

KIC 005696909

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})
005696909-01	OBS	6614.01	0.643005	131.686848	1288.7	0.530	82.7	139.5	1.04	5681	4.19	5426.84
005696909-02	OBS	No	0.643003	132.020369	812.0	1.500	14.9	-1.0	1.04	5681	2.94	5426.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005696909-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005696909-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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.

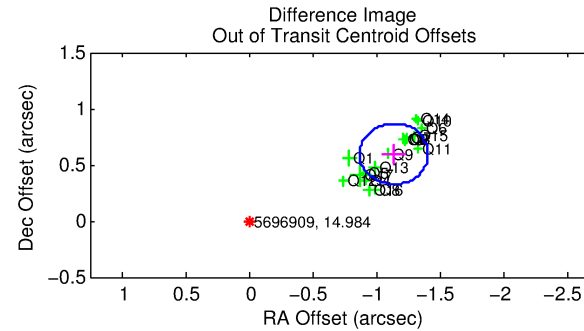
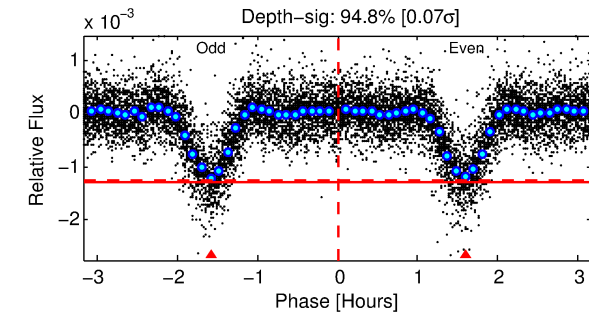
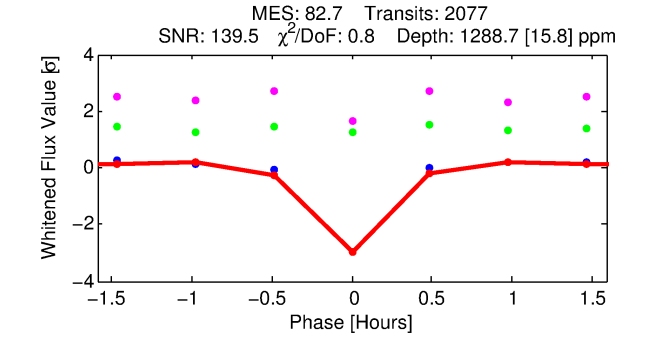
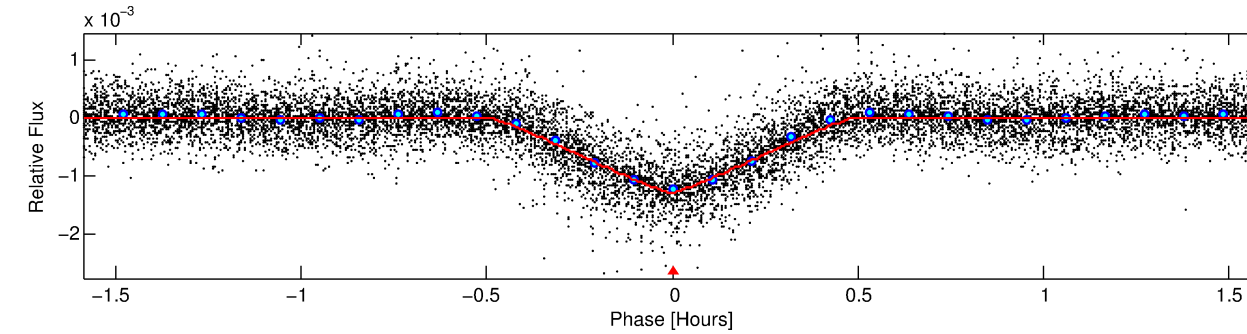
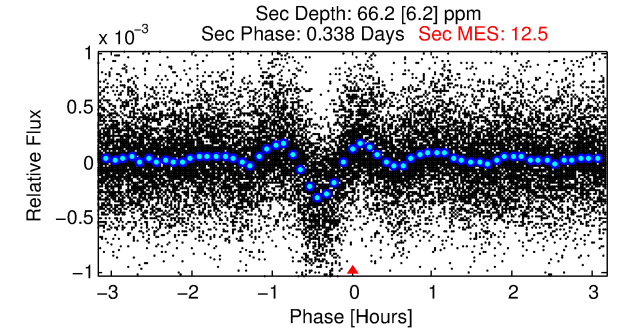
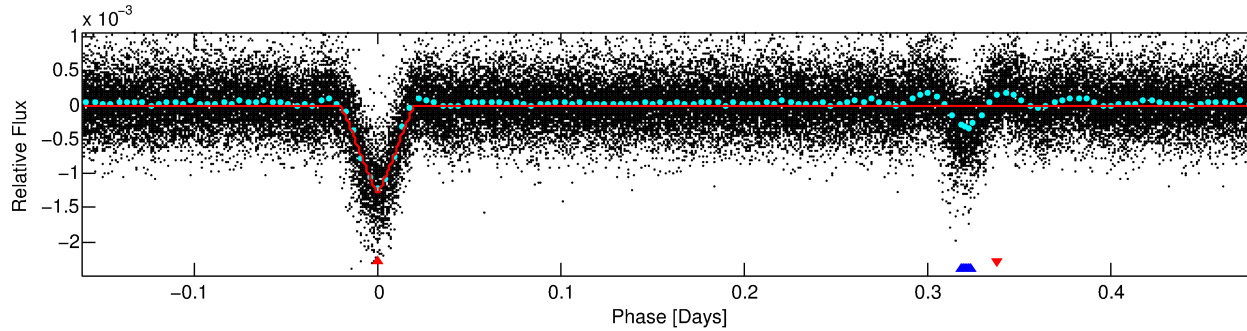
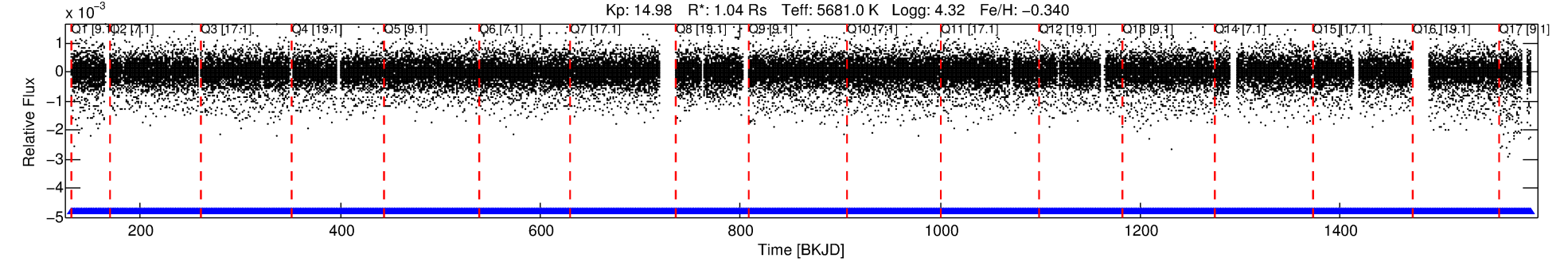
Ephemeris Match Information For 005696909-01

No Significant Match Found

DV One-Page Summary

KIC: 5696909 Candidate: 1 of 2 Period: 0.643 d
KOI: K06614 Corr: No Ephemeris Match

Kp: 14.98 R*: 1.04 Rs Teff: 5681.0 K Logg: 4.32 Fe/H: -0.340



DV Fit Results:

Period = 0.64301 [0.00000] d
Epoch = 131.6868 [0.0001] BKJD
Rp/R* = 0.0371 [0.0012]
a/R* = 7.13 [0.95]
b = 0.70 [0.10]
Seff = 5426.84 [2293.74]
Teq = 2189 [231] K
Rp = 4.19 [1.42] Re
a = 0.0136 [0.0038] AU
Ag = 0.38 [0.16] [-3.82σ]
Teffp = 2663 [109] K [1.85σ]

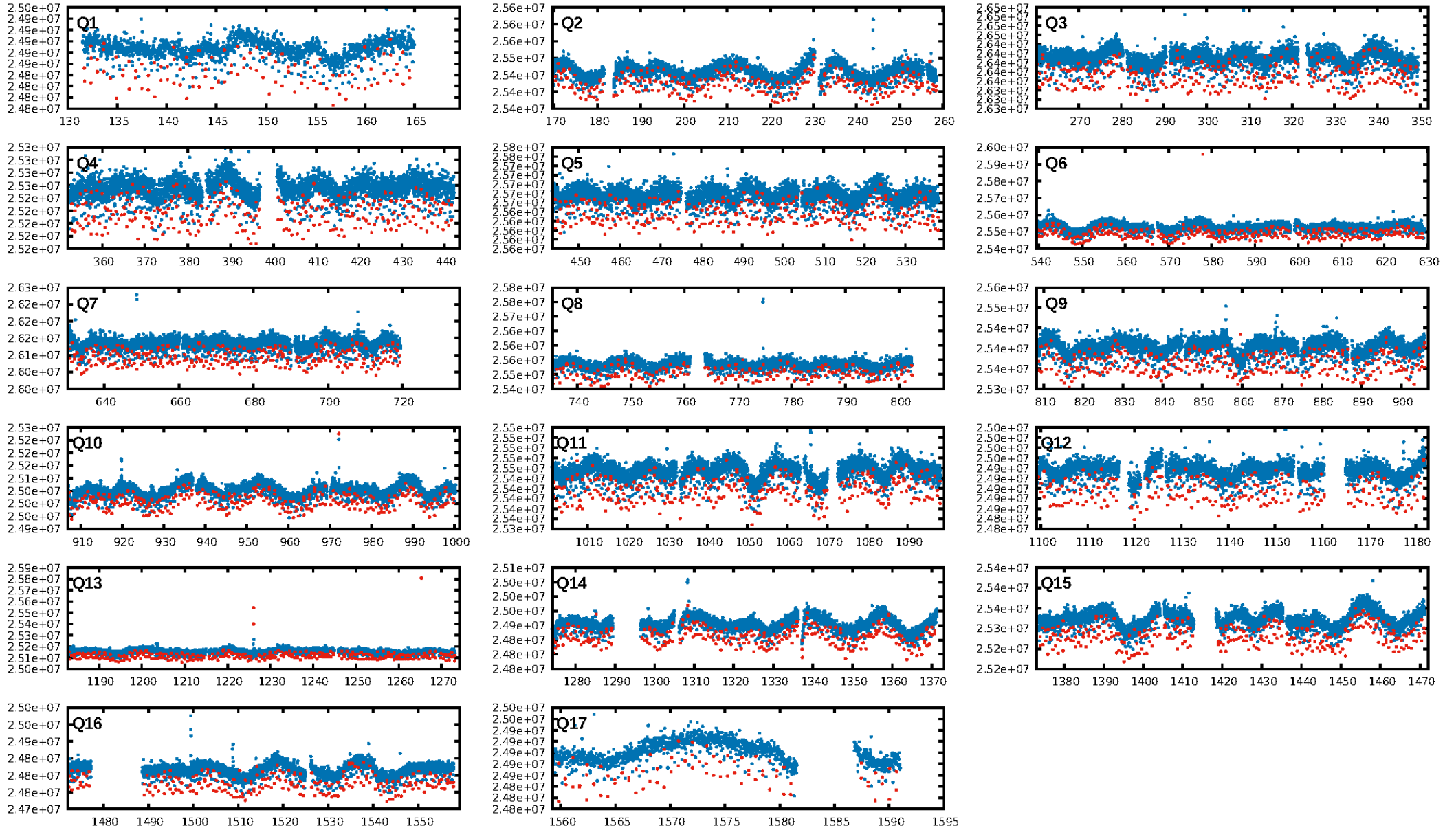
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [1984/1984]
GhostDiagnostic-chr: 4.604
Centroid-sig: 0.0%
Centroid-so: 1.817 arcsec [26.07σ]
OotOffset-rm: 1.286 arcsec [14.30σ]
KicOffset-rm: 0.679 arcsec [9.38σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

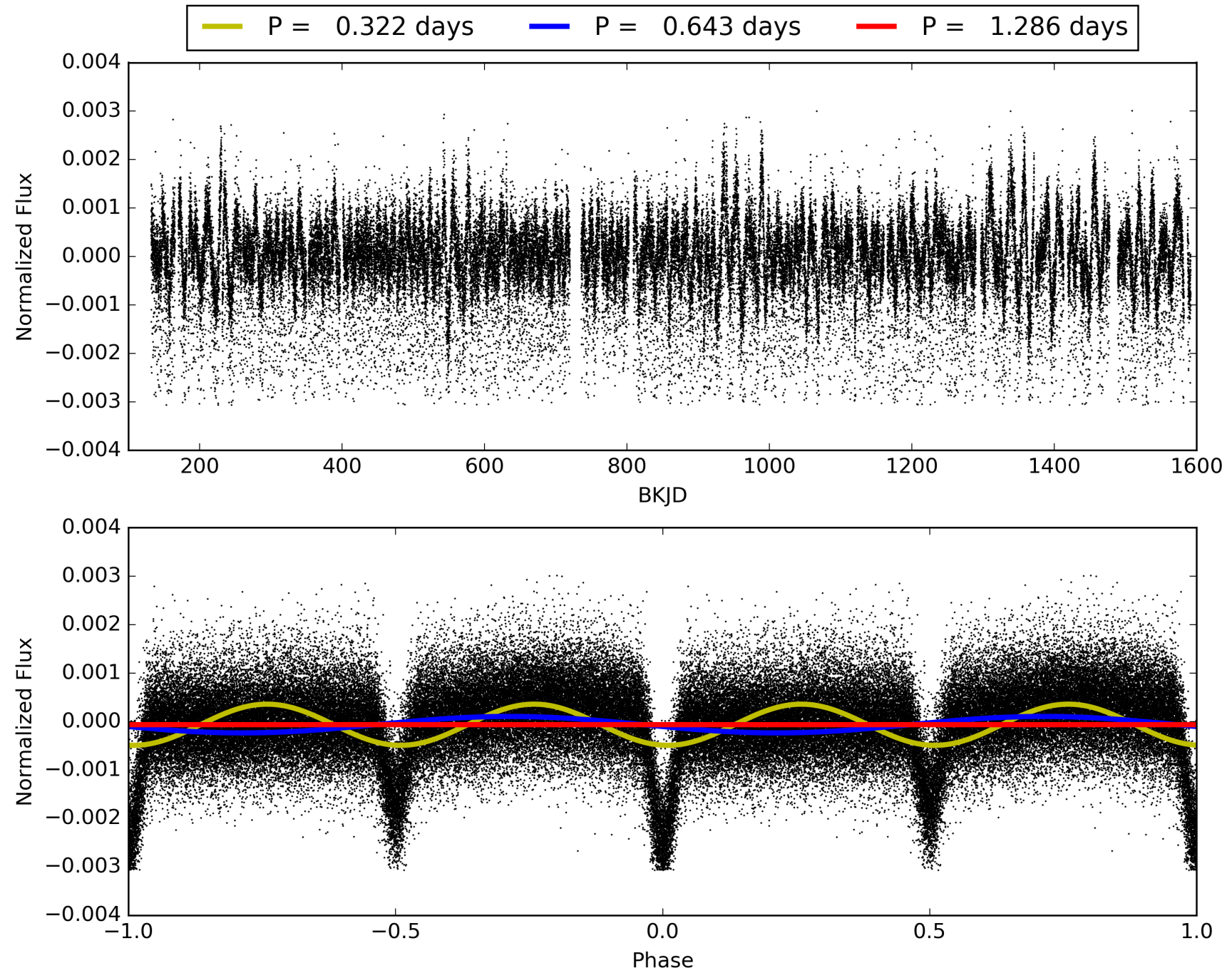
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:47:53 Z

