

KIC 005610698

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})
005610698-01	OBS	6603.01	4.132509	132.894215	121767.4	8.831	4181.0	2870.5	1.64	6567	65.65	1664.43
005610698-02	OBS	No	4.132444	134.967671	1044.2	6.000	33.1	-1.0	1.64	6567	5.33	1664.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005610698-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005610698-02	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.

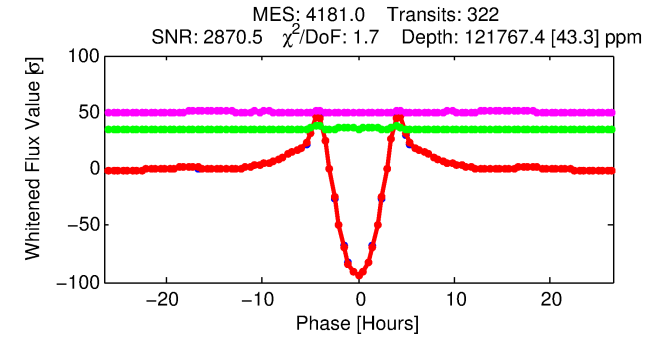
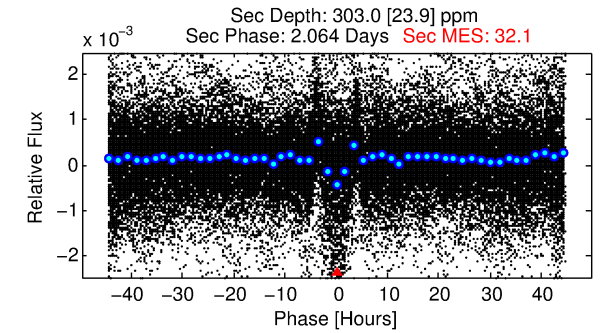
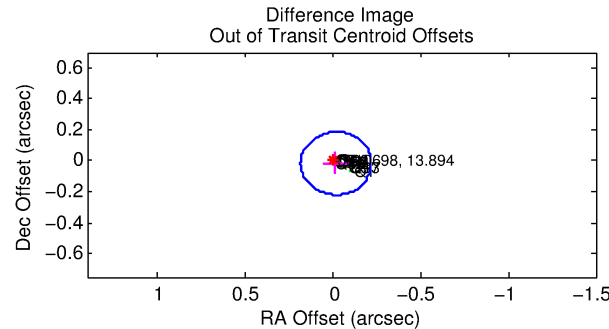
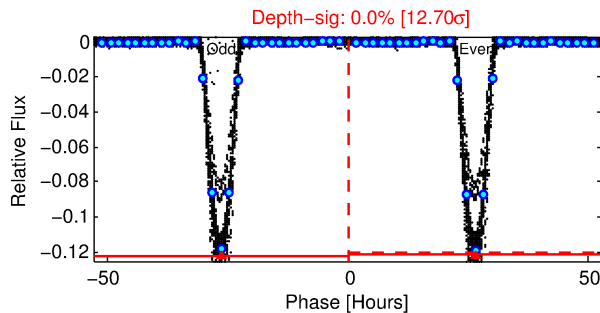
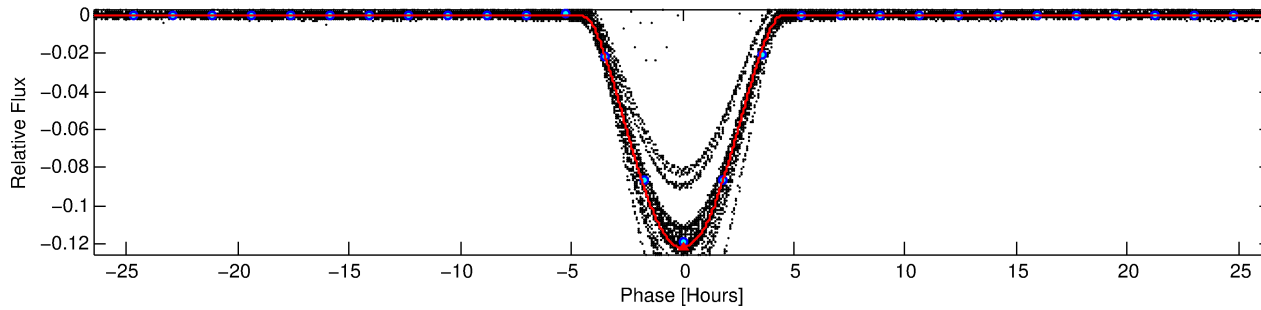
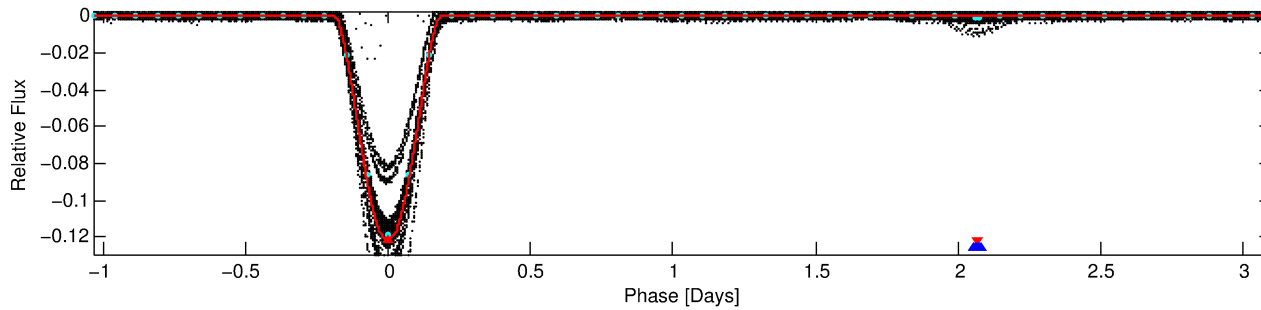
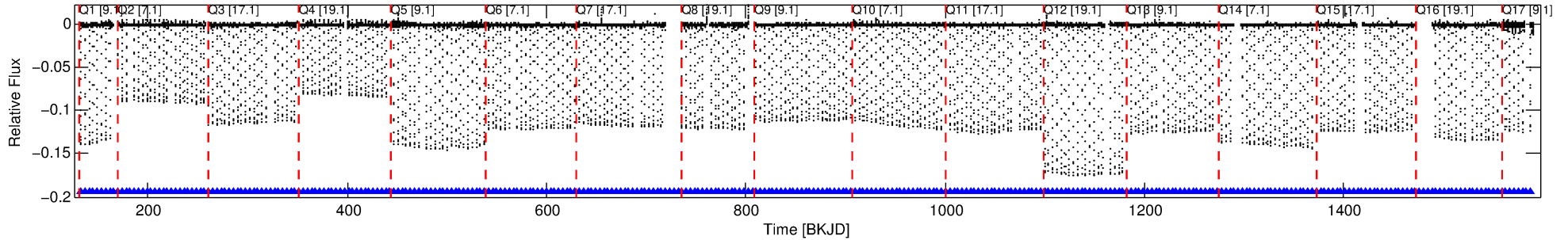
Ephemeris Match Information For 005610698-01

No Significant Match Found

DV One-Page Summary

KIC: 5610698 Candidate: 1 of 2 Period: 4.133 d
KOI: K06603.01 Corr: 0.841

Kp: 13.89 R*: 1.64 Rs Teff: 6567.0 K Logg: 4.04 Fe/H: -0.520



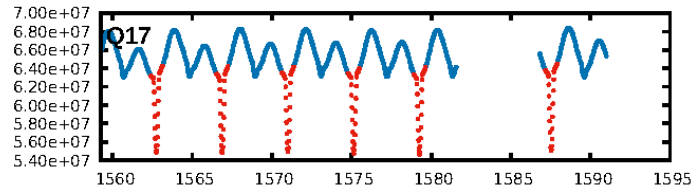
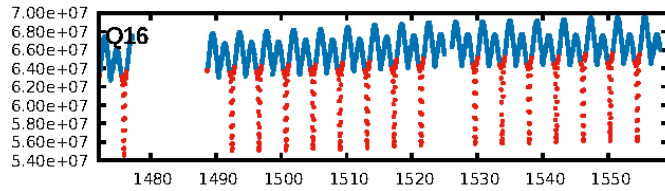
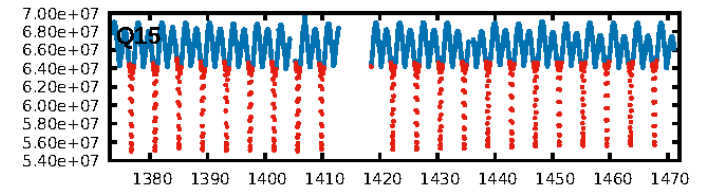
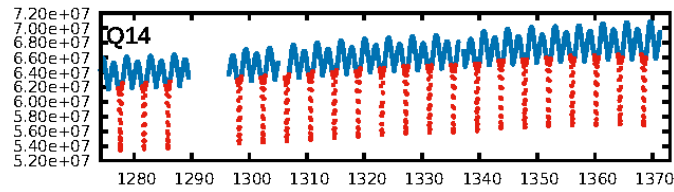
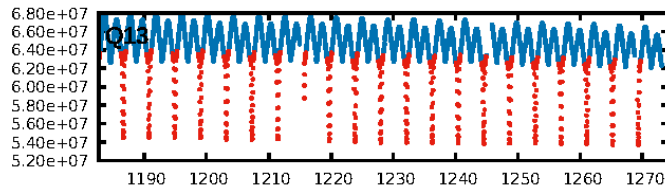
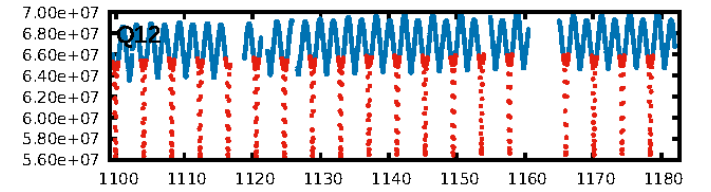
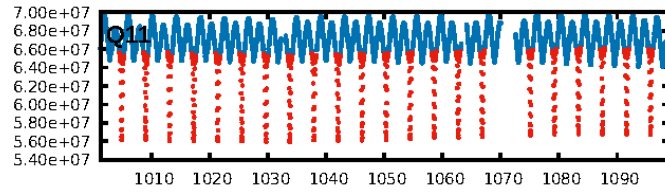
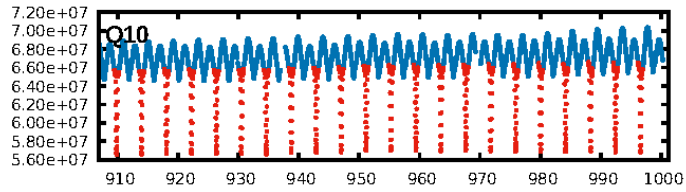
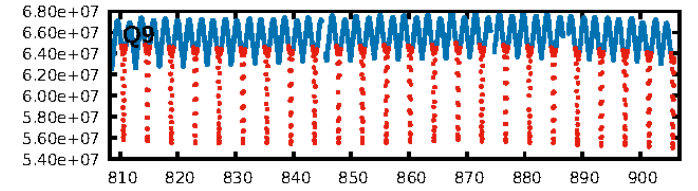
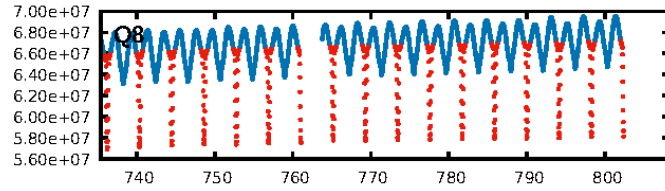
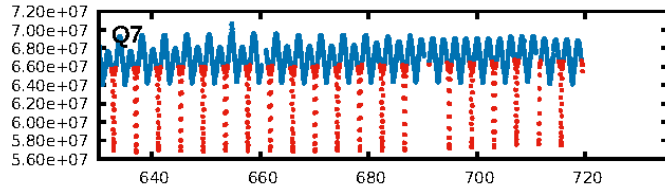
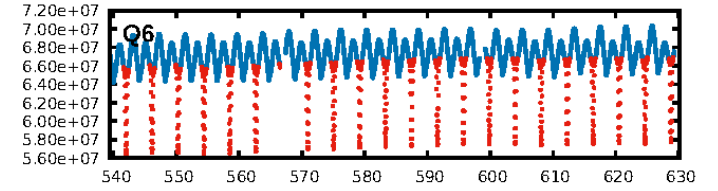
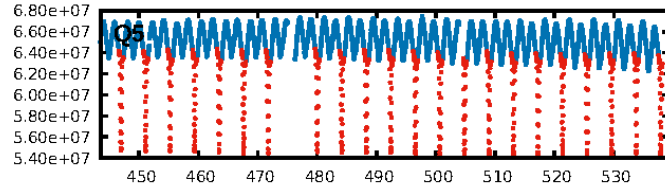
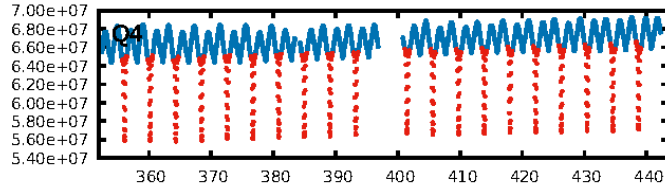
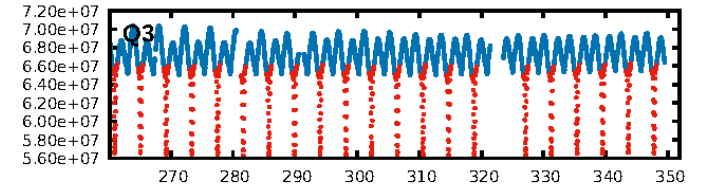
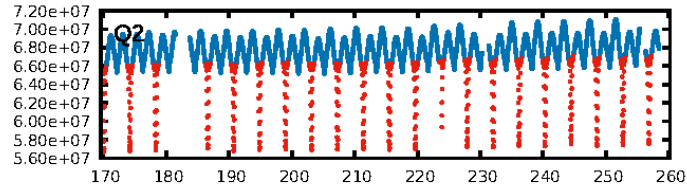
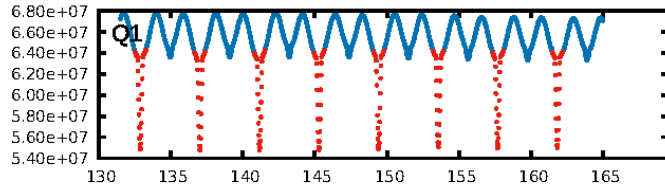
DV Fit Results:

Period = 4.13251 [0.00000] d
Epoch = 132.8942 [0.0000] BKJD
Rp/R* = 0.3677 [0.0004]
a/R* = 4.26 [0.00]
b = 0.73 [0.00]
Seff = 1664.43 [955.02]
Teq = 1629 [234] K
Rp = 65.65 [22.47] Re
a = 0.0518 [0.0176] AU
Ag = 0.10 [0.06] [-15.45σ]
Teffp = 1429 [60] K [-0.83σ]

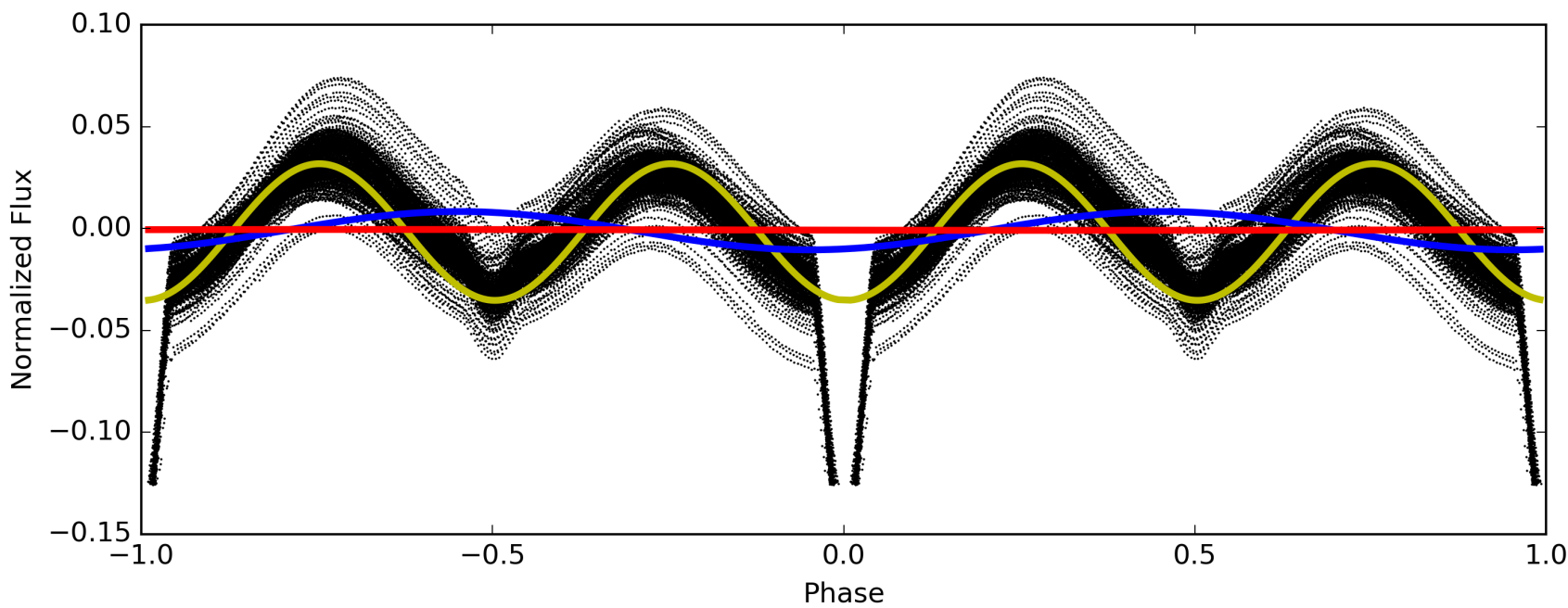
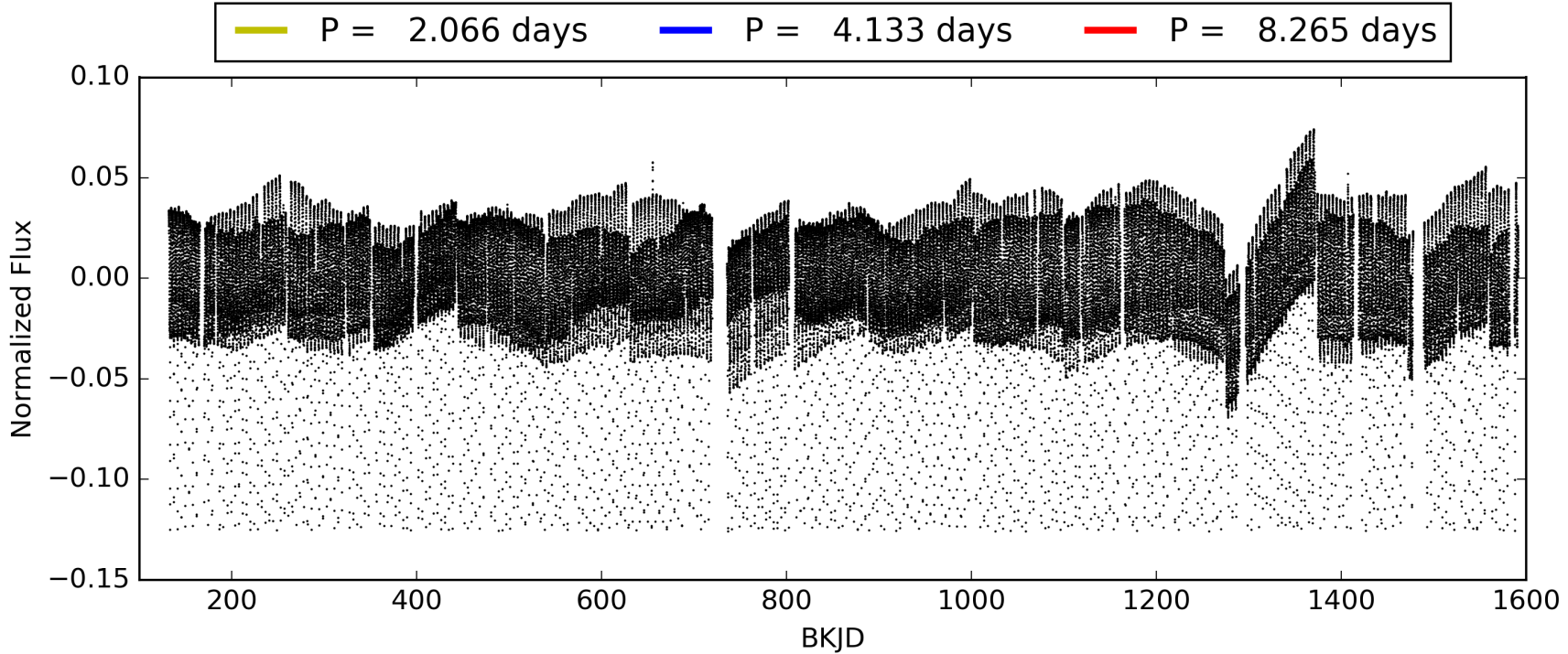
DV Diagnostic Results:

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 [308/308]
GhostDiagnostic-chr: 1.128
Centroid-sig: 0.0%
Centroid-so: 0.054 arcsec [83.82σ]
OotOffset-rm: 0.025 arcsec [0.37σ]
KicOffset-rm: 0.058 arcsec [0.86σ]
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]

TCE 005610698-01, PDC Light Curves

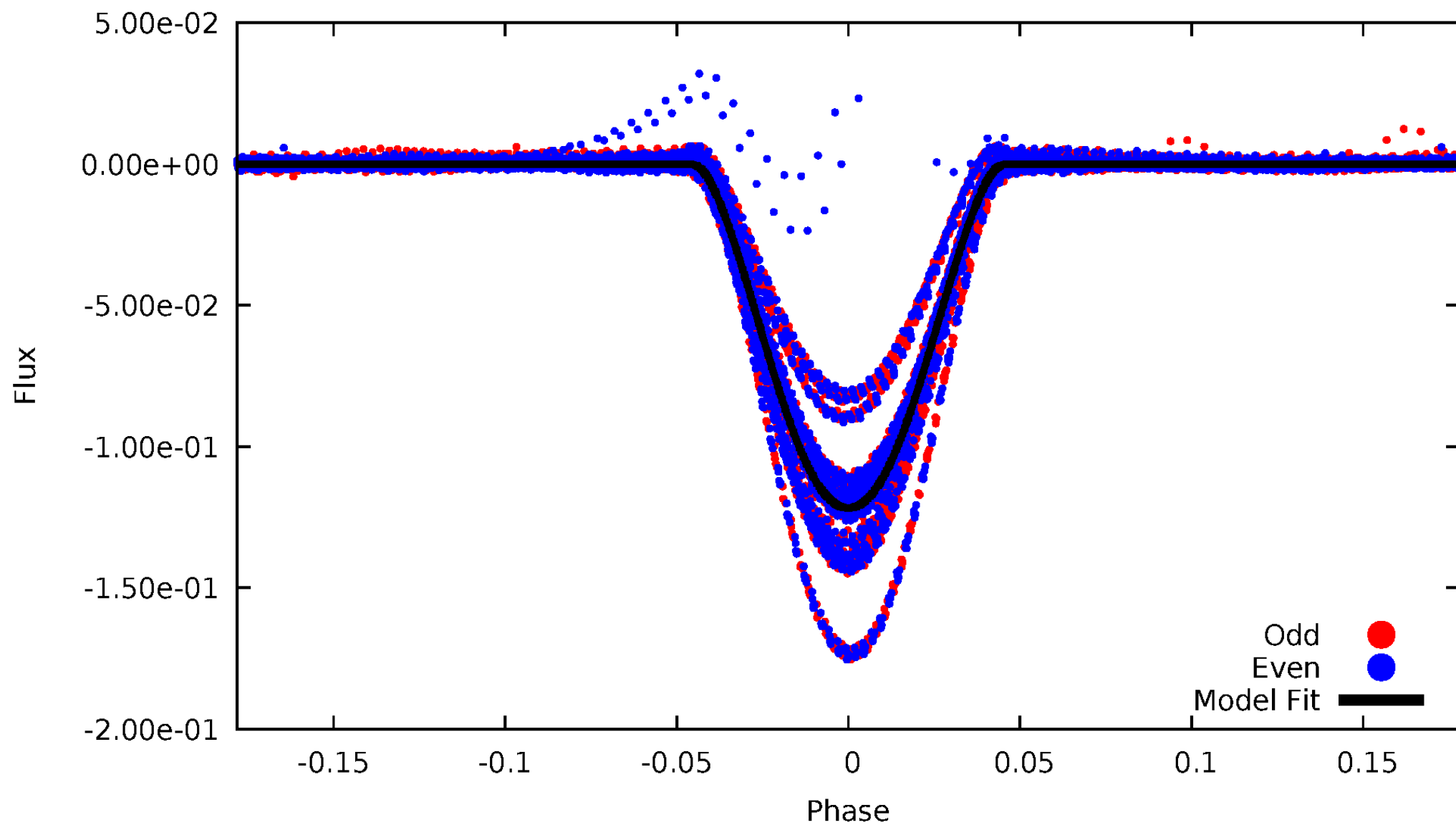


TCE 005610698-01



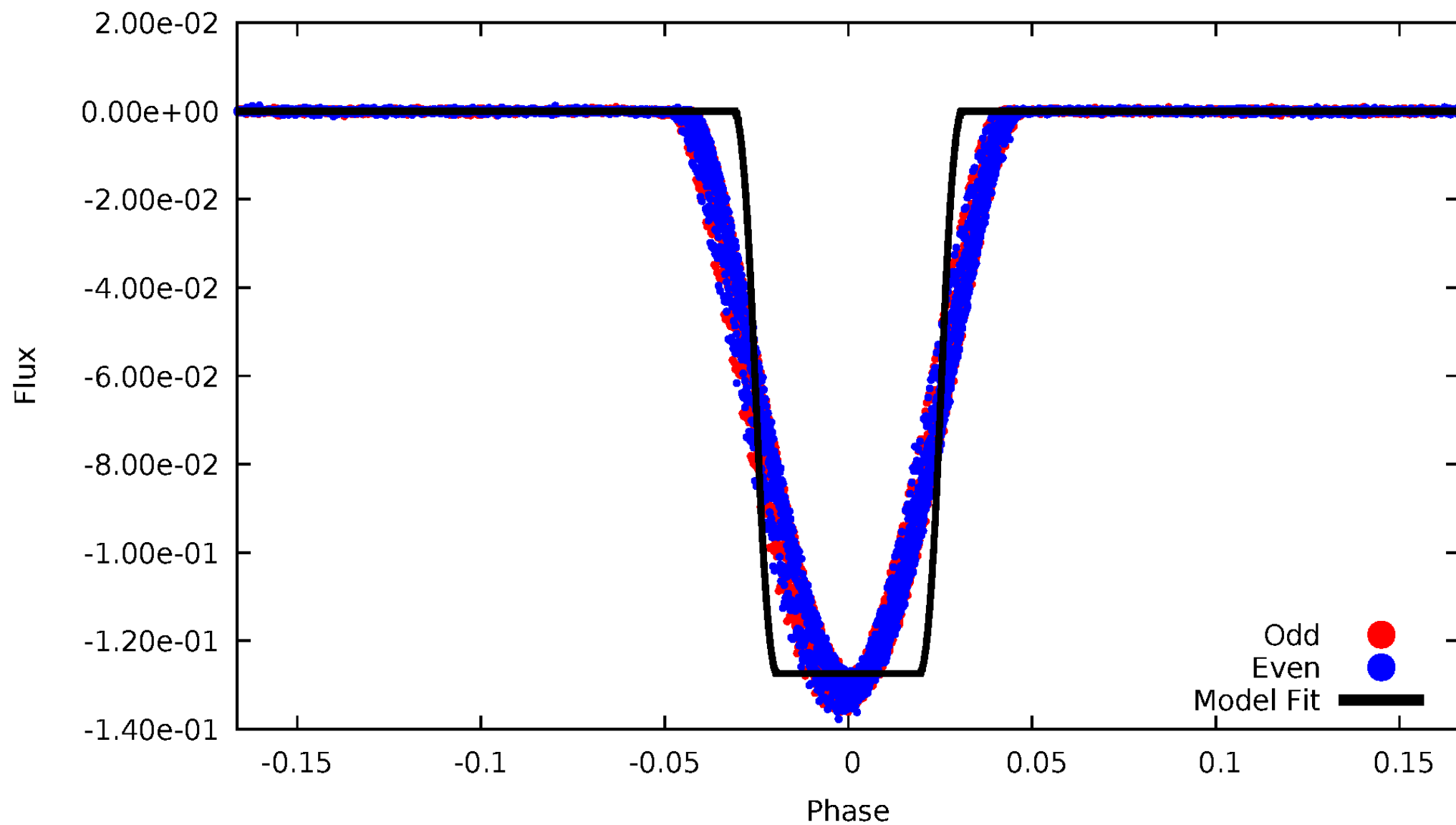
DV Odd/Even

TCE 005610698-01



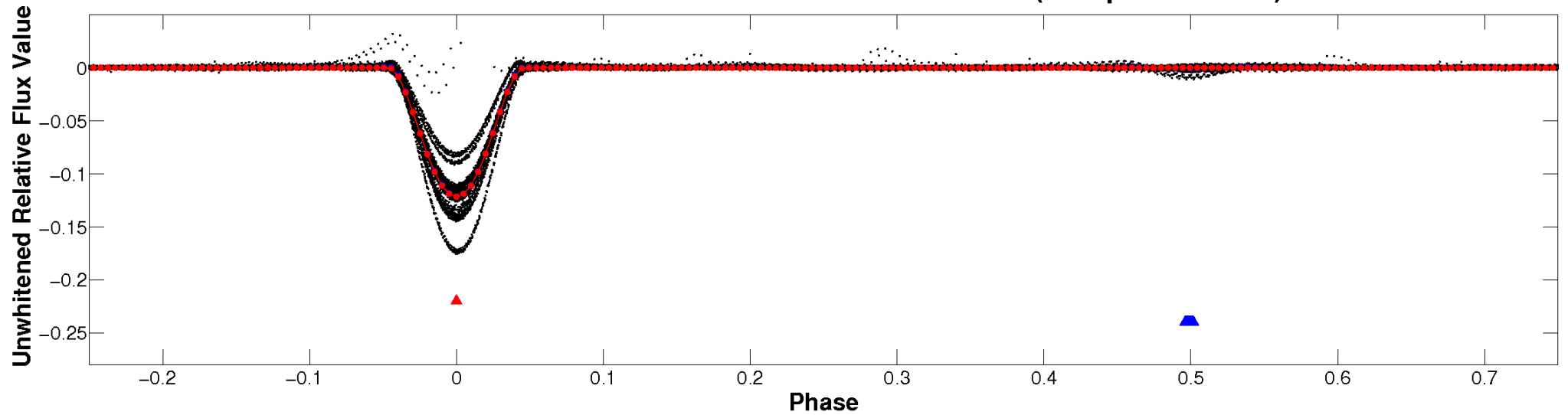
ALT Odd/Even

TCE 005610698-01

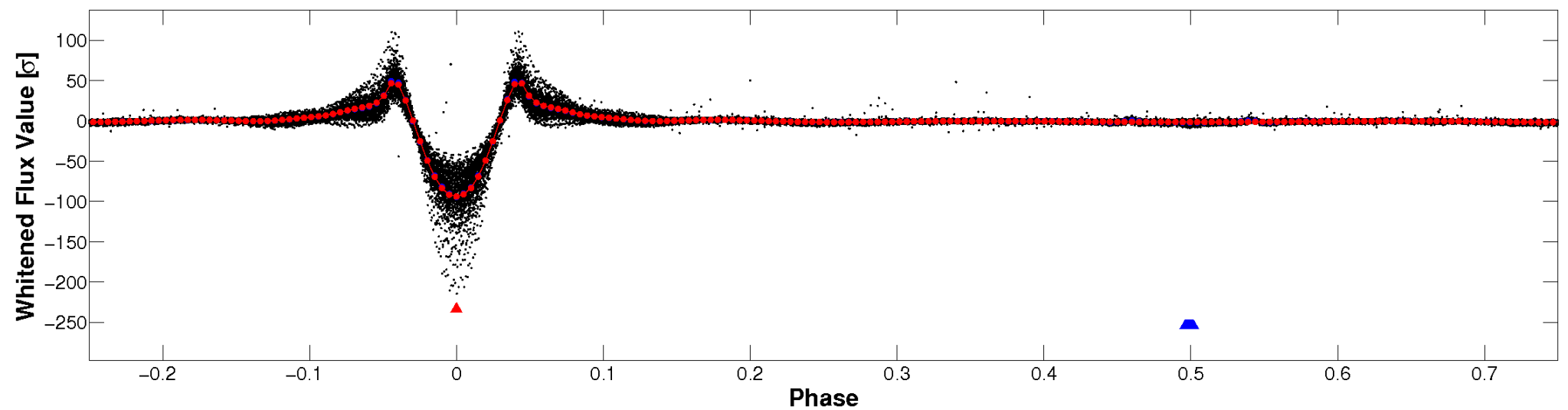


Non-Whitened Vs. Whitened Light Curve

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

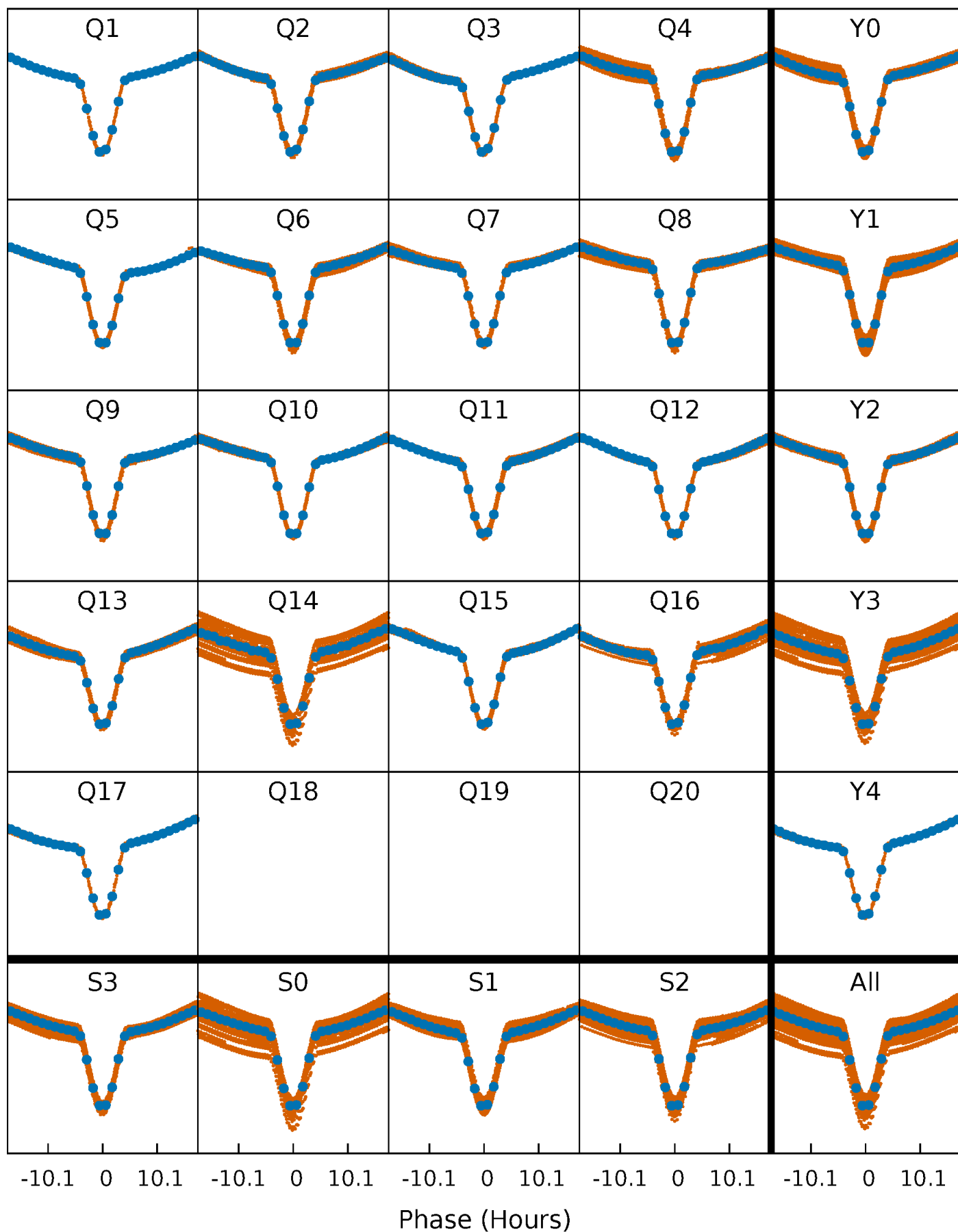


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



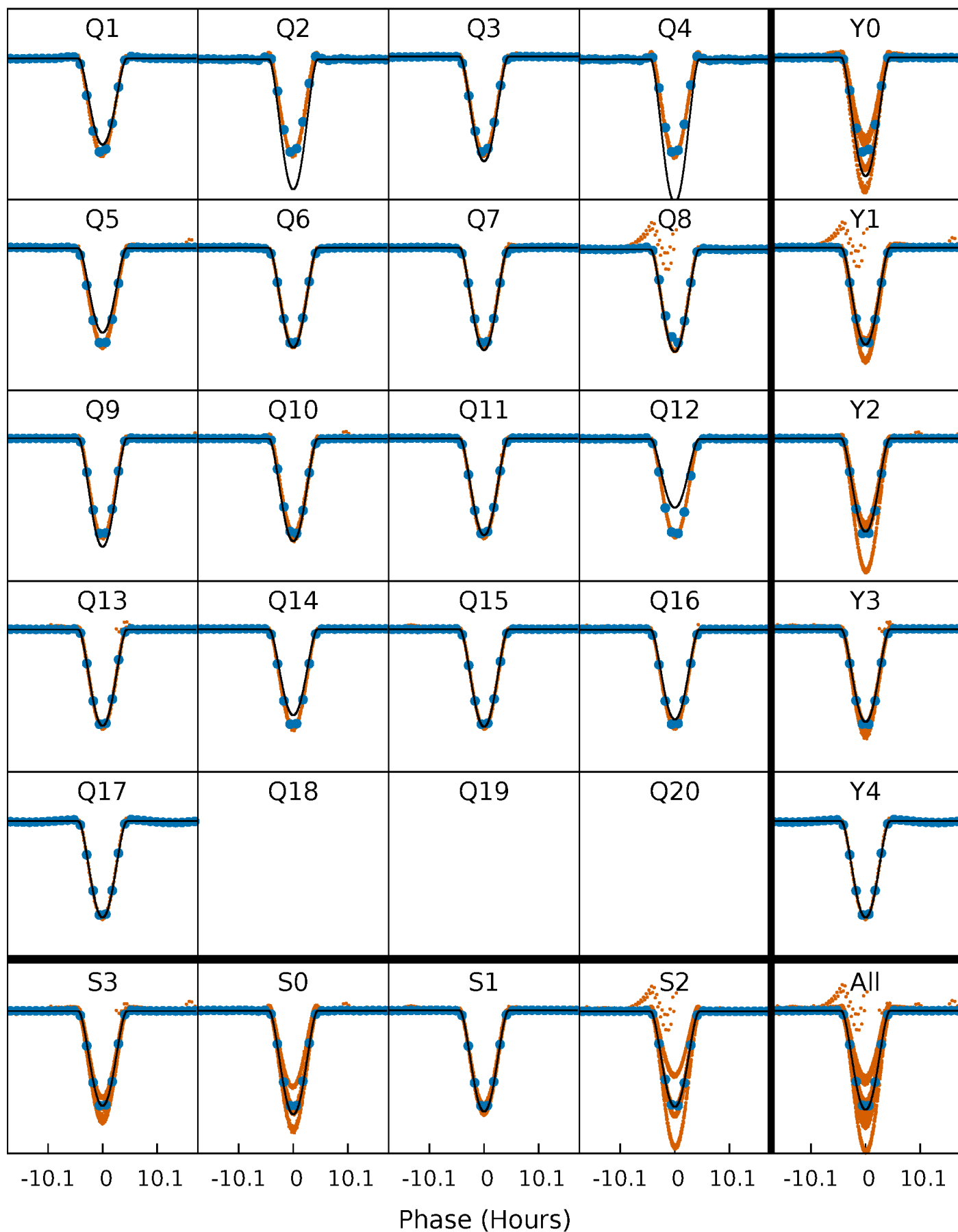
PDC Quarter-Phased Transit Curves

TCE 005610698-01 P= 4.132509 Days $T_0=132.894215$ (BKJD)



