

KIC 008162376

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
008162376-01	OBS	6982.01	0.706427	132.145060	49.9	1.245	10.4	13.1	0.57	5037	0.47	1116.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008162376-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_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.

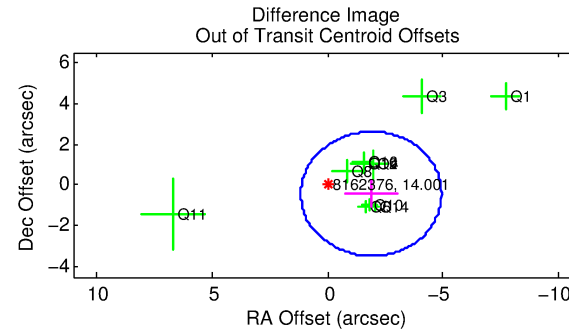
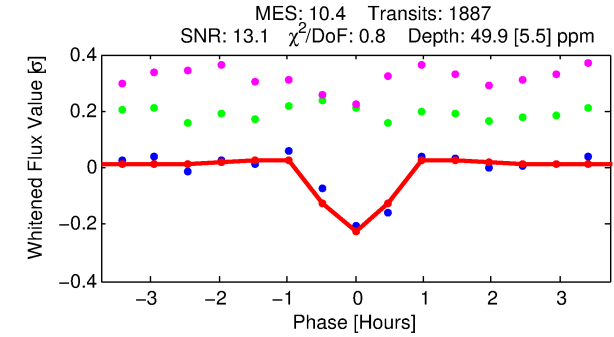
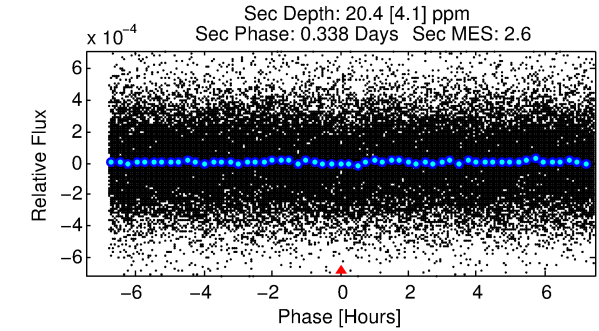
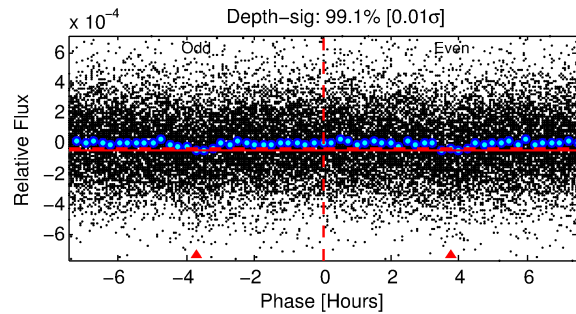
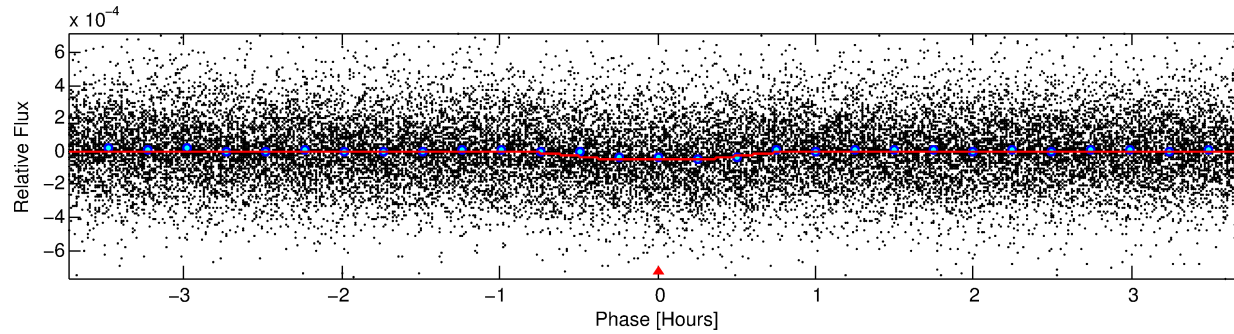
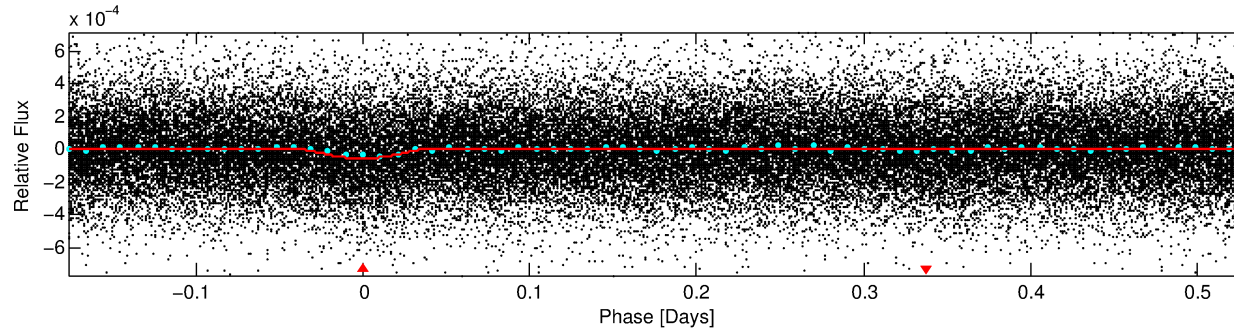
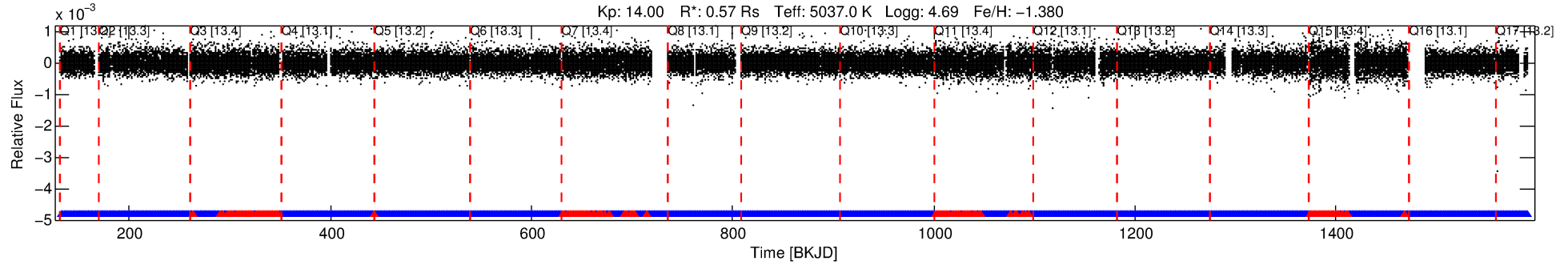
Ephemeris Match Information For 008162376-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
008162376-01	8162376	6961.01	8094140	1:1	102.9	26	0	15.16	14.00	7491.20	Direct-PRF	0	0.21	0.09

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 8162376 Candidate: 1 of 1 Period: 0.706 d
KOI: K06982.01 Corr: 0.949



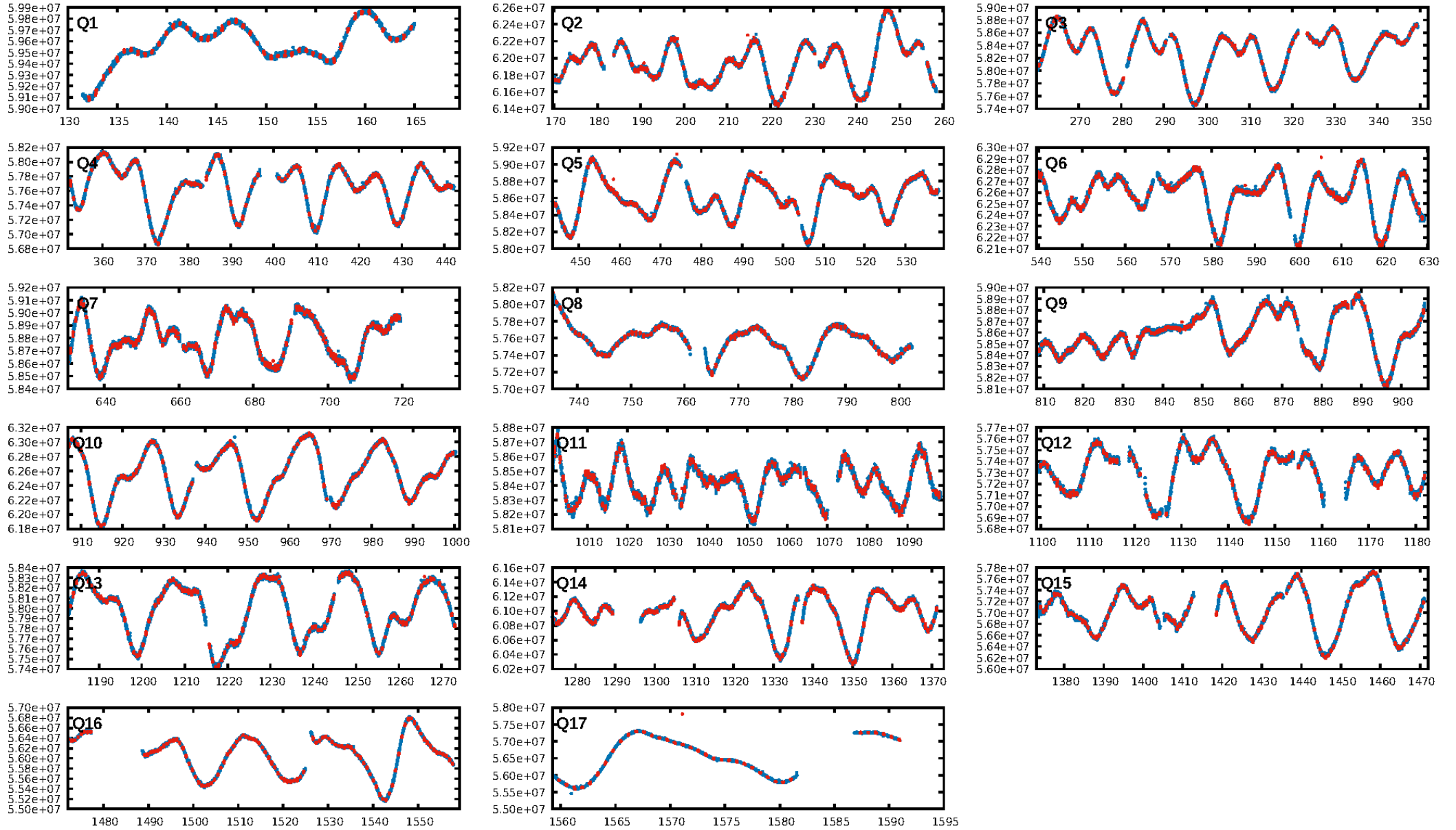
DV Fit Results:

Period = 0.70643 [0.00001] d
Epoch = 132.1451 [0.0014] BKJD
Rp/R* = 0.0076 [0.0020]
a/R* = 2.34 [2.37]
b = 0.88 [0.33]
Seff = 1116.15 [178.42]
Teq = 1474 [59] K
Rp = 0.47 [0.13] Re
a = 0.0129 [0.0007] AU
Ag = 8.50 [4.96] [1.51σ]
Teffp = 3891 [576] K [4.18σ]

