-25 12:07:01	ColSmeghead	2006-09-21 17:50:47	emarksmi
16cygB_B06L_3datasets G3V star.	29	2007-06-14 16:12:59	luis	2007-03-01 23:01:34	EricFDiaz
47uma G1V star.	46	2007-06-18 23:59:24	Artemi	2007-03-08 15:46:17	EricFDiaz
47uma_4datasets G1V star.	27	2007-05-05 00:43:16	migal	2006-09-27 08:00:40	andy
51peg G2.5IVa star.	38	2007-07-07 23:08:27	rfrench	2007-03-09 17:09:46	EricFDiaz
51peg_B06L G2.5IVa star.	43	2007-07-13	japf	2006-10-23	flanker

55cancri

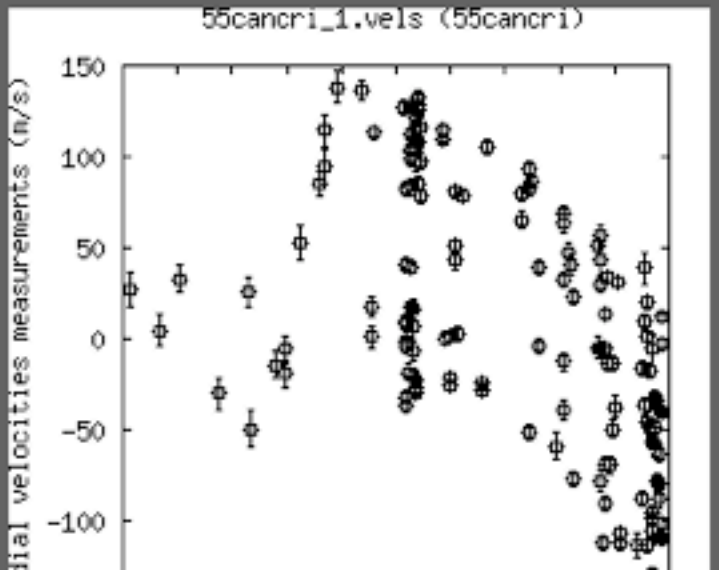
» Wiki page

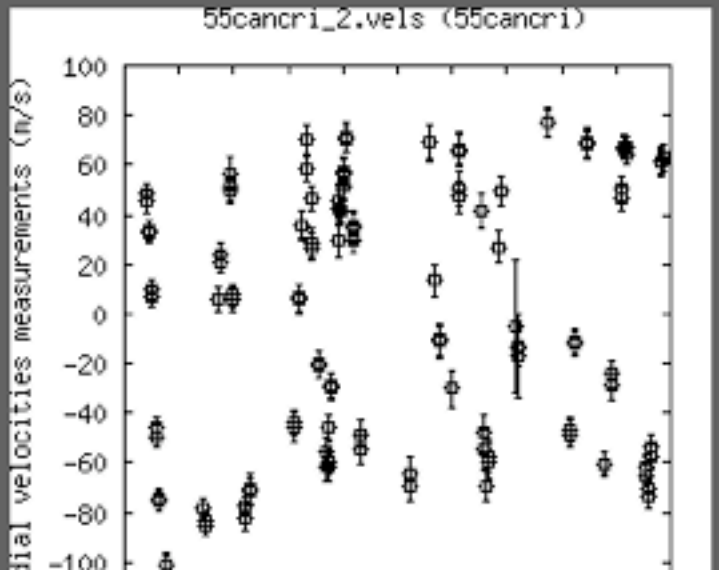
Mass	0.95 M_{sun}
Spectral type	G8V
B, V magnitude	6.82, 5.95
Radial velocity (m/s)	v +26.6
Coordinates	08 52 35.8112 +28 19 50.947

▷ More properties...

▷ Tools on the web...