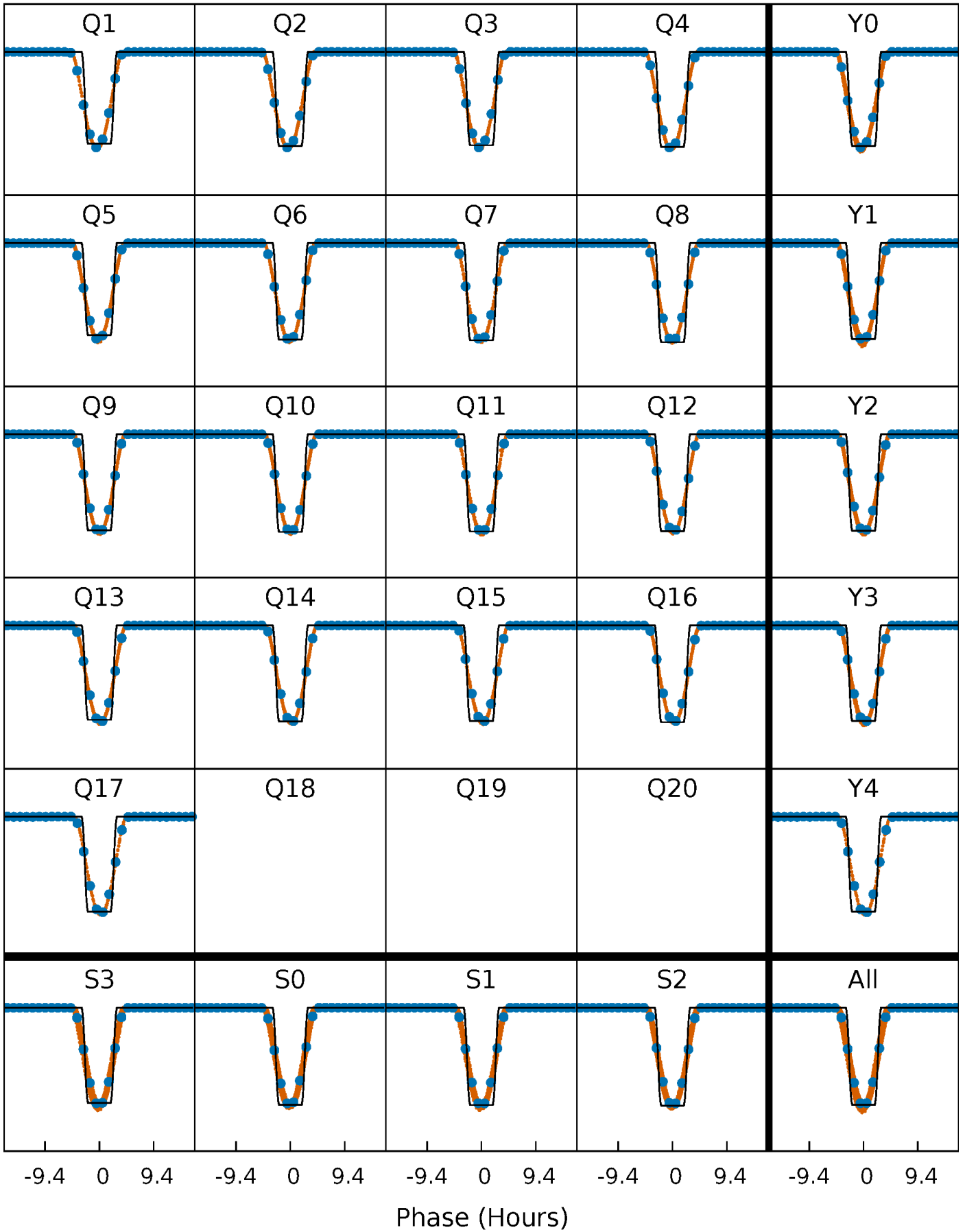
DV Quarter-Phased Transit Curves

TCE 005610698-01 P= 4.132509 Days $T_0=132.894215$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

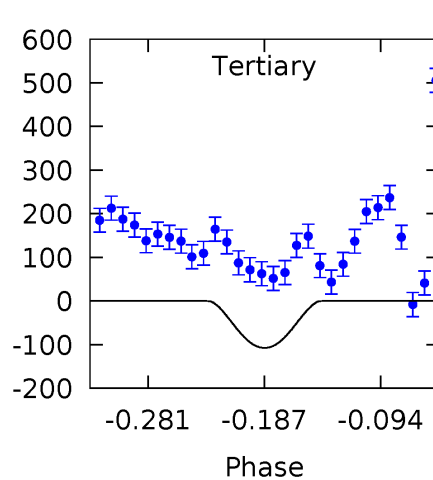
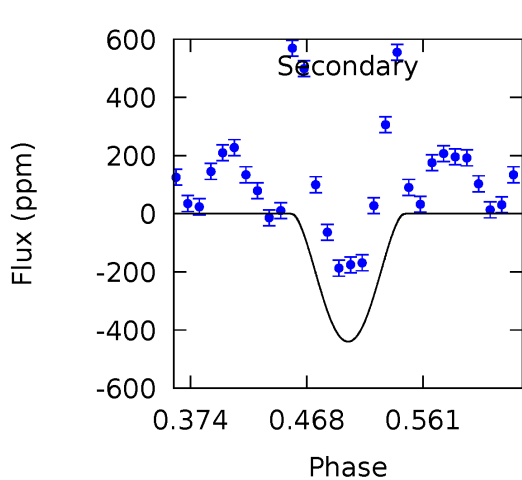
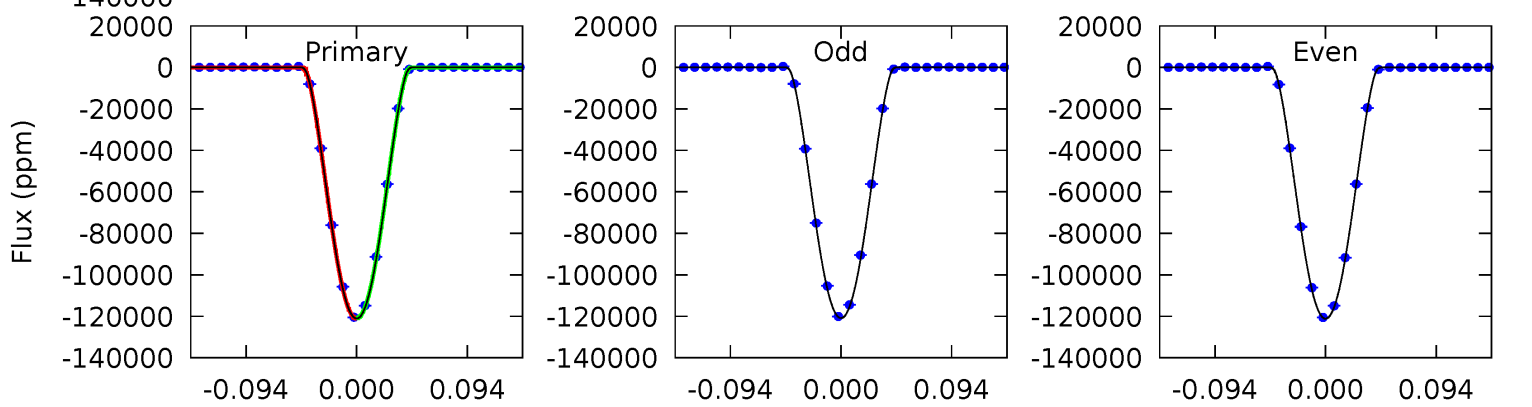
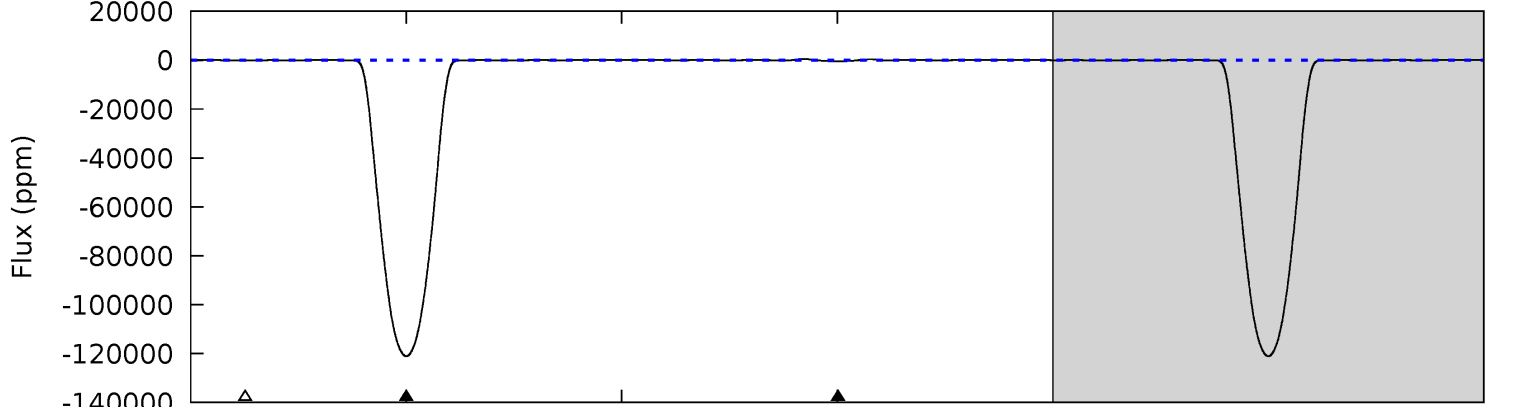
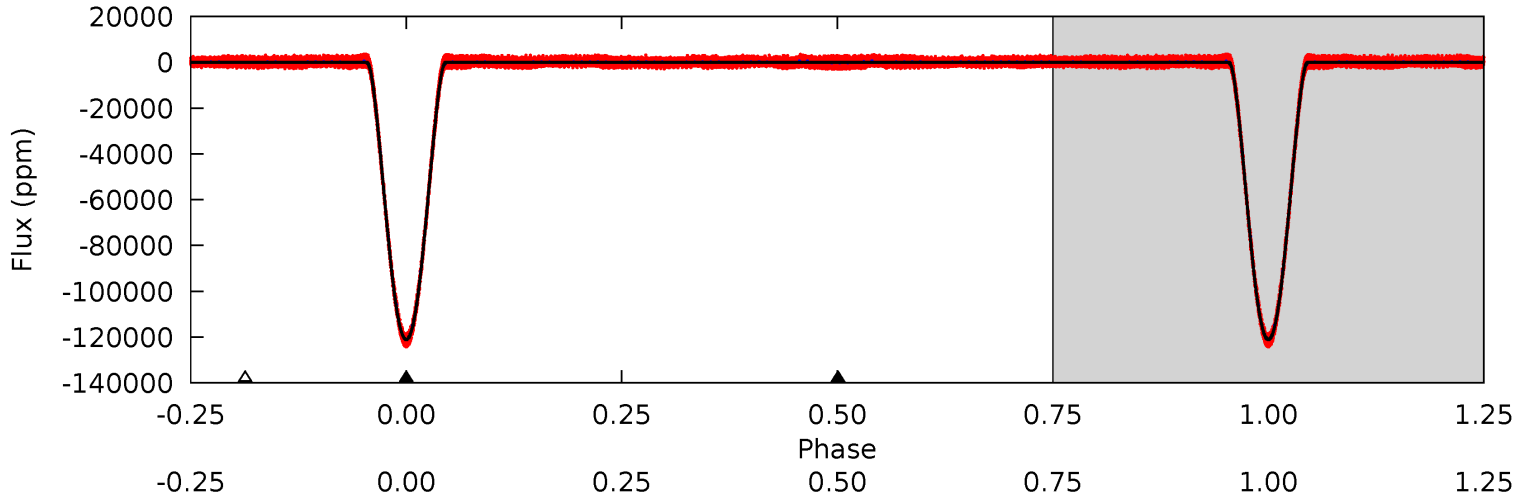
TCE 005610698-01 P= 4.132444 Days $T_0=132.905039$ (BKJD)



DV Model-Shift Uniqueness Test

005610698-01, P = 4.132509 Days, E = 128.761706 Days

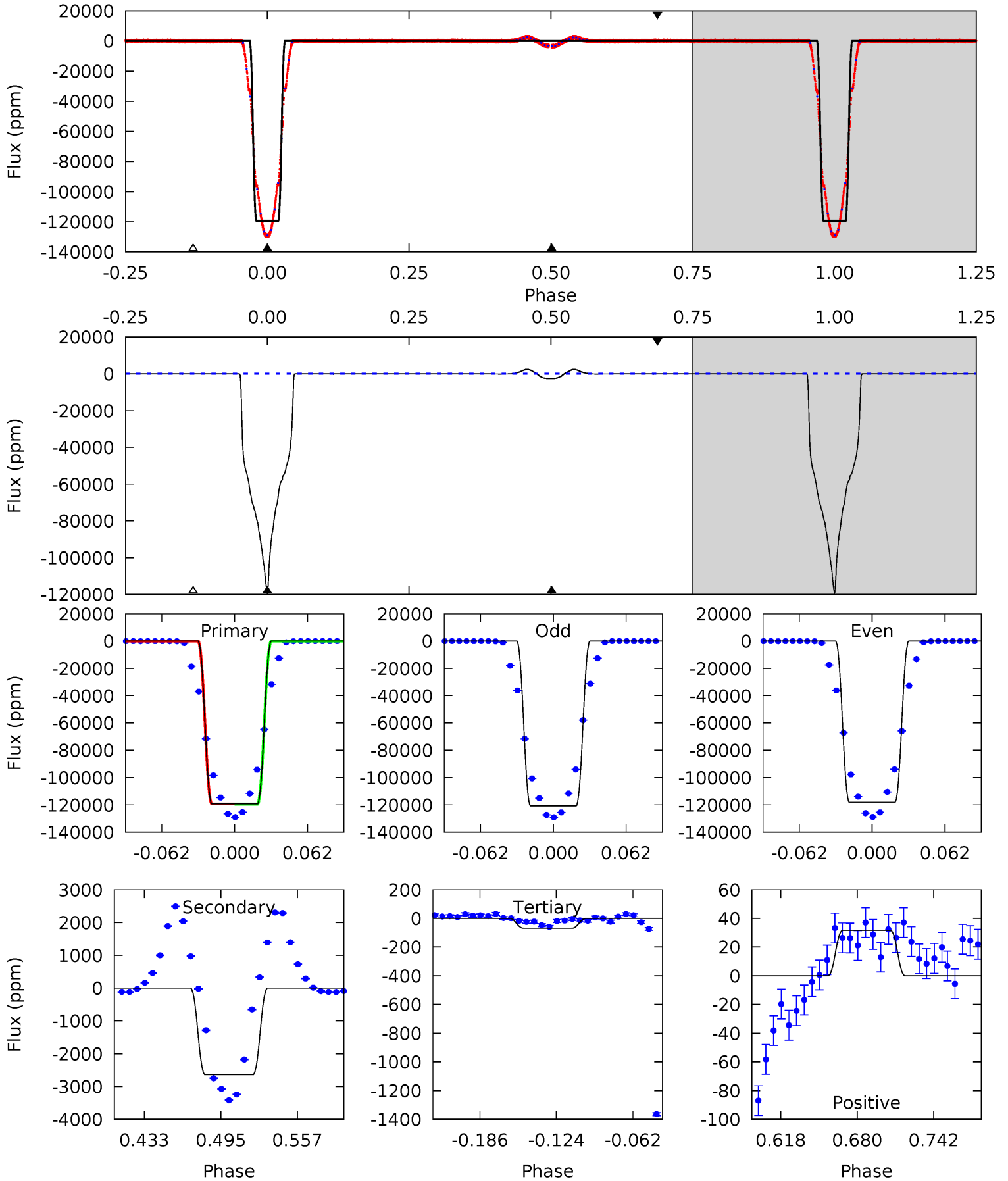
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8657	31.4	7.69	0	4.58	1.68	4.46	8650	8657	23.8	31.4	9.65	0.99	0.00	0



Alt Model-Shift Uniqueness Test

005610698-01, P = 4.132444 Days, E = 128.772595 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13523	299.4	7.87	3.58	4.66	1.87	5.85	13515	13519	291.5	295.8	157.2	1.00	0.02	0



Stellar Parameters For KIC 005610698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6567^{+183}_{-244}	$4.045^{+0.329}_{-0.141}$	$-0.520^{+0.300}_{-0.300}$	$1.636^{+0.407}_{-0.560}$	$1.084^{+0.164}_{-0.149}$	$0.349^{+0.805}_{-0.155}$
	+3%/-4%	+8%/-3%	+58%/-58%	+25%/-34%	+15%/-14%	+231%/-45%
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 005610698-01 / KOI 6603.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-440 ± 14	$64.47^{+8.89}_{-11.86}$	2236^{+159}_{-214}	-2398^{+269}_{-148}	$0.159^{+0.073}_{-0.034}$
Alt.	-2640 ± 9	$62.84^{+10.04}_{-12.26}$	2248^{+165}_{-229}	2963^{+73}_{-79}	$0.995^{+0.474}_{-0.220}$

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 $A_{obs} \gg 1.0$

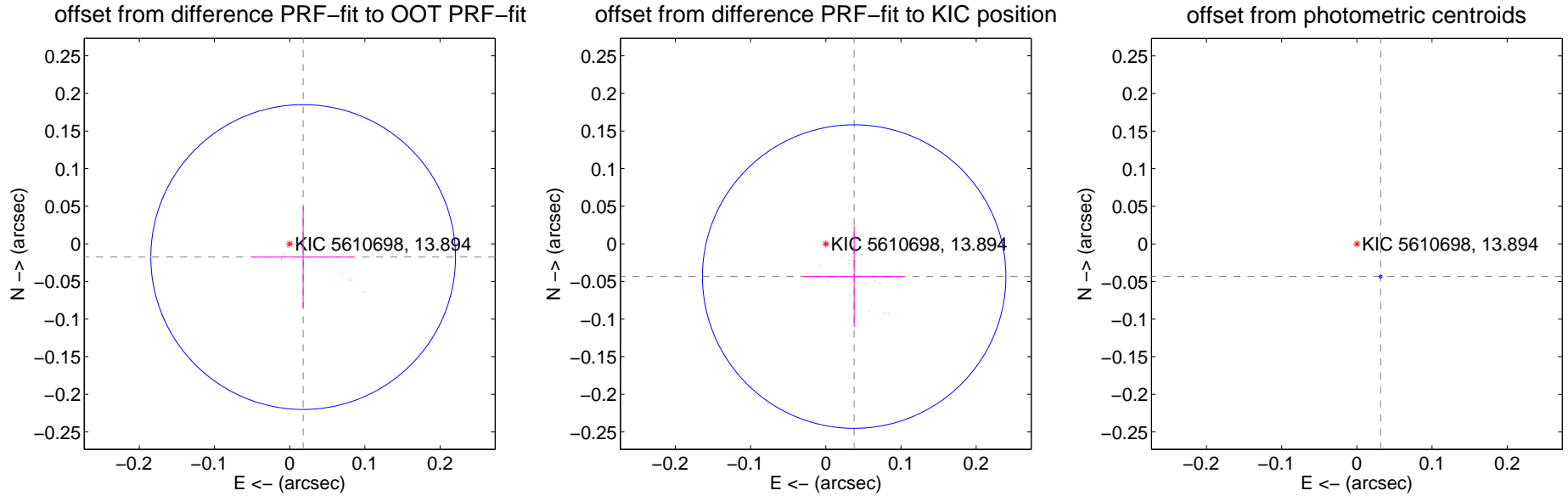
DV Centroid Data

Supplemental centroid analysis for 005610698-01. Kepler magnitude: 13.89. Transit SNR 2870.49