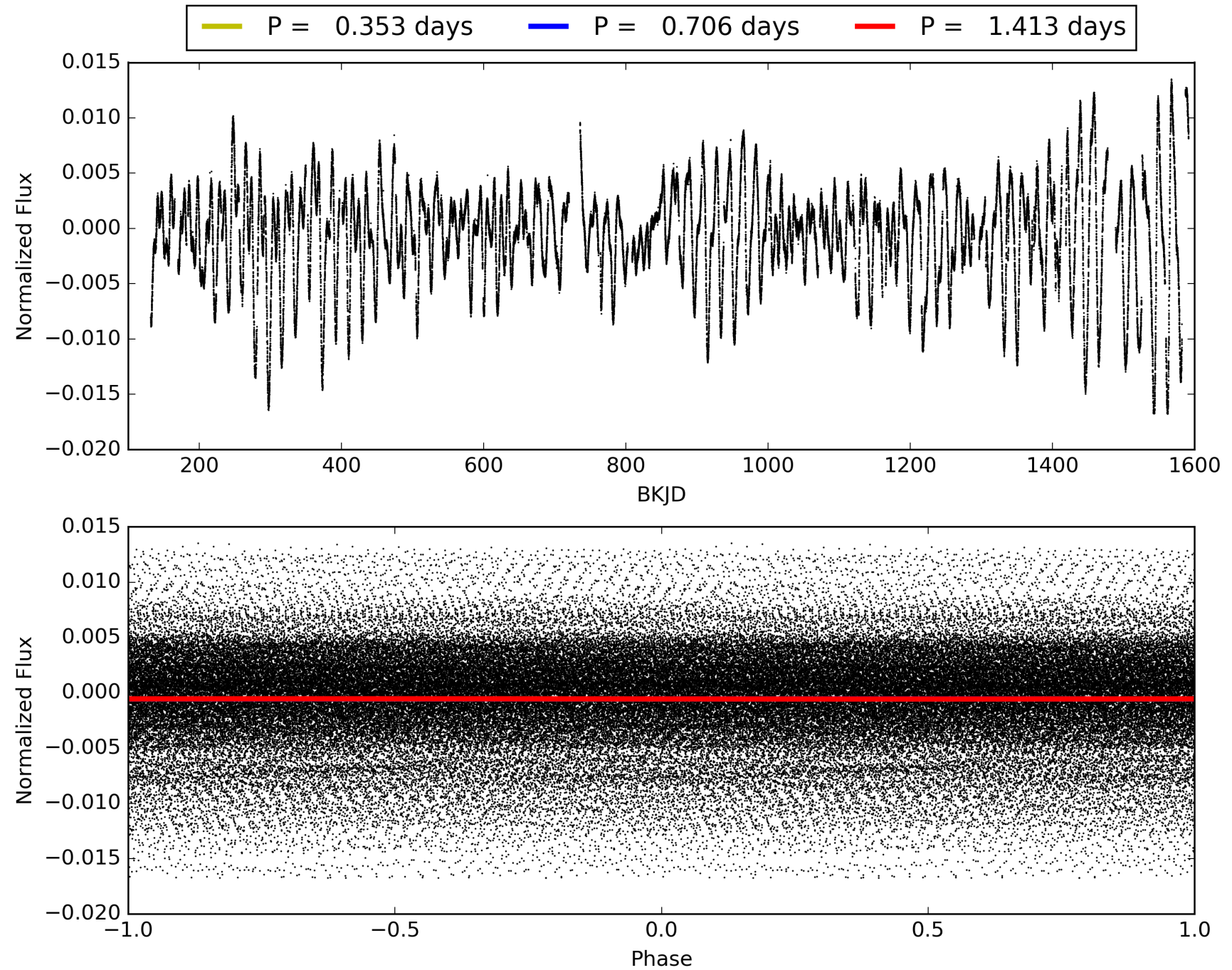
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.11e-23
RollingBand-fgt: 0.88 [1594/1803]
GhostDiagnostic-chr: 3.61
Centroid-sig: 17.3%
Centroid-so: 1.116 arcsec [1.26σ]
OotOffset-rm: 1.937 arcsec [1.91σ]
KicOffset-rm: 1.937 arcsec [1.97σ]
OotOffset-st: 3/2/4/1 [10]
KicOffset-st: 3/2/4/1 [10]
DiffImageQuality-fgm: 0.70 [7/10]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008162376-01, PDC Light Curves

