

KIC 005608566

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})
005608566-01	OBS	0609.01	4.396995	132.450700	4467.5	1.873	369.1	347.1	1.16	5949	12.10	544.21
005608566-02	OBS	No	2.198521	132.442191	145.2	1.428	11.8	13.3	1.16	5949	1.65	1371.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005608566-01	OBS	FP	0.02	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005608566-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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

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

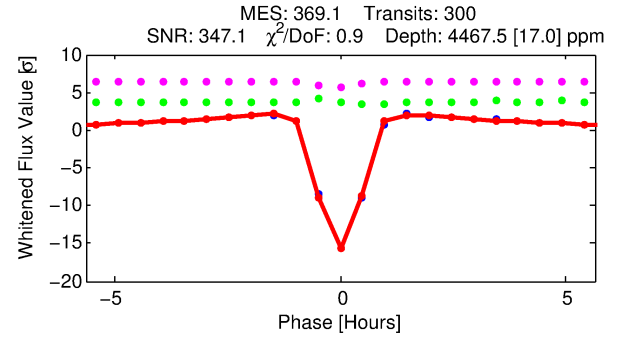
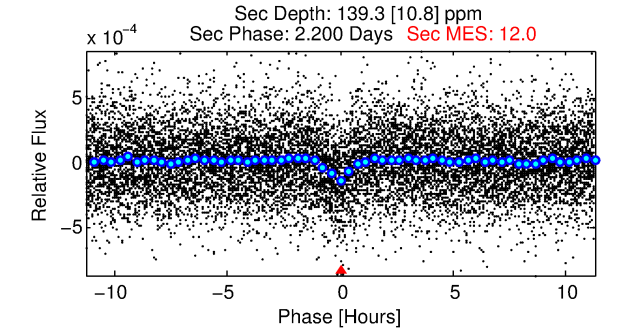
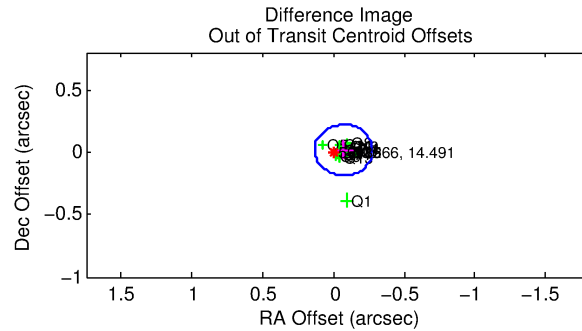
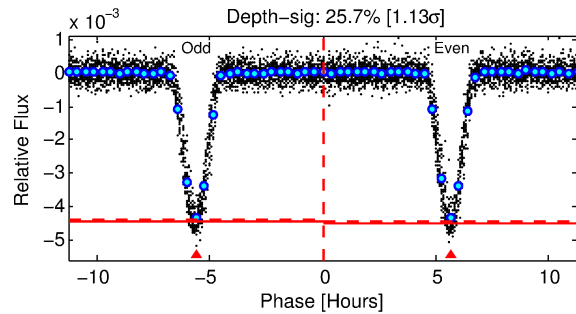
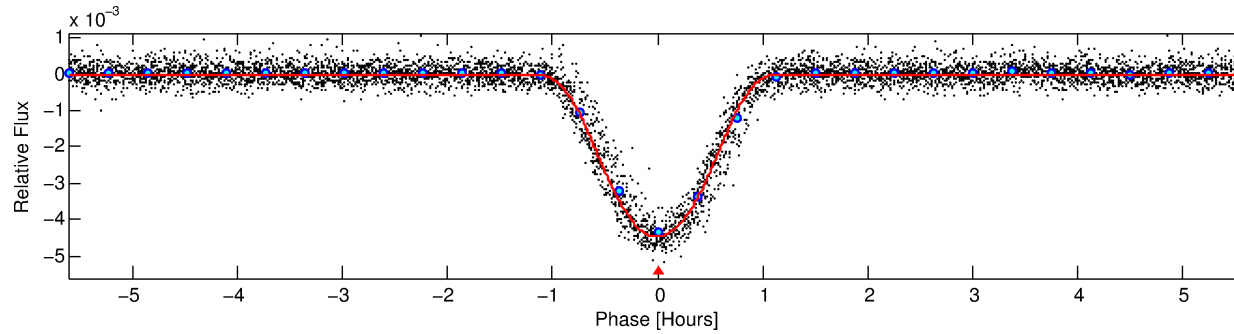
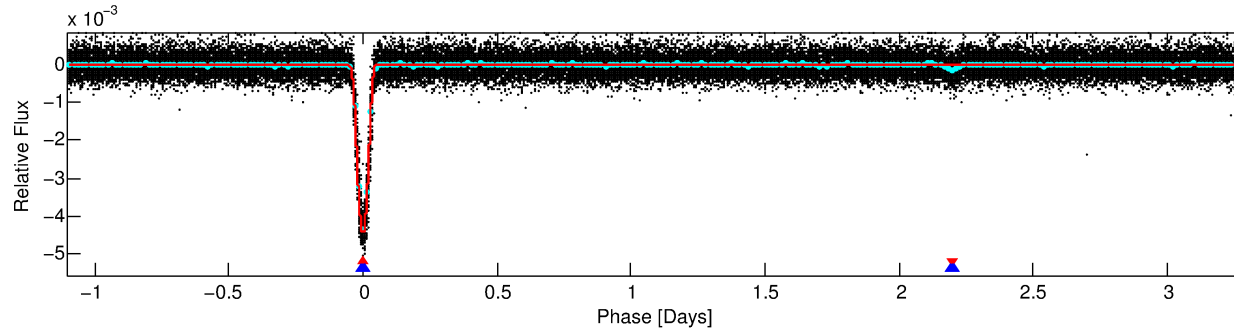
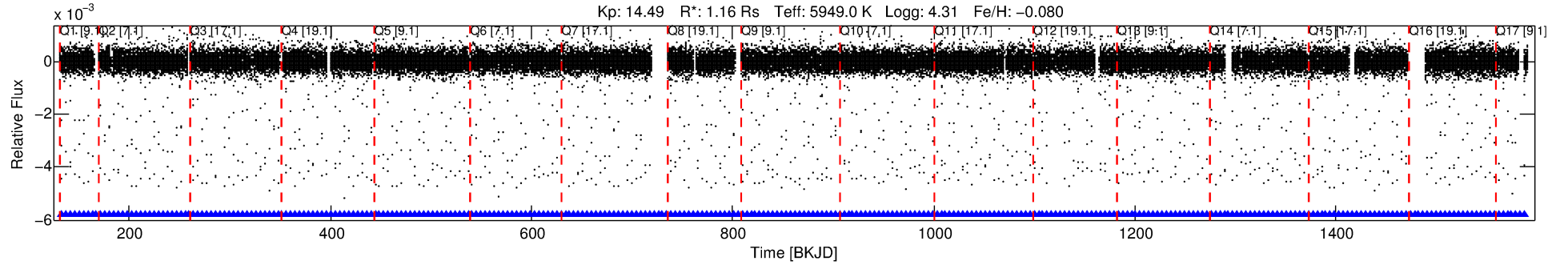
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005608566-01

No Significant Match Found

DV One-Page Summary

KIC: 5608566 Candidate: 1 of 2 Period: 4.397 d
KOI: K00609.01 Corr: 0.990



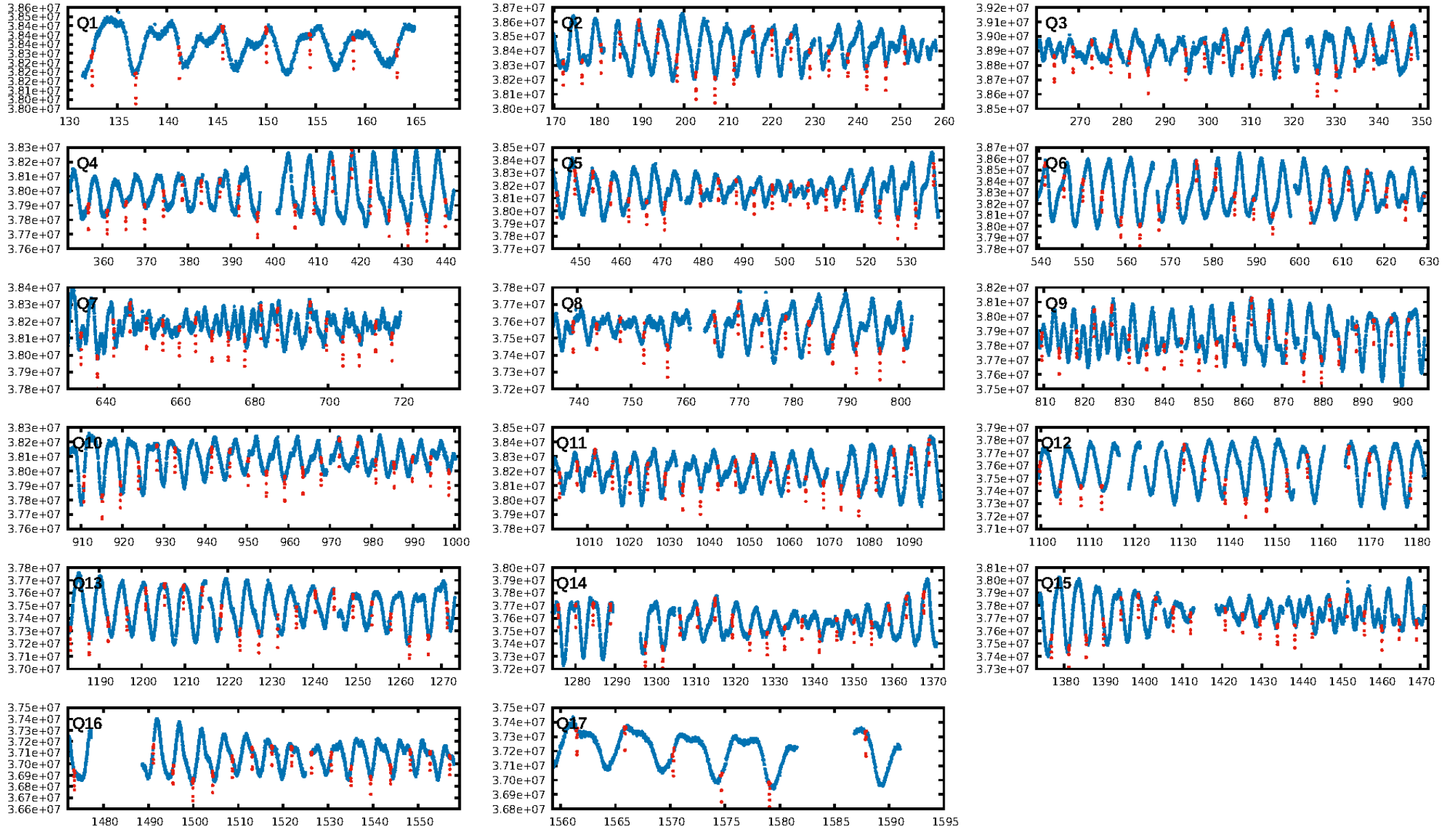
DV Fit Results:

Period = 4.39700 [0.00000] d
Epoch = 132.4507 [0.0001] BKJD
Rp/R* = 0.0959 [0.0098]
a/R* = 9.16 [0.26]
b = 0.97 [0.02]
Seff = 544.21 [204.71]
Teff = 1232 [116] K
Rp = 12.10 [3.70] Re
a = 0.0525 [0.0127] AU
Ag = 1.44 [0.60] [0.74 σ]
Teffp = 2086 [133] K [4.86 σ]

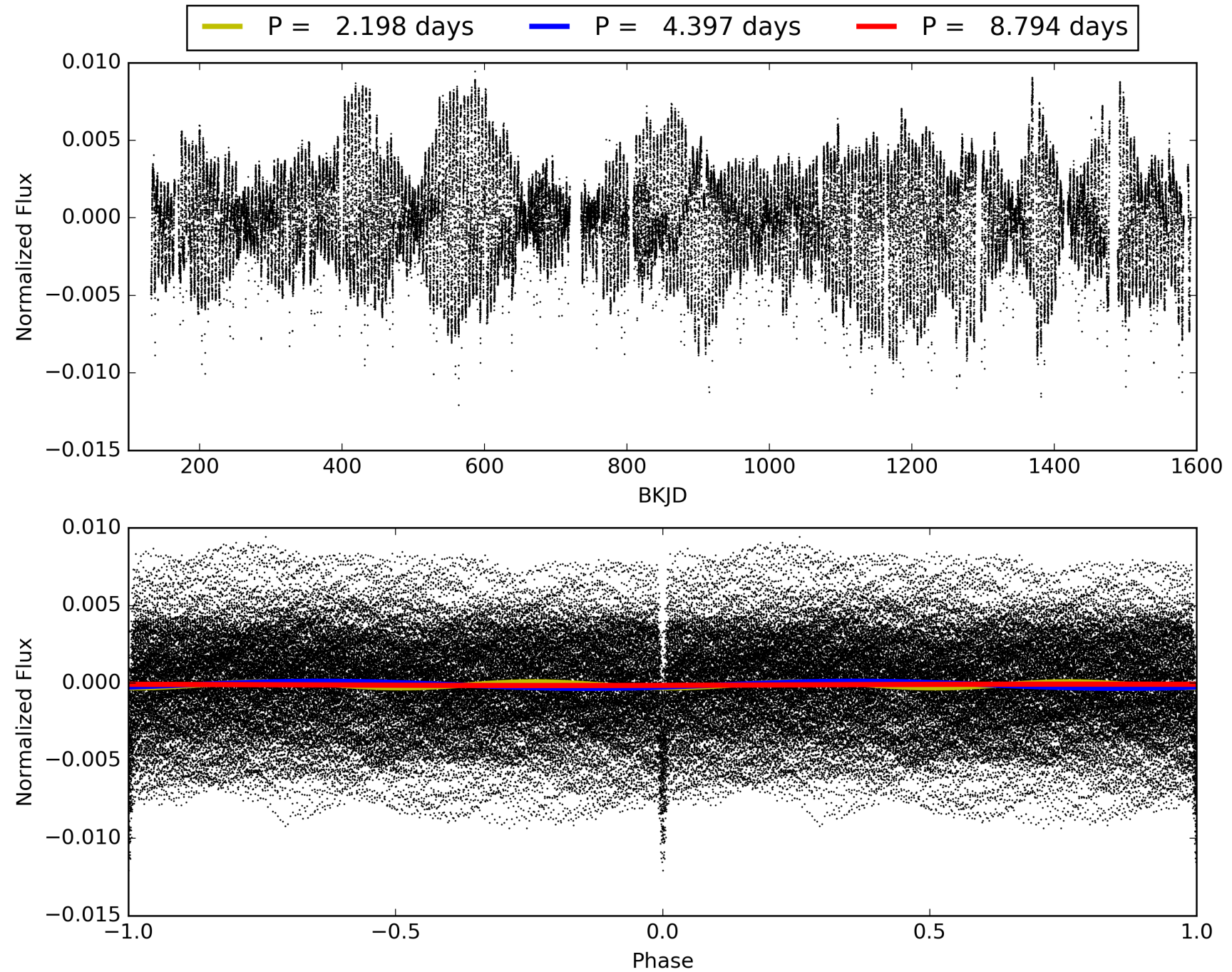
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [22.40 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [286/286]
GhostDiagnostic-chr: 3.936
Centroid-sig: 0.0%
Centroid-so: 0.103 arcsec [2.61 σ]
OotOffset-rm: 0.072 arcsec [1.06 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.103 arcsec [1.46 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005608566-01, PDC Light Curves

