

KIC 012555442

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
012555442-01	OBS	No	490.850572	592.421228	92.3	8.533	7.4	5.8	1.68	5528	1.84	1.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012555442-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

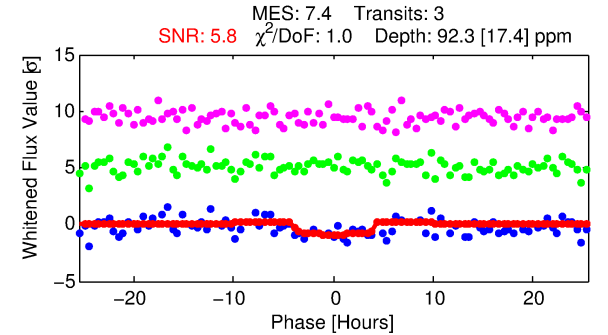
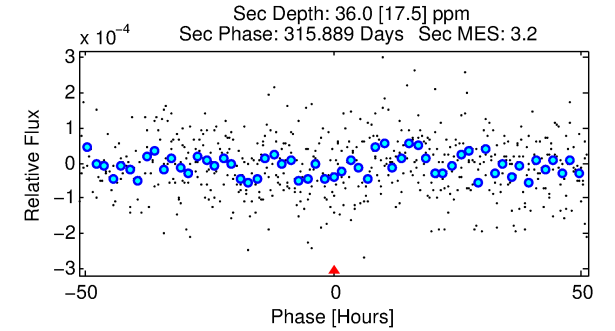
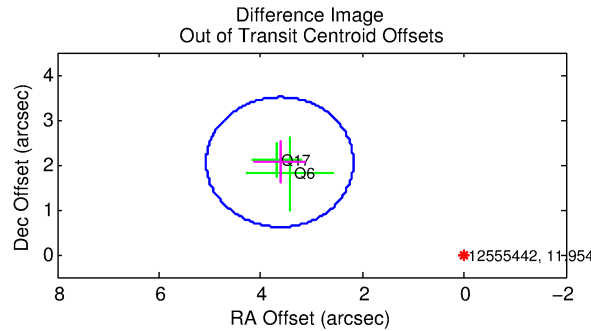
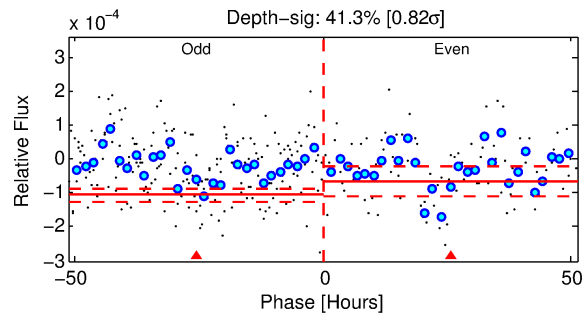
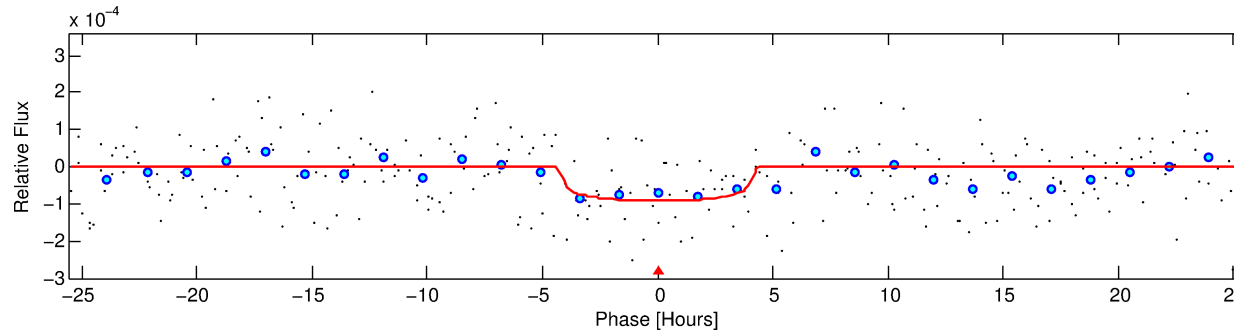
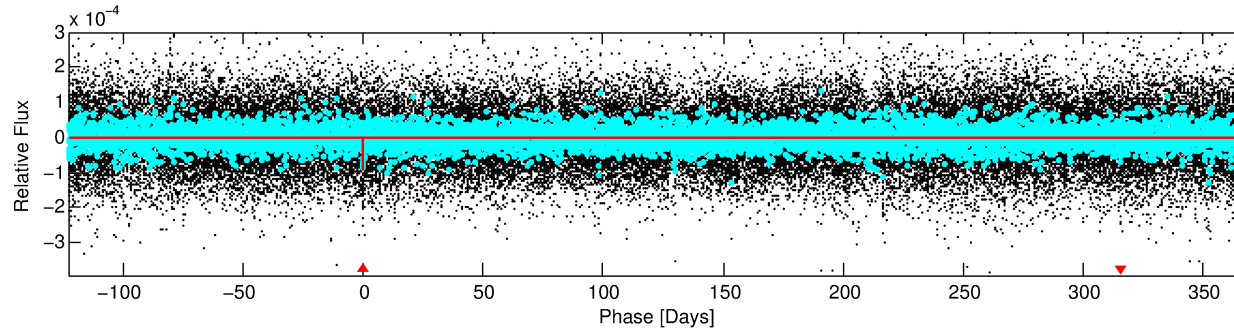
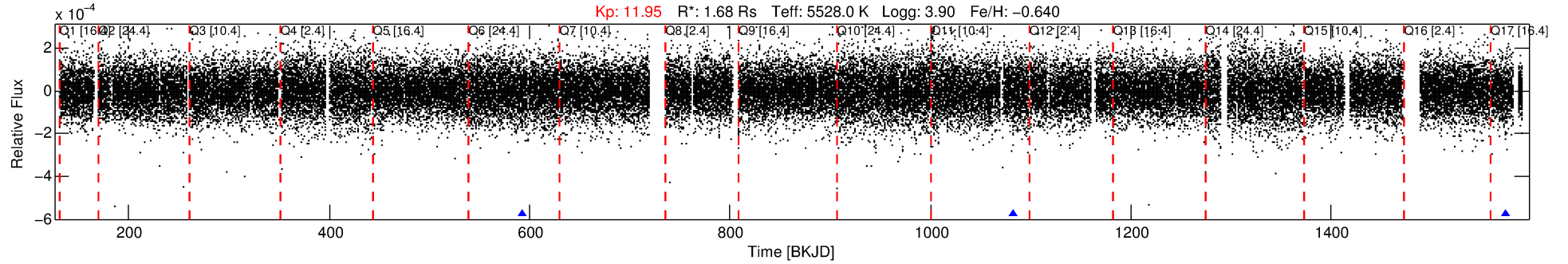
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012555442-01

