

KIC 008044402

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})
008044402-01	OBS	No	2.984772	131.763008	49.2	10.500	8.2	-1.0	2.51	9613	1.80	15848.94
008044402-02	OBS	No	5.970840	132.910301	16.8	16.655	9.2	7.5	2.51	9613	1.07	6287.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008044402-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
008044402-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

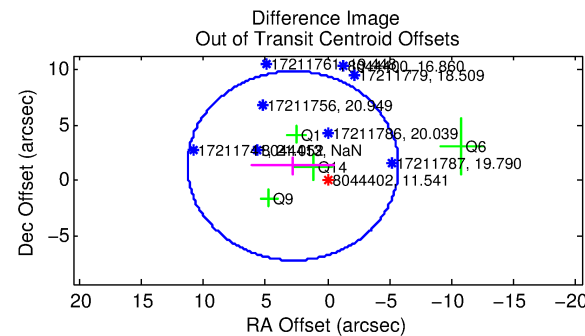
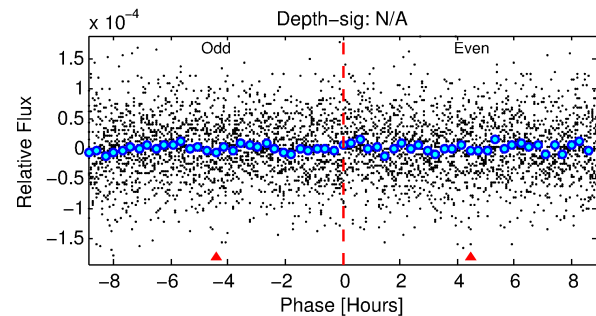
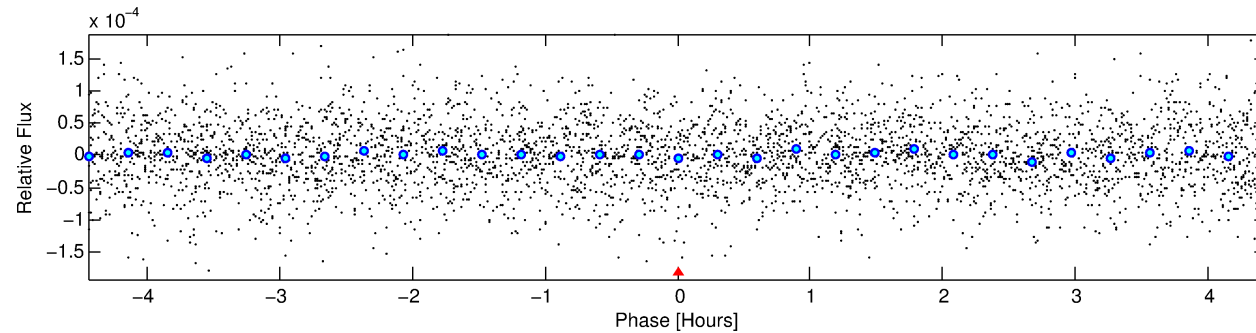
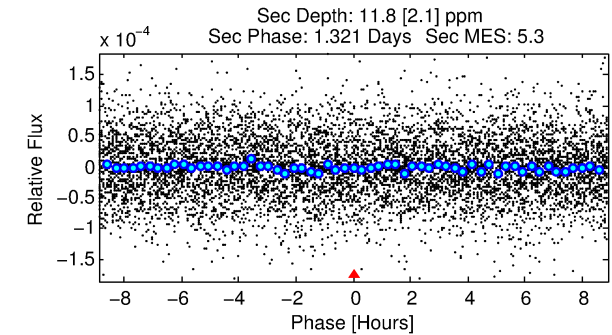
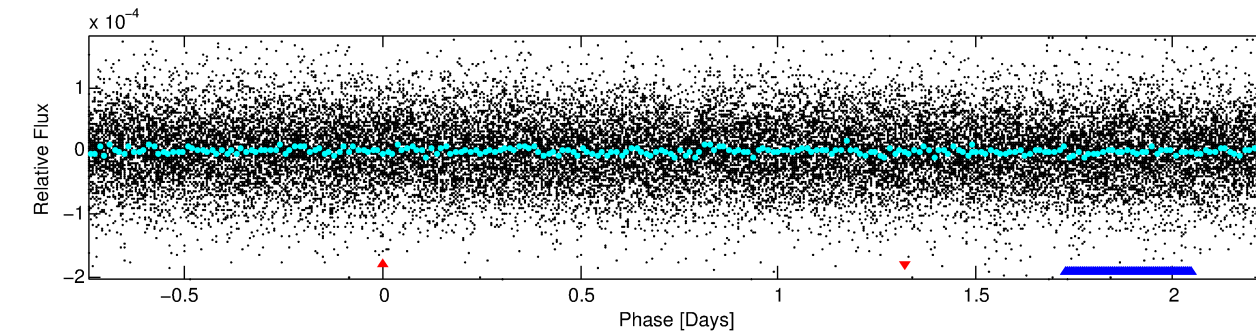
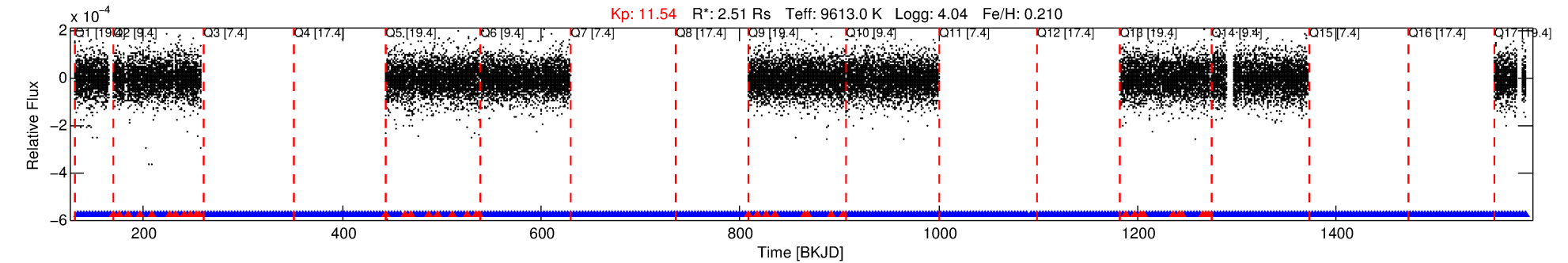
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 008044402-01

No Significant Match Found

KIC: 8044402 Candidate: 1 of 2 Period: 2.985 d



TPS TCE Results:

Period = 2.98477 d
Epoch = 131.7630 BKJD

DV fit results are unavailable

DV Diagnostic Results:

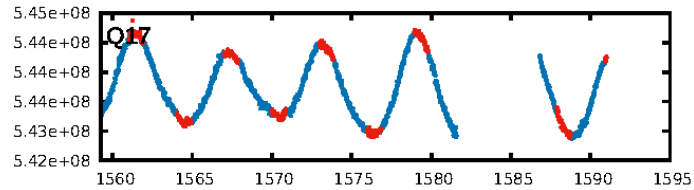
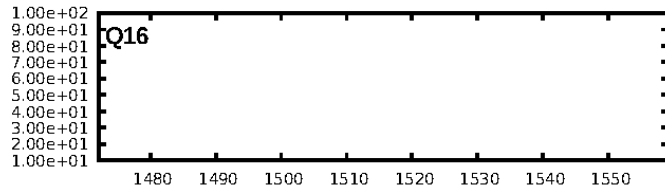
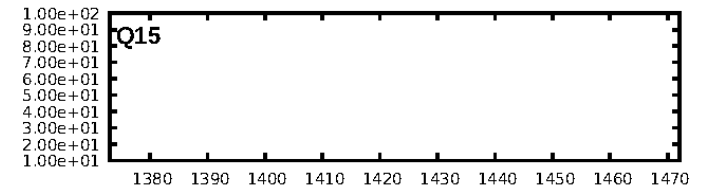
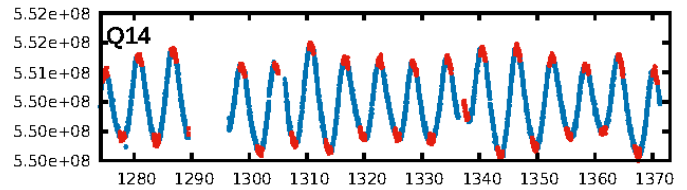
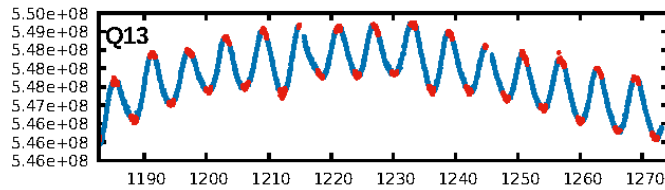
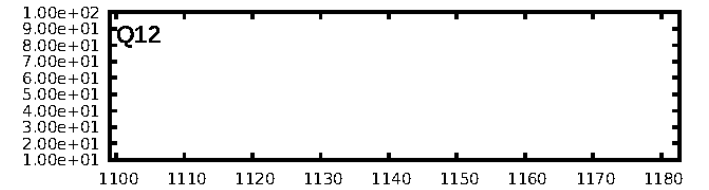
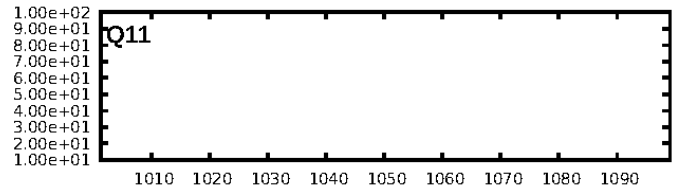
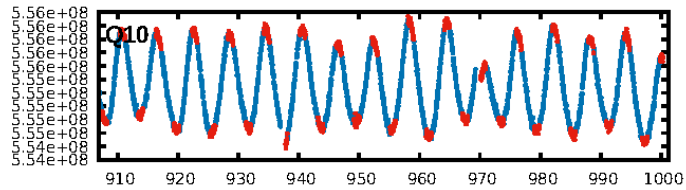
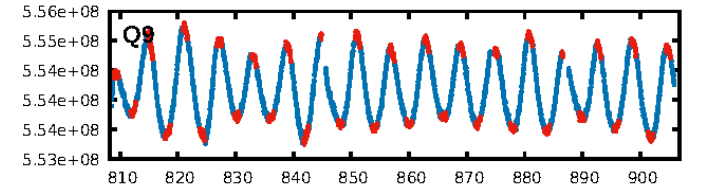
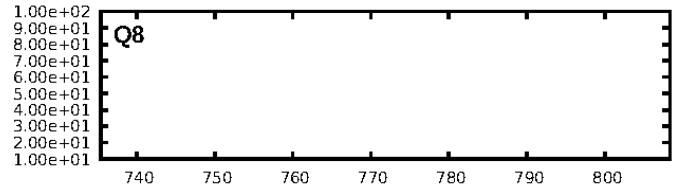
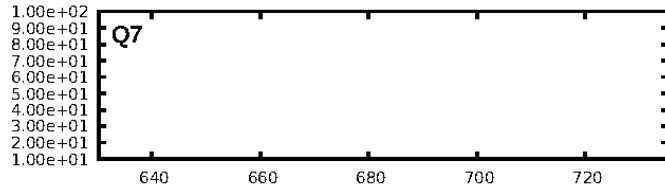
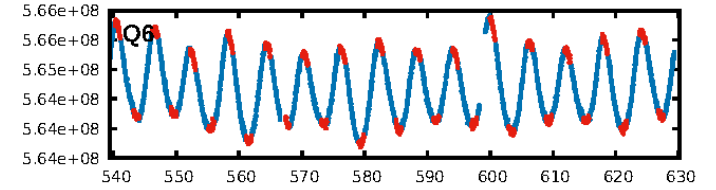
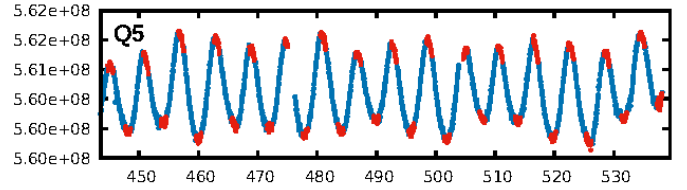
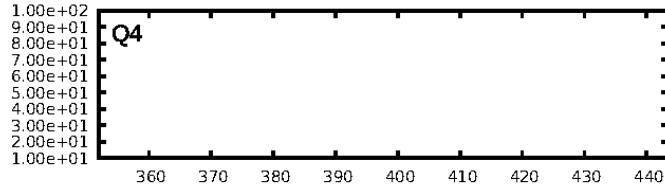
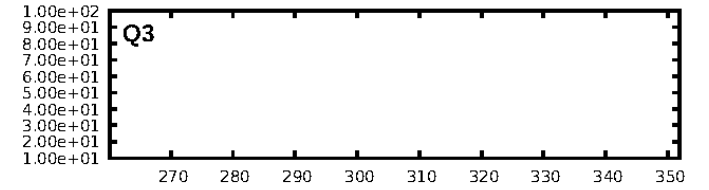
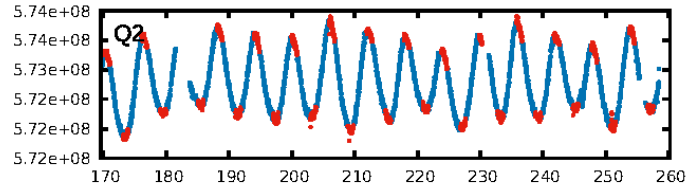
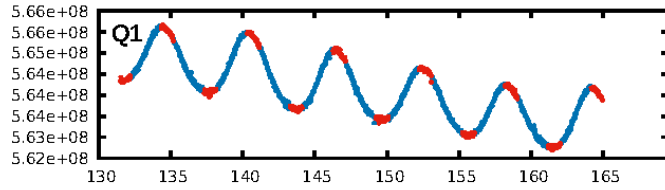
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.64σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.02e-10
RollingBand-fgt: 0.82 [172/210]
GhostDiagnostic-chr: N/A

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 3.090 arcsec [1.09σ]
KicOffset-rm: 3.064 arcsec [1.27σ]
OotOffset-st: 2/0/0/2 [4]
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DiffImageOverlap-fno: 1.00 [9/9]

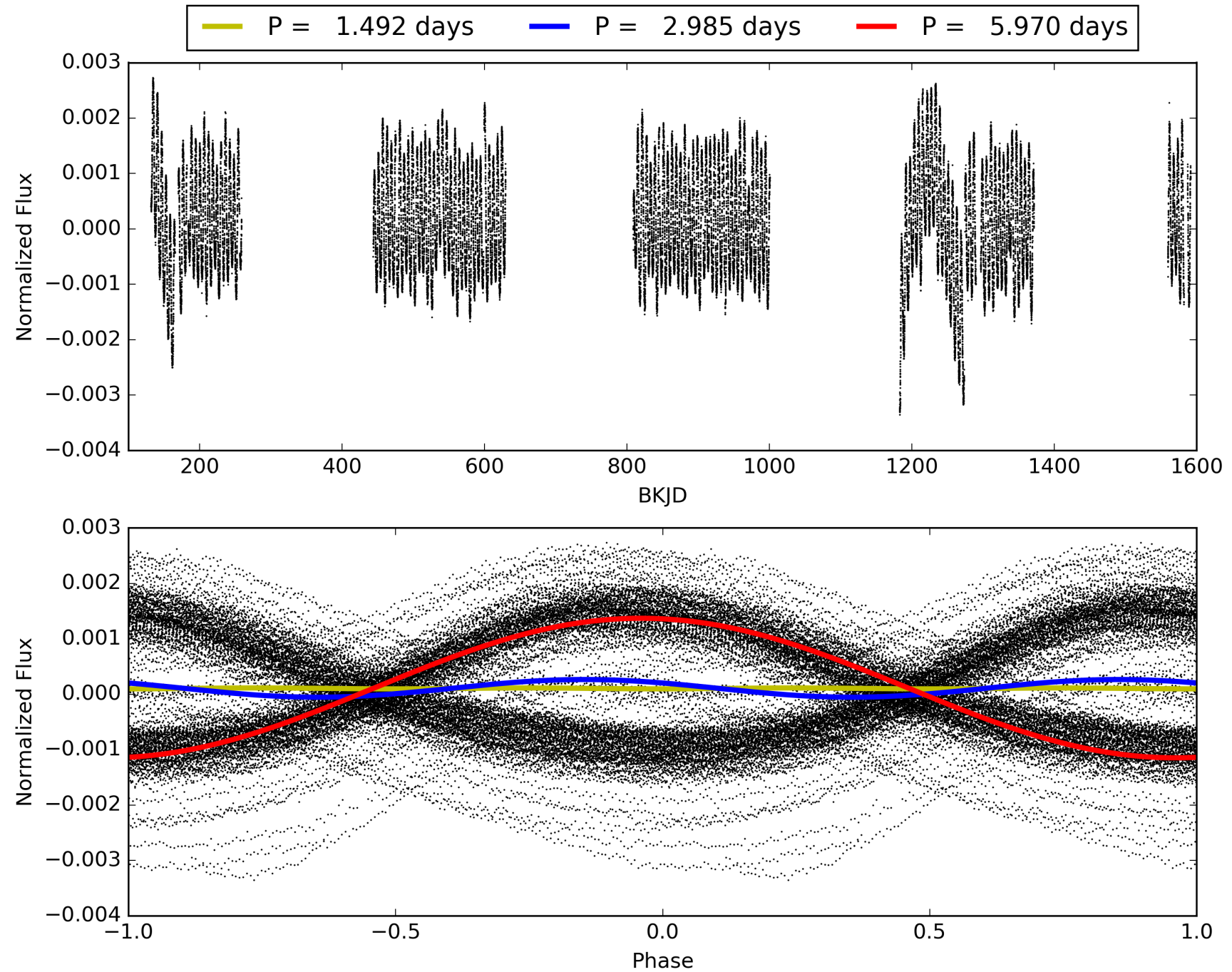
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- **Date Generated:** 30-Jan-2016 21:09:01 Z

