

KIC 010031656

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})
010031656-01	OBS	2629.01	8.589990	131.974982	307.7	6.742	16.5	17.2	0.88	5817	1.86	119.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010031656-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_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 for comment definitions.

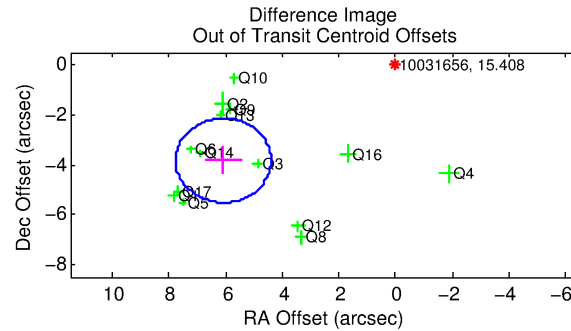
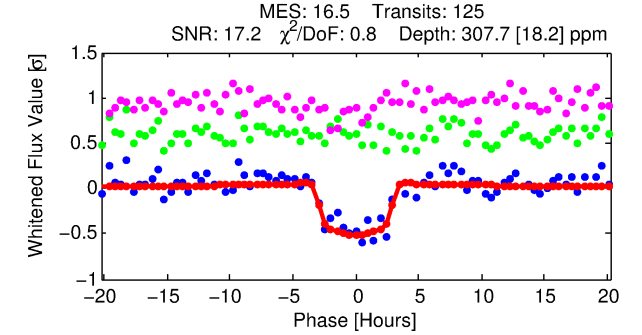
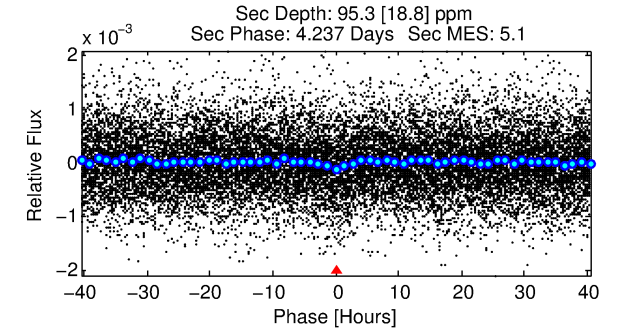
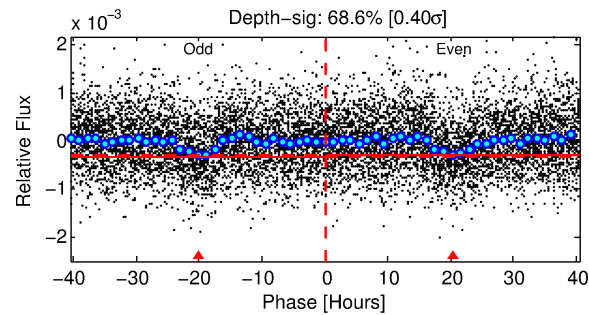
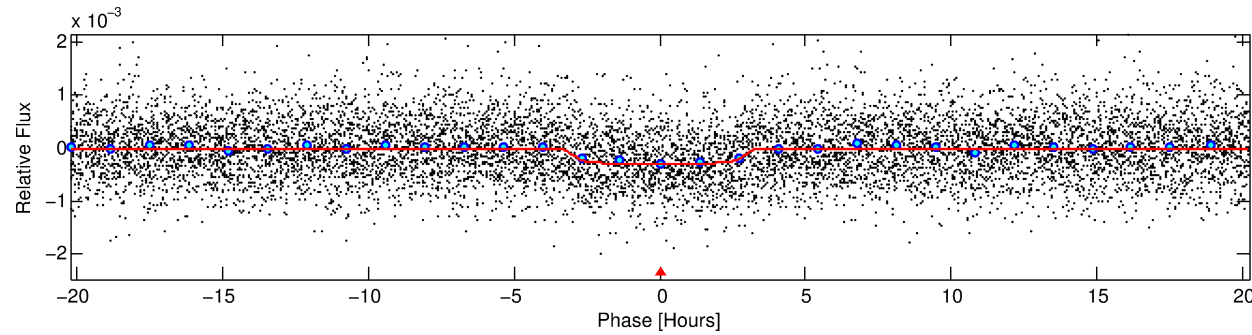
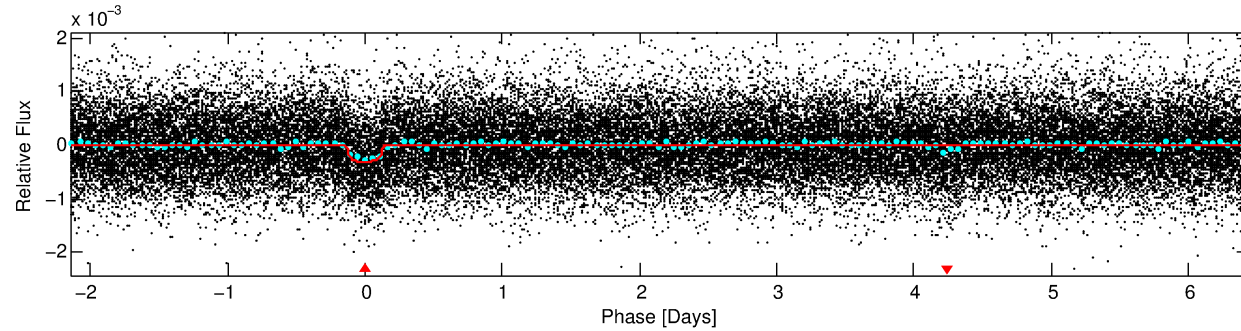
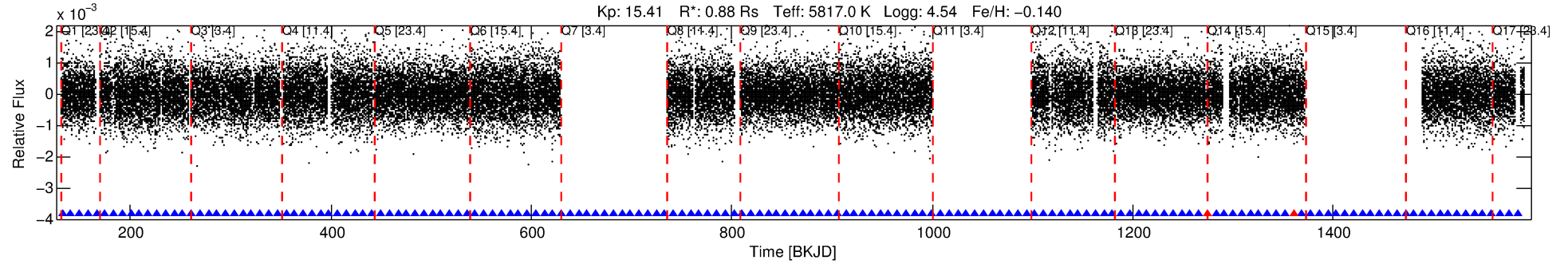
Ephemeris Match Information For 010031656-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010031656-01	10031656	010031808-01	10031808	1:1	112.5	19	21	9.56	15.41	877.07	Direct-PRF	0	2.06	1.00

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10031656 Candidate: 1 of 1 Period: 8.590 d
KOI: K02629.01 Corr: 0.974



DV Fit Results:

Period = 8.58999 [0.00008] d
Epoch = 131.9750 [0.0069] BKJD
Rp/R* = 0.0194 [0.0017]
a/R* = 4.41 [1.67]
b = 0.92 [0.07]
Seff = 119.50 [44.43]
Teq = 843 [78] K
Rp = 1.86 [0.56] Re
a = 0.0812 [0.0197] AU
Ag = 100.16 [44.14] [2.25 σ]
Teffp = 4124 [299] K [10.62 σ]

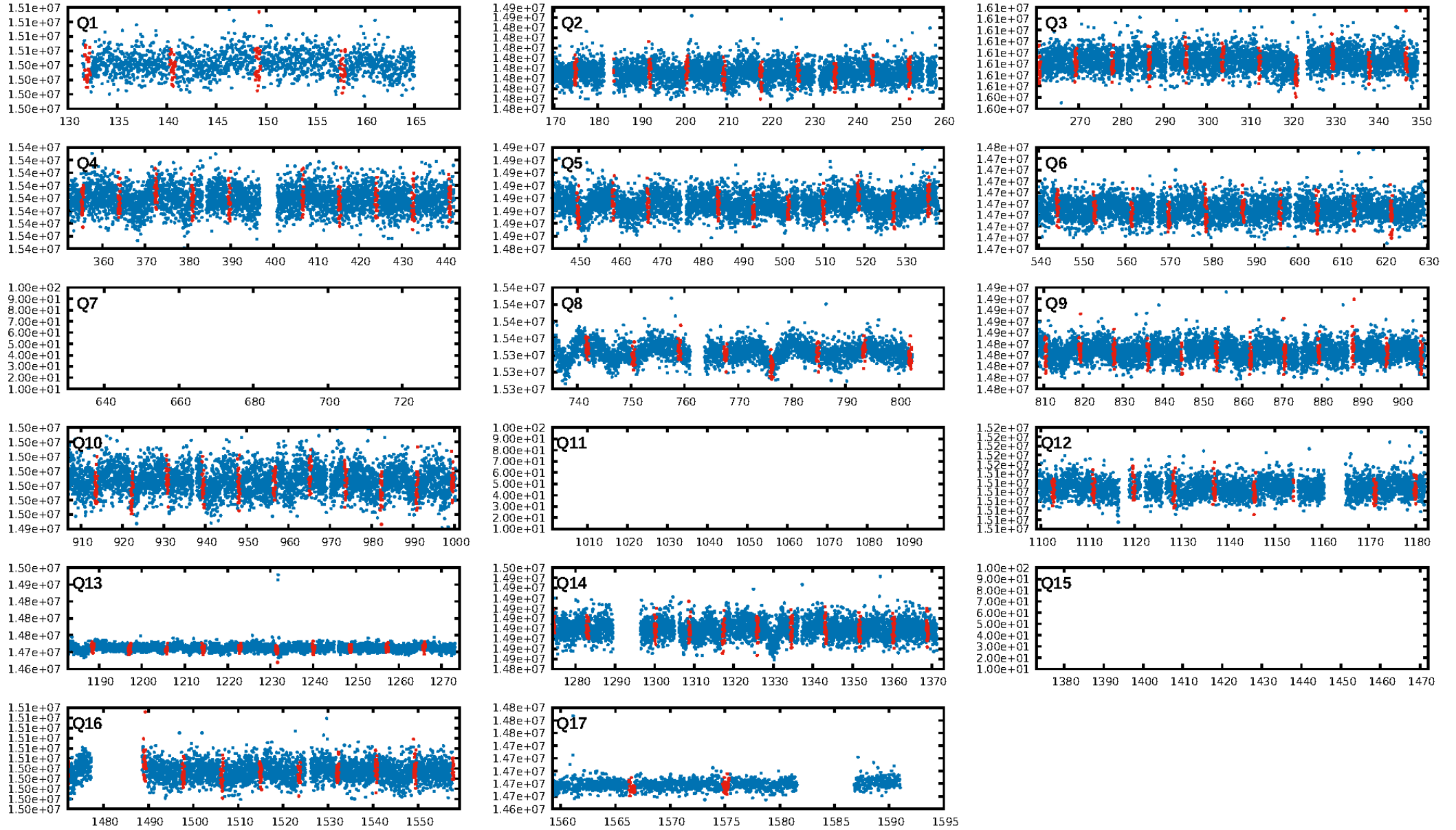
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.69e-60
RollingBand-fgt: 0.98 [117/119]
GhostDiagnostic-chr: -0.1819
Centroid-sig: 0.0%
Centroid-so: 8.570 arcsec [9.16 σ]
OotOffset-rm: 7.195 arcsec [12.80 σ]
KicOffset-rm: 7.238 arcsec [12.07 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 1.00 [14/14]

