

KIC 005431448

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})
005431448-01	OBS	No	364.586003	282.332786	822.1	4.800	7.2	7.8	0.85	5812	2.69	0.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005431448-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—MOD_POS_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.

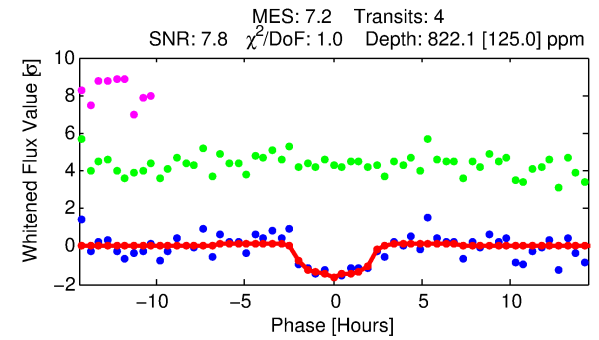
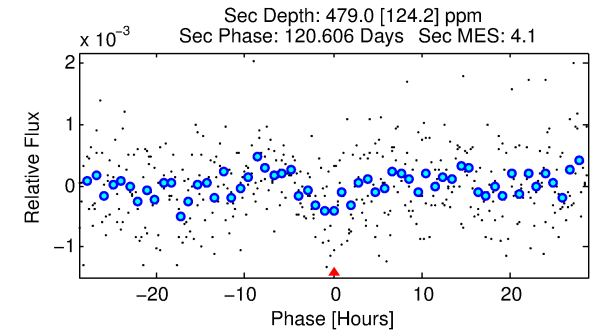
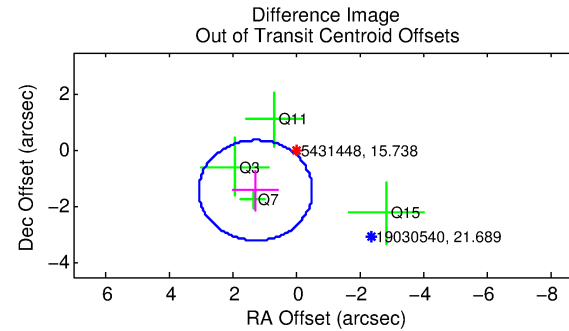
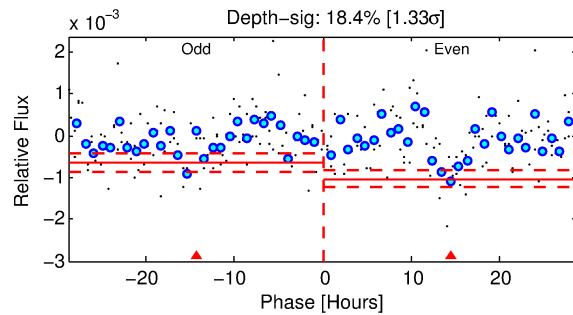
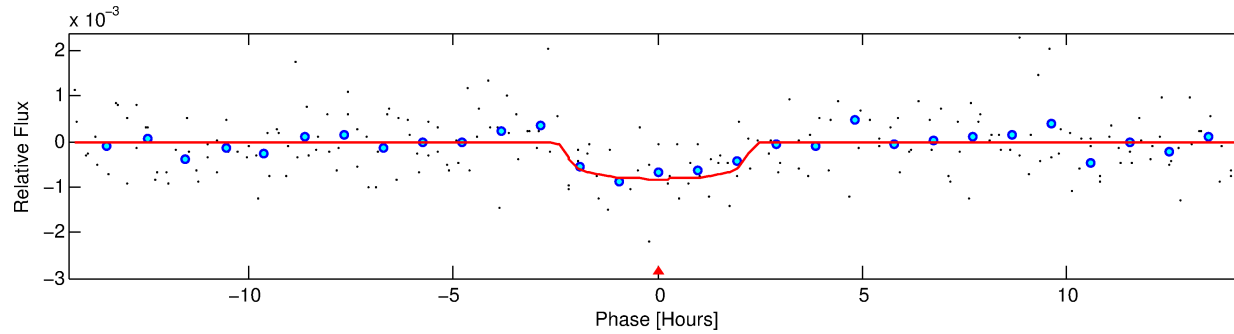
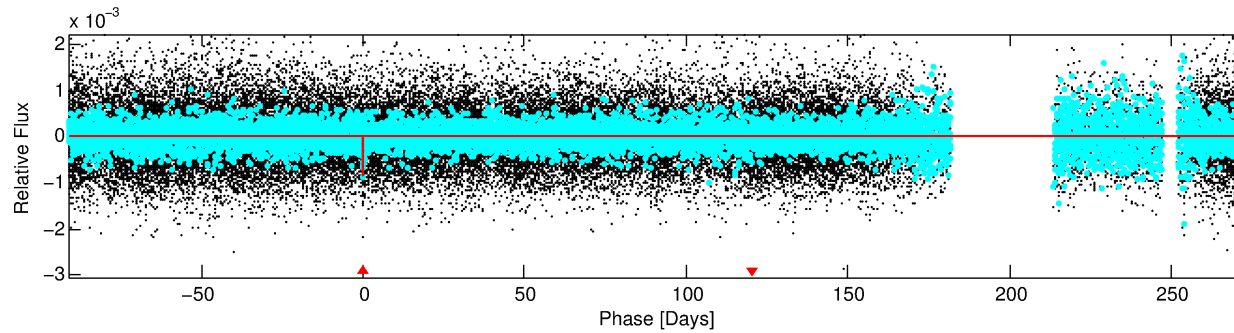
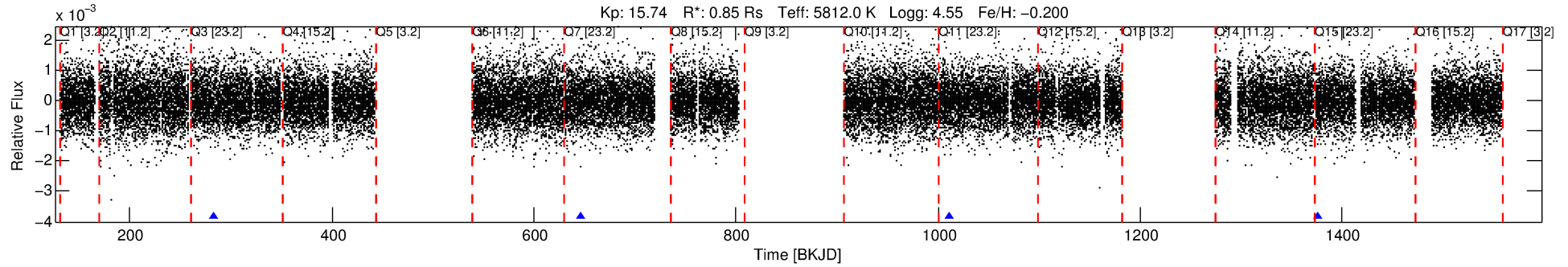
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005431448-01

No Significant Match Found

DV One-Page Summary

KIC: 5431448 Candidate: 1 of 1 Period: 364.586 d



DV Fit Results:

Period = 364.58600 [0.00717] d
Epoch = 282.3328 [0.0156] BKJD
Rp/R* = 0.0288 [0.0199]
a/R* = 391.16 [1227.73]
b = 0.78 [1.62]
Seff = 0.77 [0.27]
Teq = 239 [21] K
Rp = 2.69 [1.99] Re
a = 0.9799 [0.2222] AU
Ag = 35097.61 [50643.75] [0.69 σ]
Teffp = 5062 [1783] K [2.70 σ]

