

KIC 005385410

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})
005385410-01	OBS	4323.01	11.495975	139.373396	111.5	2.522	11.9	13.1	1.51	6290	1.87	296.02
005385410-02	OBS	4323.02	12.428557	141.322965	57.5	21.393	11.3	13.9	1.51	6290	1.21	266.78
005385410-03	OBS	No	12.424785	134.013875	50.3	21.691	11.5	13.3	1.51	6290	1.16	266.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385410-01	OBS	PC	0.91	0	0	0	0	NO_COMMENT
005385410-02	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385410-03	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—EPHEM_MATCH

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

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

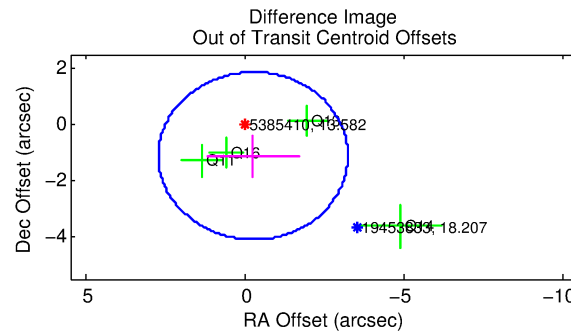
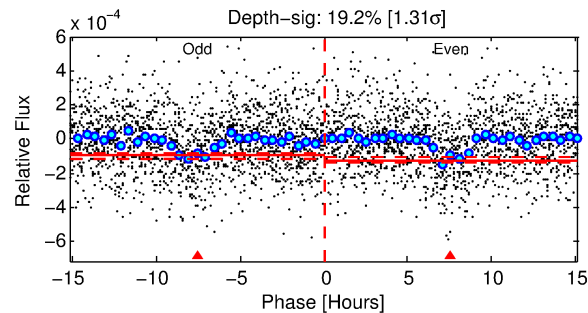
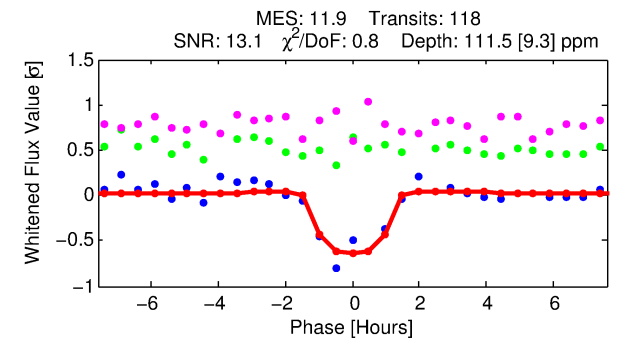
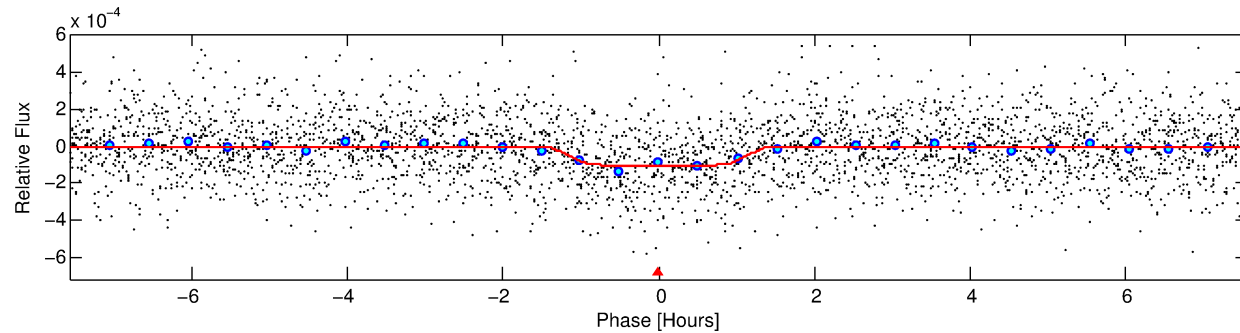
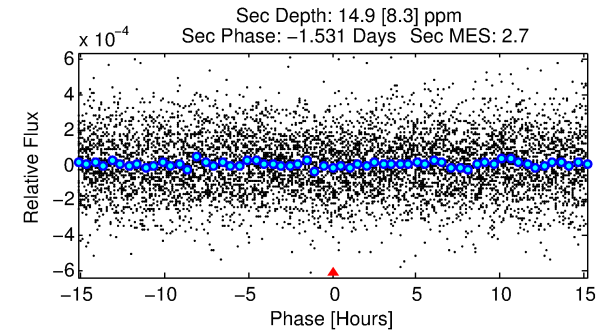
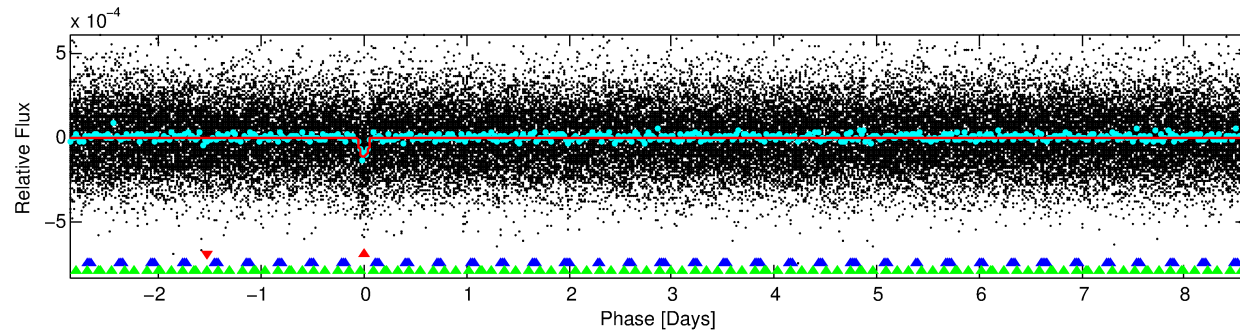
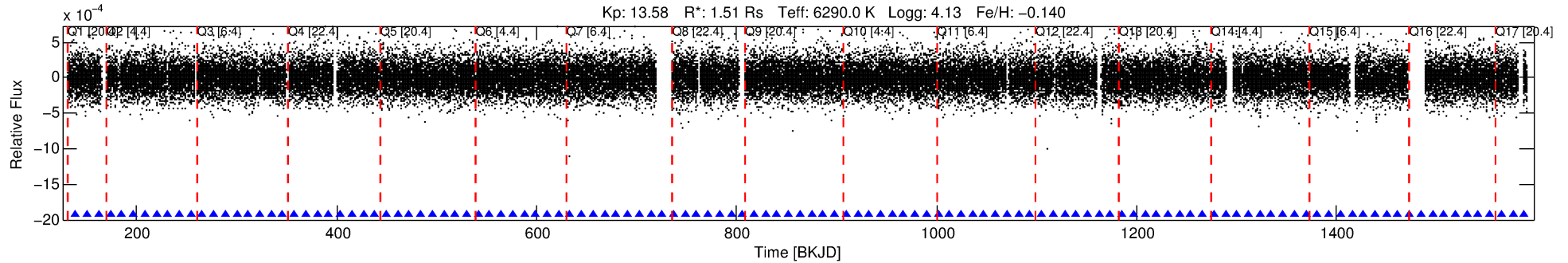
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005385410-01

No Significant Match Found

DV One-Page Summary

KIC: 5385410 Candidate: 1 of 3 Period: 11.496 d
KOI: K04323.01 Corr: 0.952



DV Fit Results:

Period = 11.49597 [0.00006] d
Epoch = 139.3734 [0.0044] BKJD
Rp/R* = 0.0114 [0.0054]
a/R* = 15.74 [41.51]
b = 0.91 [0.54]
Seff = 296.02 [134.28]
Teq = 1058 [120] K
Rp = 1.87 [1.05] Re
a = 0.1037 [0.0286] AU
Ag = 25.06 [29.64] [0.81σ]
Teffp = 3659 [1014] K [2.55σ]

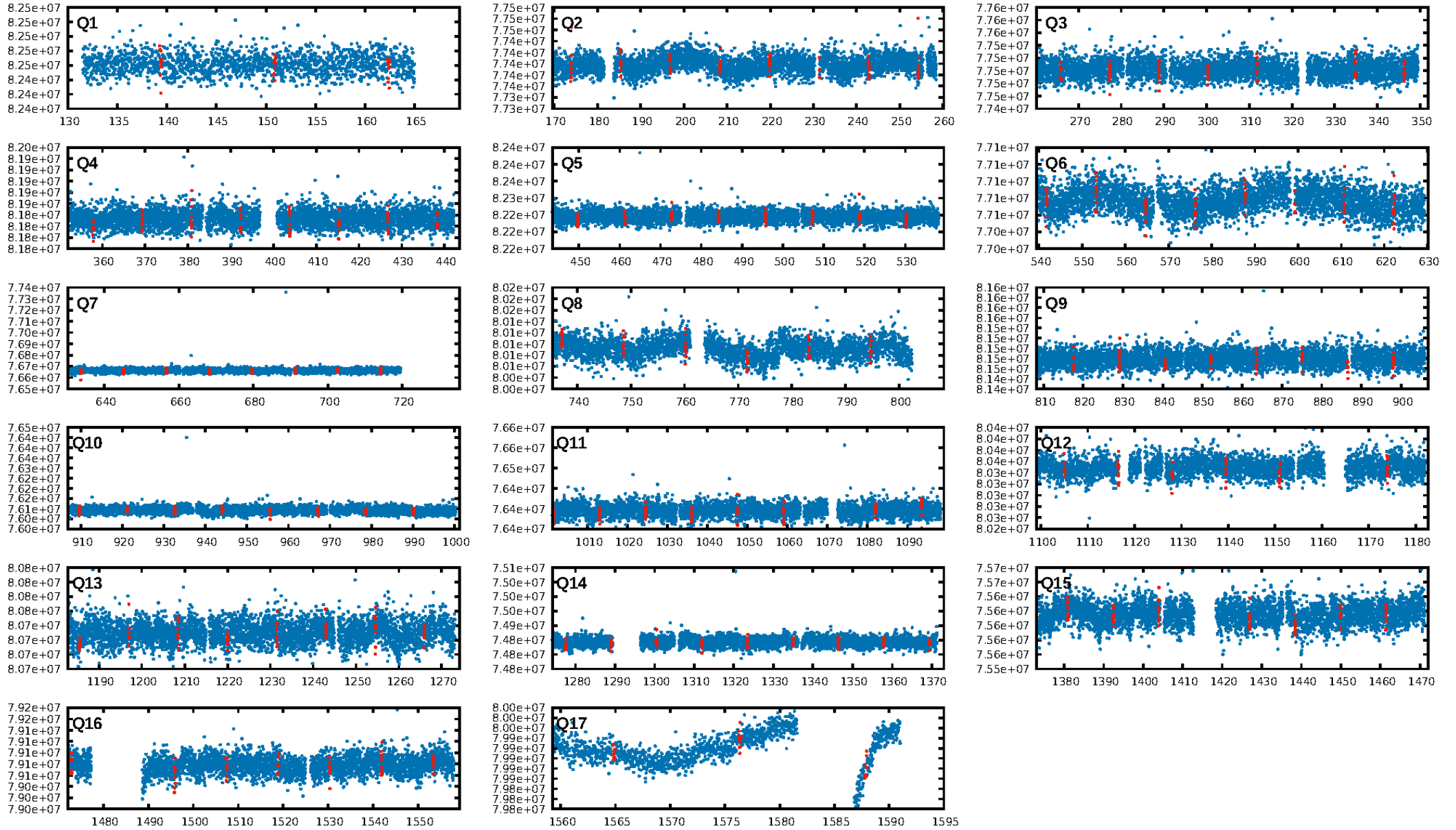
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 69.3% [1.02σ]
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.43e-33
RollingBand-fgt: 1.00 [112/112]
GhostDiagnostic-chr: 0.9605
Centroid-sig: 0.0%
Centroid-so: 2.282 arcsec [2.31σ]
OotOffset-rm: 1.144 arcsec [1.15σ]
KicOffset-rm: 1.094 arcsec [1.18σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [17/17]

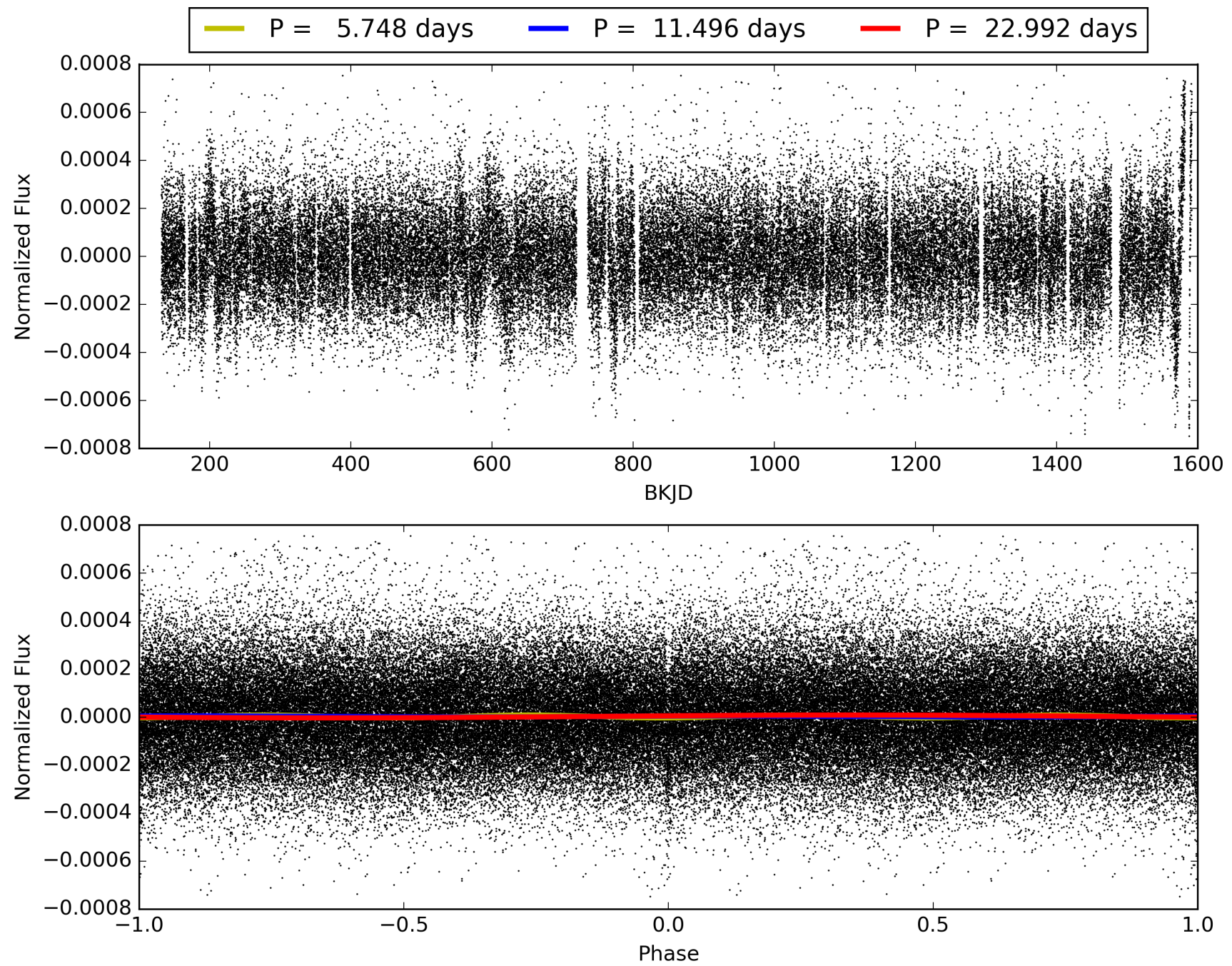
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005385410-01, PDC Light Curves

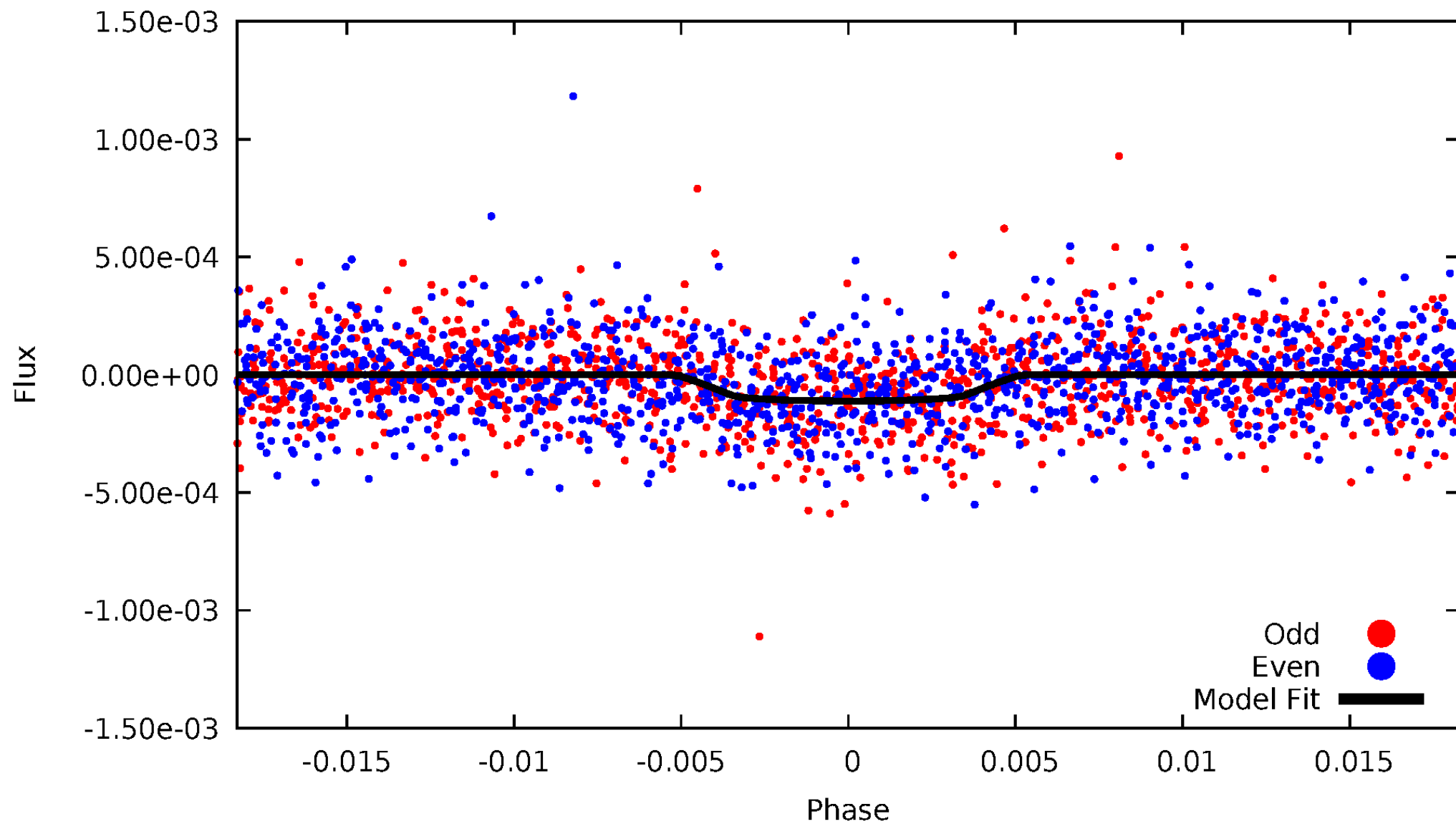


TCE 005385410-01



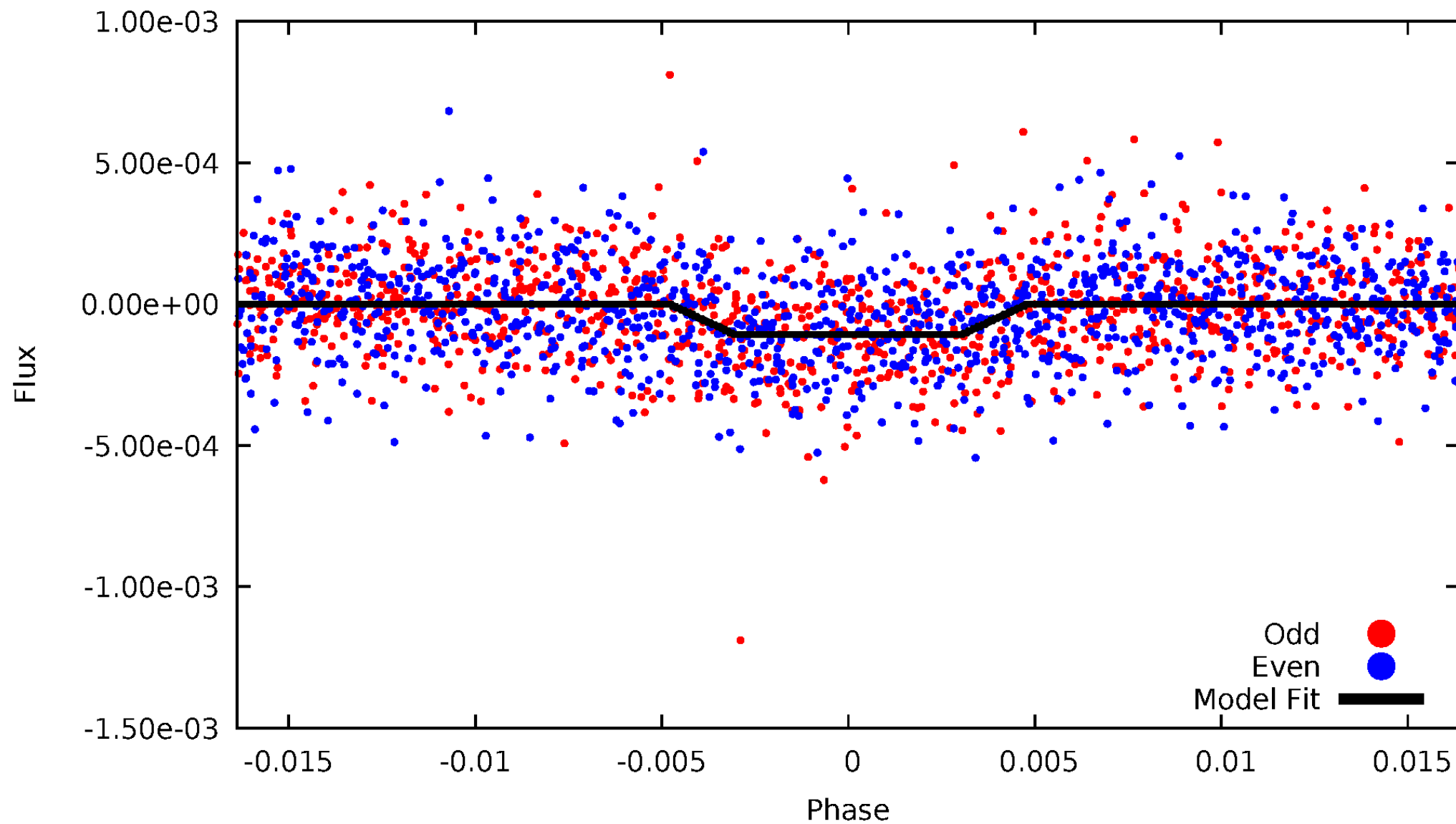
DV Odd/Even

TCE 005385410-01

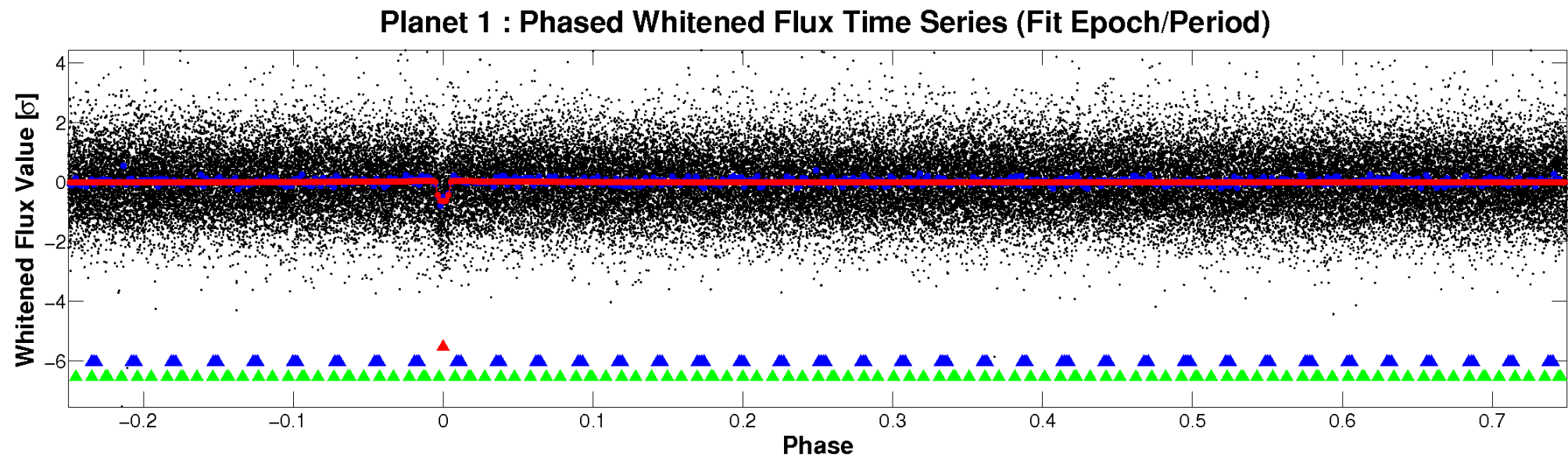
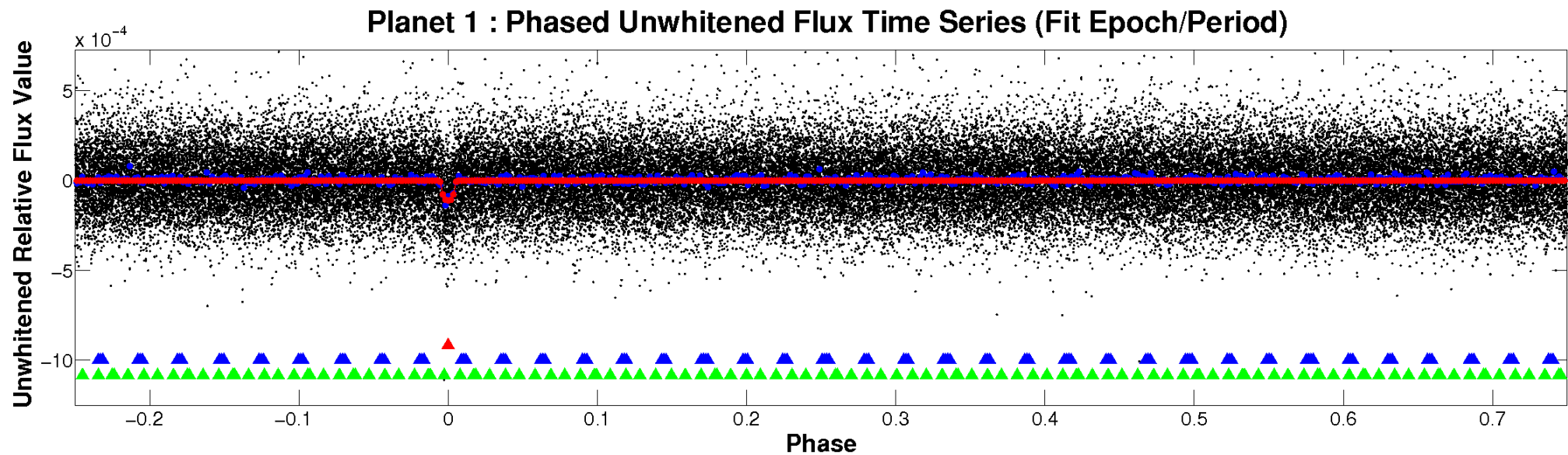


ALT Odd/Even

TCE 005385410-01

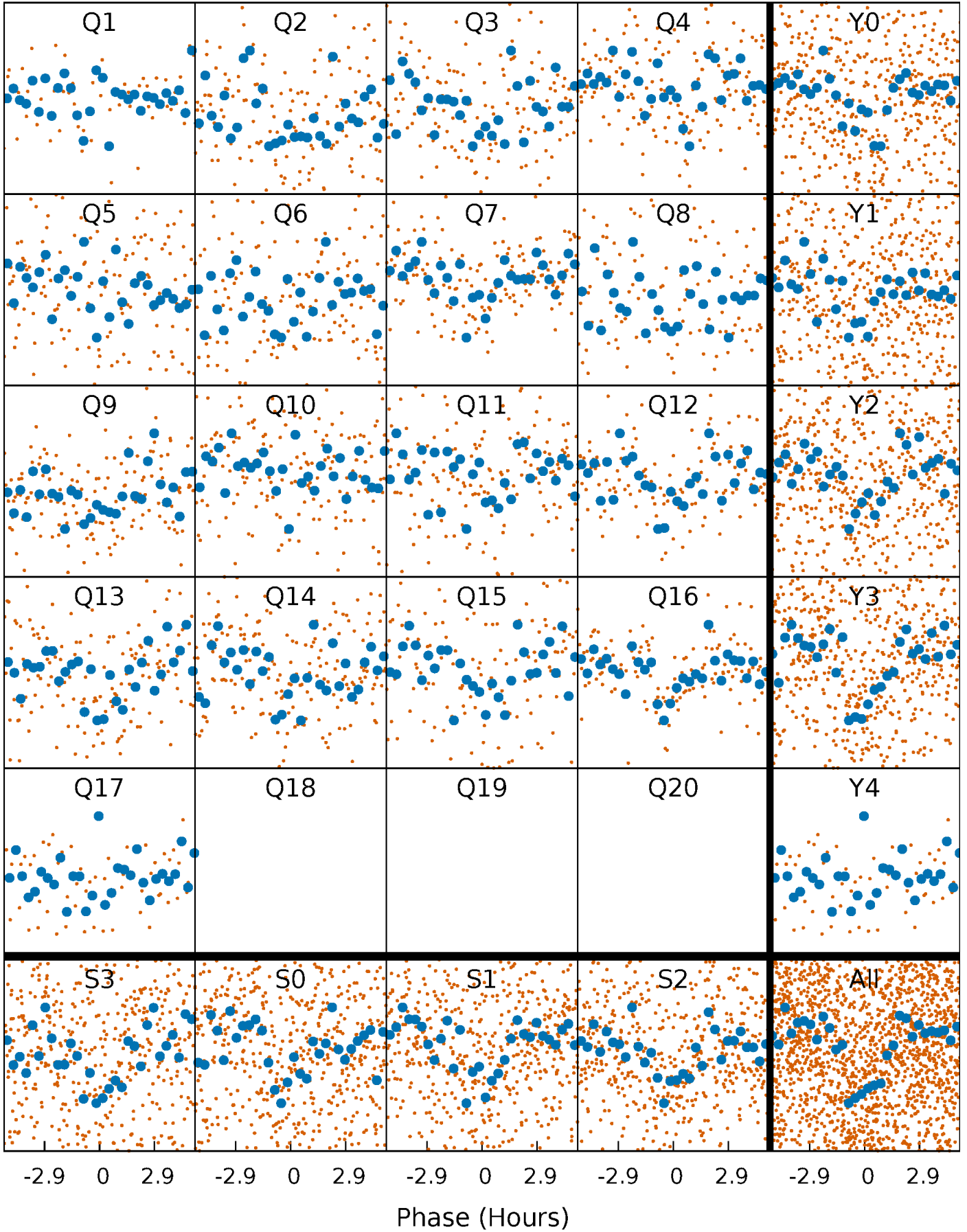


Non-Whitened Vs. Whitened Light Curve



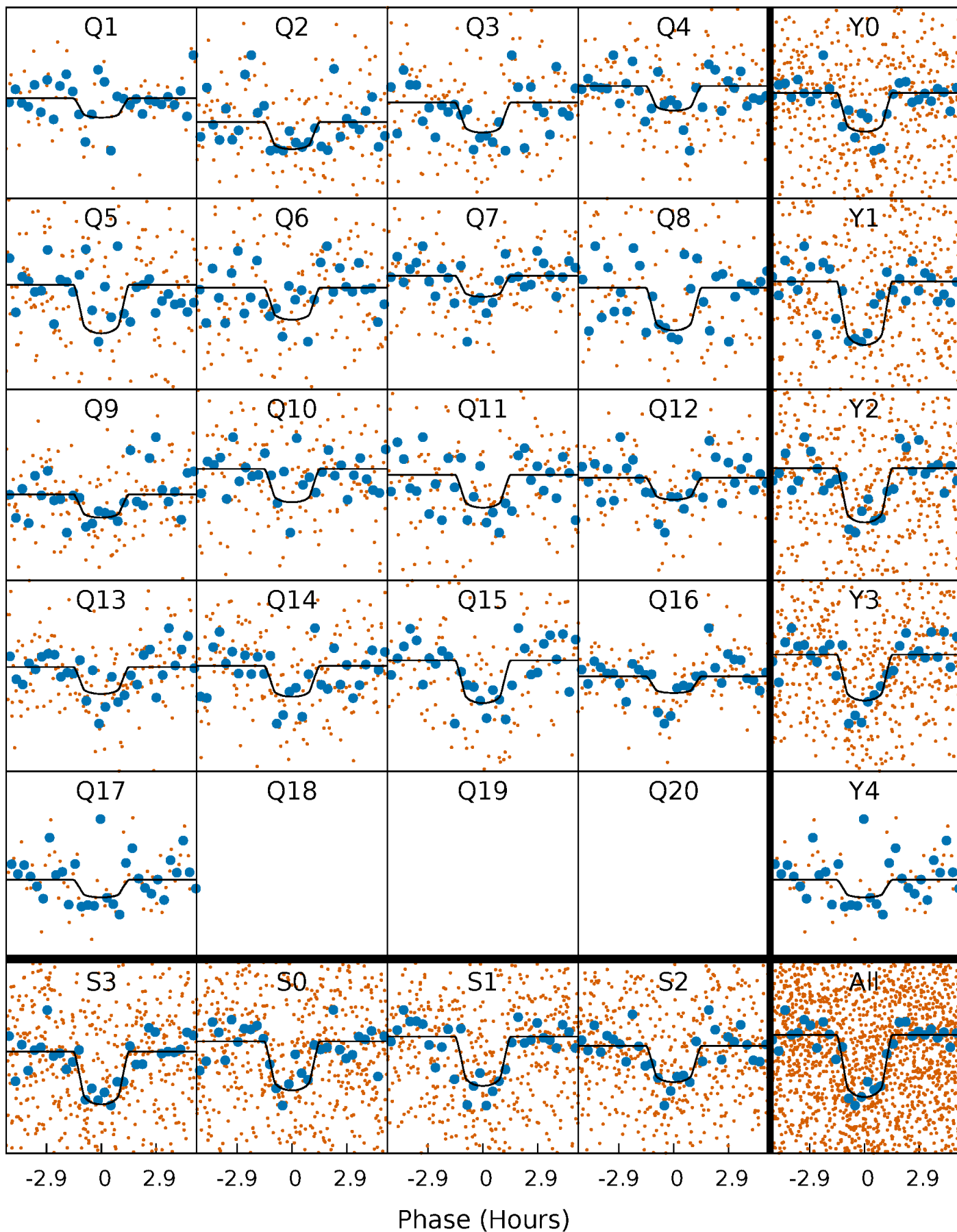
PDC Quarter-Phased Transit Curves

TCE 005385410-01 P= 11.495975 Days $T_0=139.373396$ (BKJD)