No Significant Match Found

DV One-Page Summary

KIC: 12555442 Candidate: 1 of 1 Period: 490.851 d



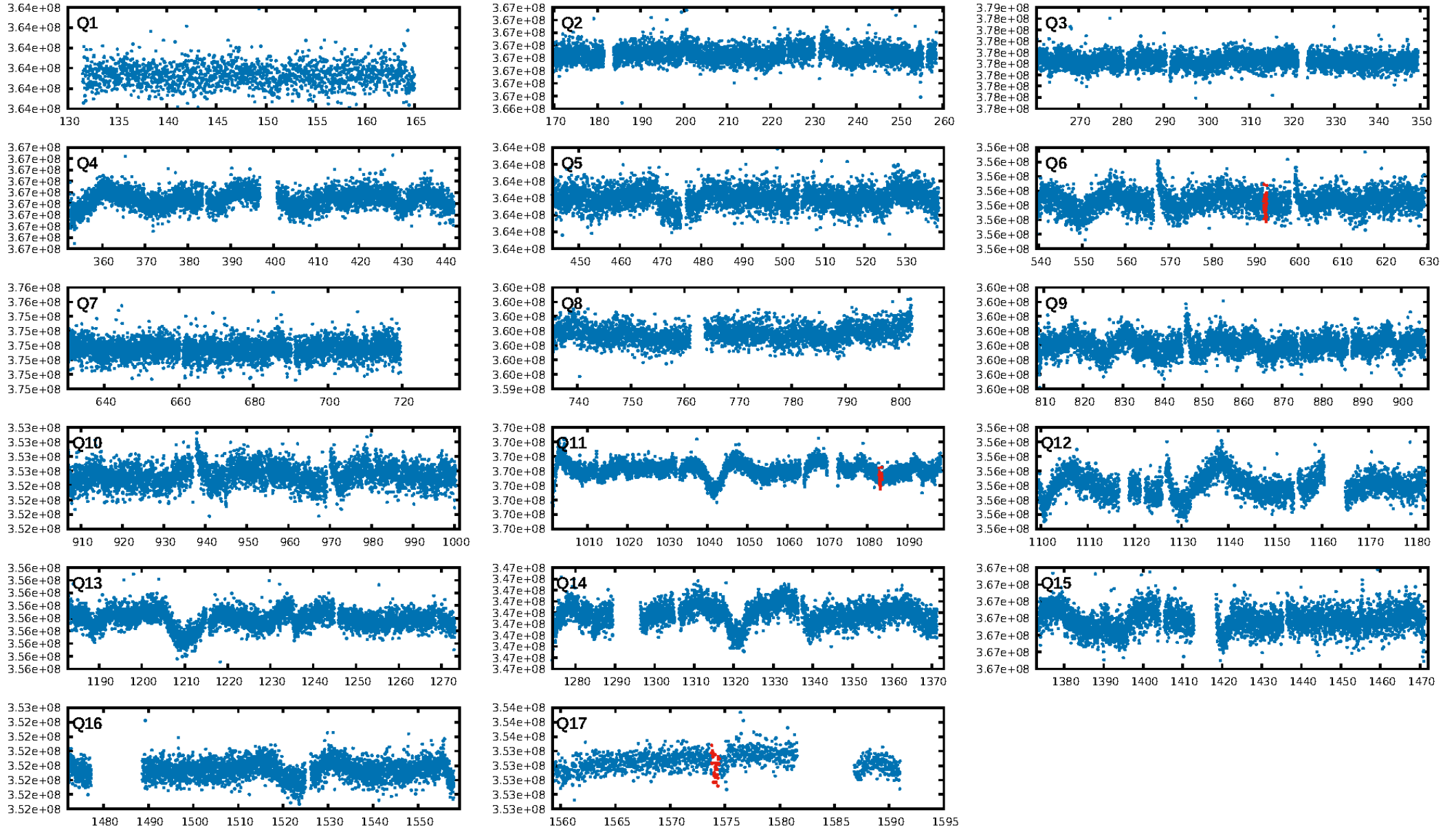
DV Fit Results:

Period = 490.85057 [0.01498] d
Epoch = 592.4212 [0.0209] BKJD
 $R_p/R^* = 0.0101$ [0.0064]
 $a/R^* = 237.06$ [714.93]
 $b = 0.85$ [0.97]
 $\text{Seff} = 1.83$ [1.86]
 $T_{\text{eq}} = 297$ [75] K
 $R_p = 1.84$ [1.52] R_e
 $a = 1.1364$ [0.6672] AU
 $A_g = 7527.73$ [12763.22] [0.59 σ]
 $T_{\text{eff}} = 4270$ [1464] K [2.71 σ]

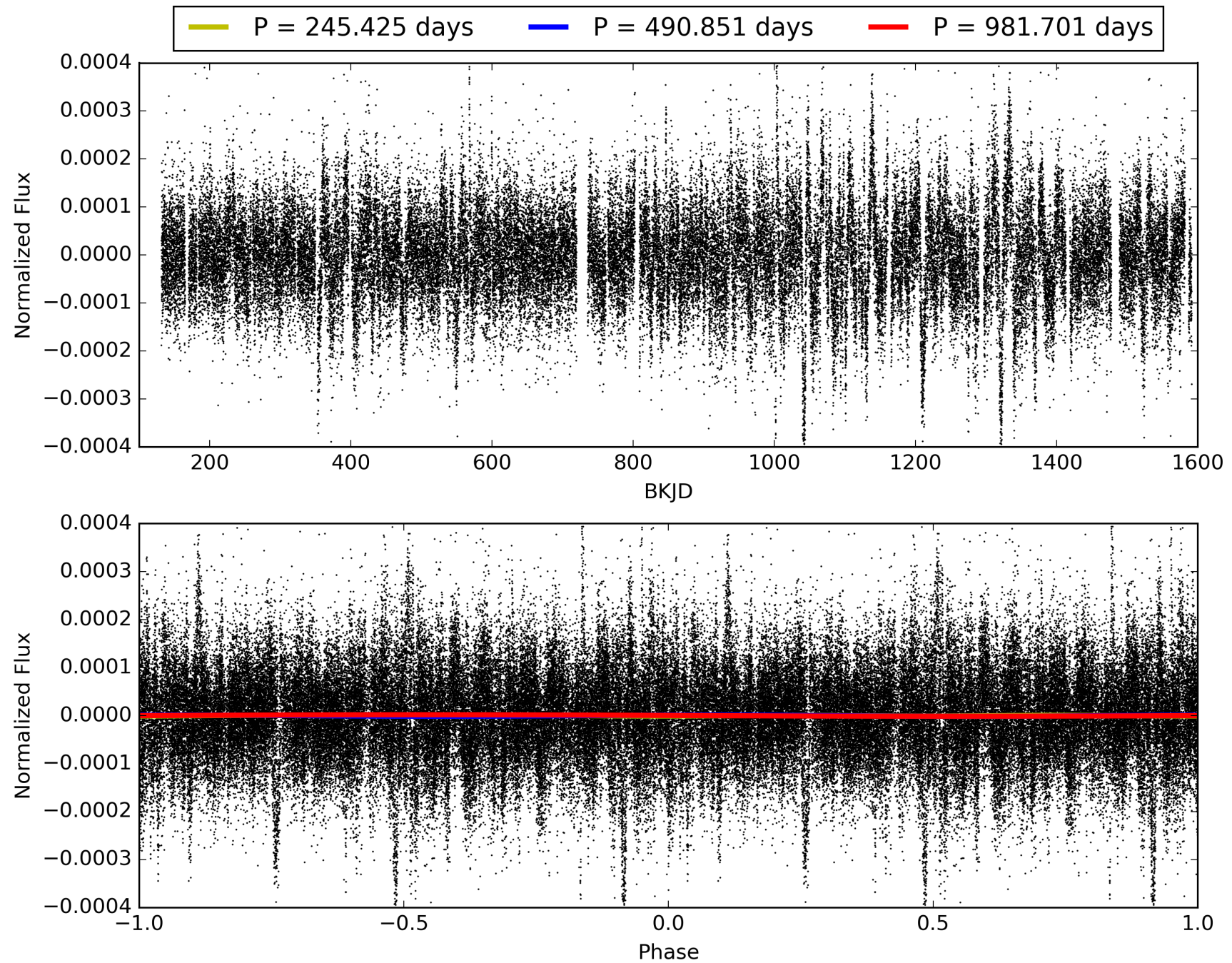
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 43.9%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 1.51e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -1.346
Centroid-sig: 2.0%
Centroid-so: 4.113 arcsec [1.95 σ]
OotOffset-rm: 4.166 arcsec [8.65 σ]
KicOffset-rm: 4.423 arcsec [9.26 σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 01255442-01, PDC Light Curves

