

# KIC 008264070

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
008264070-01	OBS	1068.01	2.897400	132.049213	933.3	2.506	54.7	58.8	2.99	5970	10.78	5251.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008264070-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—PLANET_OCCULT_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008264070-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
008264070-01	8264070	3655.01	8264097	1:1	14.0	3	2	17.69	15.04	382.57	Direct-PRF	0	0.81	0.54

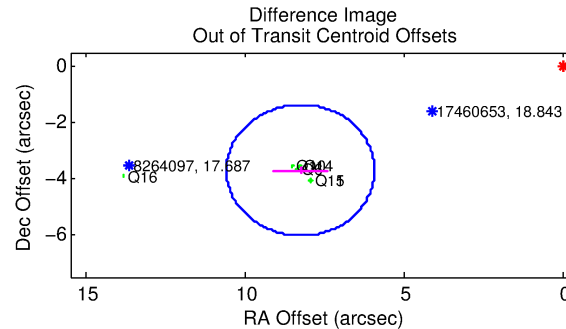
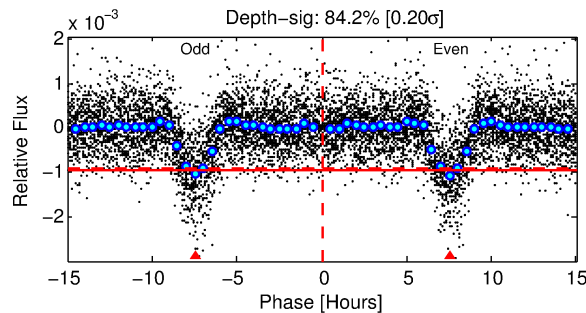
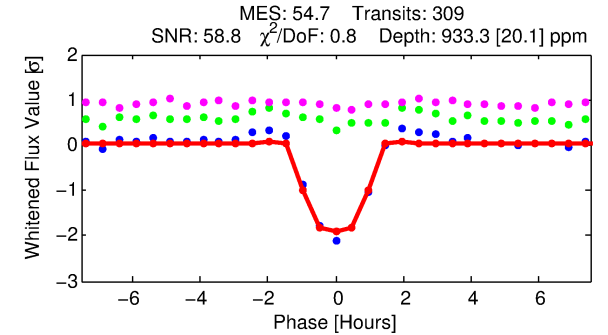
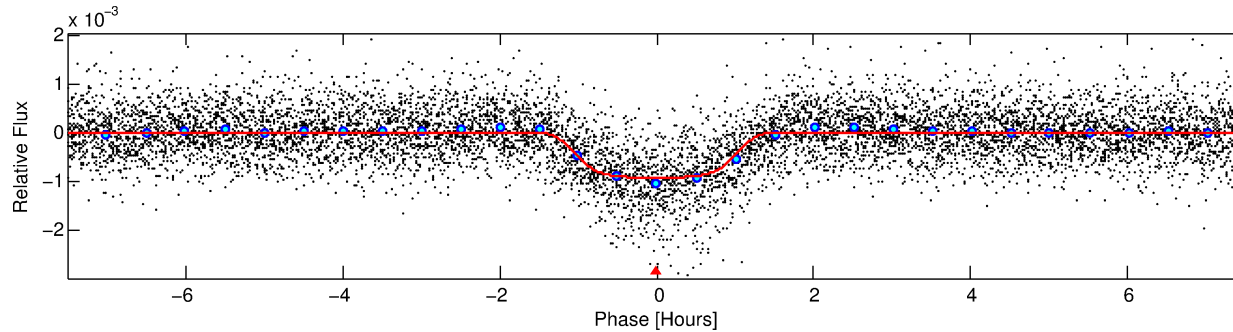
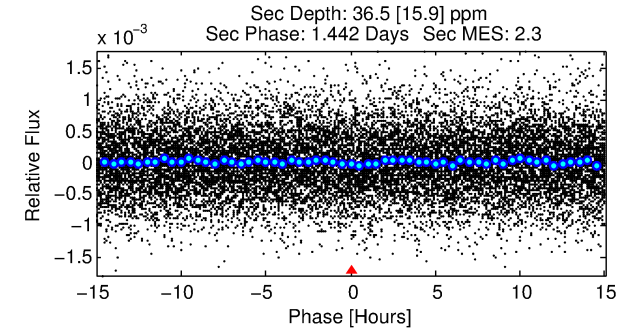
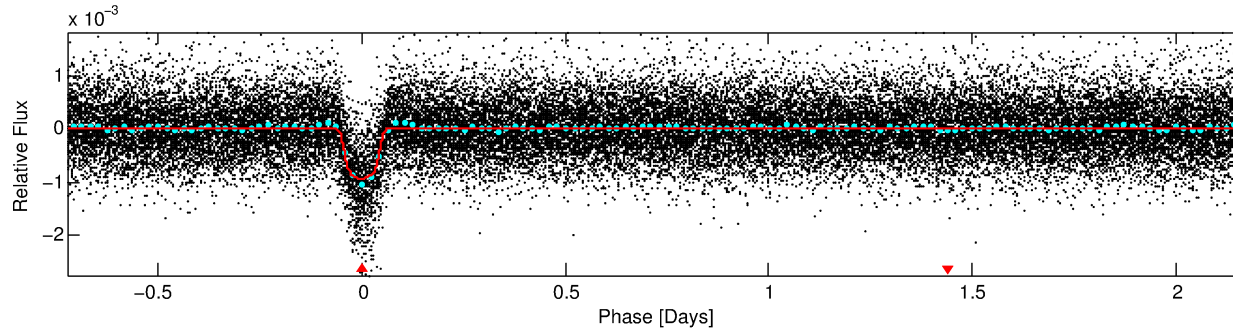
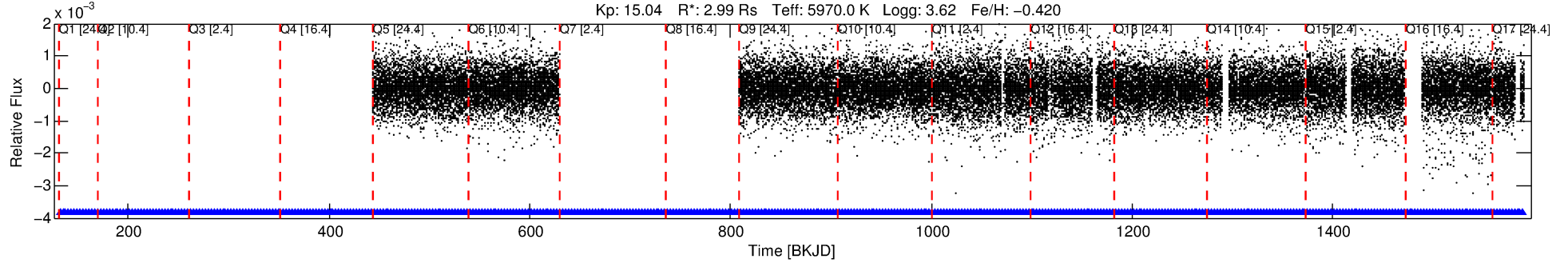
**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8264070 Candidate: 1 of 1 Period: 2.897 d

KOI: K01068.01 Corr: 0.878

Kp: 15.04 R\*: 2.99 Rs Teff: 5970.0 K Logg: 3.62 Fe/H: -0.420



## DV Fit Results:

Period = 2.89740 [0.00000] d  
Epoch = 132.0492 [0.0007] BKJD  
Rp/R\* = 0.0330 [0.0013]  
a/R\* = 4.56 [0.84]  
b = 0.90 [0.04]  
Seff = 5251.48 [6405.62]  
Teq = 2171 [662] K  
Rp = 10.78 [6.81] Re  
a = 0.0441 [0.0311] AU  
Ag = 0.34 [0.43] [-1.53σ]  
Teffp = 2555 [298] K [0.53σ]

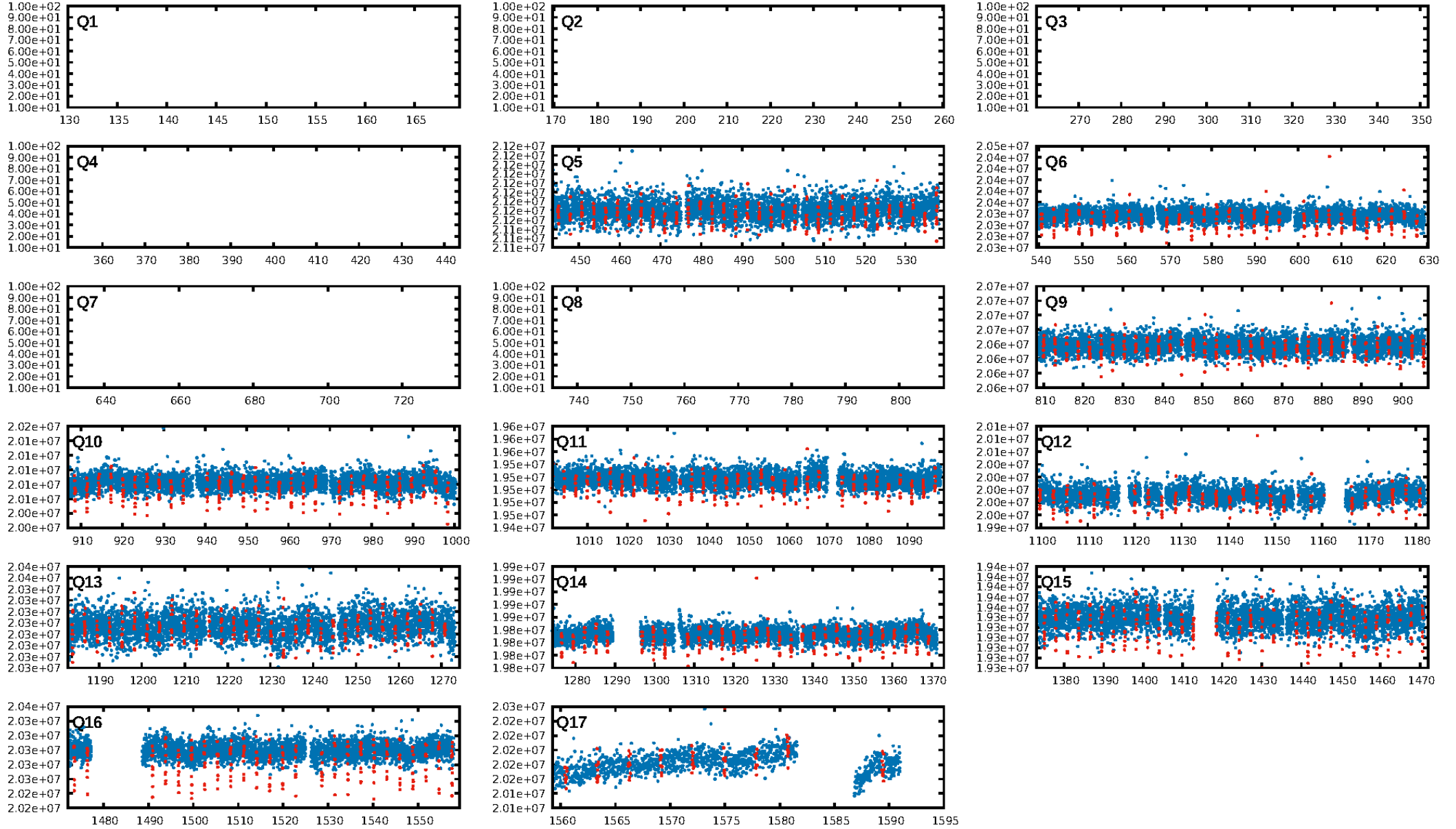
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [300/300]  
GhostDiagnostic-chr: 0.05631  
Centroid-sig: 0.0%  
Centroid-so: 12.843 arcsec [52.11σ]  
OotOffset-rm: 9.055 arcsec [11.66σ]  
KicOffset-rm: 9.153 arcsec [10.91σ]  
OotOffset-st: 3/2/1/0 [6]  
KicOffset-st: 3/2/1/0 [6]  
DiffImageQuality-fgm: 1.00 [6/6]  
DiffImageOverlap-fno: 1.00 [11/11]