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

TCE 008044402-01, PDC Light Curves

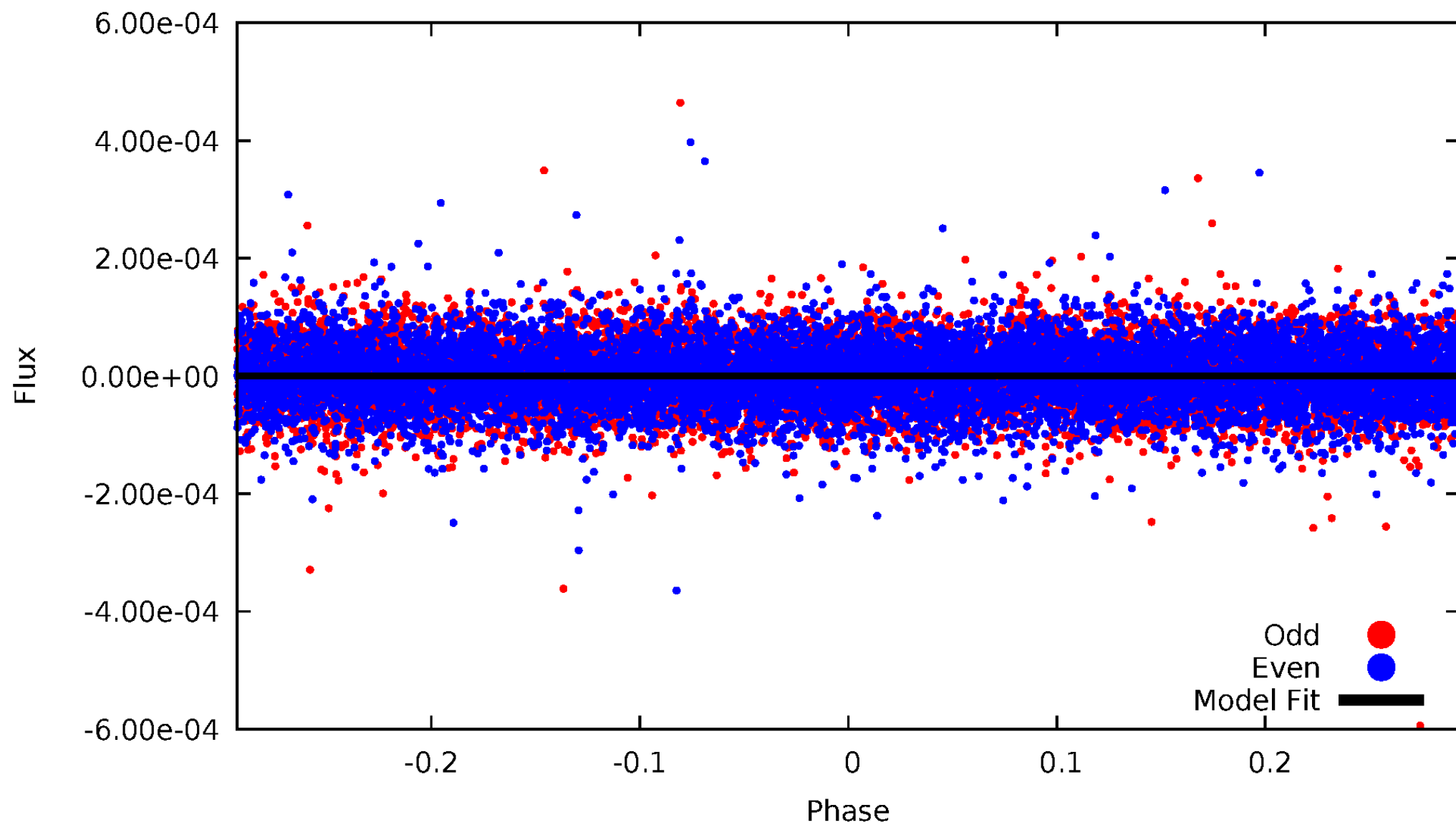


TCE 008044402-01



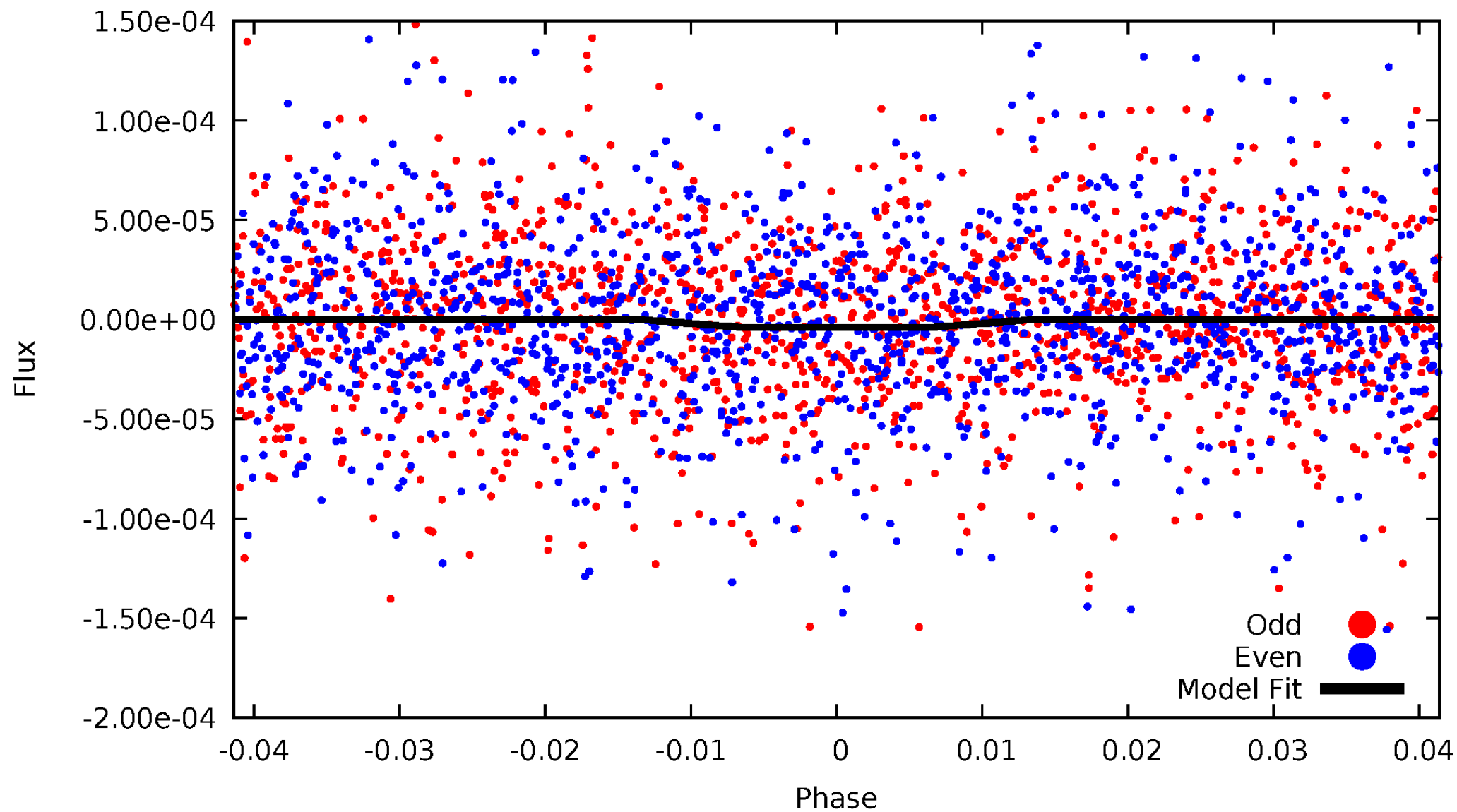
DV Odd/Even

TCE 008044402-01



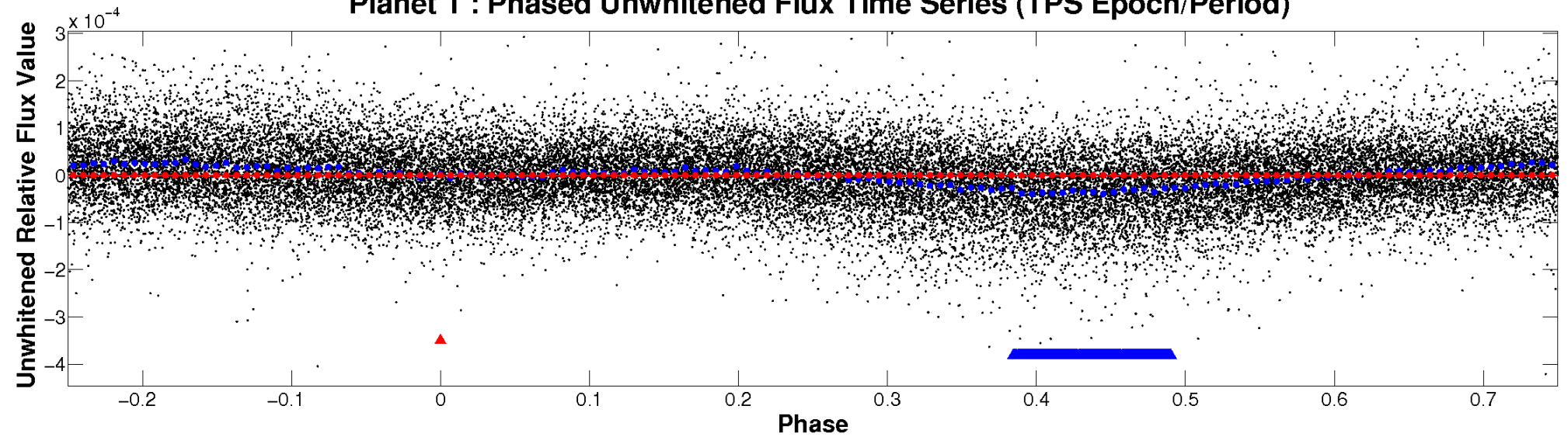
ALT Odd/Even

TCE 008044402-01



Non-Whitened Vs. Whitened Light Curve

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

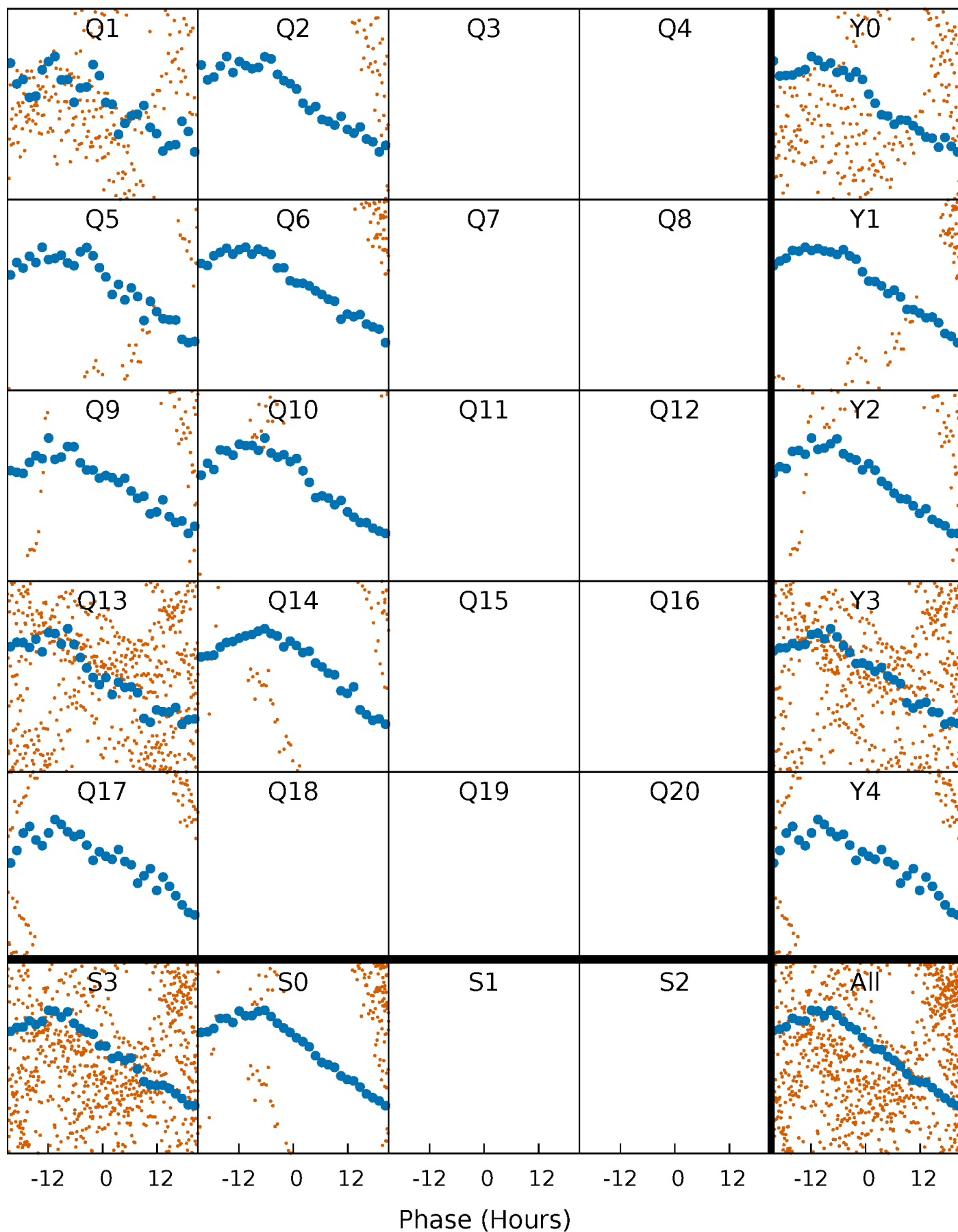


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



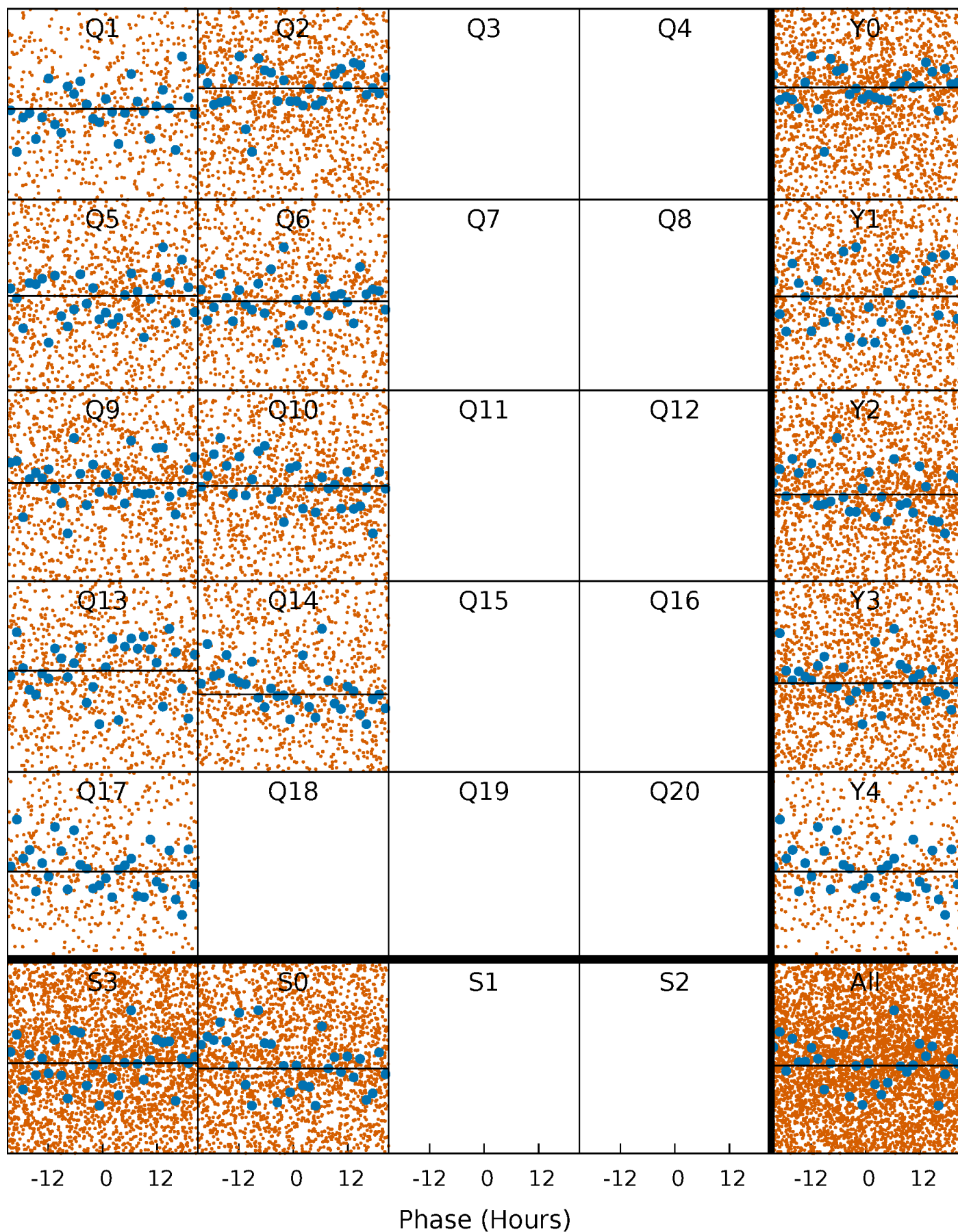
PDC Quarter-Phased Transit Curves

TCE 008044402-01 P= 2.984772 Days $T_0=131.763008$ (BKJD)



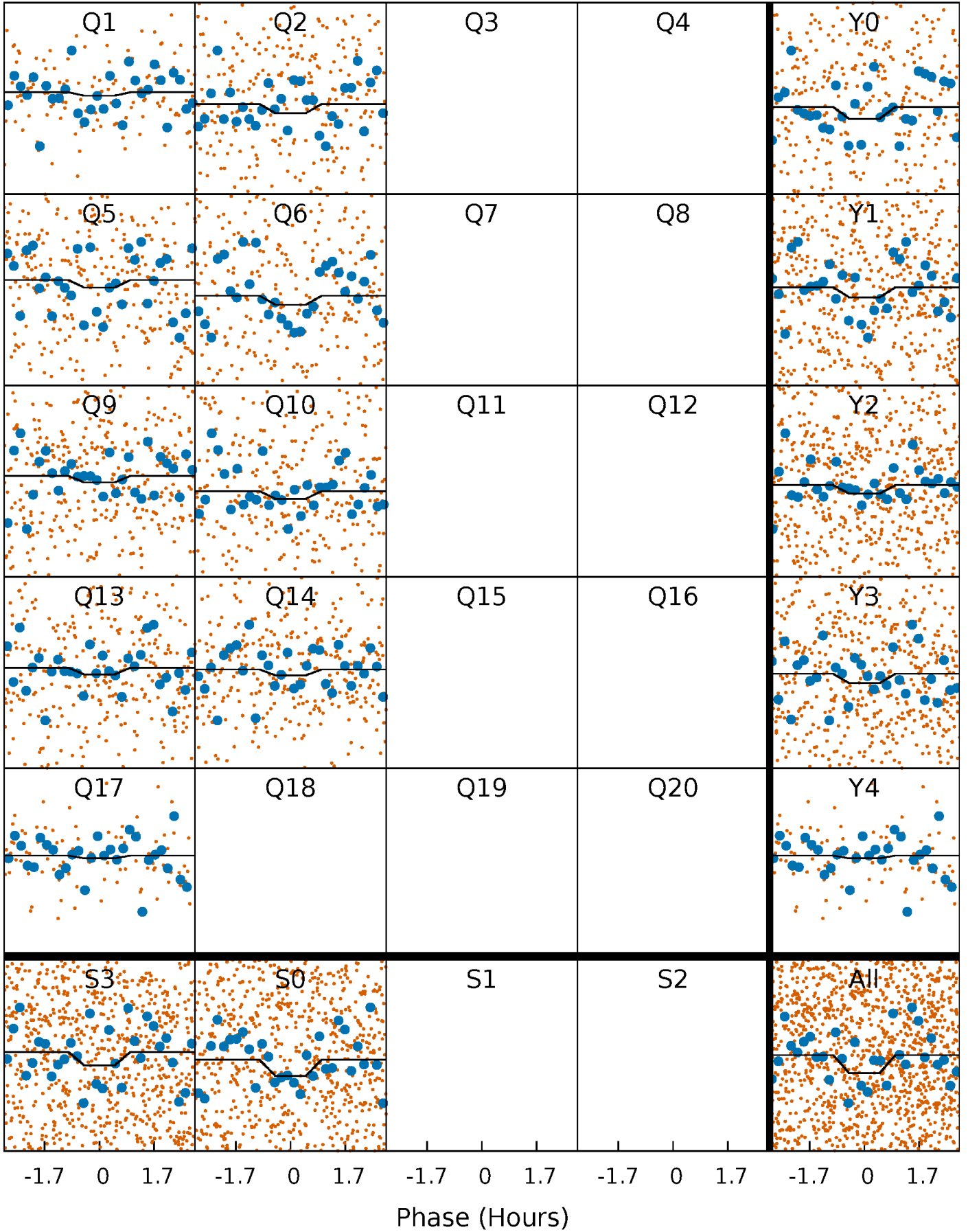
DV Quarter-Phased Transit Curves

TCE 008044402-01 P= 2.984772 Days $T_0=131.763008$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

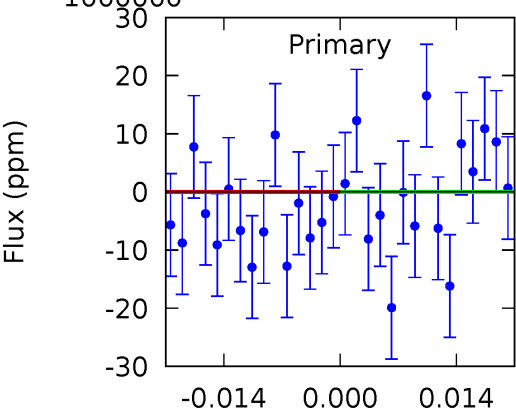
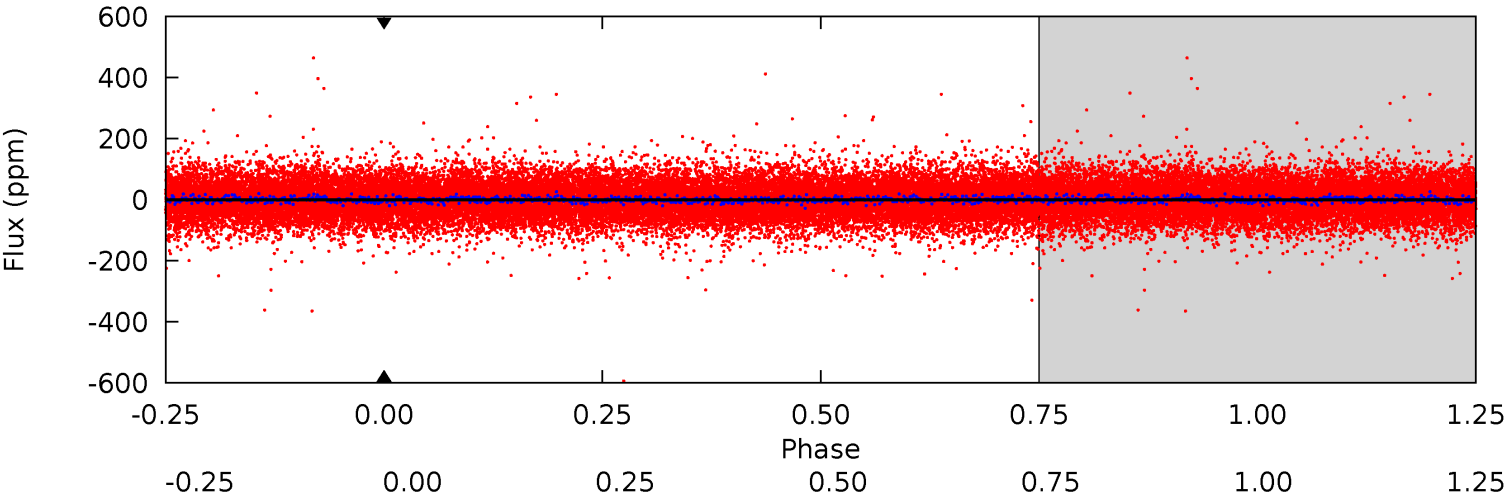
TCE 008044402-01 P= 2.984772 Days $T_0=134.165427$ (BKJD)



DV Model-Shift Uniqueness Test

008044402-01, P = 2.984772 Days, E = 128.778236 Days

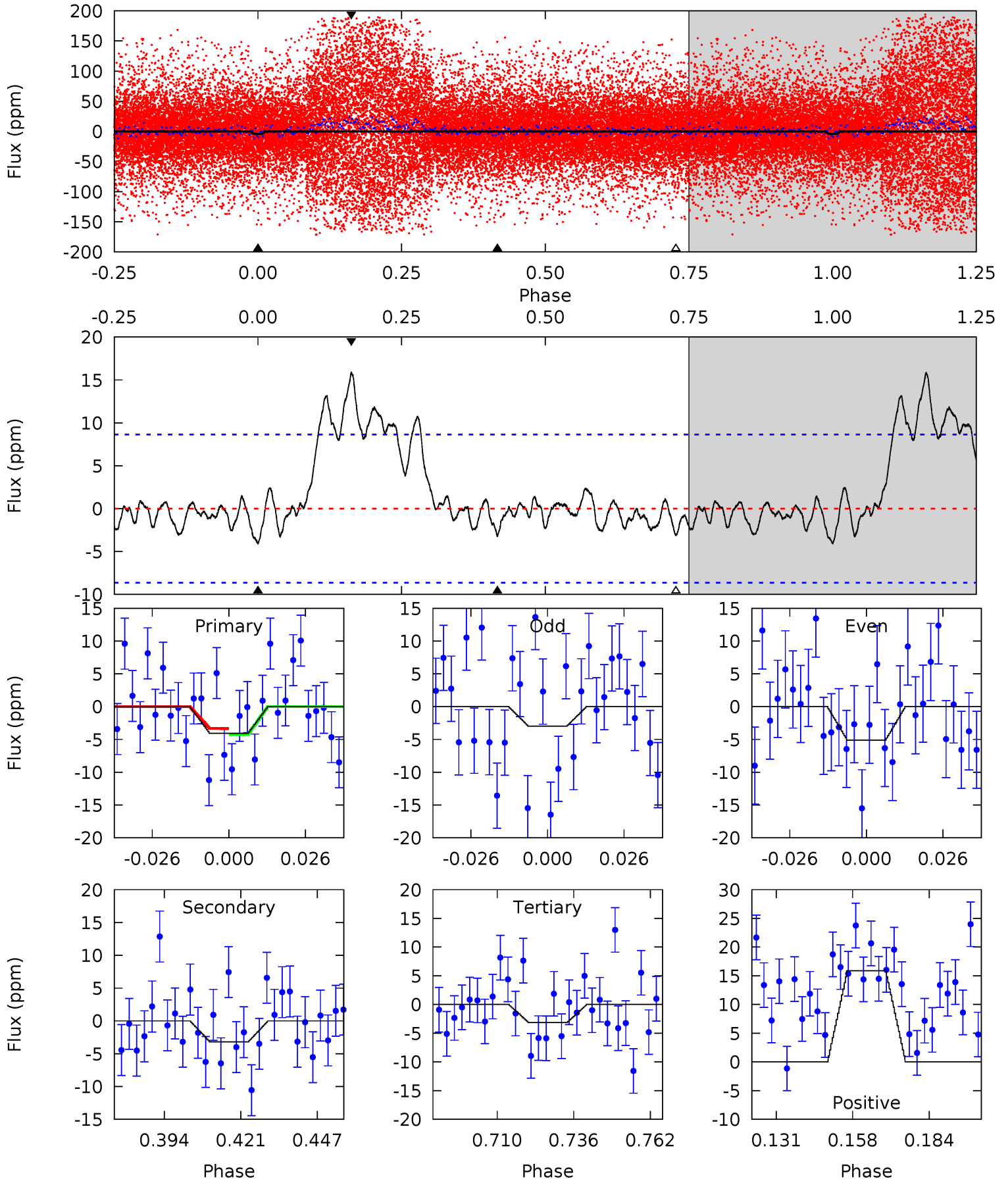
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008044402-01, P = 2.984772 Days, E = 131.180655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.27	1.79	1.76	8.90	4.84	2.22	2.48	0.51	-6.63	0.03	-7.11	0.59	3.90	0.80	0.25