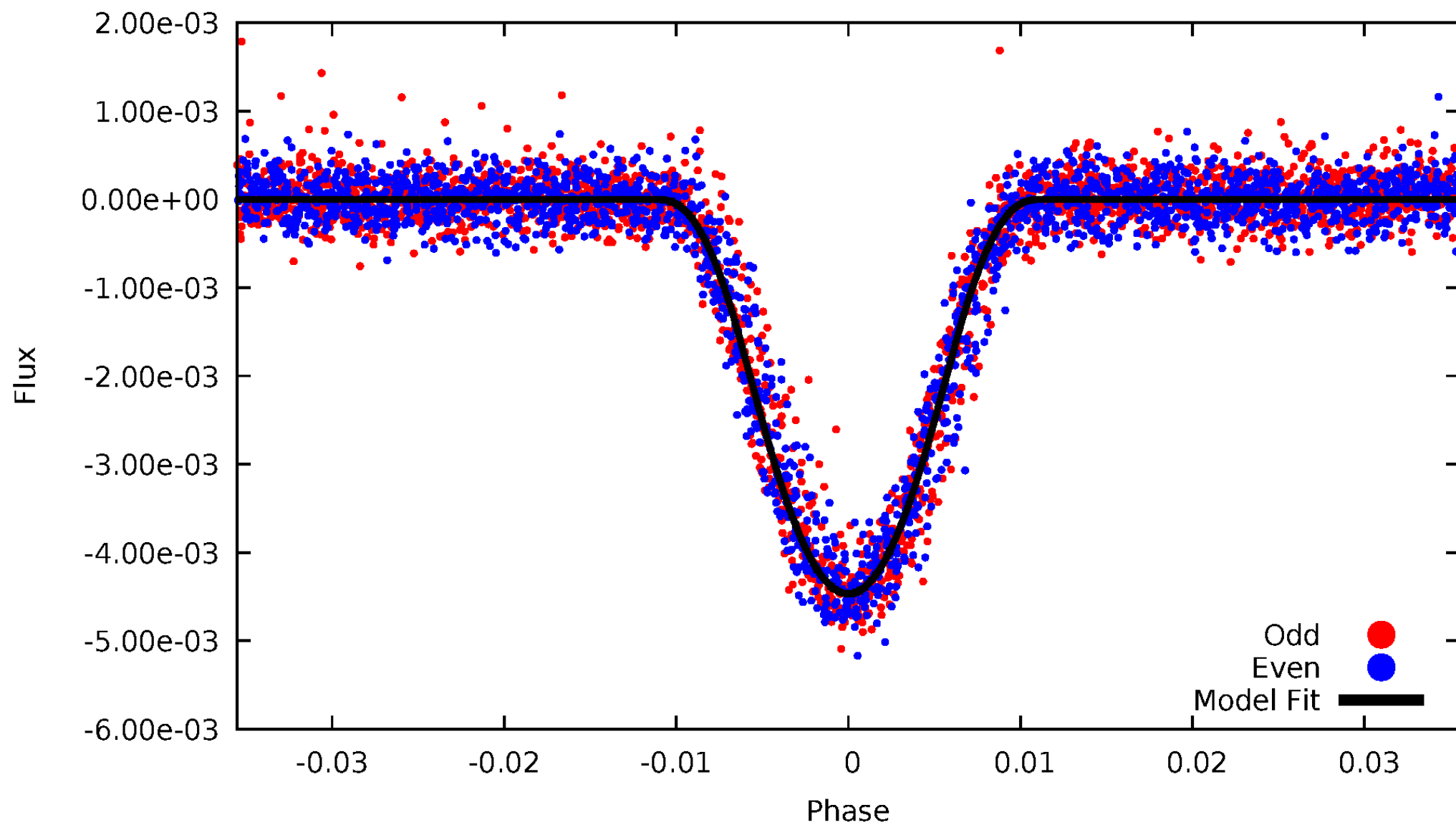


TCE 005608566-01



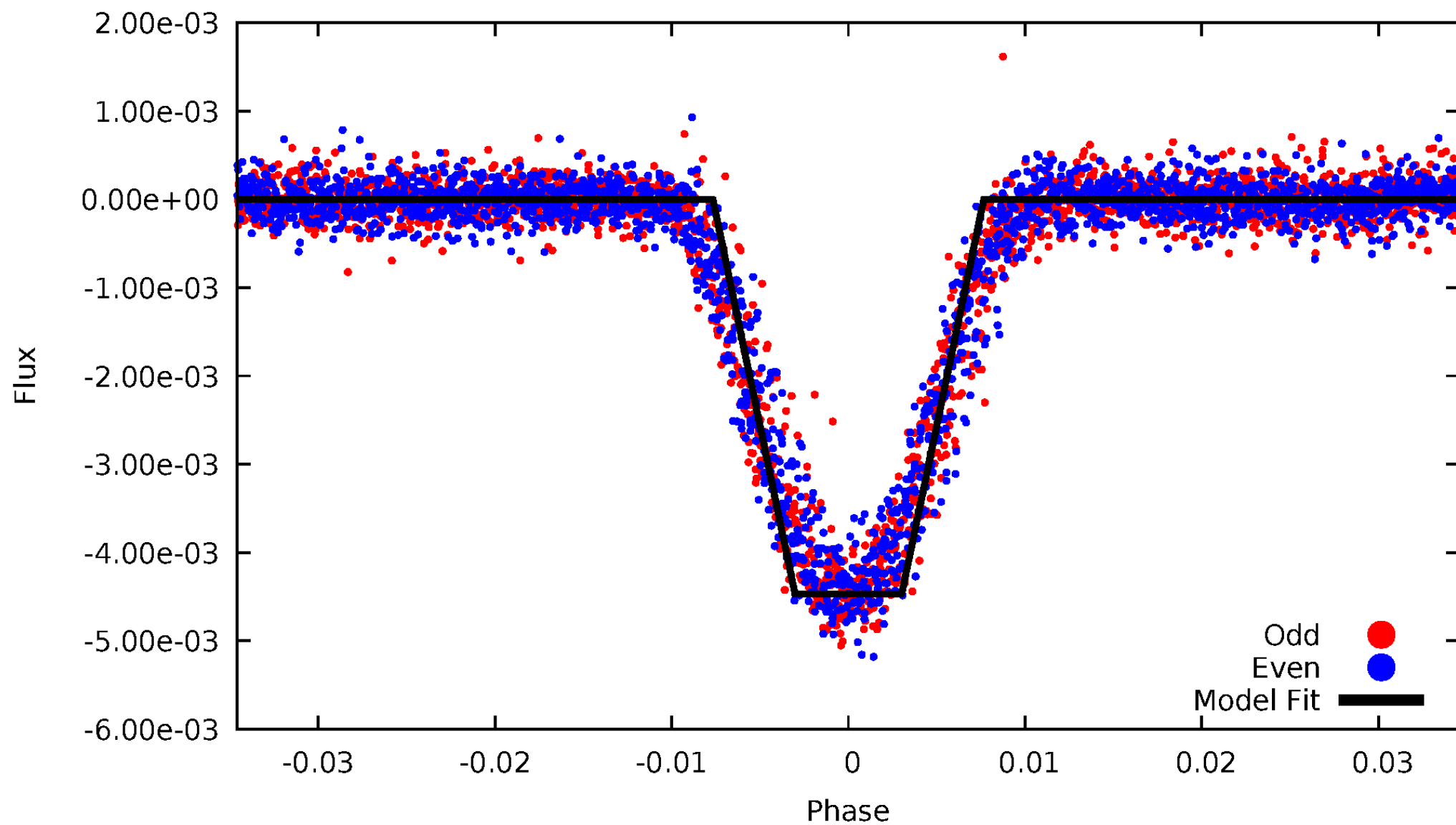
DV Odd/Even

TCE 005608566-01



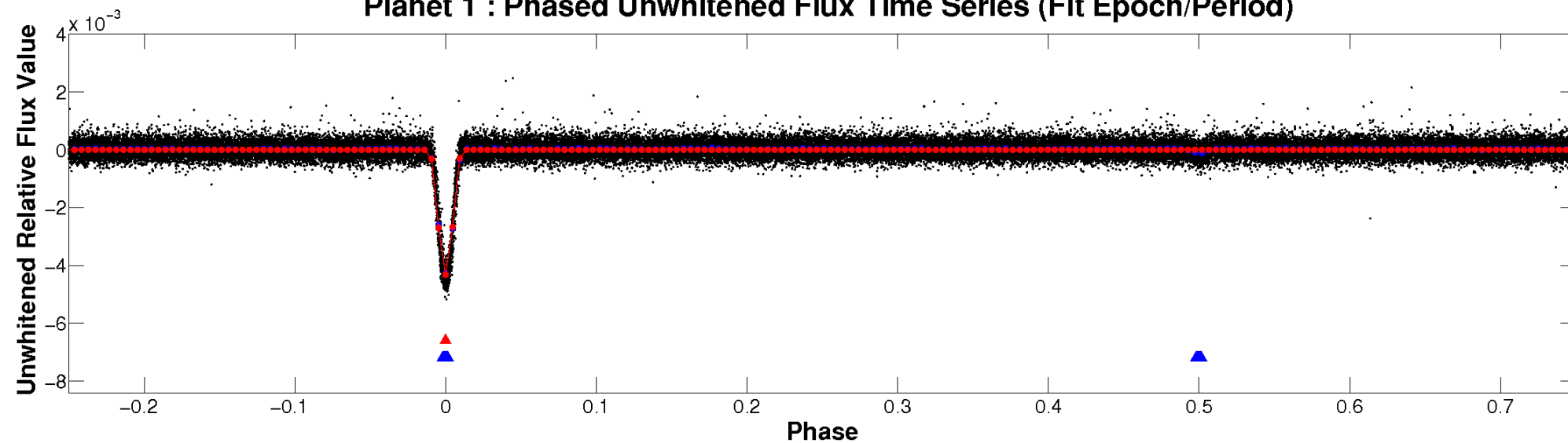
ALT Odd/Even

TCE 005608566-01

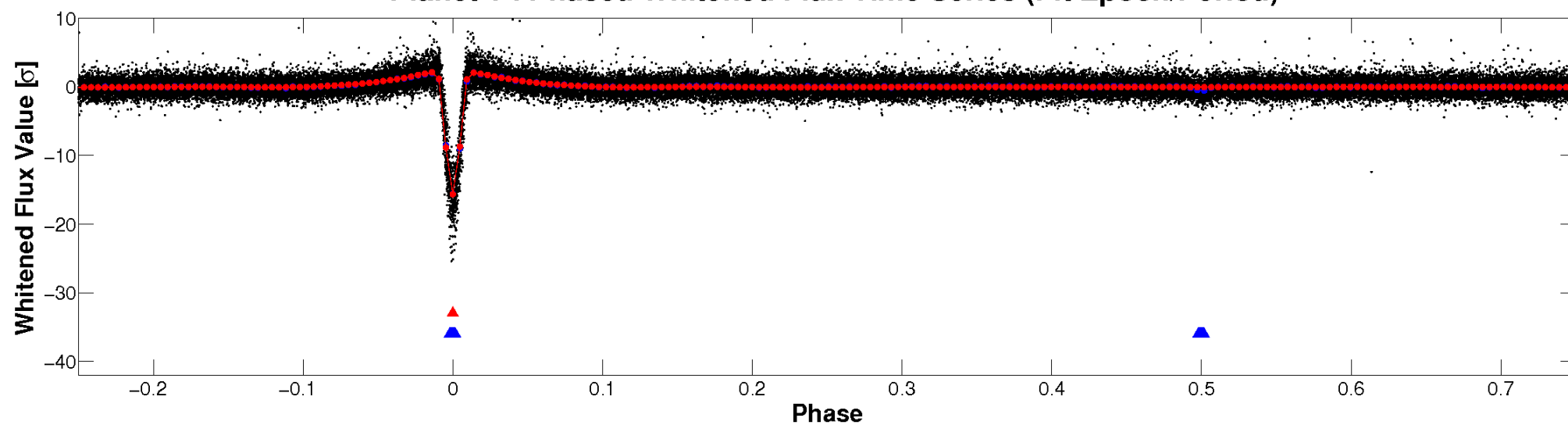


Non-Whitened Vs. Whitened Light Curve

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

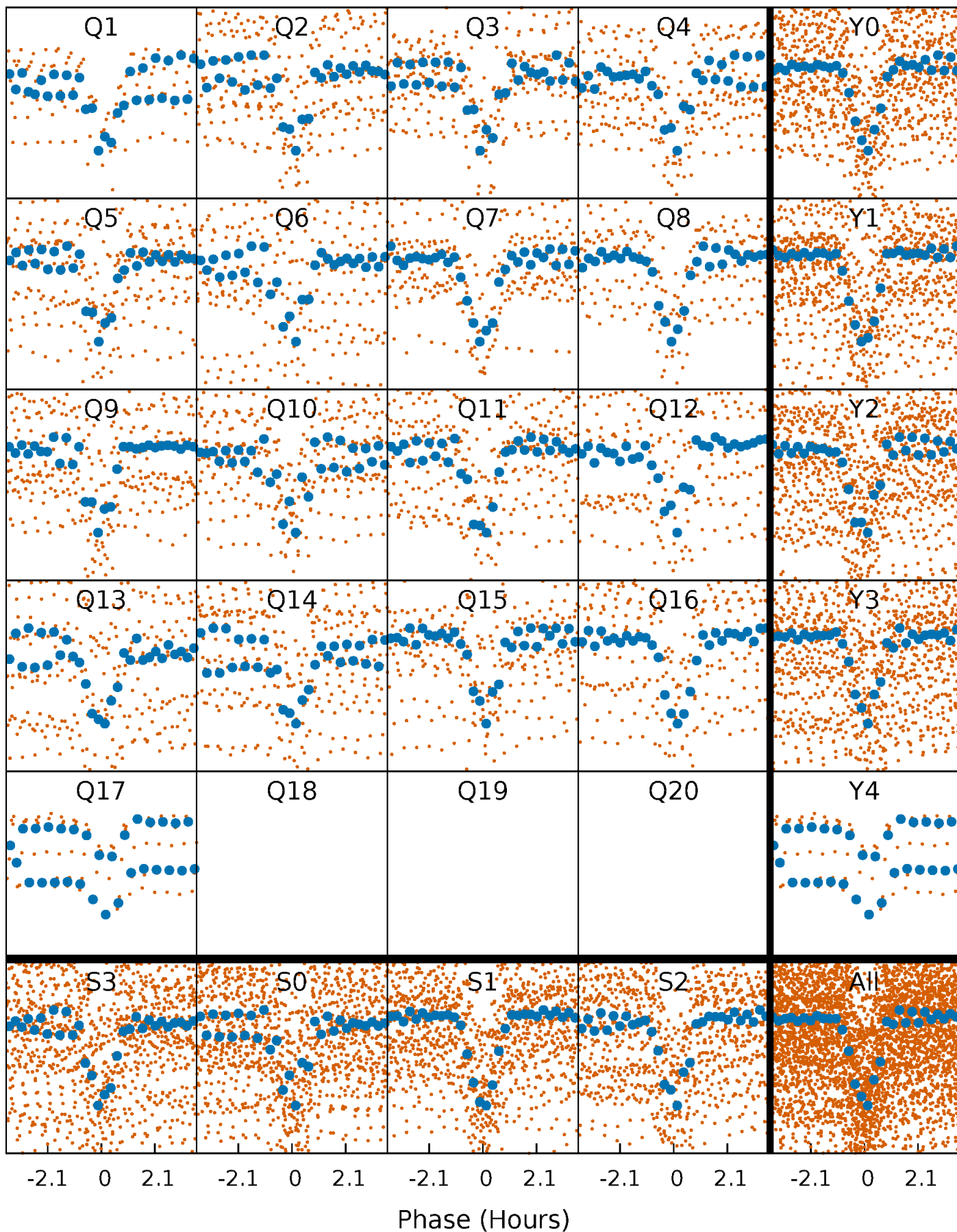


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



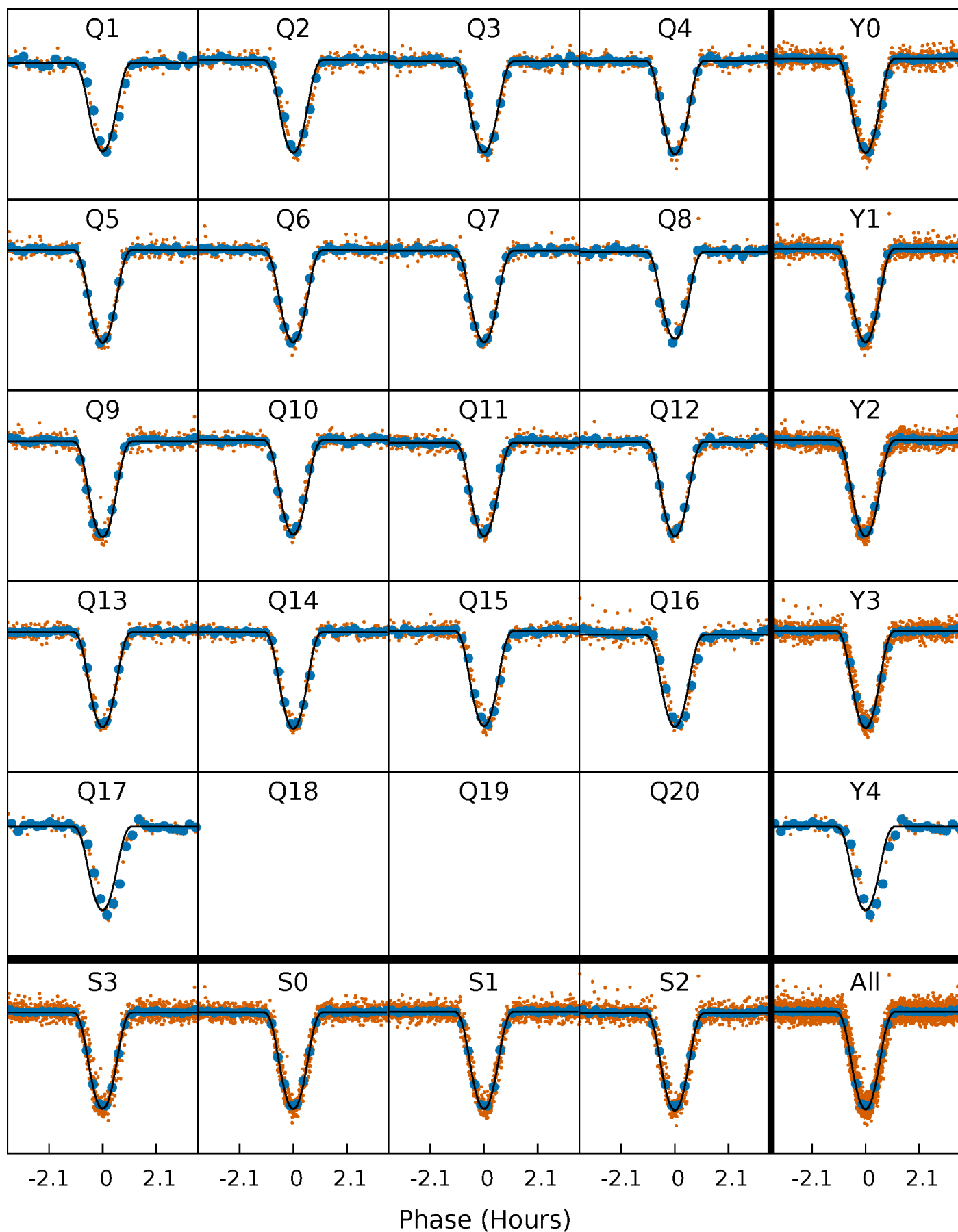
PDC Quarter-Phased Transit Curves

TCE 005608566-01 P= 4.396995 Days $T_0=132.450700$ (BKJD)



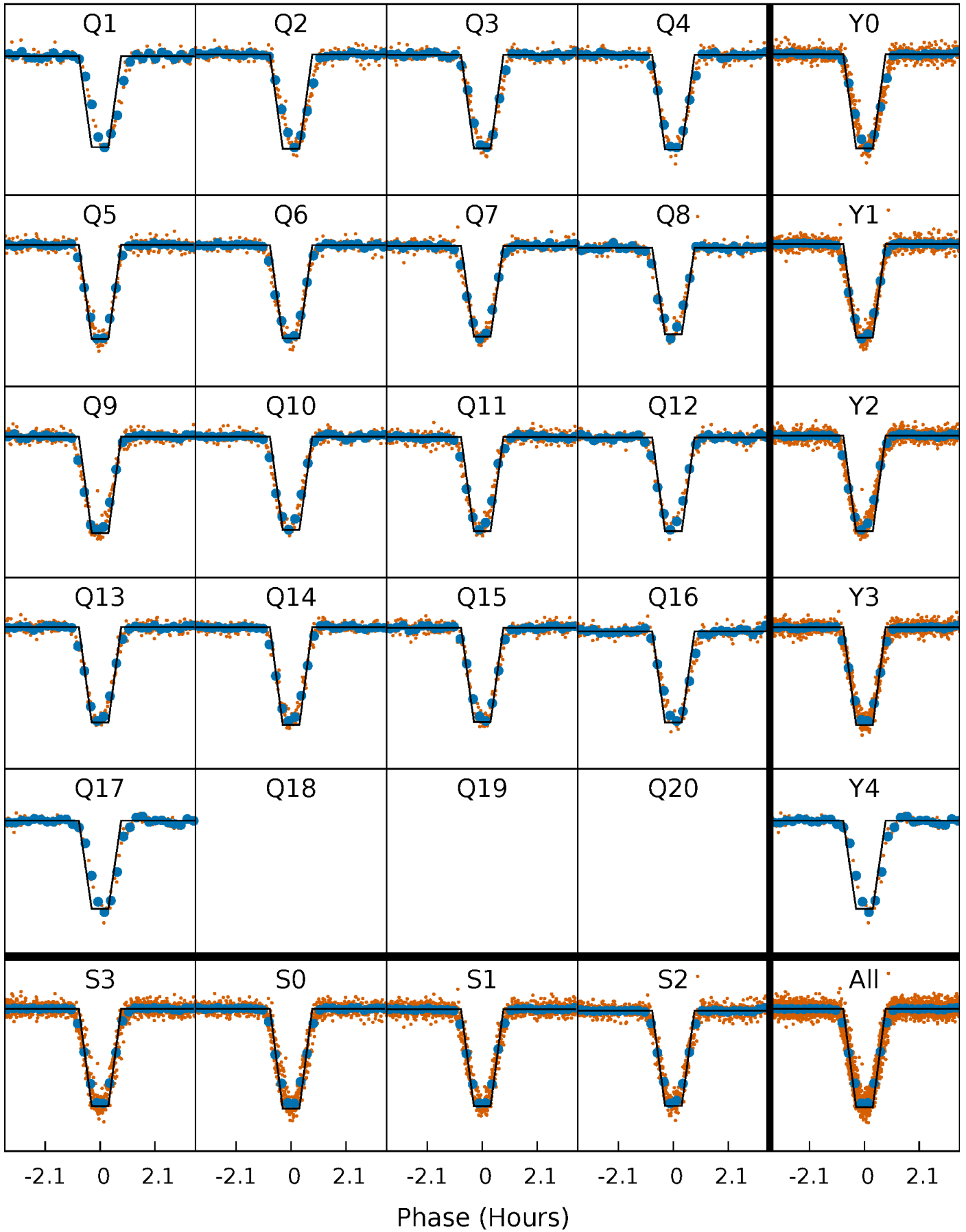
DV Quarter-Phased Transit Curves

TCE 005608566-01 P= 4.396995 Days $T_0=132.450700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

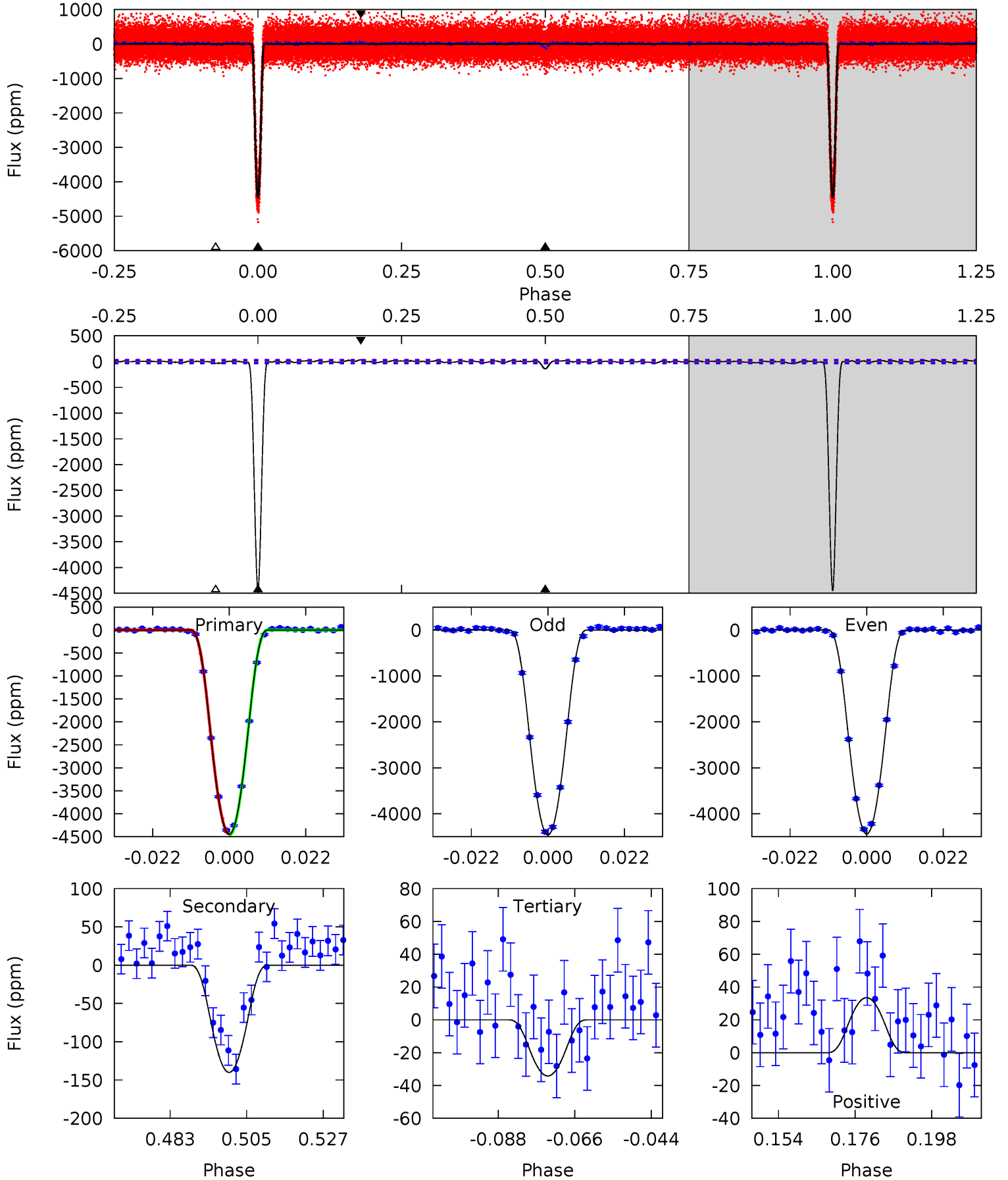
TCE 005608566-01 P= 4.397011 Days $T_0=132.448747$ (BKJD)



DV Model-Shift Uniqueness Test

005608566-01, P = 4.396995 Days, E = 128.053705 Days

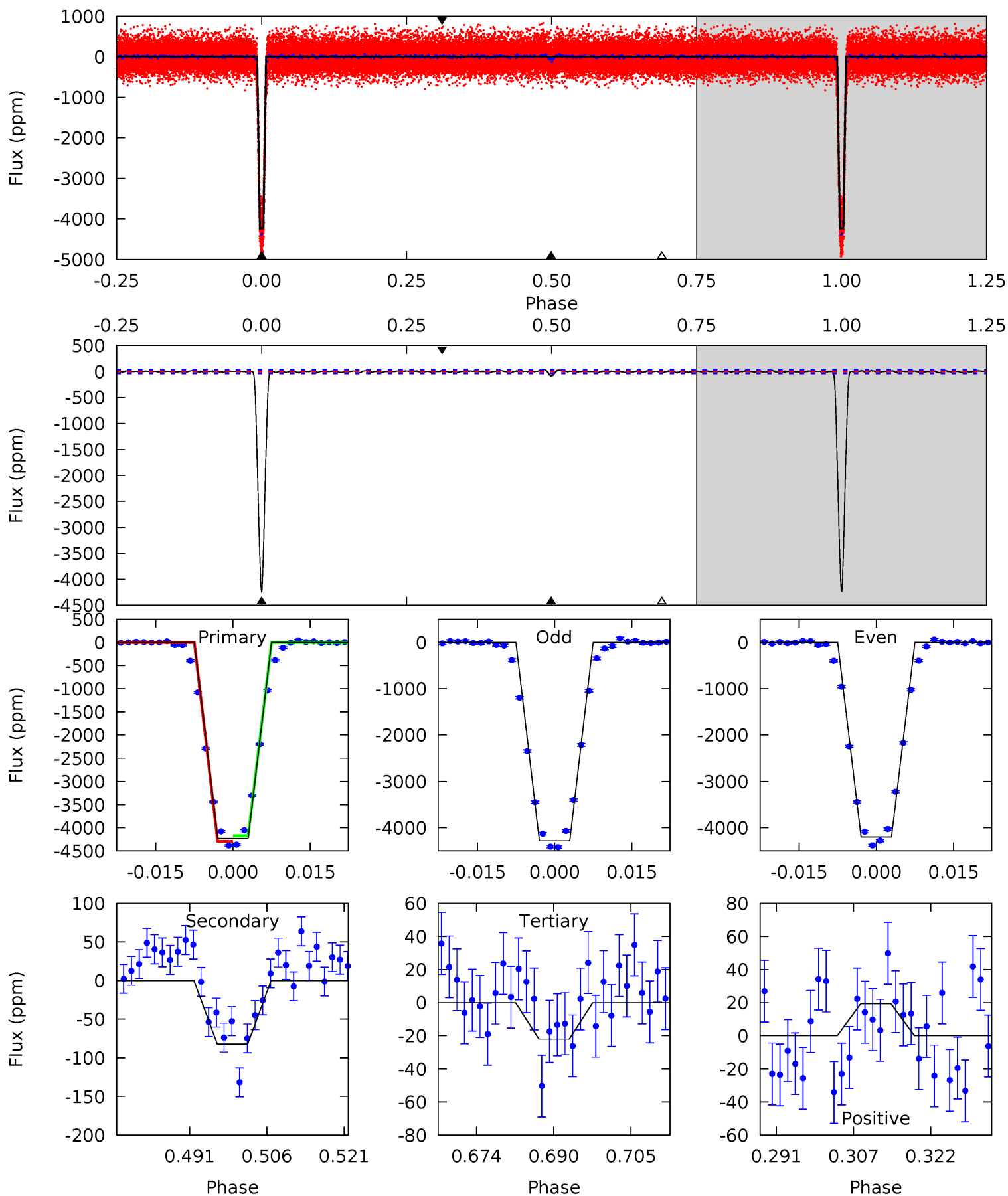
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
698.1	22.0	5.36	5.25	4.87	2.29	1.74	692.7	692.8	16.6	16.7	1.85	1.00	0.01	2.42



