

KIC 005385548

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})
005385548-01	OBS	6128.01	12.425441	141.522217	148.3	22.122	21.8	26.9	1.42	6381	2.19	263.13
005385548-02	OBS	No	12.425269	133.980508	134.3	26.631	15.0	25.0	1.42	6381	2.15	263.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385548-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385548-02	OBS	FP	0.00	1	0	1	1	LPP_DV—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.

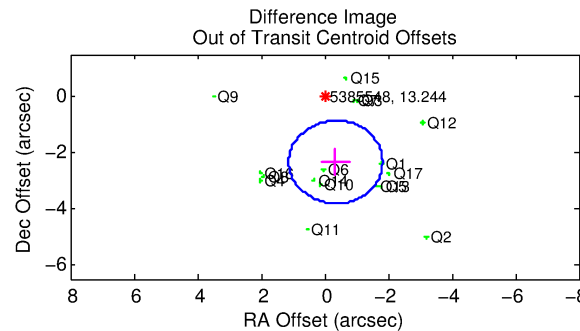
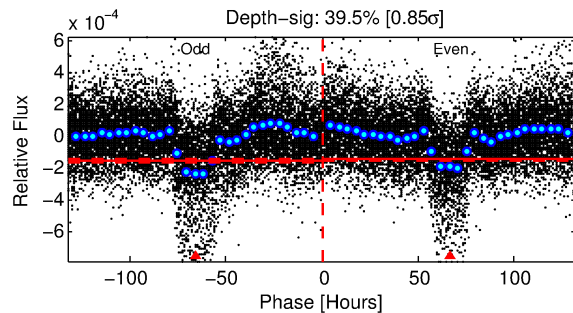
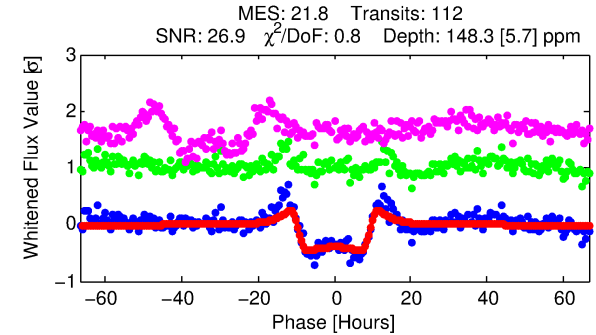
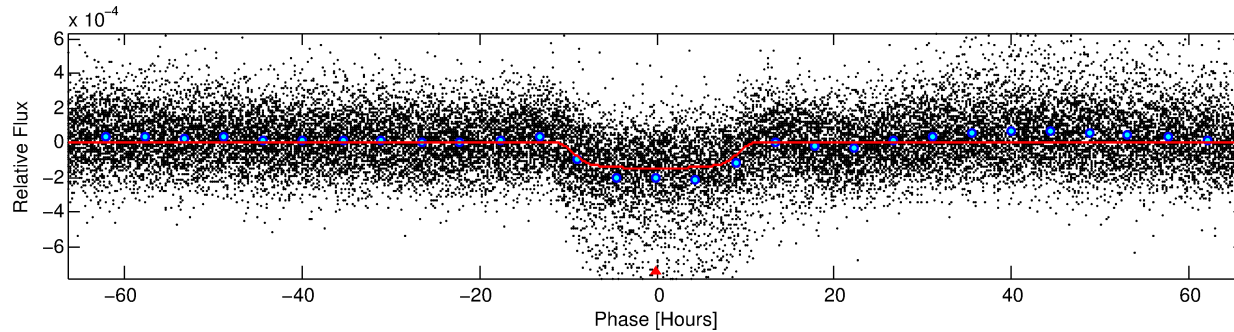
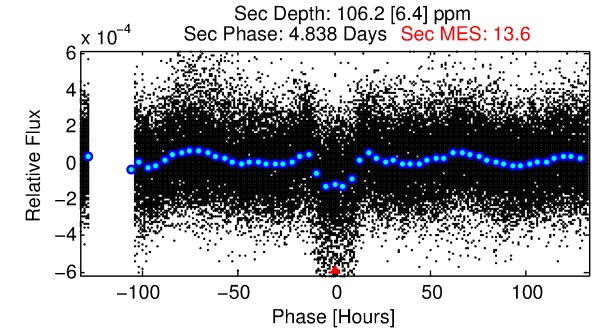
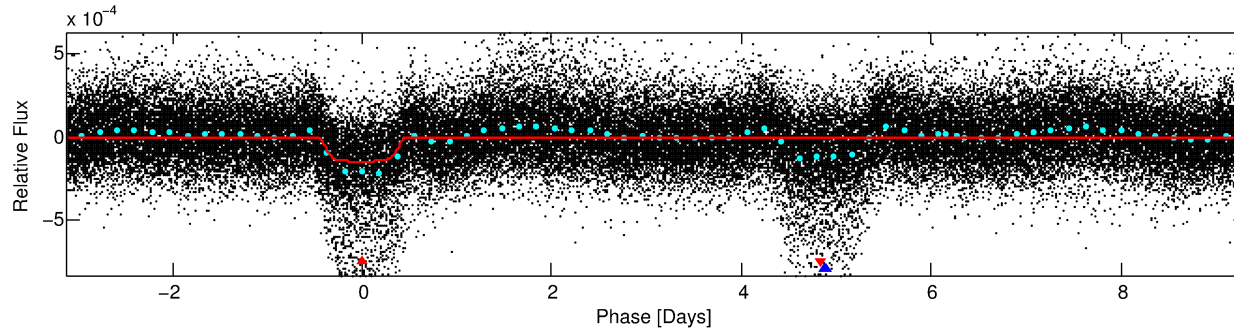
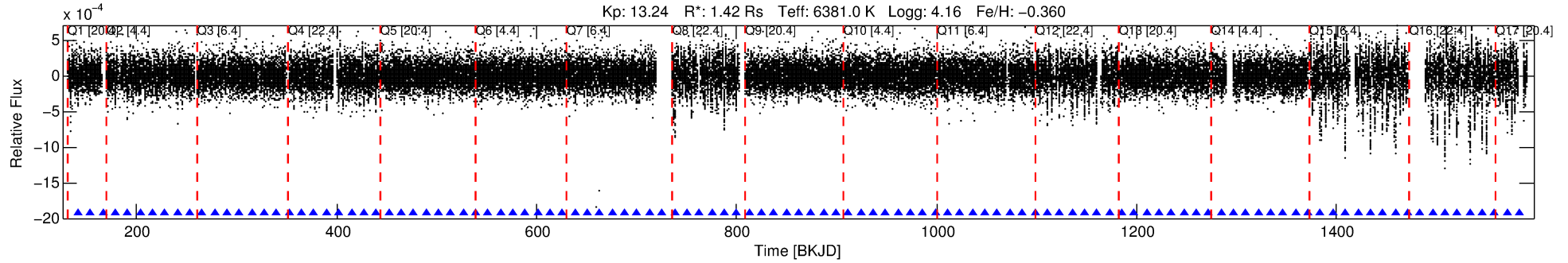
Ephemeris Match Information For 005385548-01

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
005385548-01	5385548	V380-Cyg-pri	5385723	1:1	126.7	2	-31	5.77	13.24	979.28	Direct-PRF	0	0.80	0.57

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: 5385548 Candidate: 1 of 2 Period: 12.425 d
KOI: K06128.01 Corr: 0.970



DV Fit Results:

Period = 12.42544 [0.00016] d
Epoch = 141.5222 [0.0099] BKJD
Rp/R* = 0.0141 [0.0003]
a/R* = 1.68 [0.07]
b = 0.96 [0.00]
Seff = 263.13 [116.51]
Teq = 1027 [114] K
Rp = 2.19 [0.62] Re
a = 0.1069 [0.0285] AU
Ag = 138.68 [59.47] [2.32σ]
Teffp = 5449 [210] K [18.50σ]

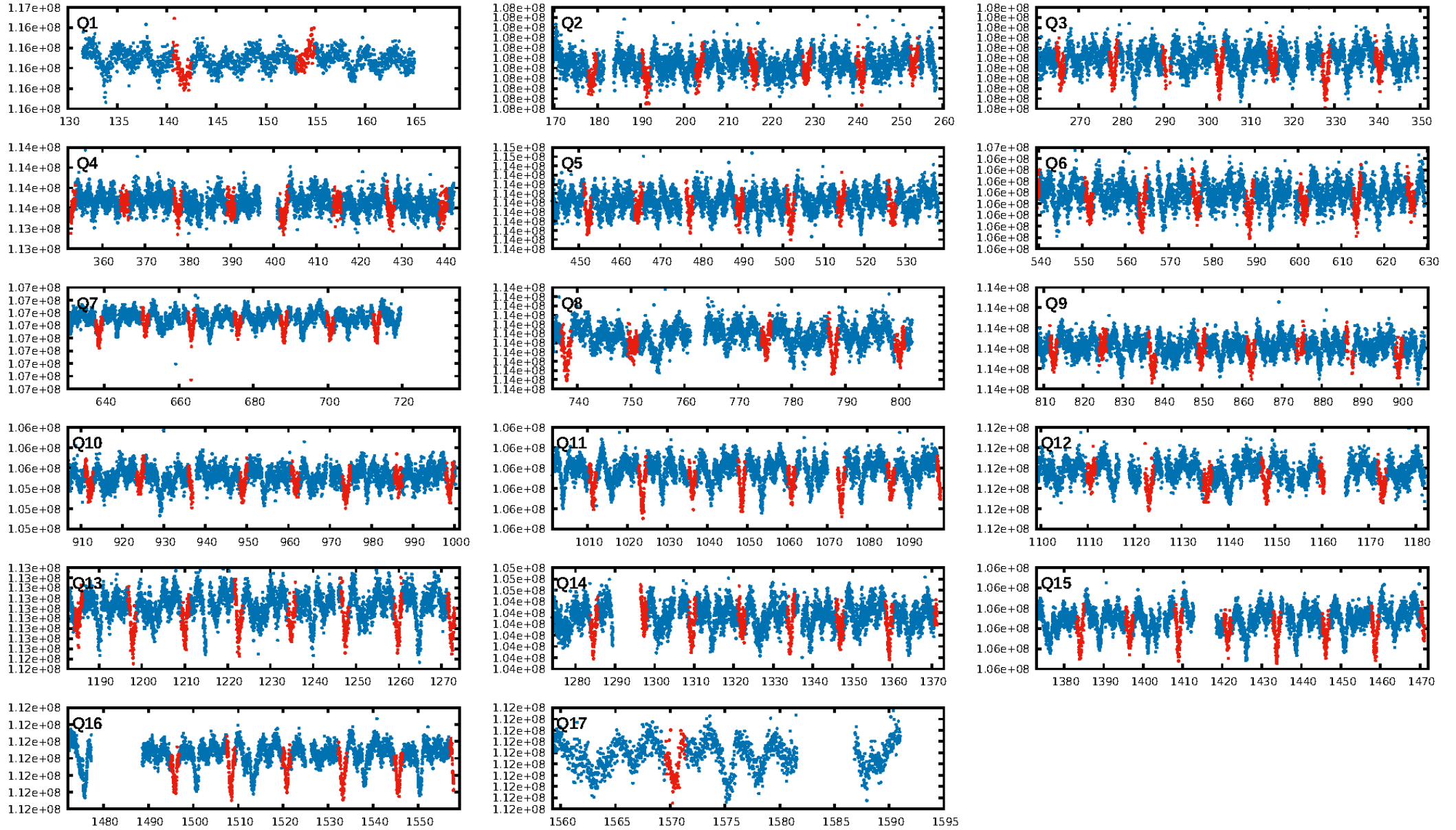
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.57e-110
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: -0.1281
Centroid-sig: 0.0%
Centroid-so: 4.770 arcsec [11.78σ]
OotOffset-rm: 2.362 arcsec [4.80σ]
KicOffset-rm: 2.407 arcsec [4.91σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.12 [2/17]
DiffImageOverlap-fno: 1.00 [17/17]

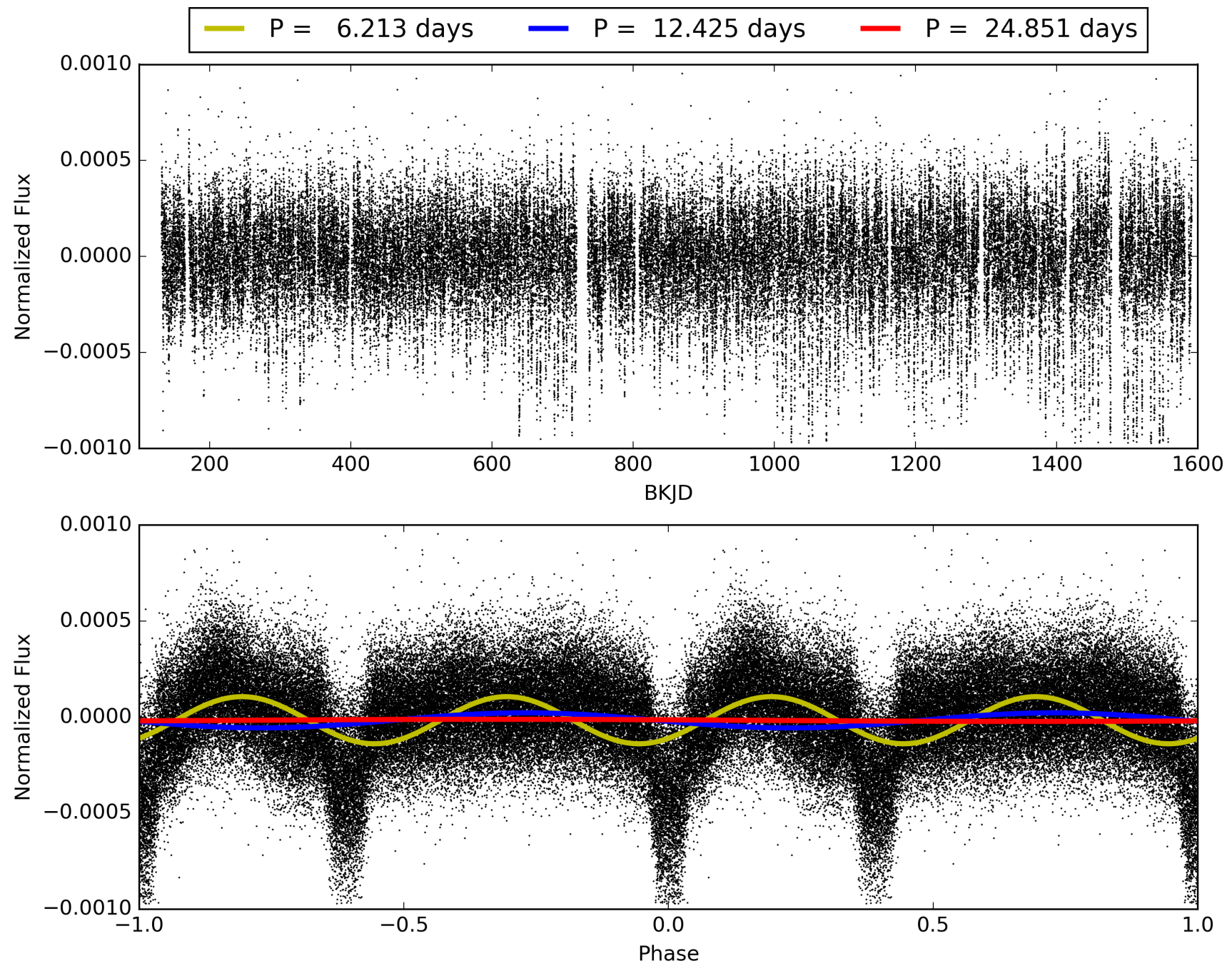
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:35:12 Z