Stellar Parameters For KIC 008044402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9613^{+270}_{-405}	$4.038^{+0.136}_{-0.204}$	$0.210^{+0.150}_{-0.250}$	$2.508^{+0.901}_{-0.485}$	$2.504^{+0.378}_{-0.309}$	$0.224^{+0.134}_{-0.125}$
	+3%/-4%	+3%/-5%	+71%/-119%	+36%/-19%	+15%/-12%	+60%/-56%
Source	KIC0	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 008044402-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$19.64^{+20.65}_{-13.84}$	4003^{+319}_{-270}	4339^{+82579}_{-66842}	$1.347^{+800.624}_{-602.400}$
Alt.	-3 ± 2	$19.20^{+20.64}_{-13.52}$	4015^{+330}_{-278}	-3467^{+339}_{-200}	$0.012^{+0.135}_{-0.009}$

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 $A_{obs} \gg 1.0$

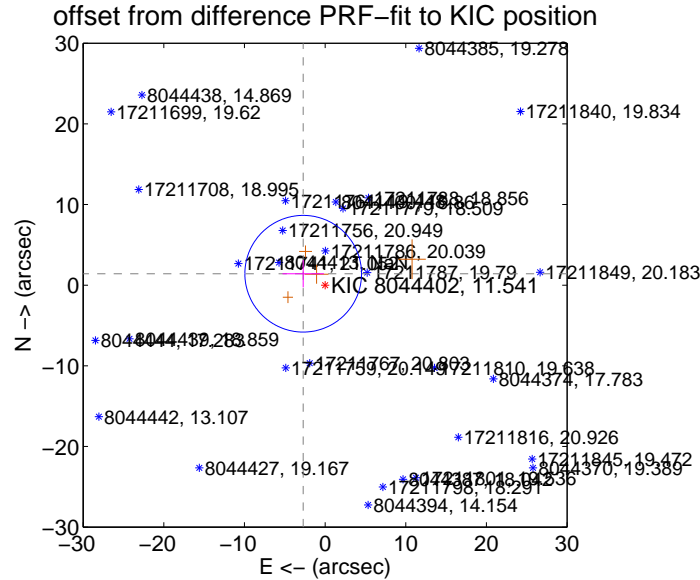
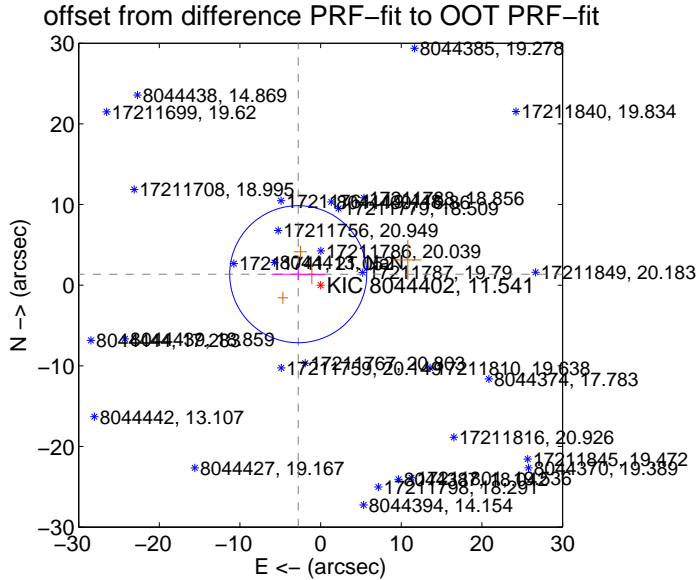
DV Centroid Data

Supplemental centroid analysis for 008044402-01. **Kepler magnitude: 11.54.** Transit SNR -1.00

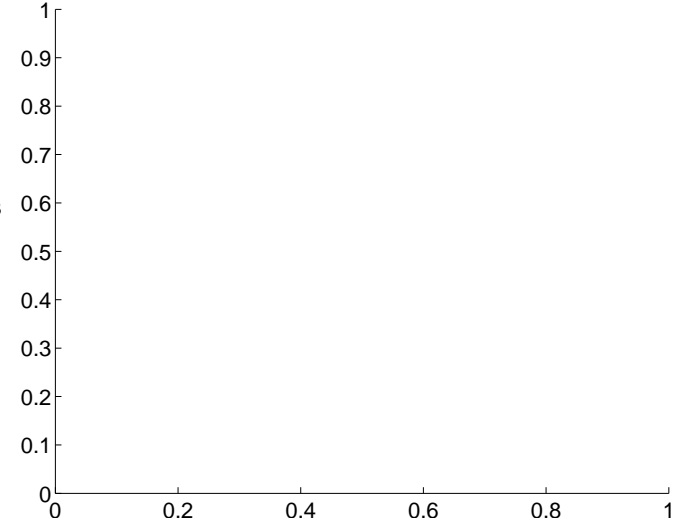
There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.090 ± 2.832	1.09	2.775 ± 3.303	1.359 ± 0.737
PRF-fit source offset from KIC position	3.064 ± 2.411	1.27	2.716 ± 2.571	1.417 ± 1.697
photometric centroid source offset	—	—	—	—

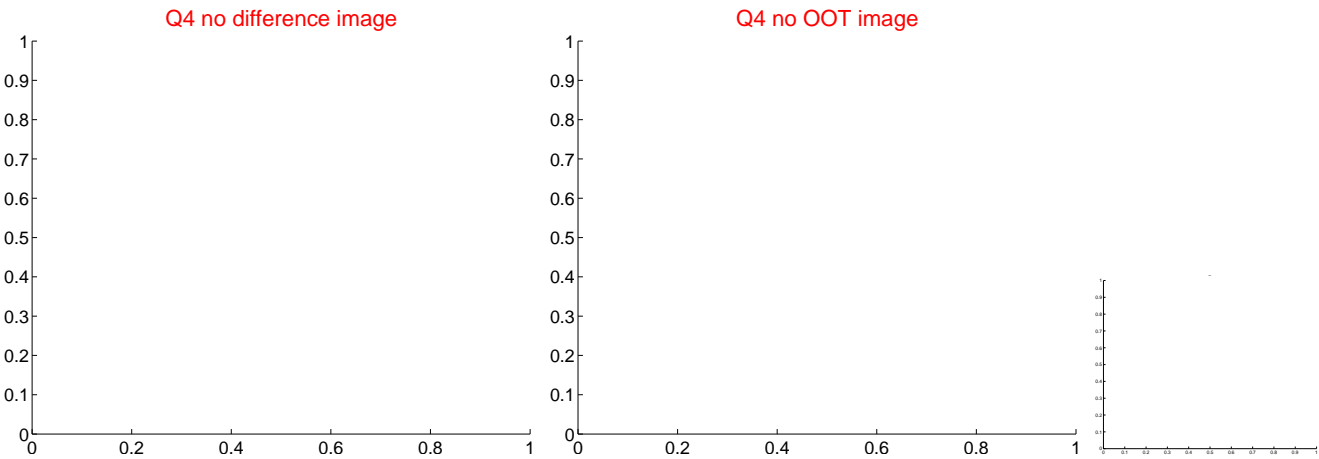
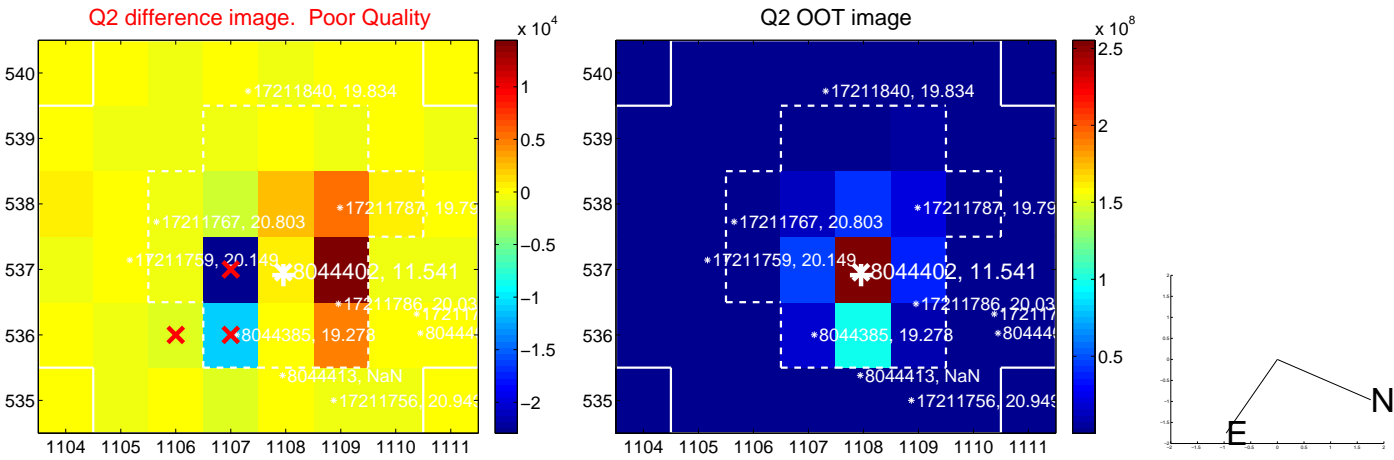
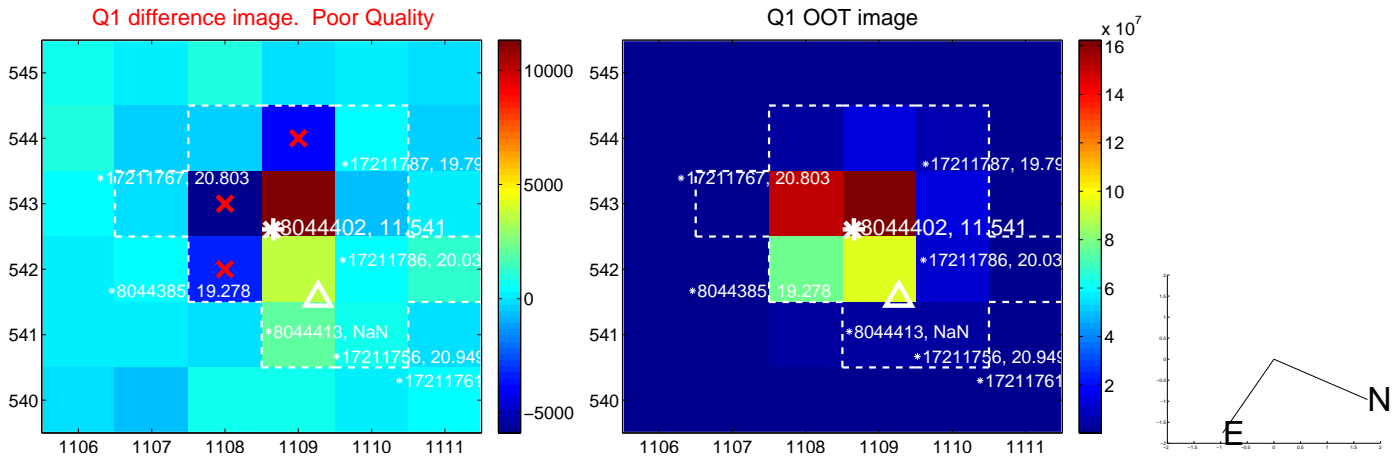


There are no photometric centroids

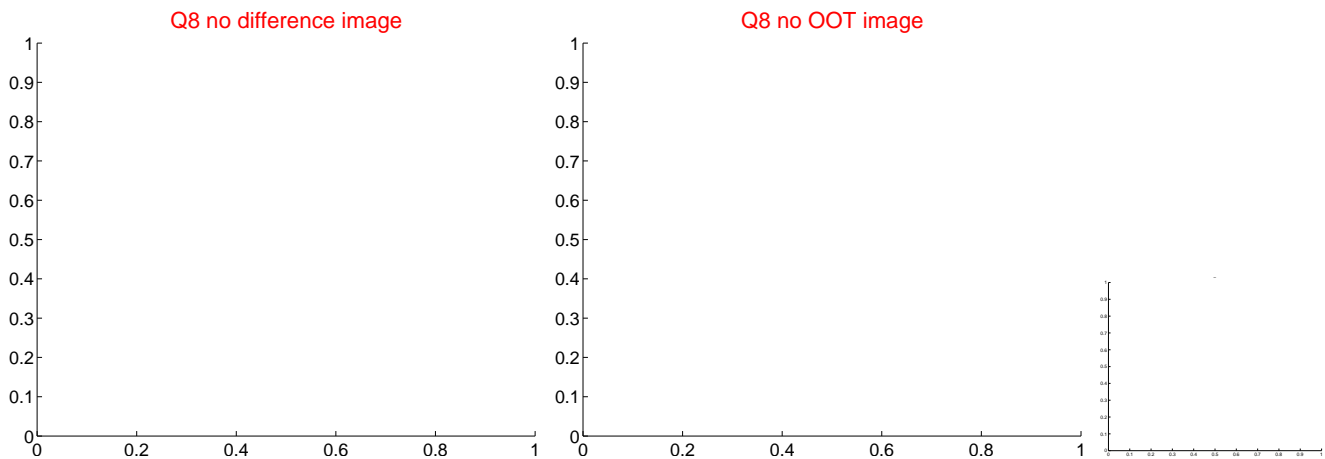
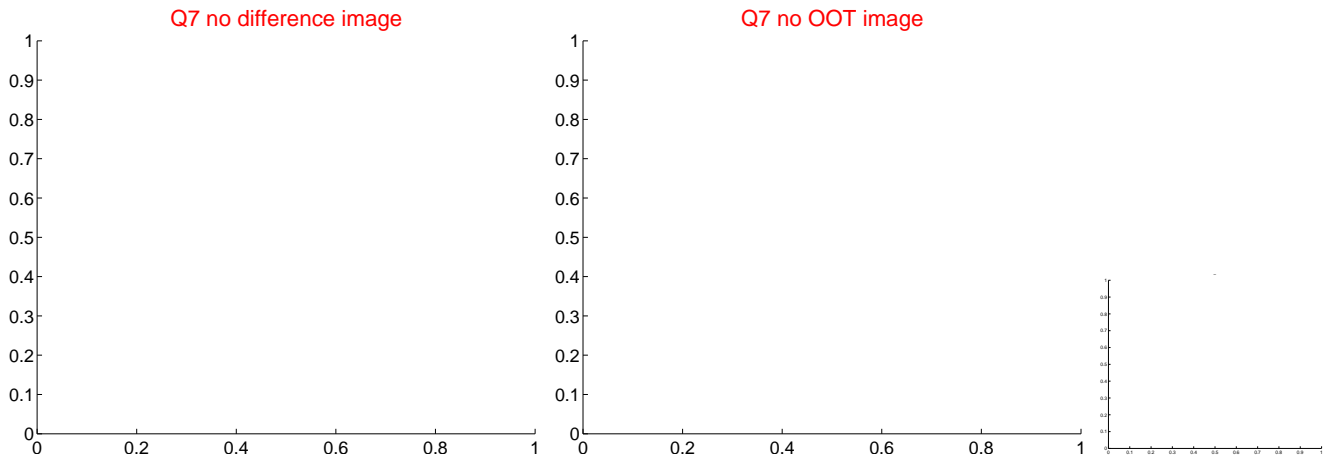
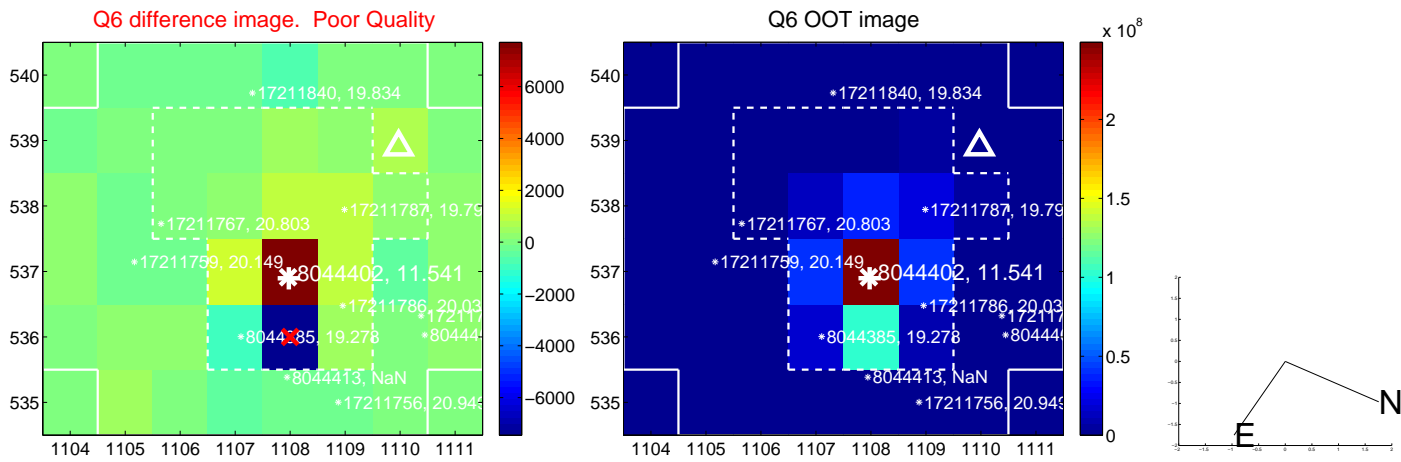
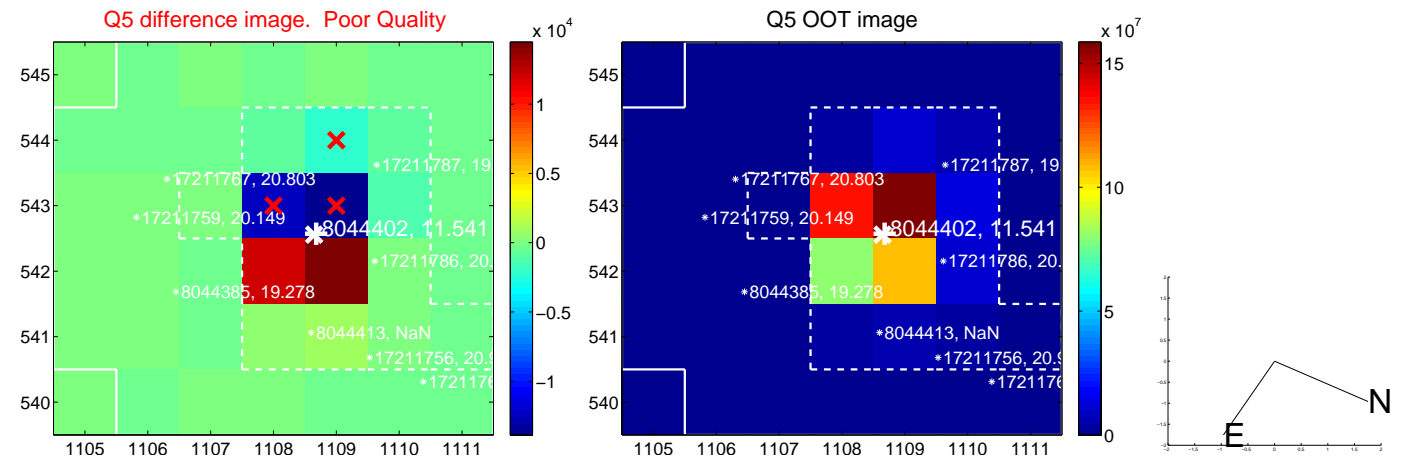