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

TCE 005696909-01, PDC Light Curves

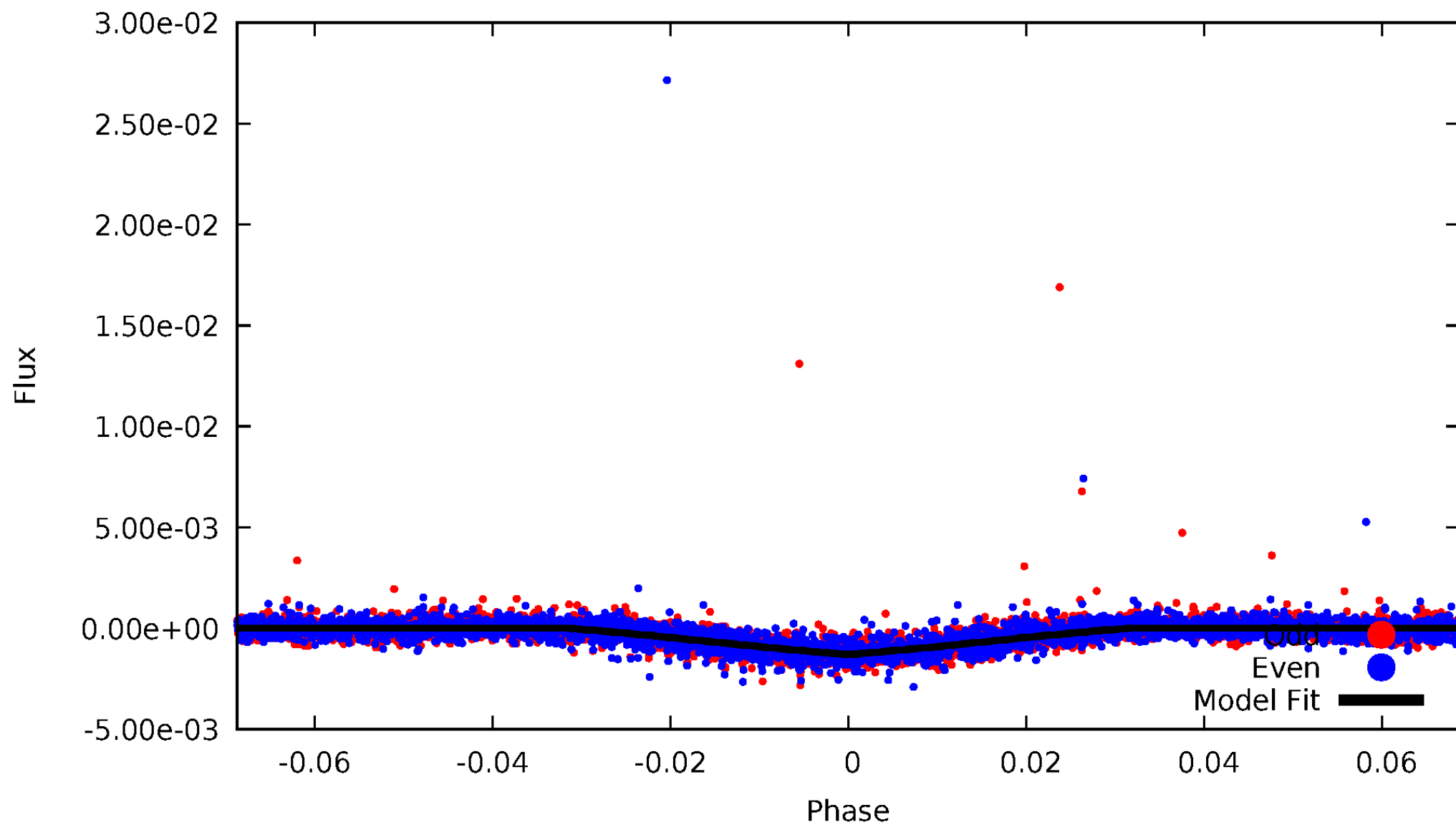


TCE 005696909-01



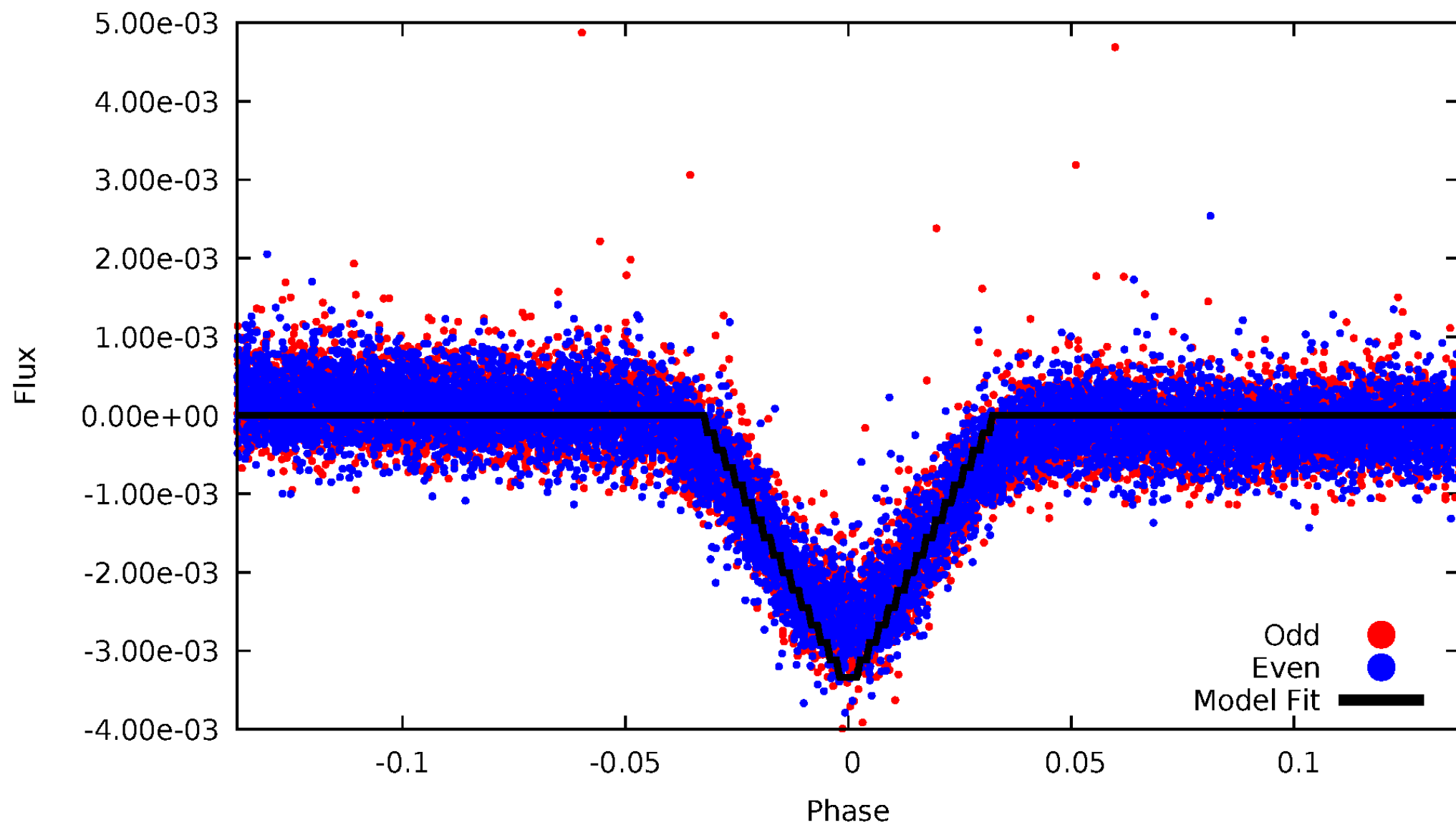
DV Odd/Even

TCE 005696909-01



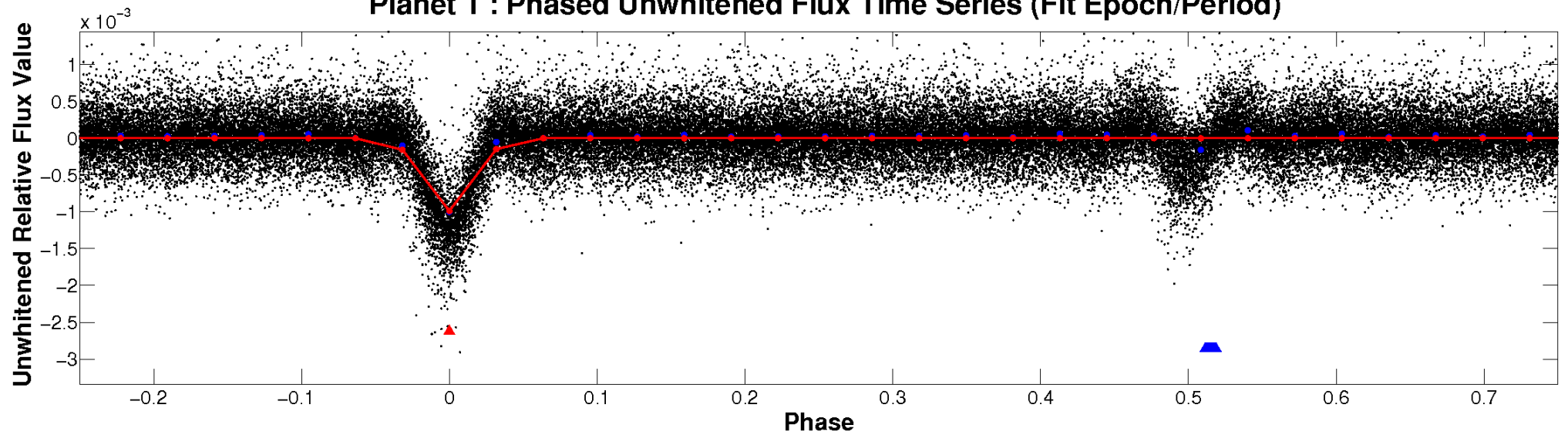
ALT Odd/Even

TCE 005696909-01

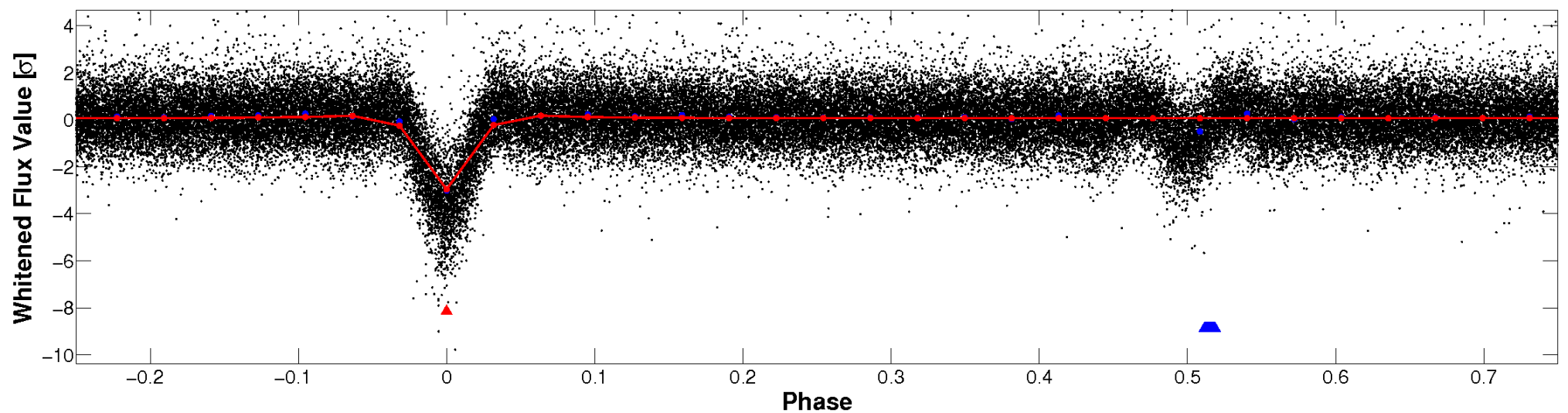


Non-Whitened Vs. Whitened Light Curve

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

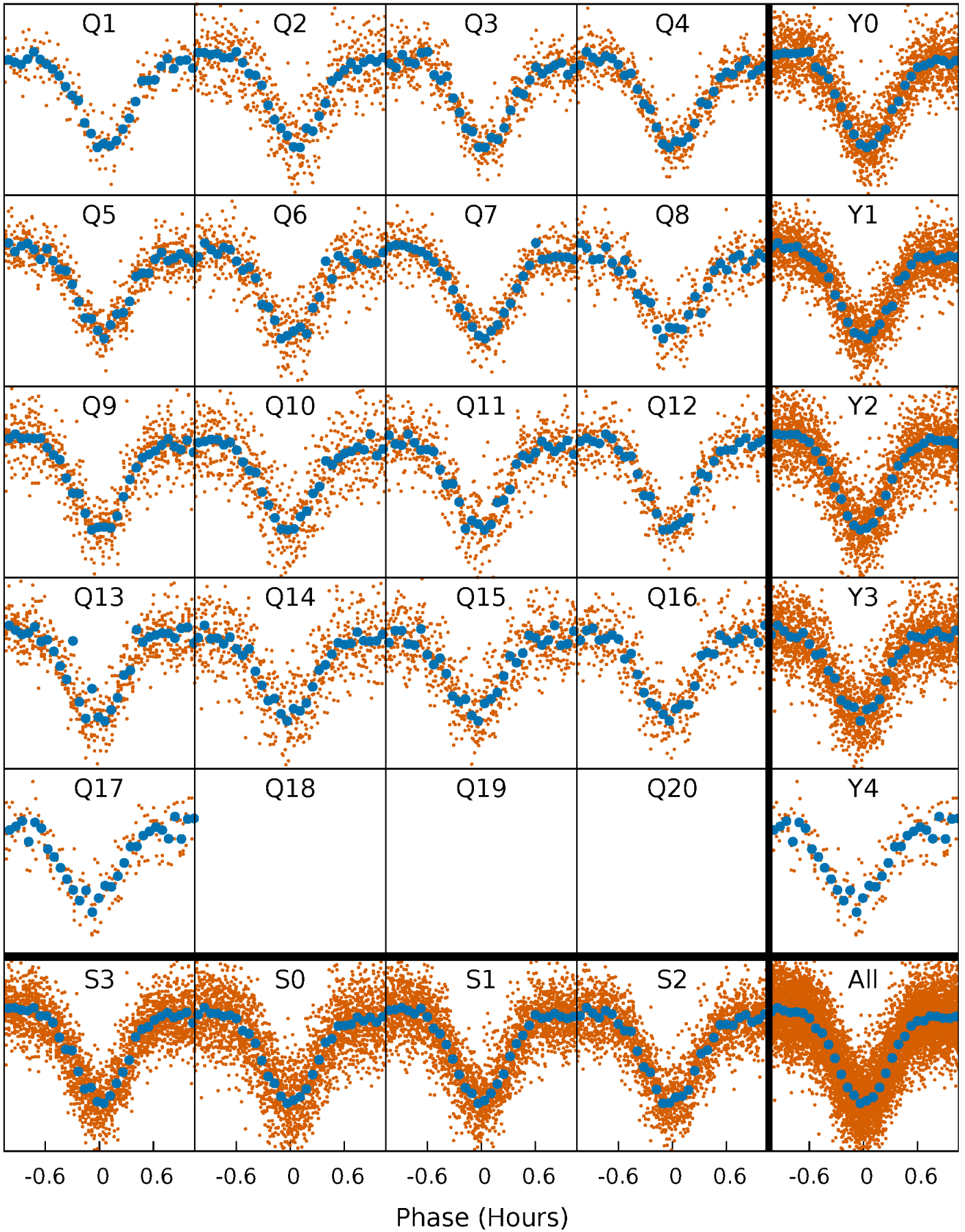


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



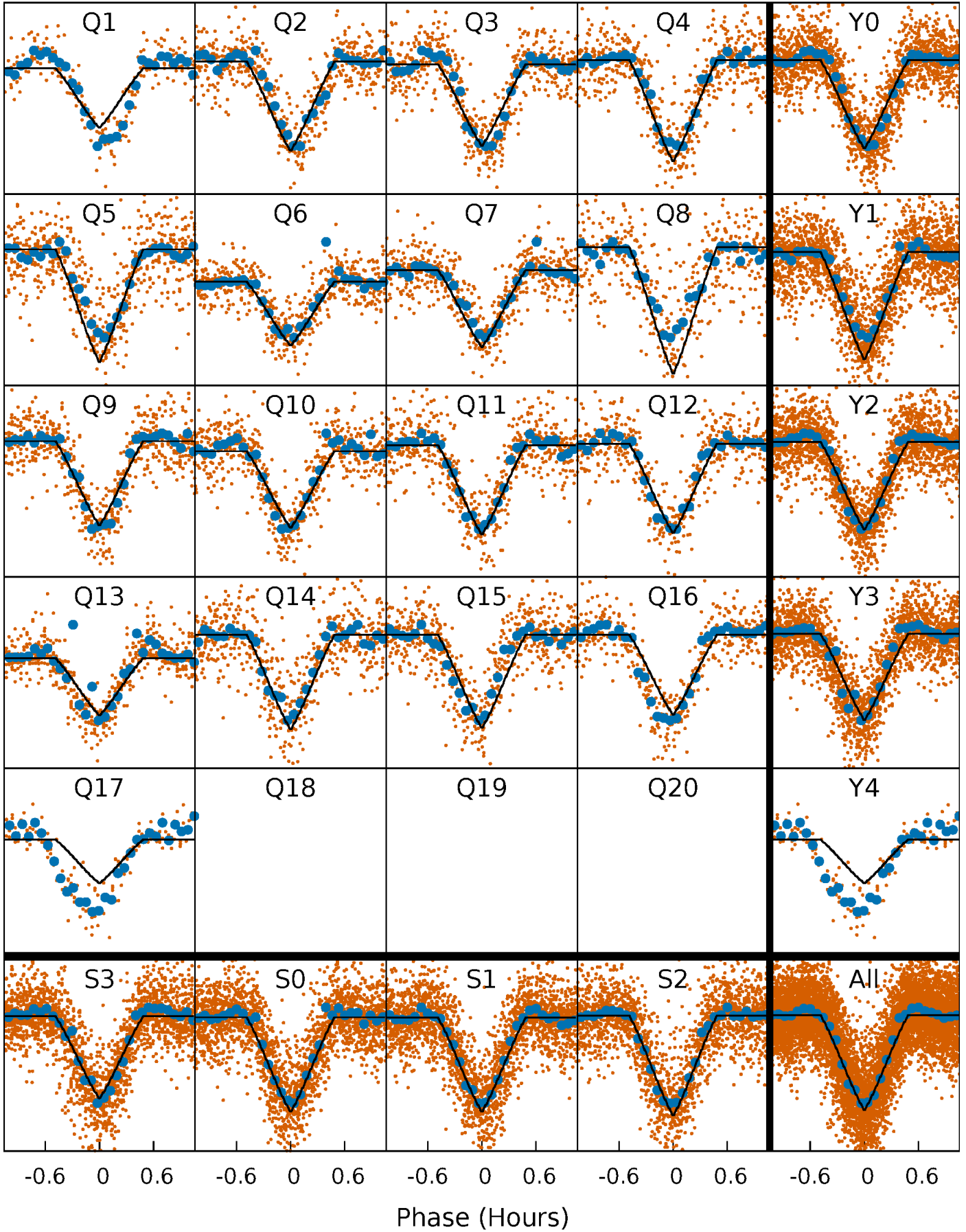
PDC Quarter-Phased Transit Curves

TCE 005696909-01 P= 0.643005 Days $T_0=131.686848$ (BKJD)



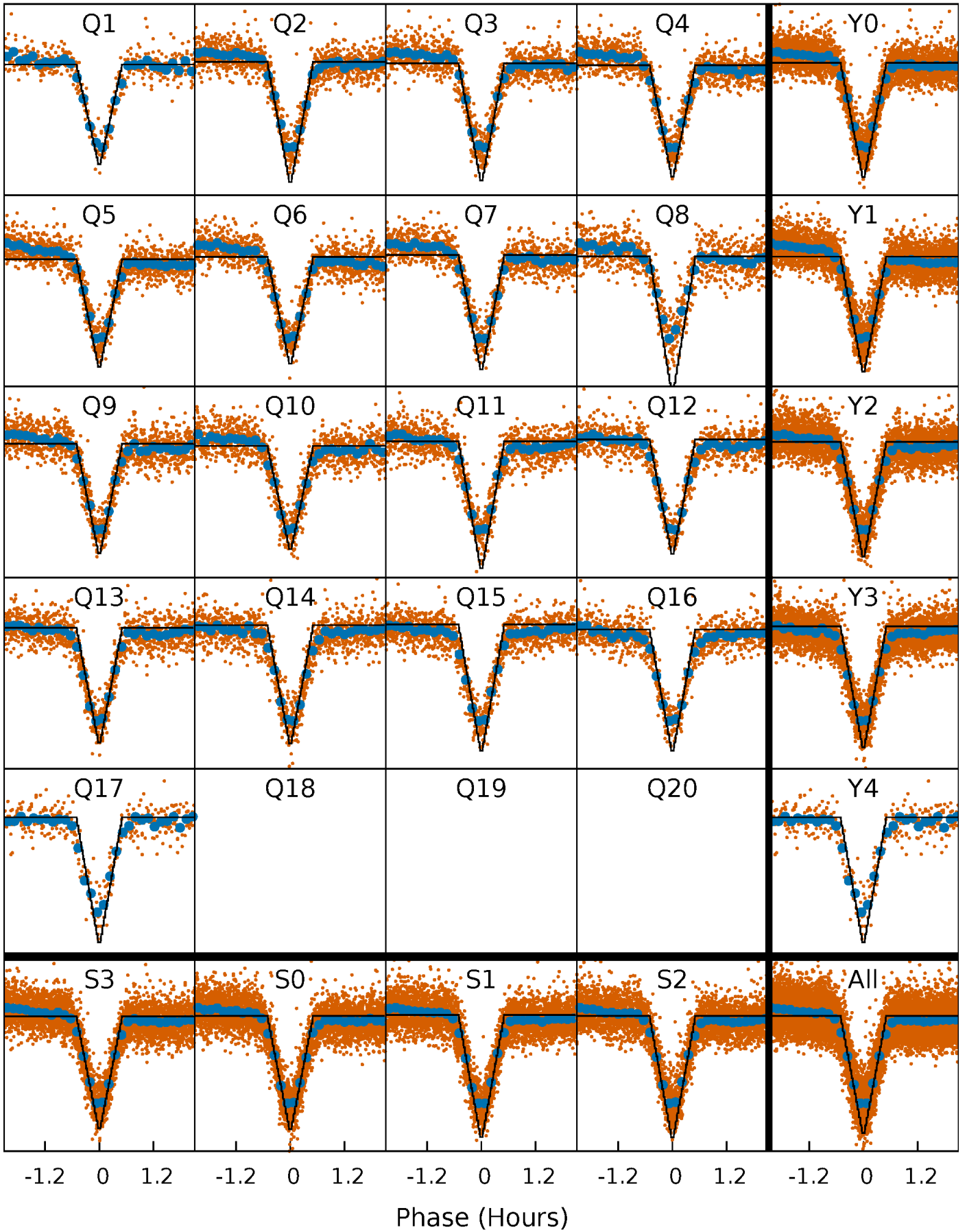
DV Quarter-Phased Transit Curves

TCE 005696909-01 P= 0.643005 Days $T_0=131.686848$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

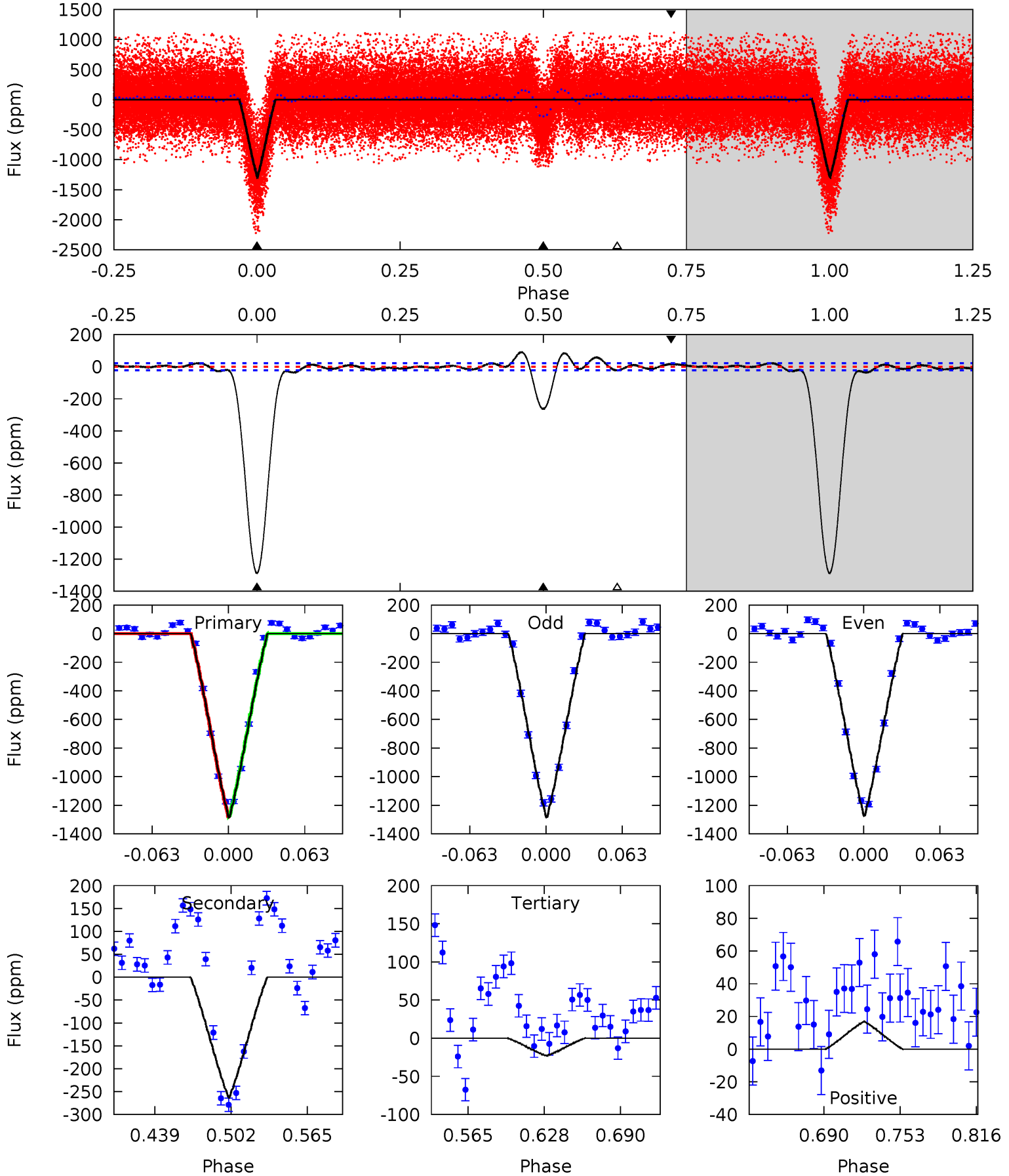
TCE 005696909-01 P= 0.643003 Days $T_0=131.689178$ (BKJD)



