

KIC 008559796

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})
008559796-01	OBS	7057.01	1.238651	131.536325	49.6	4.855	11.1	9.2	1.68	7138	1.23	10252.50
008559796-02	OBS	No	1.238996	132.423387	480.5	14.868	9.6	12.1	1.68	7138	6.99	10248.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008559796-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008559796-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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.

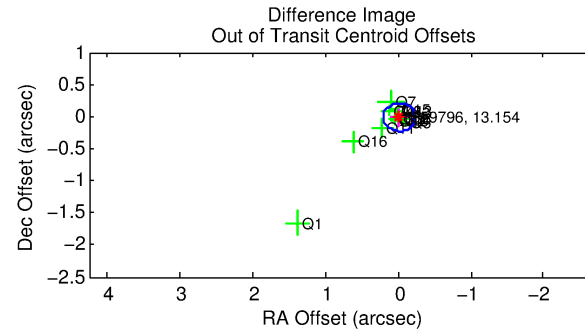
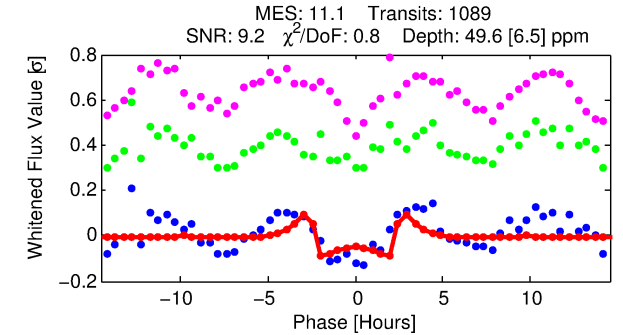
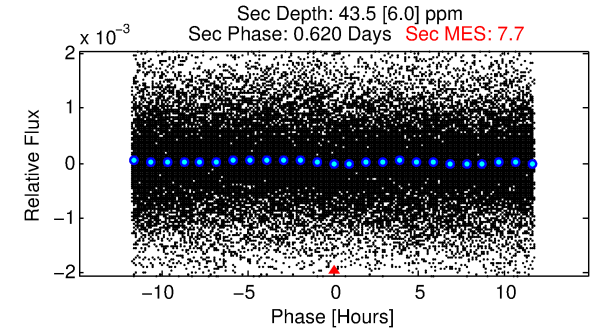
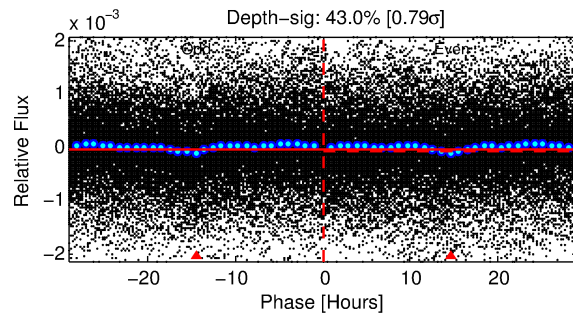
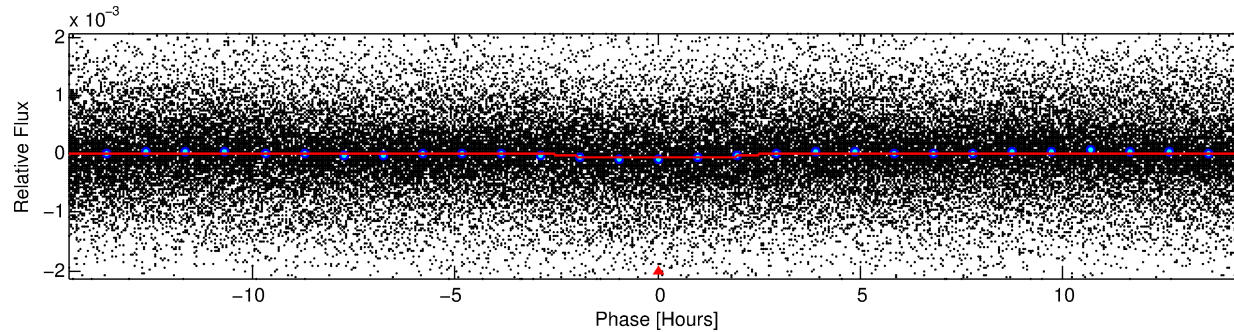
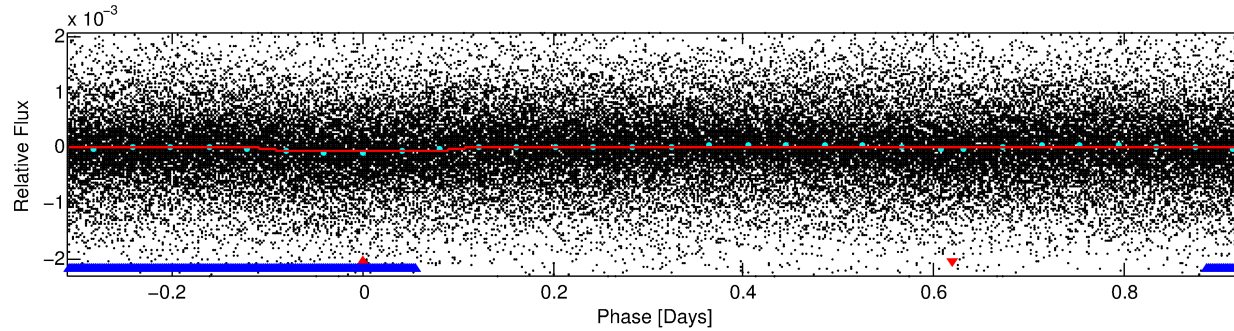
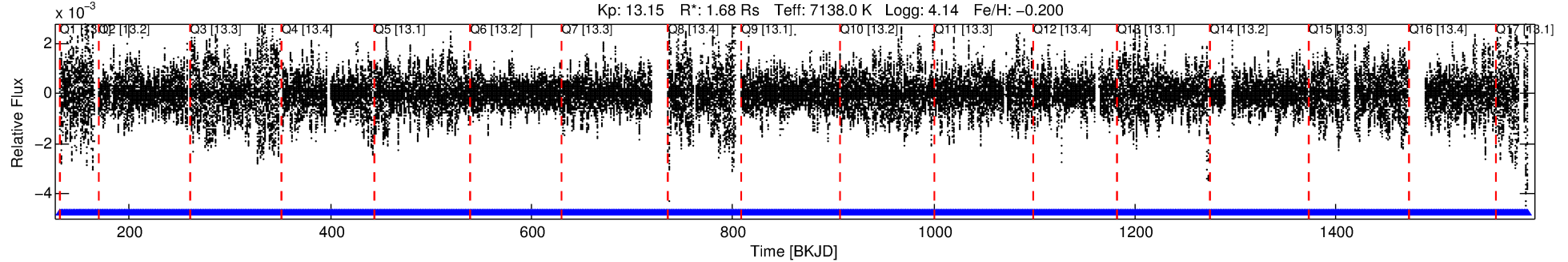
Ephemeris Match Information For 008559796-01

No Significant Match Found

DV One-Page Summary

KIC: 8559796 Candidate: 1 of 2 Period: 1.239 d
KOI: K07057 Corr: No Ephemeris Match

Kp: 13.15 R*: 1.68 Rs Teff: 7138.0 K Logg: 4.14 Fe/H: -0.200



DV Fit Results:

Period = 1.23865 [0.00001] d
Epoch = 131.5363 [0.0019] BKJD
Rp/R* = 0.0067 [0.0015]
a/R* = 1.85 [1.66]
b = 0.50 [1.91]
Seff = 10252.51 [4138.16]
Teff = 2566 [259] K
Rp = 1.23 [0.48] Re
a = 0.0254 [0.0067] AU
Ag = 10.17 [6.00] [1.53σ]
Teffp = 7085 [870] K [4.98σ]

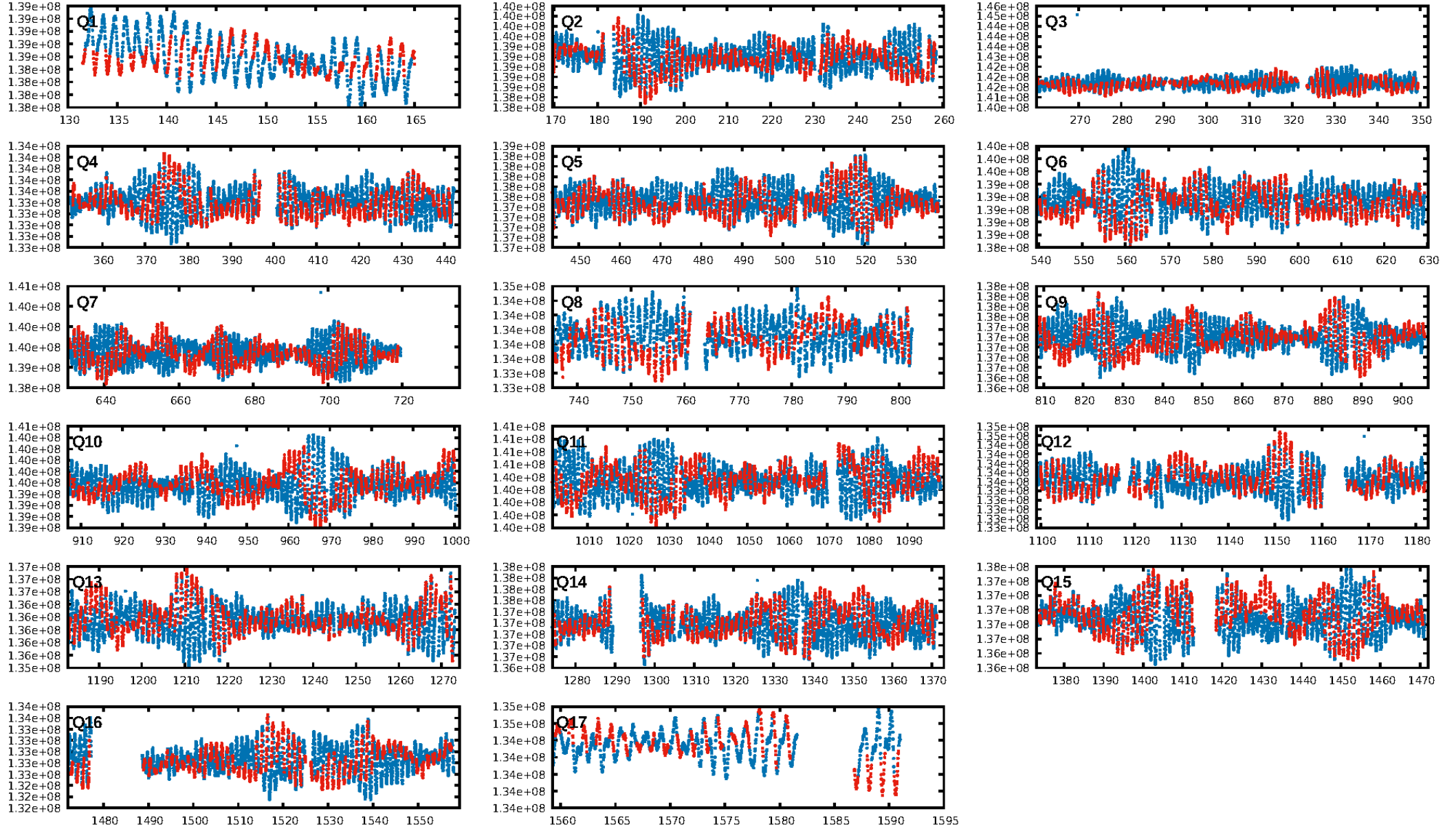
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1039/1039]
GhostDiagnostic-chr: 1.217
Centroid-sig: 50.5%
Centroid-so: 0.358 arcsec [0.88σ]
OotOffset-rm: 0.016 arcsec [0.22σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-rm: 0.078 arcsec [1.01σ]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 0.00 [0/17]

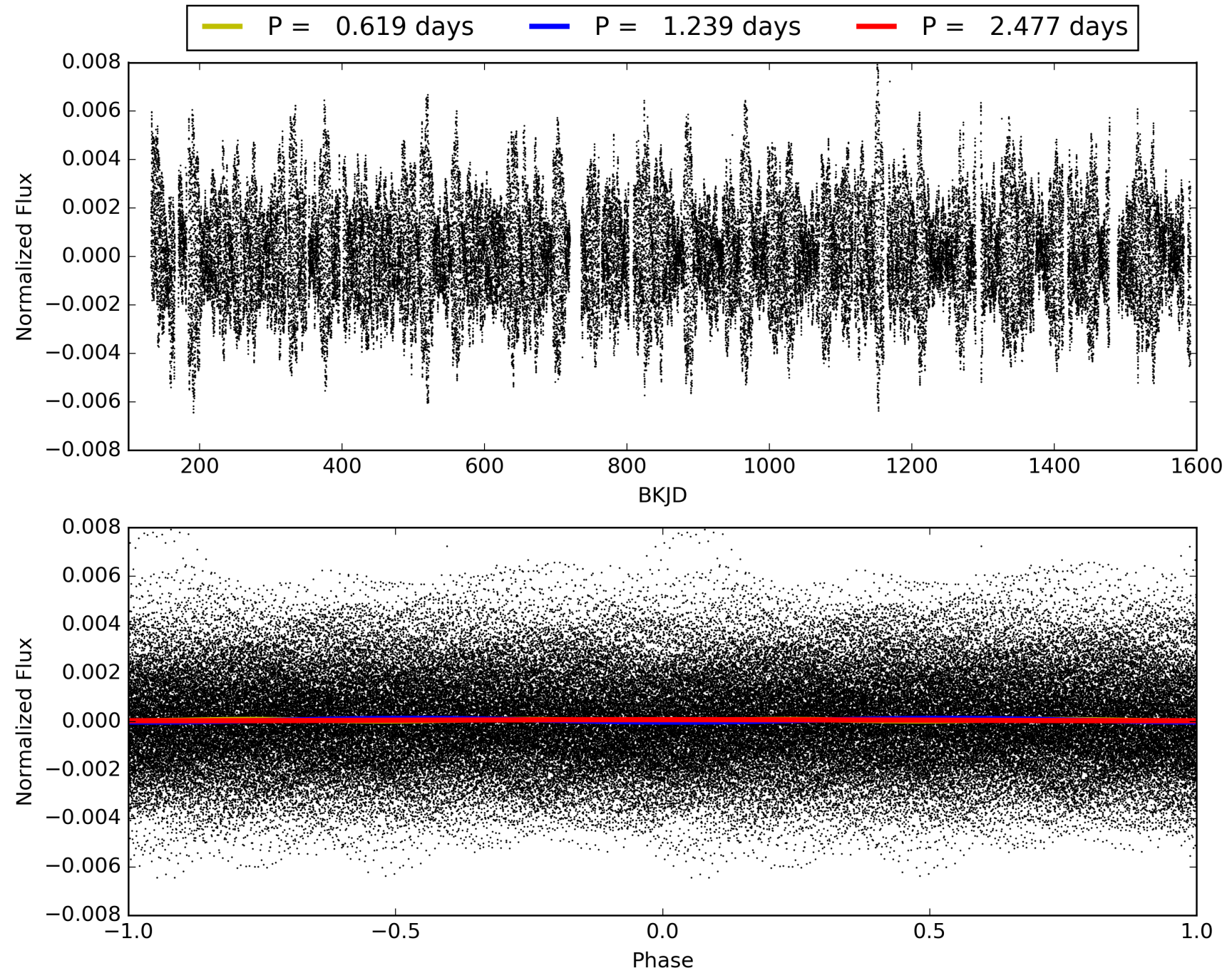
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:34:47 Z

