

KIC 005385139

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})
005385139-01	OBS	6000.01	12.429413	141.310340	175.0	25.289	10.7	12.1	0.91	5754	1.26	71.88
005385139-02	OBS	No	12.425242	133.979625	171.2	22.704	10.3	12.2	0.91	5754	1.37	71.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385139-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
005385139-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—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.

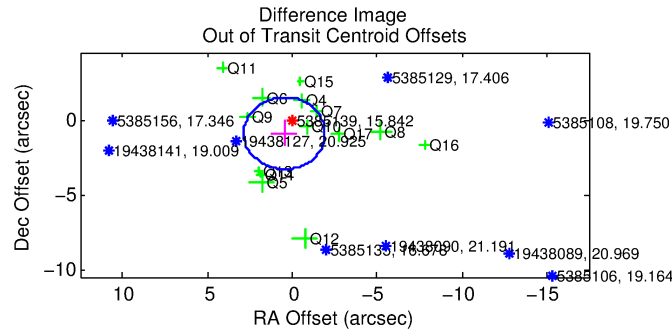
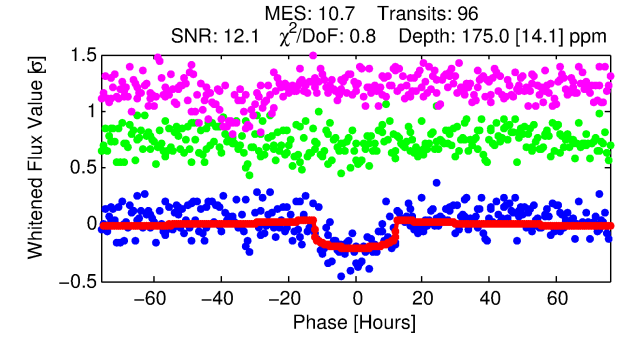
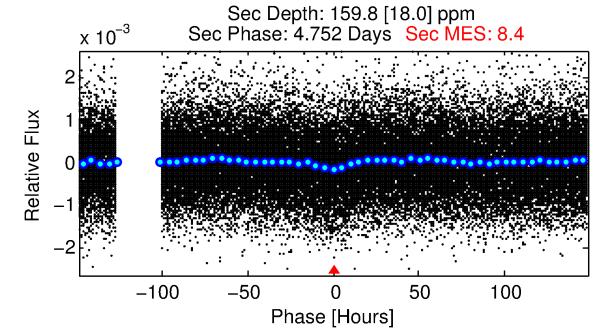
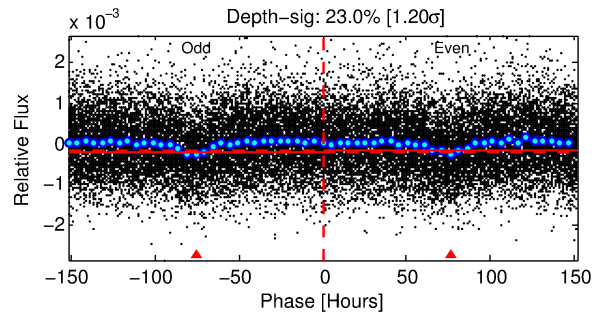
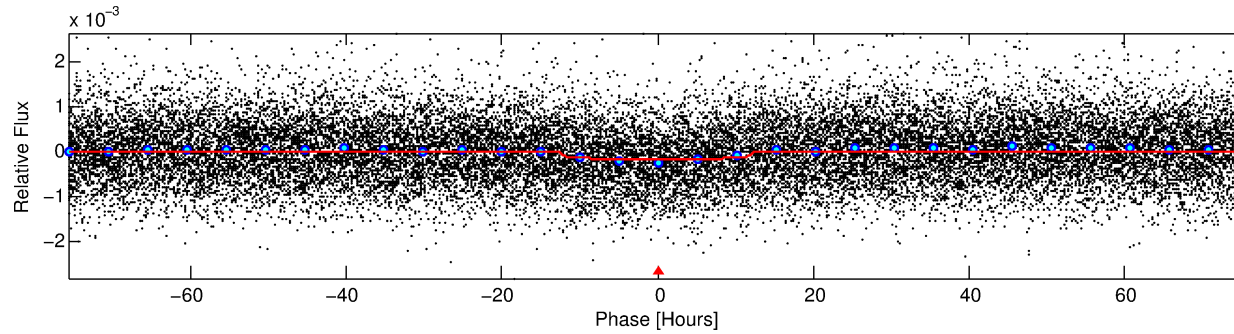
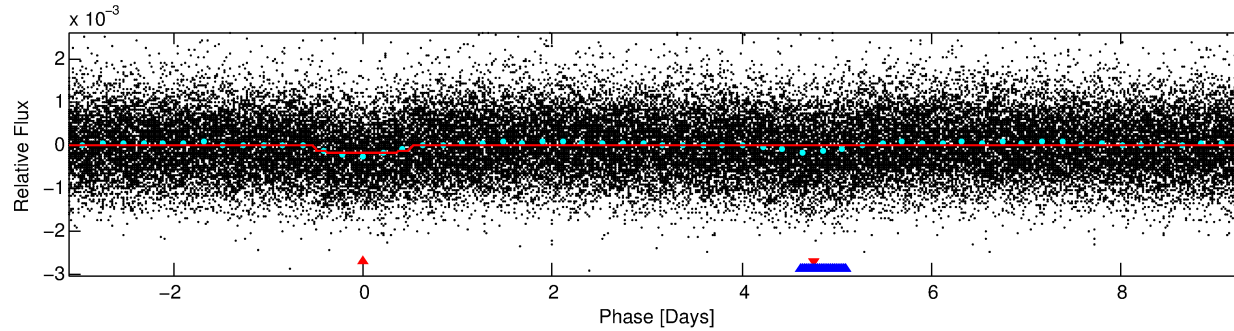
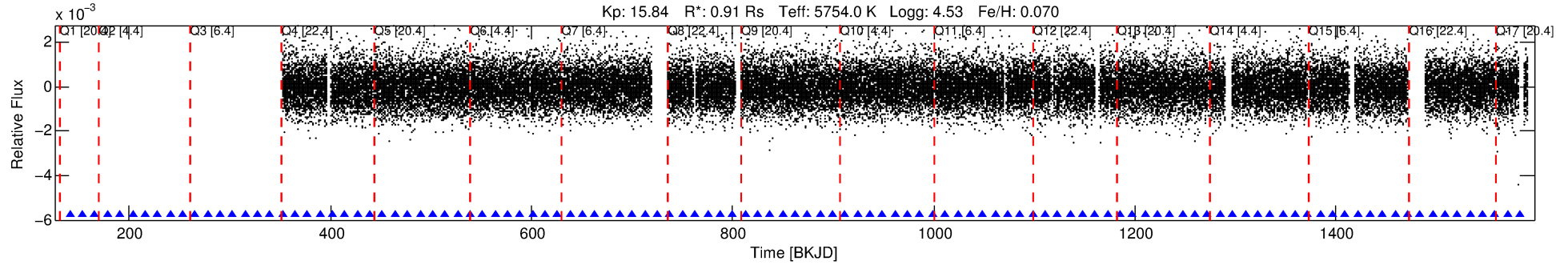
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005385139-01

No Significant Match Found

DV One-Page Summary

KIC: 5385139 Candidate: 1 of 2 Period: 12.429 d
KOI: K06000.01 Corr: 0.808



DV Fit Results:

Period = 12.42941 [0.00043] d
Epoch = 141.3103 [0.0295] BKJD
Rp/R* = 0.0127 [0.0039]
a/R* = 3.05 [3.56]
b = 0.64 [1.21]
Seff = 71.88 [29.56]
Teq = 742 [76] K
Rp = 1.26 [0.54] Re
a = 0.1058 [0.0279] AU
Ag = 623.14 [453.29] [1.37 σ]
Teffp = 5735 [905] K [5.50 σ]

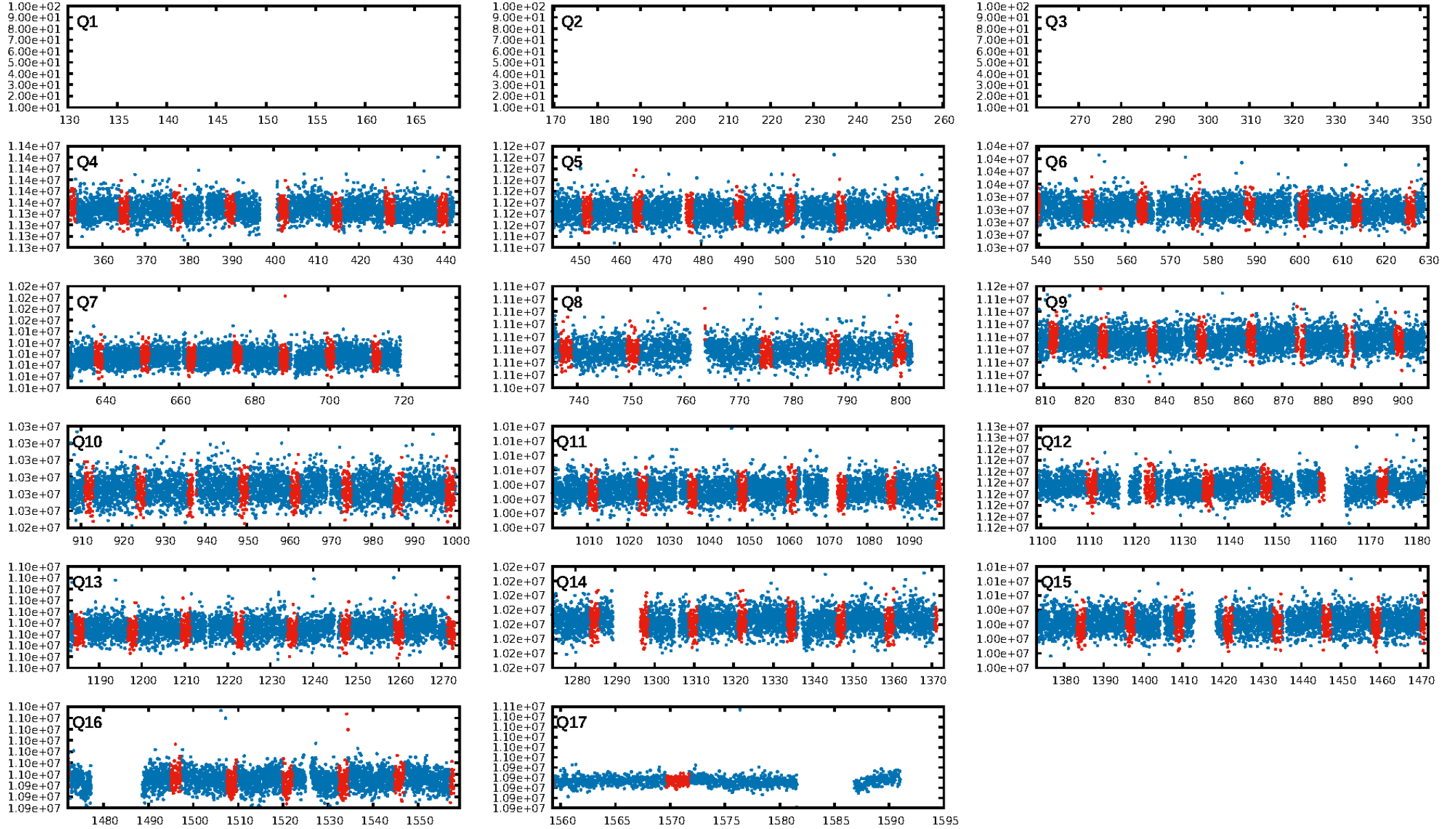
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 92.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.20e-26
RollingBand-fgt: 1.00 [95/95]
GhostDiagnostic-chr: 0.1539
Centroid-sig: 0.0%
Centroid-so: 3.879 arcsec [4.70 σ]
OotOffset-rm: 1.011 arcsec [1.26 σ]
KicOffset-rm: 1.201 arcsec [1.43 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [14/14]

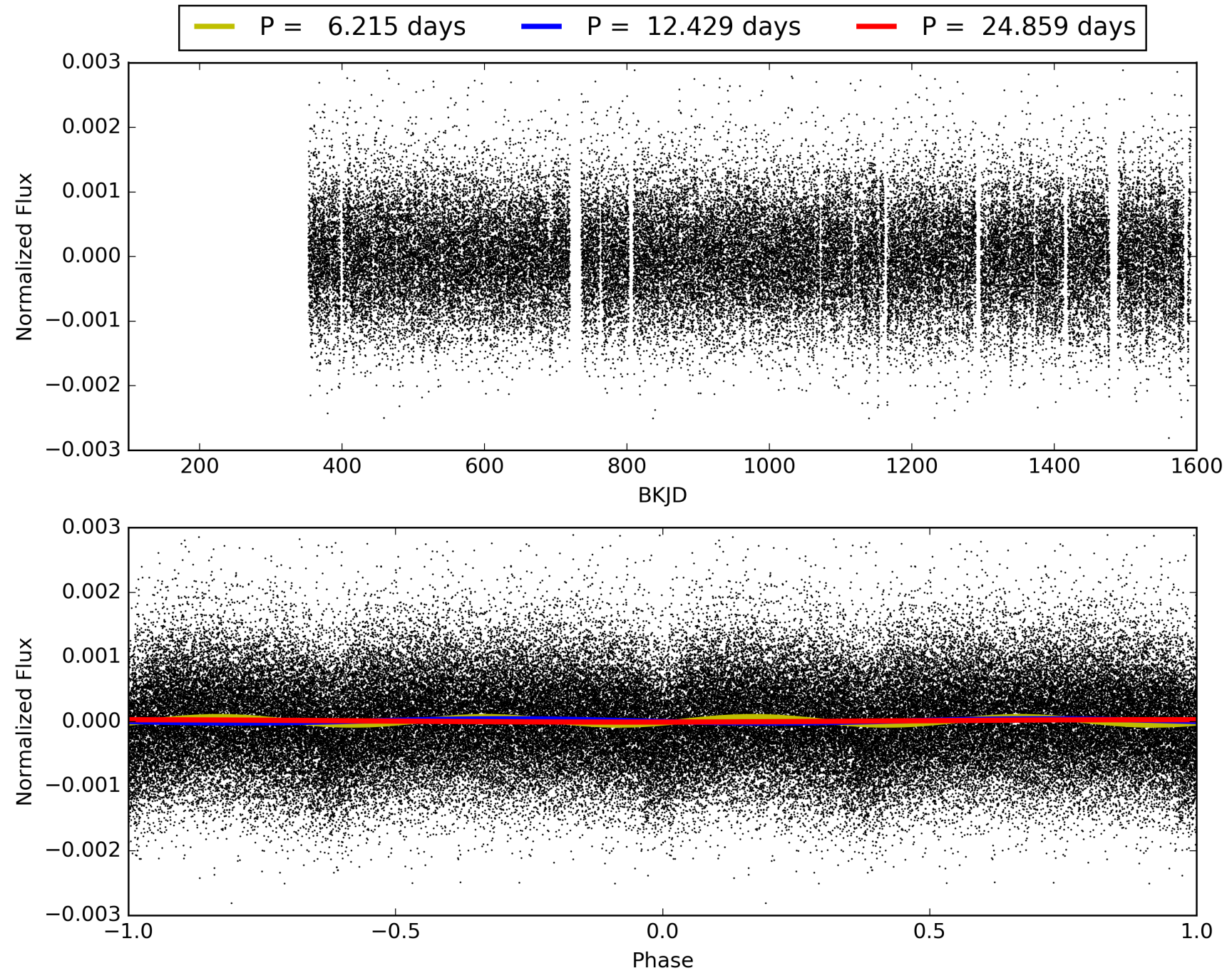
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:20:47 Z