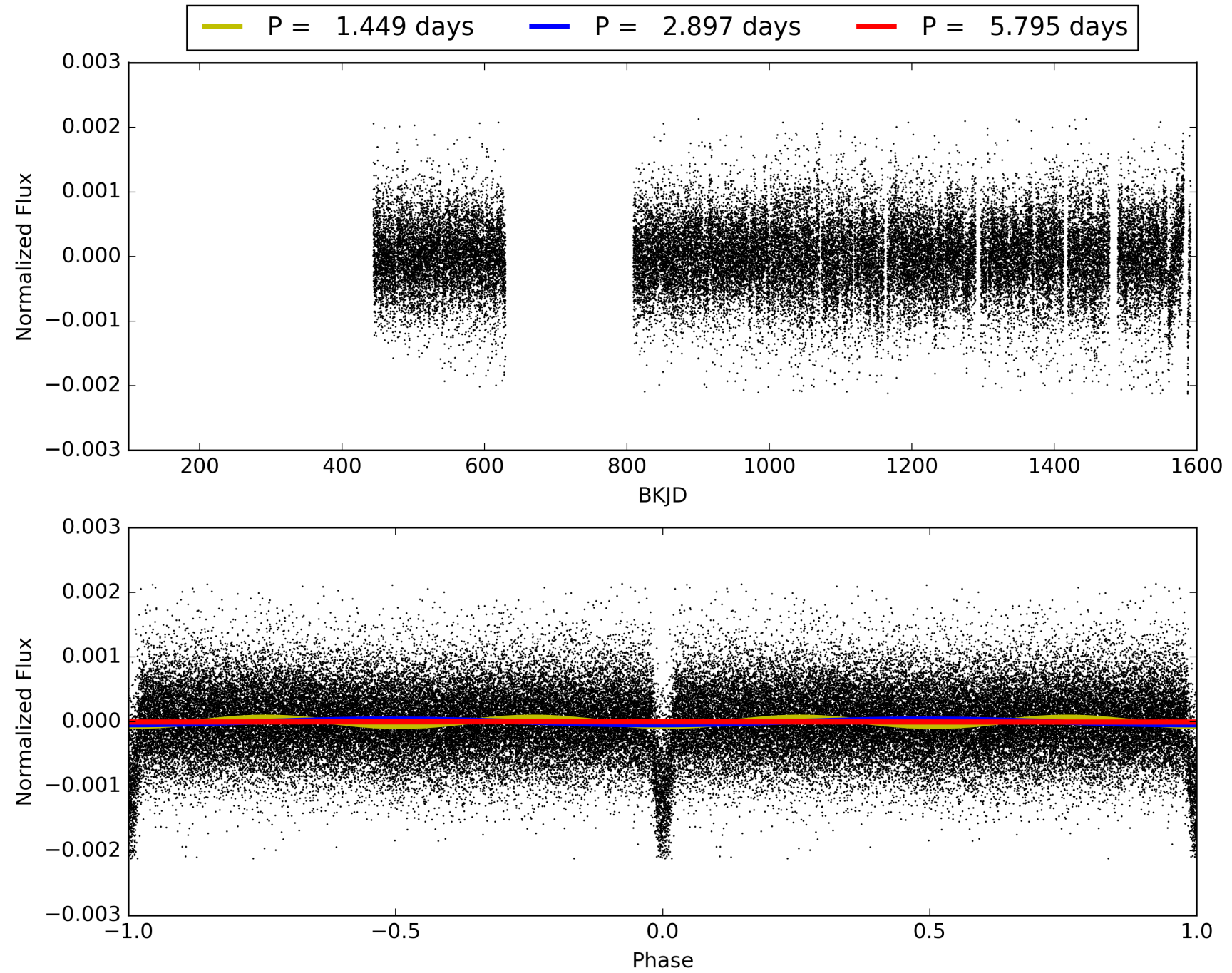
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:02:48 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008264070-01, PDC Light Curves

