

KIC 008494533

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})
008494533-01	OBS	No	3.032881	133.713434	14.6	17.386	8.1	5.7	1.25	6751	0.48	1492.31
008494533-02	OBS	No	83.596982	176.545653	160.3	20.189	9.0	7.6	1.25	6751	1.87	17.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008494533-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008494533-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

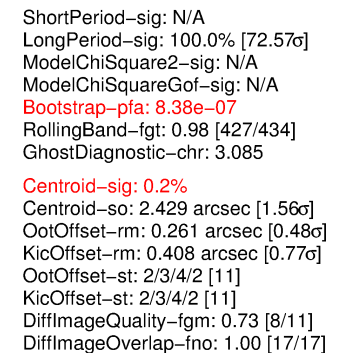
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 008494533-01

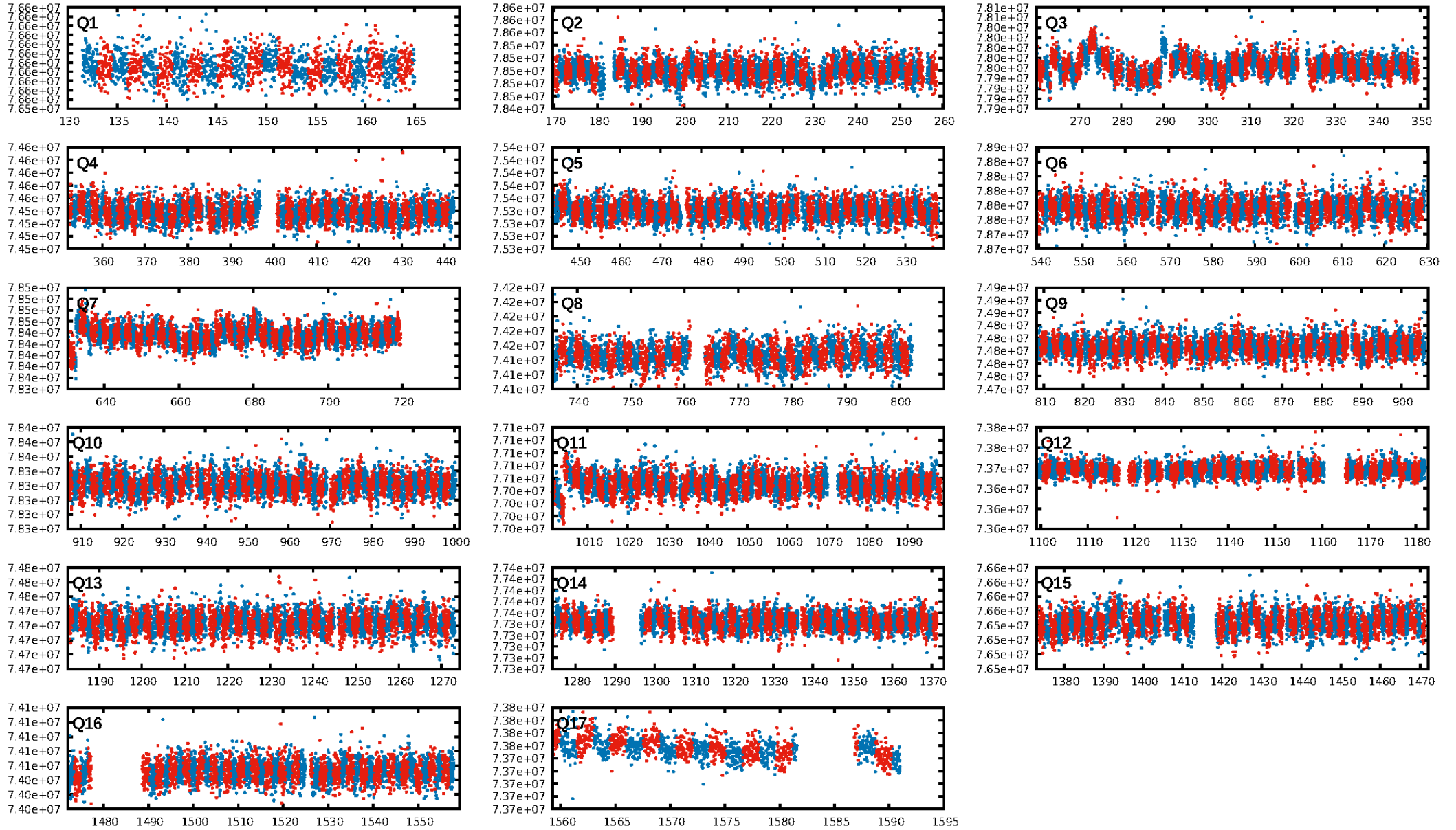
No Significant Match Found

KIC: 8494533 Candidate: 1 of 3 Period: 3.033 d

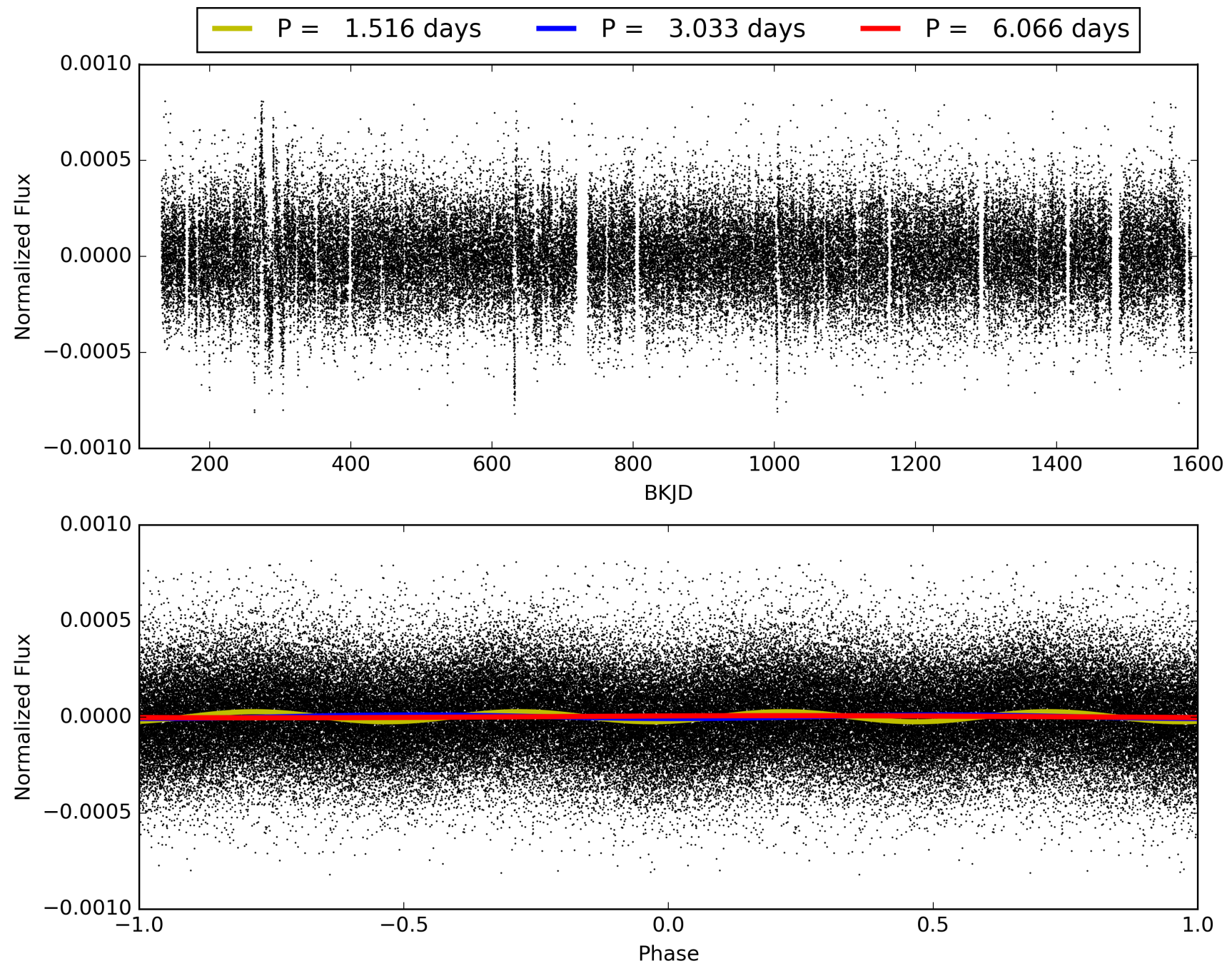


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008494533-01, PDC Light Curves

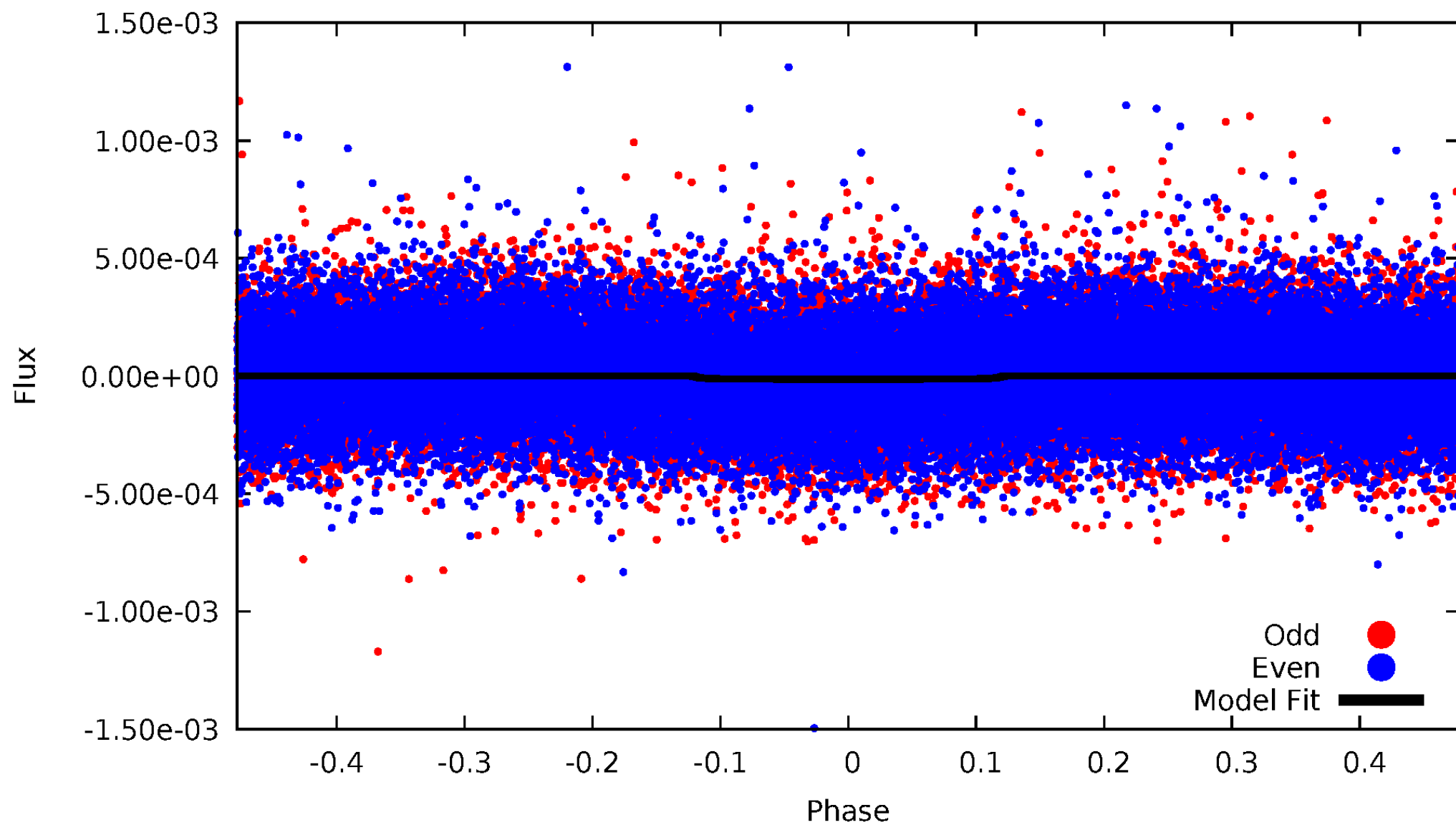


TCE 008494533-01



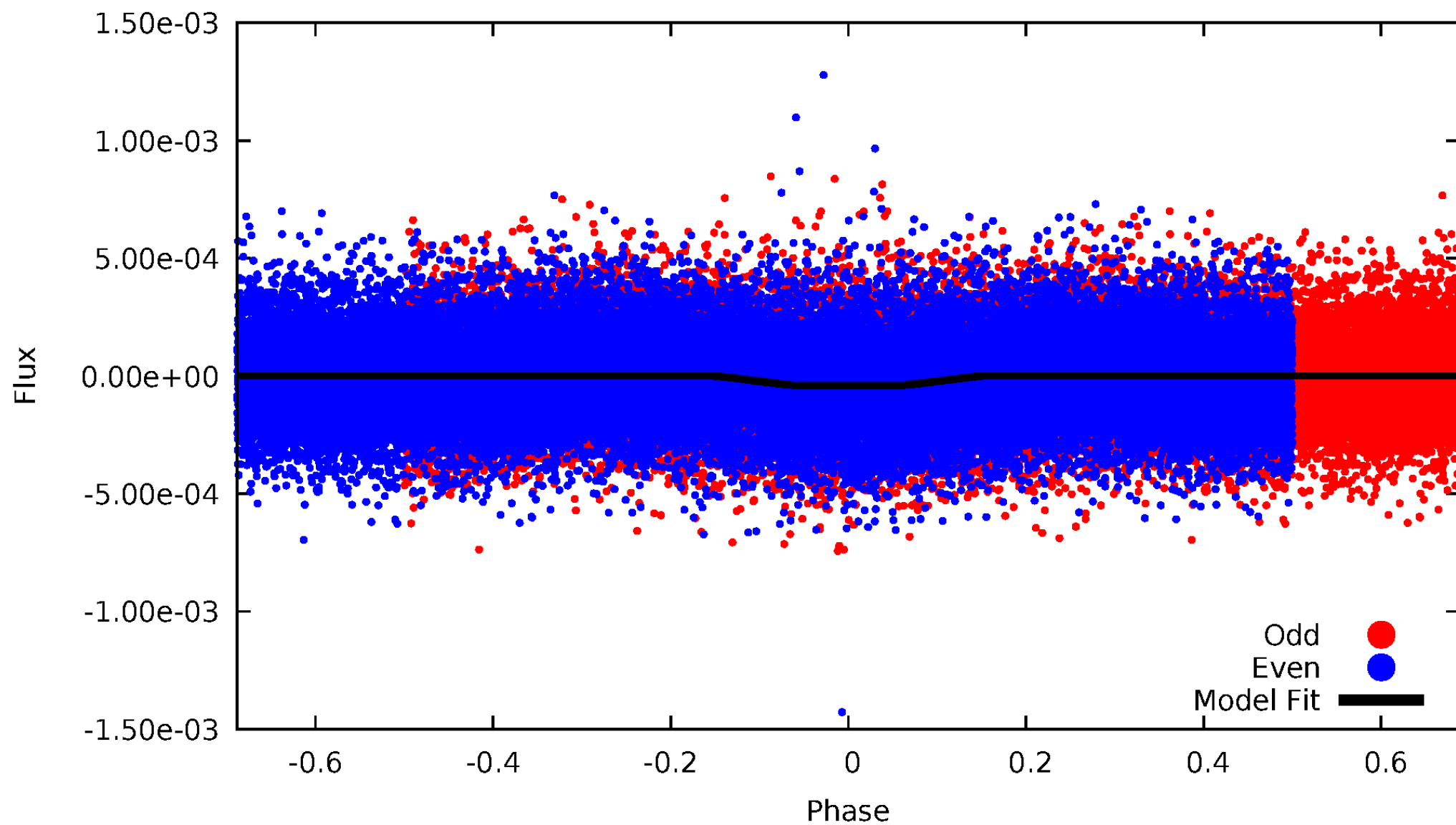
DV Odd/Even

TCE 008494533-01

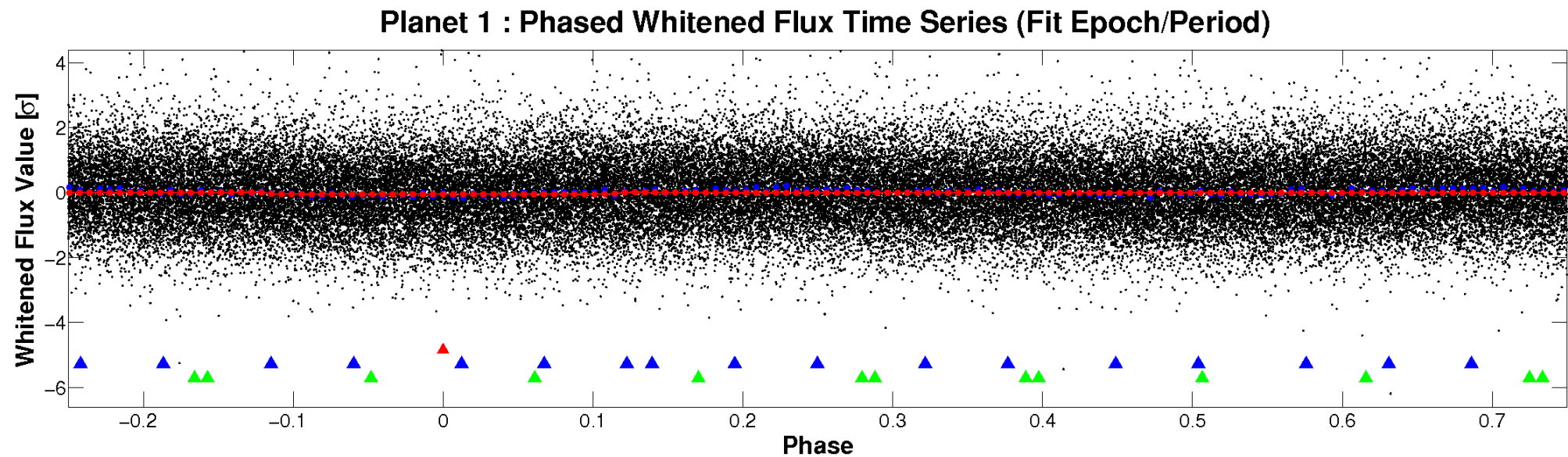
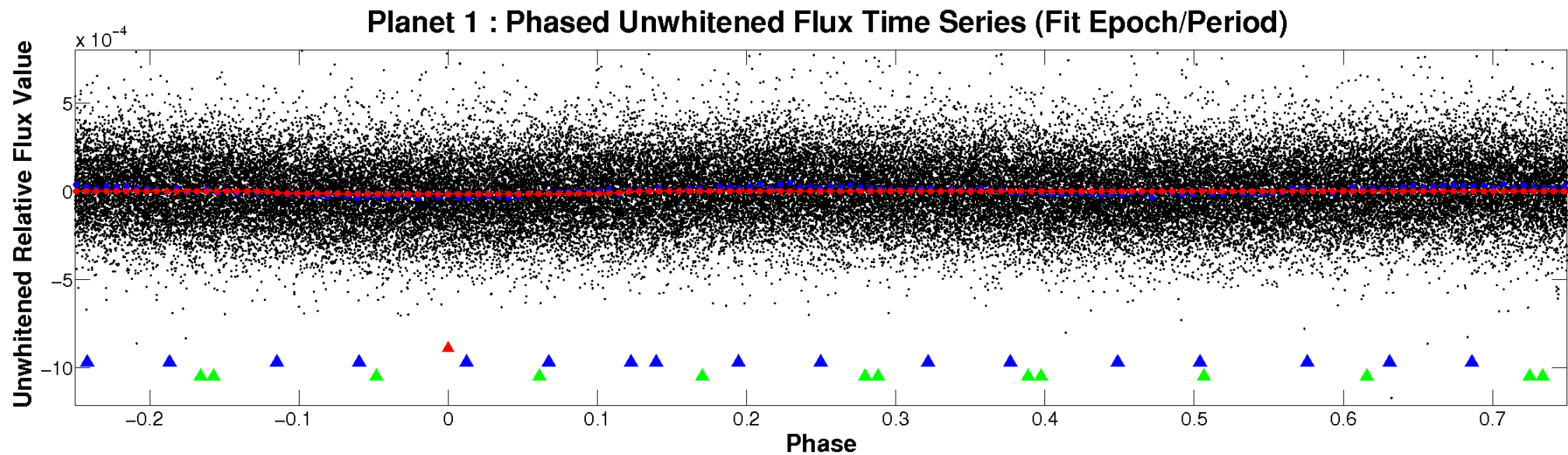