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

TCE 008559796-01, PDC Light Curves

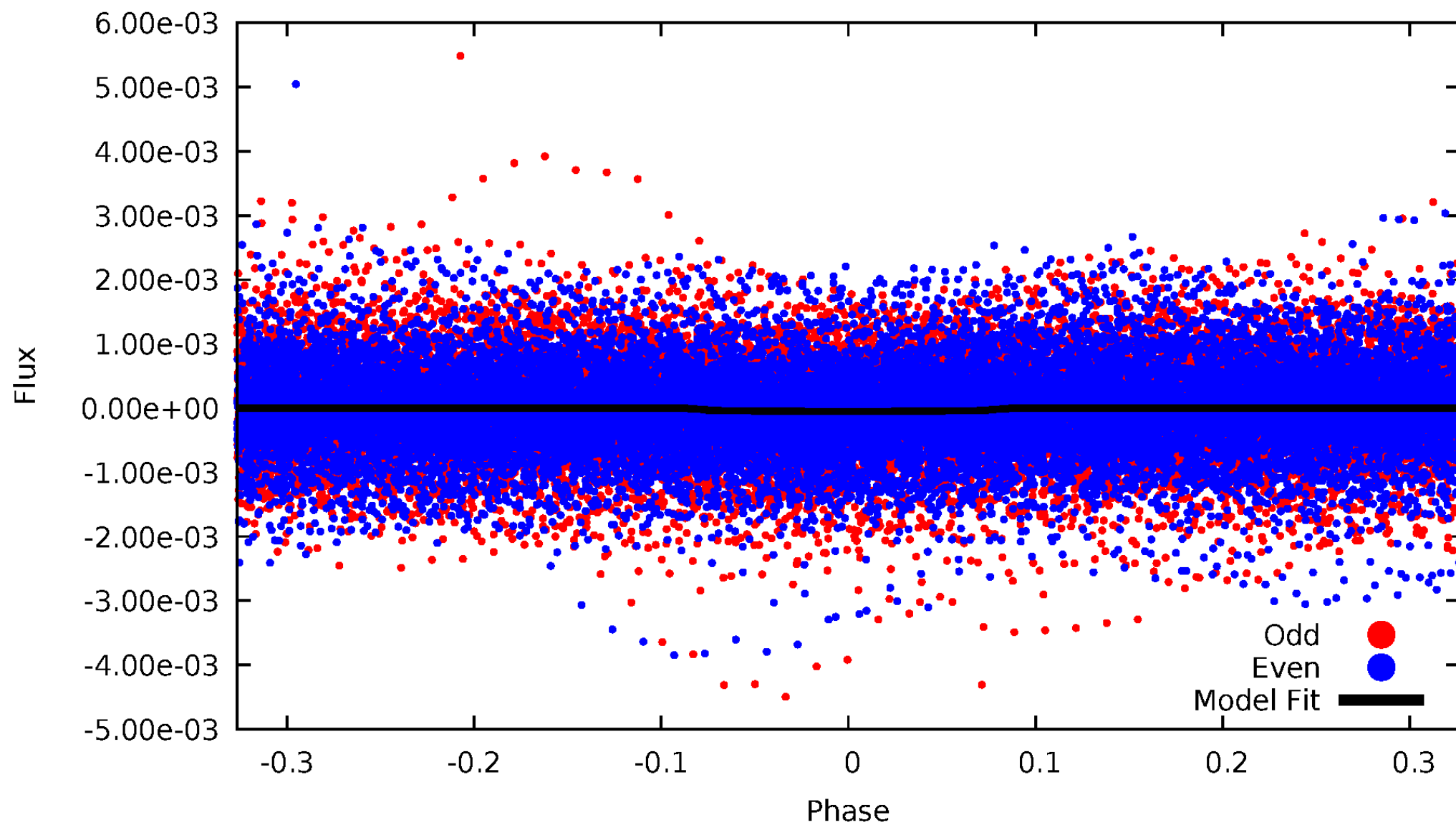


TCE 008559796-01



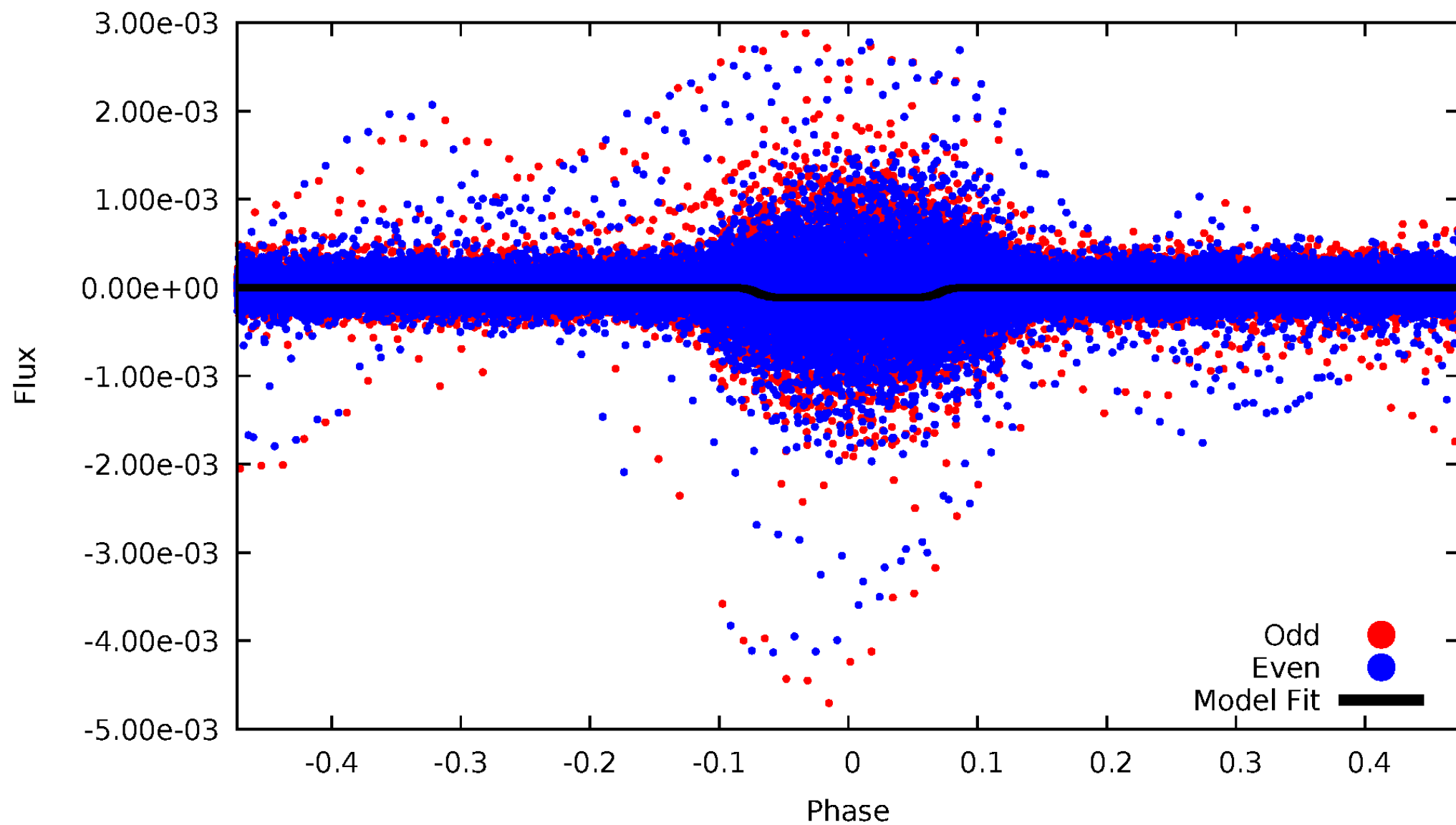
DV Odd/Even

TCE 008559796-01



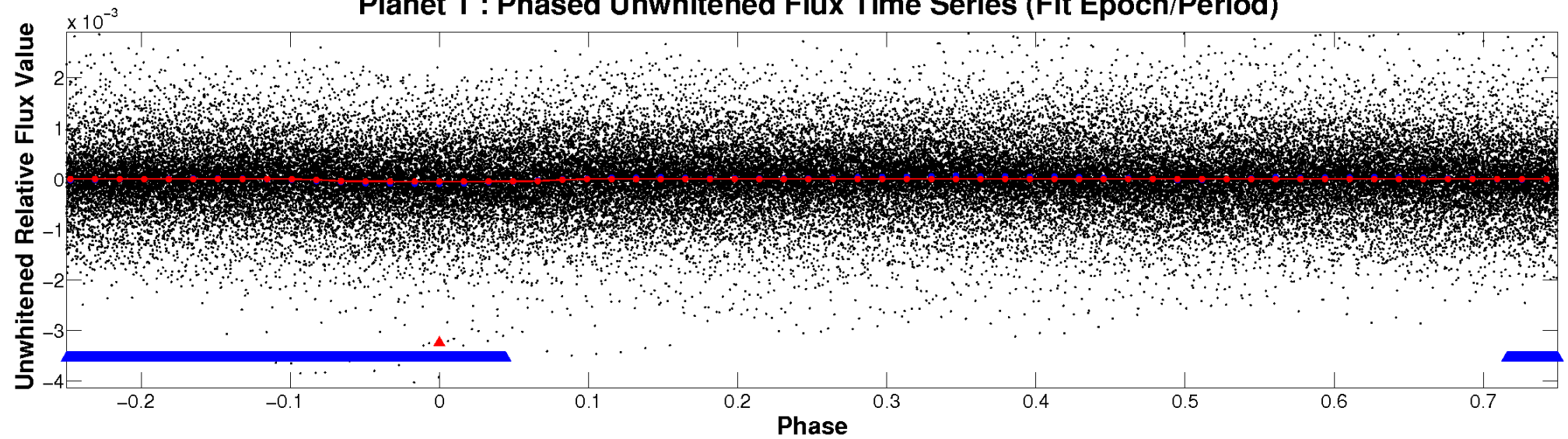
ALT Odd/Even

TCE 008559796-01

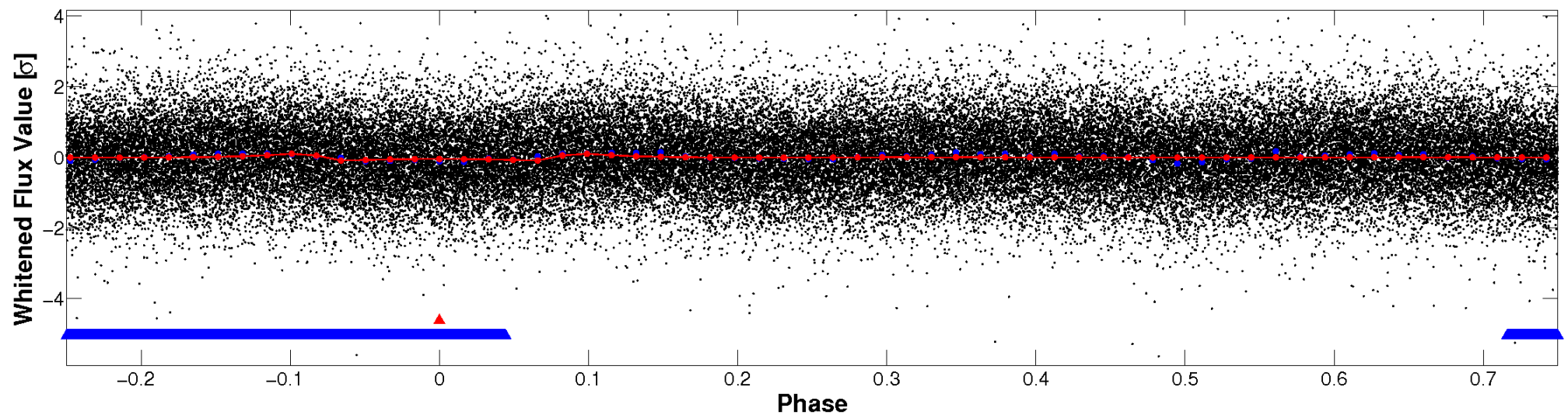


Non-Whitened Vs. Whitened Light Curve

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

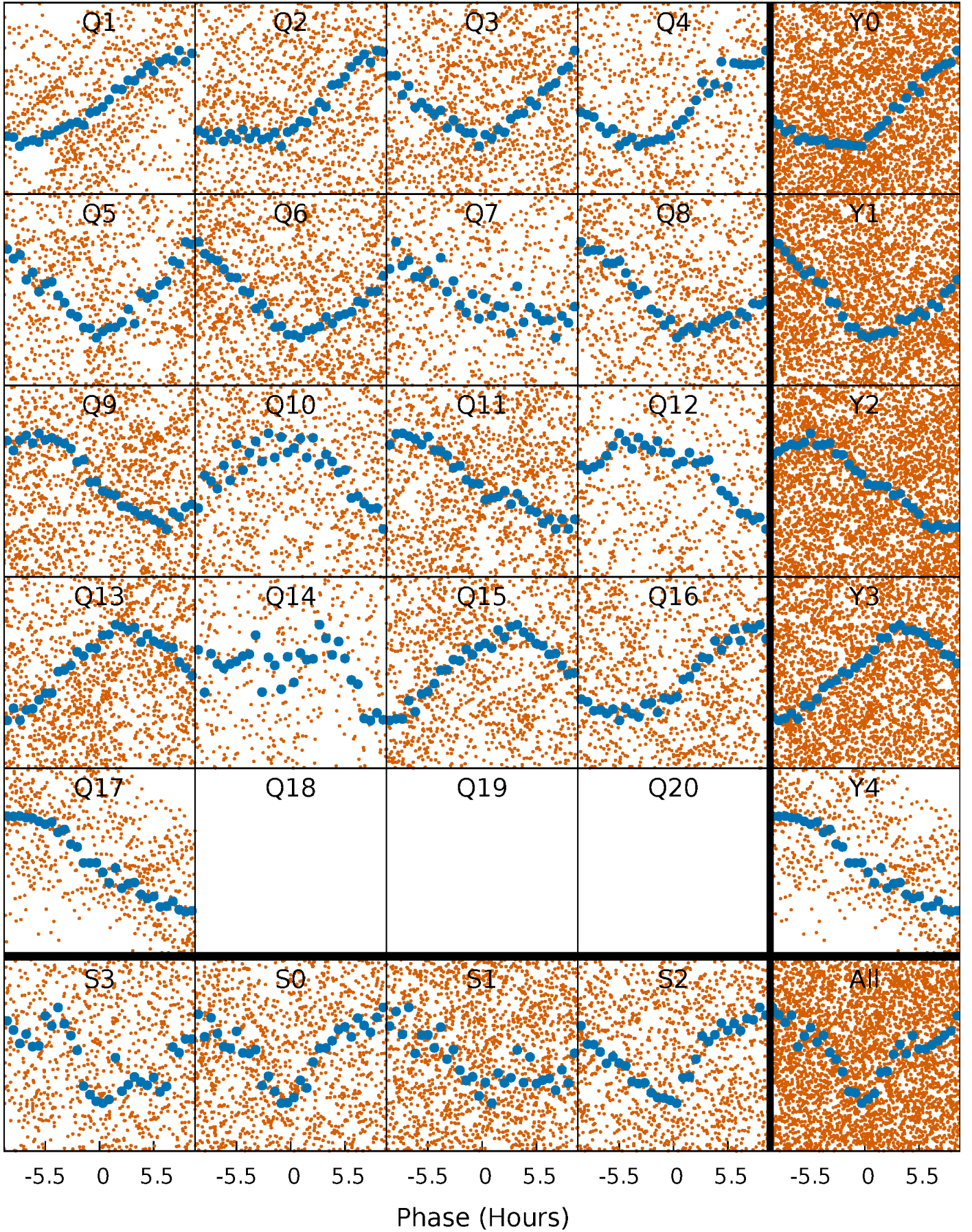


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



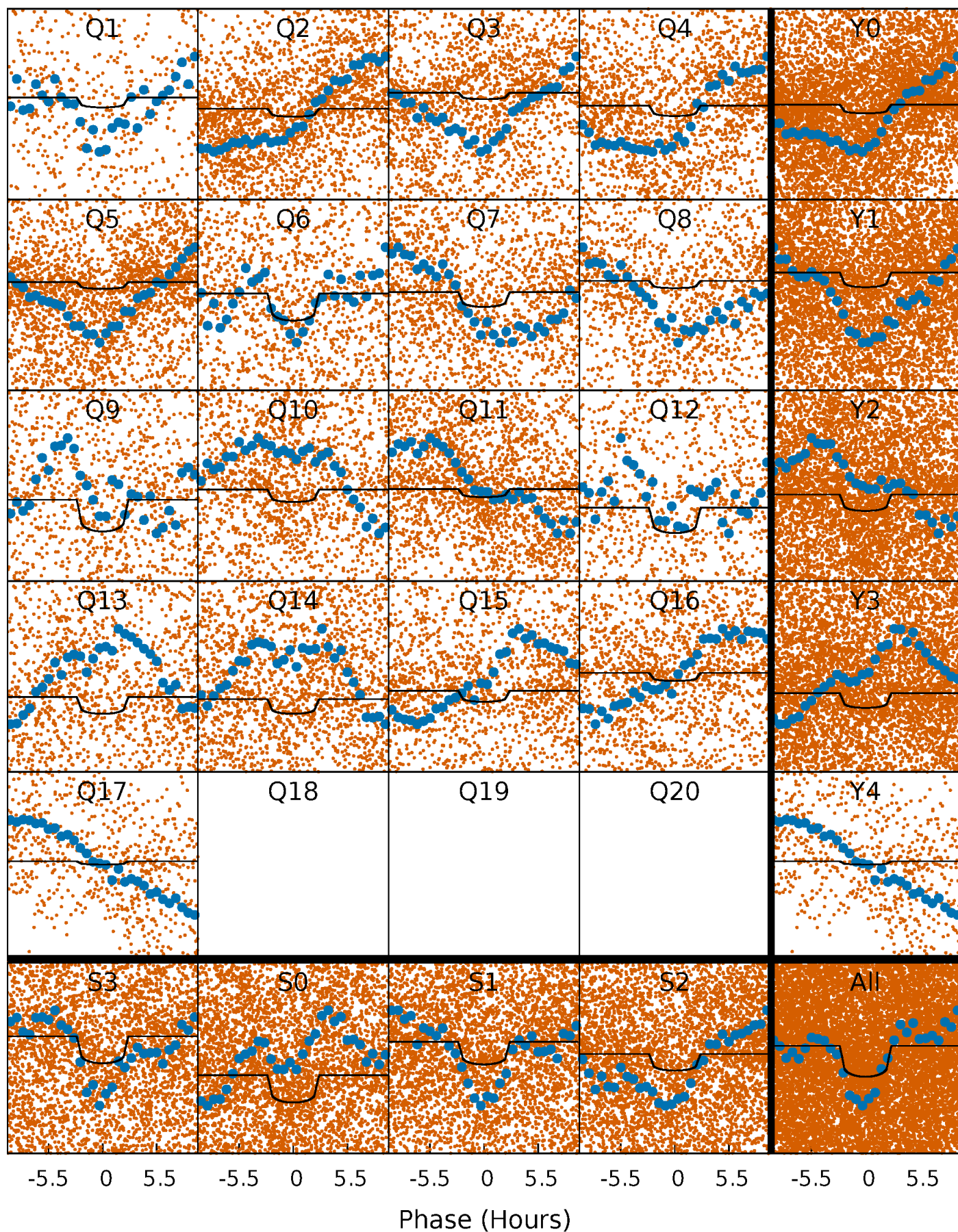
PDC Quarter-Phased Transit Curves

TCE 008559796-01 P= 1.238651 Days $T_0=131.536325$ (BKJD)



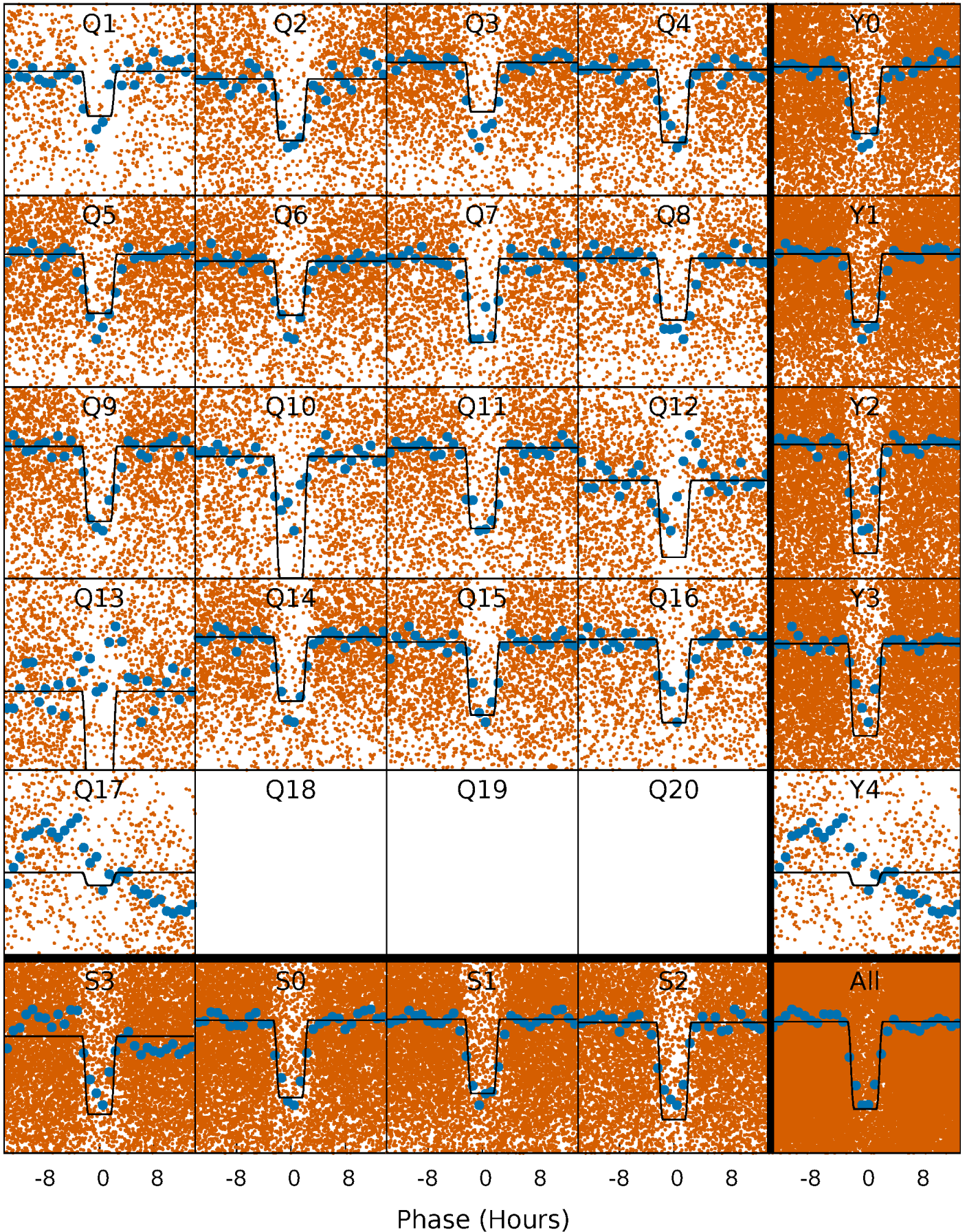
DV Quarter-Phased Transit Curves

TCE 008559796-01 P= 1.238651 Days $T_0=131.536325$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

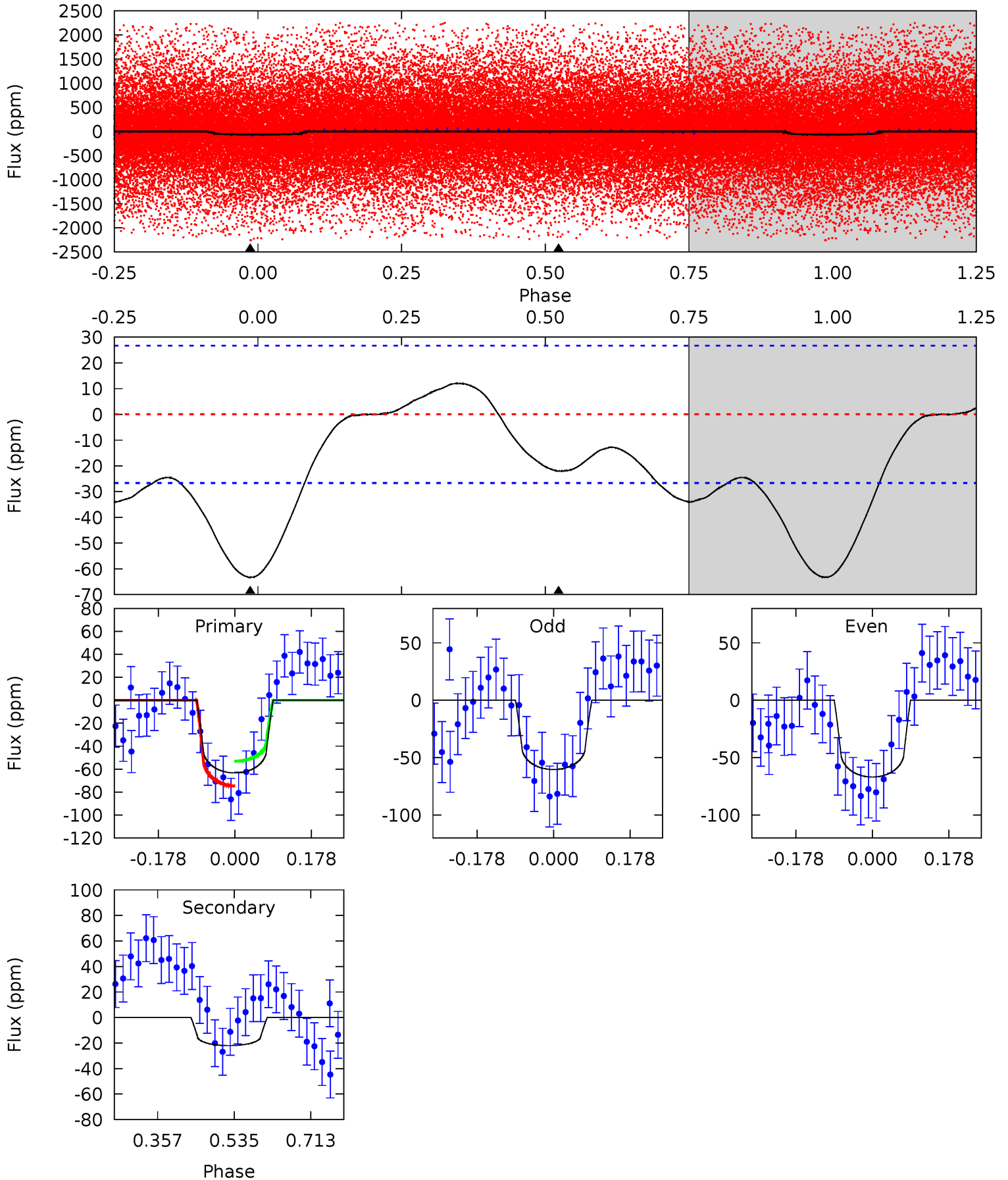
TCE 008559796-01 P= 1.238626 Days $T_0=131.542950$ (BKJD)



DV Model-Shift Uniqueness Test

008559796-01, P = 1.238651 Days, E = 130.297674 Days

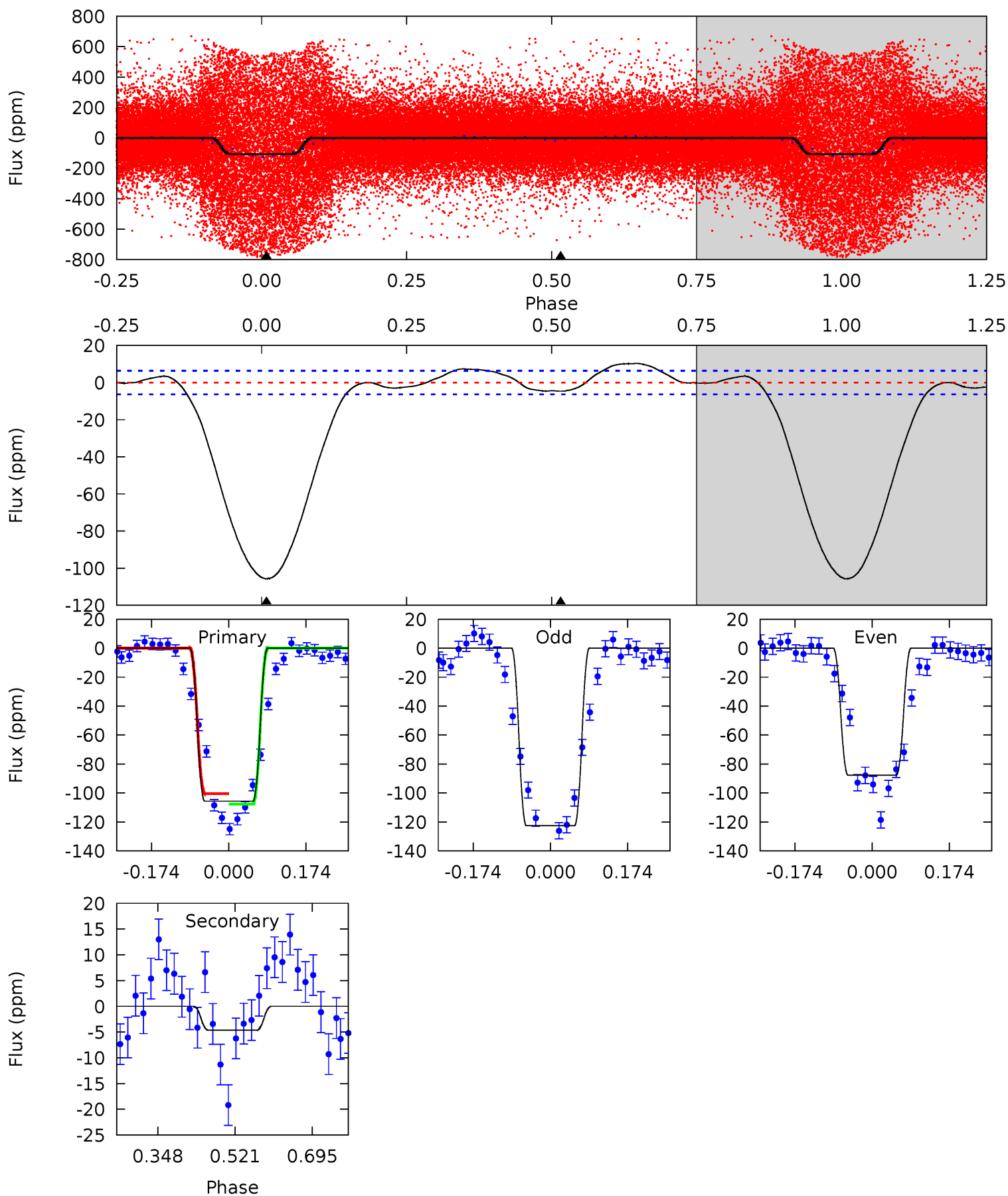
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	3.66	0	0	4.44	1.35	2.95	10.5	10.5	3.66	3.66	0.55	1.30	0.16	1.81



