

KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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 010514430-01

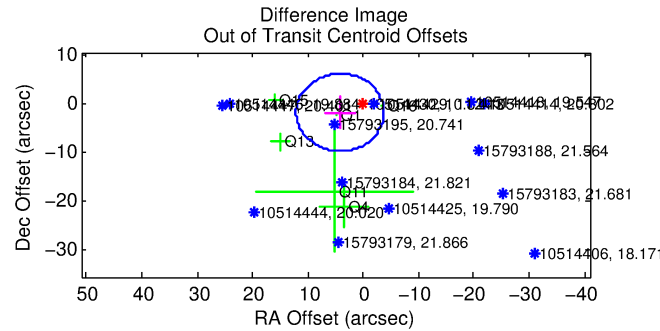
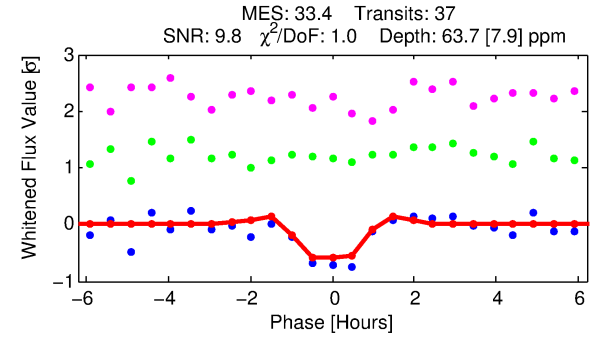
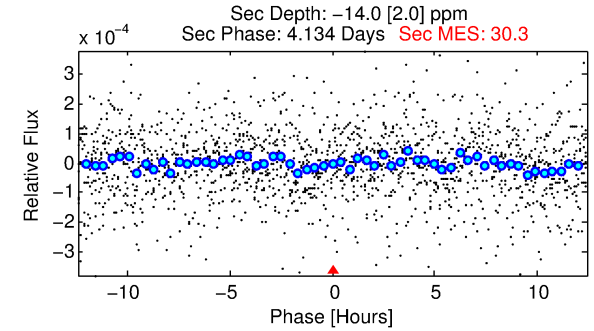
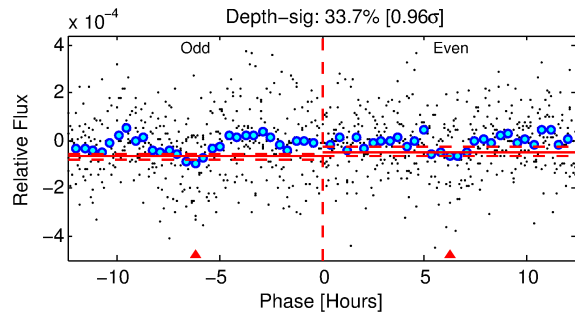
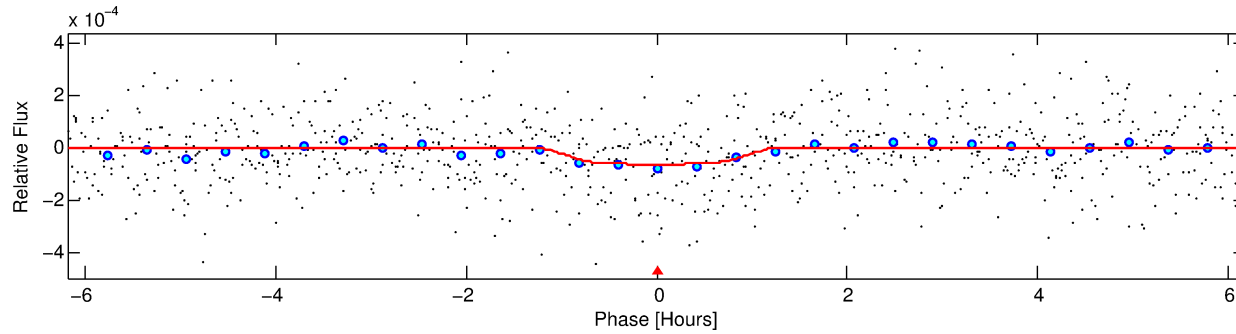
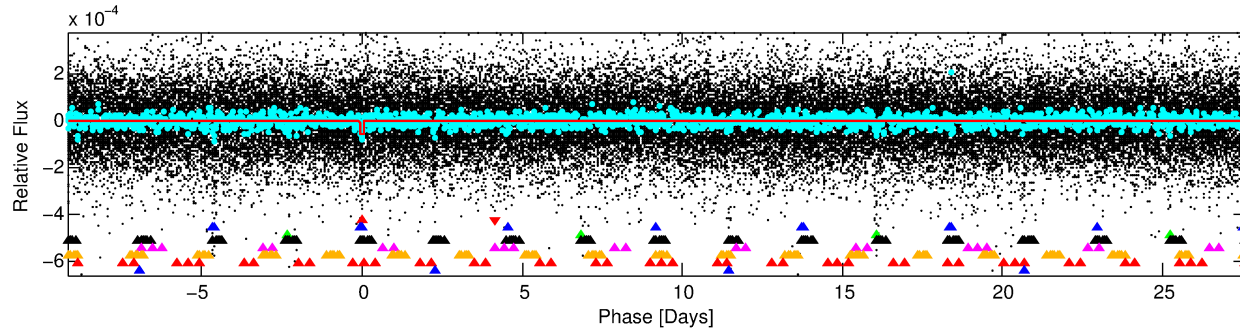
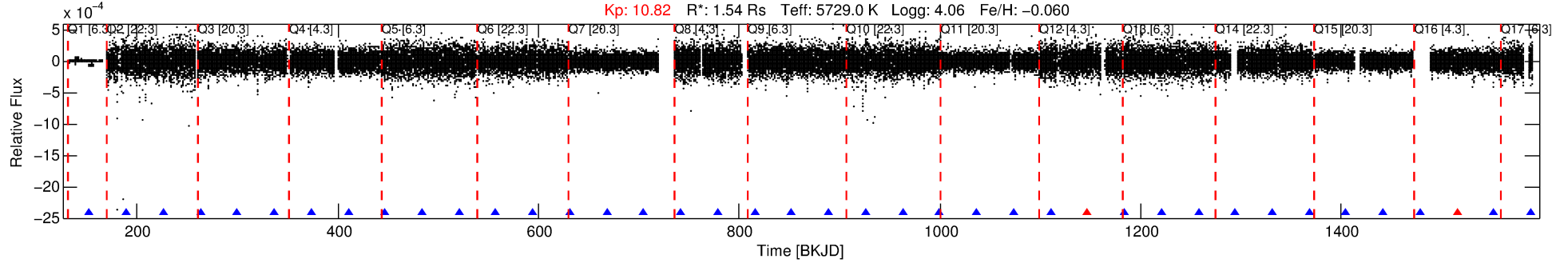
No Significant Match Found

DV One-Page Summary

KIC: 10514430 Candidate: 1 of 8 Period: 36.835 d

KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 36.83522 [0.00026] d
Epoch = 152.5300 [0.0037] BKJD
Rp/R* = 0.0087 [0.0050]
a/R* = 62.73 [168.05]
b = 0.90 [0.60]
Seff = 49.22 [4.27]
Teff = 675 [15] K
Rp = 1.46 [0.85] Re
a = 0.2164 [0.0096] AU
Ag = N/A
Teffp = N/A

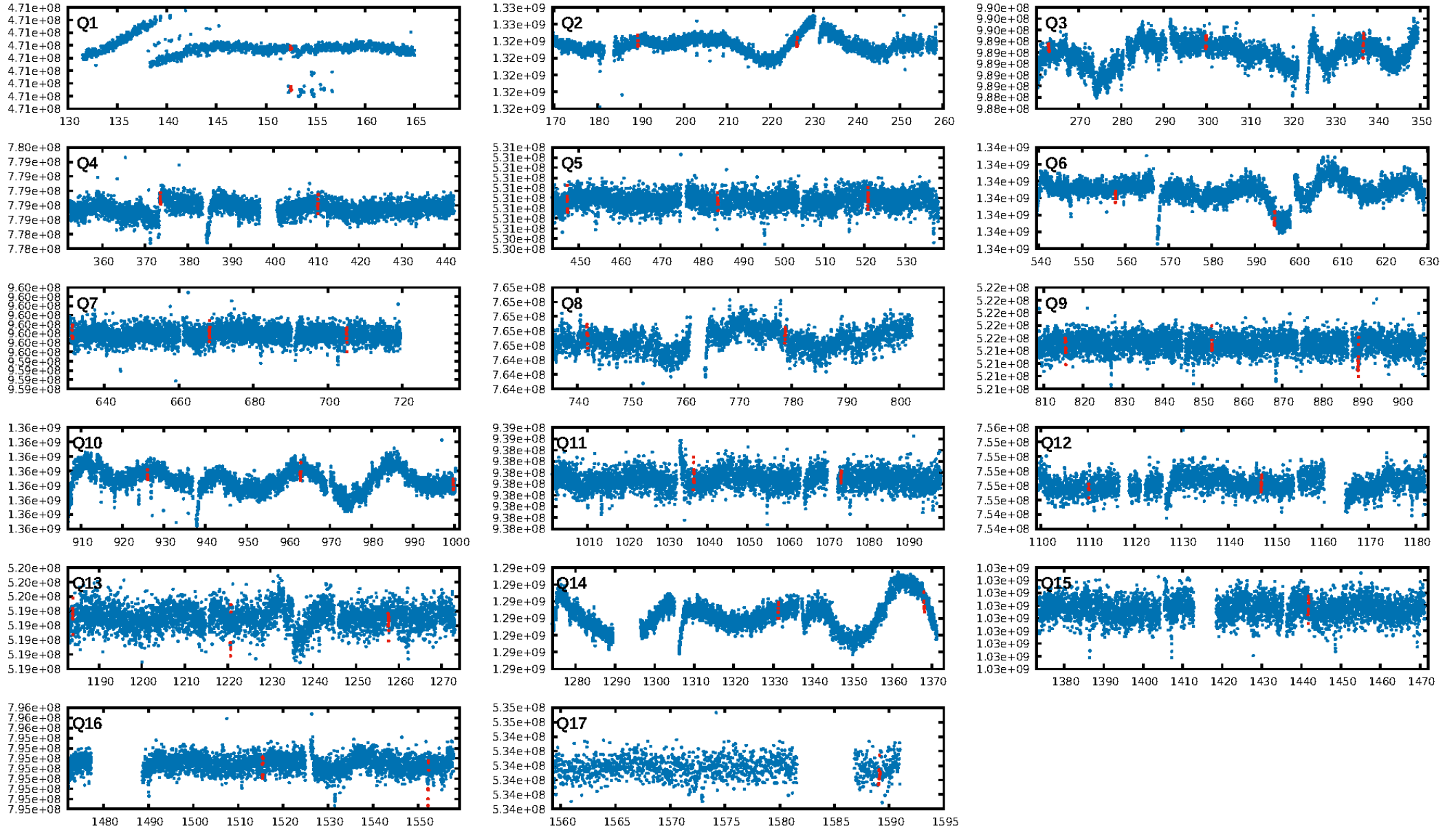
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [56.02σ]
LongPeriod-sig: 100.0% [23.87σ]
ModelChiSquare2-sig: 1.9%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.73e-163
RollingBand-fgt: 0.94 [33/35]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.2%
Centroid-so: 2.028 arcsec [2.04σ]
OotOffset-rm: 4.586 arcsec [1.73σ]
KicOffset-rm: 3.756 arcsec [1.17σ]
OotOffset-st: 0/2/2/2 [6]
KicOffset-st: 0/2/2/2 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.88 [15/17]

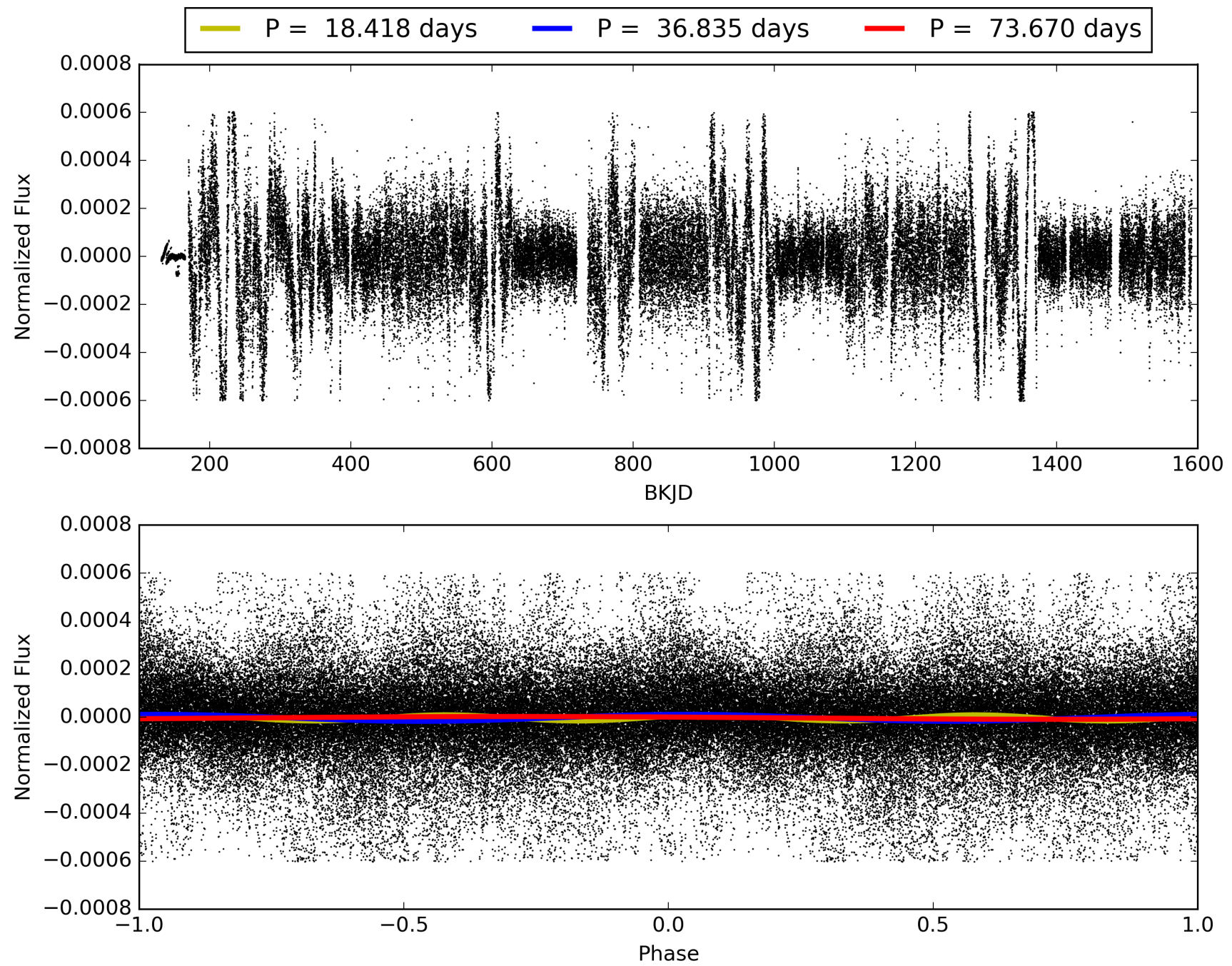
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010514430-01, PDC Light Curves

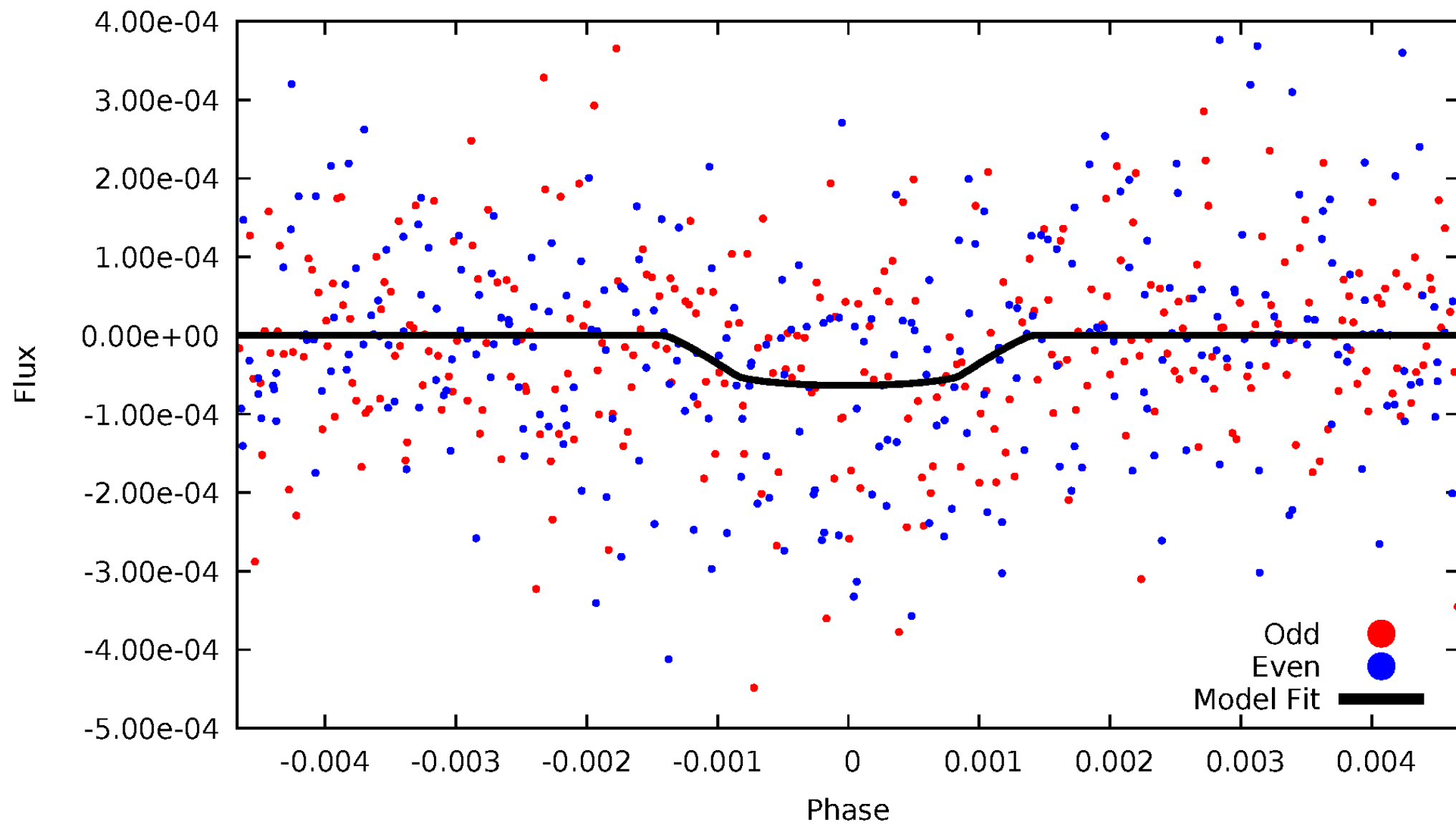


TCE 010514430-01



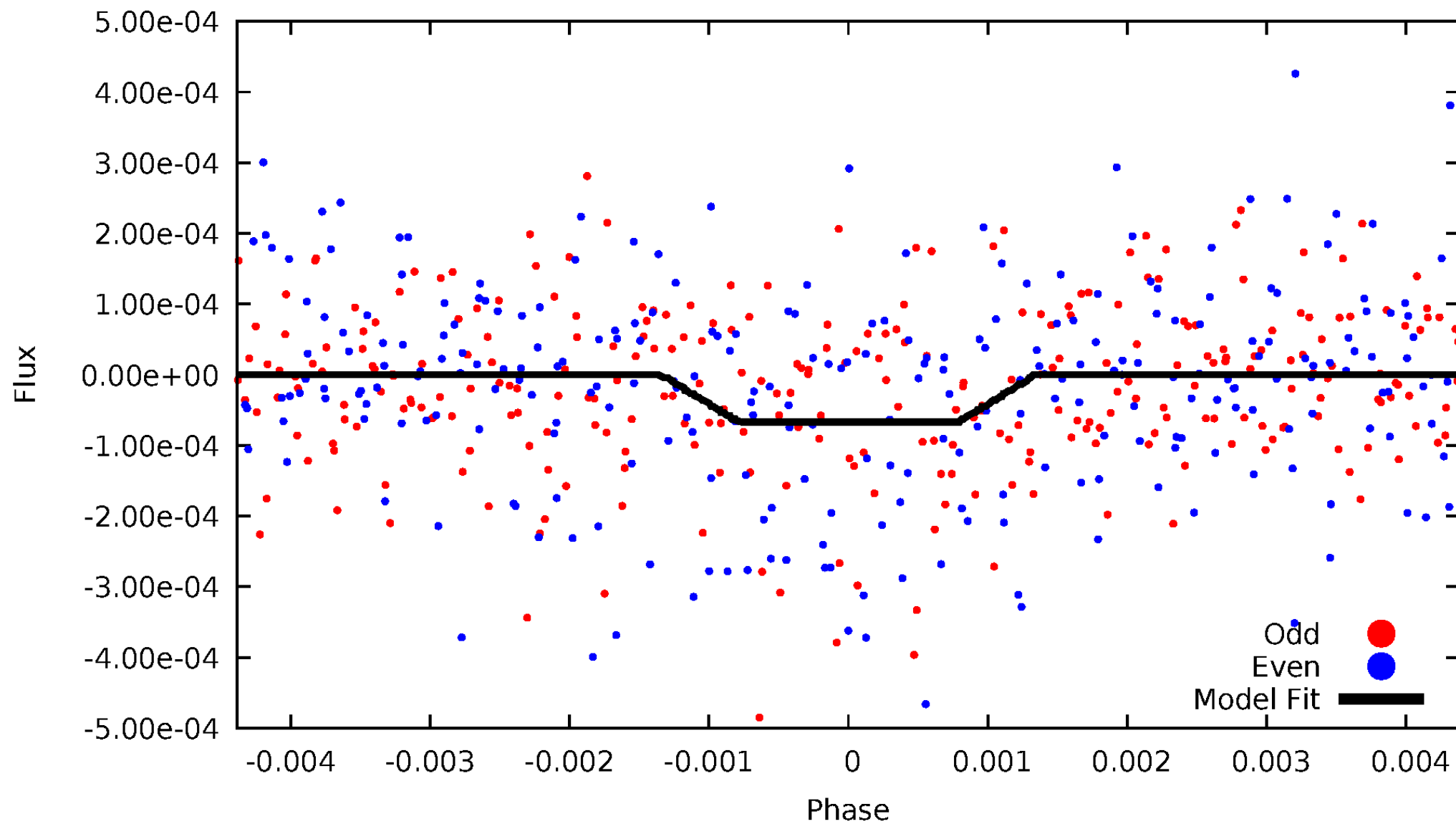
DV Odd/Even

TCE 010514430-01

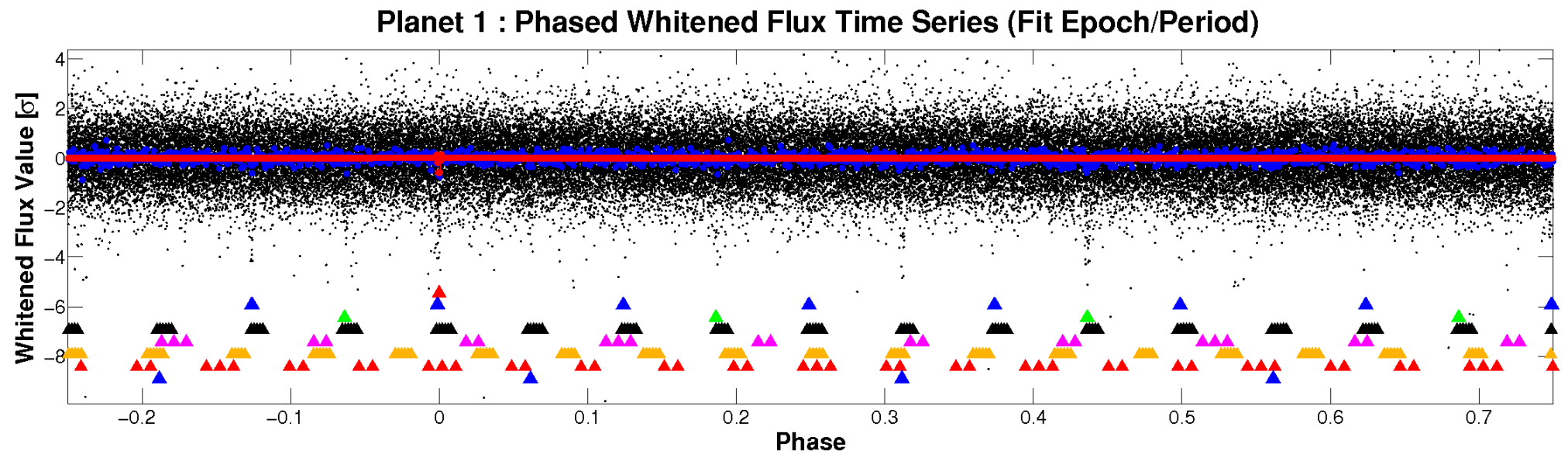
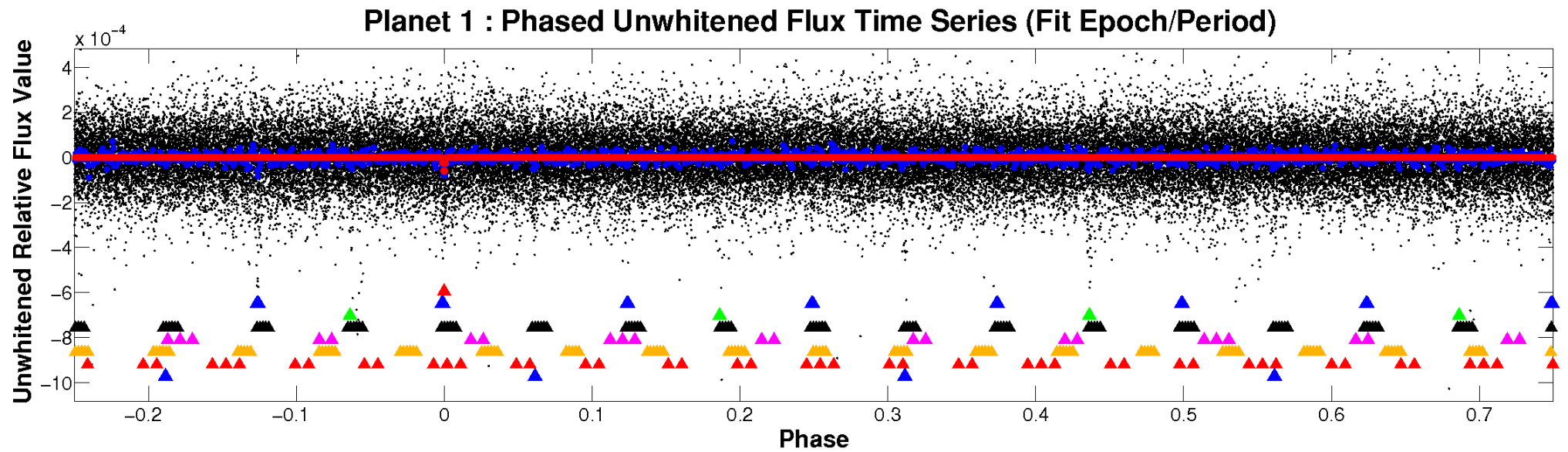