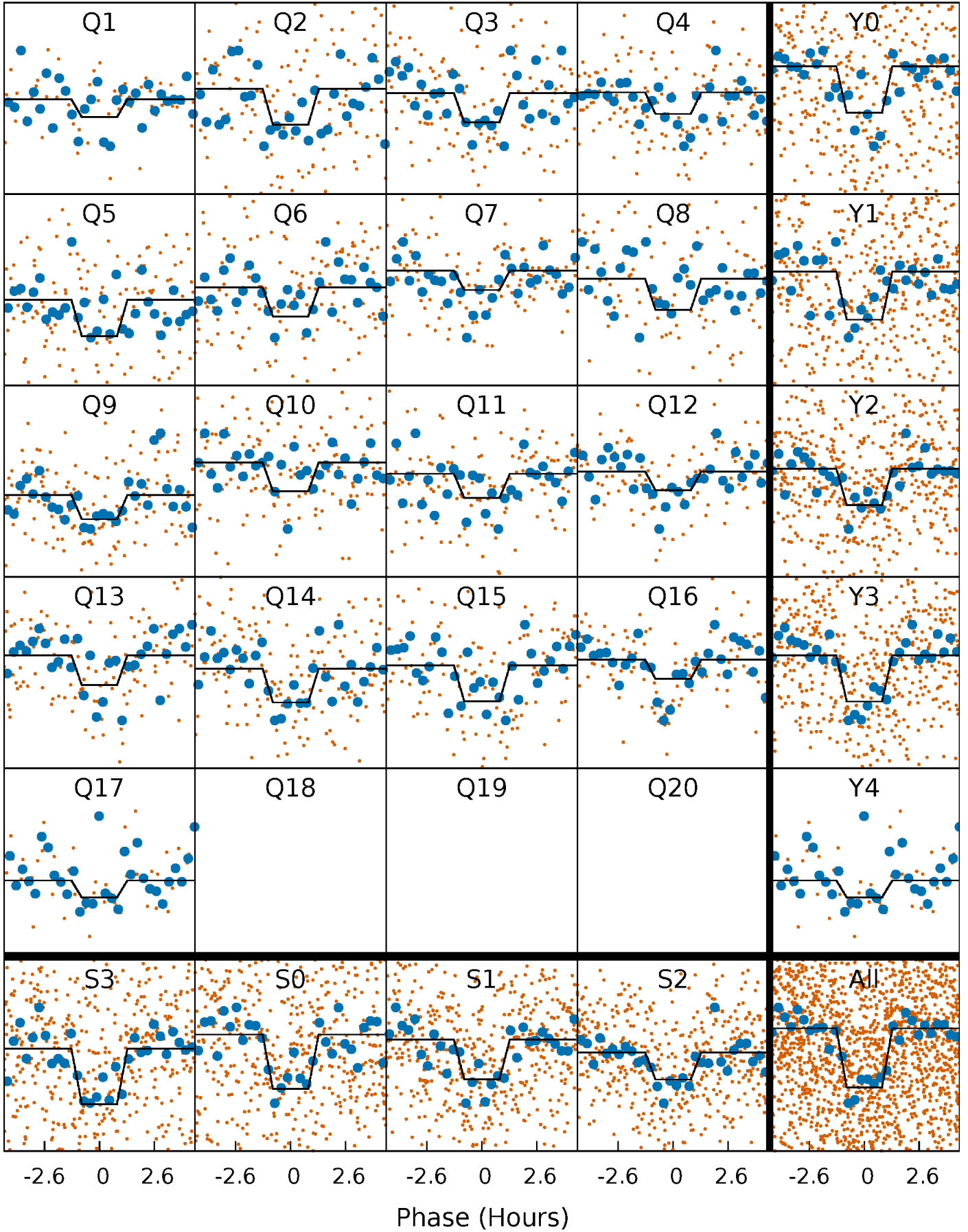
DV Quarter-Phased Transit Curves

TCE 005385410-01 P= 11.495975 Days $T_0=139.373396$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

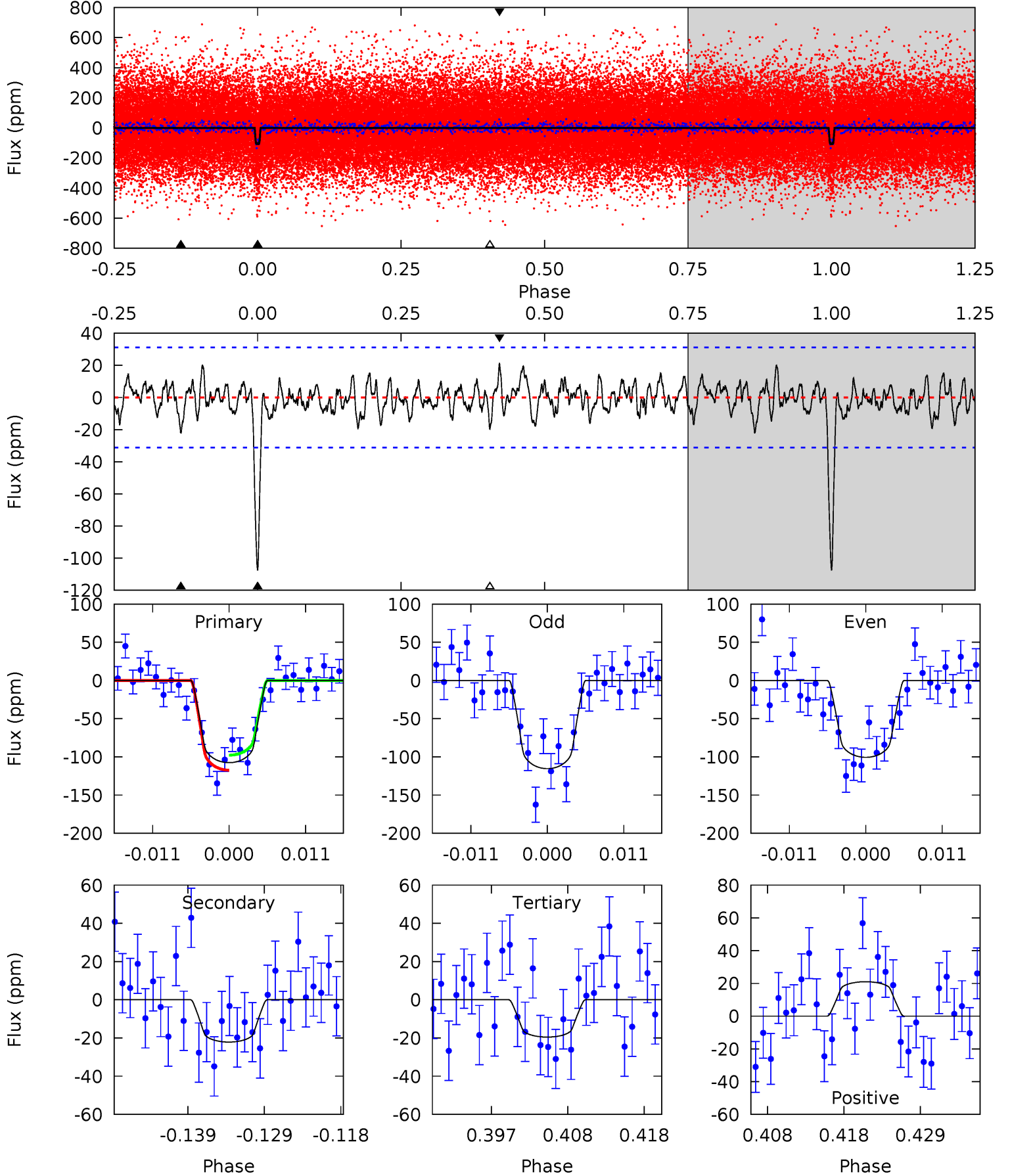
TCE 005385410-01 P= 11.495924 Days $T_0=139.378246$ (BKJD)



DV Model-Shift Uniqueness Test

005385410-01, $P = 11.495975$ Days, $E = 127.877421$ Days

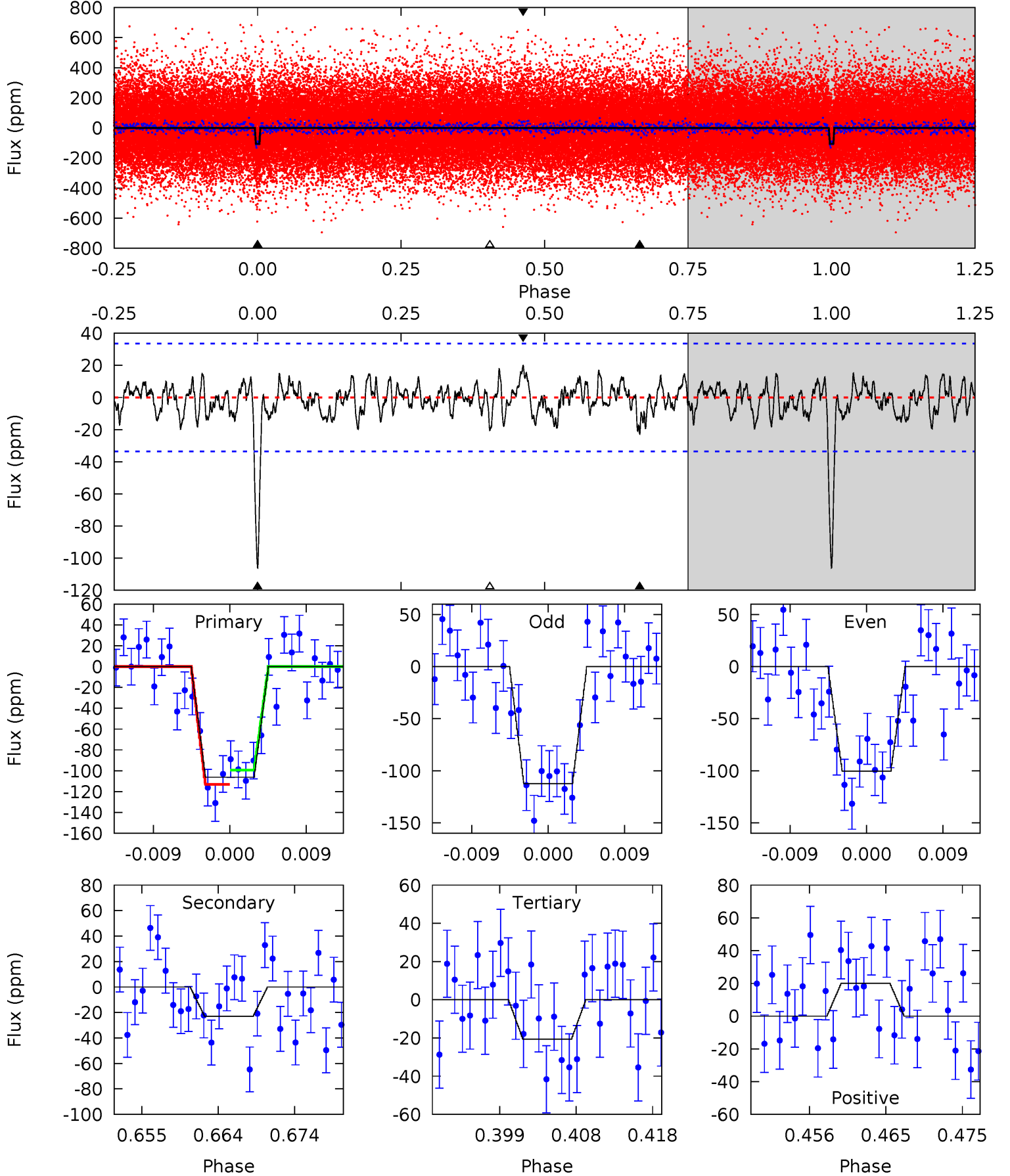
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	3.56	3.14	3.38	5.01	2.55	1.16	14.2	13.9	0.42	0.18	1.19	1.09	0.16	1.59



Alt Model-Shift Uniqueness Test

005385410-01, P = 11.495924 Days, E = 127.882322 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	3.43	3.10	3.01	5.04	2.59	1.15	12.8	12.9	0.33	0.42	0.91	1.11	0.16	1.04



Stellar Parameters For KIC 005385410

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6290^{+170}_{-208}	$4.133^{+0.252}_{-0.168}$	$-0.140^{+0.250}_{-0.300}$	$1.506^{+0.444}_{-0.400}$	$1.123^{+0.181}_{-0.164}$	$0.463^{+0.702}_{-0.212}$
	+3%/-3%	+6%/-4%	+179%/-214%	+29%/-27%	+16%/-15%	+151%/-46%
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 005385410-01 / KOI 4323.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-22 ± 6	$1.85^{+1.02}_{-0.86}$	1463^{+116}_{-111}	4236^{+1106}_{-586}	37^{+99}_{-21}
Alt.	-23 ± 7	$1.69^{+0.93}_{-0.81}$	1466^{+108}_{-115}	4416^{+1421}_{-673}	46^{+119}_{-28}

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

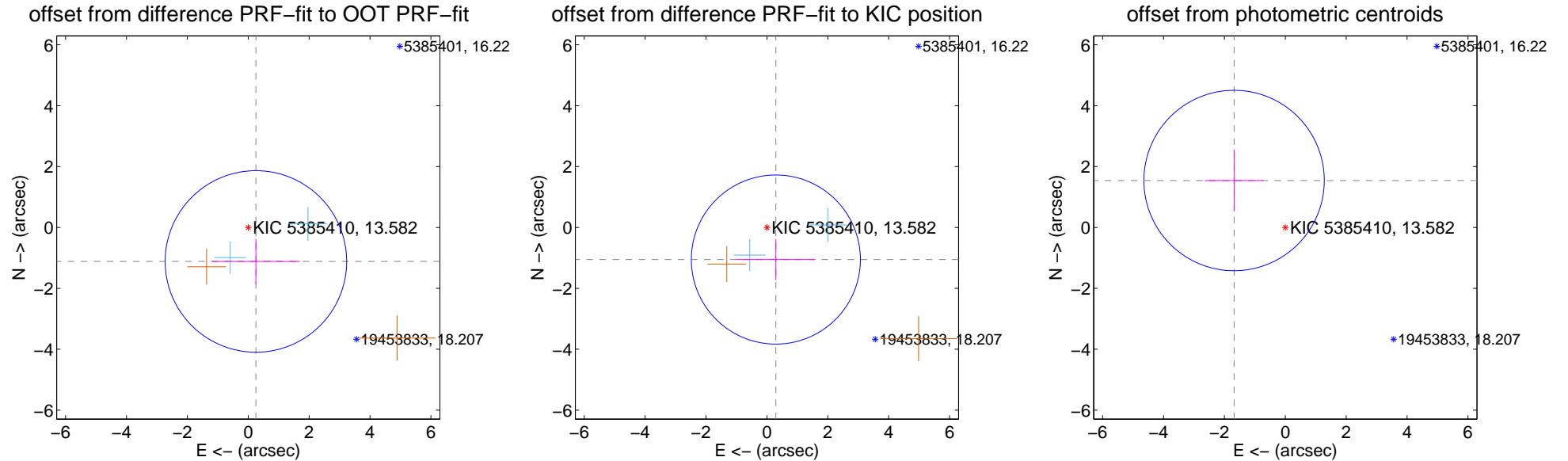
DV Centroid Data

Supplemental centroid analysis for 005385410-01. Kepler magnitude: 13.58. Transit SNR 13.12

There are 2 quarters with good PRF difference image offsets

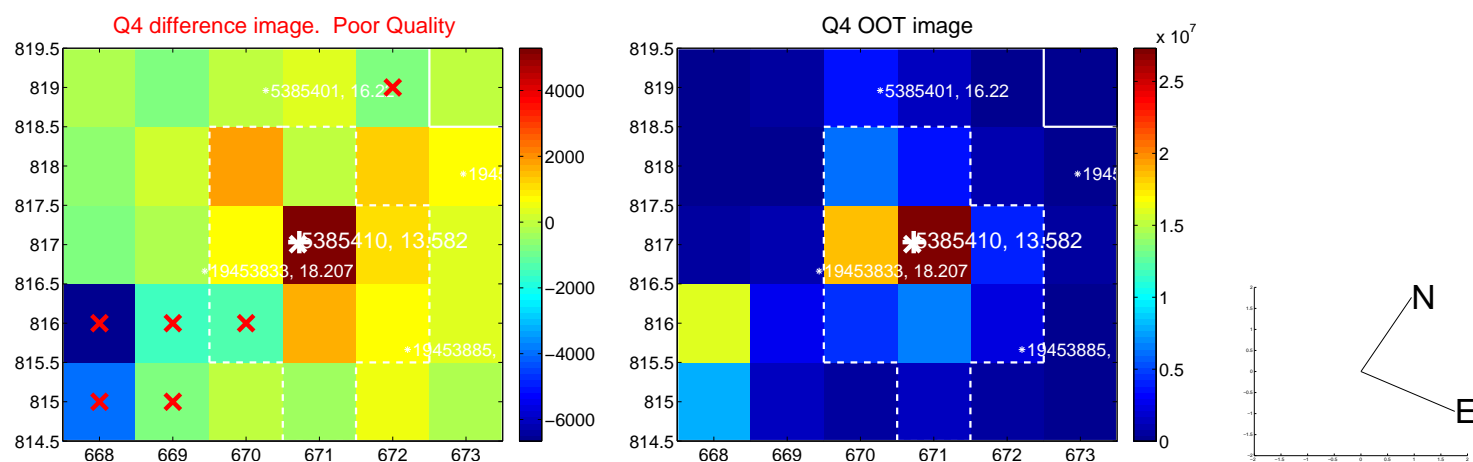
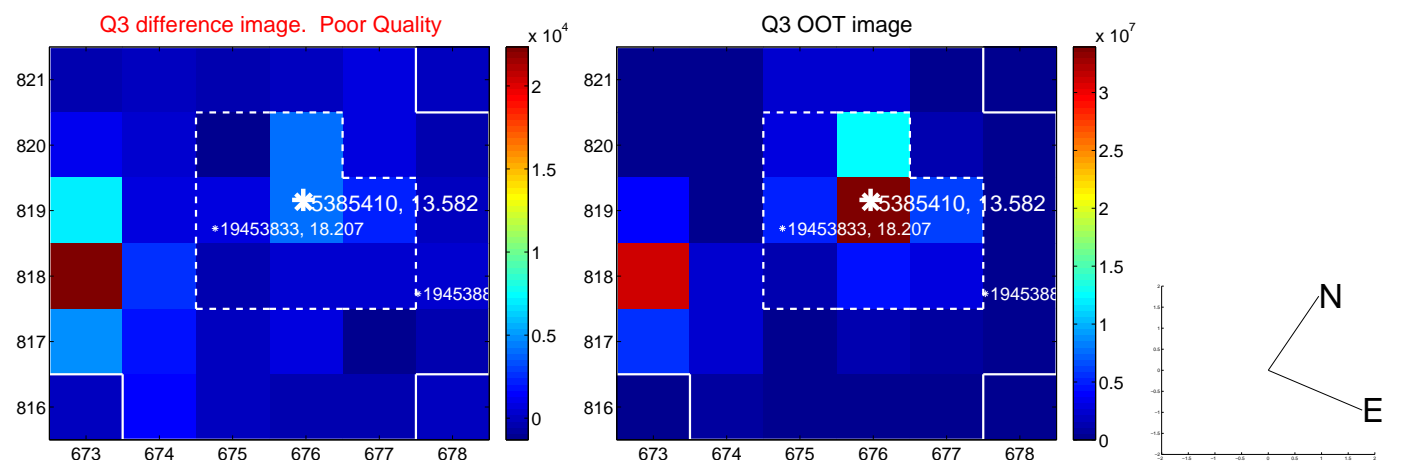
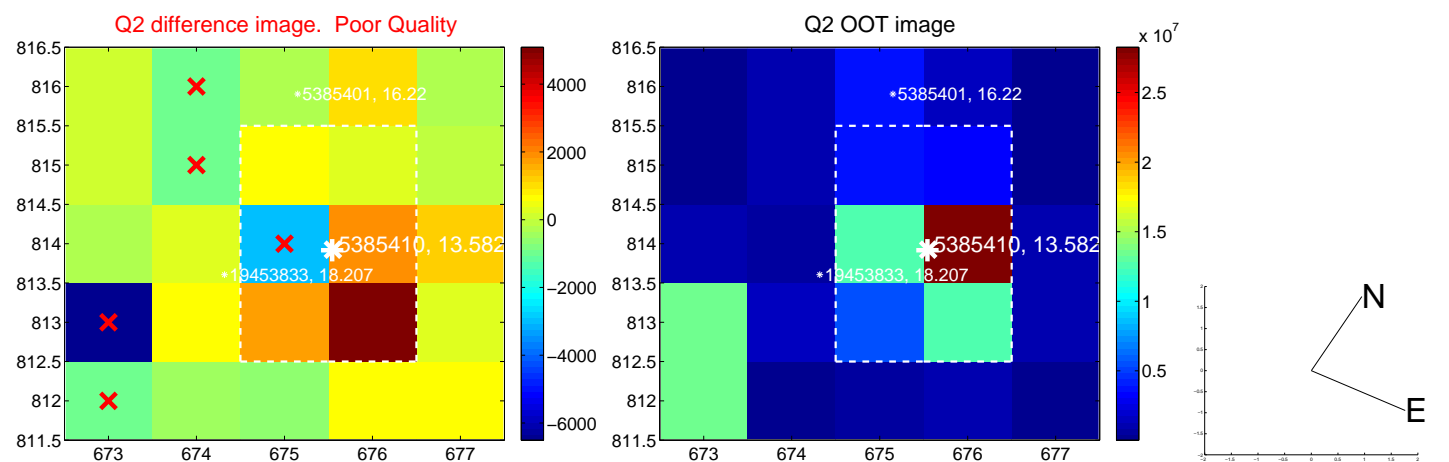
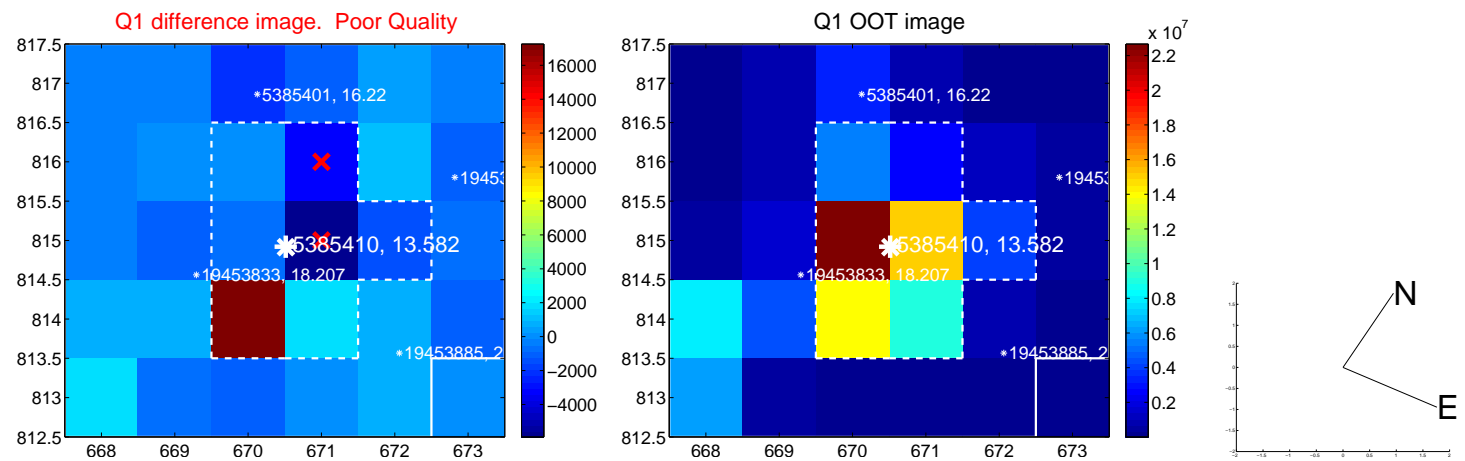
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.144 ± 0.994	1.15	-0.252 ± 1.447	-1.116 ± 0.747
PRF-fit source offset from KIC position	1.094 ± 0.926	1.18	-0.293 ± 1.294	-1.054 ± 0.675
photometric centroid source offset	2.28 ± 0.99	2.31	1.68 ± 0.96	1.54 ± 1.02

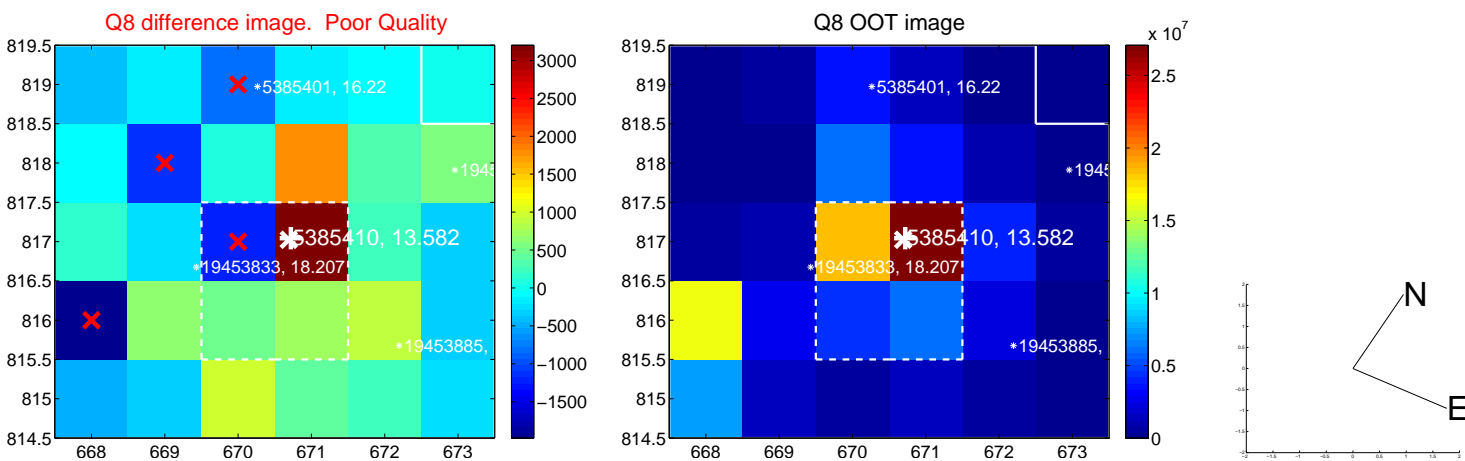
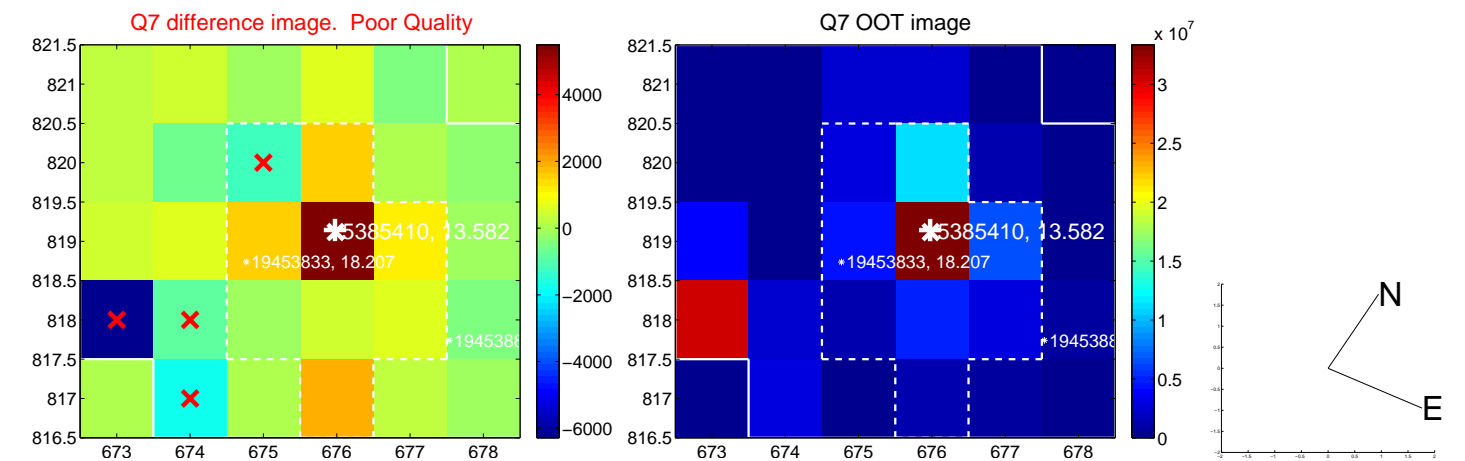
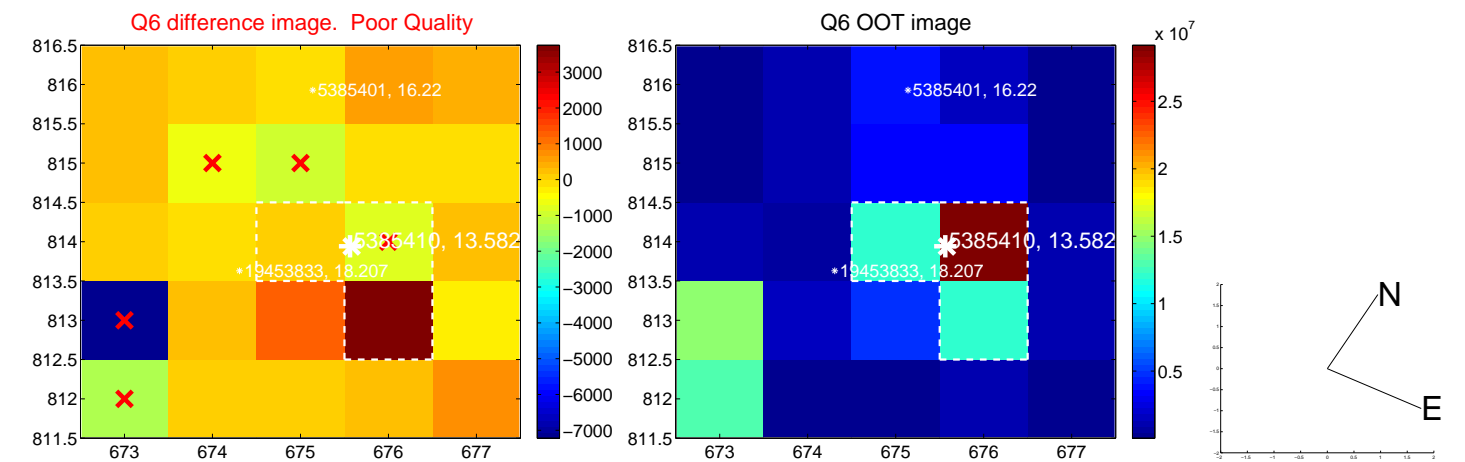
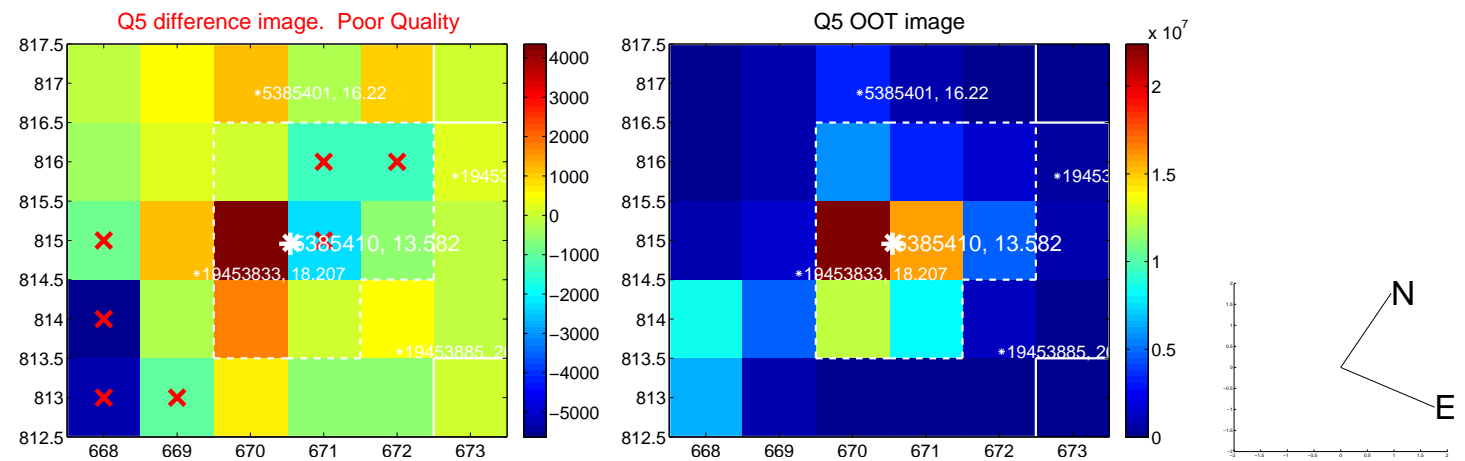


