

KIC 005558894

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})
005558894-01	OBS	No	0.765863	132.461707	11.6	1.775	9.4	3.5	0.95	6453	0.41	5221.57
005558894-02	OBS	No	0.765719	132.360535	6.5	3.719	9.4	2.6	0.95	6453	0.25	5222.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005558894-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005558894-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

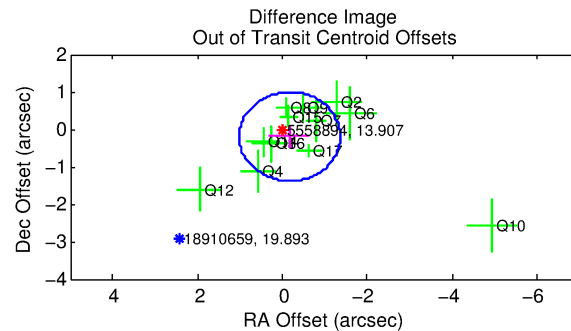
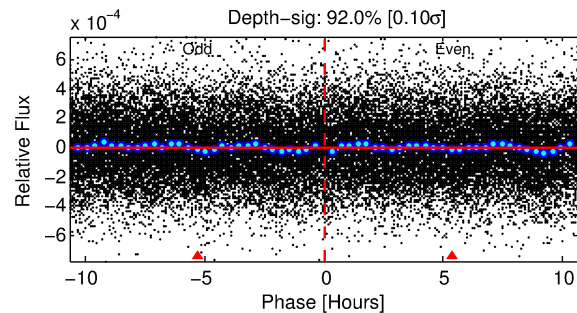
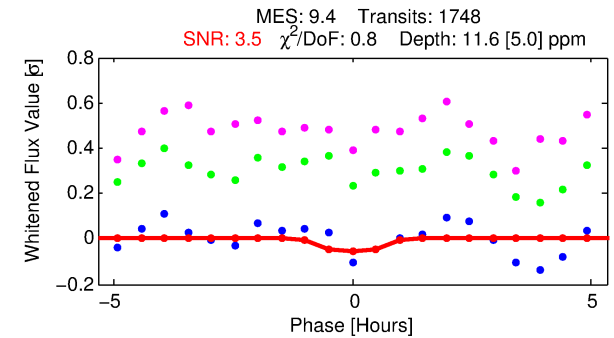
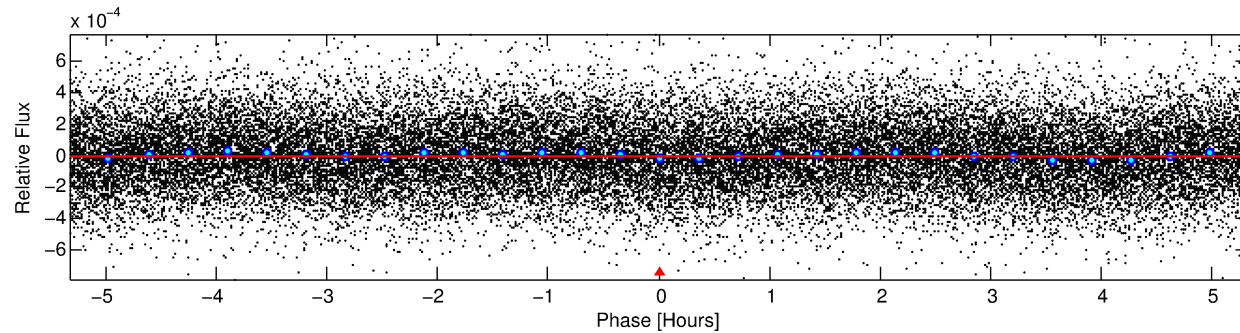
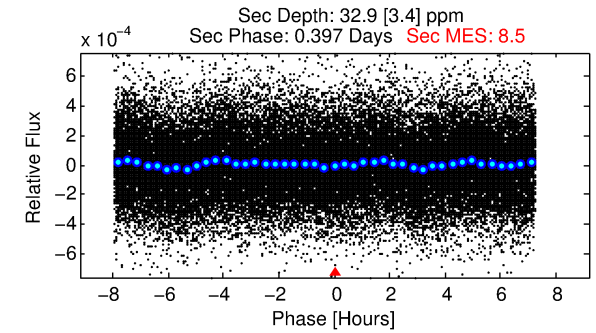
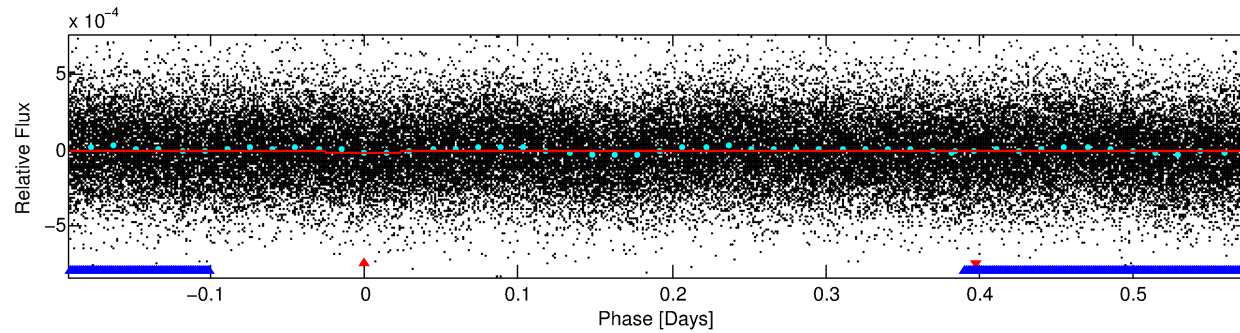
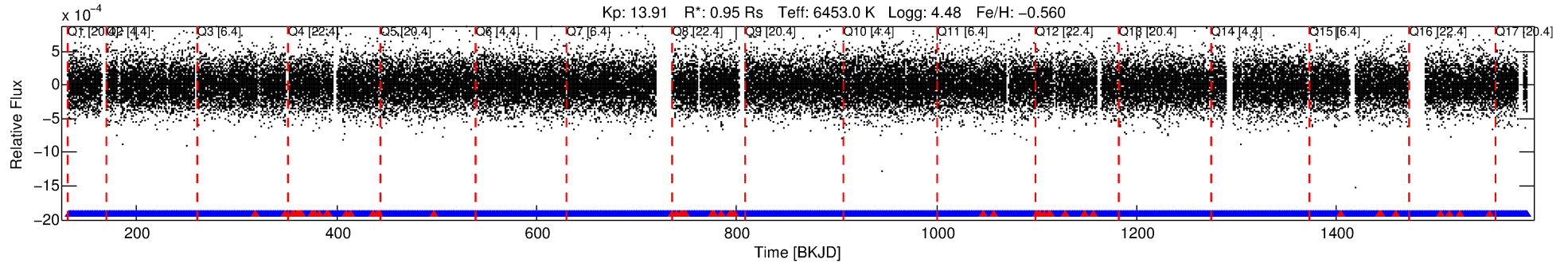
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005558894-01

No Significant Match Found

DV One-Page Summary

KIC: 5558894 Candidate: 1 of 2 Period: 0.766 d



DV Fit Results:

Period = 0.76586 [0.00003] d
Epoch = 132.4617 [0.0068] BKJD
Rp/R* = 0.0040 [0.0043]
a/R* = 1.33 [3.96]
b = 0.97 [0.48]
Seff = 5221.57 [2101.28]
Teq = 2168 [218] K
Rp = 0.41 [0.46] Re
a = 0.0164 [0.0042] AU
Ag = 28.70 [62.86] [0.44σ]
Teffp = 7757 [4191] K [1.33σ]

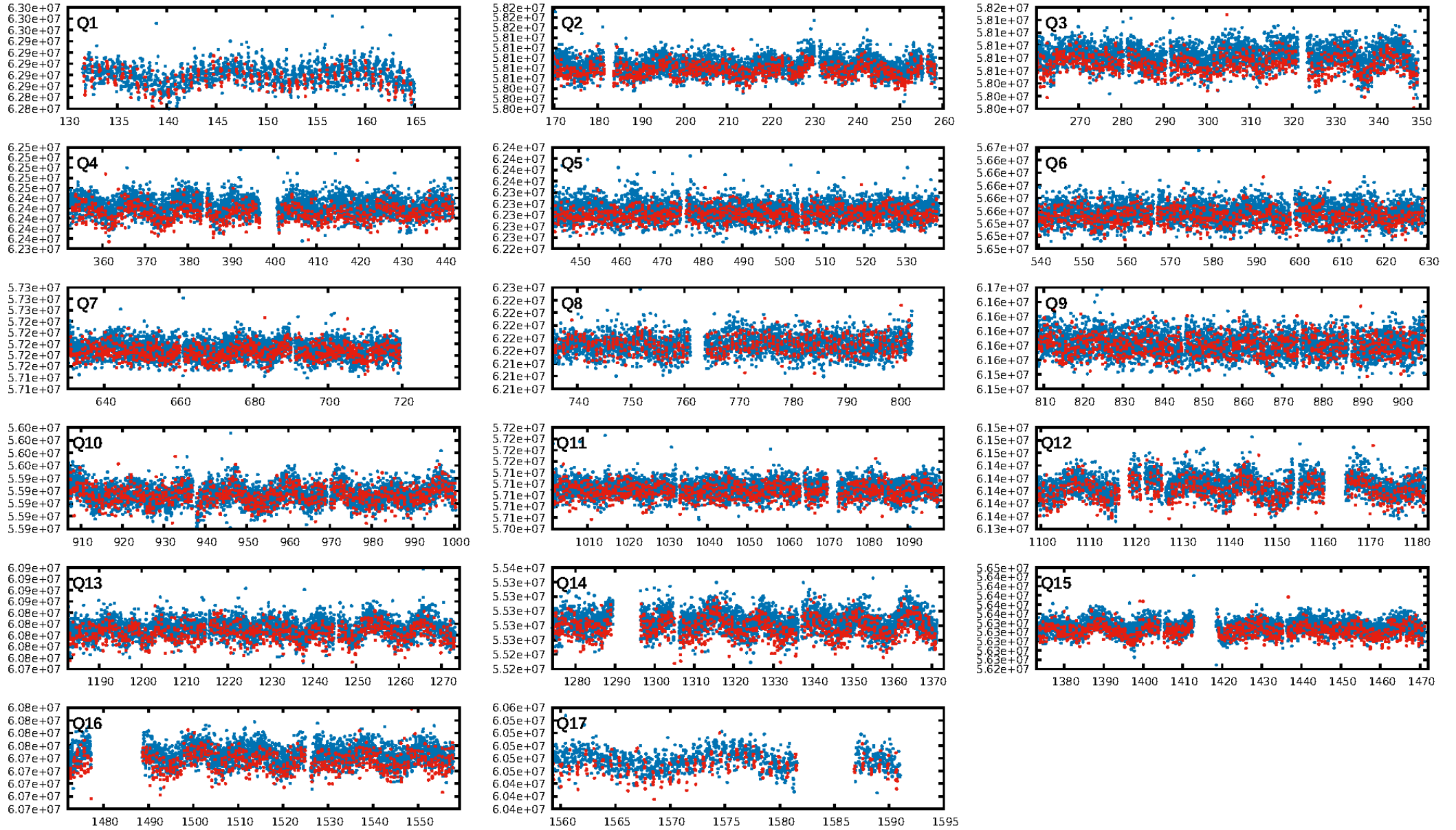
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.83e-14
RollingBand-fgt: 0.97 [1618/1668]
GhostDiagnostic-chr: 1.166
Centroid-sig: 43.7%
Centroid-so: 3.419 arcsec [0.93σ]
OotOffset-rm: 0.264 arcsec [0.67σ]
KicOffset-rm: 0.279 arcsec [0.77σ]
OotOffset-st: 4/3/4/2 [13]
KicOffset-st: 4/3/4/2 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.29 [5/17]

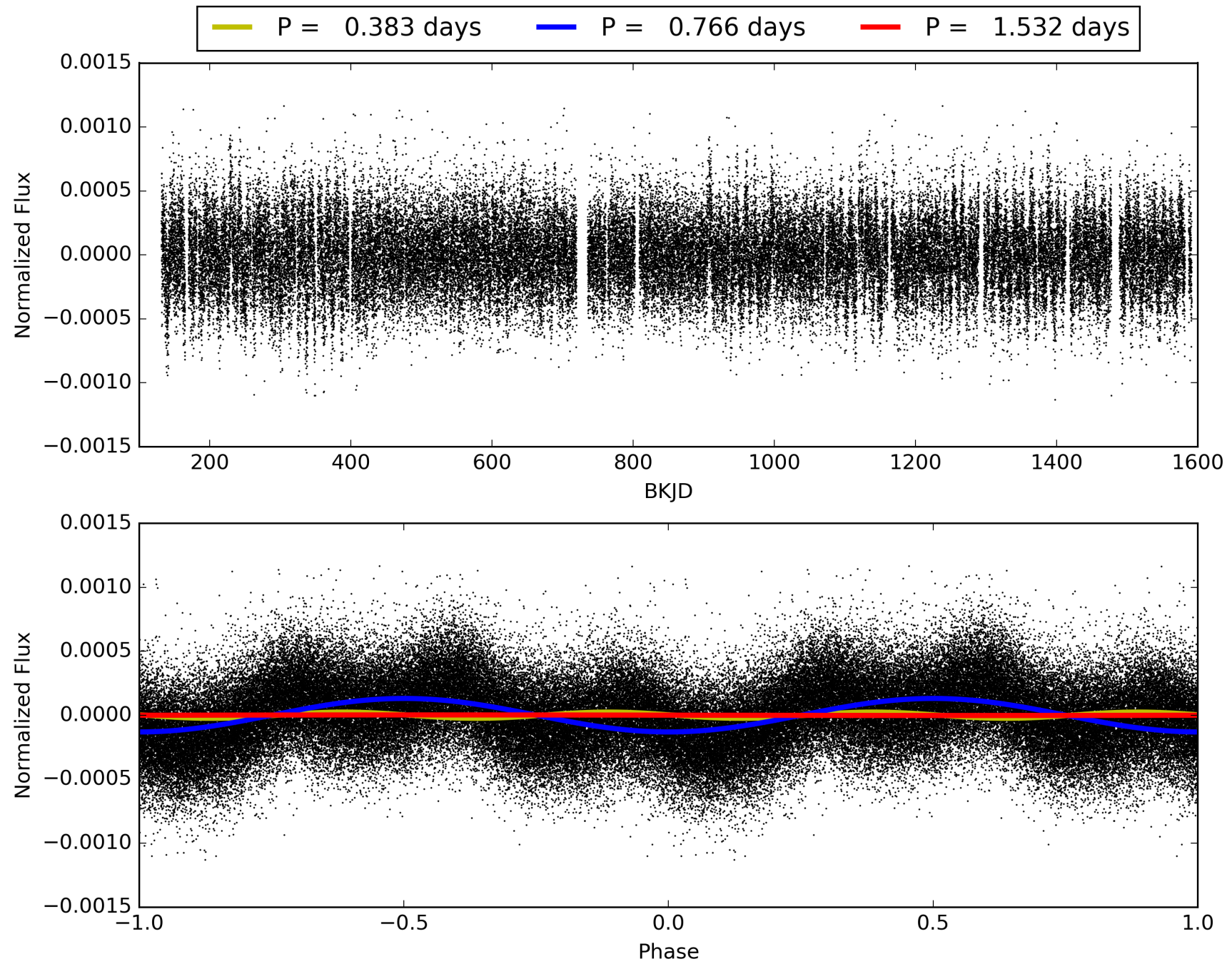
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005558894-01, PDC Light Curves

