

KIC 012109267

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})
012109267-01	OBS	4457.01	79.334227	144.025027	164.9	11.126	9.8	10.6	1.15	6384	1.67	14.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012109267-01	OBS	PC	0.80	0	0	0	0	NO_COMMENT

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

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

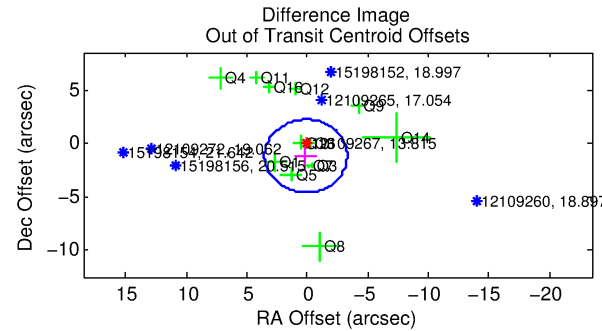
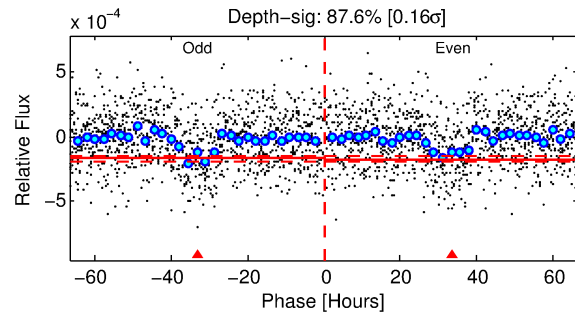
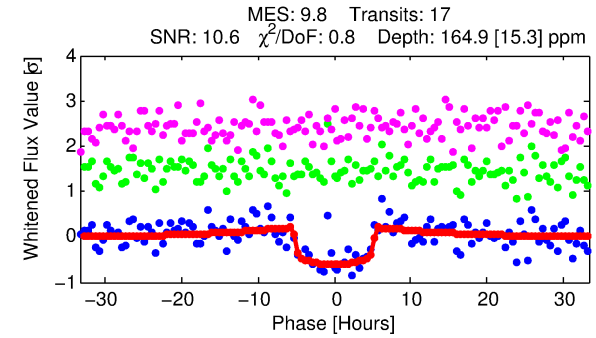
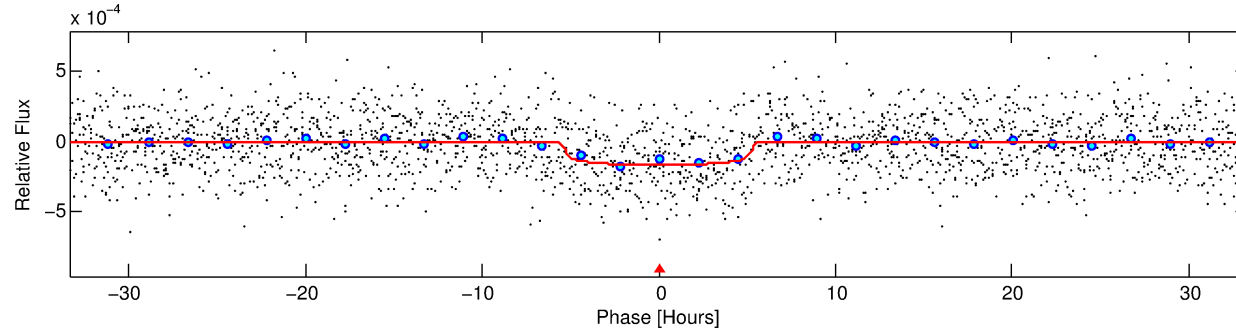
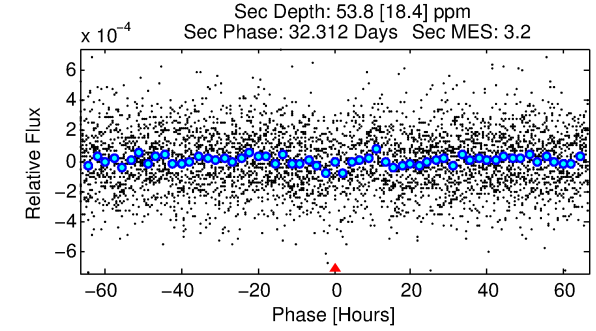
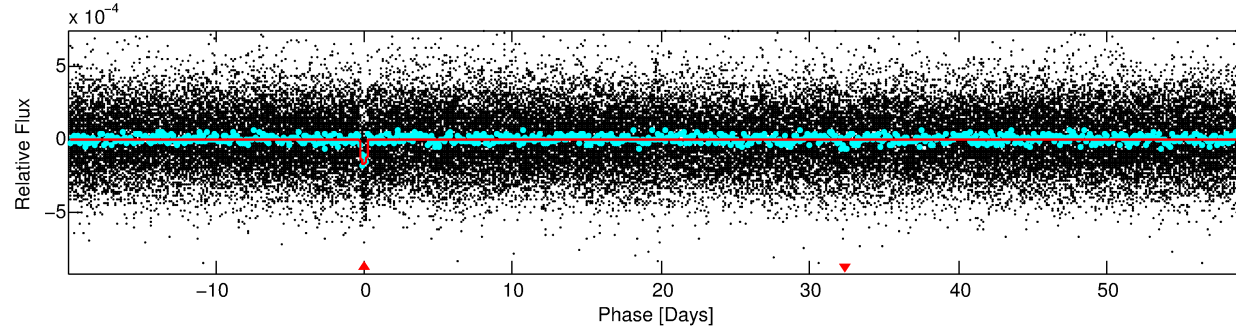
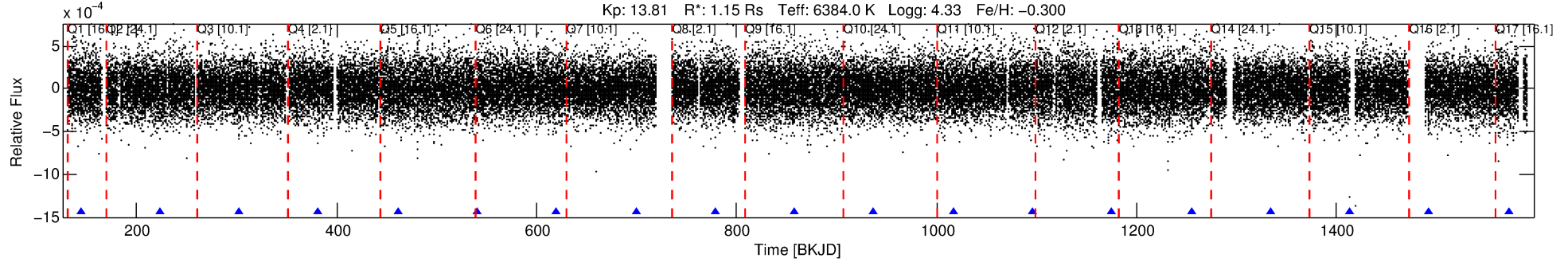
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012109267-01

No Significant Match Found

DV One-Page Summary

KIC: 12109267 Candidate: 1 of 1 Period: 79.334 d
KOI: K04457.01 Corr: 0.976



DV Fit Results:

Period = 79.33423 [0.00131] d
Epoch = 144.0250 [0.0138] BKJD
Rp/R* = 0.0133 [0.0024]
a/R* = 29.74 [28.40]
b = 0.85 [0.30]
Seff = 14.76 [5.61]
Teq = 500 [48] K
Rp = 1.67 [0.58] Re
a = 0.3651 [0.0900] AU
Ag = 1409.17 [861.14] [1.64σ]
Teffp = 4735 [606] K [6.97σ]

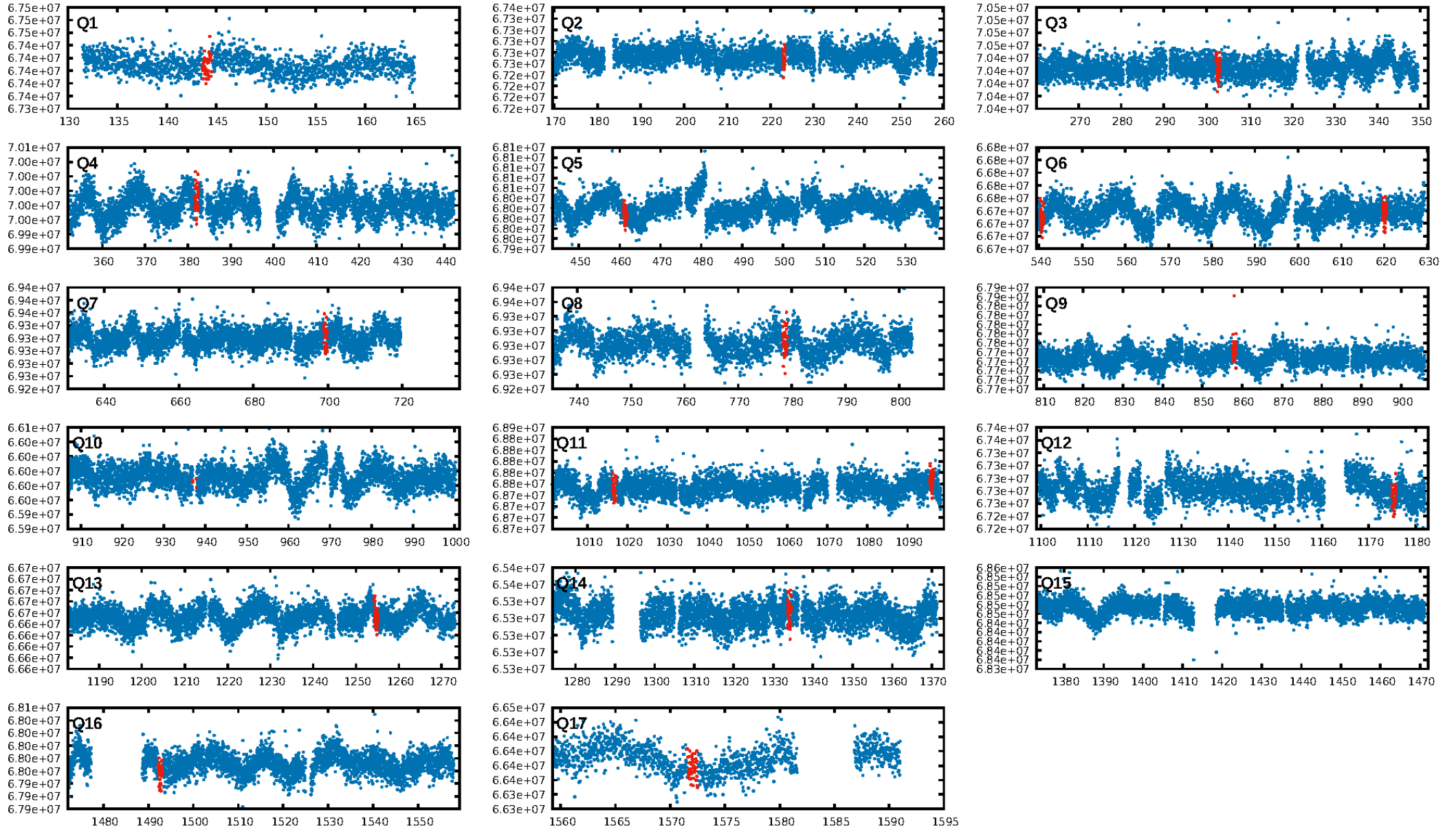
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 48.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.54e-22
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 1.676
Centroid-sig: 4.7%
Centroid-so: 1.880 arcsec [1.88σ]
OotOffset-rm: 1.202 arcsec [1.06σ]
KicOffset-rm: 1.158 arcsec [1.00σ]
OotOffset-st: 2/3/4/4 [13]
KicOffset-st: 2/3/4/4 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 1.00 [14/14]