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

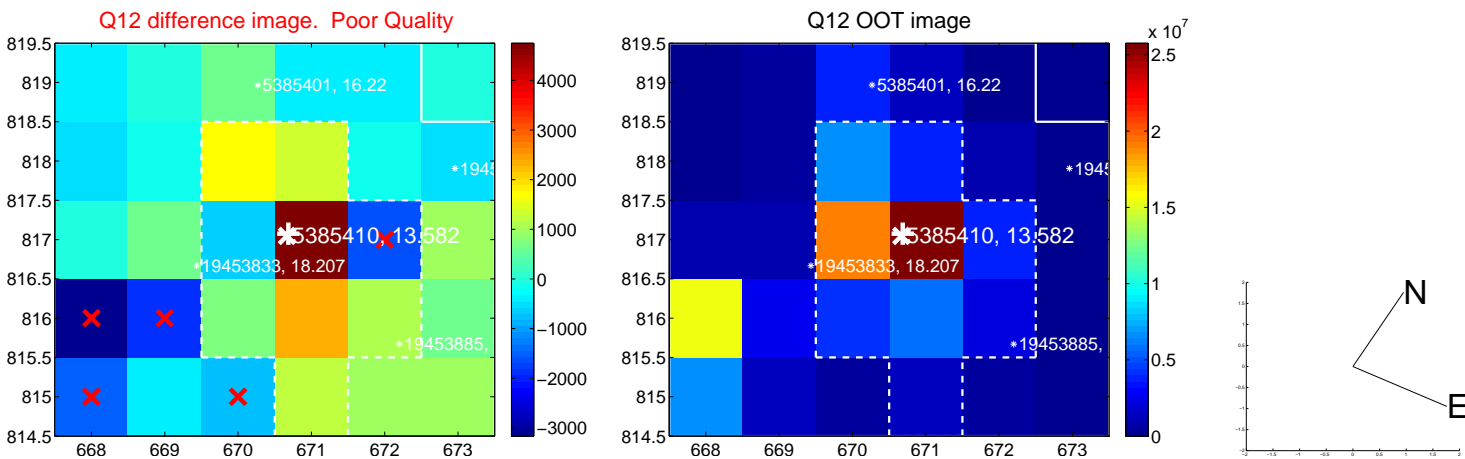
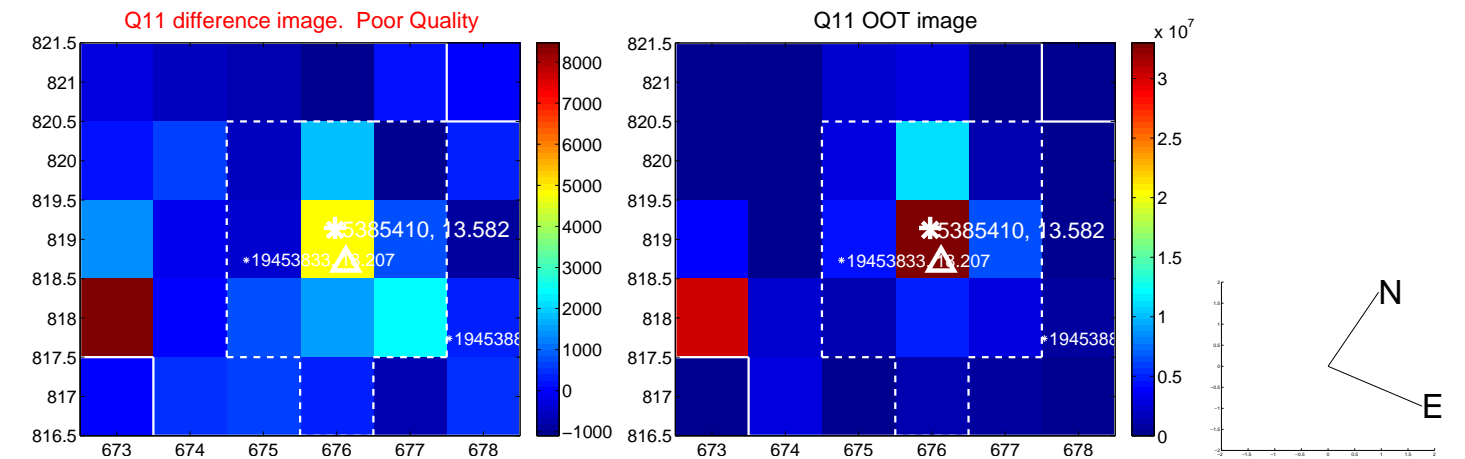
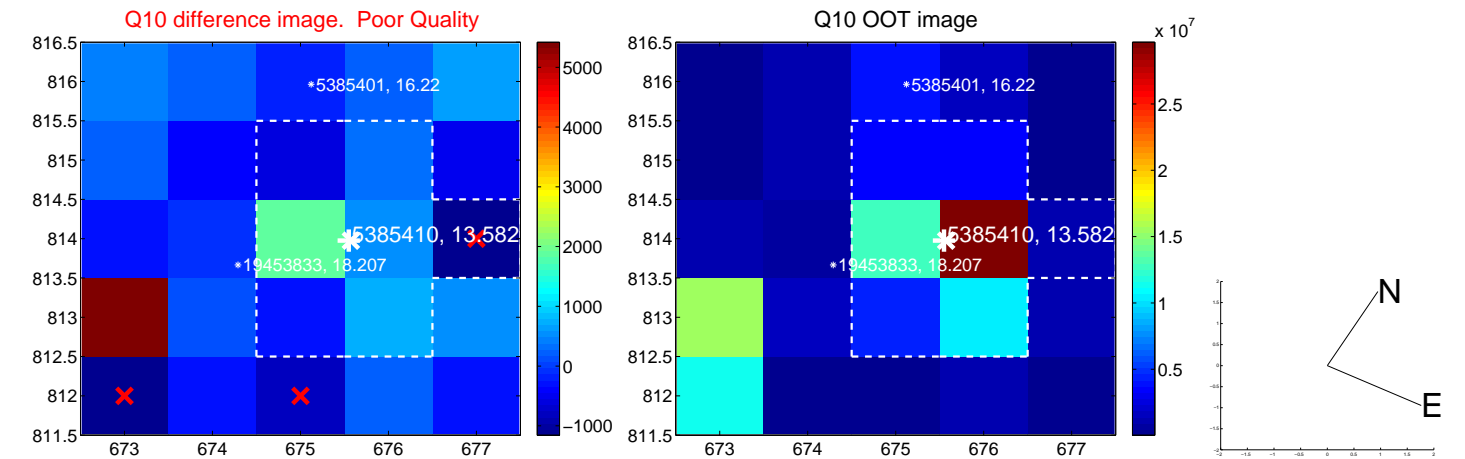
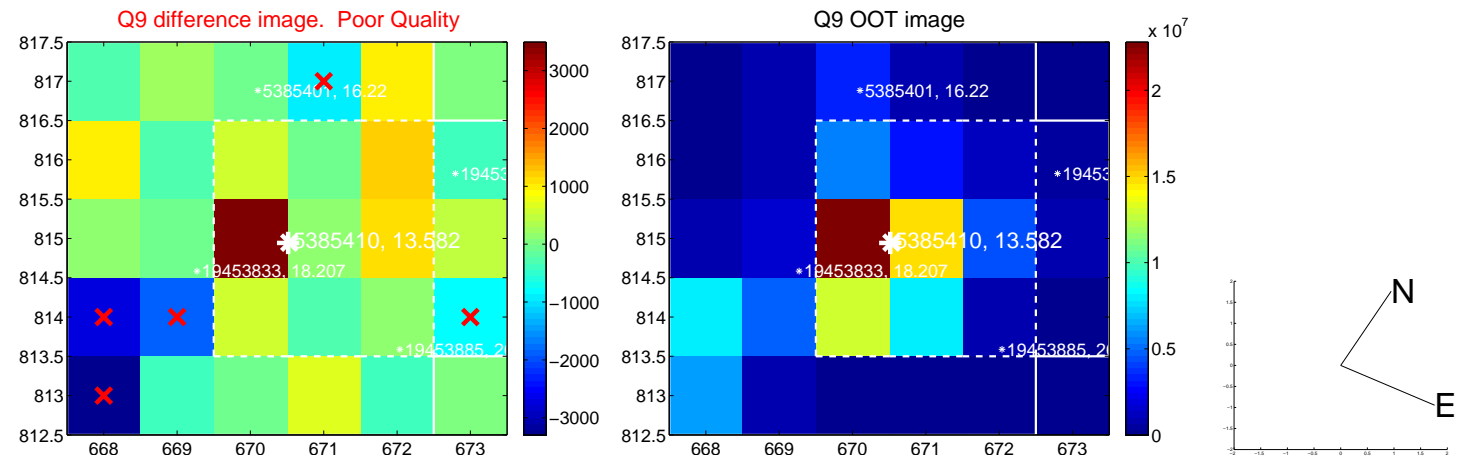
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



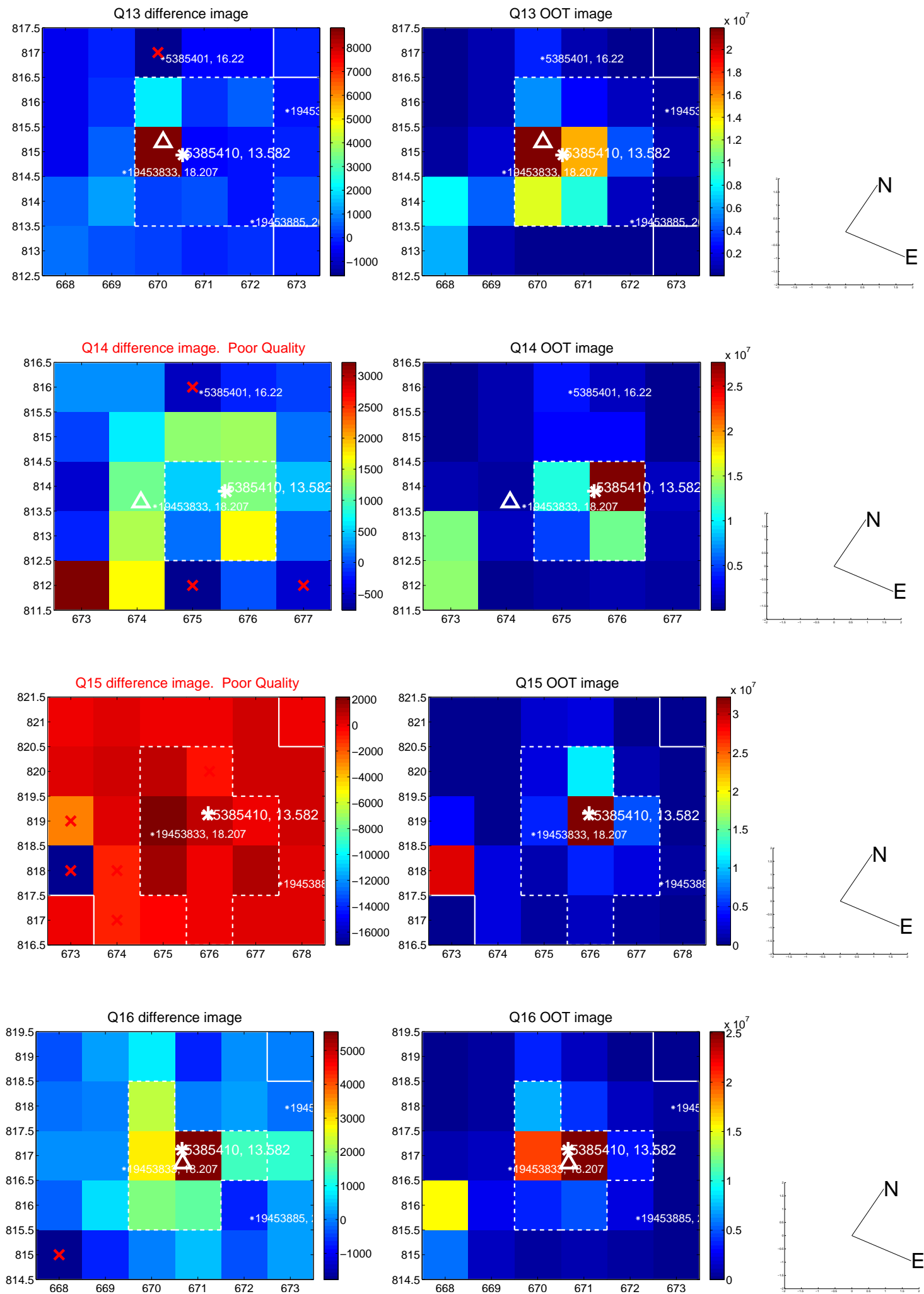
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



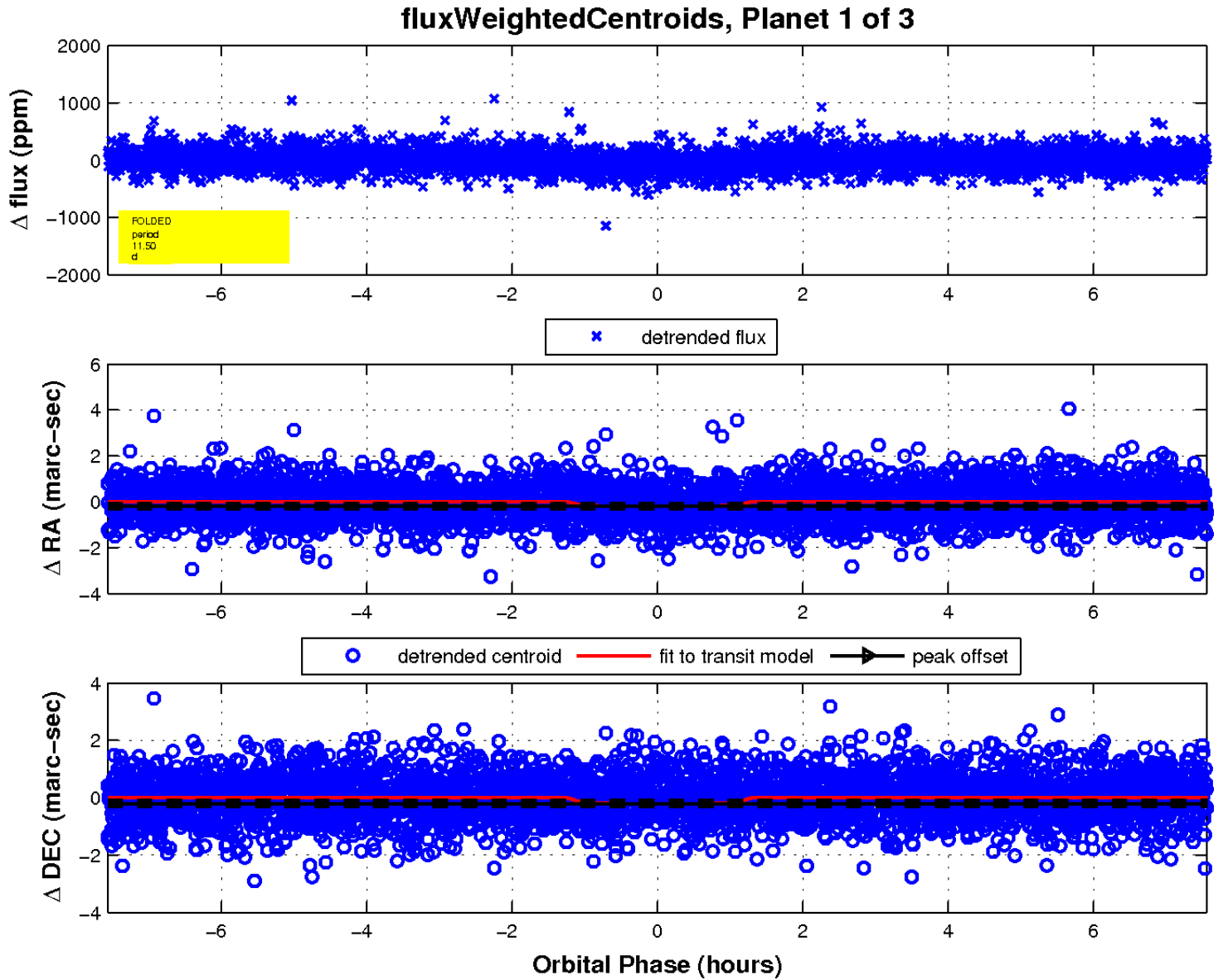
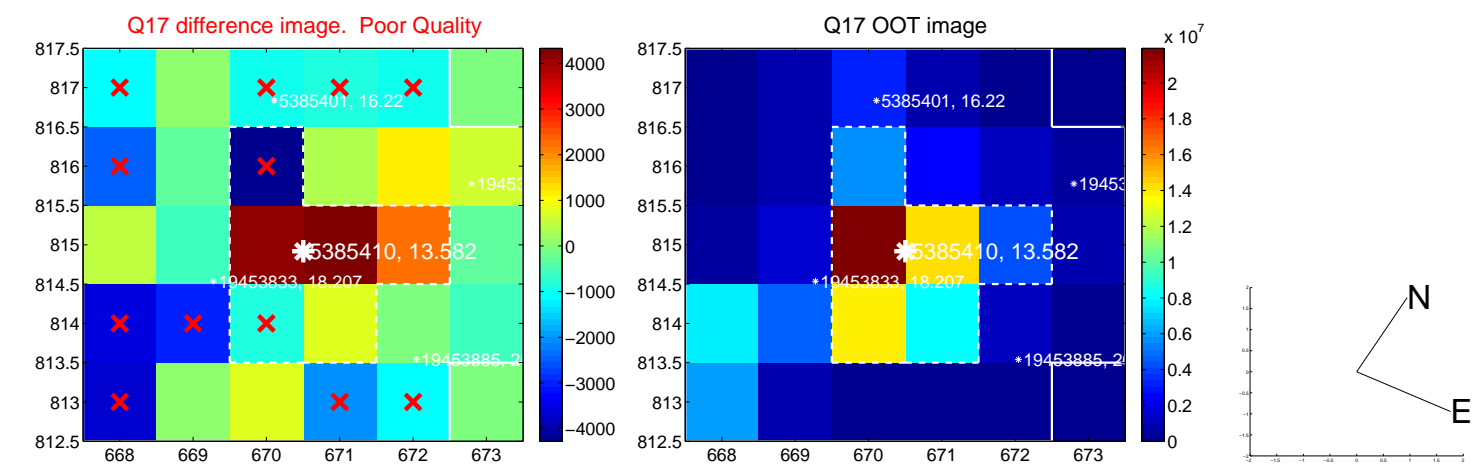
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

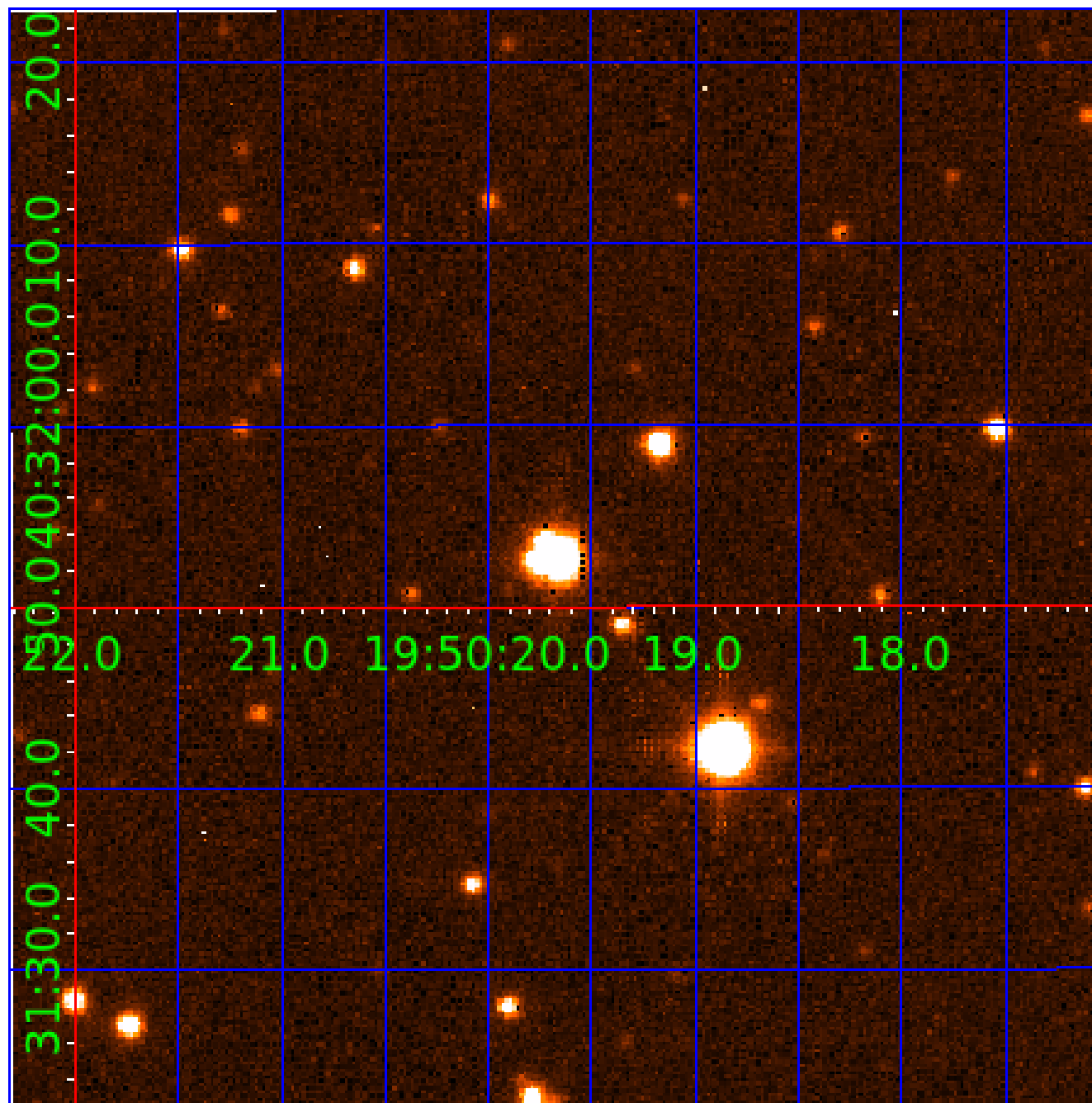


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385410

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})
005385410-01	OBS	4323.01	11.495975	139.373396	111.5	2.522	11.9	13.1	1.51	6290	1.87	296.02
005385410-02	OBS	4323.02	12.428557	141.322965	57.5	21.393	11.3	13.9	1.51	6290	1.21	266.78
005385410-03	OBS	No	12.424785	134.013875	50.3	21.691	11.5	13.3	1.51	6290	1.16	266.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385410-01	OBS	PC	0.91	0	0	0	0	NO_COMMENT
005385410-02	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385410-03	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—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.

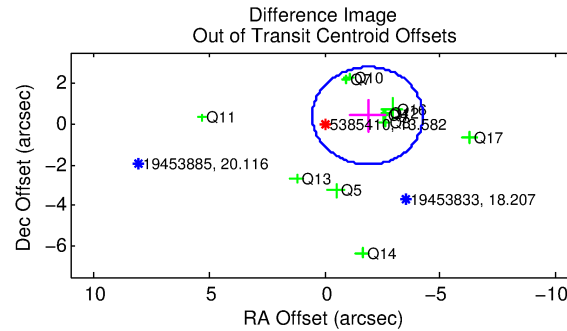
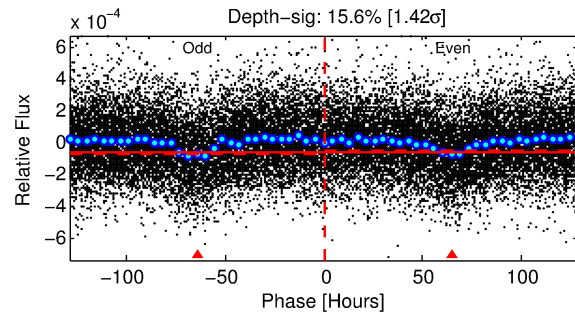
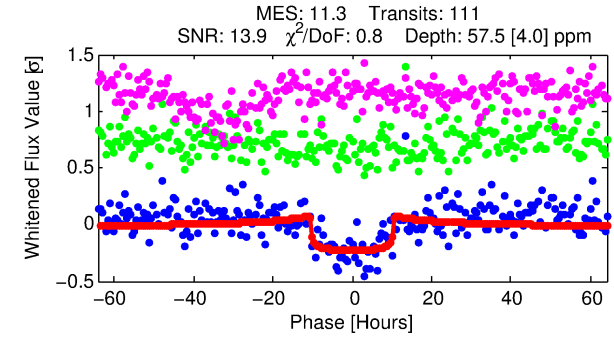
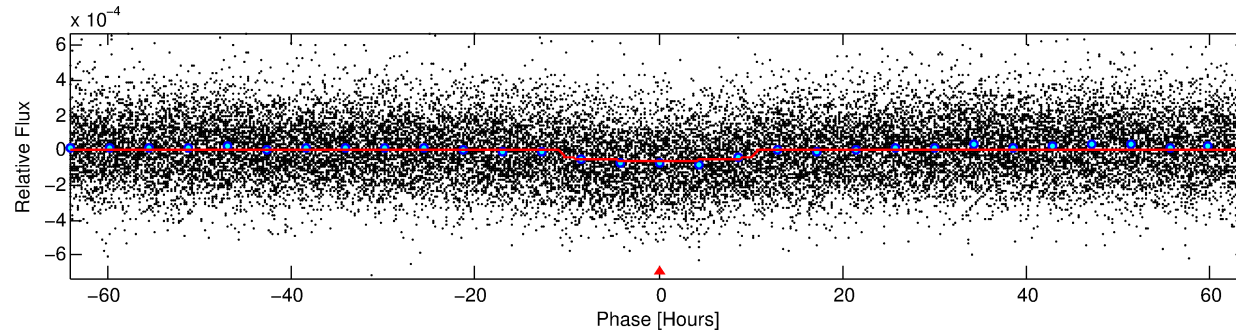
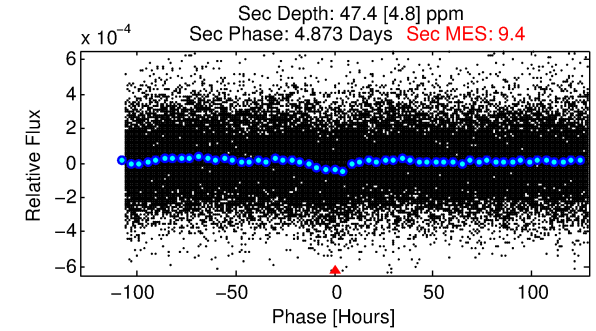
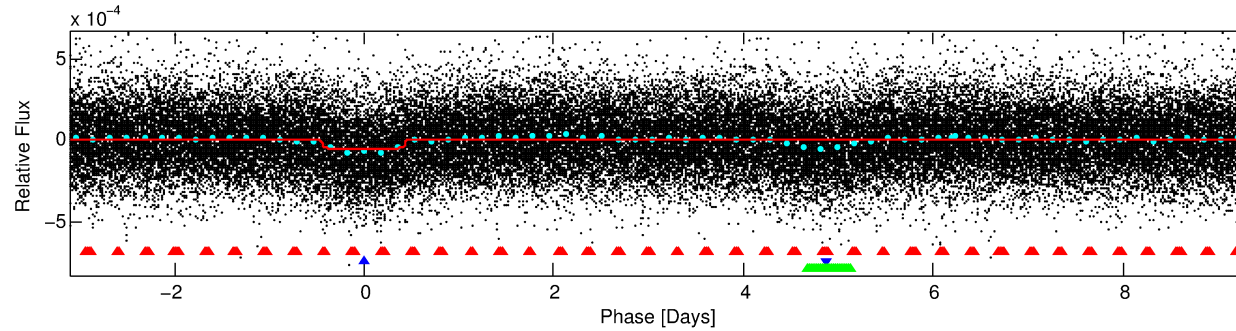
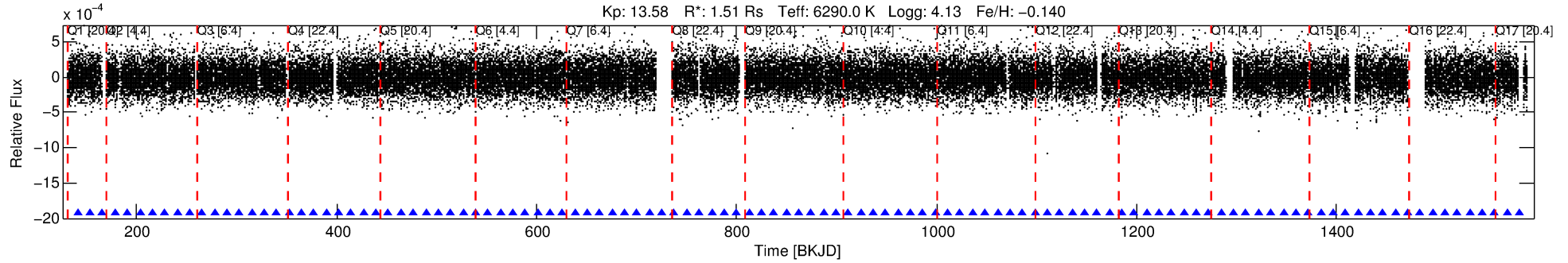
Ephemeris Match Information For 005385410-02

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
005385410-02	5385410	5172.01	5470851	1:1	370.7	-93	5	15.79	13.58	3.02	Col-Anomaly	1	3.89	2.37

Notes: P₁:P₂ 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. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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: 5385410 Candidate: 2 of 3 Period: 12.429 d
KOI: K04323.02 Corr: 0.773



DV Fit Results:

Period = 12.42856 [0.00022] d
Epoch = 141.3230 [0.0142] BKJD
Rp/R* = 0.0074 [0.0014]
a/R* = 3.41 [3.01]
b = 0.68 [0.78]
Seff = 266.78 [121.02]
Teq = 1031 [117] K
Rp = 1.21 [0.42] Re
a = 0.1092 [0.0301] AU
Ag = 210.99 [122.85] [1.71σ]
Teffp = 6073 [623] K [7.96σ]

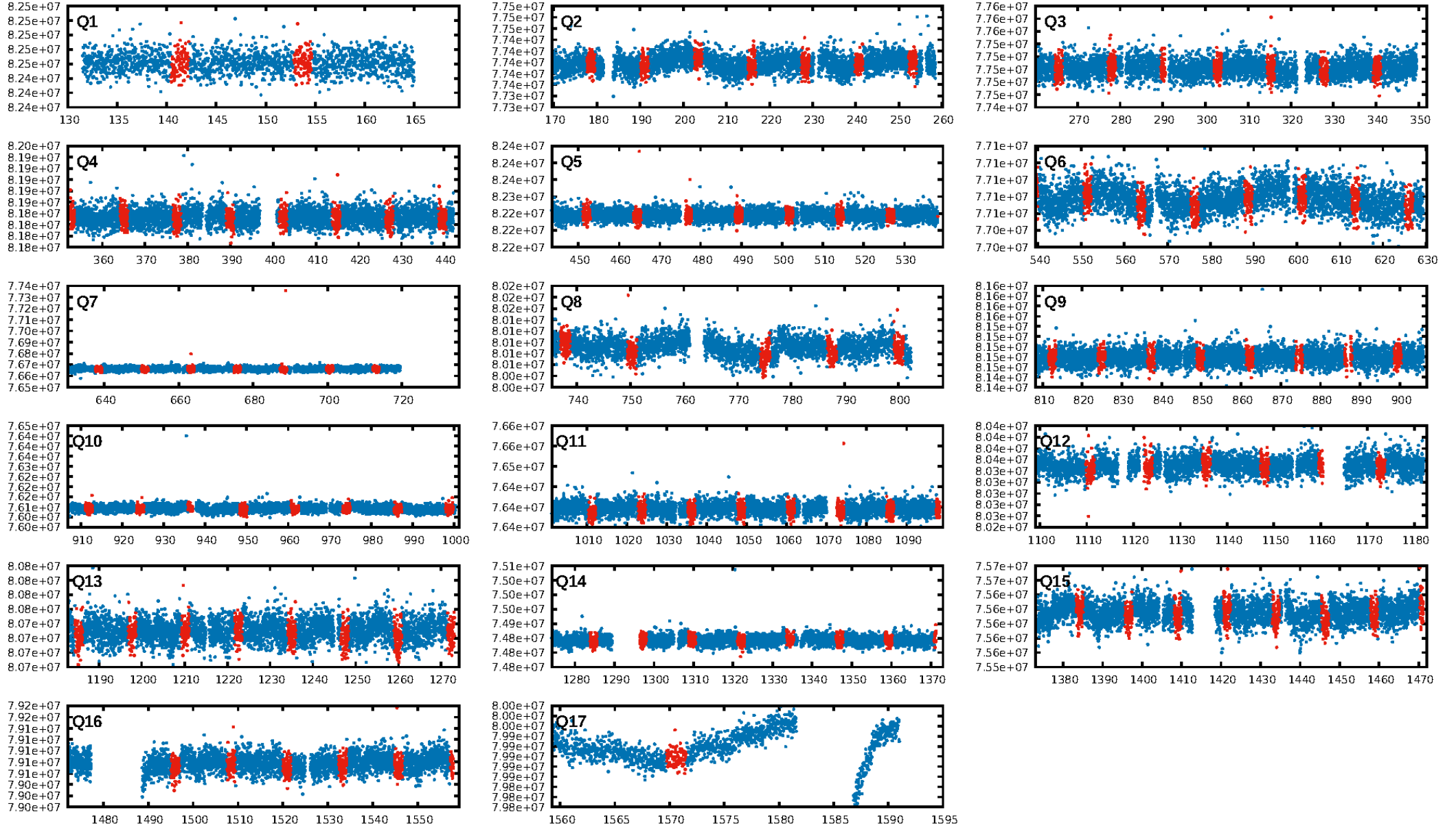
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.30e-31
RollingBand-fgt: 1.00 [108/108]
GhostDiagnostic-chr: 0.206
Centroid-sig: 63.1%
Centroid-so: 0.362 arcsec [0.44σ]
OotOffset-rm: 1.902 arcsec [2.39σ]
OotOffset-st: 2/2/4/3 [11]
KicOffset-rm: 1.935 arcsec [2.34σ]
KicOffset-st: 2/2/4/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 1.00 [17/17]

