

KIC 008552500

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})
008552500-01	OBS	7053.01	0.530964	131.725618	35.2	1.566	8.7	7.8	0.99	6185	0.69	7508.43
008552500-02	OBS	No	118.962358	187.801945	513.5	2.879	8.3	6.5	0.99	6185	2.48	5.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008552500-01	OBS	FP	0.00	0	0	1	1	CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
008552500-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—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.

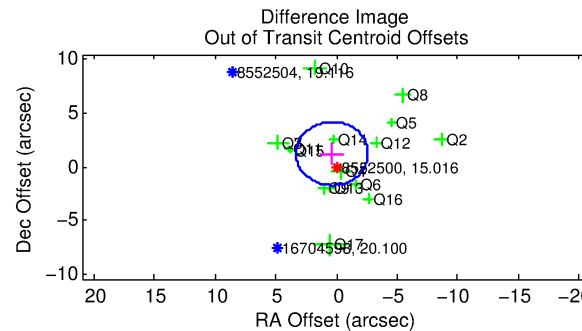
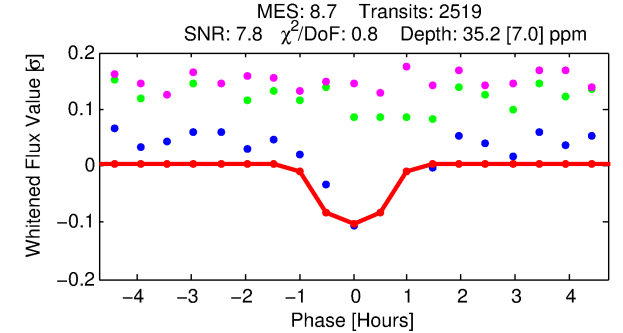
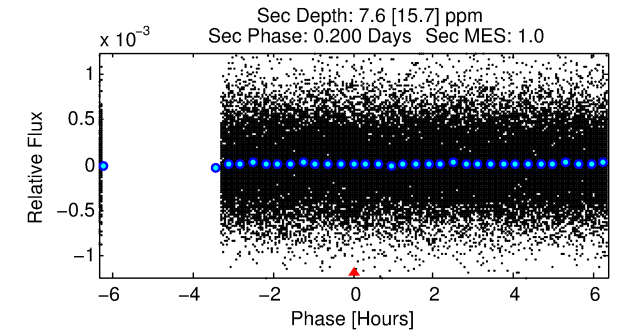
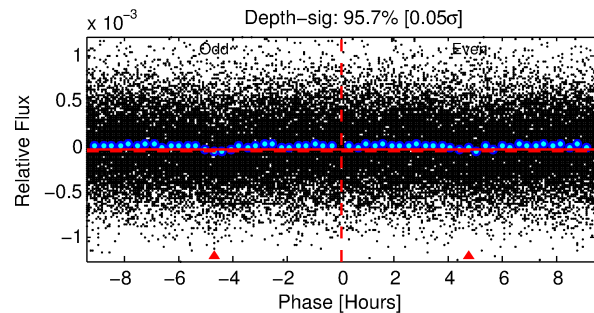
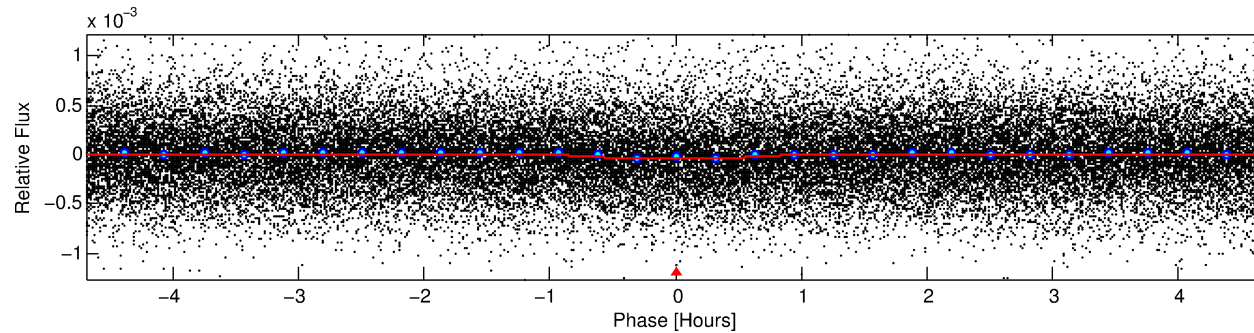
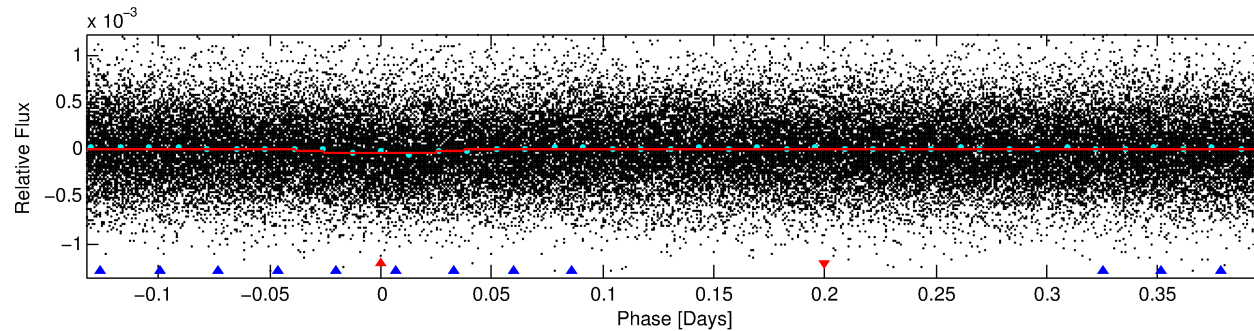
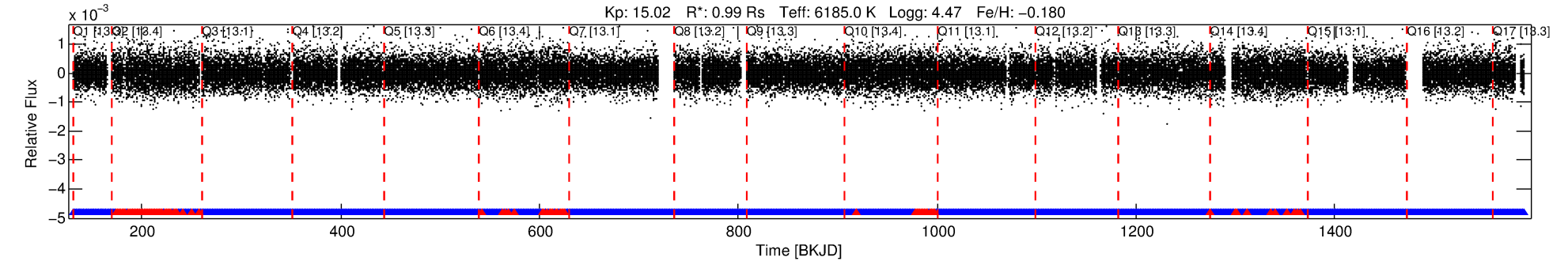
Ephemeris Match Information For 008552500-01

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
008552500-01	8552500	008552540-01	8552540	1:2	125.9	4	-32	10.29	15.01	13281.00	Direct-PRF	0	2.15	0.58

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol 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: 8552500 Candidate: 1 of 2 Period: 0.531 d
KOI: K07053 Corr: No Ephemeris Match



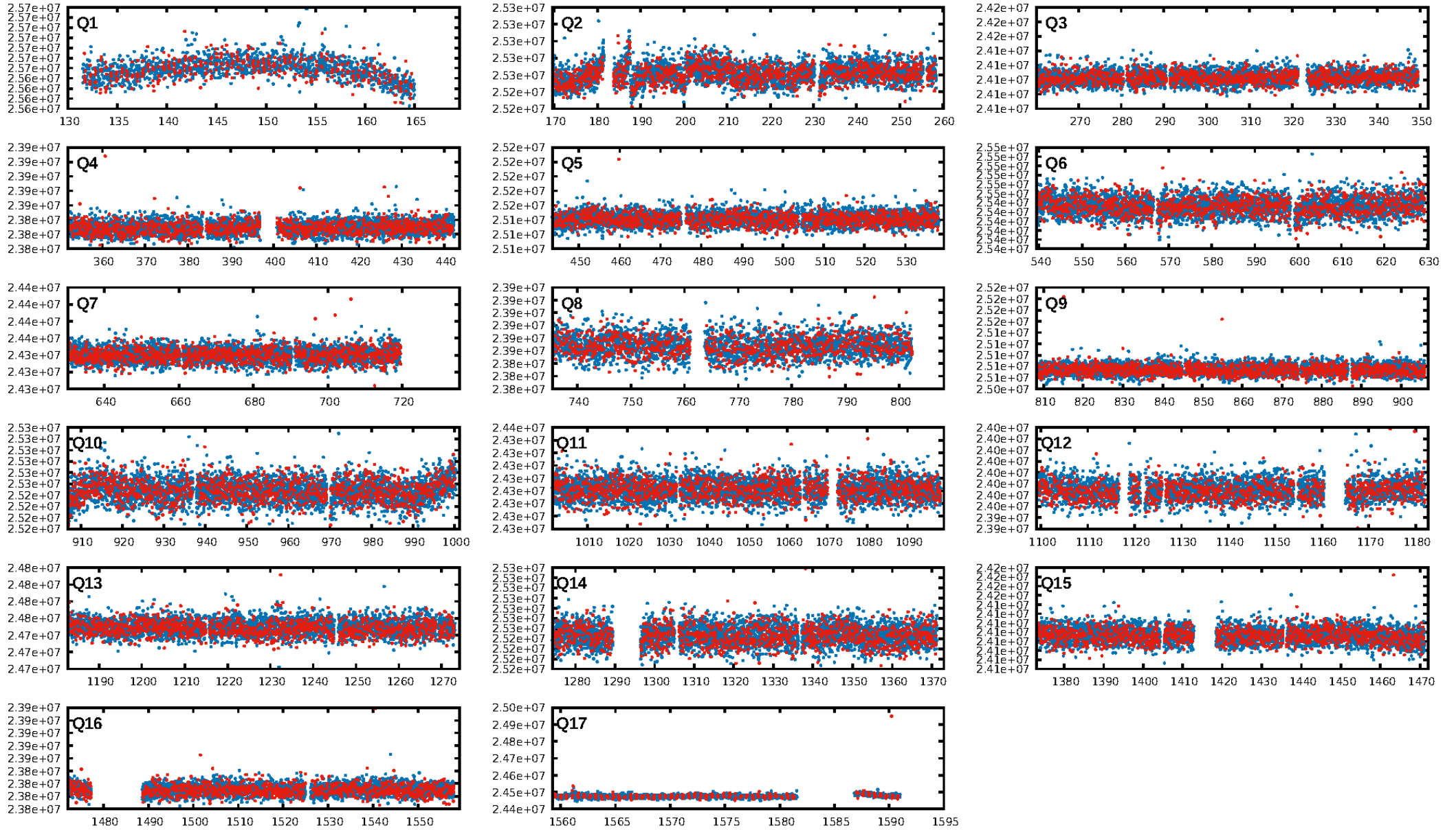
DV Fit Results:

Period = 0.53096 [0.00002] d
Epoch = 131.7256 [0.0031] BKJD
Rp/R* = 0.0064 [0.0045]
a/R* = 1.48 [3.04]
b = 0.90 [0.78]
Seff = 7508.43 [3158.54]
Teq = 2374 [250] K
Rp = 0.70 [0.54] Re
a = 0.0131 [0.0037] AU
Ag = 1.49 [3.74] [0.13 σ]
Teffp = 4053 [2520] K [0.66 σ]

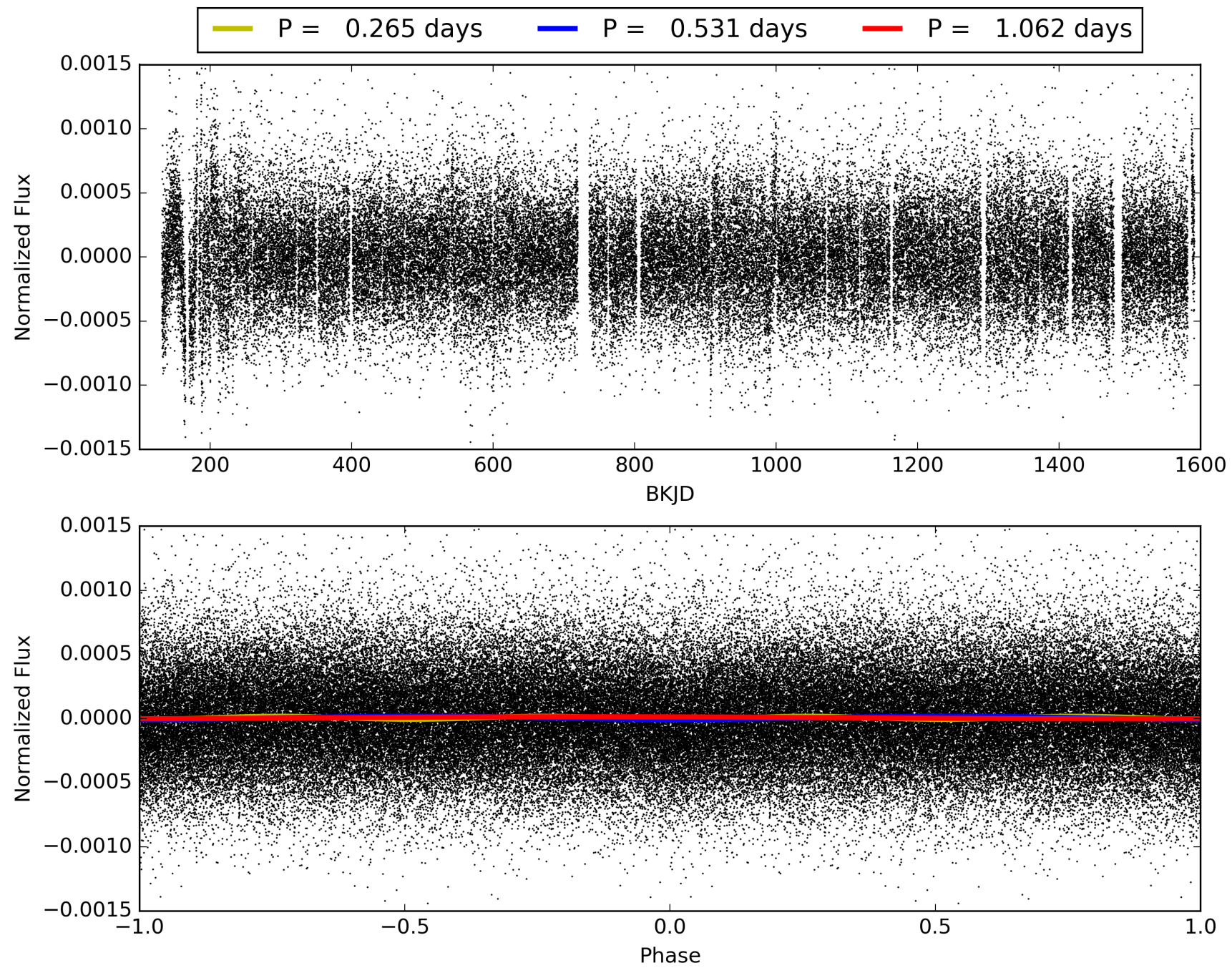
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [867.39 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.88e-20
RollingBand-fgt: 0.95 [2274/2406]
GhostDiagnostic-chr: -0.06736
Centroid-sig: 4.7%
Centroid-so: 3.662 arcsec [1.93 σ]
OotOffset-rm: 1.278 arcsec [1.29 σ]
KicOffset-rm: 1.456 arcsec [1.64 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008552500-01, PDC Light Curves

