

KIC 011616631

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})
011616631-01	OBS	7463.01	7.294595	136.097984	115.6	27.309	11.0	12.3	0.73	5289	0.77	80.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011616631-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—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 011616631-01

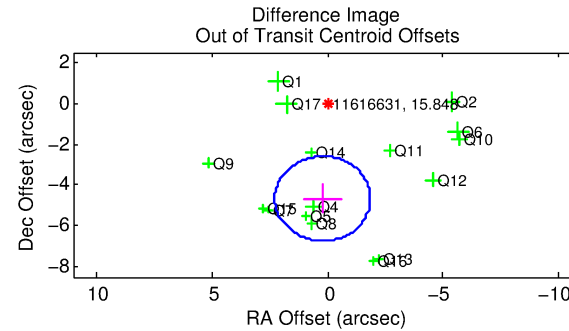
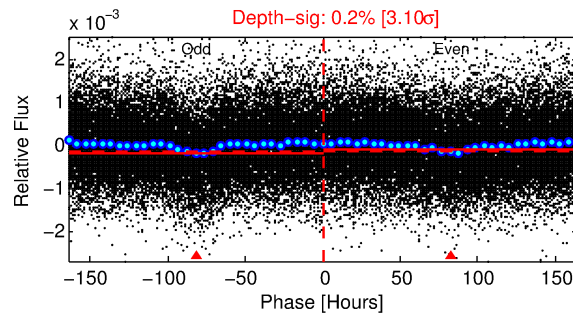
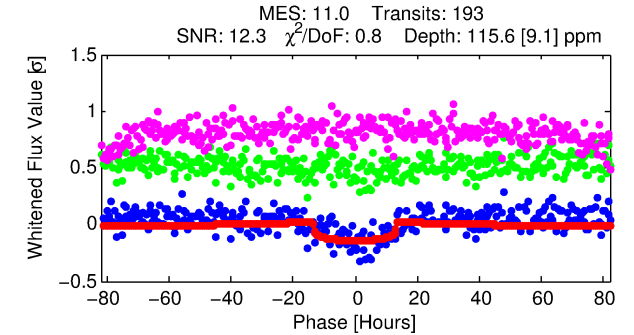
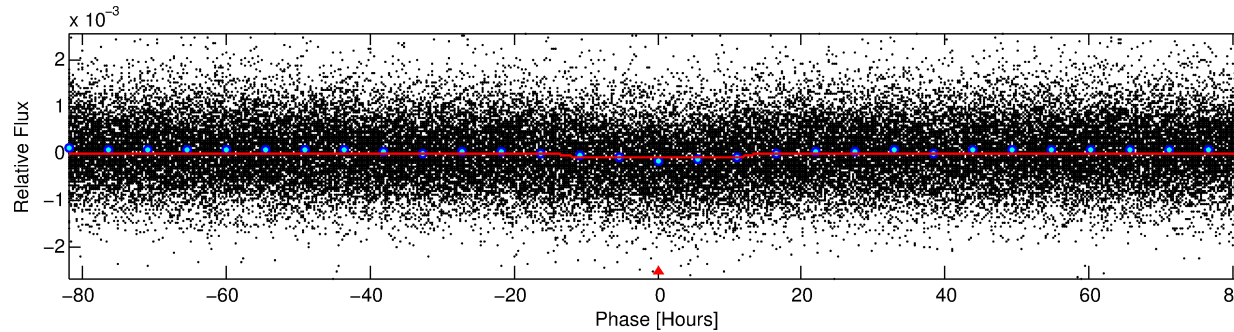
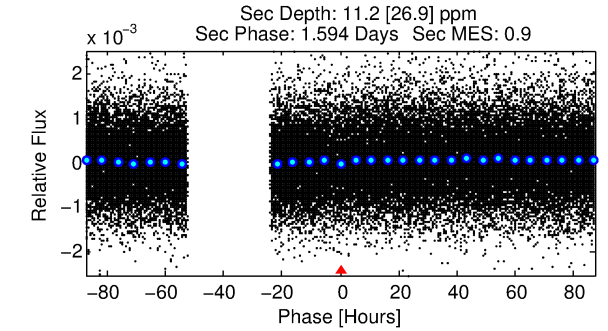
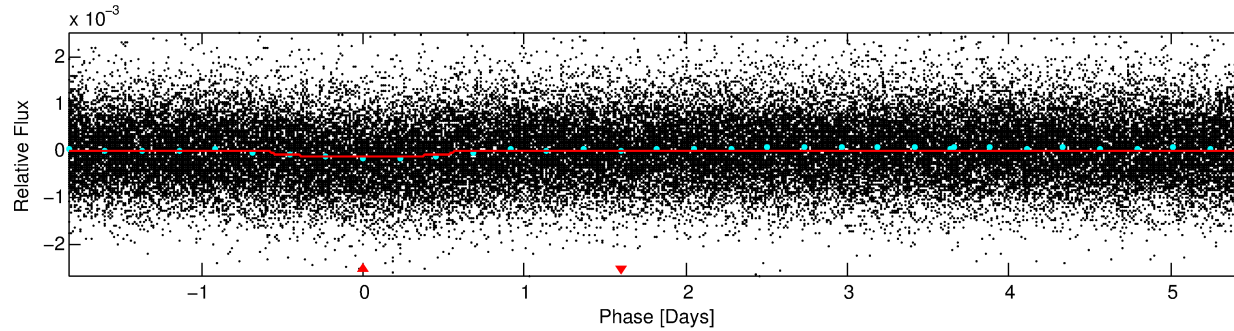
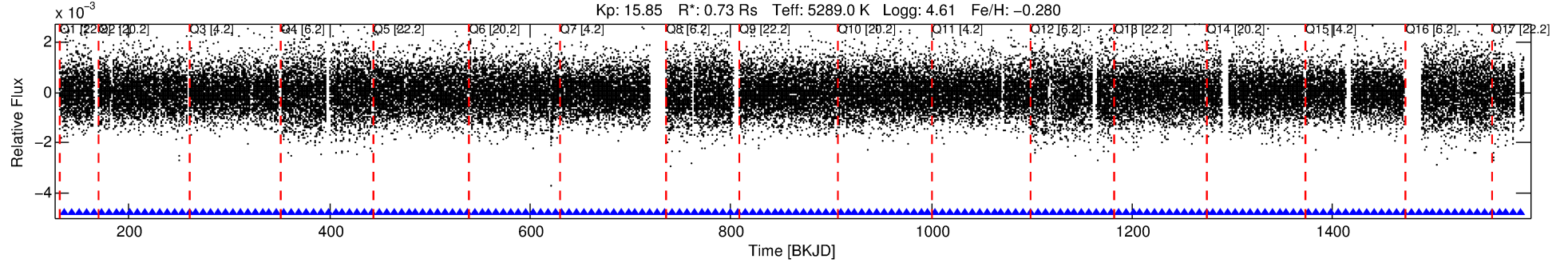
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
011616631-01	11616631	011616663-01	11616663	1:1	40.1	-2	-10	14.97	15.85	0.79	Direct-PRF	1	0.73	1.83

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: 11616631 Candidate: 1 of 1 Period: 7.295 d
KOI: K07463.01 Corr: 0.894

Kp: 15.85 R*: 0.73 Rs Teff: 5289.0 K Logg: 4.61 Fe/H: -0.280



DV Fit Results:

Period = 7.29460 [0.00020] d
Epoch = 136.0980 [0.0208] BKJD
Rp/R* = 0.0097 [0.0096]
a/R* = 2.12 [6.47]
b = 0.16 [23.35]
Seff = 80.11 [17.29]
Teq = 763 [41] K
Rp = 0.77 [0.77] Re
a = 0.0684 [0.0086] AU
Ag = 48.39 [150.86] [0.31σ]
Teffp = 3111 [2422] K [0.97σ]

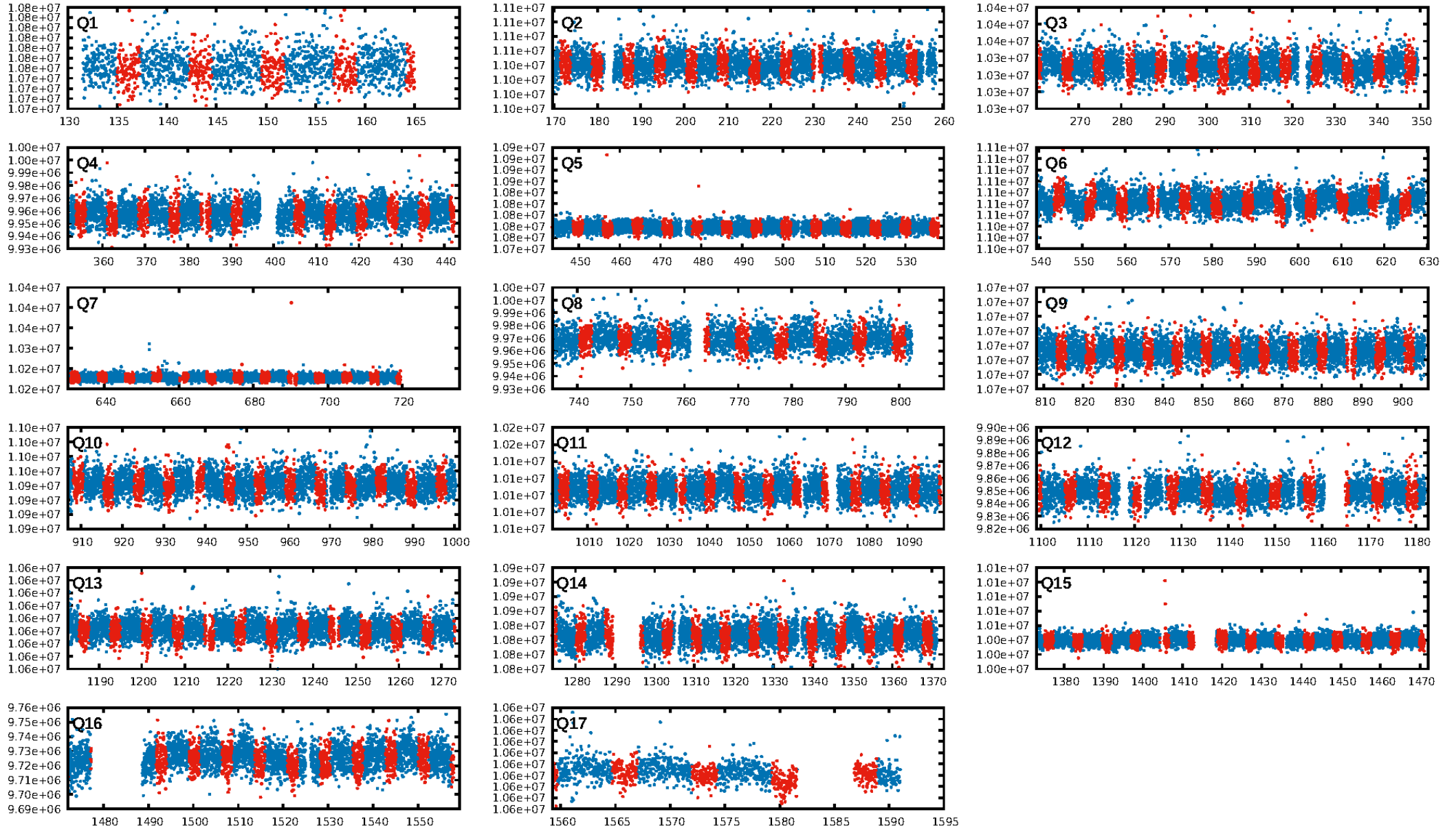
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.77e-28
RollingBand-fgt: 1.00 [184/184]
GhostDiagnostic-chr: -0.3004
Centroid-sig: 0.0%
Centroid-so: 5.293 arcsec [3.47σ]
OotOffset-rm: 4.673 arcsec [6.77σ]
KicOffset-rm: 4.694 arcsec [7.45σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