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

TCE 005385139-01, PDC Light Curves

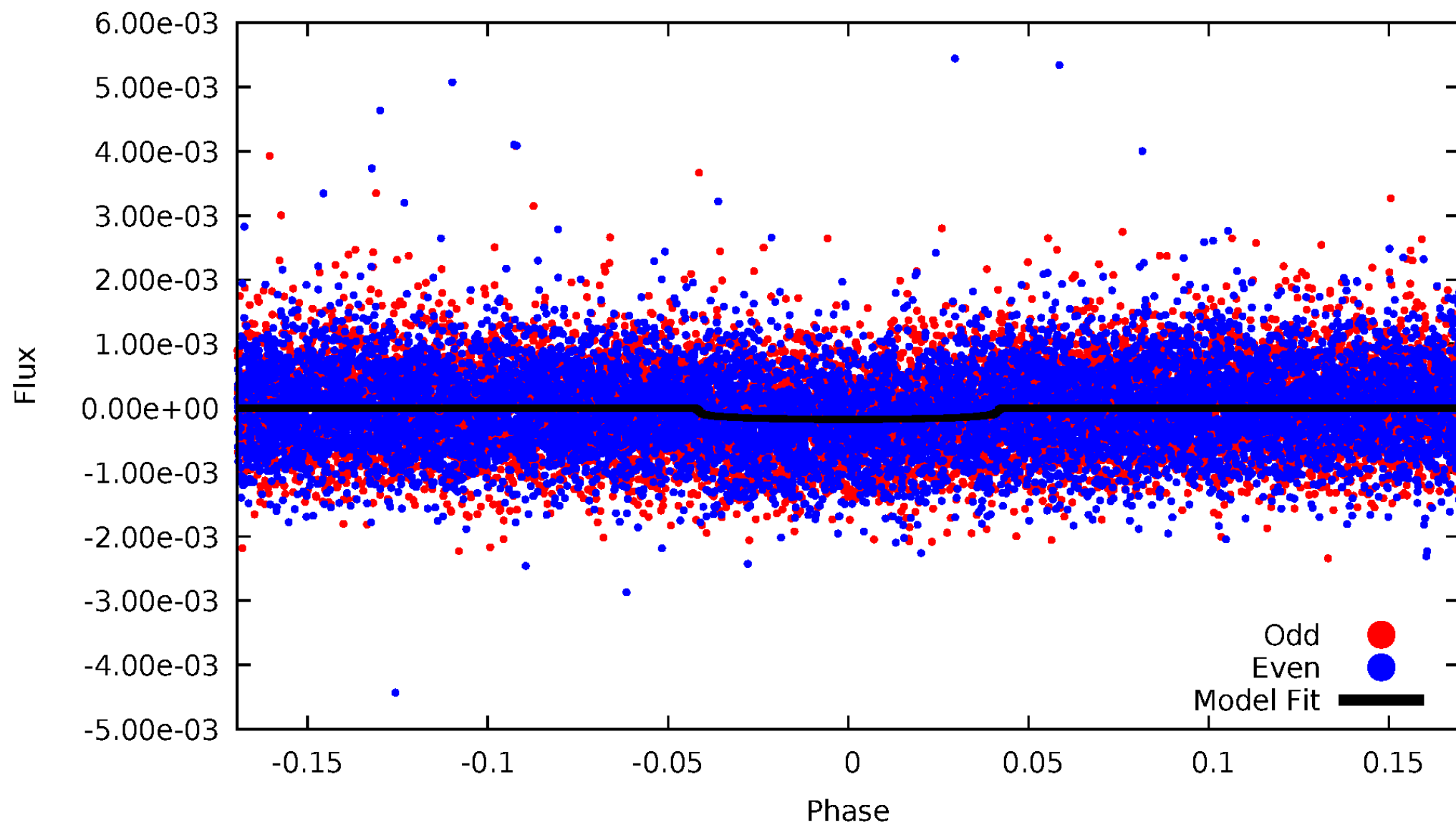


TCE 005385139-01



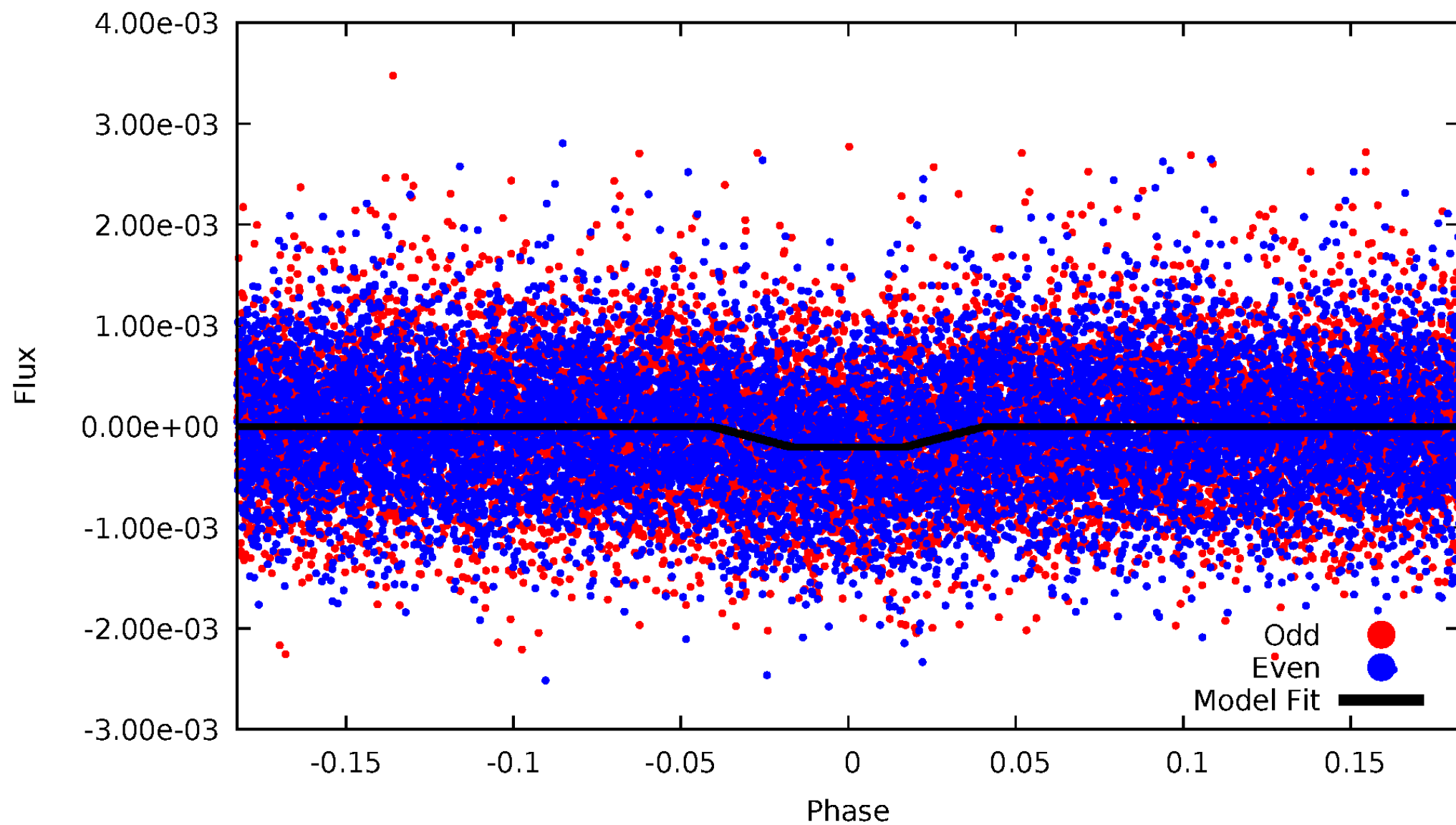
DV Odd/Even

TCE 005385139-01



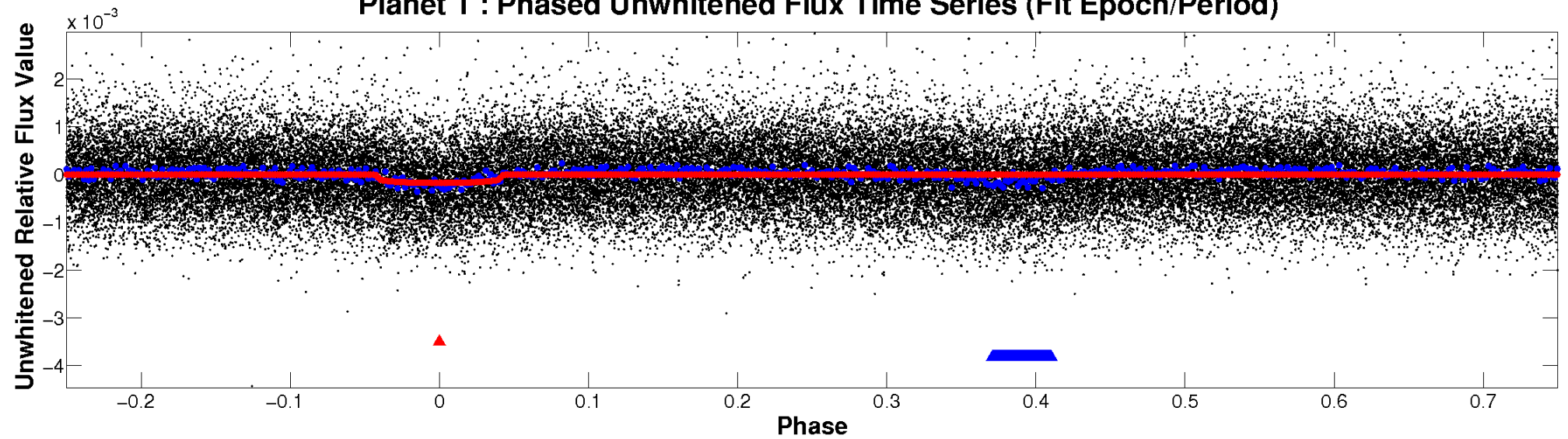
ALT Odd/Even

TCE 005385139-01

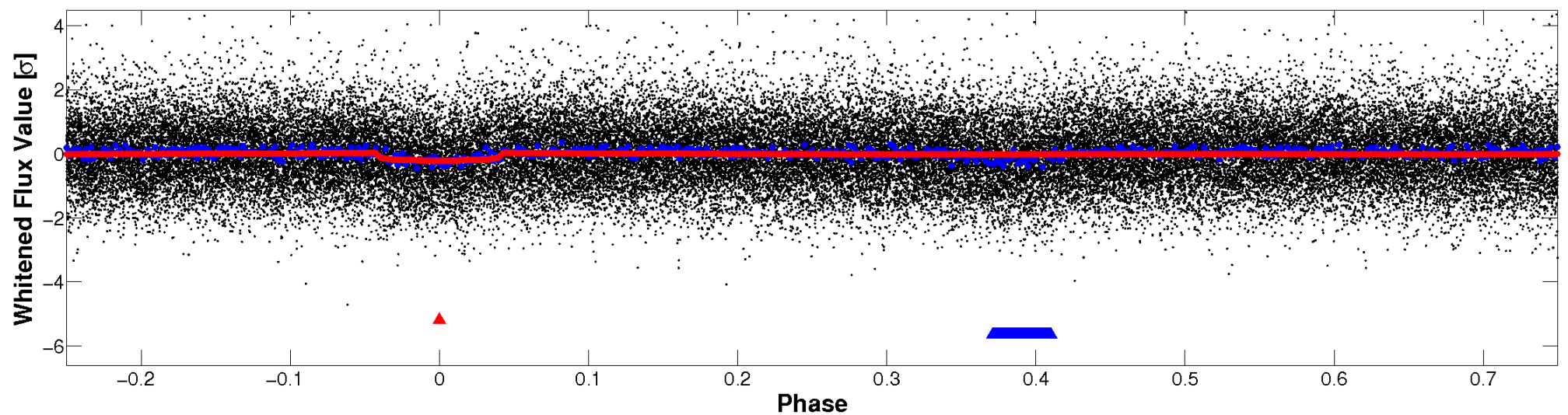


Non-Whitened Vs. Whitened Light Curve

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

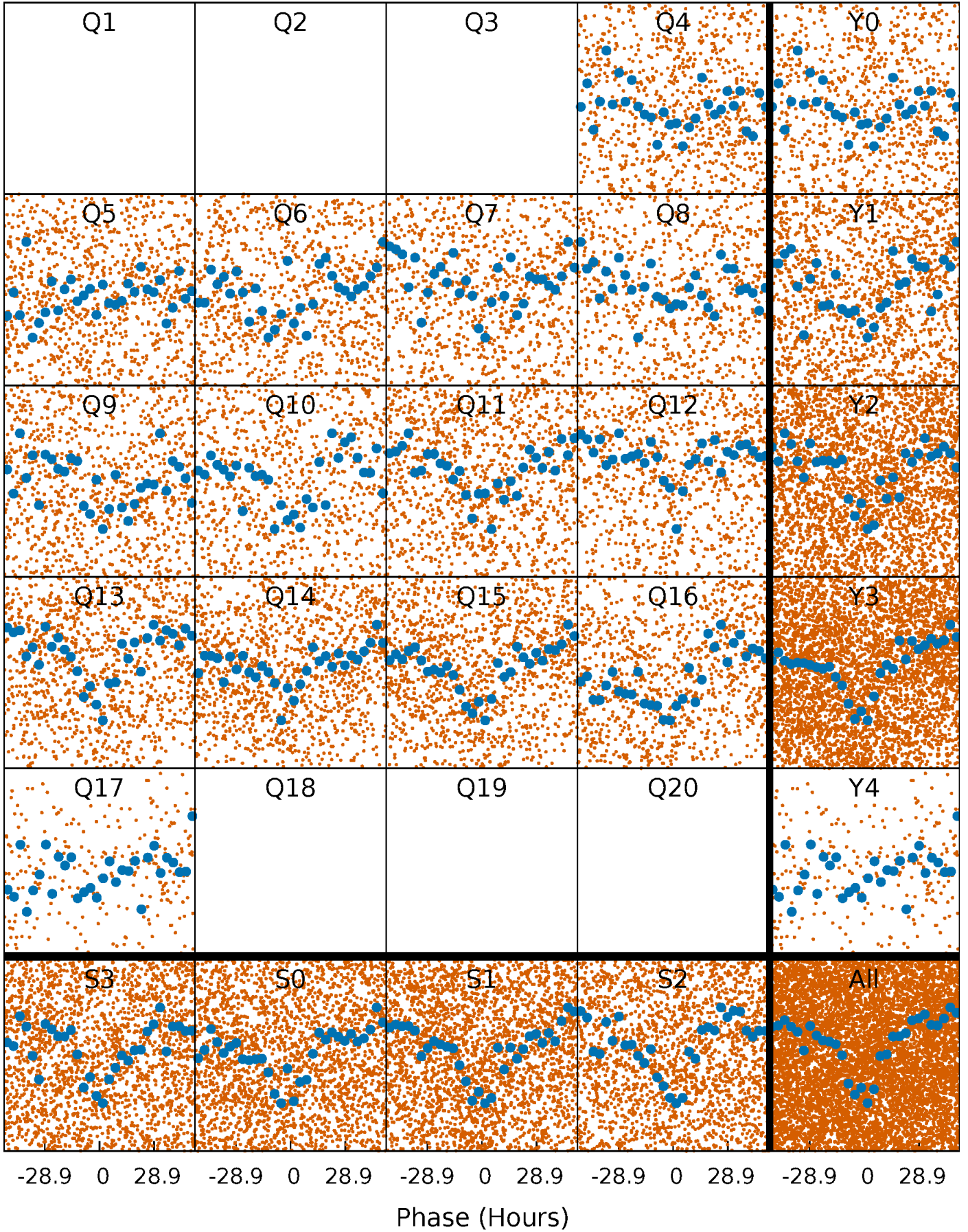


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



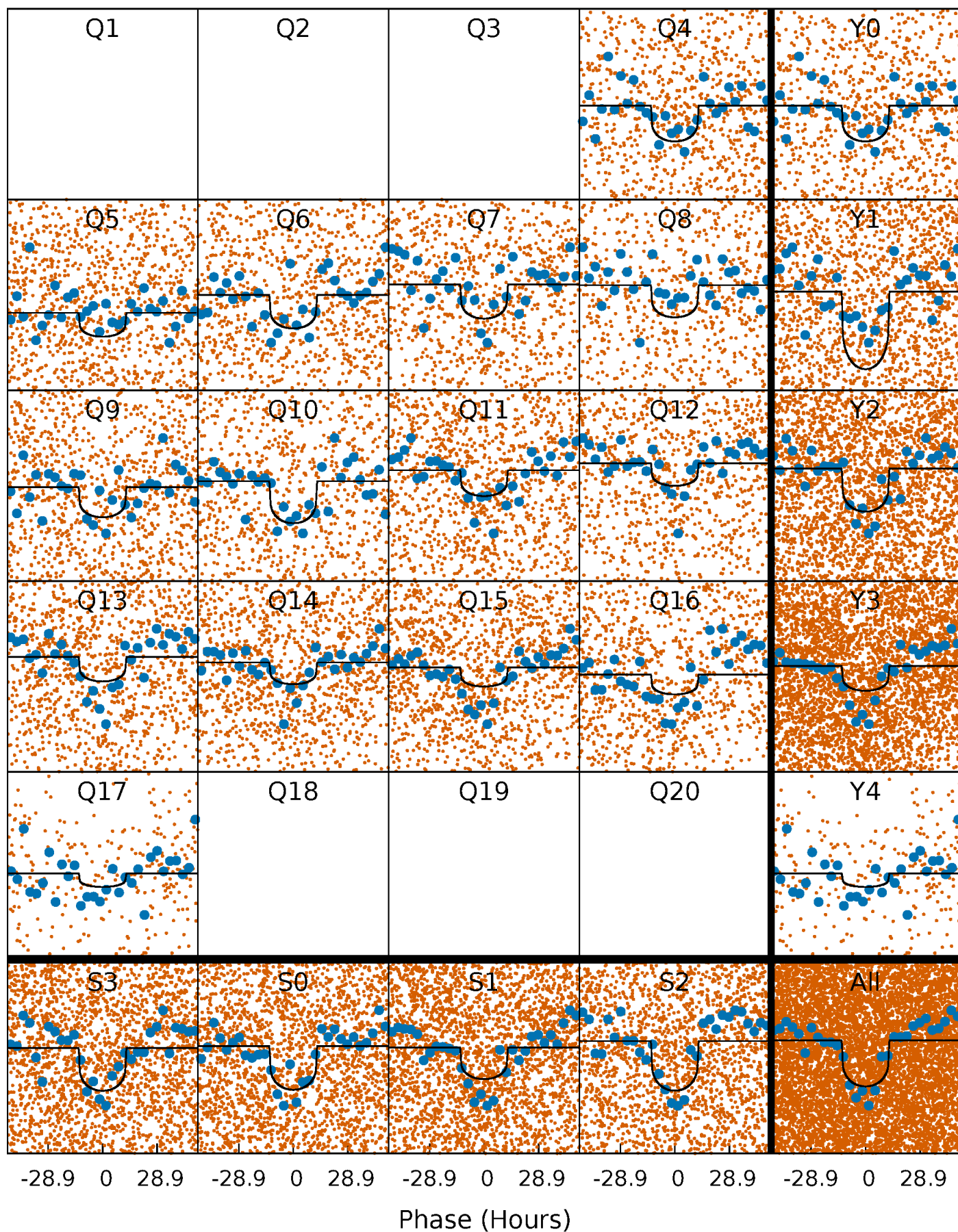
PDC Quarter-Phased Transit Curves

TCE 005385139-01 P= 12.429413 Days $T_0=141.310340$ (BKJD)



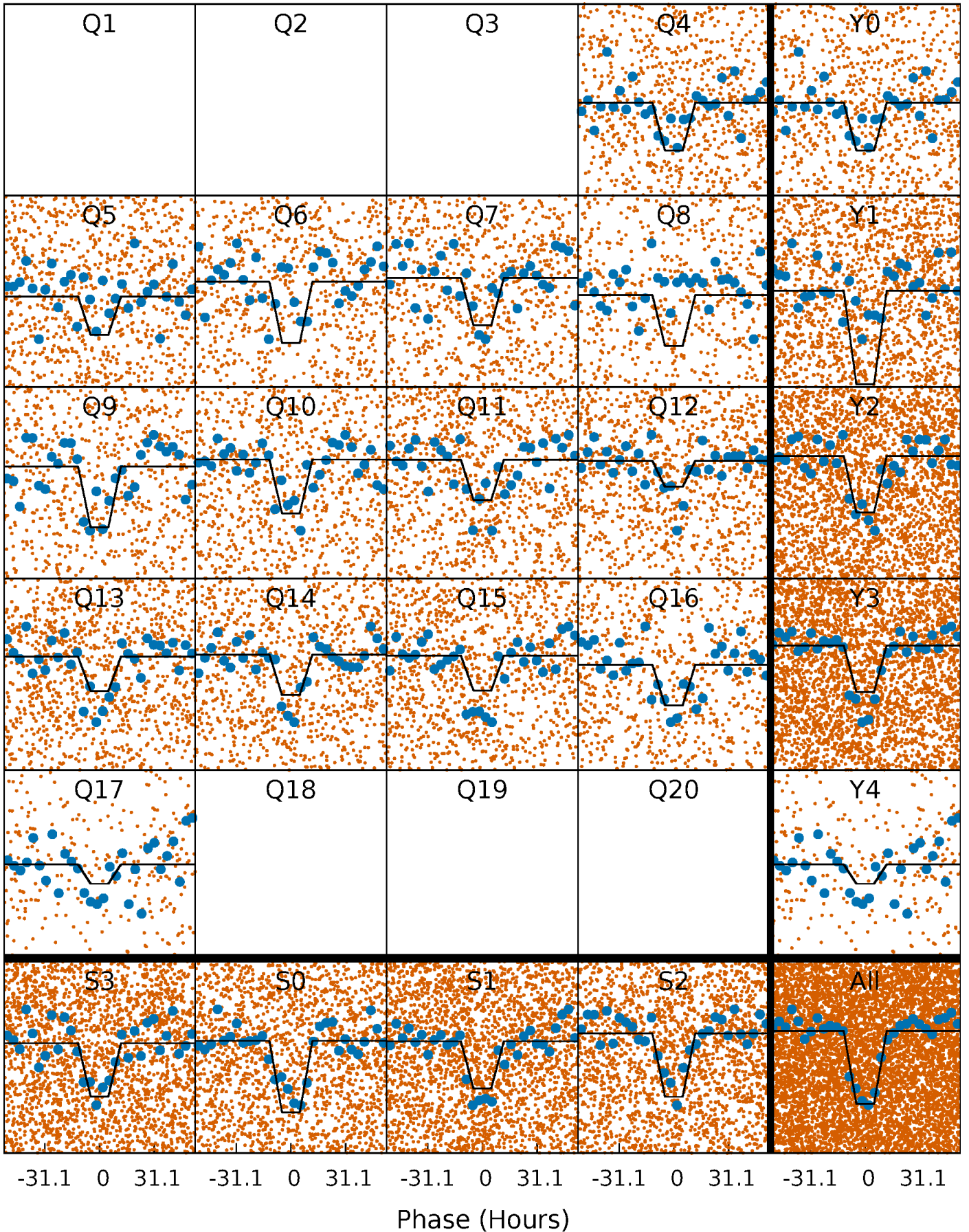
DV Quarter-Phased Transit Curves

TCE 005385139-01 P= 12.429413 Days $T_0=141.310340$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

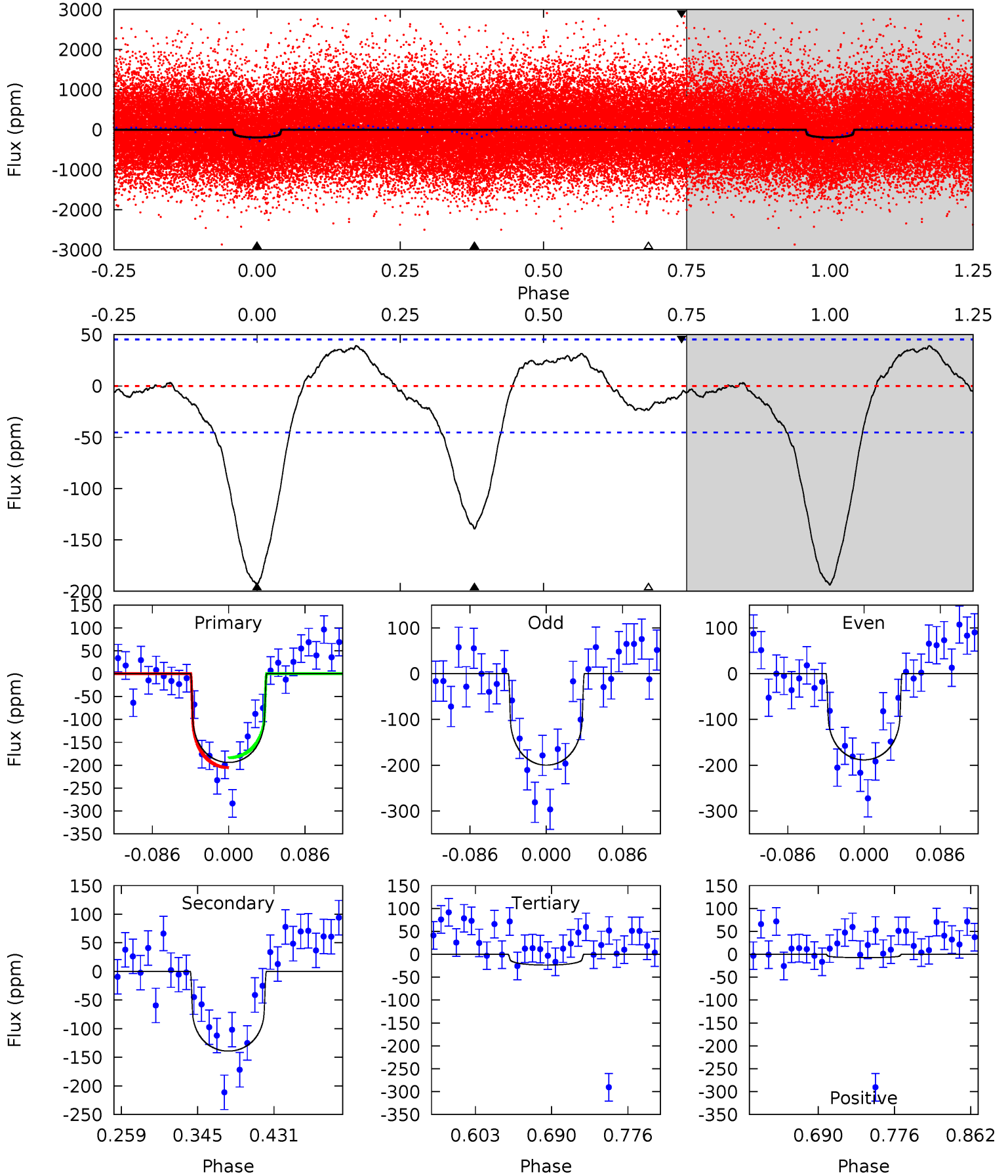
TCE 005385139-01 P= 12.427791 Days $T_0=141.412018$ (BKJD)