ALT Odd/Even

TCE 010514430-01

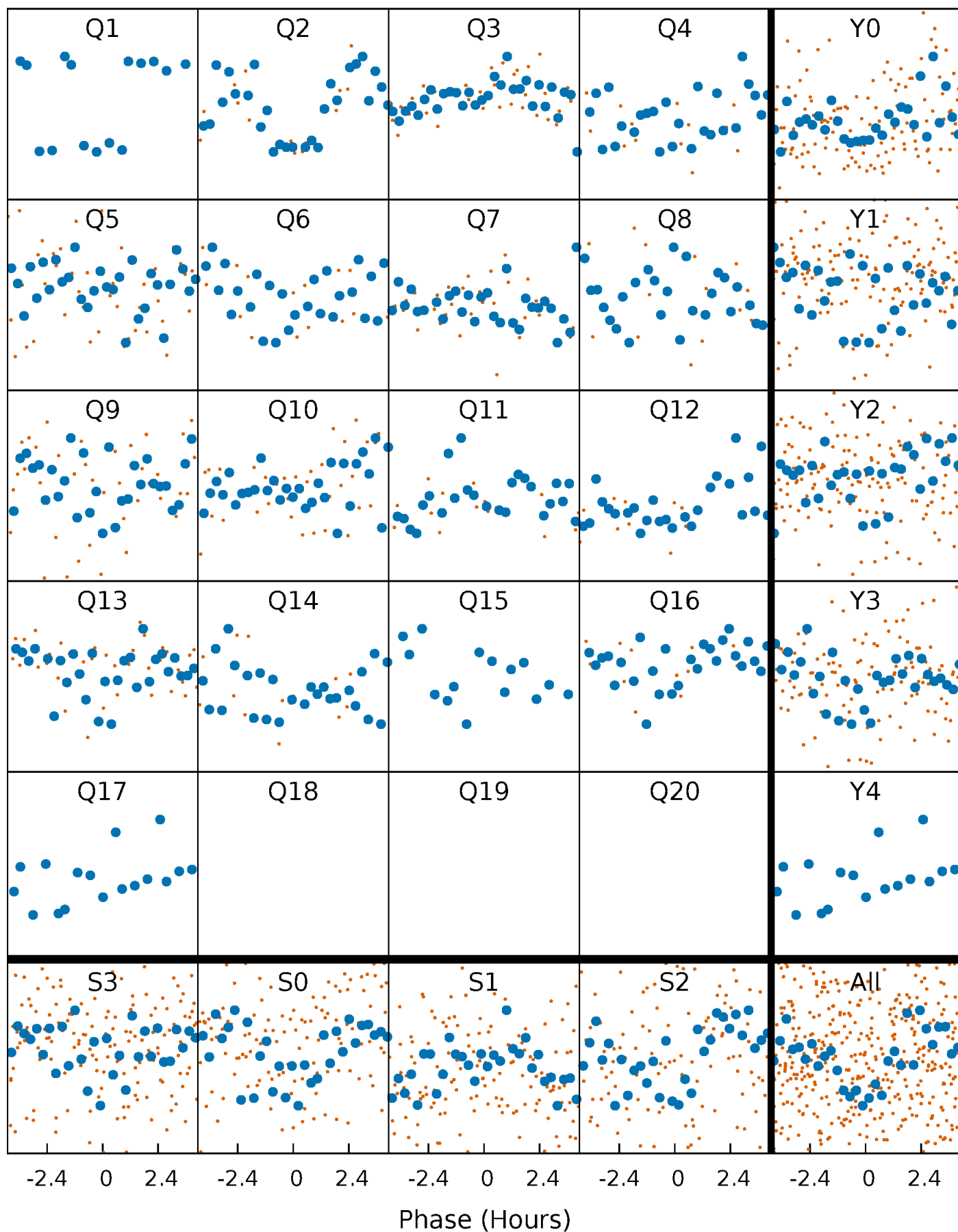


Non-Whitened Vs. Whitened Light Curve



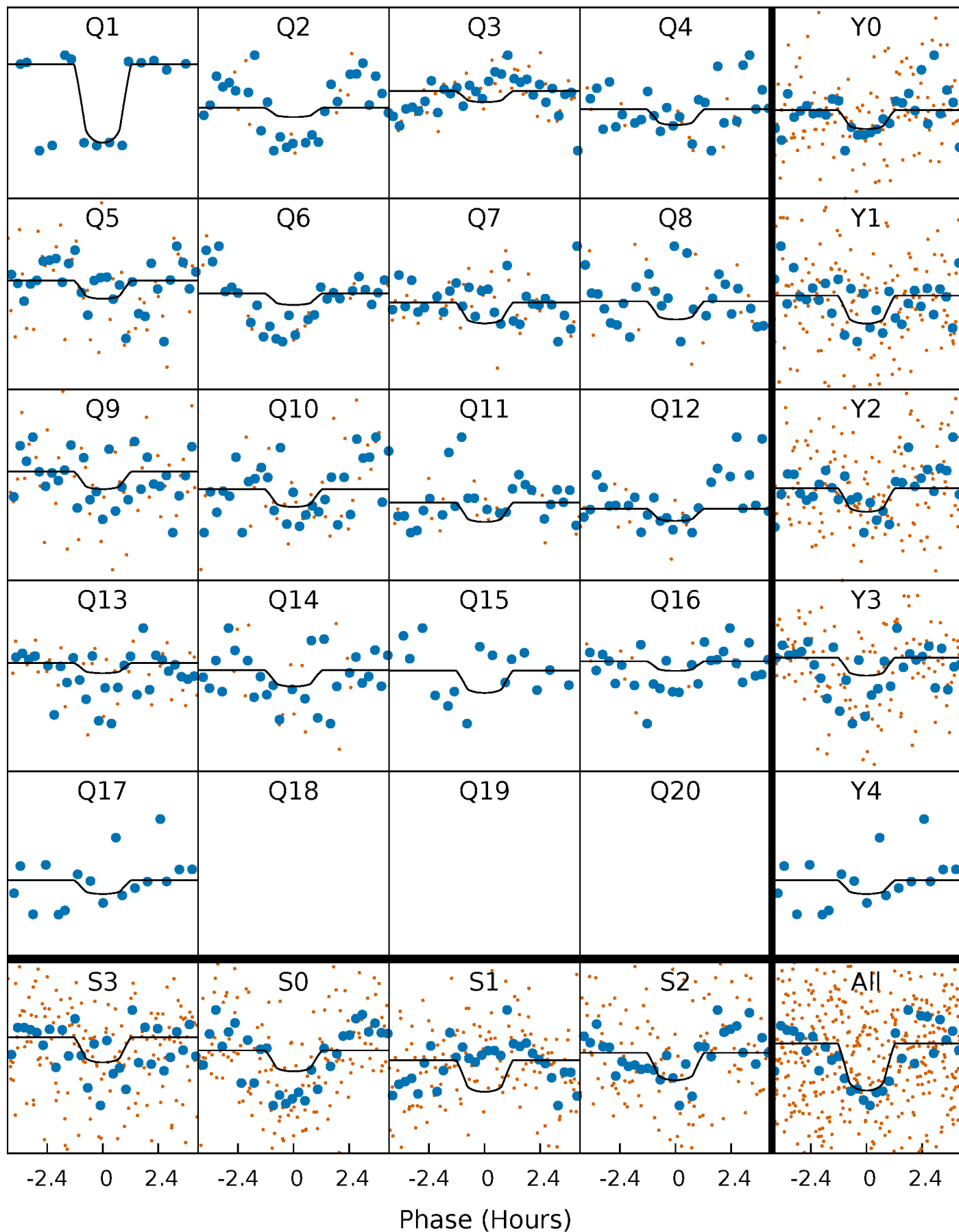
PDC Quarter-Phased Transit Curves

TCE 010514430-01 P= 36.835222 Days $T_0=152.530034$ (BKJD)



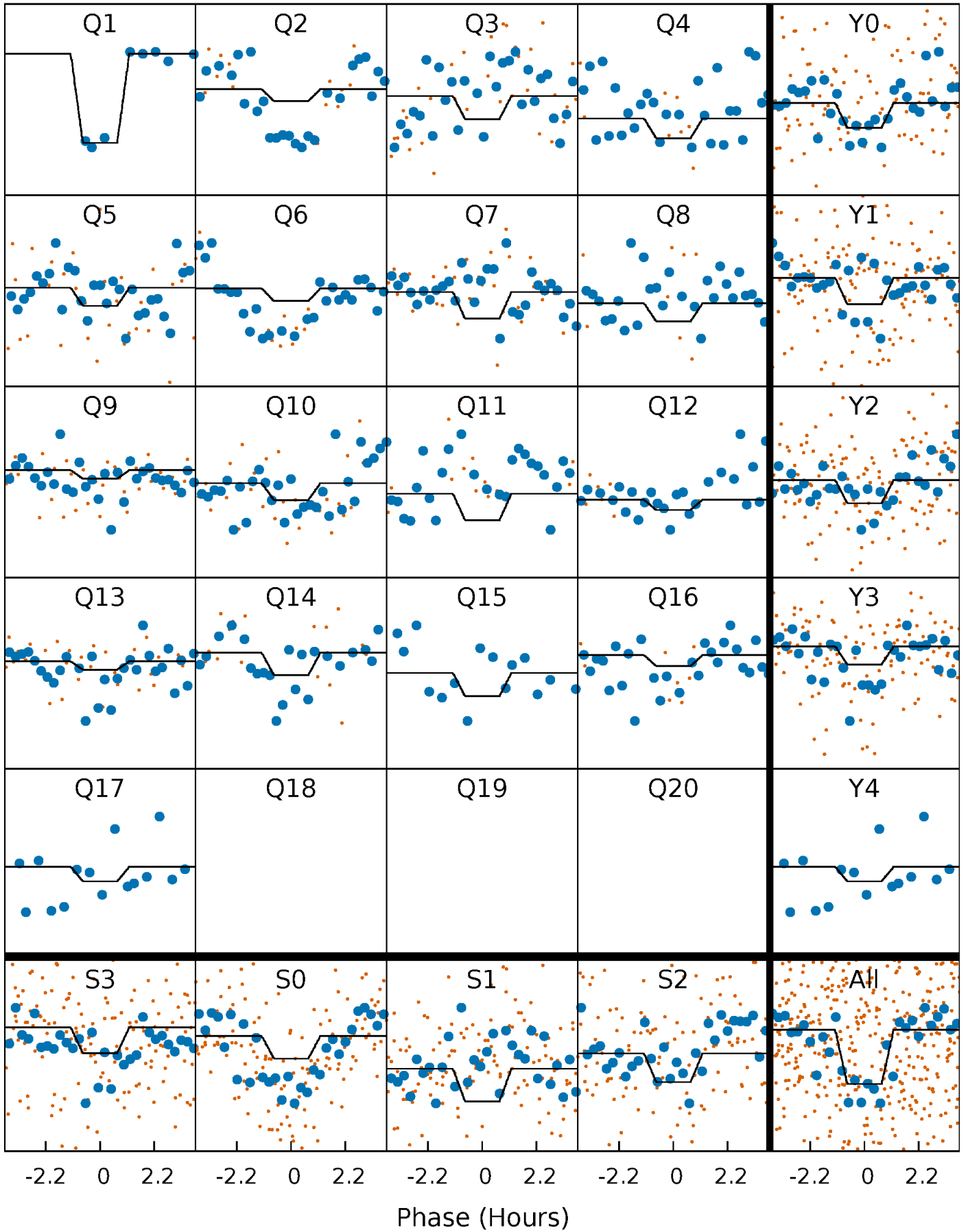
DV Quarter-Phased Transit Curves

TCE 010514430-01 P= 36.835222 Days $T_0=152.530034$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

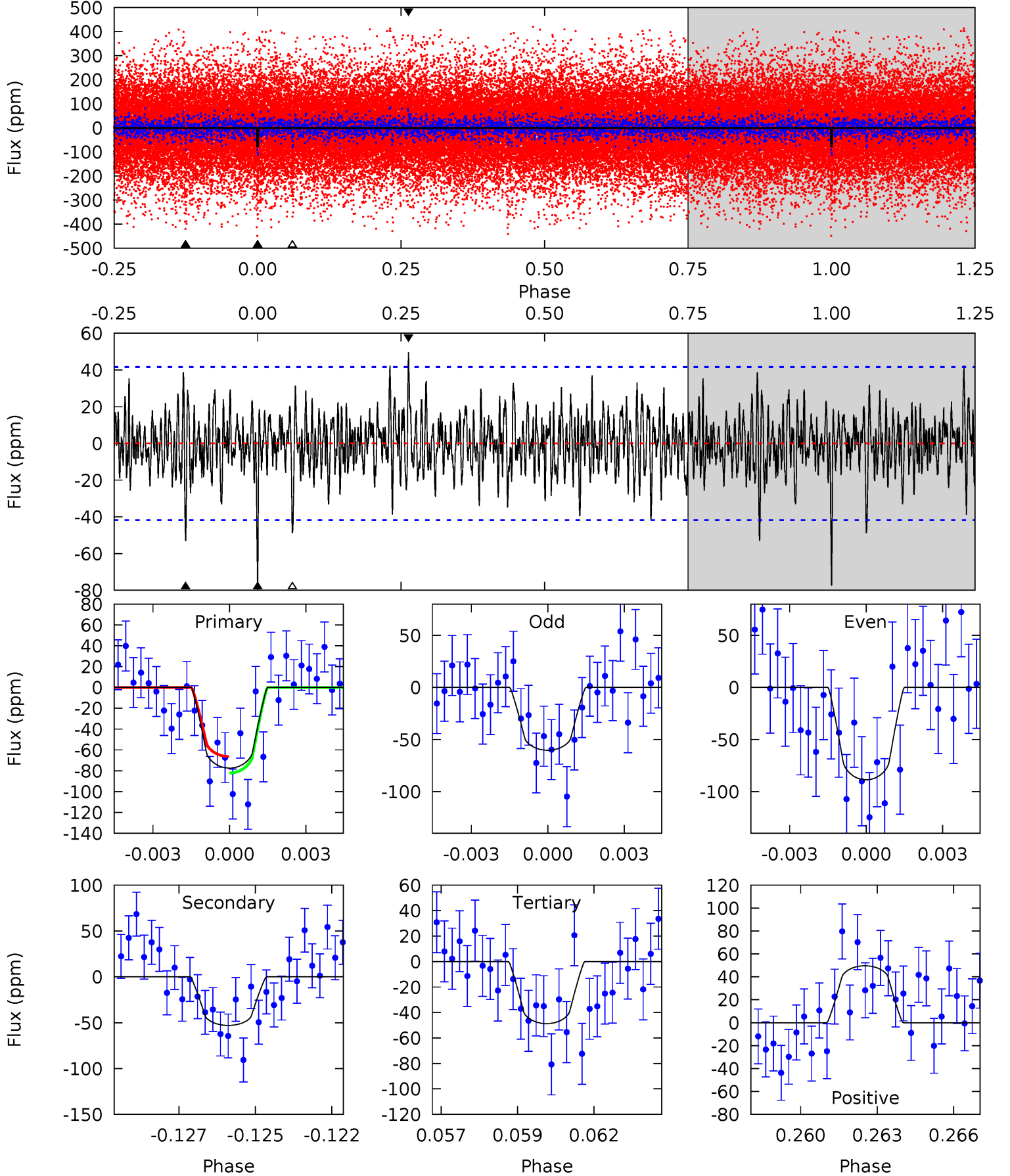
TCE 010514430-01 P= 36.835170 Days $T_0=152.528452$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-01, P = 36.835222 Days, E = 115.694812 Days

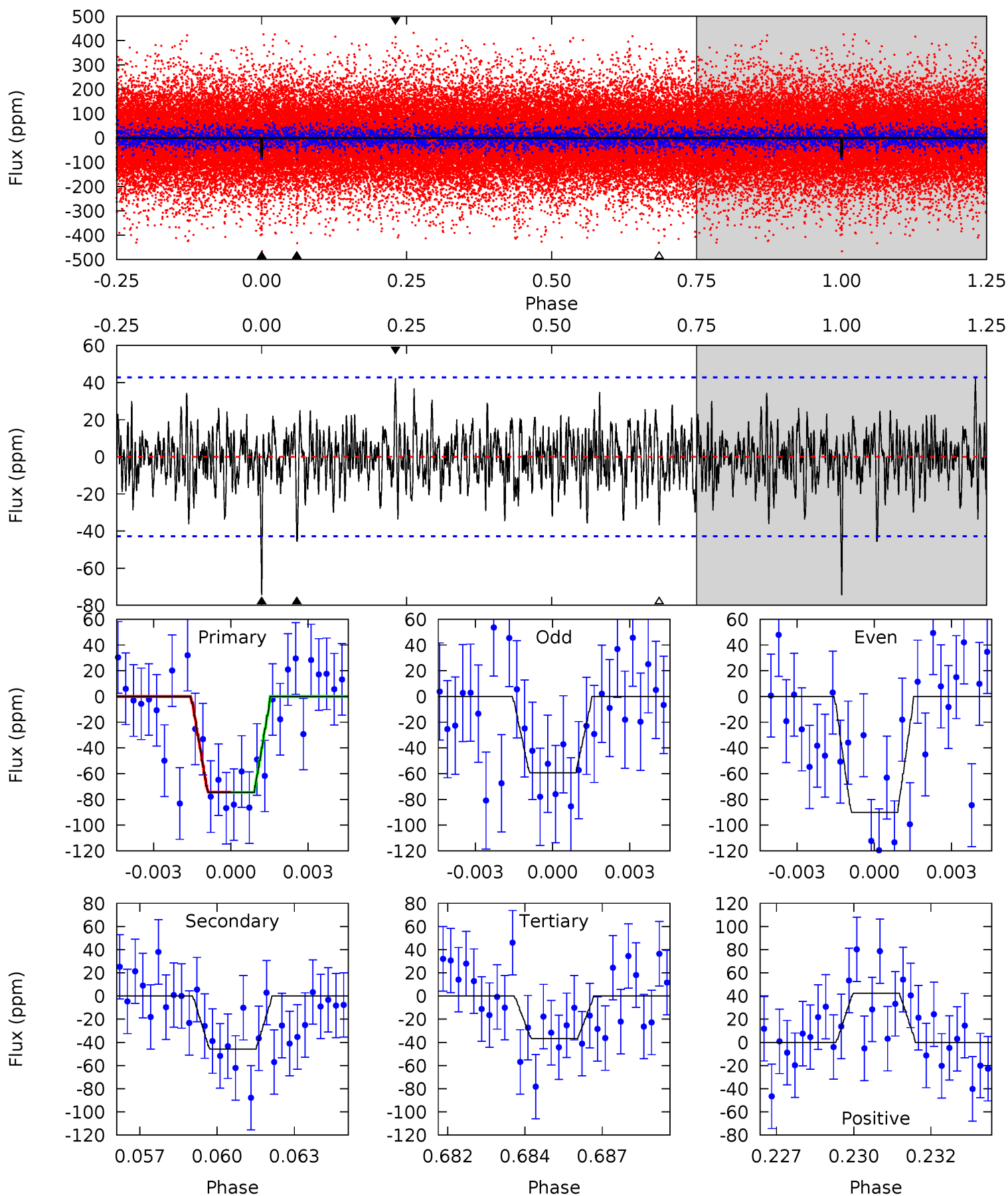
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.77	6.68	6.15	6.26	5.26	2.99	1.68	3.62	3.50	0.53	0.42	1.79	1.97	0.39	0.99



Alt Model-Shift Uniqueness Test

010514430-01, $P = 36.835170$ Days, $E = 115.693282$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.18	5.64	4.53	5.22	5.28	3.01	1.47	4.65	3.96	1.11	0.42	1.90	1.50	0.36	0.02



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-53 ± 8	$1.60^{+0.77}_{-0.86}$	943^{+18}_{-18}	5118^{+2558}_{-806}	564^{+2194}_{-326}
Alt.	-46 ± 8	$1.39^{+0.89}_{-0.78}$	943^{+18}_{-15}	5204^{+2633}_{-912}	611^{+2324}_{-383}

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 $A_{obs} \gg 1.0$

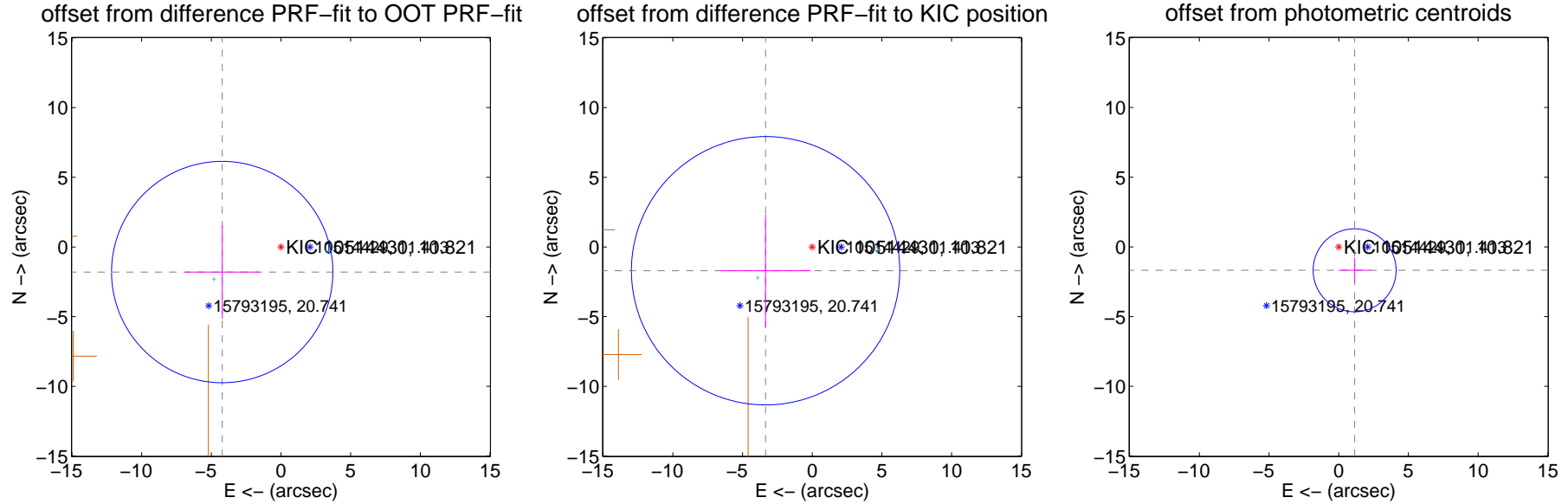
DV Centroid Data

Supplemental centroid analysis for 010514430-01. **Kepler magnitude: 10.82.** Transit SNR 9.76

There are 2 quarters with good PRF difference image offsets

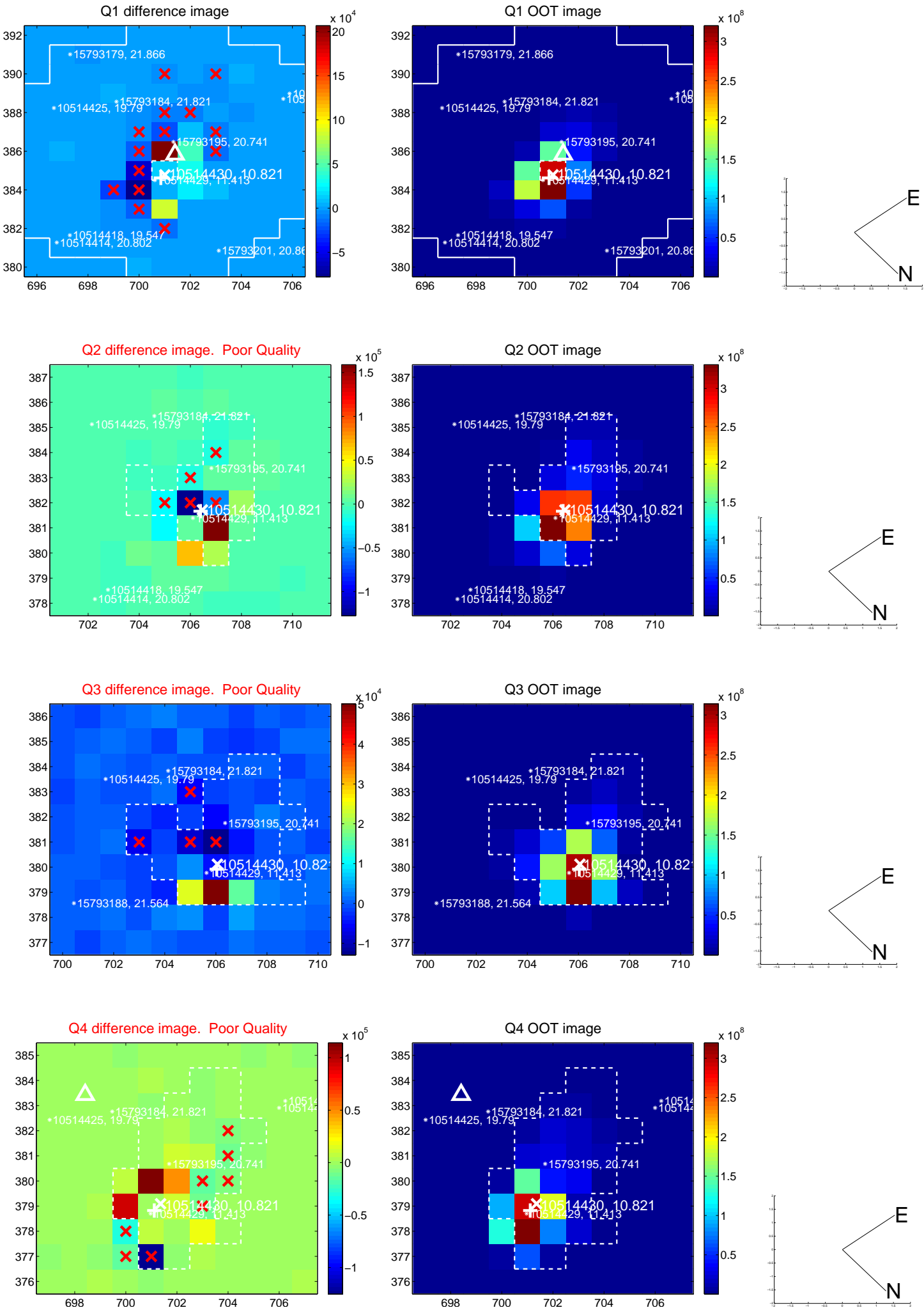
The direct PRF centroid is offset from the target star catalog position by about 1.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.586 ± 2.646	1.73	4.218 ± 2.666	-1.801 ± 3.357
PRF-fit source offset from KIC position	3.756 ± 3.208	1.17	3.346 ± 3.227	-1.706 ± 4.049
photometric centroid source offset	2.03 ± 0.99	2.04	-1.14 ± 1.16	-1.68 ± 0.90