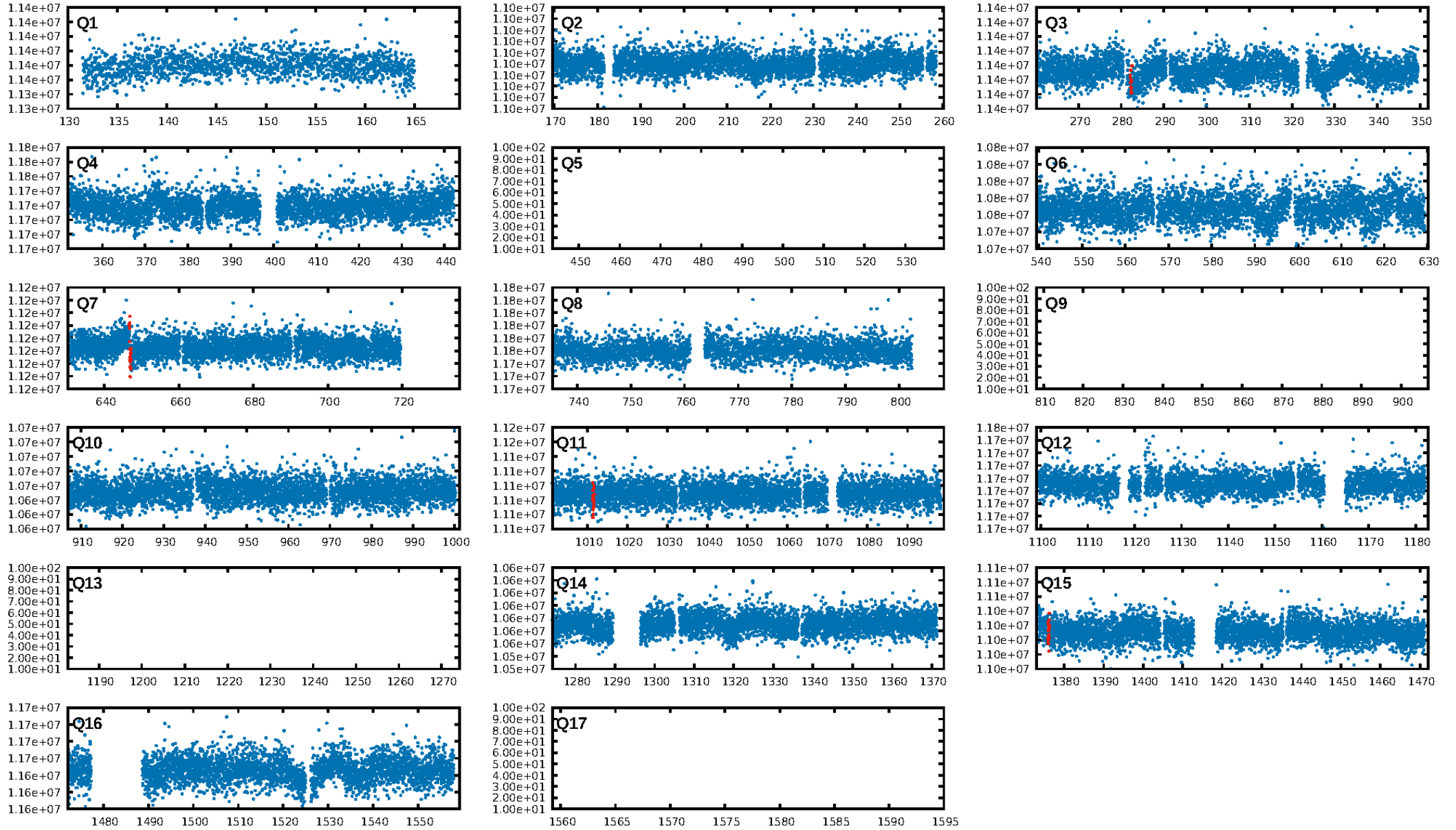
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 15.3%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 5.71e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -6.384
Centroid-sig: 54.9%
Centroid-so: 1.858 arcsec [0.85 σ]
OotOffset-rm: 1.898 arcsec [3.18 σ]
KicOffset-rm: 2.014 arcsec [3.58 σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

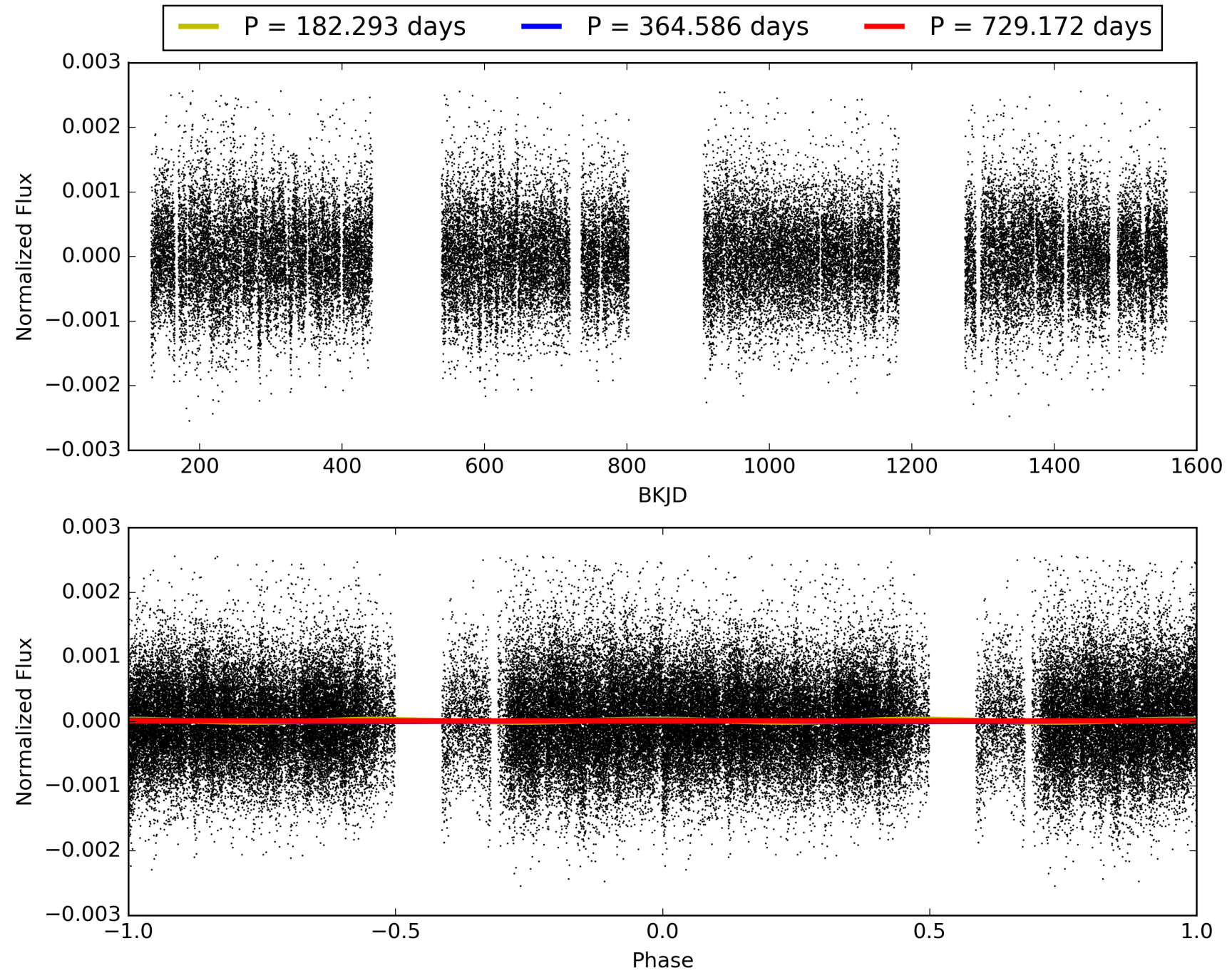
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:40:34 Z