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

TCE 005385548-01, PDC Light Curves

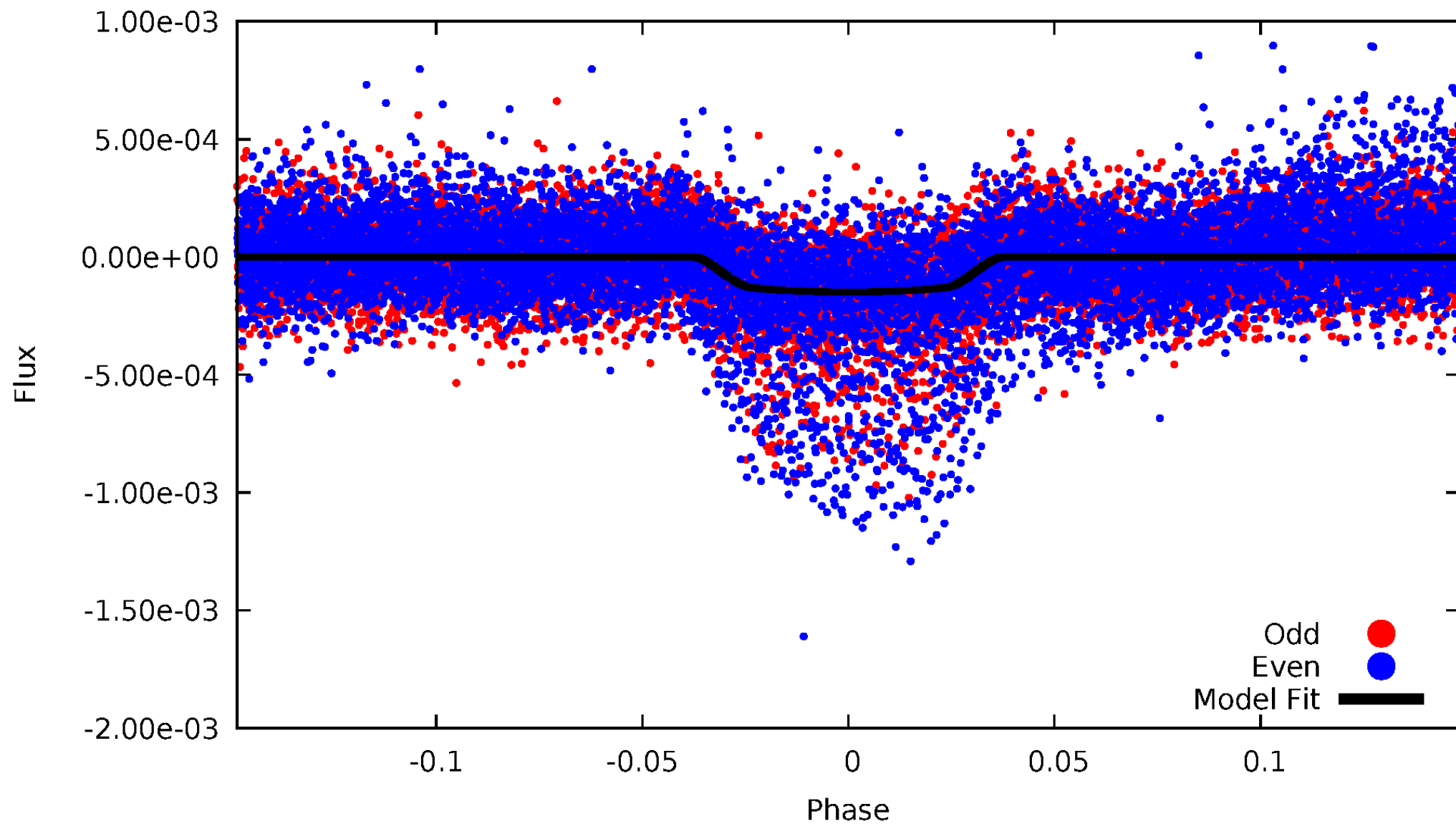


TCE 005385548-01



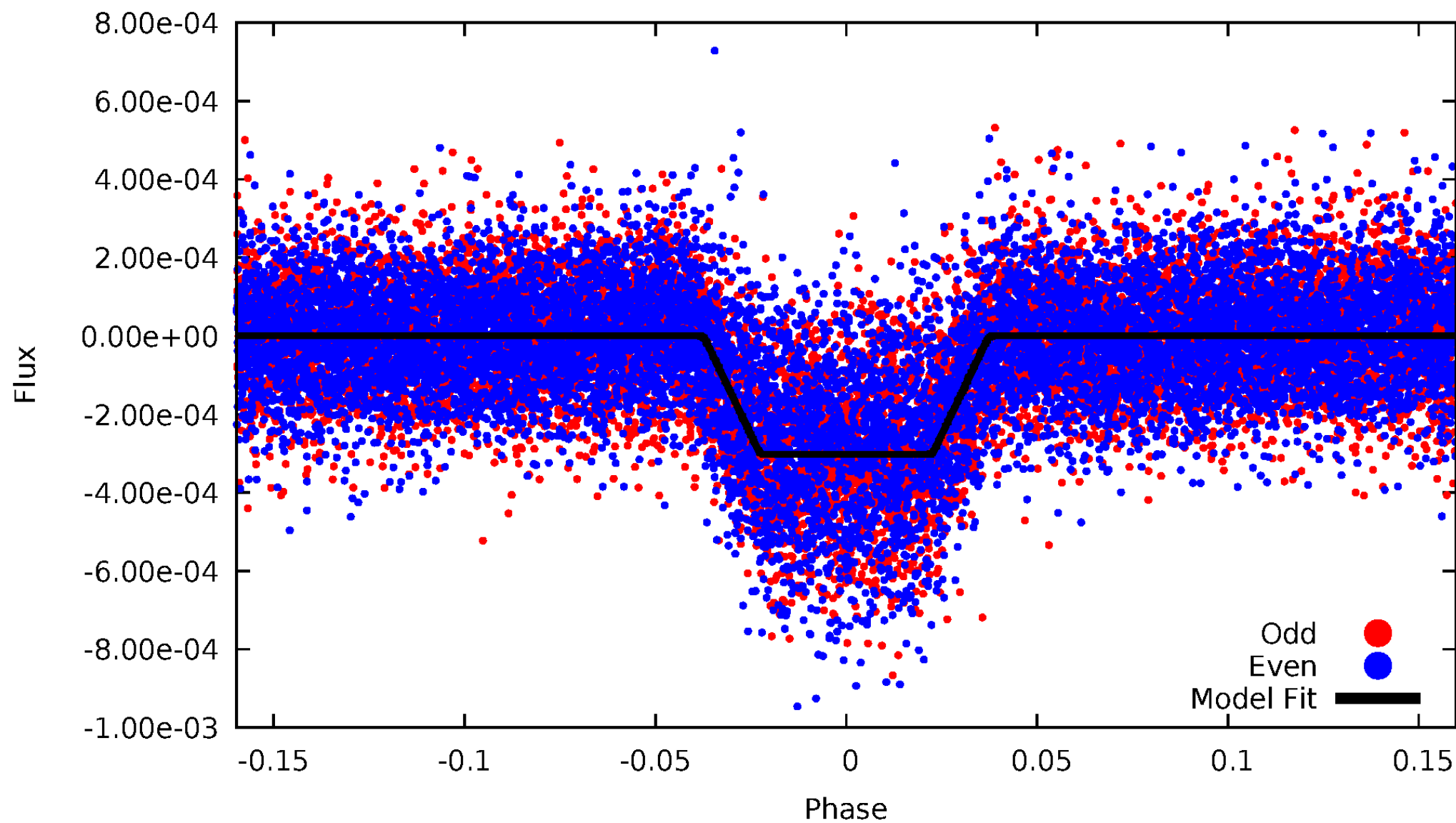
DV Odd/Even

TCE 005385548-01

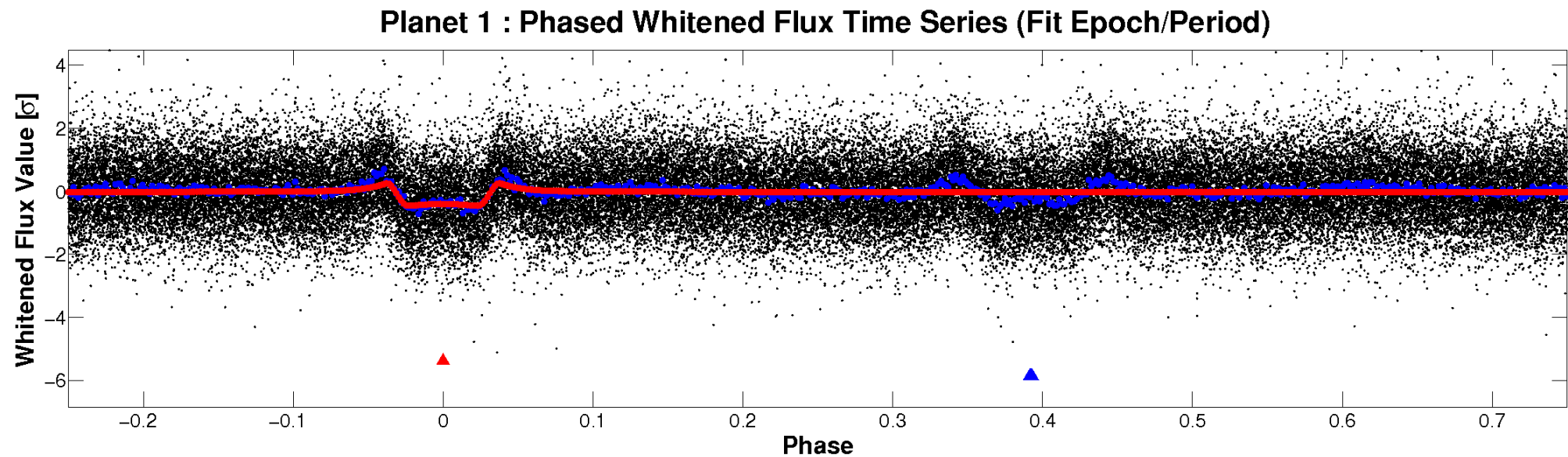
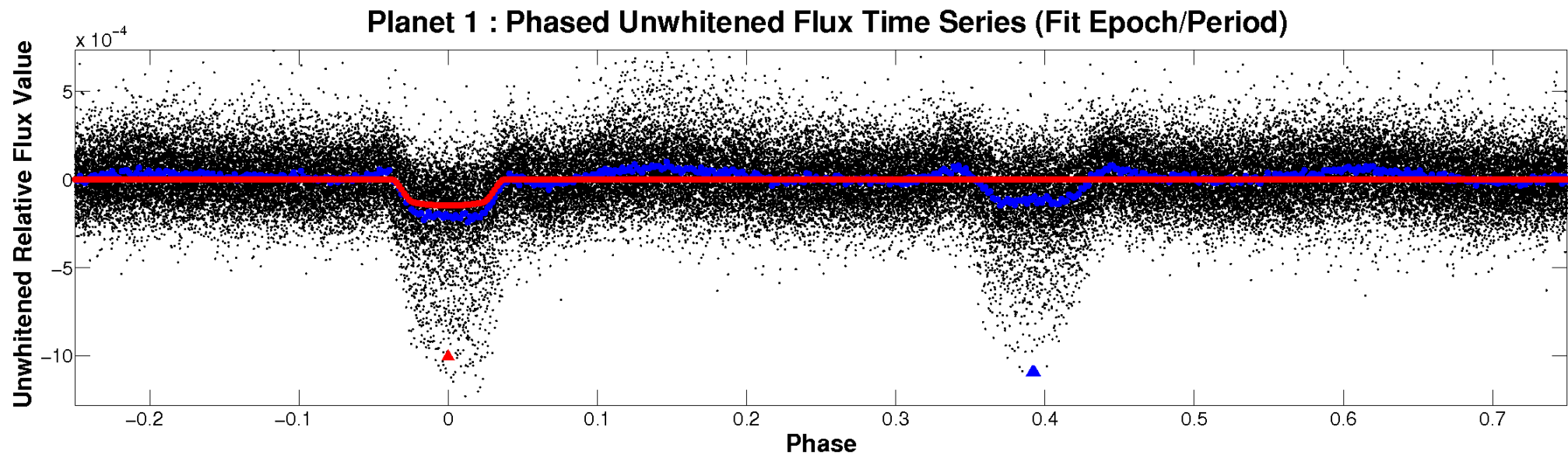


ALT Odd/Even

TCE 005385548-01

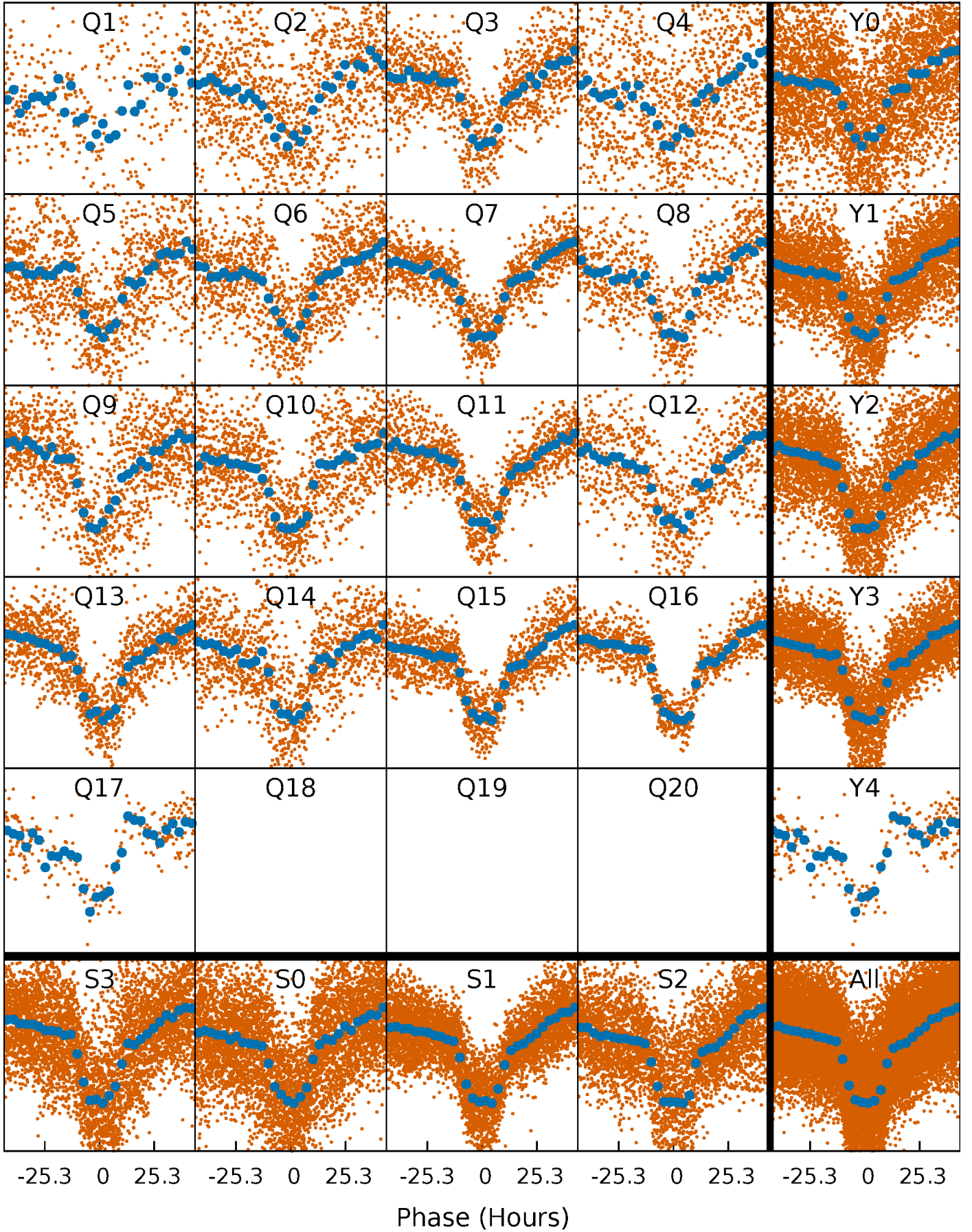


Non-Whitened Vs. Whitened Light Curve



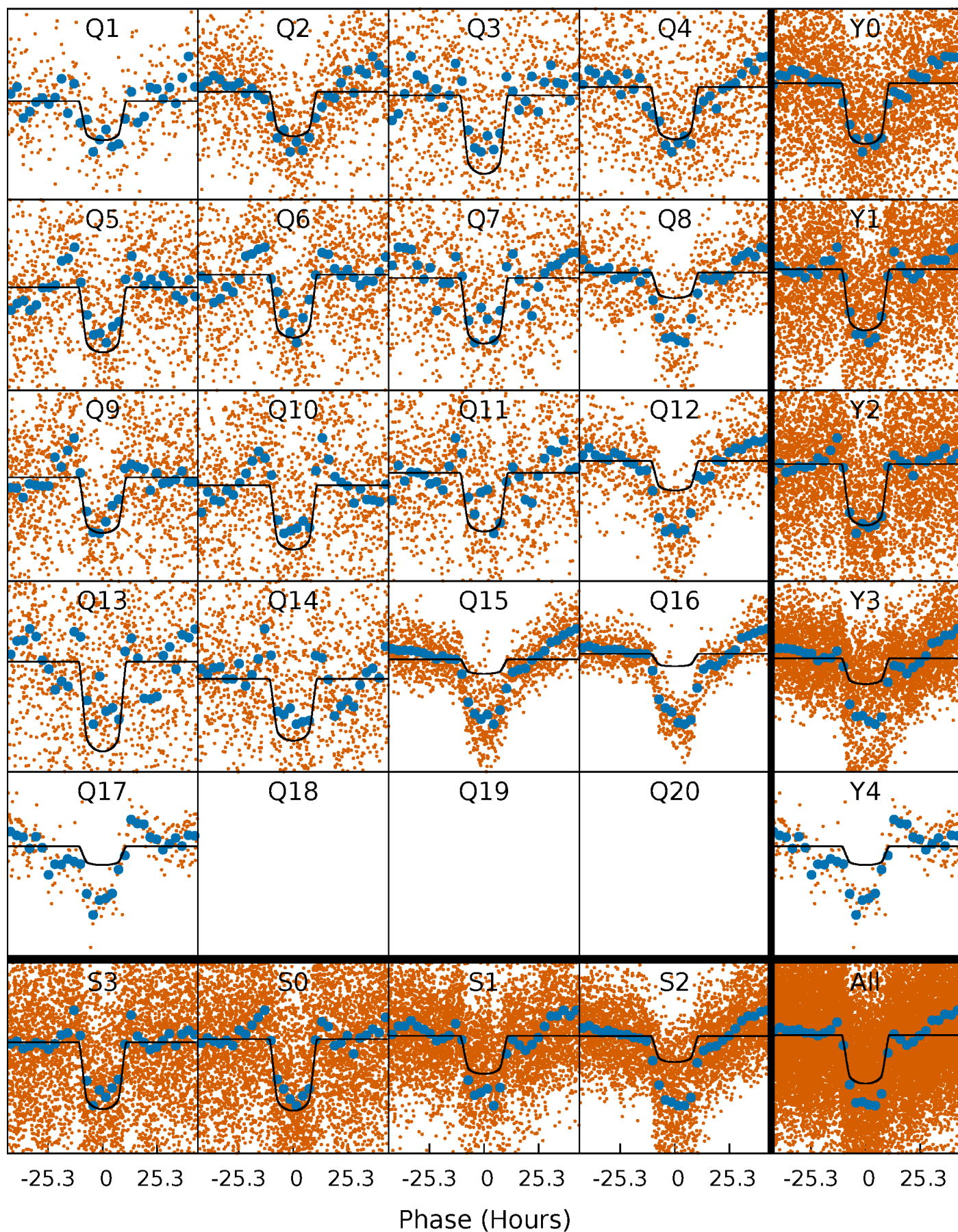
PDC Quarter-Phased Transit Curves

TCE 005385548-01 P= 12.425441 Days $T_0=141.522217$ (BKJD)



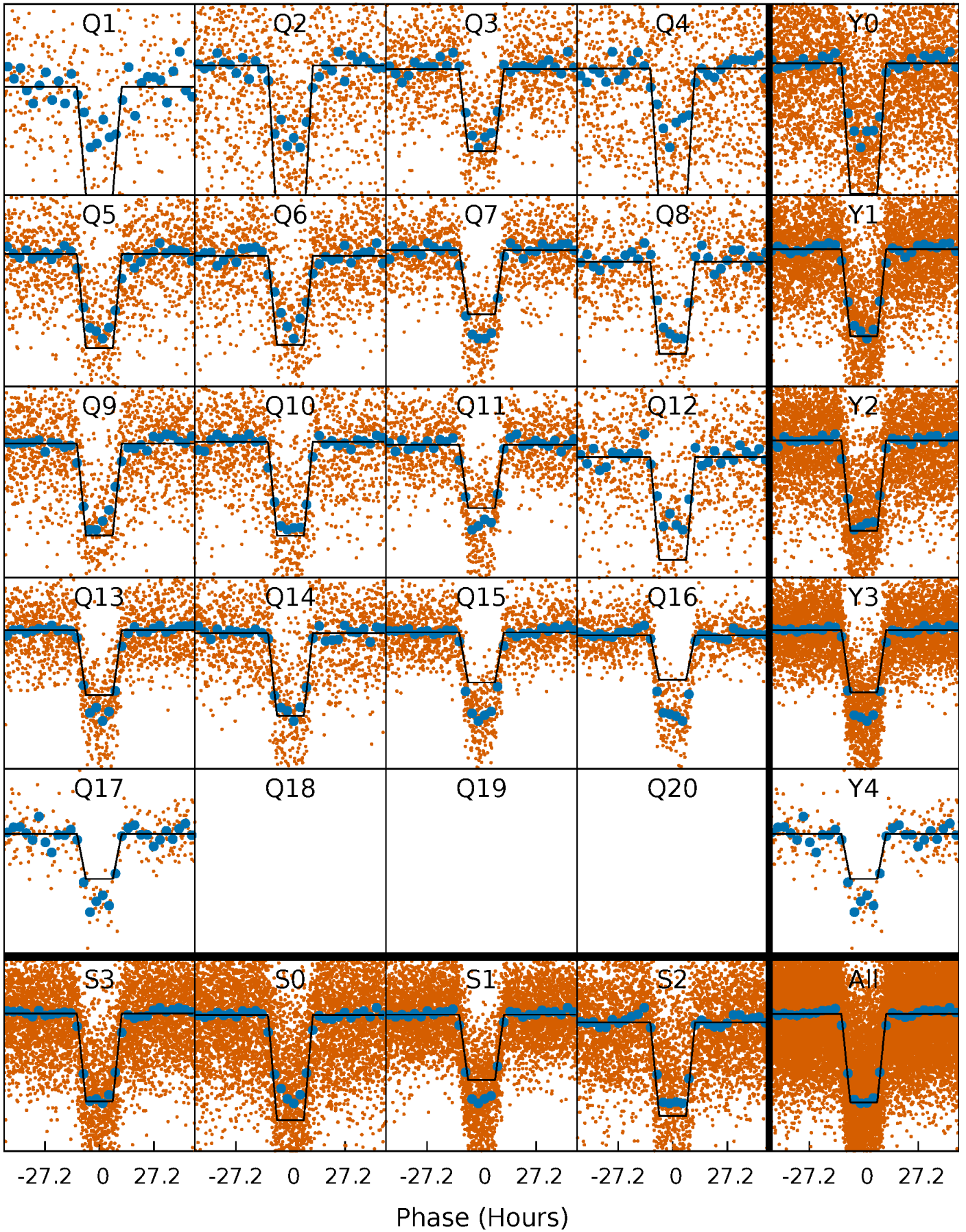
DV Quarter-Phased Transit Curves

TCE 005385548-01 P= 12.425441 Days $T_0=141.522217$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

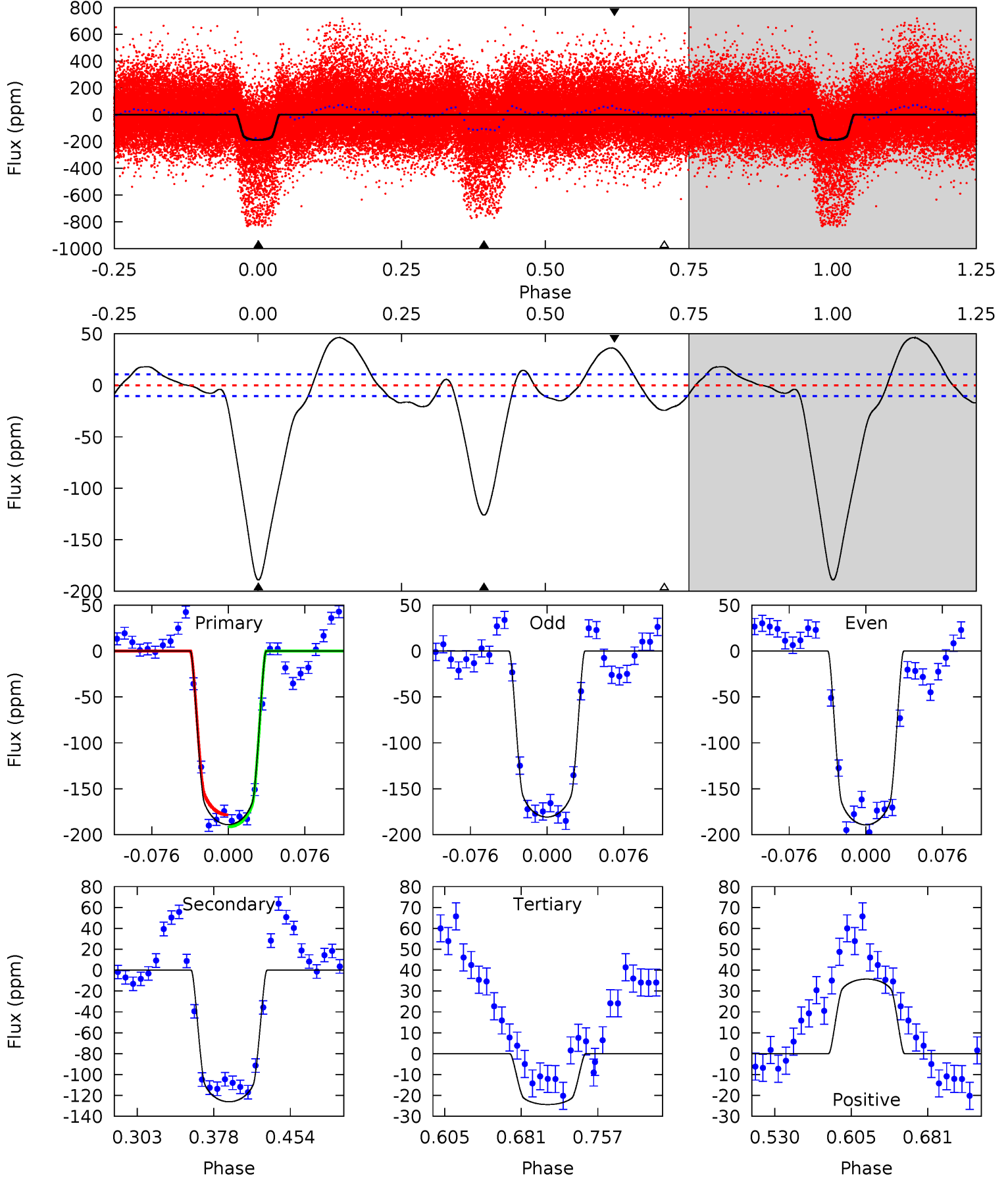
TCE 005385548-01 P= 12.425672 Days $T_0=141.509576$ (BKJD)



DV Model-Shift Uniqueness Test

005385548-01, P = 12.425441 Days, E = 129.096776 Days

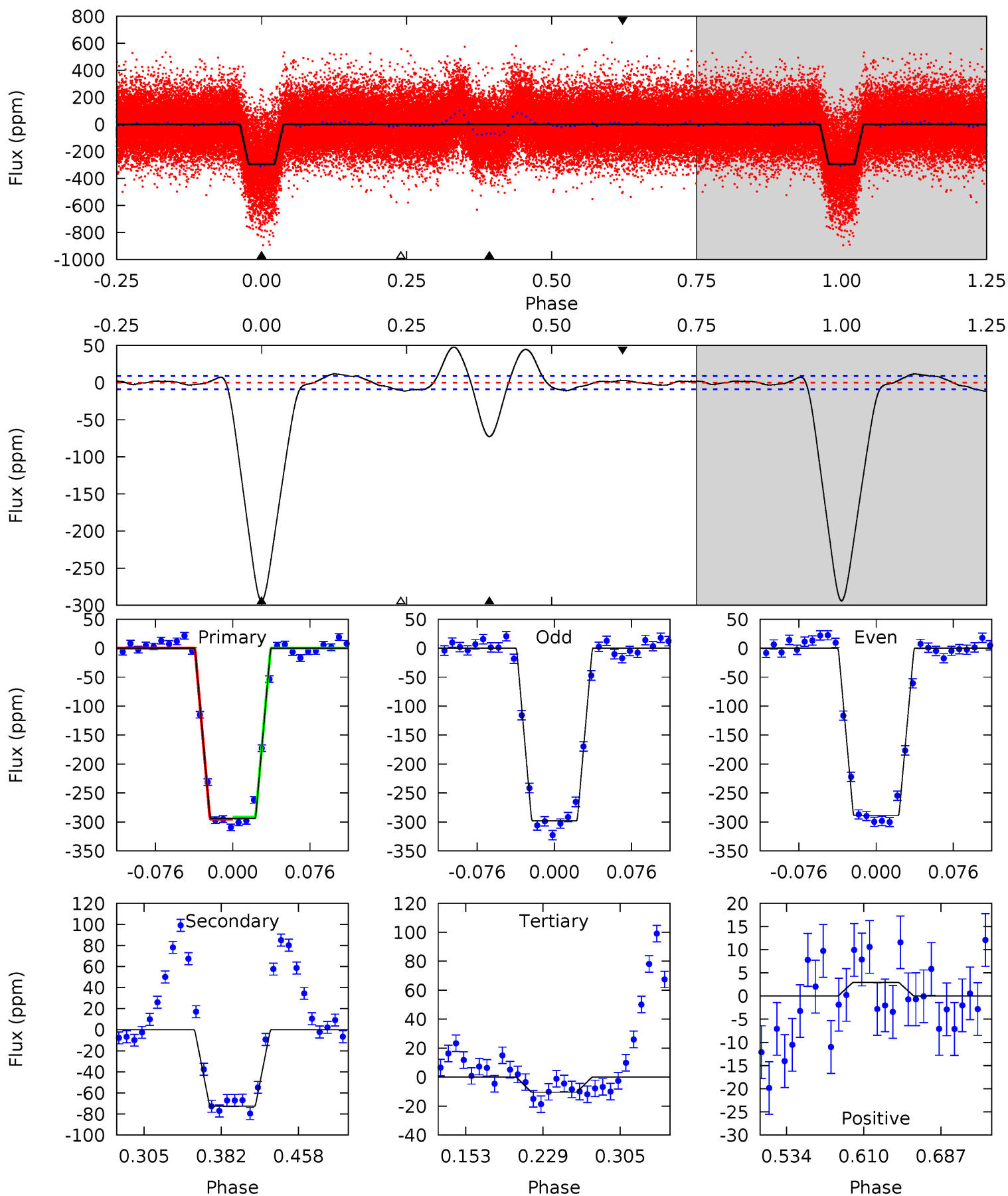
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
82.8	55.2	10.7	15.6	4.62	1.78	8.46	72.1	67.2	44.6	39.6	1.86	1.64	0.20	2.66