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

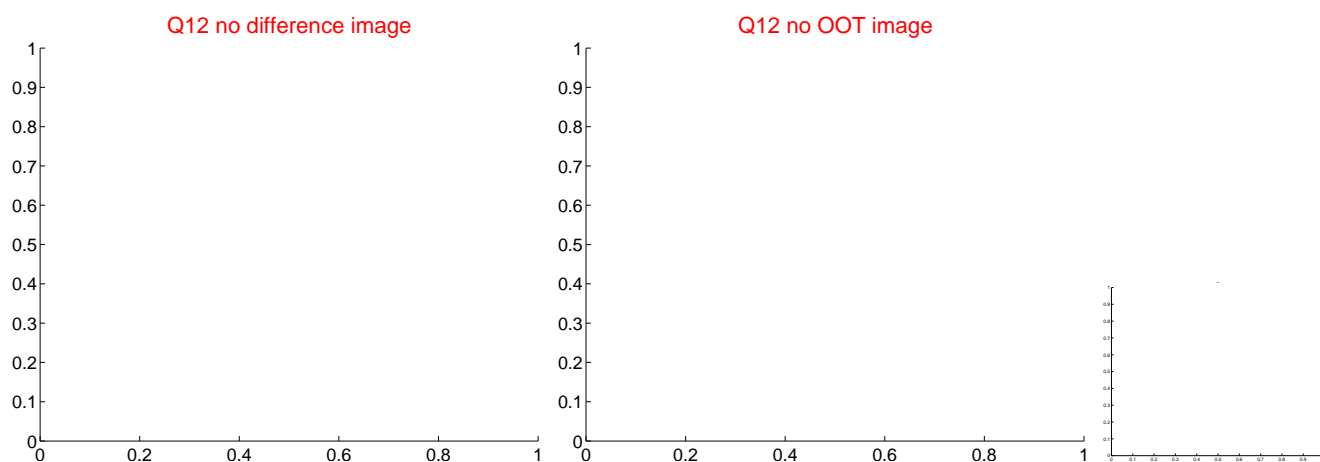
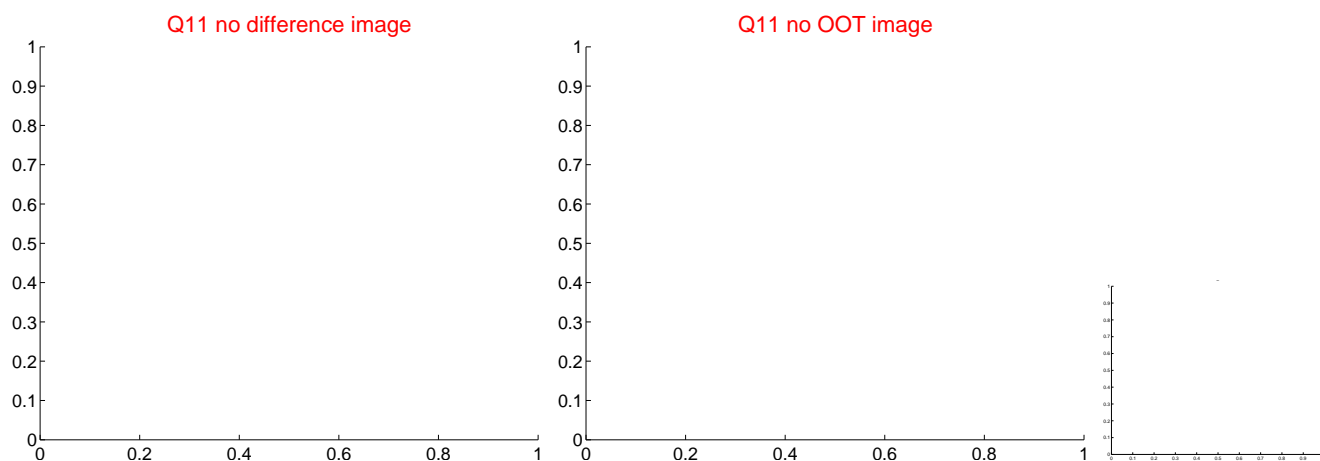
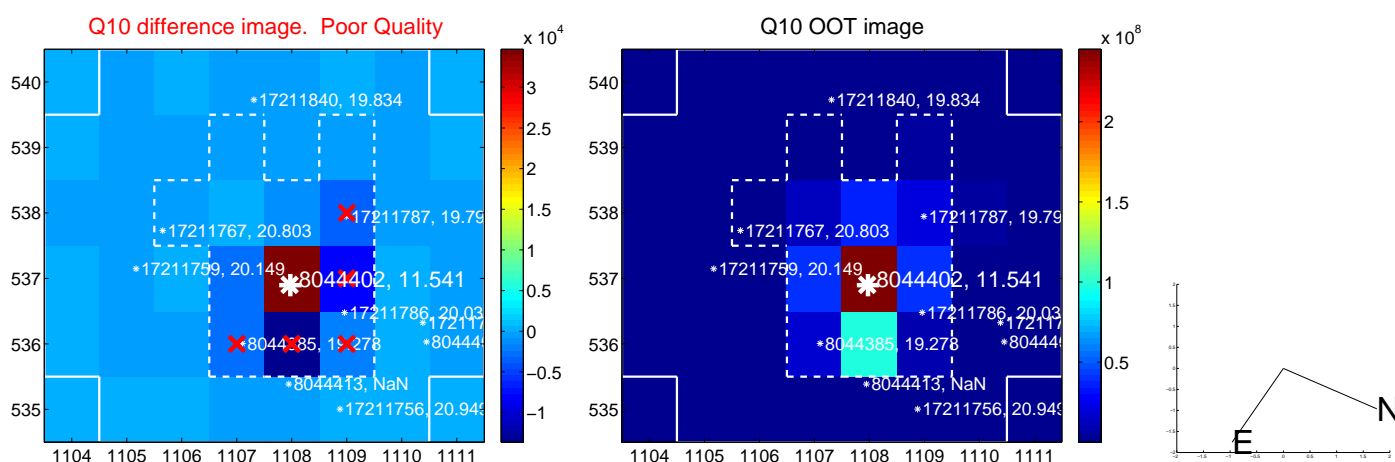
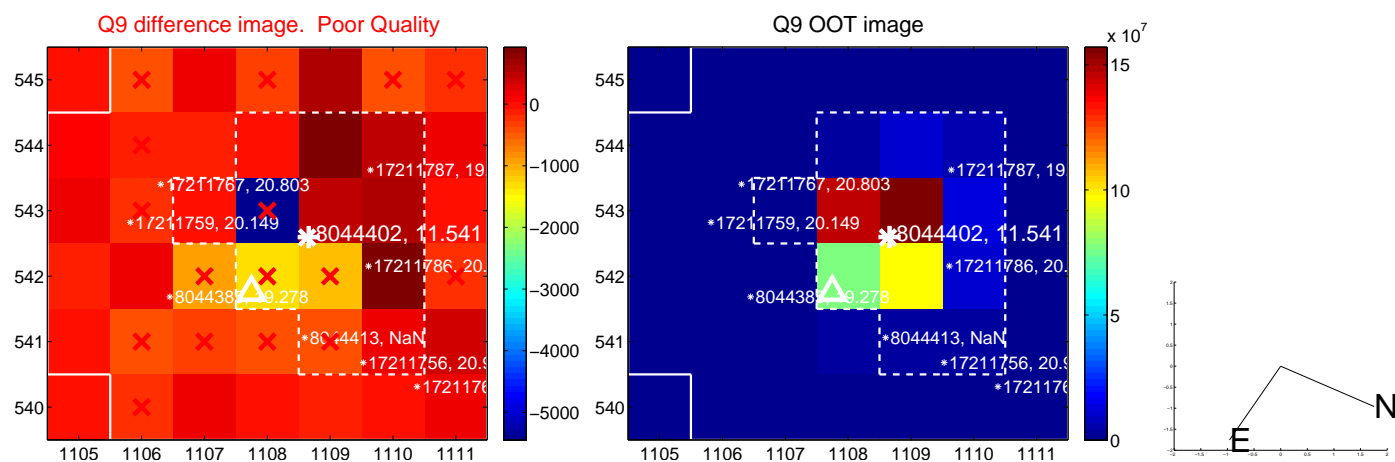
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



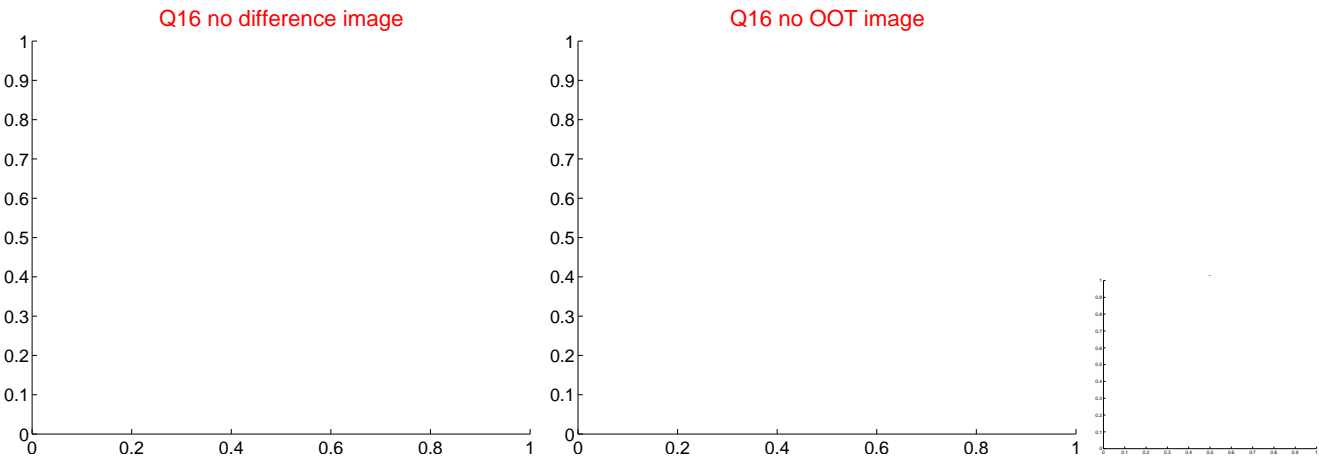
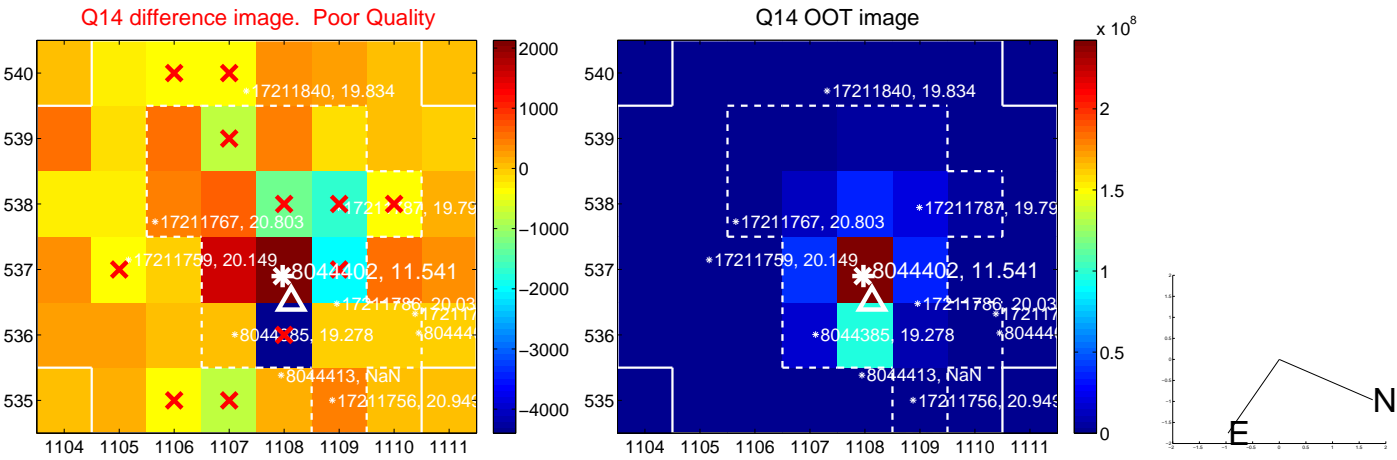
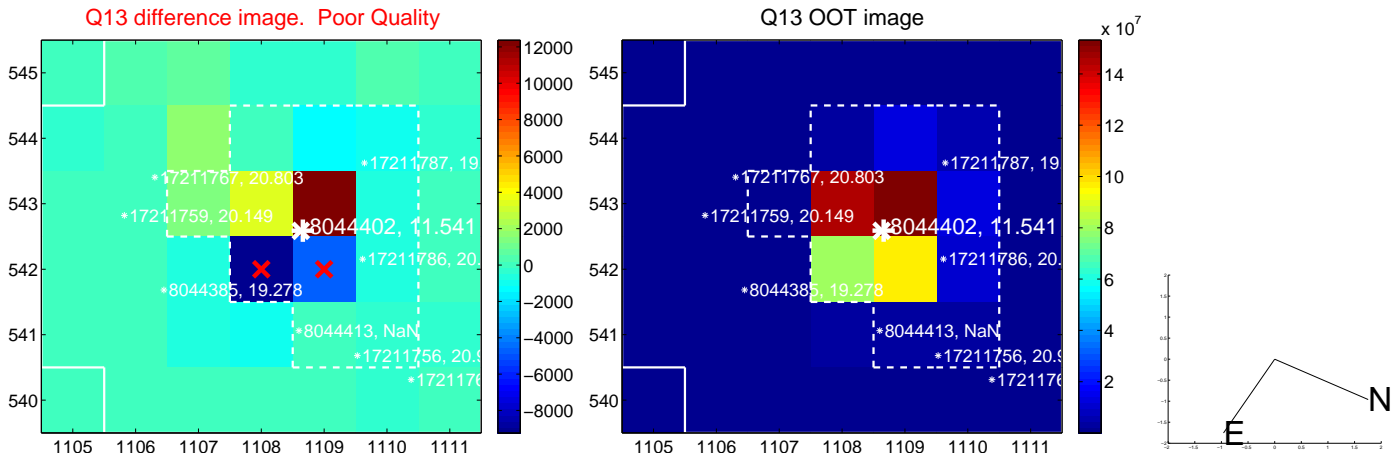
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



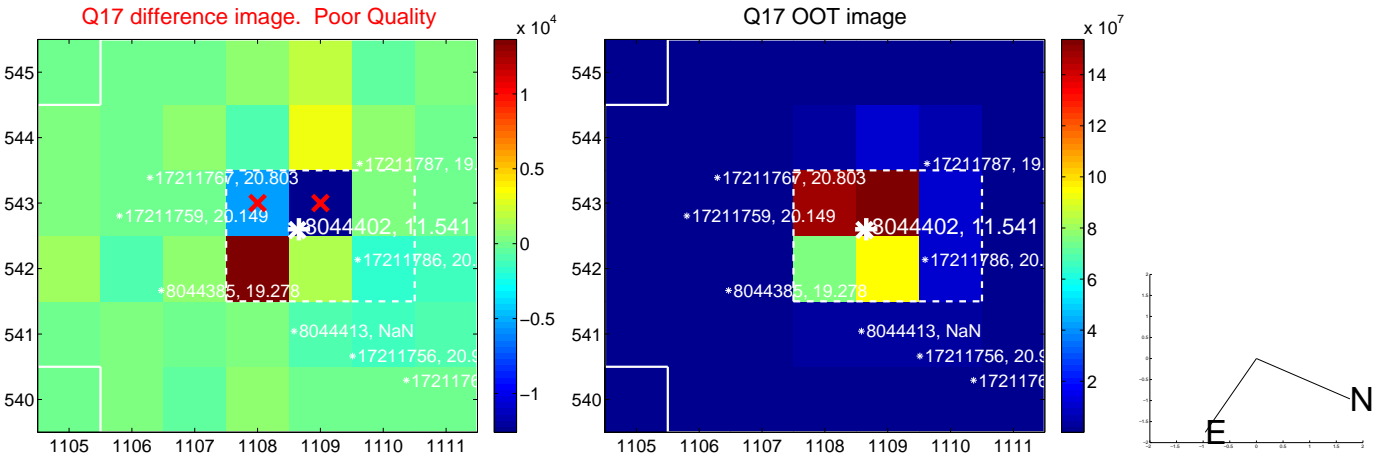
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



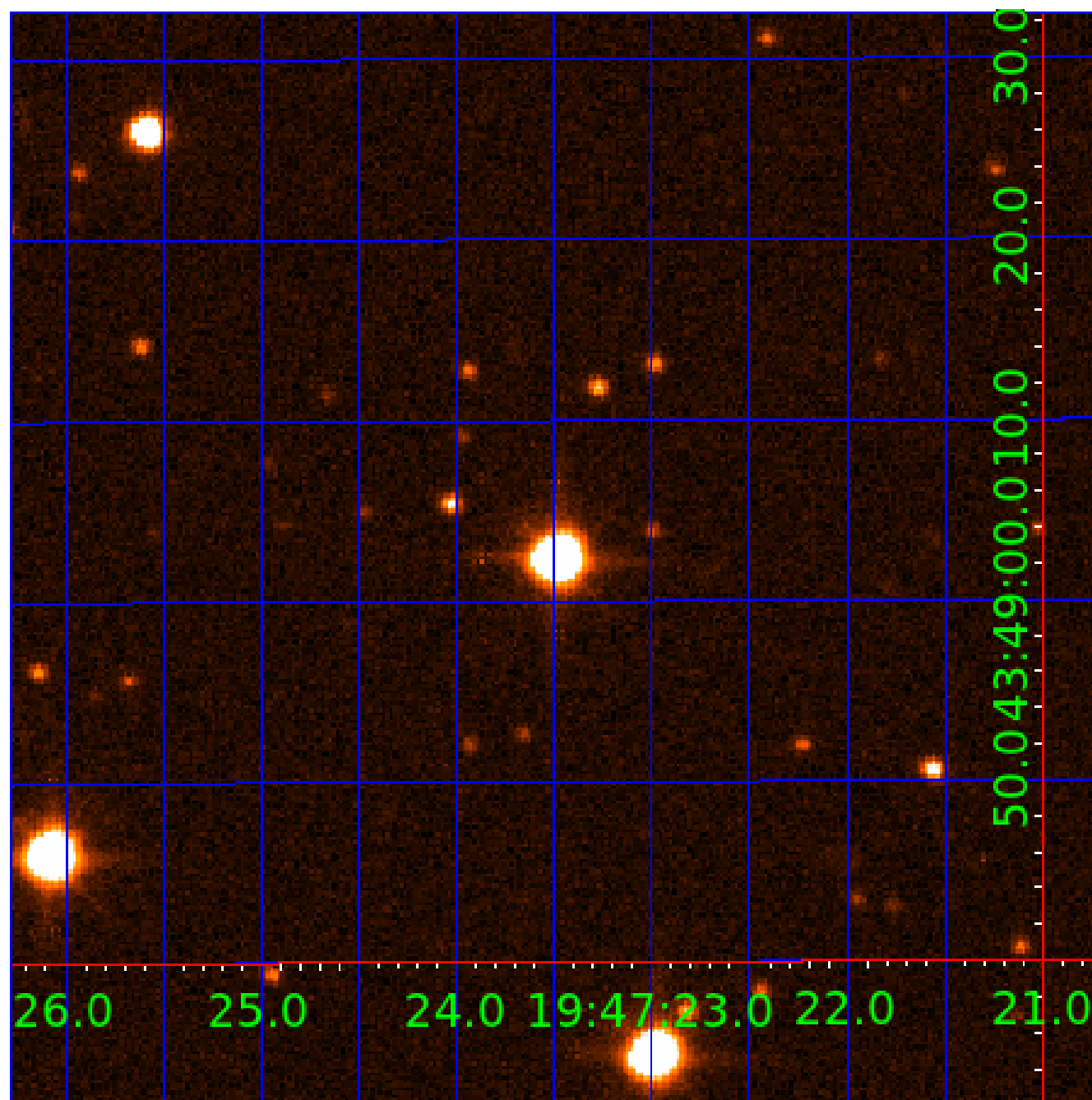
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 008044402

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})
008044402-01	OBS	No	2.984772	131.763008	49.2	10.500	8.2	-1.0	2.51	9613	1.80	15848.94
008044402-02	OBS	No	5.970840	132.910301	16.8	16.655	9.2	7.5	2.51	9613	1.07	6287.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008044402-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
008044402-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

