

KIC 010583180

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})
010583180-01	OBS	0748.01	2.696360	132.991385	328.2	3.649	34.6	37.9	0.82	4989	1.83	305.33
010583180-02	OBS	No	2.696378	131.640525	108.7	3.521	12.6	12.8	0.82	4989	1.04	305.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010583180-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
010583180-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—HALO_GHOST—EPHEM_MATCH

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.

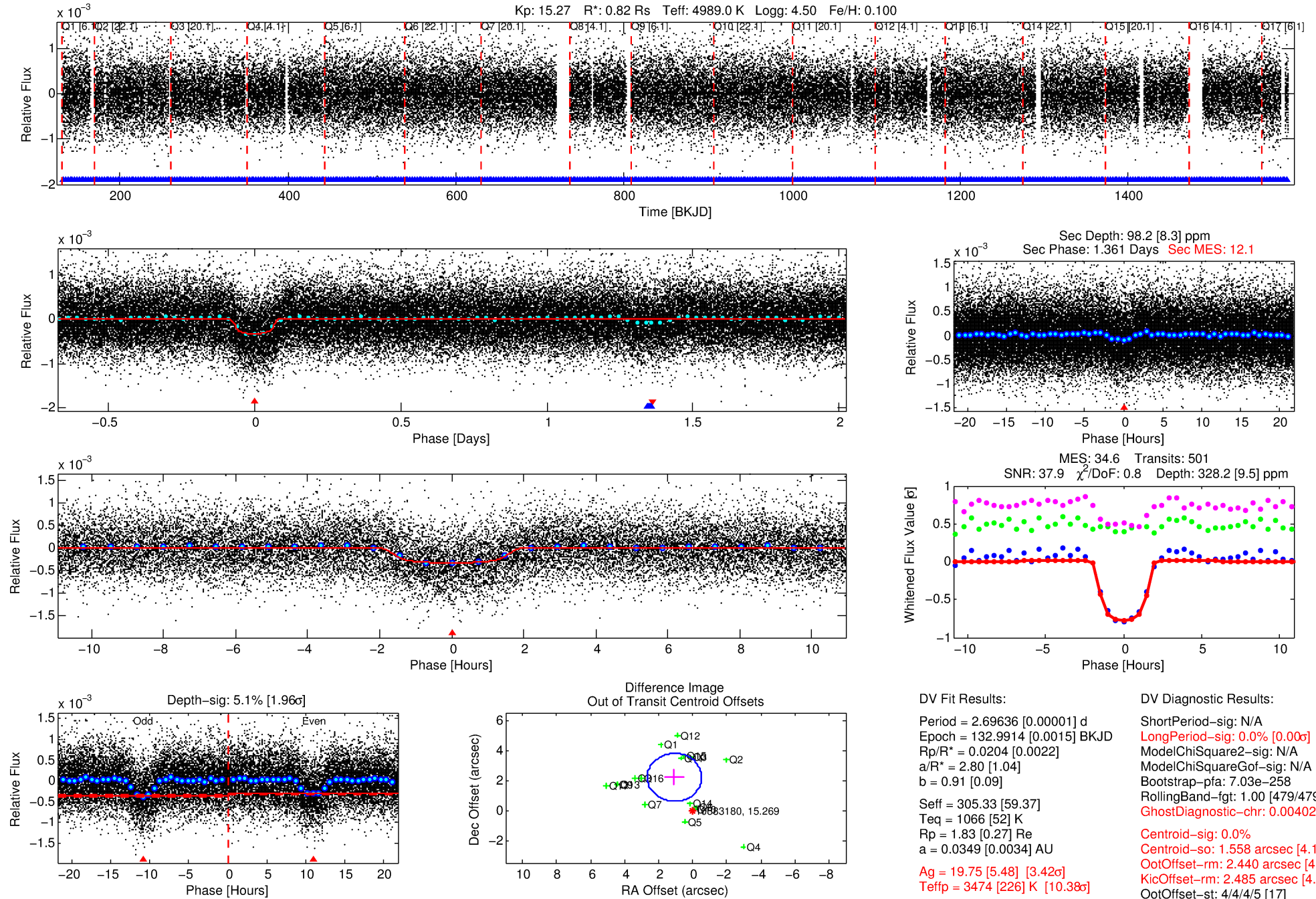
Ephemeris Match Information For 010583180-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010583180-01	10583180	010583181-pri	10583181	1:1	52.9	-10	9	11.01	15.27	772.87	Direct-PRF	0	0.88	0.24

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10583180 Candidate: 1 of 2 Period: 2.696 d
KOI: K00748.01 Corr: 0.995



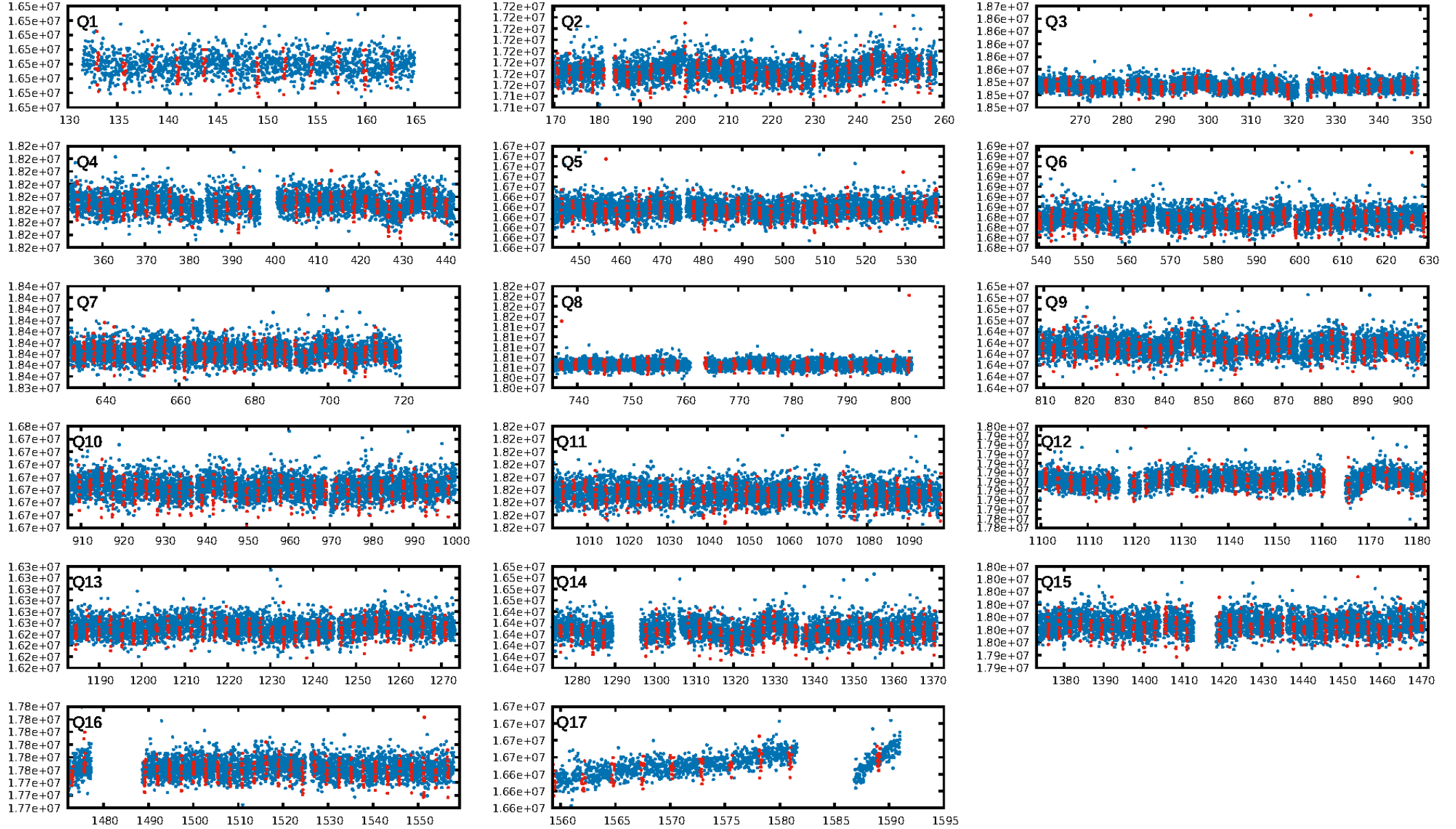
DV Fit Results:

Period = 2.69636 [0.00001] d
Epoch = 132.9914 [0.0015] BKJD
Rp/R* = 0.0204 [0.0022]
a/R* = 2.80 [1.04]
b = 0.91 [0.09]
Seff = 305.33 [59.37]
Teff = 1066 [52] K
Rp = 1.83 [0.27] Re
a = 0.0349 [0.0034] AU
Ag = 19.75 [5.48] [3.42 σ]
Teffp = 3474 [226] K [10.38 σ]

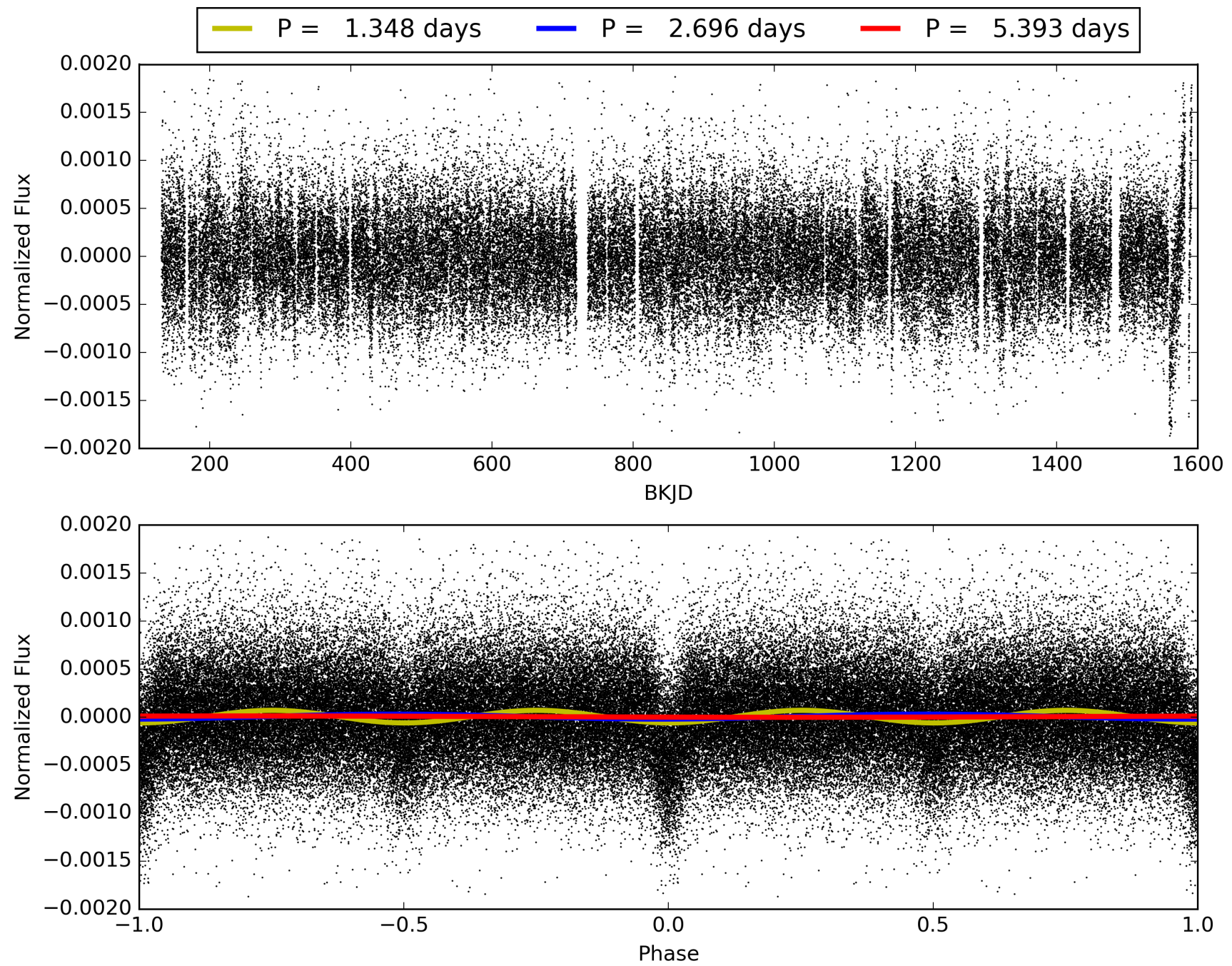
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.03e-258
RollingBand-fgt: 1.00 [479/479]
GhostDiagnostic-chr: 0.004021
Centroid-sig: 0.0%
Centroid-so: 1.558 arcsec [4.17 σ]
OotOffset-rm: 2.440 arcsec [4.58 σ]
KicOffset-rm: 2.485 arcsec [4.57 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010583180-01, PDC Light Curves