DV Model-Shift Uniqueness Test

005696909-01, P = 0.643005 Days, E = 131.043843 Days

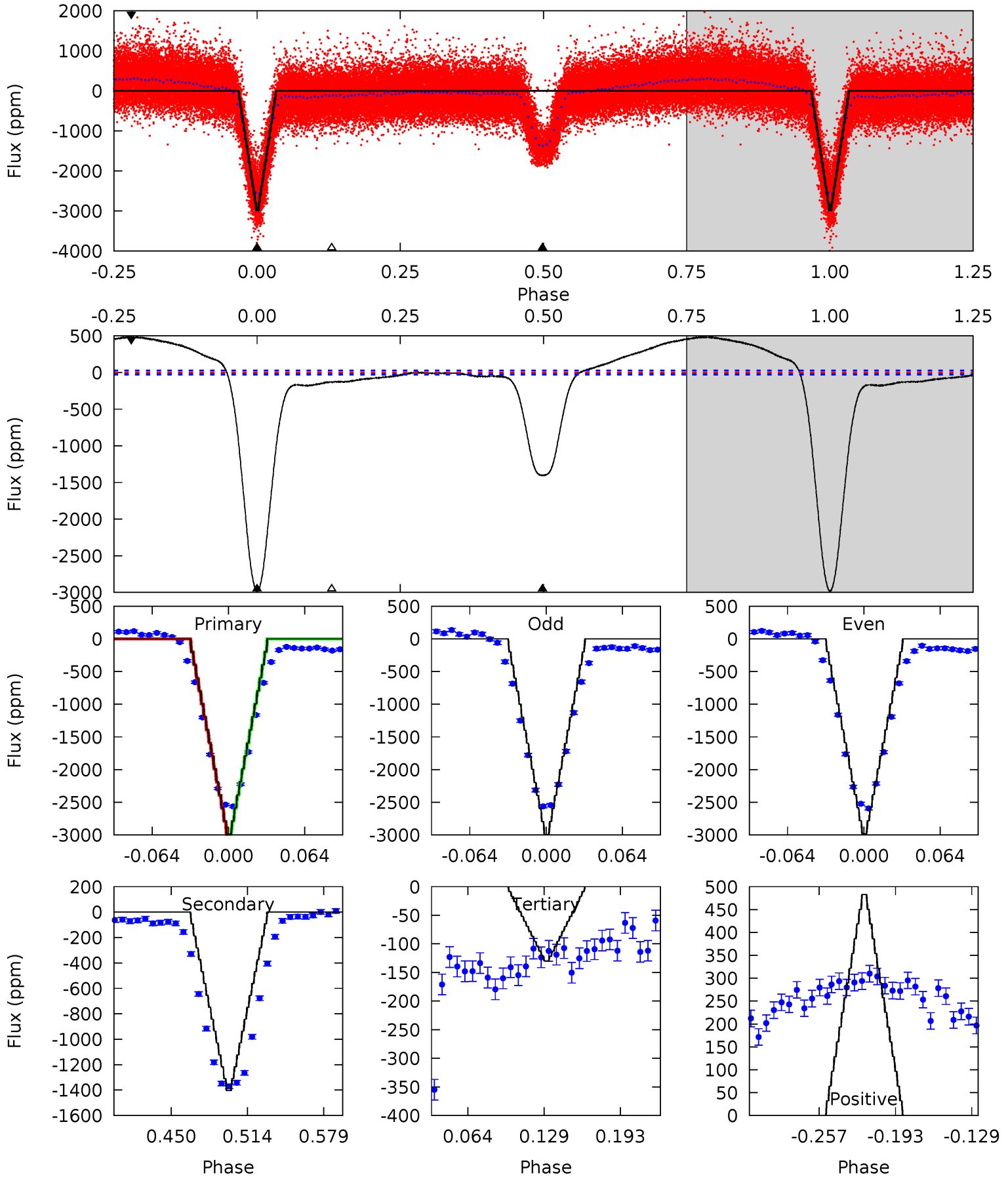
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
272.4	55.7	4.89	3.57	4.66	1.86	3.02	267.5	268.9	50.8	52.1	1.08	1.00	0.07	3.51



Alt Model-Shift Uniqueness Test

005696909-01, P = 0.643003 Days, E = 131.046175 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
502.1	236.2	21.9	81.2	4.66	1.85	36.6	480.2	420.9	214.3	155.0	1.12	1.00	0.14	0.06



Stellar Parameters For KIC 005696909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5681^{+169}_{-152}	$4.315^{+0.220}_{-0.220}$	$-0.340^{+0.350}_{-0.250}$	$1.036^{+0.349}_{-0.232}$	$0.807^{+0.124}_{-0.062}$	$1.024^{+1.229}_{-0.569}$
	+3%/-3%	+5%/-5%	+103%/-74%	+34%/-22%	+15%/-8%	+120%/-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 005696909-01 / KOI 6614.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-263 ± 5	$4.17^{+0.75}_{-0.57}$	3050^{+288}_{-215}	3898^{+112}_{-110}	$1.551^{+0.513}_{-0.434}$
Alt.	-1404 ± 6	$6.59^{+1.28}_{-0.90}$	3065^{+282}_{-229}	4613^{+115}_{-112}	$3.306^{+1.145}_{-0.931}$

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 $A_{obs} \gg 1.0$

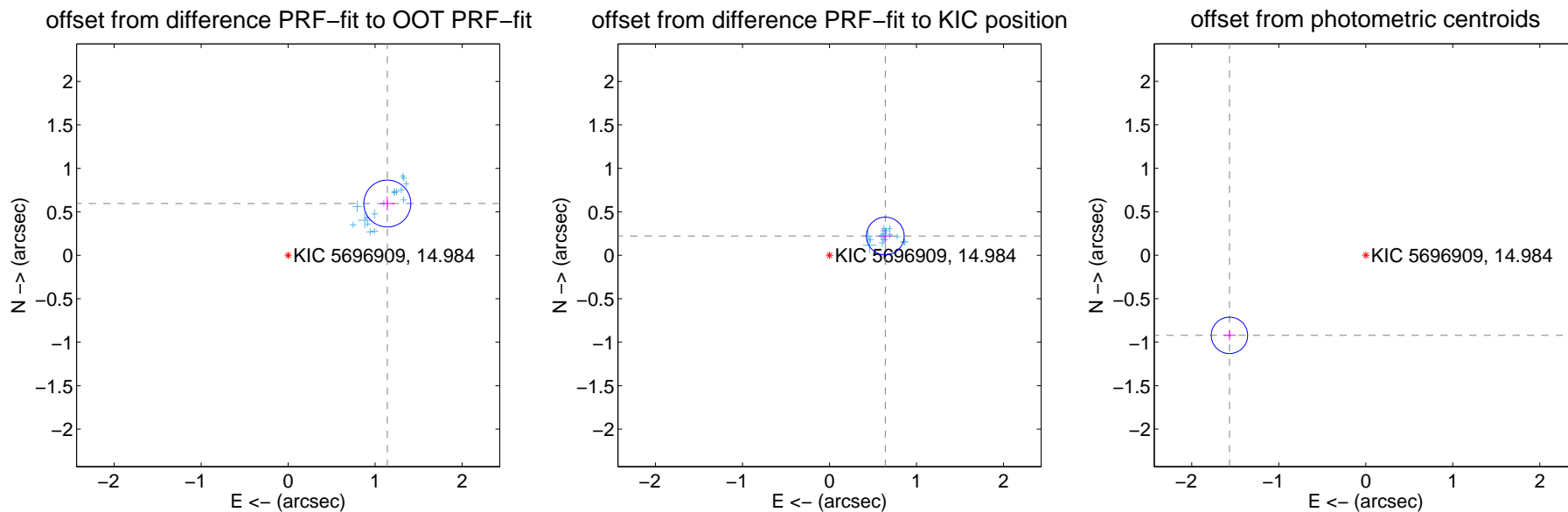
DV Centroid Data

Supplemental centroid analysis for 005696909-01. Kepler magnitude: 14.98. Transit SNR 139.54

There are 17 quarters with good PRF difference image offsets

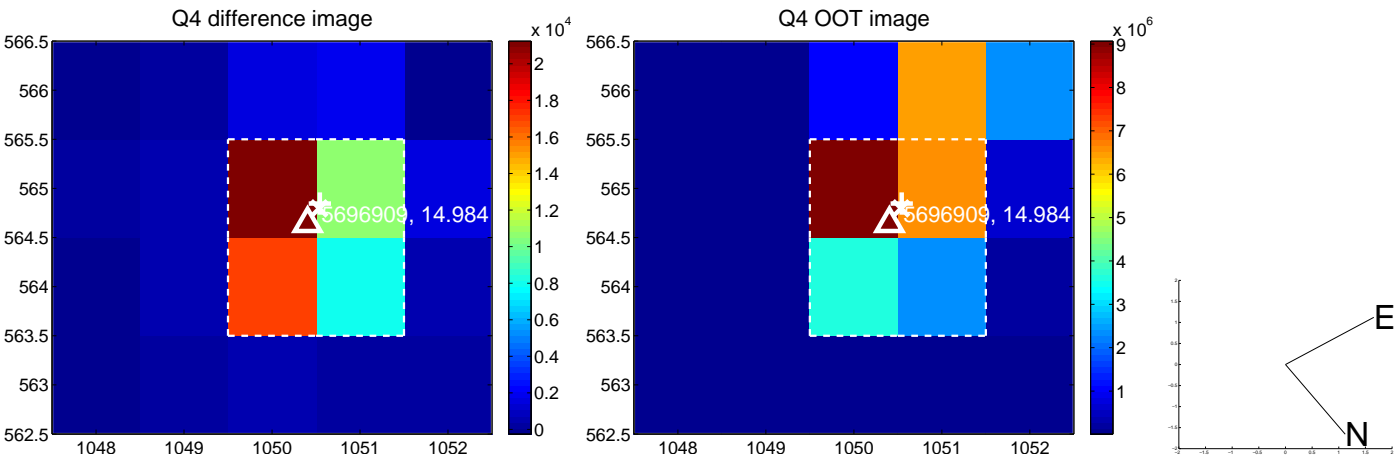
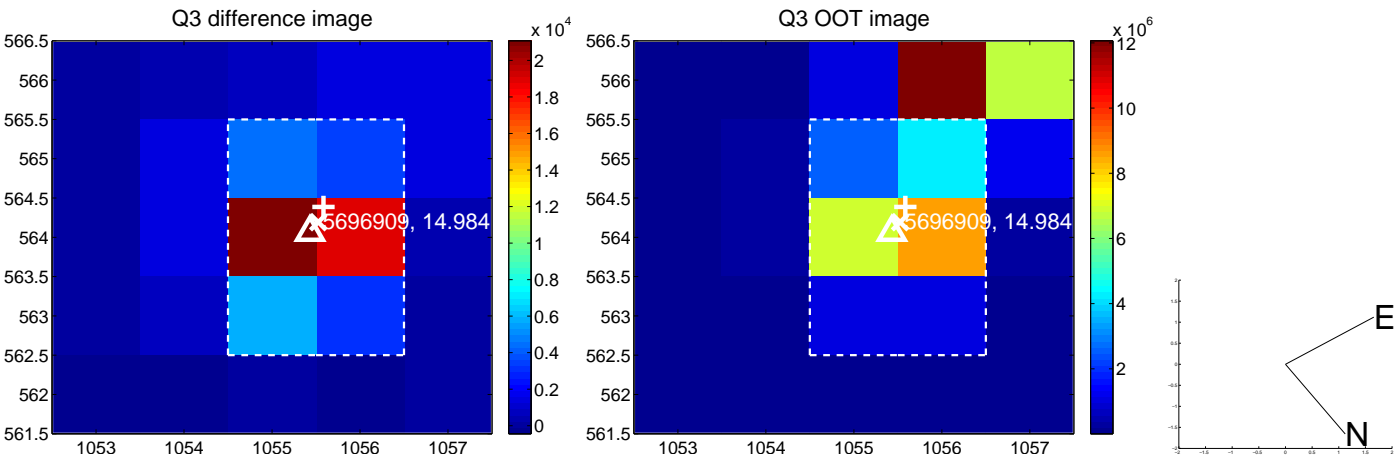
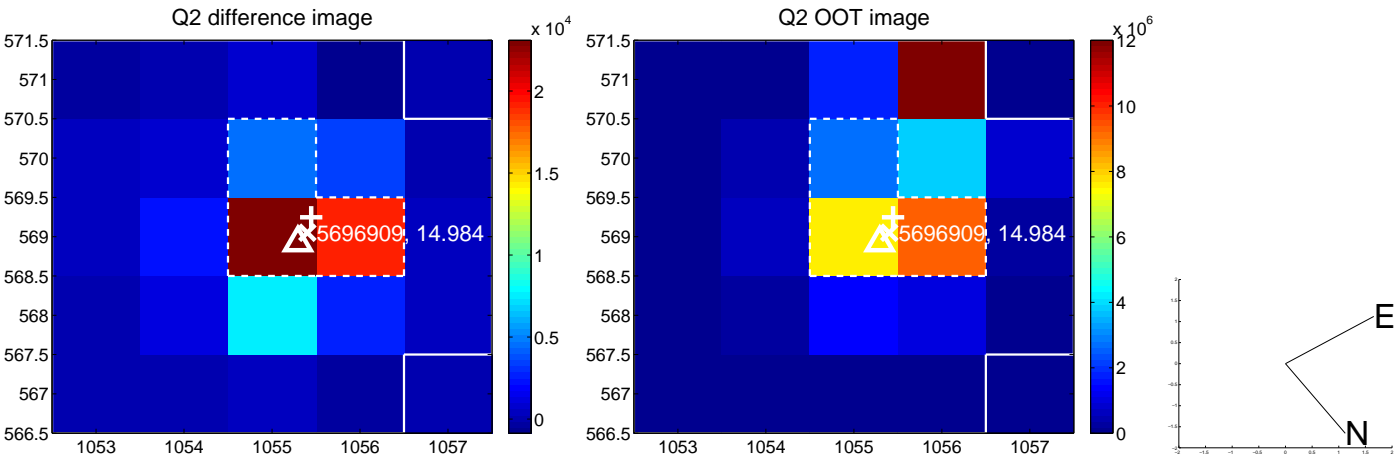
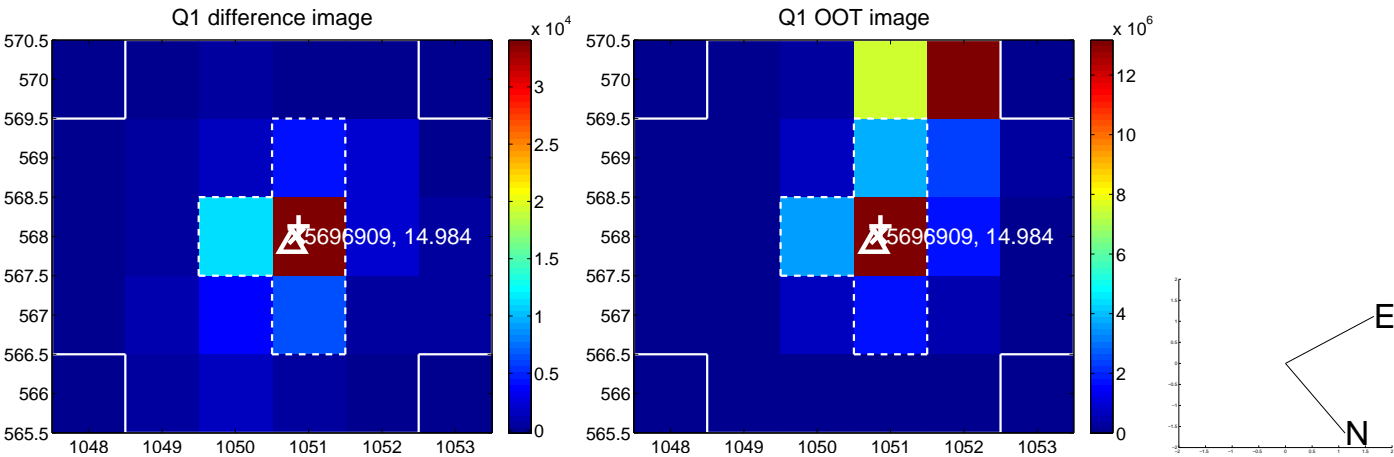
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.286 ± 0.090	14.30	-1.140 ± 0.082	0.596 ± 0.081
PRF-fit source offset from KIC position	0.679 ± 0.072	9.38	-0.641 ± 0.073	0.222 ± 0.068
photometric centroid source offset	1.82 ± 0.07	26.07	1.57 ± 0.07	-0.92 ± 0.06

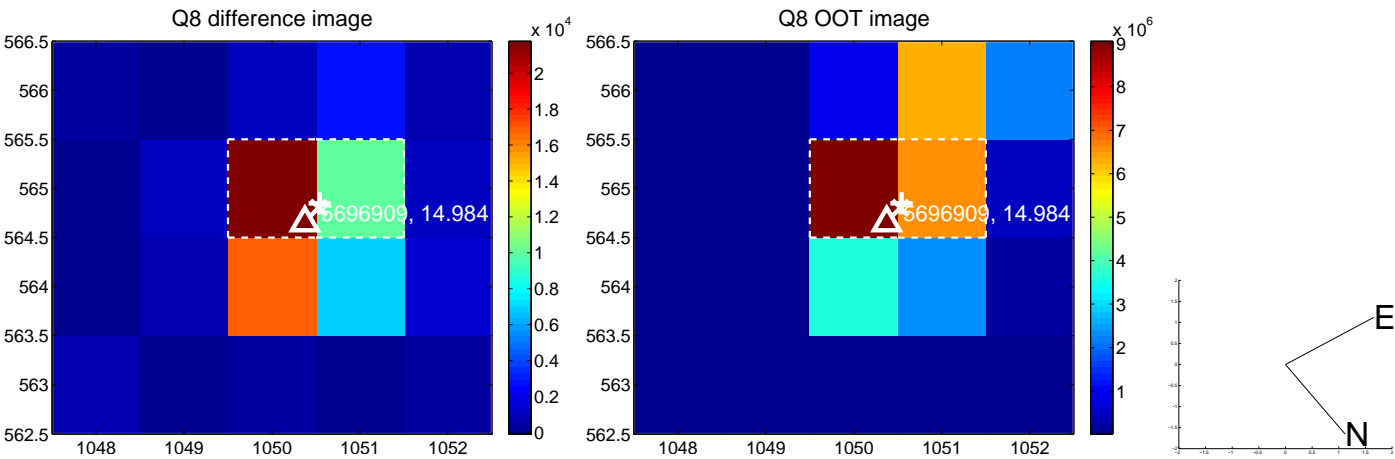
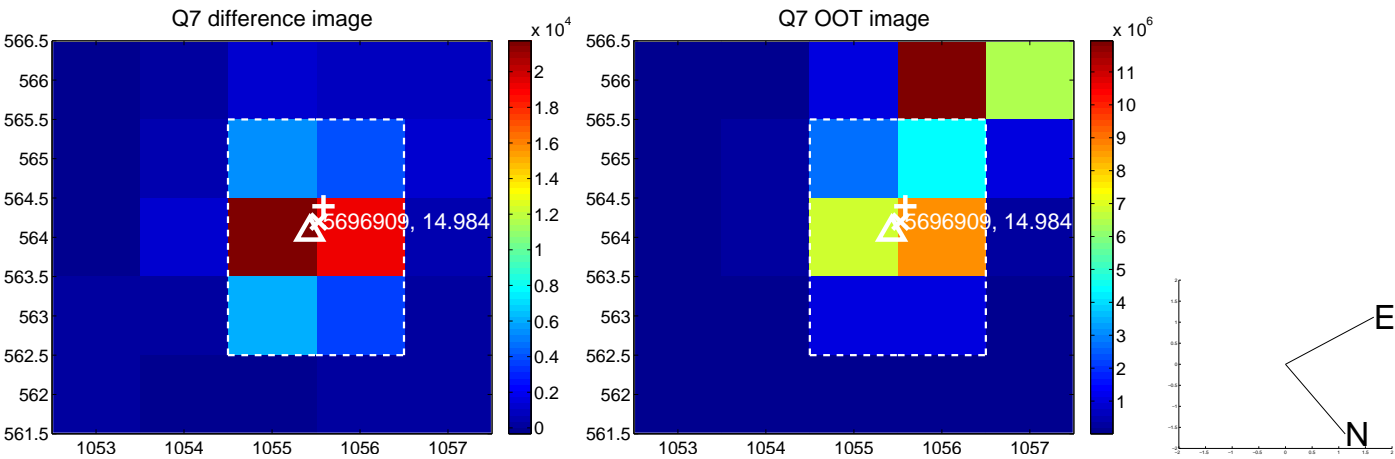
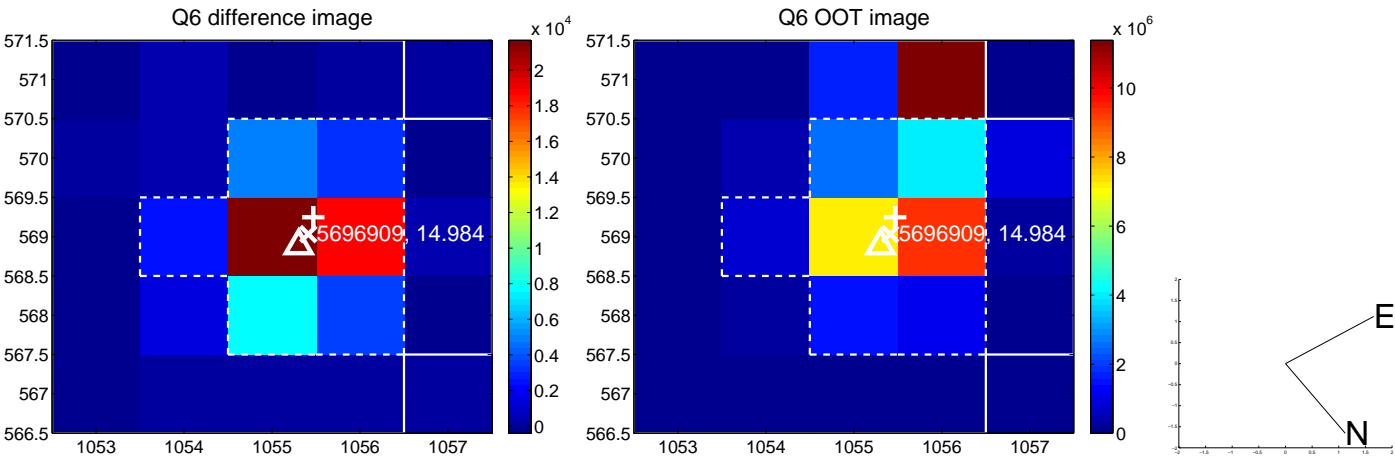
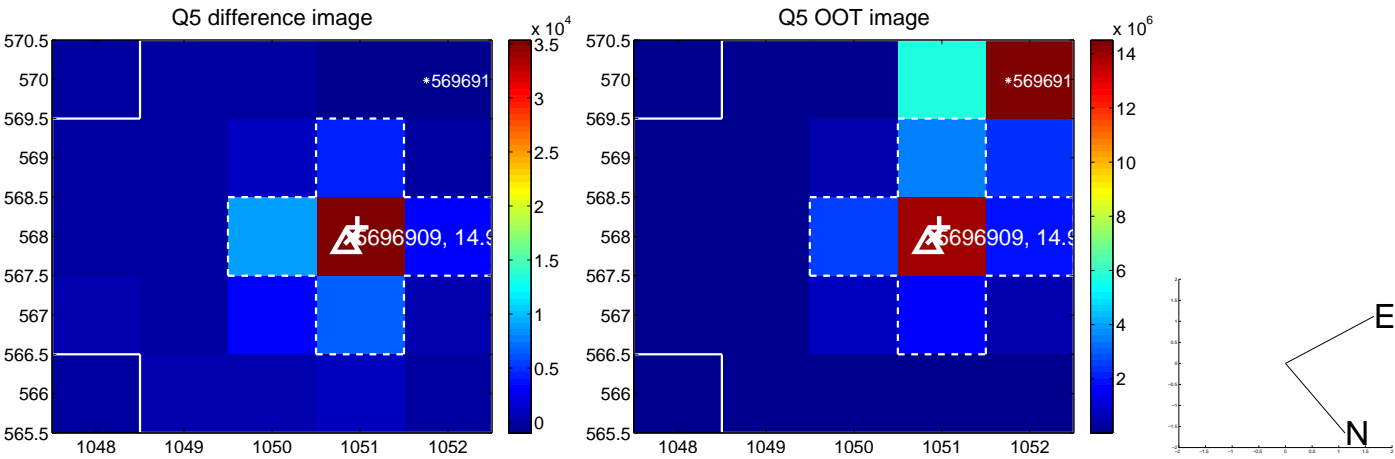