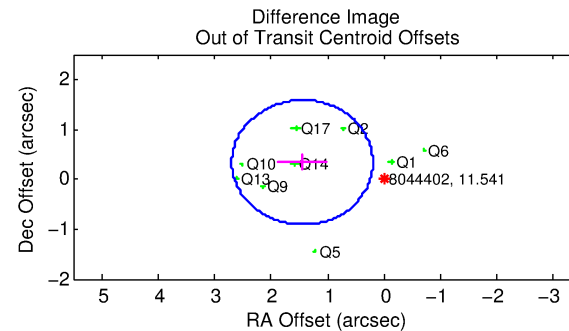
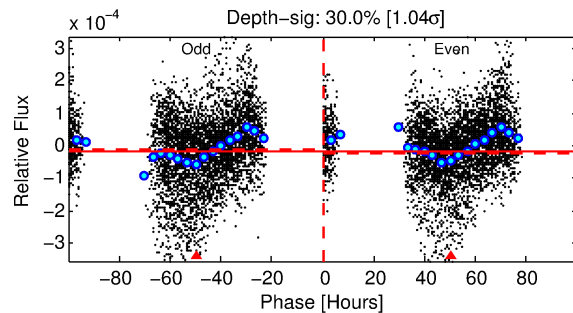
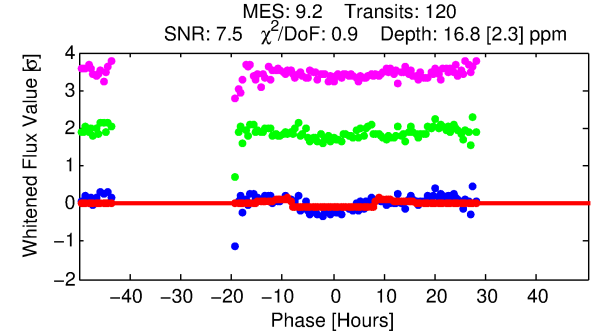
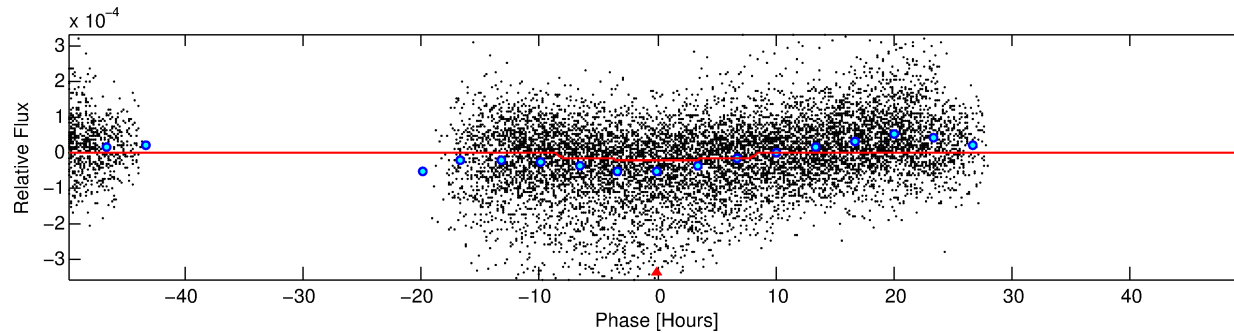
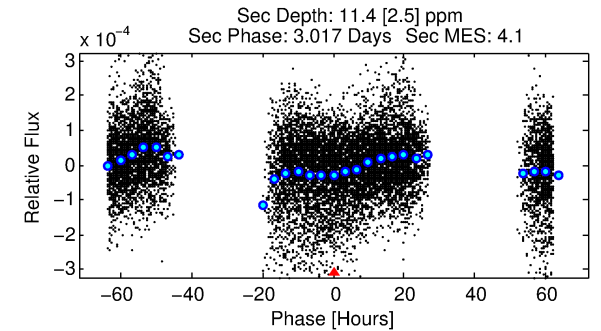
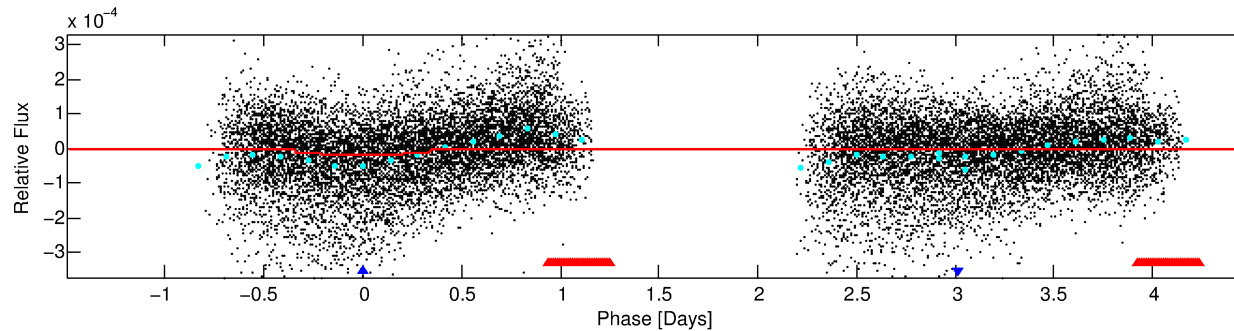
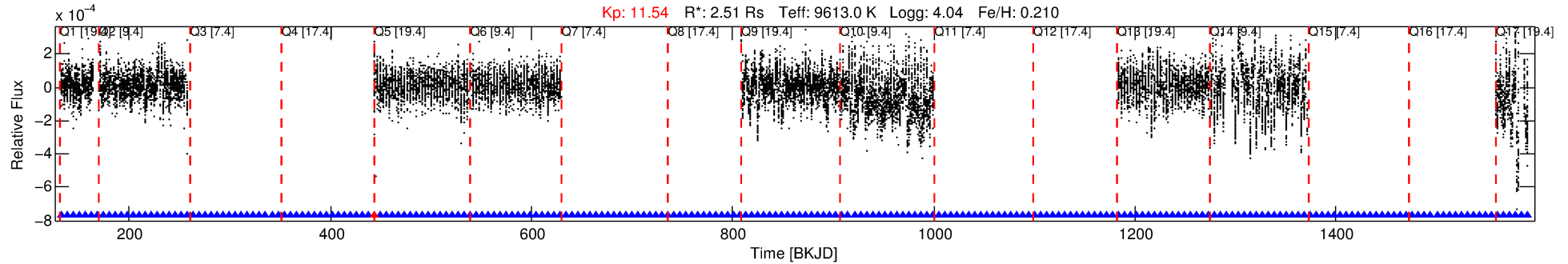
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008044402-02

No Significant Match Found

DV One-Page Summary

KIC: 8044402 Candidate: 2 of 2 Period: 5.971 d



DV Fit Results:

Period = 5.97084 [0.00008] d
Epoch = 132.9103 [0.0094] BKJD
Rp/R* = 0.0039 [0.0006]
a/R* = 2.52 [2.00]
b = 0.48 [1.52]
Seff = 6287.84 [2695.89]
Teq = 2271 [243] K
Rp = 1.07 [0.42] Re
a = 0.0875 [0.0250] AU
Ag = 41.90 [22.73] [1.80σ]
Teffp = 8932 [913] K [7.05σ]

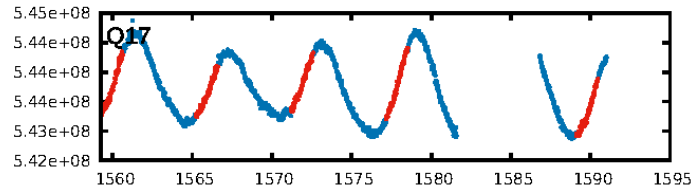
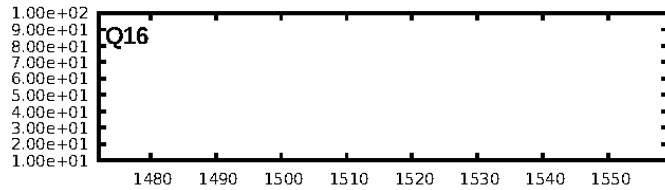
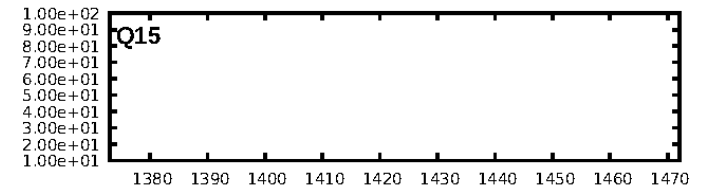
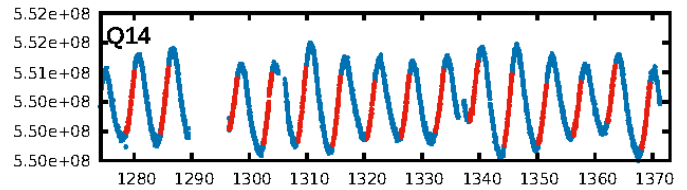
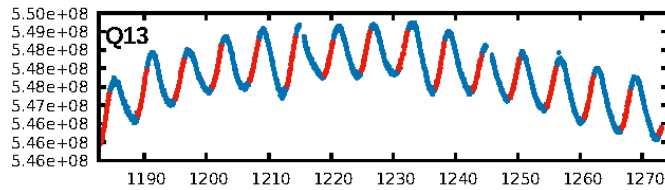
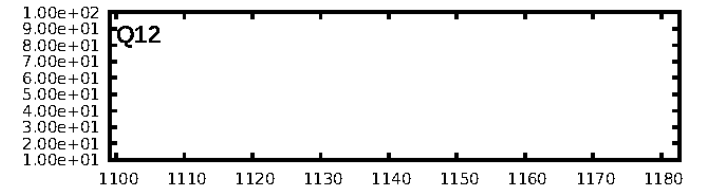
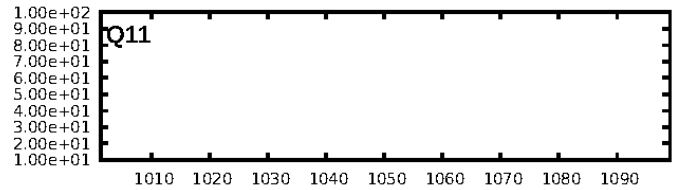
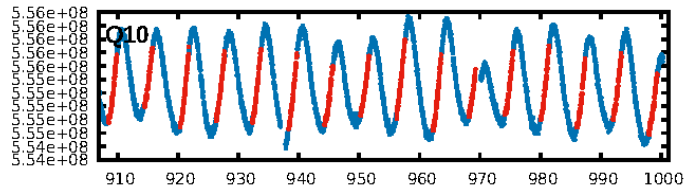
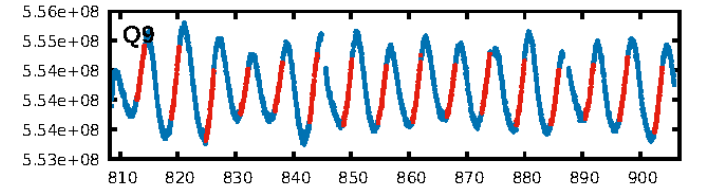
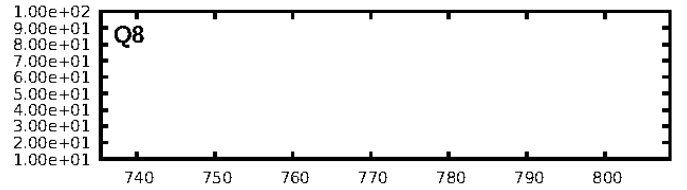
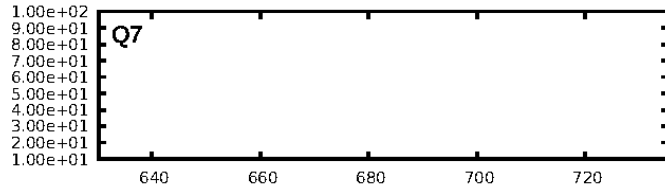
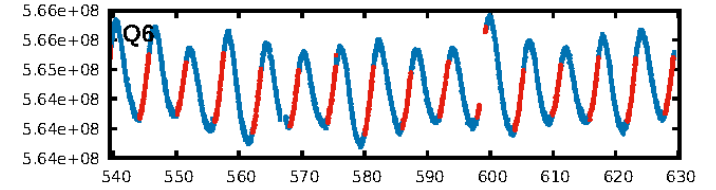
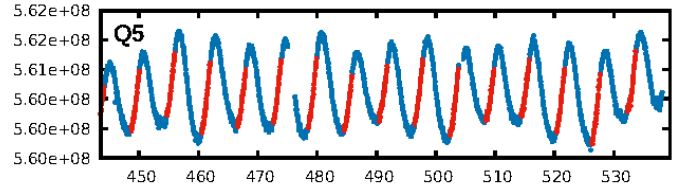
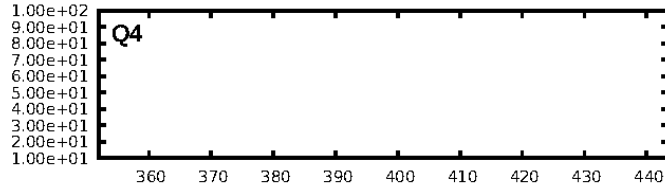
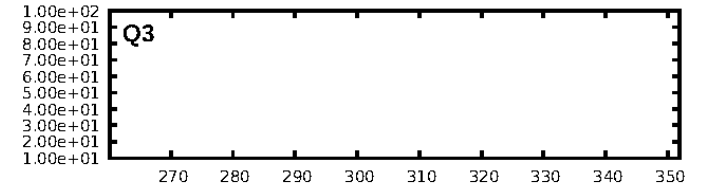
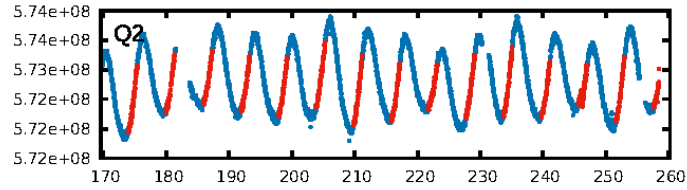
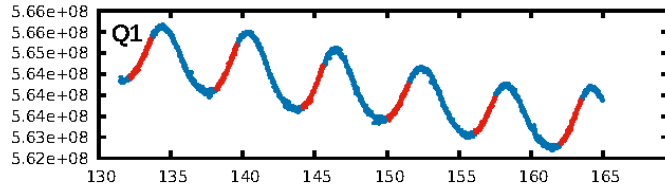
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.64σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.65e-12
RollingBand-fgt: 0.99 [108/109]
GhostDiagnostic-chr: 0.5499
Centroid-sig: 16.9%
Centroid-so: 1.232 arcsec [1.13σ]
OotOffset-rm: 1.484 arcsec [3.57σ]
KicOffset-rm: 1.481 arcsec [3.49σ]
OotOffset-st: 4/0/0/5 [9]
KicOffset-st: 4/0/0/5 [9]
DiffImageQuality-fgm: 0.89 [8/9]
DiffImageOverlap-fno: 0.22 [2/9]

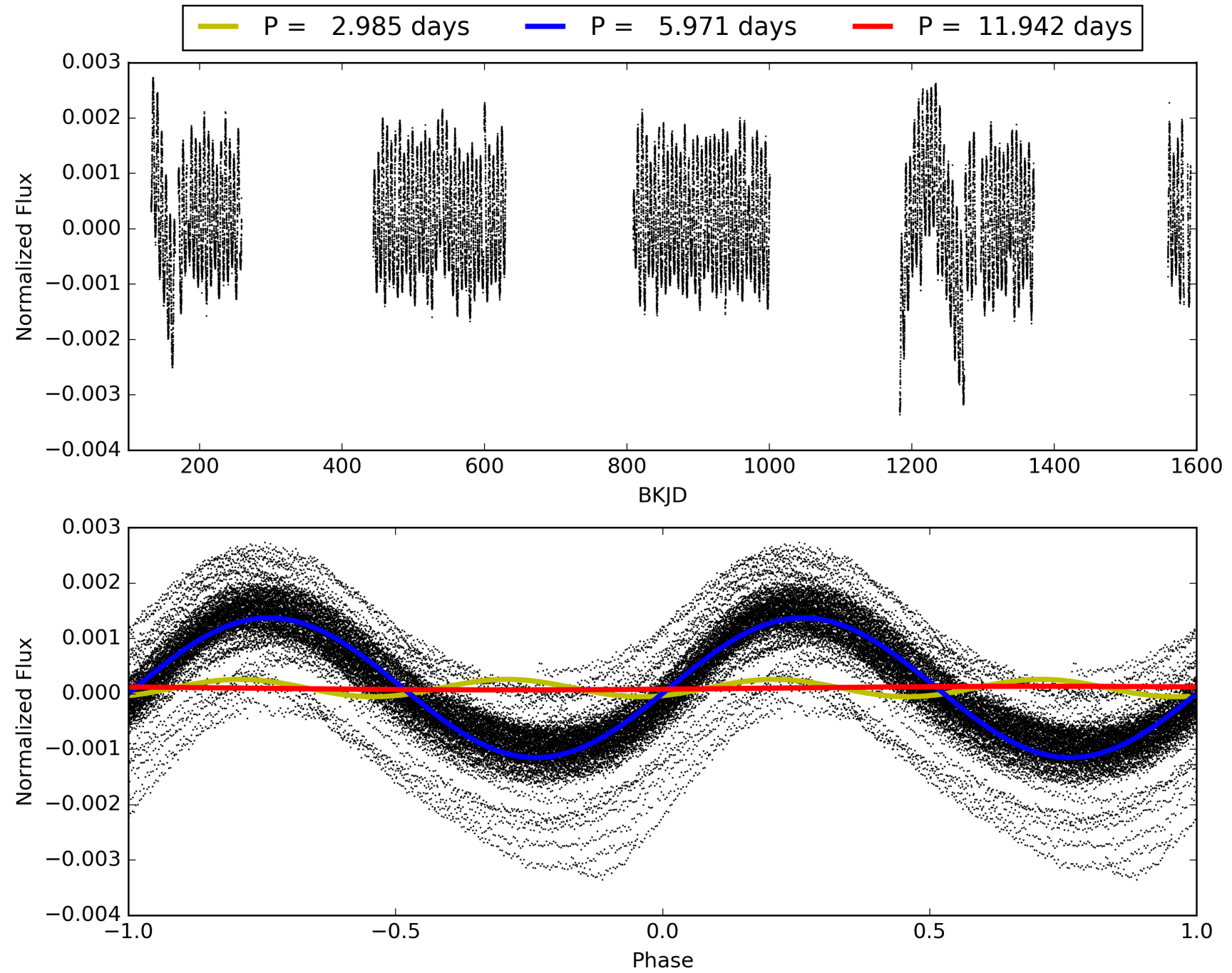
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:09:07 Z