Raw Radial velocity observations





Stable fits for 55cancri

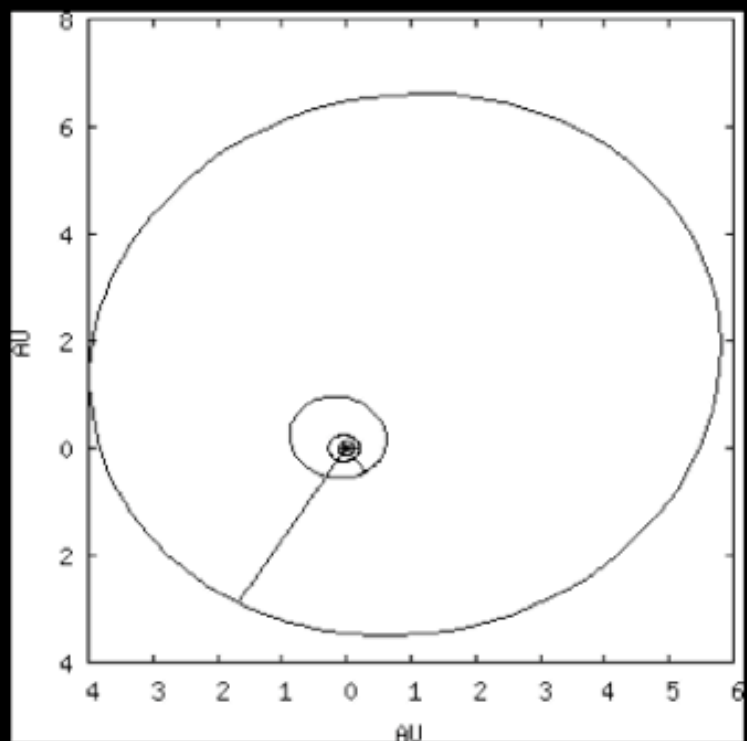
	χ^2	Planets	Uploaded on	by	# comments
	2.27	5	2007-03-03, 14:06:34	EricFDiaz	0
	Stable for at least 100 years				
	2.28	5	2007-02-06, 18:14:04	thiessen	1
	Stable for at least 100 years				
	2.43	5	2007-01-17, 08:44:19	flanker	8
	Stable for at least 1000 years				
	2.44	5	2006-10-22, 23:31:10	flanker	2
	Stable for at least 100 years				
	2.45	5	2007-01-17, 10:03:14	EricFDiaz	6
	Stable for at least 1000 years				

Admin: Fix fit – Delete fit – Refresh thumbnail – Put this on the robot queue

view | comments (1) | Report | Download | Add to library

55cancri

5-planets fit
Tags:



Added on	2007-02-06, 18:14:04
By	thiessen
URL	http://www.oklo.org/php/
Wiki code	%fit%|55cancri|ba989cb42

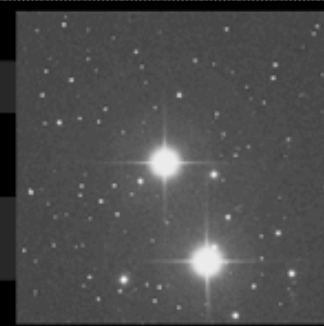
Fit parameters

χ^2	2.28
R.M.S.	6.96
Jitter	4.26

Stability check: Stable for at least 100 years.

Star

Star name	55cancri	
Star mass	0.95	M_{sun}
Overall offset	17.19	m/s
Initial epoch	7578.73	JD



55cancri (A)

Period	P = 14.65	days
Semi-major axis	a = 0.11	AU
Eccentricity	e = 0.01	
Mass	M = 0.82	$M_{Jupiter}$
Longitude of pericentre	ω = 119.48	deg
Mean anomaly	MA = 214.68	deg

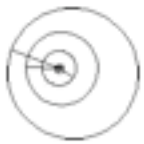
55cancri (D)

Period	$P = 256.83$	days
Semi-major axis	$a = 0.77$	AU
Eccentricity	$e = 0.31$	
Mass	$M = 0.11$	$M_{Jupiter}$
Longitude of pericentre	$\omega = 303.43$	deg
Mean anomaly	$MA = 319.49$	deg

Latest comments

7-planets fit of HD13189 by bruce01
10.03.06, 07:56:51
bruce01 says: *A little research of the literature confirms that the short period radial velocity variations are likely due to stellar processes. This is a K giant star. Such stars are known to have radial velocity variations with periods of many days due to spots, rotation, and pulsations. So, all the short period "planets" in this fit are artifacts of the star.*

7-planets fit of HD13189 by bruce01
10.02.06, 07:04:24
bruce01 says: *This star is listed at 4.5 solar masses, somewhat more massive than most of the stars in the catalog. Does that explain the poor chi square? Are the short period velocity variations in the data due to planets or due to random motions of the stellar atmosphere?*