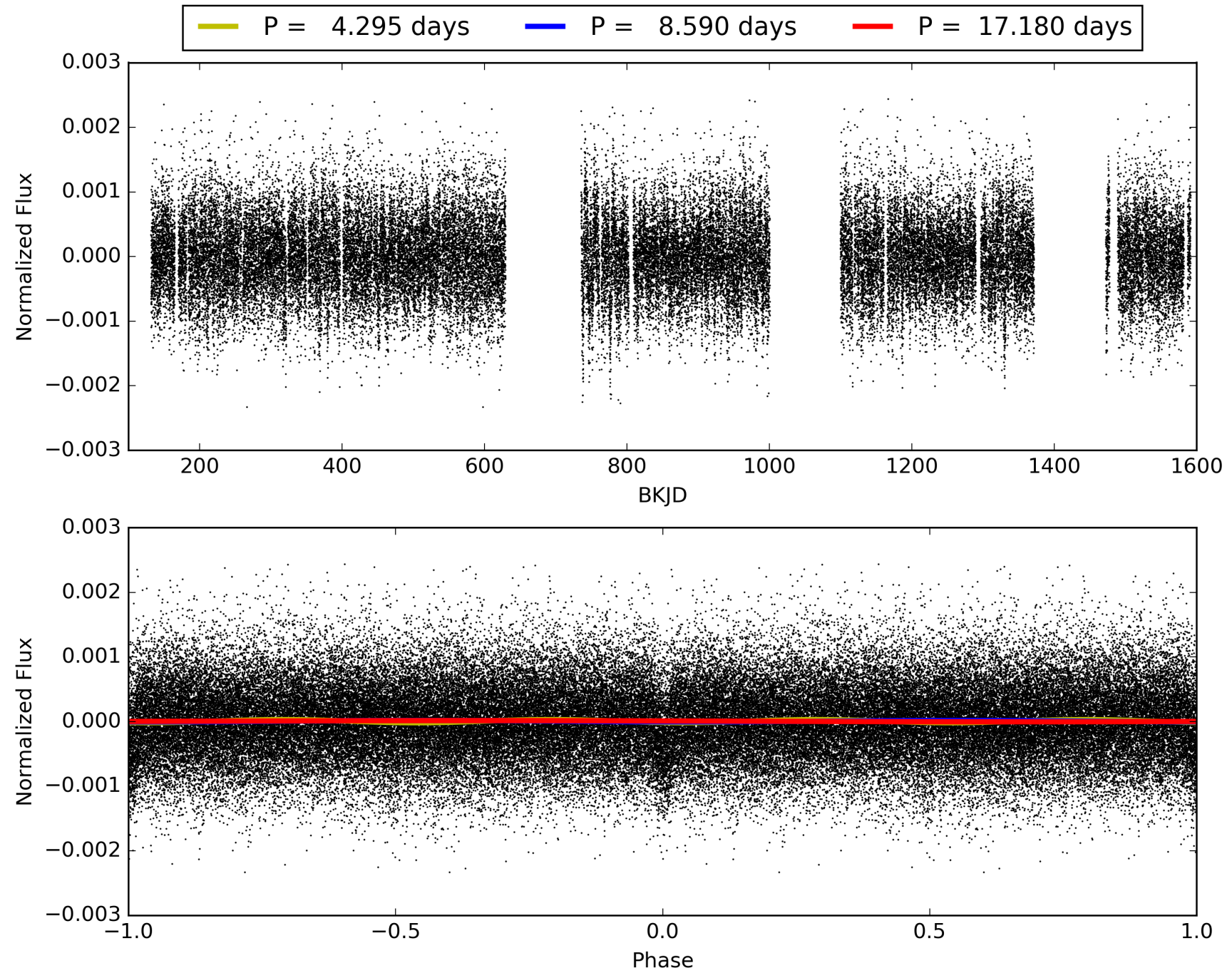
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:42:35 Z