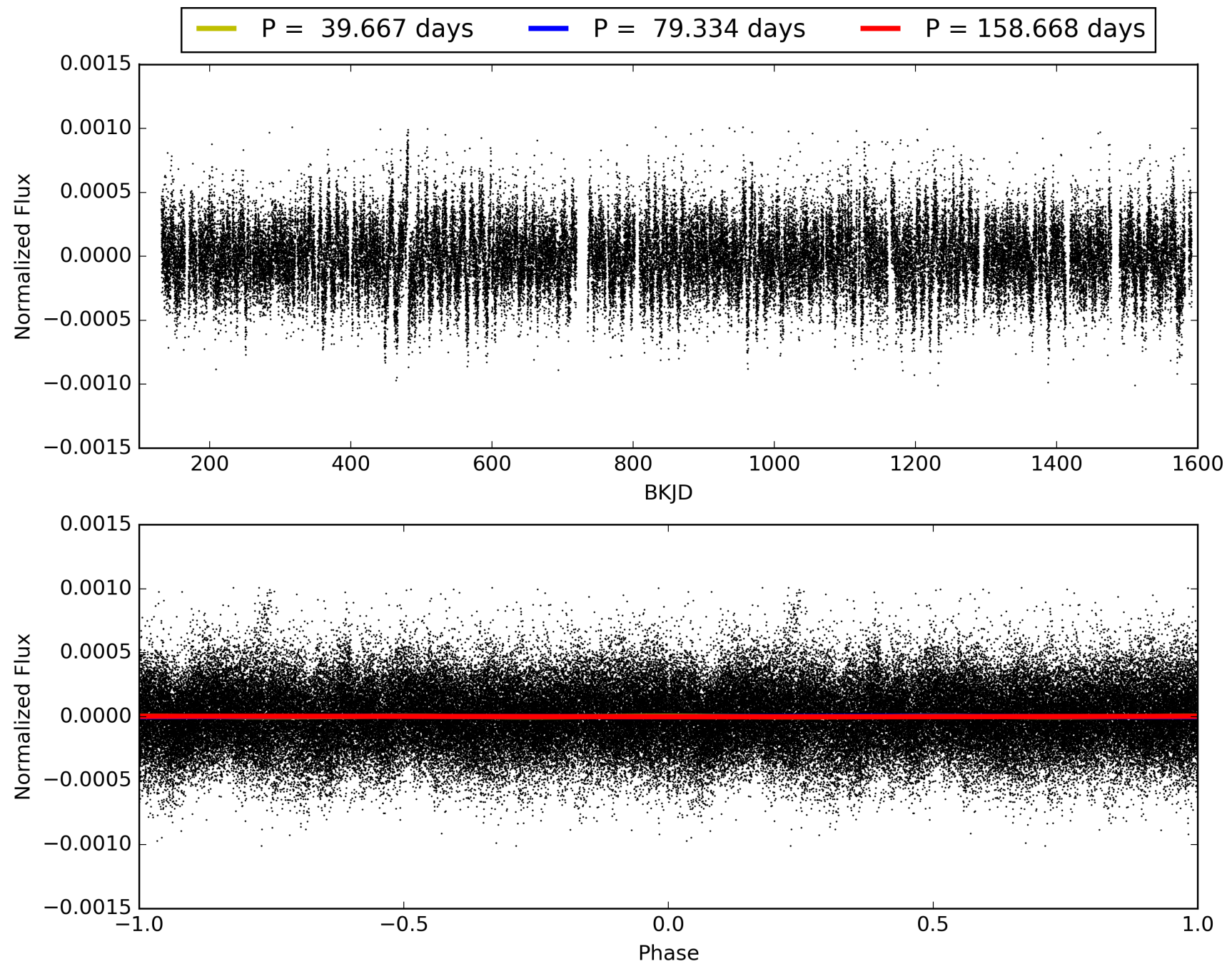
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:30:33 Z