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

TCE 005431448-01, PDC Light Curves

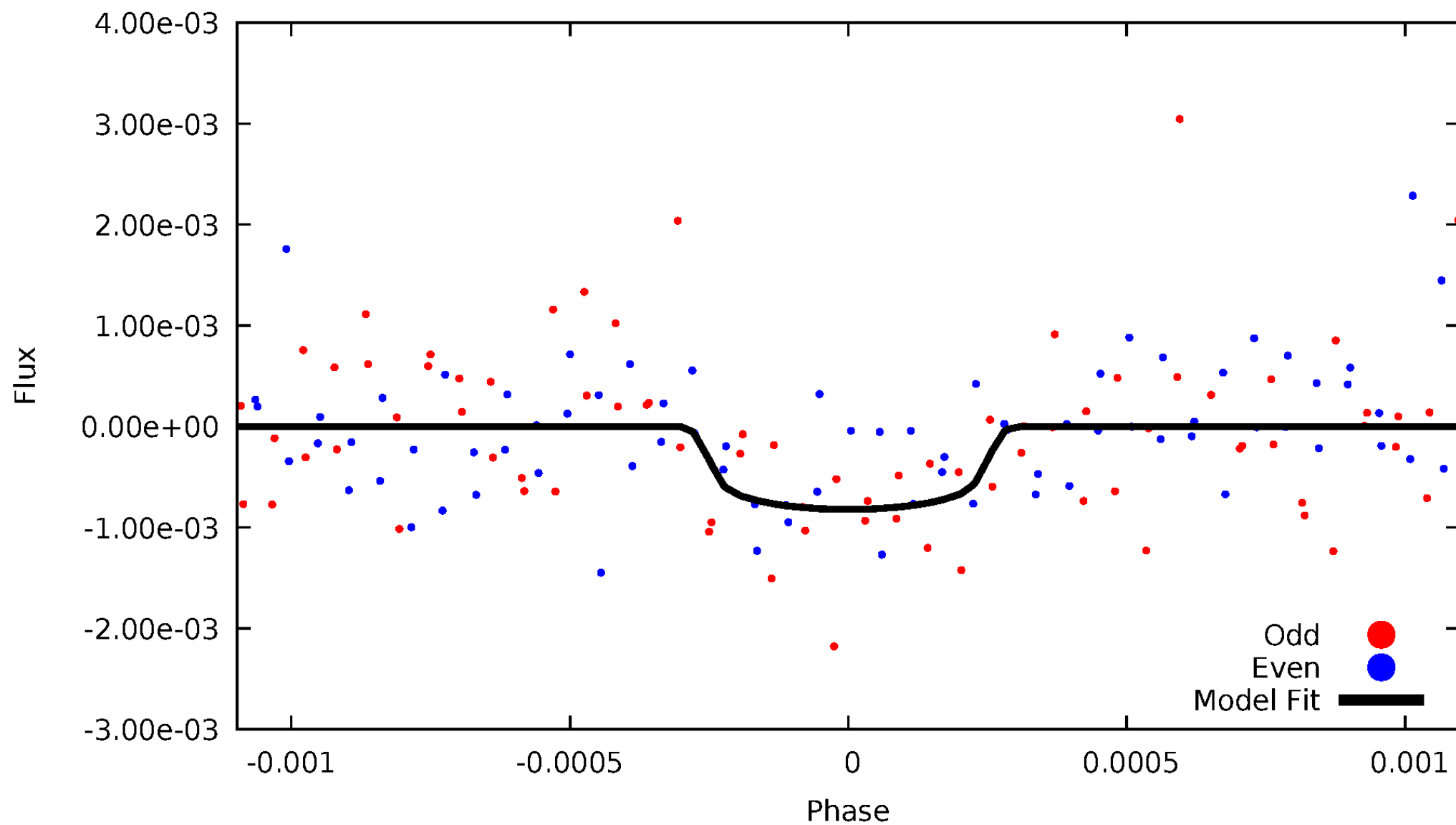


TCE 005431448-01



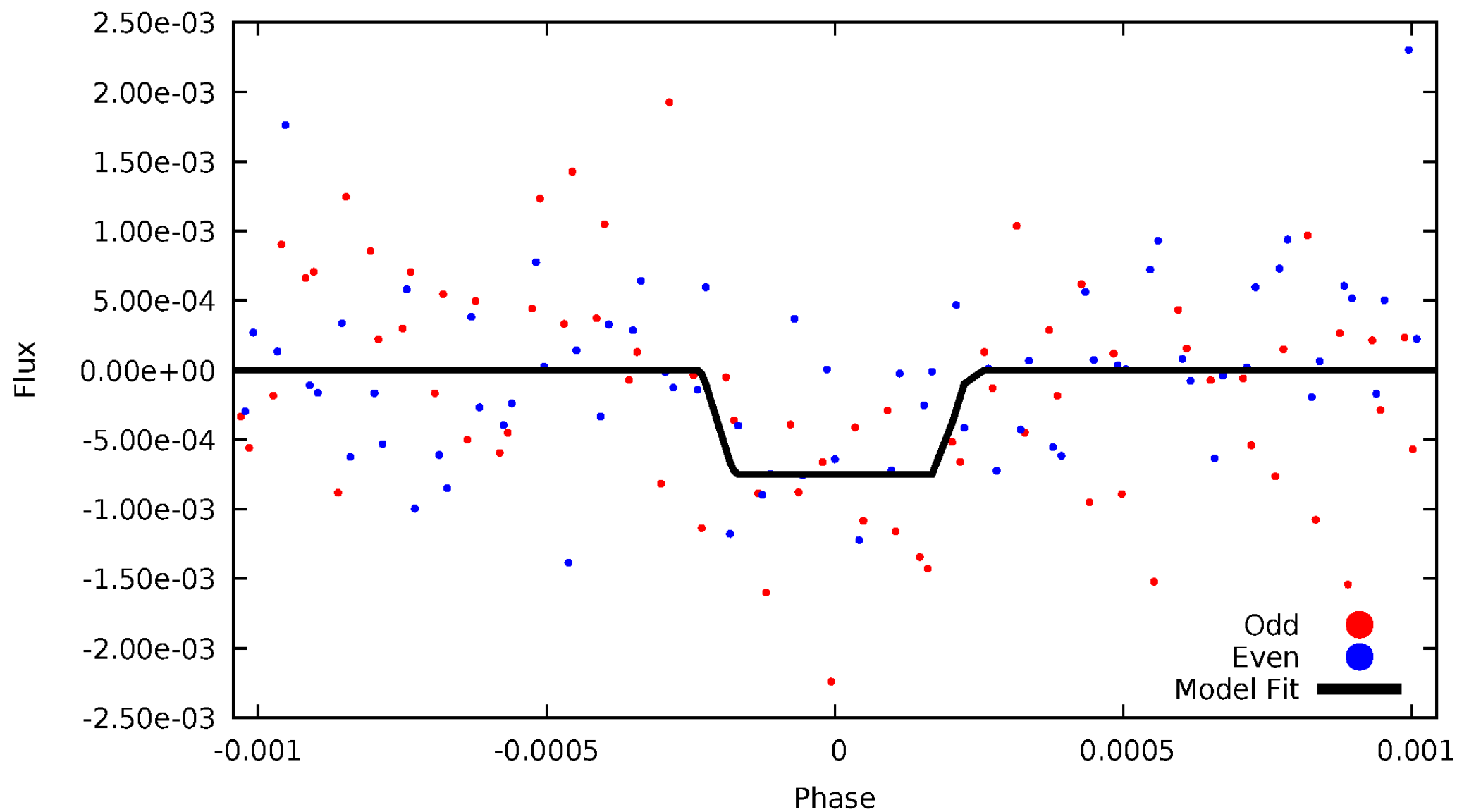
DV Odd/Even

TCE 005431448-01



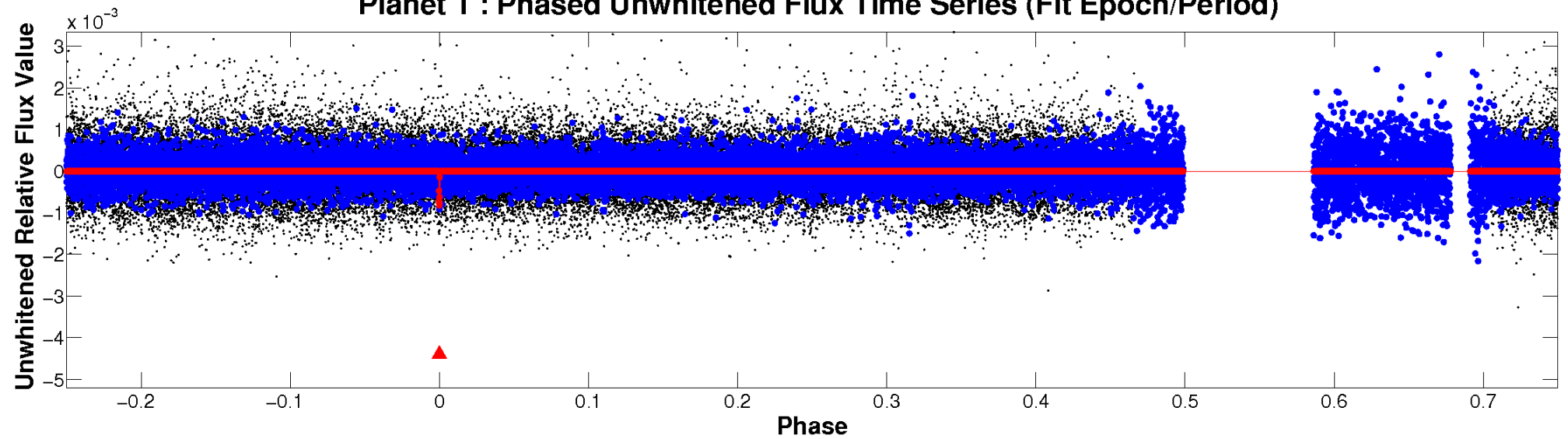
ALT Odd/Even

TCE 005431448-01

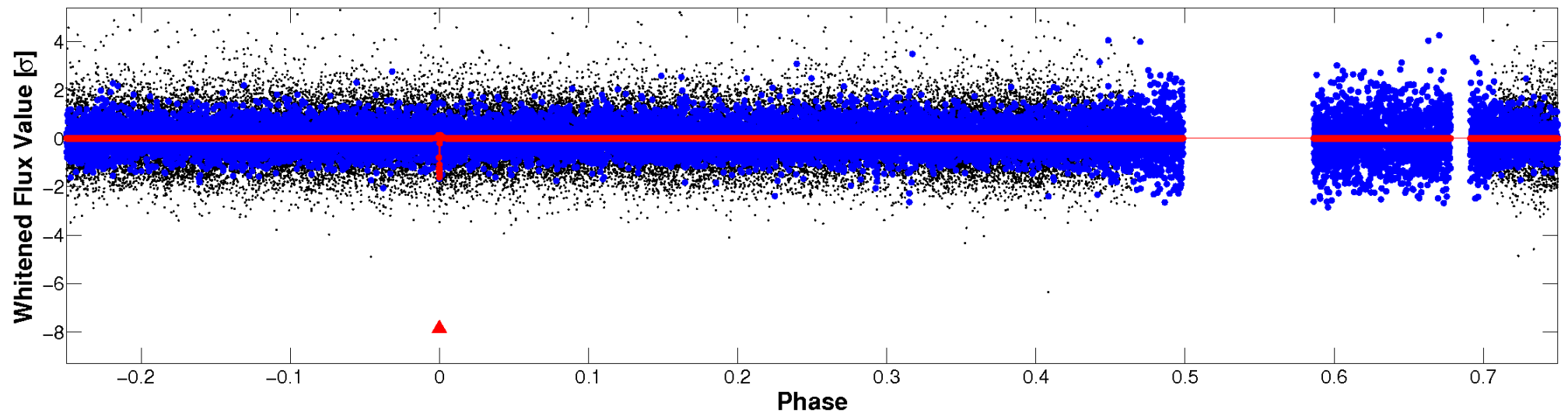


Non-Whitened Vs. Whitened Light Curve