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

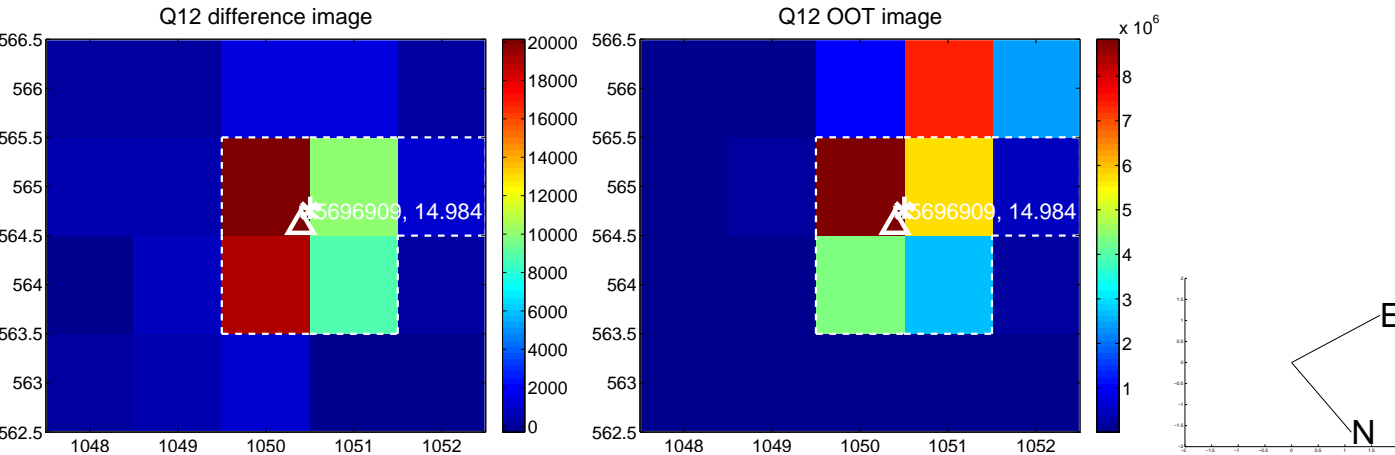
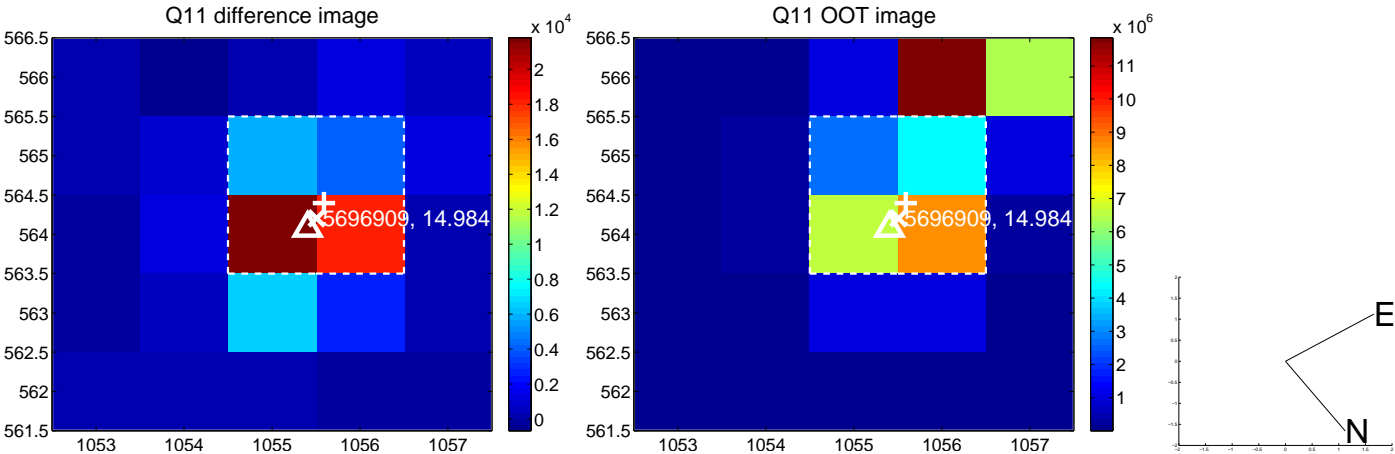
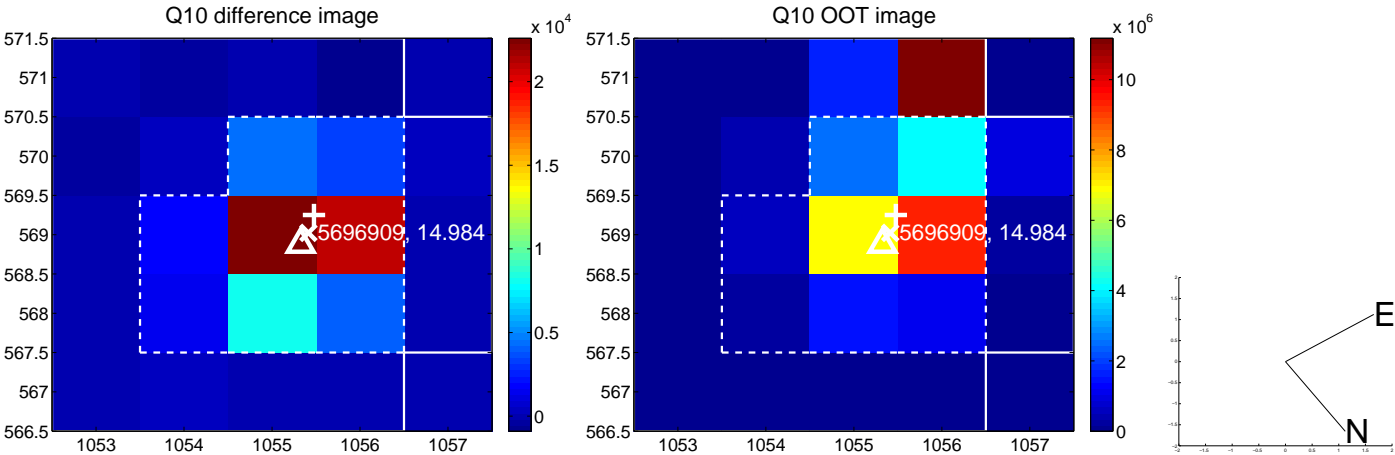
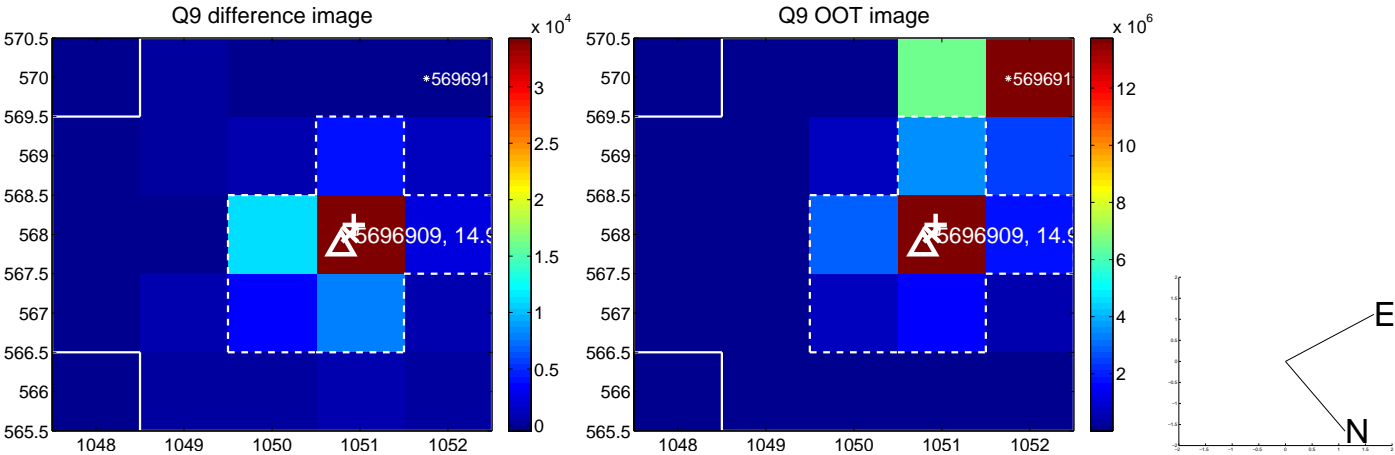
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



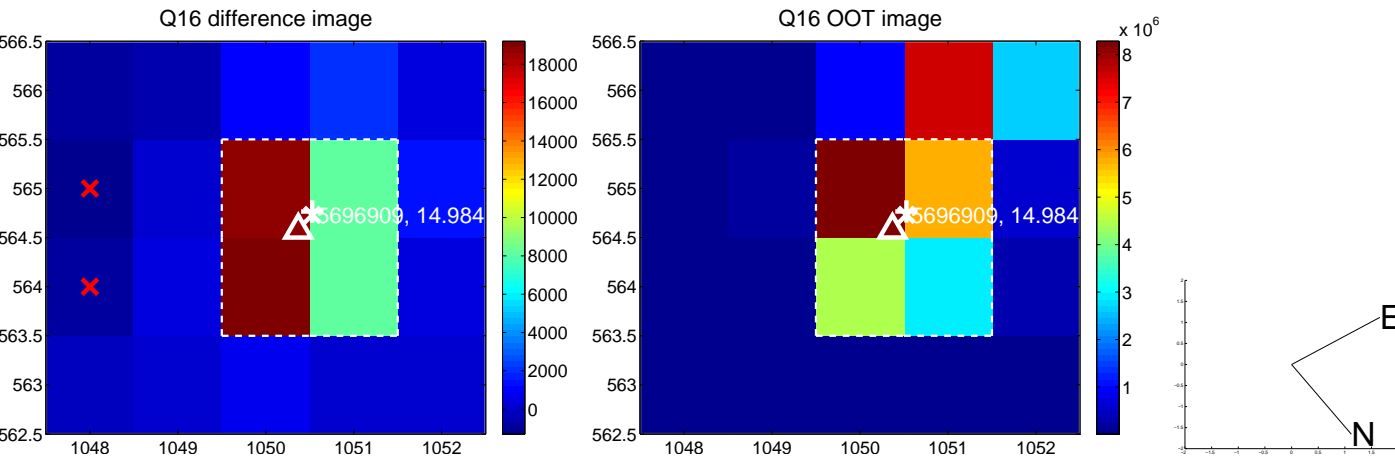
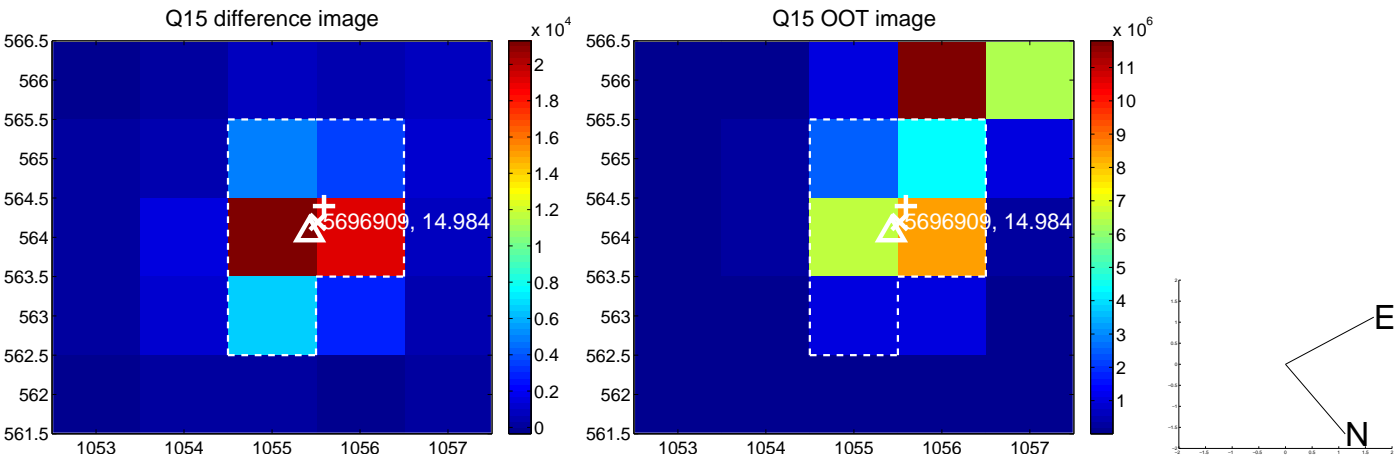
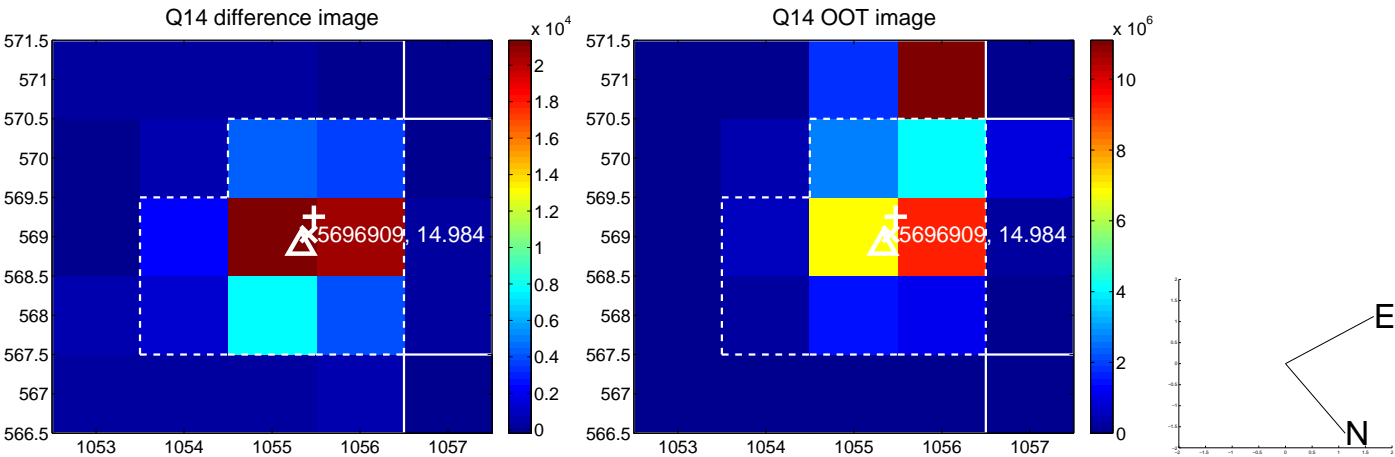
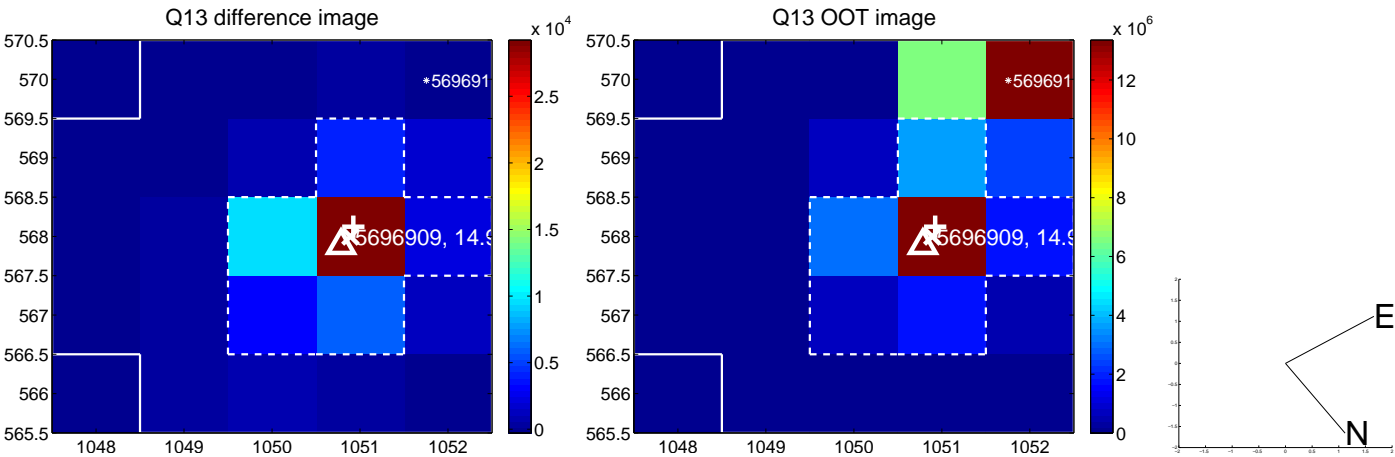
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

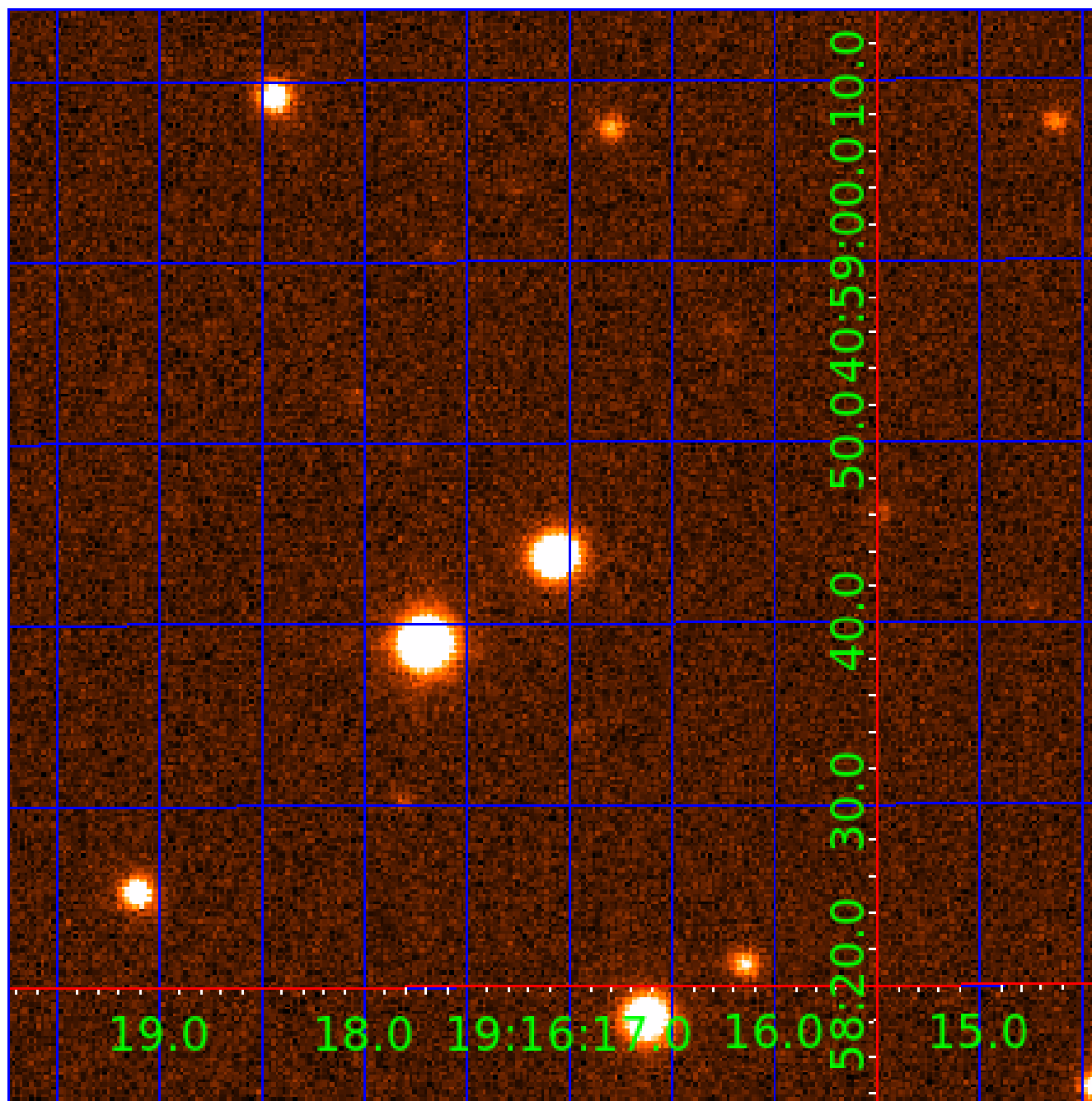


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005696909

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})
005696909-01	OBS	6614.01	0.643005	131.686848	1288.7	0.530	82.7	139.5	1.04	5681	4.19	5426.84
005696909-02	OBS	No	0.643003	132.020369	812.0	1.500	14.9	-1.0	1.04	5681	2.94	5426.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005696909-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005696909-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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 005696909-02

