

KIC 010403889

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})
010403889-01	OBS	No	514.508102	435.085727	302.3	5.623	8.1	8.8	0.96	5841	1.82	0.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010403889-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

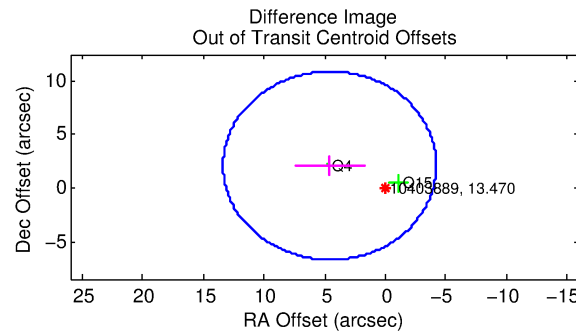
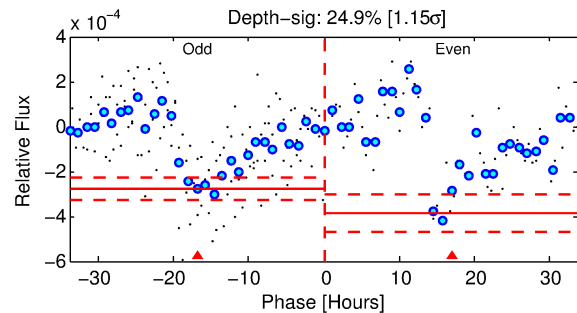
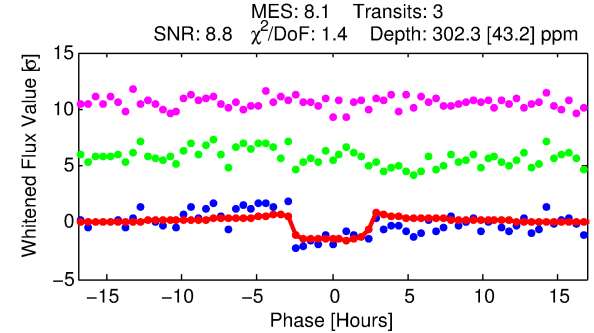
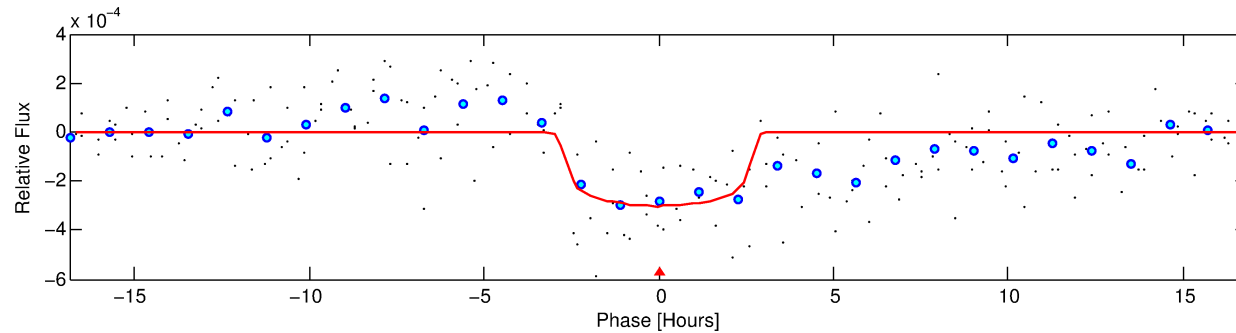
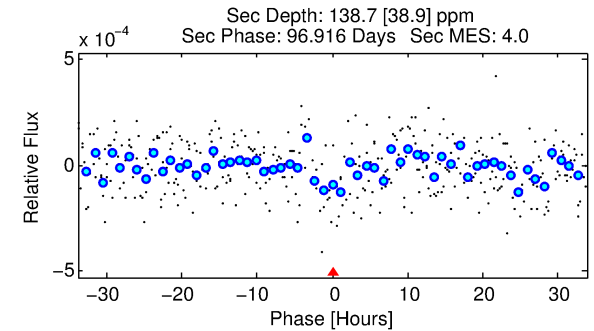
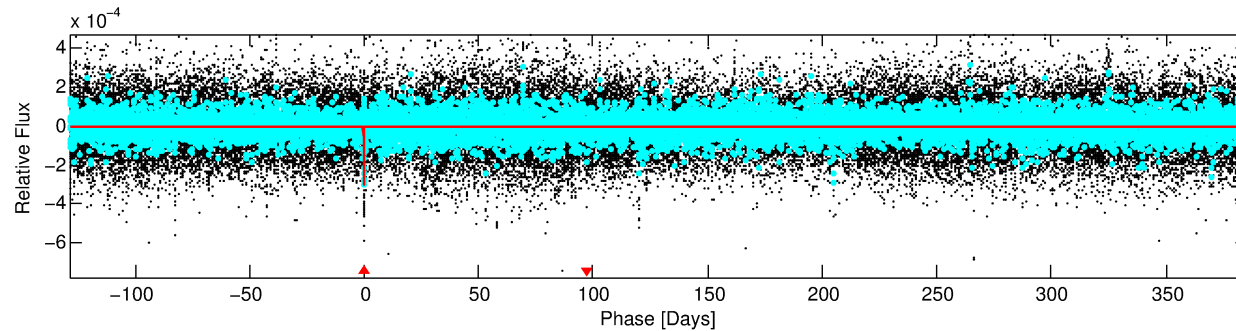
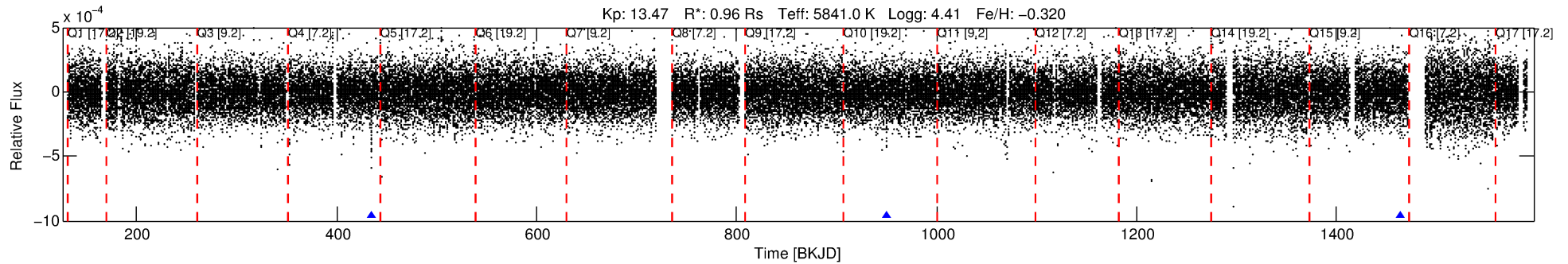
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010403889-01

No Significant Match Found

DV One-Page Summary

KIC: 10403889 Candidate: 1 of 1 Period: 514.508 d



DV Fit Results:

Period = 514.50810 [0.00684] d
Epoch = 435.0857 [0.0085] BKJD
Rp/R* = 0.0174 [0.0095]
a/R* = 470.21 [1206.68]
b = 0.76 [1.42]
Seff = 0.67 [0.24]
Teq = 230 [21] K
Rp = 1.82 [1.11] Re
a = 1.2016 [0.2823] AU
Ag = 33159.66 [38922.11] [0.85σ]
Teffp = 4808 [1359] K [3.37σ]