Alt Model-Shift Uniqueness Test

005608566-01, P = 4.397011 Days, E = 128.051736 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
607.7	11.8	3.16	2.77	4.94	2.42	1.16	604.5	604.9	8.64	9.03	5.70	1.00	0.01	8.79



Stellar Parameters For KIC 005608566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5949^{+176}_{-193}	$4.311^{+0.158}_{-0.193}$	$-0.080^{+0.300}_{-0.300}$	$1.156^{+0.333}_{-0.222}$	$0.998^{+0.152}_{-0.124}$	$0.910^{+0.678}_{-0.443}$
	+3%/-3%	+4%/-4%	+375%/-375%	+29%/-19%	+15%/-12%	+74%/-49%
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 005608566-01 / KOI 0609.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-140 ± 6	$12.28^{+2.37}_{-2.02}$	1727^{+134}_{-111}	2736^{+108}_{-116}	$1.424^{+0.572}_{-0.423}$
Alt.	-82 ± 7	$8.59^{+1.96}_{-1.69}$	1728^{+131}_{-109}	2814^{+173}_{-148}	$1.700^{+0.895}_{-0.558}$

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 $A_{obs} \gg 1.0$

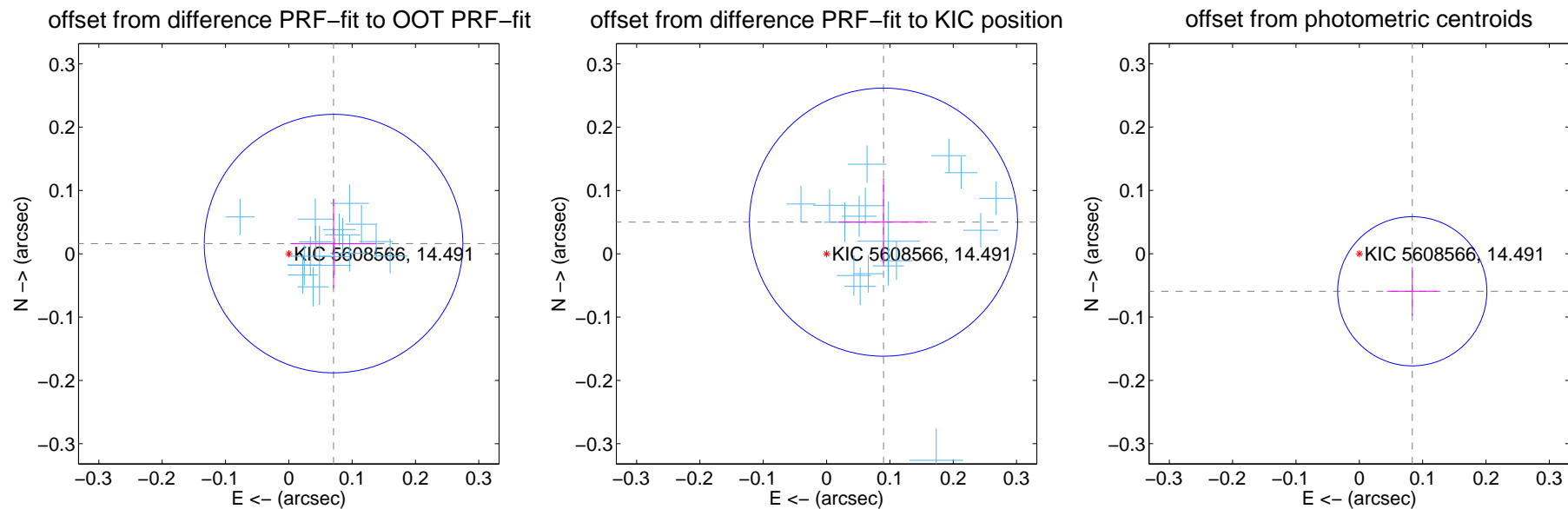
DV Centroid Data

Supplemental centroid analysis for 005608566-01. Kepler magnitude: 14.49. Transit SNR 347.13

There are 17 quarters with good PRF difference image offsets

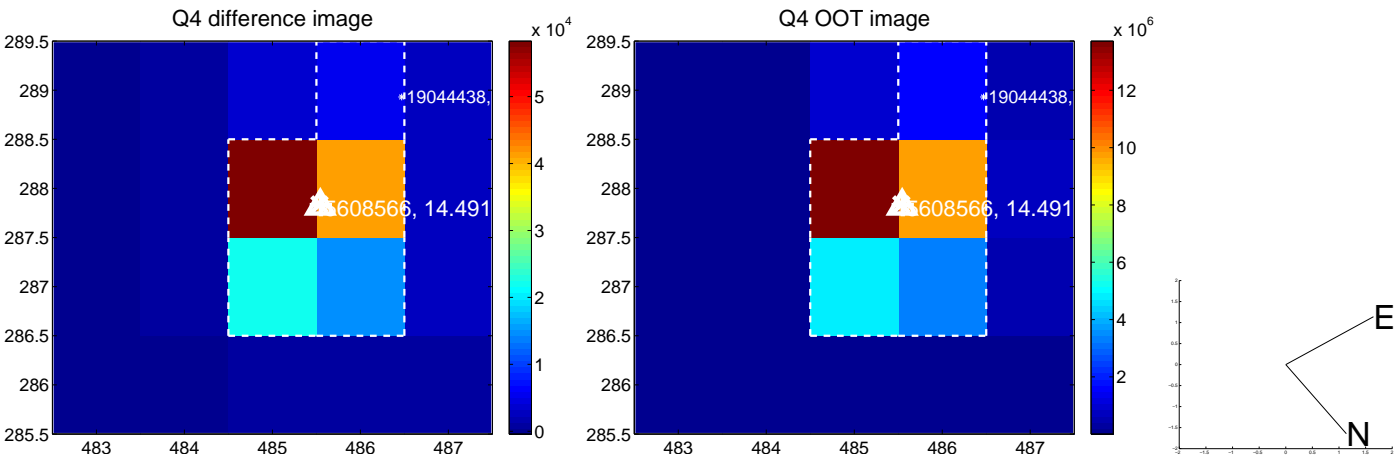
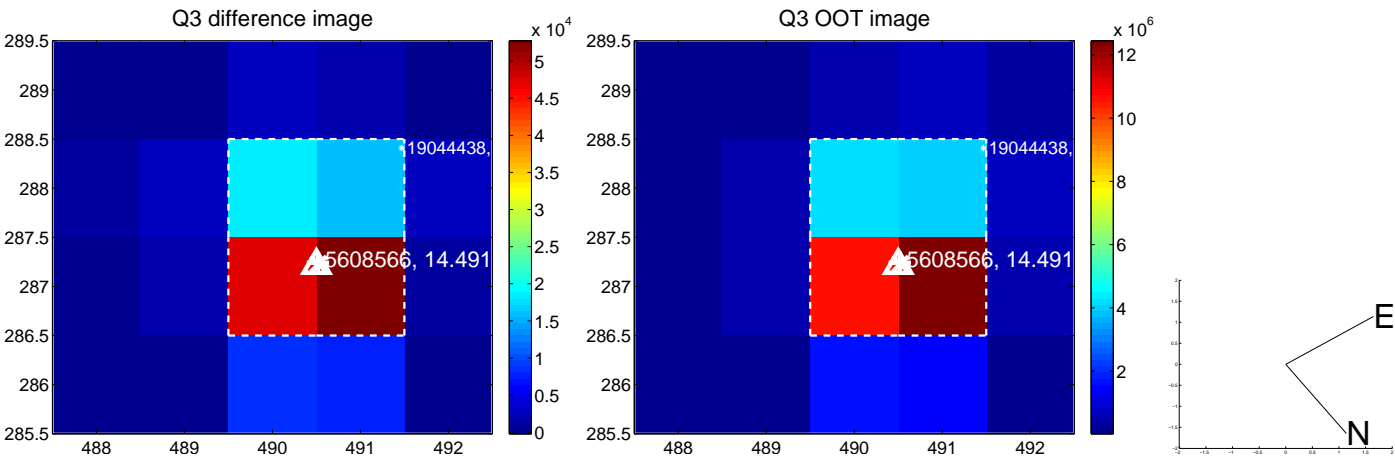
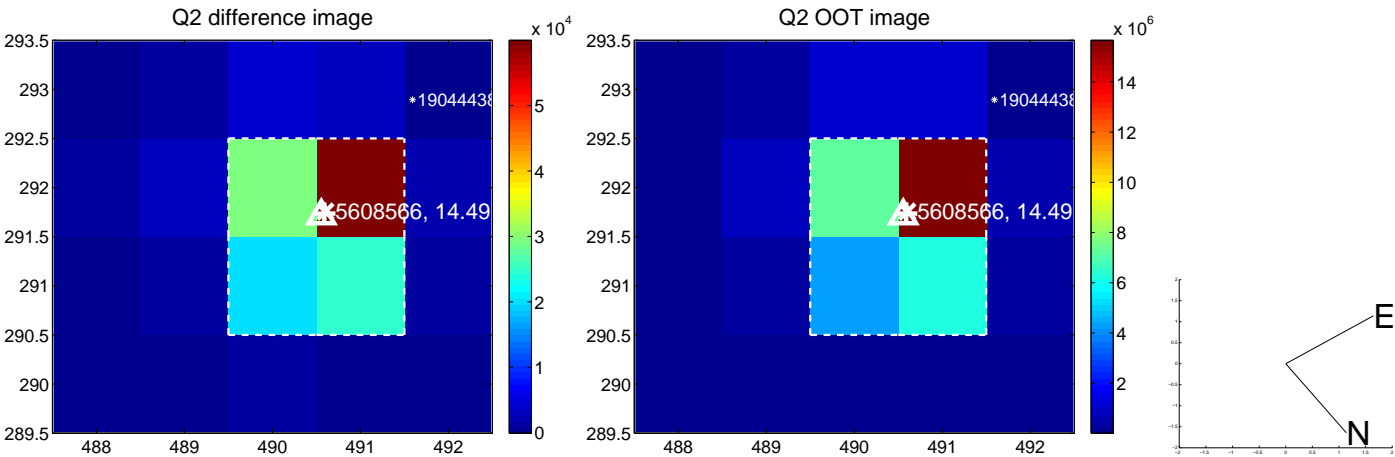
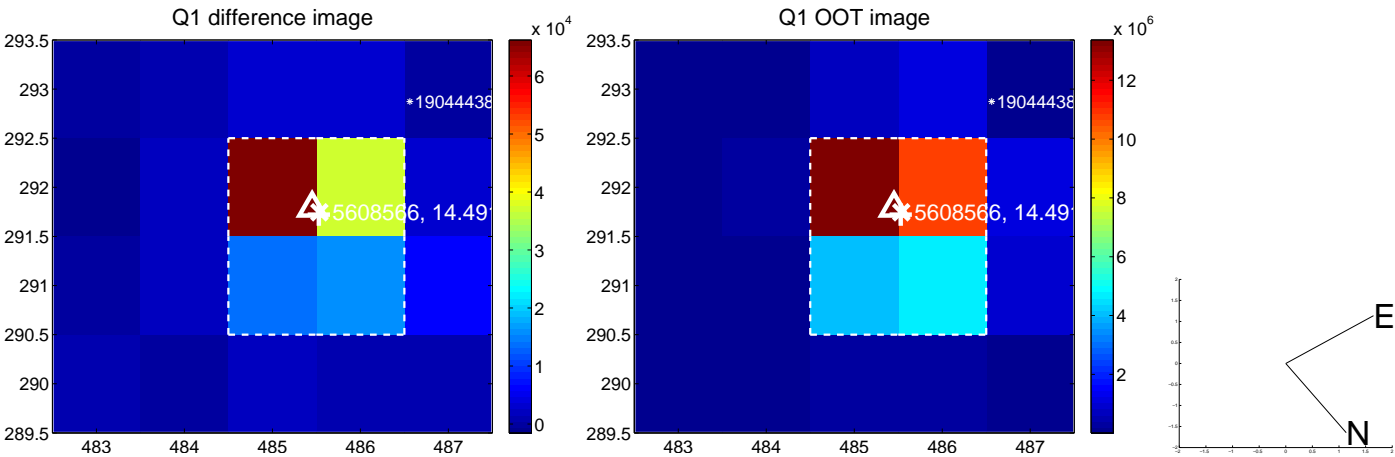
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.072 ± 0.068	1.06	-0.071 ± 0.068	0.016 ± 0.071
PRF-fit source offset from KIC position	0.103 ± 0.071	1.46	-0.090 ± 0.071	0.050 ± 0.070
photometric centroid source offset	0.10 ± 0.04	2.61	-0.08 ± 0.04	-0.06 ± 0.04

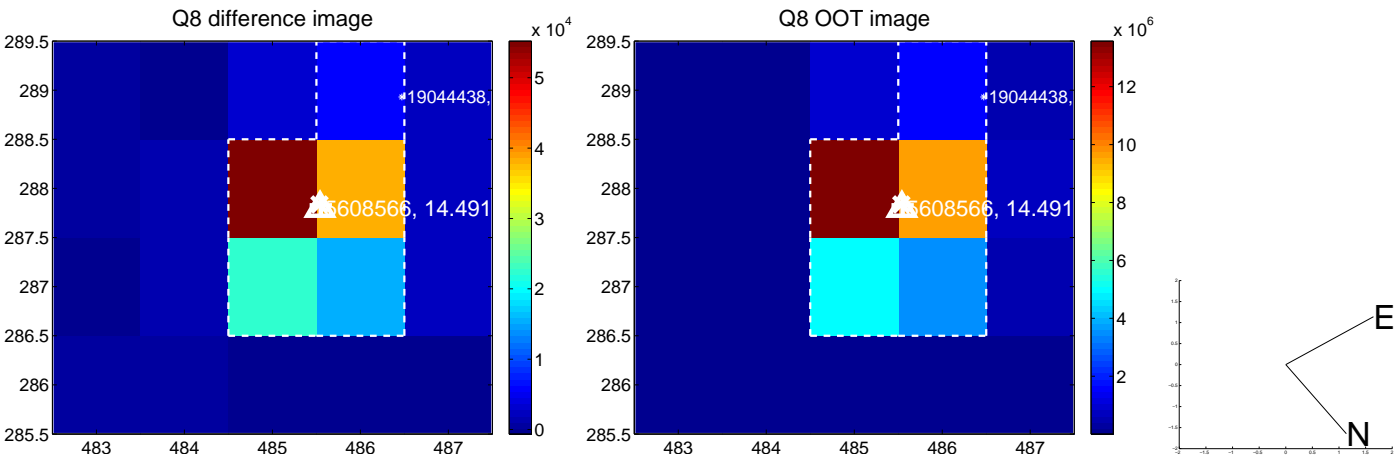
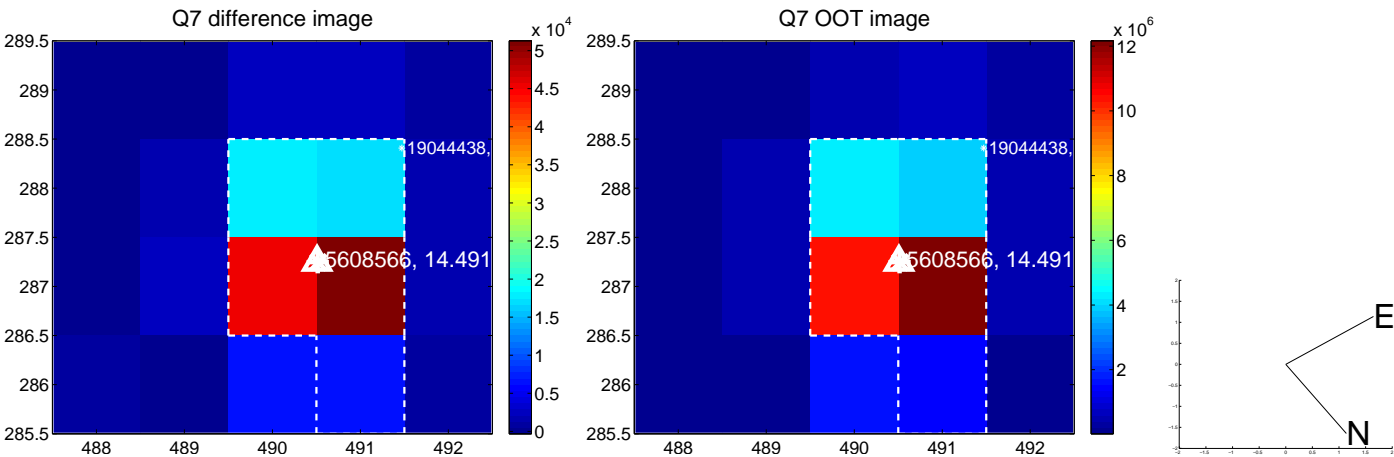
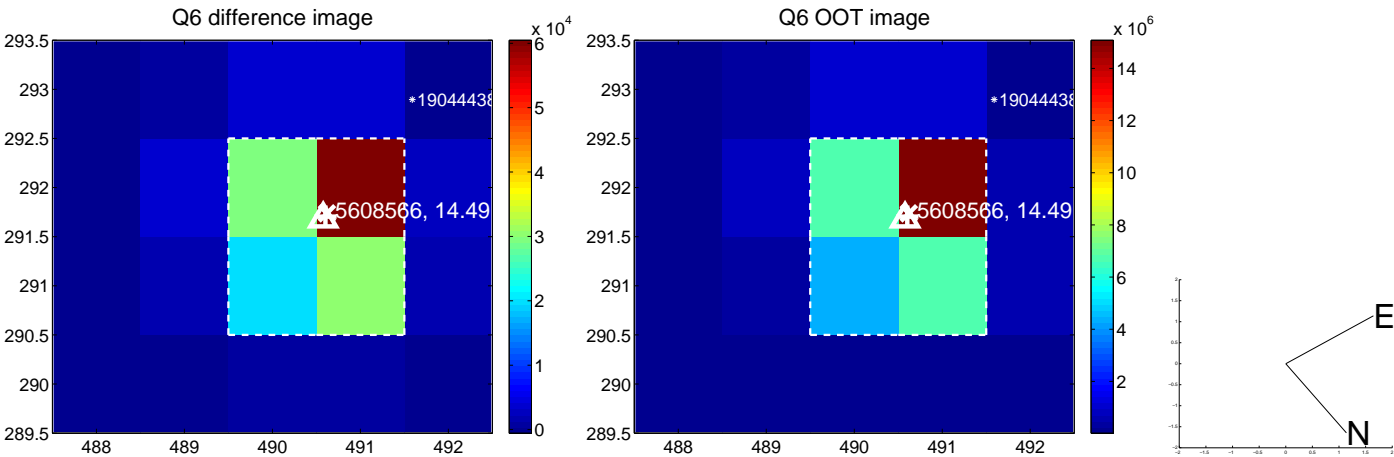
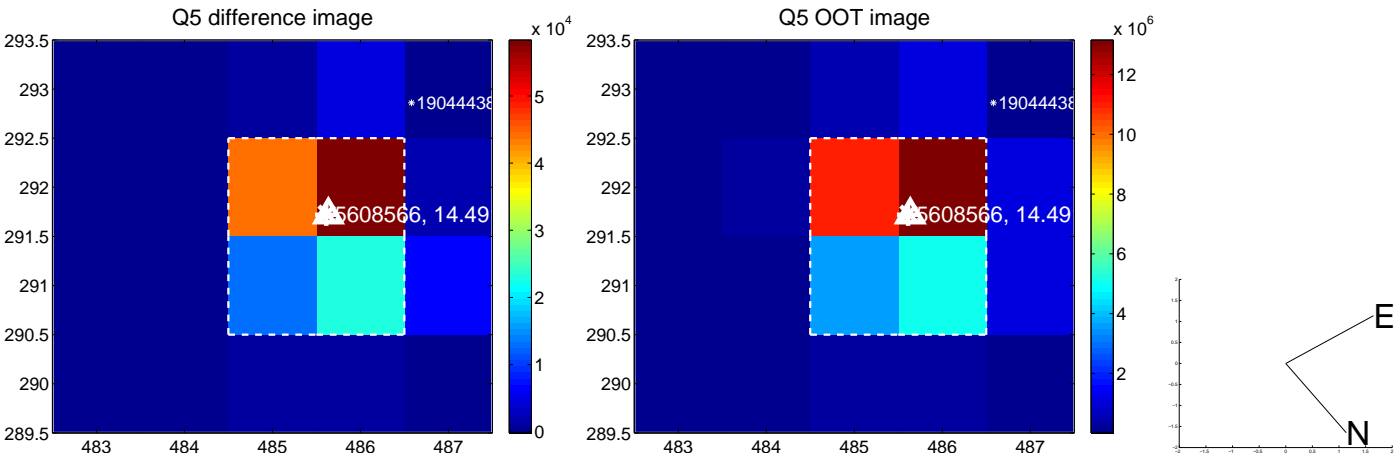