5-planets fit of HD168746_B06K by goldrake
09.30.06, 07:55:05
goldrake says: *A CPU error is occured*

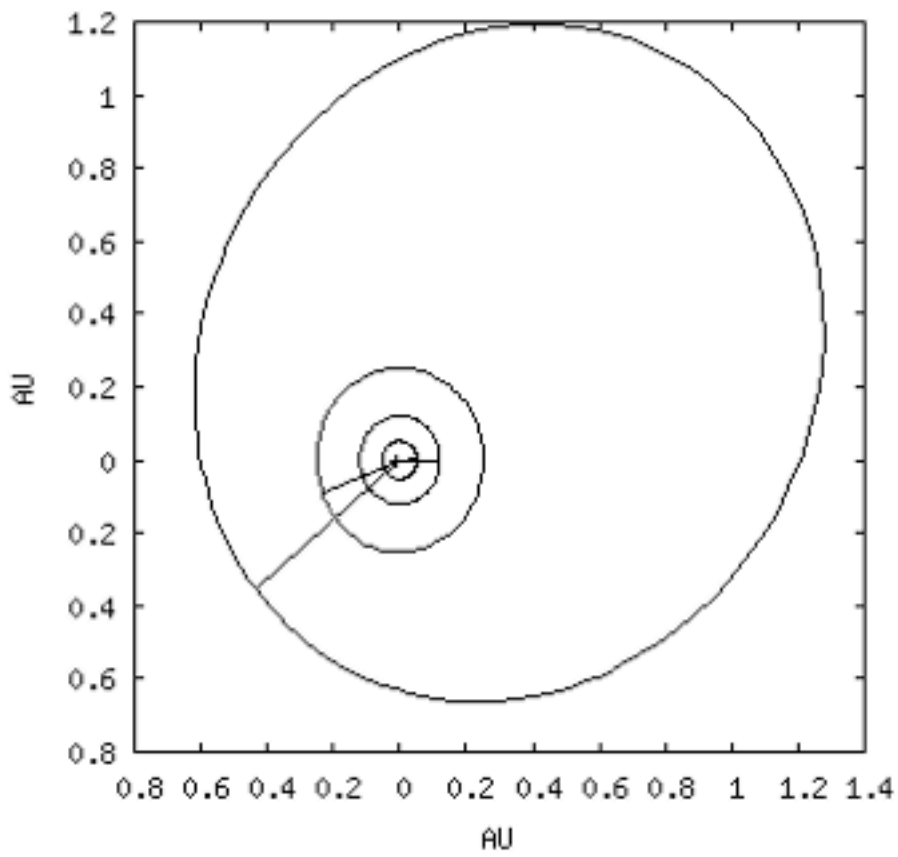
4-planets fit of HD74156 by bruce01
09.28.06, 04:53:59
bruce01 says: *This upload exceeded 20% resource limit. Chi^2 is 1.01 not 0.*

5-planets fit of 47uma_4datasets by andy
09.27.06, 22:41:15
glenn says: *I uploaded a fit for HD10697 with a chi square of 1.38, but the upload listed it as a chi square of 20.98. Can this be corrected?*

5-planets fit of 47uma_4datasets by andy
09.27.06, 08:03:37
andy says: *What with intersecting orbits and short-period eccentric planets, this one isn't looking too plausible I don't think.*

2-planets fit of rhoCrB by mikehall
09.26.06, 16:53:29
greg says: *That fit looks like it might be stabilized by 2:1 resonance. How does it sound? Greg*

2-planets fit of rhoCrB by mikehall
09.26.06, 15:08:27
mikehall says: *I am not really happy with these osculating orbits, but the integrator says YES!*



4-planets fit of 51peg_B06L (Chi^2 = 1.48)

Download this fit
Add to My Favourites Library

Views: 14
Favourited: 0 times
Downloaded: 0 times
Rate: ☆☆☆☆☆ (rated 1 times)

Tags:

About this fit

Added on 2006-09-02, 07:11:15
From bruce01
URL http://www.oklo.org/php/

Fit parameters

Chi square	1.48
Rms	8.25
Jitter	4.42

greg's Messages:
Inbox (50)
Outbox (23)
Colleagues reqs

Tools:
My uploaded fits
Search
Gen. discussion f

Latest uploaded fi
Fit of BetaGem, 4 pl
χ^2 = 3.89
— by flanker

Latest comment:
About fit of HD131
uploaded by bruce
A little research of
literature confirms
the short period ra
velocity variations a
— by bruce01
More comments..