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



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



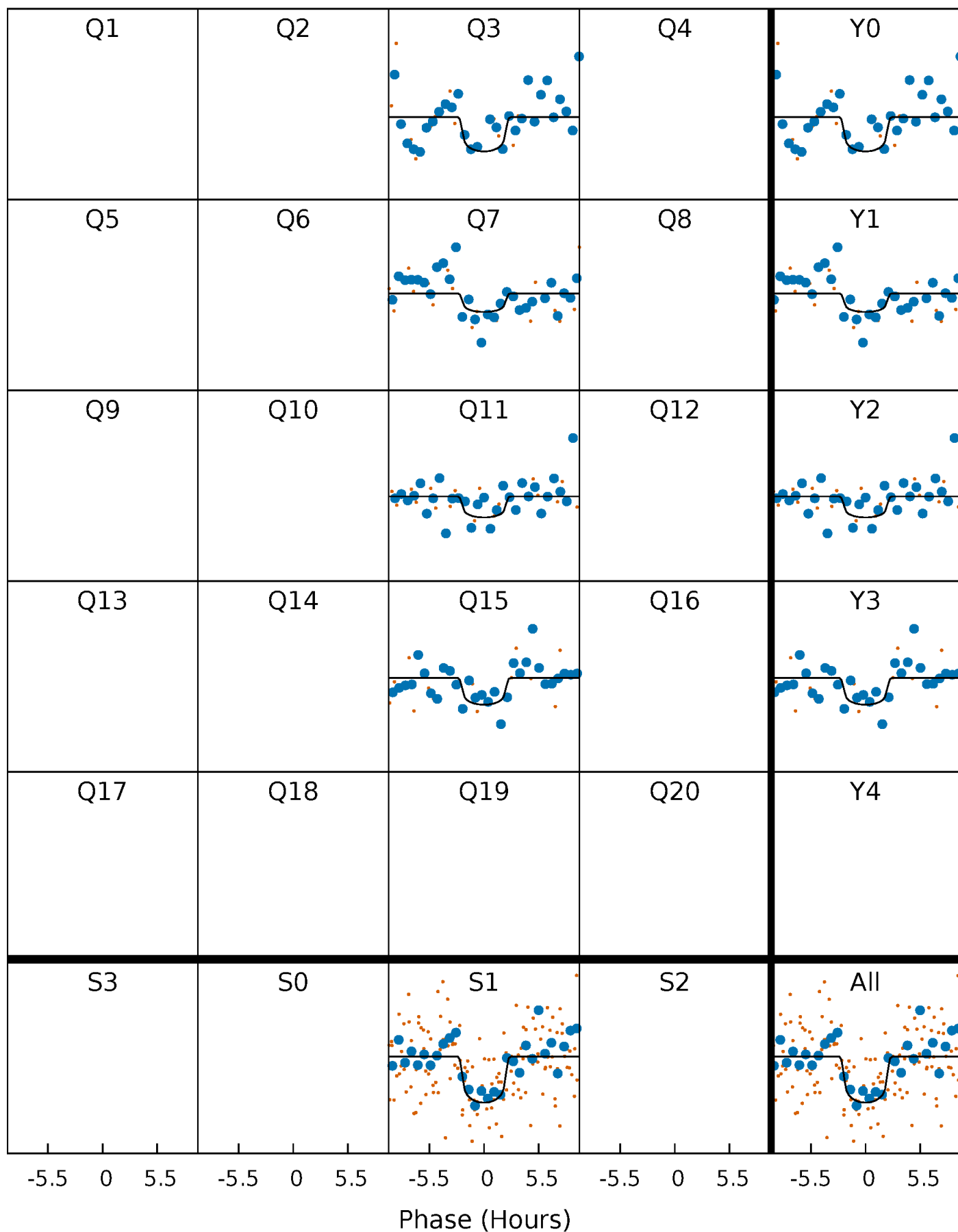
PDC Quarter-Phased Transit Curves

TCE 005431448-01 P=364.586003 Days $T_0=282.332785$ (BKJD)



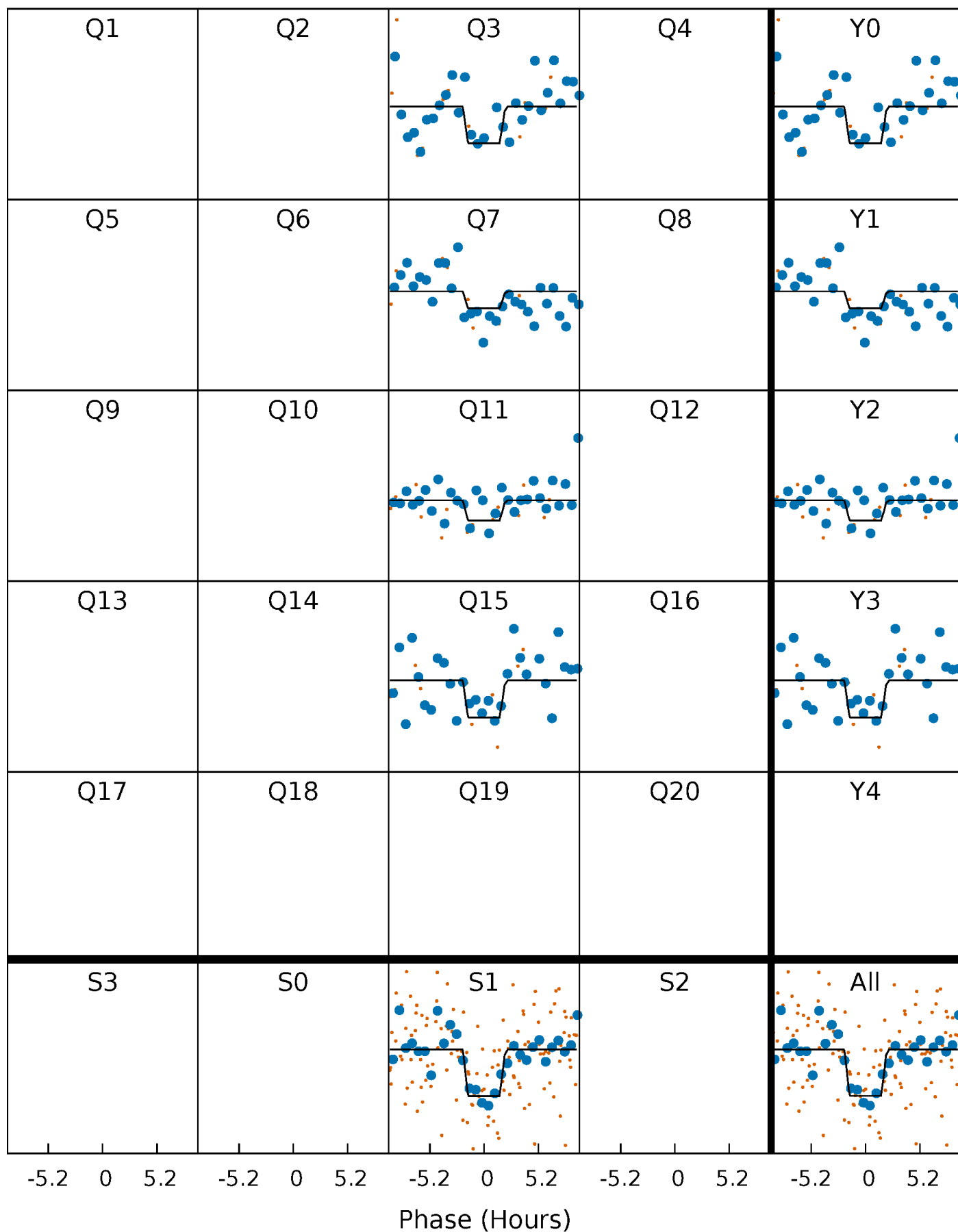
DV Quarter-Phased Transit Curves

TCE 005431448-01 P=364.586003 Days $T_0=282.332785$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