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

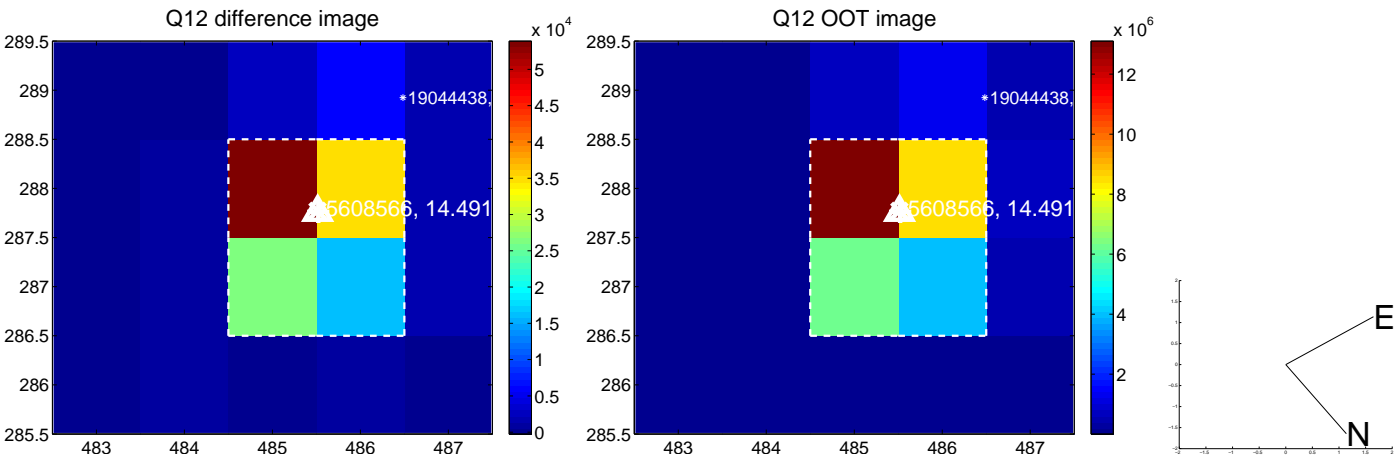
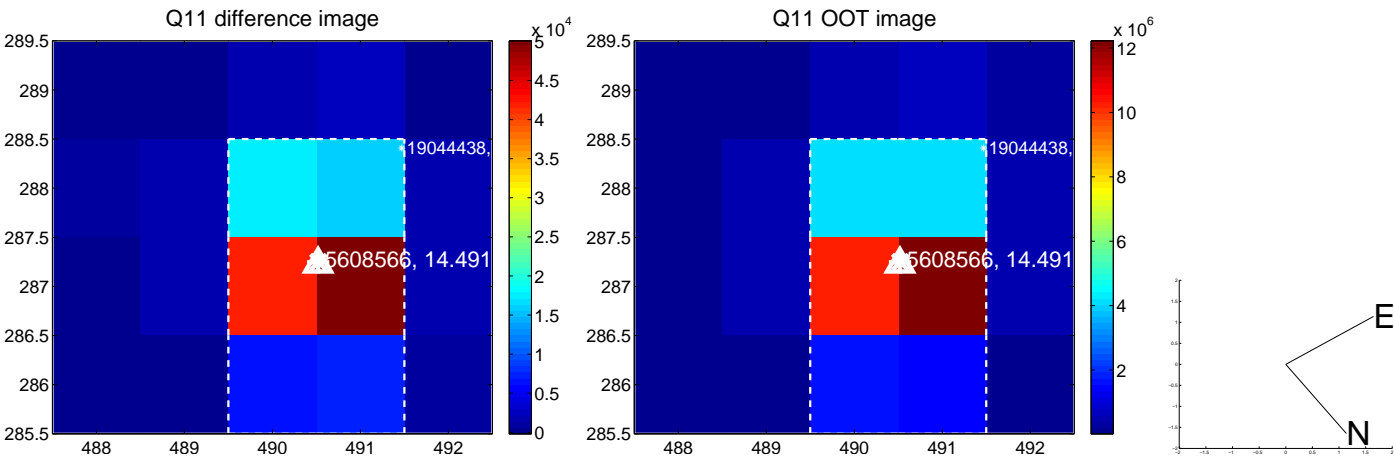
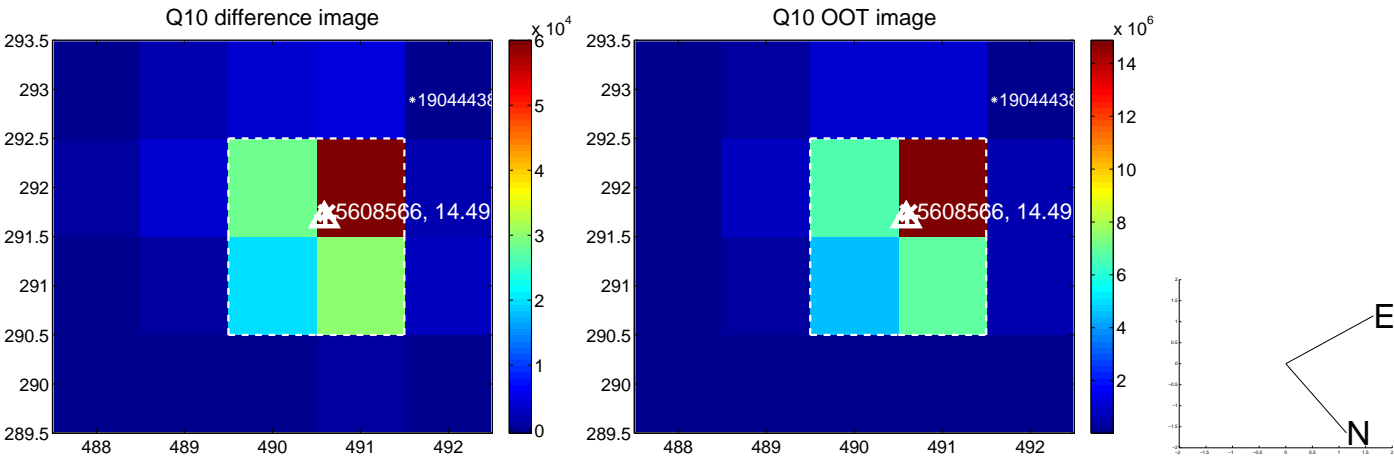
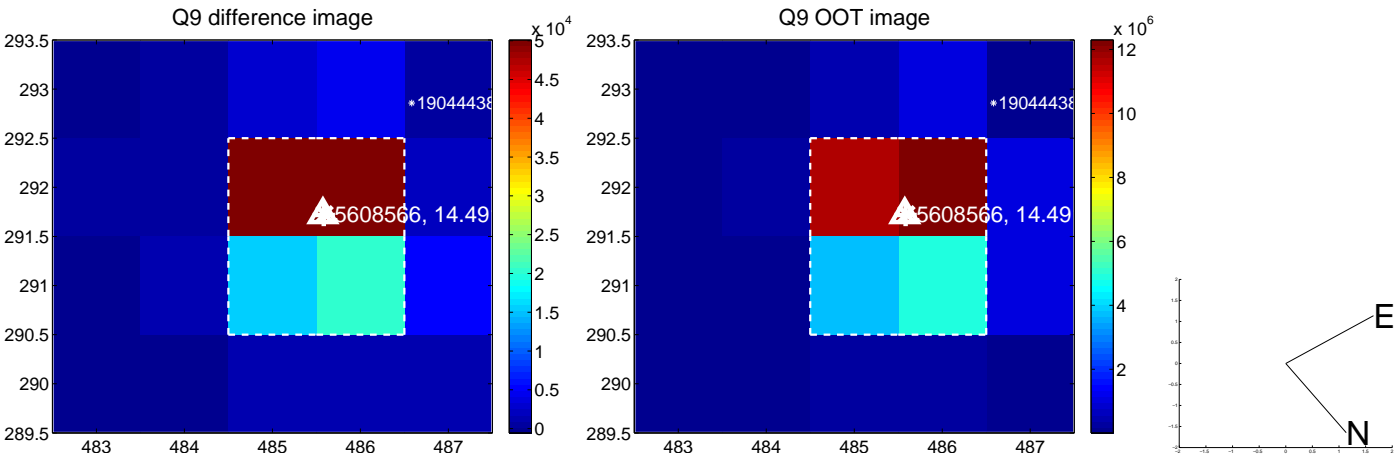
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



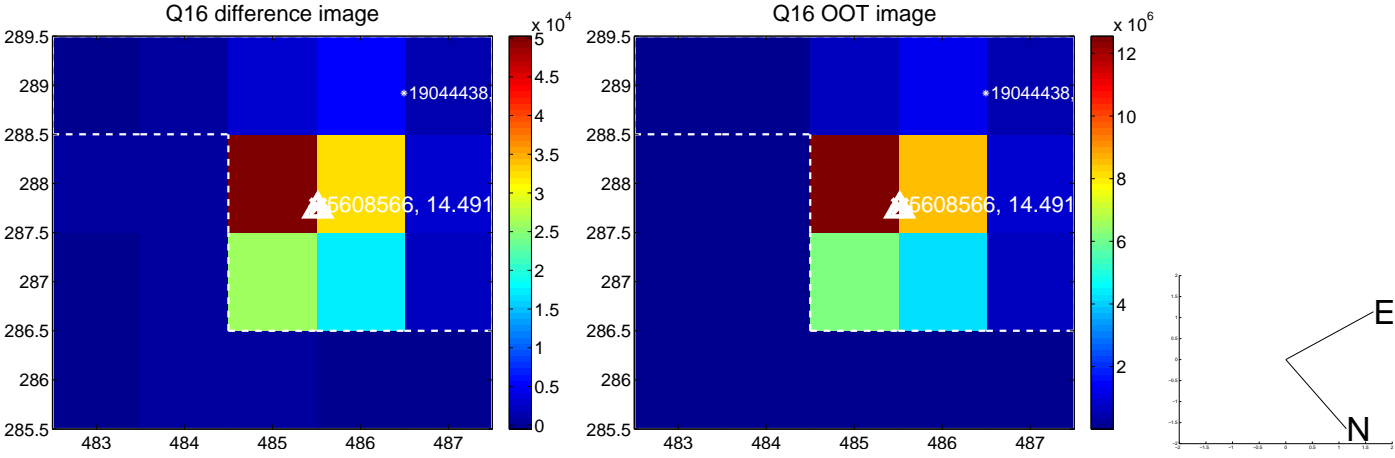
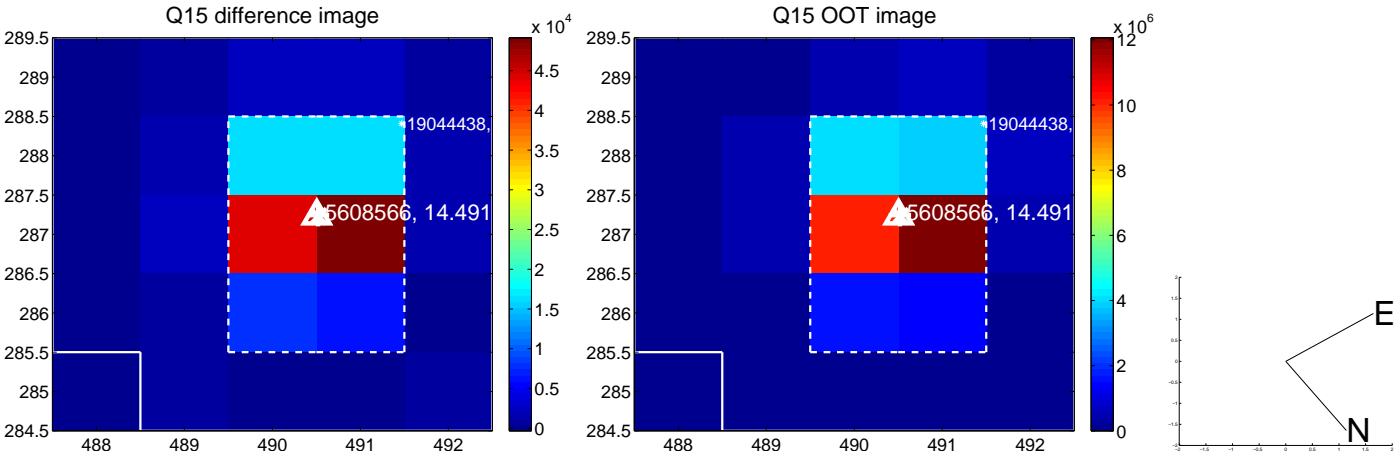
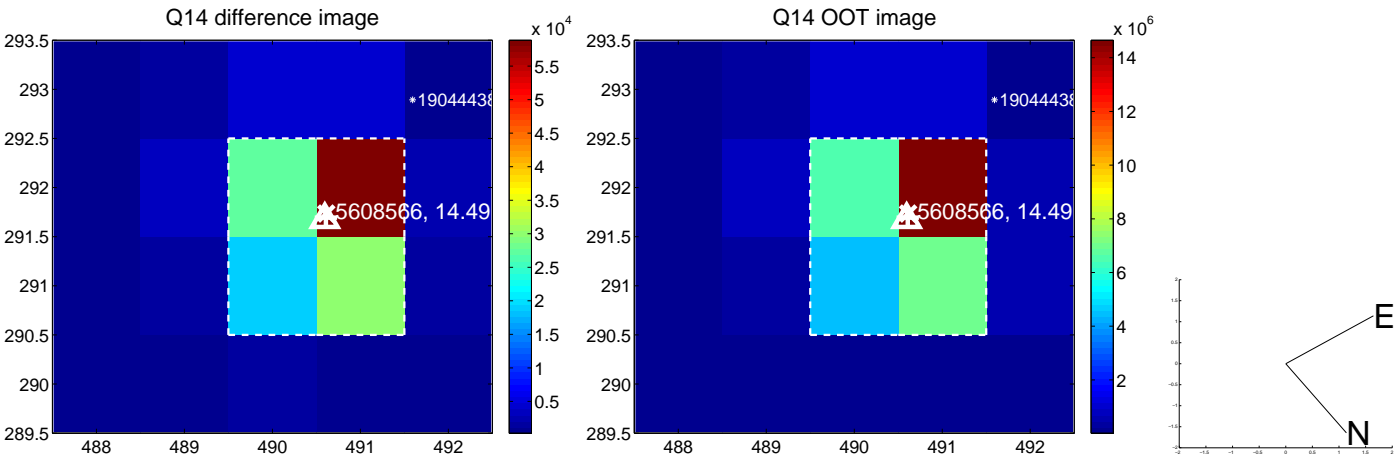
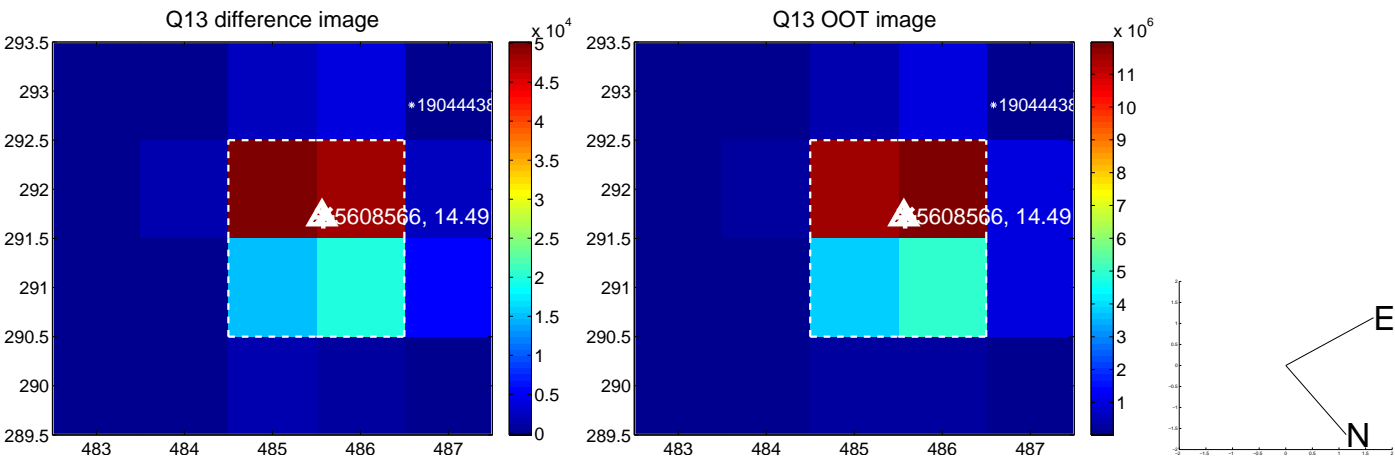
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



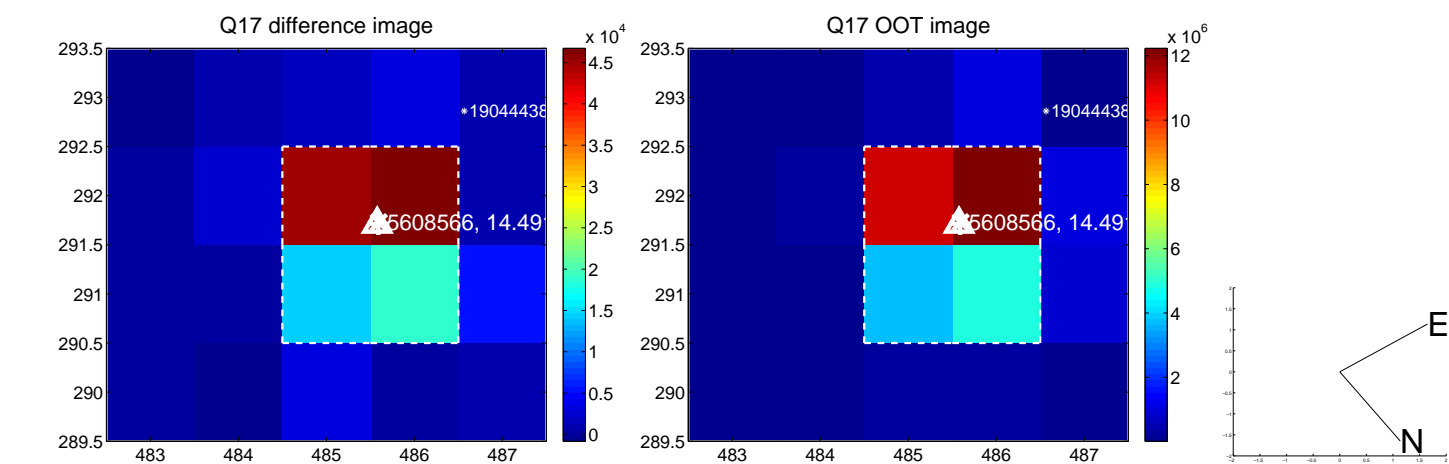
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



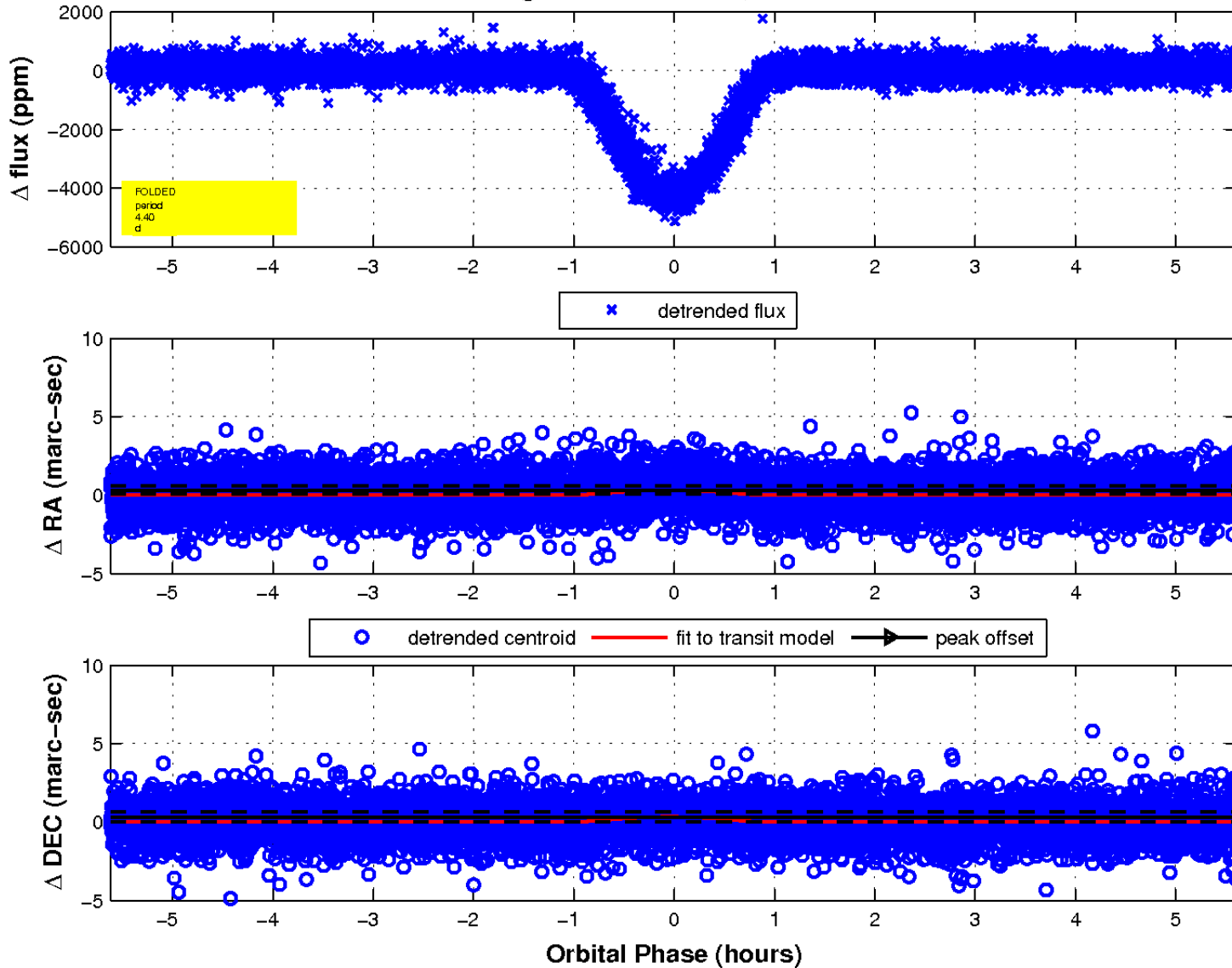
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

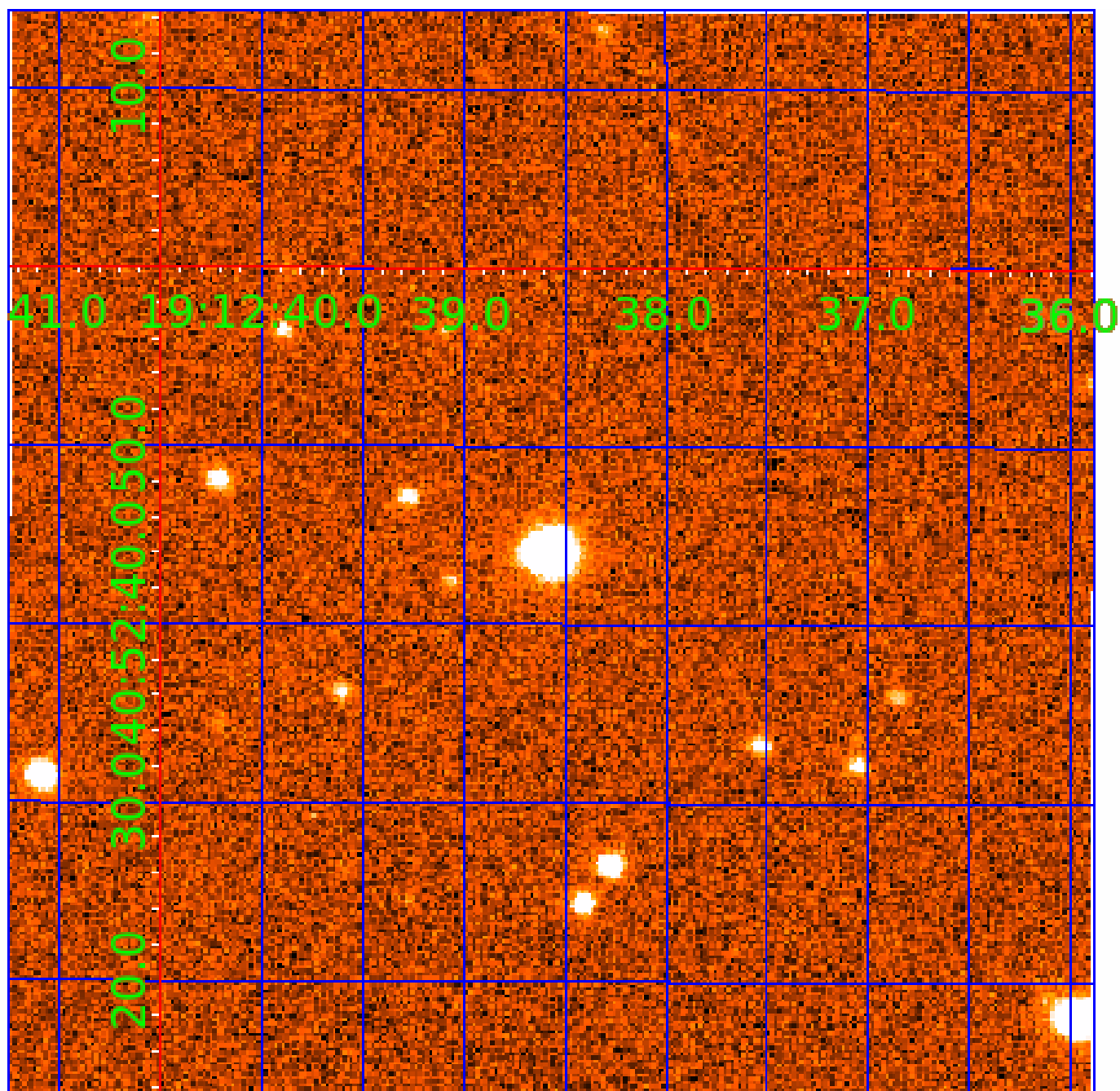


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005608566

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})
005608566-01	OBS	0609.01	4.396995	132.450700	4467.5	1.873	369.1	347.1	1.16	5949	12.10	544.21
005608566-02	OBS	No	2.198521	132.442191	145.2	1.428	11.8	13.3	1.16	5949	1.65	1371.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005608566-01	OBS	FP	0.02	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005608566-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 005608566-02