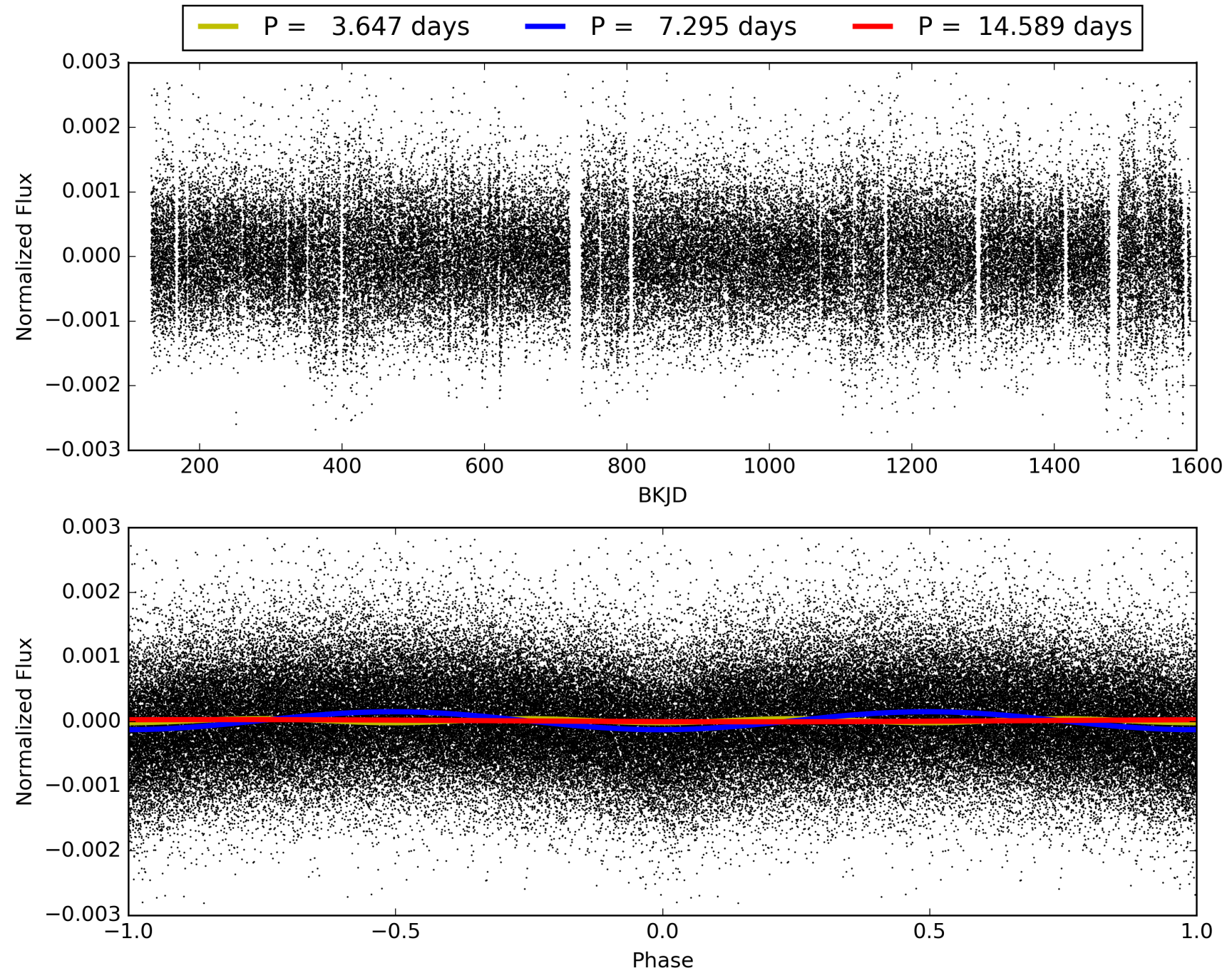
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:51:10 Z