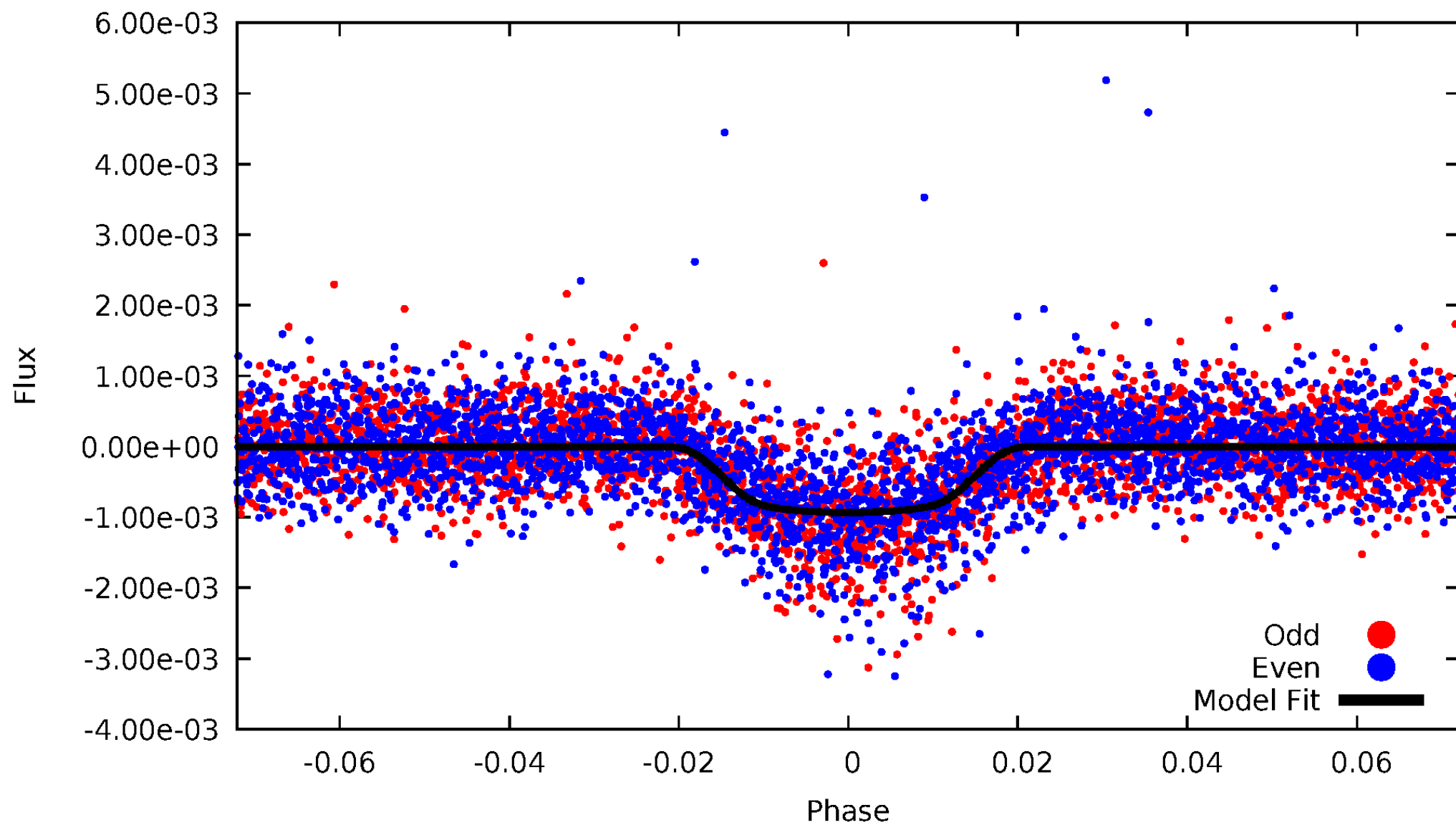


TCE 008264070-01



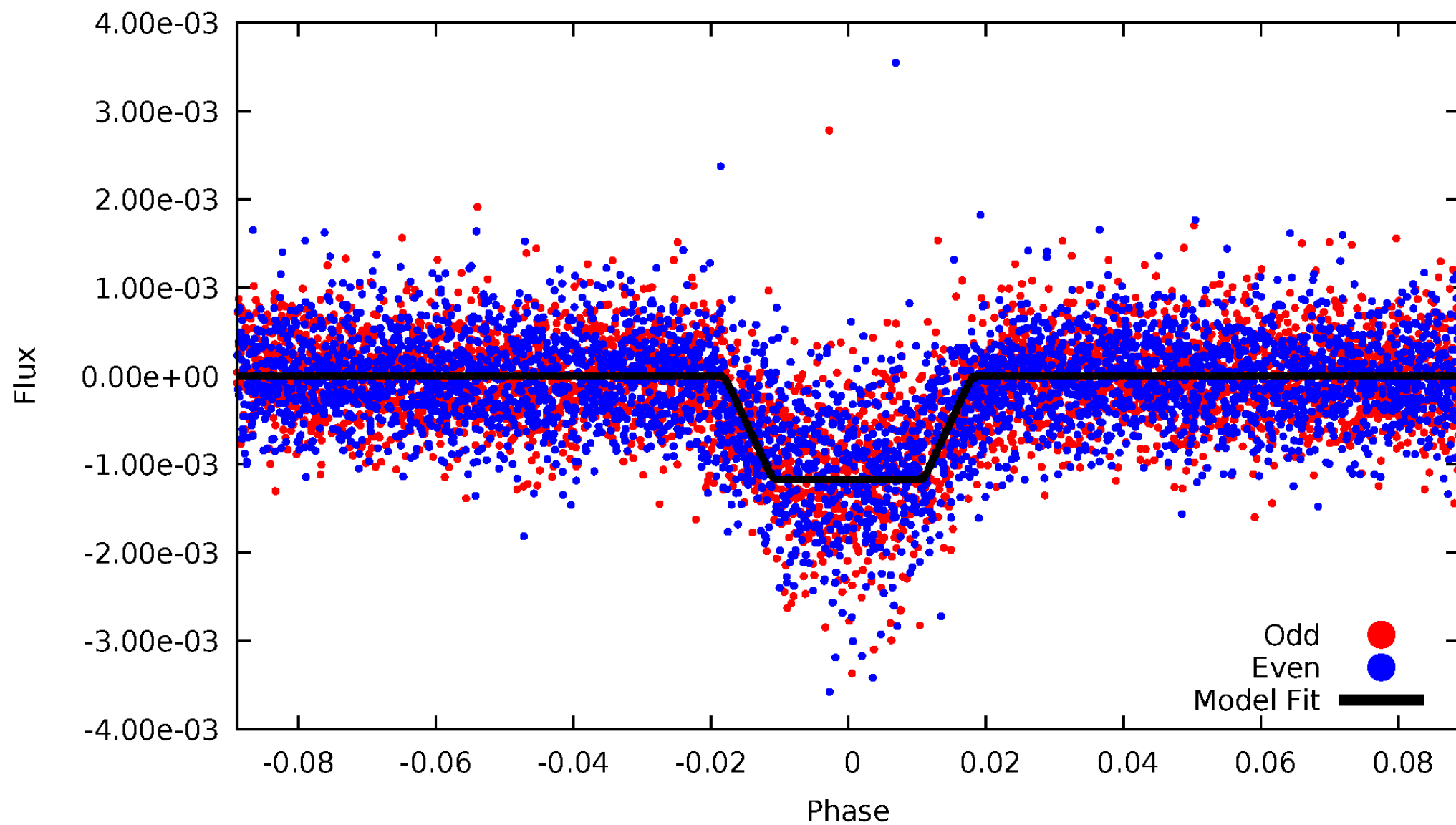
# DV Odd/Even

TCE 008264070-01



# ALT Odd/Even

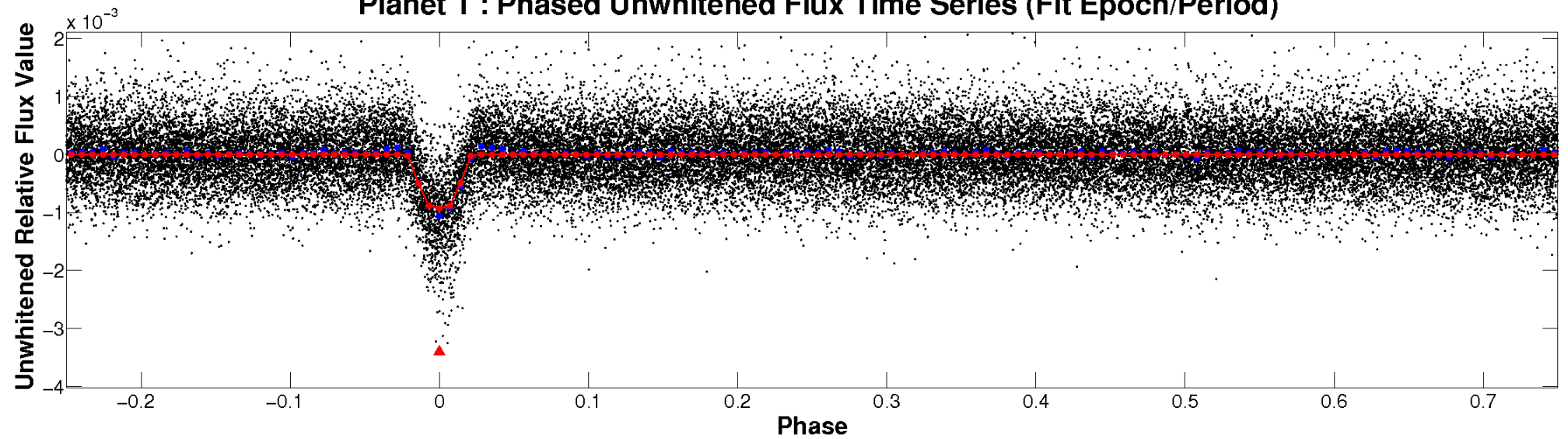
TCE 008264070-01



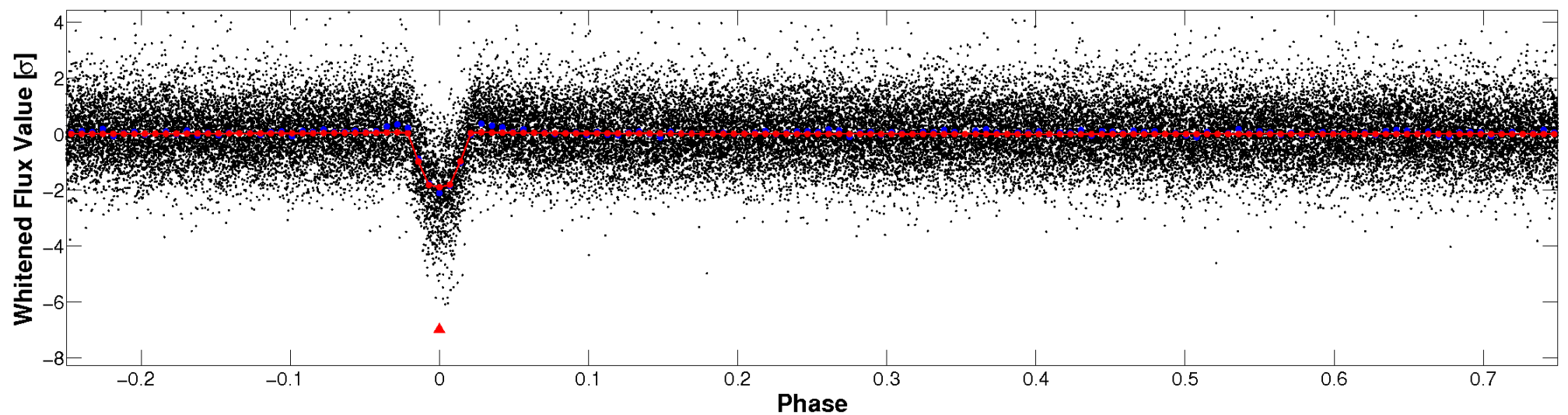


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

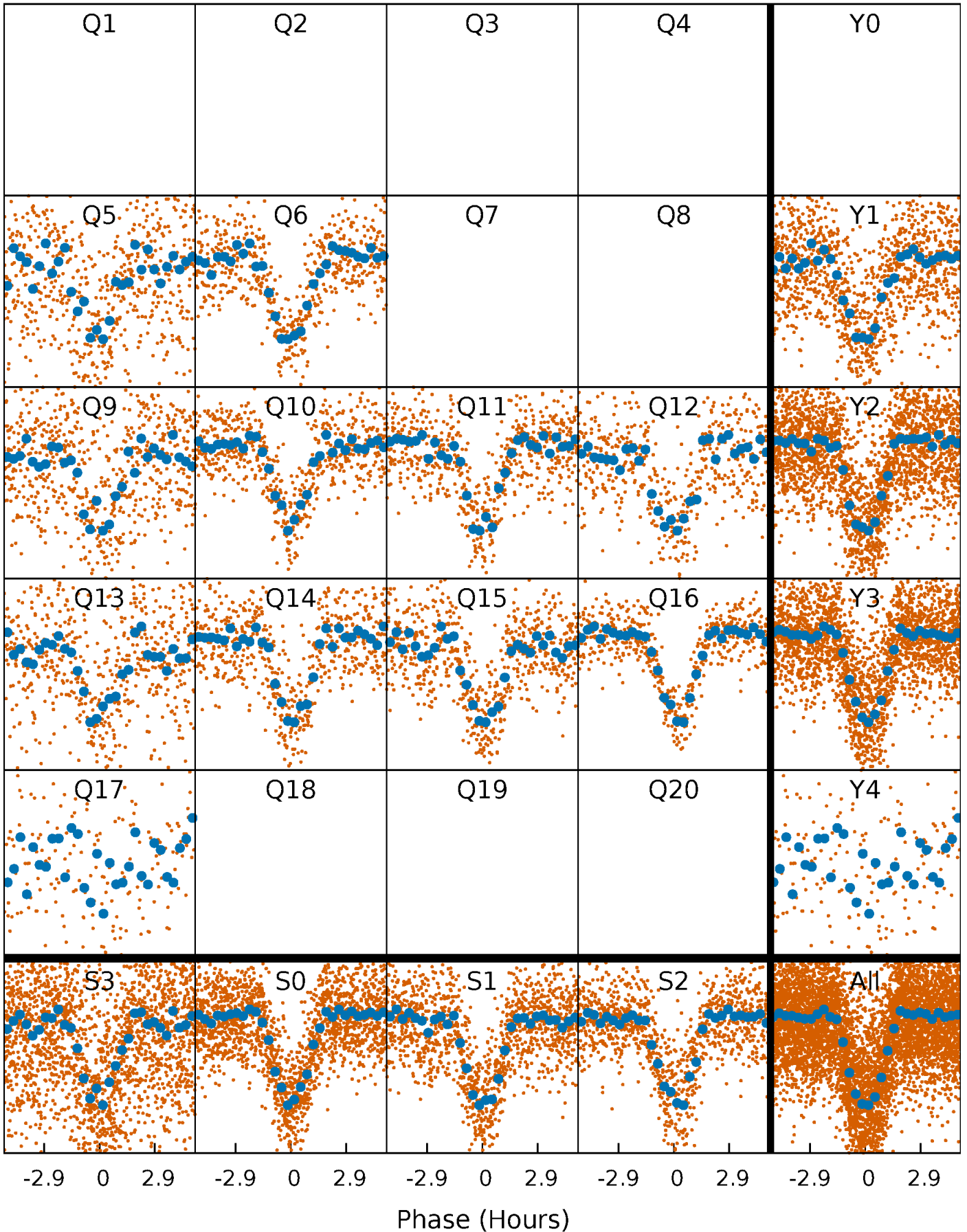


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