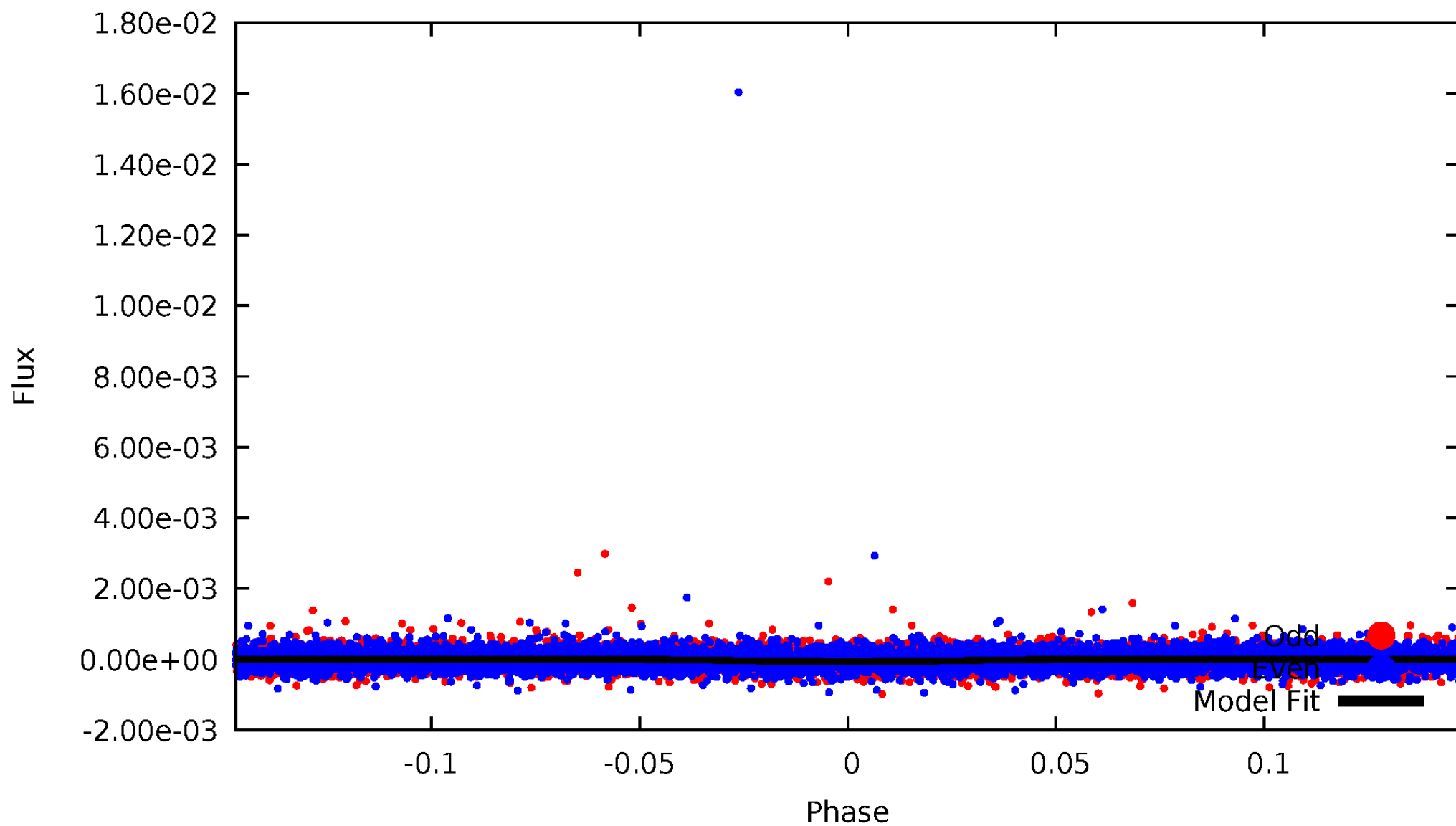


TCE 008162376-01



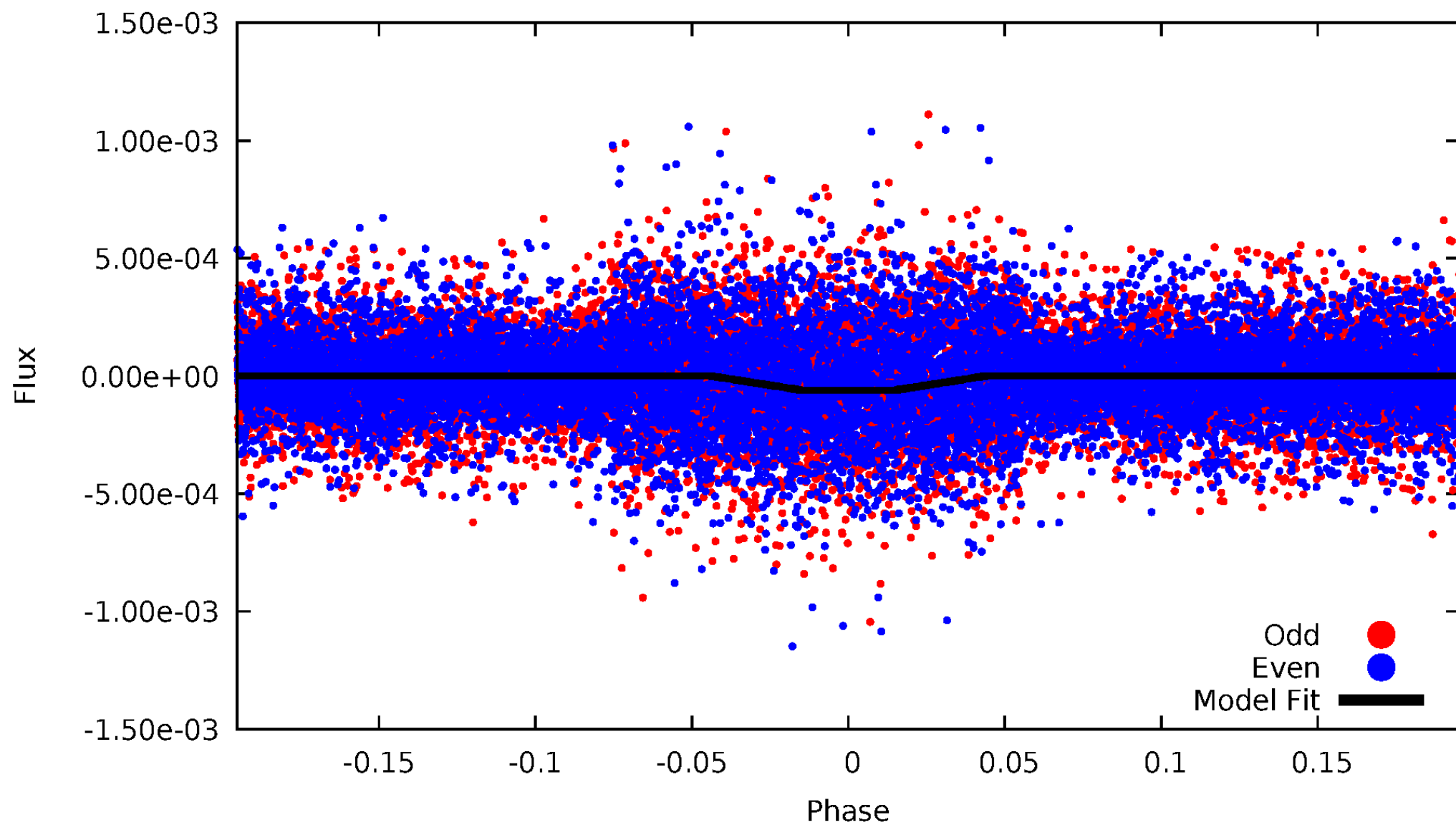
DV Odd/Even

TCE 008162376-01

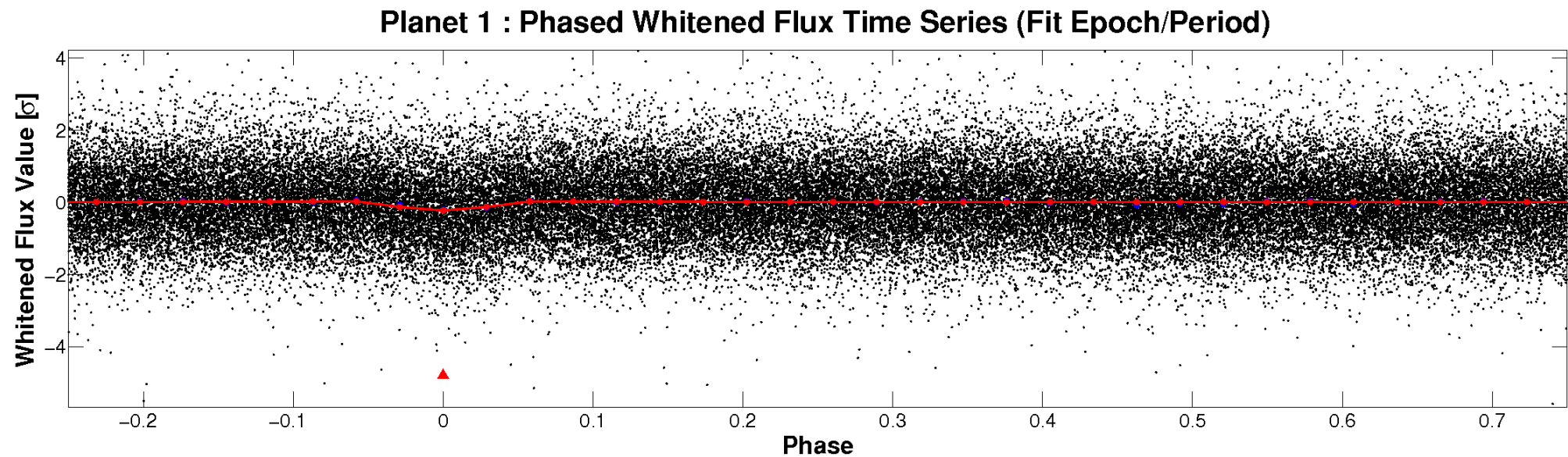
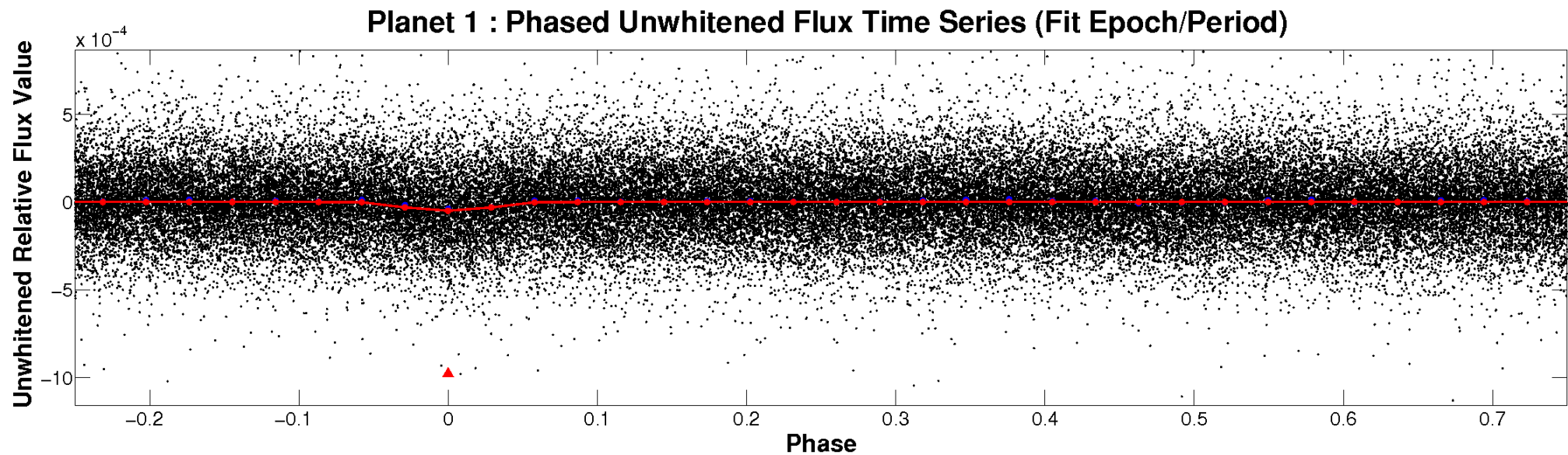


ALT Odd/Even

TCE 008162376-01

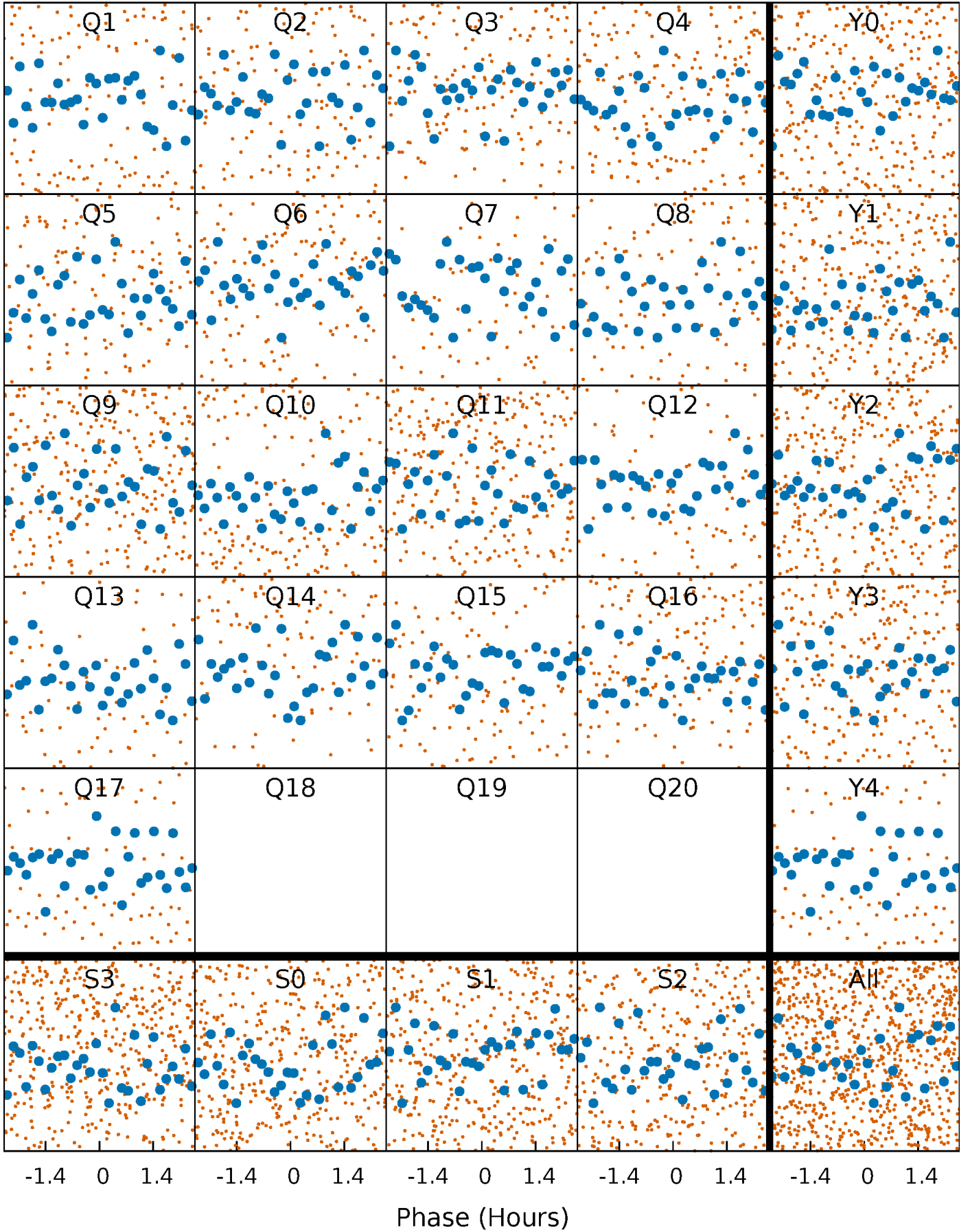


Non-Whitened Vs. Whitened Light Curve



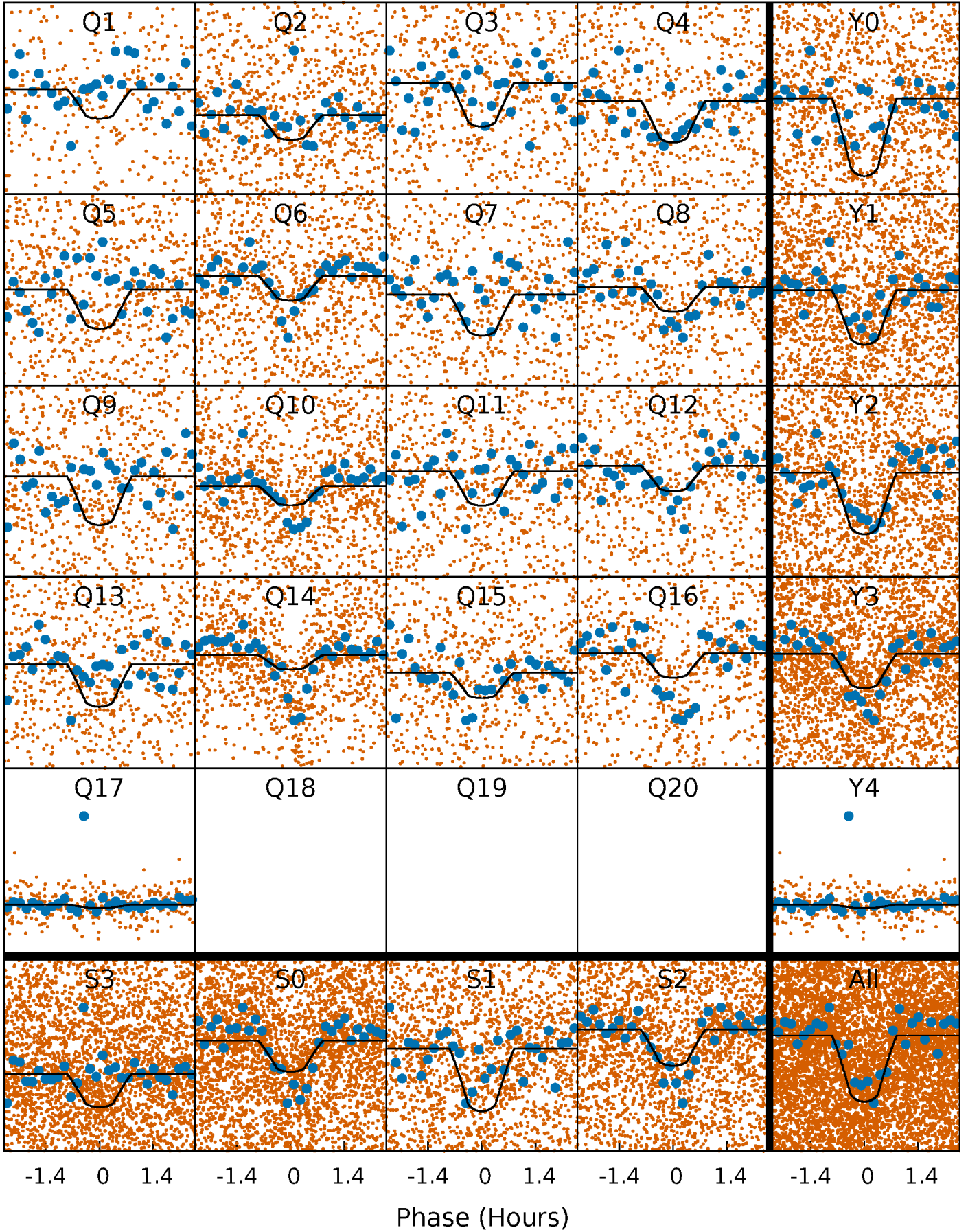
PDC Quarter-Phased Transit Curves

TCE 008162376-01 P= 0.706427 Days $T_0=132.145060$ (BKJD)