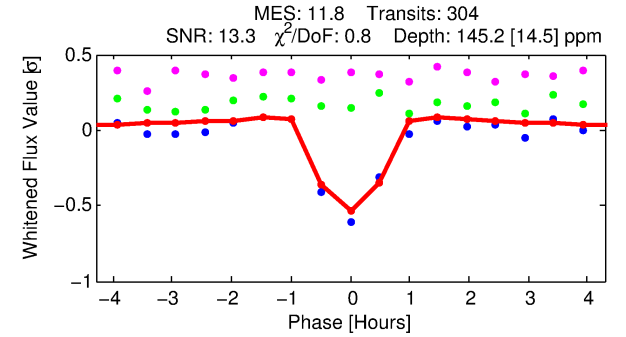
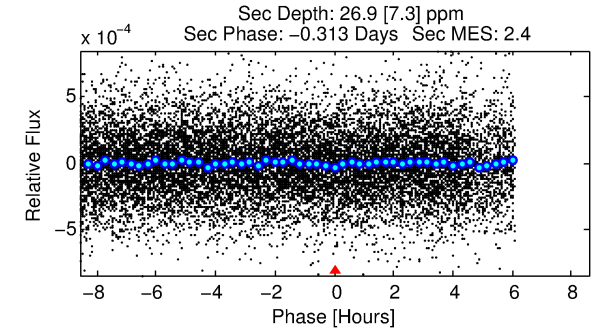
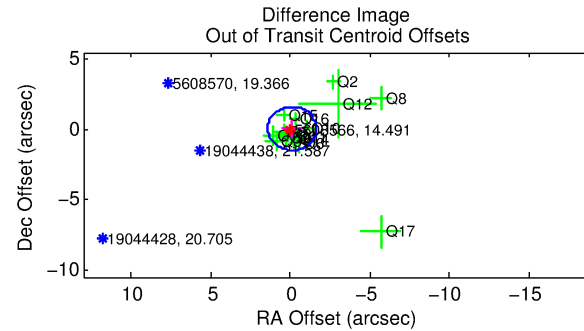
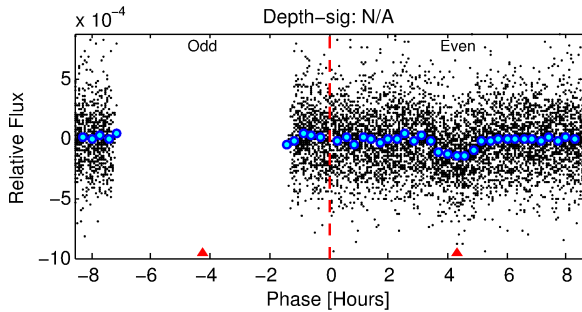
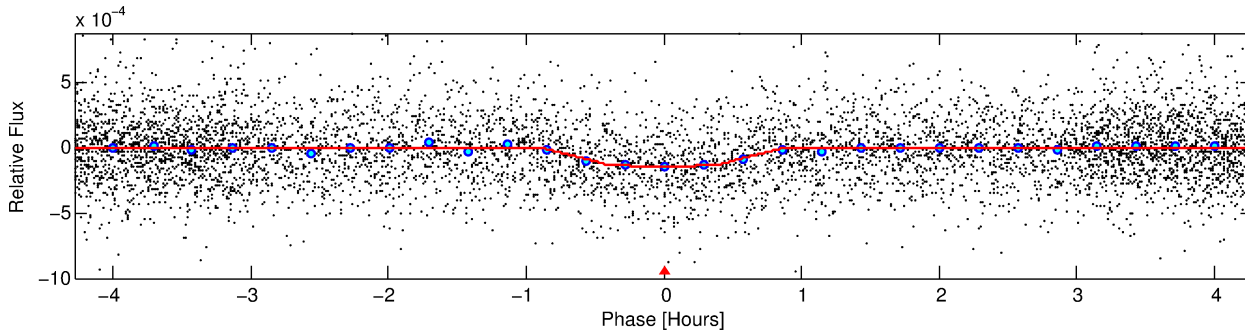
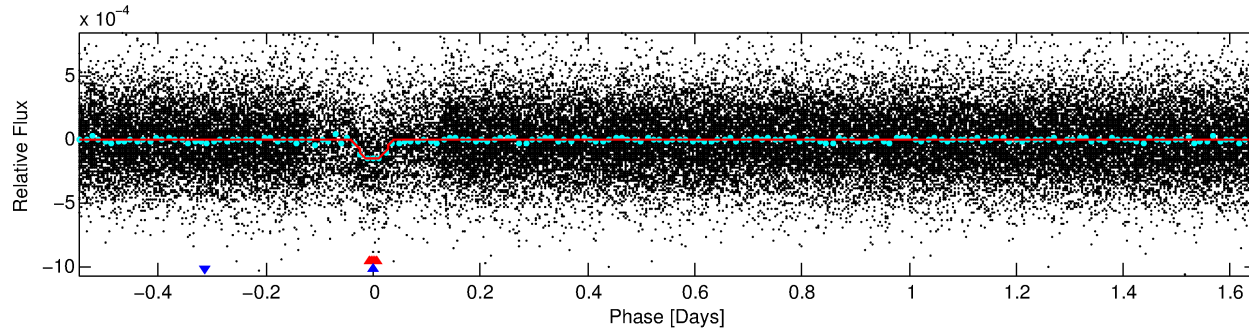
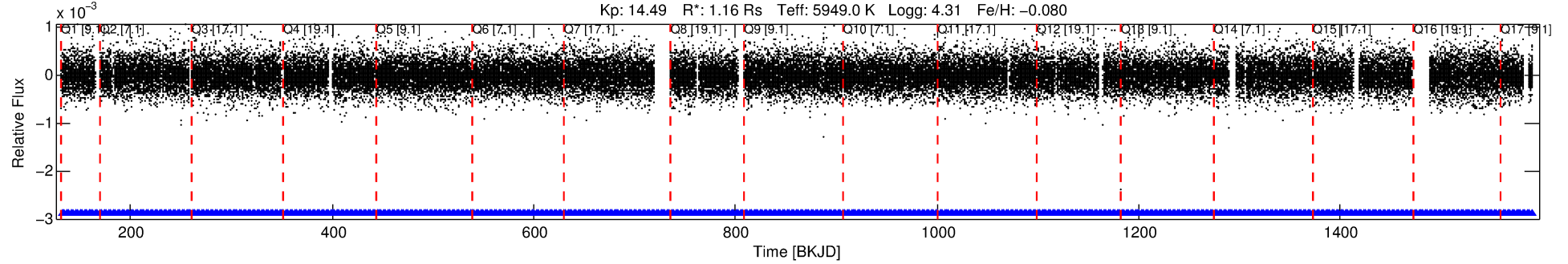
No Significant Match Found

DV One-Page Summary

KIC: 5608566 Candidate: 2 of 2 Period: 2.199 d

KOI: K00609 Corr: No Ephemeris Match

Kp: 14.49 R*: 1.16 Rs Teff: 5949.0 K Logg: 4.31 Fe/H: -0.080



DV Fit Results:

Period = 2.19852 [0.00001] d
Epoch = 132.4422 [0.0016] BKJD
Rp/R* = 0.0131 [0.0056]
a/R* = 5.61 [11.73]
b = 0.90 [0.48]
Seff = 1371.31 [515.83]
Teq = 1552 [146] K
Rp = 1.65 [0.85] Re
a = 0.0331 [0.0080] AU
Ag = 5.95 [5.75] [0.86σ]
Teffp = 3747 [852] K [2.54σ]

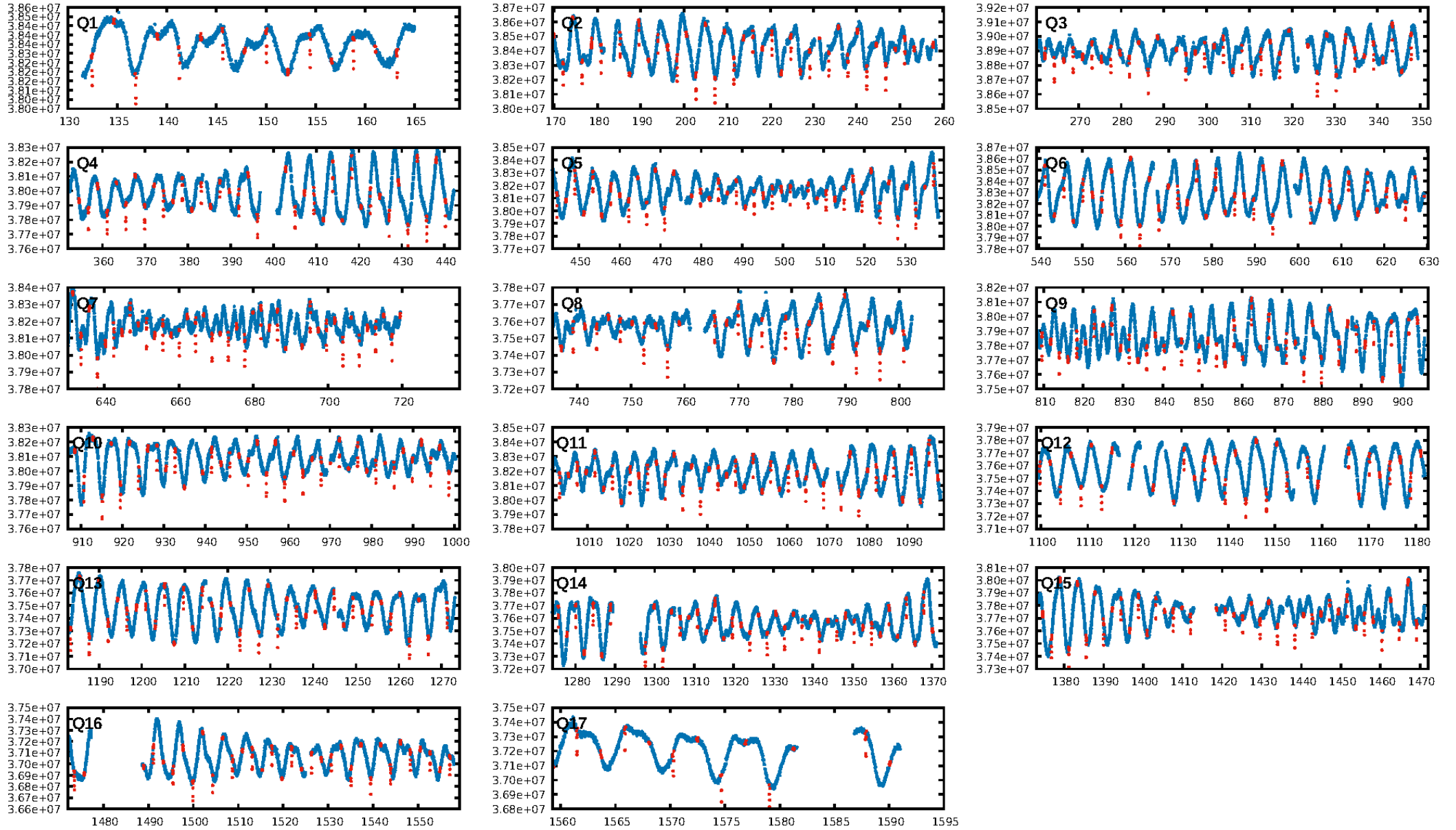
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [22.40σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.48e-31
RollingBand-fgt: 1.00 [290/290]
GhostDiagnostic-chr: 6.366
Centroid-sig: 0.0%
Centroid-so: 2.033 arcsec [2.68σ]
OotOffset-rm: 0.147 arcsec [0.29σ]
KicOffset-rm: 0.176 arcsec [0.33σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 1.00 [17/17]

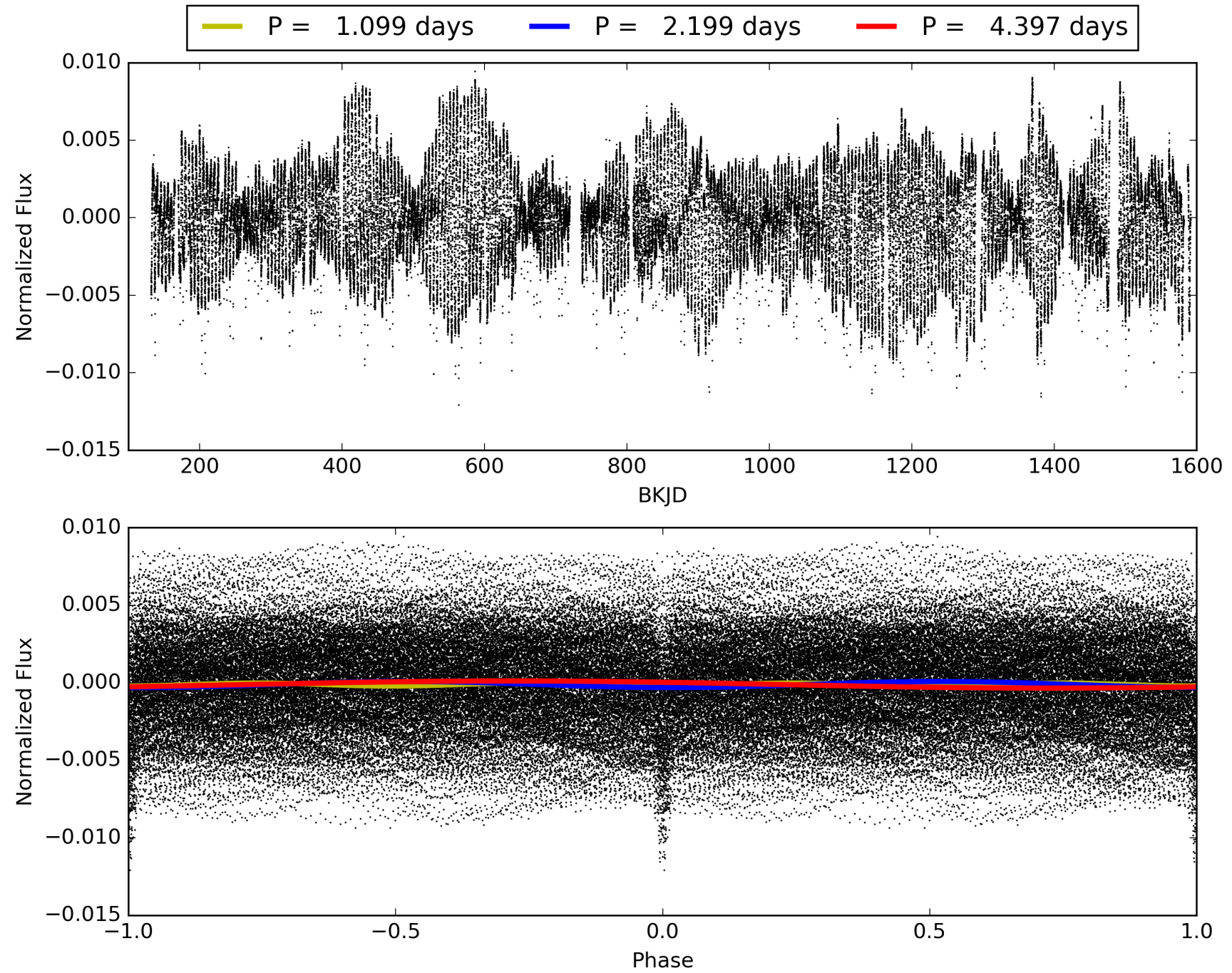
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005608566-02, PDC Light Curves