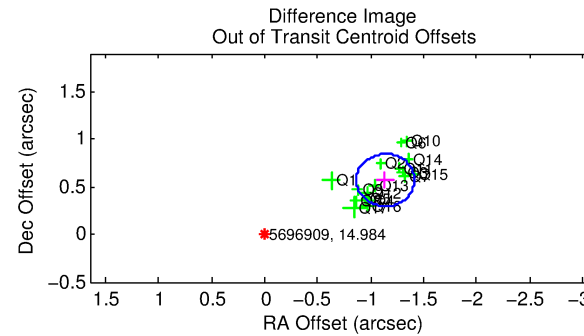
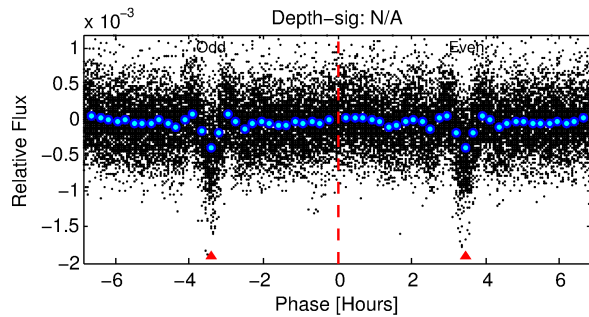
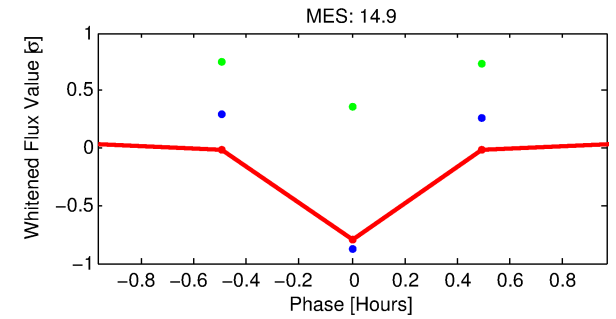
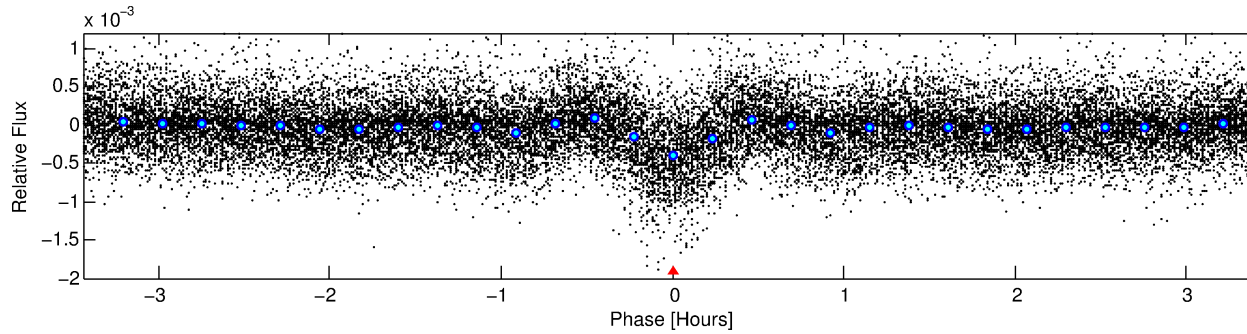
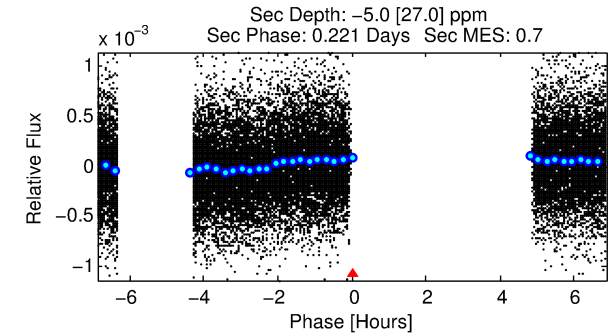
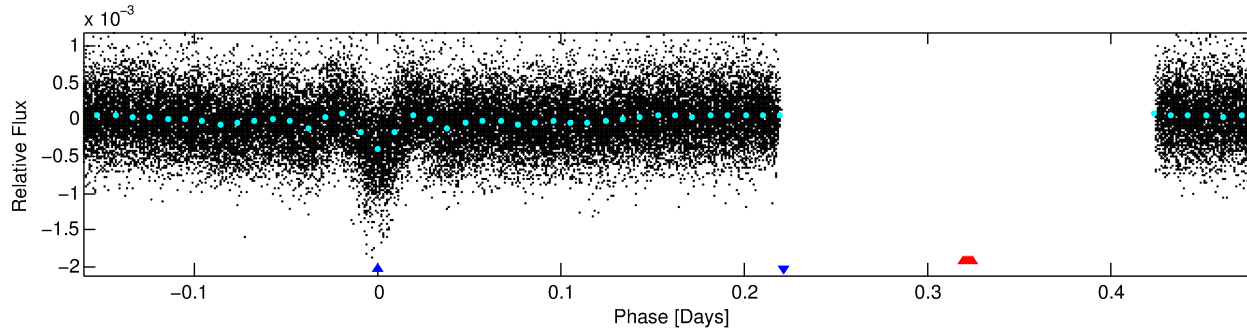
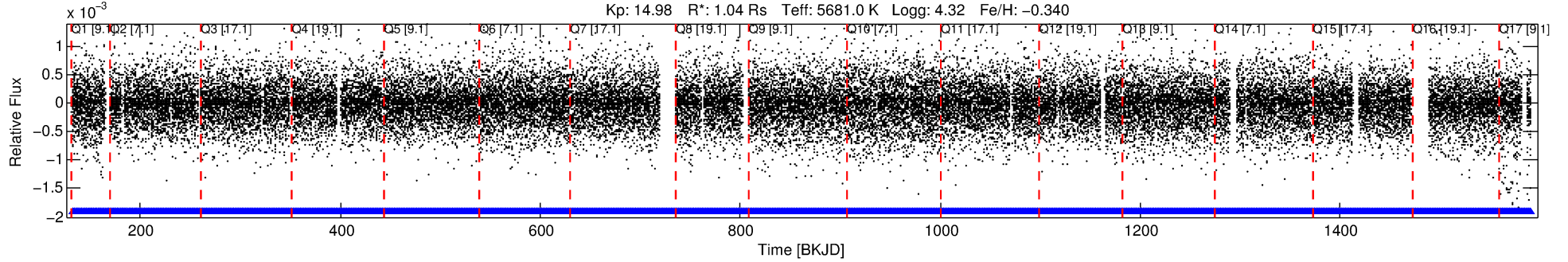
No Significant Match Found

DV One-Page Summary

KIC: 5696909 Candidate: 2 of 2 Period: 0.643 d

KOI: K06614 Corr: No Ephemeris Match

Kp: 14.98 R*: 1.04 Rs Teff: 5681.0 K Logg: 4.32 Fe/H: -0.340



TPS TCE Results:

Period = 0.64300 d
Epoch = 132.0204 BKJD

DV fit results are unavailable

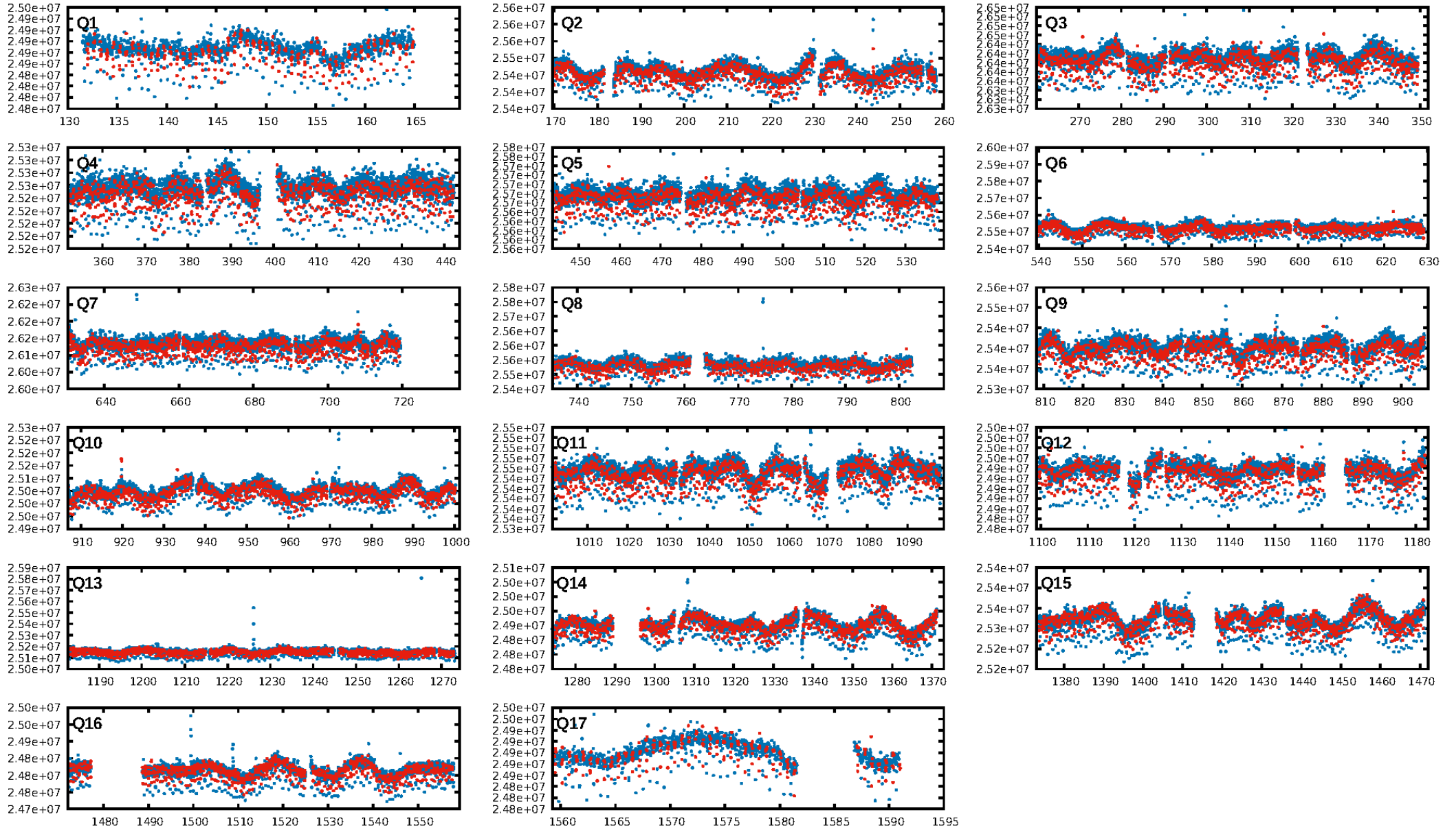
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.32e-53
RollingBand-fgt: 1.00 [1985/1985]
GhostDiagnostic-chr: 1.209
Centroid-sig: 0.0%
Centroid-so: 3.155 arcsec [85.40σ]
OotOffset-rm: 1.272 arcsec [13.88σ]
KicOffset-rm: 0.668 arcsec [8.80σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

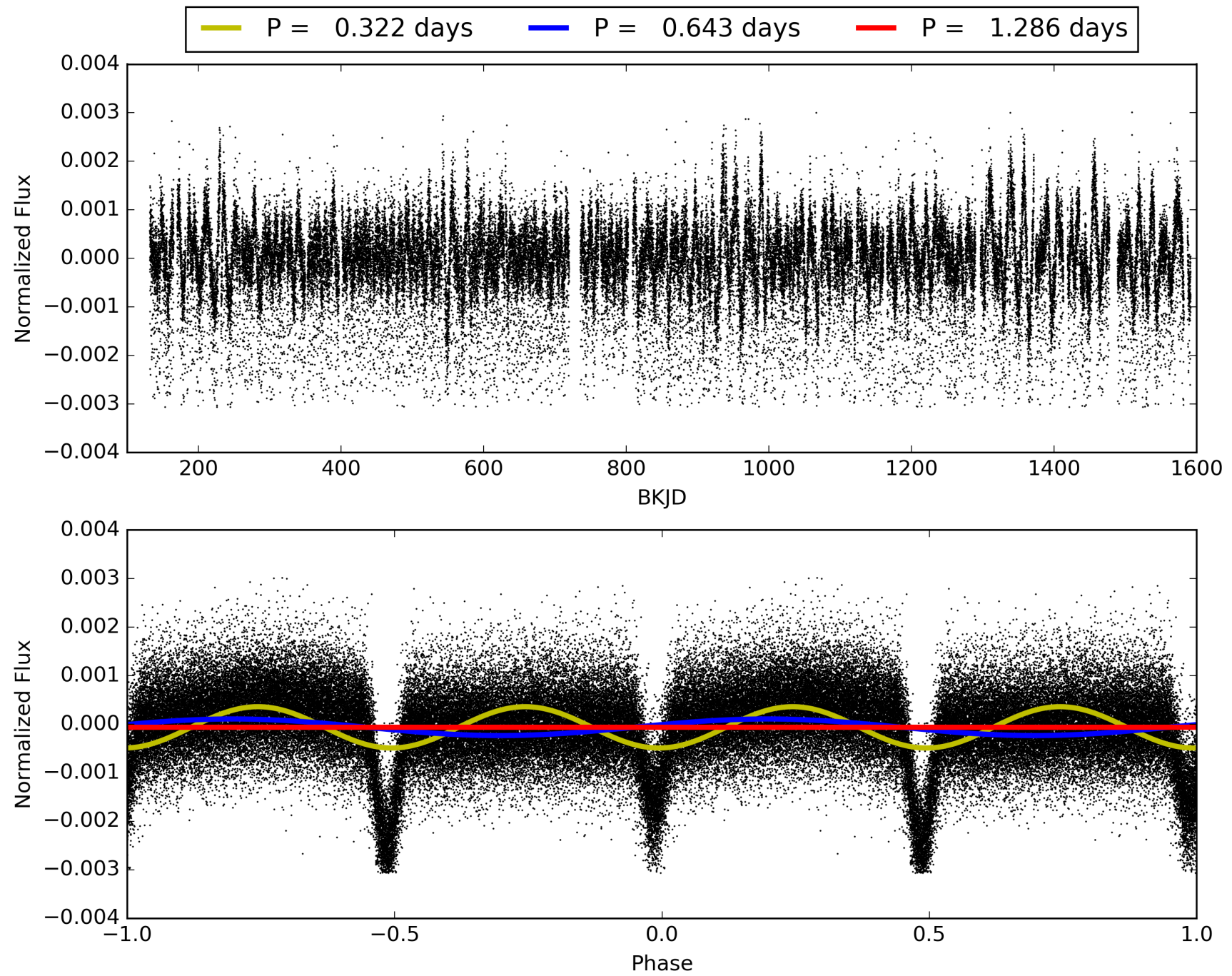
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:48:01 Z

