

KIC 004157849

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})
004157849-01	OBS	No	478.621329	193.526385	240.1	12.174	7.6	7.6	2.78	6931	4.71	7.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004157849-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

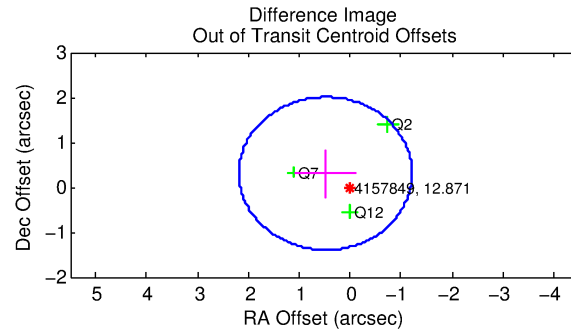
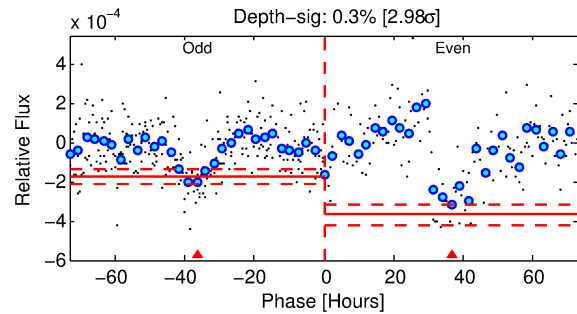
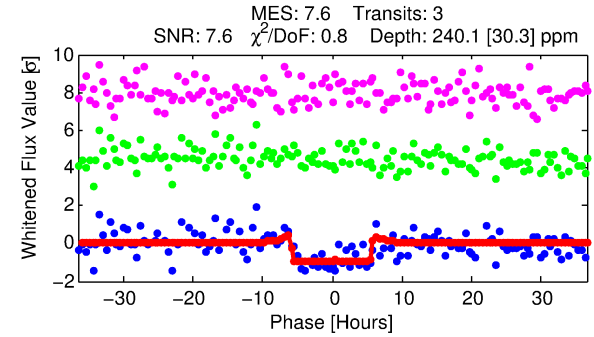
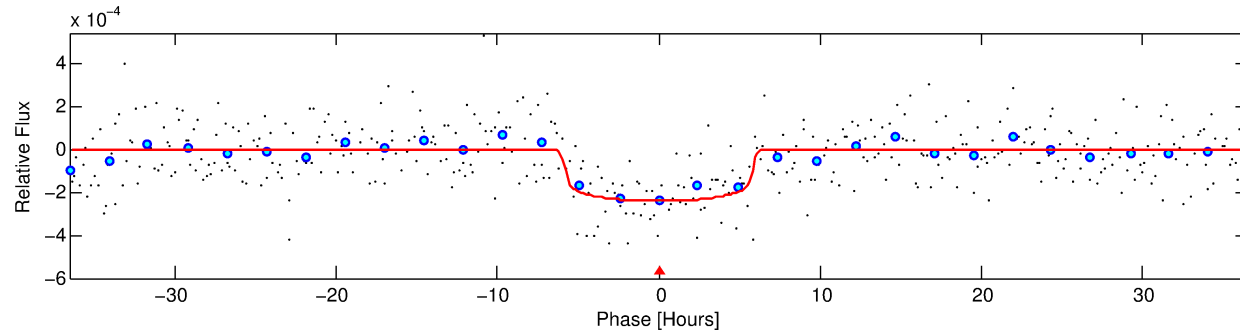
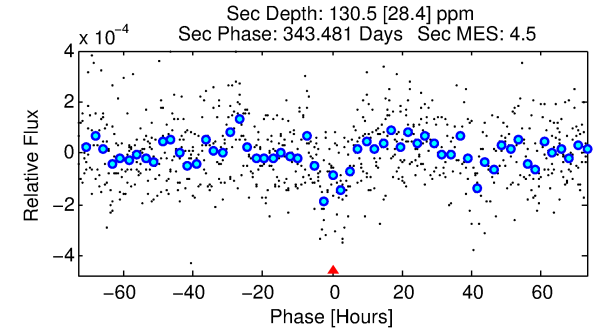
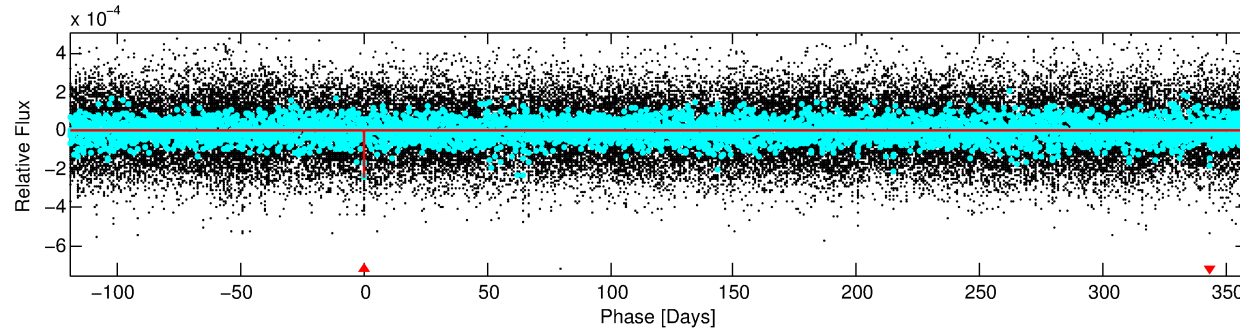
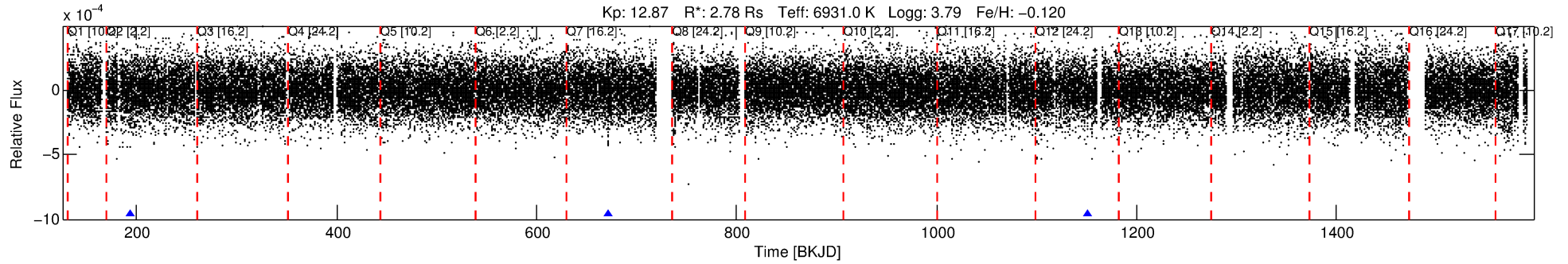
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004157849-01

No Significant Match Found

DV One-Page Summary

KIC: 4157849 Candidate: 1 of 1 Period: 478.621 d



DV Fit Results:

Period = 478.62133 [0.00838] d
Epoch = 193.5264 [0.0107] BKJD
Rp/R* = 0.0155 [0.0030]
a/R* = 195.83 [203.34]
b = 0.78 [0.53]
Seff = 7.75 [4.02]
Teq = 425 [55] K
Rp = 4.71 [1.92] Re
a = 1.4346 [0.4654] AU
Ag = 6659.43 [4438.18] [1.50σ]
Teffp = 5942 [689] K [7.98σ]