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

TCE 010031656-01, PDC Light Curves

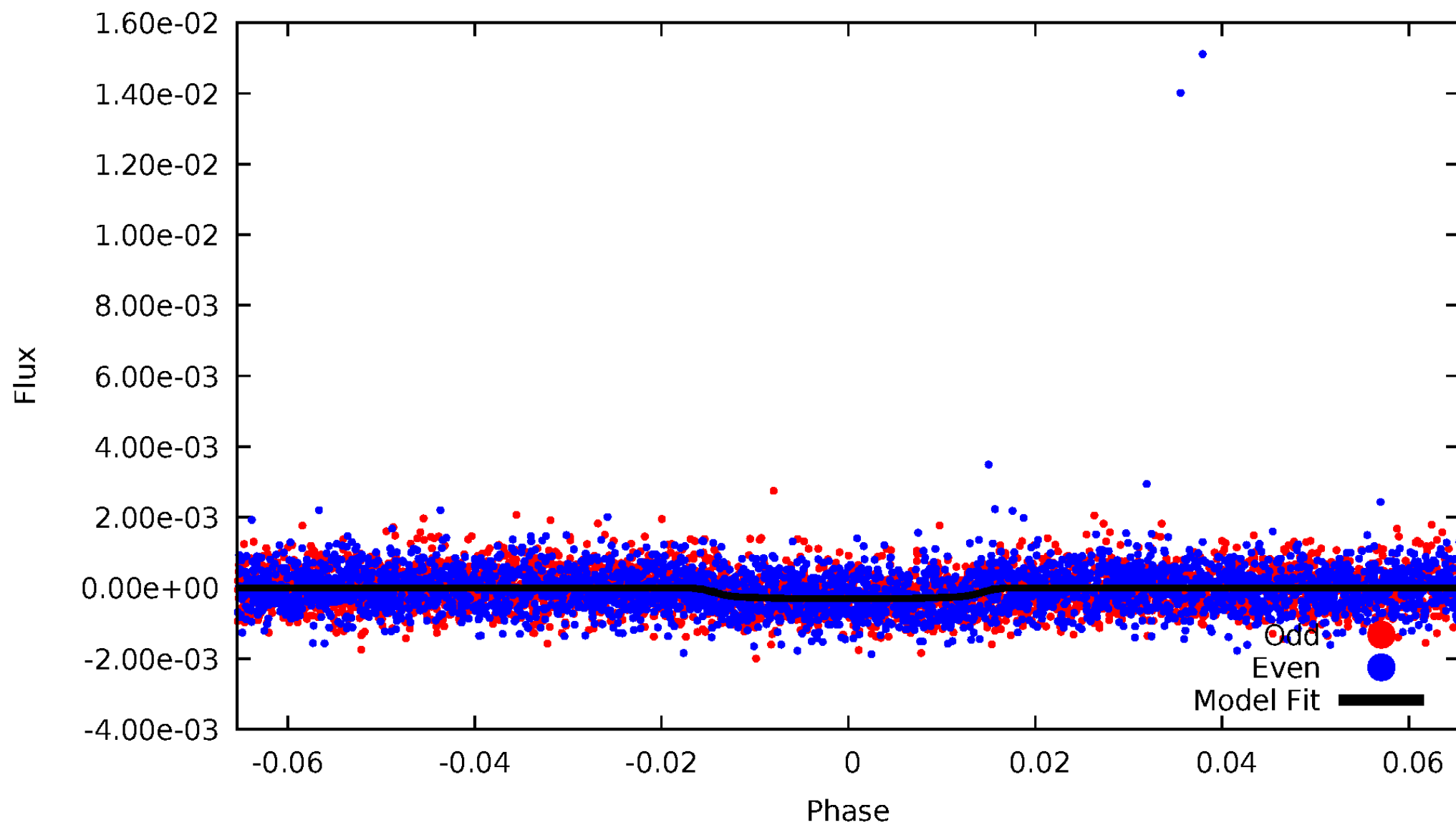


TCE 010031656-01



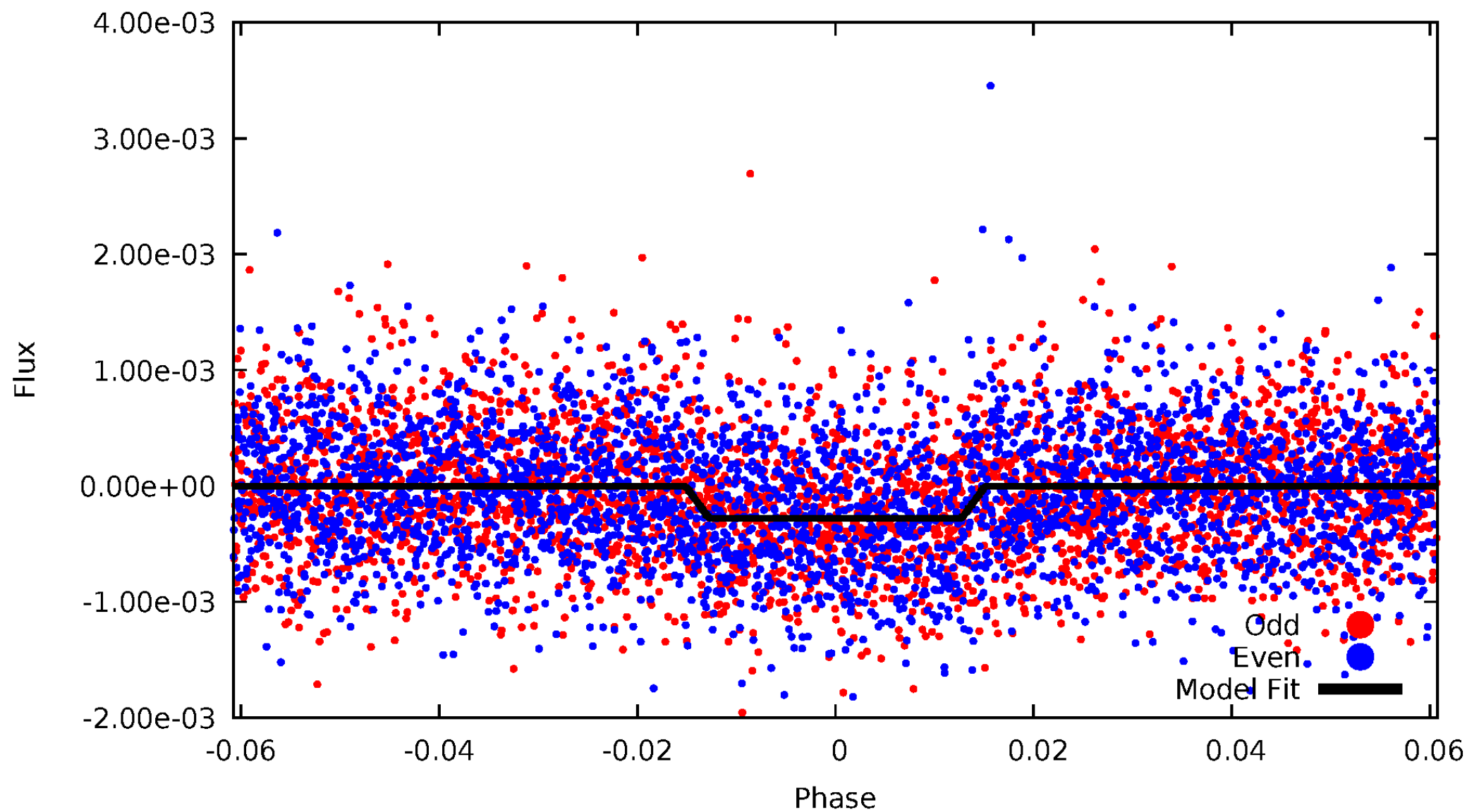
DV Odd/Even

TCE 010031656-01



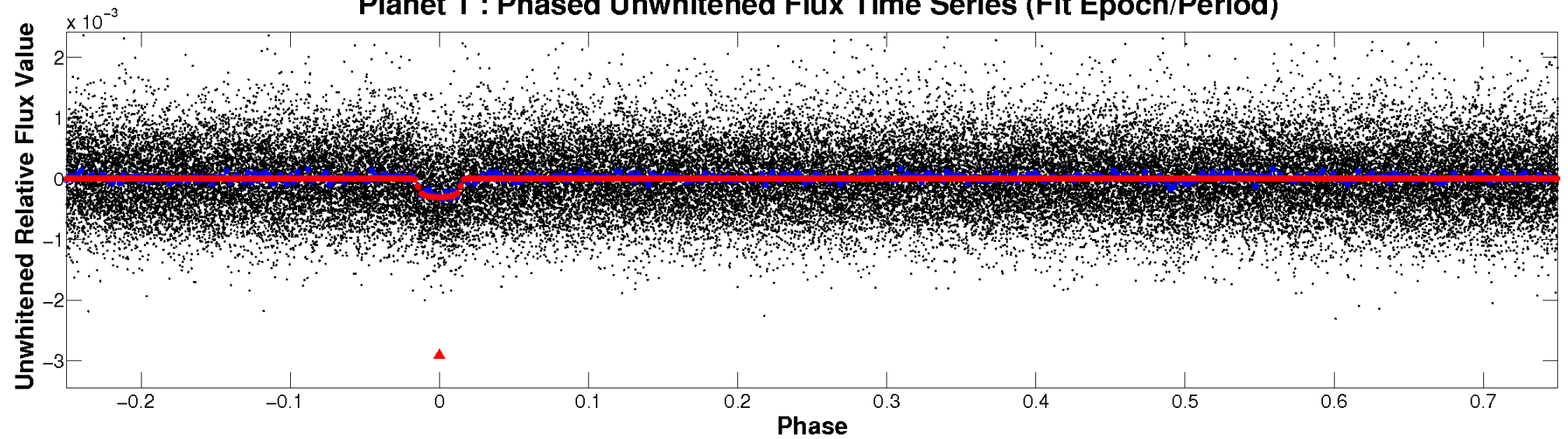
ALT Odd/Even

TCE 010031656-01

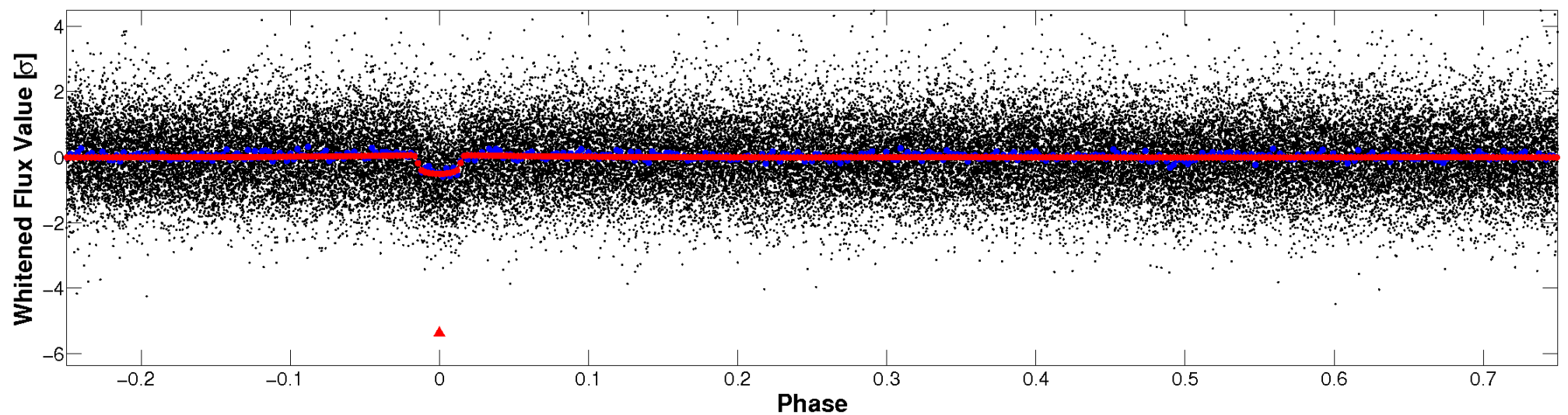


Non-Whitened Vs. Whitened Light Curve

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

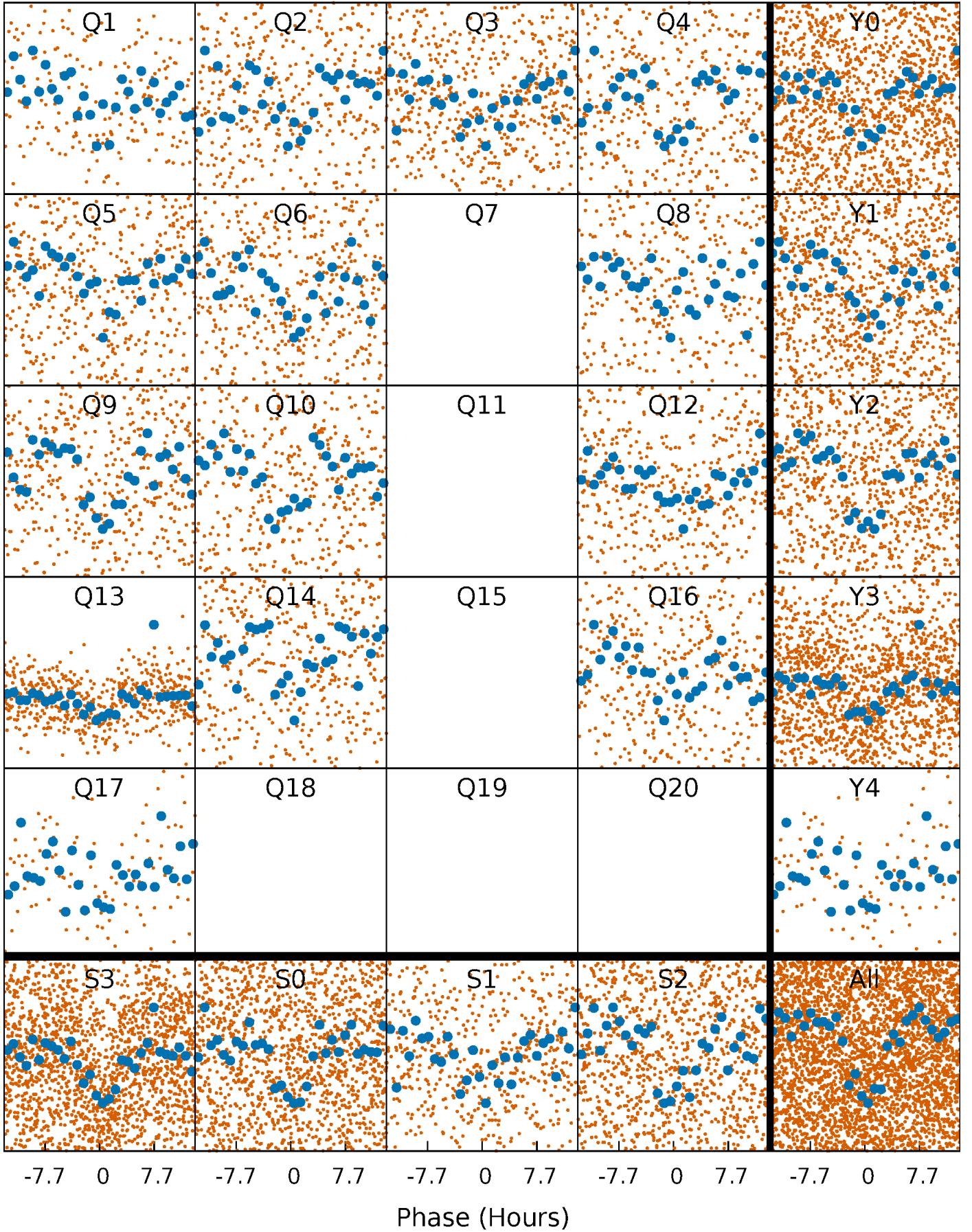