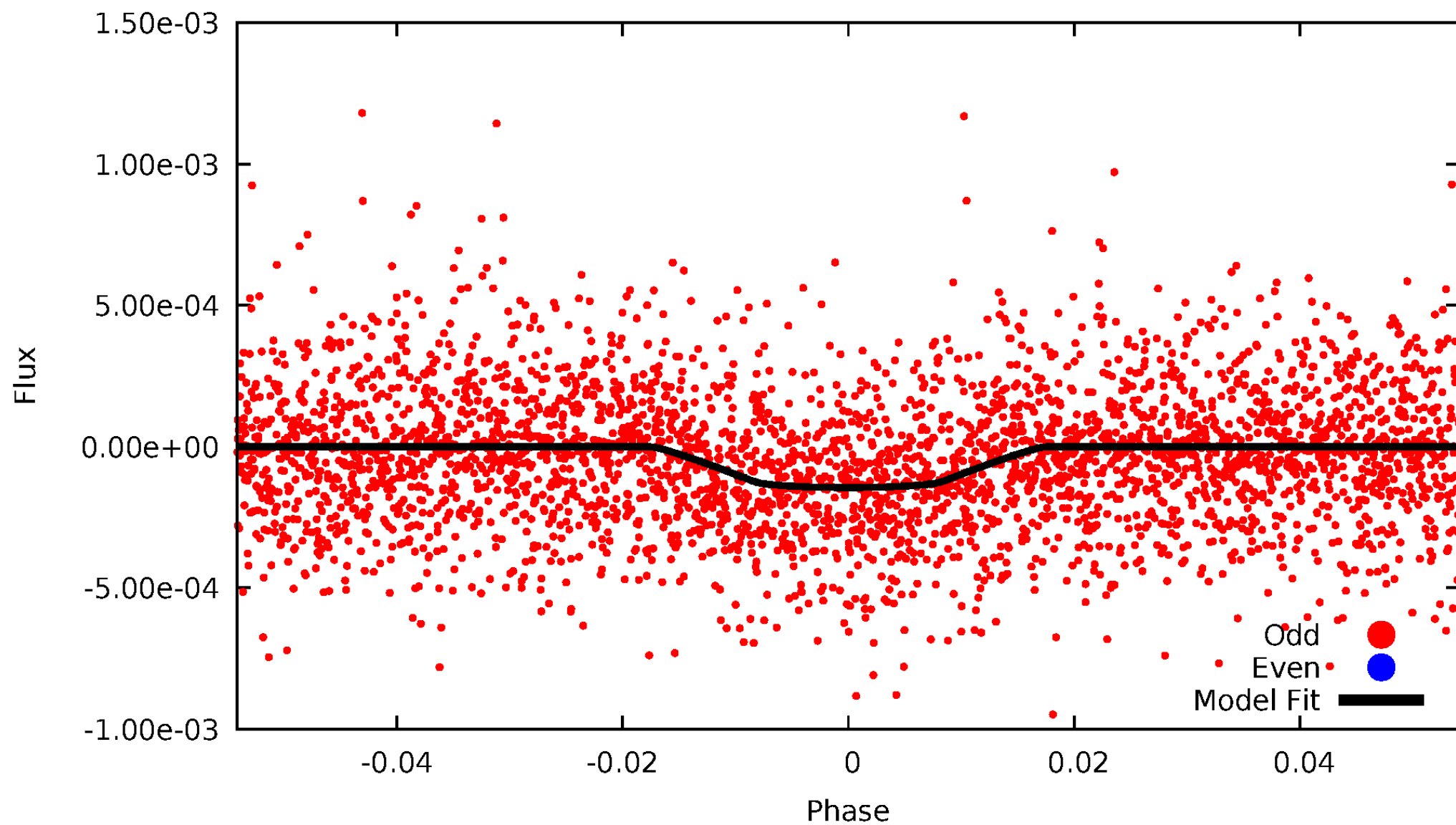


TCE 005608566-02



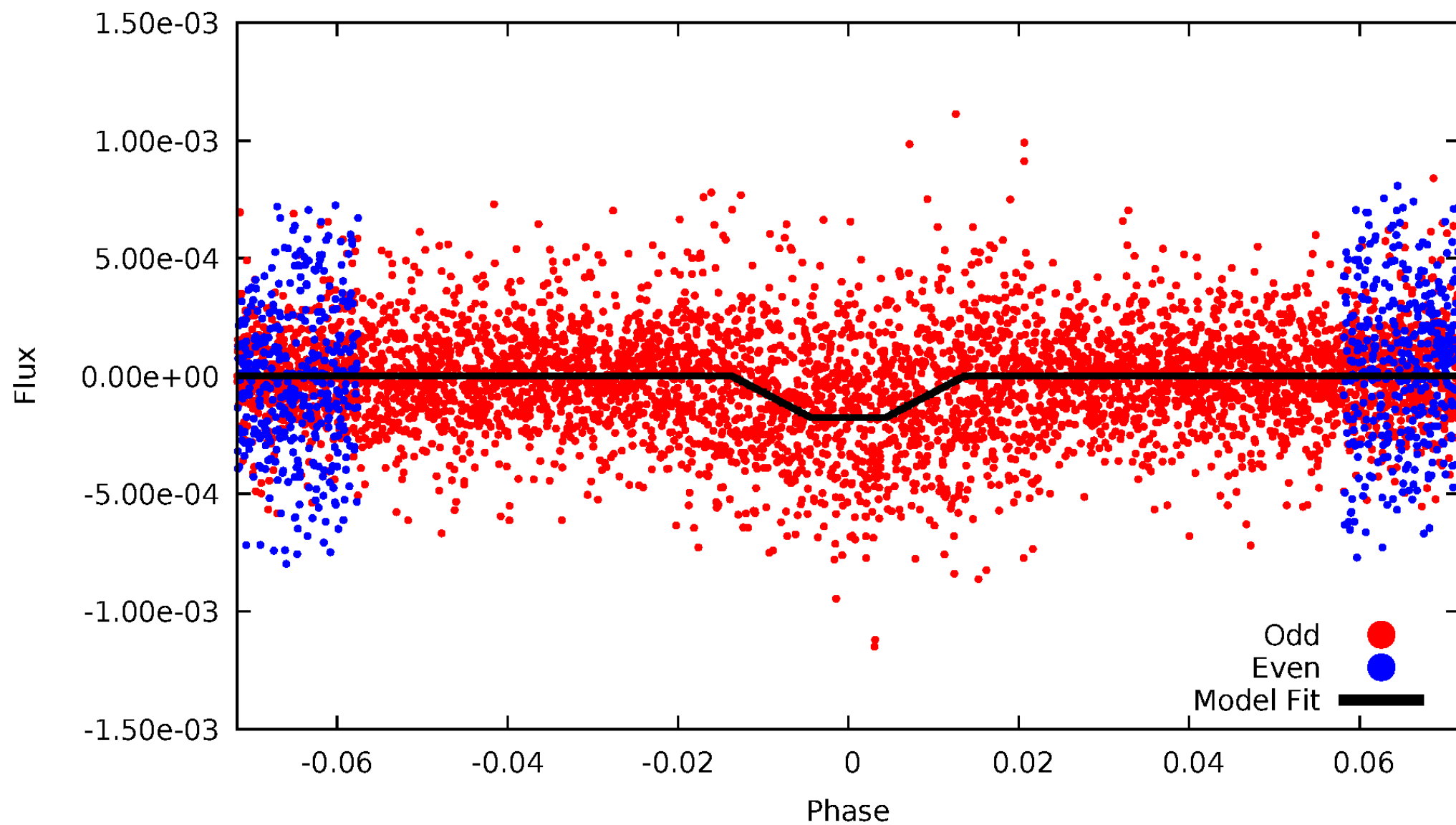
DV Odd/Even

TCE 005608566-02



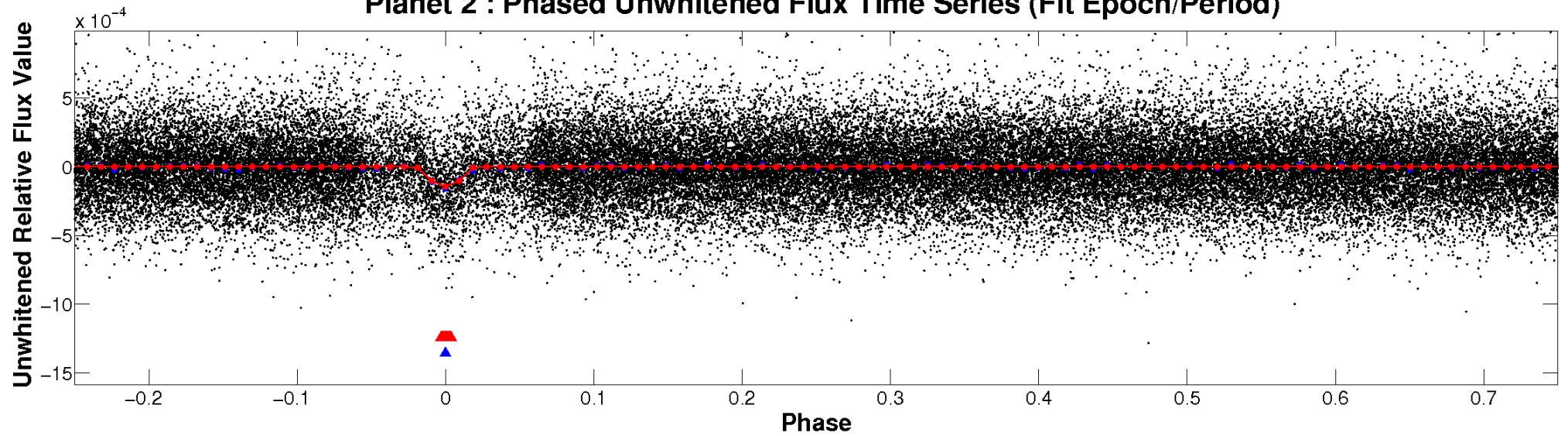
ALT Odd/Even

TCE 005608566-02

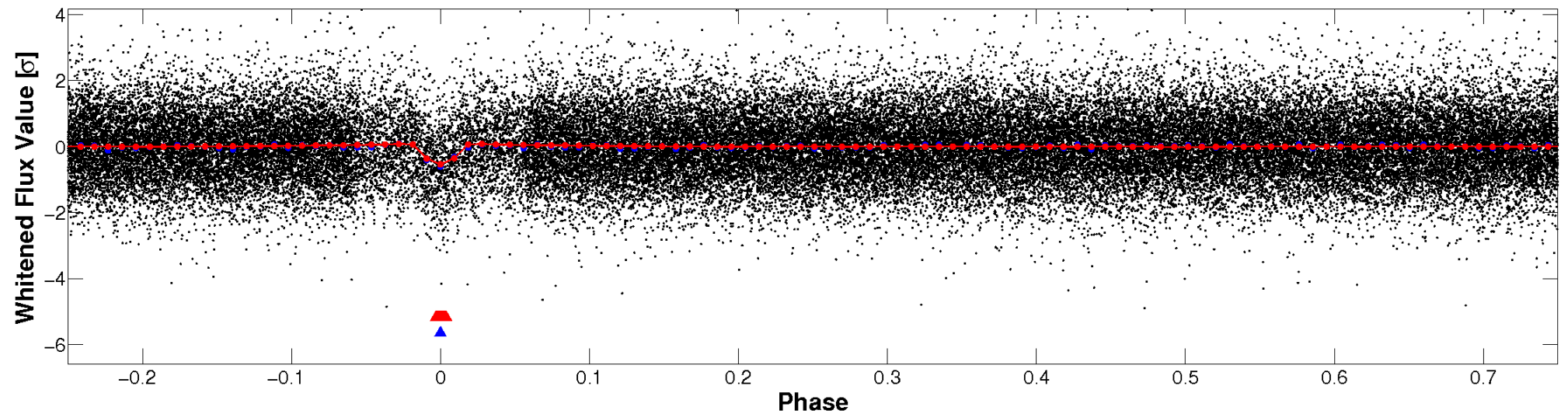


Non-Whitened Vs. Whitened Light Curve

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

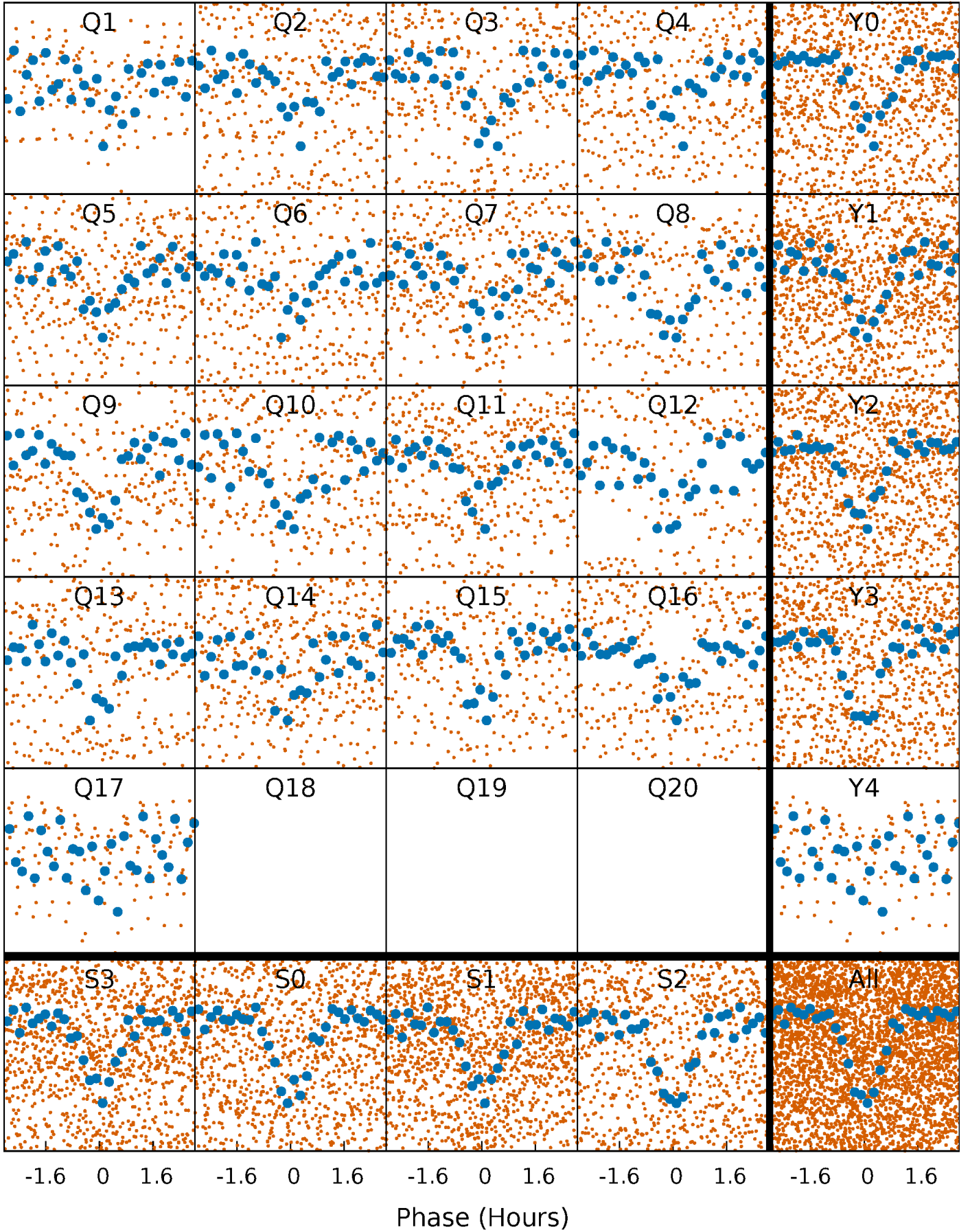


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



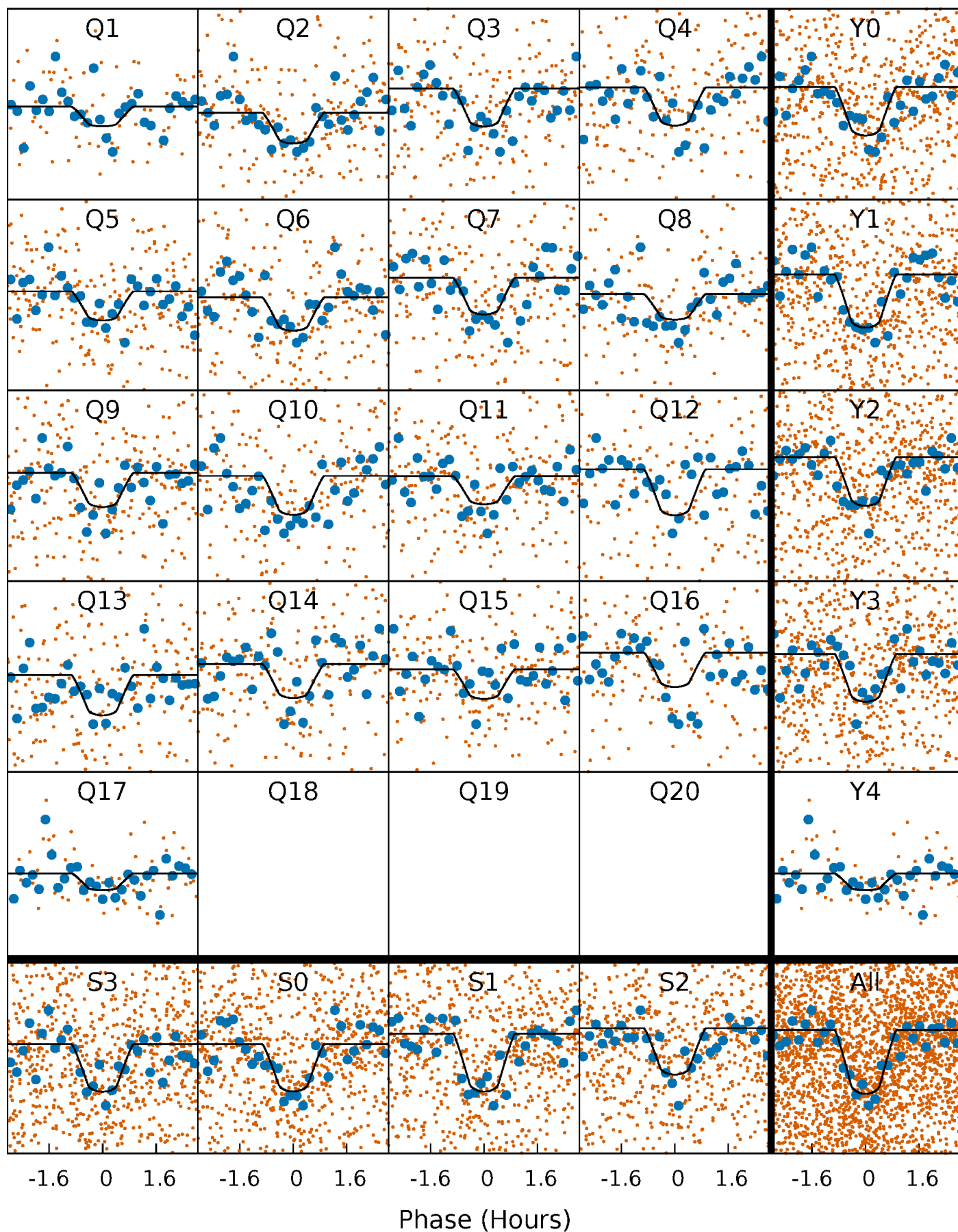
PDC Quarter-Phased Transit Curves

TCE 005608566-02 P= 2.198521 Days $T_0=132.442191$ (BKJD)



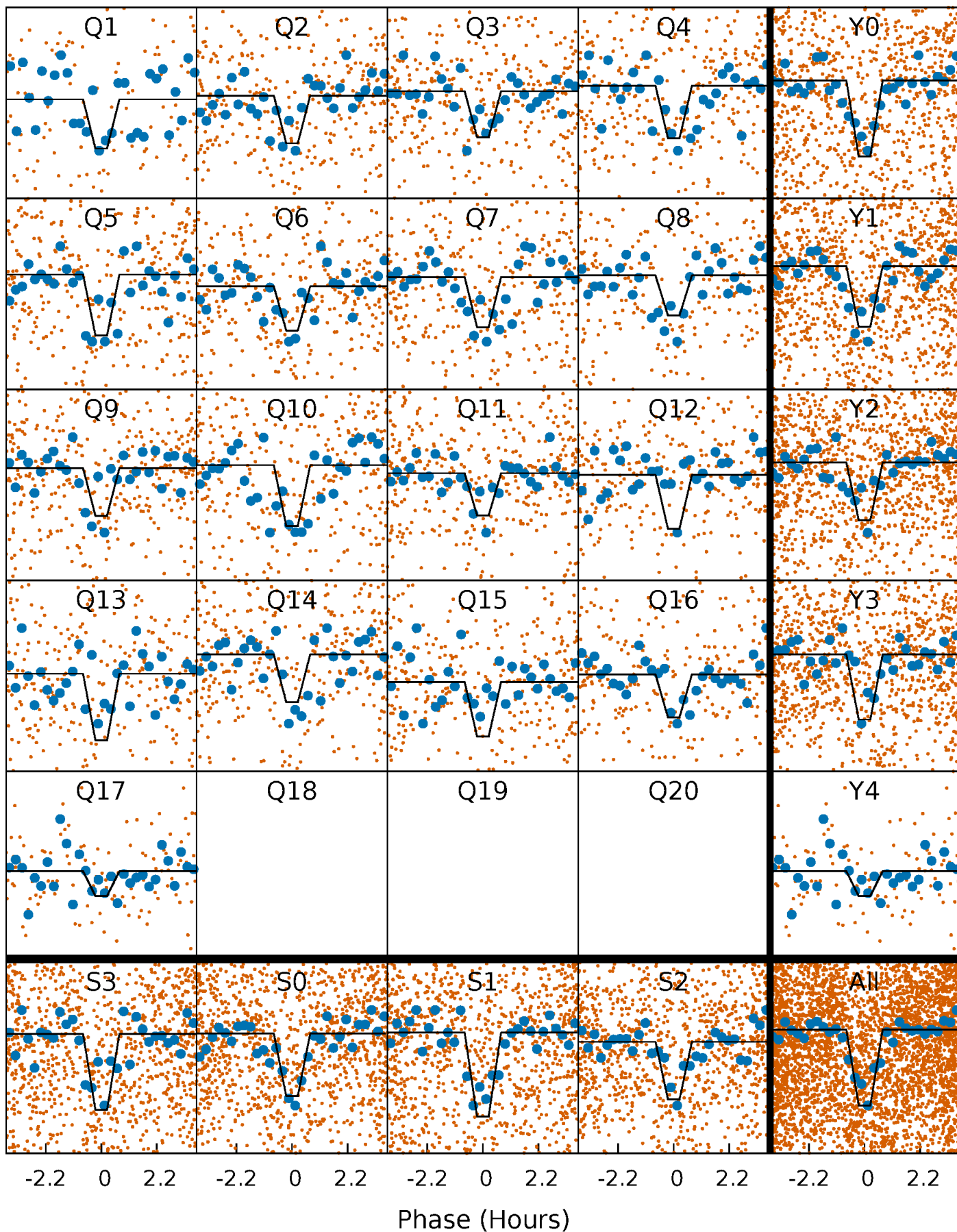
DV Quarter-Phased Transit Curves

TCE 005608566-02 P= 2.198521 Days $T_0=132.442191$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

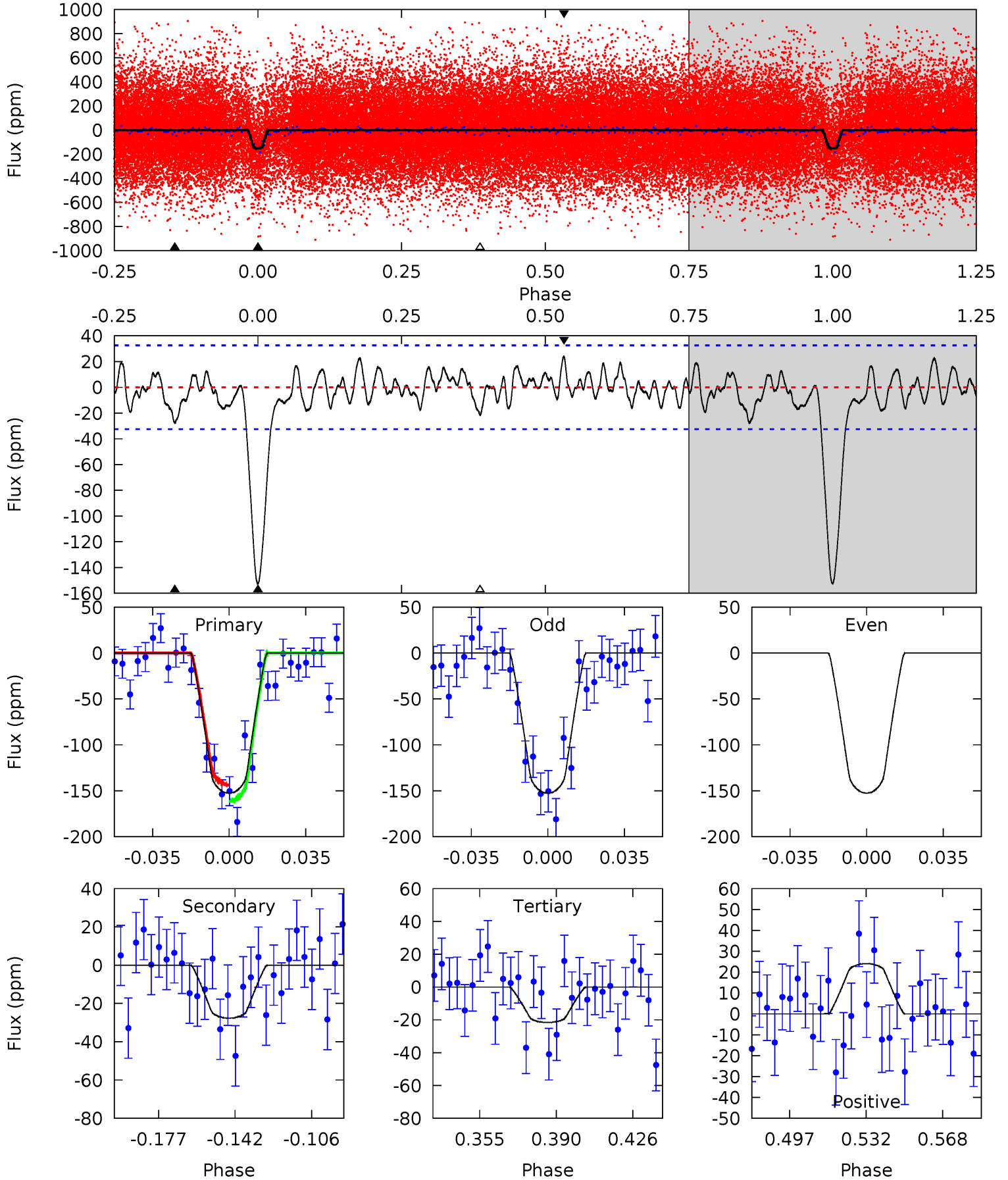
TCE 005608566-02 P= 2.198498 Days $T_0=132.449874$ (BKJD)