Pages:
- Acknowledgments
- What is Systemic?
- Console Tutorial #
- Console Tutorial #
- Console Tutorial #
- Resources

ProbablePlanetDiscoveries

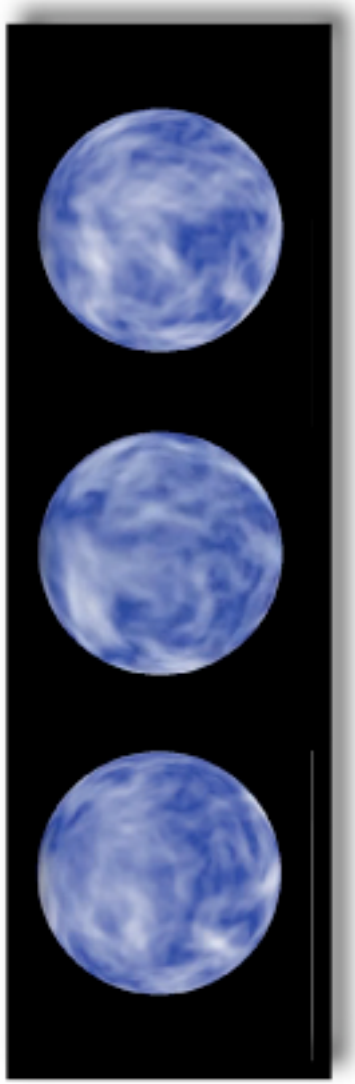
List of systems with stable fits that have an F-test probability of less than 0.02, when compared to the published fit.

HD50499

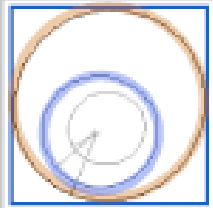
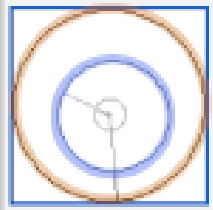
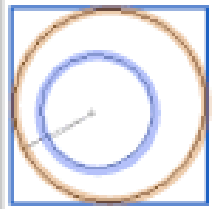
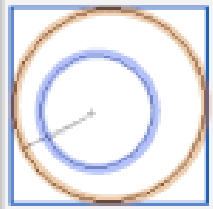
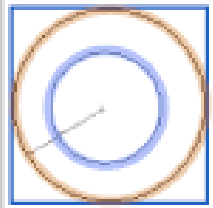
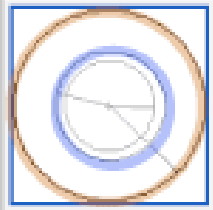
Published planet HD50499b: Period 2582.7 days, Mass 1.71 Jupiter masses, Eccentricity 0.23

This fit (2007/01/05):
Planet 1: Period 2320.9848 days, Mass 1.3900 Jupiter masses, Eccentricity 0.3553.
Planet 2: Period 6813.9969 days, Mass 2.3690 Jupiter masses, Eccentricity 0.0003.
Statistics: Chi^2 = 2.0136
F-test result = 3.1028, probability = 0.0012
Stablity tested for 10,000 years.
Systemic postings of a ~6813 day planet:
mikevald (7283d): 2006-09-02, 16:45:42
goldrake (6884d): 2006-09-05, 09:53:32
bruce01 (6814d): 2007-01-05, 14:07:47