Alt Model-Shift Uniqueness Test

008559796-01, P = 1.238626 Days, E = 130.304324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.2	3.27	0	0	4.45	1.36	1.81	74.2	74.2	3.27	3.27	12.2	0.84	0.09	2.54



Stellar Parameters For KIC 008559796

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7138^{+199}_{-299}	$4.137^{+0.158}_{-0.193}$	$-0.200^{+0.250}_{-0.350}$	$1.684^{+0.548}_{-0.365}$	$1.419^{+0.228}_{-0.228}$	$0.419^{+0.334}_{-0.213}$
	+3%/-4%	+4%/-5%	+125%/-175%	+33%/-22%	+16%/-16%	+80%/-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 008559796-01 / KOI 7057.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-22 ± 6	$1.25^{+0.37}_{-0.34}$	3580^{+286}_{-259}	5814^{+1034}_{-719}	$5.022^{+4.793}_{-2.215}$
Alt.	-5 ± 1	$1.94^{+0.40}_{-0.36}$	3584^{+293}_{-252}	3004^{+504}_{-5735}	$0.429^{+0.253}_{-0.183}$

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 $A_{obs} \gg 1.0$

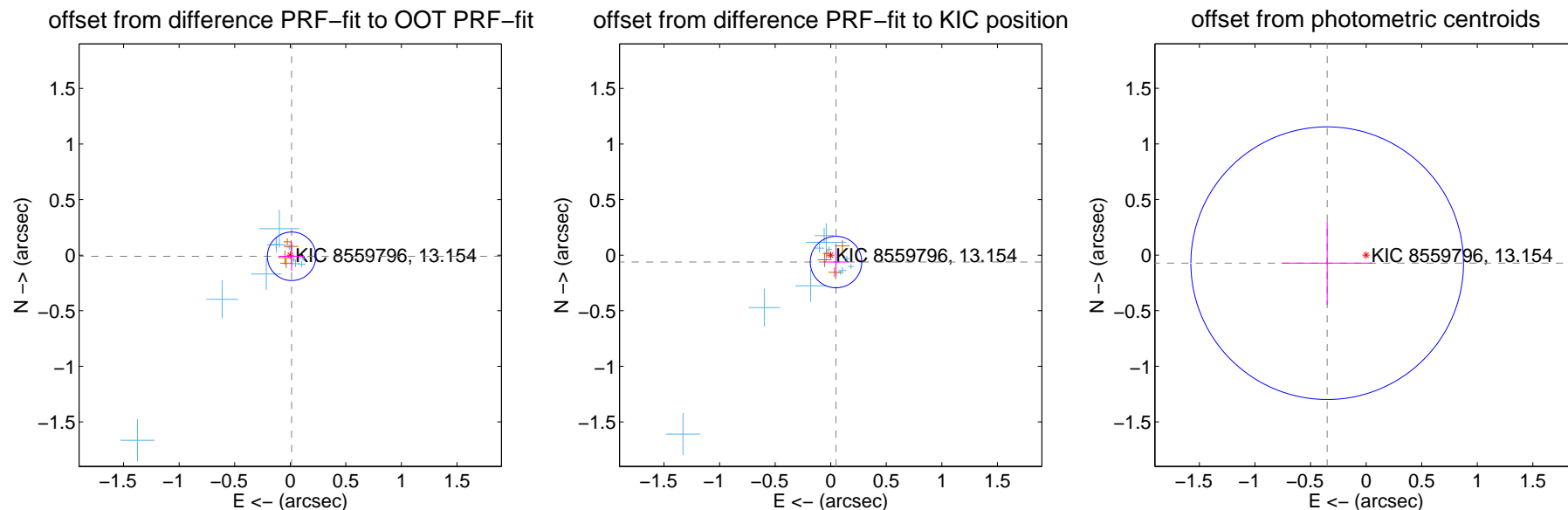
DV Centroid Data

Supplemental centroid analysis for 008559796-01. Kepler magnitude: 13.15. Transit SNR 9.25

There are 11 quarters with good PRF difference image offsets

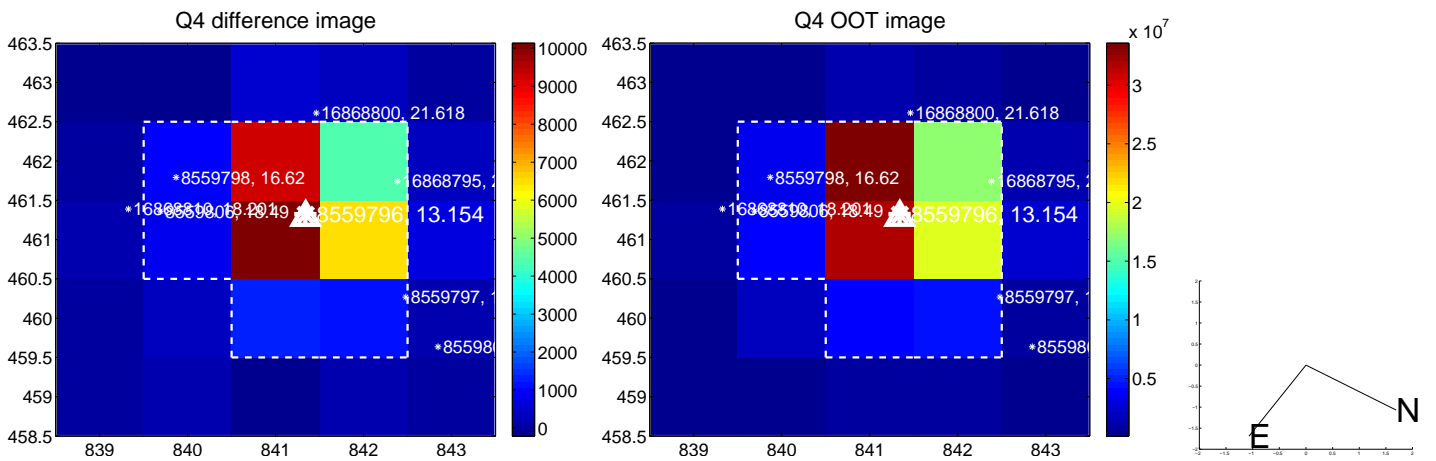
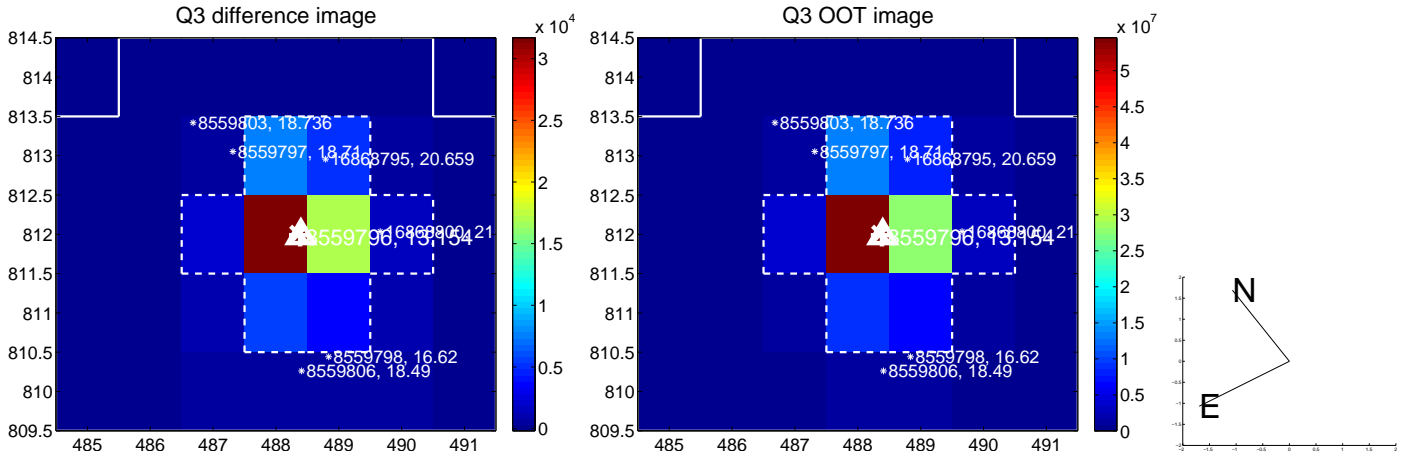
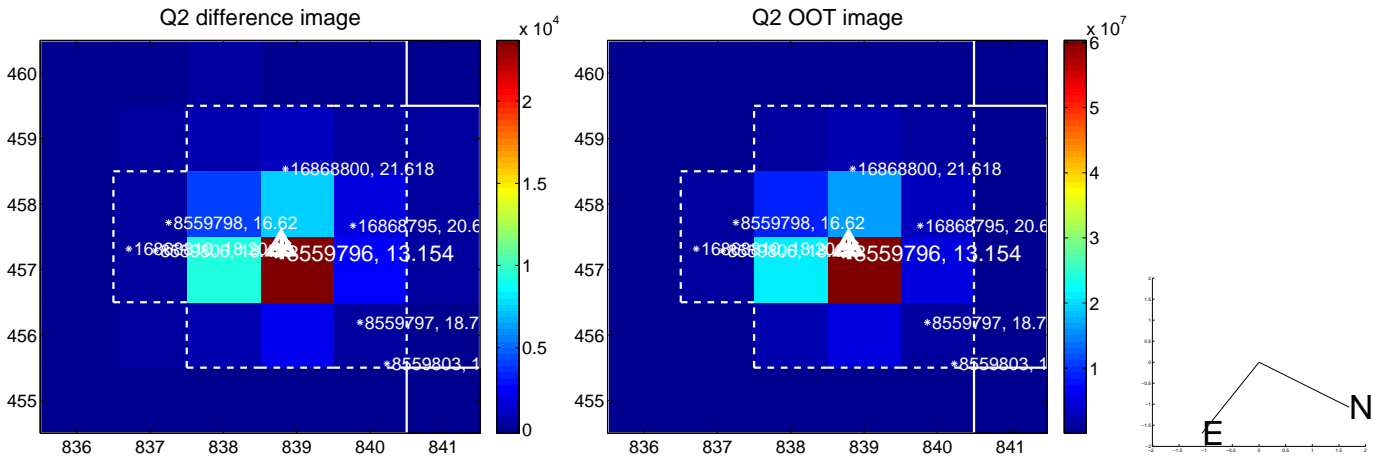
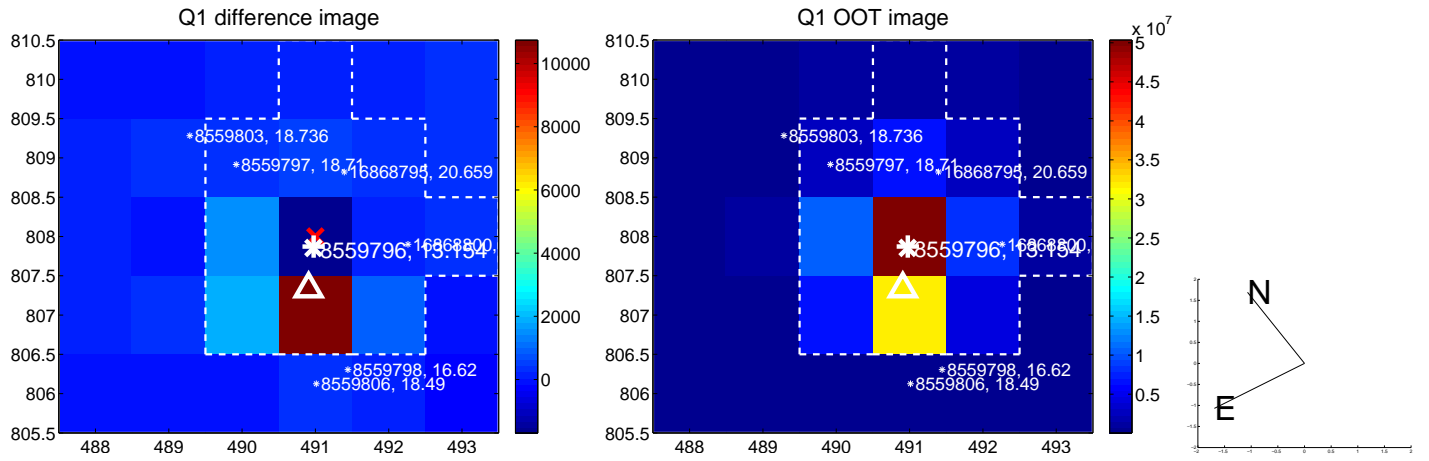
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.016 ± 0.073	0.22	-0.012 ± 0.116	-0.010 ± 0.131
PRF-fit source offset from KIC position	0.078 ± 0.077	1.01	-0.047 ± 0.111	-0.062 ± 0.122
photometric centroid source offset	0.36 ± 0.41	0.88	0.35 ± 0.41	-0.07 ± 0.37

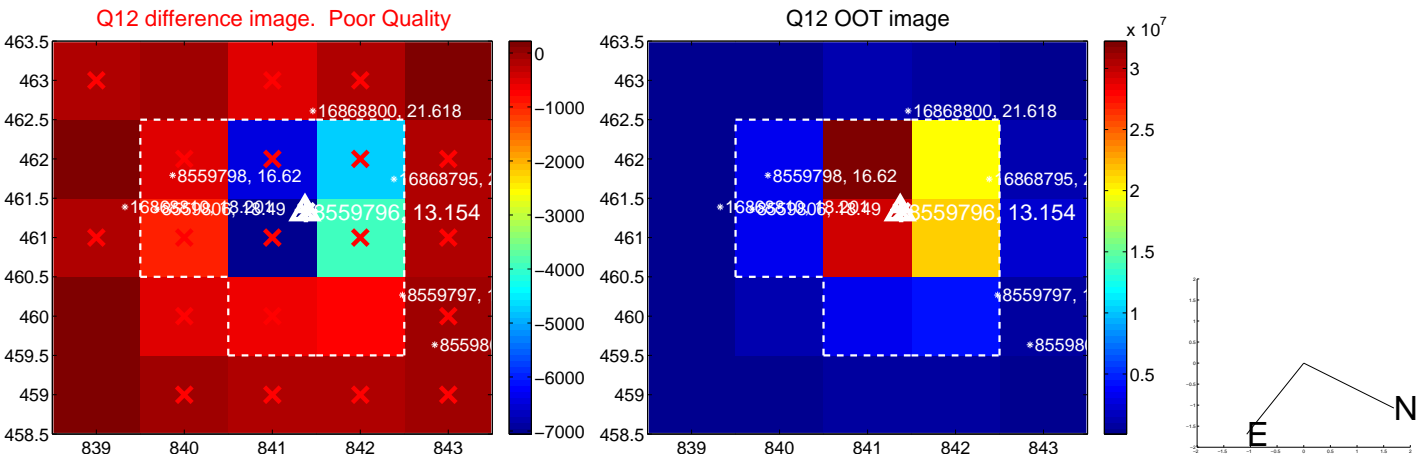
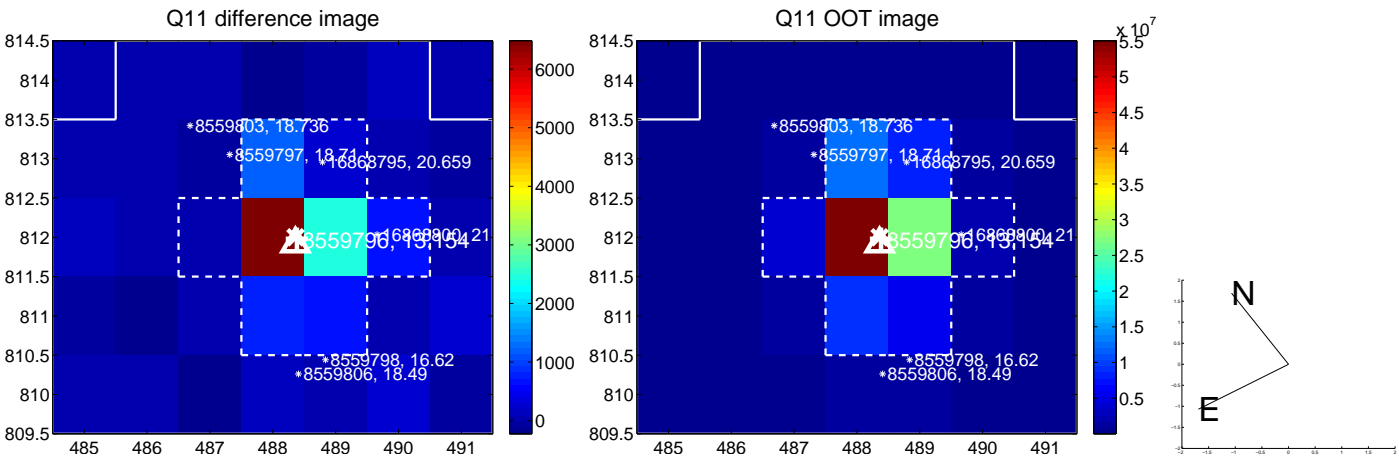
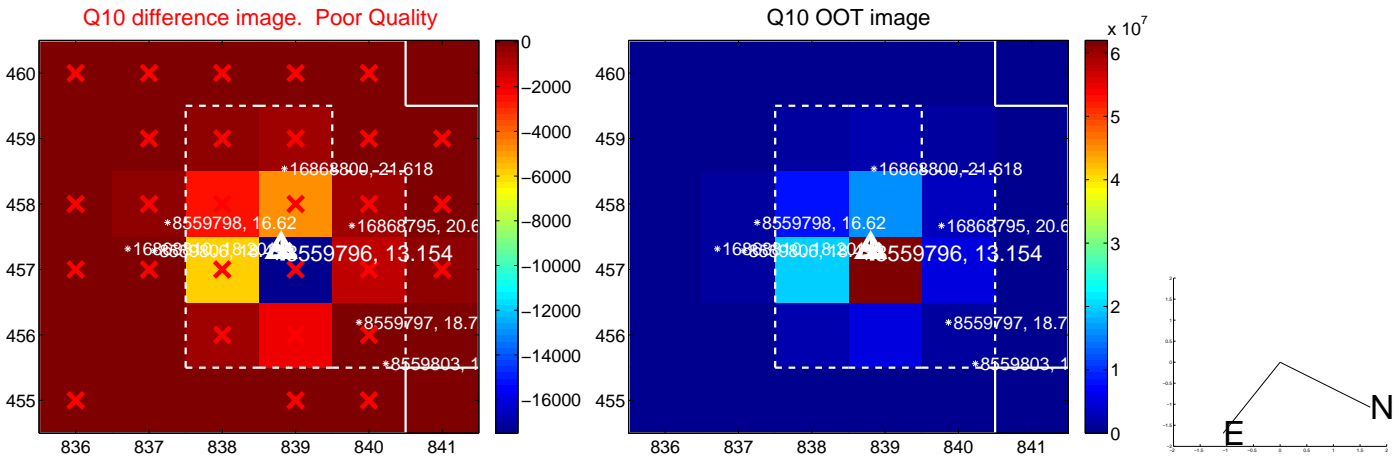
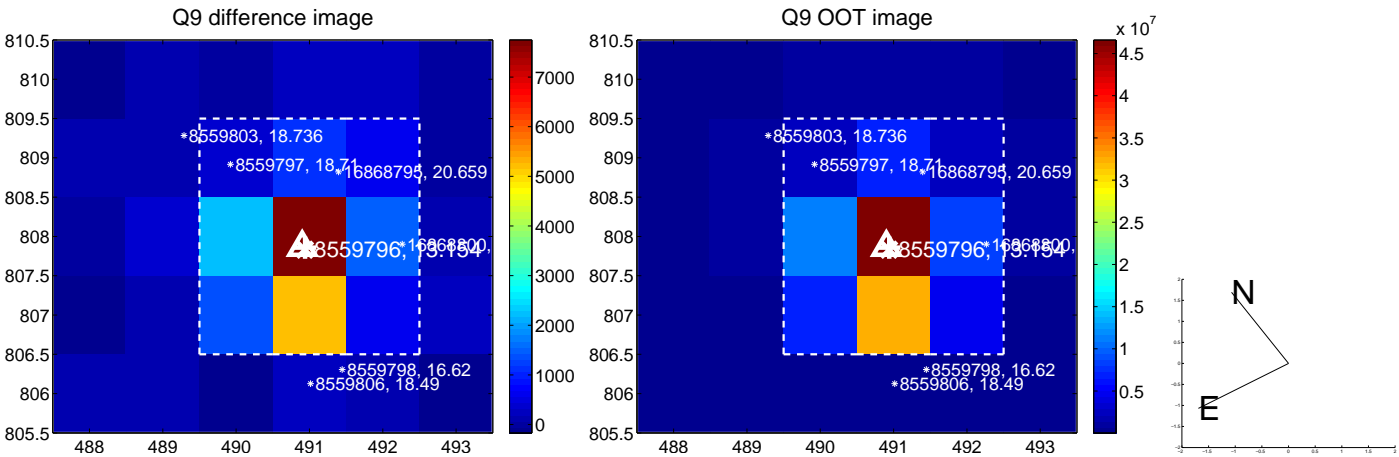