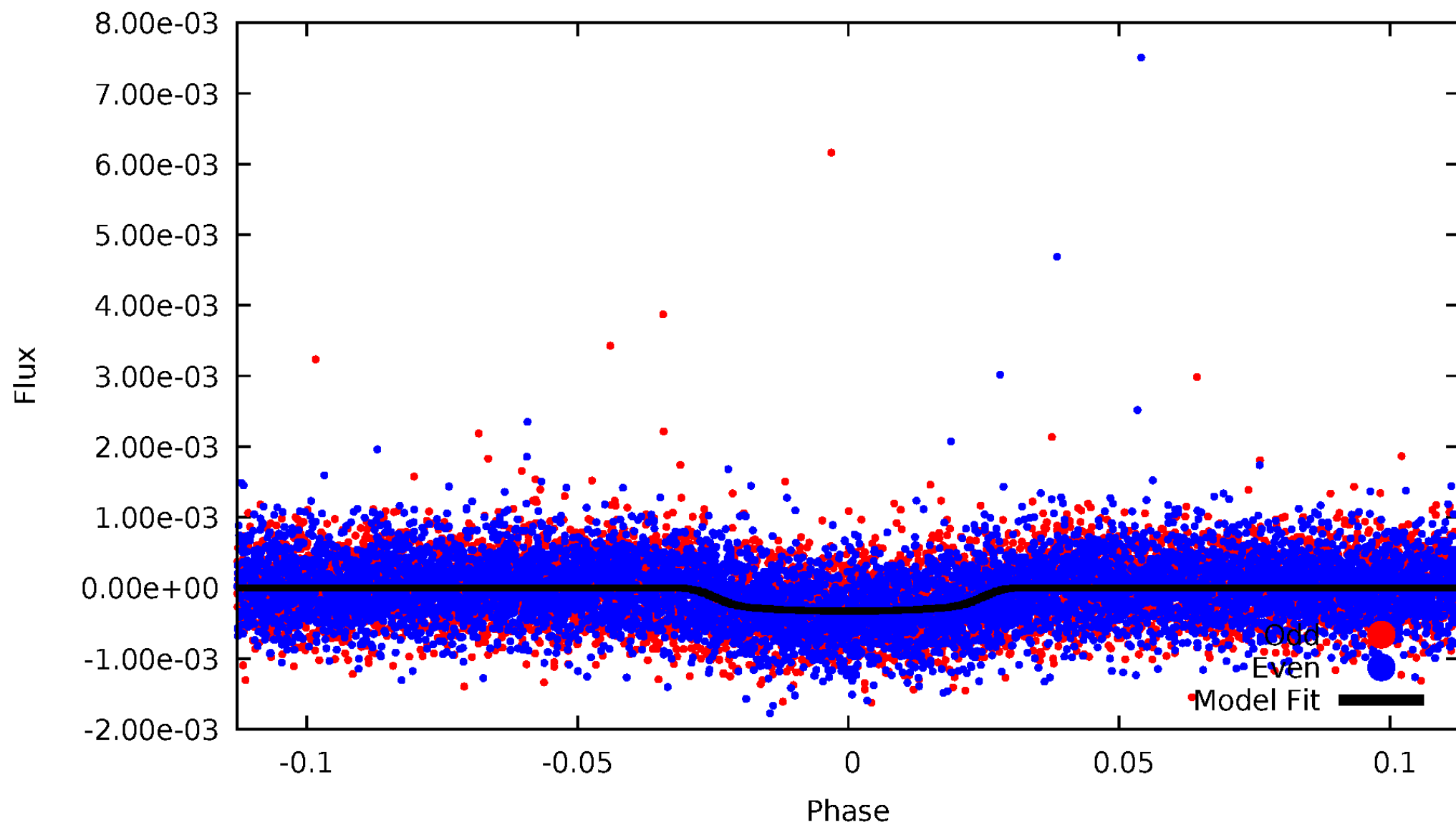


TCE 010583180-01



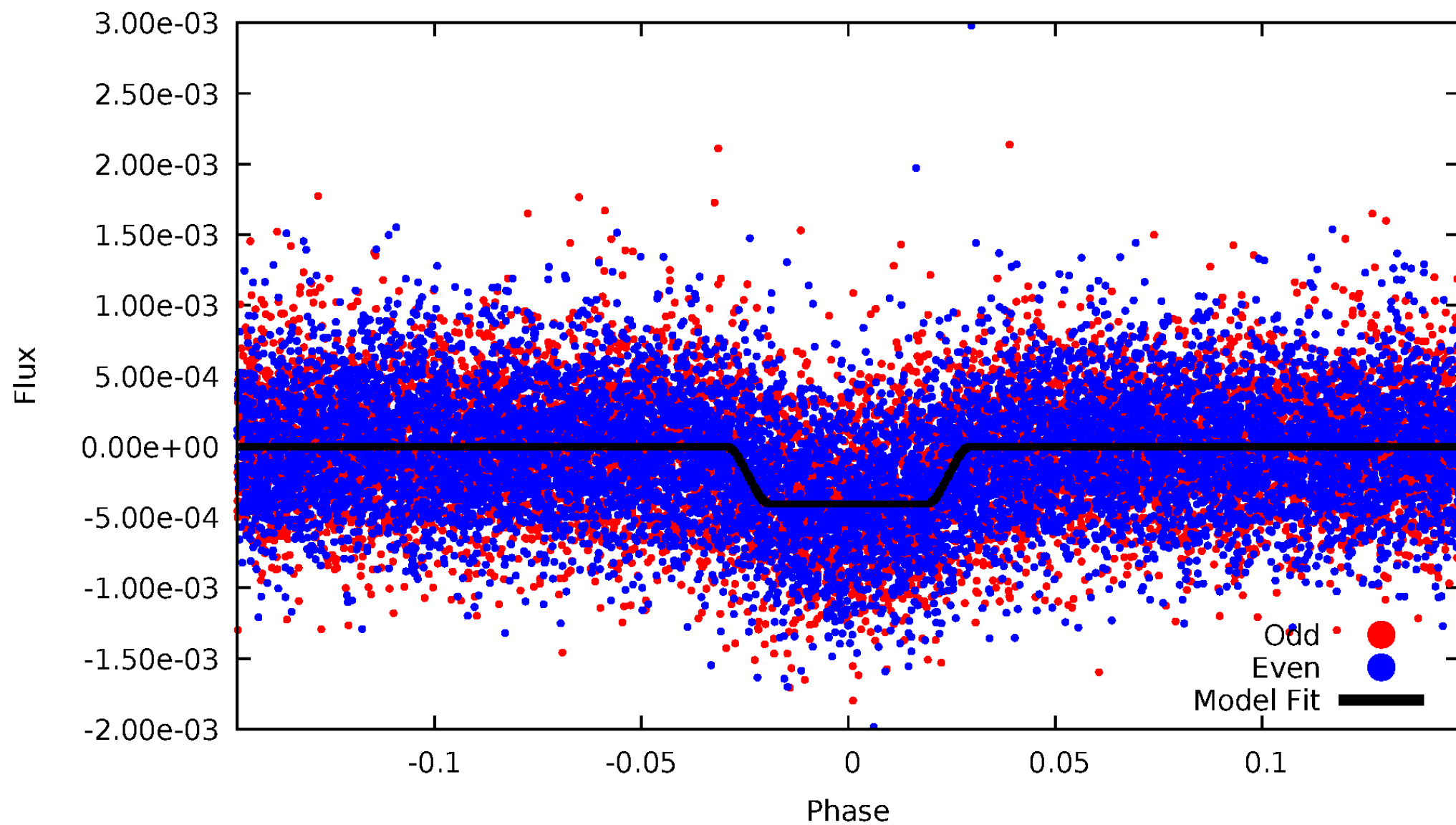
DV Odd/Even

TCE 010583180-01



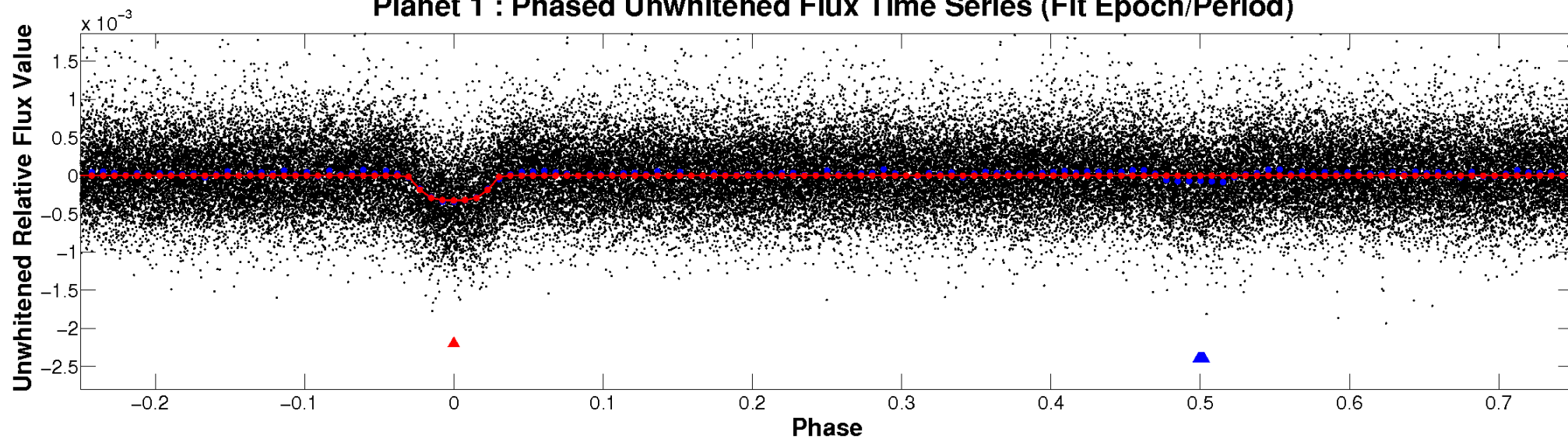
ALT Odd/Even

TCE 010583180-01

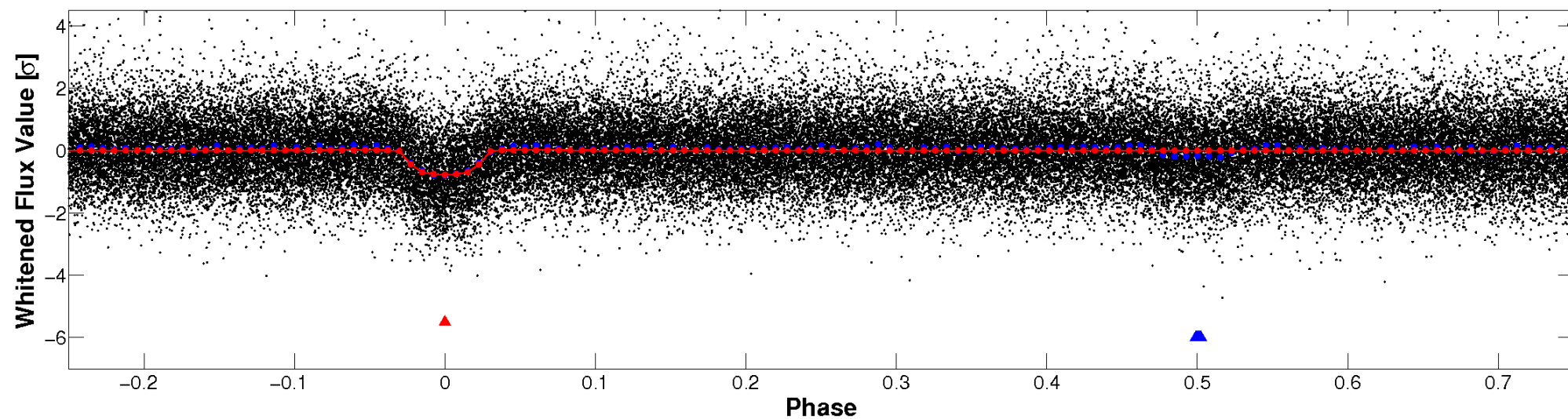


Non-Whitened Vs. Whitened Light Curve

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

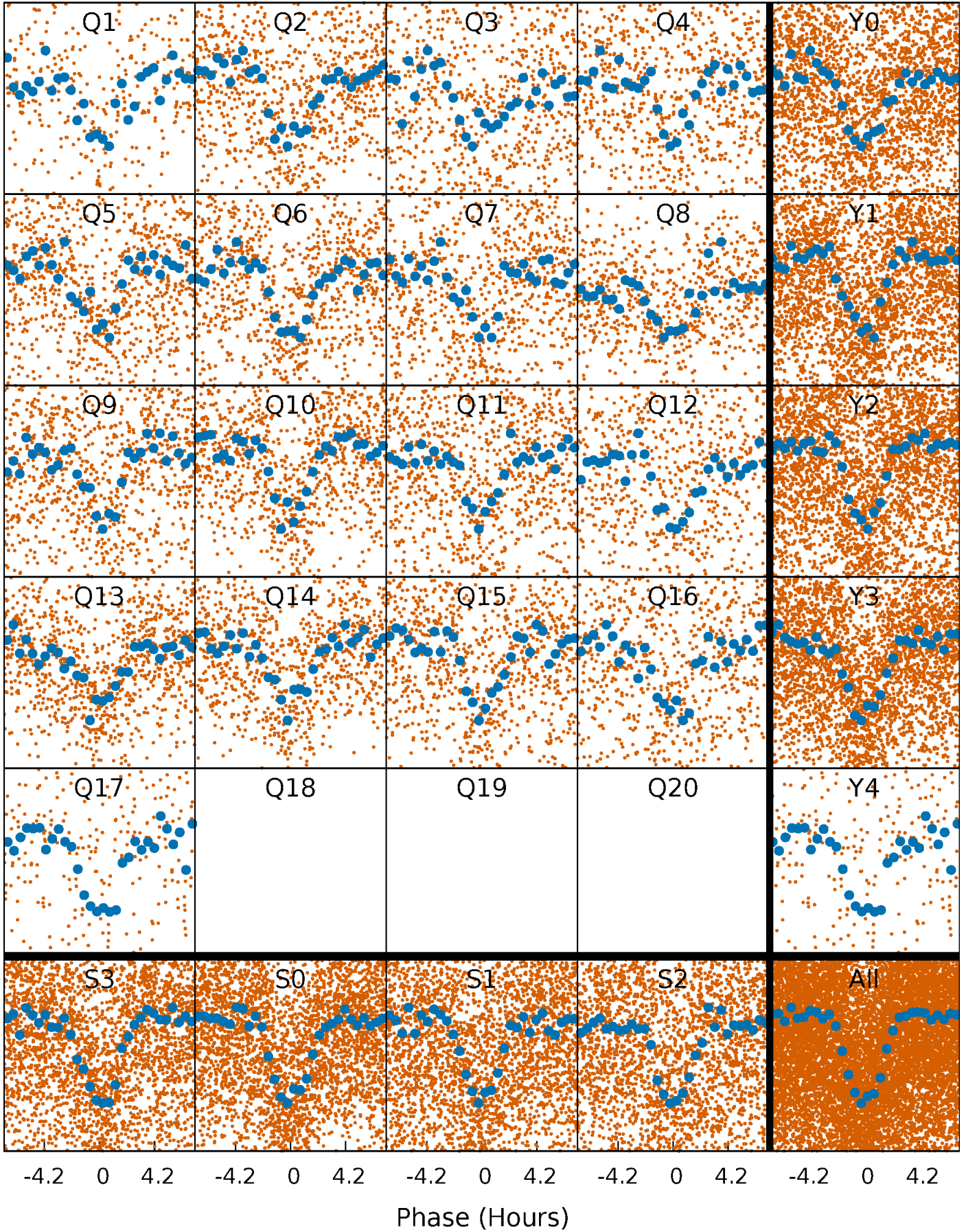


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



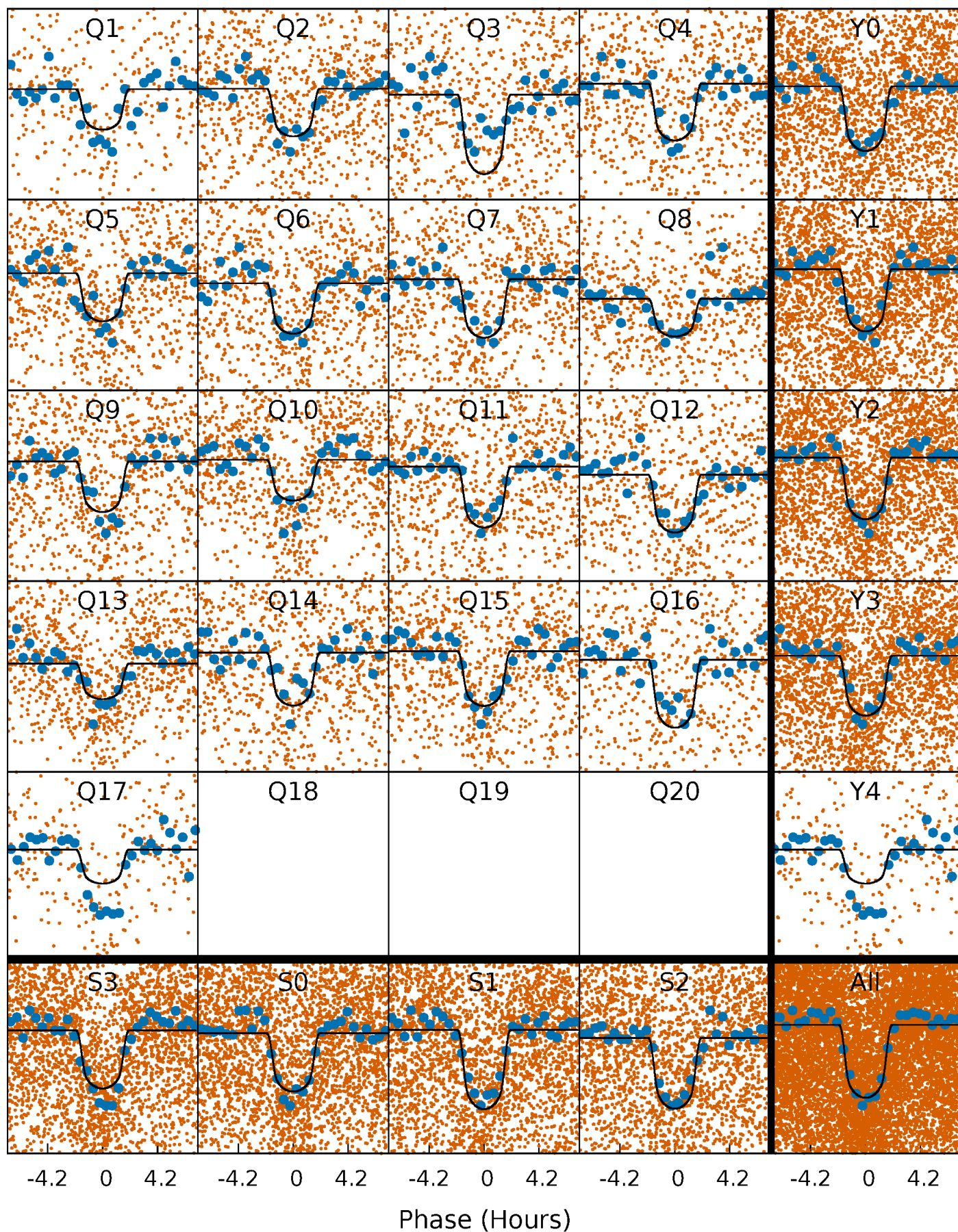
PDC Quarter-Phased Transit Curves

TCE 010583180-01 P= 2.696360 Days $T_0=132.991385$ (BKJD)



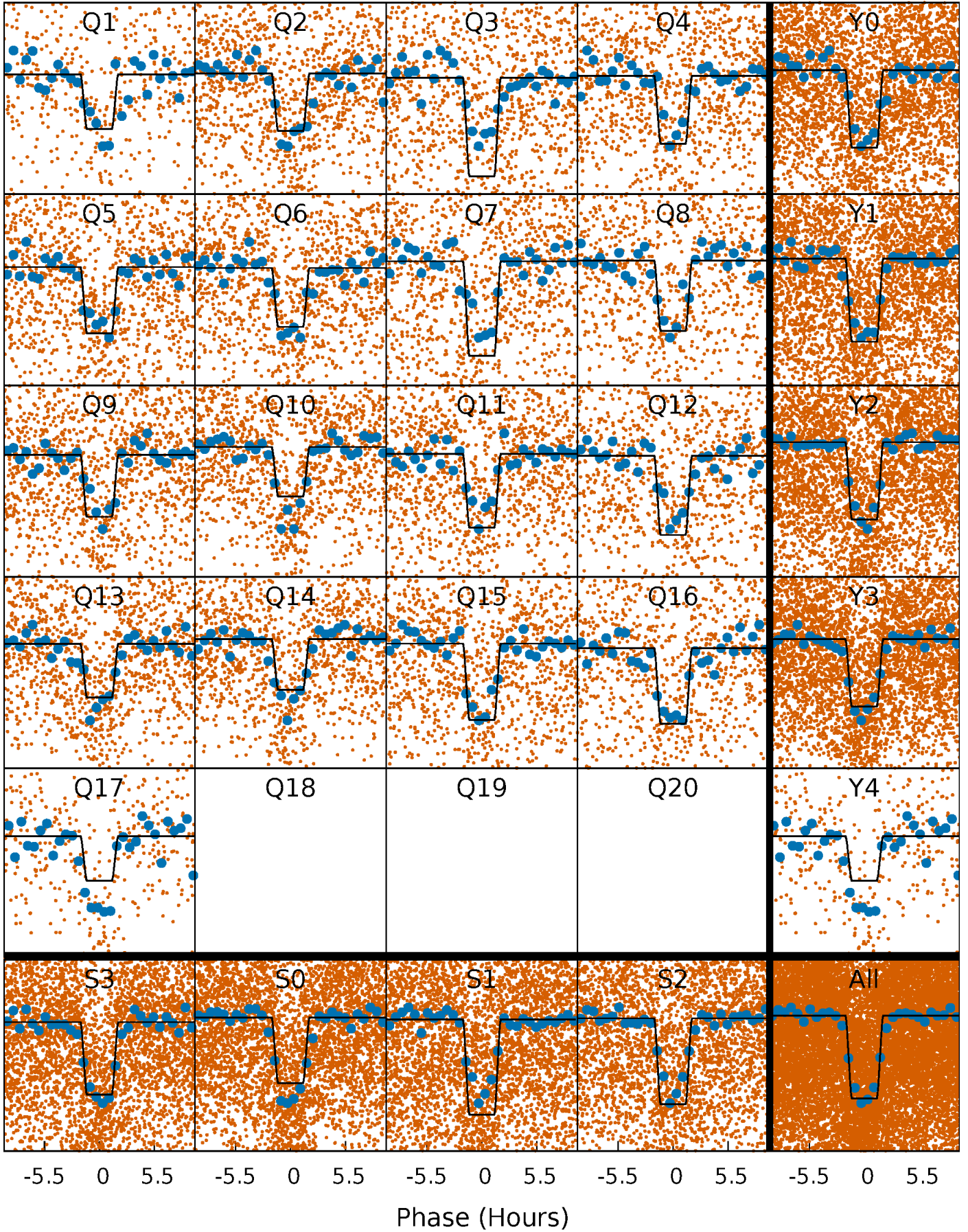
DV Quarter-Phased Transit Curves

TCE 010583180-01 P= 2.696360 Days $T_0=132.991385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

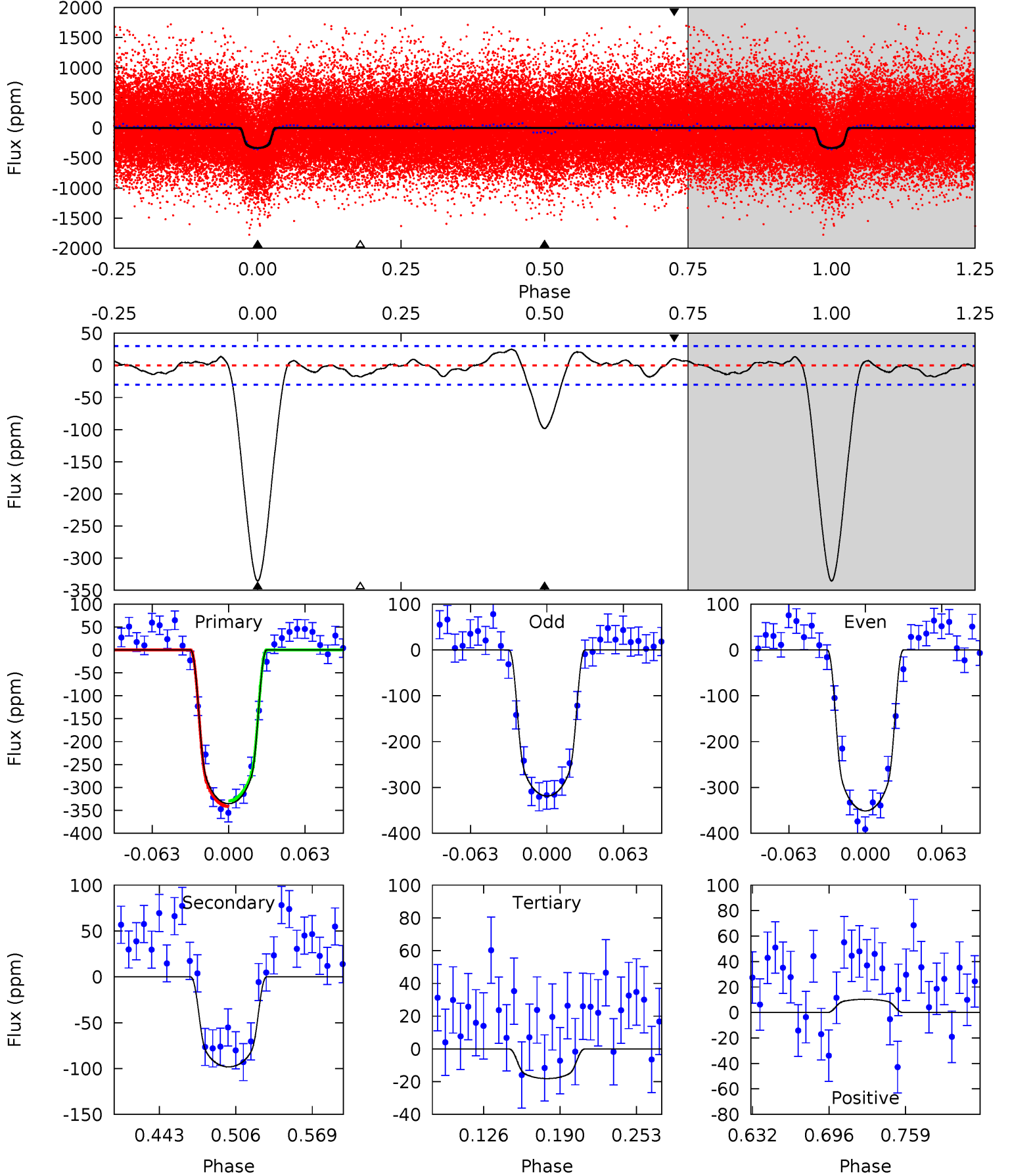
TCE 010583180-01 P= 2.696392 Days $T_0=132.982940$ (BKJD)



DV Model-Shift Uniqueness Test

010583180-01, P = 2.696360 Days, E = 130.295025 Days

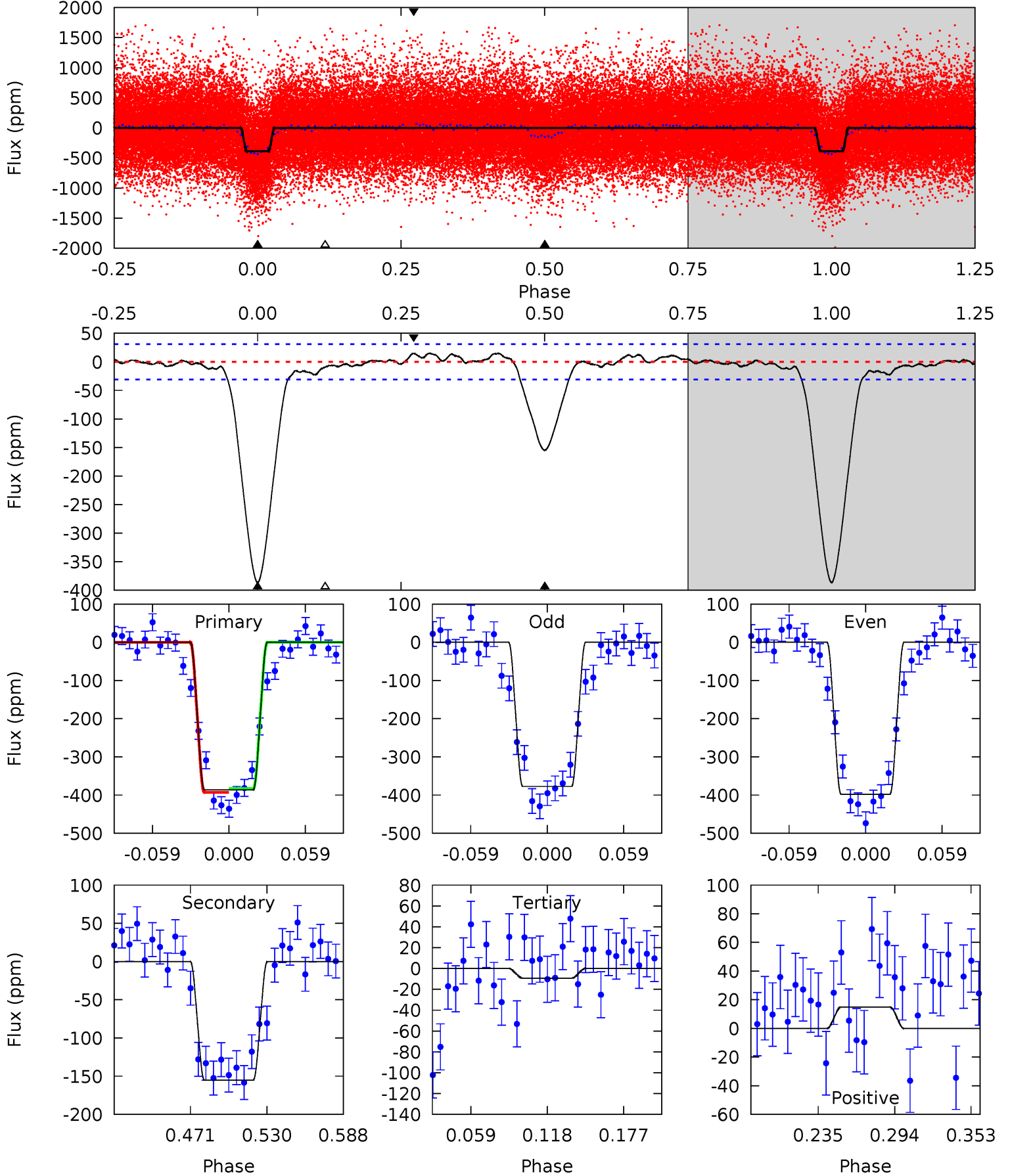
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.9	15.2	2.81	1.60	4.66	1.86	1.37	49.1	50.3	12.4	13.6	2.51	0.99	0.07	0.93



Alt Model-Shift Uniqueness Test

010583180-01, P = 2.696392 Days, E = 130.286548 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.3	23.4	1.40	2.26	4.67	1.89	1.24	56.9	56.0	22.0	21.1	1.54	0.97	0.04	0.73



Stellar Parameters For KIC 010583180

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4989^{+149}_{-149}	$4.504^{+0.090}_{-0.060}$	$0.100^{+0.250}_{-0.300}$	$0.819^{+0.067}_{-0.082}$	$0.781^{+0.078}_{-0.056}$	$2.000^{+0.718}_{-0.371}$
	+3%/-3%	+2%/-1%	+250%/-300%	+8%/-10%	+10%/-7%	+36%/-19%
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 010583180-01 / KOI 0748.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-98 ± 6	$1.81^{+0.23}_{-0.23}$	1484^{+59}_{-63}	3801^{+191}_{-191}	20^{+7}_{-4}
Alt.	-155 ± 7	$1.79^{+0.22}_{-0.22}$	1481^{+54}_{-59}	4127^{+214}_{-193}	33^{+10}_{-7}