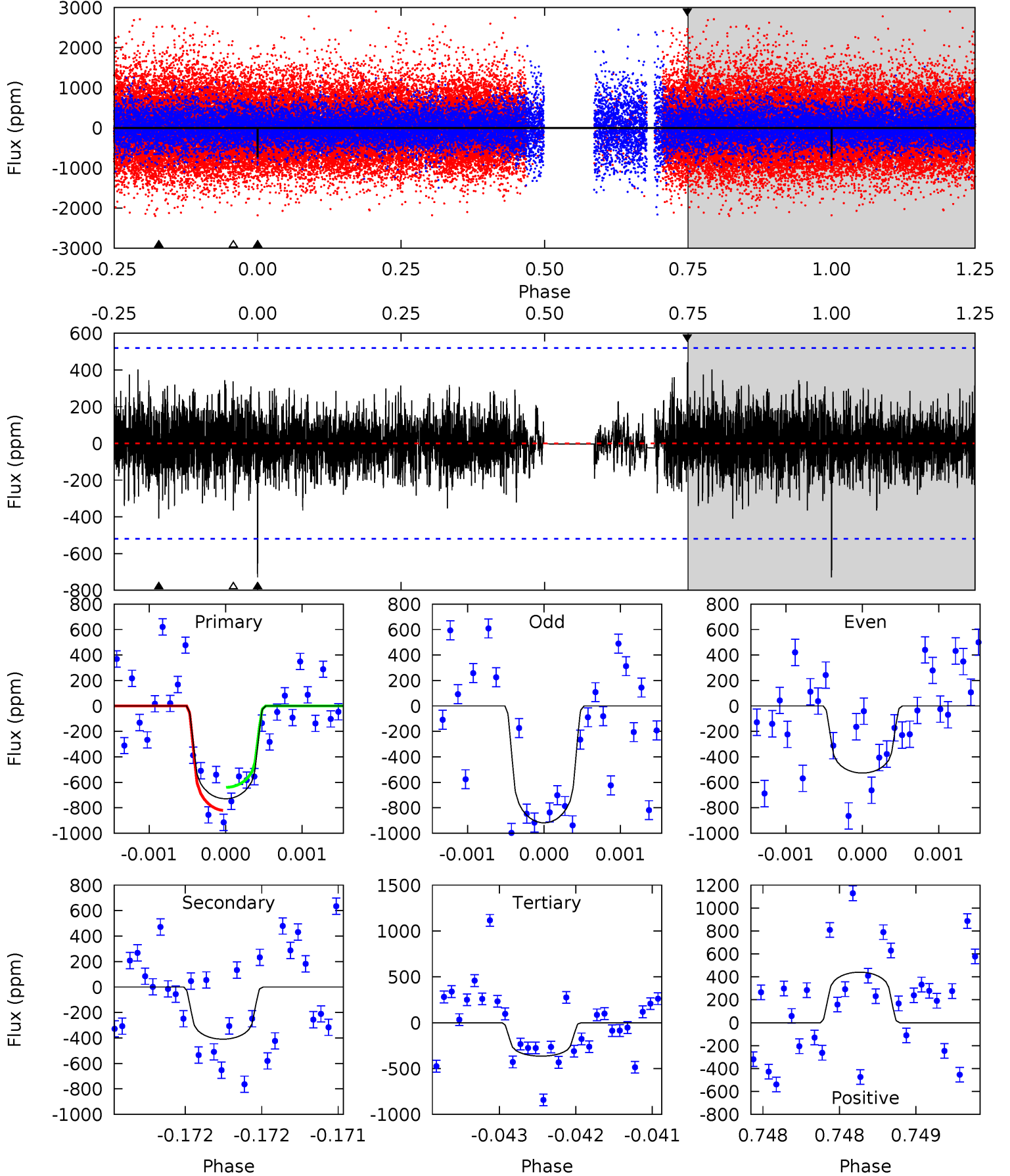
TCE 005431448-01 P=364.599578 Days $T_0=282.312343$ (BKJD)



DV Model-Shift Uniqueness Test

005431448-01, P = 364.586003 Days, E = 282.332785 Days

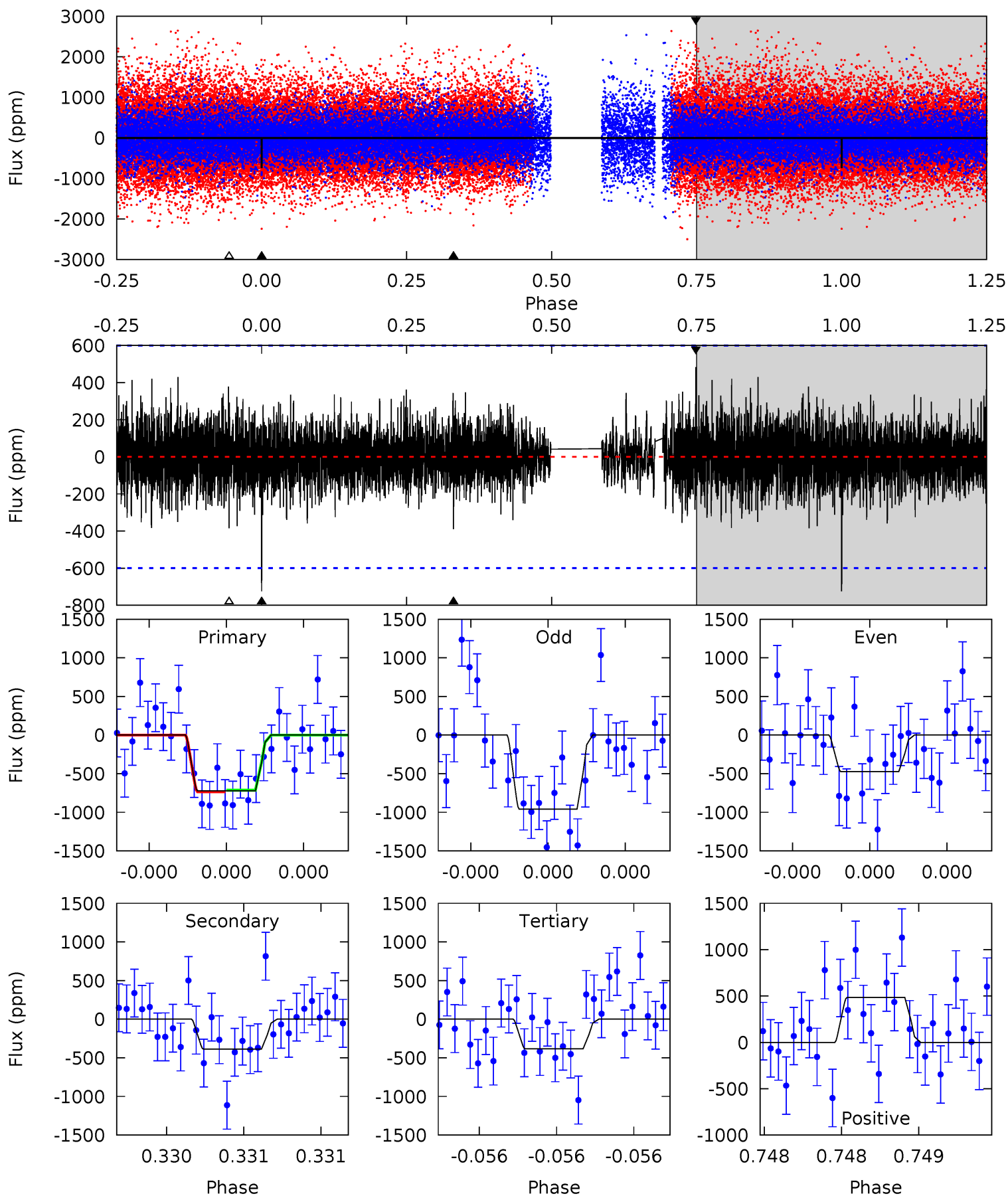
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.78	4.37	3.90	4.70	5.54	3.44	1.13	3.88	3.08	0.47	-0.33	2.12	1.18	0.38	0.95



Alt Model-Shift Uniqueness Test

005431448-01, P = 364.599578 Days, E = 282.312343 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.75	3.63	3.59	4.52	5.59	3.51	0.99	3.17	2.24	0.04	-0.89	2.26	1.24	0.40	0.09



Stellar Parameters For KIC 005431448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5812^{+139}_{-174}	$4.551^{+0.034}_{-0.184}$	$-0.200^{+0.300}_{-0.300}$	$0.853^{+0.227}_{-0.076}$	$0.947^{+0.099}_{-0.121}$	$2.146^{+0.403}_{-1.073}$
	+2%/-3%	+1%/-4%	+150%/-150%	+27%/-9%	+10%/-13%	+19%/-50%
Source	PHO1	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 005431448-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-409 ± 94	$3.11^{+1.73}_{-1.82}$	343^{+19}_{-16}	4747^{+2427}_{-800}	21447^{+96287}_{-13014}
Alt.	-389 ± 107	$3.10^{+1.86}_{-1.75}$	342^{+19}_{-15}	4698^{+2156}_{-758}	20630^{+81684}_{-12723}

