

KIC 005393558

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})
005393558-01	OBS	6576.01	10.217119	137.246002	203992.1	4.379	12182.6	7480.6	1.35	5931	87.62	231.02
005393558-02	OBS	No	10.217169	131.980966	83568.7	3.500	7958.9	-1.0	1.35	5931	38.96	231.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005393558-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005393558-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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

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

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

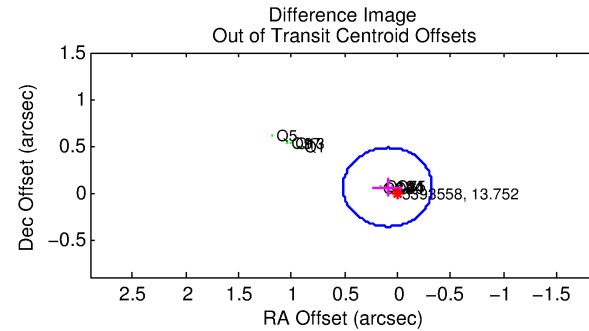
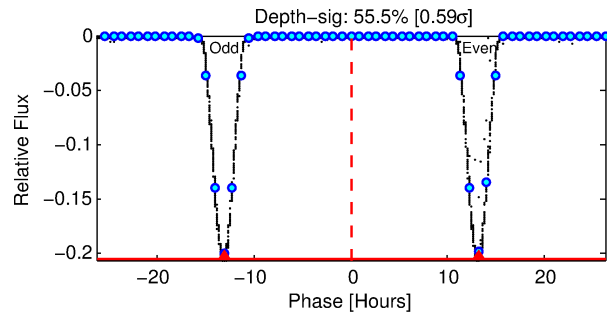
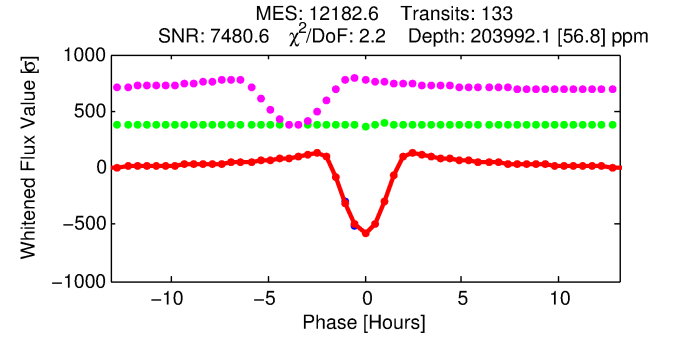
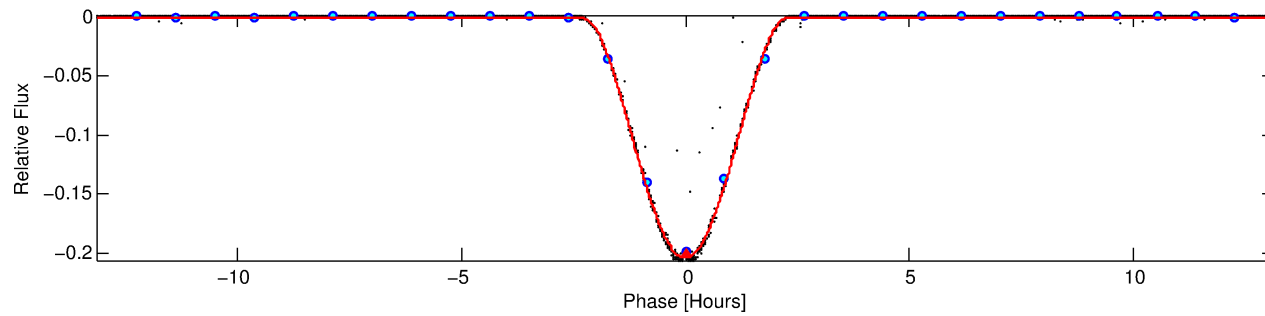
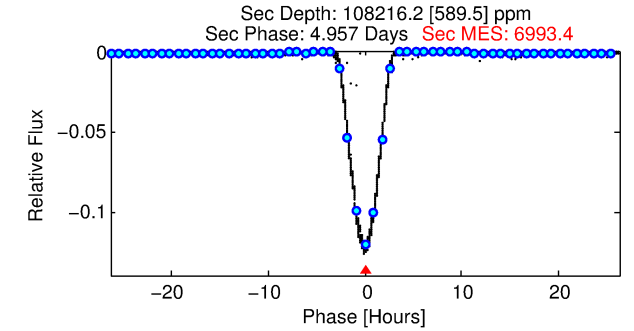
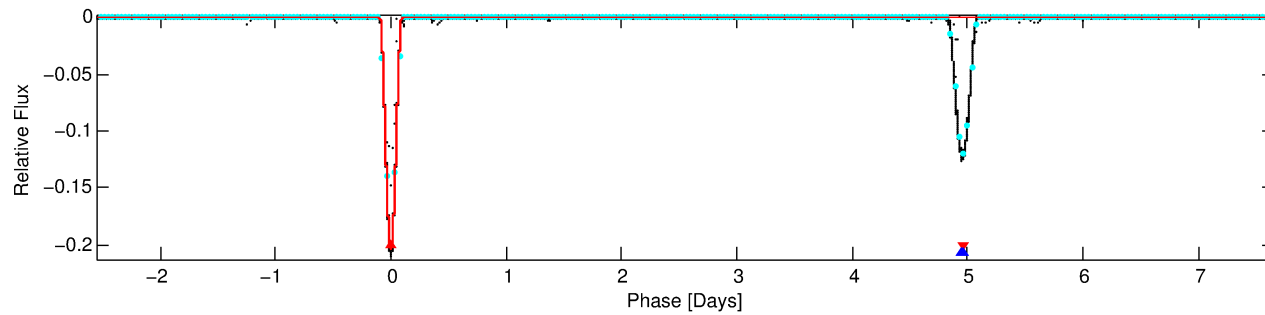
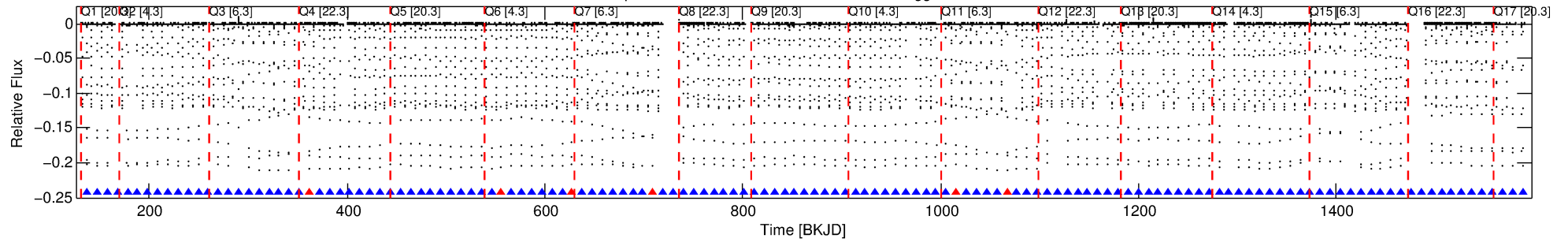
Ephemeris Match Information For 005393558-01

No Significant Match Found

DV One-Page Summary

KIC: 5393558 Candidate: 1 of 2 Period: 10.217 d
KOI: K06576.01 Corr: 0.997

Kp: 13.75 R*: 1.35 Rs Teff: 5931.0 K Logg: 4.20 Fe/H: 0.000



DV Fit Results:

Period = 10.21712 [0.00000] d
Epoch = 137.2460 [0.0000] BKJD
Rp/R* = 0.5952 [0.0090]
a/R* = 24.04 [0.05]
b = 0.85 [0.01]
Seff = 231.02 [101.34]
Teff = 994 [109] K
Rp = 87.62 [23.87] Re
a = 0.0935 [0.0245] AU
Ag = 67.73 [28.45] [2.35σ]
Teffp = 4409 [147] K [18.62σ]

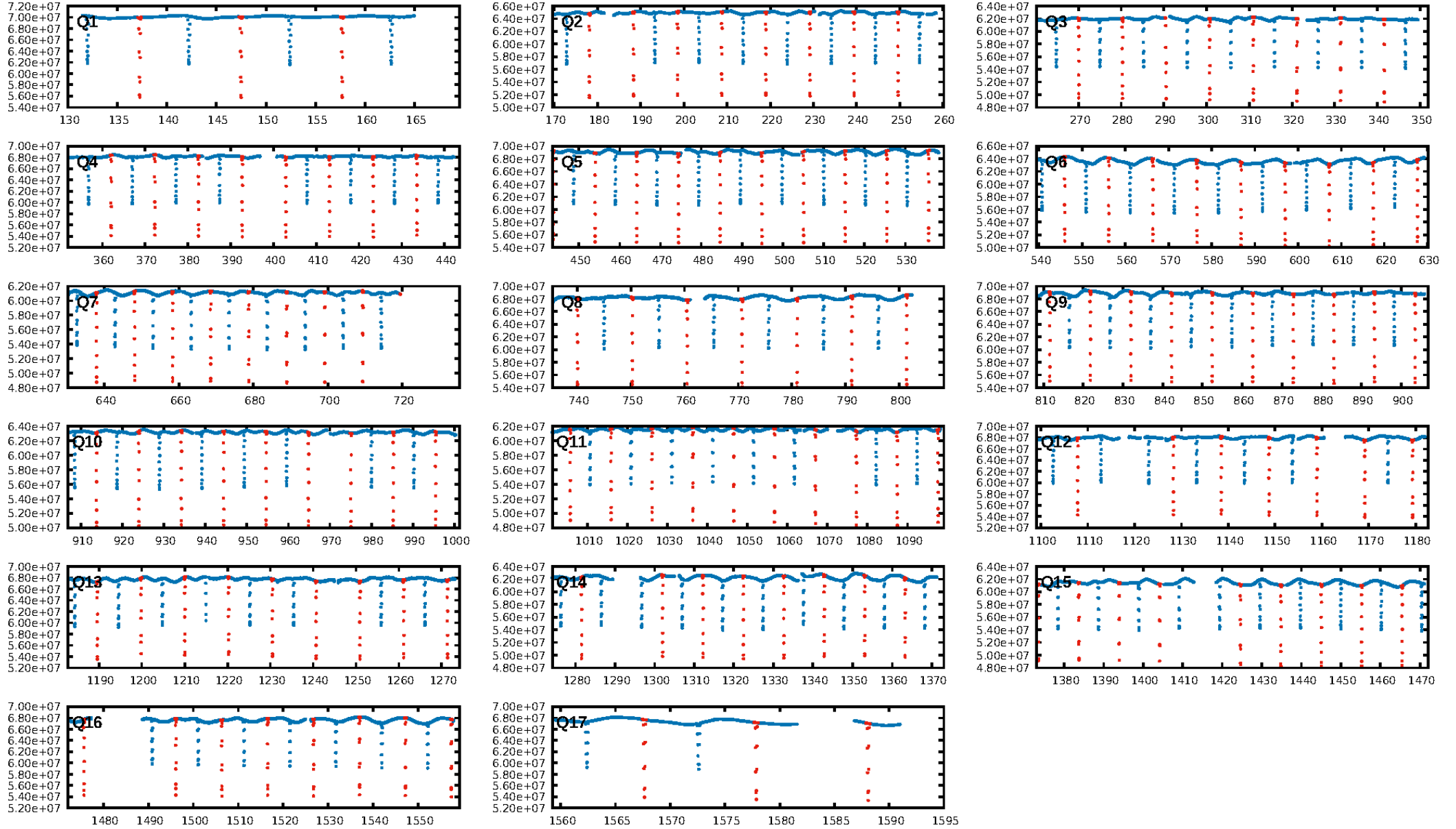
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [121/127]
GhostDiagnostic-chr: 3.056
Centroid-sig: 0.0%
Centroid-so: 1.005 arcsec [962.37σ]
OotOffset-rm: 0.110 arcsec [0.78σ]
KicOffset-rm: 0.146 arcsec [2.16σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

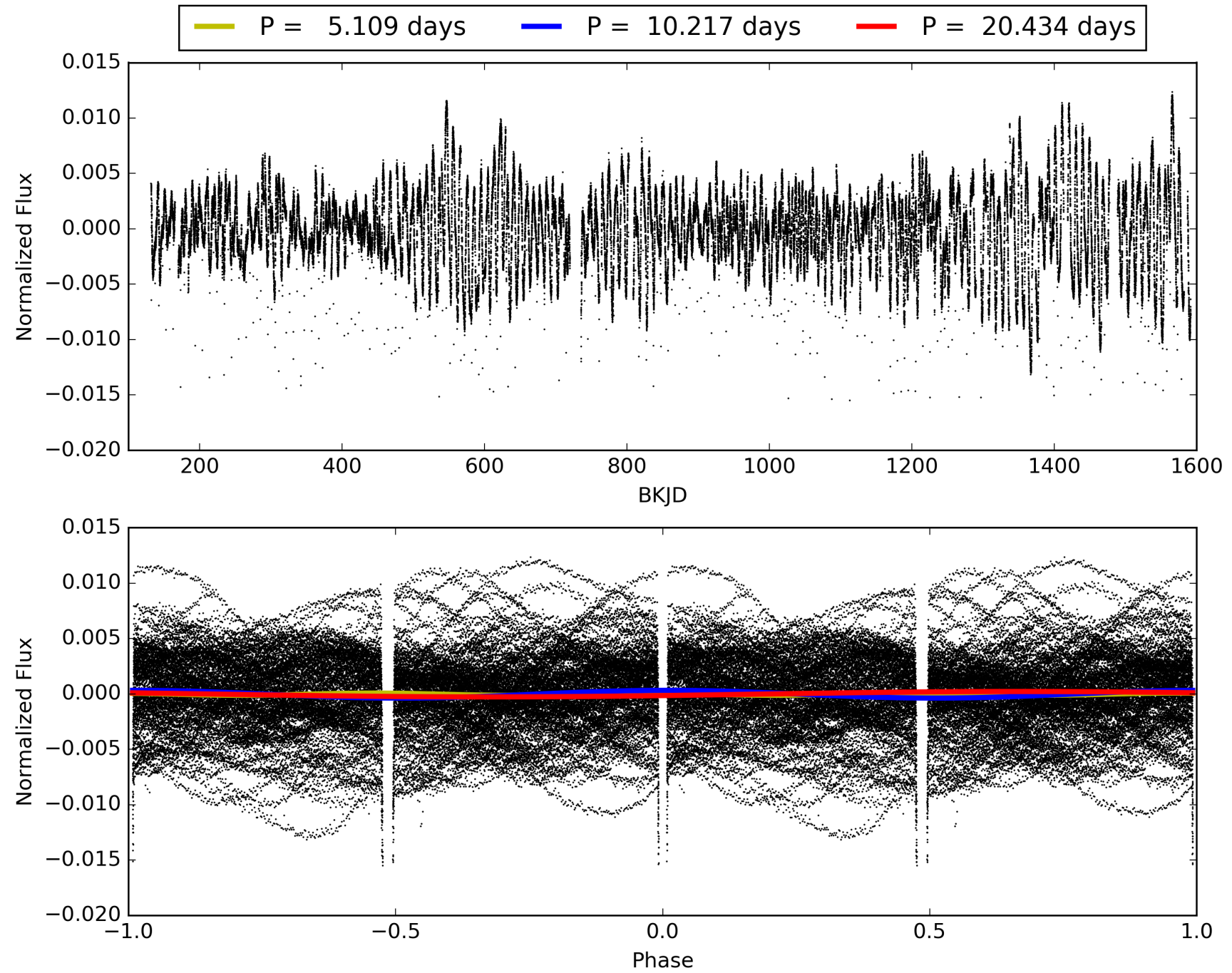
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:46:16 Z