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



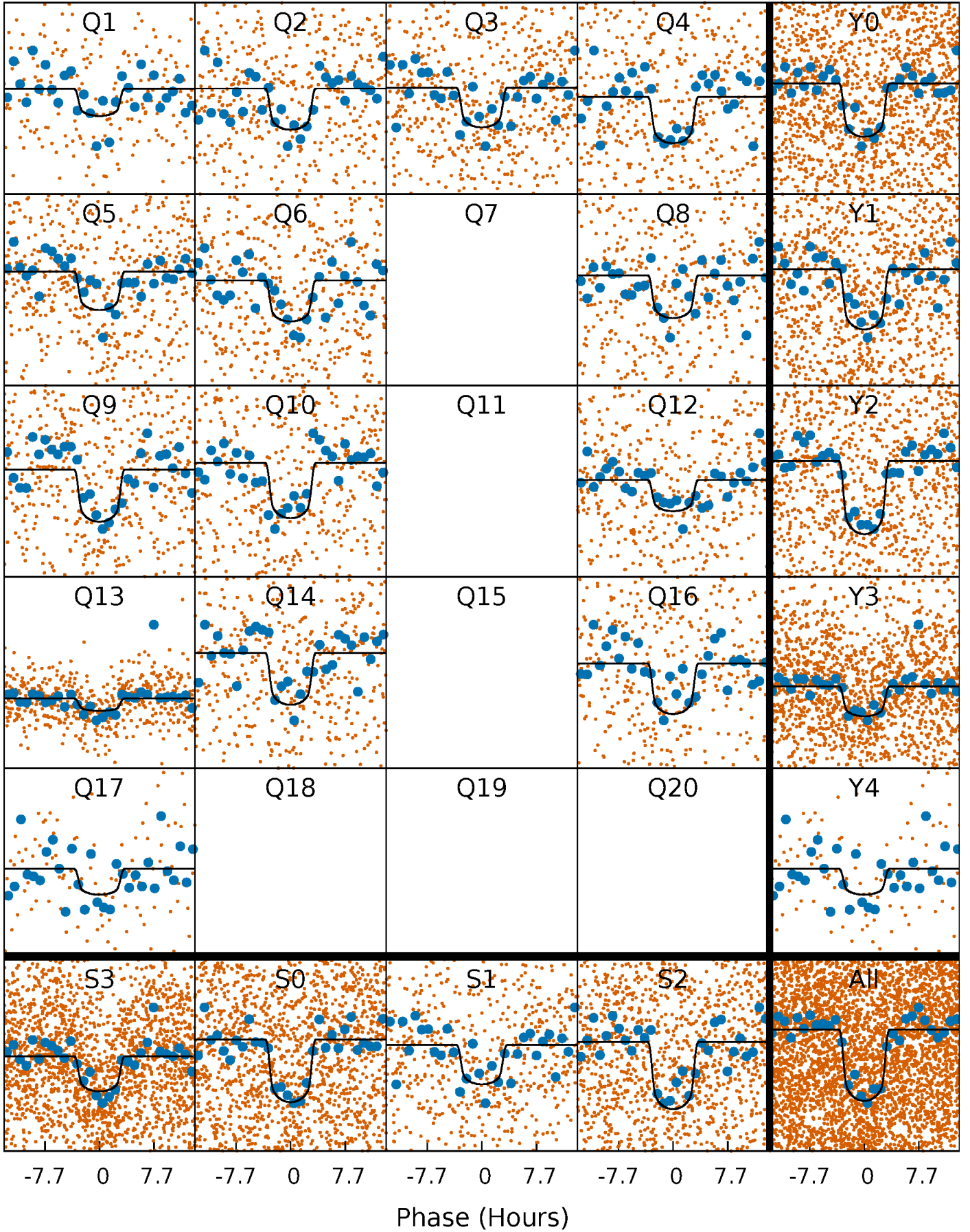
PDC Quarter-Phased Transit Curves

TCE 010031656-01 P= 8.589990 Days $T_0=131.974982$ (BKJD)



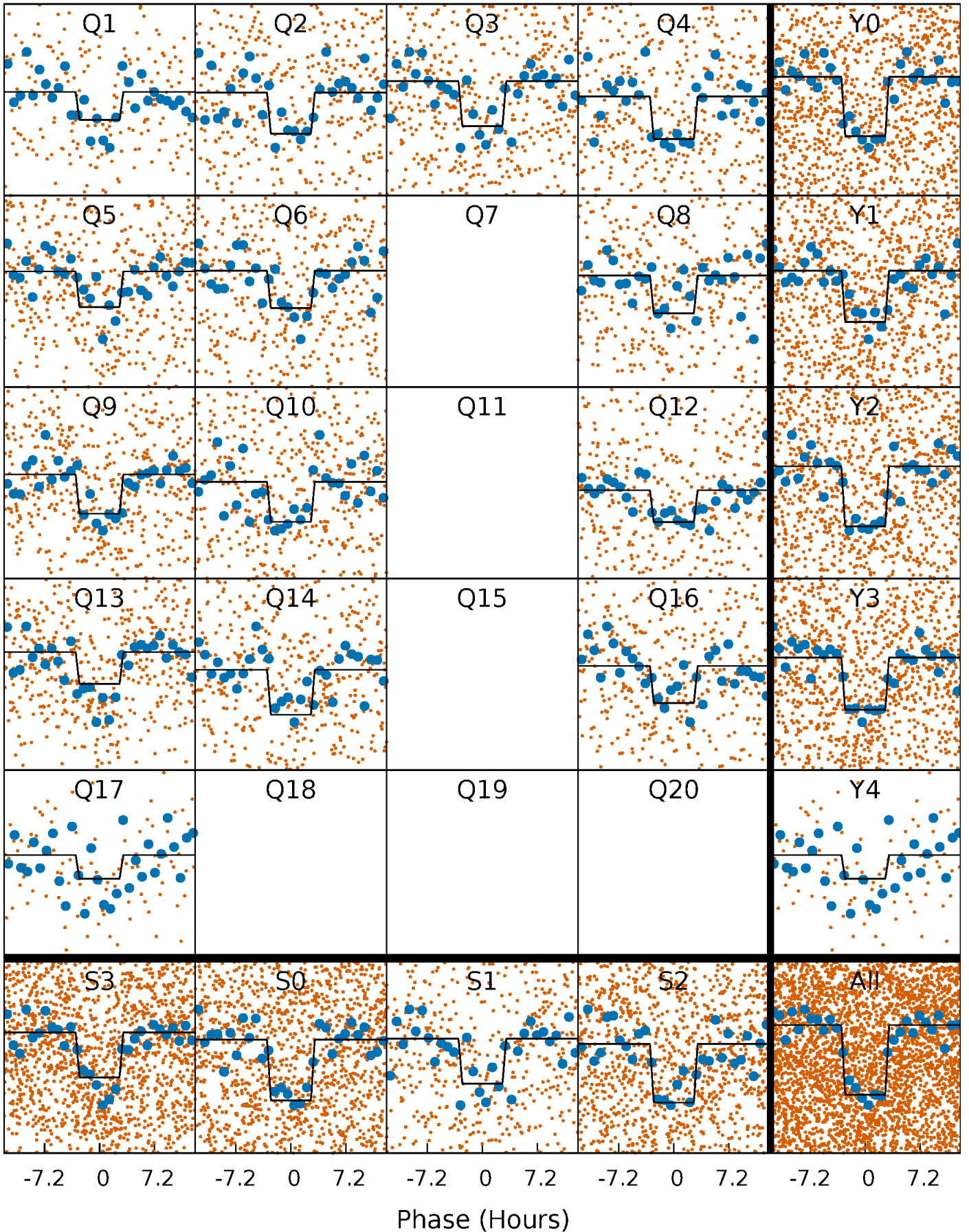
DV Quarter-Phased Transit Curves

TCE 010031656-01 P= 8.589990 Days $T_0=131.974982$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

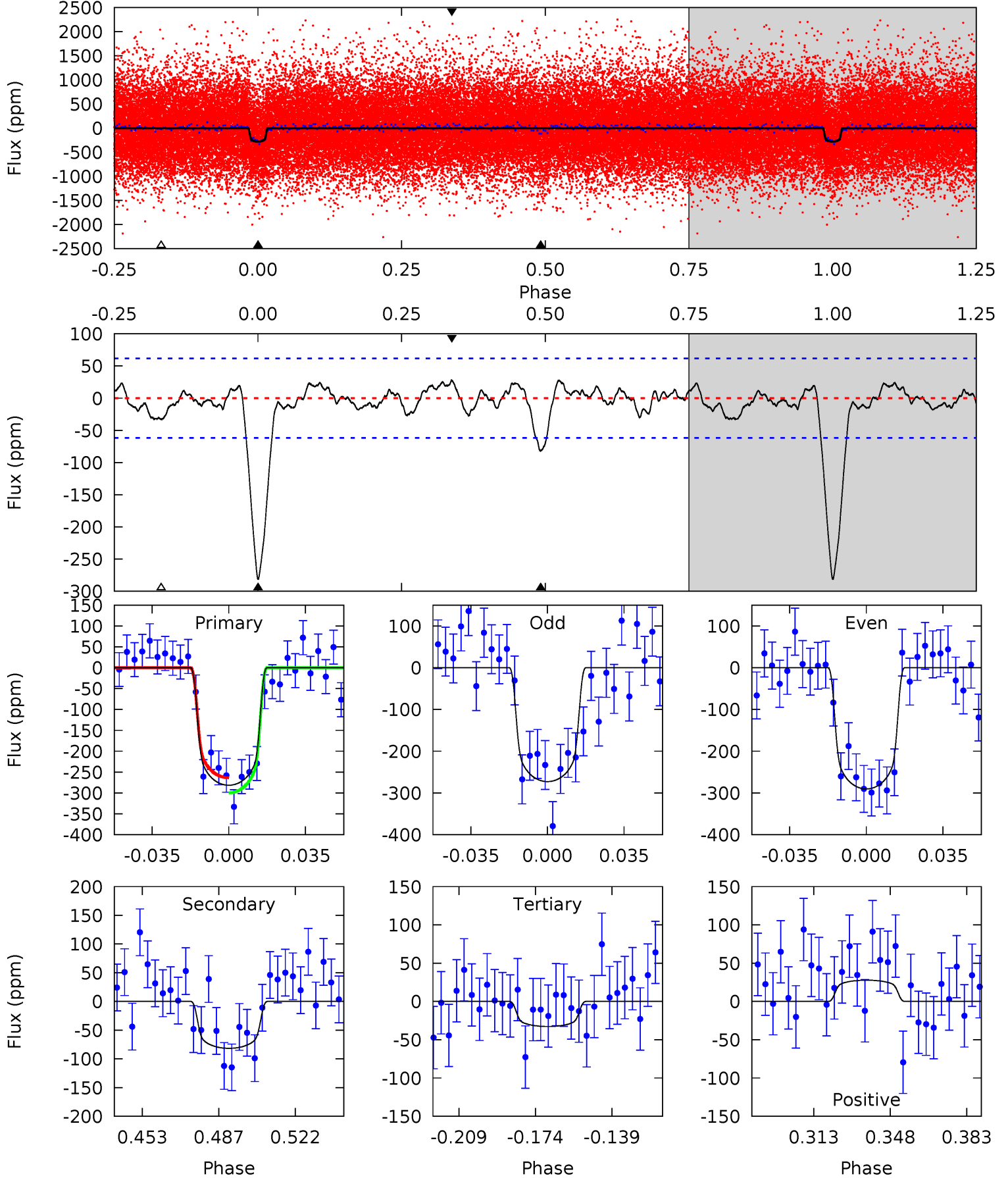
TCE 010031656-01 P= 8.589910 Days $T_0=131.982147$ (BKJD)