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

TCE 011616631-01, PDC Light Curves

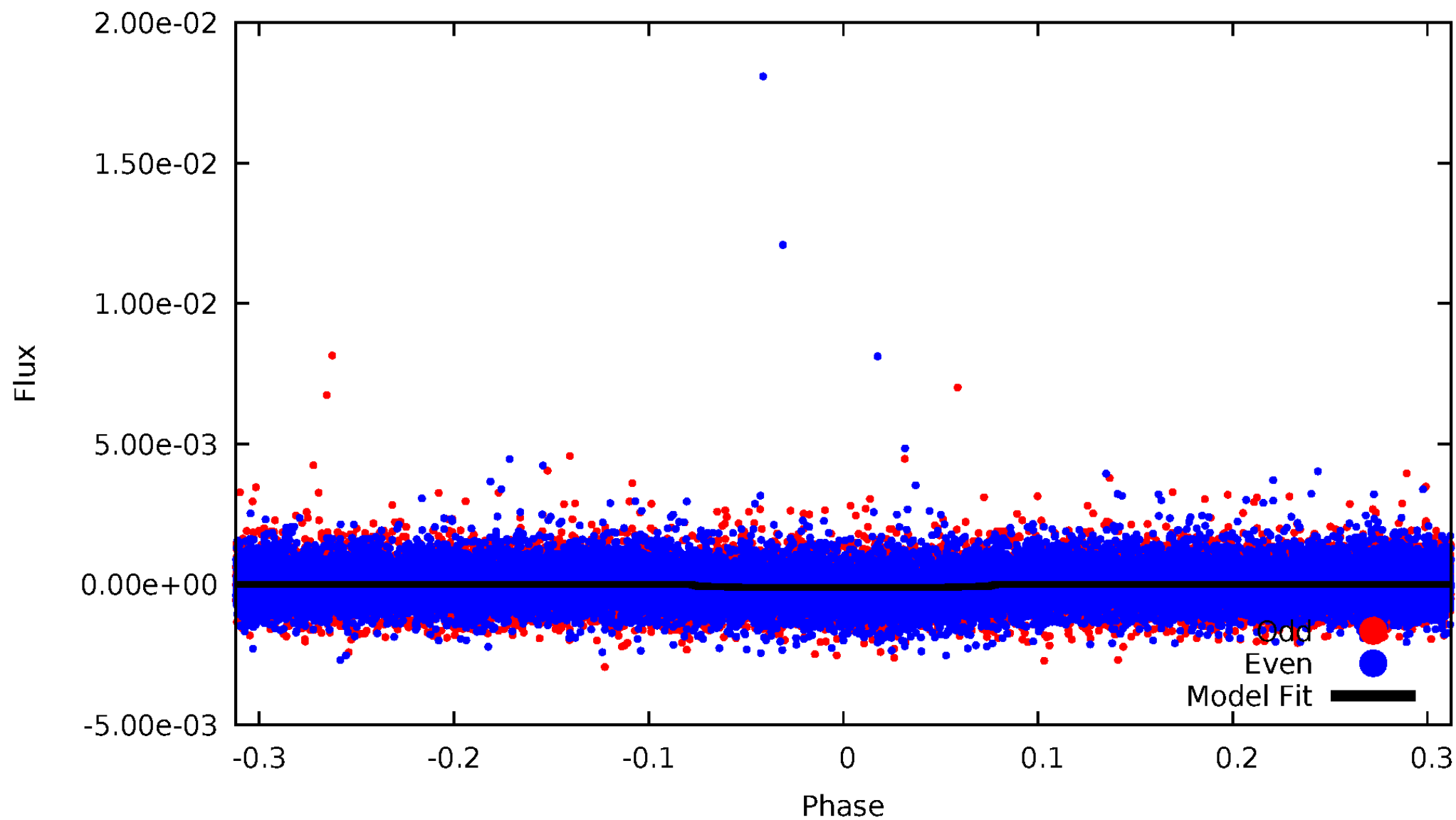


TCE 011616631-01



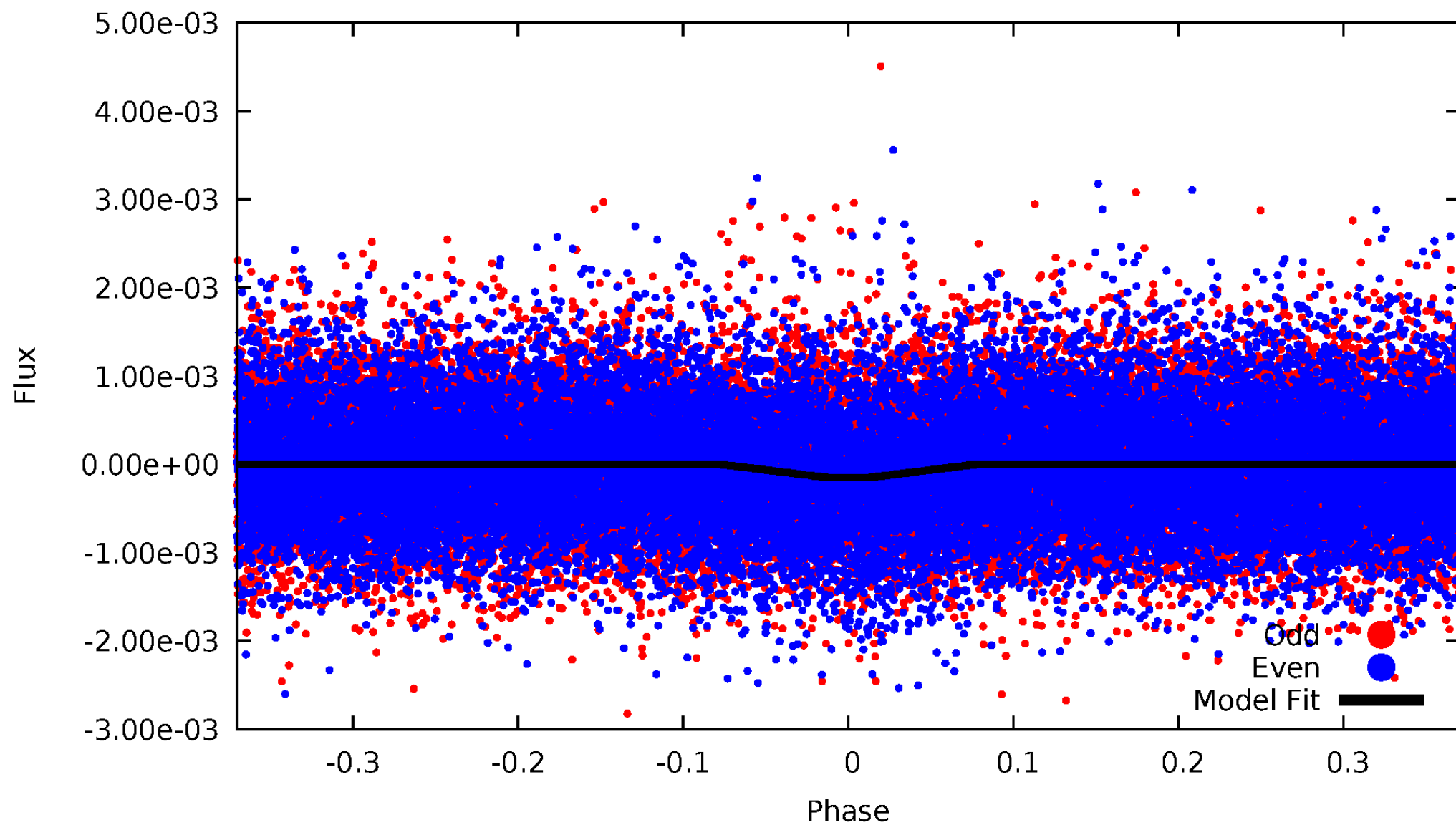
DV Odd/Even

TCE 011616631-01



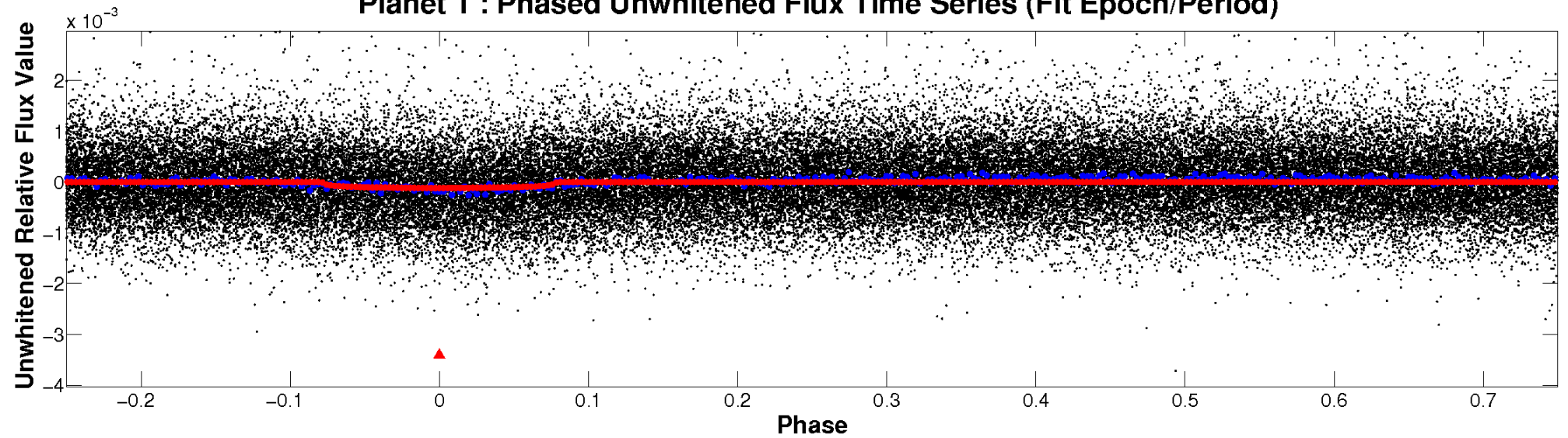
ALT Odd/Even

TCE 011616631-01

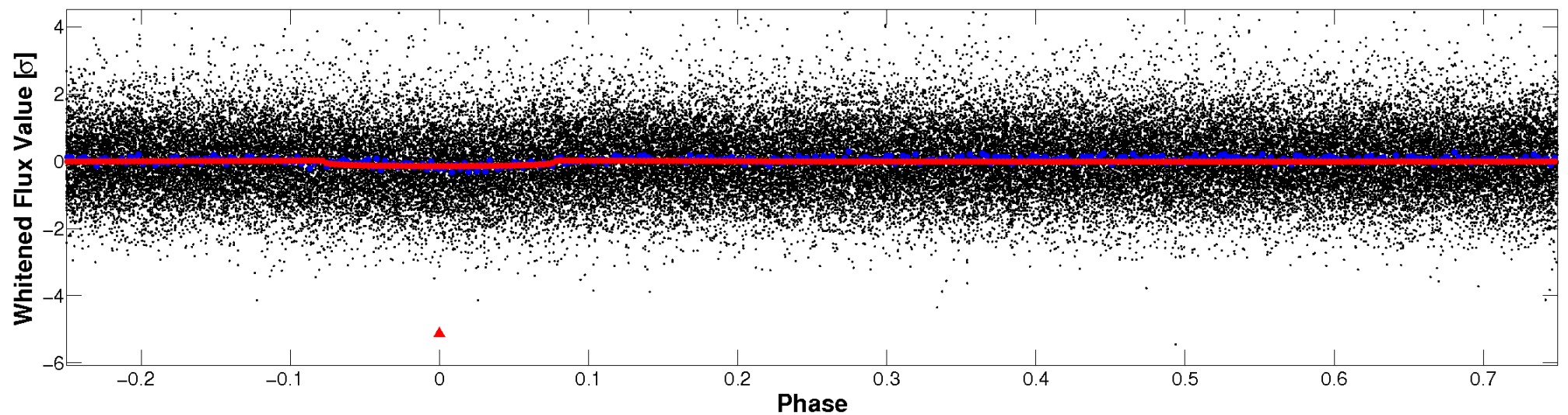


Non-Whitened Vs. Whitened Light Curve

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

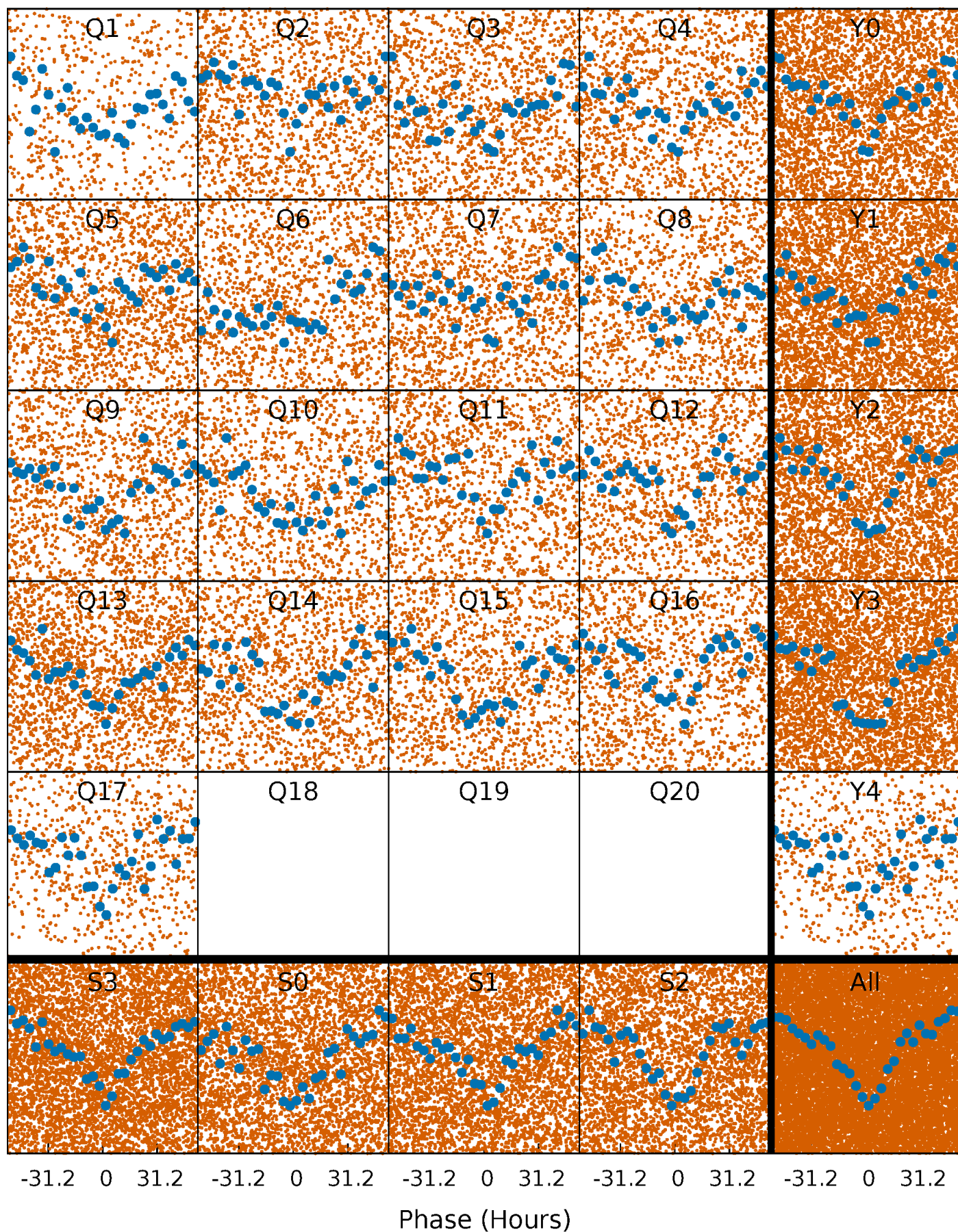