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

TCE 005393558-01, PDC Light Curves

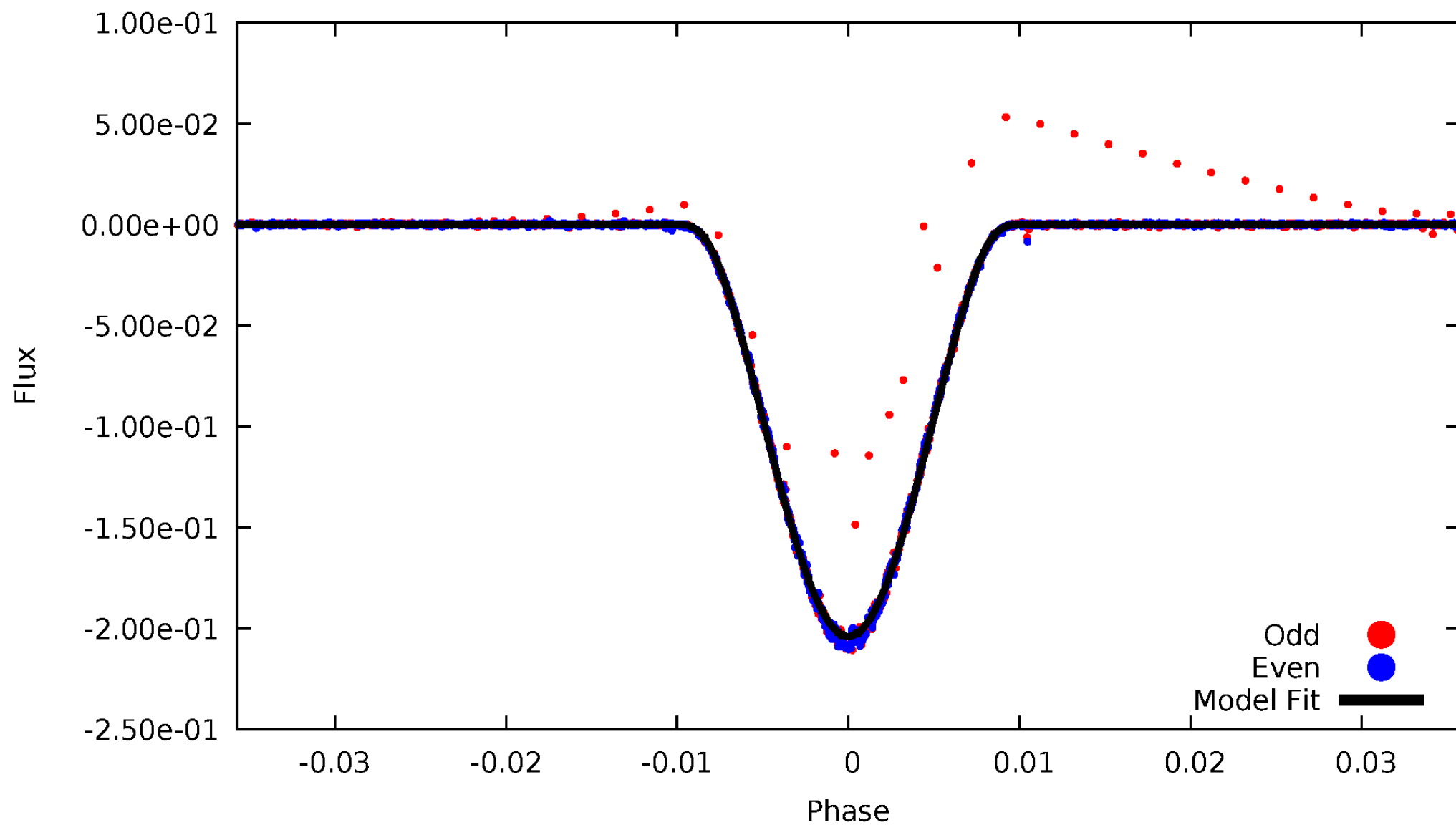


TCE 005393558-01



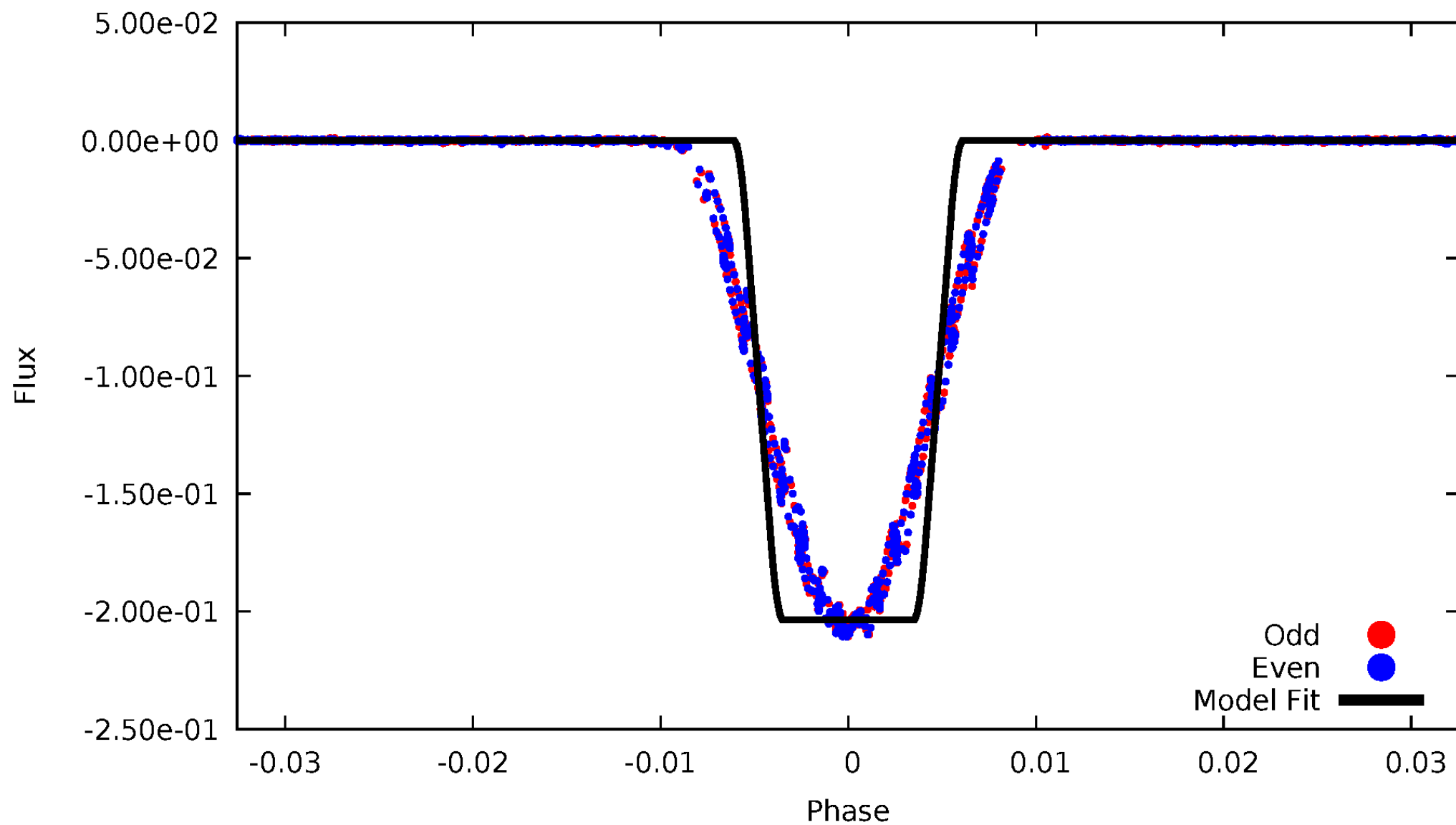
DV Odd/Even

TCE 005393558-01



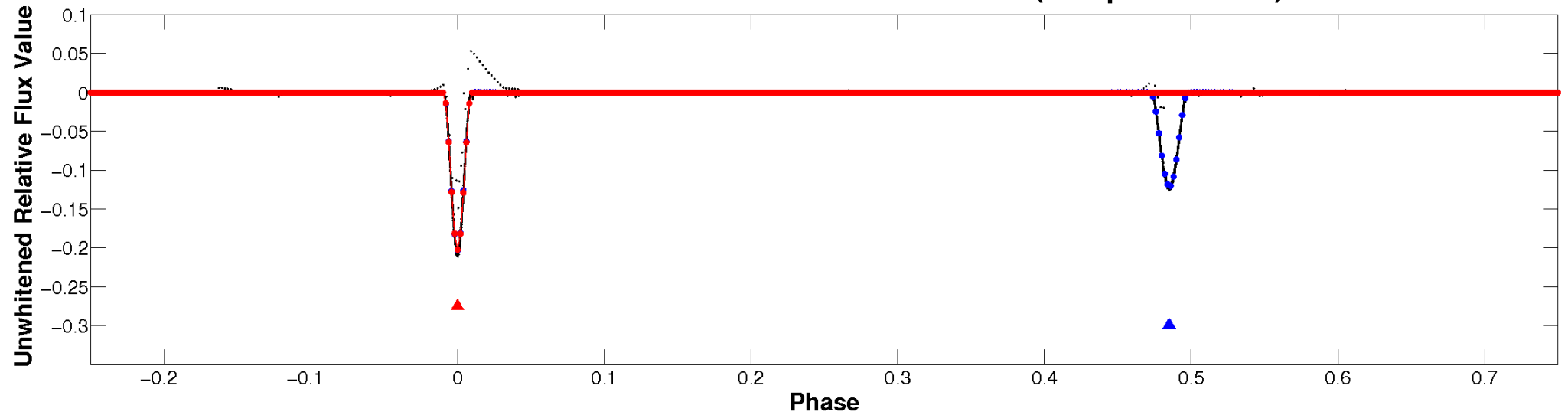
ALT Odd/Even

TCE 005393558-01

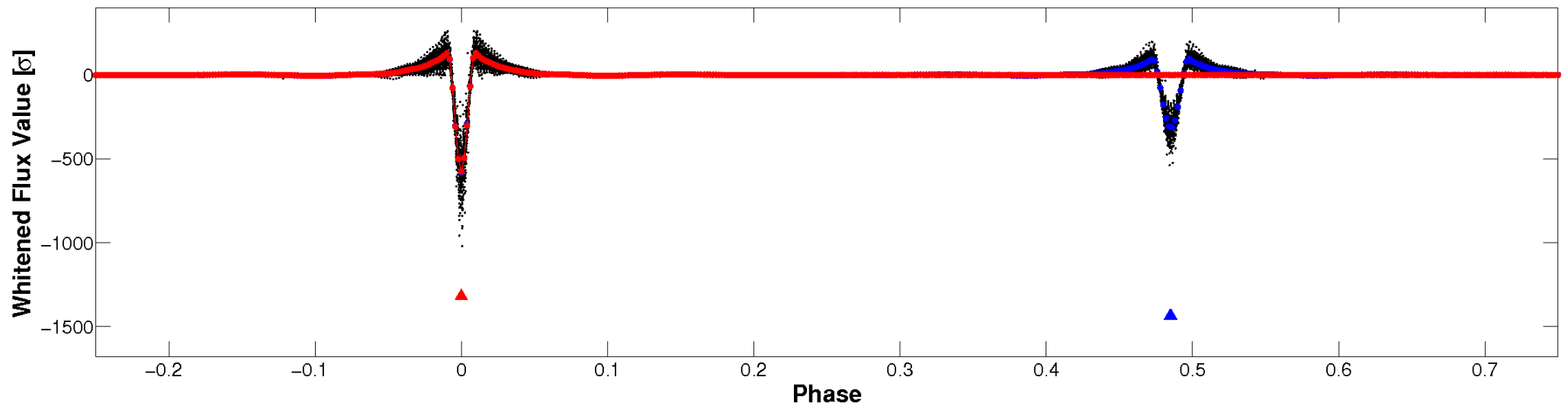


Non-Whitened Vs. Whitened Light Curve

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

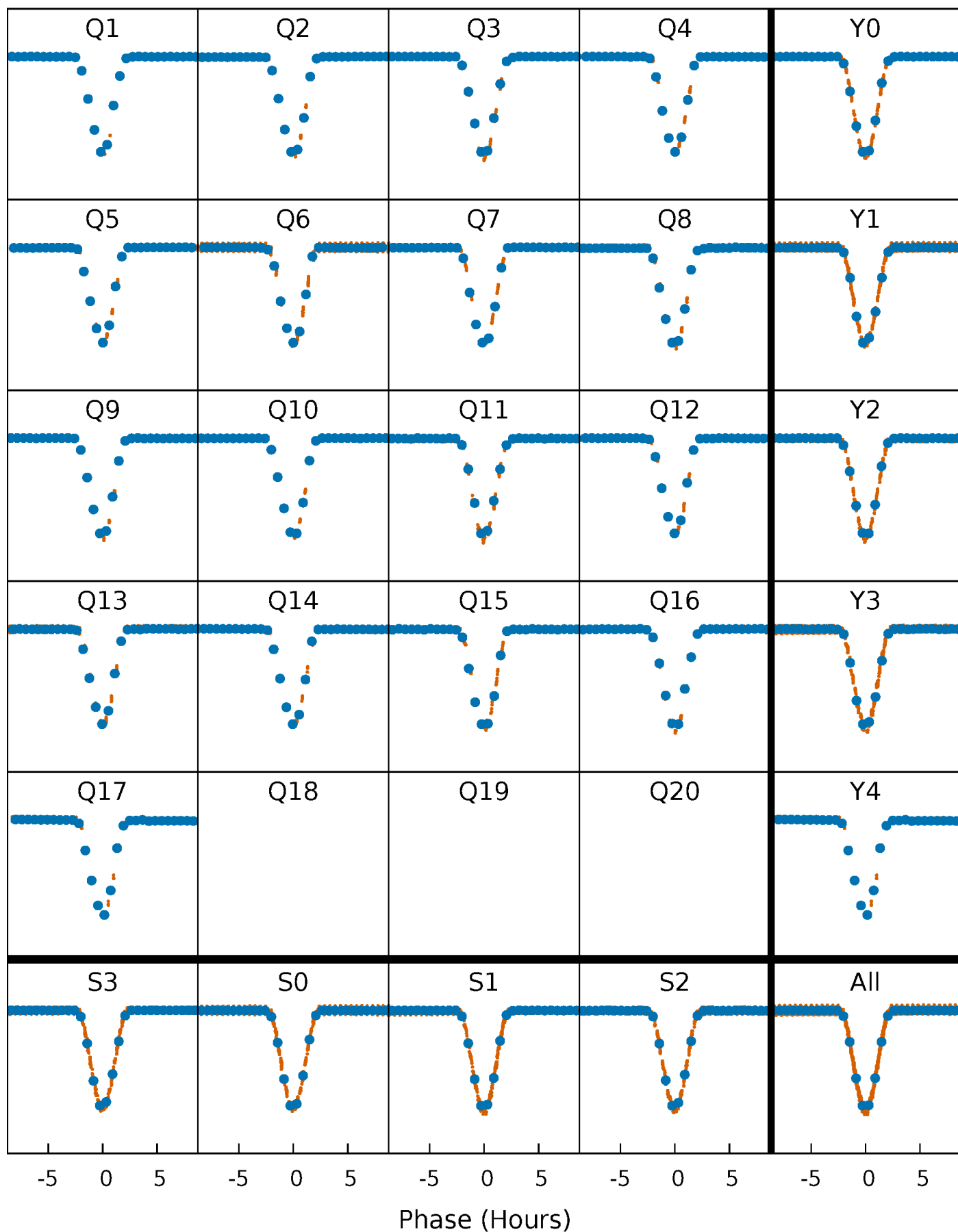


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



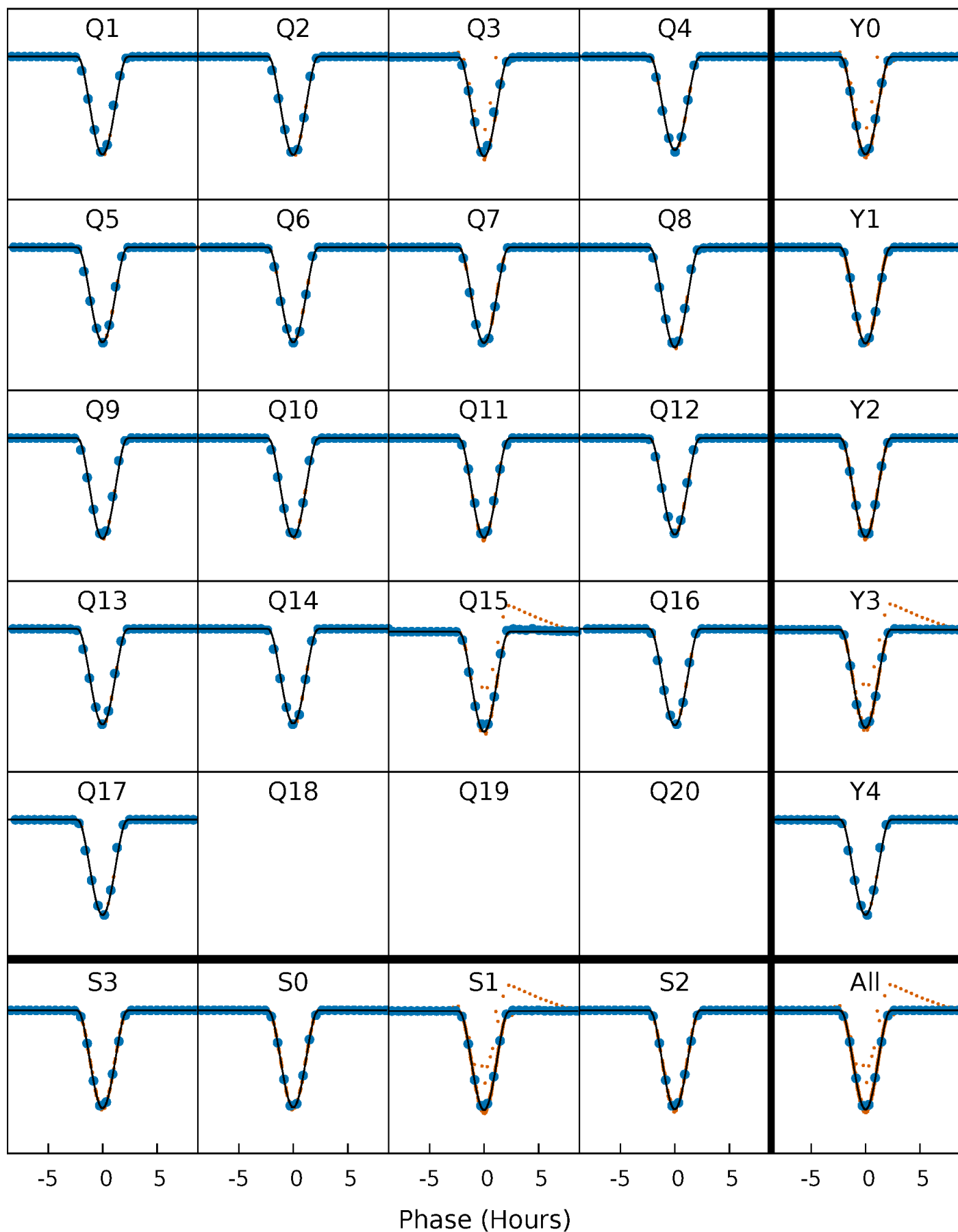
PDC Quarter-Phased Transit Curves

TCE 005393558-01 P= 10.217119 Days $T_0=137.246002$ (BKJD)



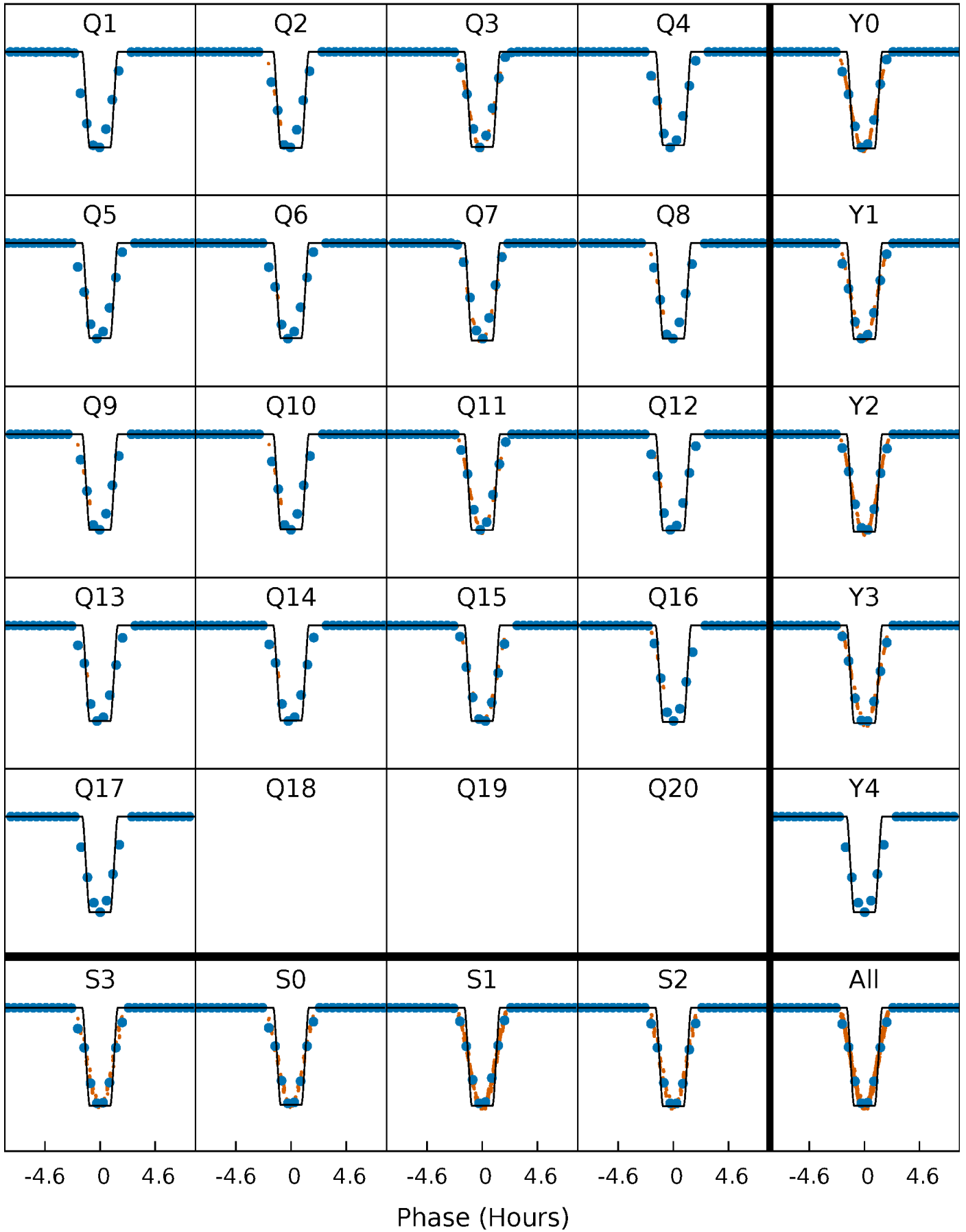
DV Quarter-Phased Transit Curves

TCE 005393558-01 P= 10.217119 Days $T_0=137.246002$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