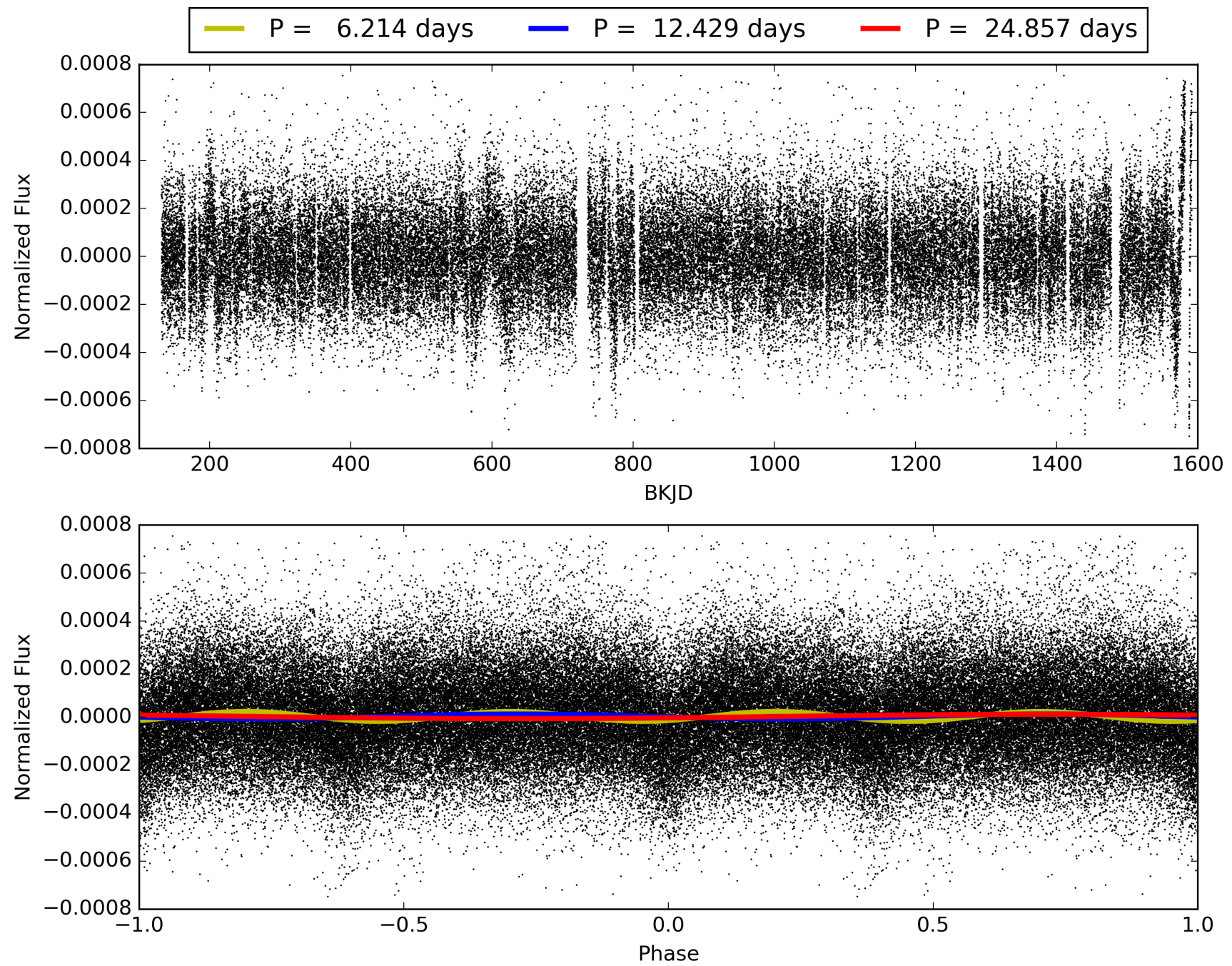
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:41:59 Z

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

TCE 005385410-02, PDC Light Curves

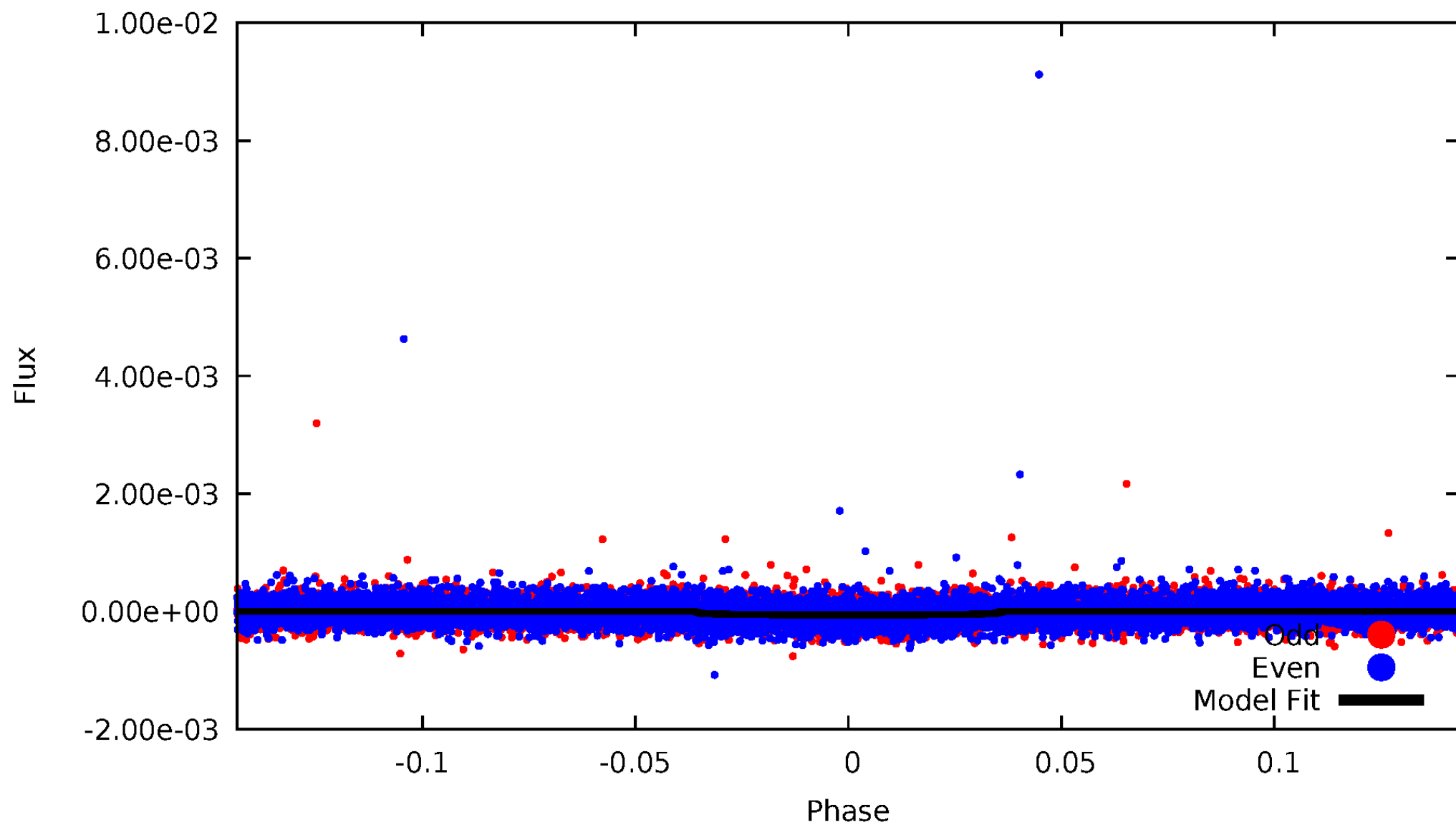


TCE 005385410-02



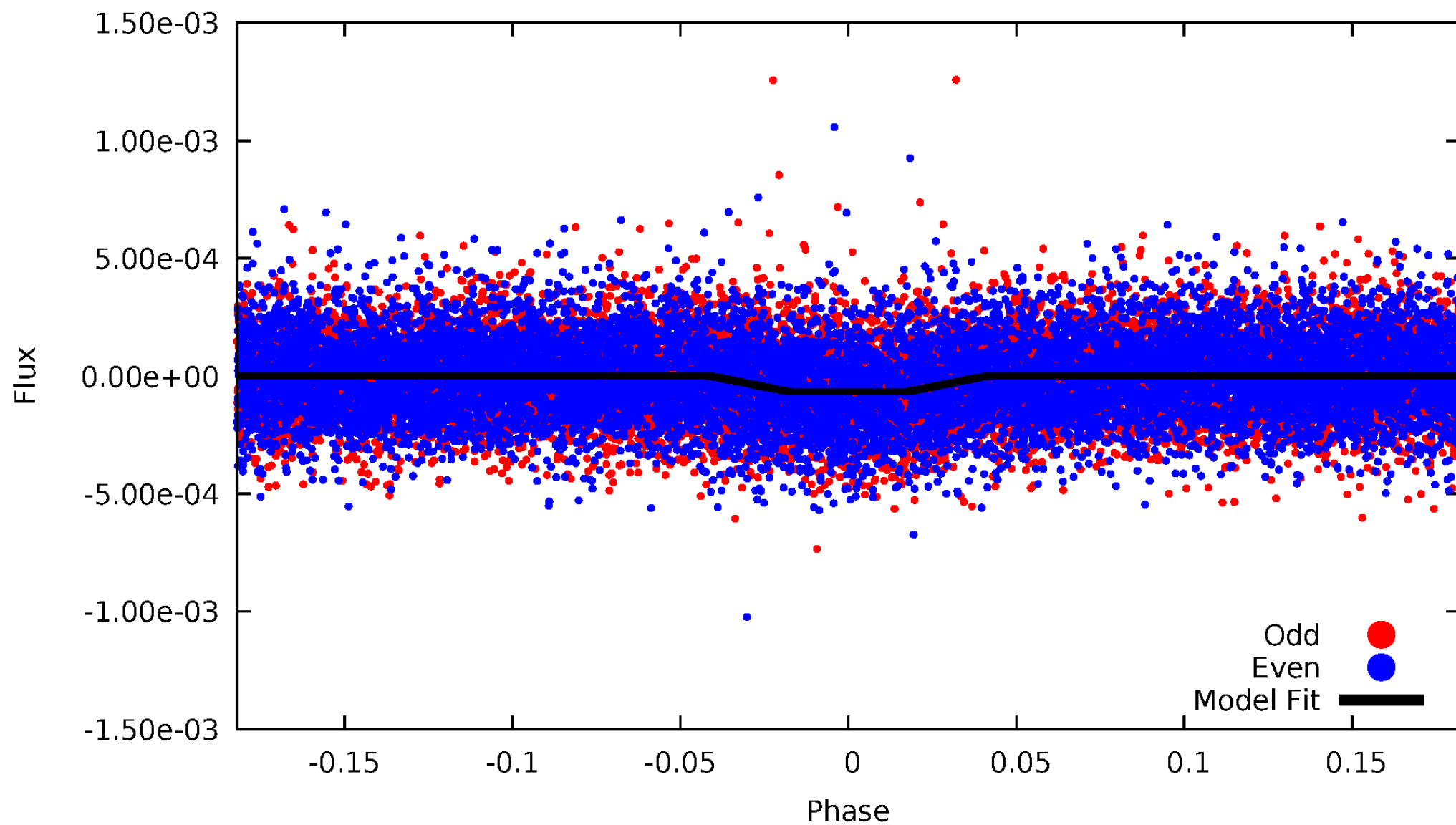
DV Odd/Even

TCE 005385410-02



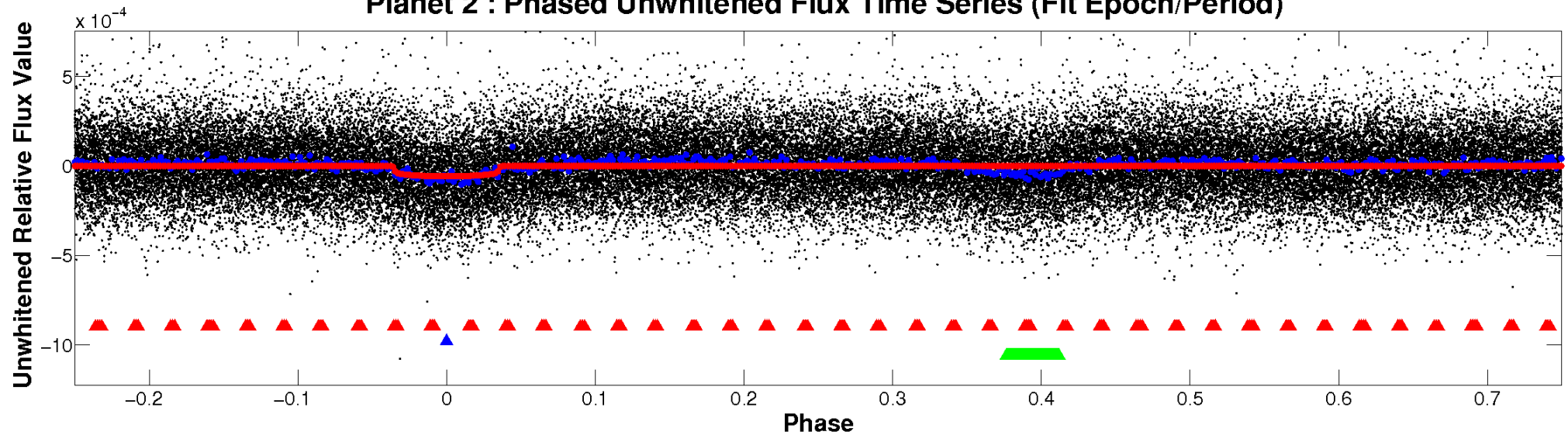
ALT Odd/Even

TCE 005385410-02

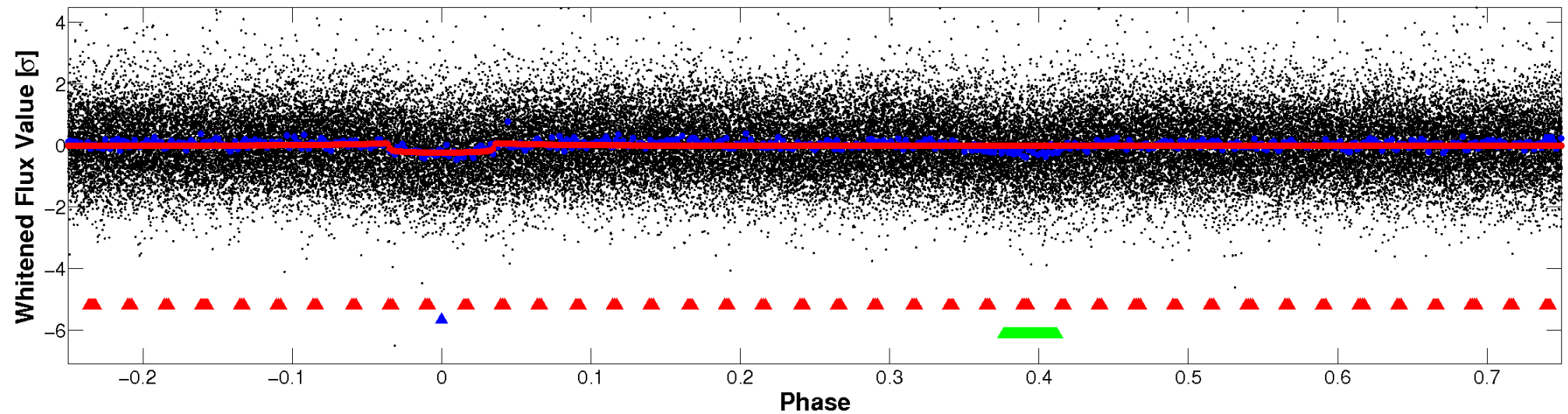


Non-Whitened Vs. Whitened Light Curve

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

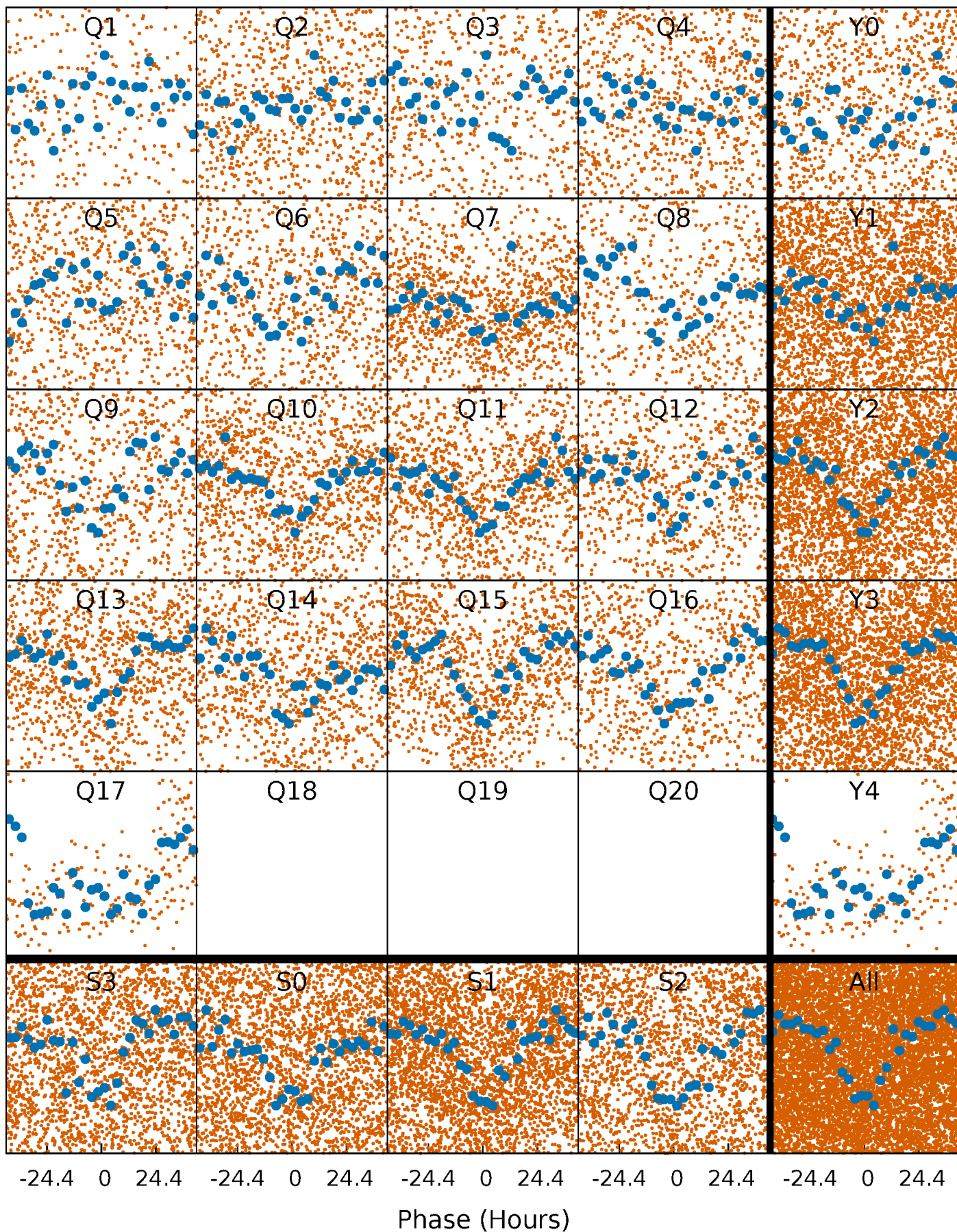


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



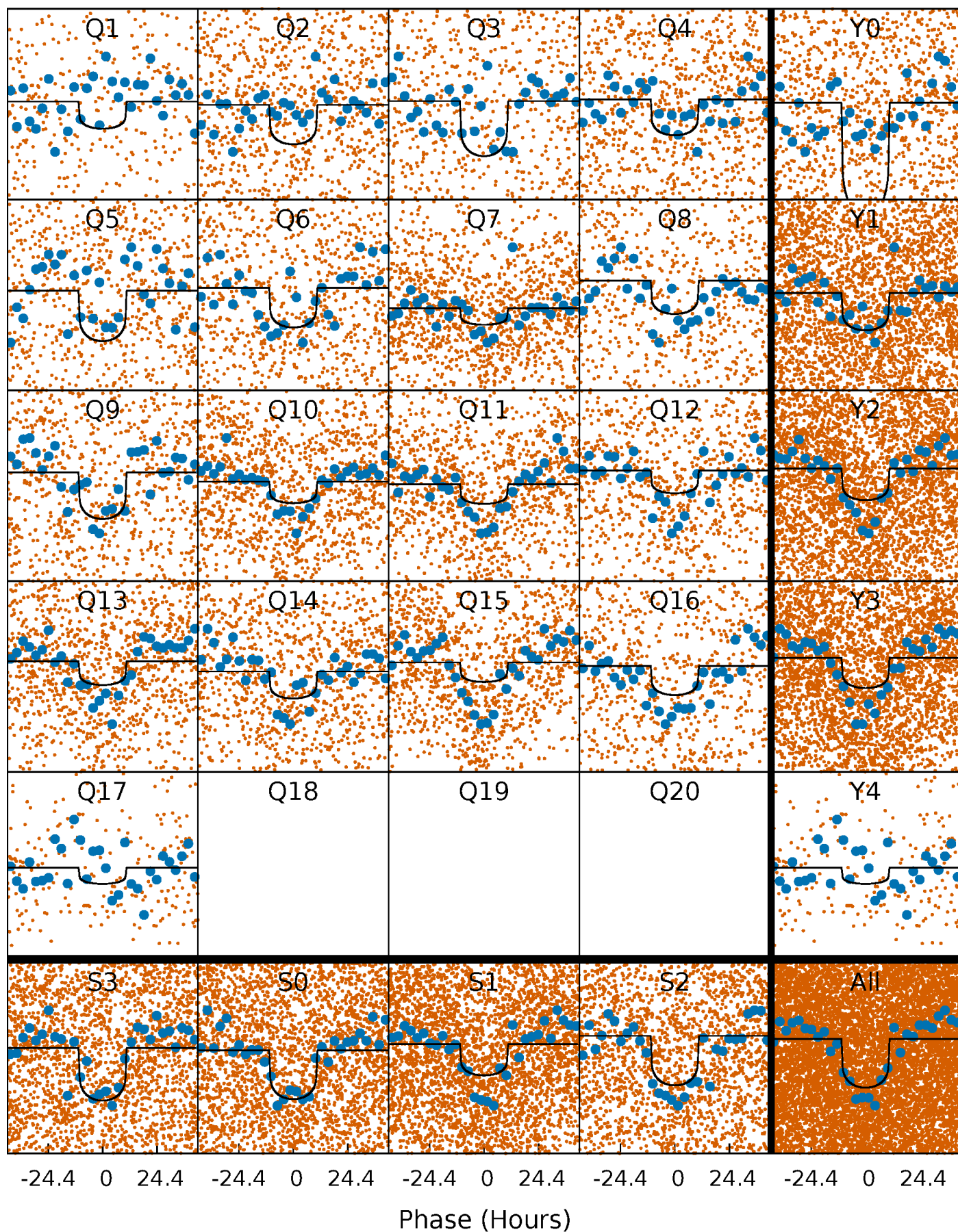
PDC Quarter-Phased Transit Curves

TCE 005385410-02 P= 12.428557 Days $T_0=141.322965$ (BKJD)



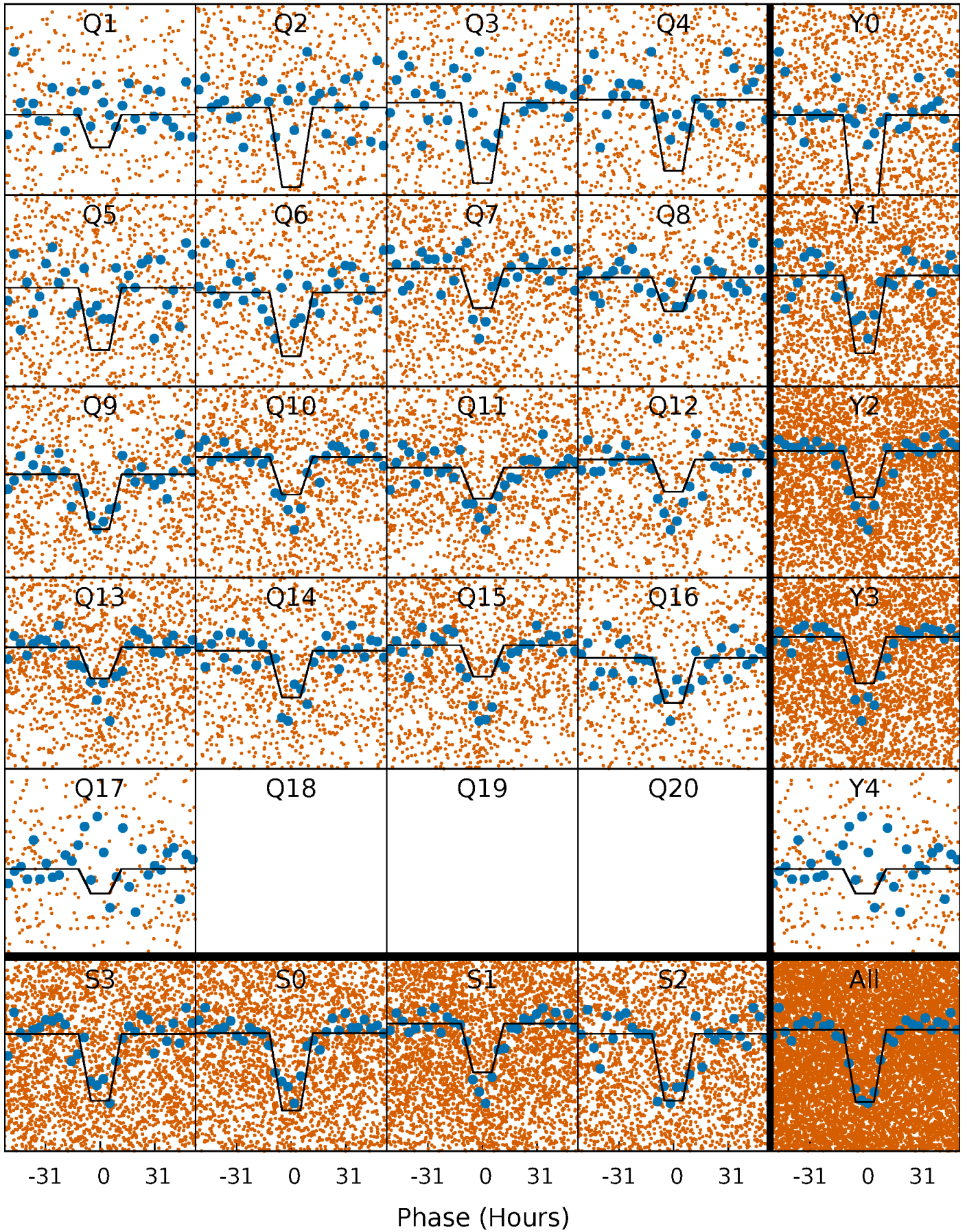
DV Quarter-Phased Transit Curves

TCE 005385410-02 P= 12.428557 Days $T_0=141.322965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

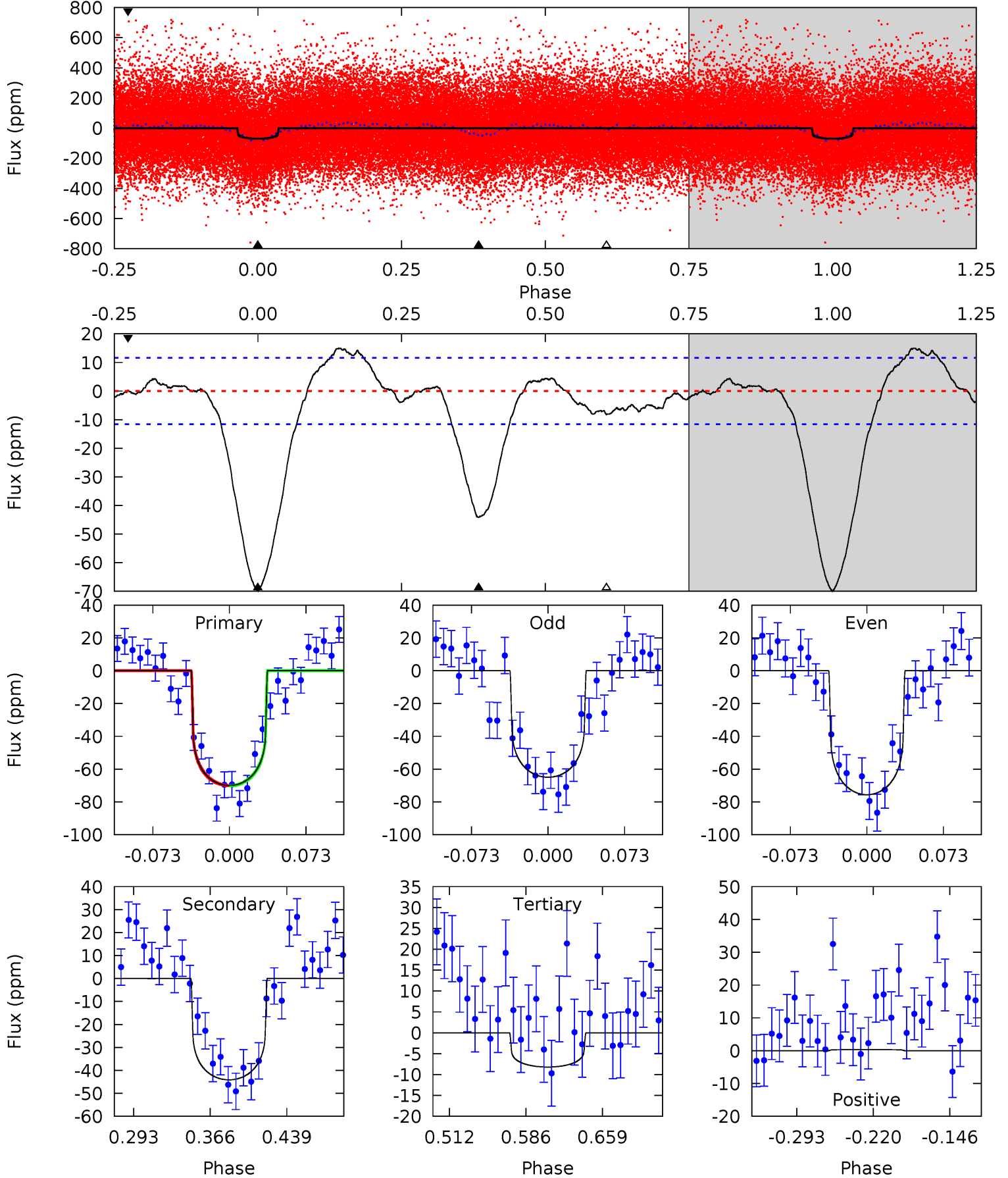
TCE 005385410-02 P= 12.426732 Days $T_0=141.450269$ (BKJD)



DV Model-Shift Uniqueness Test

005385410-02, P = 12.428557 Days, E = 128.894408 Days

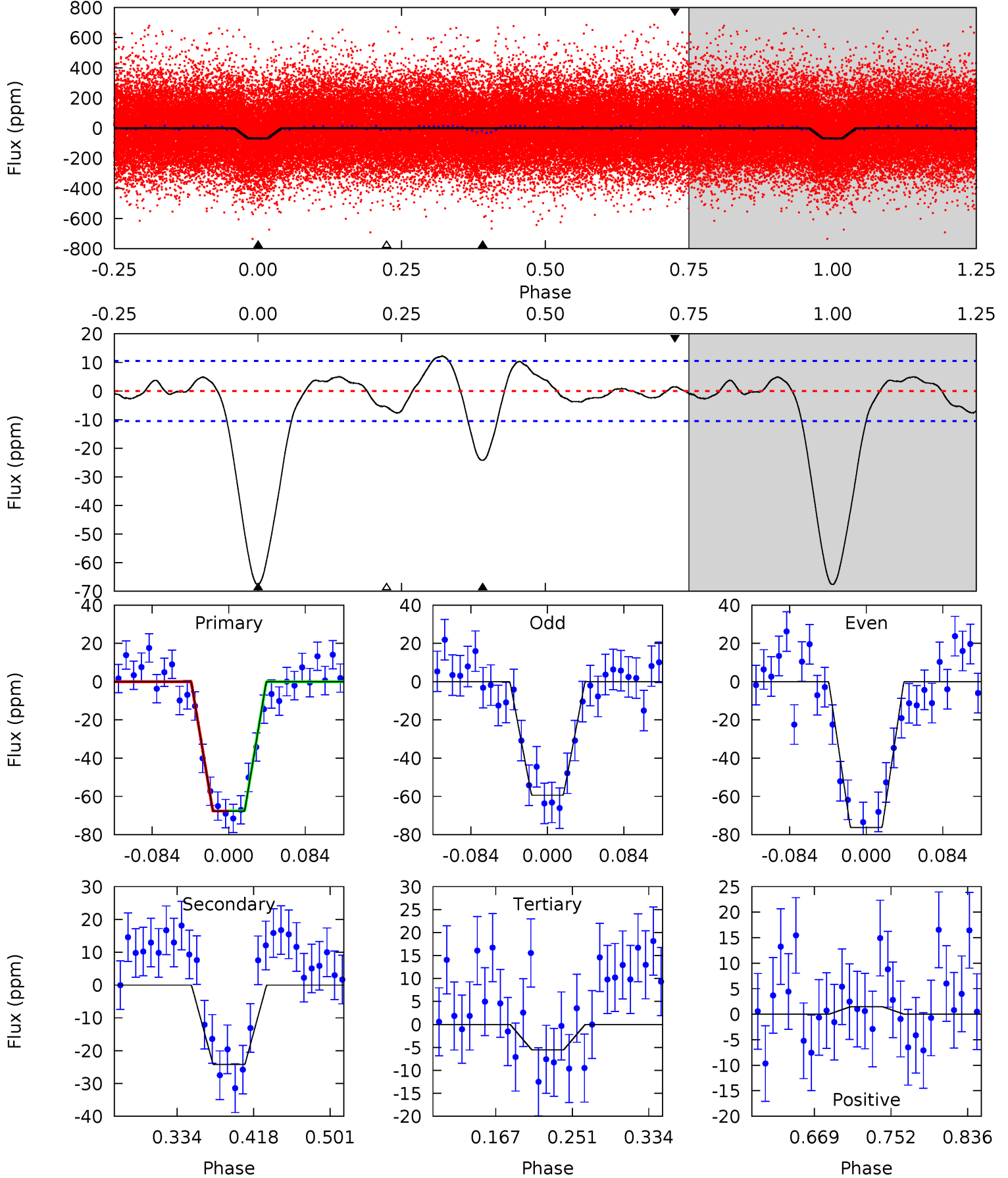
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	17.6	3.27	0.13	4.63	1.79	2.27	24.7	27.8	14.3	17.5	2.13	1.08	0.18	0.03



