

KIC 005385566

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})
005385566-01	OBS	6004.01	12.425424	141.546856	292.6	22.709	15.4	20.2	0.78	5442	1.66	51.68
005385566-02	OBS	No	12.426027	133.918951	265.6	25.116	16.5	20.5	0.78	5442	1.65	51.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385566-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—HALO_GHOST—EPHEM_MATCH
005385566-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—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 005385566-01

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
005385566-01	5385566	V380-Cyg-pri	5385723	1:1	350.5	-62	-62	5.77	15.54	494.65	Direct-PRF	0	0.85	0.15

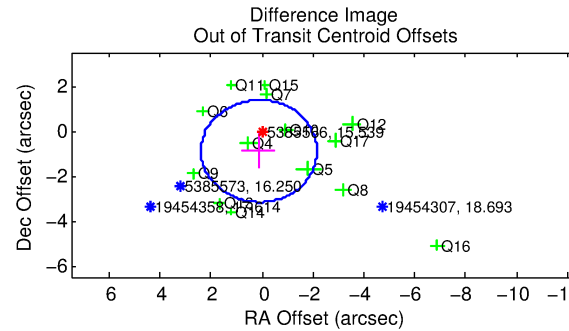
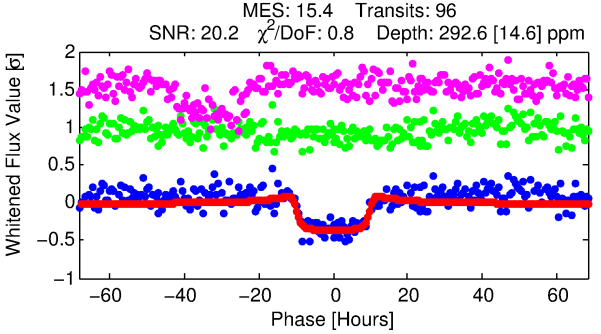
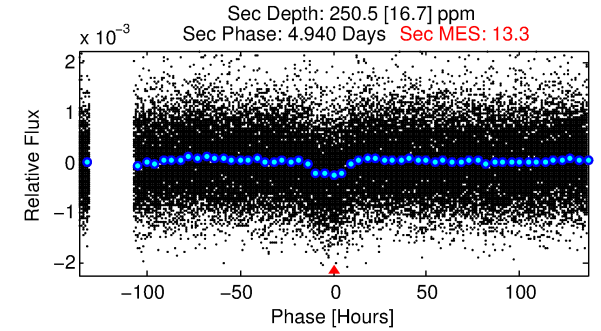
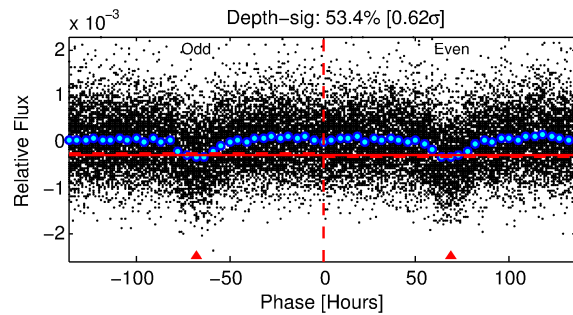
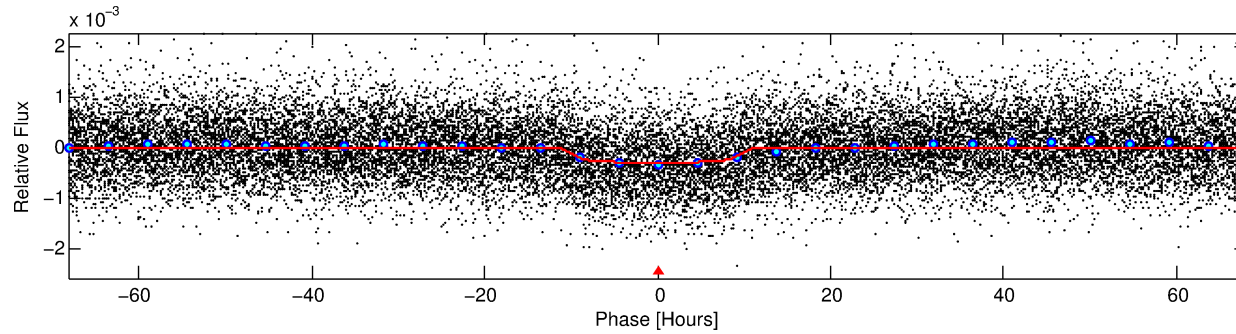
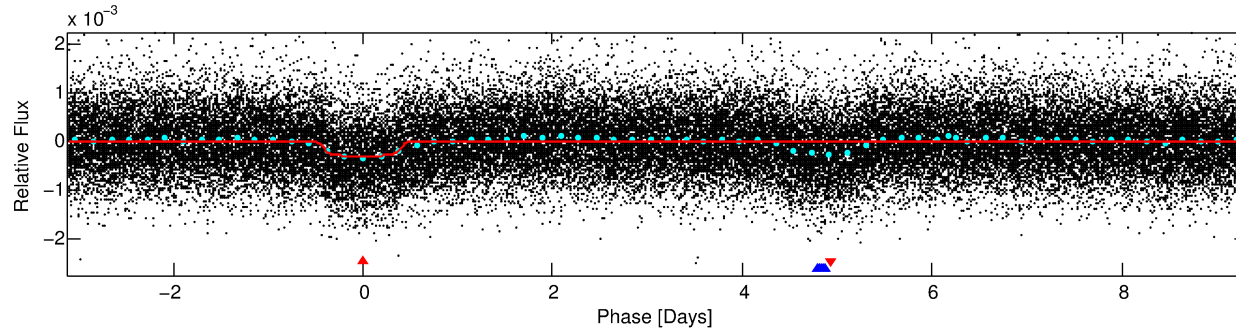
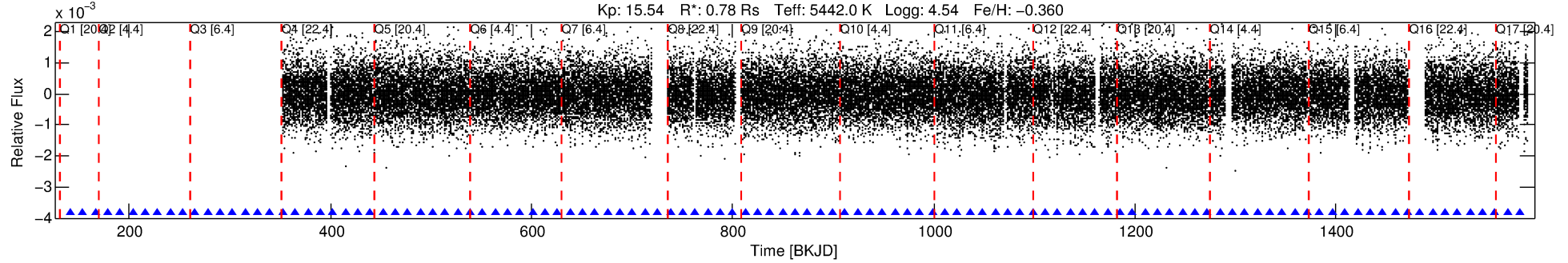
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 5385566 Candidate: 1 of 2 Period: 12.425 d

KOI: K06004.01 Corr: 0.985

Kp: 15.54 R*: 0.78 Rs Teff: 5442.0 K Logg: 4.54 Fe/H: -0.360



DV Fit Results:

Period = 12.42542 [0.00033] d
Epoch = 141.5469 [0.0235] BKJD
Rp/R* = 0.0194 [0.0009]
a/R* = 1.98 [0.27]
b = 0.93 [0.03]
Seff = 51.68 [13.14]
Teq = 684 [43] K
Rp = 1.66 [0.31] Re
a = 0.0965 [0.0140] AU
Ag = 466.10 [109.79] [4.24σ]
Teff = 4912 [235] K [17.67σ]

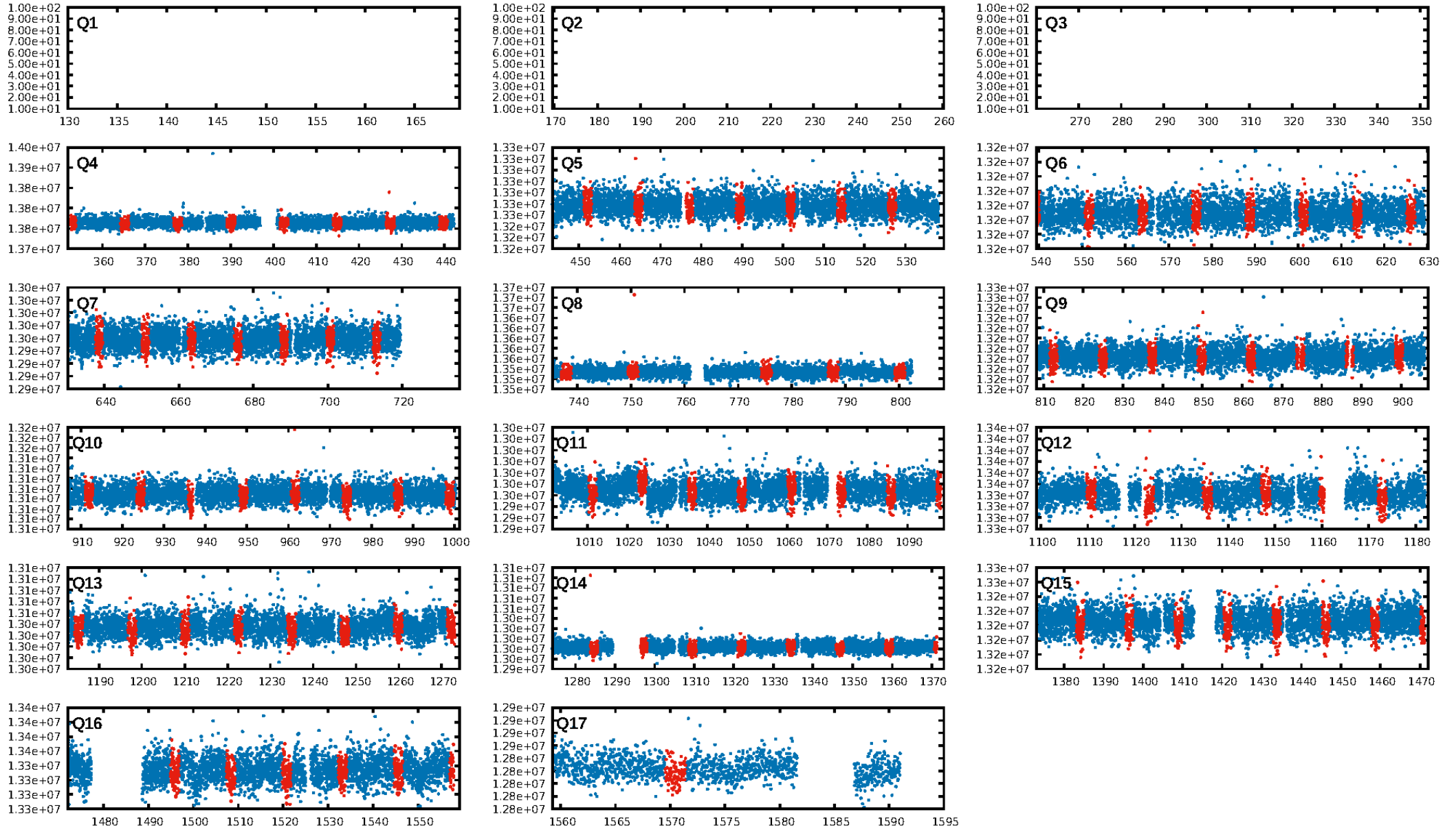
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 95.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.29e-55
RollingBand-fgt: 1.00 [95/95]
GhostDiagnostic-chr: 0.07908
Centroid-sig: 0.1%
Centroid-so: 0.789 arcsec [1.70σ]
OotOffset-rm: 0.902 arcsec [1.19σ]
KicOffset-rm: 0.728 arcsec [1.00σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.14 [2/14]
DiffImageOverlap-fno: 1.00 [14/14]

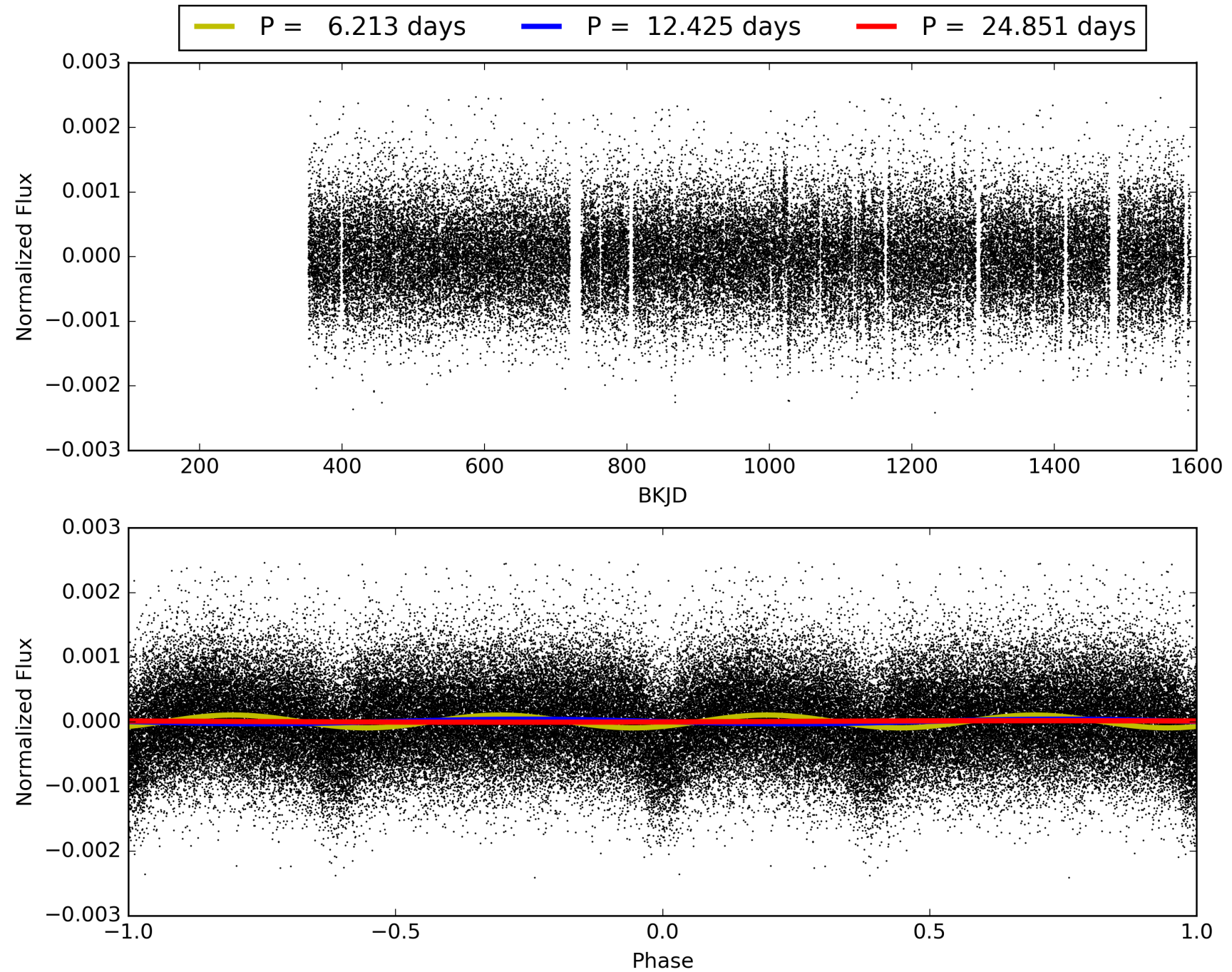
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005385566-01, PDC Light Curves