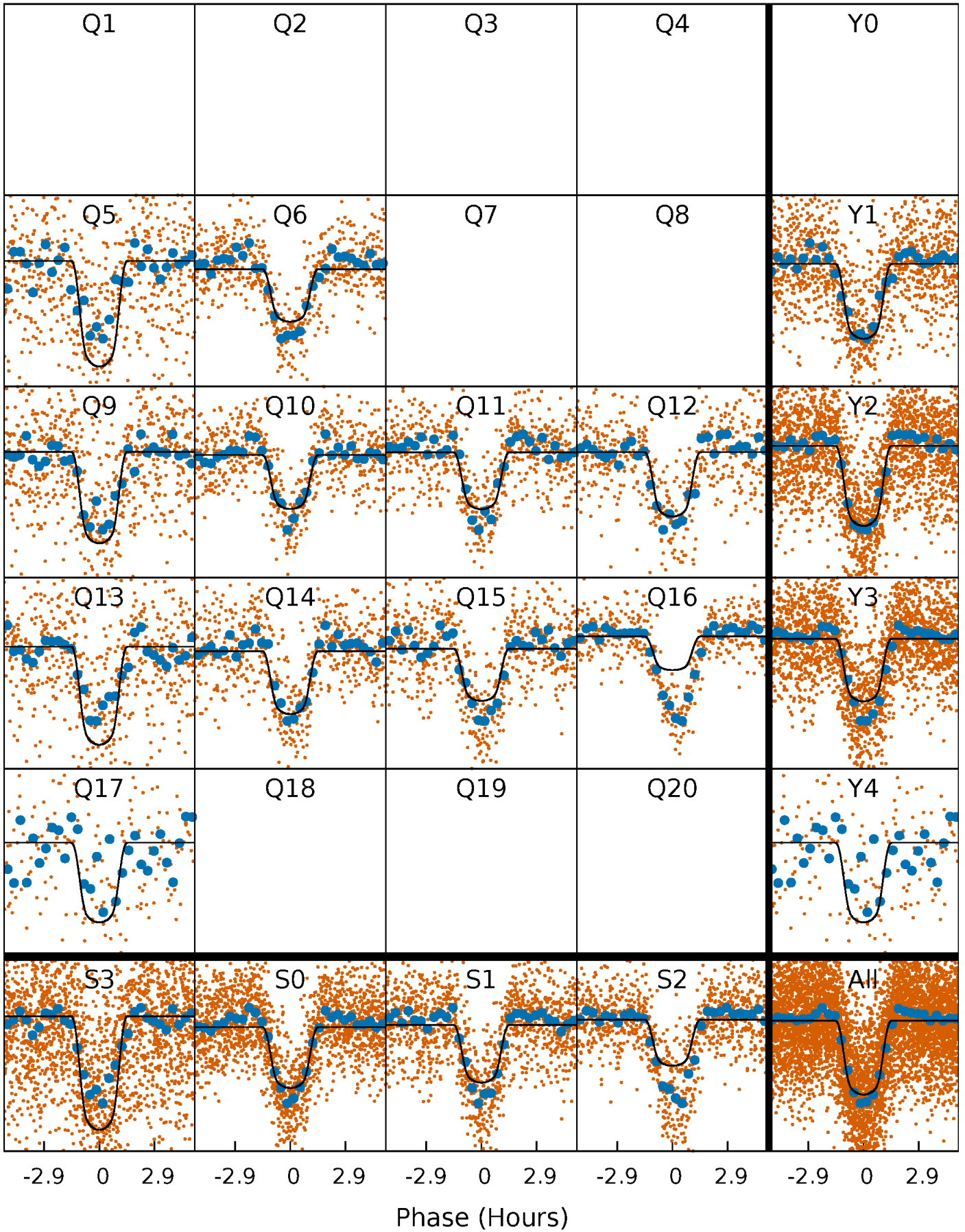
TCE 008264070-01   P= 2.897400 Days    $T_0=132.049213$  (BKJD)





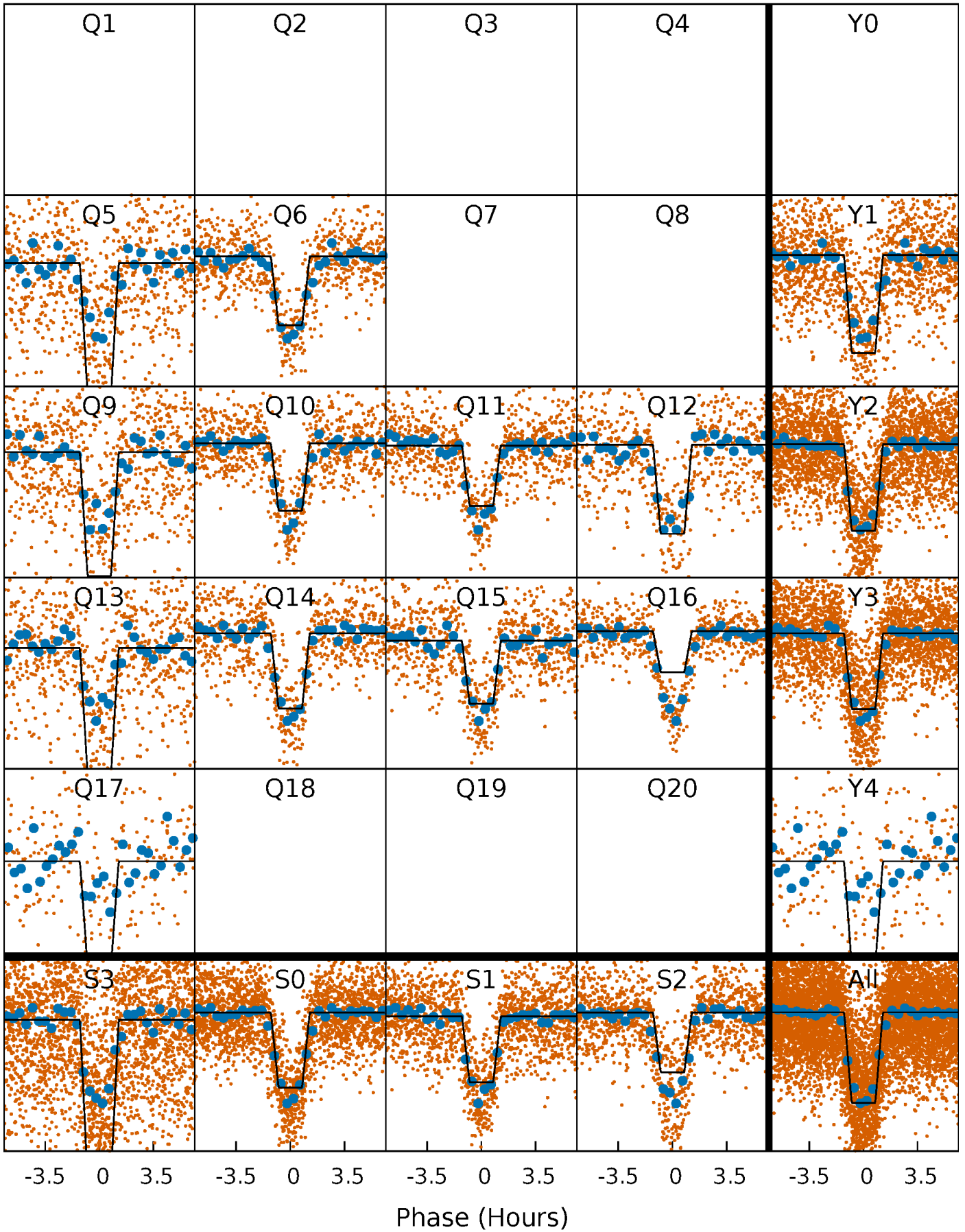
# DV Quarter-Phased Transit Curves

TCE 008264070-01   P= 2.897400 Days    $T_0=132.049213$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

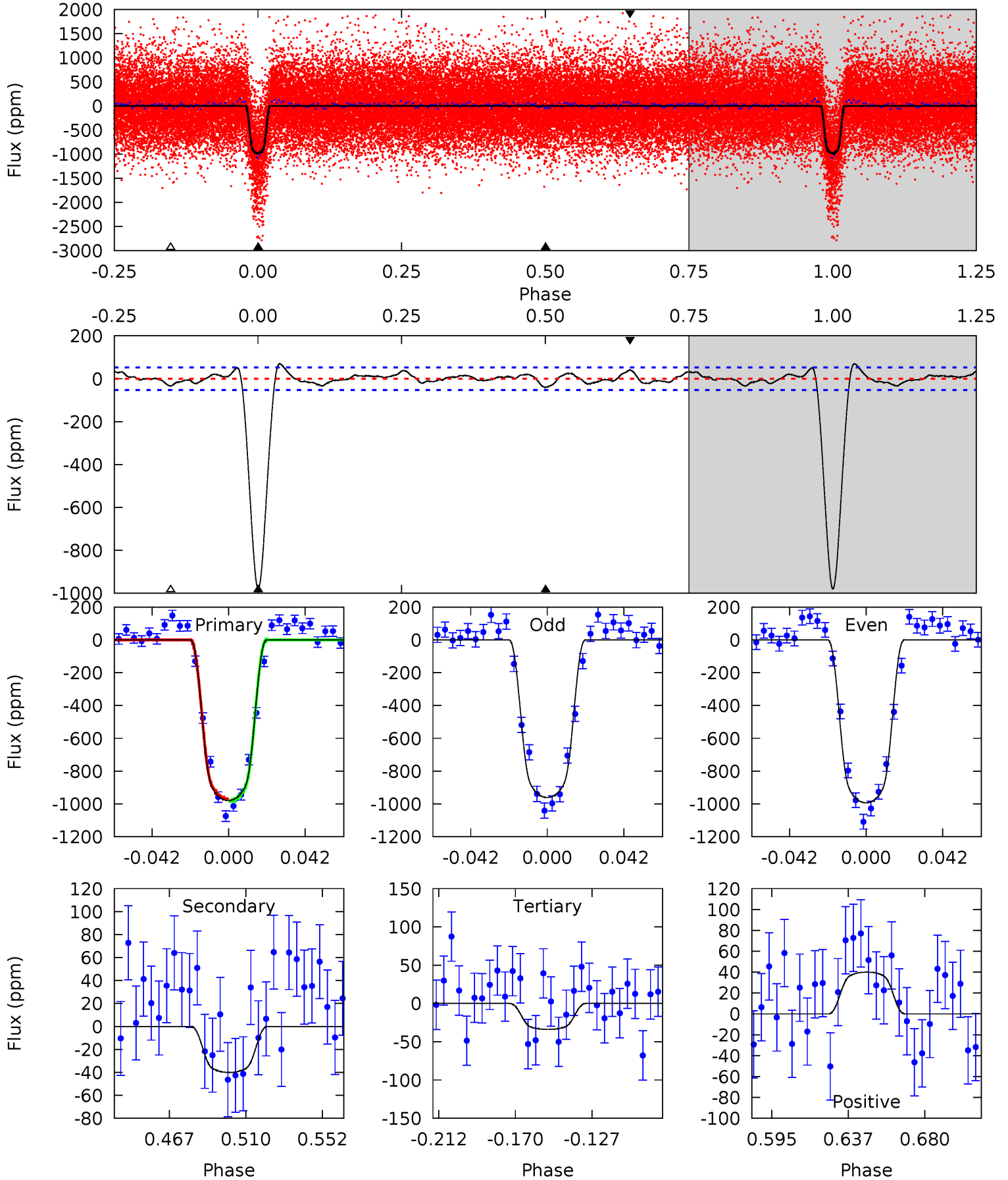
TCE 008264070-01   P= 2.897426 Days    $T_0=132.041946$  (BKJD)



