

KIC 005444491

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})
005444491-01	OBS	7727.01	0.759718	131.823131	19.6	4.429	10.3	7.1	1.01	6046	0.48	4258.44
005444491-02	OBS	No	44.458642	143.319053	495.9	1.834	10.0	7.8	1.01	6046	2.65	18.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005444491-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005444491-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—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.

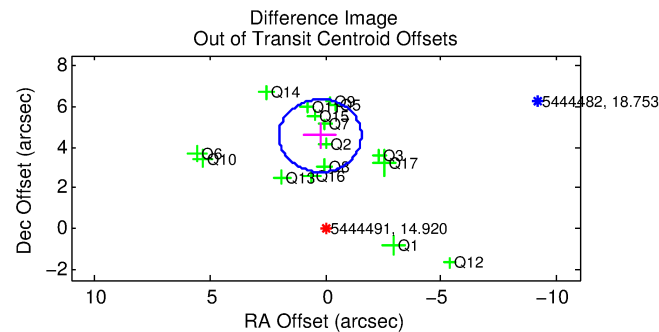
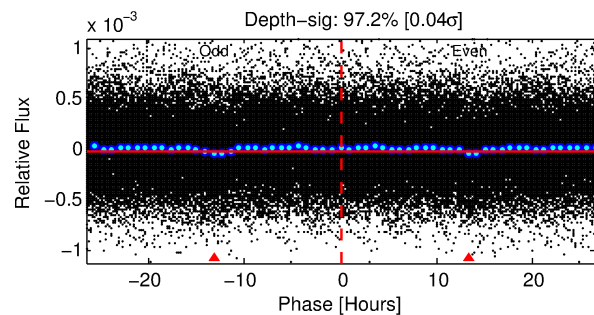
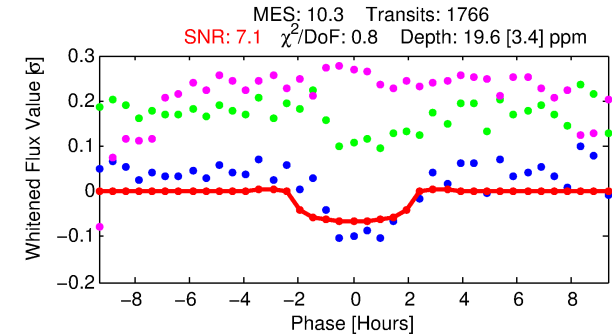
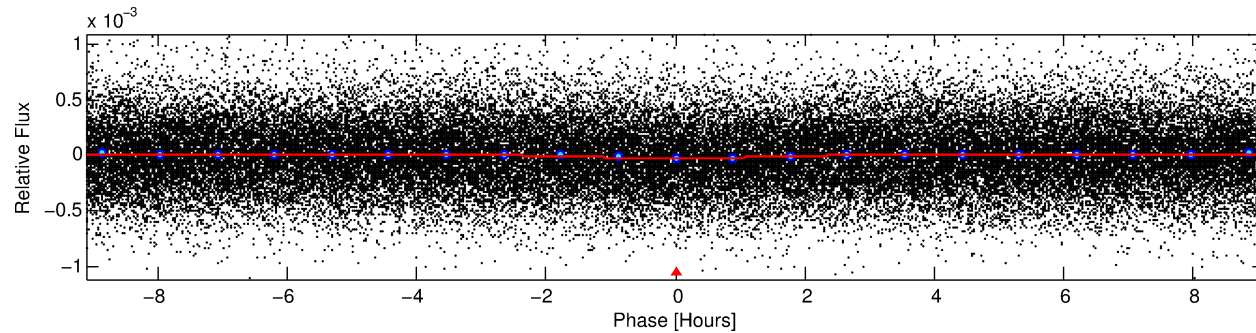
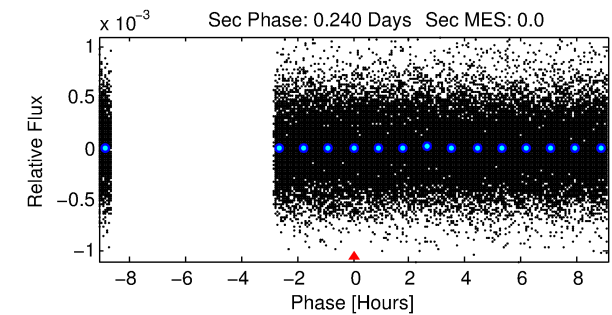
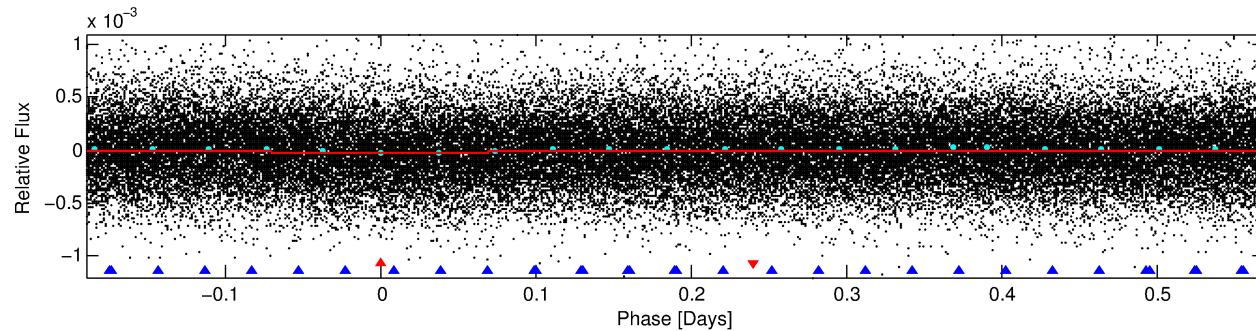
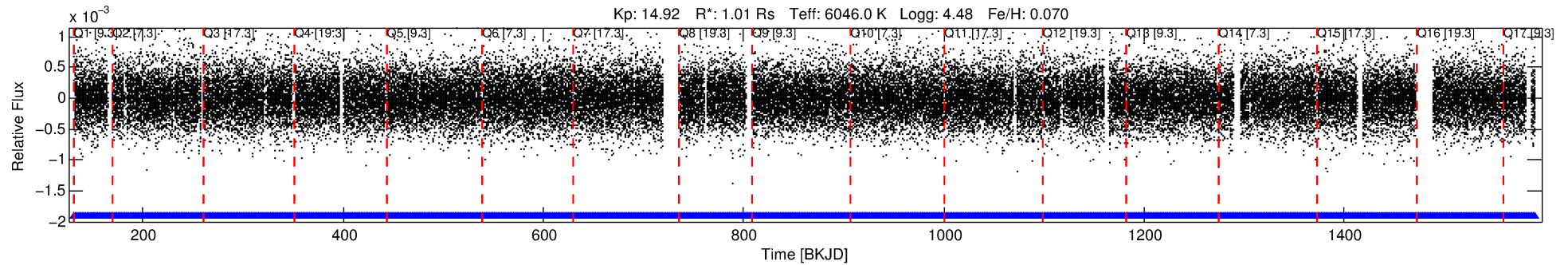
Ephemeris Match Information For 005444491-01

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
005444491-01	5444491	005529738-01	5529738	1:1	76.2	-19	-1	14.87	14.92	1.85	Direct-PRF	1	0.99	0.14

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: 5444491 Candidate: 1 of 2 Period: 0.760 d



DV Fit Results:

Period = 0.75972 [0.00002] d
Epoch = 131.8231 [0.0073] BKJD
Rp/R* = 0.0044 [0.0042]
a/R* = 1.24 [1.99]
b = 0.73 [3.06]
Seff = 4258.43 [1416.29]
Teff = 2060 [171] K
Rp = 0.48 [0.48] Re
a = 0.0169 [0.0034] AU
Ag = N/A
Teffp = N/A

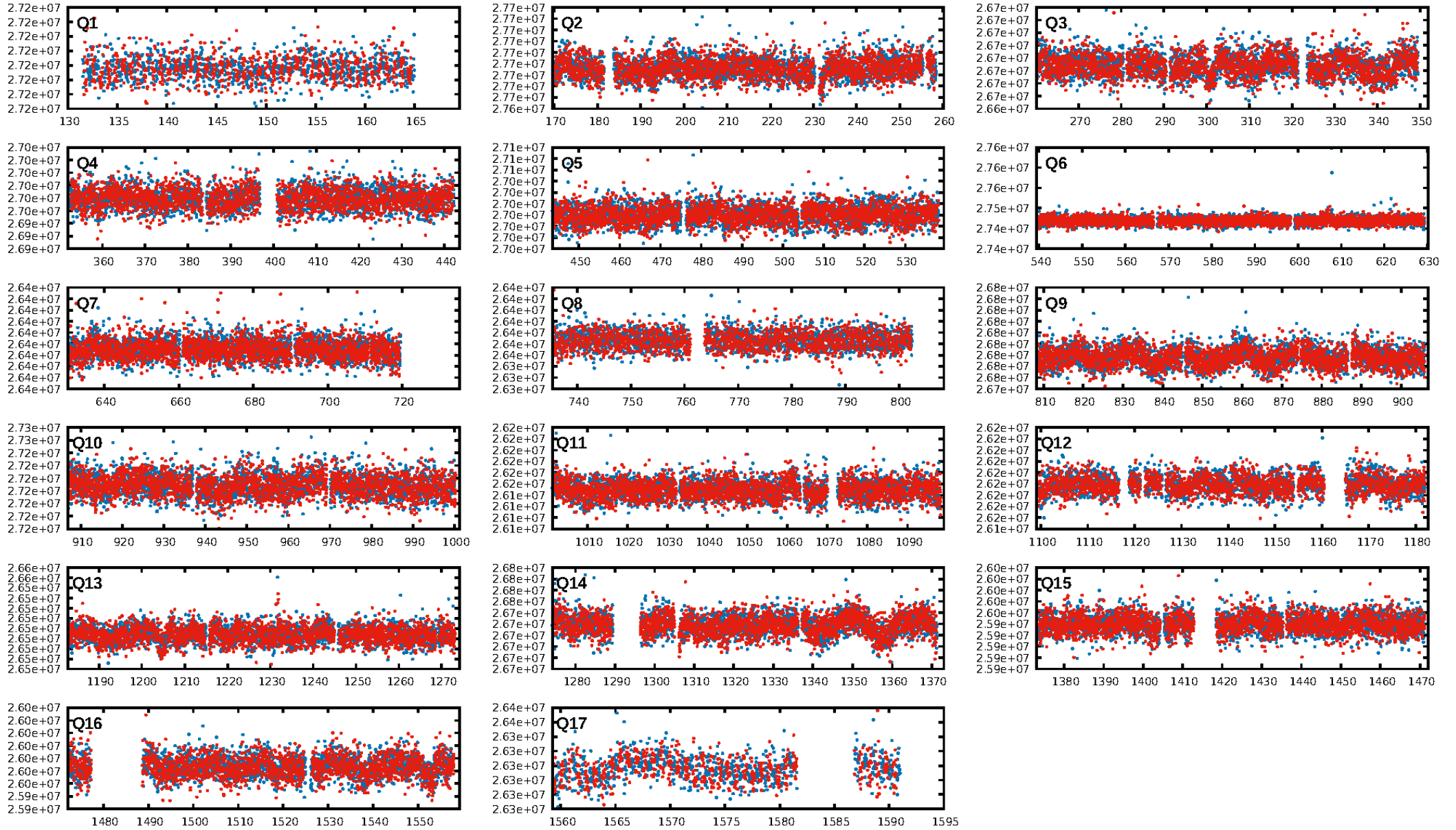
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [218.77 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.09e-18
RollingBand-fgt: 1.00 [1687/1687]
GhostDiagnostic-chr: -0.08536
Centroid-sig: 0.0%
Centroid-so: 12.060 arcsec [6.52 σ]
OotOffset-rm: 4.572 arcsec [7.70 σ]
KicOffset-rm: 4.681 arcsec [7.87 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.12 [2/16]
DiffImageOverlap-fno: 1.00 [17/17]

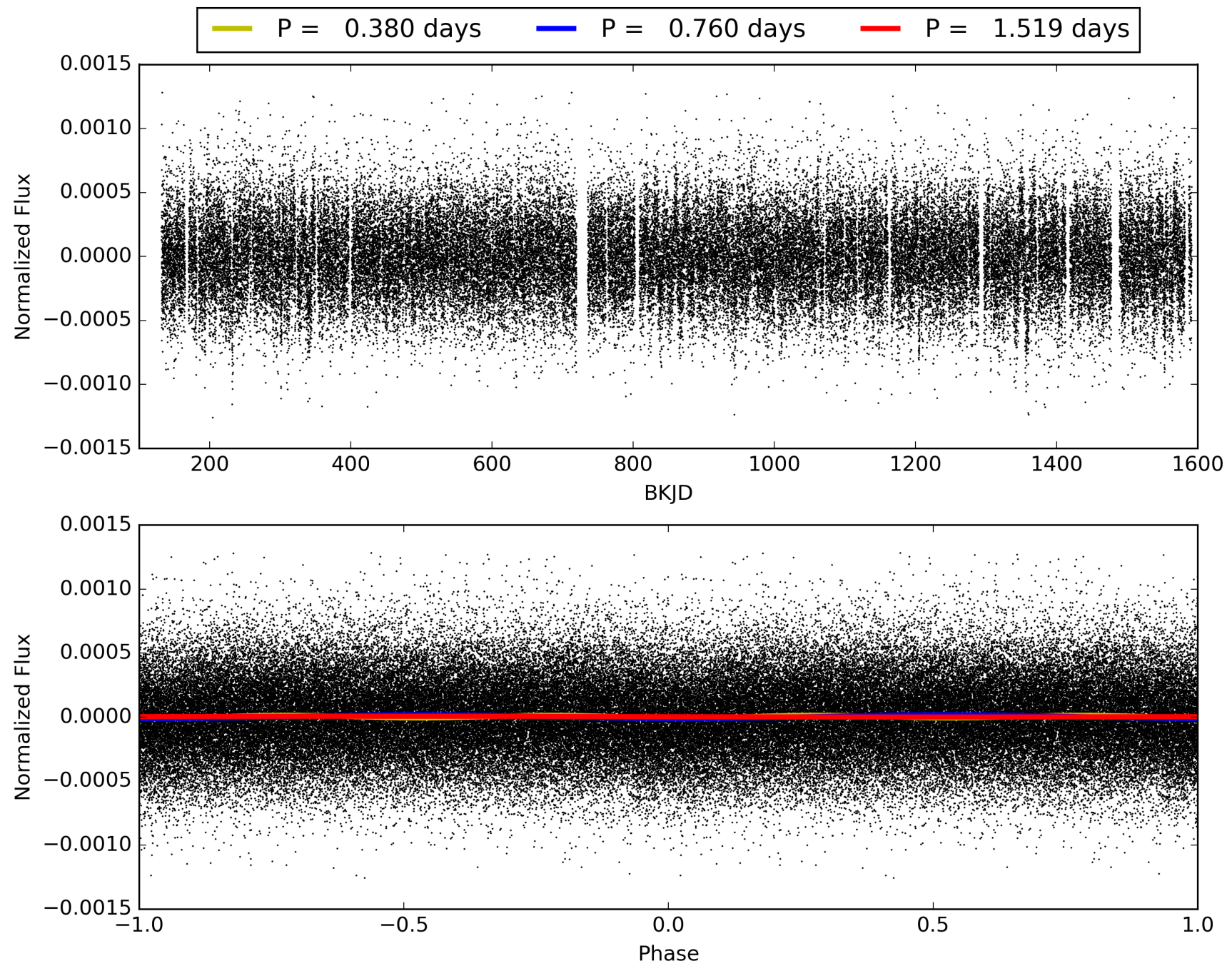
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:35:27 Z