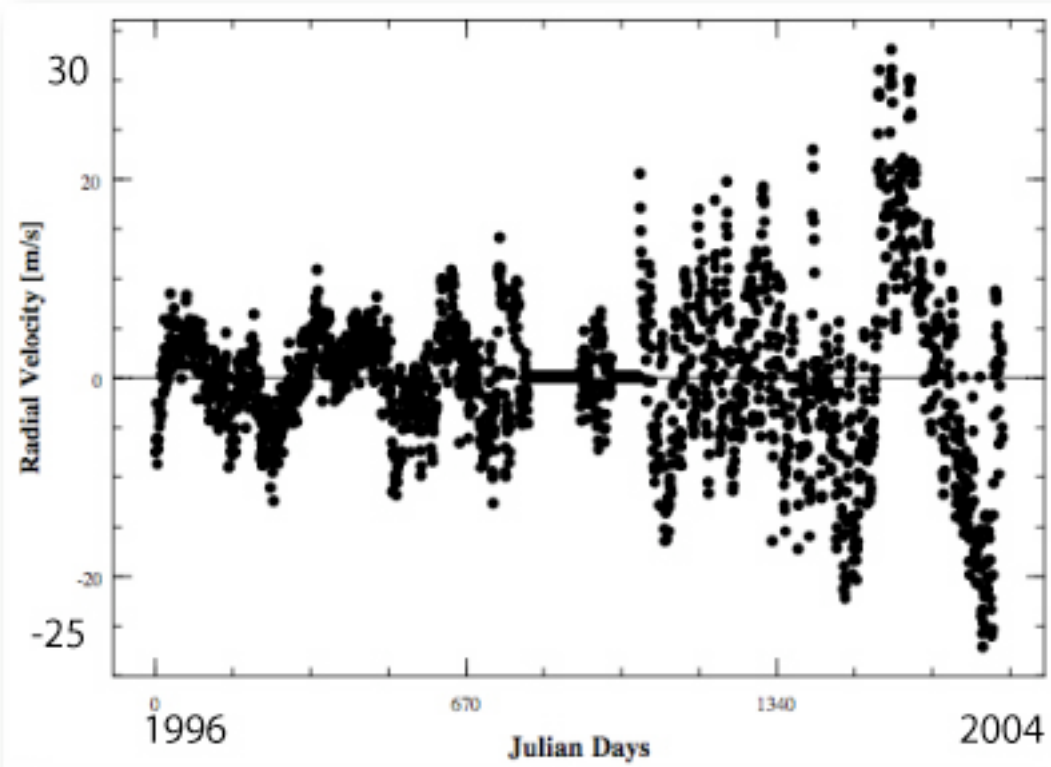
This appeared previously in comments to Blog: Roll 'em out, December 31, 2006
--bruce01 February 12, 2007, 9:35 am



Stable fits for gl581

	χ^2	Planets	Uploaded on	by
	0.89	3	2006-09-26, 13:08:52	flanker
	Stable for at least 100 years			
	1.13	3	2006-11-03, 21:02:44	flanker
	Stable for at least 100 years			
	1.63	2	2006-09-21, 10:27:12	EricFDiaz
	Stable for at least 100 years			
	1.90	2	2006-06-19, 18:24:52	eugenio
	Stable for at least 100 years			
	1.94	2	2007-03-11, 17:27:56	EricFDiaz
	Stable for at least 100 years			
	2.02	3	2006-09-07, 04:40:47	bruce01
	Stable for at least 100 years			

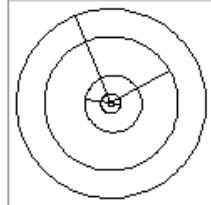
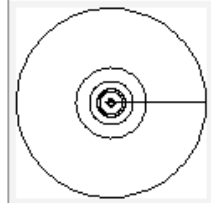
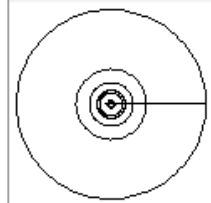
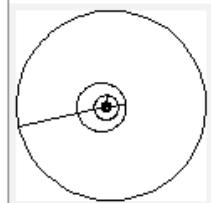
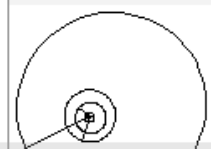
Gl 581 c was characterized by many users more than six months before its discovery was announced