Alt Model-Shift Uniqueness Test

005385548-01, P = 12.425672 Days, E = 129.083904 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
152.7	37.8	5.40	1.54	4.62	1.77	3.56	147.3	151.2	32.4	36.2	2.41	1.05	0.14	0.86



Stellar Parameters For KIC 005385548

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6381^{+155}_{-214}	$4.155^{+0.246}_{-0.164}$	$-0.360^{+0.300}_{-0.300}$	$1.423^{+0.402}_{-0.402}$	$1.055^{+0.177}_{-0.133}$	$0.516^{+0.726}_{-0.228}$
	+2%/-3%	+6%/-4%	+83%/-83%	+28%/-28%	+17%/-13%	+141%/-44%
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 005385548-01 / KOI 6128.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-126 ± 2	$2.17^{+0.34}_{-0.35}$	1412^{+108}_{-113}	5668^{+169}_{-175}	169^{+68}_{-38}
Alt.	-73 ± 2	$2.69^{+0.42}_{-0.40}$	1426^{+105}_{-117}	4615^{+105}_{-123}	64^{+22}_{-15}

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

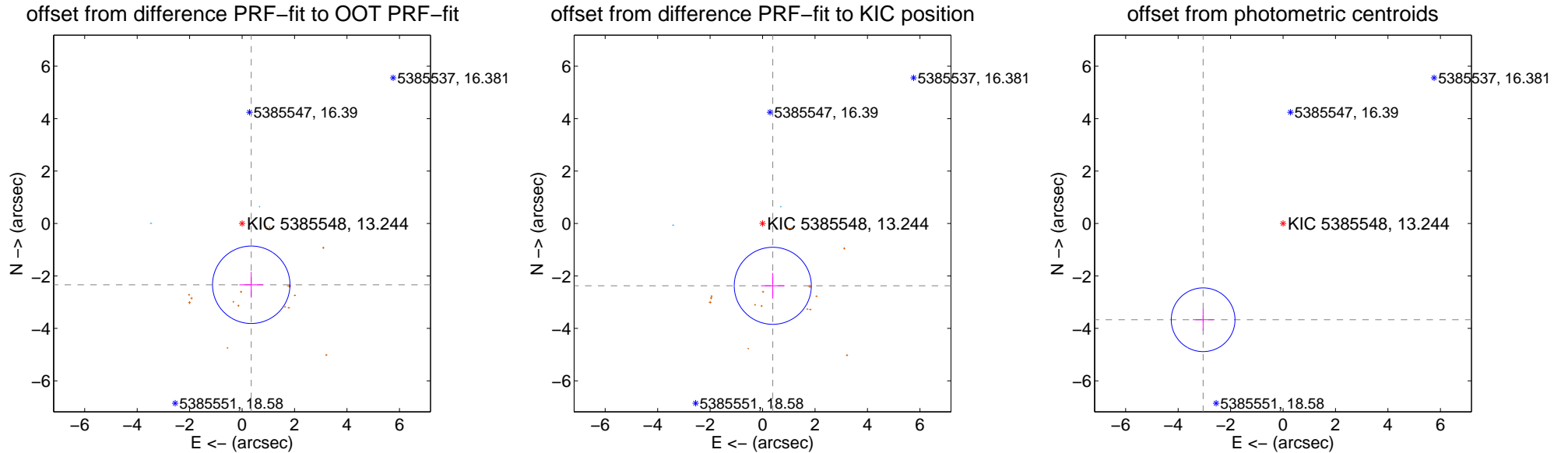
DV Centroid Data

Supplemental centroid analysis for 005385548-01. Kepler magnitude: 13.24. Transit SNR 26.86

There are 2 quarters with good PRF difference image offsets

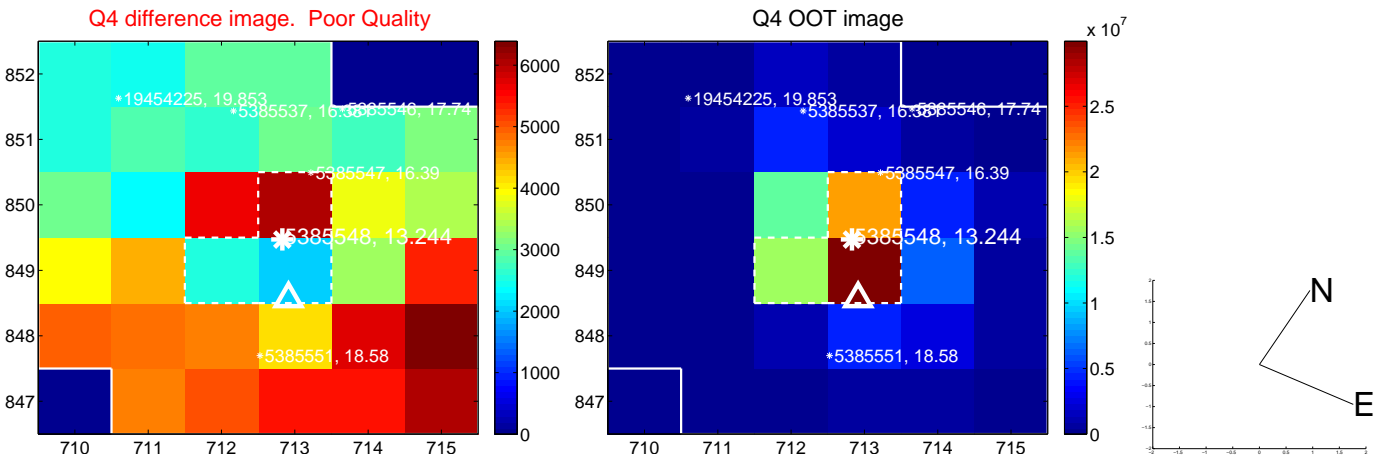
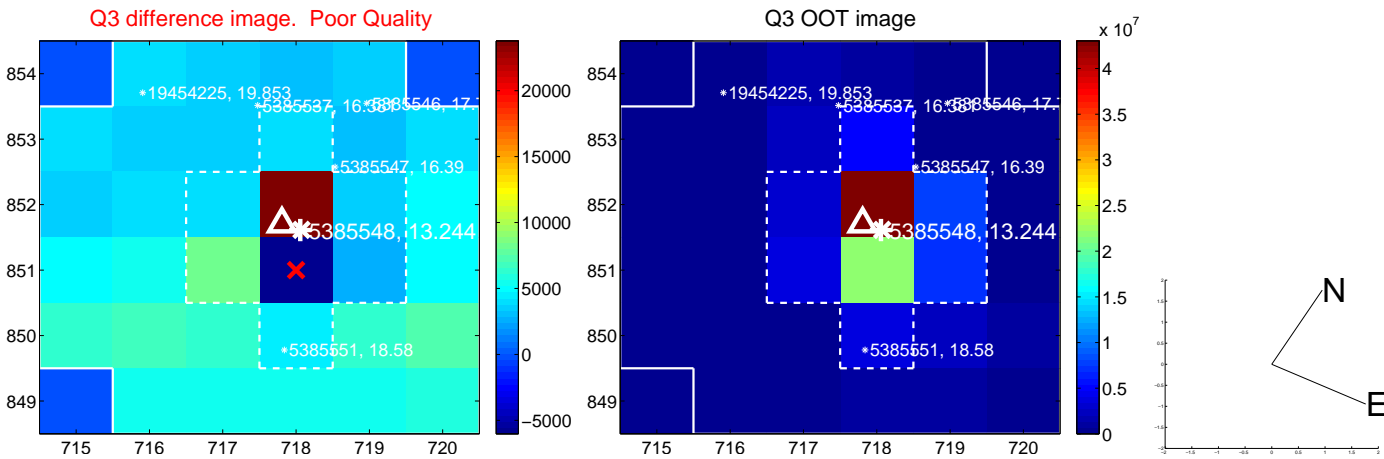
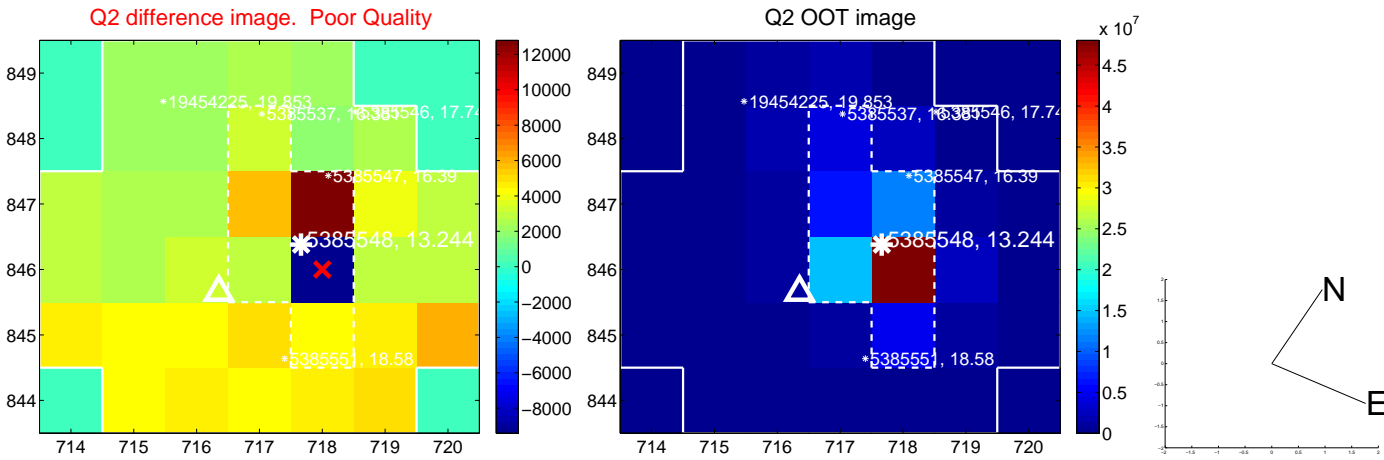
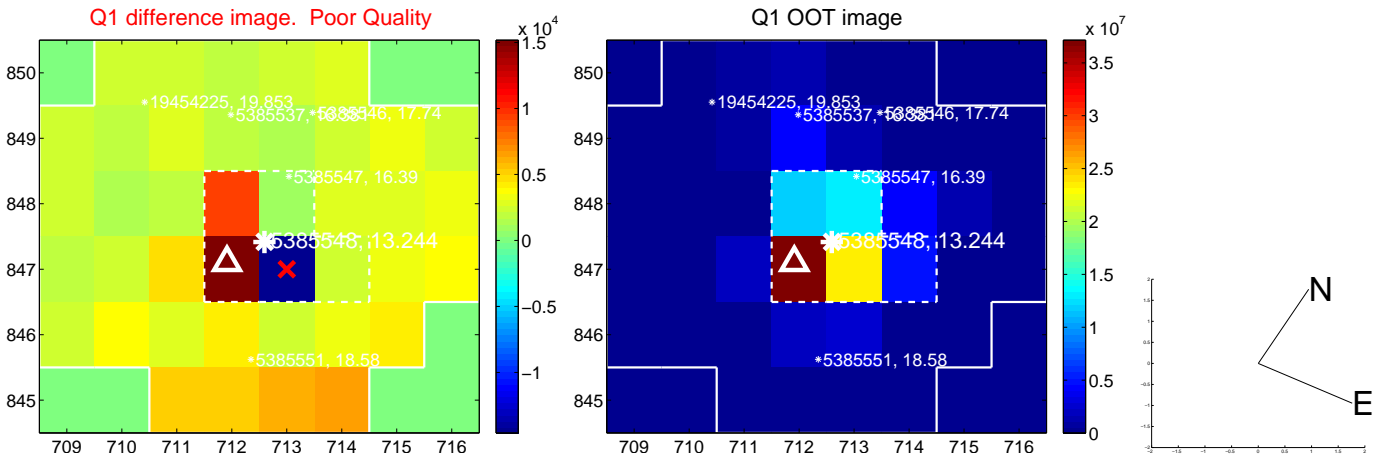
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.362 ± 0.492	4.80	-0.349 ± 0.452	-2.336 ± 0.493
PRF-fit source offset from KIC position	2.407 ± 0.490	4.91	-0.389 ± 0.449	-2.375 ± 0.491
photometric centroid source offset	4.77 ± 0.40	11.78	3.05 ± 0.40	-3.67 ± 0.41

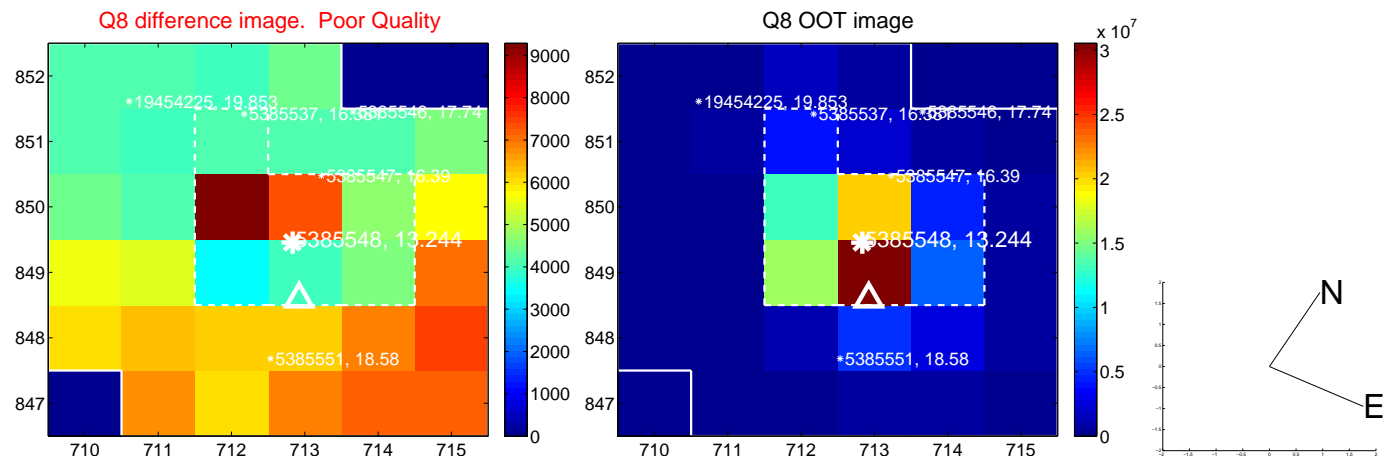
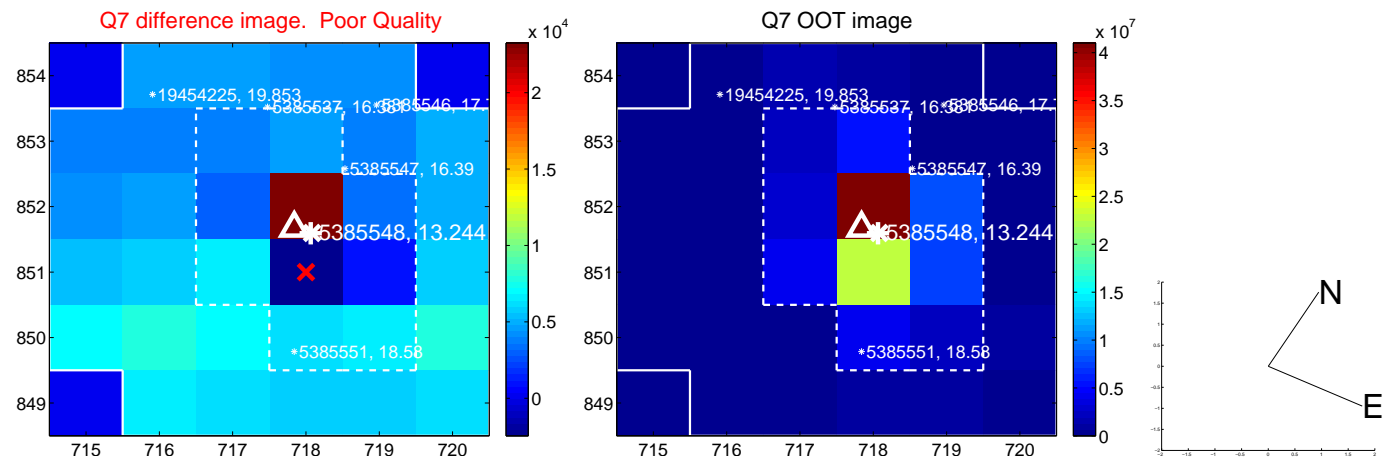
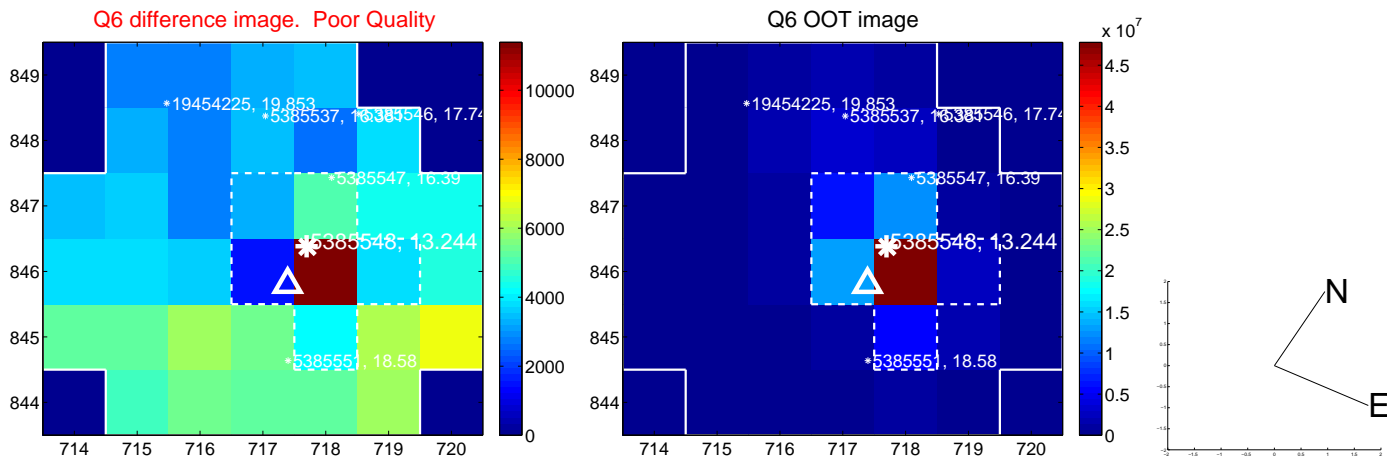
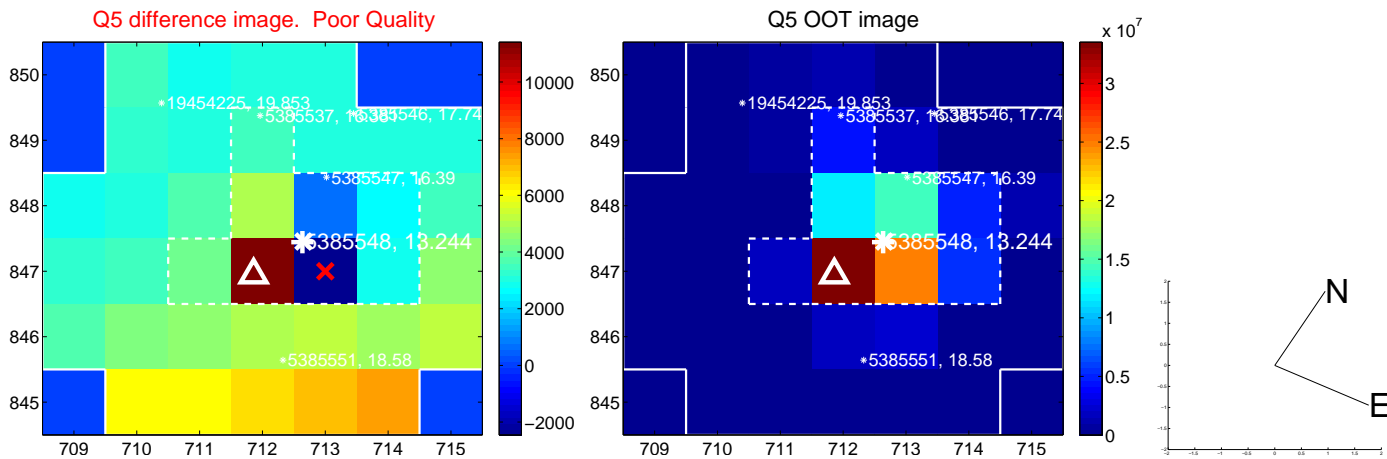