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

TCE 005444491-01, PDC Light Curves

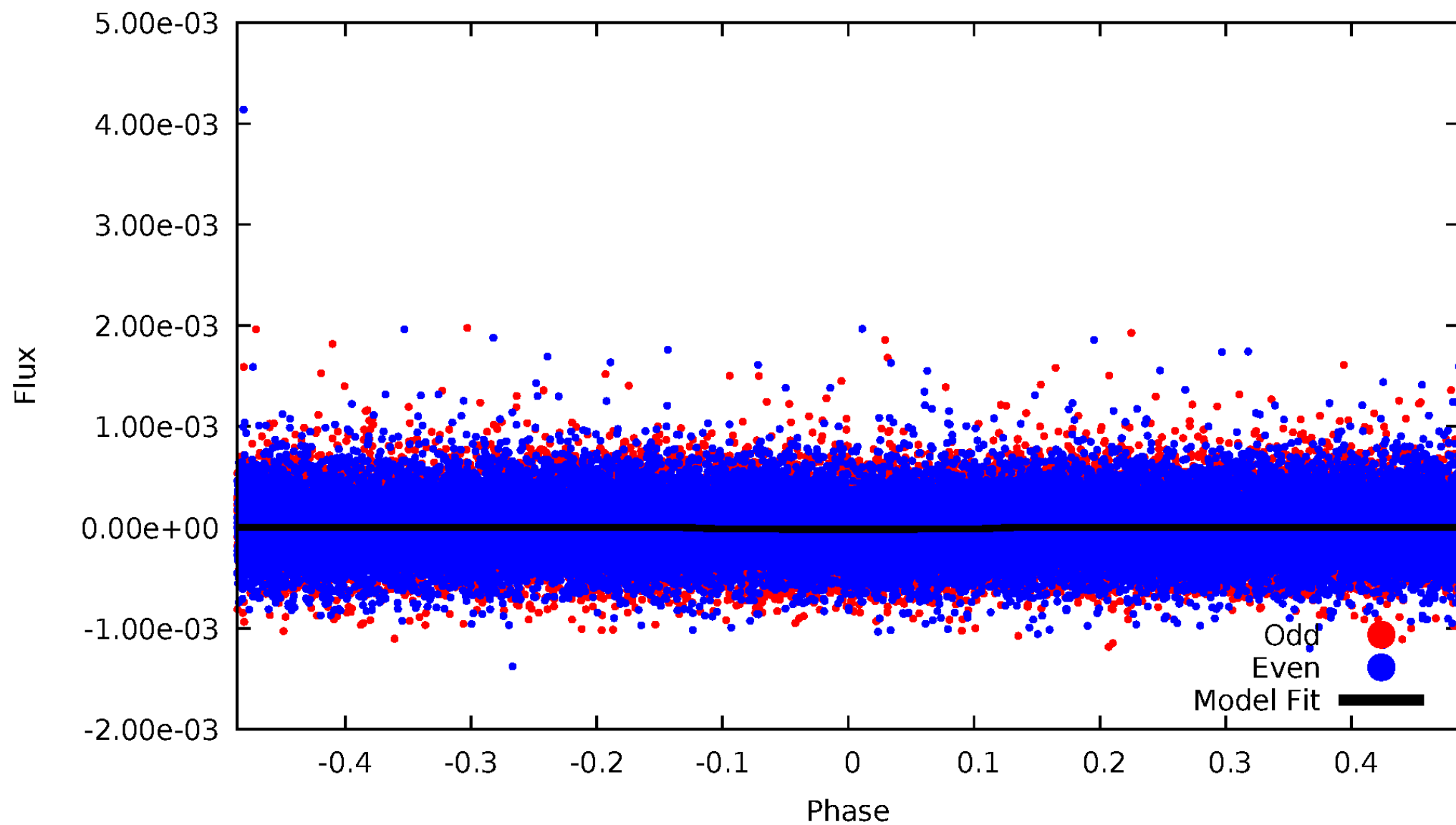


TCE 005444491-01



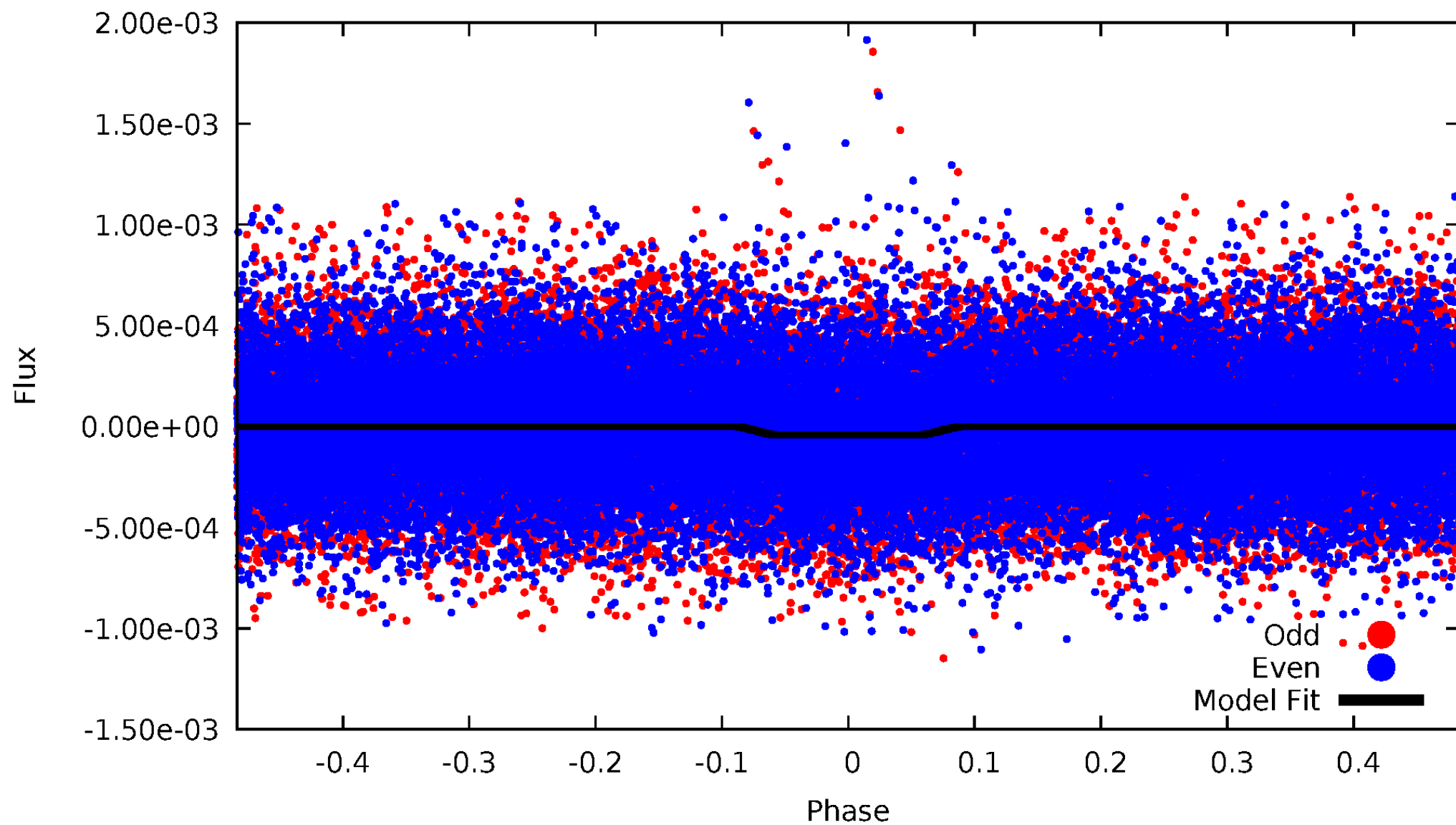
DV Odd/Even

TCE 005444491-01

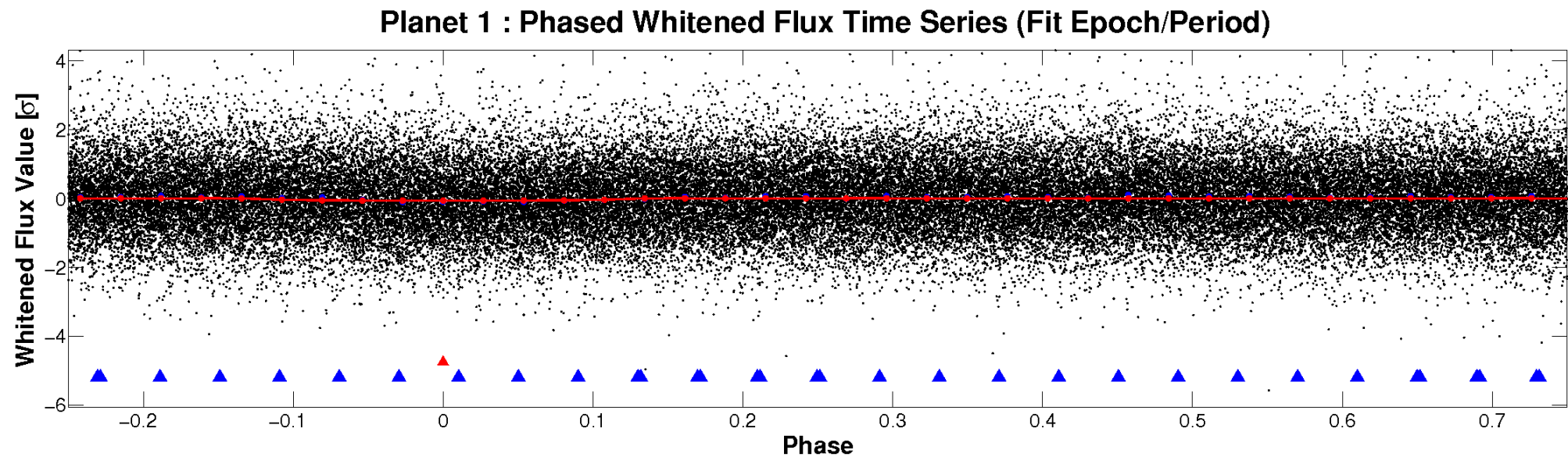
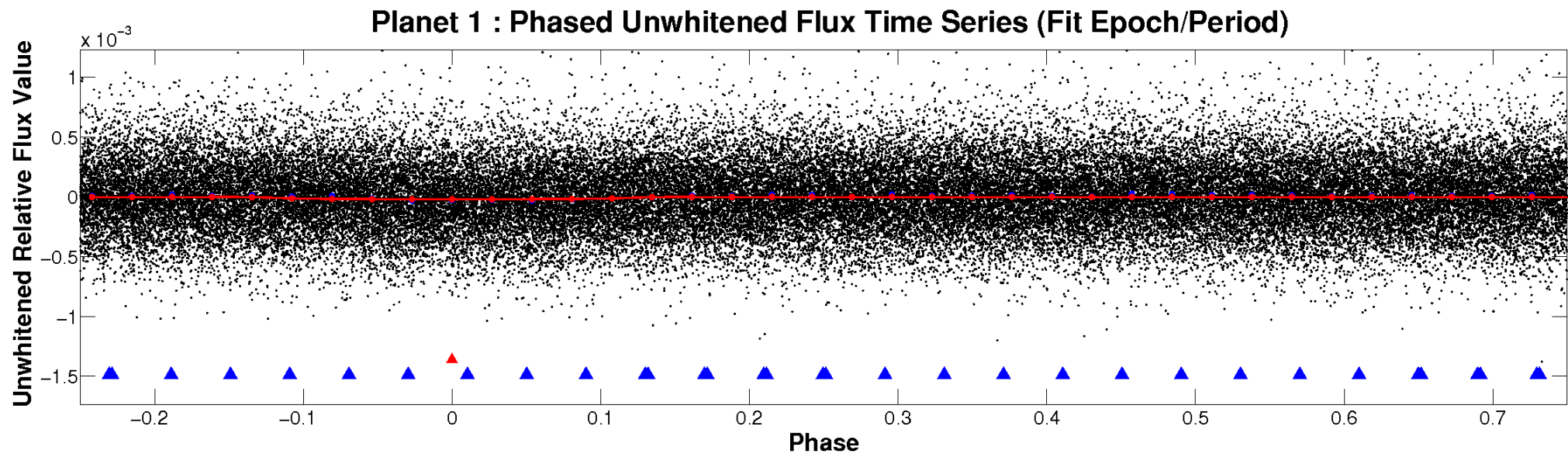


ALT Odd/Even

TCE 005444491-01

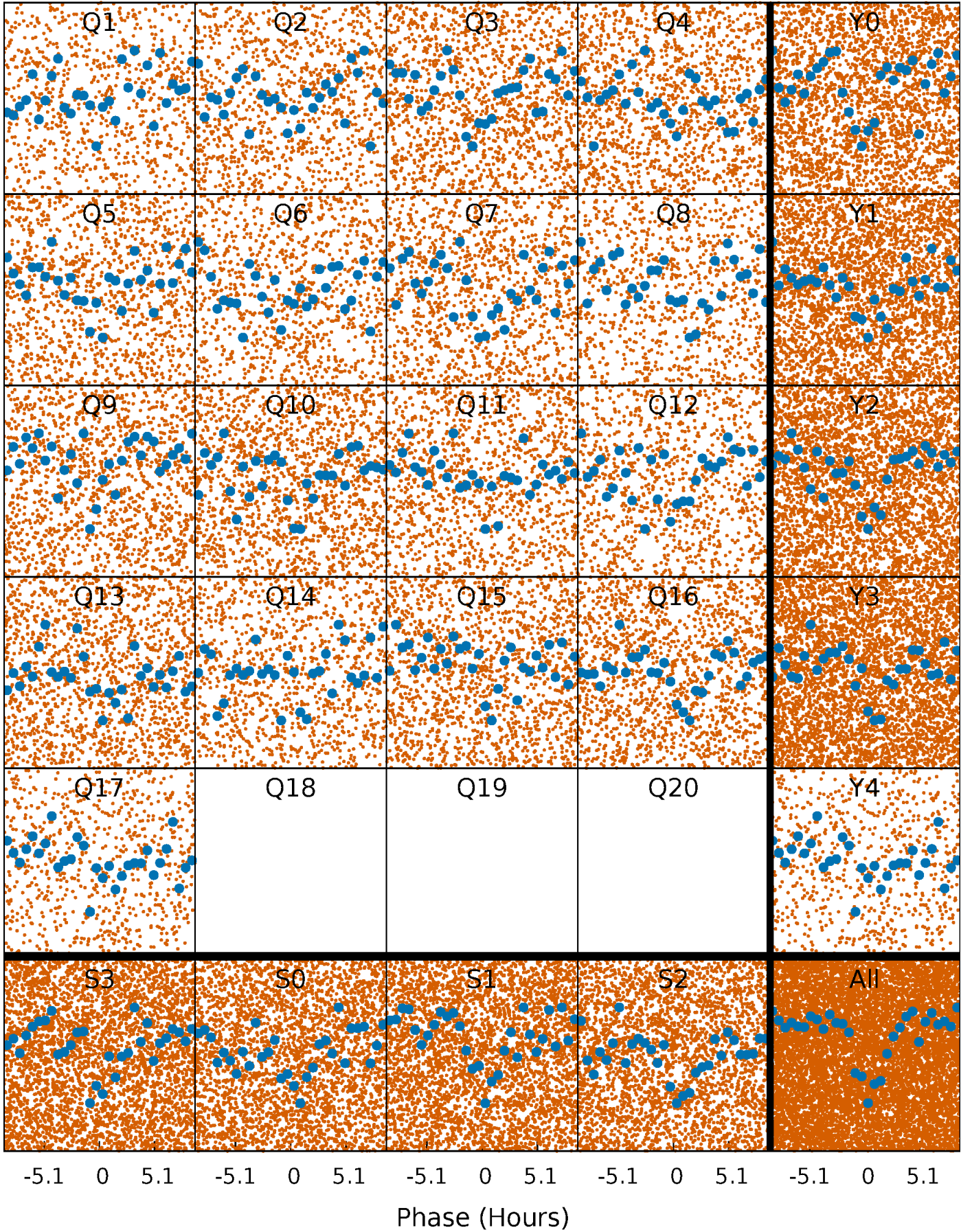


Non-Whitened Vs. Whitened Light Curve



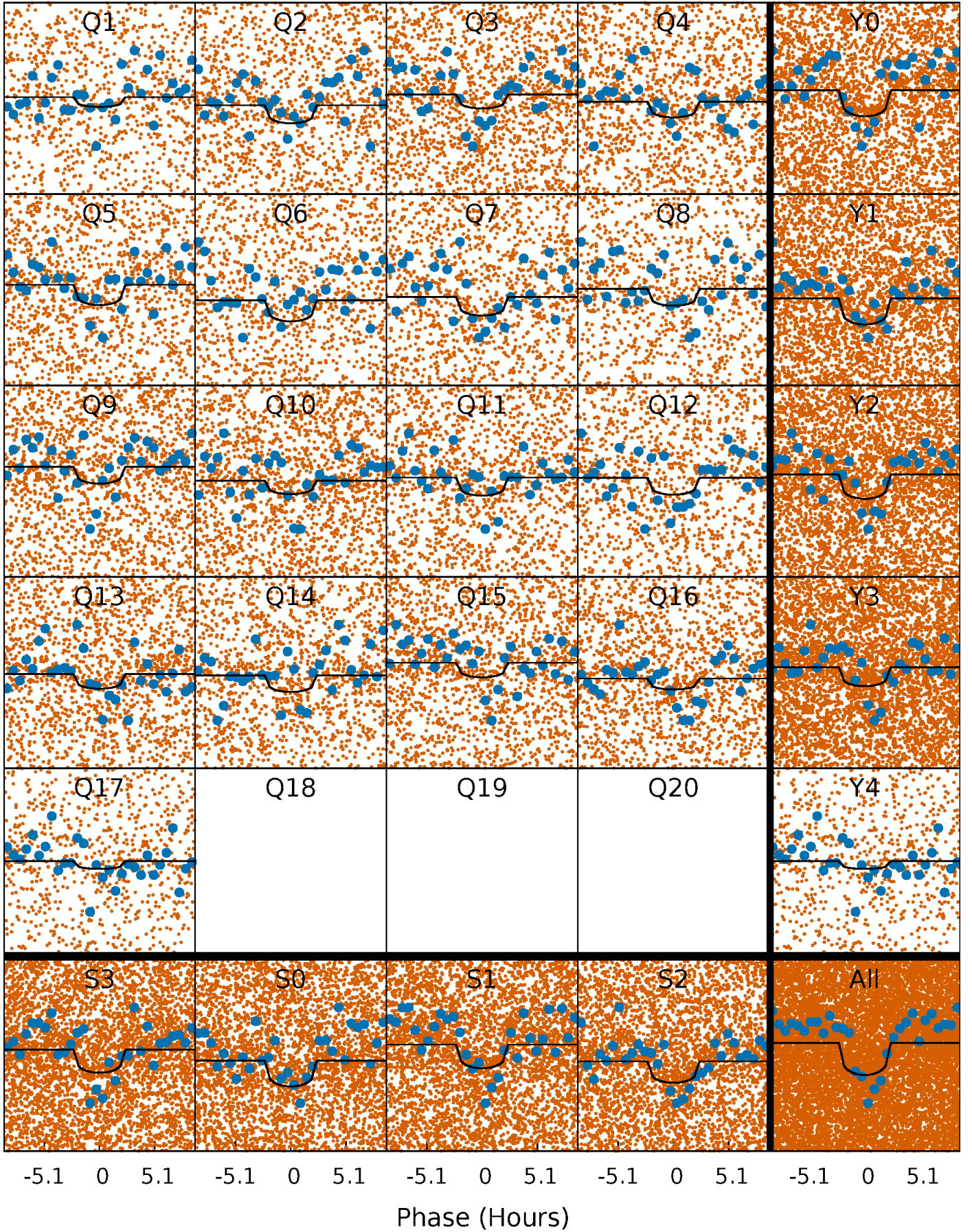
PDC Quarter-Phased Transit Curves

TCE 005444491-01 P= 0.759718 Days $T_0=131.823131$ (BKJD)



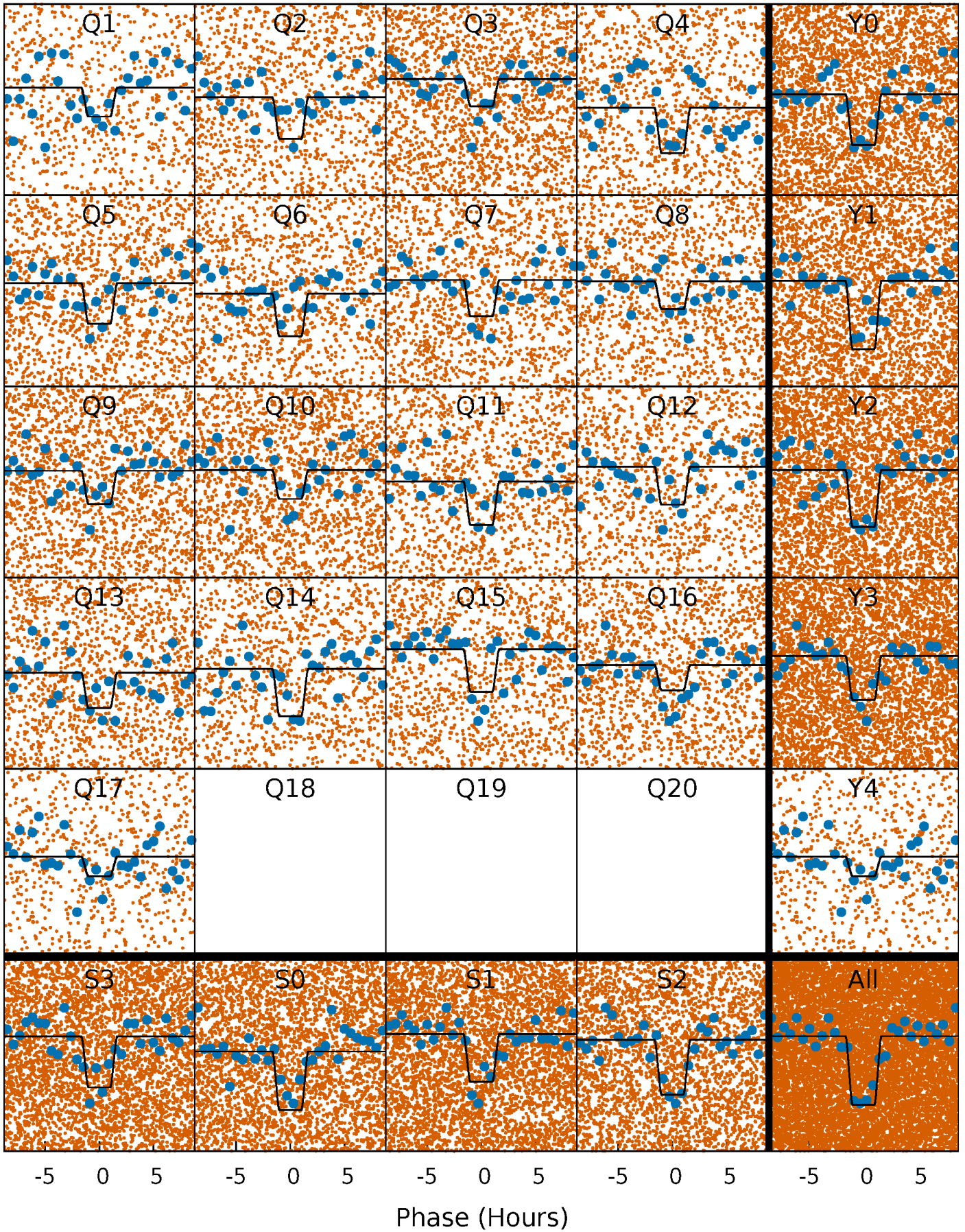
DV Quarter-Phased Transit Curves

TCE 005444491-01 P= 0.759718 Days $T_0=131.823131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

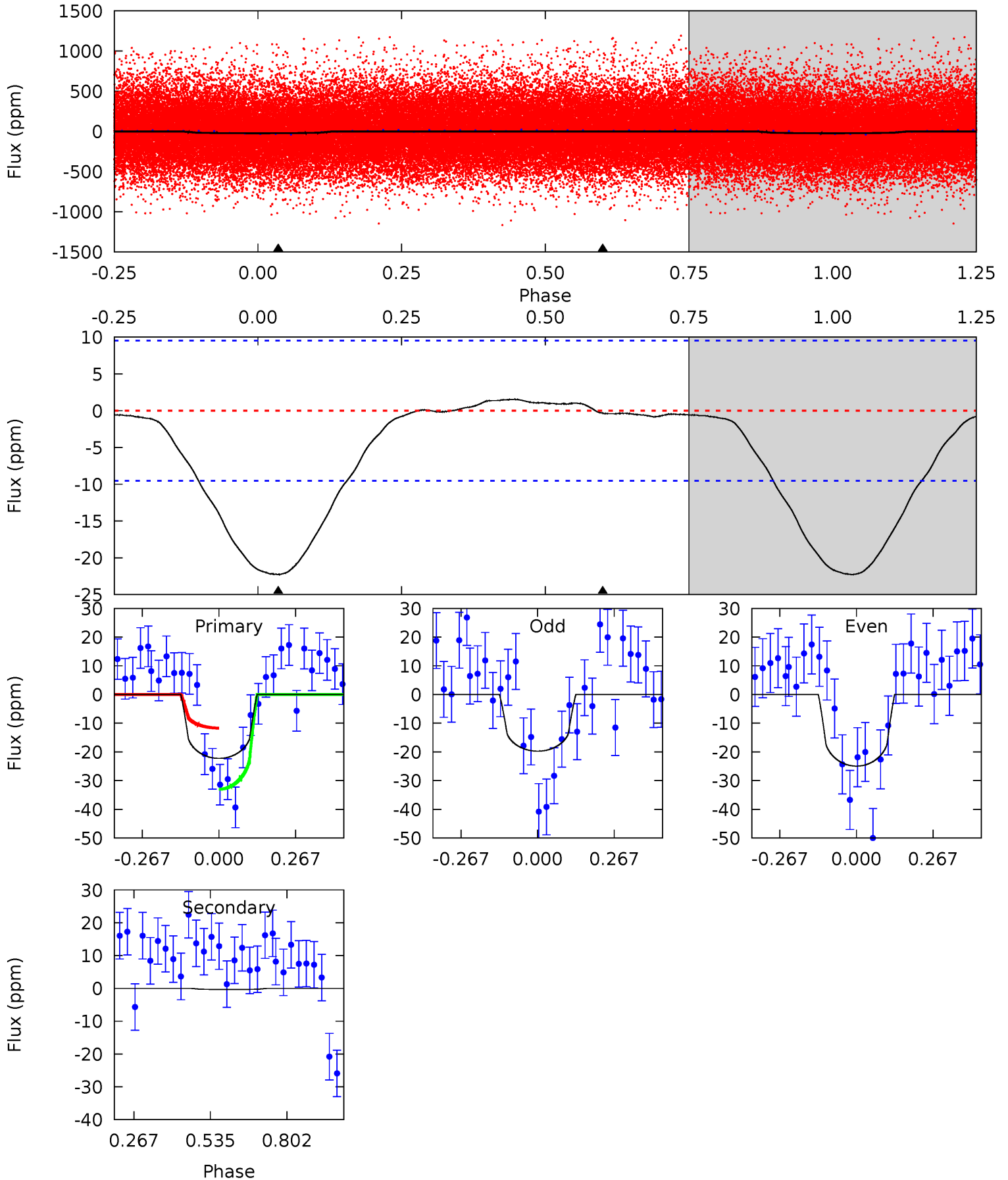
TCE 005444491-01 P= 0.759756 Days $T_0=131.803838$ (BKJD)