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



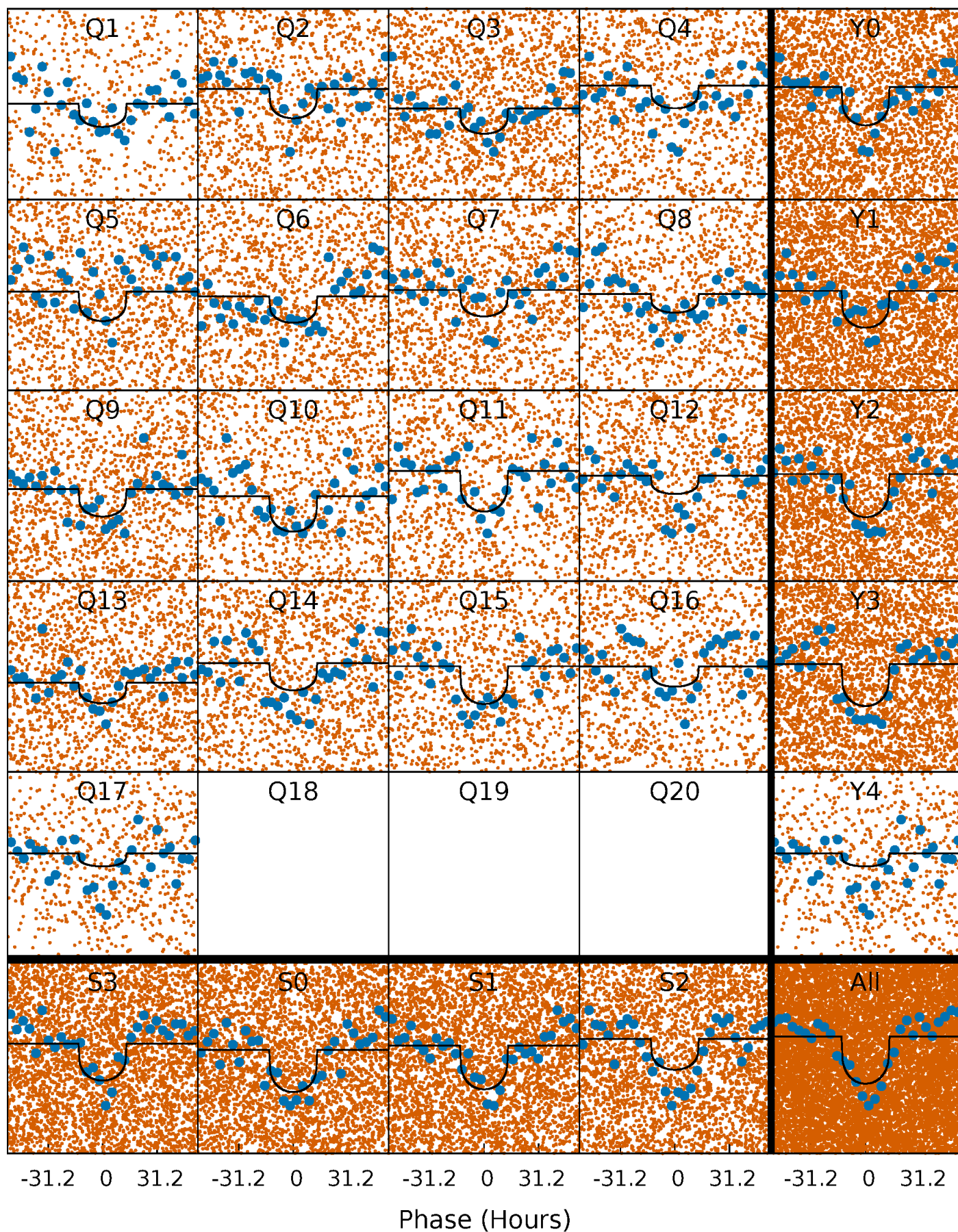
PDC Quarter-Phased Transit Curves

TCE 011616631-01 P= 7.294595 Days $T_0=136.097984$ (BKJD)



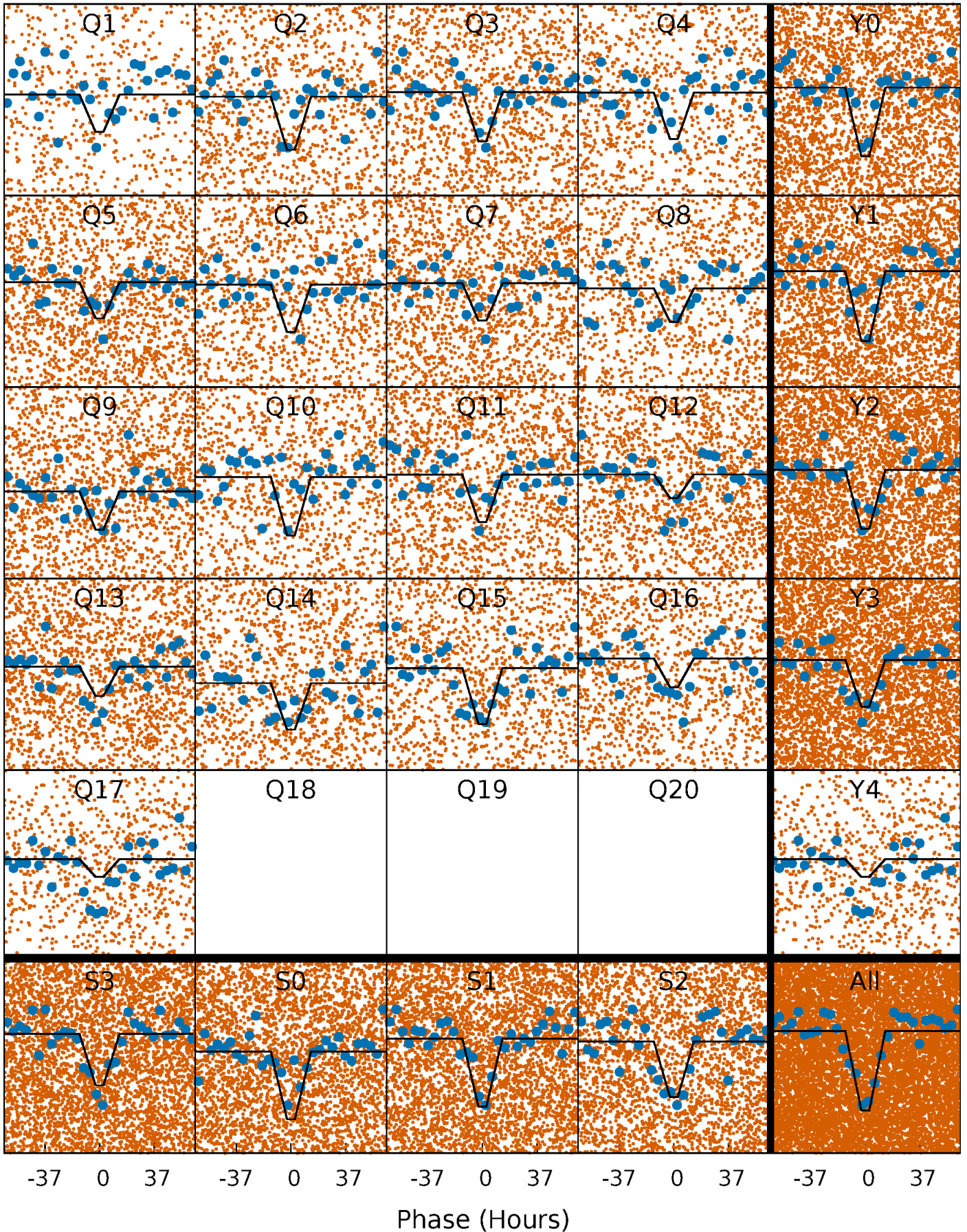
DV Quarter-Phased Transit Curves

TCE 011616631-01 P= 7.294595 Days $T_0=136.097984$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

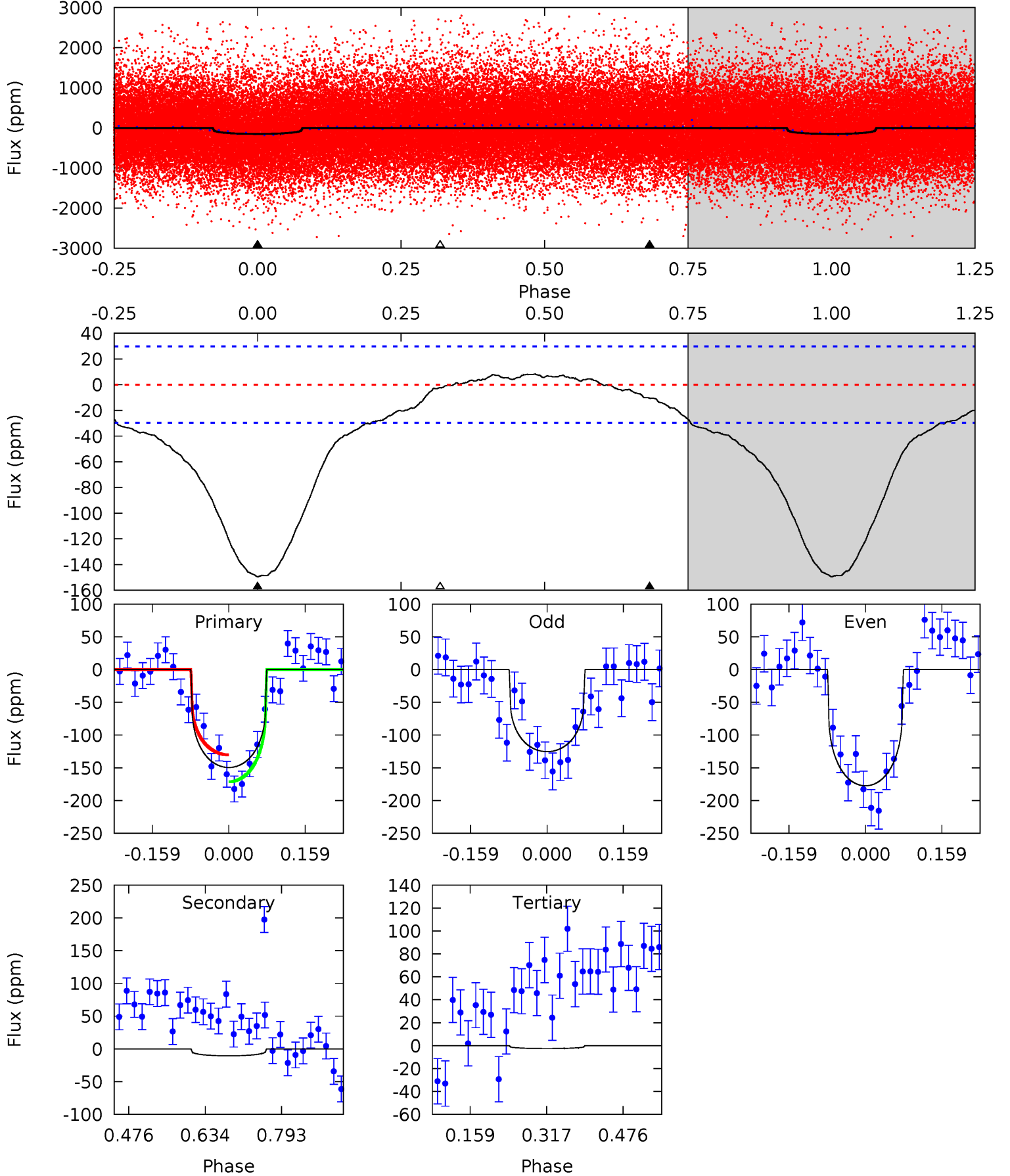
TCE 011616631-01 P= 7.294453 Days $T_0=136.193351$ (BKJD)