# DV Model-Shift Uniqueness Test

008264070-01, P = 2.897400 Days, E = 132.049213 Days

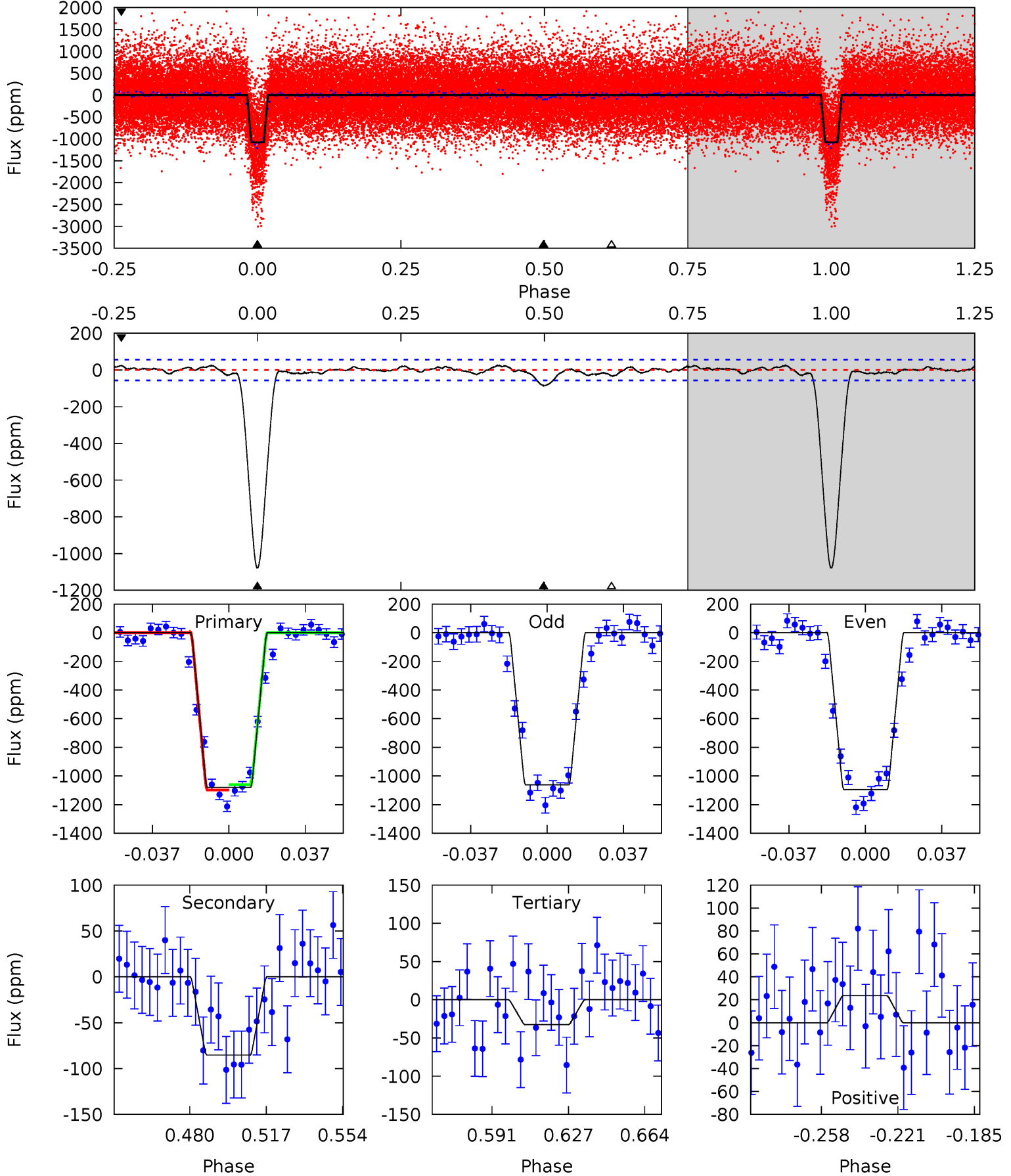
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
87.9	3.60	3.04	3.59	4.74	2.03	1.48	84.8	84.3	0.56	0.00	1.46	1.06	0.07	0.64



# Alt Model-Shift Uniqueness Test

008264070-01, P = 2.897426 Days, E = 132.041946 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.6	7.16	2.73	1.98	4.77	2.09	1.09	87.9	88.6	4.43	5.18	1.38	0.94	0.02	1.62



### Stellar Parameters For KIC 008264070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5970^{+215}_{-179}$	$3.619^{+0.740}_{-0.131}$	$-0.420^{+0.350}_{-0.250}$	$2.994^{+0.809}_{-1.888}$	$1.359^{+0.197}_{-0.492}$	$0.071^{+1.018}_{-0.033}$
	+4%/-3%	+20%/-4%	+83%/-60%	+27%/-63%	+14%/-36%	+1427%/-47%
Source	KIC0	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008264070-01 / KOI 1068.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-40 \pm 11$	$10.13^{+1.92}_{-3.49}$	$2936^{+283}_{-495}$	$2714^{+381}_{-5076}$	$0.429^{+0.465}_{-0.161}$
Alt.	$-85 \pm 12$	$10.20^{+2.28}_{-3.48}$	$2909^{+289}_{-499}$	$3337^{+178}_{-215}$	$0.866^{+0.984}_{-0.285}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature  
 $T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )  
 $A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



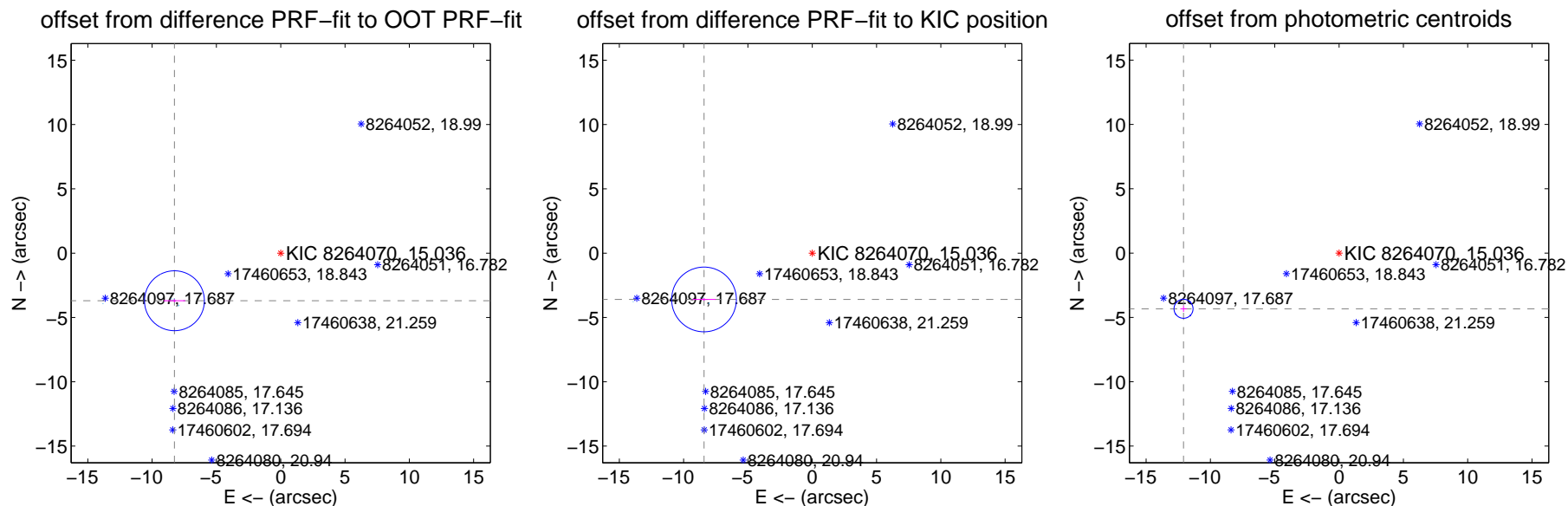
## DV Centroid Data

Supplemental centroid analysis for 008264070-01. Kepler magnitude: 15.04. Transit SNR 58.79

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	9.055 $\pm$ 0.776	11.66	8.264 $\pm$ 0.840	-3.700 $\pm$ 0.116
PRF-fit source offset from KIC position	9.153 $\pm$ 0.839	10.91	8.415 $\pm$ 0.900	-3.599 $\pm$ 0.103
photometric centroid source offset	12.84 $\pm$ 0.25	52.11	12.09 $\pm$ 0.25	-4.33 $\pm$ 0.24