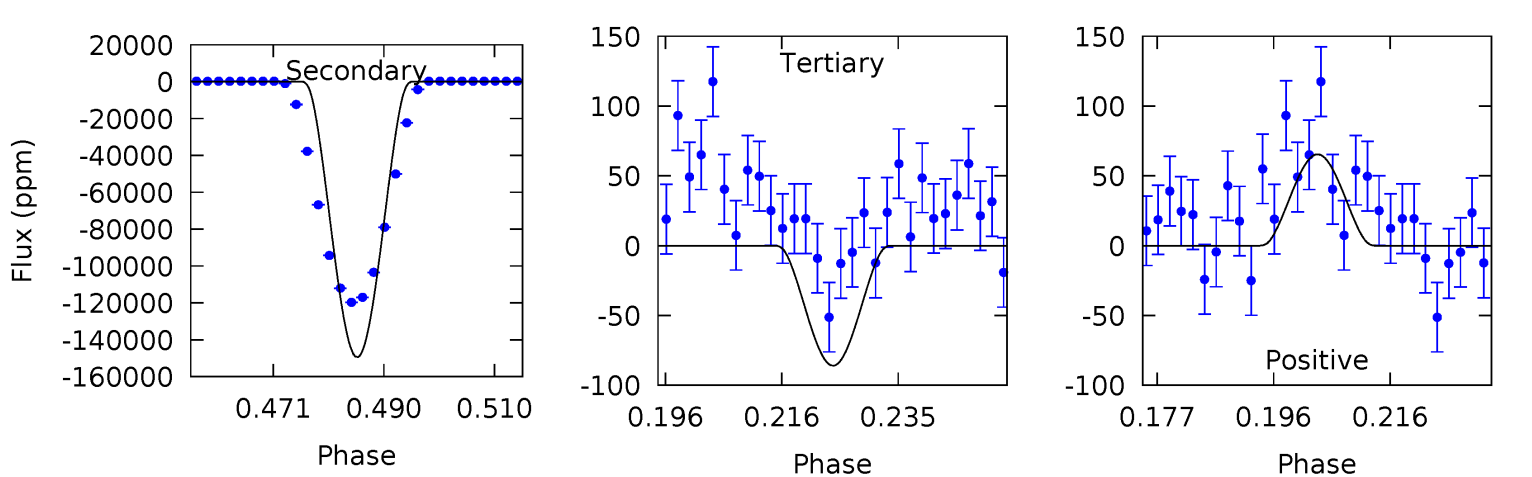
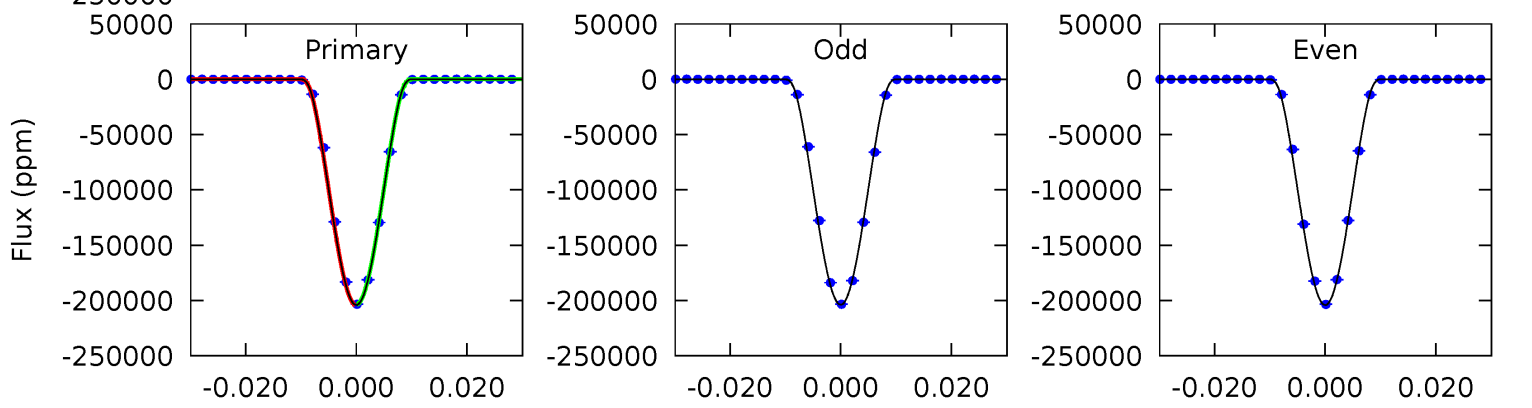
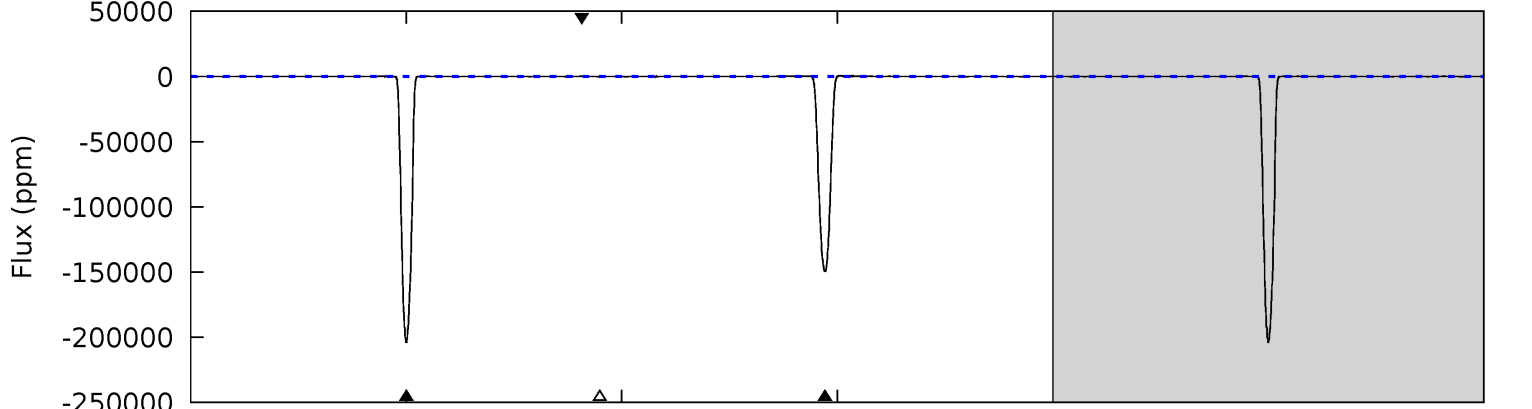
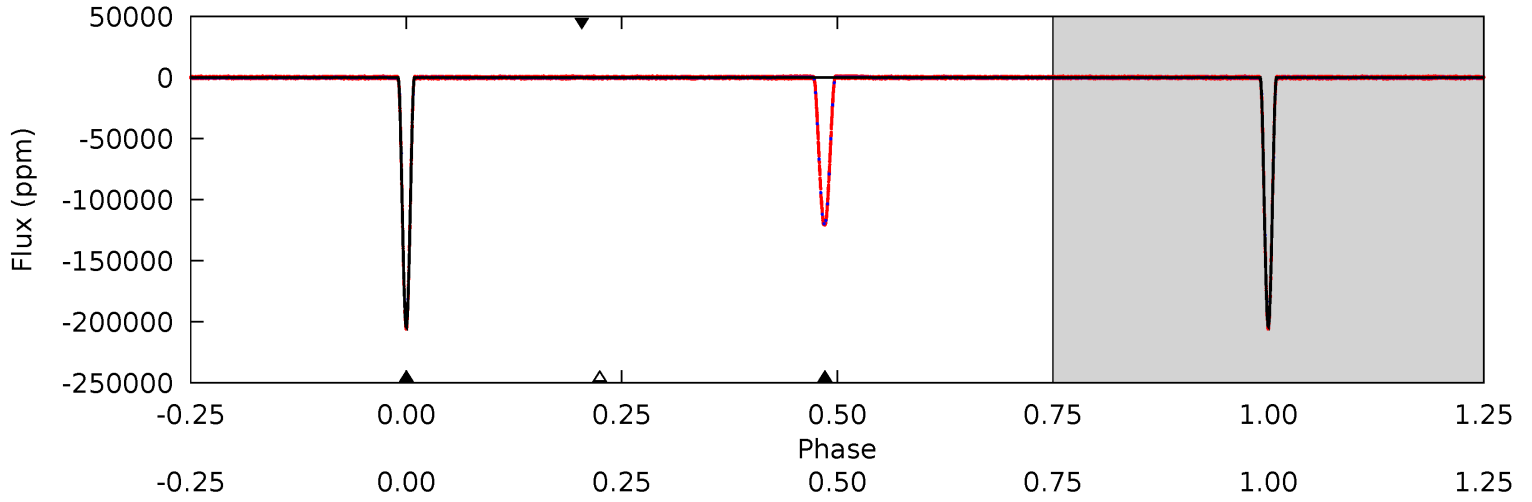
TCE 005393558-01 P= 10.217057 Days $T_0=137.250333$ (BKJD)



DV Model-Shift Uniqueness Test

005393558-01, P = 10.217119 Days, E = 127.028883 Days

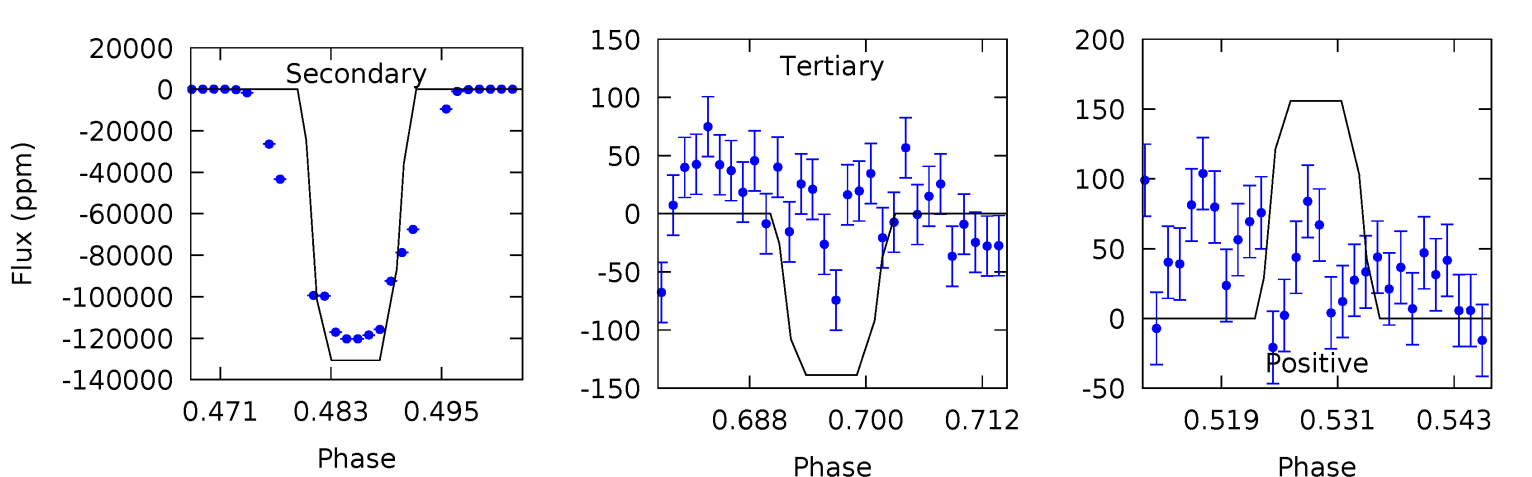
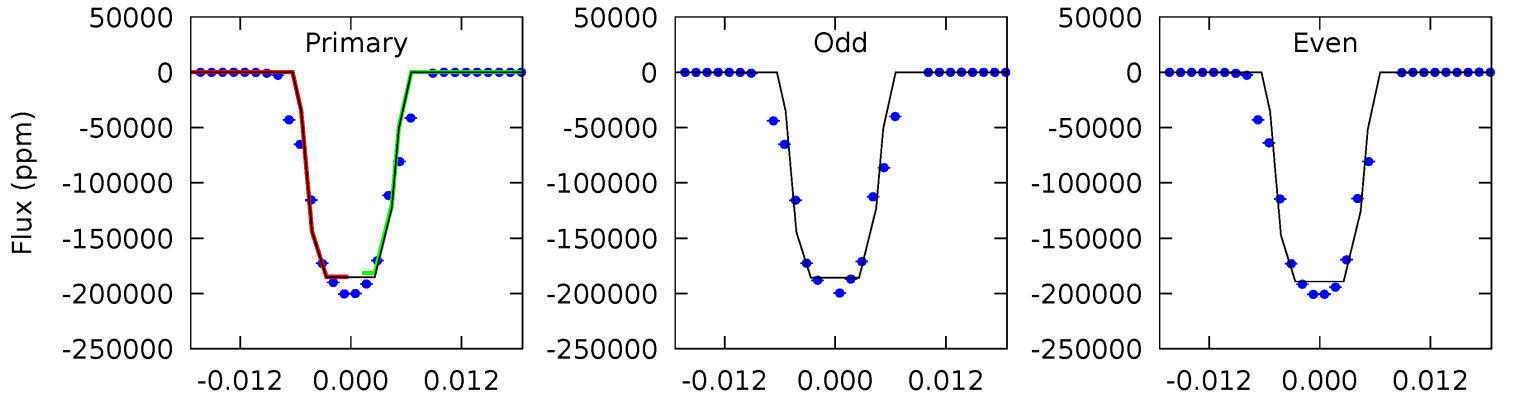
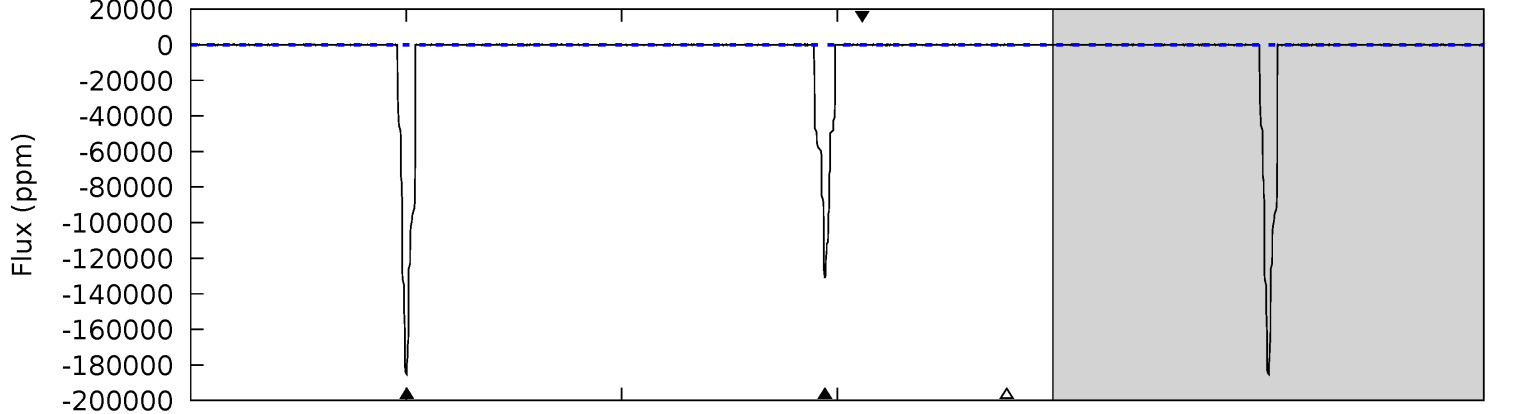
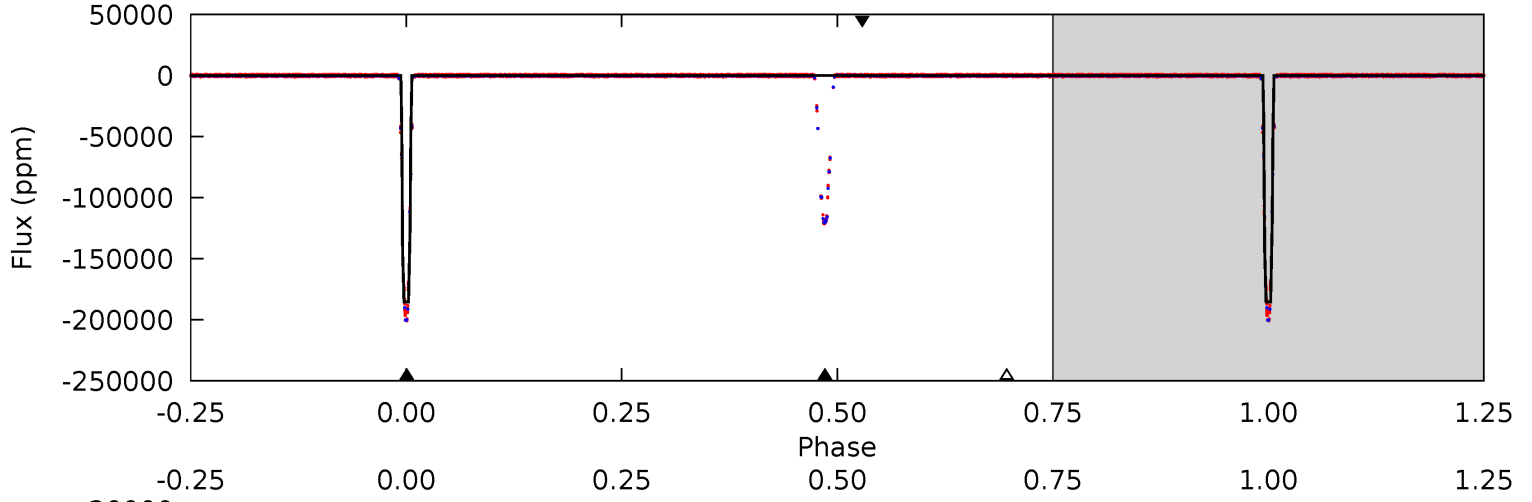
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18383	13461	7.75	5.89	4.90	2.33	6.03	18375	18377	13453	13455	16.3	1.00	0.00	0



Alt Model-Shift Uniqueness Test

005393558-01, P = 10.217057 Days, E = 127.033276 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5641	3979	4.22	4.74	4.99	2.51	6.30	5637	5636	3975	3975	54.5	1.00	0.00	0



Stellar Parameters For KIC 005393558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5931^{+158}_{-193}	$4.196^{+0.246}_{-0.164}$	$0.000^{+0.250}_{-0.300}$	$1.349^{+0.367}_{-0.367}$	$1.042^{+0.152}_{-0.138}$	$0.599^{+0.753}_{-0.292}$
	+3%/-3%	+6%/-4%	+inf%/-inf%	+27%/-27%	+15%/-13%	+126%/-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 005393558-01 / KOI 6576.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-149354 ± 11	$86.55^{+14.15}_{-12.17}$	1377^{+110}_{-105}	5054^{+124}_{-147}	112^{+38}_{-26}
Alt.	-130675 ± 33	$65.56^{+11.07}_{-9.30}$	1372^{+104}_{-105}	5496^{+175}_{-162}	169^{+57}_{-40}