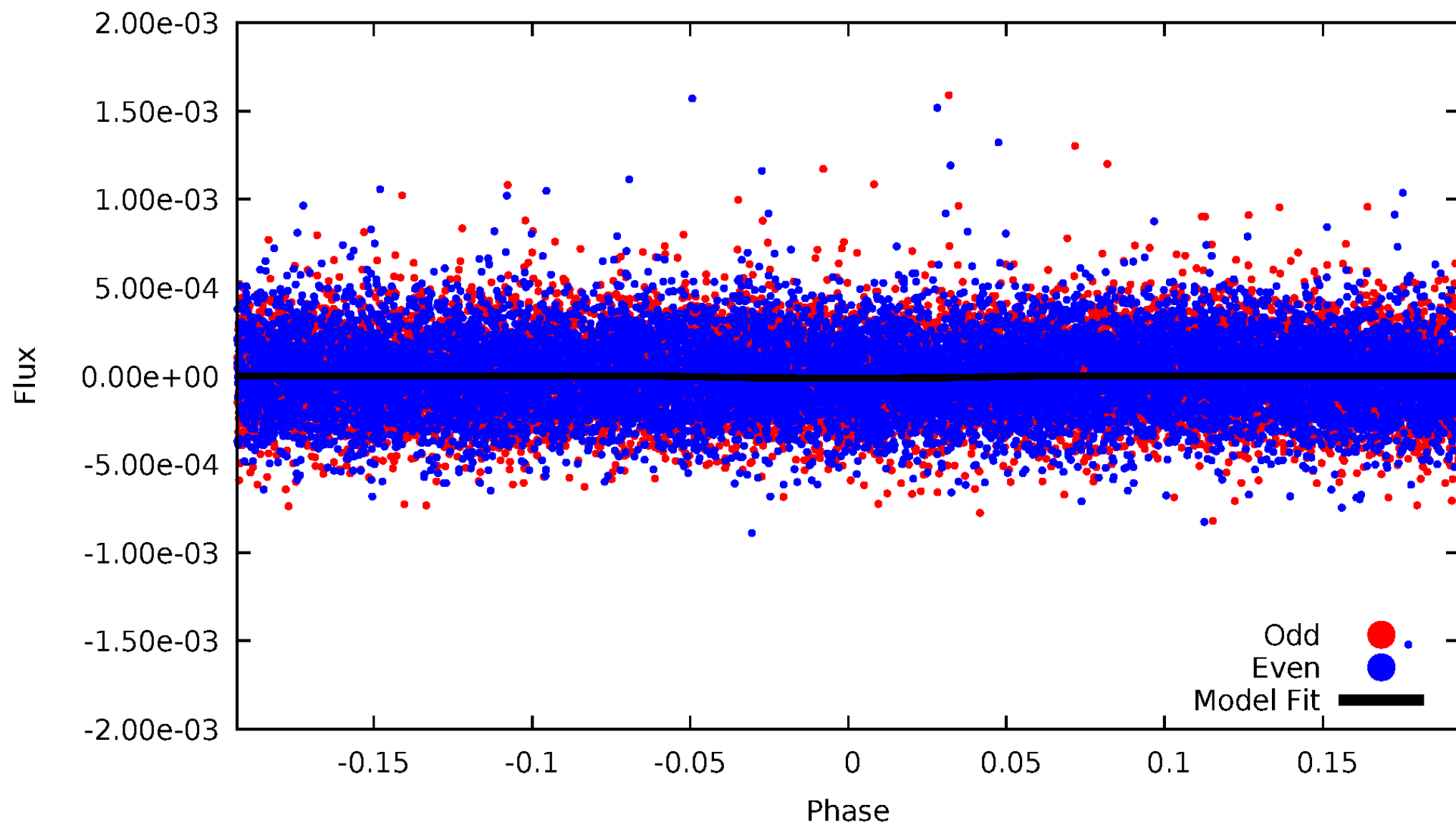


TCE 005558894-01



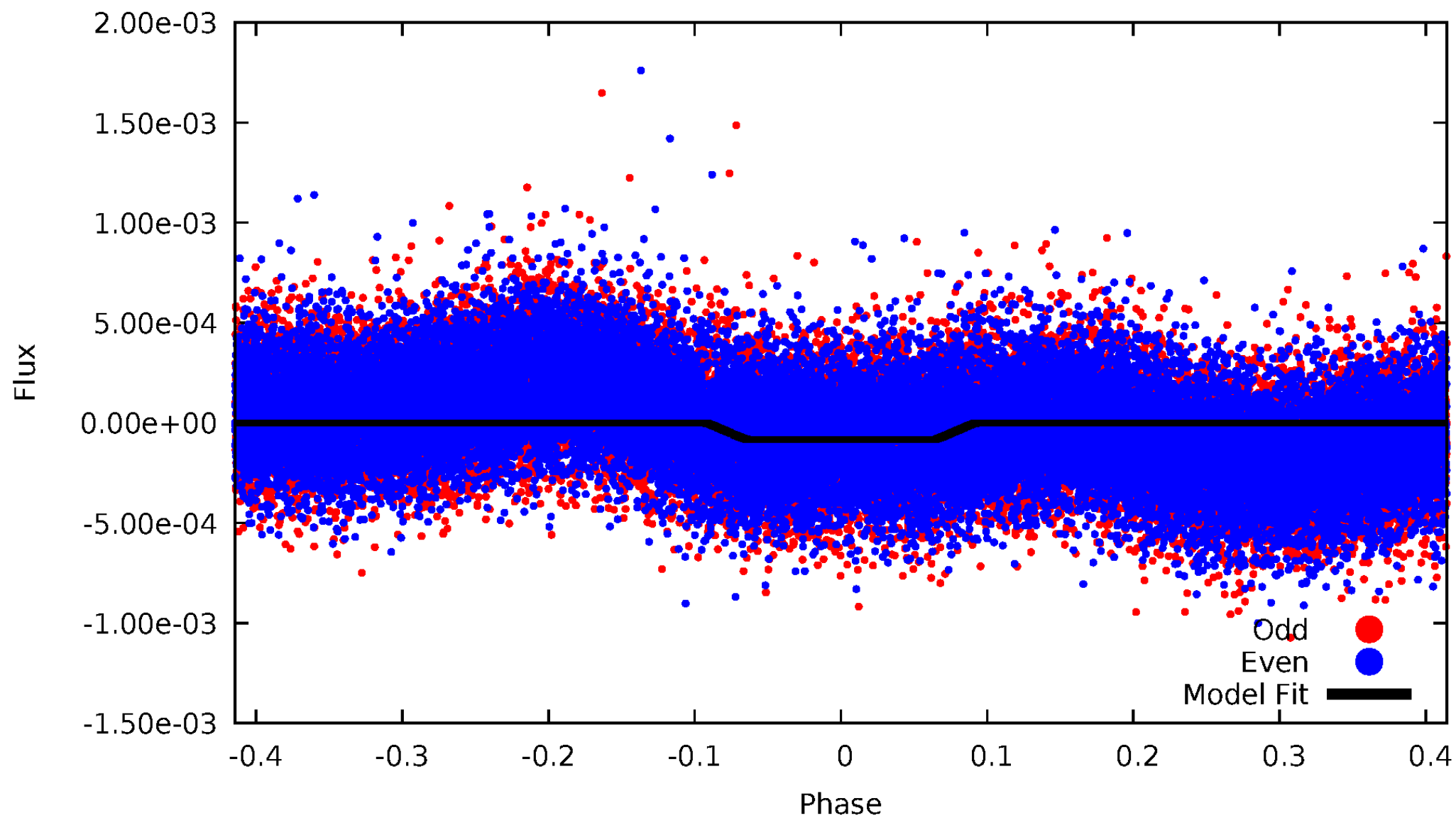
DV Odd/Even

TCE 005558894-01

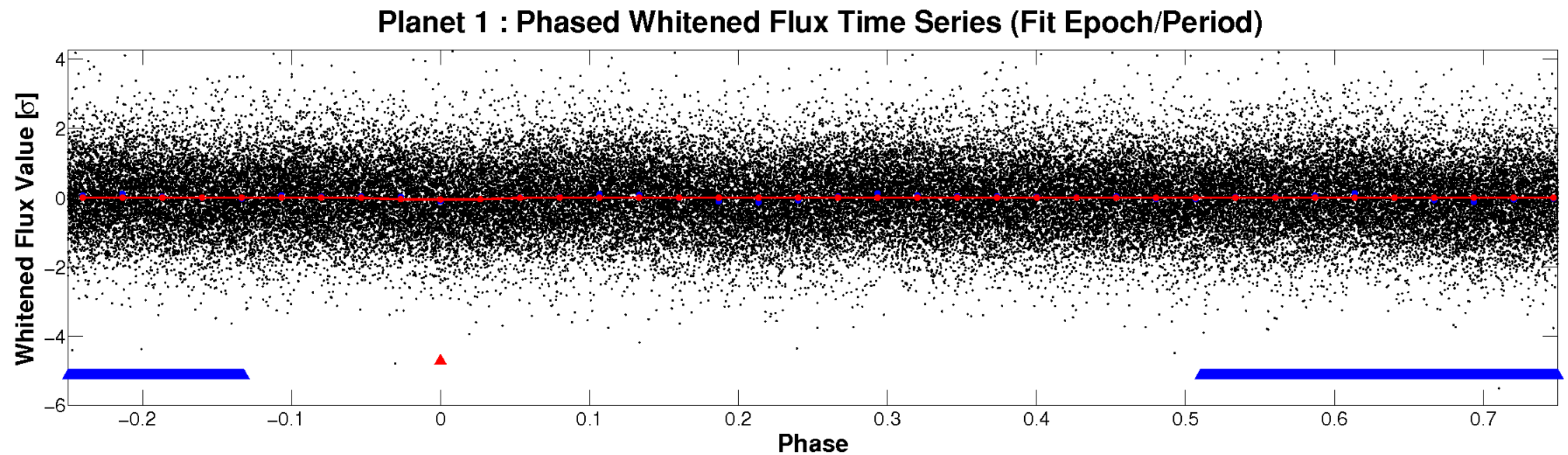
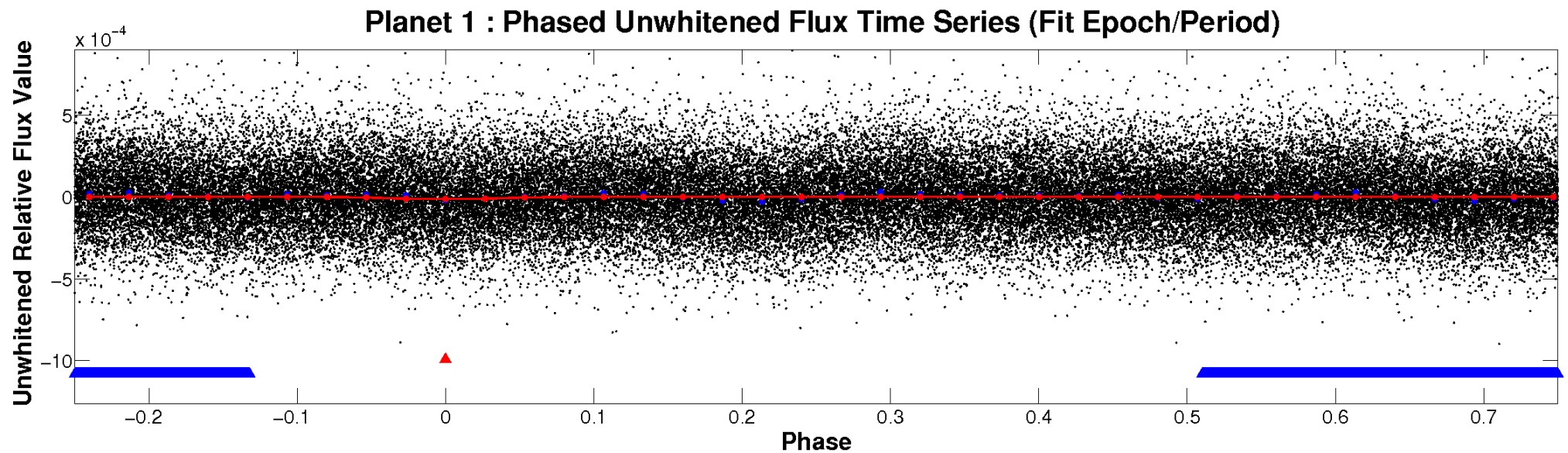


ALT Odd/Even

TCE 005558894-01

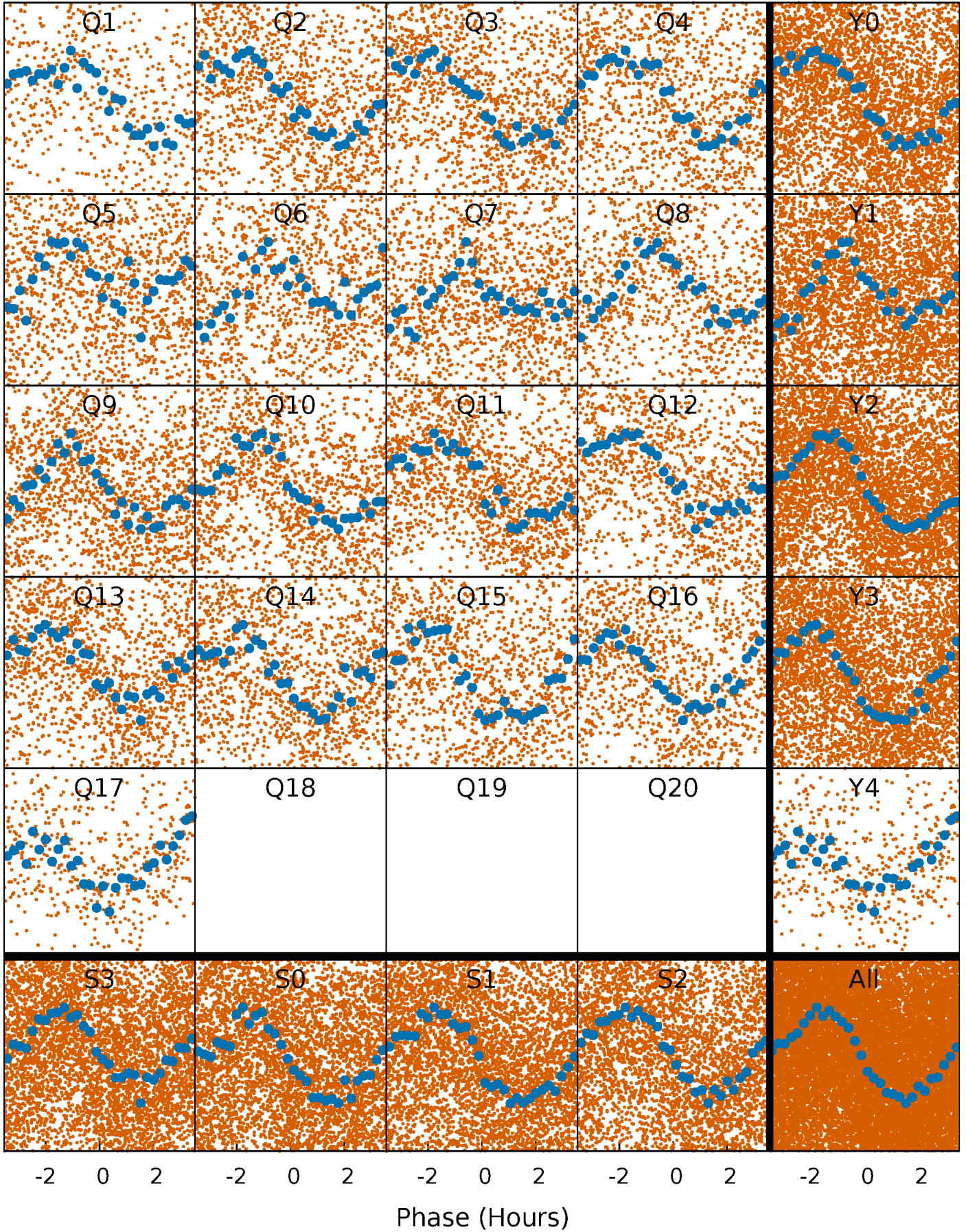


Non-Whitened Vs. Whitened Light Curve



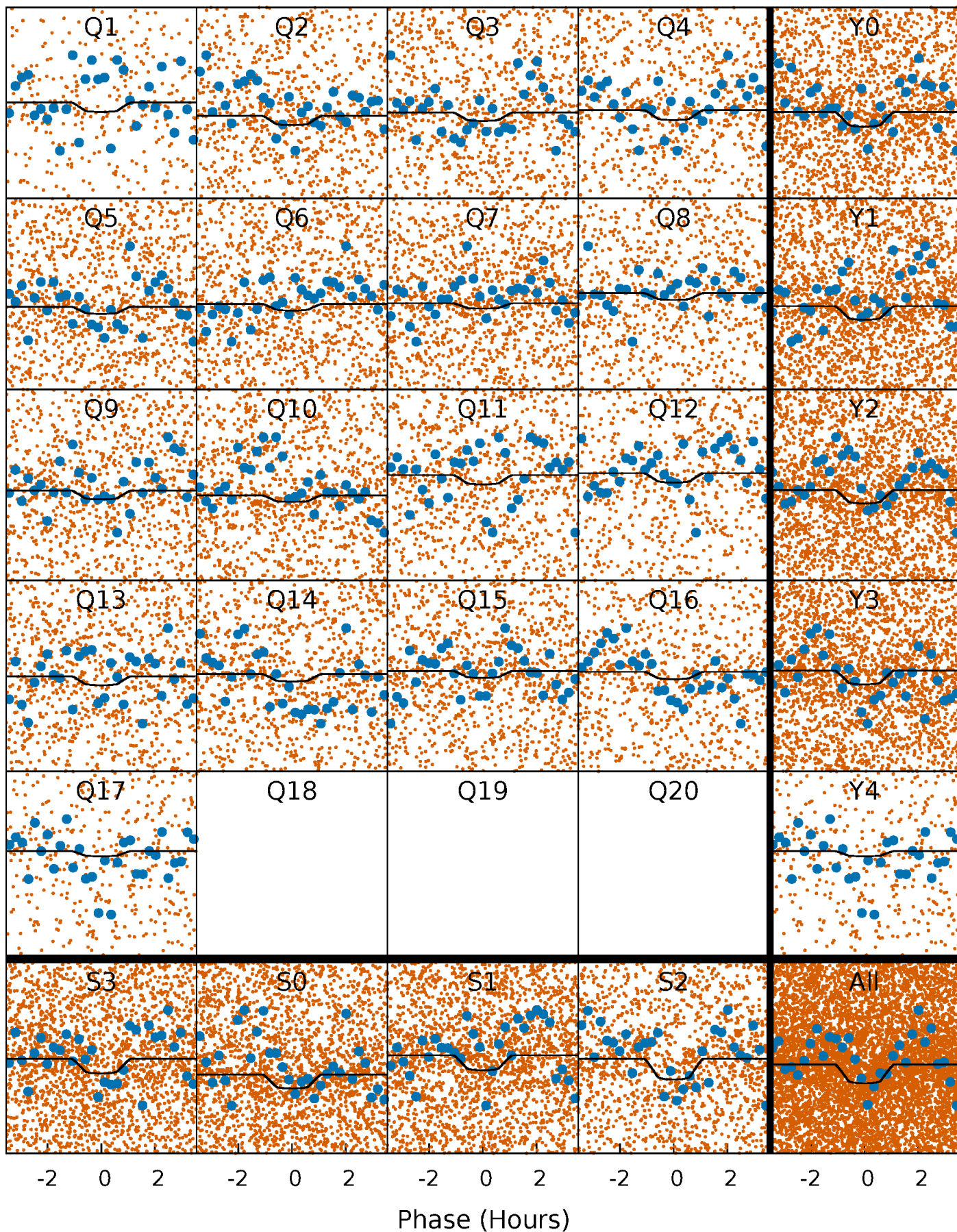
PDC Quarter-Phased Transit Curves

TCE 005558894-01 P= 0.765863 Days $T_0=132.461707$ (BKJD)



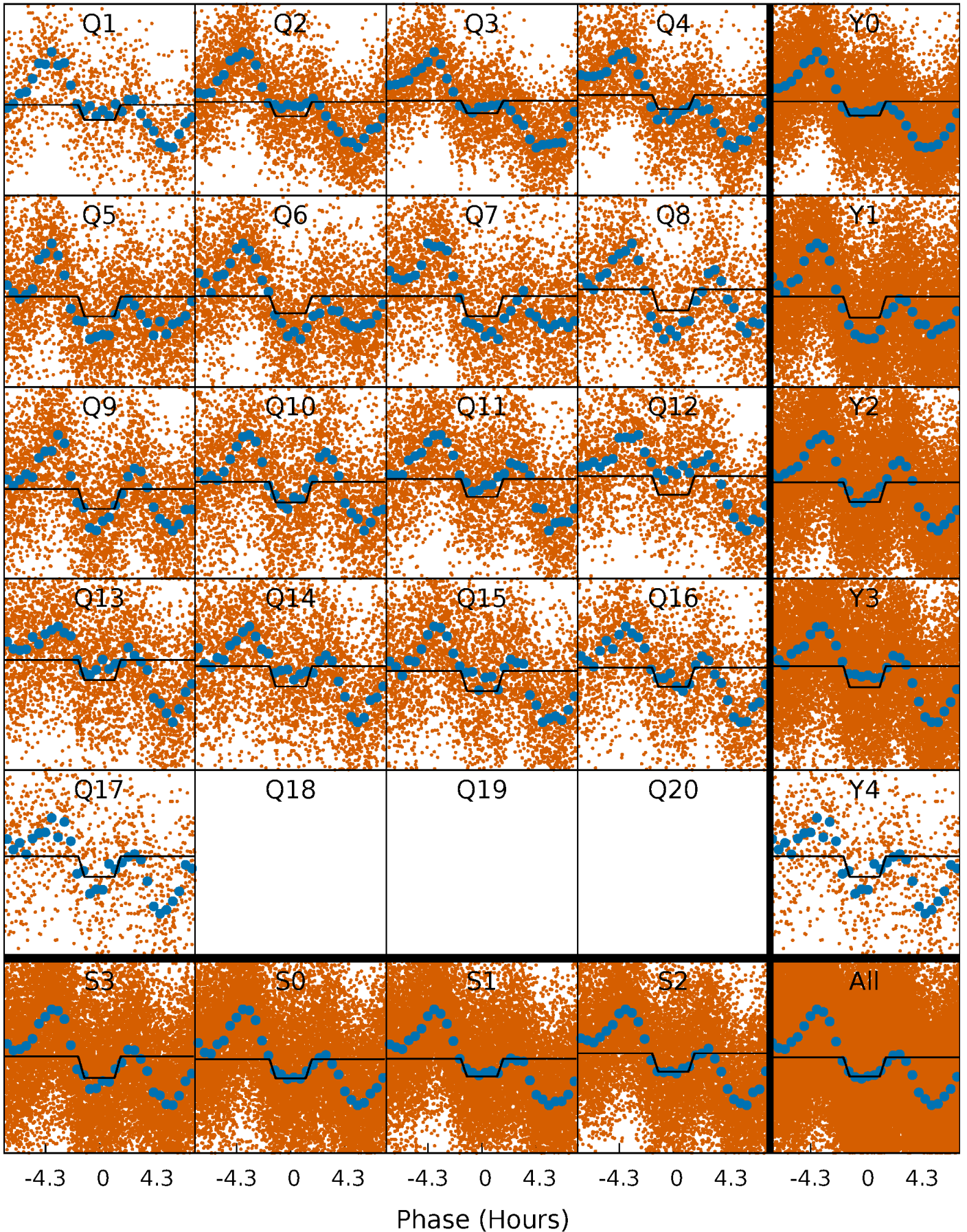
DV Quarter-Phased Transit Curves

TCE 005558894-01 P= 0.765863 Days $T_0=132.461707$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

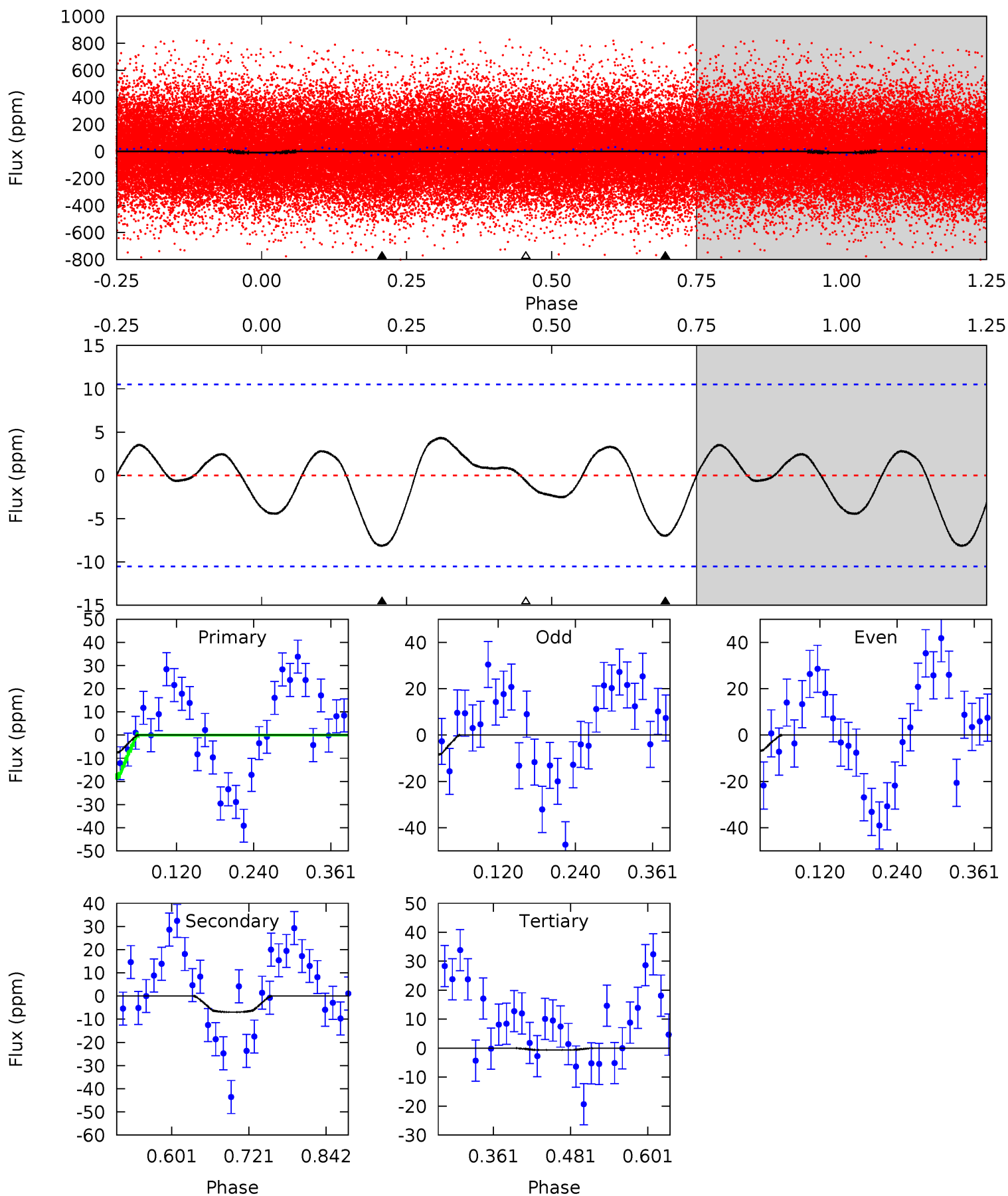
TCE 005558894-01 P= 0.765830 Days $T_0=132.326421$ (BKJD)