DV Model-Shift Uniqueness Test

010031656-01, P = 8.589990 Days, E = 123.384992 Days

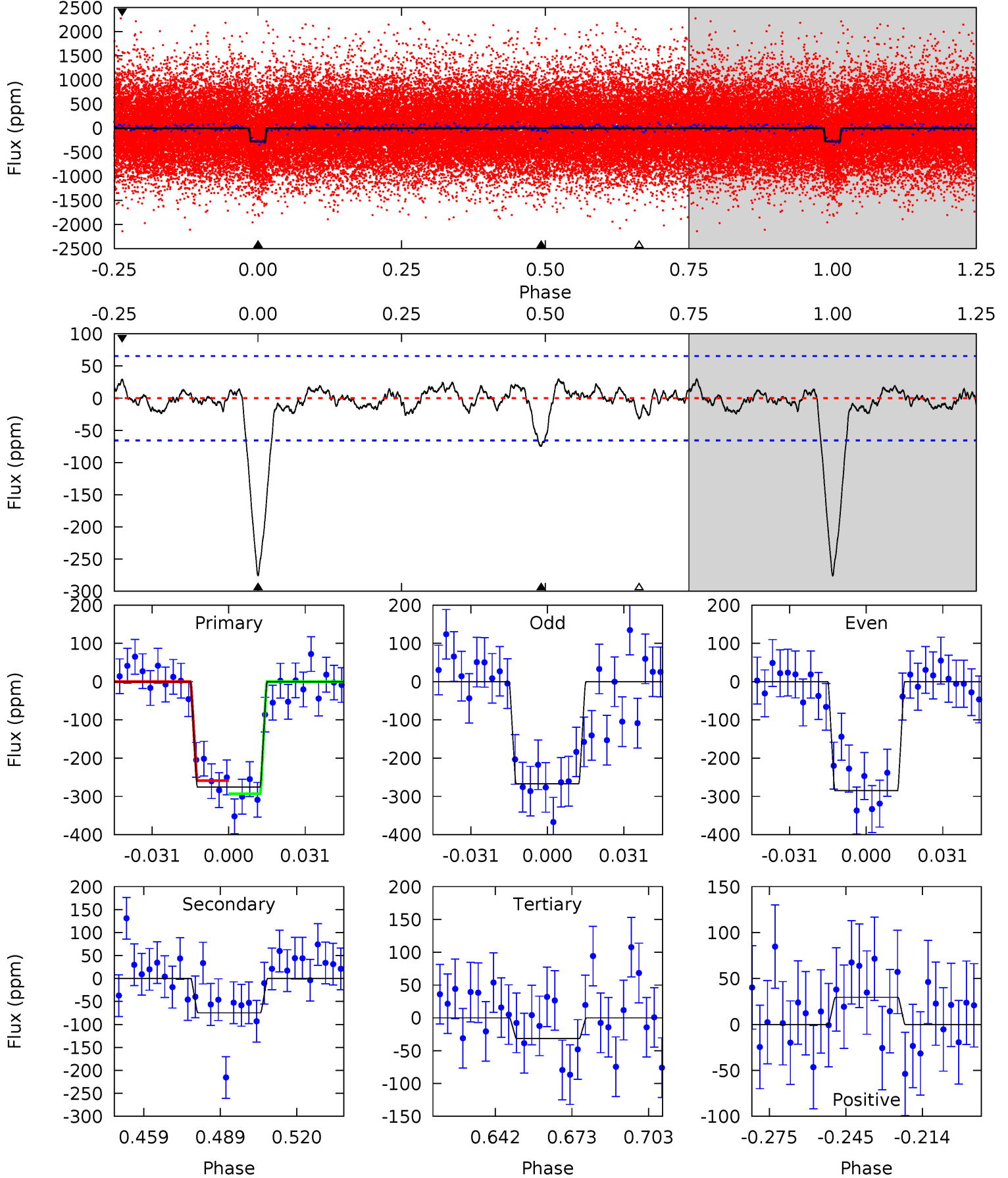
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	6.32	2.53	2.15	4.78	2.11	1.07	19.3	19.6	3.79	4.17	0.68	0.93	0.09	1.40



Alt Model-Shift Uniqueness Test

010031656-01, P = 8.589910 Days, E = 123.392237 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	5.47	2.33	2.16	4.81	2.16	0.88	17.9	18.0	3.14	3.31	0.66	0.96	0.10	1.24



Stellar Parameters For KIC 010031656

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5817^{+155}_{-172}	$4.538^{+0.048}_{-0.192}$	$-0.140^{+0.300}_{-0.300}$	$0.876^{+0.254}_{-0.085}$	$0.965^{+0.111}_{-0.123}$	$2.025^{+0.383}_{-1.009}$
	+3%/-3%	+1%/-4%	+214%/-214%	+29%/-10%	+12%/-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 010031656-01 / KOI 2629.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-82 ± 13	$1.93^{+0.31}_{-0.25}$	1201^{+81}_{-53}	4204^{+213}_{-206}	76^{+27}_{-19}
Alt.	-75 ± 14	$1.67^{+0.29}_{-0.24}$	1199^{+81}_{-53}	4367^{+272}_{-243}	95^{+37}_{-29}

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 $A_{obs} \gg 1.0$

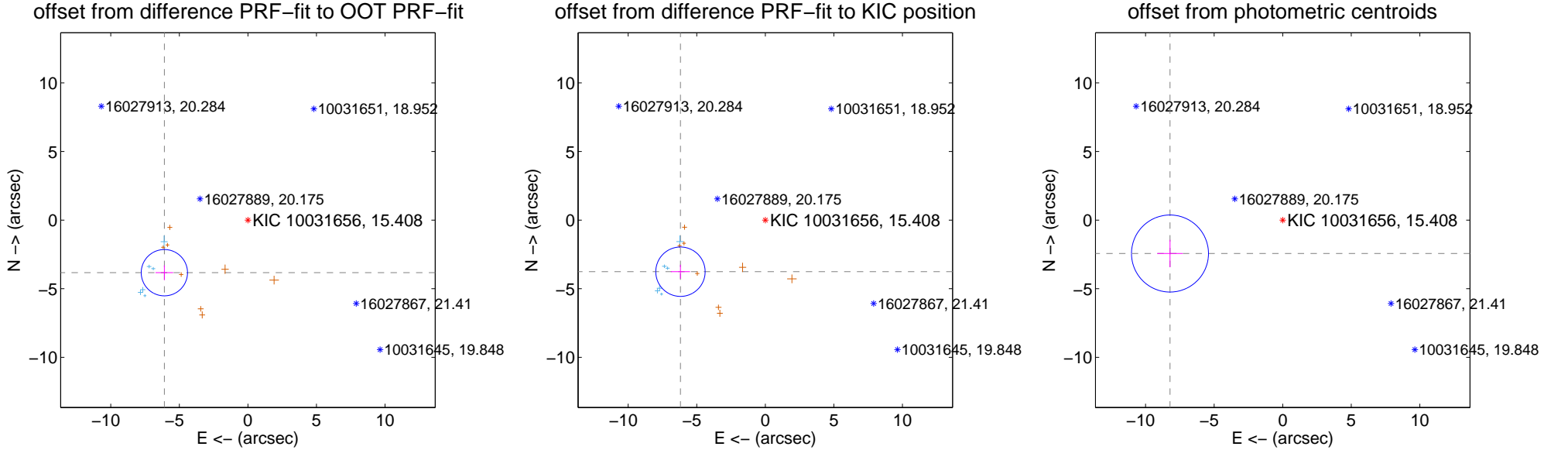
DV Centroid Data

Supplemental centroid analysis for 010031656-01. Kepler magnitude: 15.41. Transit SNR 17.23