DV Model-Shift Uniqueness Test

005444491-01, P = 0.759718 Days, E = 131.063413 Days

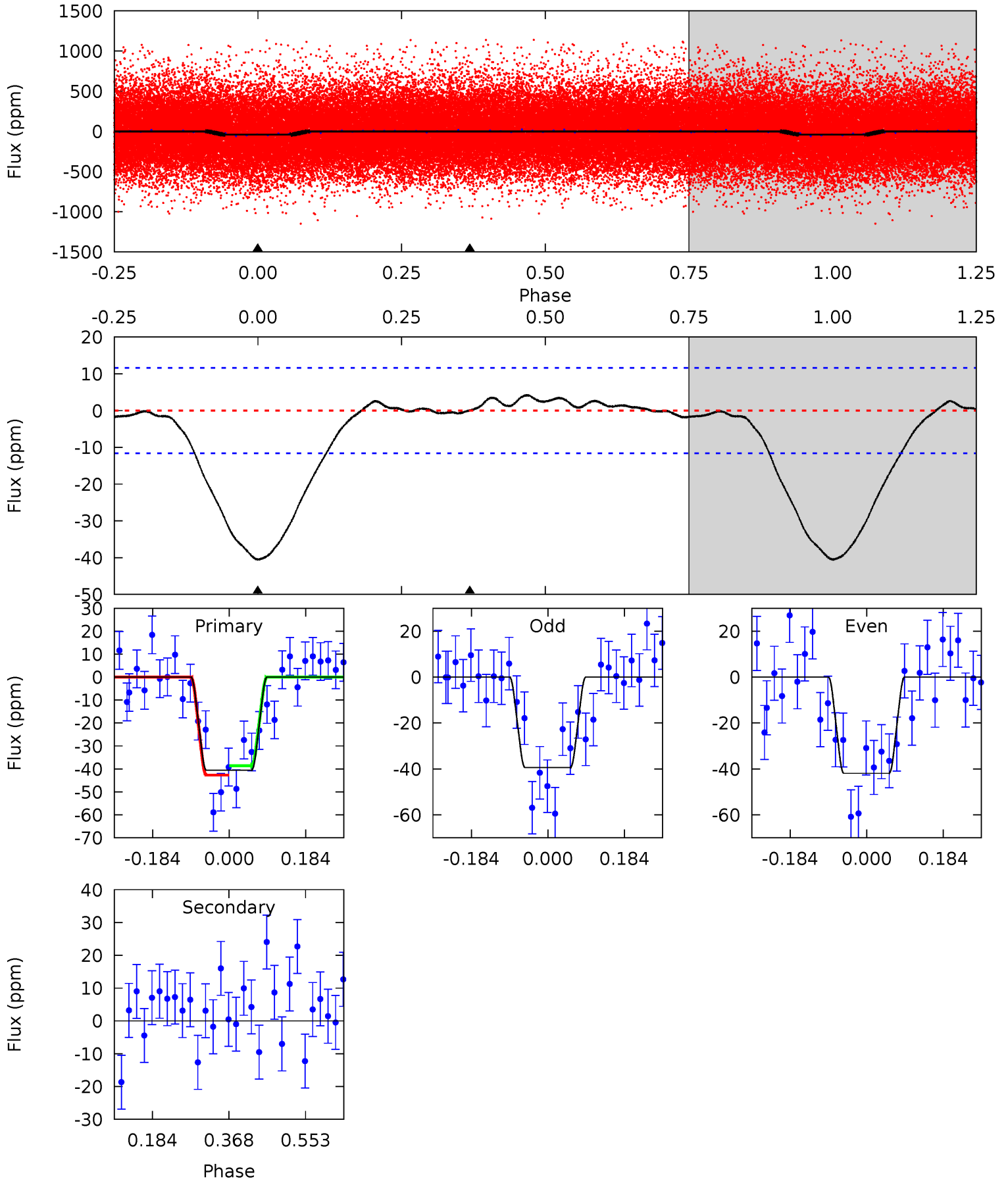
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	0.15	0	0	4.35	1.11	0.09	10.2	10.2	0.15	0.15	1.19	0.96	0.06	4.93



Alt Model-Shift Uniqueness Test

005444491-01, P = 0.759756 Days, E = 131.044082 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	0	0	0	4.43	1.33	0.48	15.5	15.5	0	0	0.47	1.03	0.09	0.77



Stellar Parameters For KIC 005444491

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+169}_{-211}	$4.478^{+0.042}_{-0.168}$	$0.070^{+0.200}_{-0.350}$	$1.007^{+0.237}_{-0.102}$	$1.111^{+0.107}_{-0.147}$	$1.532^{+0.335}_{-0.688}$
	+3%/-3%	+1%/-4%	+286%/-500%	+24%/-10%	+10%/-13%	+22%/-45%
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 005444491-01 / KOI 7727.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-0 ± 2	$0.58^{+0.41}_{-0.34}$	2932^{+180}_{-134}	-2830^{+6831}_{-1099}	$0.126^{+1.764}_{-1.258}$
Alt.	0 ± 3	$0.77^{+0.47}_{-0.42}$	2932^{+171}_{-125}	-3039^{+6419}_{-793}	$0.014^{+0.867}_{-0.992}$

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 $A_{obs} \gg 1.0$

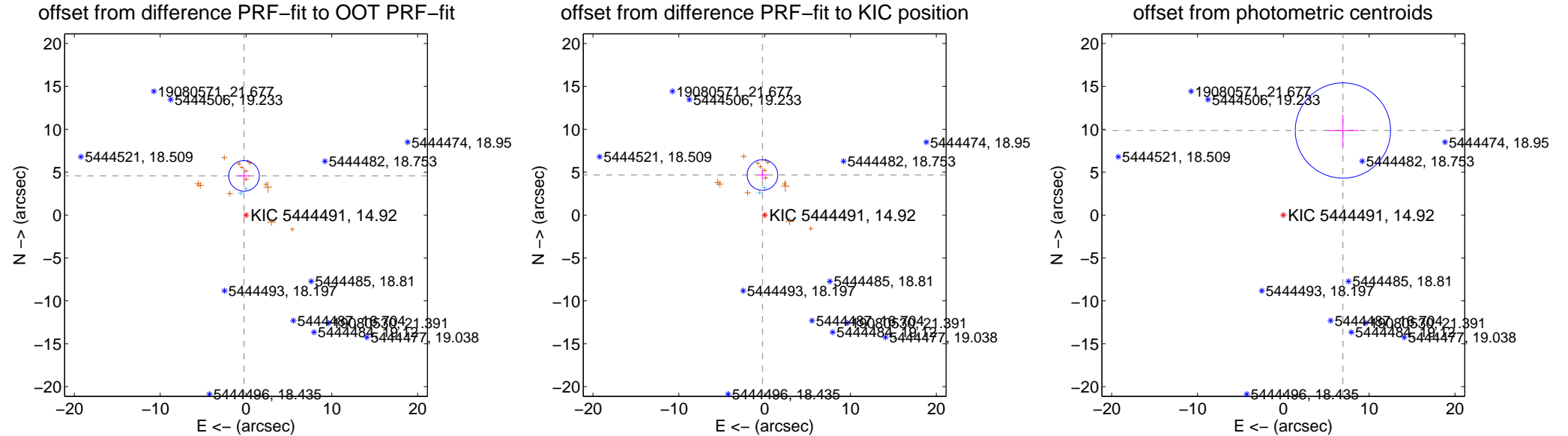
DV Centroid Data

Supplemental centroid analysis for 005444491-01. Kepler magnitude: 14.92. Transit SNR 7.05

There are 2 quarters with good PRF difference image offsets

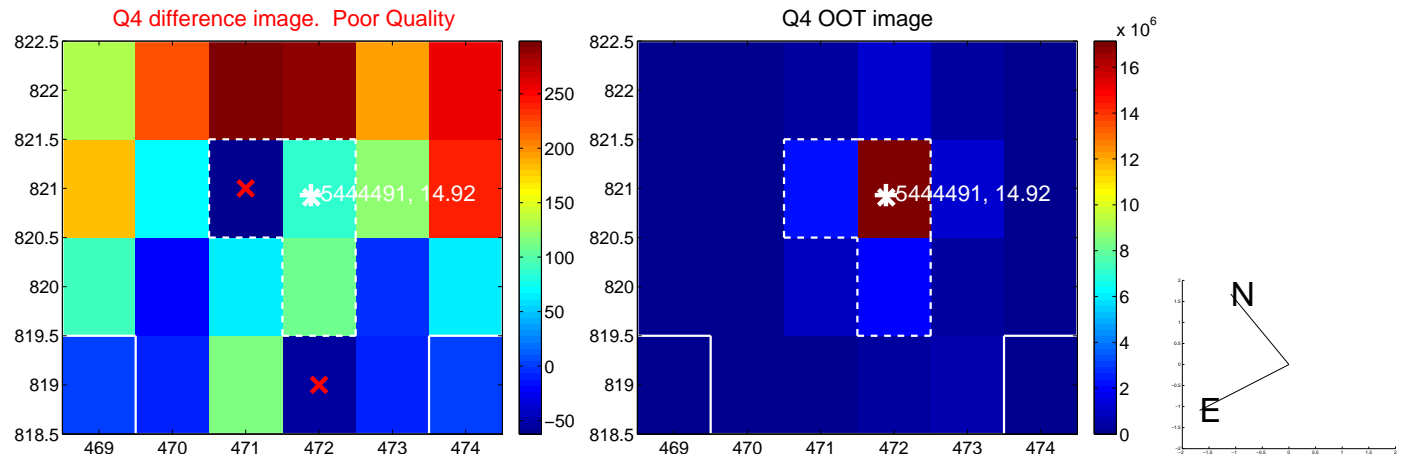
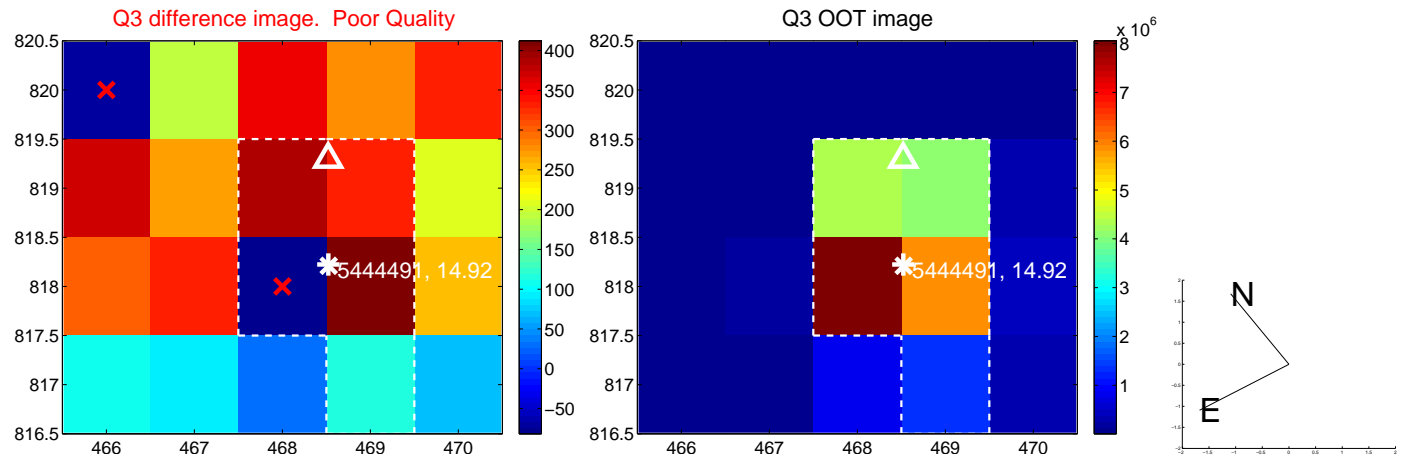
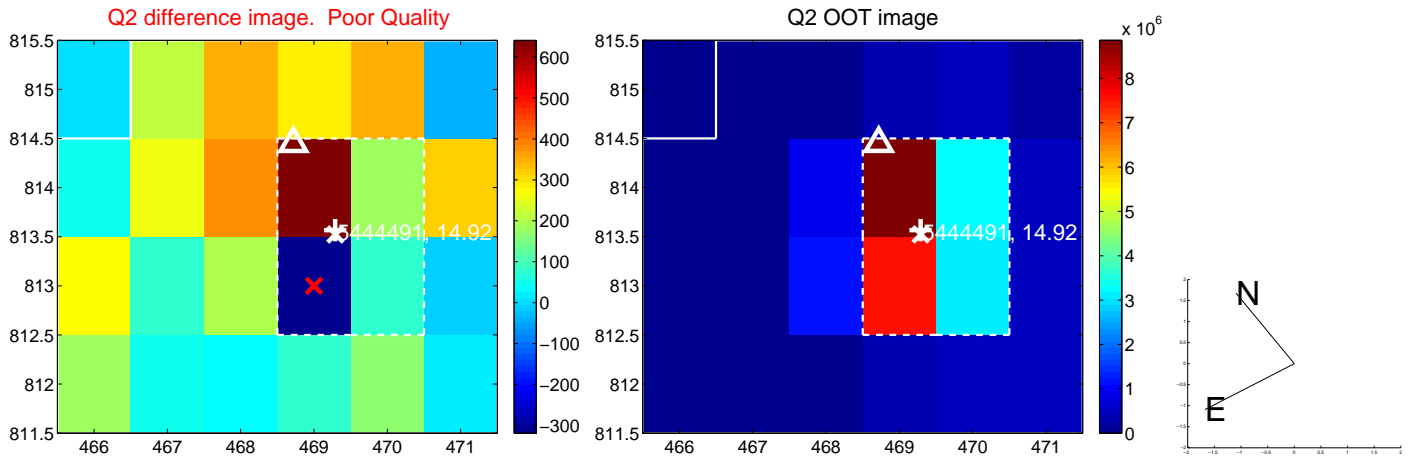
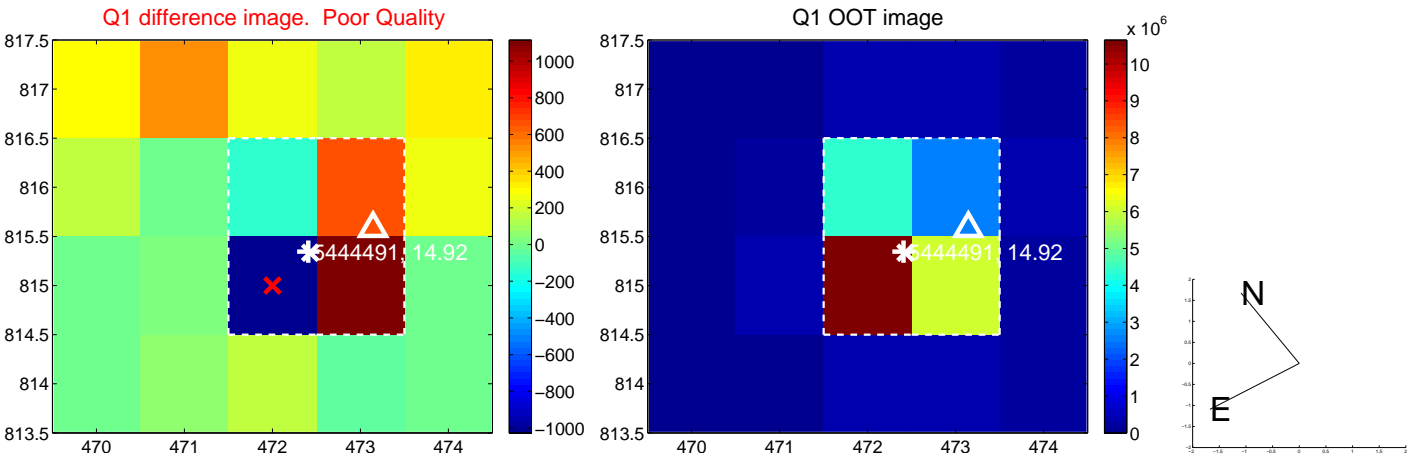
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.572 \pm 0.594	7.70	0.231 \pm 0.701	4.566 \pm 0.579
PRF-fit source offset from KIC position	4.681 \pm 0.595	7.87	0.255 \pm 0.646	4.674 \pm 0.581
photometric centroid source offset	12.06 \pm 1.85	6.52	-6.95 \pm 1.84	9.86 \pm 1.85

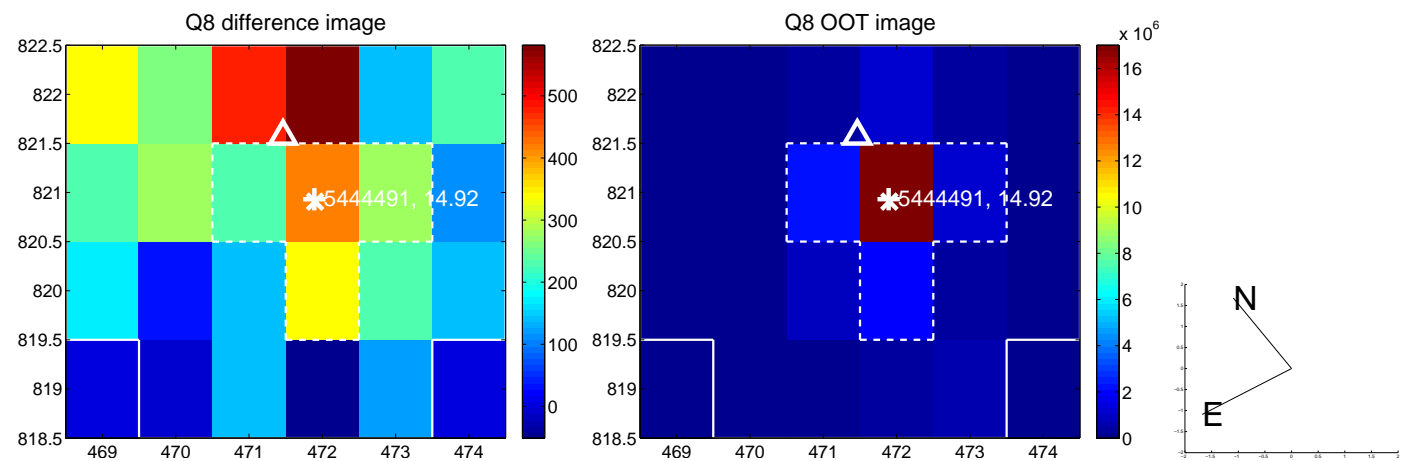
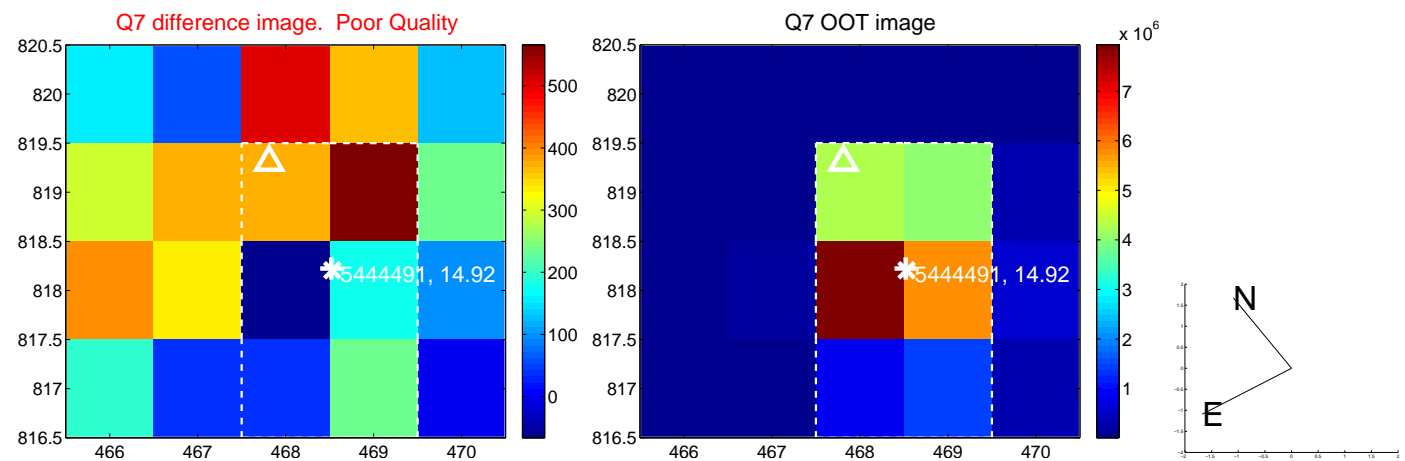
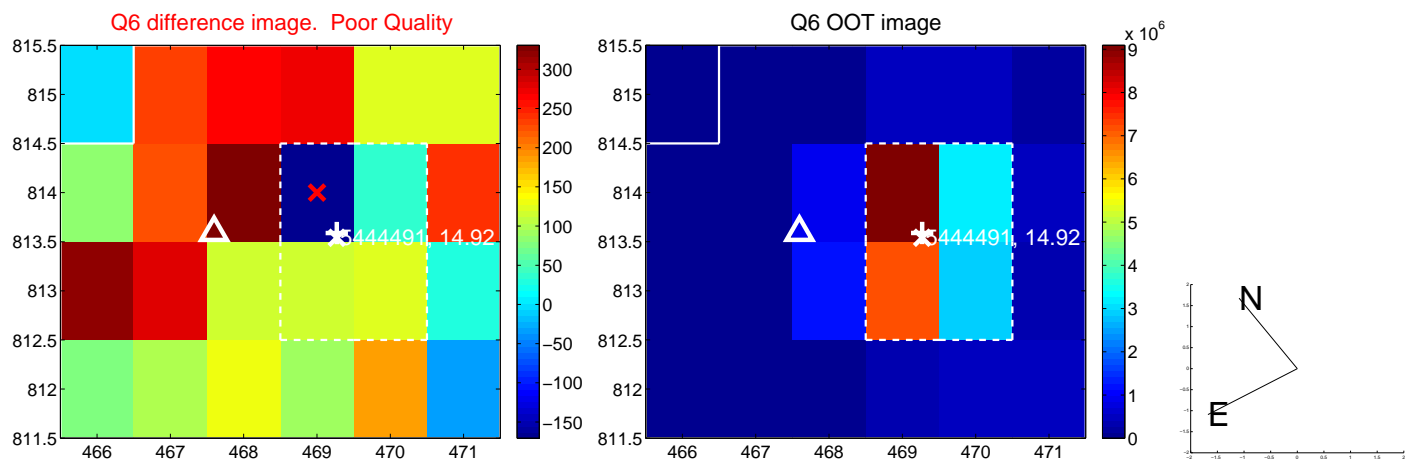
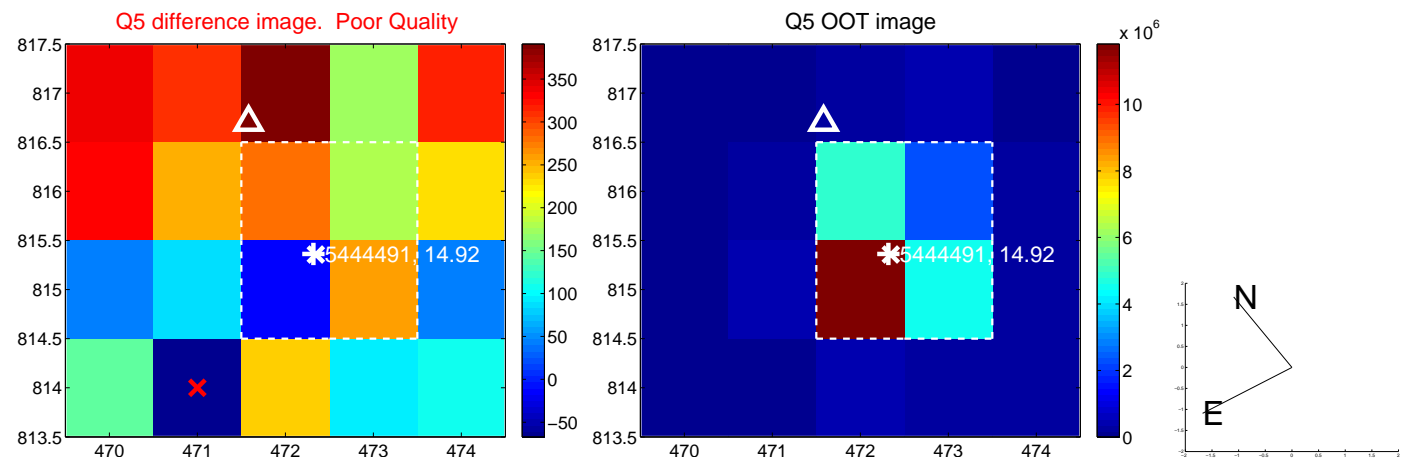