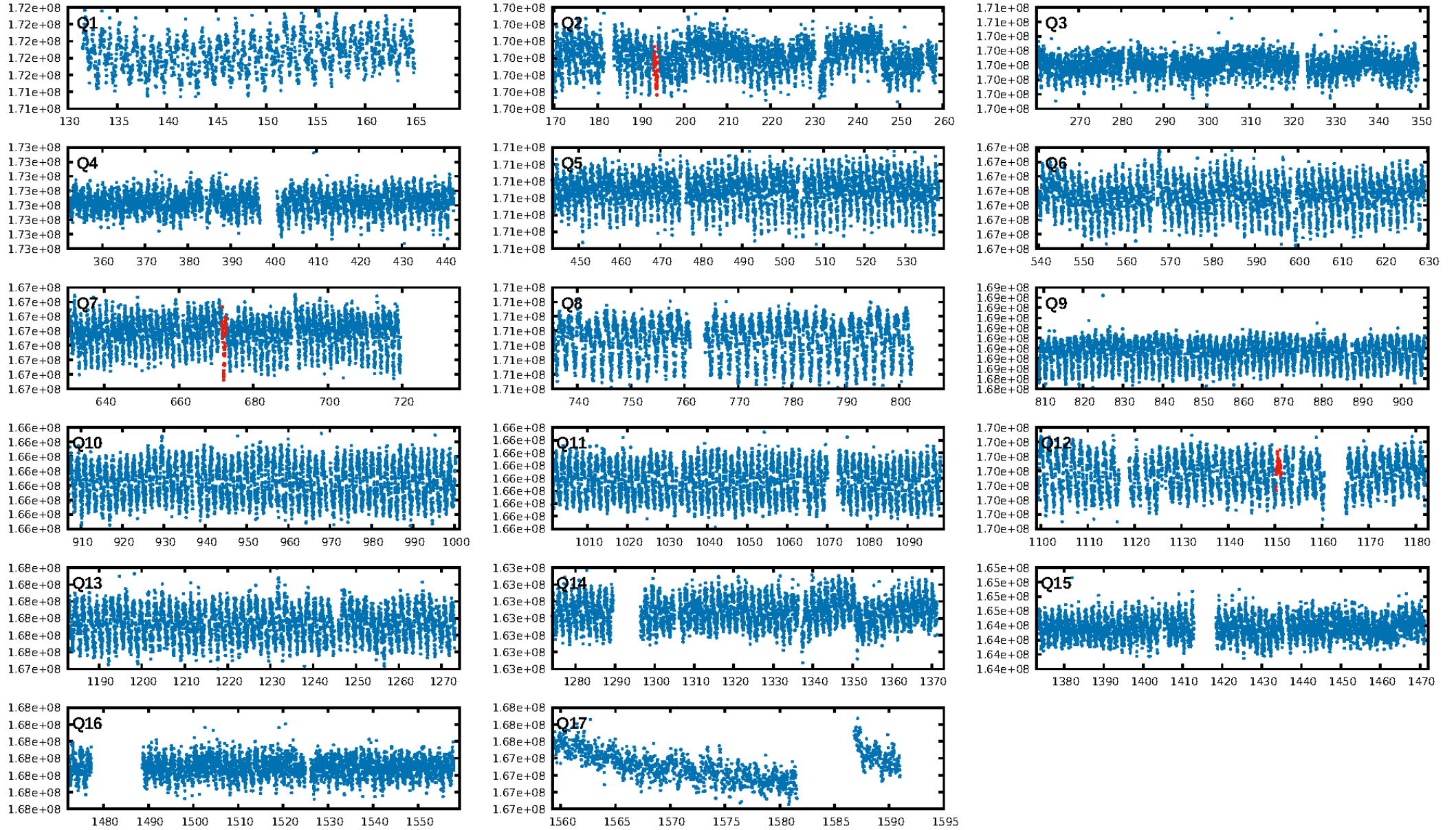
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.93e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.516
Centroid-sig: 74.6%
Centroid-so: 0.685 arcsec [0.54σ]
OotOffset-rm: 0.572 arcsec [1.01σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.530 arcsec [0.95σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

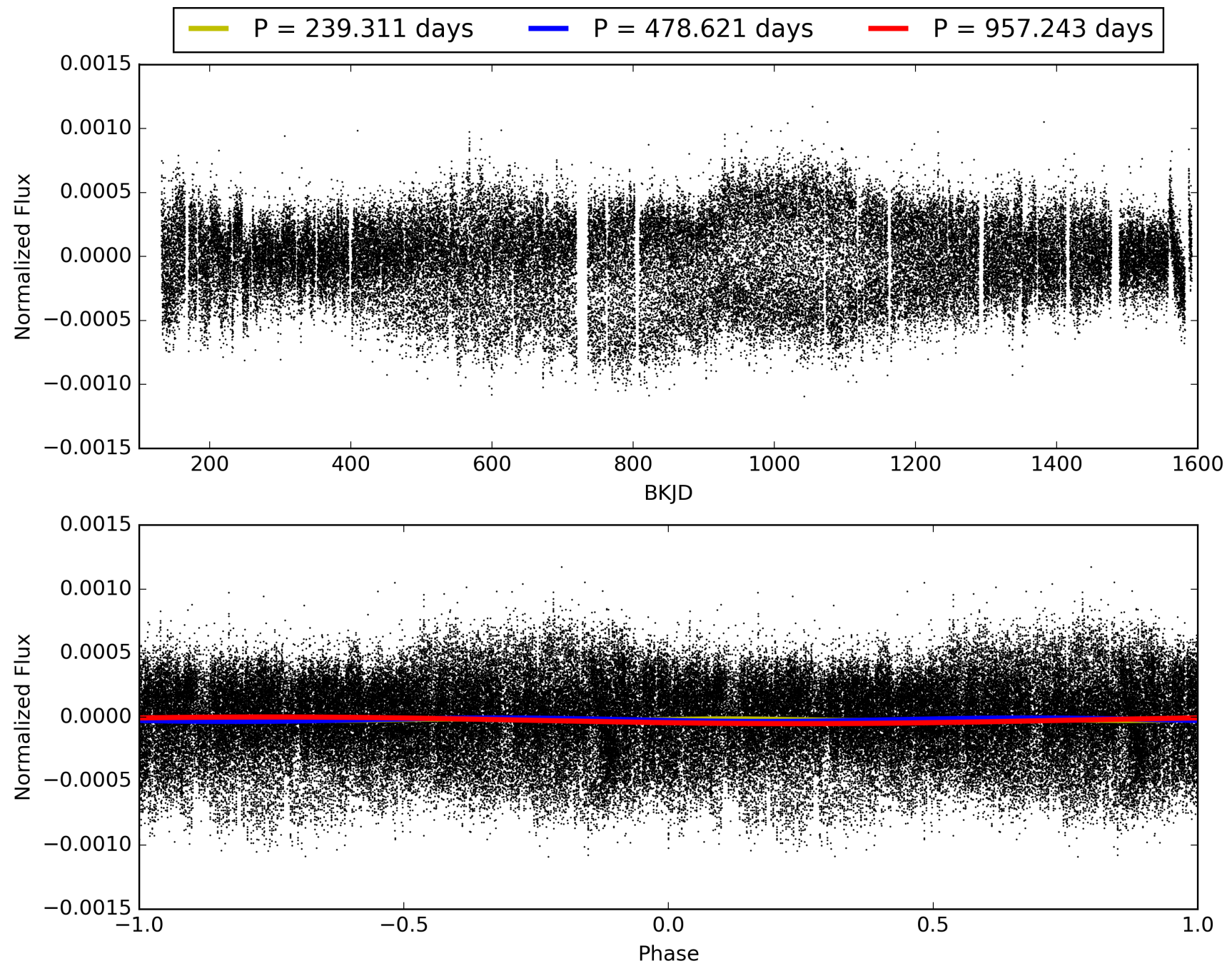
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:37:14 Z