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

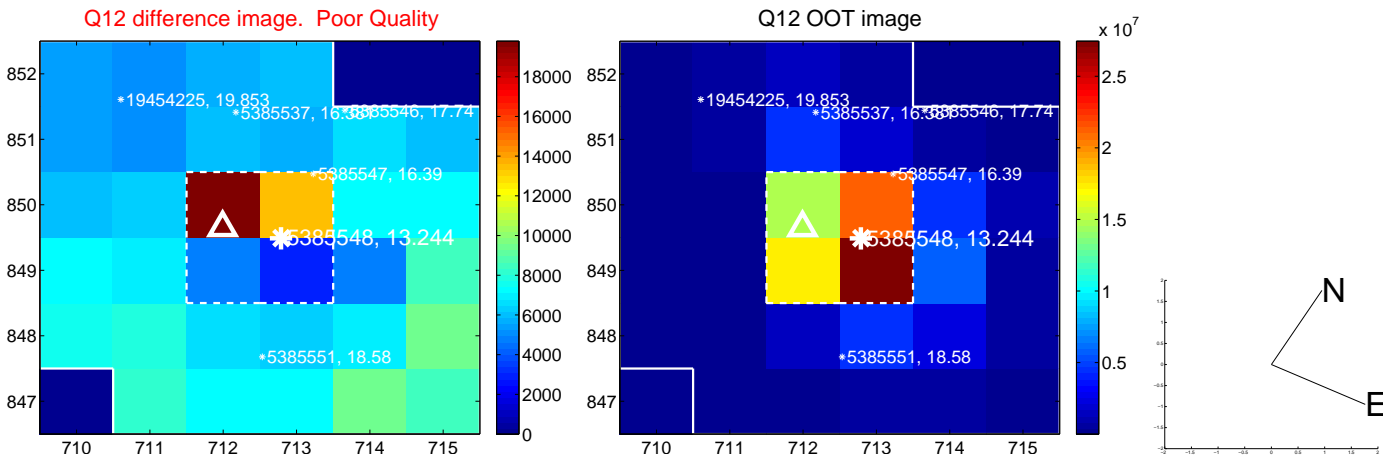
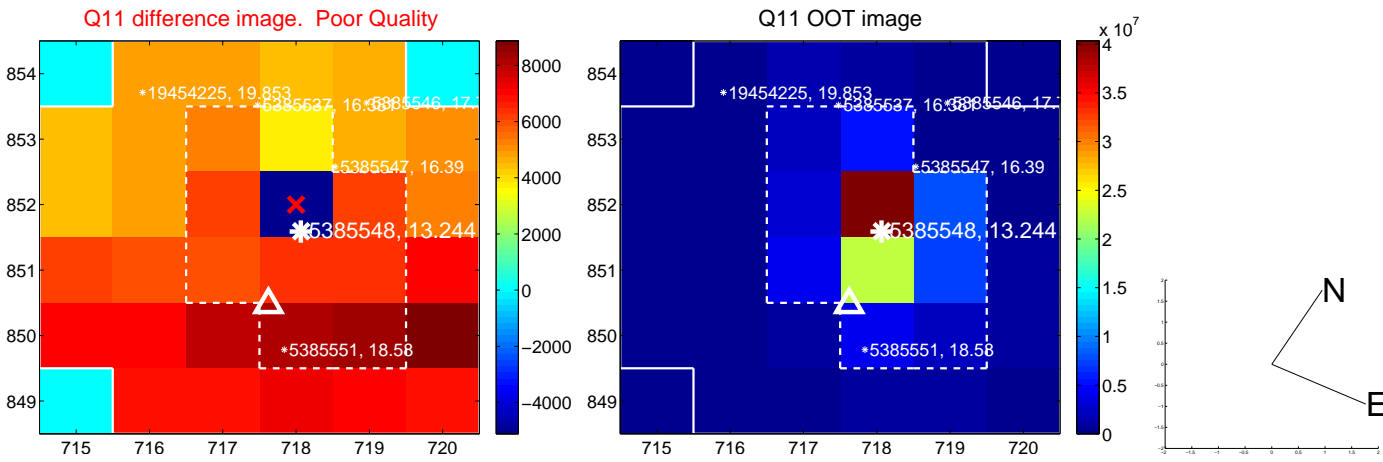
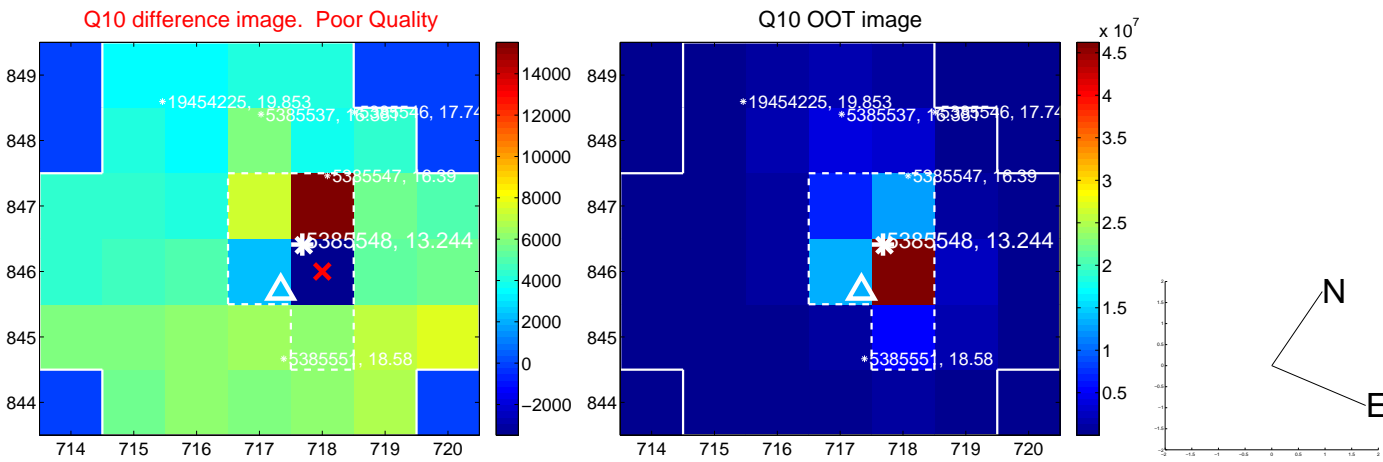
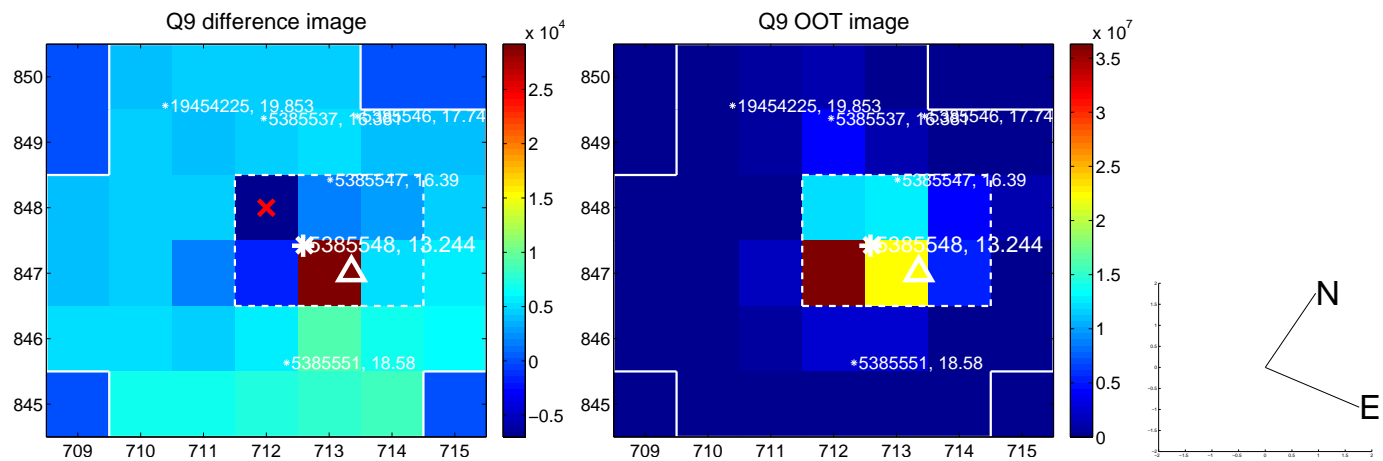
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



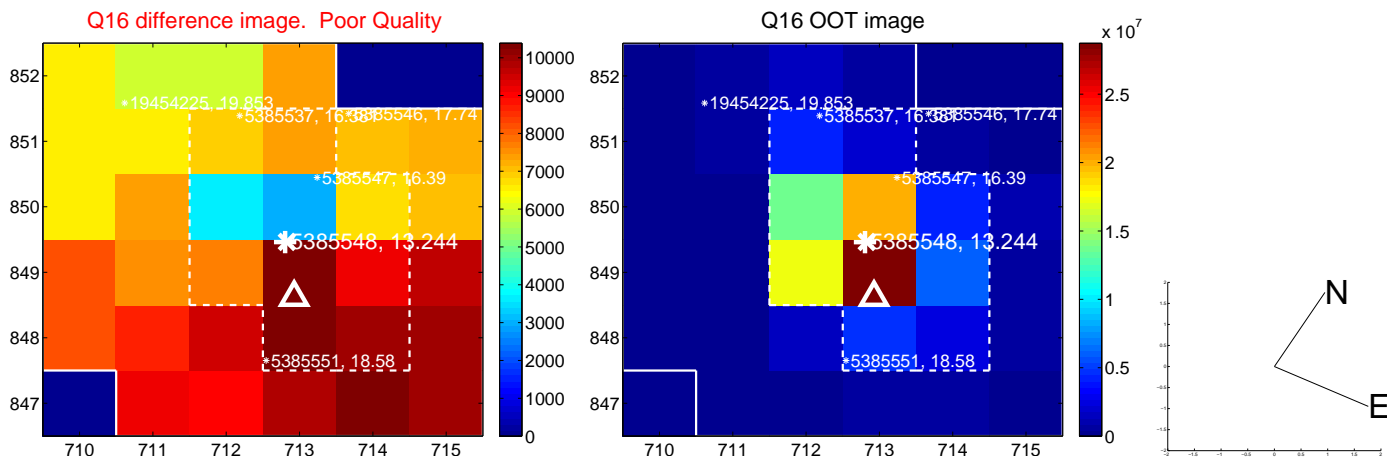
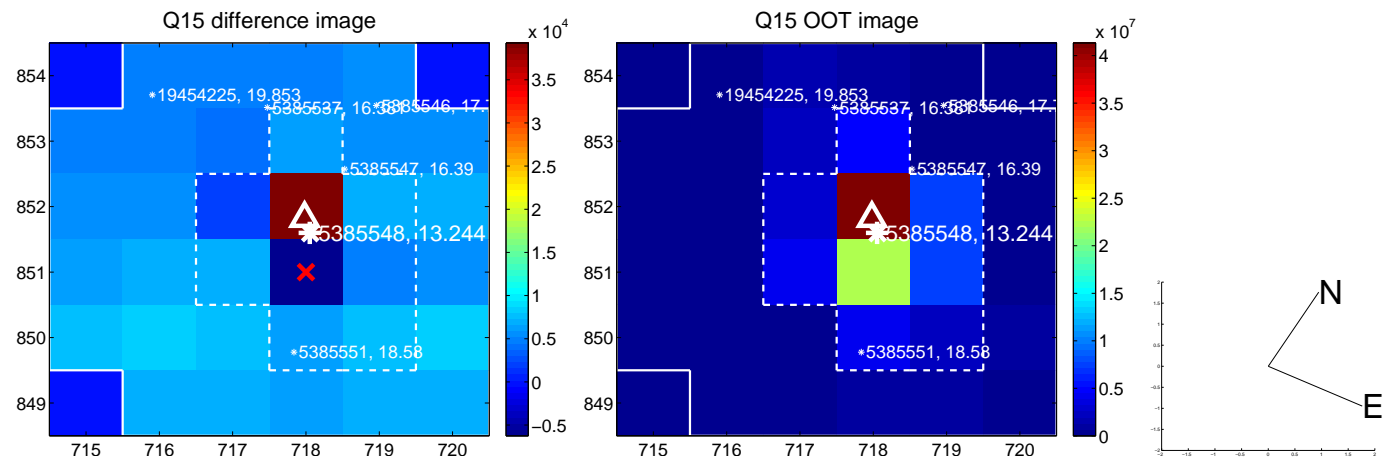
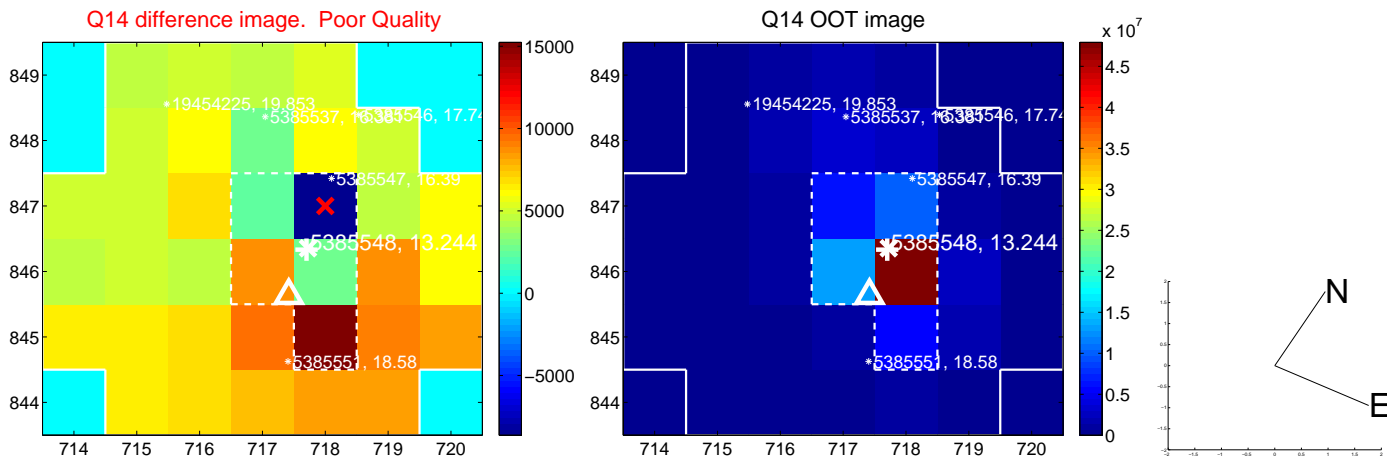
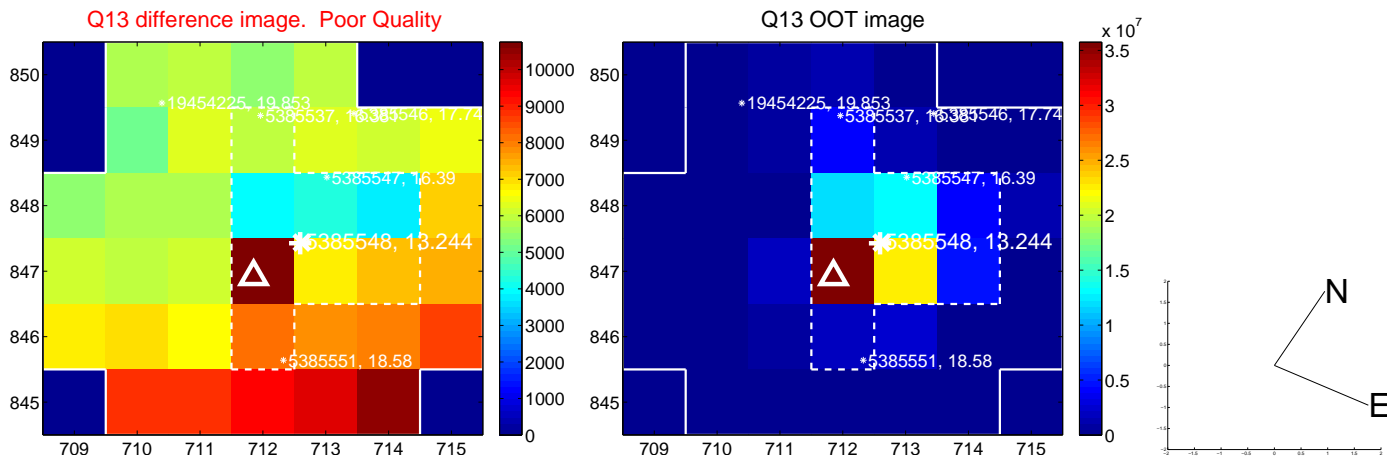
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



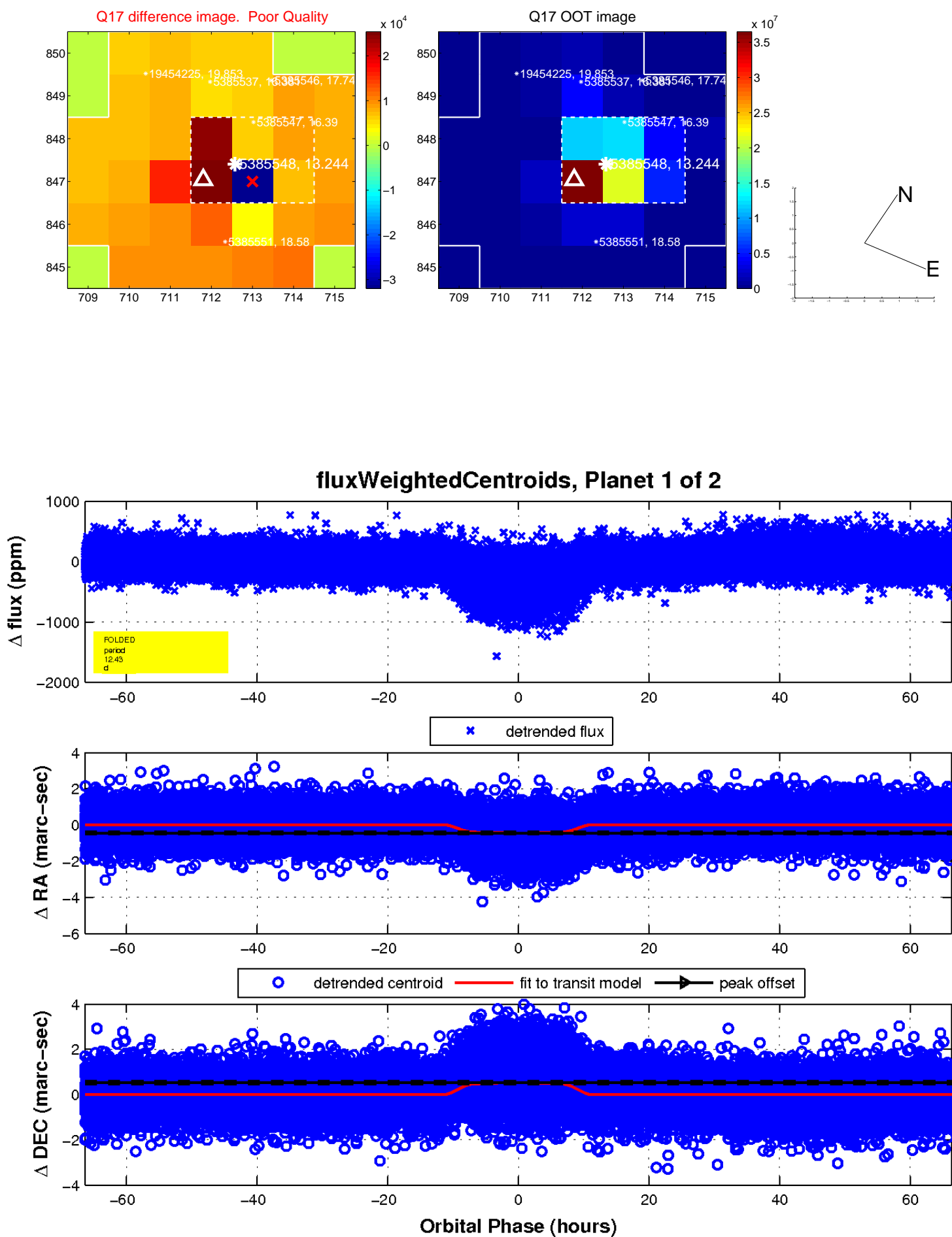
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

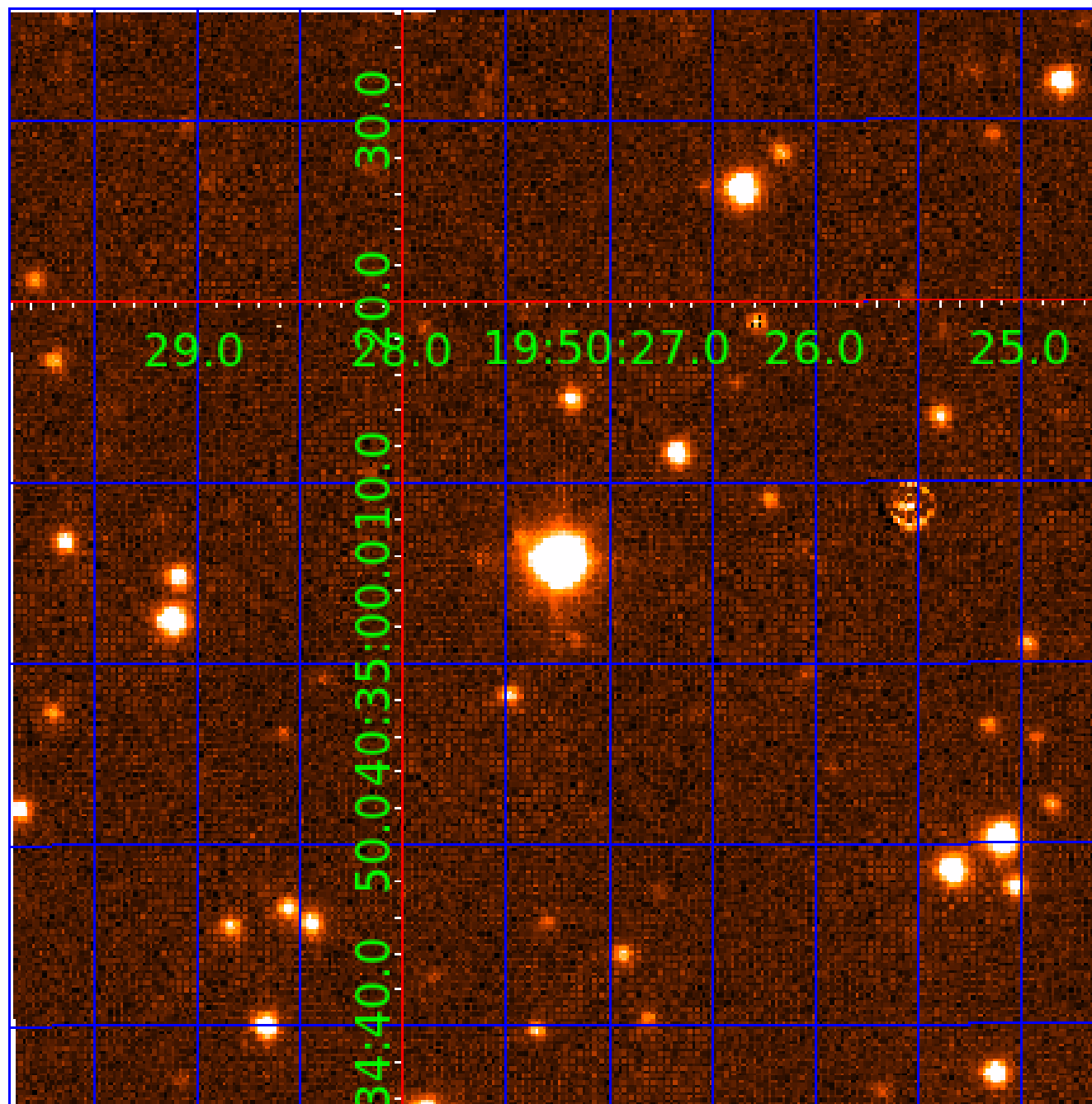


white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385548

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})
005385548-01	OBS	6128.01	12.425441	141.522217	148.3	22.122	21.8	26.9	1.42	6381	2.19	263.13
005385548-02	OBS	No	12.425269	133.980508	134.3	26.631	15.0	25.0	1.42	6381	2.15	263.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385548-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385548-02	OBS	FP	0.00	1	0	1	1	LPP_DV—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.