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

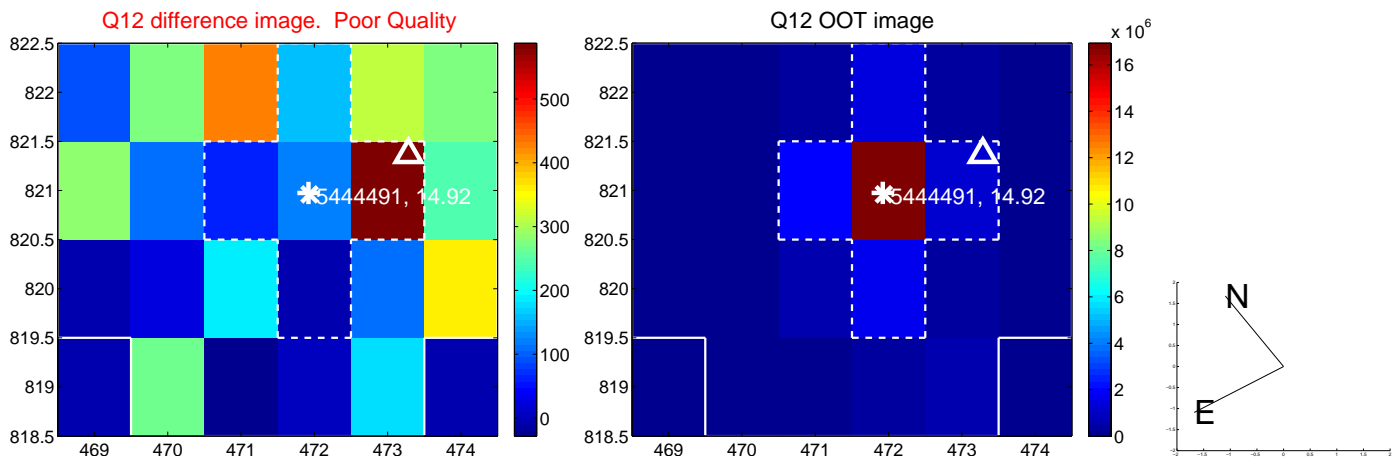
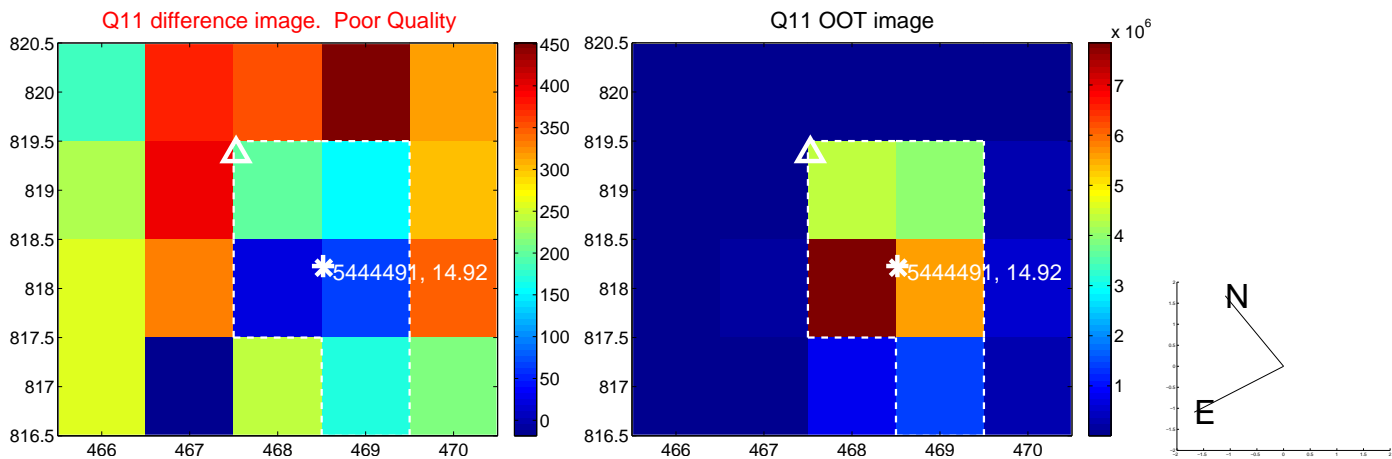
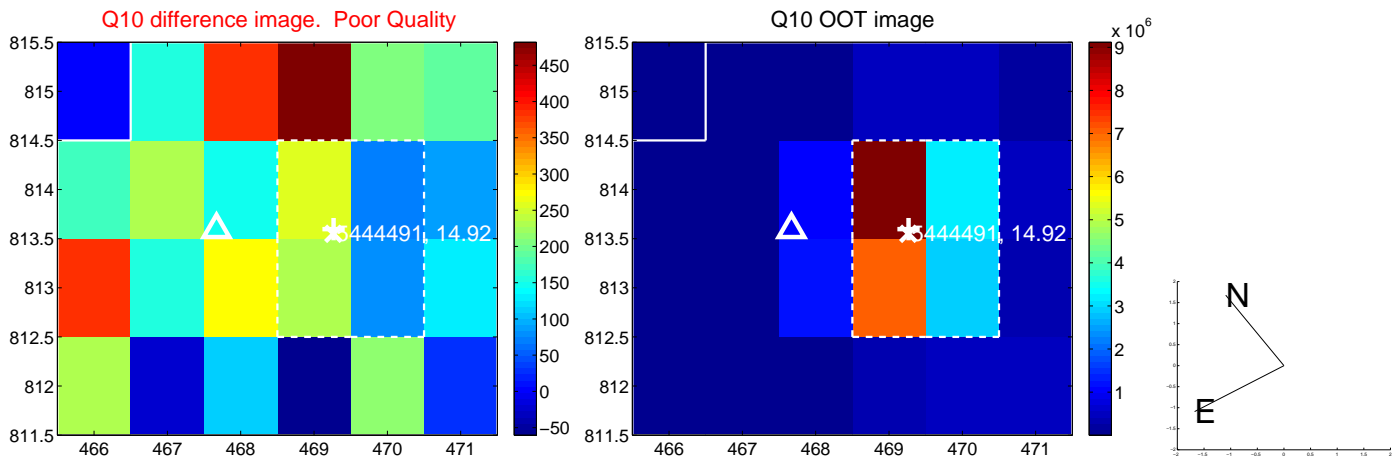
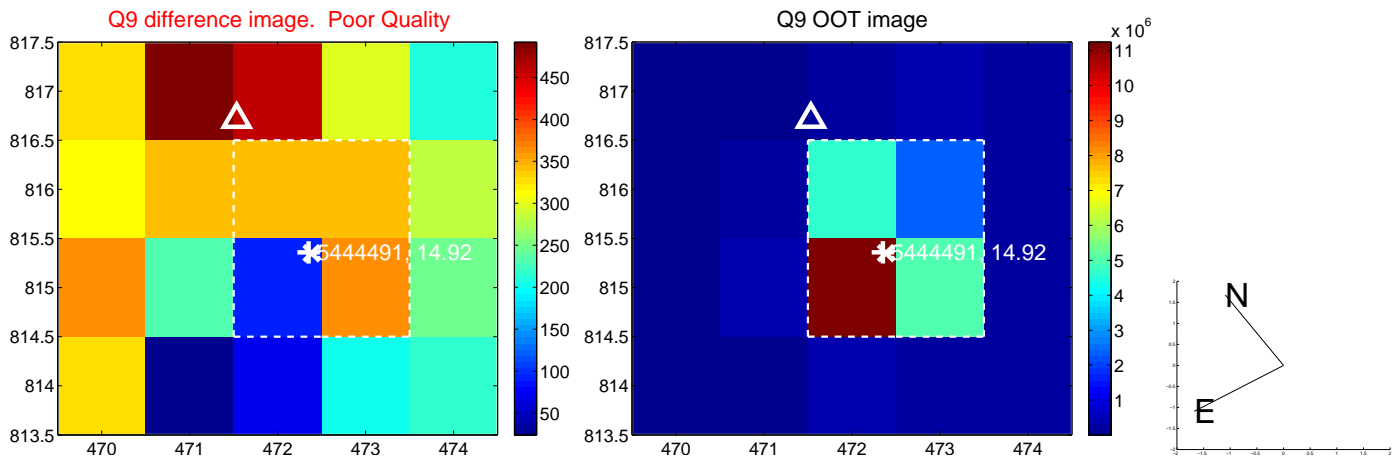
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



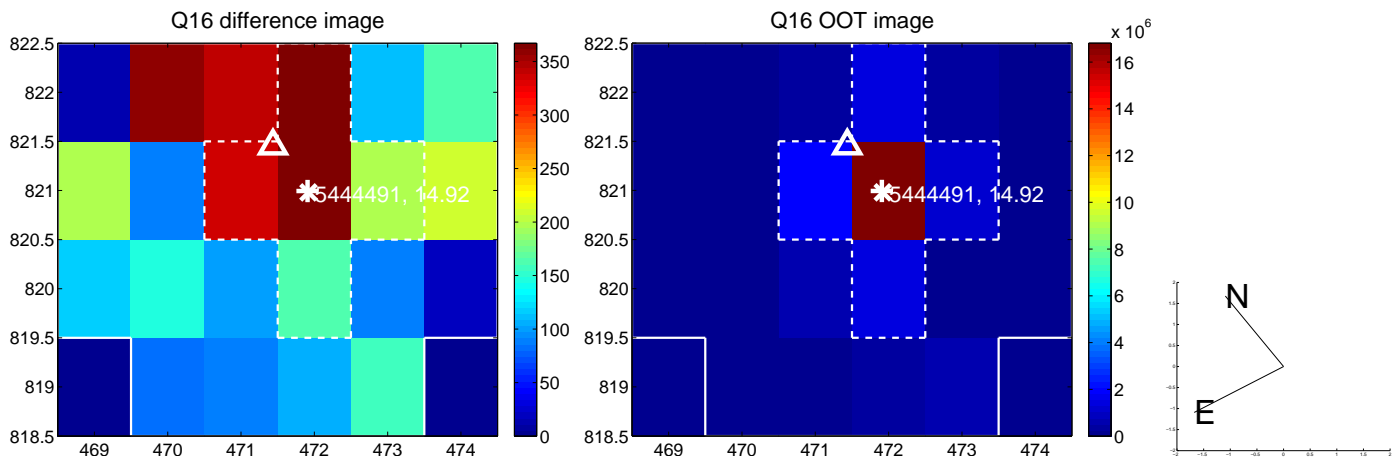
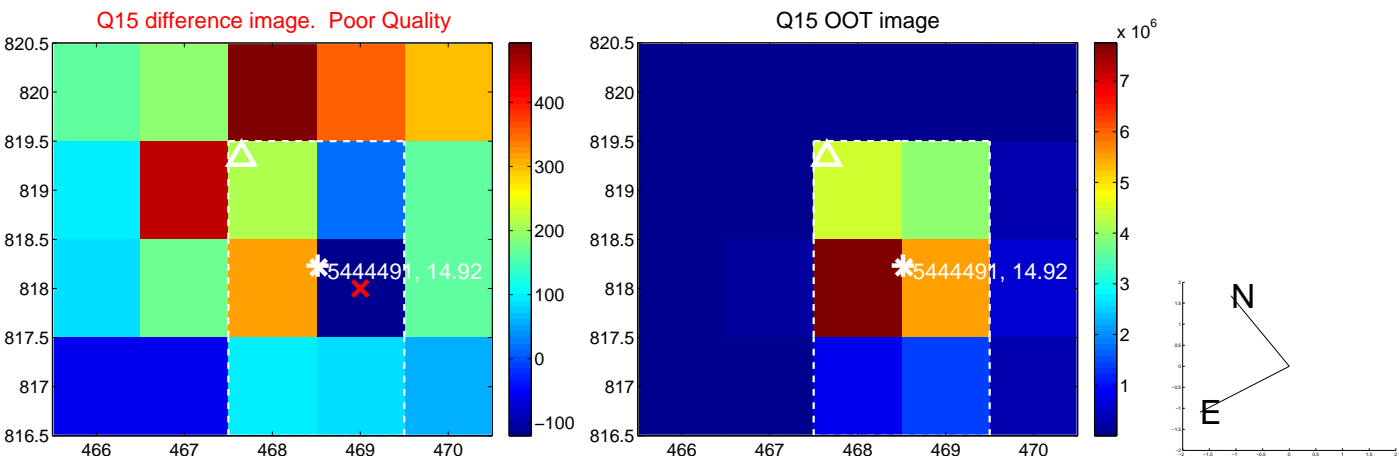
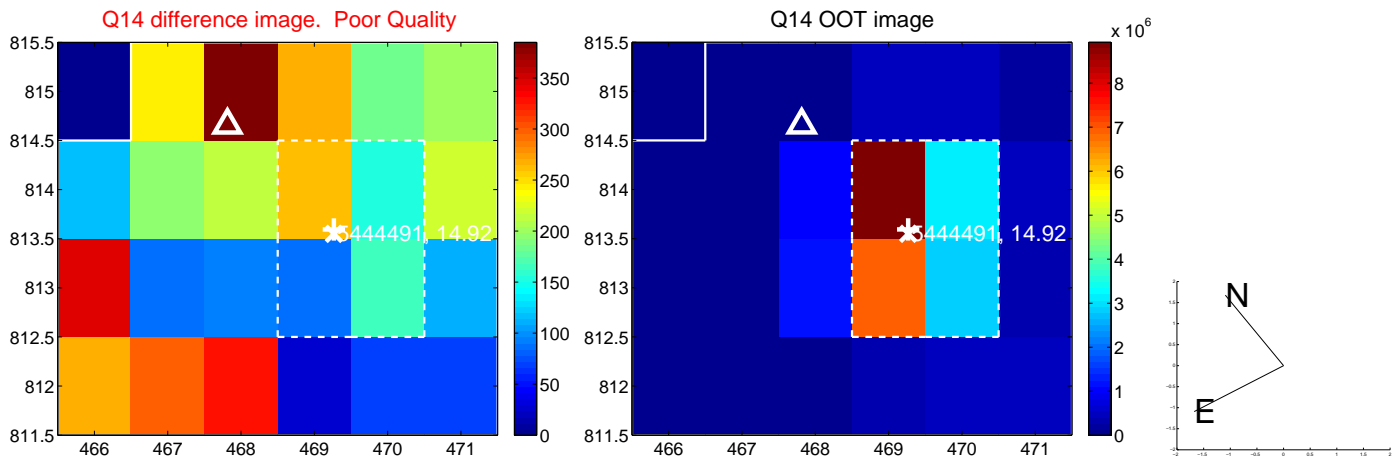
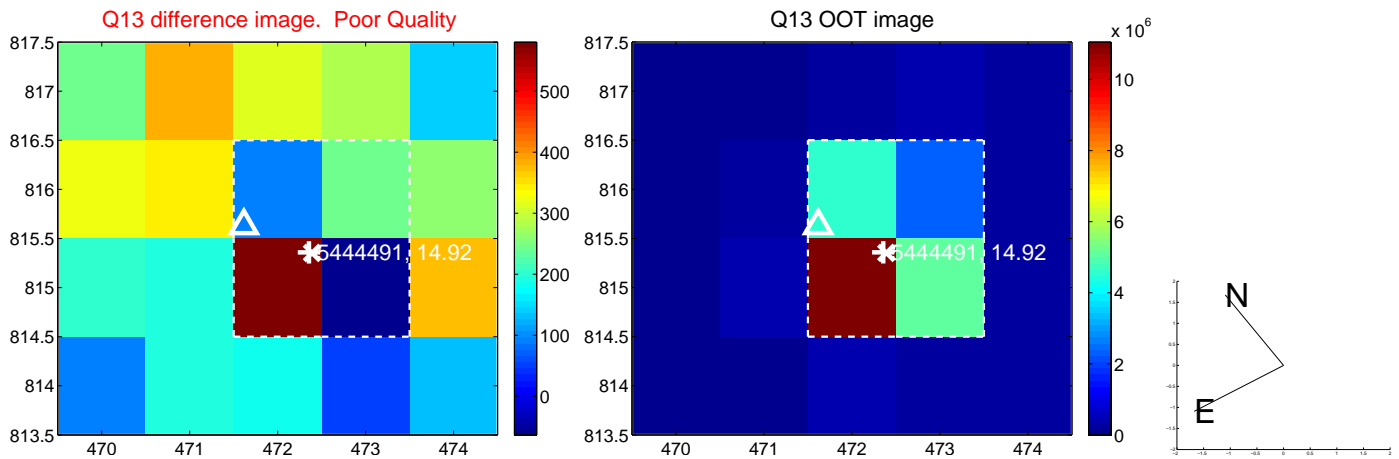
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