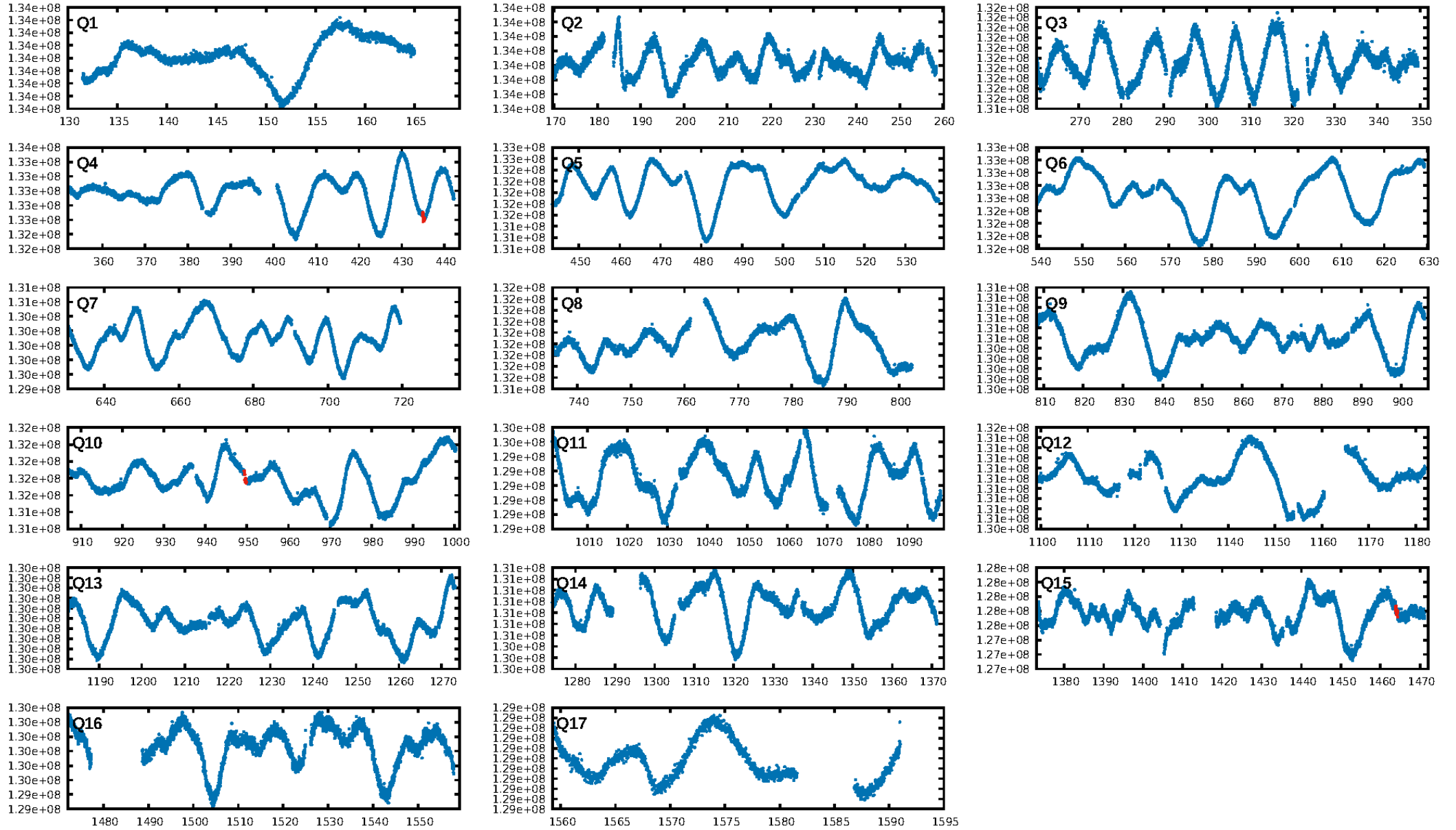
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 55.9%
Bootstrap-pfa: 1.07e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1249
Centroid-sig: 12.4%
Centroid-so: 1.638 arcsec [1.56σ]
OotOffset-rm: 5.037 arcsec [1.72σ]
KicOffset-rm: 5.018 arcsec [2.01σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

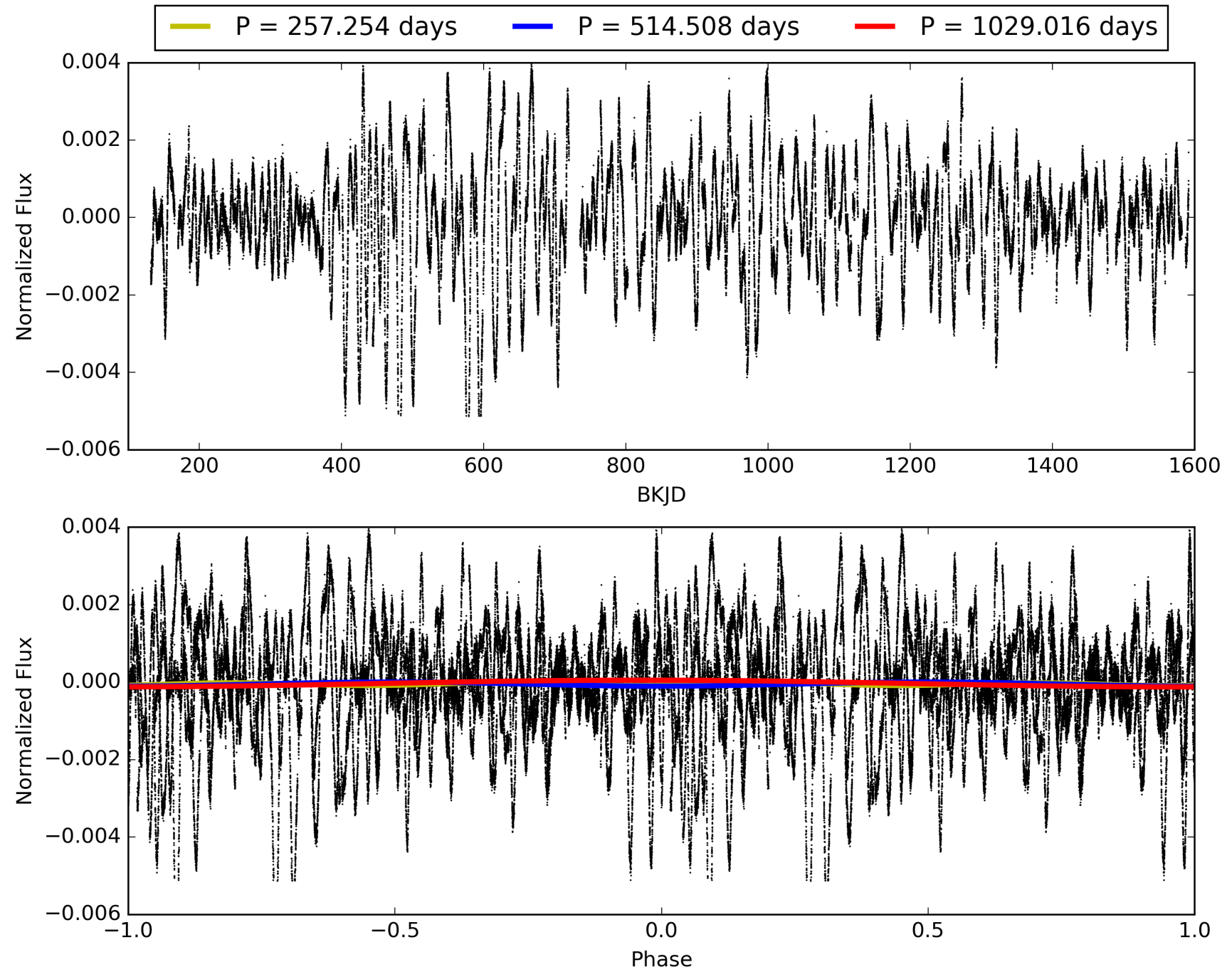
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:13:25 Z