DV Model-Shift Uniqueness Test

005608566-02, P = 2.198521 Days, E = 130.243670 Days

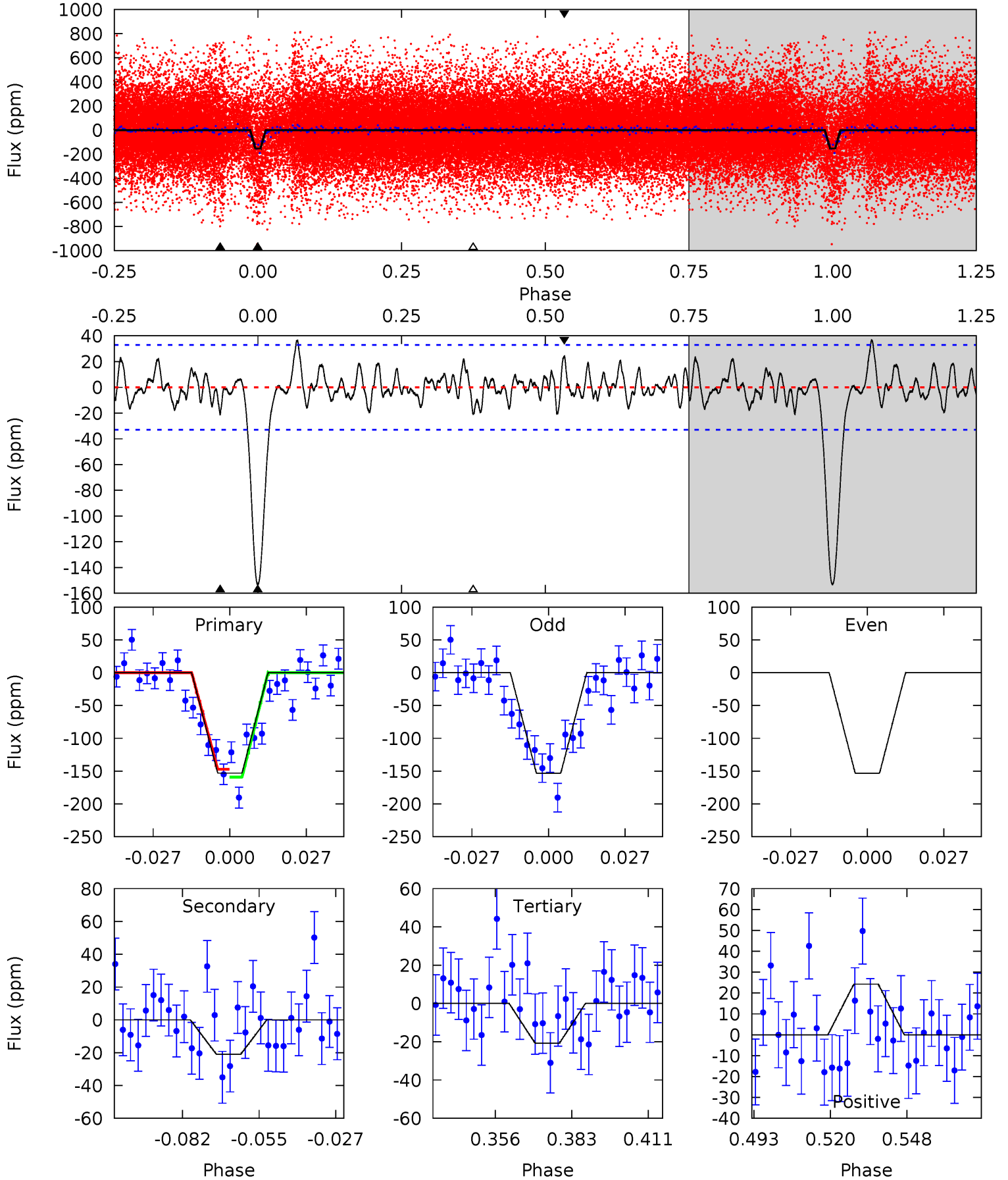
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	4.06	3.17	3.53	4.78	2.10	1.36	19.2	18.9	0.90	0.53	0	1.03	0.14	1.32



Alt Model-Shift Uniqueness Test

005608566-02, P = 2.198498 Days, E = 130.251376 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	3.08	3.04	3.56	4.83	2.21	1.37	19.4	18.9	0.03	-0.48	0	1.13	0.19	0.88



Stellar Parameters For KIC 005608566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5949^{+176}_{-193}	$4.311^{+0.158}_{-0.193}$	$-0.080^{+0.300}_{-0.300}$	$1.156^{+0.333}_{-0.222}$	$0.998^{+0.152}_{-0.124}$	$0.910^{+0.678}_{-0.443}$
	+3%/-3%	+4%/-4%	+375%/-375%	+29%/-19%	+15%/-12%	+74%/-49%
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 005608566-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 7	$1.70^{+0.73}_{-0.73}$	2175^{+153}_{-143}	3995^{+894}_{-523}	$5.680^{+11.660}_{-3.027}$
Alt.	-21 ± 7	$1.72^{+0.77}_{-0.76}$	2184^{+174}_{-145}	3786^{+932}_{-520}	$4.212^{+9.129}_{-2.434}$

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

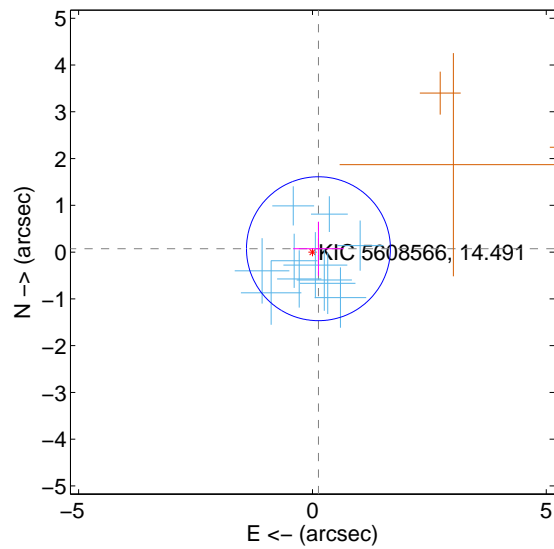
Supplemental centroid analysis for 005608566-02. Kepler magnitude: 14.49. Transit SNR 13.33

There are 11 quarters with good PRF difference image offsets

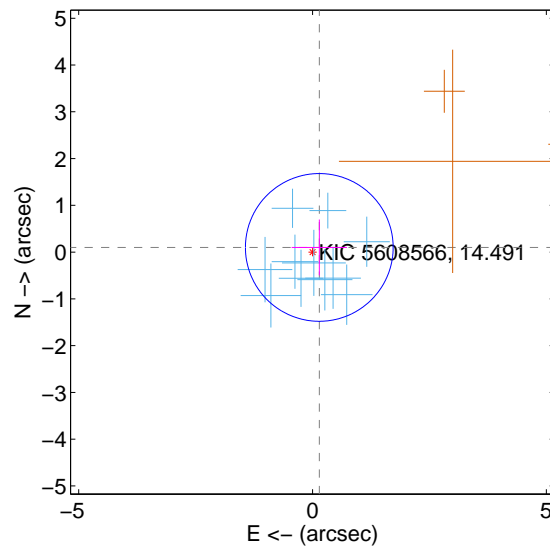
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.513	0.29	-0.128 ± 0.541	0.072 ± 0.579
PRF-fit source offset from KIC position	0.176 ± 0.526	0.33	-0.145 ± 0.590	0.100 ± 0.597
photometric centroid source offset	2.03 ± 0.76	2.68	0.99 ± 0.78	1.78 ± 0.75

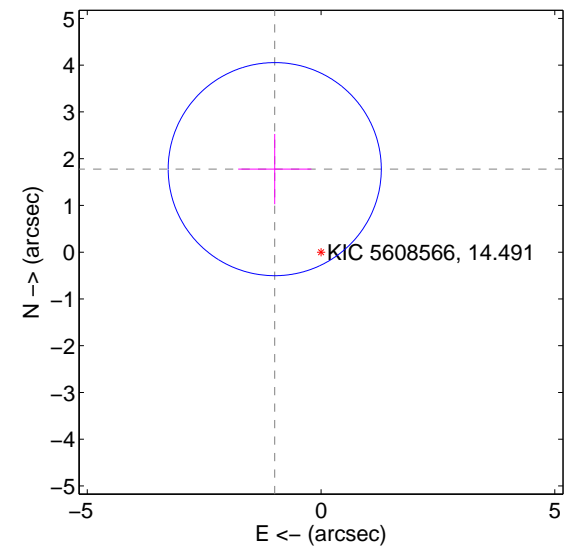
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

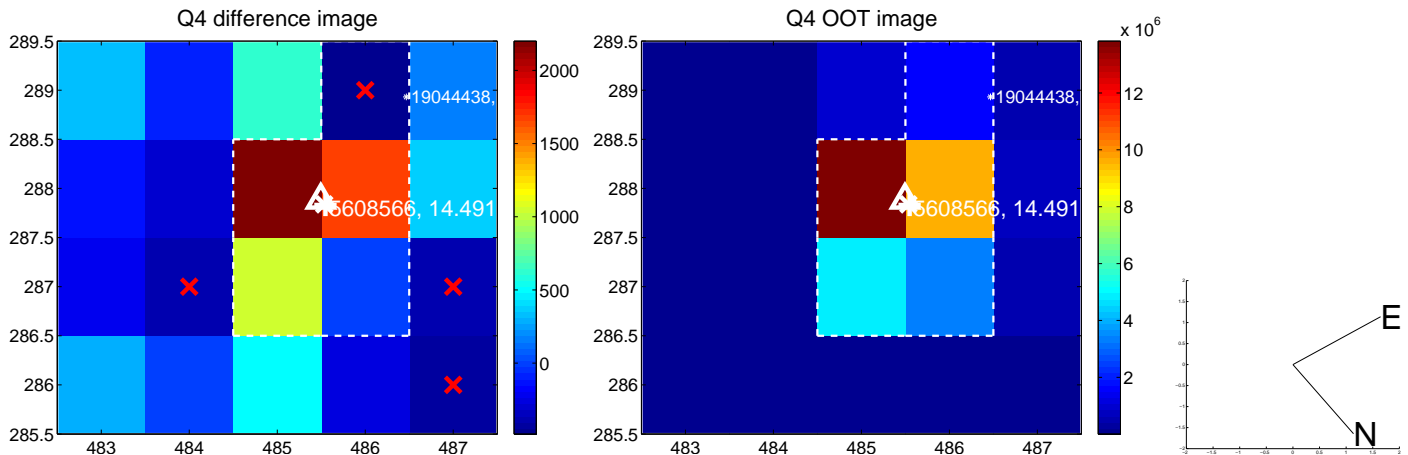
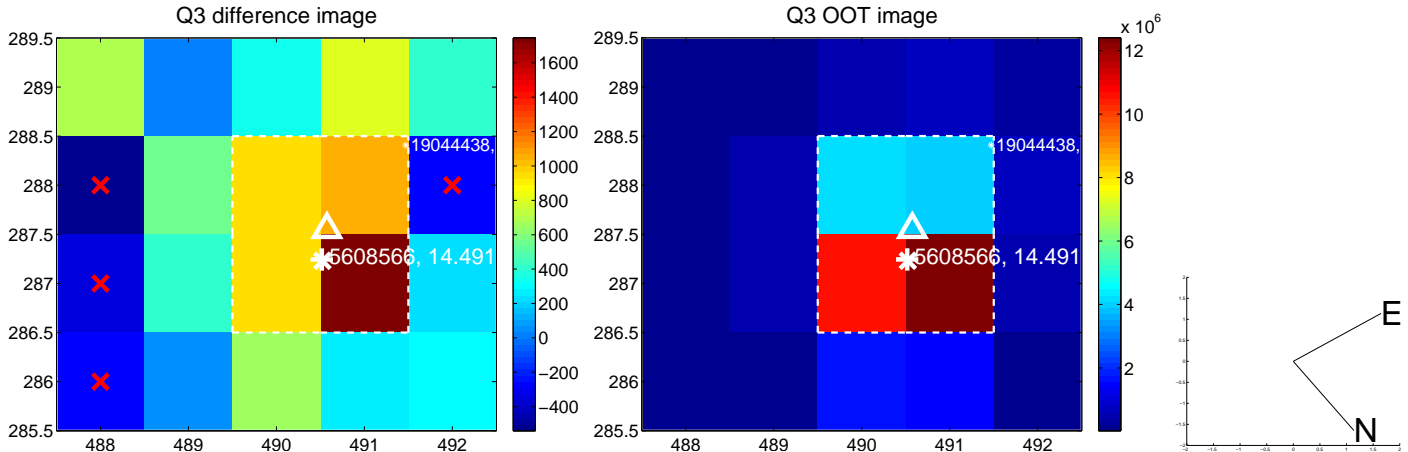
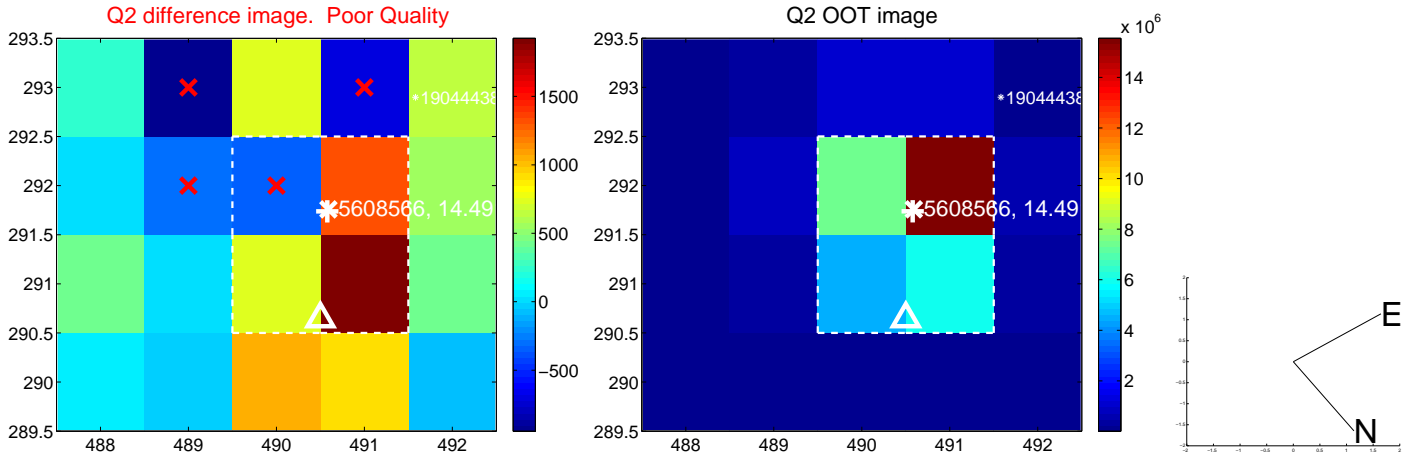
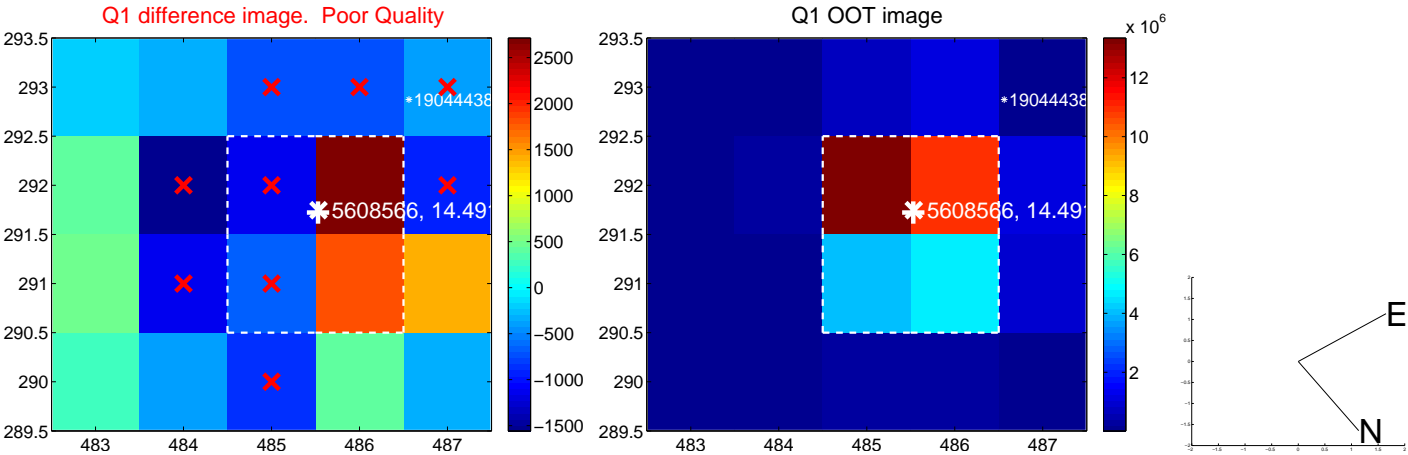


offset from photometric centroids

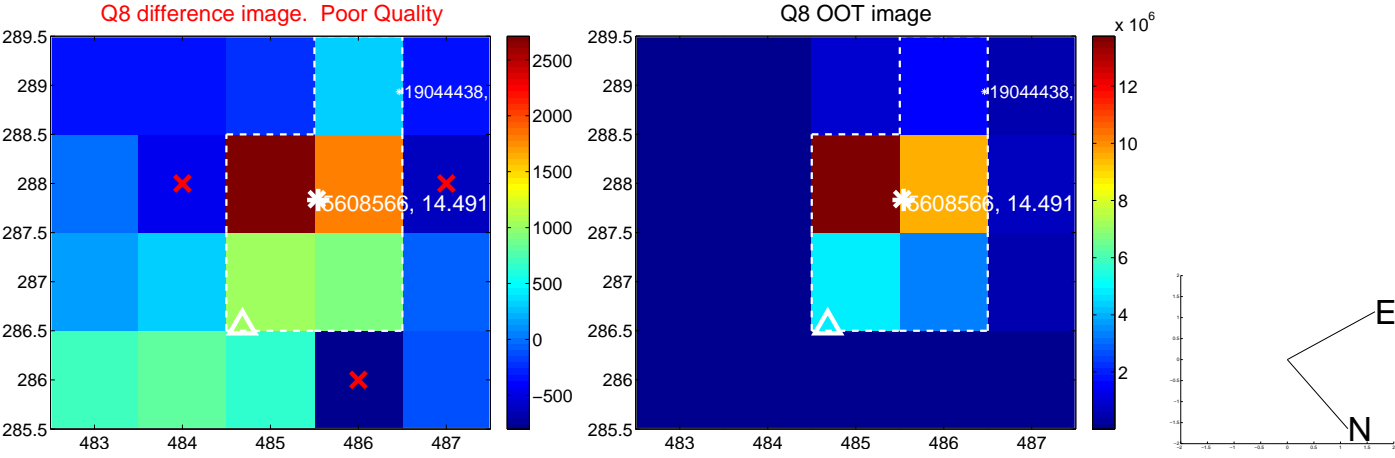
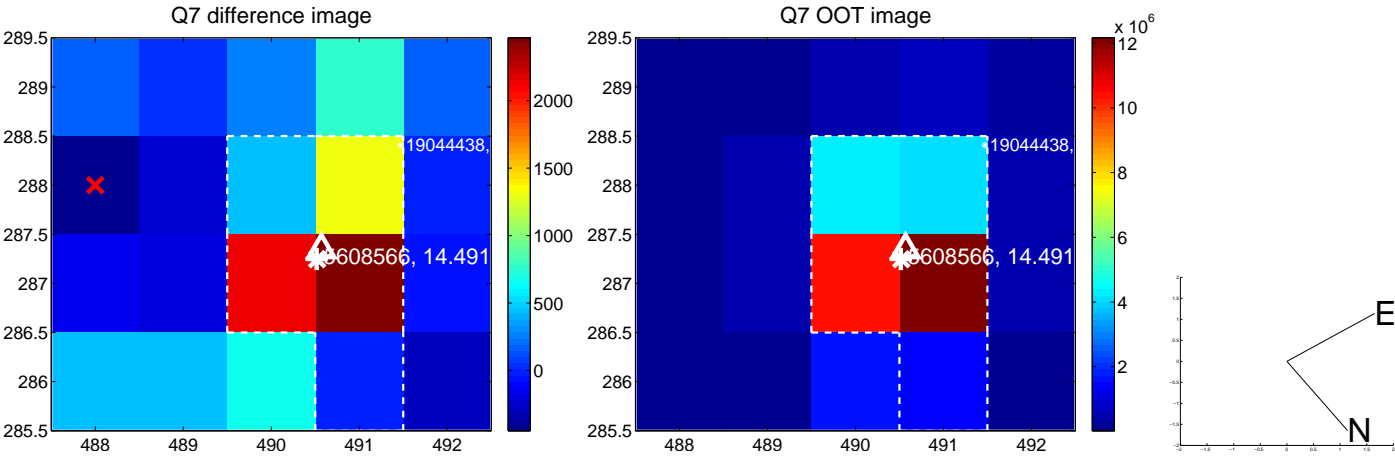
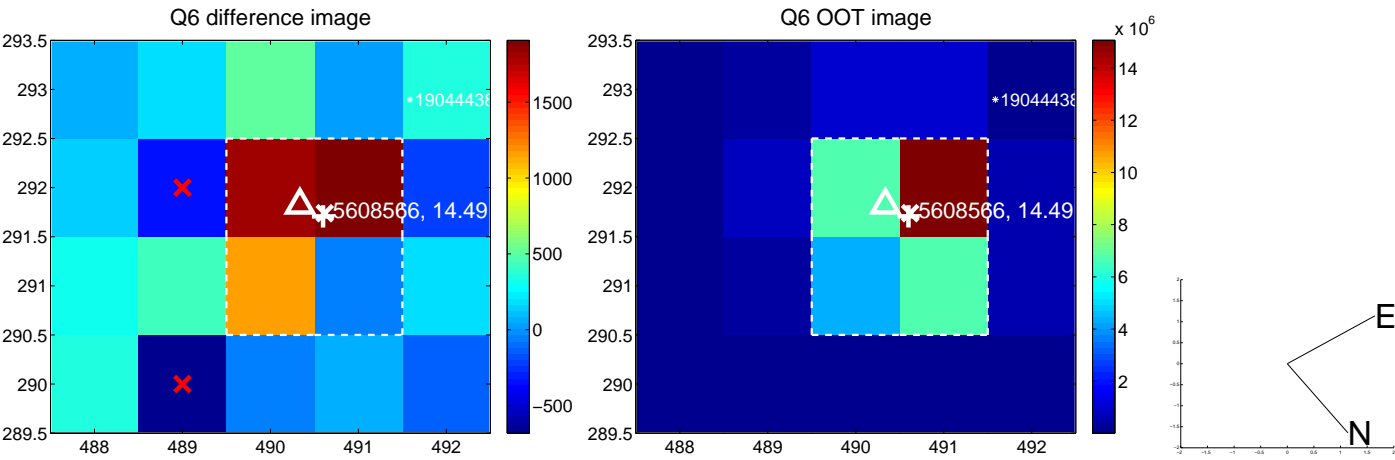
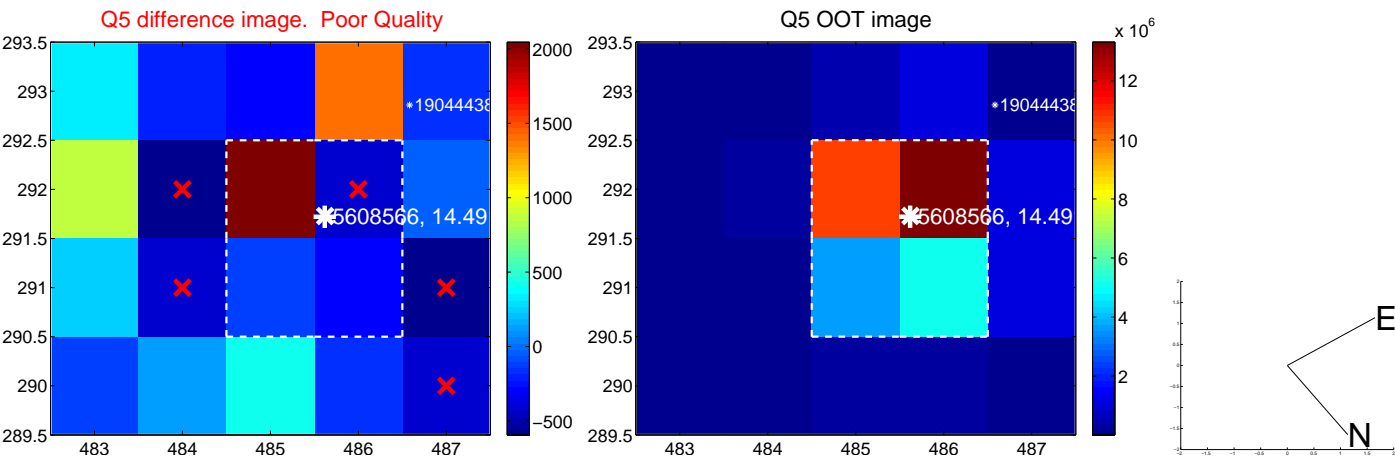