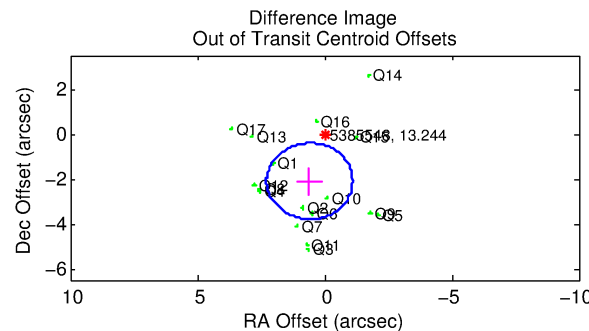
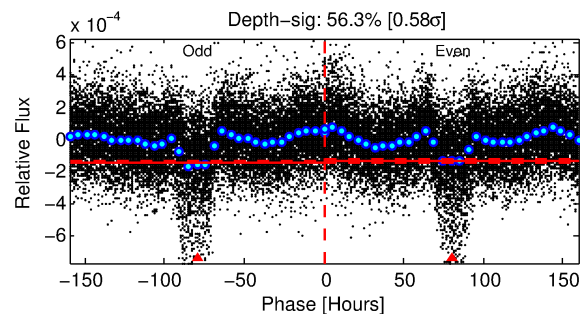
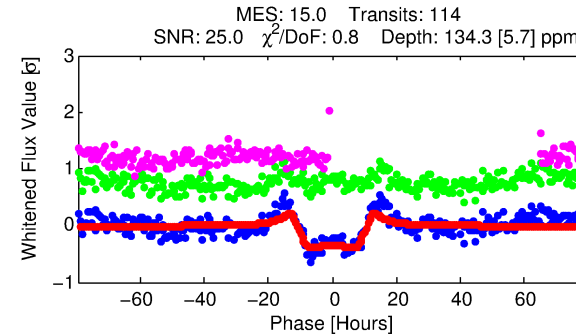
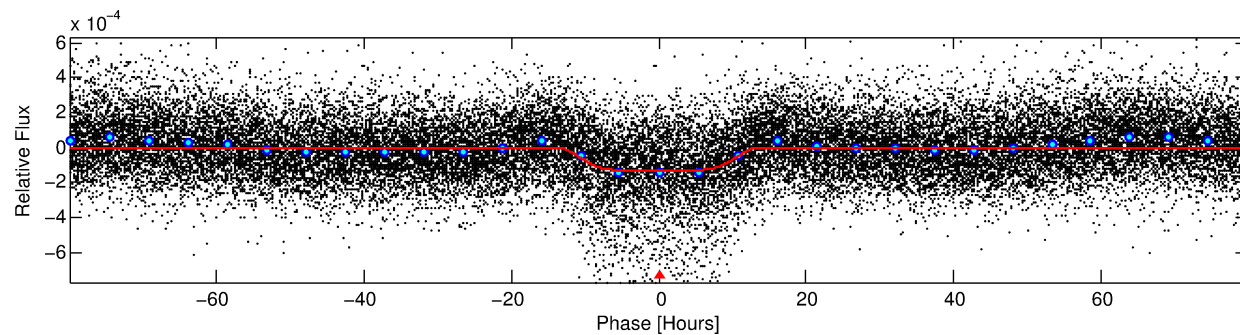
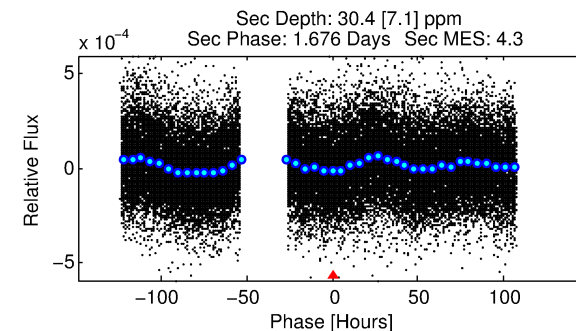
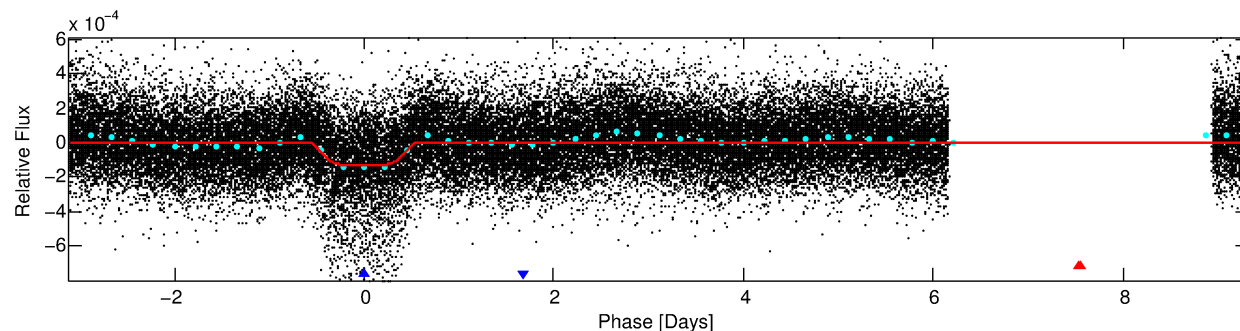
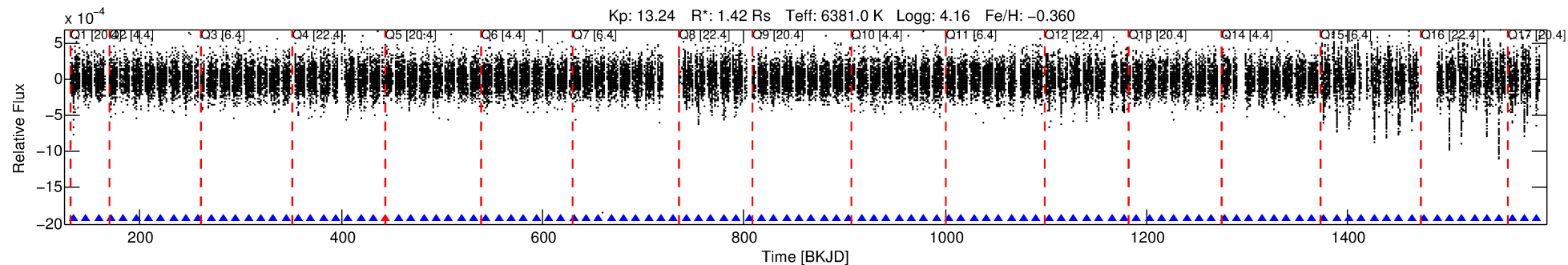
Ephemeris Match Information For 005385548-02

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
005385548-02	5385548	V380-Cyg-sec	5385723	1:1	126.7	2	-31	5.77	13.24	962.96	Direct-PRF	0	0.61	1.02

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: 5385548 Candidate: 2 of 2 Period: 12.425 d
KOI: K06128 Corr: No Ephemeris Match



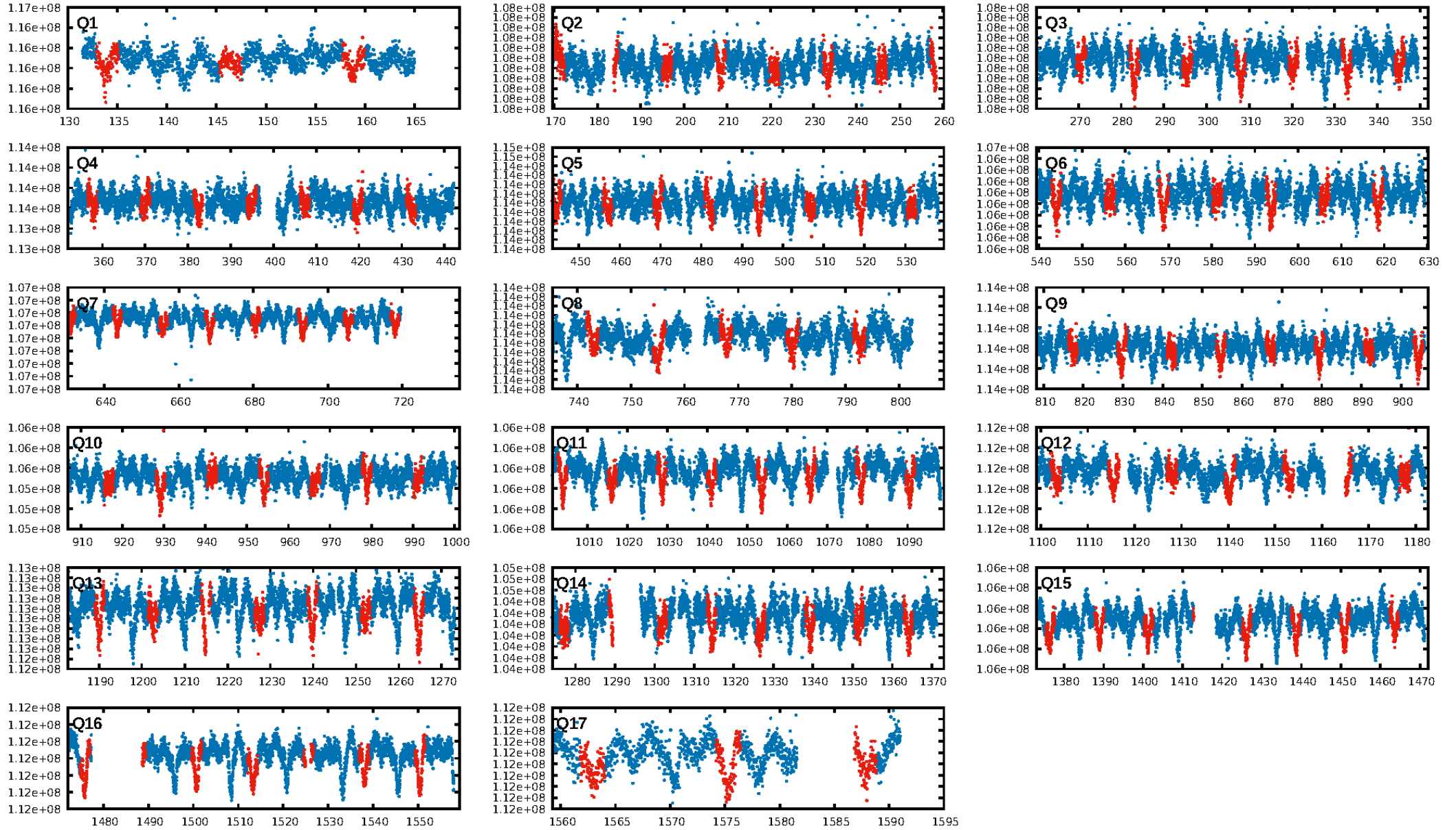
DV Fit Results:

Period = 12.42527 [0.00022] d
Epoch = 133.9805 [0.0140] BKJD
Rp/R* = 0.0138 [0.0003]
a/R* = 1.40 [0.04]
b = 0.97 [0.00]
Seff = 263.13 [116.51]
Teq = 1027 [114] K
Rp = 2.15 [0.61] Re
a = 0.1069 [0.0285] AU
Ag = 41.43 [20.10] [2.01σ]
Teffp = 4029 [276] K [10.05σ]

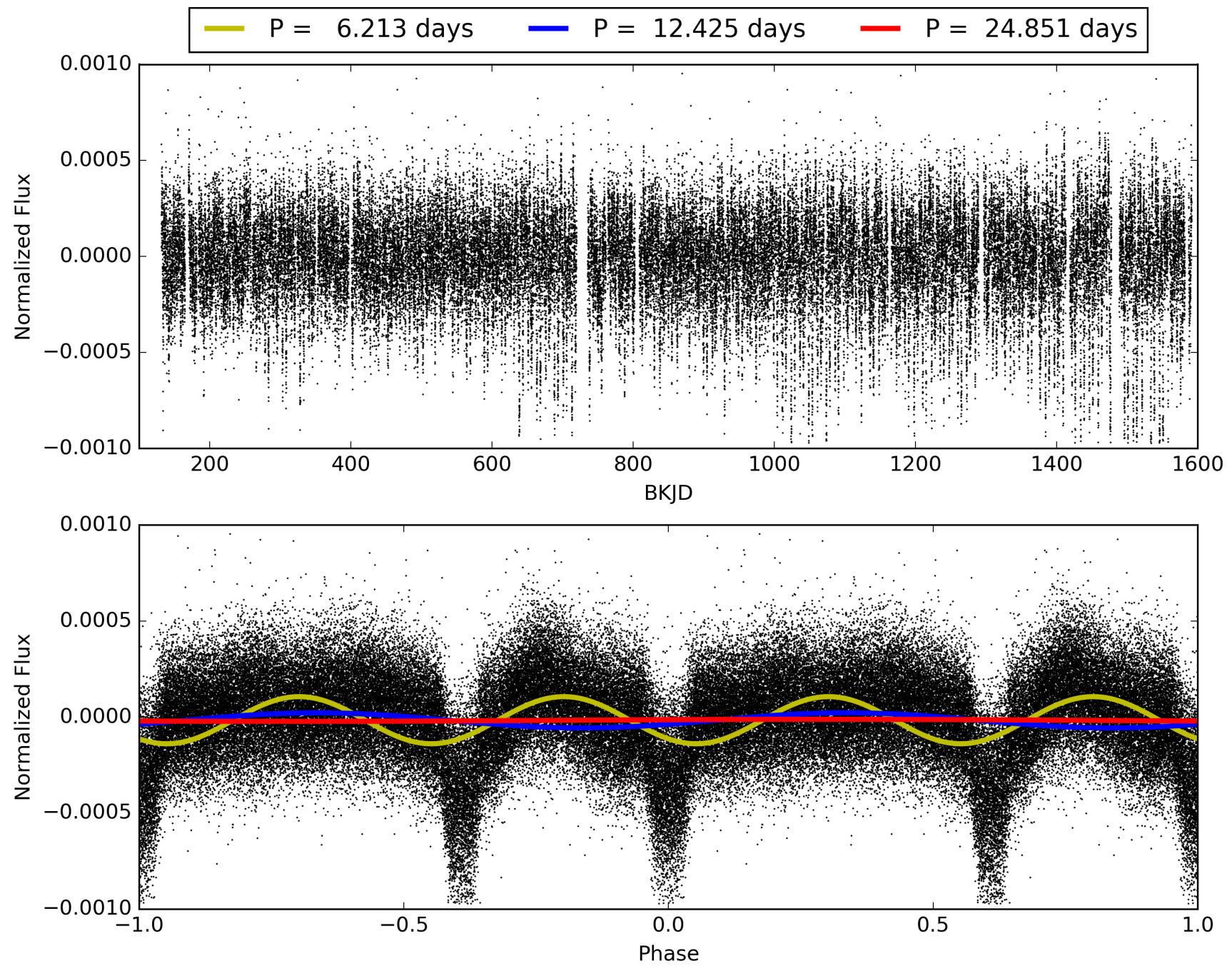
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.70e-54
RollingBand-fgt: 0.99 [107/108]
GhostDiagnostic-chr: 0.1032
Centroid-sig: 0.0%
Centroid-so: 4.536 arcsec [10.31σ]
OotOffset-rm: 2.182 arcsec [3.86σ]
KicOffset-rm: 2.206 arcsec [3.91σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005385548-02, PDC Light Curves

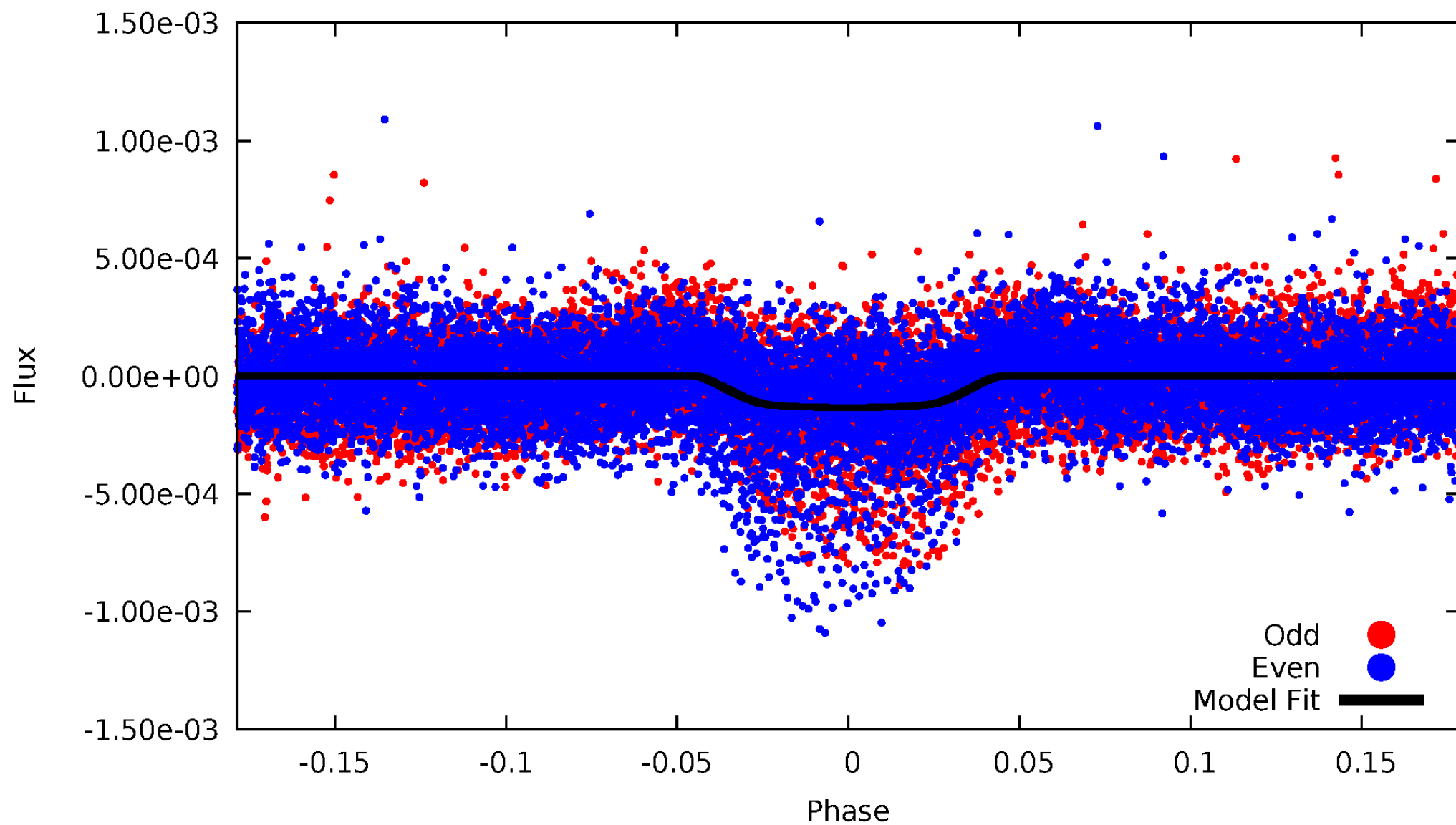


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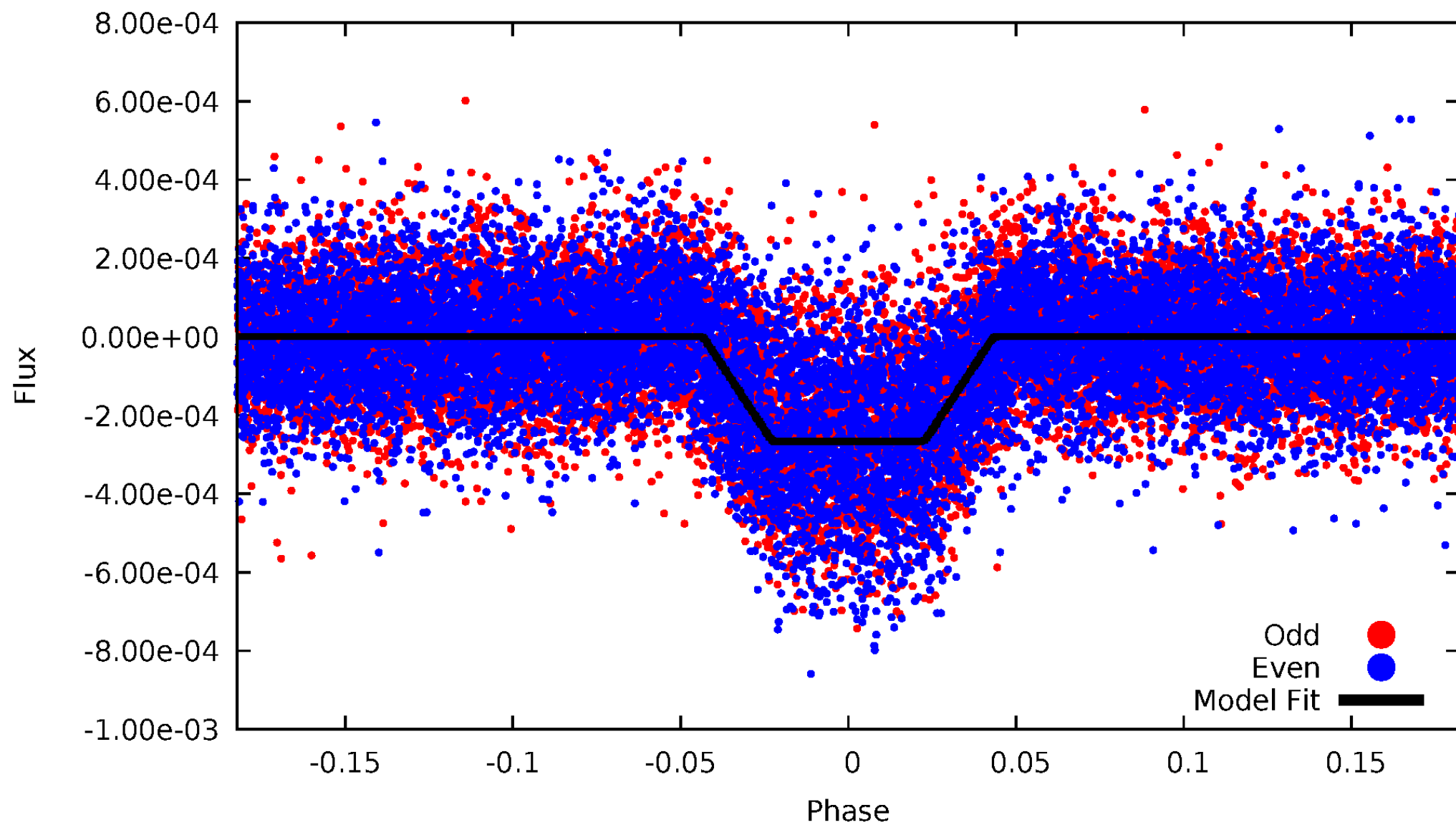
DV Odd/Even