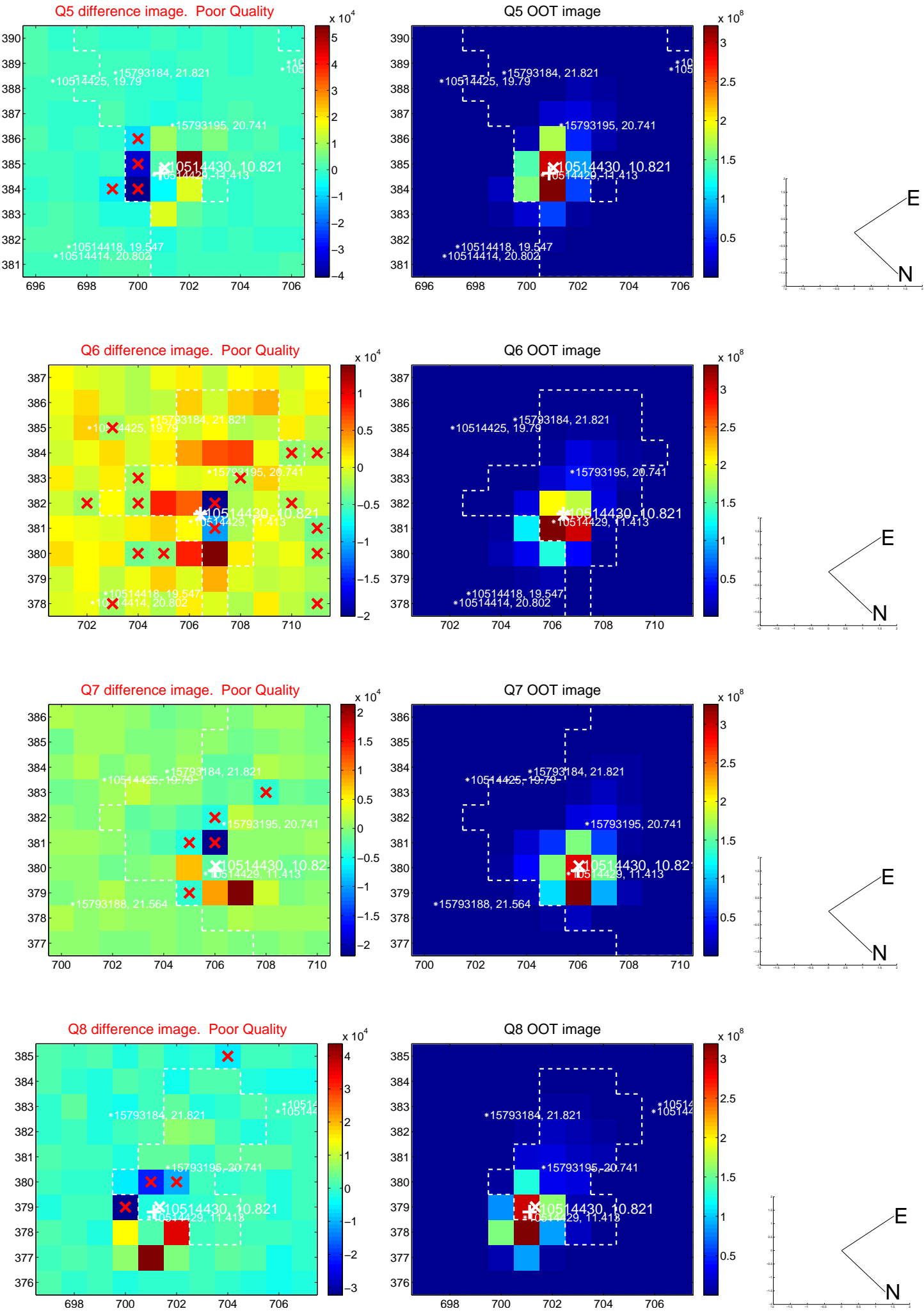


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

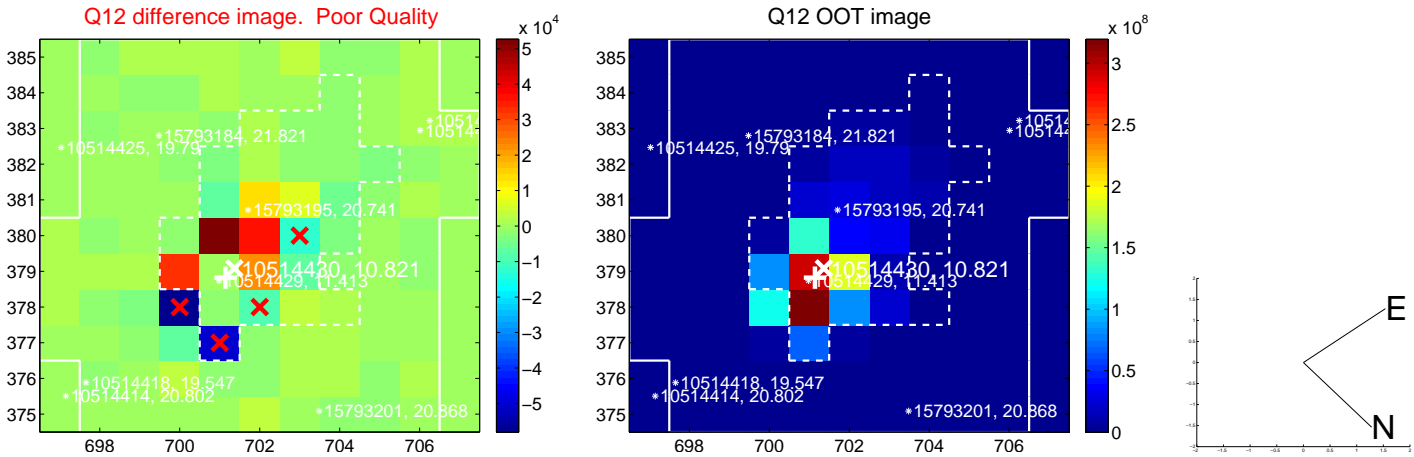
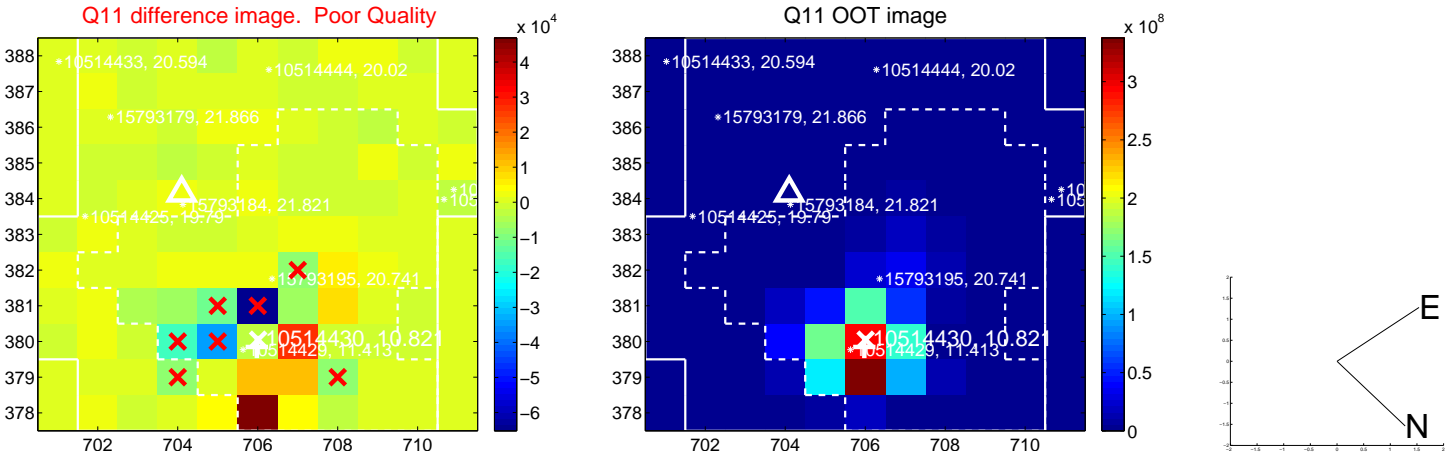
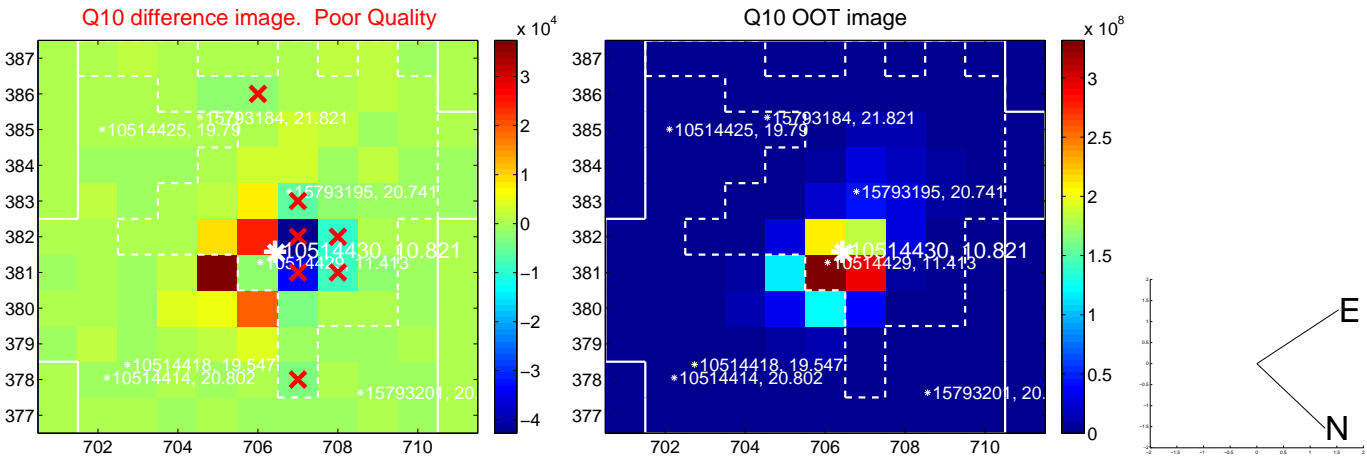
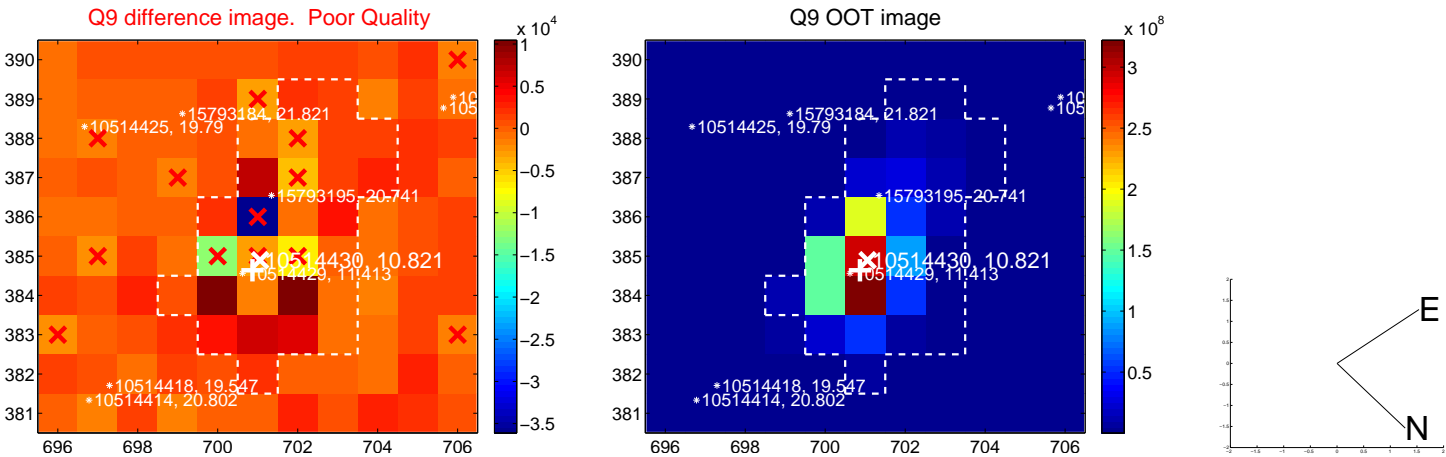
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



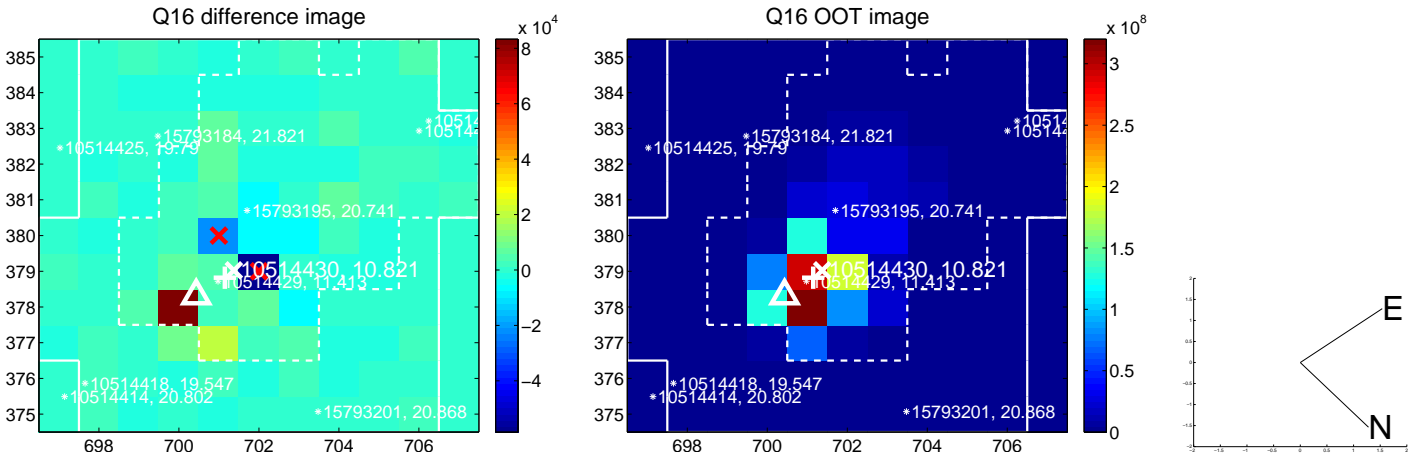
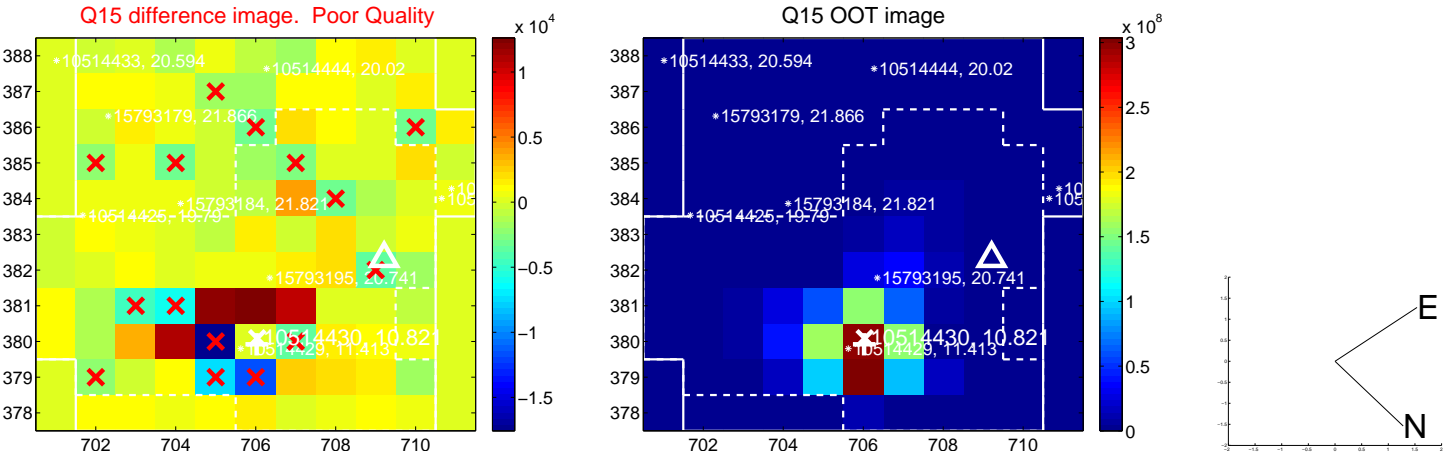
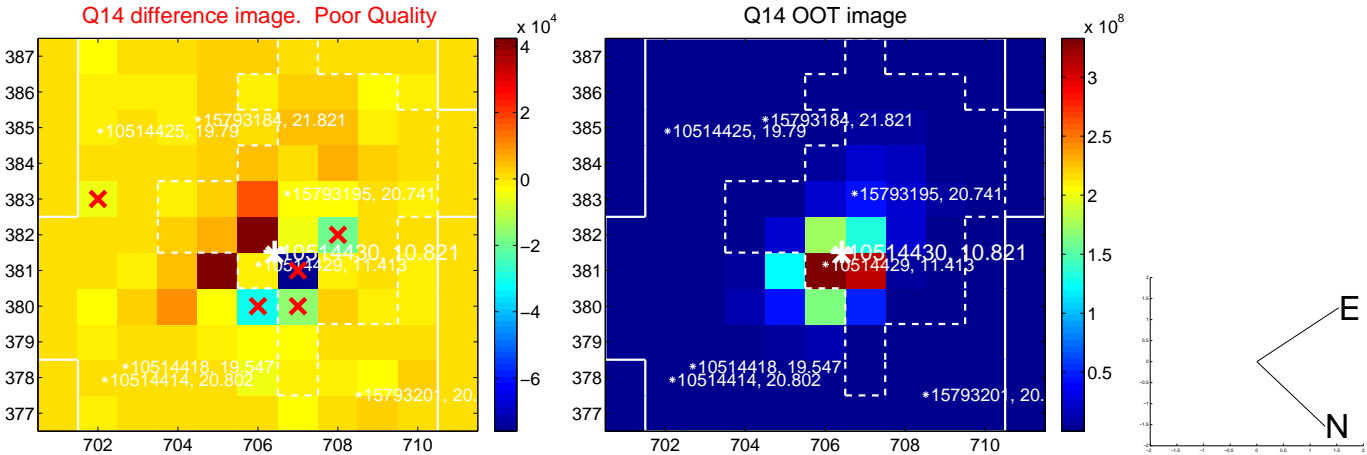
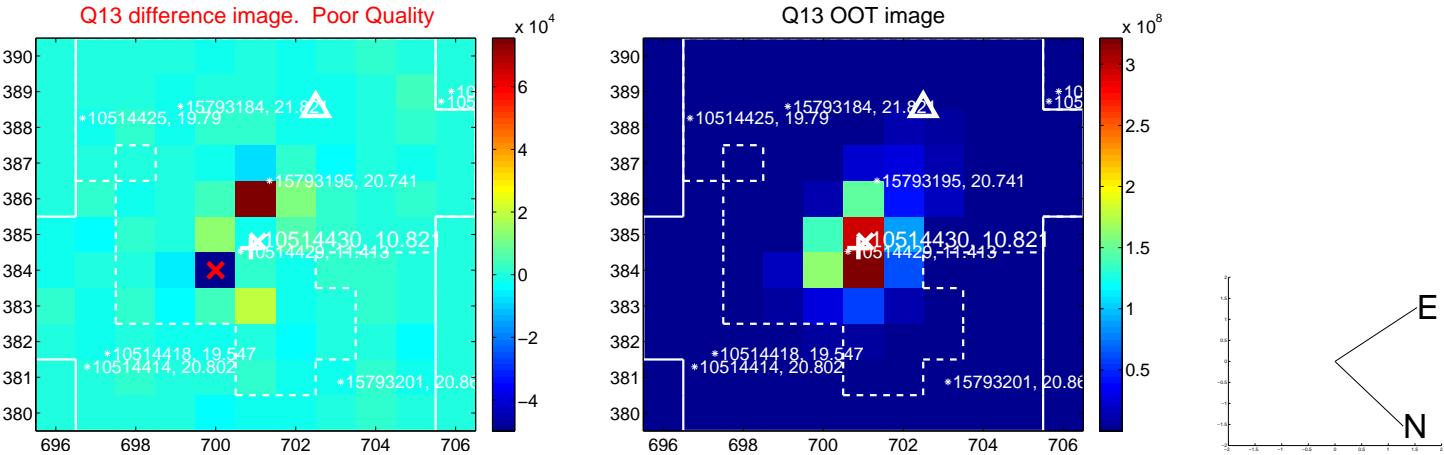
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



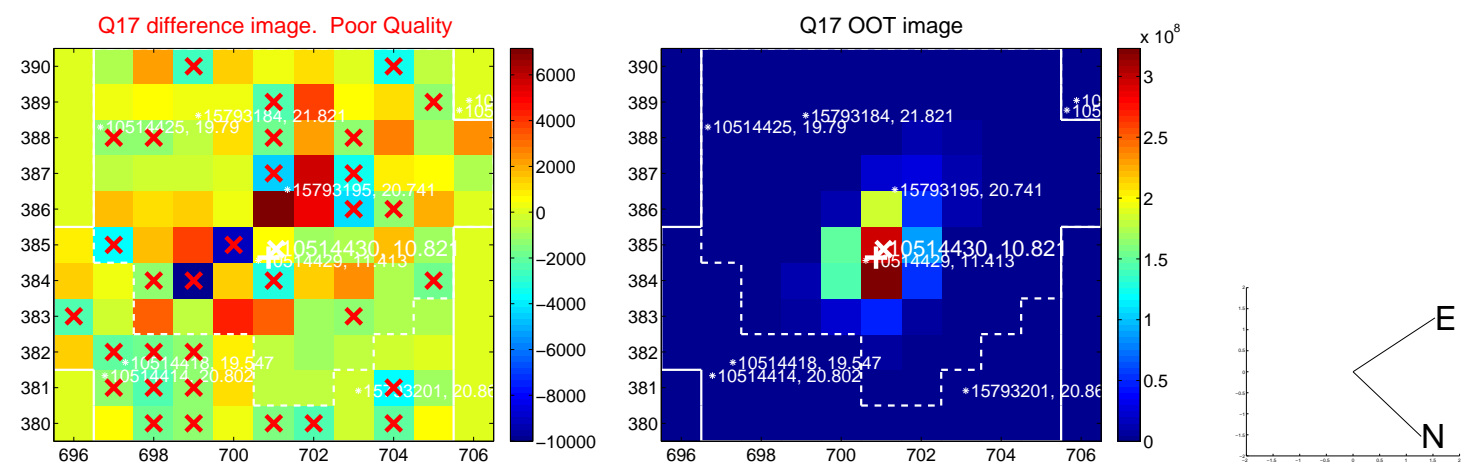
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



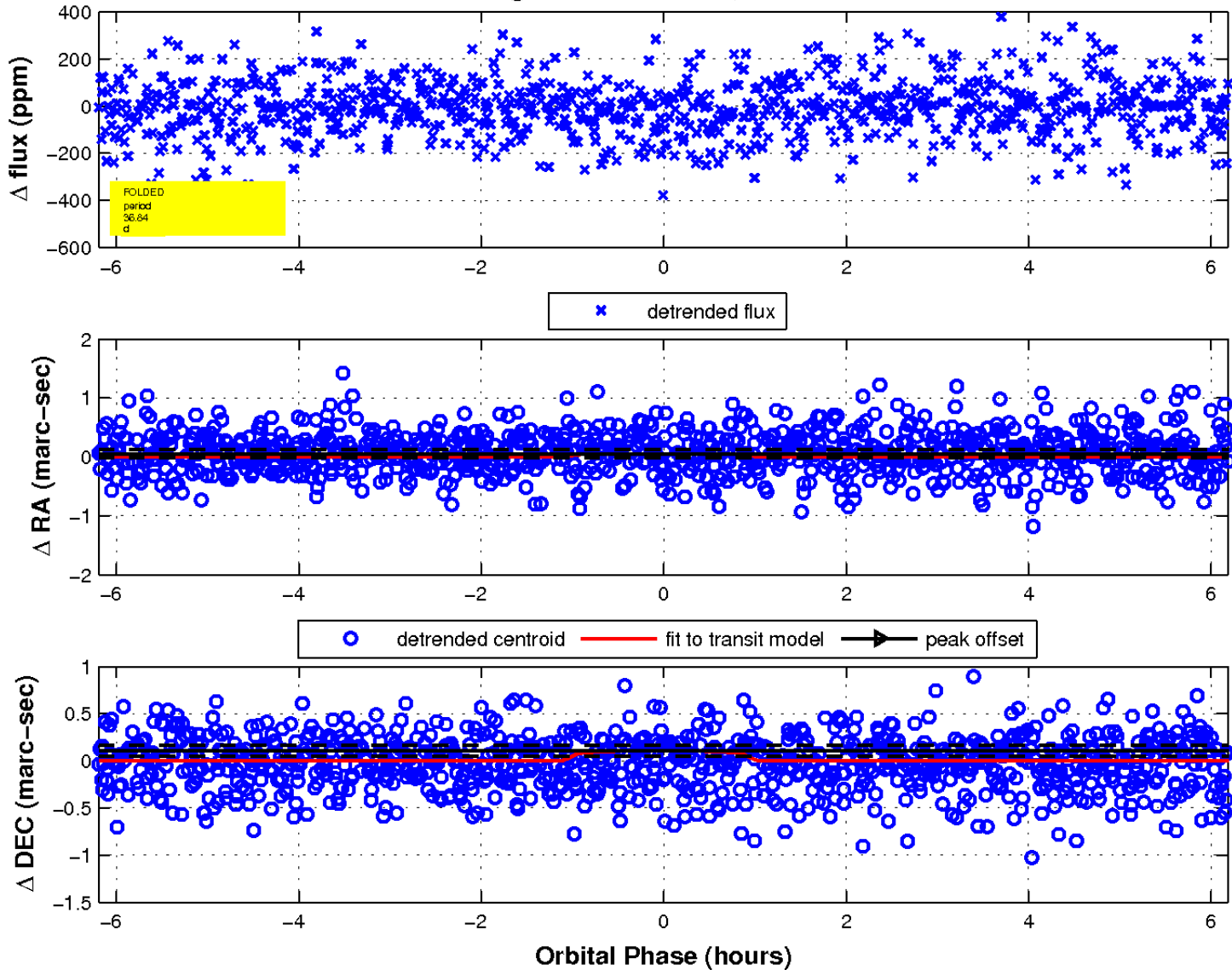
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