ALT Odd/Even

TCE 008494533-01

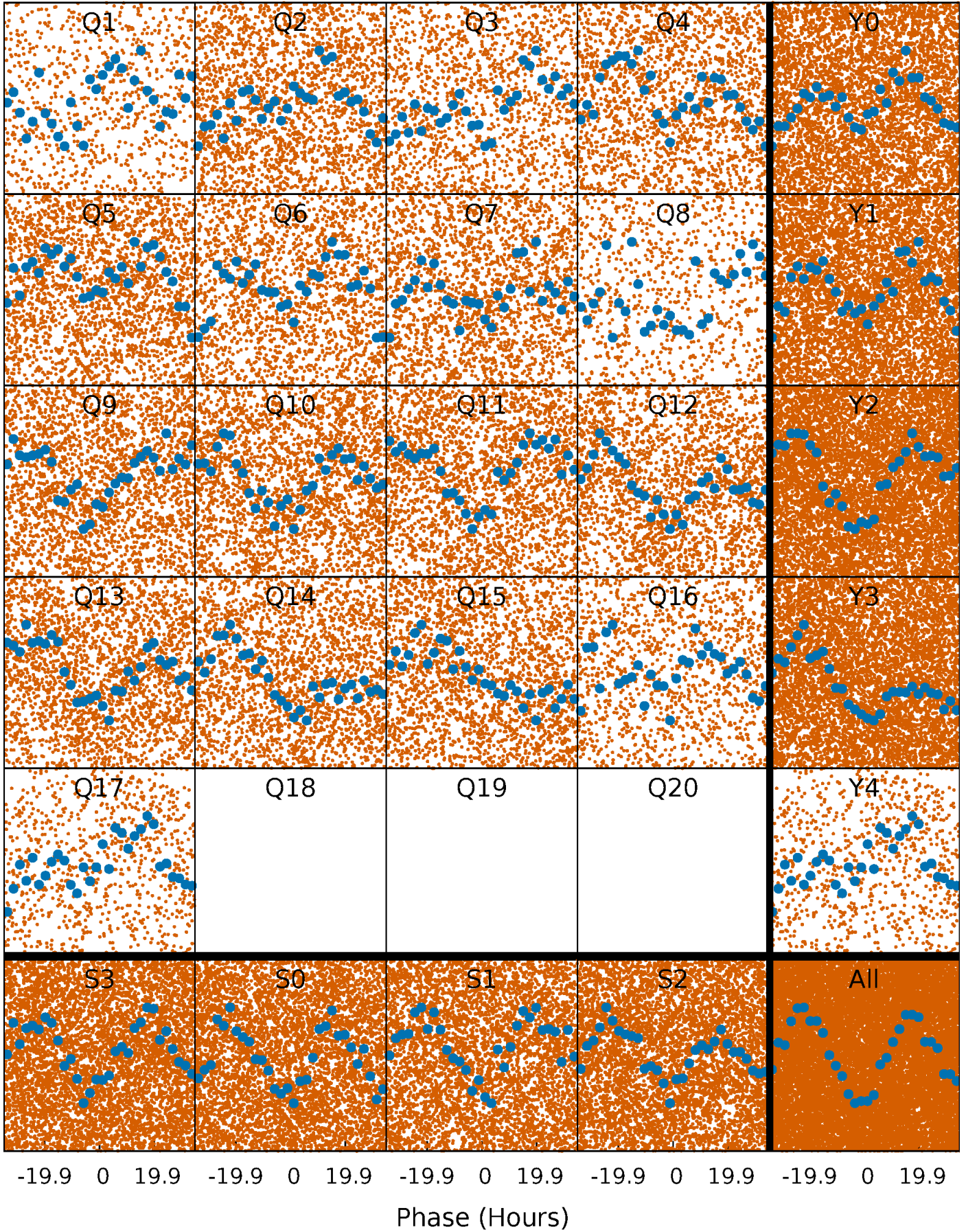


Non-Whitened Vs. Whitened Light Curve



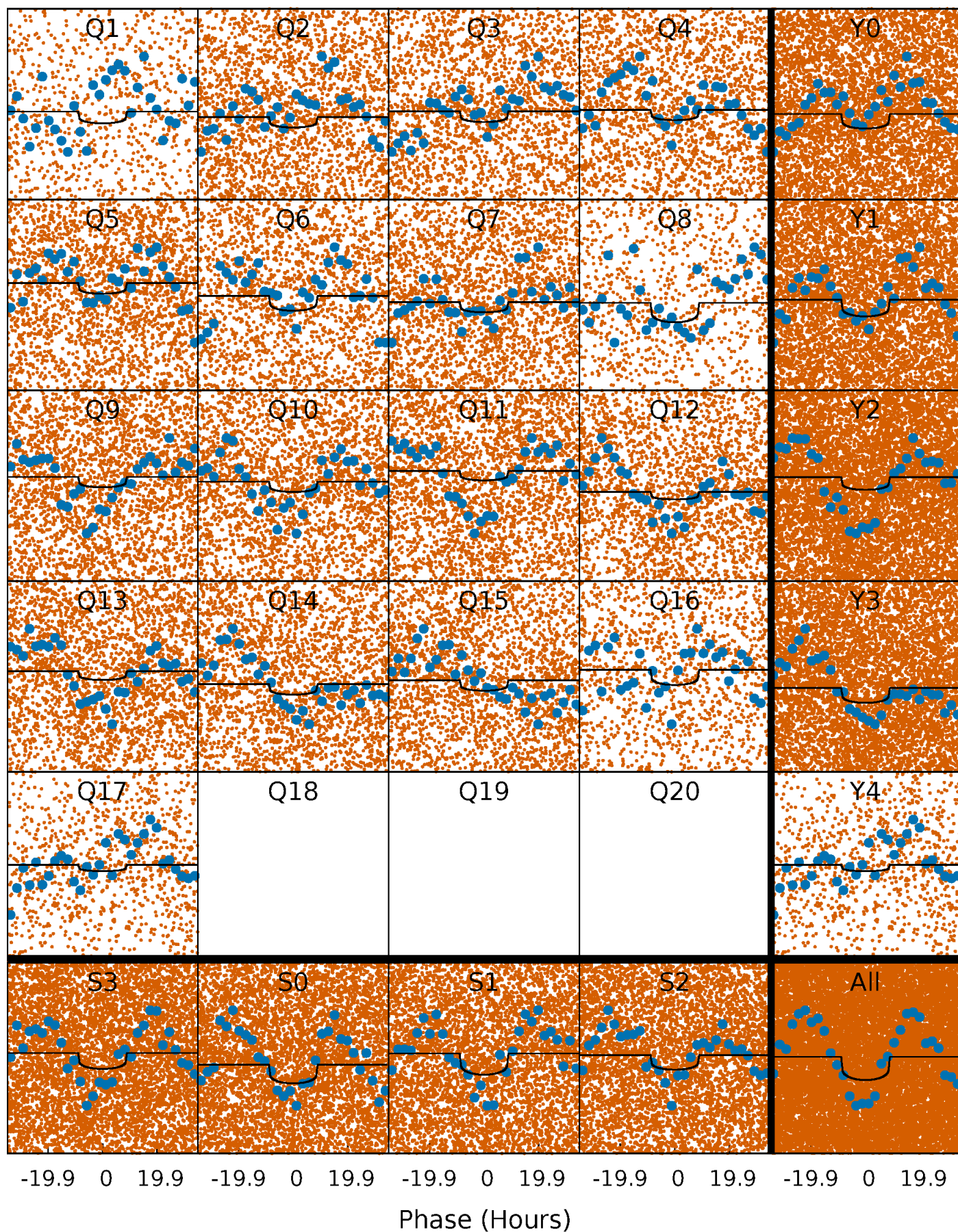
PDC Quarter-Phased Transit Curves

TCE 008494533-01 P= 3.032881 Days $T_0=133.713434$ (BKJD)



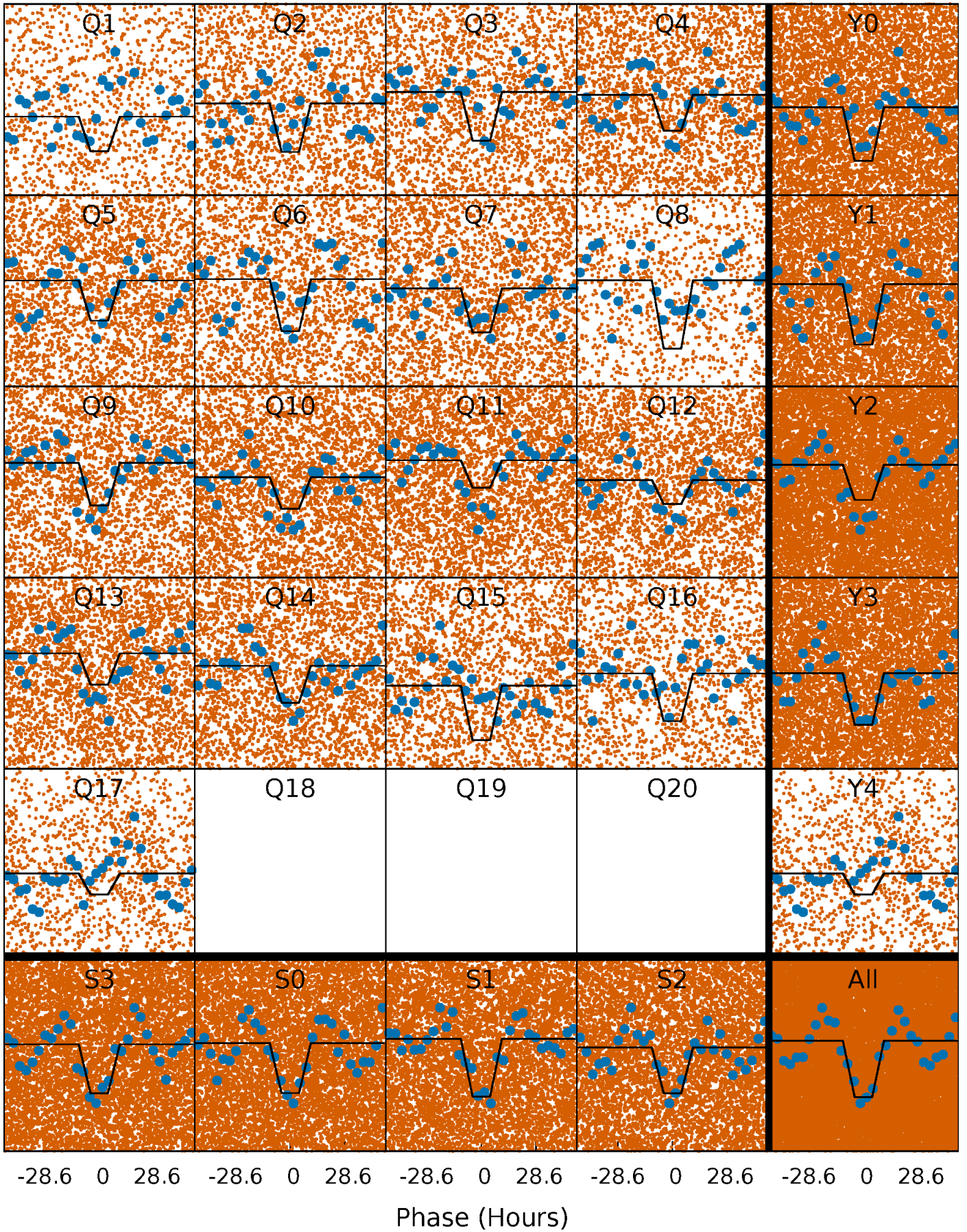
DV Quarter-Phased Transit Curves

TCE 008494533-01 P= 3.032881 Days $T_0=133.713434$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

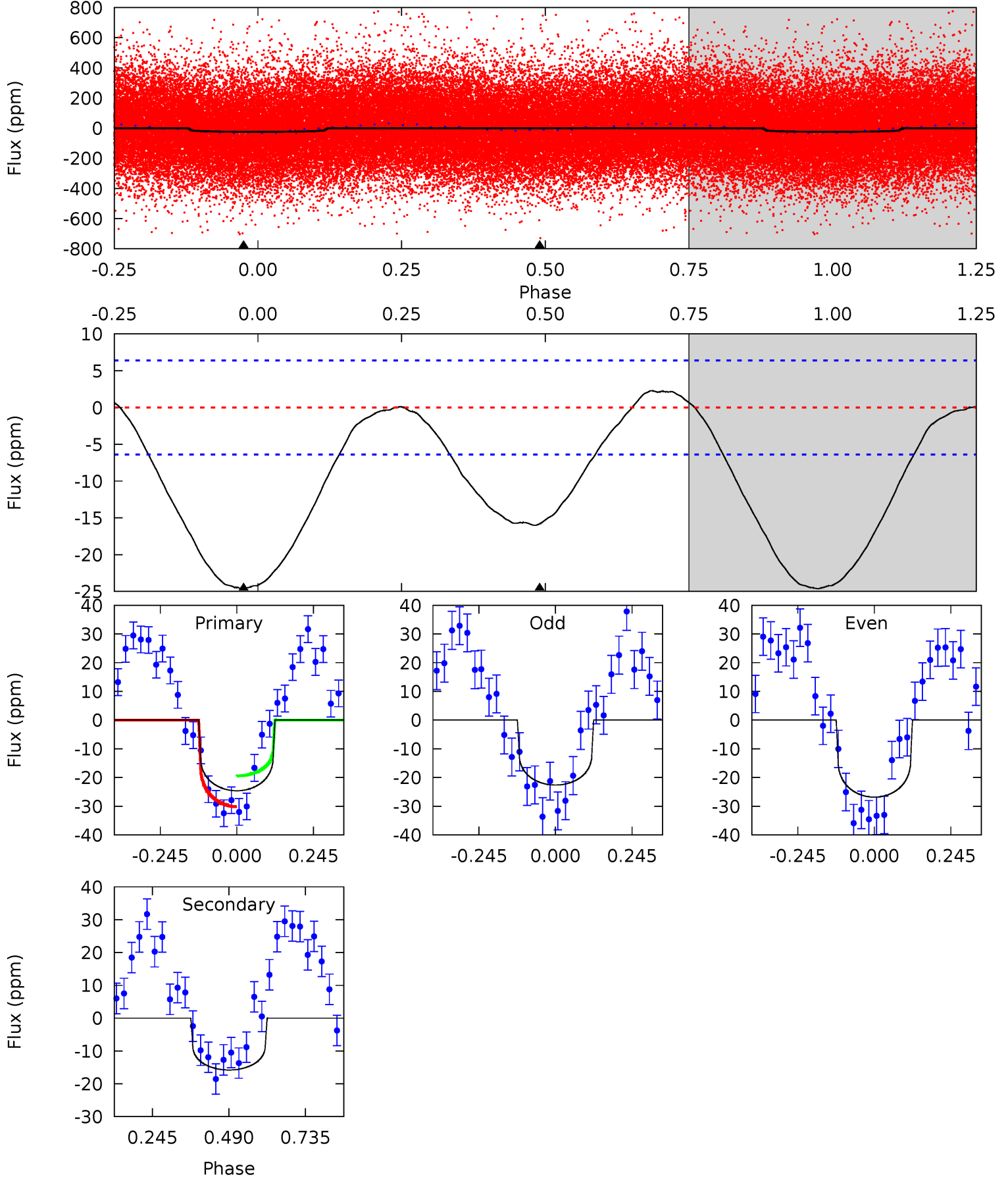
TCE 008494533-01 P= 3.033065 Days $T_0=133.594515$ (BKJD)



DV Model-Shift Uniqueness Test

008494533-01, P = 3.032881 Days, E = 130.680553 Days

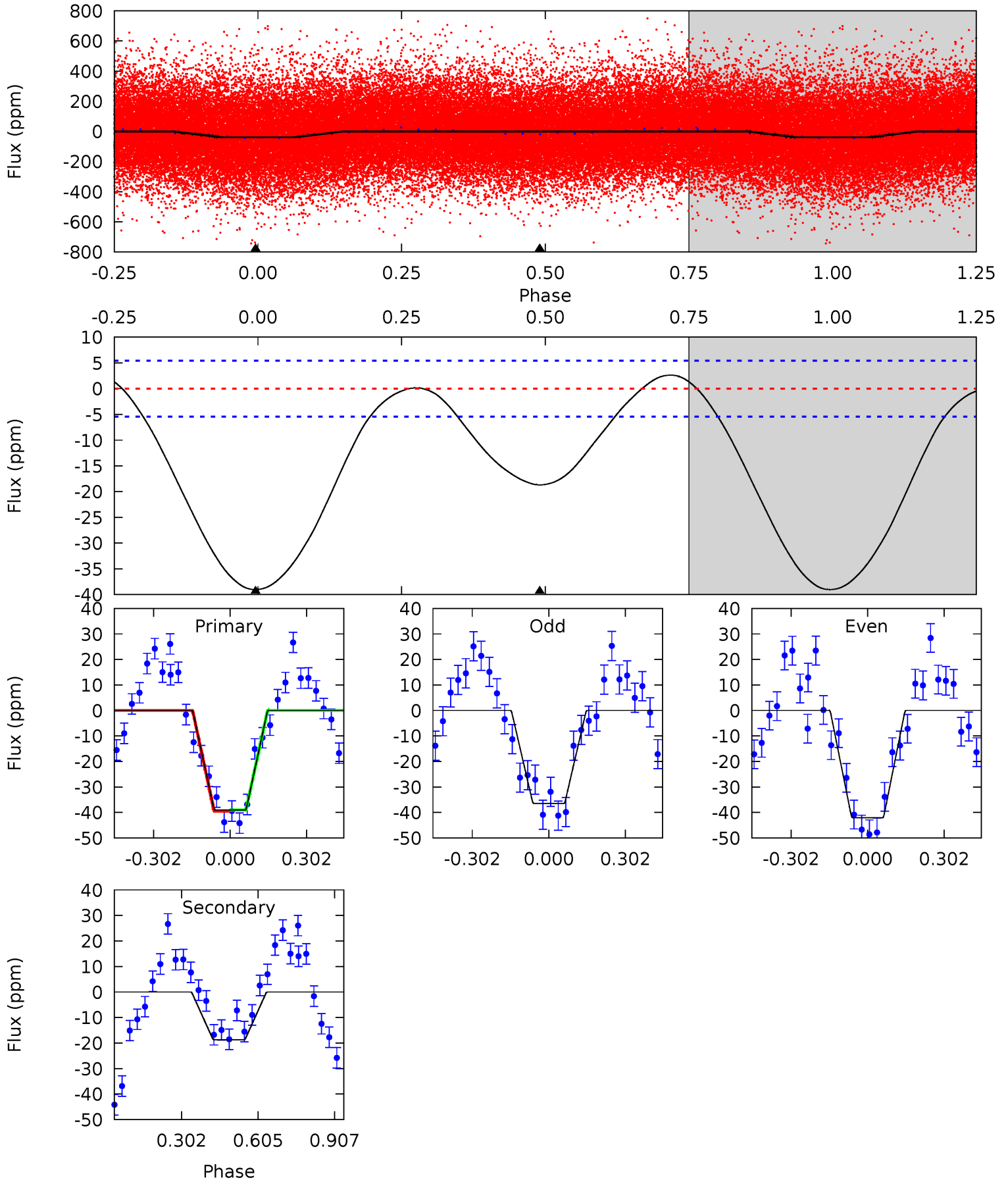
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.8	10.8	0	0	4.37	1.16	0.66	16.8	16.8	10.8	10.8	1.45	1.17	0.09	3.71



Alt Model-Shift Uniqueness Test

008494533-01, P = 3.033065 Days, E = 130.561450 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	14.9	0	0	4.33	1.03	1.22	31.1	31.1	14.9	14.9	2.21	0.84	0.06	0.20