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

TCE 005696909-02, PDC Light Curves

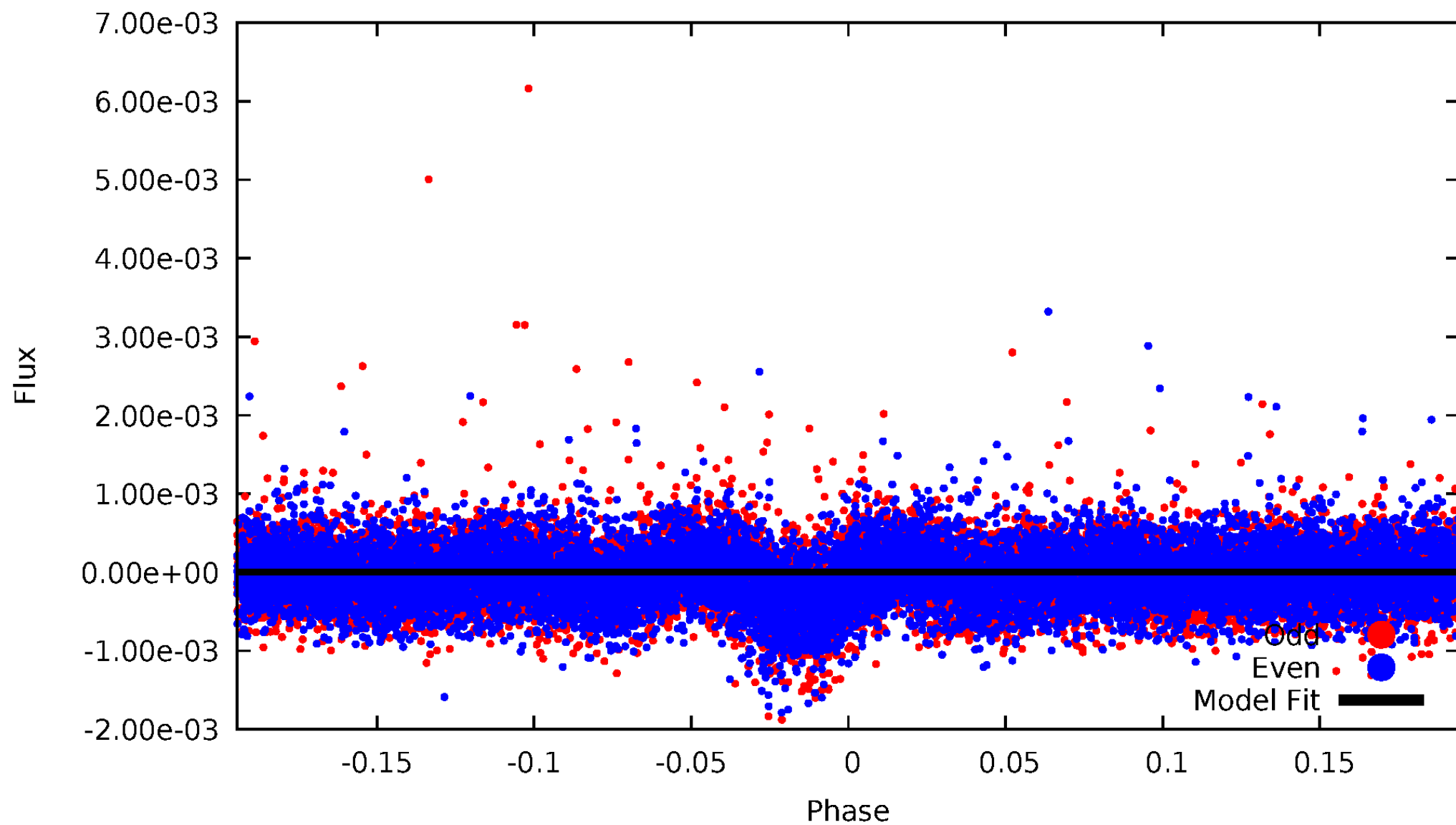


TCE 005696909-02



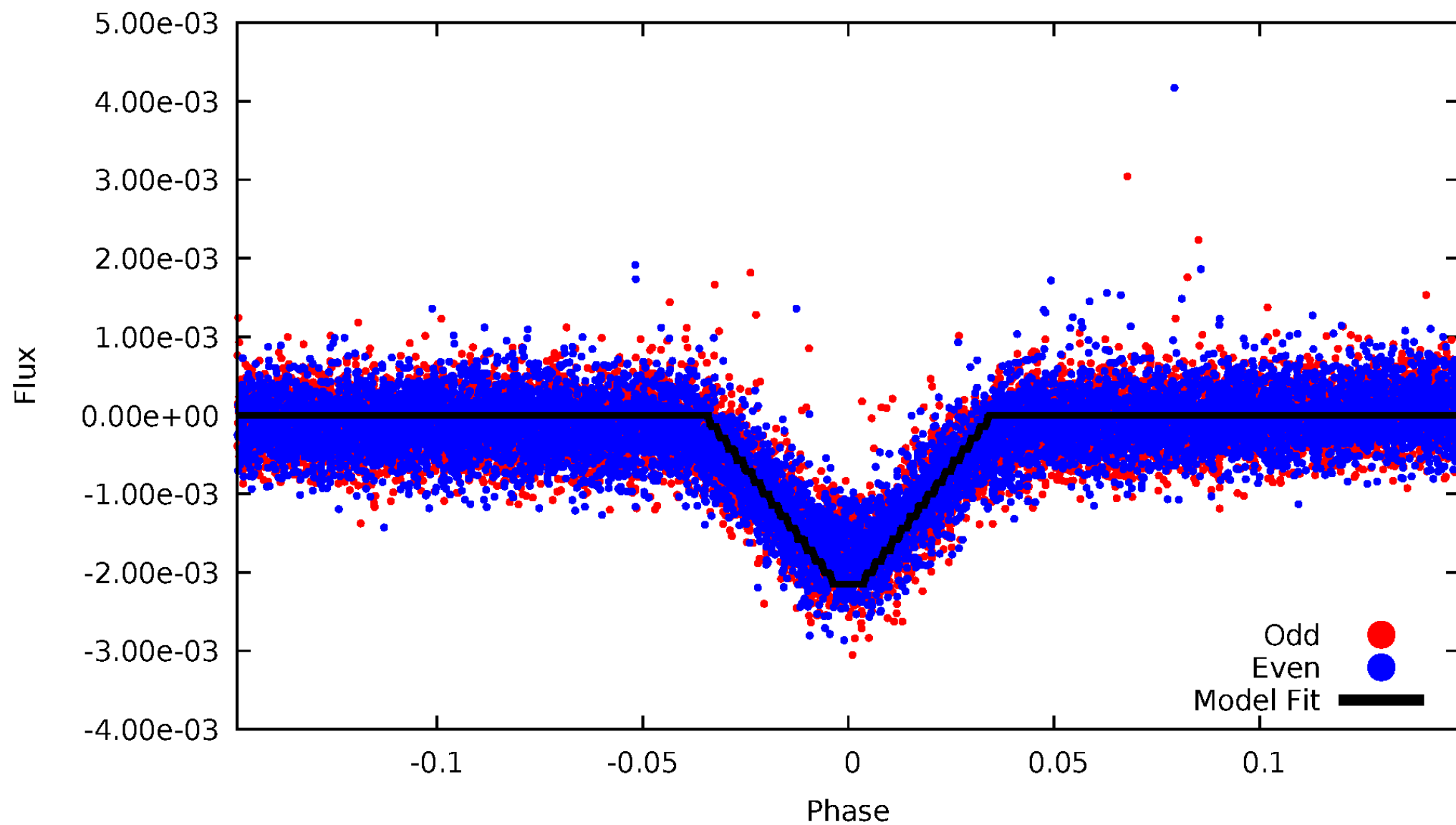
DV Odd/Even

TCE 005696909-02



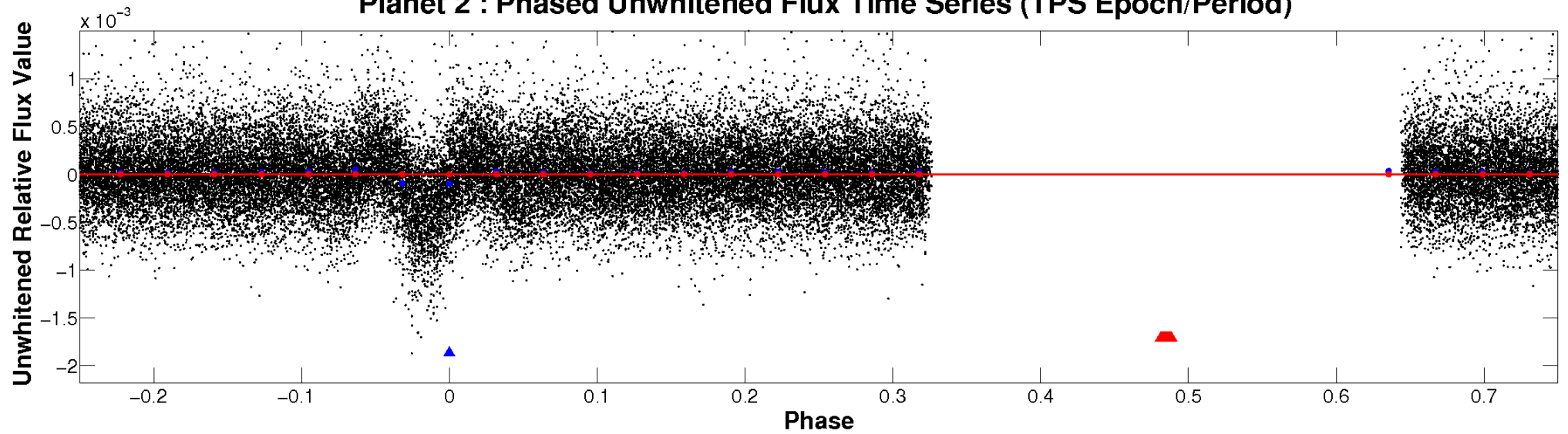
ALT Odd/Even

TCE 005696909-02

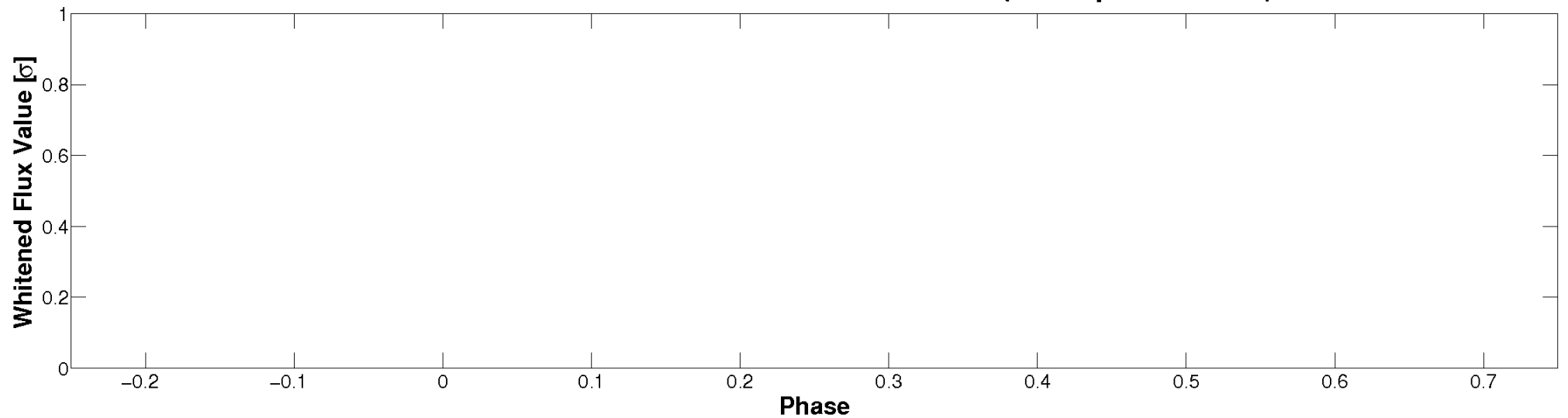


Non-Whitened Vs. Whitened Light Curve

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

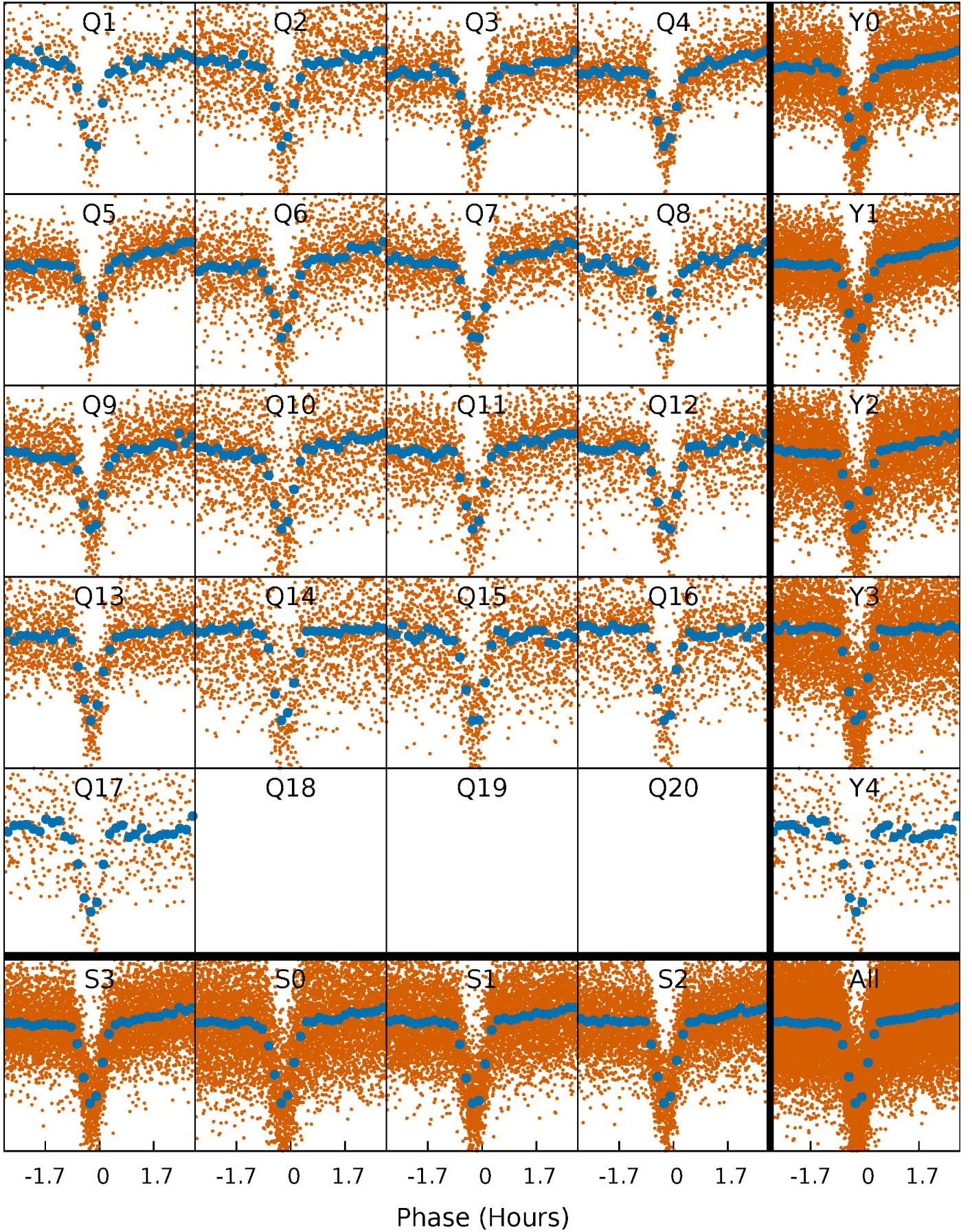


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



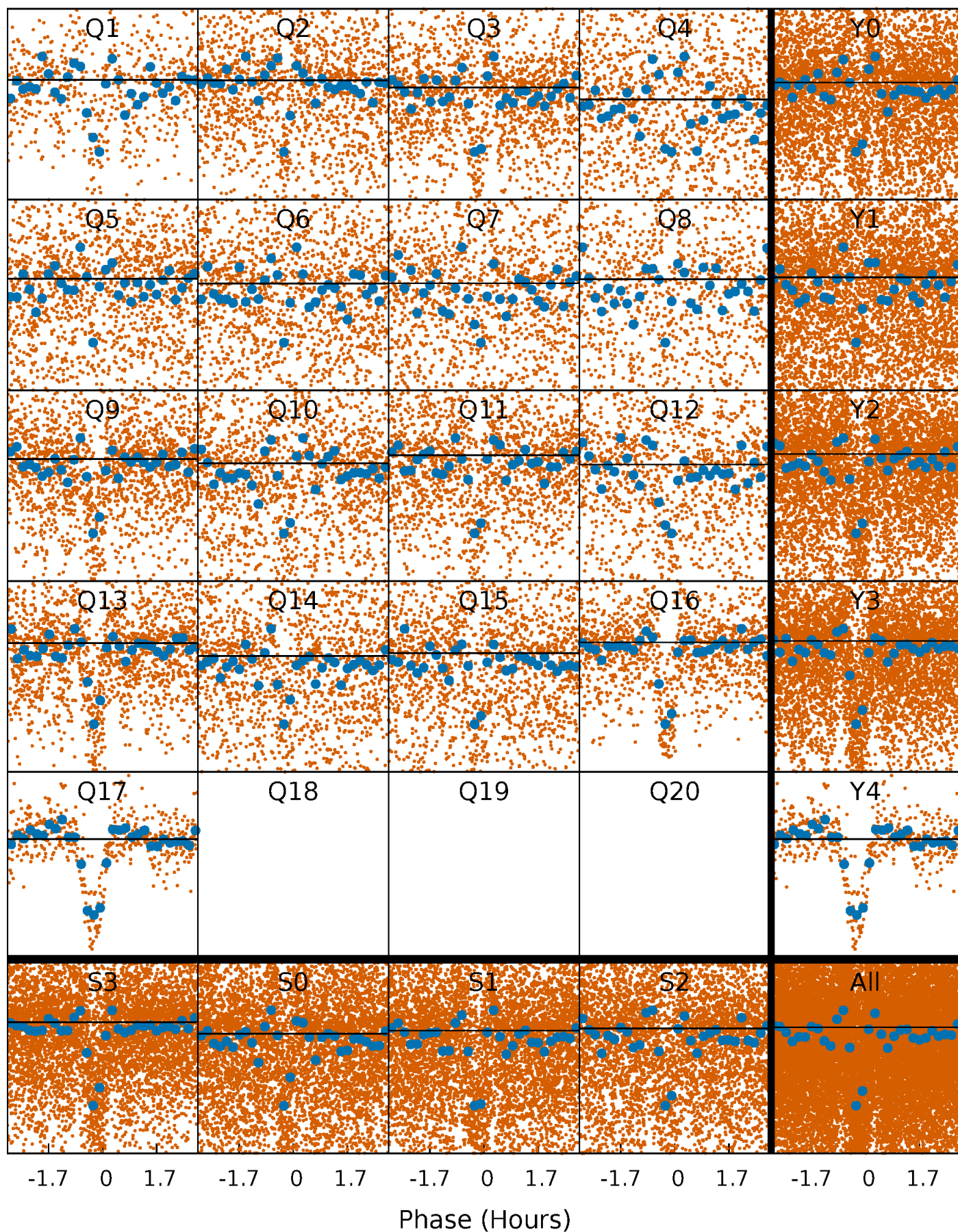
PDC Quarter-Phased Transit Curves

TCE 005696909-02 $P = 0.643003$ Days $T_0 = 132.020369$ (BKJD)



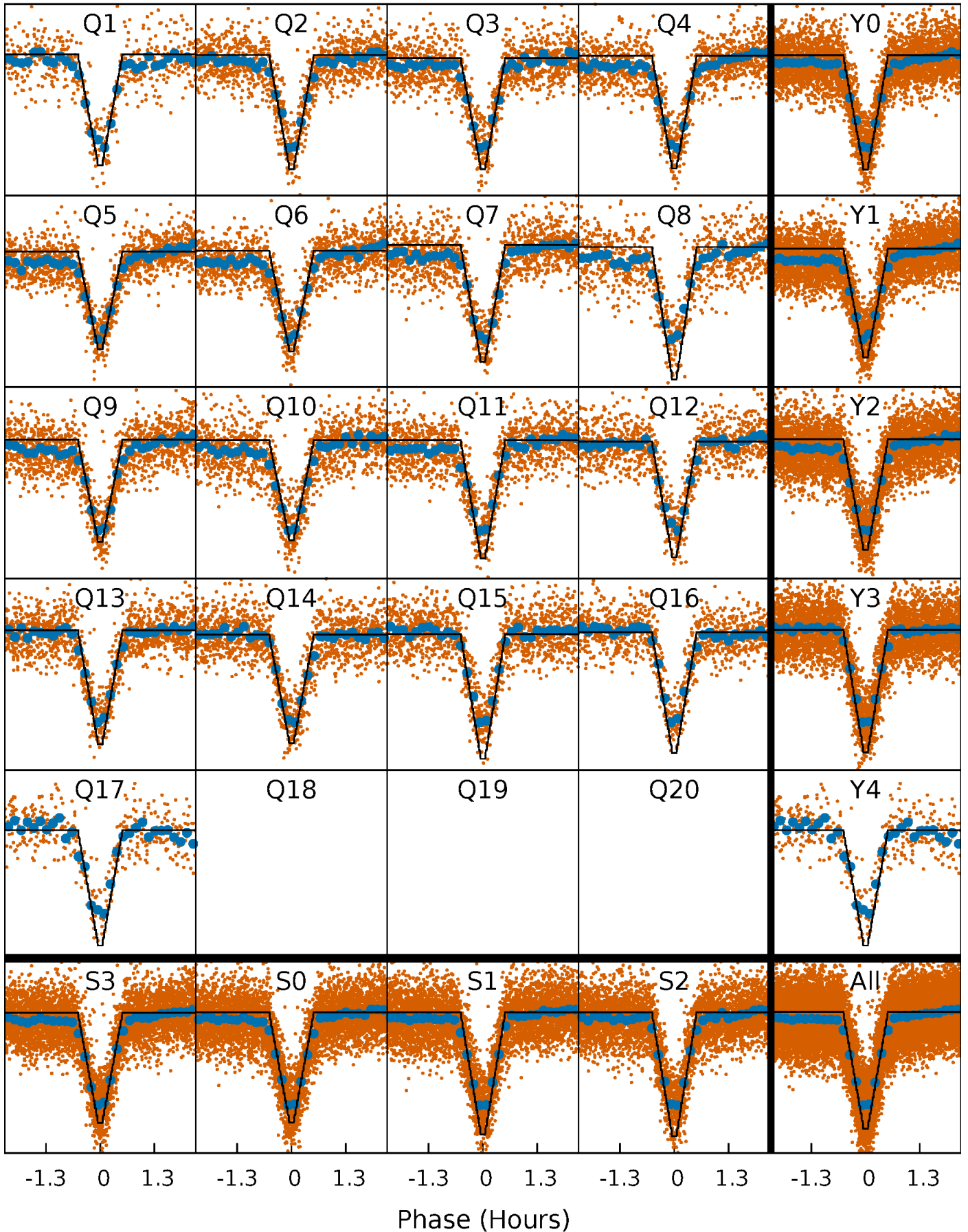
DV Quarter-Phased Transit Curves

TCE 005696909-02 P= 0.643003 Days $T_0=132.020369$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

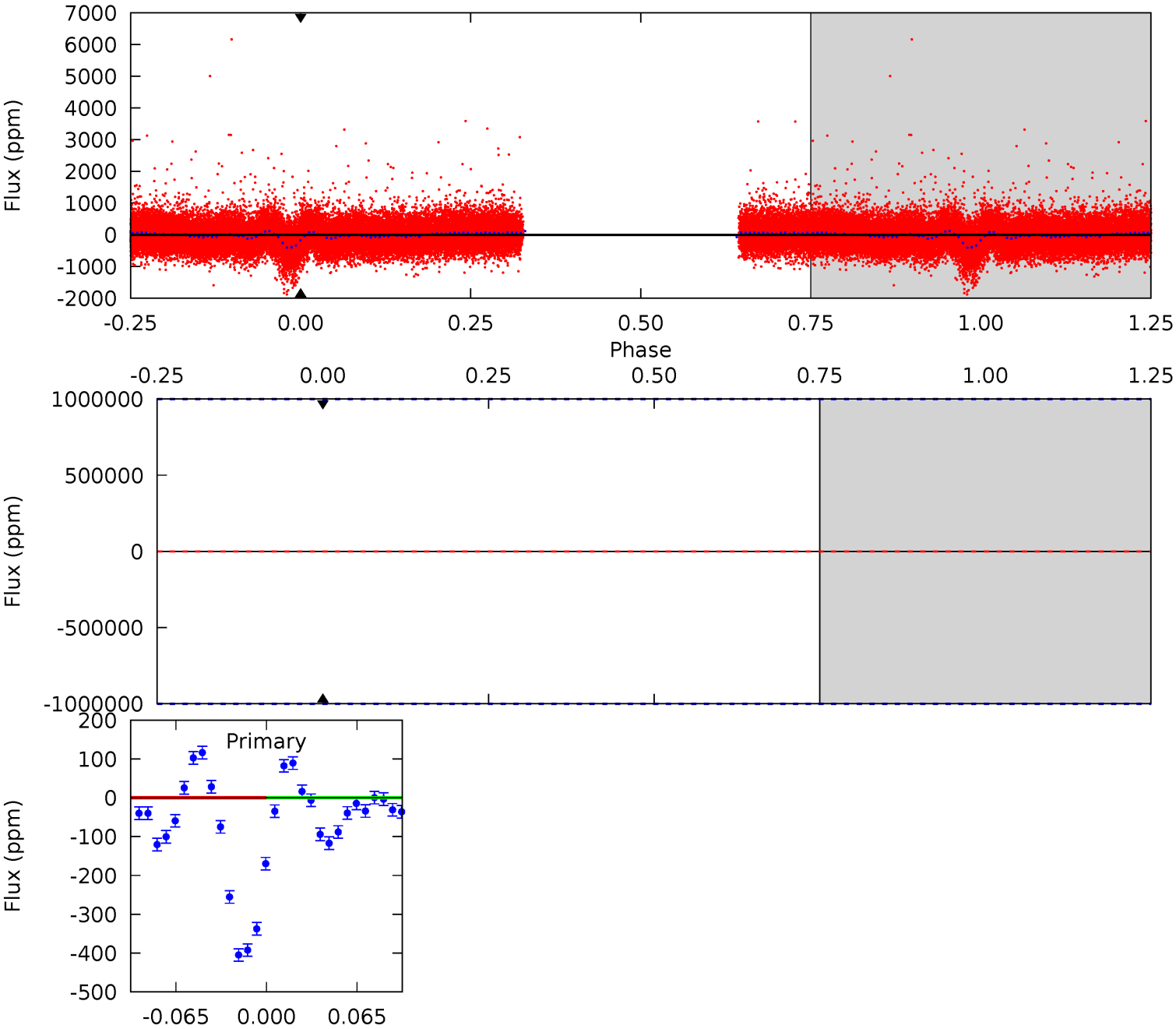
TCE 005696909-02 P= 0.643003 Days $T_0=132.010300$ (BKJD)