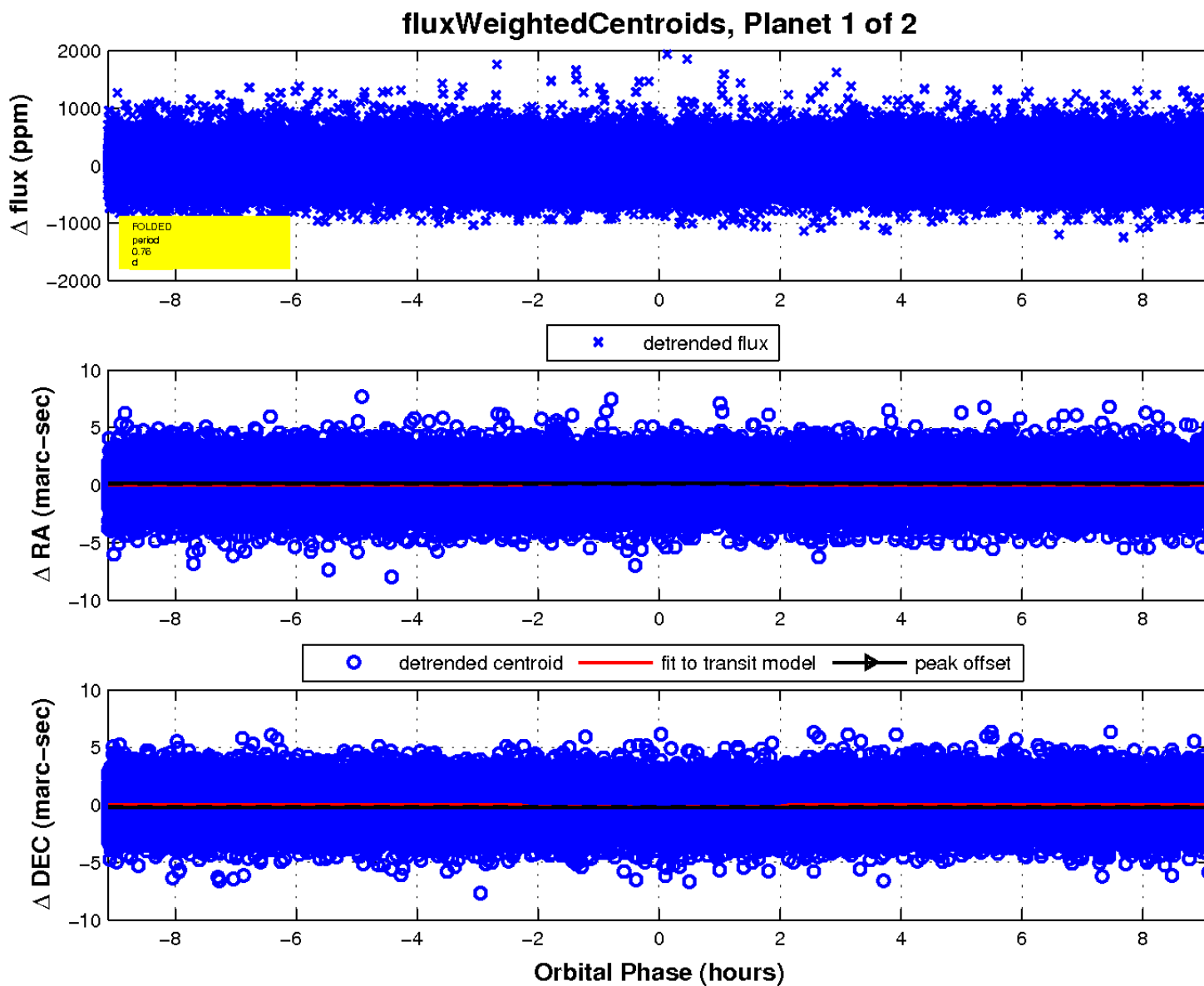
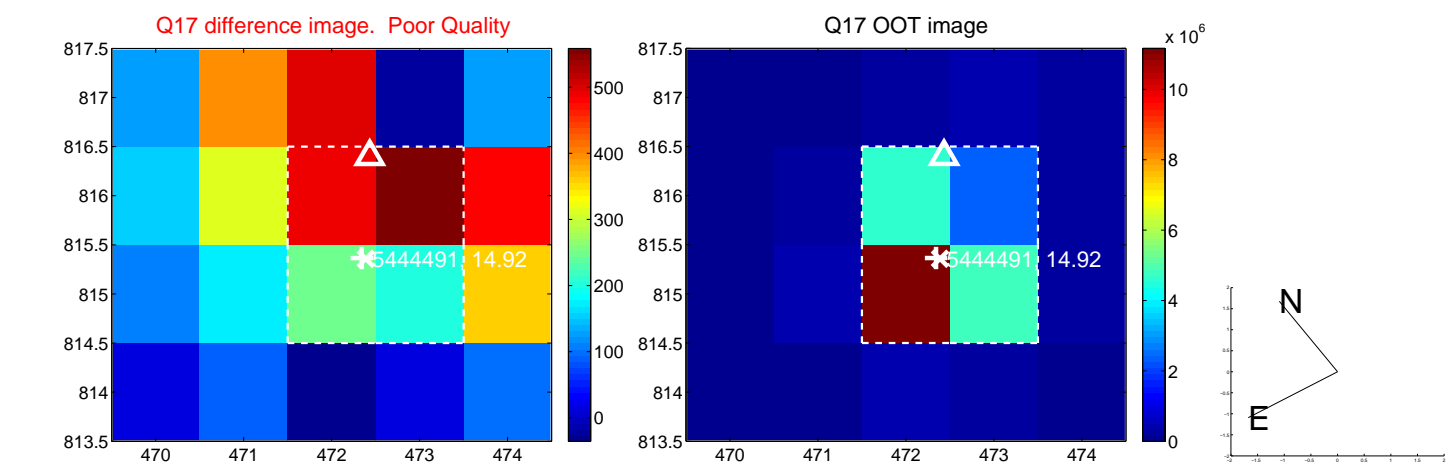
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

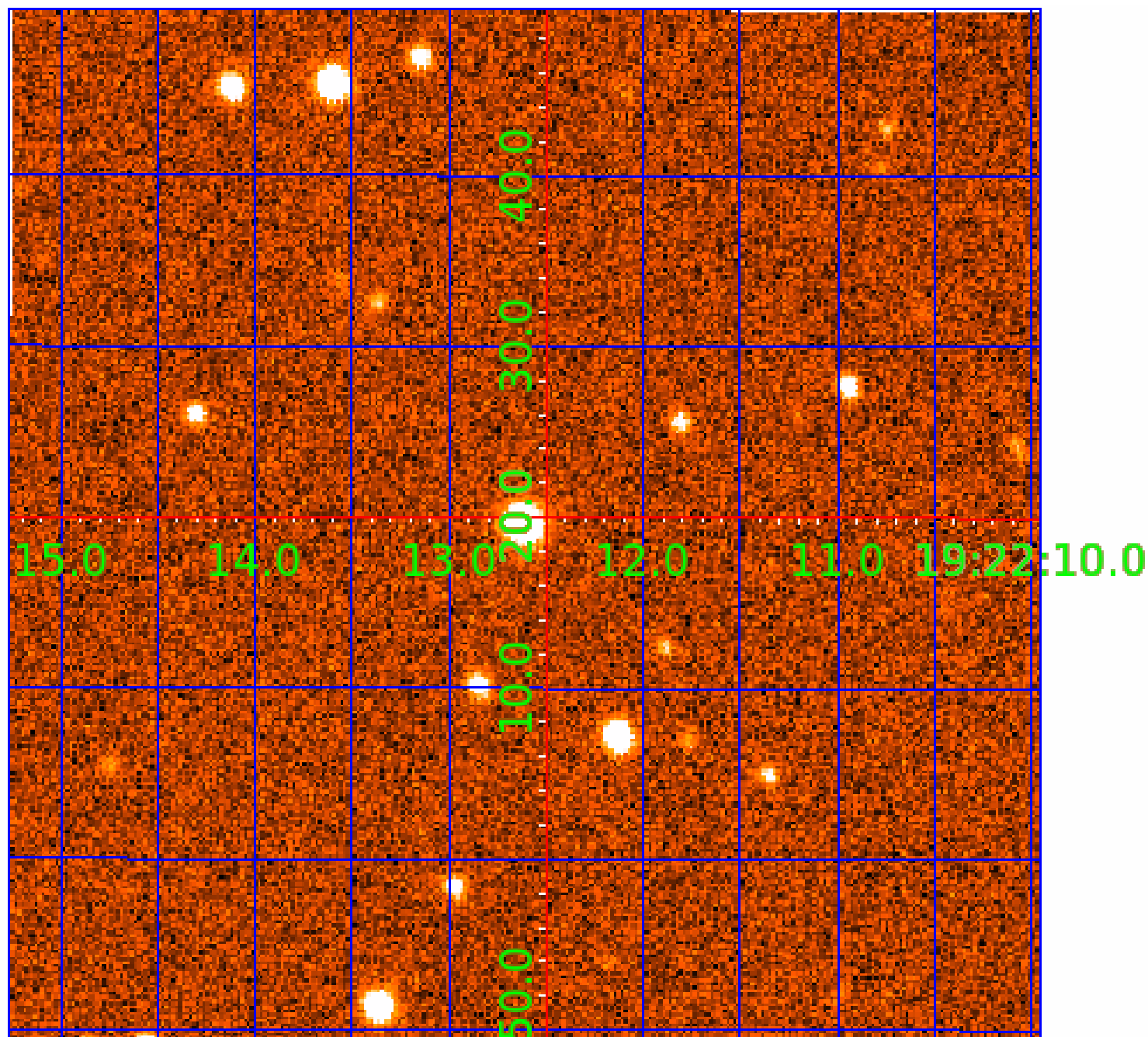


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005444491

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})
005444491-01	OBS	7727.01	0.759718	131.823131	19.6	4.429	10.3	7.1	1.01	6046	0.48	4258.44
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005444491-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
005444491-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—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.

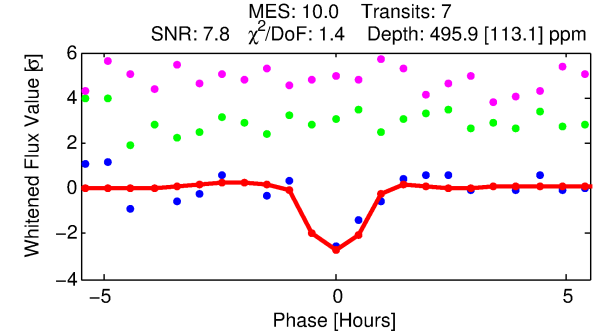
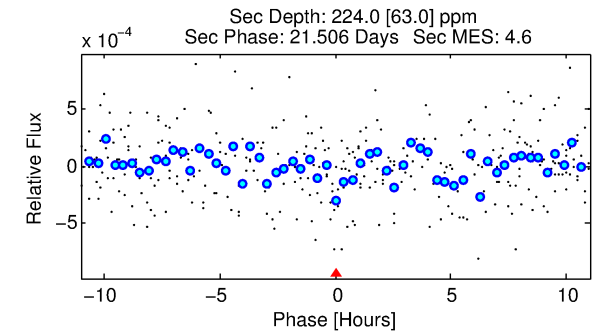
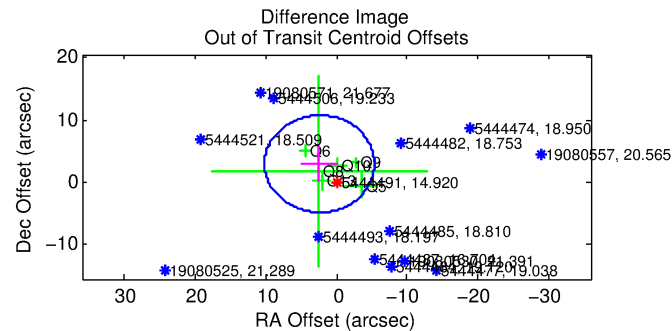
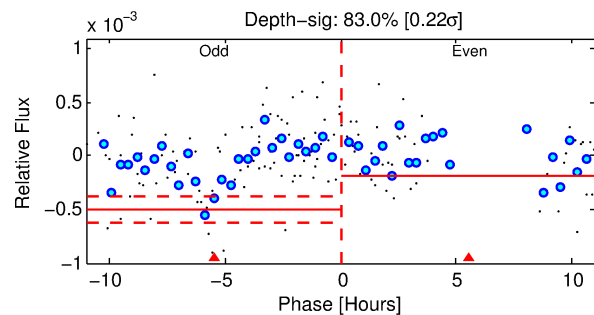
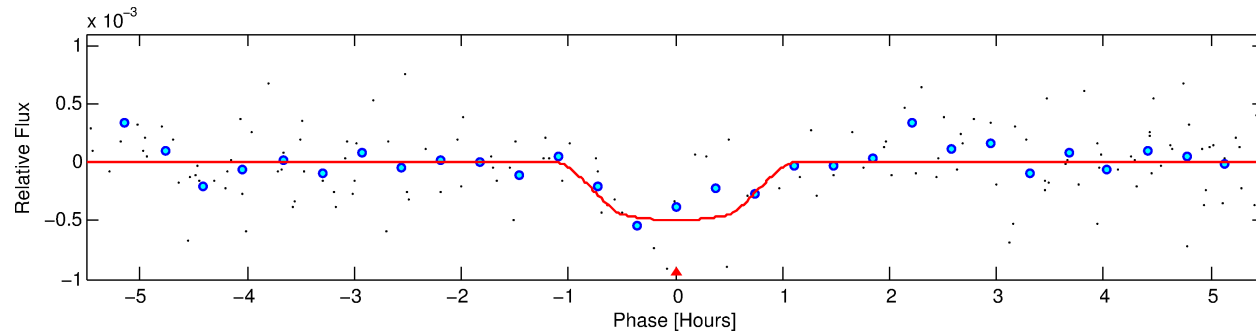
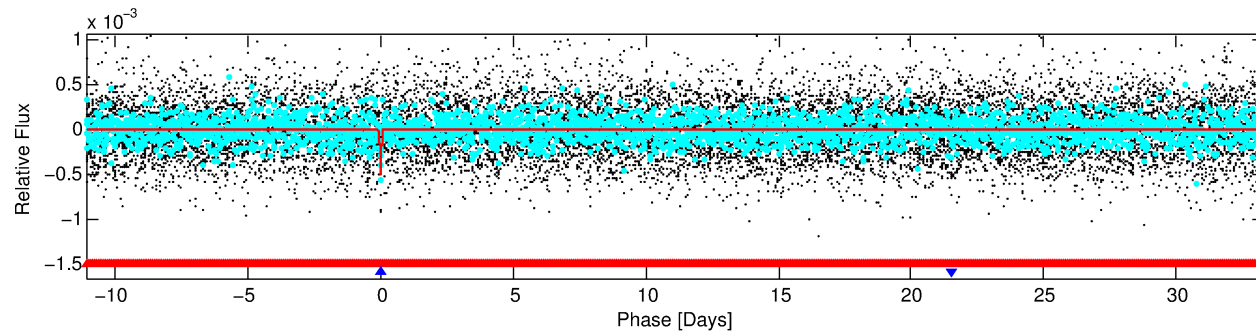
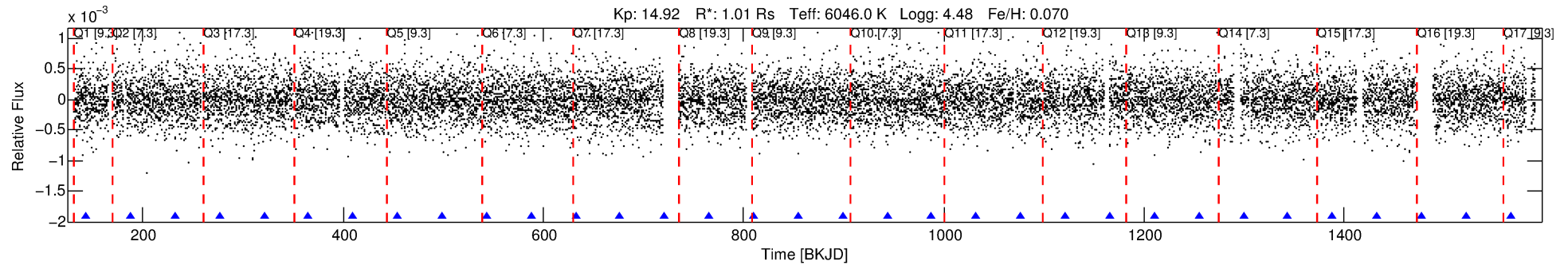
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005444491-02

No Significant Match Found

DV One-Page Summary

KIC: 5444491 Candidate: 2 of 2 Period: 44.459 d



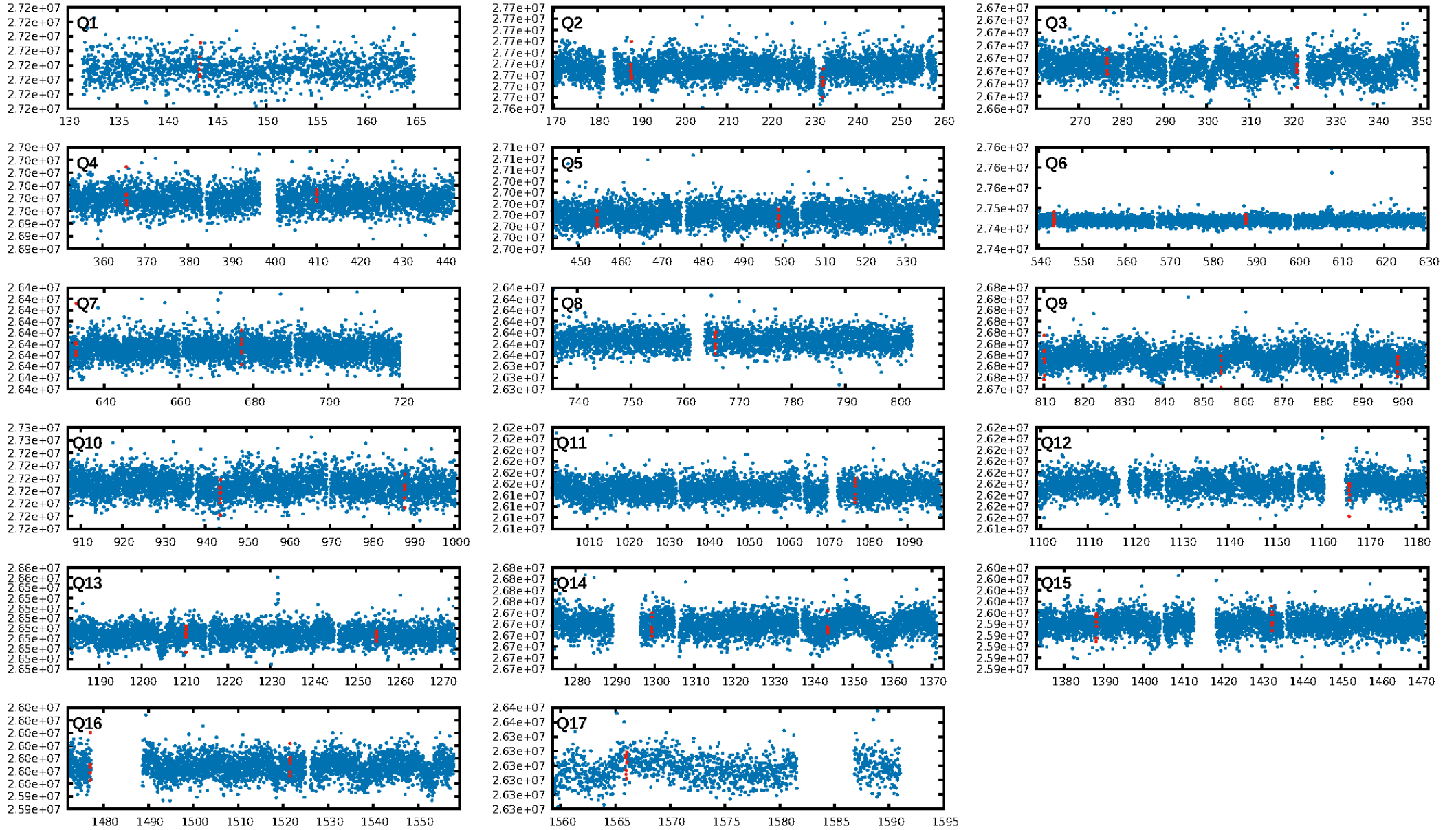
DV Fit Results:

Period = 44.45864 [0.00061] d
Epoch = 143.3191 [0.0107] BKJD
Rp/R* = 0.0242 [0.0270]
a/R* = 90.83 [483.01]
b = 0.90 [1.17]
Seff = 18.74 [6.23]
Teff = 531 [44] K
Rp = 2.66 [3.03] Re
a = 0.2545 [0.0517] AU
Ag = 1132.13 [2573.43] [0.44σ]
Teffp = 4758 [2685] K [1.57σ]

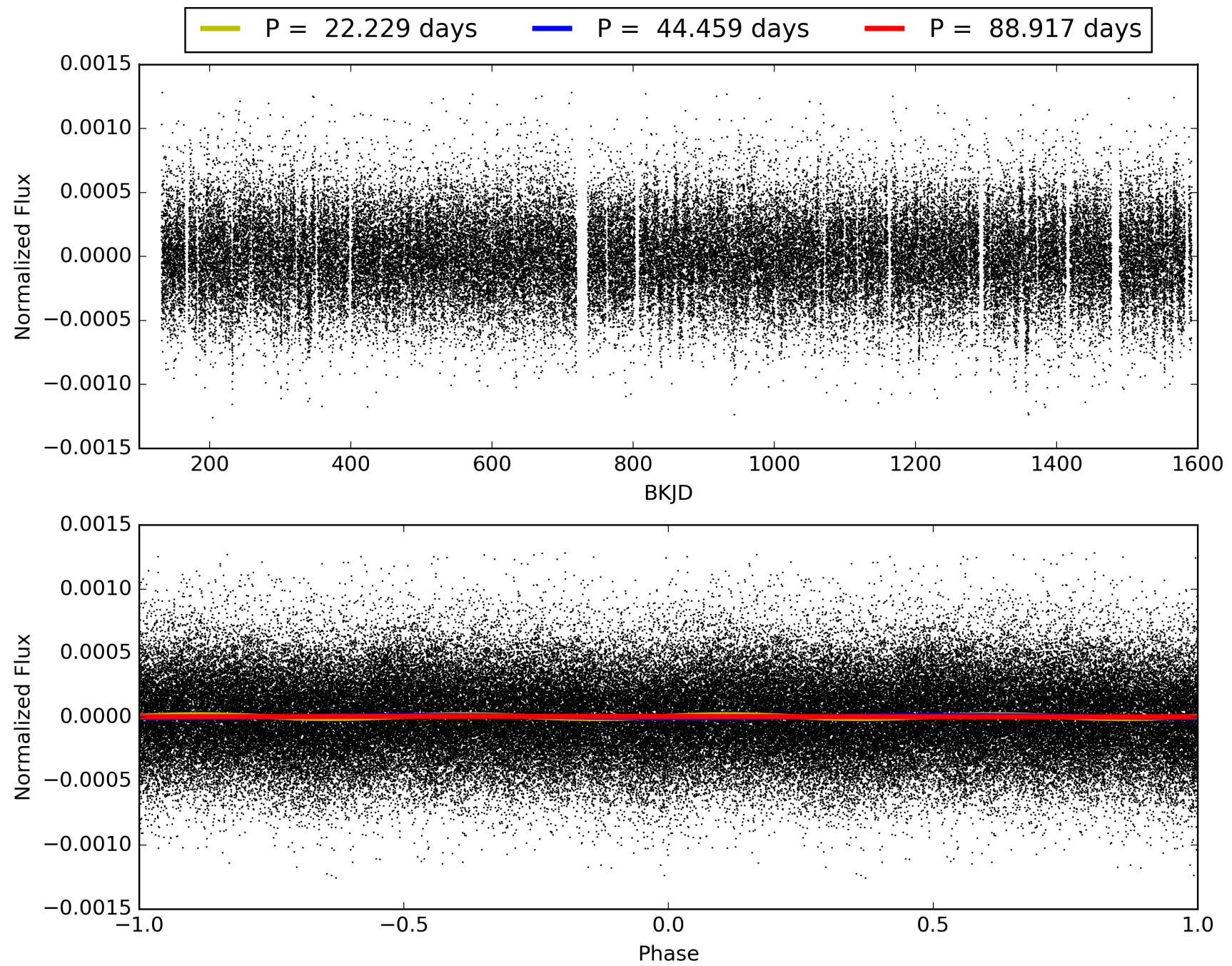
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [218.77σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 29.3%
ModelChiSquareGof-sig: 98.2%
Bootstrap-pfa: 3.37e-14
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -9.639
Centroid-sig: 37.0%
Centroid-so: 0.635 arcsec [0.68σ]
OotOffset-rm: 3.800 arcsec [1.47σ]
KicOffset-rm: 3.827 arcsec [1.48σ]
OotOffset-st: 2/0/1/3 [6]
KicOffset-st: 2/0/1/3 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.06 [1/17]