Stellar Parameters For KIC 008494533

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6751^{+162}_{-243}	$4.341^{+0.054}_{-0.216}$	$-0.100^{+0.250}_{-0.350}$	$1.253^{+0.434}_{-0.145}$	$1.267^{+0.190}_{-0.171}$	$0.907^{+0.281}_{-0.509}$
	+2%/-4%	+1%/-5%	+250%/-350%	+35%/-12%	+15%/-13%	+31%/-56%
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 008494533-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 1	$0.75^{+0.67}_{-0.50}$	2264^{+172}_{-121}	5901^{+5756}_{-1447}	31^{+251}_{-22}
Alt.	-19 ± 1	$1.01^{+0.75}_{-0.65}$	2272^{+176}_{-122}	5334^{+4176}_{-1097}	20^{+127}_{-13}

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

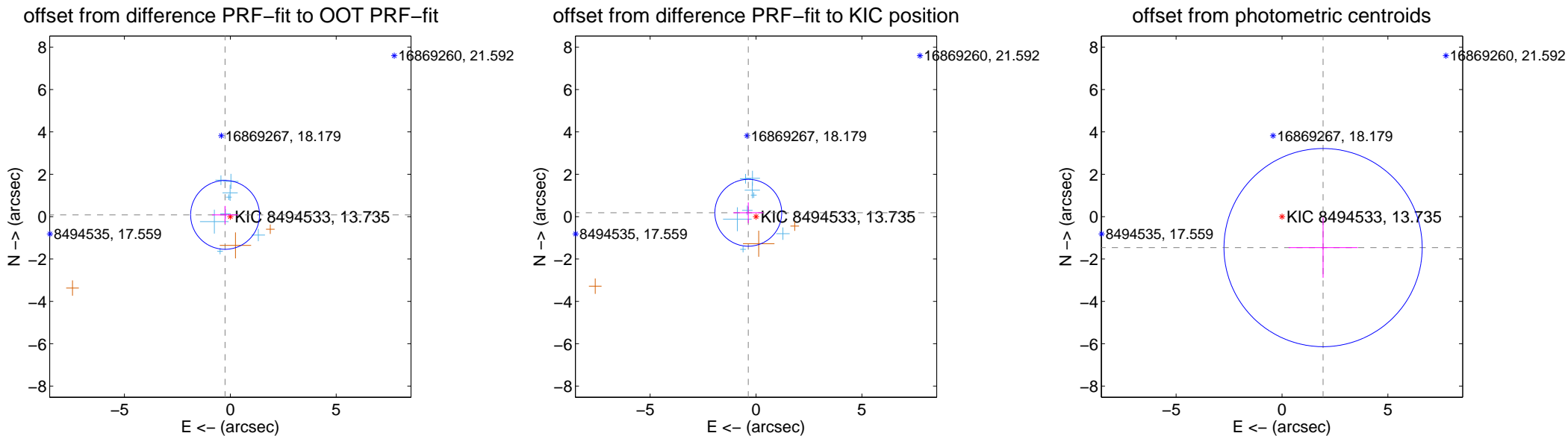
DV Centroid Data

Supplemental centroid analysis for 008494533-01. Kepler magnitude: 13.73. Transit SNR 5.67

There are 8 quarters with good PRF difference image offsets

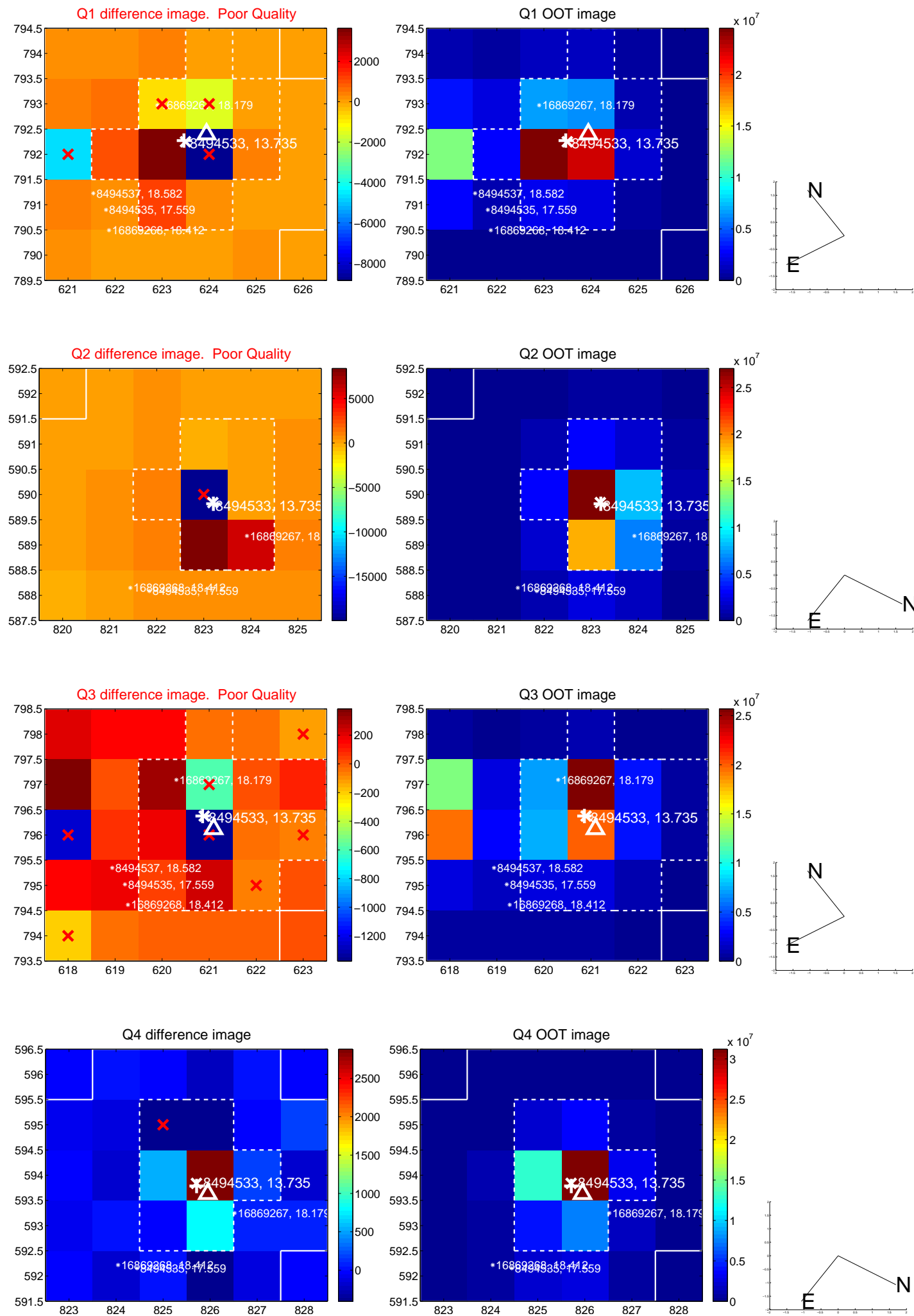
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.261 ± 0.542	0.48	0.248 ± 0.612	0.083 ± 0.423
PRF-fit source offset from KIC position	0.408 ± 0.526	0.77	0.365 ± 0.702	0.182 ± 0.492
photometric centroid source offset	2.43 ± 1.56	1.56	-1.94 ± 1.63	-1.46 ± 1.43

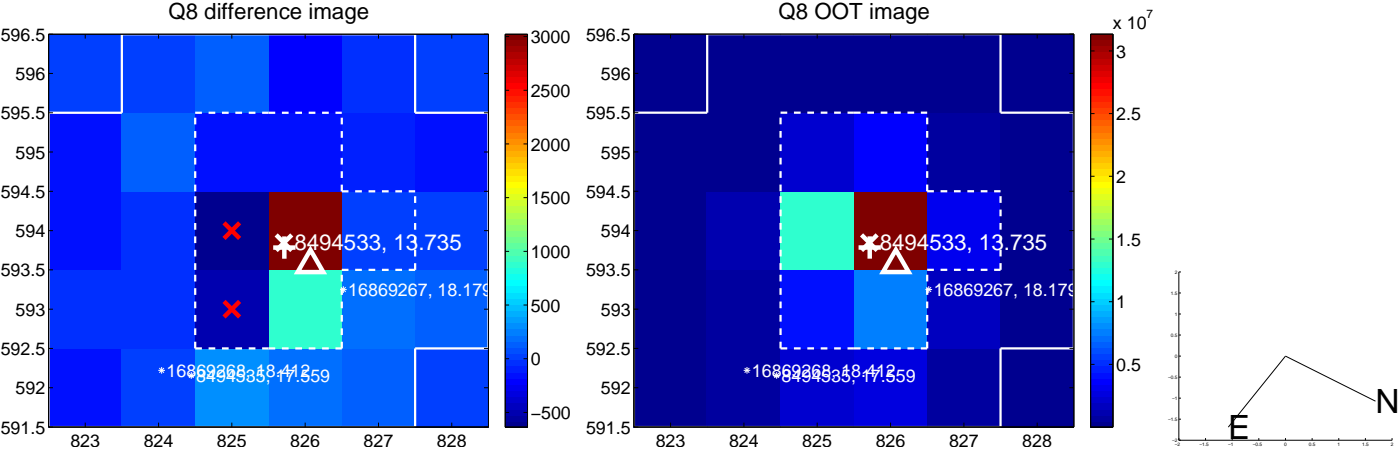
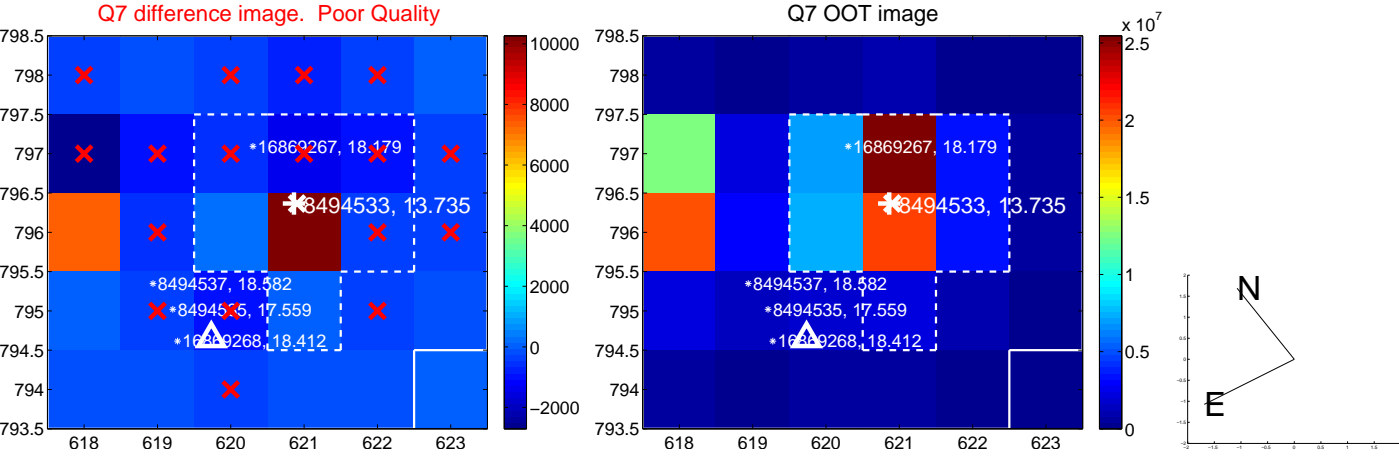
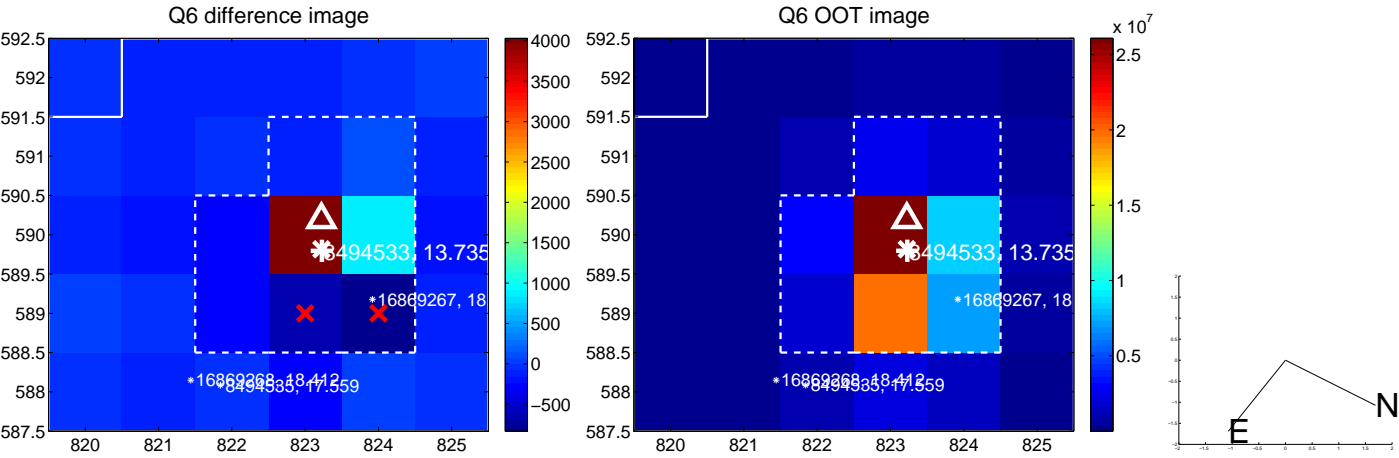
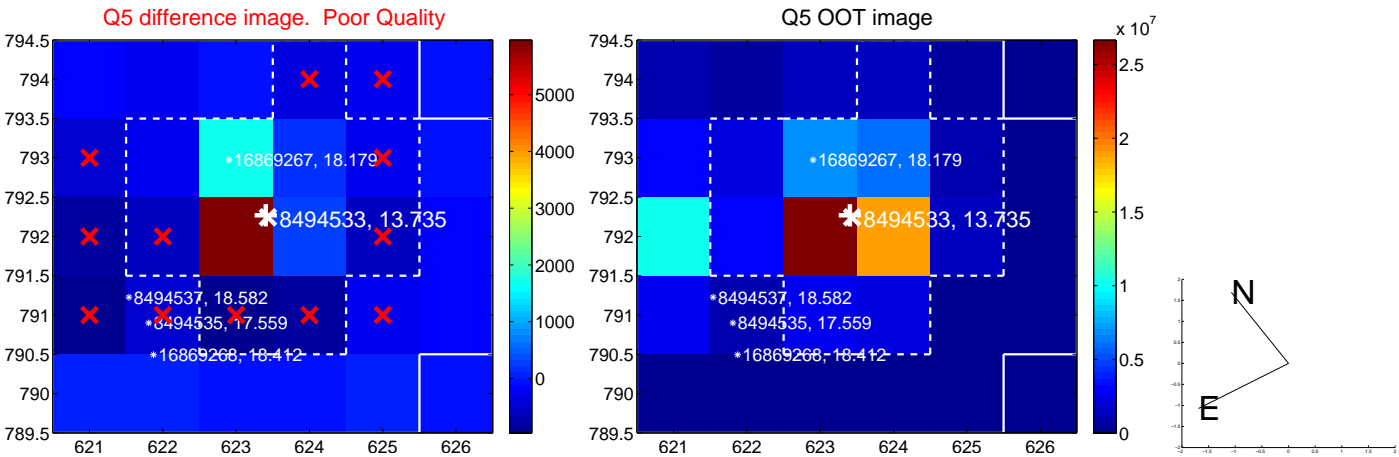


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

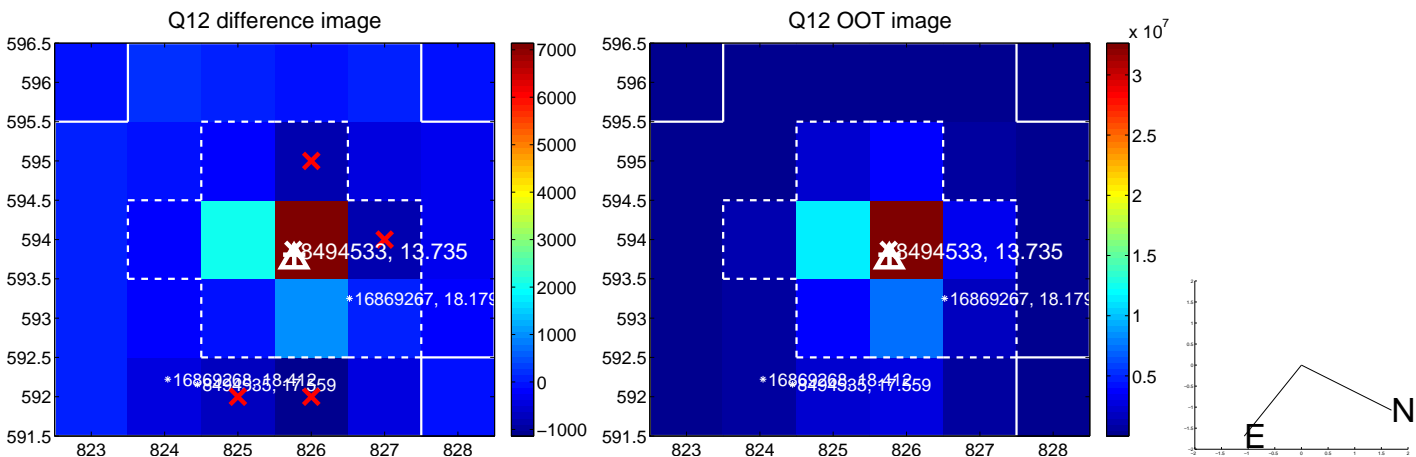
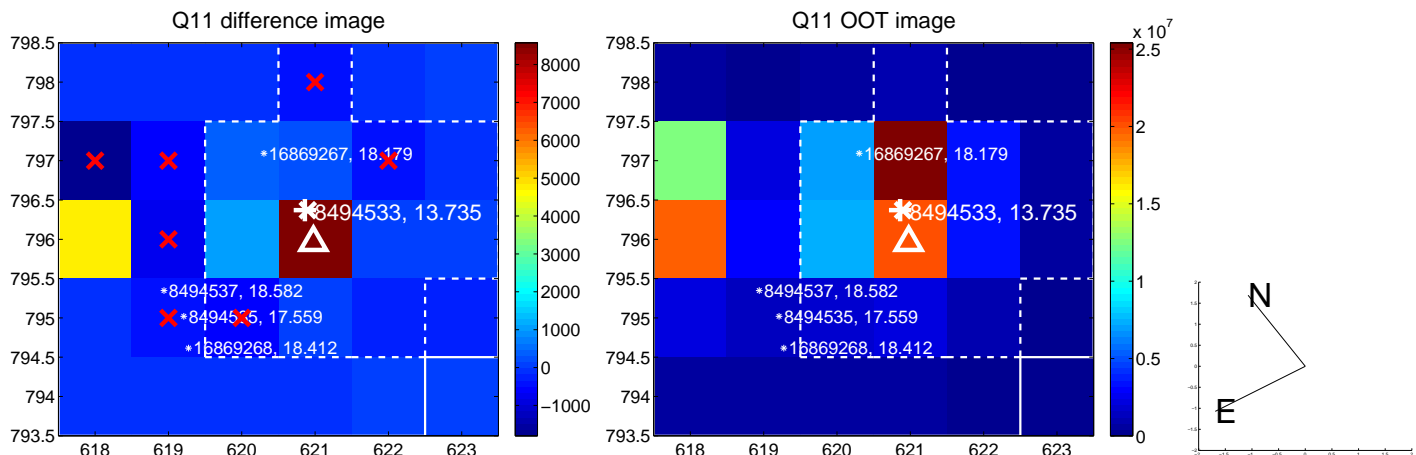
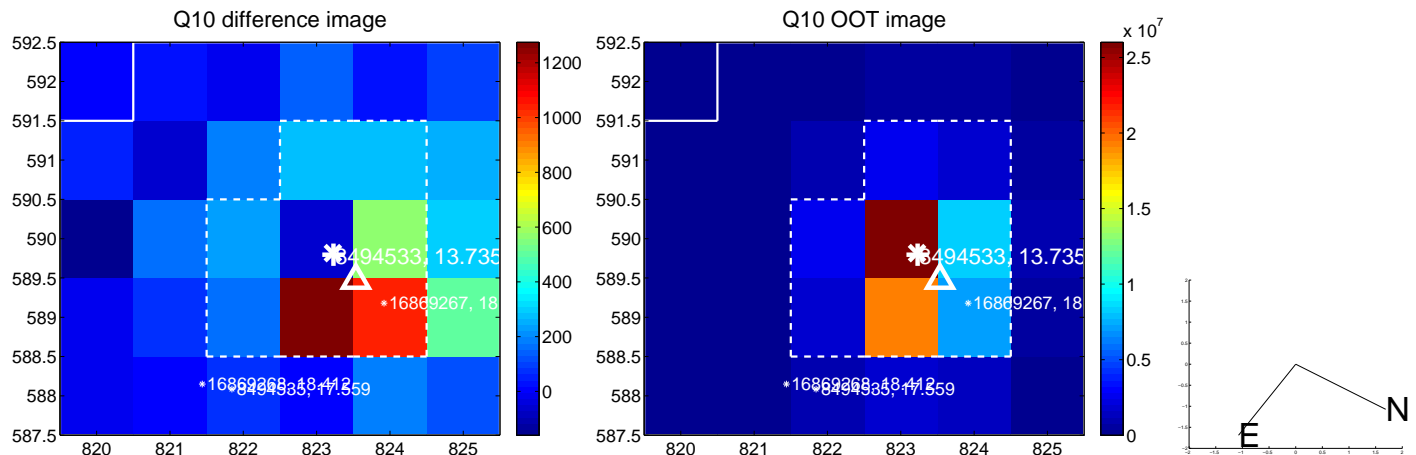
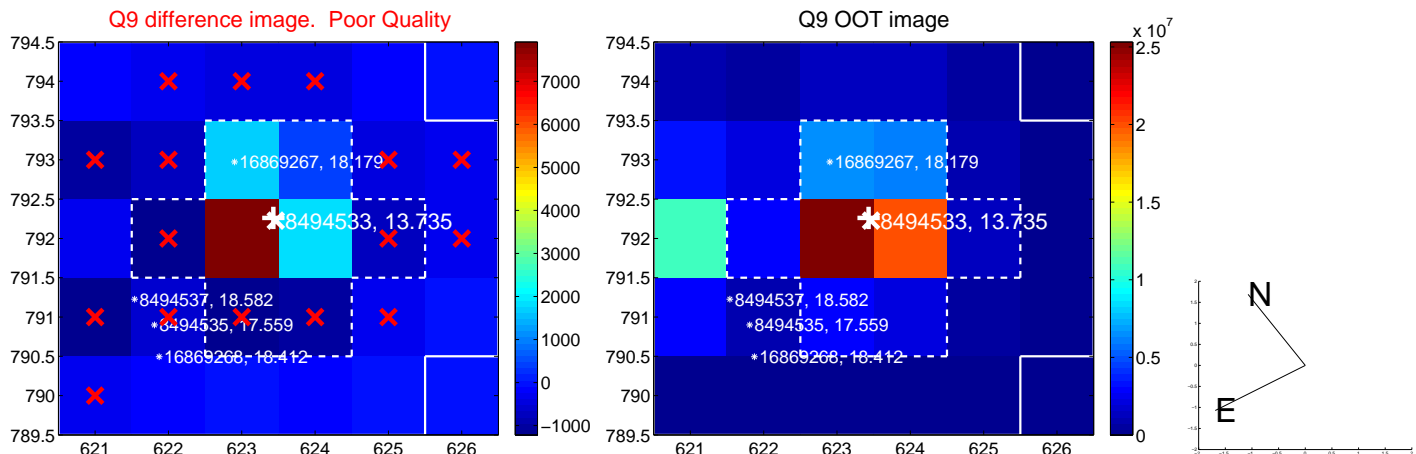
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