DV Model-Shift Uniqueness Test

005696909-02, P = 0.643003 Days, E = 131.377366 Days

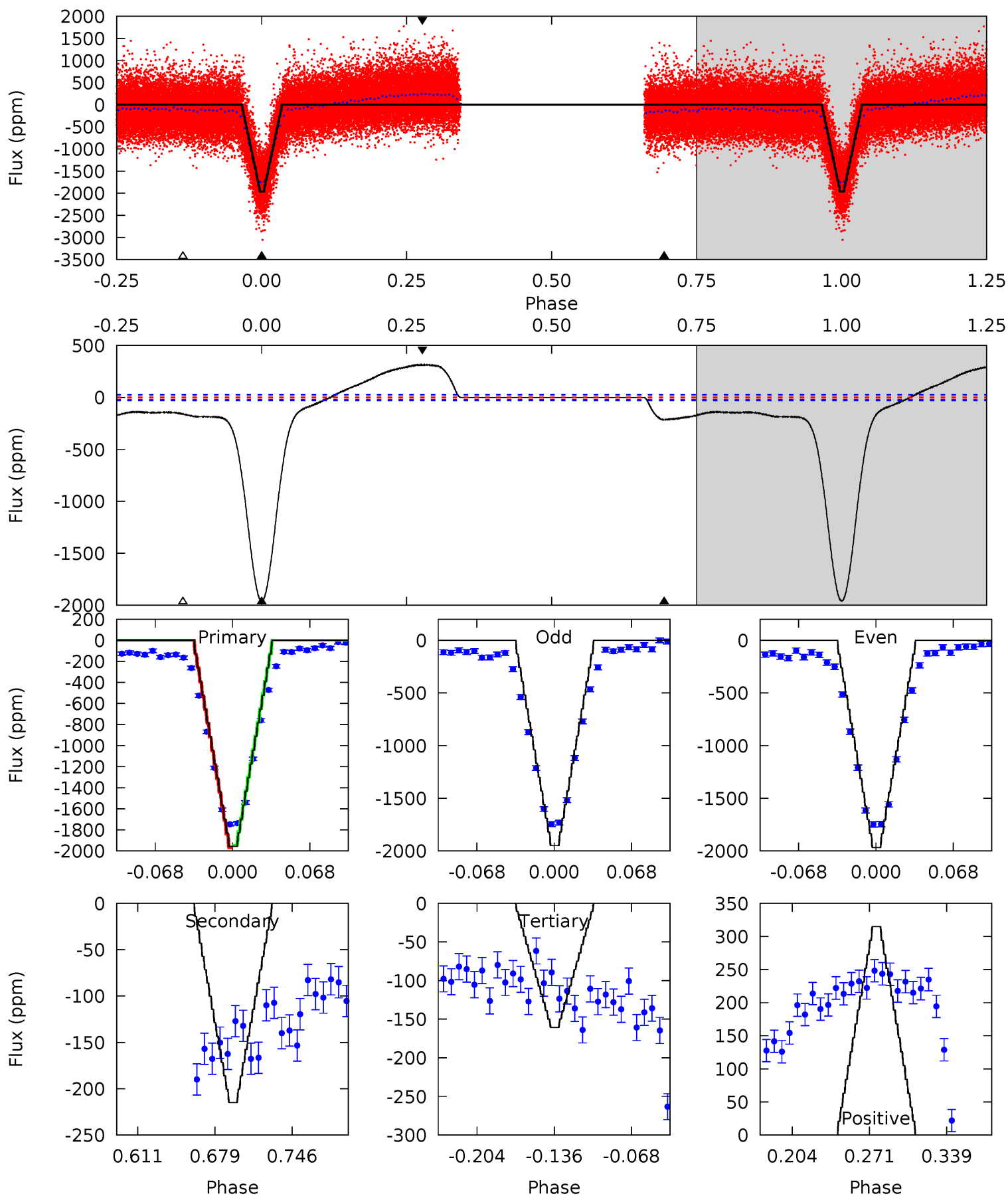
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005696909-02, P = 0.643003 Days, E = 131.367297 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
344.2	37.8	28.2	55.3	4.65	1.83	32.9	315.9	288.8	9.55	-17.6	1.50	1.00	0.14	2.17



Stellar Parameters For KIC 005696909

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5681^{+169}_{-152}	$4.315^{+0.220}_{-0.220}$	$-0.340^{+0.350}_{-0.250}$	$1.036^{+0.349}_{-0.232}$	$0.807^{+0.124}_{-0.062}$	$1.024^{+1.229}_{-0.569}$
	+3%/-3%	+5%/-5%	+103%/-74%	+34%/-22%	+15%/-8%	+120%/-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 005696909-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$8.84^{+9.81}_{-6.32}$	3053^{+280}_{-221}	4559^{+15462}_{-22744}	$2.859^{+242.082}_{-204.556}$
Alt.	-215 ± 6	$9.88^{+9.91}_{-6.66}$	3056^{+254}_{-208}	-2547^{+6823}_{-513}	$0.225^{+1.906}_{-0.169}$

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

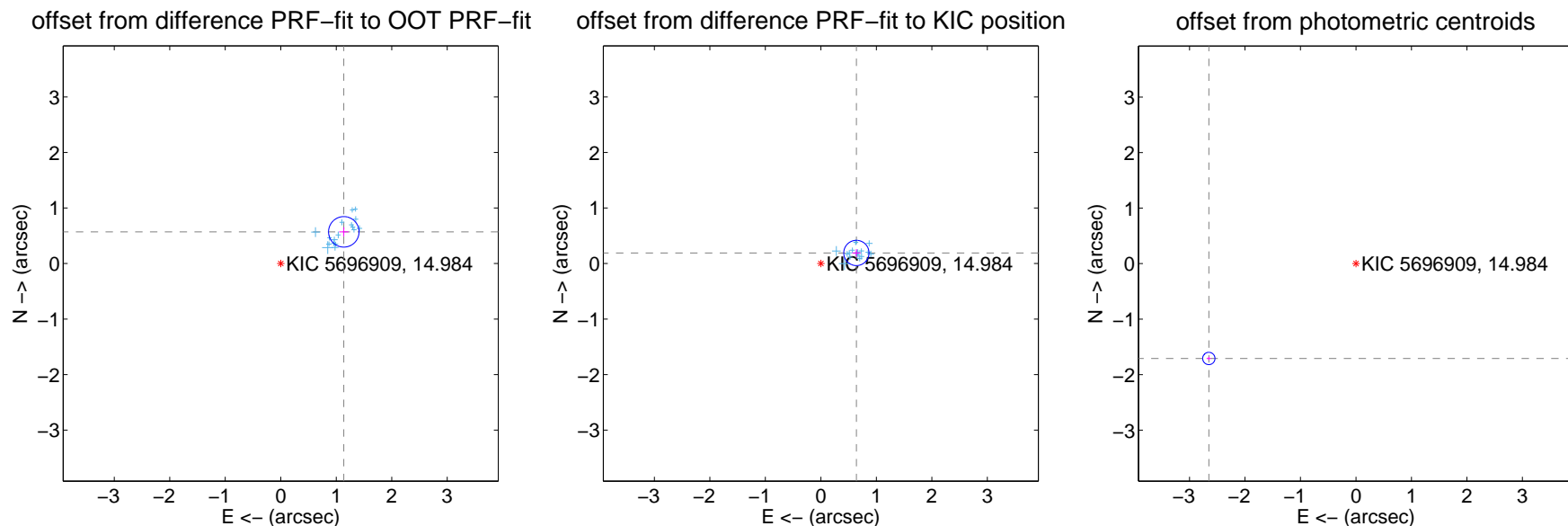
DV Centroid Data

Supplemental centroid analysis for 005696909-02. Kepler magnitude: 14.98. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

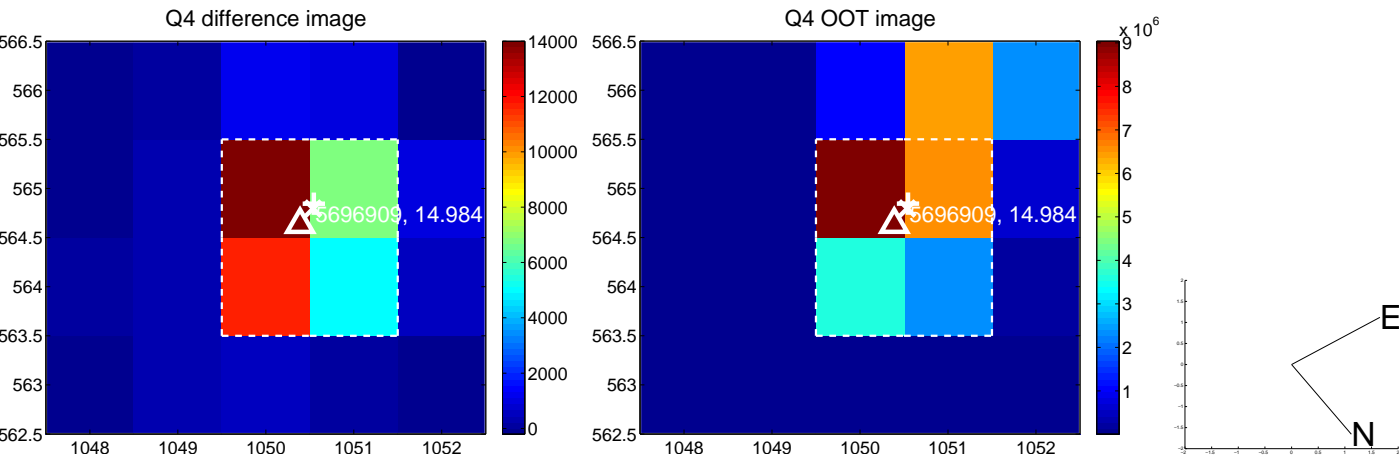
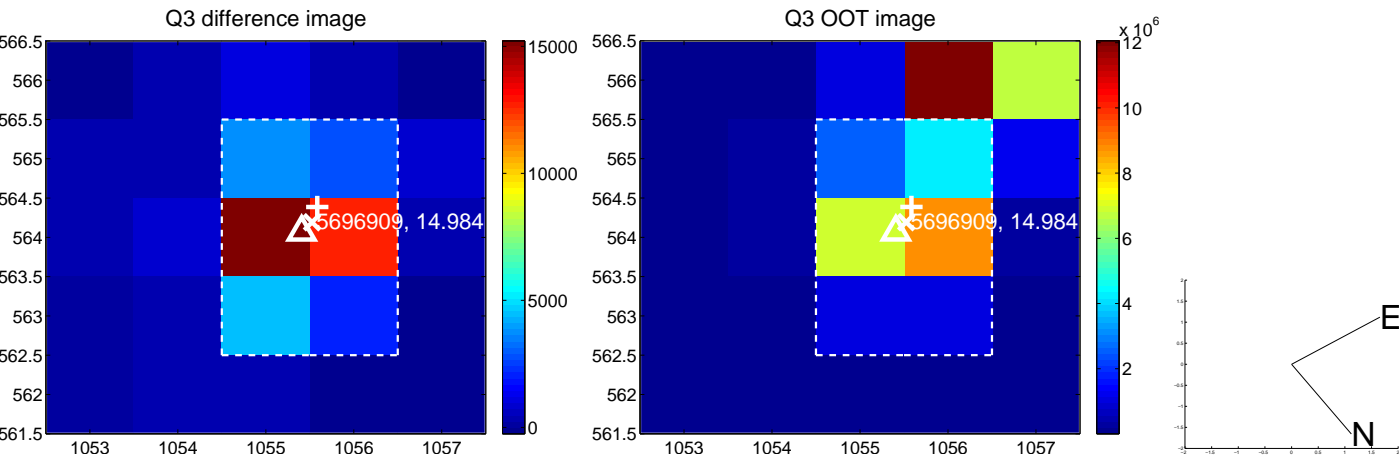
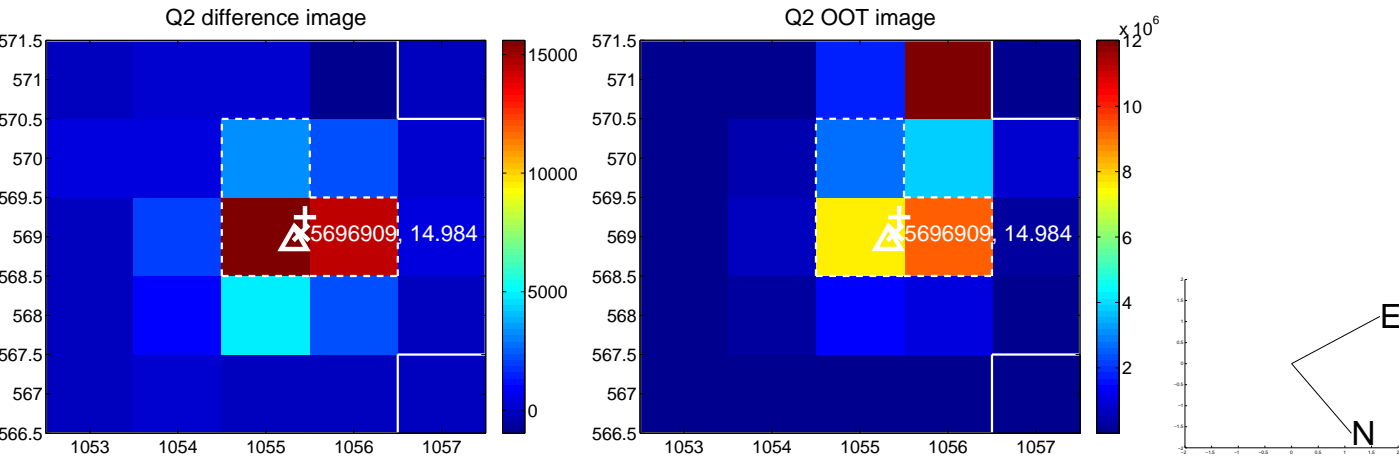
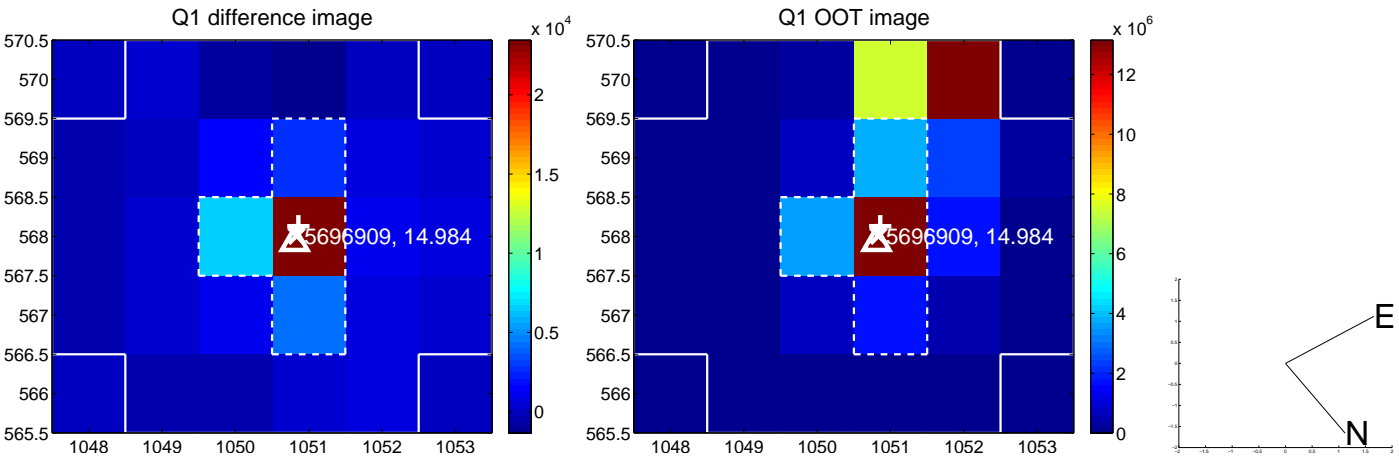
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.272 ± 0.092	13.88	-1.136 ± 0.084	0.571 ± 0.082
PRF-fit source offset from KIC position	0.668 ± 0.076	8.80	-0.640 ± 0.076	0.191 ± 0.071
photometric centroid source offset	3.15 ± 0.04	85.40	2.65 ± 0.04	-1.71 ± 0.03

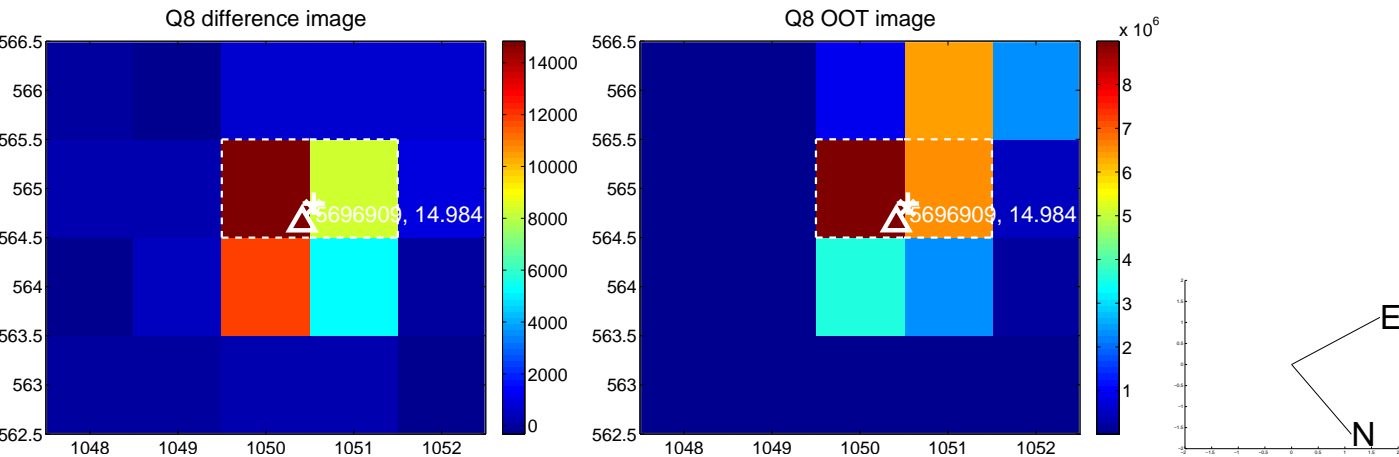
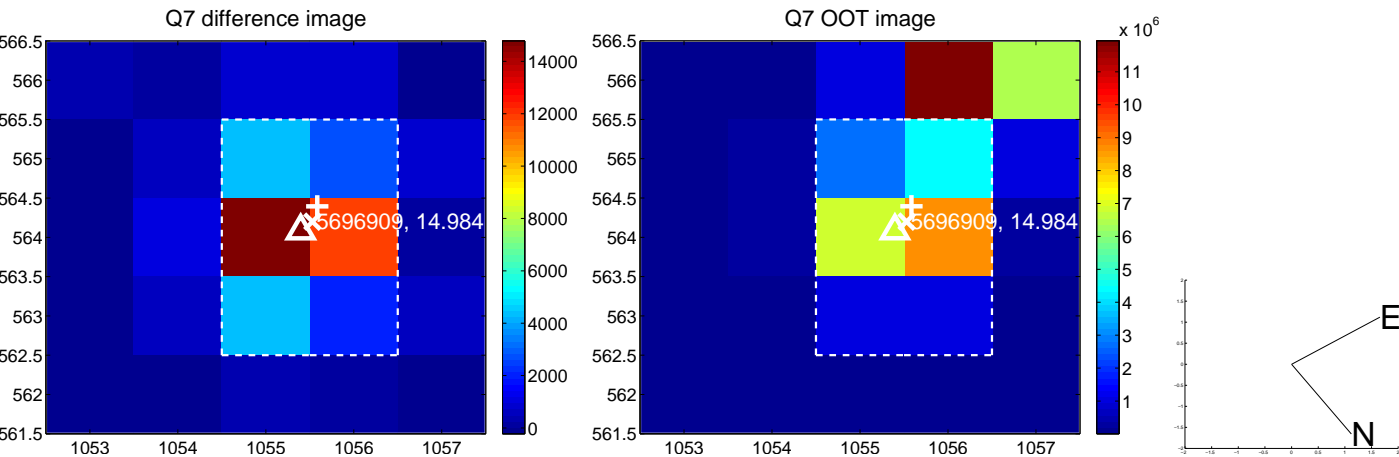
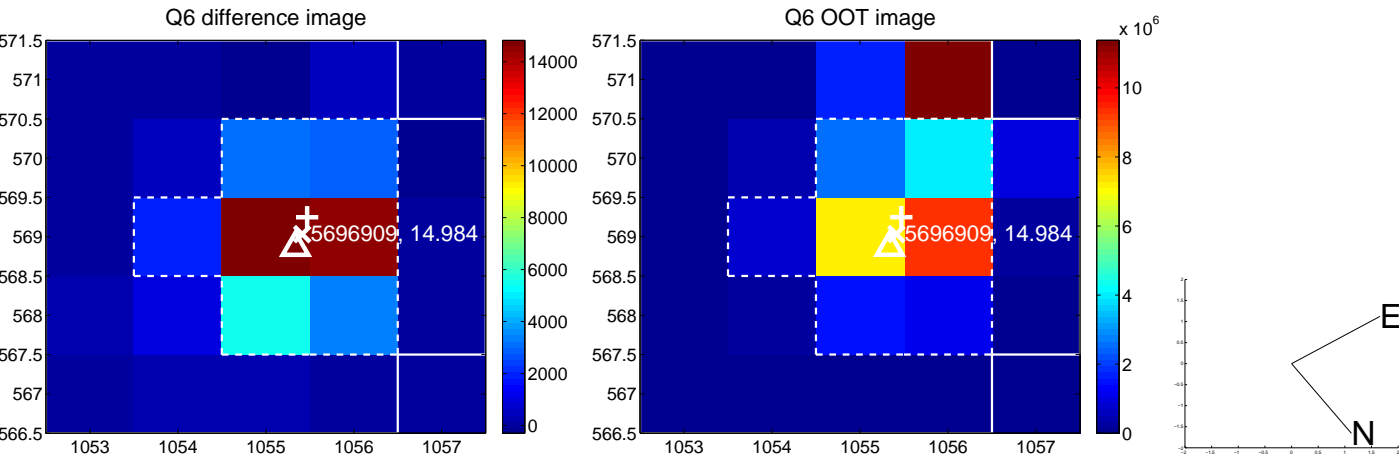
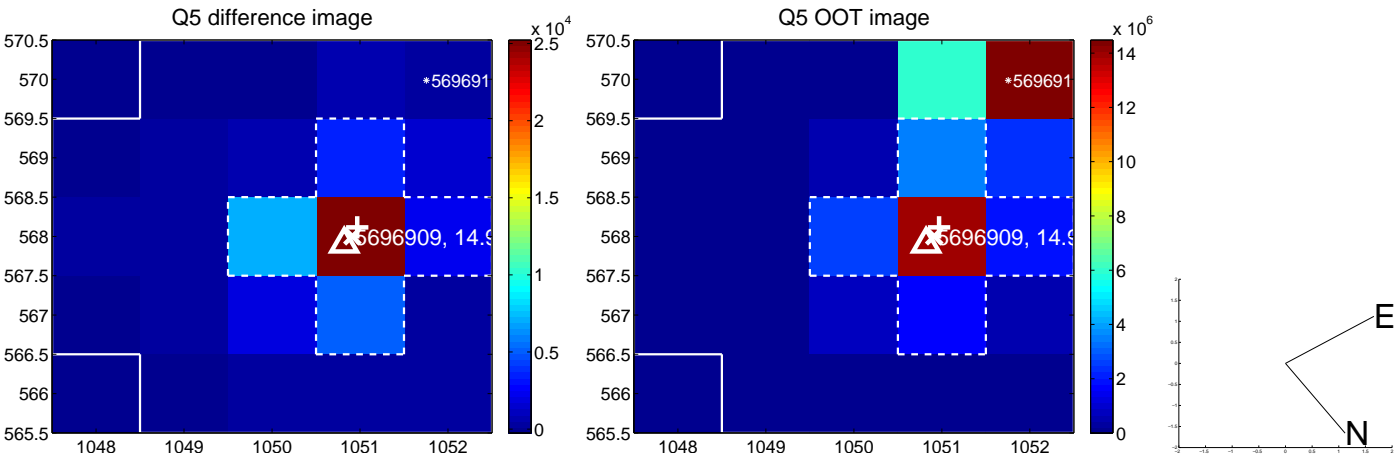