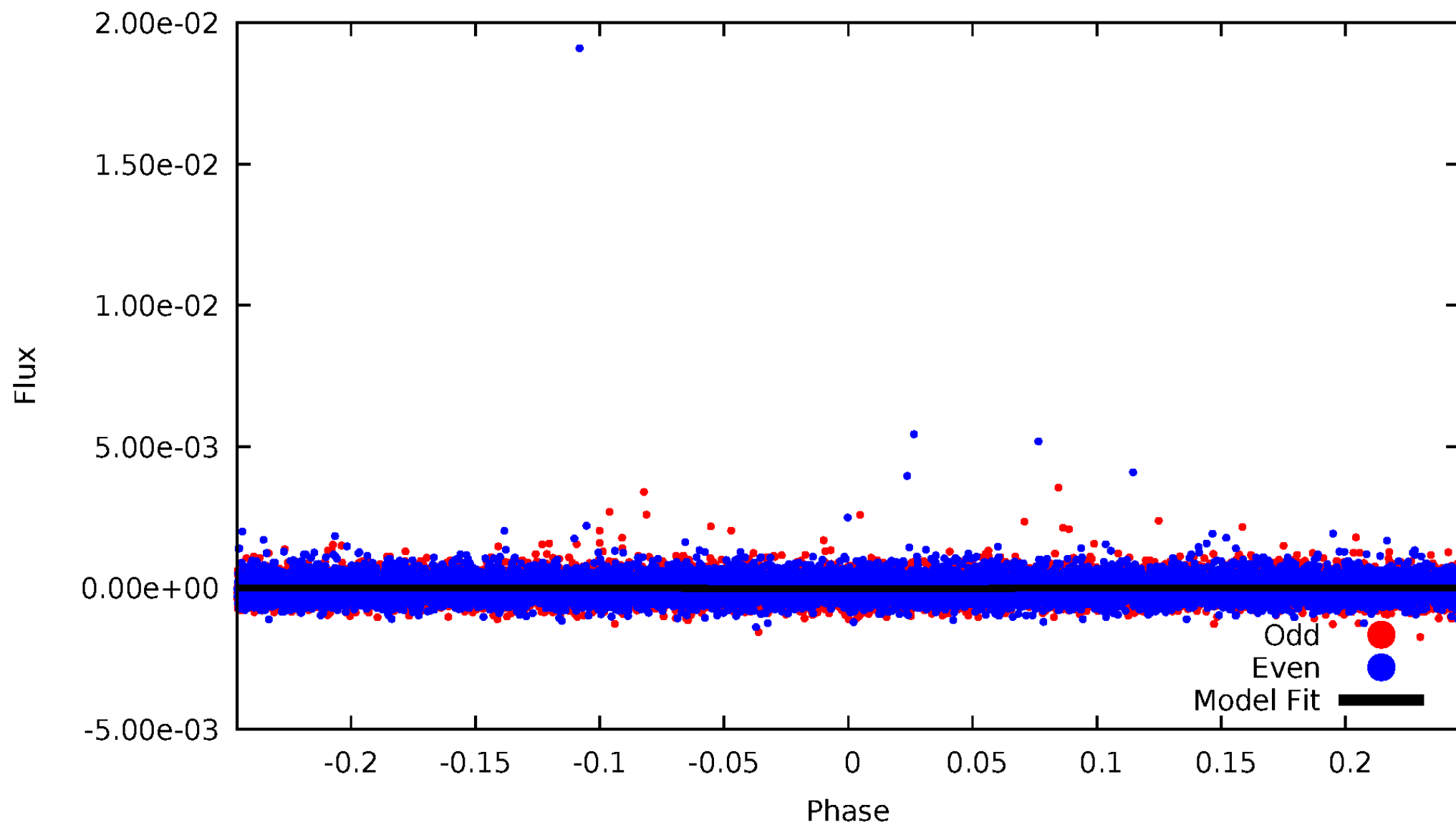


TCE 008552500-01



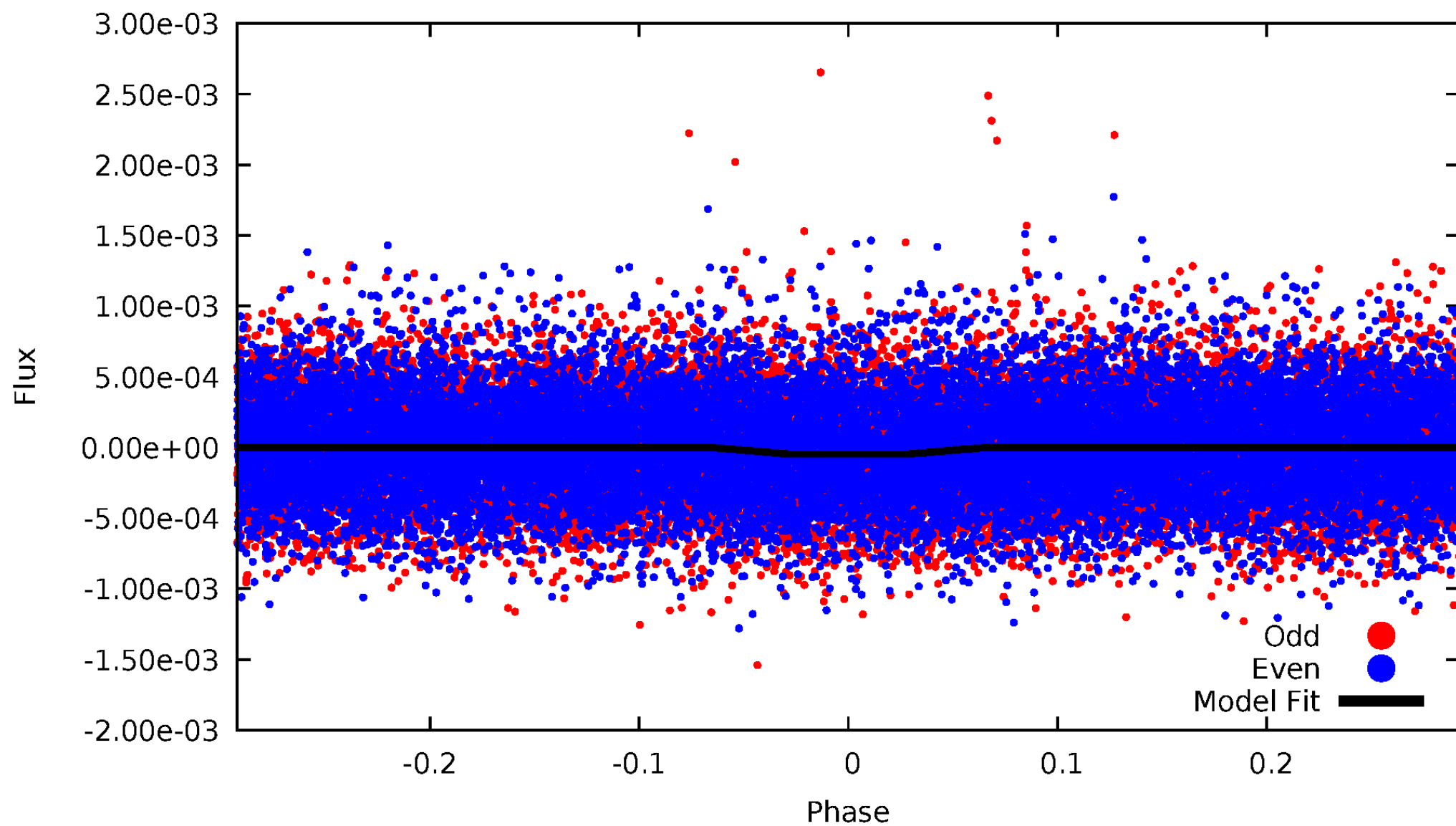
DV Odd/Even

TCE 008552500-01



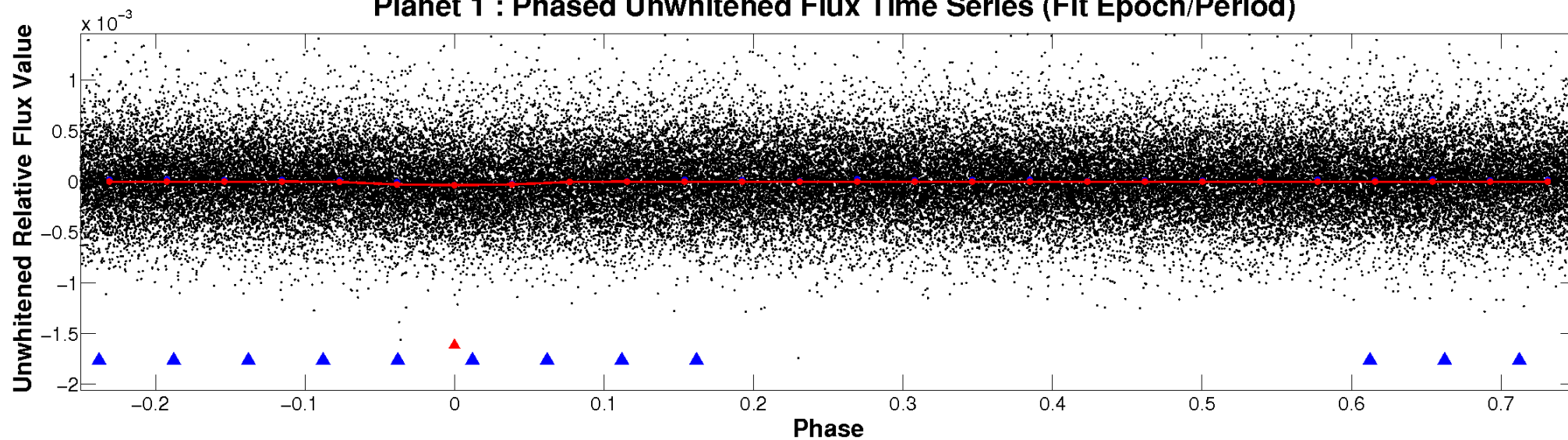
ALT Odd/Even

TCE 008552500-01

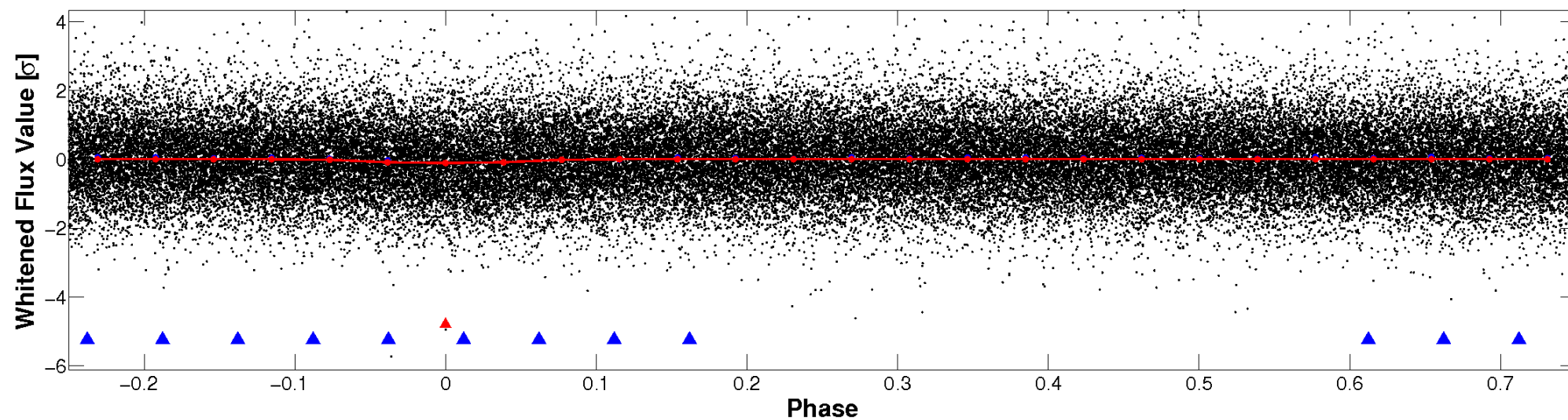


Non-Whitened Vs. Whitened Light Curve

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

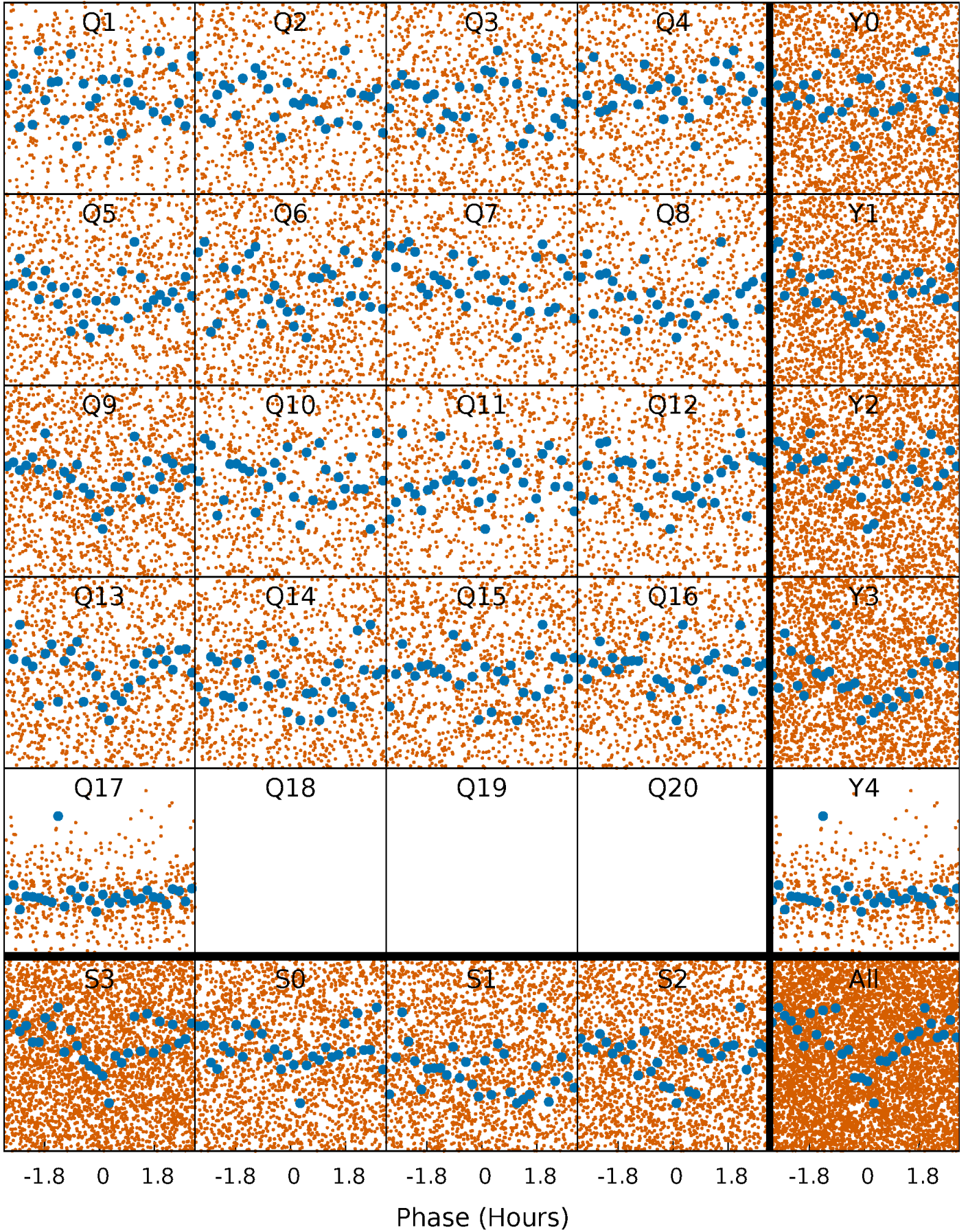


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



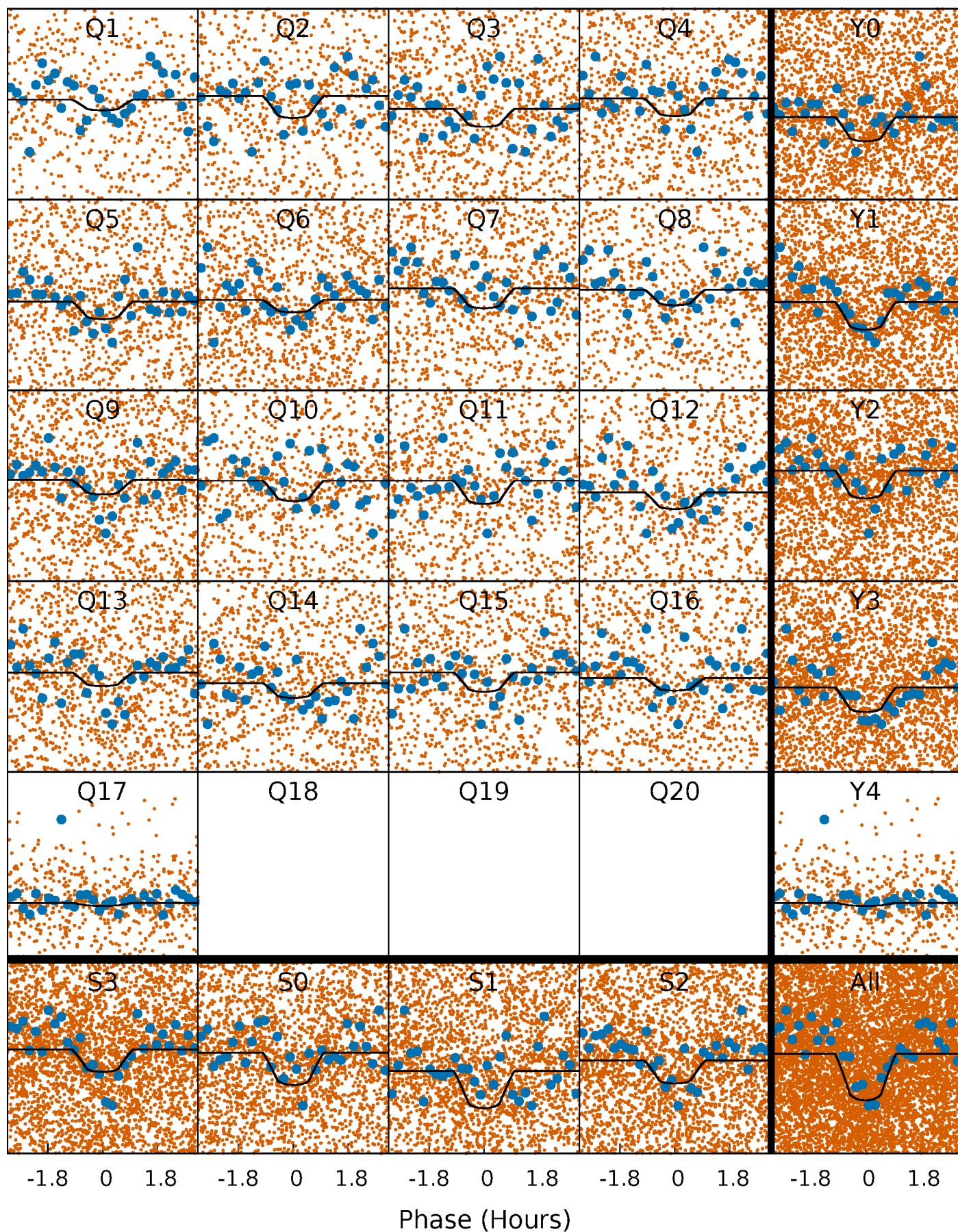
PDC Quarter-Phased Transit Curves

TCE 008552500-01 P= 0.530964 Days $T_0=131.725618$ (BKJD)



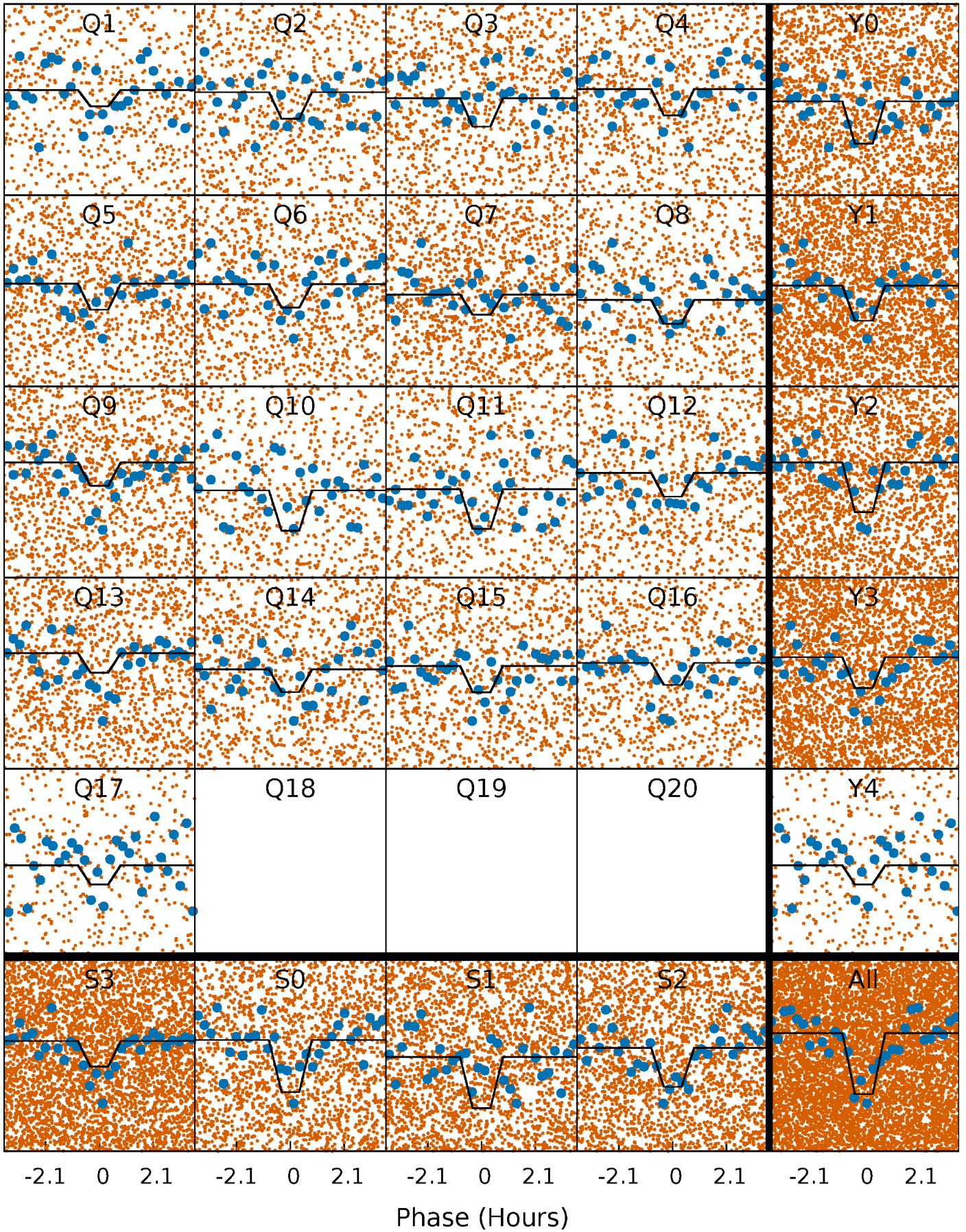
DV Quarter-Phased Transit Curves

TCE 008552500-01 P= 0.530964 Days $T_0=131.725618$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

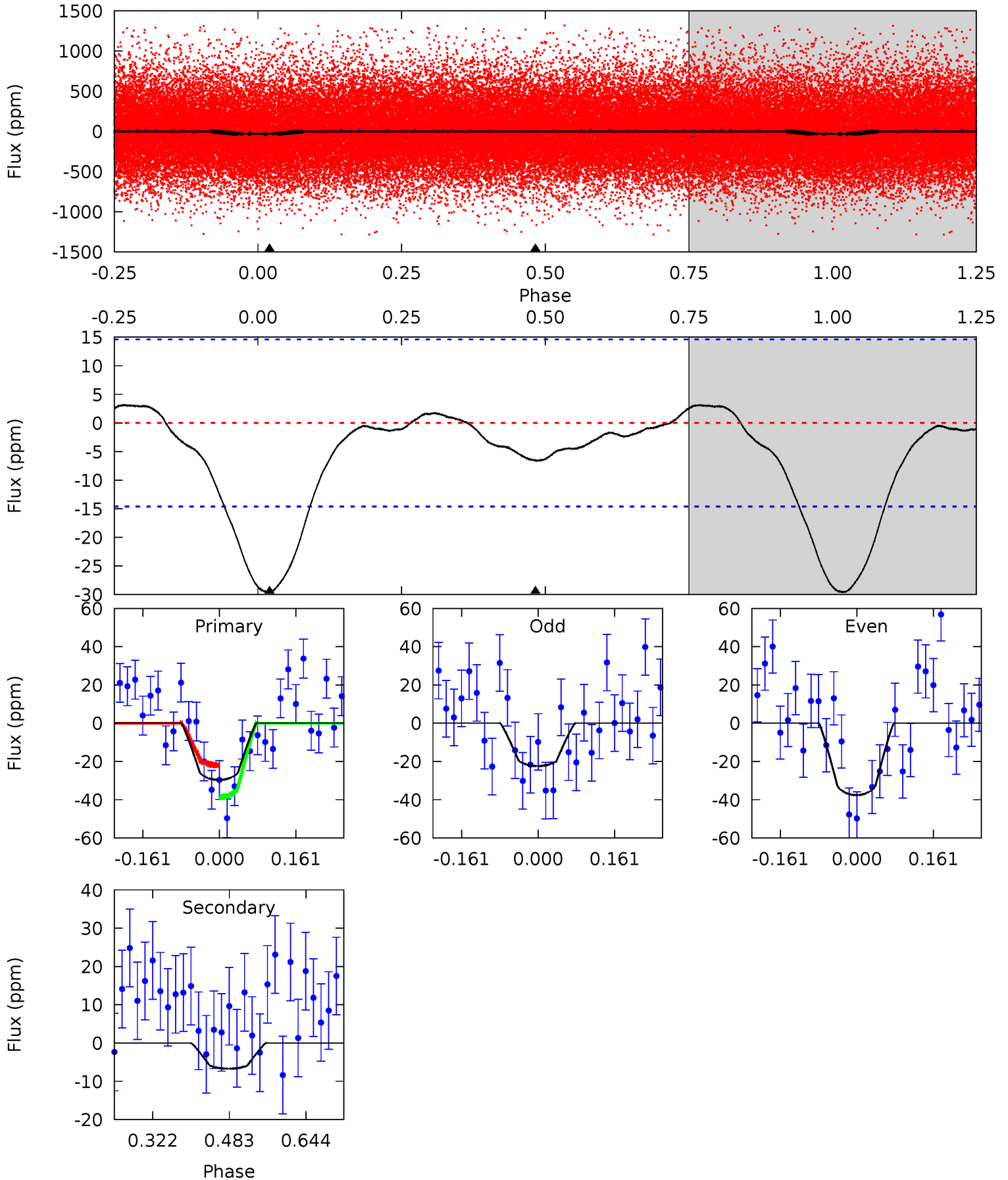
TCE 008552500-01 P= 0.530968 Days $T_0=131.724221$ (BKJD)