DV Model-Shift Uniqueness Test

005385139-01, P = 12.429413 Days, E = 141.310340 Days

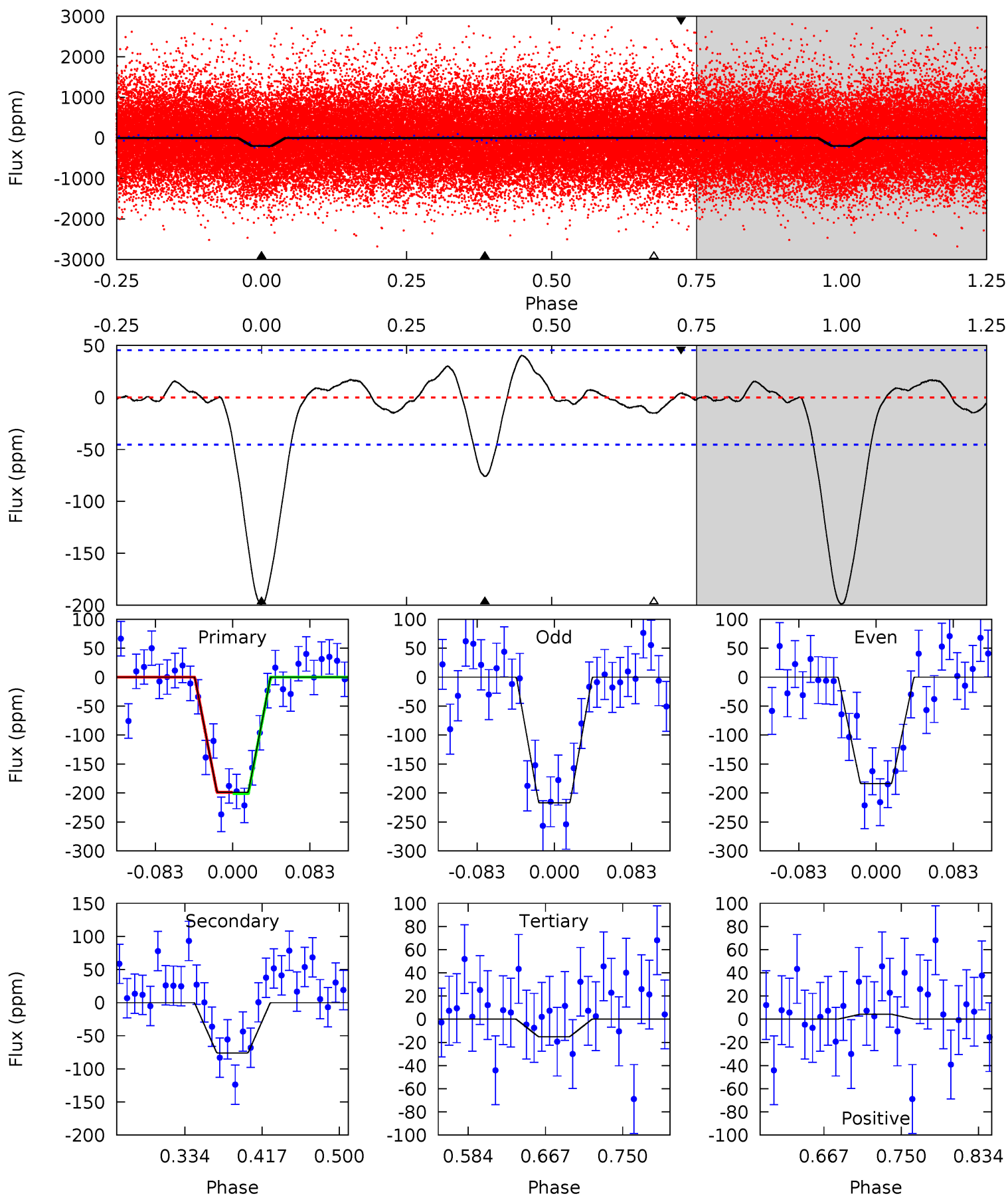
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	14.1	2.40	-0.75	4.60	1.72	1.96	17.3	20.4	11.7	14.9	0.58	1.00	0.17	1.09



Alt Model-Shift Uniqueness Test

005385139-01, $P = 12.427791$ Days, $E = 141.412018$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	7.70	1.53	0.43	4.60	1.73	0.91	18.6	19.7	6.17	7.27	1.68	1.13	0.17	0.11



Stellar Parameters For KIC 005385139

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5754^{+160}_{-200}	$4.534^{+0.037}_{-0.213}$	$0.070^{+0.250}_{-0.300}$	$0.905^{+0.281}_{-0.088}$	$1.021^{+0.110}_{-0.134}$	$1.938^{+0.386}_{-1.048}$
	+3%/-3%	+1%/-5%	+357%/-429%	+31%/-10%	+11%/-13%	+20%/-54%
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 005385139-01 / KOI 6000.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-139 ± 10	$1.34^{+0.46}_{-0.43}$	1065^{+81}_{-51}	5523^{+1142}_{-667}	466^{+518}_{-213}
Alt.	-76 ± 10	$1.45^{+0.47}_{-0.39}$	1063^{+71}_{-54}	4647^{+682}_{-440}	215^{+188}_{-92}

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 $A_{obs} \gg 1.0$

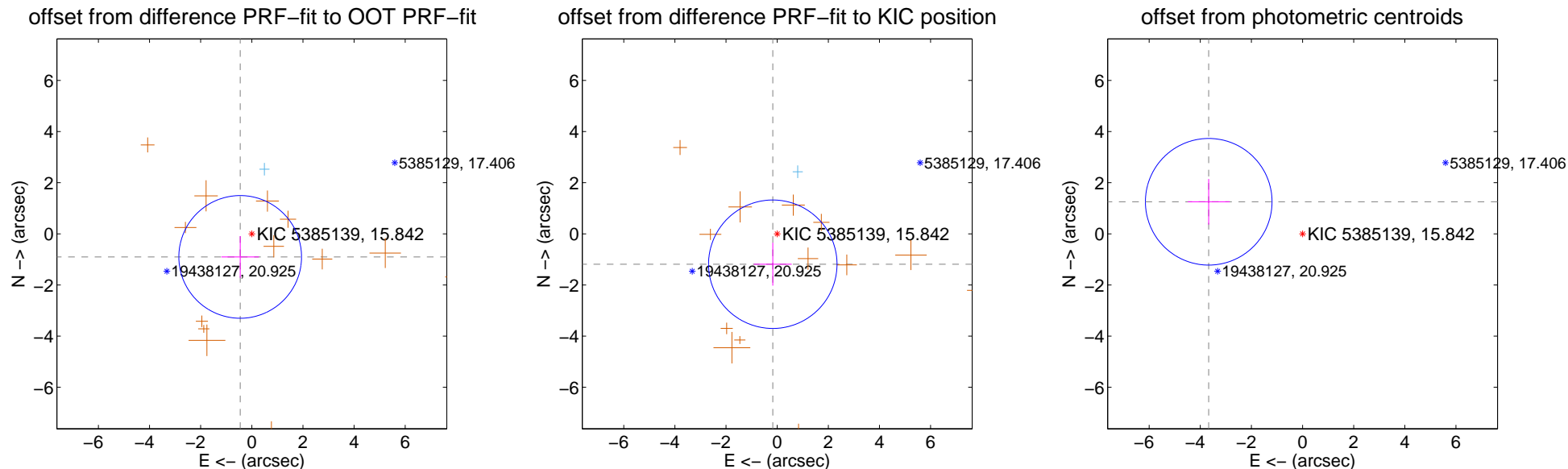
DV Centroid Data

Supplemental centroid analysis for 005385139-01. Kepler magnitude: 15.84. Transit SNR 12.13

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.011 ± 0.800	1.26	0.455 ± 0.733	-0.903 ± 0.816
PRF-fit source offset from KIC position	1.201 ± 0.837	1.43	0.172 ± 0.741	-1.189 ± 0.839
photometric centroid source offset	3.88 ± 0.83	4.70	3.67 ± 0.82	1.25 ± 0.89



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



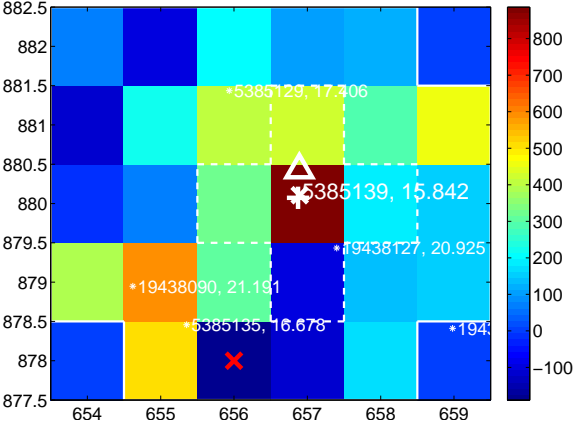
Q3 no difference image



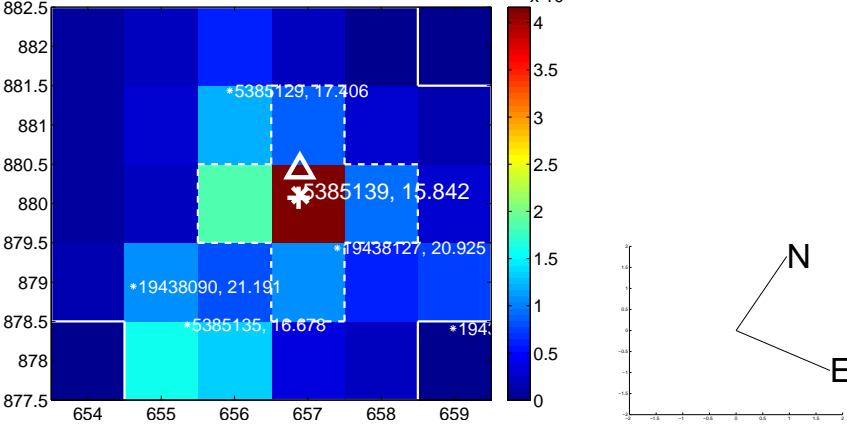
Q3 no OOT image



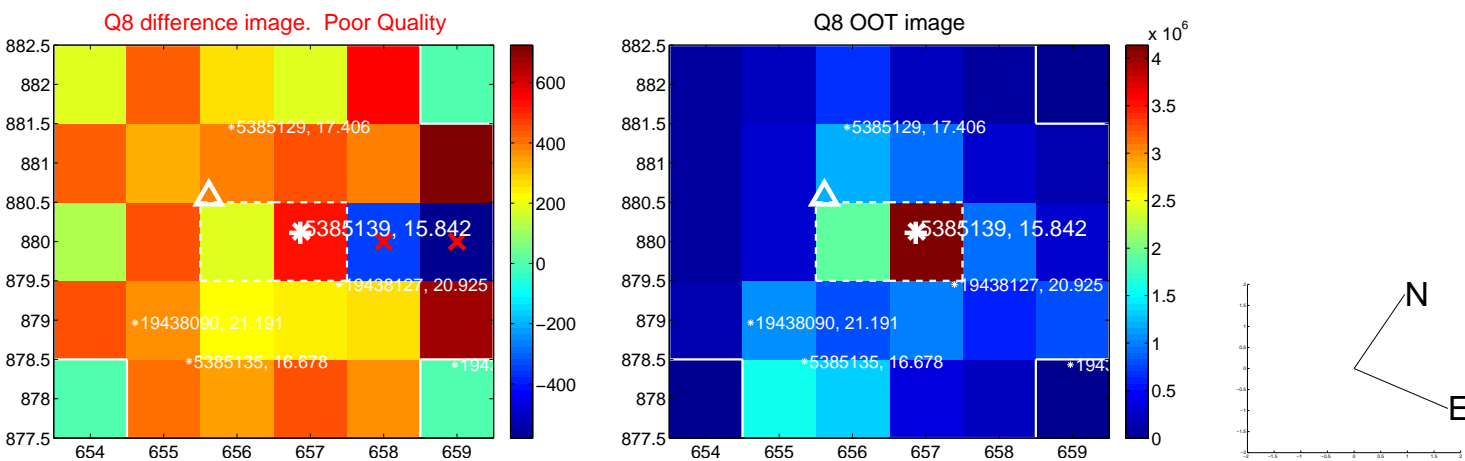
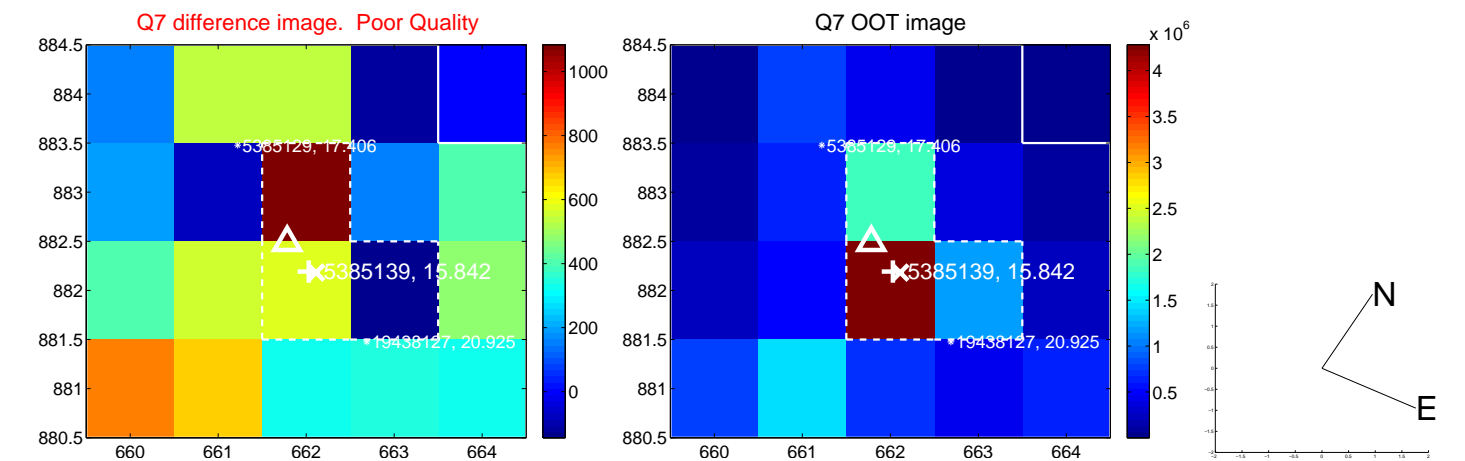
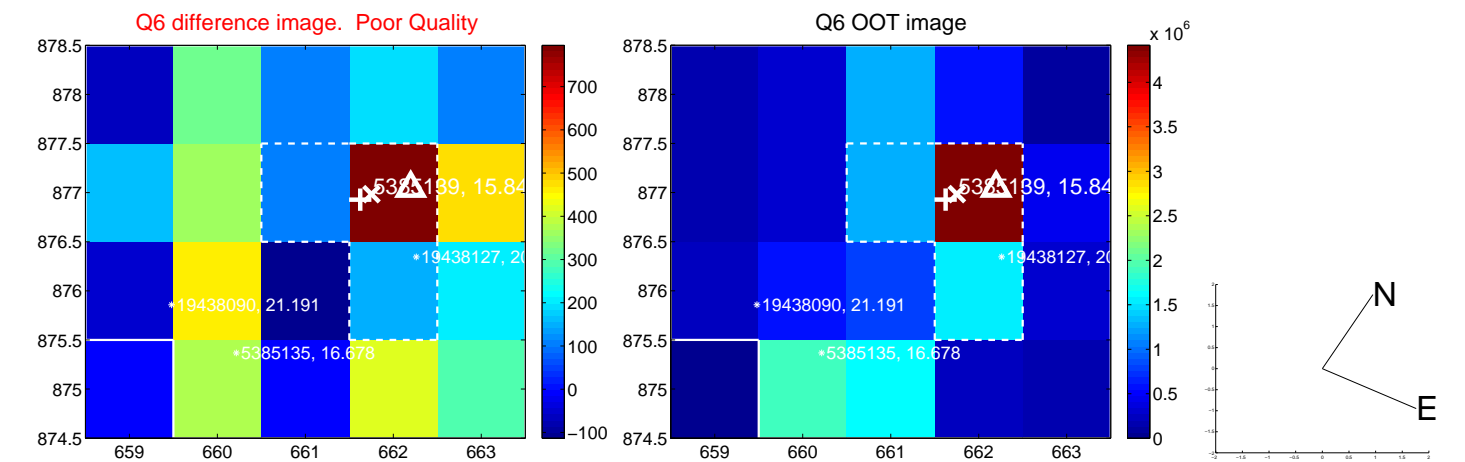
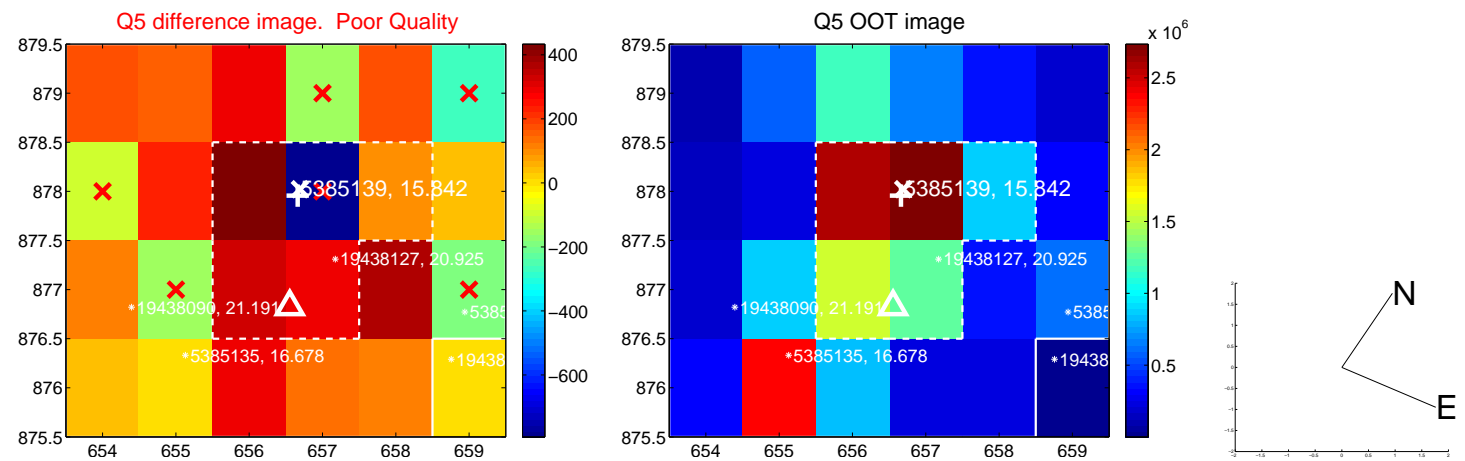
Q4 difference image. Poor Quality