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

TCE 004157849-01, PDC Light Curves

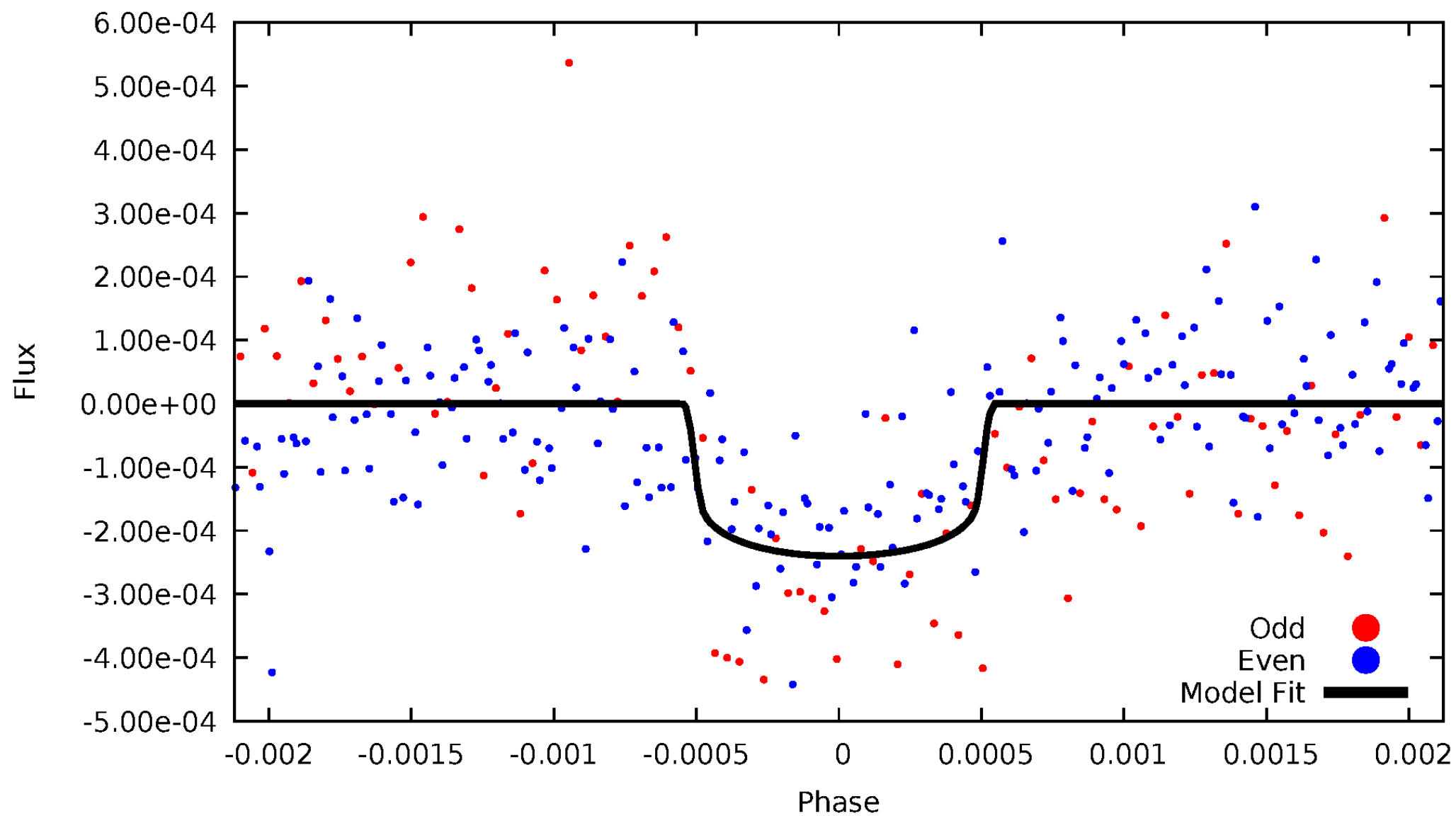


TCE 004157849-01



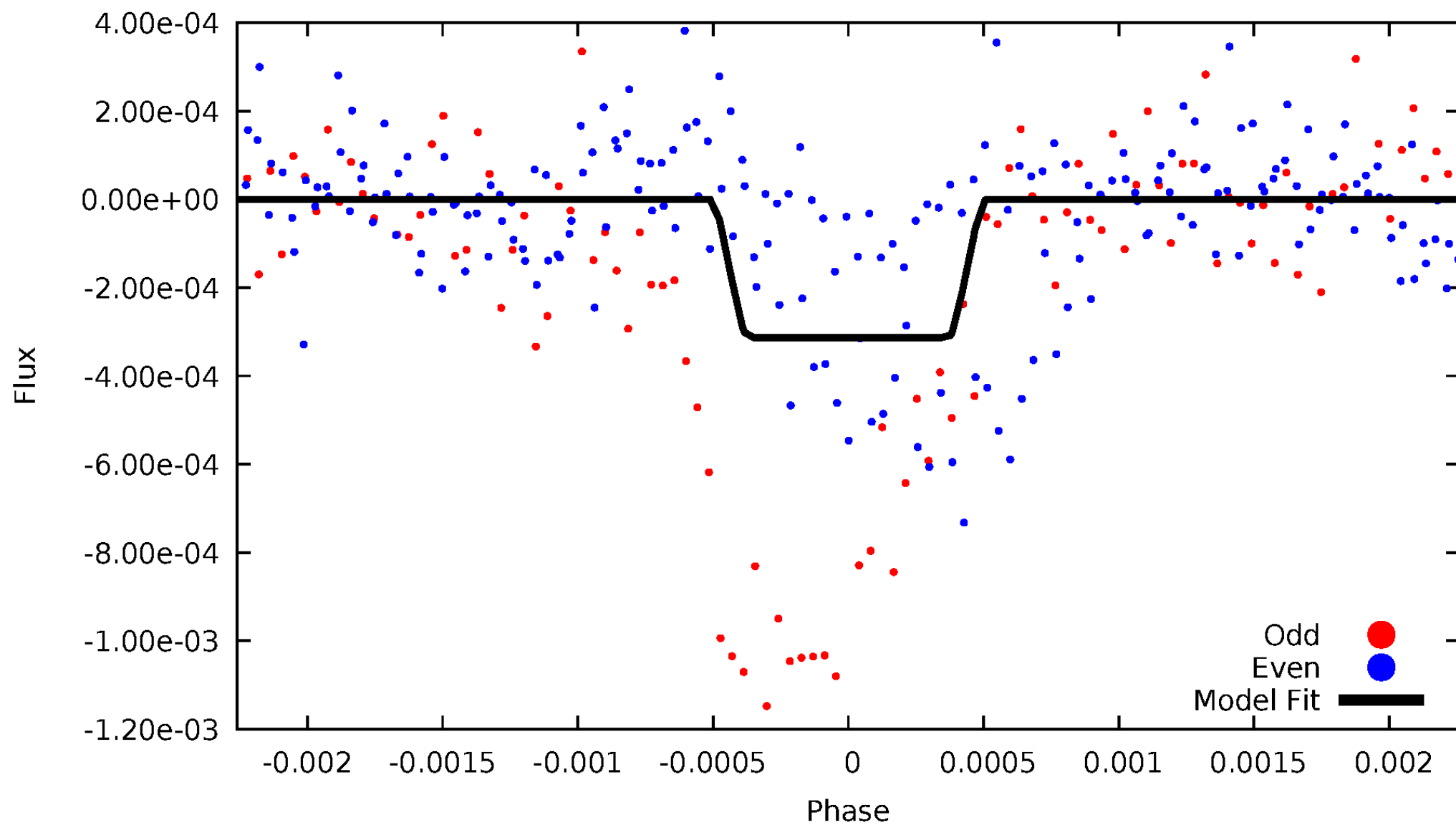
DV Odd/Even

TCE 004157849-01



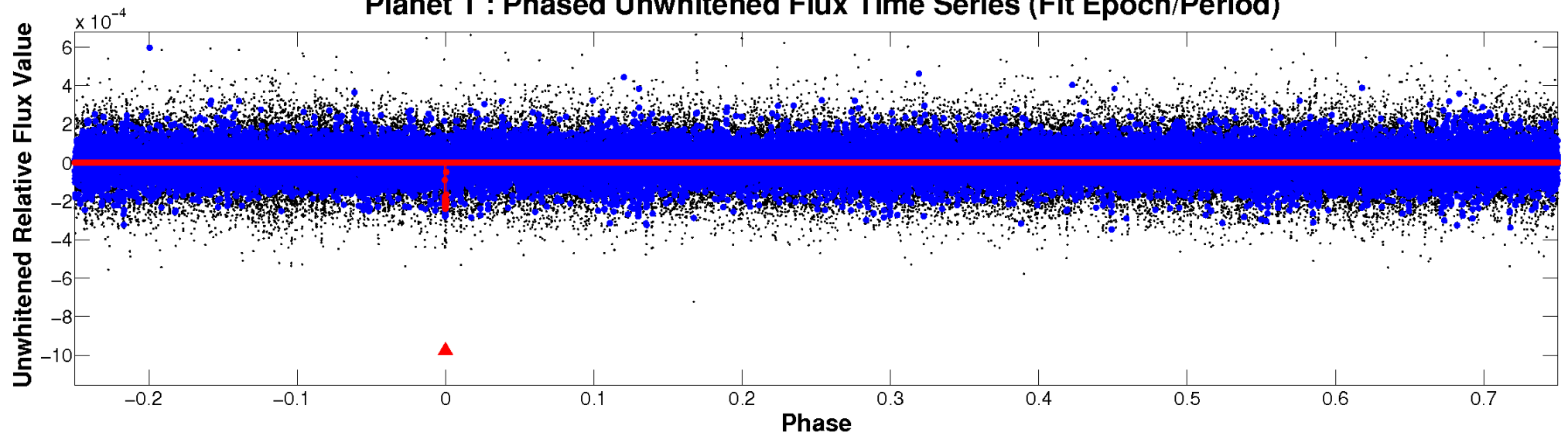
ALT Odd/Even

TCE 004157849-01

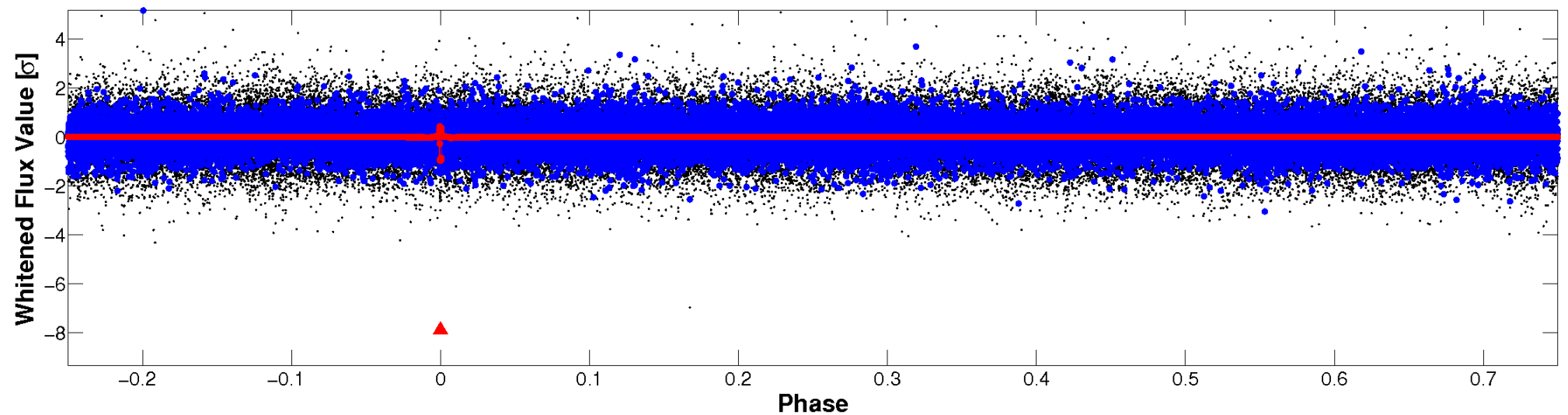


Non-Whitened Vs. Whitened Light Curve