DV Model-Shift Uniqueness Test

008552500-01, P = 0.530964 Days, E = 131.194654 Days

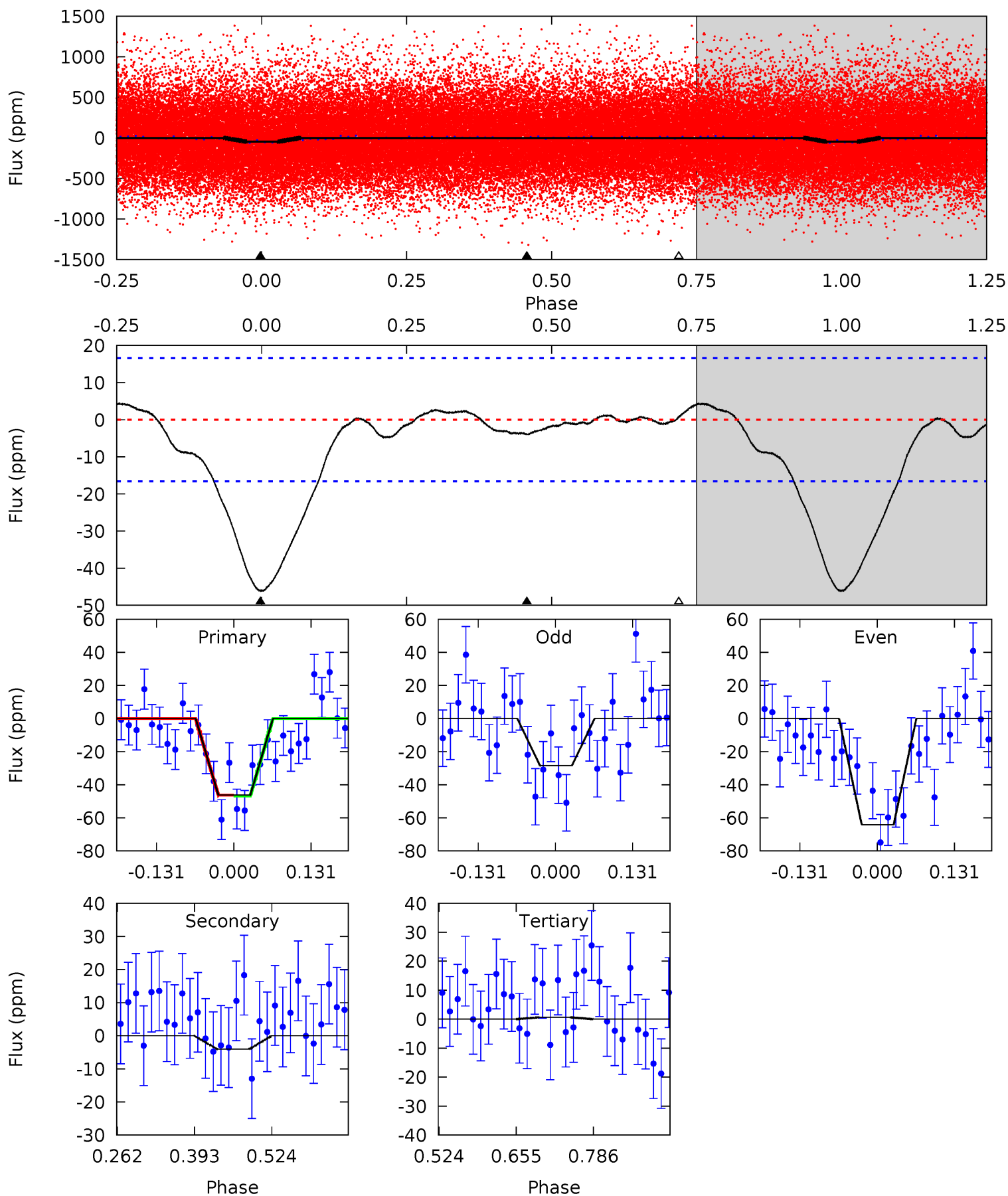
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.06	2.05	0	0	4.46	1.40	0.51	9.06	9.06	2.05	2.05	2.32	0.85	0.10	2.54



Alt Model-Shift Uniqueness Test

008552500-01, P = 0.530968 Days, E = 131.193253 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	1.11	-0.17	0	4.51	1.51	0.78	12.7	12.6	1.28	1.11	4.84	1.06	0.09	0.07



Stellar Parameters For KIC 008552500

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6185^{+175}_{-197}	$4.472^{+0.054}_{-0.216}$	$-0.180^{+0.250}_{-0.350}$	$0.991^{+0.335}_{-0.112}$	$1.060^{+0.144}_{-0.144}$	$1.537^{+0.351}_{-0.868}$
	+3%/-3%	+1%/-5%	+139%/-194%	+34%/-11%	+14%/-14%	+23%/-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 008552500-01 / KOI 7053.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 3	$0.78^{+0.50}_{-0.43}$	3385^{+272}_{-170}	3773^{+1705}_{-5664}	$0.948^{+3.636}_{-0.651}$
Alt.	-4 ± 4	$0.82^{+0.53}_{-0.44}$	3394^{+254}_{-175}	2957^{+1808}_{-6333}	$0.440^{+2.060}_{-0.437}$

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 $A_{obs} \gg 1.0$

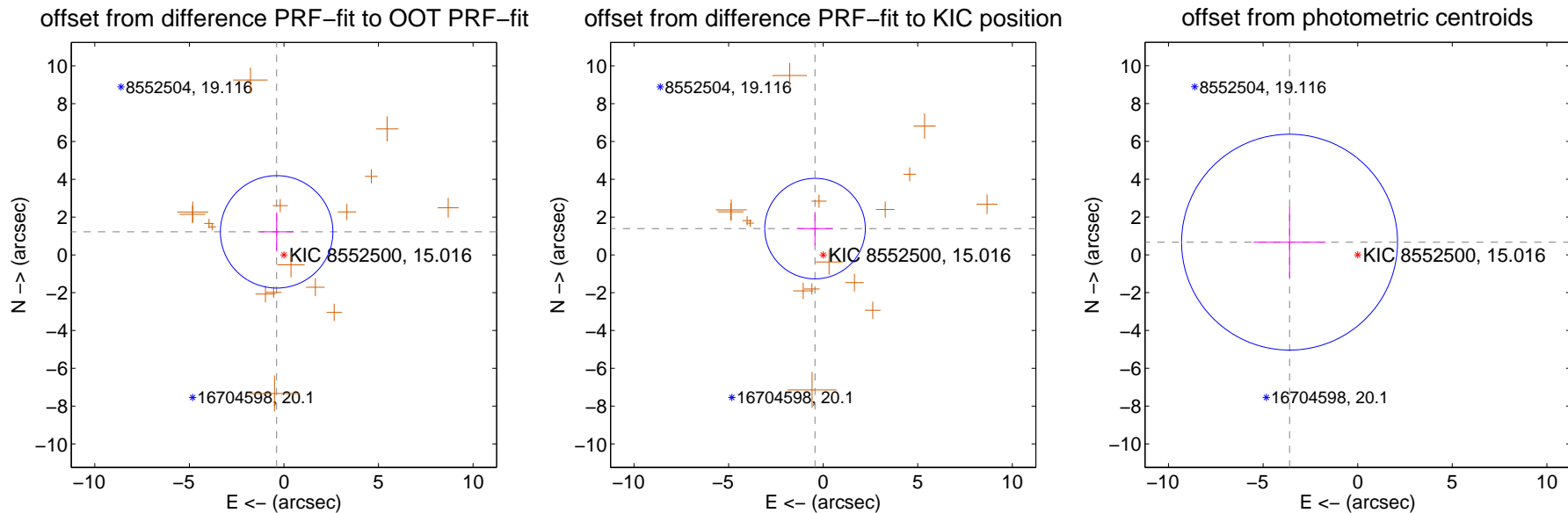
DV Centroid Data

Supplemental centroid analysis for 008552500-01. Kepler magnitude: 15.02. Transit SNR 7.81

There are 0 quarters with good PRF difference image offsets

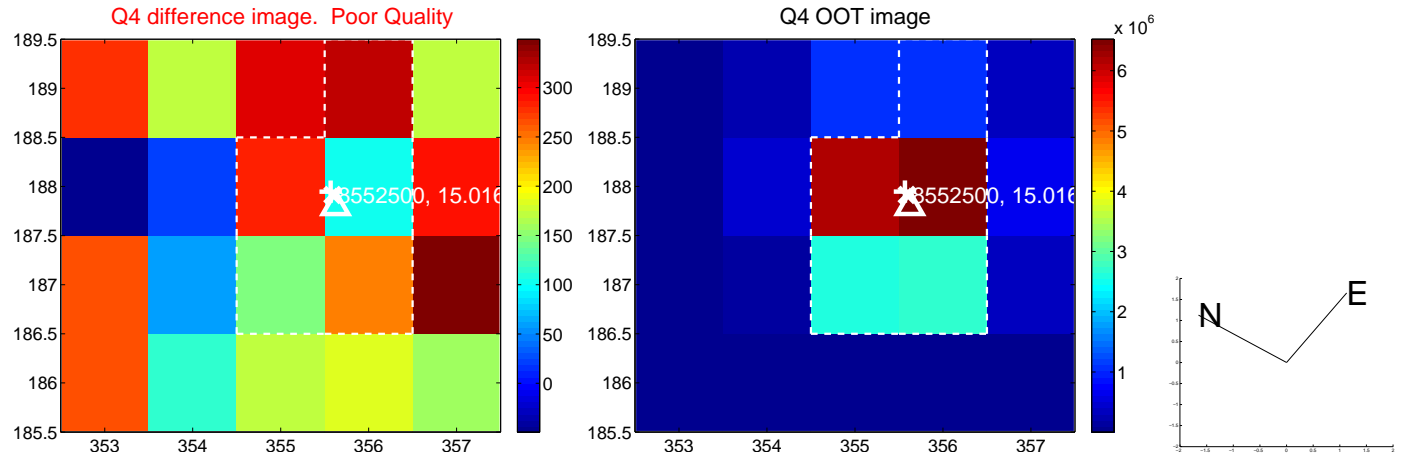
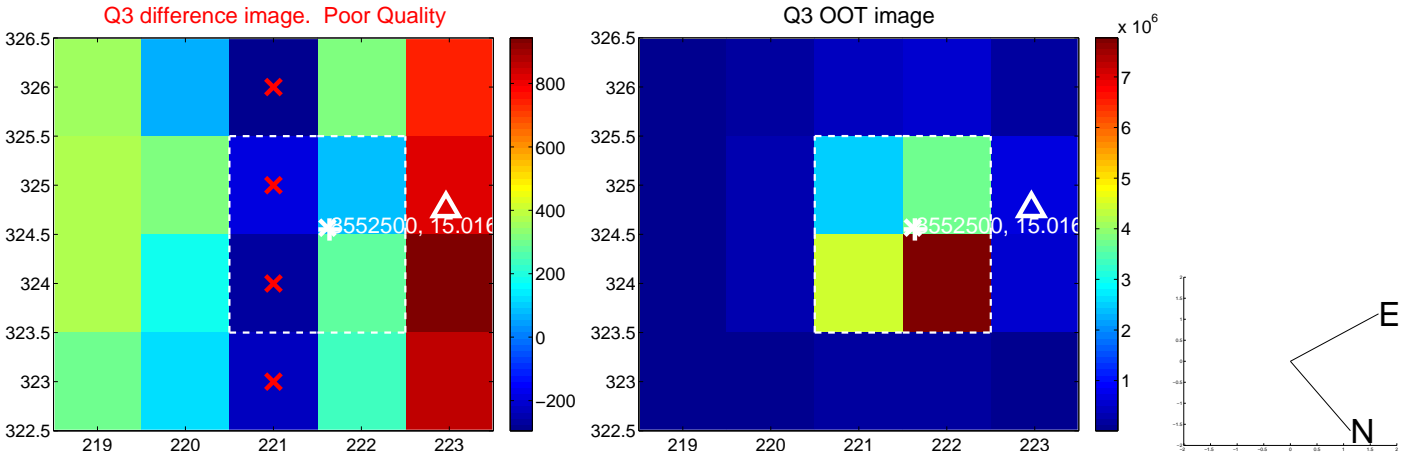
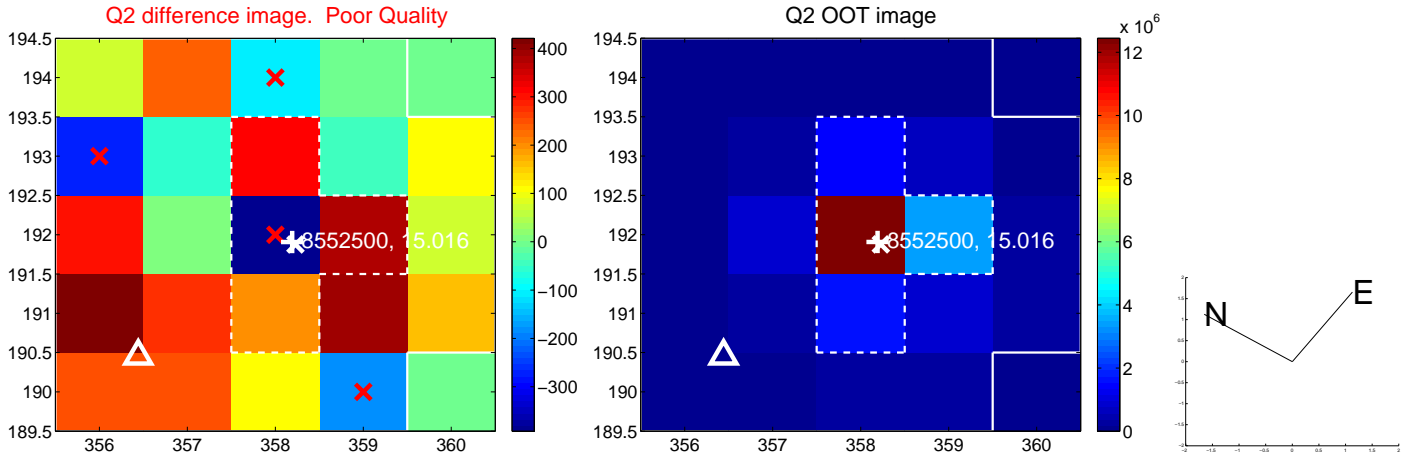
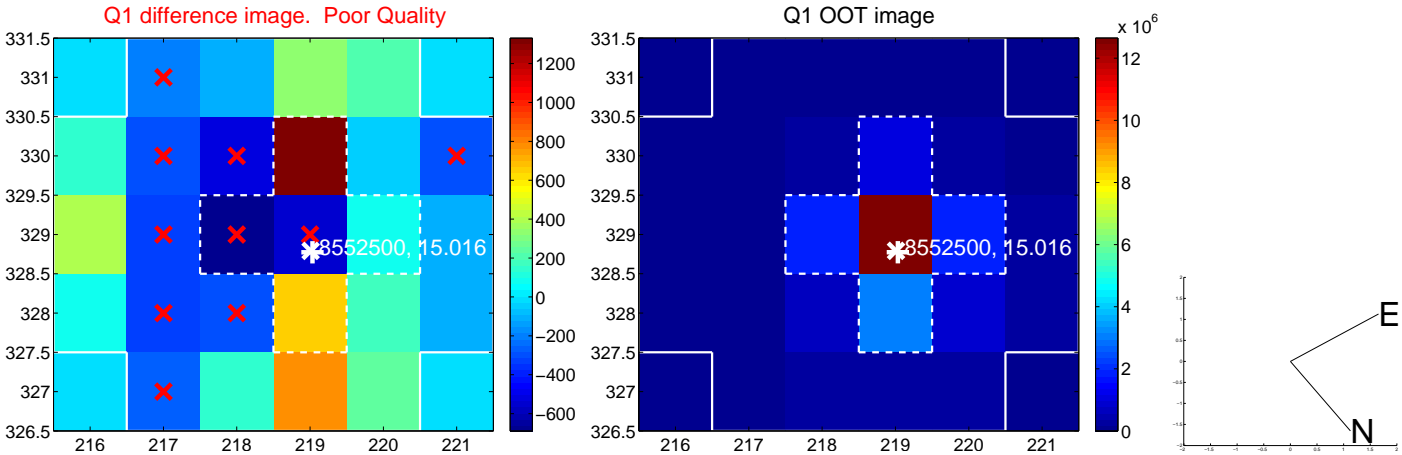
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.278 ± 0.991	1.29	0.384 ± 0.888	1.219 ± 1.035
PRF-fit source offset from KIC position	1.456 ± 0.886	1.64	0.431 ± 0.931	1.391 ± 0.888
photometric centroid source offset	3.66 ± 1.90	1.93	3.60 ± 1.90	0.67 ± 1.88

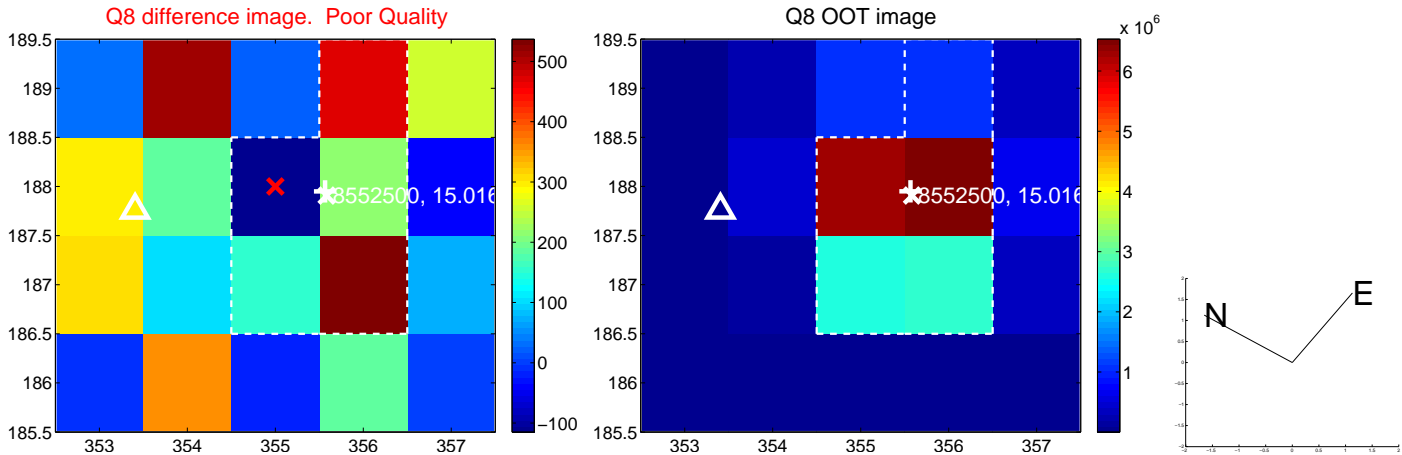
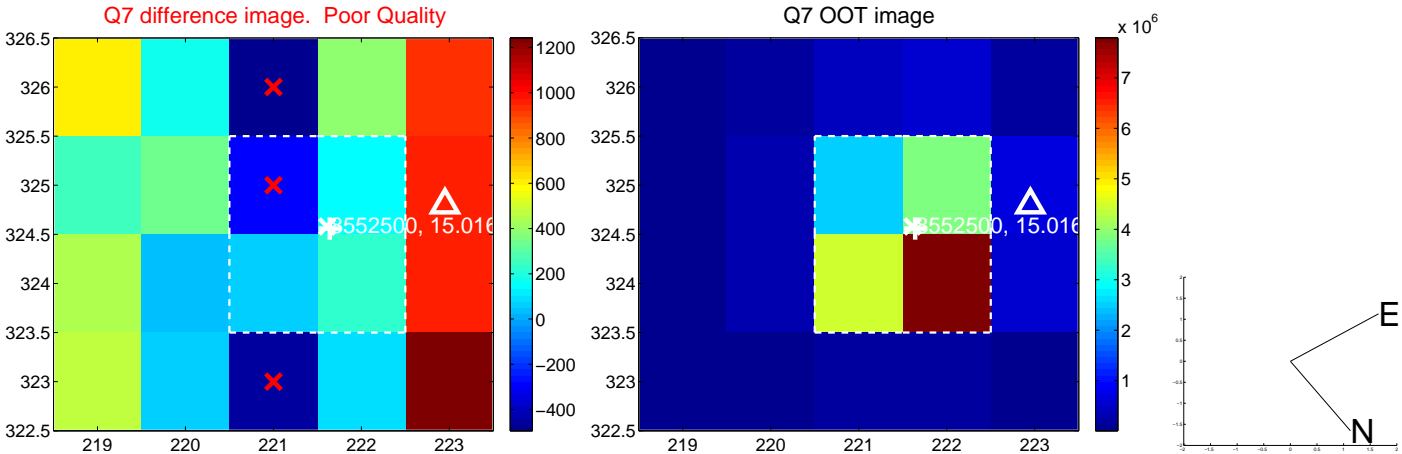
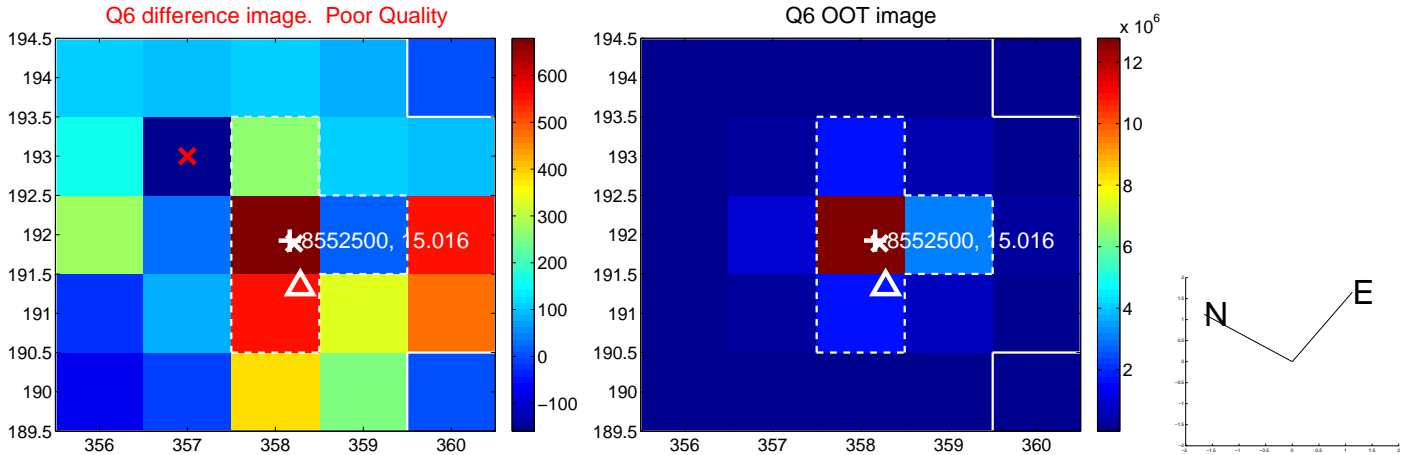
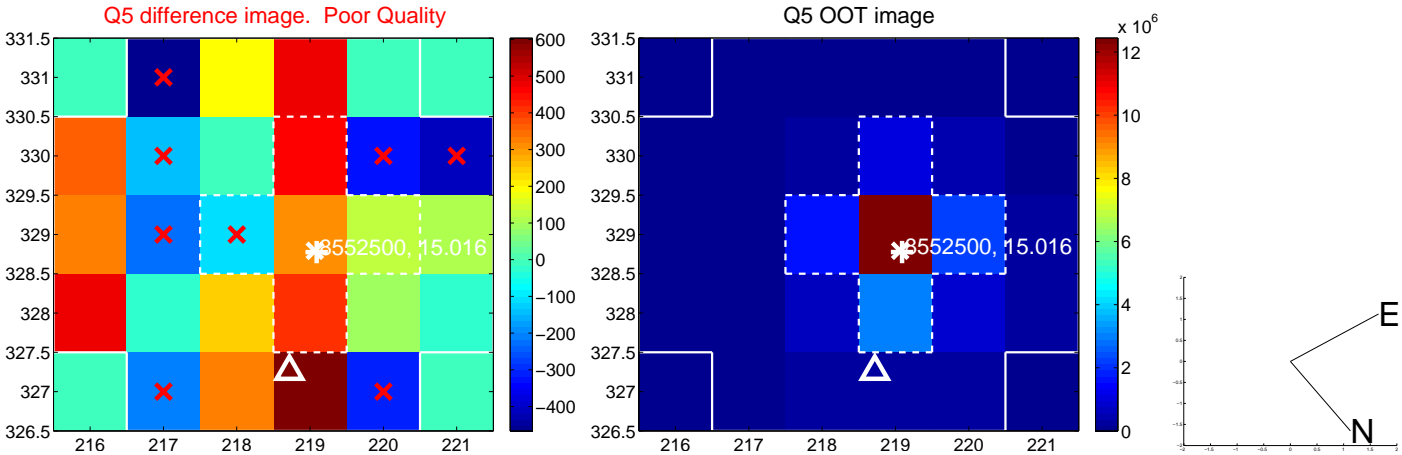