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

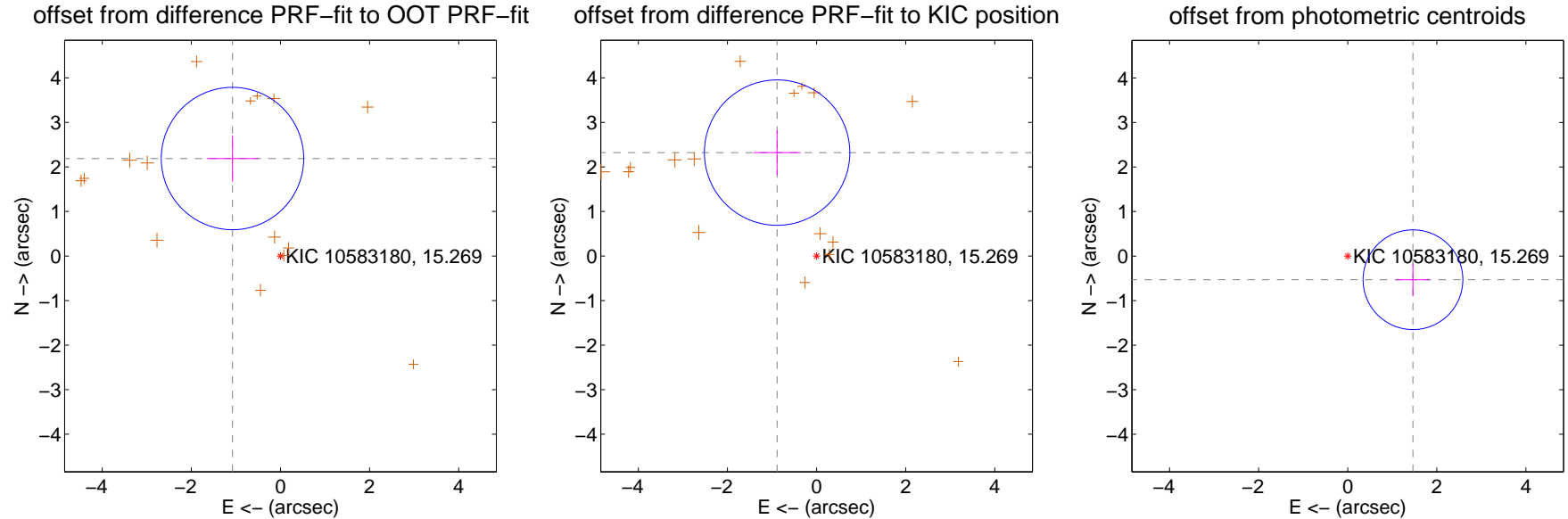
DV Centroid Data

Supplemental centroid analysis for 010583180-01. Kepler magnitude: 15.27. Transit SNR 37.88

There are 0 quarters with good PRF difference image offsets

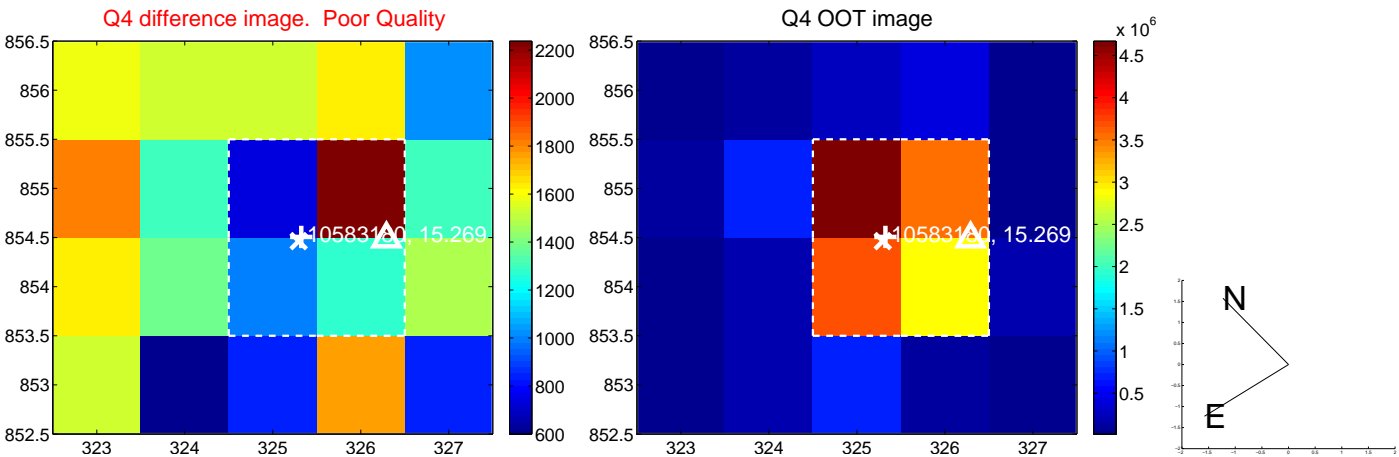
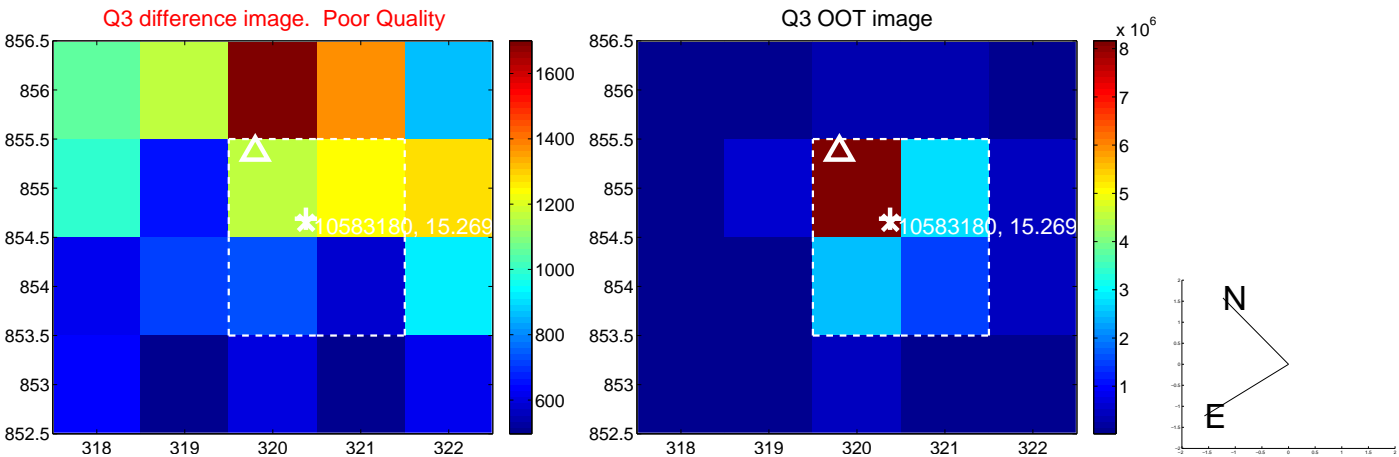
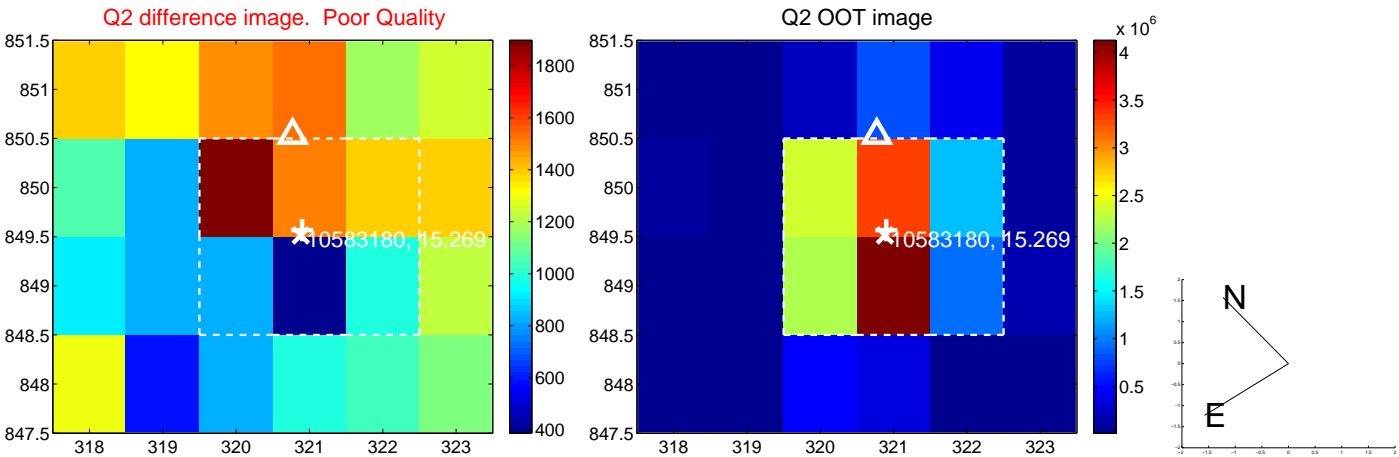
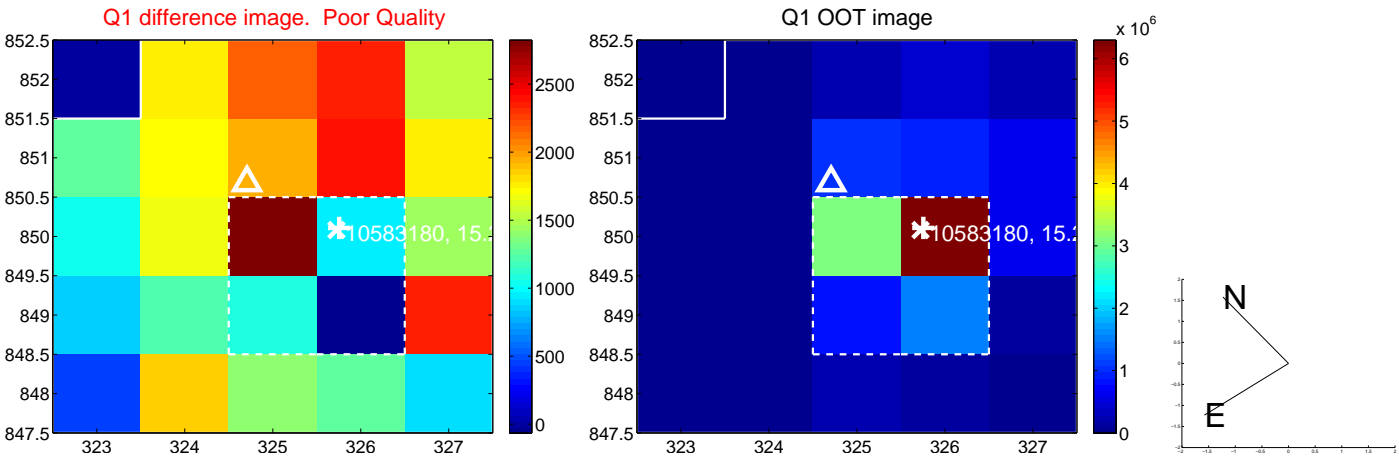
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.440 ± 0.533	4.58	1.077 ± 0.578	2.189 ± 0.521
PRF-fit source offset from KIC position	2.485 ± 0.544	4.57	0.886 ± 0.524	2.322 ± 0.503
photometric centroid source offset	1.56 ± 0.37	4.17	-1.47 ± 0.37	-0.53 ± 0.37

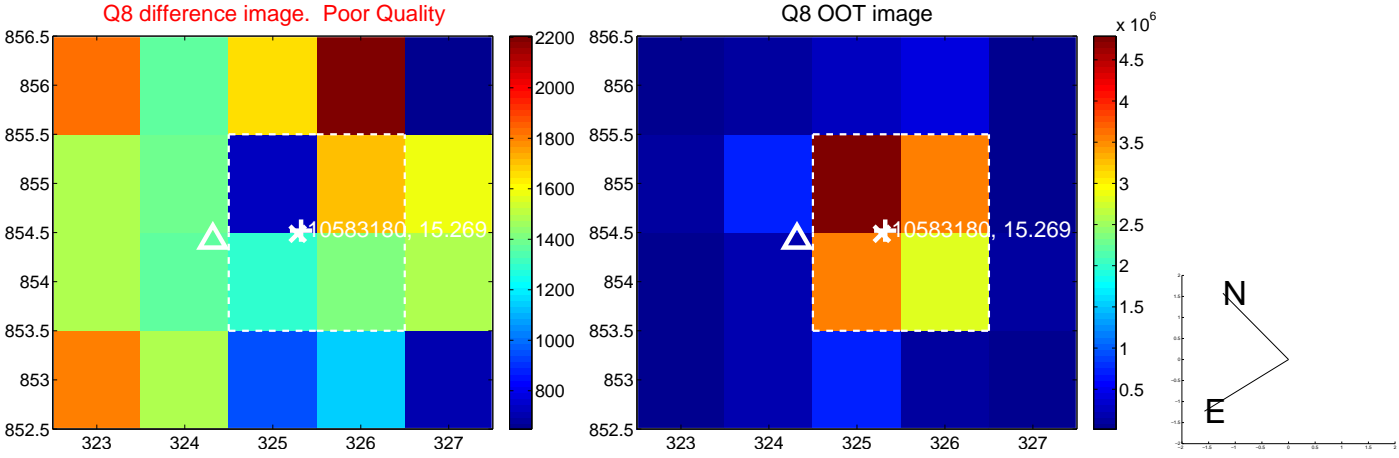
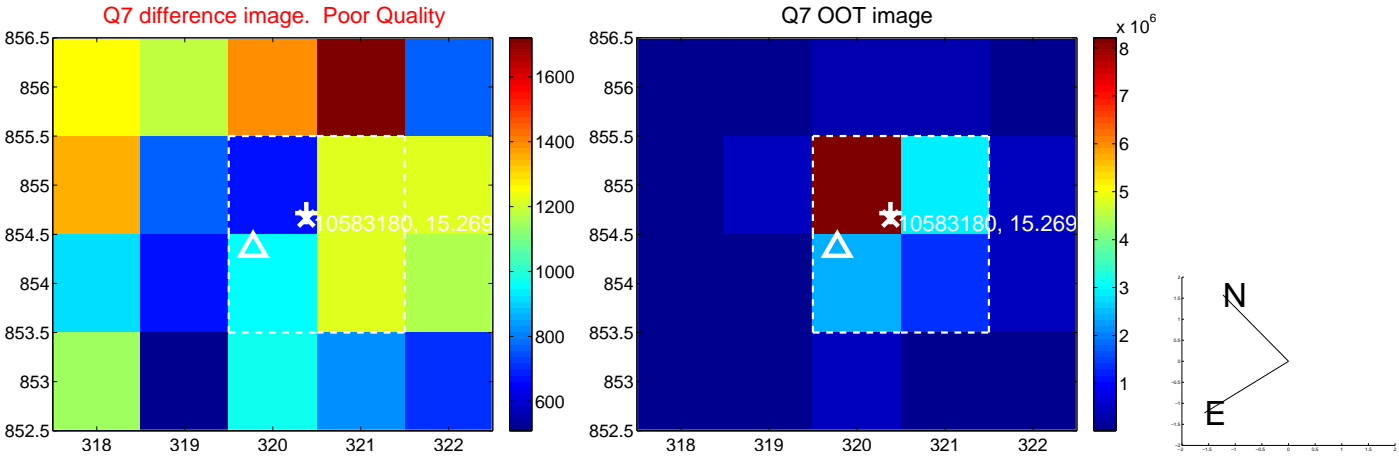
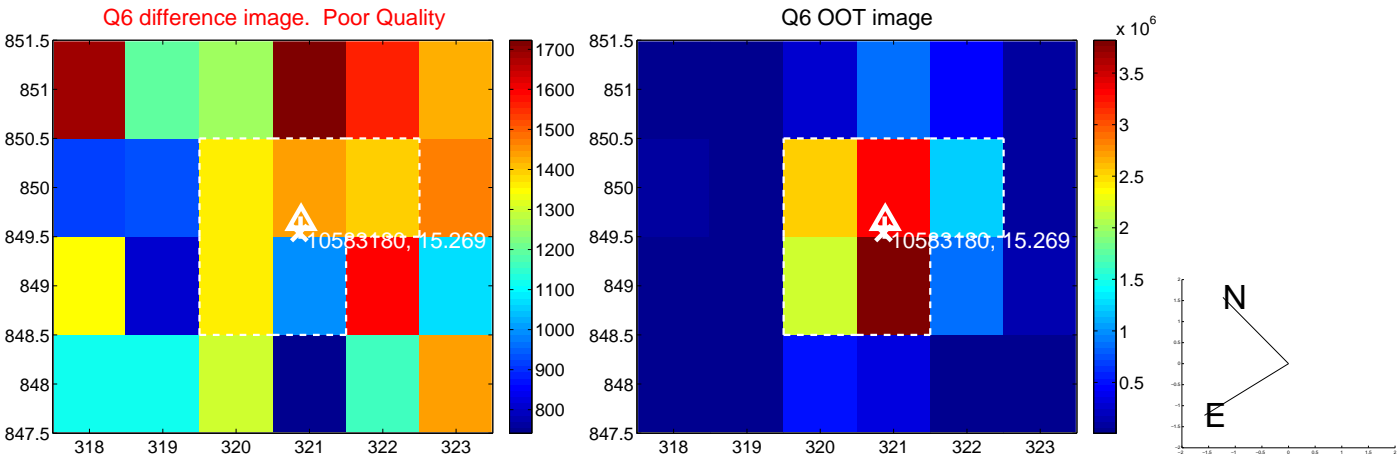
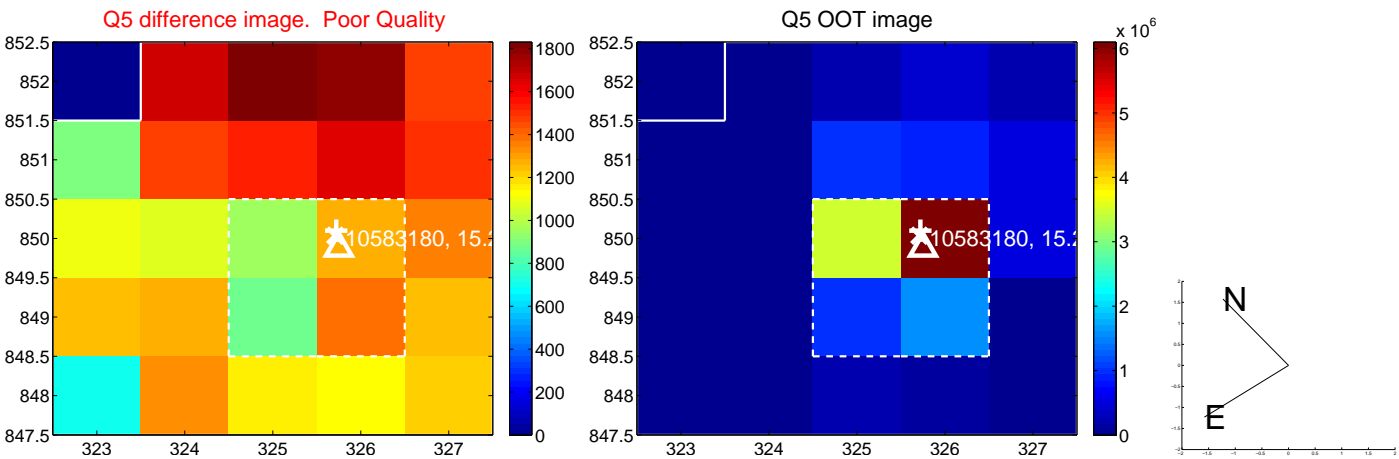


