MAST Users Group Meeting

December 15-16, 2016

Sci Portal

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Motivation

The Portal is very good for position based searches,
But less so for non-position based data.
Advanced search offers some options,
Sci Portal aims to offer more.

Goals:

- Where the generic Portal is data-set oriented, Sci Portal will be target oriented.
- Sci Portal will provide interfaces focused on specific subdisciplines.

Flavors

- **ExoPortal**: for exoplanet science
- **PlanetPortal**: for moving target science
- **DeepPortal**: for deep field science
- **LensingPortal**: for galactic lens science

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Exoplanet Portal

Goals for interface:

- Ability to filter data on planet parameters
- Ability to filter by method of detection
- Connect planet detections to literature
- Transit visualization

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Exoplanet Portal

Exoplanets | Album View

Edit Columns... Table Display: All

		Actions	Name	Semi-Major Axis	a/R*	Astrometry	BigΩ	Binary Flag	B-V	Reduced Chi S	Planet Name
☐	1		Kepler-107 d	0.0780099	11.9153	0	NaN	0	NaN	NaN	d
☐	2		Kepler-1049 b	0.0344721	15.1619	0	NaN	0	NaN	NaN	b
☐	3		Kepler-813 b	0.13761	31.8896	0	NaN	0	NaN	NaN	b
☐	4		Kepler-427 b	0.091351	14.5835	0	NaN	0	0.71	NaN	b
☐	5		Kepler-1056 b	0.185149	33.2523	0	NaN	0	NaN	NaN	b
☐	6		Kepler-1165 b	0.0912977	16.6748	0	NaN	0	NaN	NaN	b
☐	7		Kepler-1104 b	0.0627651	9.59359	0	NaN	0	NaN	NaN	b
☐	8		WASP-14 b	0.0367693	6.04917	0	NaN	0	0.46	NaN	b
☐	9		Kepler-50 b	0.0825598	NaN	0	NaN	0	0.48	NaN	b
☐	10		NN Ser d	3.70596	NaN	0	NaN	0	-0.672001	0.75	d
☐	11		Kepler-1279 b	0.170989	27.7076	0	NaN	0	NaN	NaN	b
☐	12		Kepler-1599 b	0.48075	104.657	0	NaN	0	NaN	NaN	b
☐	13		Kepler-20 b	0.0453704	10.3582	0	NaN	0	0.9	NaN	b
☐	14		HAT-P-27 b	0.0399488	9.89615	0	NaN	0	0.99	NaN	b

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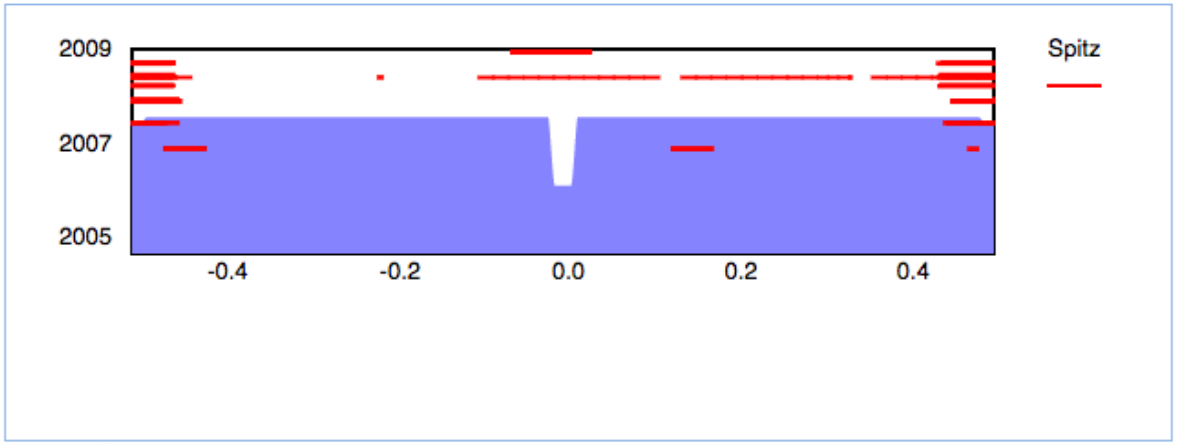
Exoplanets | Album View

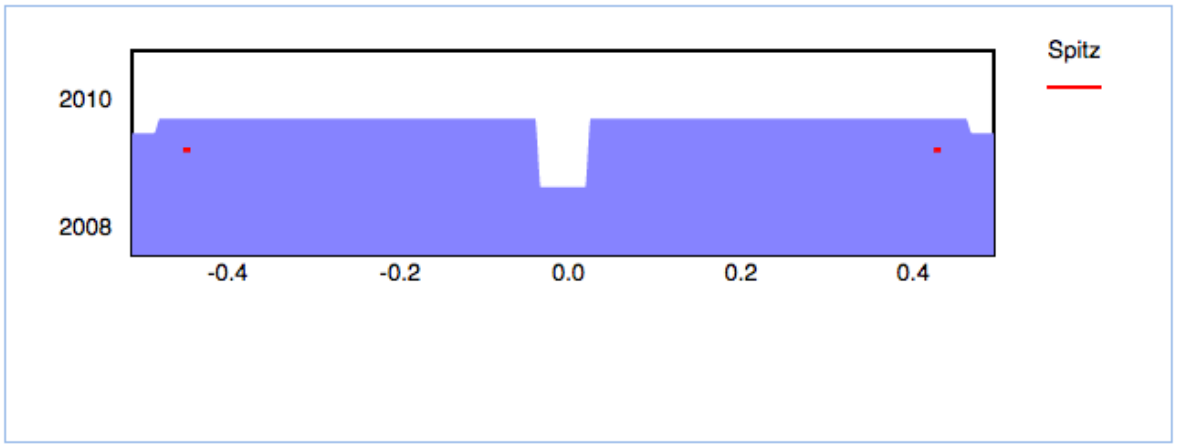
Edit Columns... Table Display: All Page 2 of 2 Displaying 21 - 40 of 40