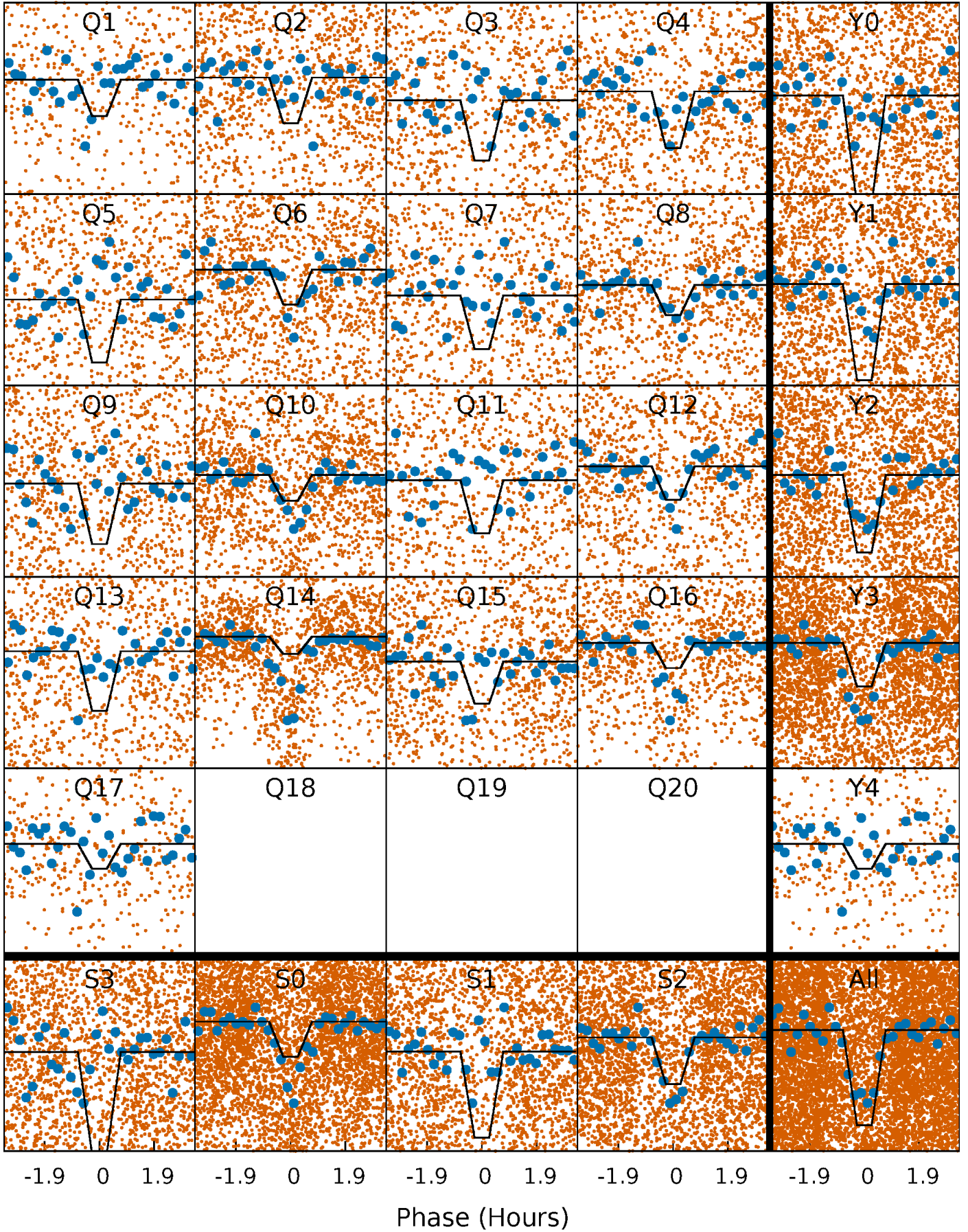
DV Quarter-Phased Transit Curves

TCE 008162376-01 P= 0.706427 Days $T_0=132.145060$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

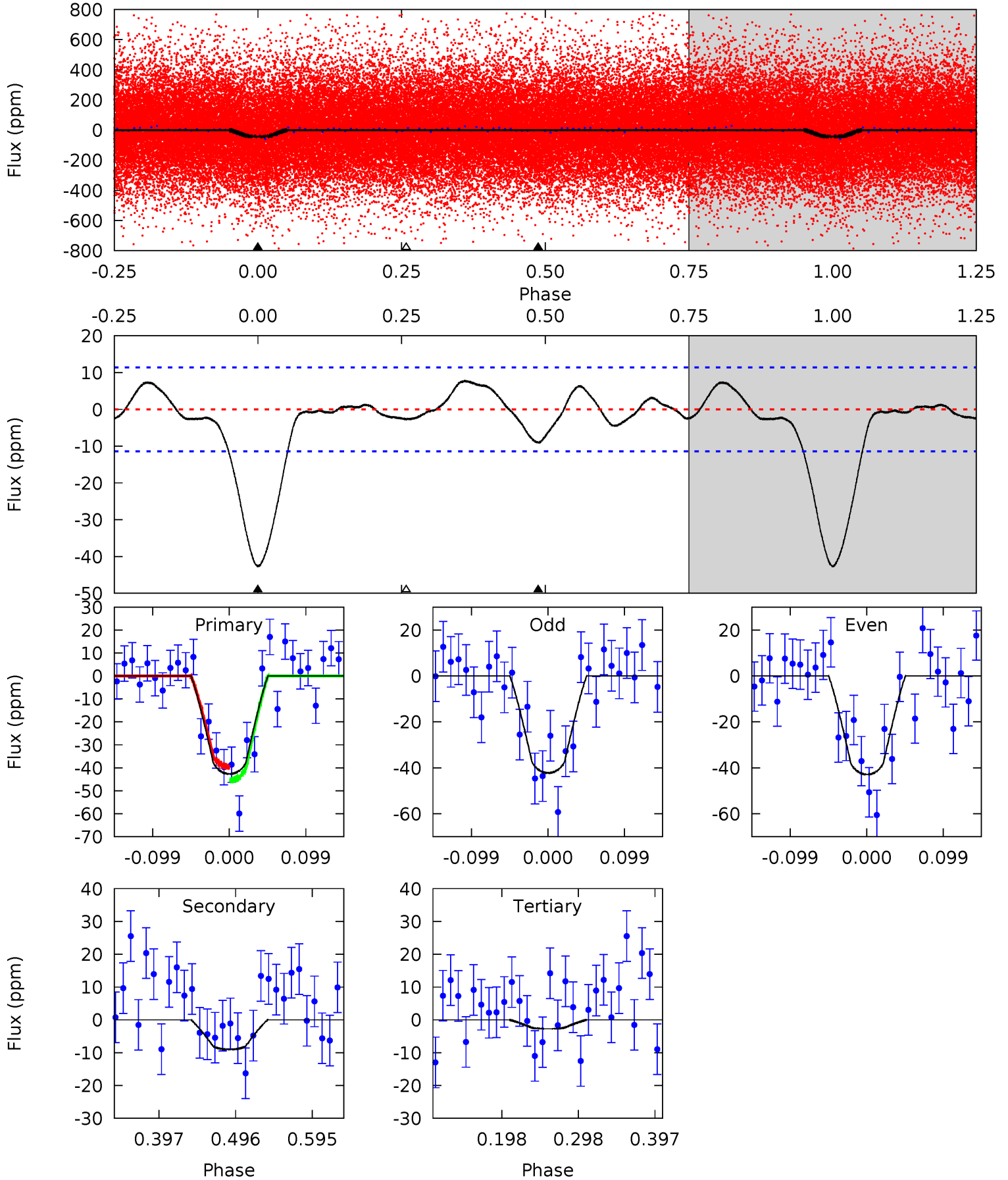
TCE 008162376-01 P= 0.706437 Days $T_0=132.132460$ (BKJD)



DV Model-Shift Uniqueness Test

008162376-01, P = 0.706427 Days, E = 131.438633 Days

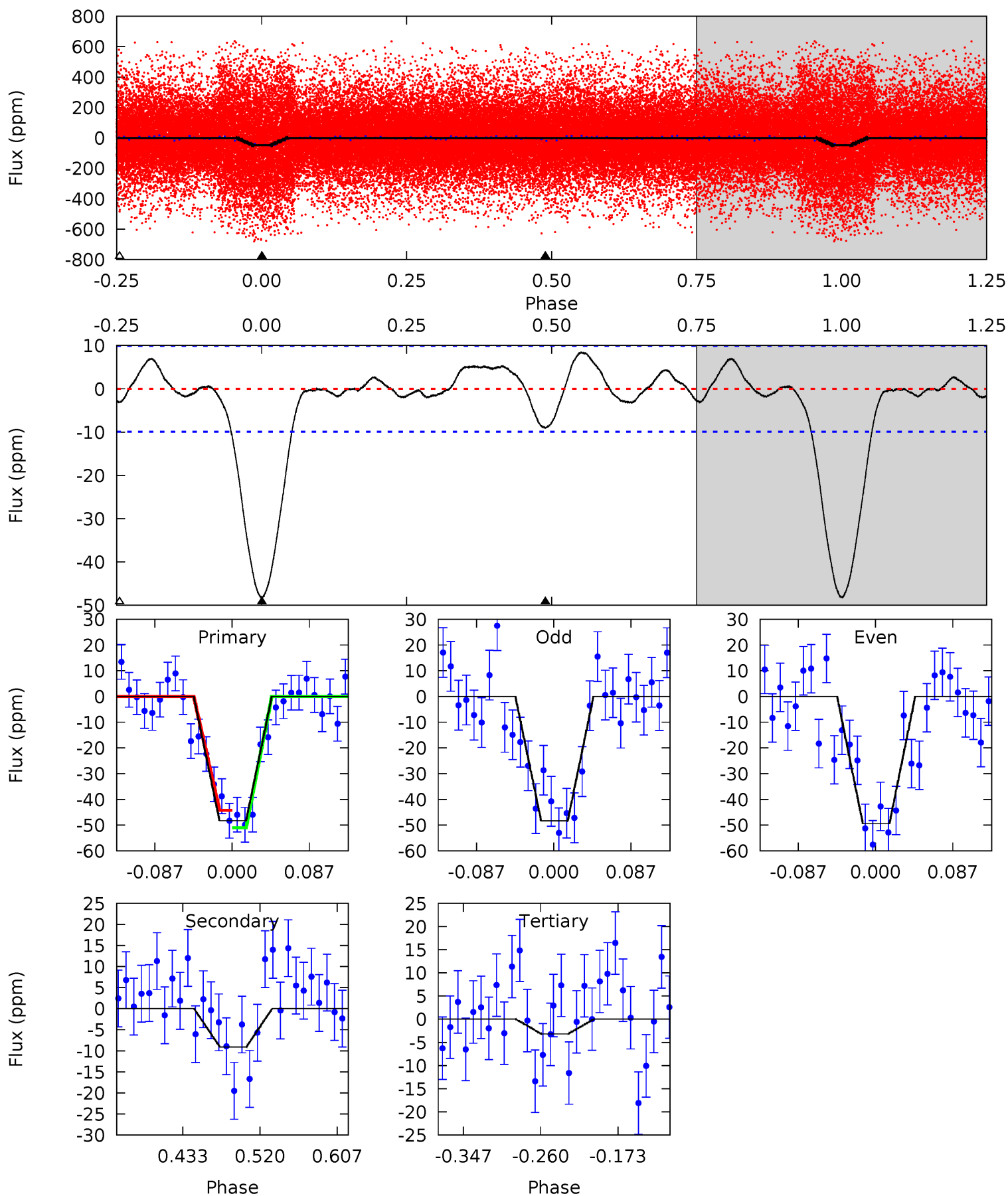
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	3.62	1.09	0	4.57	1.65	1.28	16.0	17.1	2.54	3.62	0.13	0.85	0.15	1.19