There are 6 quarters with good PRF difference image offsets

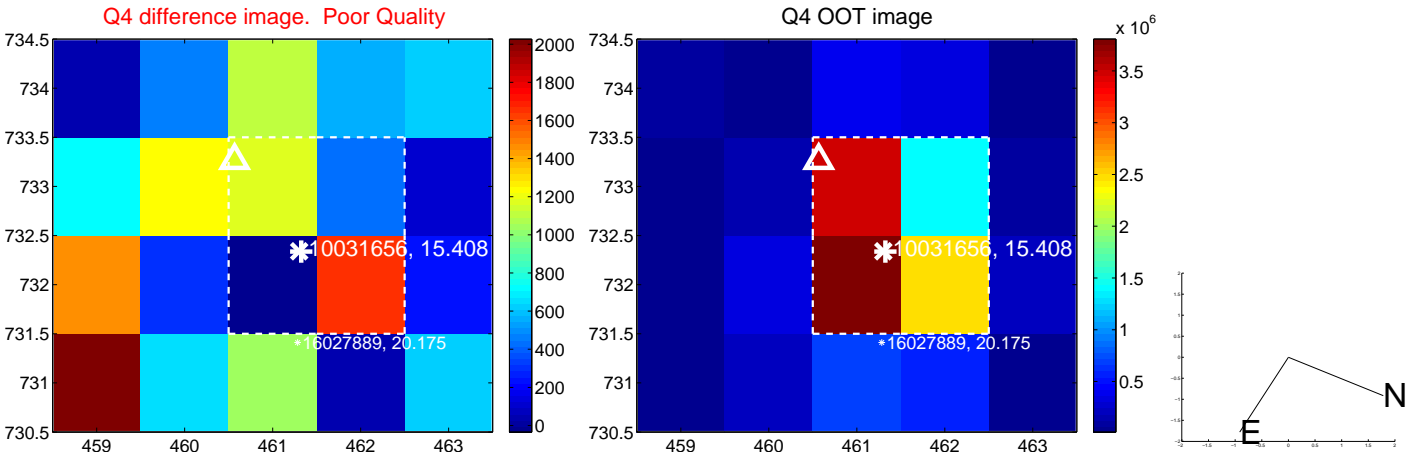
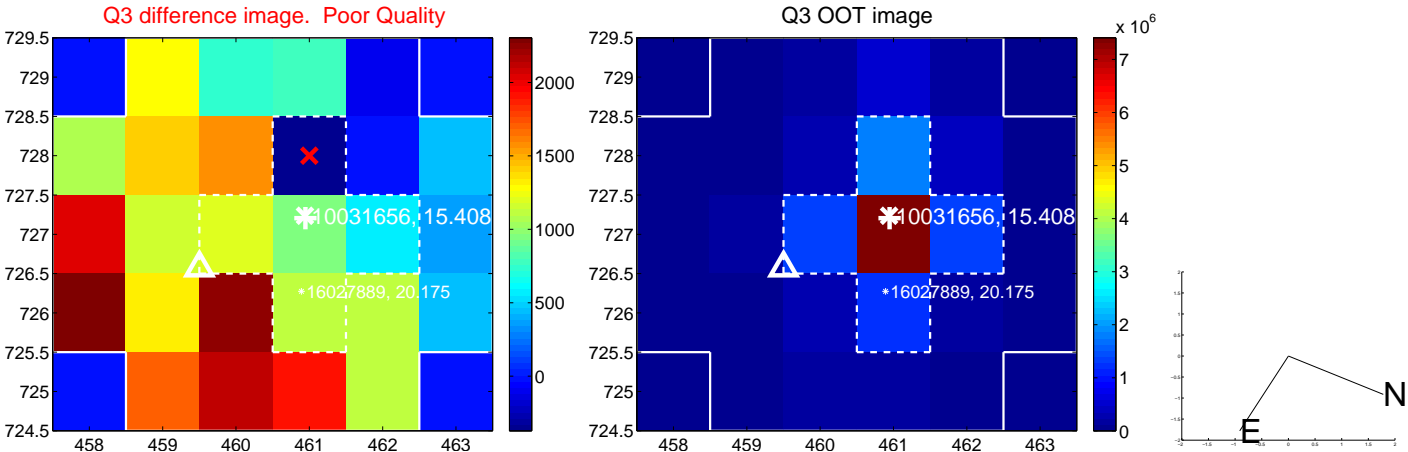
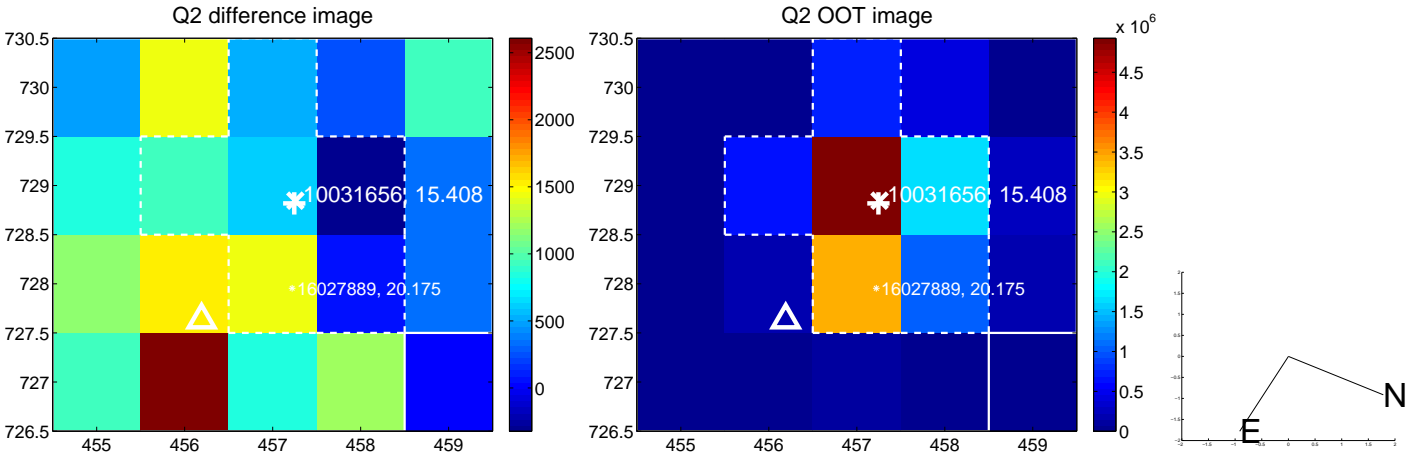
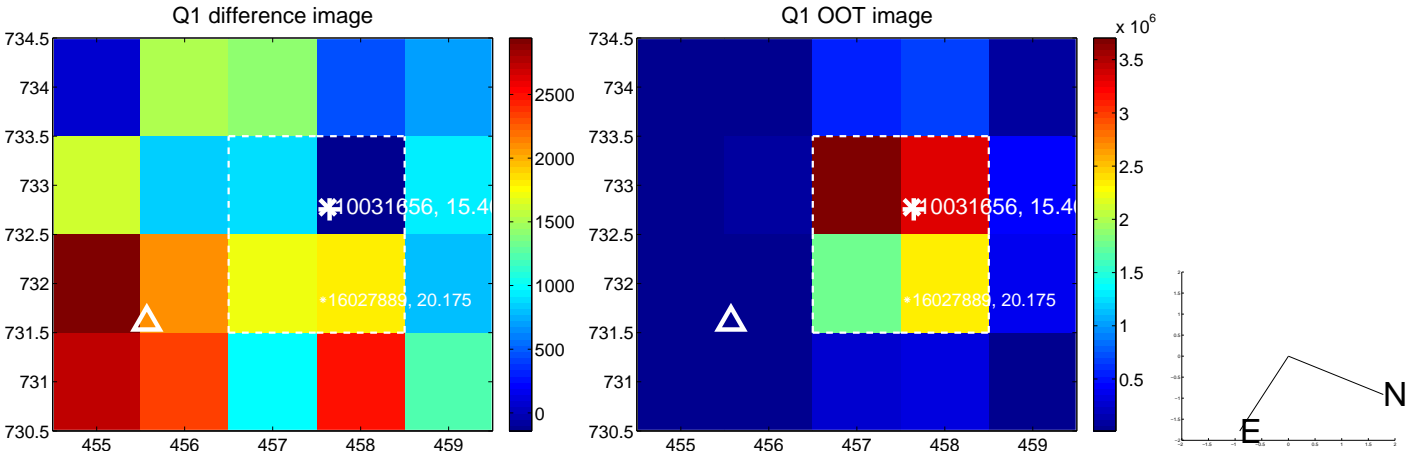
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.195 ± 0.562	12.80	6.090 ± 0.642	-3.831 ± 0.538
PRF-fit source offset from KIC position	7.238 ± 0.600	12.07	6.185 ± 0.695	-3.759 ± 0.509
photometric centroid source offset	8.57 ± 0.94	9.16	8.22 ± 0.93	-2.43 ± 1.00

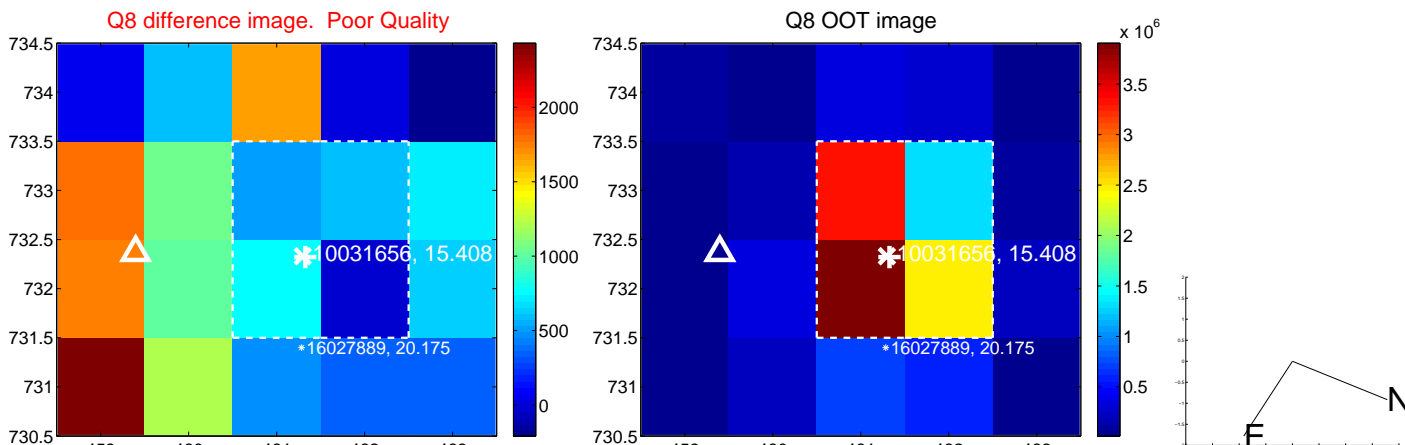
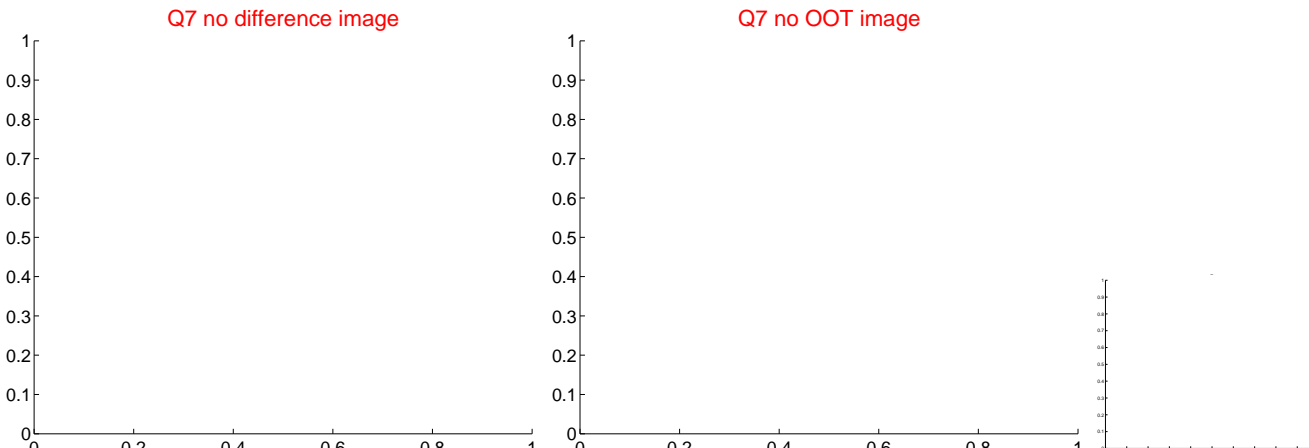
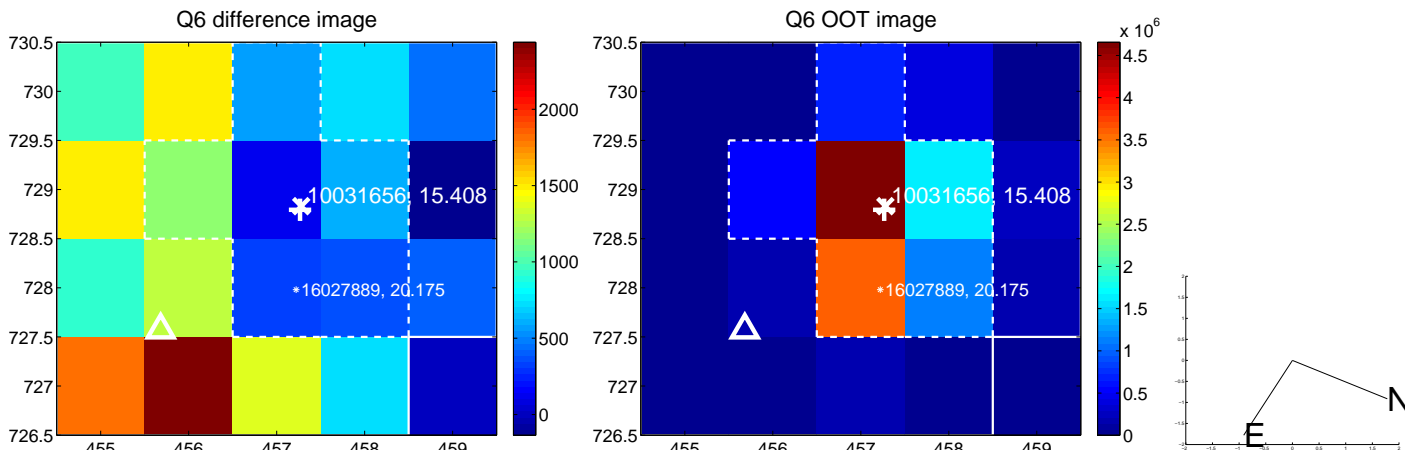
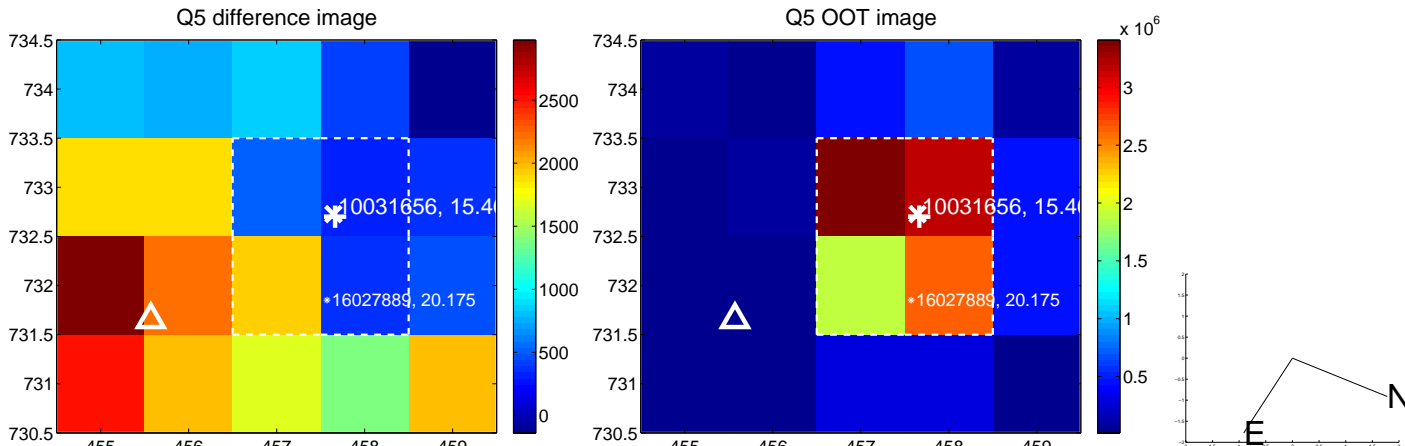