TCE 005385548-02



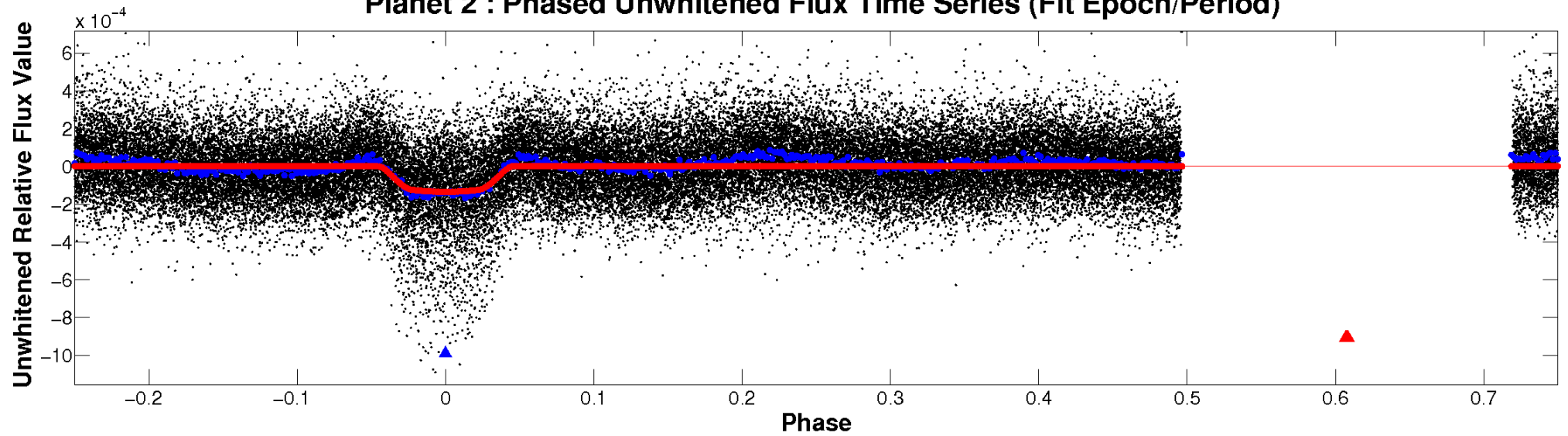
ALT Odd/Even

TCE 005385548-02

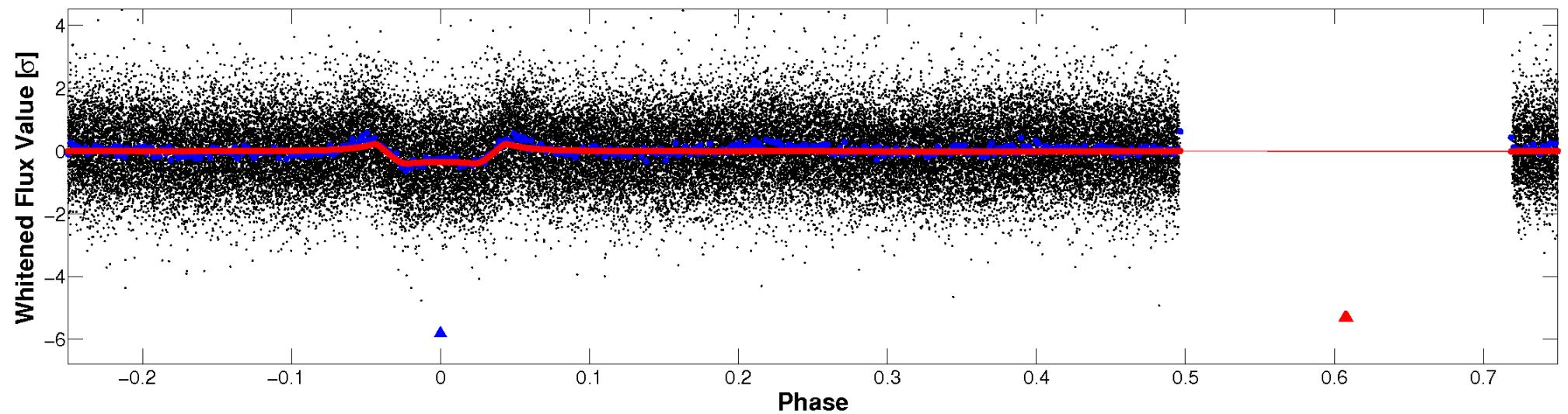


Non-Whitened Vs. Whitened Light Curve

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

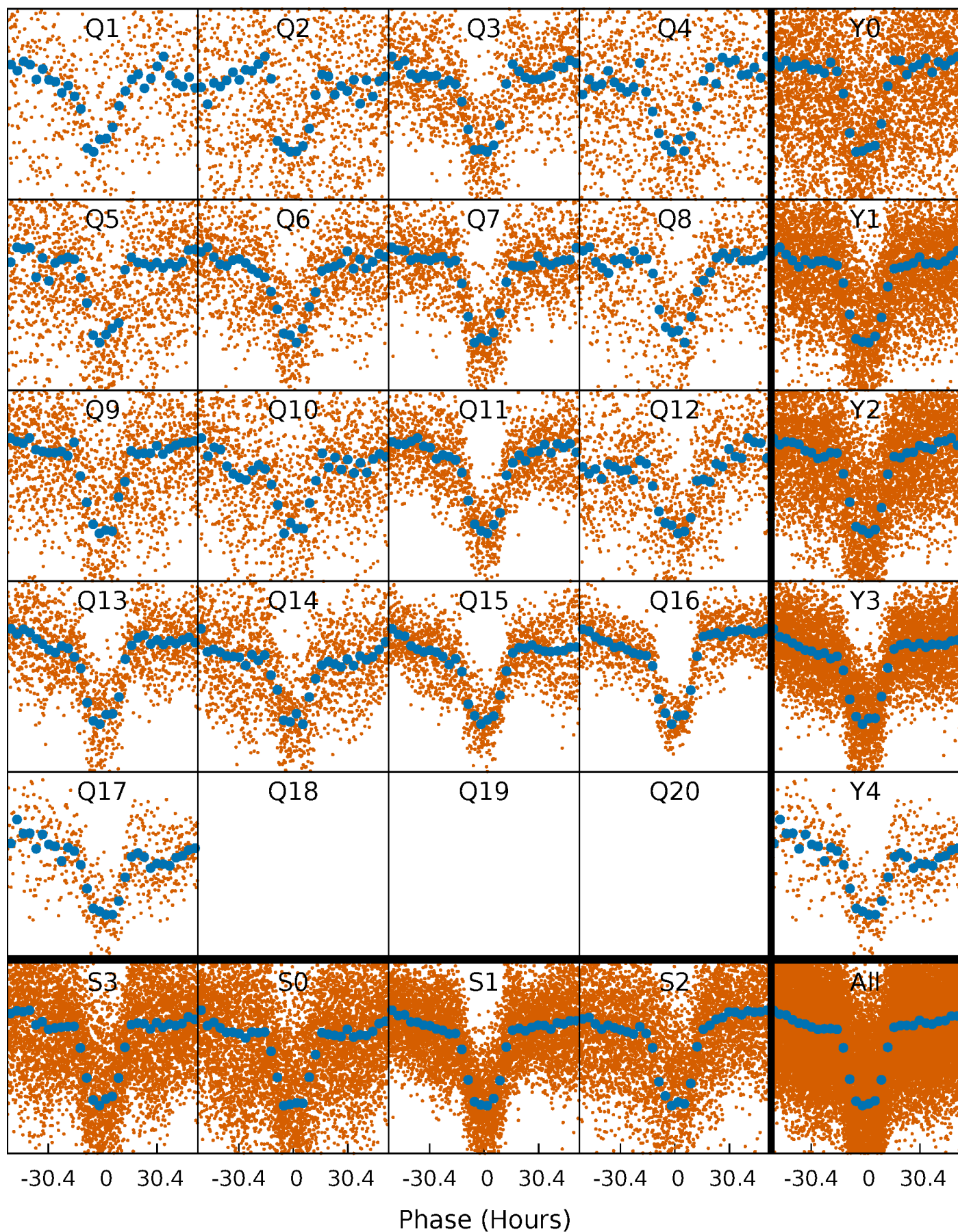


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



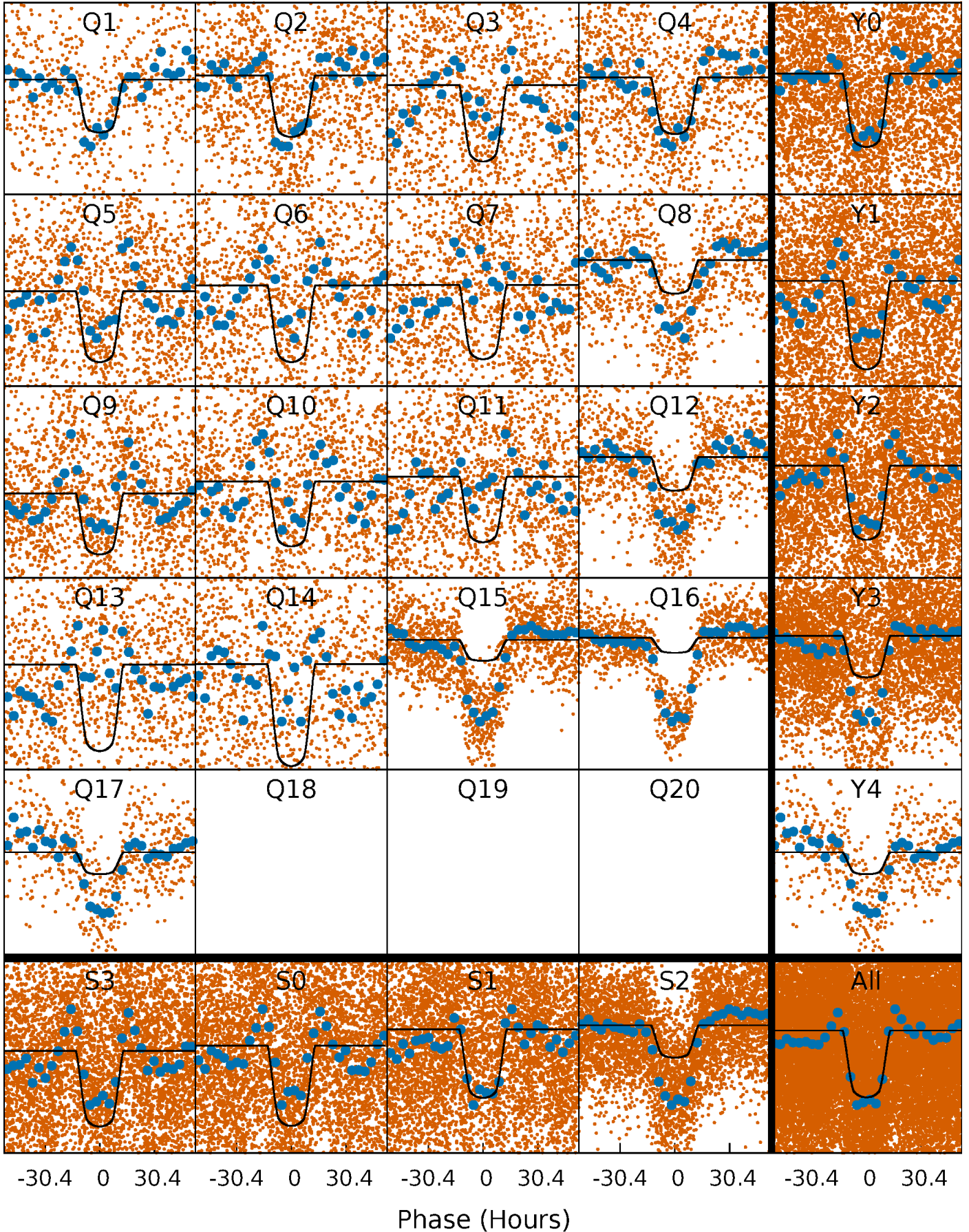
PDC Quarter-Phased Transit Curves

TCE 005385548-02 P= 12.425269 Days $T_0=133.980508$ (BKJD)



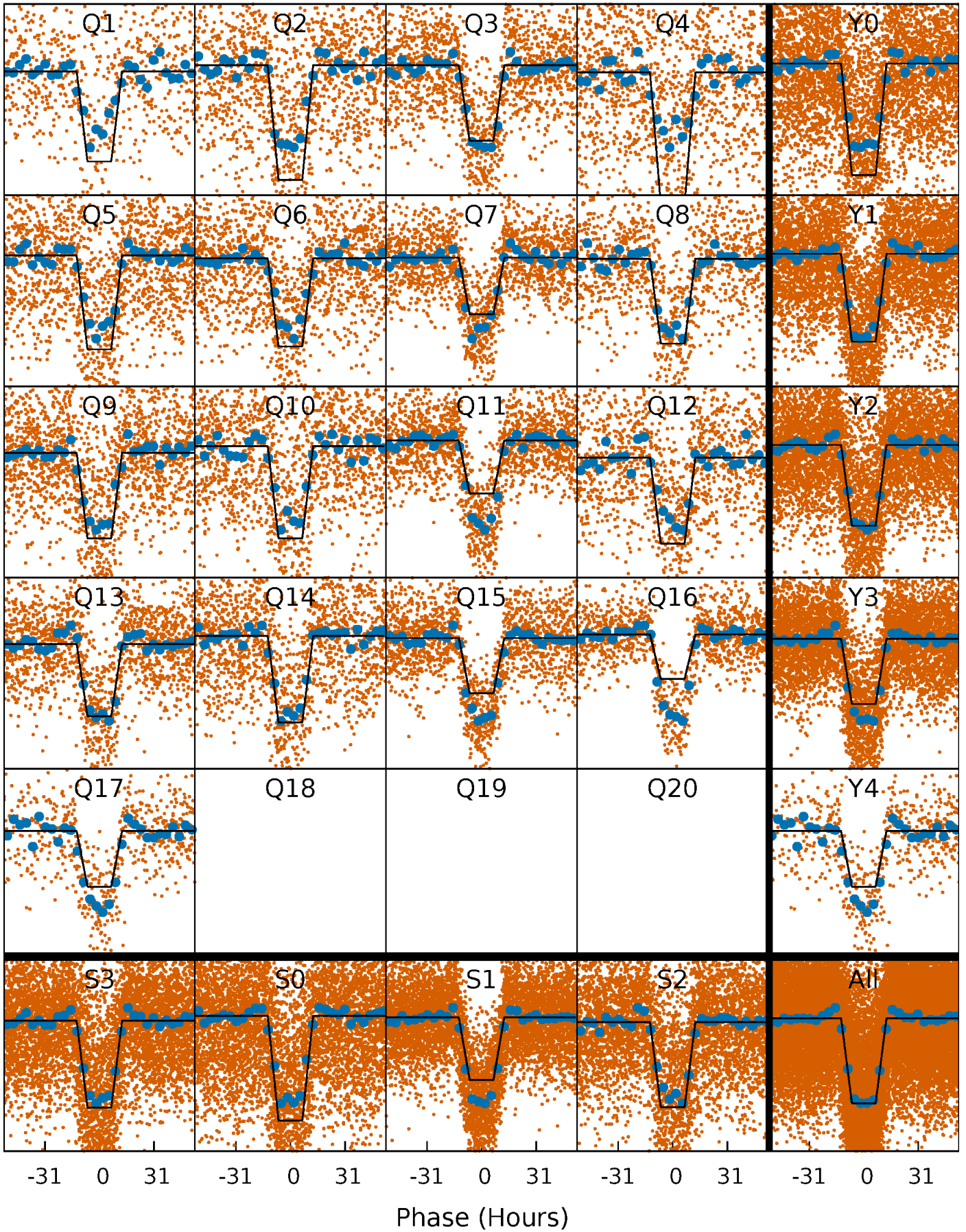
DV Quarter-Phased Transit Curves

TCE 005385548-02 P= 12.425269 Days $T_0=133.980508$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

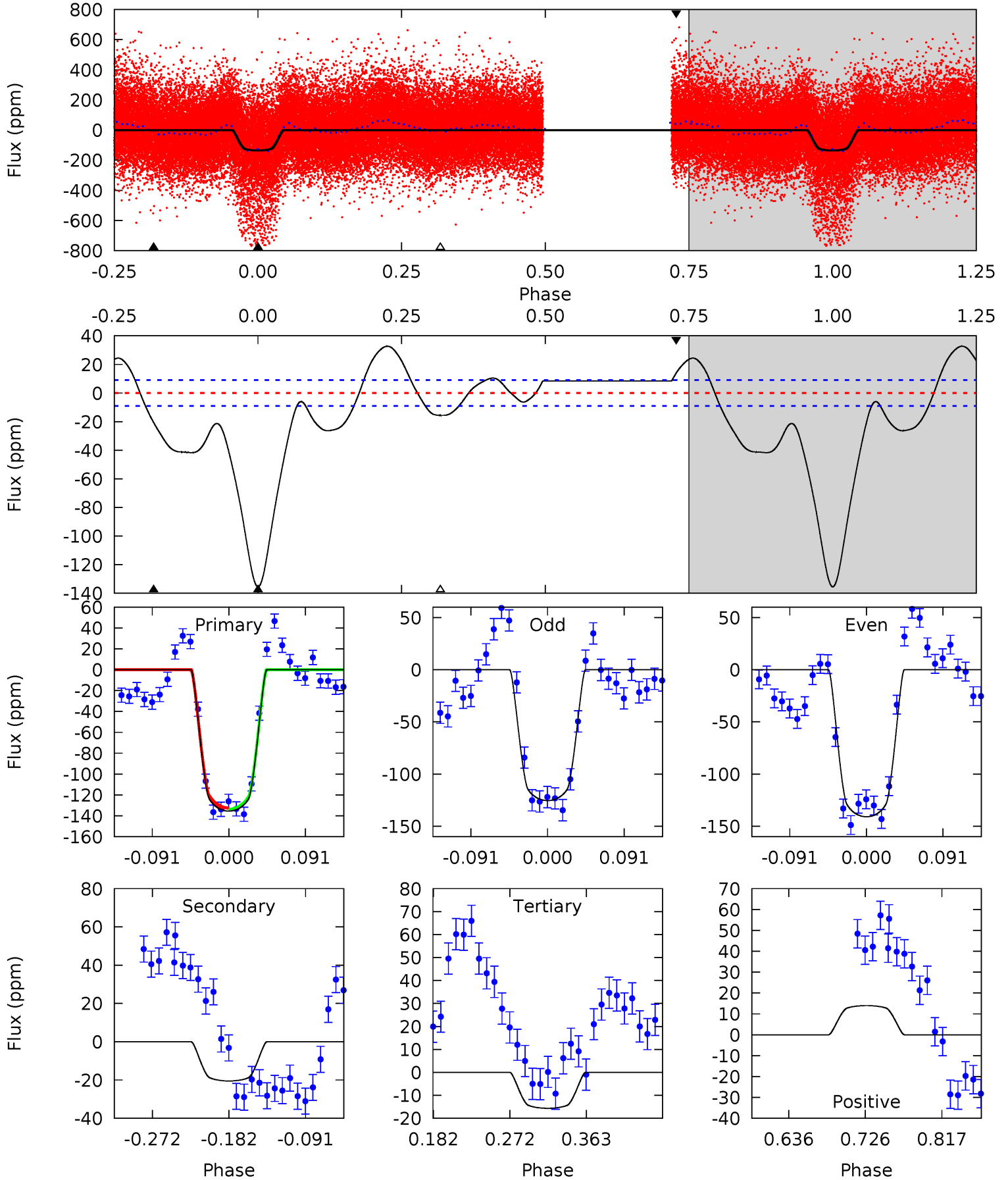
TCE 005385548-02 P= 12.425672 Days $T_0=133.959586$ (BKJD)



DV Model-Shift Uniqueness Test

005385548-02, $P = 12.425269$ Days, $E = 121.555239$ Days

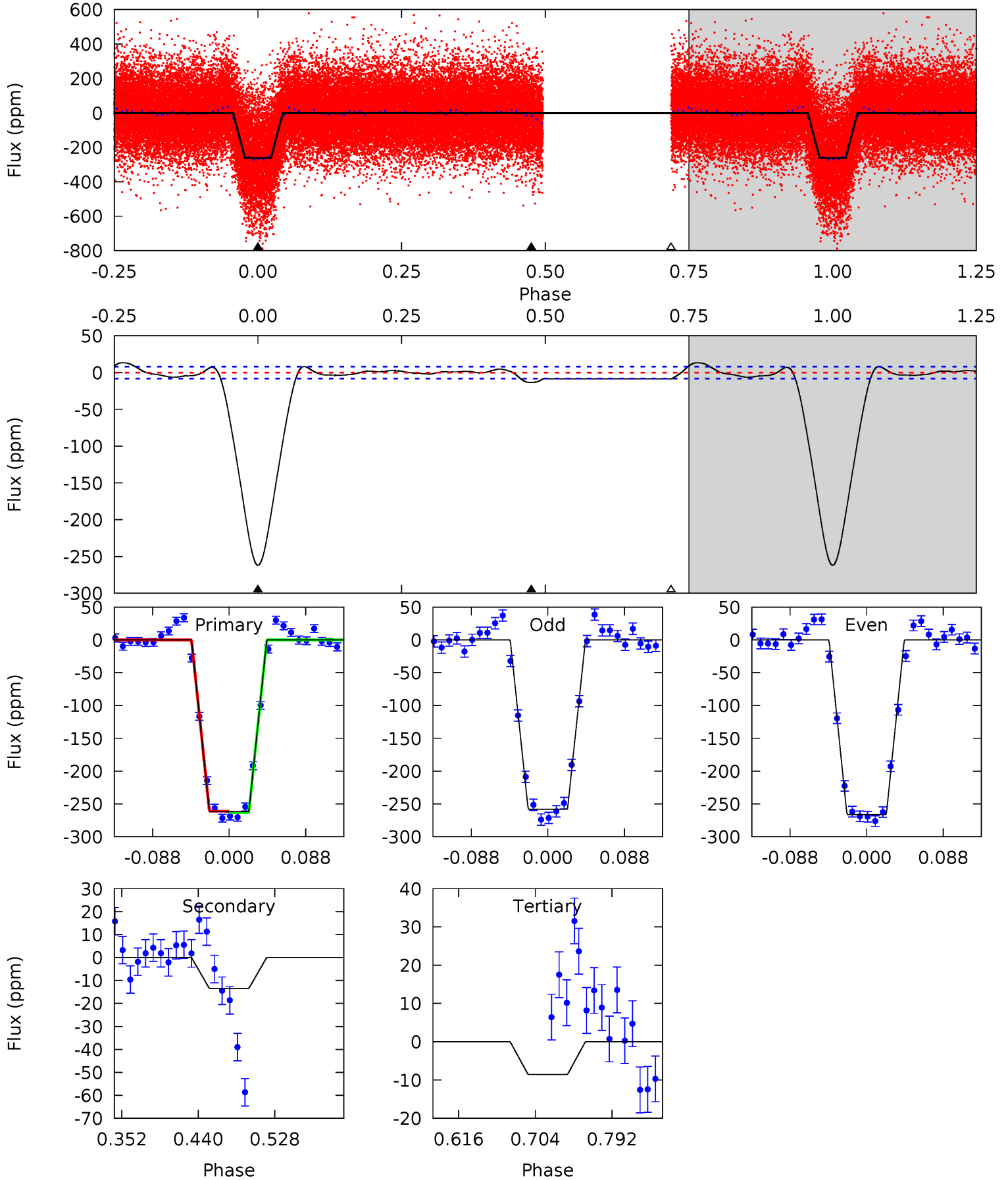
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
68.8	10.4	7.95	7.09	4.58	1.69	8.33	60.9	61.7	2.46	3.32	3.91	2.44	0.19	0.31