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

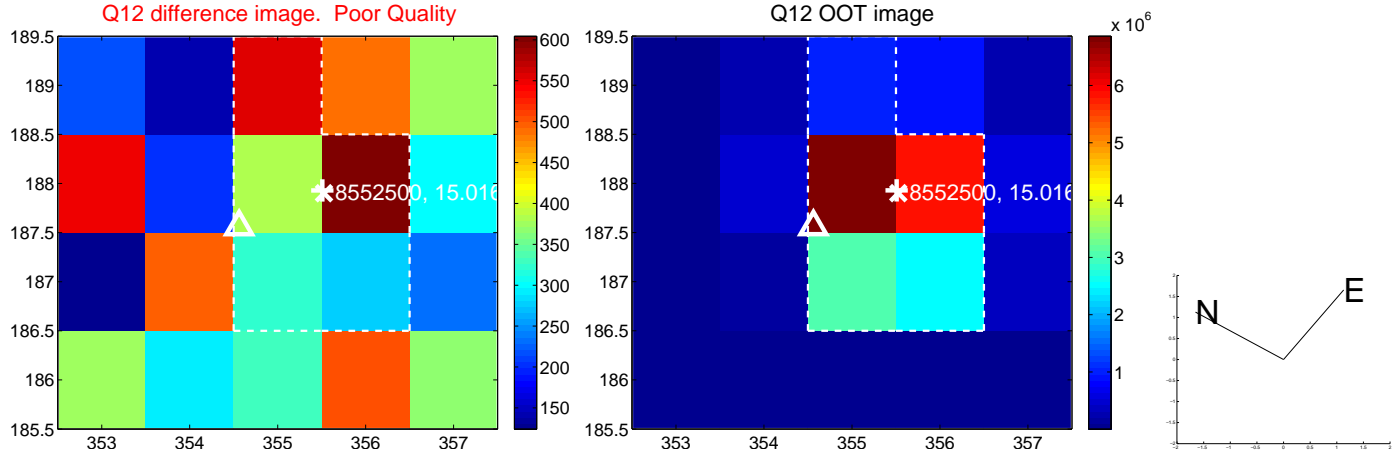
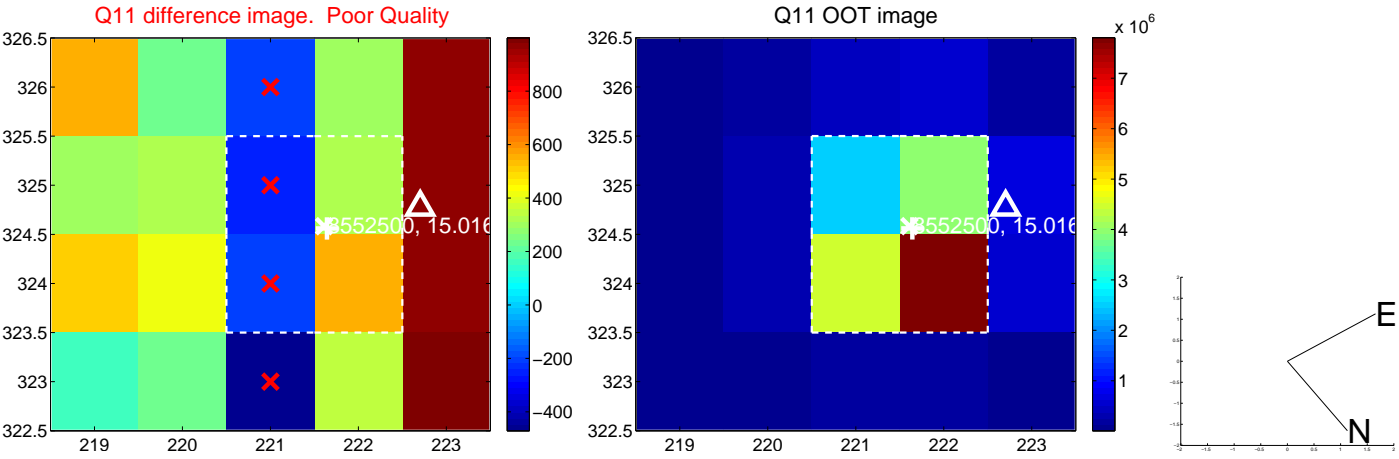
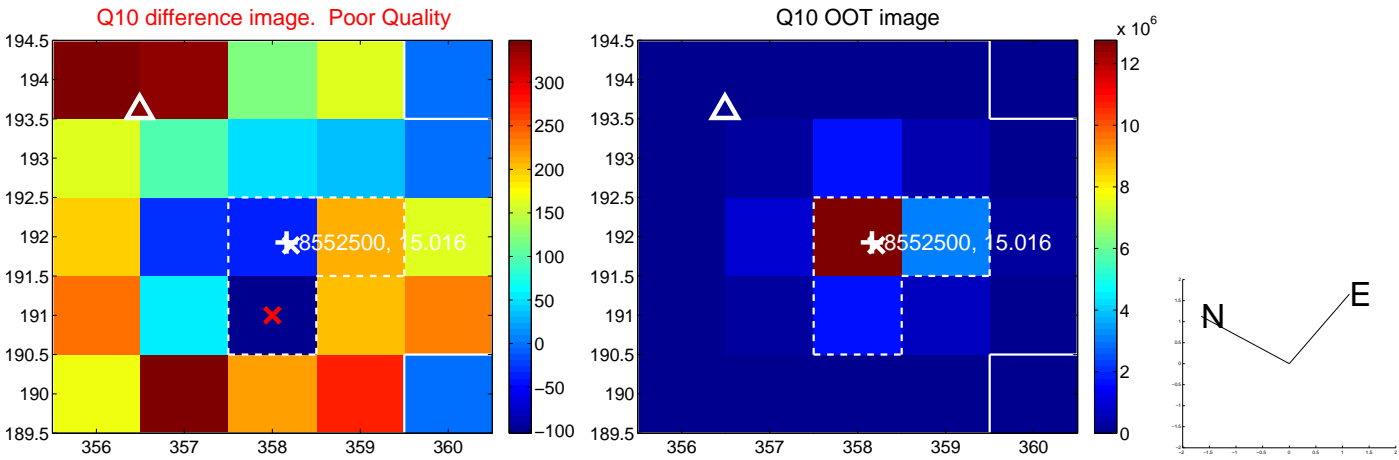
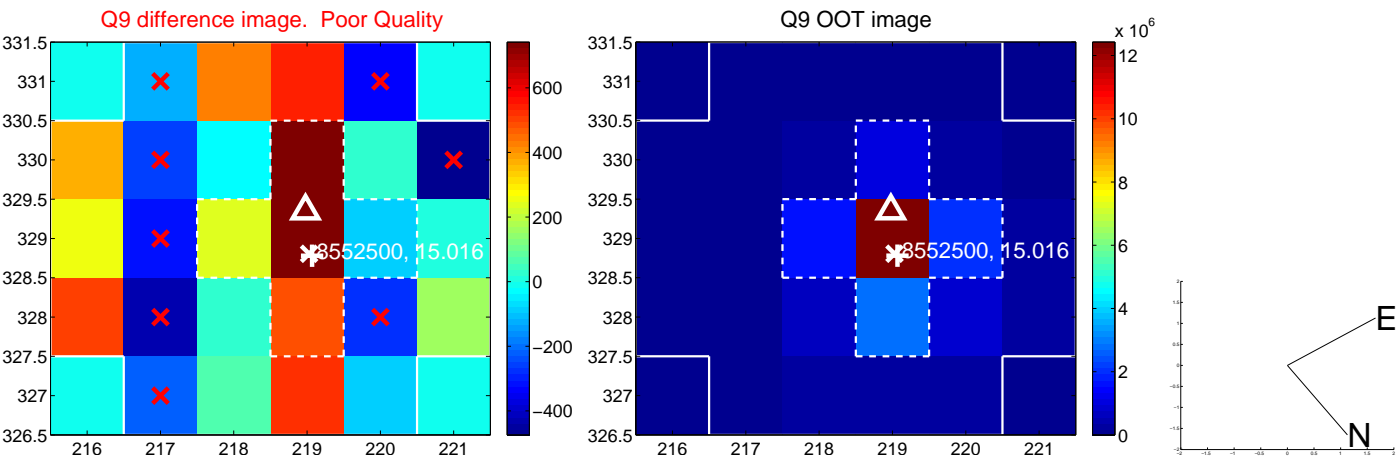
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



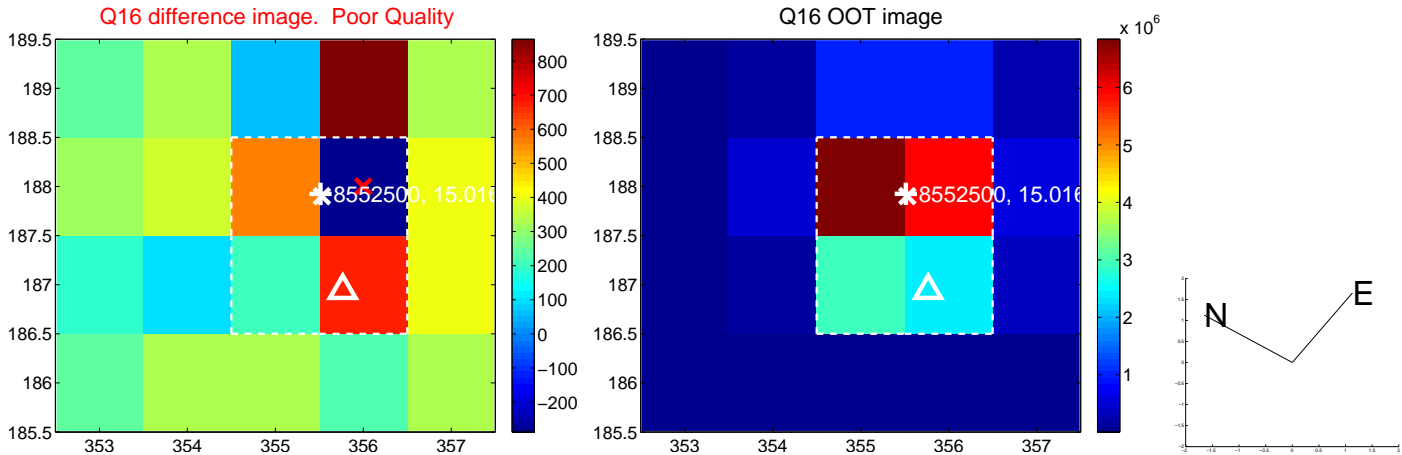
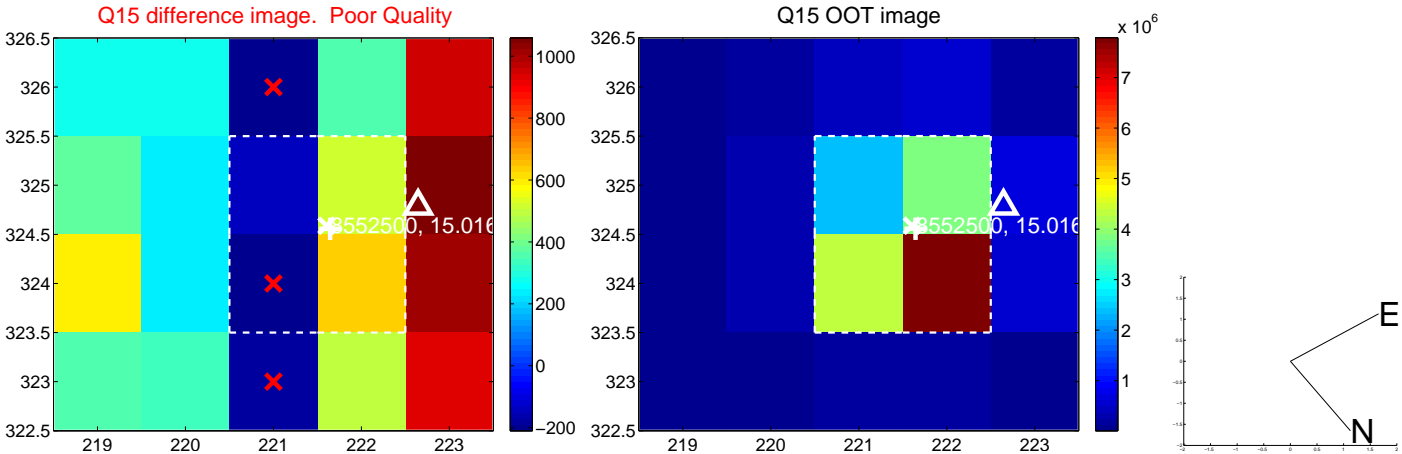
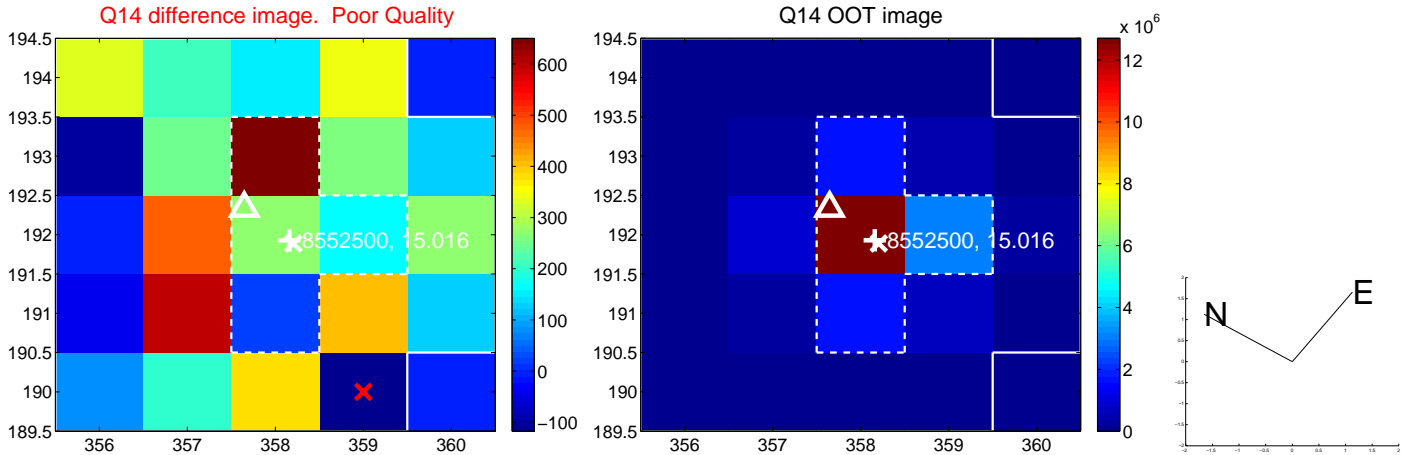
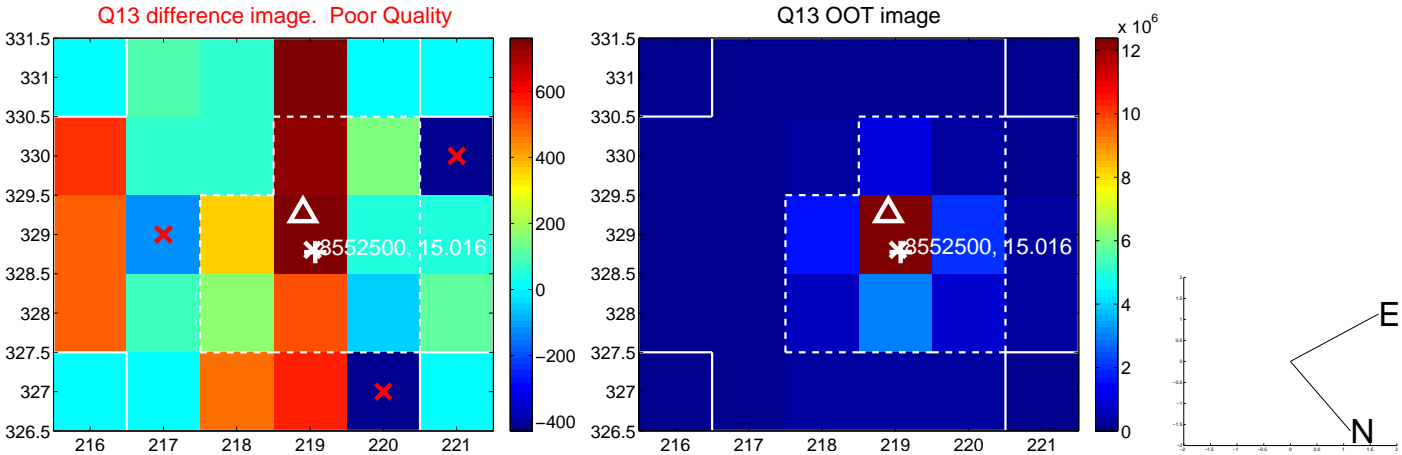
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