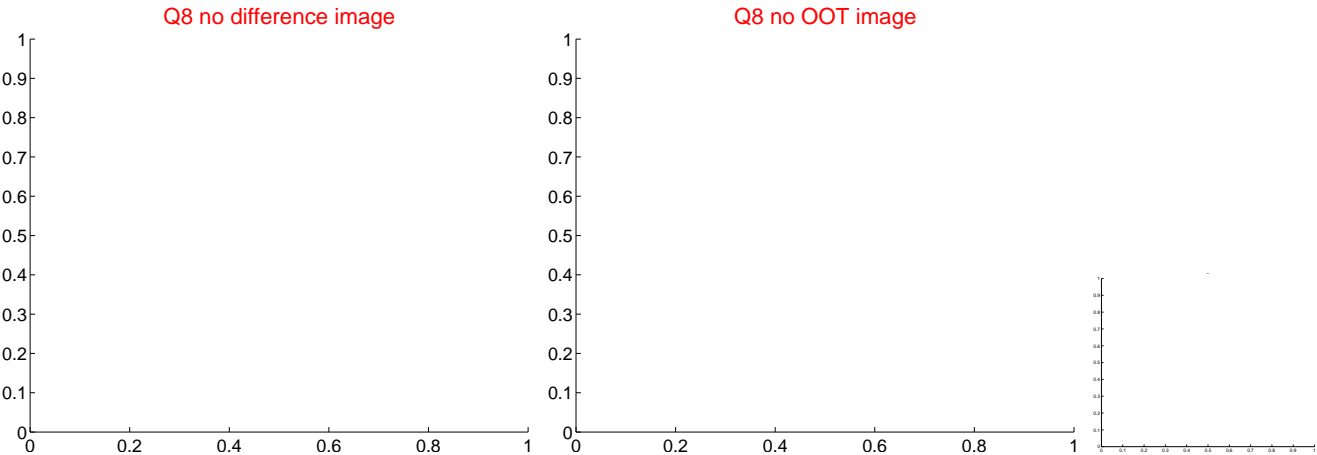
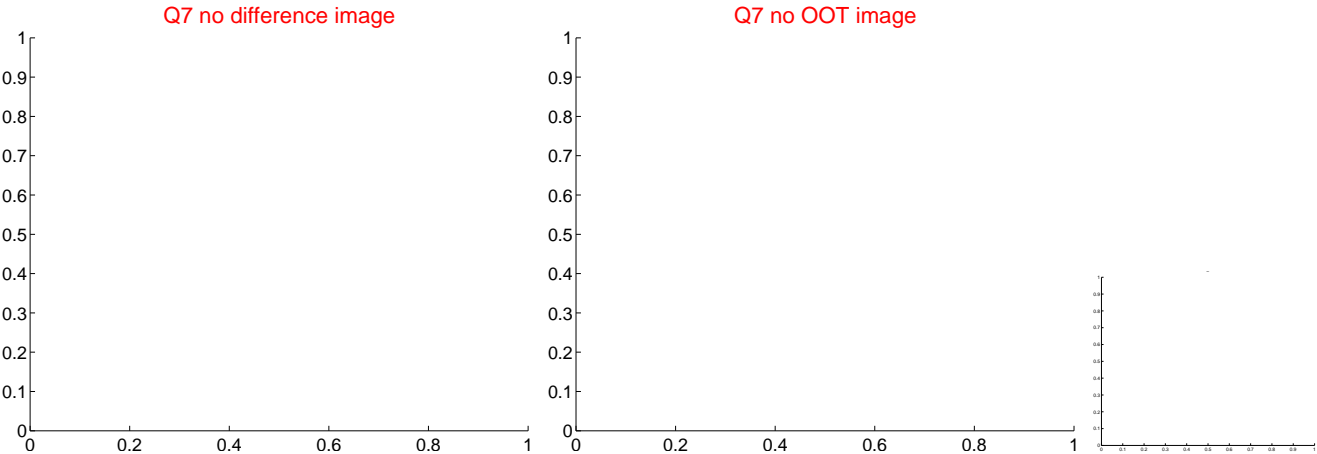
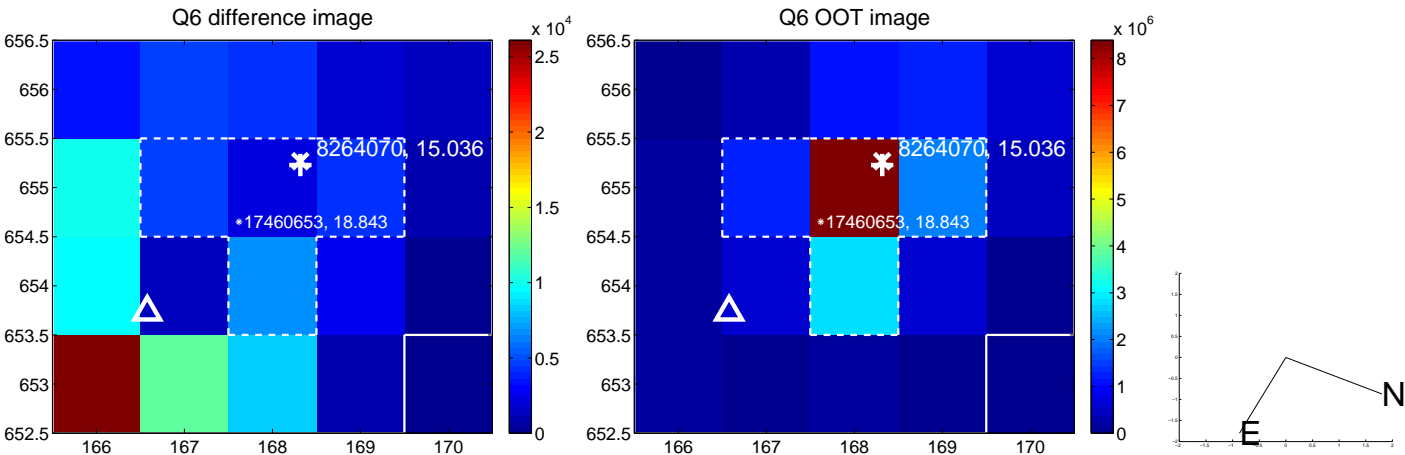
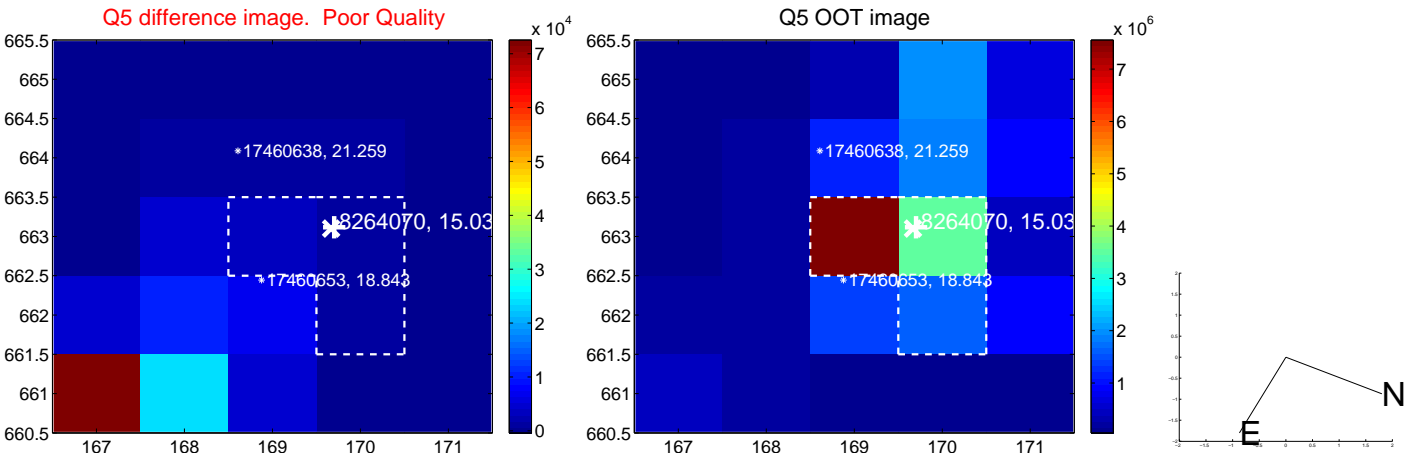