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

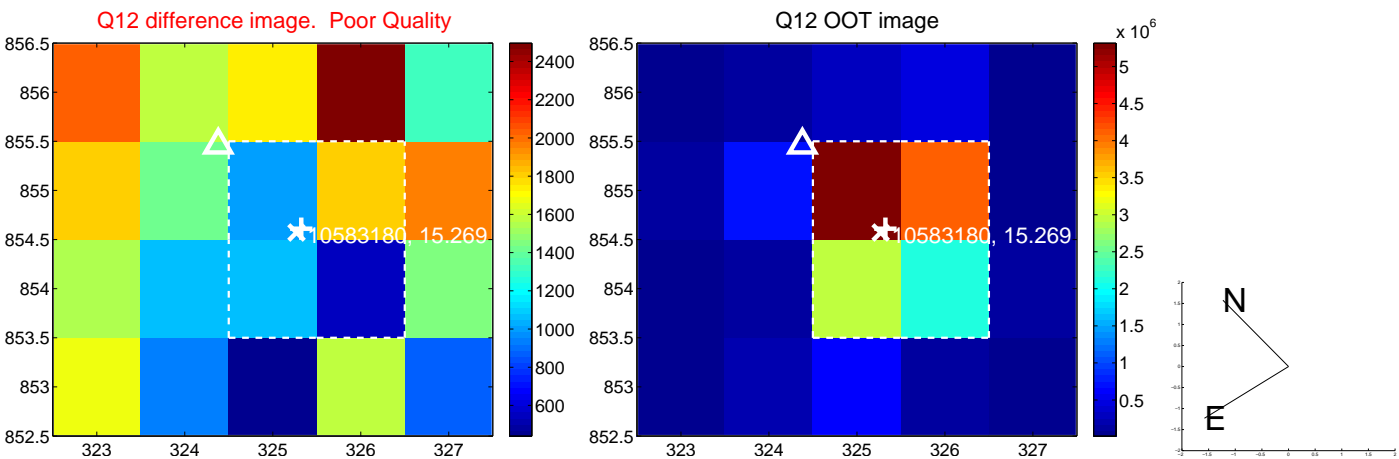
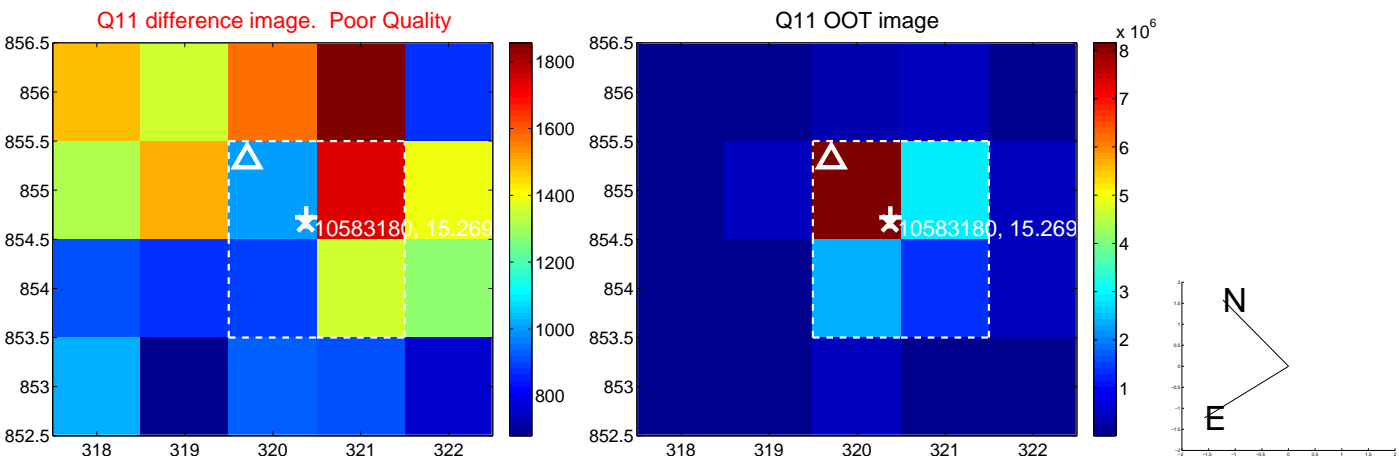
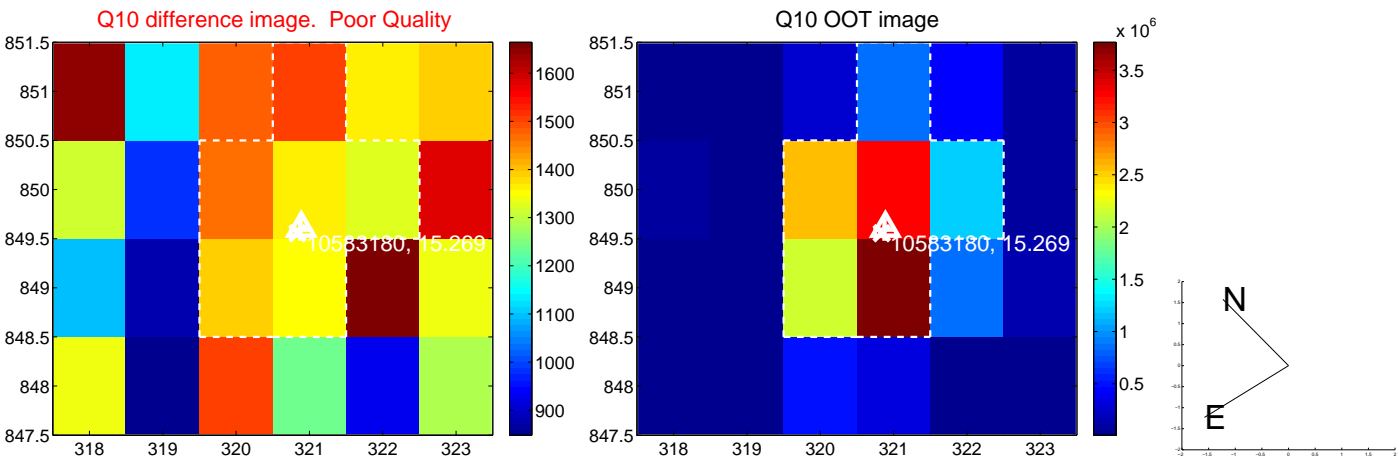
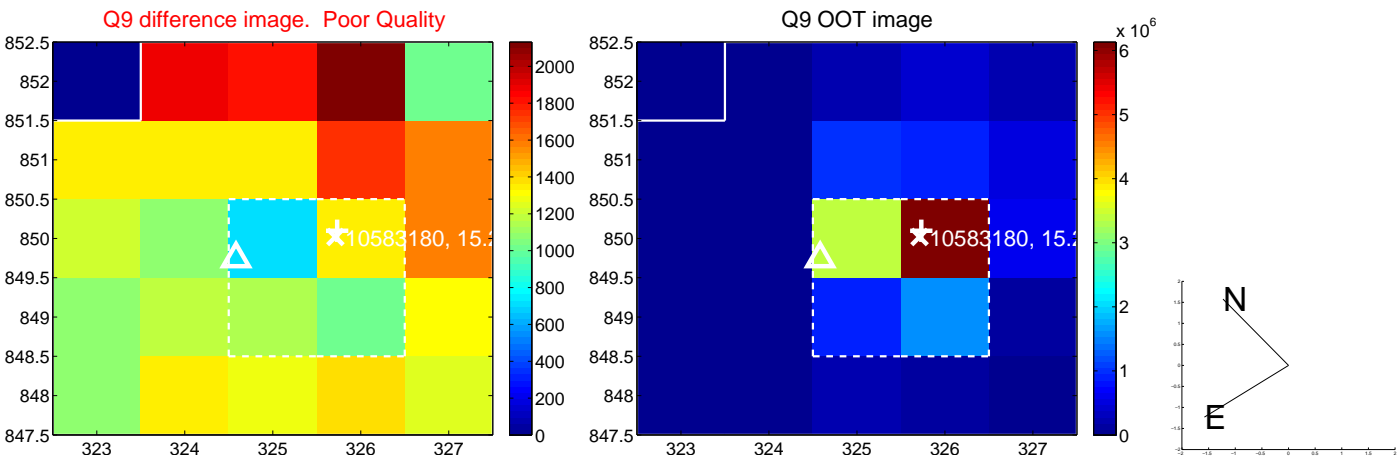
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



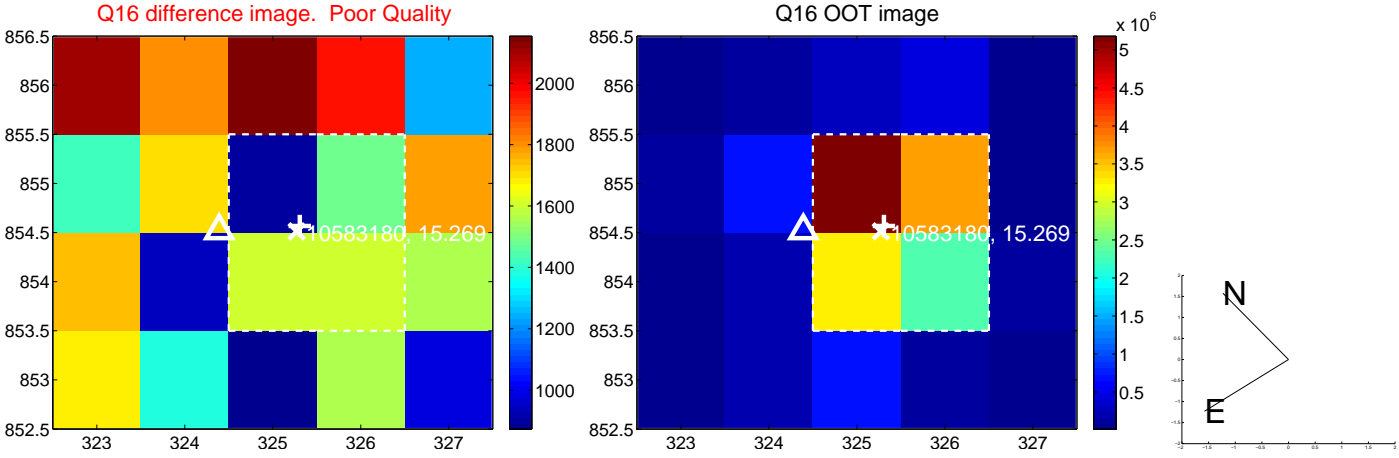
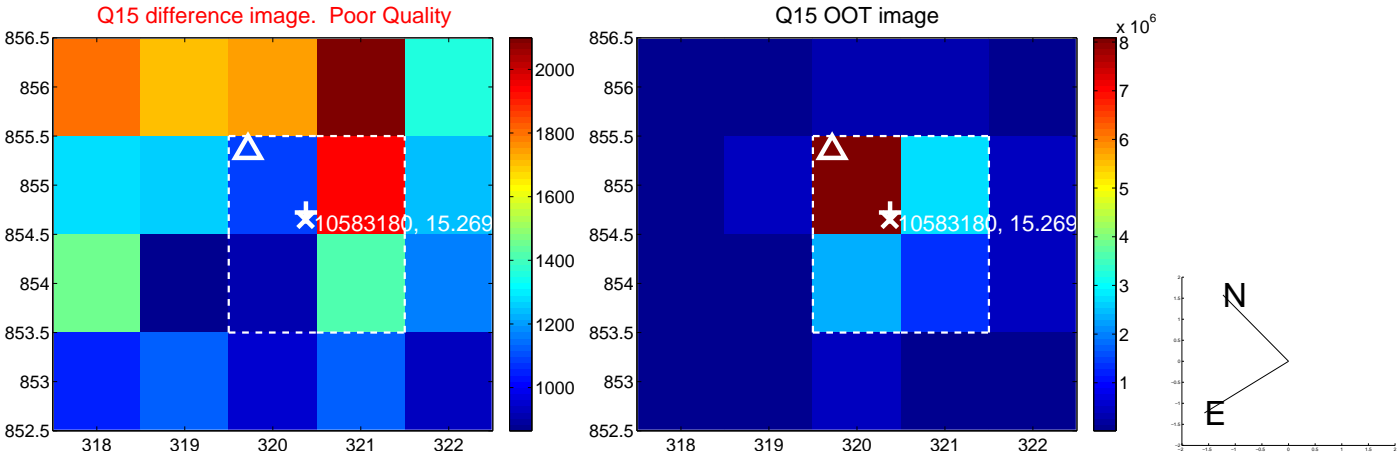
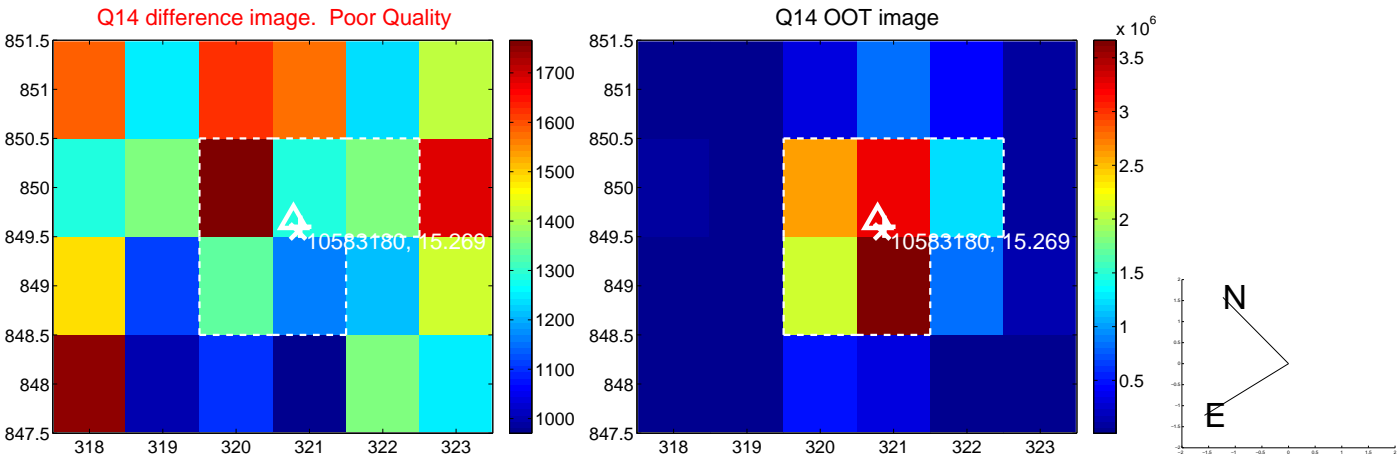
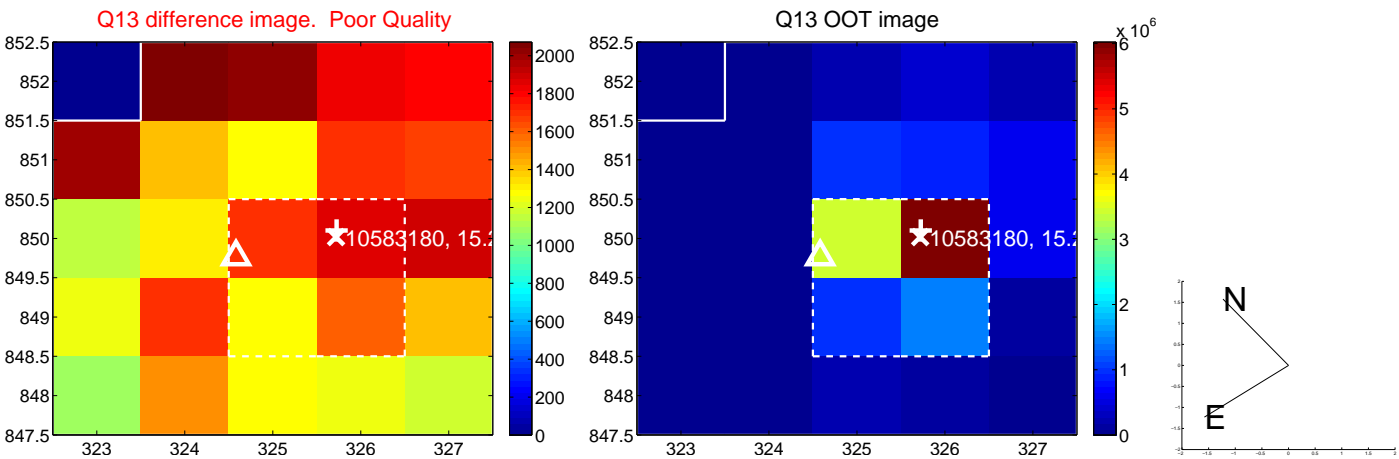
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



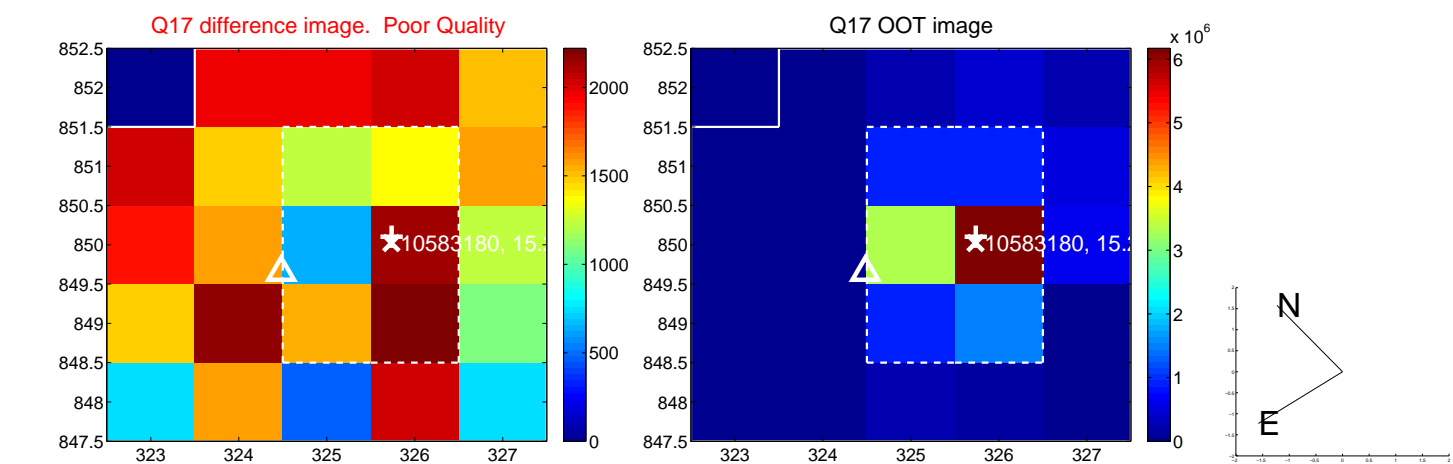
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



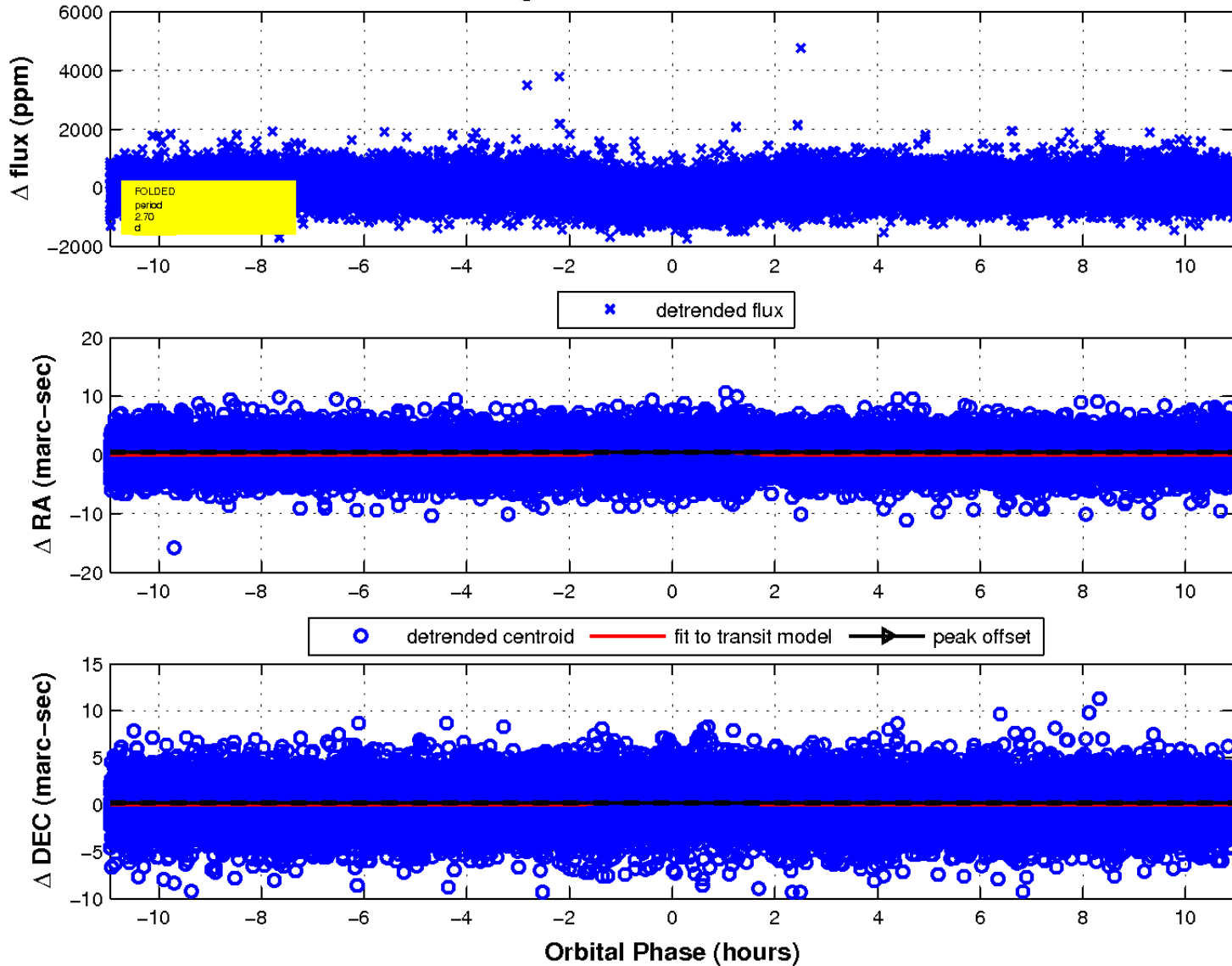
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

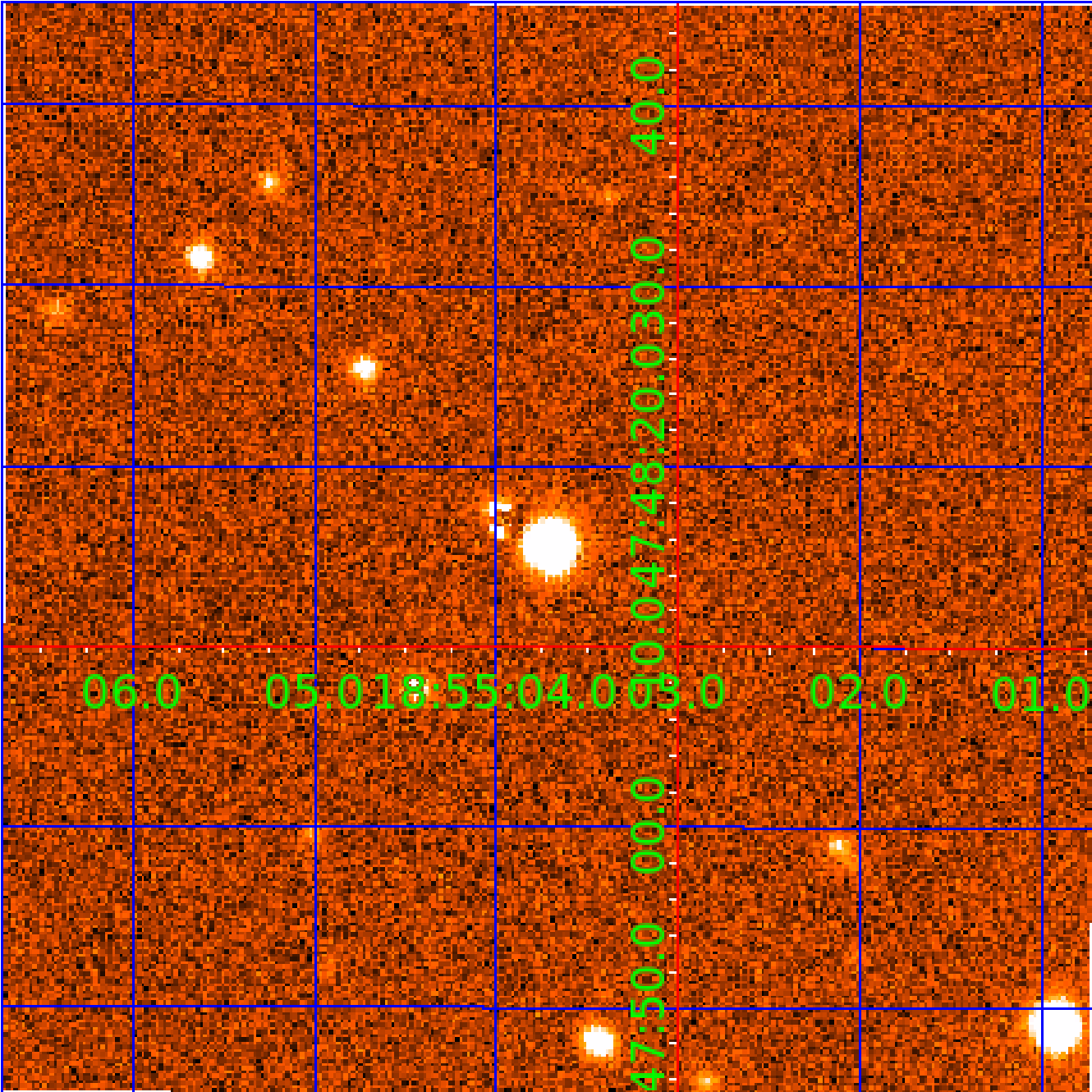


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010583180

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})
010583180-01	OBS	0748.01	2.696360	132.991385	328.2	3.649	34.6	37.9	0.82	4989	1.83	305.33
010583180-02	OBS	No	2.696378	131.640525	108.7	3.521	12.6	12.8	0.82	4989	1.04	305.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010583180-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
010583180-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—HALO_GHOST—EPHEM_MATCH