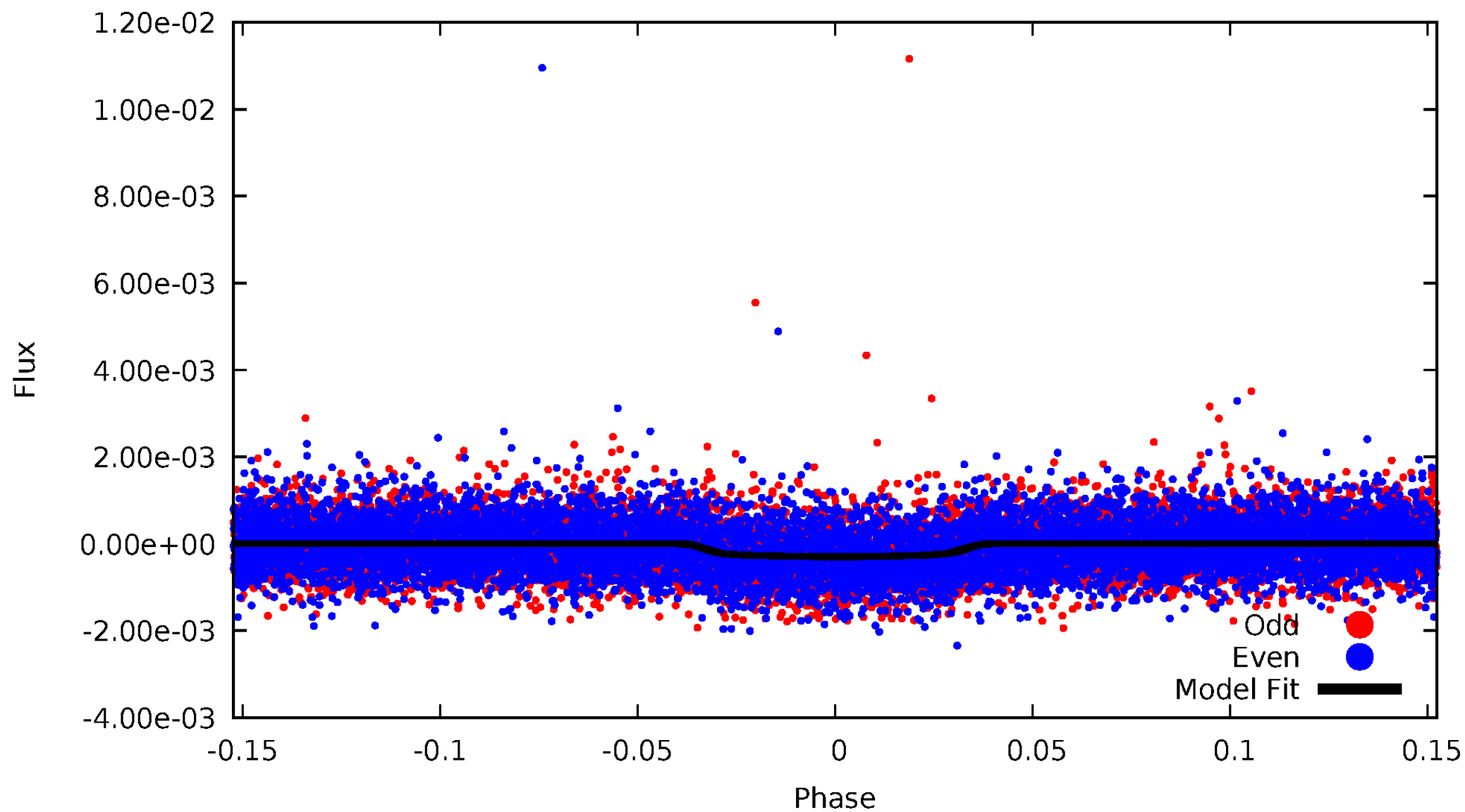


TCE 005385566-01



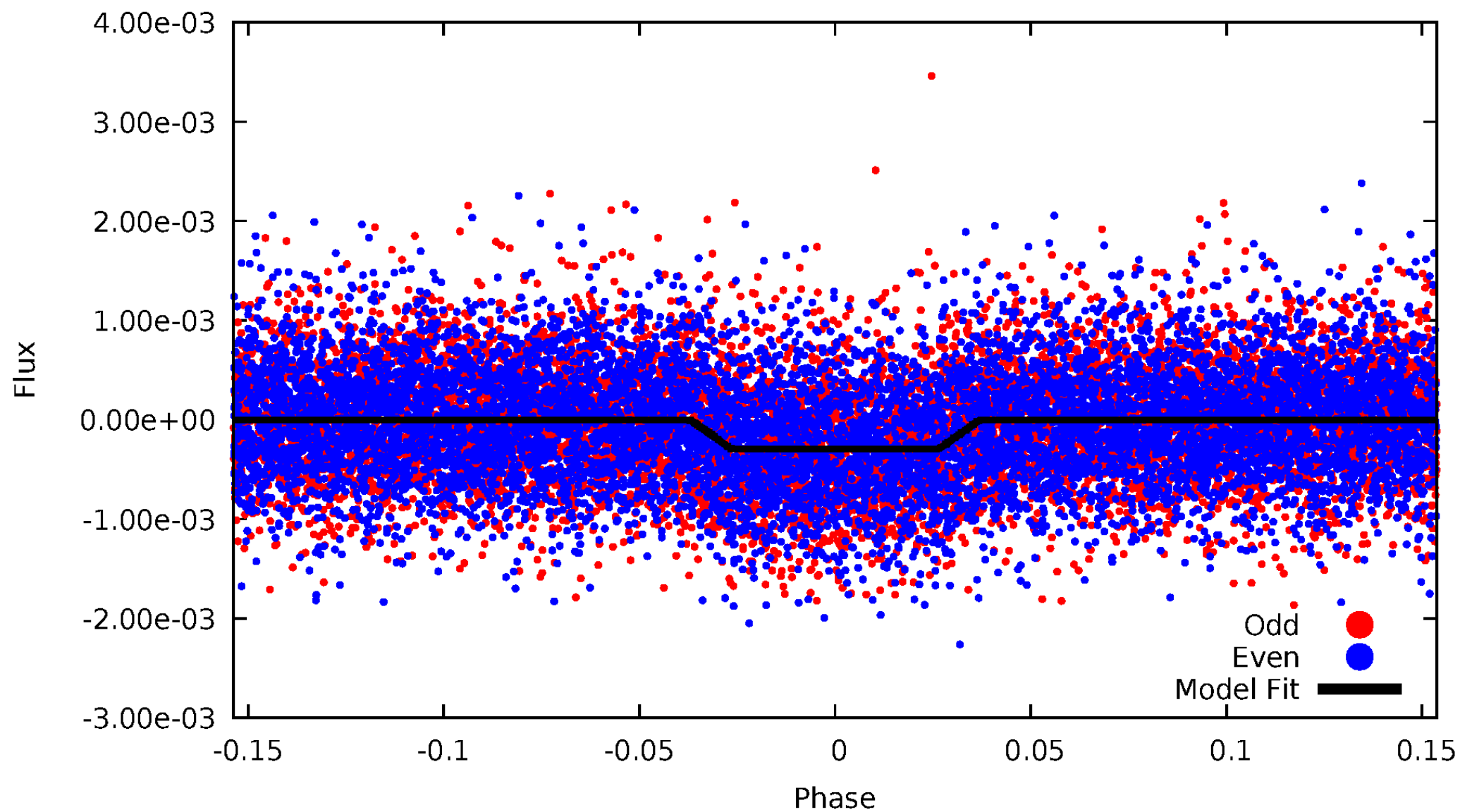
DV Odd/Even

TCE 005385566-01

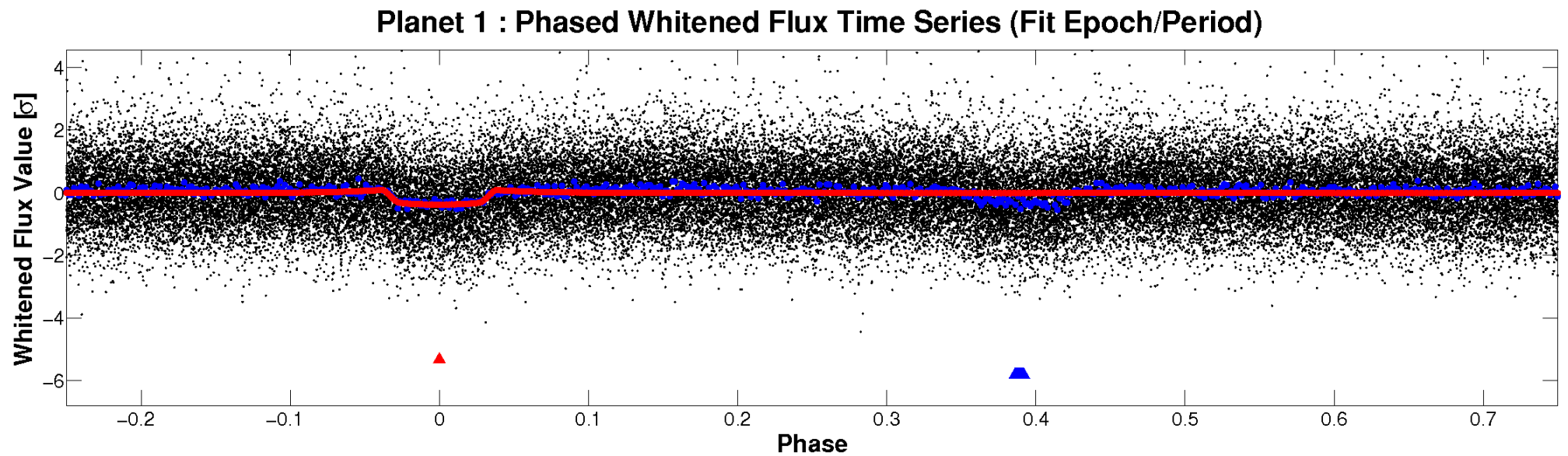
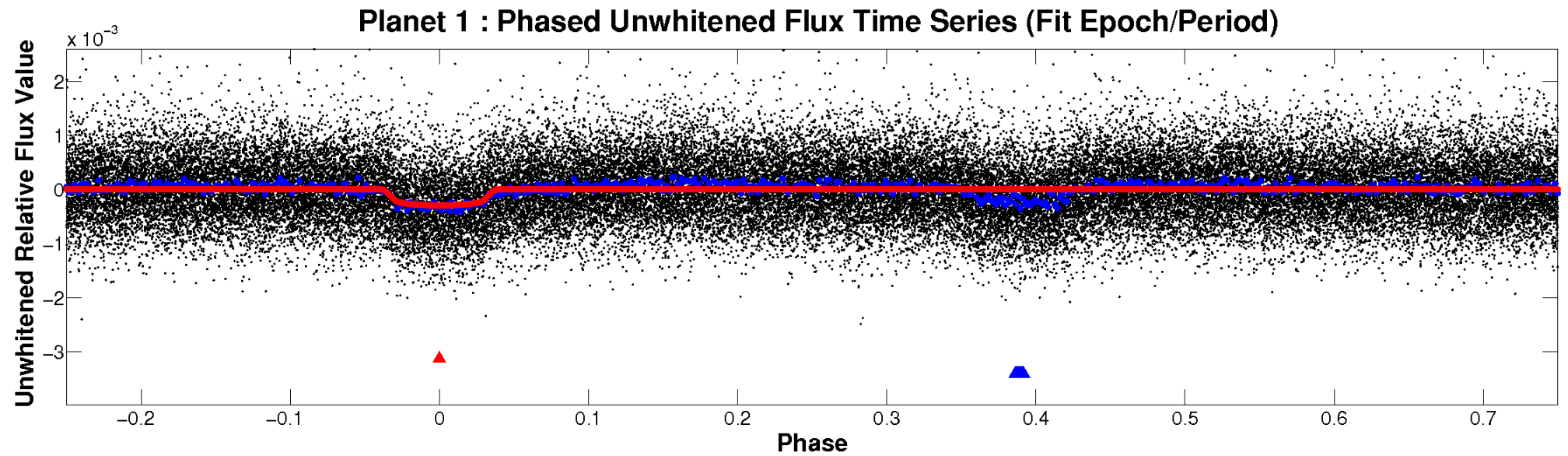


ALT Odd/Even

TCE 005385566-01

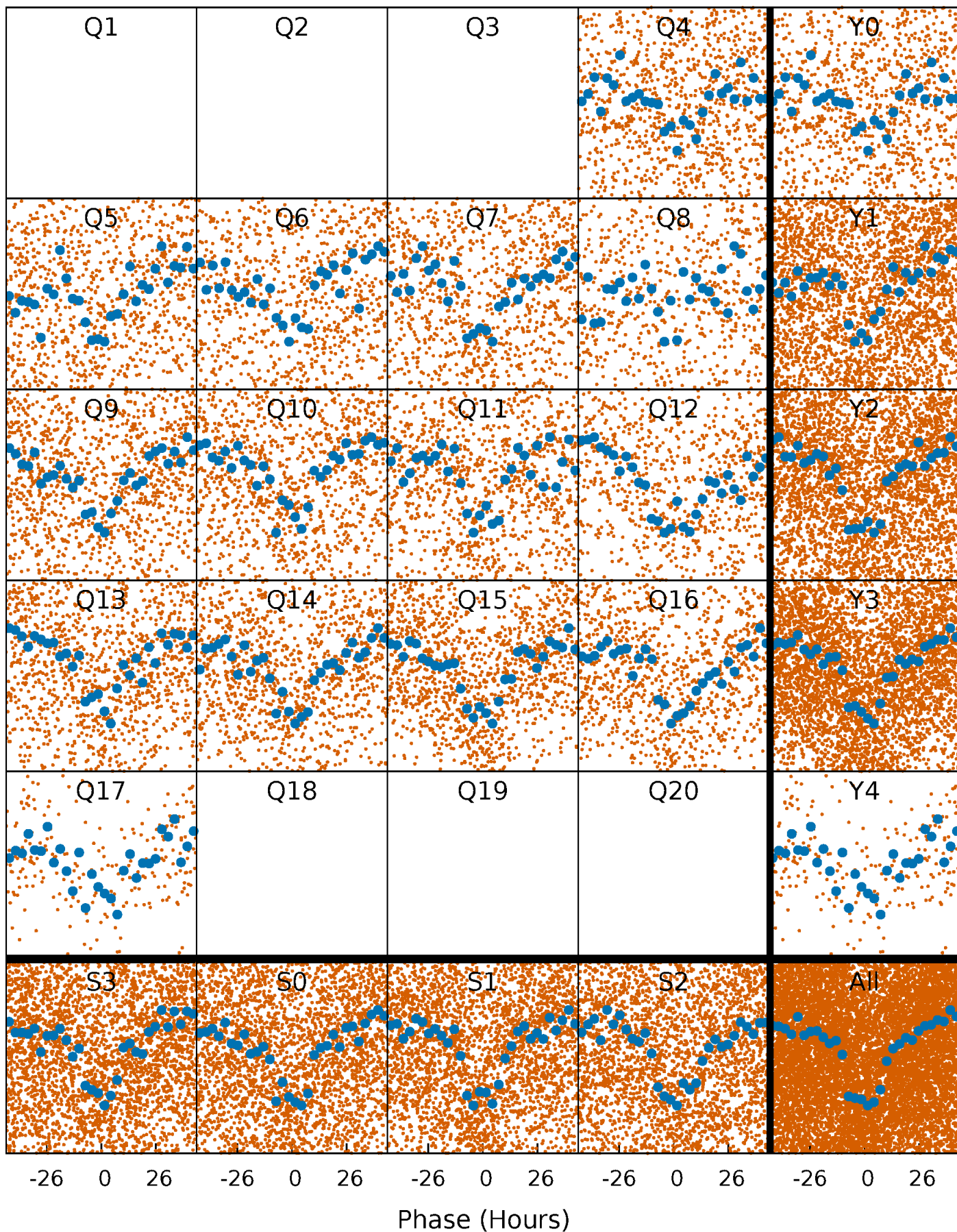


Non-Whitened Vs. Whitened Light Curve



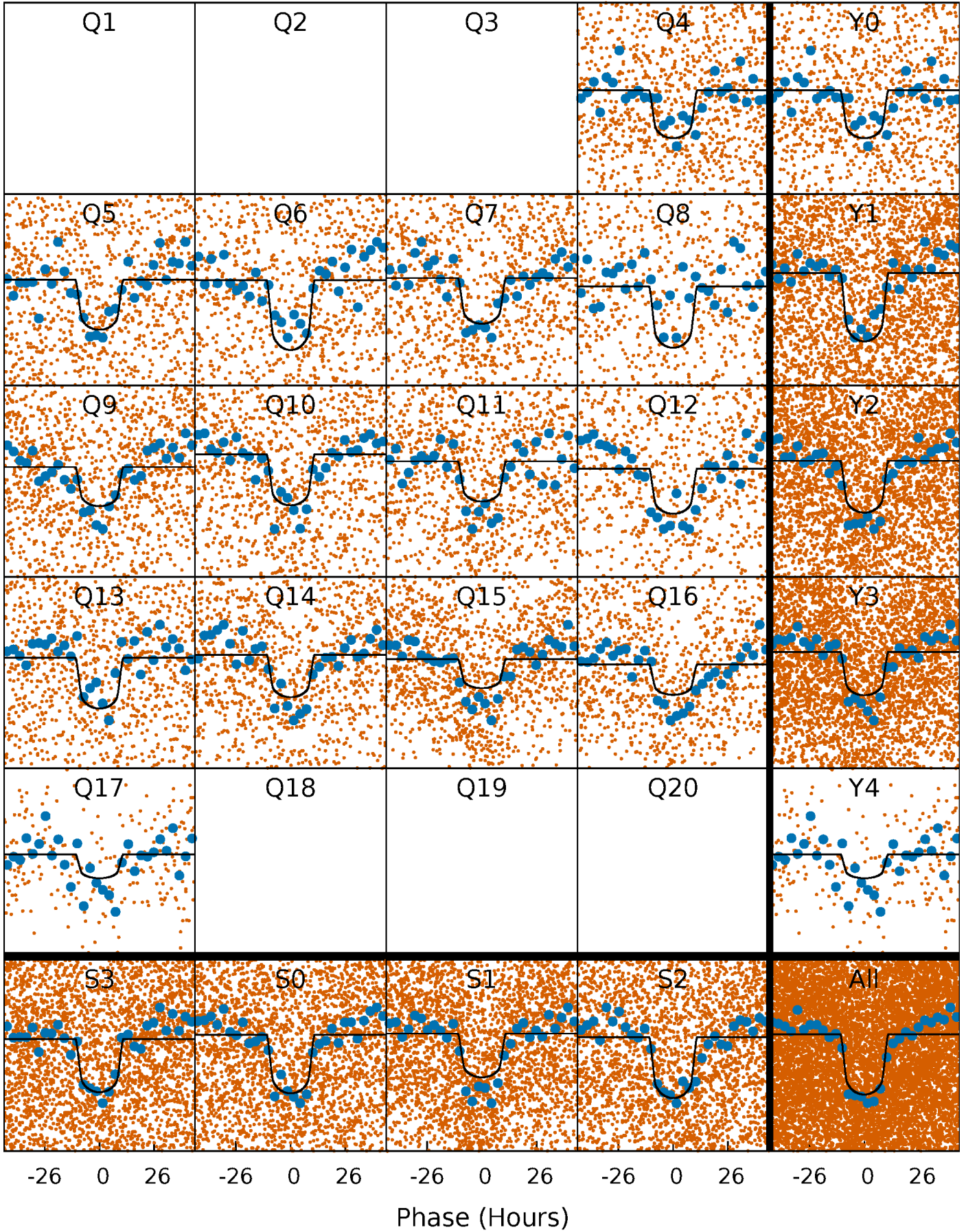
PDC Quarter-Phased Transit Curves

TCE 005385566-01 P= 12.425424 Days $T_0=141.546856$ (BKJD)



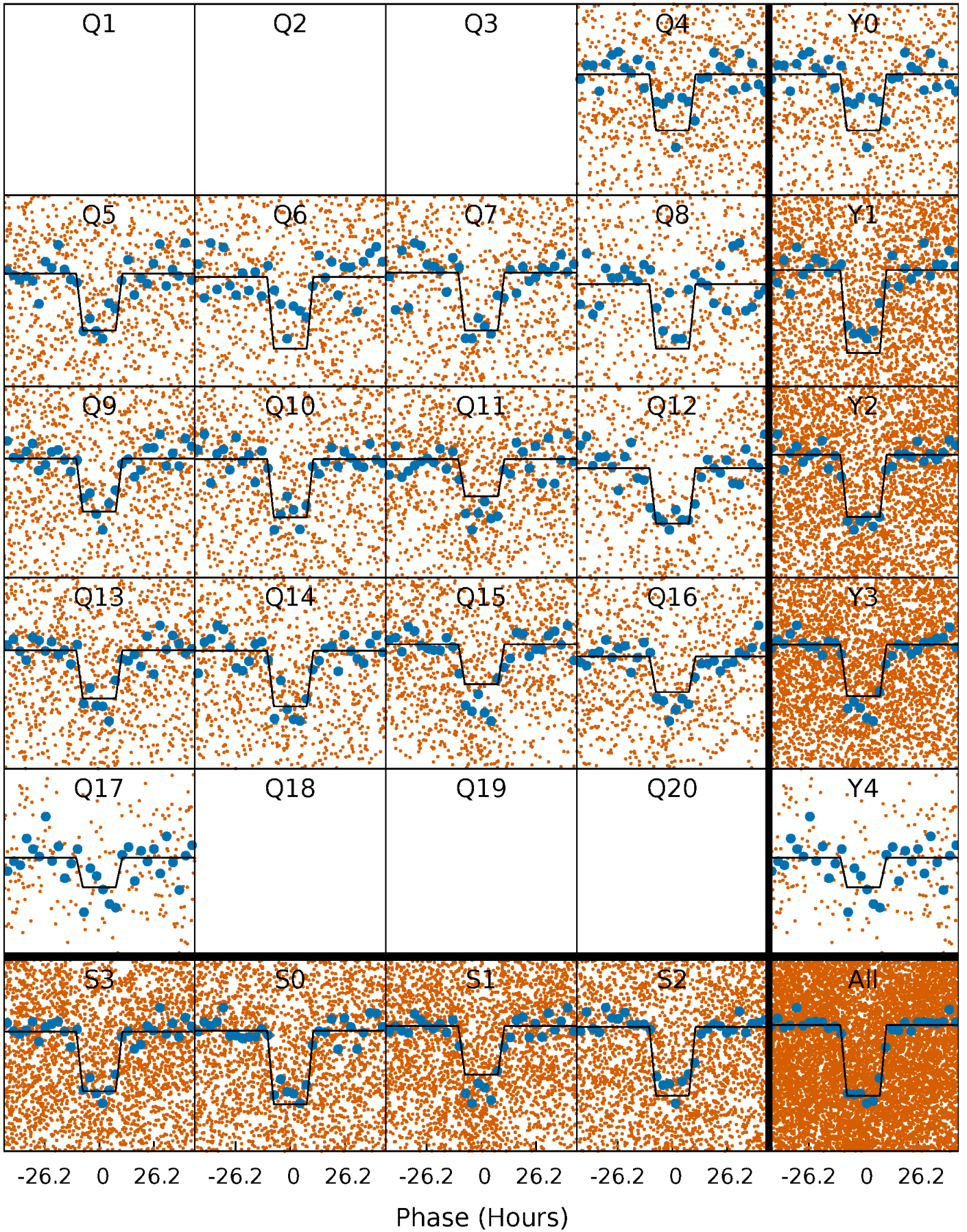
DV Quarter-Phased Transit Curves

TCE 005385566-01 P= 12.425424 Days $T_0=141.546856$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

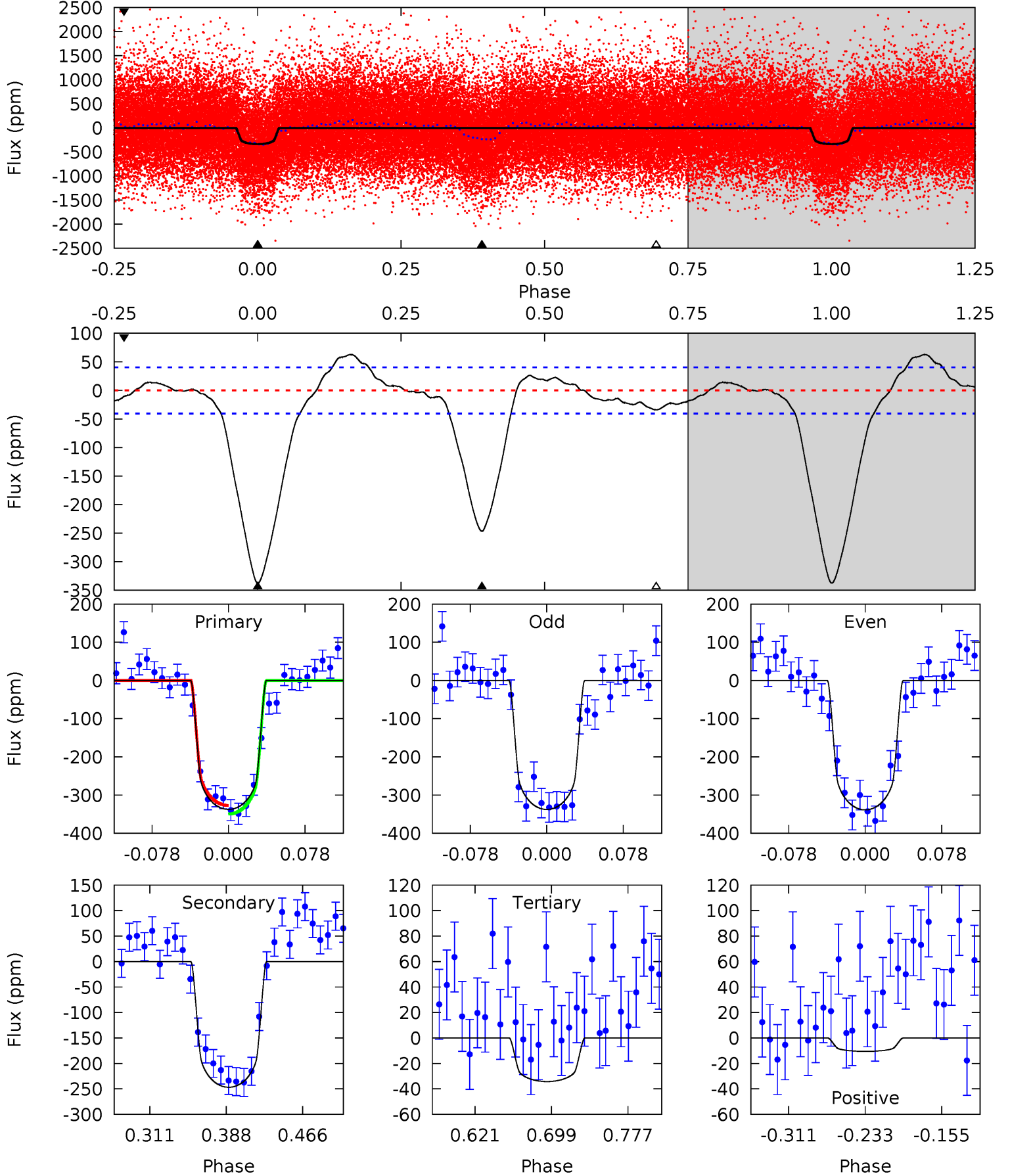
TCE 005385566-01 P= 12.425672 Days $T_0=141.529385$ (BKJD)