Alt Model-Shift Uniqueness Test

008162376-01, P = 0.706437 Days, E = 131.426023 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	4.21	1.48	0	4.59	1.71	1.18	20.9	22.4	2.73	4.21	0.25	0.97	0.15	1.56



Stellar Parameters For KIC 008162376

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5037^{+152}_{-167}	$4.689^{+0.052}_{-0.024}$	$-1.380^{+0.300}_{-0.300}$	$0.568^{+0.030}_{-0.034}$	$0.574^{+0.038}_{-0.021}$	$4.420^{+0.873}_{-0.441}$
	+3%/-3%	+1%/-1%	+22%/-22%	+5%/-6%	+7%/-4%	+20%/-10%
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 008162376-01 / KOI 6982.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 2	$0.46^{+0.14}_{-0.13}$	2046^{+70}_{-72}	3551^{+448}_{-378}	$3.935^{+4.008}_{-1.854}$
Alt.	-9 ± 2	$0.49^{+0.11}_{-0.13}$	2052^{+65}_{-77}	3490^{+430}_{-308}	$3.649^{+3.261}_{-1.488}$

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

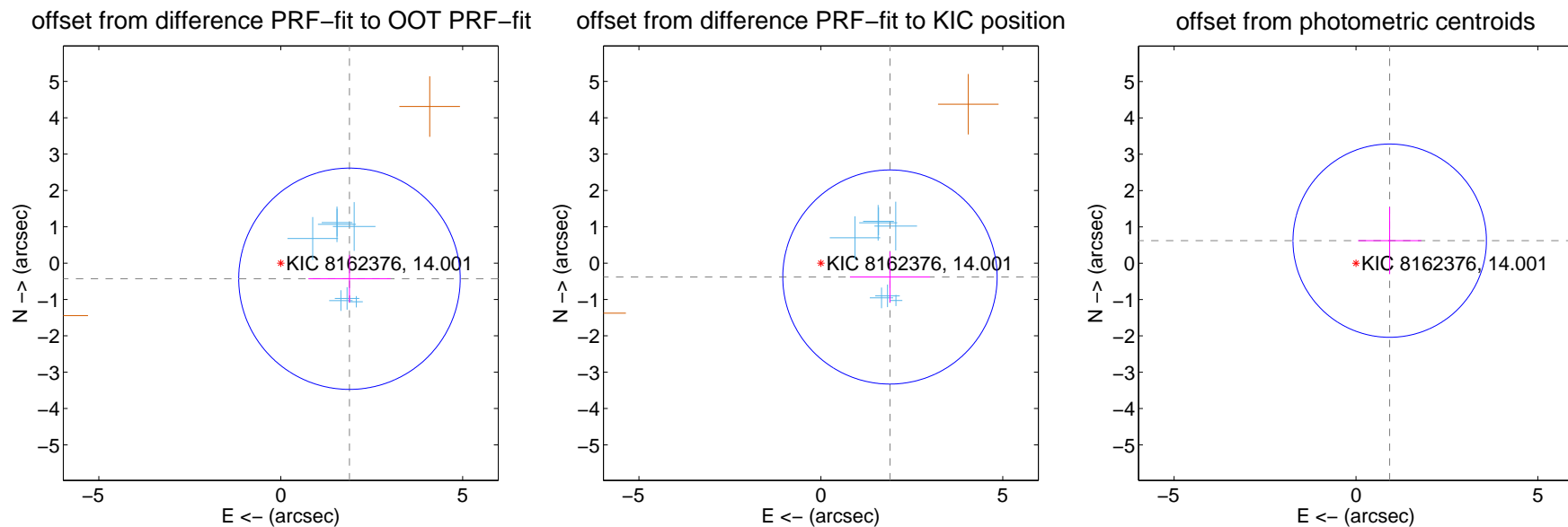
DV Centroid Data

Supplemental centroid analysis for 008162376-01. Kepler magnitude: 14.00. Transit SNR 13.13

There are 7 quarters with good PRF difference image offsets

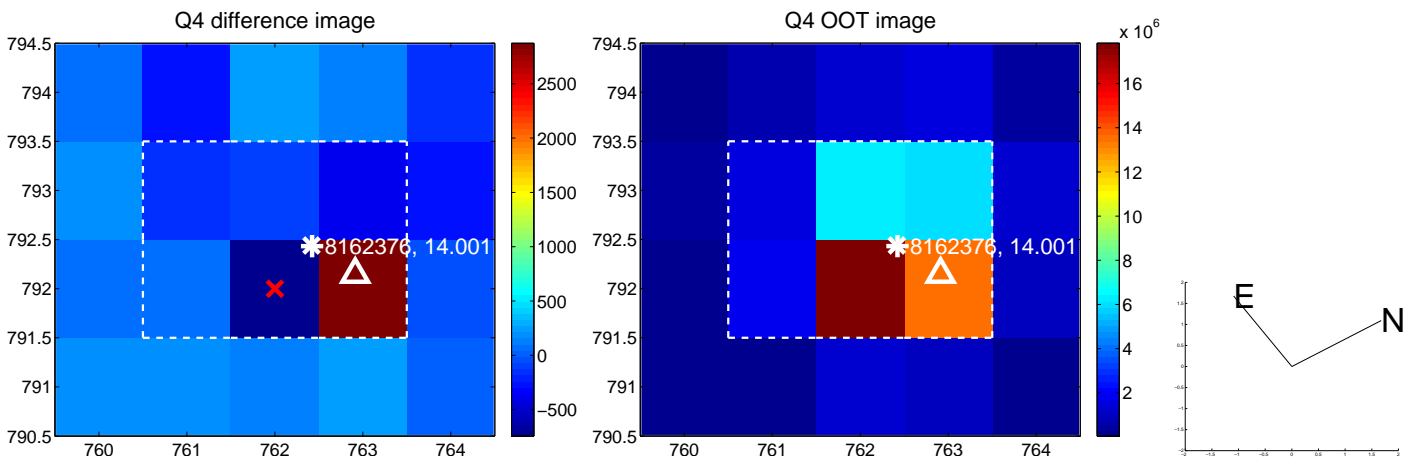
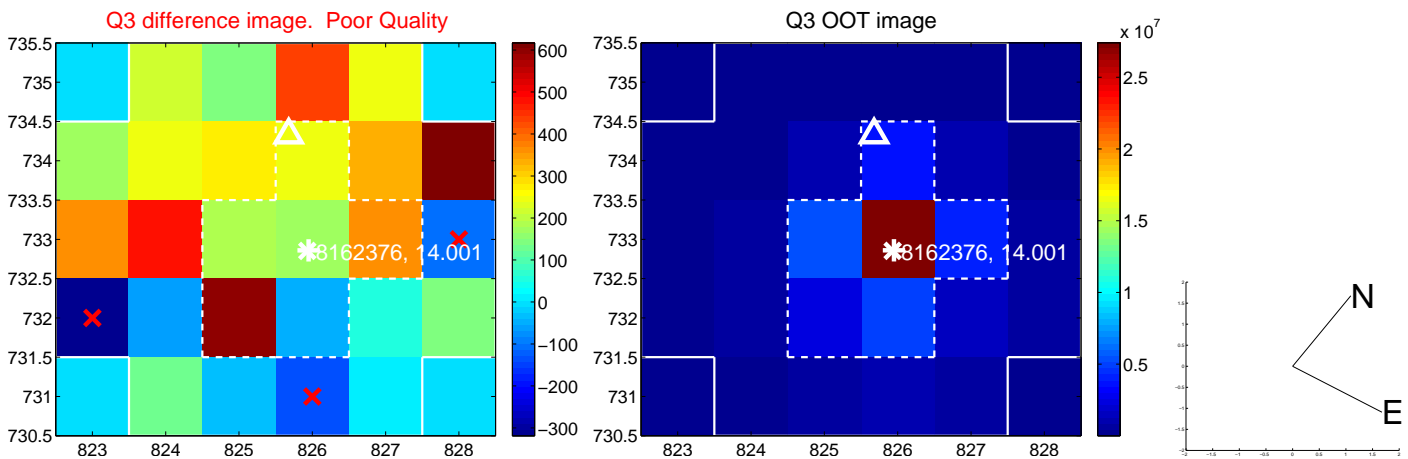
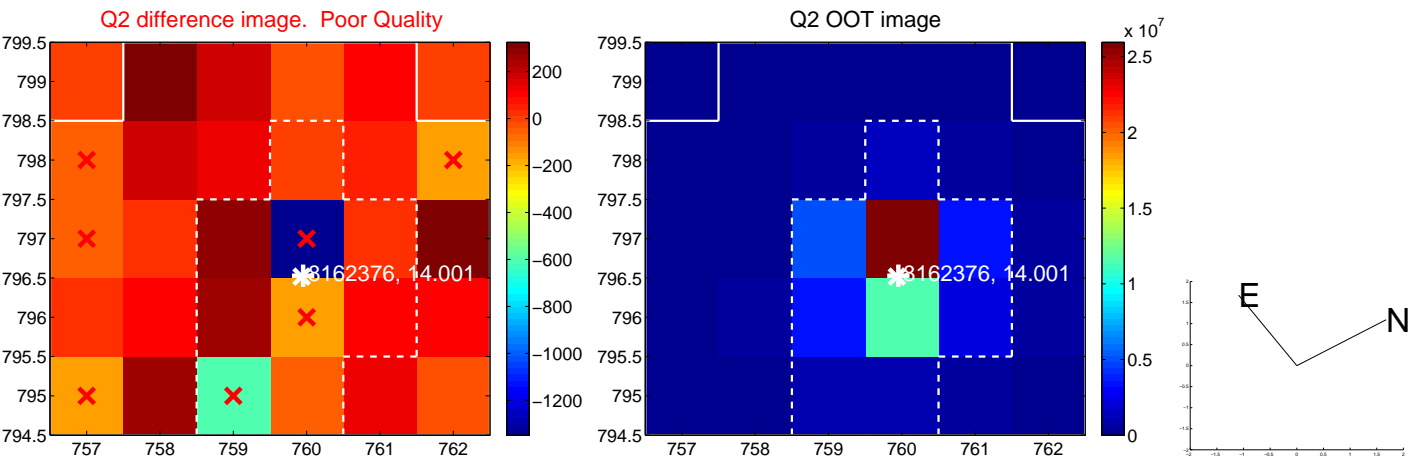
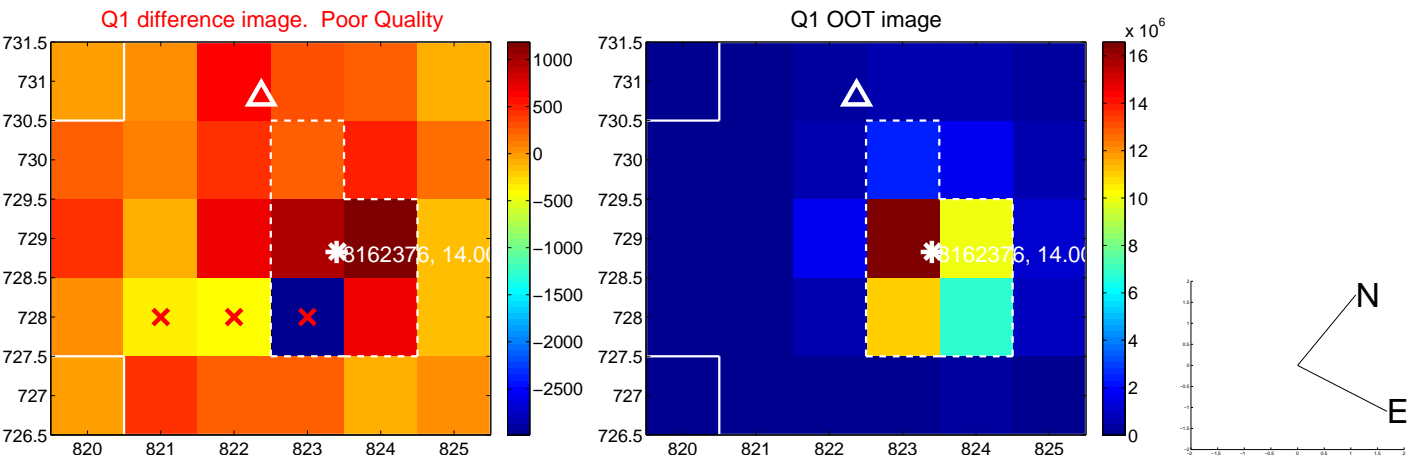
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.937 ± 1.015	1.91	-1.889 ± 1.131	-0.430 ± 0.653
PRF-fit source offset from KIC position	1.937 ± 0.982	1.97	-1.899 ± 1.099	-0.382 ± 0.701
photometric centroid source offset	1.12 ± 0.89	1.26	-0.93 ± 0.87	0.62 ± 0.92