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 010583180-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010583180-02	10583180	010583181-sec	10583181	1:1	52.9	-10	9	11.01	15.27	914.68	Direct-PRF	0	1.29	0.34

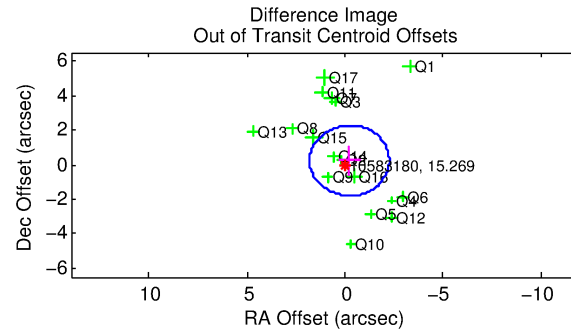
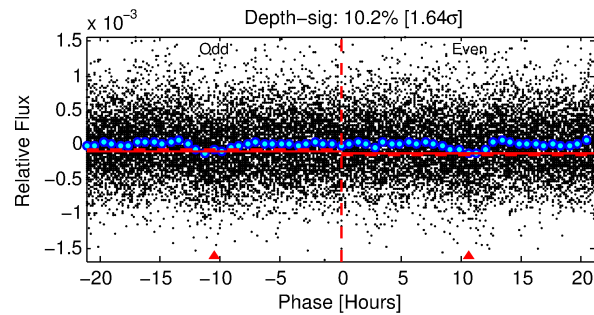
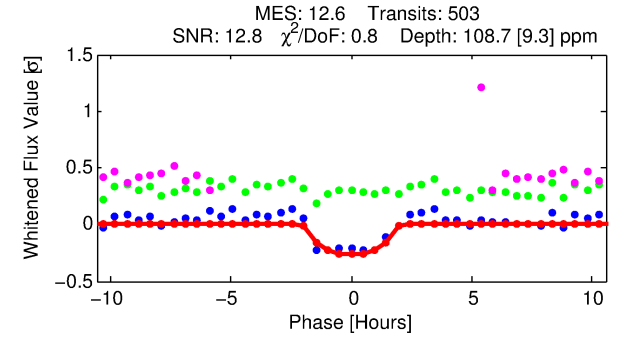
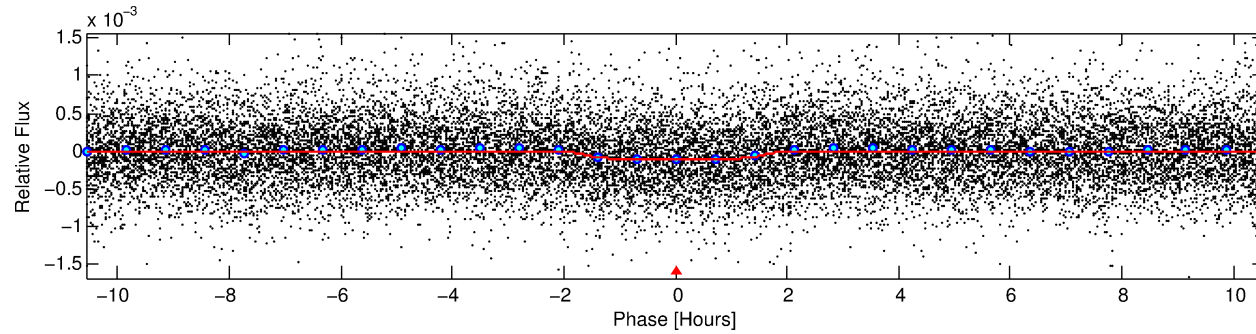
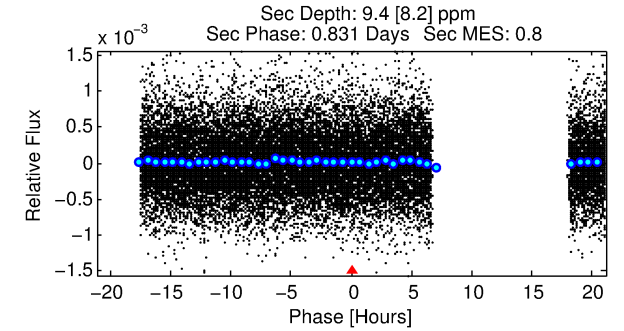
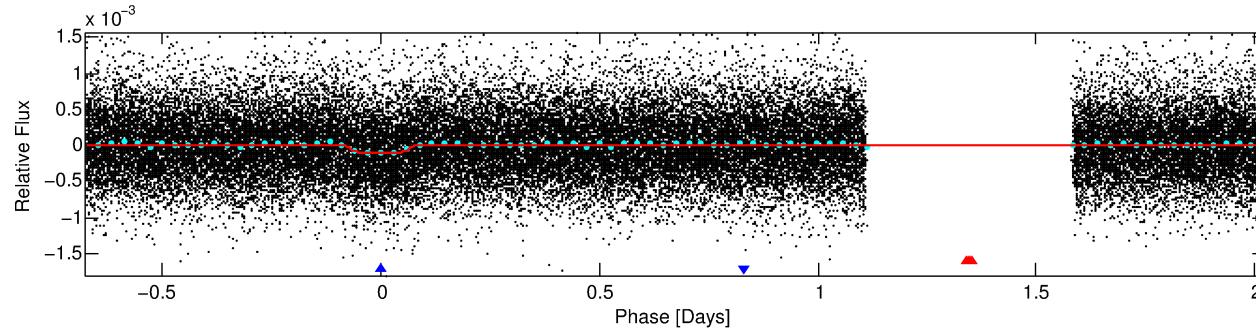
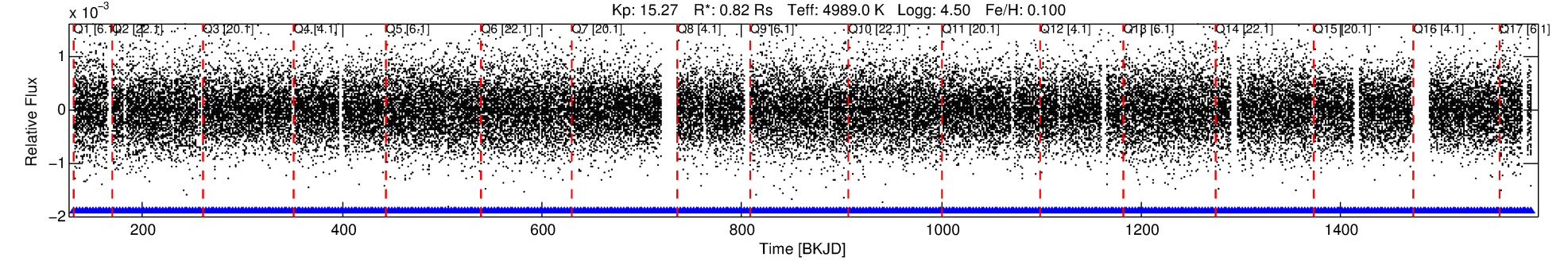
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10583180 Candidate: 2 of 2 Period: 2.696 d

KOI: K00748 Corr: No Ephemeris Match

Kp: 15.27 R*: 0.82 Rs Teff: 4989.0 K Logg: 4.50 Fe/H: 0.100



DV Fit Results:

Period = 2.69638 [0.00002] d
Epoch = 131.6405 [0.0042] BKJD
Rp/R* = 0.0116 [0.0070]
a/R* = 2.90 [6.17]
b = 0.90 [0.54]
Seff = 305.33 [59.37]
Teff = 1066 [52] K
Rp = 1.04 [0.64] Re
a = 0.0349 [0.0034] AU
Ag = 5.86 [8.78] [0.55σ]
Teffp = 2564 [959] K [1.56σ]

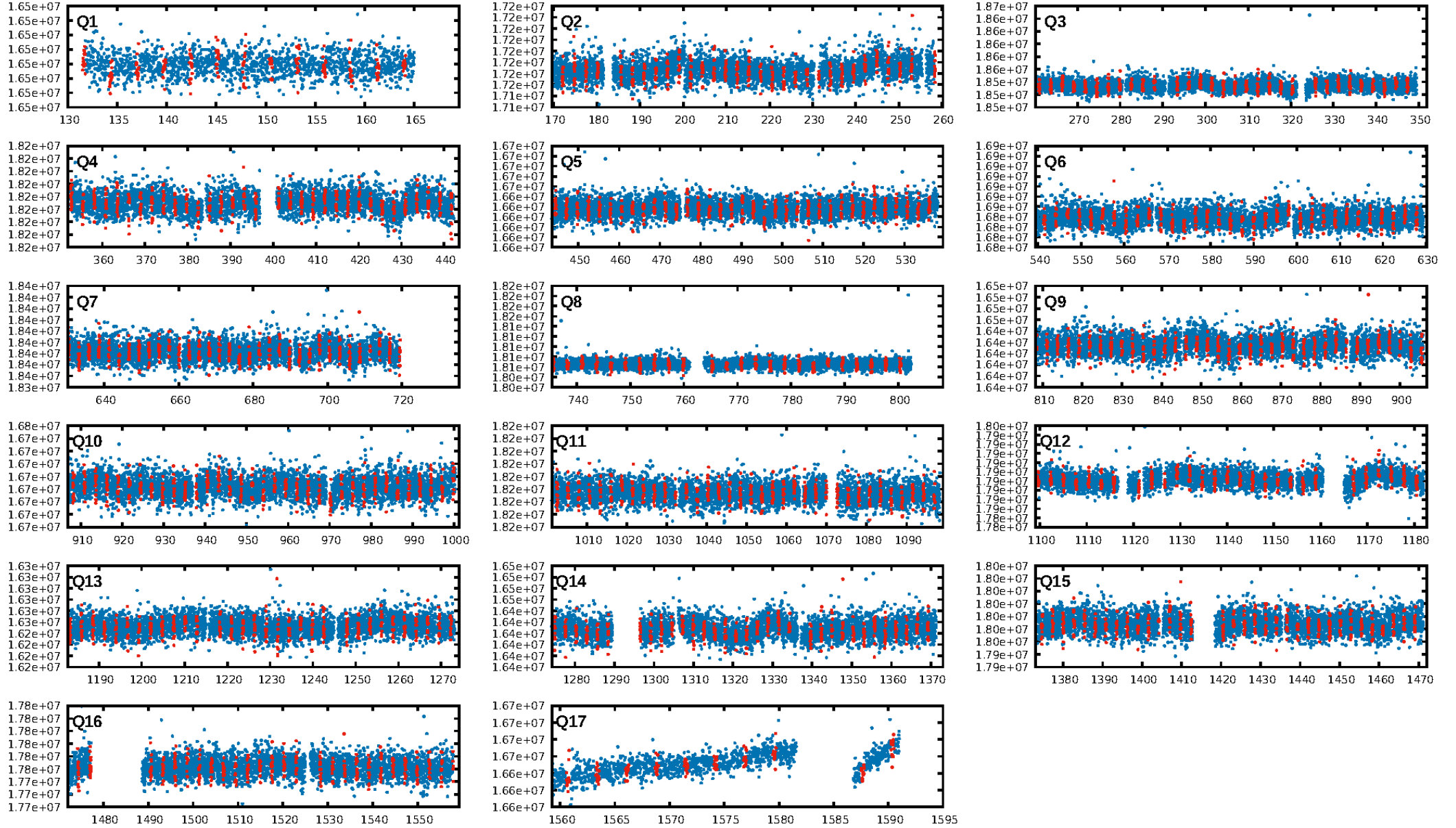
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.28e-37
RollingBand-fgt: 1.00 [480/480]
GhostDiagnostic-chr: -0.04849
Centroid-sig: 6.5%
Centroid-so: 1.793 arcsec [1.60σ]
OotOffset-rm: 0.322 arcsec [0.47σ]
KicOffset-rm: 0.542 arcsec [0.83σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.06 [1/17]
DiffImageOverlap-fno: 1.00 [17/17]

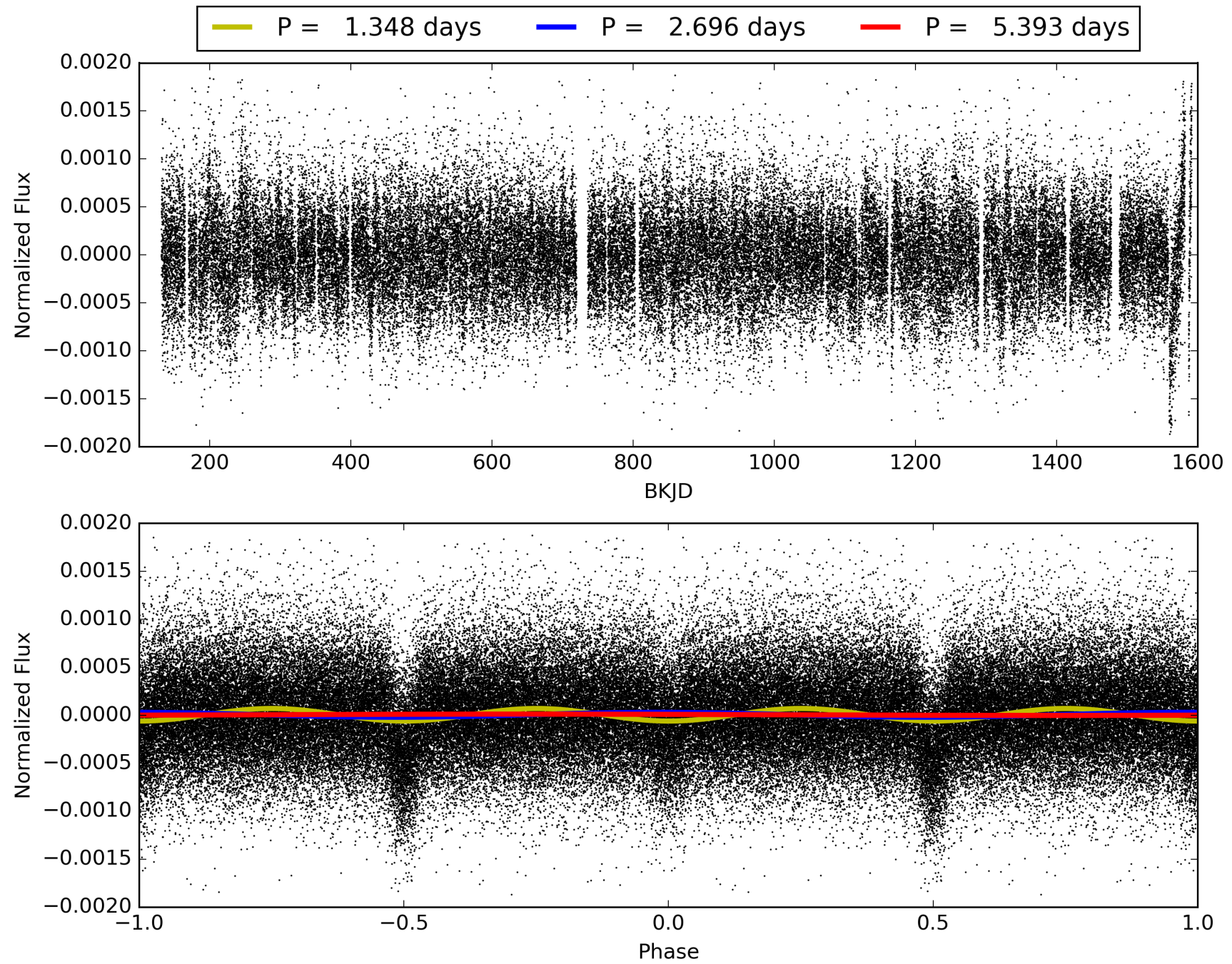
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:13:58 Z