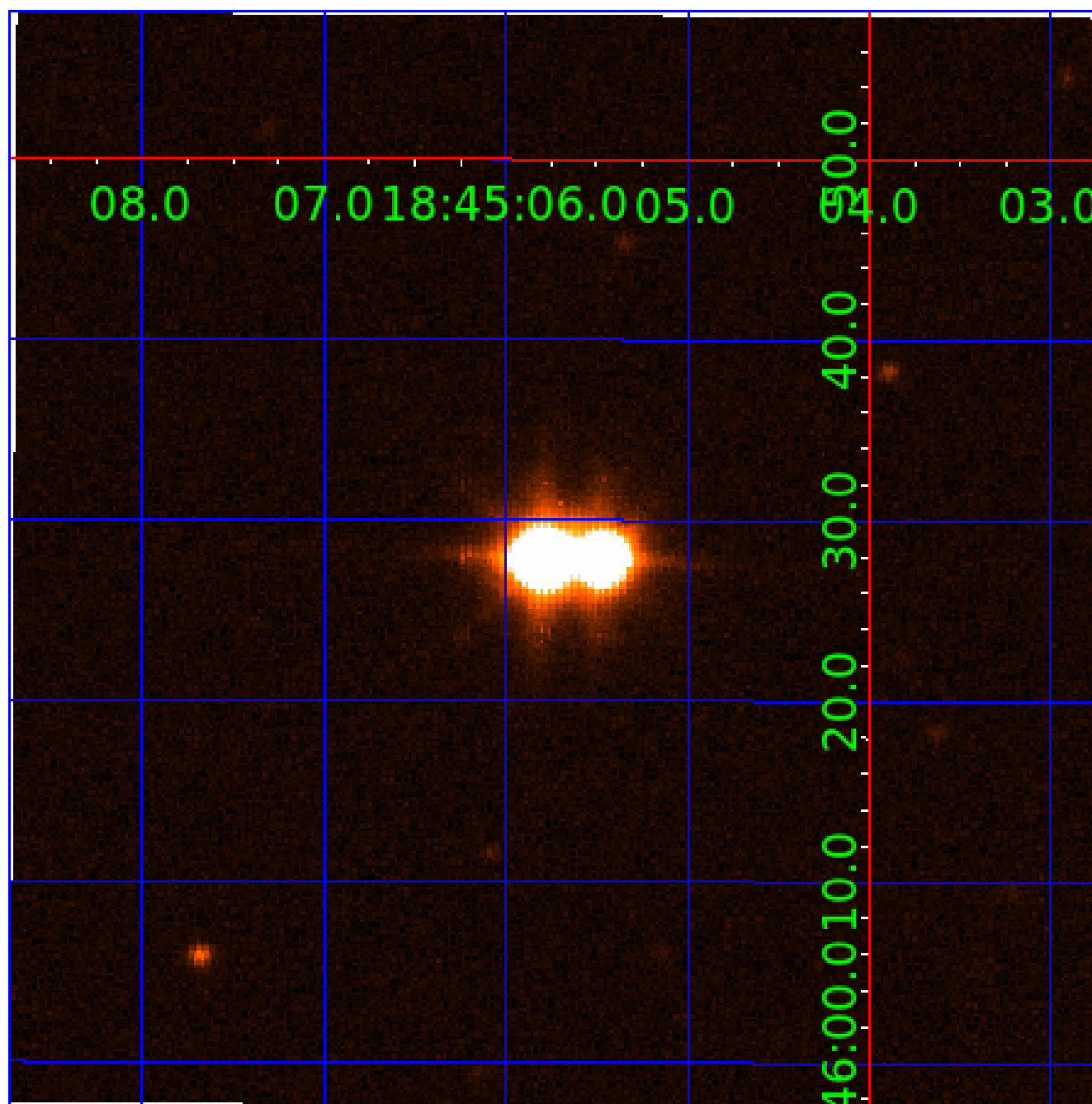


fluxWeightedCentroids, Planet 1 of 8



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
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010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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 010514430-02

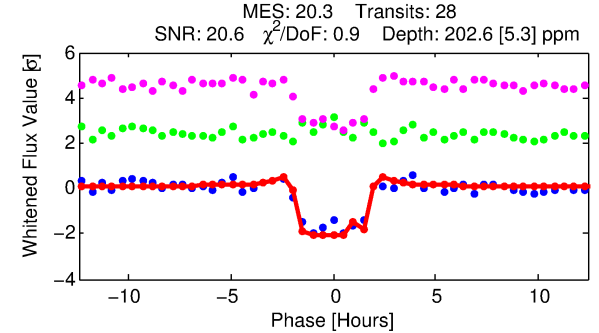
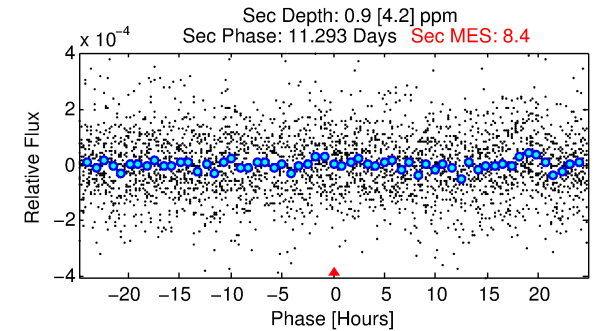
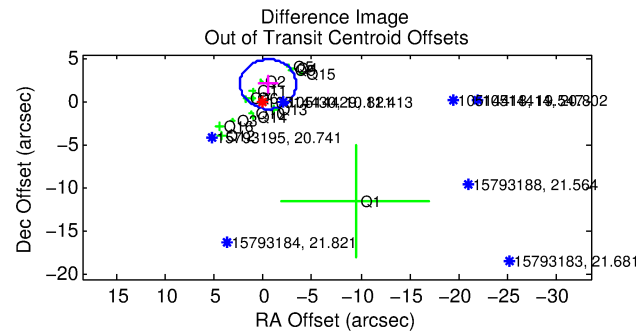
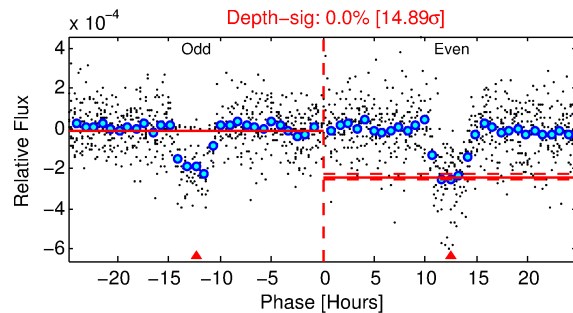
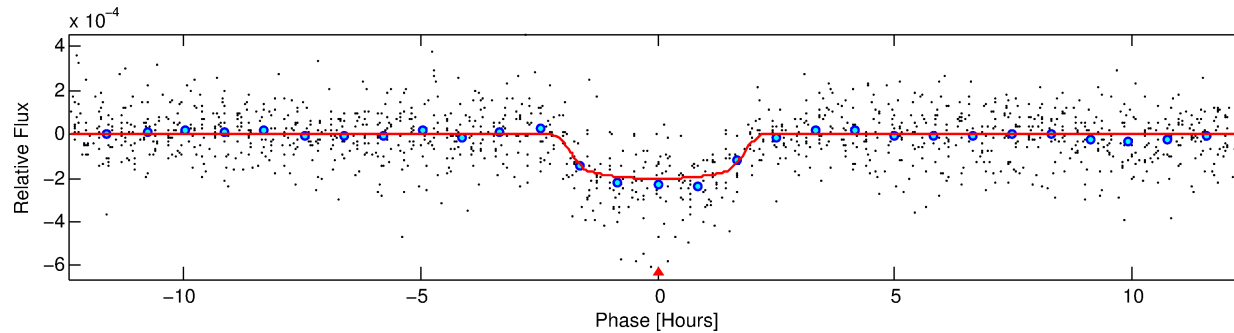
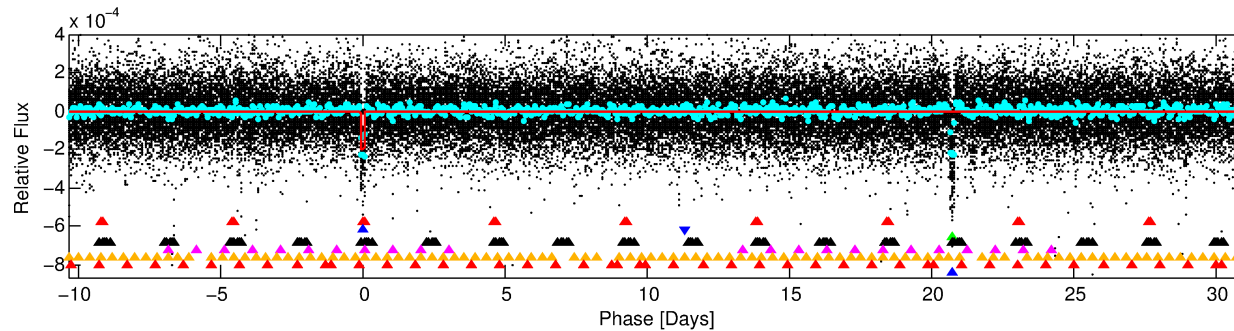
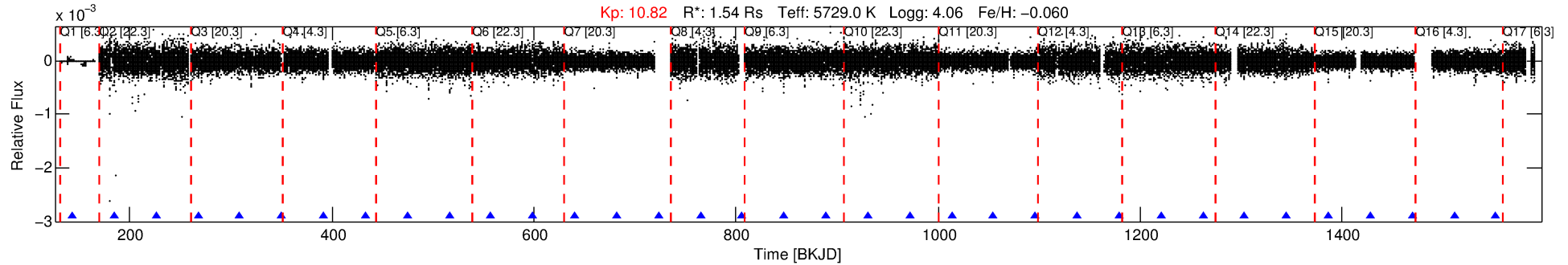
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010514430-02	10514430	1614.01	10514429	2:1	2.1	1	1	11.41	10.82	1.36	Direct-PRF	0	0.68	0.15

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10514430 Candidate: 2 of 8 Period: 41.438 d
KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 41.43834 [0.00009] d
Epoch = 143.3037 [0.0007] BKJD
Rp/R* = 0.0160 [0.0008]
a/R* = 31.63 [6.28]
b = 0.93 [0.03]
Seff = 42.07 [3.65]
Teq = 649 [14] K
Rp = 2.70 [0.20] Re
a = 0.2340 [0.0104] AU
Ag = 3.68 [17.60] [0.15σ]
Teffp = 1391 [1663] K [0.45σ]

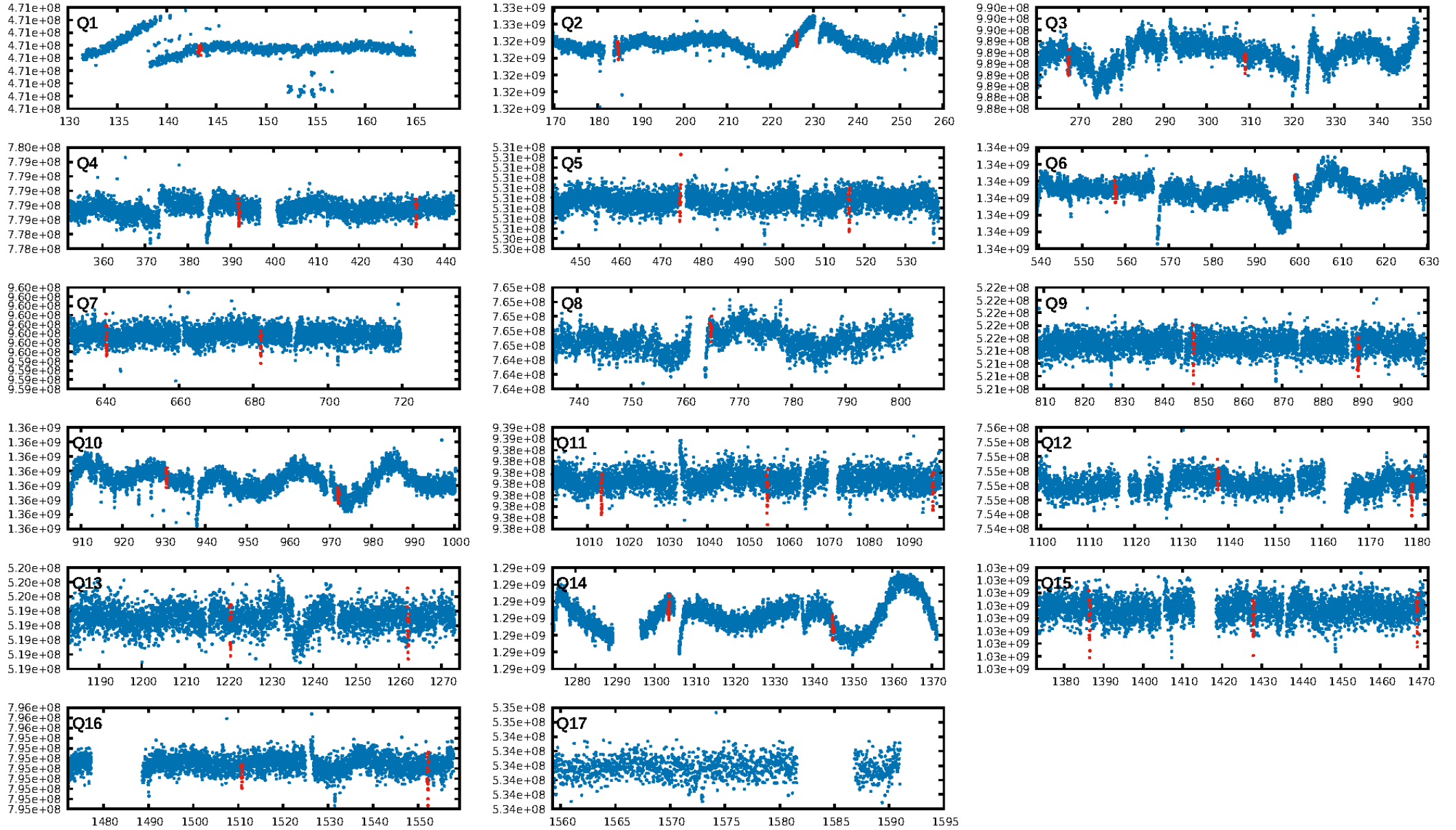
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.87σ]
LongPeriod-sig: 100.0% [113.68σ]
ModelChiSquare2-sig: 32.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.28e-29
RollingBand-fgt: 1.00 [27/27]
GhostDiagnostic-chr: N/A
Centroid-sig: 9.0%
Centroid-so: 0.278 arcsec [0.81σ]
OotOffset-rm: 2.108 arcsec [2.20σ]
KicOffset-rm: 2.498 arcsec [2.61σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 0.67 [10/15]

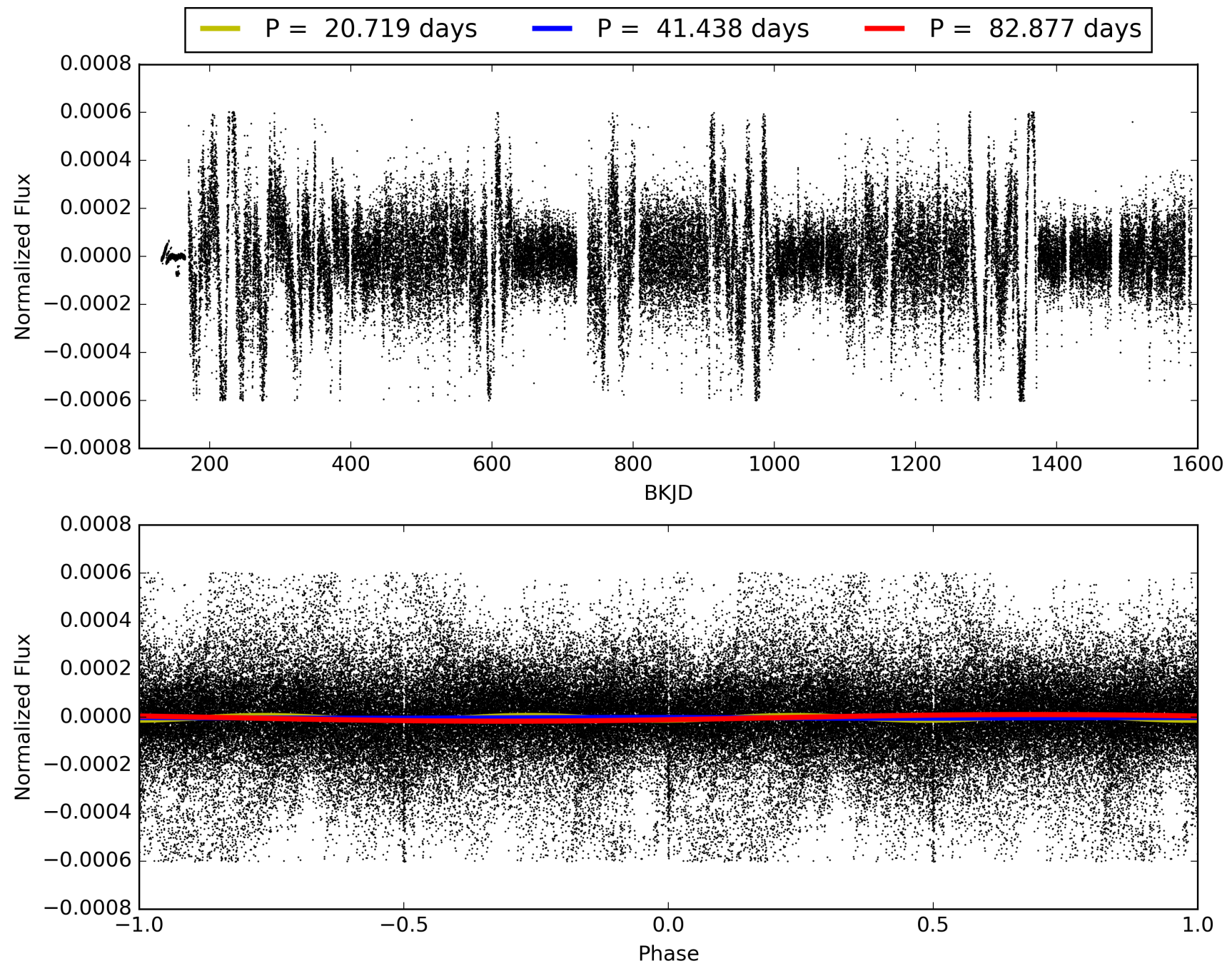
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:34:49 Z