DV Model-Shift Uniqueness Test

011616631-01, P = 7.294595 Days, E = 128.803389 Days

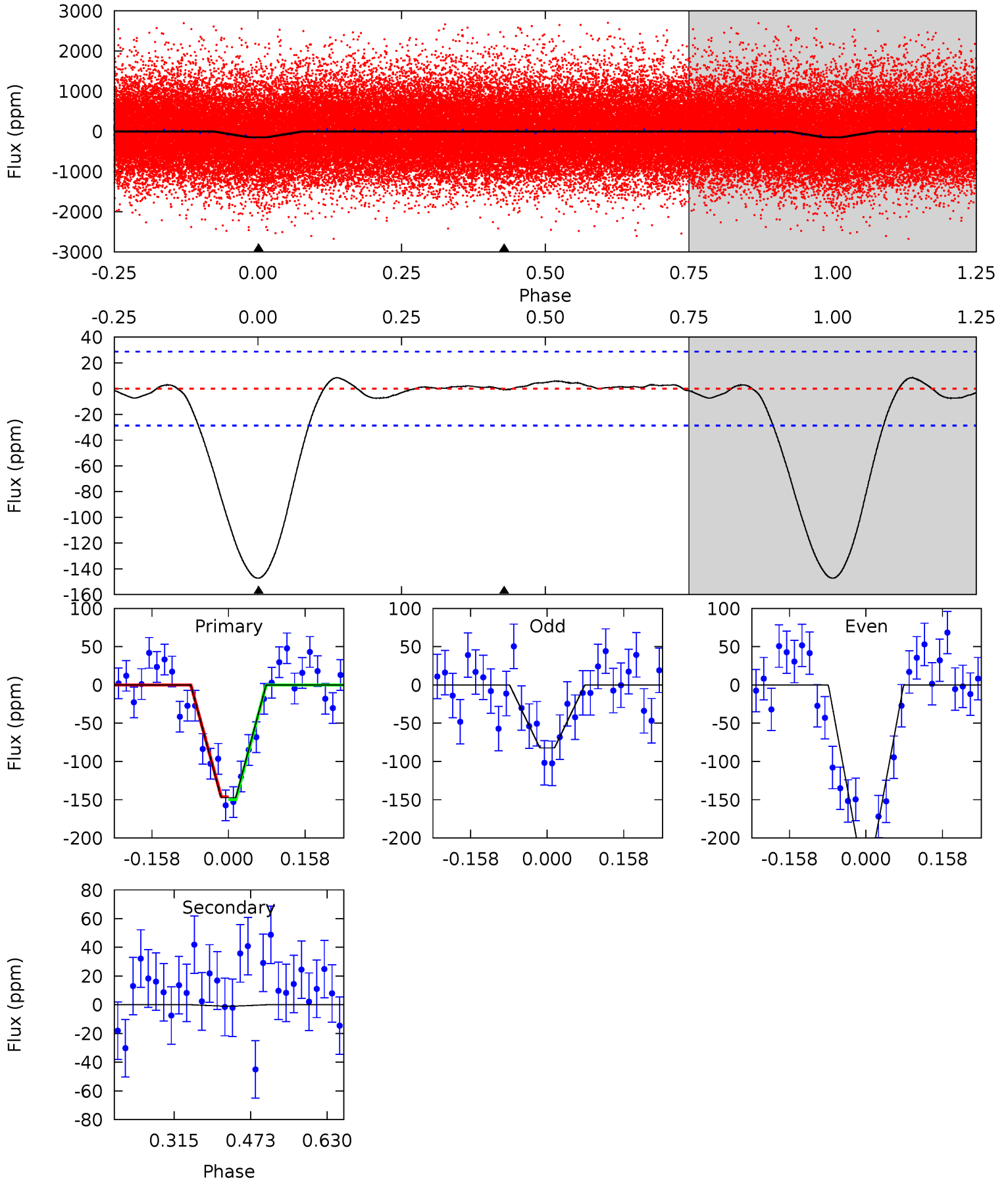
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	1.60	0.38	0	4.47	1.41	2.22	22.1	22.5	1.22	1.60	3.94	0.93	0.05	3.15



Alt Model-Shift Uniqueness Test

011616631-01, P = 7.294453 Days, E = 128.898898 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	0.14	0	0	4.47	1.41	0.55	22.9	22.9	0.14	0.14	10.3	0.98	0.05	0.32



Stellar Parameters For KIC 011616631

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5289^{+159}_{-143}	$4.614^{+0.036}_{-0.096}$	$-0.280^{+0.300}_{-0.300}$	$0.731^{+0.112}_{-0.060}$	$0.809^{+0.078}_{-0.086}$	$2.914^{+0.505}_{-0.909}$
	+3%/-3%	+1%/-2%	+107%/-107%	+15%/-8%	+10%/-11%	+17%/-31%
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 011616631-01 / KOI 7463.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 7	$0.94^{+0.73}_{-0.54}$	1080^{+49}_{-39}	3228^{+1269}_{-617}	25^{+149}_{-20}
Alt.	-1 ± 6	$1.09^{+0.76}_{-0.64}$	1083^{+44}_{-42}	2220^{+1006}_{-5296}	$1.678^{+23.451}_{-17.888}$

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 $A_{\text{obs}} \gg 1.0$

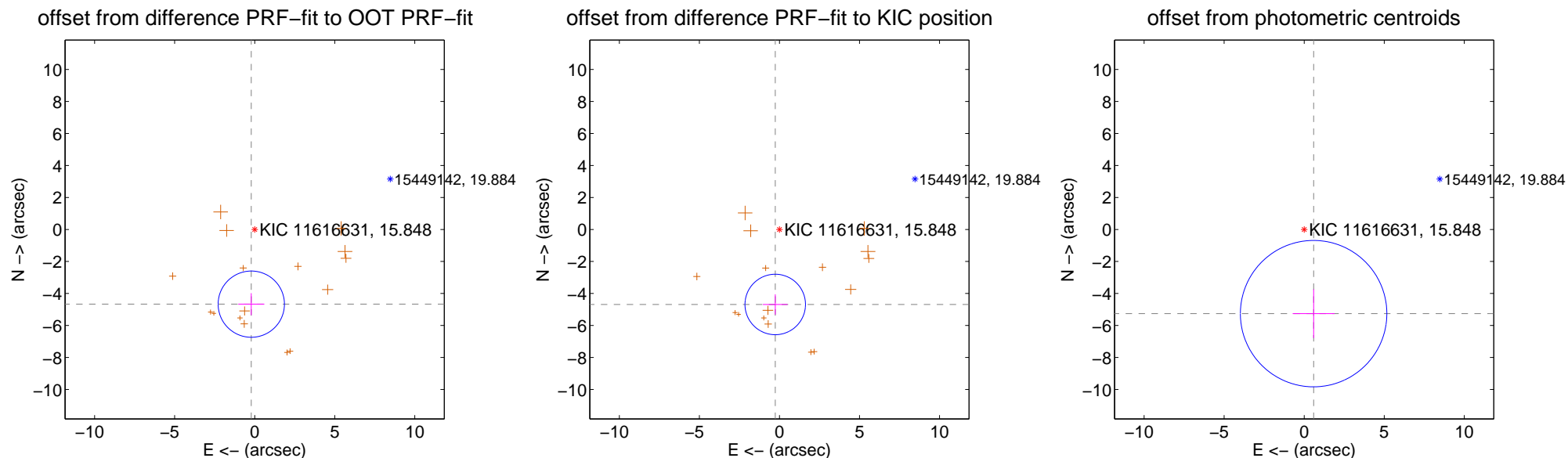
DV Centroid Data

Supplemental centroid analysis for 011616631-01. Kepler magnitude: 15.85. Transit SNR 12.27