Alt Model-Shift Uniqueness Test

005385410-02, P = 12.426732 Days, E = 129.023537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	10.6	2.43	0.65	4.60	1.73	1.50	27.2	29.0	8.18	9.96	3.69	1.05	0.15	0.02



Stellar Parameters For KIC 005385410

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6290^{+170}_{-208}	$4.133^{+0.252}_{-0.168}$	$-0.140^{+0.250}_{-0.300}$	$1.506^{+0.444}_{-0.400}$	$1.123^{+0.181}_{-0.164}$	$0.463^{+0.702}_{-0.212}$
	+3%/-3%	+6%/-4%	+179%/-214%	+29%/-27%	+16%/-15%	+151%/-46%
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 005385410-02 / KOI 4323.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-44 ± 3	$1.19^{+0.33}_{-0.28}$	1422^{+108}_{-107}	5932^{+681}_{-477}	207^{+145}_{-77}
Alt.	-24 ± 2	$1.34^{+0.31}_{-0.29}$	1423^{+118}_{-117}	4936^{+423}_{-325}	91^{+55}_{-32}

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

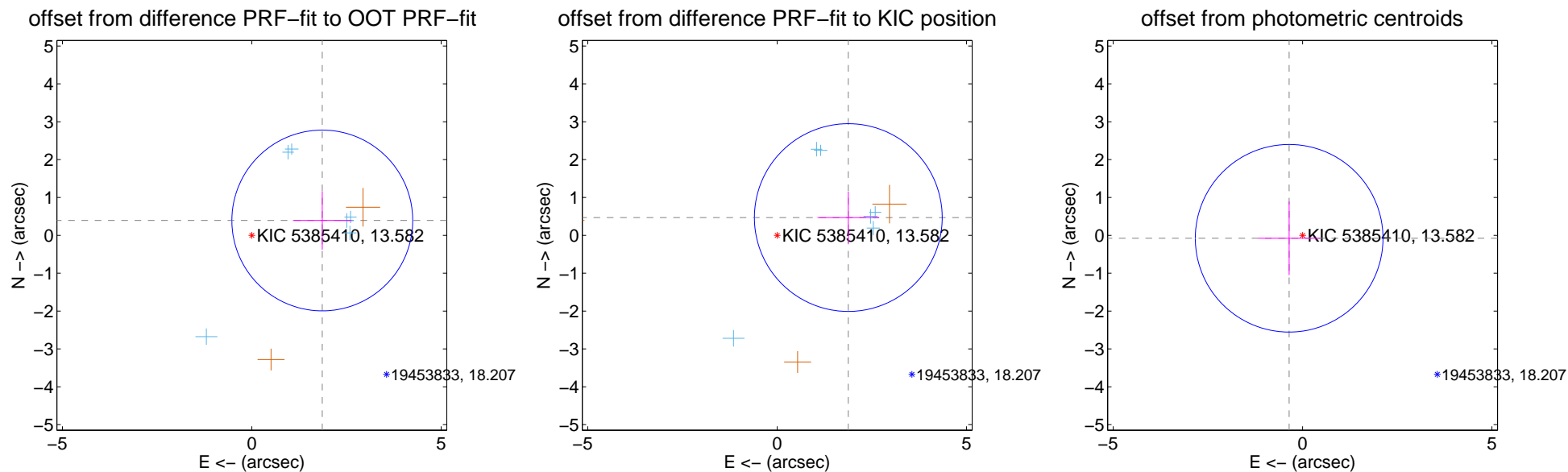
DV Centroid Data

Supplemental centroid analysis for 005385410-02. Kepler magnitude: 13.58. Transit SNR 13.90

There are 6 quarters with good PRF difference image offsets

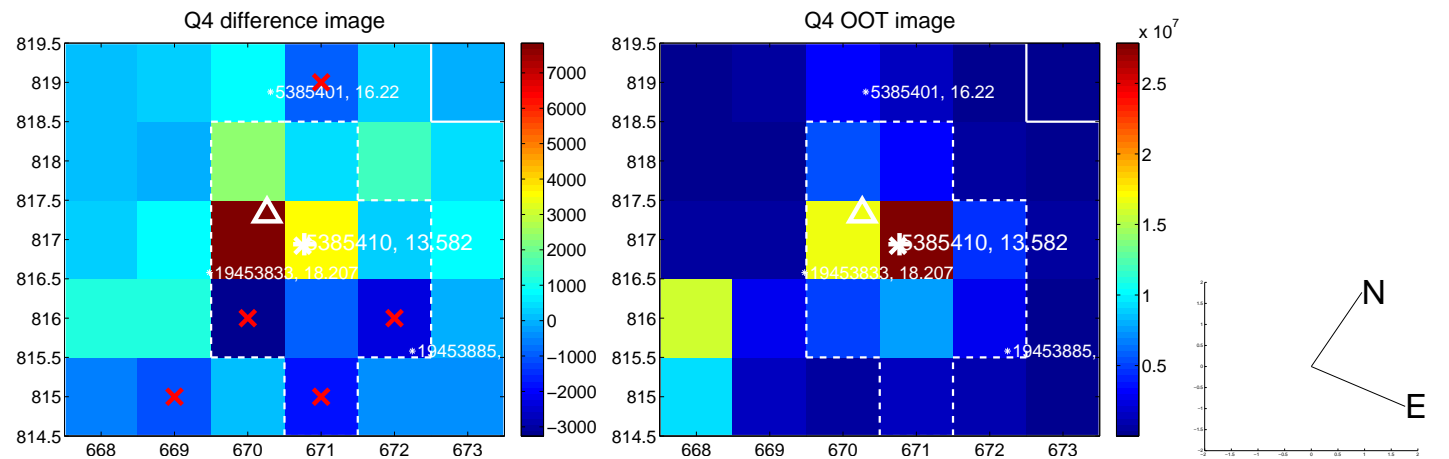
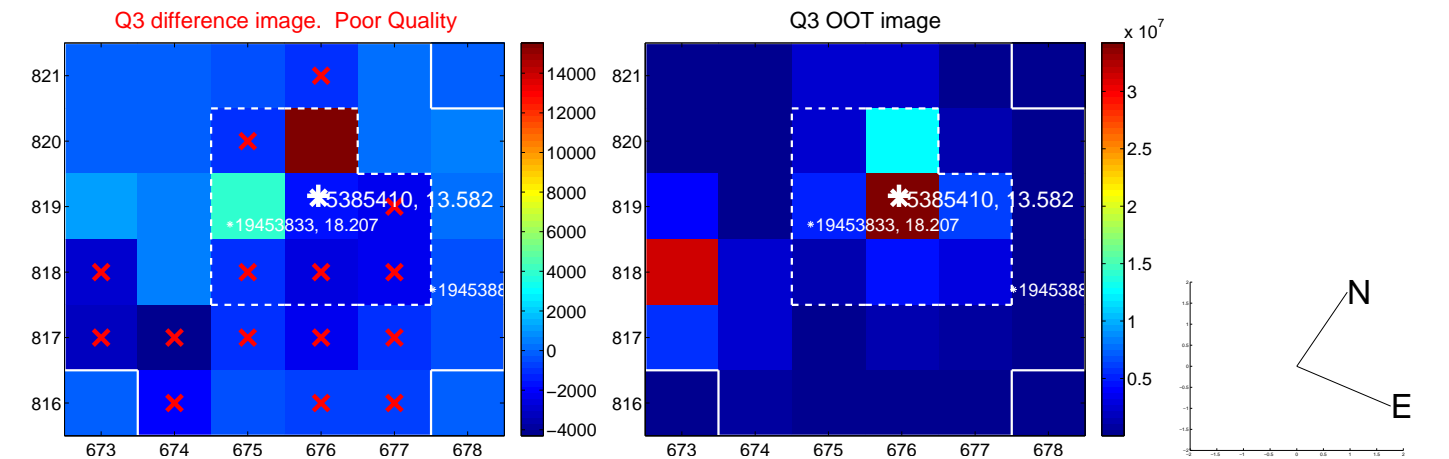
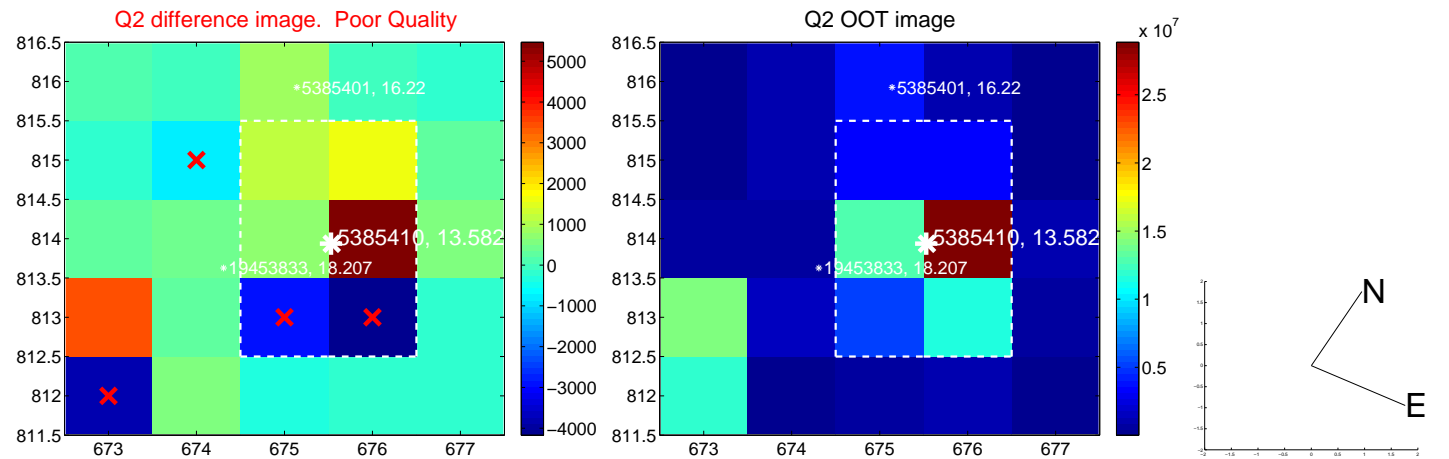
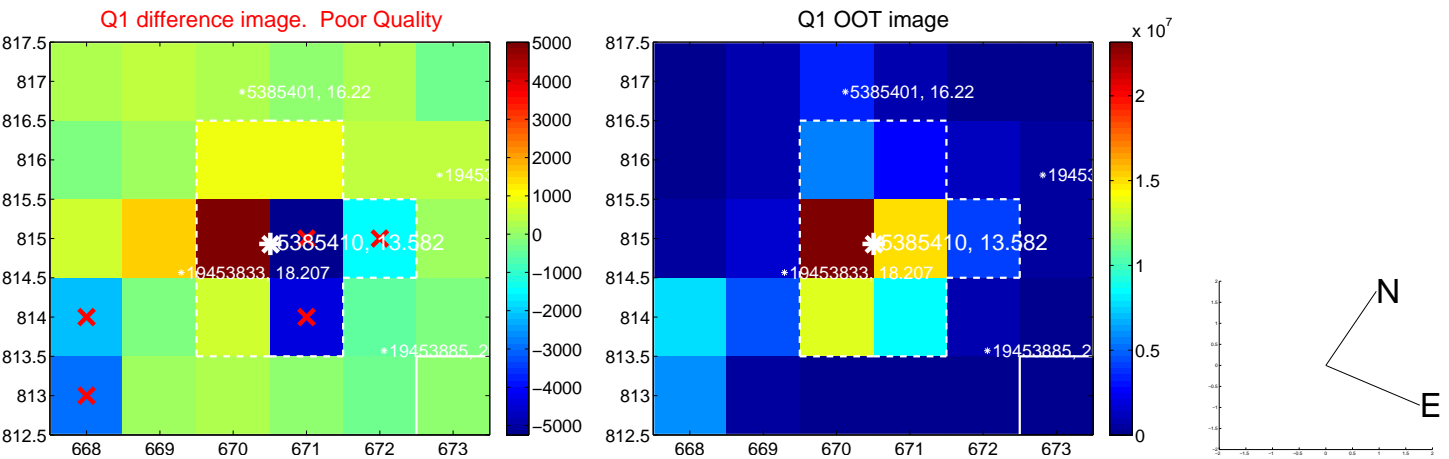
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.902 ± 0.796	2.39	-1.861 ± 0.772	0.392 ± 0.769
PRF-fit source offset from KIC position	1.935 ± 0.826	2.34	-1.877 ± 0.815	0.469 ± 0.684
photometric centroid source offset	0.36 ± 0.83	0.44	0.35 ± 0.82	-0.08 ± 0.97

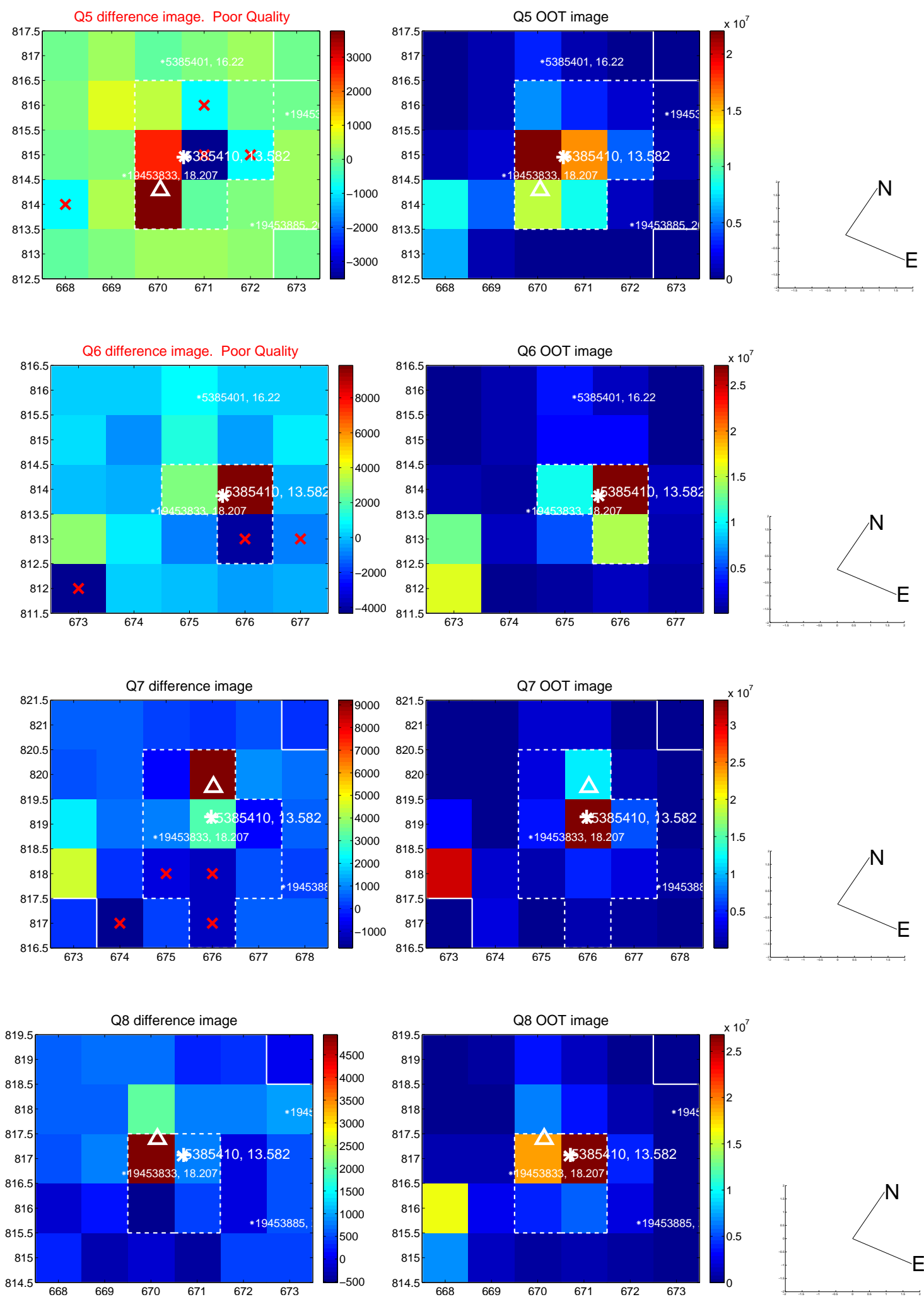


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

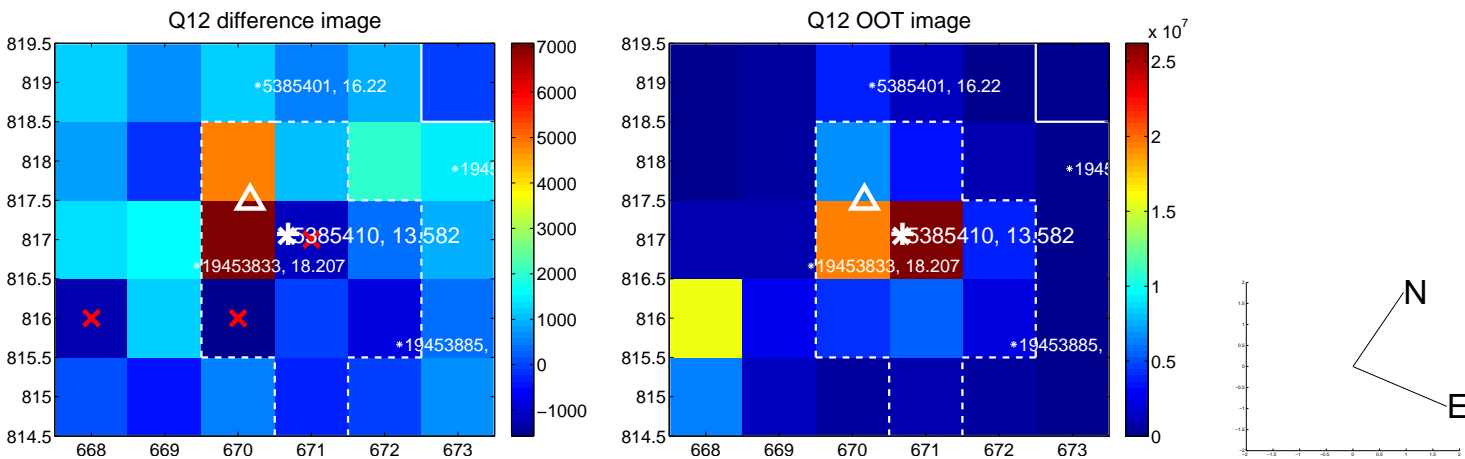
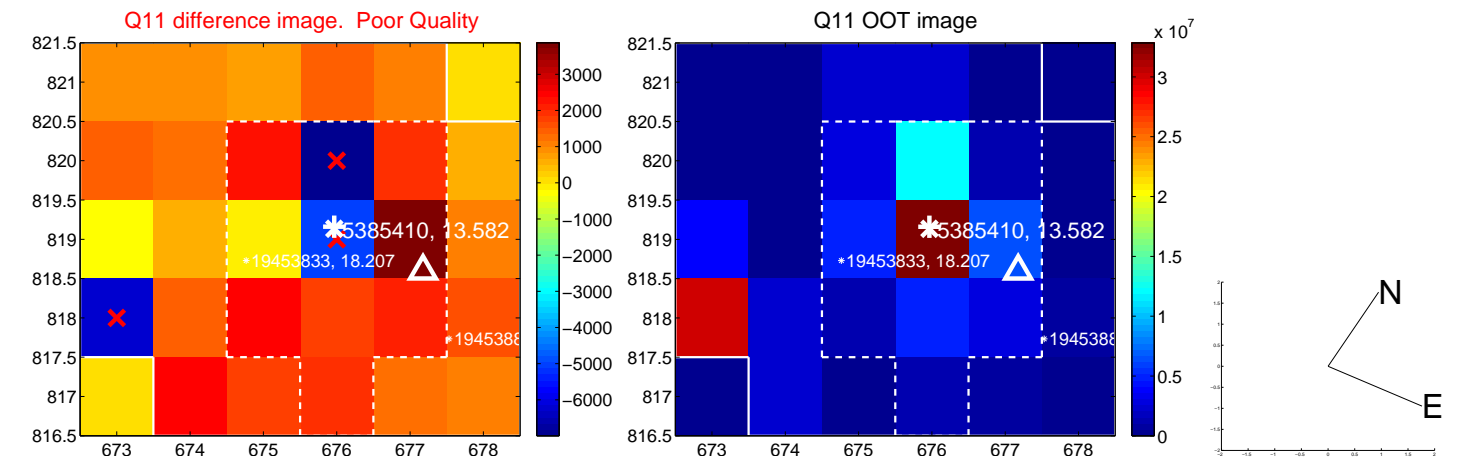
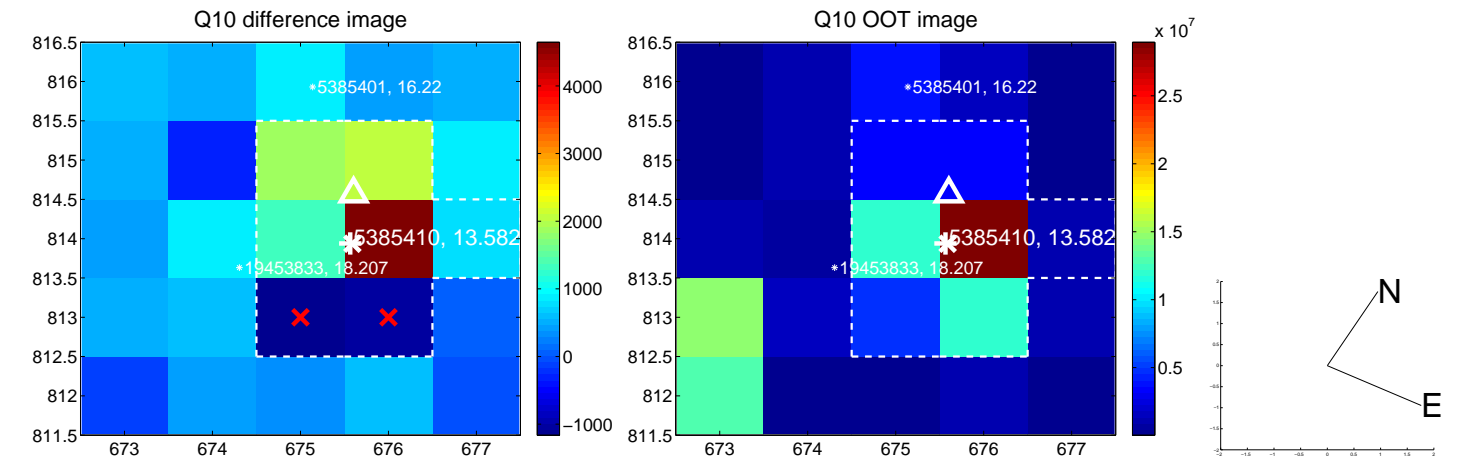
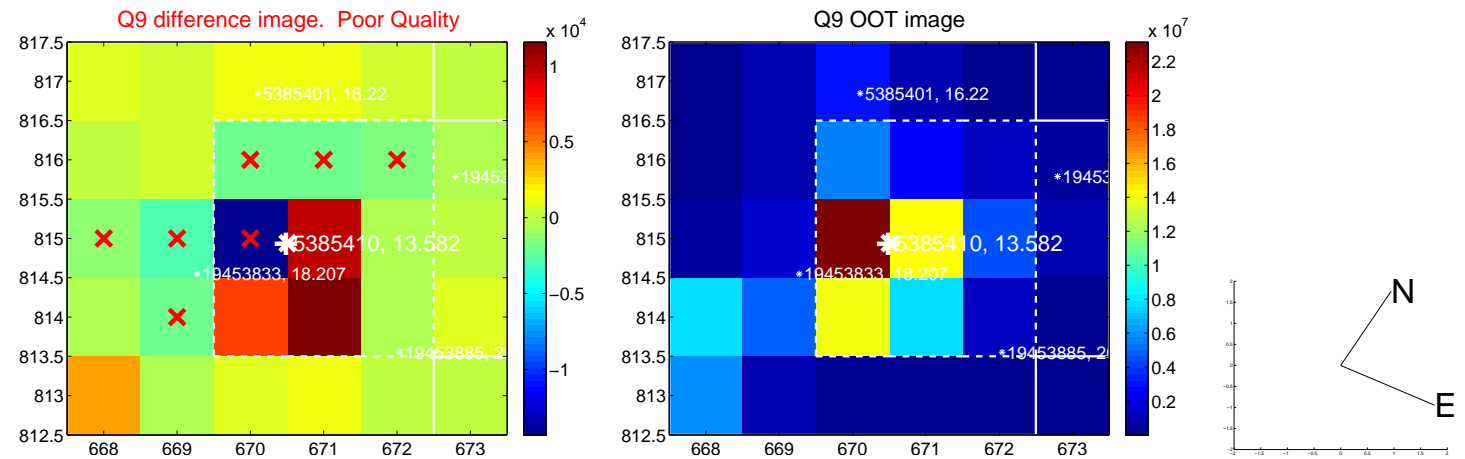
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



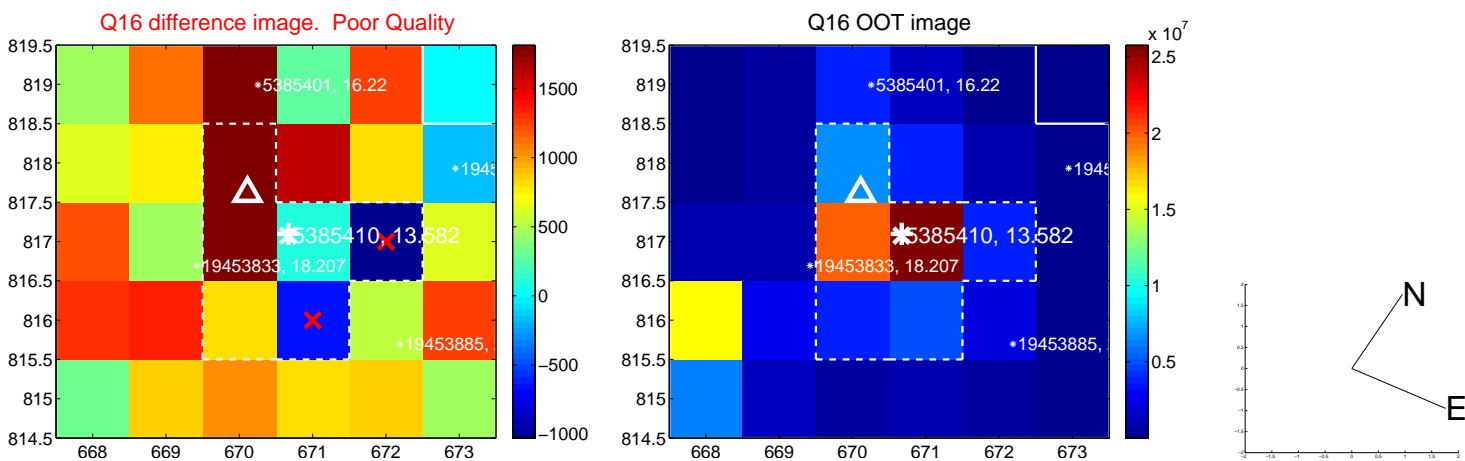
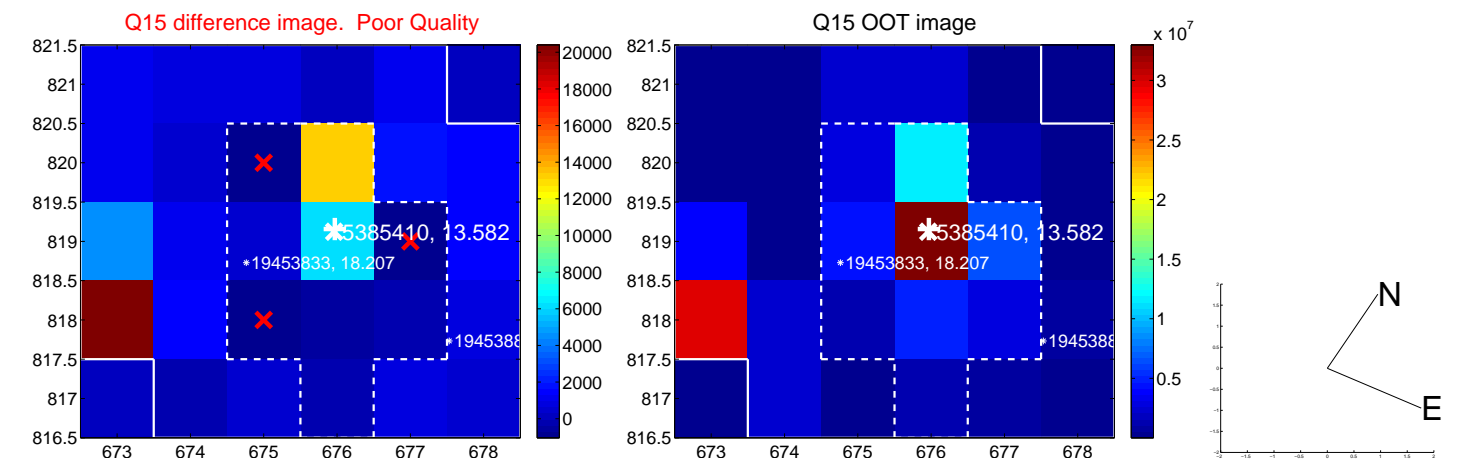
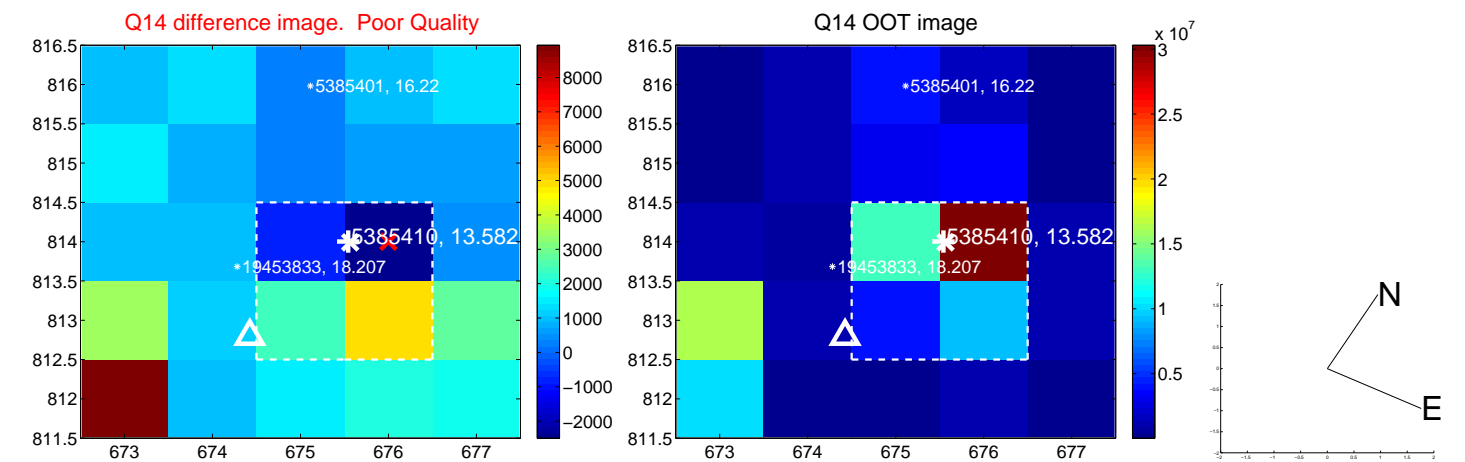
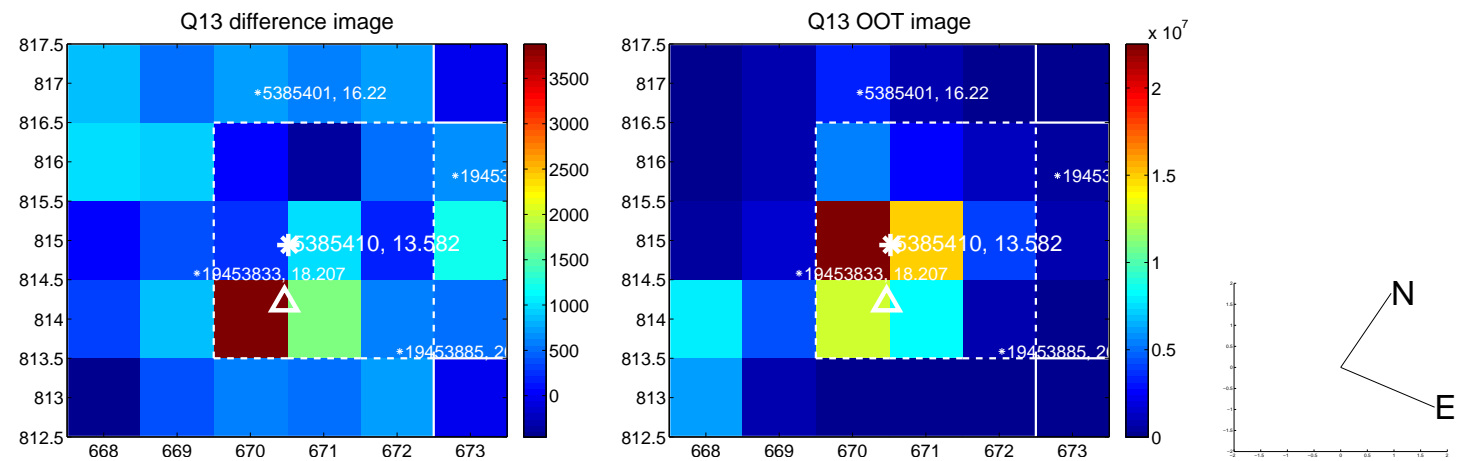
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