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

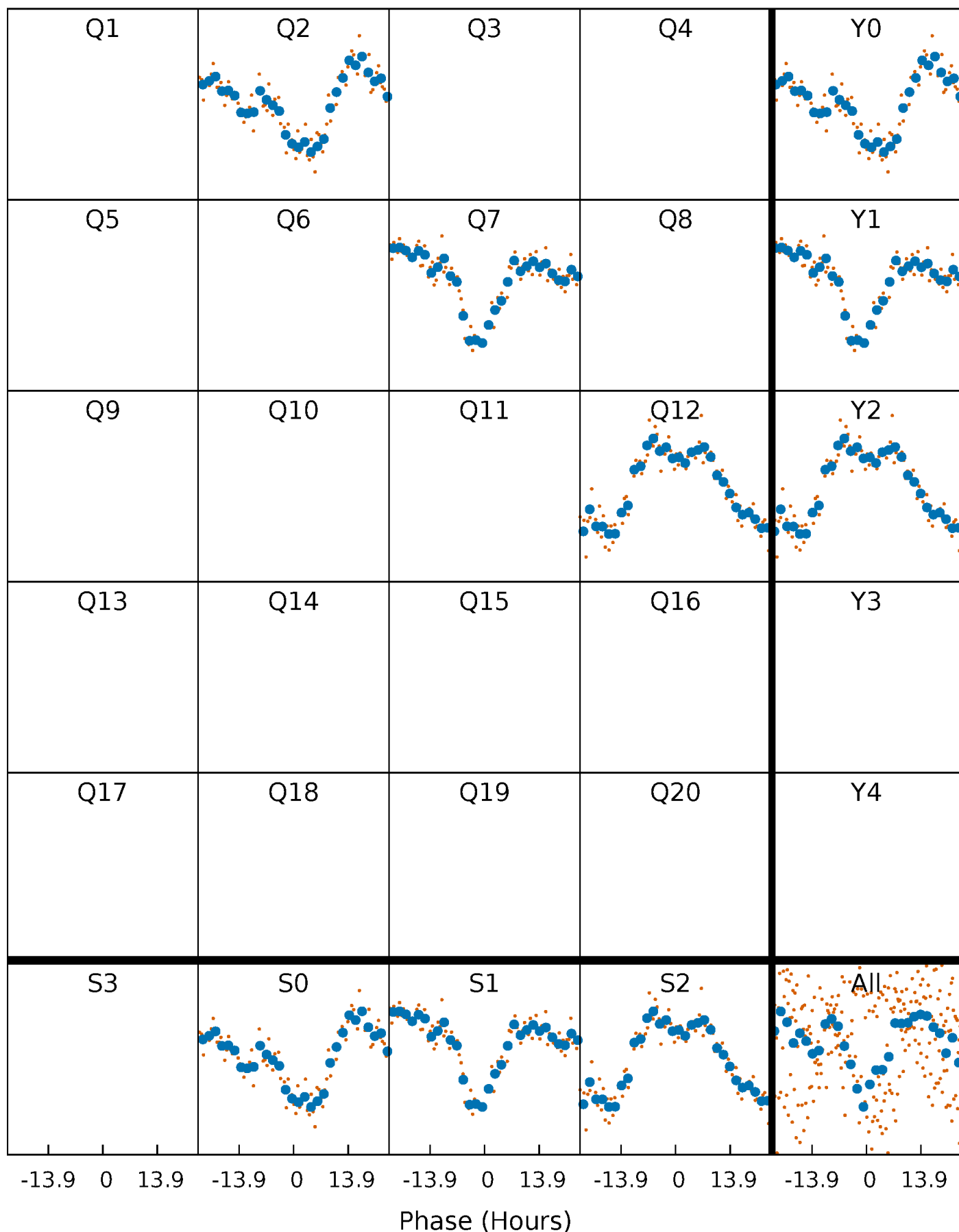


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



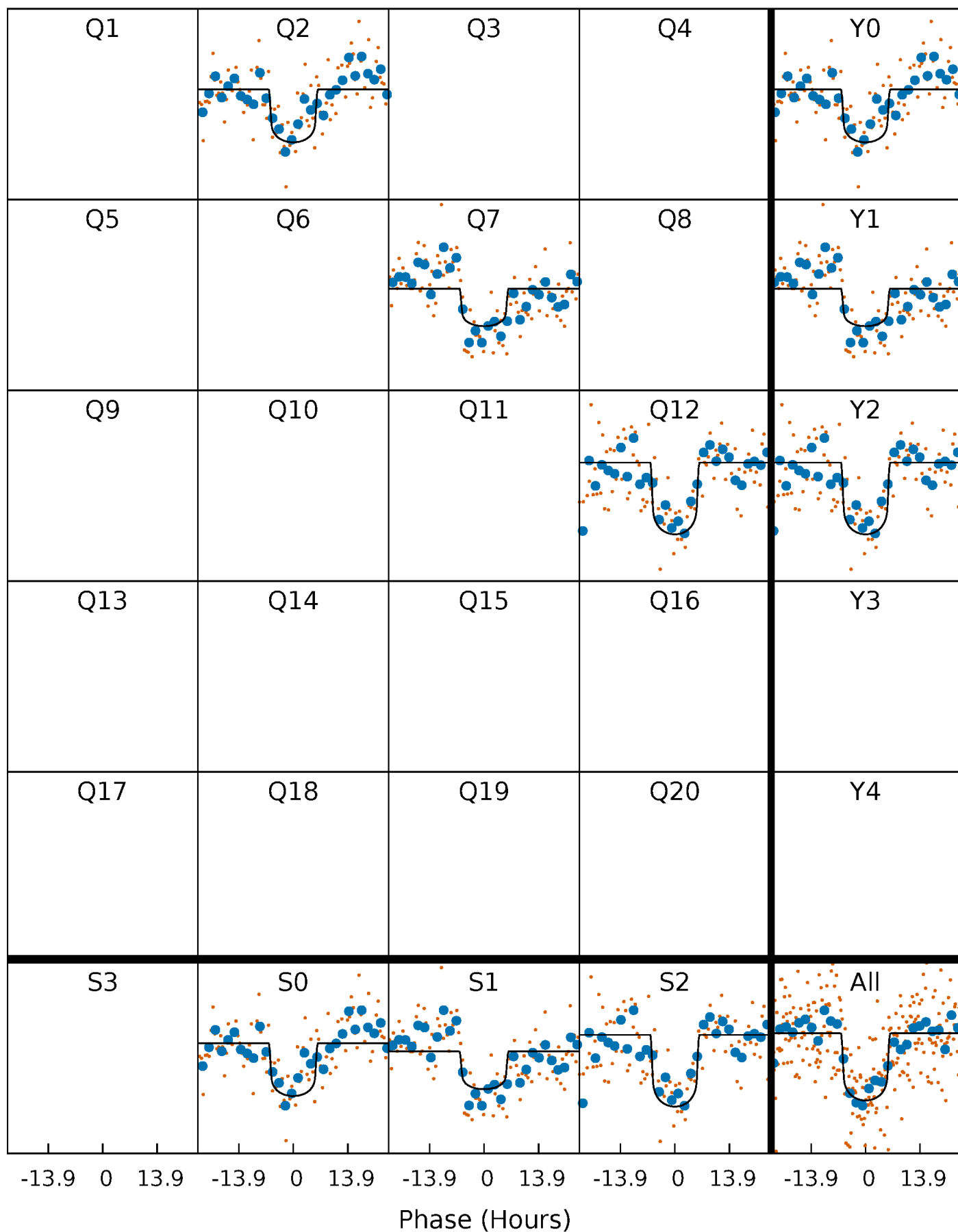
PDC Quarter-Phased Transit Curves

TCE 004157849-01 P=478.621329 Days $T_0=193.526385$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004157849-01 P=478.621329 Days $T_0=193.526385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