Alt Model-Shift Uniqueness Test

005385548-02, P = 12.425672 Days, E = 121.533914 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
148.6	7.66	4.86	0	4.59	1.71	2.47	143.8	148.6	2.80	7.66	2.35	1.06	0.05	0.63



Stellar Parameters For KIC 005385548

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6381^{+155}_{-214}	$4.155^{+0.246}_{-0.164}$	$-0.360^{+0.300}_{-0.300}$	$1.423^{+0.402}_{-0.402}$	$1.055^{+0.177}_{-0.133}$	$0.516^{+0.726}_{-0.228}$
	+2%/-3%	+6%/-4%	+83%/-83%	+28%/-28%	+17%/-13%	+141%/-44%
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 005385548-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 2	$2.14^{+0.33}_{-0.30}$	1424^{+109}_{-106}	3965^{+101}_{-123}	28^{+10}_{-7}
Alt.	-14 ± 2	$2.53^{+0.41}_{-0.40}$	1420^{+110}_{-117}	3486^{+102}_{-98}	13^{+6}_{-4}

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

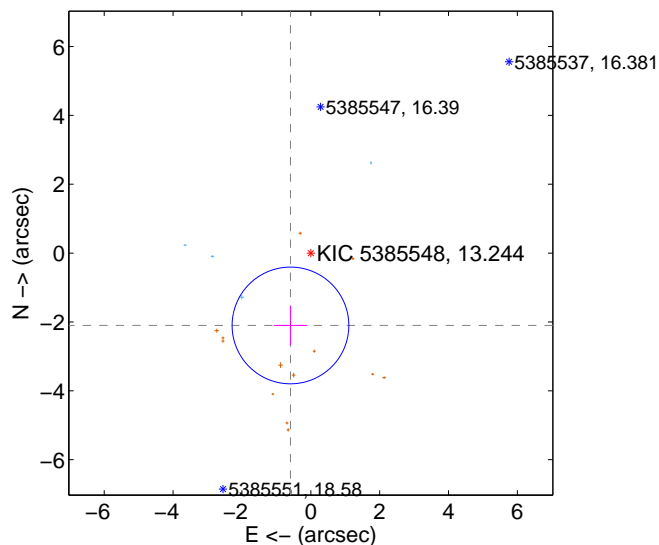
Supplemental centroid analysis for 005385548-02. Kepler magnitude: 13.24. Transit SNR 25.00

There are 4 quarters with good PRF difference image offsets

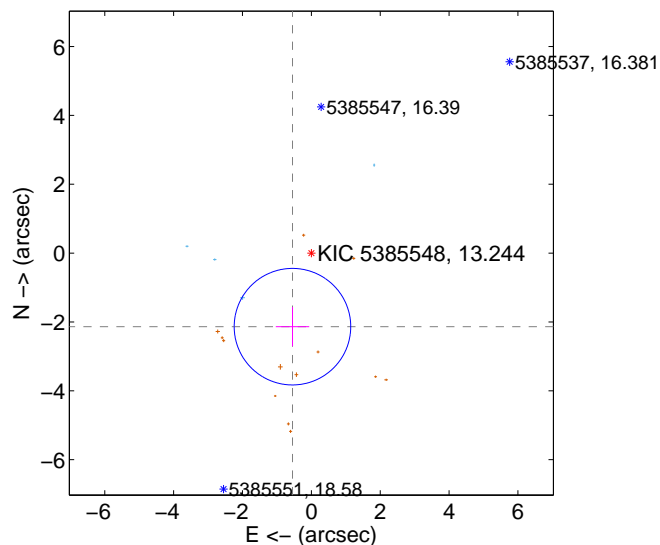
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.182 ± 0.565	3.86	0.590 ± 0.481	-2.101 ± 0.571
PRF-fit source offset from KIC position	2.206 ± 0.564	3.91	0.548 ± 0.486	-2.137 ± 0.569
photometric centroid source offset	4.54 ± 0.44	10.31	2.93 ± 0.42	-3.46 ± 0.45

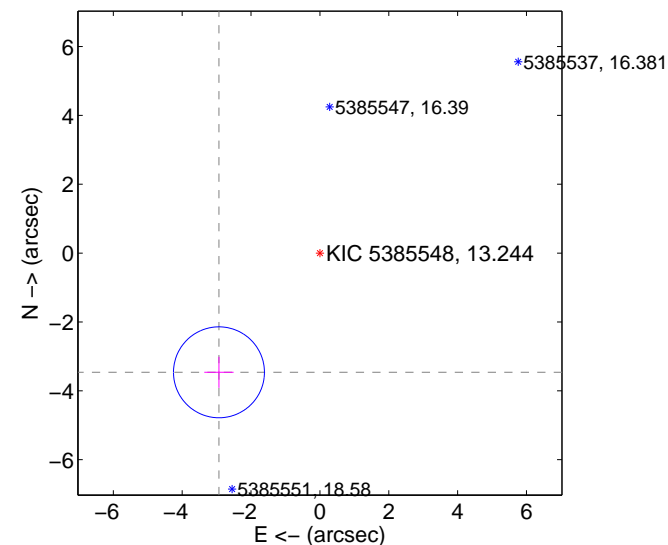
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

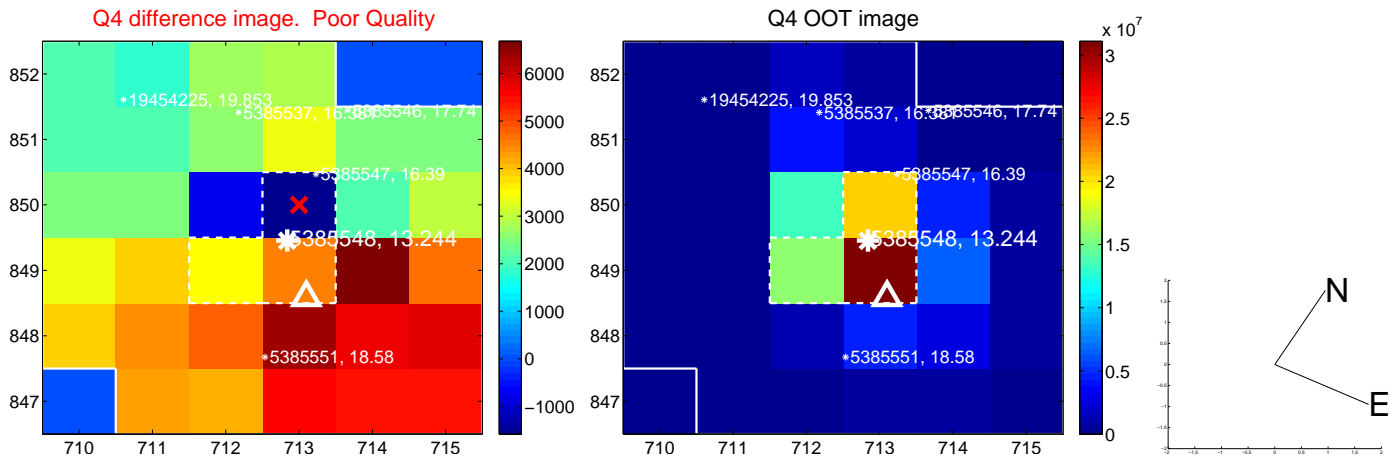
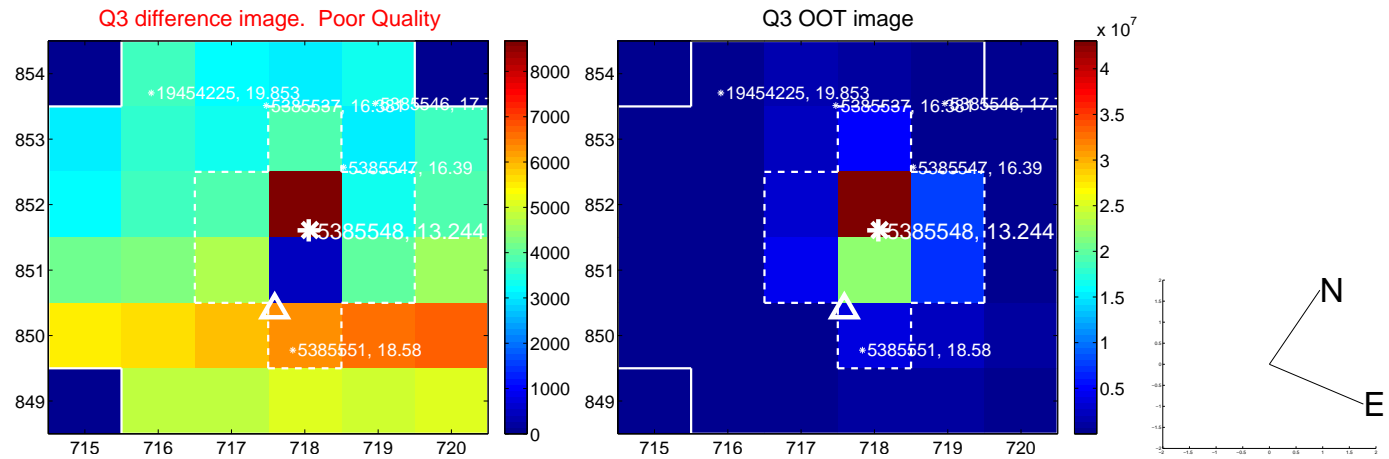
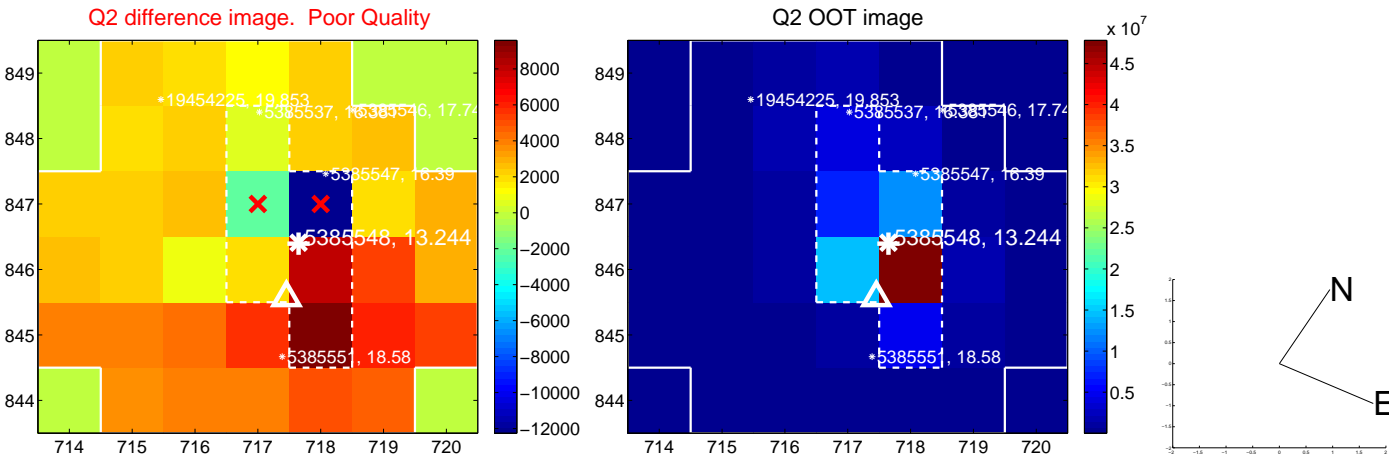
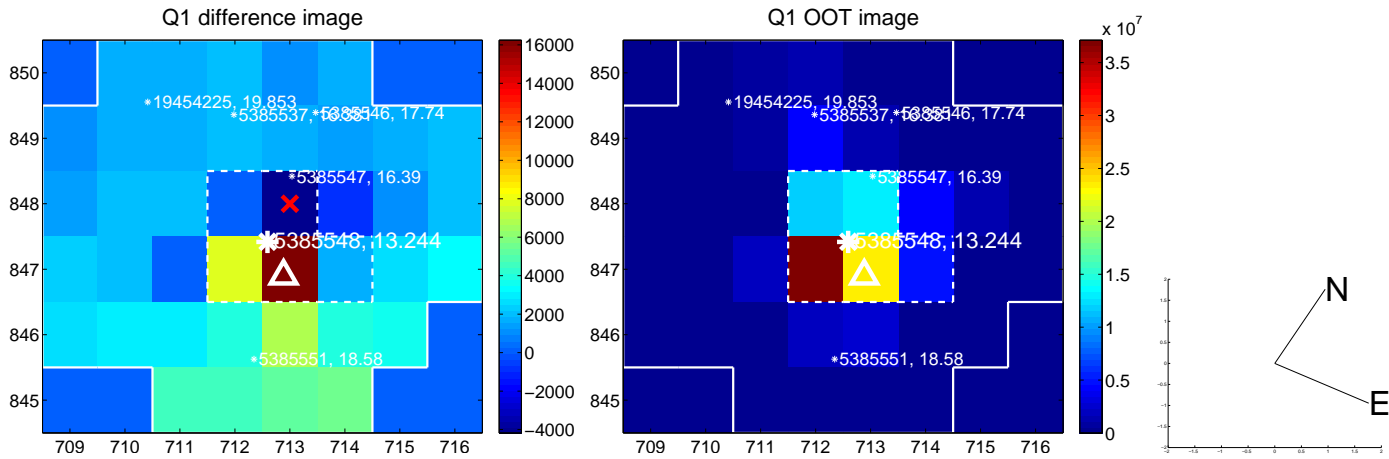


offset from photometric centroids

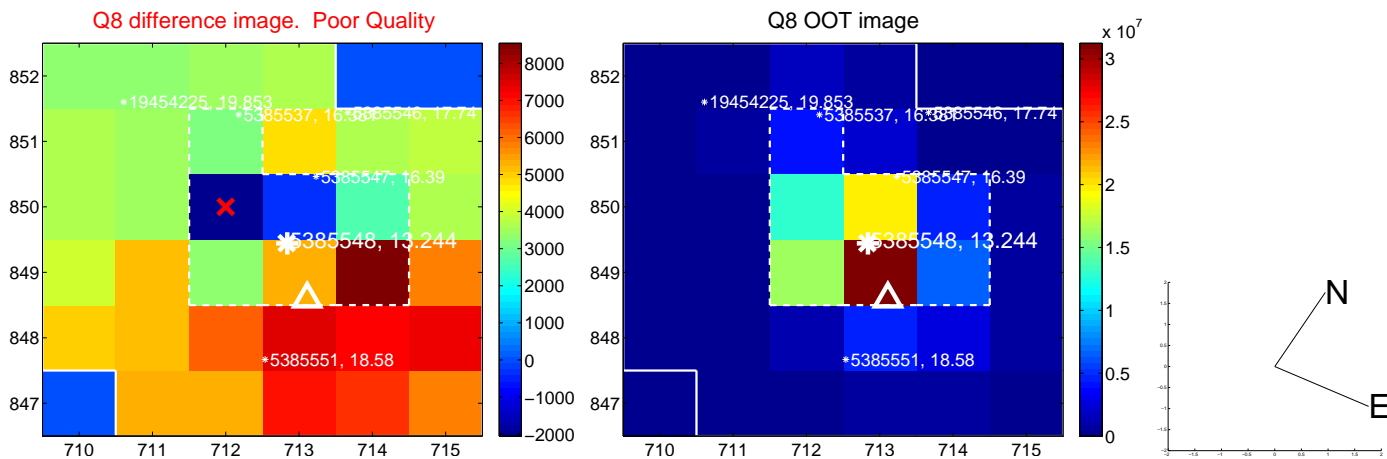
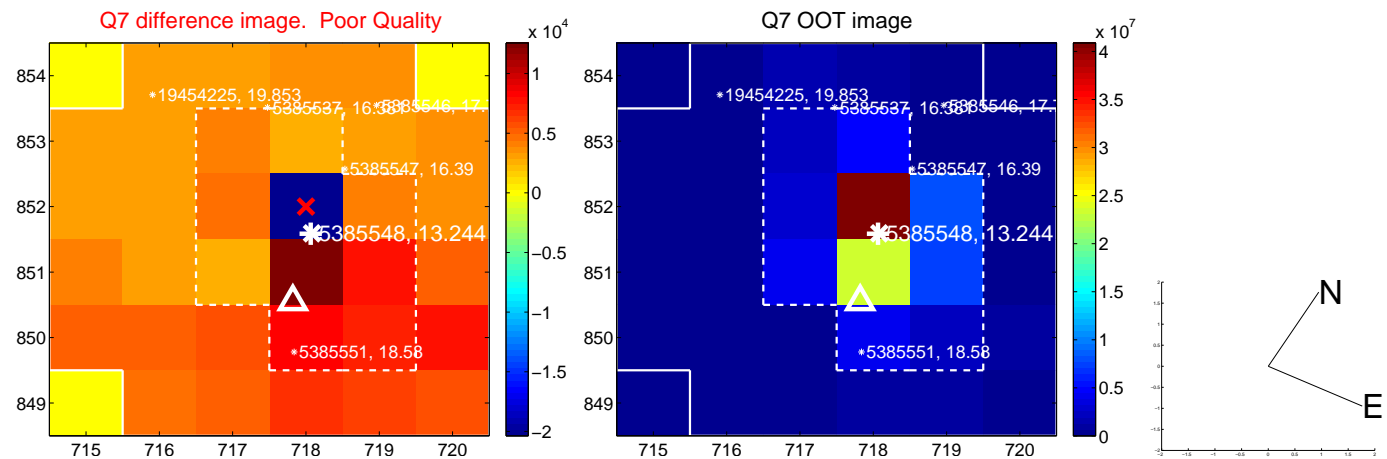
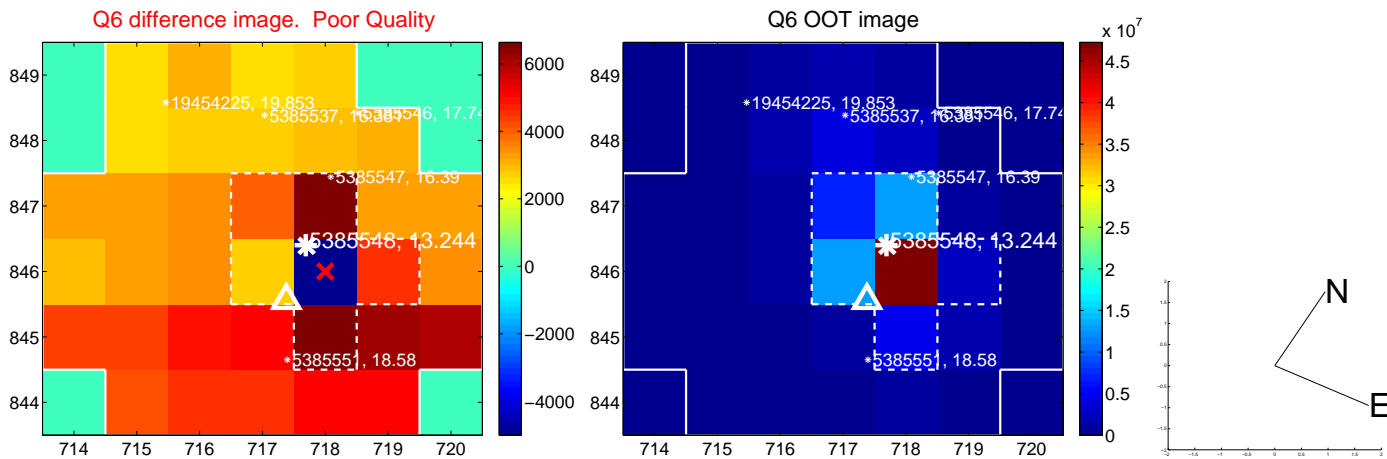
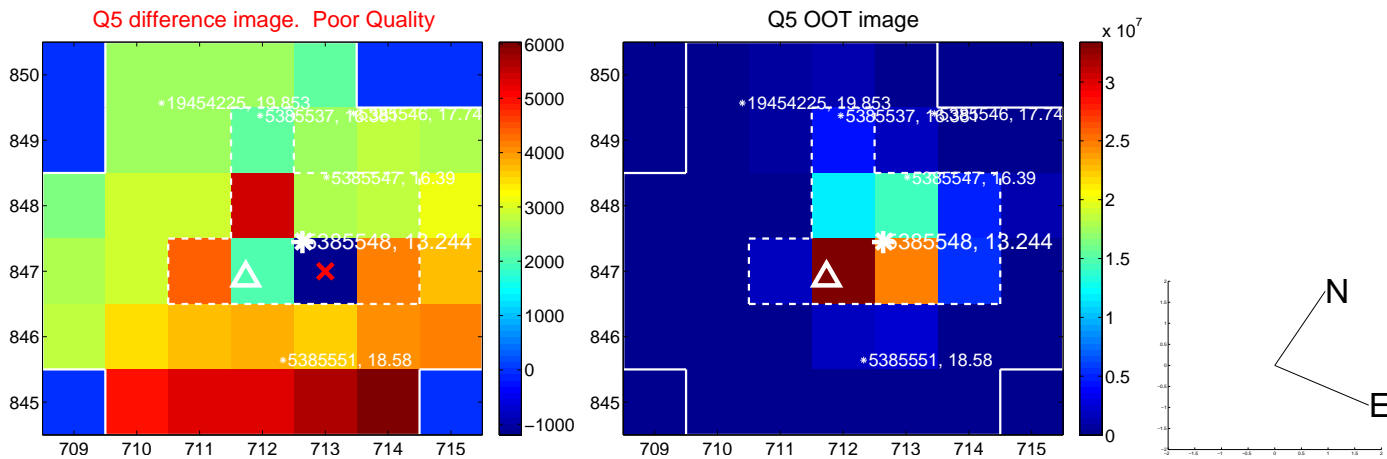