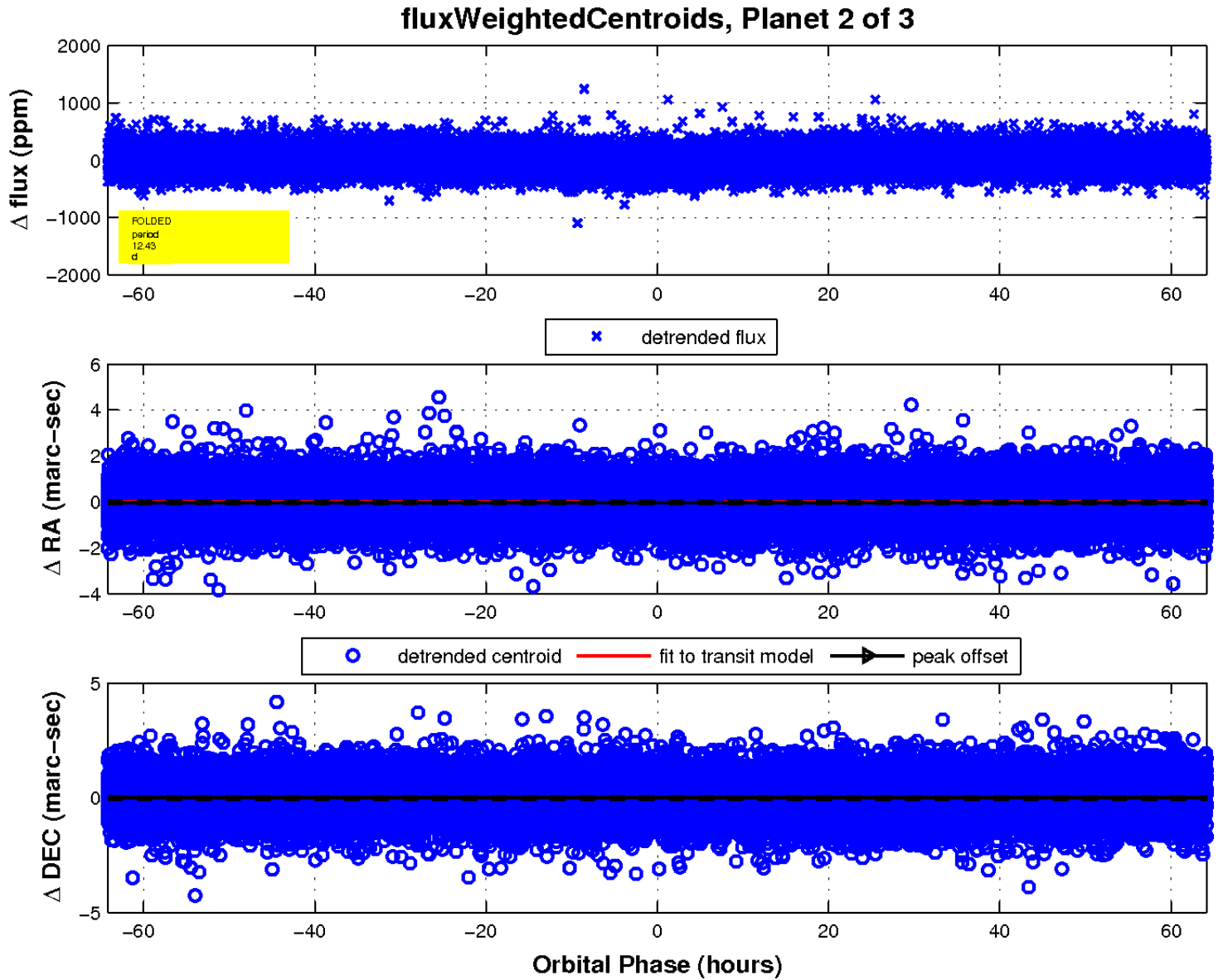
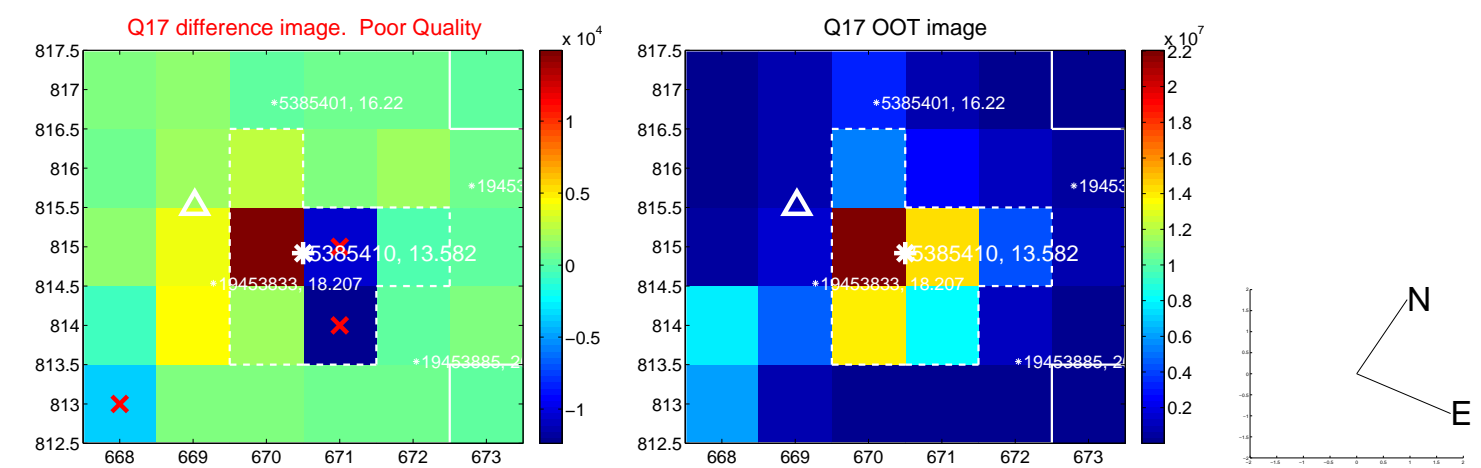
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

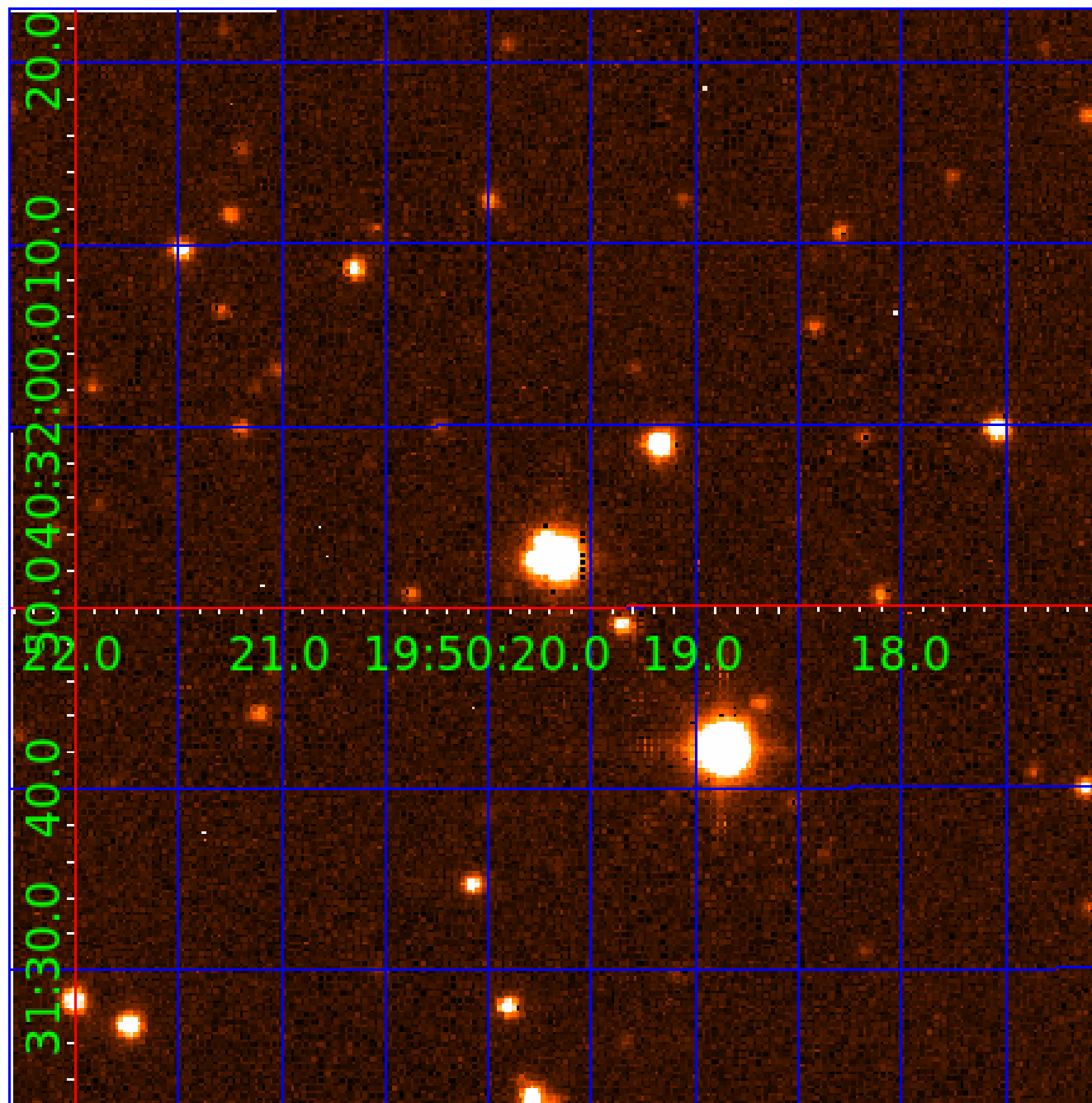


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385410

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})
005385410-01	OBS	4323.01	11.495975	139.373396	111.5	2.522	11.9	13.1	1.51	6290	1.87	296.02
005385410-02	OBS	4323.02	12.428557	141.322965	57.5	21.393	11.3	13.9	1.51	6290	1.21	266.78
005385410-03	OBS	No	12.424785	134.013875	50.3	21.691	11.5	13.3	1.51	6290	1.16	266.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385410-01	OBS	PC	0.91	0	0	0	0	NO_COMMENT
005385410-02	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH
005385410-03	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS—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 005385410-03

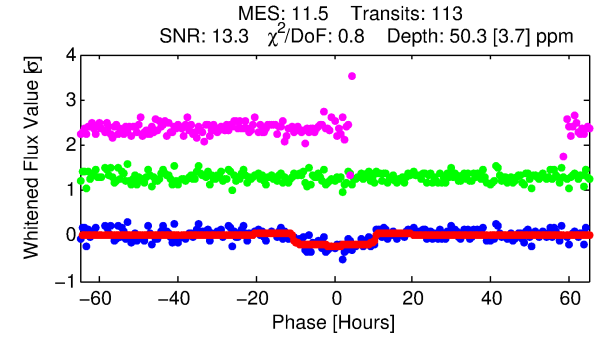
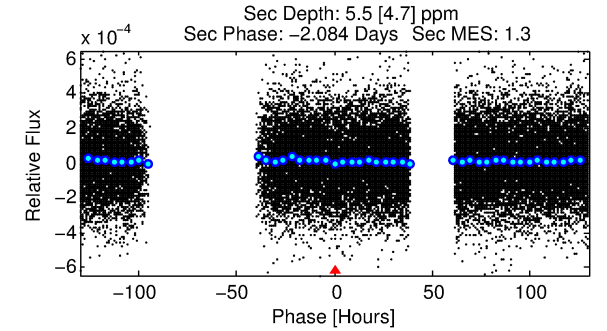
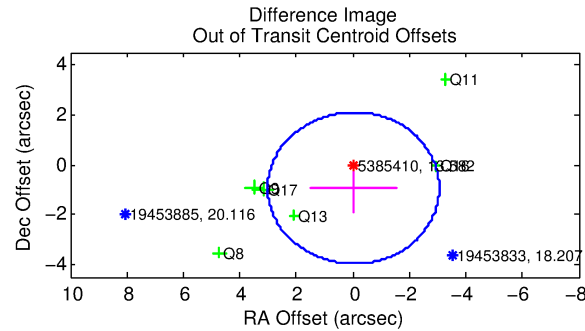
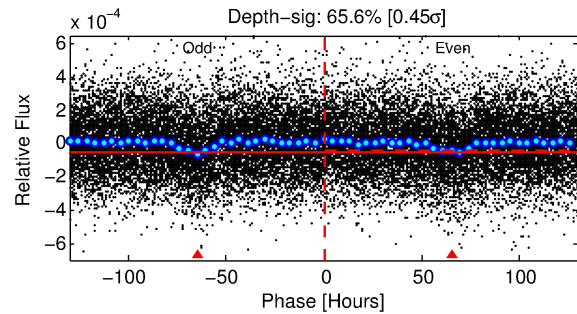
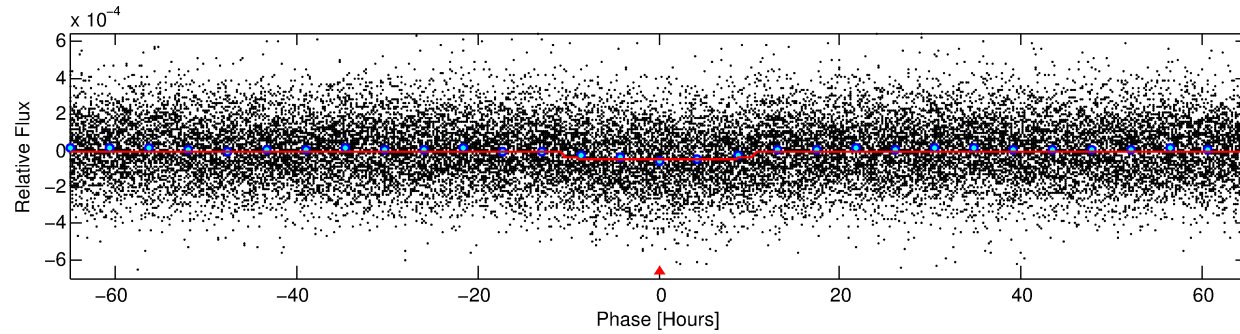
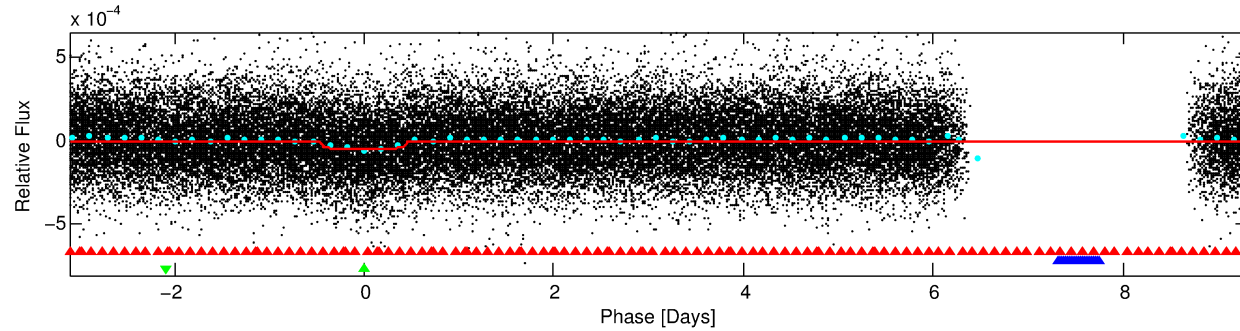
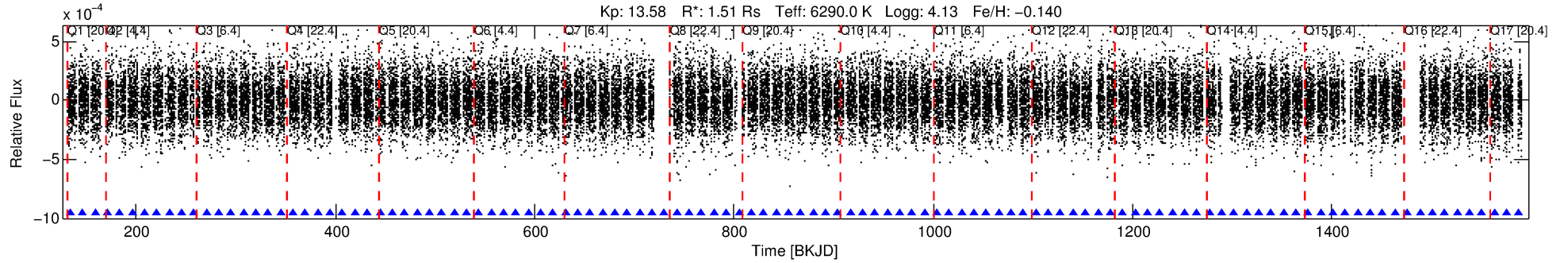
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
005385410-03	5385410	V380-Cyg-sec	5385723	1:1	318.2	-31	-74	5.77	13.58	2580.70	Direct-PRF	0	2.00	2.06

Notes: P₁:P₂ 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. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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: 5385410 Candidate: 3 of 3 Period: 12.425 d

KOI: K04323 Corr: No Ephemeris Match



DV Fit Results:

Period = 12.42479 [0.00025] d
Epoch = 134.0139 [0.0158] BKJD
Rp/R* = 0.0071 [0.0012]
a/R* = 3.05 [2.31]
b = 0.75 [0.49]
Seff = 266.89 [121.06]
Teq = 1031 [117] K
Rp = 1.16 [0.39] Re
a = 0.1092 [0.0301] AU
Ag = 27.04 [27.31] [0.95 σ]
Teffp = 3634 [837] K [3.08 σ]

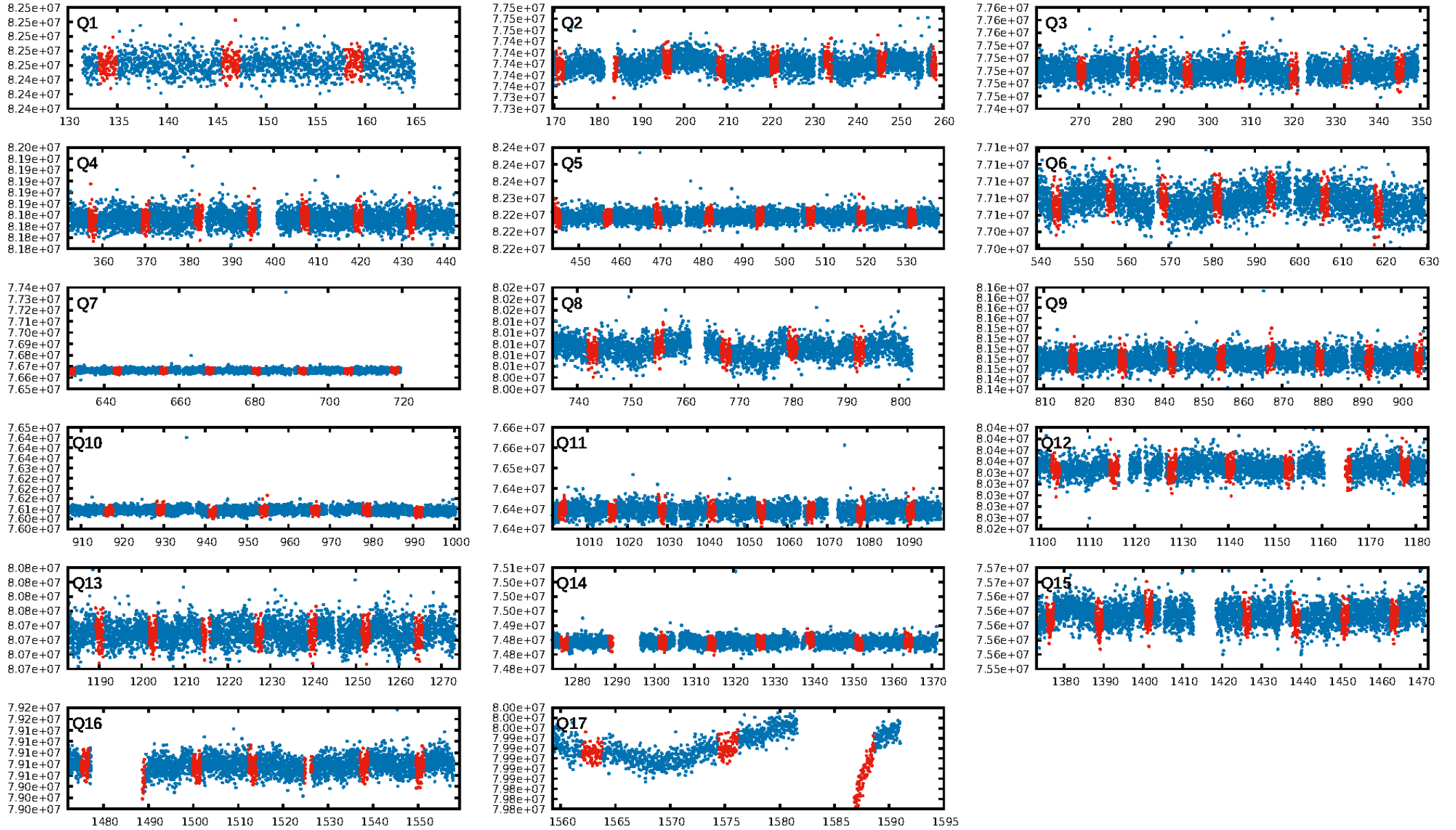
DV Diagnostic Results:

ShortPeriod-sig: 69.3% [1.02 σ]
LongPeriod-sig: 0.2% [0.00 σ]
ModelChiSquare2-sig: 47.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.15e-33
RollingBand-fgt: 1.00 [107/107]
GhostDiagnostic-chr: 0.2971
Centroid-sig: 0.0%
Centroid-so: 2.115 arcsec [2.06 σ]
OotOffset-rm: 0.938 arcsec [0.93 σ]
KicOffset-rm: 0.889 arcsec [0.88 σ]
OotOffset-st: 0/1/2/3 [6]
KicOffset-st: 0/1/2/3 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.88 [15/17]

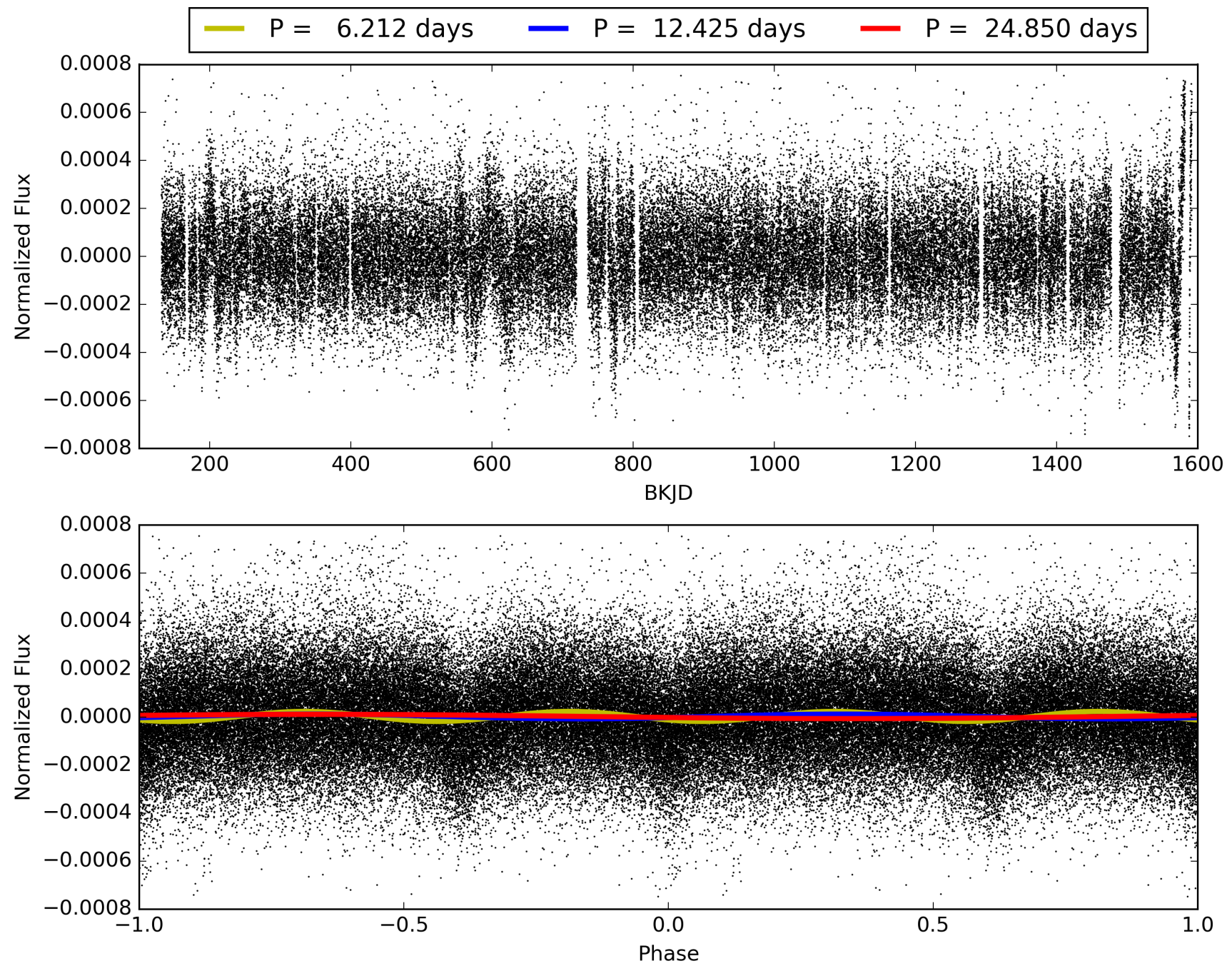
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:42:09 Z

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

TCE 005385410-03, PDC Light Curves

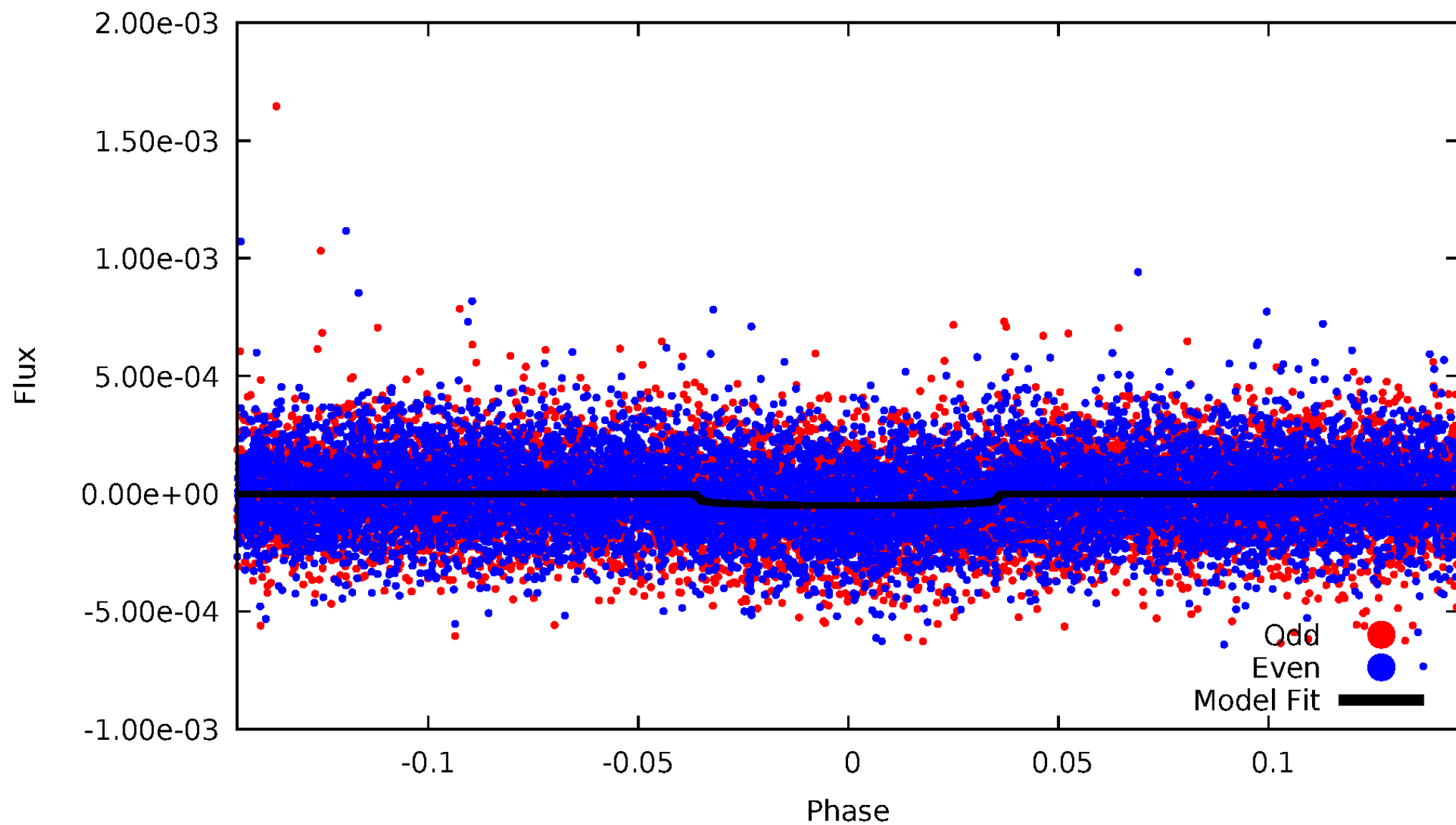


TCE 005385410-03



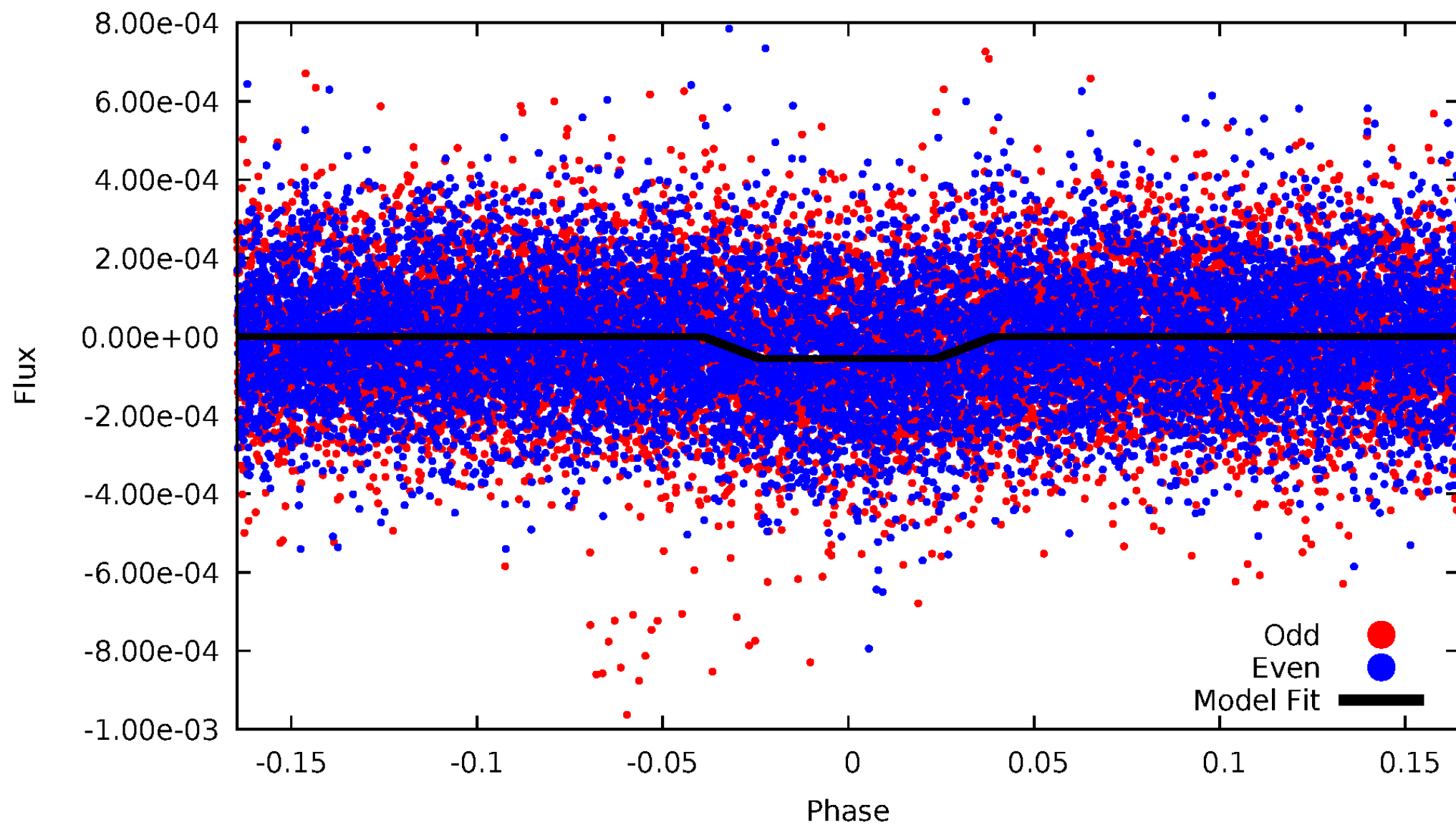
DV Odd/Even

TCE 005385410-03

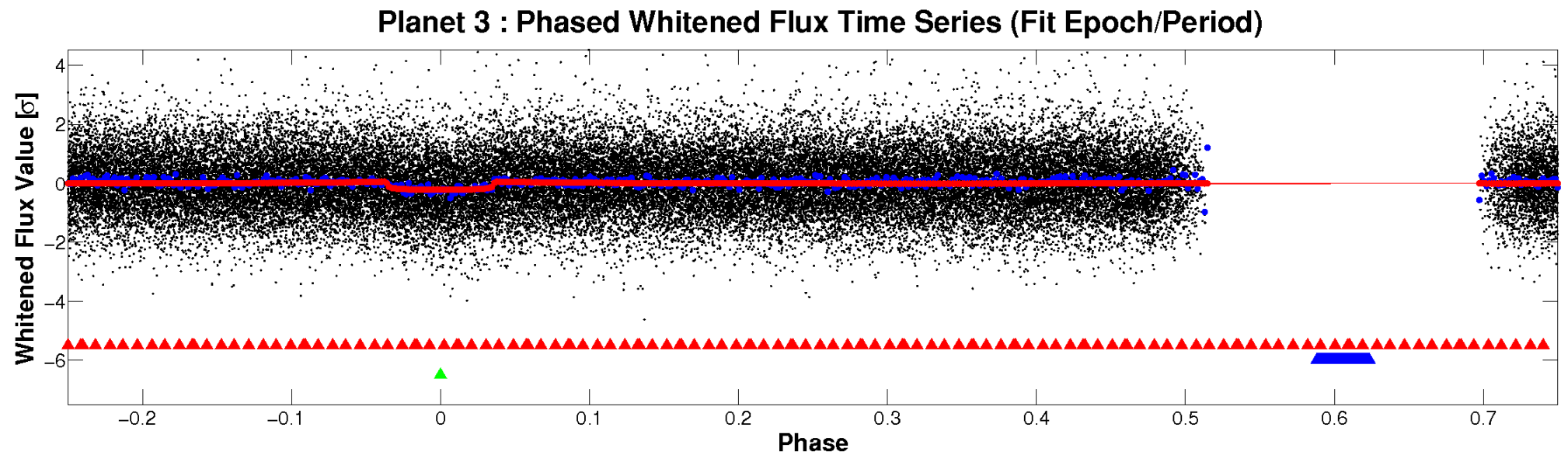
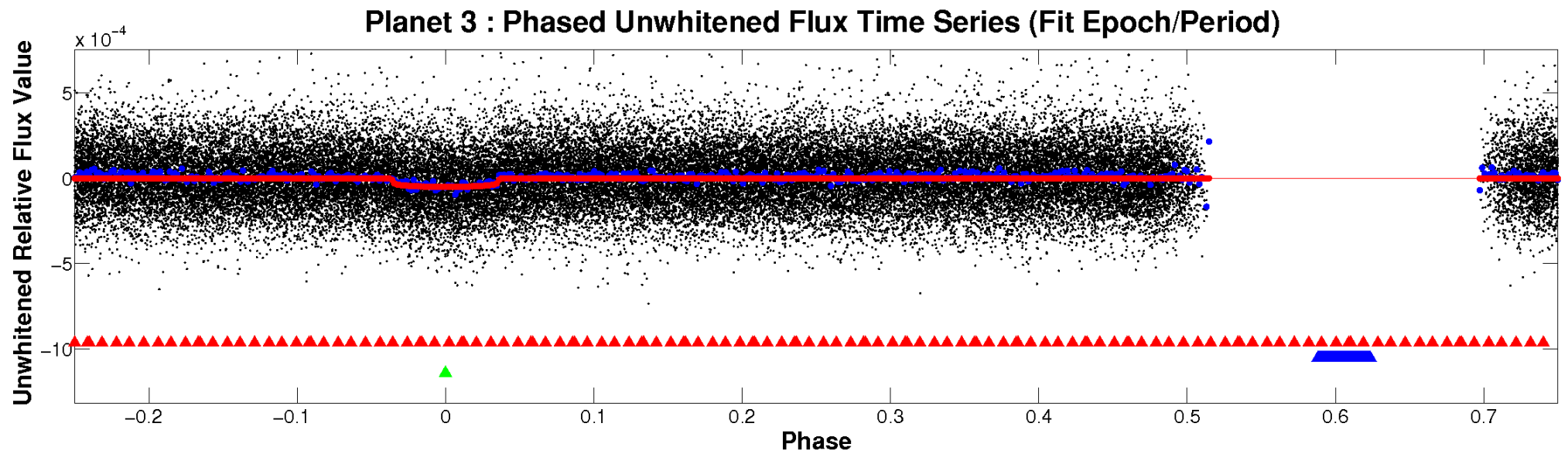