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

TCE 012109267-01, PDC Light Curves

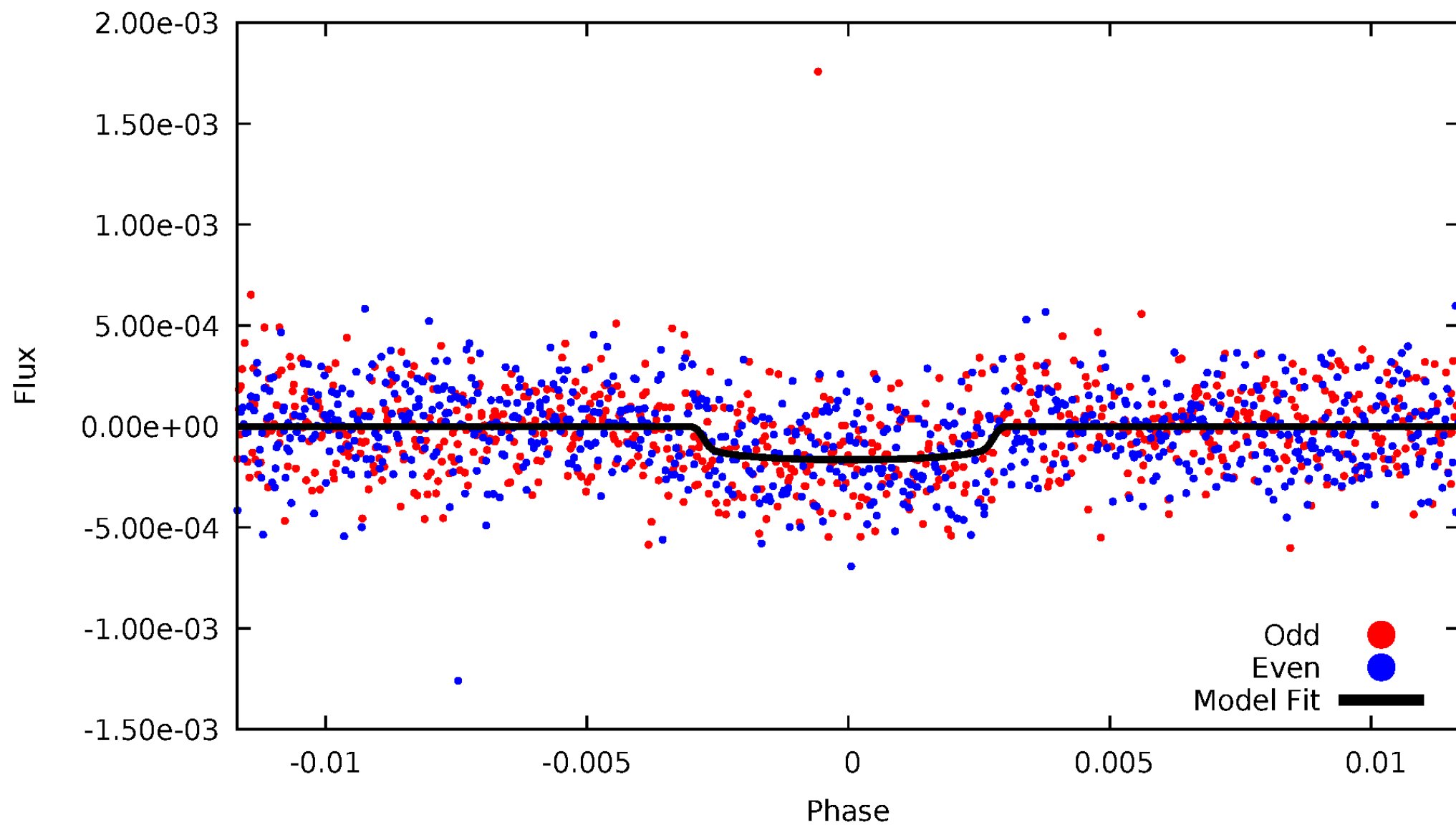


TCE 012109267-01



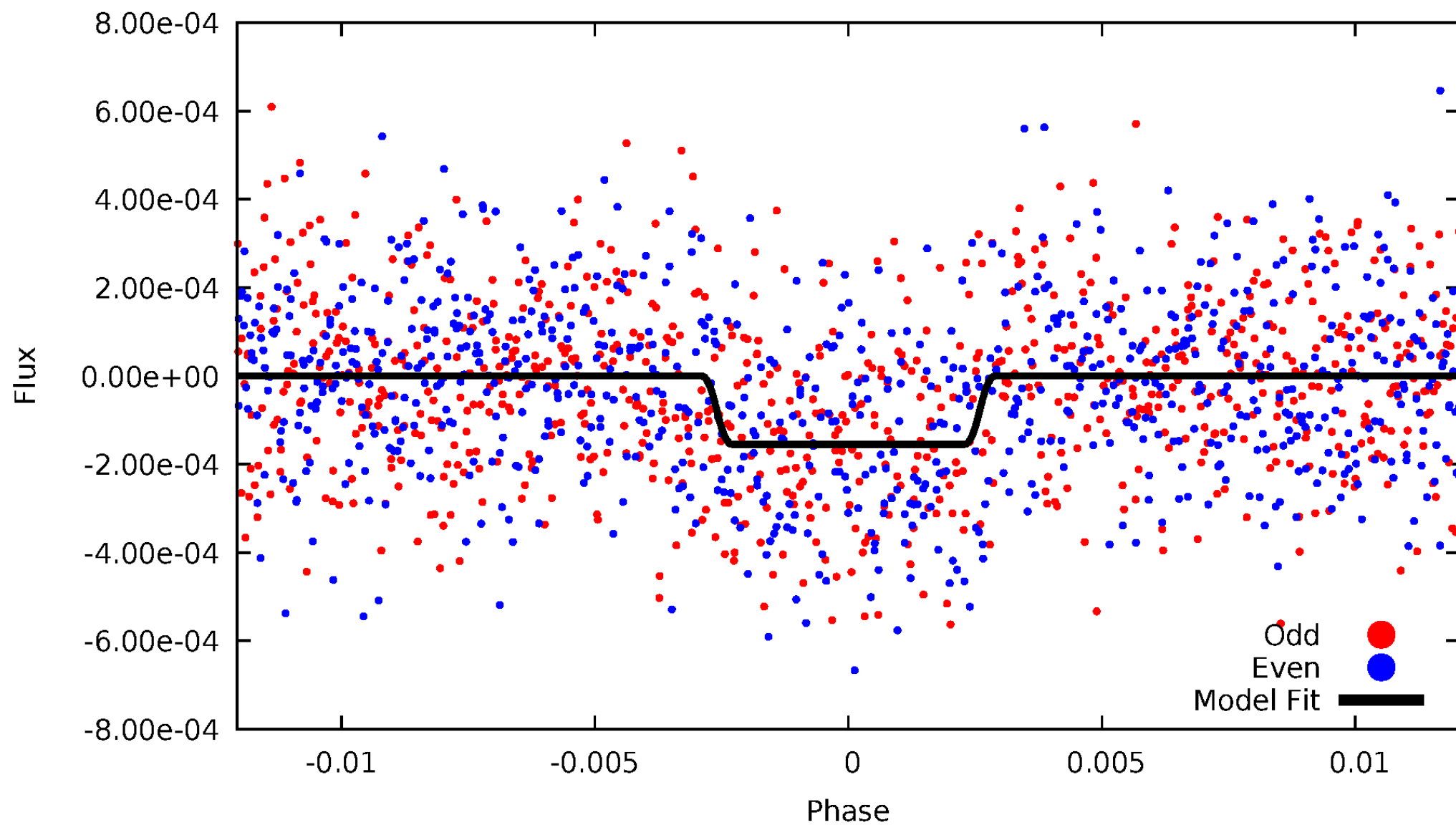
DV Odd/Even

TCE 012109267-01

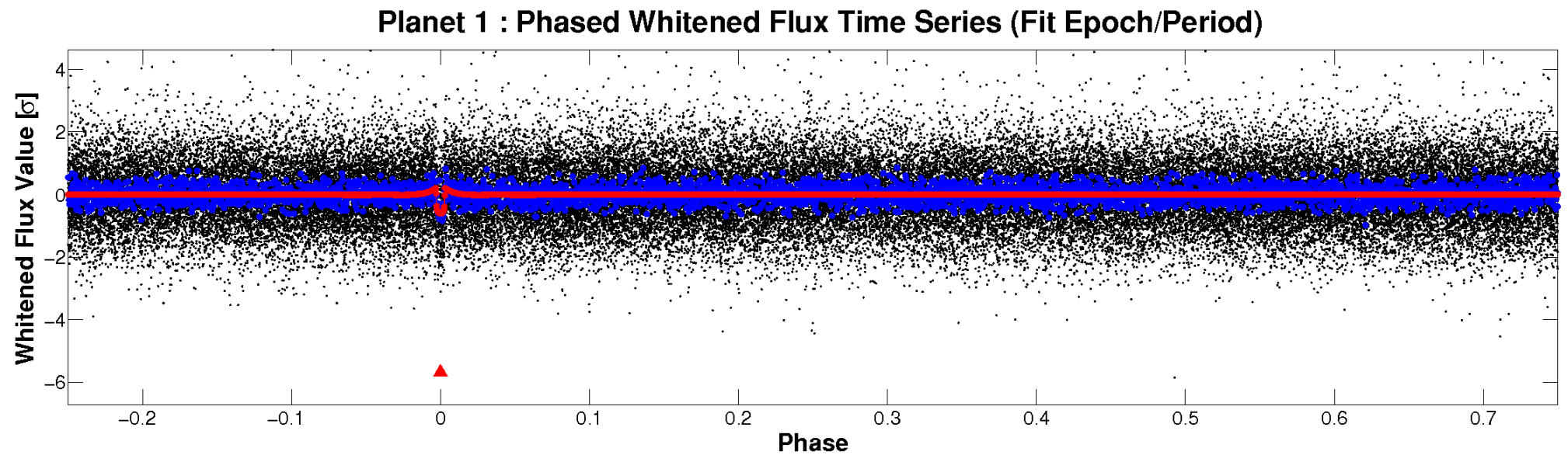
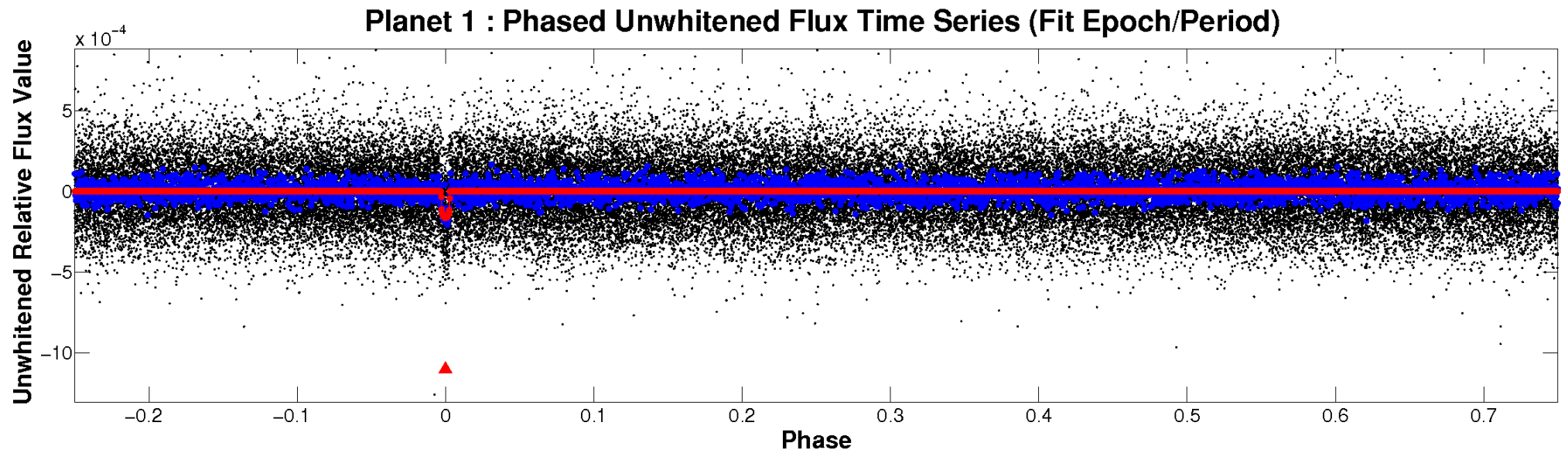