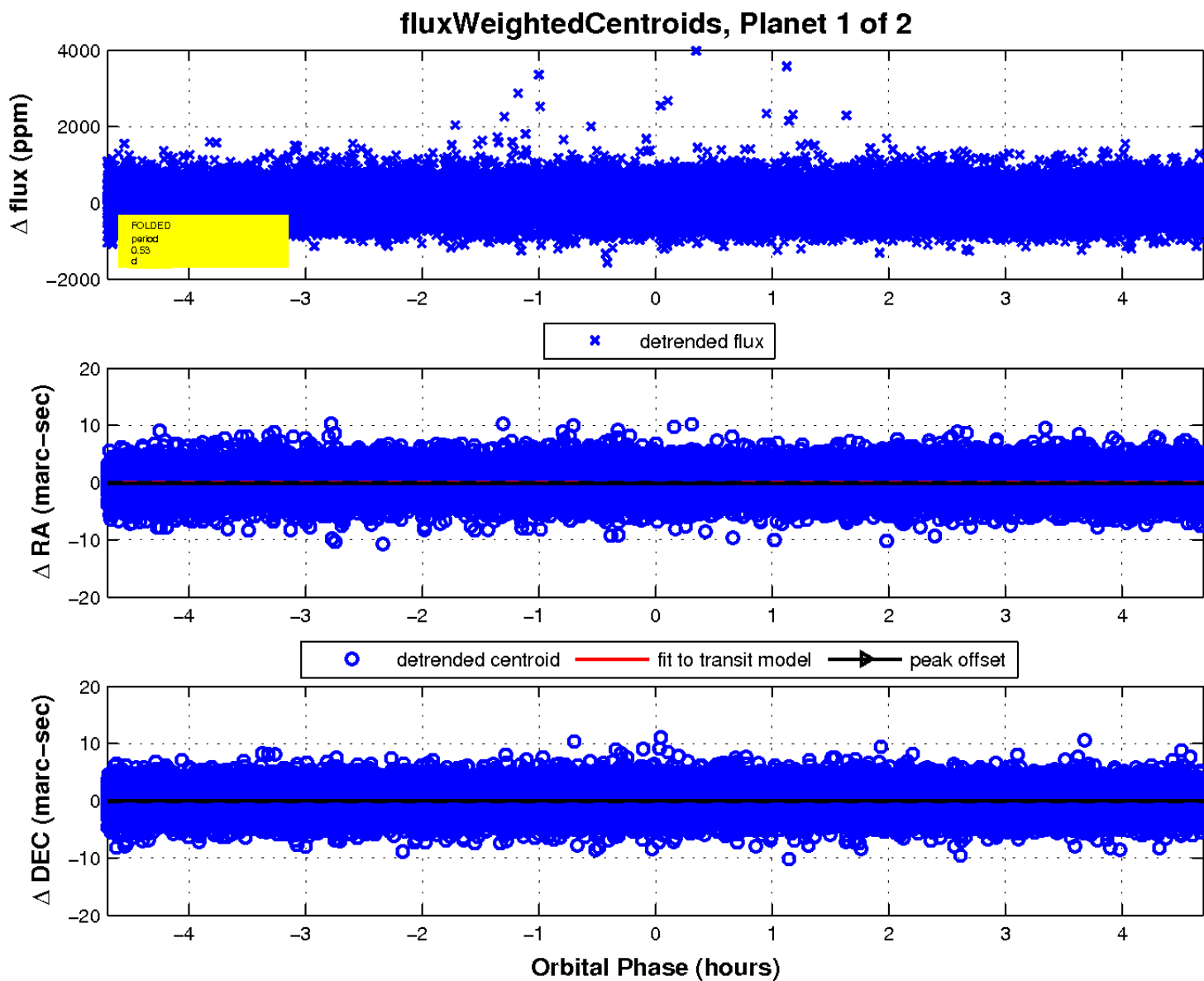
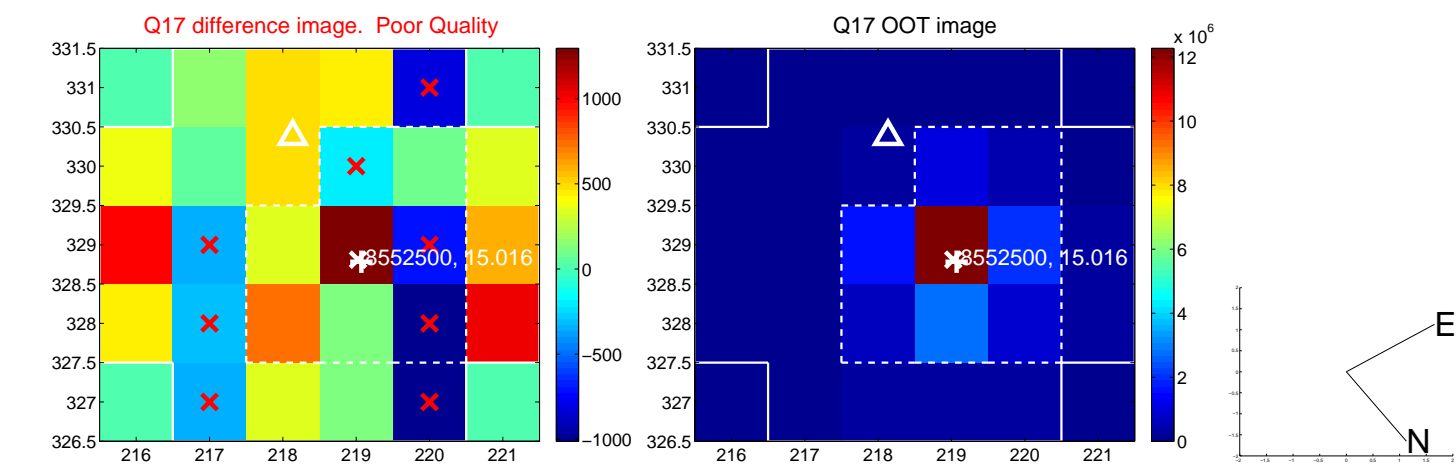
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

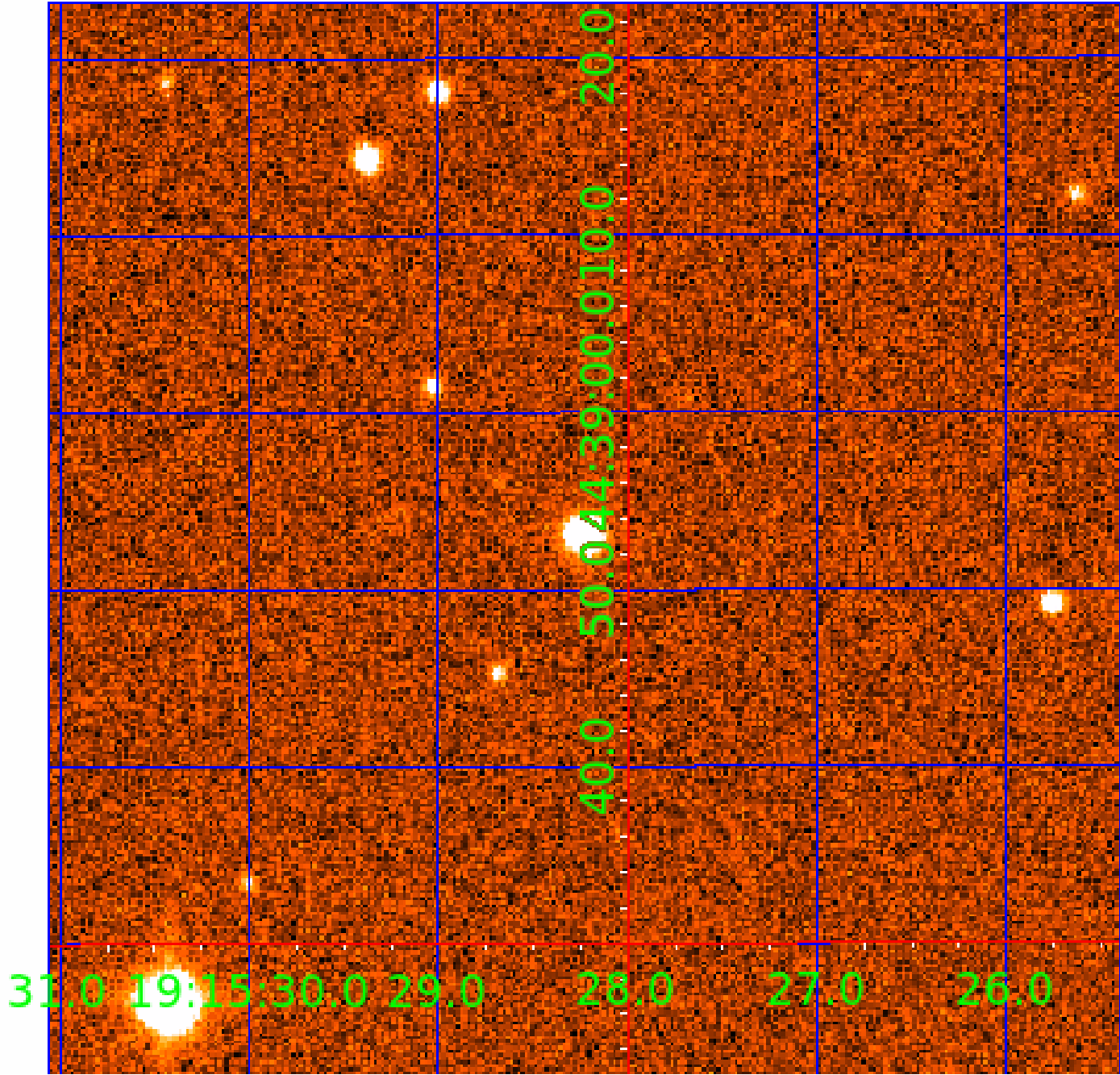


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008552500

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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008552500-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—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.

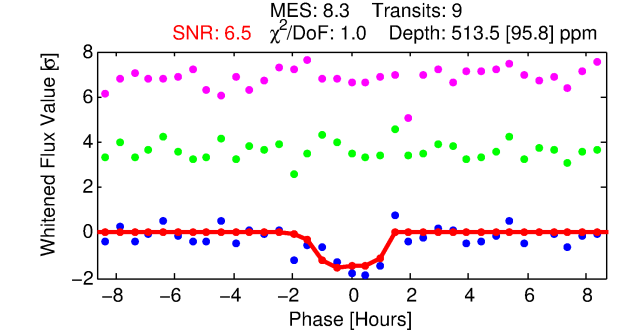
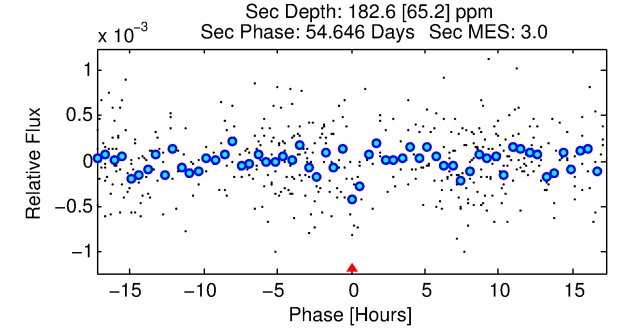
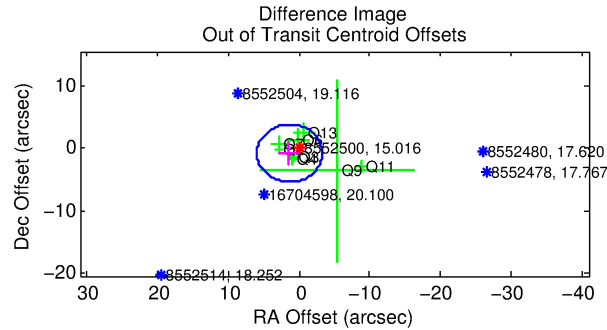
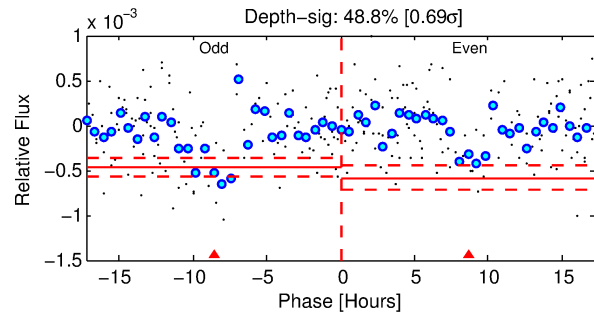
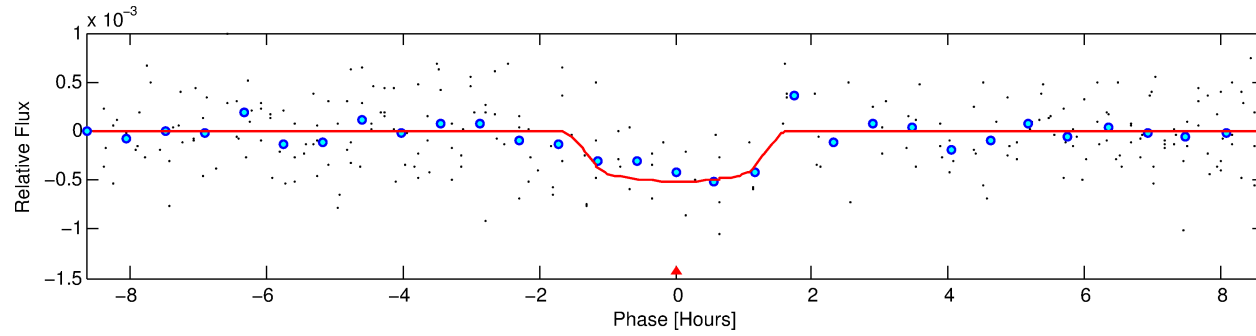
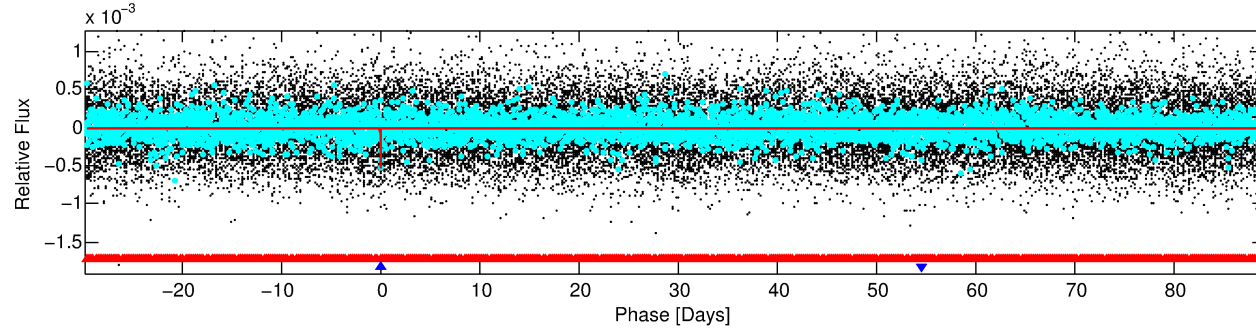
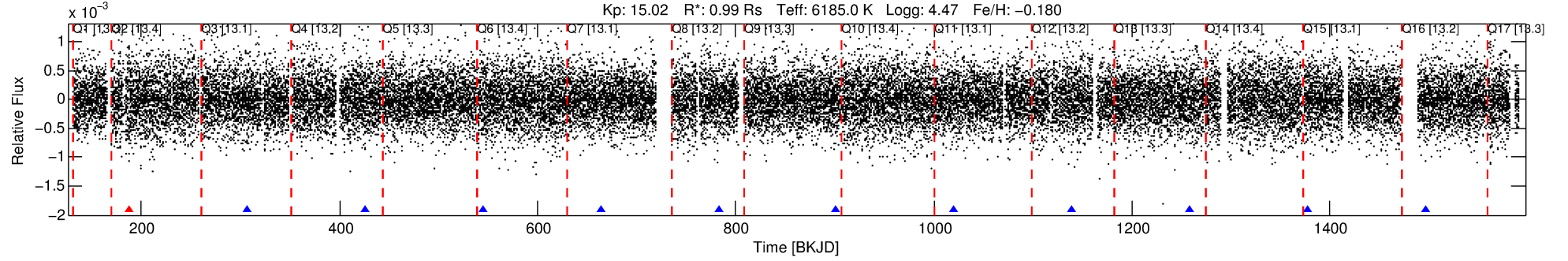
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008552500-02

No Significant Match Found

DV One-Page Summary

KIC: 8552500 Candidate: 2 of 2 Period: 118.962 d
KOI: K07053 Corr: No Ephemeris Match



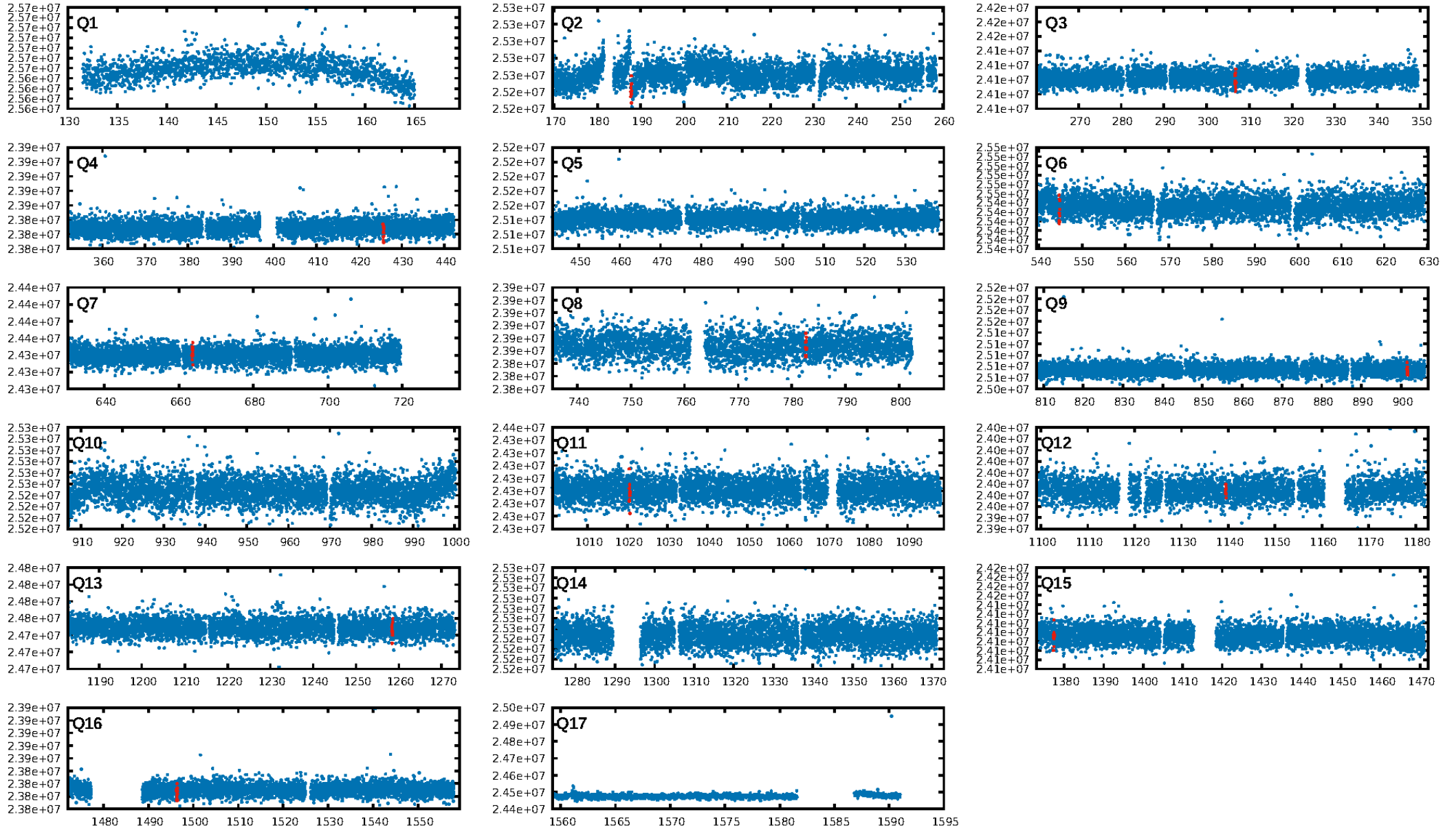
DV Fit Results:

Period = 118.96236 [0.00203] d
Epoch = 187.8019 [0.0109] BKJD
Rp/R* = 0.0229 [0.0238]
a/R* = 203.38 [1065.92]
b = 0.79 [2.47]
Seff = 5.52 [2.32]
Teq = 391 [41] K
Rp = 2.48 [2.71] Re
a = 0.4831 [0.1352] AU
Ag = 3811.11 [8182.76] [0.47σ]
Teffp = 4748 [2508] K [1.74σ]