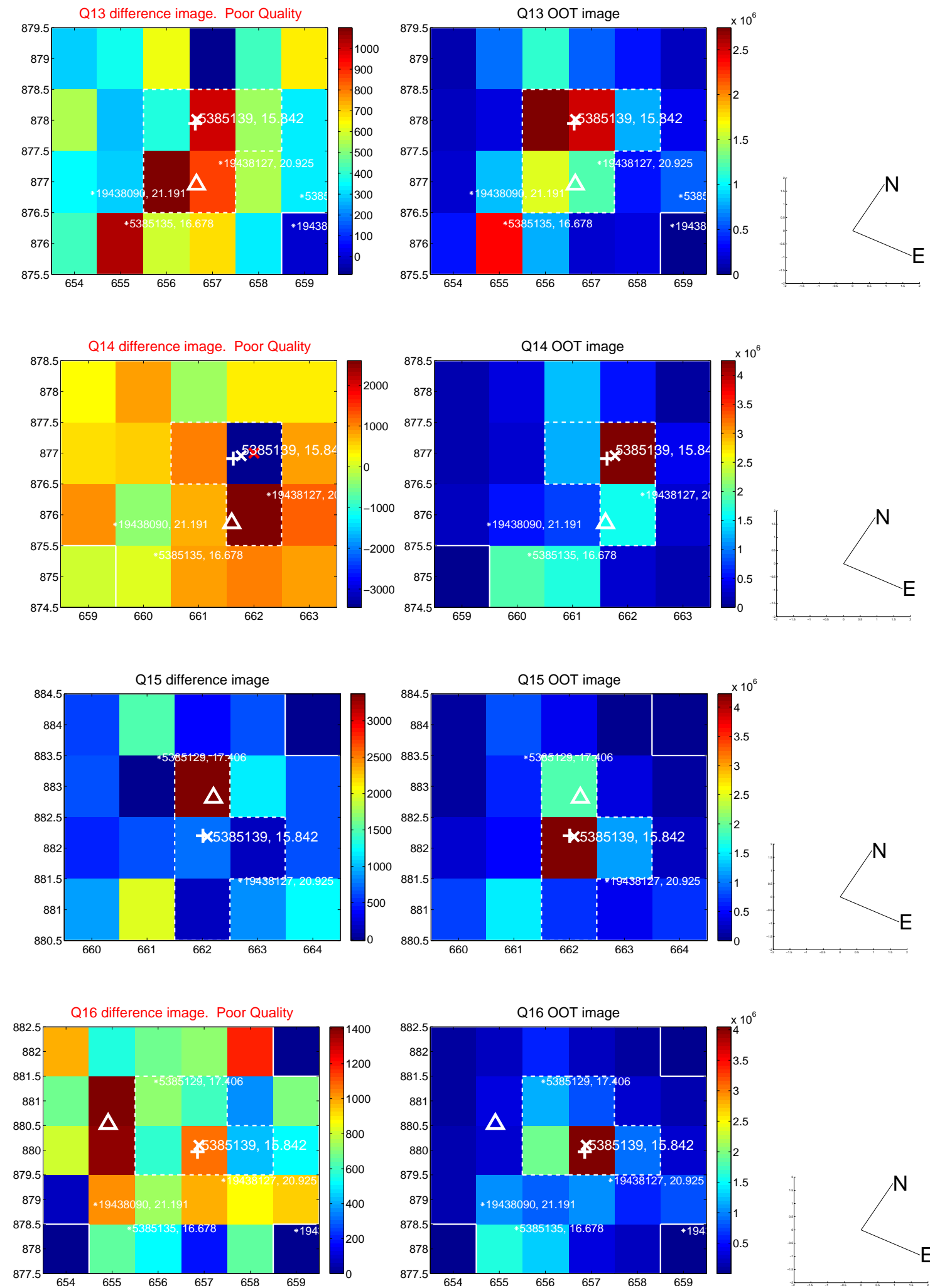
Q4 OOT image



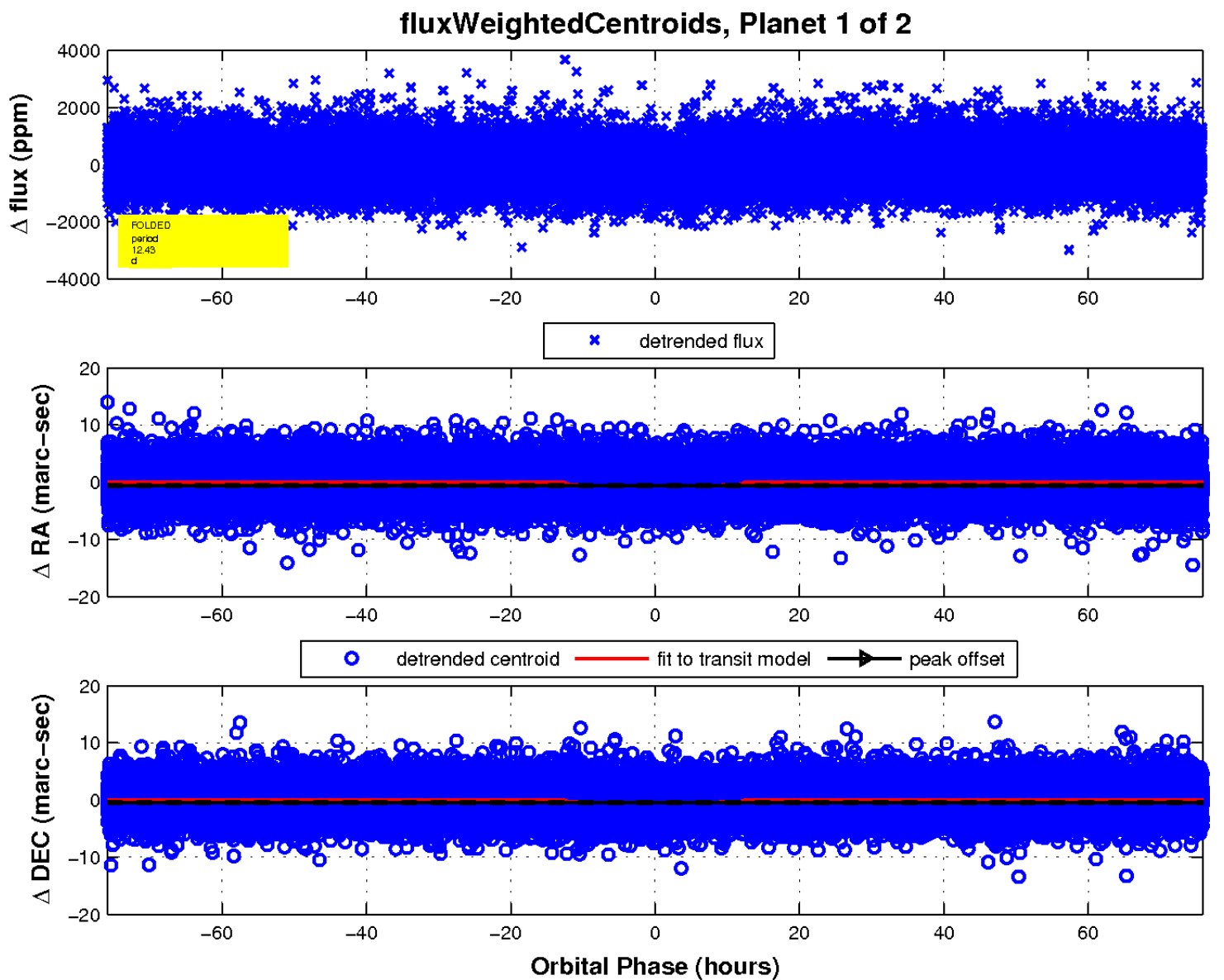
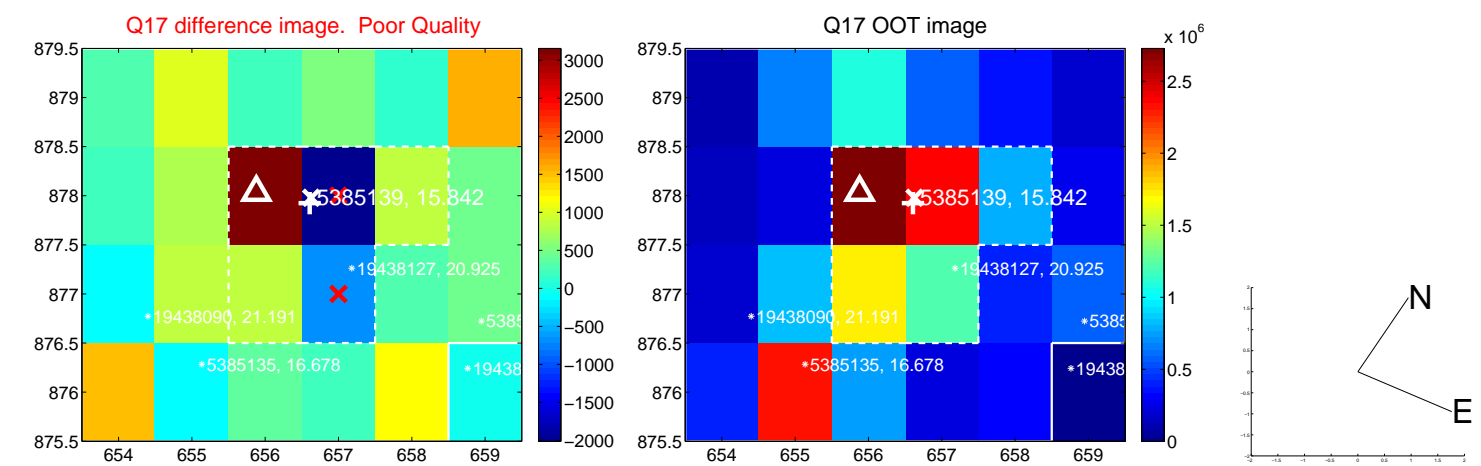
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

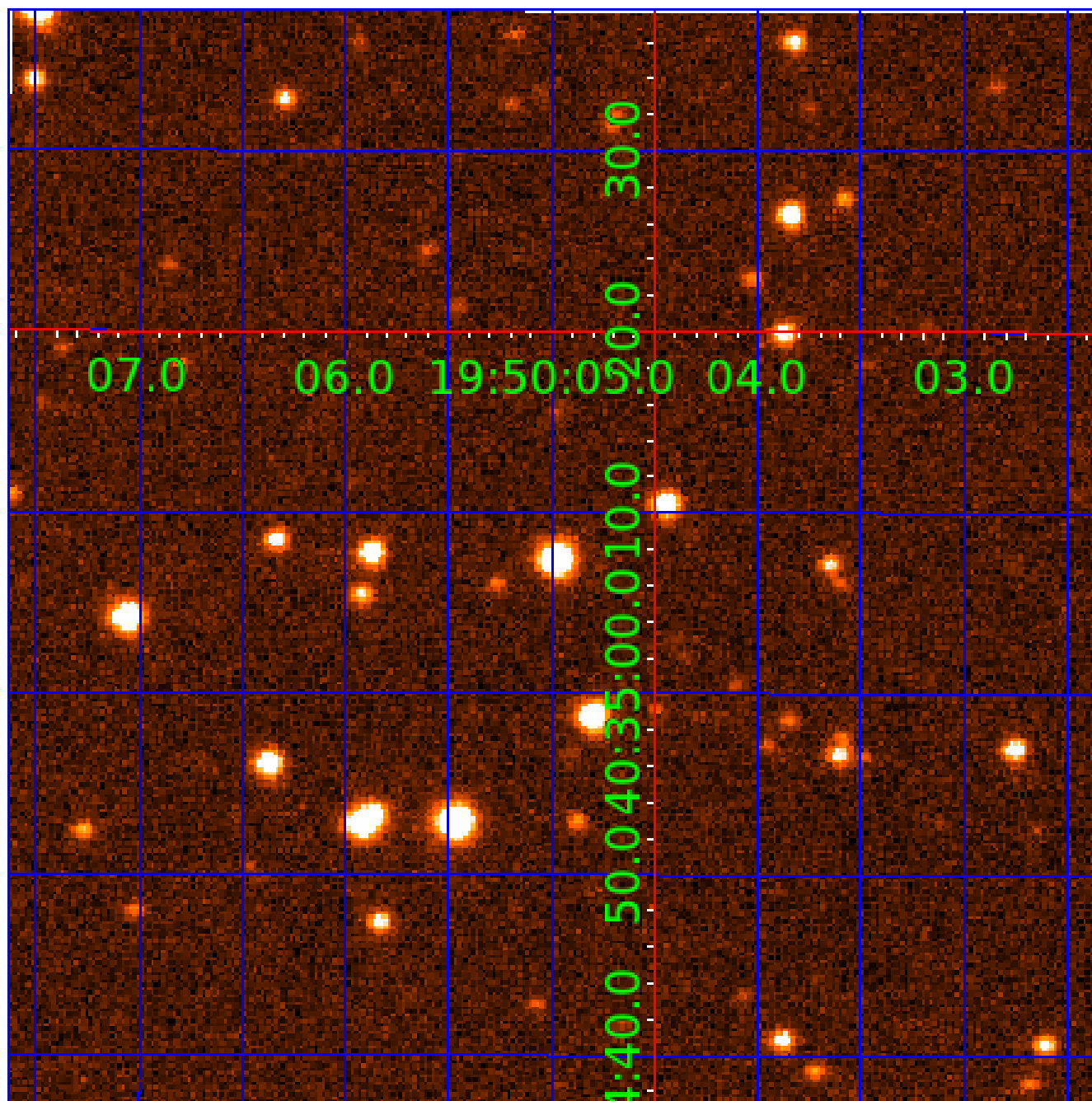


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385139

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})
005385139-01	OBS	6000.01	12.429413	141.310340	175.0	25.289	10.7	12.1	0.91	5754	1.26	71.88
005385139-02	OBS	No	12.425242	133.979625	171.2	22.704	10.3	12.2	0.91	5754	1.37	71.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385139-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST
005385139-02	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—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 005385139-02

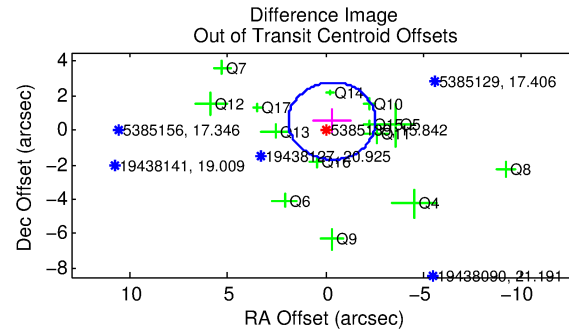
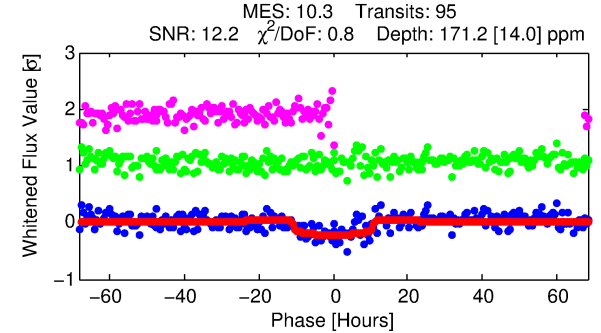
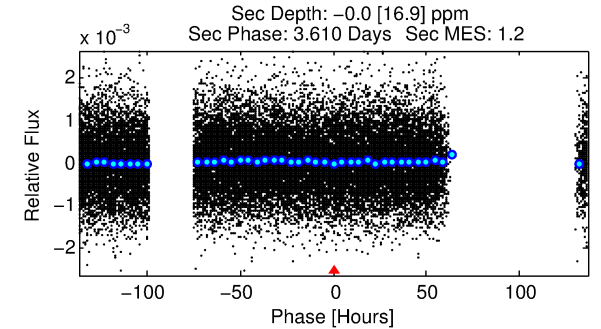
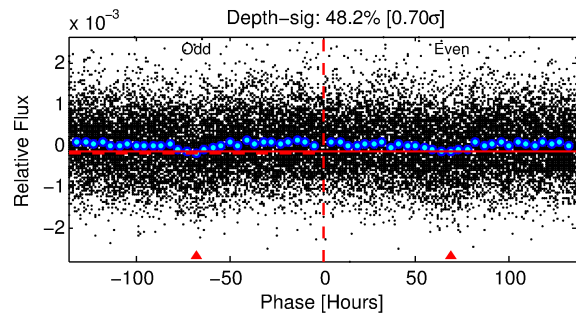
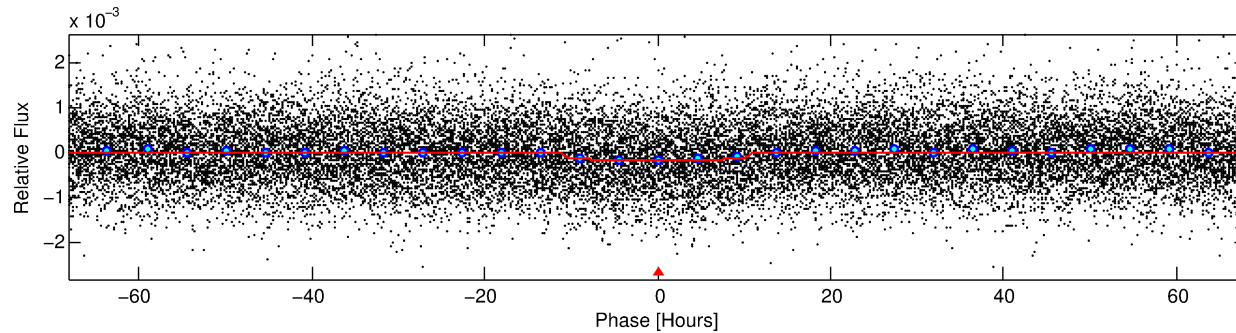
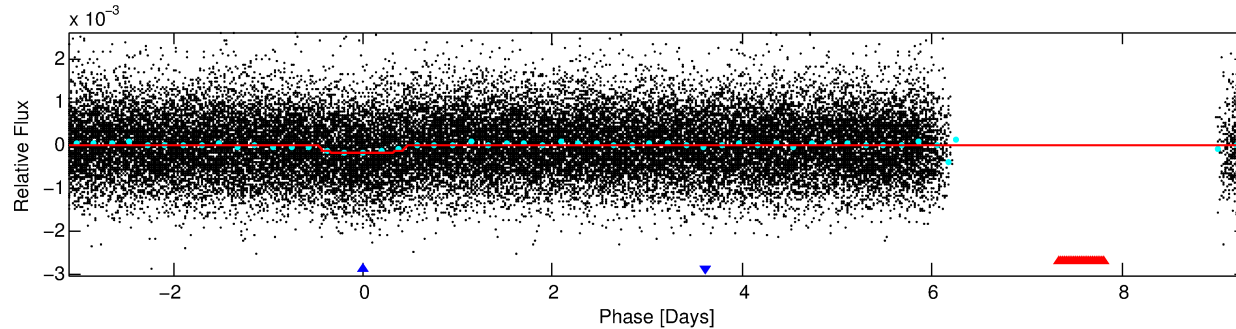
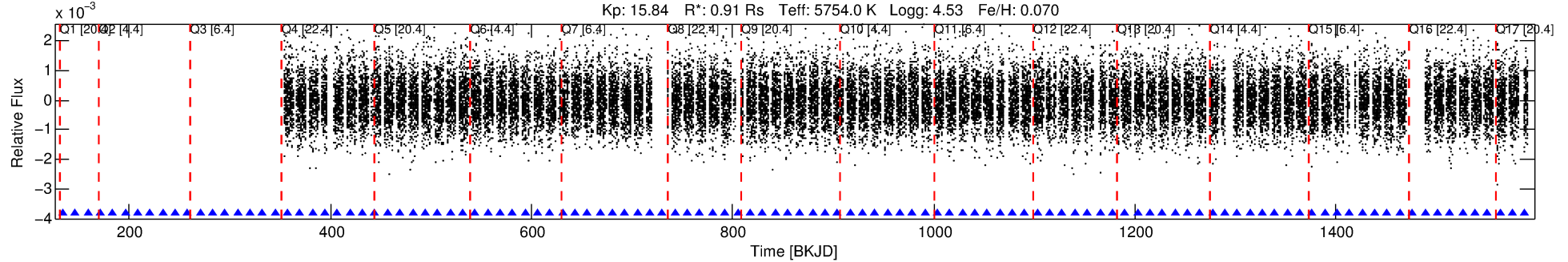
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005385139-02	5385139	V380-Cyg-sec	5385723	1:1	372.1	32	-87	5.77	15.84	754.60	Direct-PRF	0	0.69	0.99

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: 5385139 Candidate: 2 of 2 Period: 12.425 d
KOI: K06000 Corr: No Ephemeris Match

Kp: 15.84 R*: 0.91 Rs Teff: 5754.0 K Logg: 4.53 Fe/H: 0.070



DV Fit Results:

Period = 12.42524 [0.00050] d
Epoch = 133.9796 [0.0351] BKJD
Rp/R* = 0.0139 [0.0019]
a/R* = 2.36 [1.19]
b = 0.87 [0.17]
Seff = 71.91 [29.57]
Teq = 743 [76] K
Rp = 1.37 [0.47] Re
a = 0.1058 [0.0279] AU
Ag = N/A
Teffp = N/A

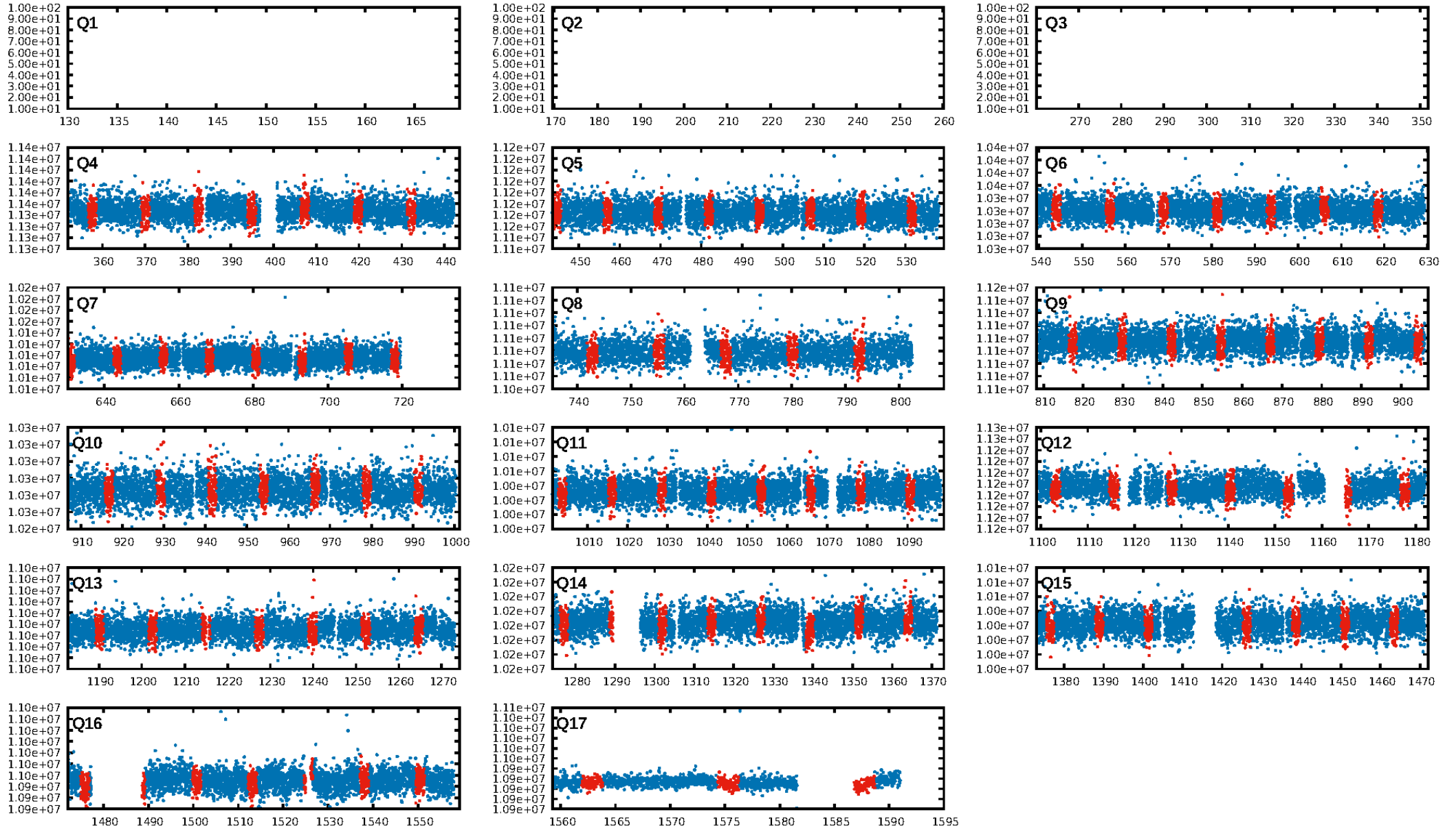
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 94.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.85e-24
RollingBand-fgt: 1.00 [92/92]
GhostDiagnostic-chr: 0.1502
Centroid-sig: 0.0%
Centroid-so: 3.147 arcsec [3.62σ]
OotOffset-rm: 0.622 arcsec [0.84σ]
KicOffset-rm: 0.710 arcsec [0.79σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [14/14]

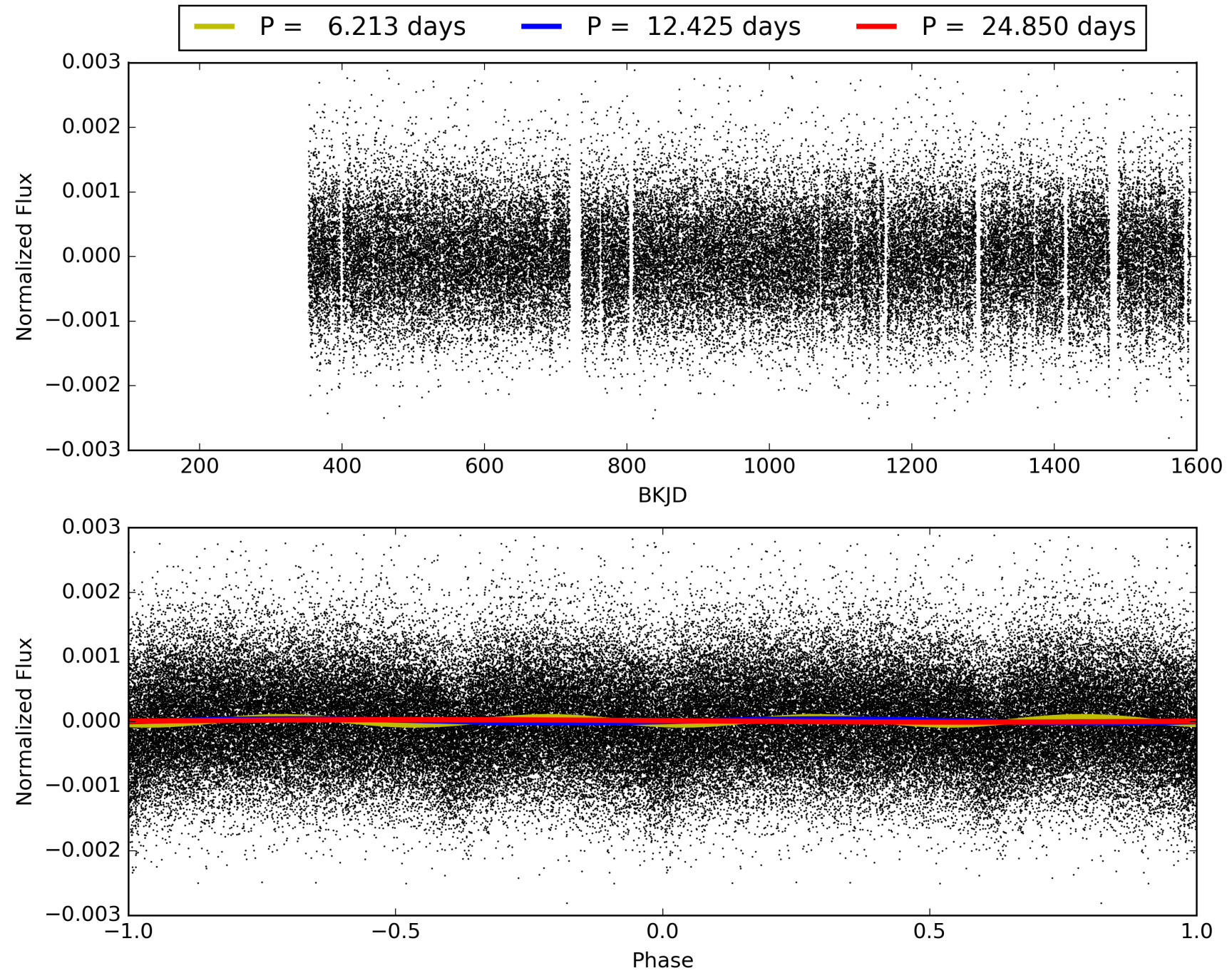
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:20:57 Z

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TCE 005385139-02, PDC Light Curves