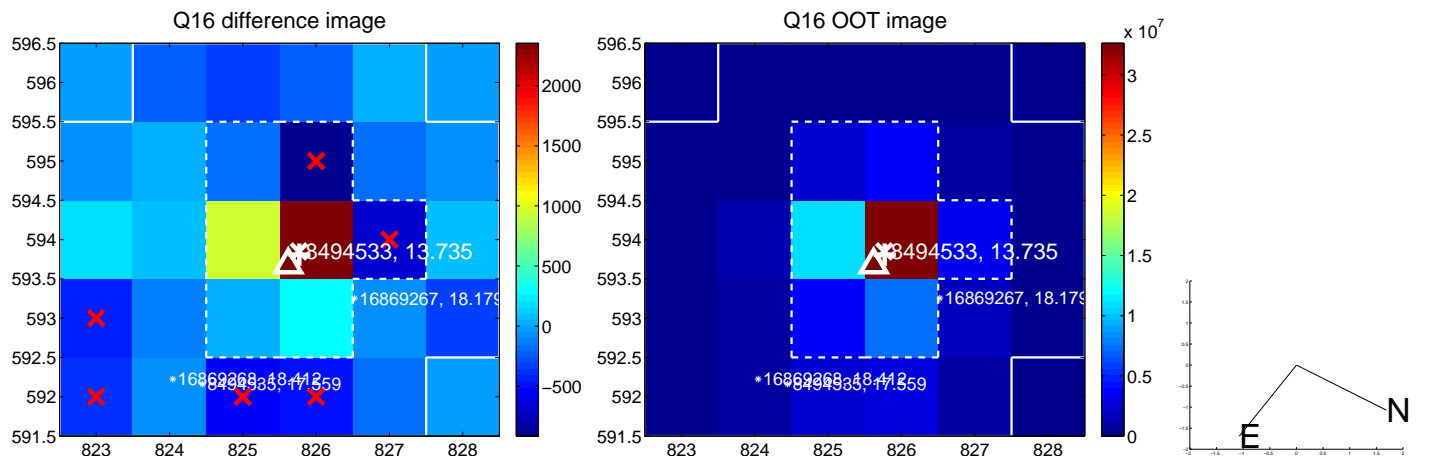
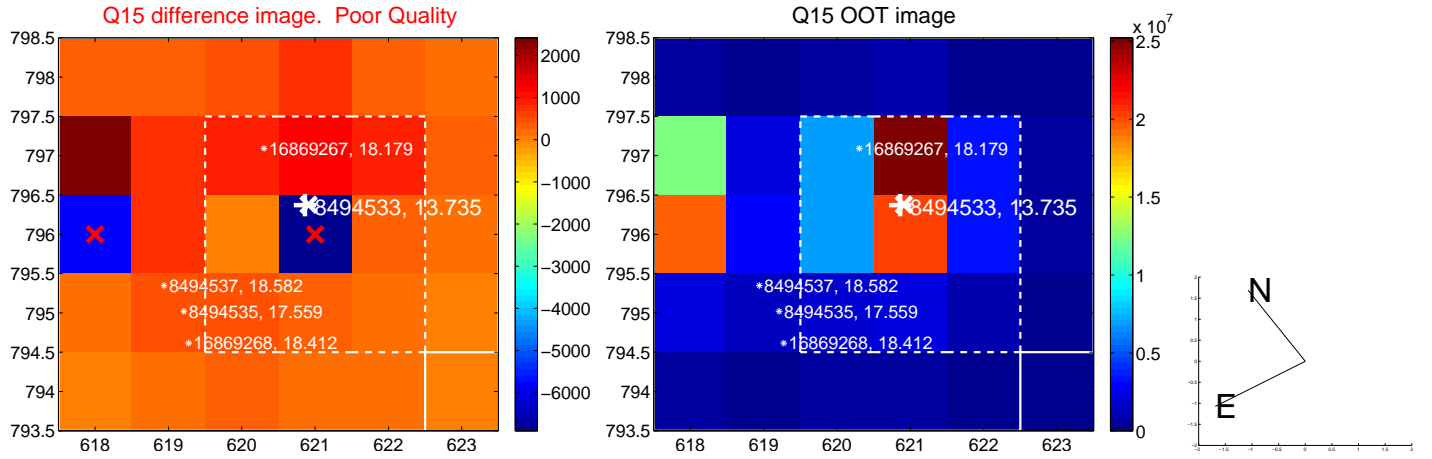
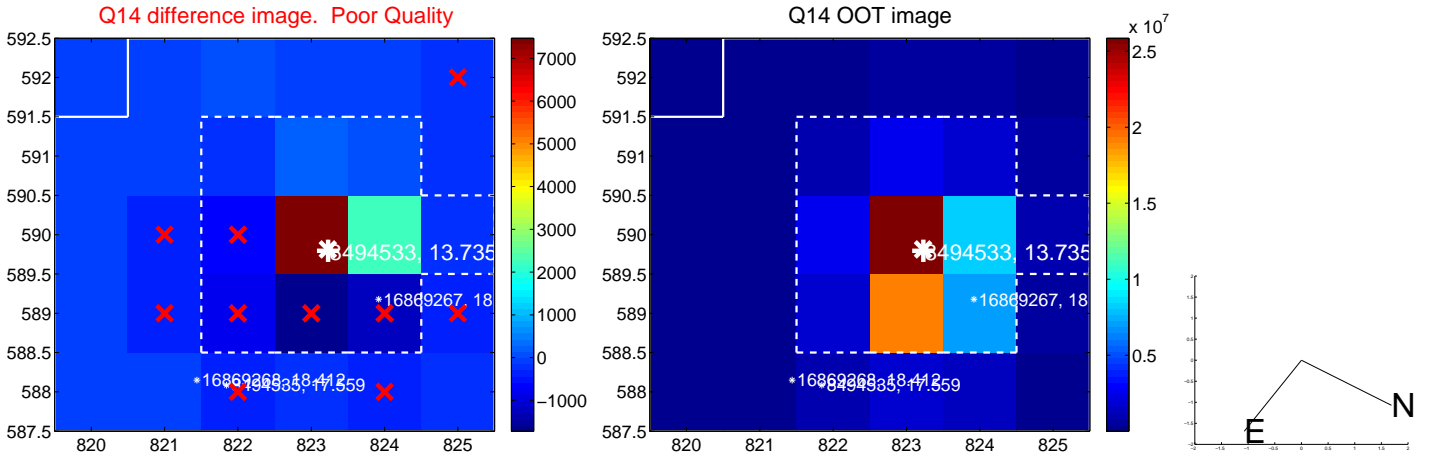
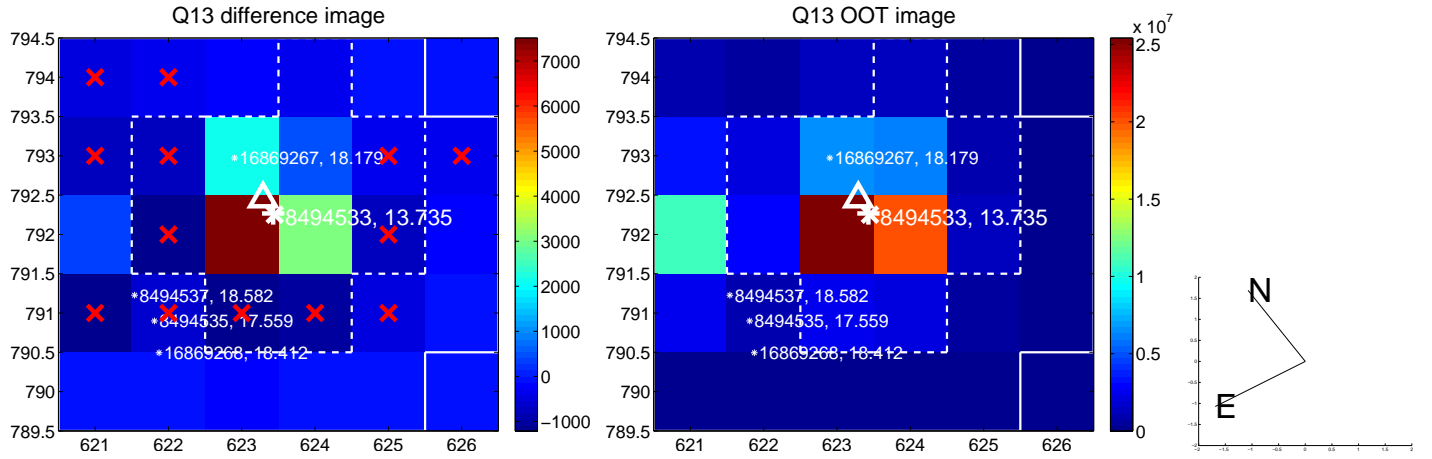
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



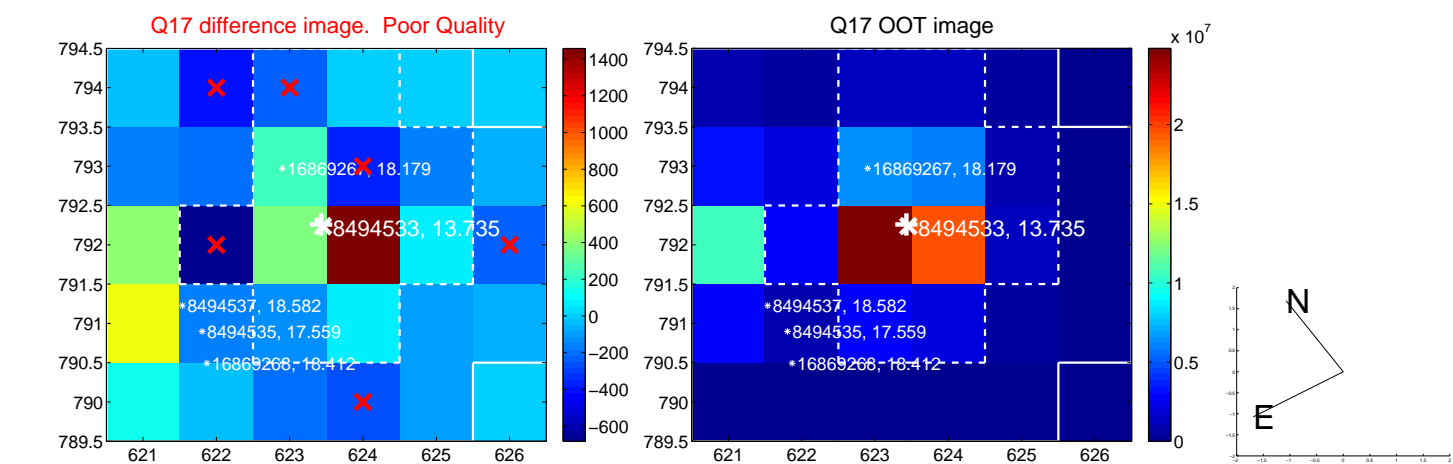
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



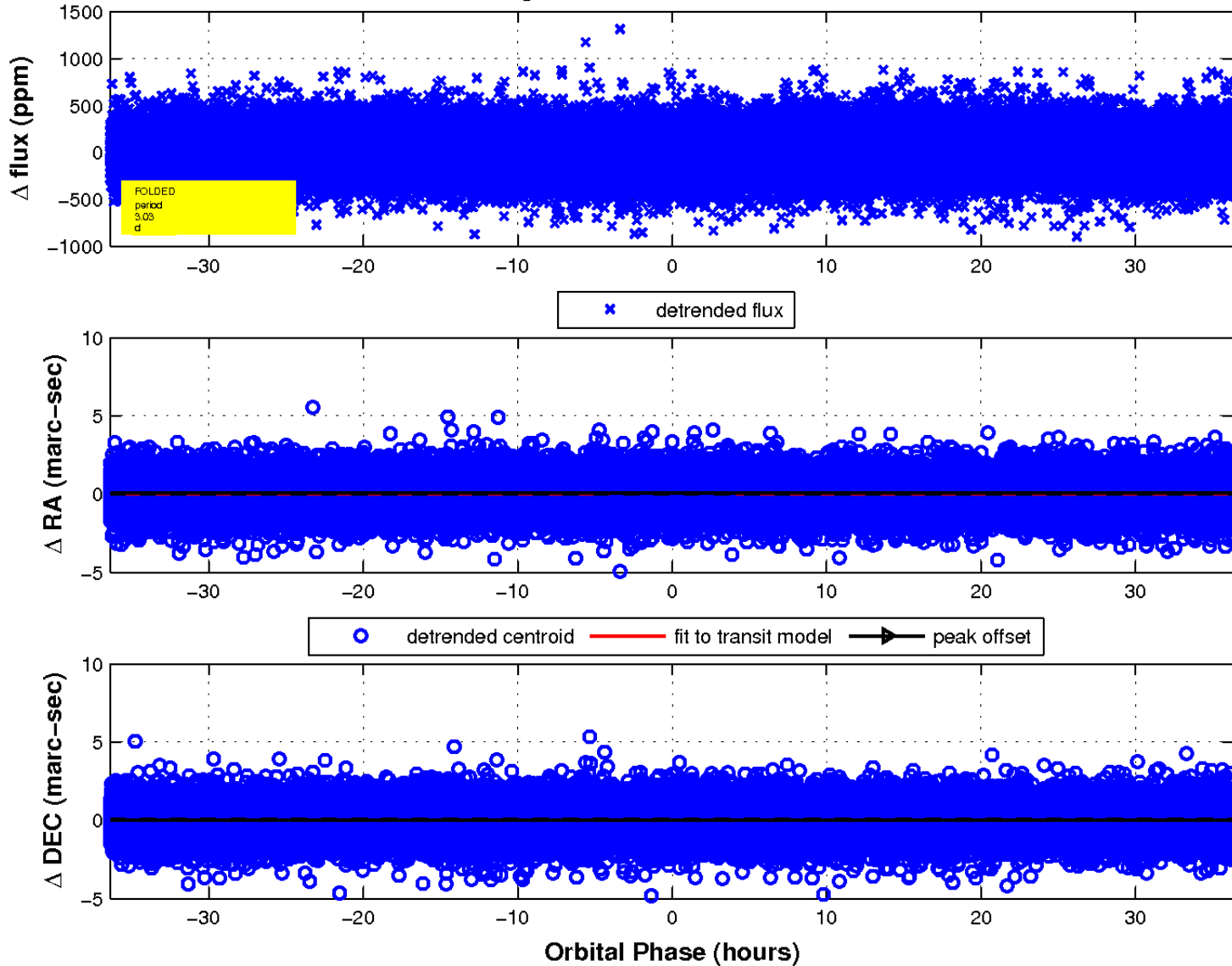
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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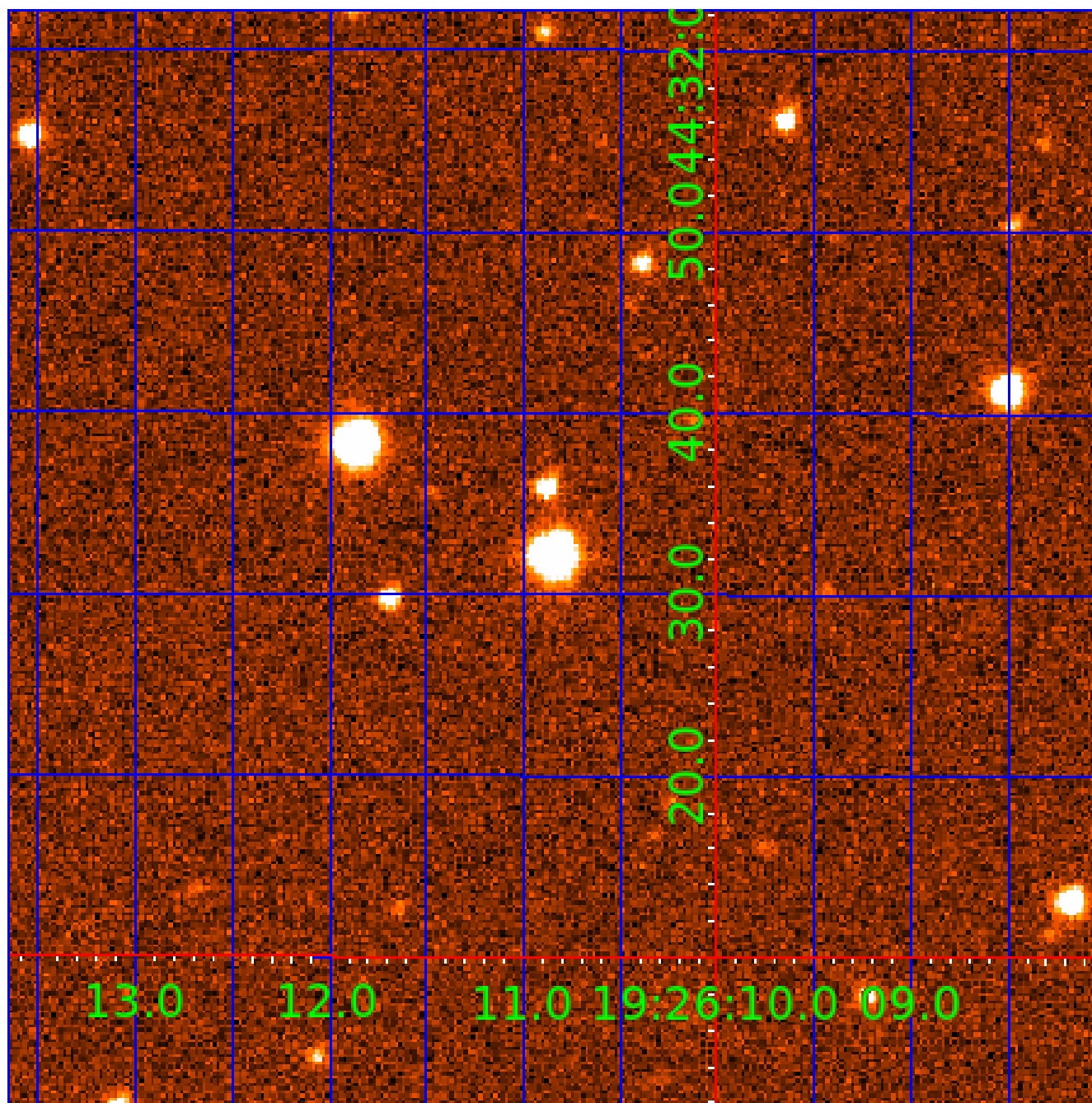