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

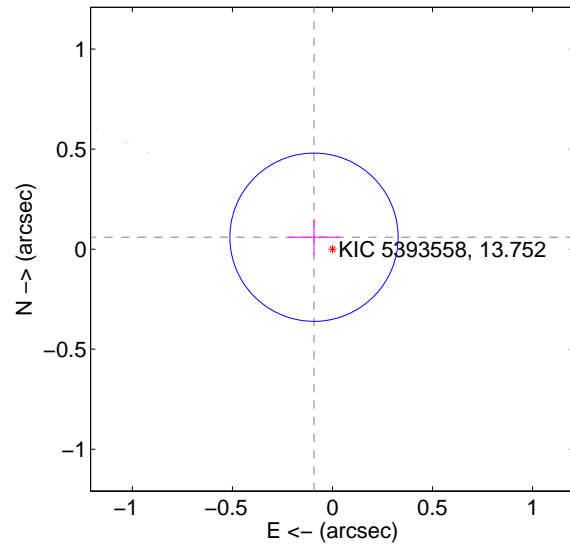
Supplemental centroid analysis for 005393558-01. Kepler magnitude: 13.75. Transit SNR 7480.57

There are 17 quarters with good PRF difference image offsets

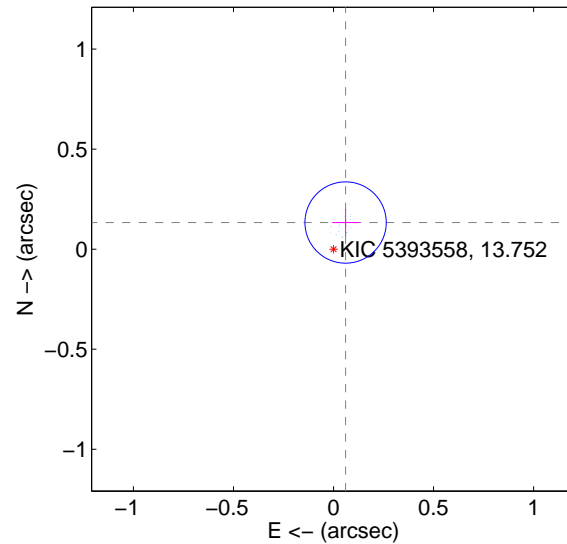
The direct PRF centroid is offset from the target star catalog position by about 1.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.110 ± 0.140	0.78	0.092 ± 0.129	0.060 ± 0.087
PRF-fit source offset from KIC position	0.146 ± 0.068	2.16	-0.060 ± 0.067	0.133 ± 0.068
photometric centroid source offset	1.00 ± 0.00	962.37	-0.57 ± 0.00	-0.83 ± 0.00

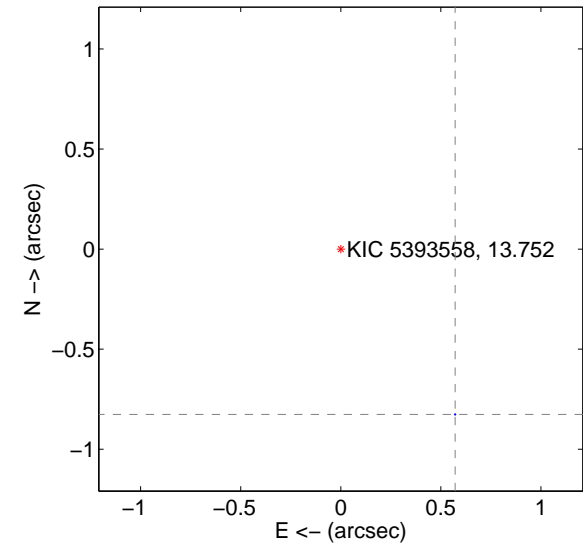
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

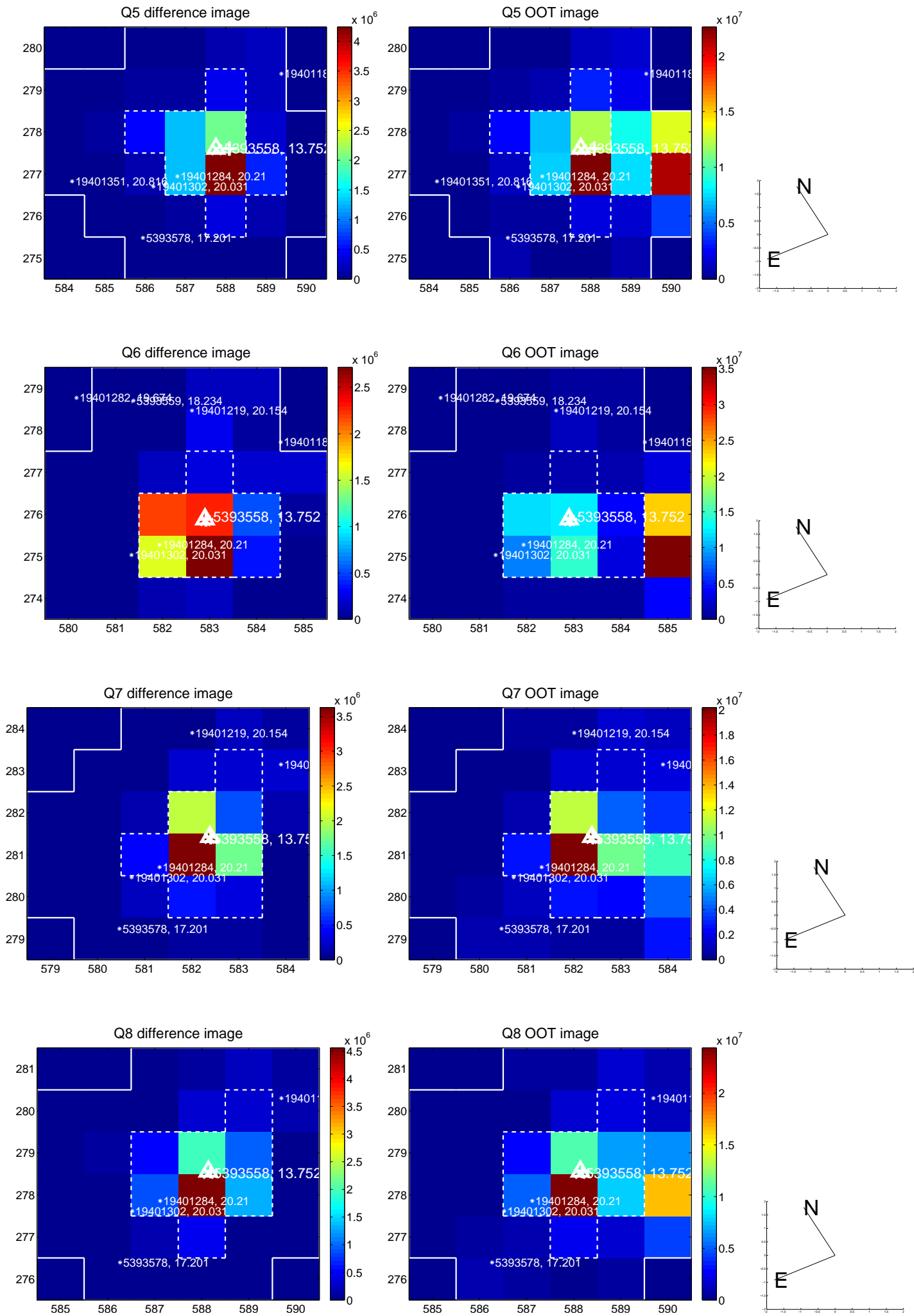


offset from photometric centroids

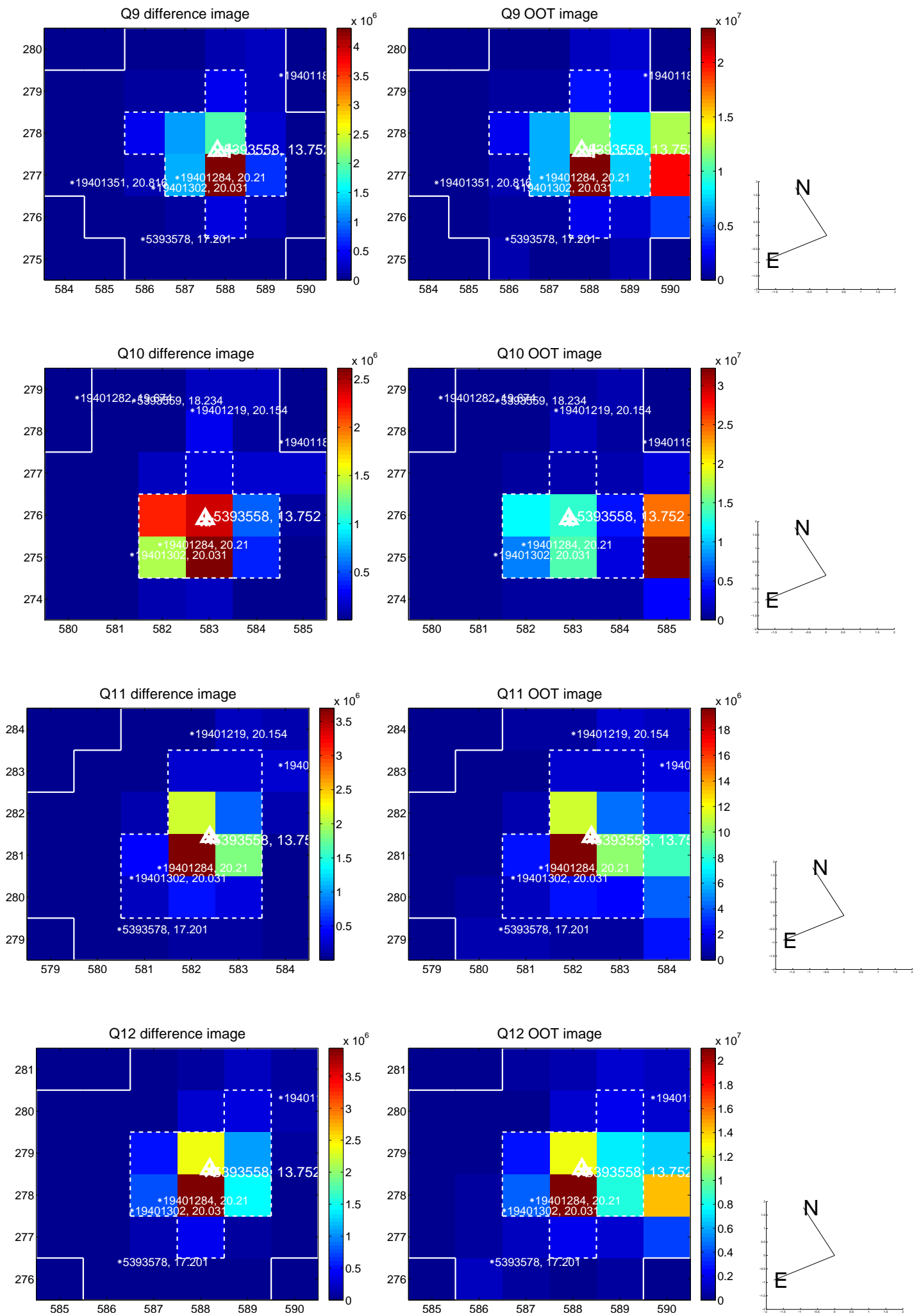


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

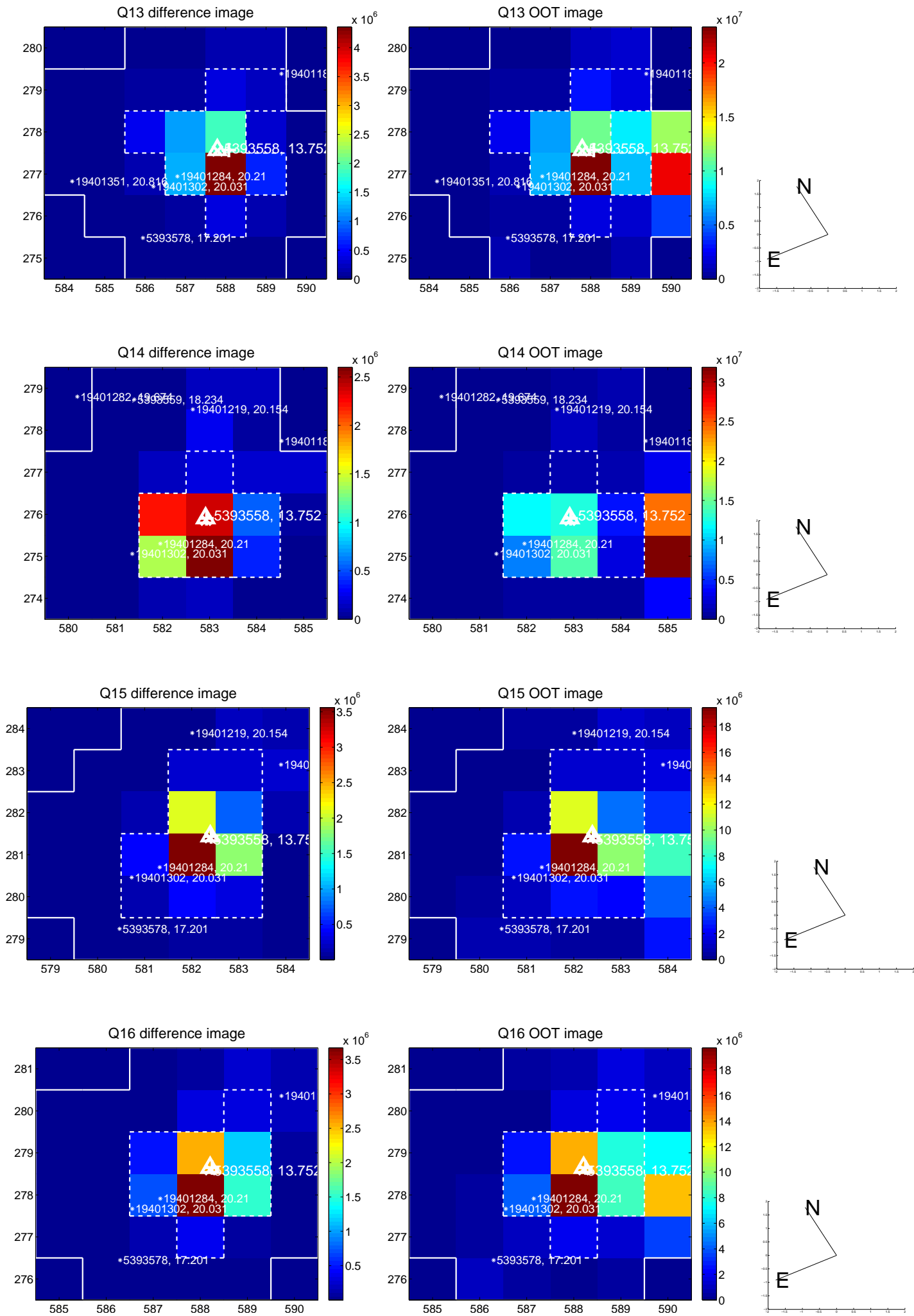
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



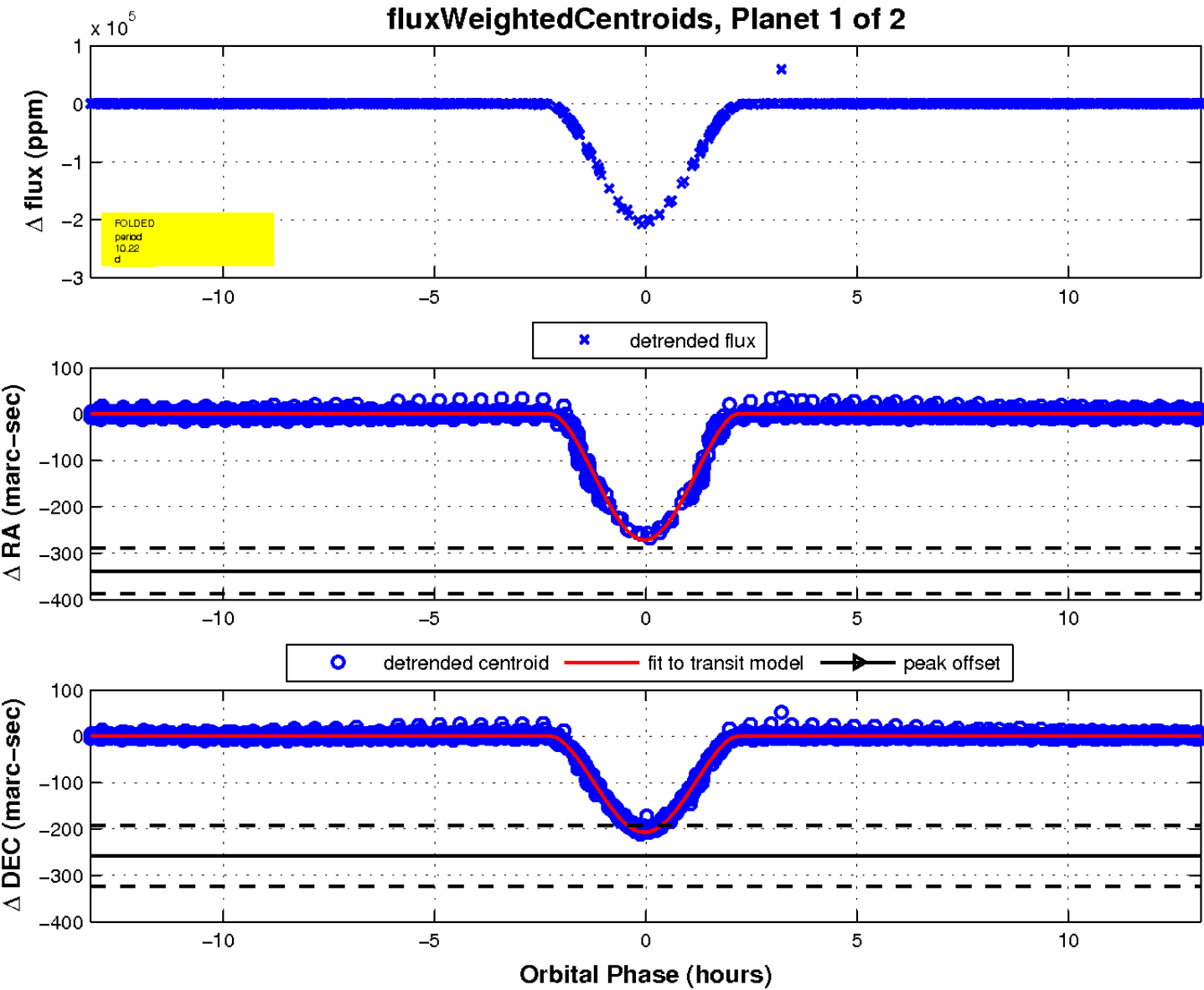
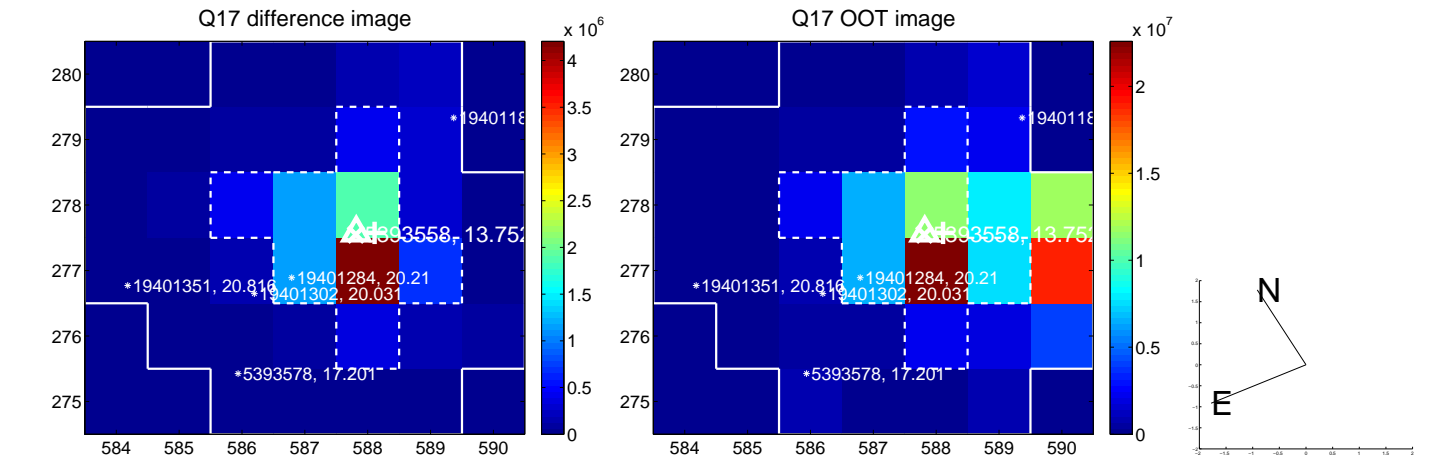
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