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

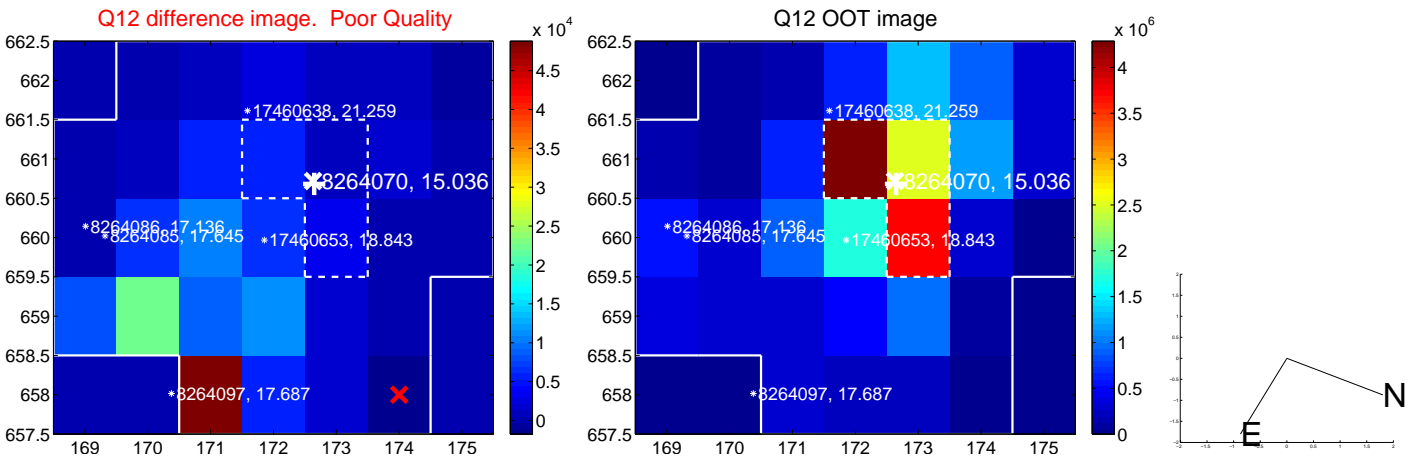
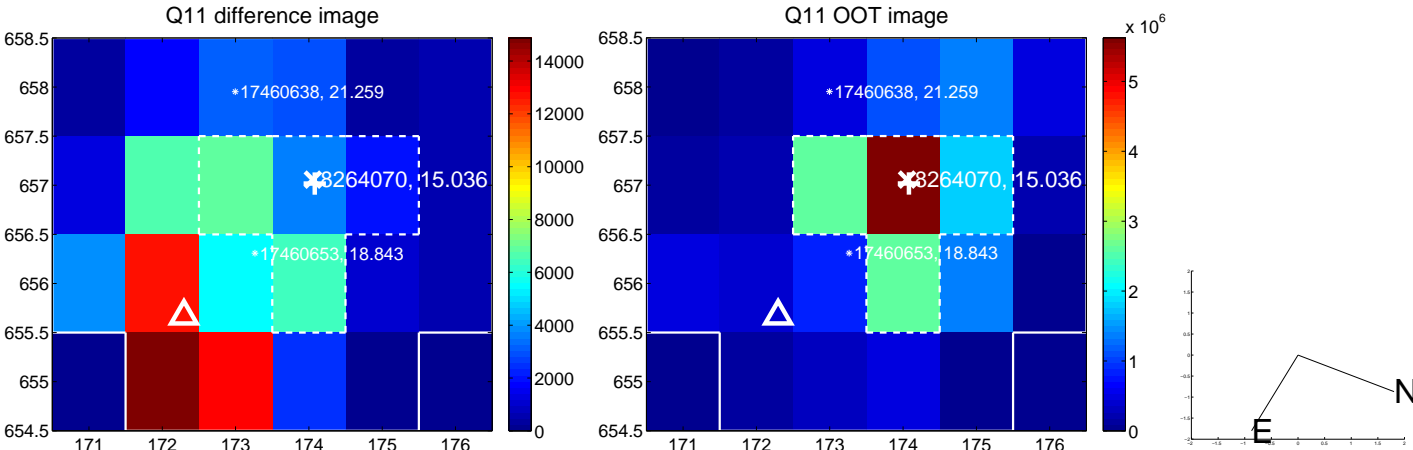
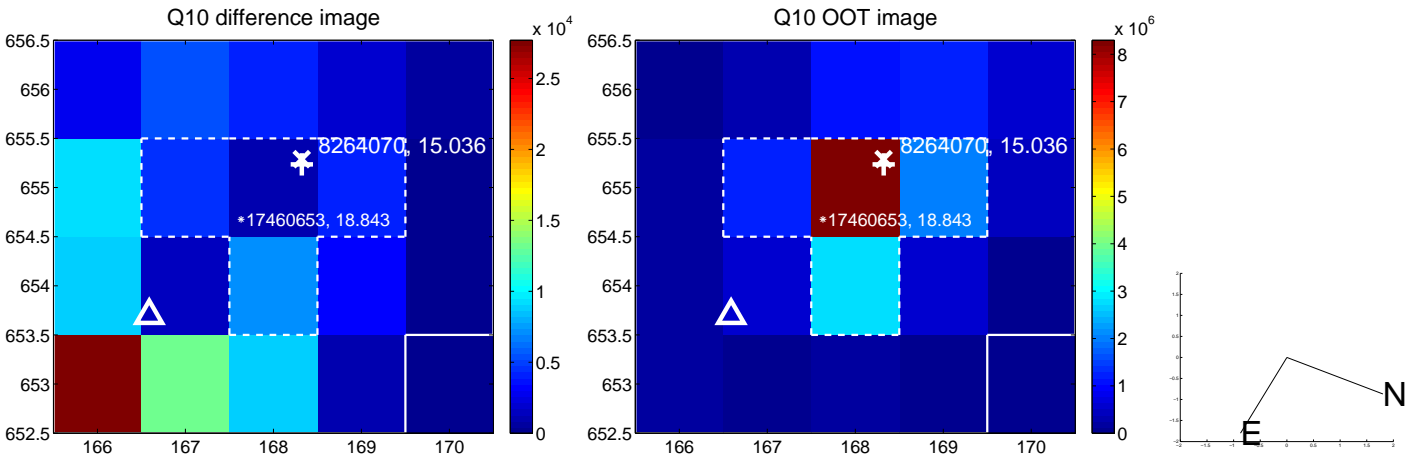
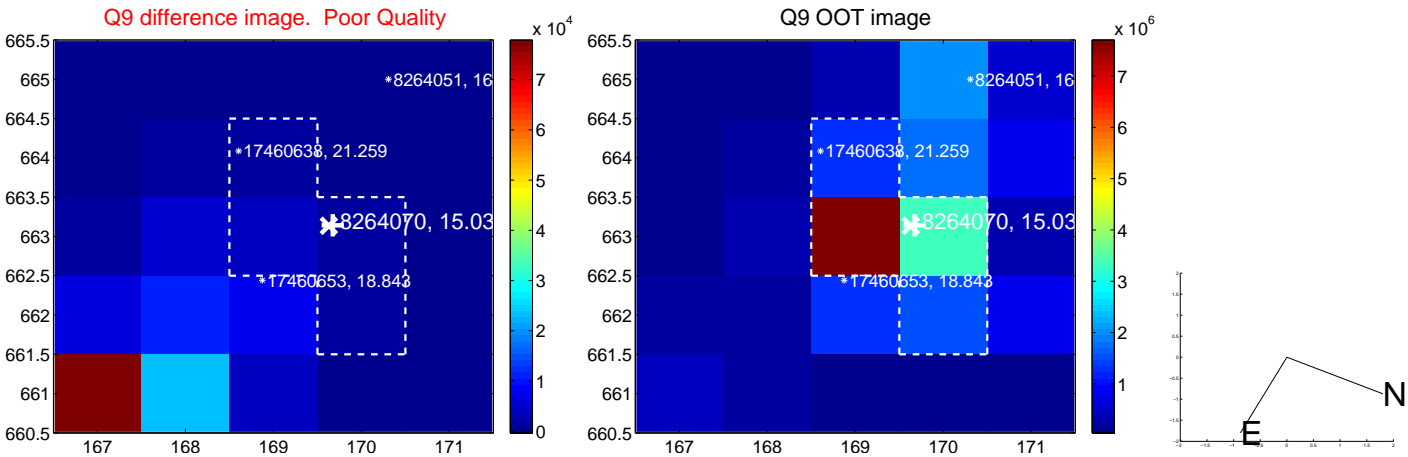
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