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008494533

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})
008494533-01	OBS	No	3.032881	133.713434	14.6	17.386	8.1	5.7	1.25	6751	0.48	1492.31
008494533-02	OBS	No	83.596982	176.545653	160.3	20.189	9.0	7.6	1.25	6751	1.87	17.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008494533-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008494533-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

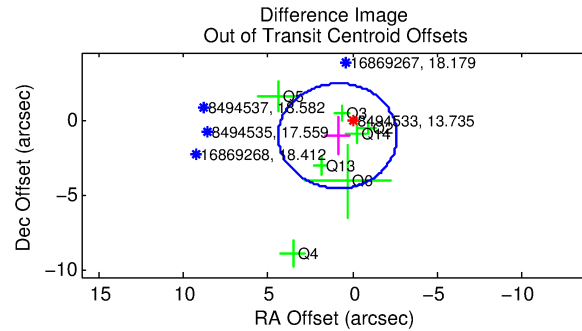
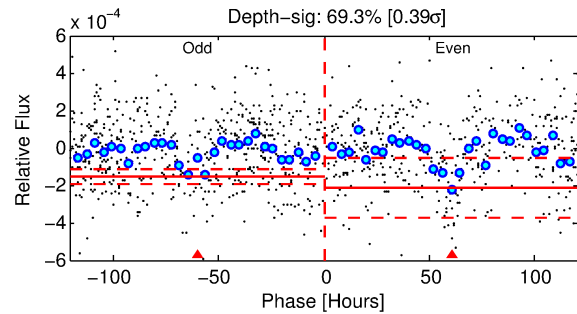
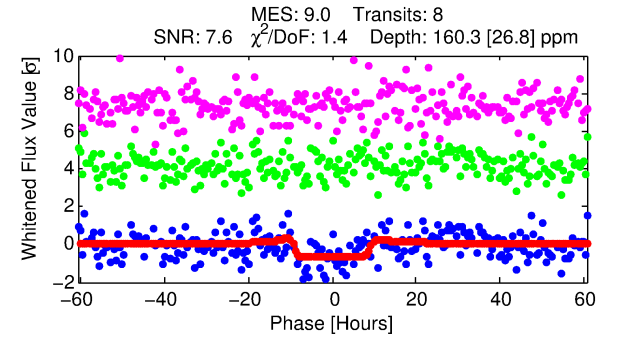
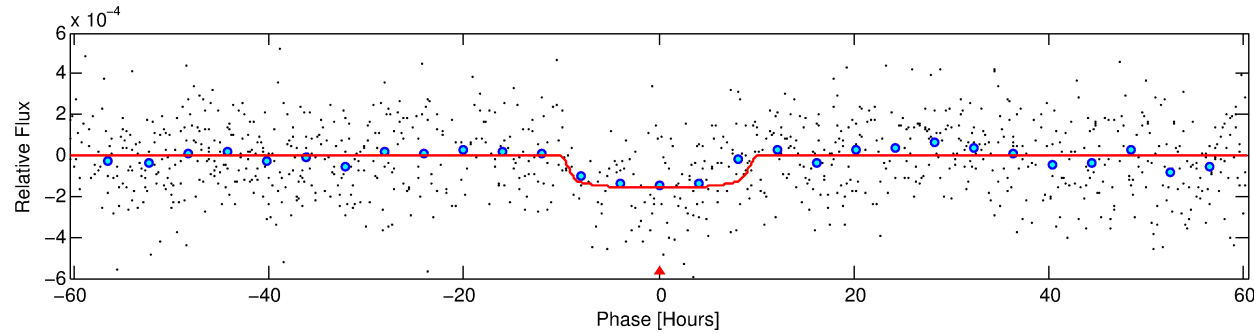
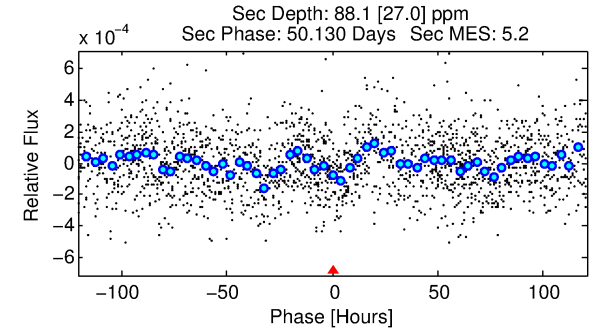
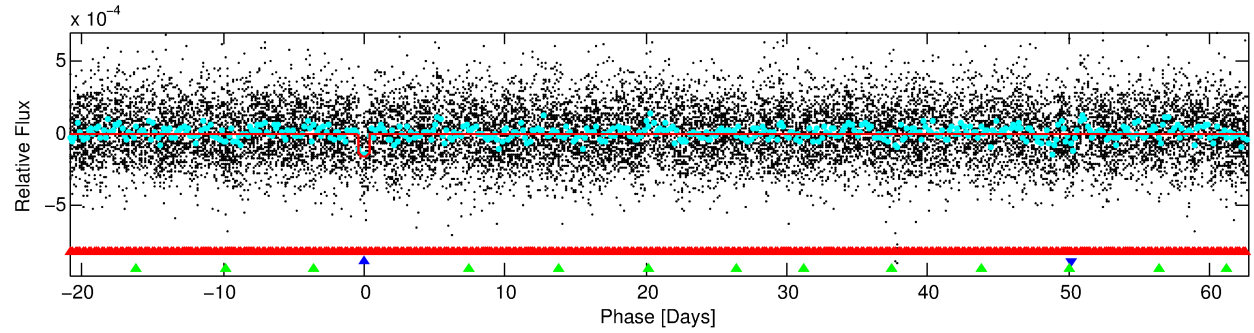
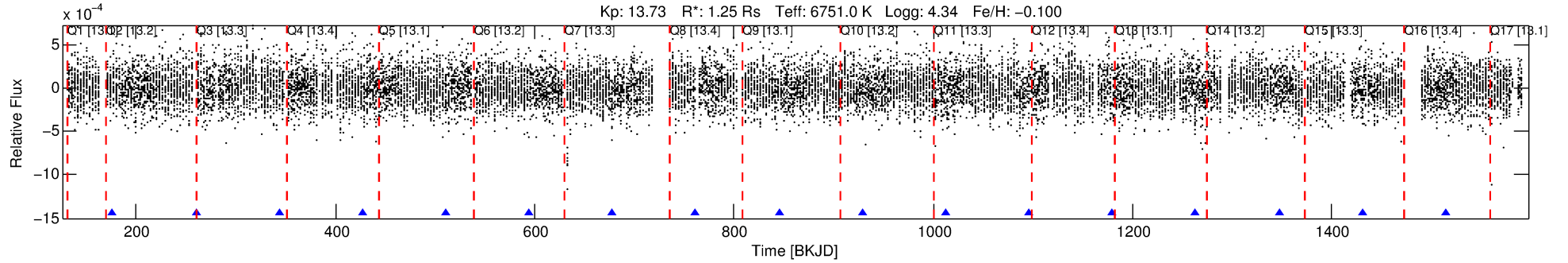
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008494533-02

No Significant Match Found

DV One-Page Summary

KIC: 8494533 Candidate: 2 of 3 Period: 83.597 d



DV Fit Results:

Period = 83.59698 [0.00495] d
Epoch = 176.5457 [0.0473] BKJD
Rp/R* = 0.0137 [0.0019]
a/R* = 13.81 [8.60]
b = 0.92 [0.11]
Seff = 17.92 [7.69]
Teff = 525 [56] K
Rp = 1.87 [0.70] Re
a = 0.4038 [0.1148] AU
Ag = 2255.61 [1305.41] [1.73σ]
Teffp = 5590 [613] K [8.23σ]

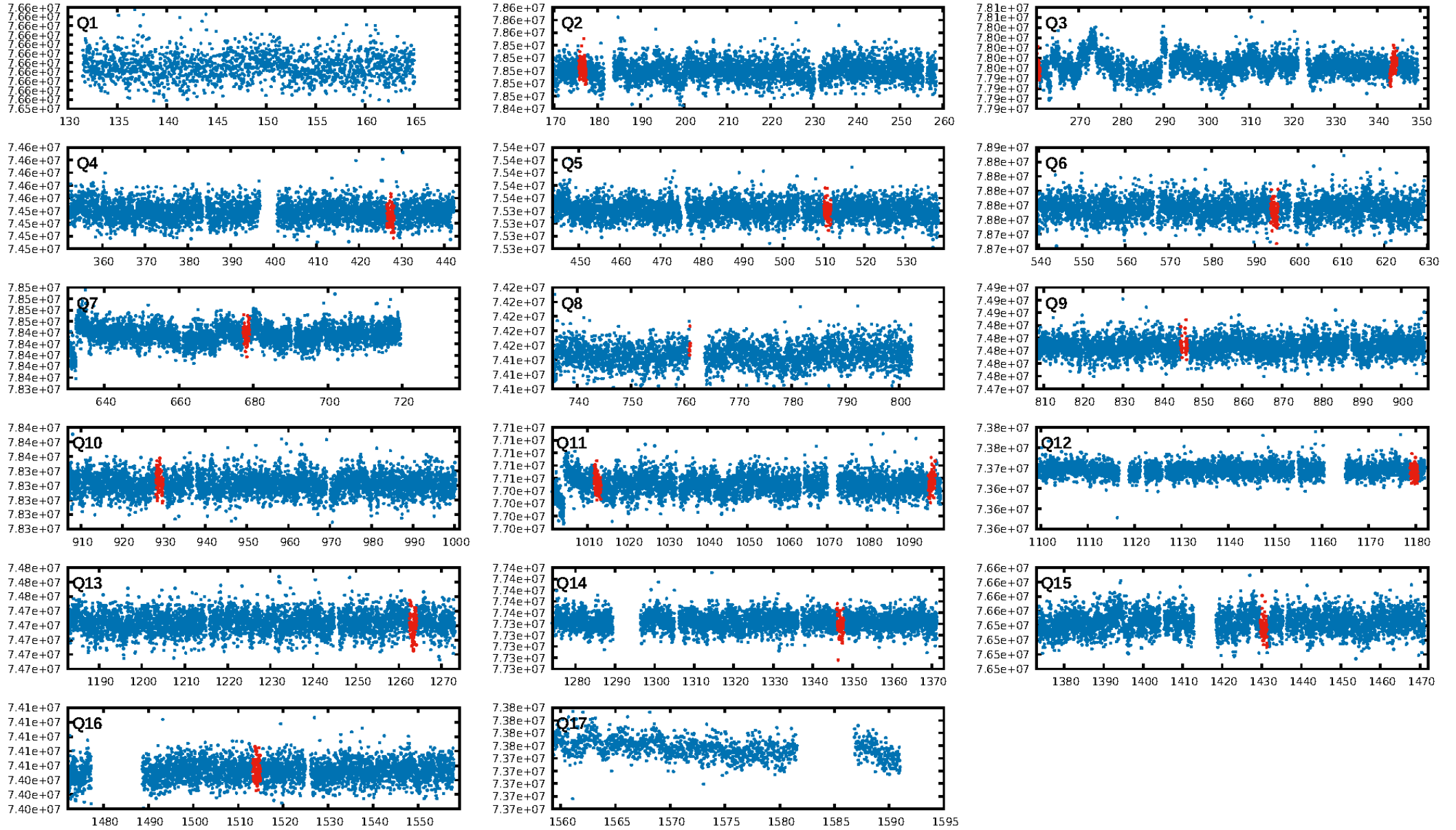
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.57σ]
LongPeriod-sig: 100.0% [26.83σ]
ModelChiSquare2-sig: 6.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.23e-09
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.5008
Centroid-sig: 8.6%
Centroid-so: 0.392 arcsec [0.52σ]
OotOffset-rm: 1.393 arcsec [1.19σ]
OotOffset-st: 3/1/1/2 [7]
KicOffset-rm: 1.399 arcsec [1.47σ]
KicOffset-st: 3/1/1/2 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.00 [0/11]

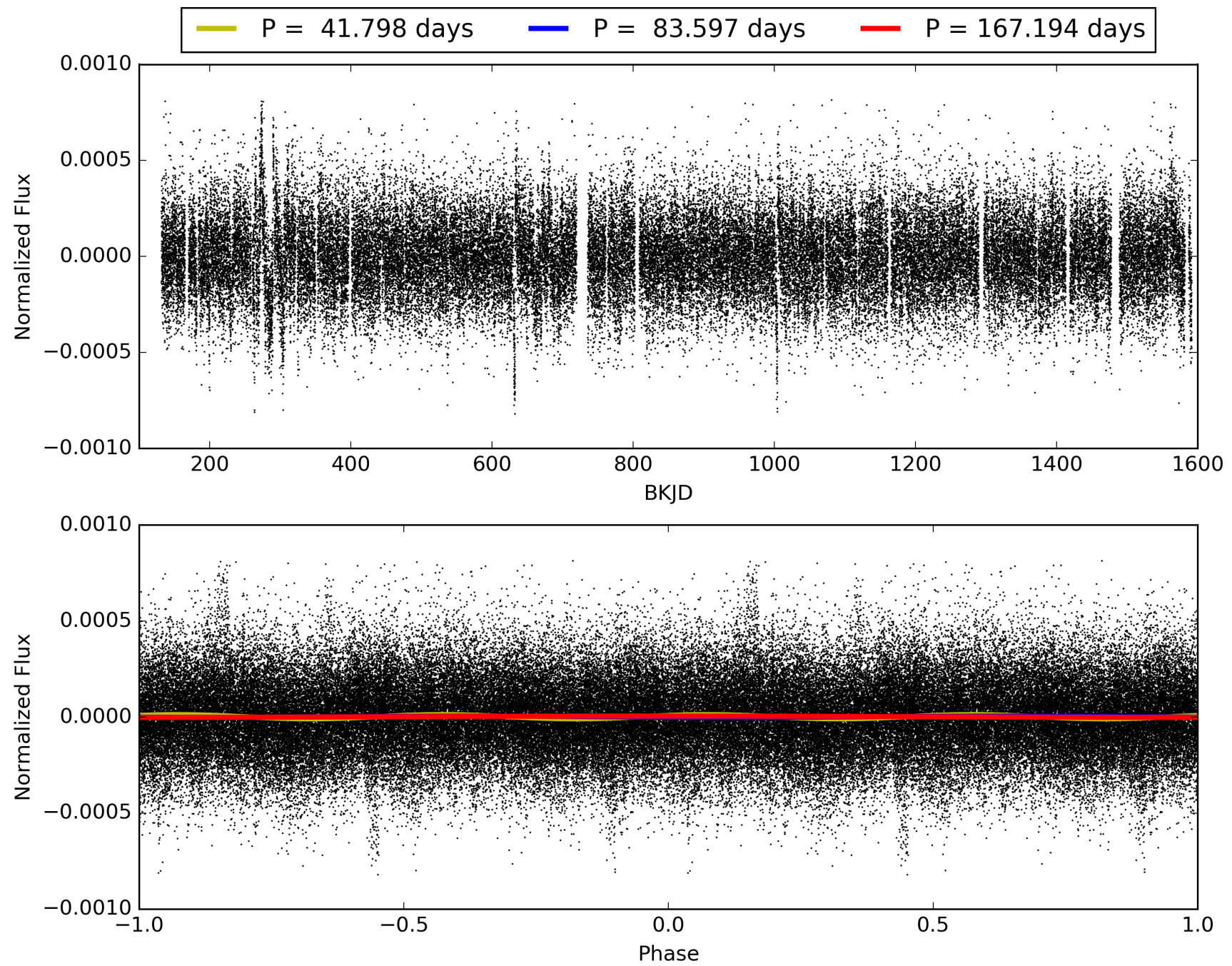
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:19:19 Z