TCE 005444491-02, PDC Light Curves

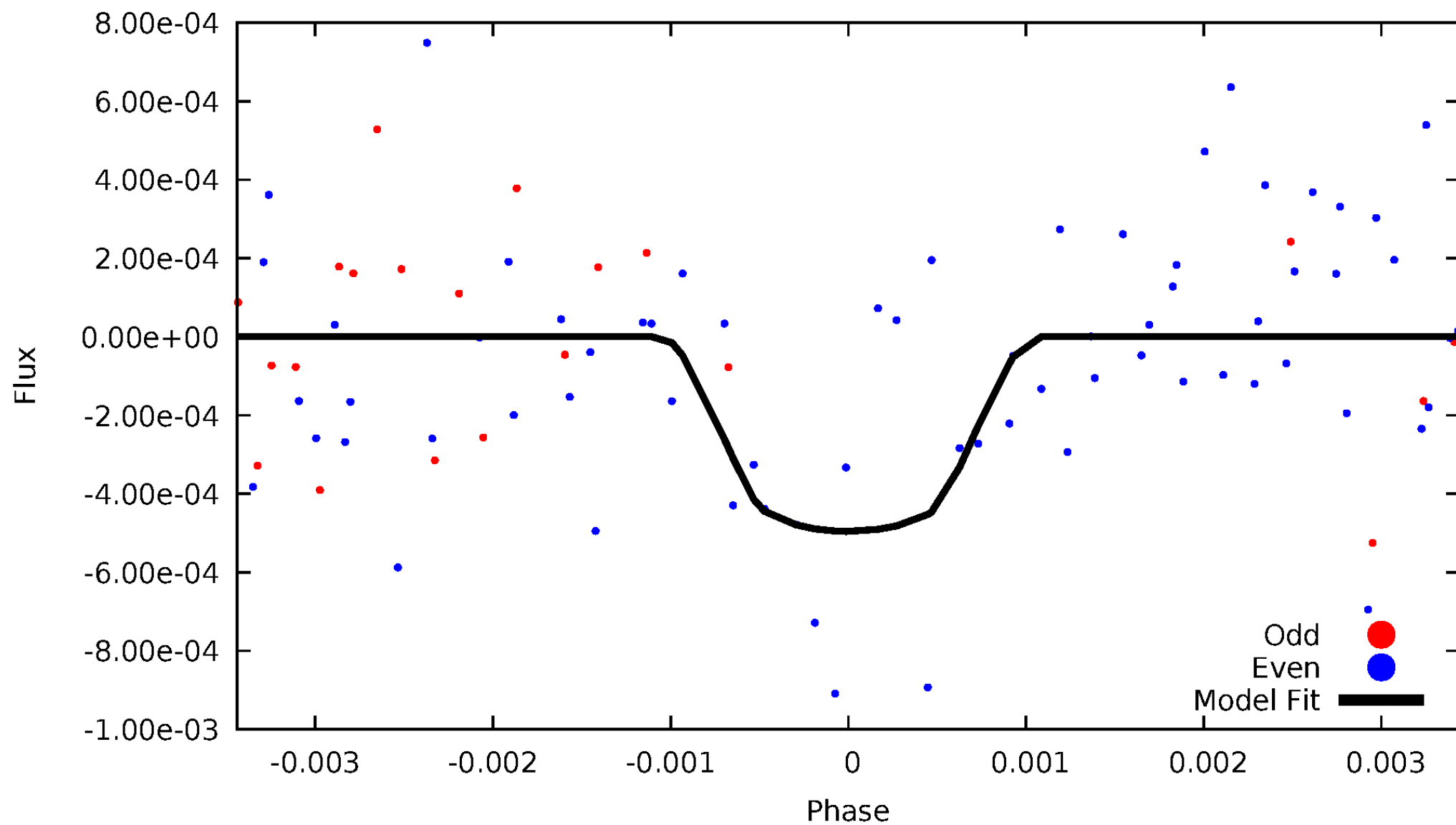


TCE 005444491-02



DV Odd/Even

TCE 005444491-02

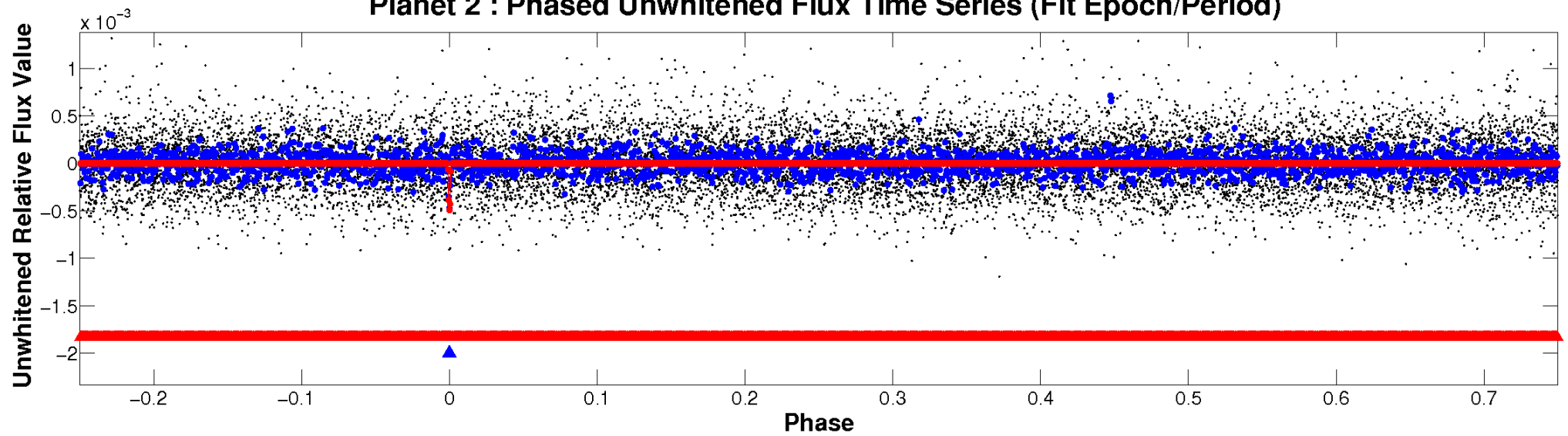


ALT Odd/Even

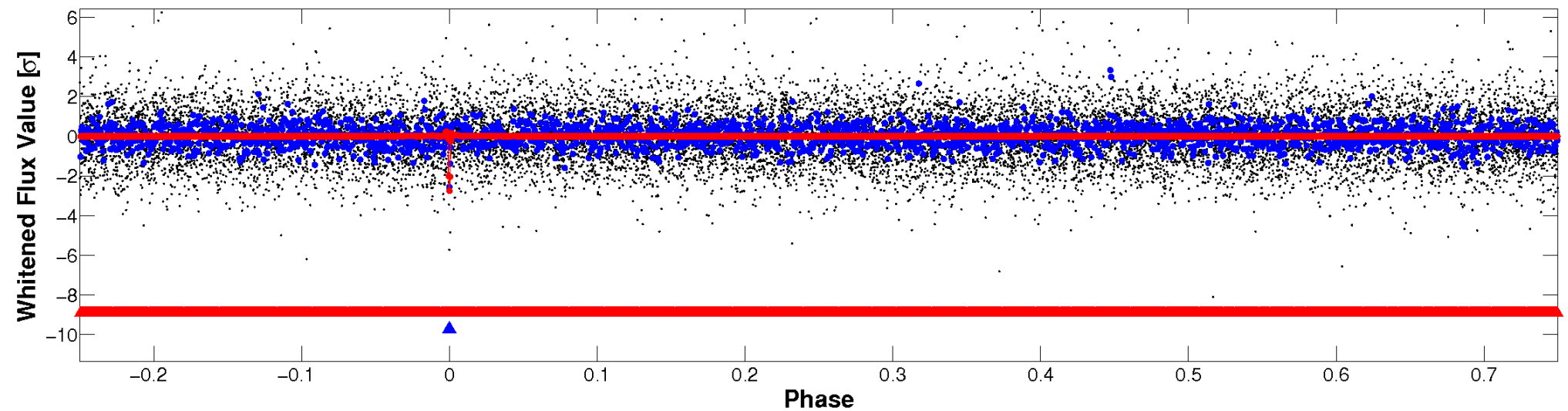
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

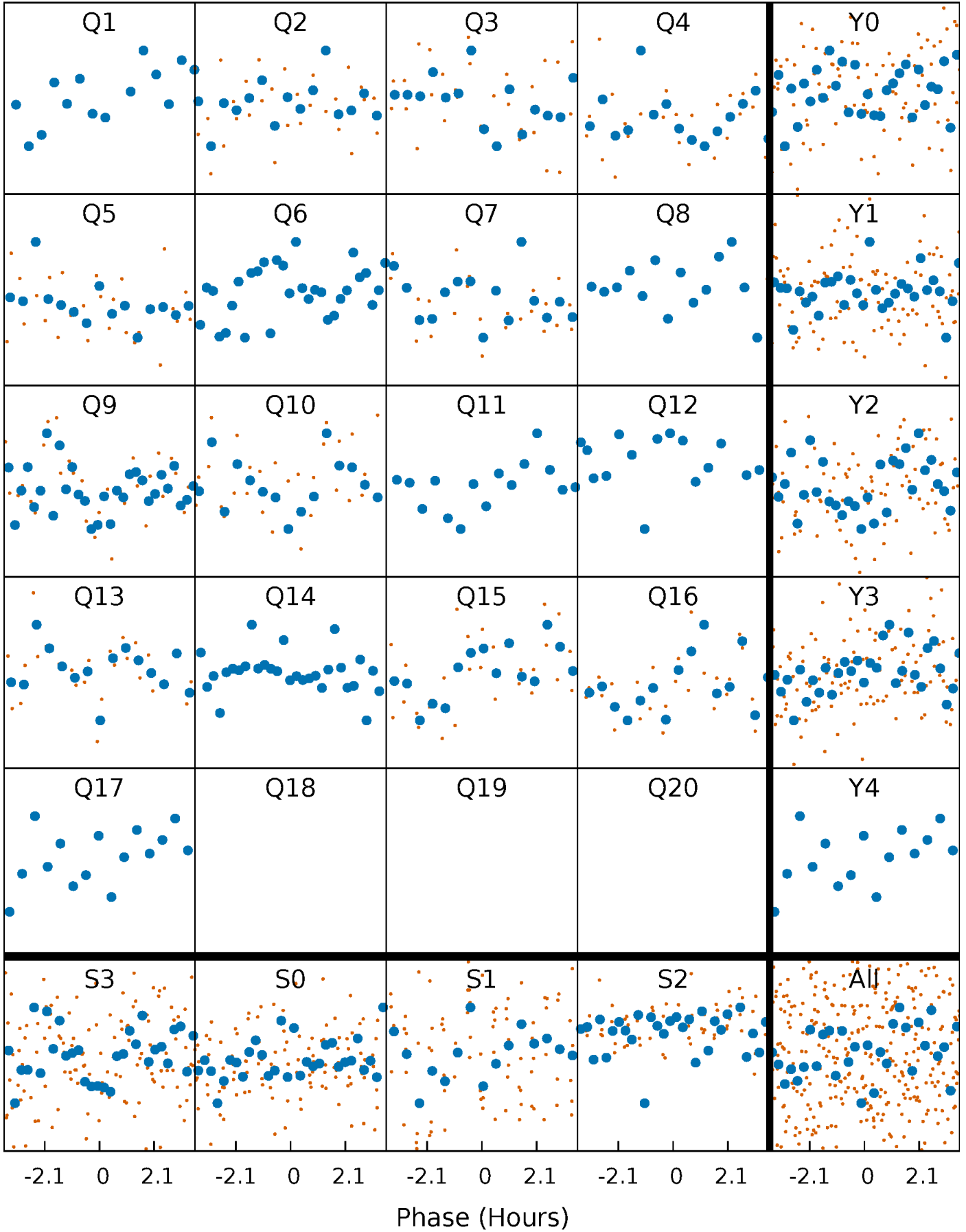


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



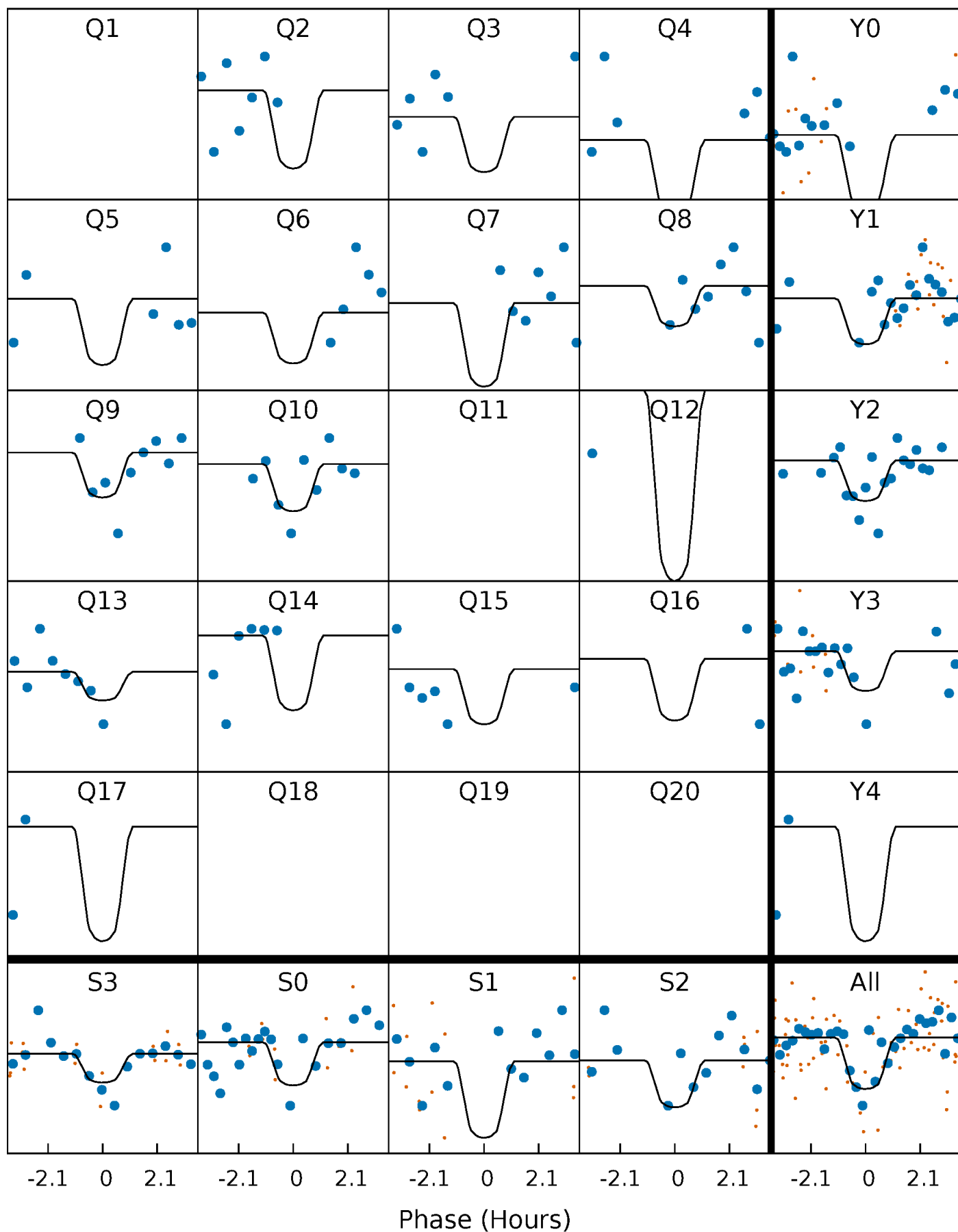
PDC Quarter-Phased Transit Curves

TCE 005444491-02 $P = 44.458642$ Days $T_0 = 143.319053$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005444491-02 P= 44.458642 Days $T_0=143.319053$ (BKJD)

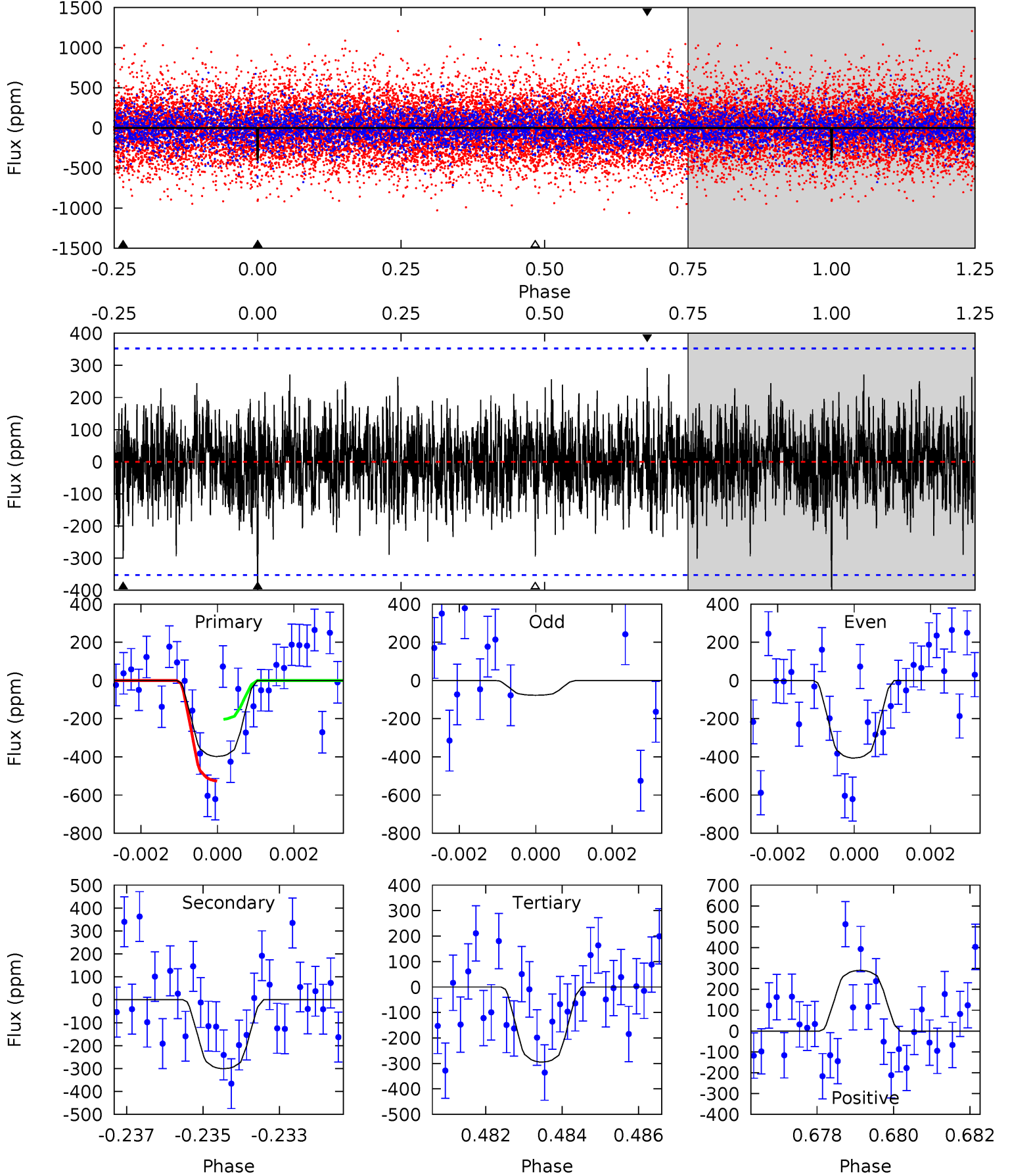


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

005444491-02, P = 44.458642 Days, E = 98.860411 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.01	4.54	4.45	4.40	5.32	3.08	1.26	1.56	1.62	0.09	0.15	1.15	0.82	0.42	2.42