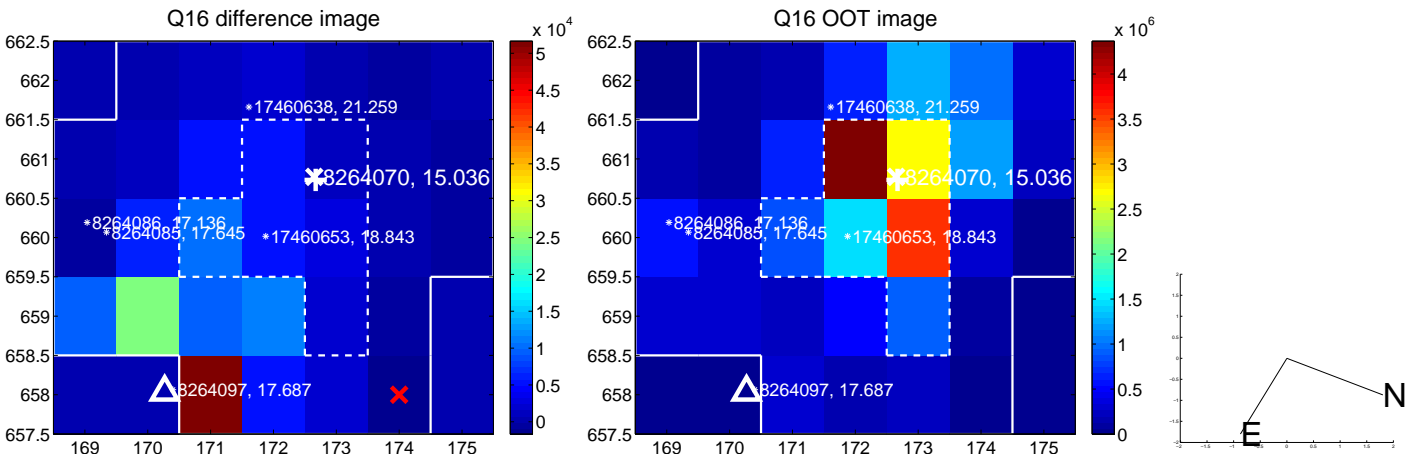
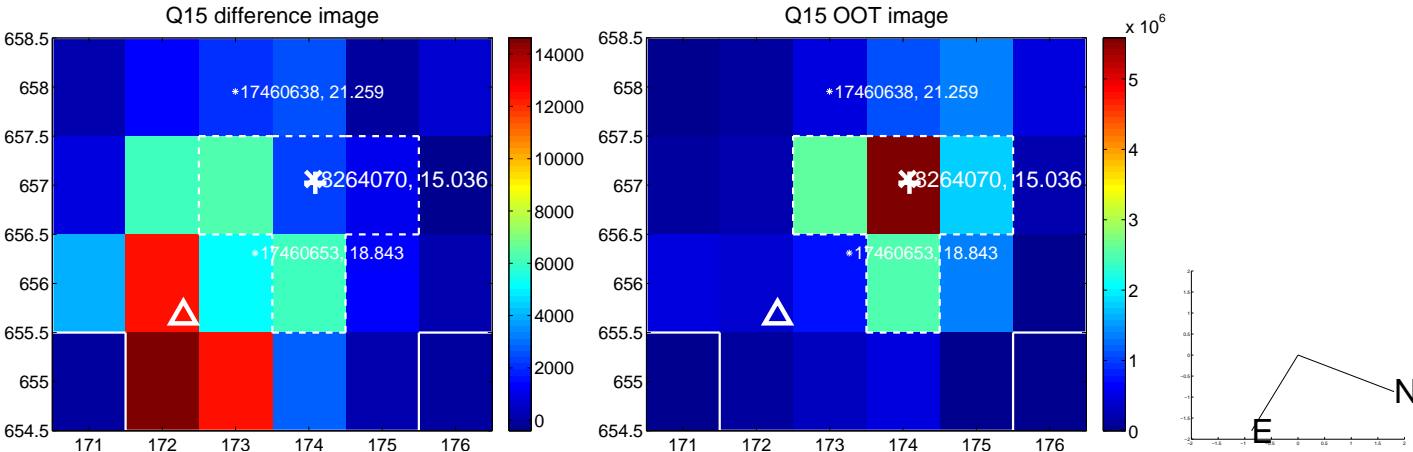
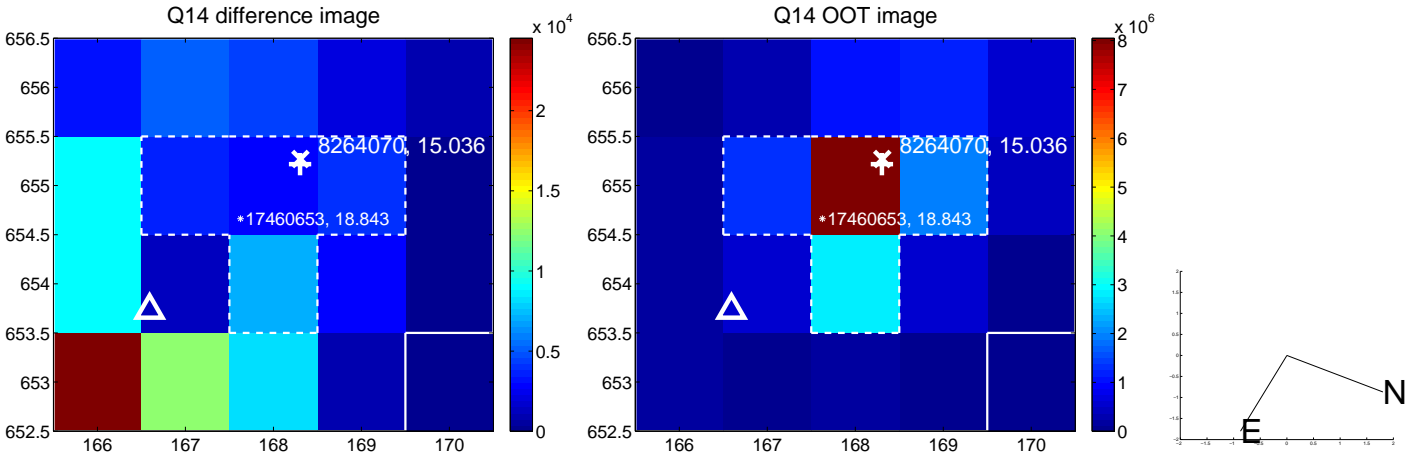
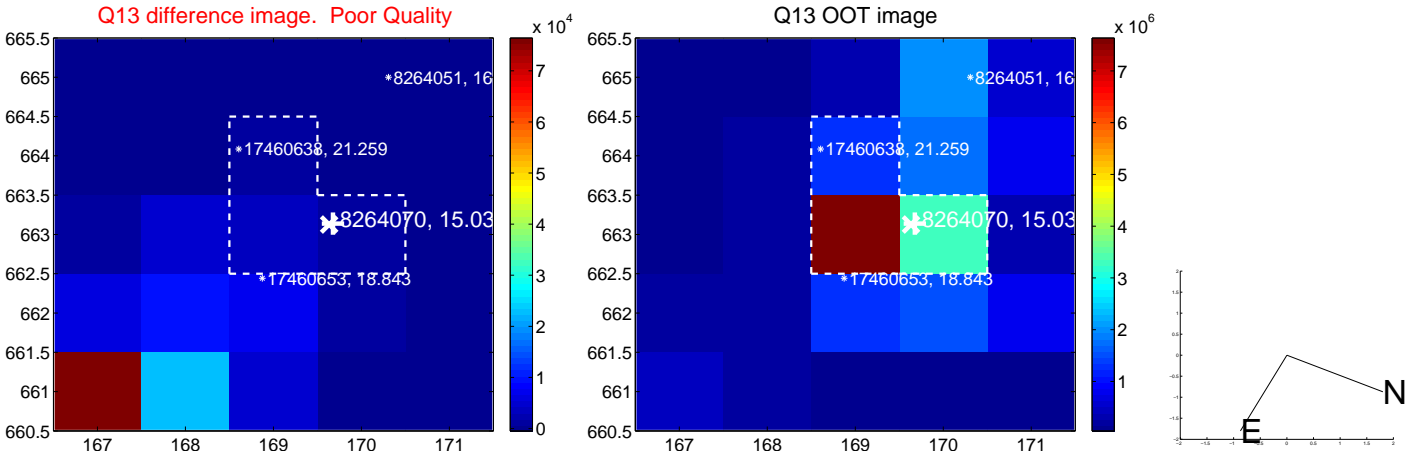
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

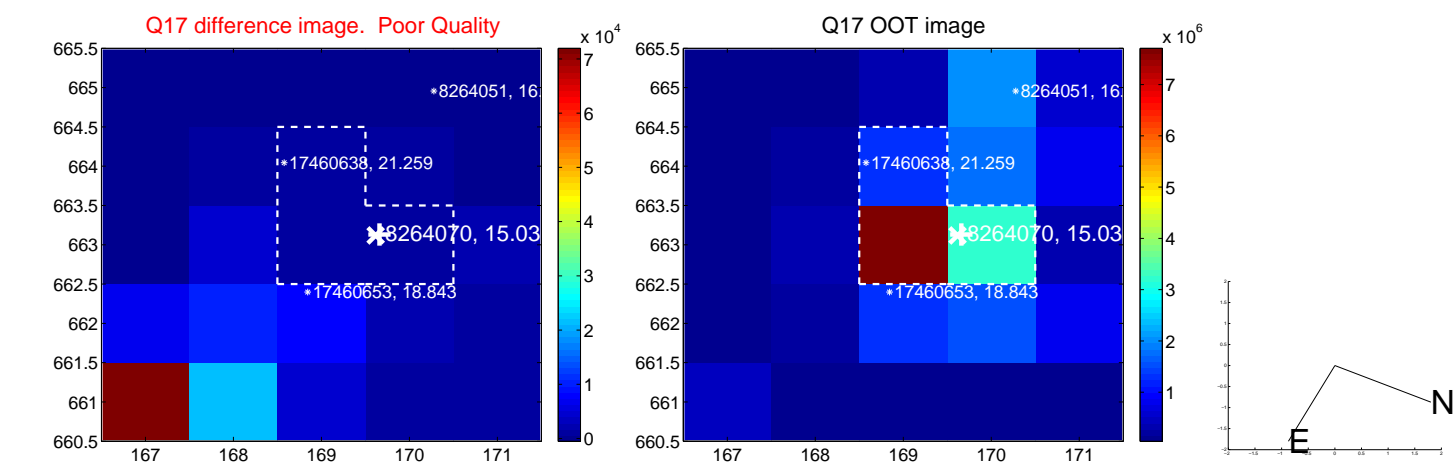


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

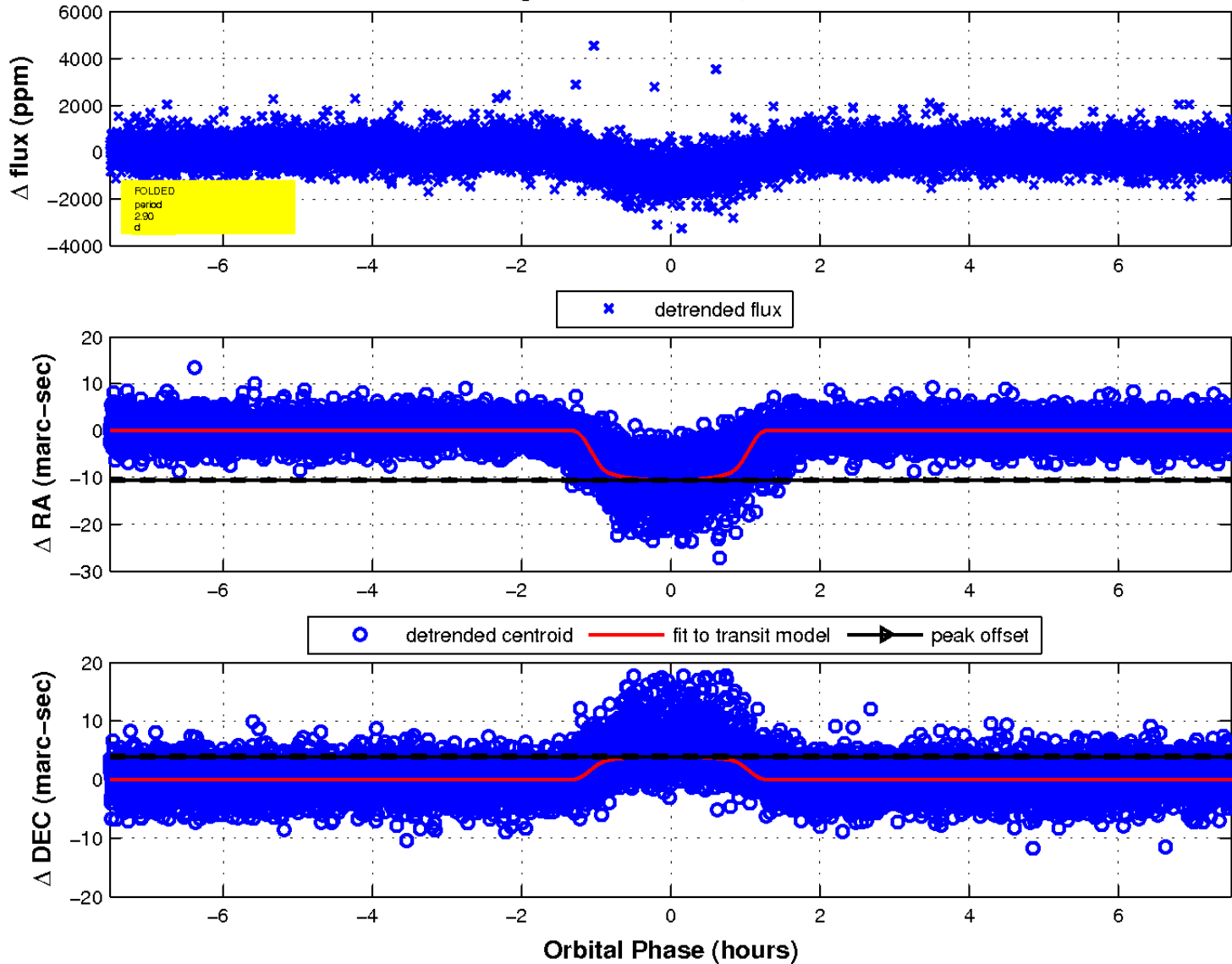




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