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

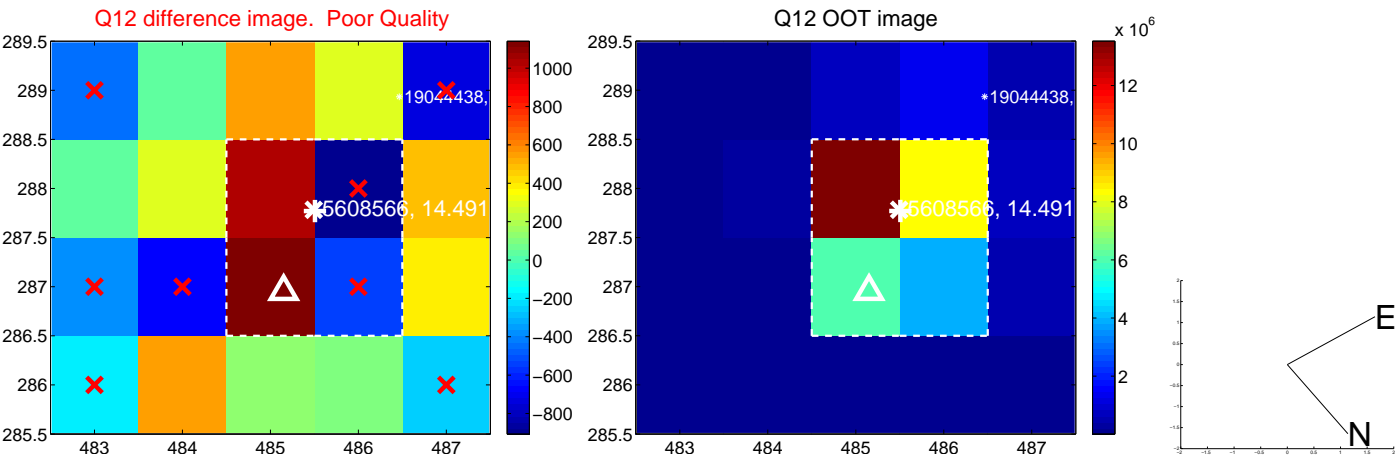
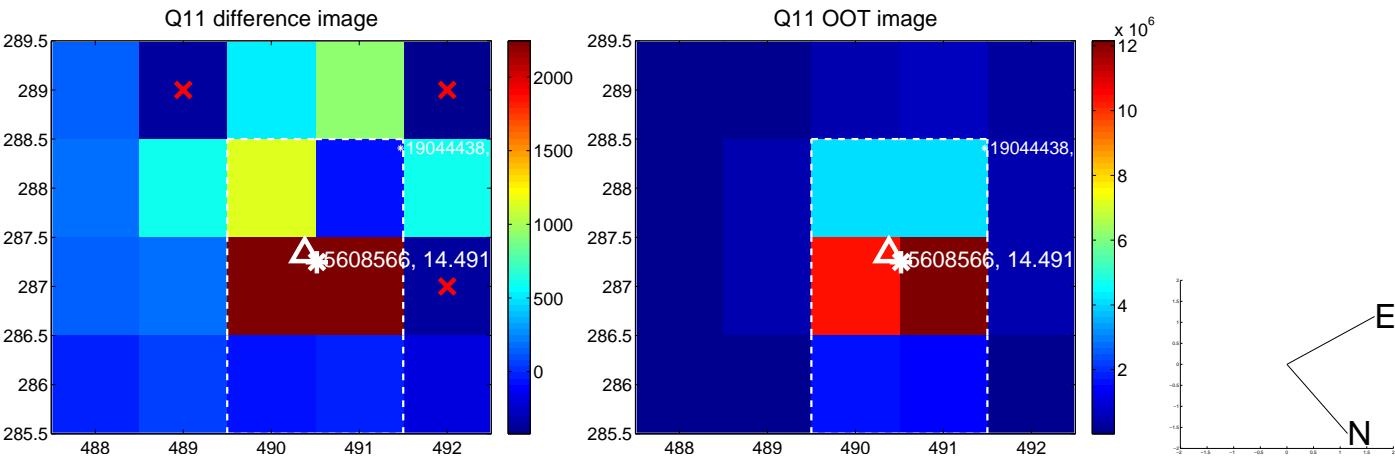
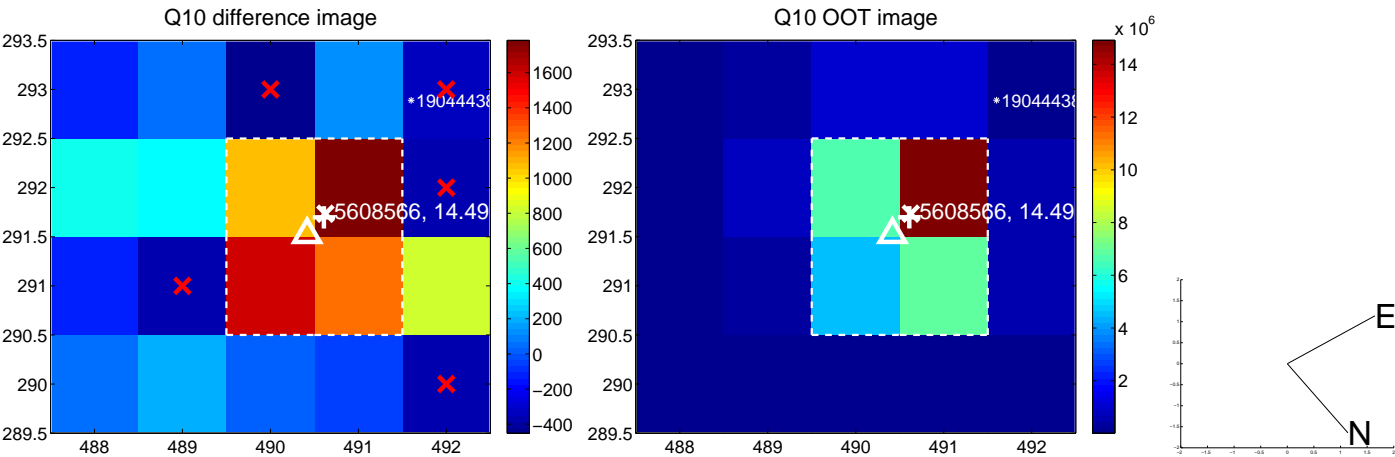
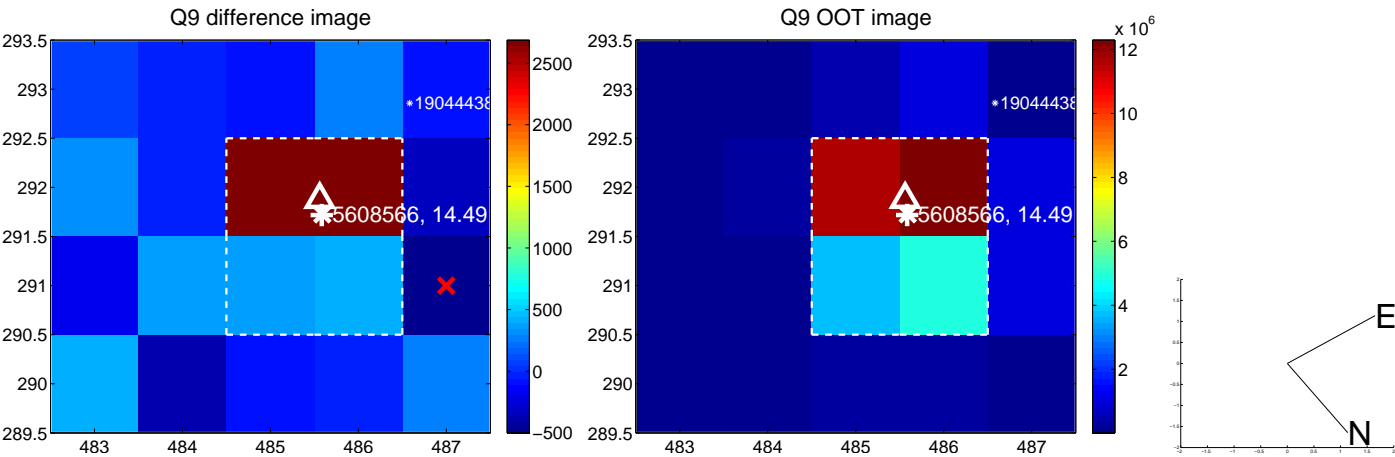
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



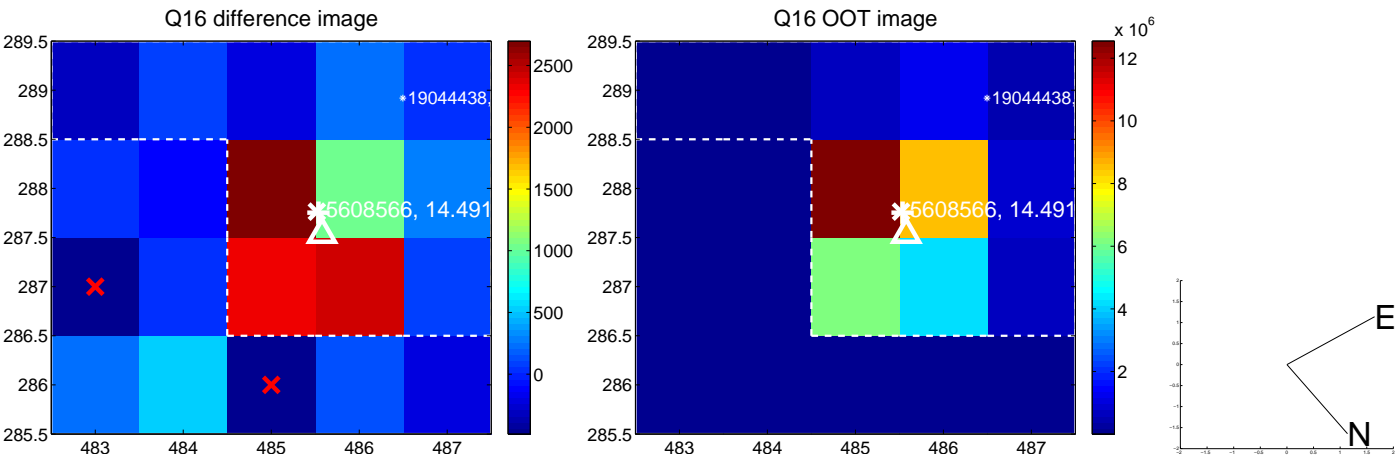
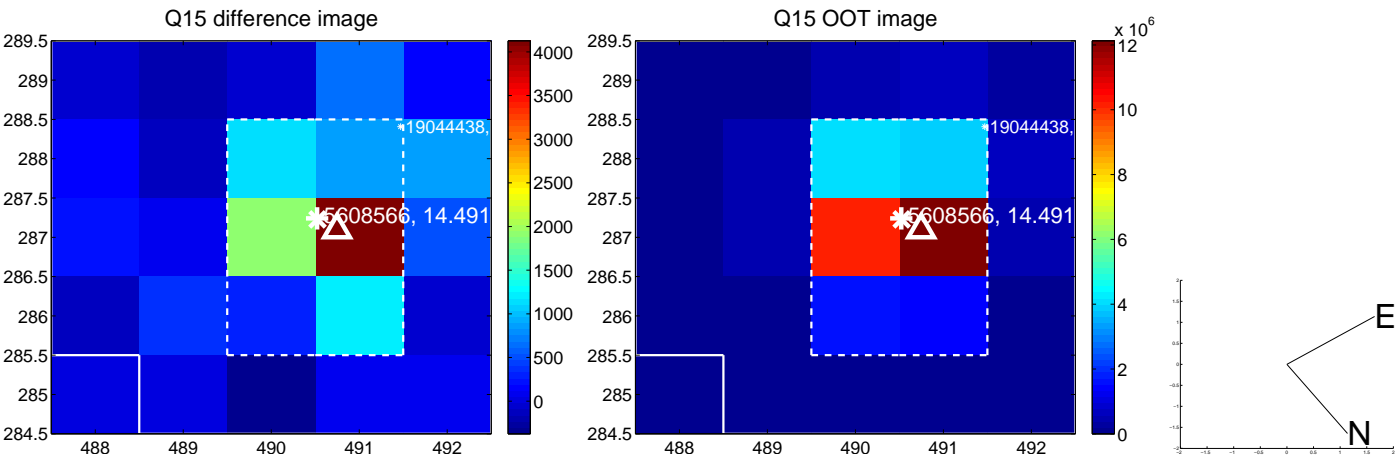
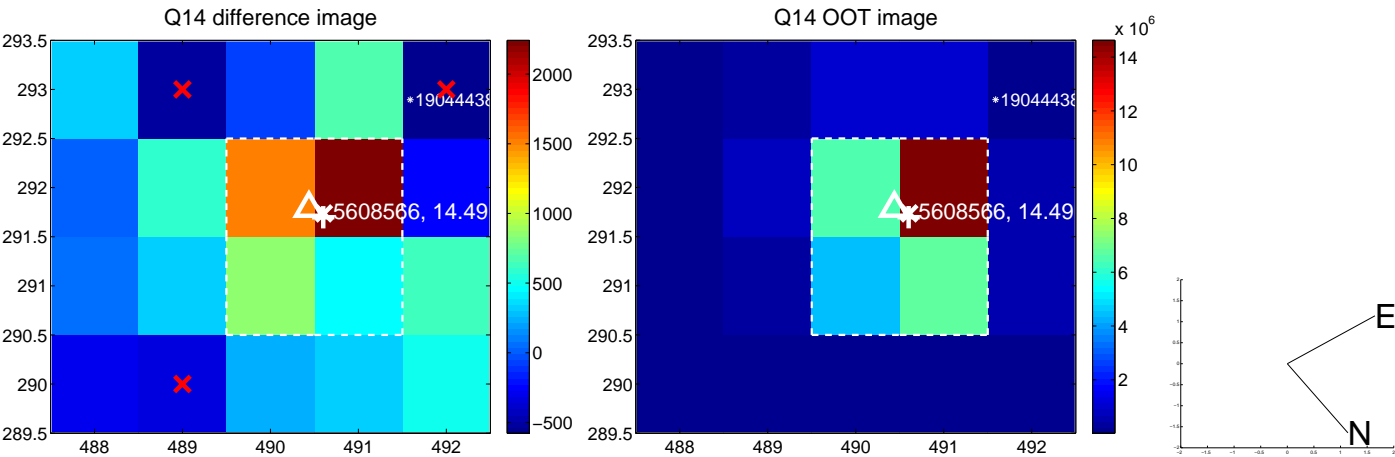
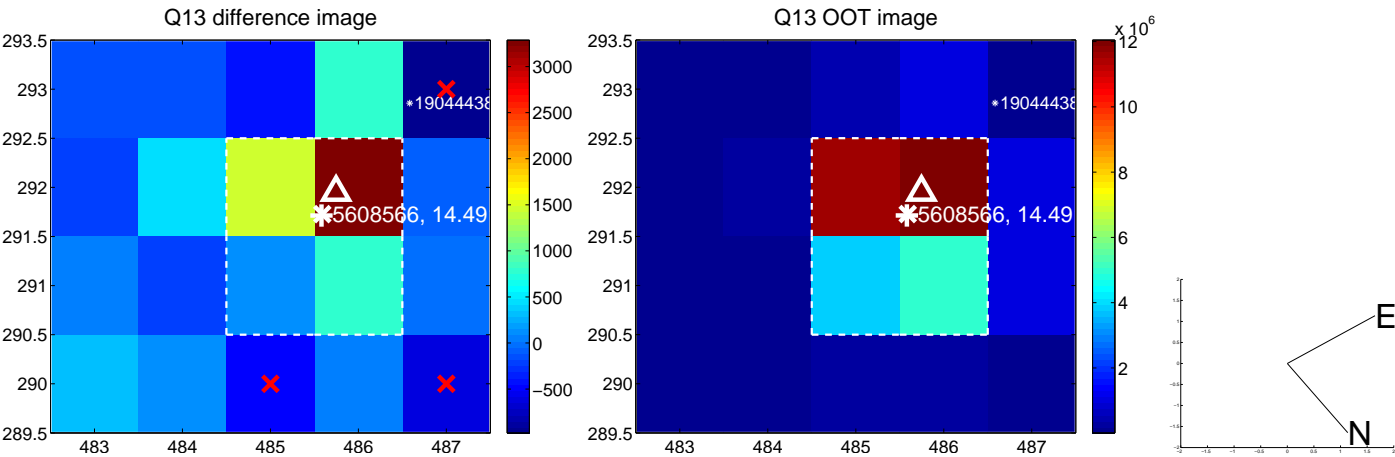
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



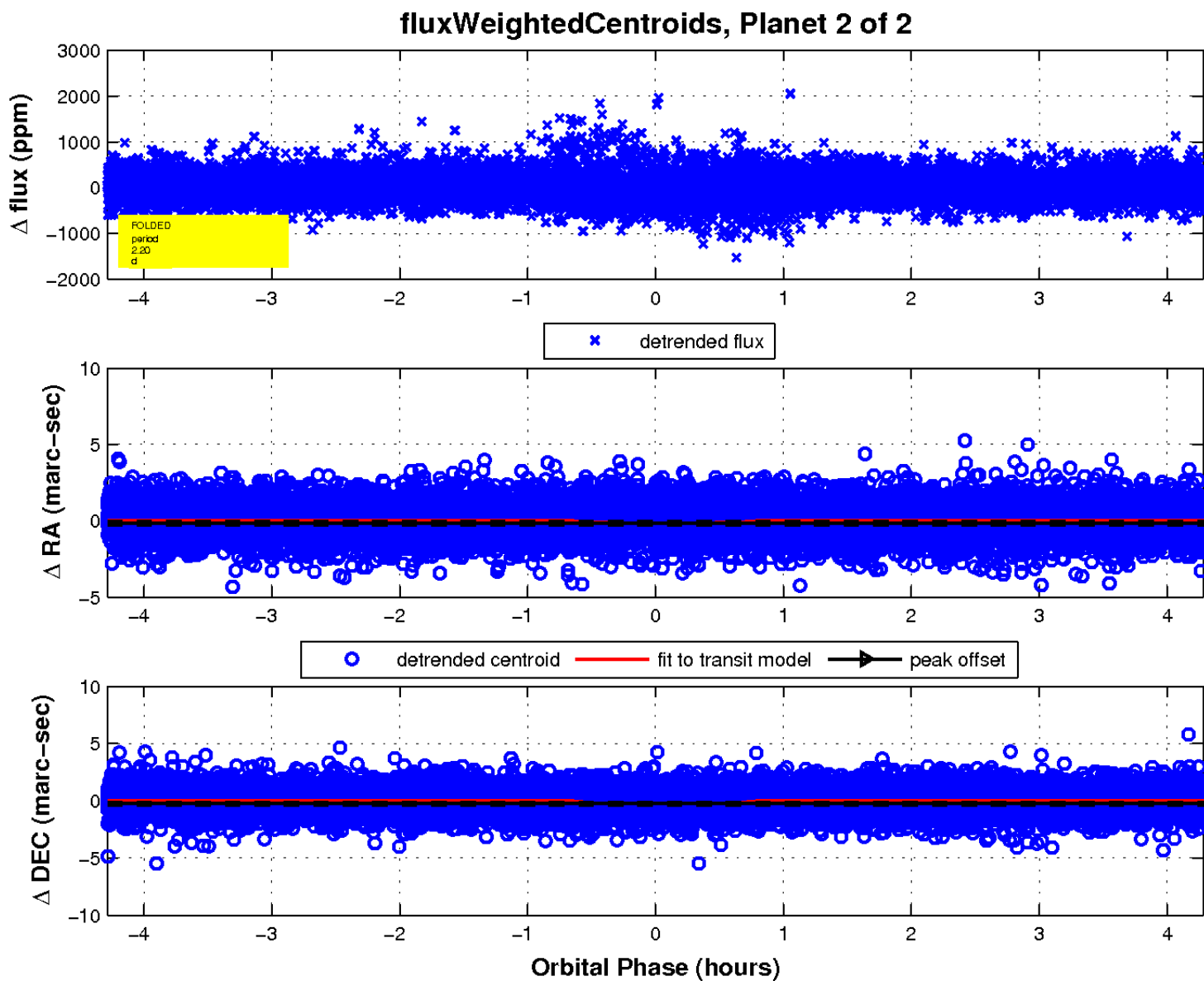
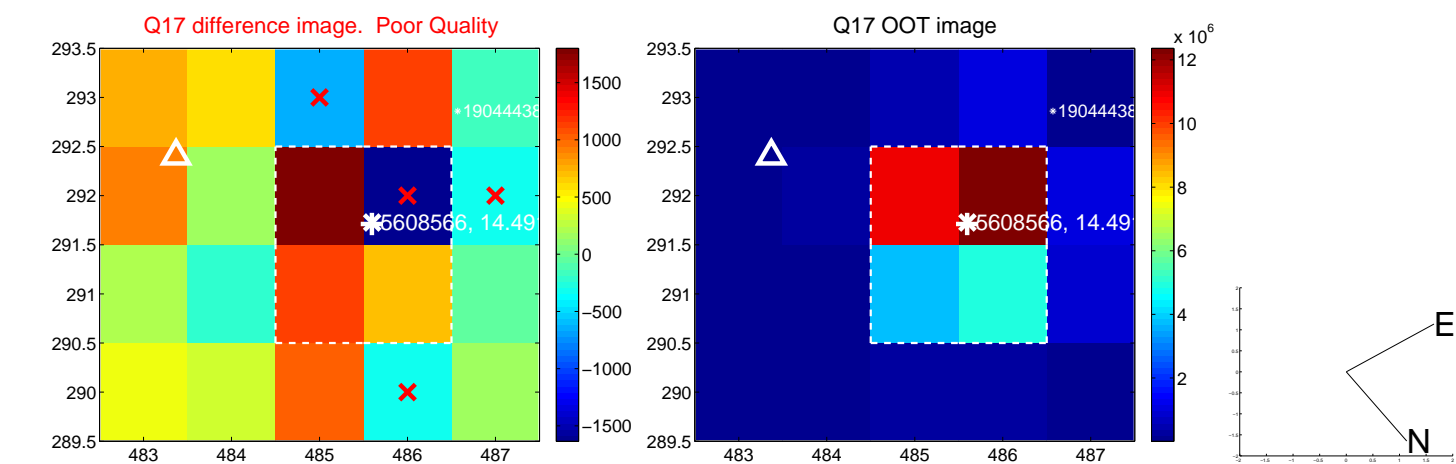
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \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