DV Model-Shift Uniqueness Test

005558894-01, P = 0.765863 Days, E = 130.929981 Days

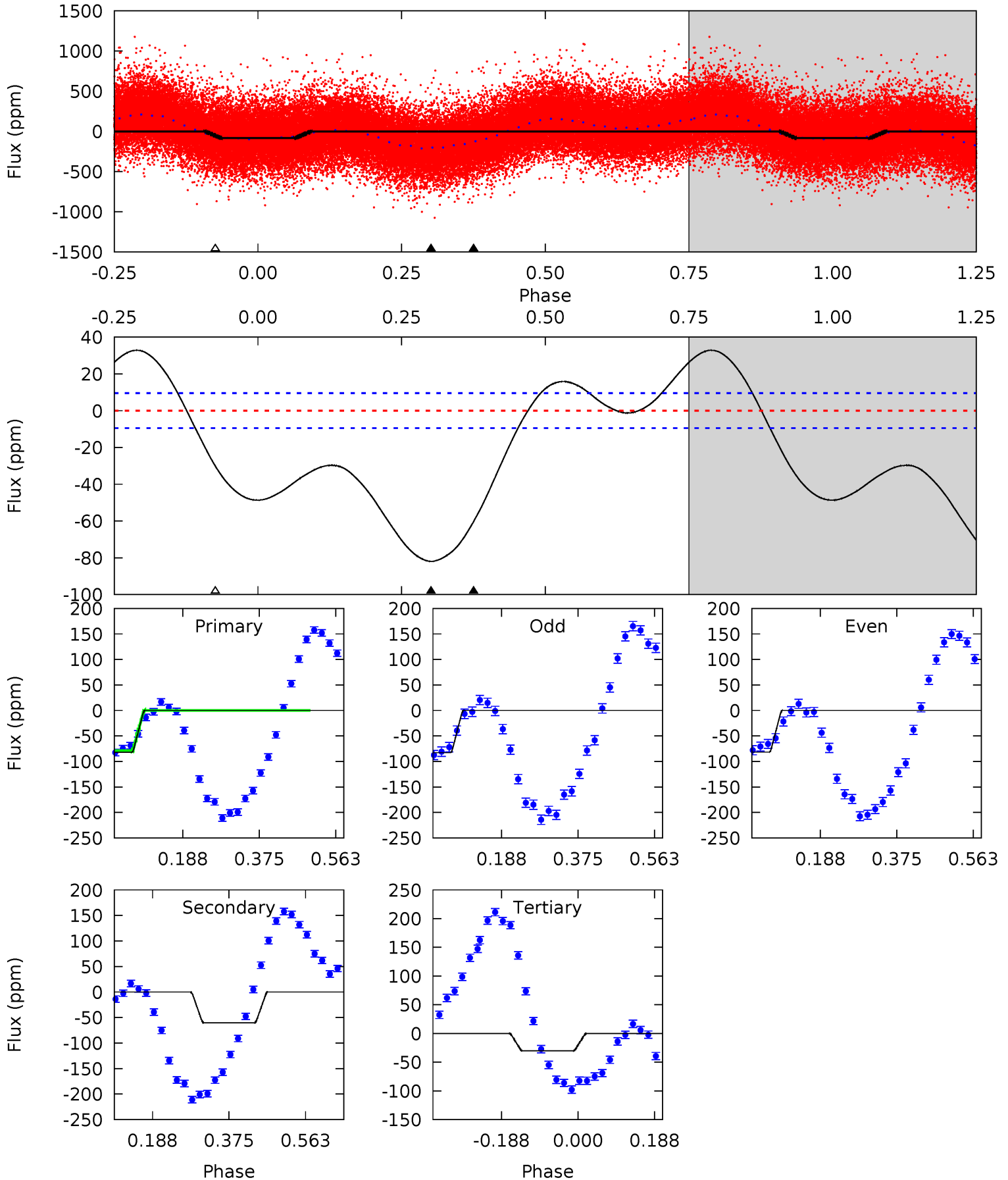
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.50	3.00	0.28	0	4.53	1.55	0.85	3.22	3.50	2.72	3.00	0.38	0.47	0.35	3.49



Alt Model-Shift Uniqueness Test

005558894-01, P = 0.765830 Days, E = 130.794761 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.1	28.1	14.0	0	4.43	1.32	12.8	24.1	38.1	14.0	28.1	0.25	1.02	0.29	1.64



Stellar Parameters For KIC 005558894

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-210}	$4.484^{+0.050}_{-0.213}$	$-0.560^{+0.300}_{-0.350}$	$0.953^{+0.279}_{-0.093}$	$1.011^{+0.123}_{-0.123}$	$1.643^{+0.346}_{-0.846}$
	+3%/-3%	+1%/-5%	+54%/-62%	+29%/-10%	+12%/-12%	+21%/-51%
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 005558894-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 2	$0.53^{+0.47}_{-0.30}$	3096^{+229}_{-156}	4655^{+2684}_{-1081}	$3.237^{+14.841}_{-2.270}$
Alt.	-60 ± 2	$1.01^{+0.48}_{-0.48}$	3091^{+229}_{-153}	5857^{+2599}_{-965}	$8.574^{+21.845}_{-4.591}$

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

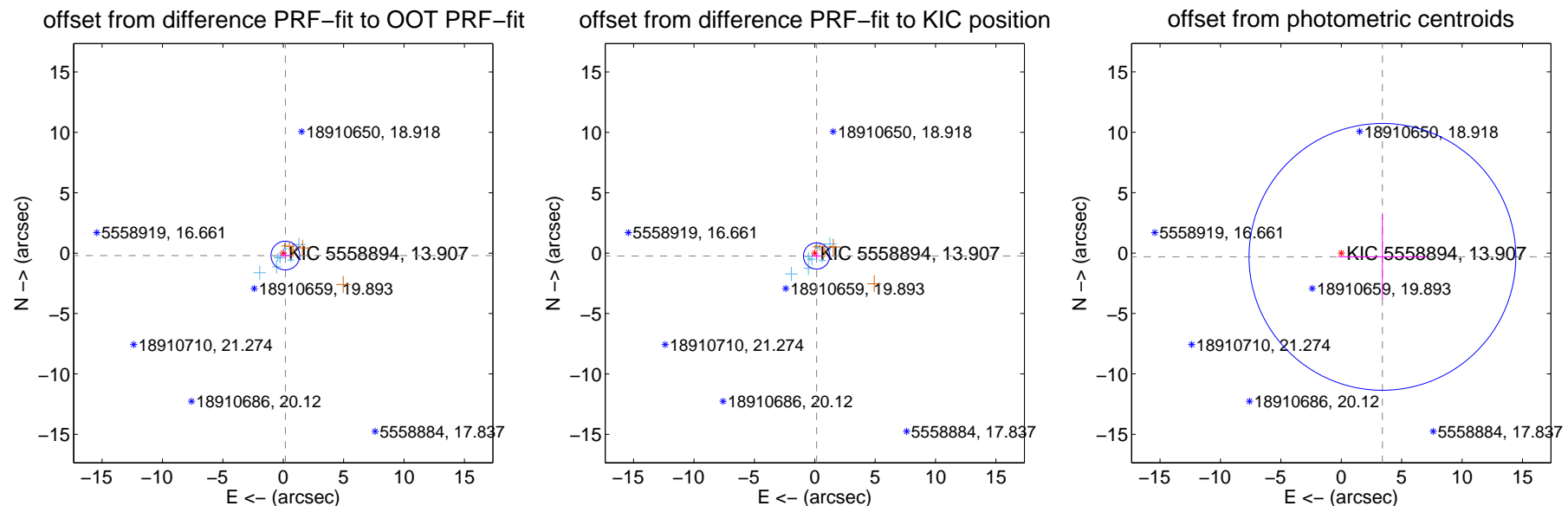
DV Centroid Data

Supplemental centroid analysis for 005558894-01. Kepler magnitude: 13.91. Transit SNR 3.46

There are 8 quarters with good PRF difference image offsets

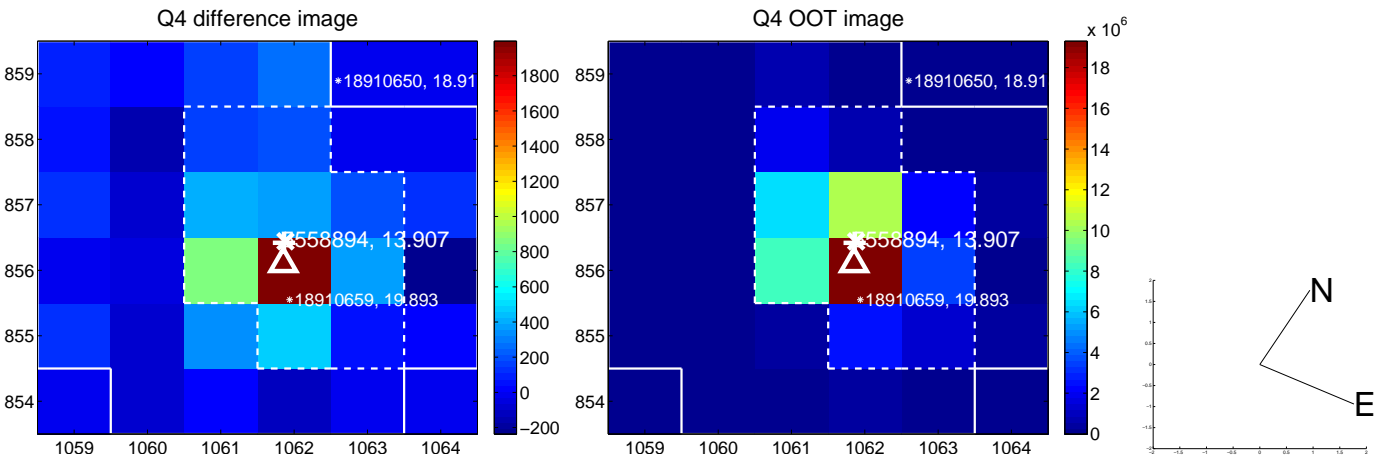
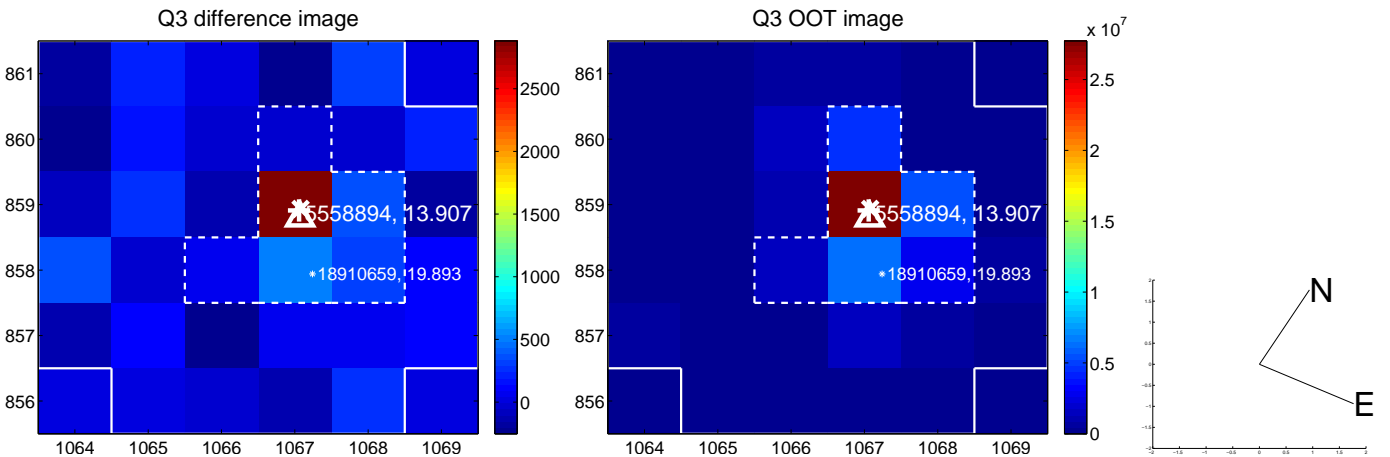
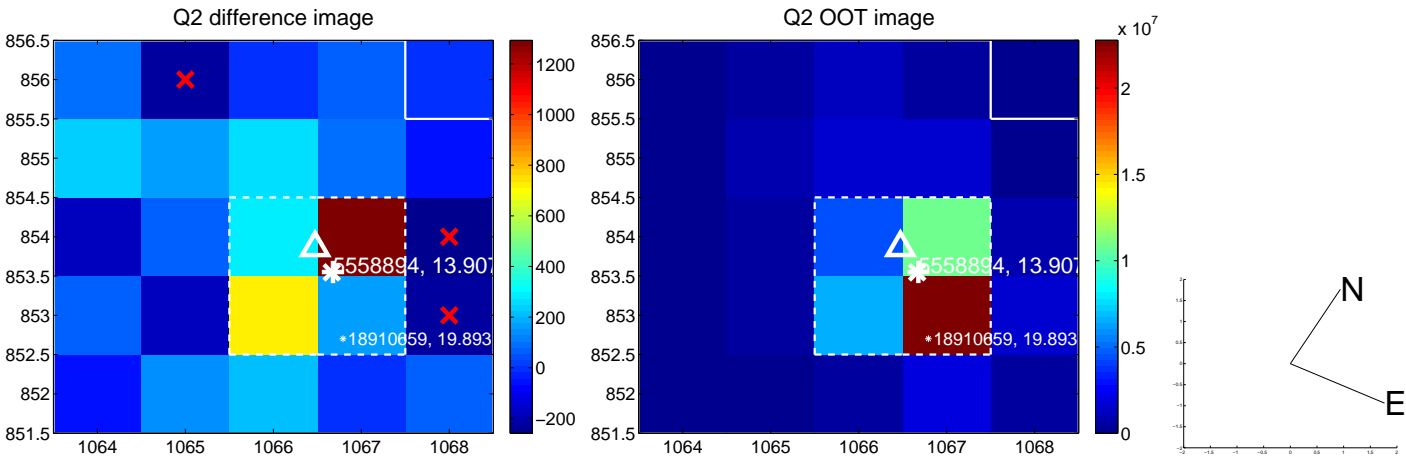
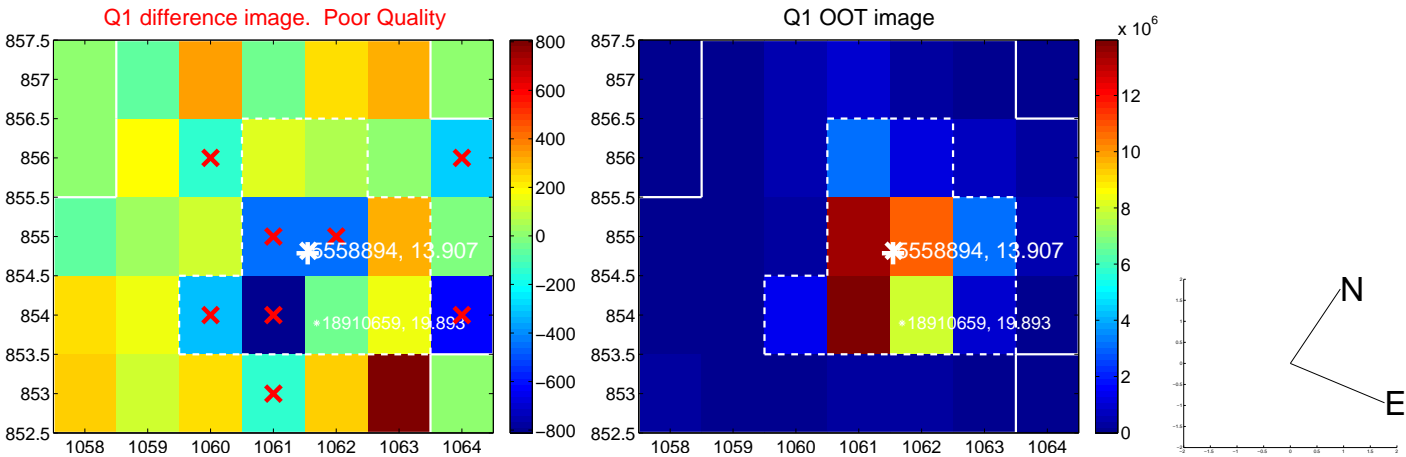
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.264 ± 0.396	0.67	-0.175 ± 0.456	-0.197 ± 0.273
PRF-fit source offset from KIC position	0.279 ± 0.362	0.77	-0.153 ± 0.421	-0.233 ± 0.273
photometric centroid source offset	3.42 ± 3.68	0.93	-3.41 ± 3.68	-0.31 ± 3.52

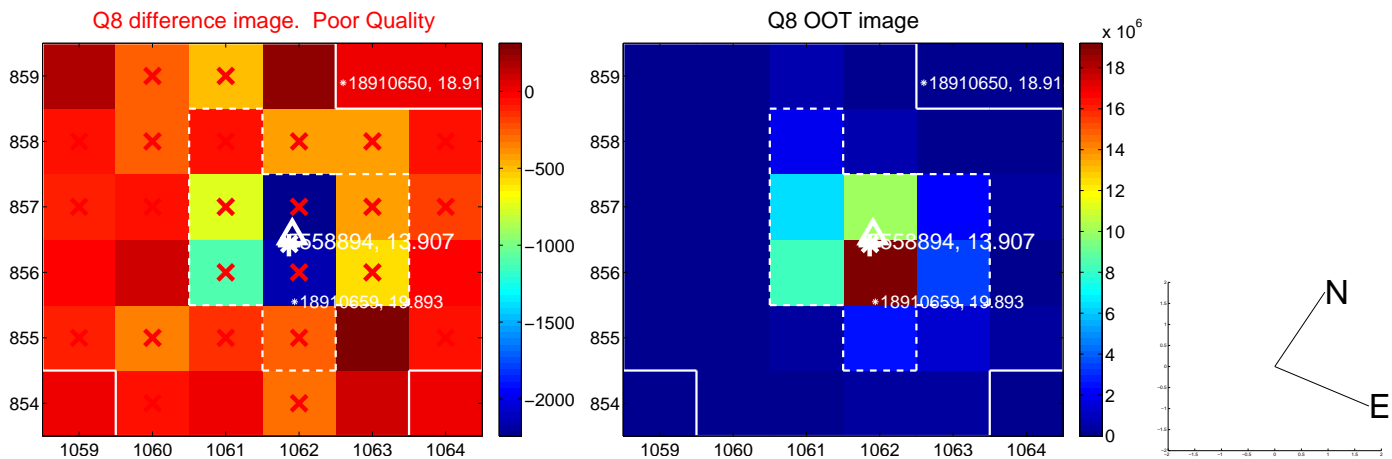
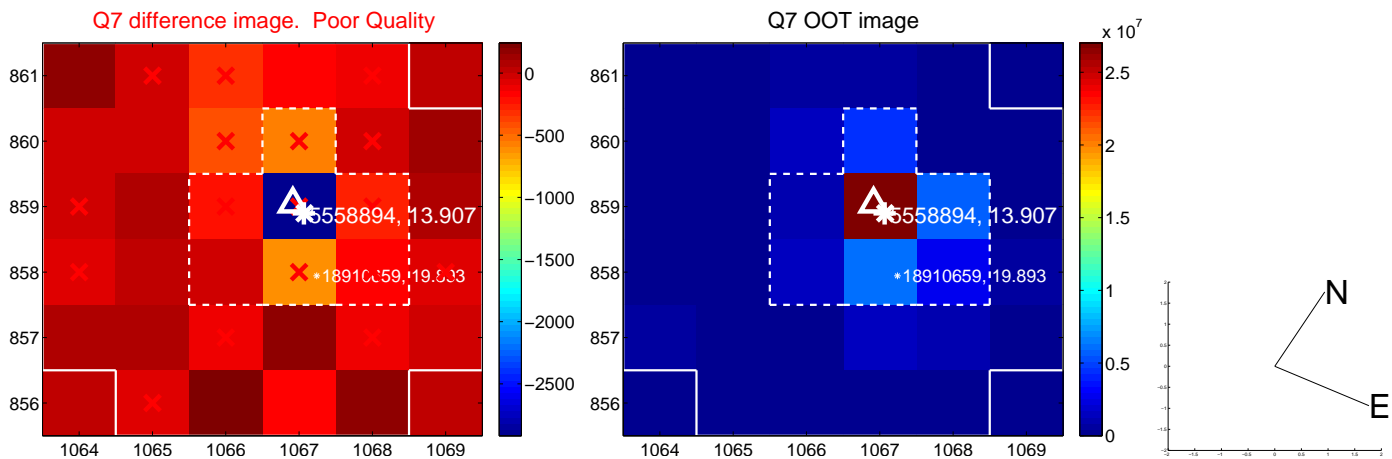
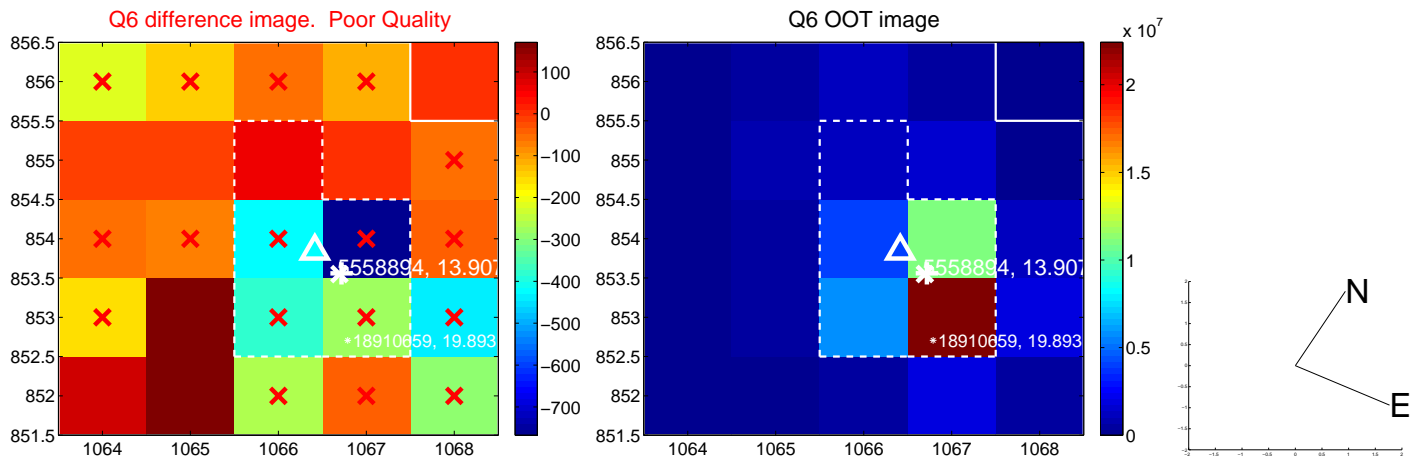
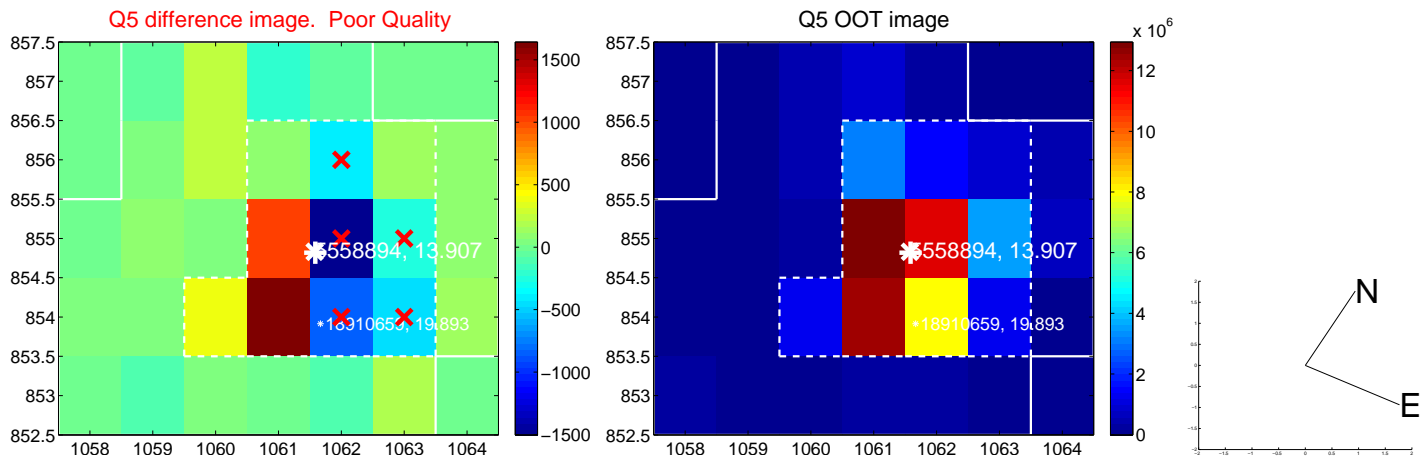