ALT Odd/Even

TCE 005385410-03

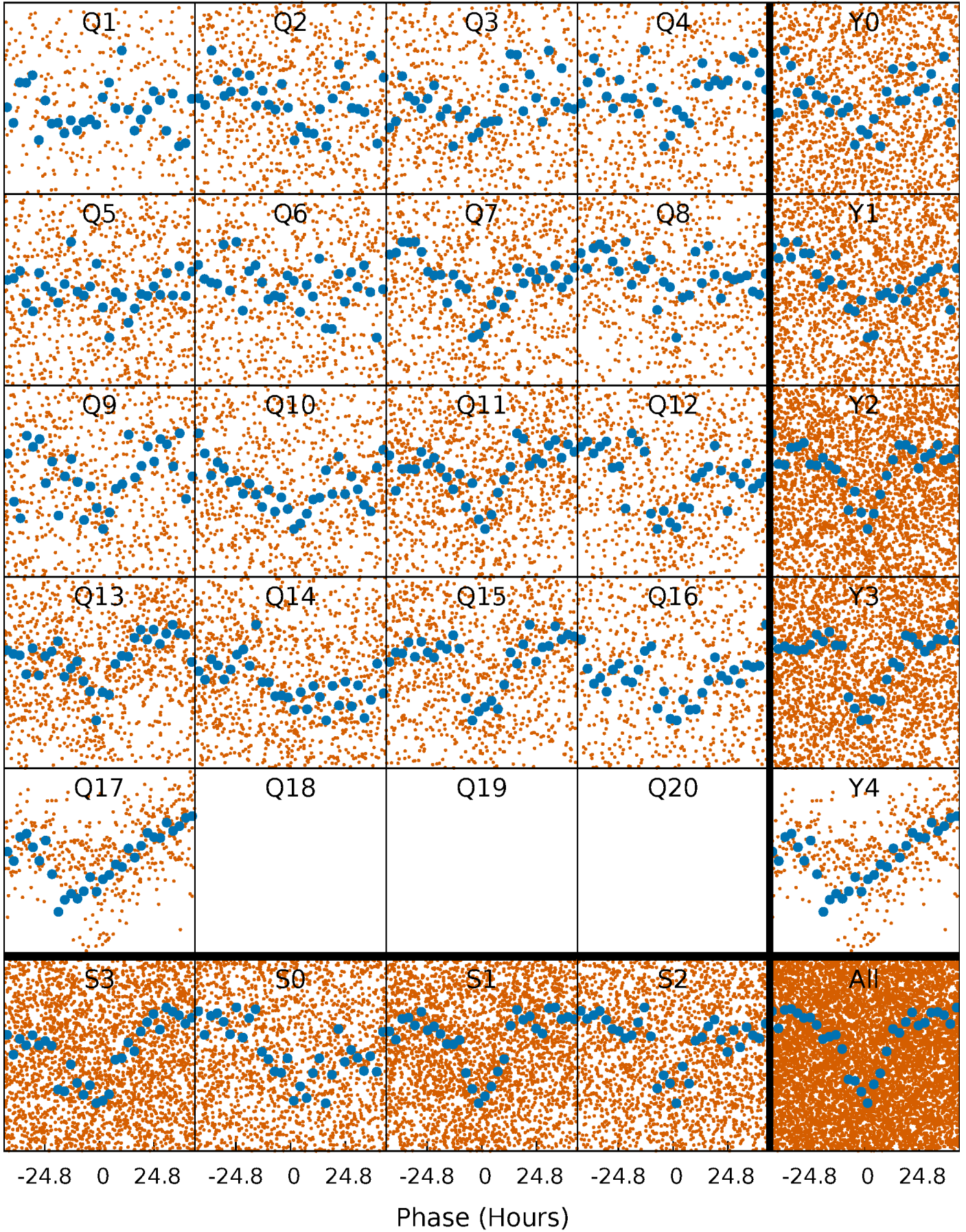


Non-Whitened Vs. Whitened Light Curve



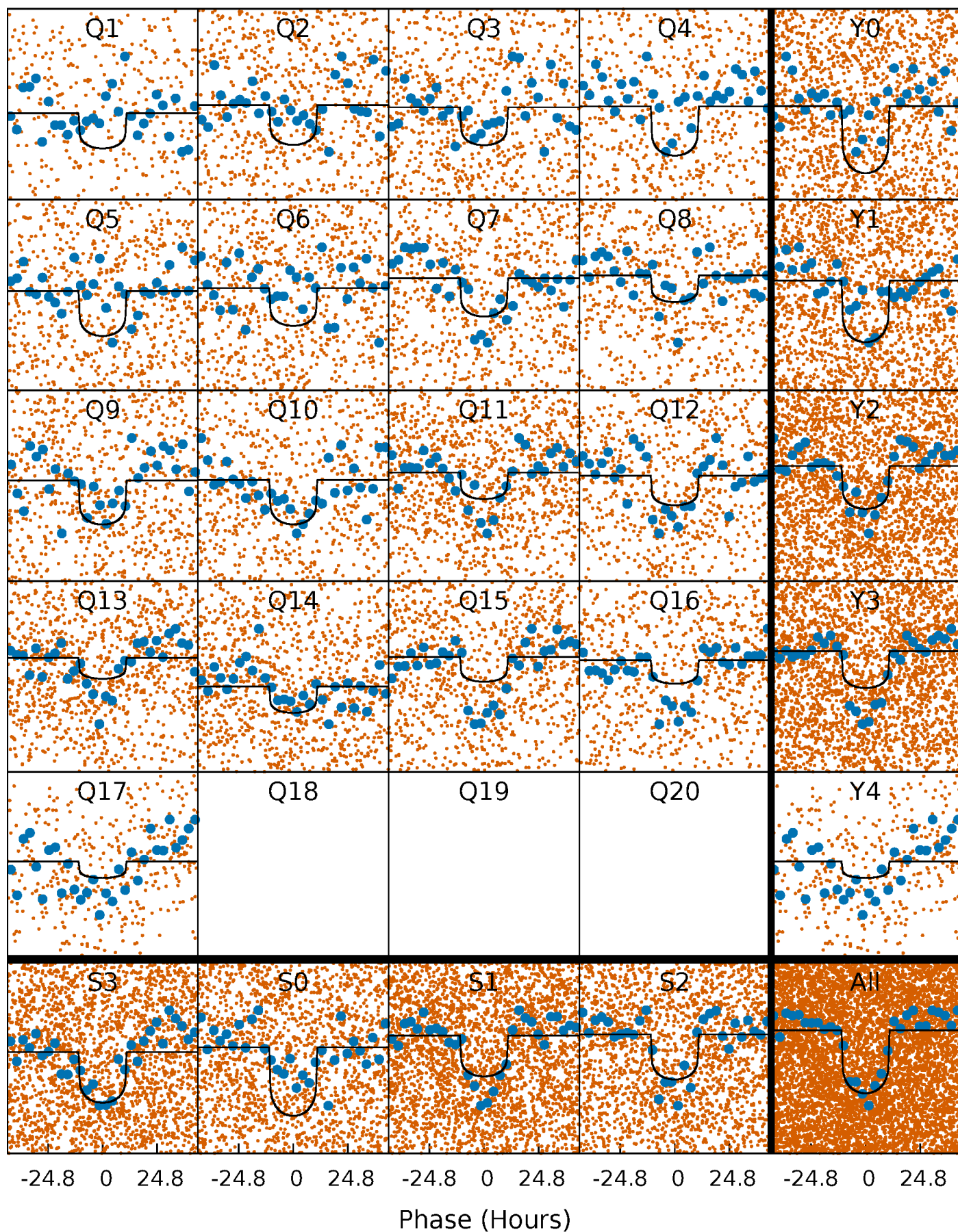
PDC Quarter-Phased Transit Curves

TCE 005385410-03 P= 12.424785 Days $T_0=134.013875$ (BKJD)



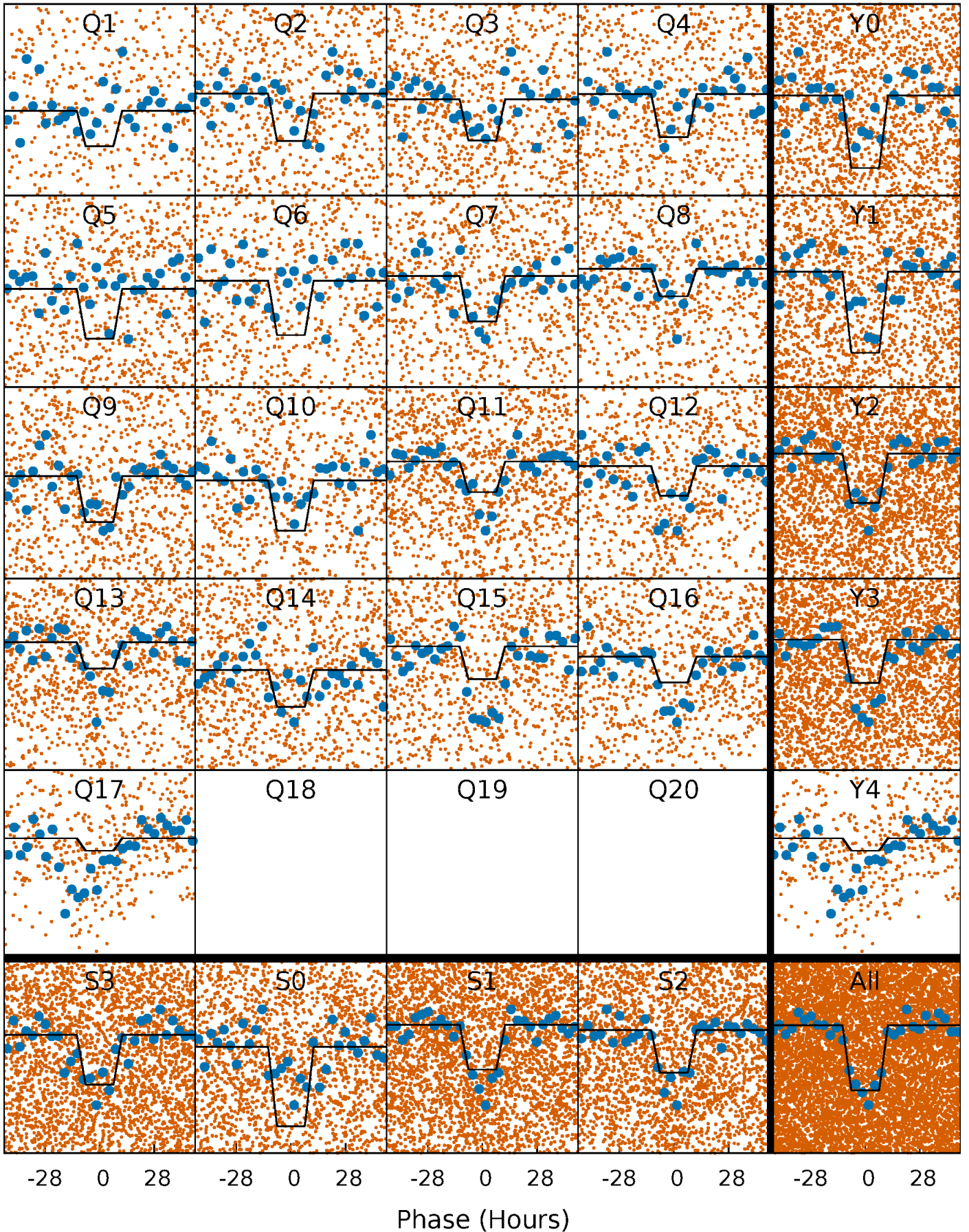
DV Quarter-Phased Transit Curves

TCE 005385410-03 P= 12.424785 Days $T_0=134.013875$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

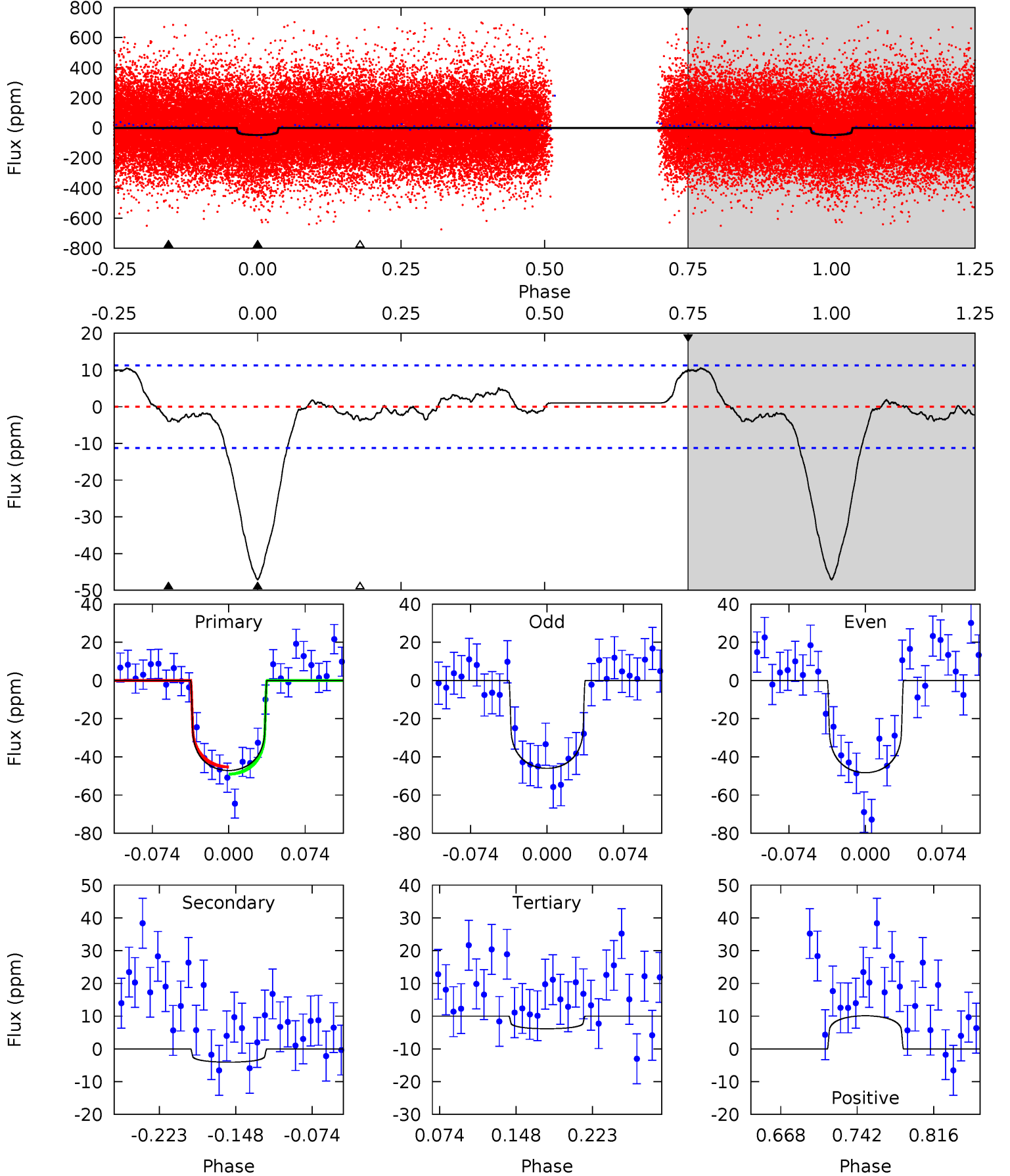
TCE 005385410-03 P= 12.424613 Days $T_0=134.015687$ (BKJD)



DV Model-Shift Uniqueness Test

005385410-03, $P = 12.424785$ Days, $E = 121.589090$ Days

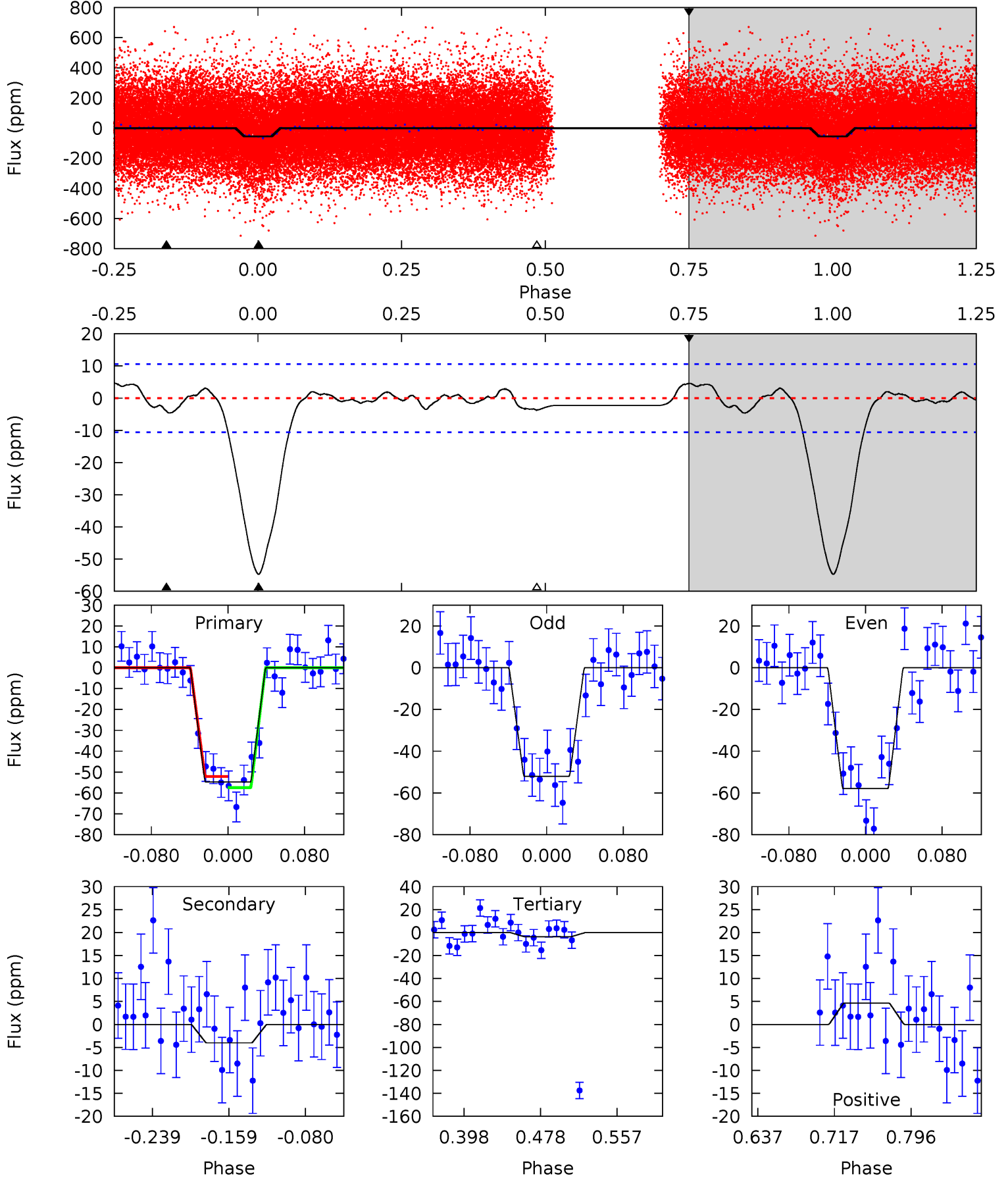
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	1.67	1.59	4.16	4.63	1.79	1.40	17.8	15.2	0.08	-2.49	0.47	1.07	0.18	0.77



Alt Model-Shift Uniqueness Test

005385410-03, P = 12.424613 Days, E = 121.591074 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	1.75	1.61	2.01	4.61	1.75	0.82	22.2	21.8	0.14	-0.26	1.28	1.16	0.08	1.16



Stellar Parameters For KIC 005385410

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6290^{+170}_{-208}	$4.133^{+0.252}_{-0.168}$	$-0.140^{+0.250}_{-0.300}$	$1.506^{+0.444}_{-0.400}$	$1.123^{+0.181}_{-0.164}$	$0.463^{+0.702}_{-0.212}$
	+3%/-3%	+6%/-4%	+179%/-214%	+29%/-27%	+16%/-15%	+151%/-46%
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 005385410-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 2	$1.12^{+0.28}_{-0.26}$	1422^{+98}_{-117}	3719^{+450}_{-506}	20^{+20}_{-13}
Alt.	-4 ± 2	$1.19^{+0.33}_{-0.25}$	1423^{+114}_{-110}	3651^{+431}_{-458}	18^{+18}_{-11}

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 $A_{obs} \gg 1.0$

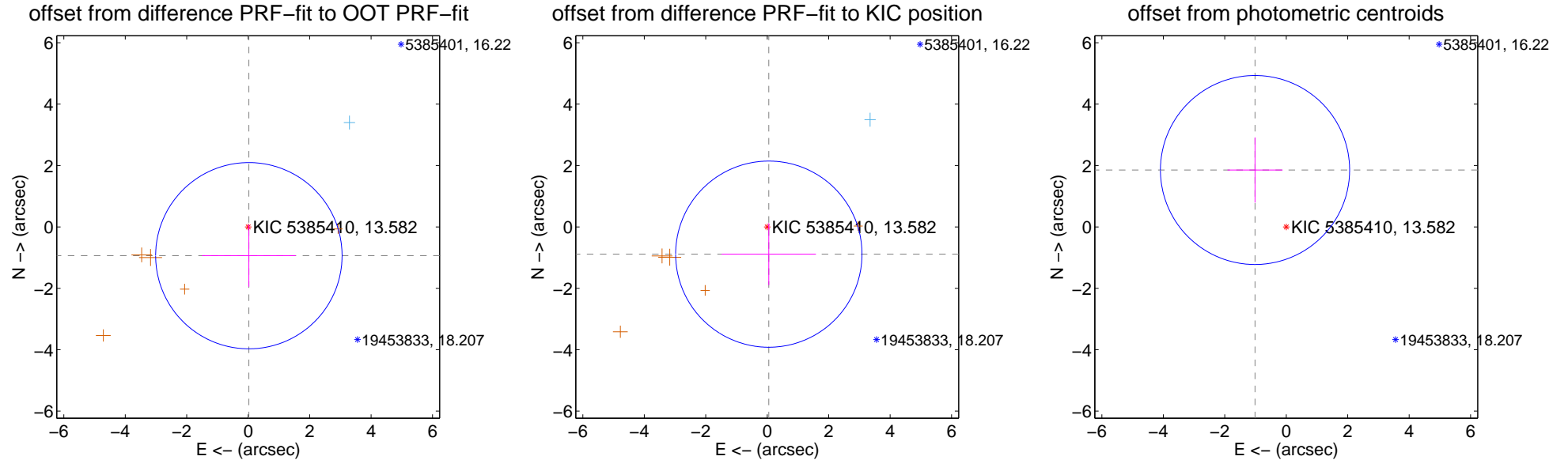
DV Centroid Data

Supplemental centroid analysis for 005385410-03. Kepler magnitude: 13.58. Transit SNR 13.27

There are 1 quarters with good PRF difference image offsets

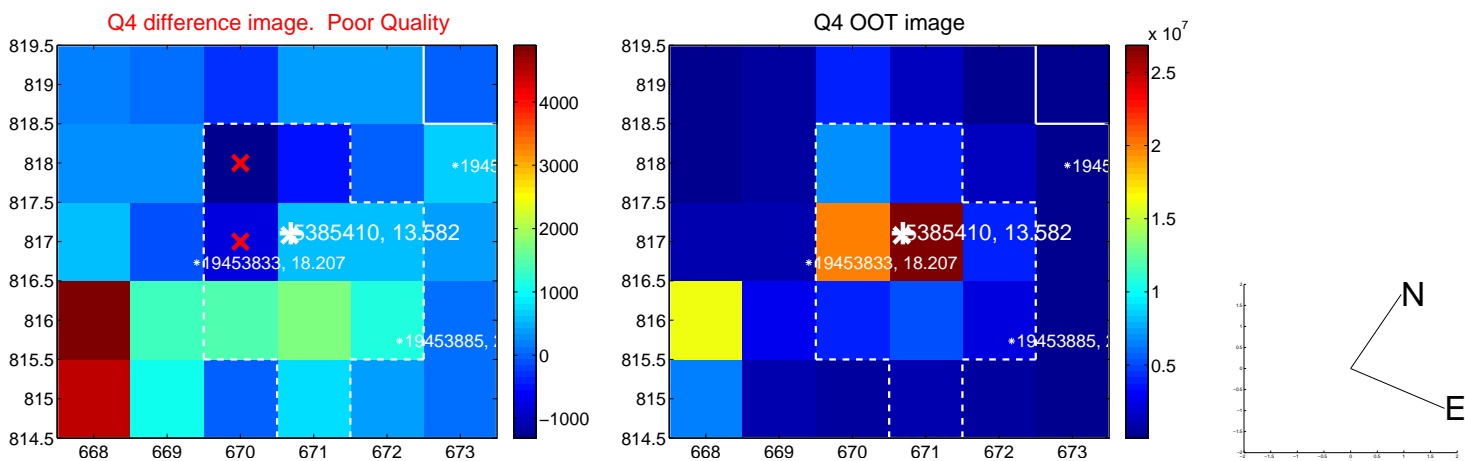
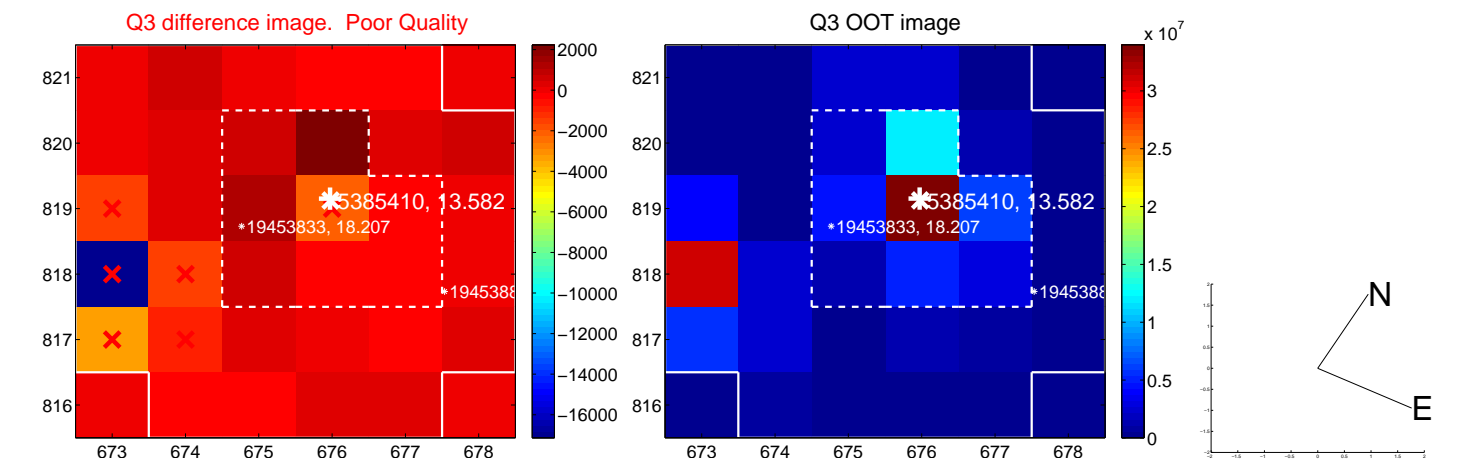
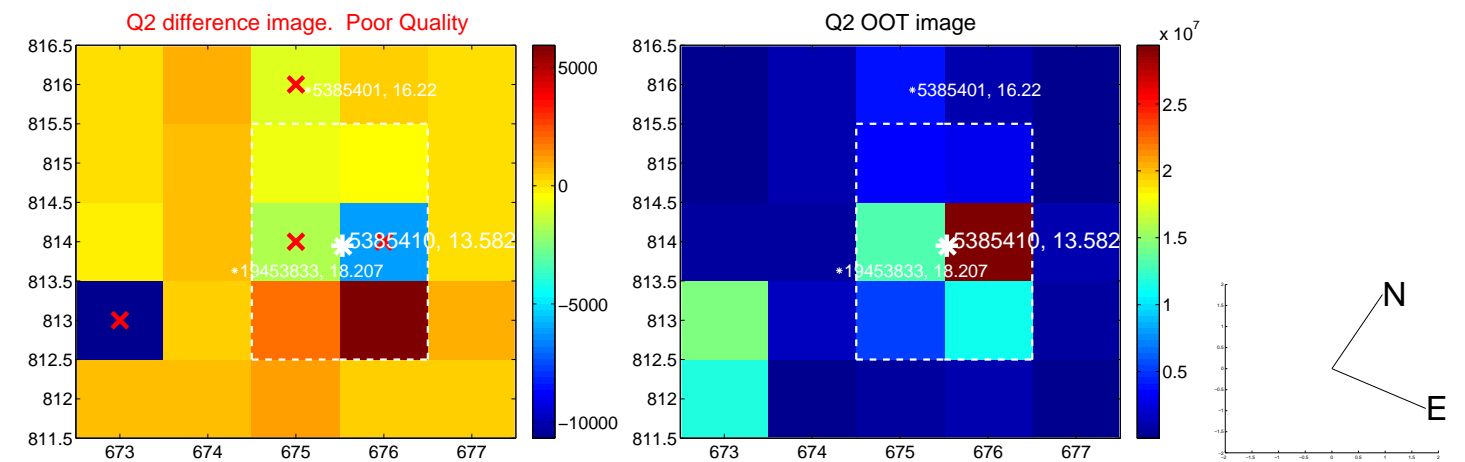
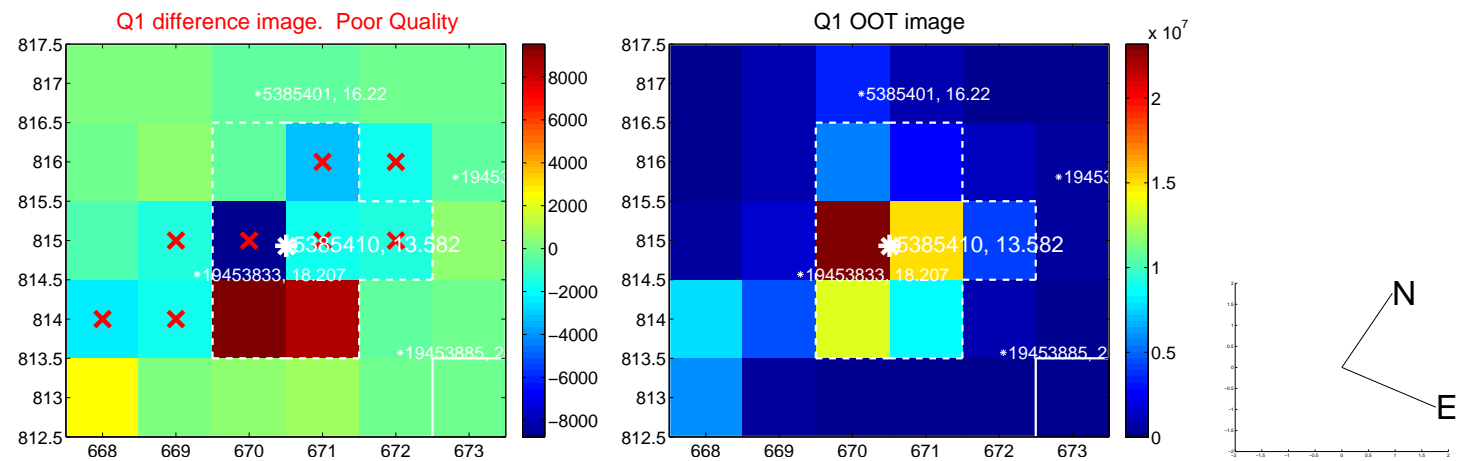
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.938 ± 1.011	0.93	-0.022 ± 1.523	-0.938 ± 1.011
PRF-fit source offset from KIC position	0.889 ± 1.011	0.88	-0.052 ± 1.533	-0.888 ± 1.009
photometric centroid source offset	2.11 ± 1.03	2.06	1.02 ± 0.90	1.85 ± 1.06