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 005444491

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+169}_{-211}	$4.478^{+0.042}_{-0.168}$	$0.070^{+0.200}_{-0.350}$	$1.007^{+0.237}_{-0.102}$	$1.111^{+0.107}_{-0.147}$	$1.532^{+0.335}_{-0.688}$
	+3%/-3%	+1%/-4%	+286%/-500%	+24%/-10%	+10%/-13%	+22%/-45%
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 005444491-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-301 ± 66	$3.47^{+2.76}_{-2.21}$	756^{+44}_{-37}	4713^{+2922}_{-945}	841^{+5474}_{-579}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

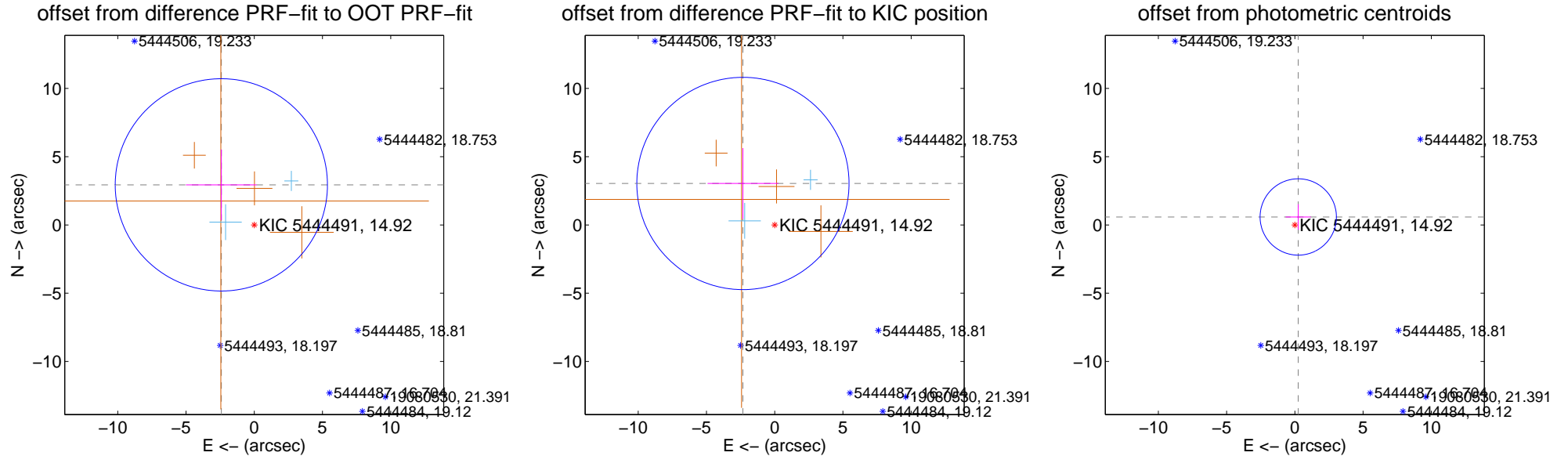
DV Centroid Data

Supplemental centroid analysis for 005444491-02. Kepler magnitude: 14.92. Transit SNR 7.85

There are 2 quarters with good PRF difference image offsets

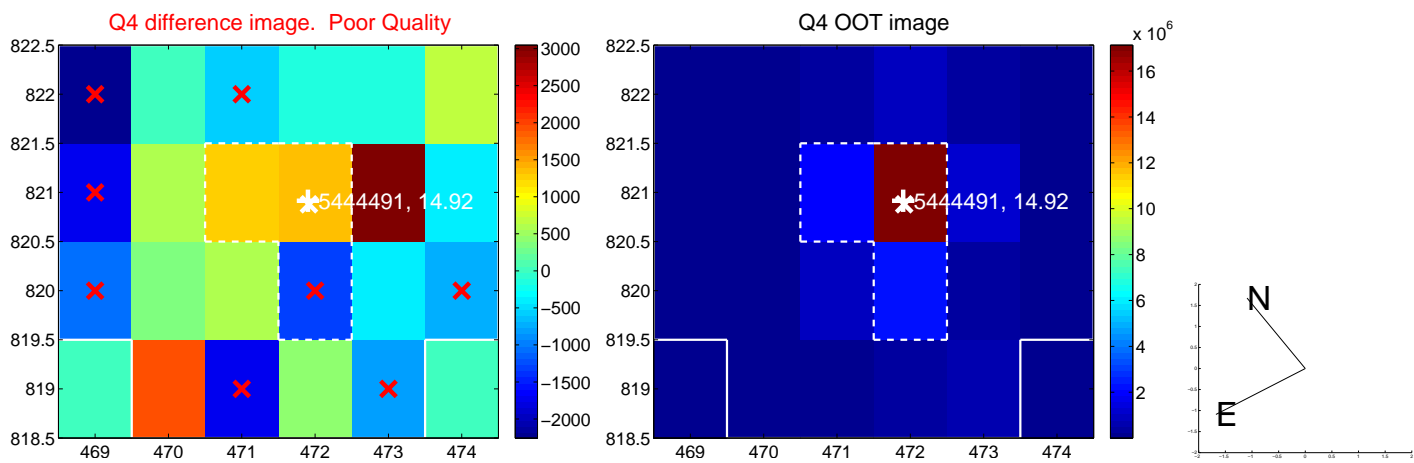
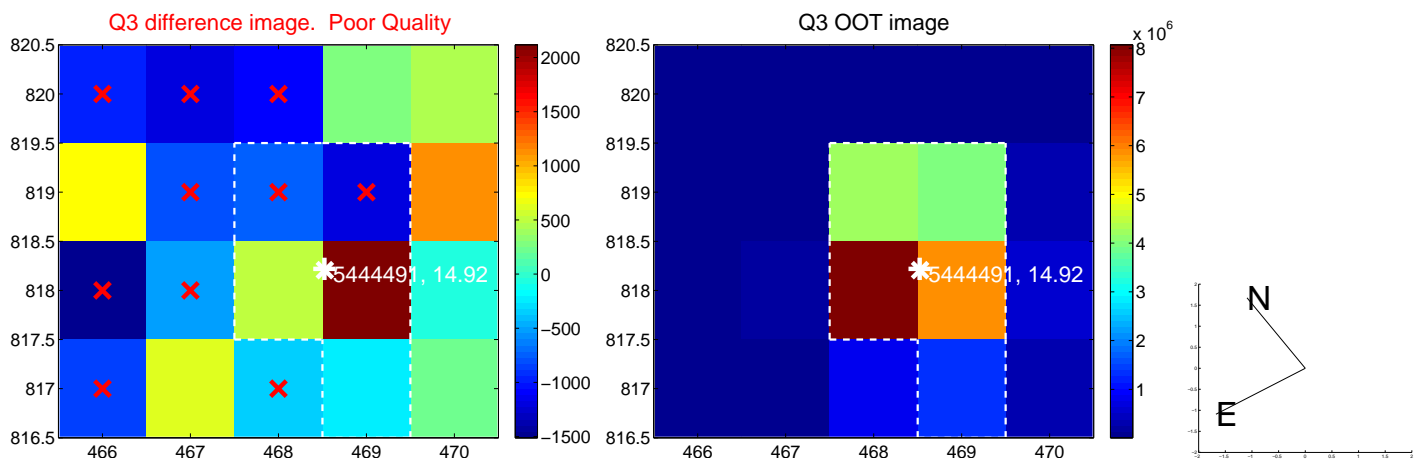
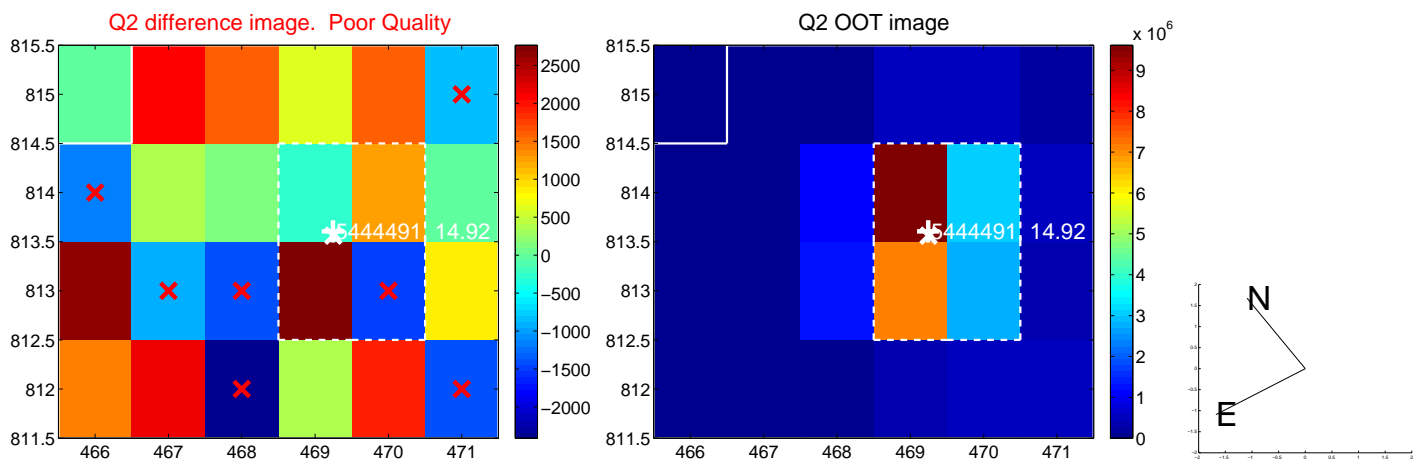
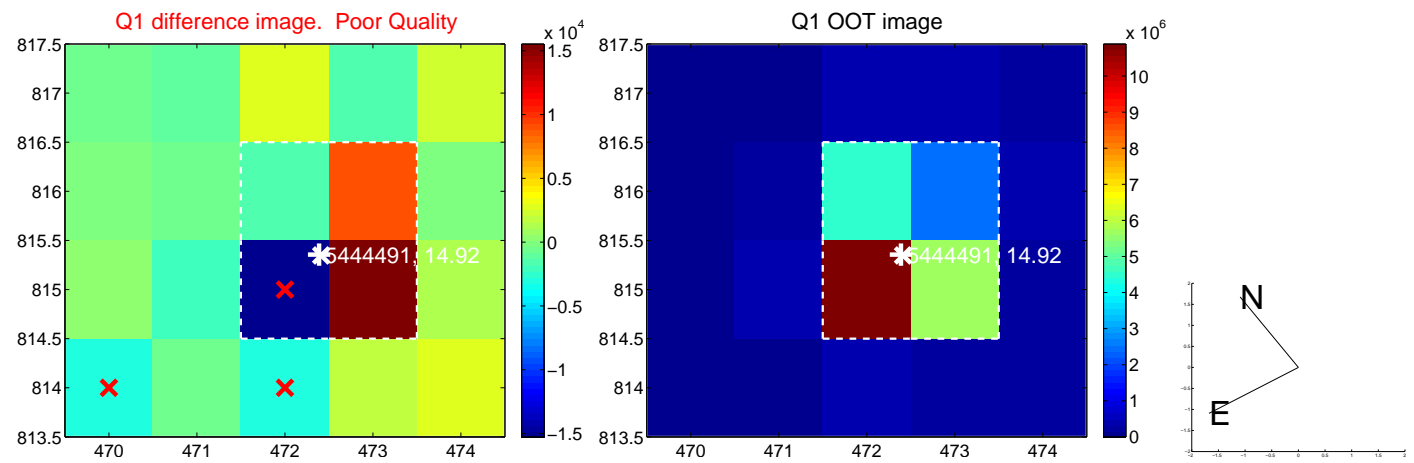
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.800 ± 2.592	1.47	2.412 ± 2.593	2.936 ± 2.591
PRF-fit source offset from KIC position	3.827 ± 2.592	1.48	2.328 ± 2.593	3.038 ± 2.591
photometric centroid source offset	0.64 ± 0.93	0.68	-0.25 ± 0.92	0.58 ± 0.93

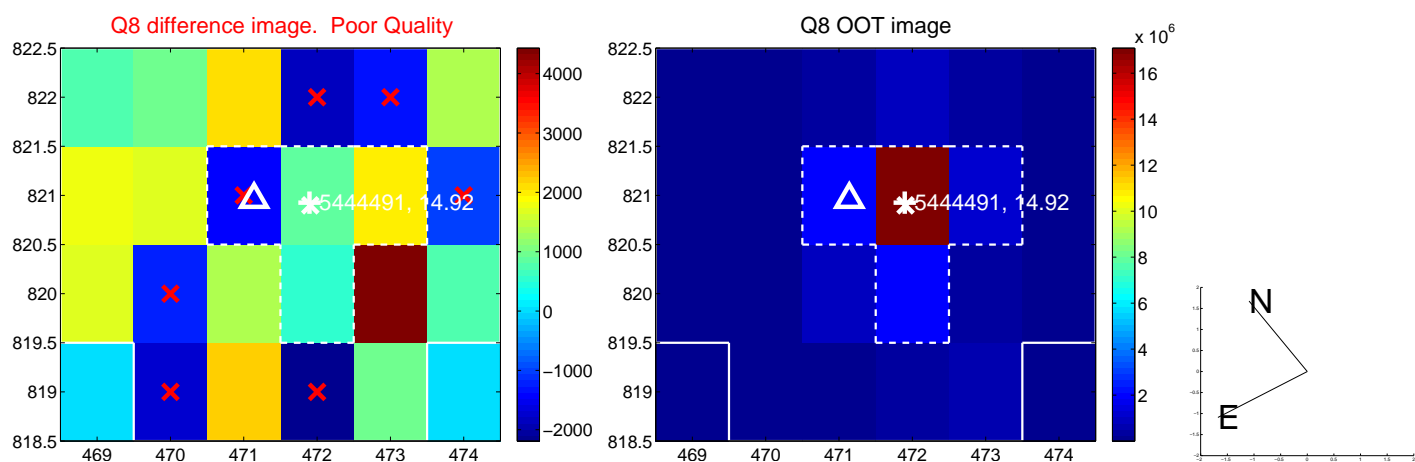
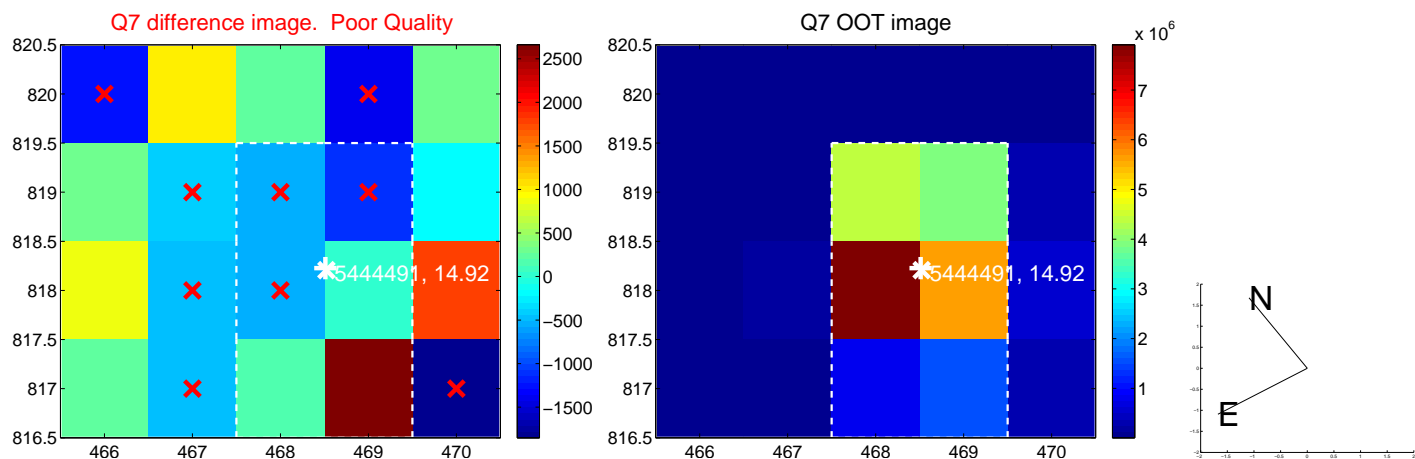
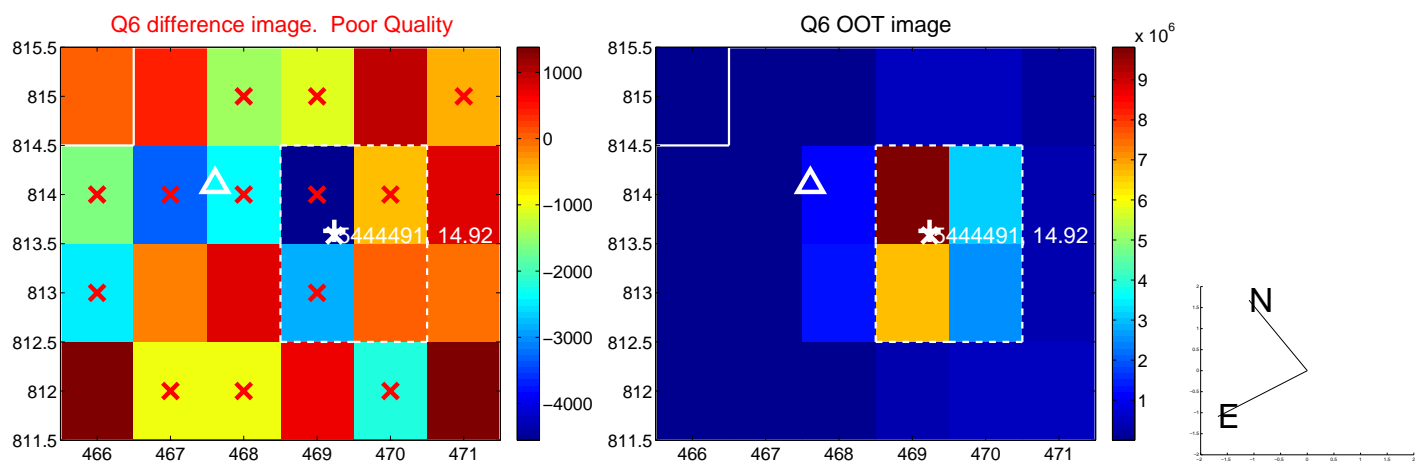
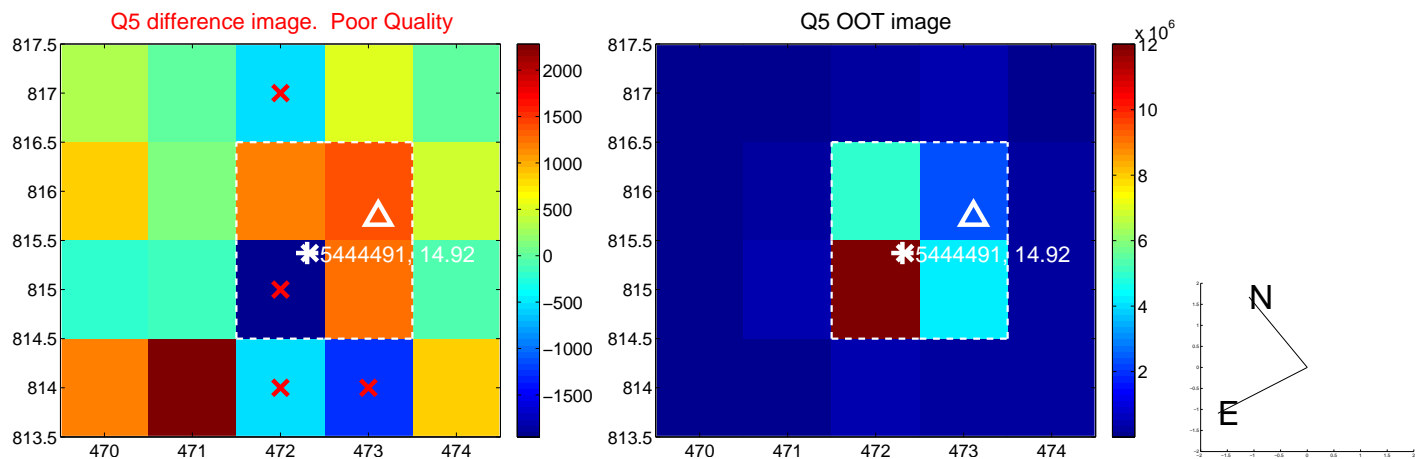