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

TCE 008044402-02, PDC Light Curves

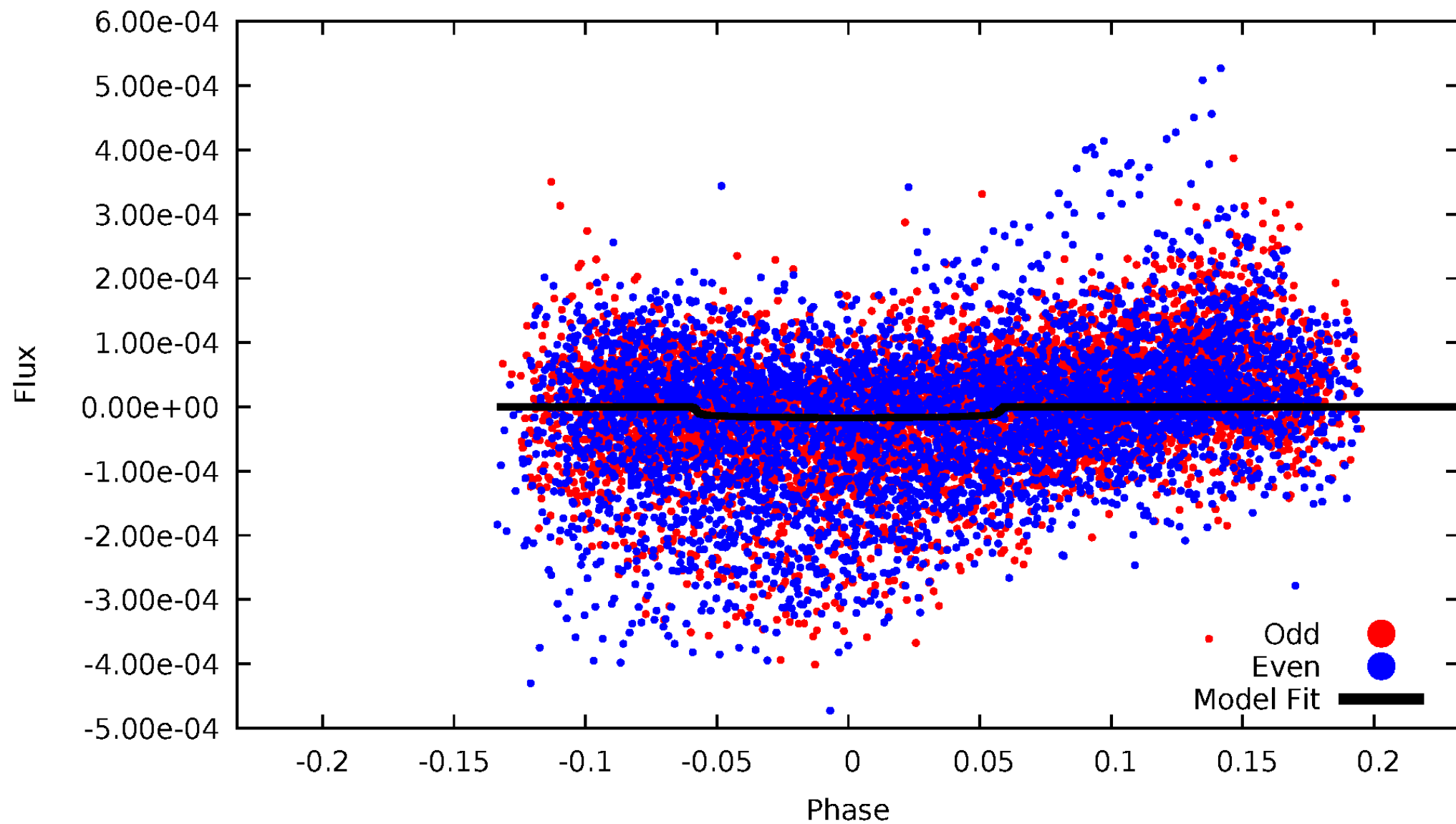


TCE 008044402-02



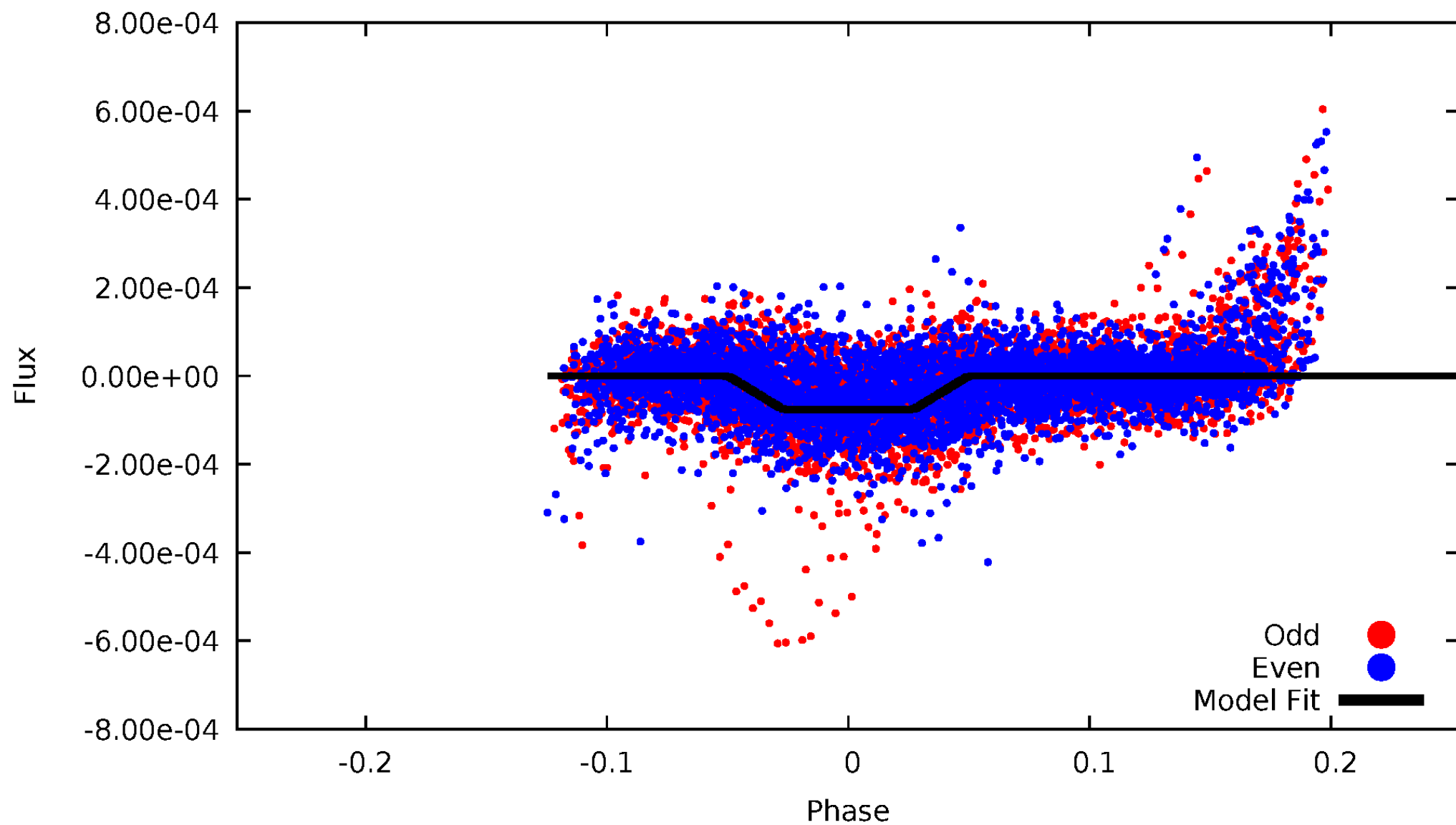
DV Odd/Even

TCE 008044402-02



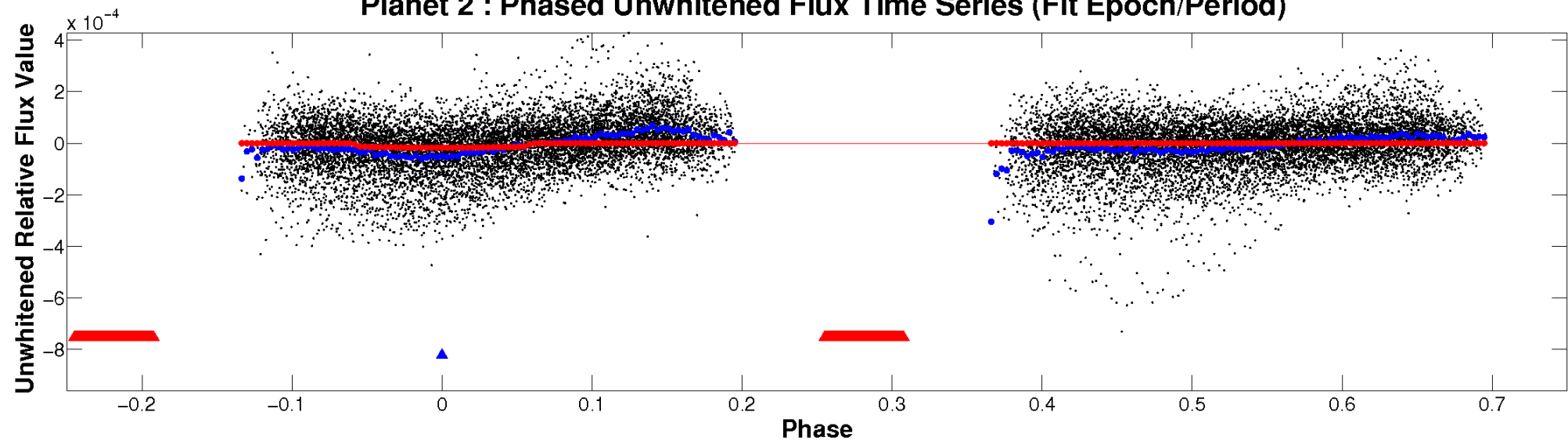
ALT Odd/Even

TCE 008044402-02

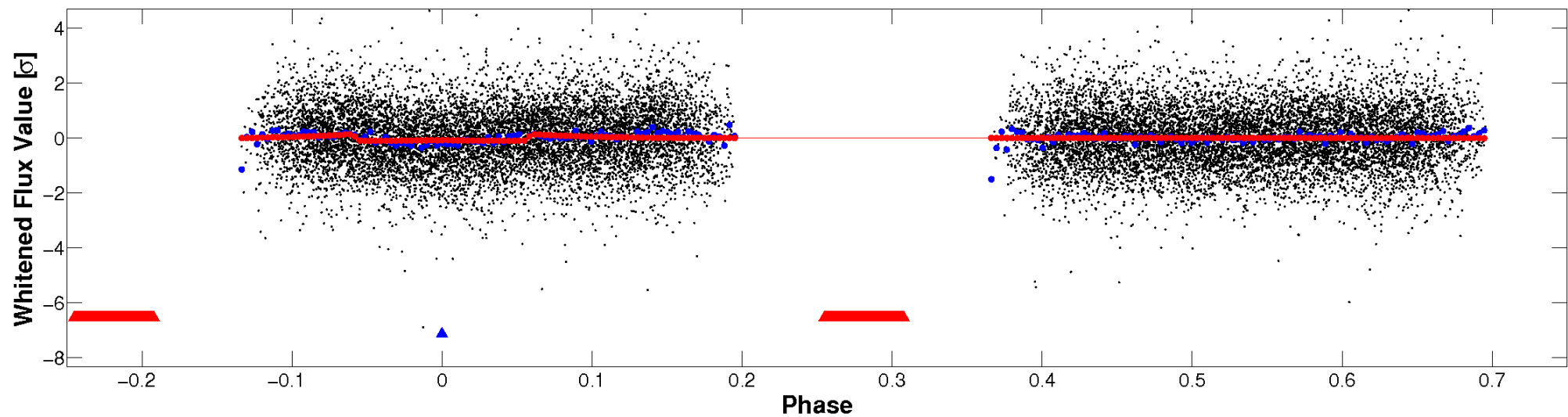


Non-Whitened Vs. Whitened Light Curve

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

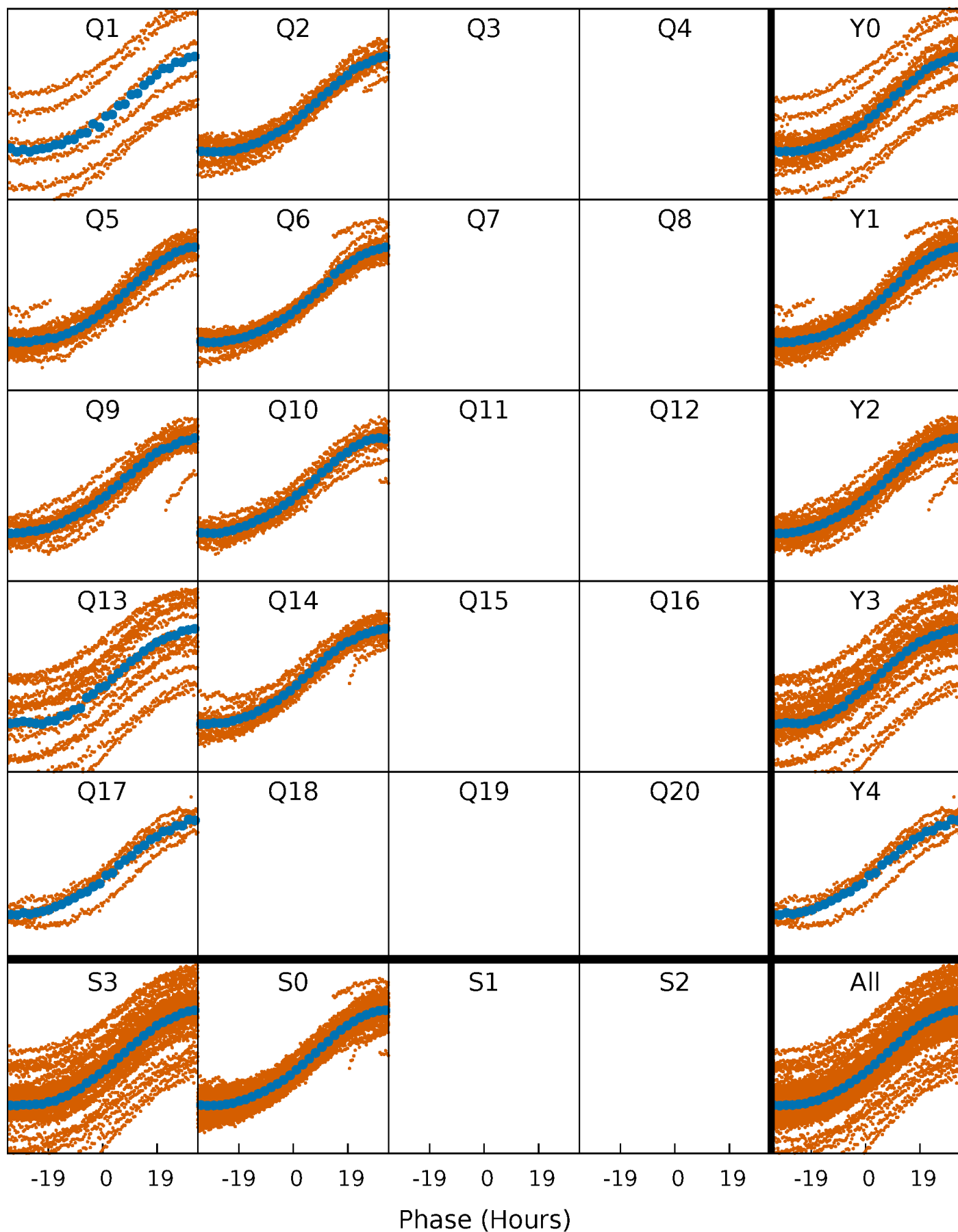


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



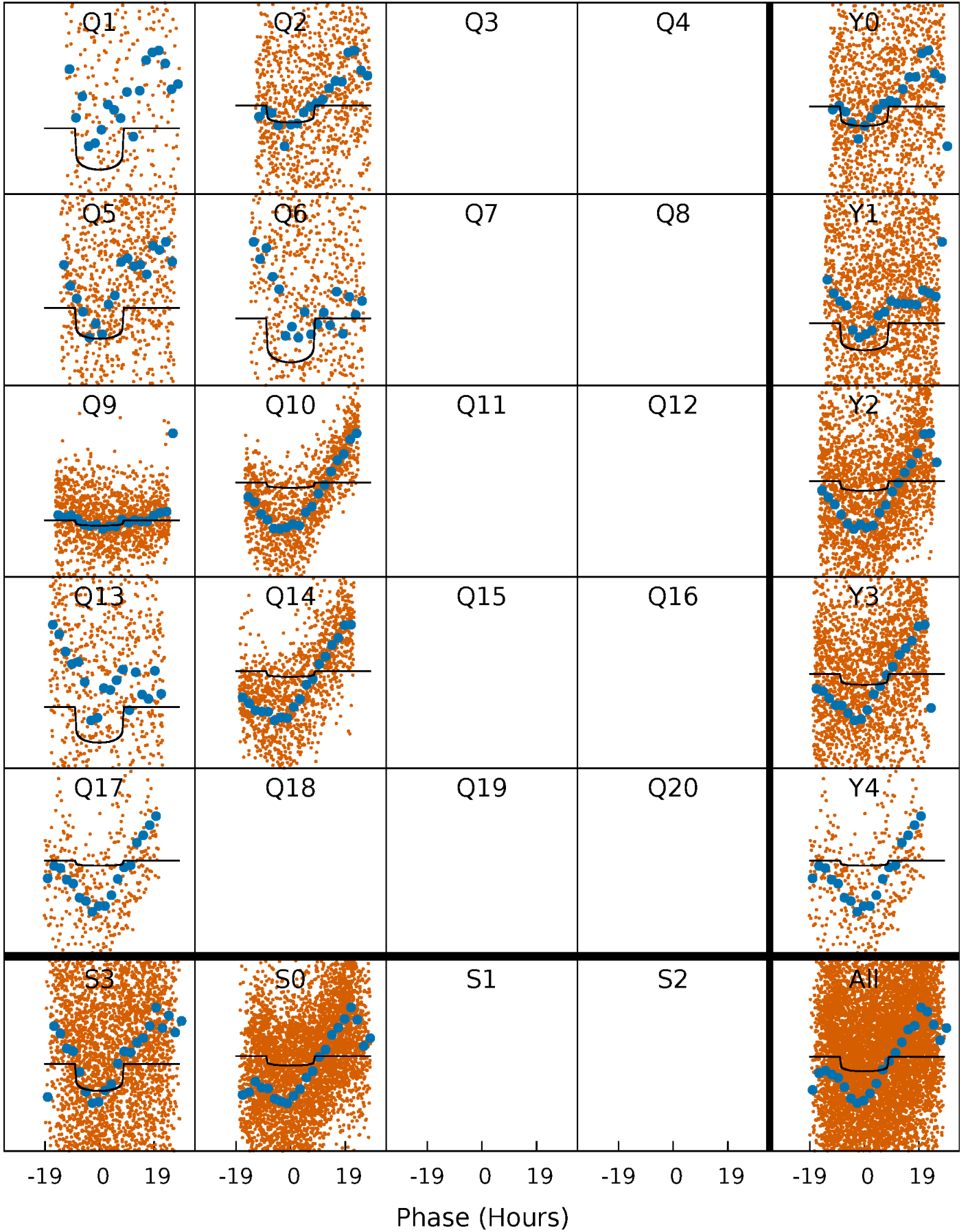
PDC Quarter-Phased Transit Curves

TCE 008044402-02 P= 5.970840 Days $T_0=132.910301$ (BKJD)



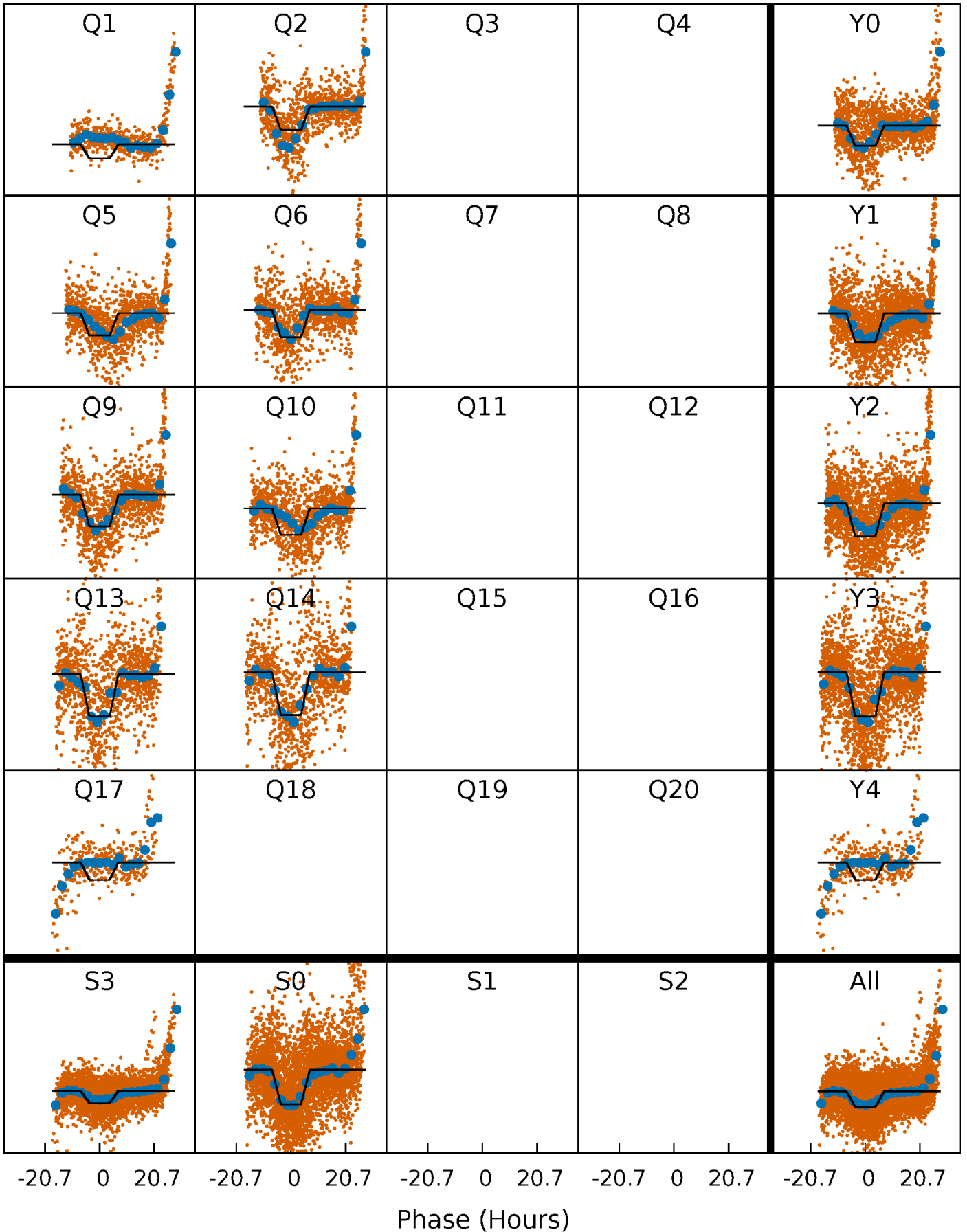
DV Quarter-Phased Transit Curves

TCE 008044402-02 P= 5.970840 Days $T_0=132.910301$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

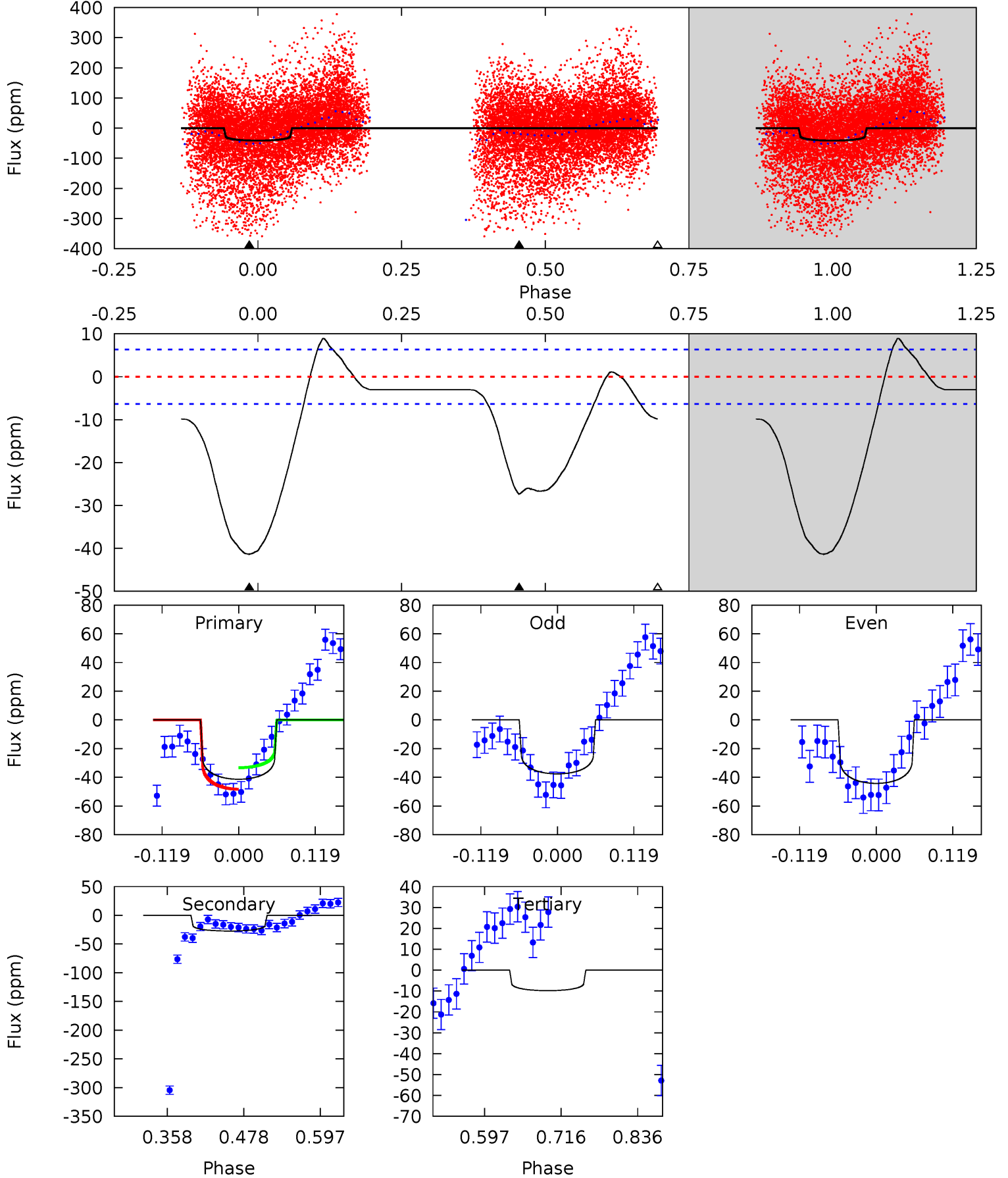
TCE 008044402-02 P= 5.970775 Days $T_0=132.888830$ (BKJD)