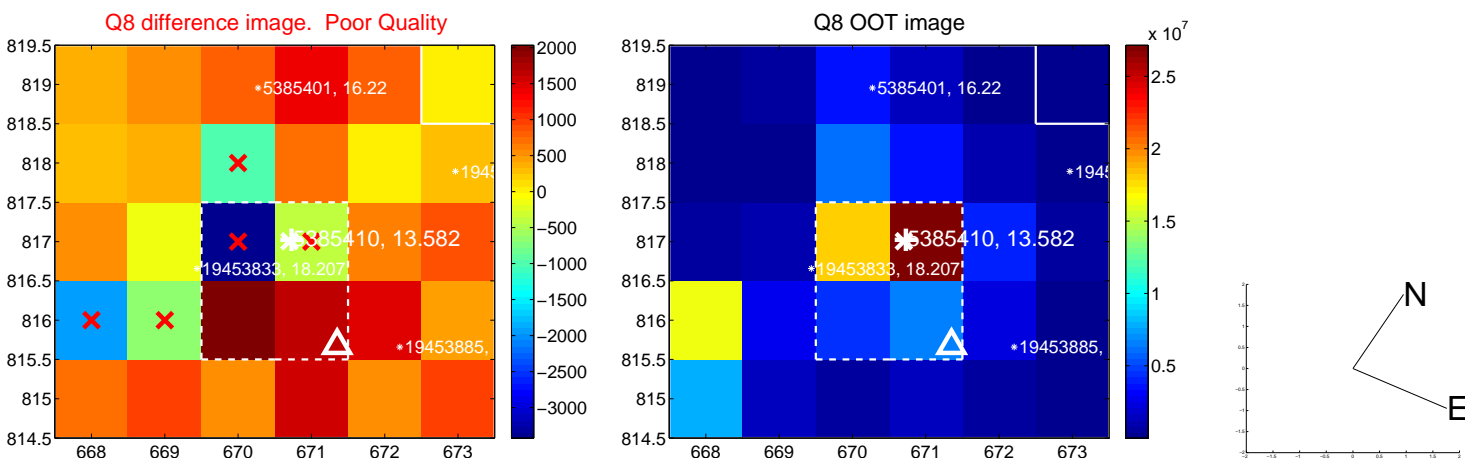
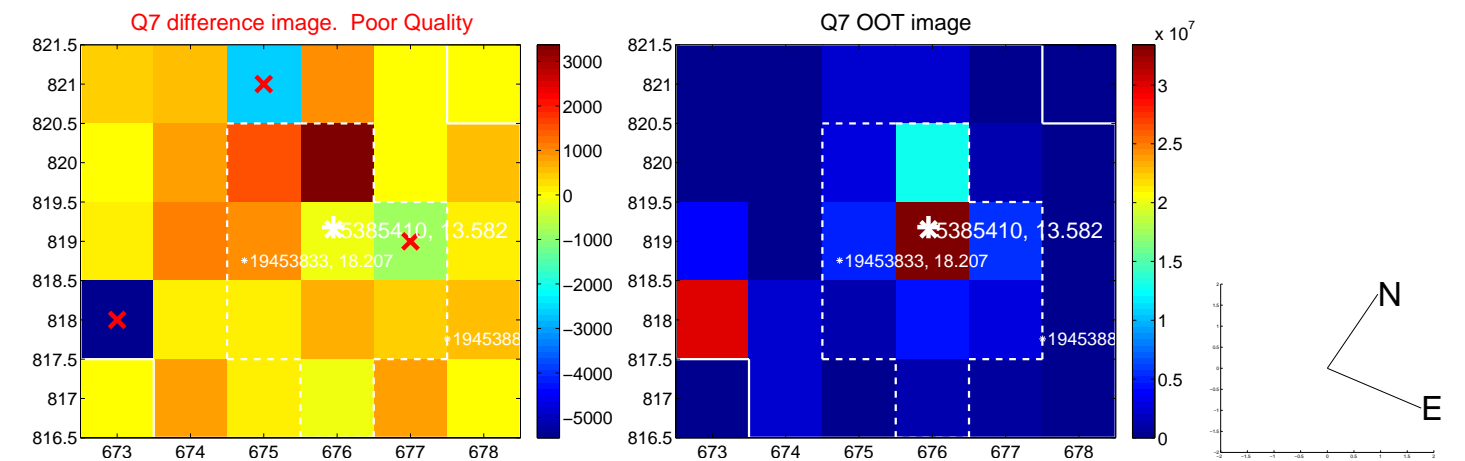
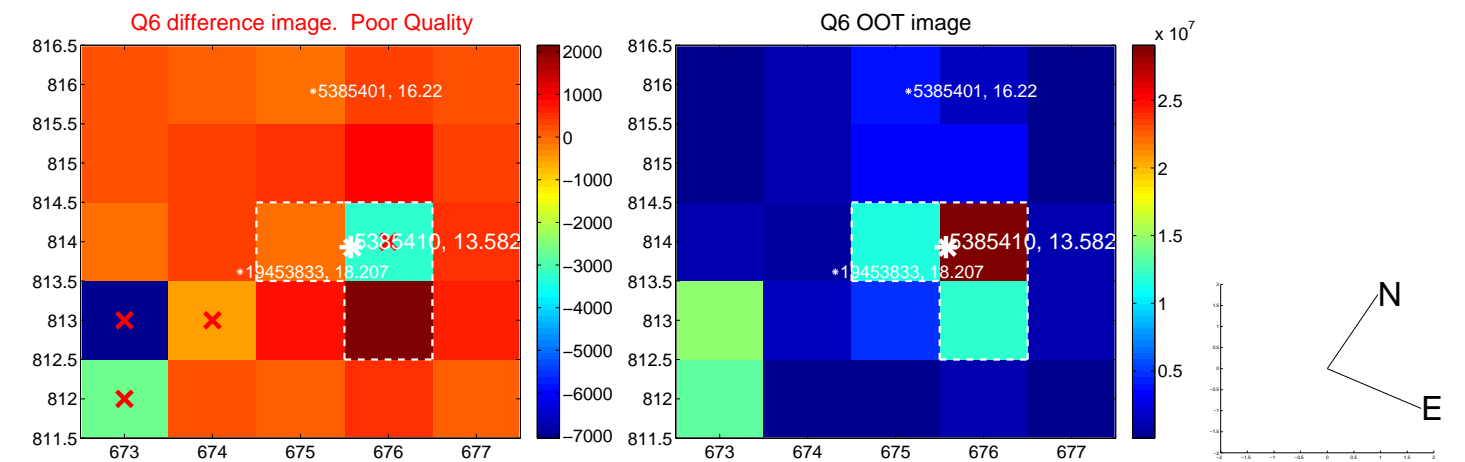
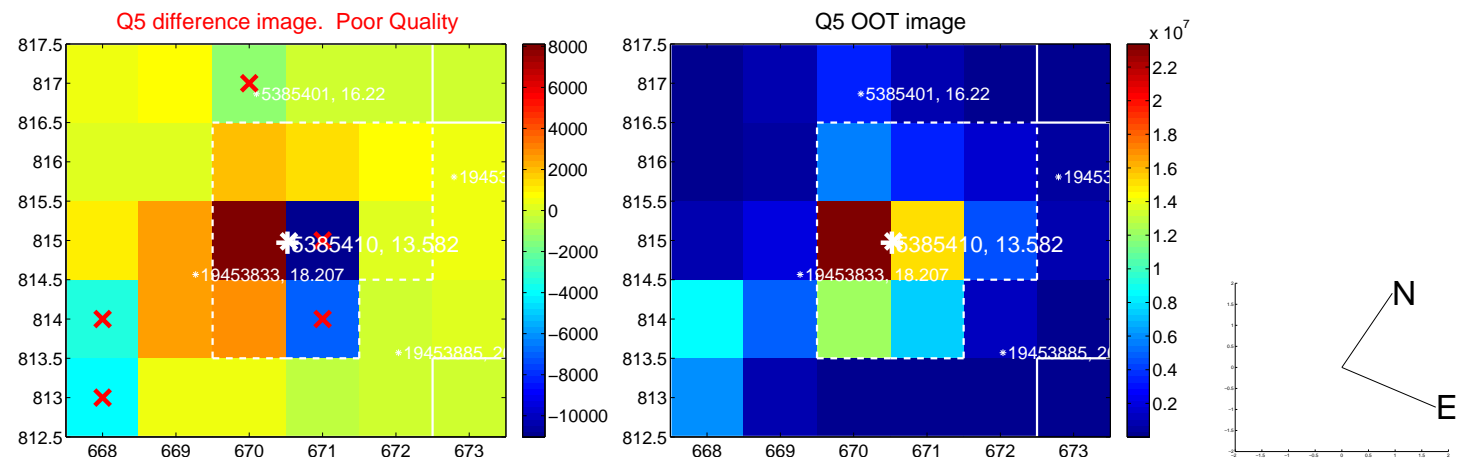


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

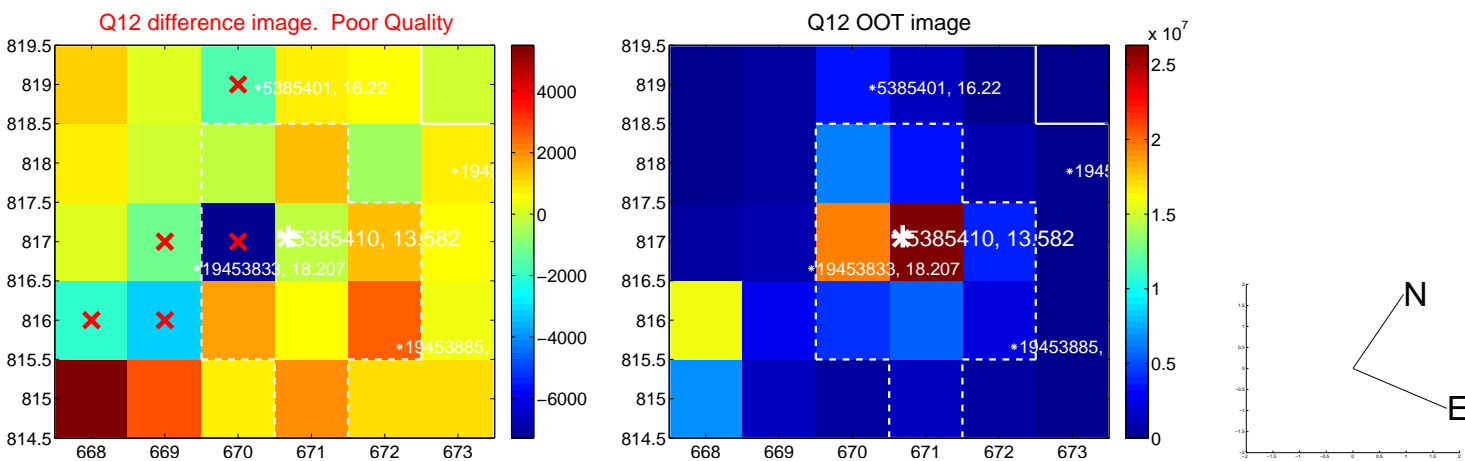
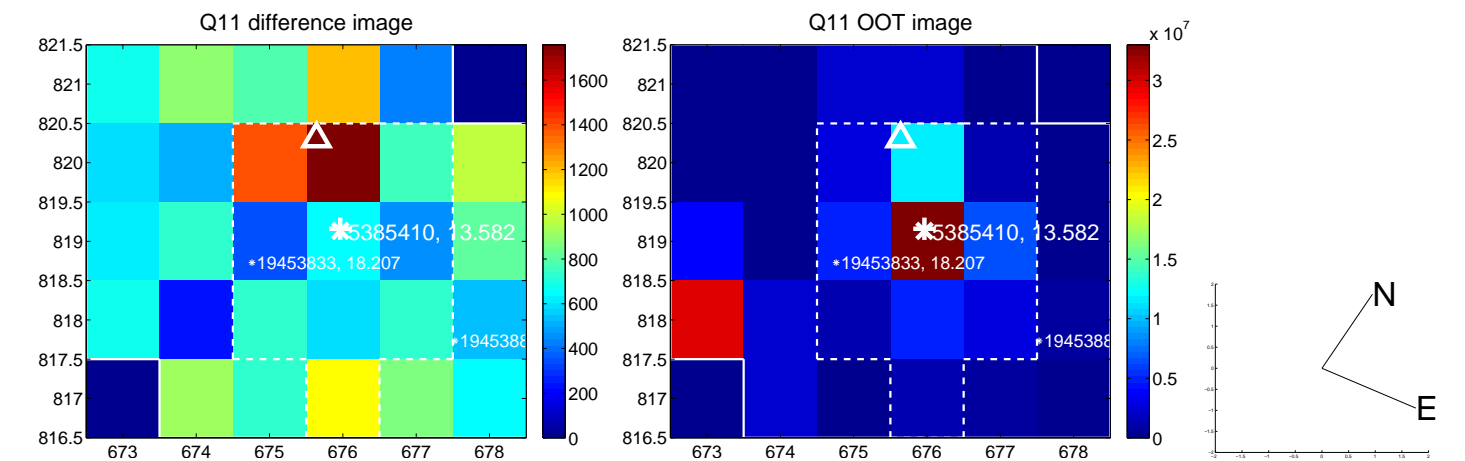
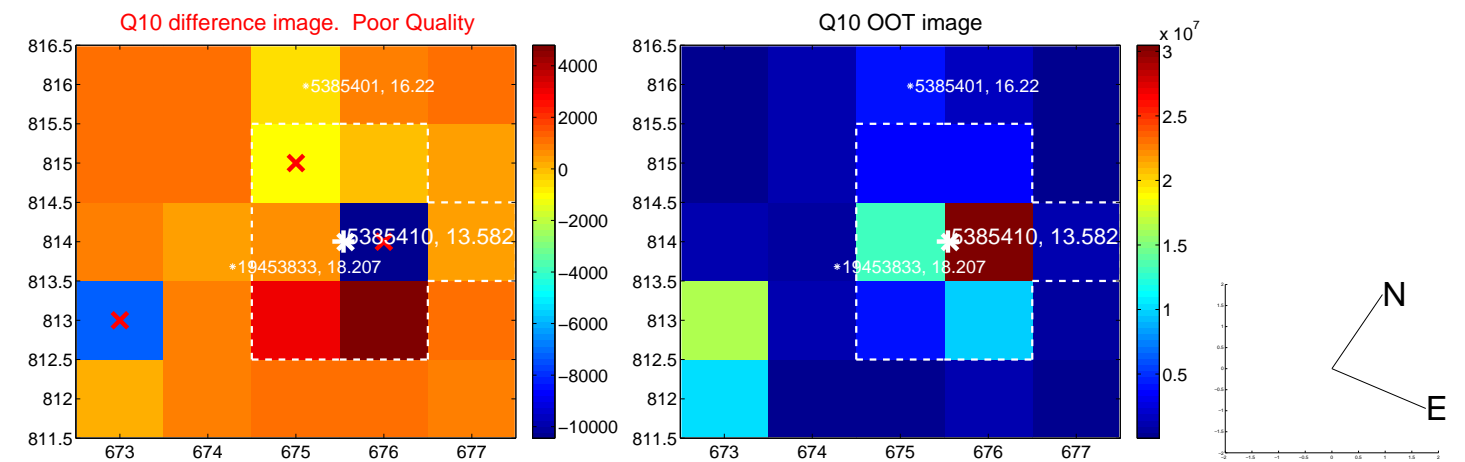
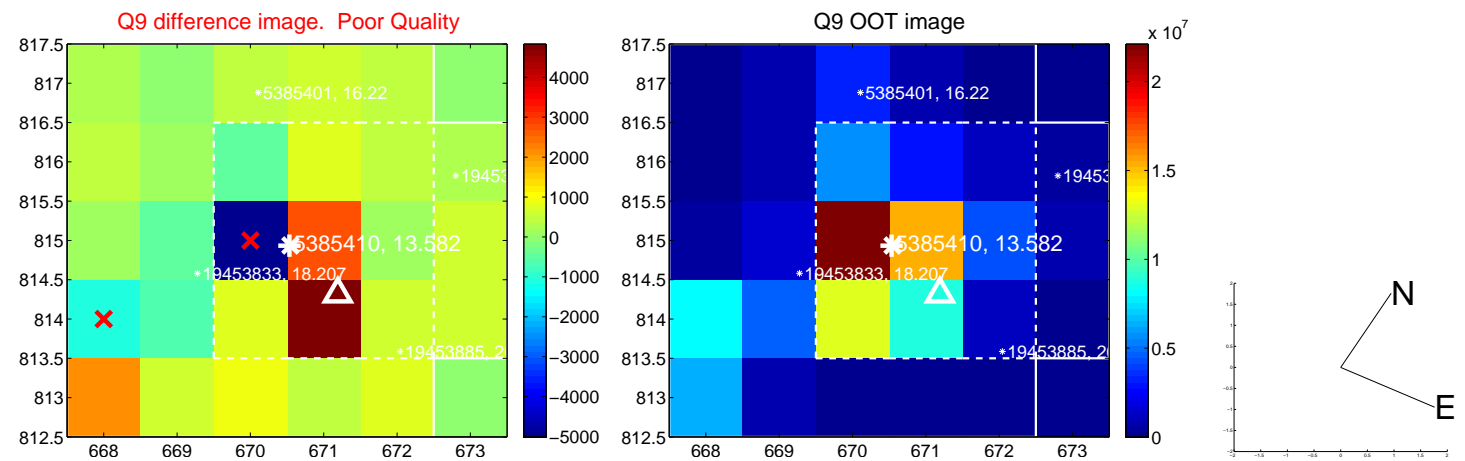
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



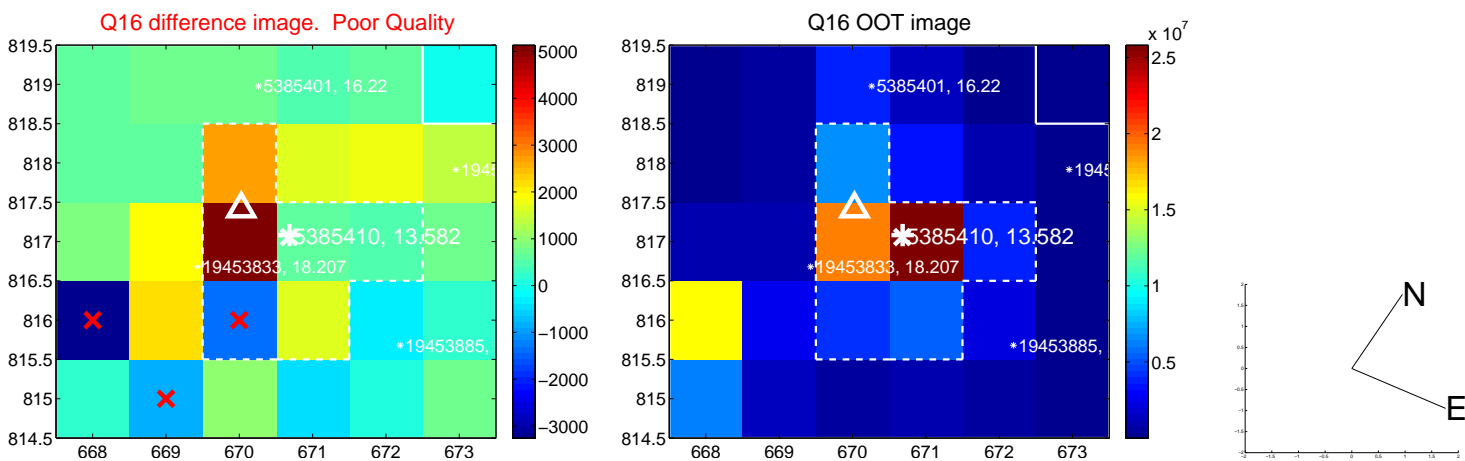
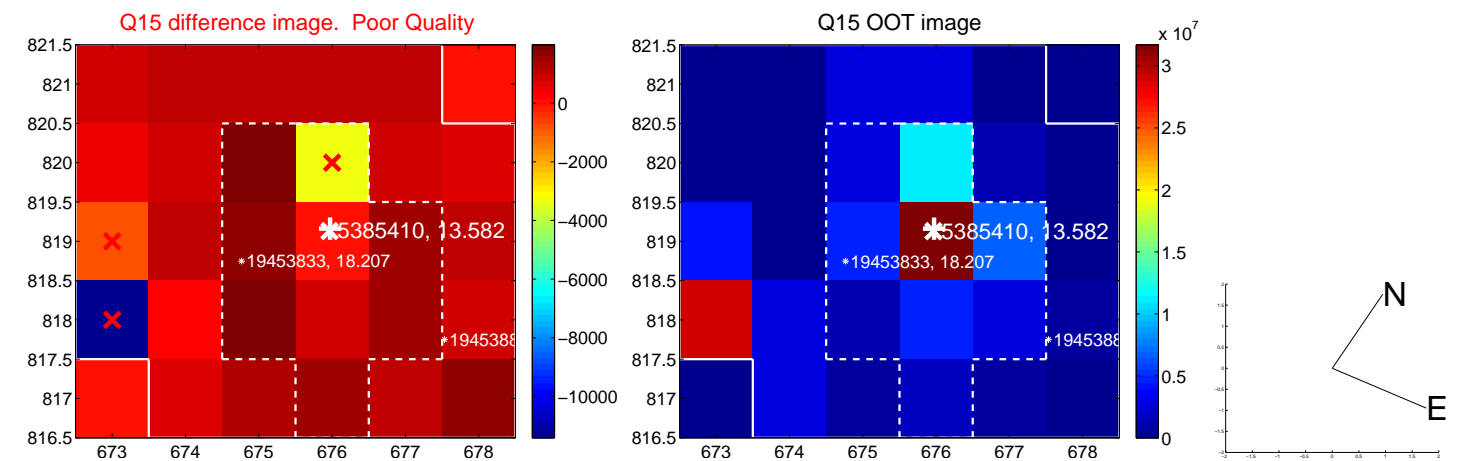
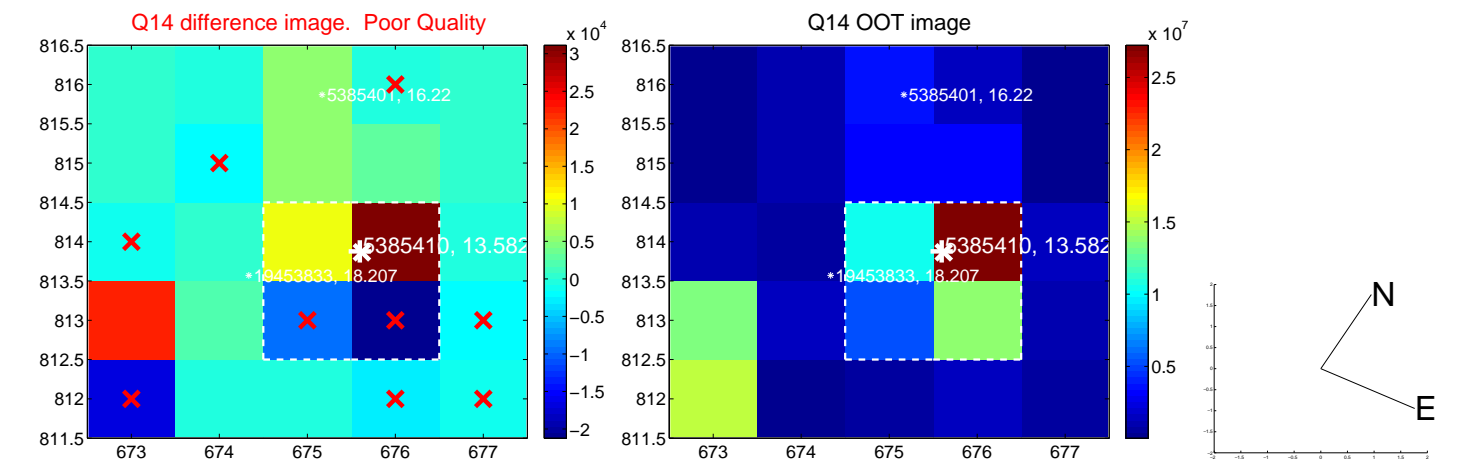
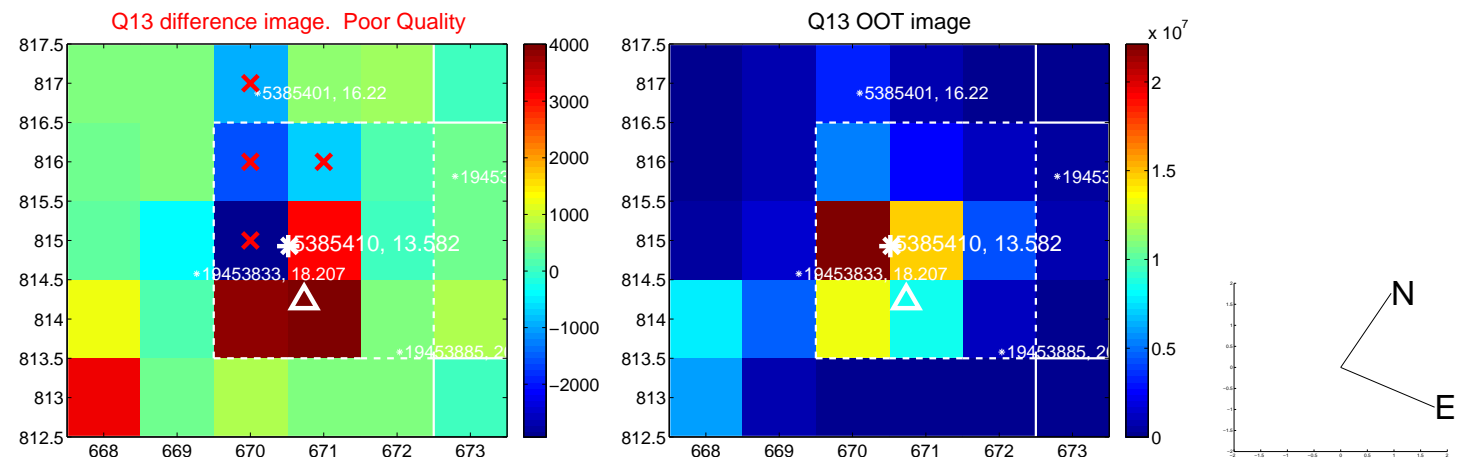
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



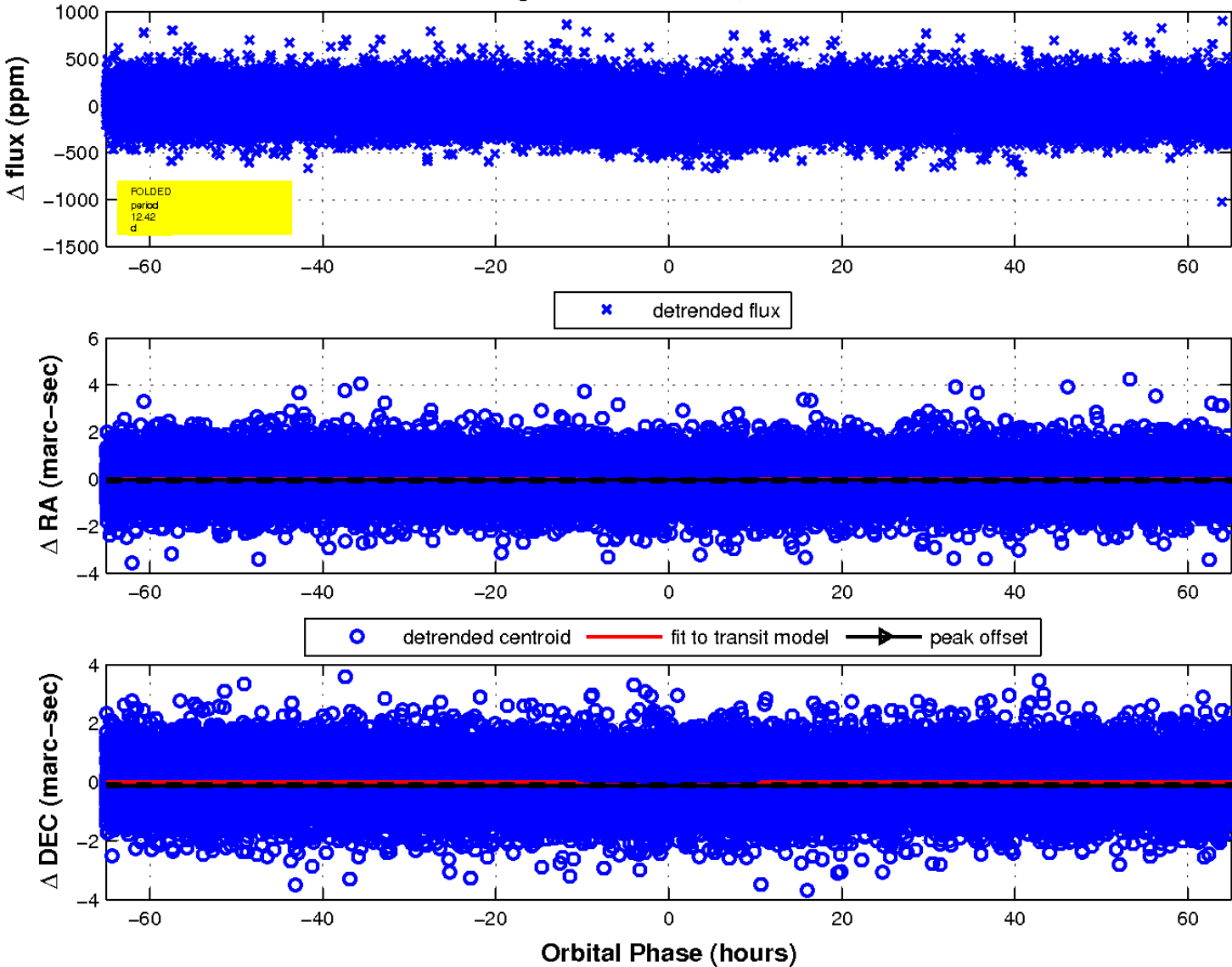
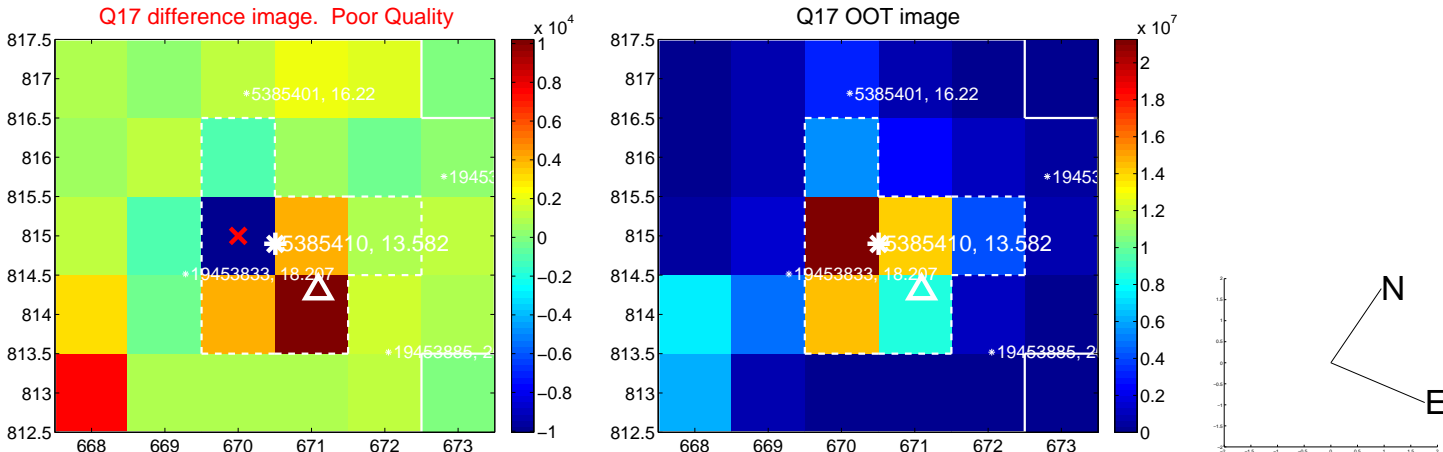
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