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

TCE 008494533-02, PDC Light Curves

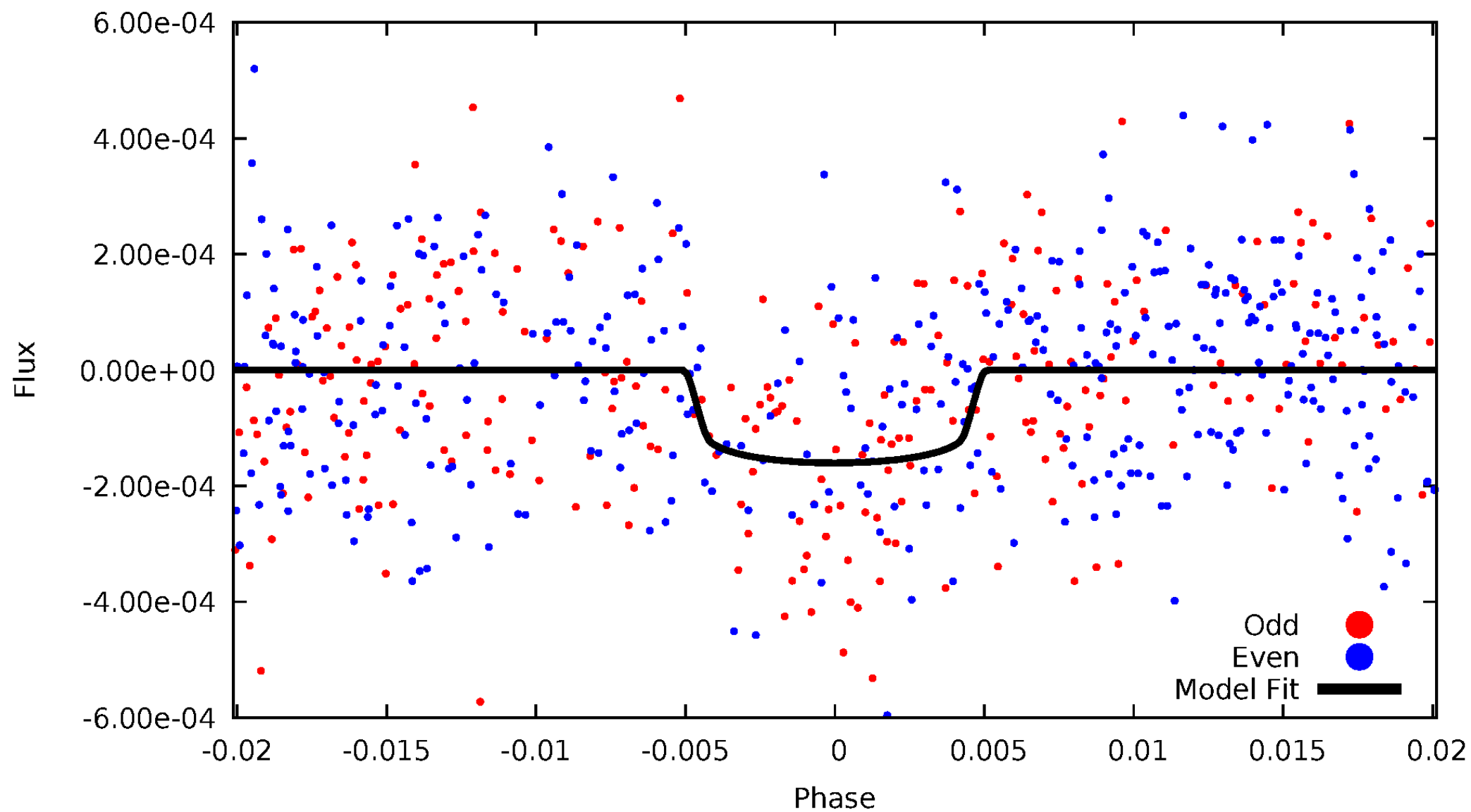


TCE 008494533-02



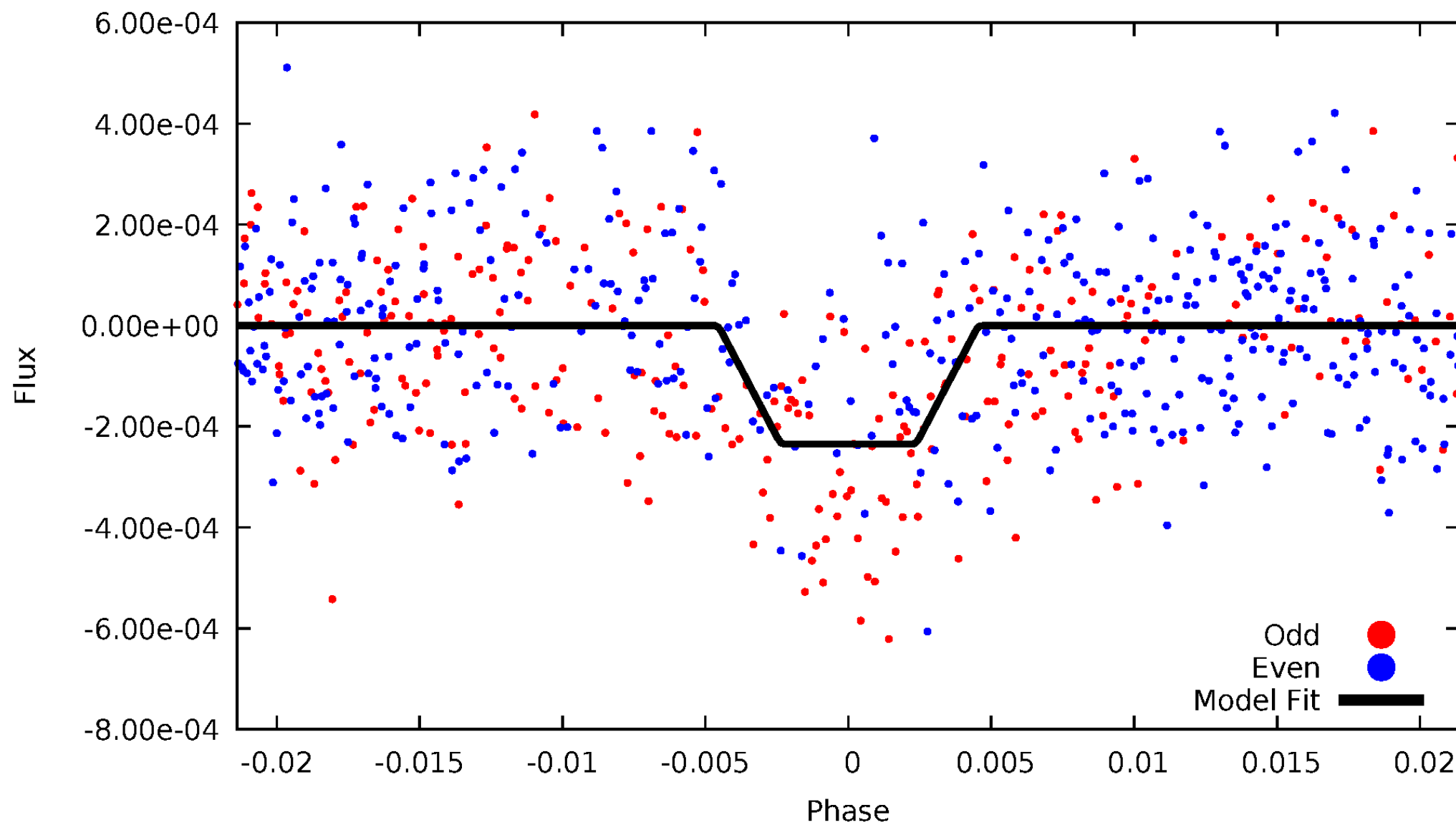
DV Odd/Even

TCE 008494533-02



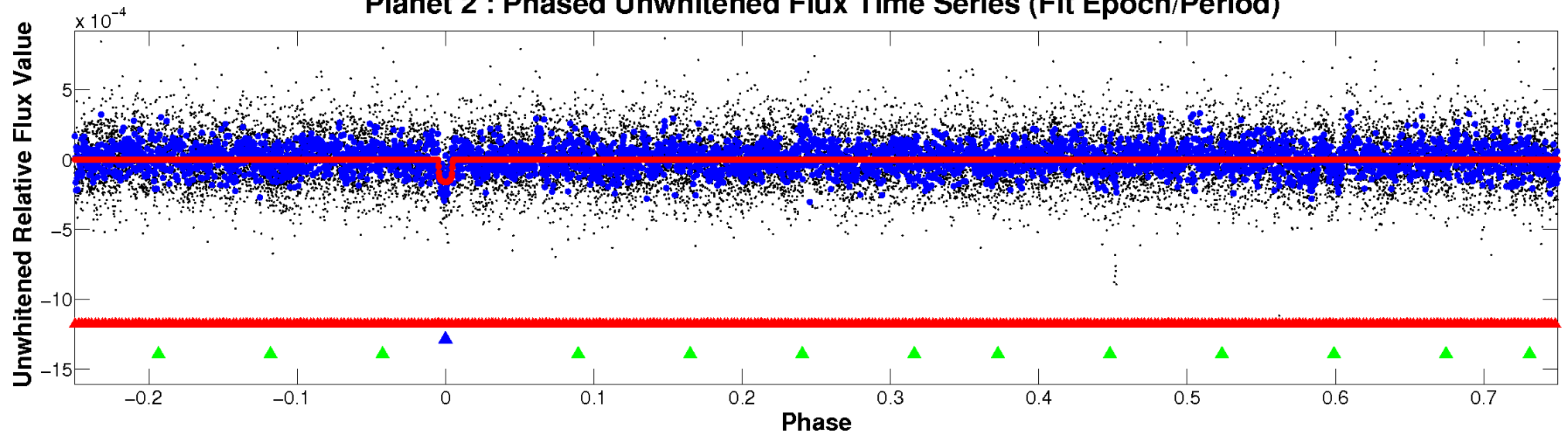
ALT Odd/Even

TCE 008494533-02

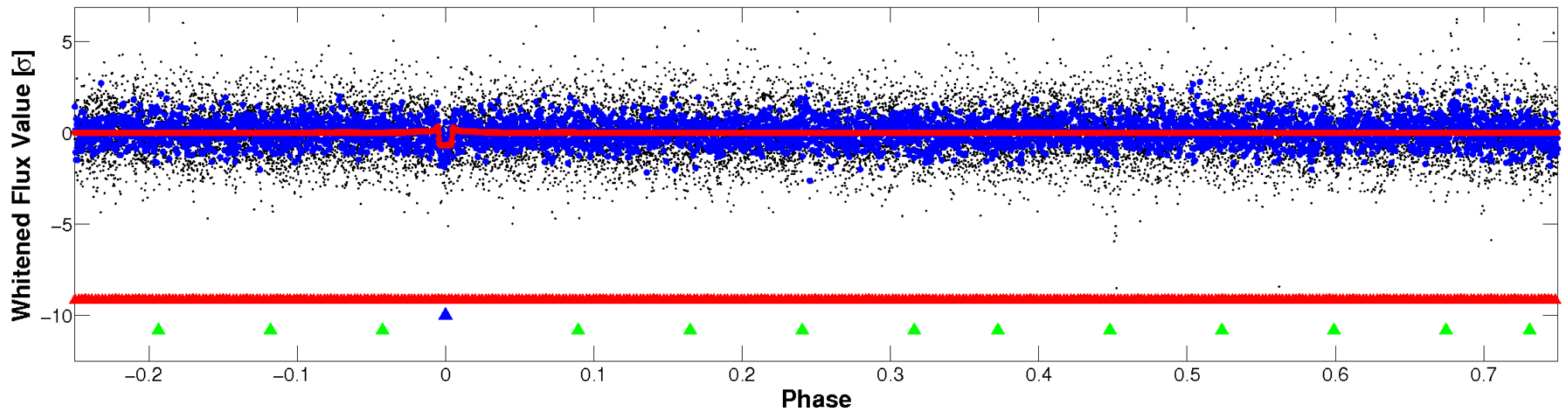


Non-Whitened Vs. Whitened Light Curve

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

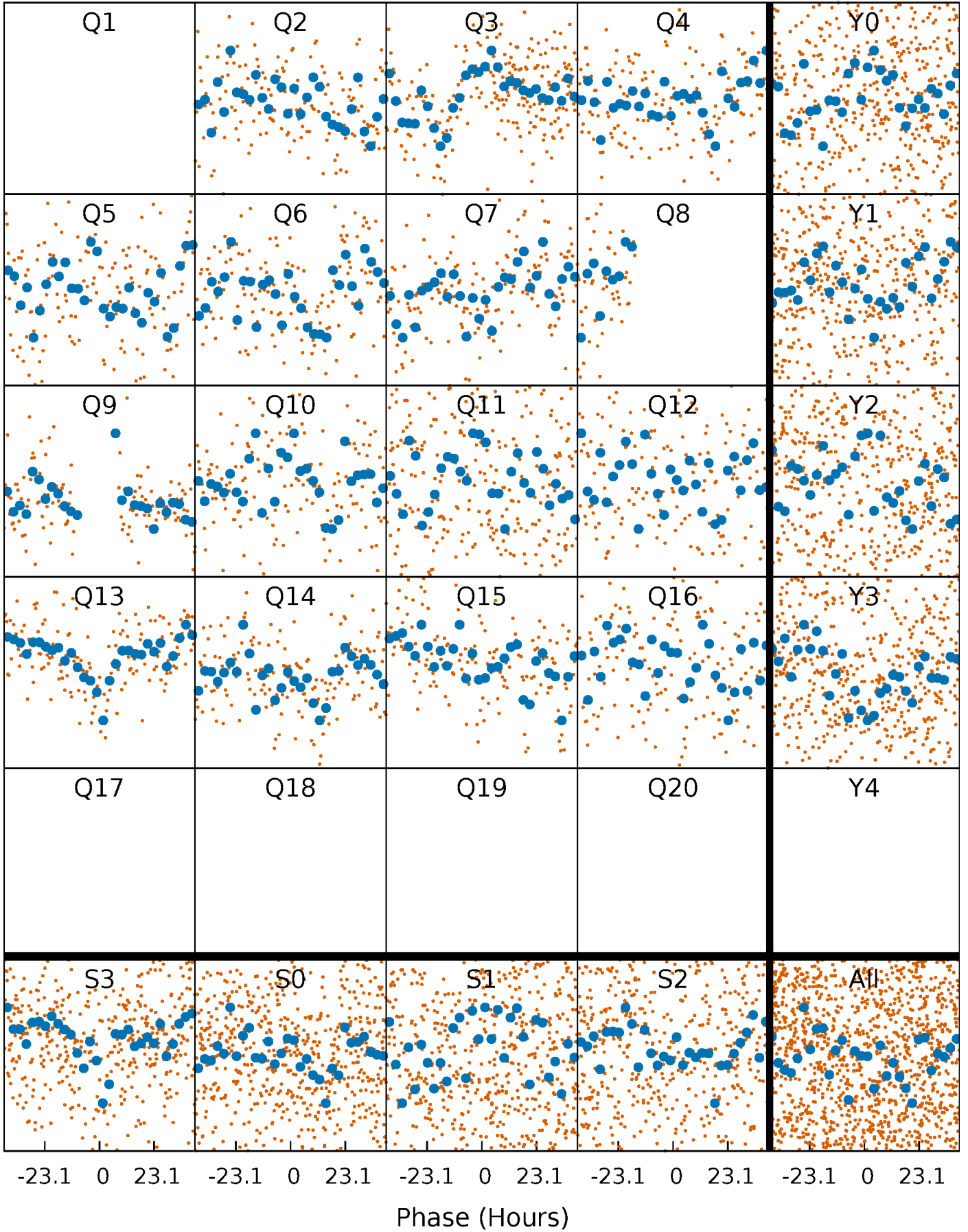


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



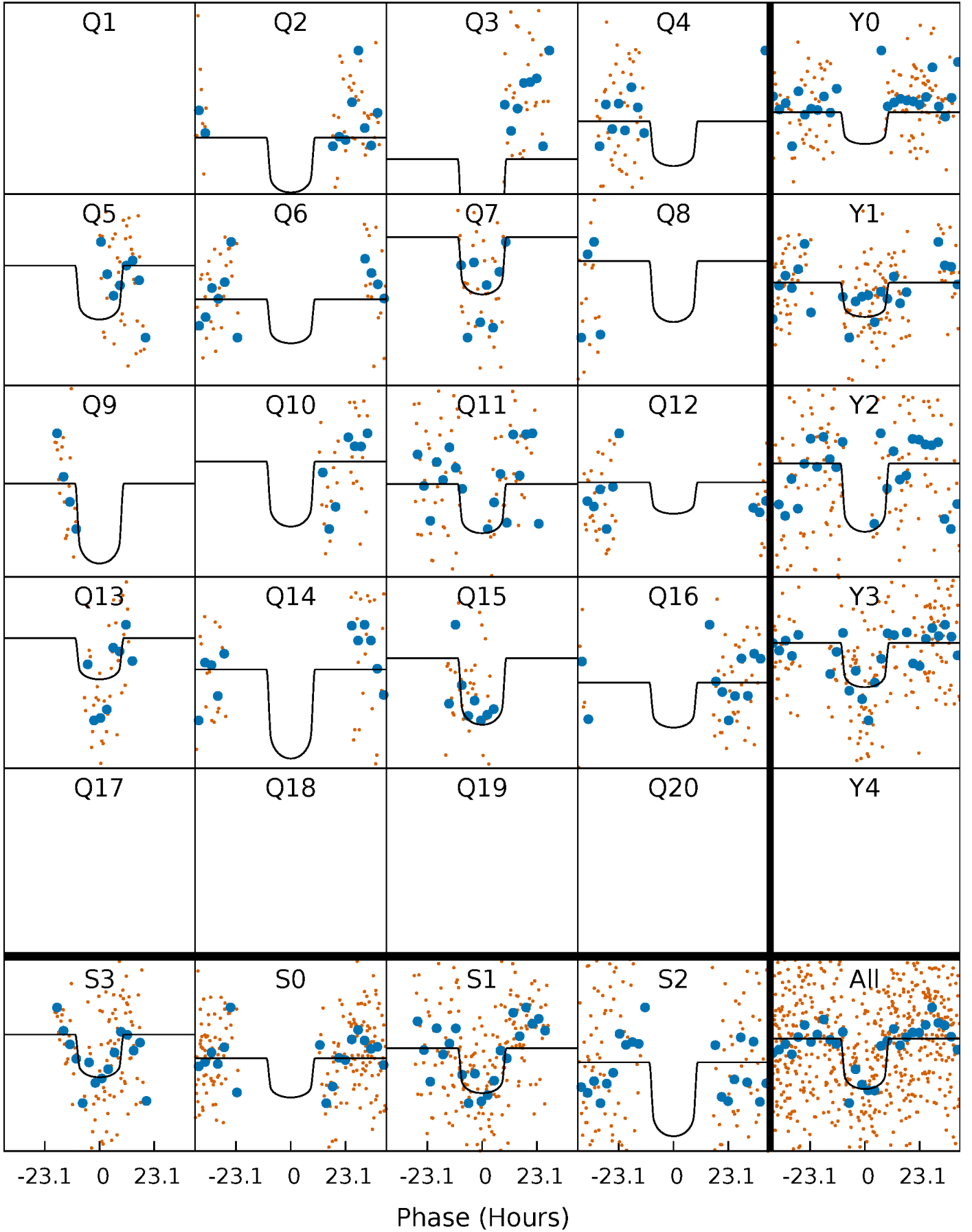
PDC Quarter-Phased Transit Curves

TCE 008494533-02 P= 83.596982 Days $T_0=176.545653$ (BKJD)



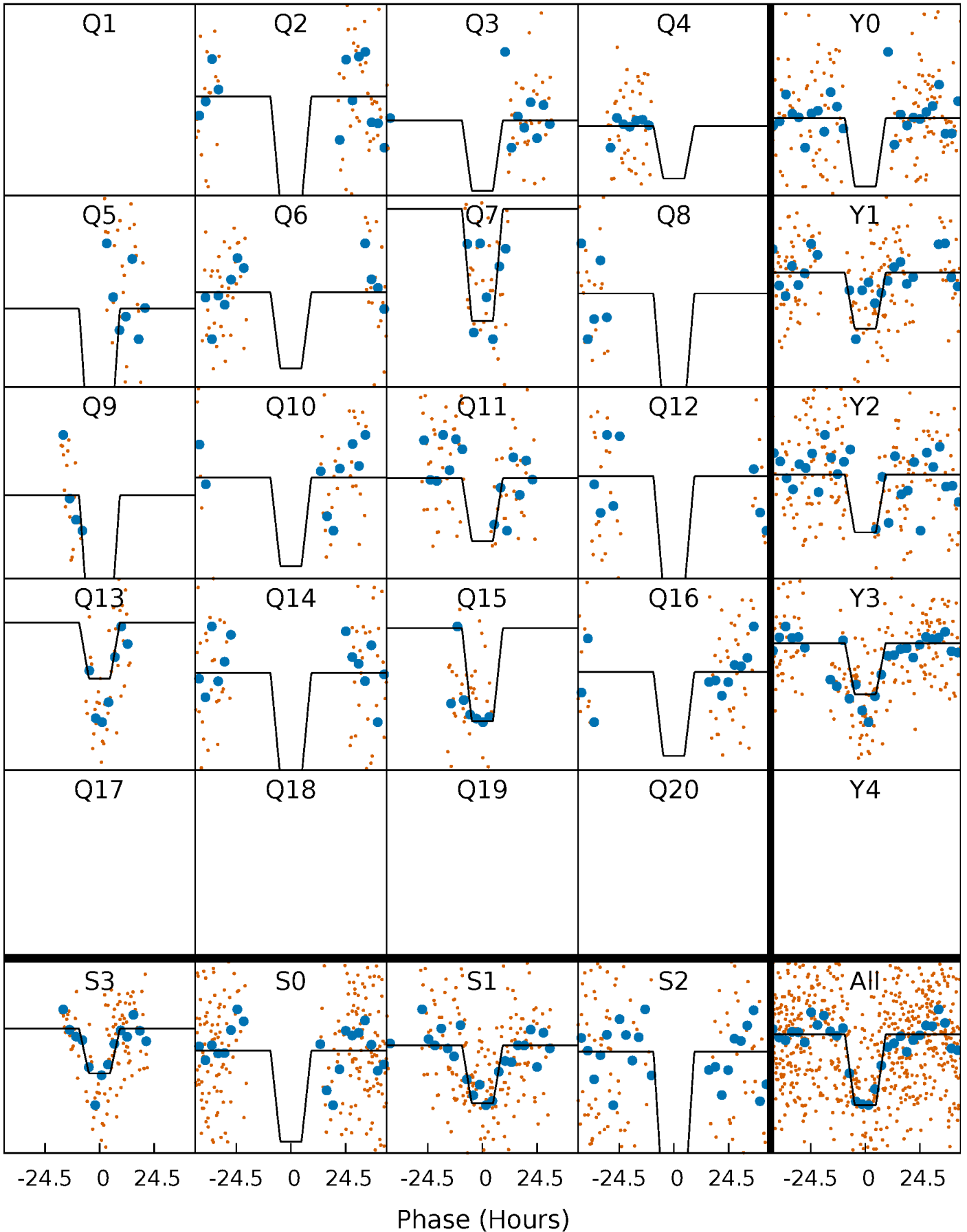
DV Quarter-Phased Transit Curves

TCE 008494533-02 P= 83.596982 Days $T_0=176.545653$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