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

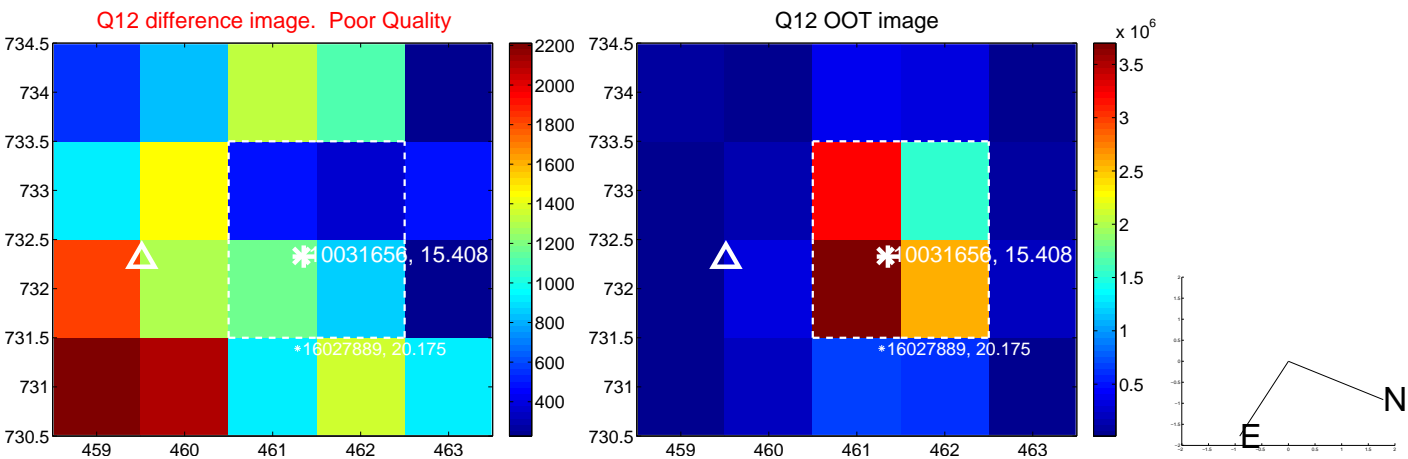
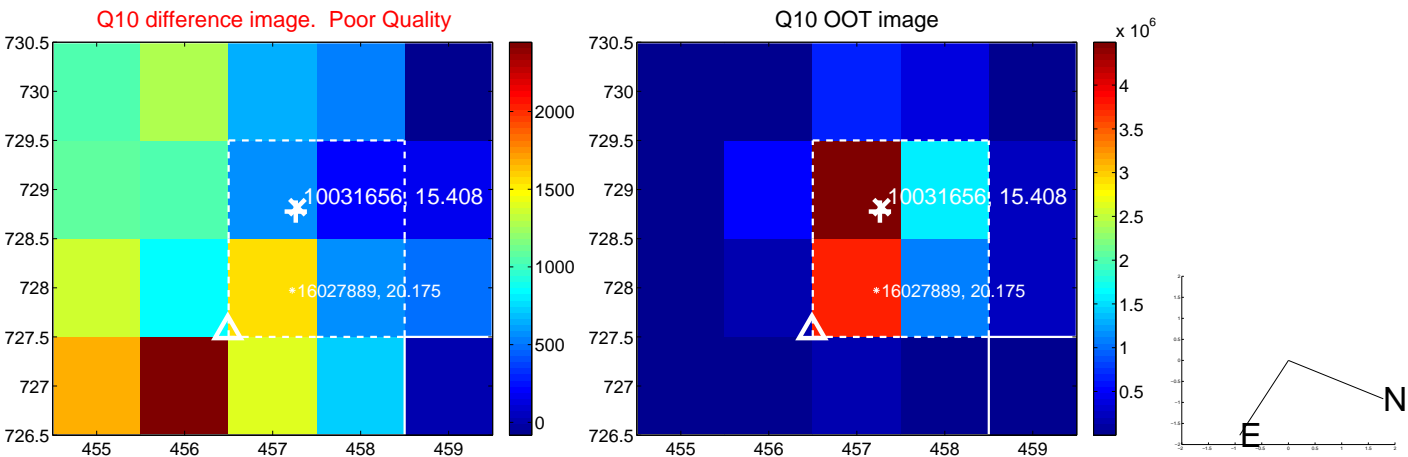
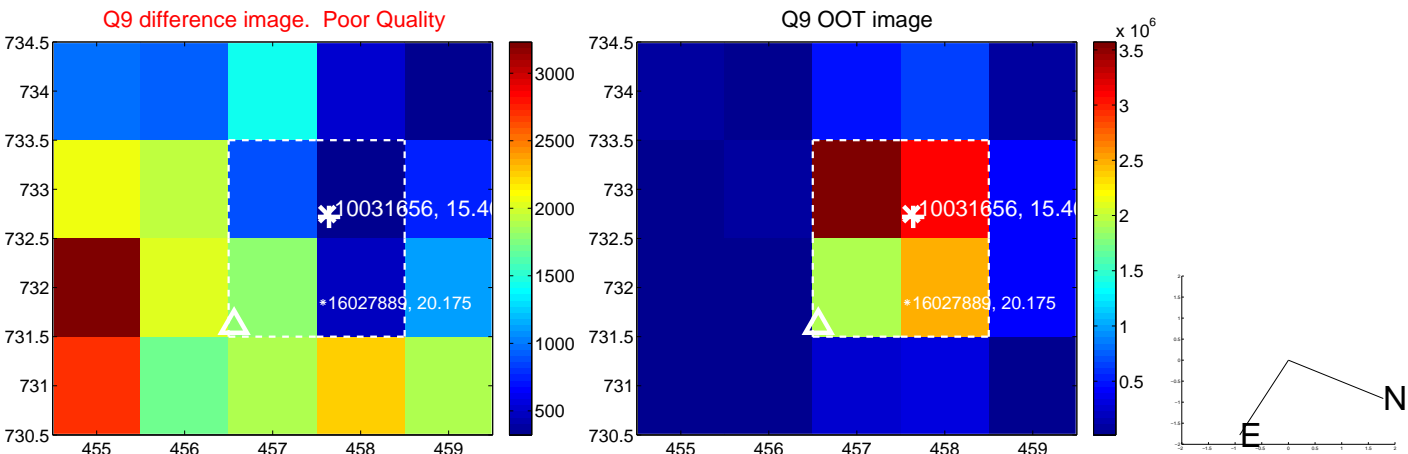
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