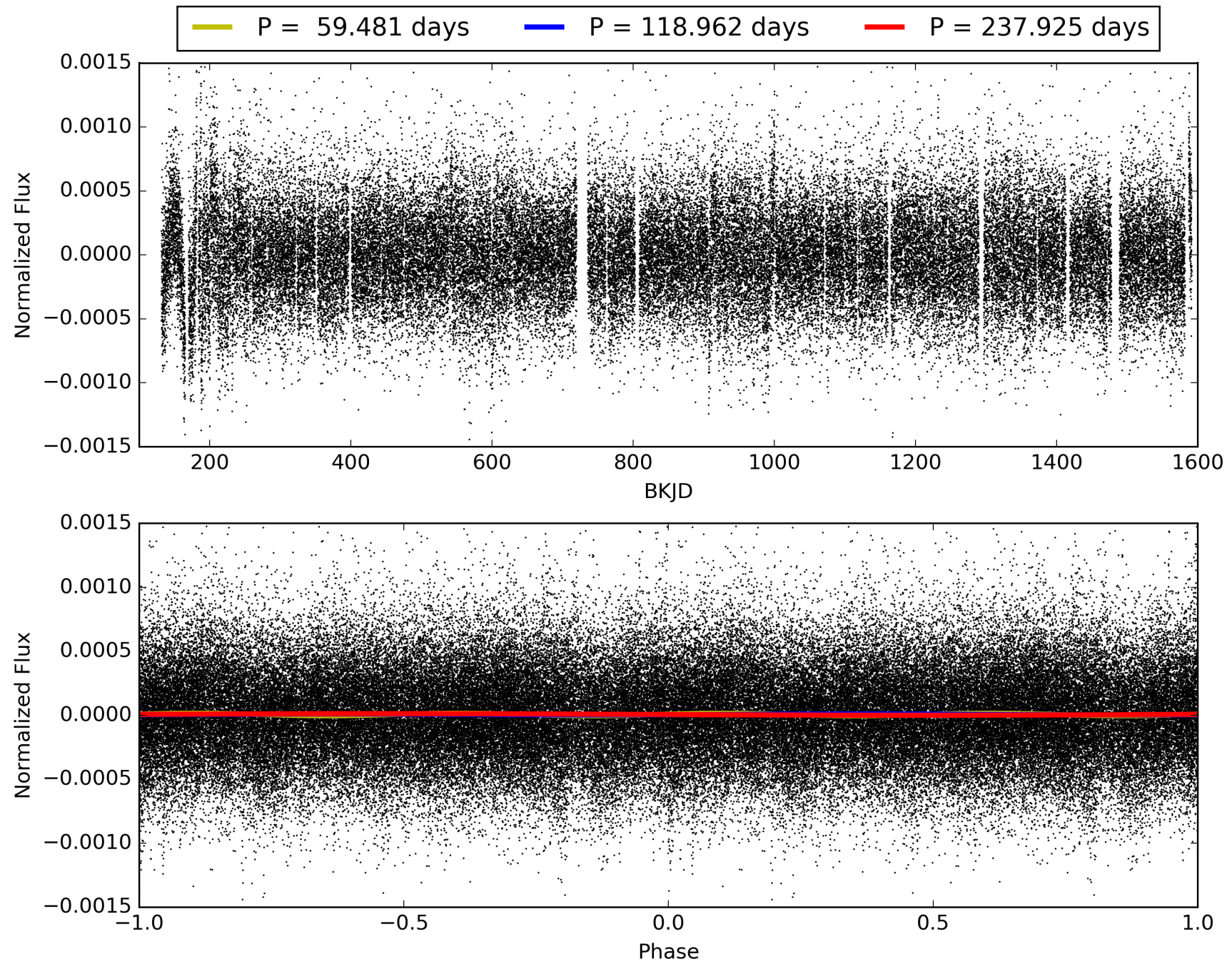
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [867.39σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.42e-17
RollingBand-fgt: 0.89 [8/9]
GhostDiagnostic-chr: 4.252
Centroid-sig: 13.3%
Centroid-so: 1.351 arcsec [0.98σ]
OotOffset-rm: 1.611 arcsec [1.05σ]
KicOffset-rm: 1.570 arcsec [1.05σ]
OotOffset-st: 2/3/1/2 [8]
KicOffset-st: 2/3/1/2 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.00 [0/12]

TCE 008552500-02, PDC Light Curves

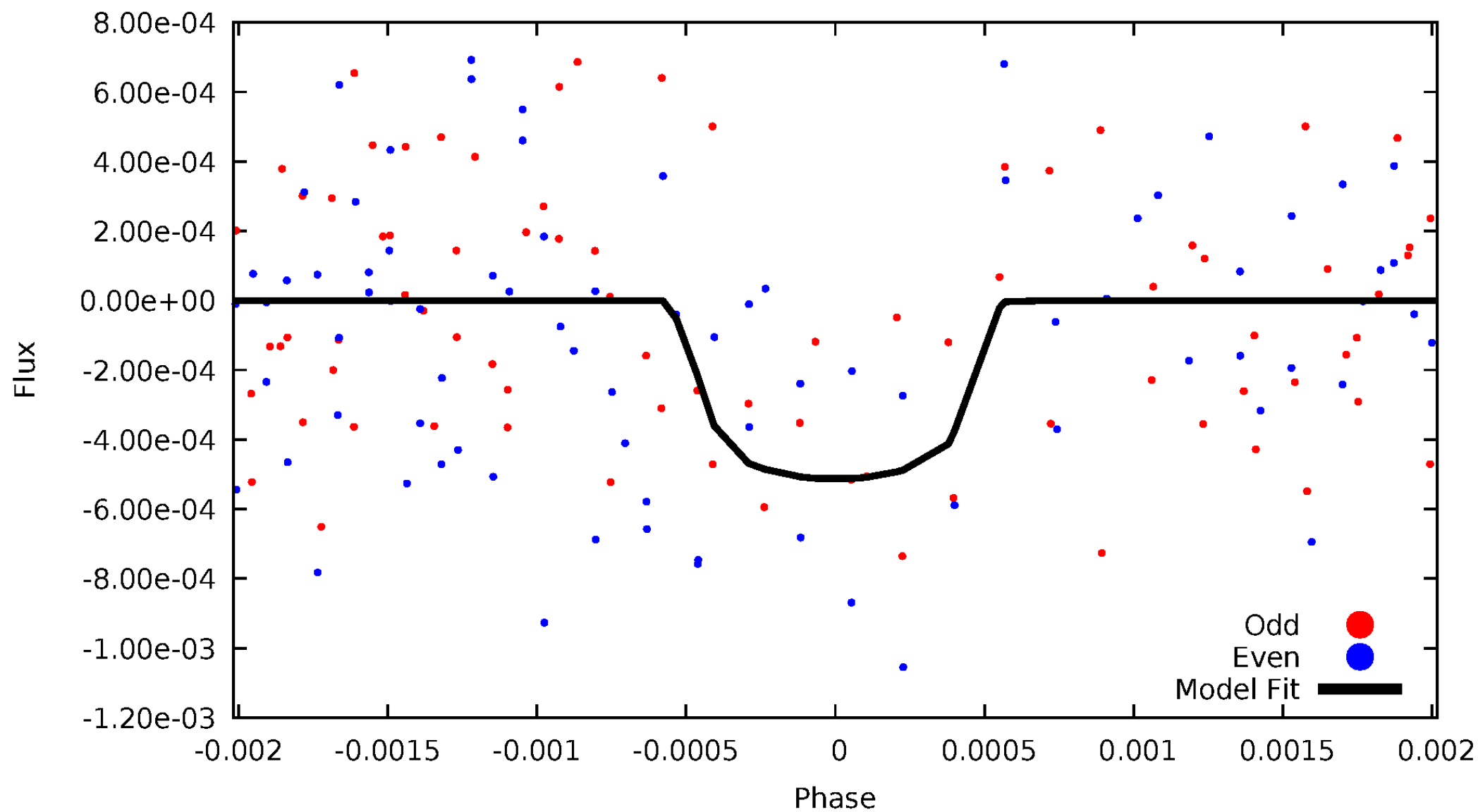


TCE 008552500-02



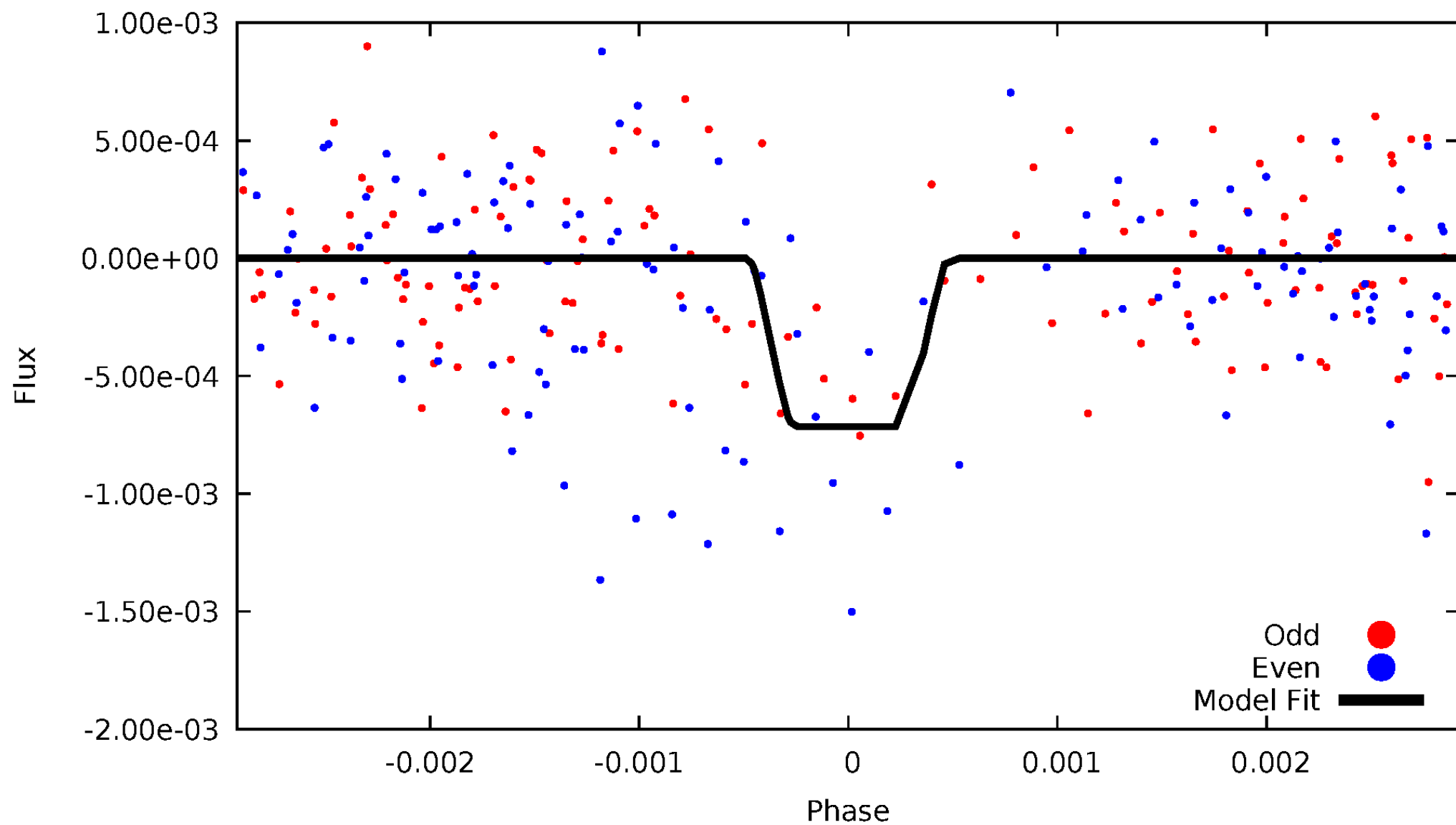
DV Odd/Even

TCE 008552500-02



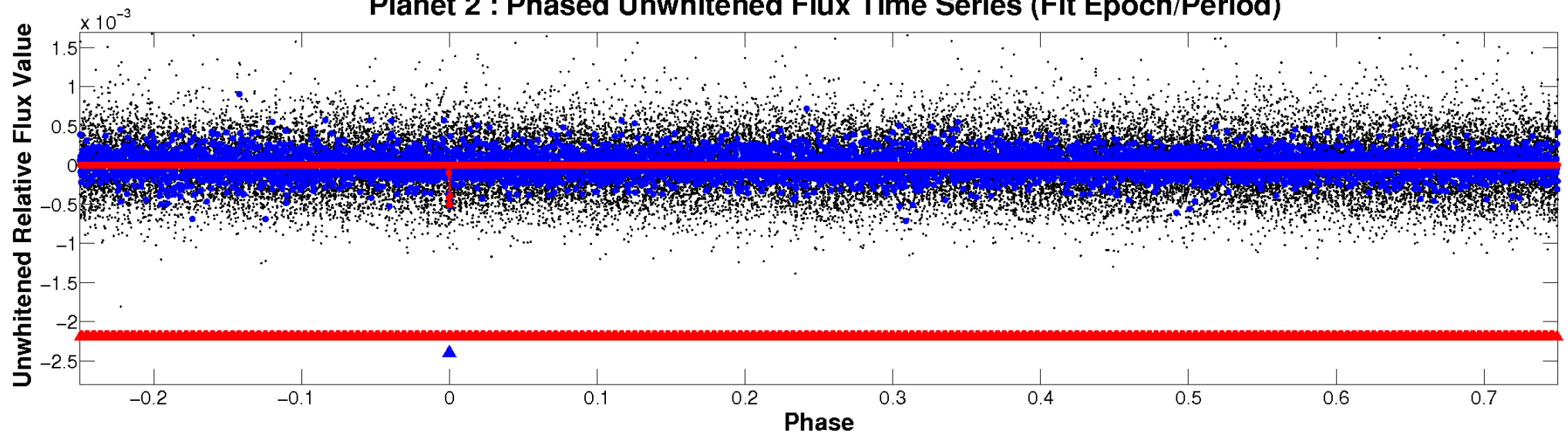
ALT Odd/Even

TCE 008552500-02

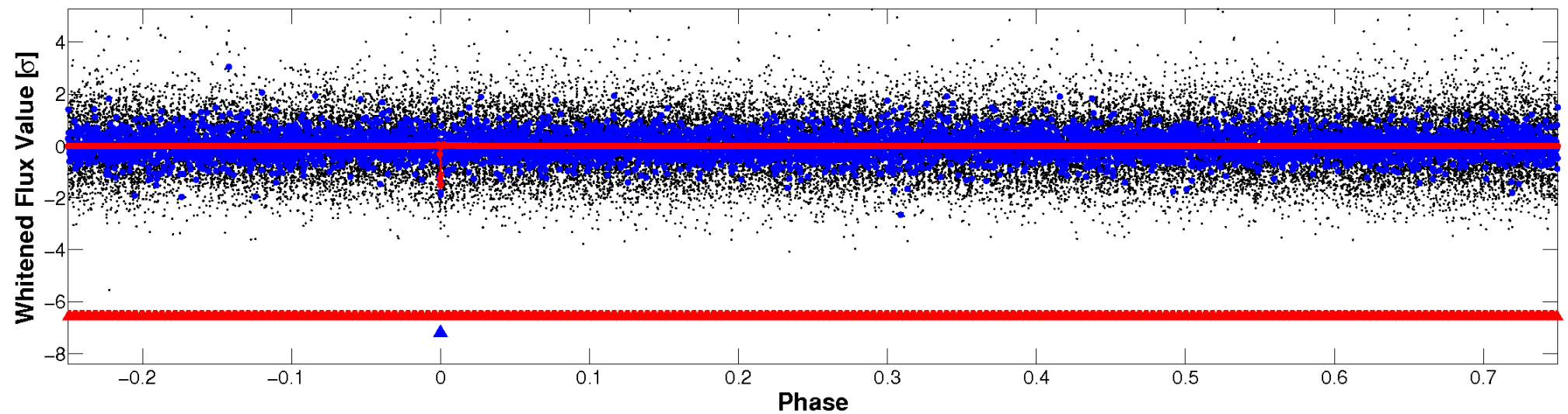


Non-Whitened Vs. Whitened Light Curve

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

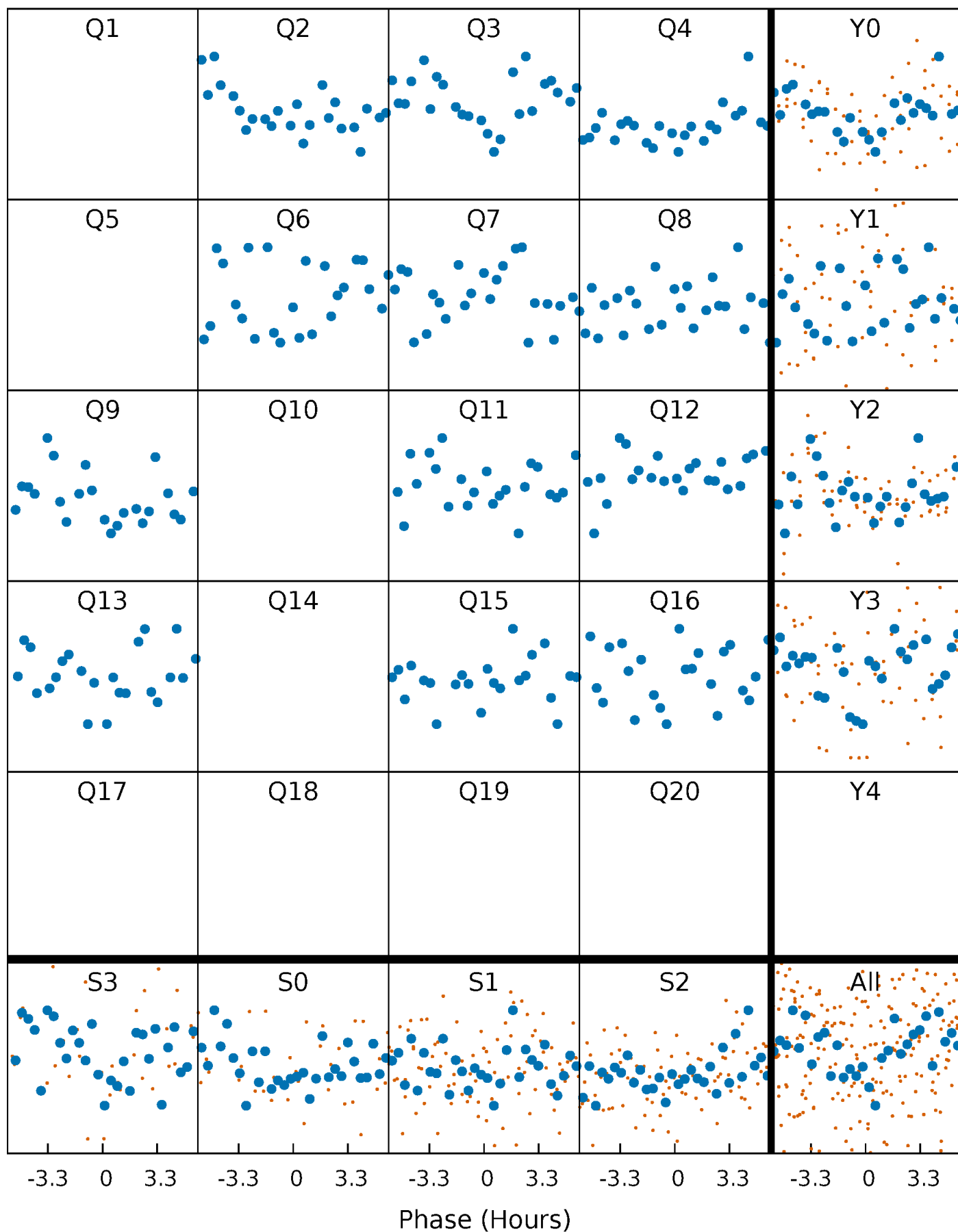


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



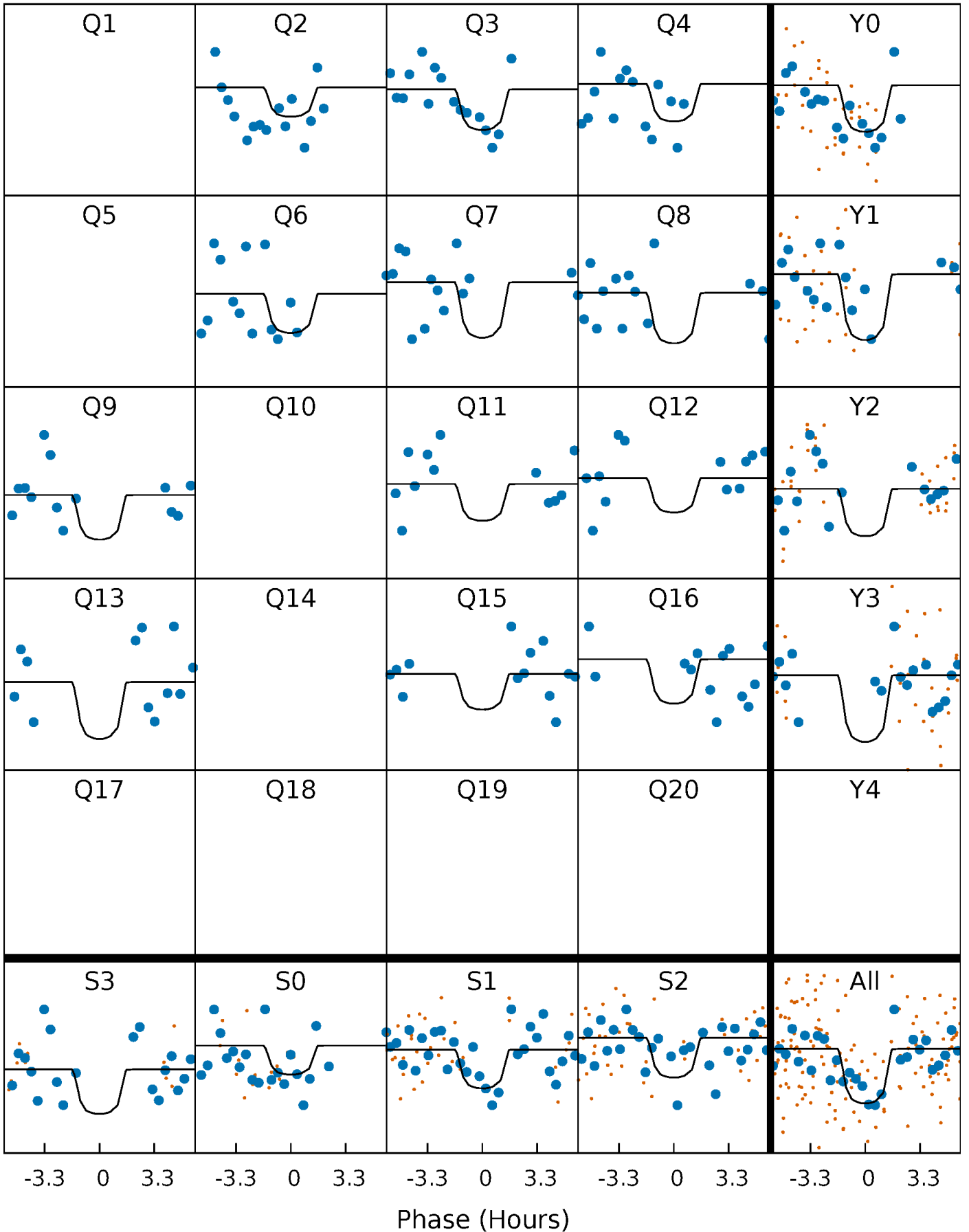
PDC Quarter-Phased Transit Curves

TCE 008552500-02 $P=118.962358$ Days $T_0=187.801945$ (BKJD)