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

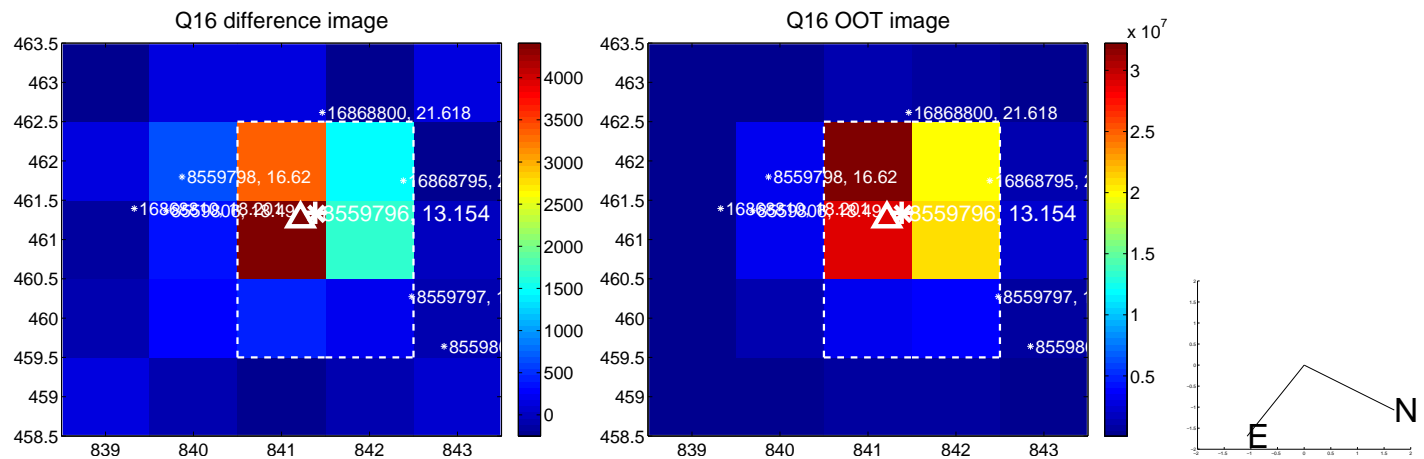
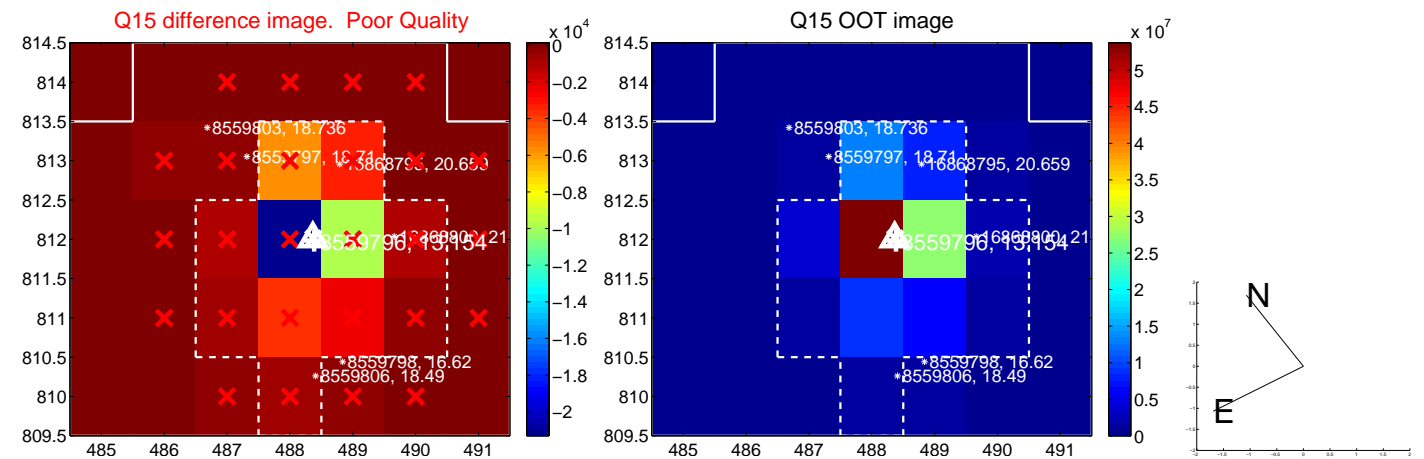
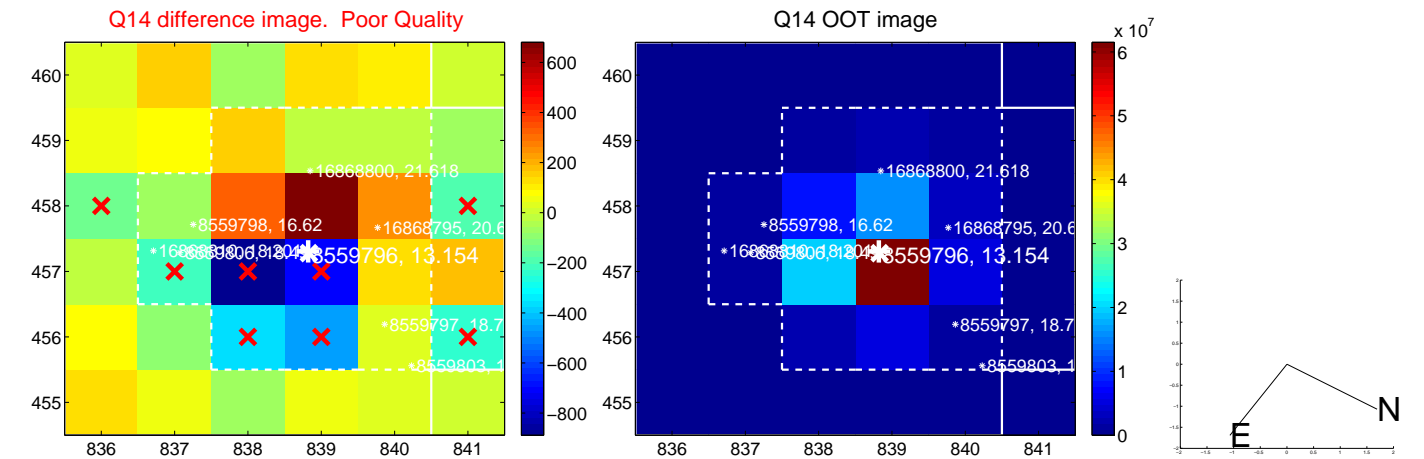
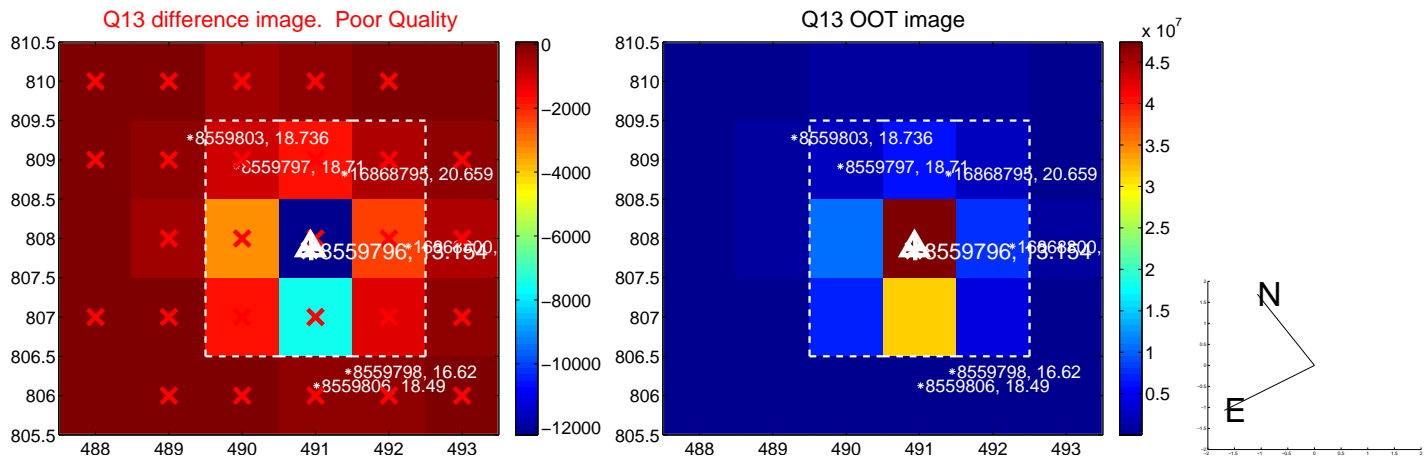
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



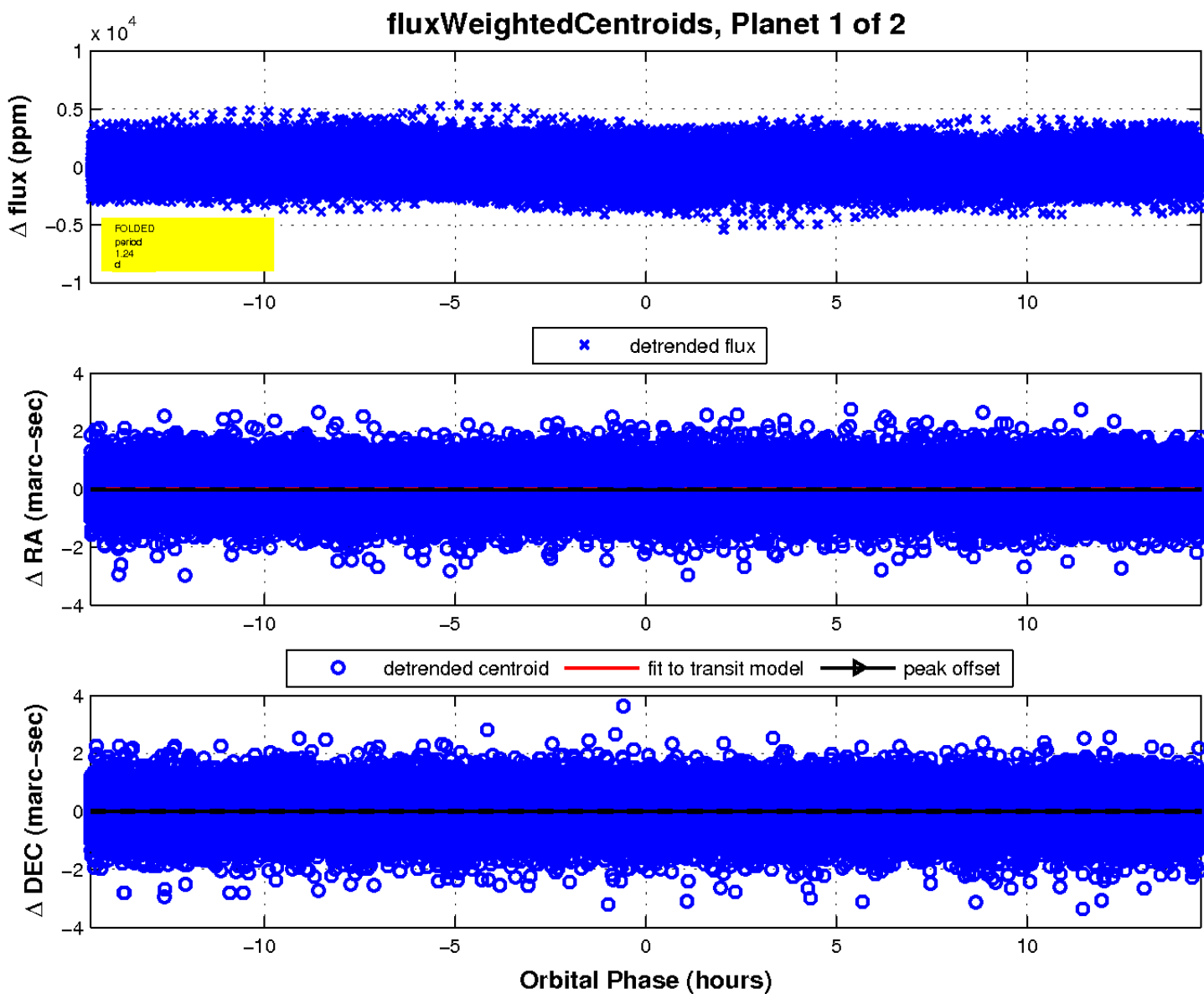
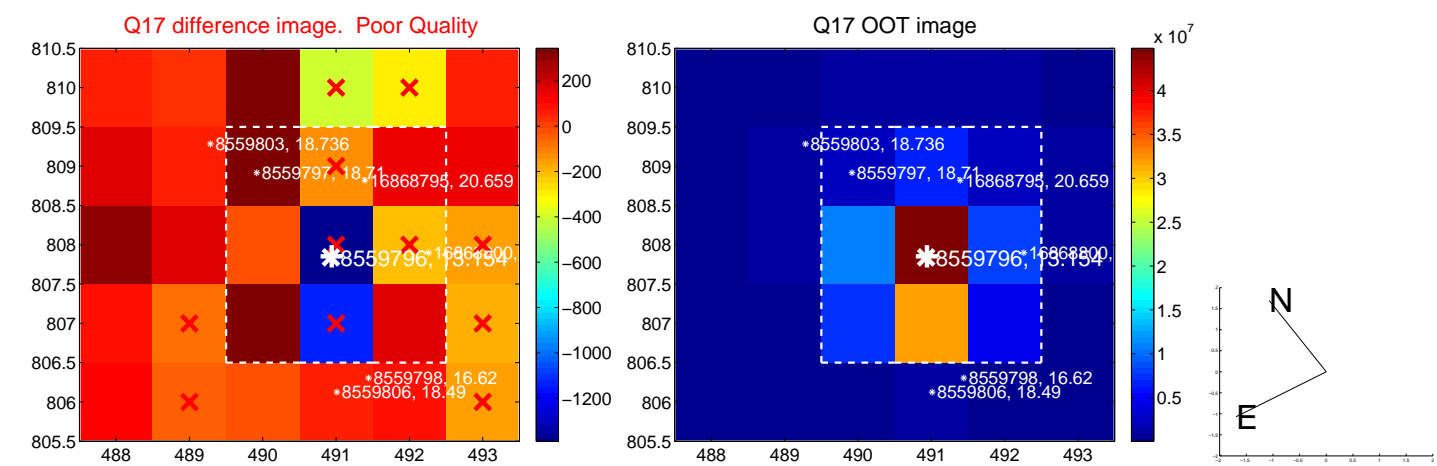
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

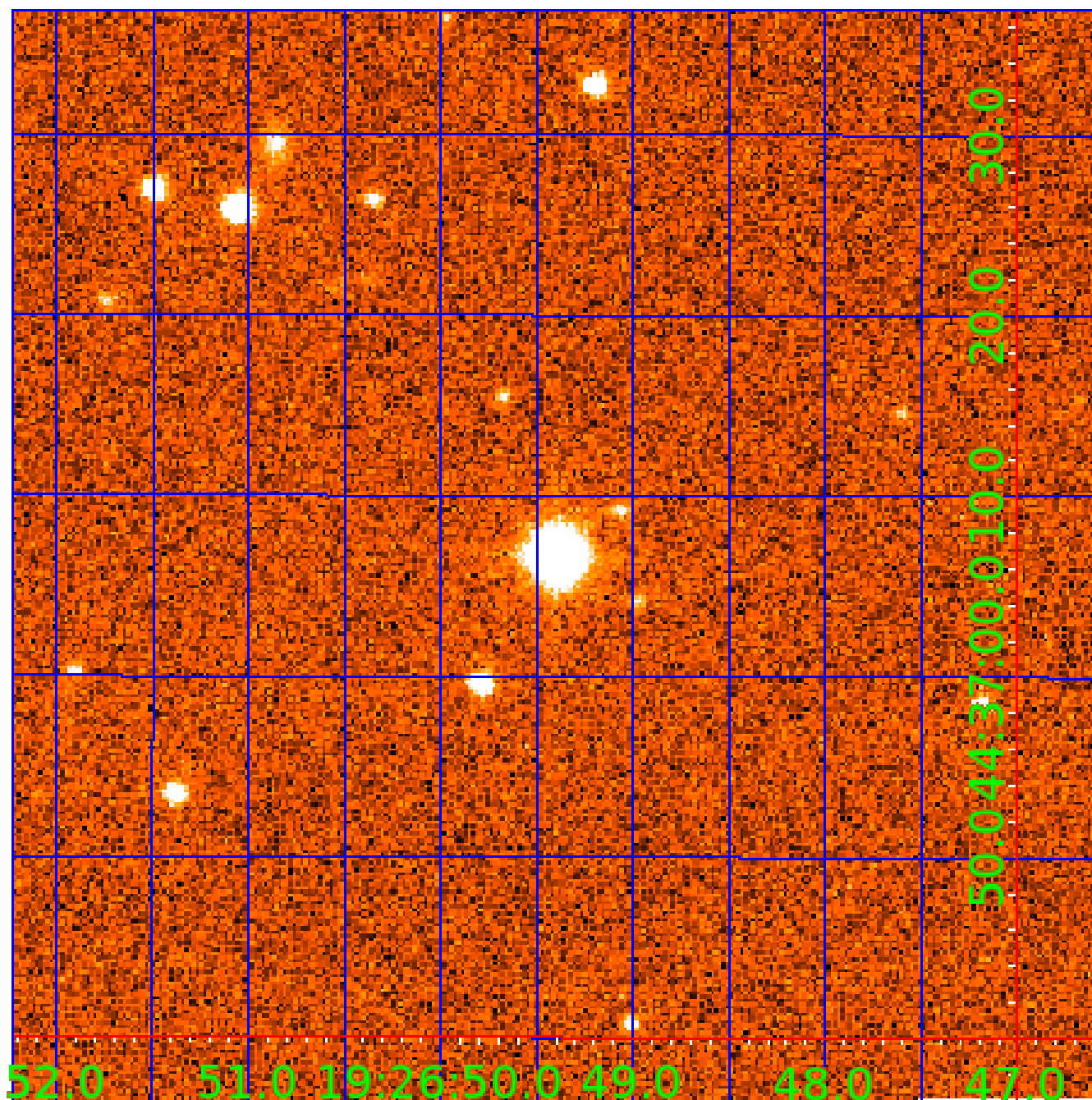


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008559796

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})
008559796-01	OBS	7057.01	1.238651	131.536325	49.6	4.855	11.1	9.2	1.68	7138	1.23	10252.50
008559796-02	OBS	No	1.238996	132.423387	480.5	14.868	9.6	12.1	1.68	7138	6.99	10248.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008559796-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008559796-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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.

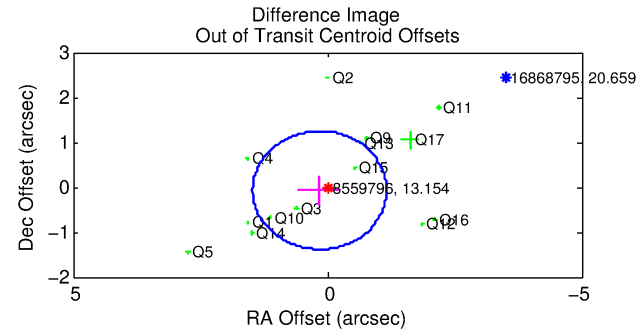
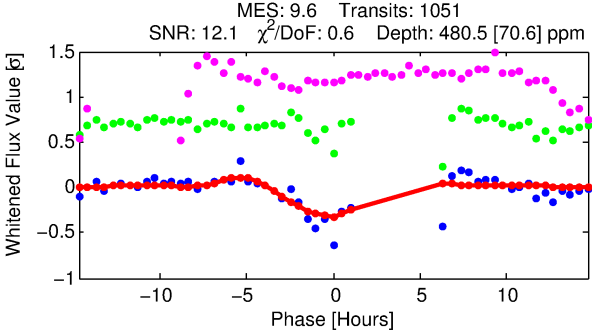
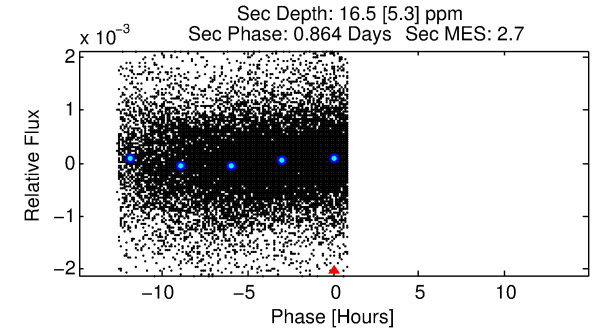
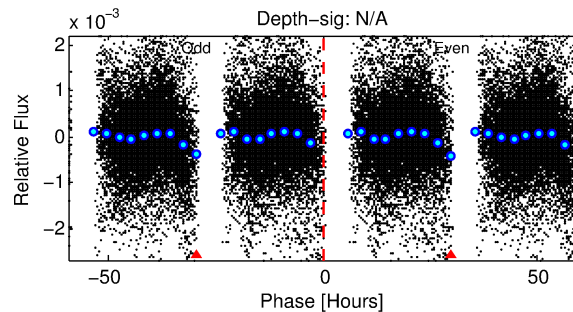
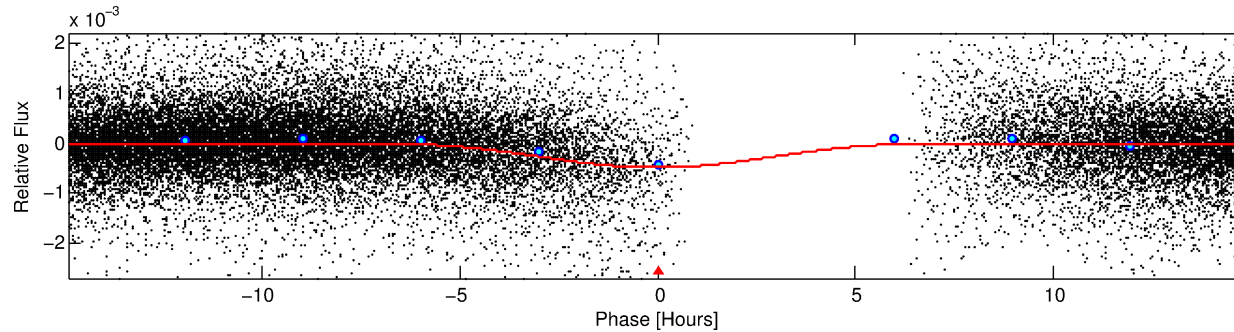
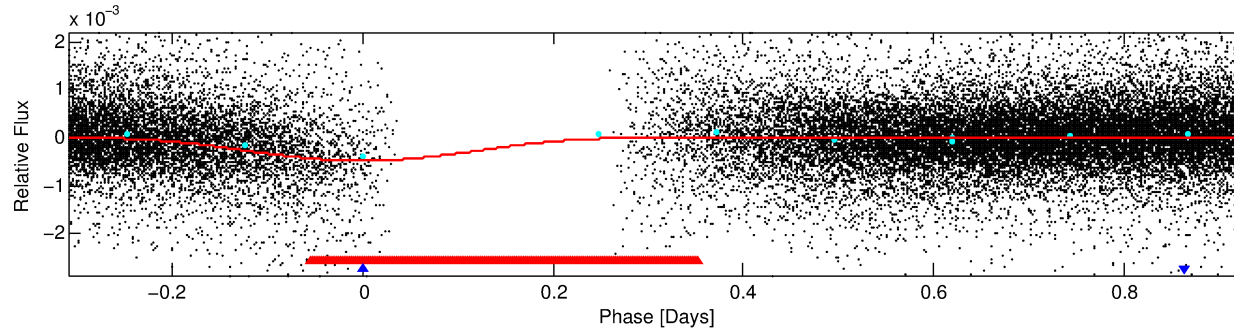
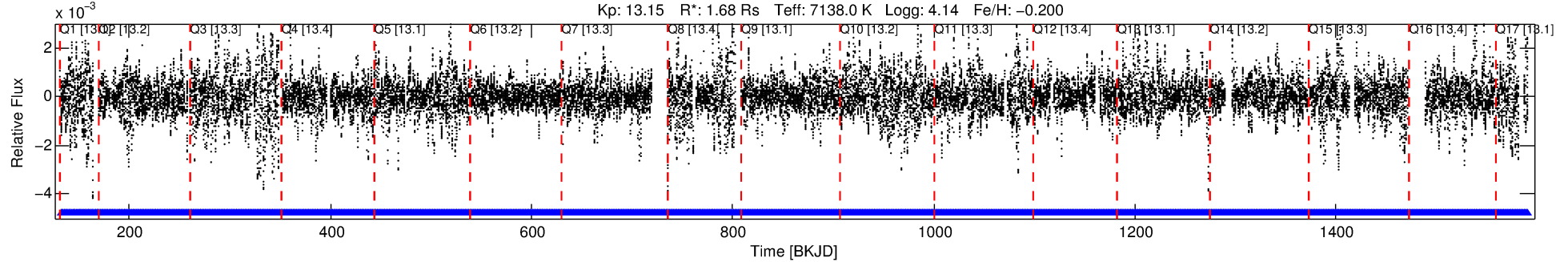
Ephemeris Match Information For 008559796-02