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

TCE 010403889-01, PDC Light Curves

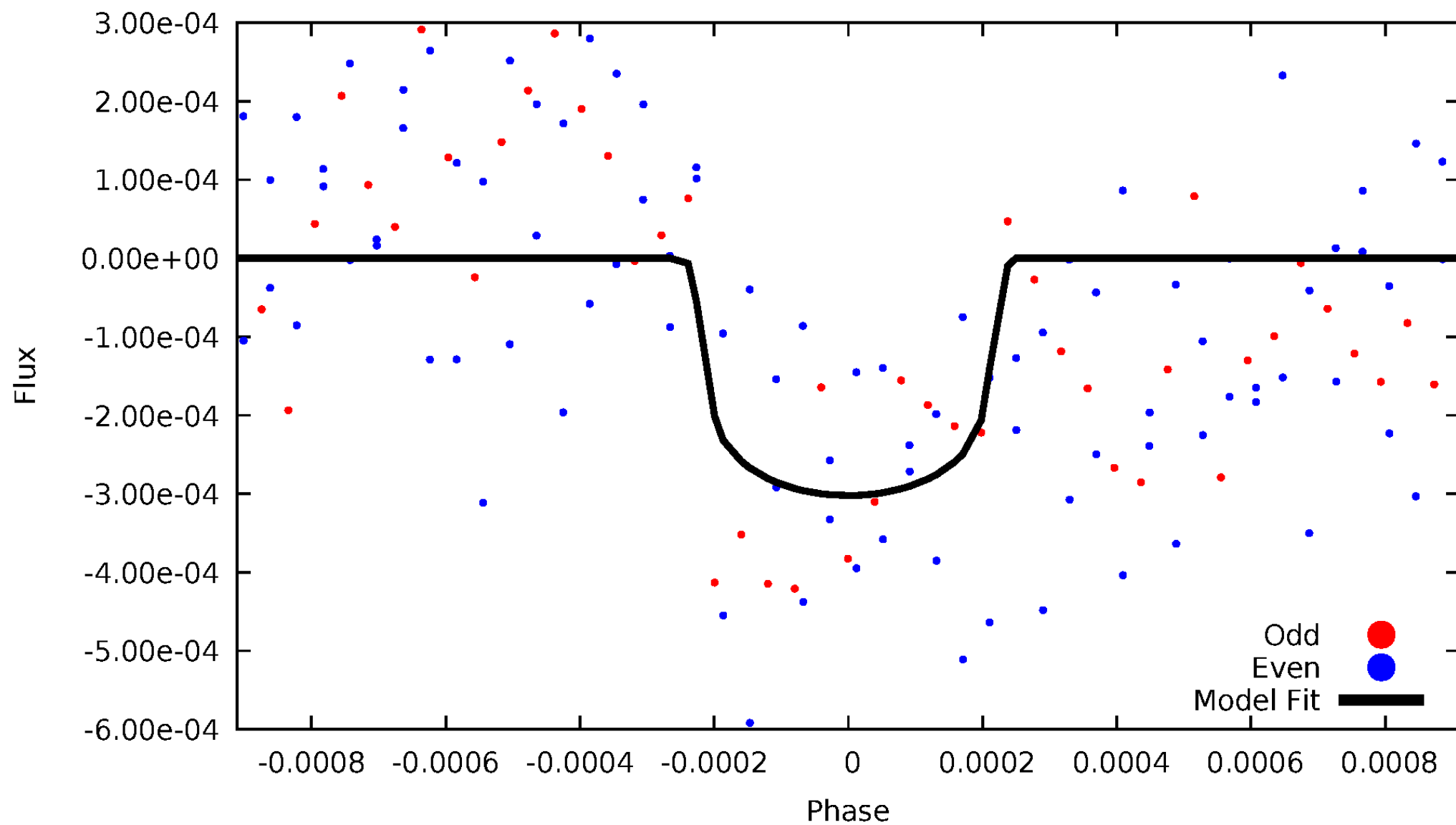


TCE 010403889-01



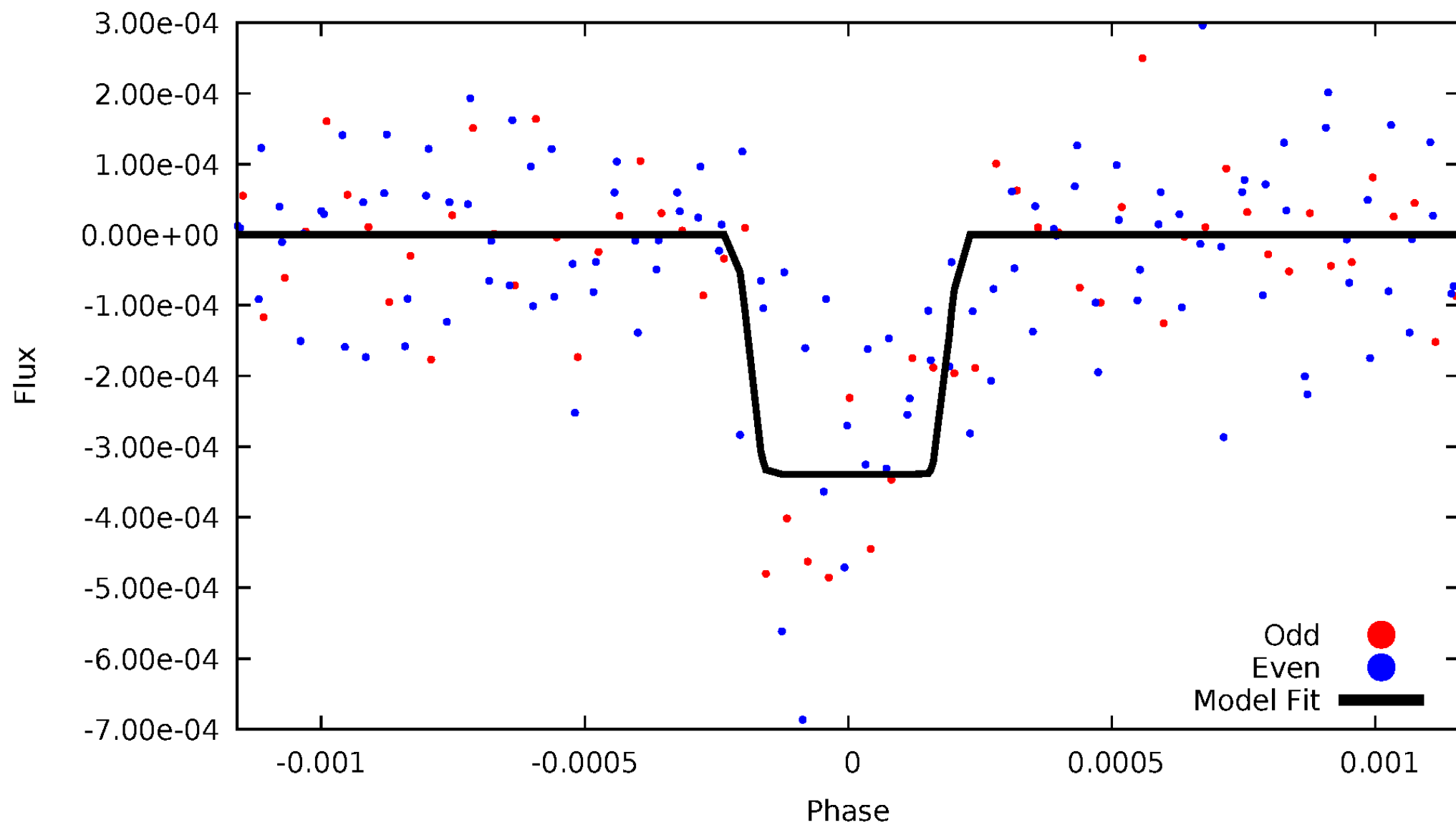
DV Odd/Even

TCE 010403889-01

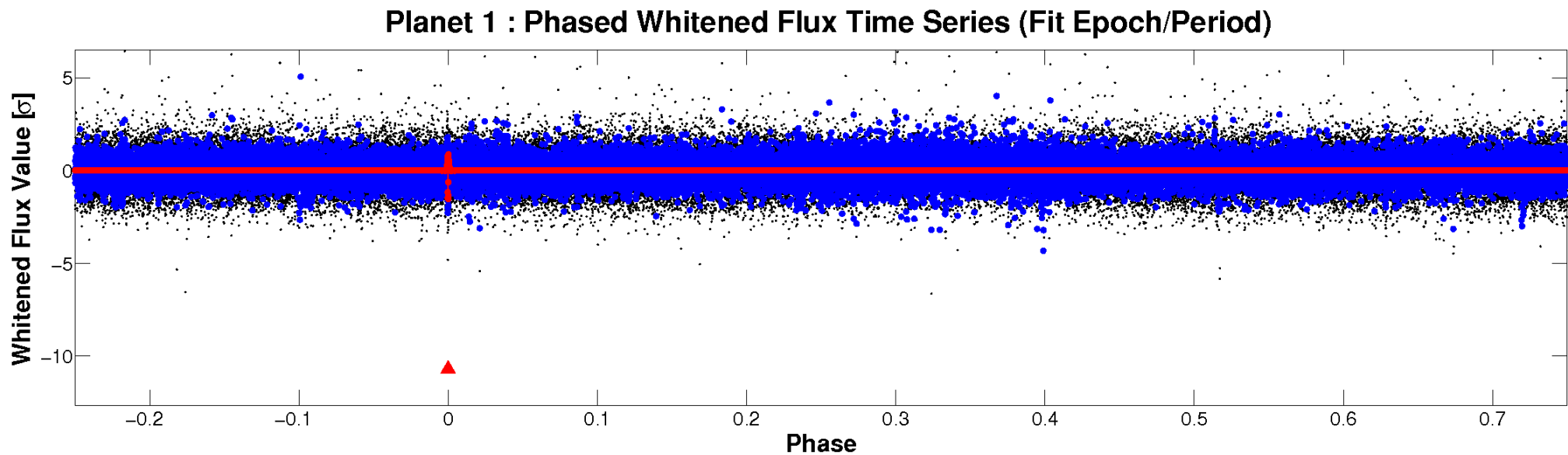
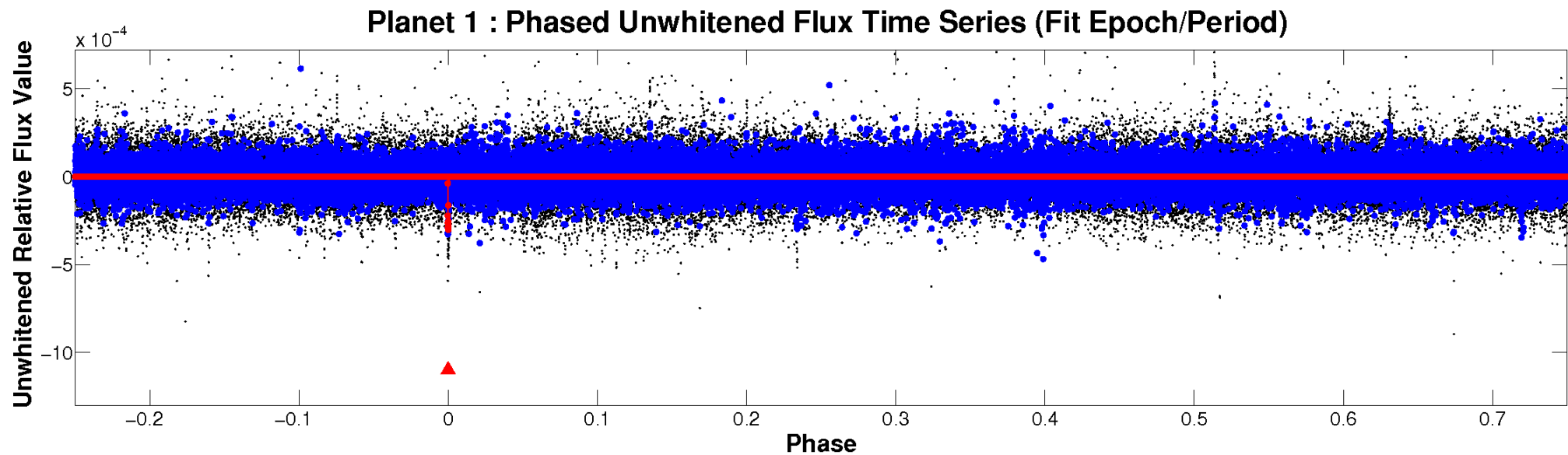