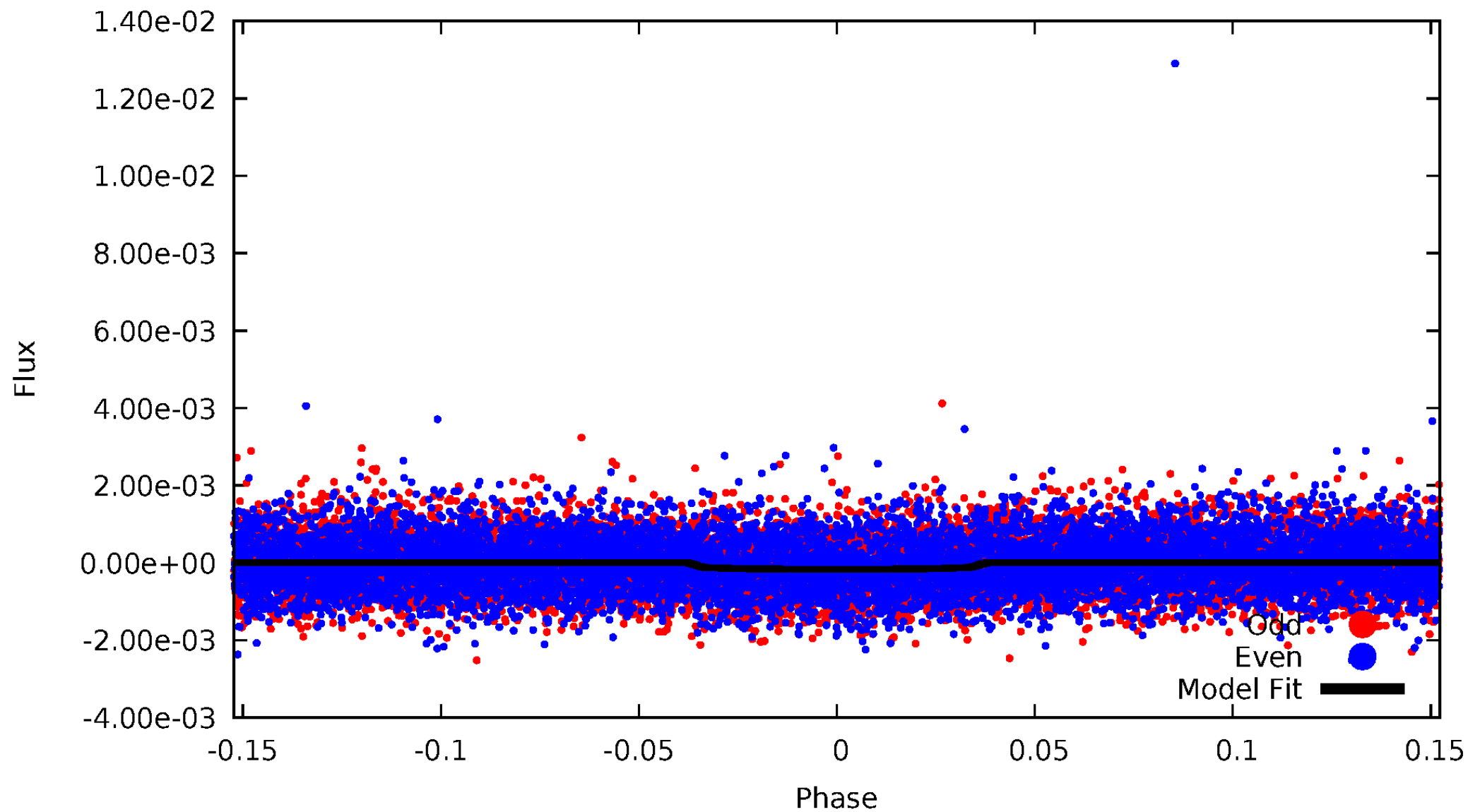


TCE 005385139-02



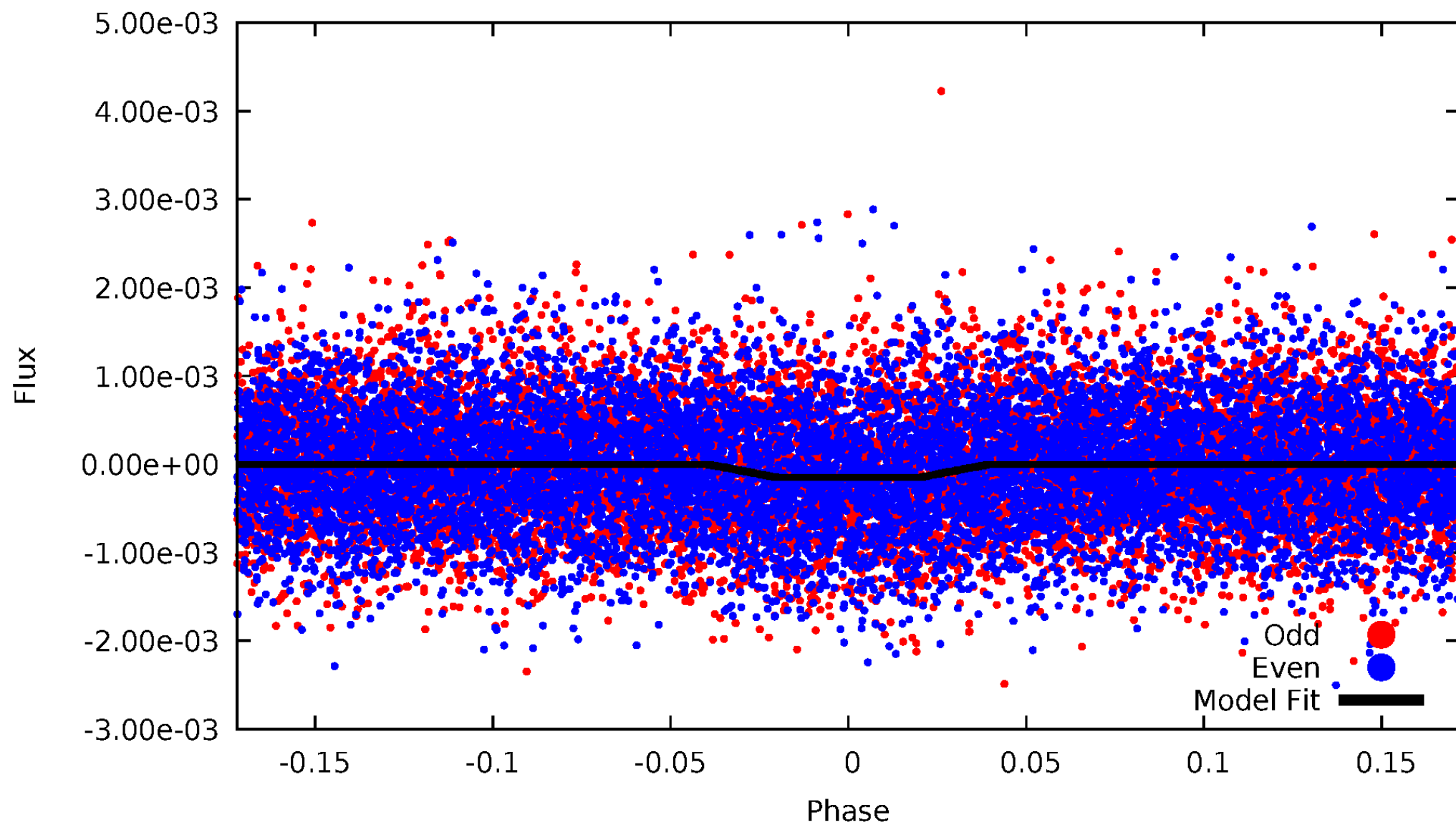
DV Odd/Even

TCE 005385139-02



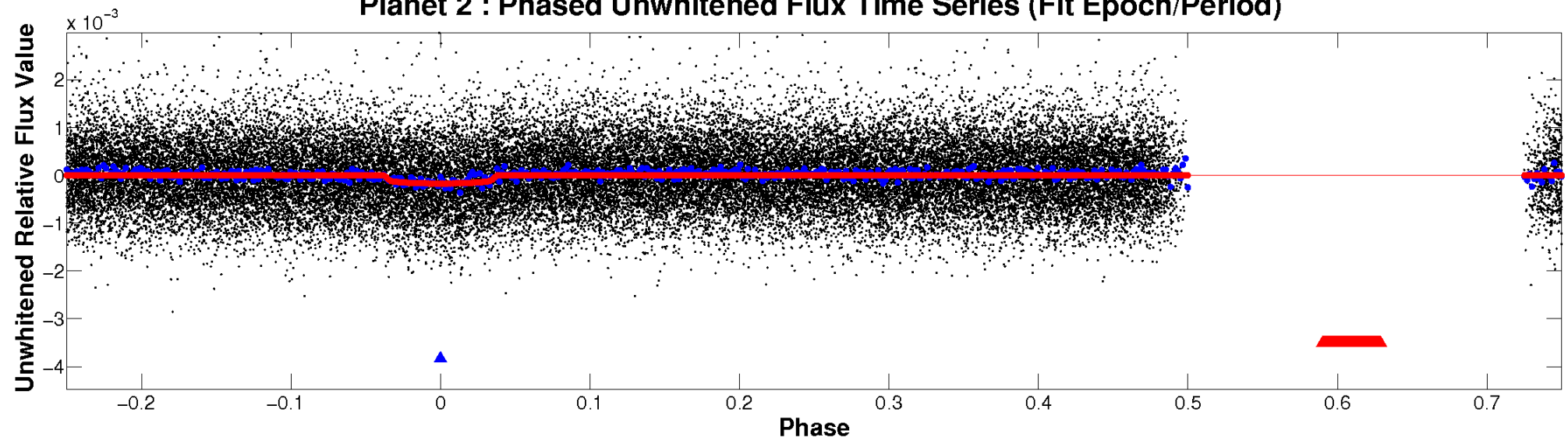
ALT Odd/Even

TCE 005385139-02

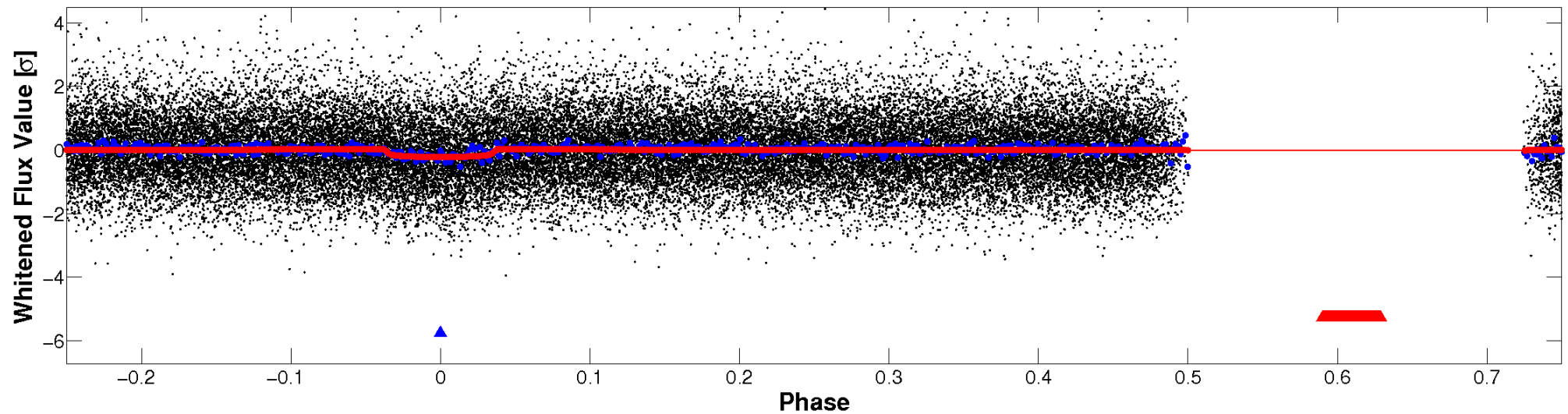


Non-Whitened Vs. Whitened Light Curve

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

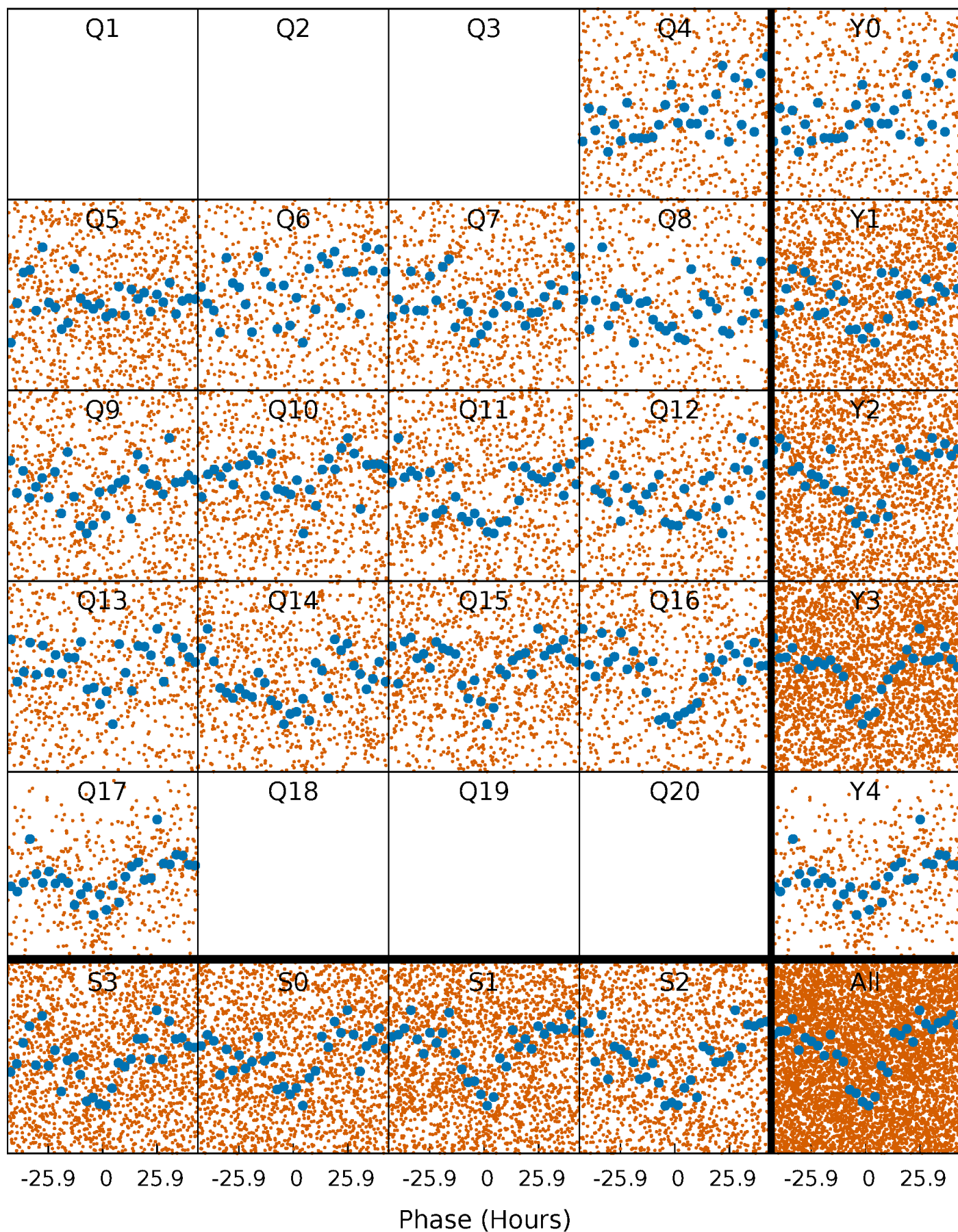


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



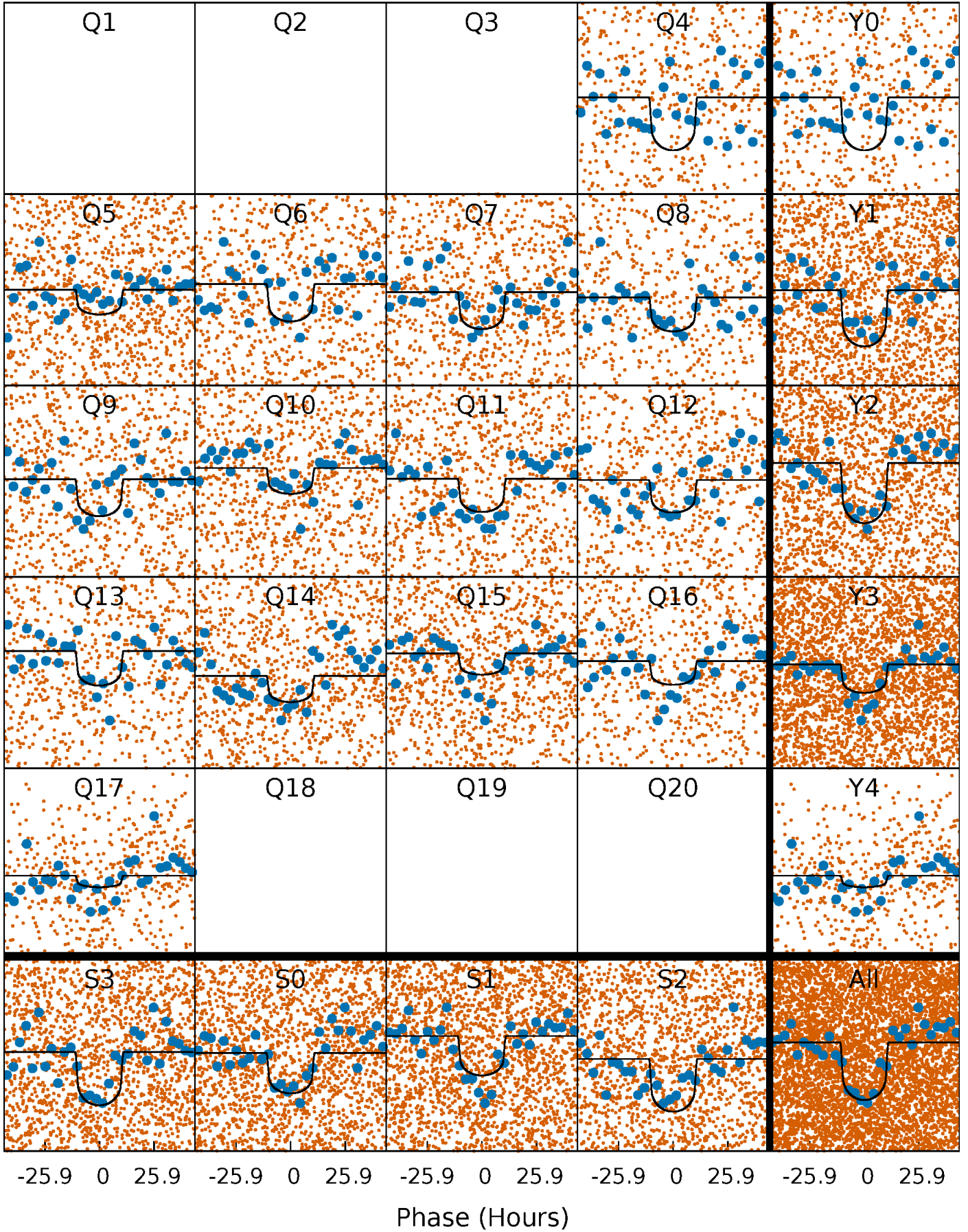
PDC Quarter-Phased Transit Curves

TCE 005385139-02 P= 12.425242 Days $T_0=133.979625$ (BKJD)



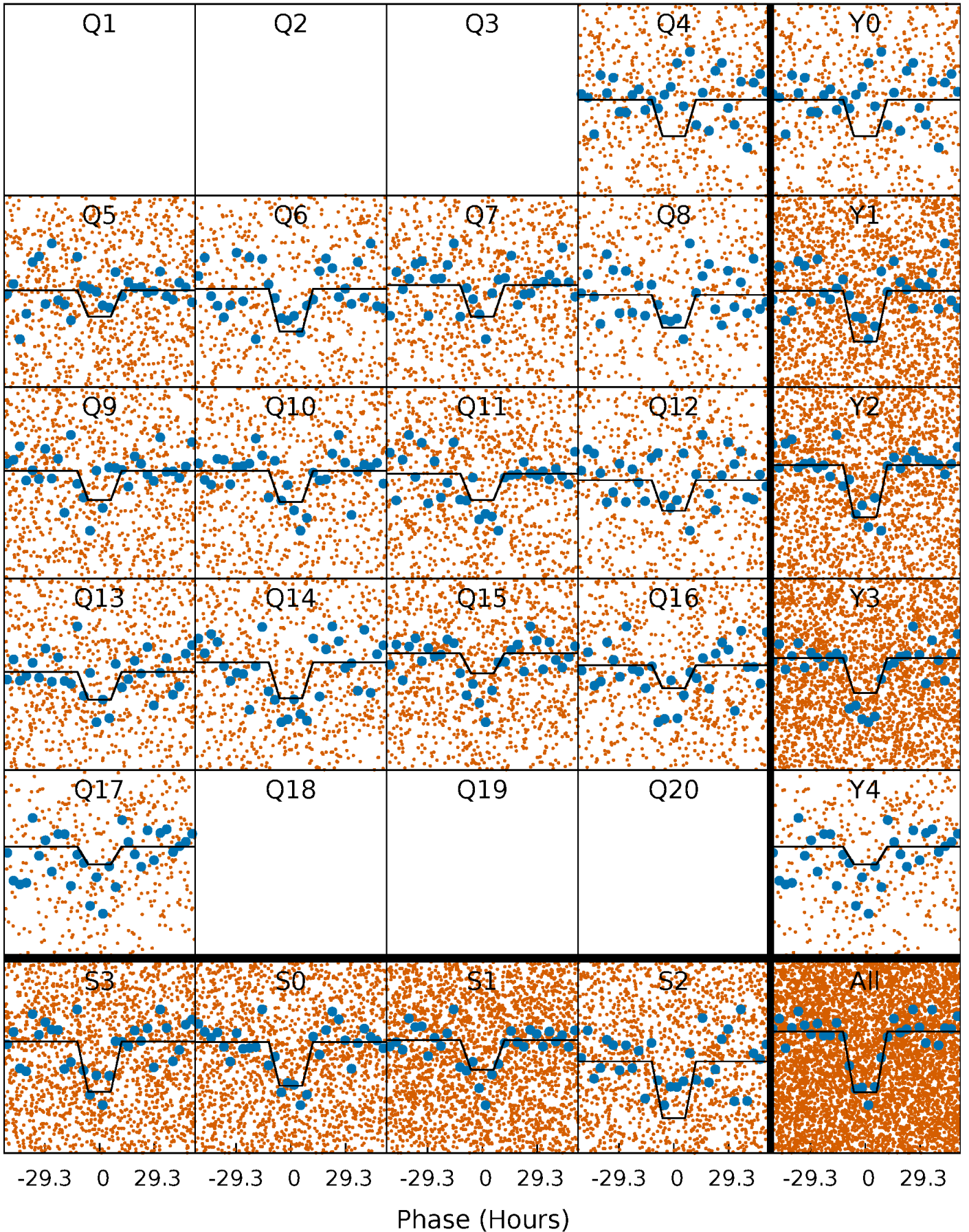
DV Quarter-Phased Transit Curves

TCE 005385139-02 P= 12.425242 Days $T_0=133.979625$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

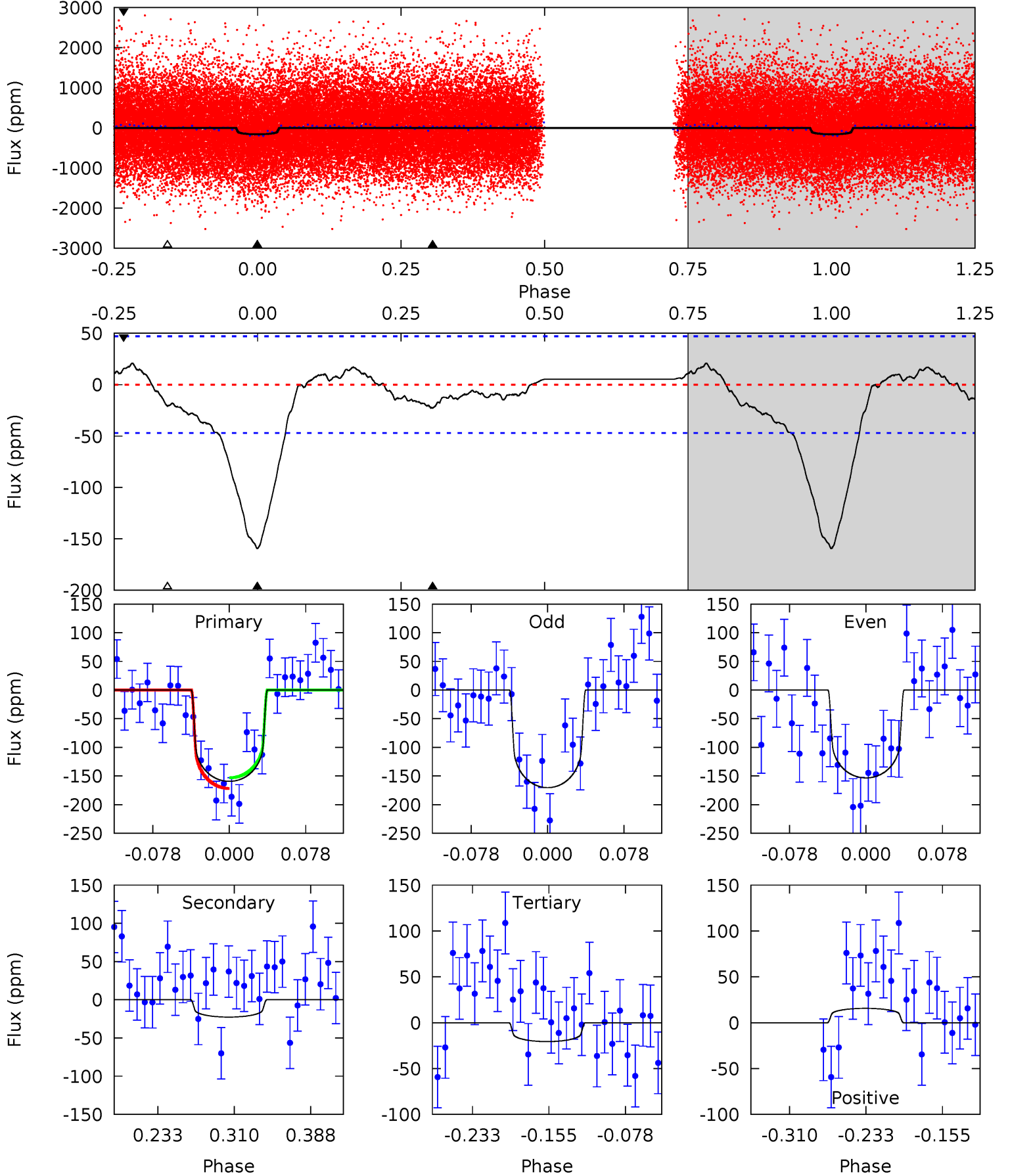
TCE 005385139-02 P= 12.426732 Days $T_0=133.853042$ (BKJD)



DV Model-Shift Uniqueness Test

005385139-02, $P = 12.425242$ Days, $E = 133.979625$ Days

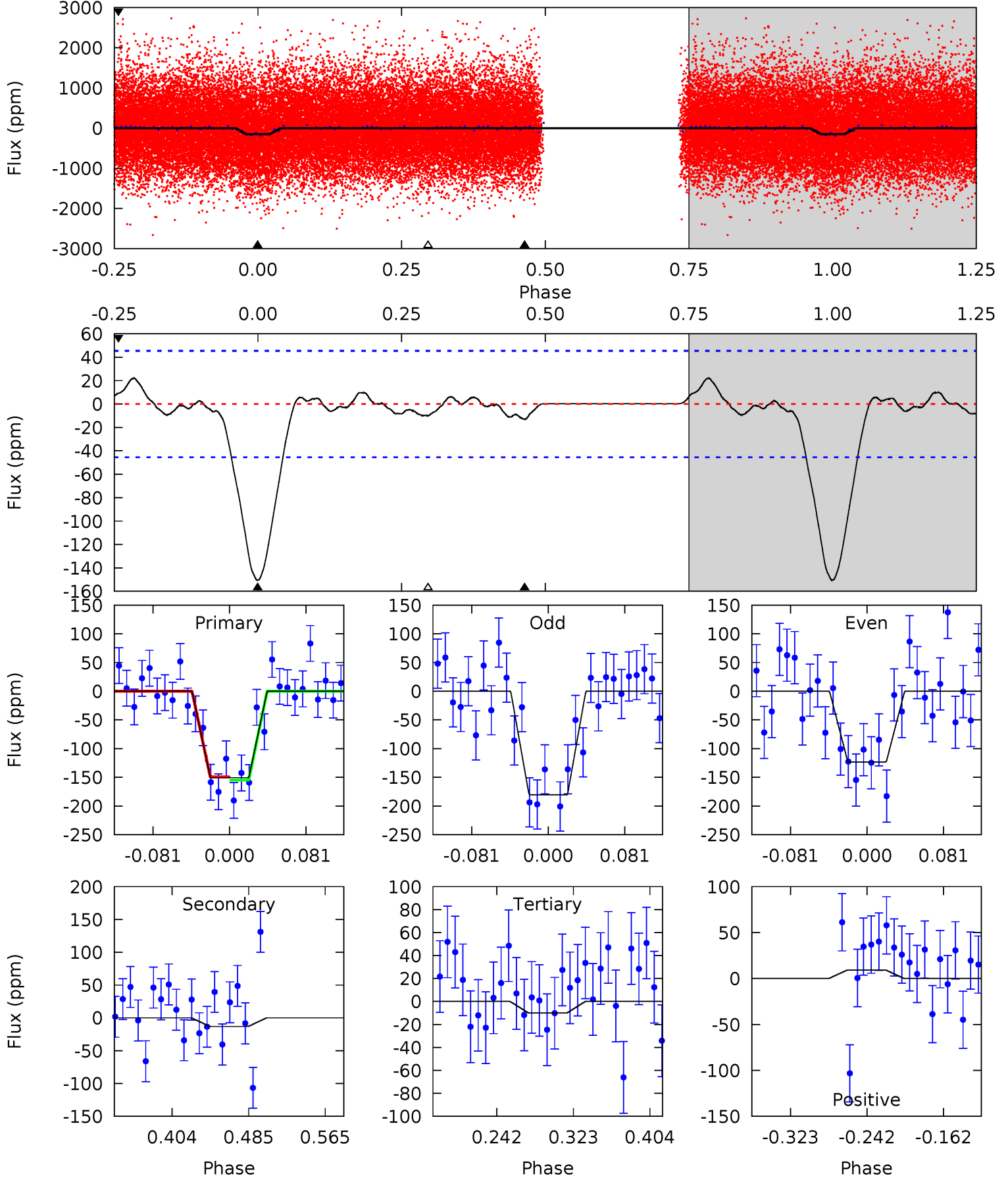
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	2.23	2.02	1.53	4.62	1.76	1.51	13.6	14.1	0.20	0.69	0.84	1.13	0.12	0.91



Alt Model-Shift Uniqueness Test

005385139-02, $P = 12.426732$ Days, $E = 133.853042$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	1.33	1.02	0.94	4.61	1.75	0.72	14.3	14.3	0.31	0.39	2.91	0.98	0.13	0.28



Stellar Parameters For KIC 005385139

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5754^{+160}_{-200}	$4.534^{+0.037}_{-0.213}$	$0.070^{+0.250}_{-0.300}$	$0.905^{+0.281}_{-0.088}$	$1.021^{+0.110}_{-0.134}$	$1.938^{+0.386}_{-1.048}$
	+3%/-3%	+1%/-5%	+357%/-429%	+31%/-10%	+11%/-13%	+20%/-54%
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 005385139-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-23 ± 10	$1.45^{+0.27}_{-0.23}$	1062^{+83}_{-48}	3740^{+373}_{-360}	62^{+47}_{-29}
Alt.	-13 ± 10	$1.27^{+0.28}_{-0.24}$	1063^{+82}_{-48}	3567^{+434}_{-697}	48^{+47}_{-37}