There are 17 quarters with good PRF difference image offsets

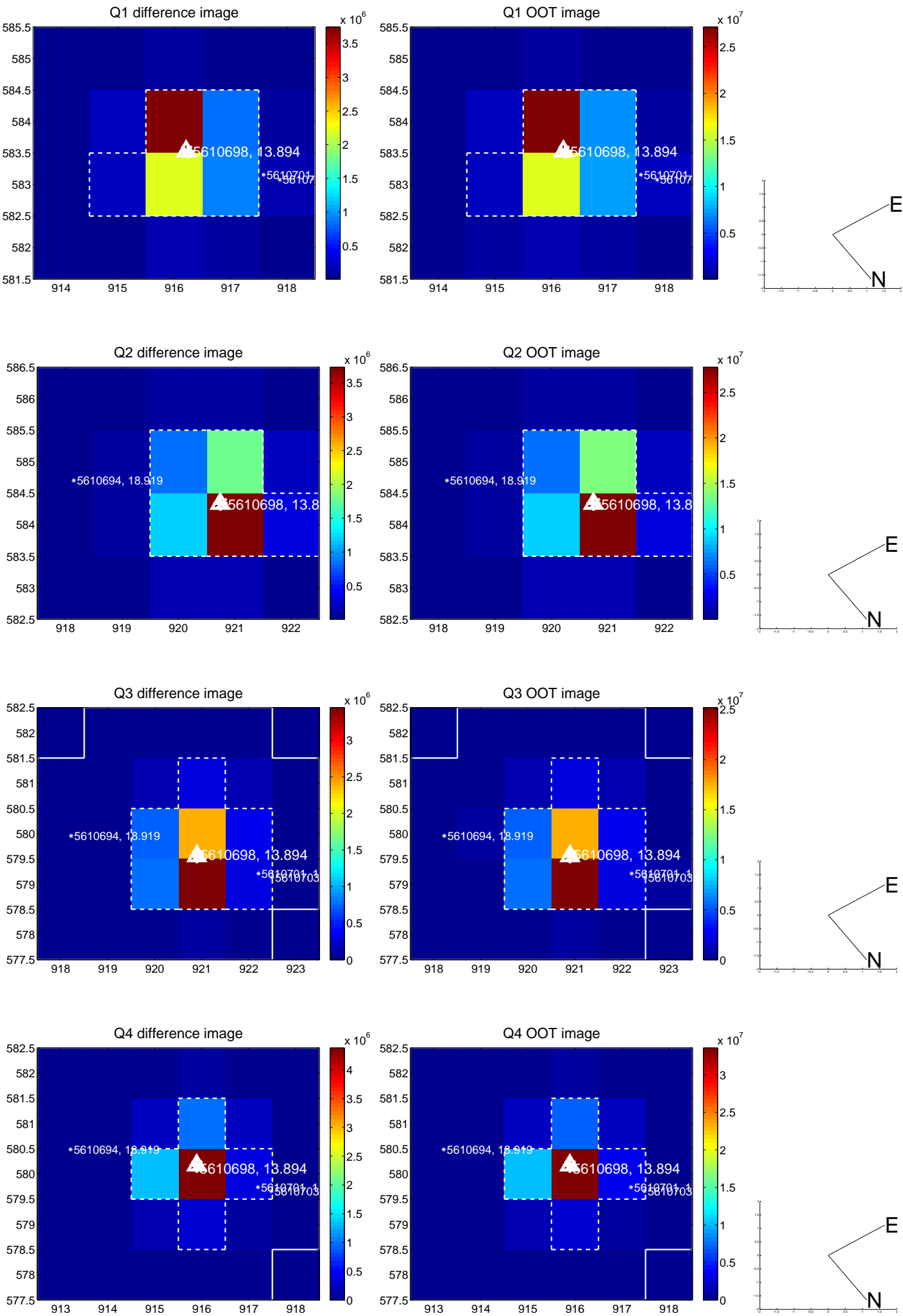
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.025 ± 0.068	0.37	-0.018 ± 0.067	-0.018 ± 0.067
PRF-fit source offset from KIC position	0.058 ± 0.067	0.86	-0.038 ± 0.067	-0.044 ± 0.067
photometric centroid source offset	0.05 ± 0.00	83.82	-0.03 ± 0.00	-0.04 ± 0.00

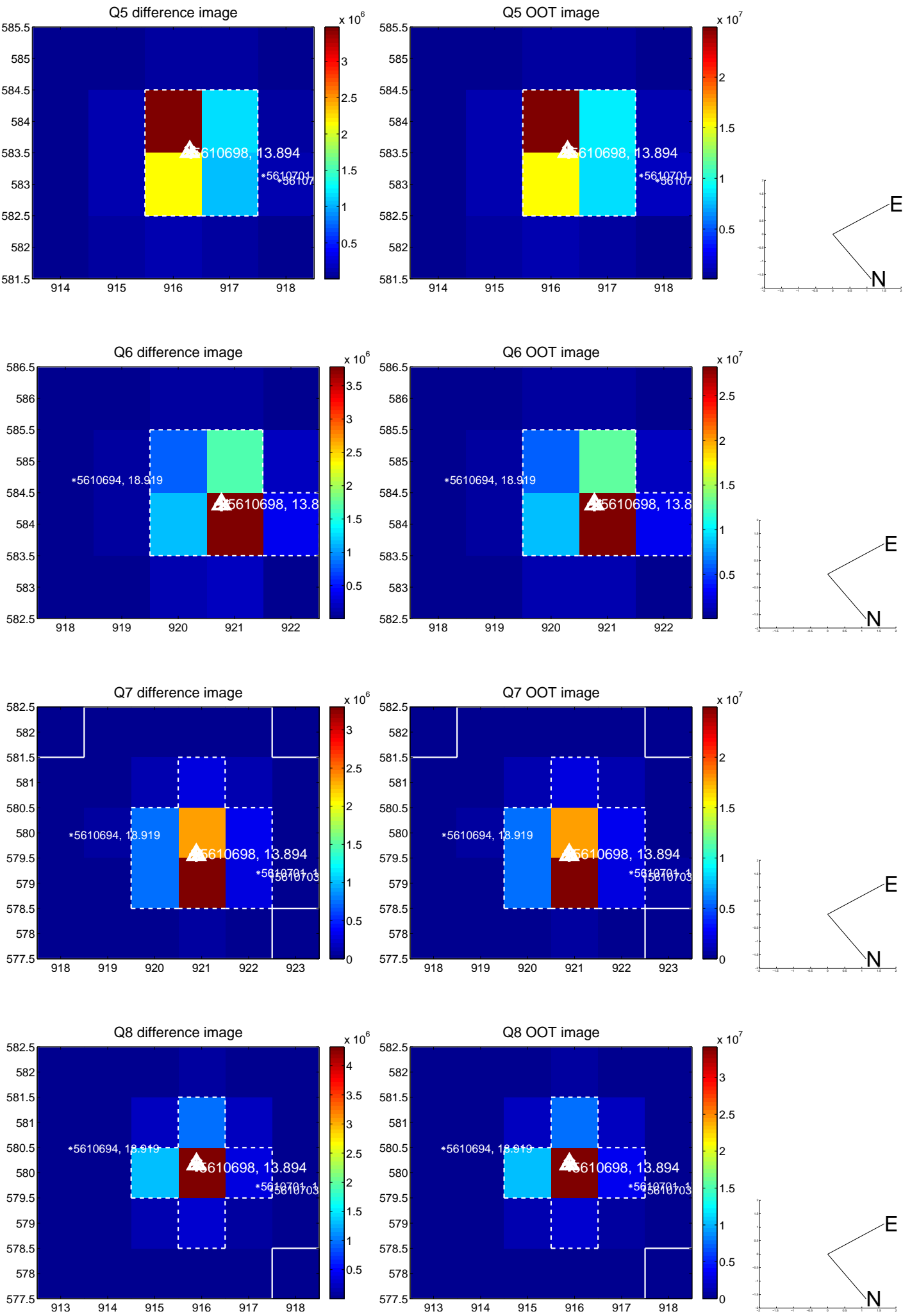


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

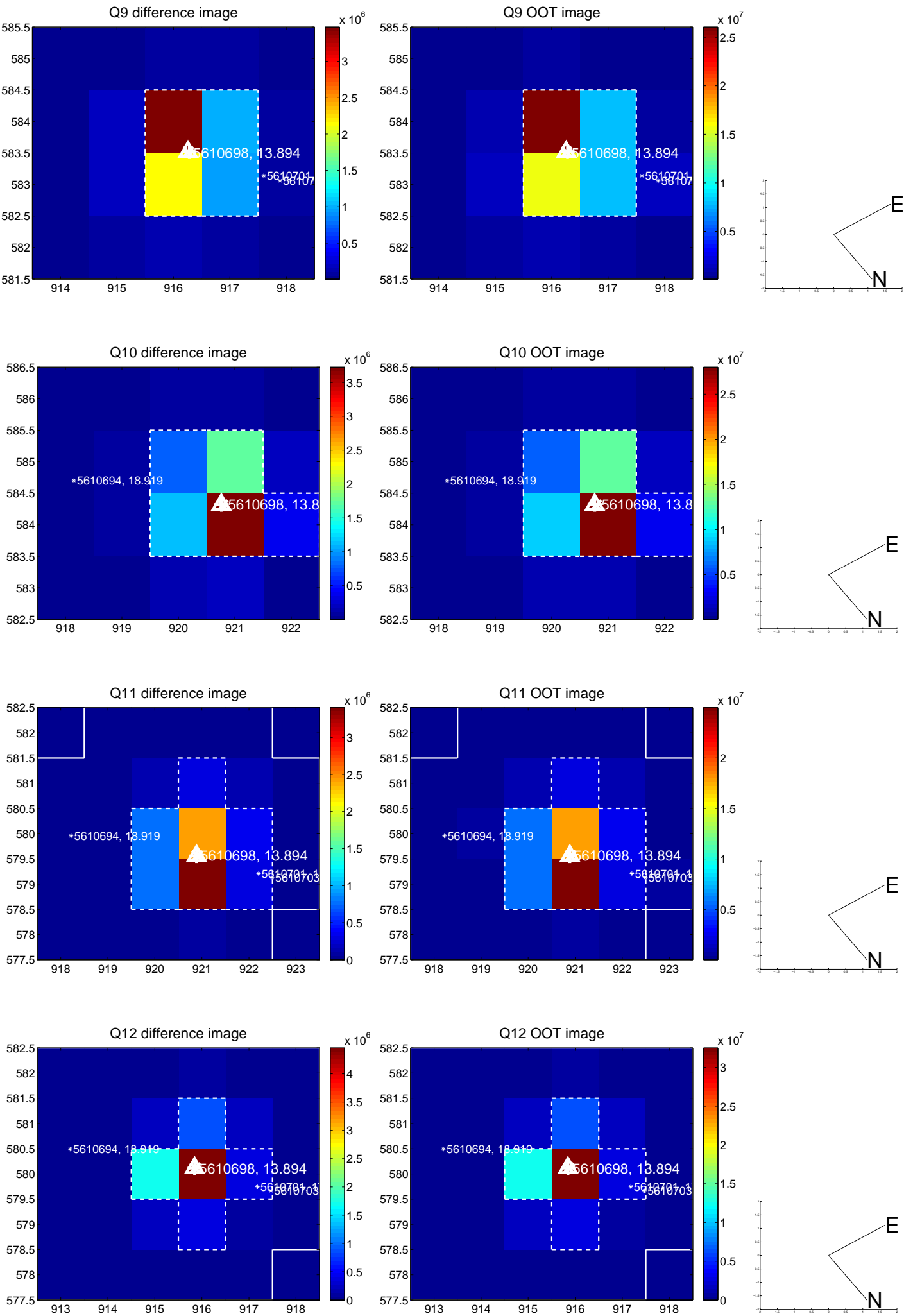
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



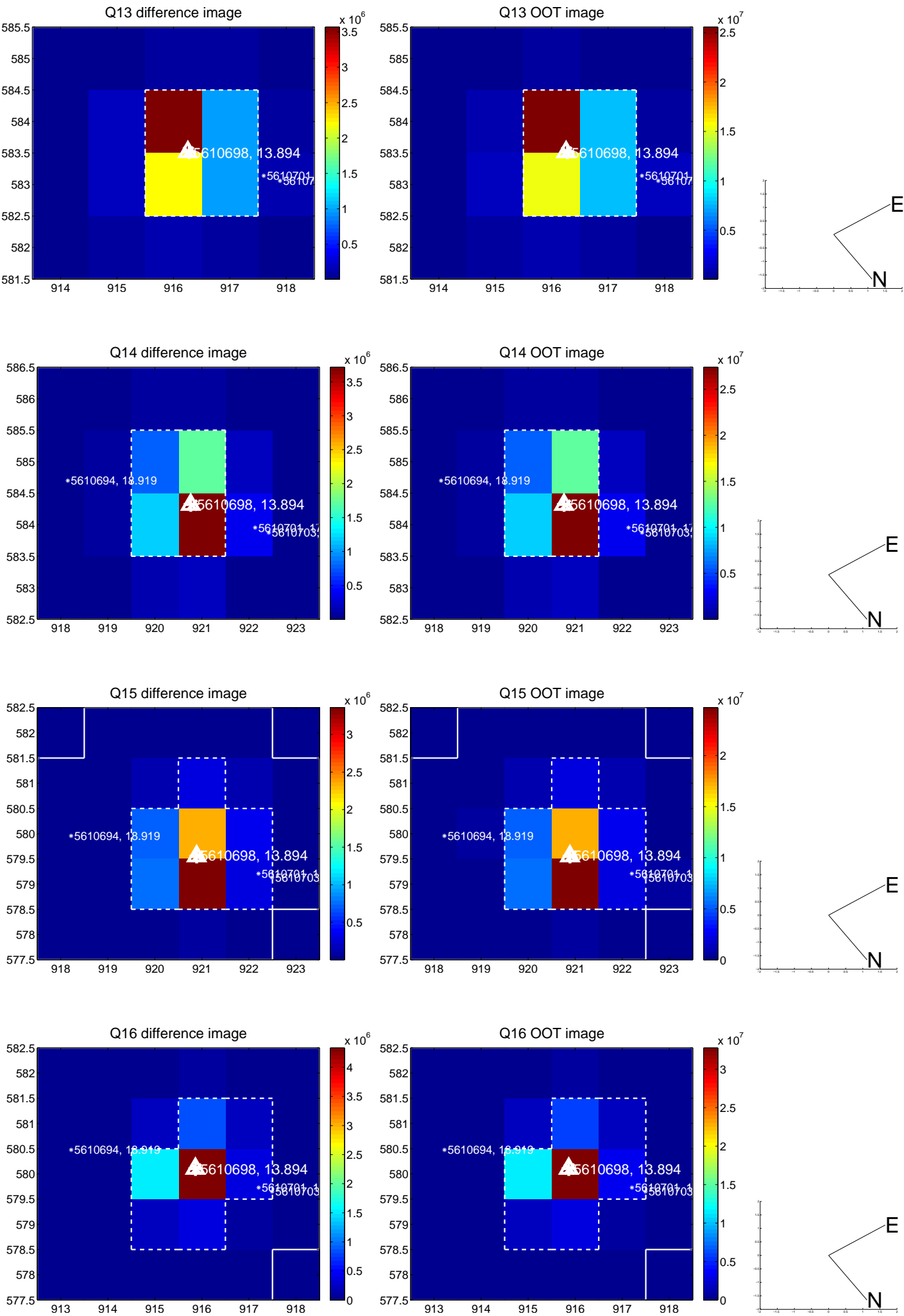
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



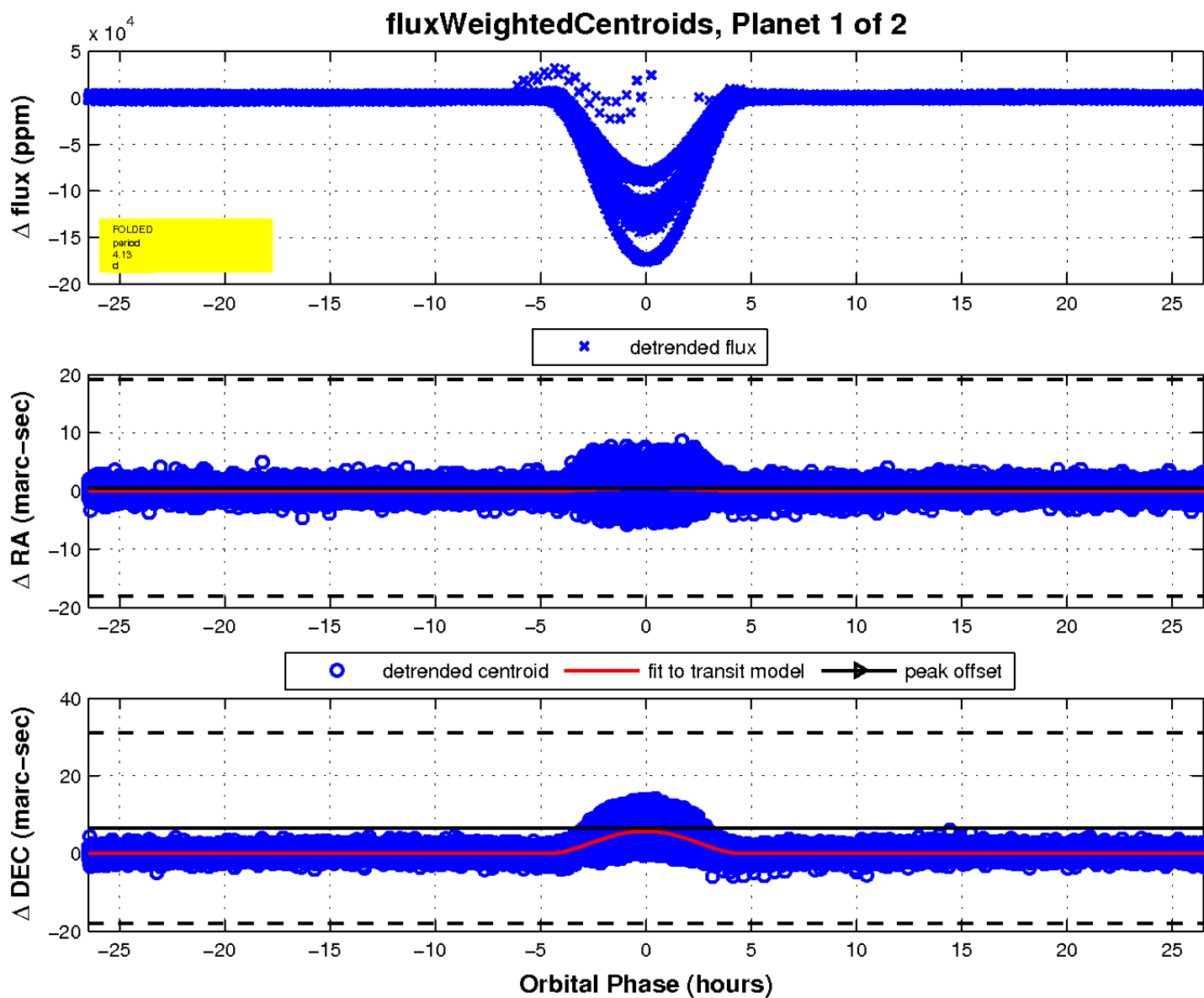
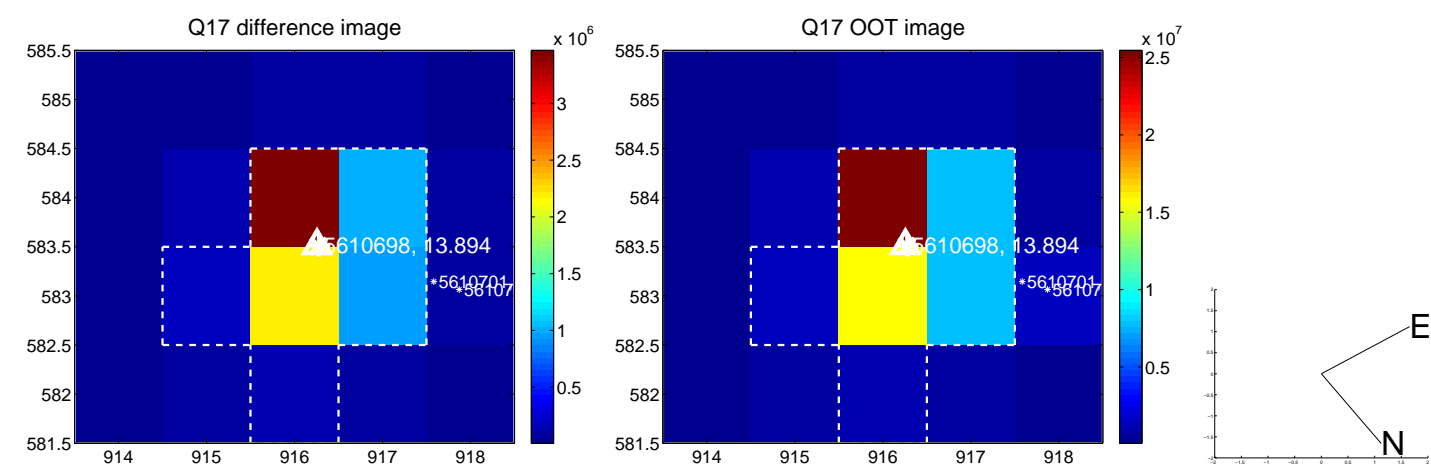
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

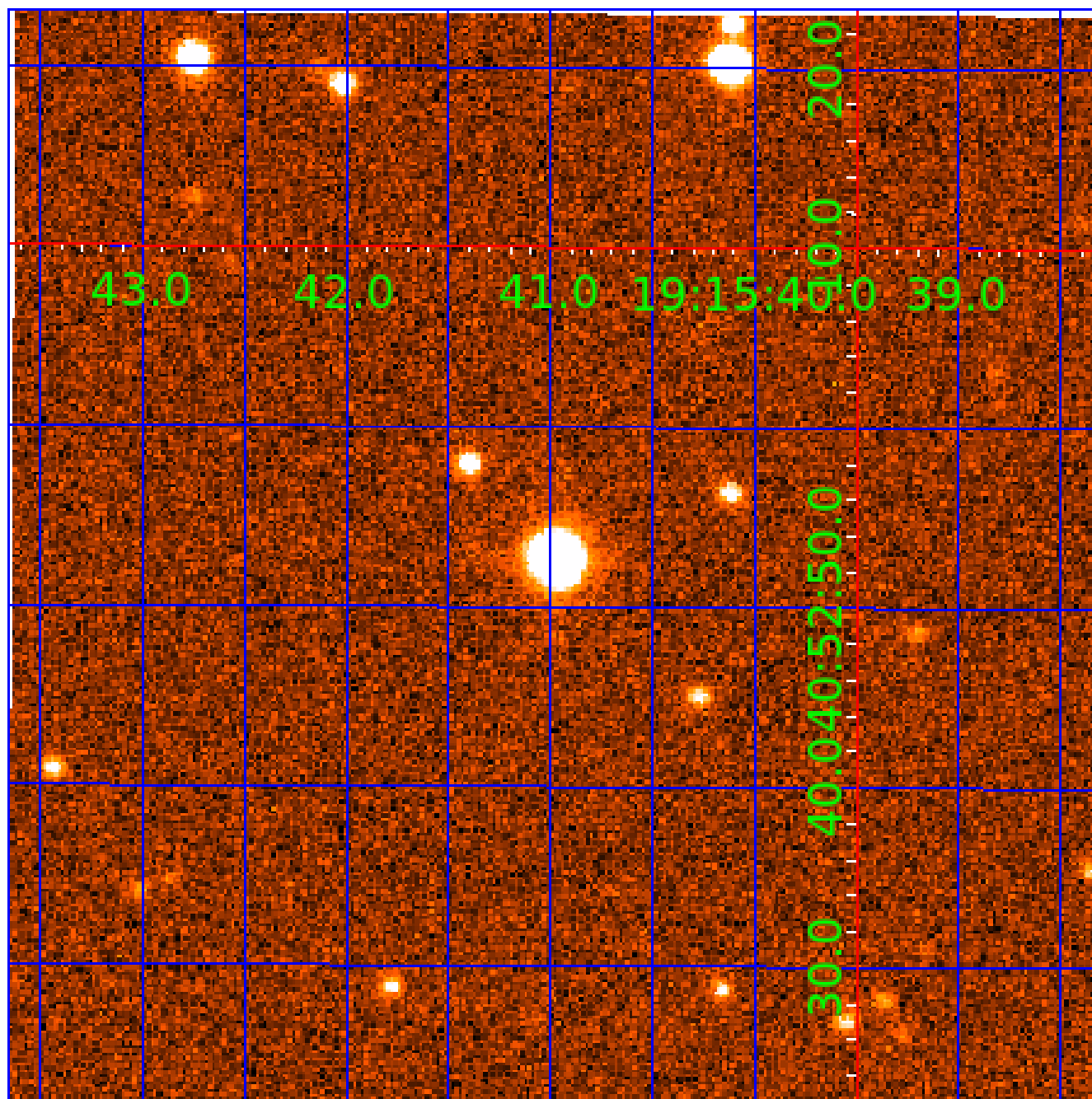


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005610698

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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005610698-02	OBS	No	4.132444	134.967671	1044.2	6.000	33.1	-1.0	1.64	6567	5.33	1664.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005610698-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005610698-02	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.