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

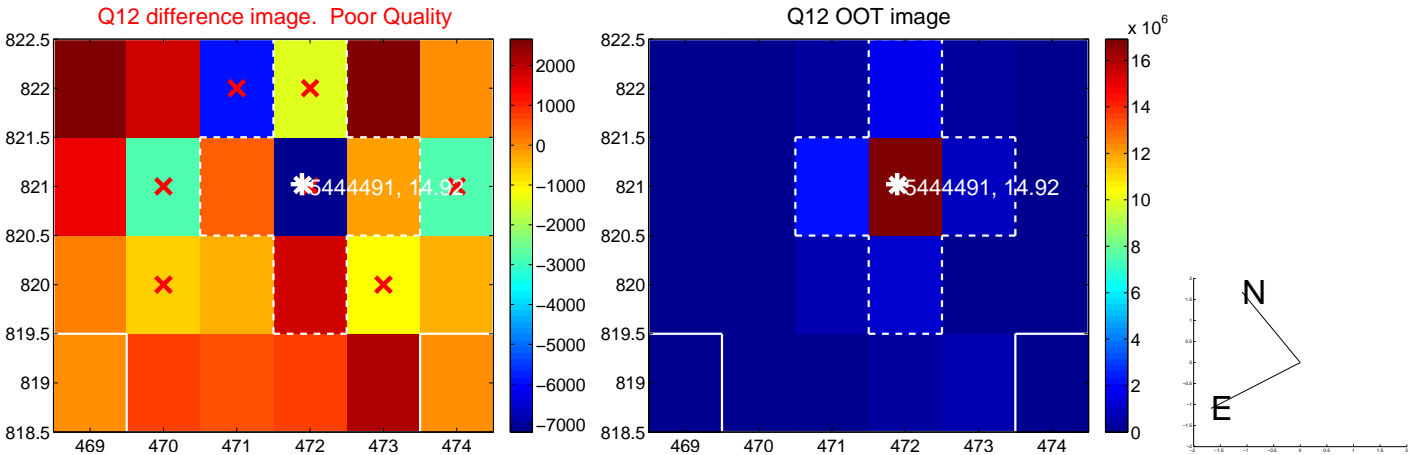
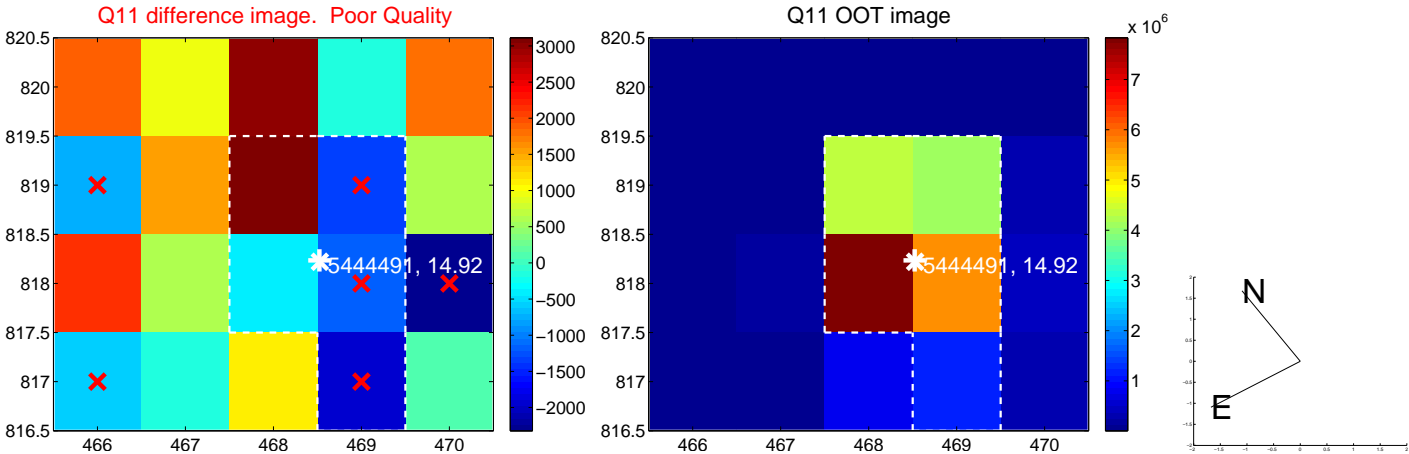
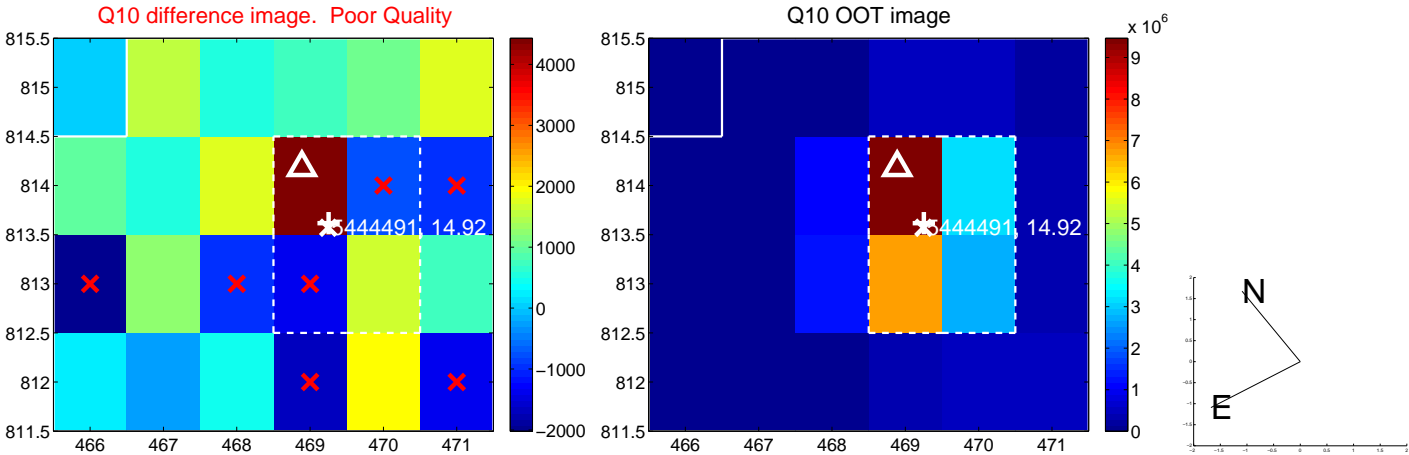
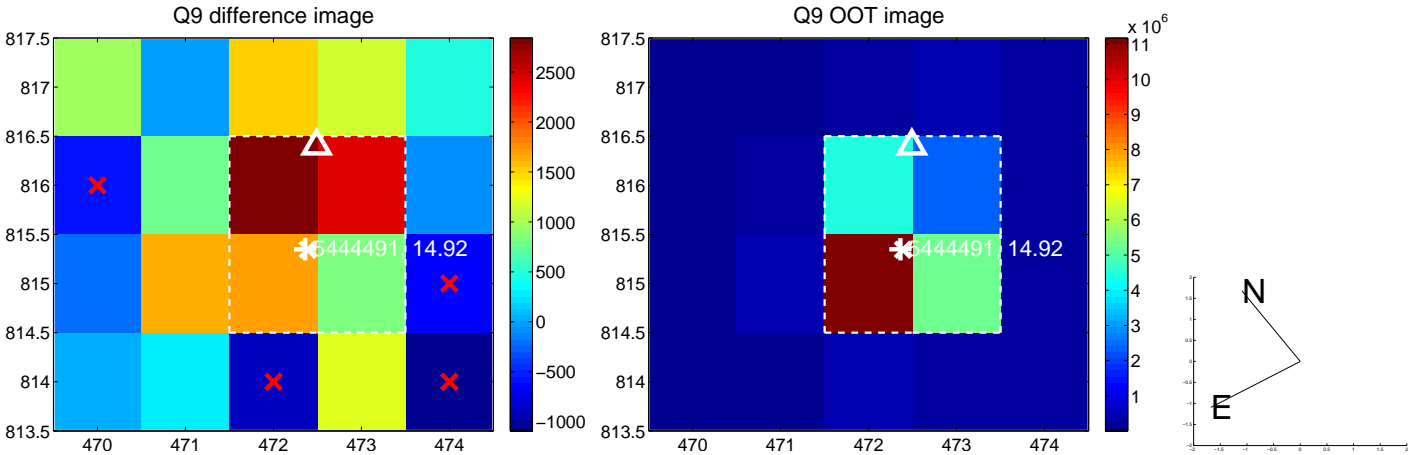
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



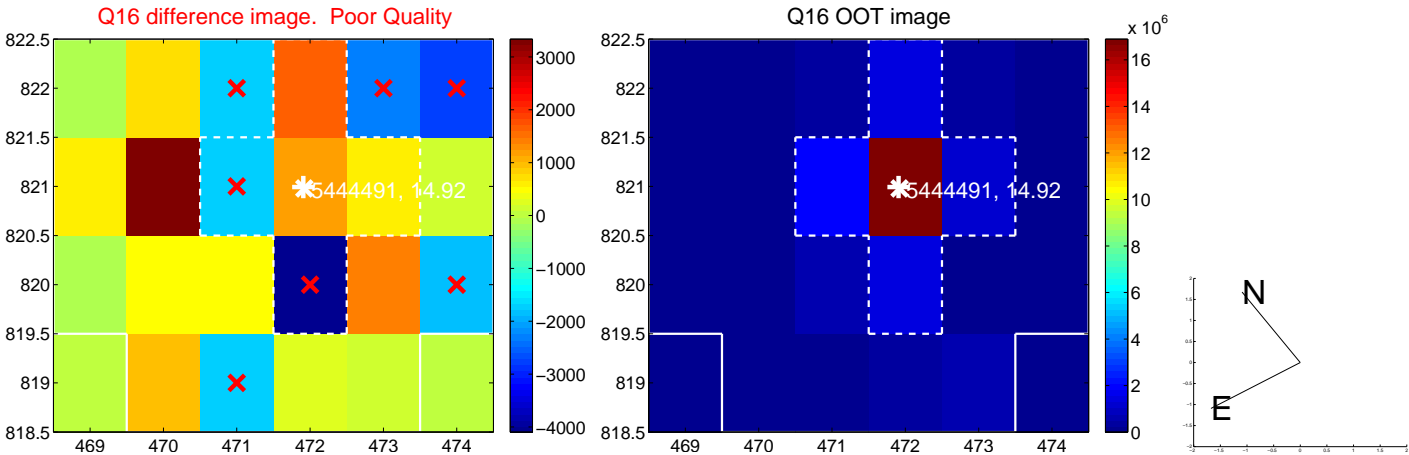
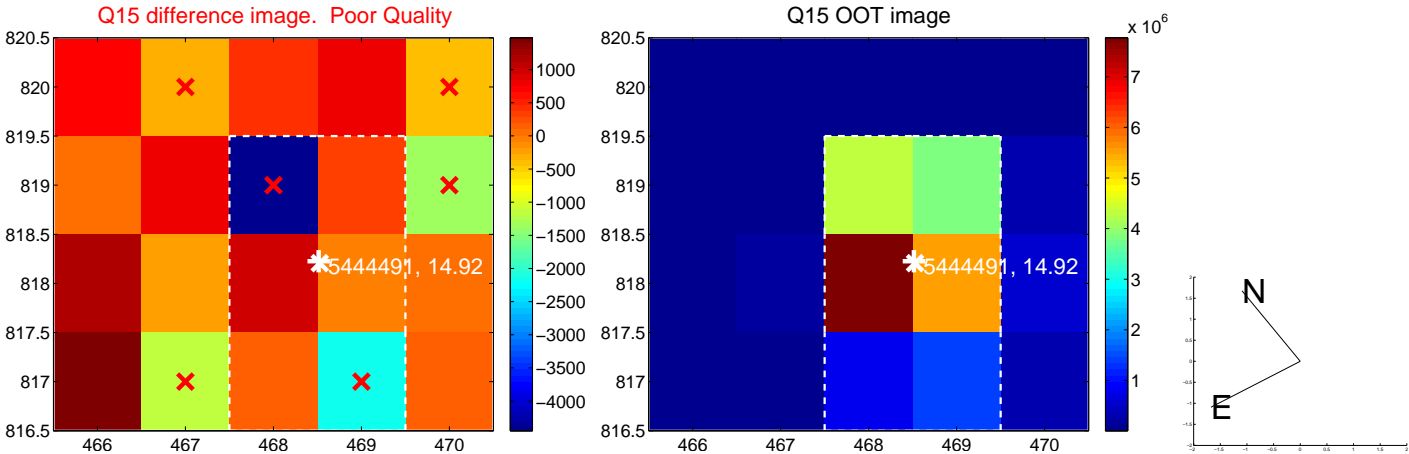
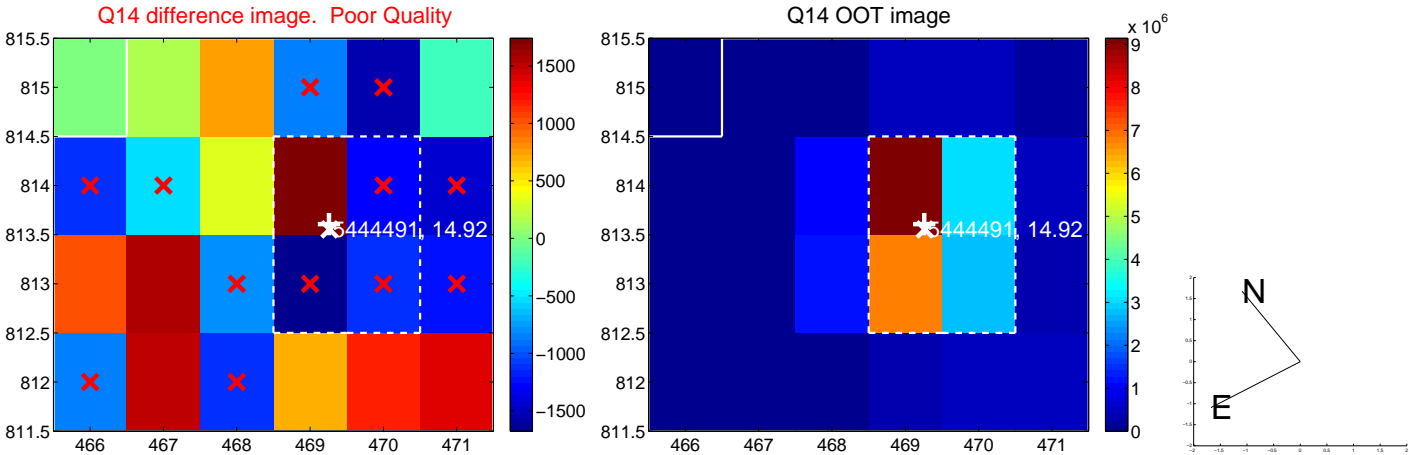
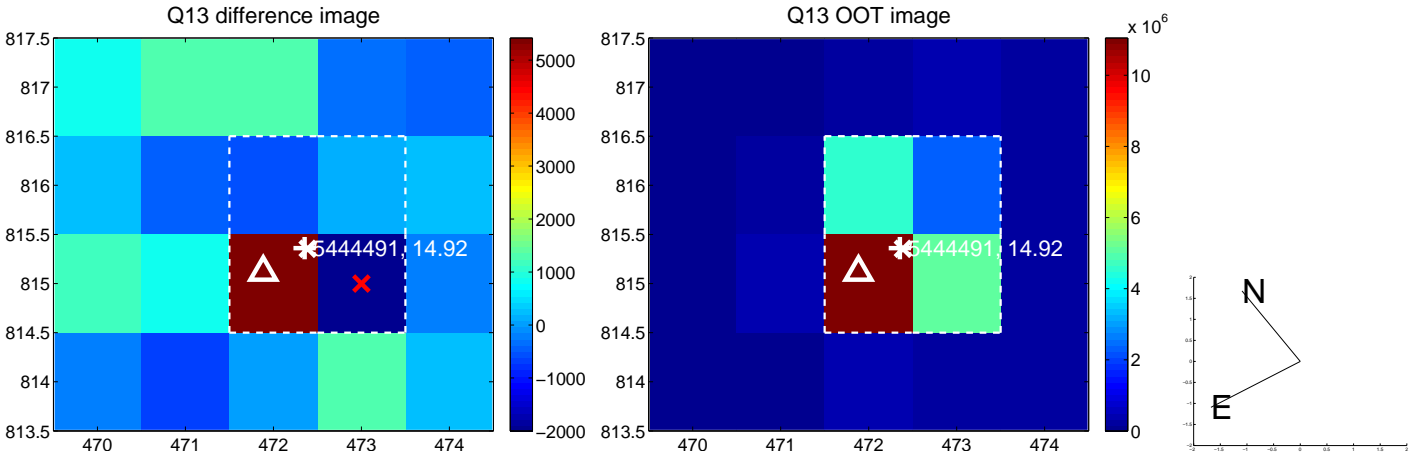
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



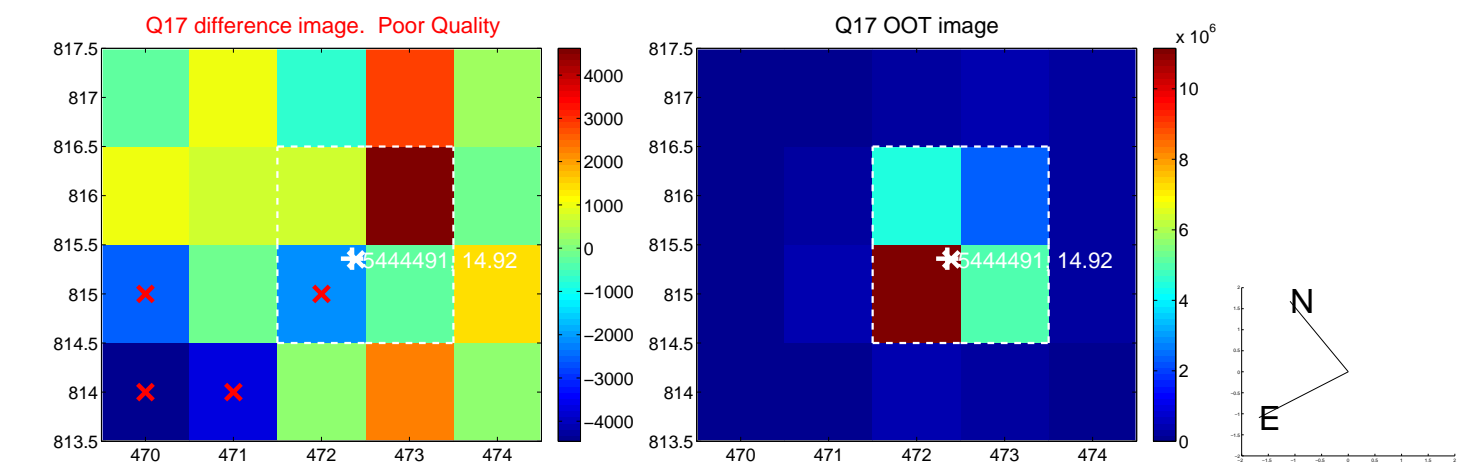
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



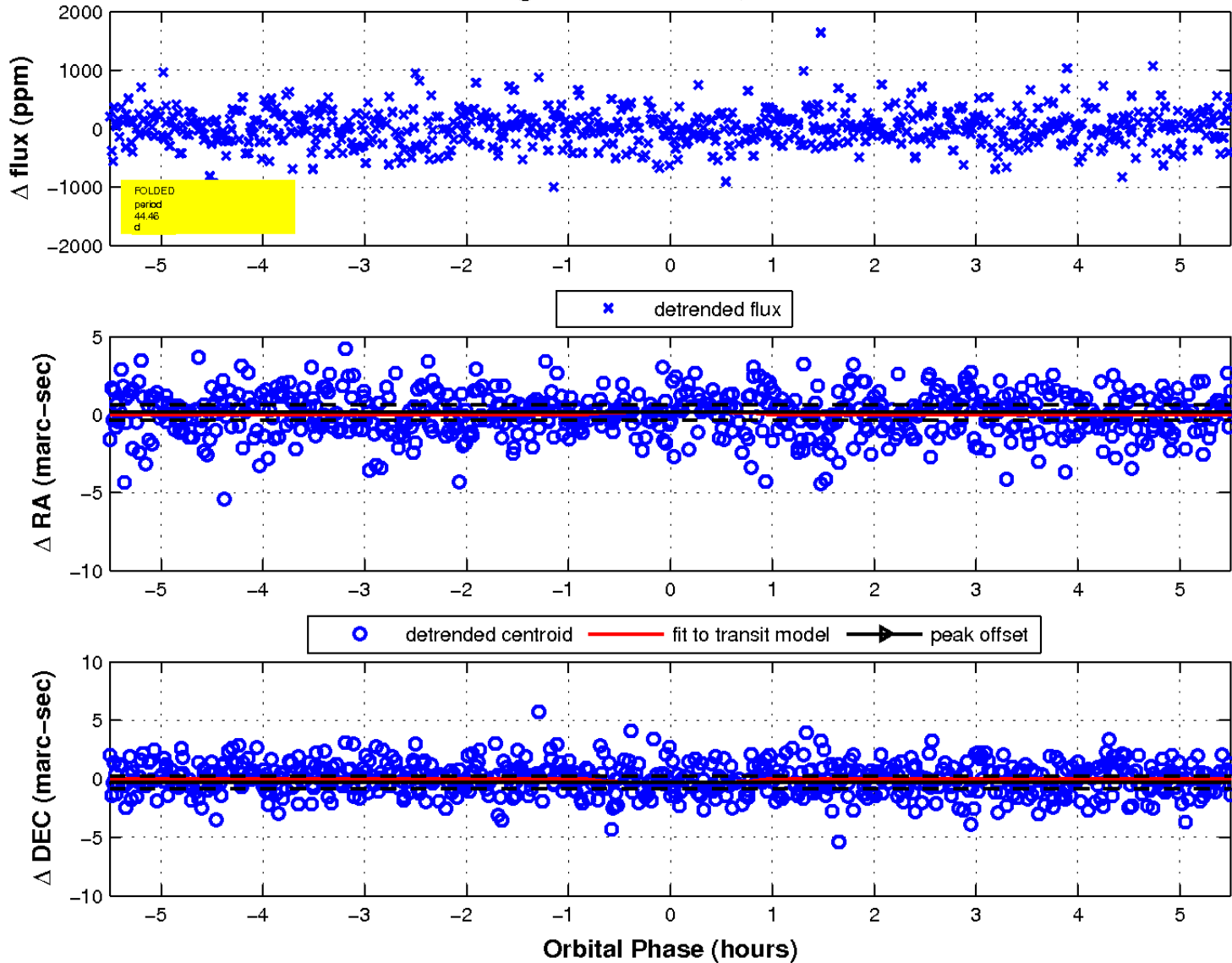
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