DV Model-Shift Uniqueness Test

005385566-01, P = 12.425424 Days, E = 141.546856 Days

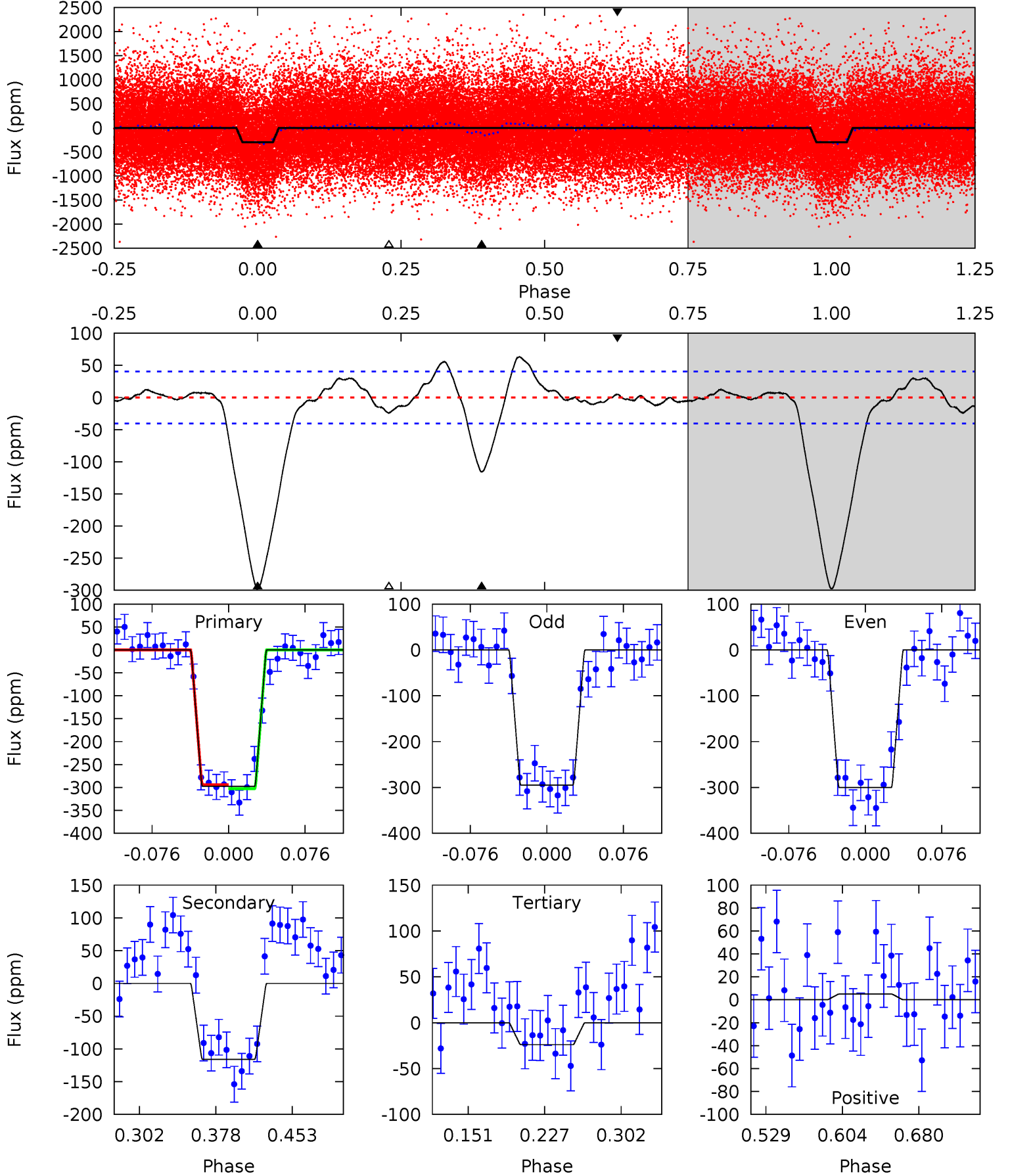
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.5	28.1	3.90	-1.20	4.62	1.76	2.63	34.6	39.7	24.2	29.3	0.06	0.75	0.16	1.26



Alt Model-Shift Uniqueness Test

005385566-01, P = 12.425672 Days, E = 141.529385 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.1	13.3	2.74	0.57	4.62	1.78	1.63	31.4	33.5	10.5	12.7	0.32	0.78	0.18	0.49



Stellar Parameters For KIC 005385566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5442^{+206}_{-187}	$4.541^{+0.072}_{-0.108}$	$-0.360^{+0.350}_{-0.300}$	$0.783^{+0.140}_{-0.081}$	$0.778^{+0.109}_{-0.067}$	$2.282^{+0.735}_{-0.784}$
	+4%/-3%	+2%/-2%	+97%/-83%	+18%/-10%	+14%/-9%	+32%/-34%
Source	KIC0	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 005385566-01 / KOI 6004.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-247 ± 9	$1.68^{+0.17}_{-0.14}$	964^{+51}_{-46}	4953^{+217}_{-179}	442^{+88}_{-70}
Alt.	-116 ± 9	$1.49^{+0.16}_{-0.13}$	961^{+53}_{-44}	4475^{+193}_{-175}	270^{+51}_{-49}

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

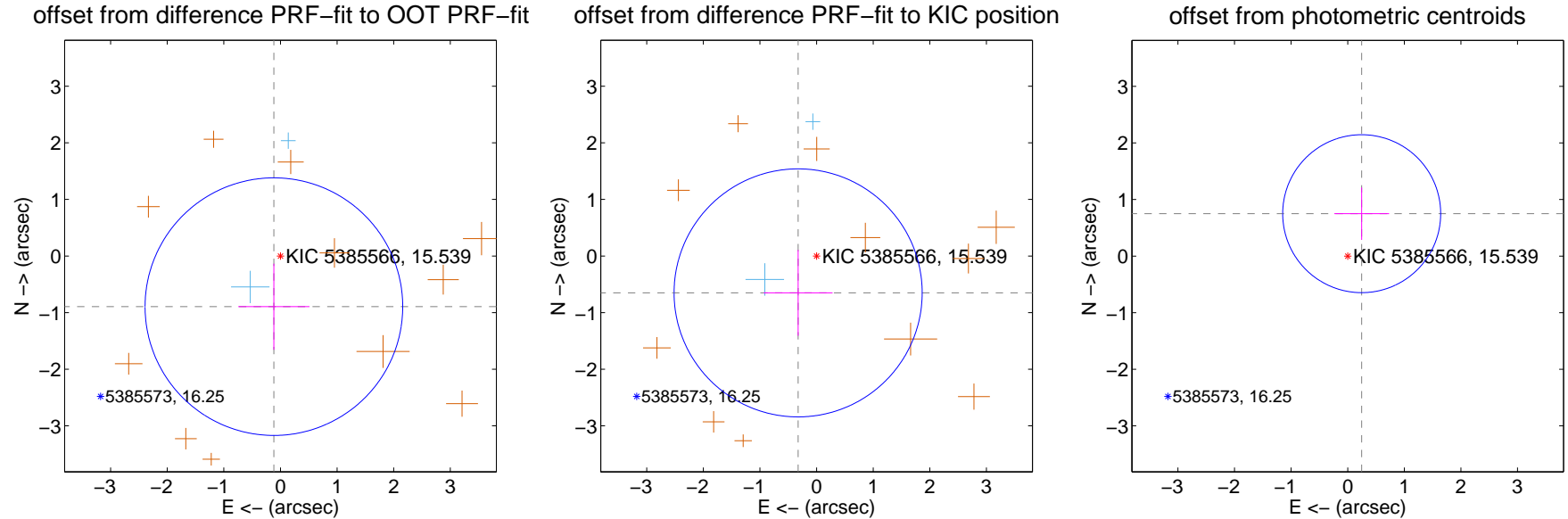
DV Centroid Data

Supplemental centroid analysis for 005385566-01. Kepler magnitude: 15.54. Transit SNR 20.20

There are 2 quarters with good PRF difference image offsets

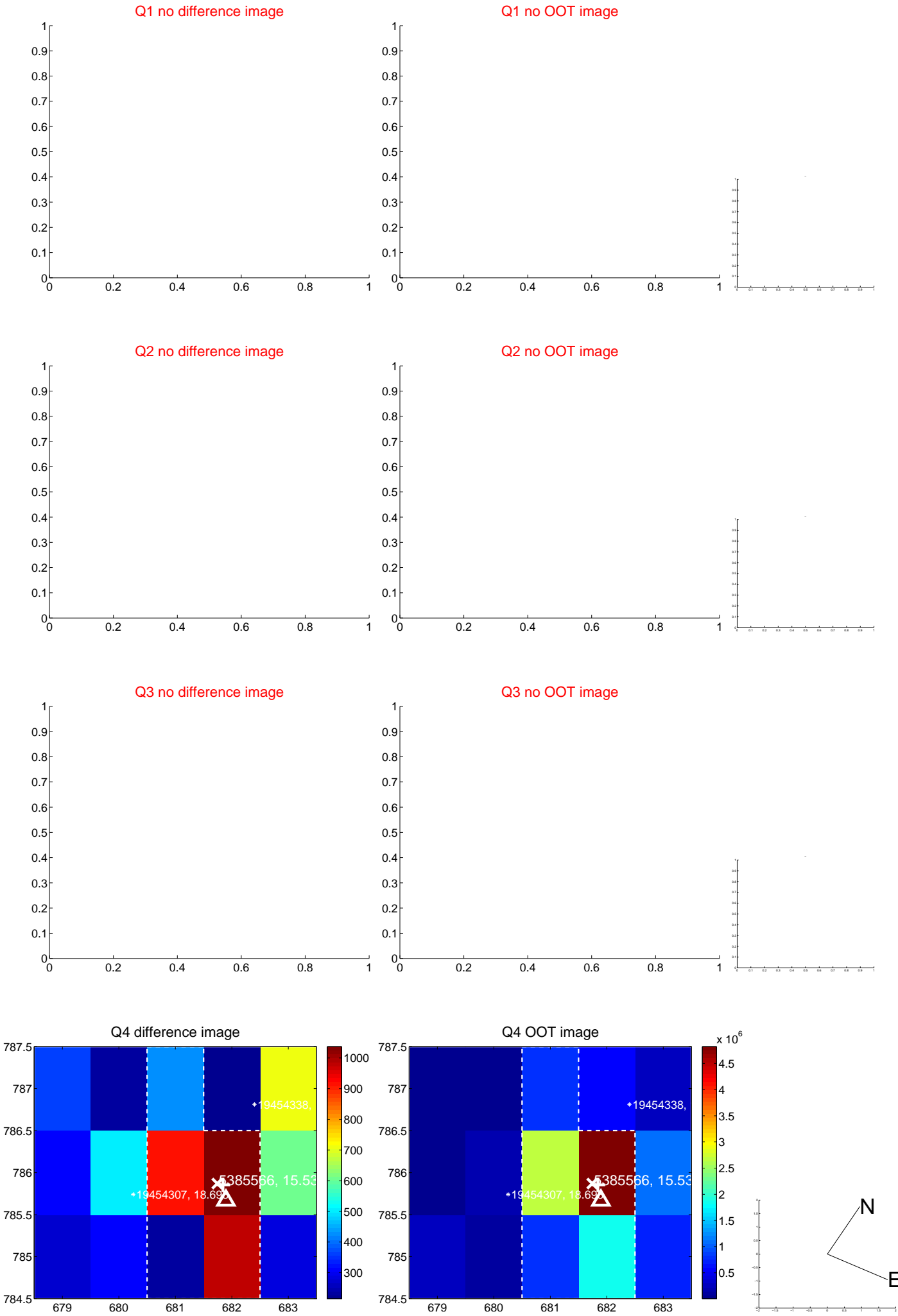
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.902 ± 0.759	1.19	0.116 ± 0.629	-0.895 ± 0.761
PRF-fit source offset from KIC position	0.728 ± 0.730	1.00	0.326 ± 0.608	-0.651 ± 0.758
photometric centroid source offset	0.79 ± 0.47	1.70	-0.25 ± 0.48	0.75 ± 0.46

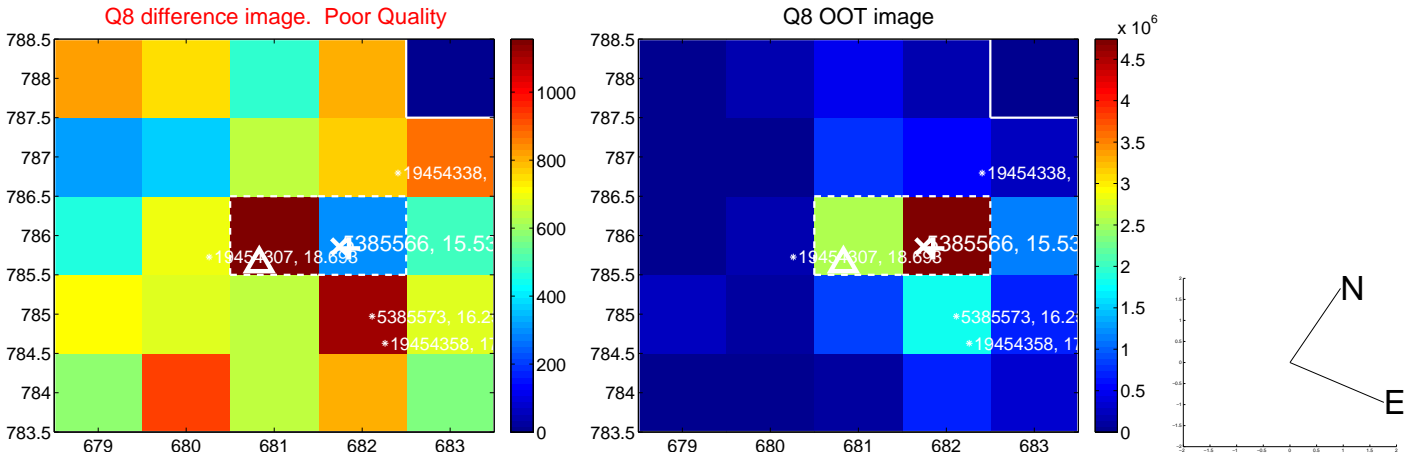
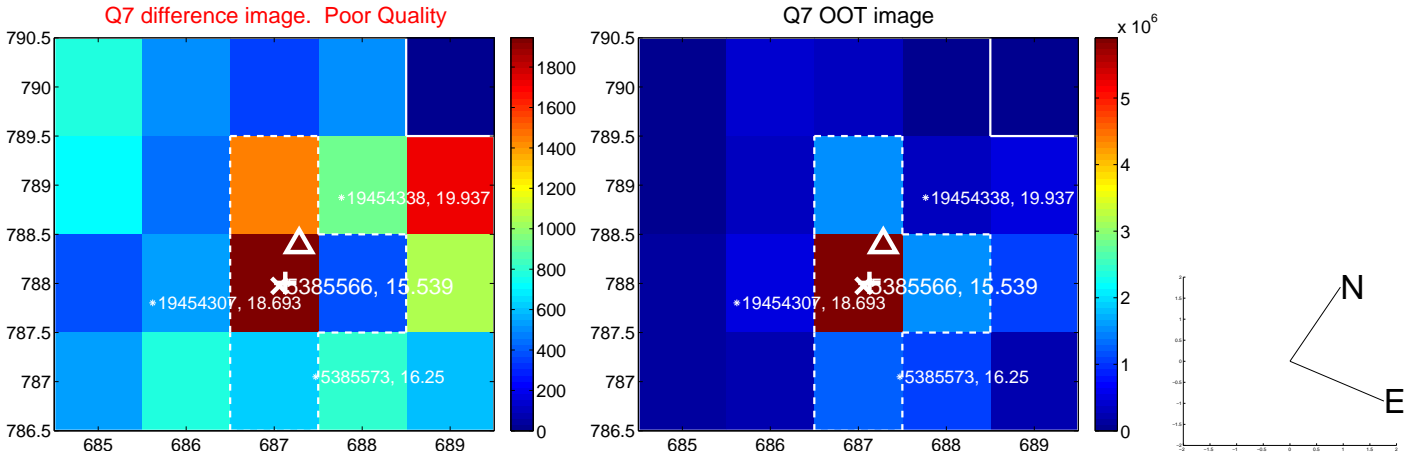
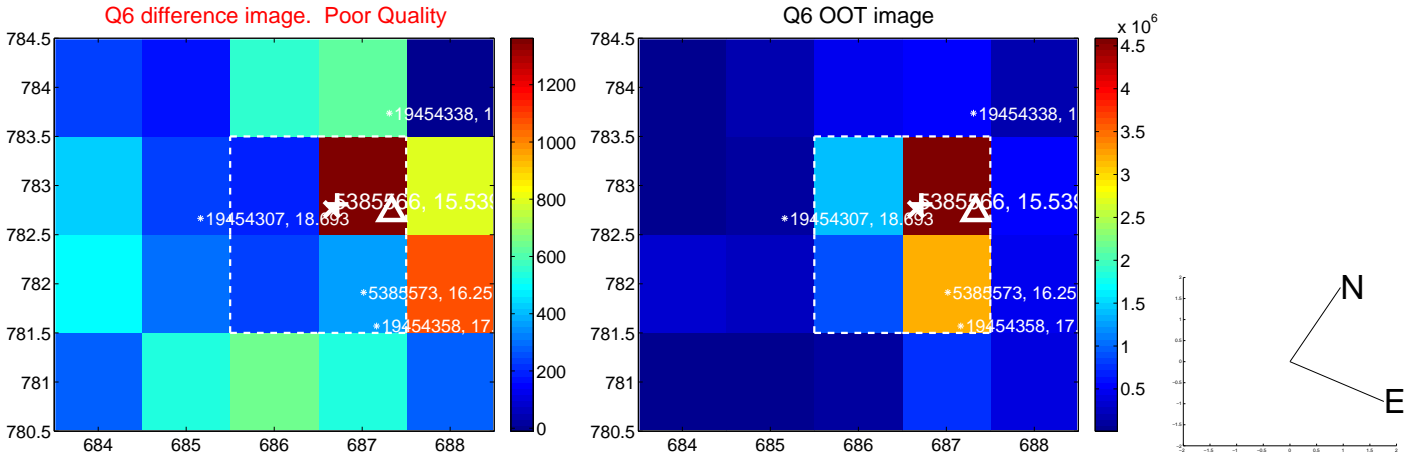
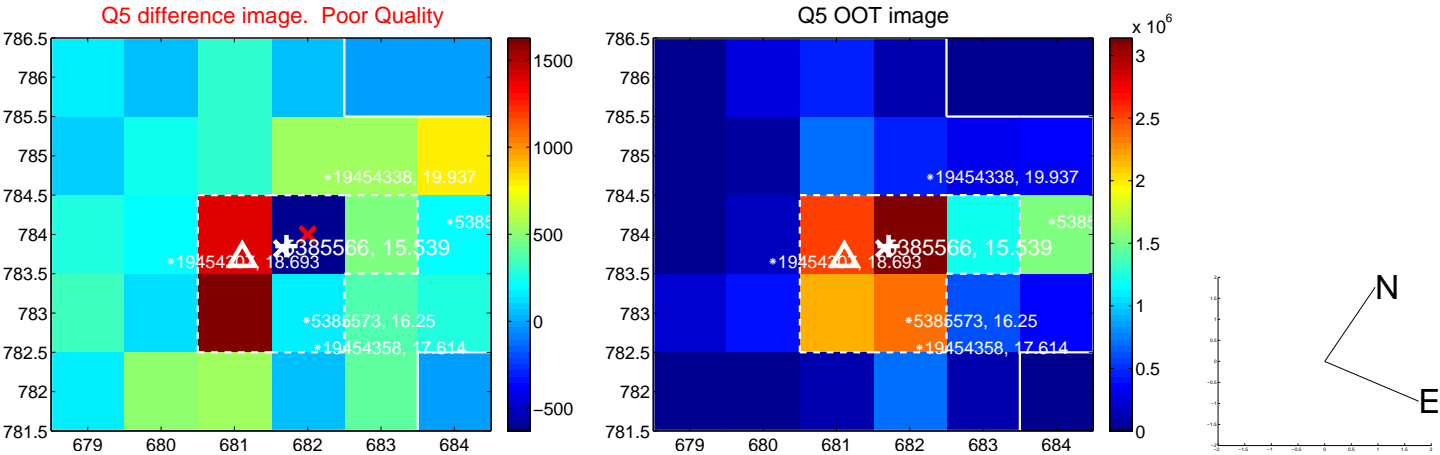