ALT Odd/Even

TCE 012109267-01

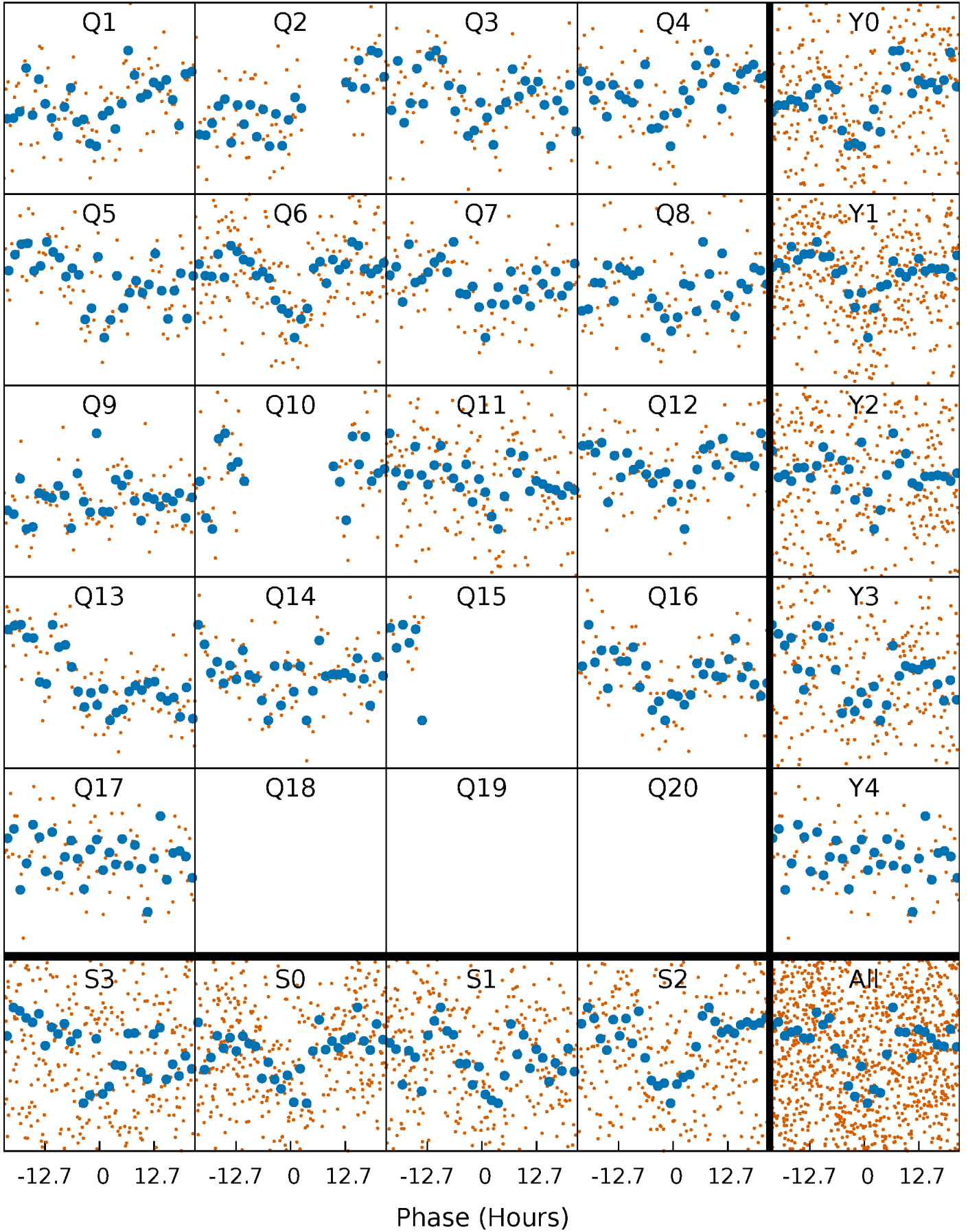


Non-Whitened Vs. Whitened Light Curve



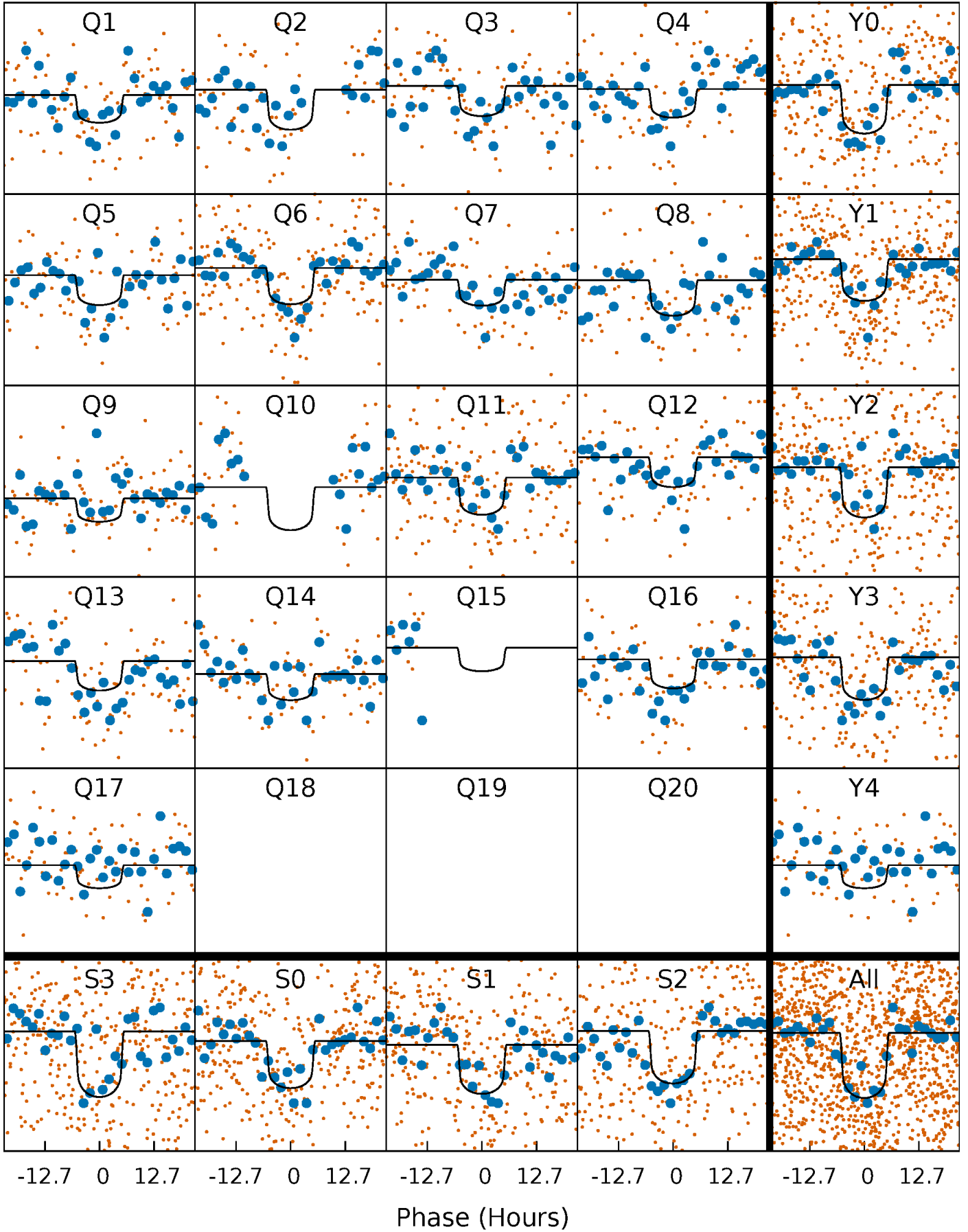
PDC Quarter-Phased Transit Curves

TCE 012109267-01 P= 79.334227 Days $T_0=144.025027$ (BKJD)



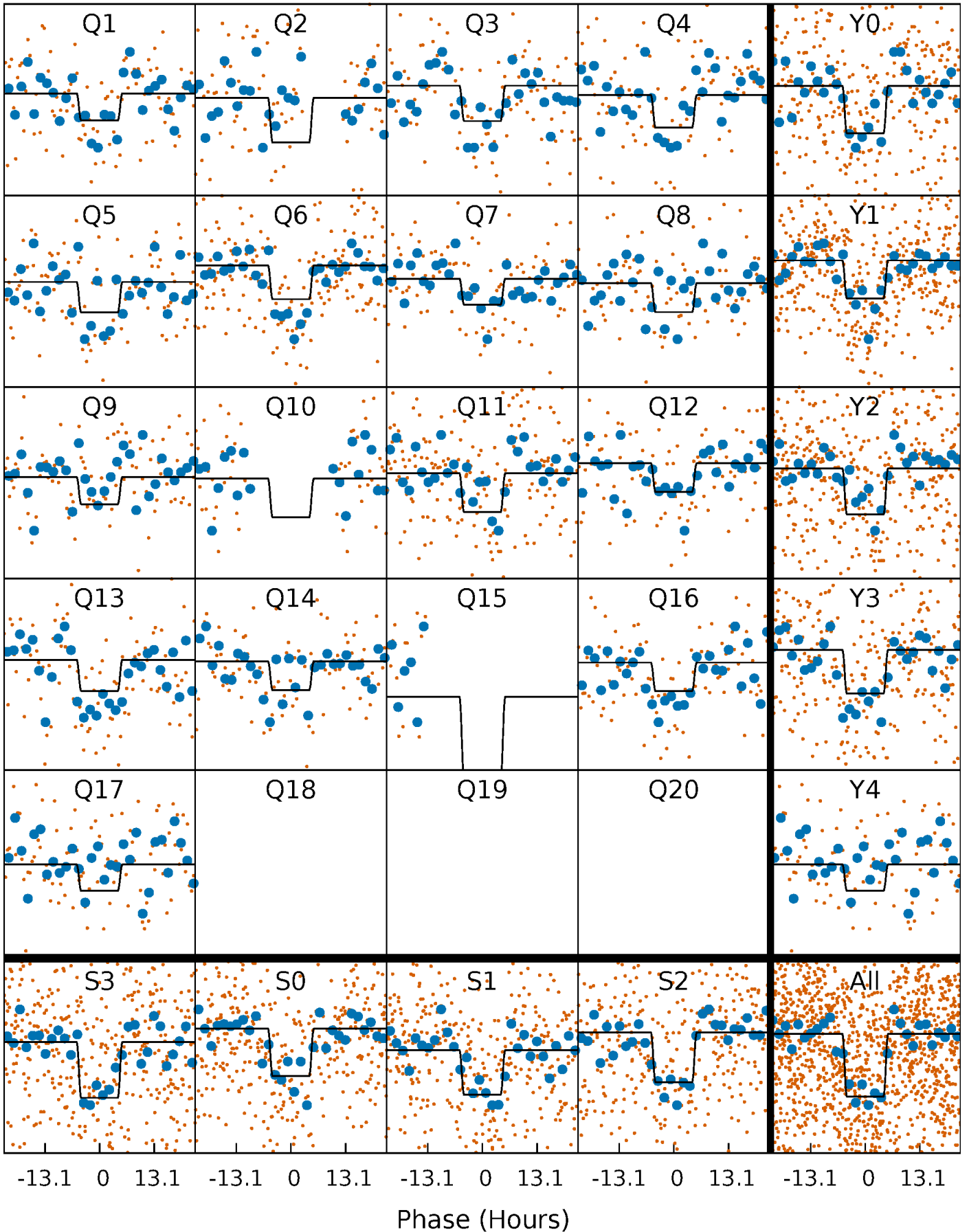
DV Quarter-Phased Transit Curves

TCE 012109267-01 P= 79.334227 Days $T_0=144.025027$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

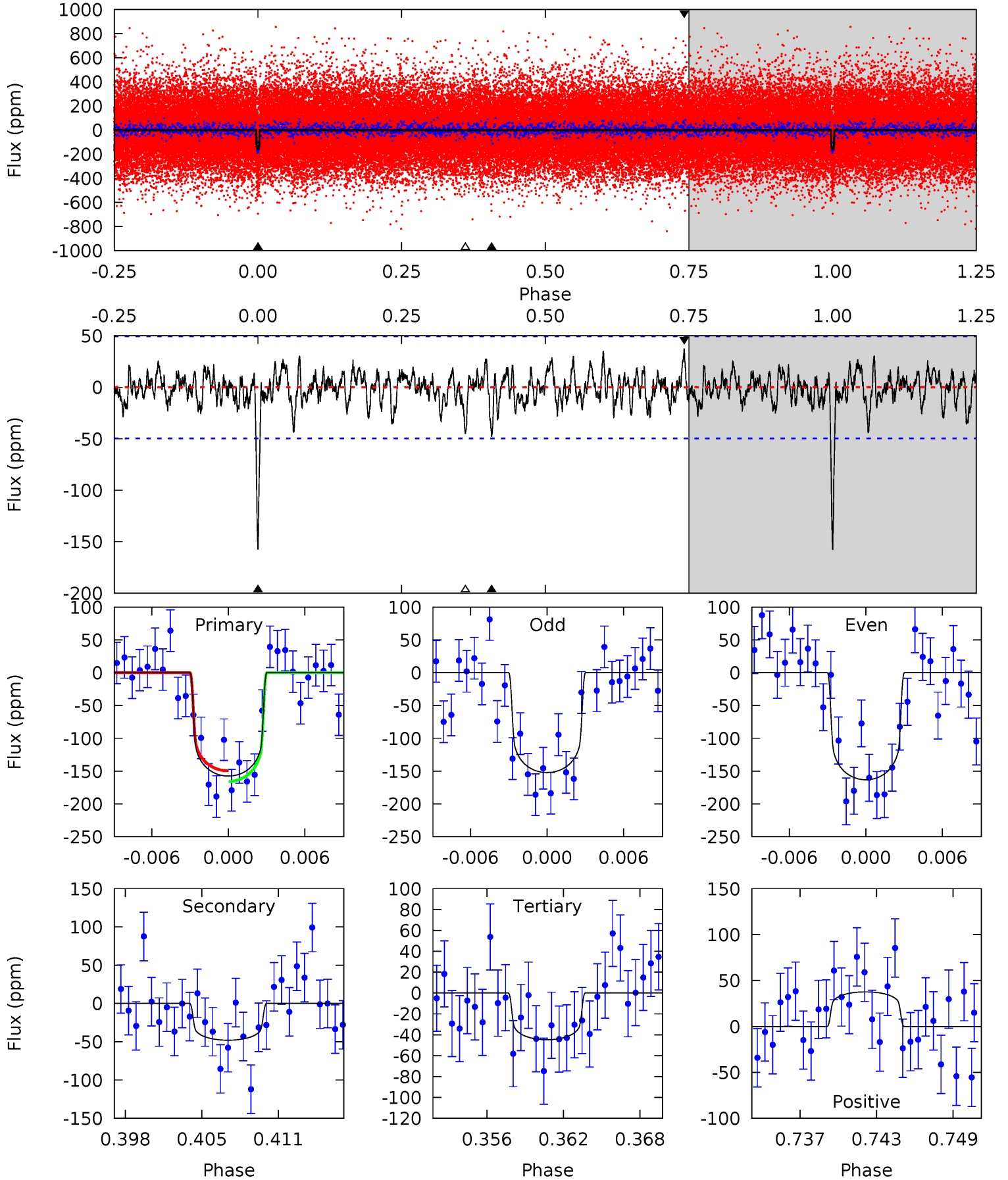
TCE 012109267-01 P= 79.334452 Days $T_0=144.017667$ (BKJD)