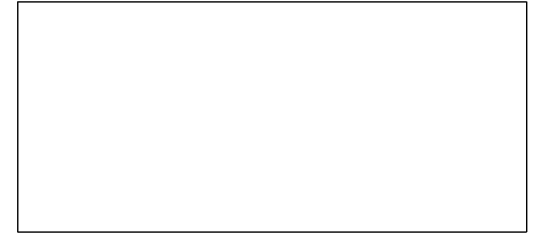
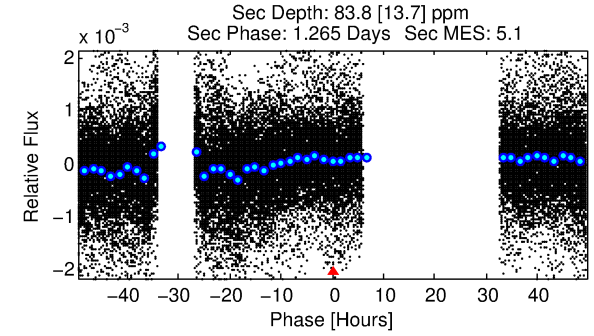
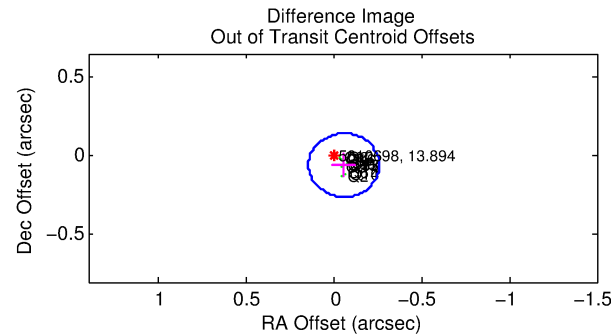
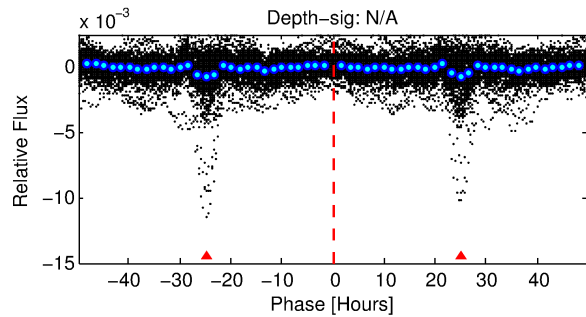
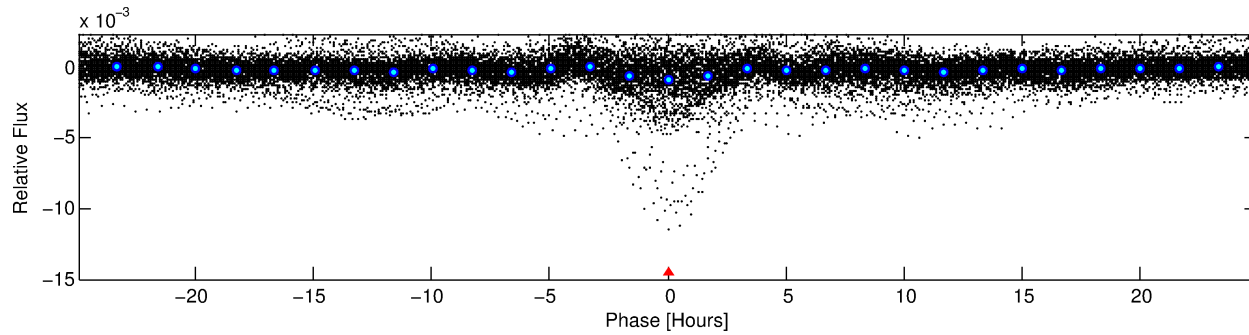
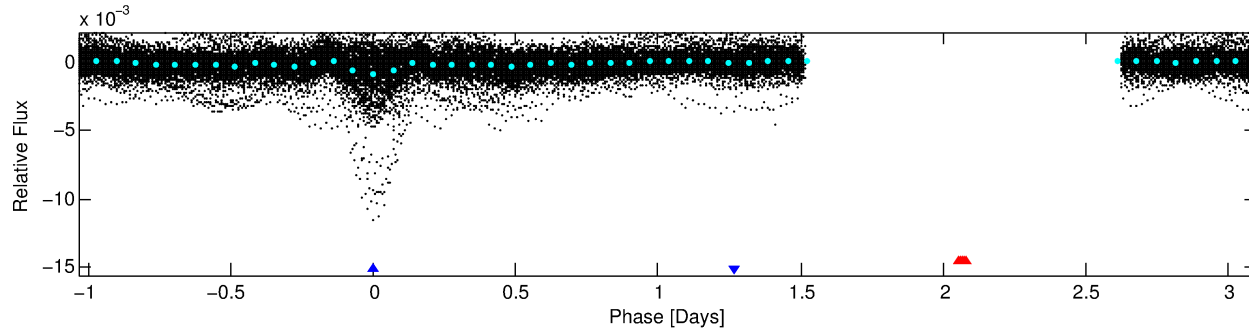
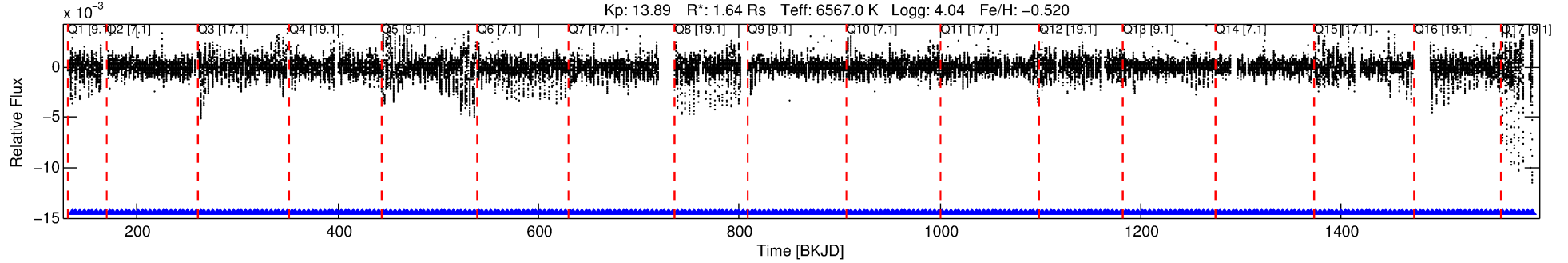
Ephemeris Match Information For 005610698-02

No Significant Match Found

DV One-Page Summary

KIC: 5610698 Candidate: 2 of 2 Period: 4.132 d
KOI: K06603 Corr: No Ephemeris Match

Kp: 13.89 R*: 1.64 Rs Teff: 6567.0 K Logg: 4.04 Fe/H: -0.520



TPS TCE Results:

Period = 4.13244 d
Epoch = 134.9677 BKJD

DV fit results are unavailable

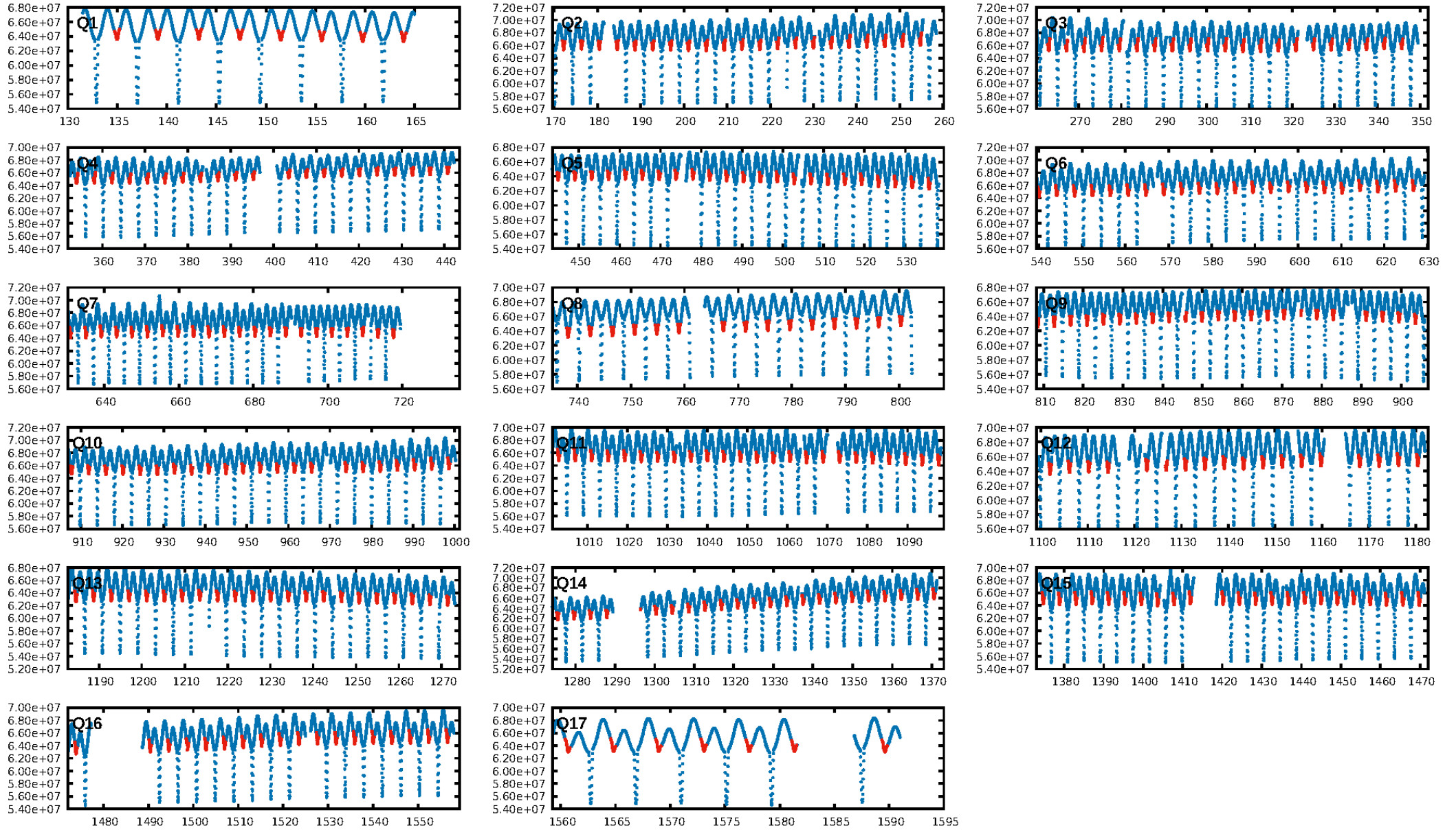
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [316/316]
GhostDiagnostic-chr: 0.8199
Centroid-sig: 0.0%
Centroid-so: 0.057 arcsec [12.90σ]
OotOffset-rm: 0.081 arcsec [1.21σ]
KicOffset-rm: 0.119 arcsec [1.71σ]
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]

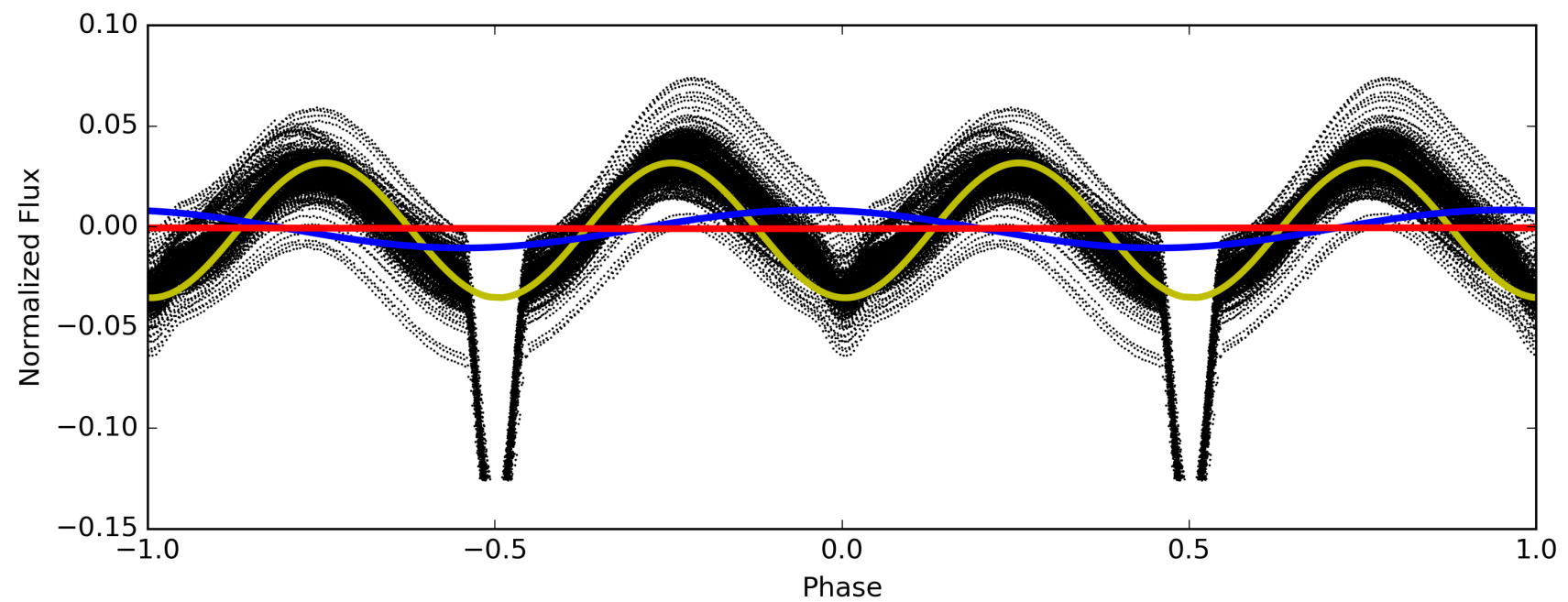
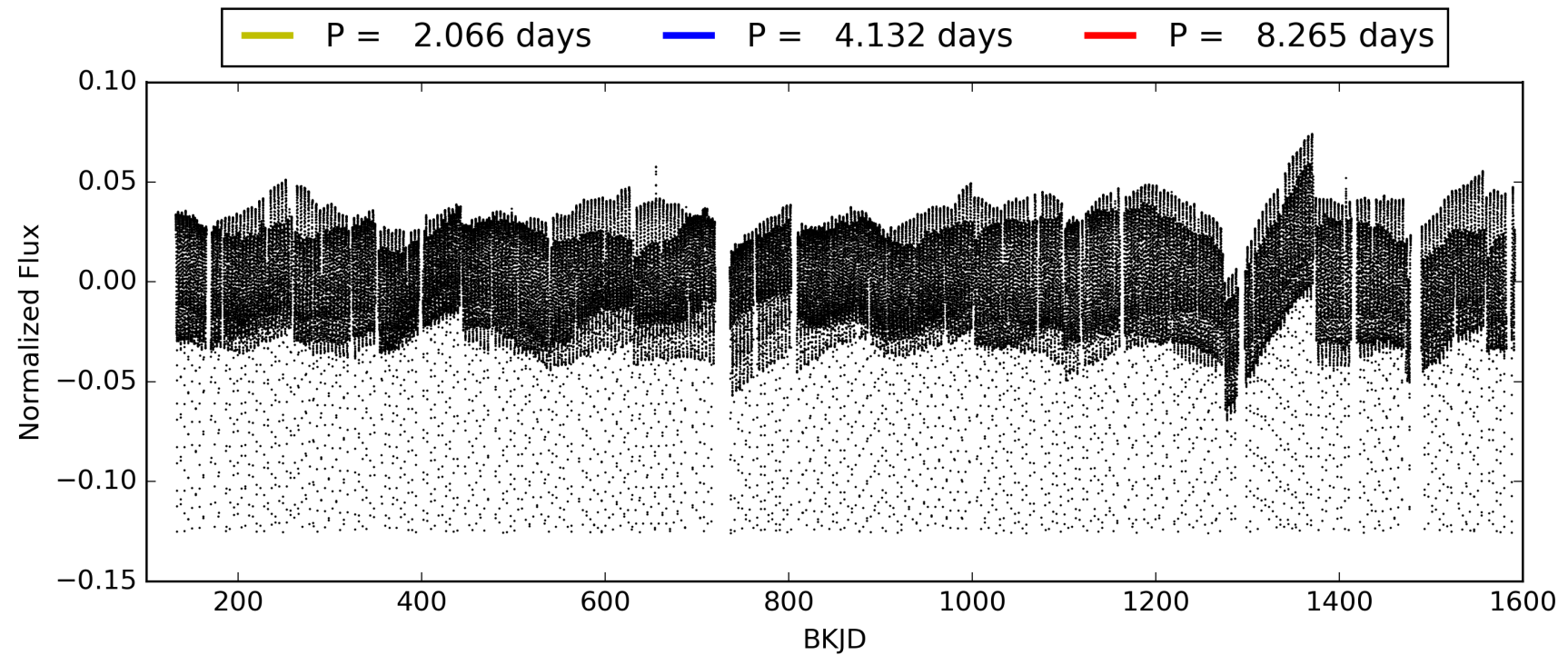
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005610698-02, PDC Light Curves