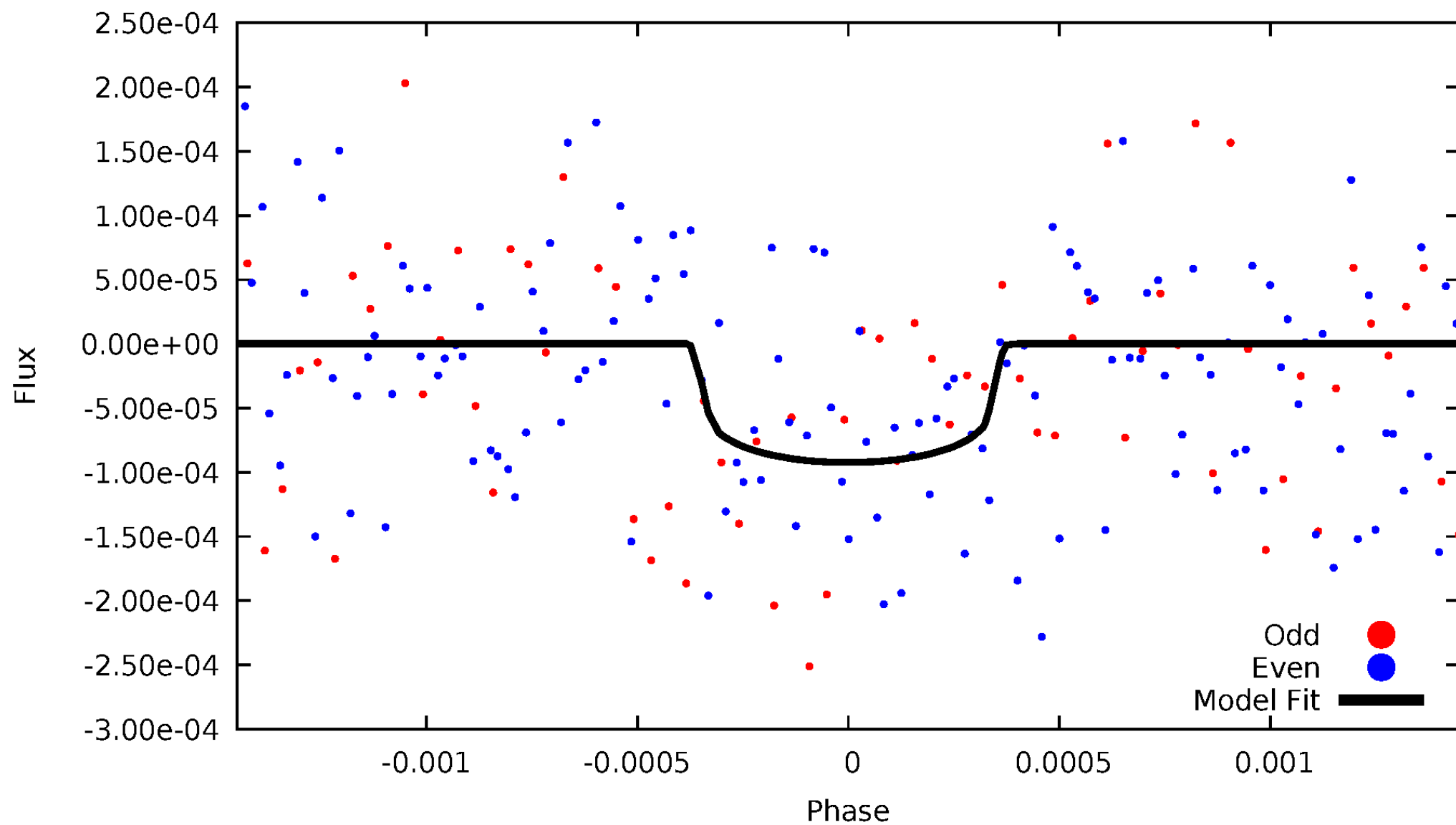


TCE 012555442-01



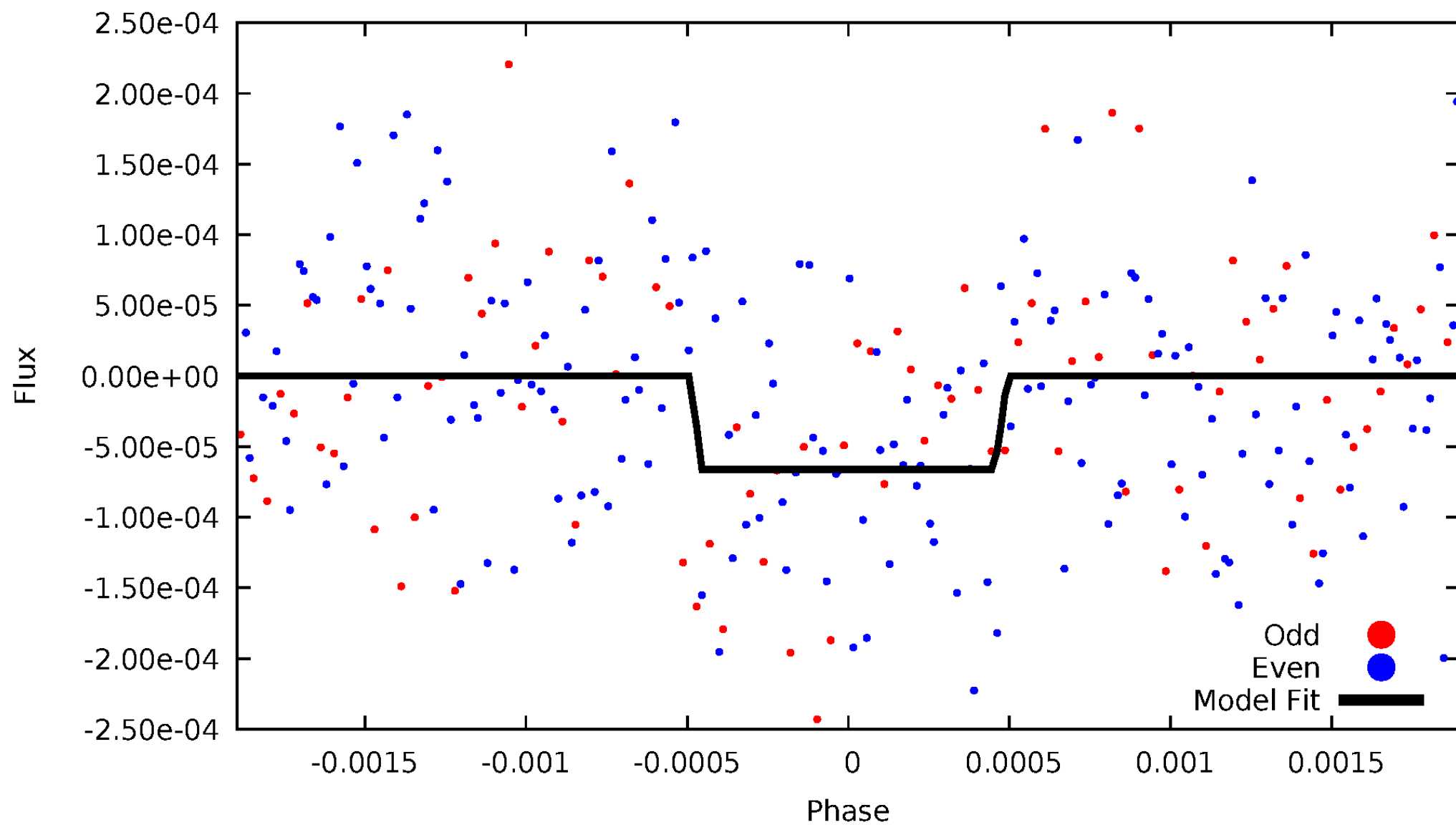
DV Odd/Even

TCE 012555442-01



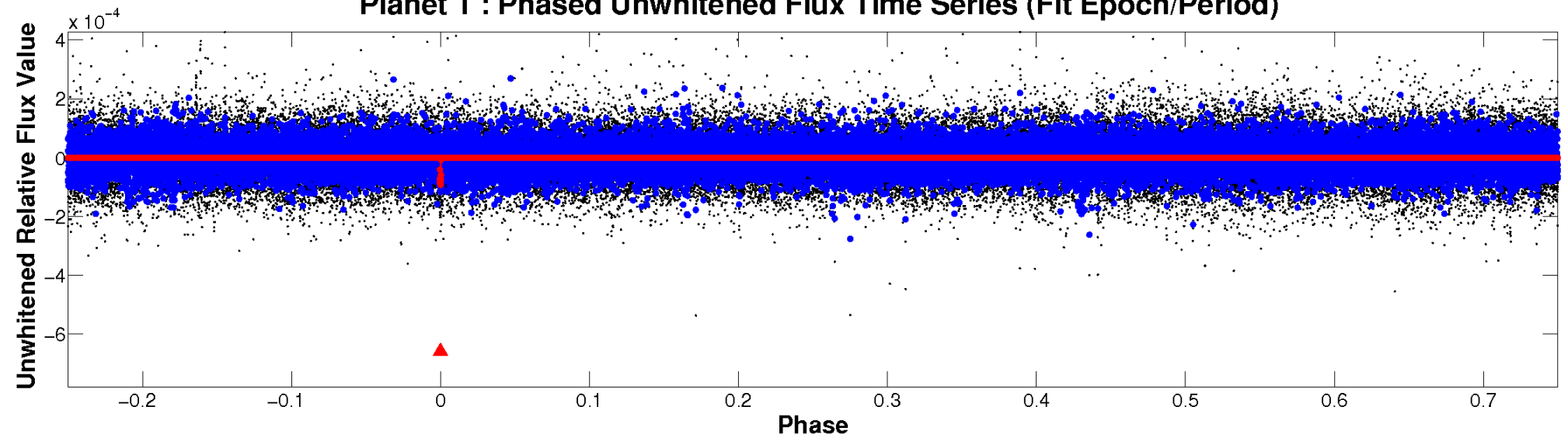
ALT Odd/Even

TCE 012555442-01

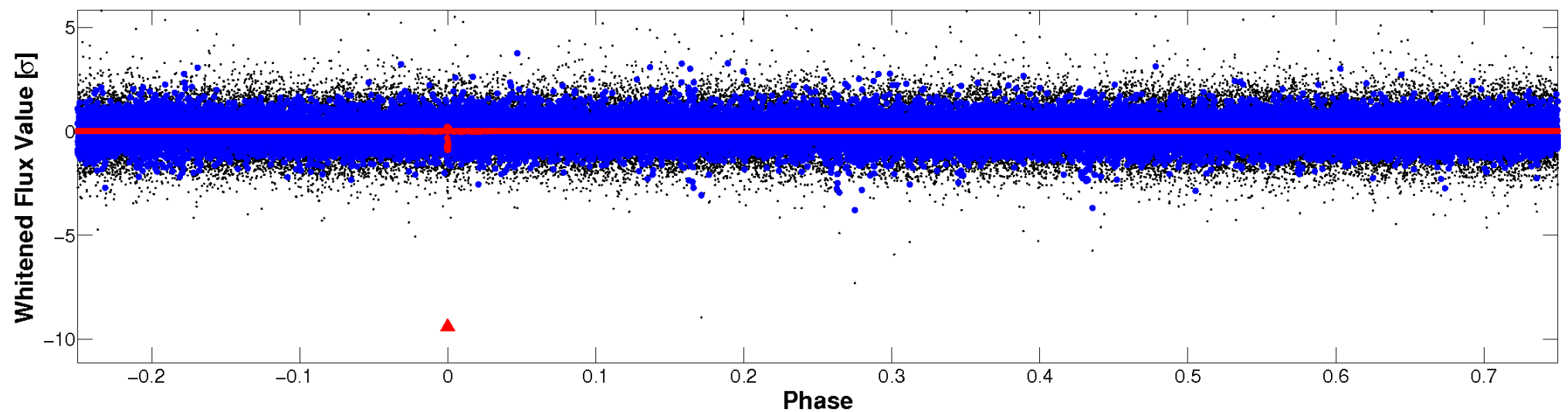