No Significant Match Found

DV One-Page Summary

KIC: 8559796 Candidate: 2 of 2 Period: 1.239 d
KOI: K07057 Corr: No Ephemeris Match

Kp: 13.15 R*: 1.68 Rs Teff: 7138.0 K Logg: 4.14 Fe/H: -0.200



DV Fit Results:

Period = 1.23900 [0.00003] d
Epoch = 132.4234 [0.0129] BKJD
Rp/R* = 0.0380 [0.0227]
a/R* = 1.04 [0.02]
b = 1.00 [0.04]
Seff = 10248.70 [4136.62]
Teq = 2566 [259] K
Rp = 6.99 [4.76] Re
a = 0.0254 [0.0067] AU
Ag = 0.12 [0.15] [-5.73σ]
Teffp = 2331 [727] K [-0.30σ]

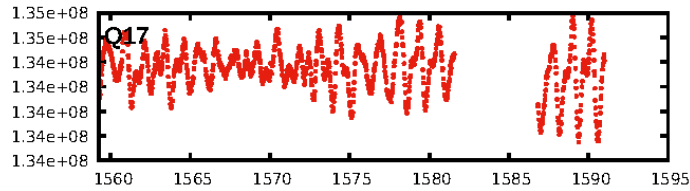
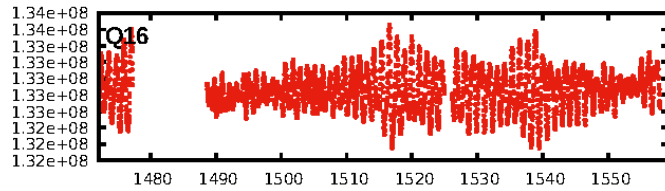
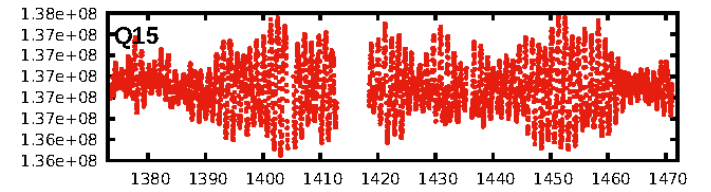
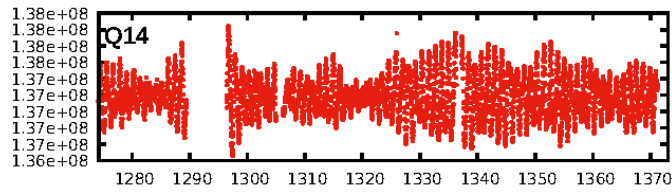
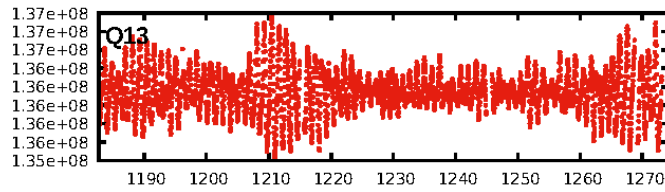
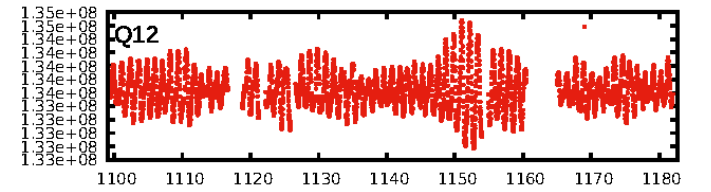
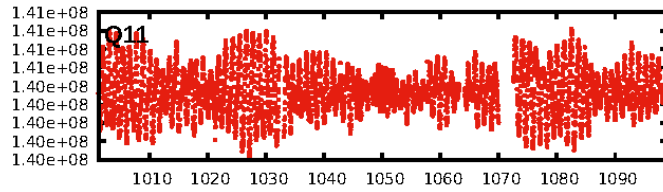
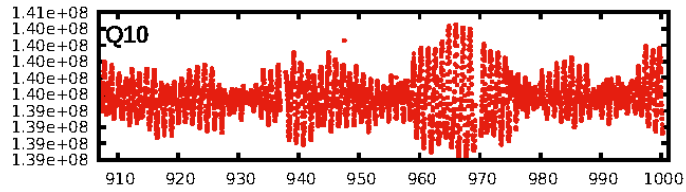
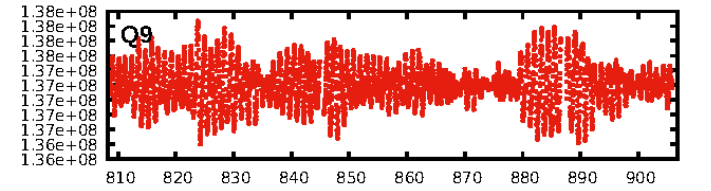
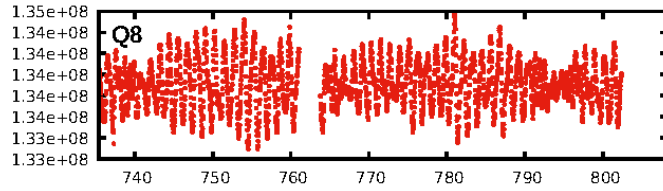
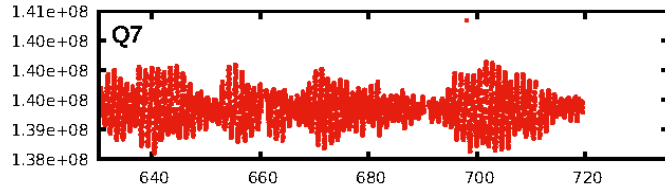
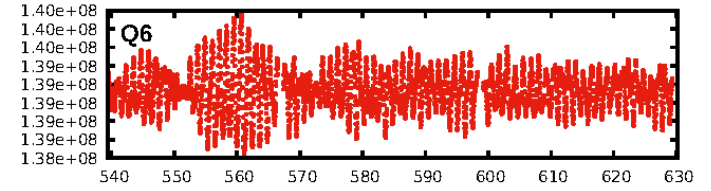
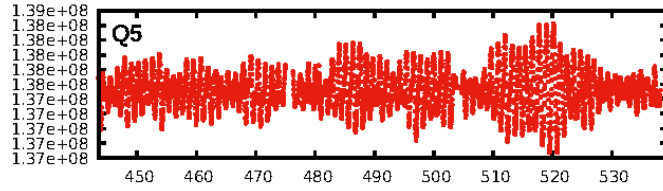
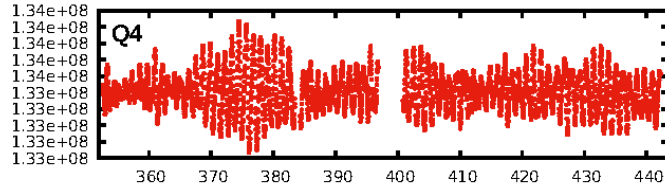
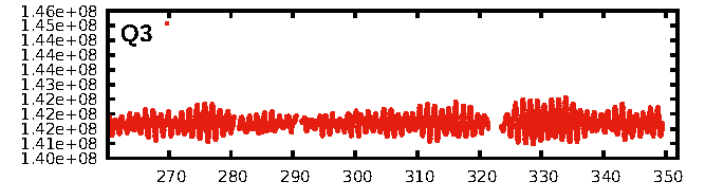
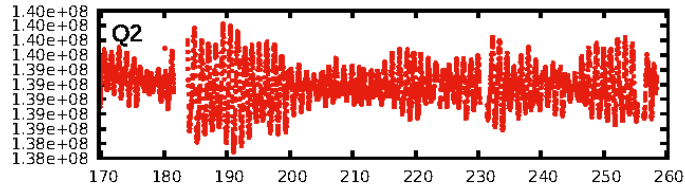
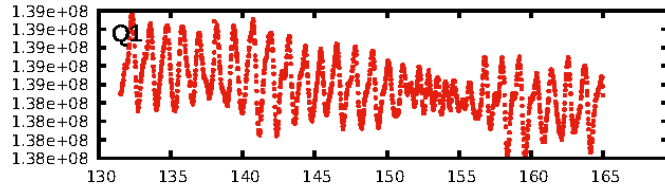
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1002/1002]
GhostDiagnostic-chr: -0.1005
Centroid-sig: 23.1%
Centroid-so: 0.130 arcsec [3.54σ]
OotOffset-rm: 0.171 arcsec [0.39σ]
KicOffset-rm: 0.158 arcsec [0.37σ]
OotOffset-st: 3/3/3/5 [14]
KicOffset-st: 3/3/3/5 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 0.00 [0/17]

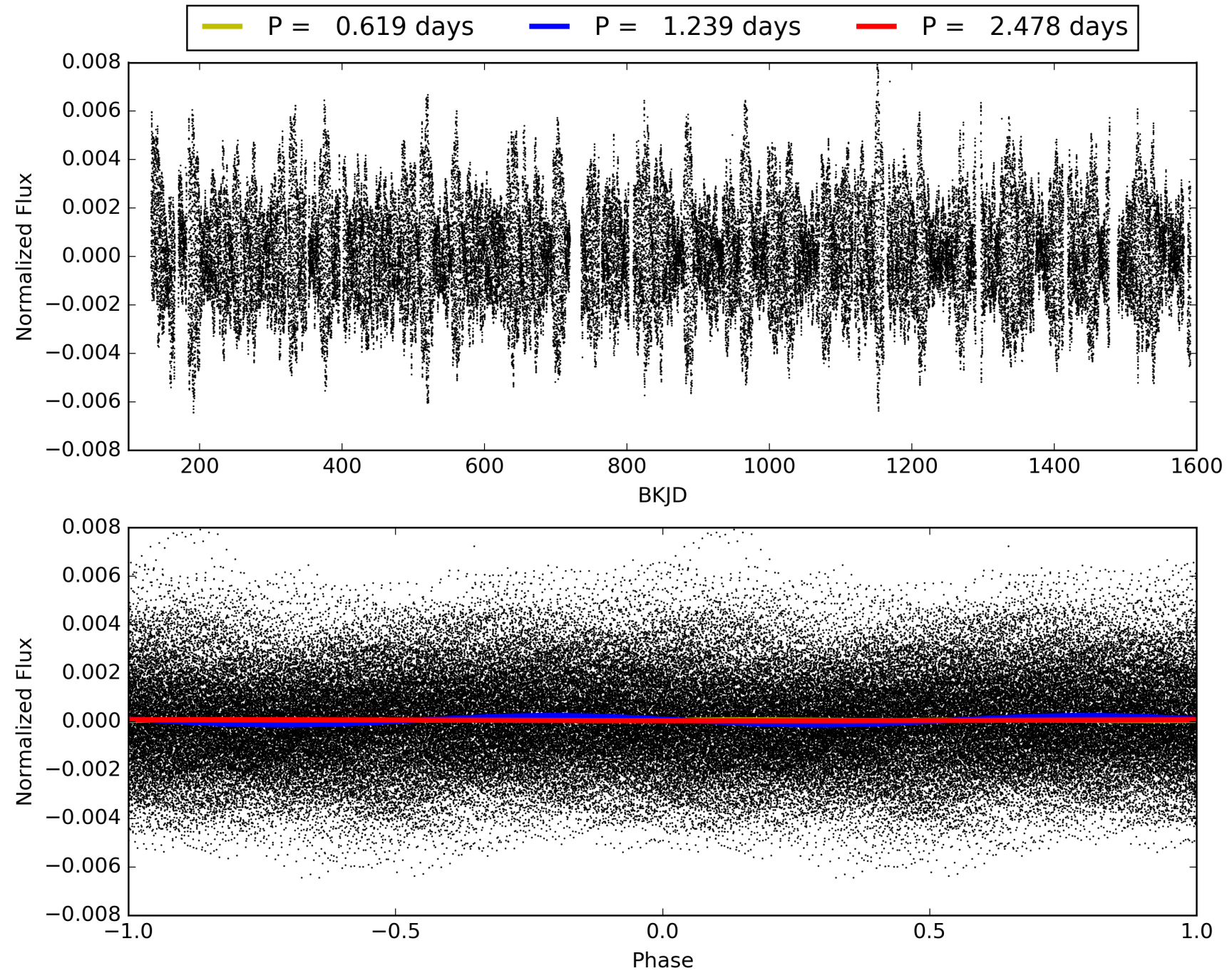
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 18:35:05 Z