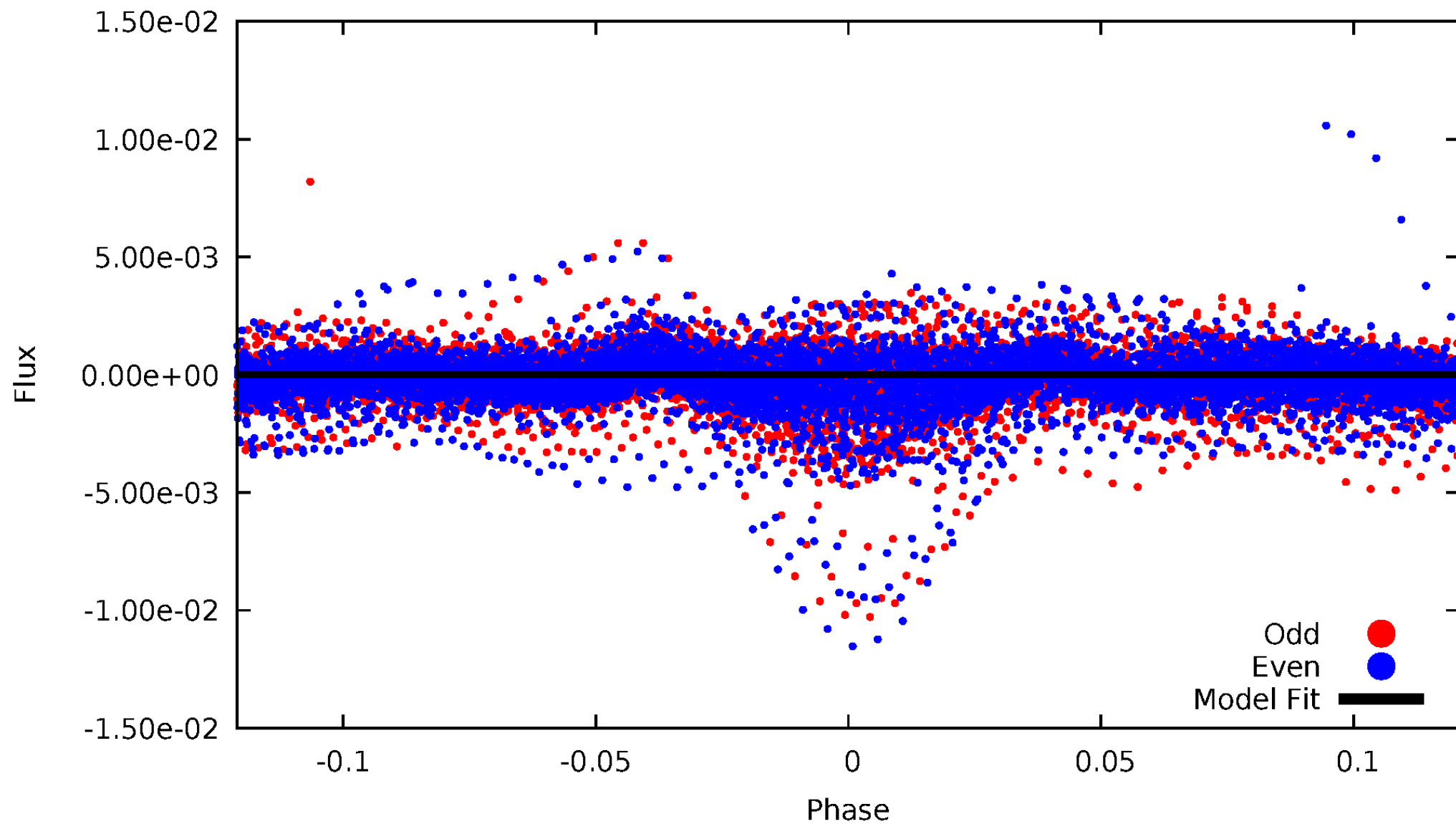


TCE 005610698-02



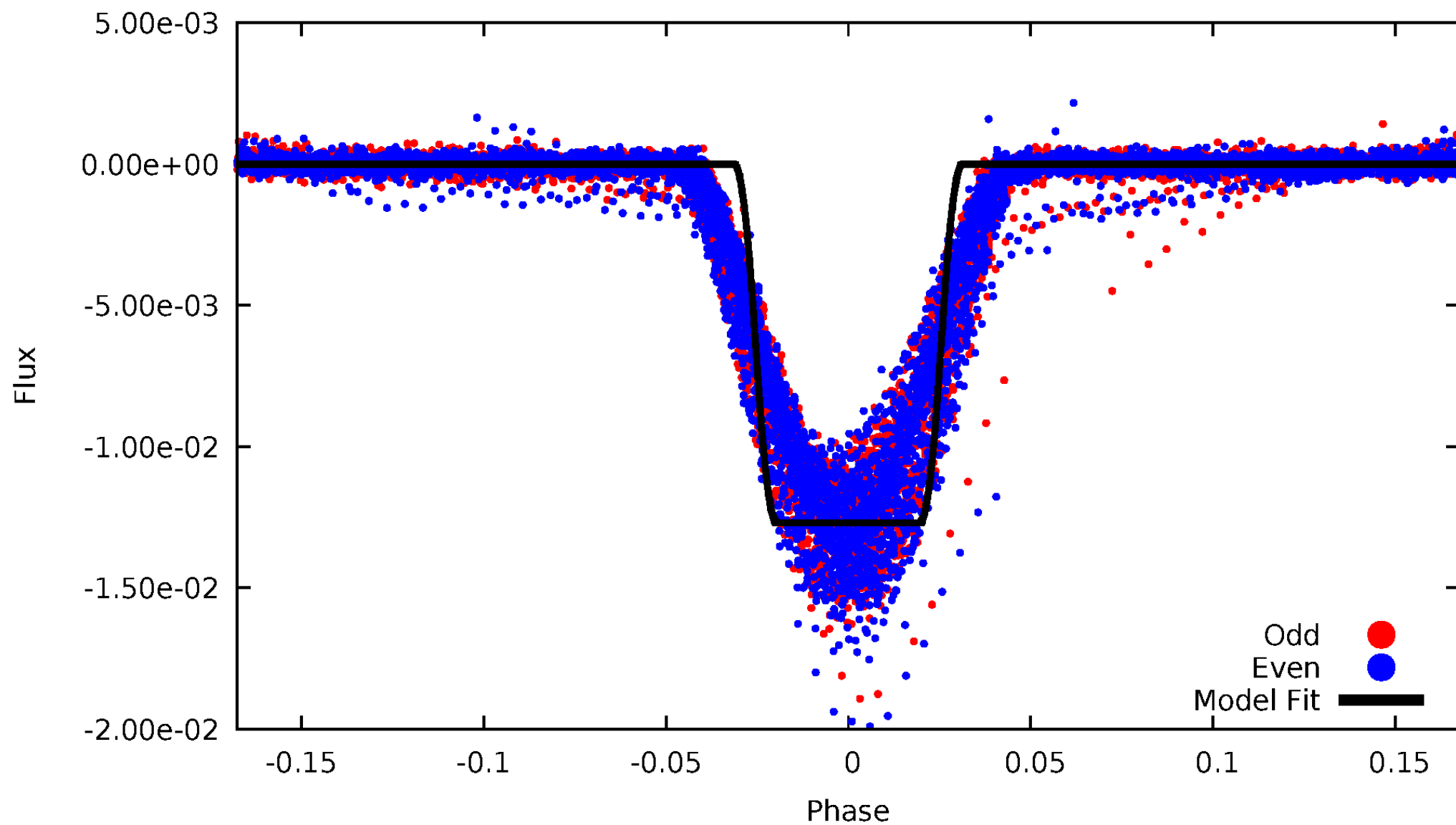
DV Odd/Even

TCE 005610698-02



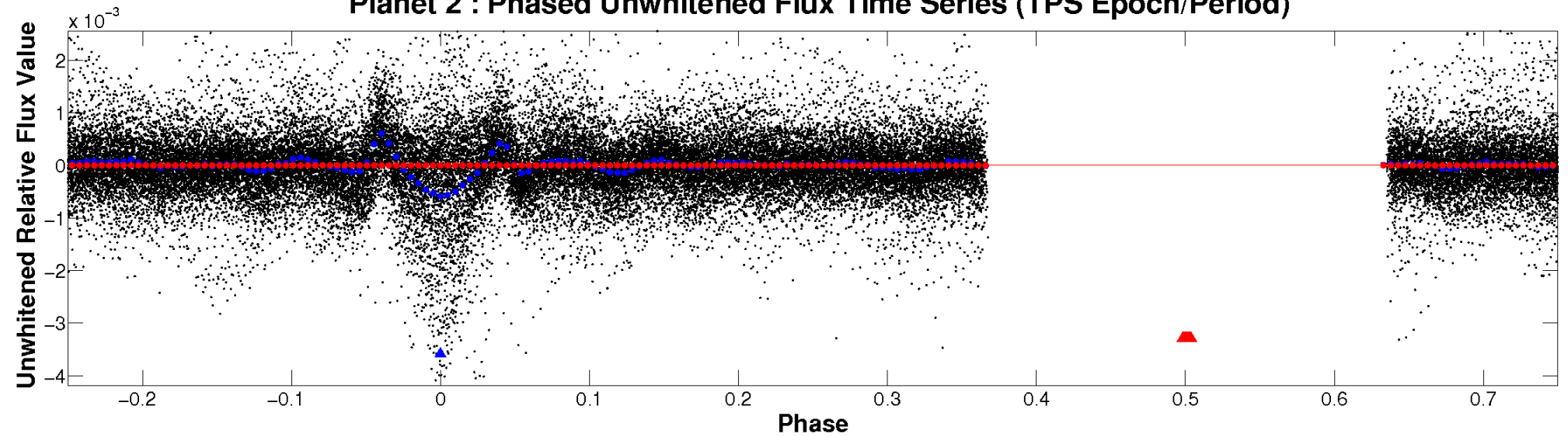
ALT Odd/Even

TCE 005610698-02



Non-Whitened Vs. Whitened Light Curve

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

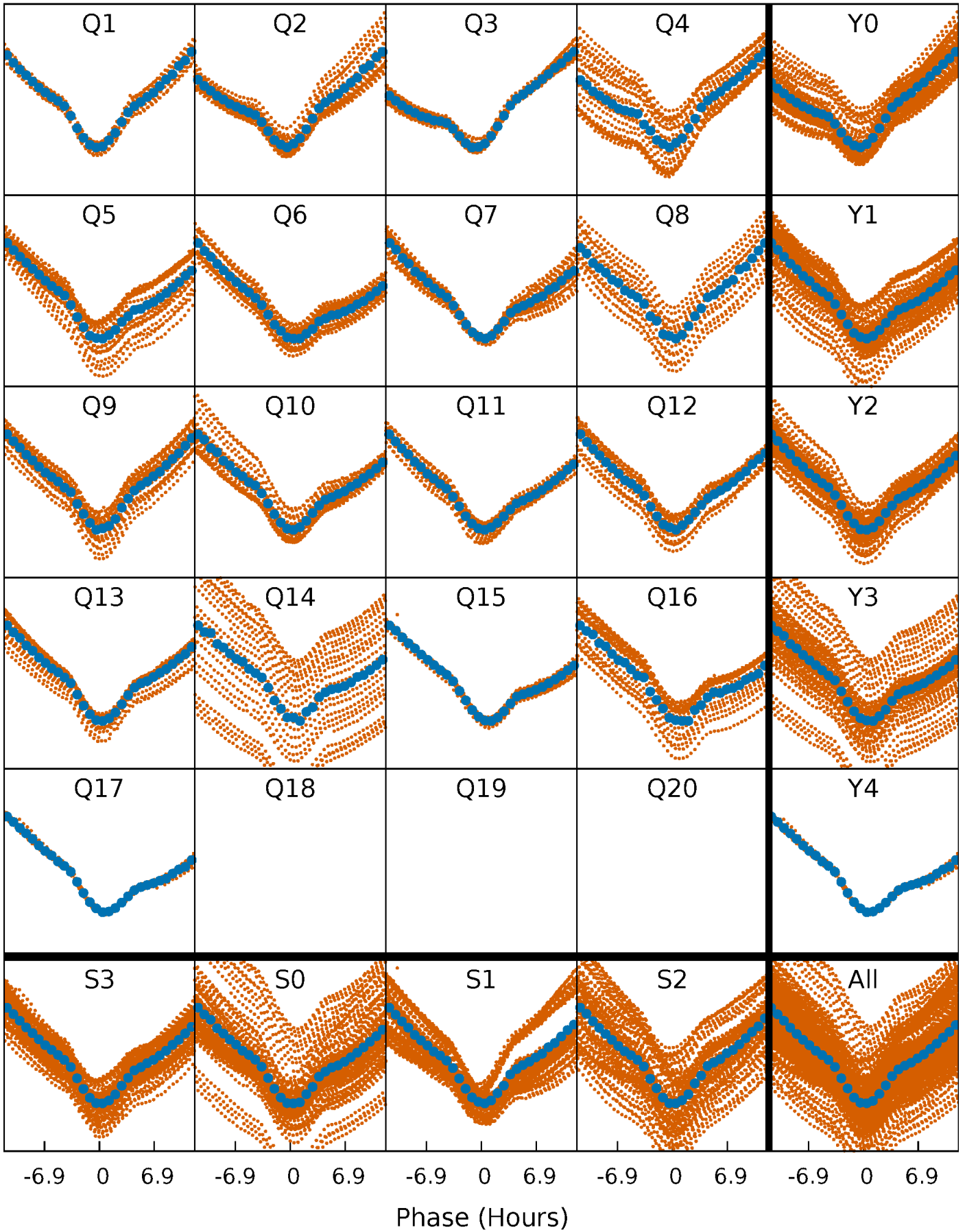


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



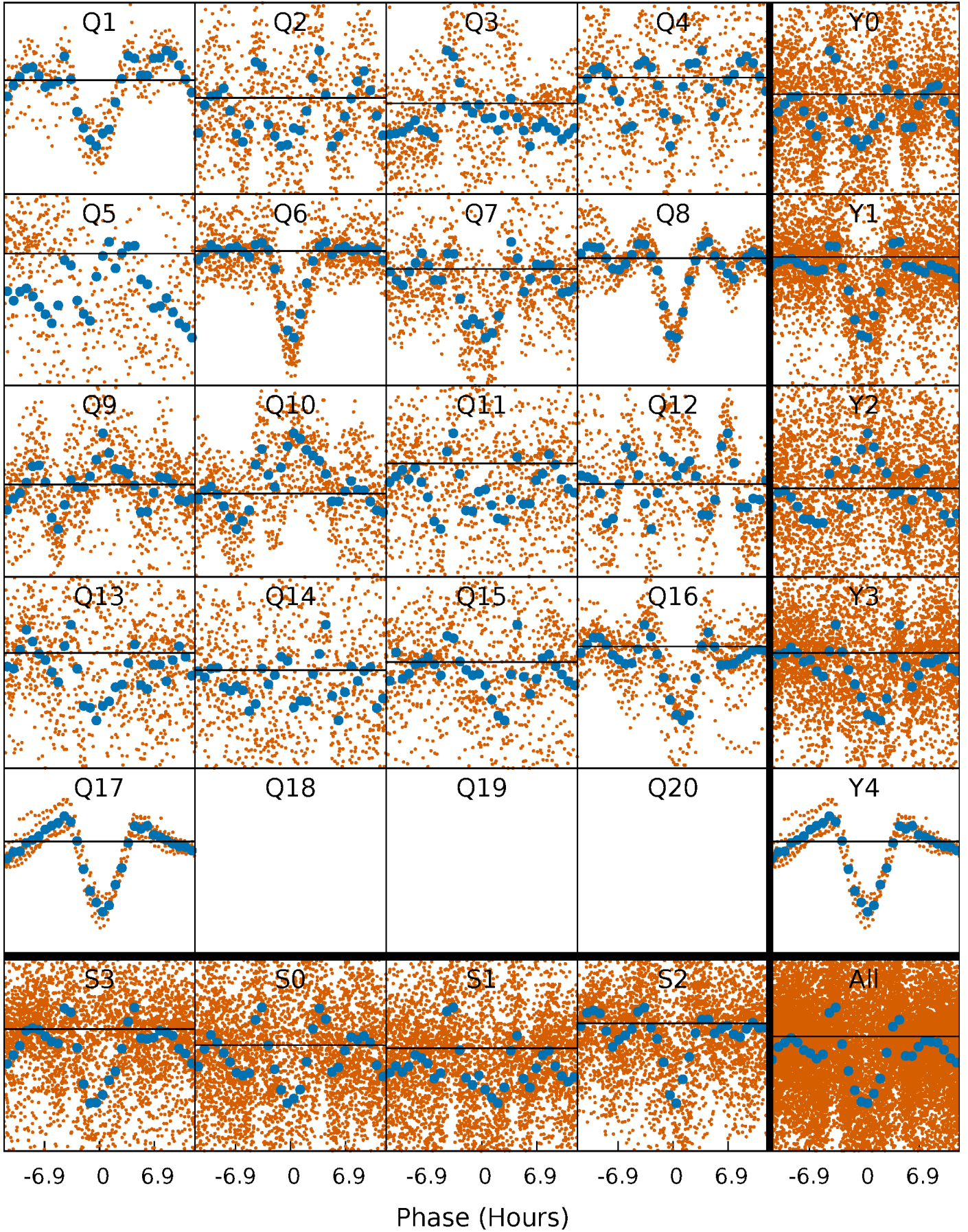
PDC Quarter-Phased Transit Curves

TCE 005610698-02 P= 4.132444 Days $T_0=134.967671$ (BKJD)



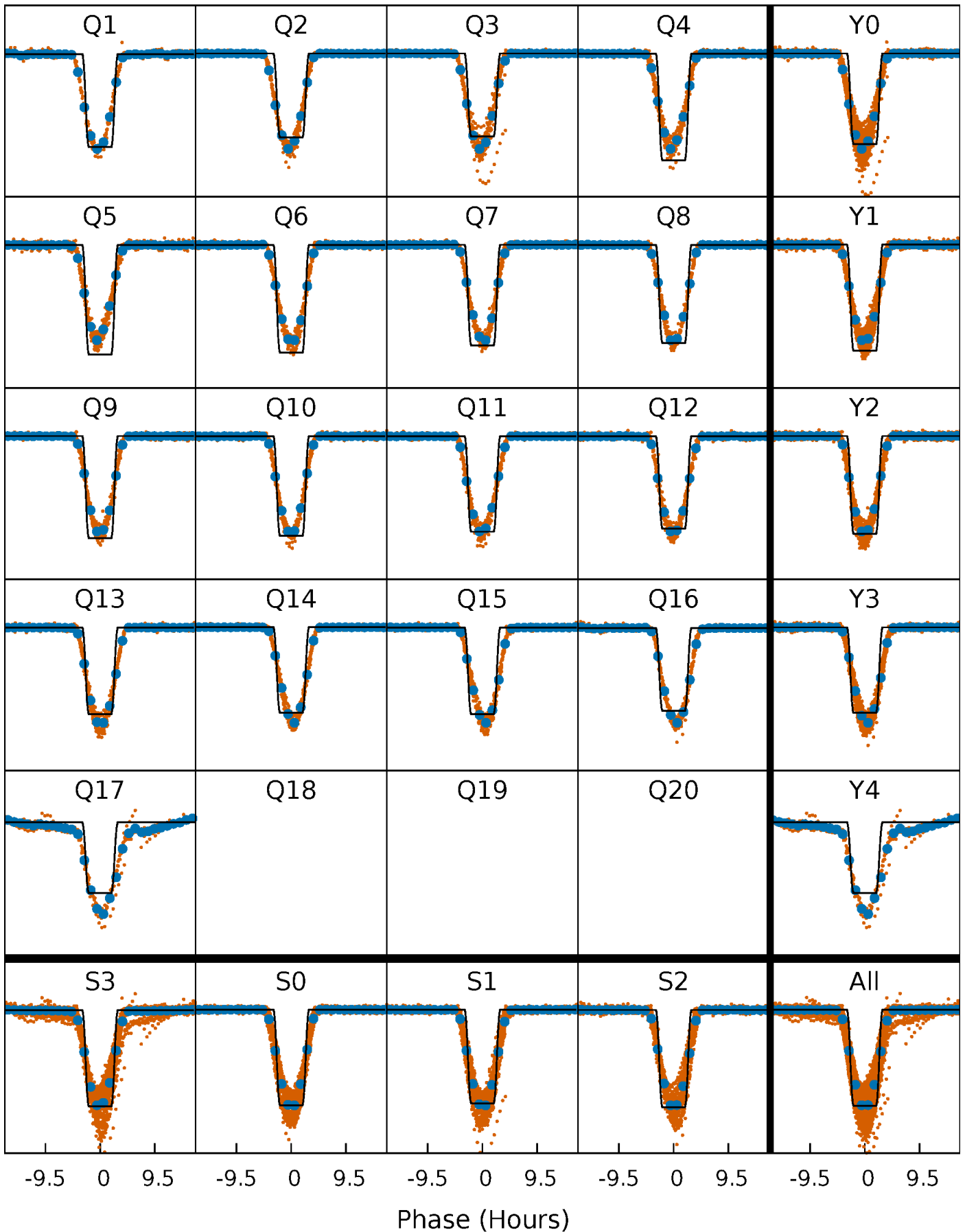
DV Quarter-Phased Transit Curves

TCE 005610698-02 P= 4.132444 Days $T_0=134.967671$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