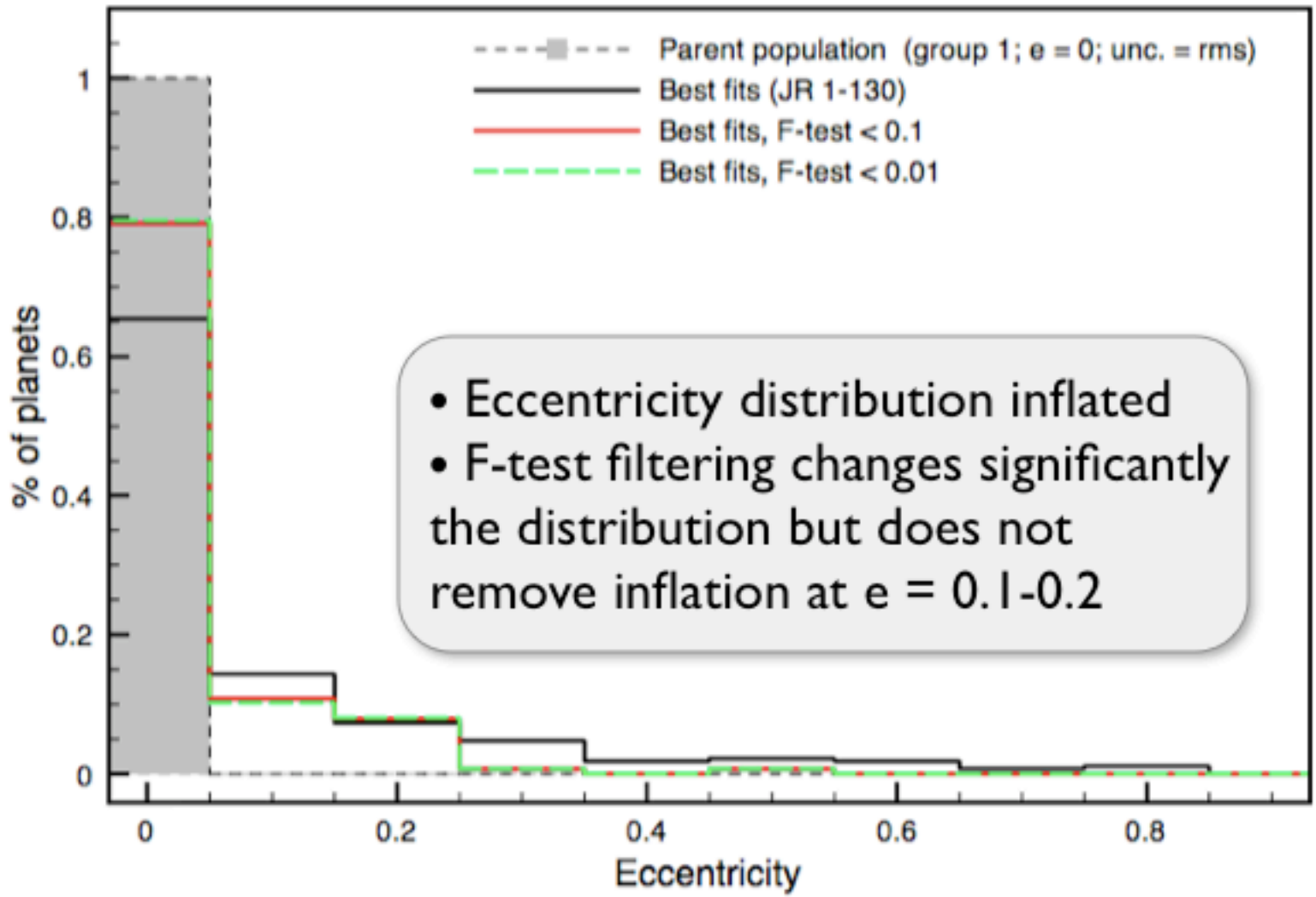


Golf RV data set for the Sun

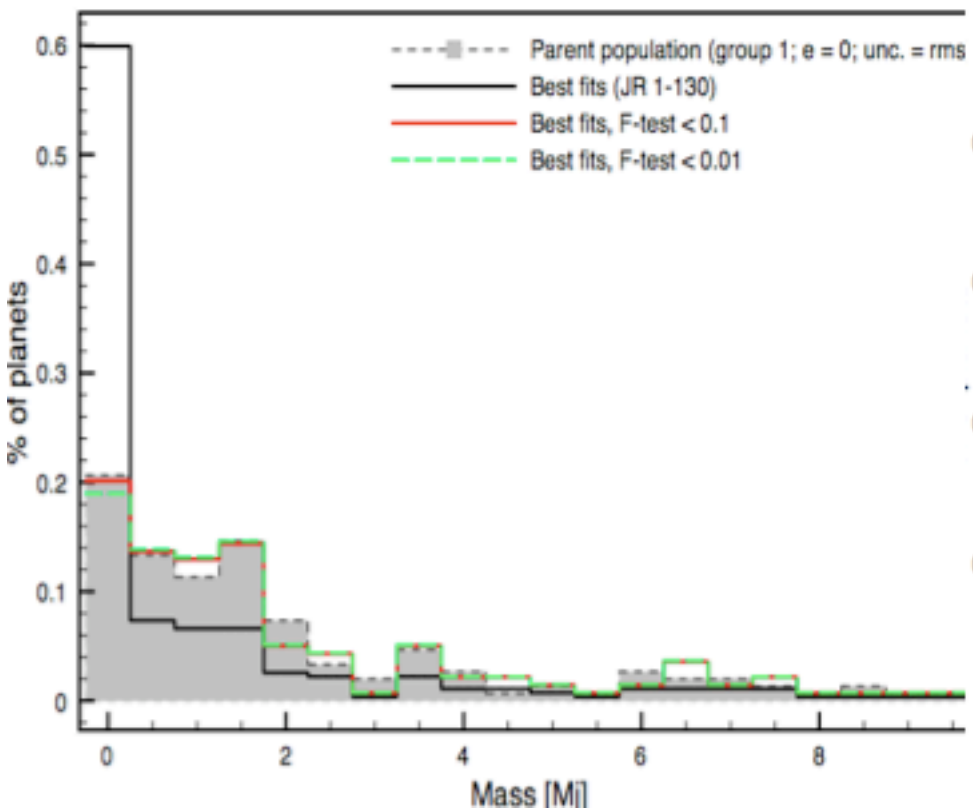
Using this noise perturbation, HD 69830 b,c,d are undetectable.