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

TCE 008559796-02, PDC Light Curves

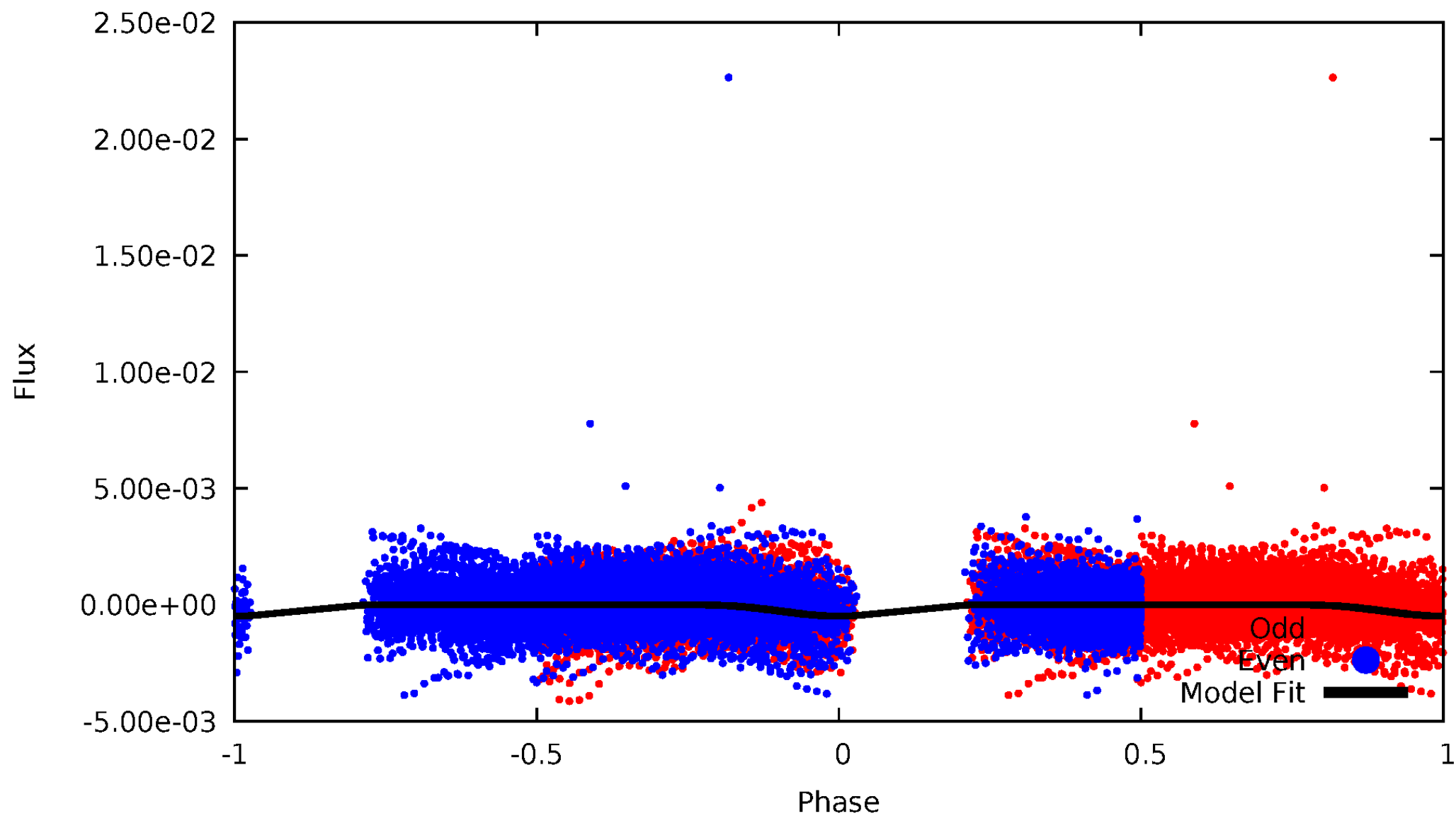


TCE 008559796-02



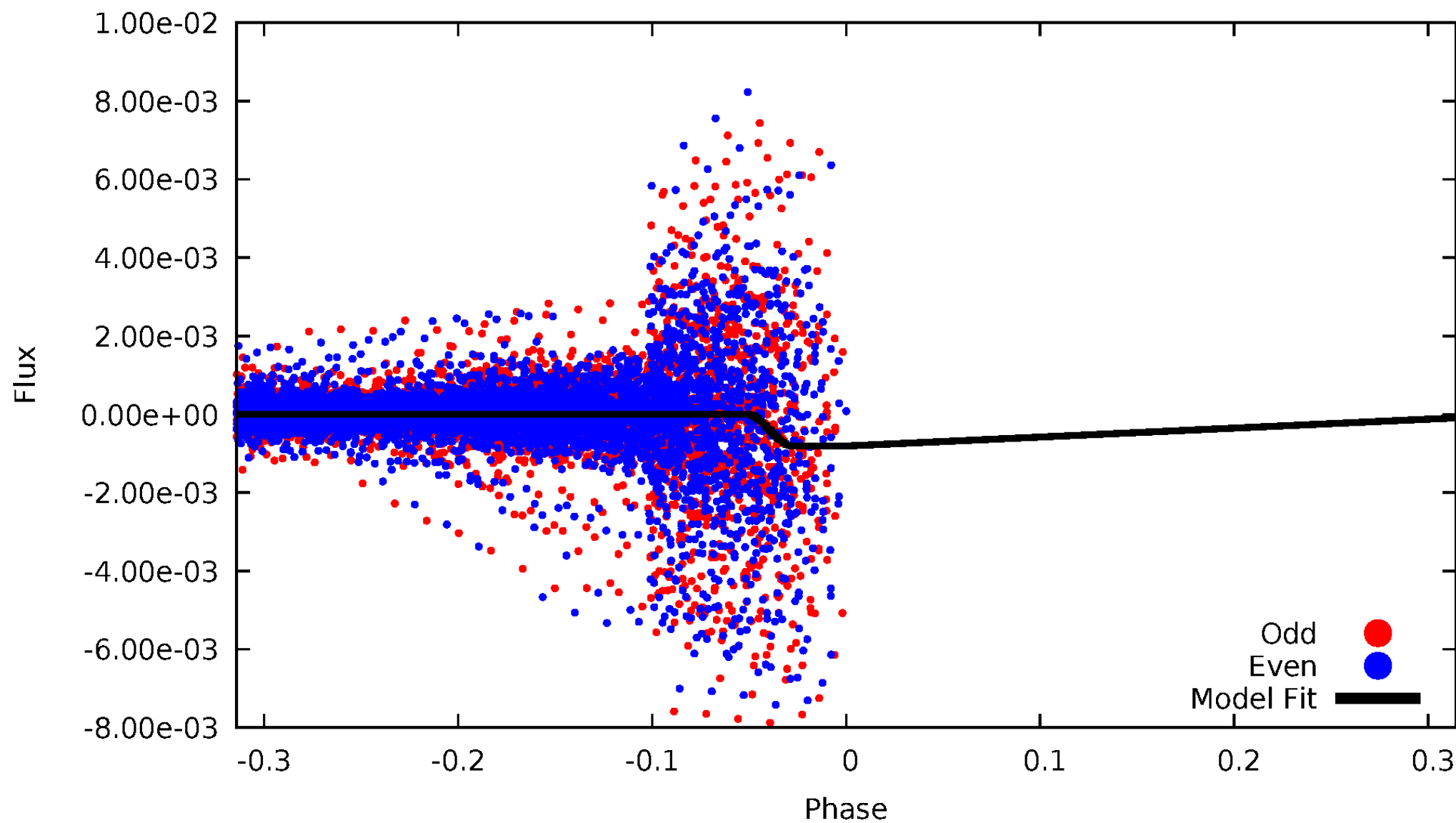
DV Odd/Even

TCE 008559796-02



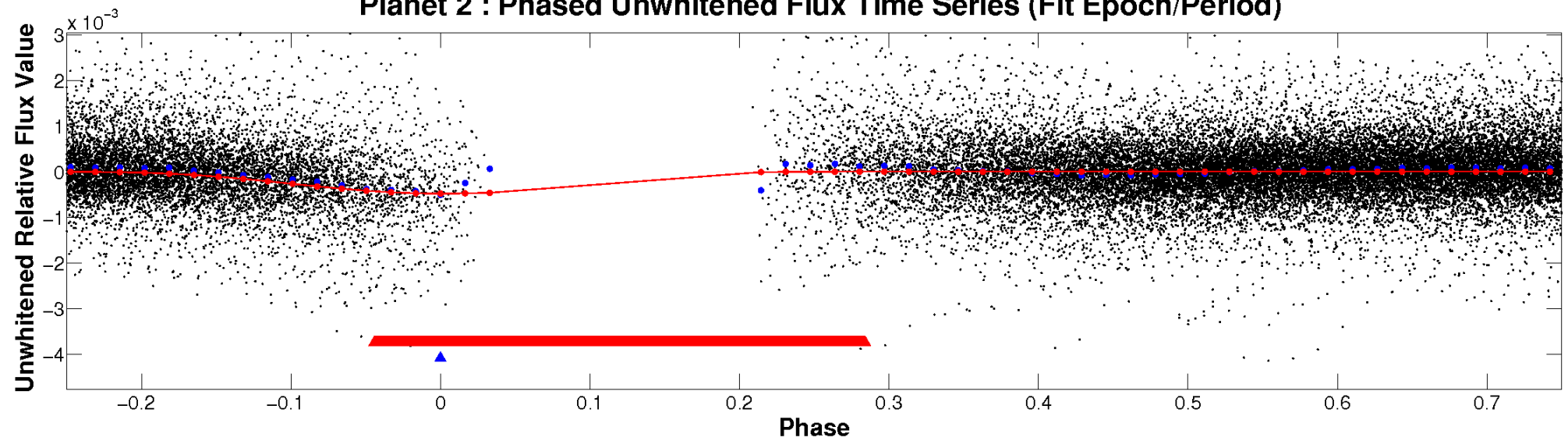
ALT Odd/Even

TCE 008559796-02

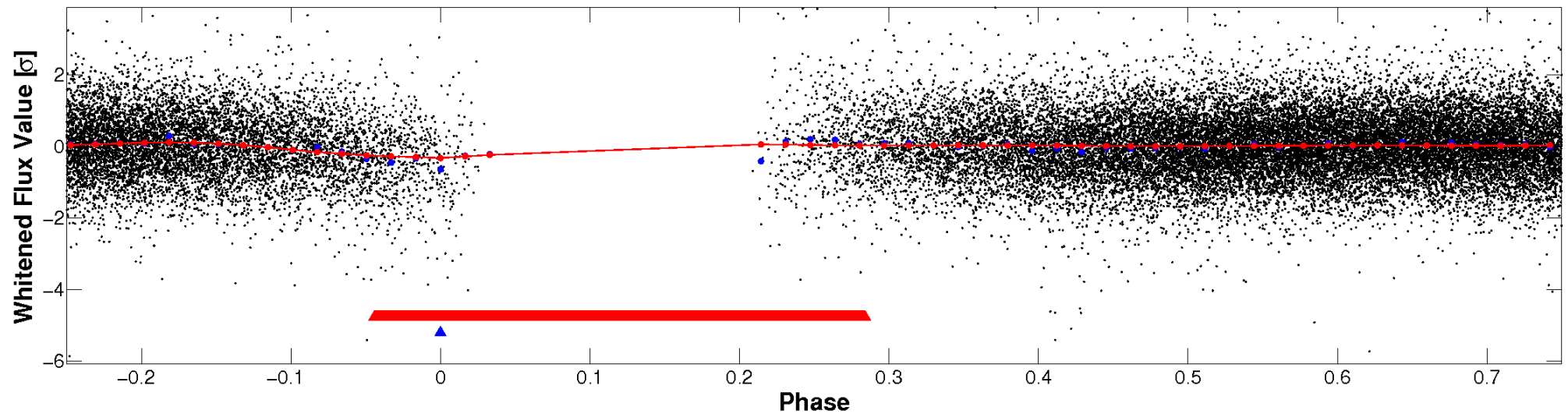


Non-Whitened Vs. Whitened Light Curve

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

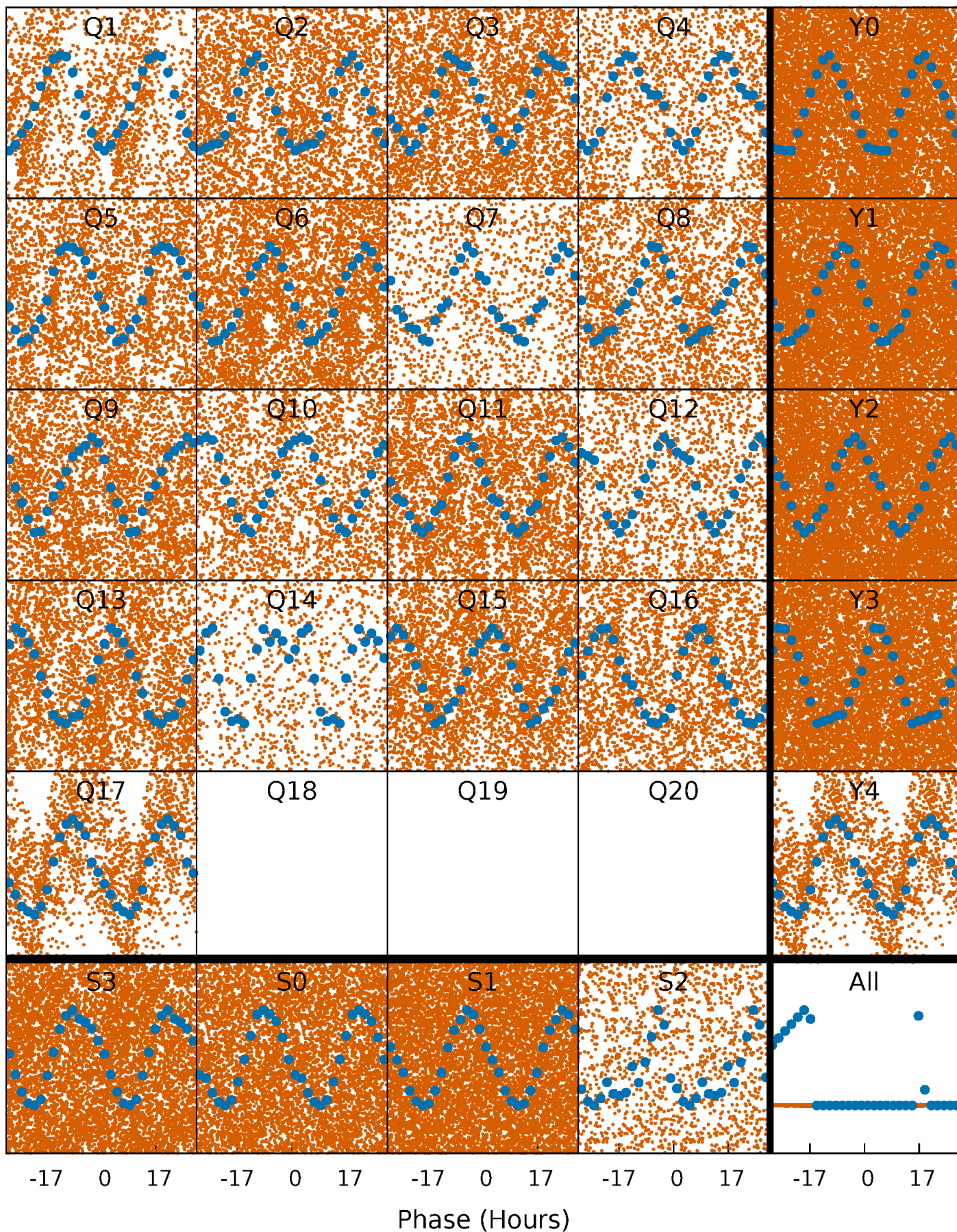


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



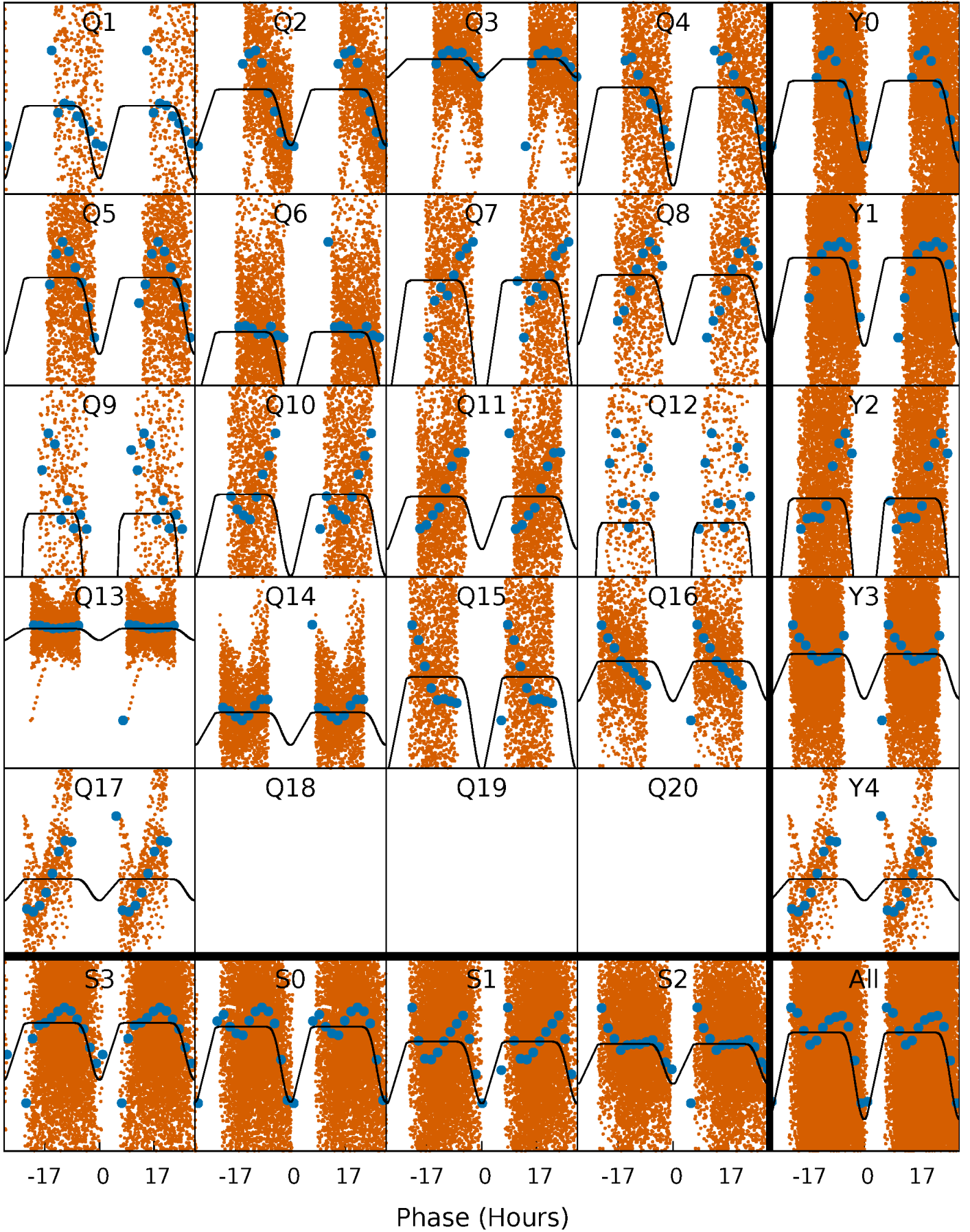
PDC Quarter-Phased Transit Curves

TCE 008559796-02 P= 1.238996 Days $T_0=132.423387$ (BKJD)



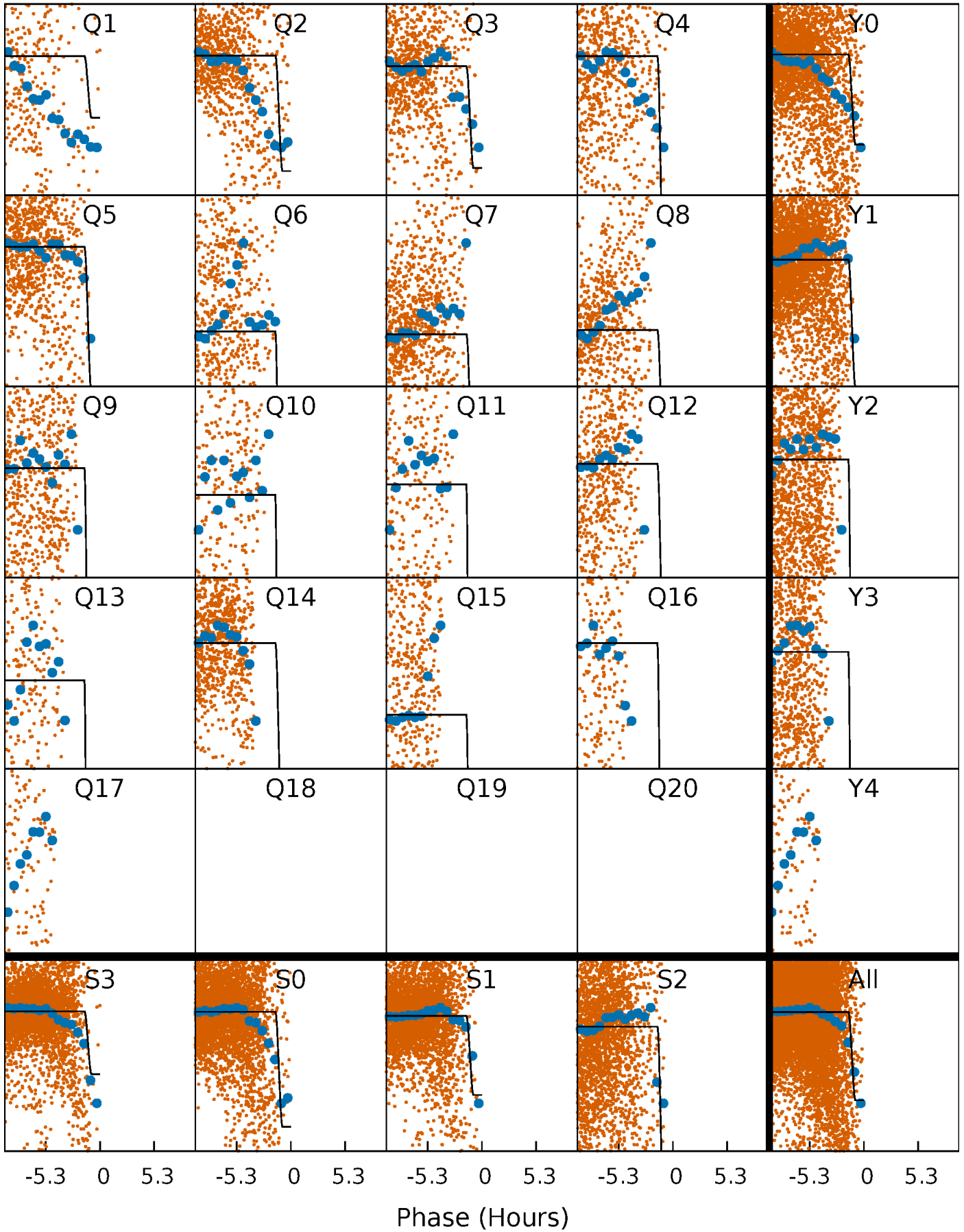
DV Quarter-Phased Transit Curves

TCE 008559796-02 $P = 1.238996$ Days $T_0 = 132.423387$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

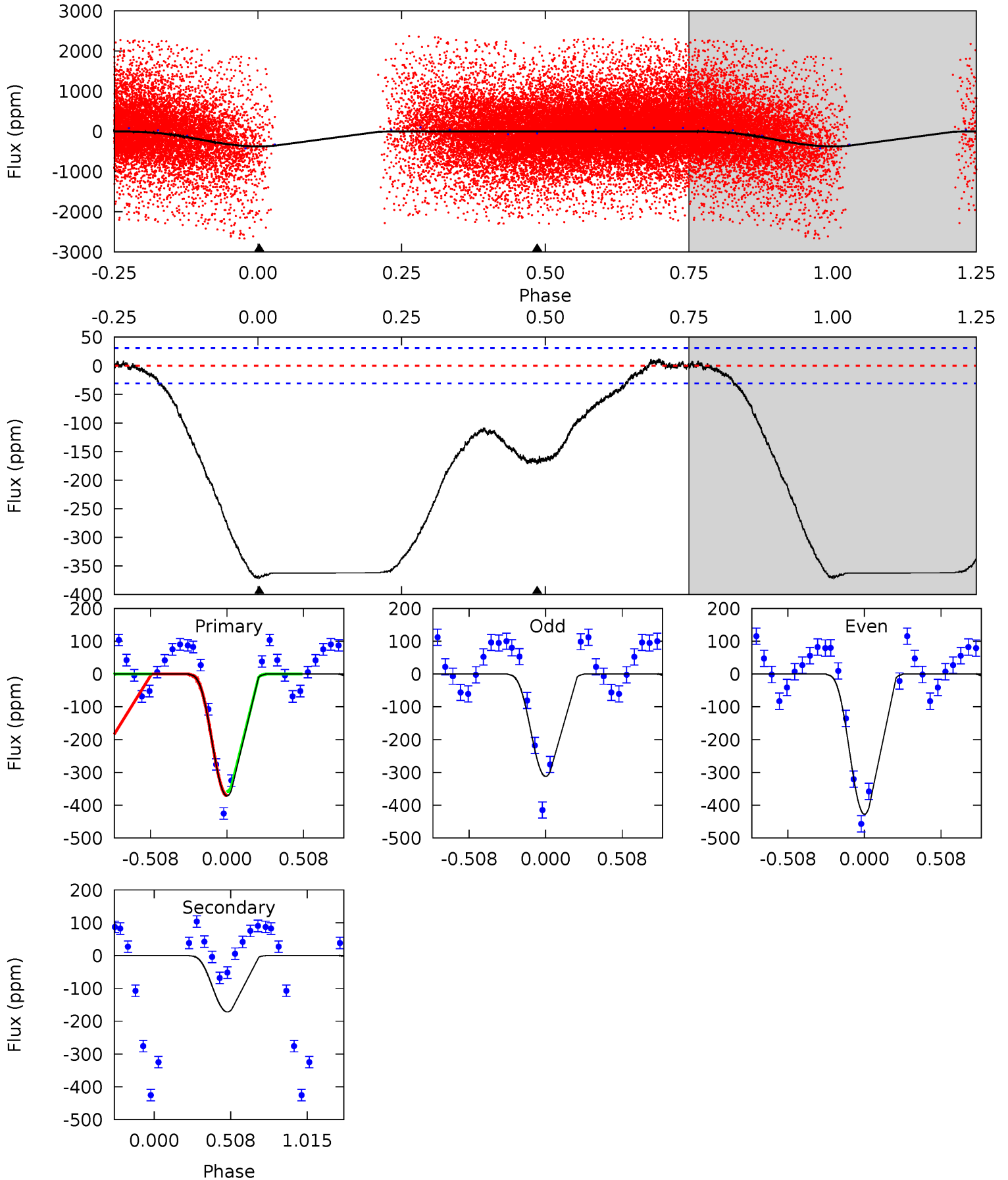
TCE 008559796-02 P= 1.238810 Days $T_0=132.459959$ (BKJD)



DV Model-Shift Uniqueness Test

008559796-02, P = 1.238996 Days, E = 131.184391 Days

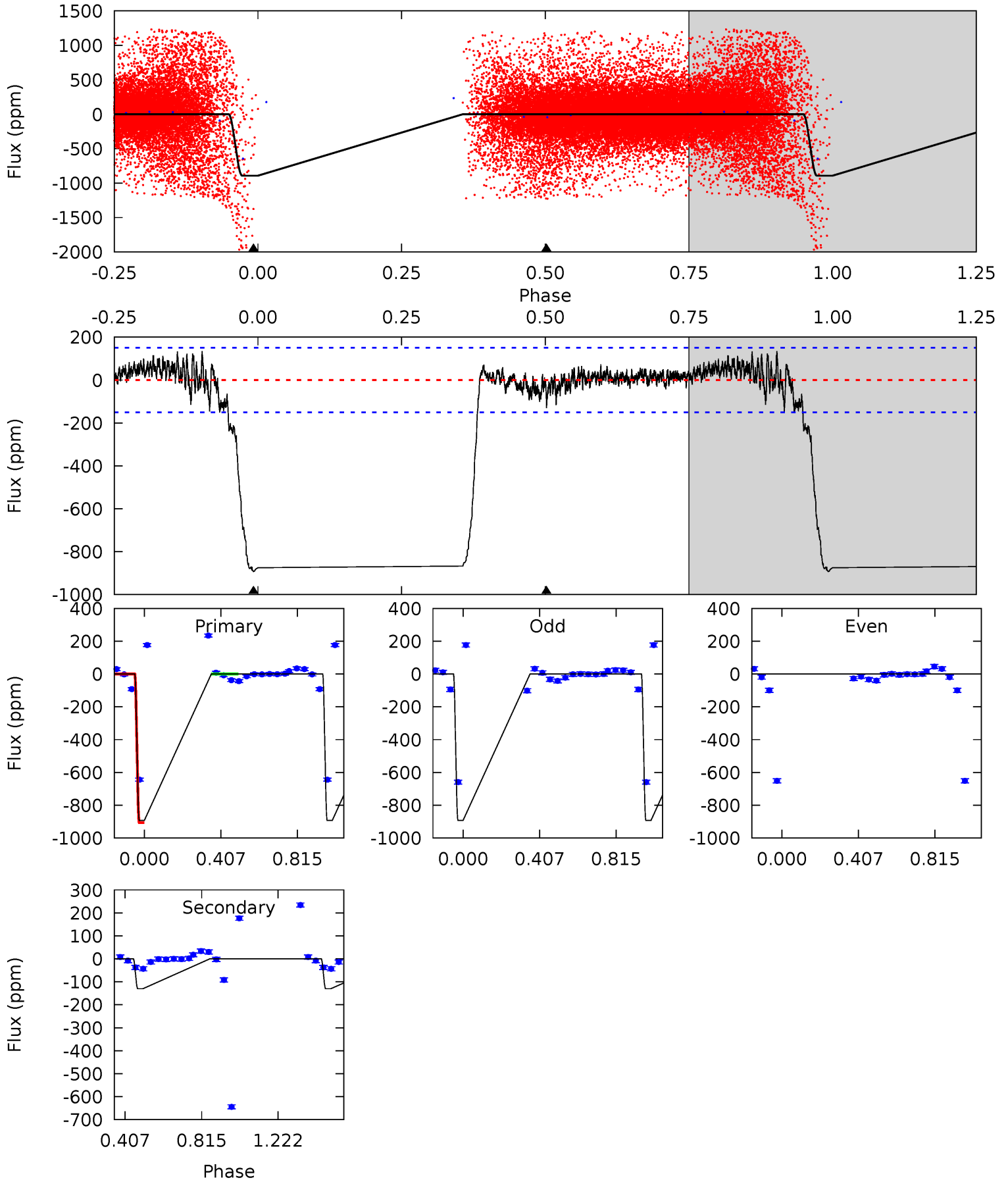
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.5	23.4	0	0	4.21	0.66	9.51	50.5	50.5	23.4	23.4	7.71	-56.0	0.03	0.22