DV Model-Shift Uniqueness Test

008044402-02, P = 5.970840 Days, E = 126.939461 Days

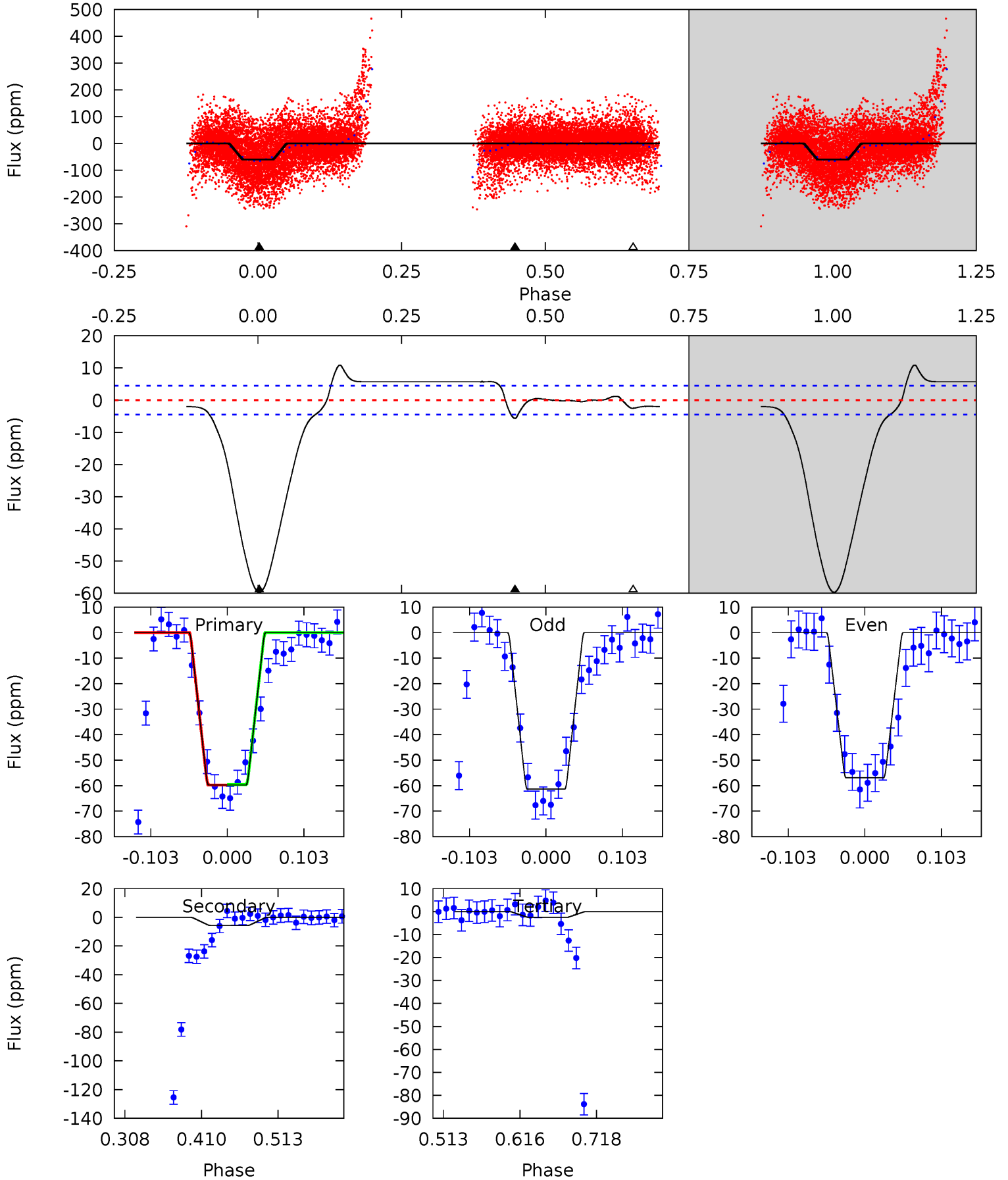
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	19.5	7.01	0	4.53	1.56	3.58	22.5	29.5	12.5	19.5	2.28	2.44	0.18	5.11



Alt Model-Shift Uniqueness Test

008044402-02, P = 5.970775 Days, E = 126.918055 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.7	5.75	2.56	0	4.56	1.63	3.95	58.1	60.7	3.19	5.75	2.23	1.10	0.15	0.07



Stellar Parameters For KIC 008044402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9613^{+270}_{-405}	$4.038^{+0.136}_{-0.204}$	$0.210^{+0.150}_{-0.250}$	$2.508^{+0.901}_{-0.485}$	$2.504^{+0.378}_{-0.309}$	$0.224^{+0.134}_{-0.125}$
	+3%/-4%	+3%/-5%	+71%/-119%	+36%/-19%	+15%/-12%	+60%/-56%
Source	KIC0	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 008044402-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 1	$1.09^{+0.24}_{-0.20}$	3181^{+282}_{-198}	11920^{+1895}_{-1314}	97^{+44}_{-32}
Alt.	-6 ± 1	$2.43^{+0.47}_{-0.34}$	3168^{+276}_{-195}	4684^{+267}_{-243}	$3.965^{+1.510}_{-1.268}$

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 $A_{obs} \gg 1.0$

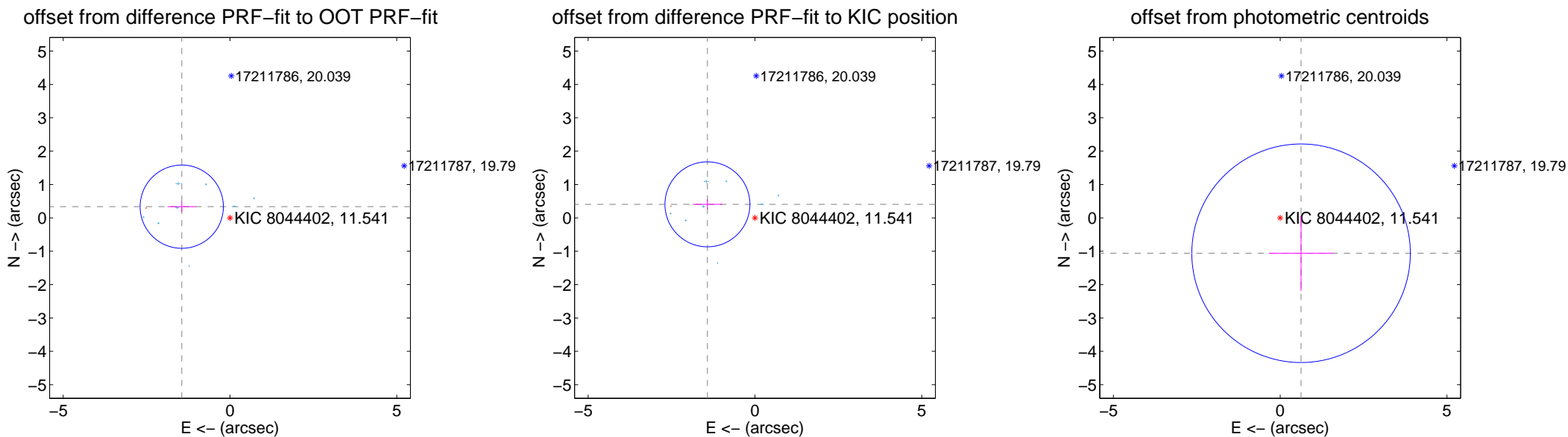
DV Centroid Data

Supplemental centroid analysis for 008044402-02. **Kepler magnitude: 11.54**. Transit SNR 7.54

There are 8 quarters with good PRF difference image offsets

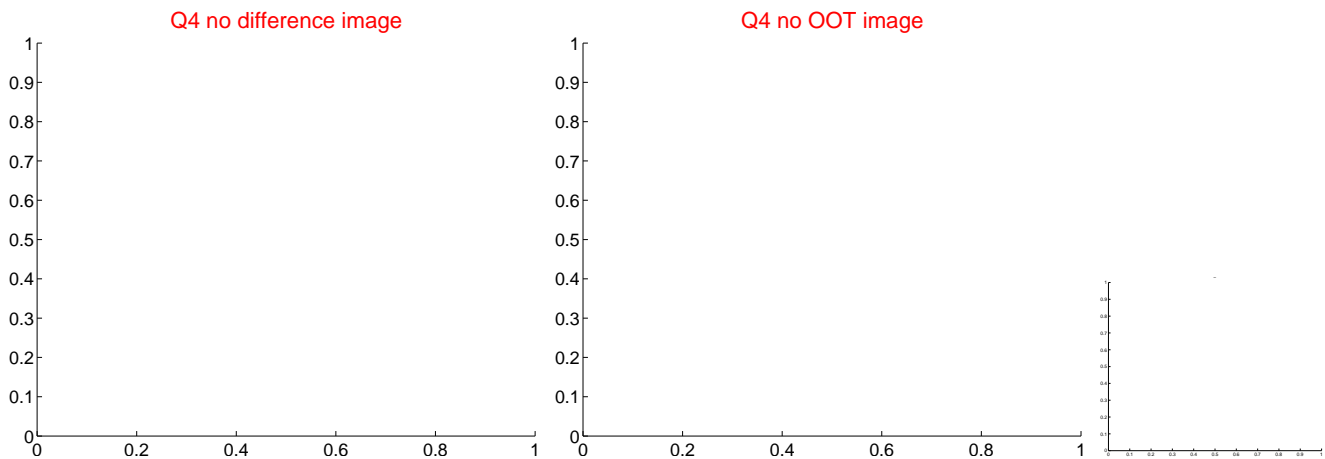
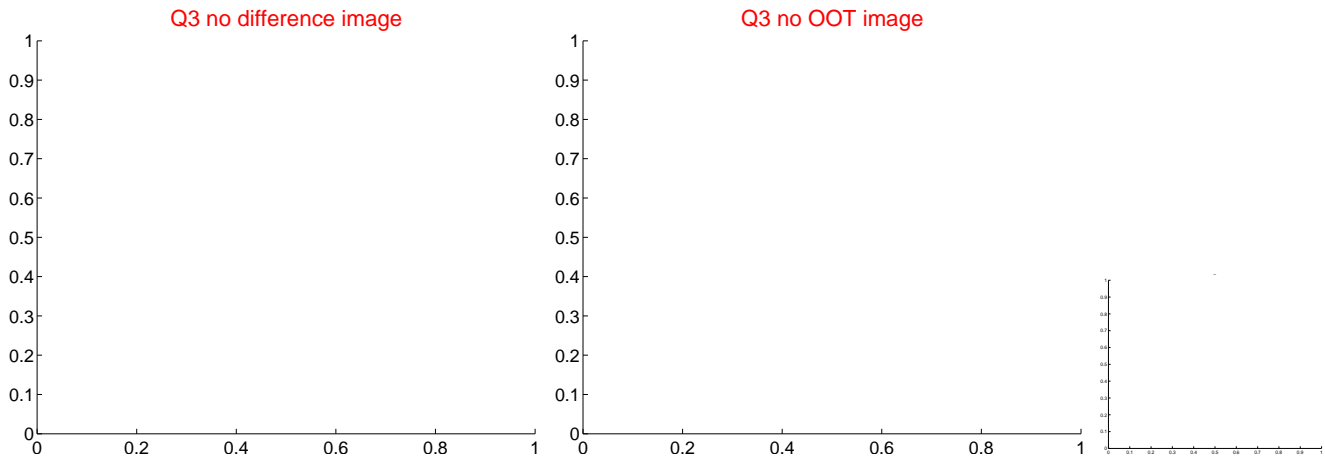
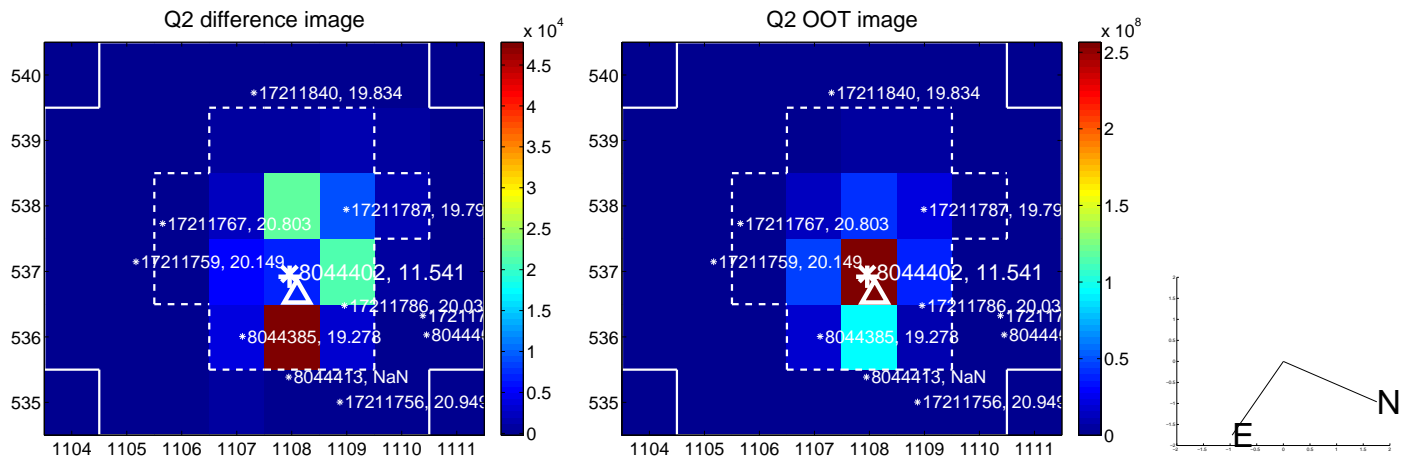
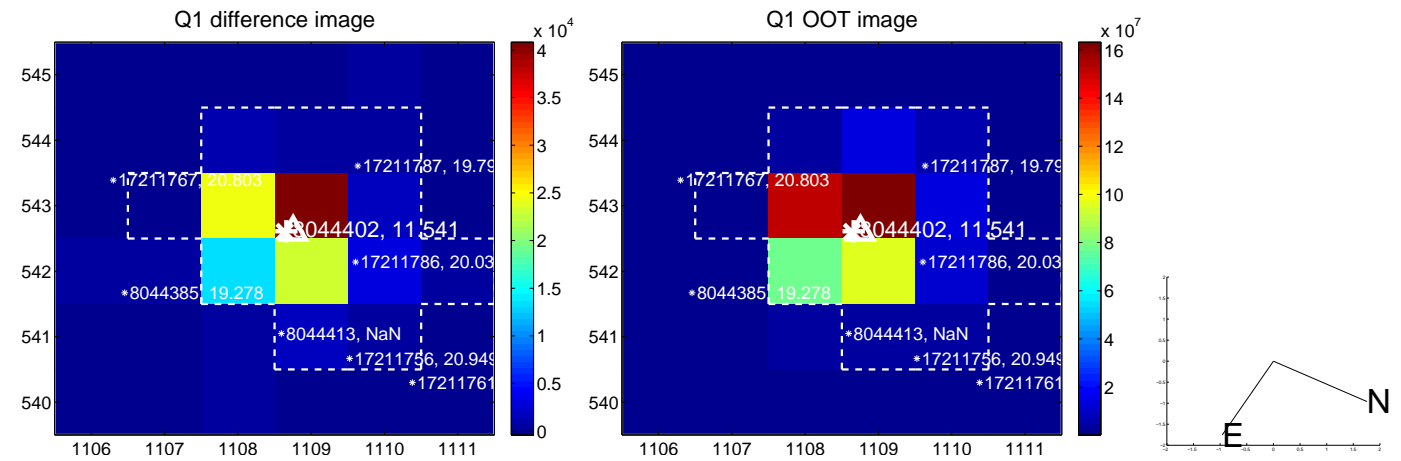
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.484 \pm 0.416	3.57	1.446 \pm 0.425	0.336 \pm 0.159
PRF-fit source offset from KIC position	1.481 \pm 0.424	3.49	1.424 \pm 0.439	0.406 \pm 0.155
photometric centroid source offset	1.23 \pm 1.09	1.13	-0.63 \pm 0.97	-1.06 \pm 1.13

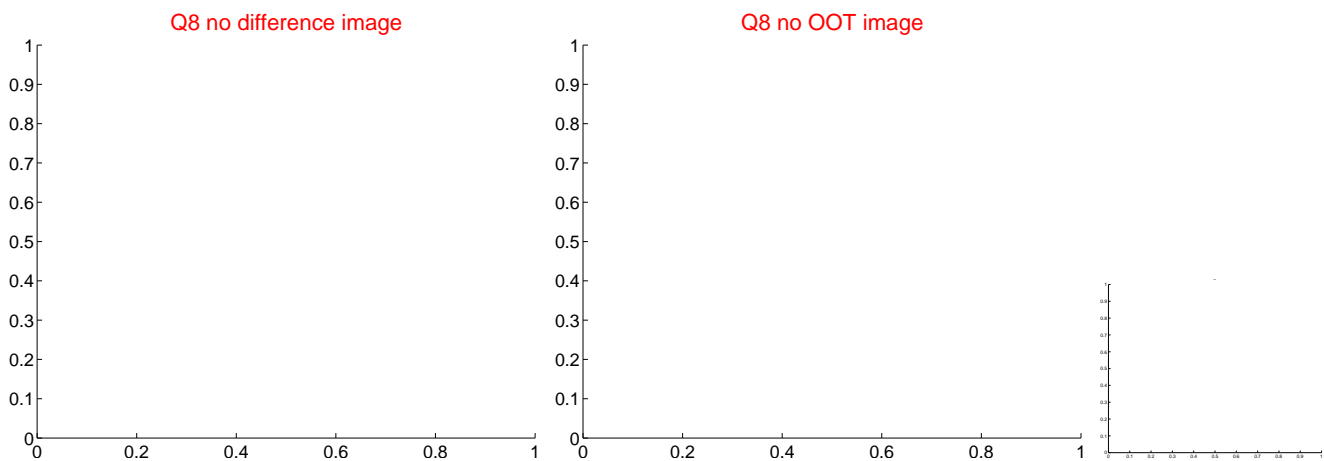
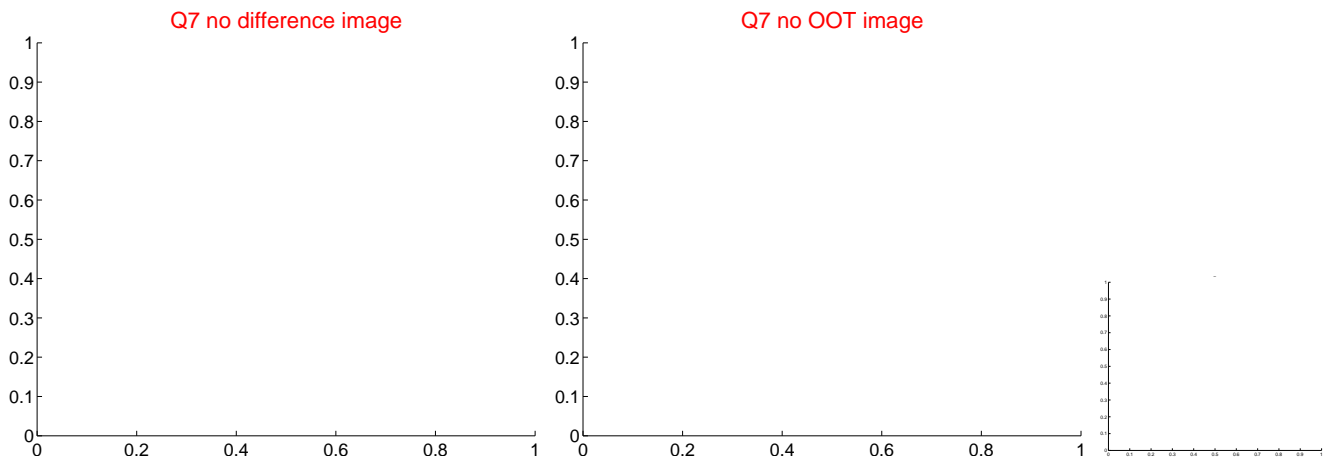
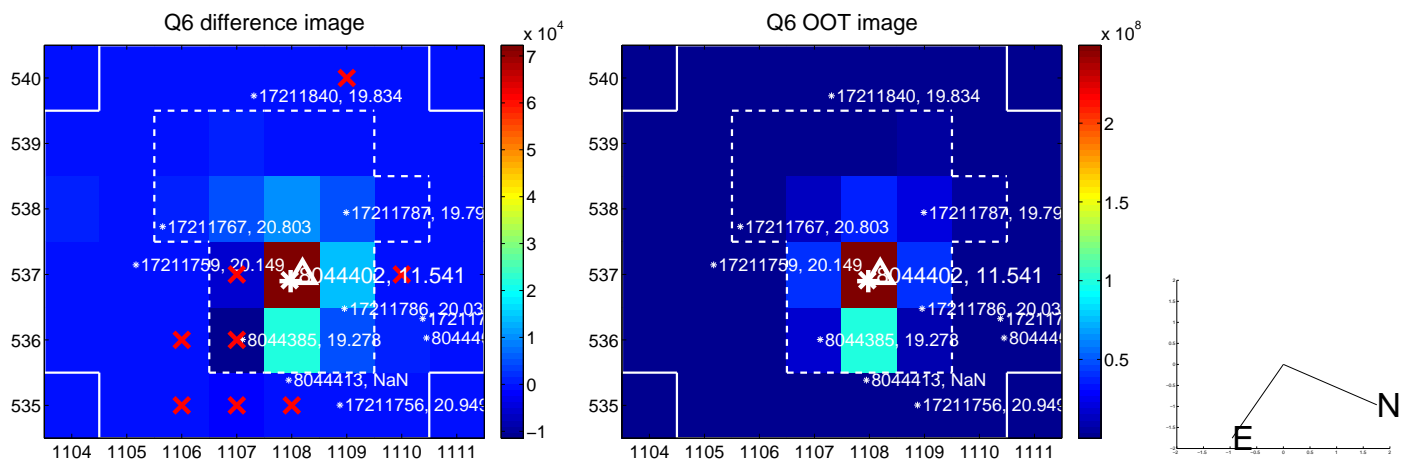
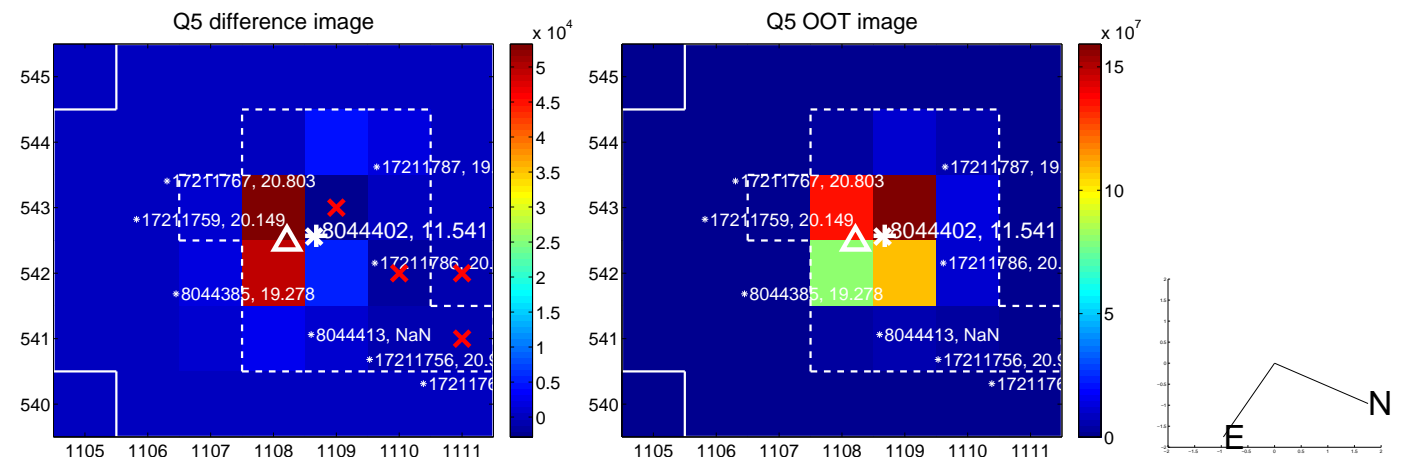