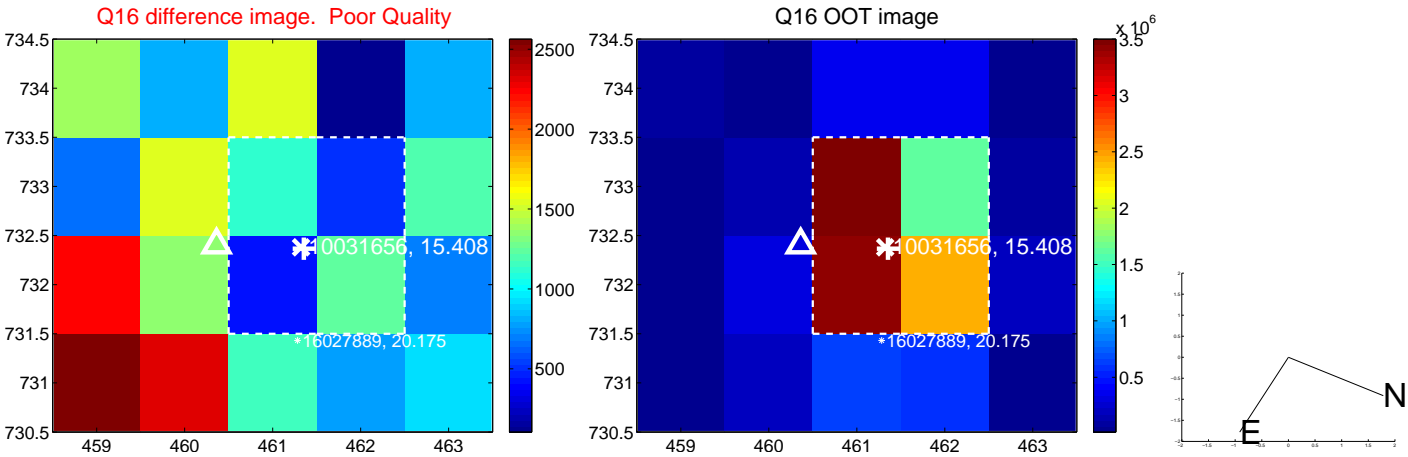
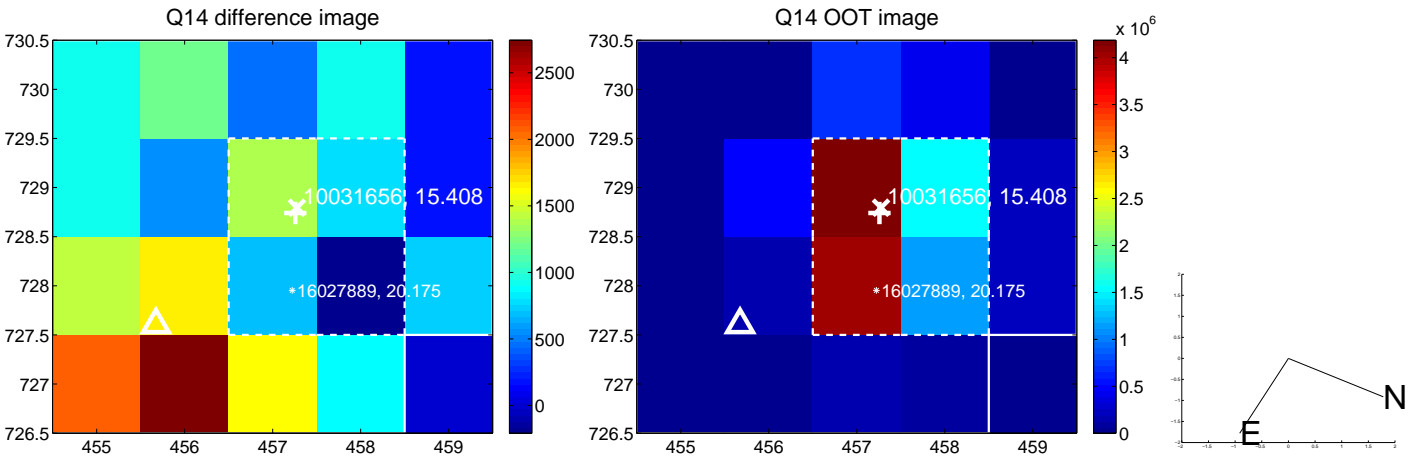
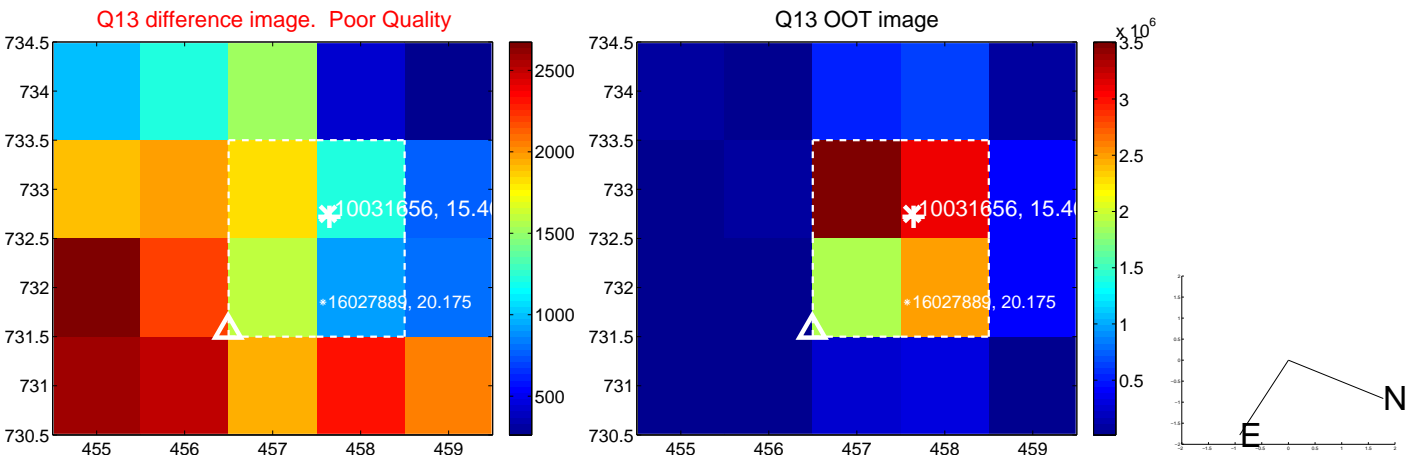
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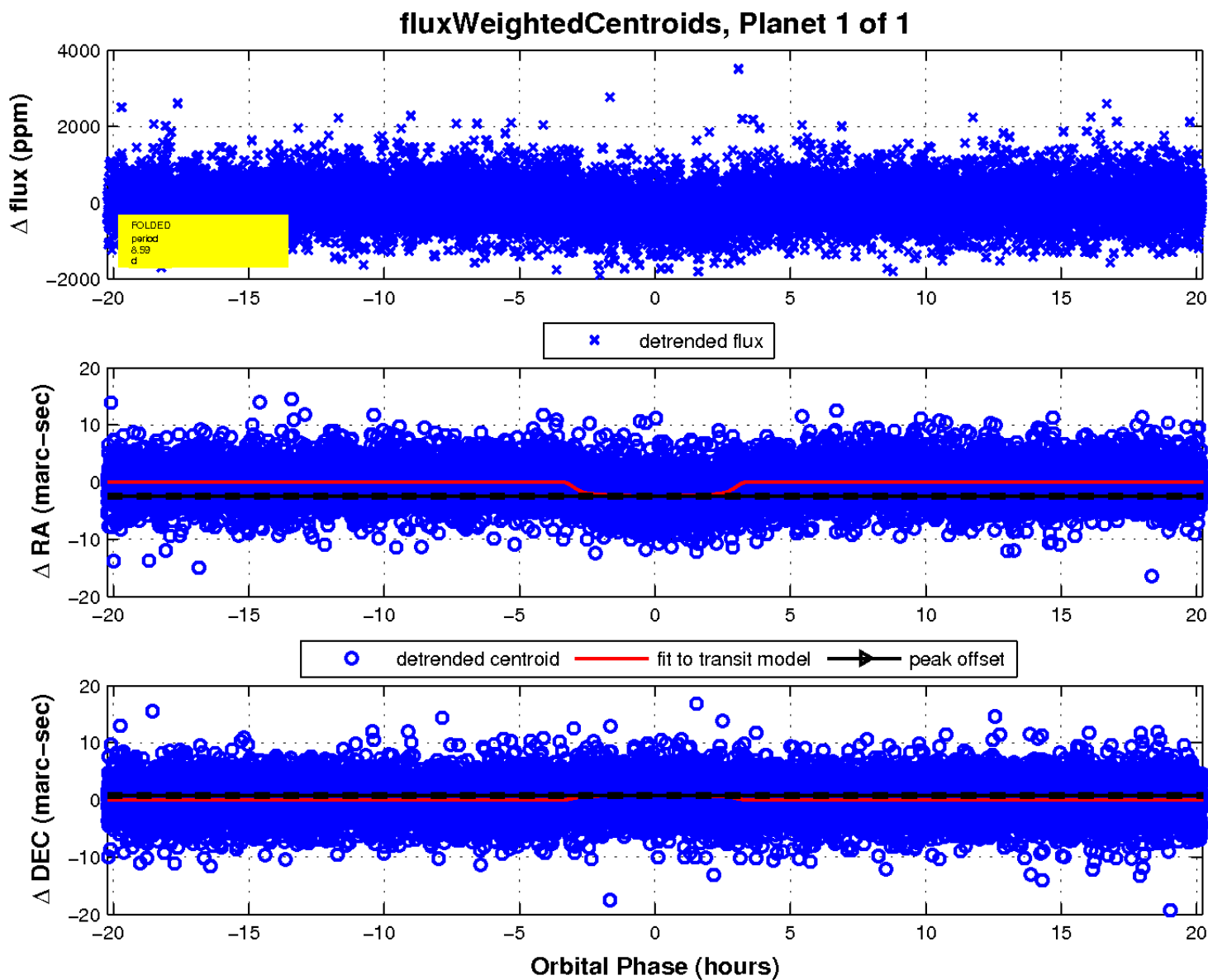
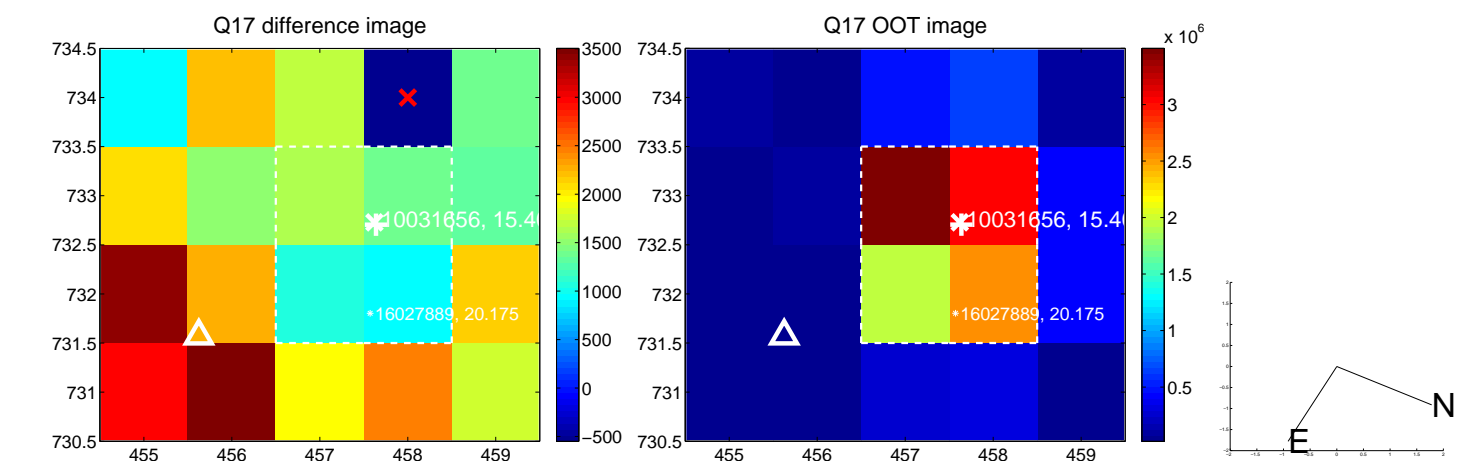
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UKIRT Image

Declination