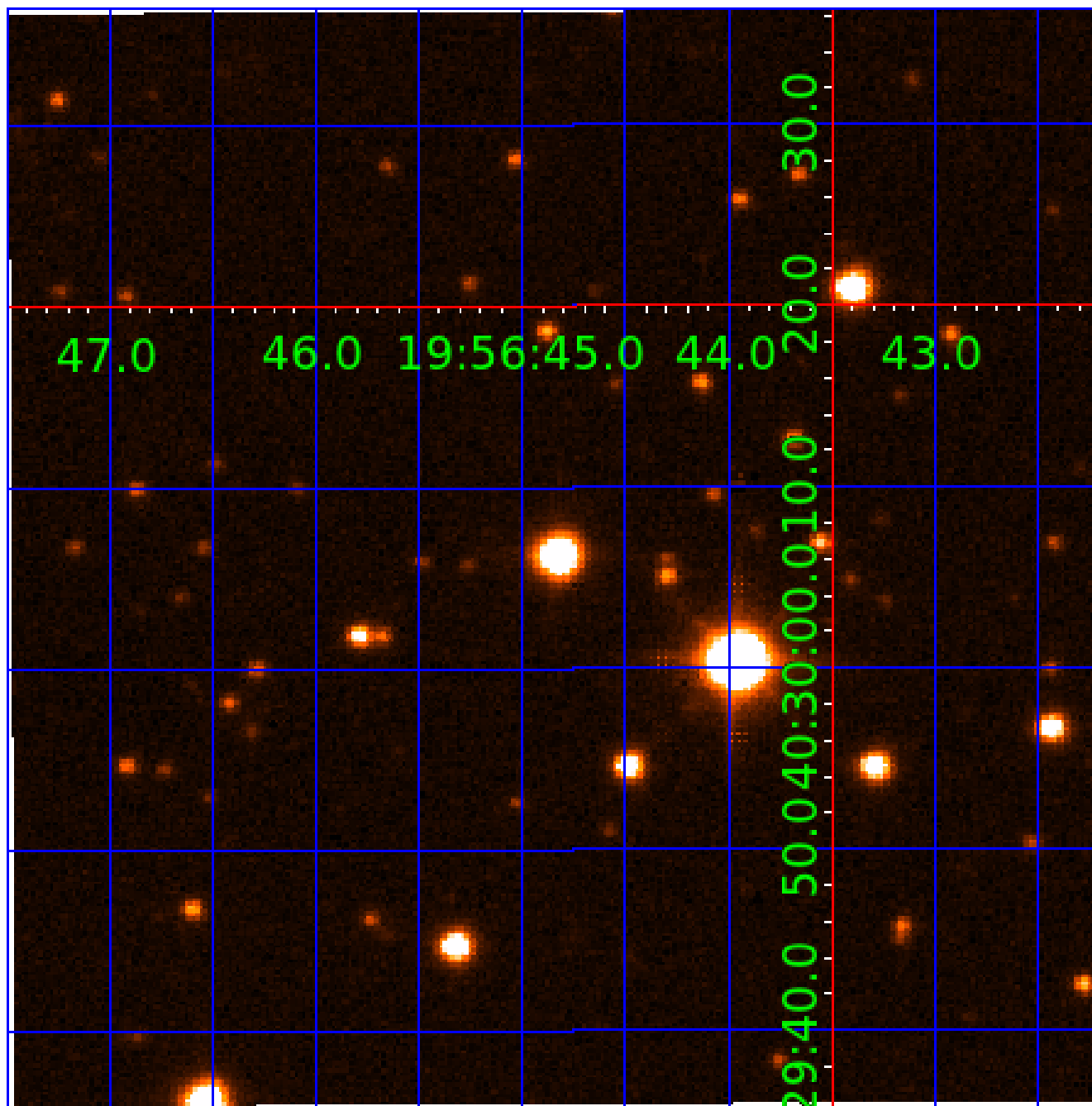


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005393558

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})
005393558-01	OBS	6576.01	10.217119	137.246002	203992.1	4.379	12182.6	7480.6	1.35	5931	87.62	231.02
005393558-02	OBS	No	10.217169	131.980966	83568.7	3.500	7958.9	-1.0	1.35	5931	38.96	231.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005393558-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005393558-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS

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

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

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

Ephemeris Match Information For 005393558-02

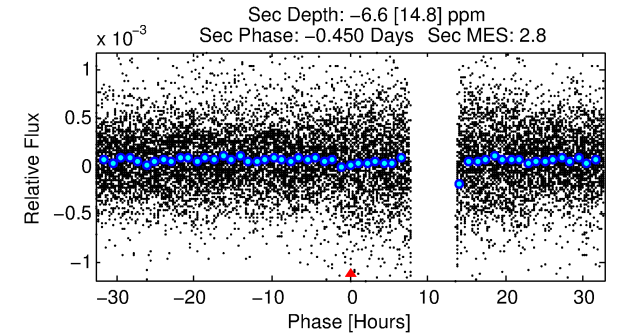
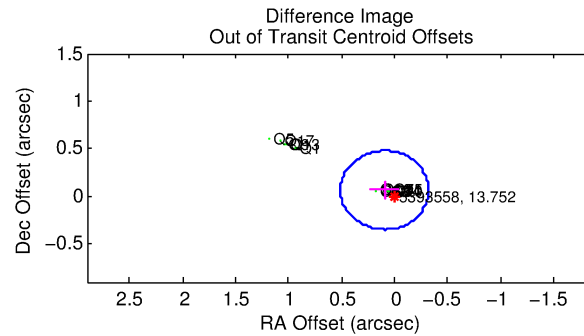
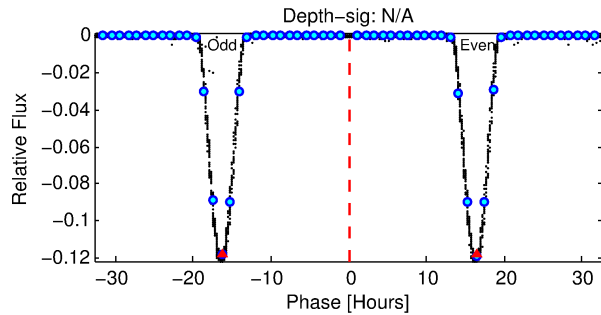
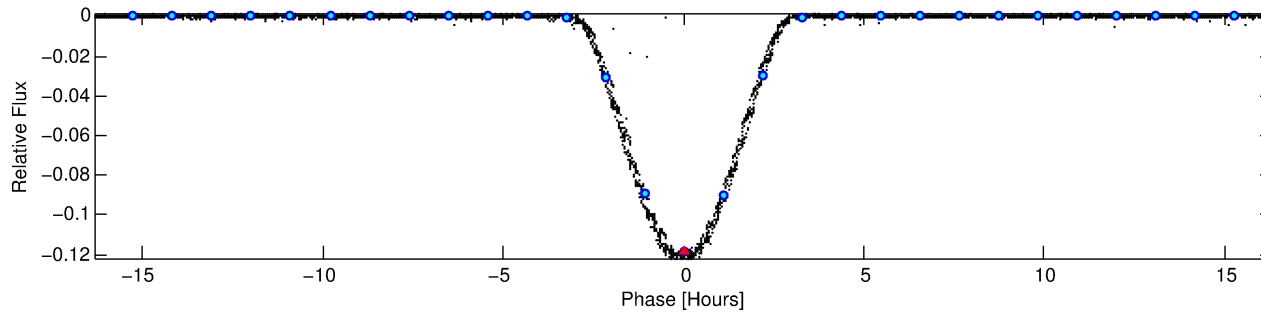
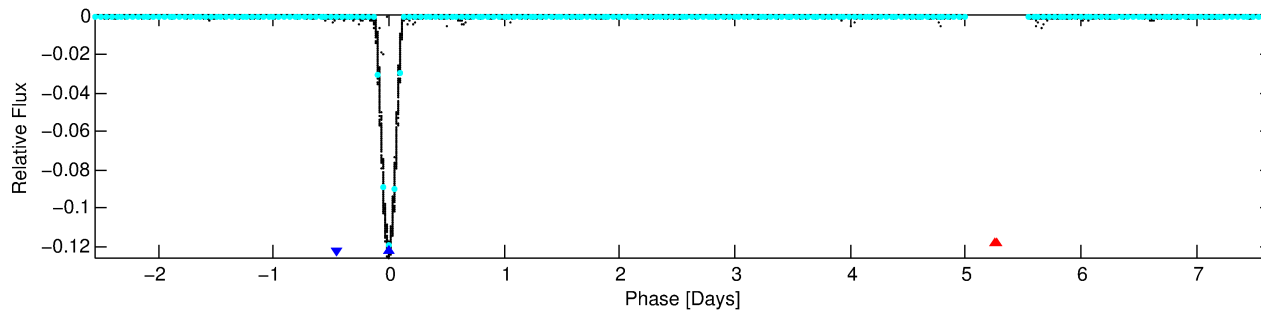
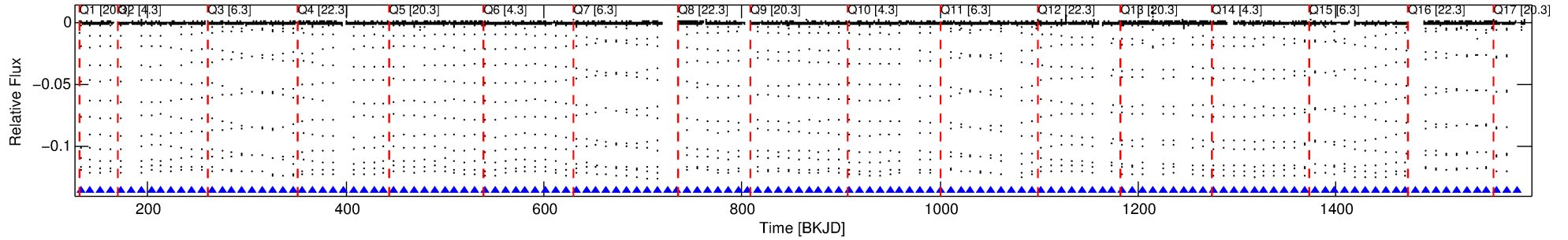
No Significant Match Found

DV One-Page Summary

KIC: 5393558 Candidate: 2 of 2 Period: 10.217 d

KOI: K06576 Corr: No Ephemeris Match

Kp: 13.75 R*: 1.35 Rs Teff: 5931.0 K Logg: 4.20 Fe/H: 0.000



TPS TCE Results:

Period = 10.21717 d
Epoch = 131.9810 BKJD

DV fit results are unavailable

DV Diagnostic Results:

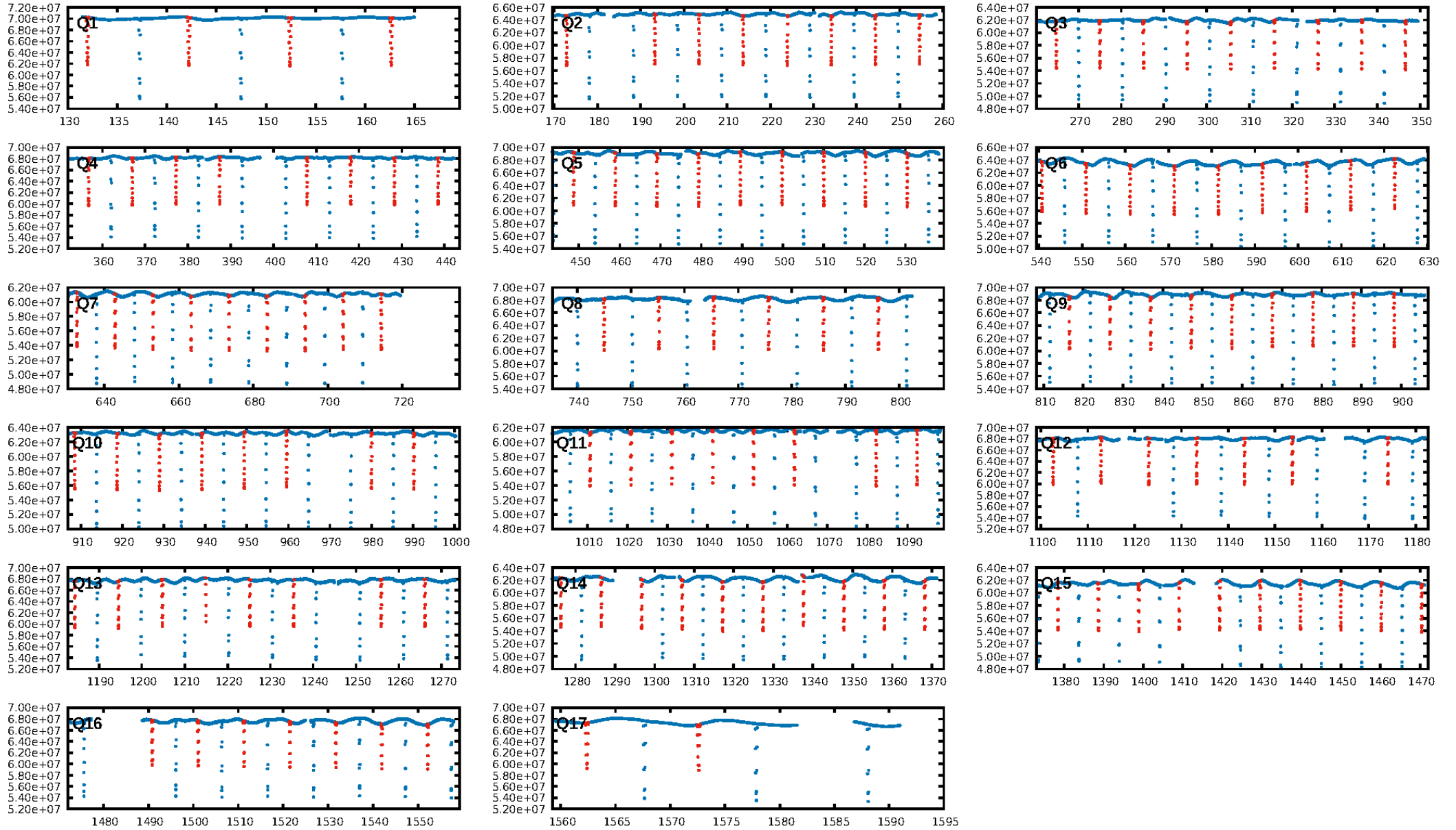
ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [125/125]
GhostDiagnostic-chr: 3.576

Centroid-sig: 0.0%
Centroid-so: 1.343 arcsec [933.81σ]
OotOffset-rm: 0.113 arcsec [0.82σ]
KicOffset-rm: 0.151 arcsec [2.24σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

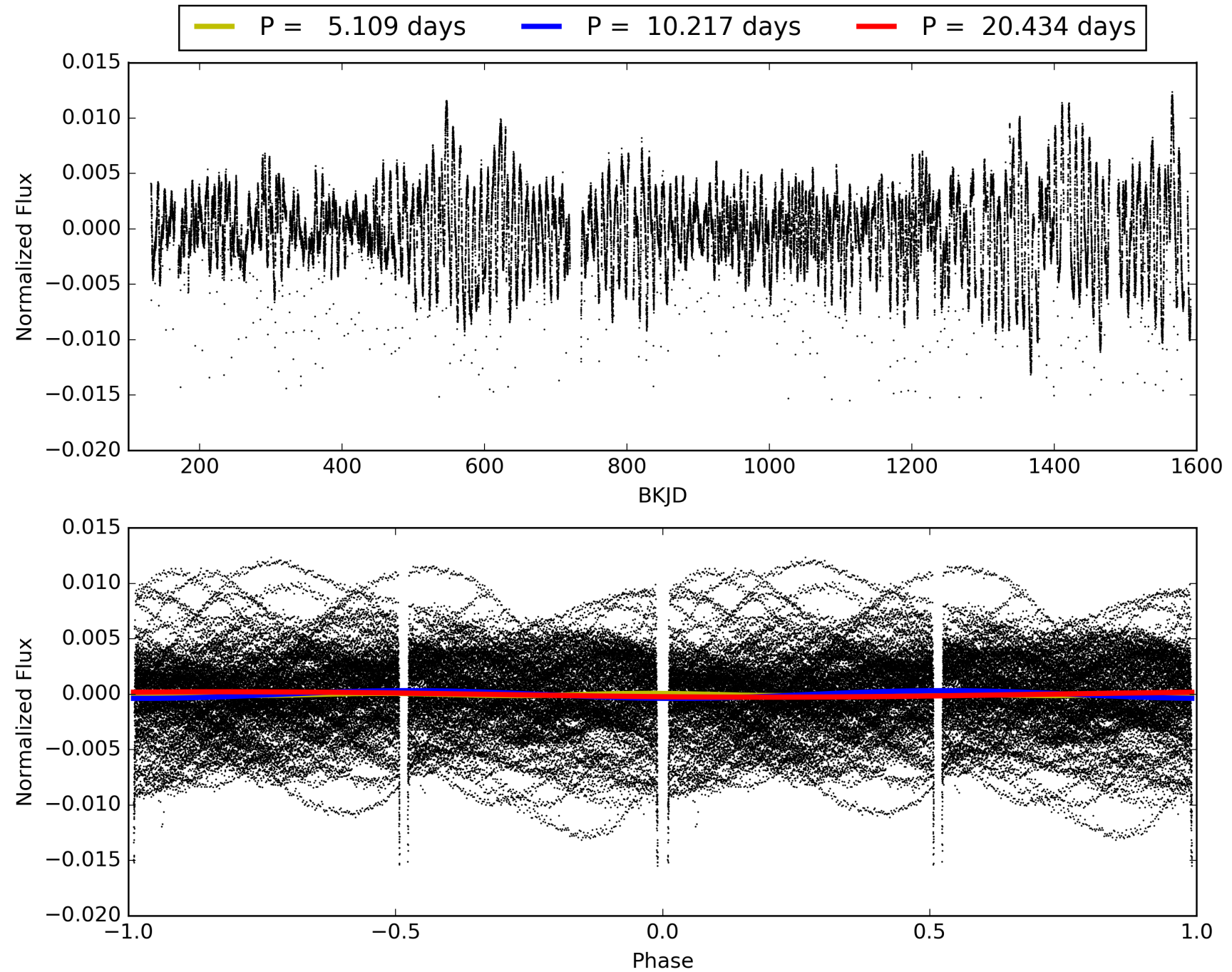
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:46:20 Z