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

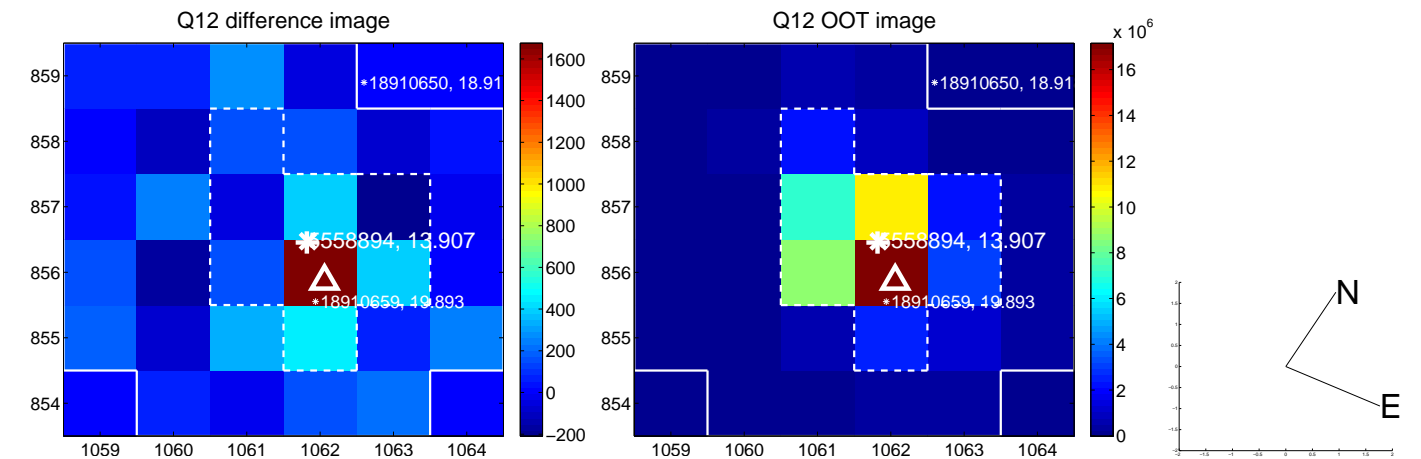
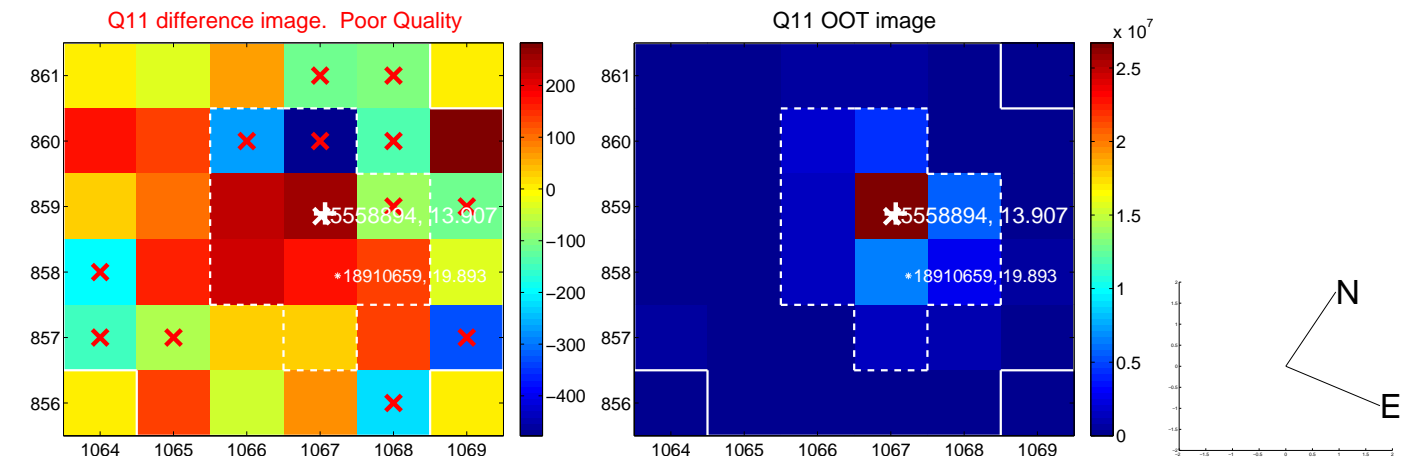
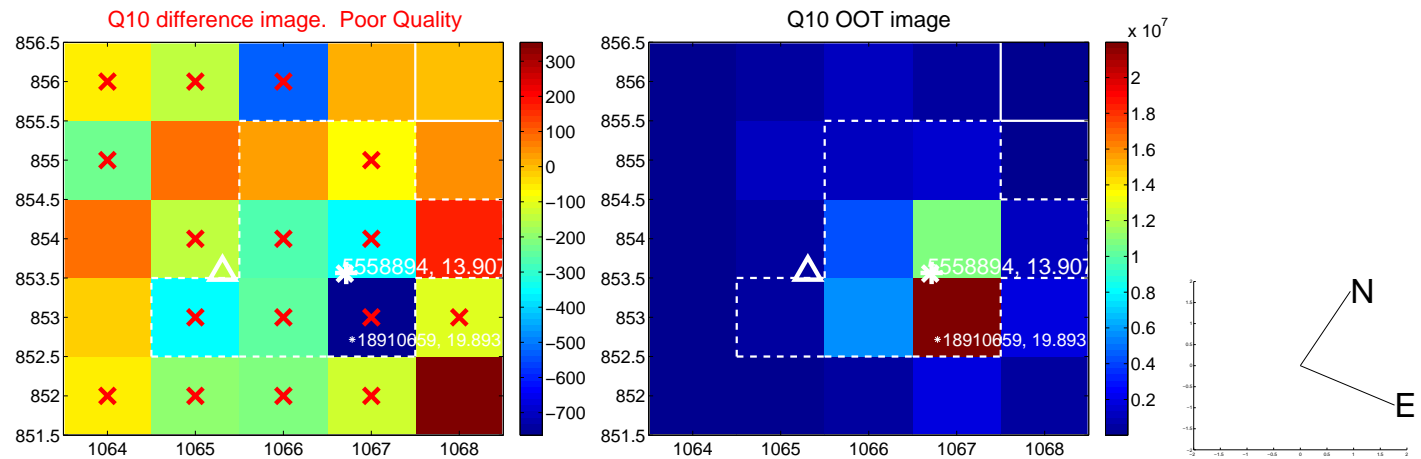
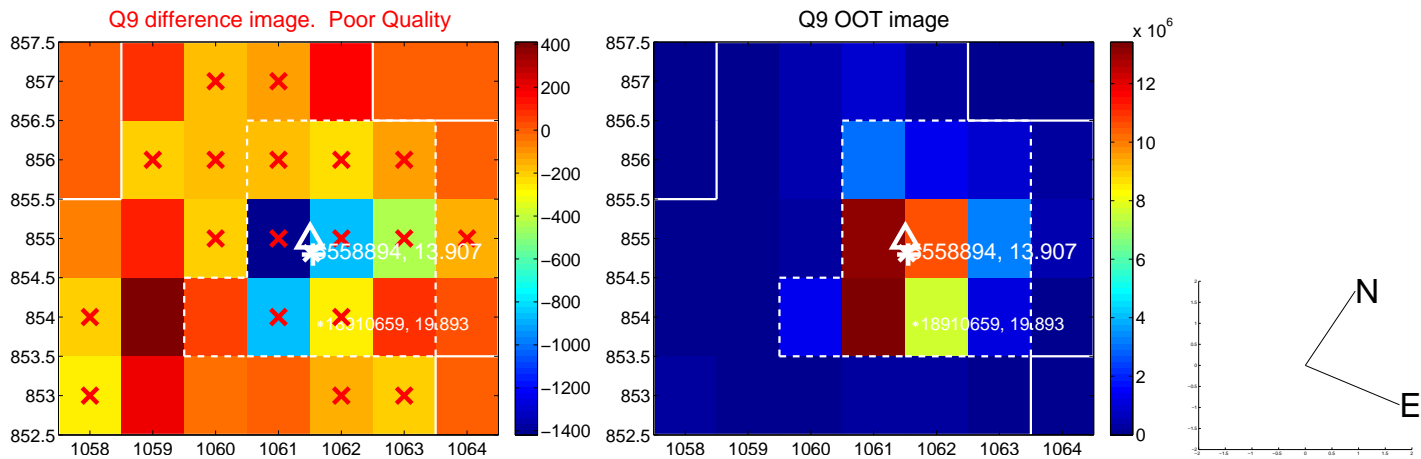
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



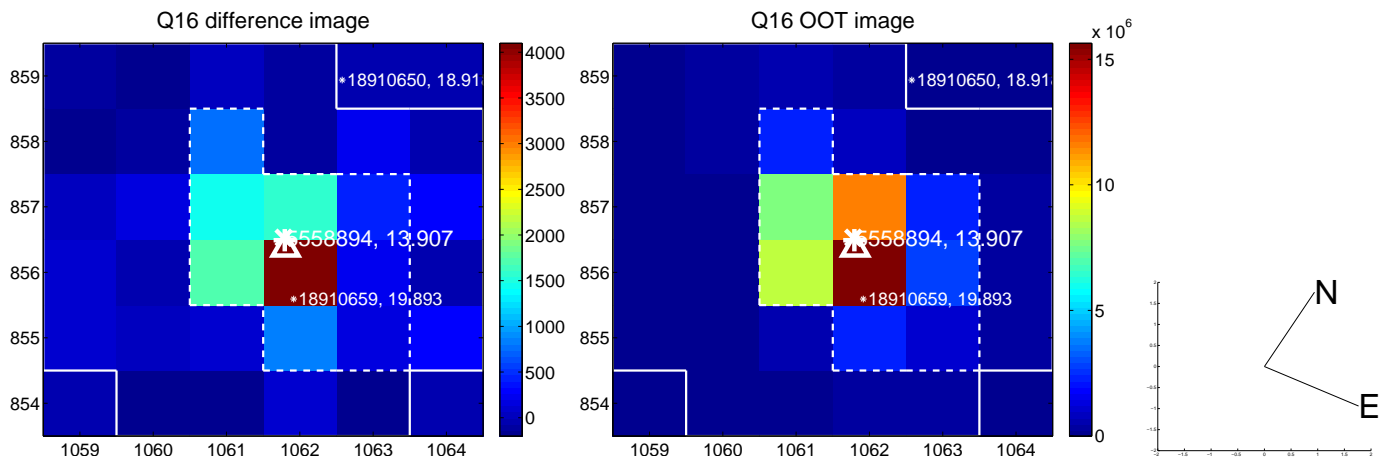
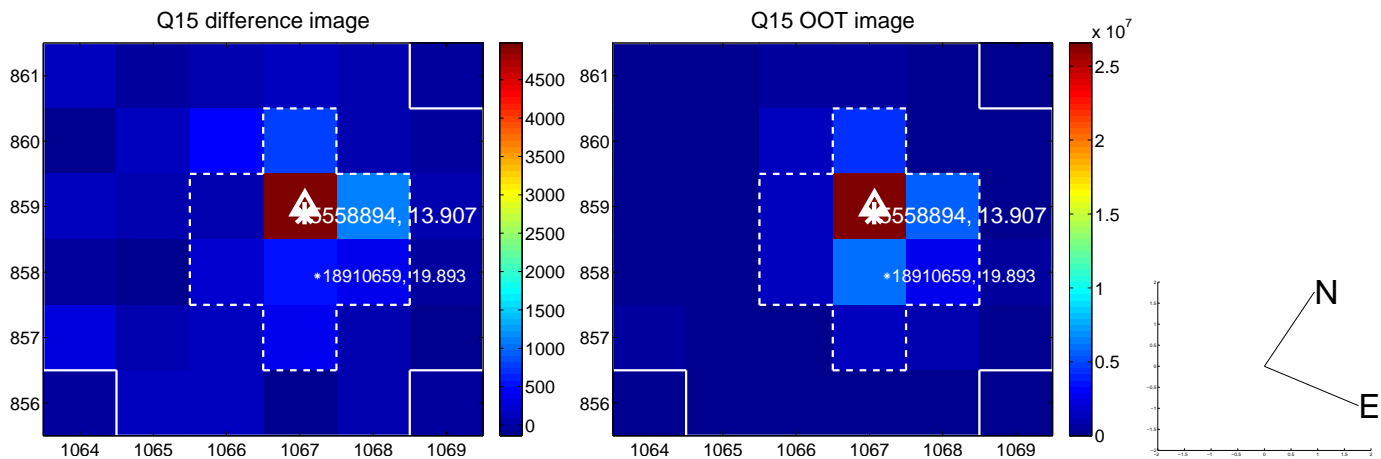
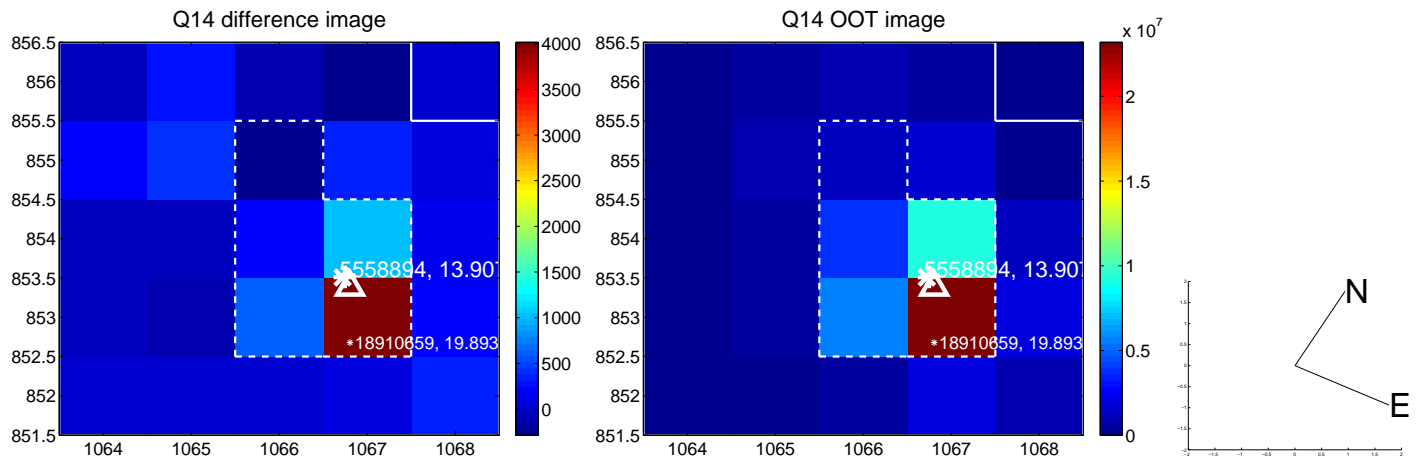
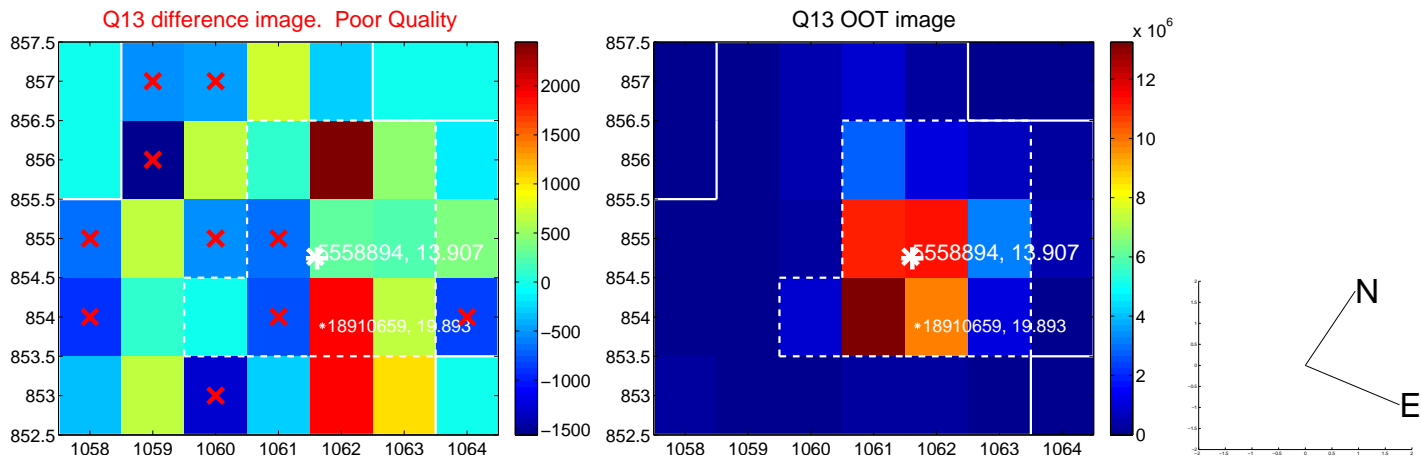
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



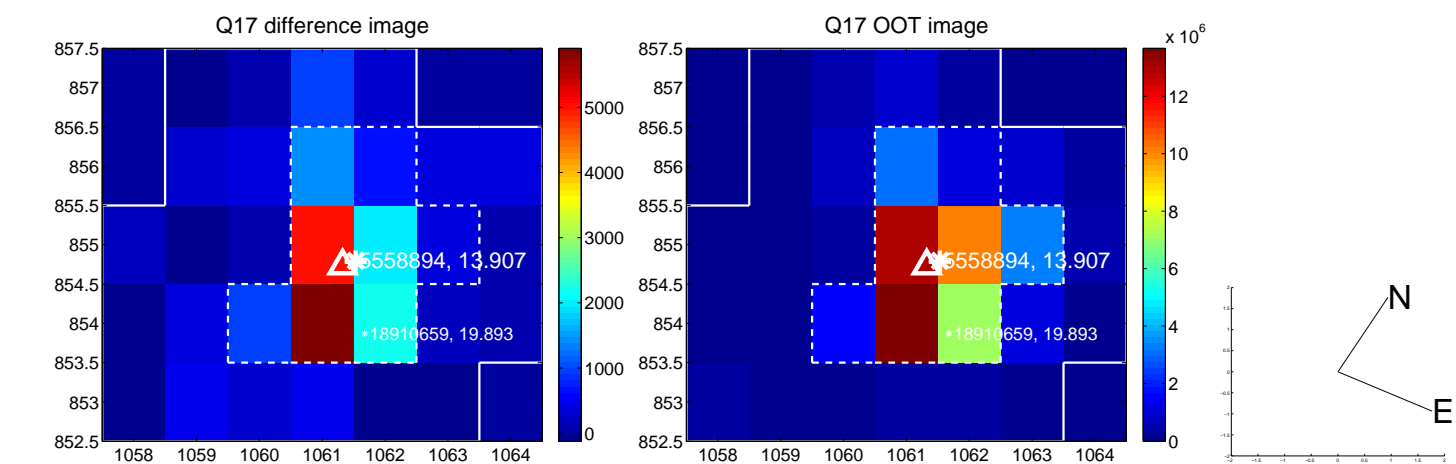
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