DV Model-Shift Uniqueness Test

012109267-01, P = 79.334227 Days, E = 64.690800 Days

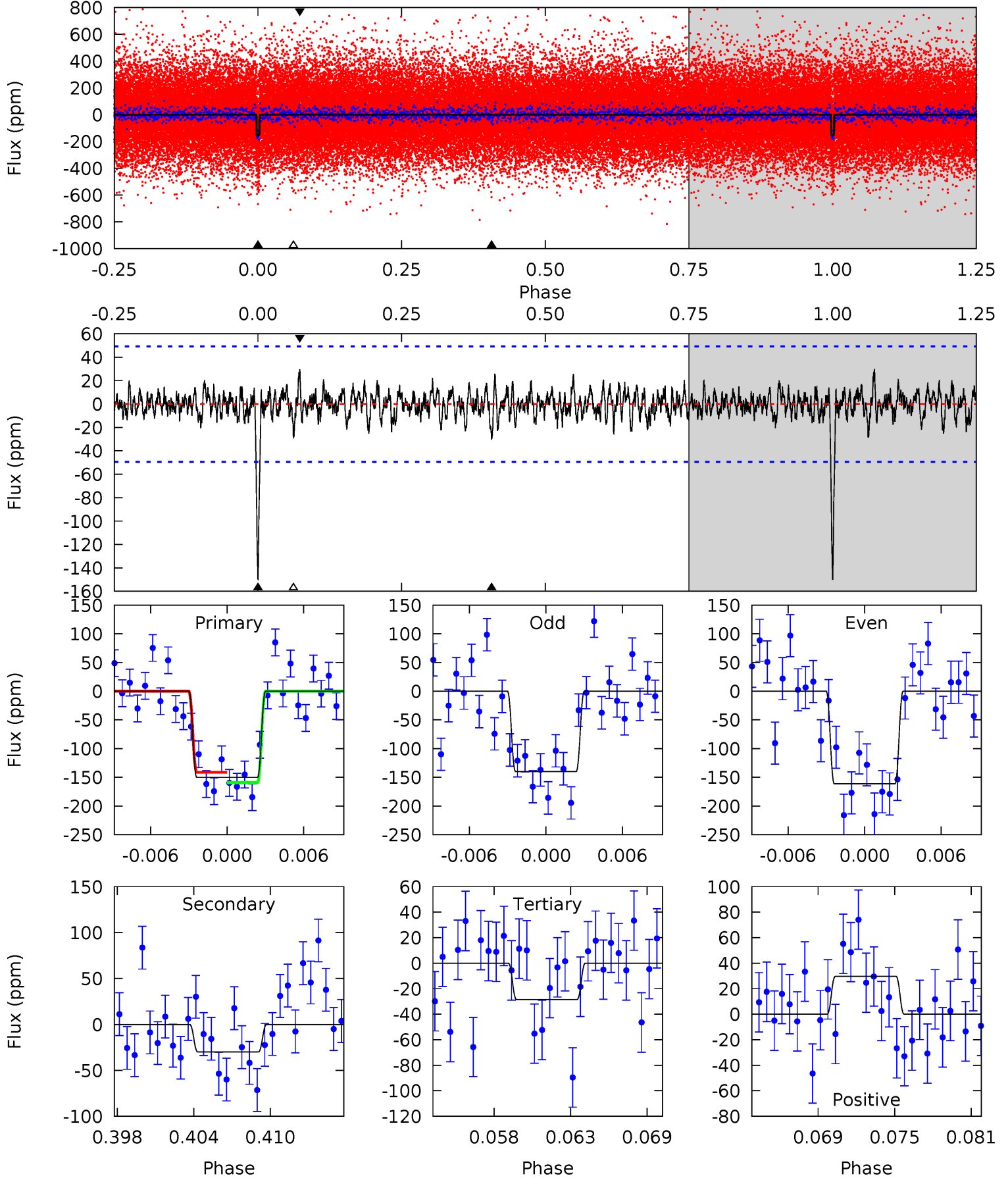
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	4.95	4.62	3.88	5.12	2.75	1.30	11.6	12.4	0.33	1.07	0.57	0.90	0.19	0.84



Alt Model-Shift Uniqueness Test

012109267-01, P = 79.334452 Days, E = 64.683215 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	3.11	2.96	3.08	5.13	2.76	0.90	12.7	12.5	0.15	0.03	1.12	0.93	0.16	0.94



Stellar Parameters For KIC 012109267

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6384^{+158}_{-206}	$4.330^{+0.120}_{-0.195}$	$-0.300^{+0.250}_{-0.300}$	$1.150^{+0.338}_{-0.182}$	$1.027^{+0.172}_{-0.106}$	$0.952^{+0.465}_{-0.472}$
	+2%/-3%	+3%/-5%	+83%/-100%	+29%/-16%	+17%/-10%	+49%/-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 012109267-01 / KOI 4457.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-48 ± 10	$1.69^{+0.43}_{-0.36}$	703^{+52}_{-42}	4724^{+498}_{-354}	1228^{+780}_{-484}
Alt.	-30 ± 10	$1.58^{+0.43}_{-0.33}$	703^{+53}_{-40}	4442^{+444}_{-414}	866^{+598}_{-388}

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

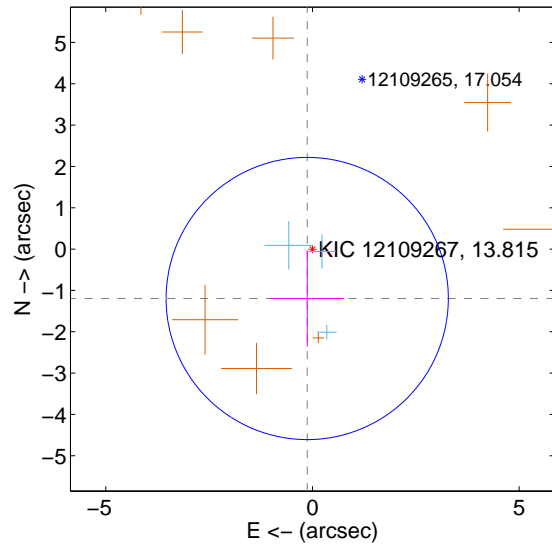
Supplemental centroid analysis for 012109267-01. Kepler magnitude: 13.81. Transit SNR 10.58

There are 3 quarters with good PRF difference image offsets

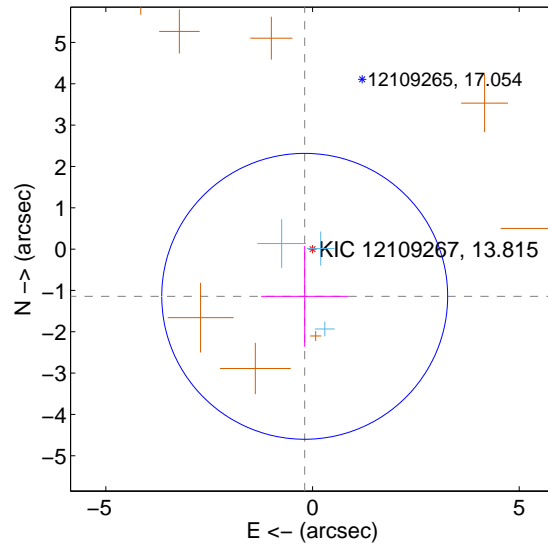
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.202 ± 1.138	1.06	0.126 ± 0.890	-1.195 ± 1.165
PRF-fit source offset from KIC position	1.158 ± 1.153	1.00	0.189 ± 1.054	-1.142 ± 1.220
photometric centroid source offset	1.88 ± 1.00	1.88	-1.83 ± 0.99	0.43 ± 1.18

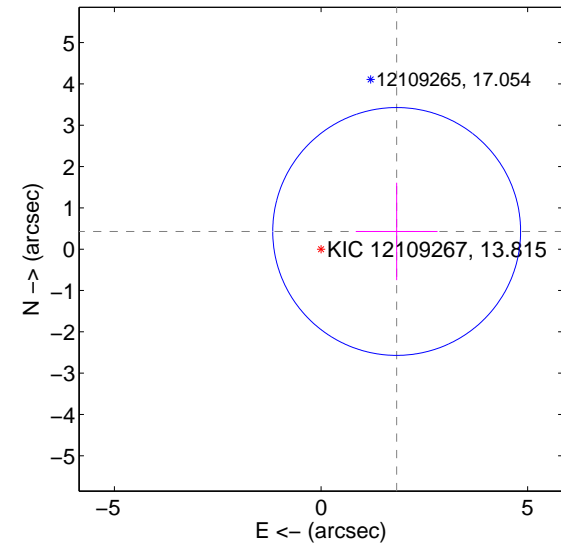
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