ALT Odd/Even

TCE 010403889-01

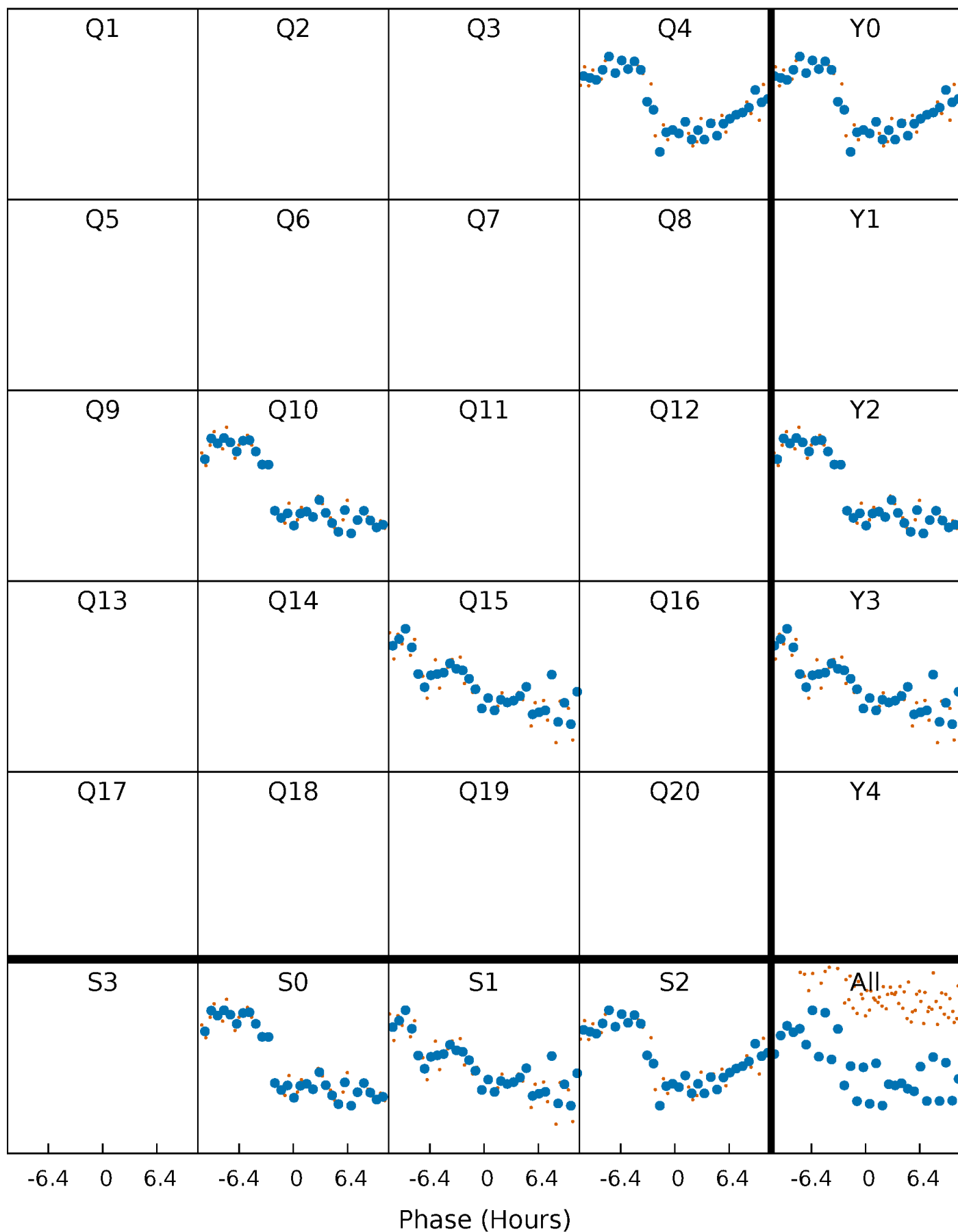


Non-Whitened Vs. Whitened Light Curve



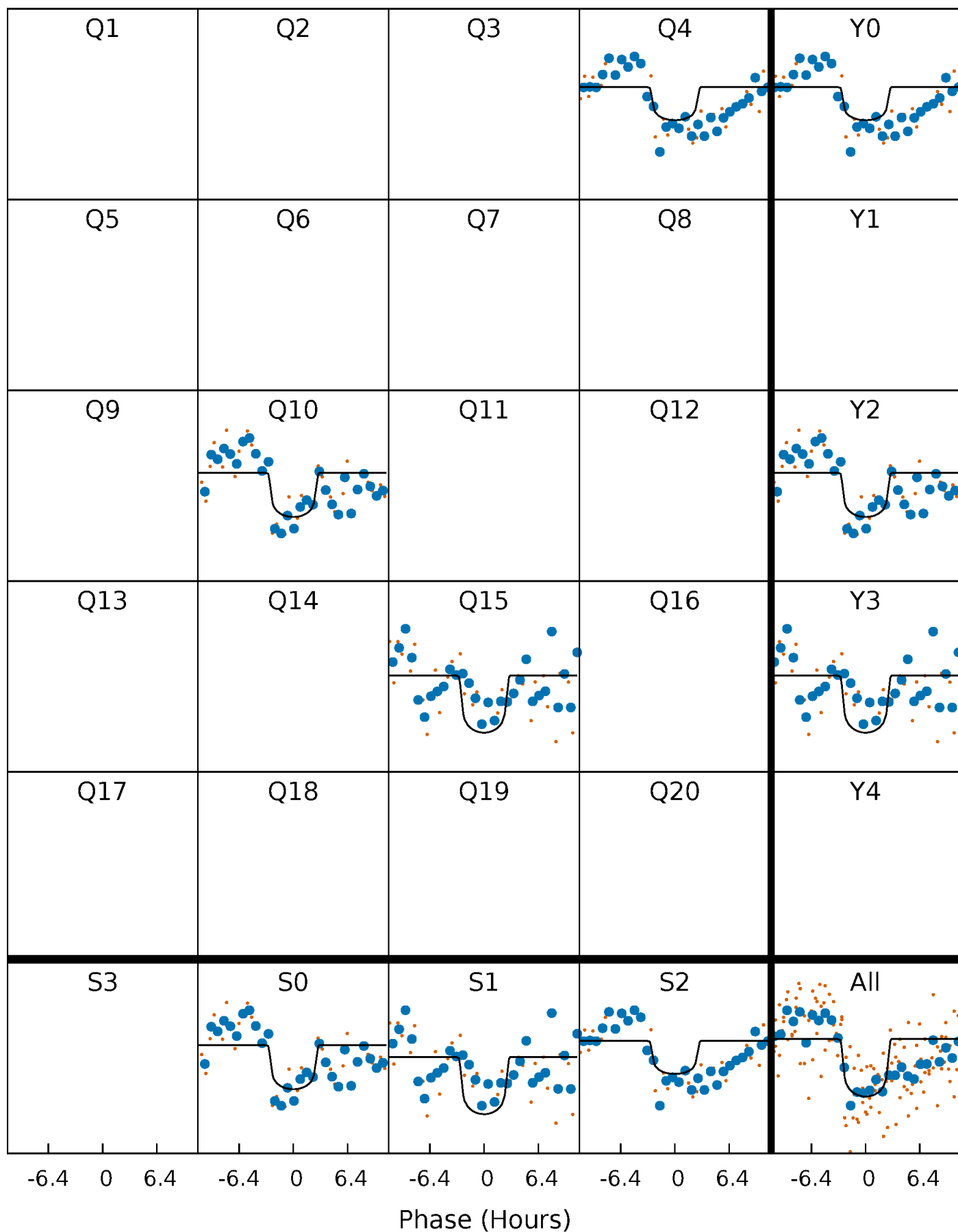
PDC Quarter-Phased Transit Curves

TCE 010403889-01 P=514.508102 Days $T_0=435.085727$ (BKJD)