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

TCE 010514430-02, PDC Light Curves

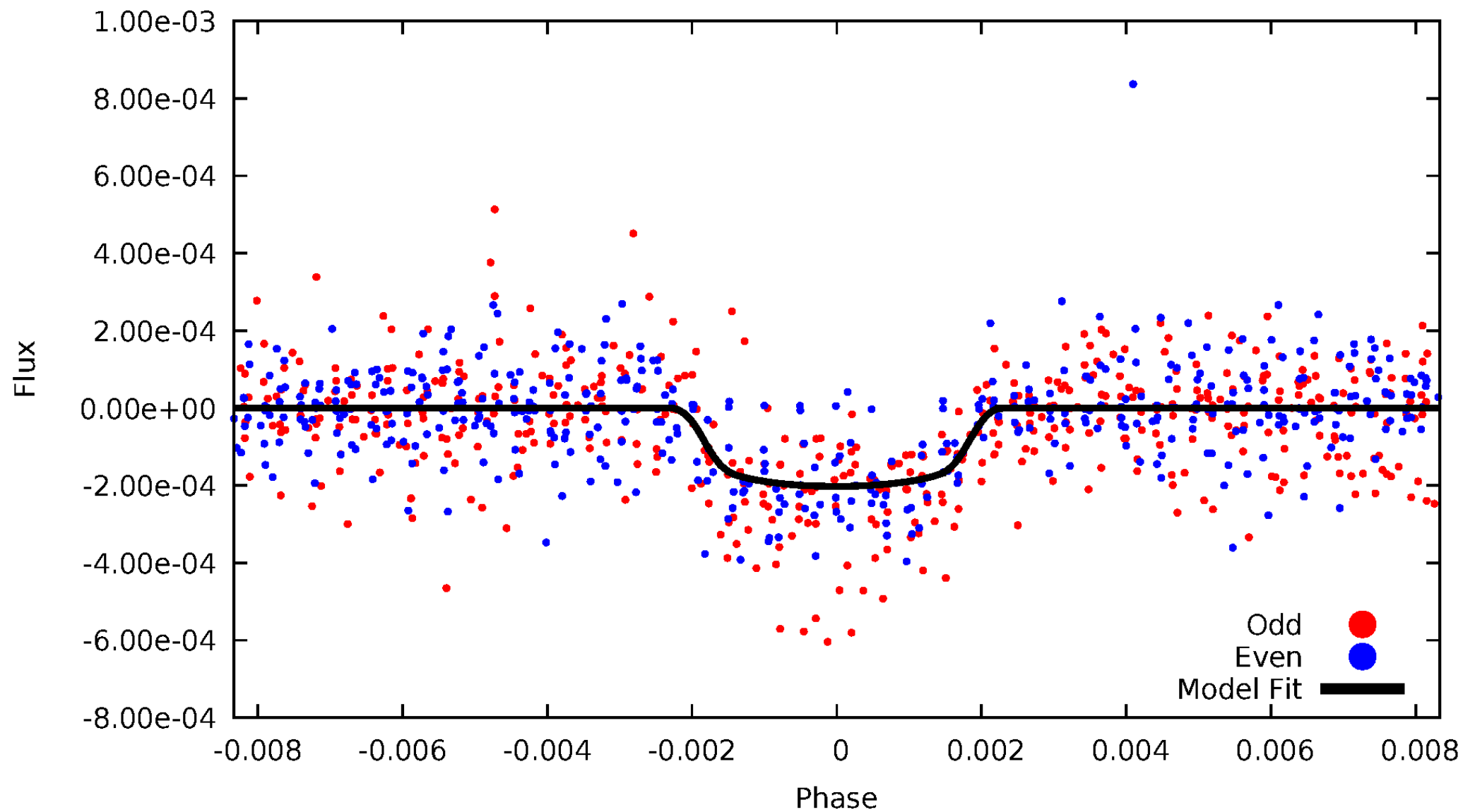


TCE 010514430-02



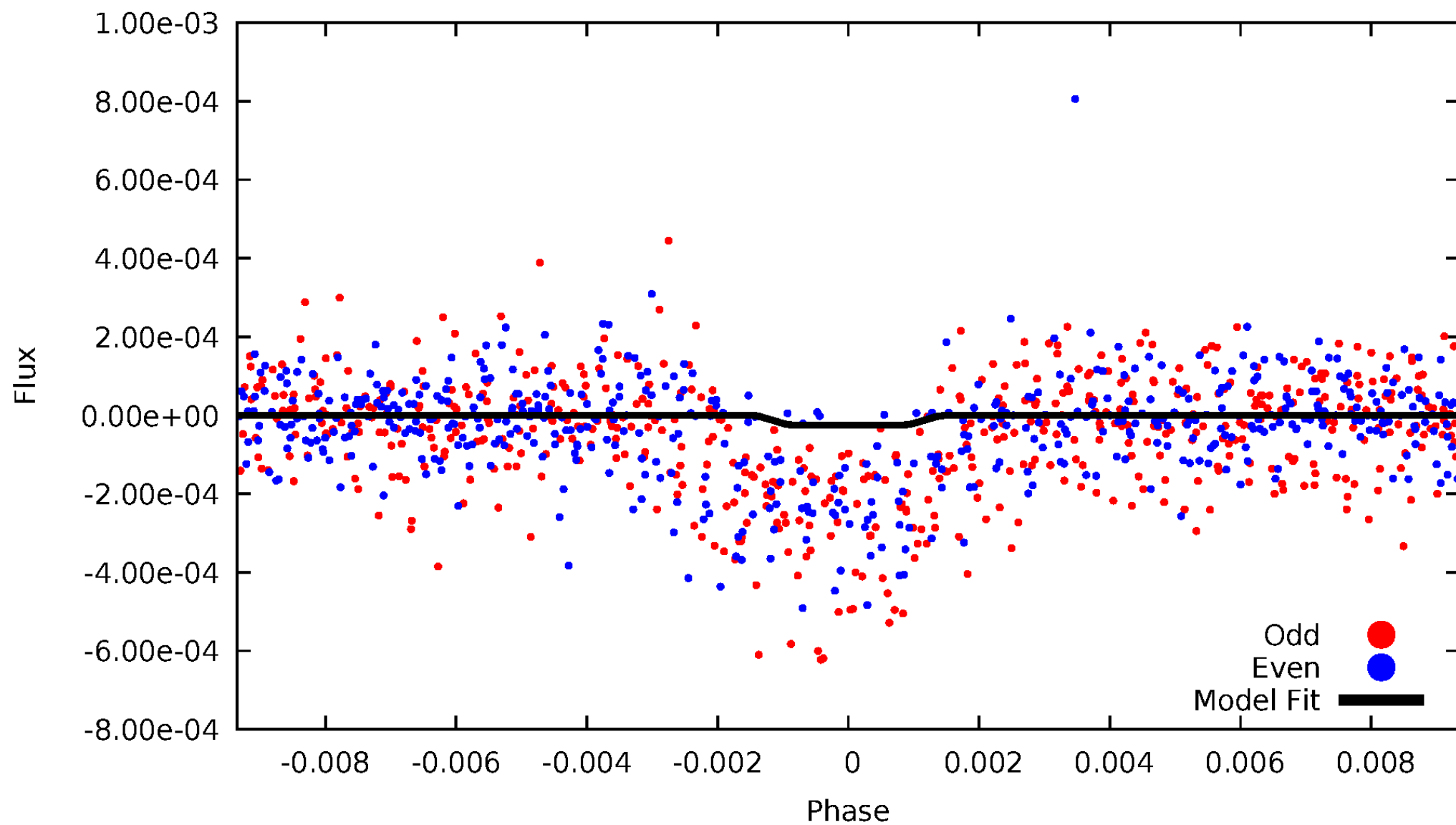
DV Odd/Even

TCE 010514430-02



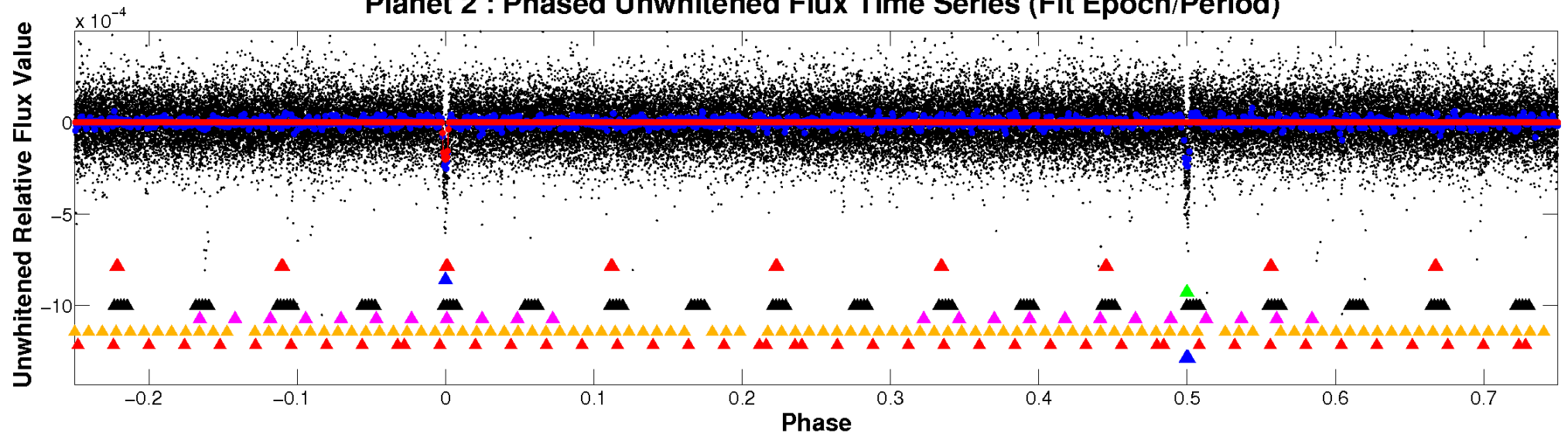
ALT Odd/Even

TCE 010514430-02

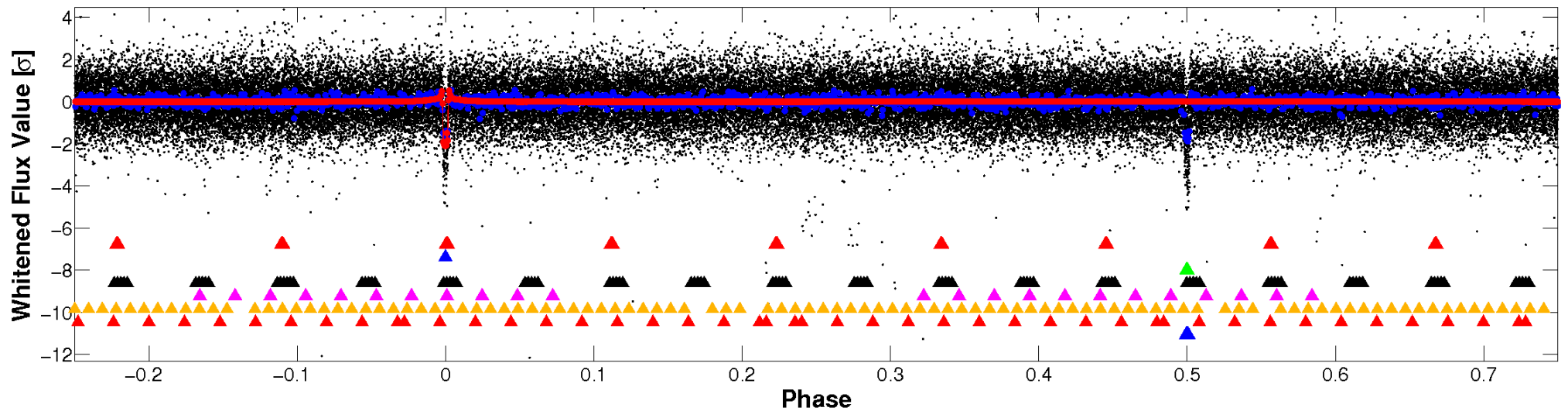


Non-Whitened Vs. Whitened Light Curve

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

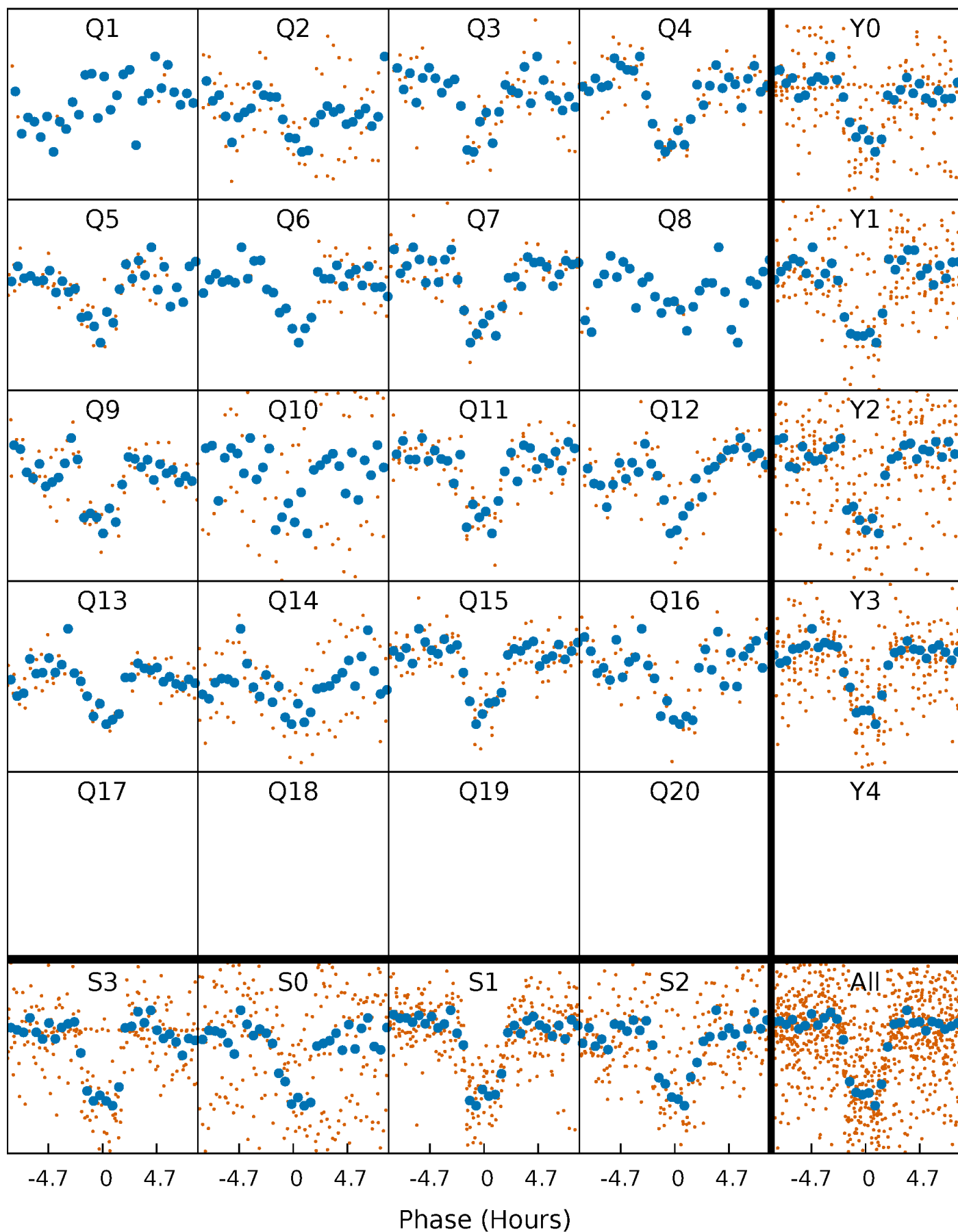


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



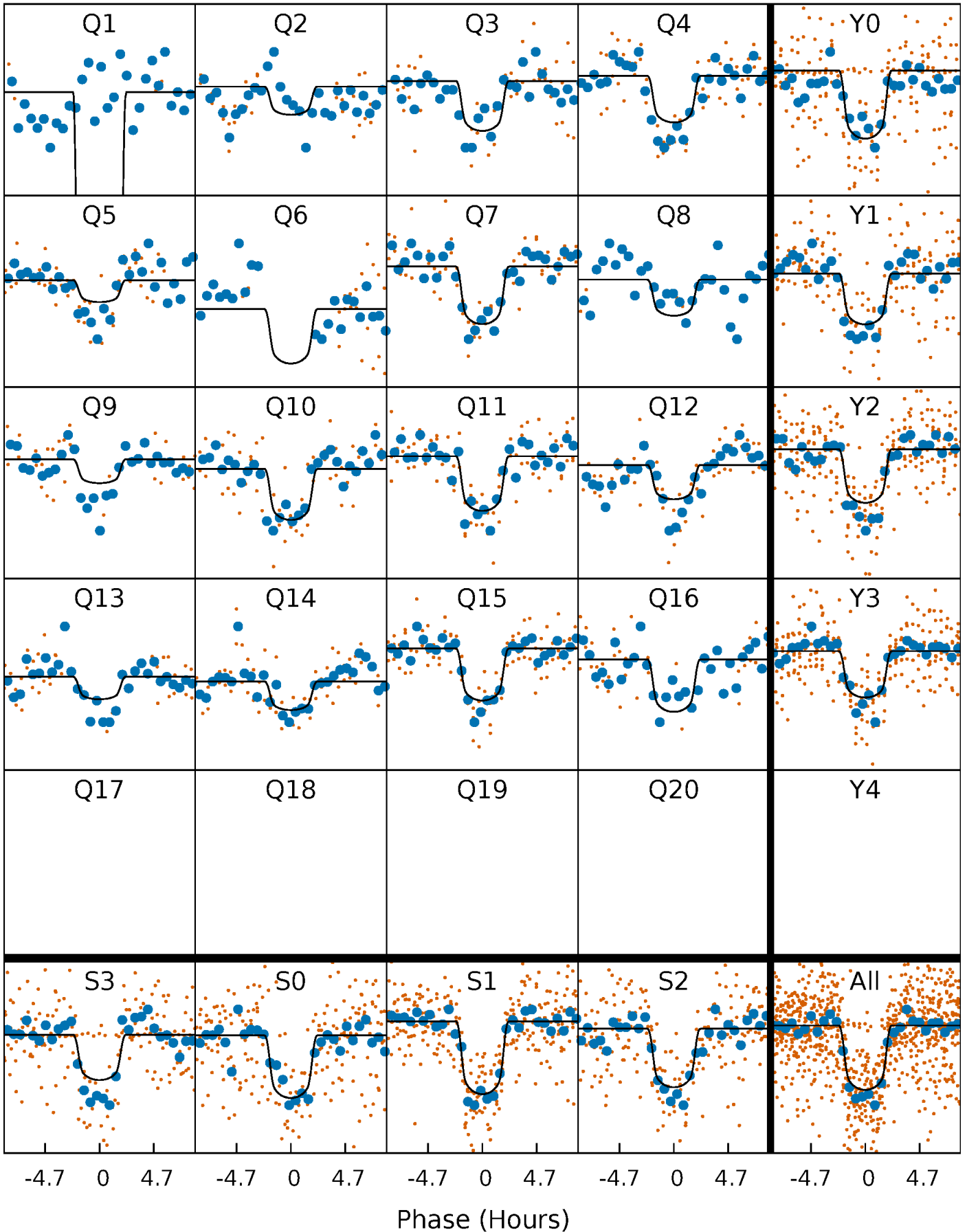
PDC Quarter-Phased Transit Curves

TCE 010514430-02 P= 41.438343 Days $T_0=143.303742$ (BKJD)



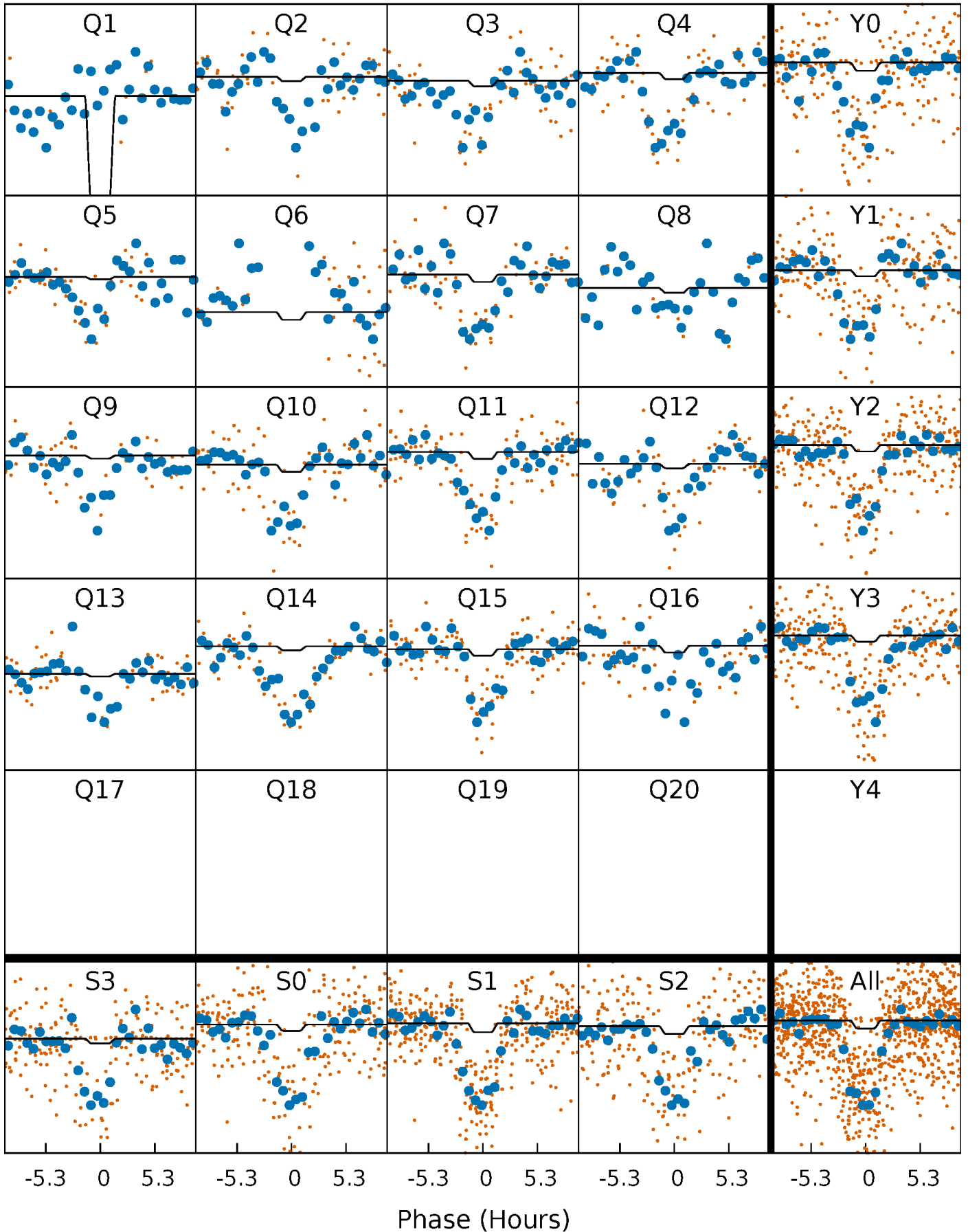
DV Quarter-Phased Transit Curves

TCE 010514430-02 P= 41.438343 Days $T_0=143.303742$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

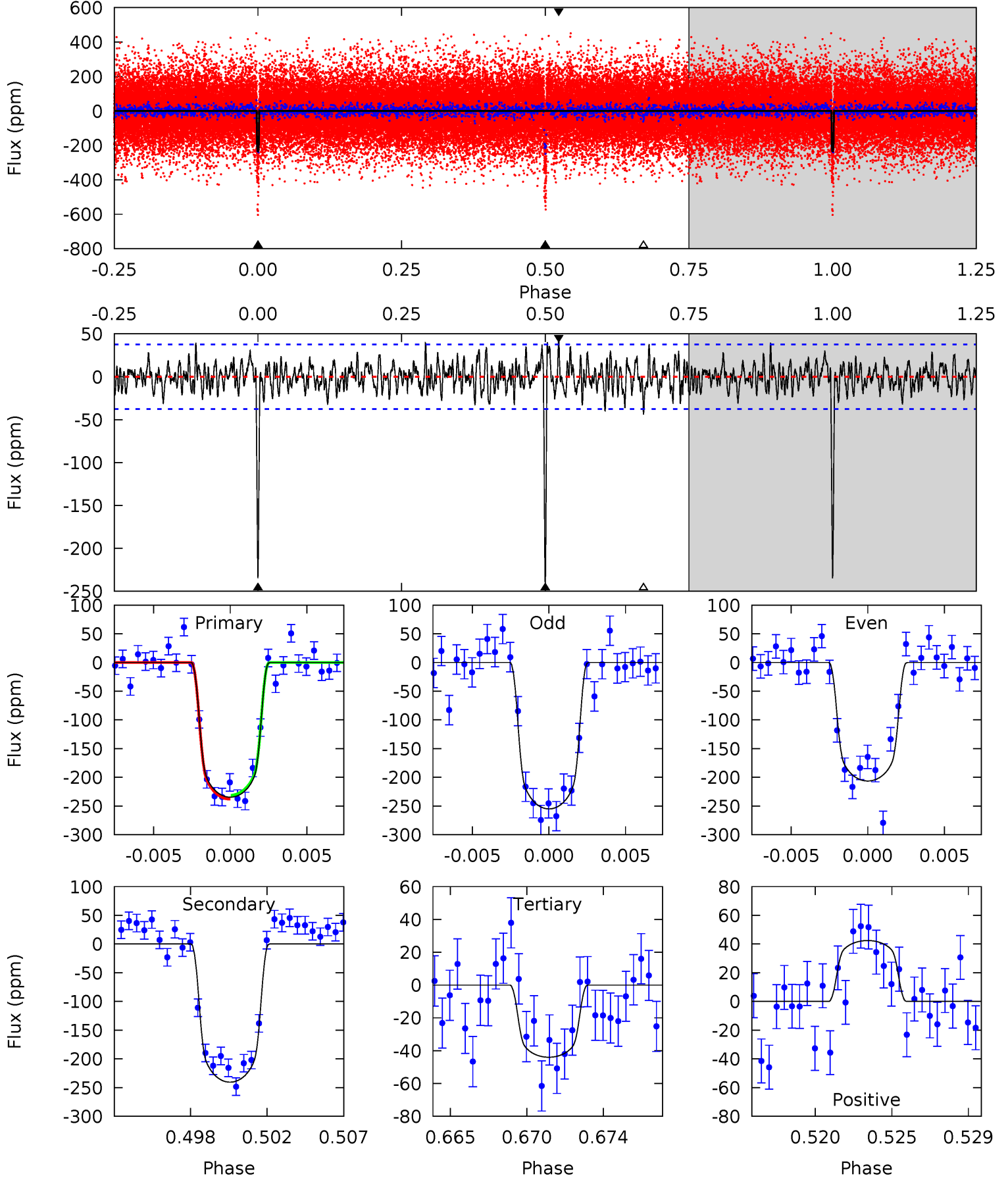
TCE 010514430-02 $P = 41.436830$ Days $T_0 = 143.341764$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-02, $P = 41.438343$ Days, $E = 101.865399$ Days

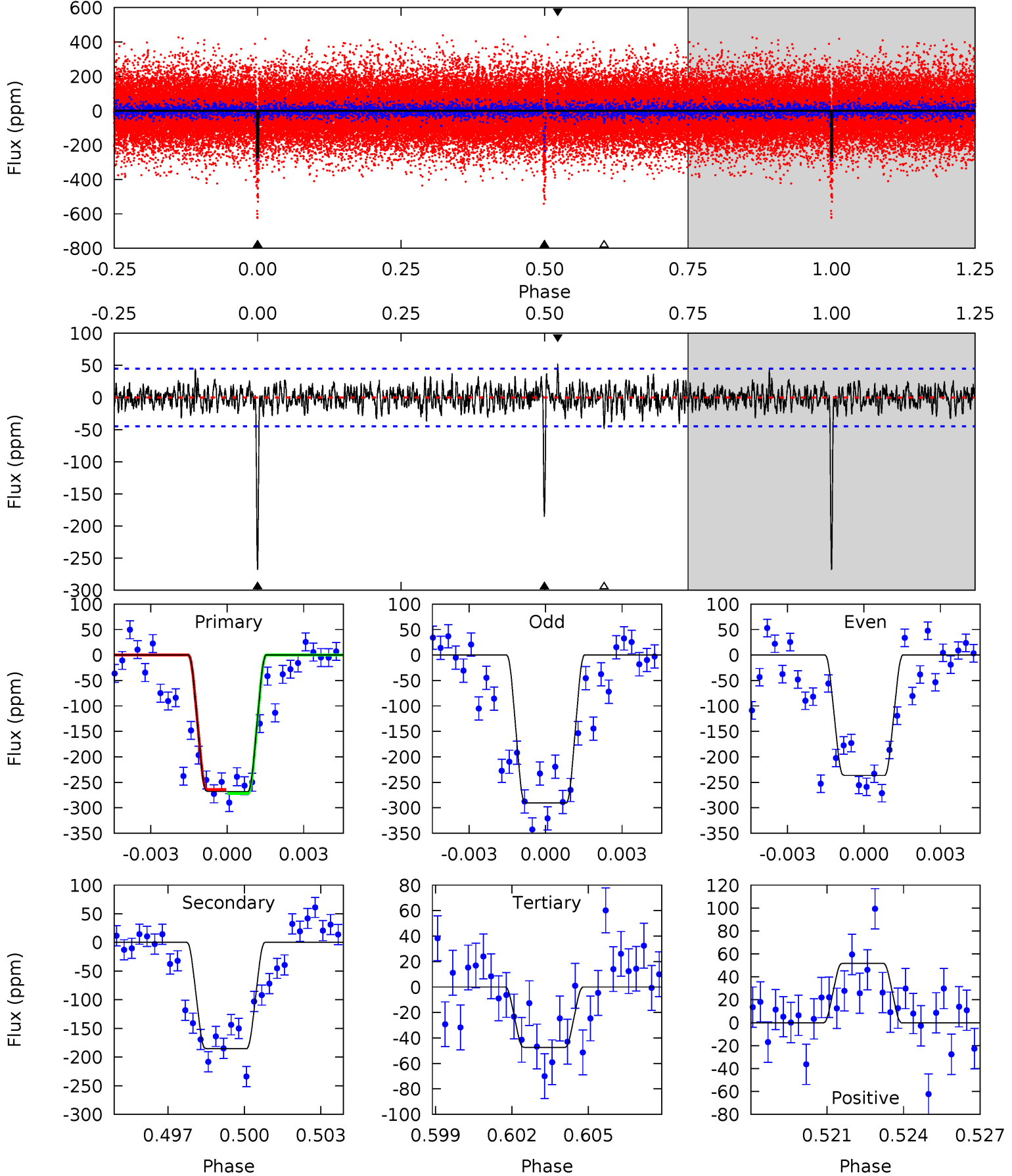
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.3	33.1	6.06	5.84	5.18	2.84	1.82	26.3	26.5	27.1	27.3	3.33	1.03	0.15	0.47



Alt Model-Shift Uniqueness Test

010514430-02, P = 41.436830 Days, E = 101.904934 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	21.7	5.56	6.08	5.25	2.97	1.51	25.9	25.3	16.2	15.6	3.15	1.18	0.16	0.43



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-02 / KOI 0263.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-241 ± 7	$2.70^{+0.15}_{-0.15}$	907^{+18}_{-15}	5661^{+162}_{-161}	1006^{+116}_{-107}
Alt.	-185 ± 9	$0.83^{+0.13}_{-0.12}$	908^{+17}_{-18}	10456^{+1494}_{-1064}	8036^{+3045}_{-2096}

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 $A_{obs} \gg 1.0$

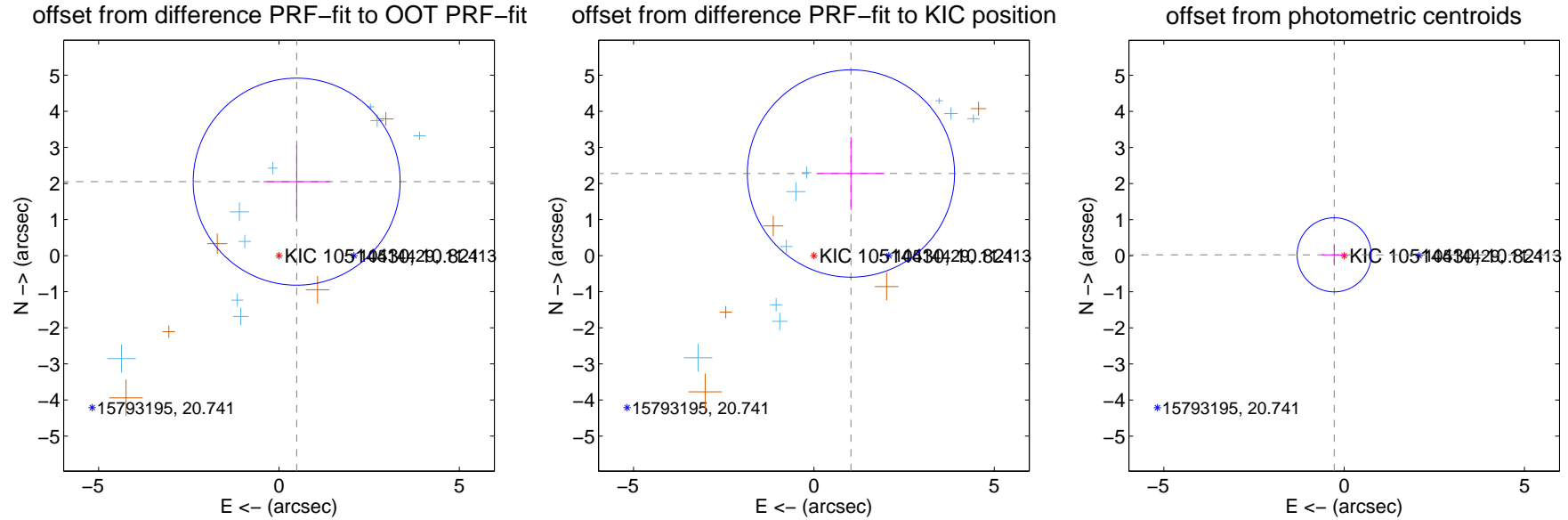
DV Centroid Data

Supplemental centroid analysis for 010514430-02. **Kepler magnitude: 10.82.** Transit SNR 20.64