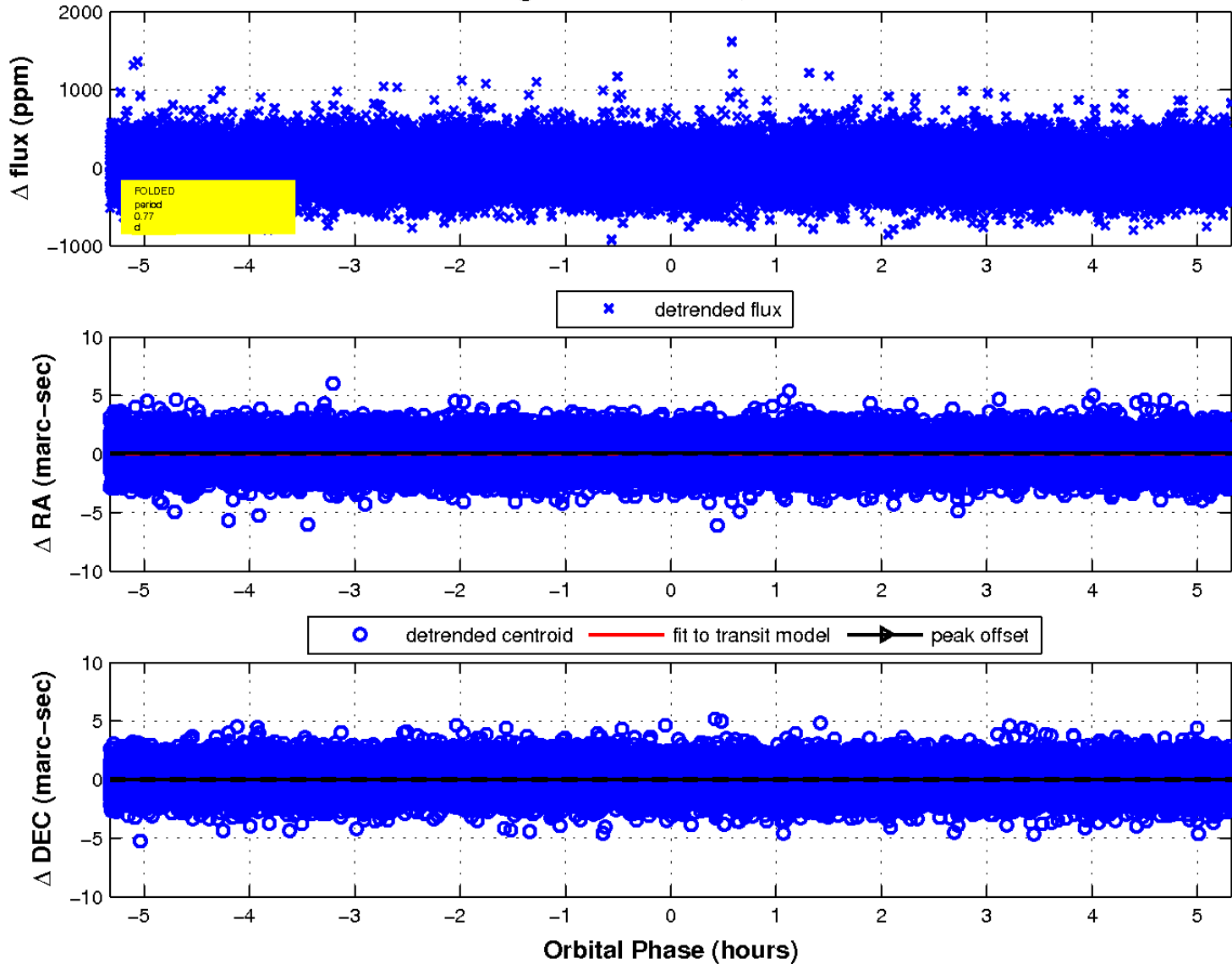
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

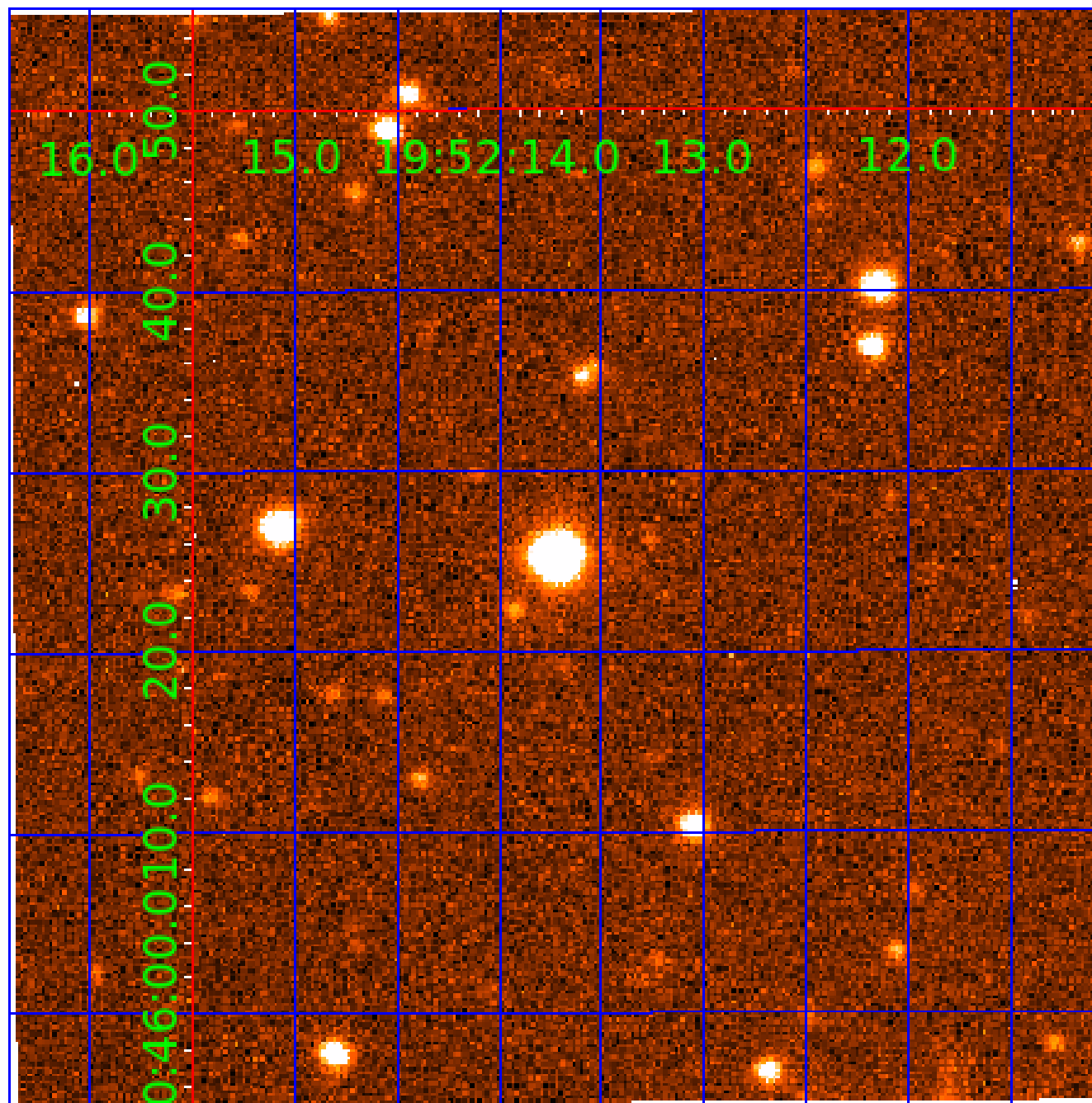


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005558894

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})
005558894-01	OBS	No	0.765863	132.461707	11.6	1.775	9.4	3.5	0.95	6453	0.41	5221.57
005558894-02	OBS	No	0.765719	132.360535	6.5	3.719	9.4	2.6	0.95	6453	0.25	5222.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005558894-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005558894-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

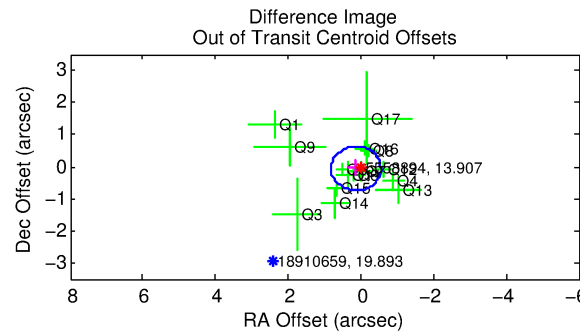
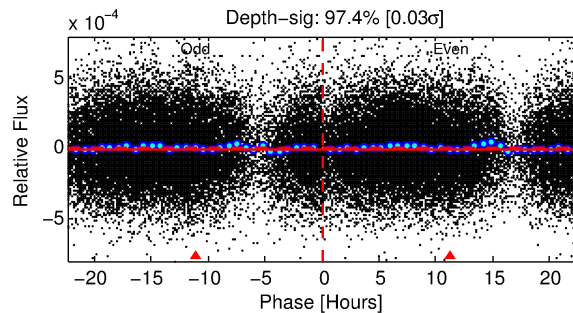
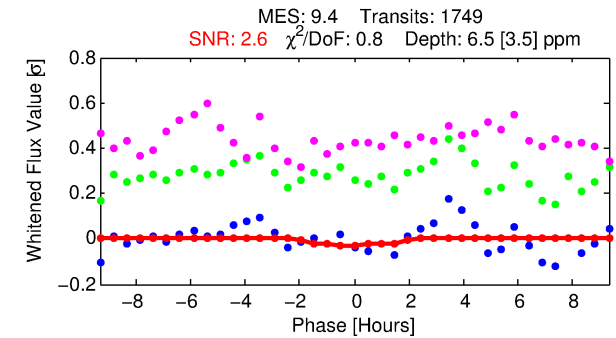
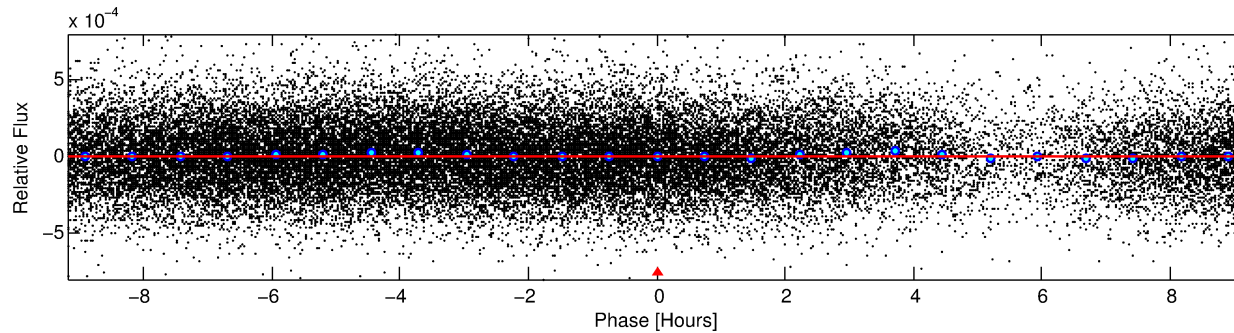
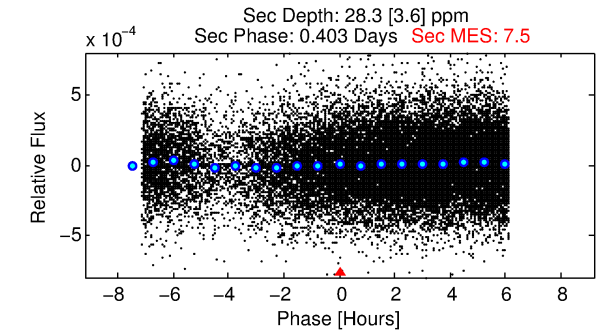
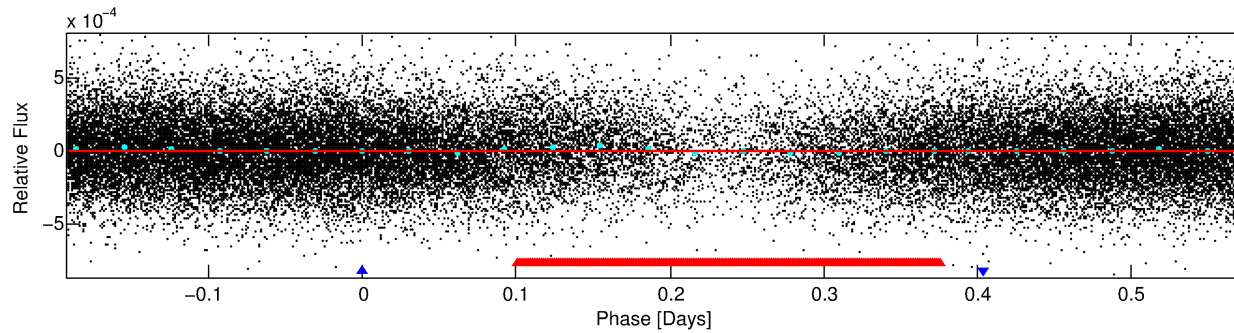
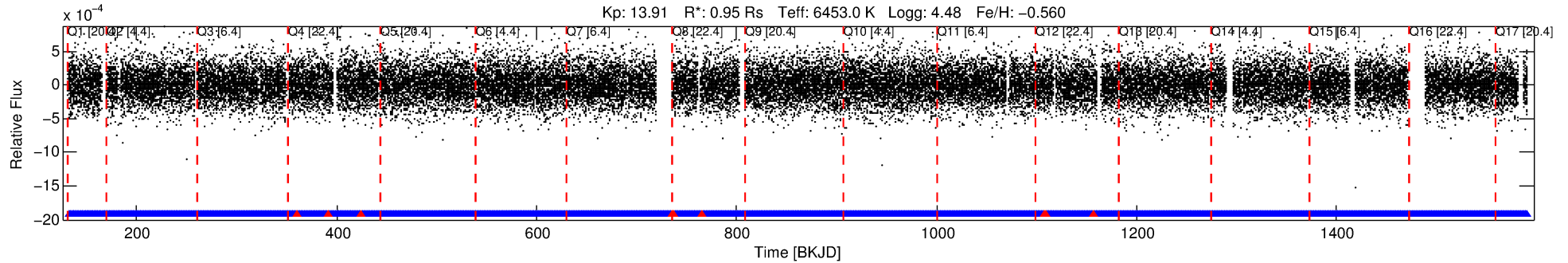
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005558894-02

No Significant Match Found

DV One-Page Summary

KIC: 5558894 Candidate: 2 of 2 Period: 0.766 d



DV Fit Results:

Period = 0.76572 [0.00005] d
Epoch = 132.3605 [0.0159] BKJD
Rp/R* = 0.0024 [0.0019]
a/R* = 1.51 [3.52]
b = 0.55 [5.21]
Seff = 5222.88 [2101.81]
Teq = 2168 [218] K
Rp = 0.25 [0.21] Re
a = 0.0164 [0.0042] AU
Ag = 65.60 [107.41] [0.60σ]
Teffp = 9538 [3810] K [1.93σ]

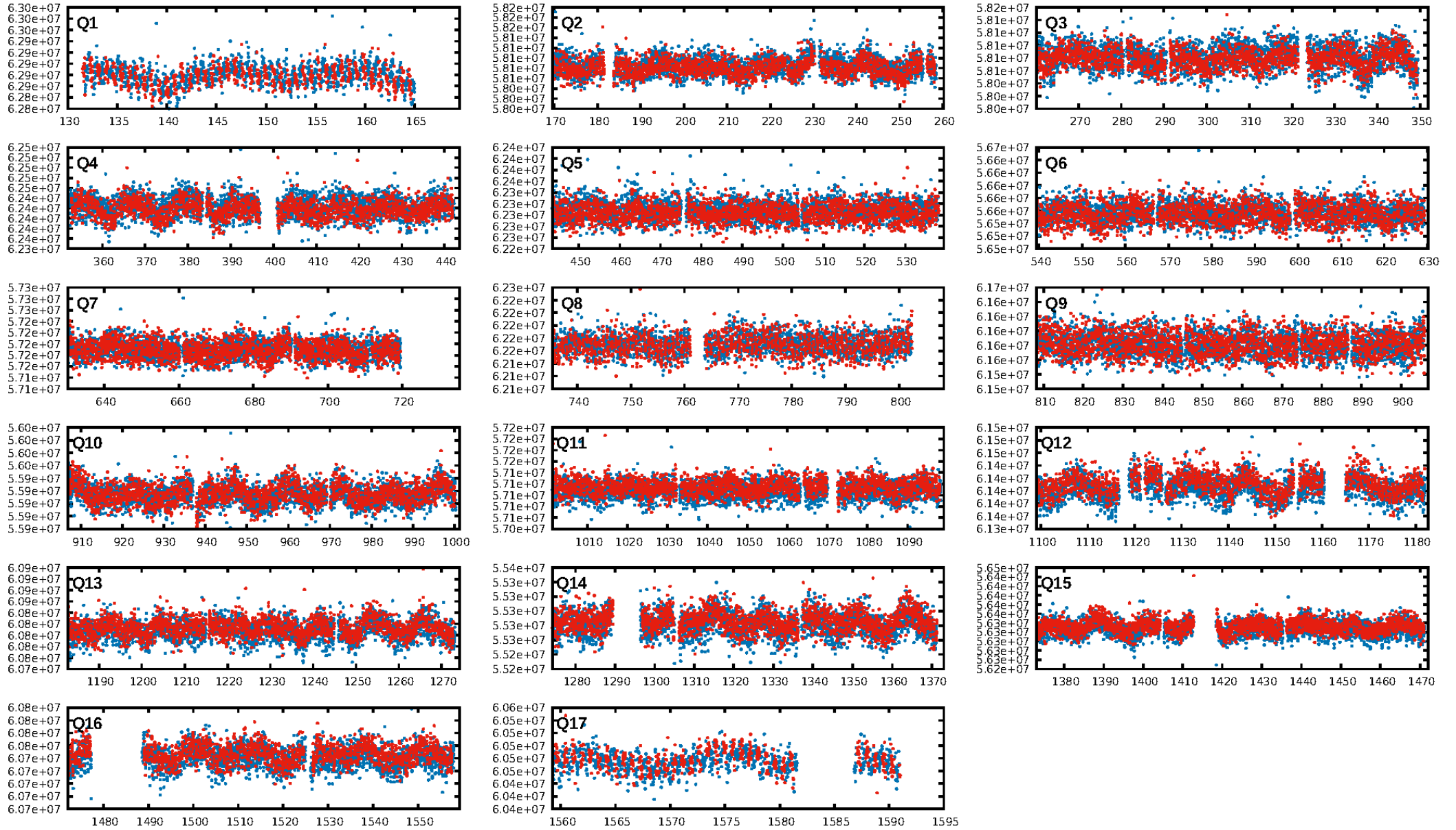
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.20e-14
RollingBand-fgt: 0.99 [1661/1670]
GhostDiagnostic-chr: 1.912
Centroid-sig: 0.1%
Centroid-so: 11.757 arcsec [2.64σ]
OotOffset-rm: 0.149 arcsec [0.65σ]
KicOffset-rm: 0.191 arcsec [0.83σ]
OotOffset-st: 2/4/4/5 [15]
KicOffset-st: 2/4/4/5 [15]
DiffImageQuality-fgm: 0.47 [7/15]
DiffImageOverlap-fno: 0.00 [0/17]

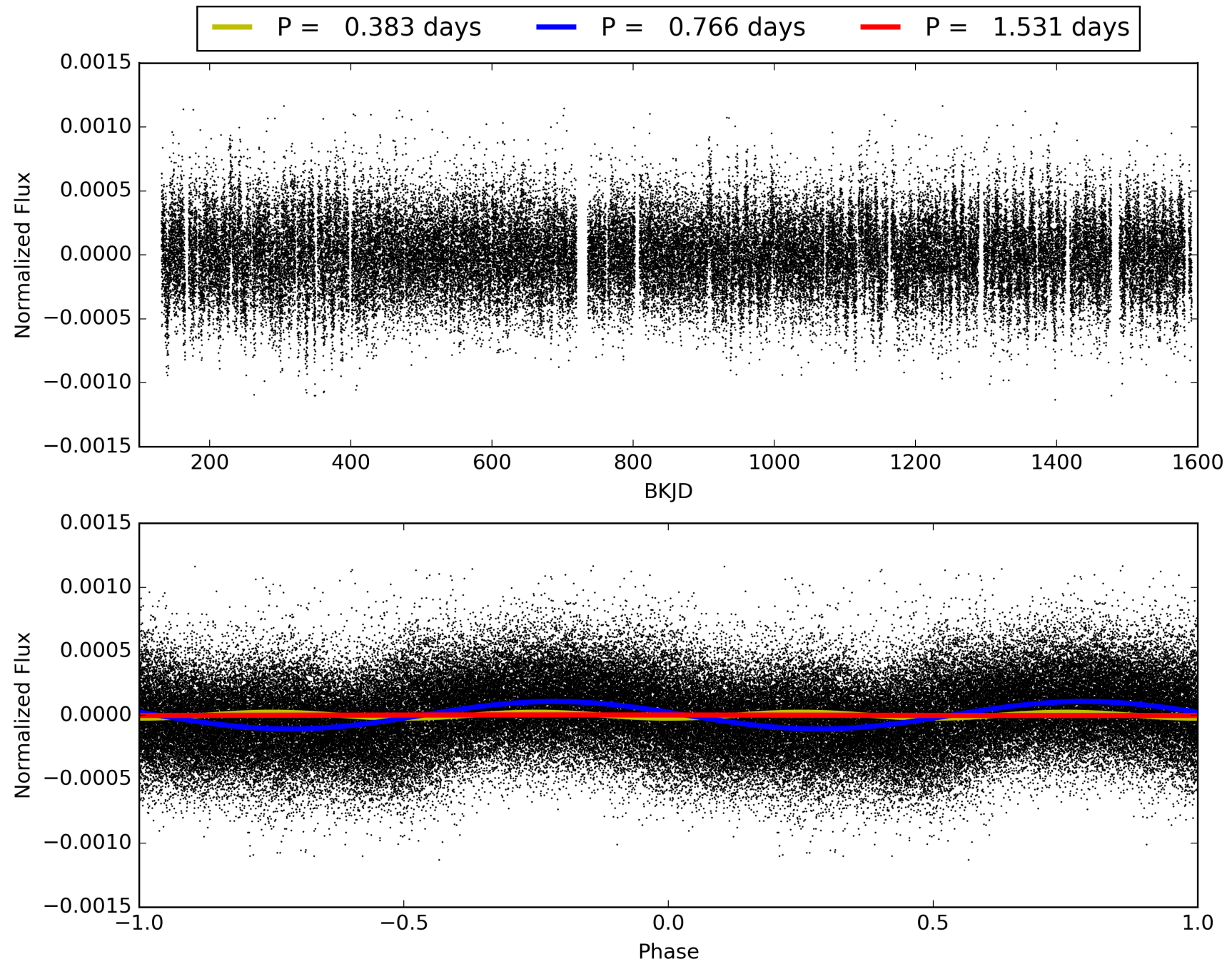
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005558894-02, PDC Light Curves