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

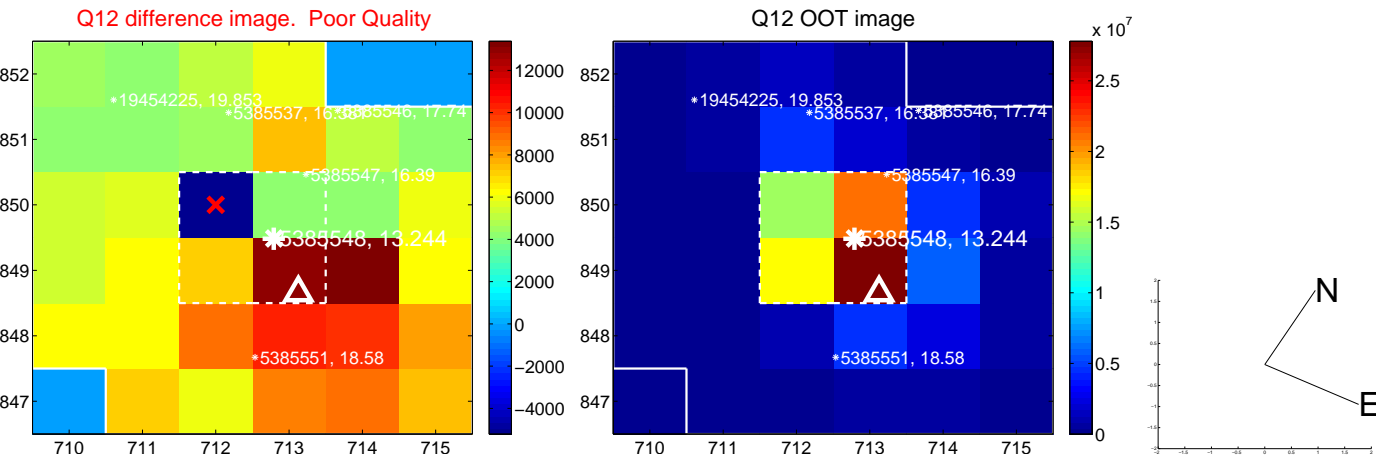
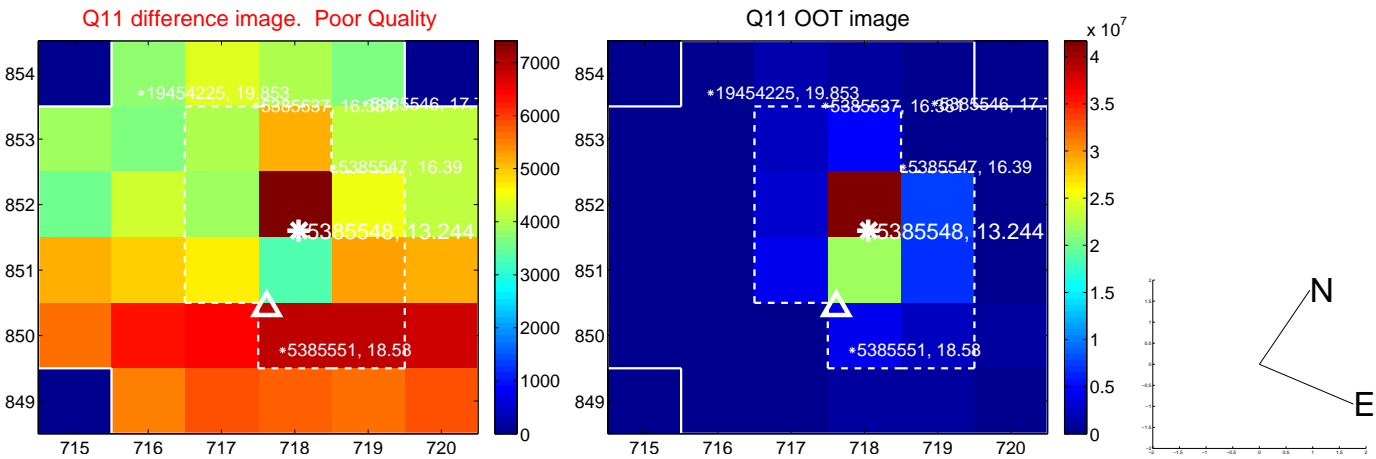
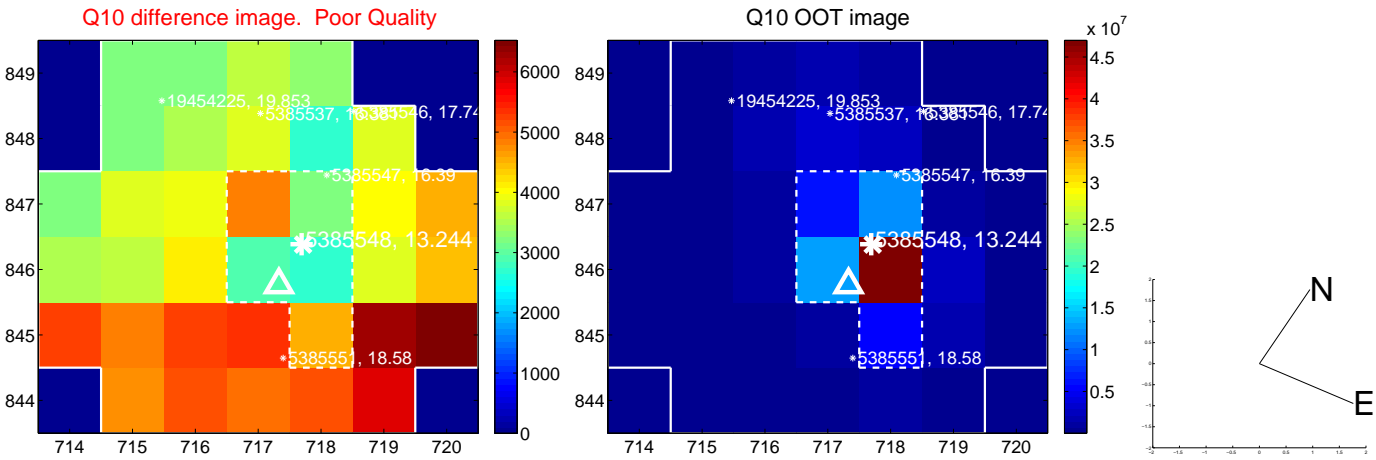
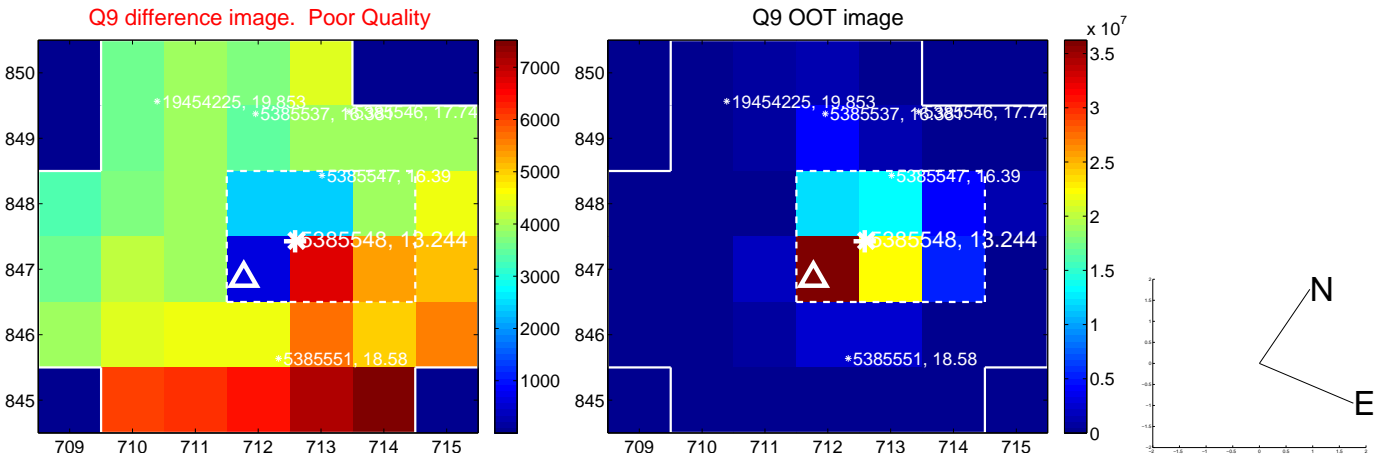
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



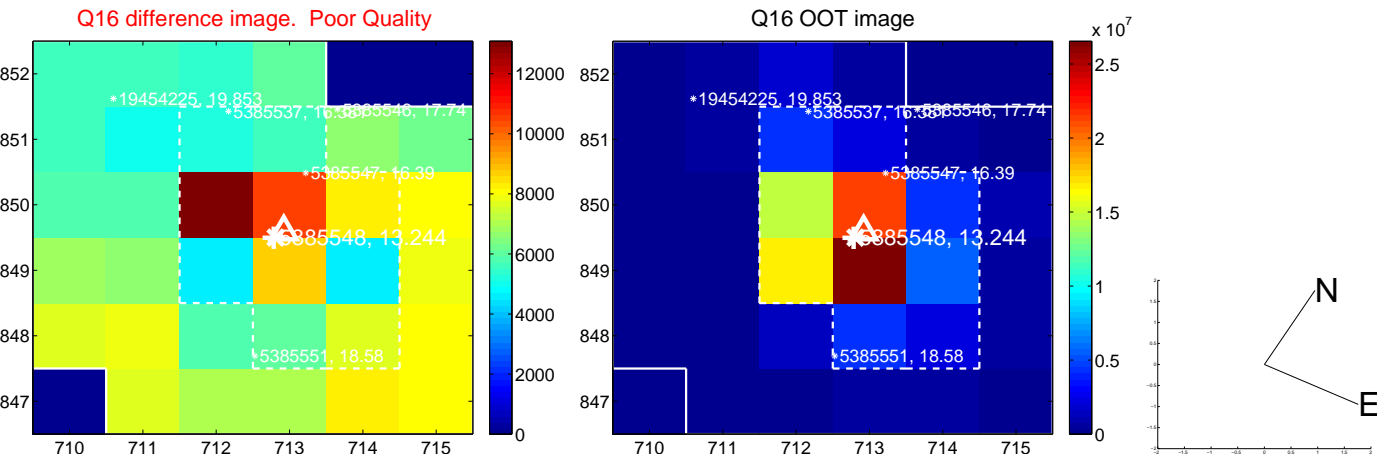
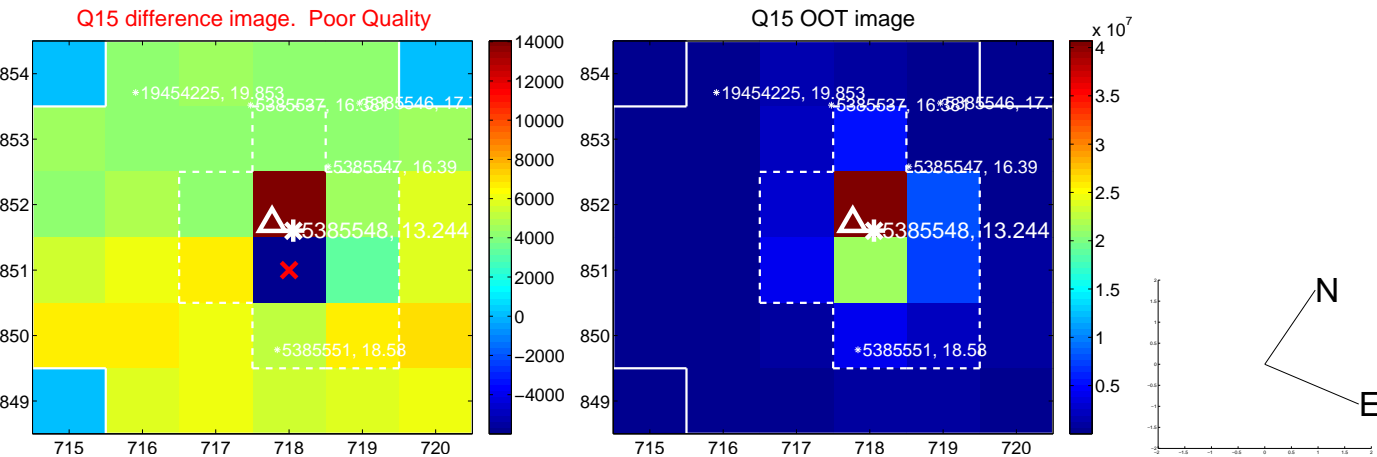
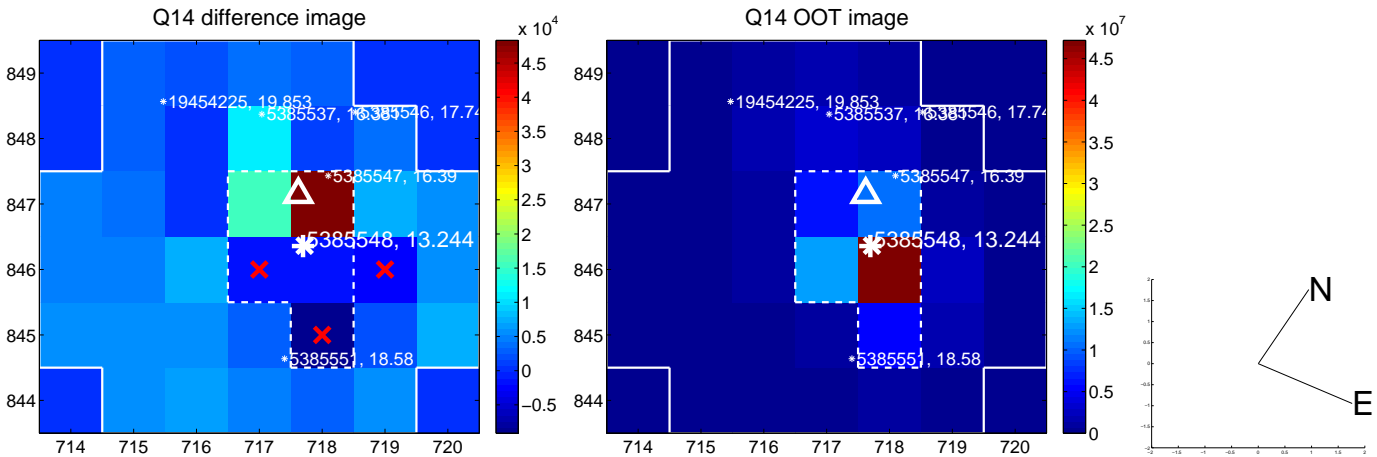
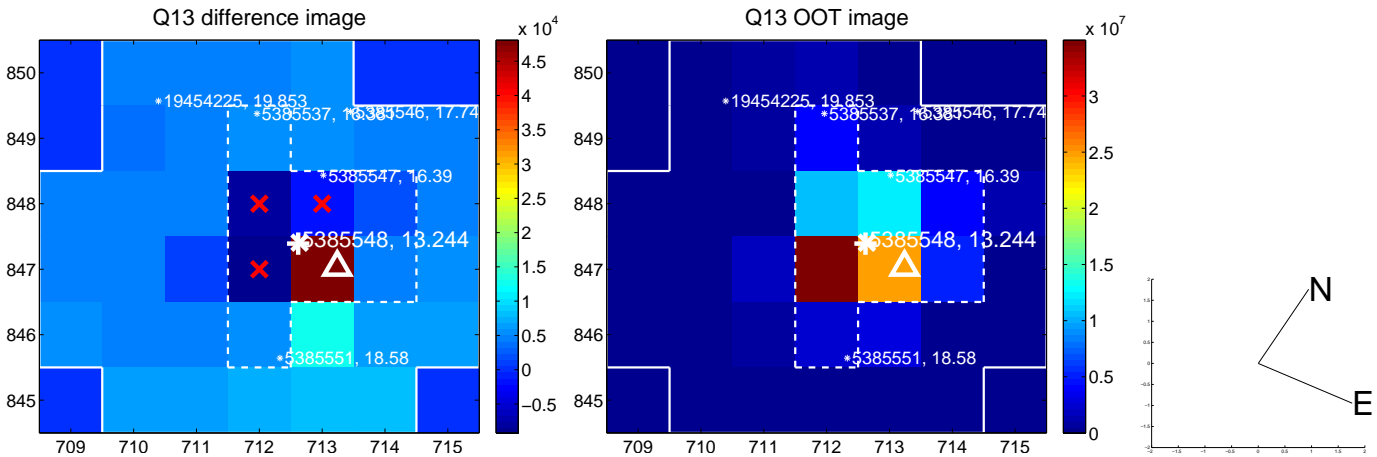
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



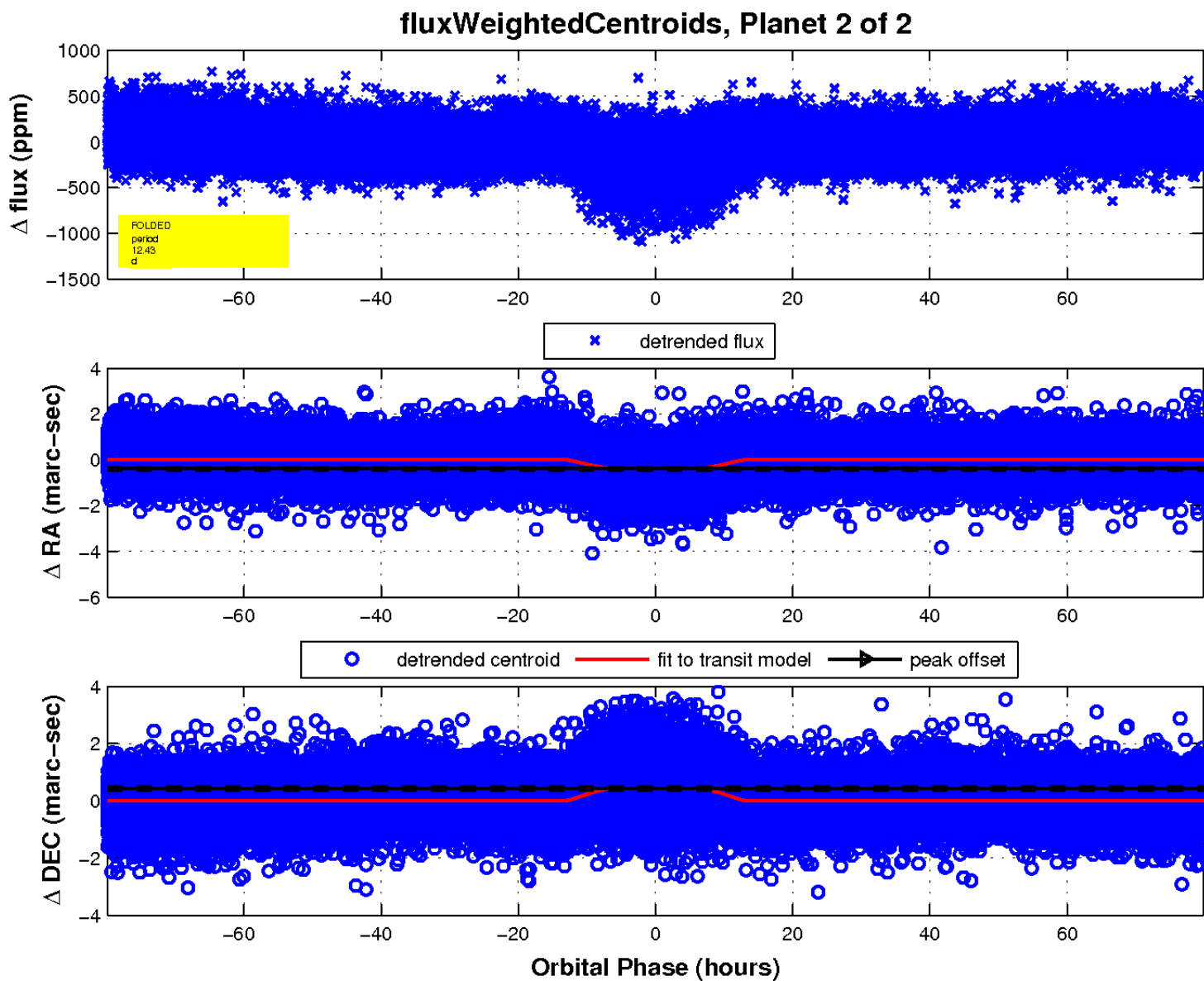
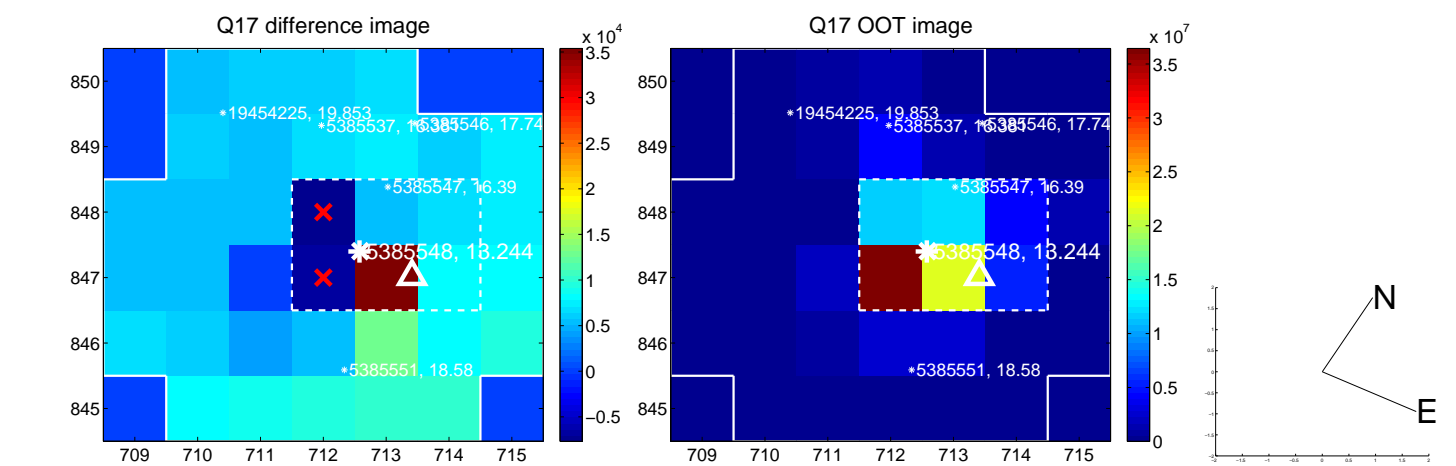
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