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

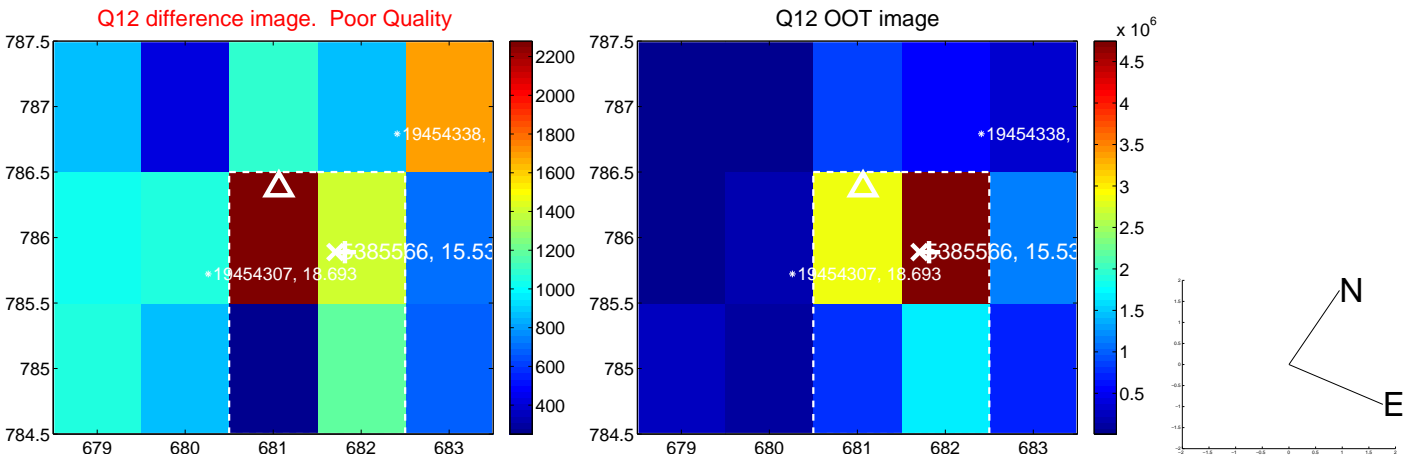
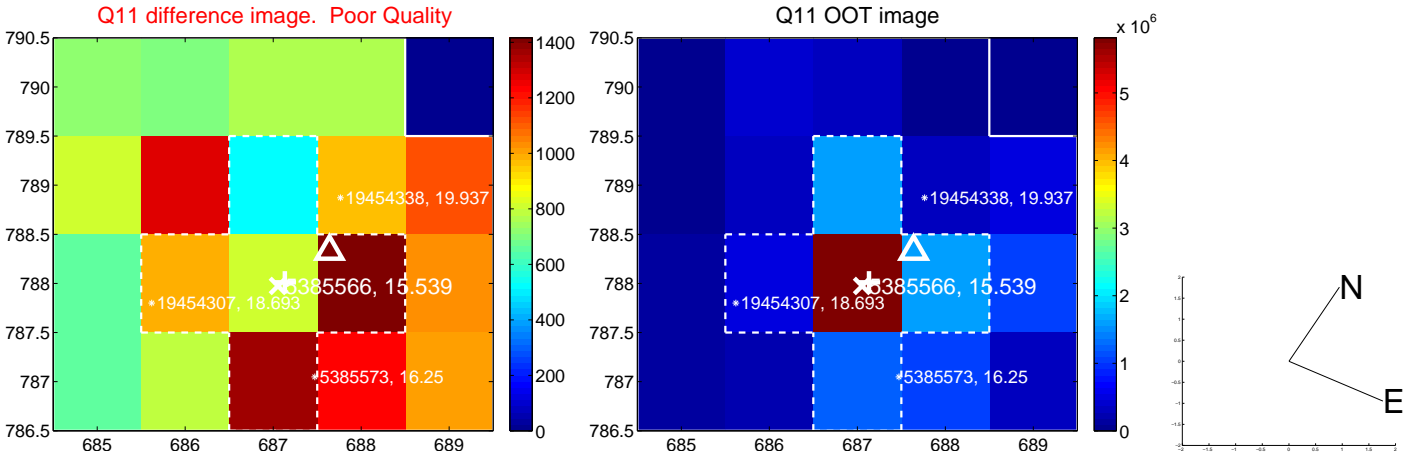
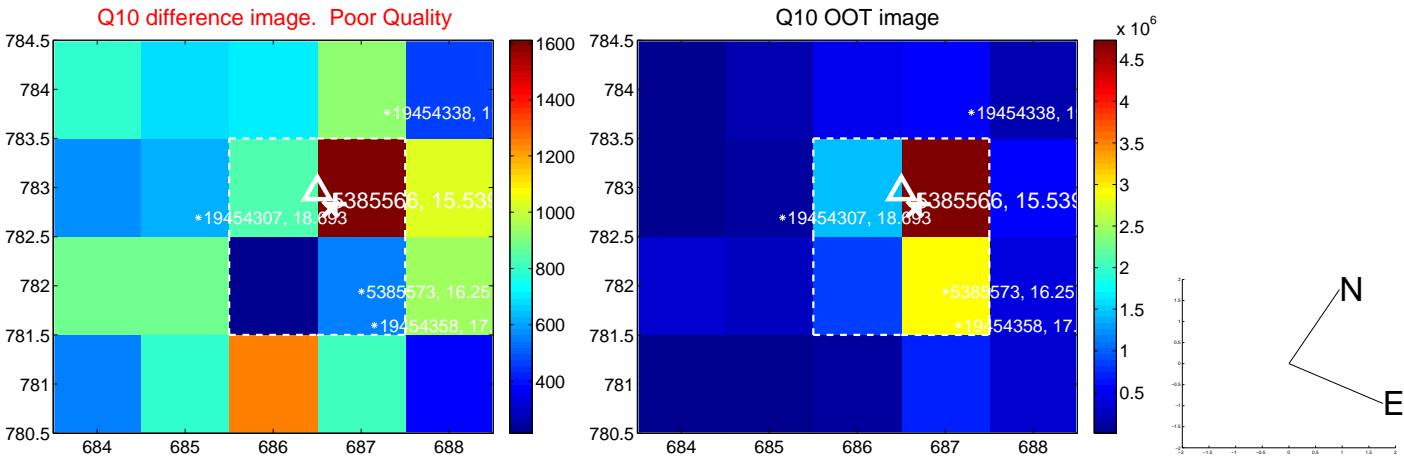
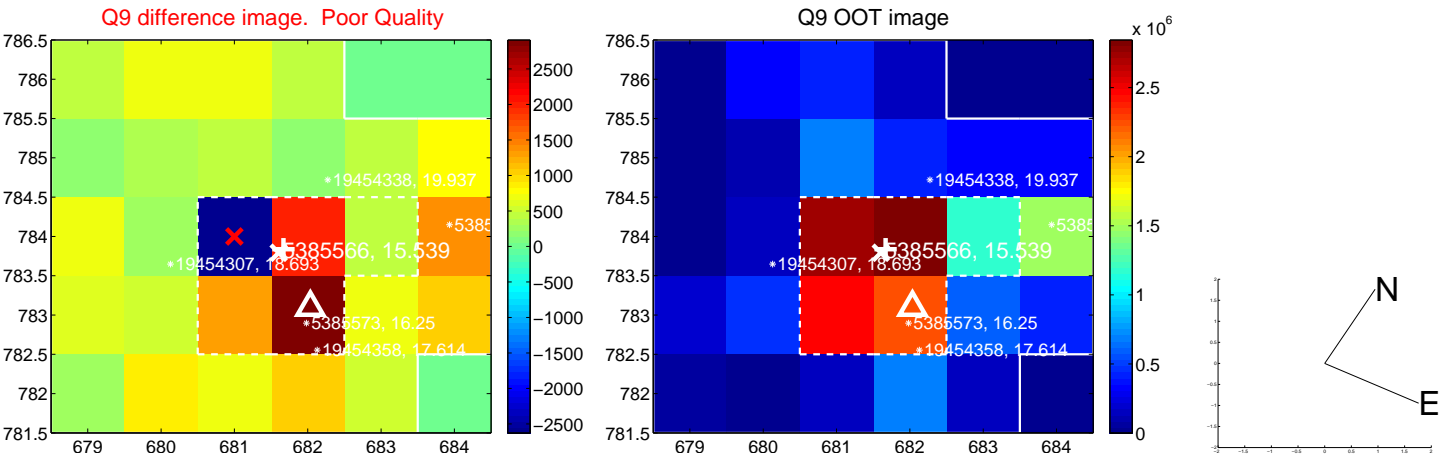
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



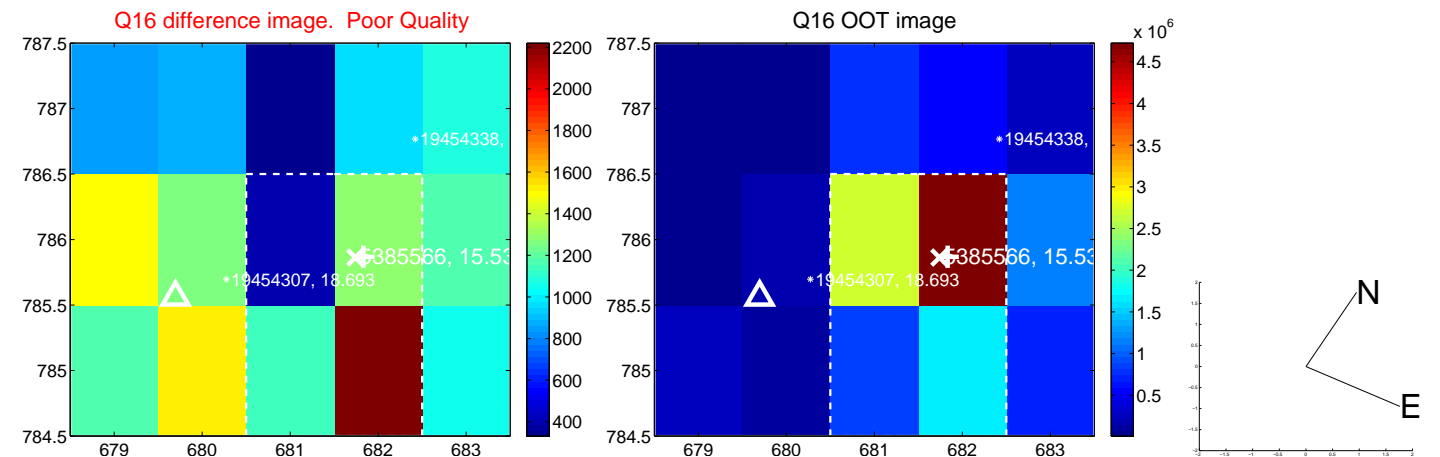
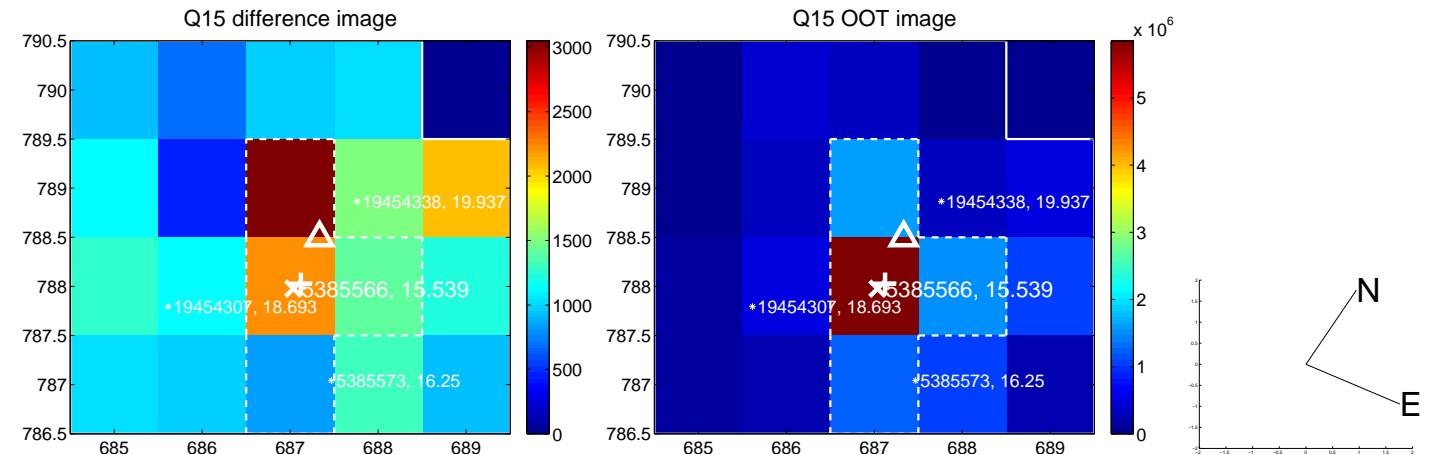
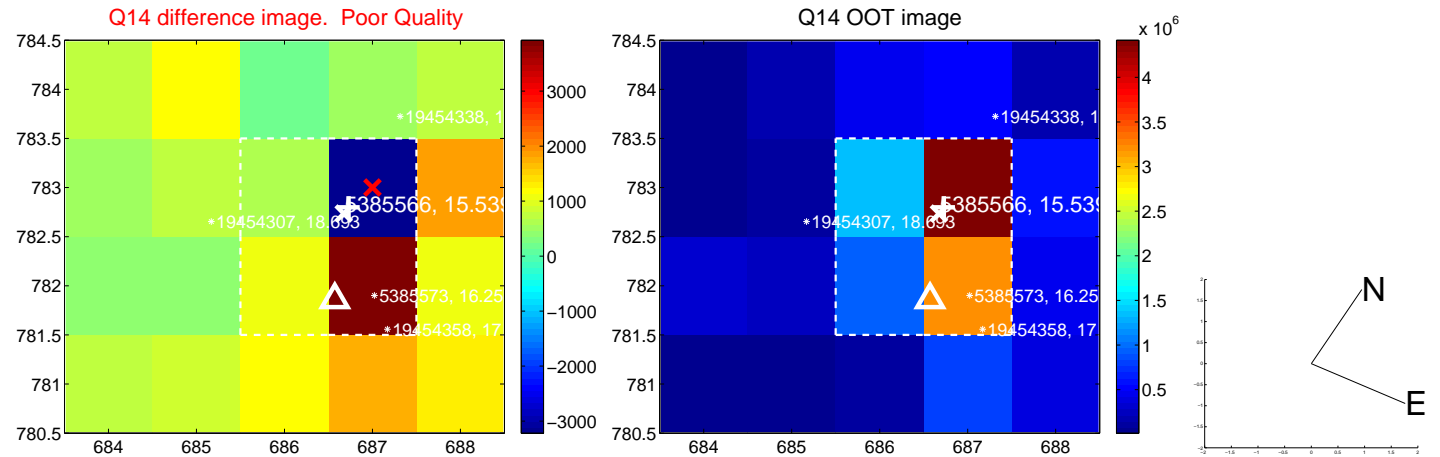
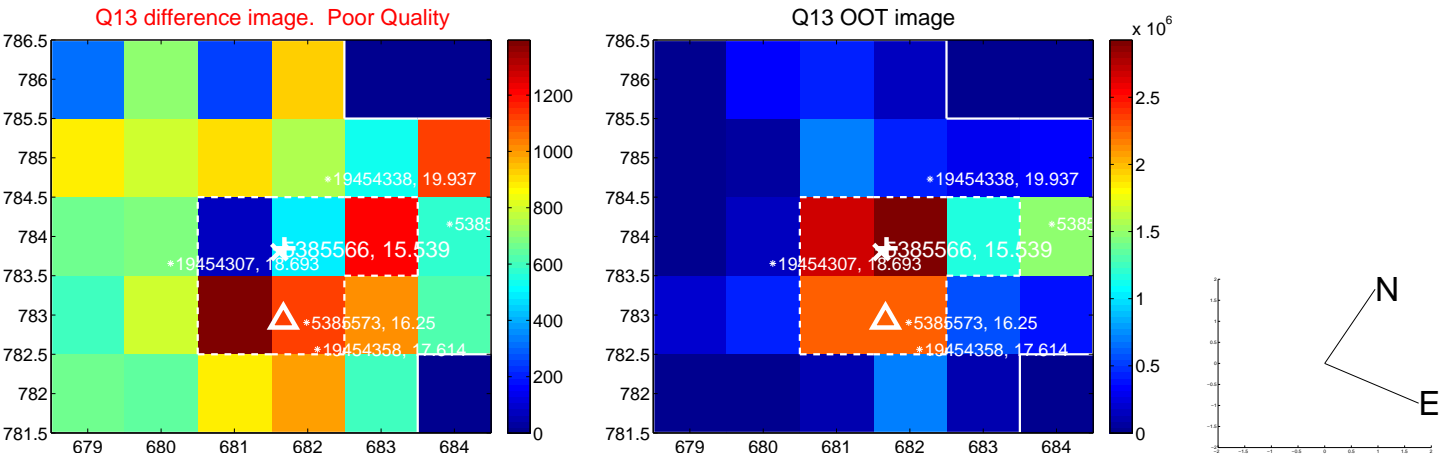
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



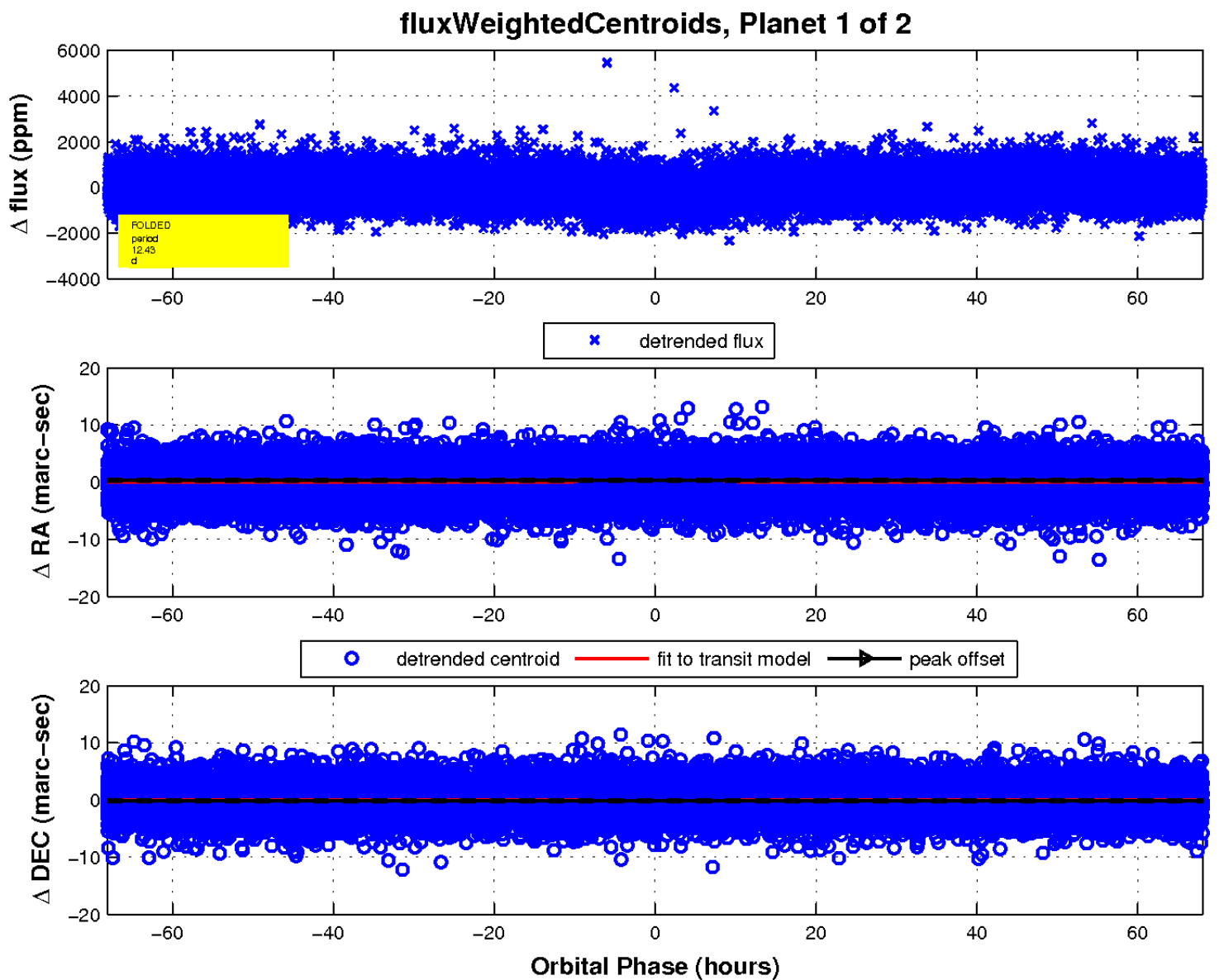
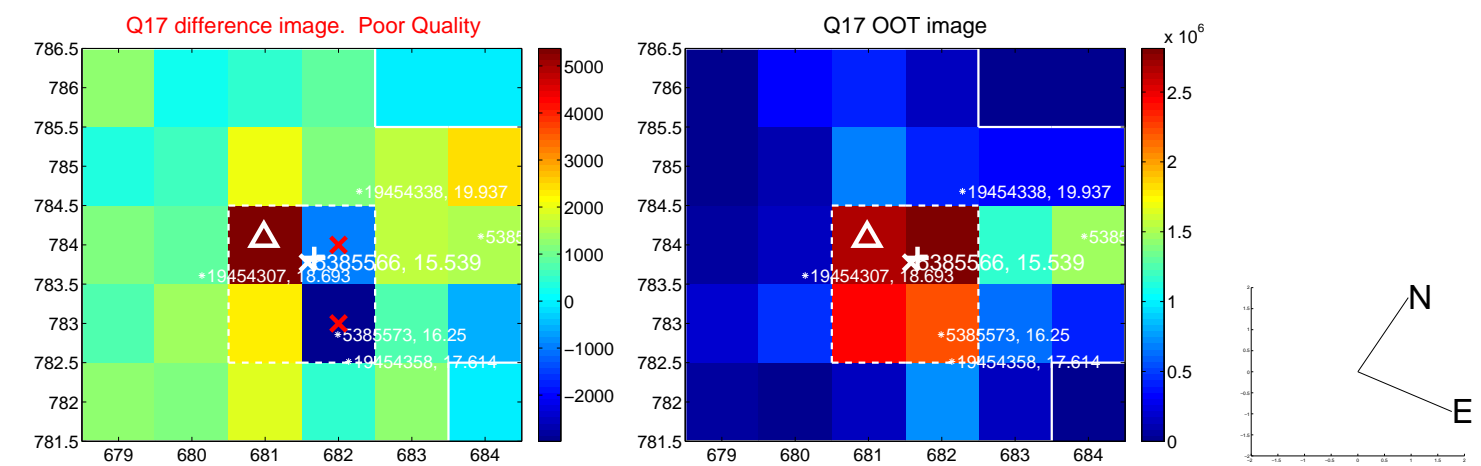
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