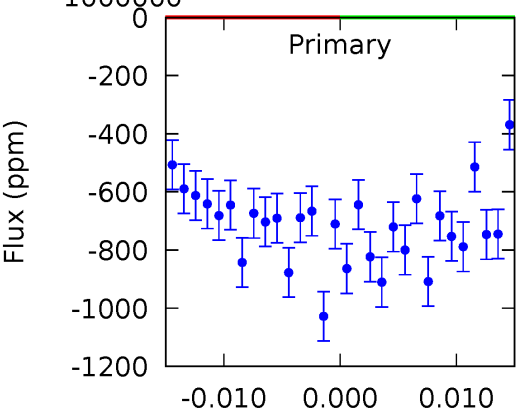
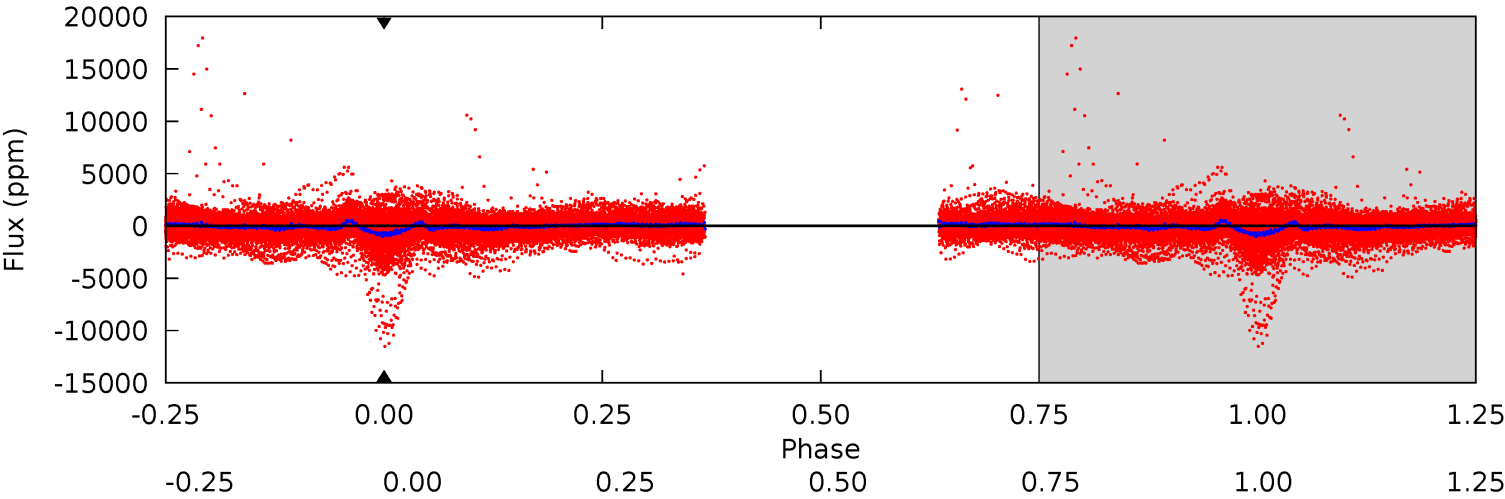
TCE 005610698-02 P= 4.132444 Days $T_0=134.970585$ (BKJD)



DV Model-Shift Uniqueness Test

005610698-02, P = 4.132444 Days, E = 130.835227 Days

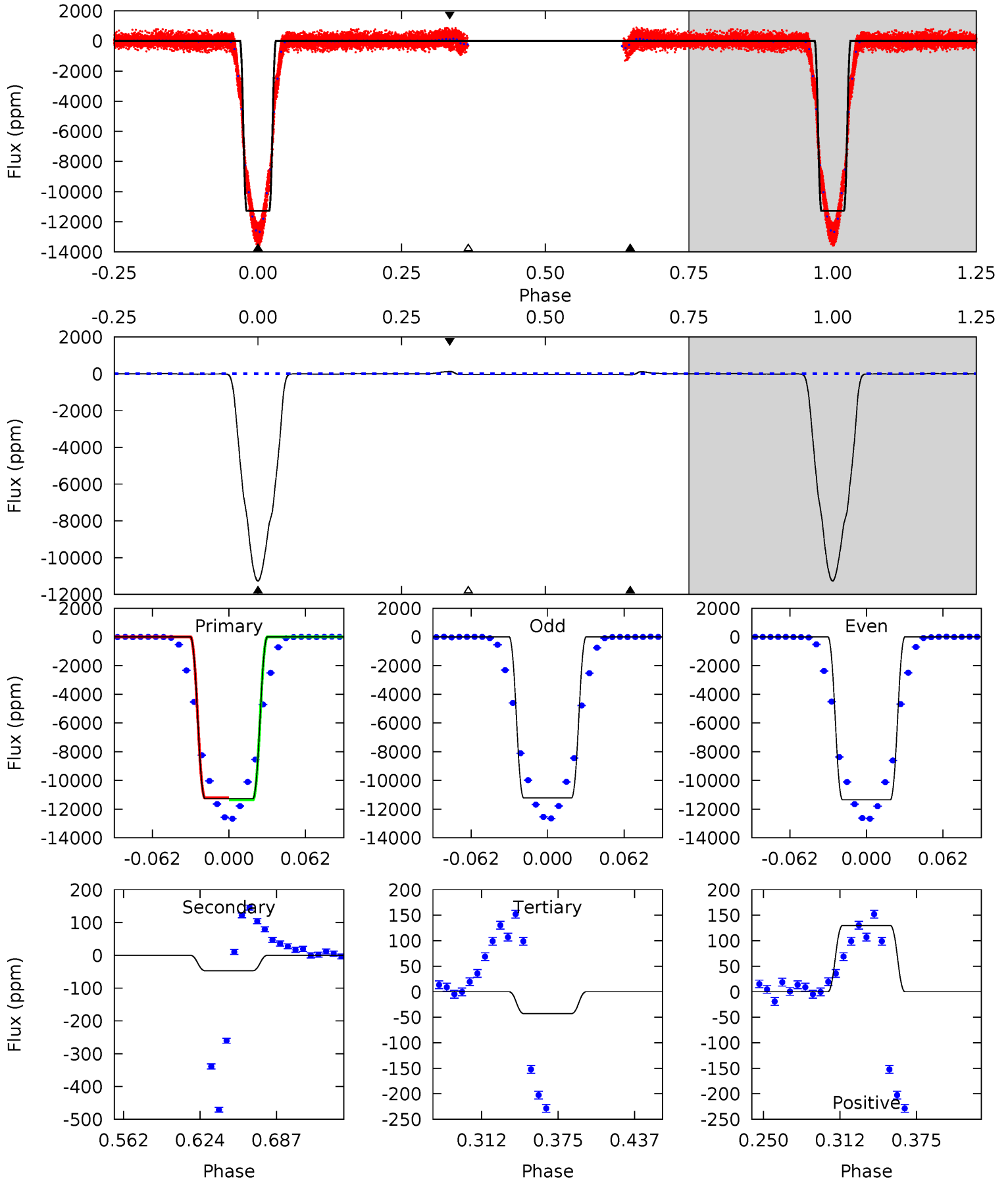
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005610698-02, P = 4.132444 Days, E = 130.838141 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2576	10.7	9.79	29.7	4.66	1.86	5.87	2567	2547	0.95	-19.0	14.7	1.02	0.01	0



Stellar Parameters For KIC 005610698

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6567^{+183}_{-244}	$4.045^{+0.329}_{-0.141}$	$-0.520^{+0.300}_{-0.300}$	$1.636^{+0.407}_{-0.560}$	$1.084^{+0.164}_{-0.149}$	$0.349^{+0.805}_{-0.155}$
	+3%/-4%	+8%/-3%	+58%/-58%	+25%/-34%	+15%/-14%	+231%/-45%
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 005610698-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$14.20^{+13.22}_{-9.76}$	2230^{+166}_{-205}	5814^{+21534}_{-26050}	36^{+1812}_{-990}
Alt.	-47 ± 4	$21.98^{+16.93}_{-13.26}$	2243^{+168}_{-225}	-2394^{+5253}_{-240}	$0.144^{+0.740}_{-0.097}$

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 $A_{obs} \gg 1.0$

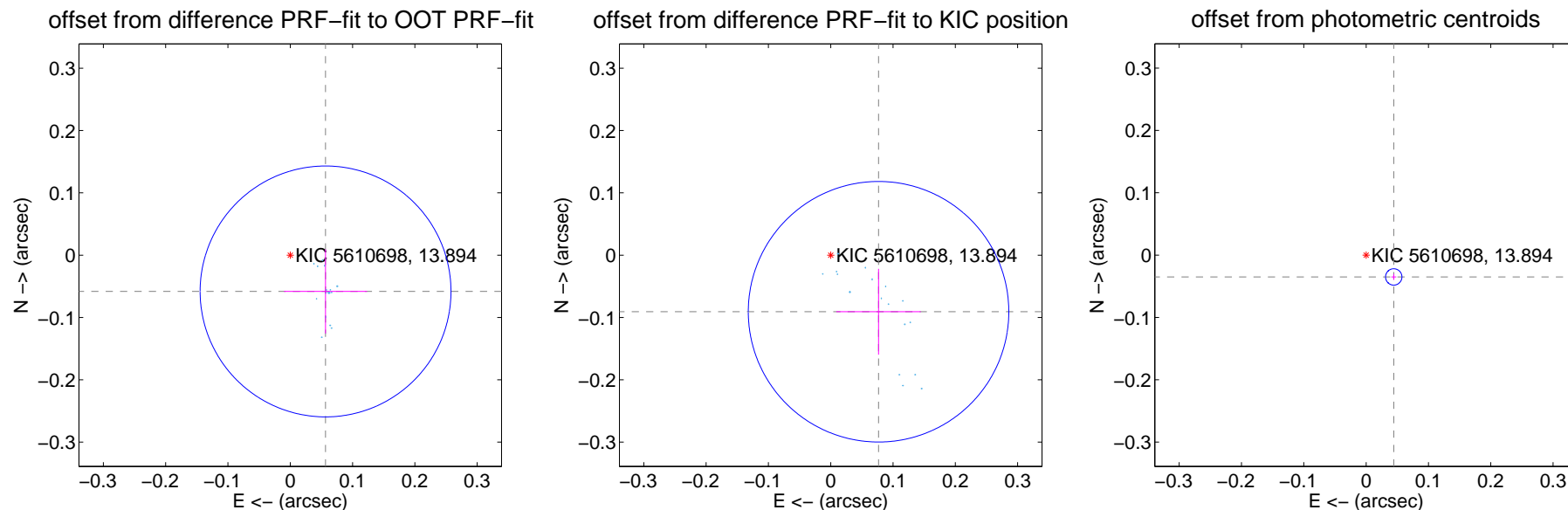
DV Centroid Data

Supplemental centroid analysis for 005610698-02. Kepler magnitude: 13.89. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

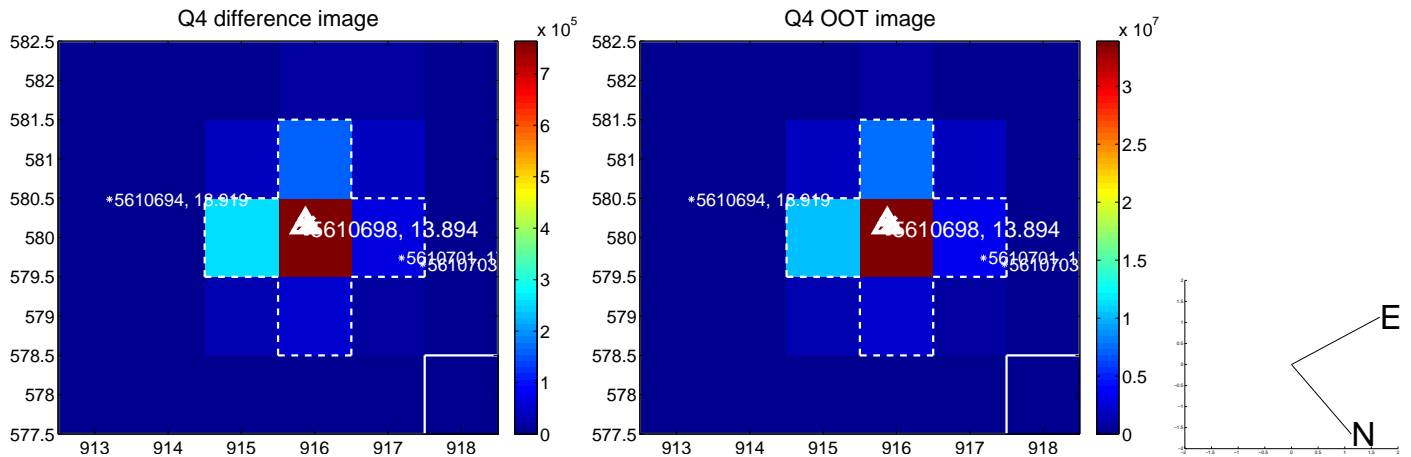
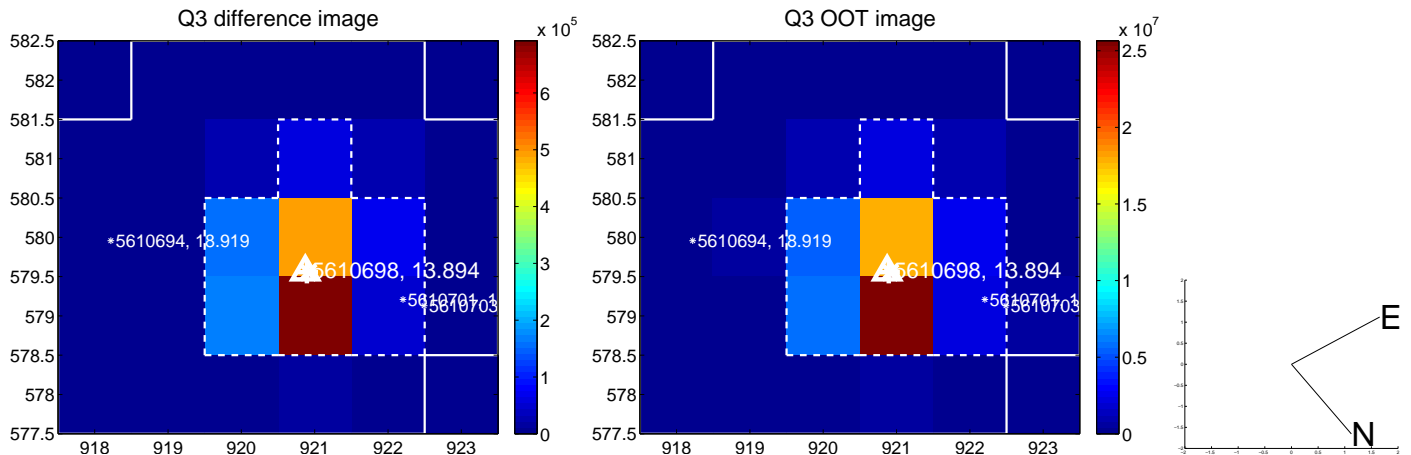
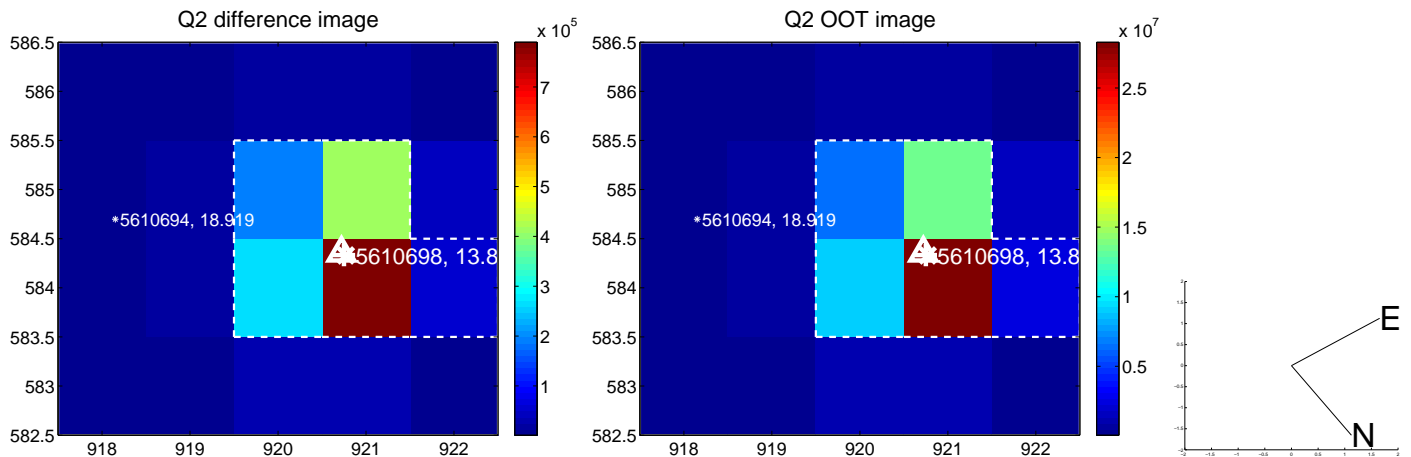
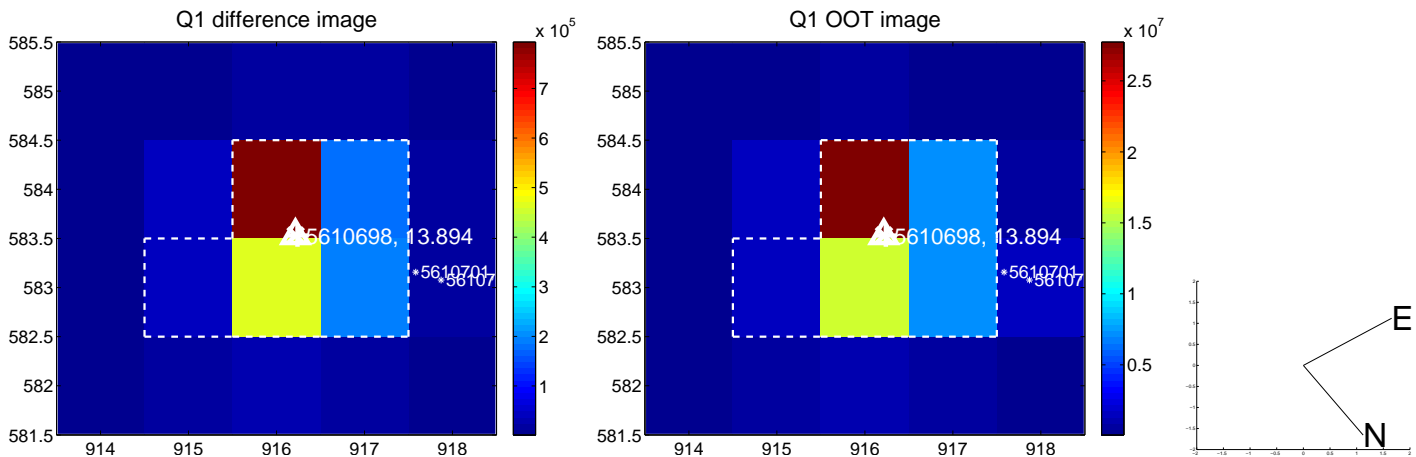
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.081 ± 0.067	1.21	-0.057 ± 0.067	-0.058 ± 0.067
PRF-fit source offset from KIC position	0.119 ± 0.070	1.71	-0.077 ± 0.068	-0.091 ± 0.069
photometric centroid source offset	0.06 ± 0.00	12.90	-0.04 ± 0.00	-0.04 ± 0.00