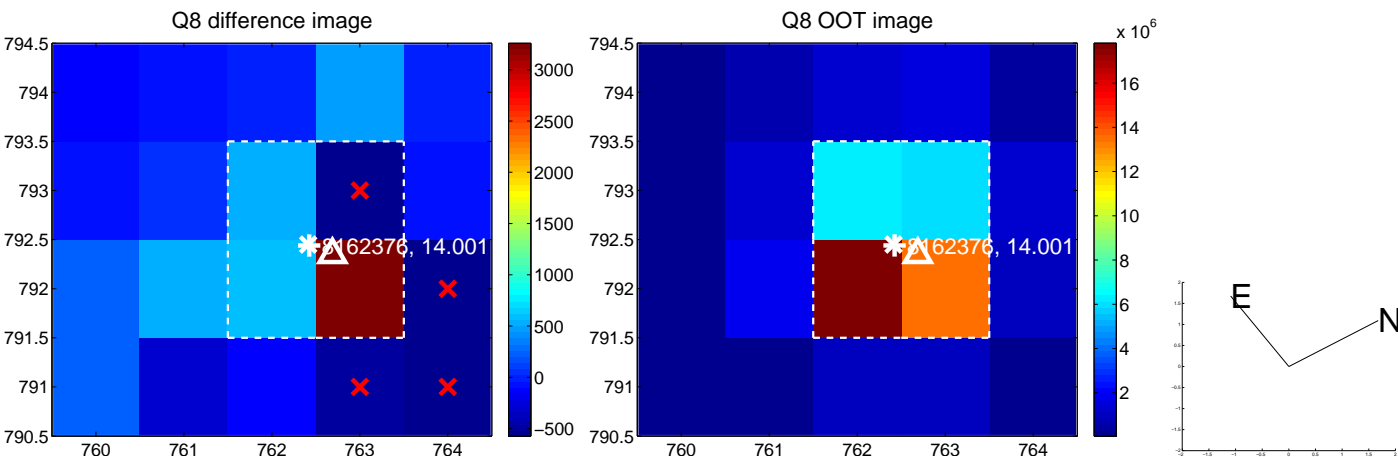
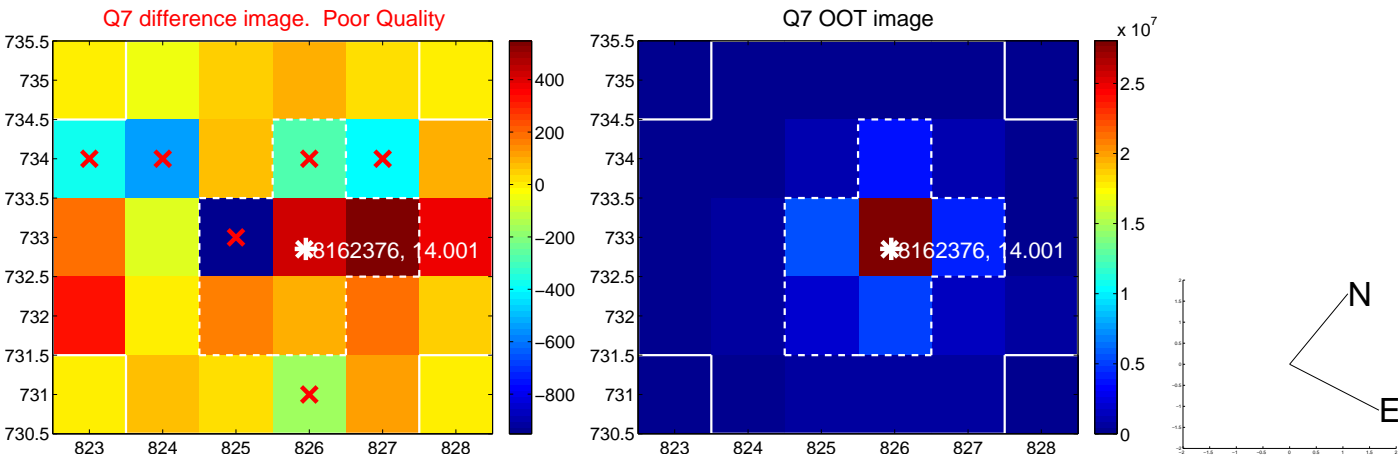
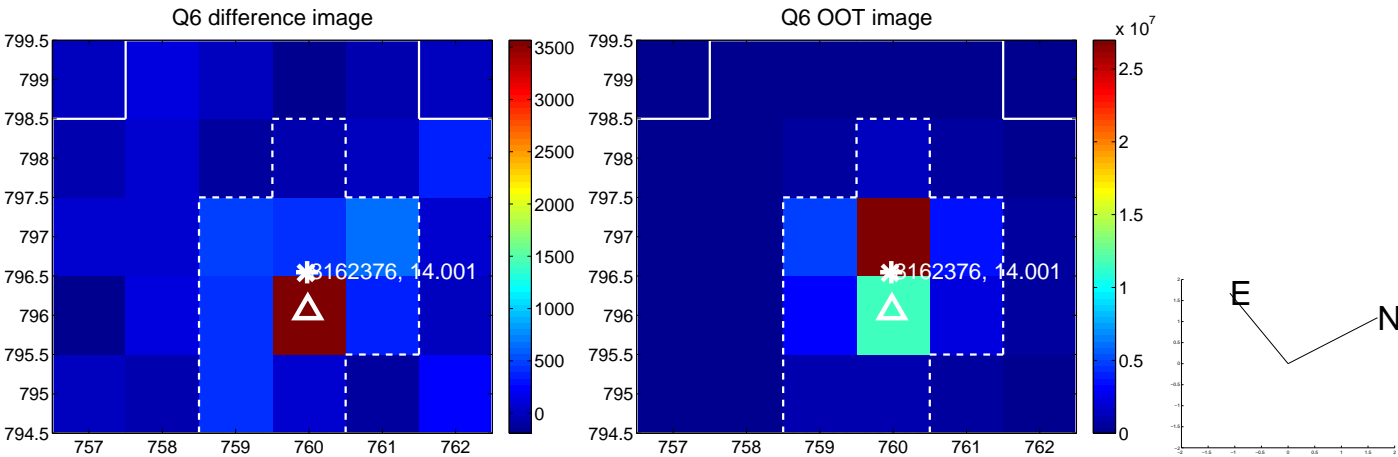
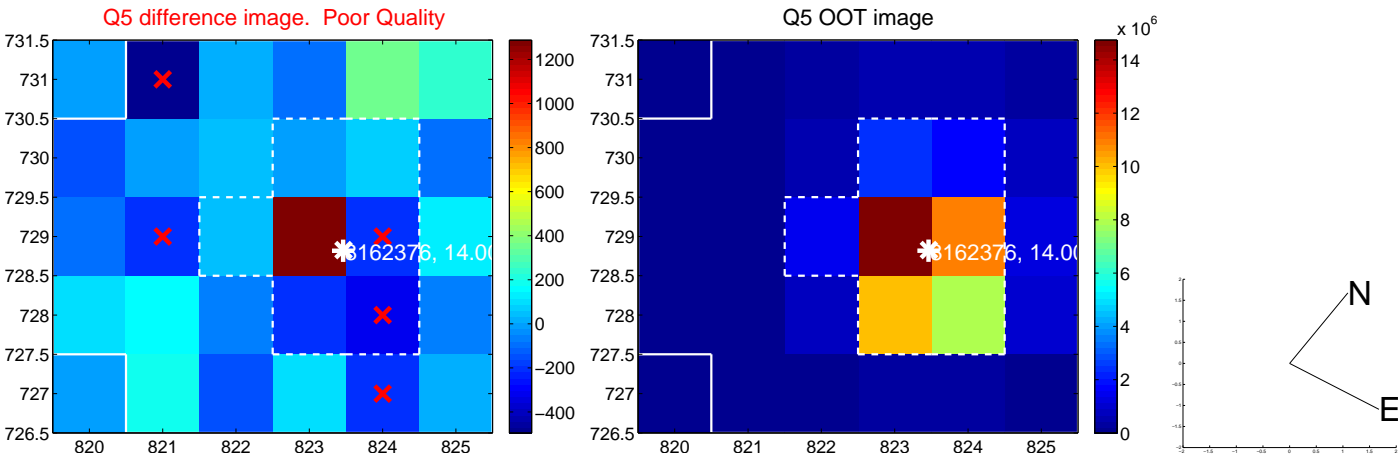