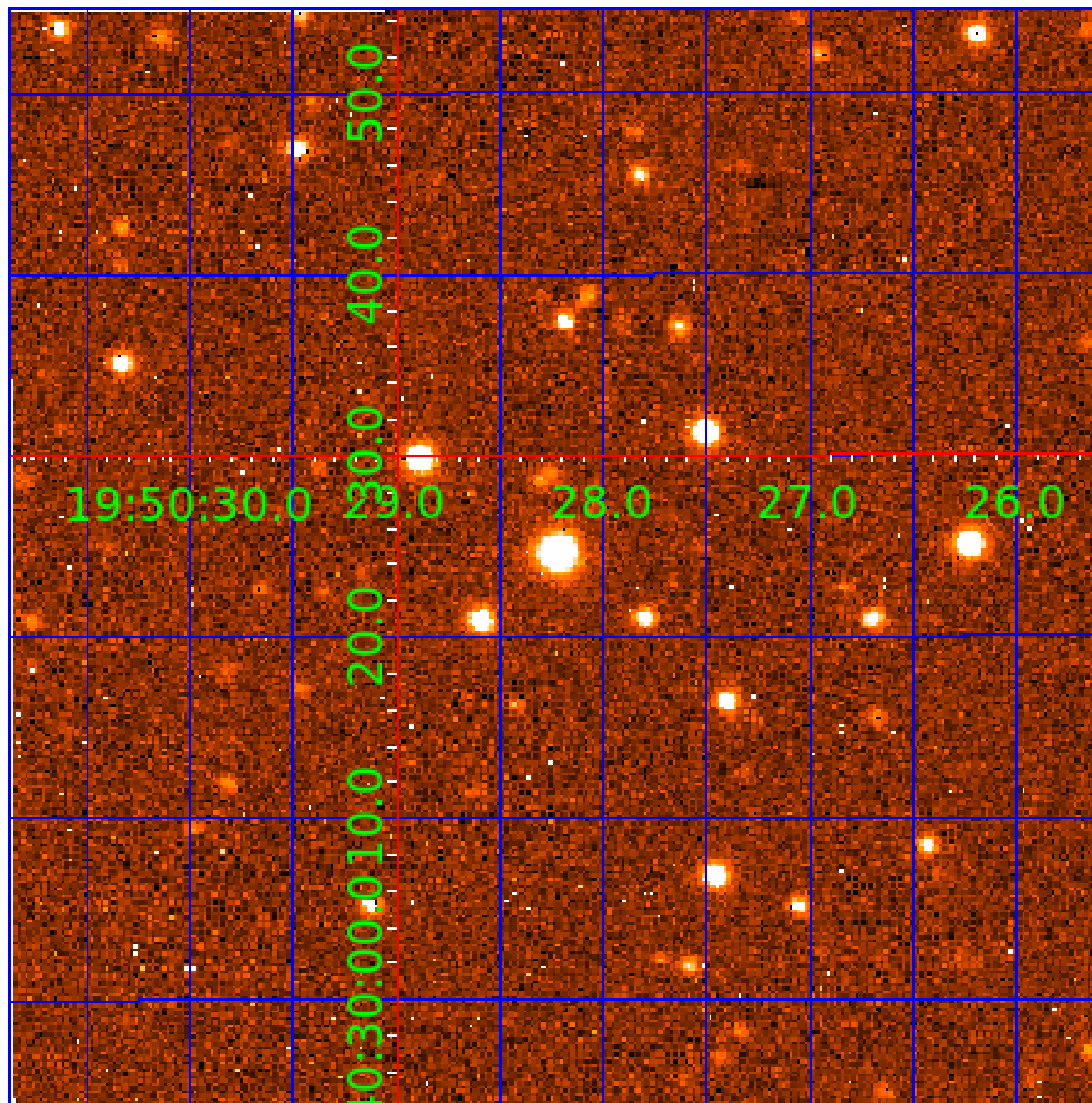


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385566

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})
005385566-01	OBS	6004.01	12.425424	141.546856	292.6	22.709	15.4	20.2	0.78	5442	1.66	51.68
005385566-02	OBS	No	12.426027	133.918951	265.6	25.116	16.5	20.5	0.78	5442	1.65	51.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385566-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—HALO_GHOST—EPHEM_MATCH
005385566-02	OBS	FP	0.00	1	0	1	1	LPP_DV—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—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 005385566-02

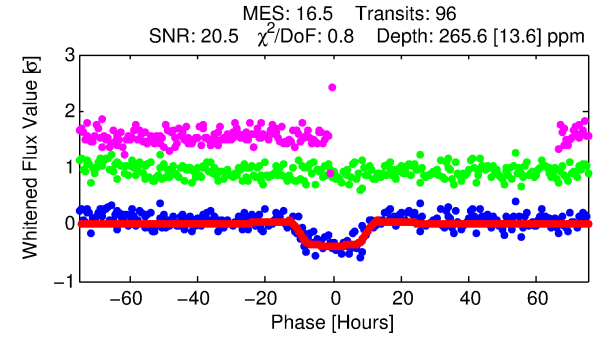
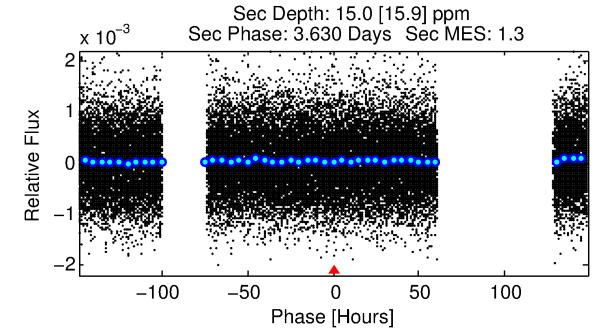
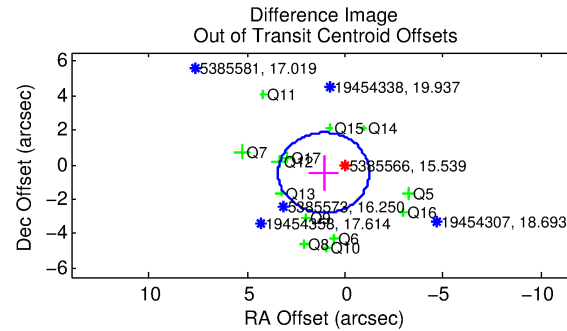
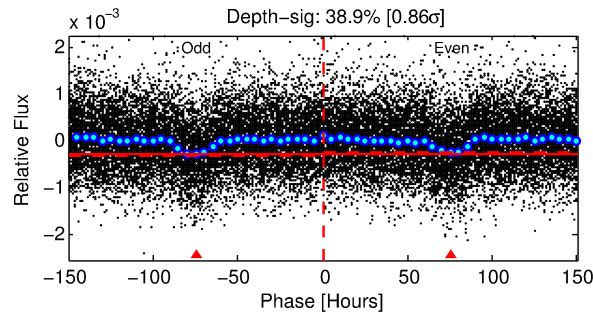
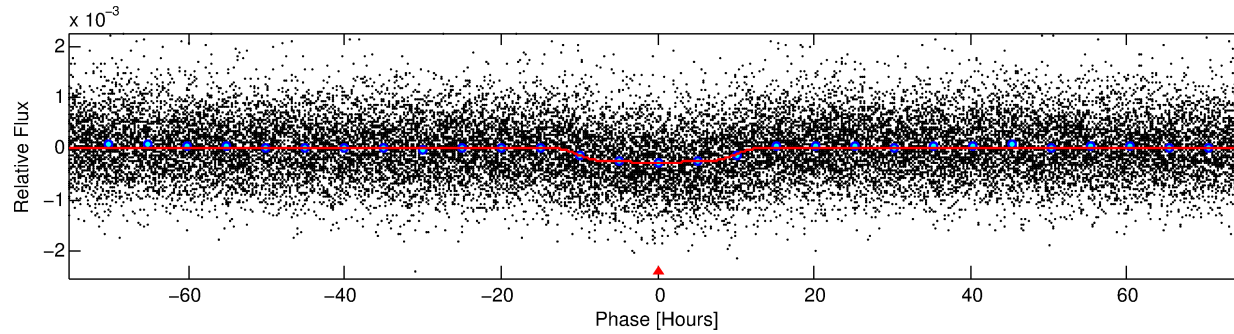
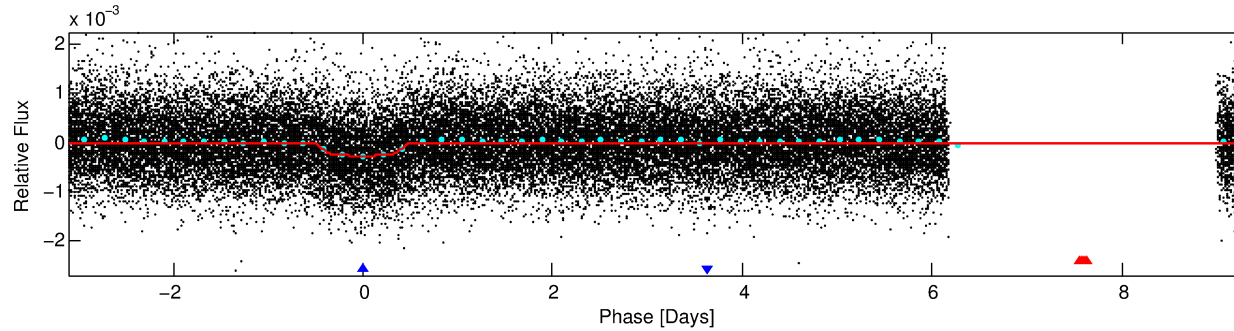
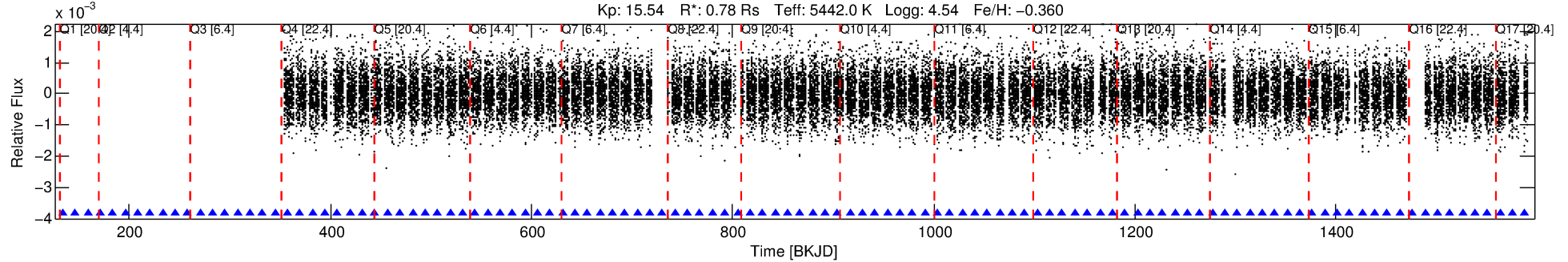
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005385566-02	5385566	V380-Cyg-sec	5385723	1:1	350.5	-62	-62	5.77	15.54	485.10	Direct-PRF	0	1.56	0.81

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: 5385566 Candidate: 2 of 2 Period: 12.426 d
KOI: K06004 Corr: No Ephemeris Match

Kp: 15.54 R*: 0.78 Rs Teff: 5442.0 K Logg: 4.54 Fe/H: -0.360



DV Fit Results:

Period = 12.42603 [0.00042] d
Epoch = 133.9190 [0.0298] BKJD
Rp/R* = 0.0193 [0.0008]
a/R* = 1.66 [0.15]
b = 0.96 [0.01]
Seff = 51.68 [13.14]
Teq = 684 [43] K
Rp = 1.65 [0.30] Re
a = 0.0966 [0.0140] AU
Ag = 28.22 [30.55] [0.89σ]
Teffp = 2436 [654] K [2.67σ]

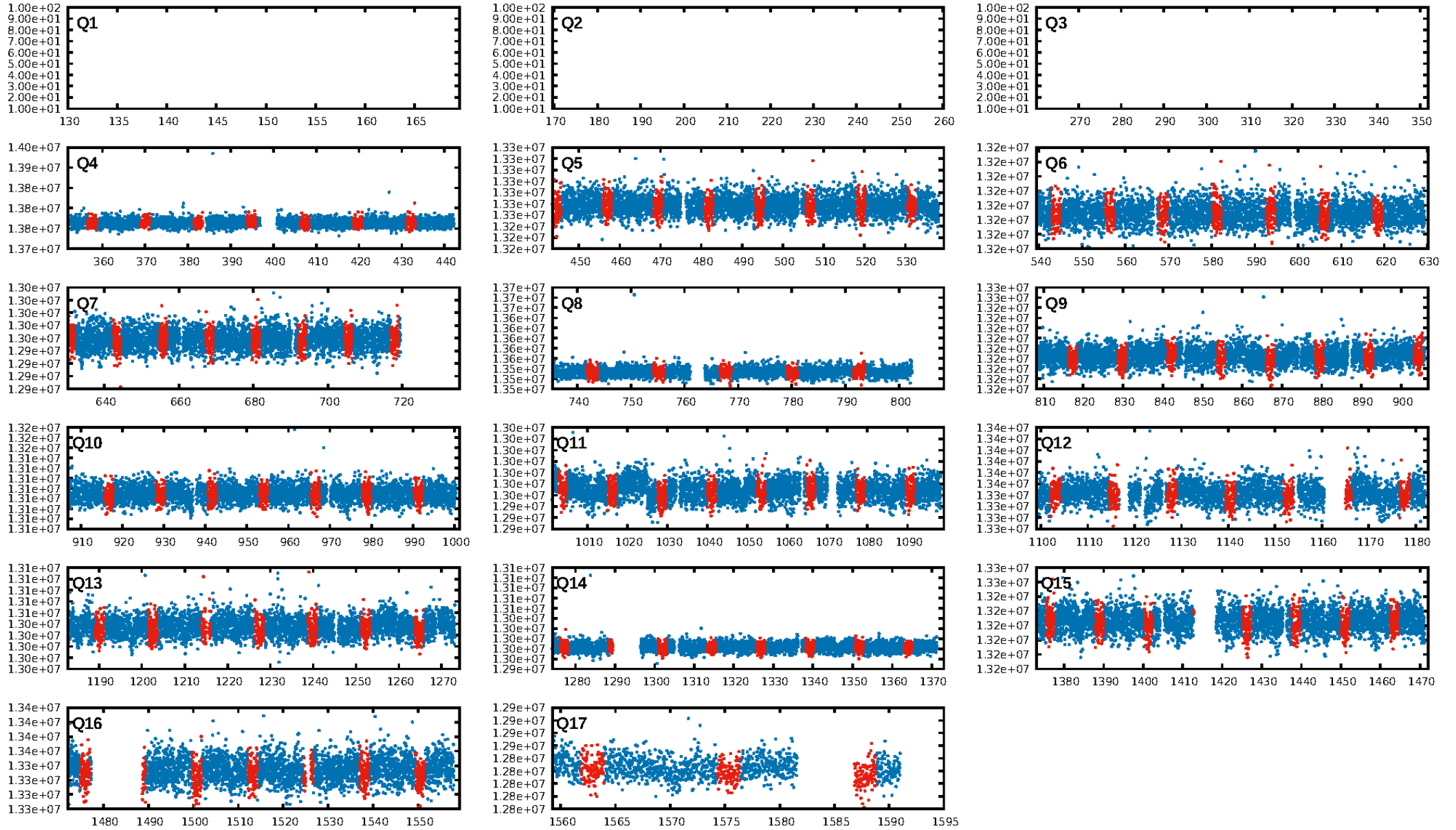
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 67.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.42e-63
RollingBand-fgt: 1.00 [93/93]
GhostDiagnostic-chr: 0.1551
Centroid-sig: 81.1%
Centroid-so: 0.922 arcsec [1.78σ]
OotOffset-rm: 1.191 arcsec [1.53σ]
KicOffset-rm: 1.306 arcsec [1.72σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 1.00 [14/14]

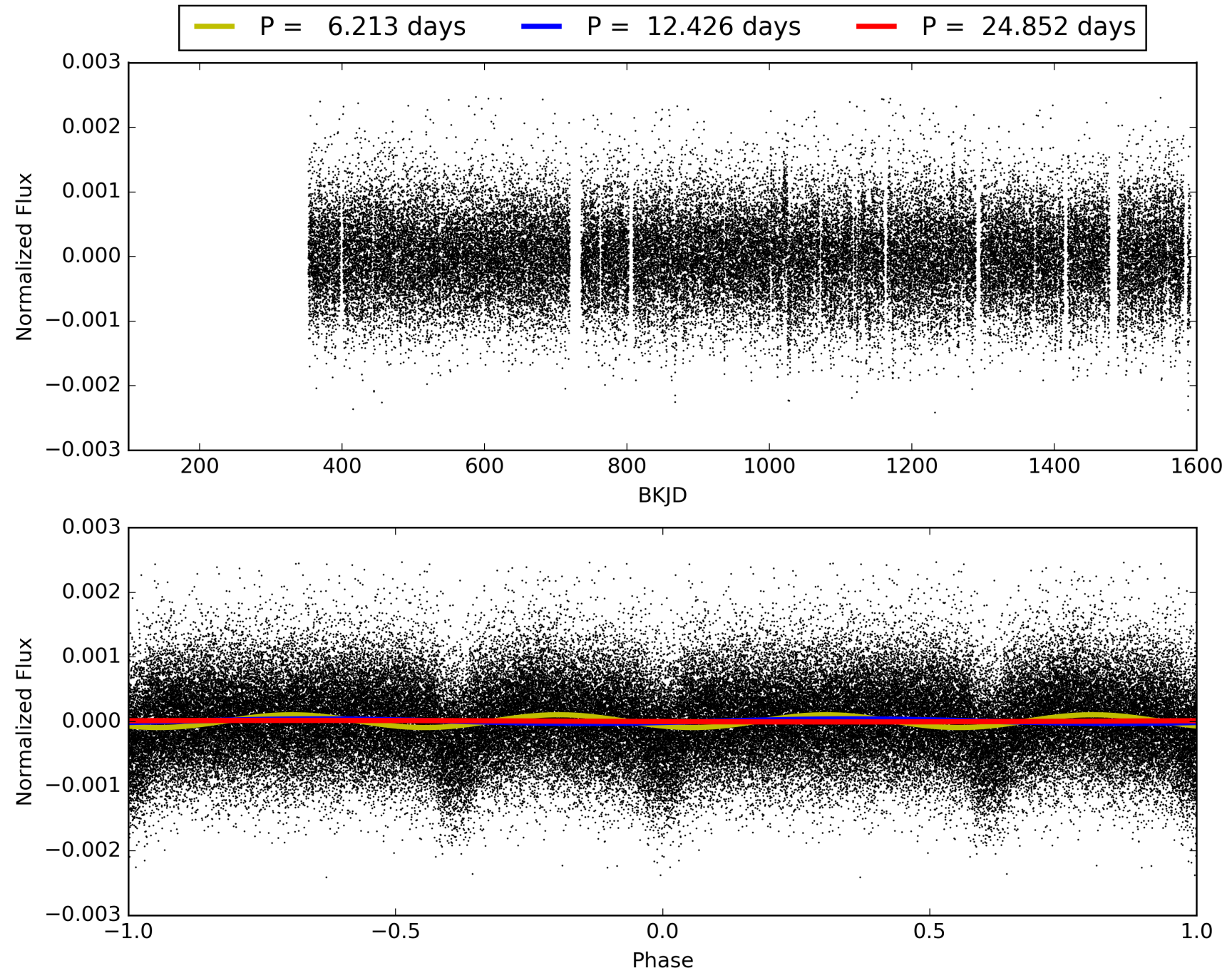
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:59:16 Z