There are 9 quarters with good PRF difference image offsets

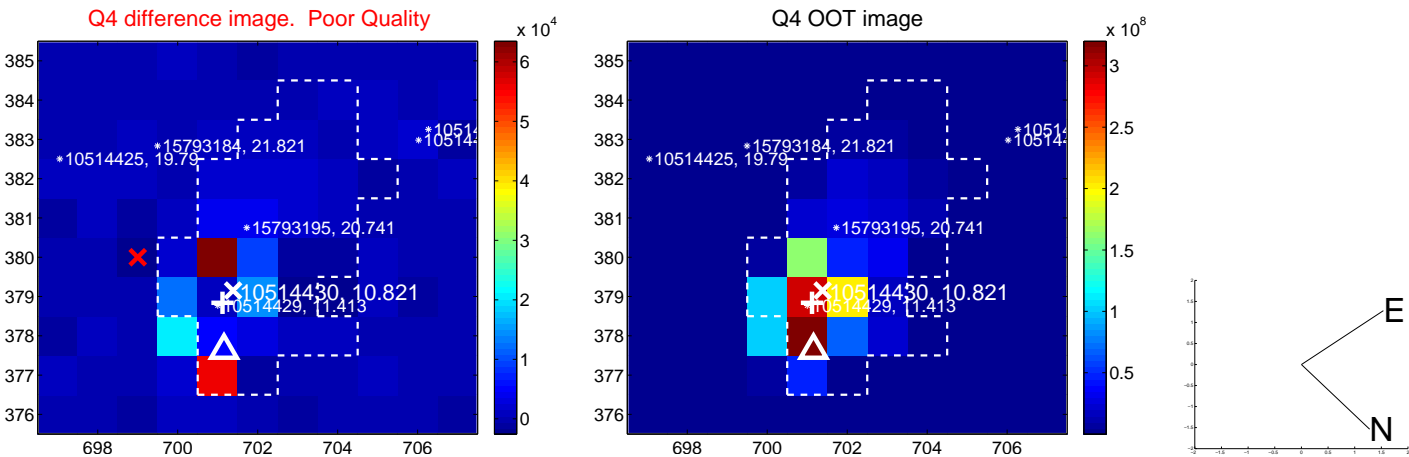
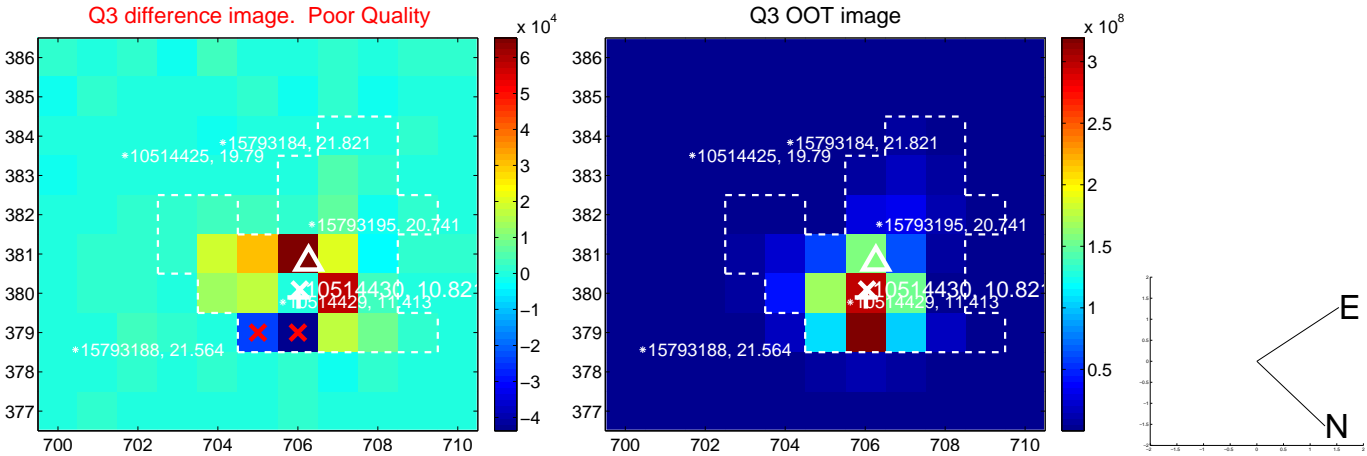
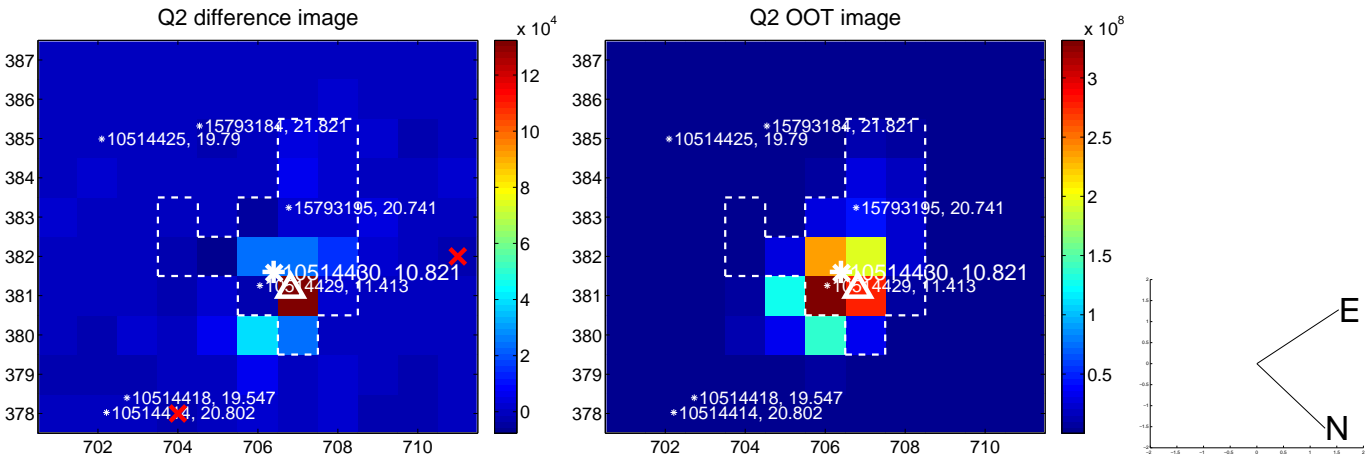
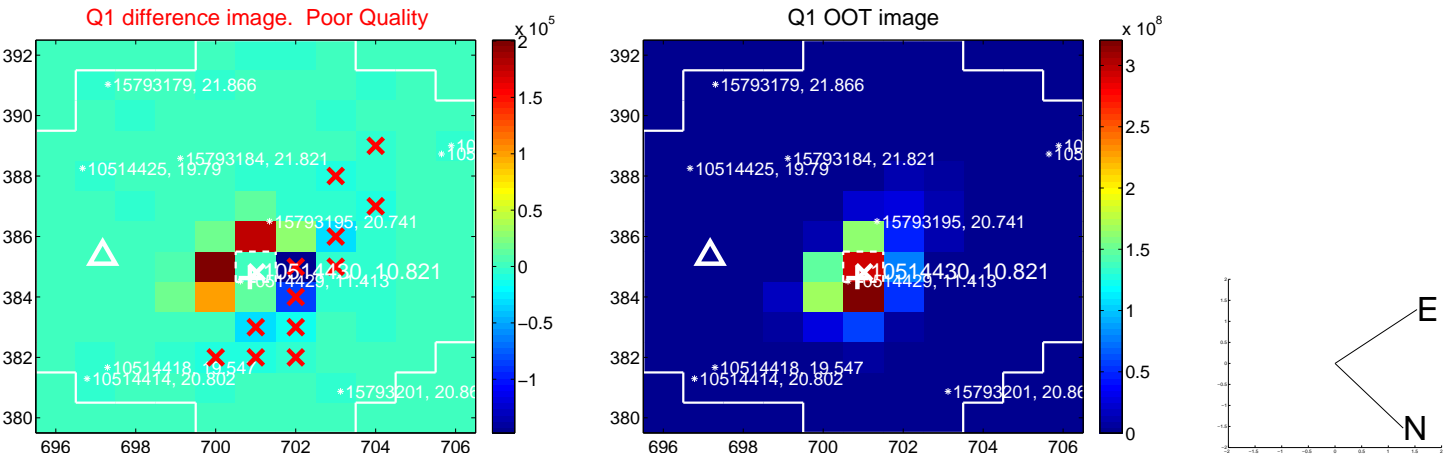
The direct PRF centroid is offset from the target star catalog position by about 1.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.108 ± 0.956	2.20	-0.490 ± 0.918	2.050 ± 1.012
PRF-fit source offset from KIC position	2.498 ± 0.958	2.61	-1.028 ± 0.933	2.276 ± 1.008
photometric centroid source offset	0.28 ± 0.34	0.81	0.28 ± 0.34	0.02 ± 0.26

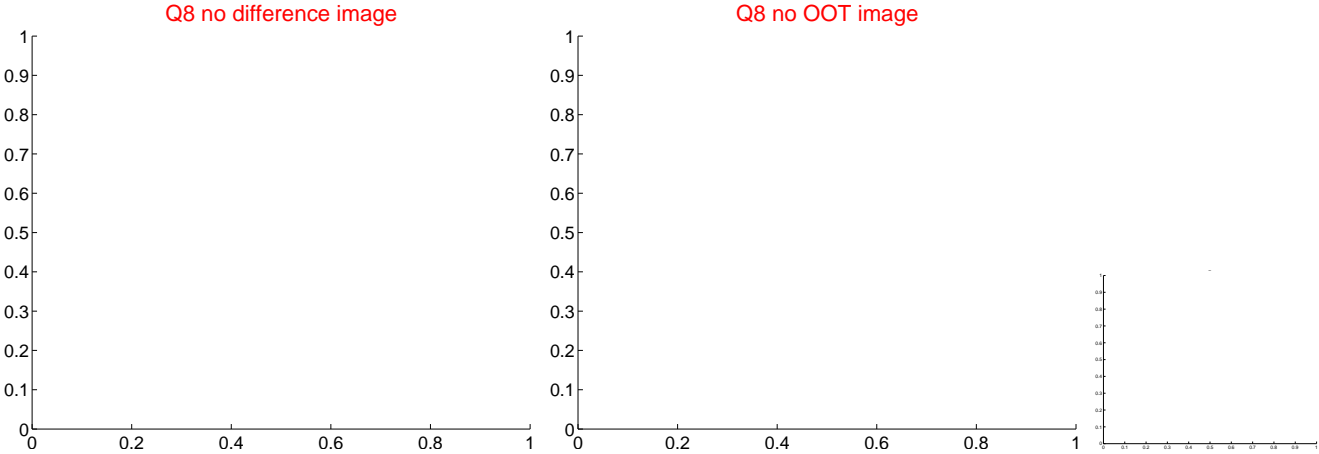
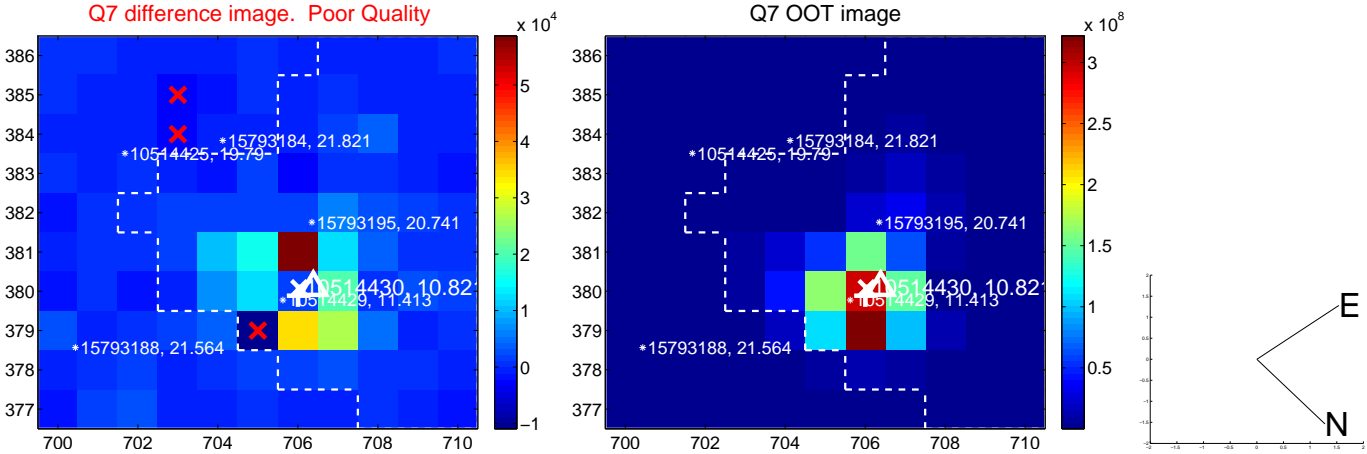
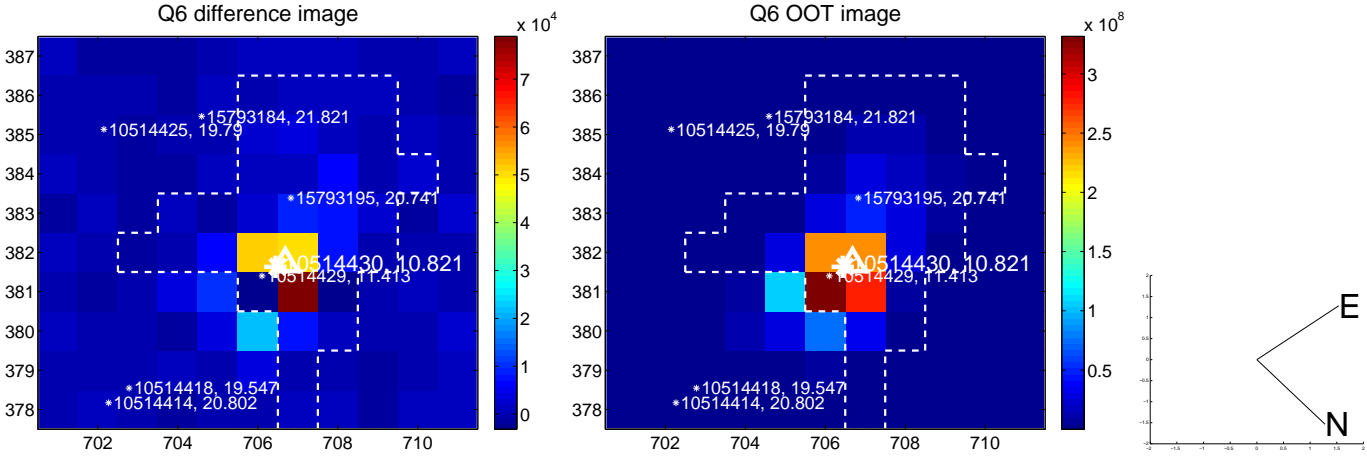
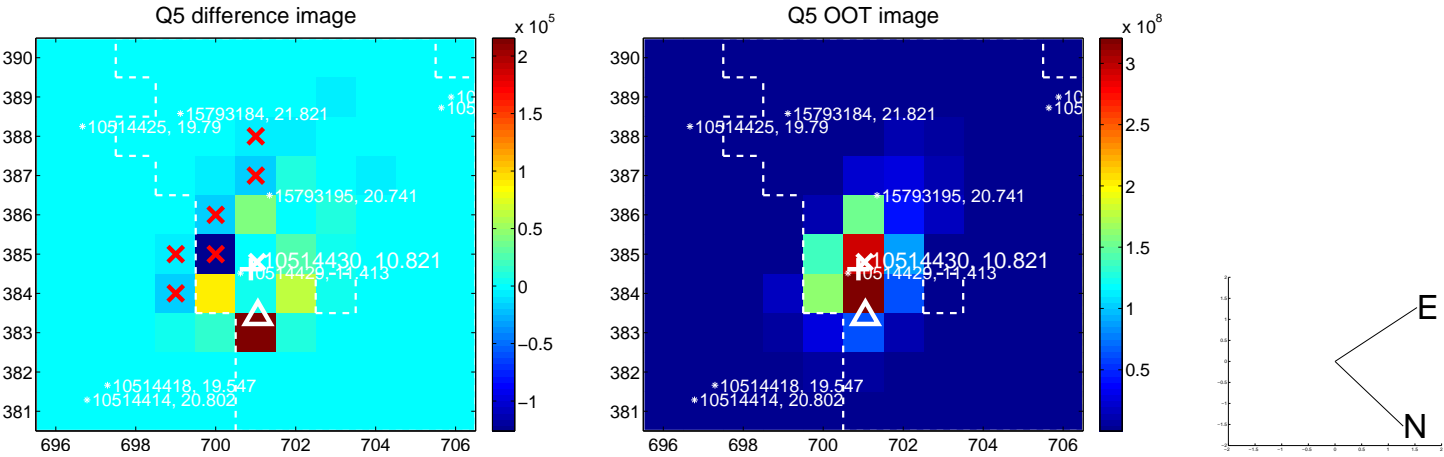


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

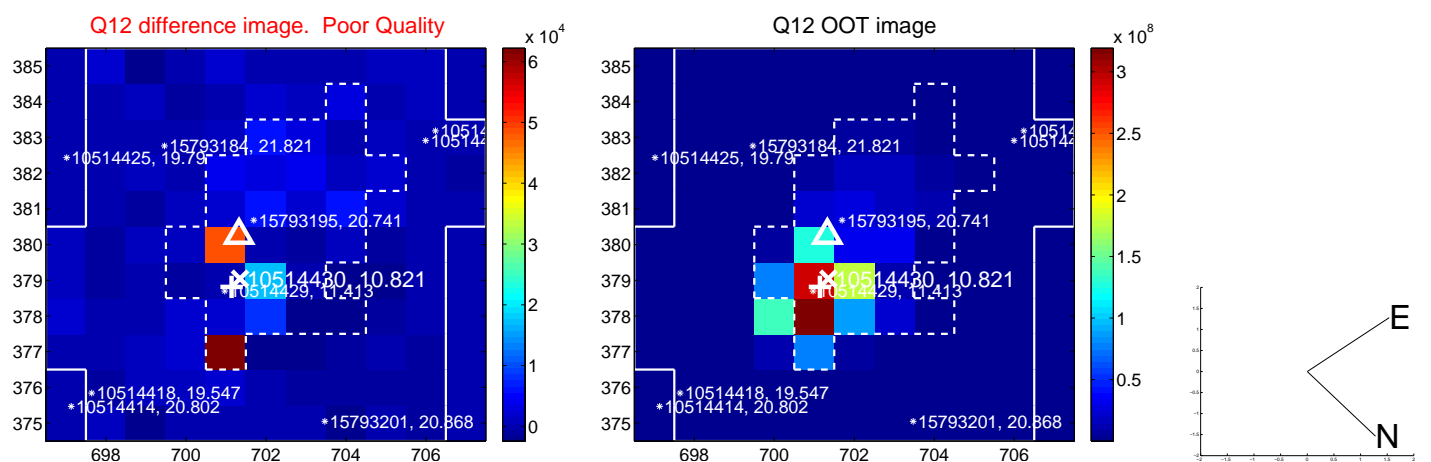
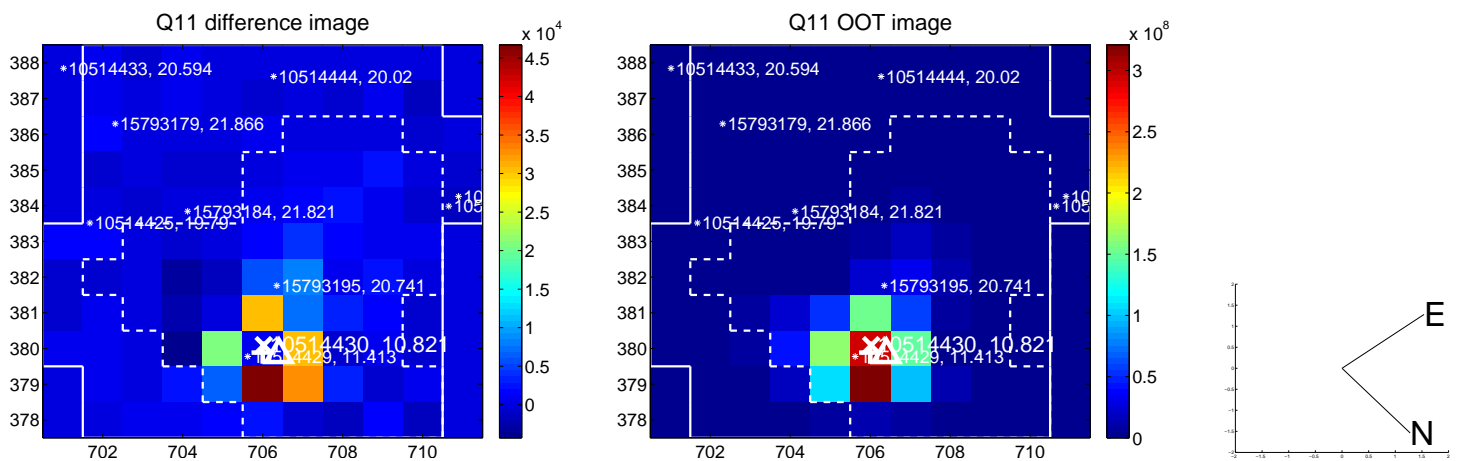
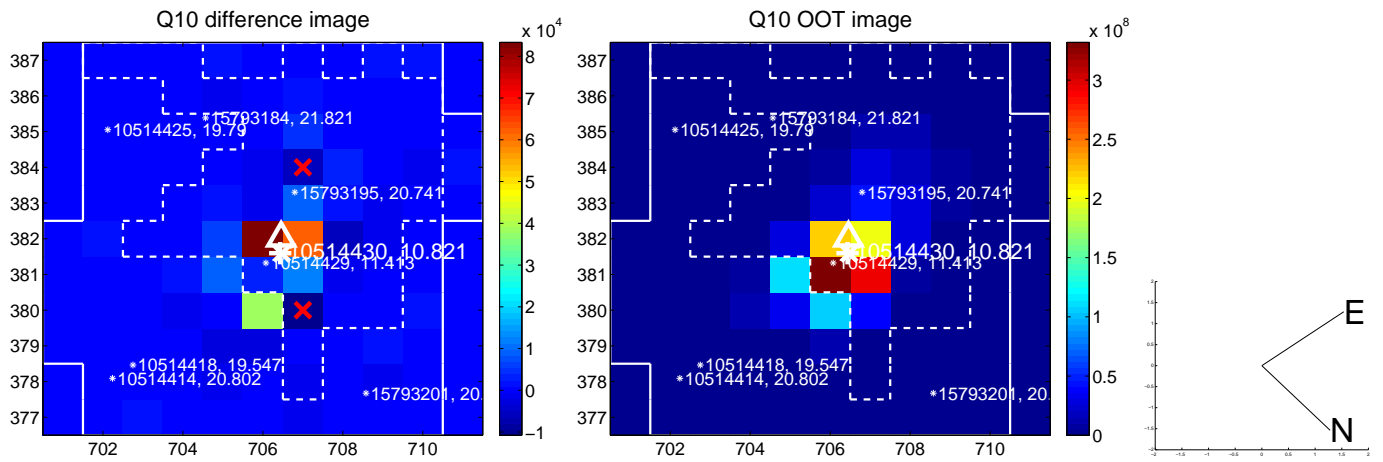
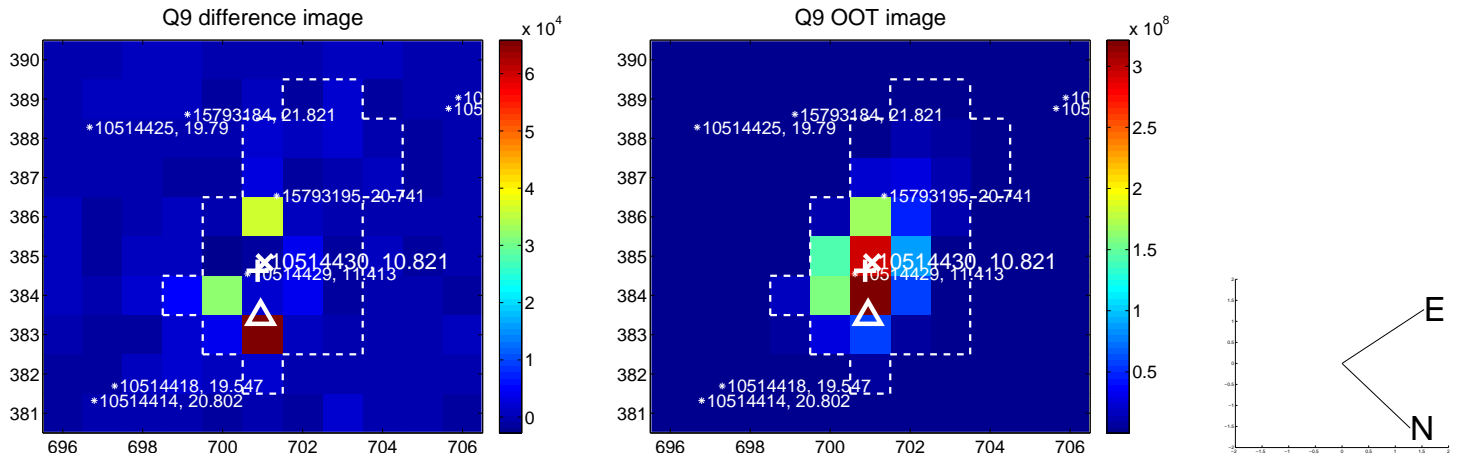
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