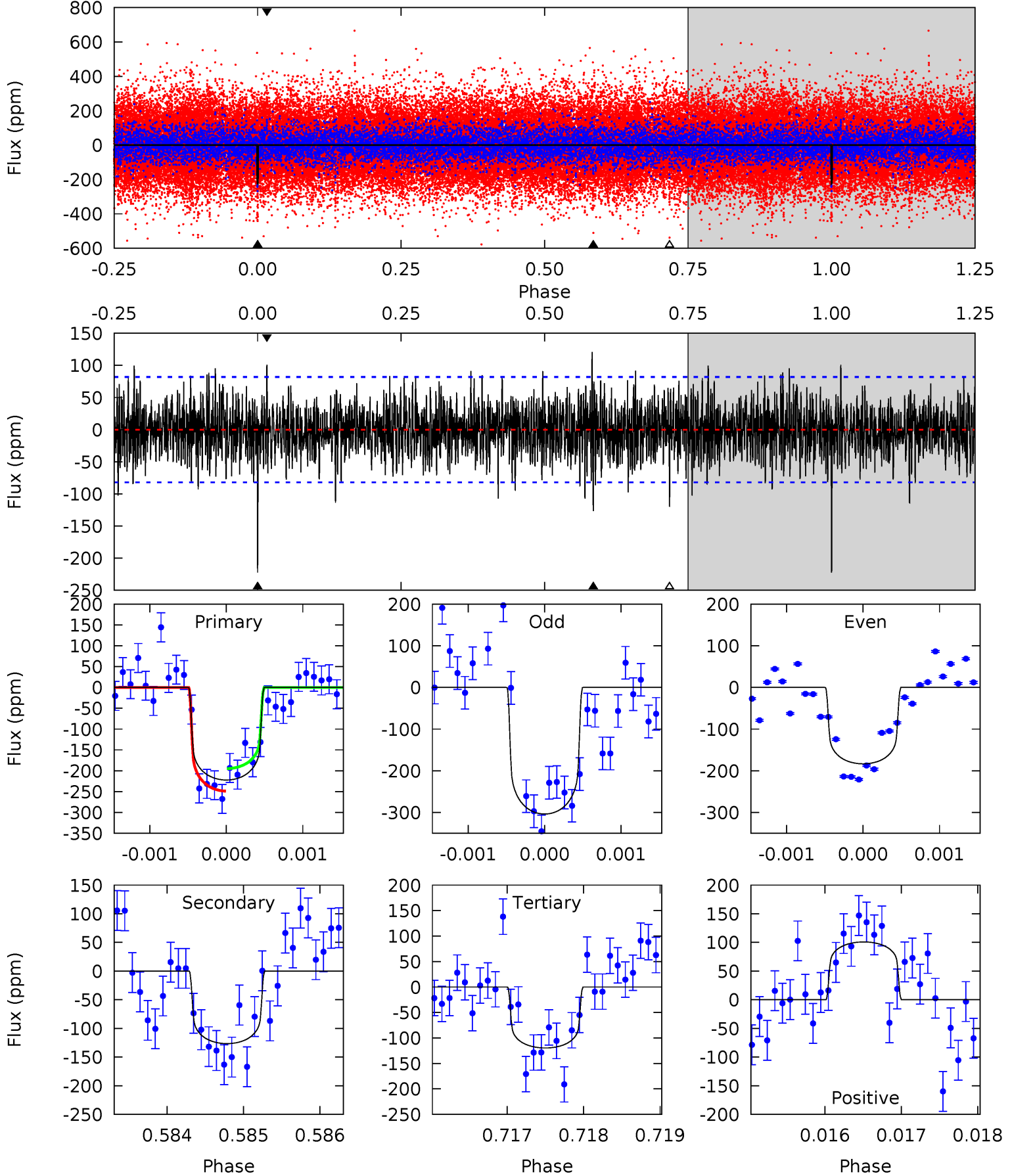
TCE 004157849-01 P=478.615276 Days $T_0=193.550639$ (BKJD)



DV Model-Shift Uniqueness Test

004157849-01, P = 478.621329 Days, E = 193.526385 Days

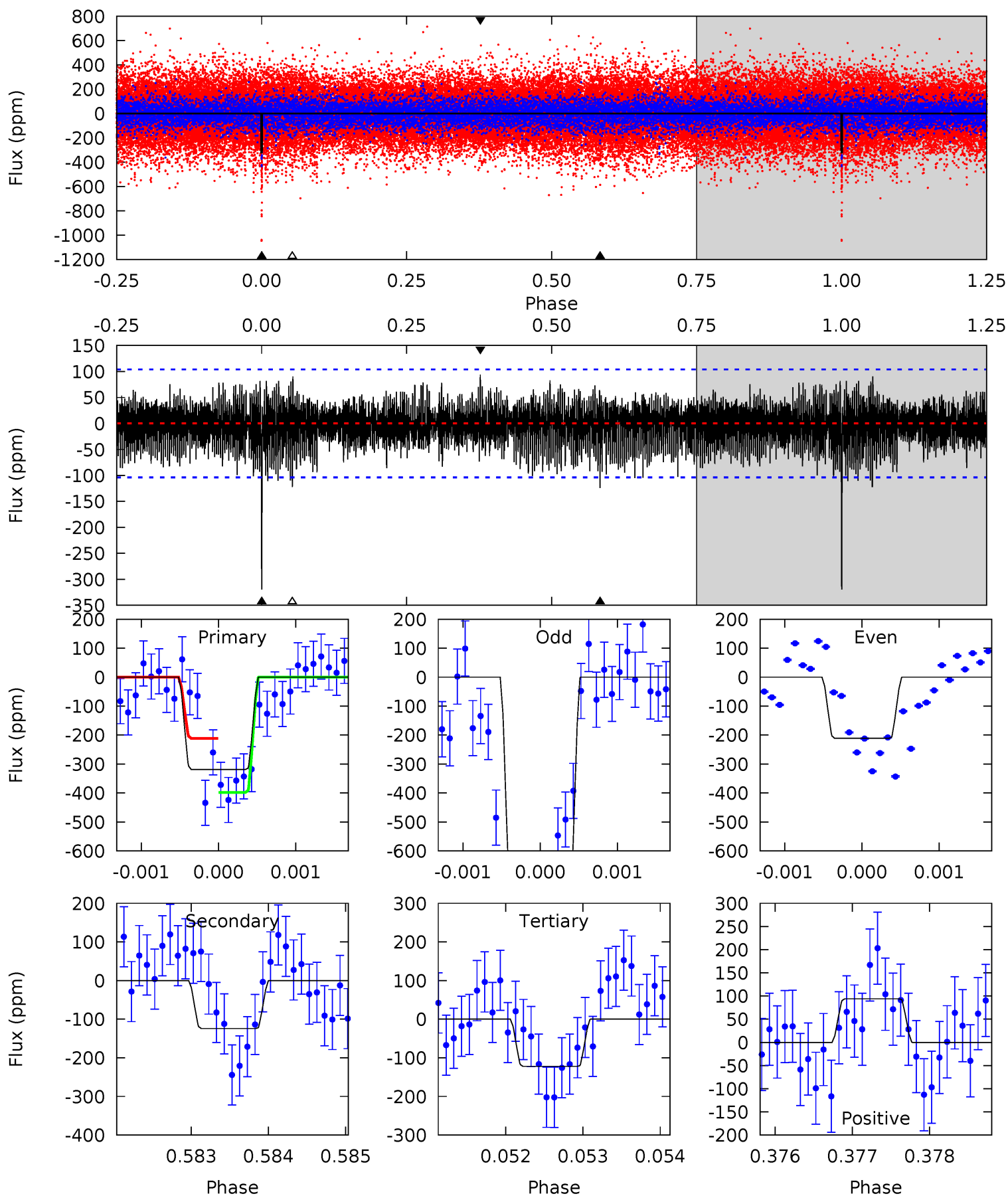
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	8.39	7.93	6.69	5.43	3.26	2.07	6.80	8.04	0.46	1.70	3.76	1.17	0.35	1.79



Alt Model-Shift Uniqueness Test

004157849-01, P = 478.615276 Days, E = 193.550639 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	6.52	6.42	4.93	5.45	3.29	1.68	10.3	11.8	0.11	1.59	16.2	1.08	0.23	4.79