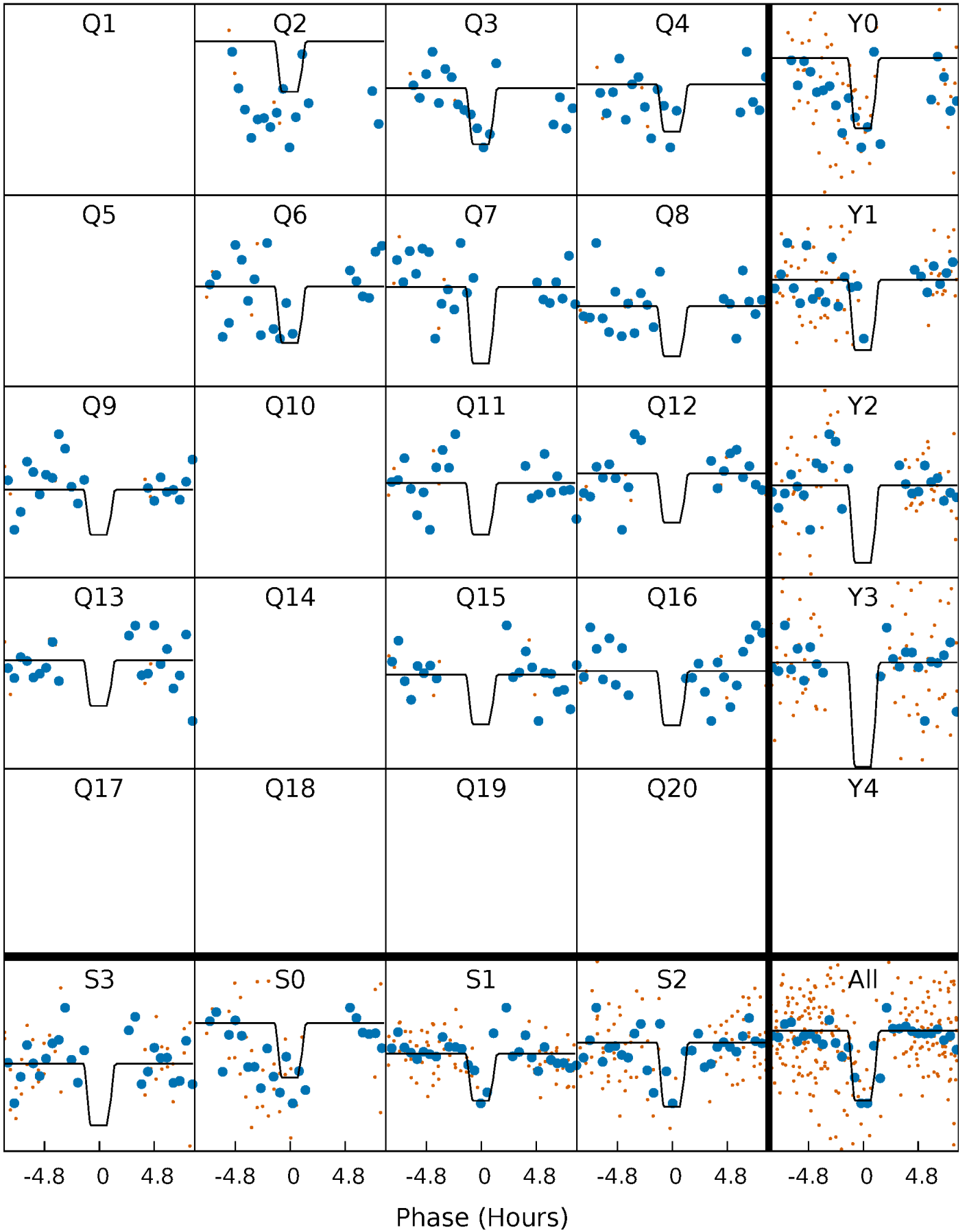
DV Quarter-Phased Transit Curves

TCE 008552500-02 P=118.962358 Days $T_0=187.801945$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

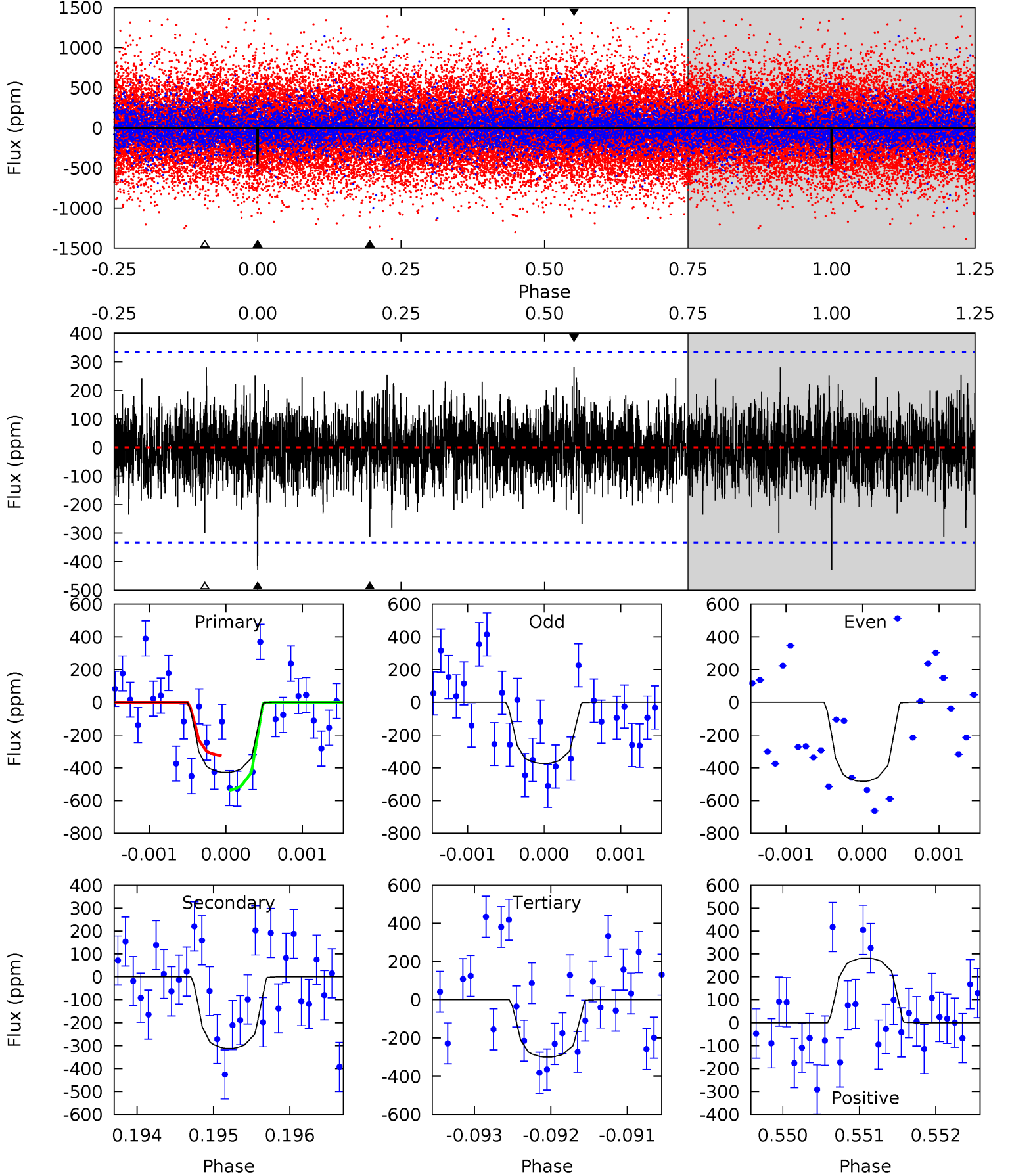
TCE 008552500-02 $P=118.957334$ Days $T_0=187.827163$ (BKJD)



DV Model-Shift Uniqueness Test

008552500-02, P = 118.962358 Days, E = 68.839587 Days

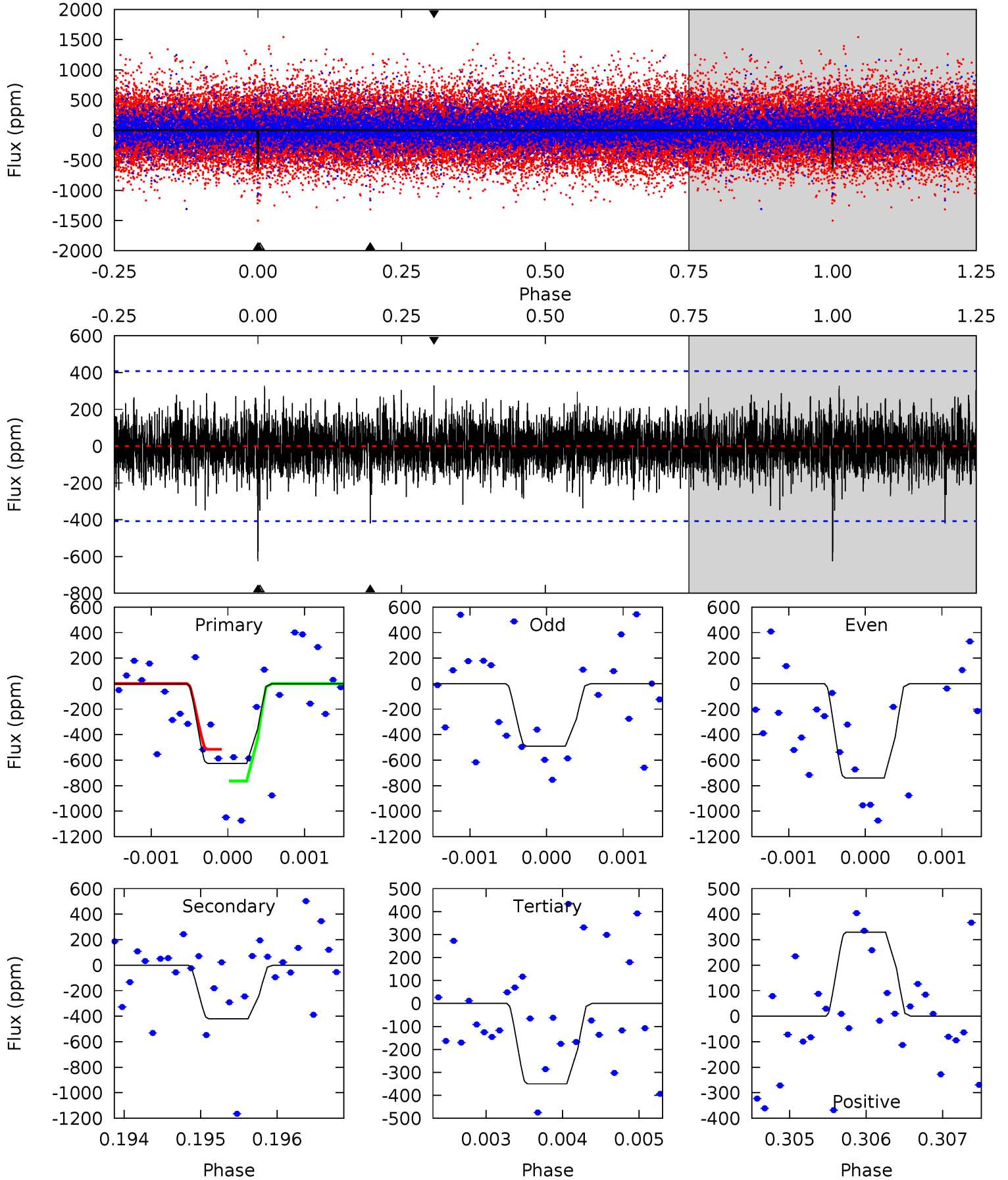
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.95	5.07	4.87	4.57	5.43	3.25	1.18	2.08	2.38	0.20	0.50	0.88	0.83	0.40	1.72



Alt Model-Shift Uniqueness Test

008552500-02, P = 118.957334 Days, E = 68.869829 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.37	5.63	4.69	4.41	5.47	3.31	1.14	3.69	3.96	0.94	1.21	1.67	1.00	0.35	1.63



Stellar Parameters For KIC 008552500

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6185^{+175}_{-197}	$4.472^{+0.054}_{-0.216}$	$-0.180^{+0.250}_{-0.350}$	$0.991^{+0.335}_{-0.112}$	$1.060^{+0.144}_{-0.144}$	$1.537^{+0.351}_{-0.868}$
	+3%/-3%	+1%/-5%	+139%/-194%	+34%/-11%	+14%/-14%	+23%/-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 008552500-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-312 ± 62	$3.15^{+2.73}_{-1.95}$	560^{+44}_{-28}	4947^{+3106}_{-990}	3684^{+23349}_{-2540}
Alt.	-420 ± 75	$3.58^{+2.63}_{-2.16}$	558^{+44}_{-29}	5054^{+3098}_{-938}	4136^{+23425}_{-2765}

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

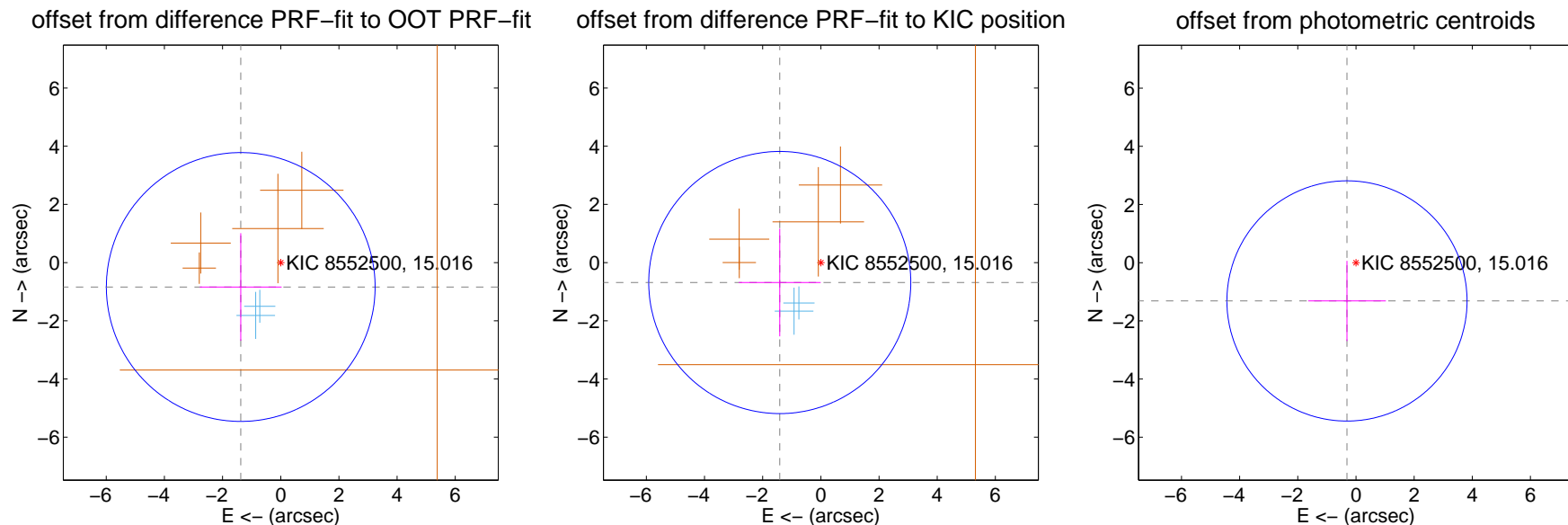
DV Centroid Data

Supplemental centroid analysis for 008552500-02. Kepler magnitude: 15.02. Transit SNR 6.50

There are 2 quarters with good PRF difference image offsets

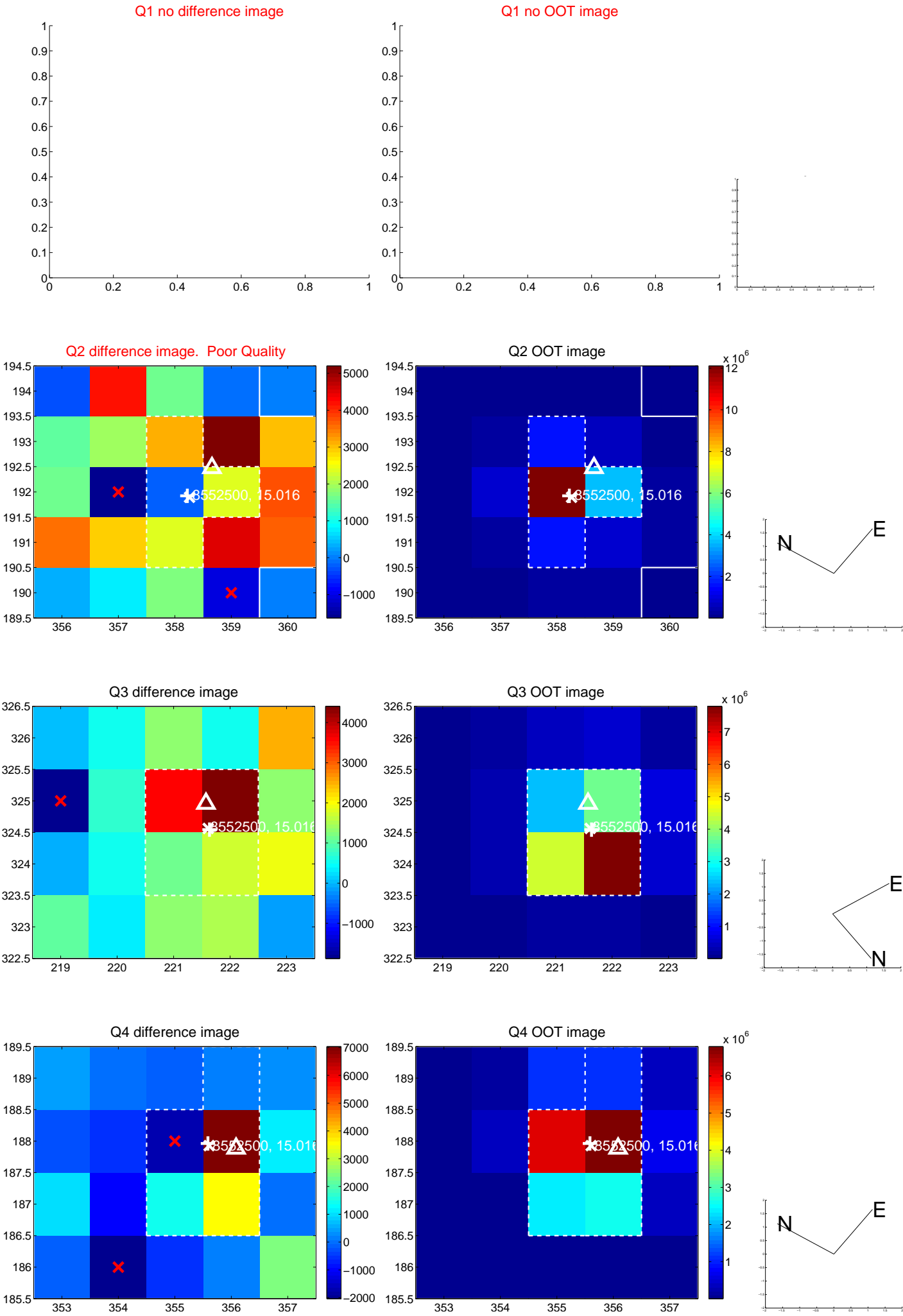
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.611 ± 1.540	1.05	1.375 ± 1.407	-0.839 ± 1.850
PRF-fit source offset from KIC position	1.570 ± 1.501	1.05	1.413 ± 1.407	-0.685 ± 1.850
photometric centroid source offset	1.35 ± 1.38	0.98	0.31 ± 1.34	-1.32 ± 1.38