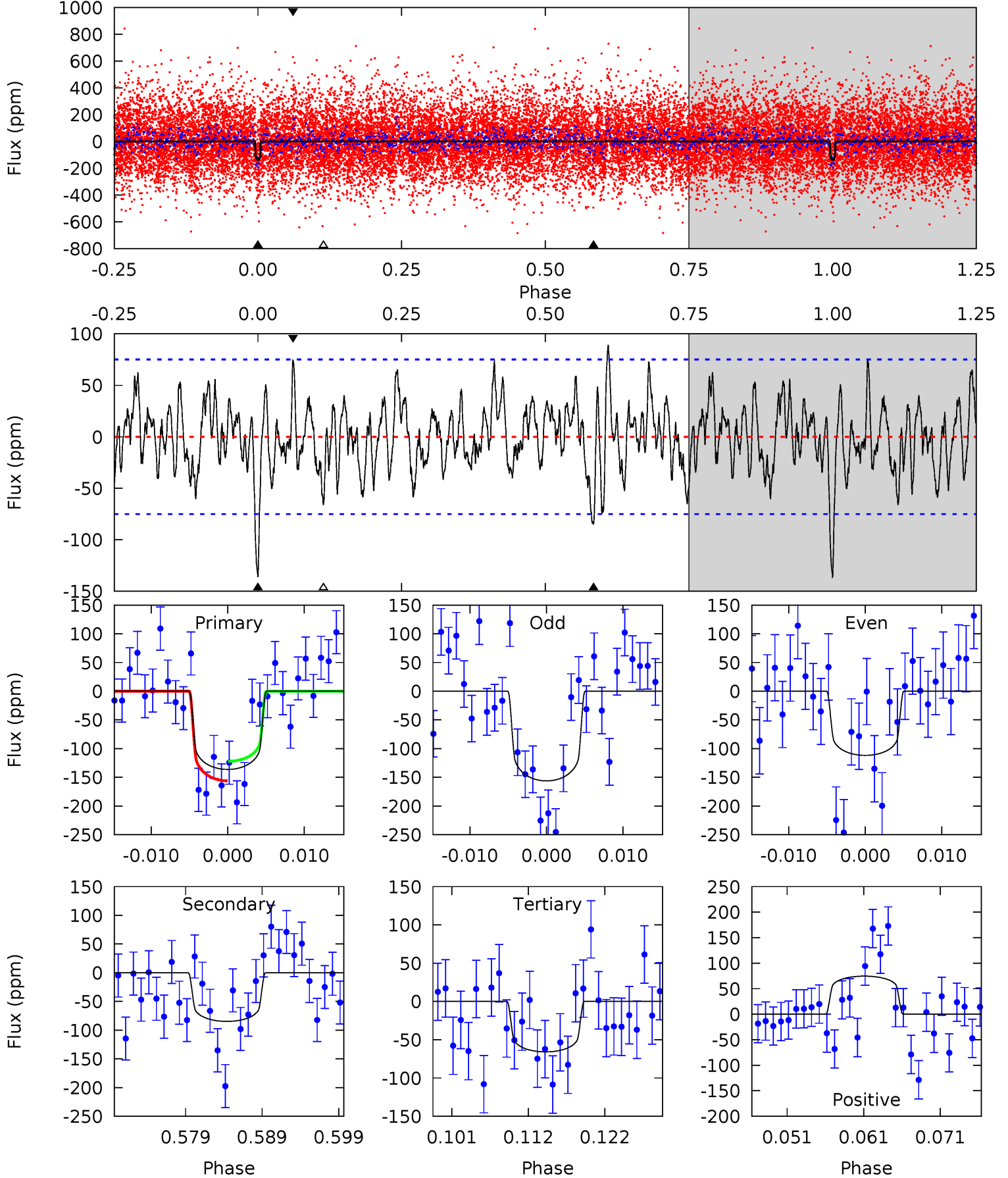
TCE 008494533-02 P= 83.607316 Days $T_0=176.398353$ (BKJD)



DV Model-Shift Uniqueness Test

008494533-02, P = 83.596982 Days, E = 92.948671 Days

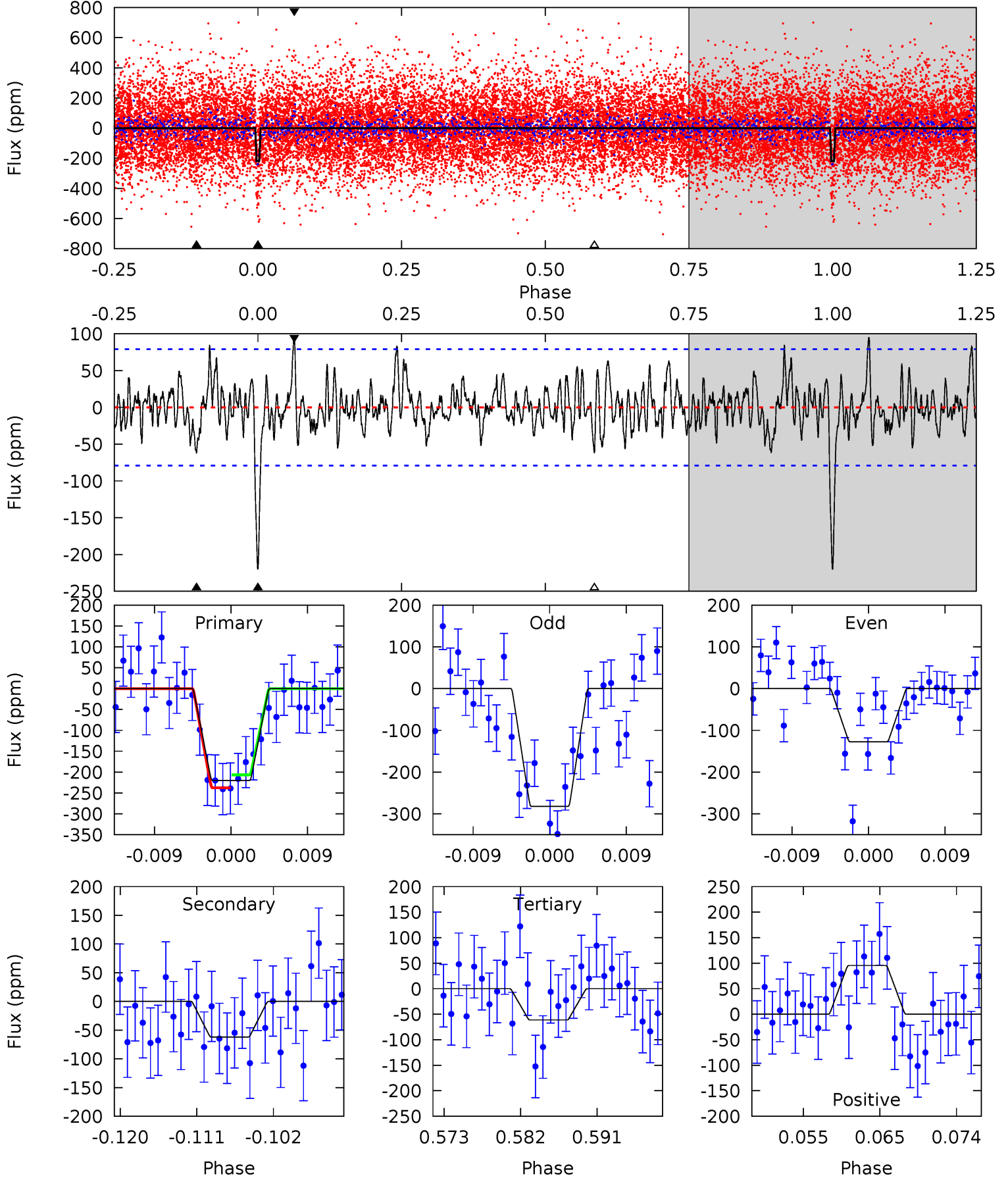
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.12	5.67	4.41	5.00	5.02	2.57	1.84	4.71	4.13	1.26	0.68	1.48	0.98	0.40	1.12



Alt Model-Shift Uniqueness Test

008494533-02, P = 83.607316 Days, E = 92.791037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	3.95	3.91	6.09	5.04	2.60	1.55	10.1	7.95	0.04	-2.14	4.91	0.65	0.30	0.98



Stellar Parameters For KIC 008494533

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6751^{+162}_{-243}	$4.341^{+0.054}_{-0.216}$	$-0.100^{+0.250}_{-0.350}$	$1.253^{+0.434}_{-0.145}$	$1.267^{+0.190}_{-0.171}$	$0.907^{+0.281}_{-0.509}$
	+2%/-4%	+1%/-5%	+250%/-350%	+35%/-12%	+15%/-13%	+31%/-56%
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 008494533-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-85 ± 15	$1.97^{+0.43}_{-0.32}$	751^{+59}_{-39}	5500^{+486}_{-384}	1915^{+872}_{-654}
Alt.	-62 ± 16	$2.20^{+0.45}_{-0.34}$	748^{+54}_{-40}	4872^{+401}_{-354}	1075^{+571}_{-373}

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 $A_{obs} \gg 1.0$

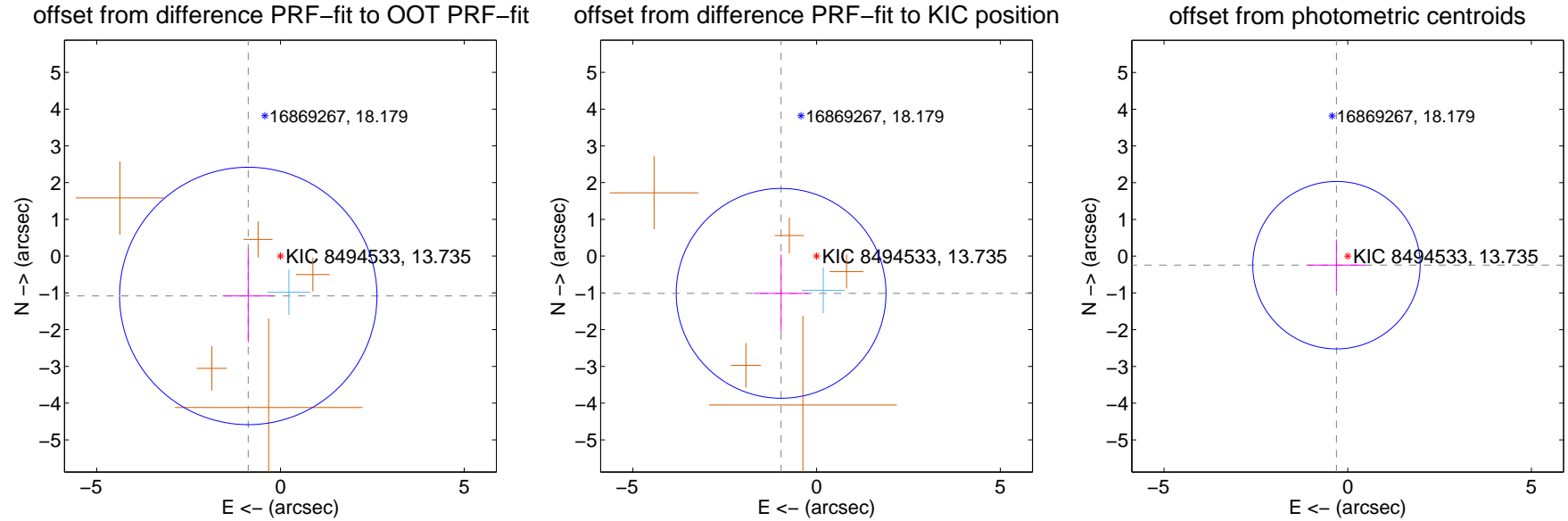
DV Centroid Data

Supplemental centroid analysis for 008494533-02. Kepler magnitude: 13.73. Transit SNR 7.61

There are 1 quarters with good PRF difference image offsets

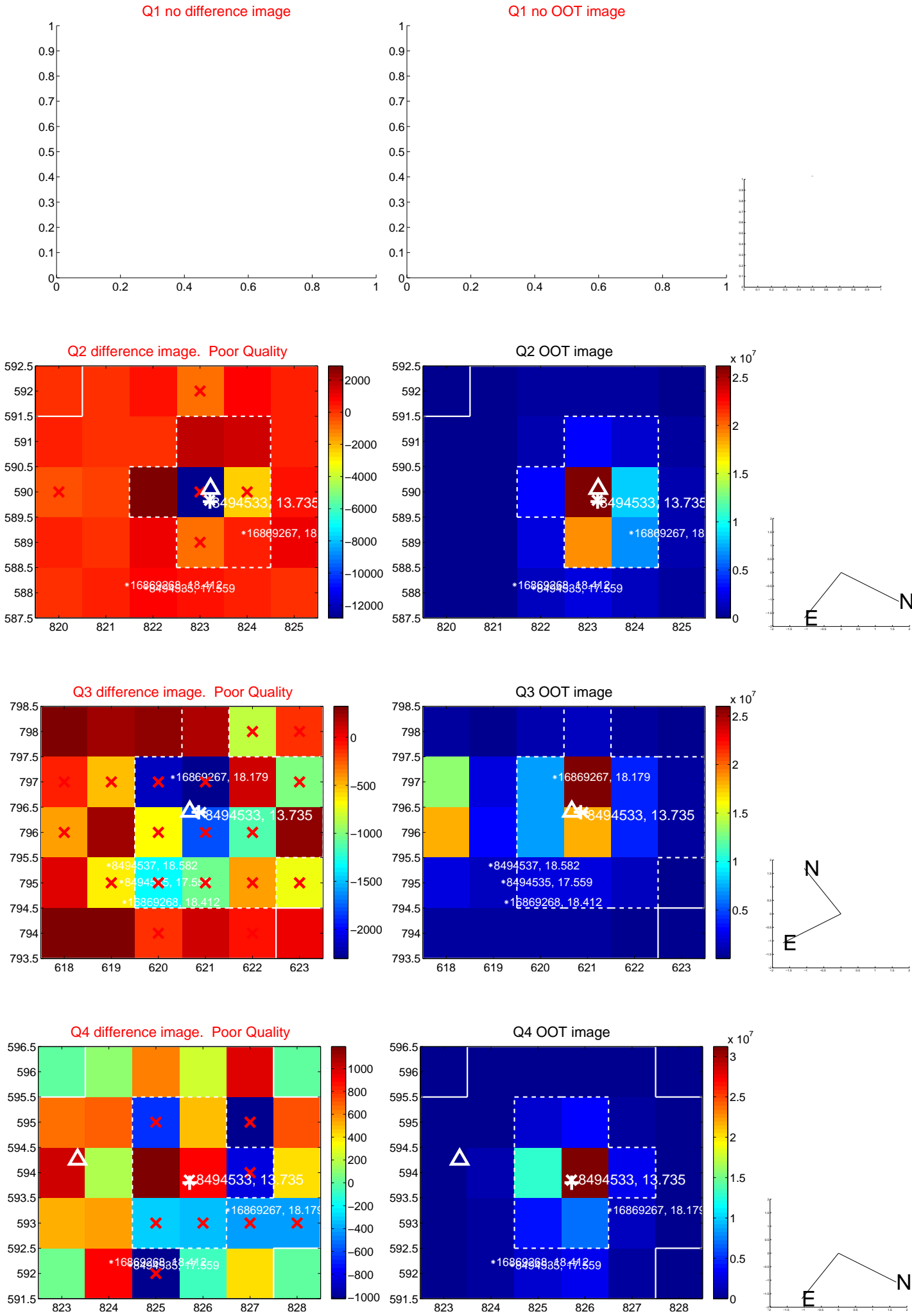
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.393 ± 1.167	1.19	0.876 ± 0.700	-1.084 ± 1.259
PRF-fit source offset from KIC position	1.399 ± 0.951	1.47	0.965 ± 0.747	-1.012 ± 1.055
photometric centroid source offset	0.39 ± 0.76	0.52	0.31 ± 0.80	-0.24 ± 0.70

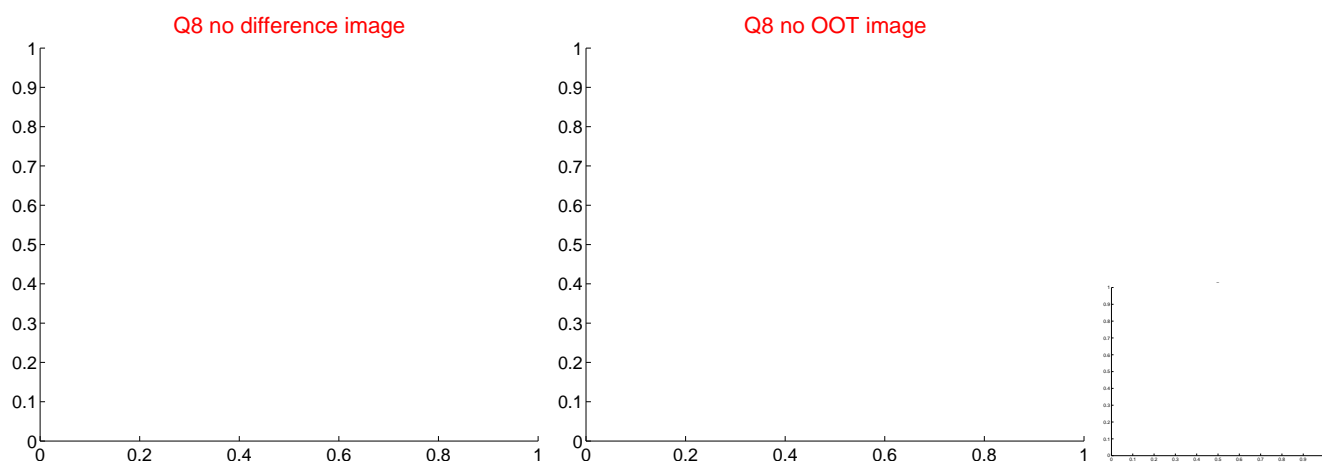
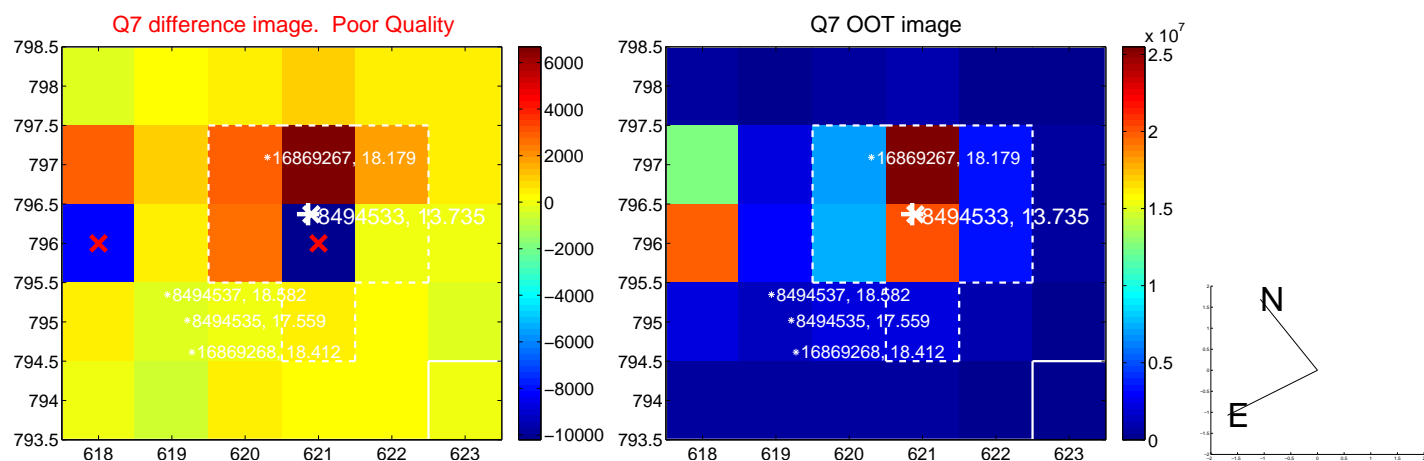
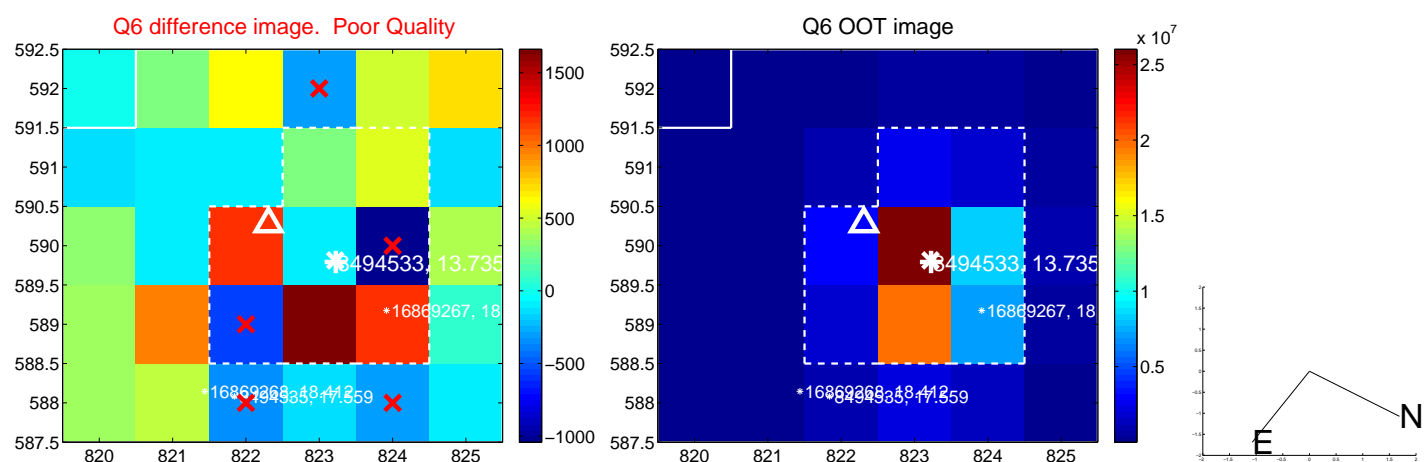
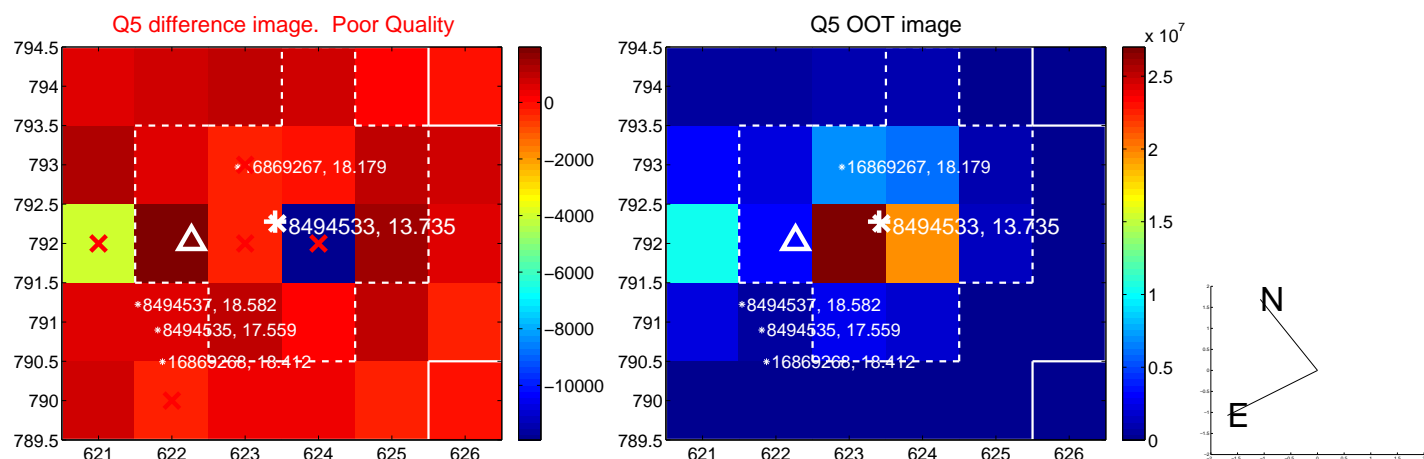