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

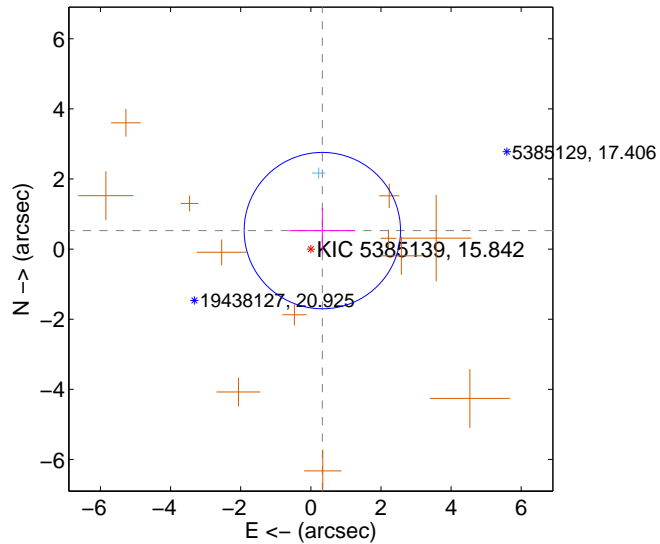
Supplemental centroid analysis for 005385139-02. Kepler magnitude: 15.84. Transit SNR 12.16

There are 1 quarters with good PRF difference image offsets

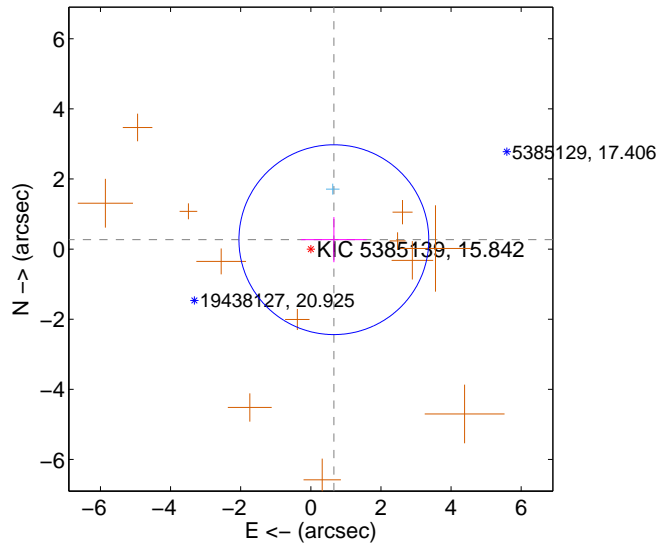
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.622 ± 0.743	0.84	-0.328 ± 0.931	0.528 ± 0.656
PRF-fit source offset from KIC position	0.710 ± 0.903	0.79	-0.657 ± 0.939	0.269 ± 0.644
photometric centroid source offset	3.15 ± 0.87	3.62	3.03 ± 0.86	0.86 ± 0.94

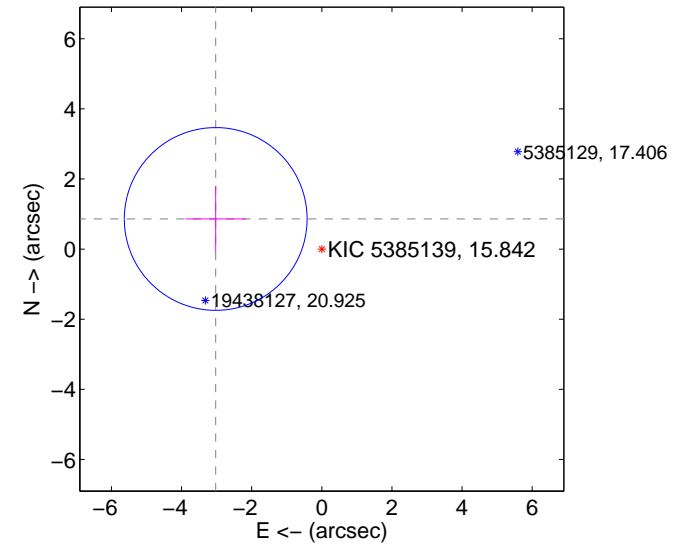
offset from difference PRF-fit to OOT PRF-fit



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.

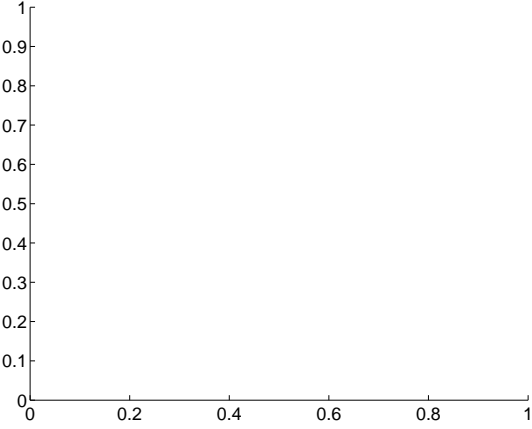
Q1 no difference image



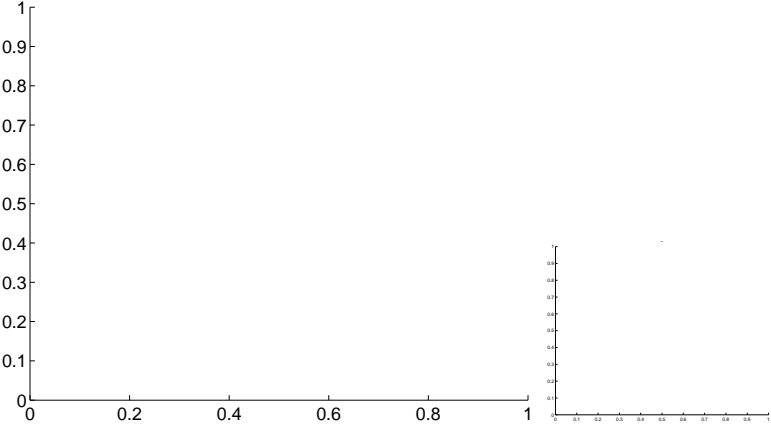
Q1 no OOT image



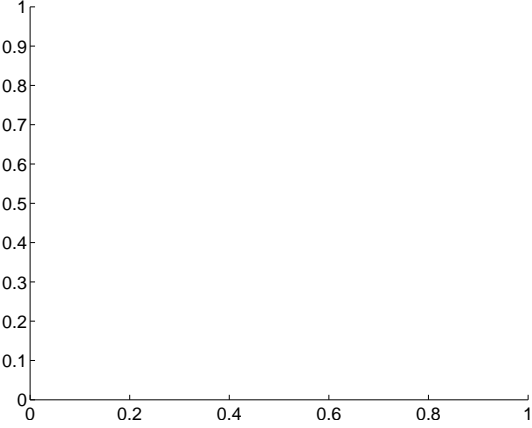
Q2 no difference image



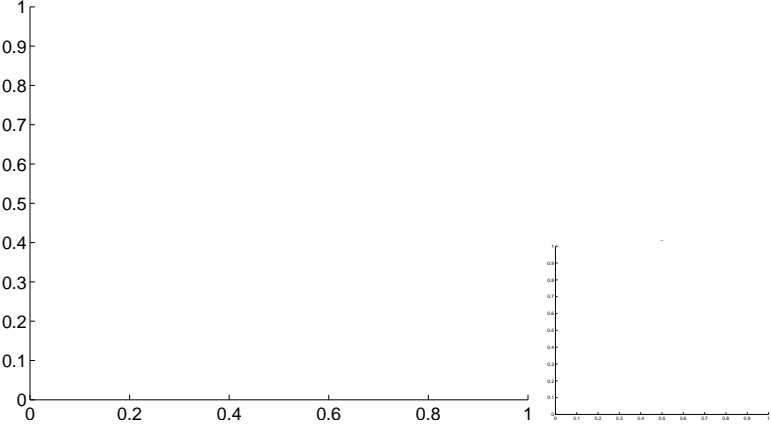
Q2 no OOT image



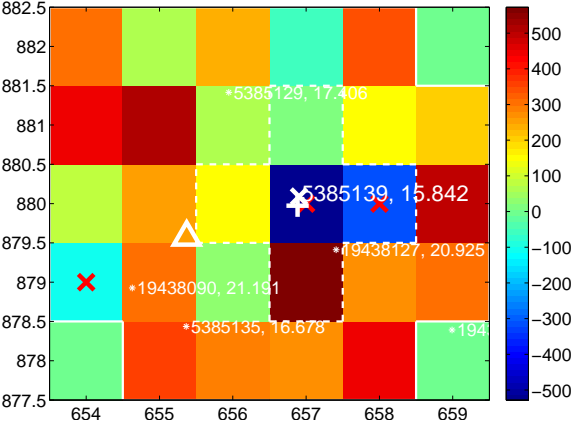
Q3 no difference image



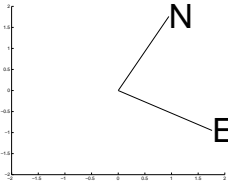
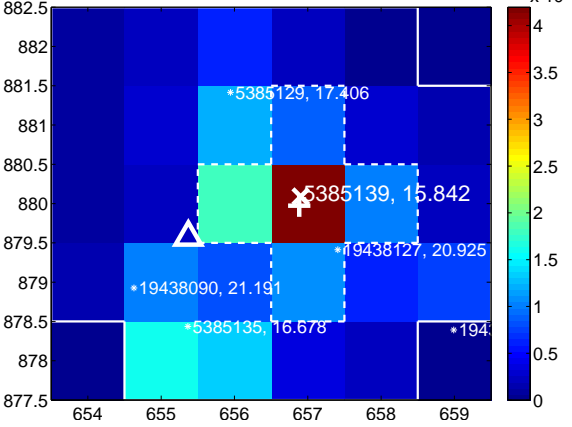
Q3 no OOT image



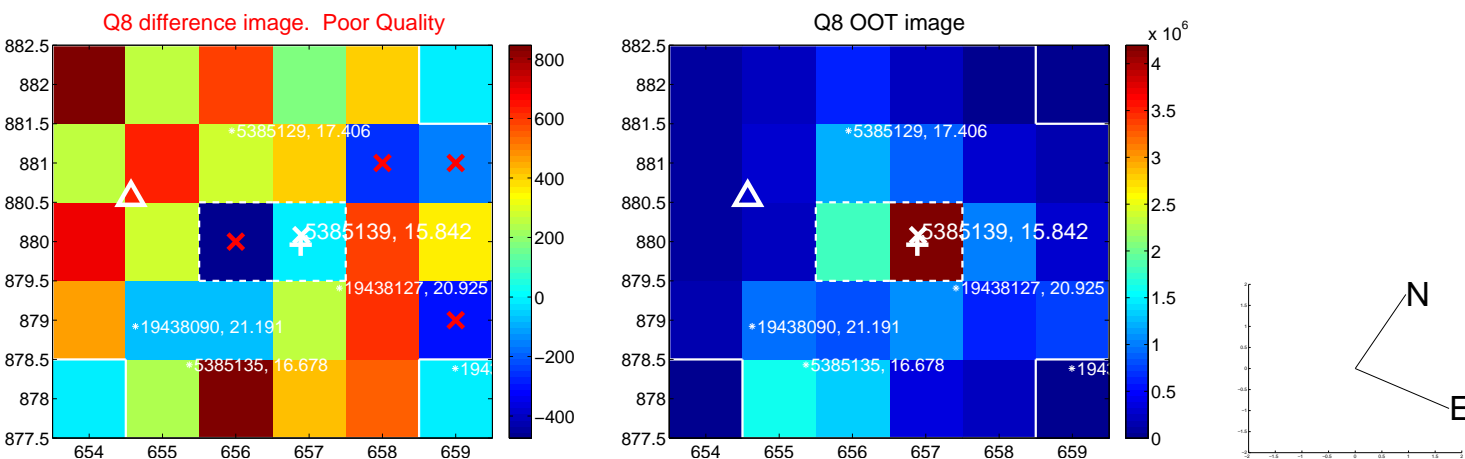
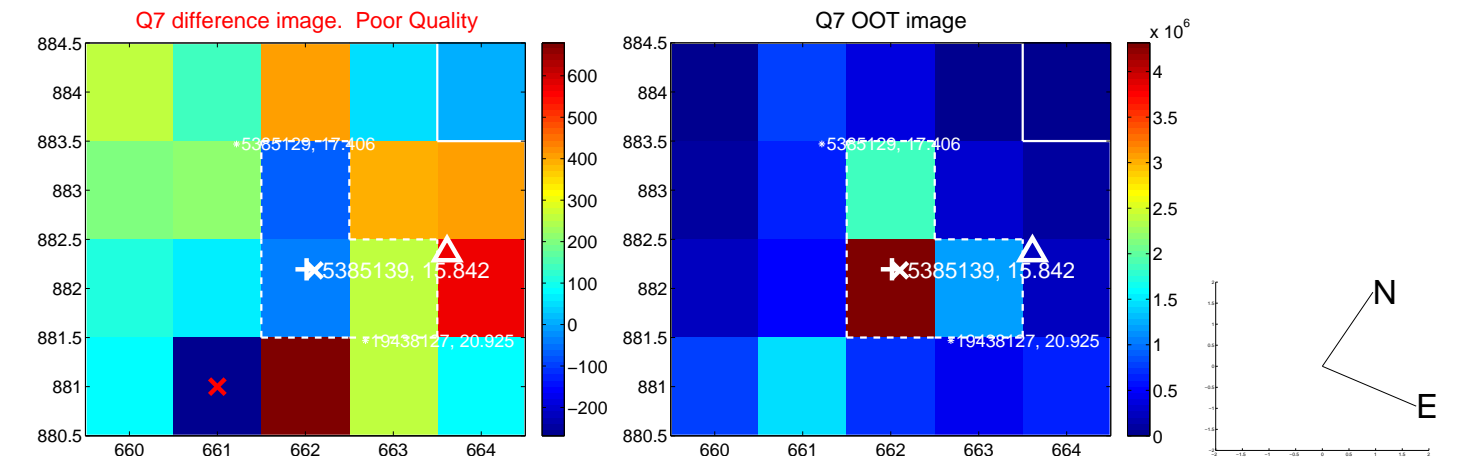
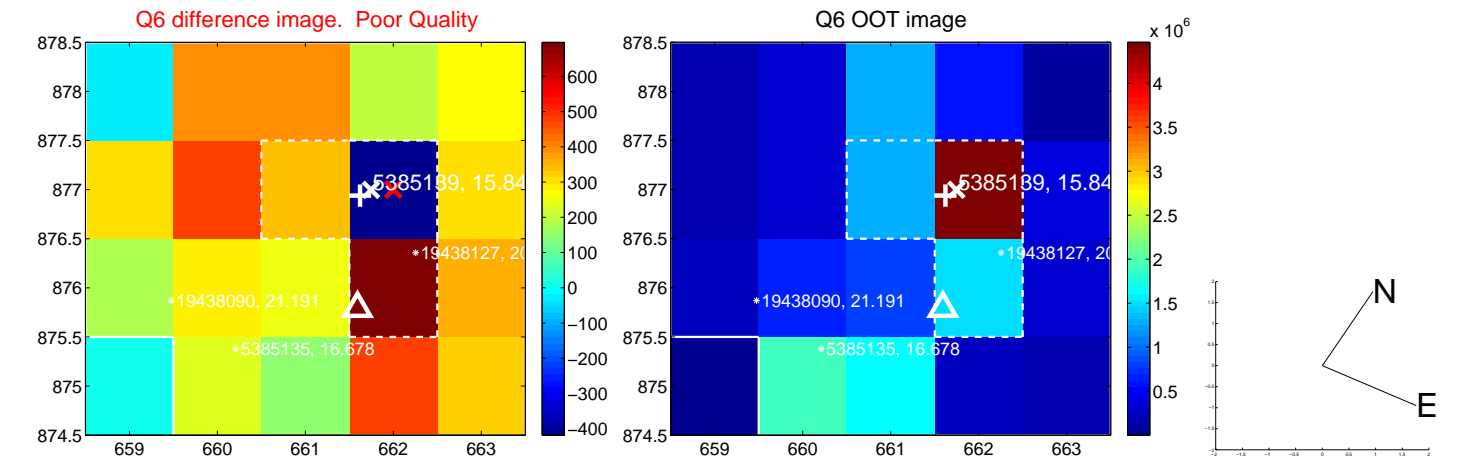
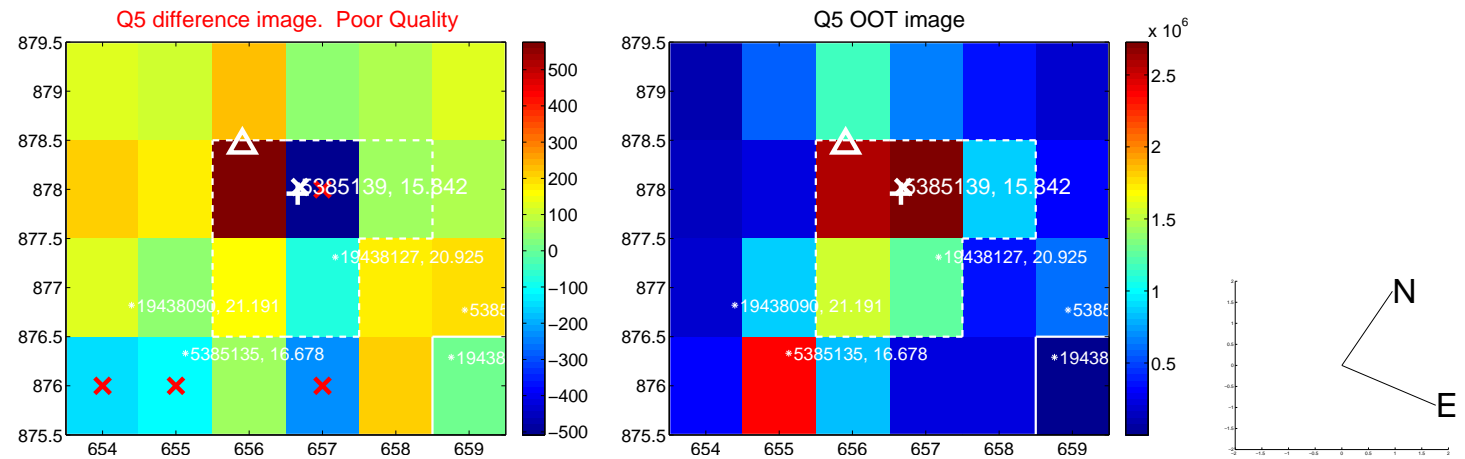
Q4 difference image. Poor Quality