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

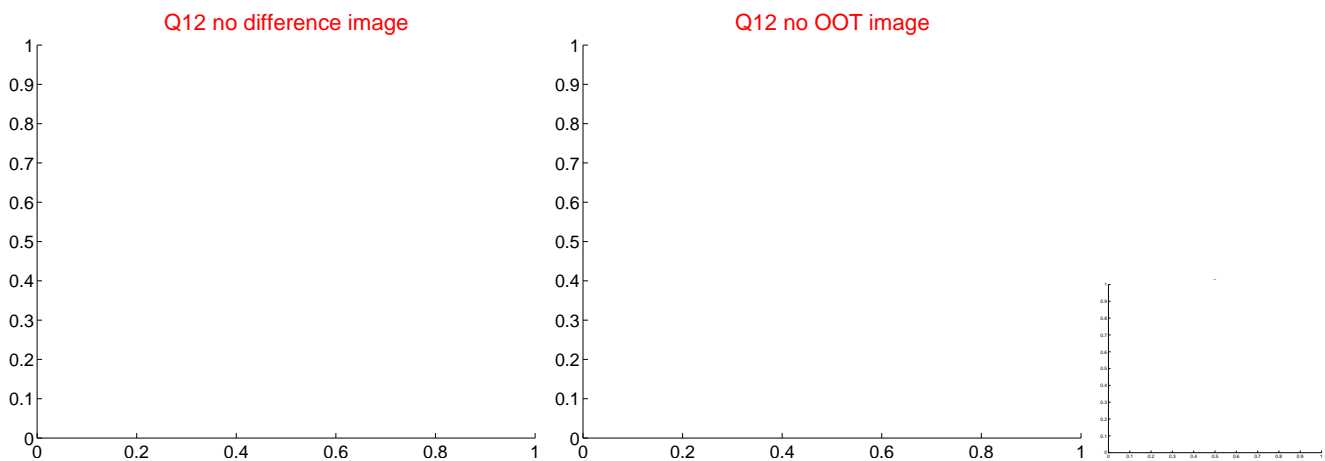
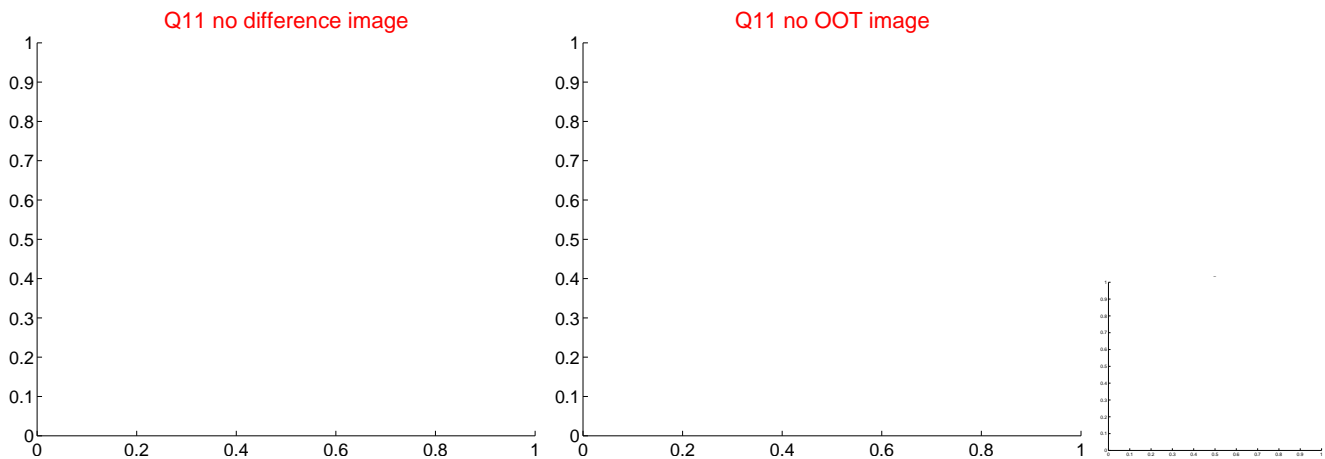
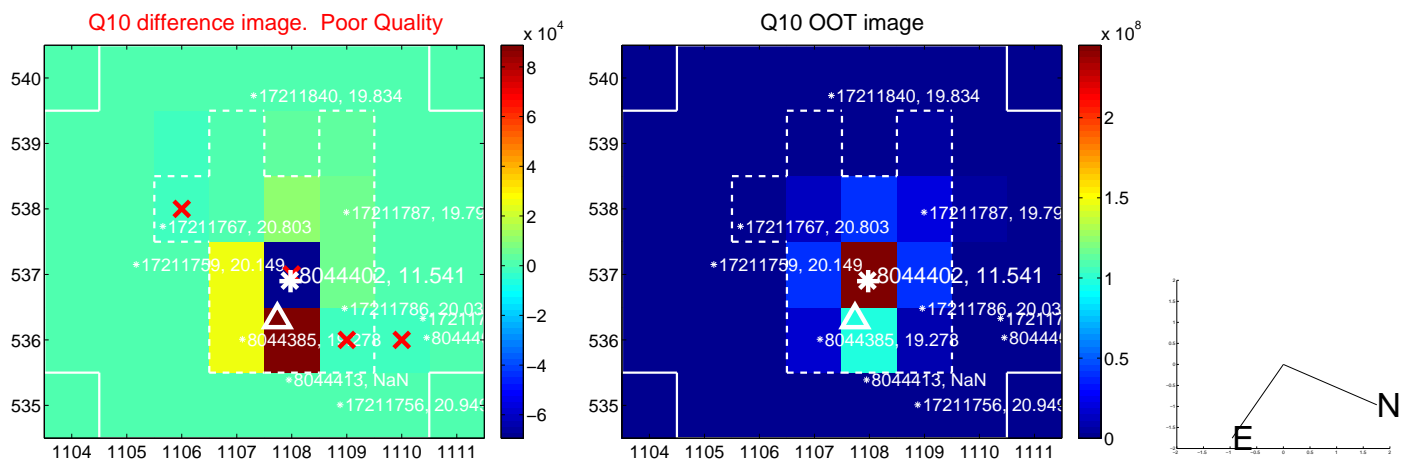
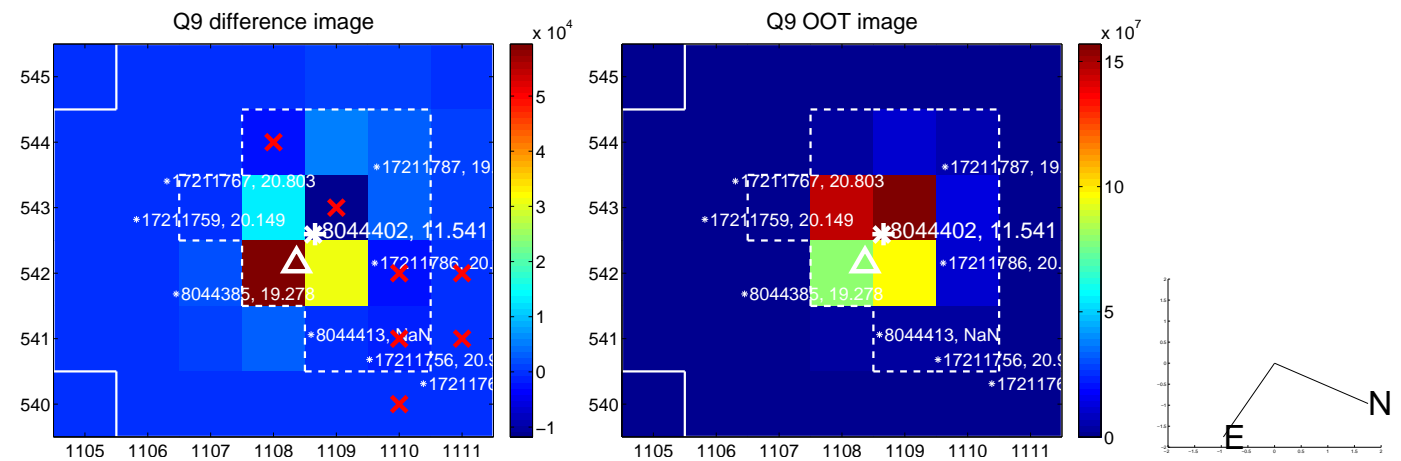
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



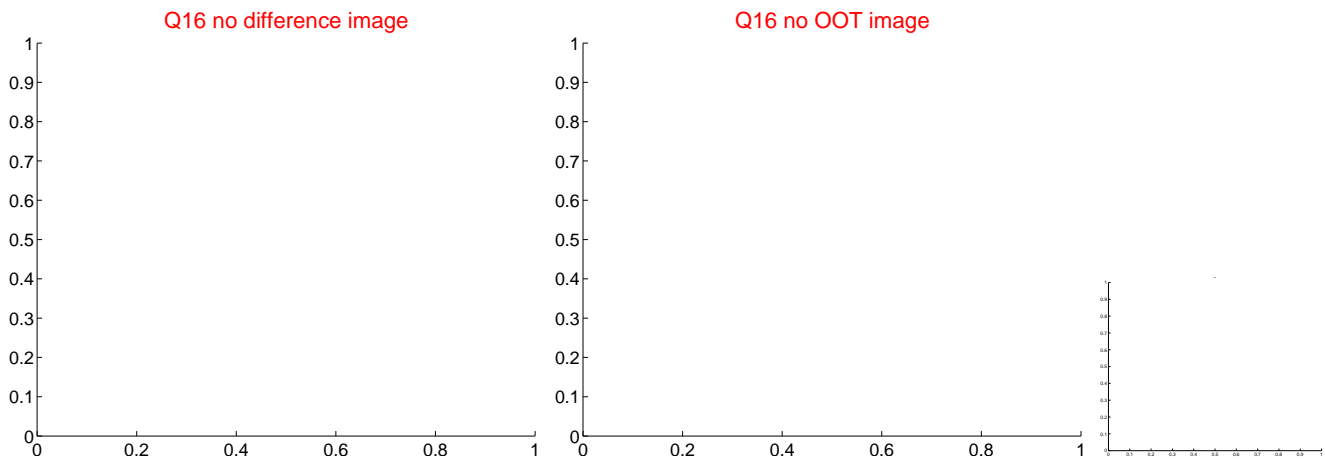
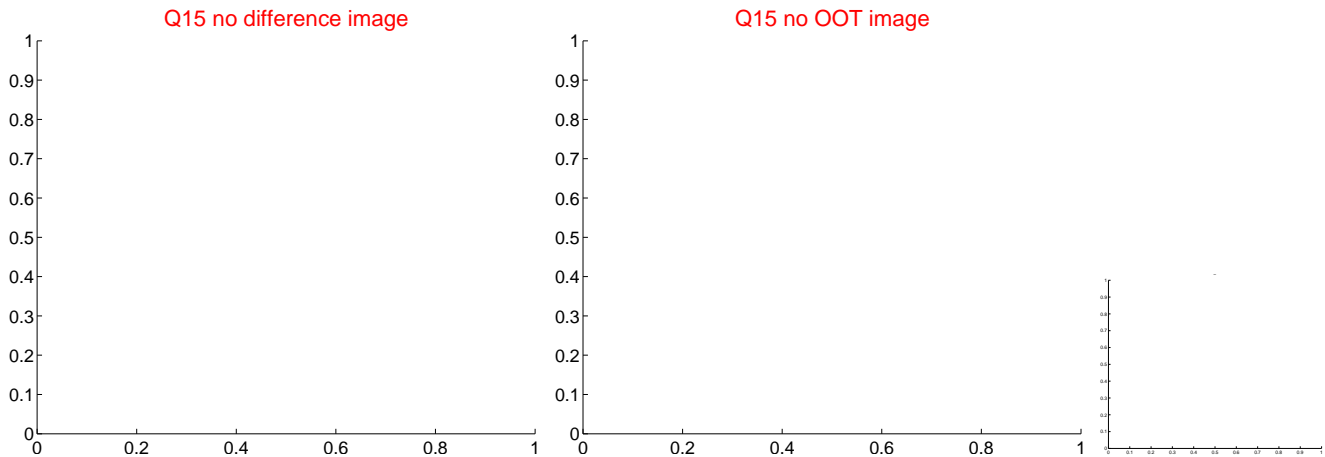
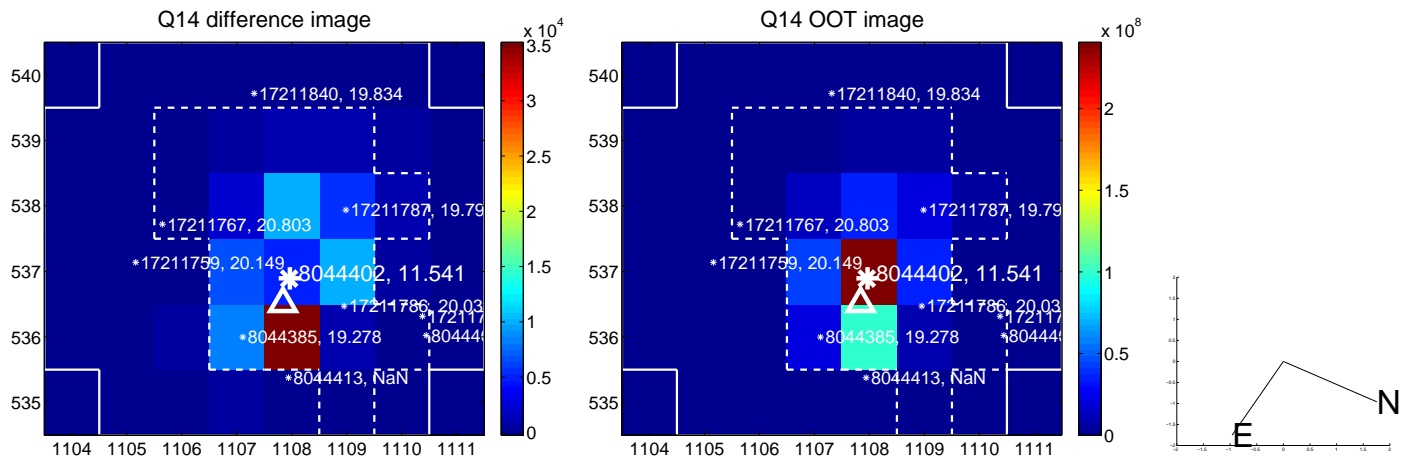
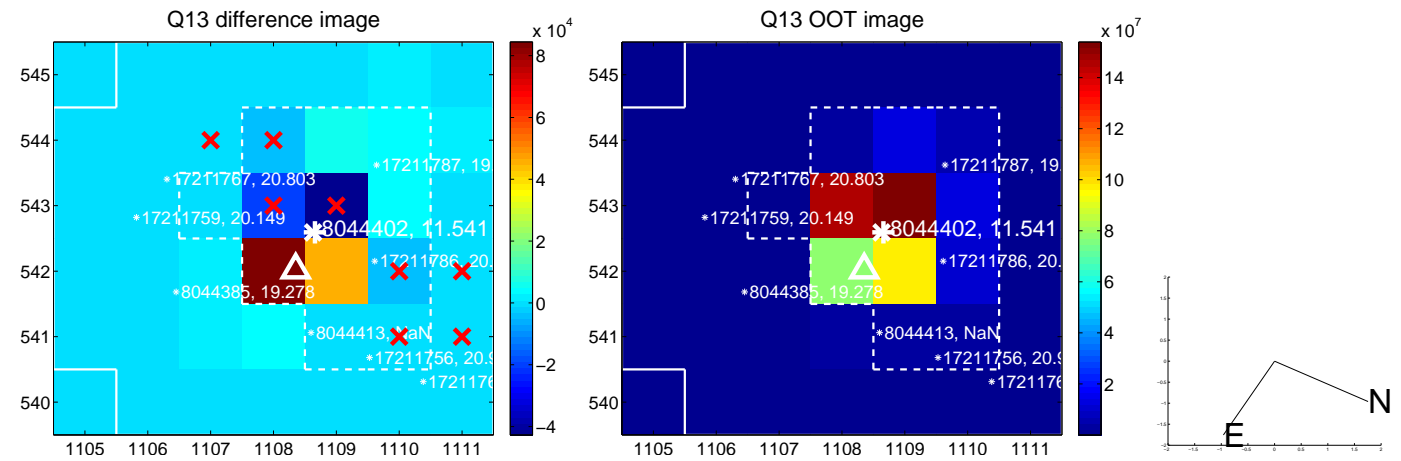
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



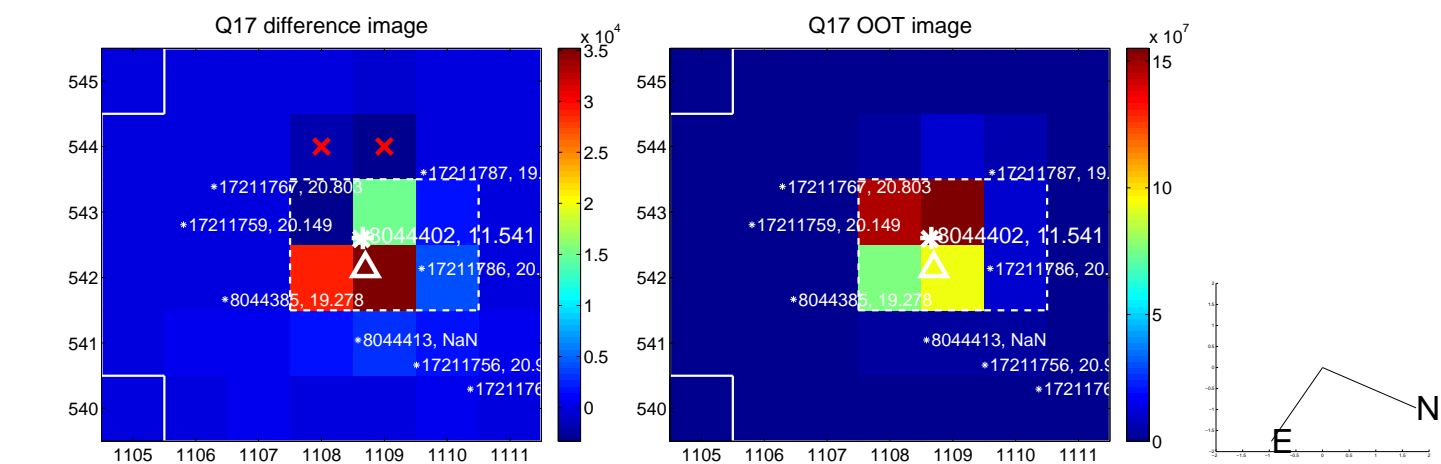
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



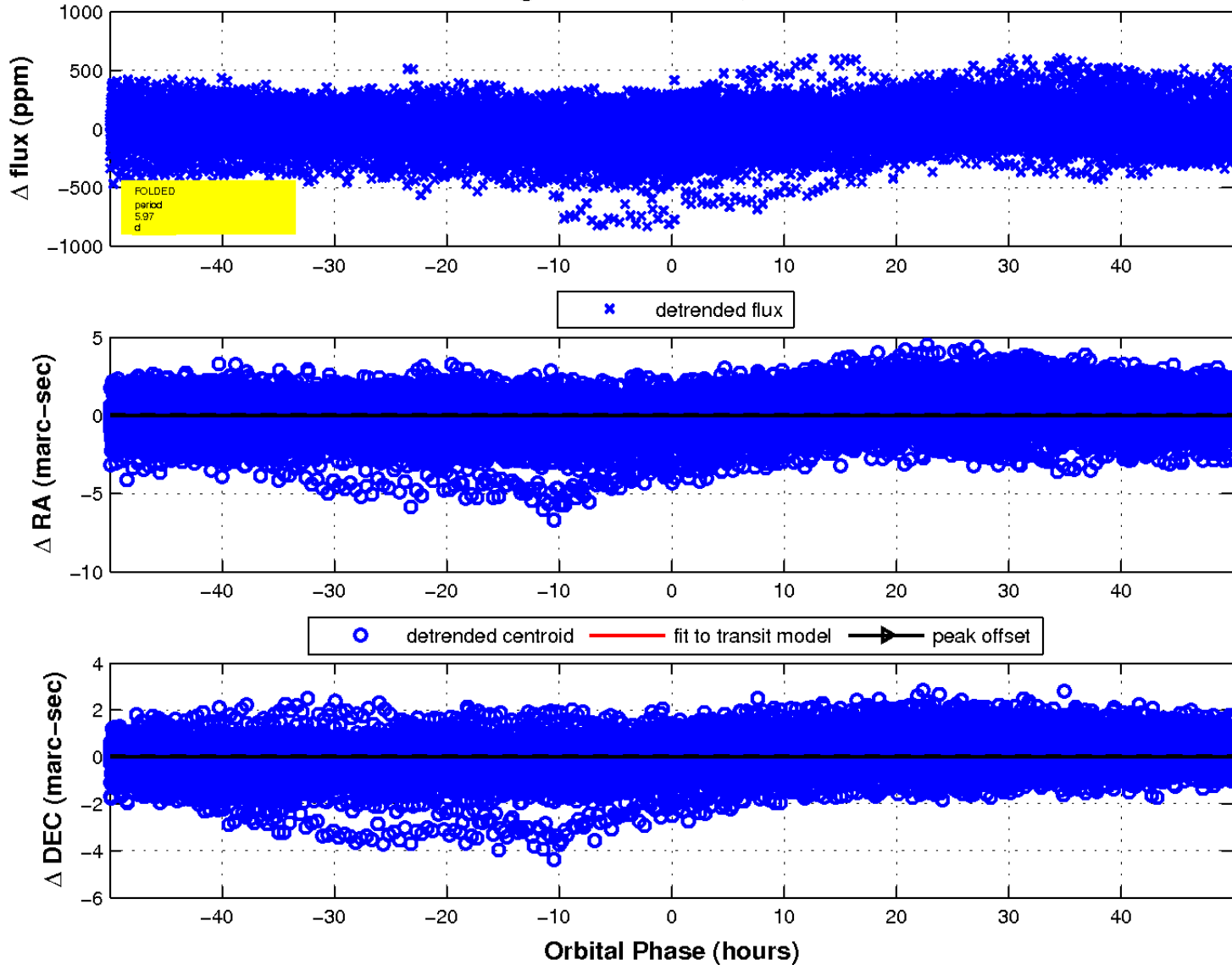
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