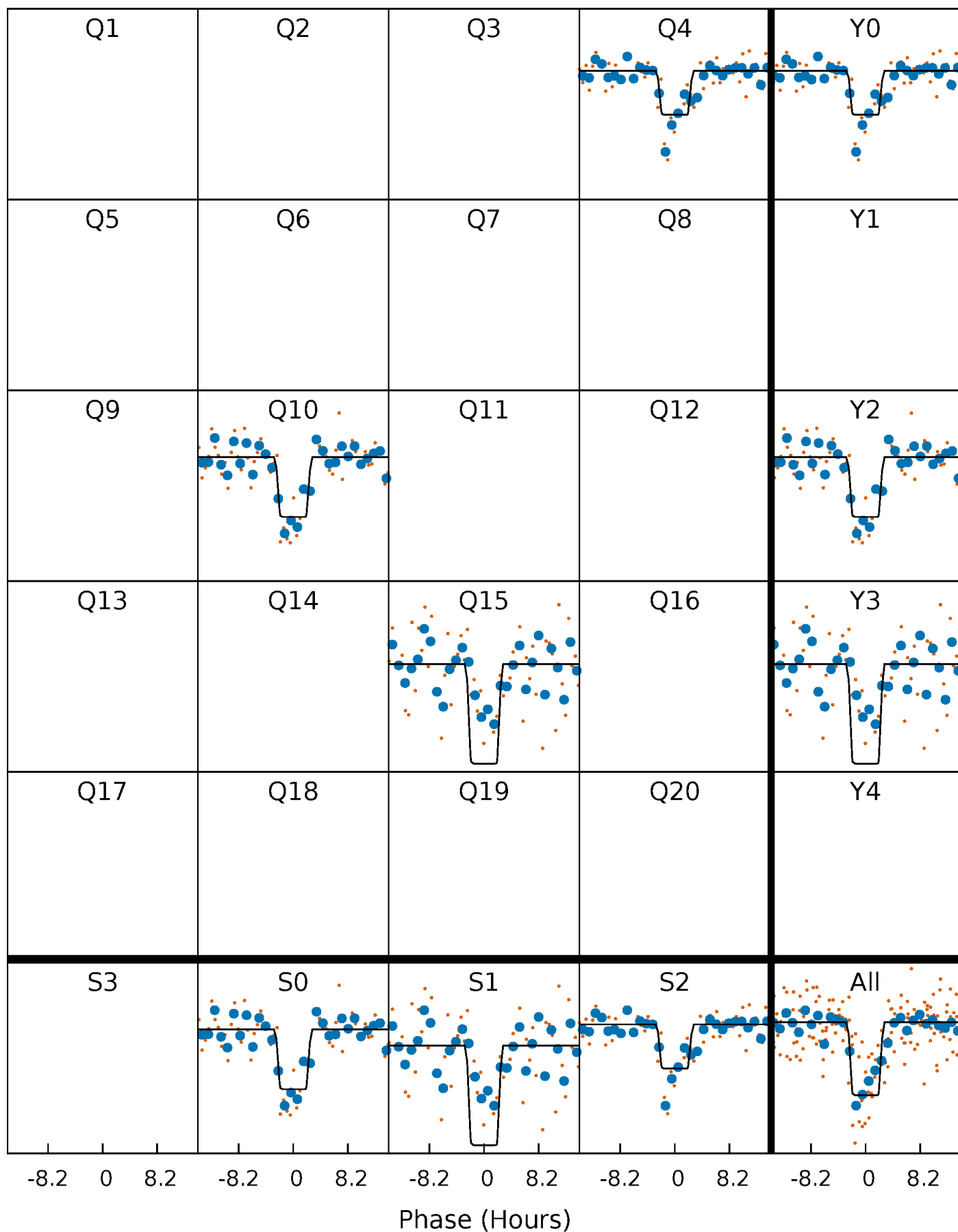
DV Quarter-Phased Transit Curves

TCE 010403889-01 P=514.508102 Days $T_0=435.085727$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

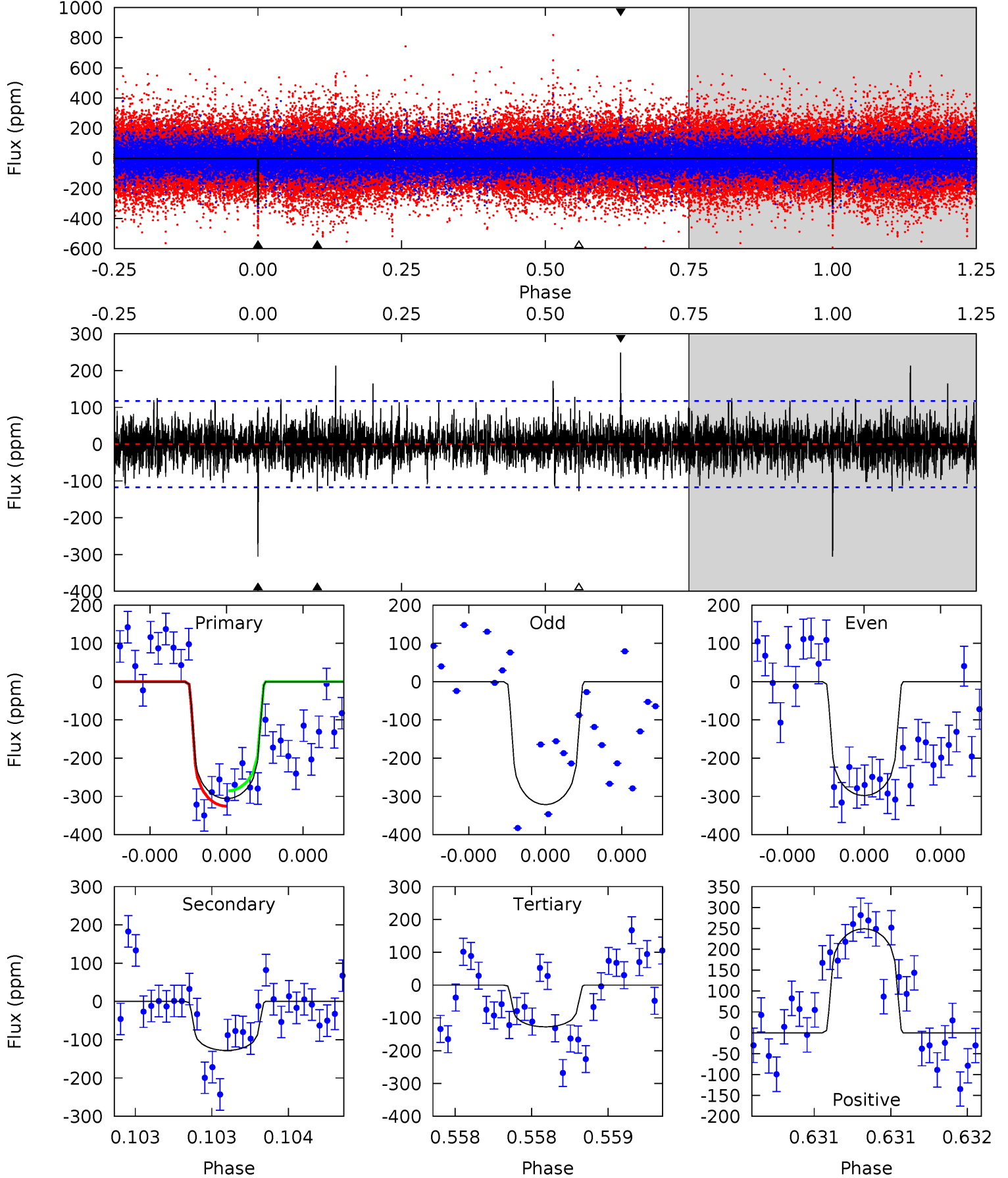
TCE 010403889-01 P=514.517041 Days $T_0=435.054742$ (BKJD)