Stellar Parameters For KIC 004157849

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6931^{+184}_{-245}	$3.786^{+0.285}_{-0.095}$	$-0.120^{+0.300}_{-0.300}$	$2.777^{+0.428}_{-0.998}$	$1.719^{+0.154}_{-0.360}$	$0.113^{+0.216}_{-0.034}$
	+3%/-4%	+8%/-3%	+250%/-250%	+15%/-36%	+9%/-21%	+191%/-30%
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 004157849-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-127 ± 15	$4.37^{+1.17}_{-1.06}$	580^{+36}_{-50}	5874^{+676}_{-558}	7305^{+5081}_{-2683}
Alt.	-124 ± 19	$5.09^{+1.14}_{-1.12}$	581^{+38}_{-51}	5470^{+523}_{-441}	5376^{+3192}_{-1883}

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 $A_{obs} \gg 1.0$

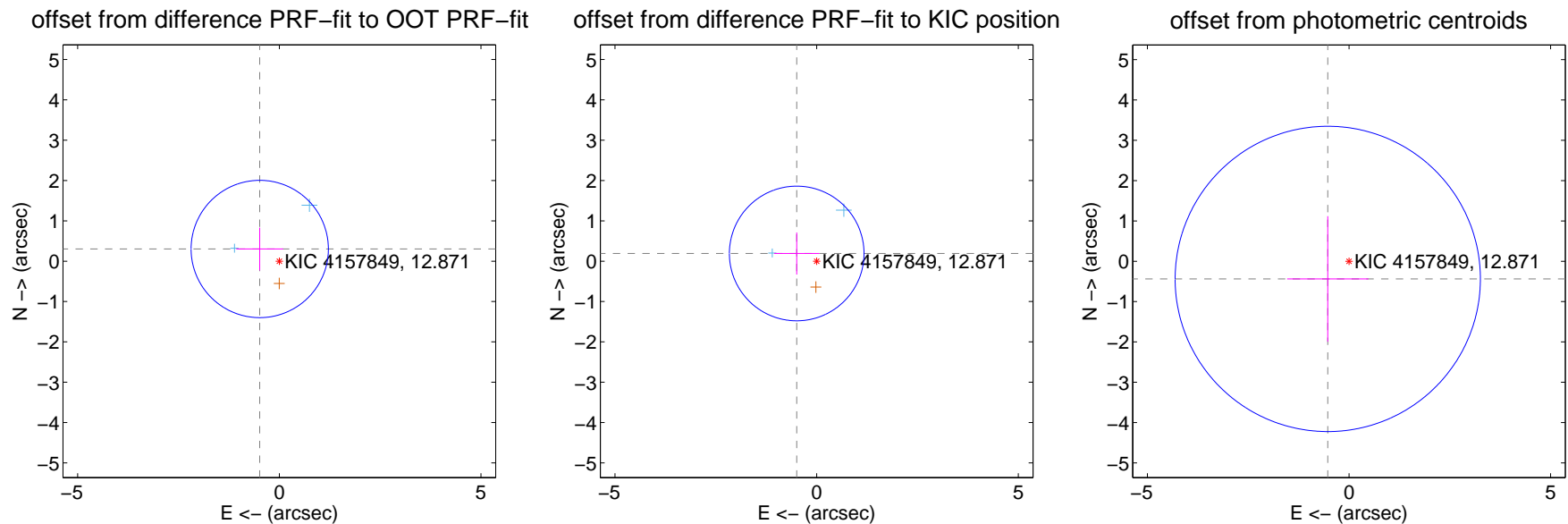
DV Centroid Data

Supplemental centroid analysis for 004157849-01. Kepler magnitude: 12.87. Transit SNR 7.56

There are 2 quarters with good PRF difference image offsets

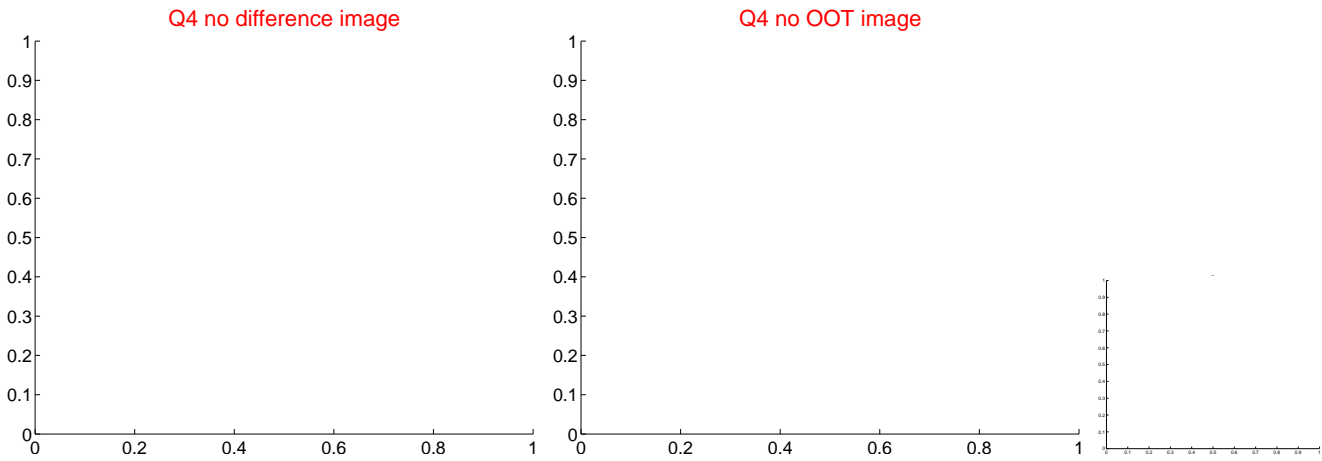
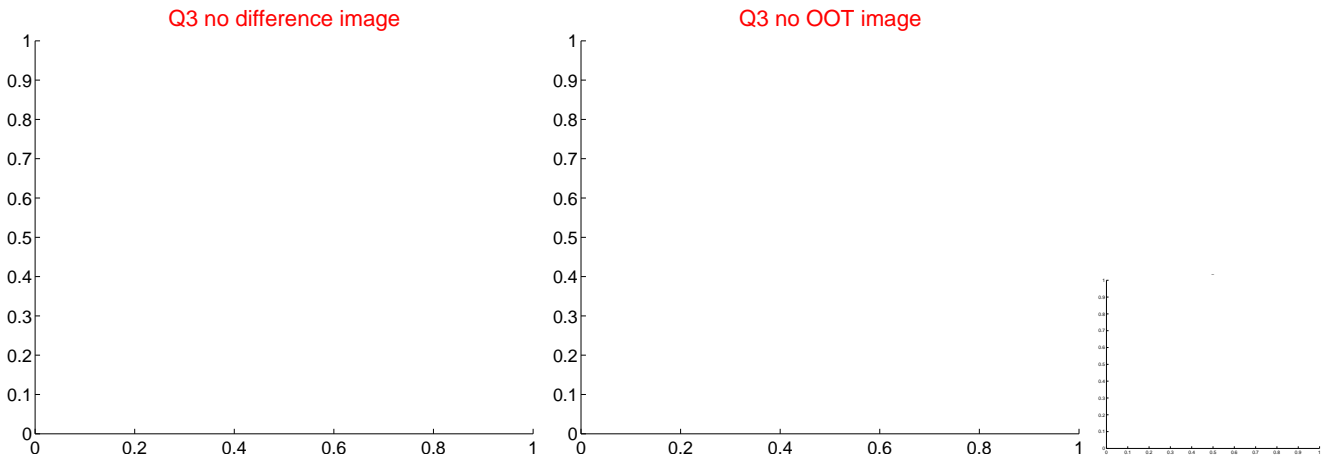
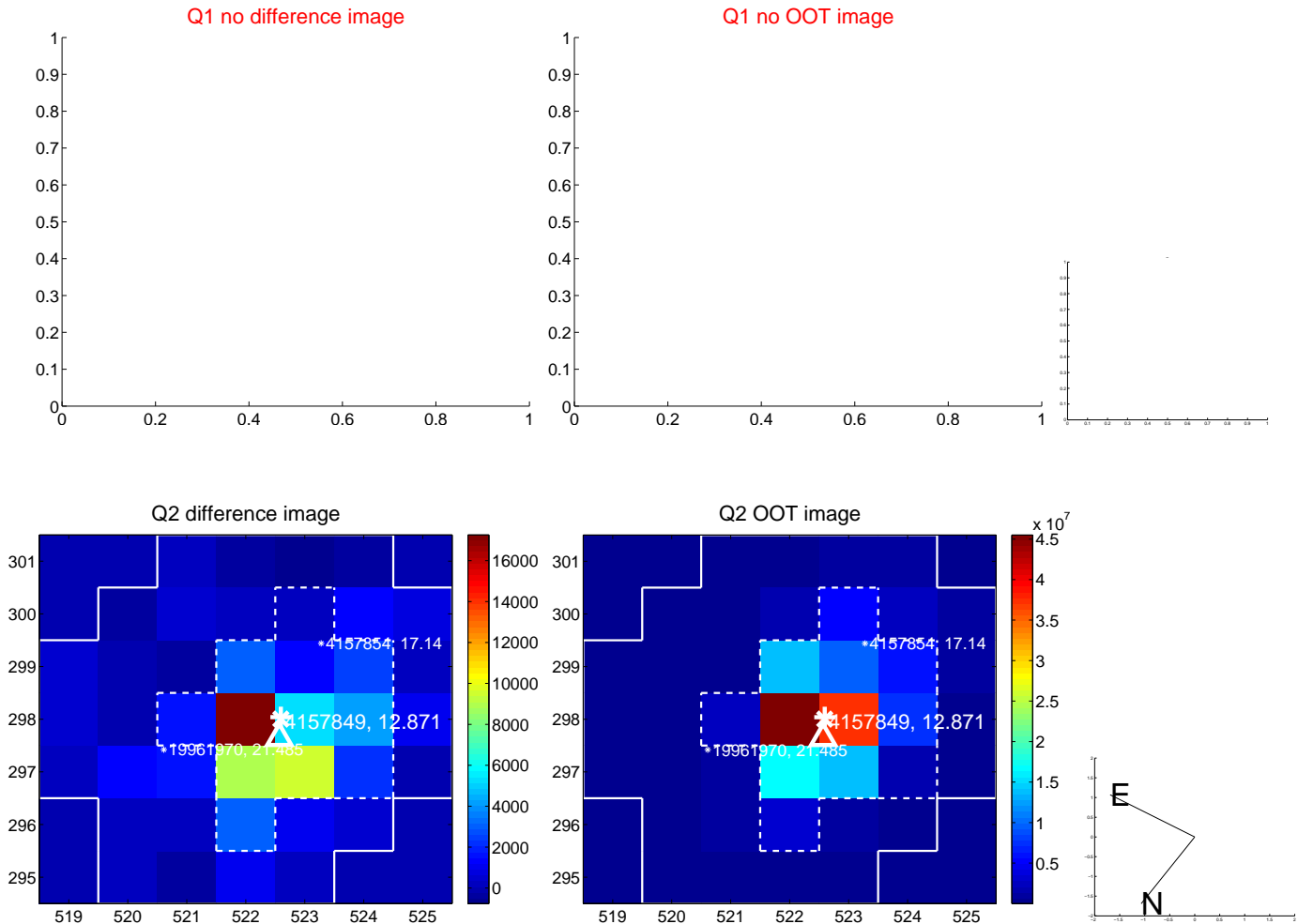
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.572 ± 0.567	1.01	0.485 ± 0.581	0.303 ± 0.529
PRF-fit source offset from KIC position	0.530 ± 0.556	0.95	0.495 ± 0.561	0.191 ± 0.522
photometric centroid source offset	0.68 ± 1.26	0.54	0.53 ± 1.01	-0.44 ± 1.56