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

TCE 005393558-02, PDC Light Curves

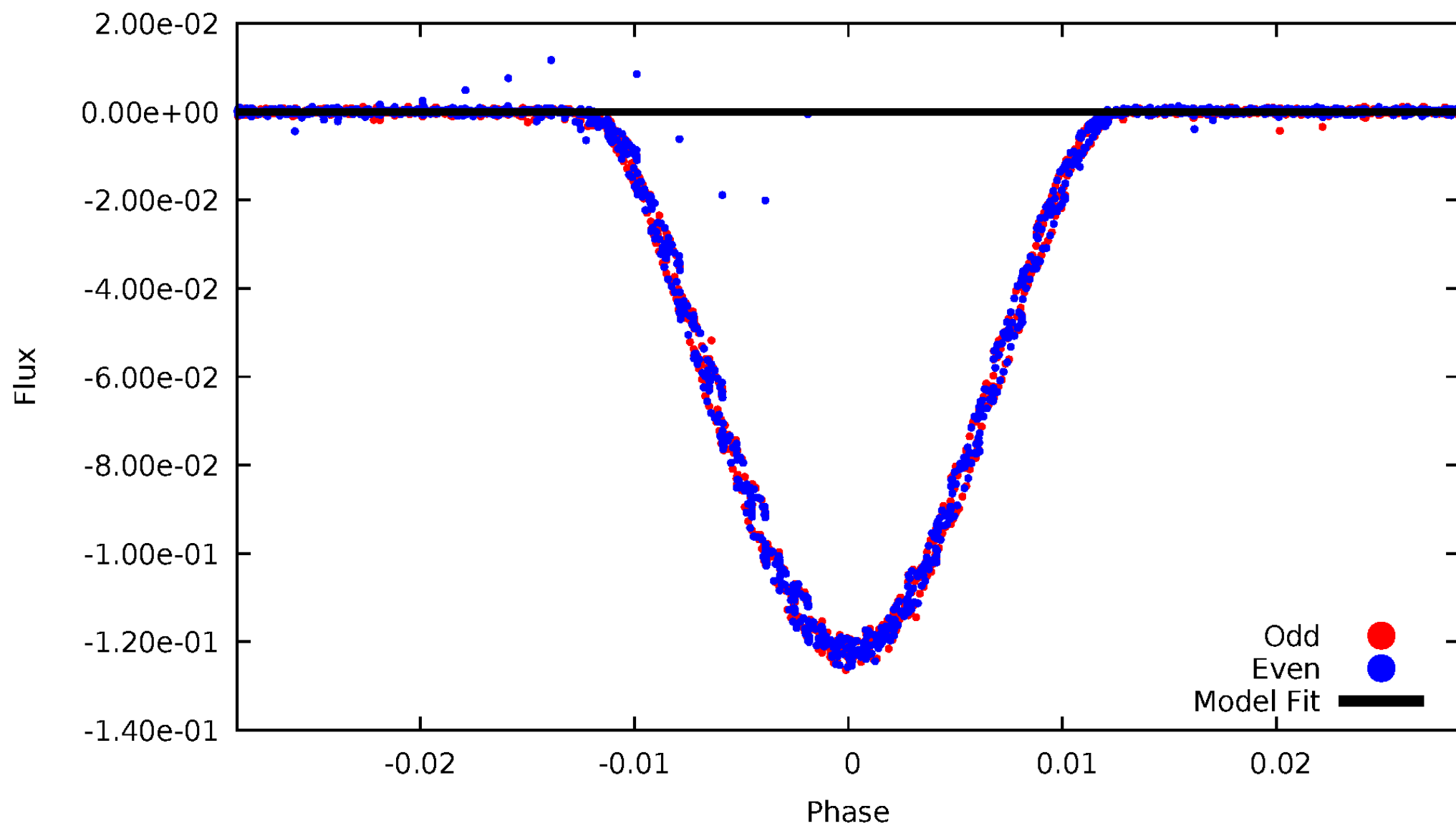


TCE 005393558-02



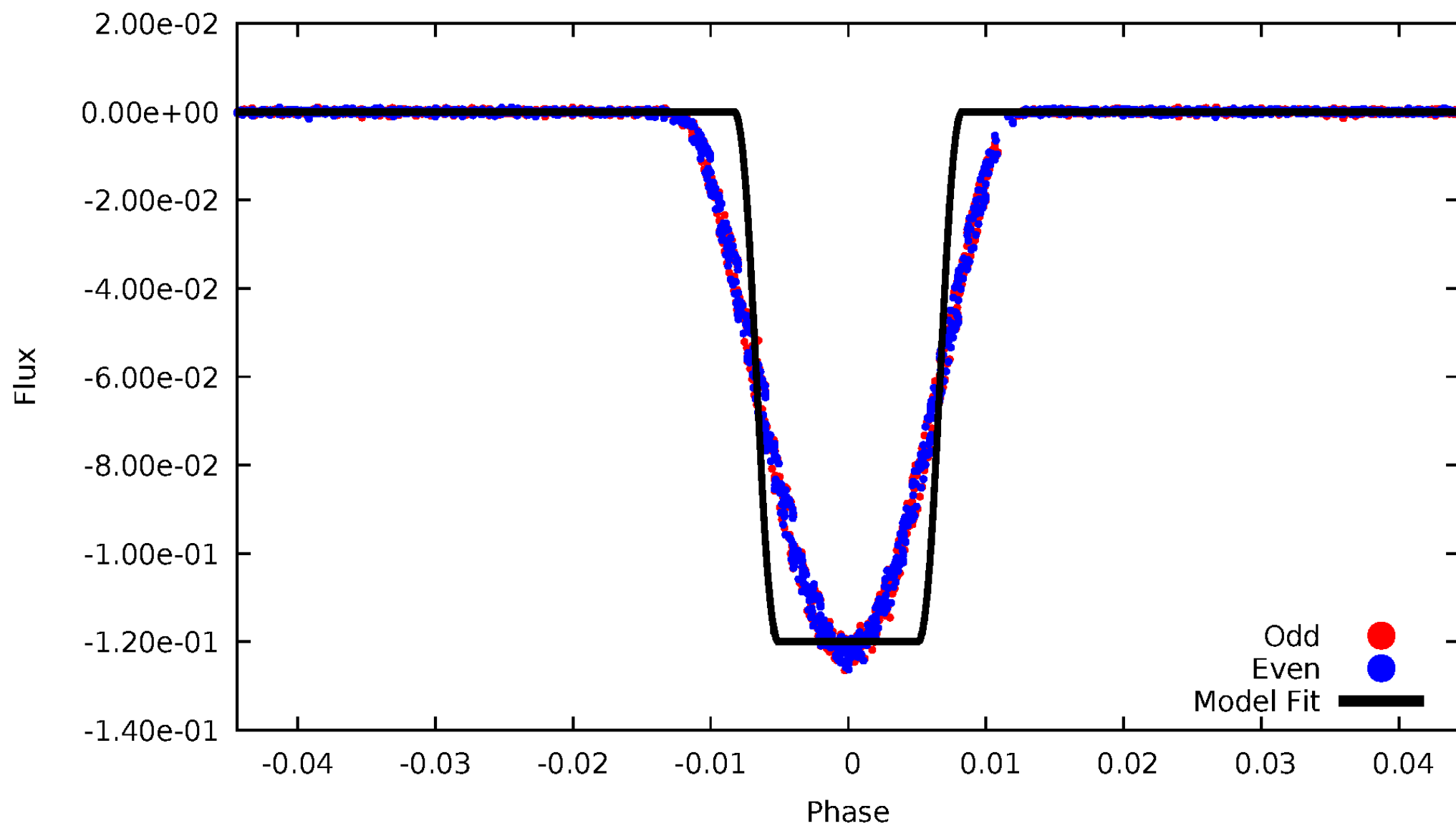
DV Odd/Even

TCE 005393558-02



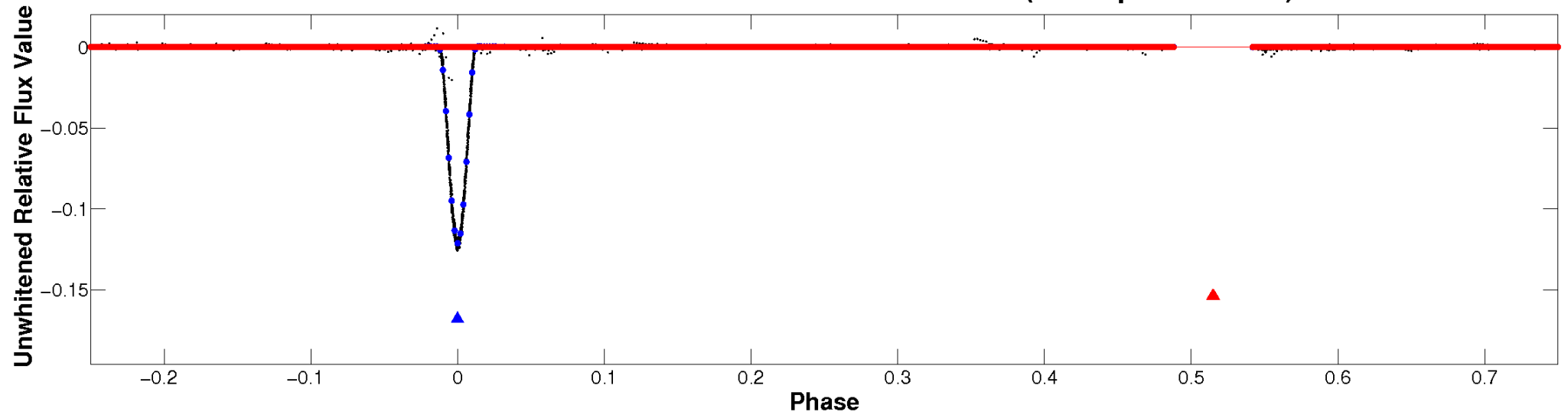
ALT Odd/Even

TCE 005393558-02



Non-Whitened Vs. Whitened Light Curve

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

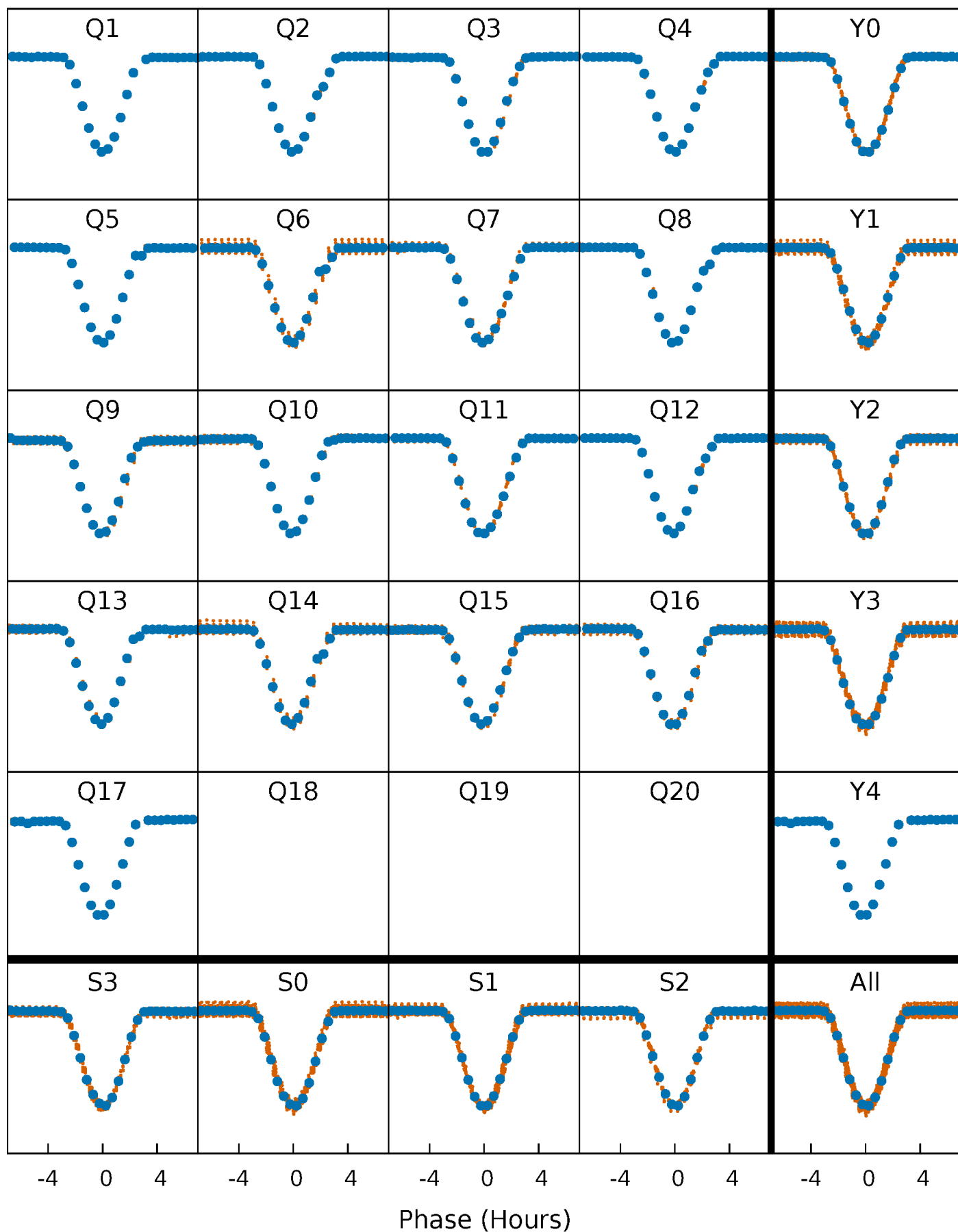


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



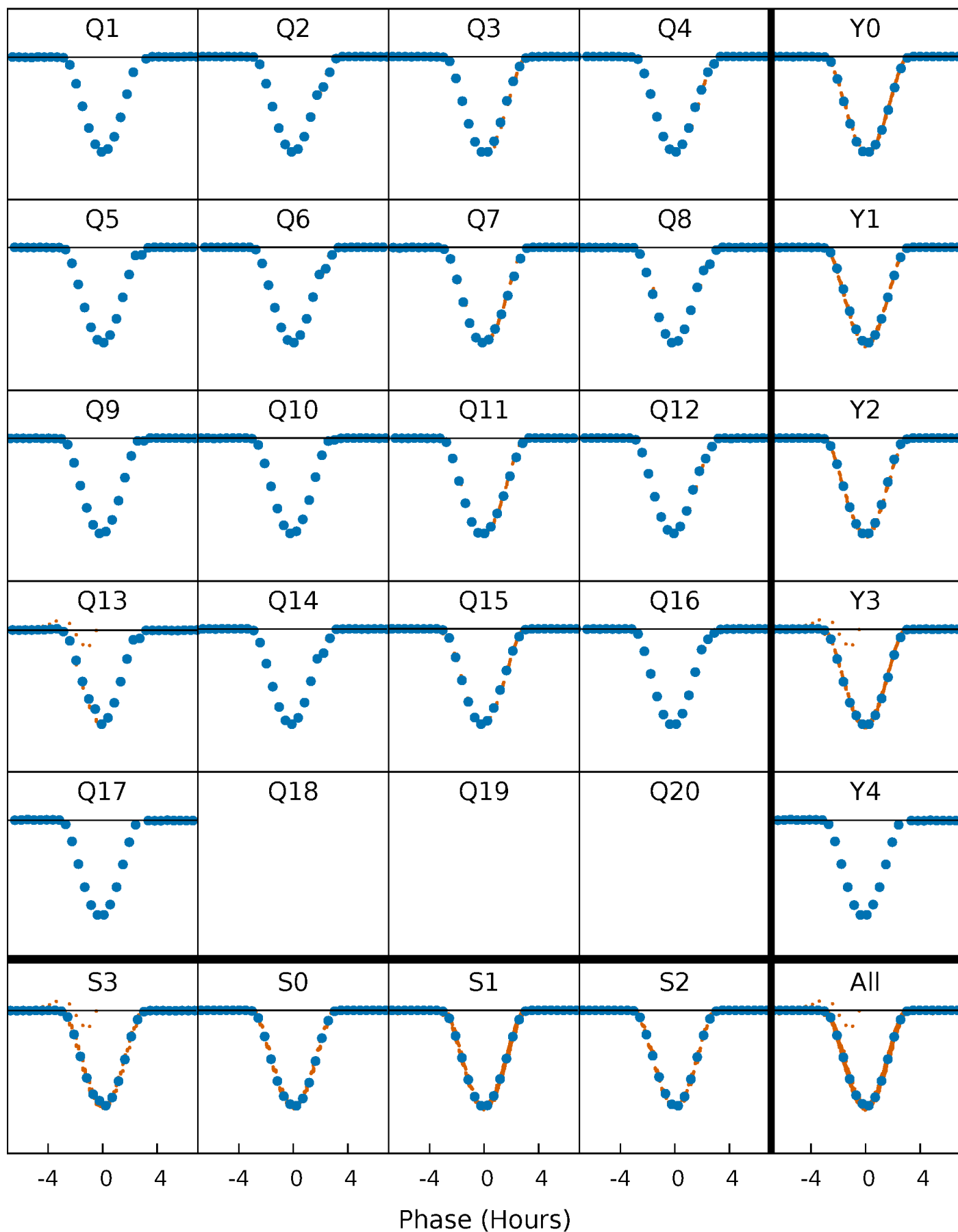
PDC Quarter-Phased Transit Curves

TCE 005393558-02 P= 10.217169 Days $T_0=131.980966$ (BKJD)