Alt Model-Shift Uniqueness Test

008559796-02, P = 1.238810 Days, E = 131.221149 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.3	3.69	0	0	4.26	0.83	2.38	25.3	25.3	3.69	3.69	0	0	0.13	0



Stellar Parameters For KIC 008559796

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7138^{+199}_{-299}	$4.137^{+0.158}_{-0.193}$	$-0.200^{+0.250}_{-0.350}$	$1.684^{+0.548}_{-0.365}$	$1.419^{+0.228}_{-0.228}$	$0.419^{+0.334}_{-0.213}$
	+3%/-4%	+4%/-5%	+125%/-175%	+33%/-22%	+16%/-16%	+80%/-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 008559796-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-172 ± 7	$7.46^{+4.40}_{-3.94}$	3590^{+292}_{-250}	4029^{+1636}_{-927}	$1.088^{+3.409}_{-0.648}$
Alt.	-130 ± 35	$5.78^{+4.25}_{-3.30}$	3586^{+298}_{-238}	4193^{+2219}_{-1184}	$1.319^{+6.130}_{-0.904}$

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 $A_{obs} \gg 1.0$

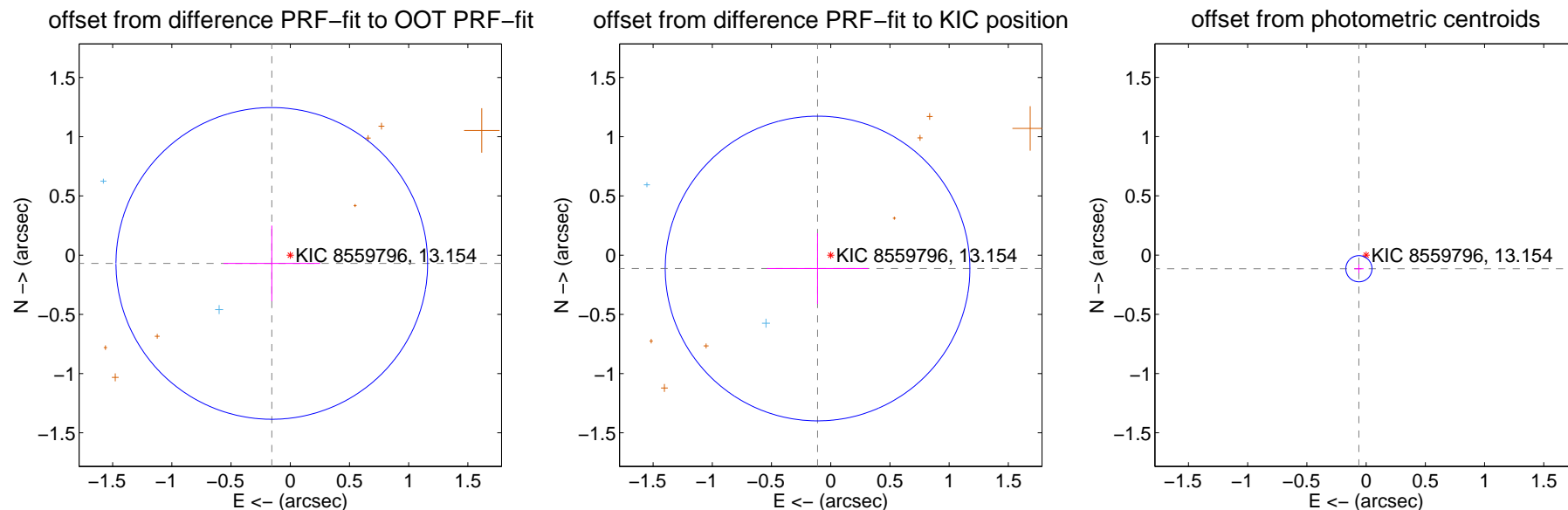
DV Centroid Data

Supplemental centroid analysis for 008559796-02. Kepler magnitude: 13.15. Transit SNR 12.13

There are 3 quarters with good PRF difference image offsets

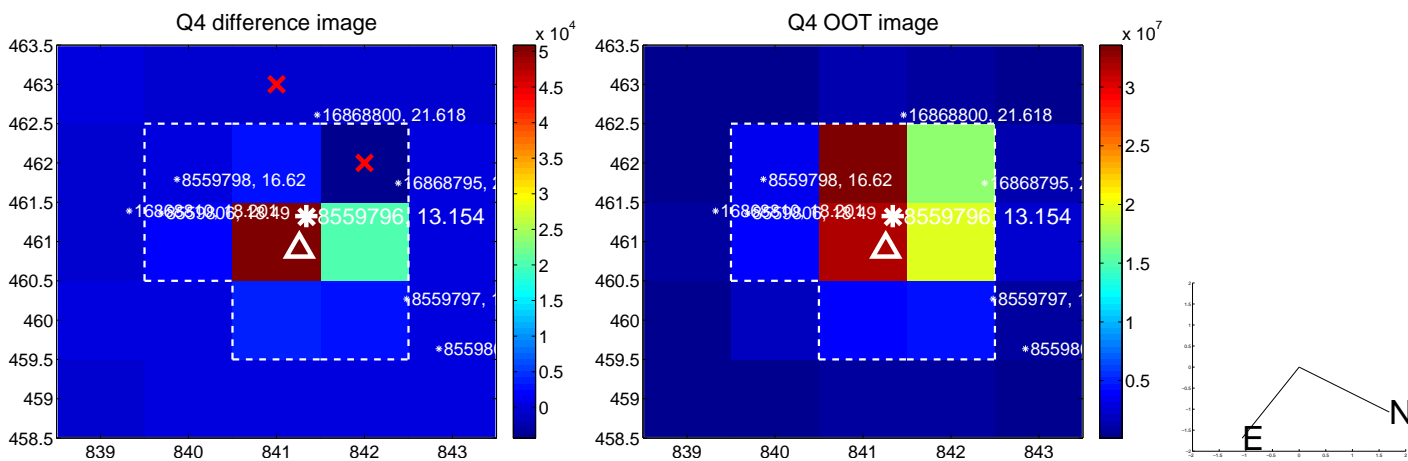
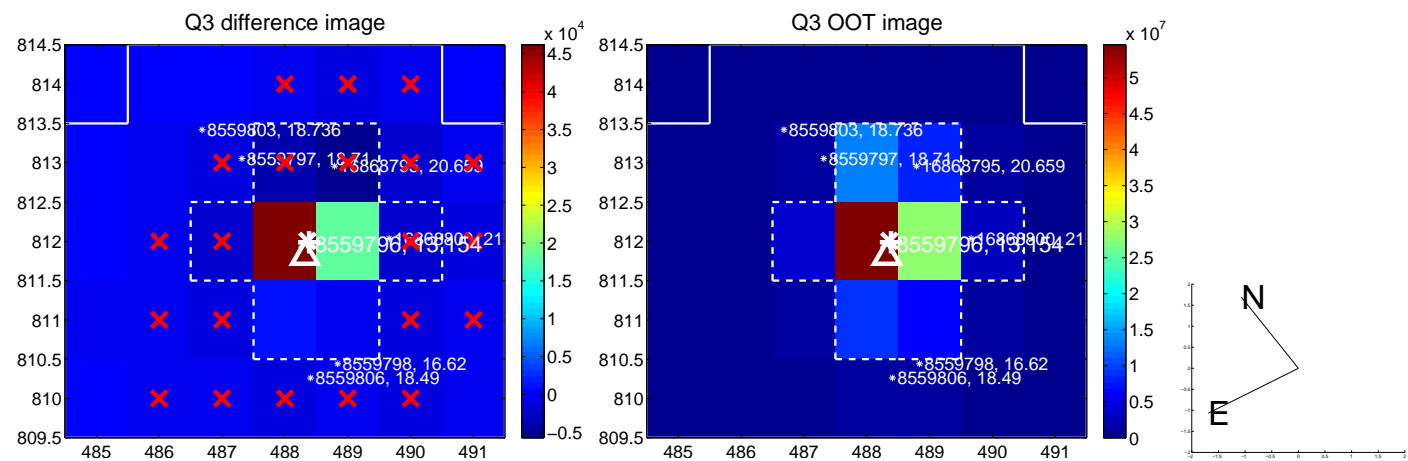
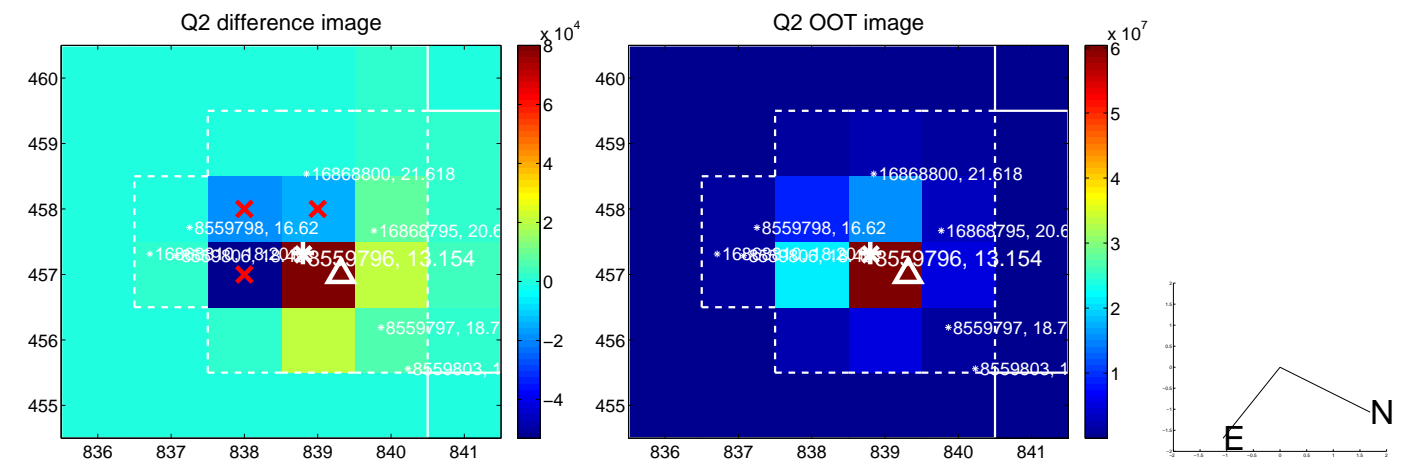
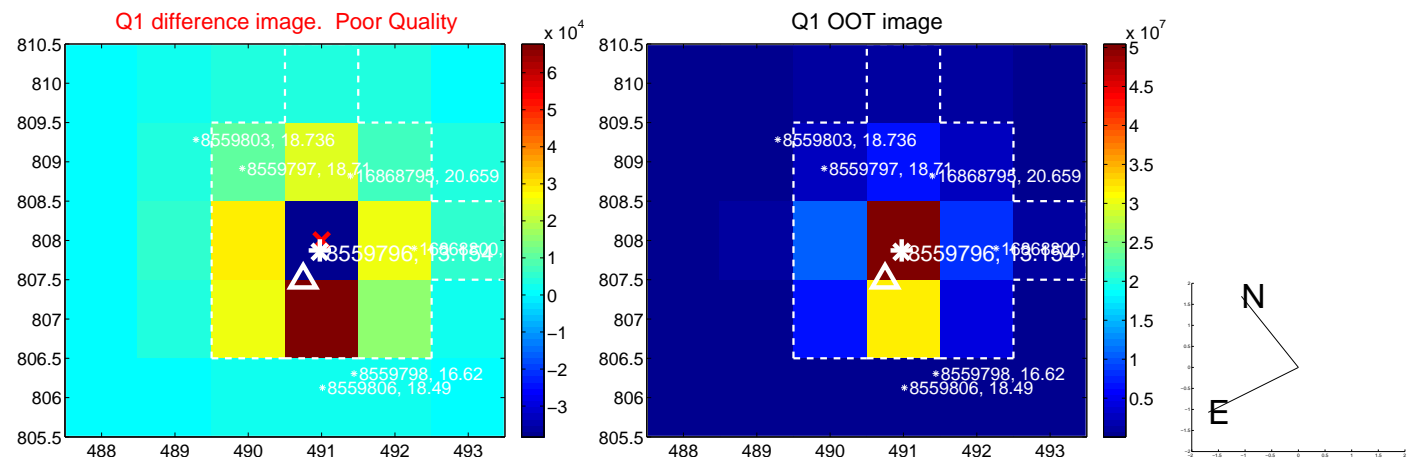
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.171 ± 0.439	0.39	0.156 ± 0.408	-0.070 ± 0.319
PRF-fit source offset from KIC position	0.158 ± 0.429	0.37	0.111 ± 0.428	-0.113 ± 0.298
photometric centroid source offset	0.13 ± 0.04	3.54	0.06 ± 0.04	-0.12 ± 0.04

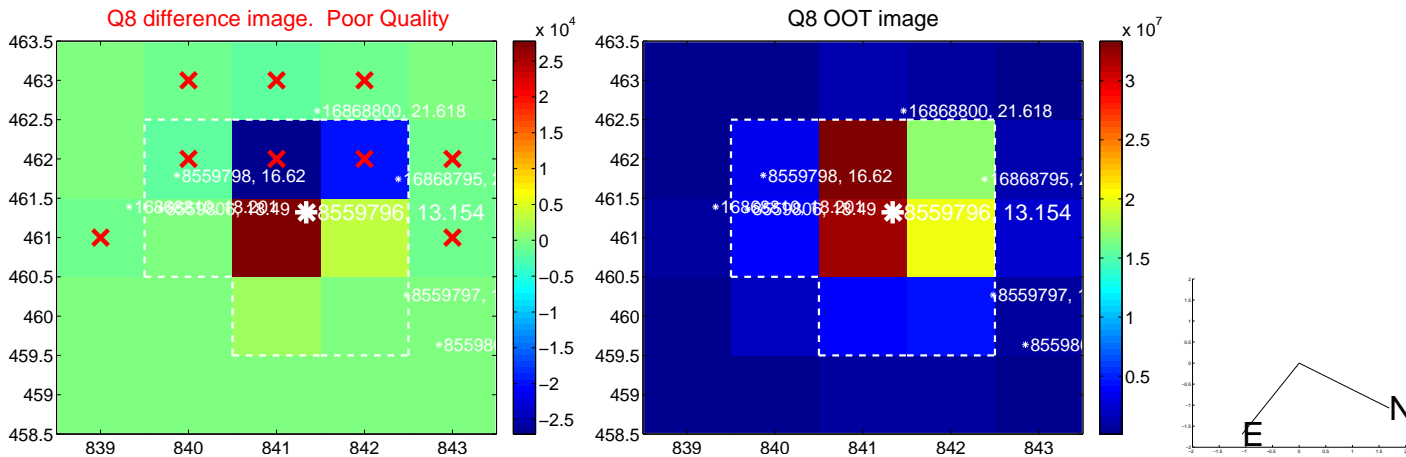
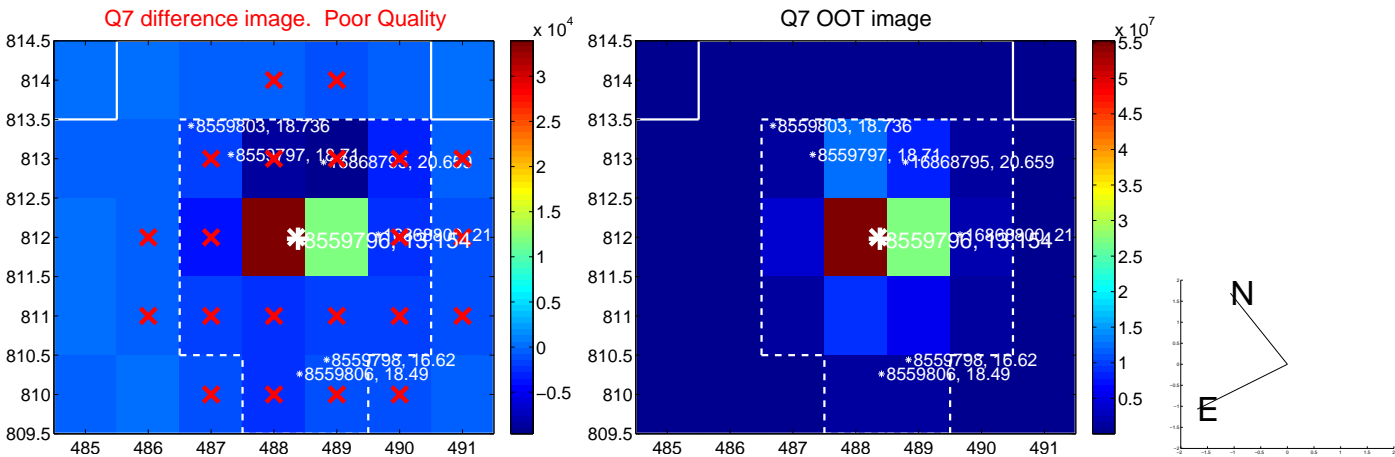
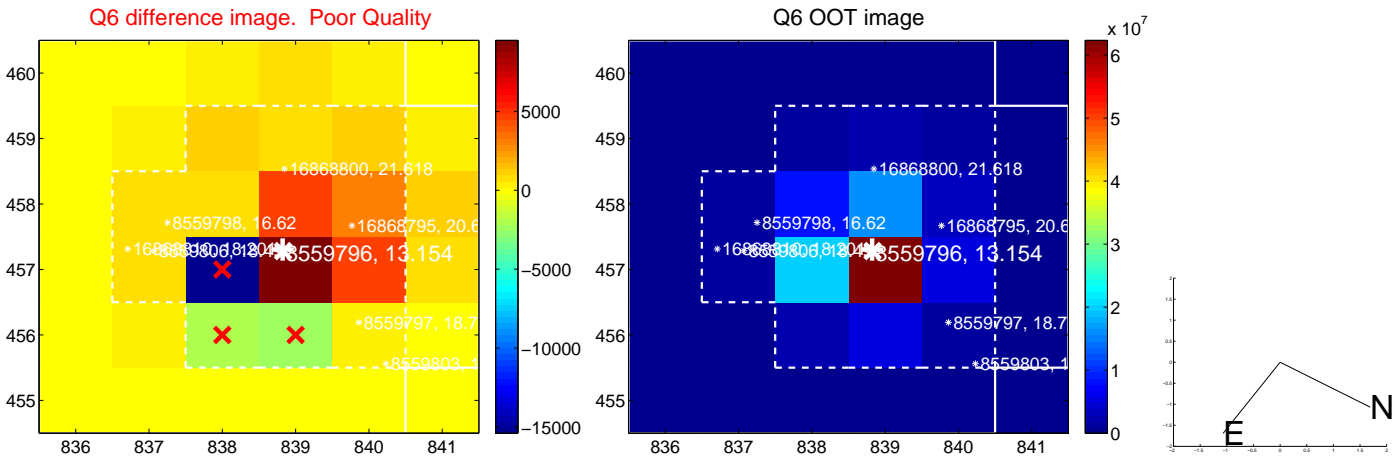
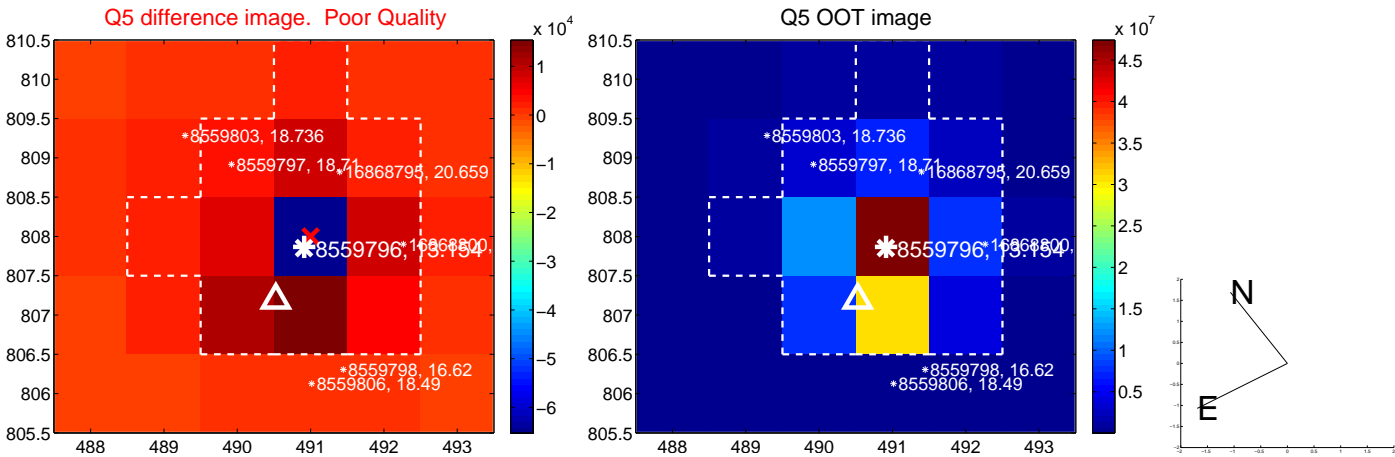