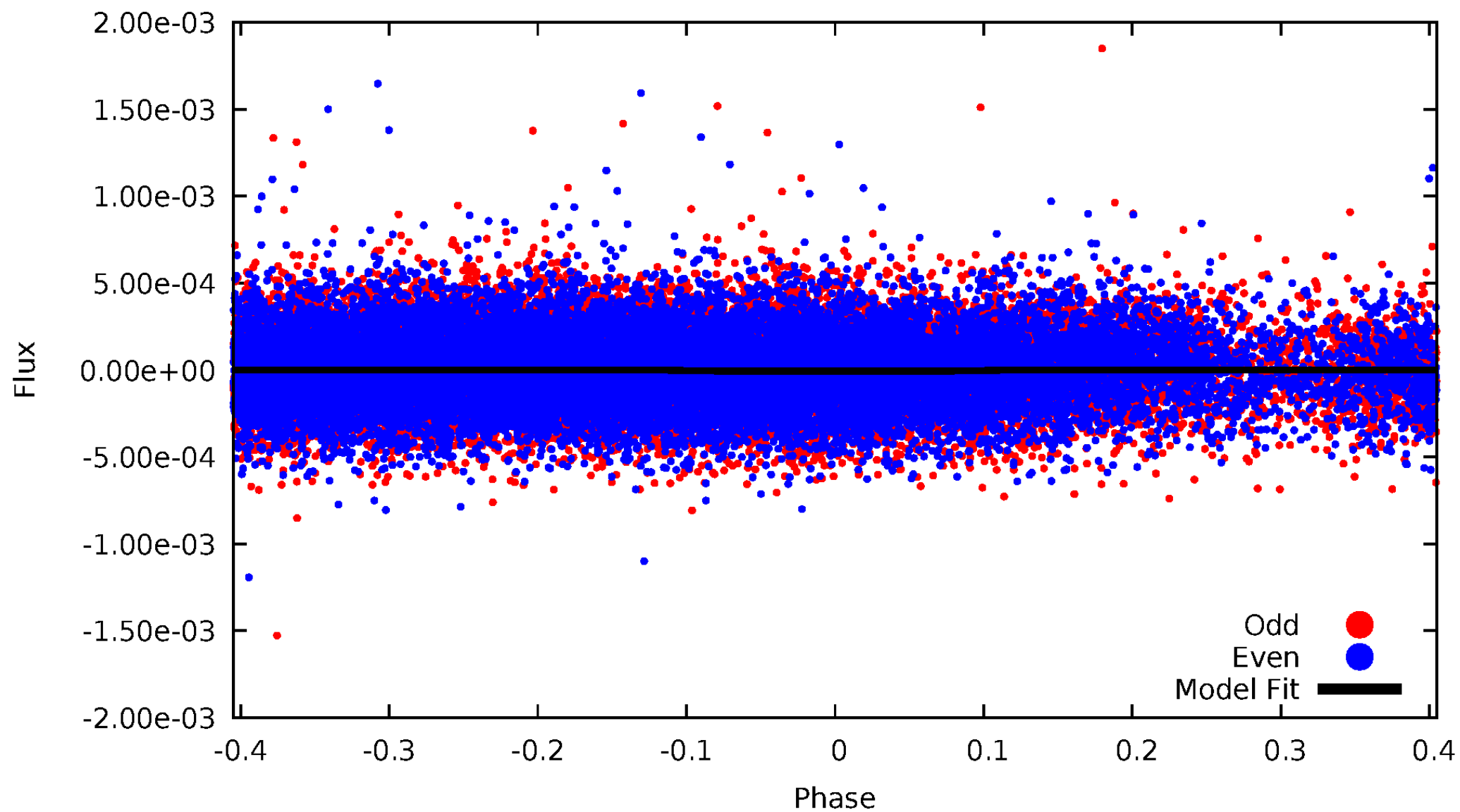


TCE 005558894-02



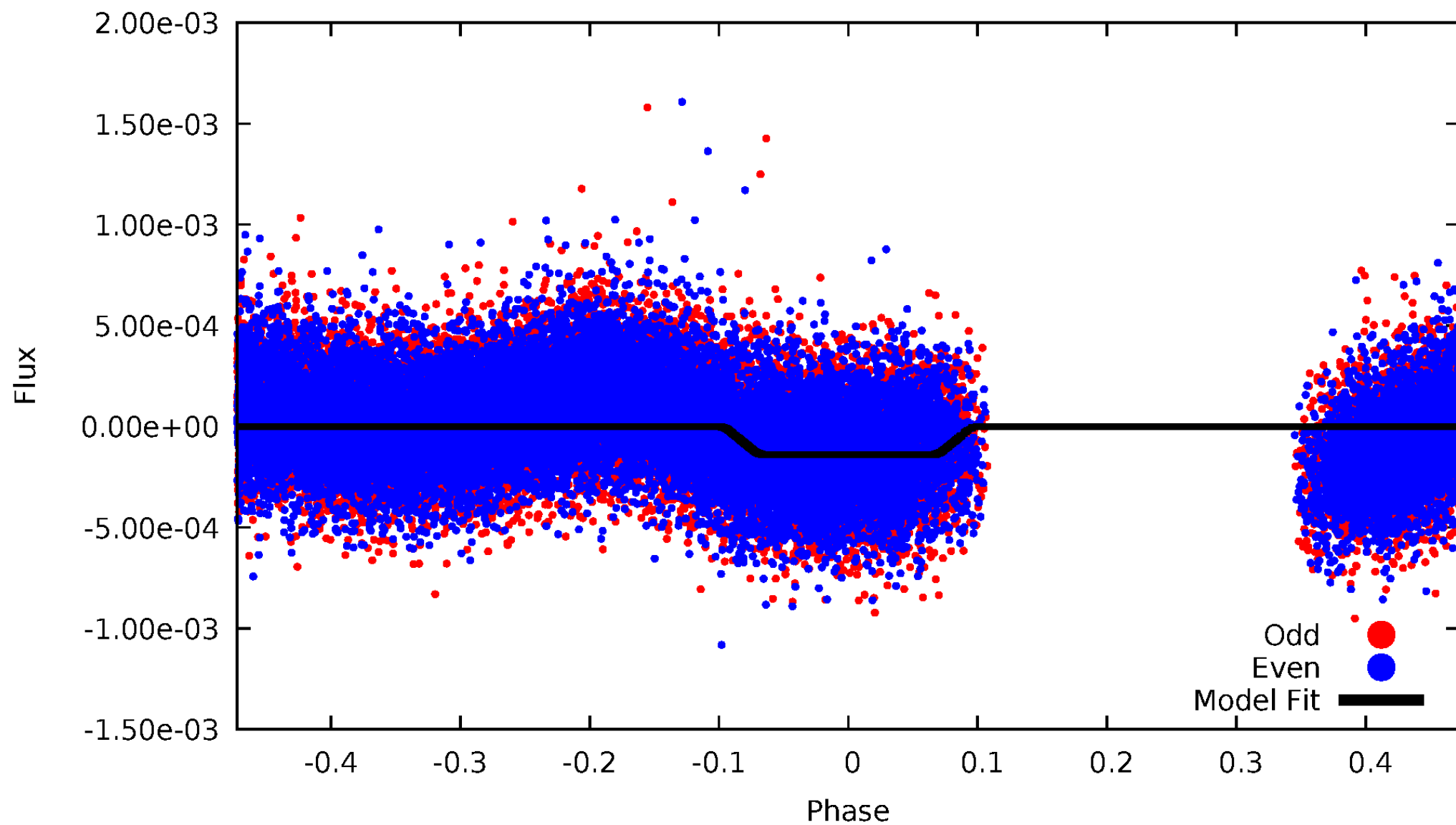
DV Odd/Even

TCE 005558894-02



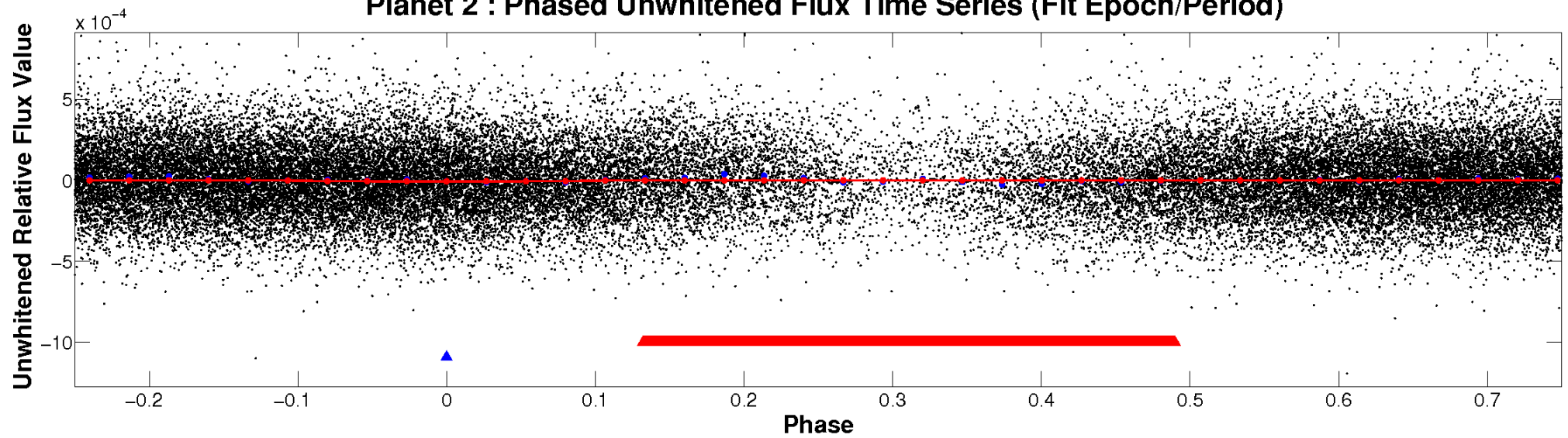
ALT Odd/Even

TCE 005558894-02

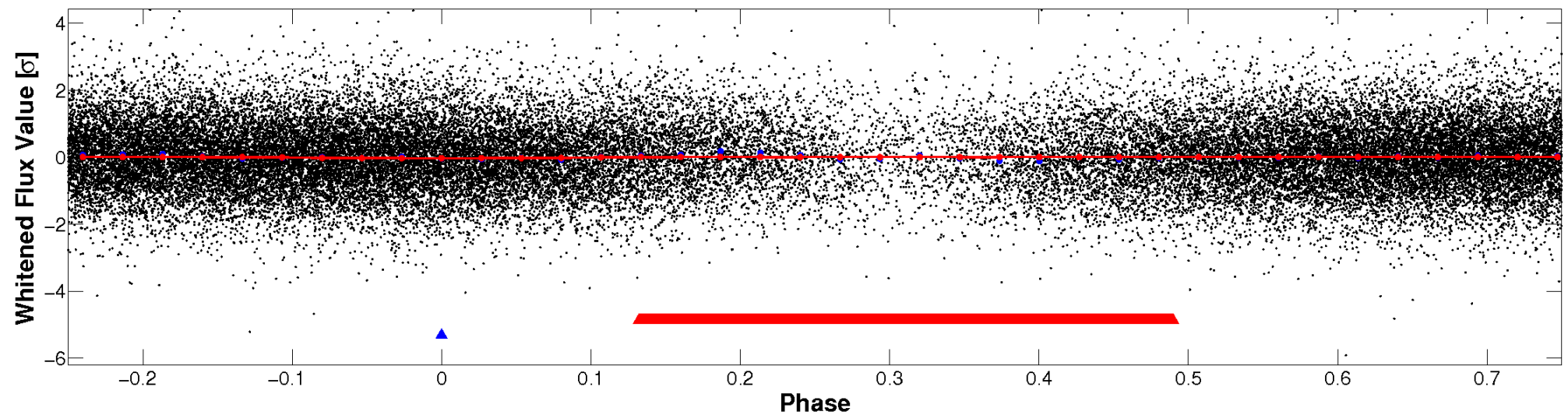


Non-Whitened Vs. Whitened Light Curve

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

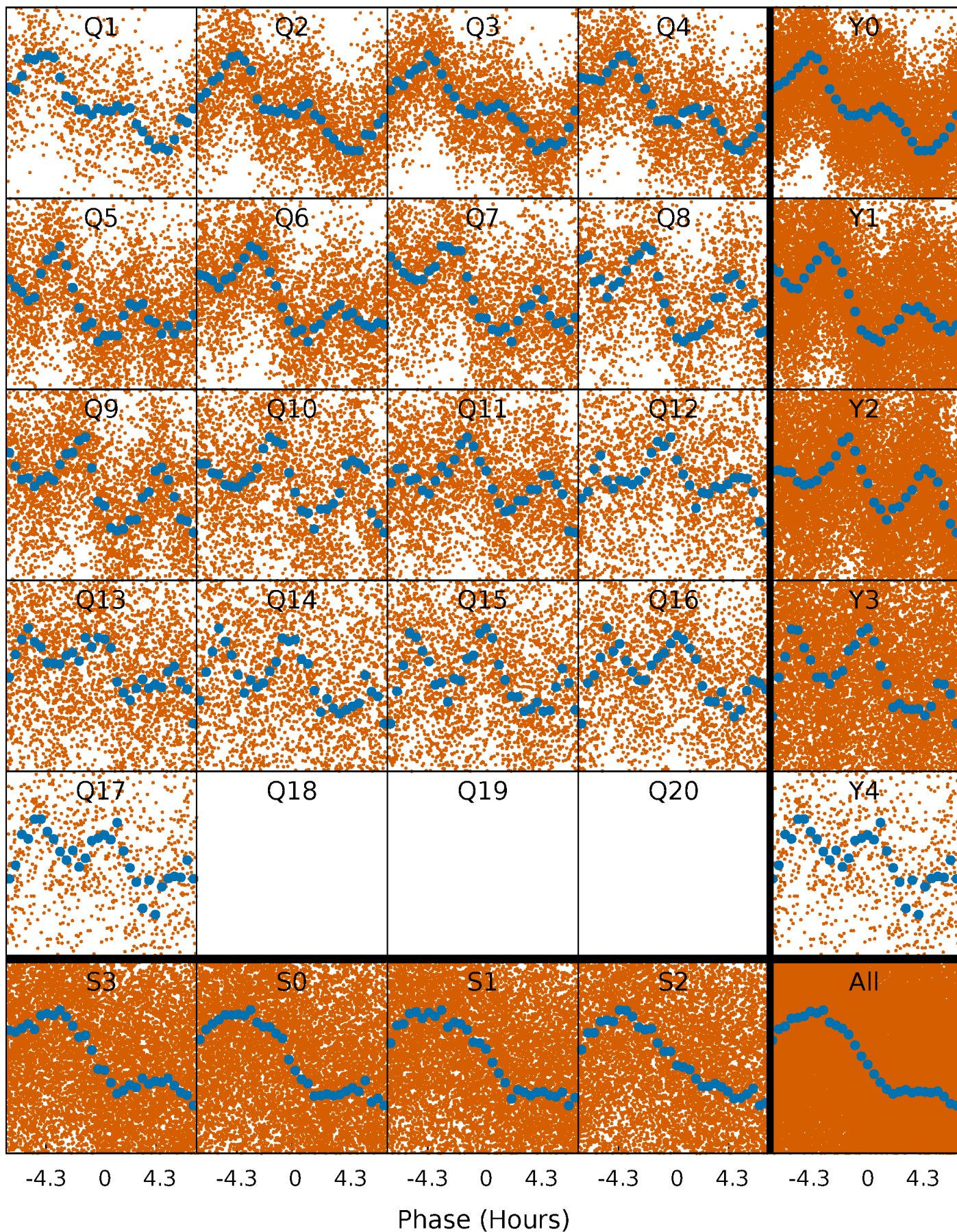


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



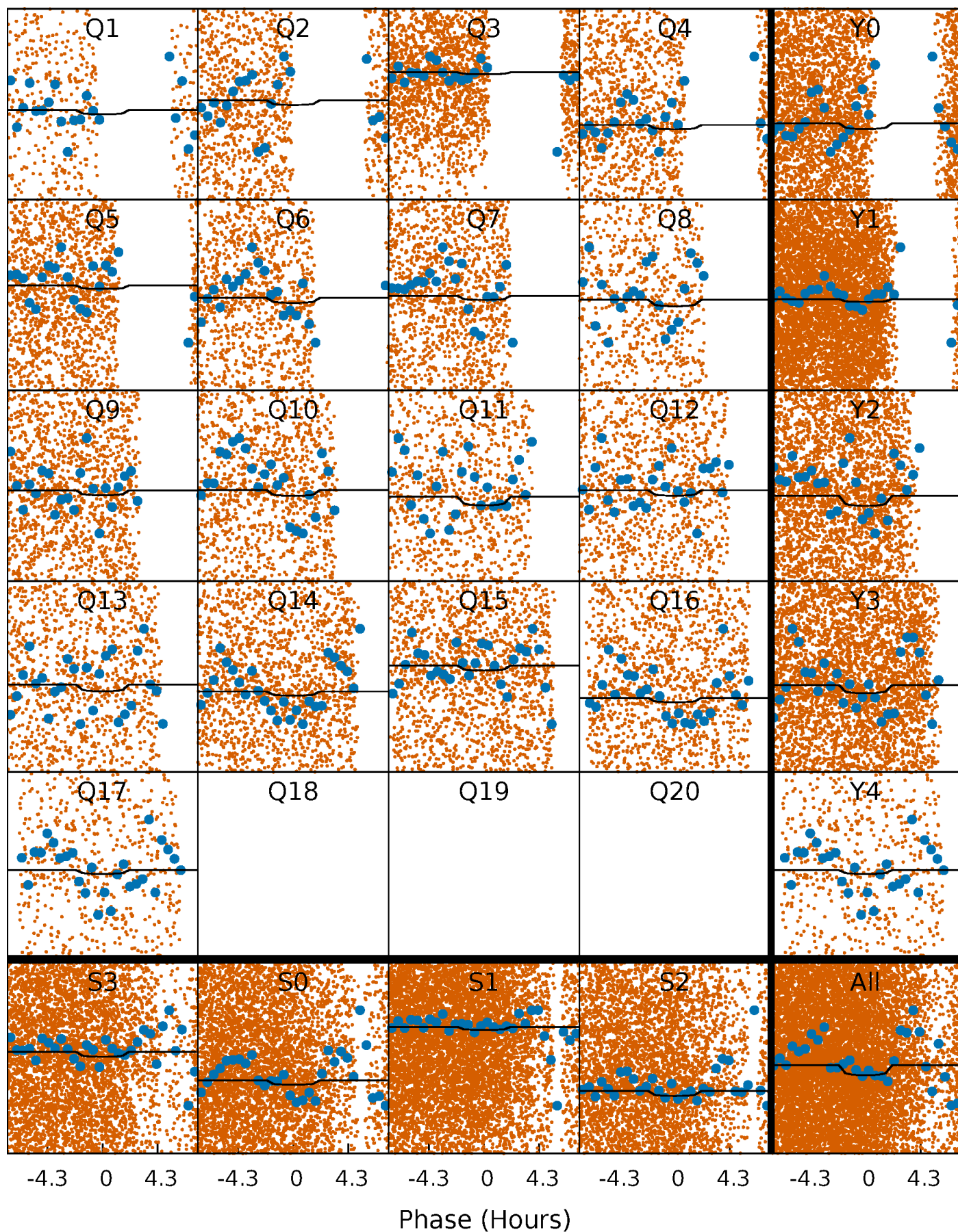
PDC Quarter-Phased Transit Curves

TCE 005558894-02 P= 0.765719 Days $T_0=132.360535$ (BKJD)



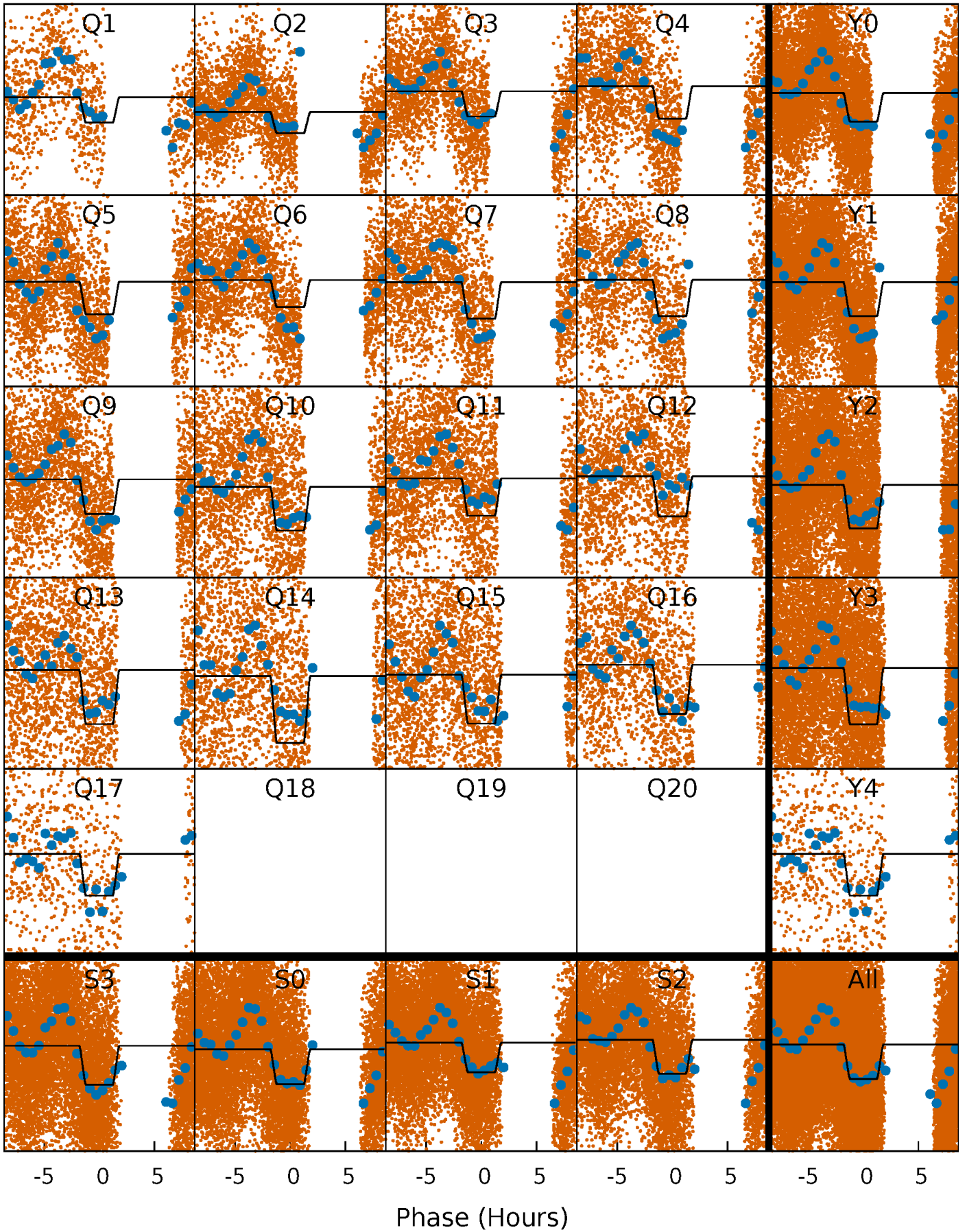
DV Quarter-Phased Transit Curves

TCE 005558894-02 P= 0.765719 Days $T_0=132.360535$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