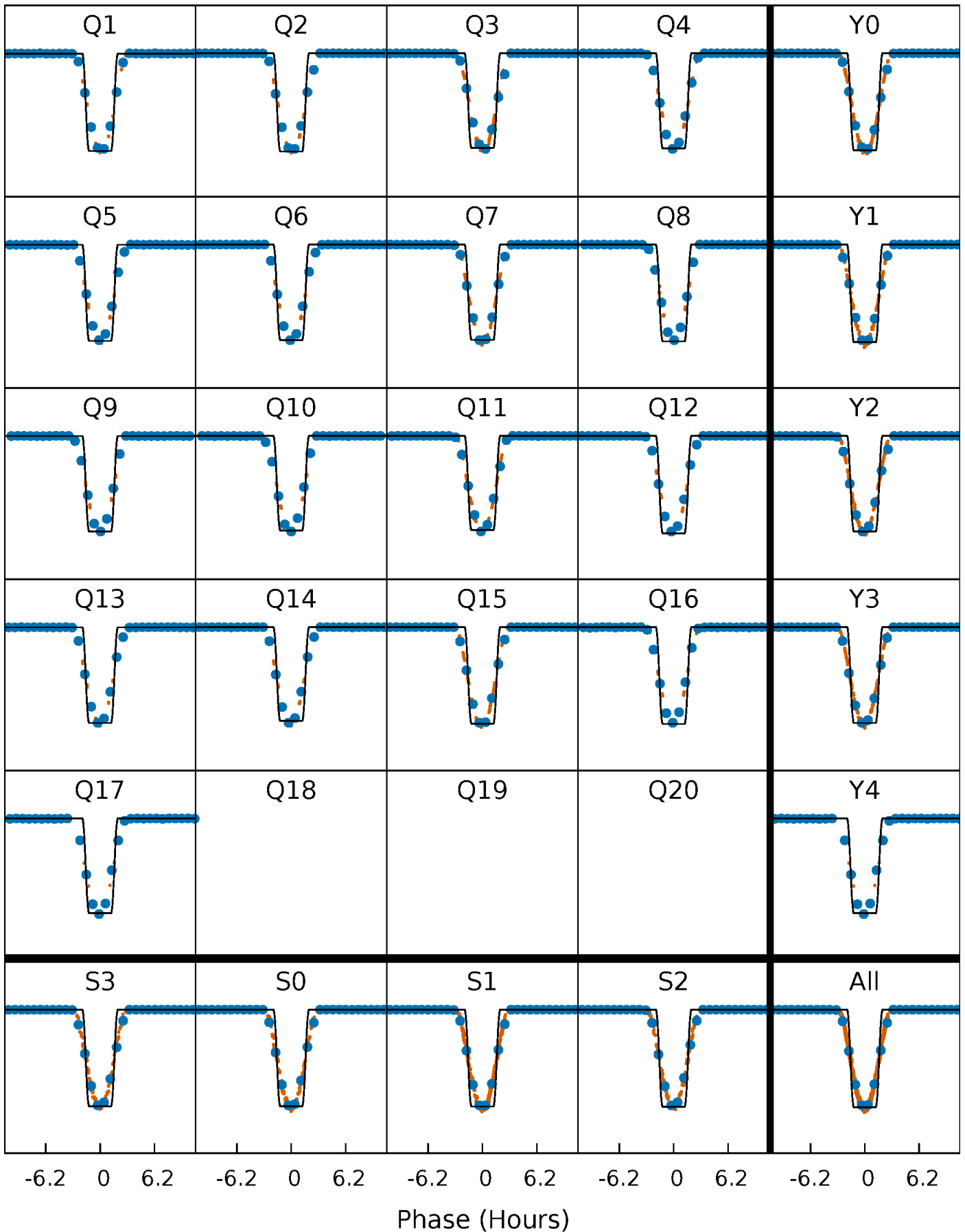
DV Quarter-Phased Transit Curves

TCE 005393558-02 P= 10.217169 Days $T_0=131.980966$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

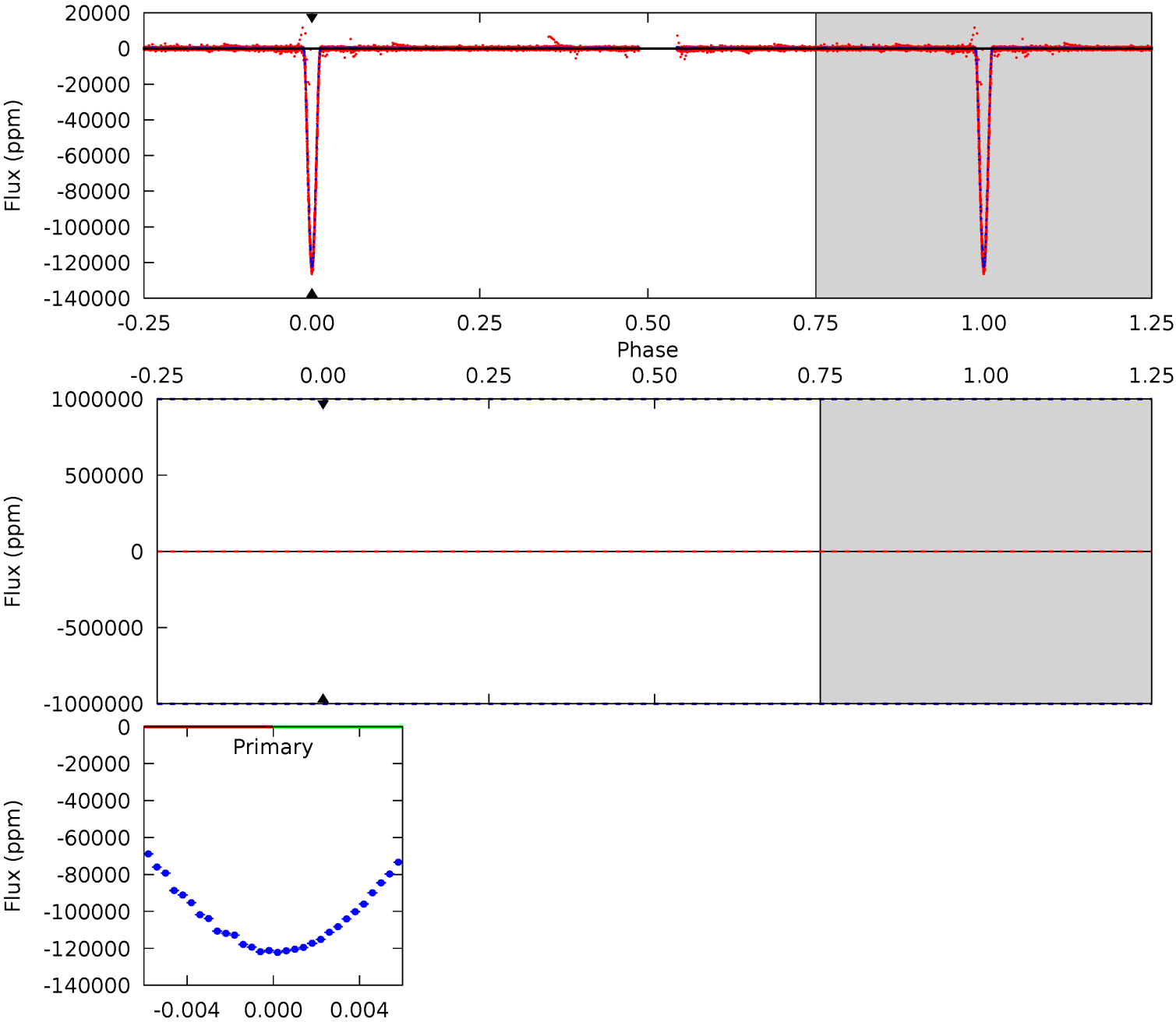
TCE 005393558-02 P= 10.217169 Days $T_0=131.982447$ (BKJD)



DV Model-Shift Uniqueness Test

005393558-02, P = 10.217169 Days, E = 121.763797 Days

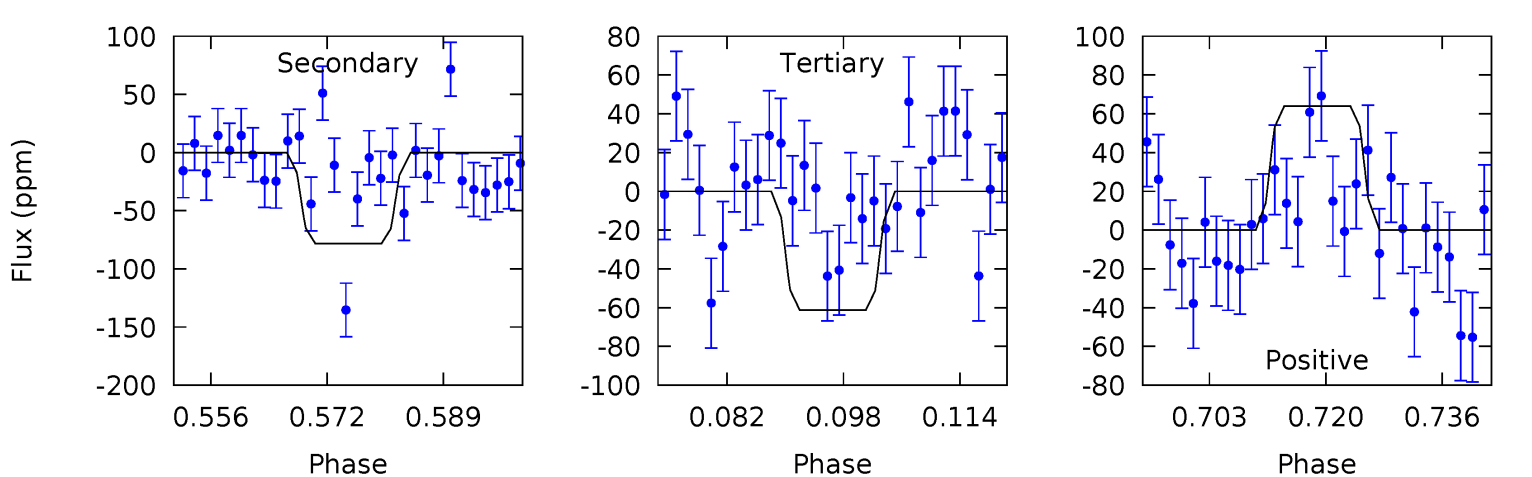
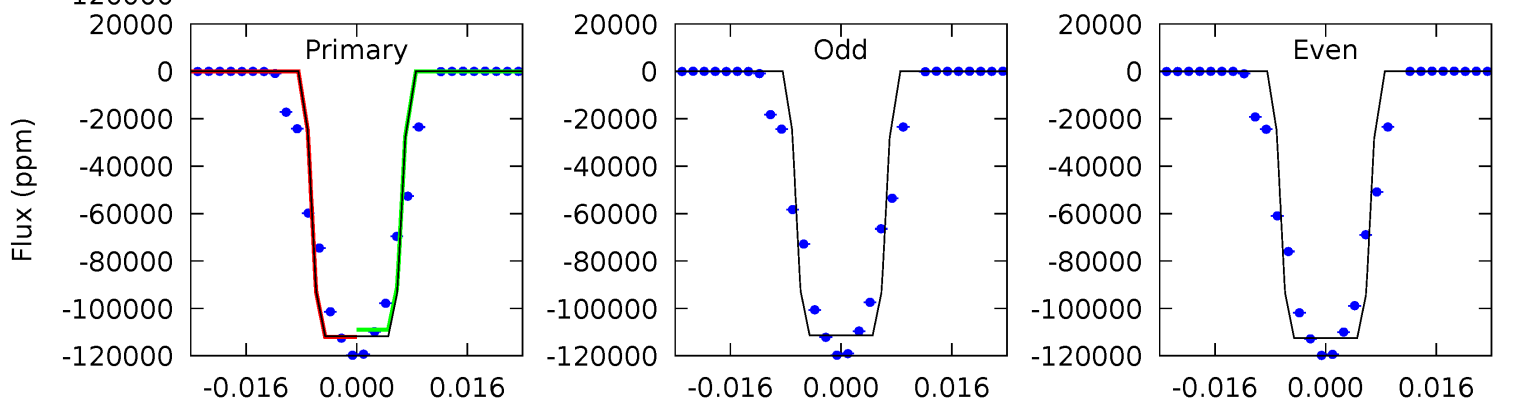
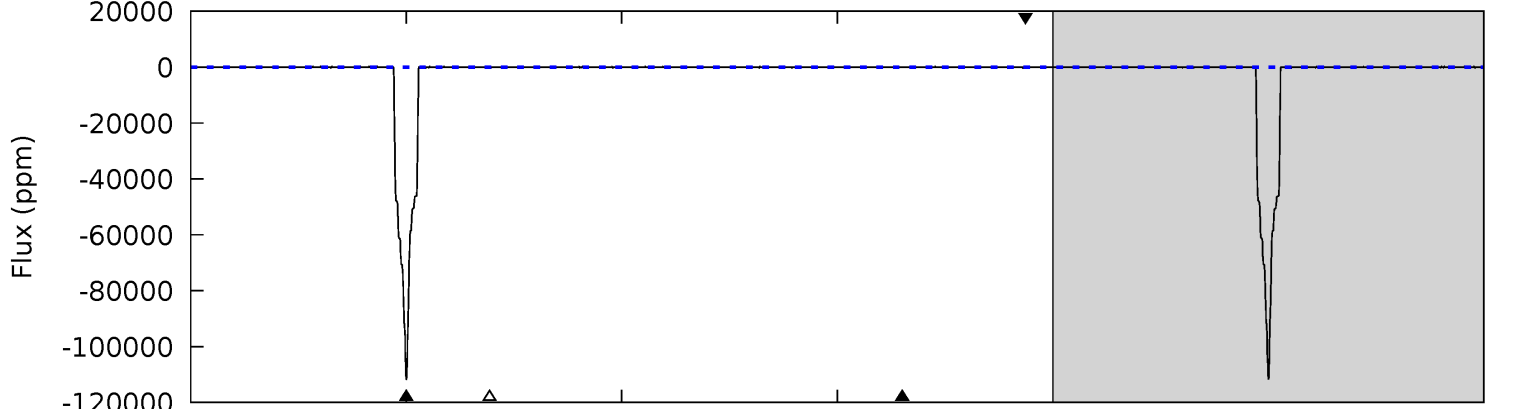
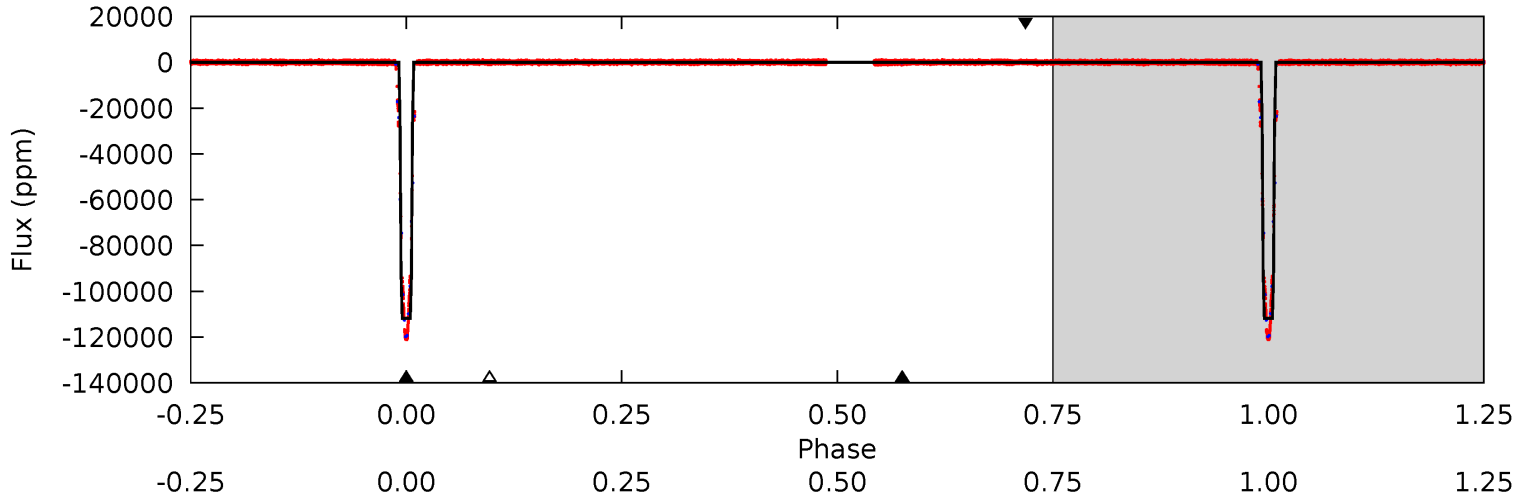
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005393558-02, P = 10.217169 Days, E = 121.765278 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6581	4.60	3.60	3.76	4.93	2.40	0.99	6578	6577	1.00	0.84	34.5	1.00	0.00	0



Stellar Parameters For KIC 005393558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5931^{+158}_{-193}	$4.196^{+0.246}_{-0.164}$	$0.000^{+0.250}_{-0.300}$	$1.349^{+0.367}_{-0.367}$	$1.042^{+0.152}_{-0.138}$	$0.599^{+0.753}_{-0.292}$
	+3%/-3%	+6%/-4%	+inf%/-inf%	+27%/-27%	+15%/-13%	+126%/-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 005393558-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$39.10^{+16.62}_{-15.76}$	1375^{+106}_{-103}	3037^{+3905}_{-9495}	$5.979^{+426.846}_{-319.922}$
Alt.	-78 ± 17	$48.48^{+17.37}_{-14.20}$	1374^{+105}_{-108}	-1942^{+3517}_{-123}	$0.155^{+0.163}_{-0.075}$

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 $A_{obs} \gg 1.0$

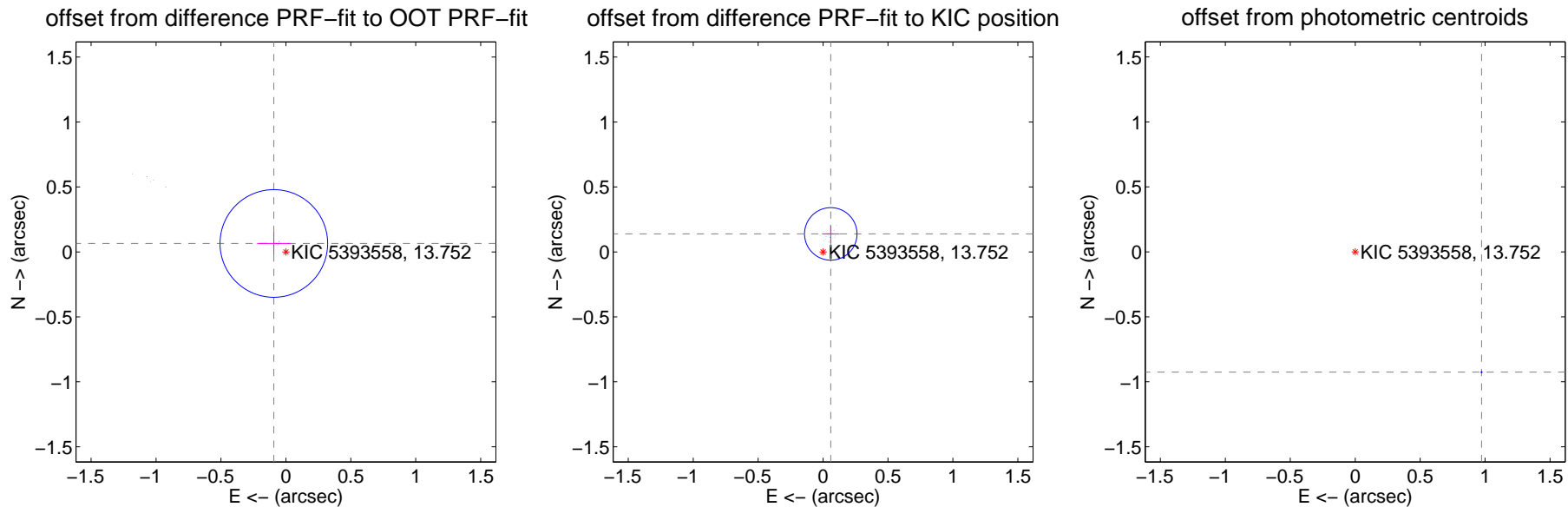
DV Centroid Data

Supplemental centroid analysis for 005393558-02. Kepler magnitude: 13.75. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