Non-Whitened Vs. Whitened Light Curve

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



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



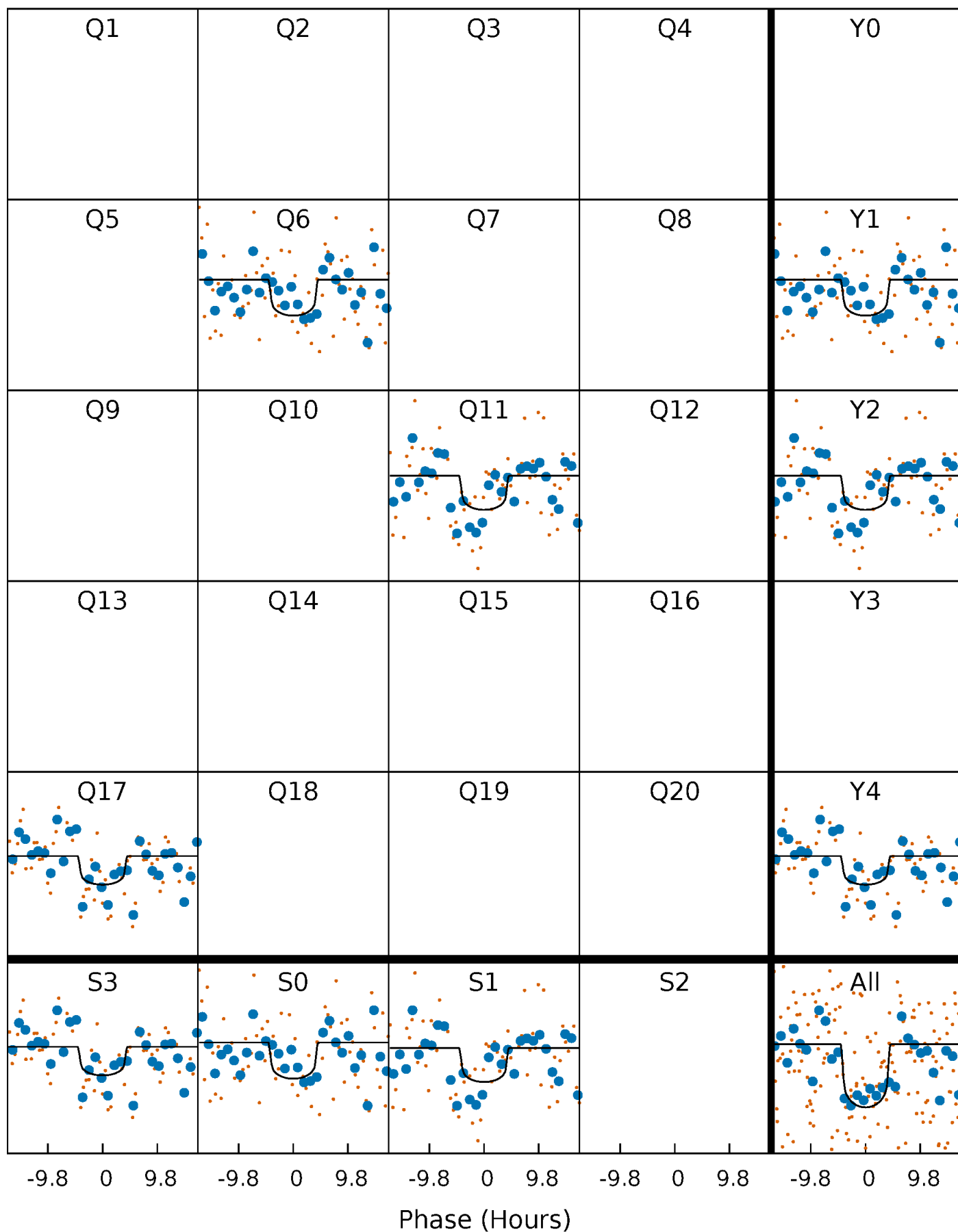
PDC Quarter-Phased Transit Curves

TCE 012555442-01 P=490.850572 Days $T_0=592.421228$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 012555442-01 P=490.850572 Days $T_0=592.421228$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

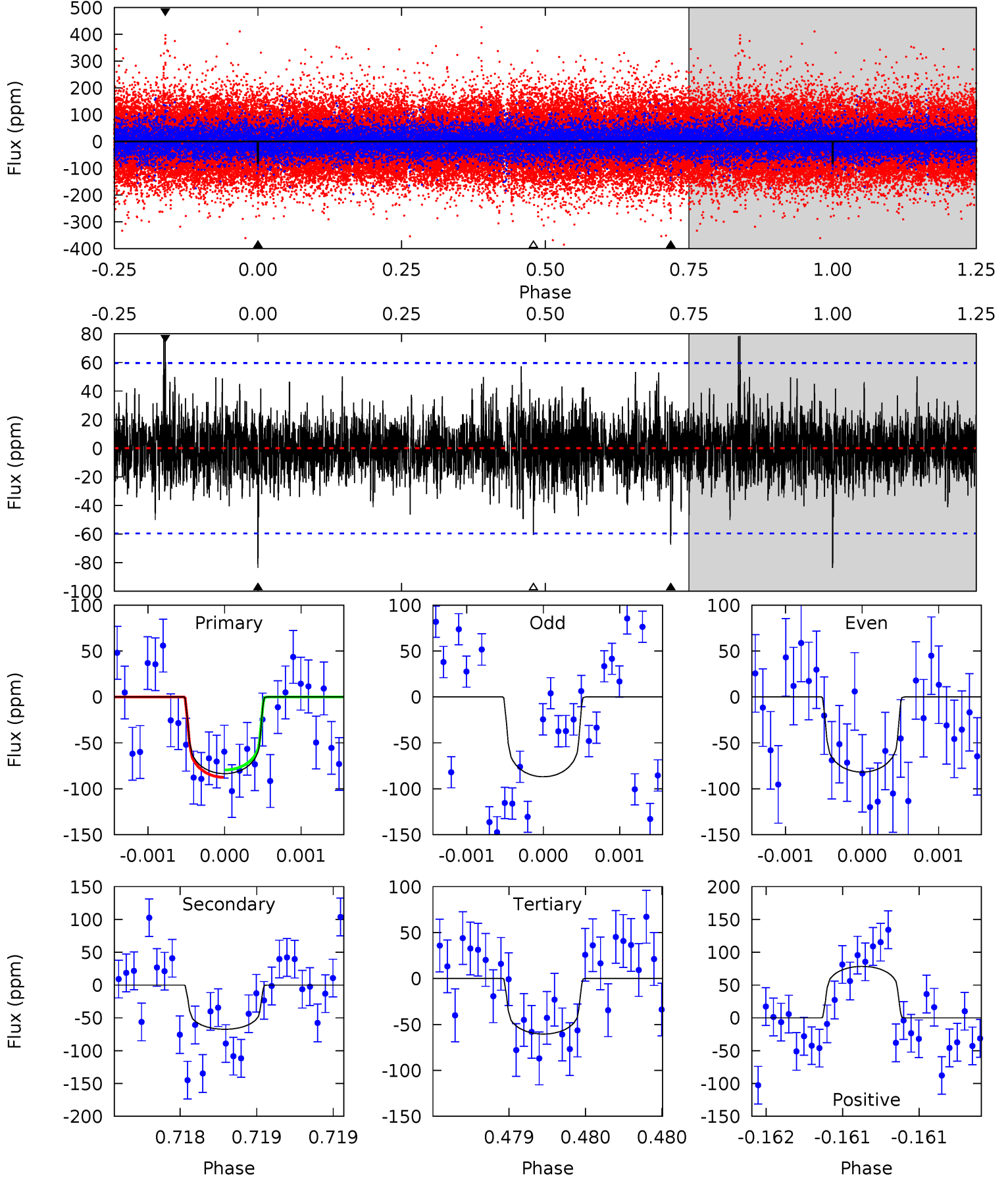
TCE 012555442-01 P=490.882223 Days $T_0=592.391442$ (BKJD)