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

TCE 010583180-02, PDC Light Curves

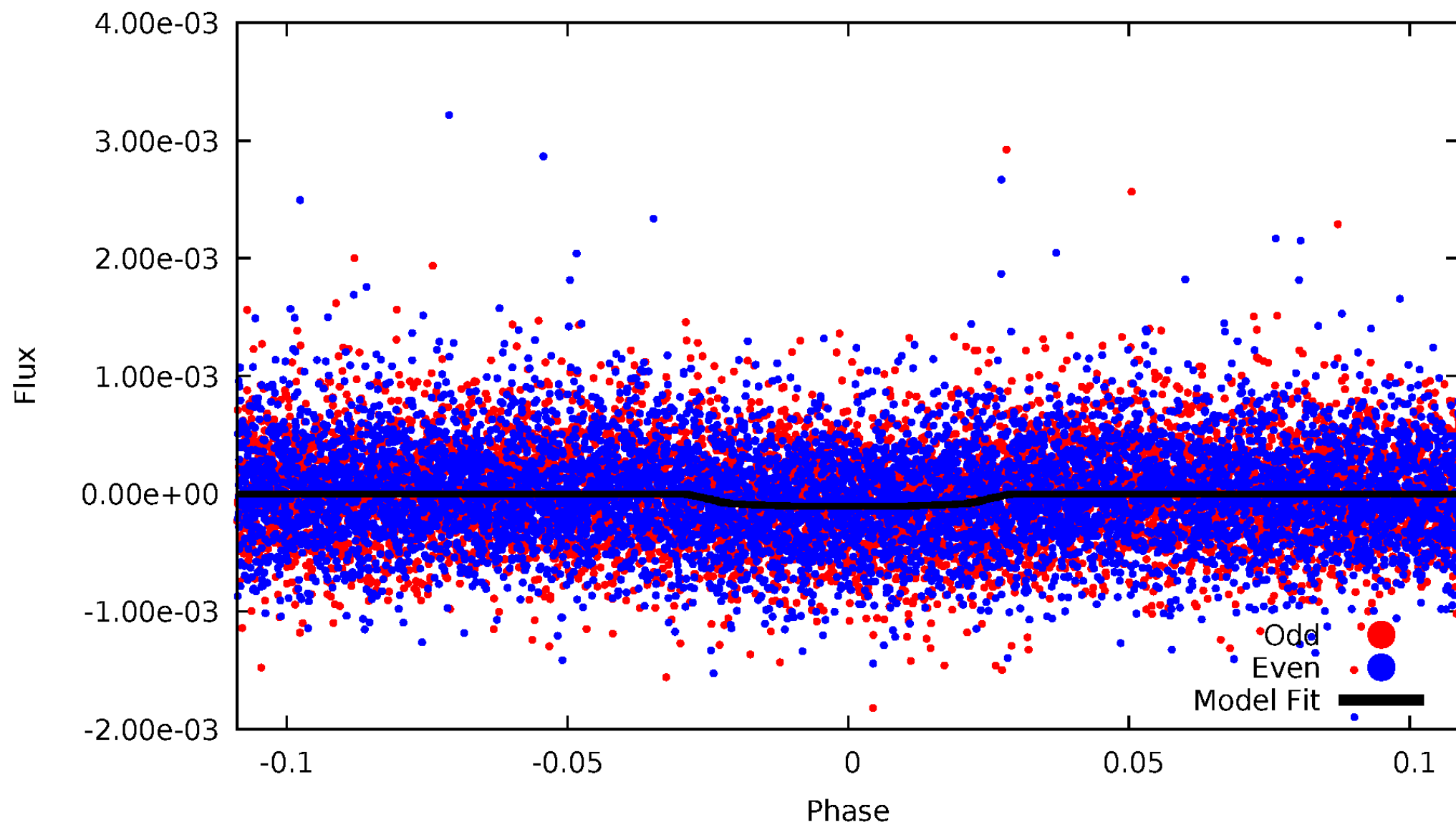


TCE 010583180-02



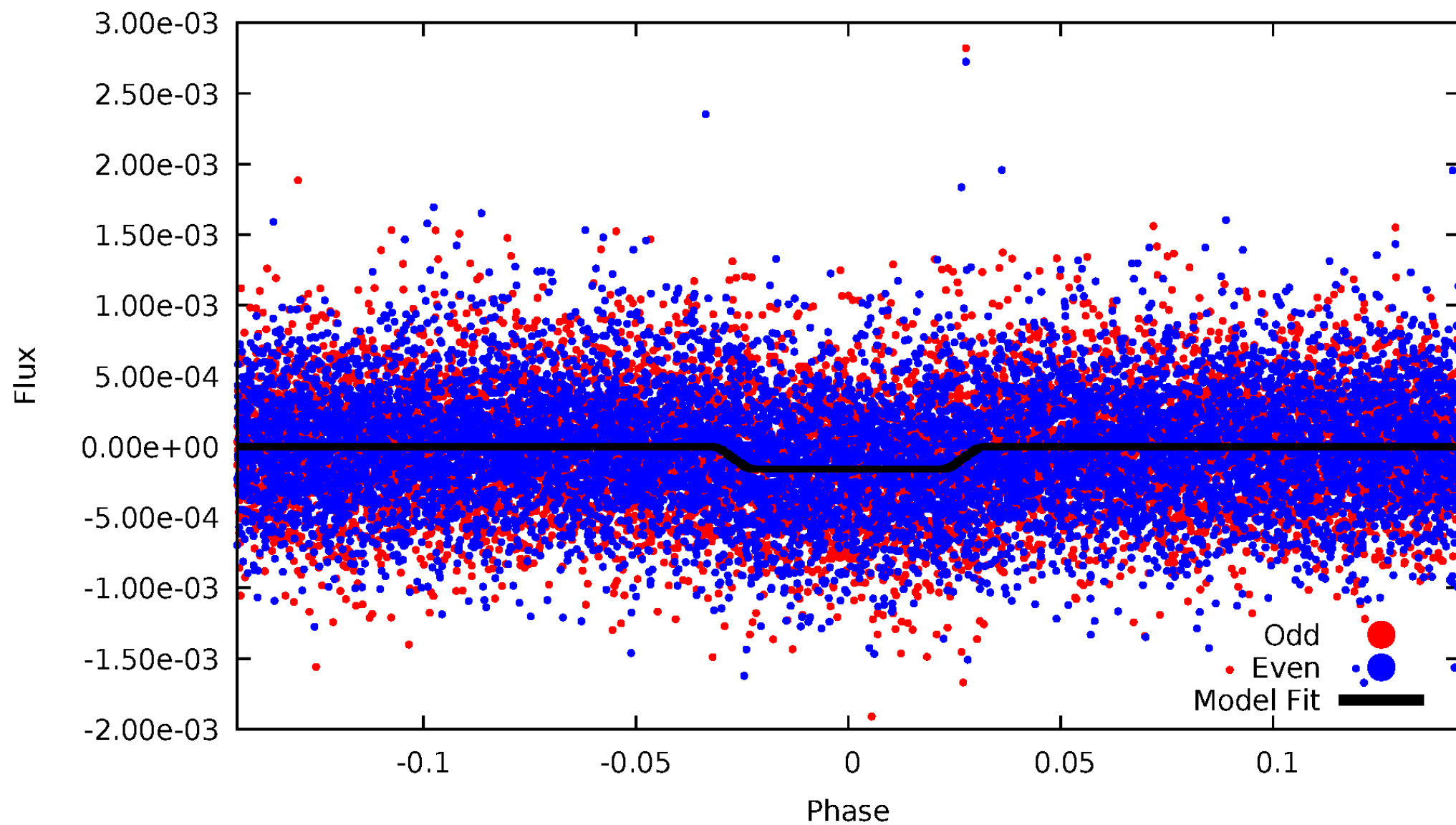
DV Odd/Even

TCE 010583180-02



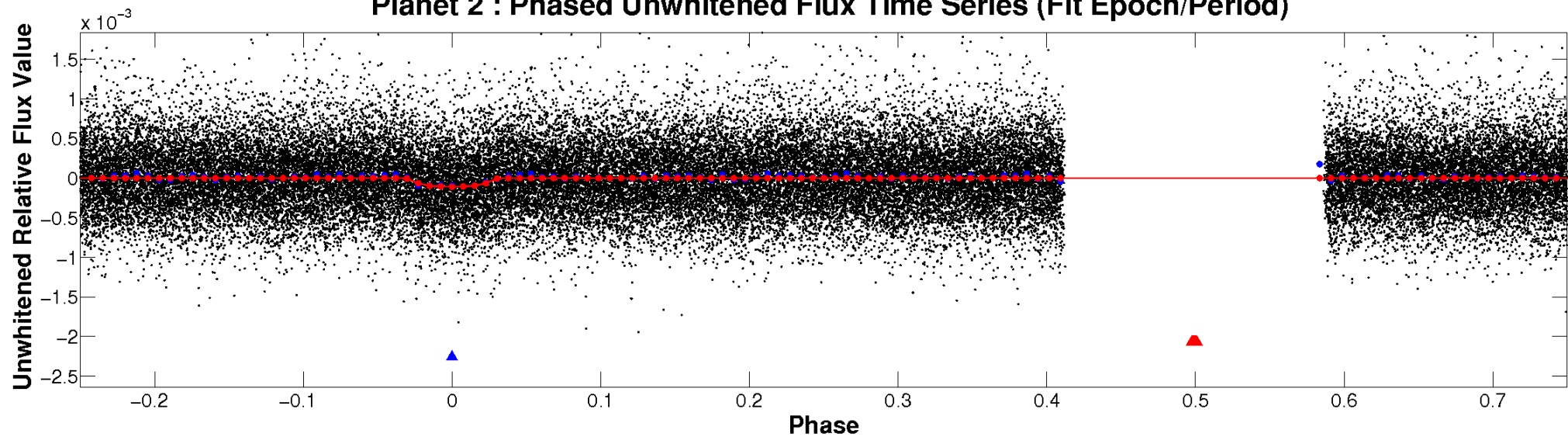
ALT Odd/Even

TCE 010583180-02

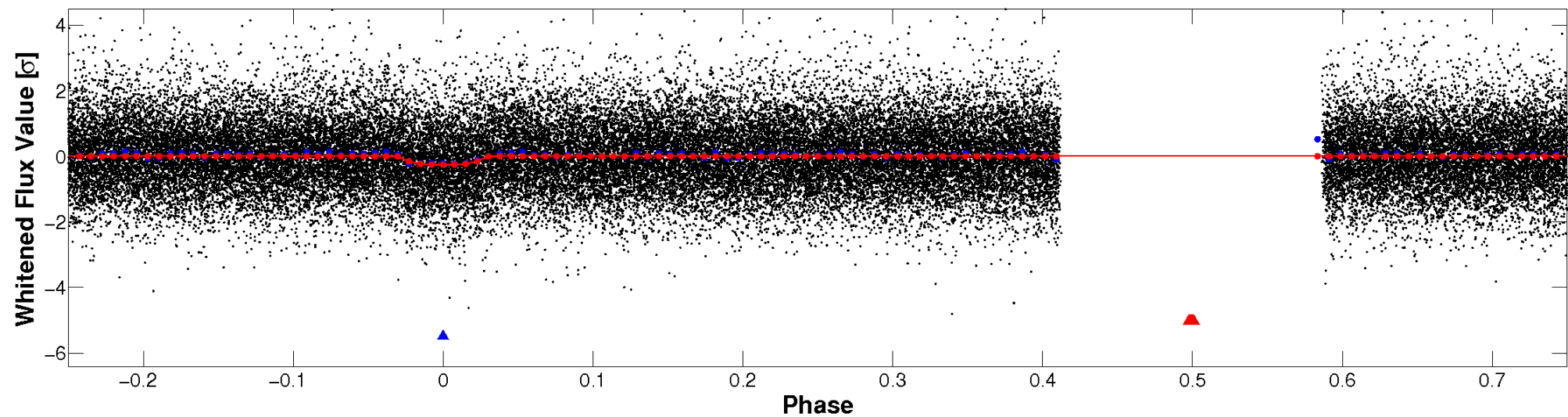


Non-Whitened Vs. Whitened Light Curve

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

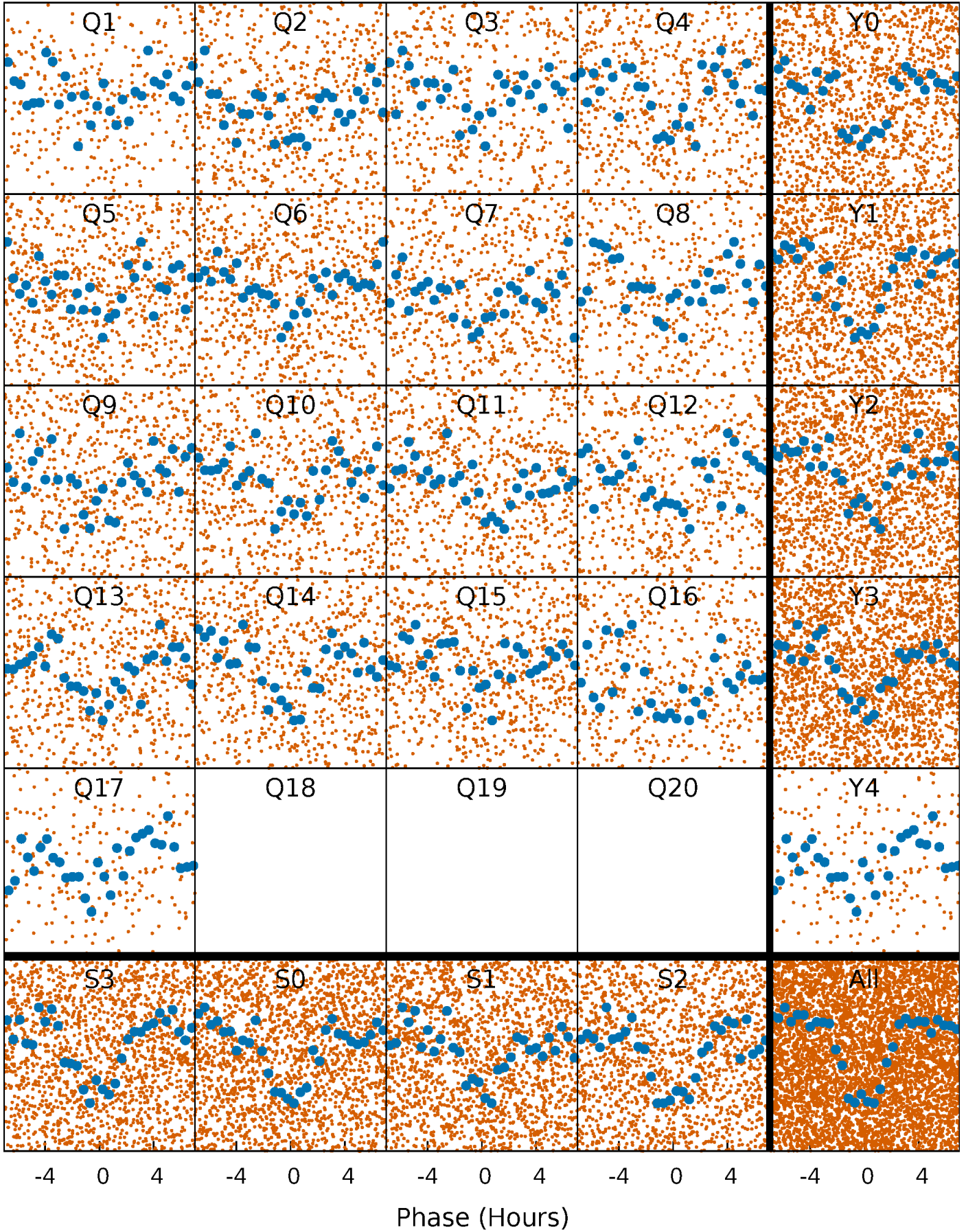


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



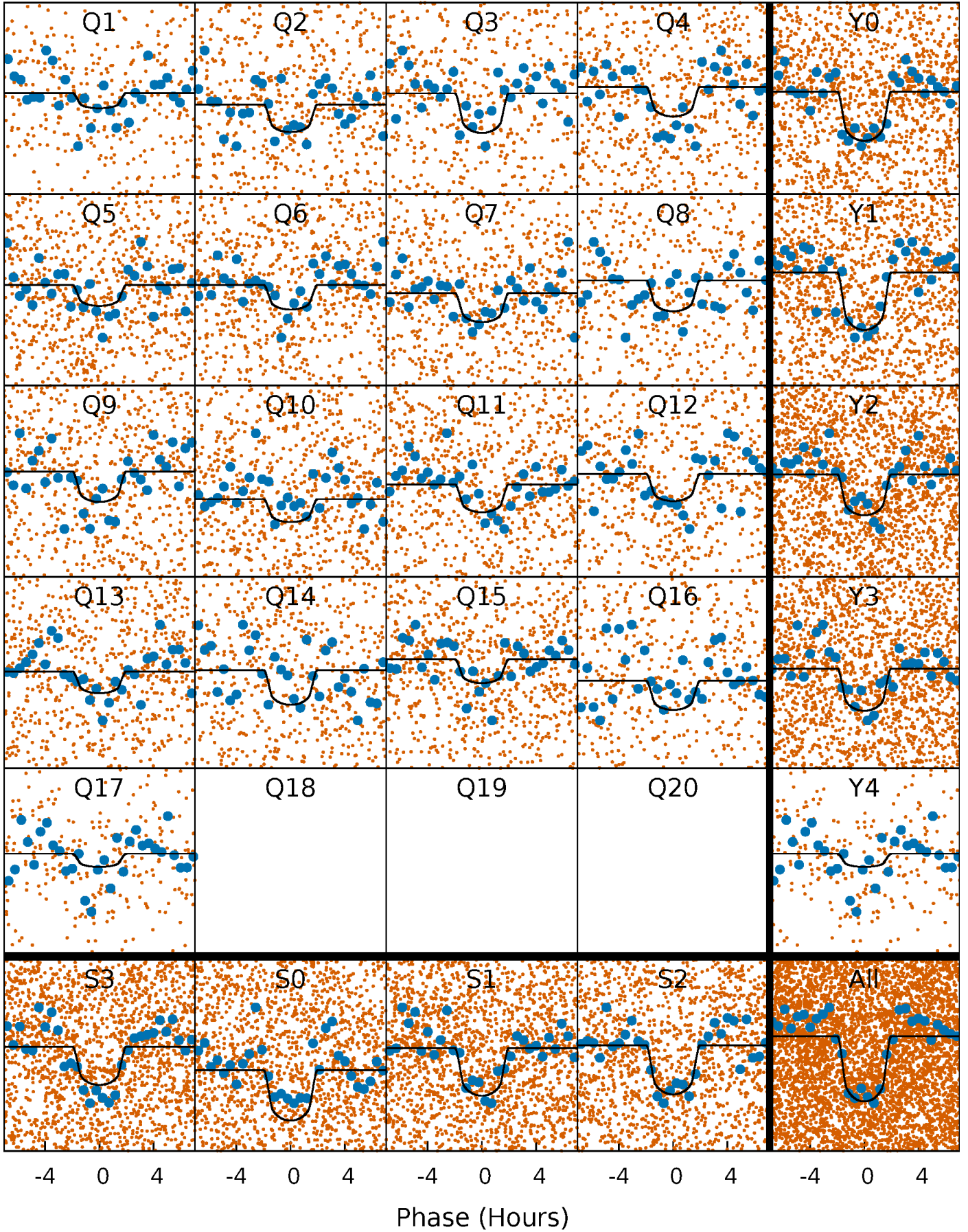
PDC Quarter-Phased Transit Curves

TCE 010583180-02 P= 2.696378 Days $T_0=131.640525$ (BKJD)



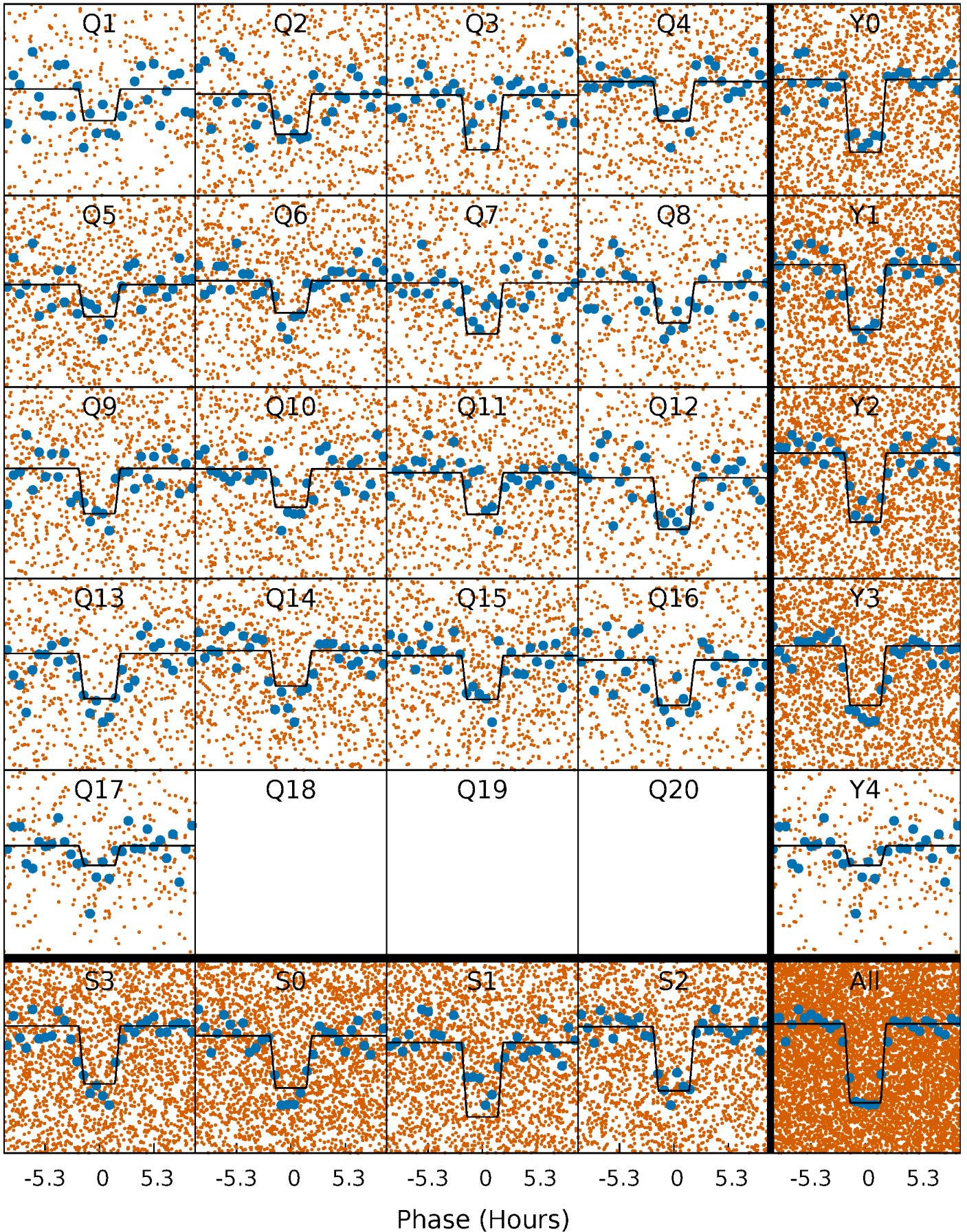
DV Quarter-Phased Transit Curves

TCE 010583180-02 P= 2.696378 Days $T_0=131.640525$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

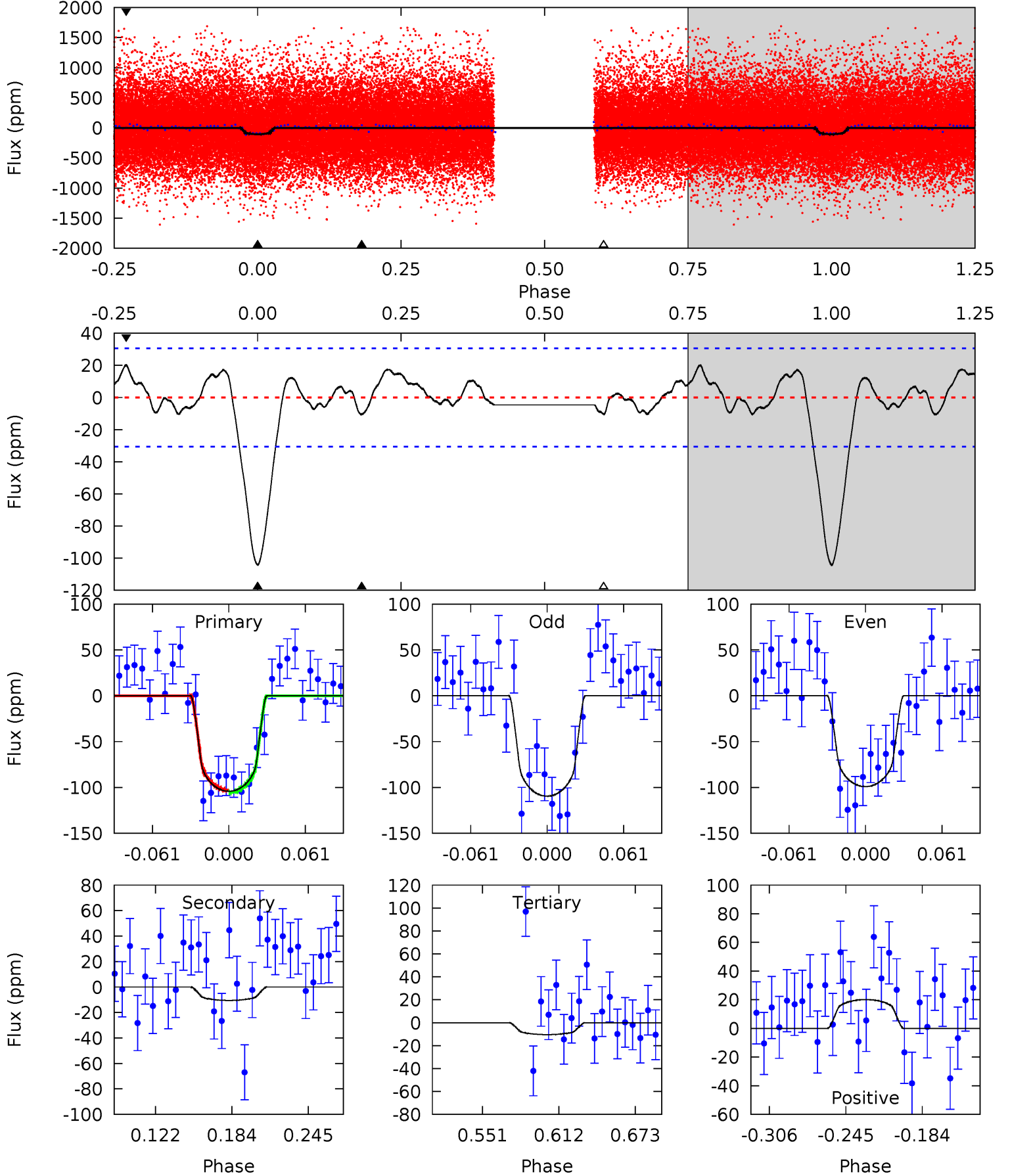
TCE 010583180-02 P= 2.696392 Days $T_0=131.635496$ (BKJD)



DV Model-Shift Uniqueness Test

010583180-02, P = 2.696378 Days, E = 128.944147 Days

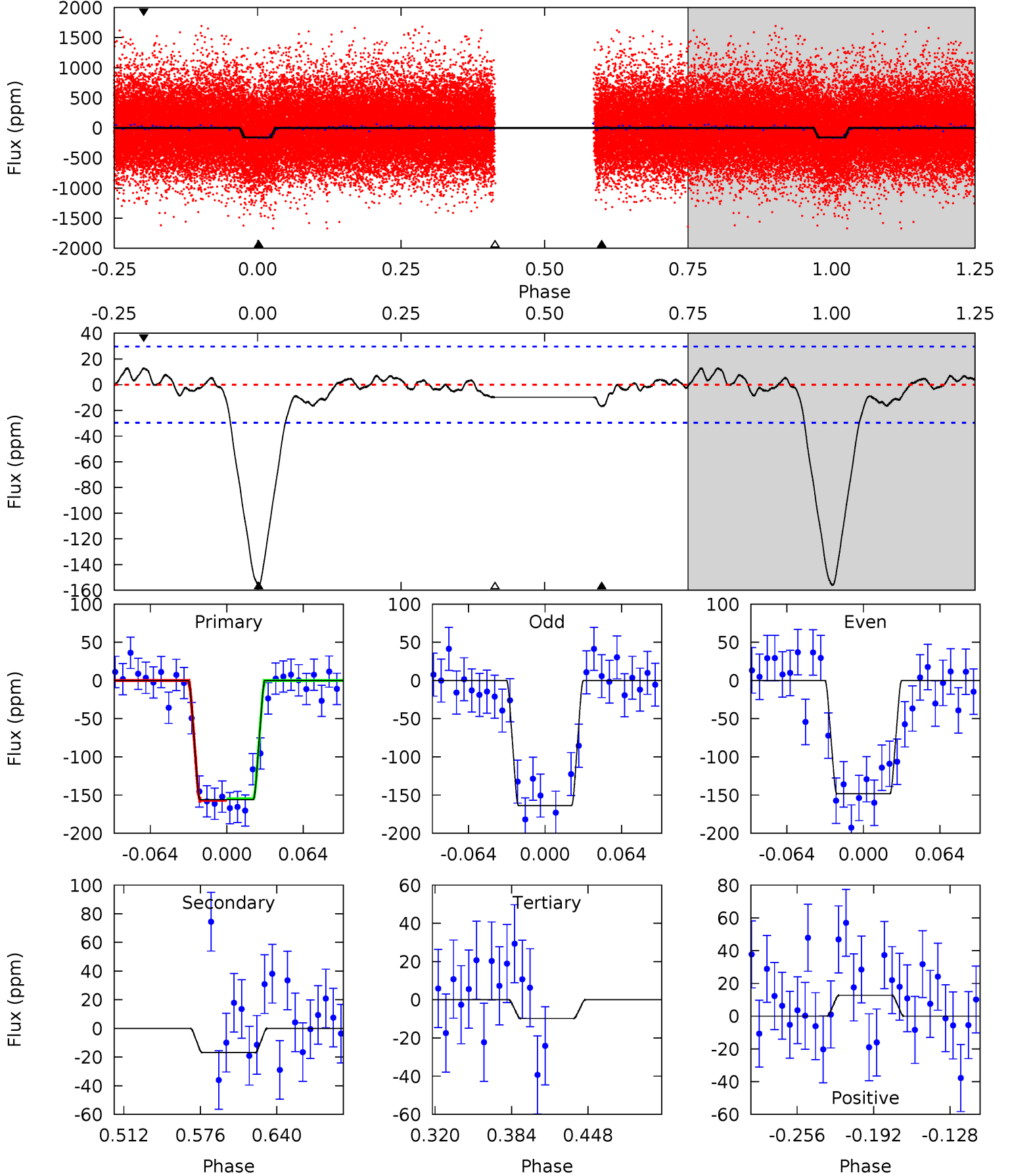
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	1.60	1.59	3.07	4.67	1.87	1.15	14.3	12.8	0.02	-1.46	0.80	0.94	0.16	0.18