DV Model-Shift Uniqueness Test

010403889-01, P = 514.508102 Days, E = 435.085727 Days

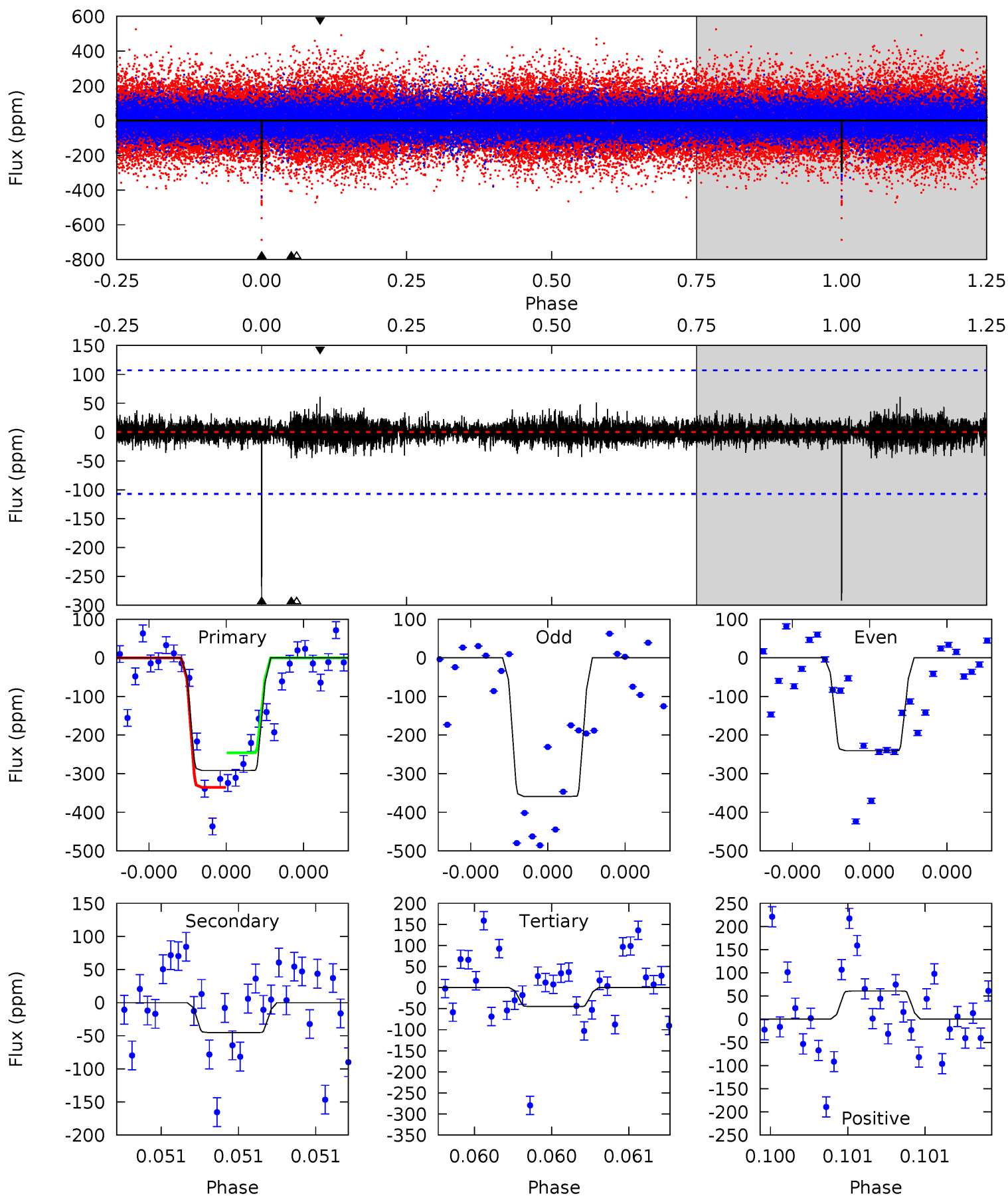
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	6.10	6.06	11.9	5.58	3.49	1.64	8.49	2.71	0.04	-5.75	0.54	0.95	0.45	0.94



Alt Model-Shift Uniqueness Test

010403889-01, P = 514.517041 Days, E = 435.054742 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	2.37	2.35	3.20	5.61	3.54	0.54	13.0	12.1	0.02	-0.82	2.98	0.81	0.17	2.35



Stellar Parameters For KIC 010403889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5841^{+175}_{-193}	$4.414^{+0.124}_{-0.186}$	$-0.320^{+0.300}_{-0.300}$	$0.961^{+0.269}_{-0.145}$	$0.875^{+0.119}_{-0.075}$	$1.389^{+0.779}_{-0.679}$
	+3%/-3%	+3%/-4%	+94%/-94%	+28%/-15%	+14%/-9%	+56%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 010403889-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-128 ± 21	$1.91^{+1.06}_{-1.00}$	323^{+24}_{-19}	4704^{+2001}_{-675}	27130^{+94777}_{-15812}
Alt.	-45 ± 19	$1.95^{+1.05}_{-0.99}$	324^{+25}_{-19}	3828^{+1294}_{-555}	8483^{+30330}_{-5262}

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

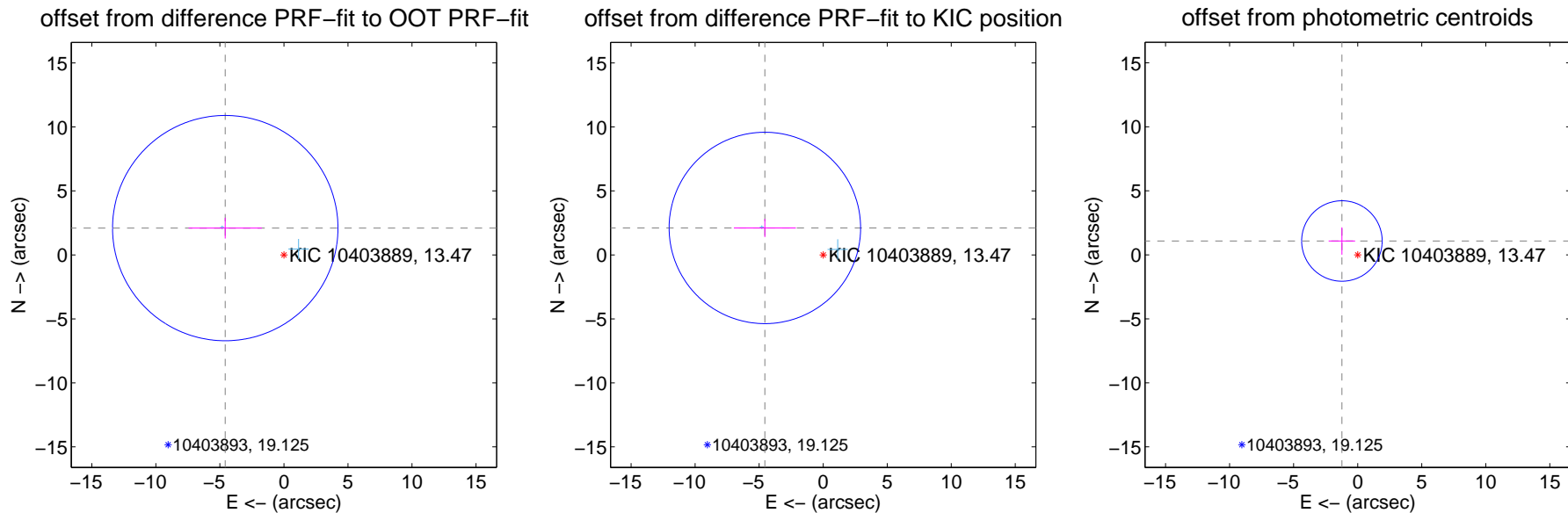
DV Centroid Data

Supplemental centroid analysis for 010403889-01. Kepler magnitude: 13.47. Transit SNR 8.82