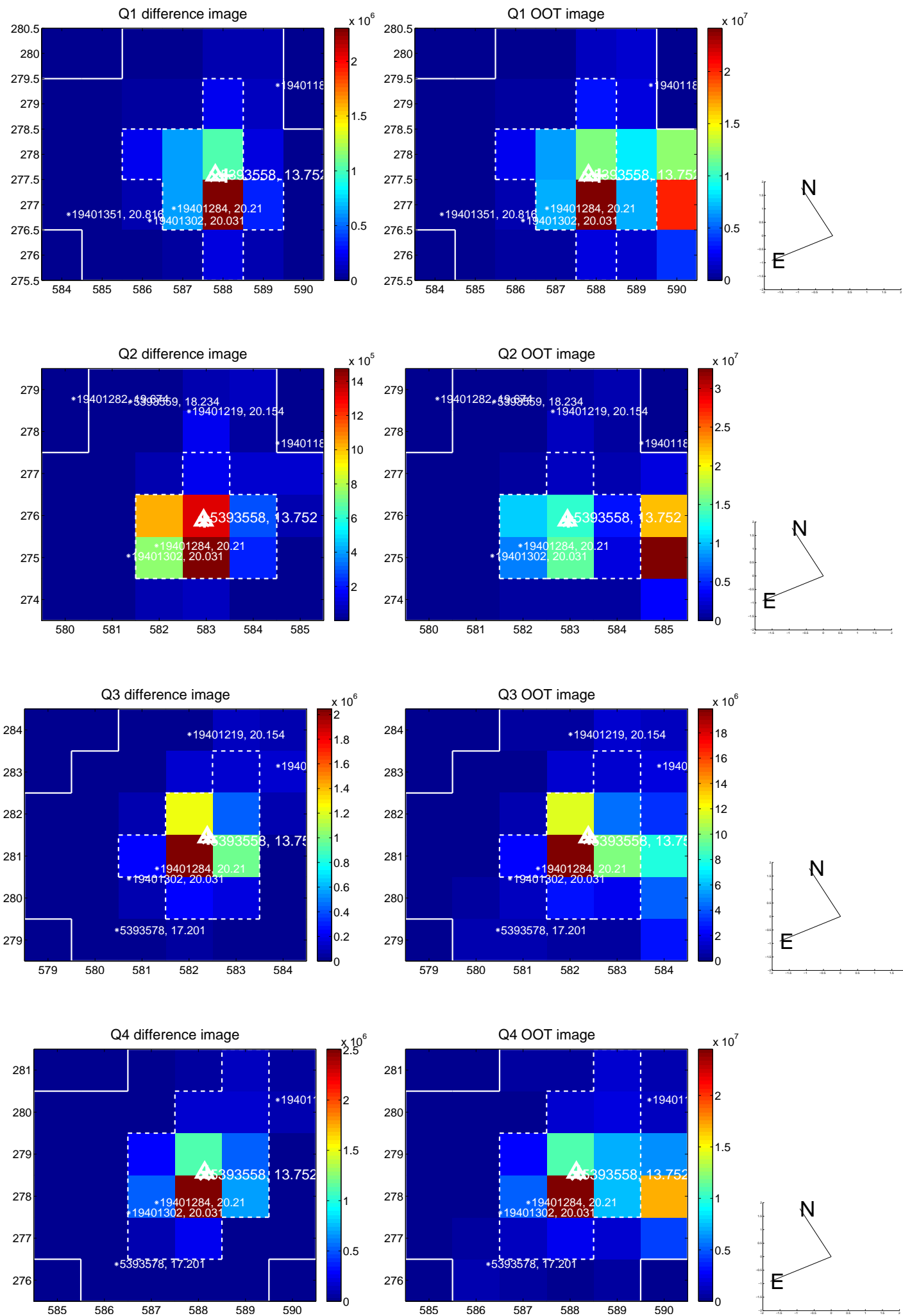
The direct PRF centroid is offset from the target star catalog position by about 1.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.113 ± 0.138	0.82	0.093 ± 0.128	0.065 ± 0.087
PRF-fit source offset from KIC position	0.151 ± 0.067	2.24	-0.059 ± 0.067	0.139 ± 0.067
photometric centroid source offset	1.34 ± 0.00	933.81	-0.97 ± 0.00	-0.93 ± 0.00

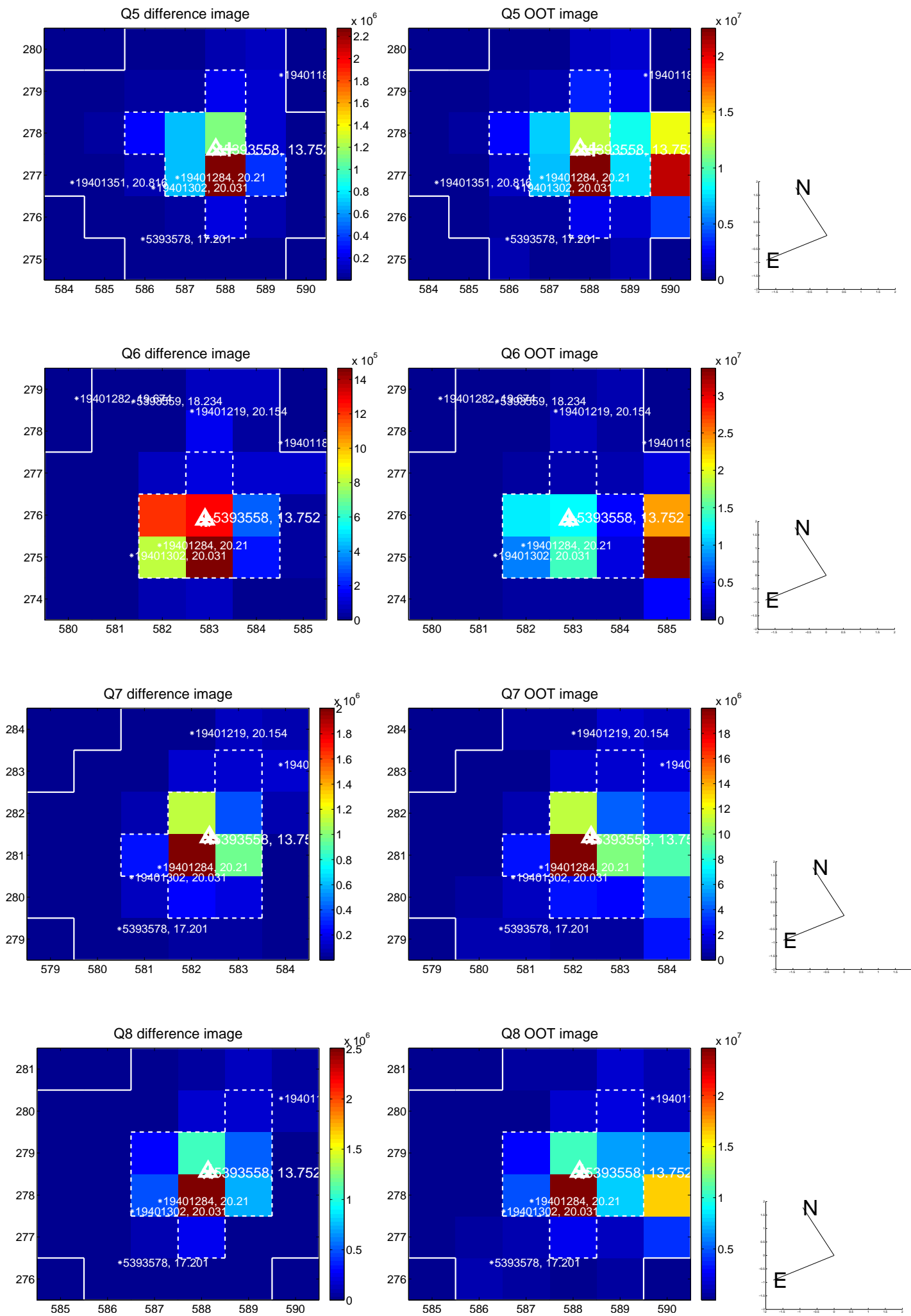


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

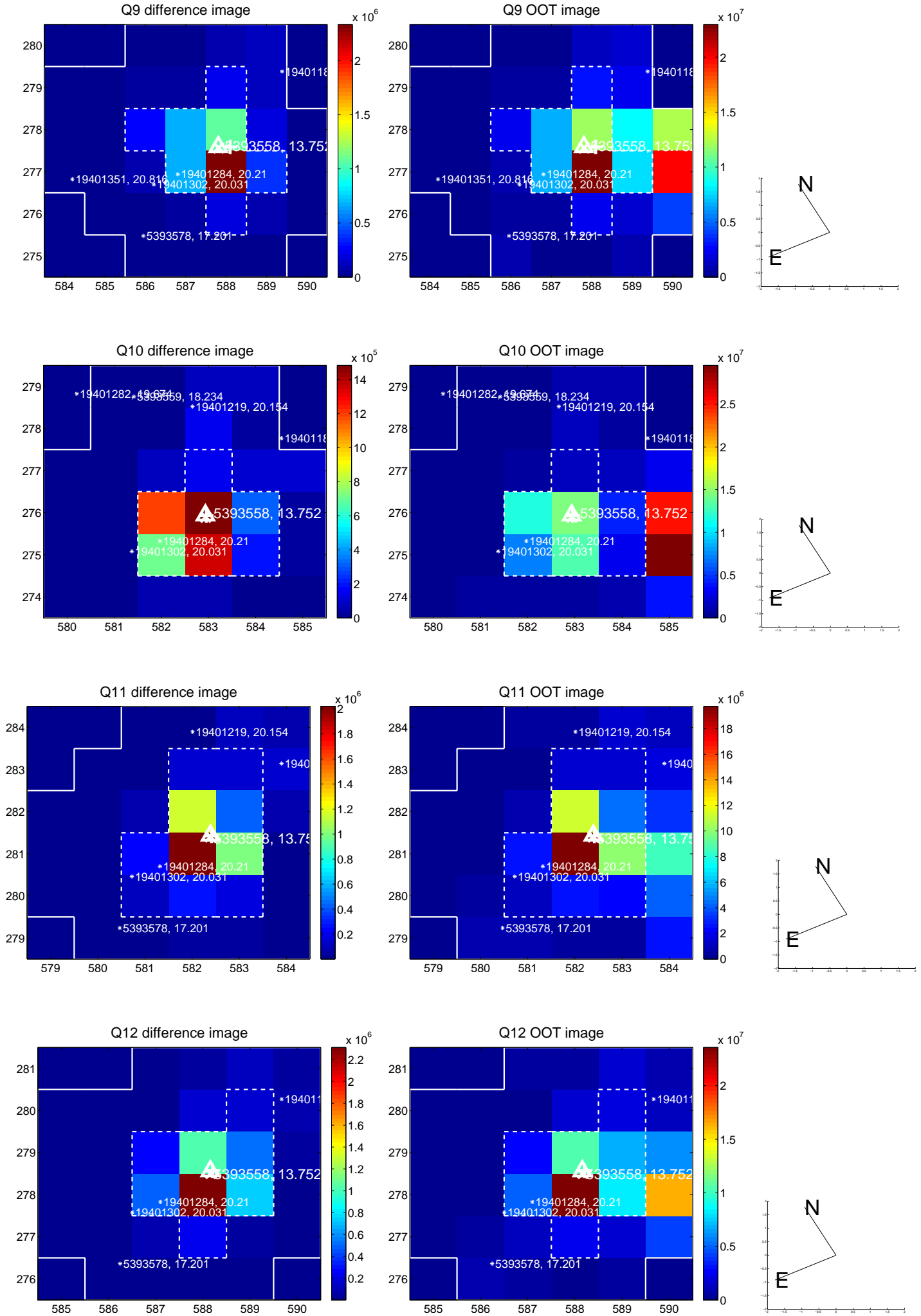
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



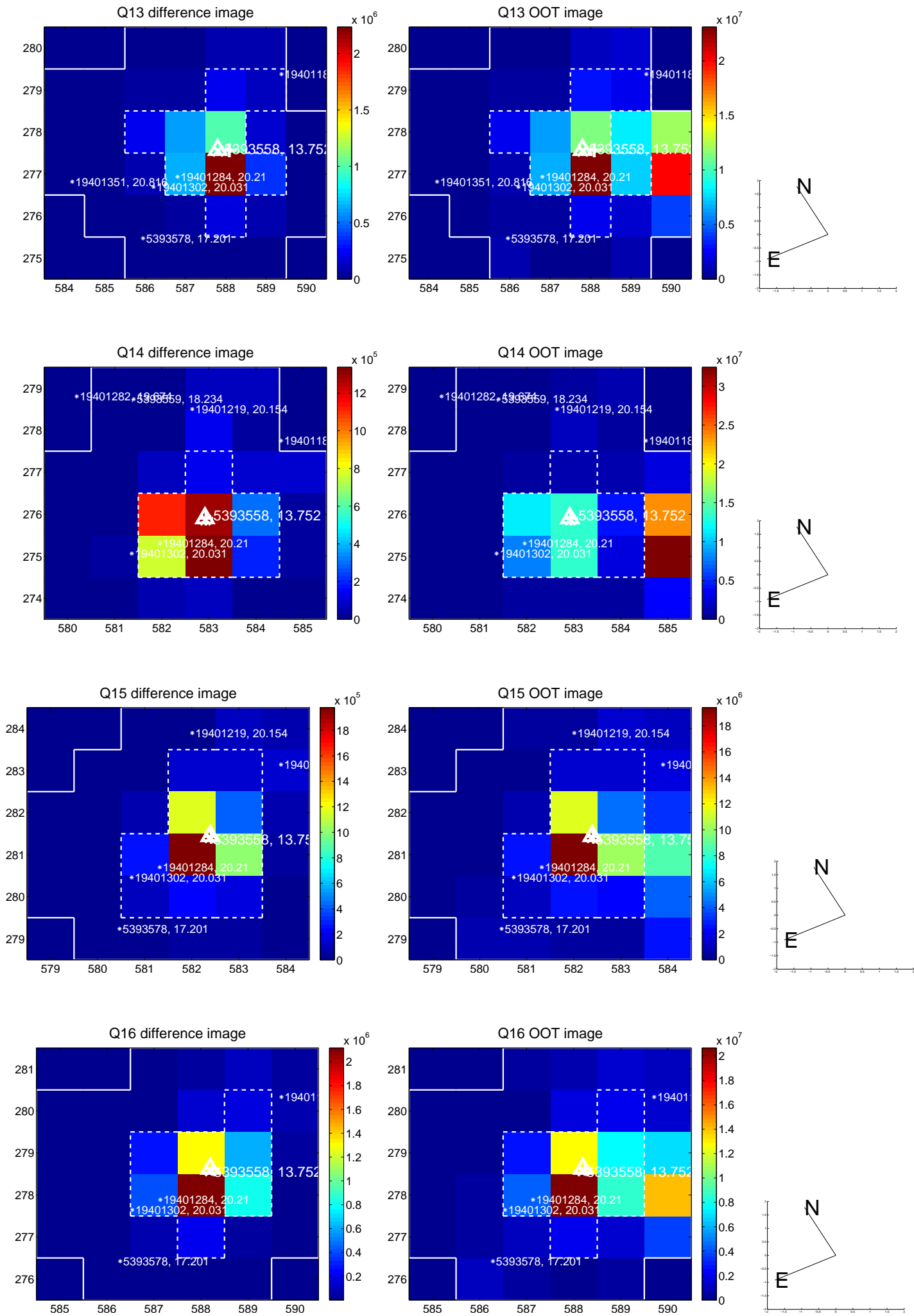
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



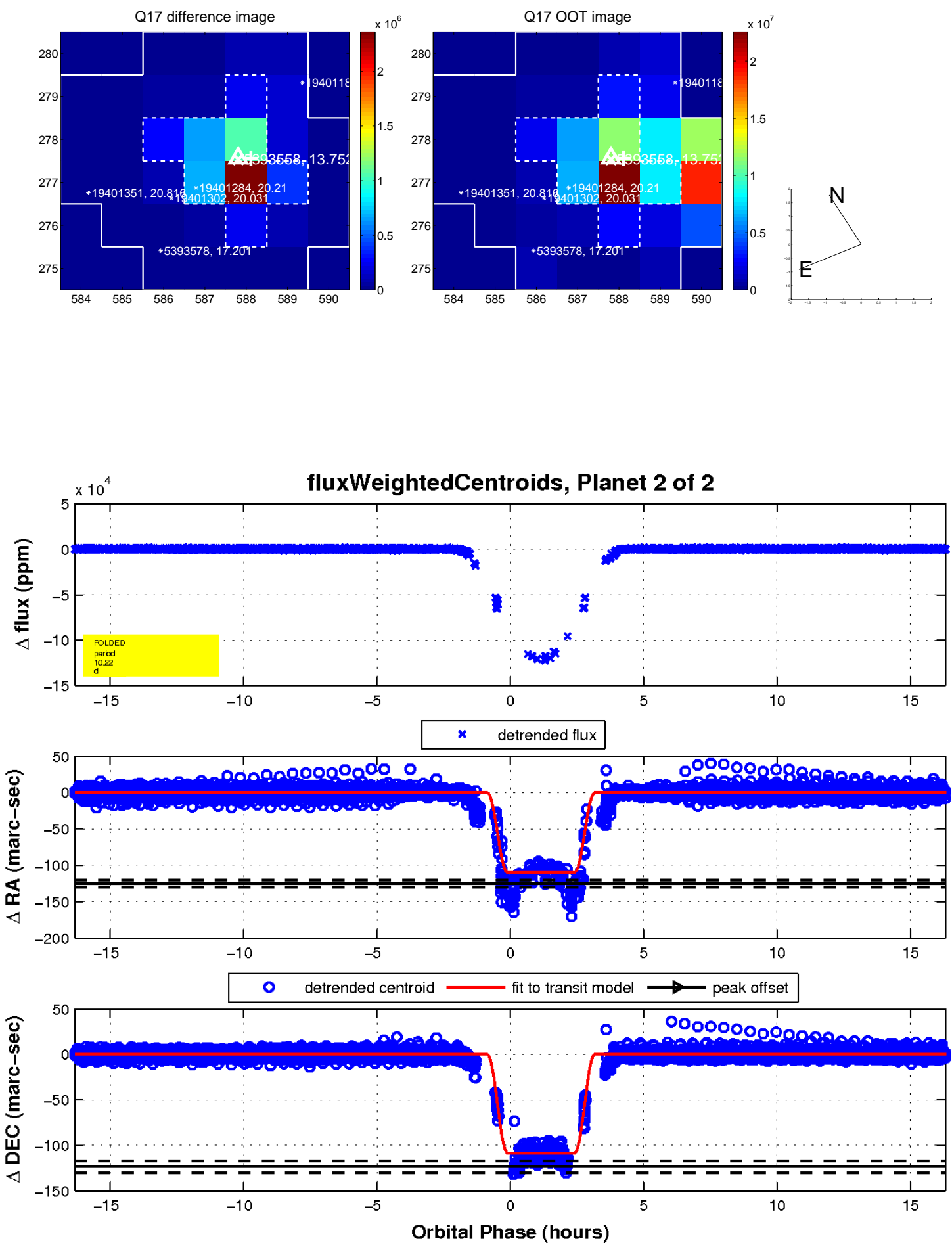
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