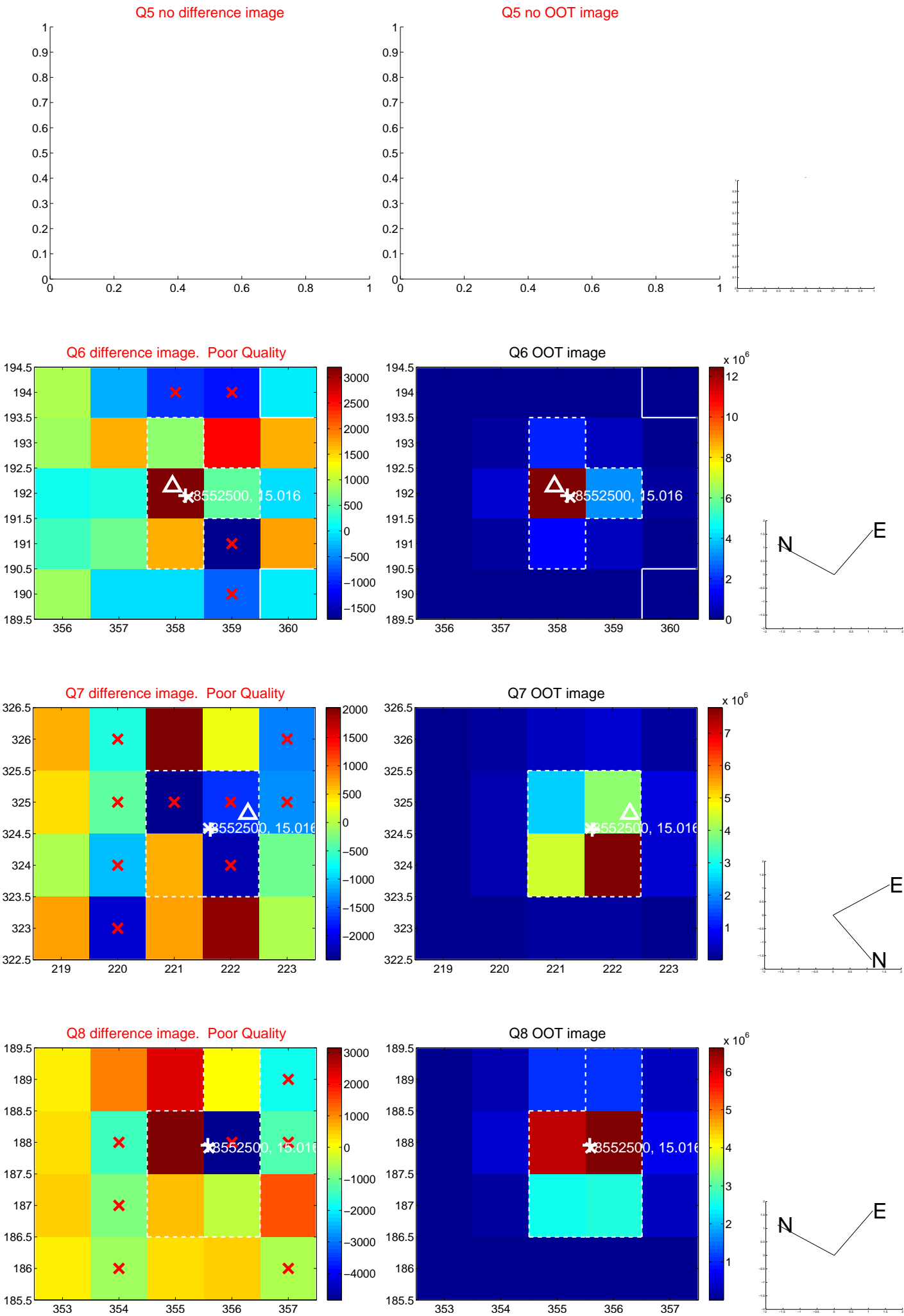


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

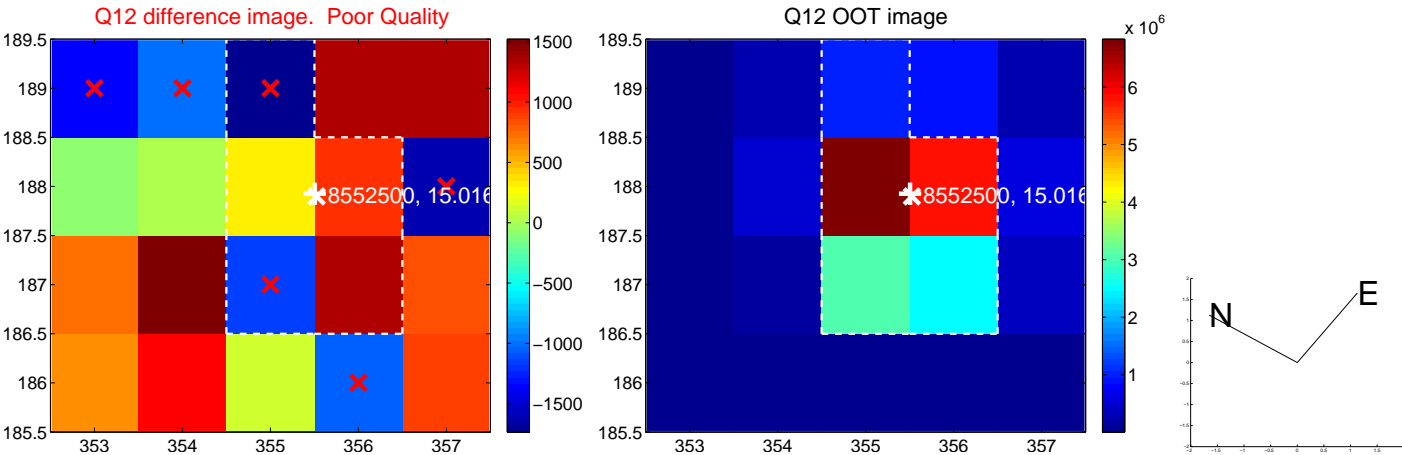
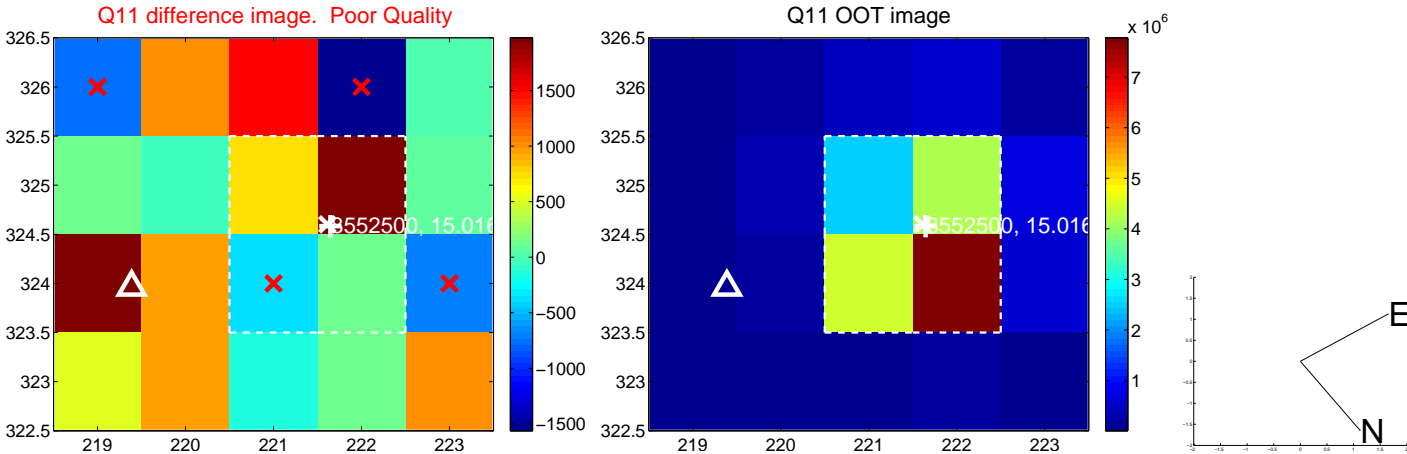
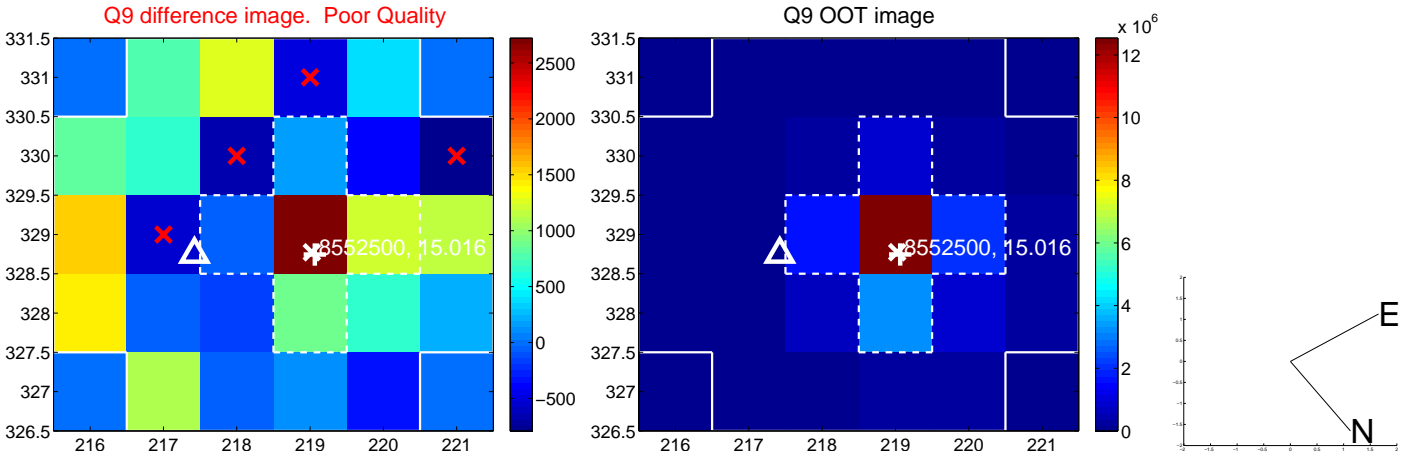
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



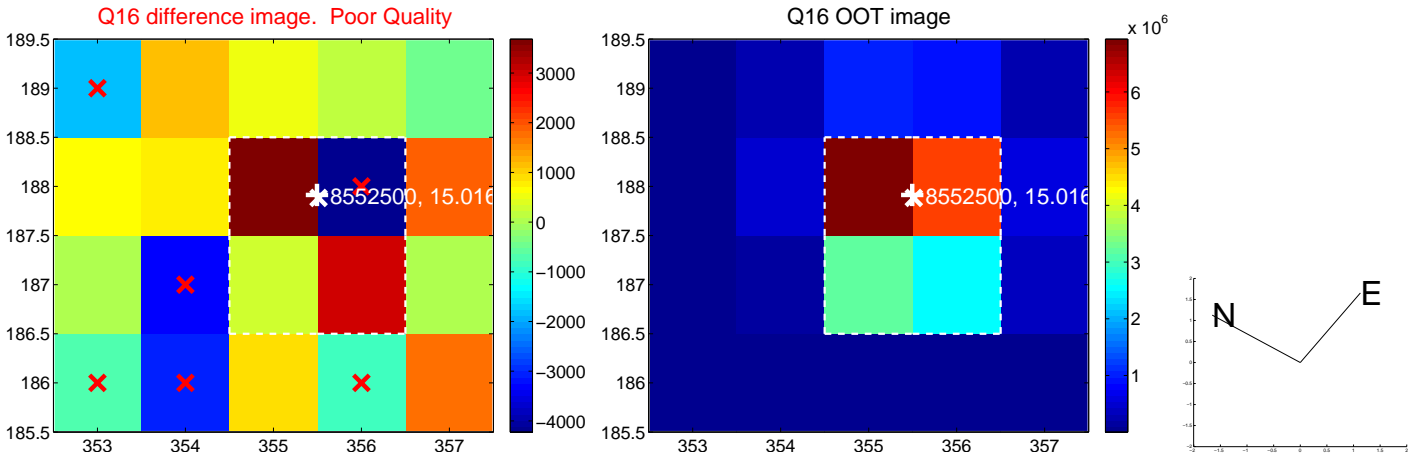
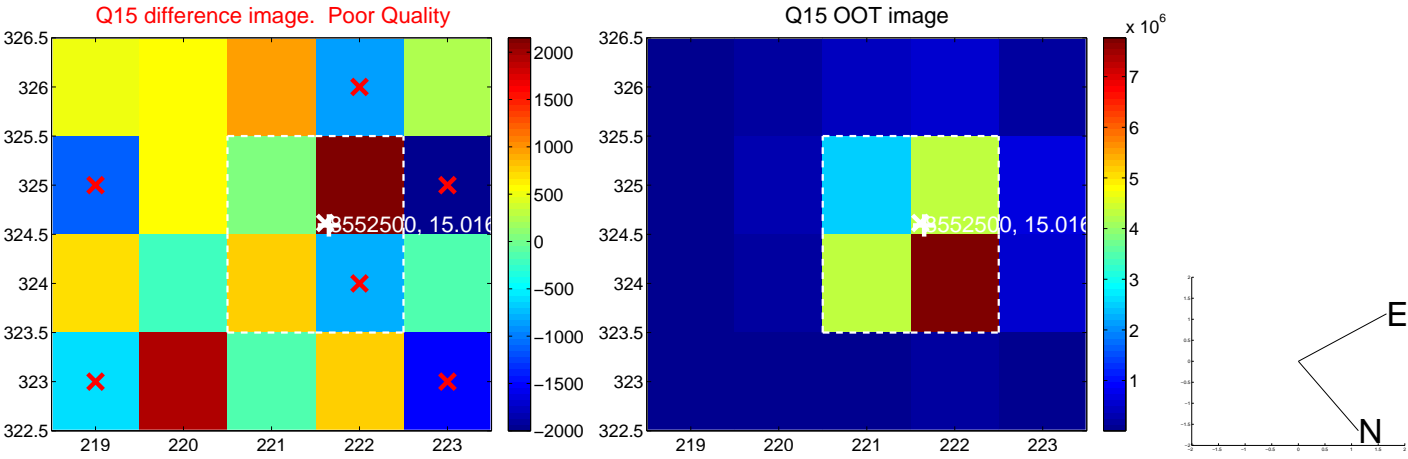
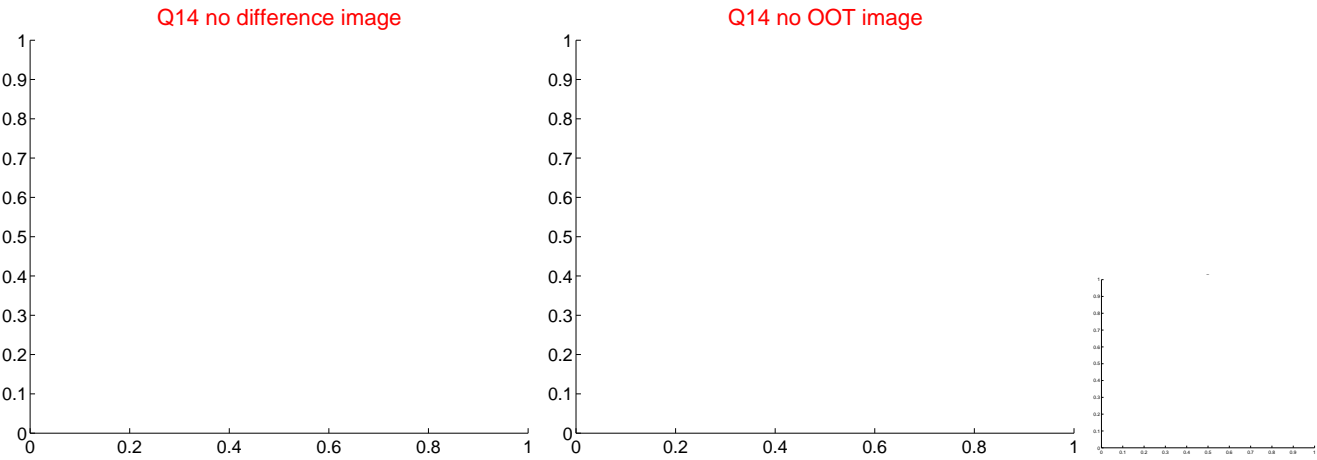
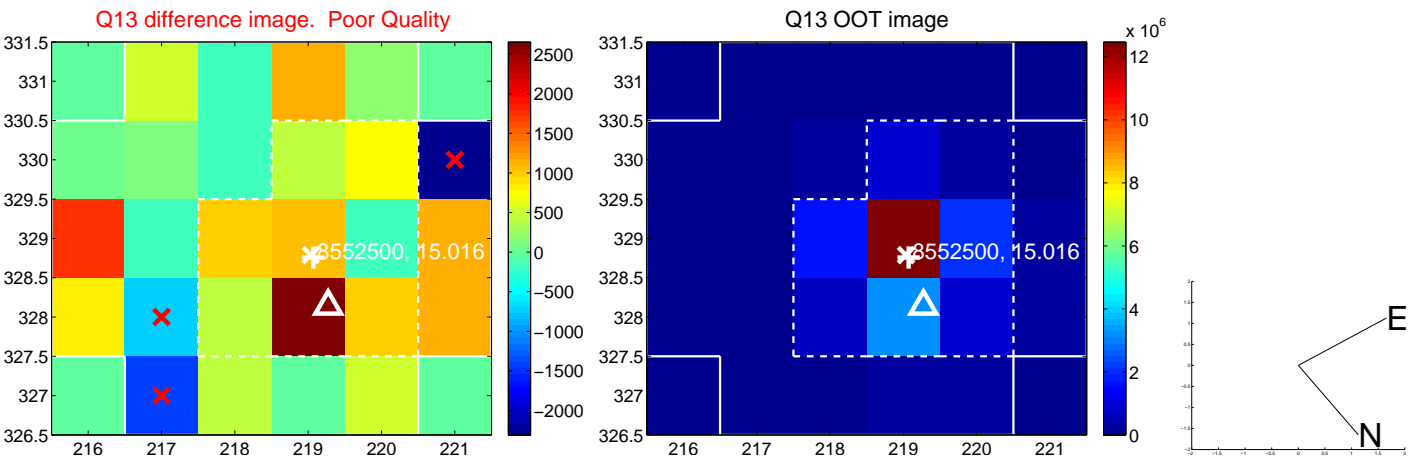
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



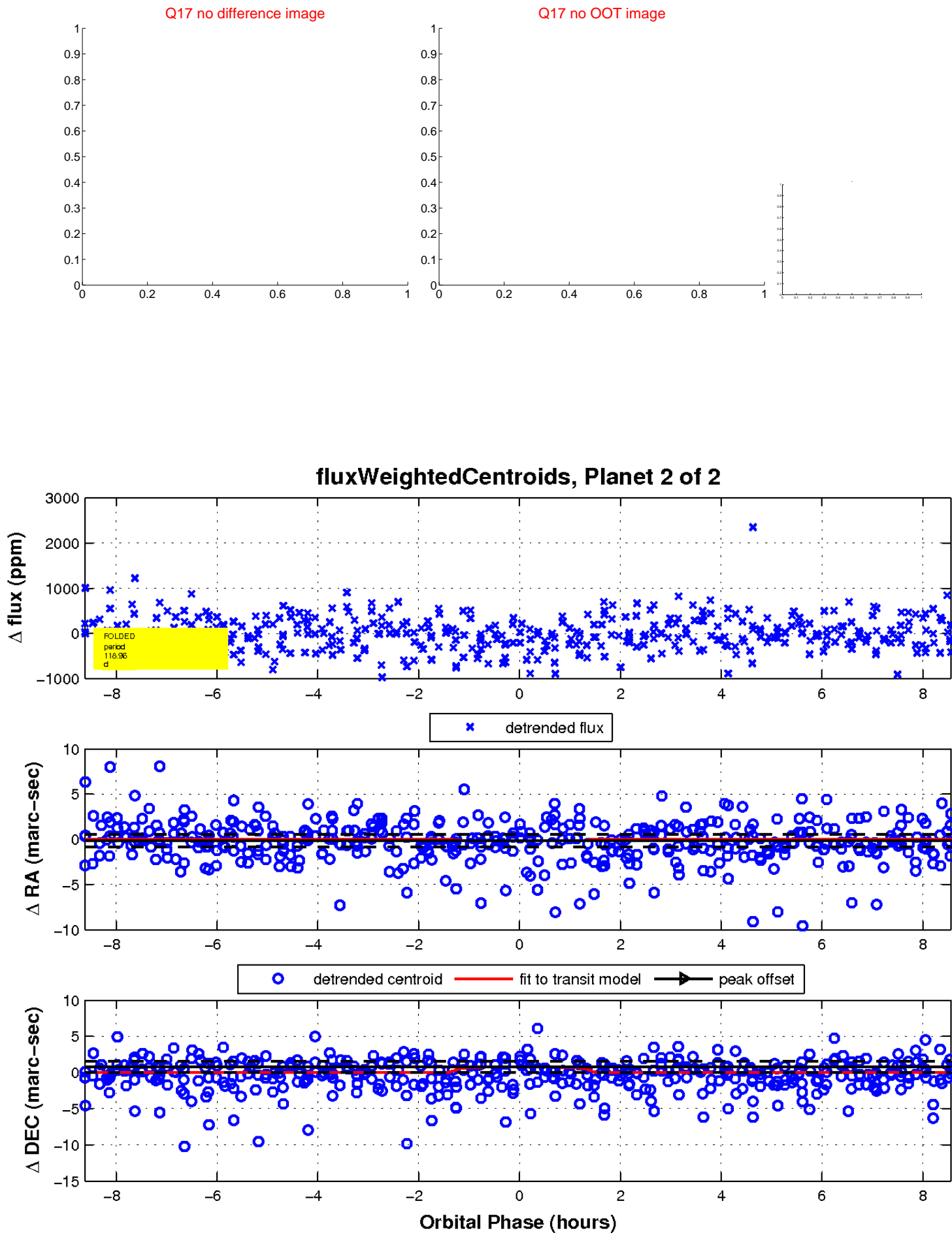
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