There are 0 quarters with good PRF difference image offsets

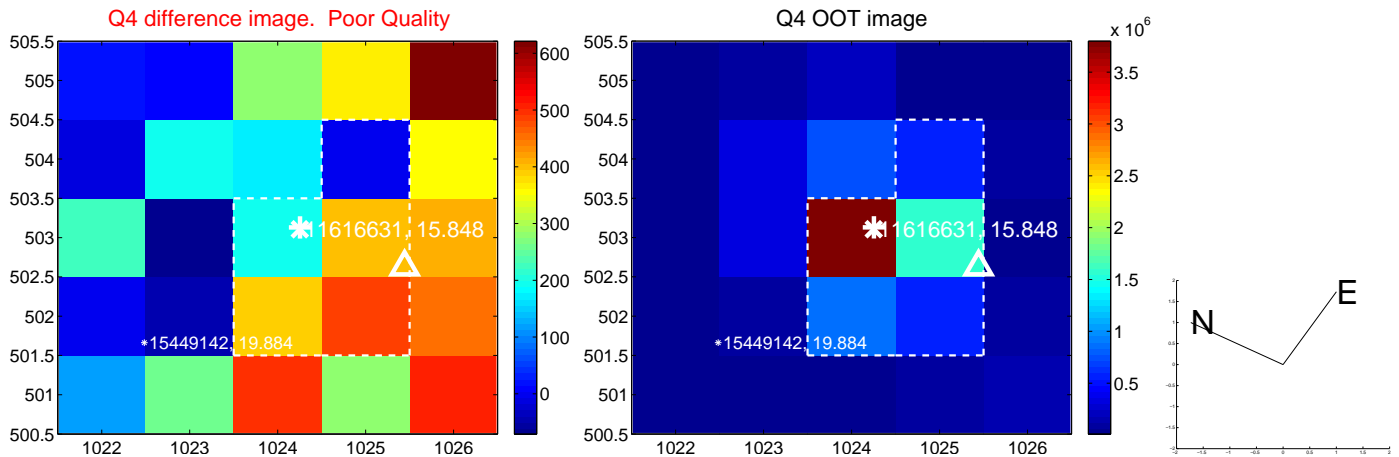
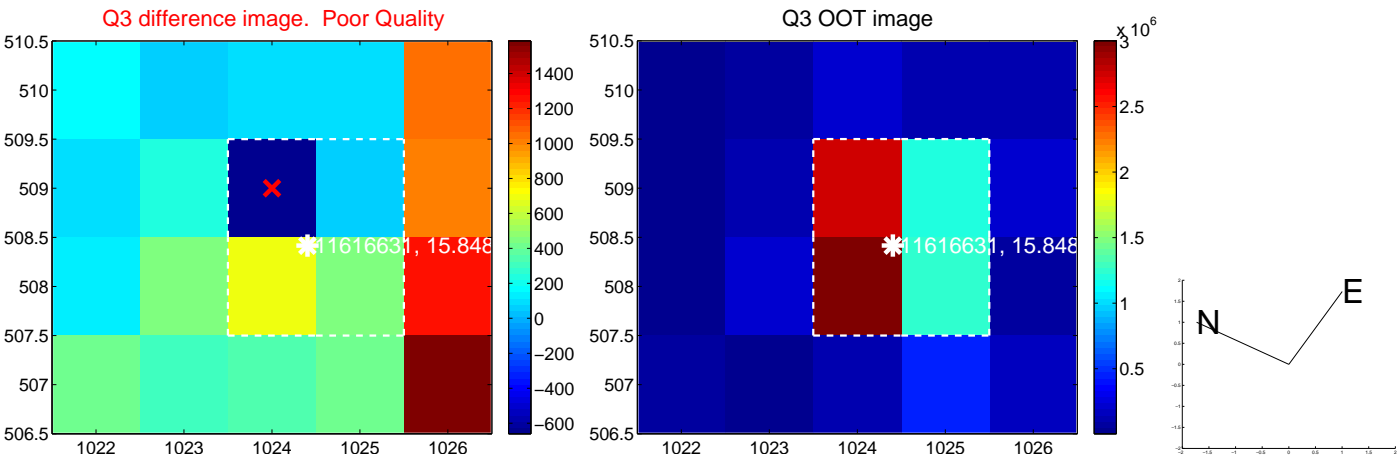
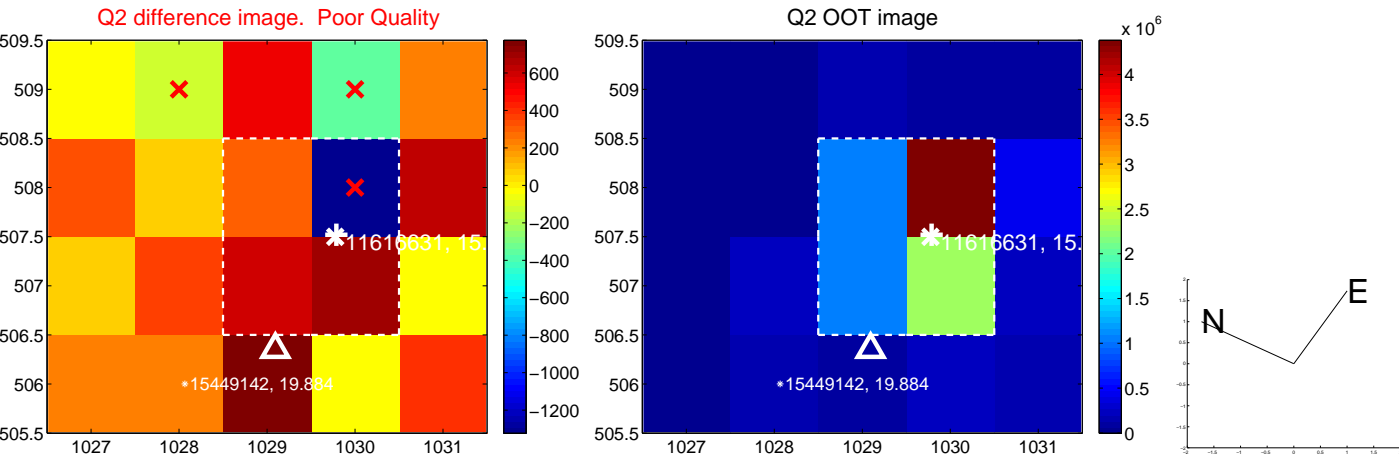
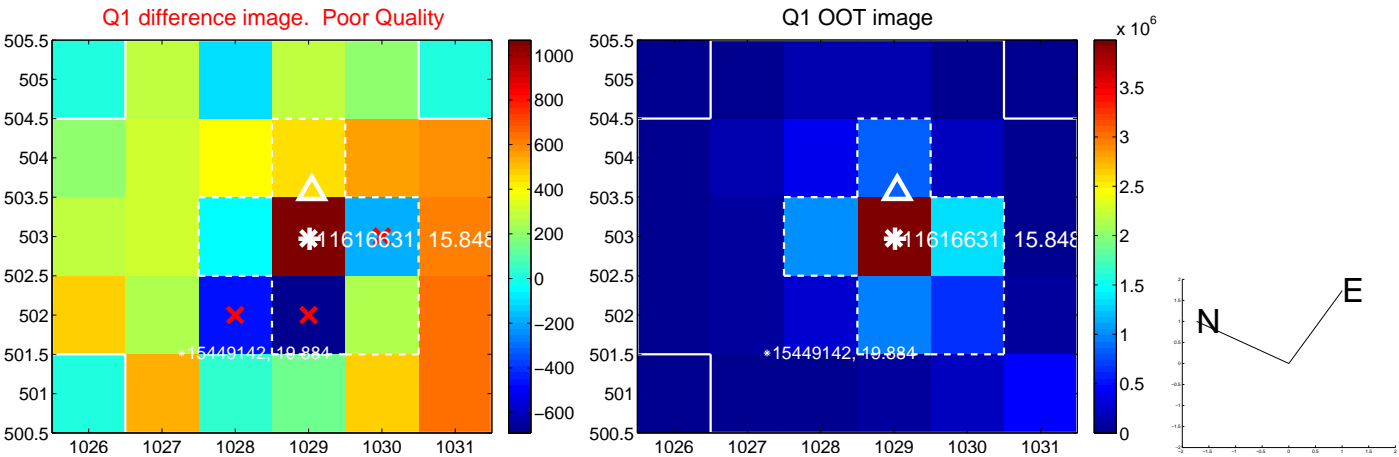
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.673 ± 0.690	6.77	0.213 ± 0.817	-4.668 ± 0.686
PRF-fit source offset from KIC position	4.694 ± 0.630	7.45	0.263 ± 0.772	-4.687 ± 0.632
photometric centroid source offset	5.29 ± 1.52	3.47	-0.59 ± 1.31	-5.26 ± 1.53