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

Q5 no difference image



Q5 no OOT image



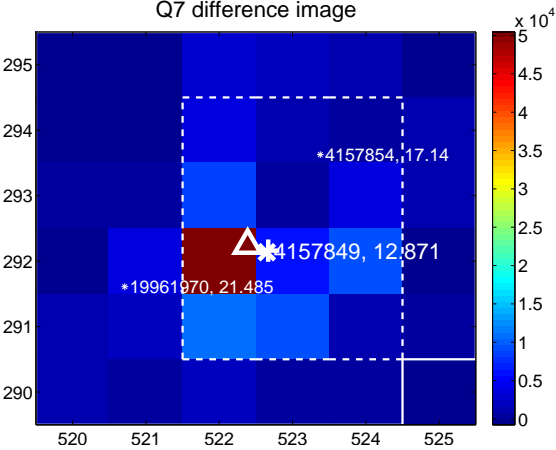
Q6 no difference image



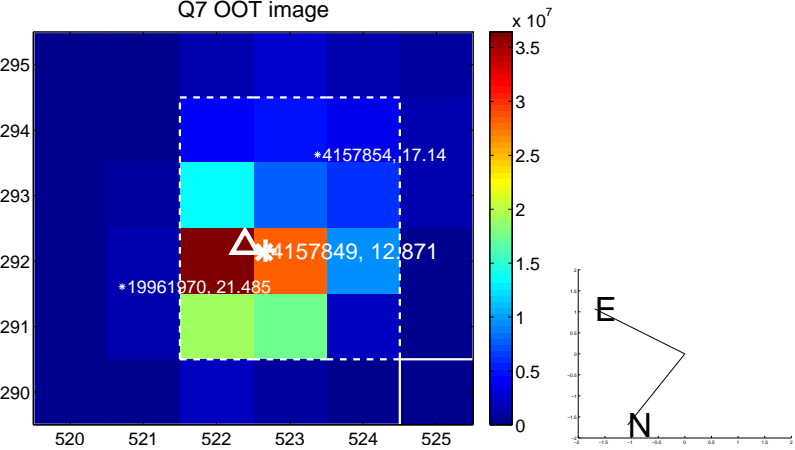
Q6 no OOT image



Q7 difference image



Q7 OOT image



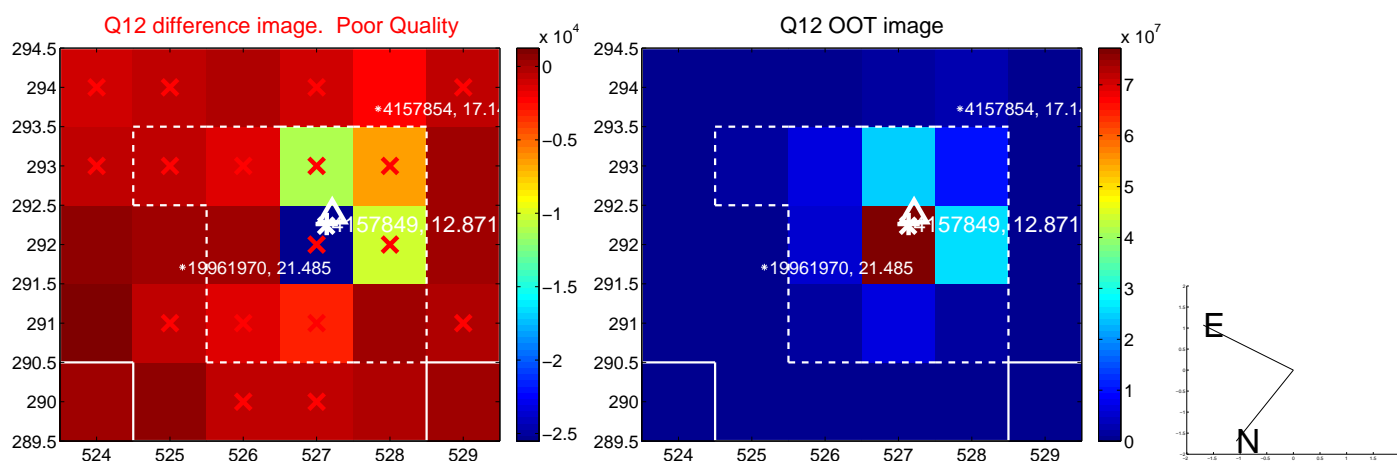