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

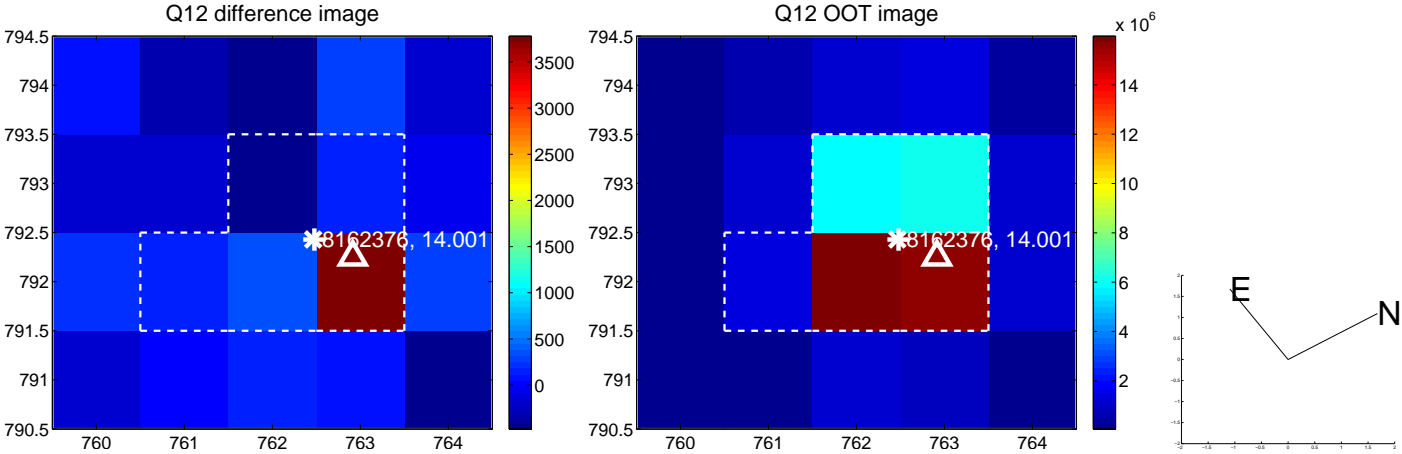
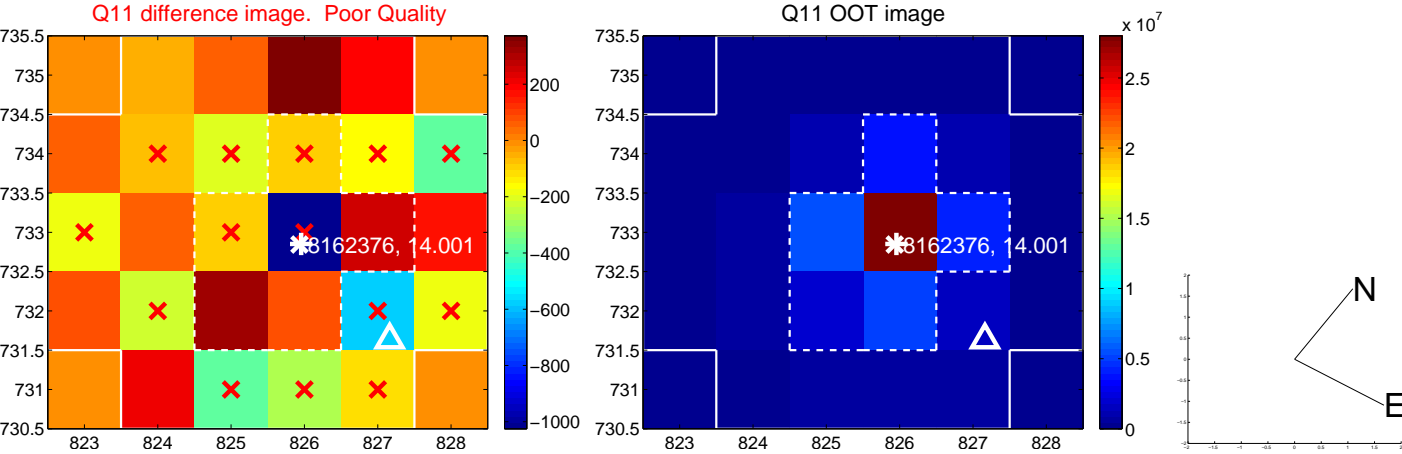
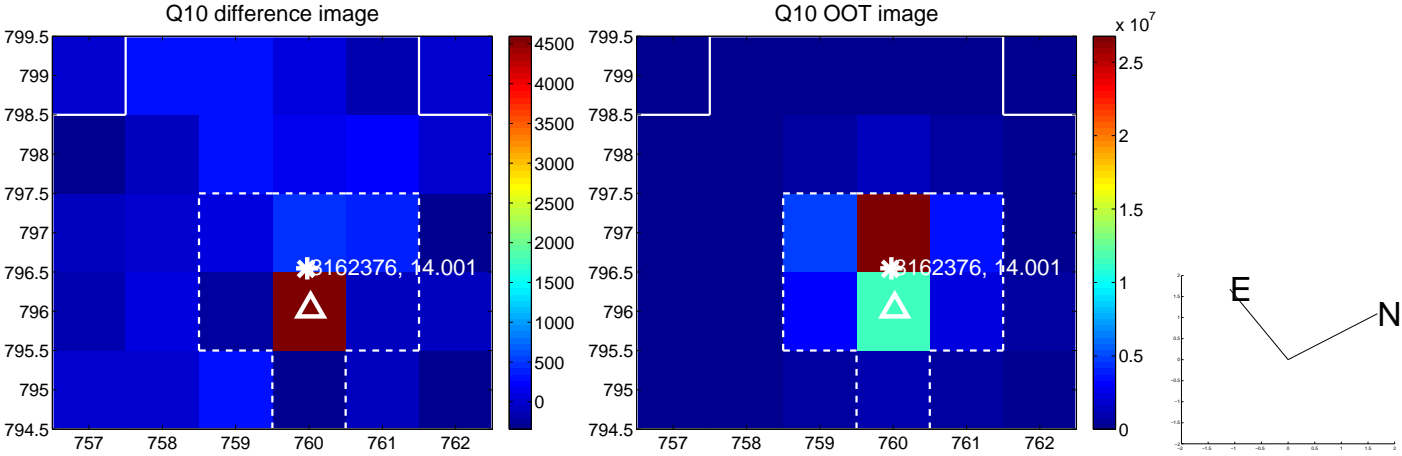
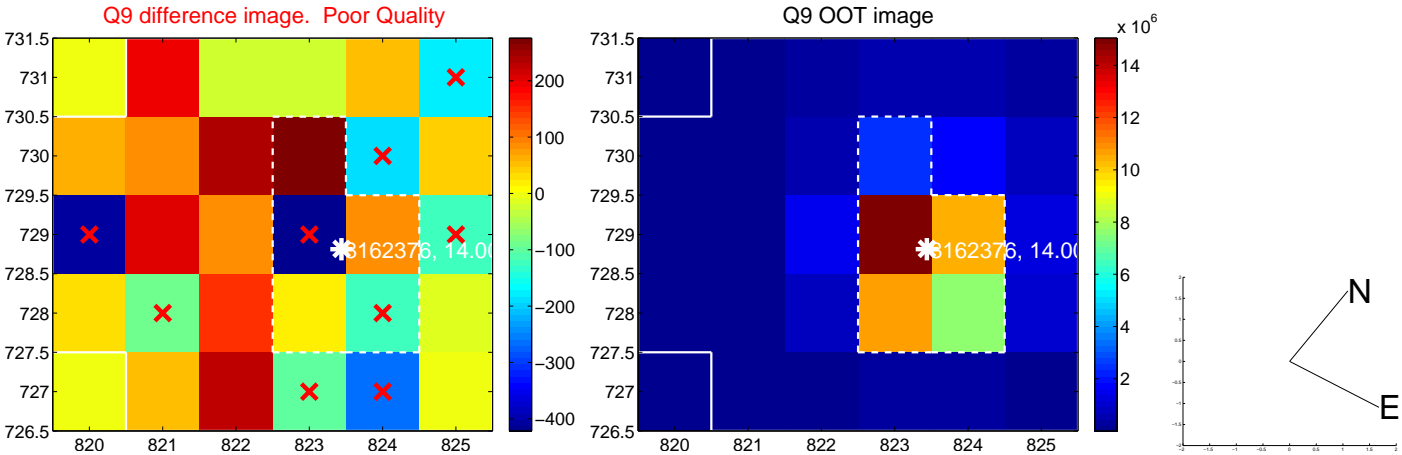
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