There are 2 quarters with good PRF difference image offsets

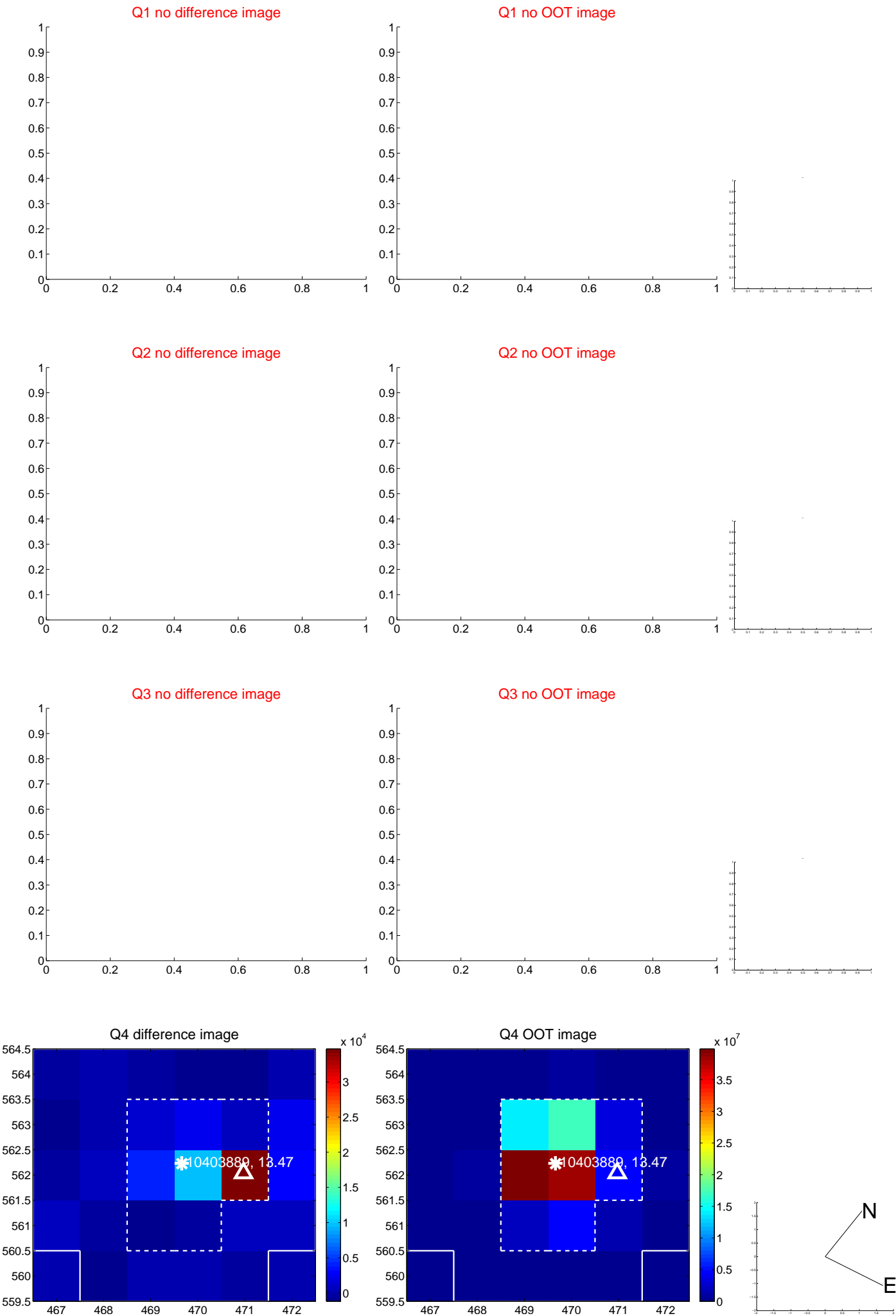
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.037 ± 2.934	1.72	4.582 ± 2.855	2.093 ± 0.813
PRF-fit source offset from KIC position	5.018 ± 2.492	2.01	4.555 ± 2.419	2.106 ± 0.710
photometric centroid source offset	1.64 ± 1.05	1.56	1.23 ± 1.03	1.08 ± 1.07



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.

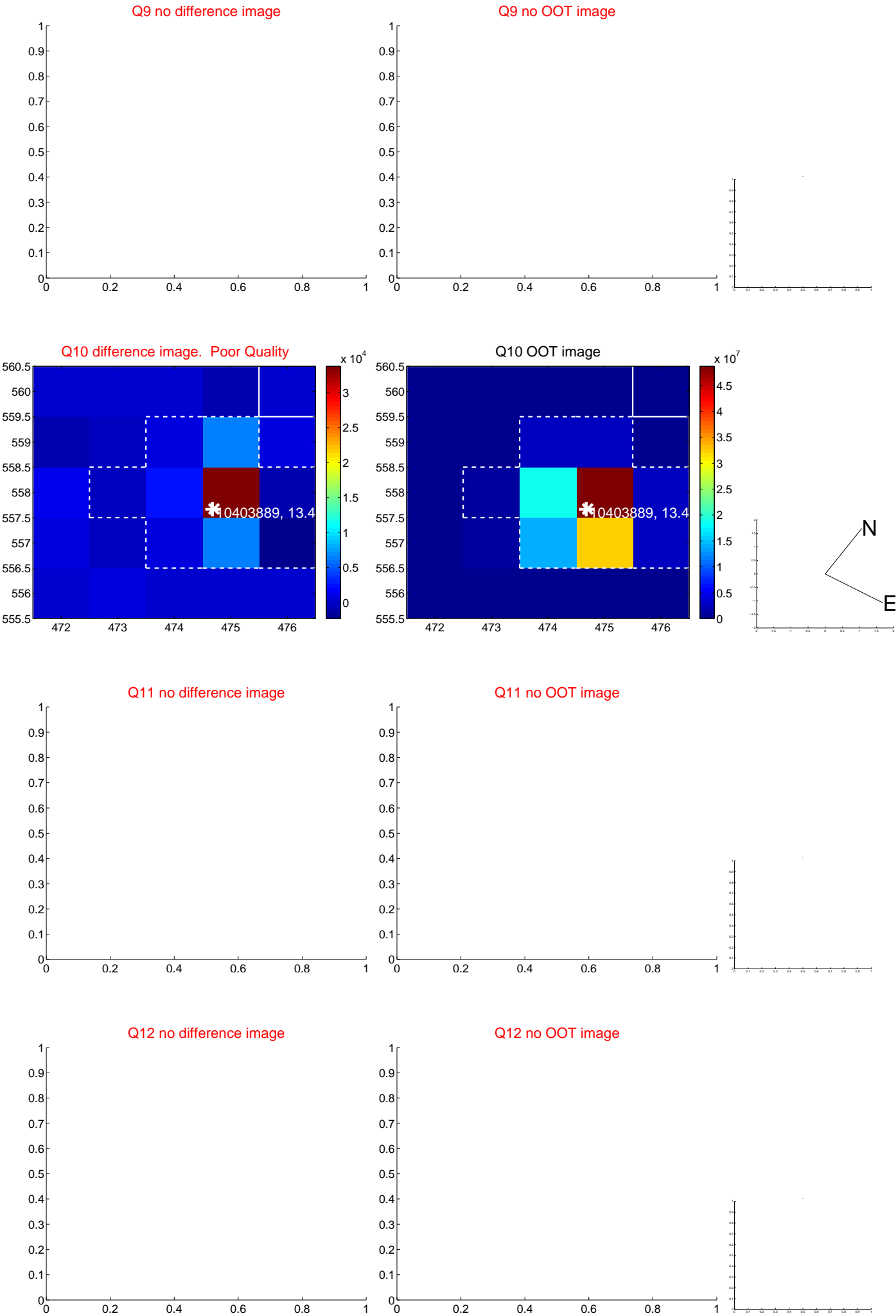
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