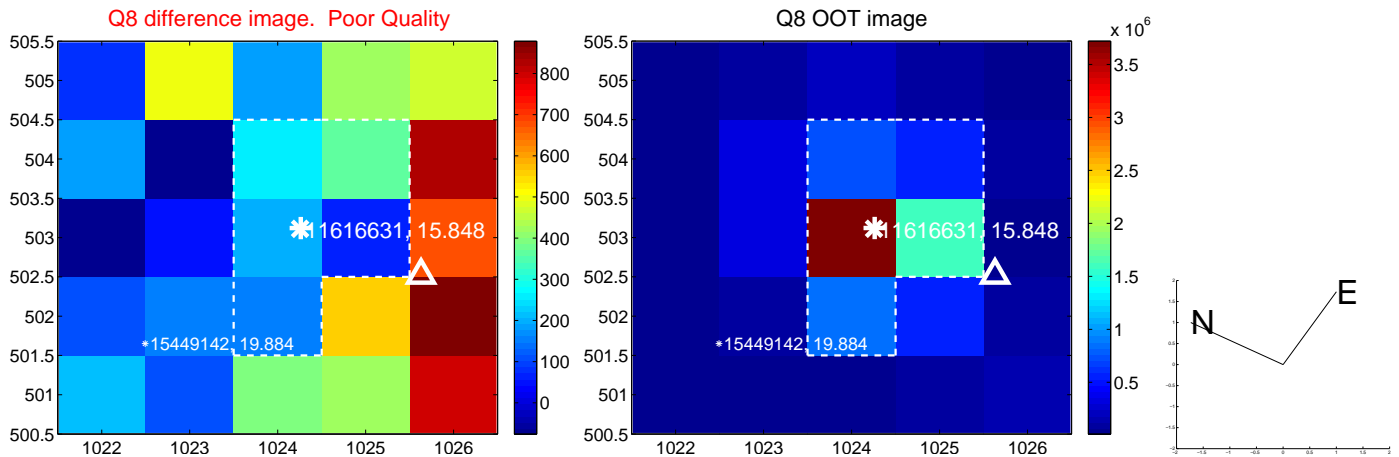
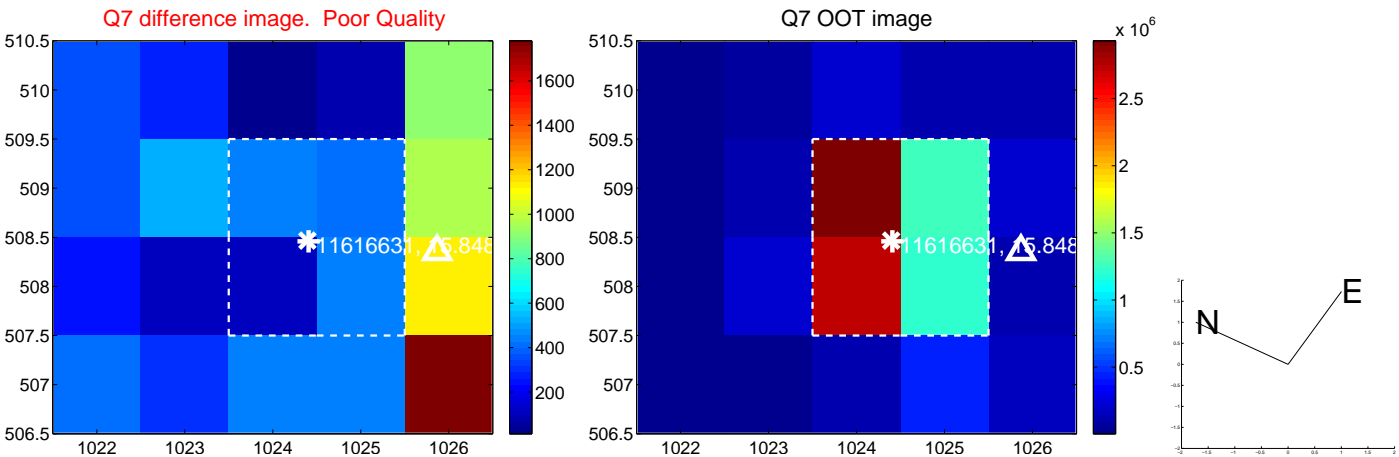
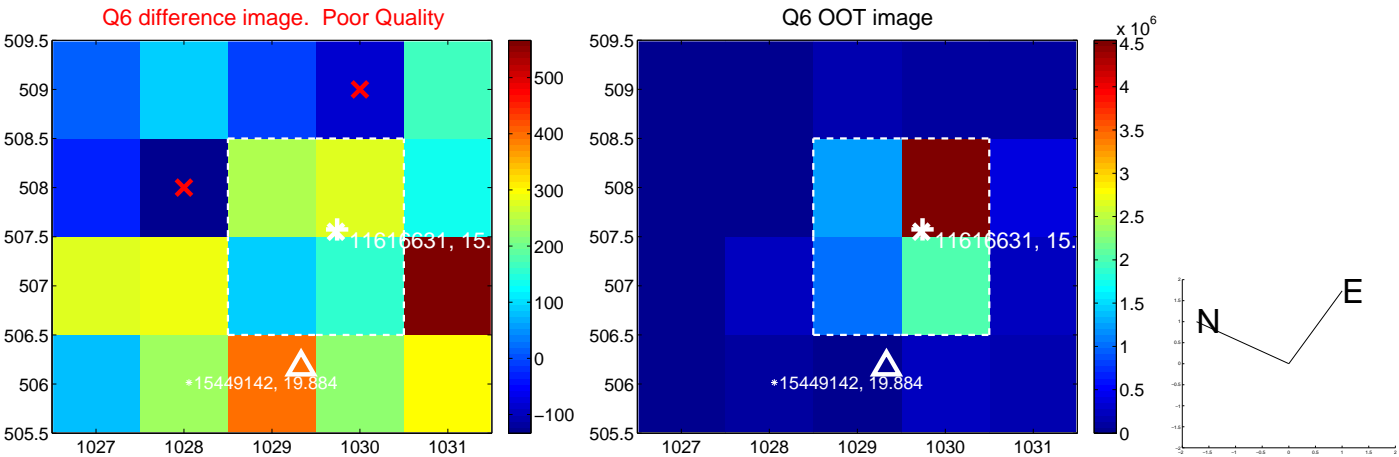
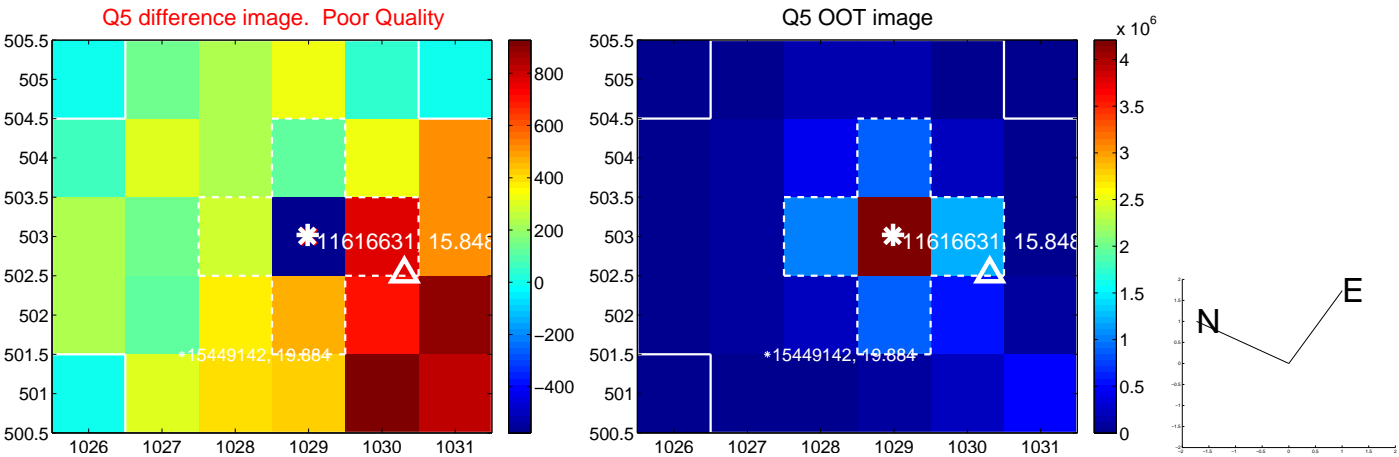


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

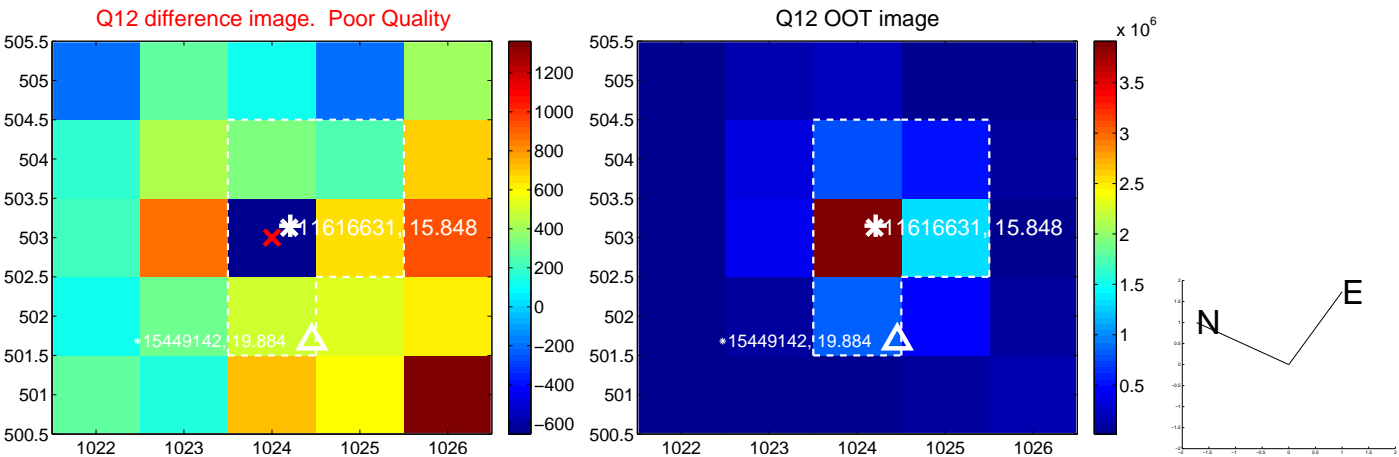
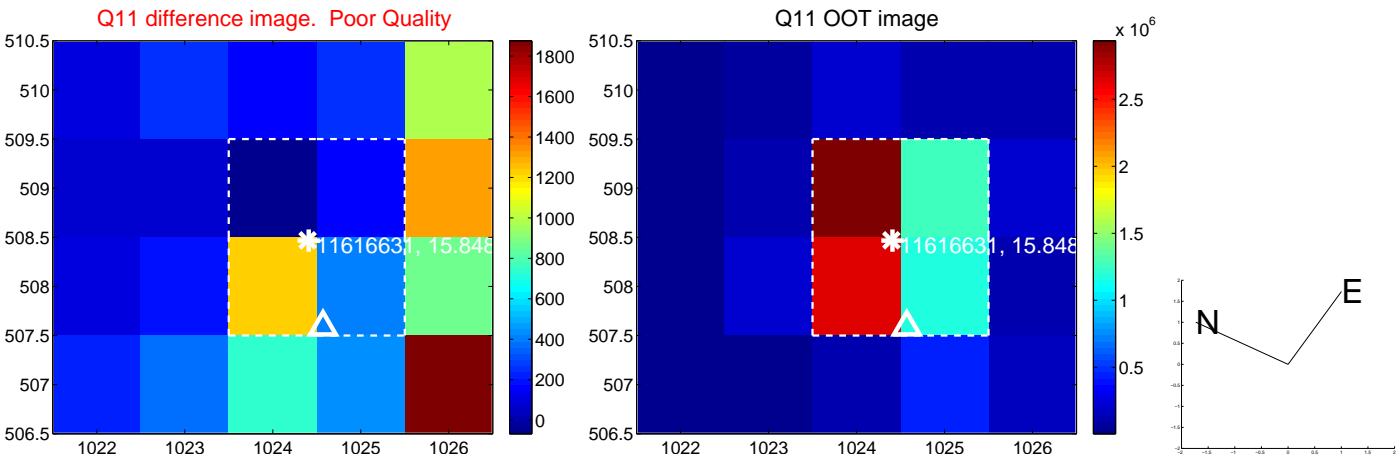
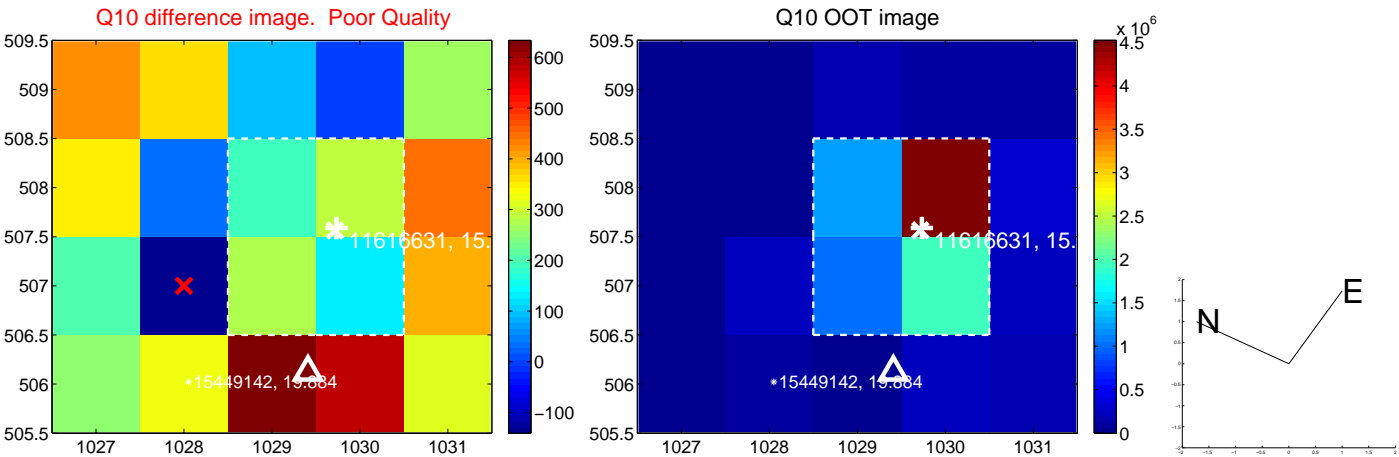
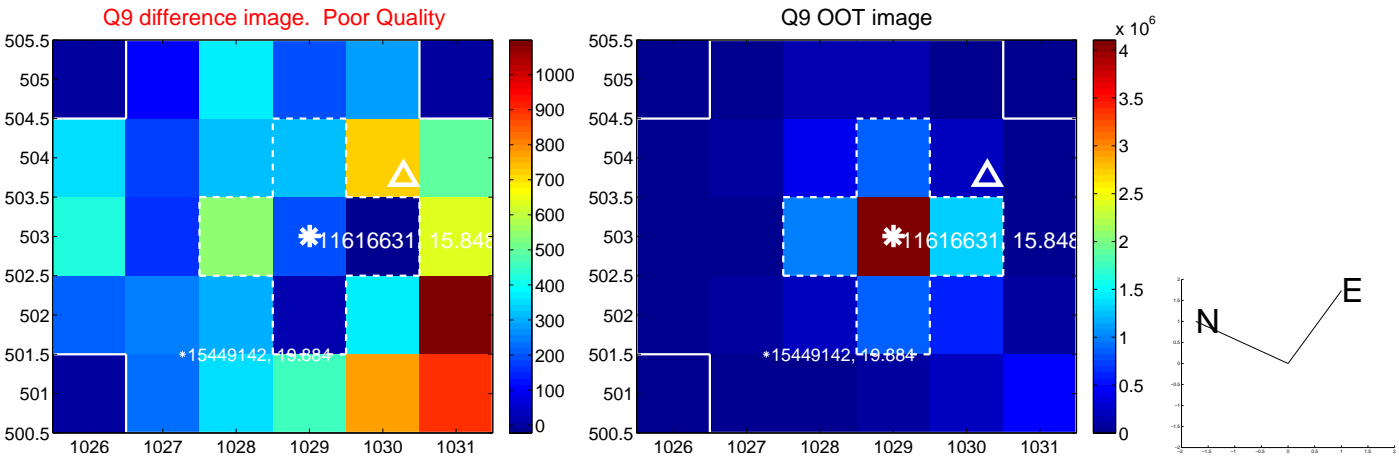
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