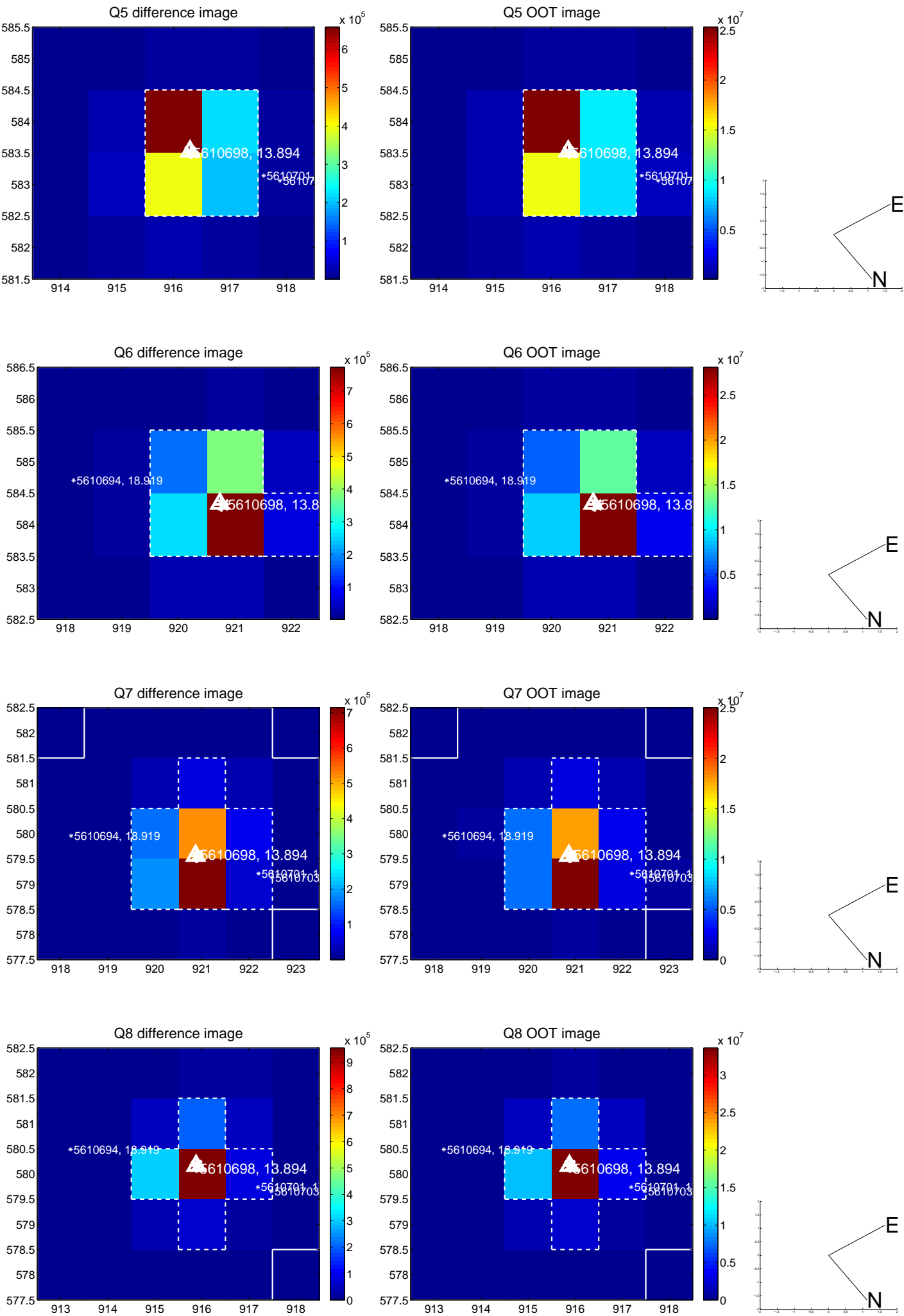


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

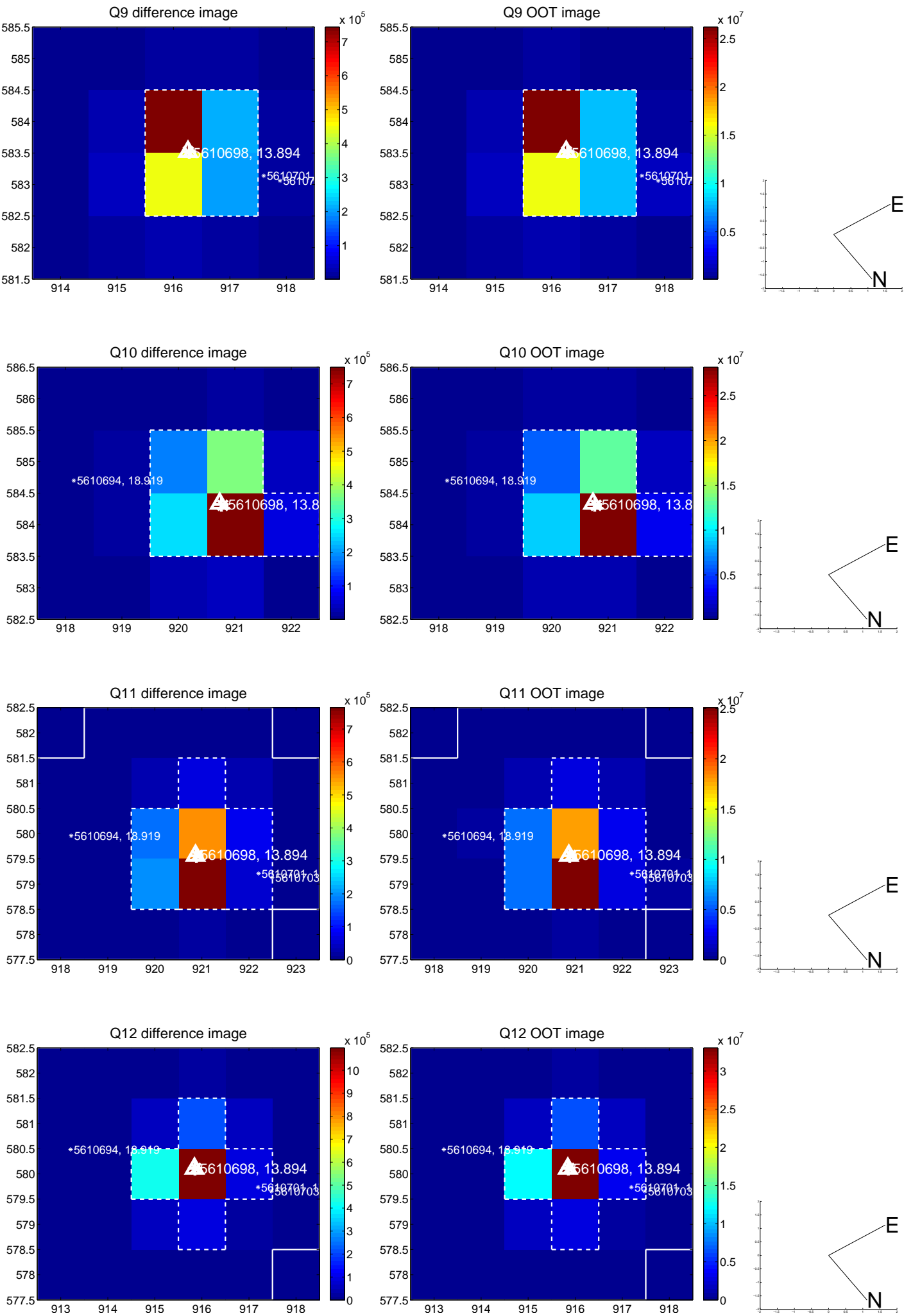
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



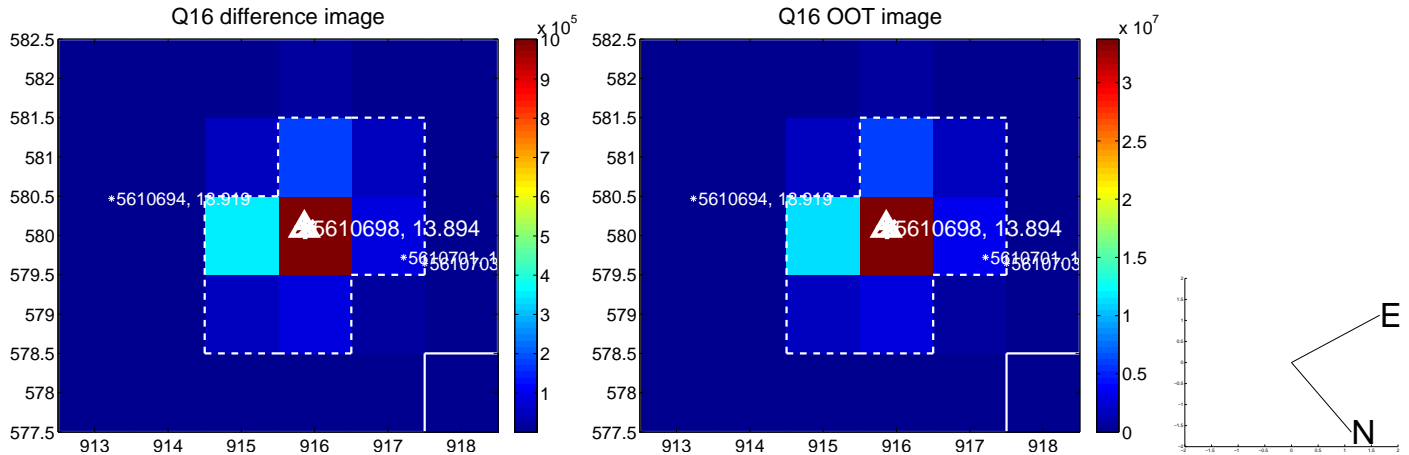
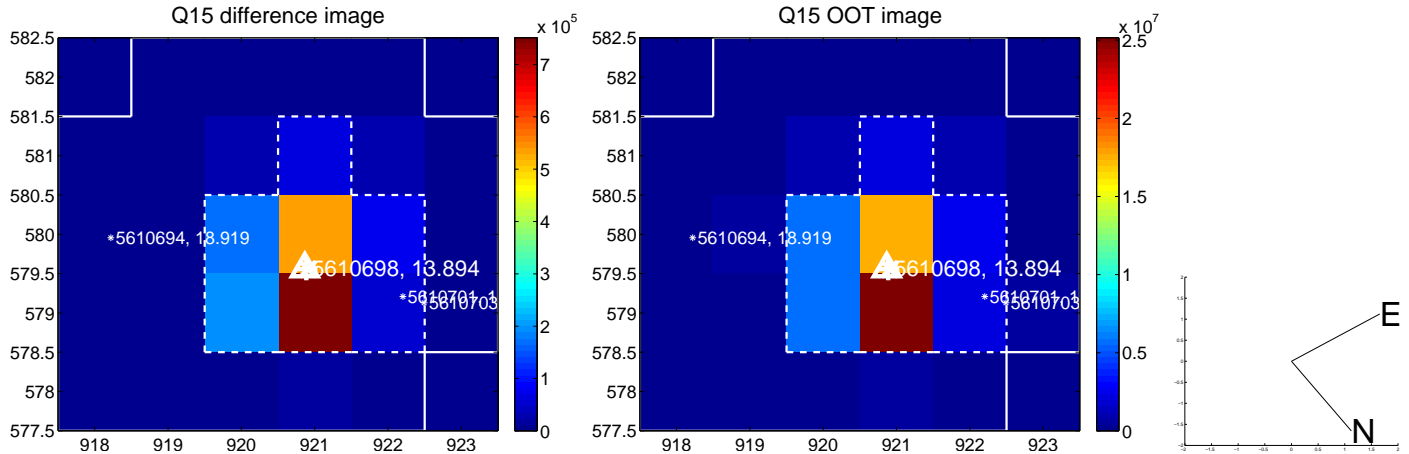
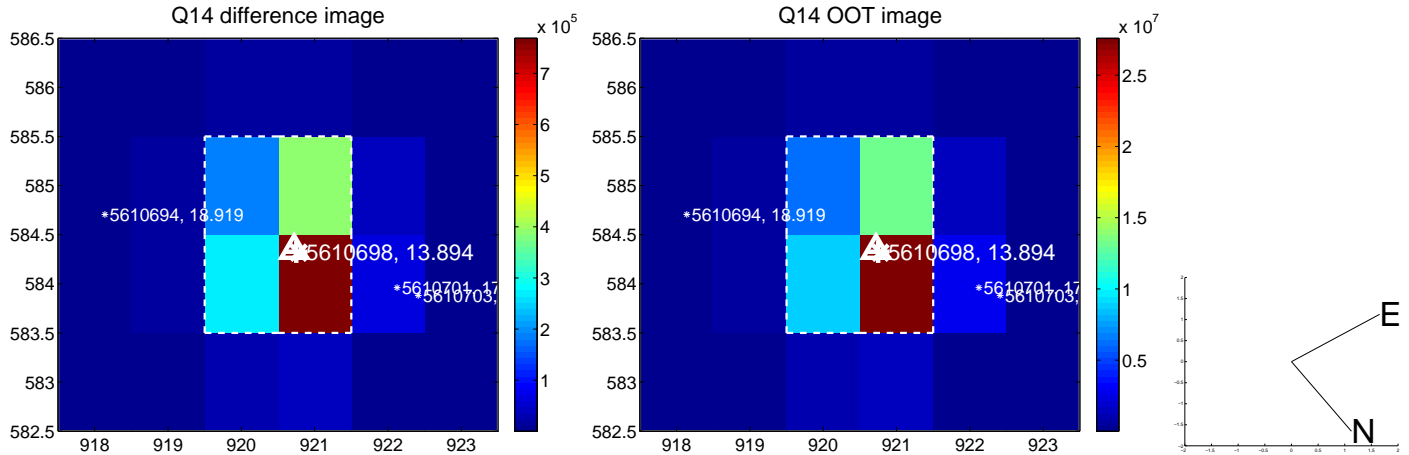
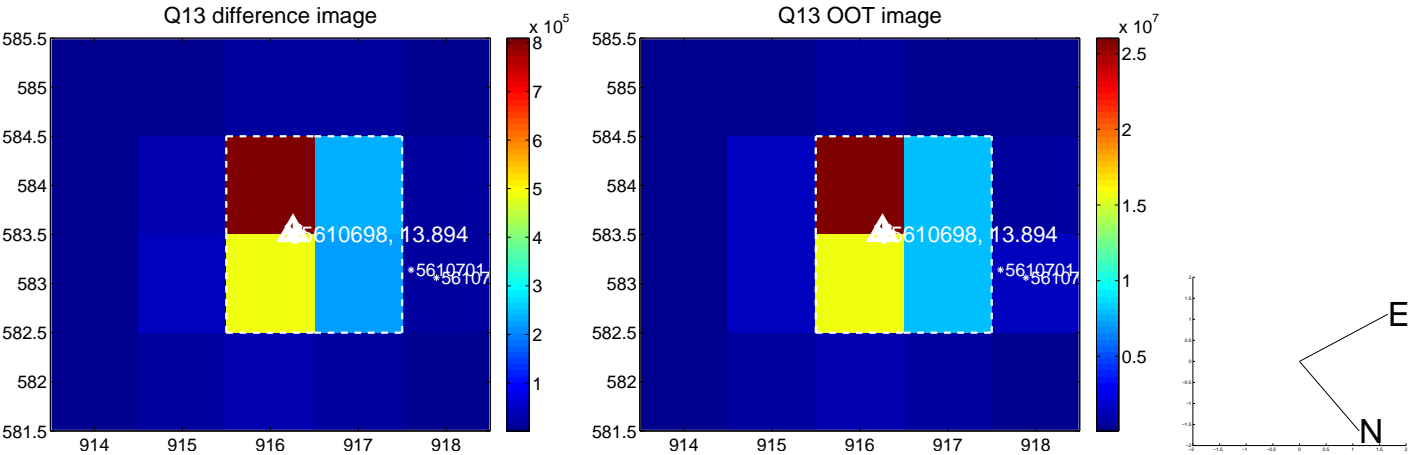
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



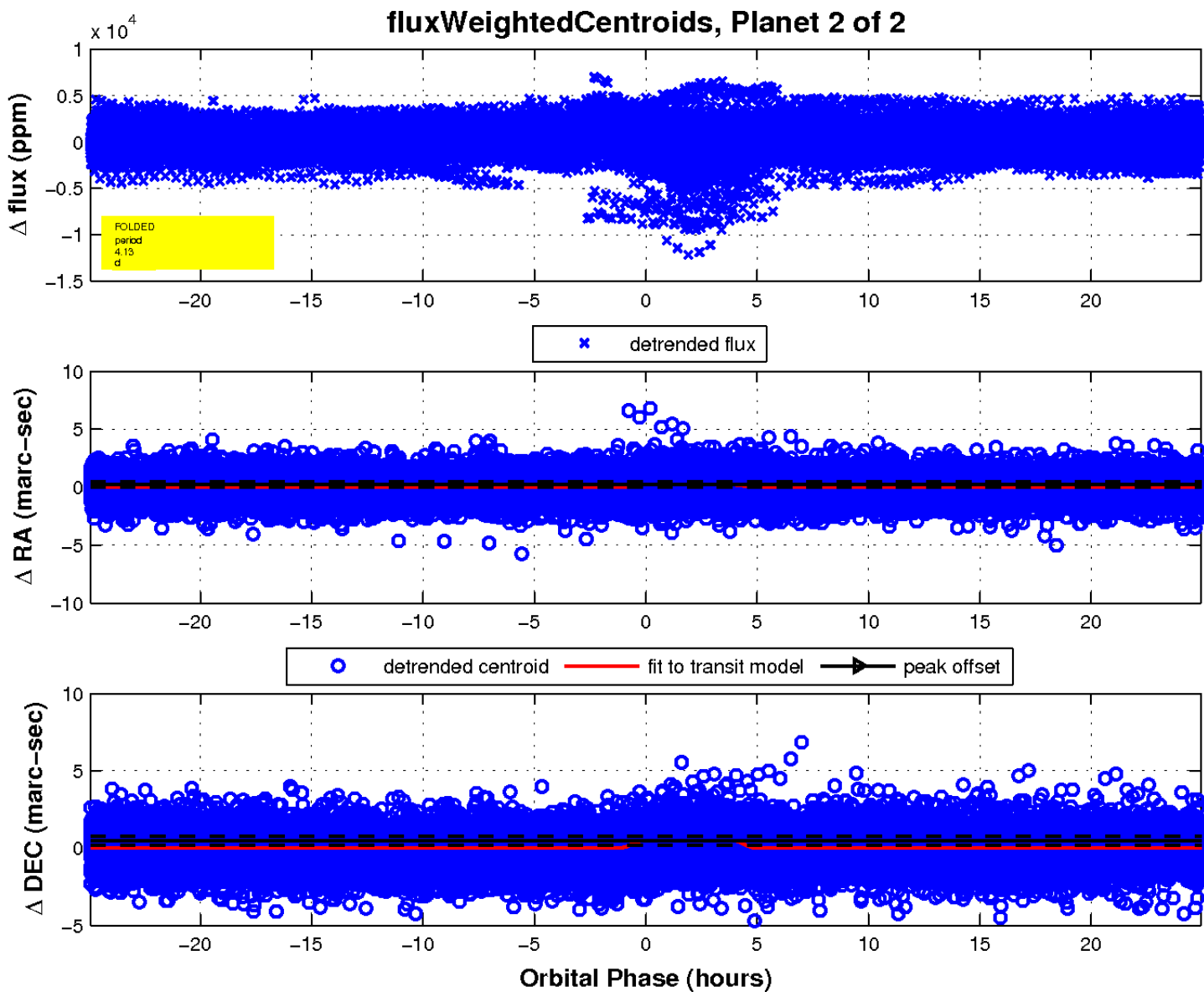
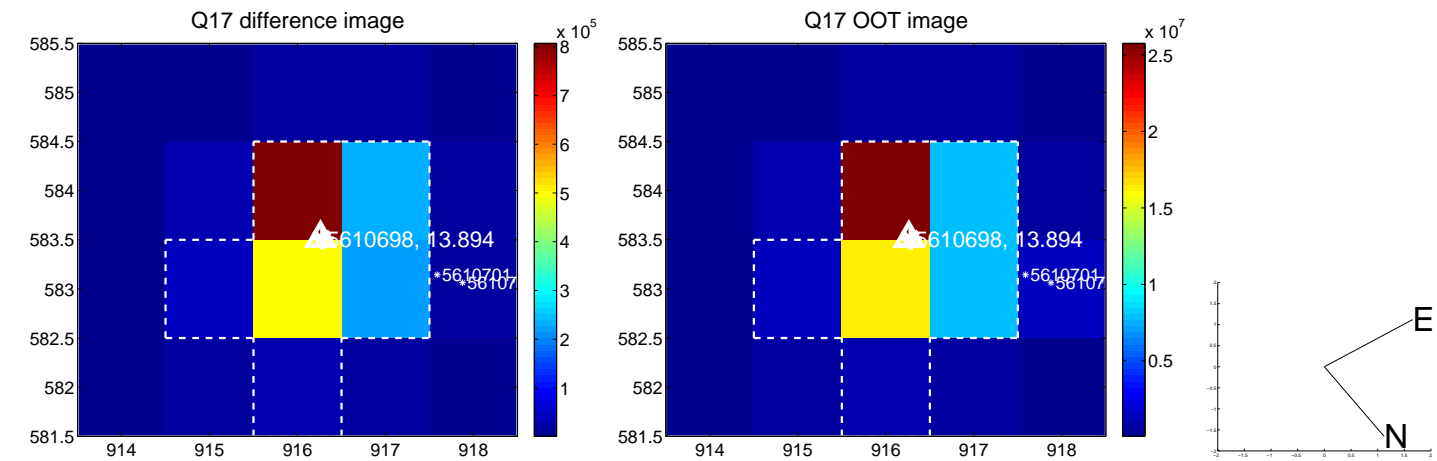
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