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

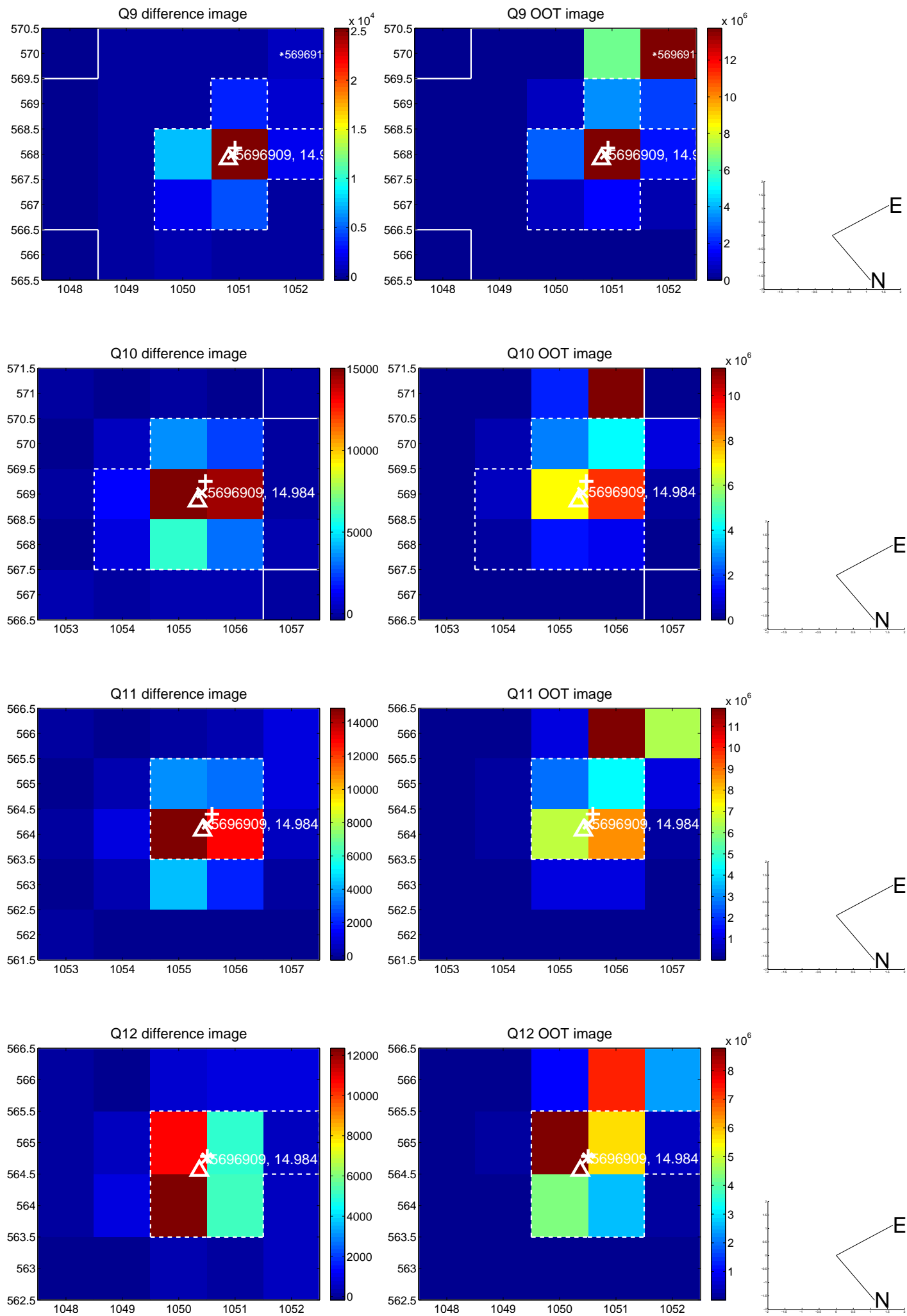
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



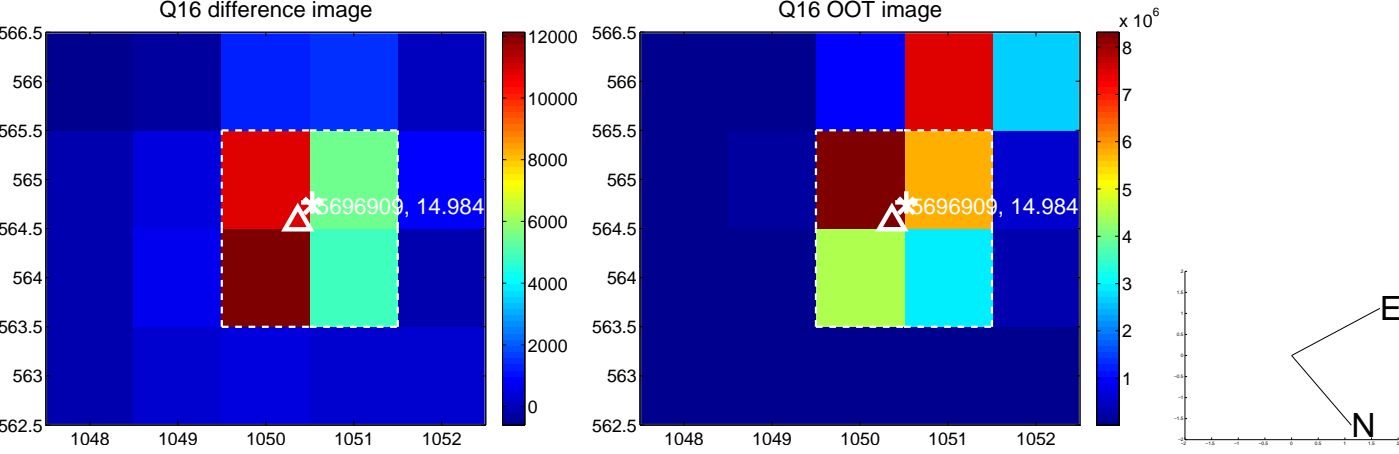
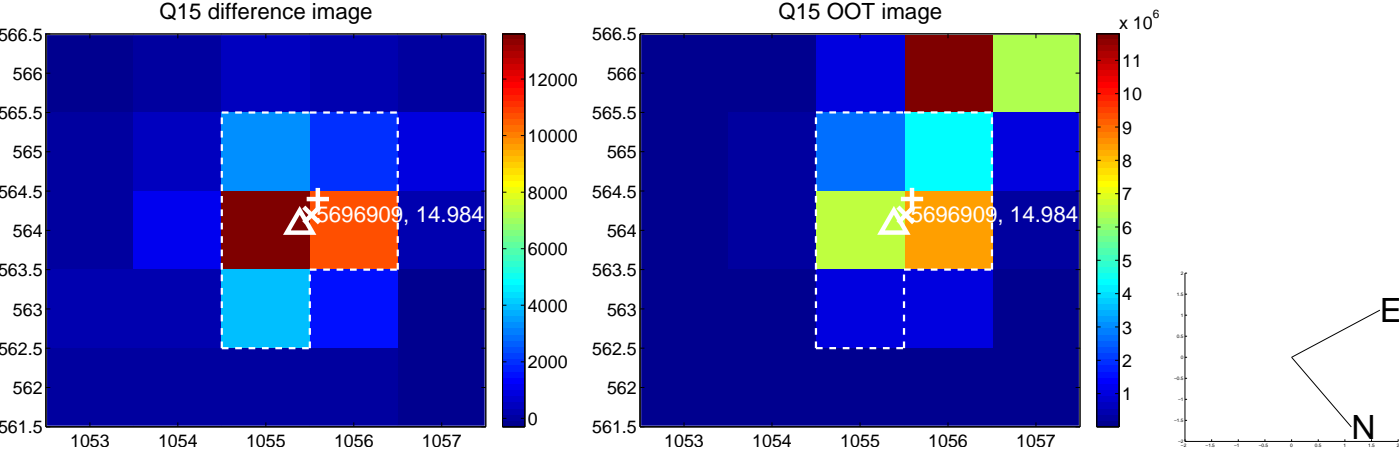
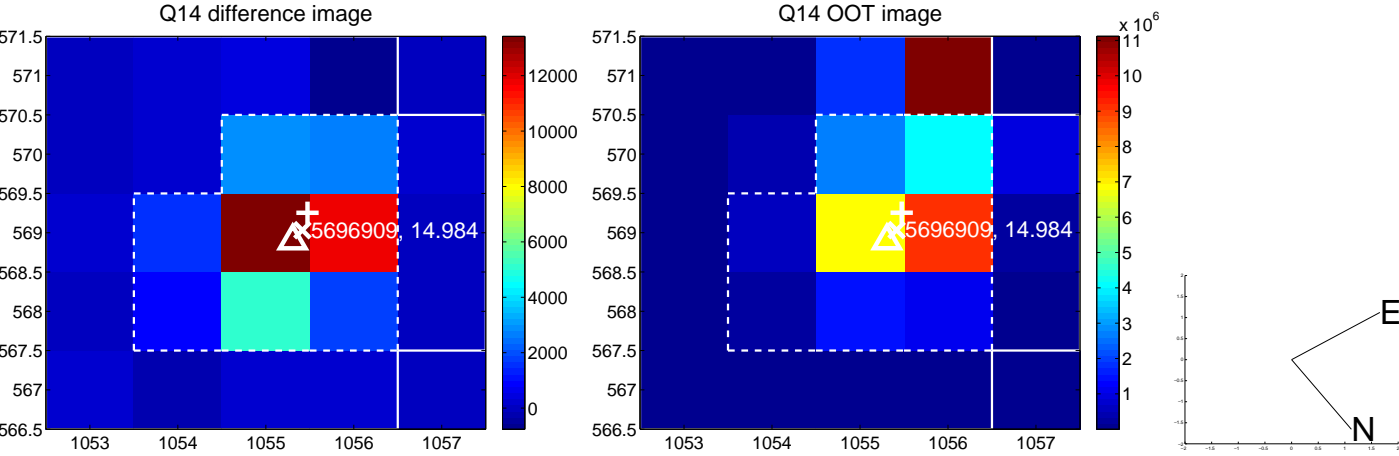
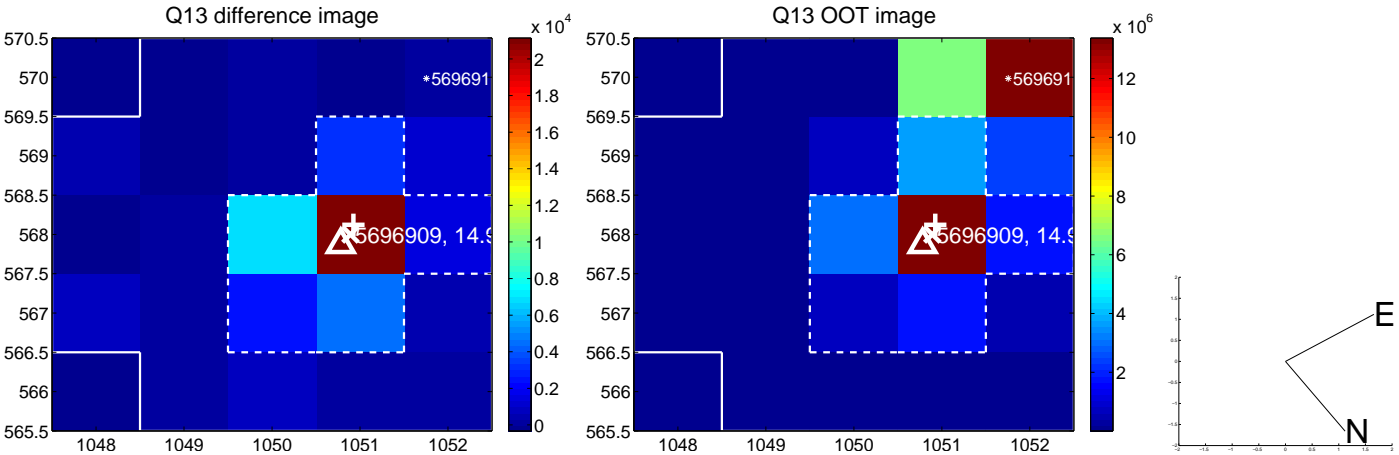
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



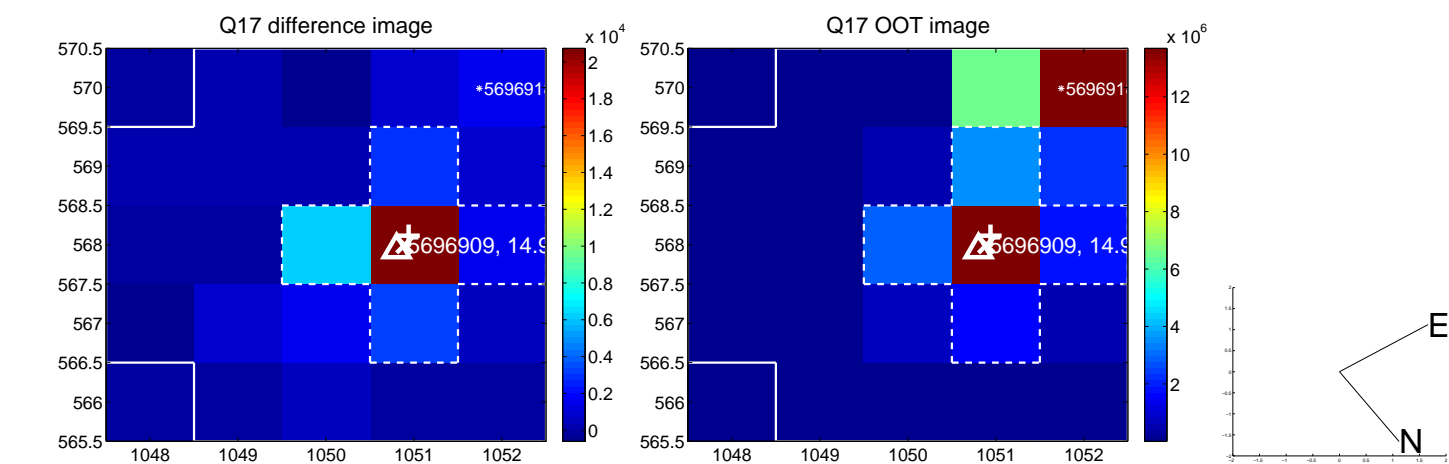
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



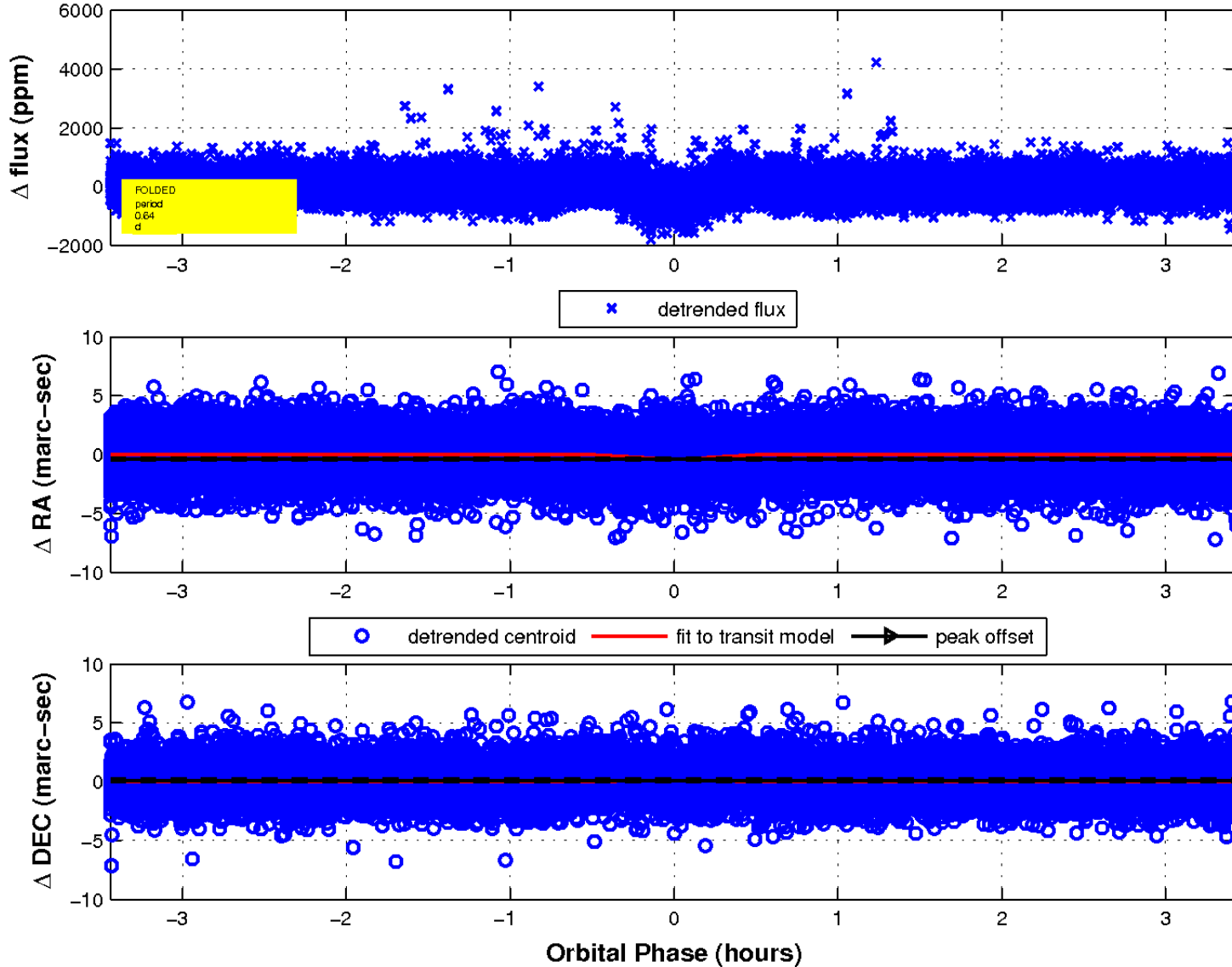
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