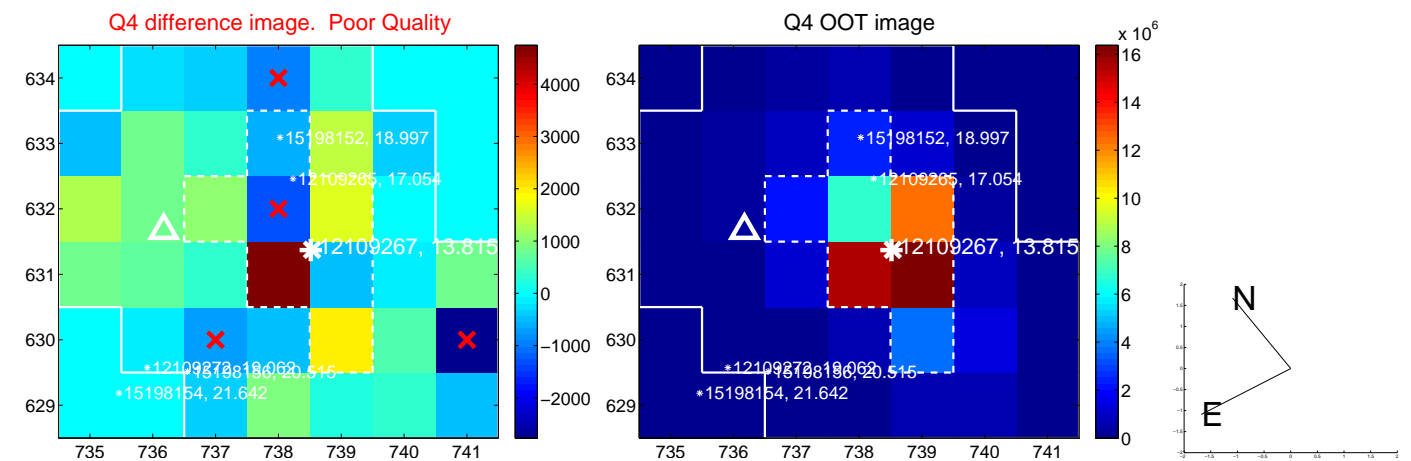
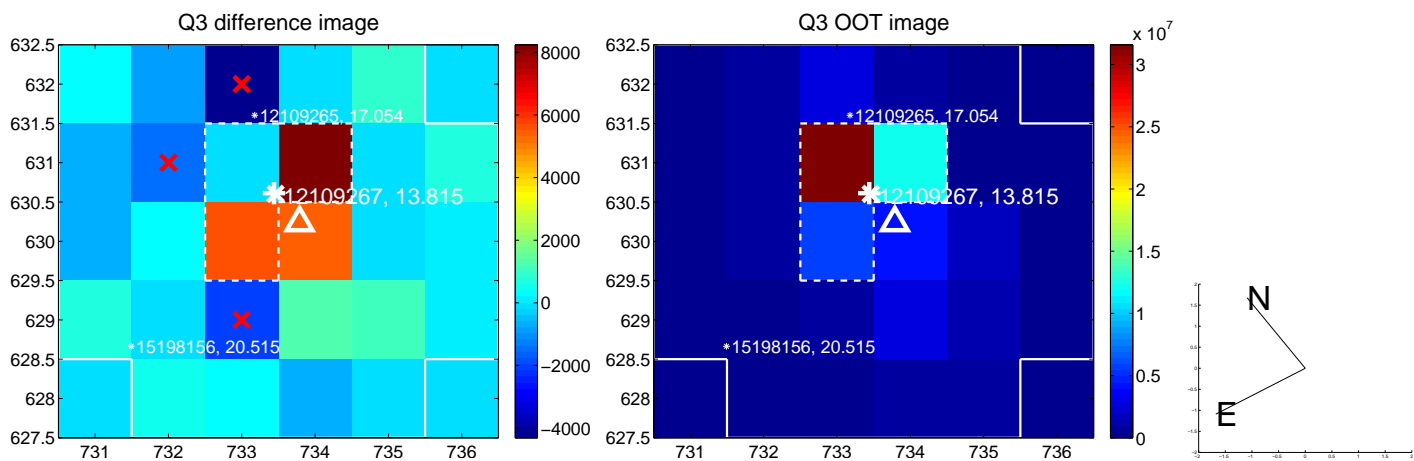
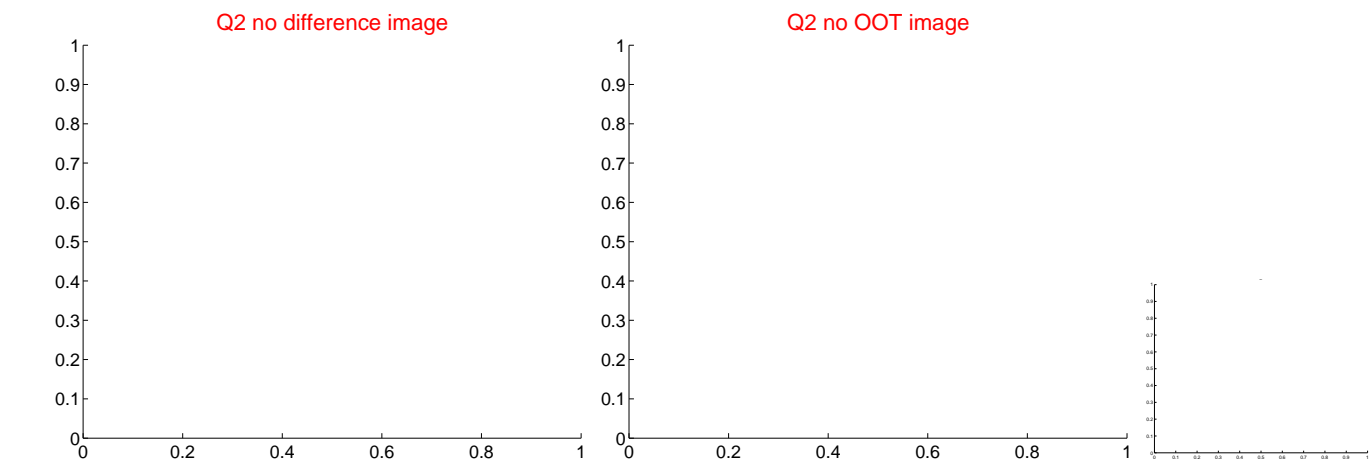
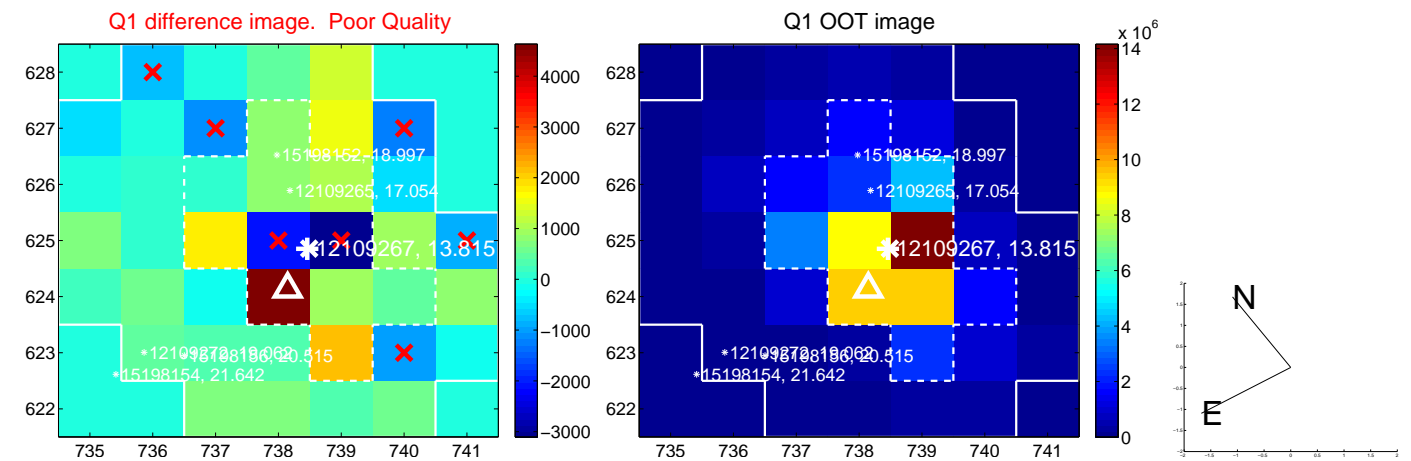