Alt Model-Shift Uniqueness Test

010583180-02, P = 2.696392 Days, E = 128.939104 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.5	2.64	1.54	2.00	4.66	1.85	0.92	23.0	22.5	1.11	0.65	1.22	1.03	0.08	0.17



Stellar Parameters For KIC 010583180

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4989^{+149}_{-149}	$4.504^{+0.090}_{-0.060}$	$0.100^{+0.250}_{-0.300}$	$0.819^{+0.067}_{-0.082}$	$0.781^{+0.078}_{-0.056}$	$2.000^{+0.718}_{-0.371}$
	+3%/-3%	+2%/-1%	+250%/-300%	+8%/-10%	+10%/-7%	+36%/-19%
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 010583180-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 7	$1.07^{+0.58}_{-0.51}$	1487^{+54}_{-62}	3058^{+829}_{-556}	$5.338^{+17.531}_{-3.980}$
Alt.	-17 ± 6	$1.15^{+0.61}_{-0.58}$	1486^{+51}_{-64}	3283^{+889}_{-448}	$8.377^{+27.938}_{-5.222}$

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

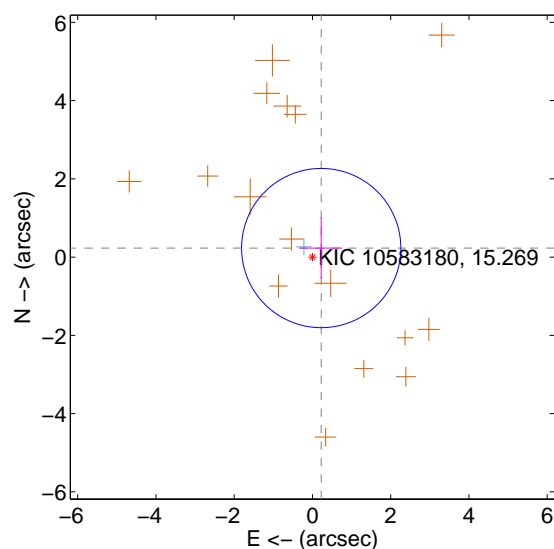
Supplemental centroid analysis for 010583180-02. Kepler magnitude: 15.27. Transit SNR 12.77

There are 1 quarters with good PRF difference image offsets

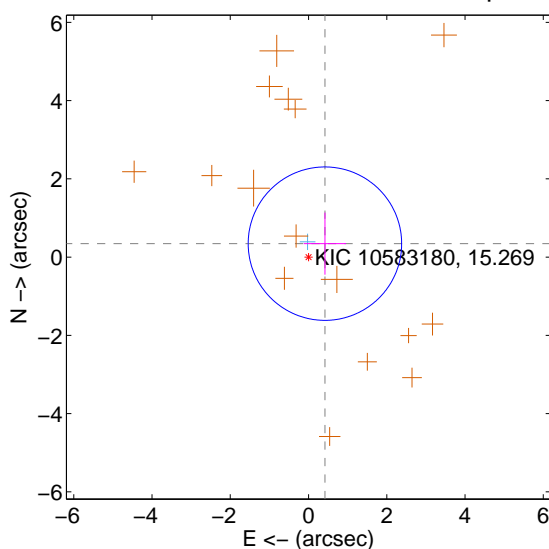
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.322 ± 0.678	0.47	-0.224 ± 0.540	0.231 ± 0.786
PRF-fit source offset from KIC position	0.542 ± 0.654	0.83	-0.419 ± 0.541	0.344 ± 0.792
photometric centroid source offset	1.79 ± 1.12	1.60	1.52 ± 1.12	-0.94 ± 1.11

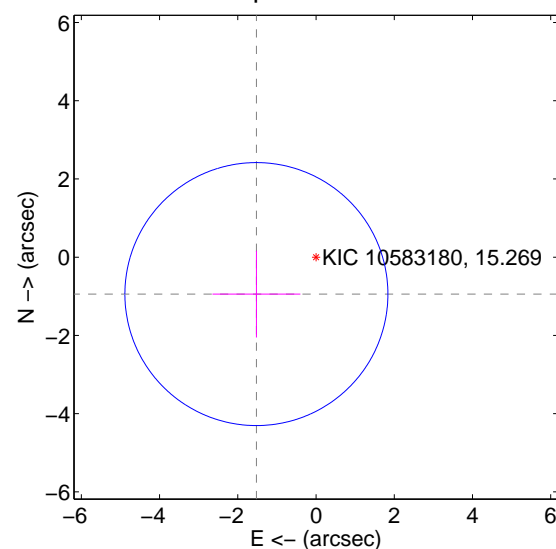
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

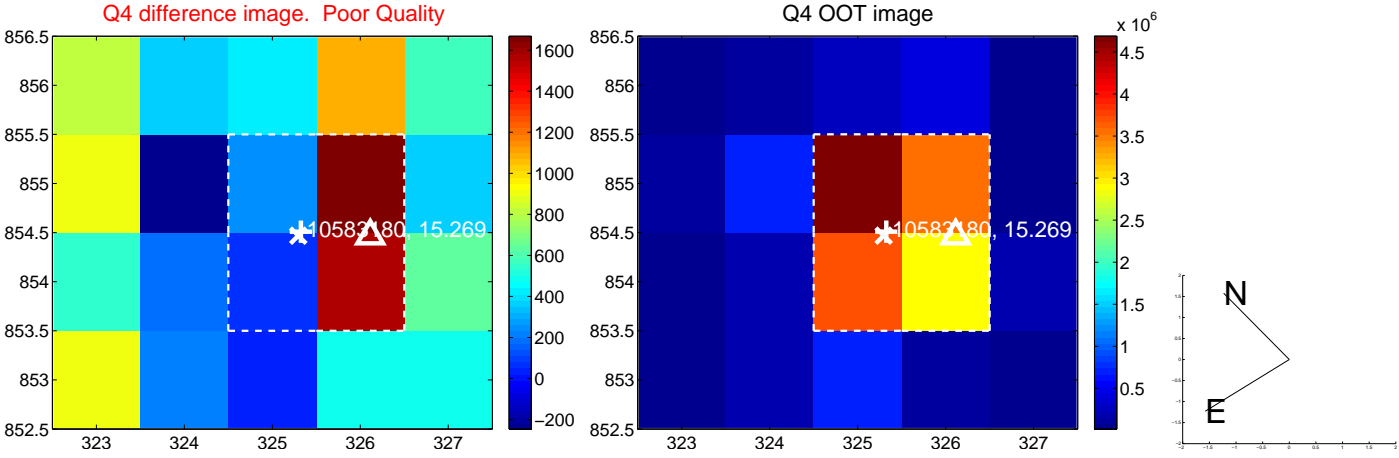
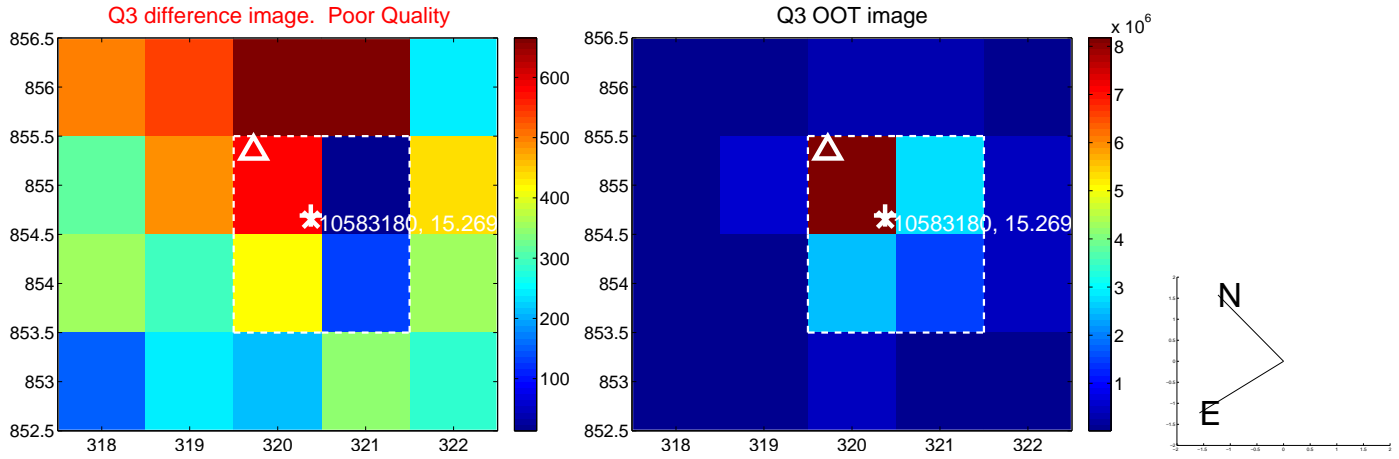
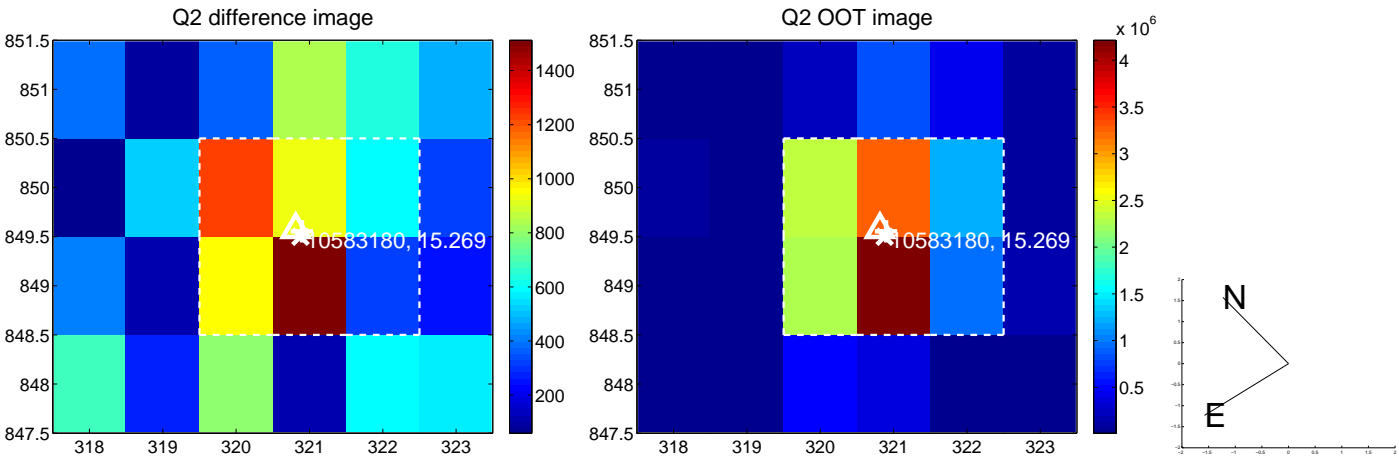
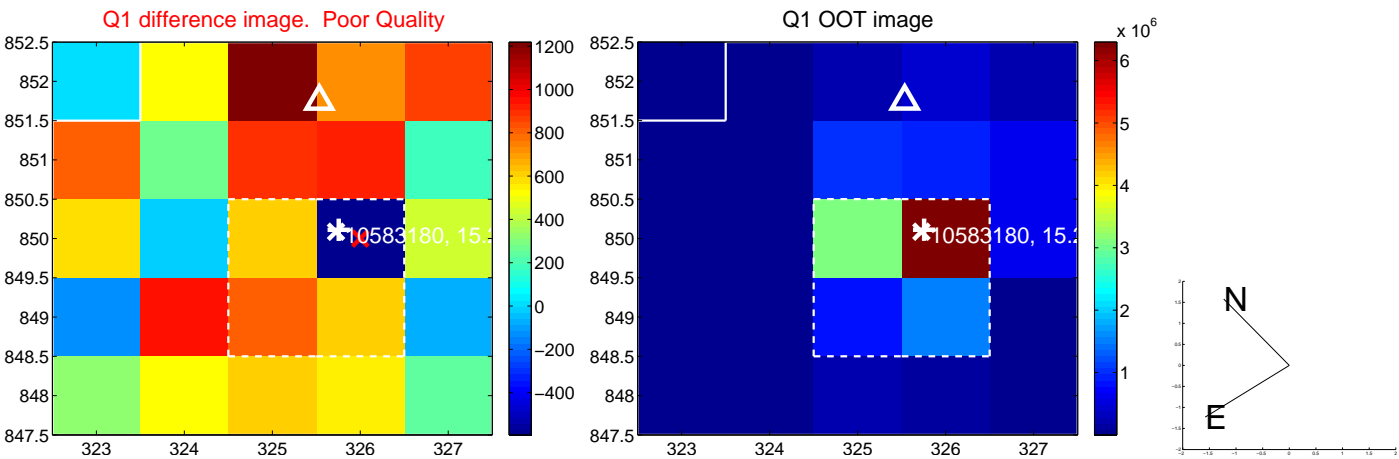


offset from photometric centroids

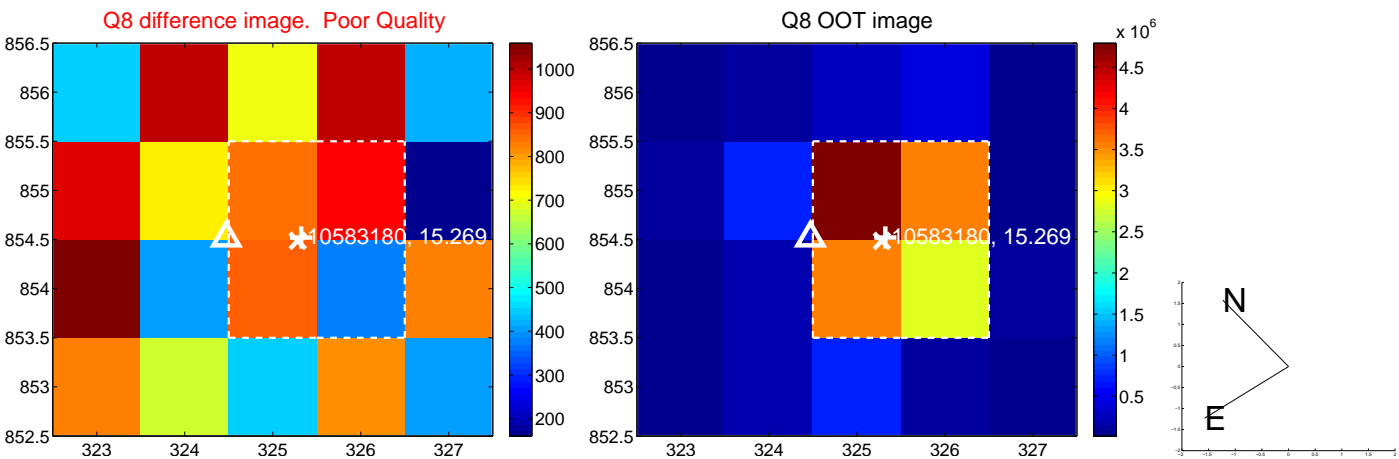
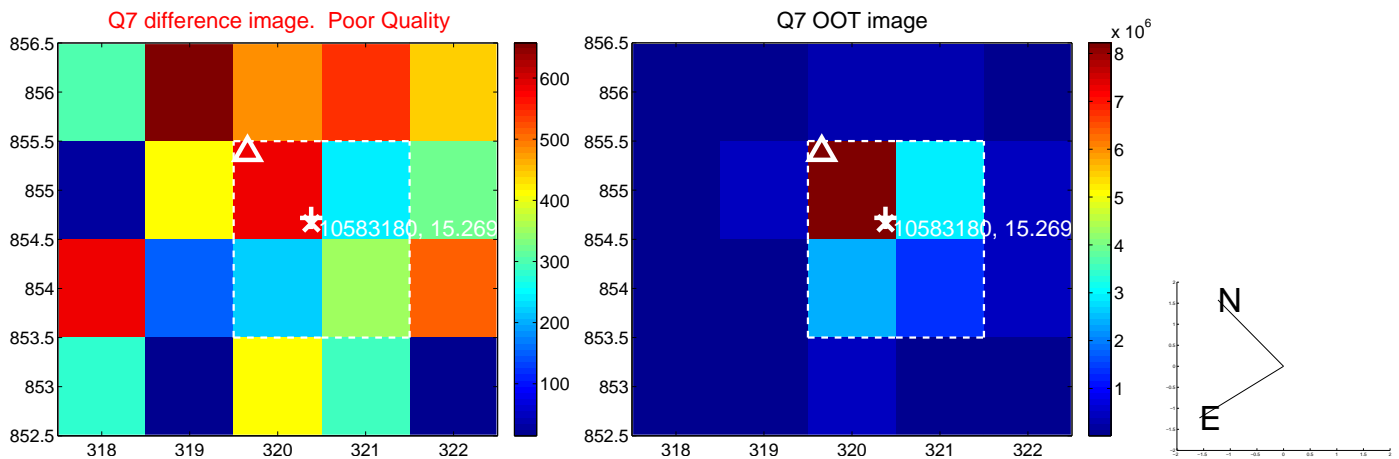
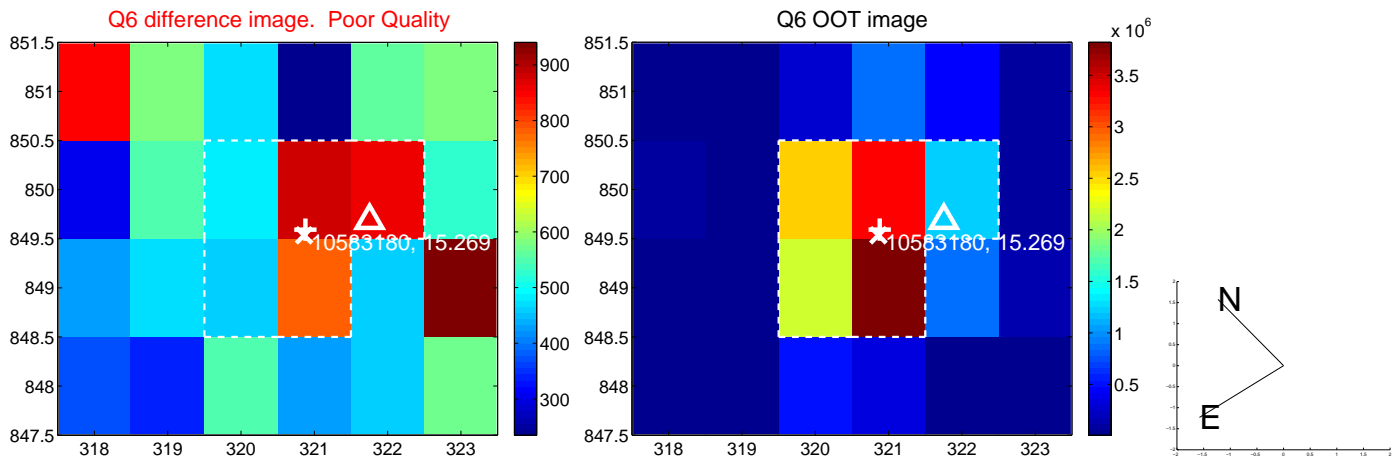
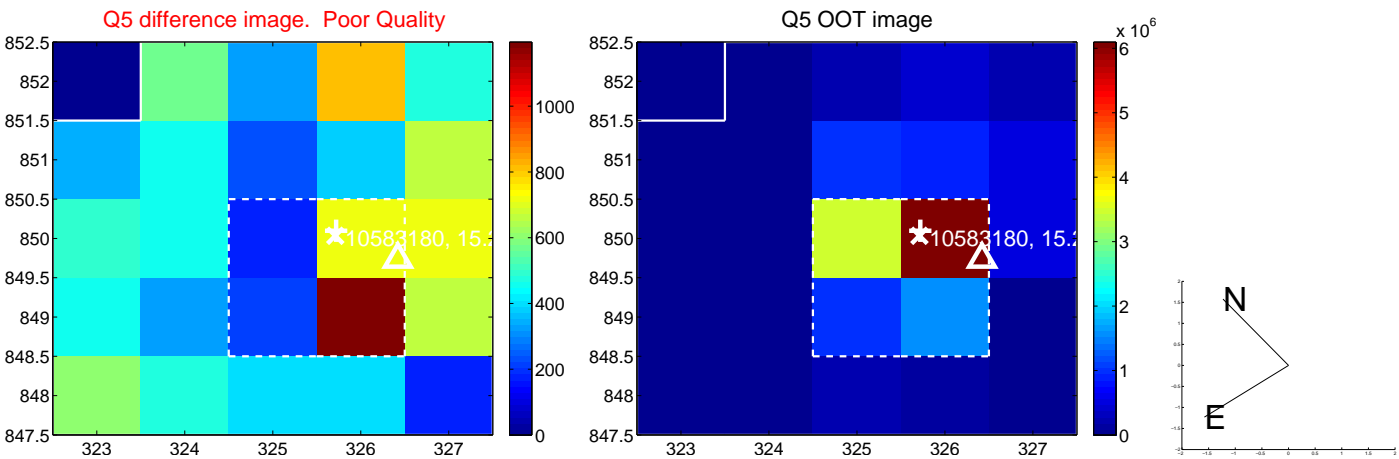