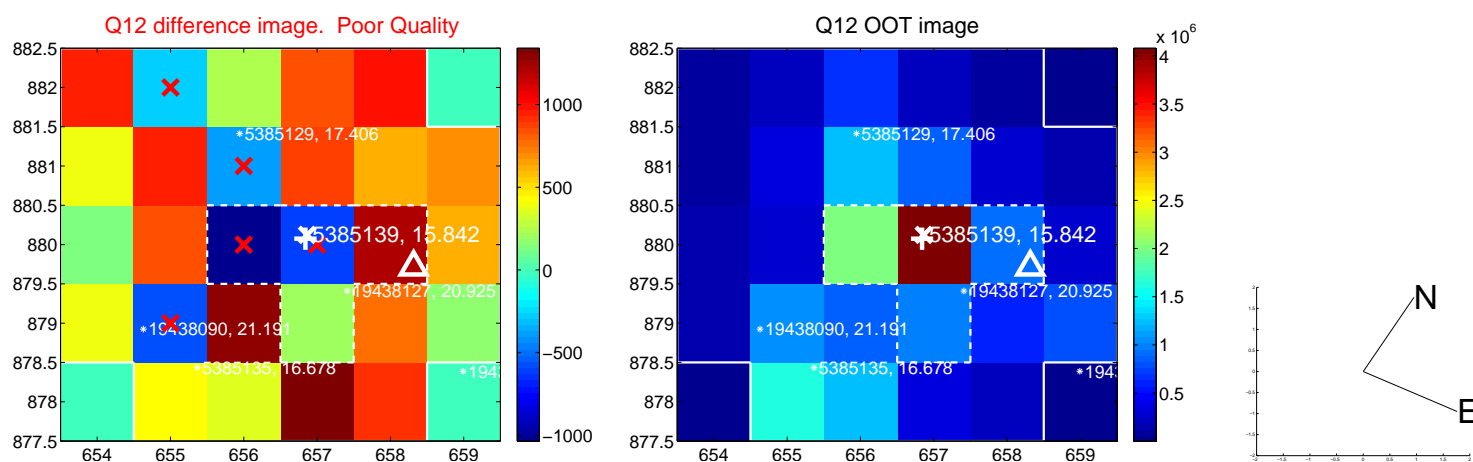
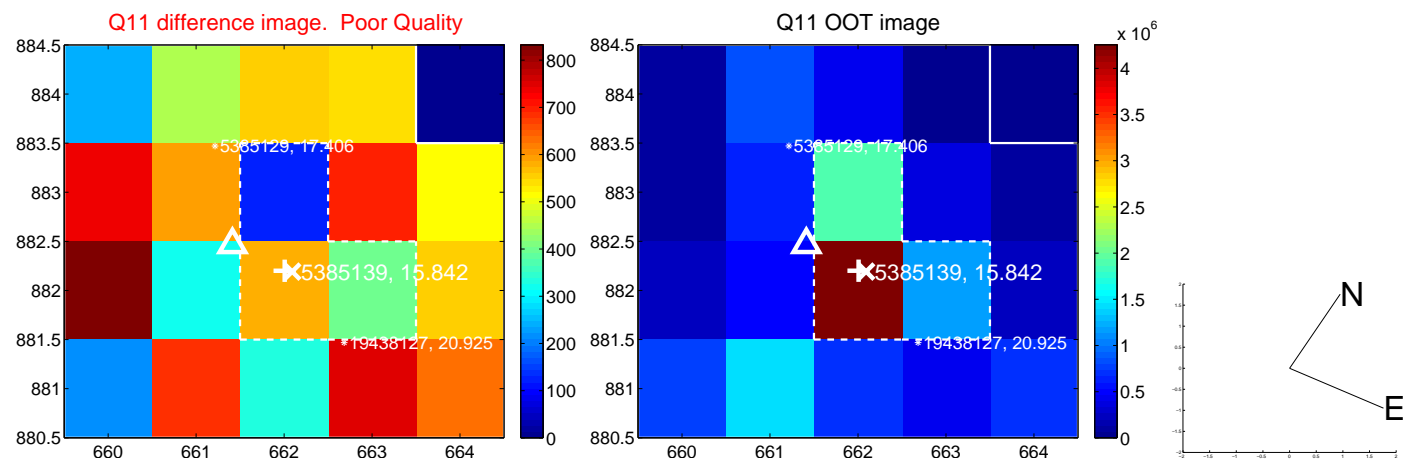
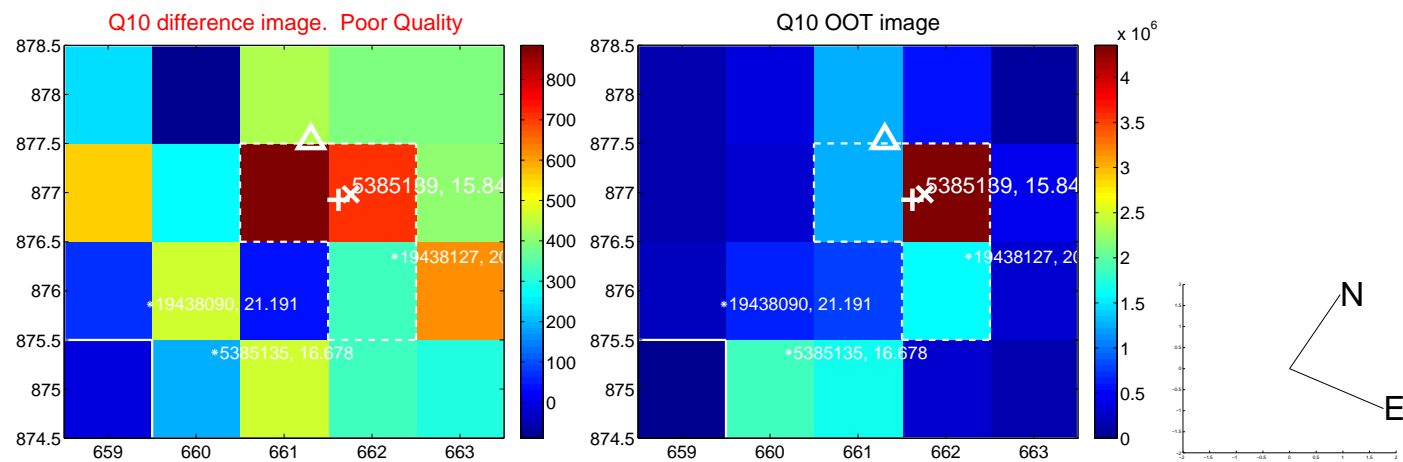
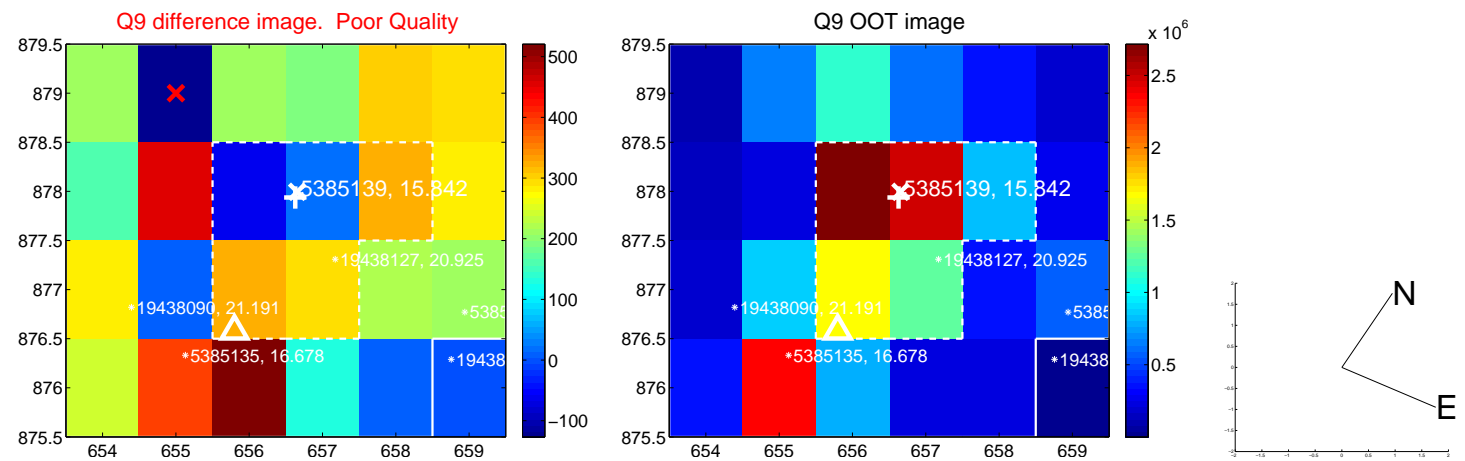
Q4 OOT image



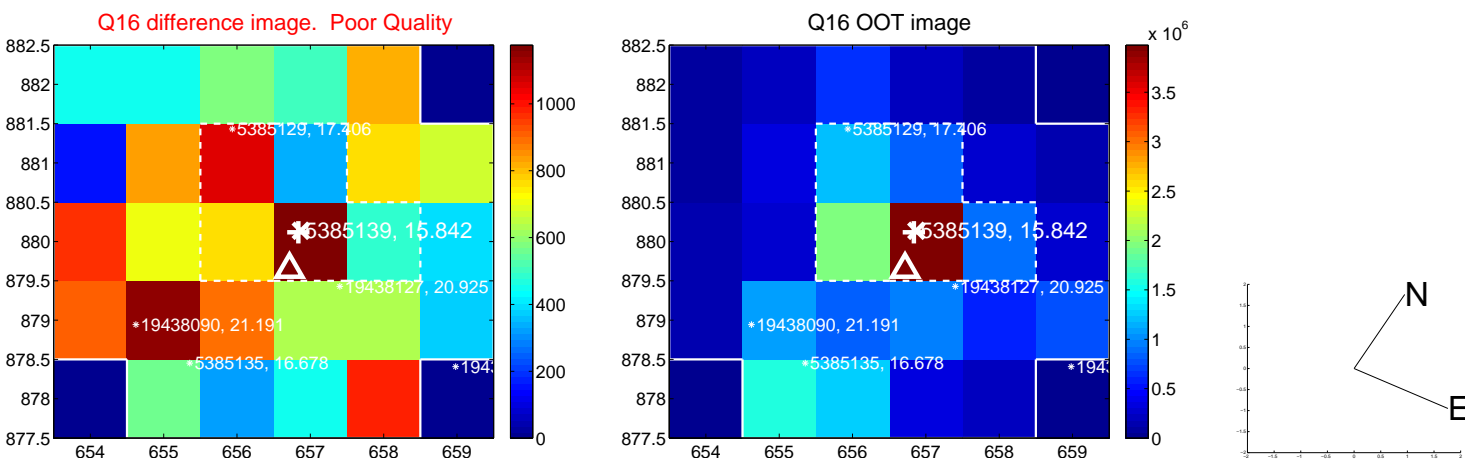
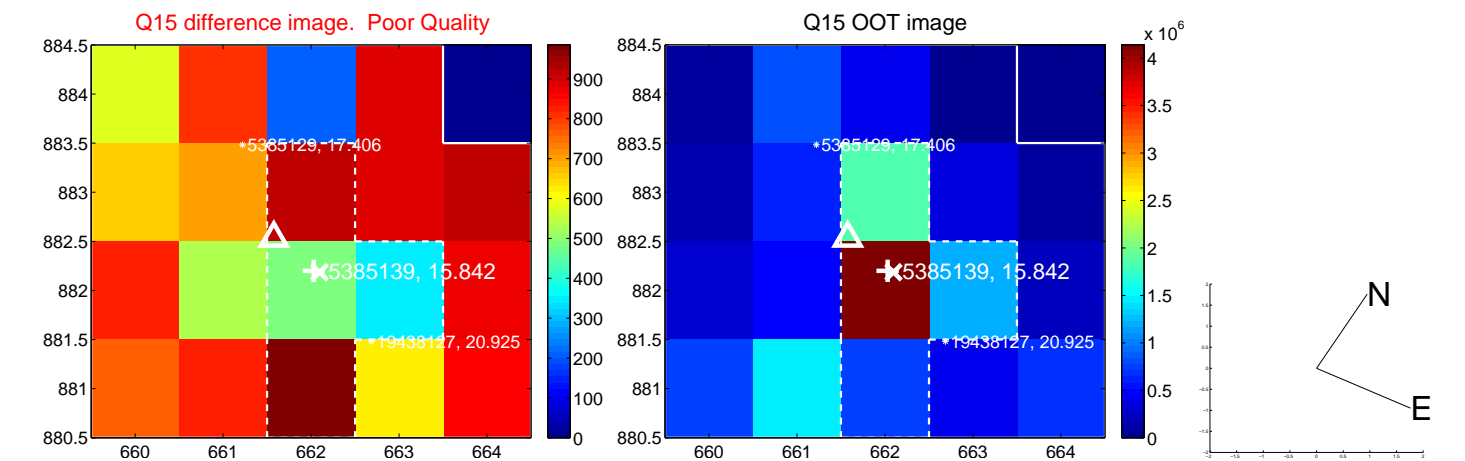
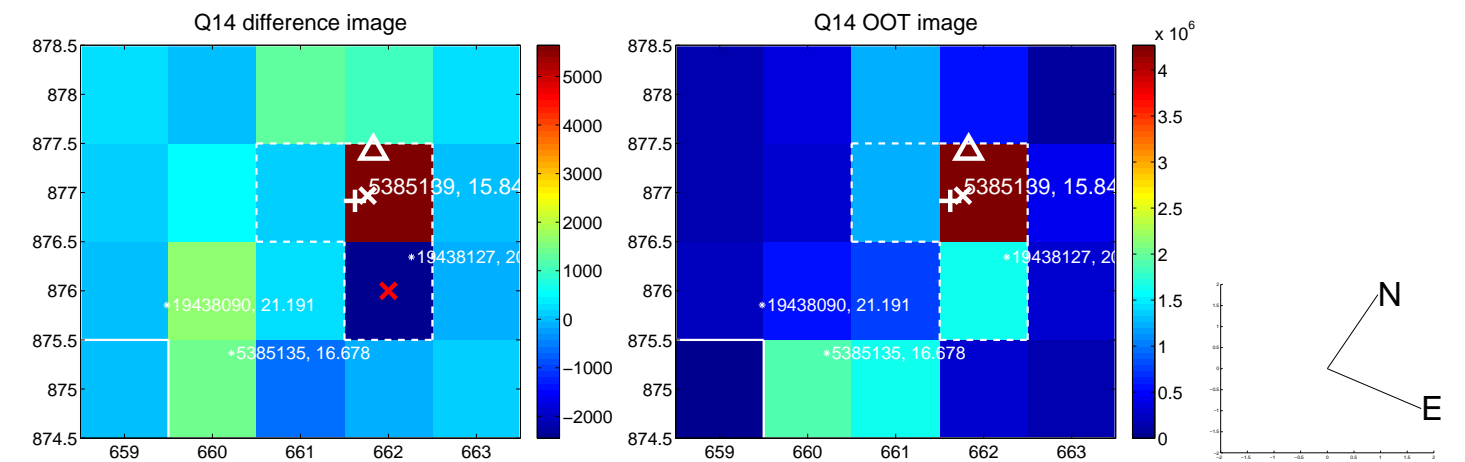
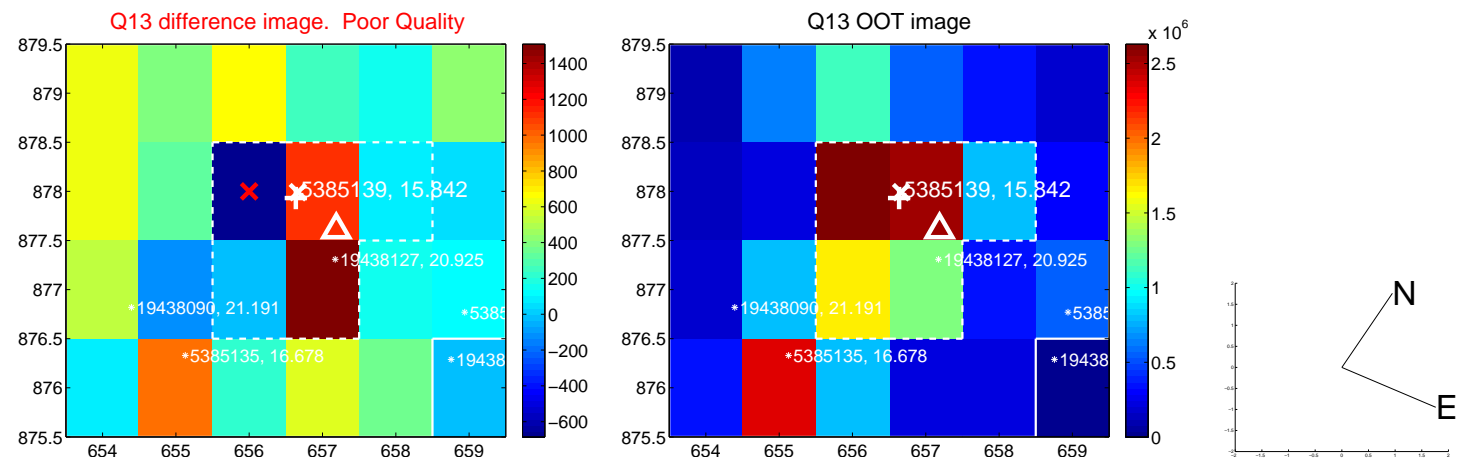
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



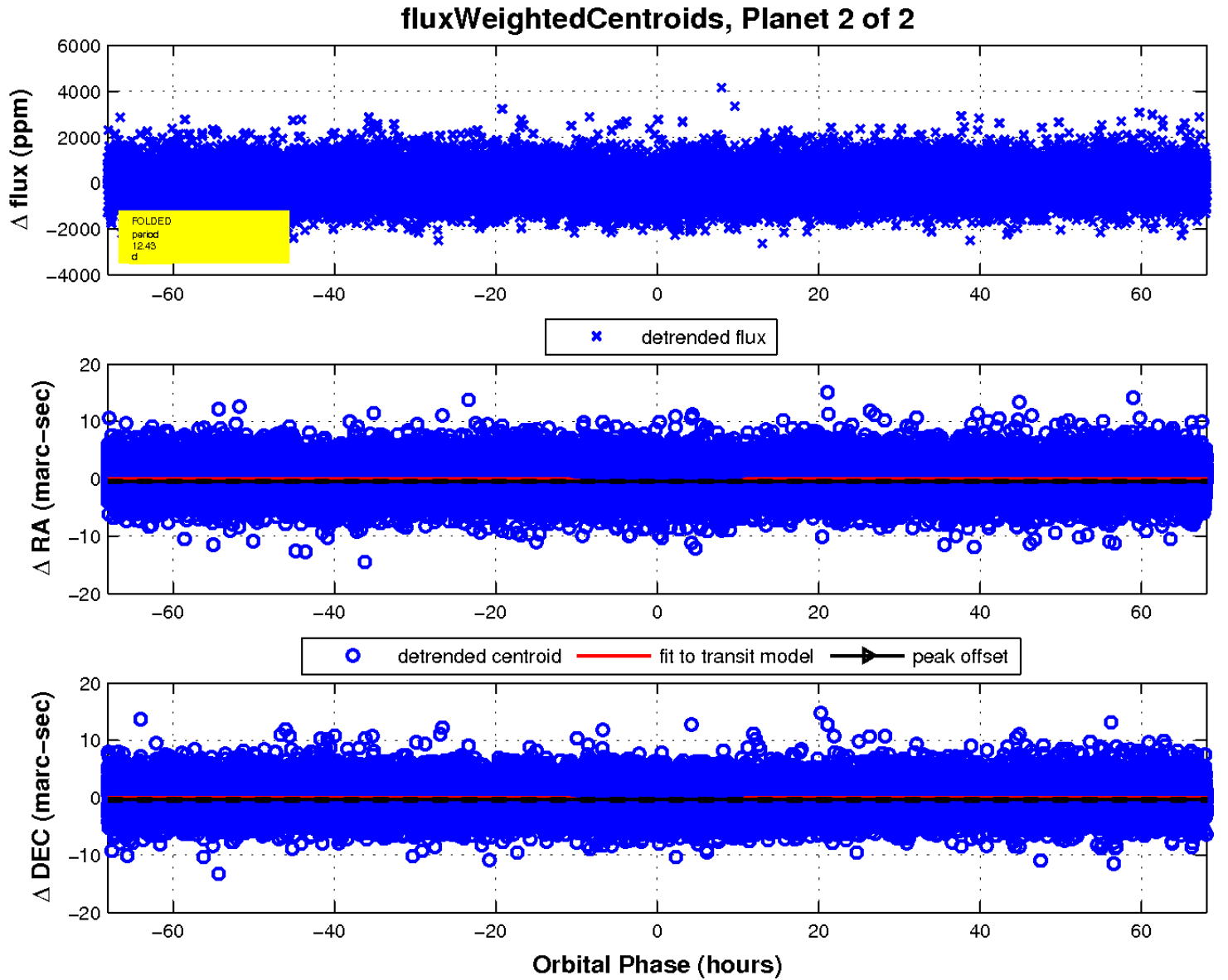
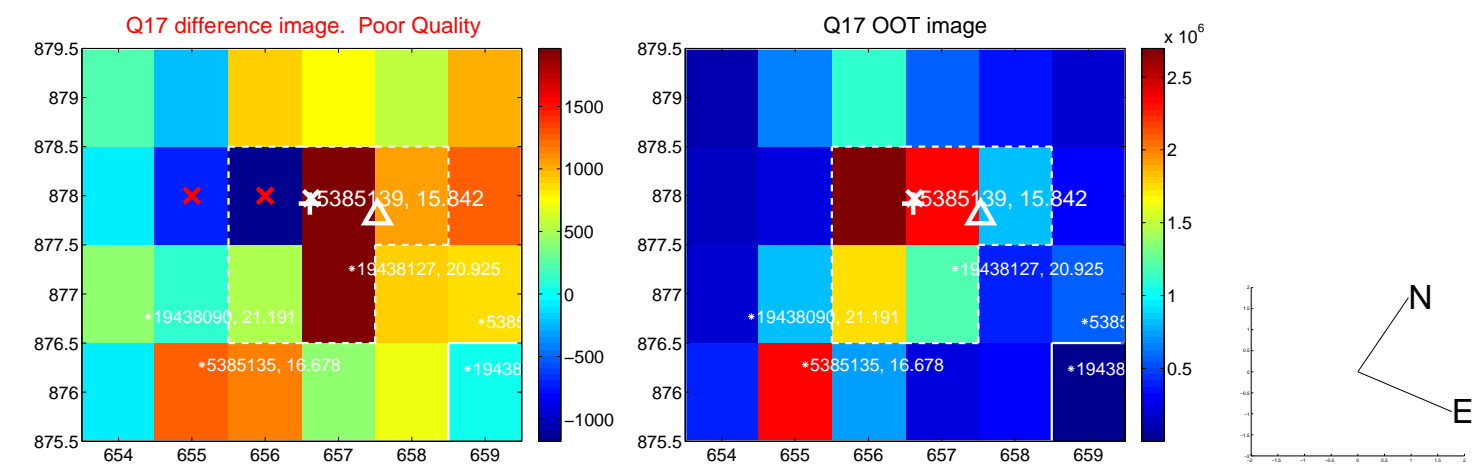
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