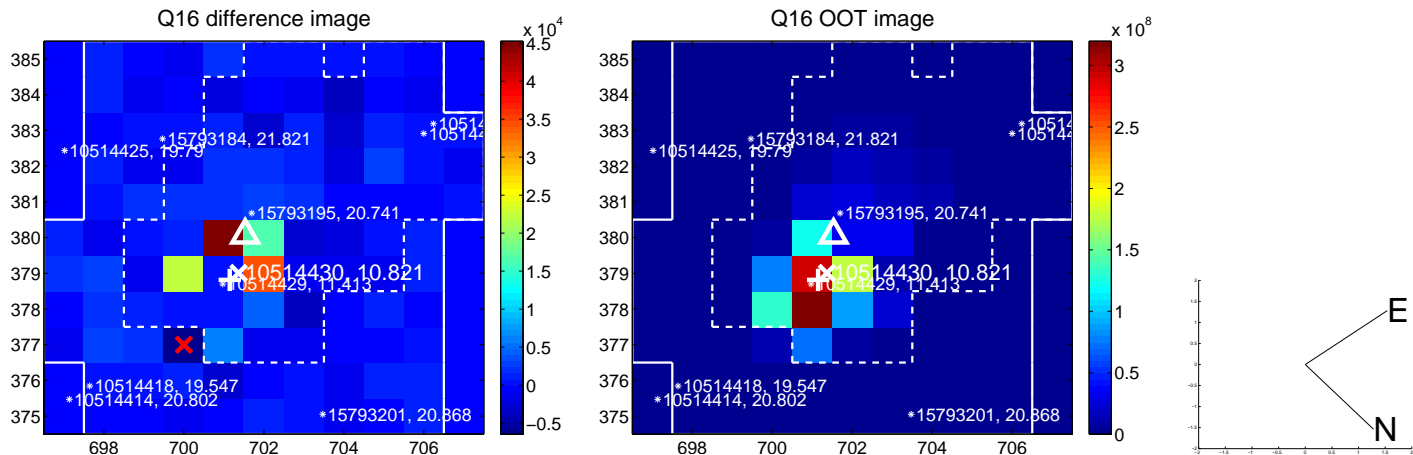
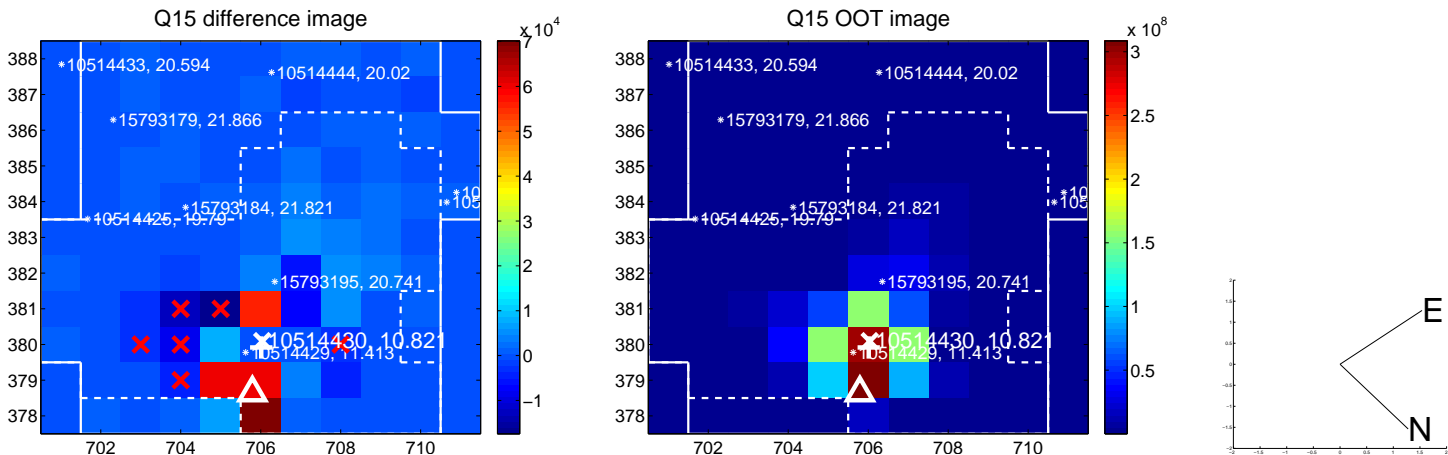
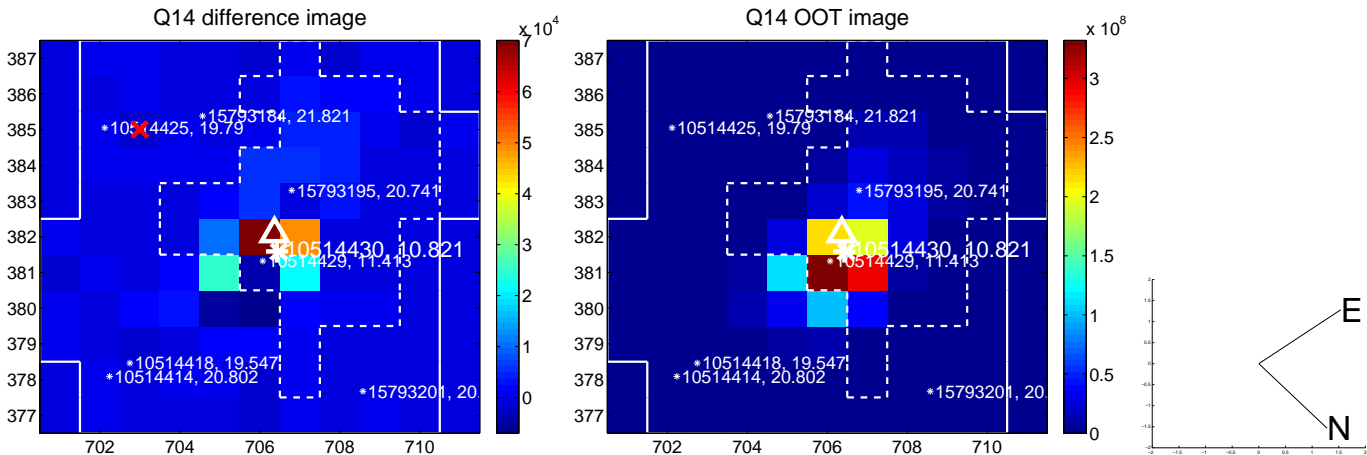
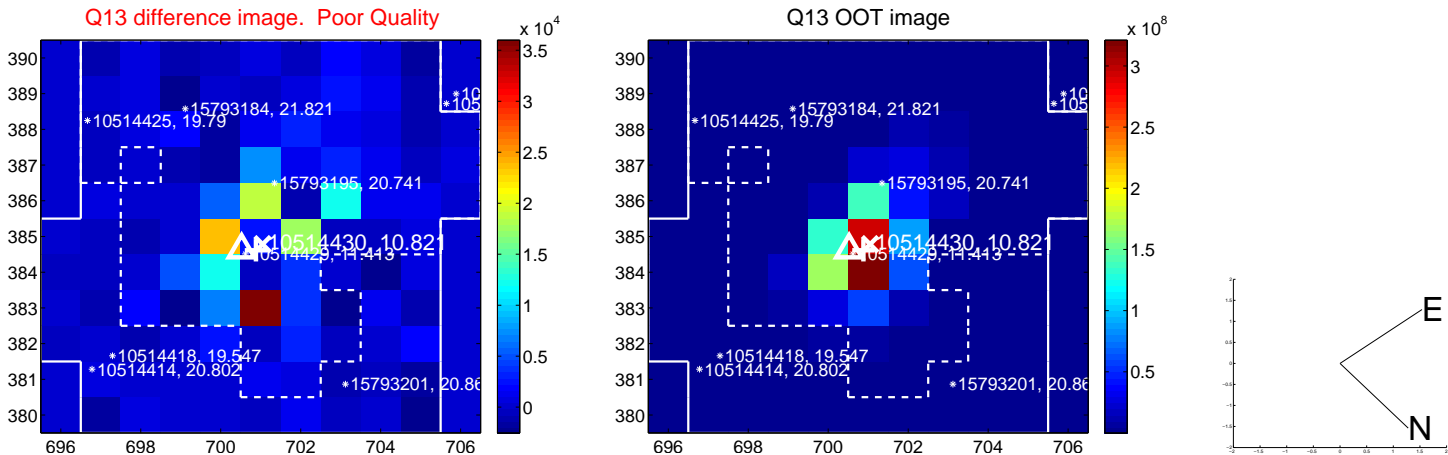
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



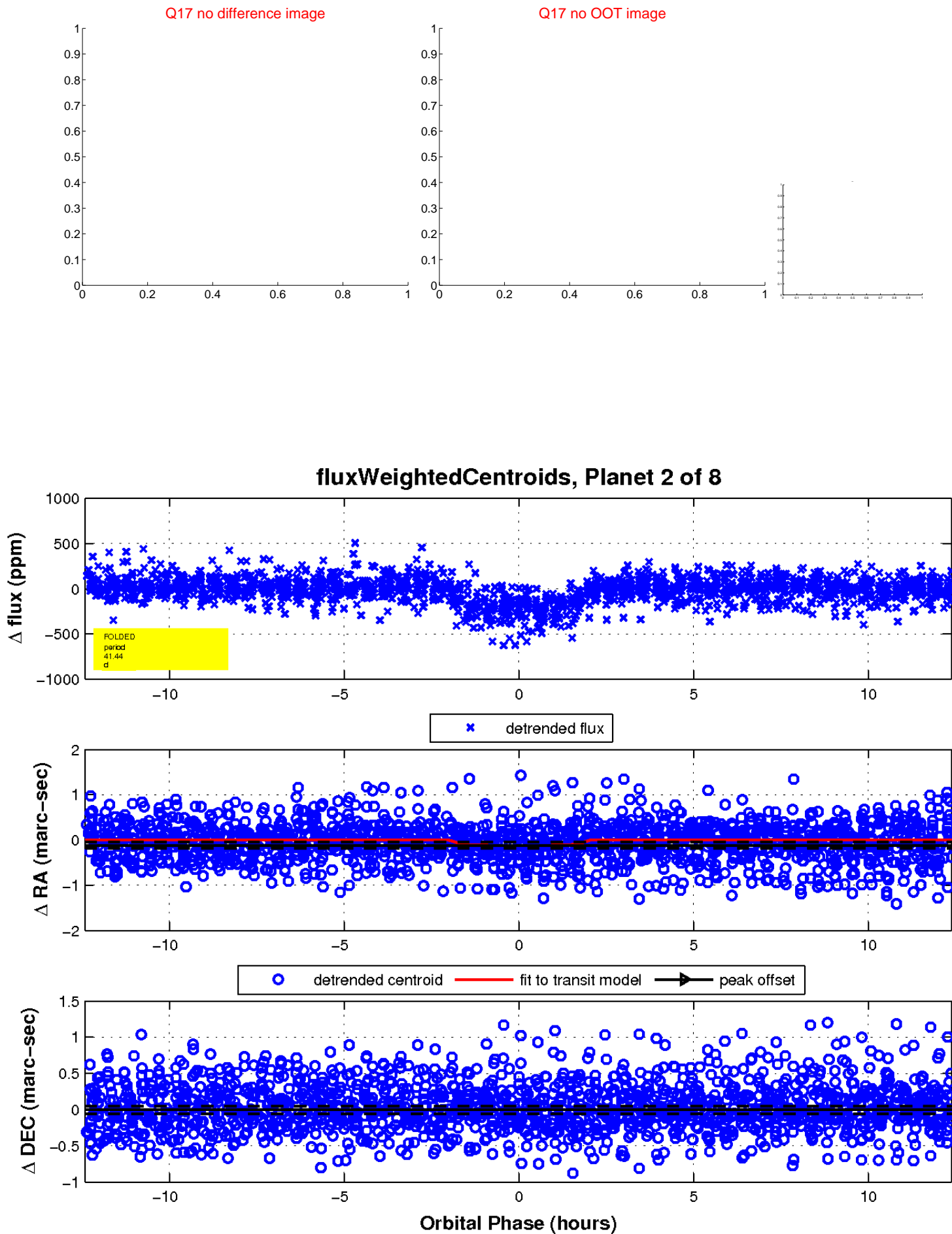
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

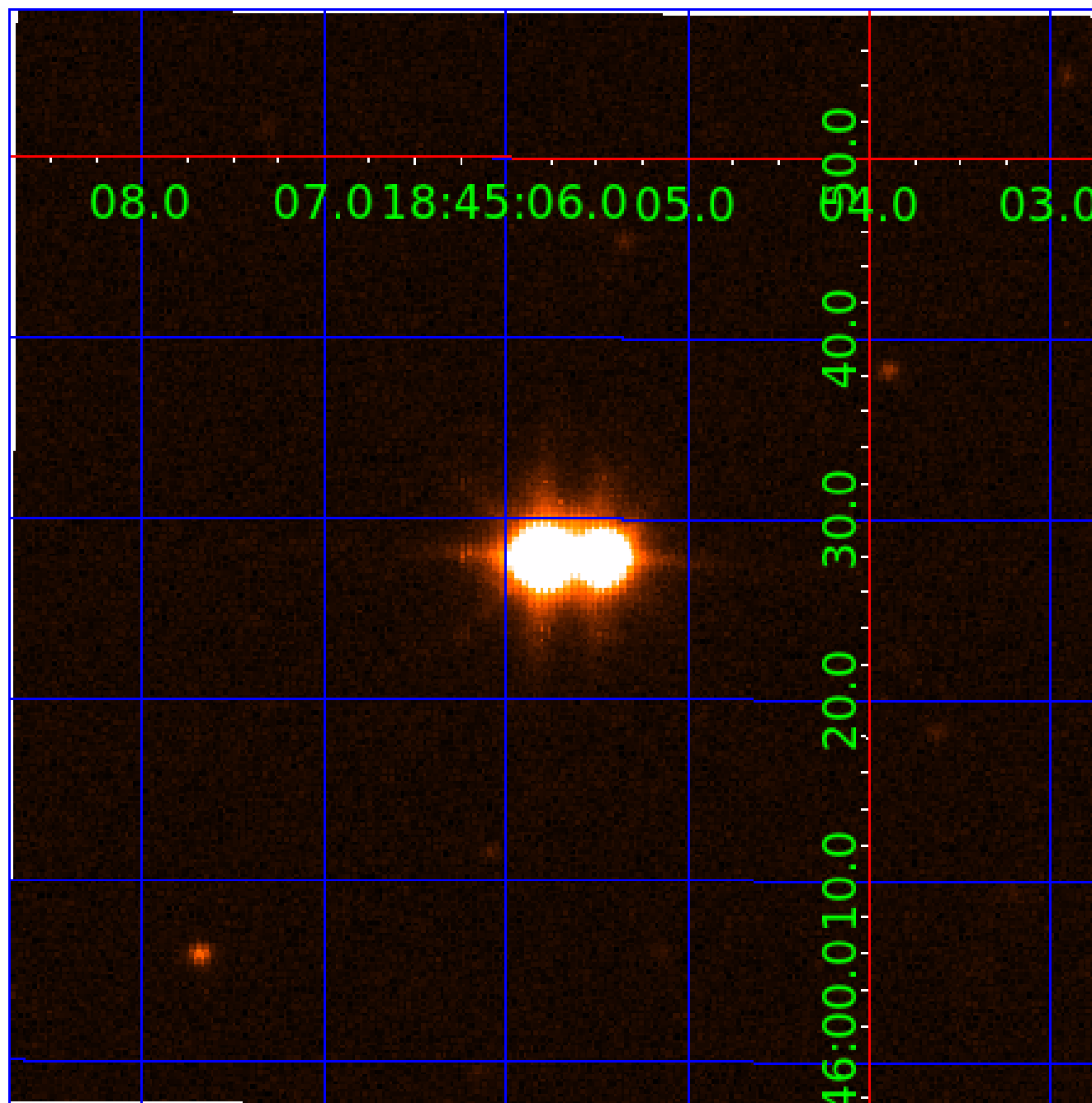


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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 010514430-03

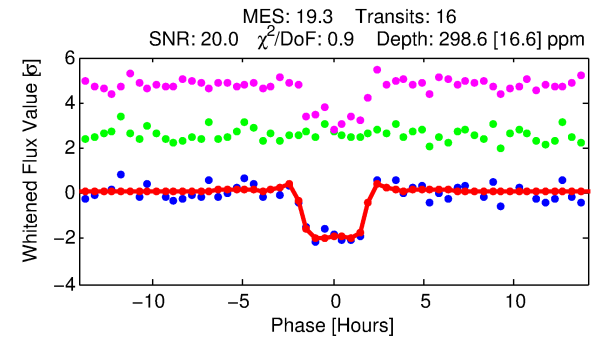
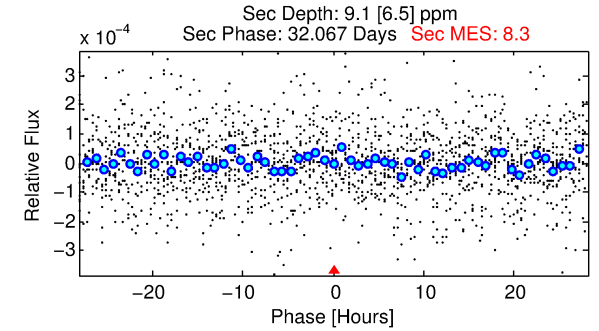
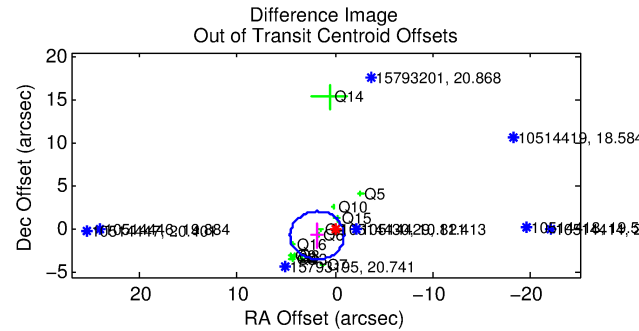
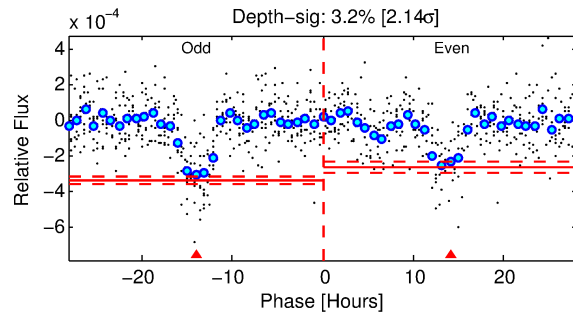
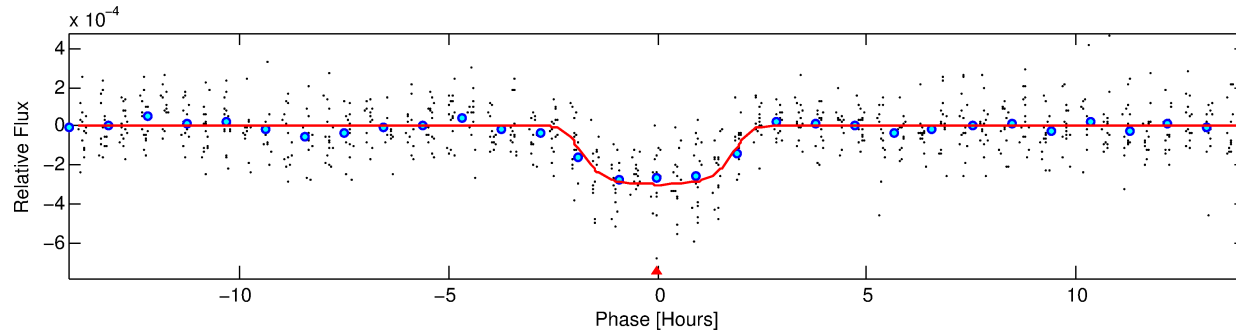
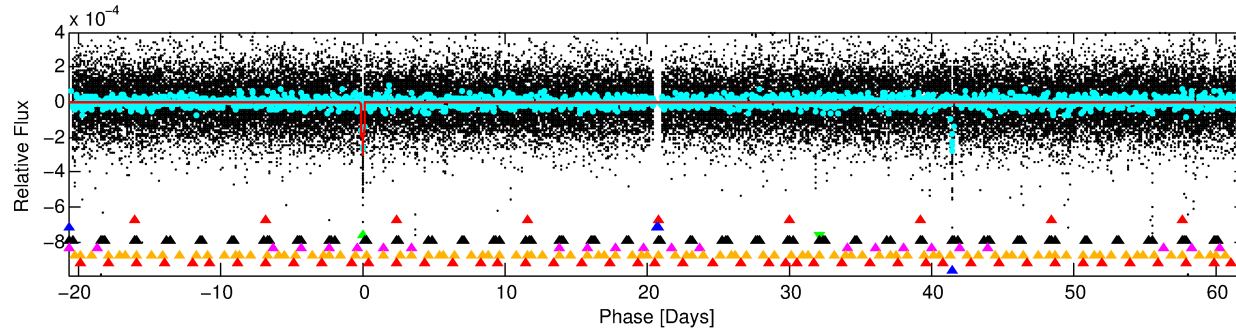
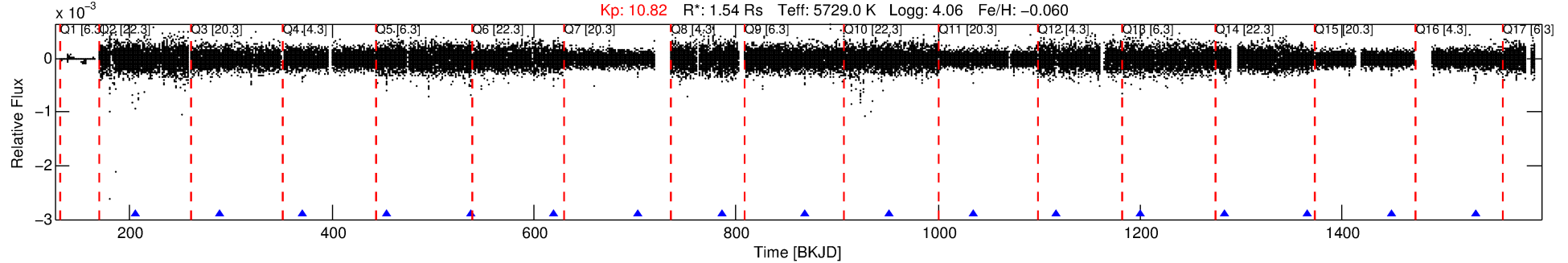
No Significant Match Found

DV One-Page Summary

KIC: 10514430 Candidate: 3 of 8 Period: 82.878 d

KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 82.87829 [0.00045] d
Epoch = 205.4451 [0.0048] BKJD
Rp/R* = 0.0206 [0.0008]
a/R* = 45.77 [5.50]
b = 0.96 [0.01]
Seff = 16.69 [1.45]
Teq = 515 [11] K
Rp = 3.48 [0.24] Re
a = 0.3715 [0.0166] AU
Ag = 56.76 [41.40] [1.35σ]
Teffp = 2187 [399] K [4.19σ]

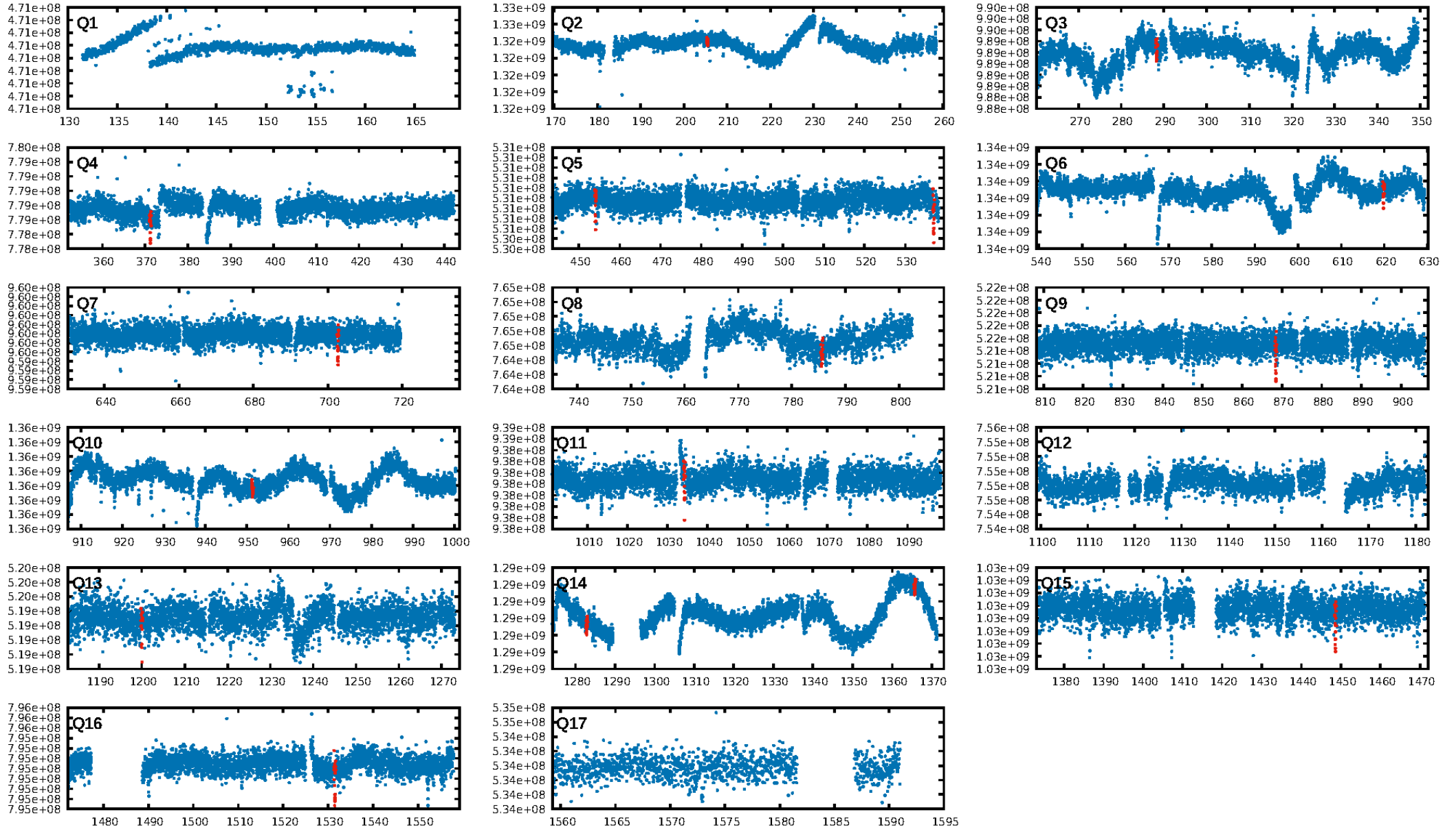
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [97.03σ]
LongPeriod-sig: 100.0% [624.12σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.21e-40
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: N/A
Centroid-sig: 3.8%
Centroid-so: 0.309 arcsec [0.95σ]
OotOffset-rm: 1.987 arcsec [2.15σ]
OotOffset-st: 4/3/3/2 [12]
KicOffset-rm: 1.524 arcsec [1.64σ]
KicOffset-st: 4/3/3/2 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 0.83 [10/12]

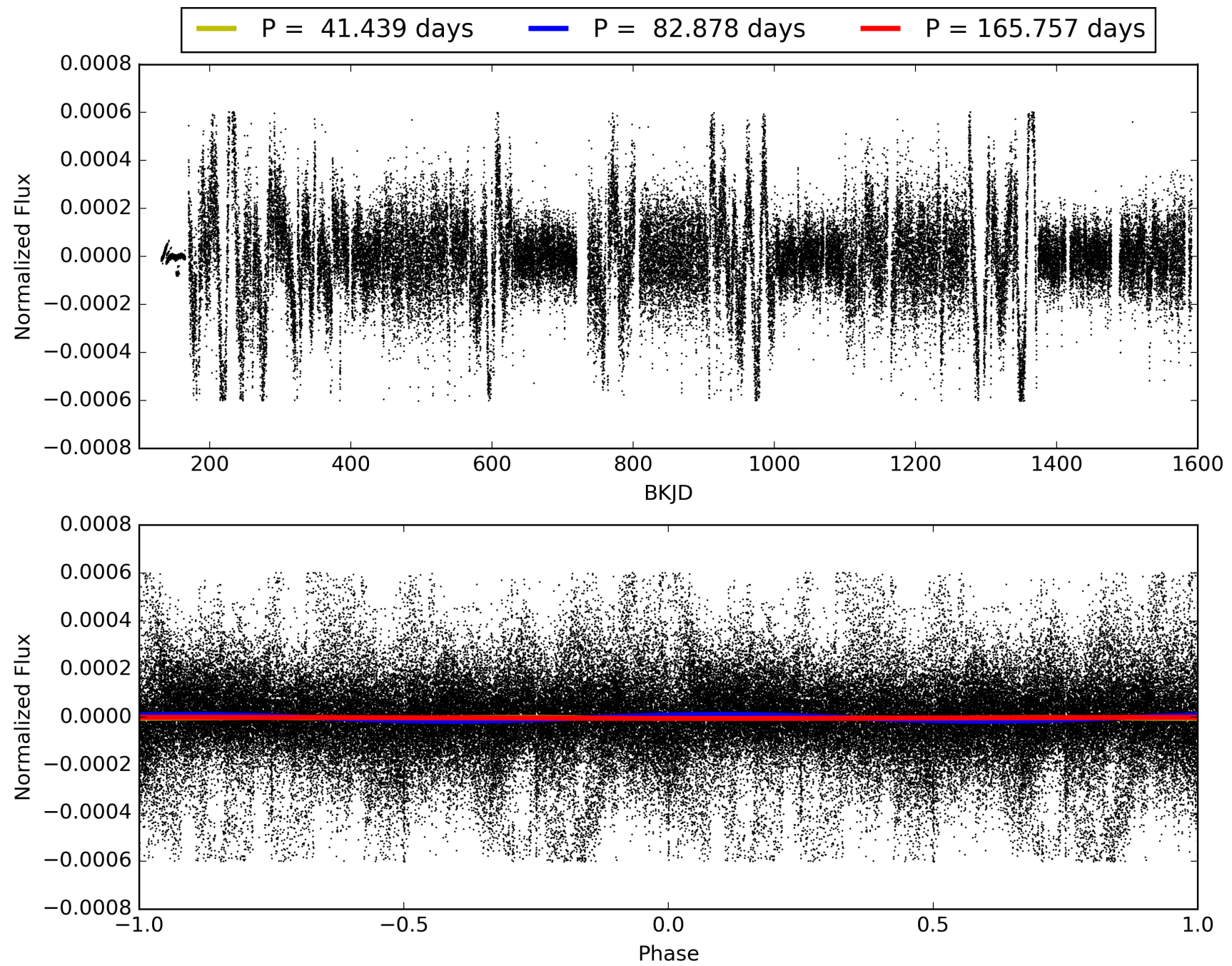
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:34:57 Z