DV Model-Shift Uniqueness Test

012555442-01, P = 490.850572 Days, E = 101.570656 Days

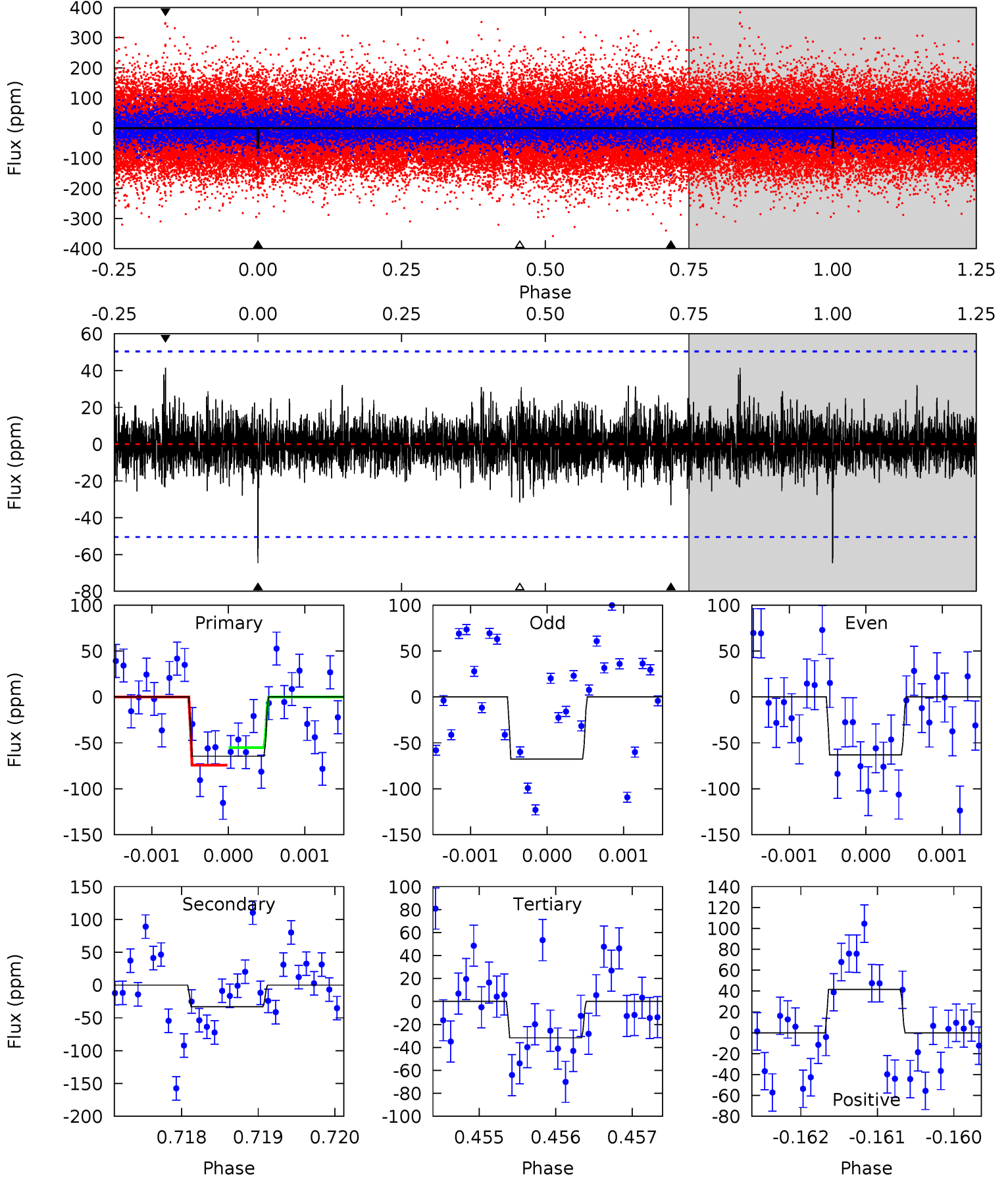
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.72	6.23	5.59	7.25	5.51	3.38	1.36	2.13	0.47	0.64	-1.02	0.22	0.96	0.48	0.37



Alt Model-Shift Uniqueness Test

012555442-01, P = 490.882223 Days, E = 101.509219 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.99	3.57	3.43	4.50	5.46	3.30	0.92	3.56	2.49	0.14	-0.93	0.22	0.96	0.39	1.03



Stellar Parameters For KIC 012555442

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5528^{+199}_{-132}	$3.897^{+0.616}_{-0.154}$	$-0.640^{+0.400}_{-0.250}$	$1.680^{+0.472}_{-0.877}$	$0.811^{+0.109}_{-0.089}$	$0.241^{+1.798}_{-0.095}$
	+4%/-2%	+16%/-4%	+62%/-39%	+28%/-52%	+13%/-11%	+746%/-40%
Source	PHO1	FLK73	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 012555442-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 11	$1.76^{+1.27}_{-1.02}$	408^{+36}_{-62}	4948^{+2278}_{-830}	15915^{+76682}_{-10345}
Alt.	-33 ± 9	$1.42^{+1.13}_{-0.85}$	406^{+37}_{-59}	4644^{+2438}_{-841}	11971^{+62082}_{-8531}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