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

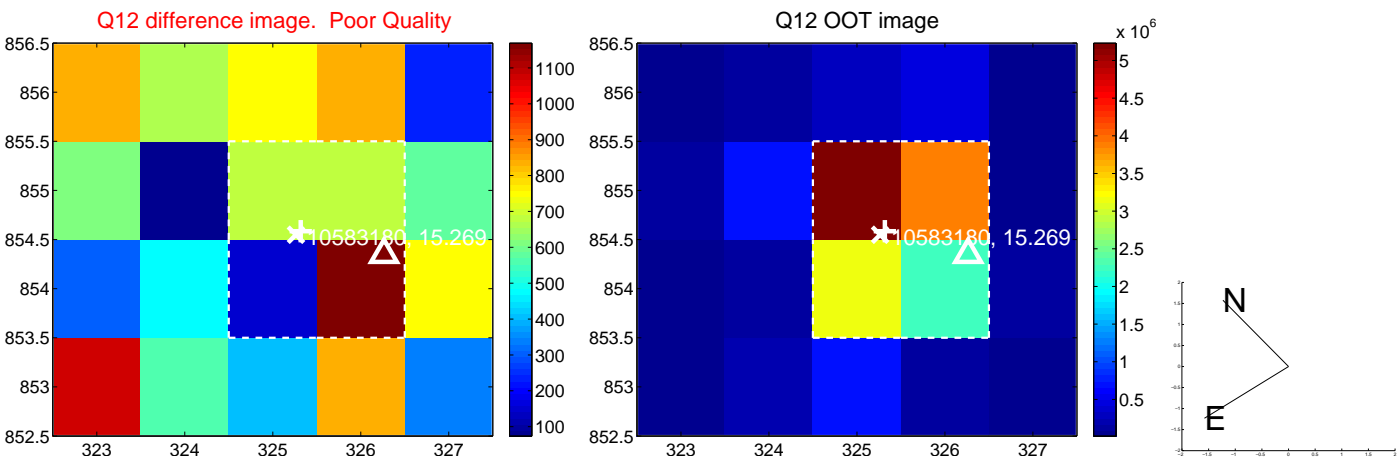
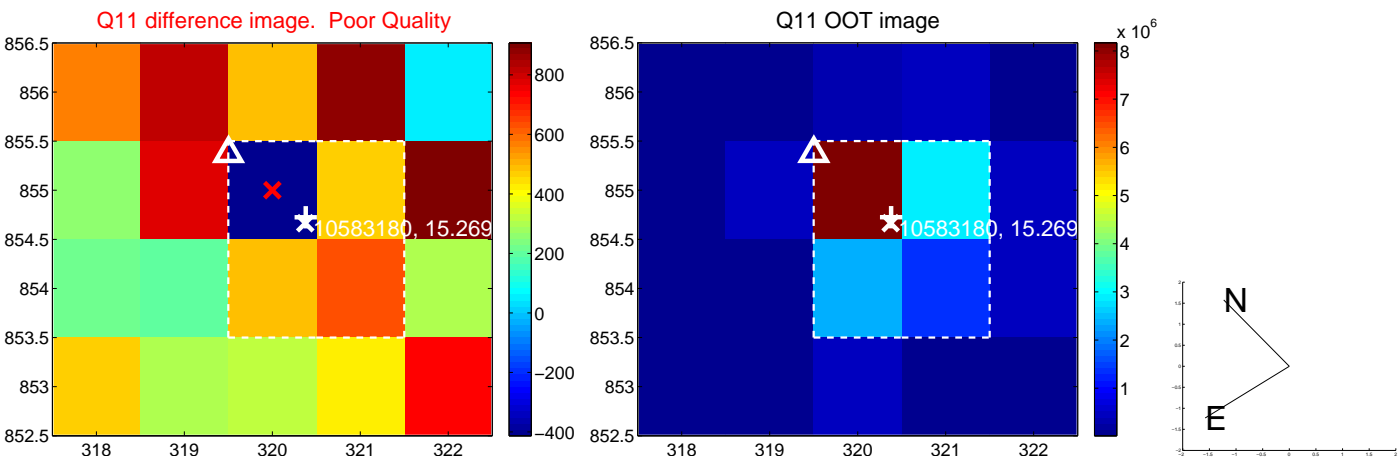
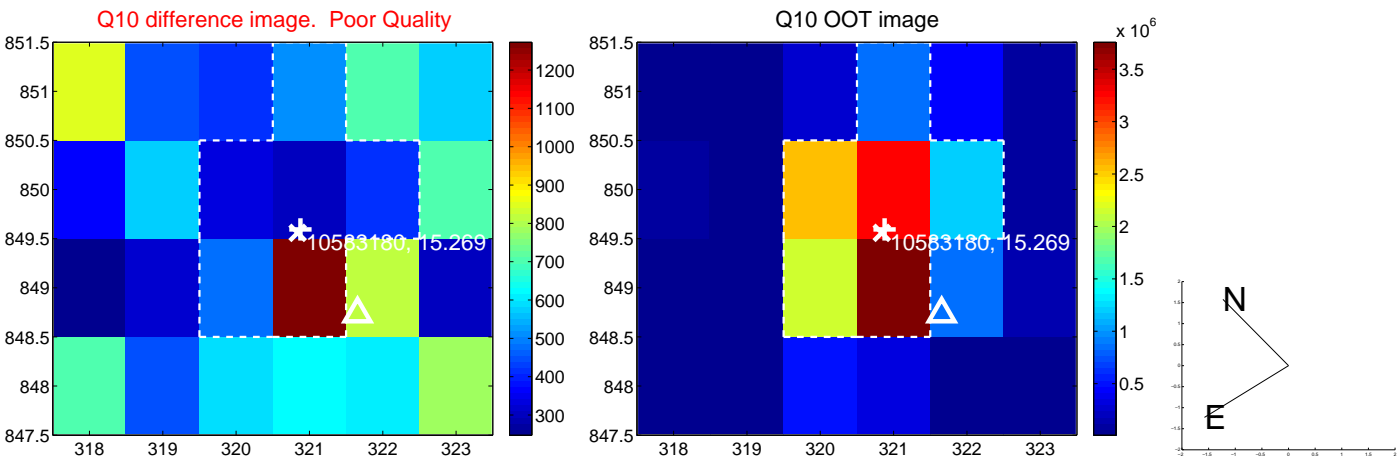
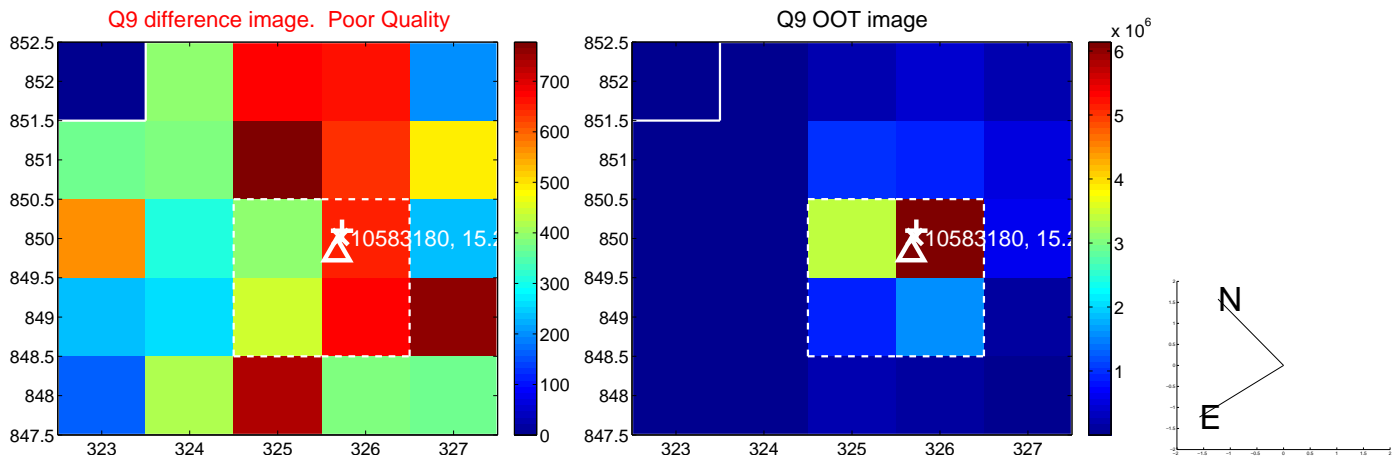
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



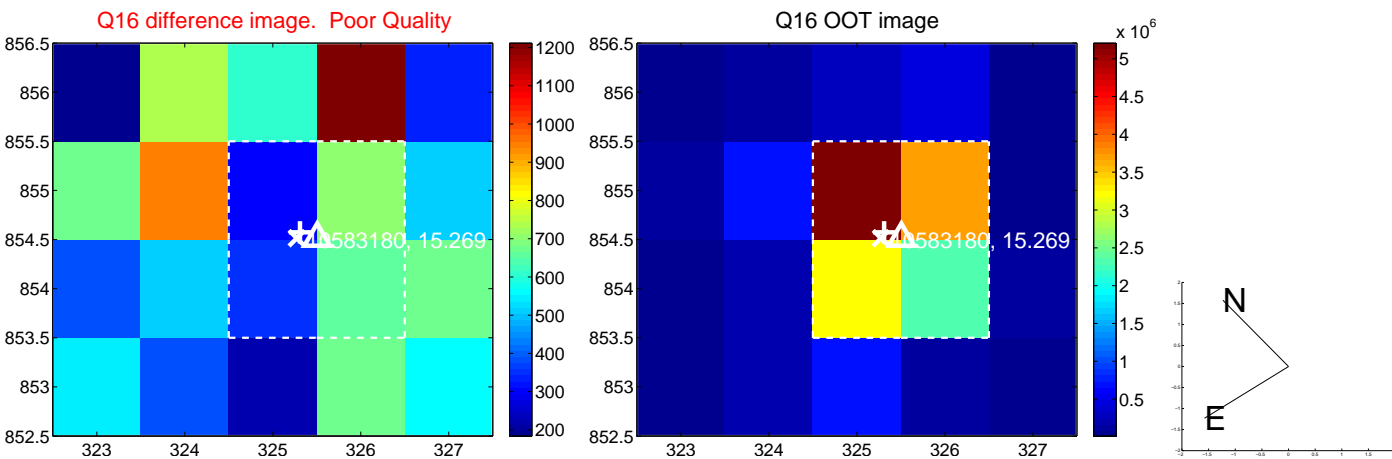
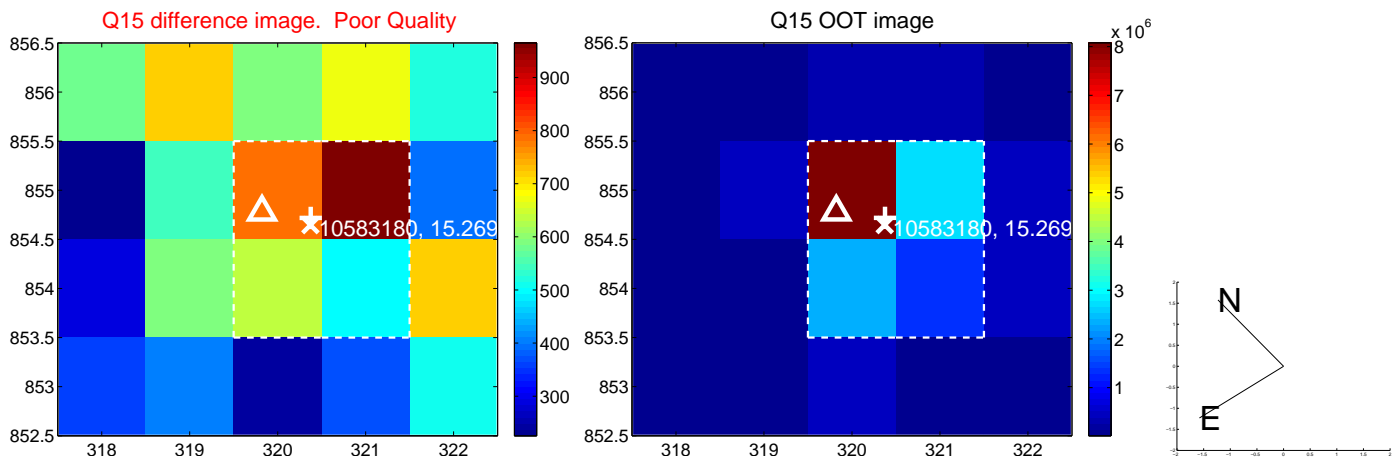
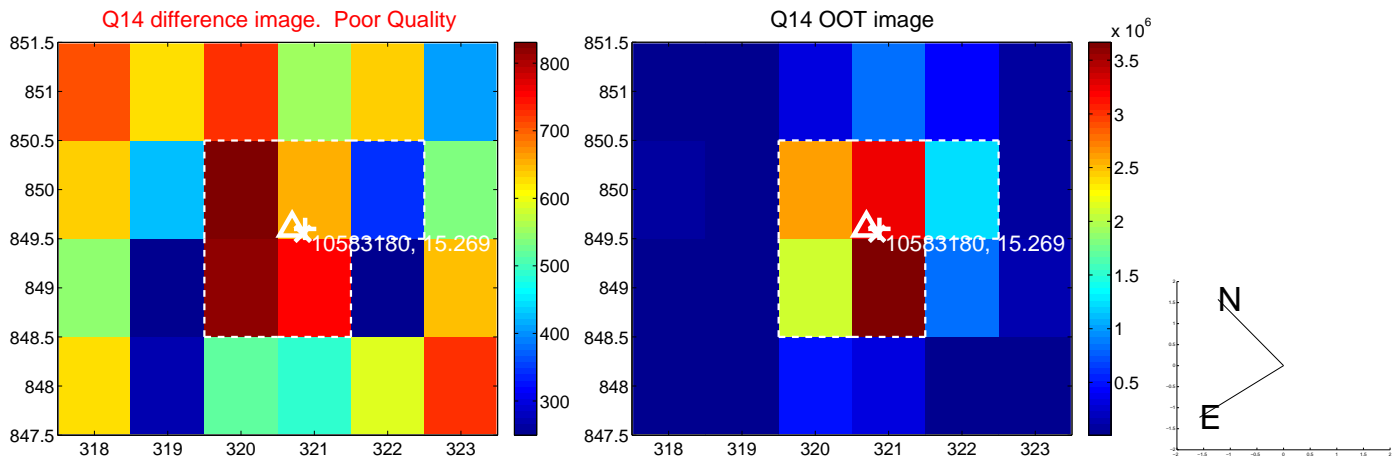
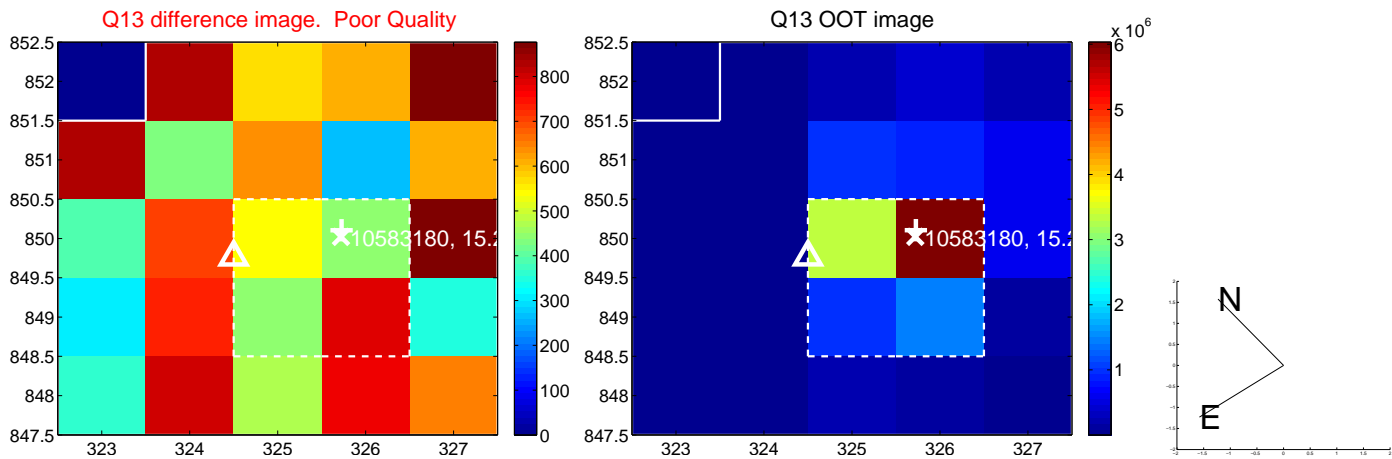
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



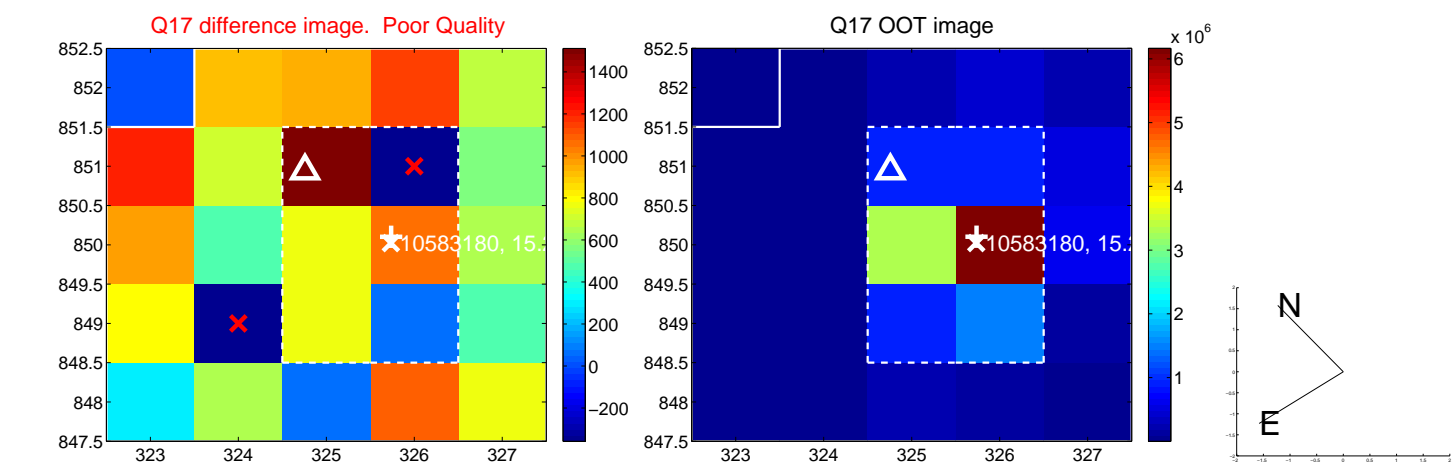
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



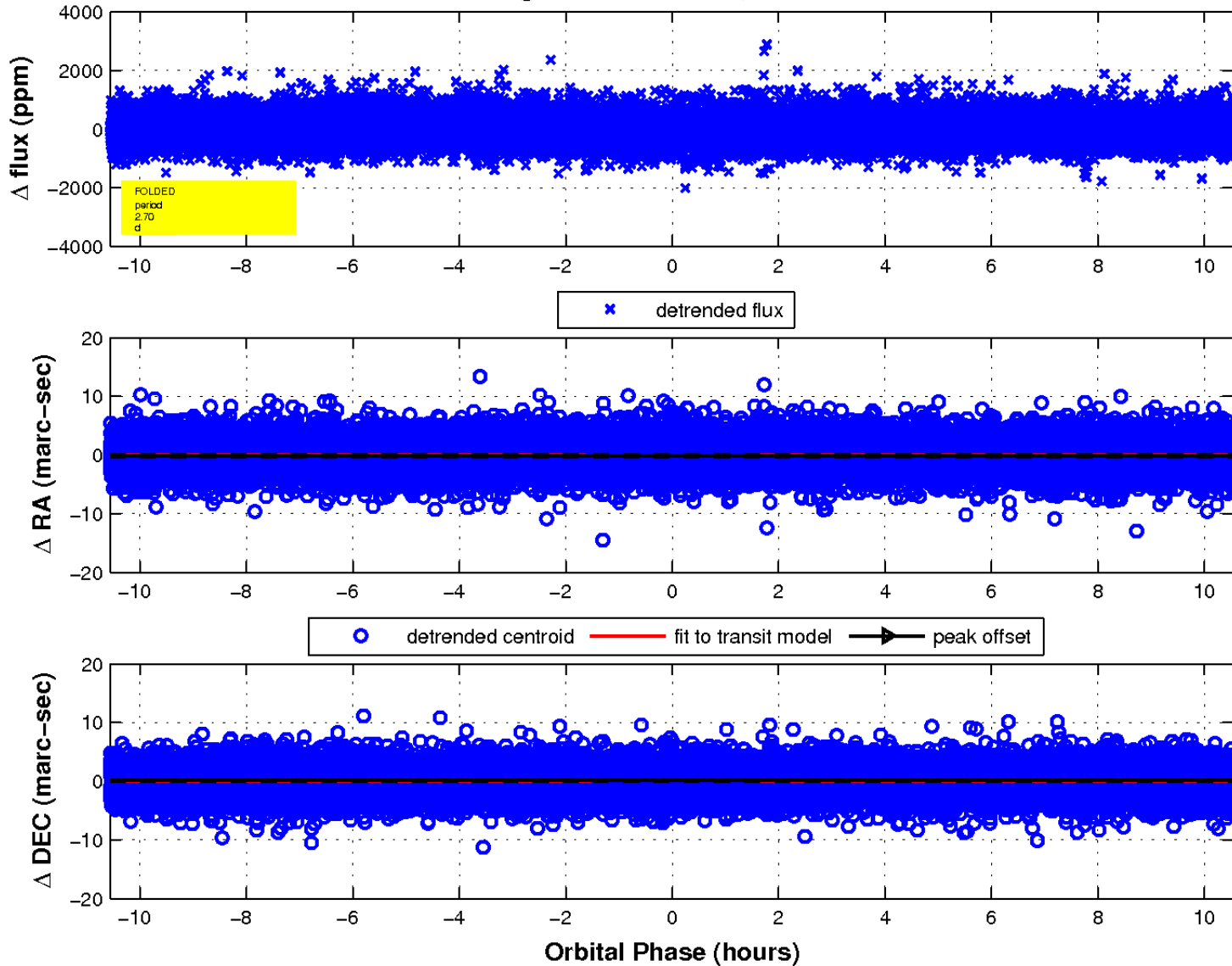
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