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

TCE 005385566-02, PDC Light Curves

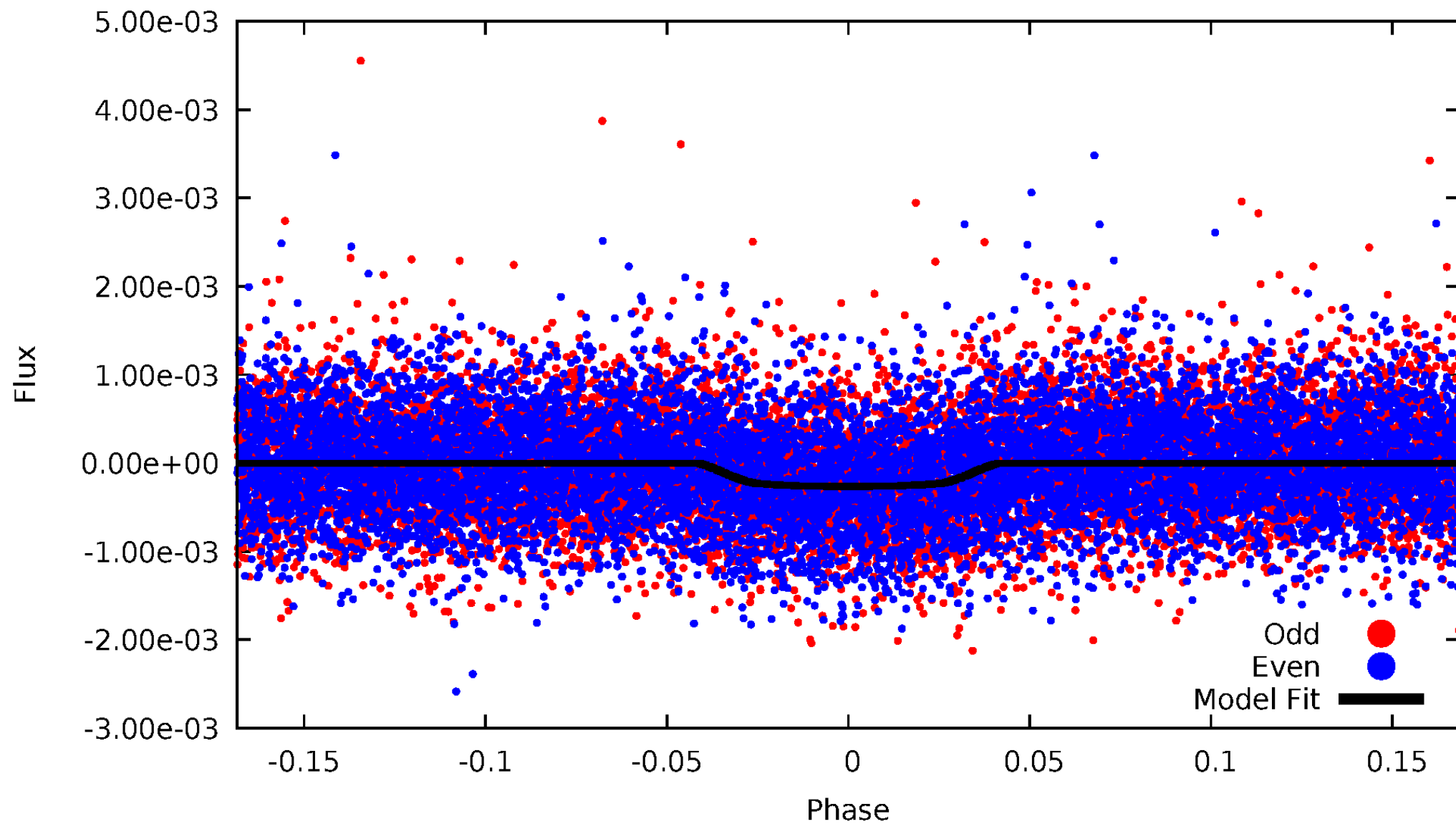


TCE 005385566-02



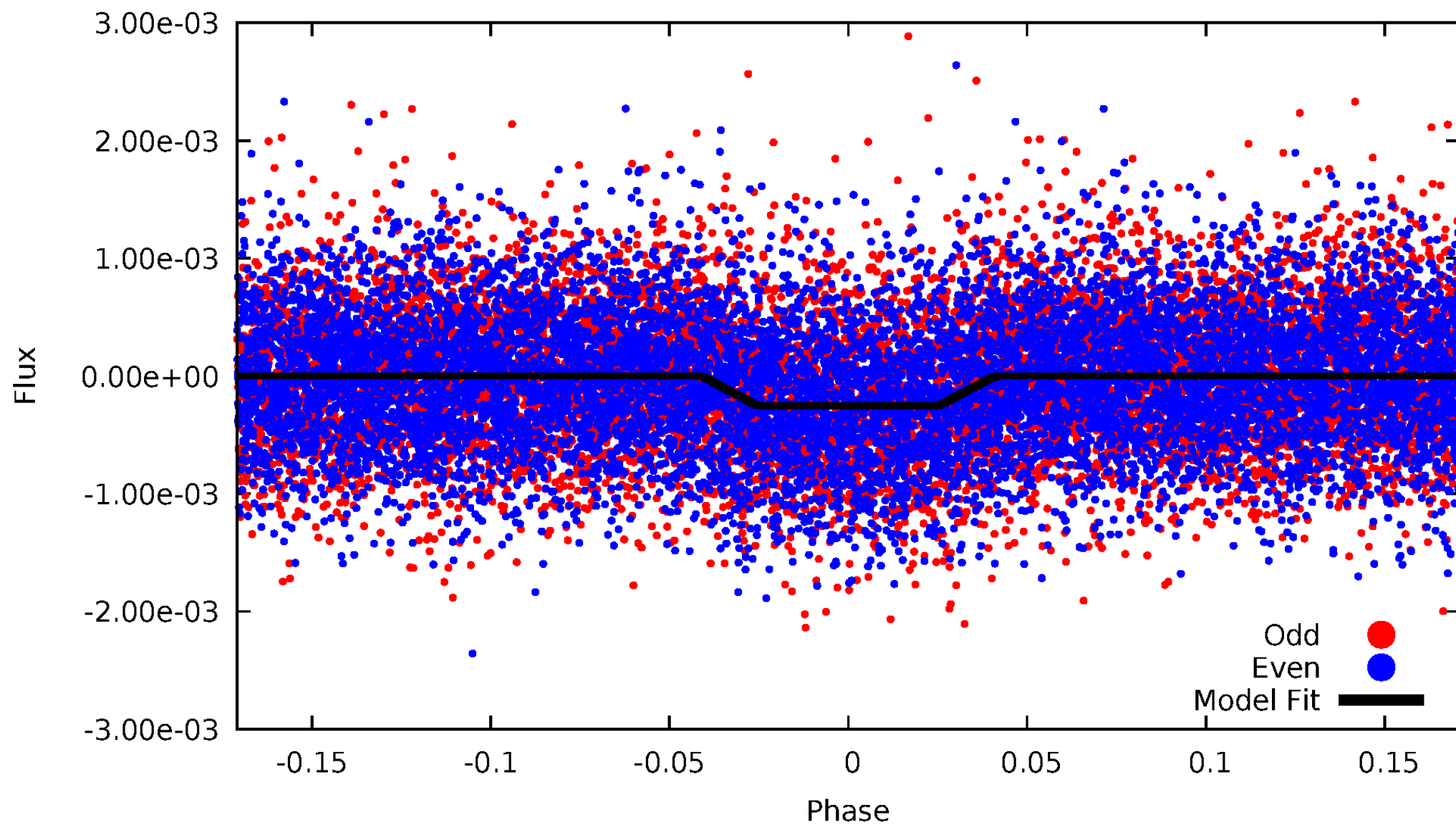
DV Odd/Even

TCE 005385566-02



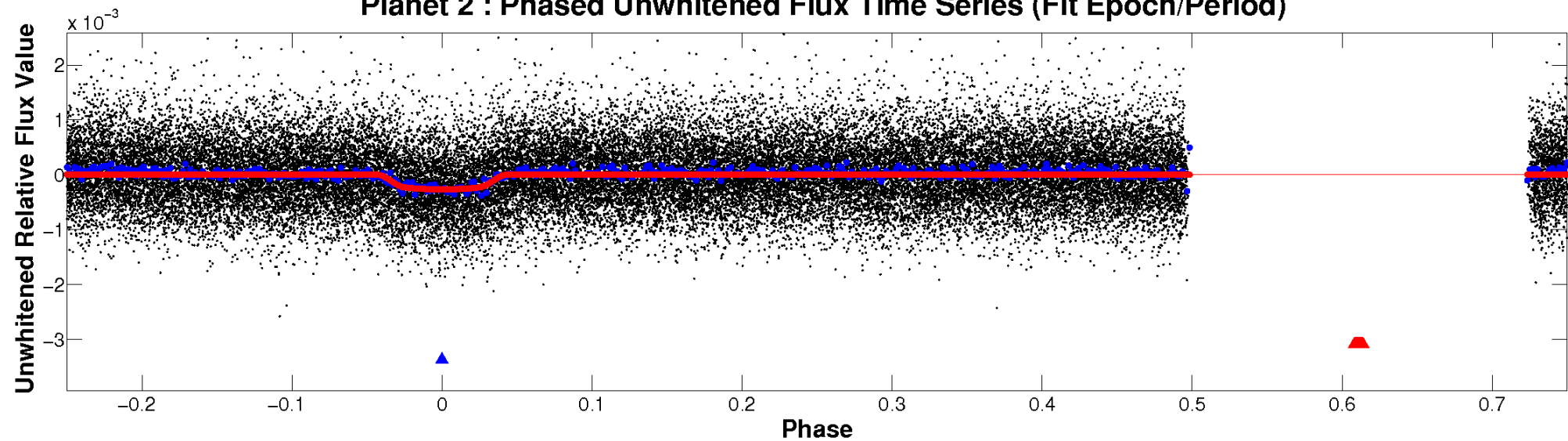
ALT Odd/Even

TCE 005385566-02

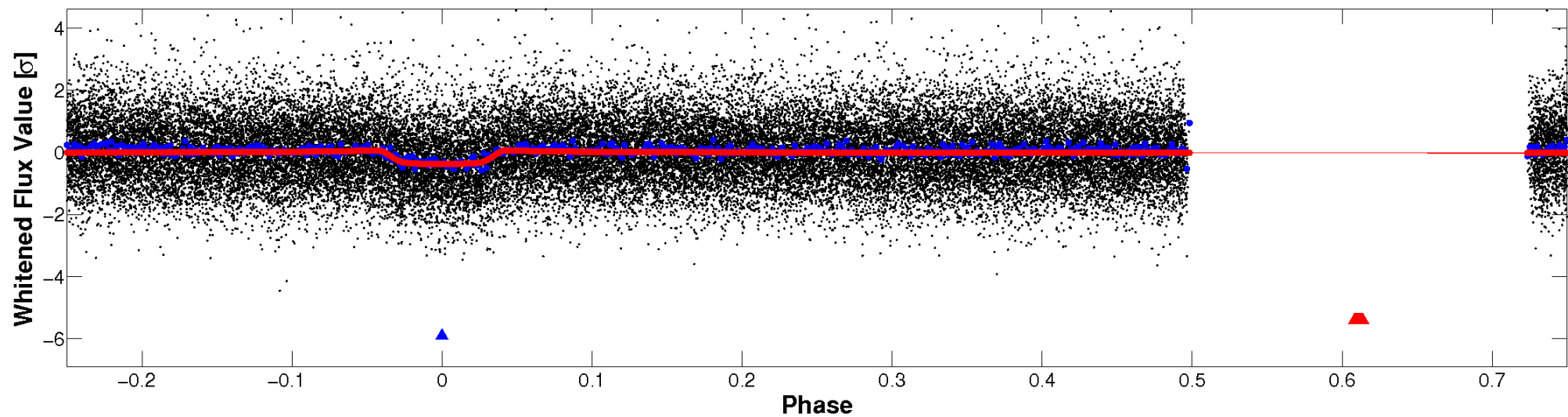


Non-Whitened Vs. Whitened Light Curve

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

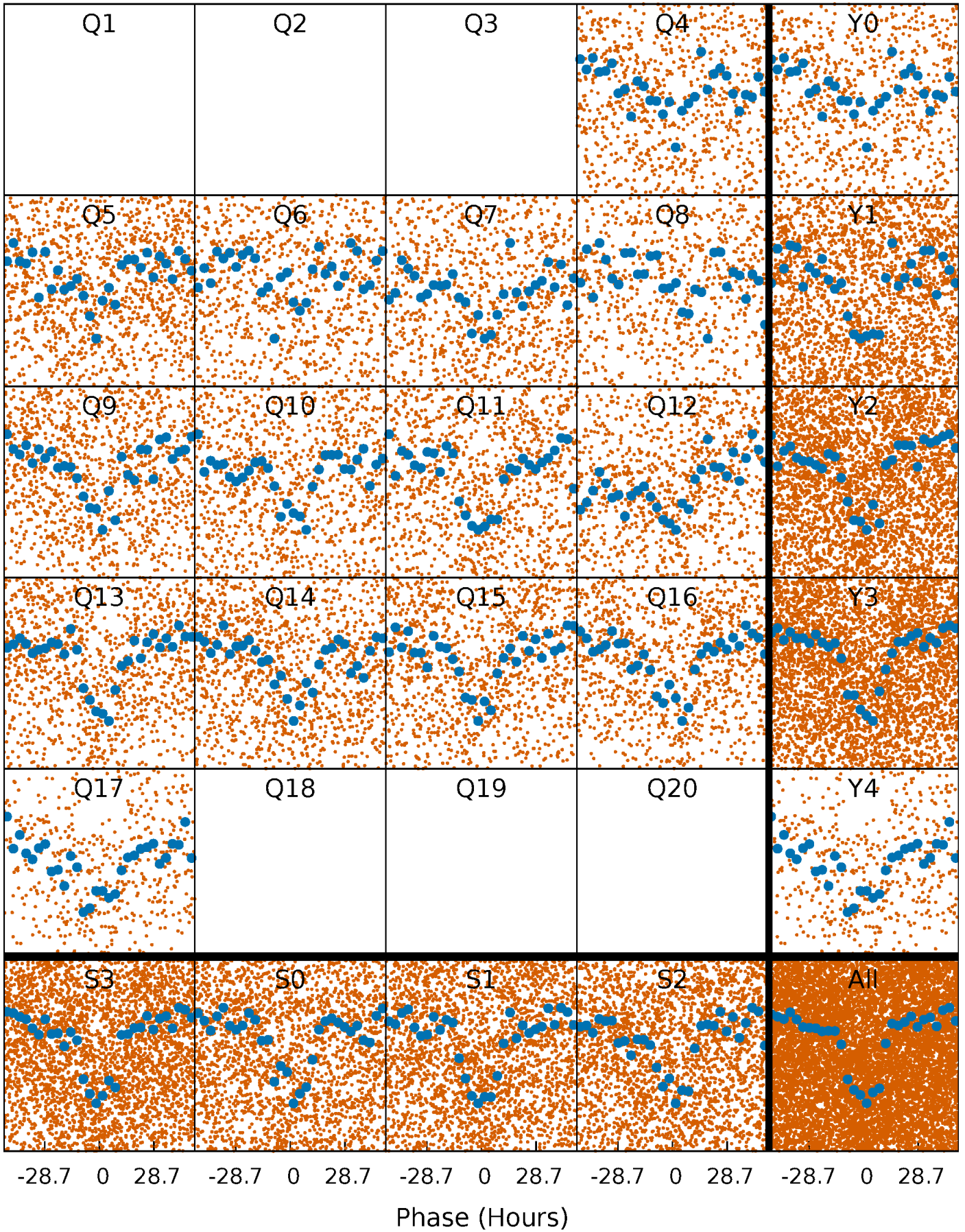


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



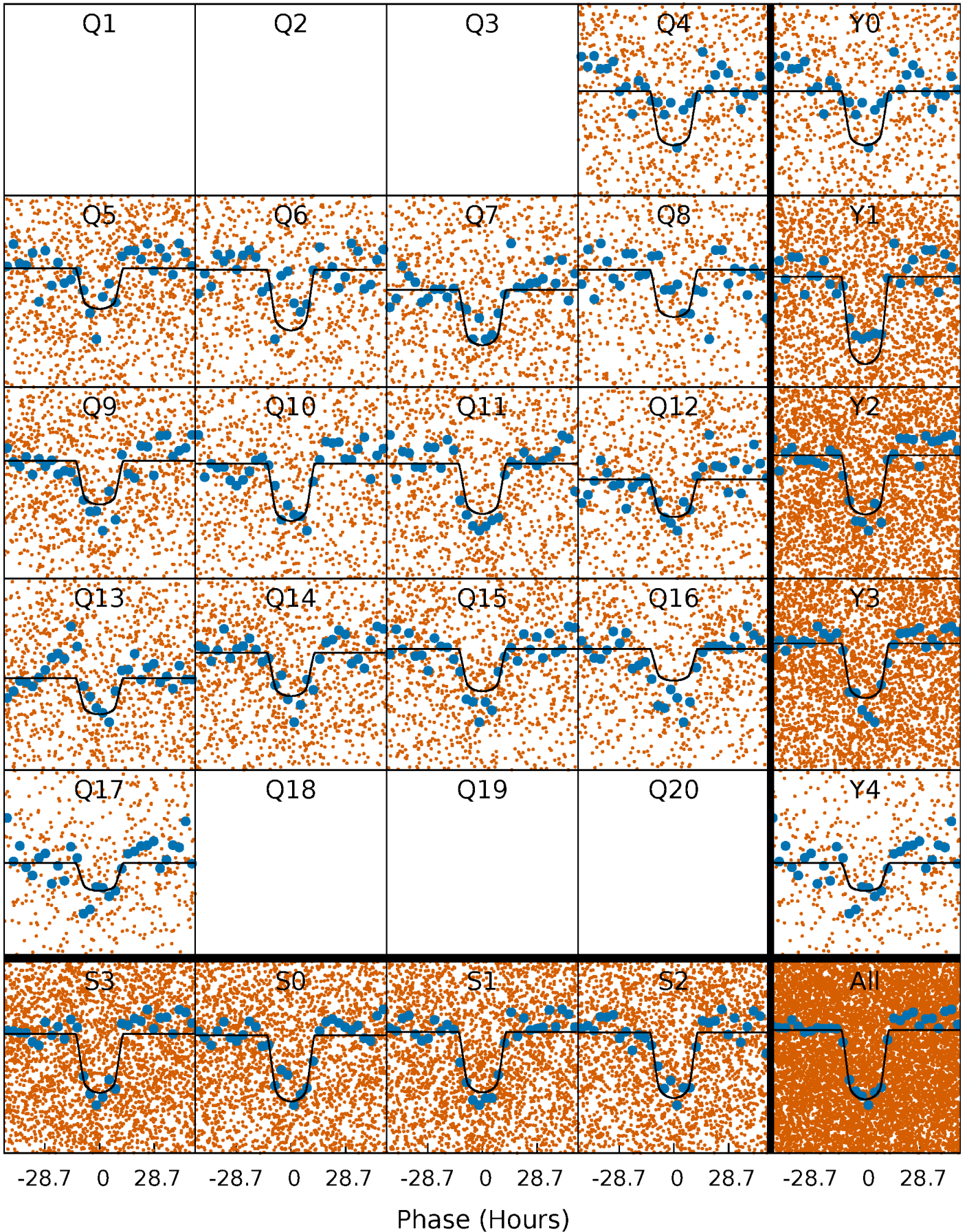
PDC Quarter-Phased Transit Curves

TCE 005385566-02 P= 12.426027 Days $T_0=133.918951$ (BKJD)



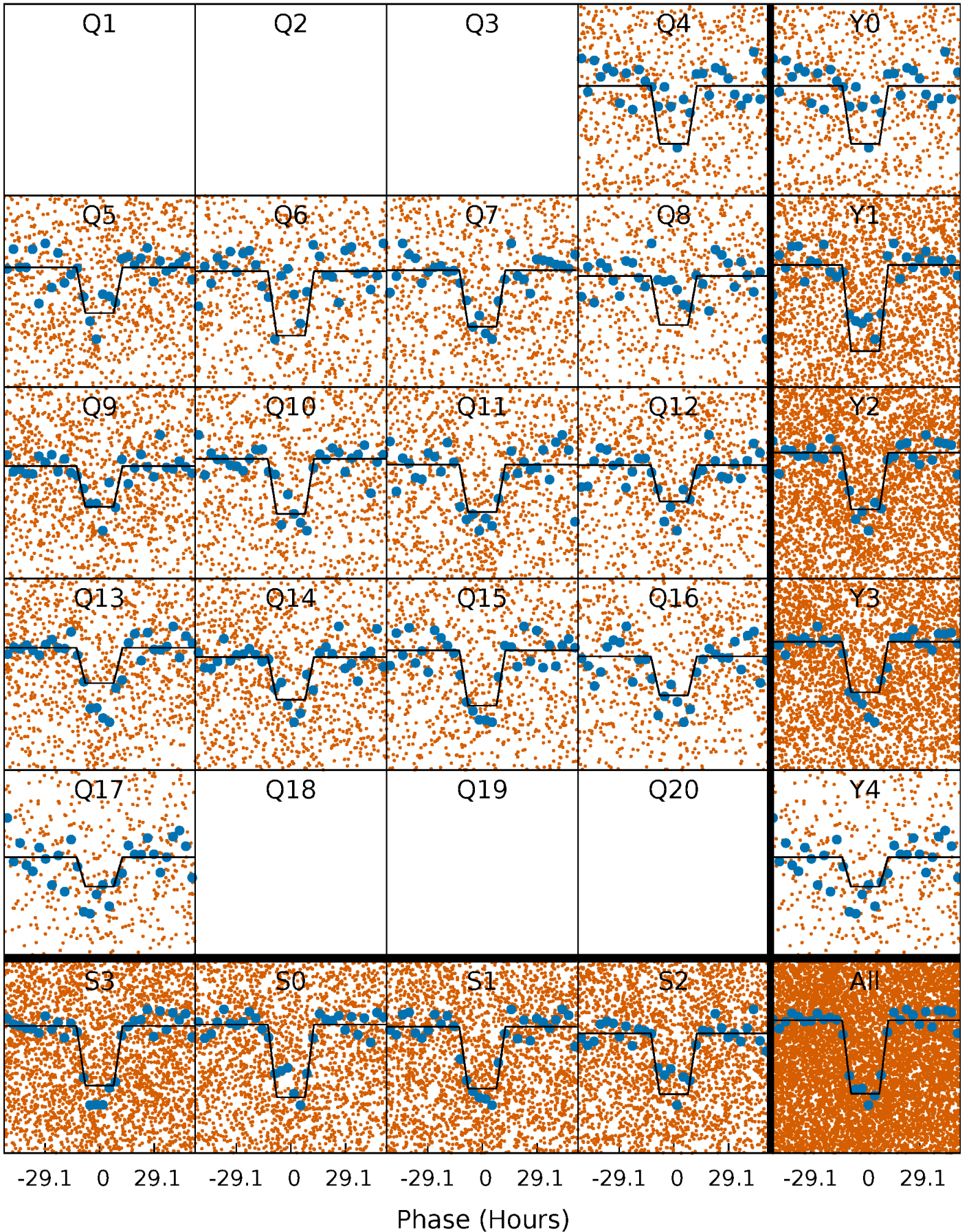
DV Quarter-Phased Transit Curves

TCE 005385566-02 P= 12.426027 Days $T_0=133.918951$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

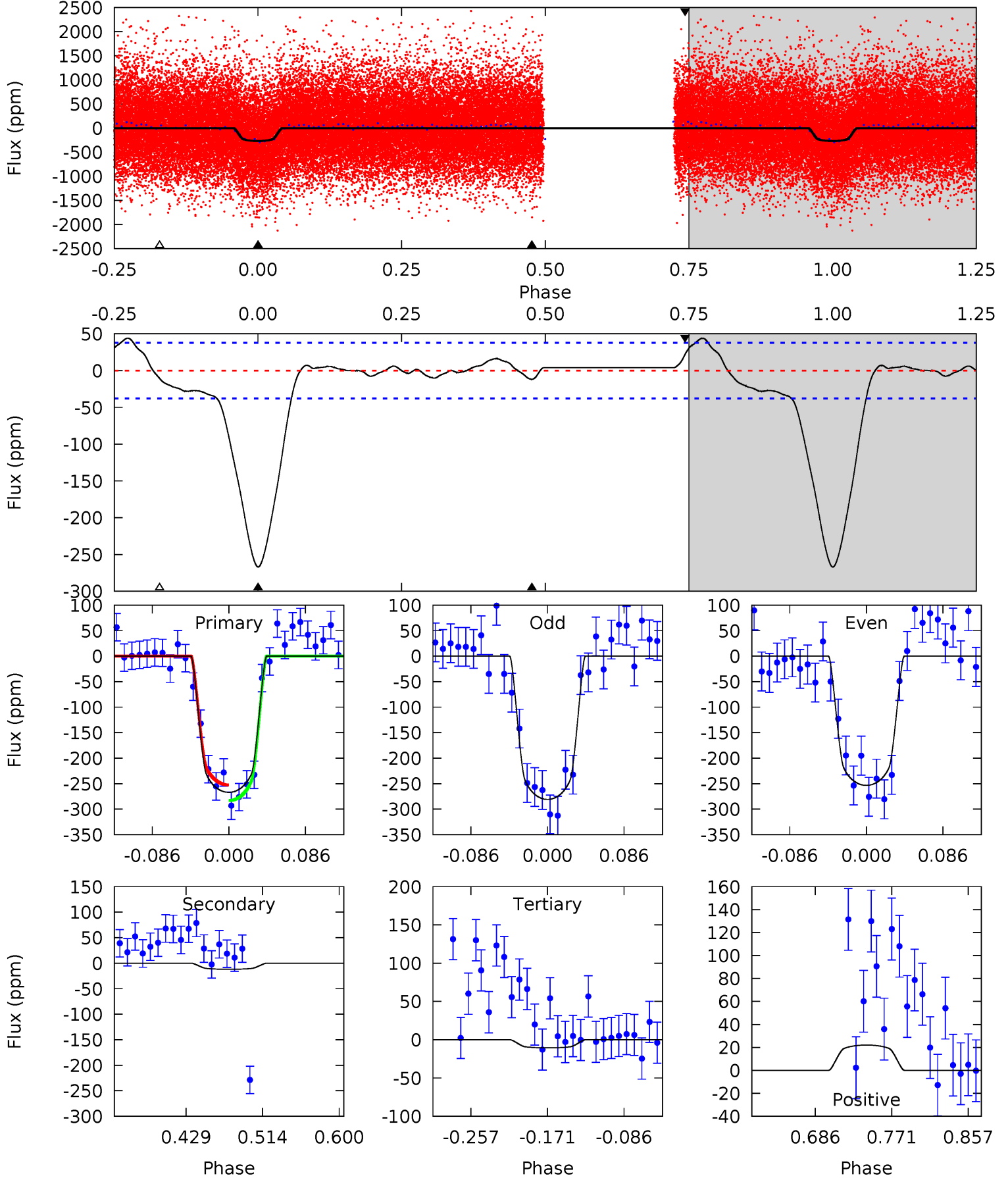
TCE 005385566-02 P= 12.426067 Days $T_0=133.938276$ (BKJD)