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

DV Centroid Data

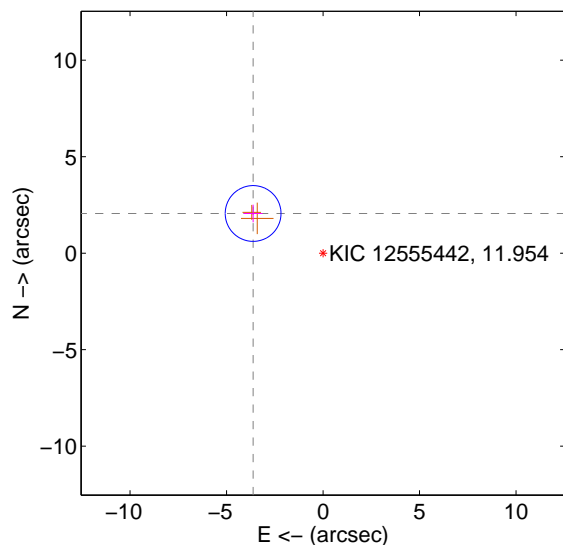
Supplemental centroid analysis for 012555442-01. **Kepler magnitude: 11.95.** Transit SNR 5.83

There are 0 quarters with good PRF difference image offsets

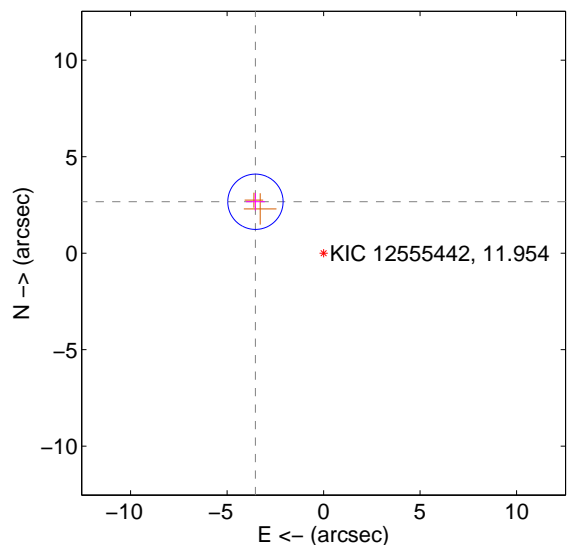
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.166 \pm 0.482	8.65	3.623 \pm 0.490	2.057 \pm 0.456
PRF-fit source offset from KIC position	4.423 \pm 0.478	9.26	3.531 \pm 0.490	2.664 \pm 0.456
photometric centroid source offset	4.11 \pm 2.11	1.95	3.97 \pm 2.09	-1.09 \pm 2.34

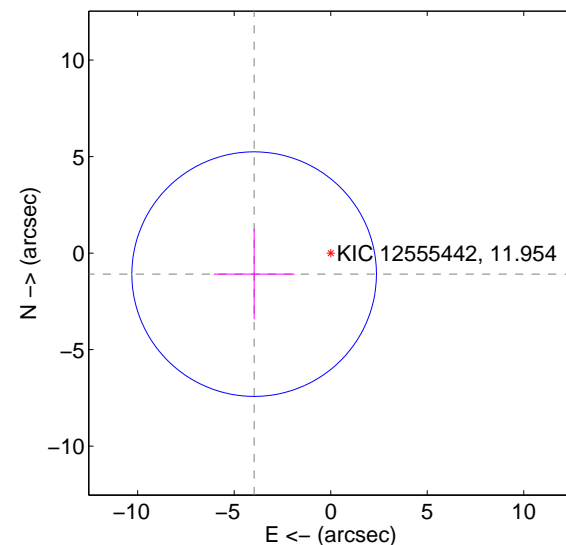
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

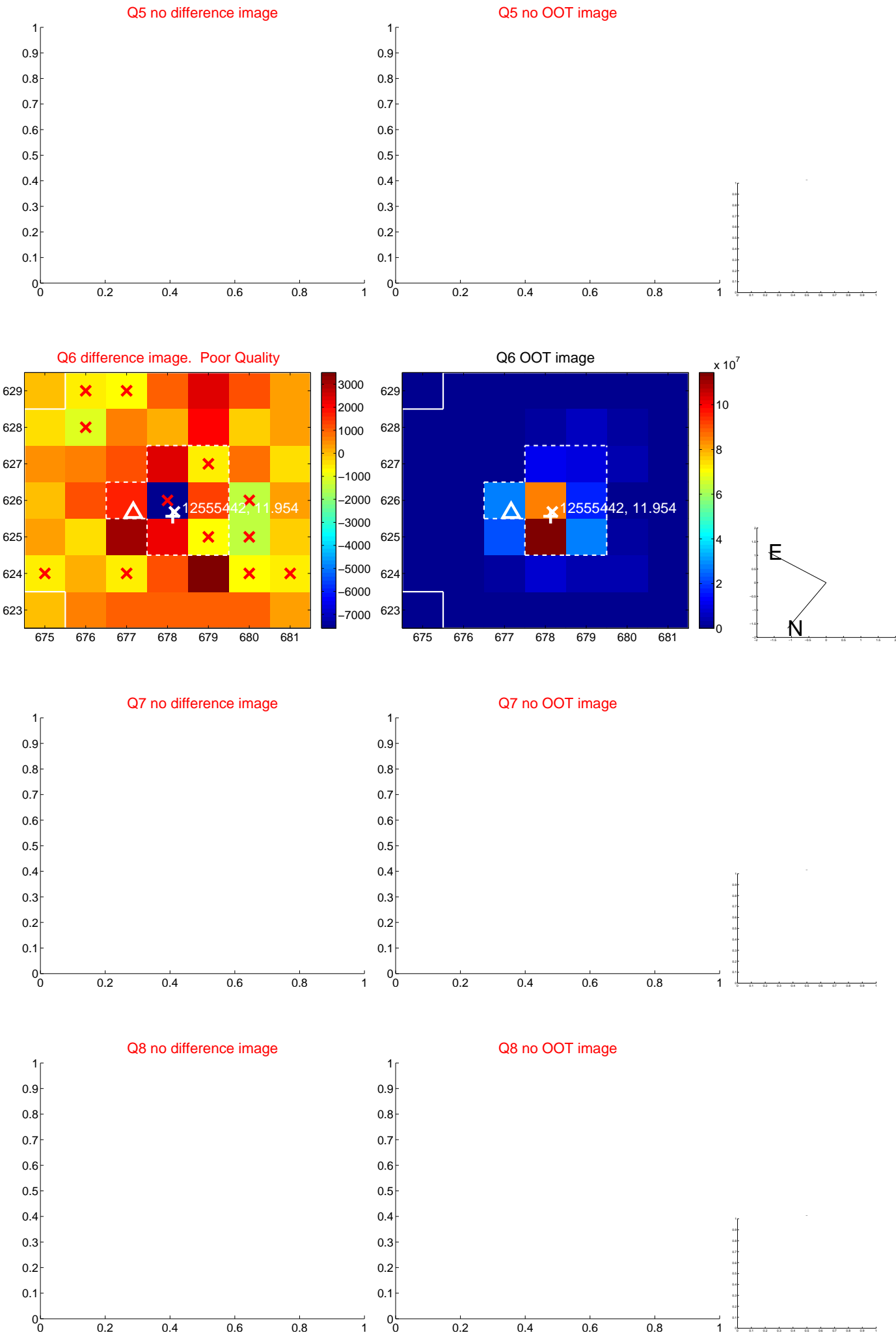


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.