offset from photometric centroids

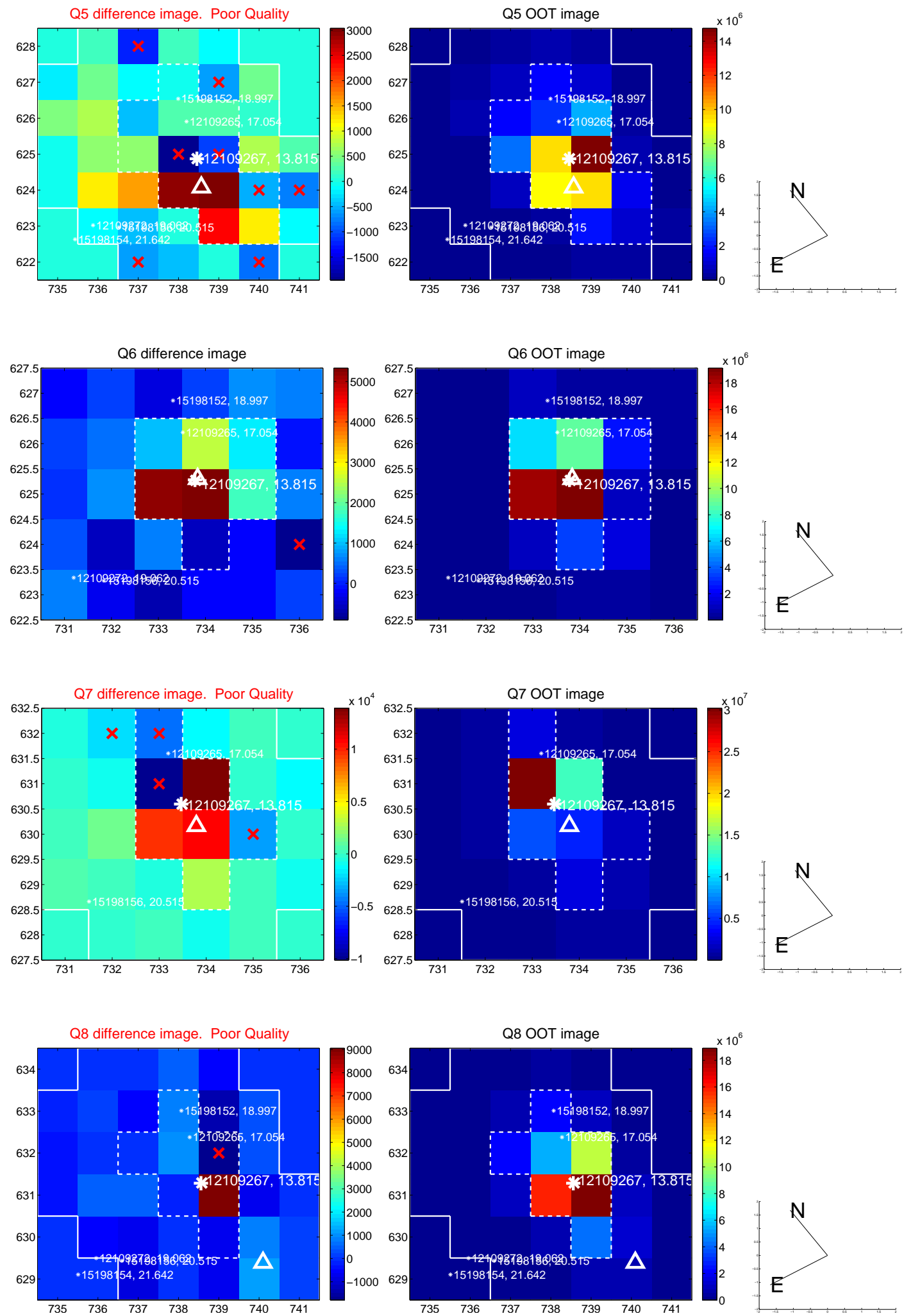


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

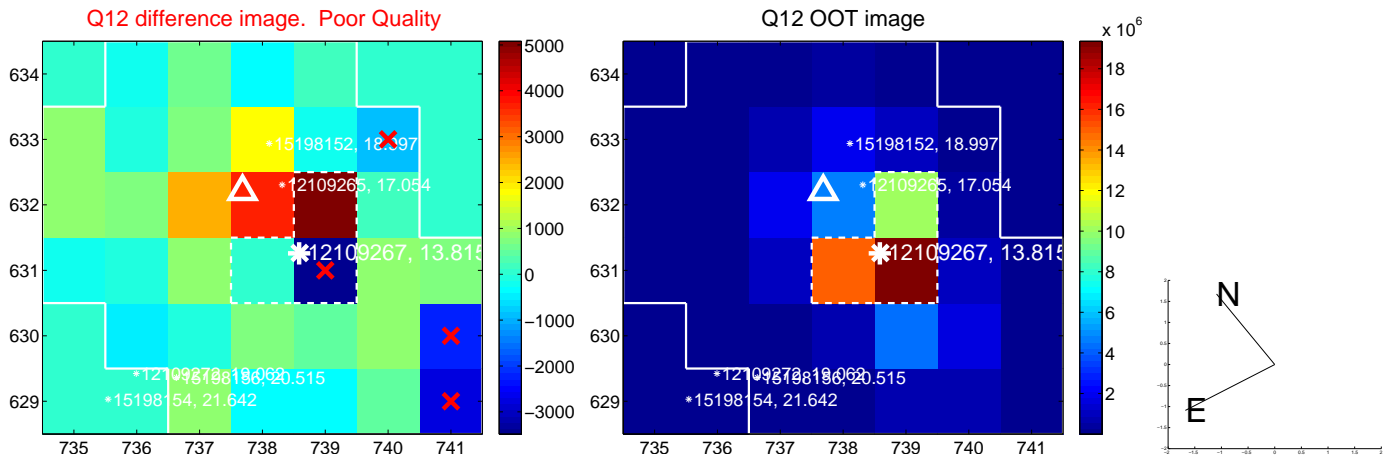
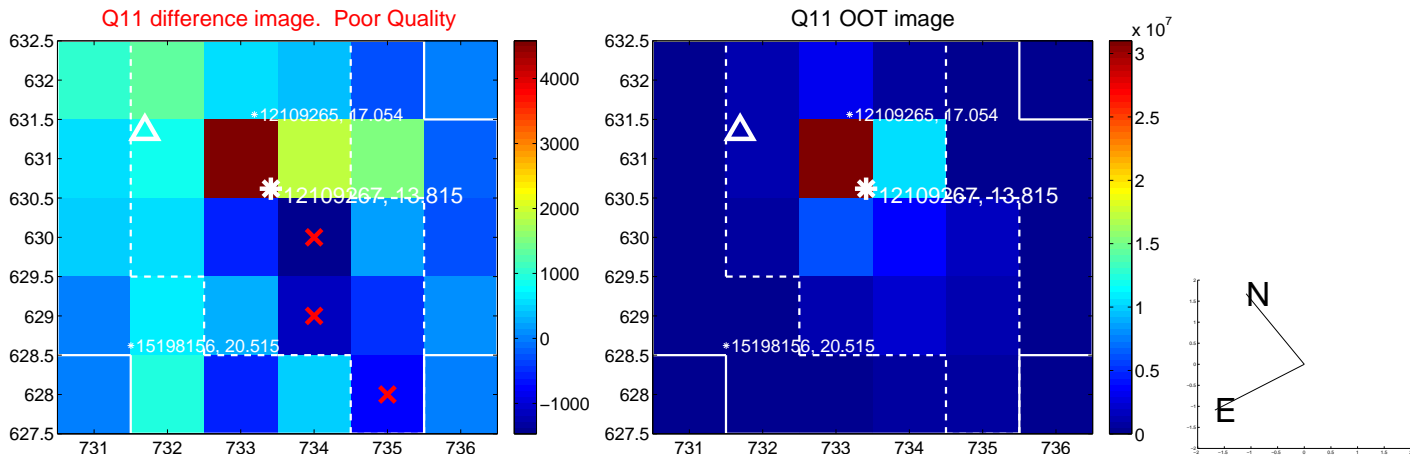
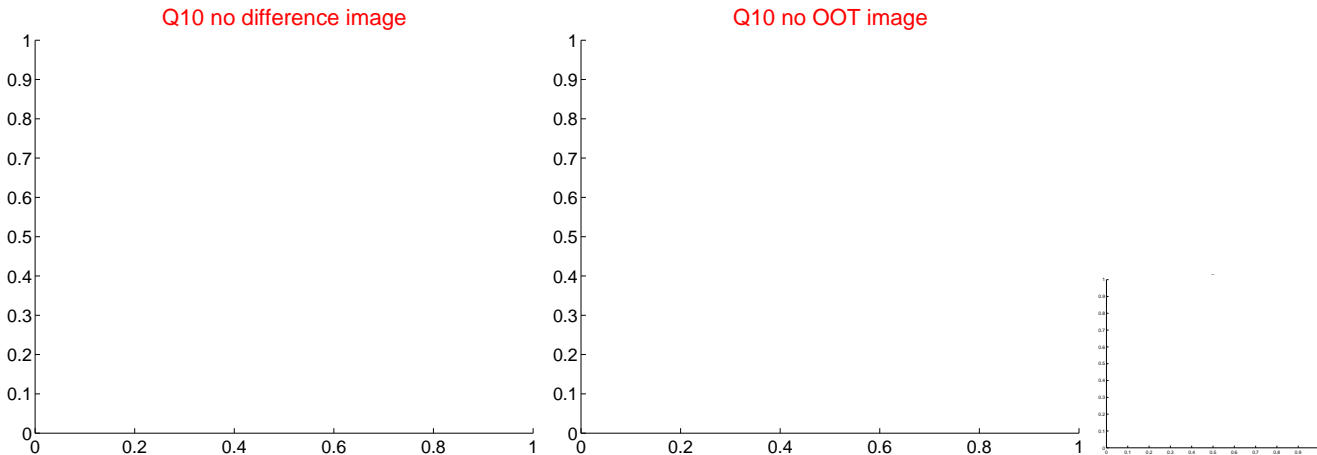
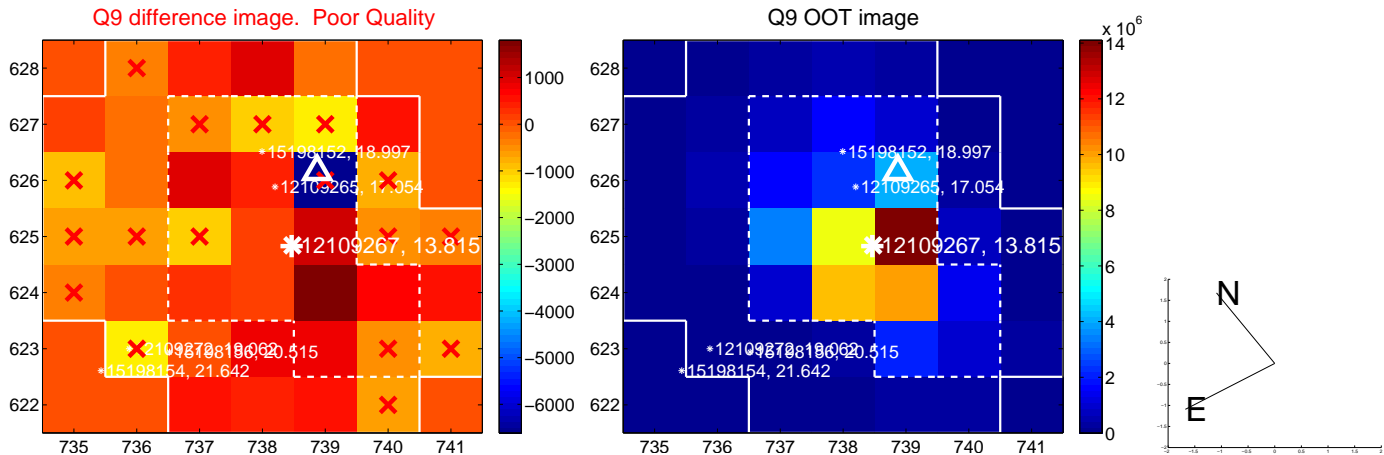
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