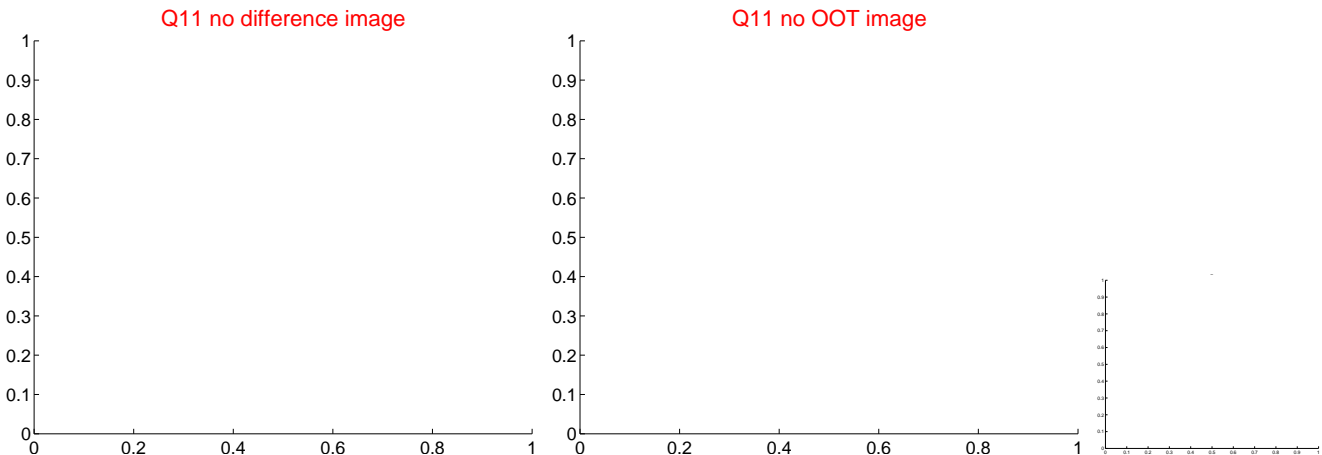
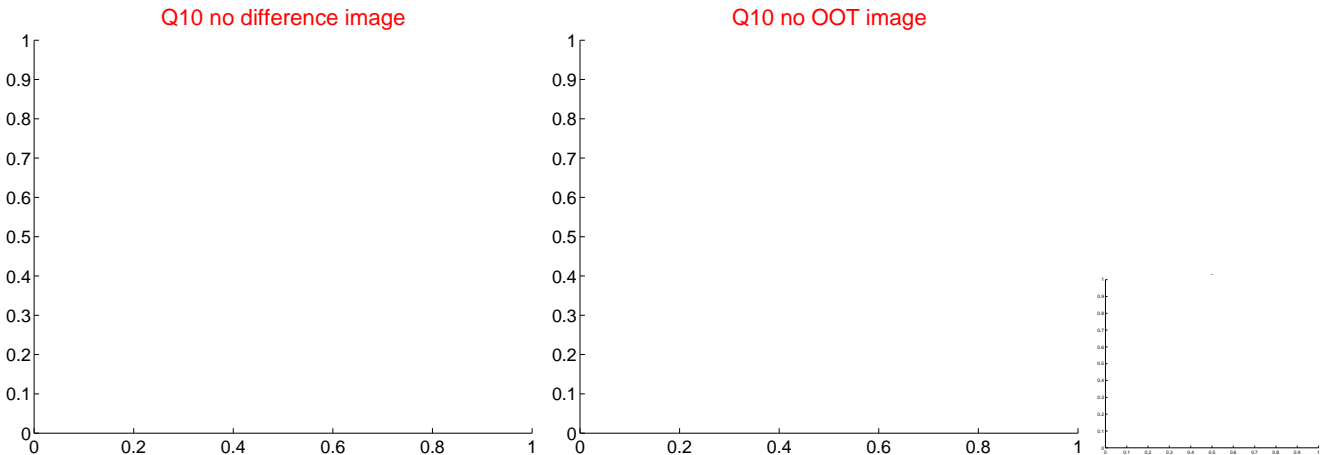
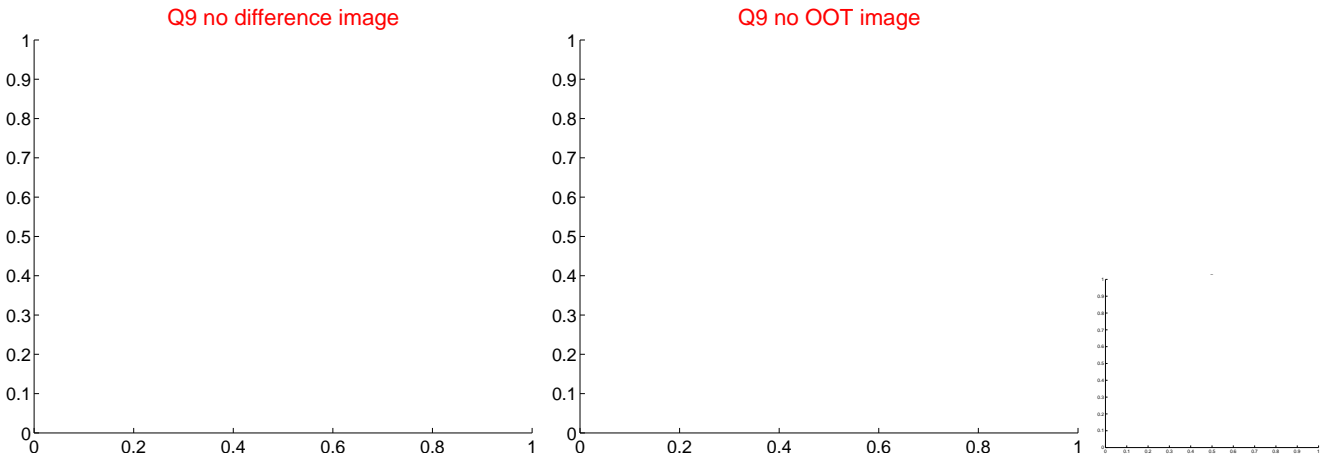
Q8 no difference image



Q8 no OOT image



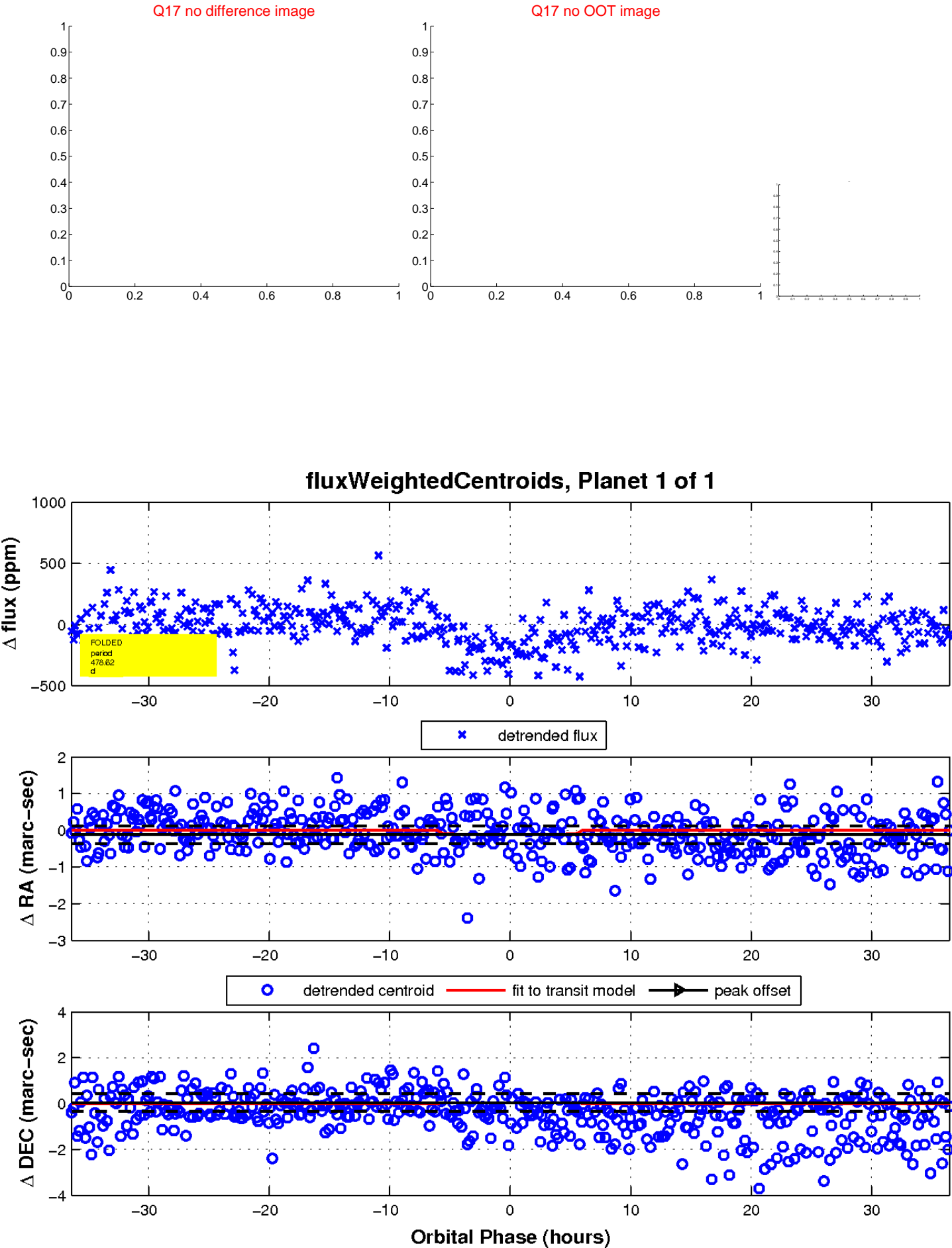
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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.



UKIRT Image

Declination