Selected:



Name: HD 189733 b
Omega: 90.0000
Period: 2.2186
Separation: 0.0310
SE Depth: 0.0021

Selected:



Name: WASP-1 b
Omega: 90.0000
Period: 2.5199

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Exoplanets

Discovery and References

Other Name:	
Fisrt Publication Date:	2005
Method of discovery for the planet:	RV
Method of discovery of the first planet in system:	RV
Orbit Reference:	Bouchy 2005
First Reference:	Bouchy 2005

Coordinates and Catalogs

RA (h:m:s):	+20:00:43.71
DEC (d:m:s):	+22:42:41.26
Parallax:	51.41
Distance to Star:	19.4515
Hipparcos Catalog #:	98505
HD #:	189733
Gliese Catalog #:	4130

Orbital Parameters

Msin:	1.14039
Planet Mass:	1.1436
Semi-Major Axis:	0.0309953
Separation:	0.0309953
Orbital Period:	2.21857567
Velocity Semiamplitude:	205
Orbital Eccentricity:	0
Orbital Inclination:	85.71
Argument of Periastron:	90
Spin-Orbit Misalignment:	-0.85

Stellar Properties

Star Name:	HD 189733
Binary Flag:	1
Mass of Star:	0.806
Radius of Star:	0.756
[Fe/H]:	-0.03
$T_{[eff]}$:	5040
Density of Star:	1.907
$\log_{10}(g)$:	4.587
Vsin(i):	3.5
Gamma:	-2.56989

Orbital Fit Properties

Reduced Chi Squared:	NaN
# of Observations:	
RMS of Velocities:	15
Frozen Eccentricity Flag:	
Flag for linear Trend:	0
Components:	1

Stellar Magnitudes

V Mag:	7.67
B-V:	0.931
2Mass J:	6.073
2Mass H:	5.586
2Mass K_S:	5.541

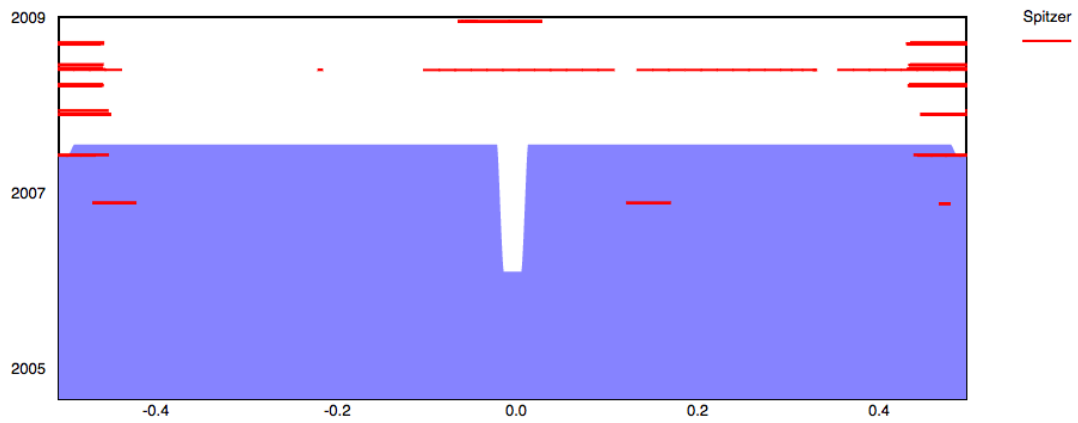
Secondary Eclipse Depth

Secondary Eclipse:	1
Secondary Eclipse depth in 3.6 micron:	0.00256
Secondary Eclipse depth in 4.5 micron:	0.00214
Secondary Eclipse depth in 5.8 micron:	0.0031

Transit Parameters

Planetary Radius:	1.138
Epoch of Transit Center:	2454279.436714
Duration of Transit:	0.0759722
Impact Parameter:	0.6631
a/R*:	8.83602
Transit Depth:	0.0241221
Planetary Density:	0.963
Surface Gravity:	3.33866

Exo-planet Transit Curve



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Moving Target Portal

Goals for interface:

- Moving target specific search fields
- Improved data tagging
- Useful visualizations
- Ability to search for new objects

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Moving Target Portal

- Tag all Hubble data consistently
  - Include both primary and serendipitous objects
  - Expand to other datasets
- Create moving target interface
  - Combine observation information with external sources (e.g. JPL HORIZONS)
- Create visualization
  - Moving Target alternate to AstroView
- Create method for new target searches
  - Test feasibility

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Deep Fields and Galactic Lensing Portals

Interface ideas:

- Present results by field
  - High Level Science Products
  - Available catalogs
  - Available spectral data
- Deep field specific filtering options
- Provide consistent view of available deep field information

Moving Forward

- Plan to have a preliminary release next fall
  - Exoplanet Portal
  - Moving Target Portal
- New metadata scientist arriving in spring
  - Advise on Sci Portal generally
  - Specifically move the deep fields effort forward

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Questions? Input?

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