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q9 no difference image



Q9 no OOT image



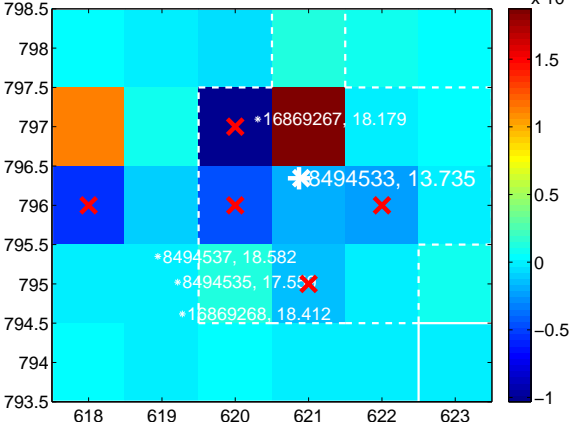
Q10 no difference image



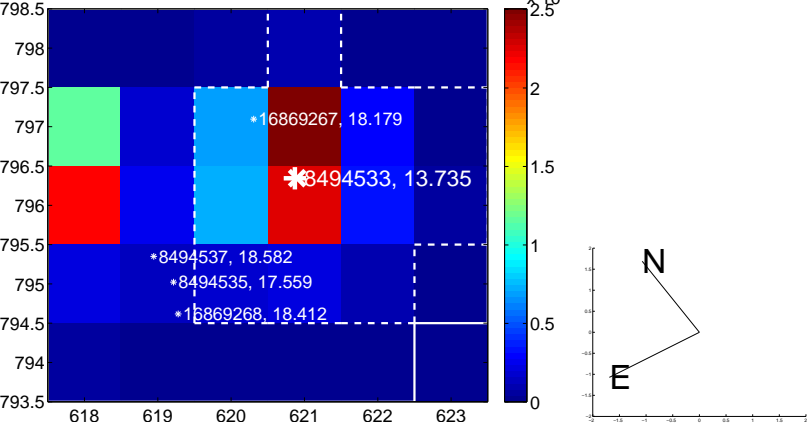
Q10 no OOT image



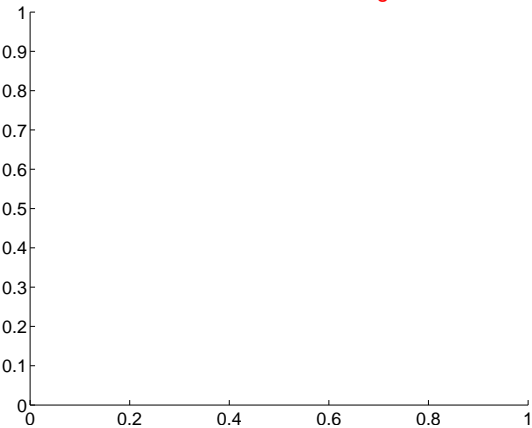
Q11 difference image. Poor Quality



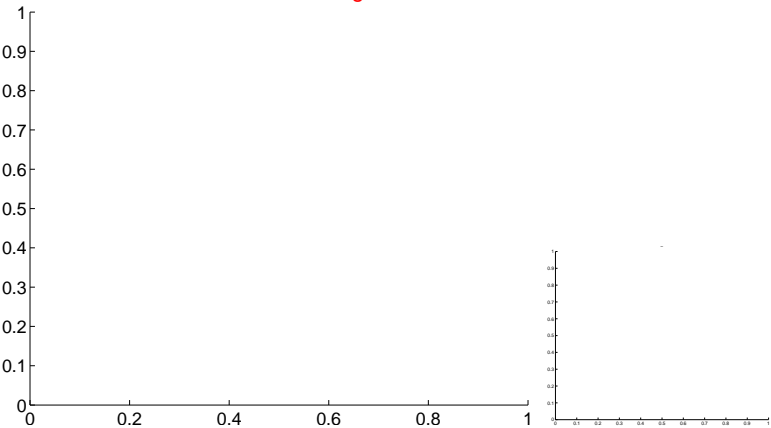
Q11 OOT image



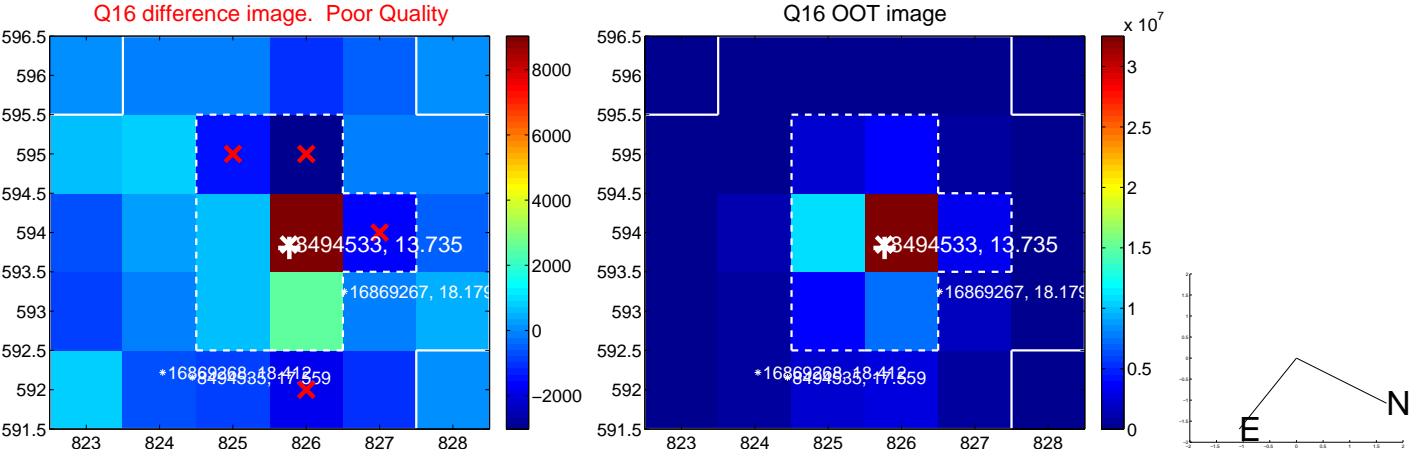
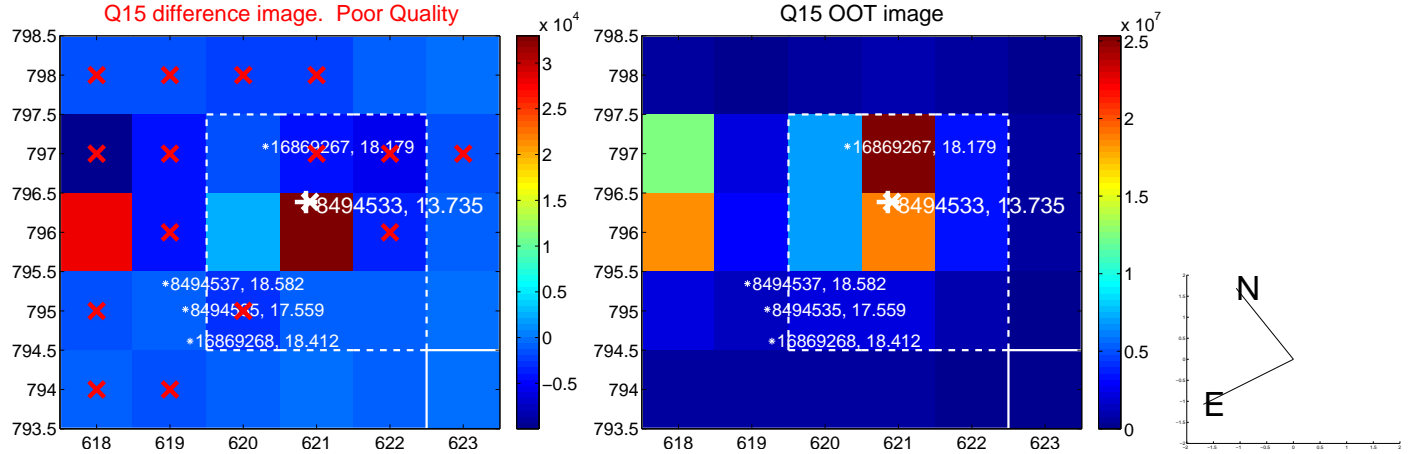
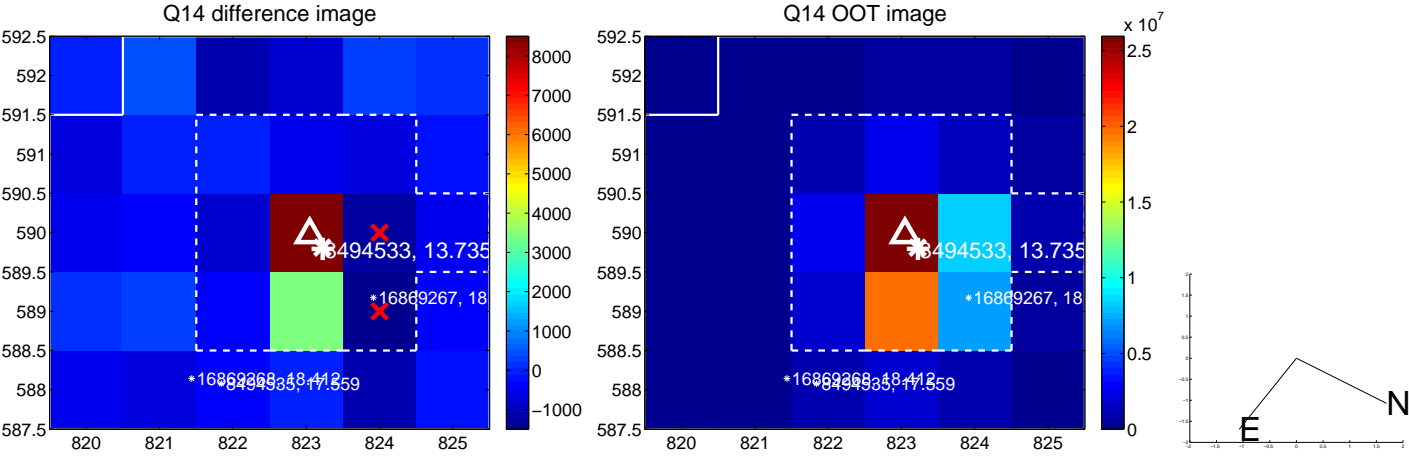
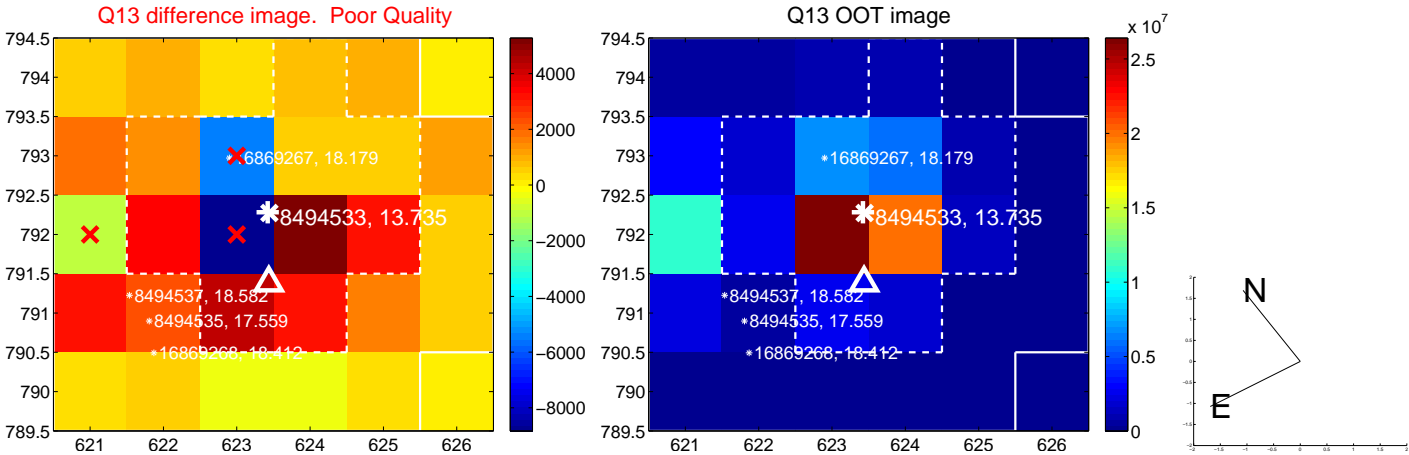
Q12 no difference image



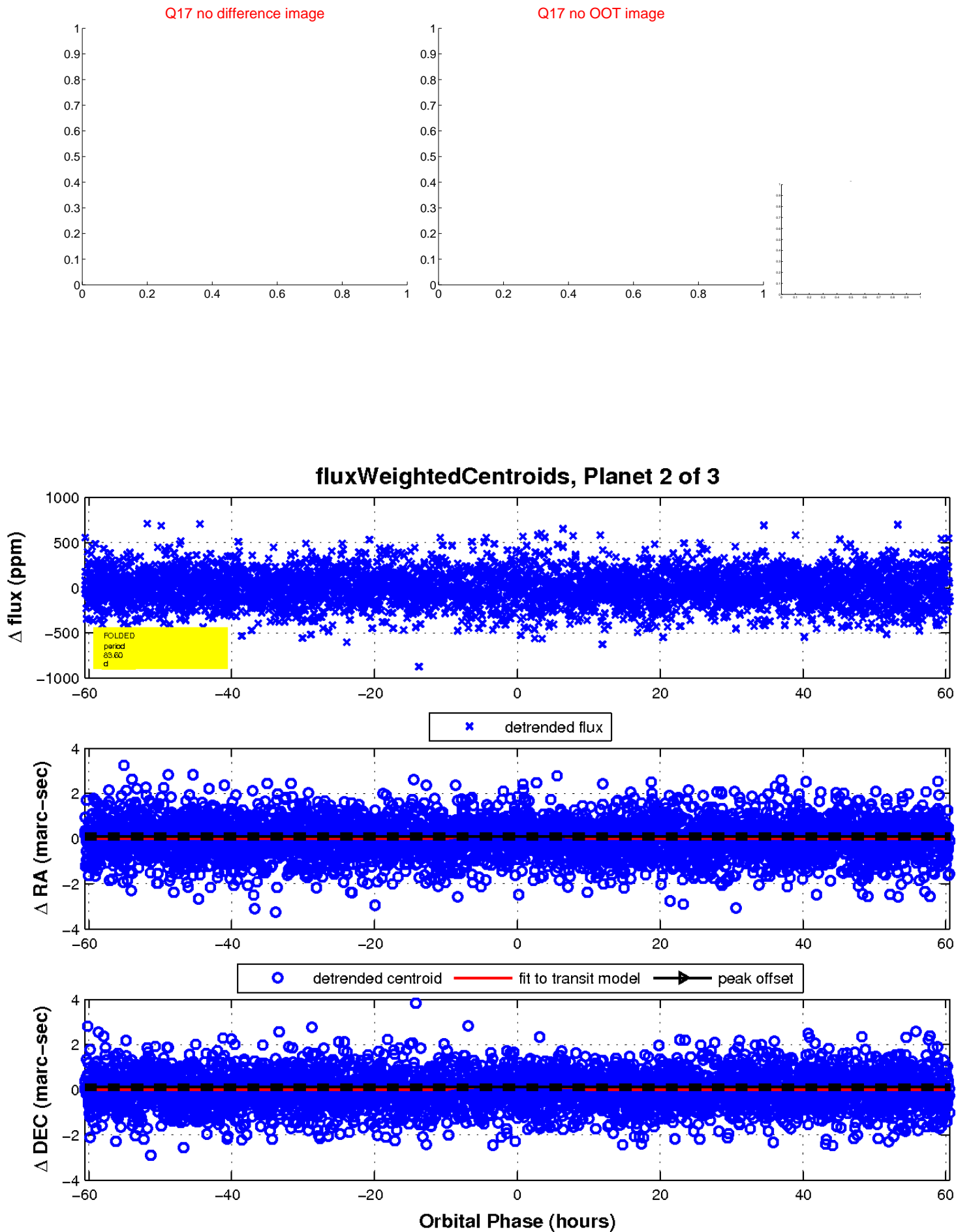
Q12 no OOT image



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