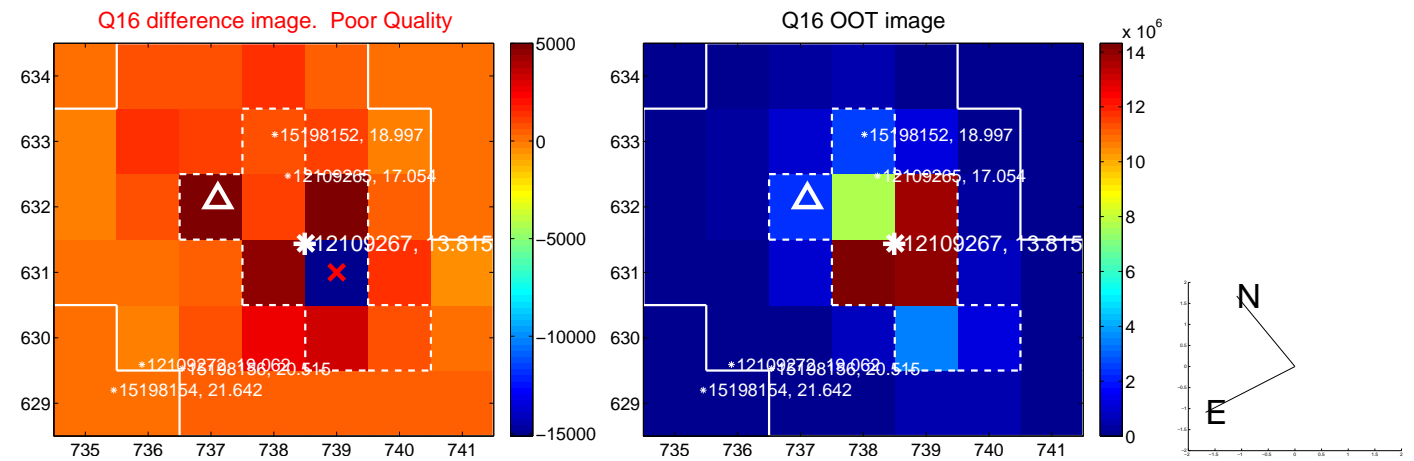
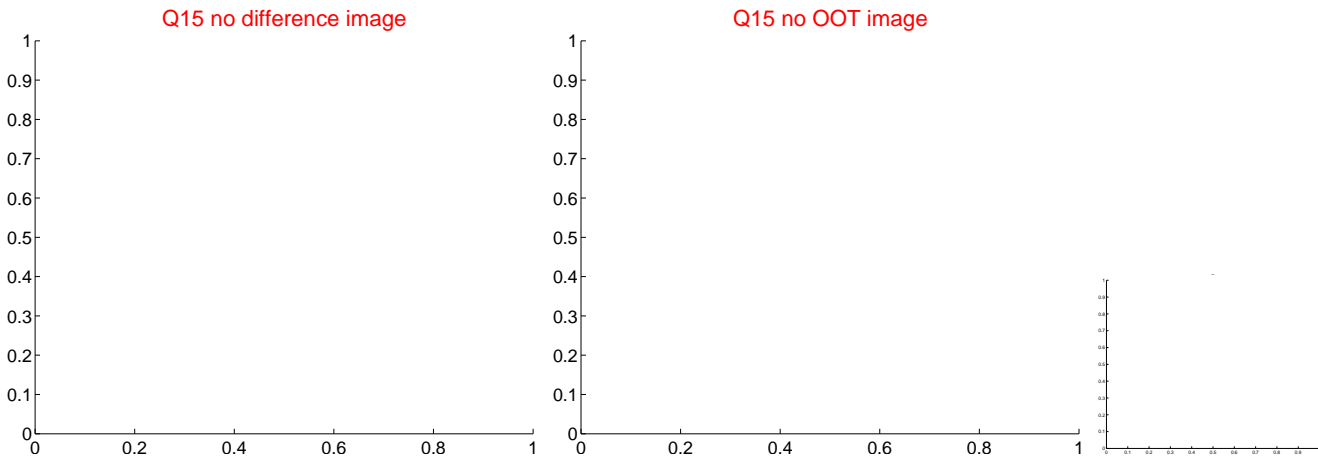
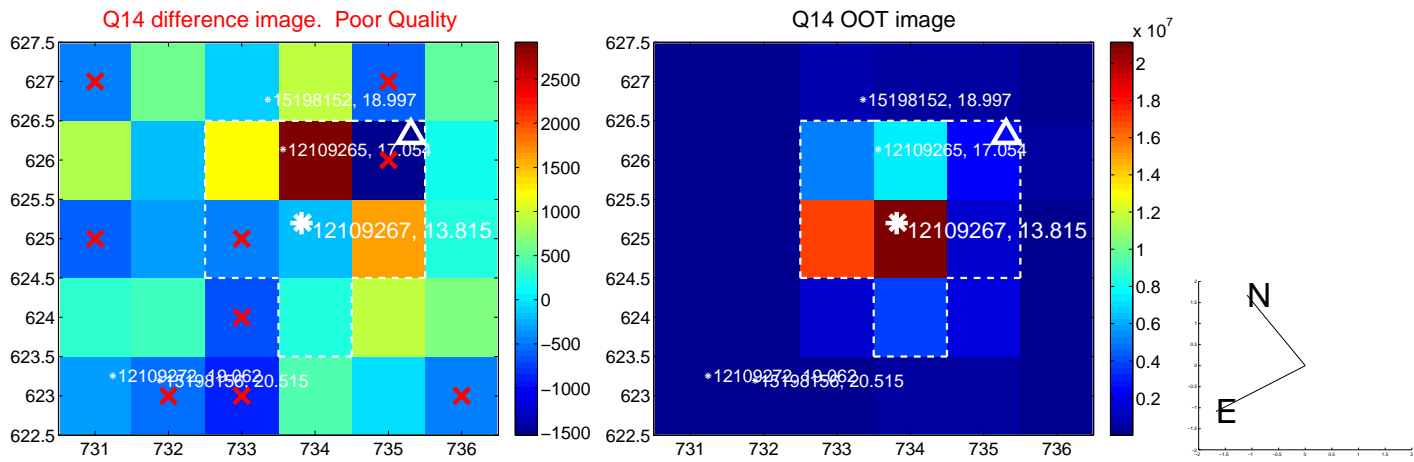
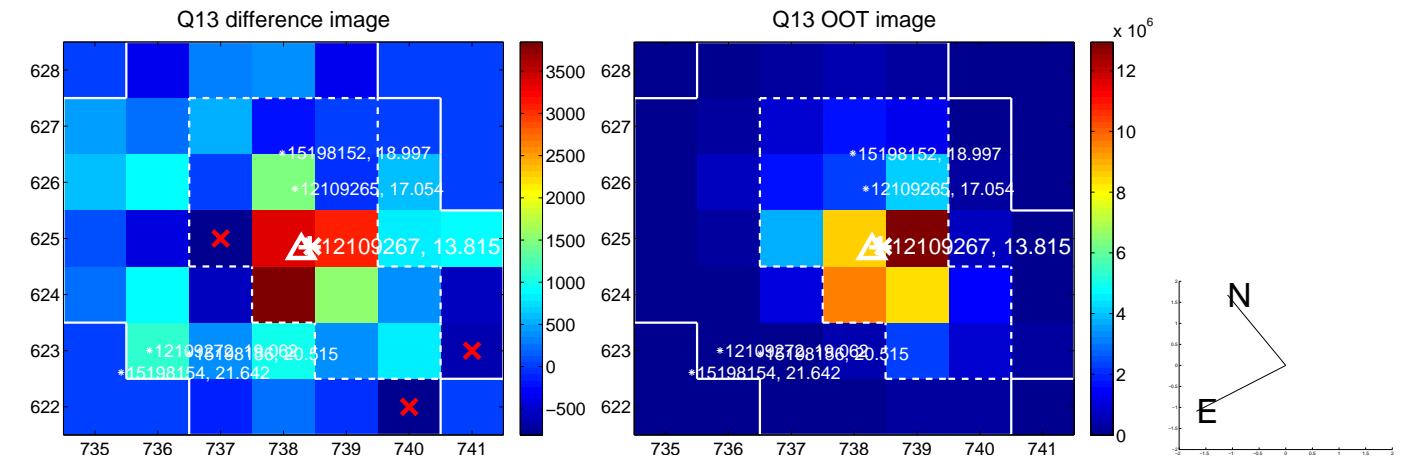
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



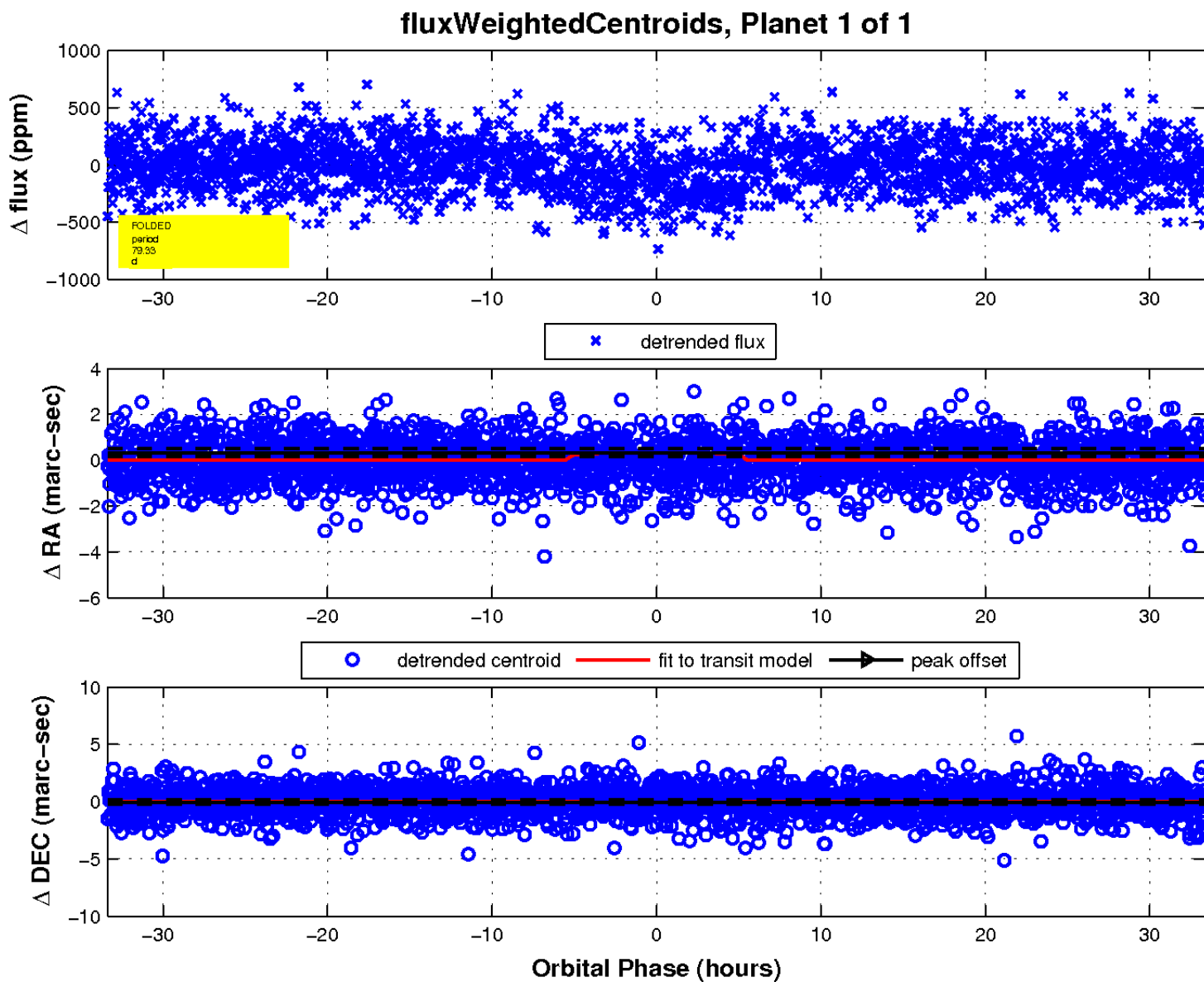
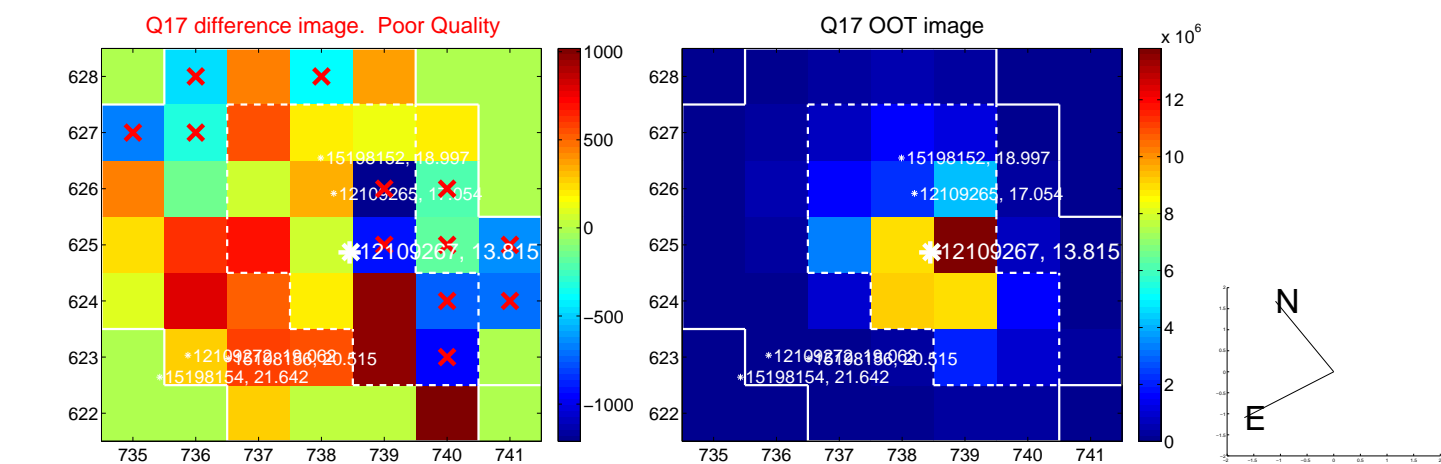
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