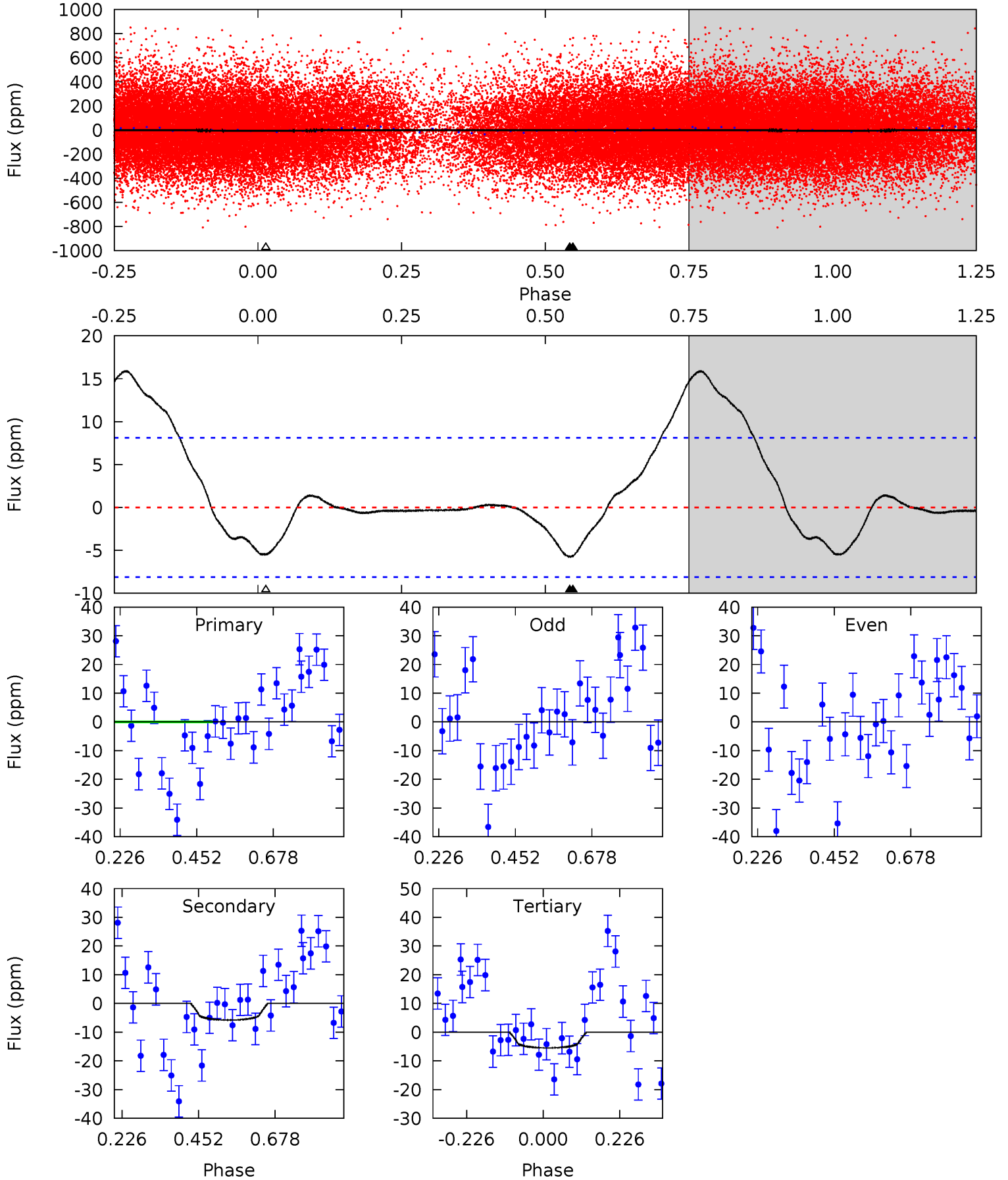
TCE 005558894-02 P= 0.765830 Days $T_0=132.320111$ (BKJD)



DV Model-Shift Uniqueness Test

005558894-02, P = 0.765719 Days, E = 130.829097 Days

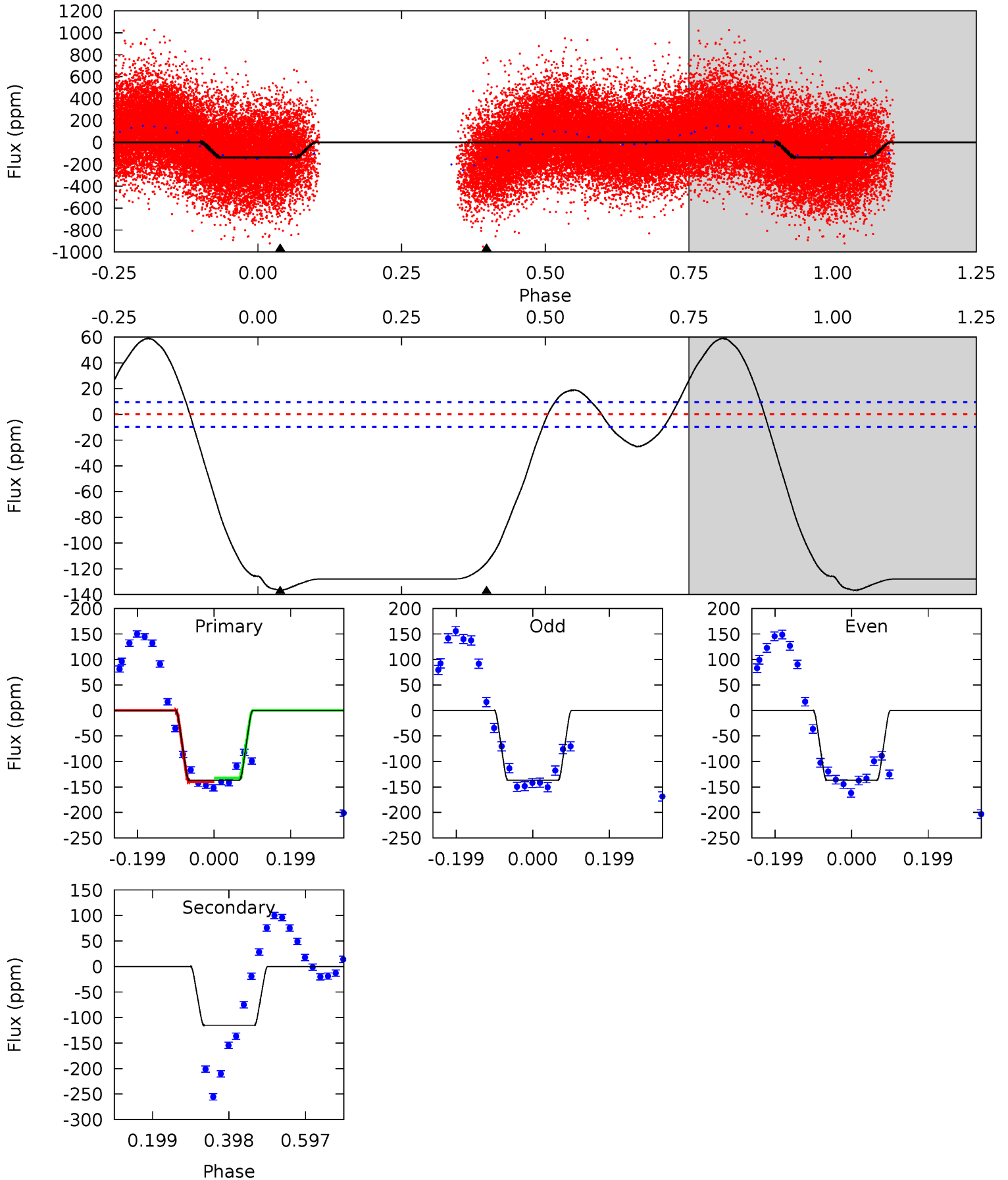
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.07	3.13	2.98	0	4.39	1.21	3.41	0.09	3.07	0.15	3.13	1.07	0.40	0.73	1.44



Alt Model-Shift Uniqueness Test

005558894-02, P = 0.765830 Days, E = 130.788451 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.9	53.1	0	0	4.42	1.28	14.4	62.9	62.9	53.1	53.1	0.02	1.03	0.30	1.42



Stellar Parameters For KIC 005558894

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6453^{+162}_{-210}	$4.484^{+0.050}_{-0.213}$	$-0.560^{+0.300}_{-0.350}$	$0.953^{+0.279}_{-0.093}$	$1.011^{+0.123}_{-0.123}$	$1.643^{+0.346}_{-0.846}$
	+3%/-3%	+1%/-5%	+54%/-62%	+29%/-10%	+12%/-12%	+21%/-51%
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 005558894-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 2	$0.29^{+0.21}_{-0.16}$	3091^{+227}_{-153}	6038^{+3545}_{-1467}	$9.761^{+38.892}_{-6.929}$
Alt.	-115 ± 2	$1.30^{+0.27}_{-0.24}$	3091^{+224}_{-148}	6036^{+709}_{-444}	$9.973^{+5.052}_{-2.913}$

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

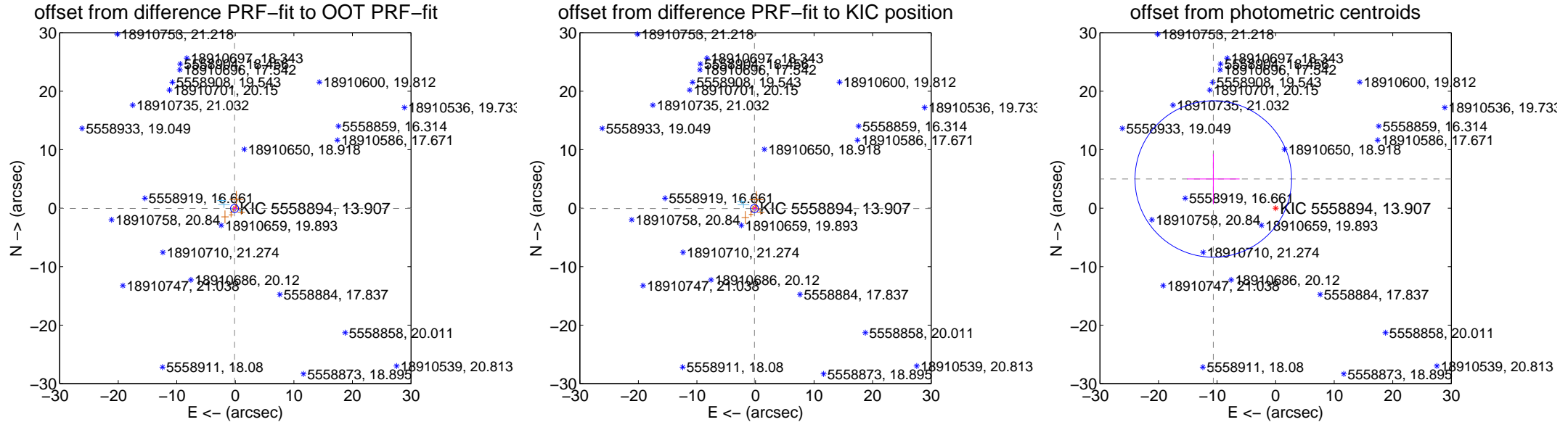
DV Centroid Data

Supplemental centroid analysis for 005558894-02. Kepler magnitude: 13.91. Transit SNR 2.56

There are 7 quarters with good PRF difference image offsets

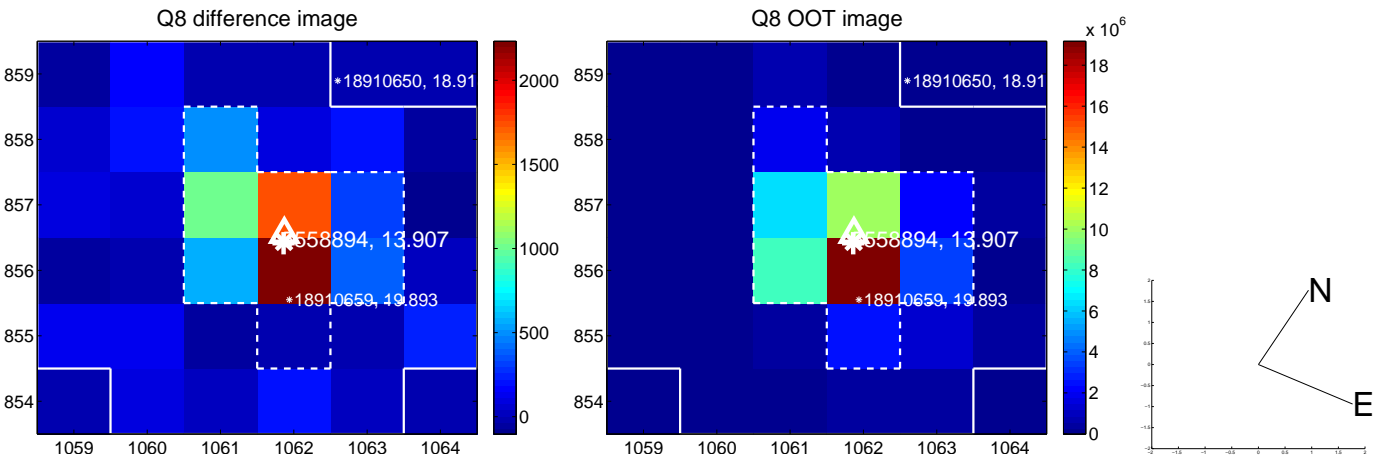
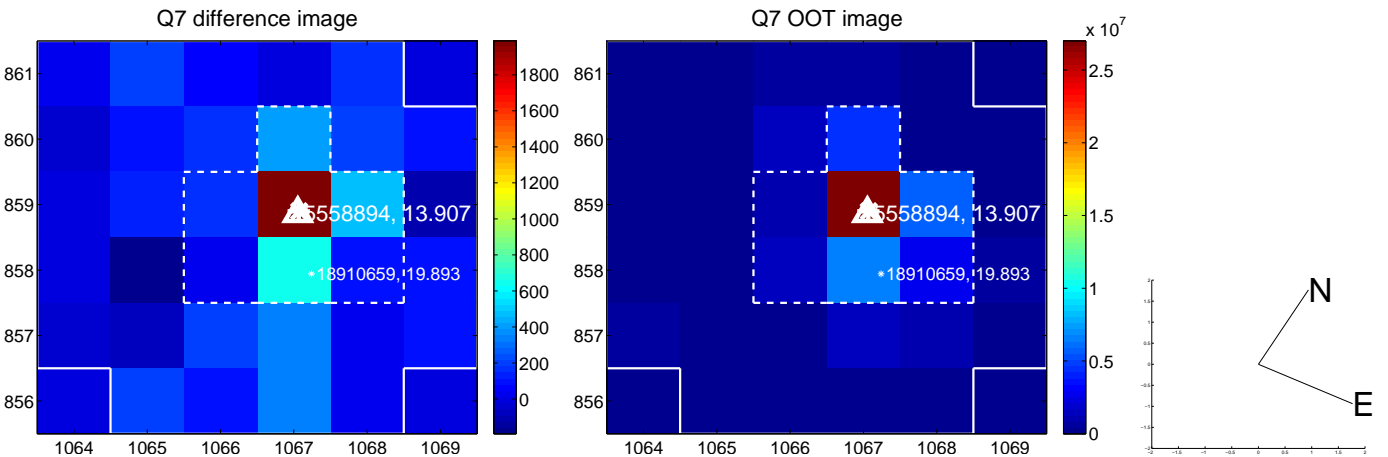
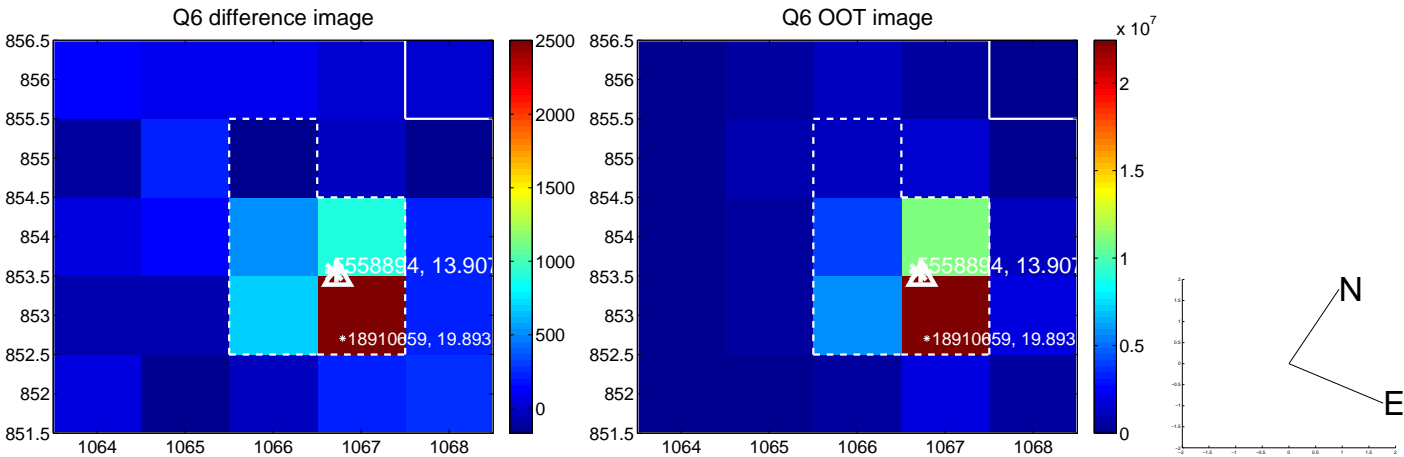
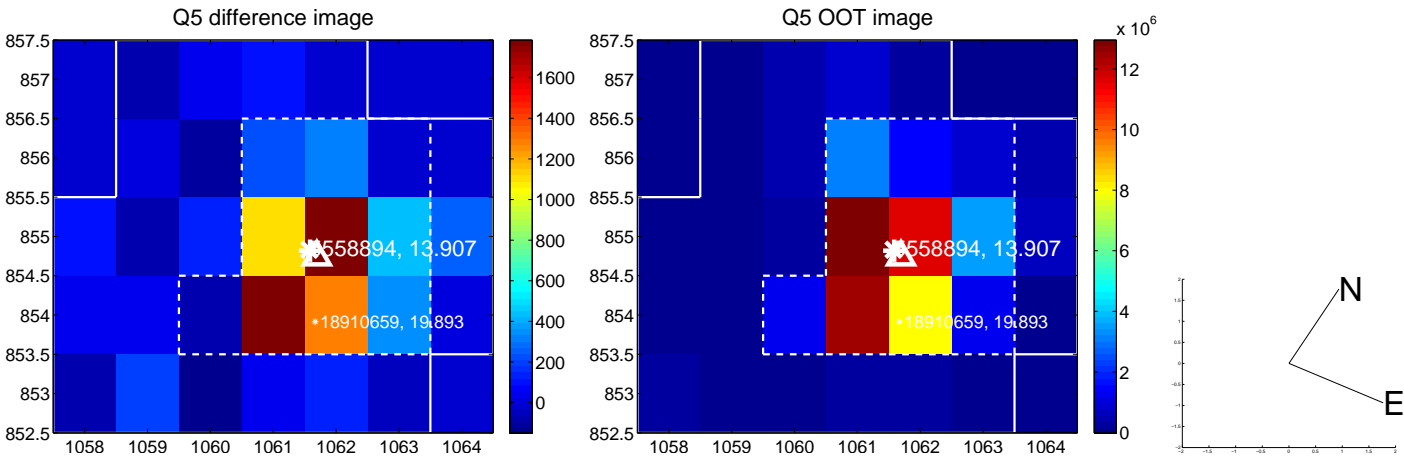
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.229	0.65	0.138 ± 0.237	-0.057 ± 0.232
PRF-fit source offset from KIC position	0.191 ± 0.230	0.83	0.178 ± 0.243	-0.067 ± 0.214
photometric centroid source offset	11.76 ± 4.46	2.64	10.65 ± 4.49	4.99 ± 4.28