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 $A_{obs} \gg 1.0$

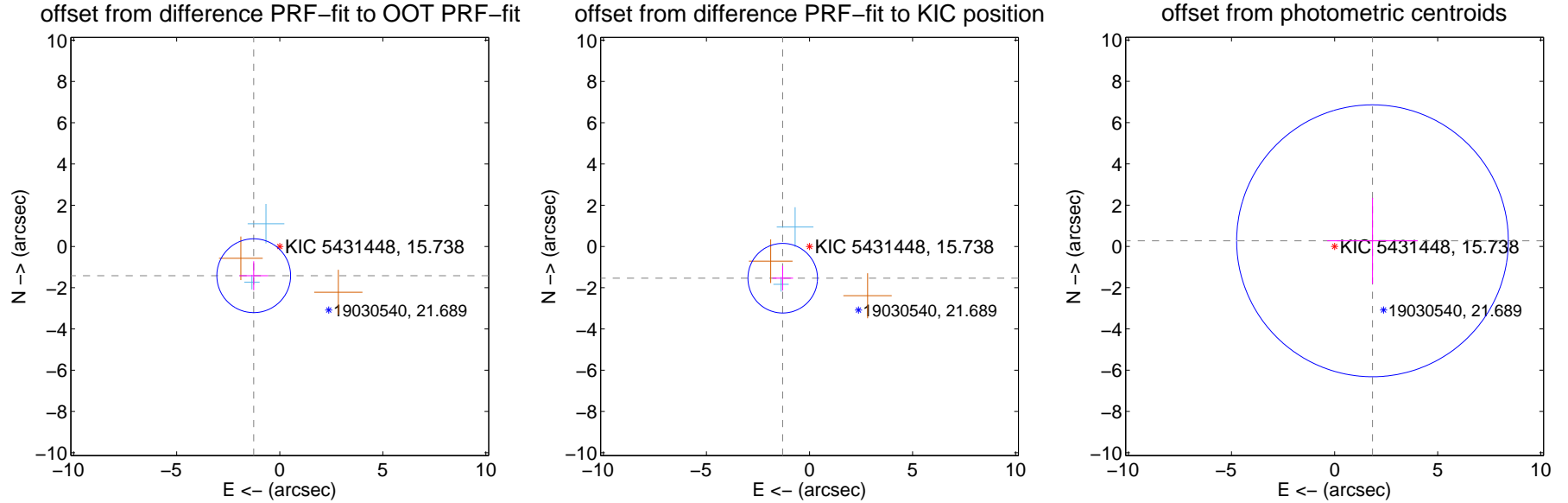
DV Centroid Data

Supplemental centroid analysis for 005431448-01. Kepler magnitude: 15.74. Transit SNR 7.79

There are 2 quarters with good PRF difference image offsets

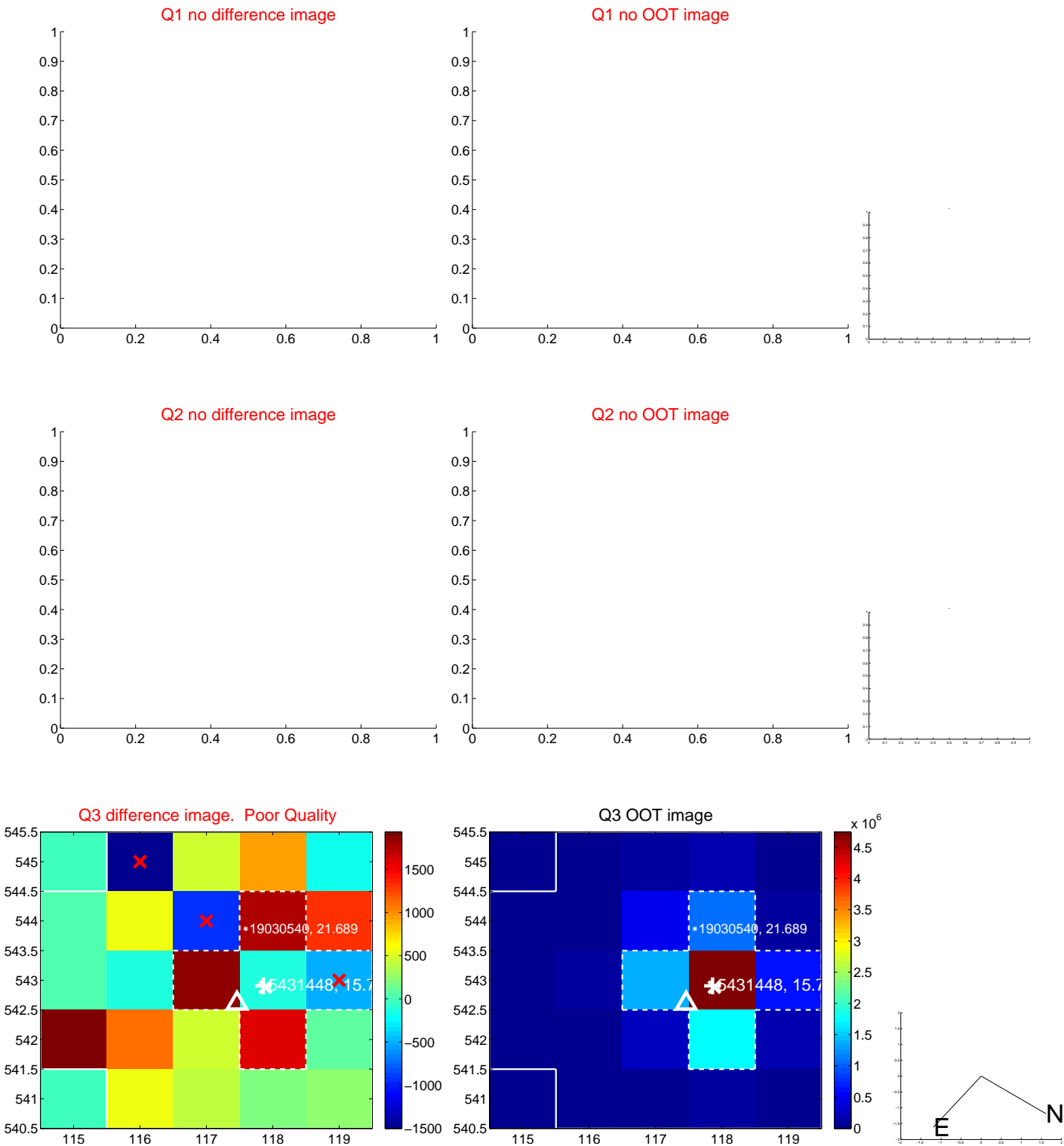
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.898 ± 0.596	3.18	1.263 ± 0.695	-1.417 ± 0.699
PRF-fit source offset from KIC position	2.014 ± 0.562	3.58	1.301 ± 0.503	-1.538 ± 0.601
photometric centroid source offset	1.86 ± 2.20	0.85	-1.84 ± 2.20	0.27 ± 2.08