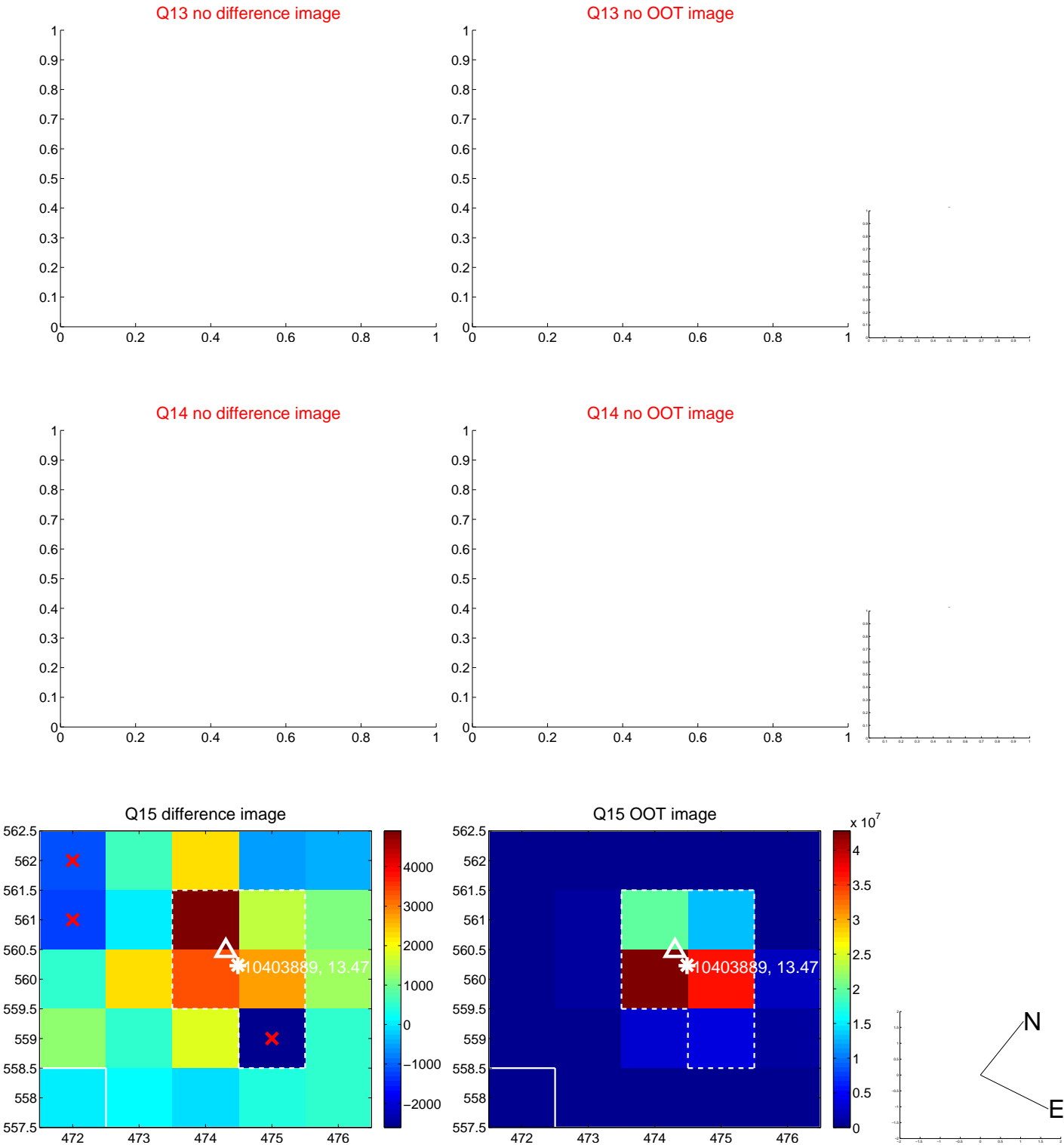
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



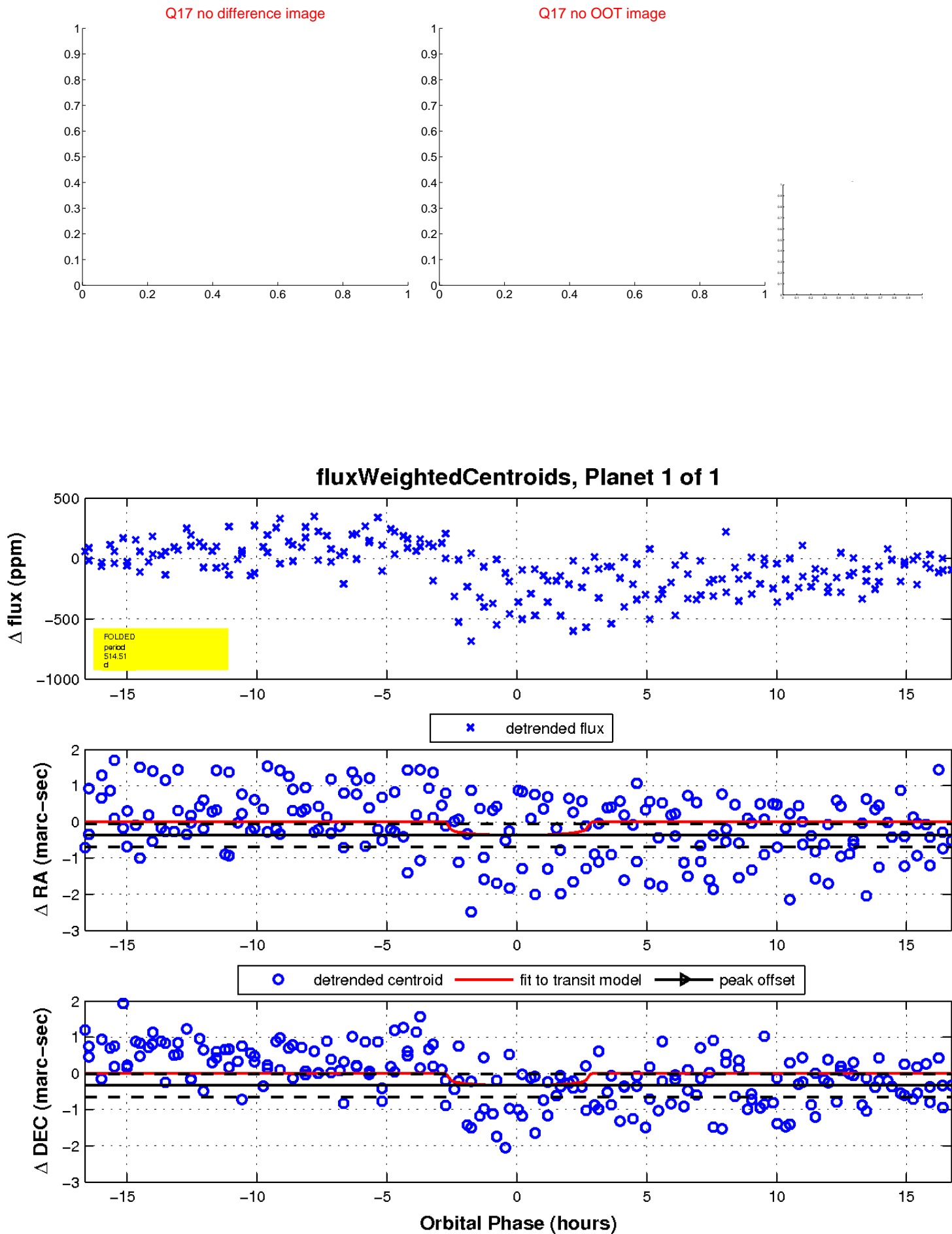
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \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.



UKIRT Image

Declination