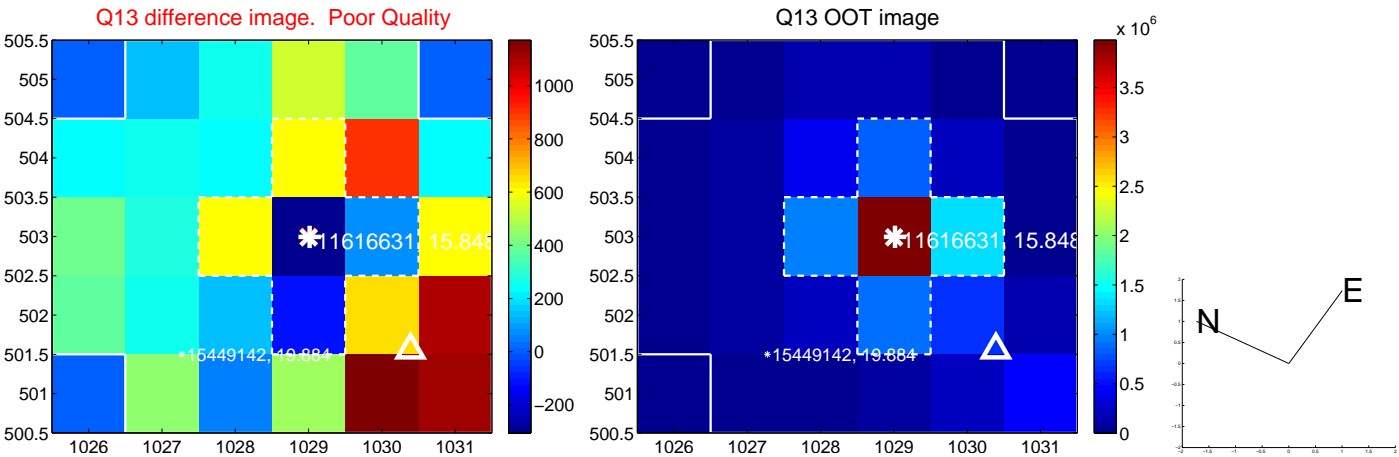
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



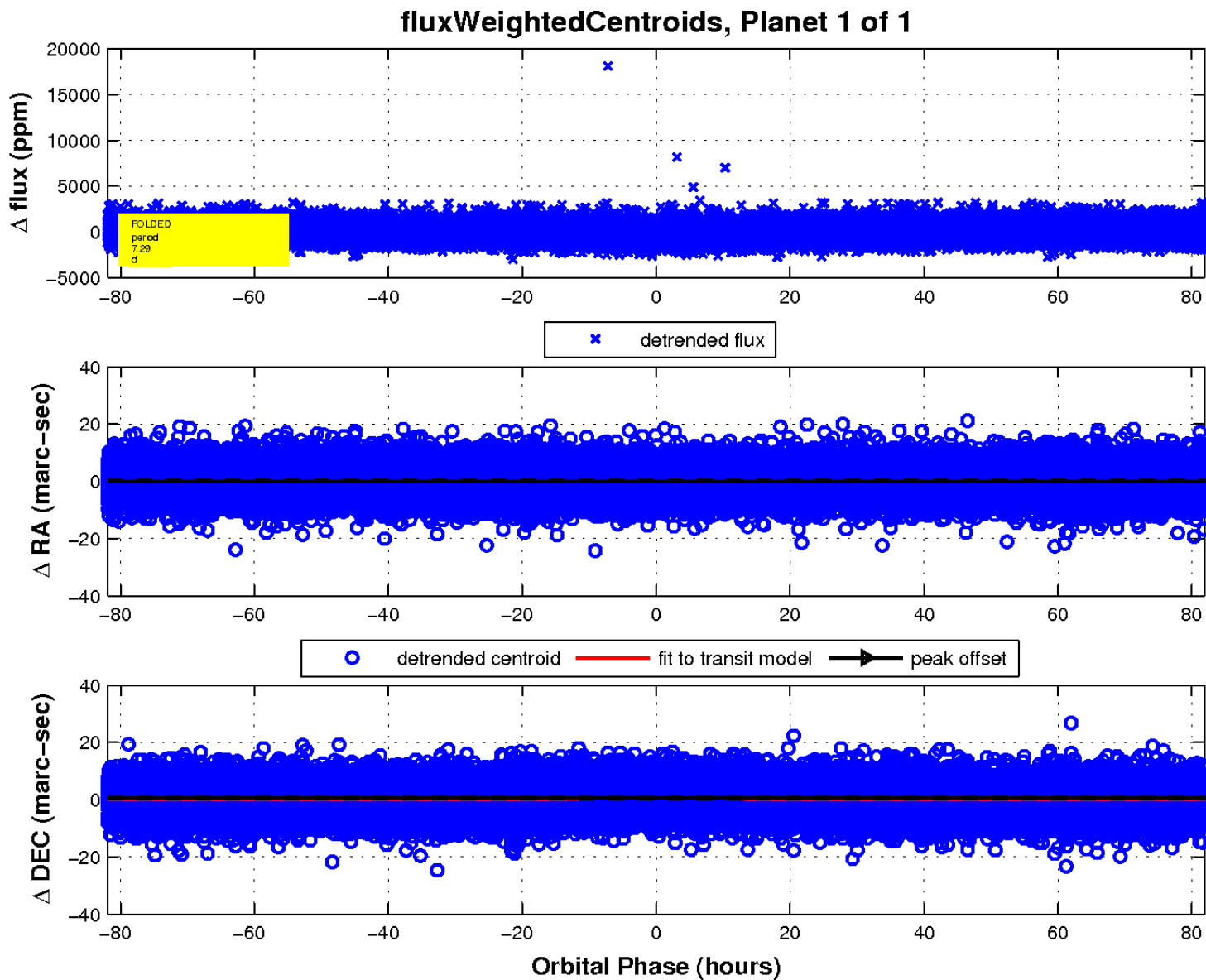
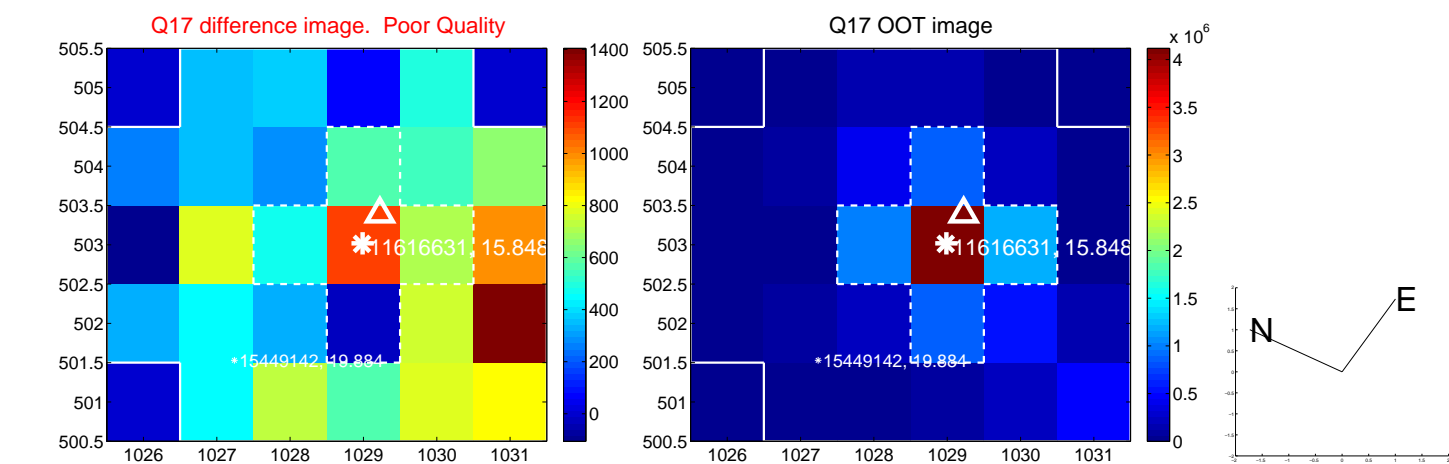
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