DV Model-Shift Uniqueness Test

005385566-02, P = 12.426027 Days, E = 133.918951 Days

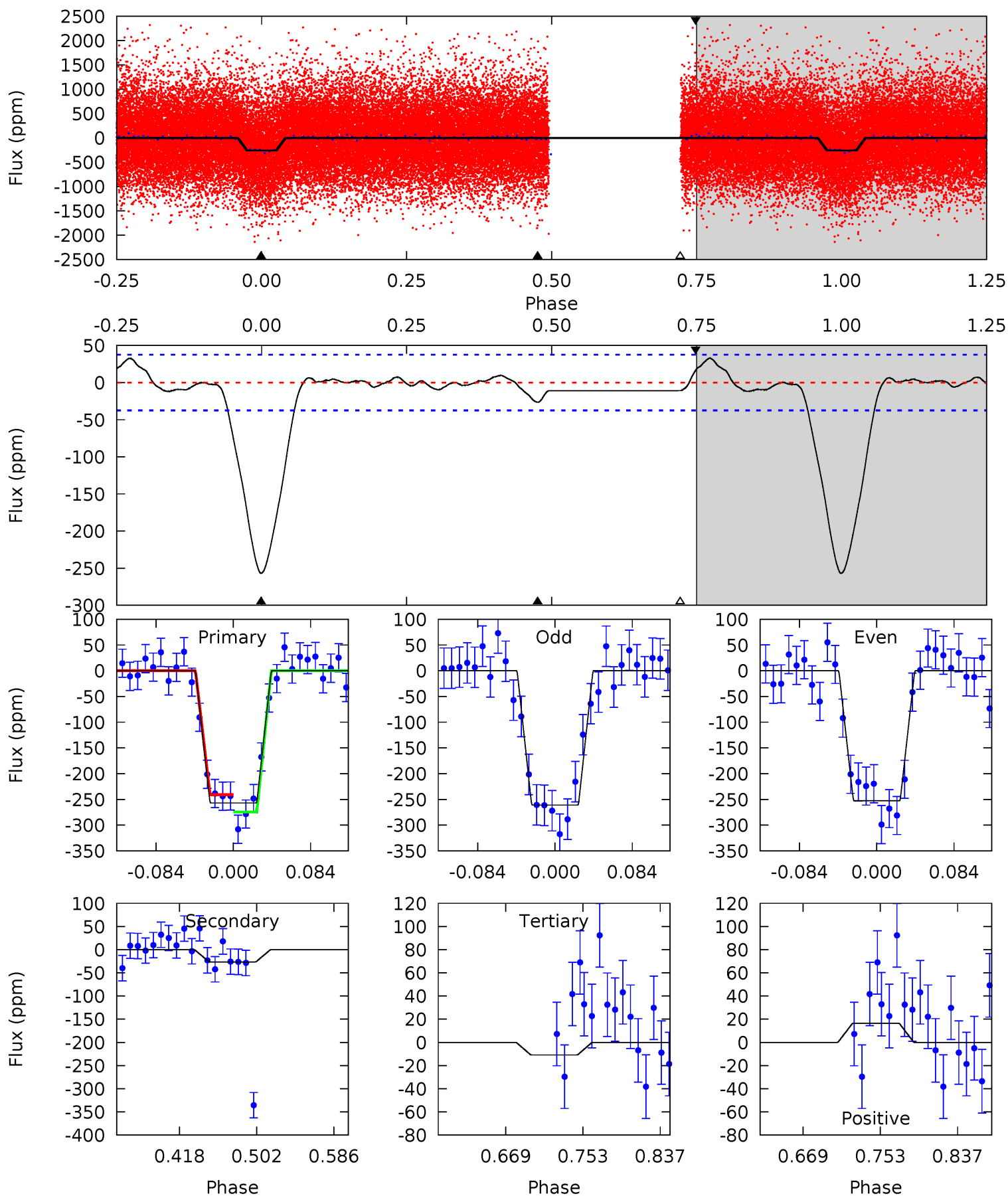
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.5	1.45	1.29	2.68	4.60	1.72	2.05	31.2	29.8	0.16	-1.23	1.68	0.32	0.14	1.87



Alt Model-Shift Uniqueness Test

005385566-02, P = 12.426067 Days, E = 133.938276 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	3.25	1.33	2.01	4.60	1.73	1.17	30.1	29.4	1.92	1.24	0.52	0.95	0.11	2.05



Stellar Parameters For KIC 005385566

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5442^{+206}_{-187}	$4.541^{+0.072}_{-0.108}$	$-0.360^{+0.350}_{-0.300}$	$0.783^{+0.140}_{-0.081}$	$0.778^{+0.109}_{-0.067}$	$2.282^{+0.735}_{-0.784}$
	+4%/-3%	+2%/-2%	+97%/-83%	+18%/-10%	+14%/-9%	+32%/-34%
Source	KIC0	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 005385566-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-12 ± 8	$1.67^{+0.17}_{-0.14}$	961^{+54}_{-45}	2963^{+252}_{-447}	22^{+15}_{-15}
Alt.	-27 ± 8	$1.37^{+0.14}_{-0.11}$	961^{+49}_{-46}	3551^{+200}_{-212}	74^{+24}_{-24}

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 $A_{obs} \gg 1.0$

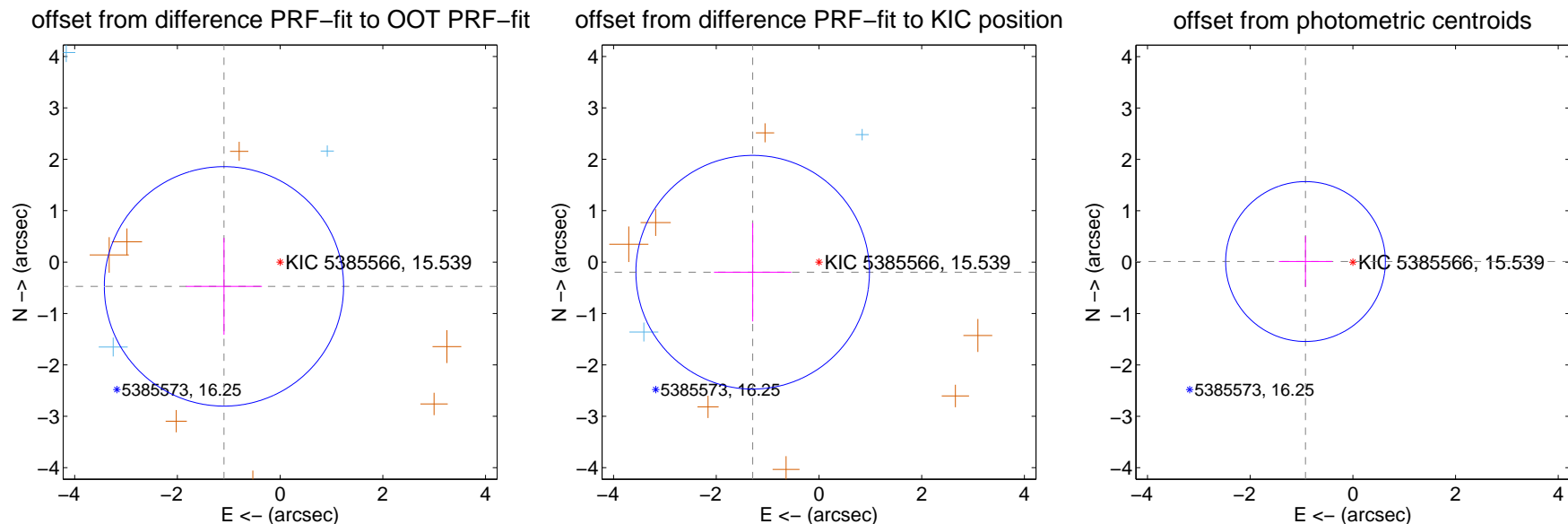
DV Centroid Data

Supplemental centroid analysis for 005385566-02. Kepler magnitude: 15.54. Transit SNR 20.53

There are 3 quarters with good PRF difference image offsets

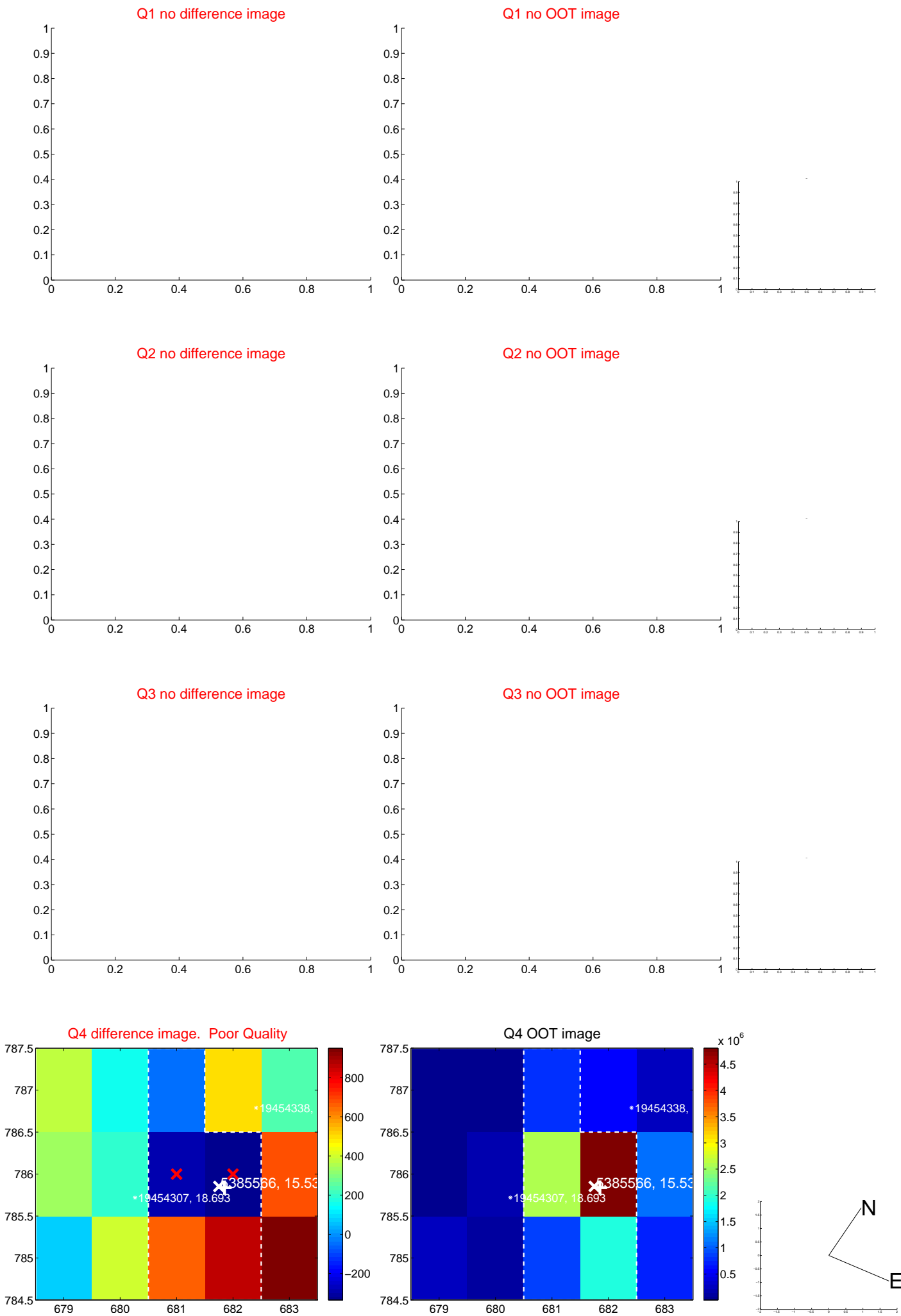
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.191 ± 0.777	1.53	1.094 ± 0.741	-0.473 ± 0.943
PRF-fit source offset from KIC position	1.306 ± 0.758	1.72	1.291 ± 0.753	-0.198 ± 0.957
photometric centroid source offset	0.92 ± 0.52	1.78	0.92 ± 0.52	0.01 ± 0.49

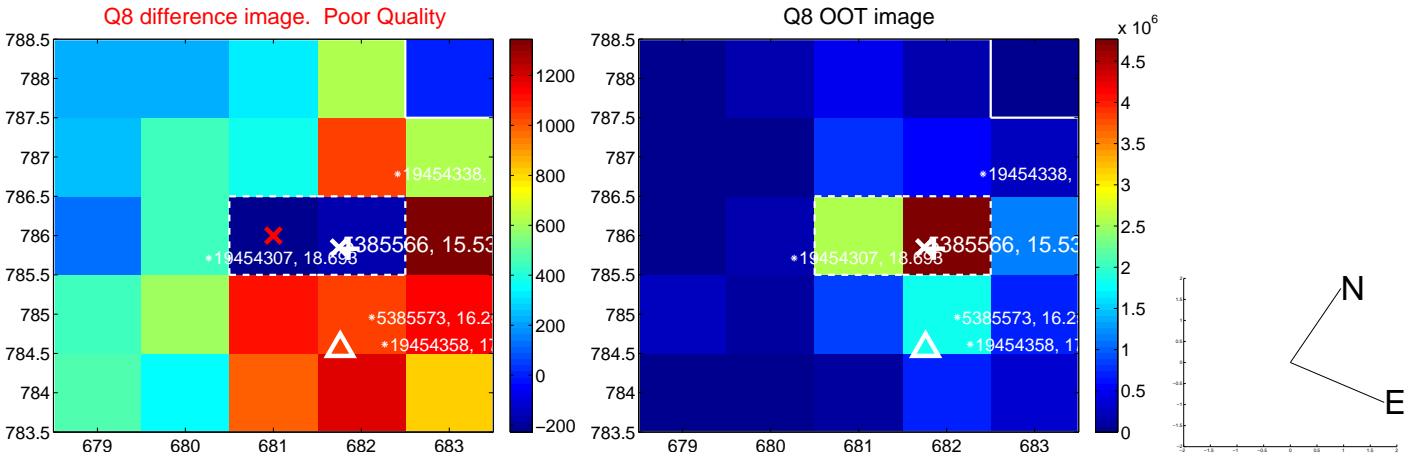
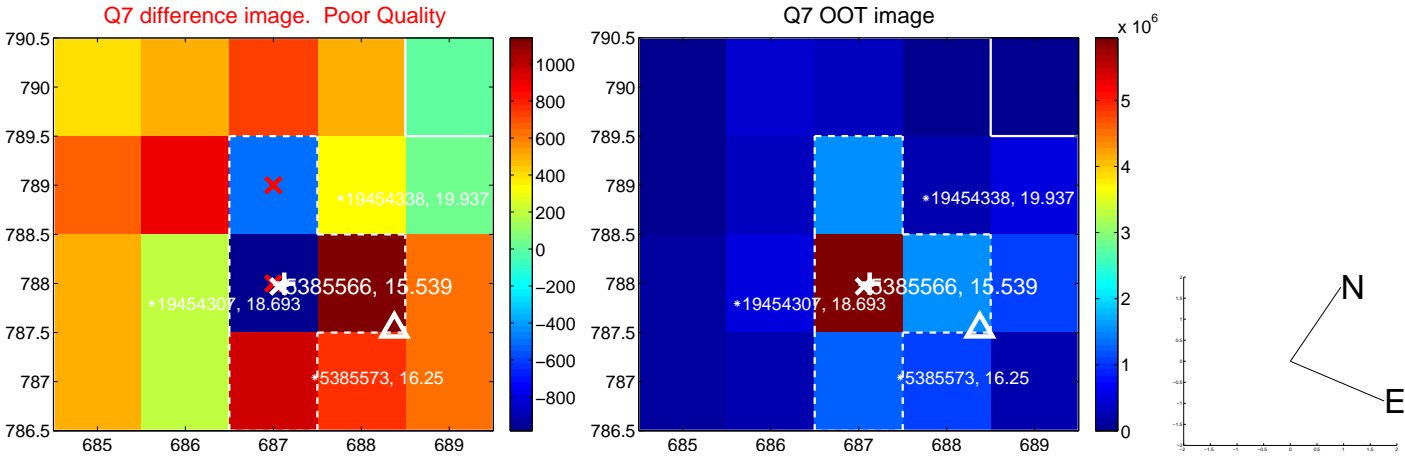
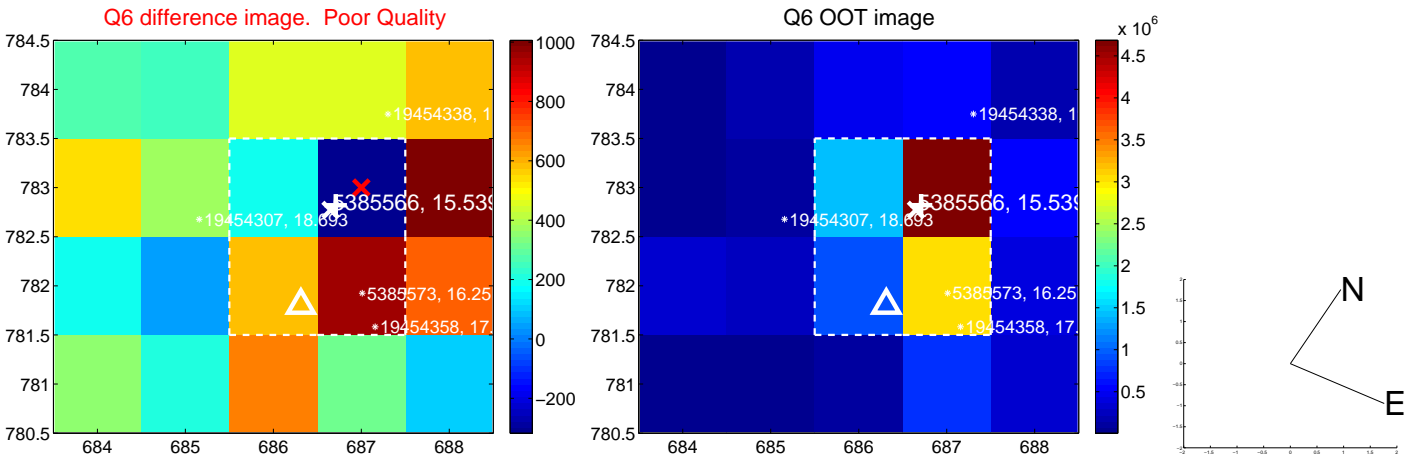
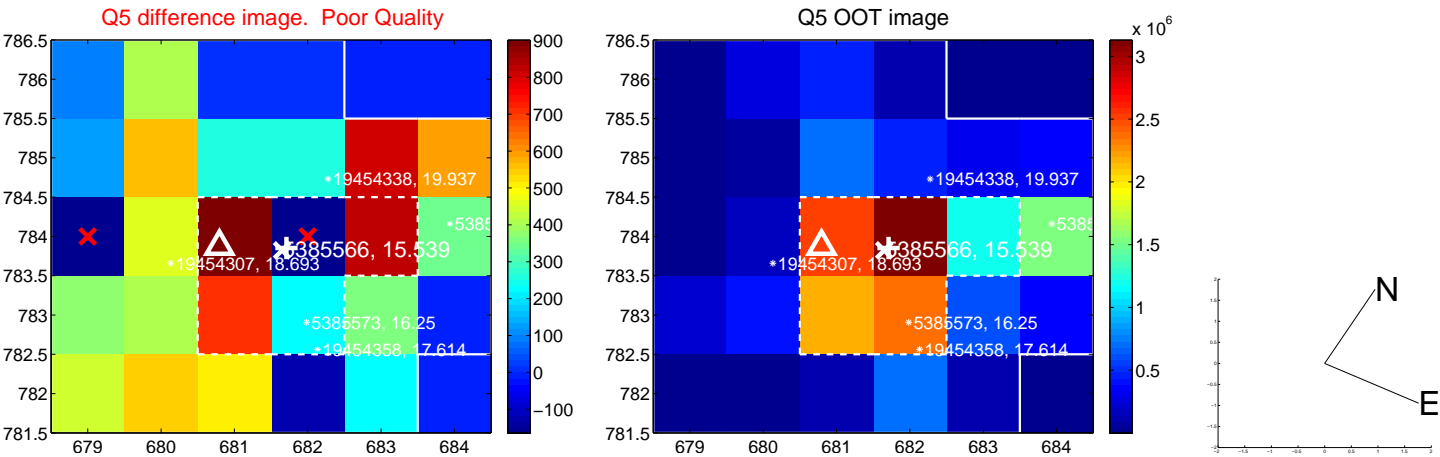