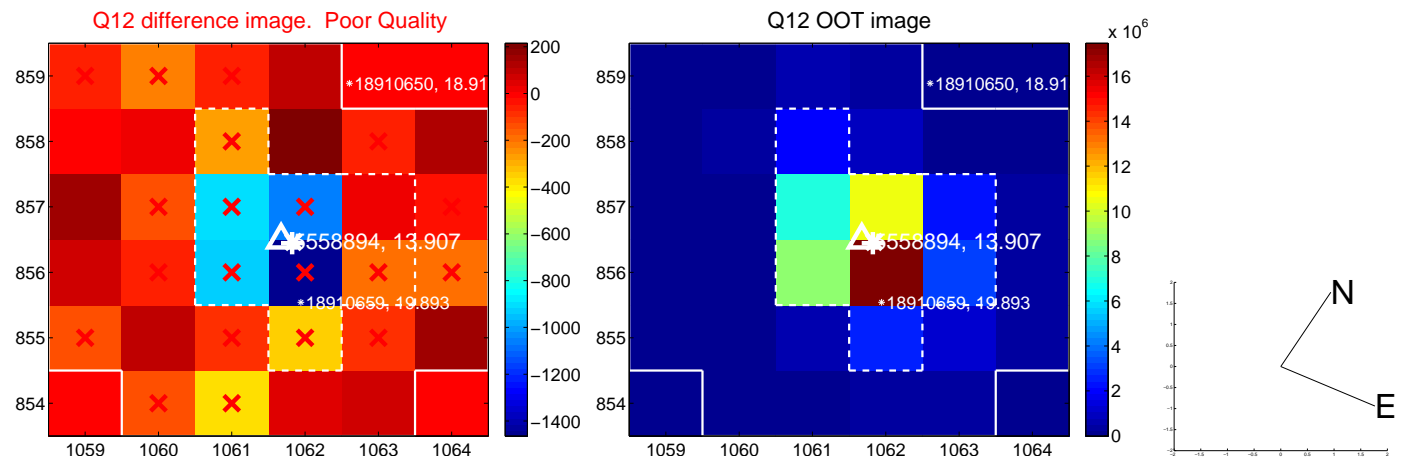
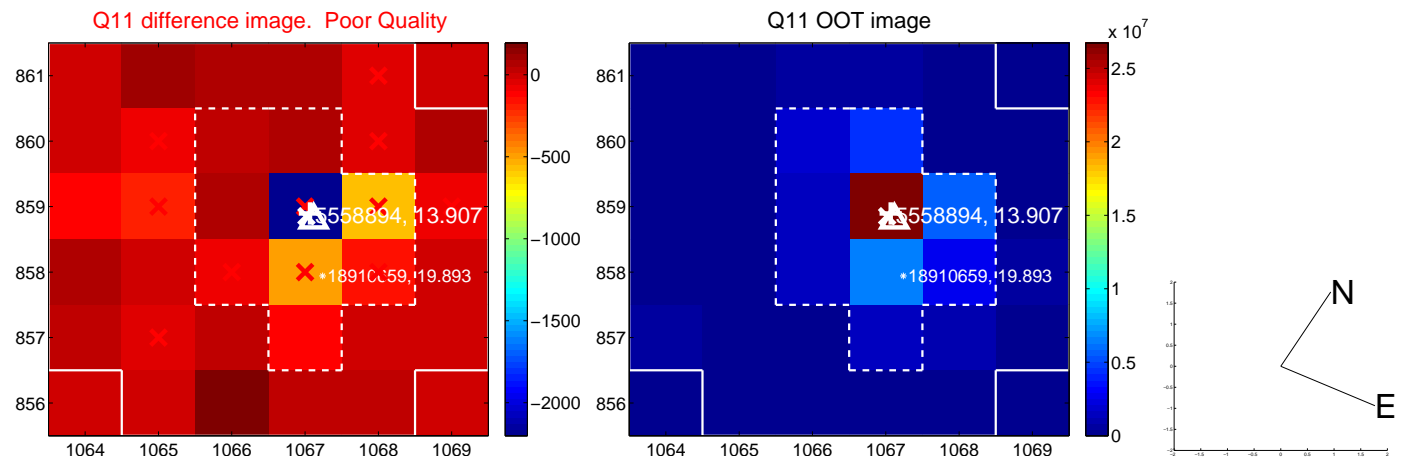
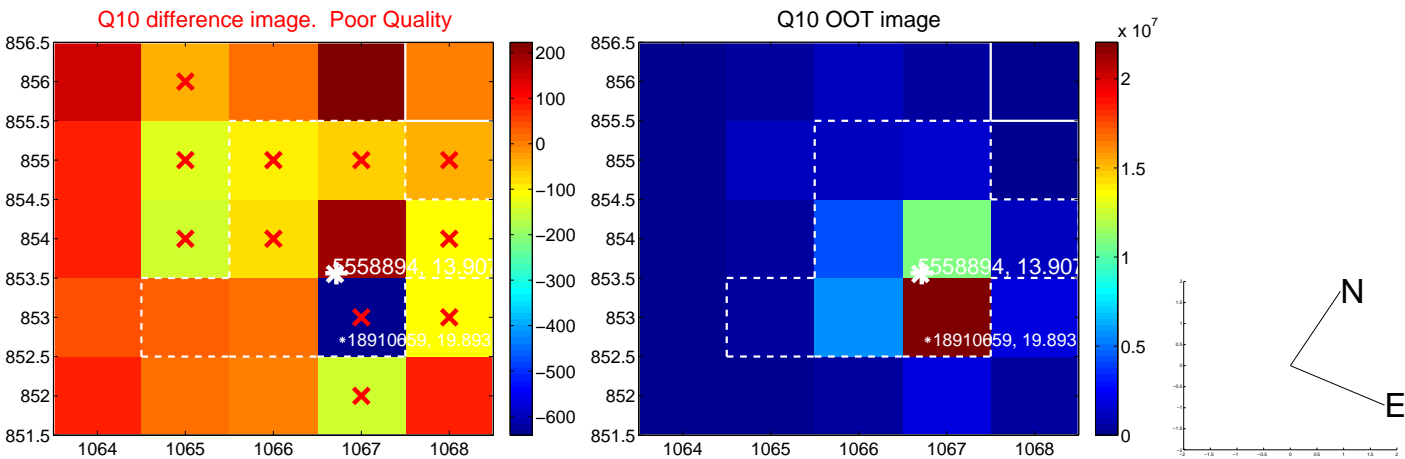
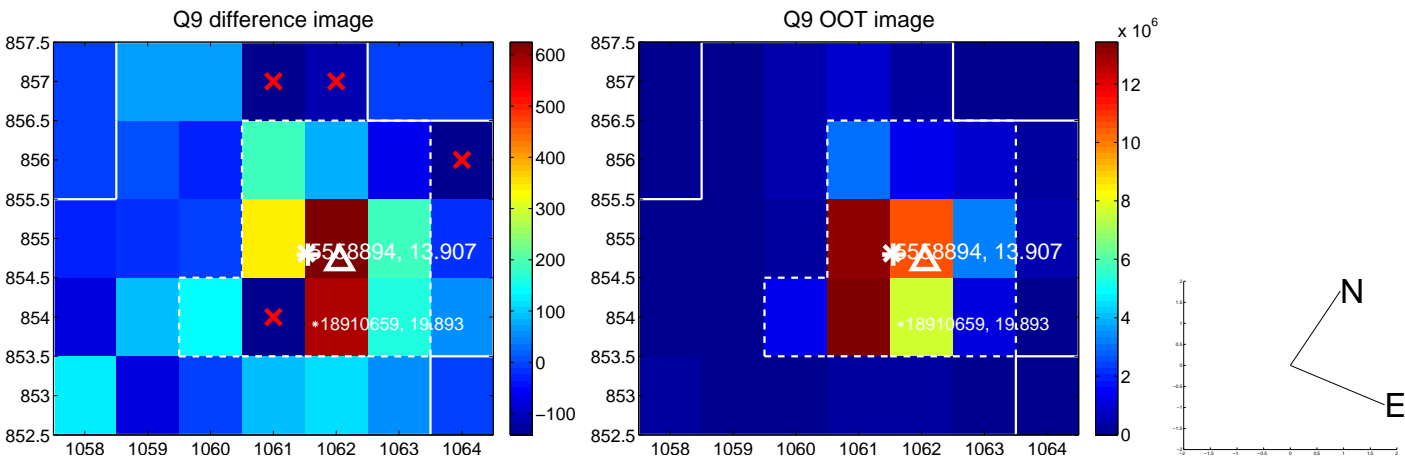


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

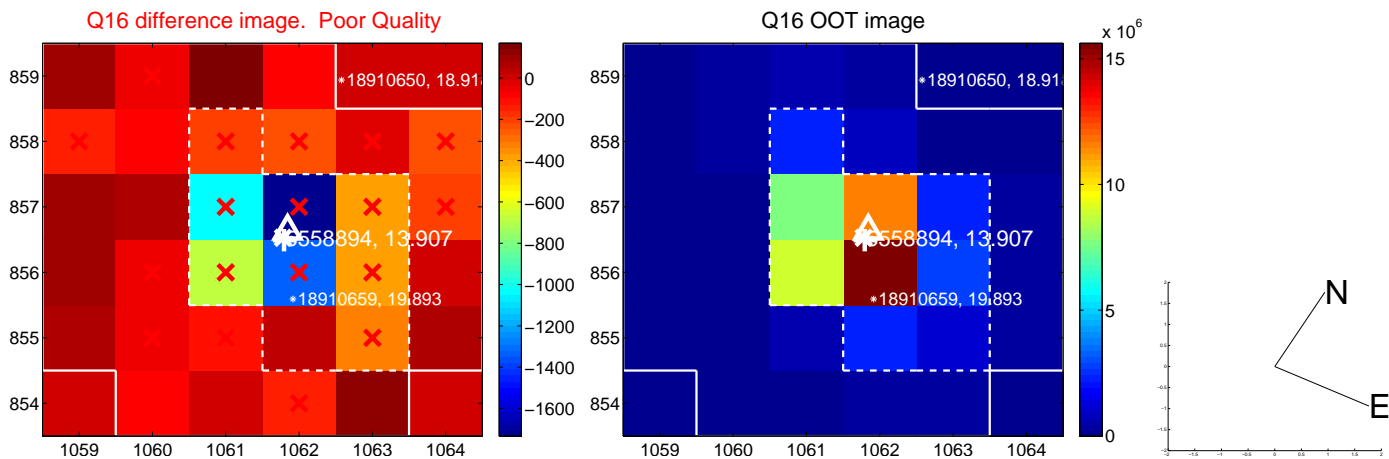
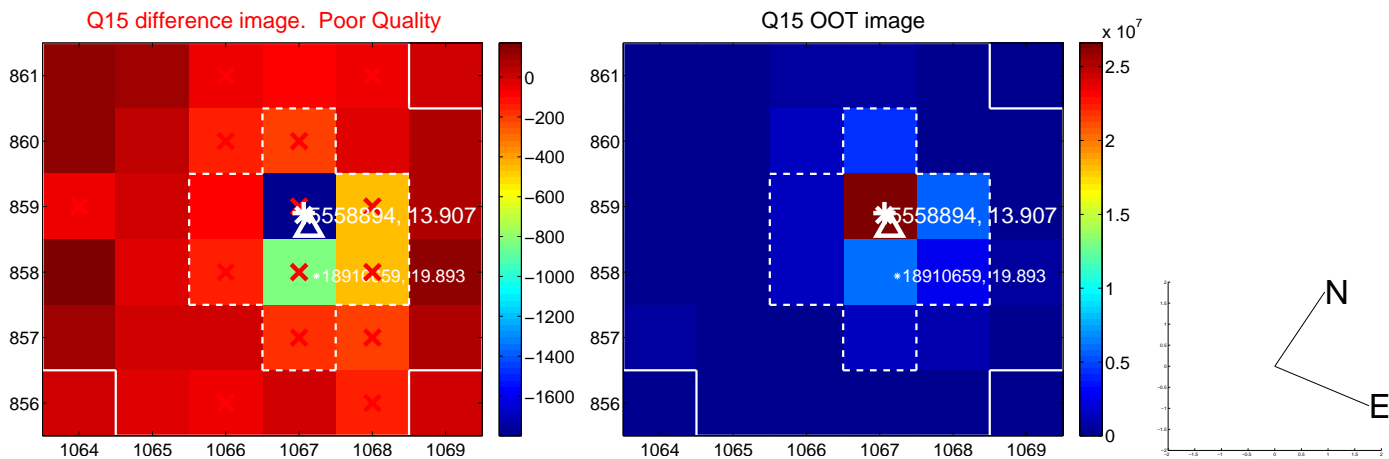
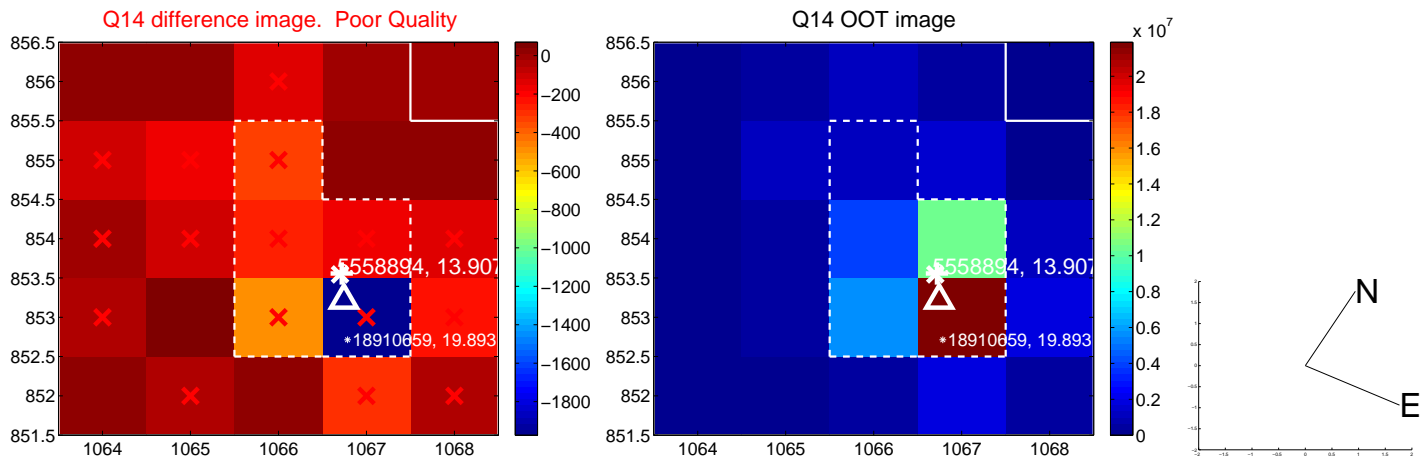
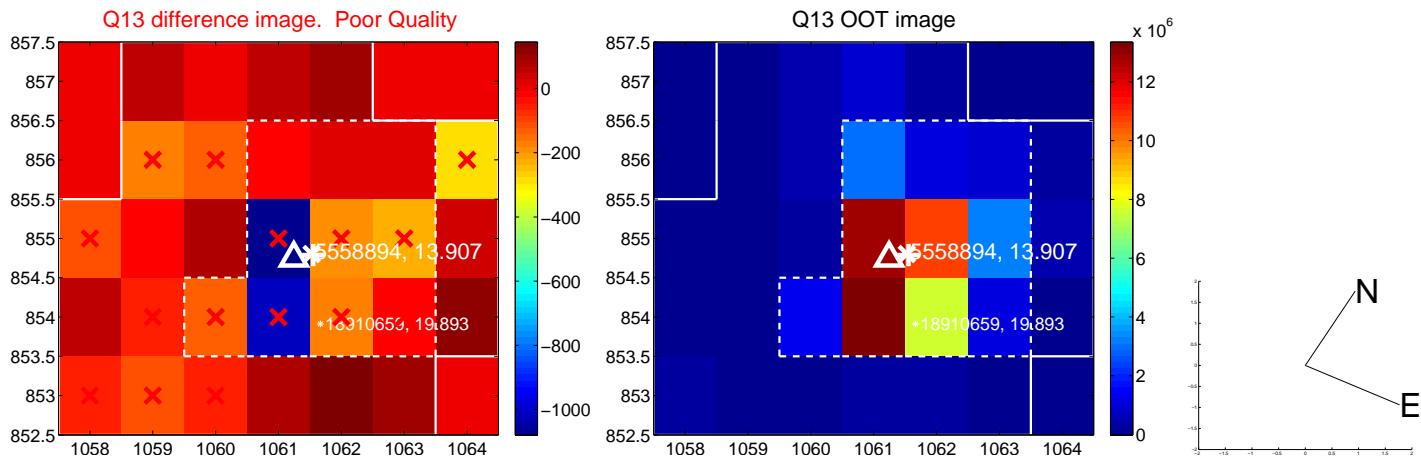
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



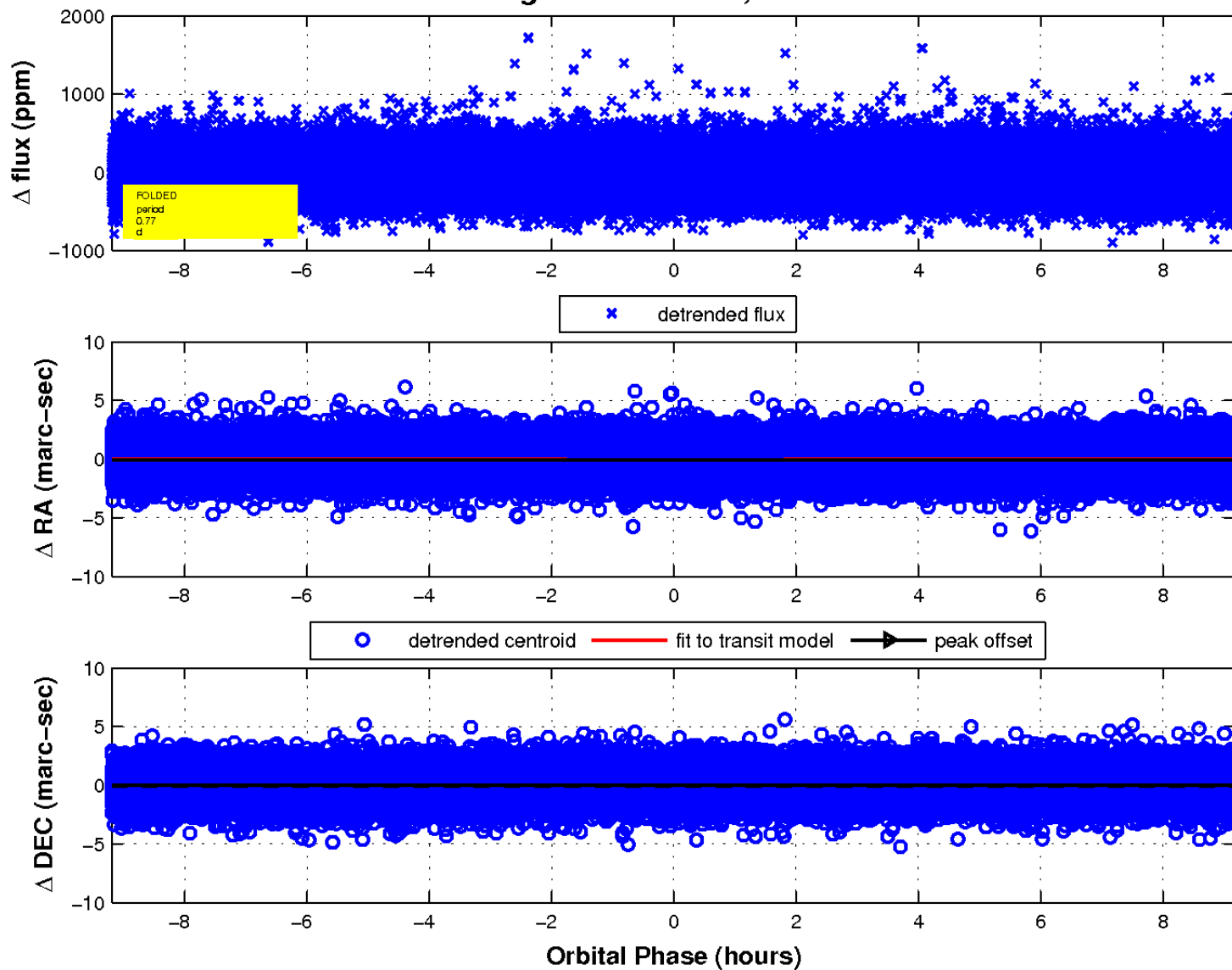
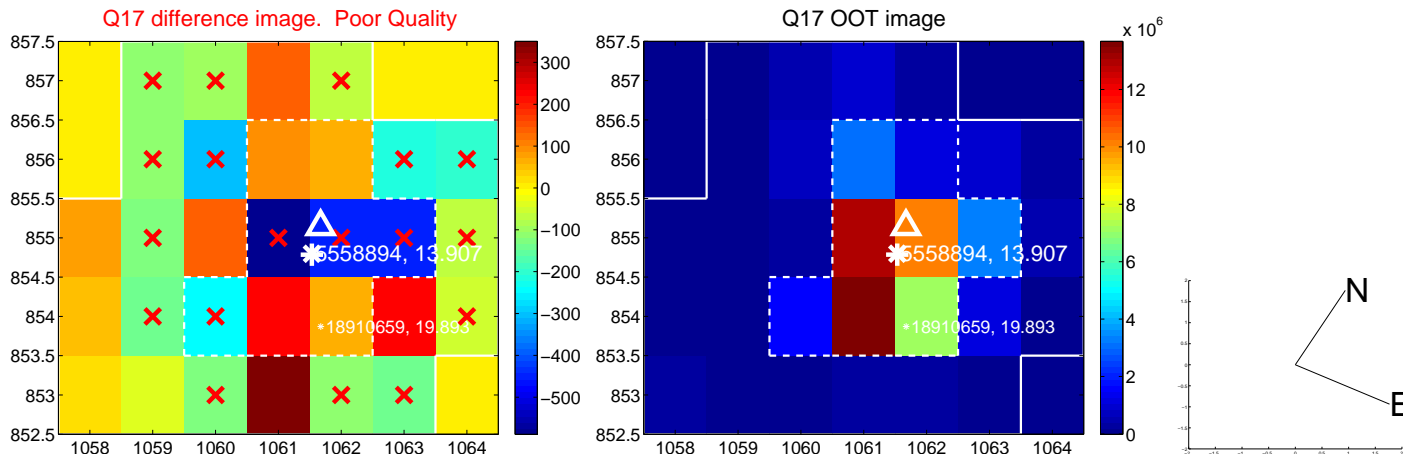
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