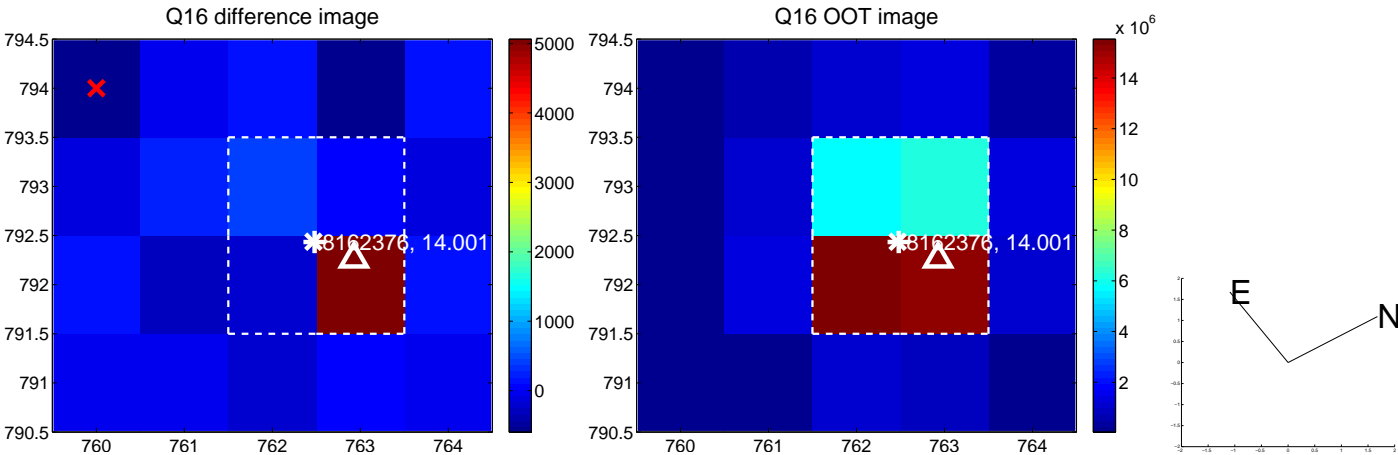
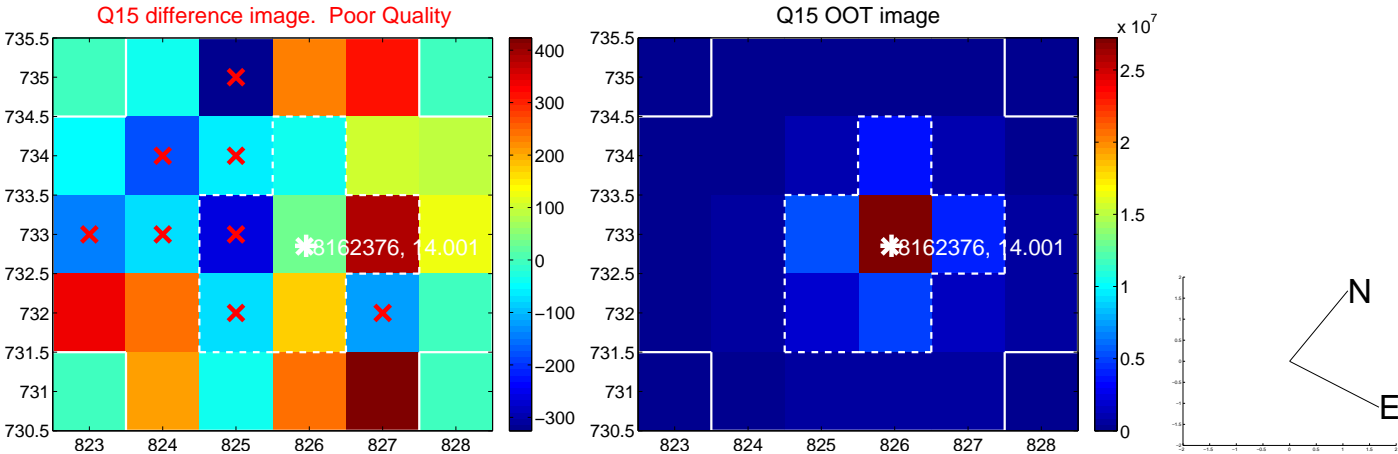
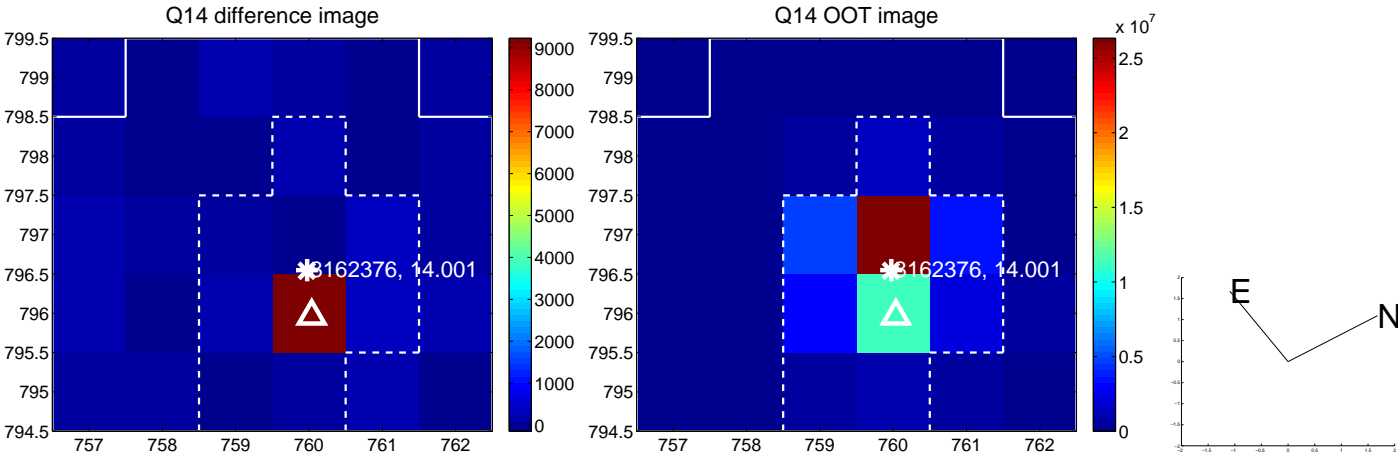
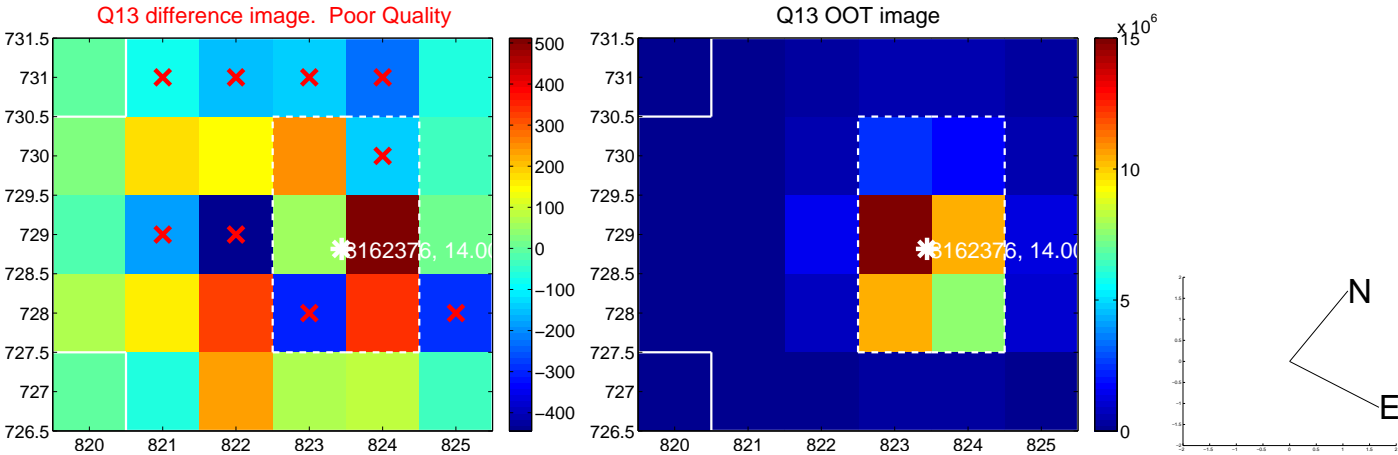
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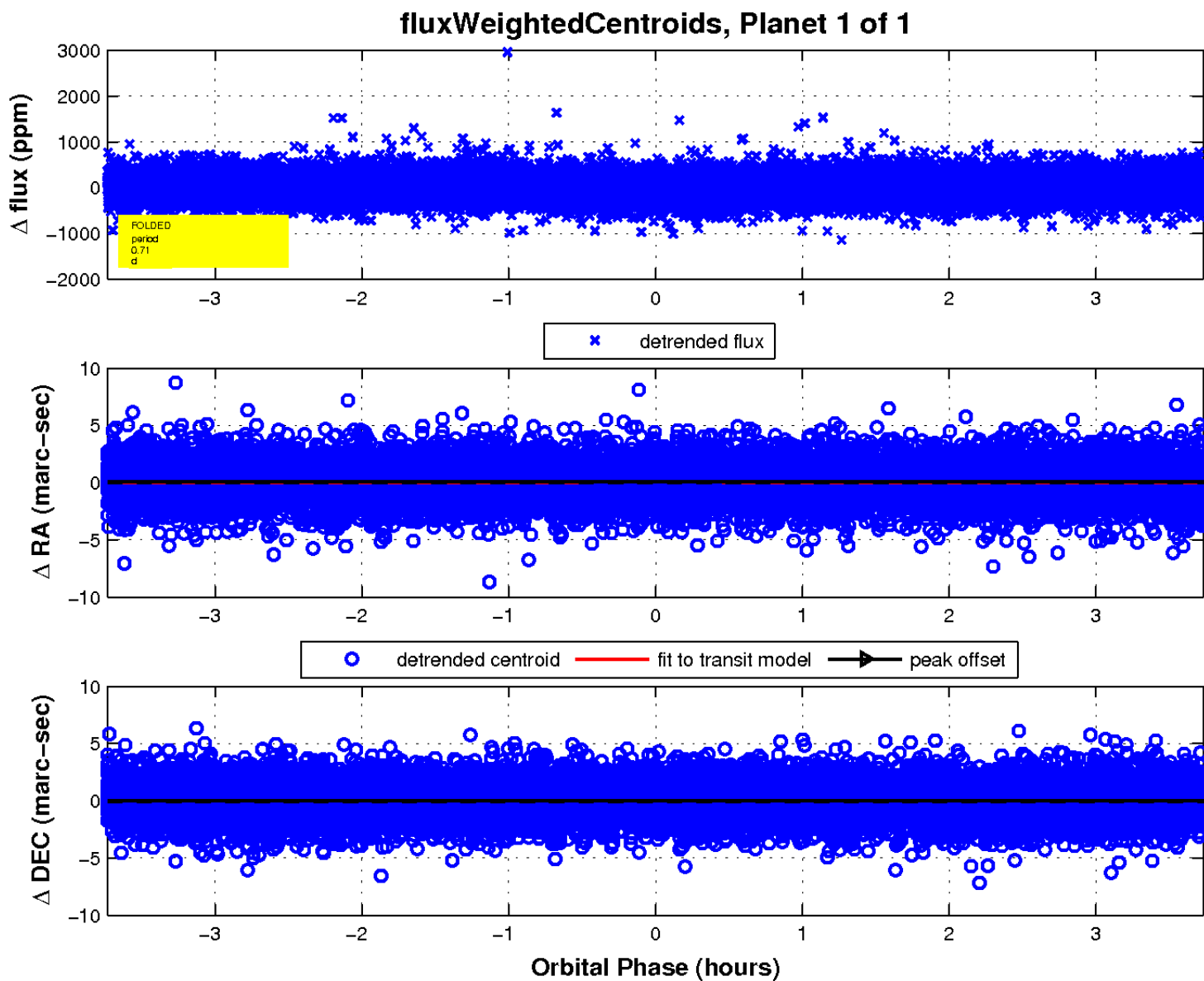
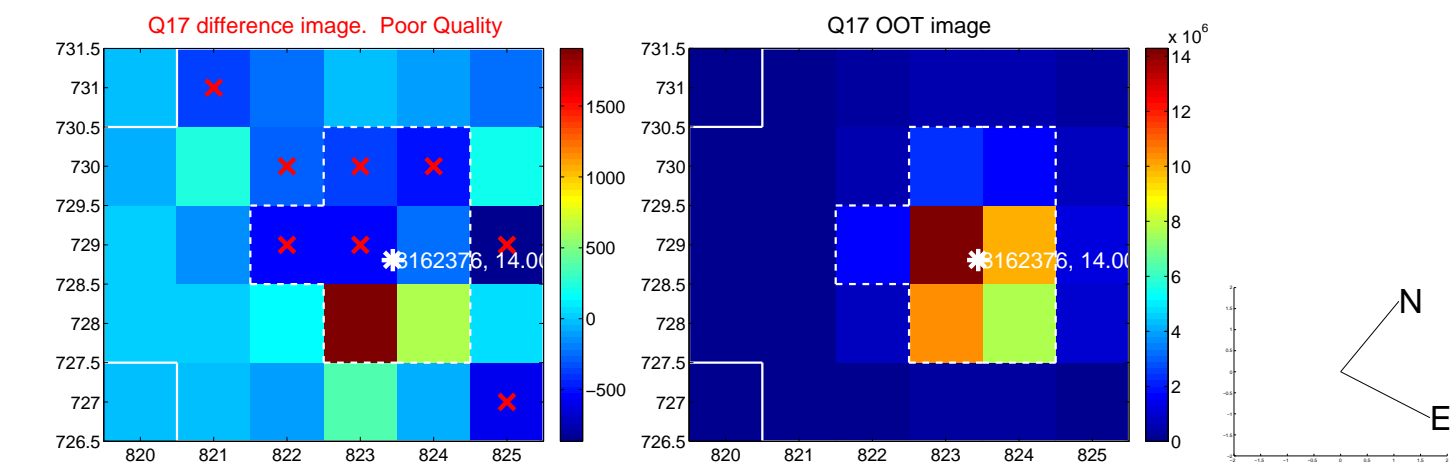
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UKIRT Image

Declination