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

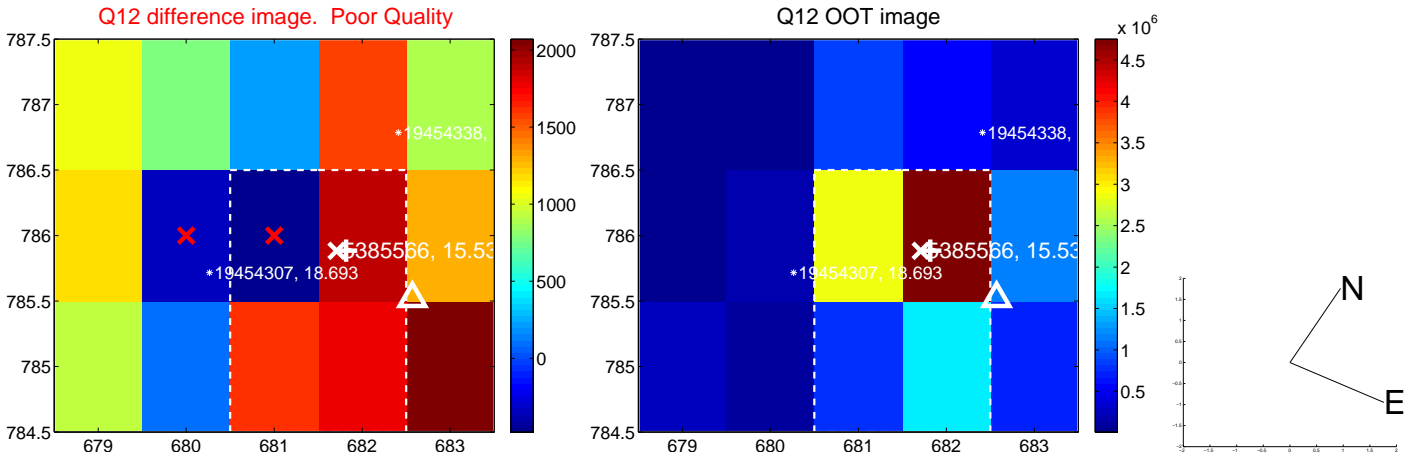
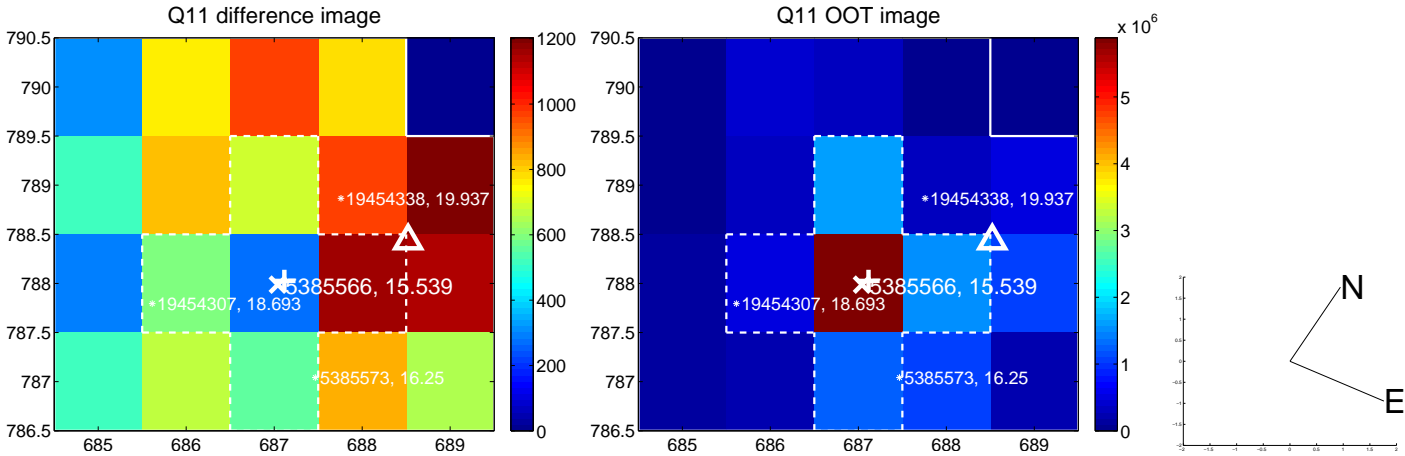
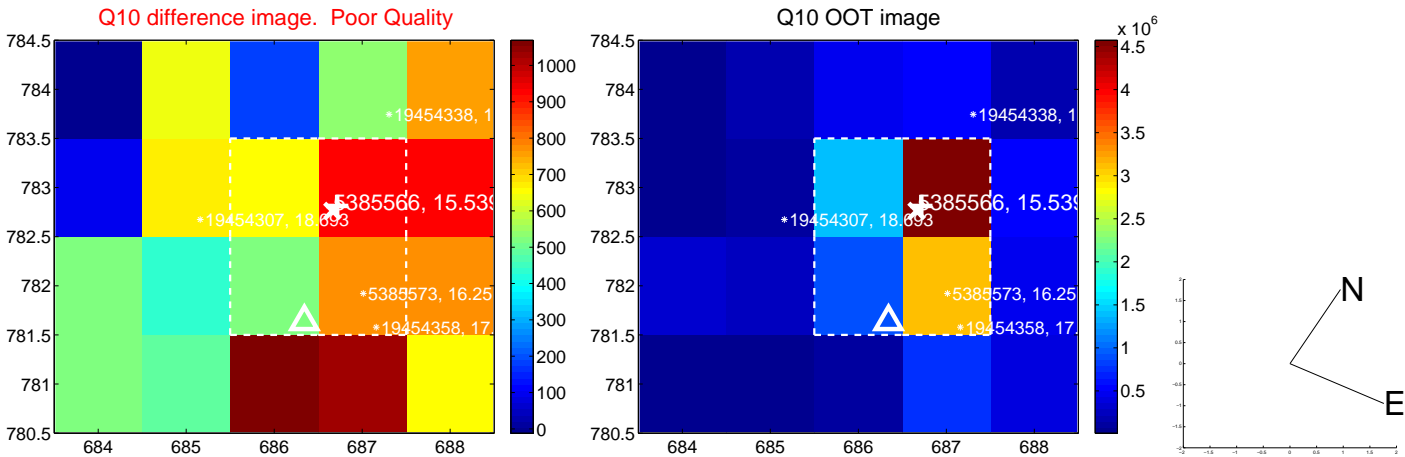
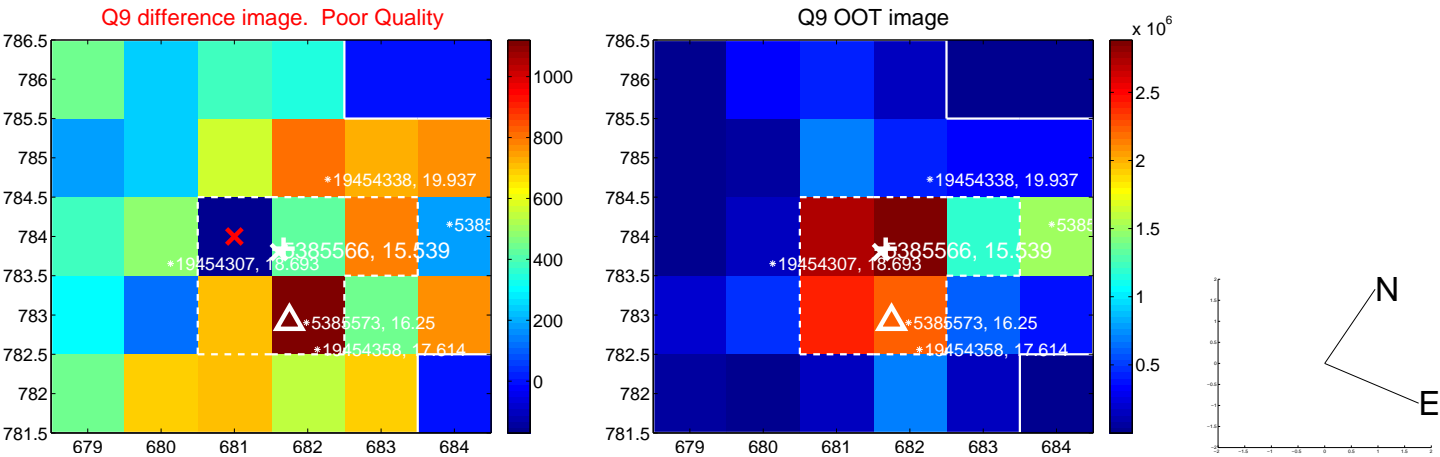
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



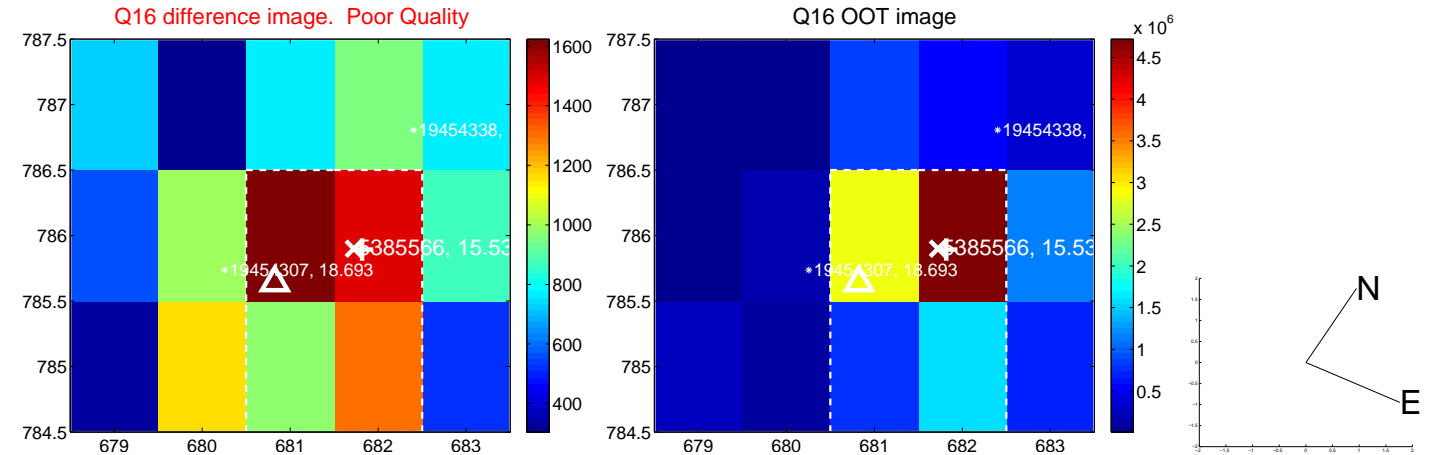
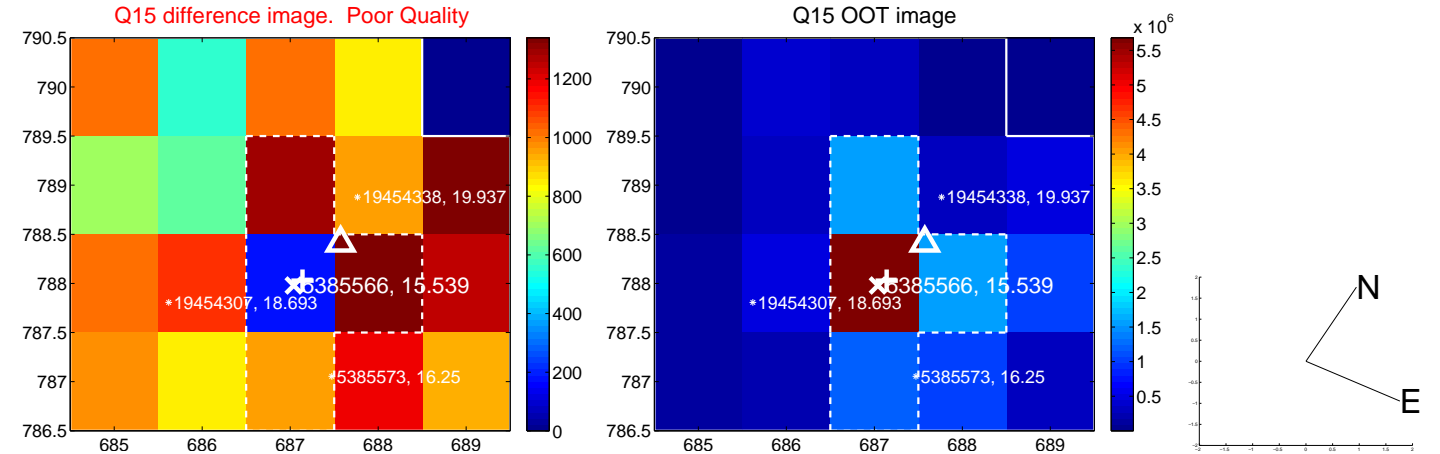
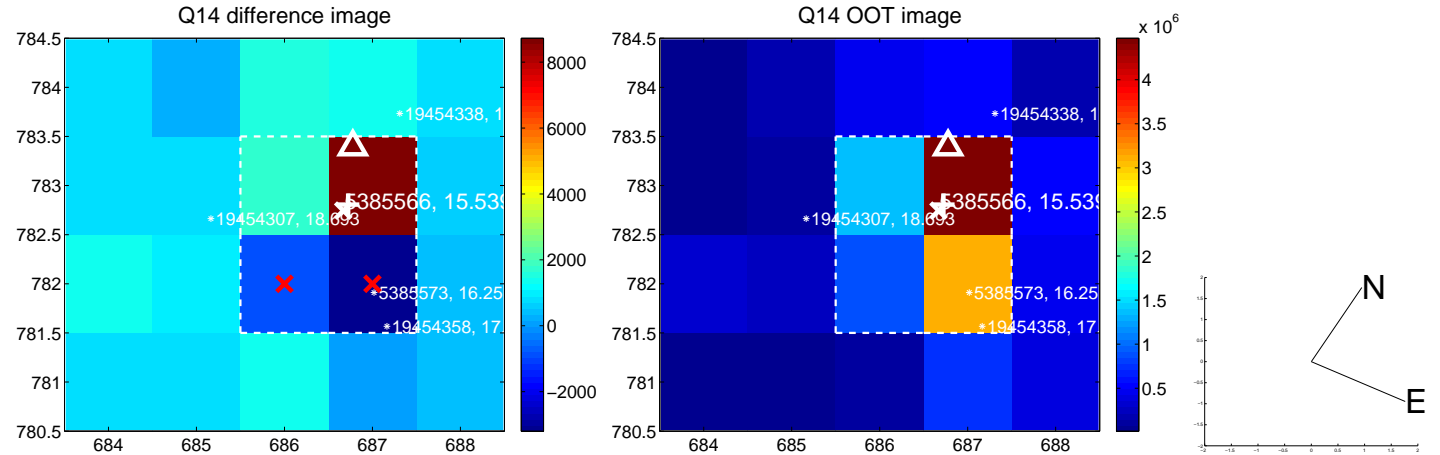
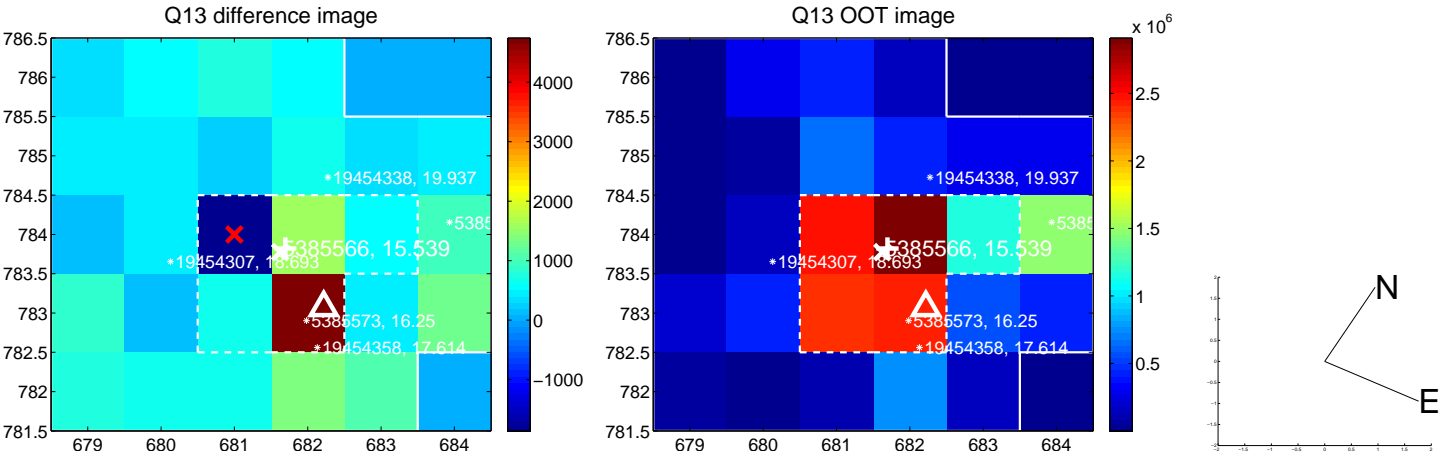
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



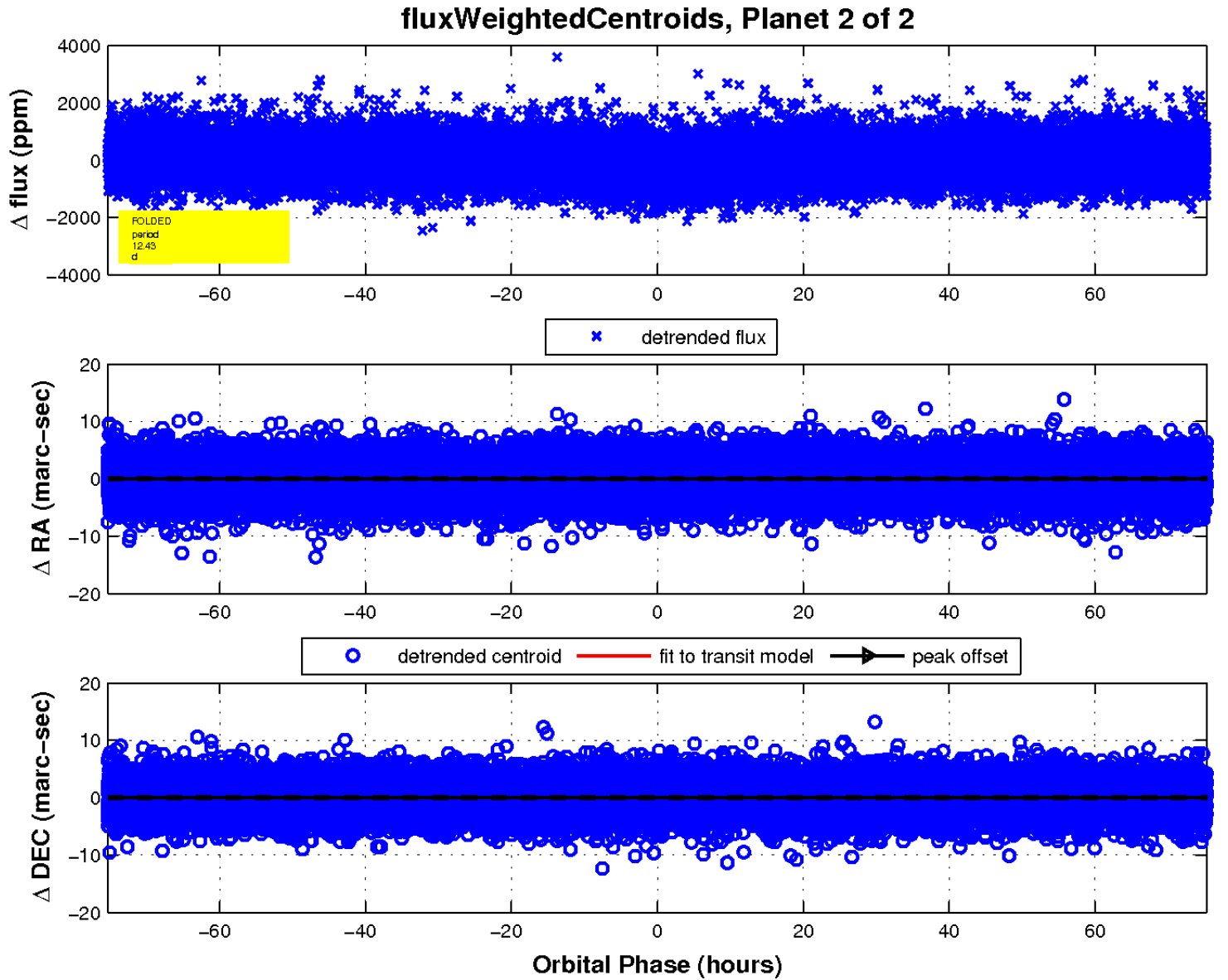
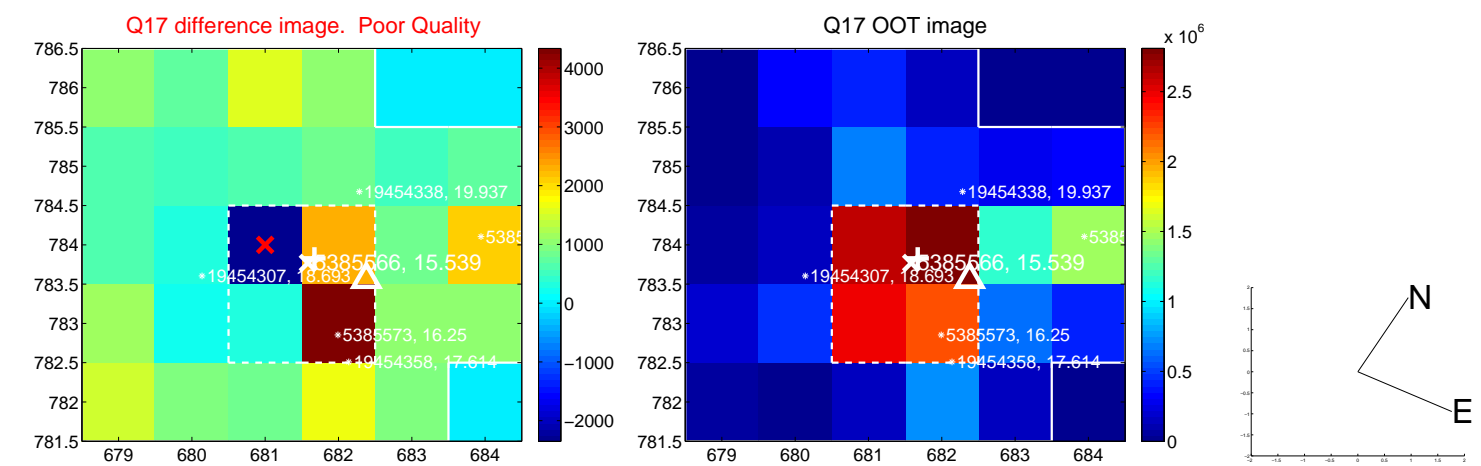
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