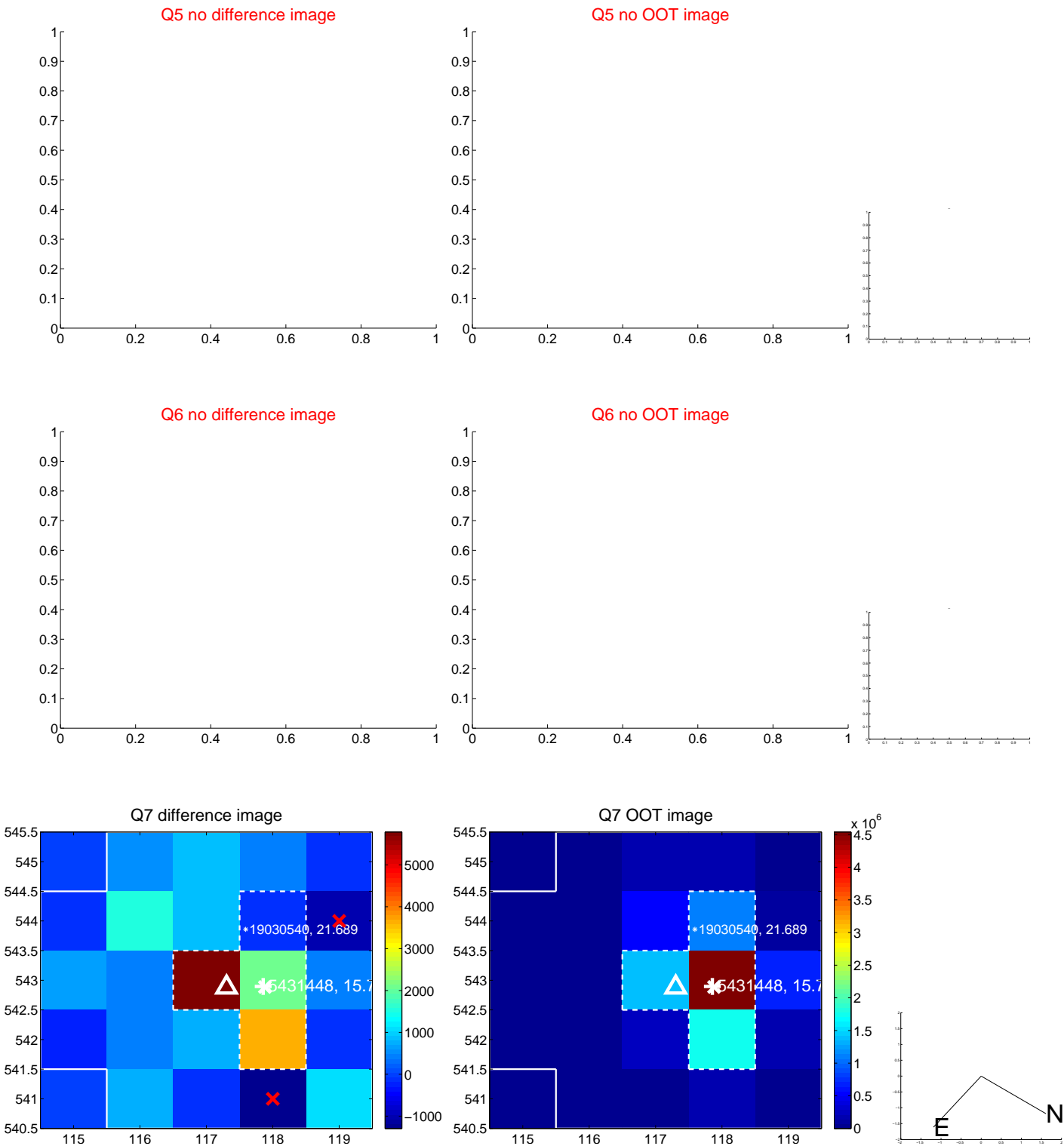


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

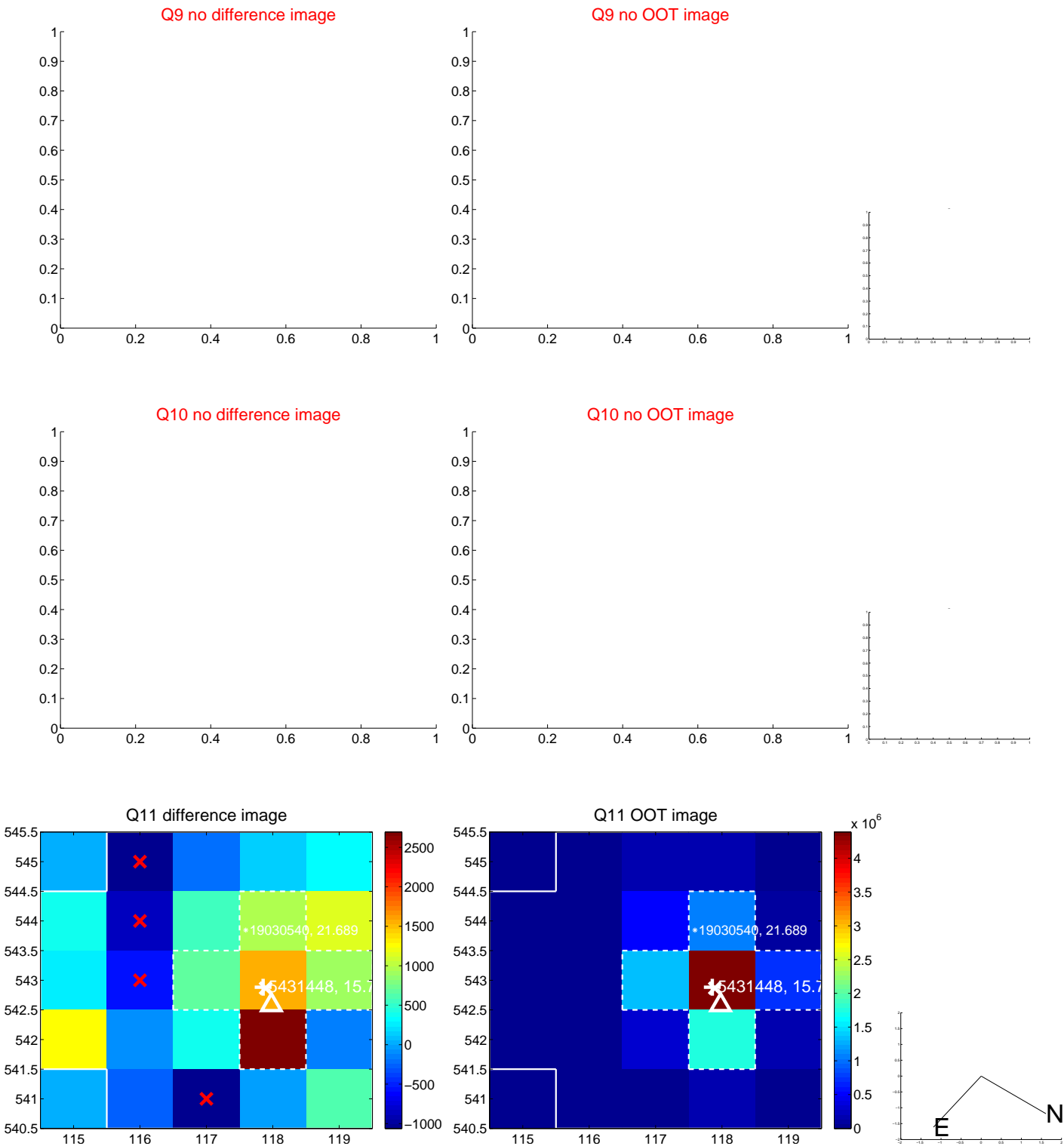
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