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

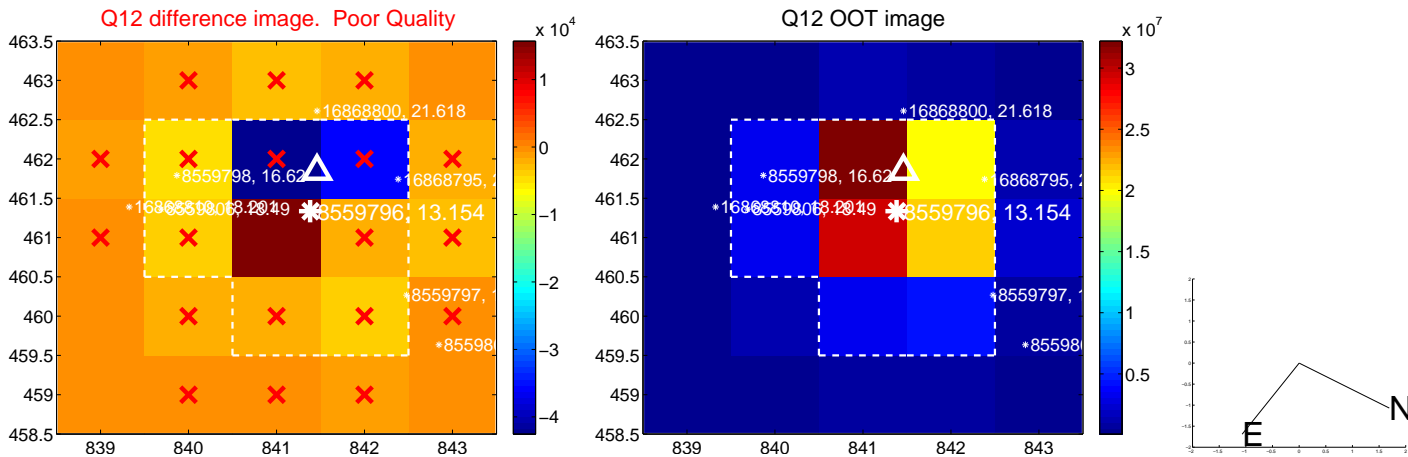
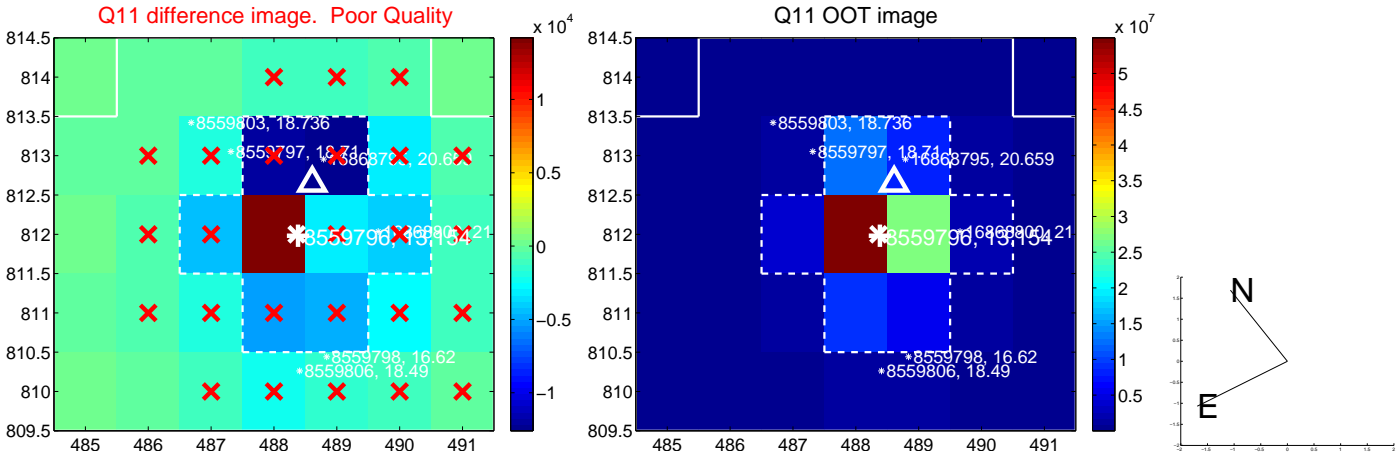
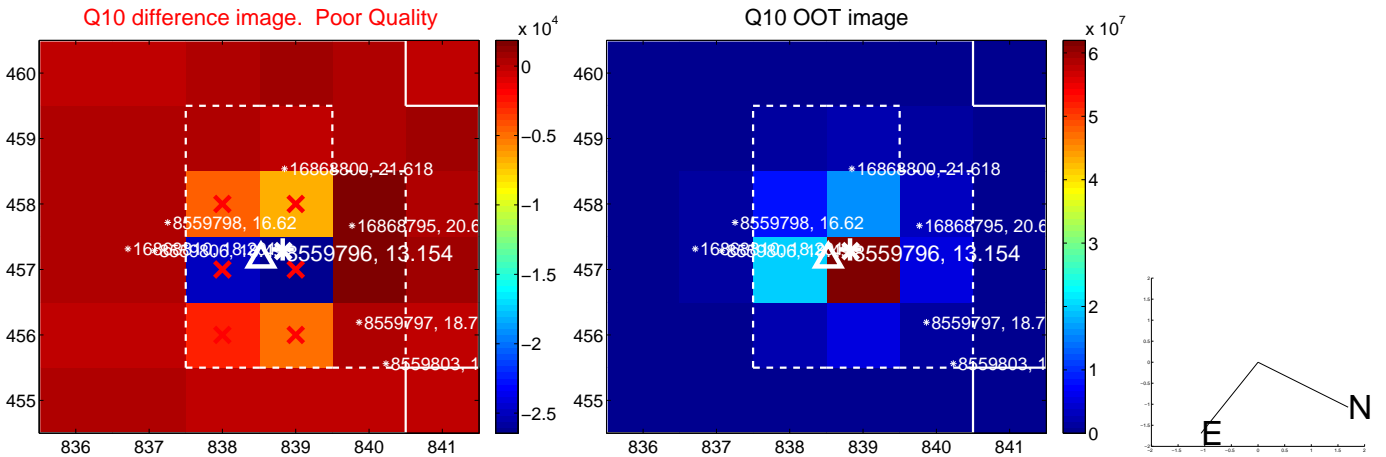
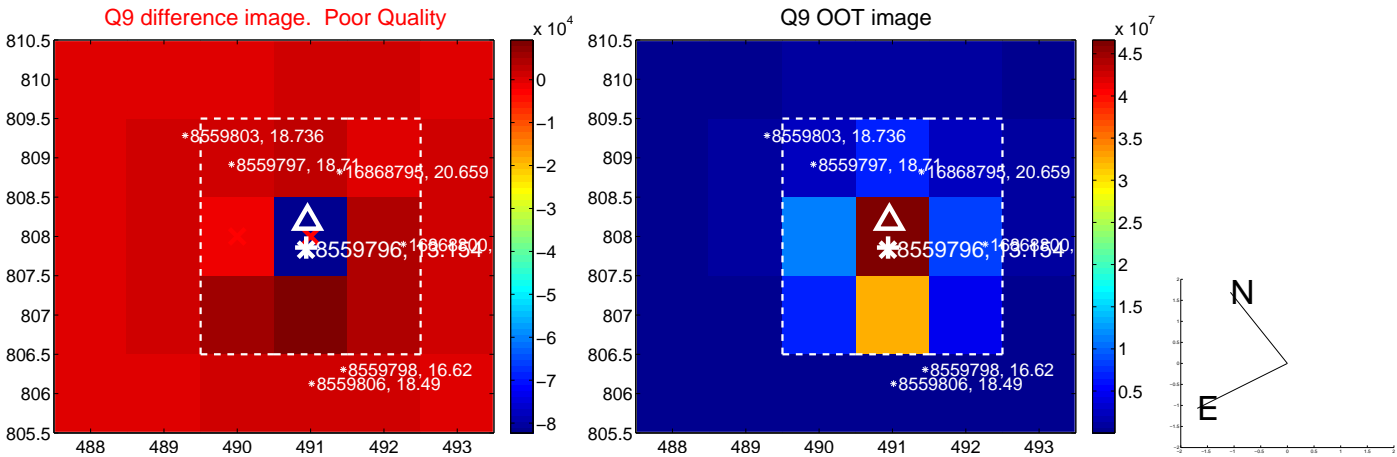
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



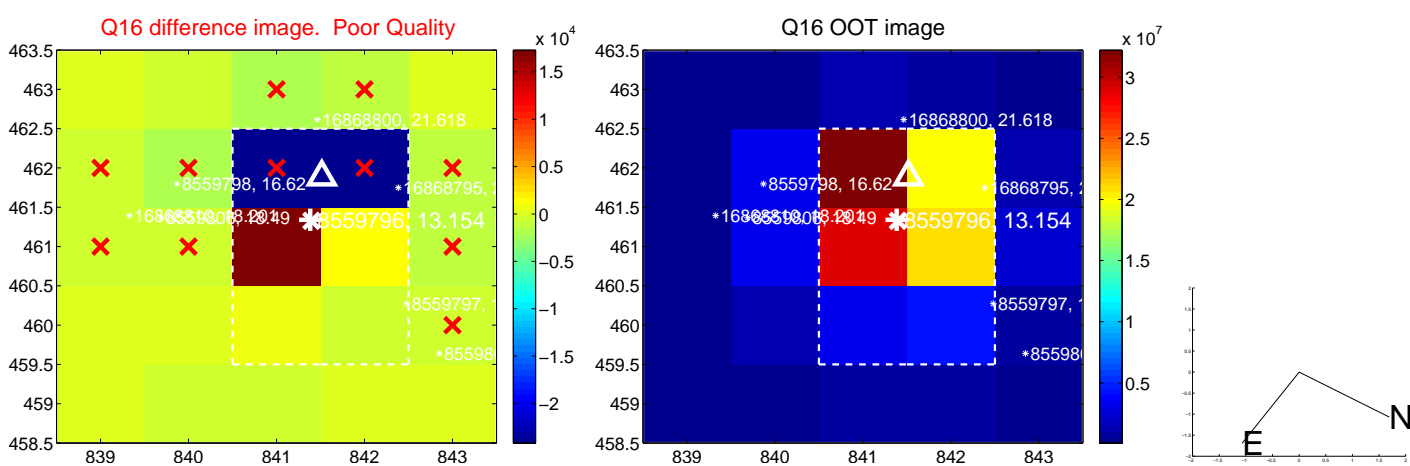
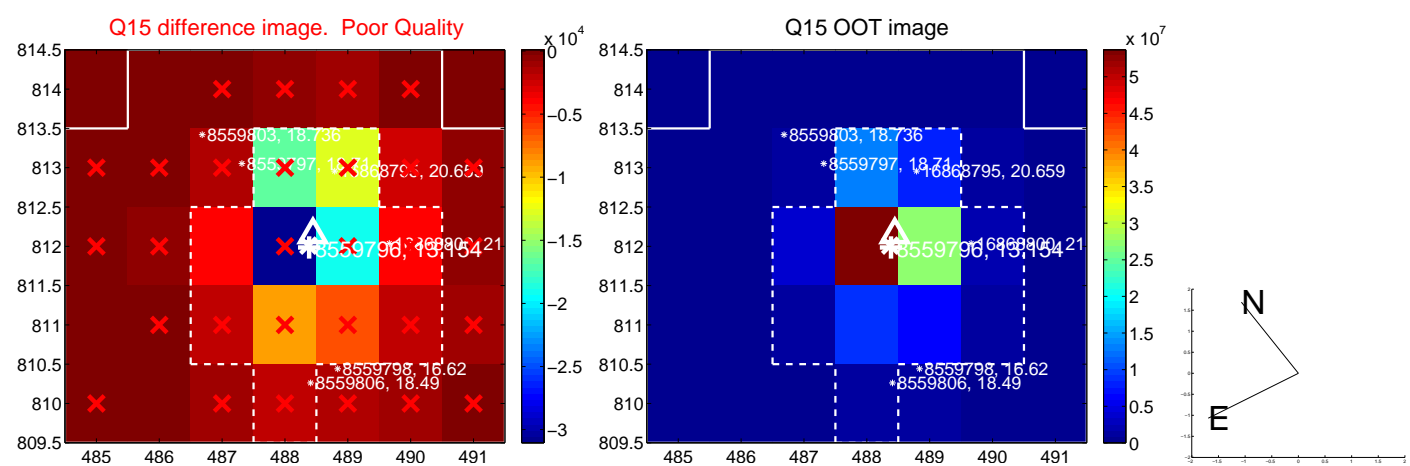
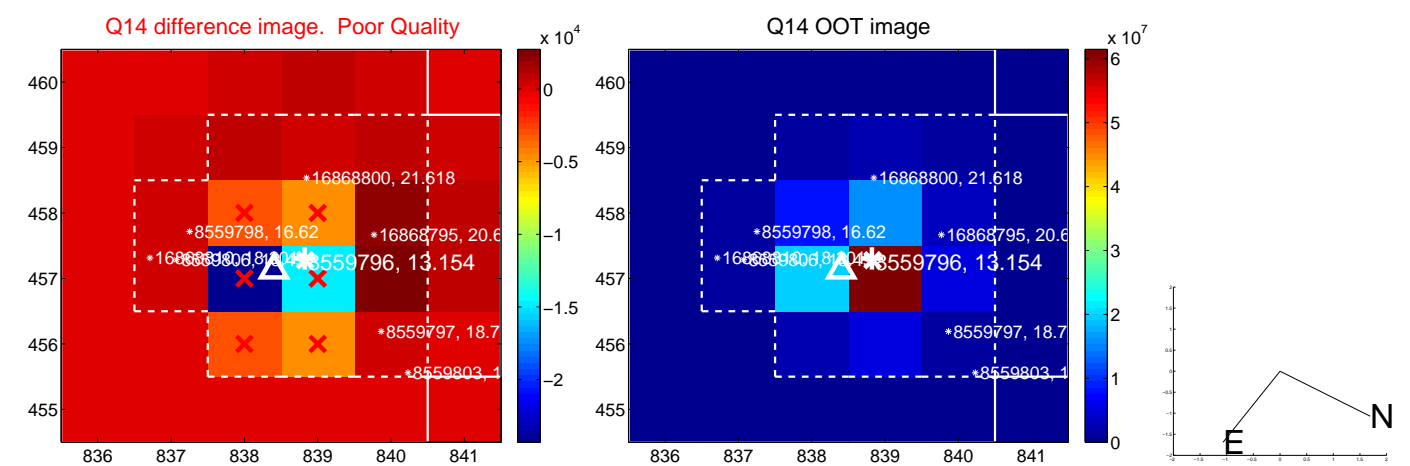
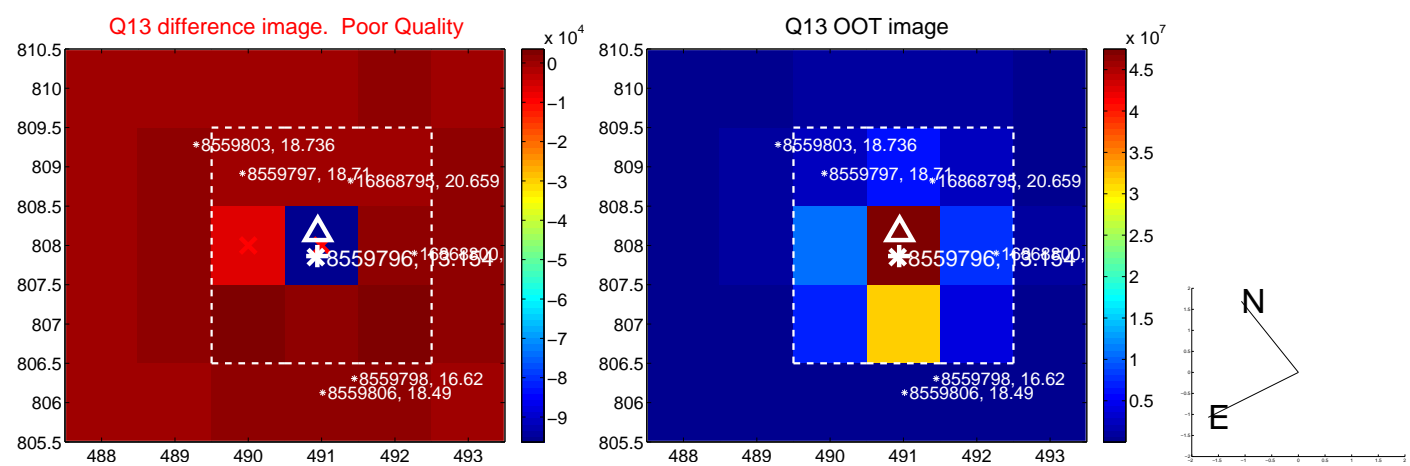
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



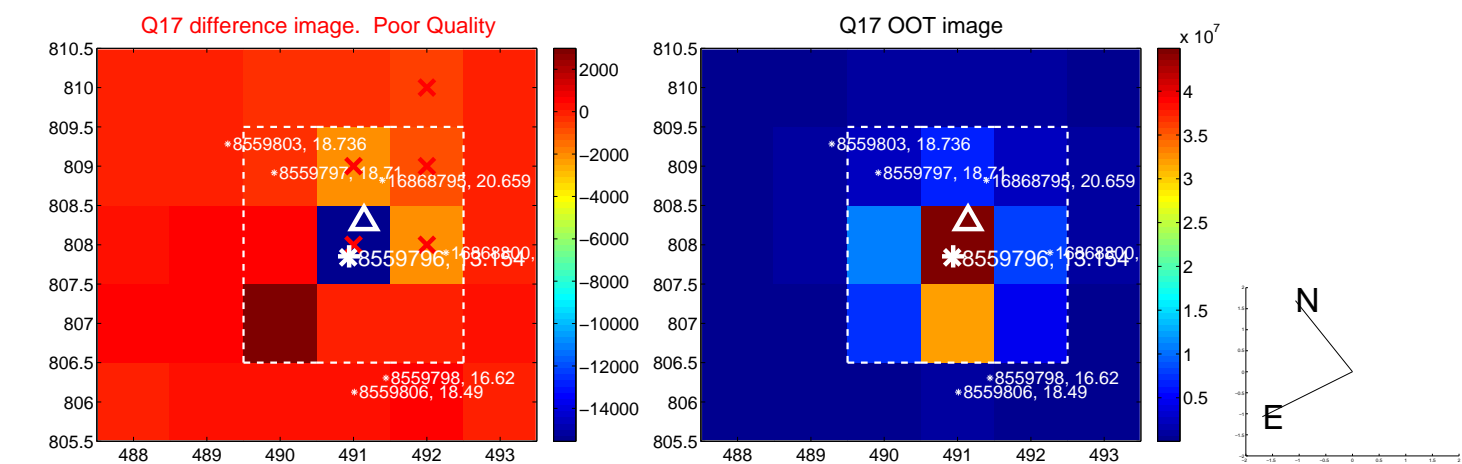
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



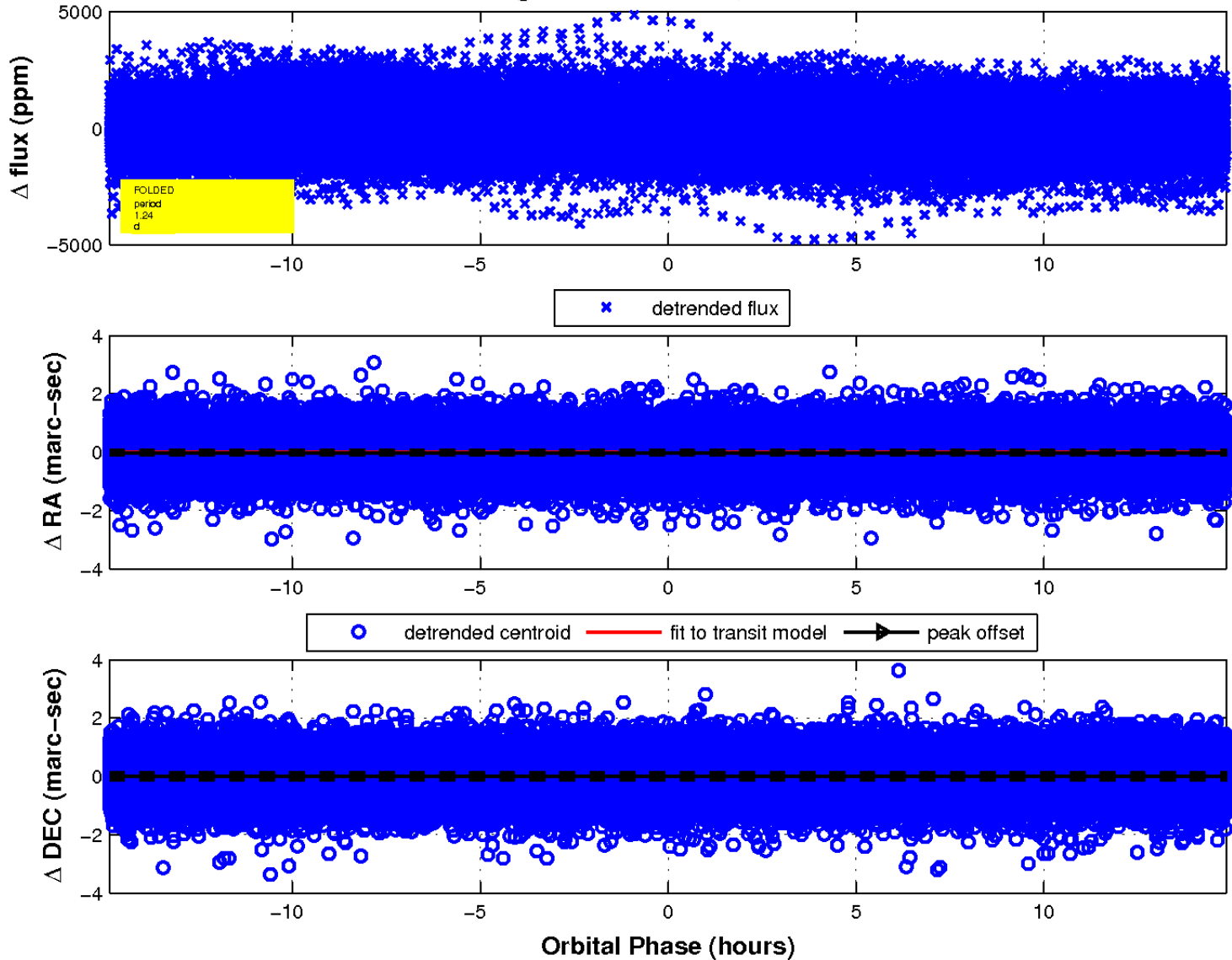
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