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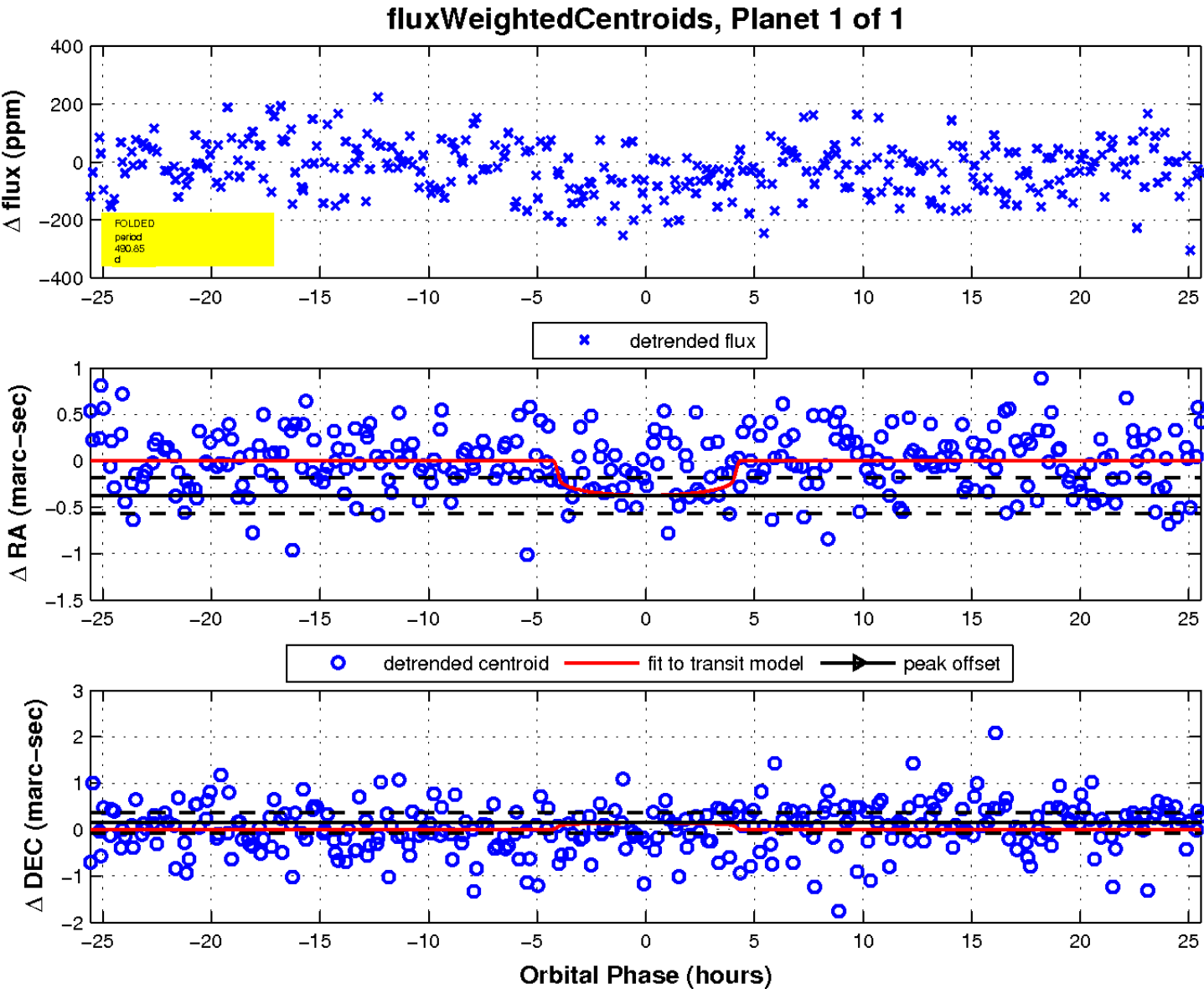
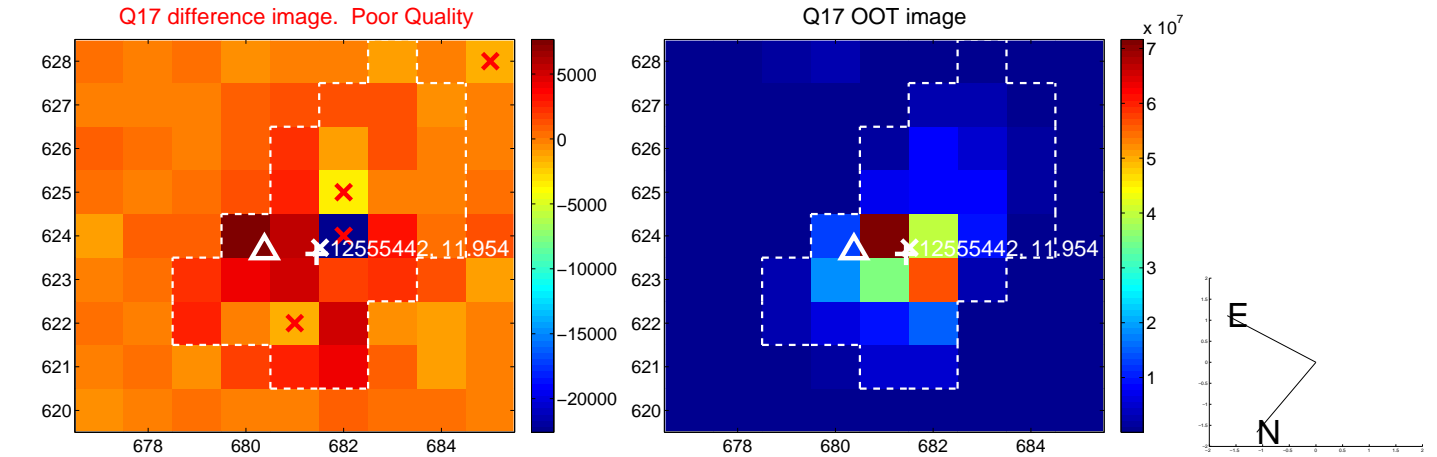
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UKIRT Image

Declination