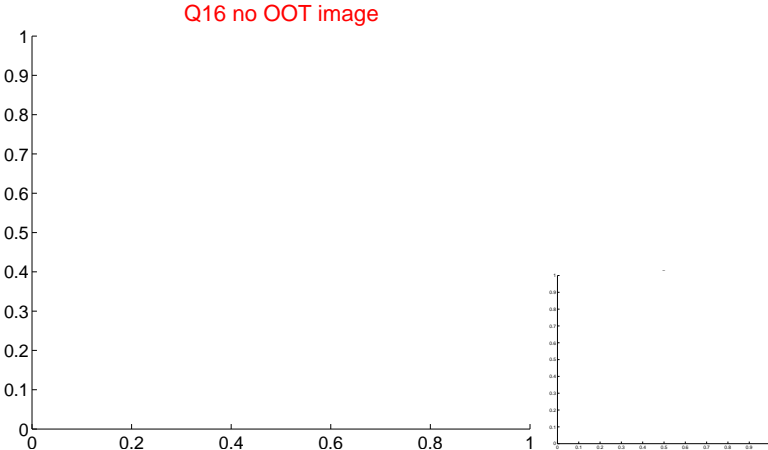
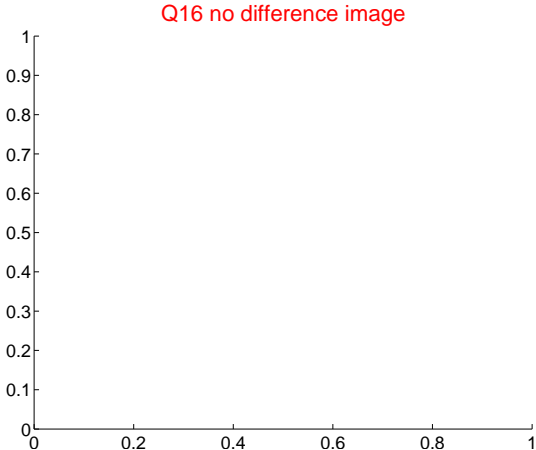
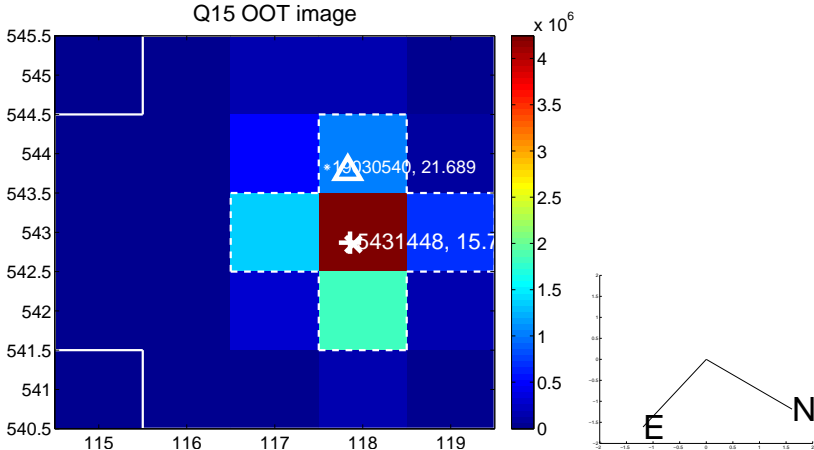
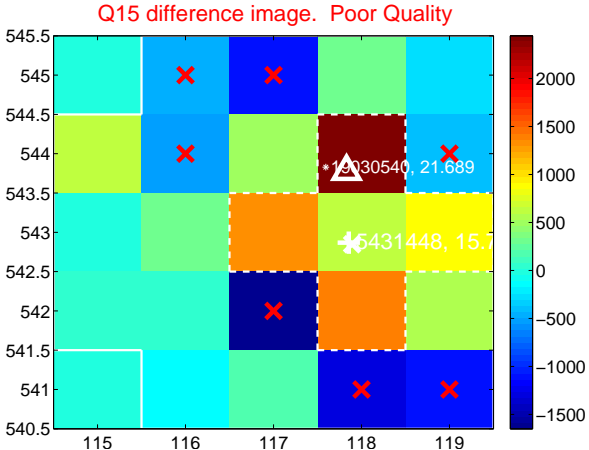
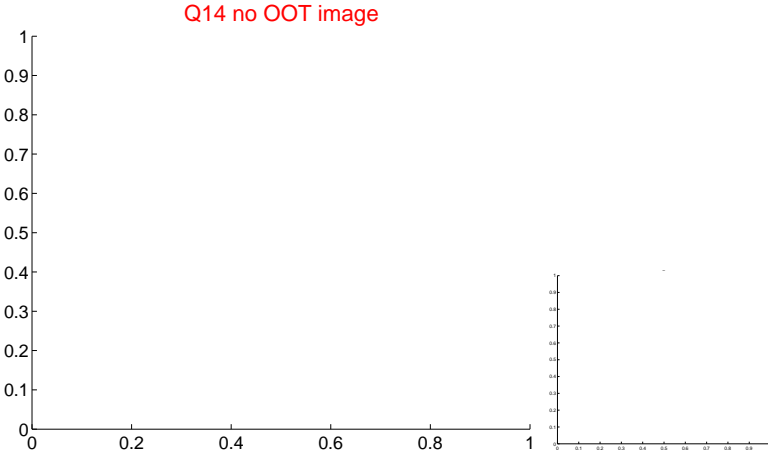
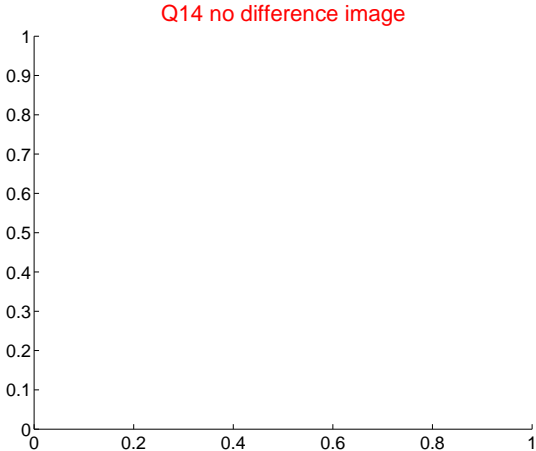
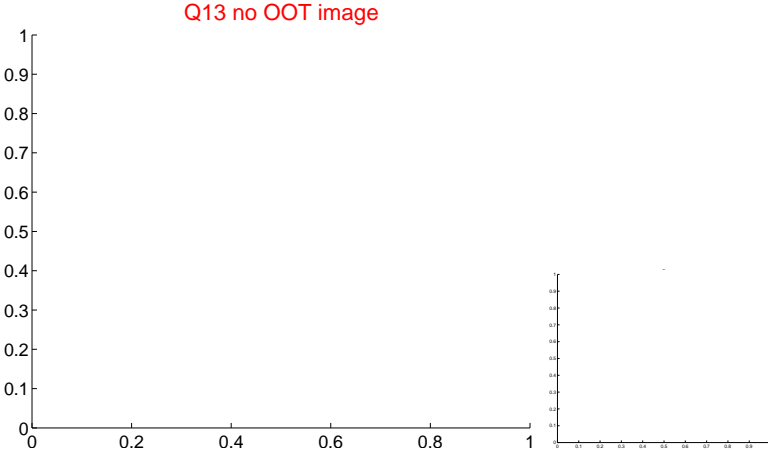
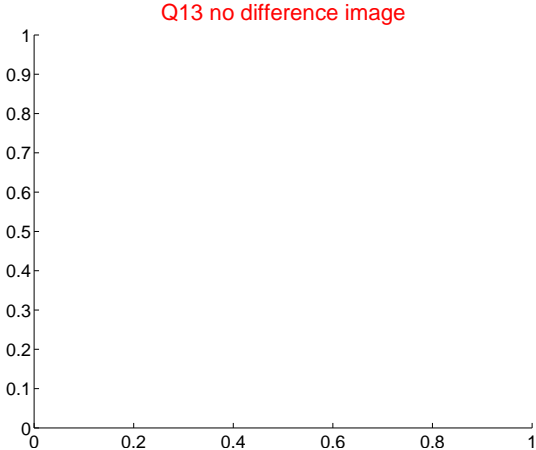
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



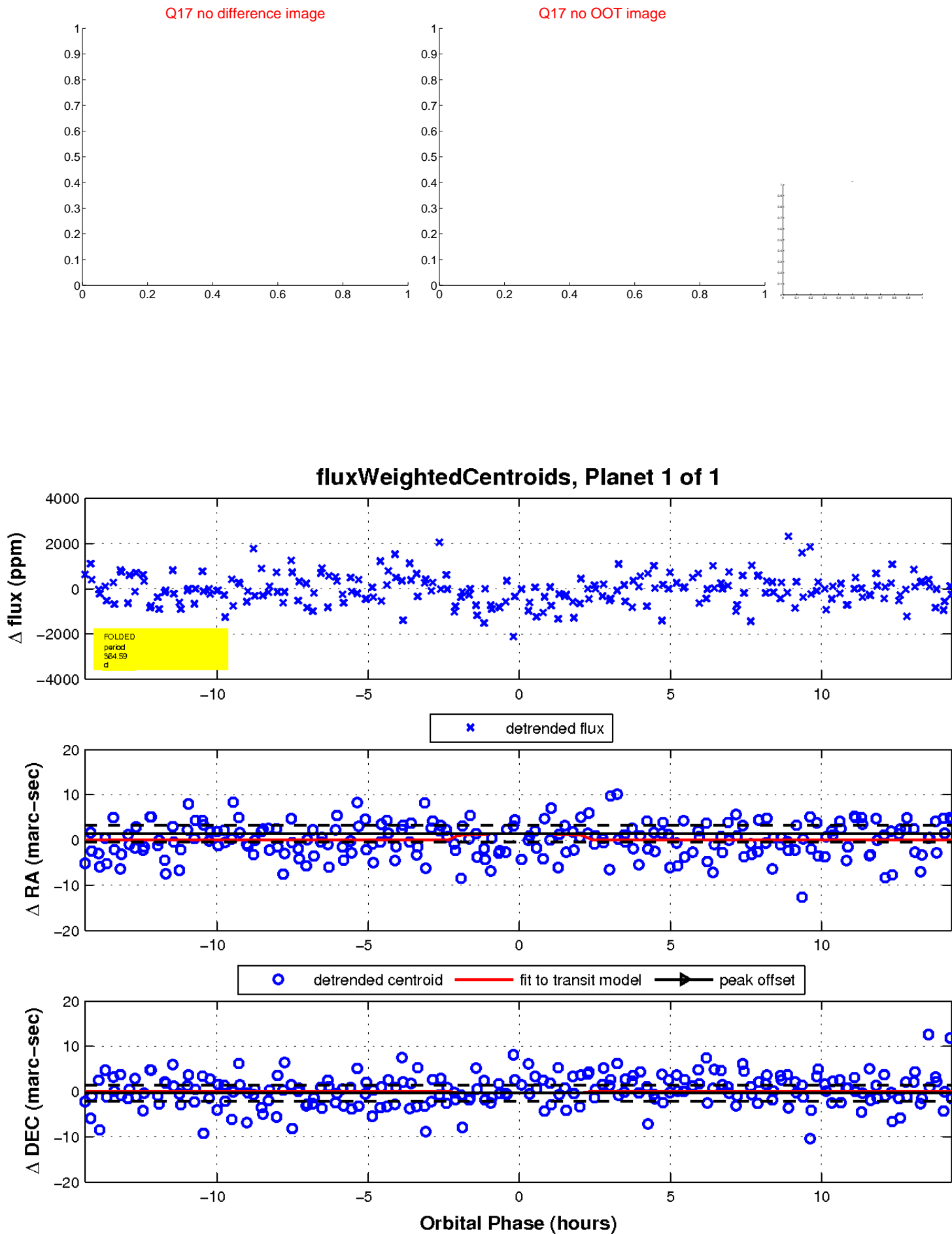
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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UKIRT Image

Declination