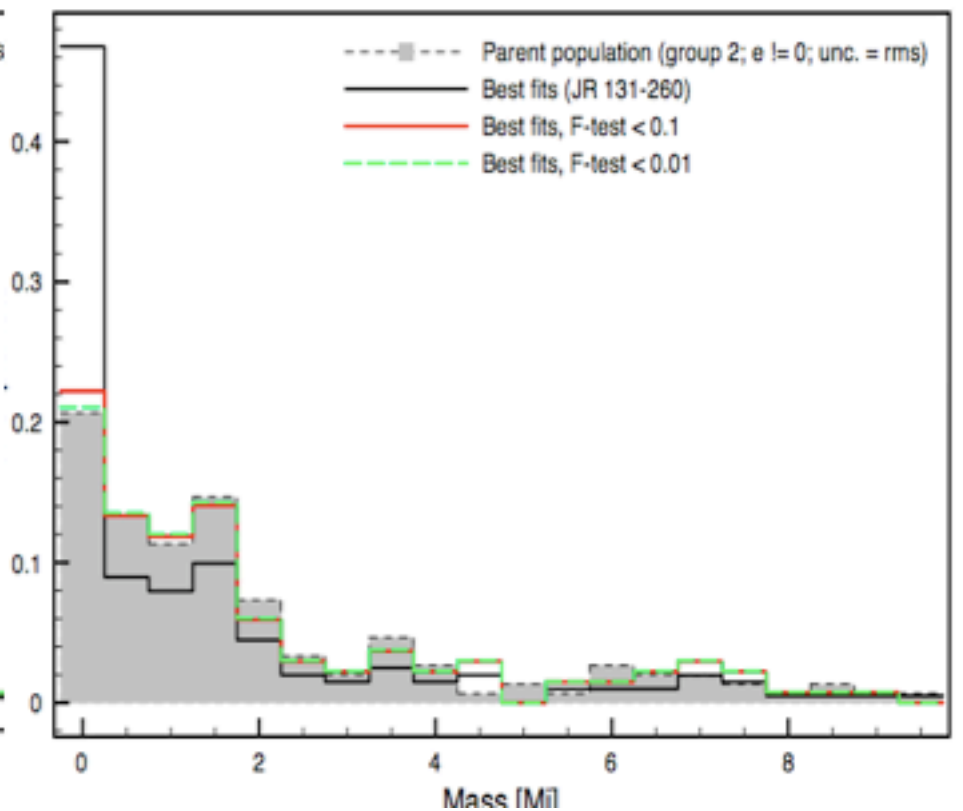
Stable fits for systemic004

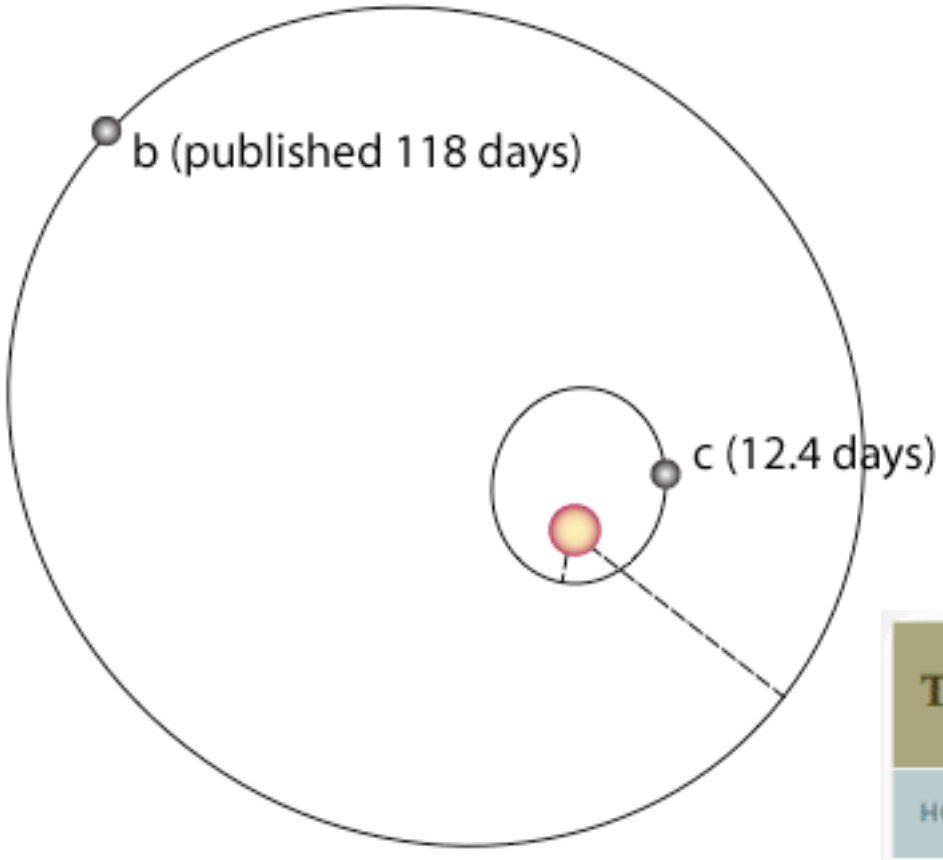
	χ^2	Planets	Uploaded on	by
	2.69	5	2006-11-19, 10:28:53	flanker
	Stable for at least 1000 years			
	2.98	6	2006-11-17, 11:50:36	EricFDiaz
	Stable for at least 1000 years			
	2.98	6	2006-11-17, 11:21:56	EricFDiaz
	Stable for at least 1000 years			
	3.00	5	2006-11-17, 16:57:07	JWXR
	Stable for at least 1000 years			
	3.52	4	2006-11-17, 04:52:01	Pandora
	Stable for at least 1000 years			



We've done a number of experiments to quantify biases in eccentricity.


Parent population (group 1; e = 0; unc. = rms
Best fits (JR 1-130)
Best fits, F-test < 0.1
Best fits, F-test < 0.01
% of planets
Mass [Mj]


Parent population (group 2; e != 0; unc. = rms)
Best fits (JR 131-260)
Best fits, F-test < 0.1
Best fits, F-test < 0.01
Mass [Mj]



High-quality candidates emerging from the systemic collaboration are added to the transitsearch catalog.

TRANSITSEARCH

HOME PUBLISHED CANDIDATES

Unpublished Candidates

Click on the Ephemeris links to see tables of predicted transit times.

Star	Planet	Period (days)	P (%)	R.A.	DEC.	Depth (%)
HD216770_	c	12.46	3.1	22:56	-26:40	1.54
HD19994__	c	35.01	3.8	03:13	-01:12	0.68

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