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

TCE 010514430-03, PDC Light Curves

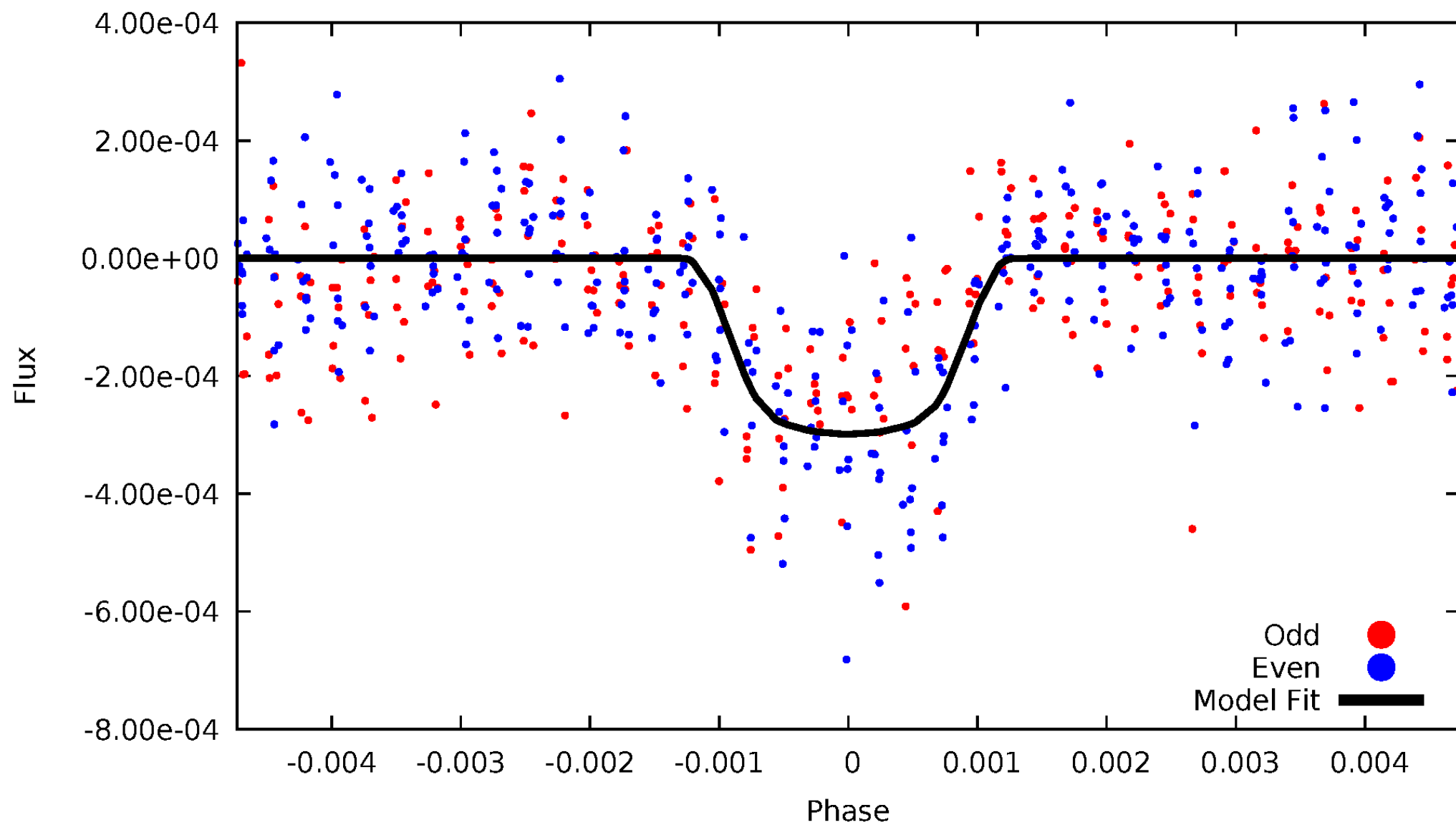


TCE 010514430-03



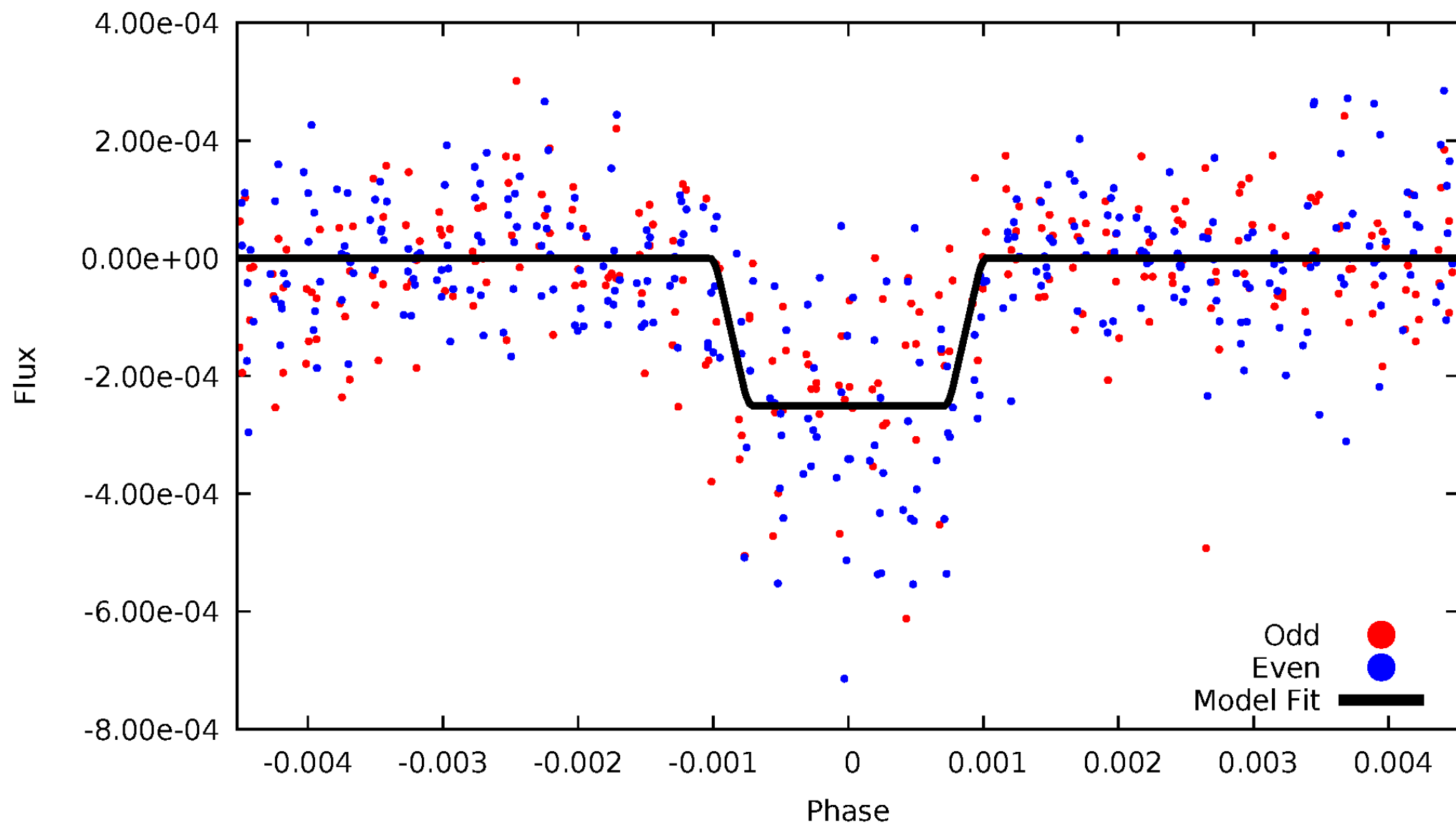
DV Odd/Even

TCE 010514430-03



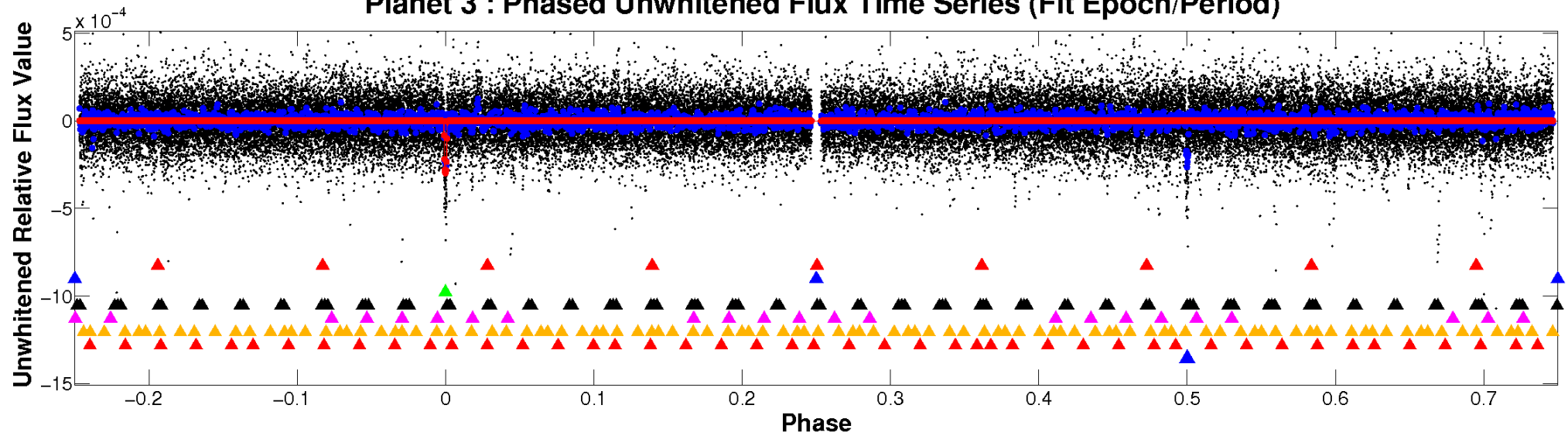
ALT Odd/Even

TCE 010514430-03

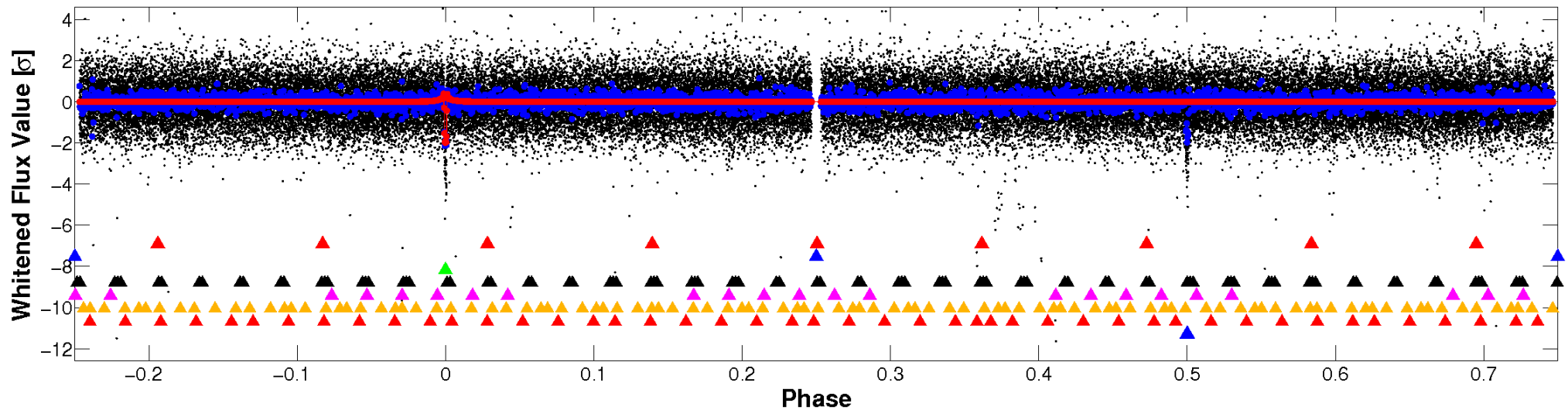


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

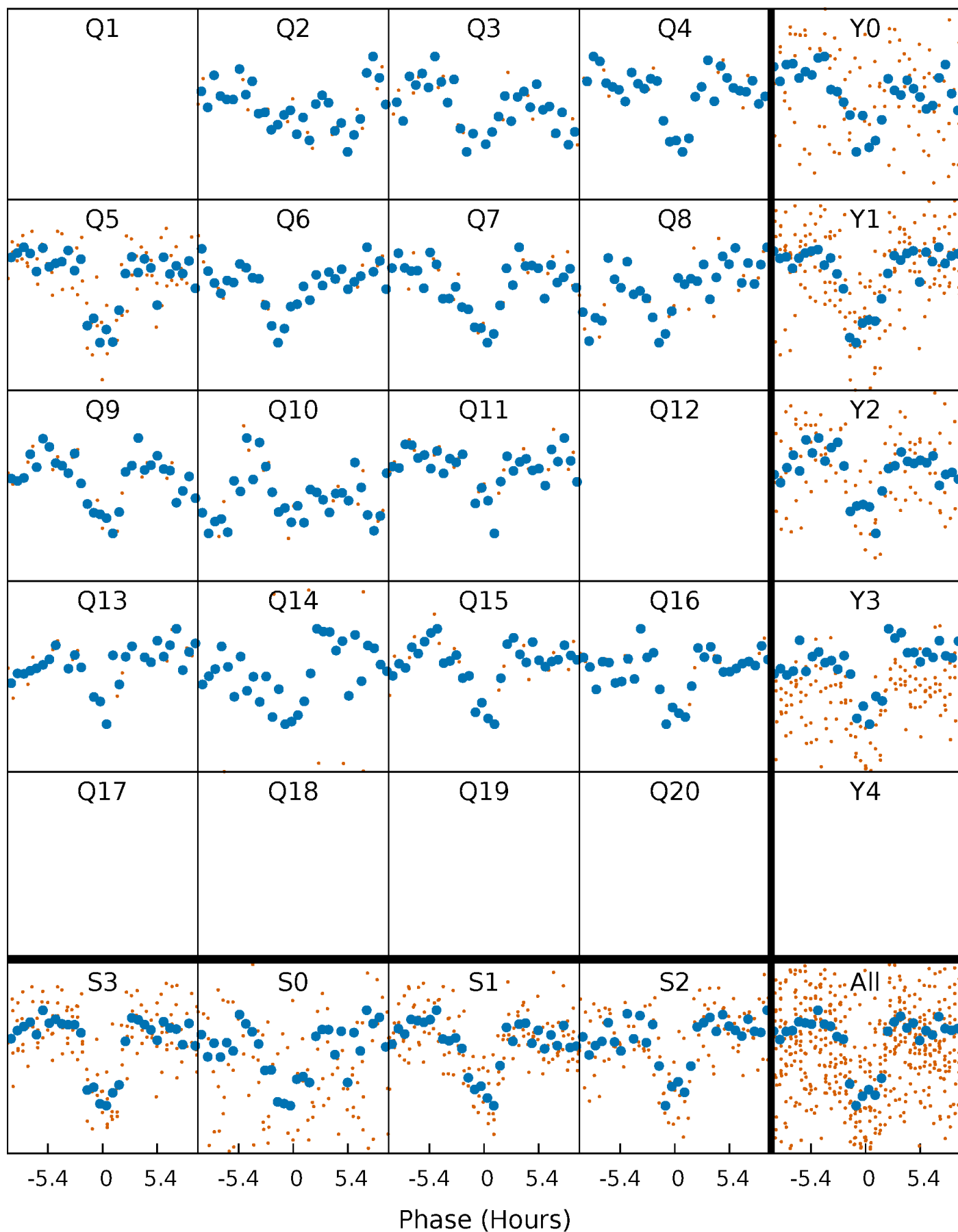


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



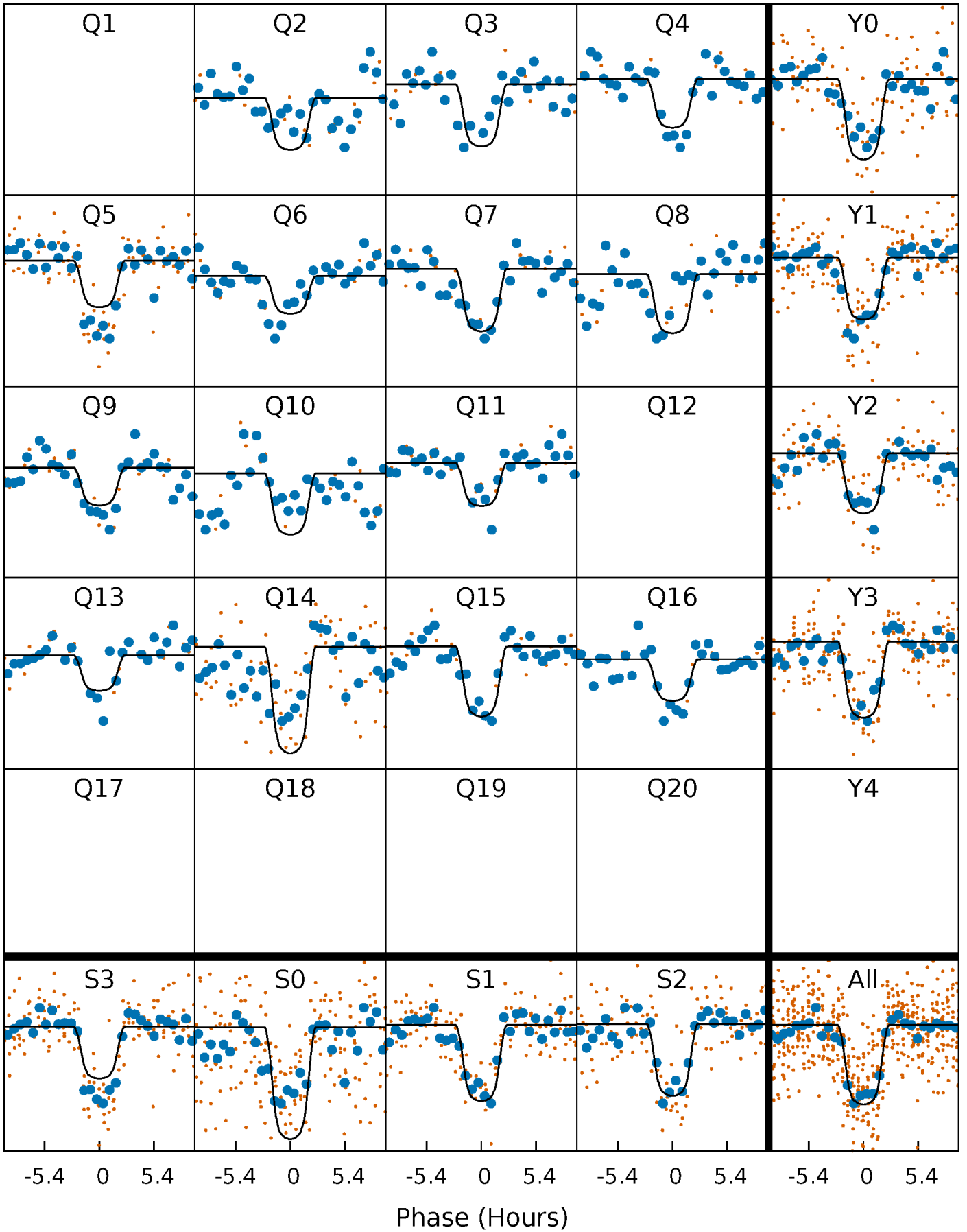
PDC Quarter-Phased Transit Curves

TCE 010514430-03 P= 82.878292 Days $T_0=205.445061$ (BKJD)



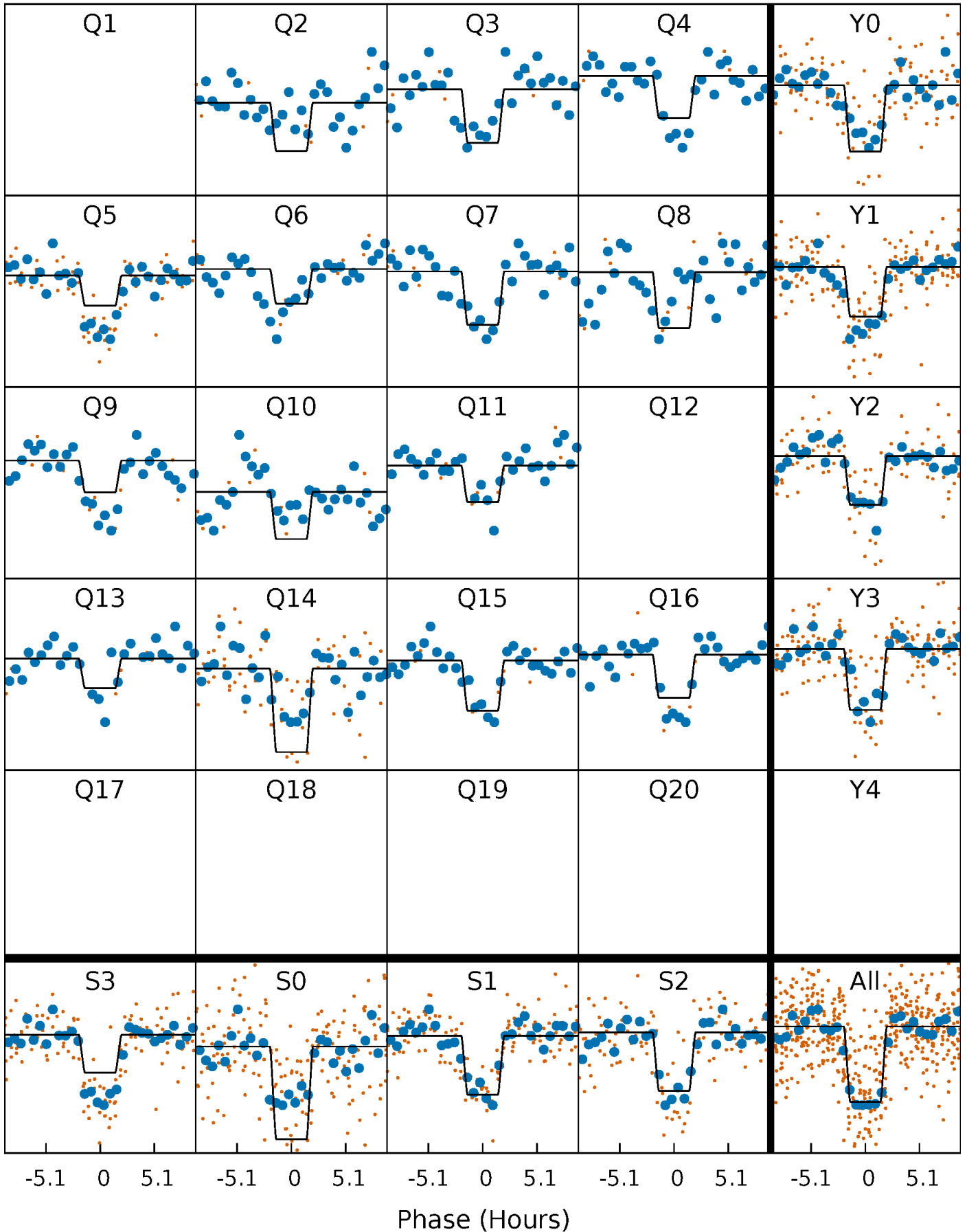
DV Quarter-Phased Transit Curves

TCE 010514430-03 P= 82.878292 Days $T_0=205.445061$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

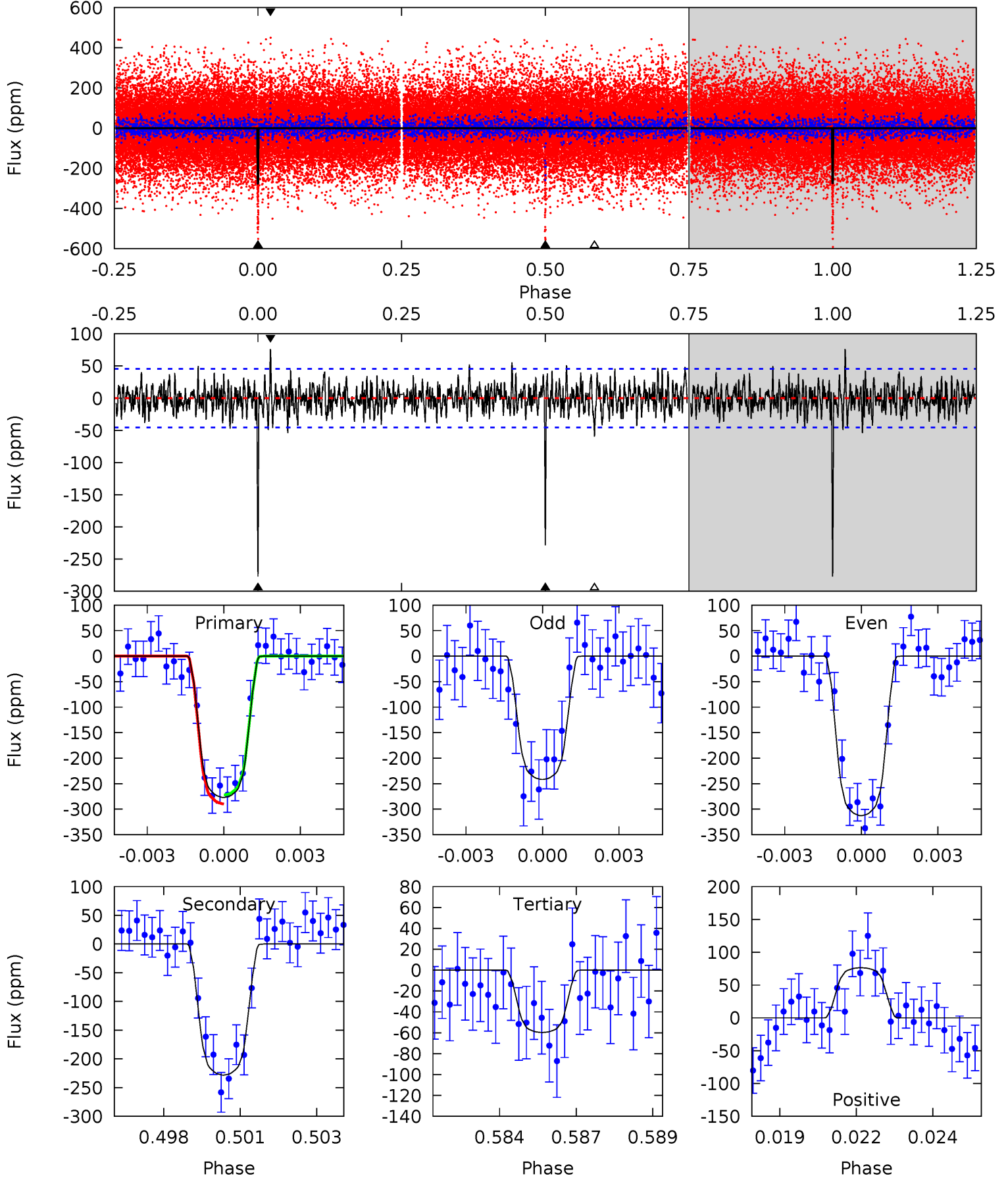
TCE 010514430-03 P= 82.878109 Days $T_0=205.446939$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-03, P = 82.878292 Days, E = 122.566769 Days

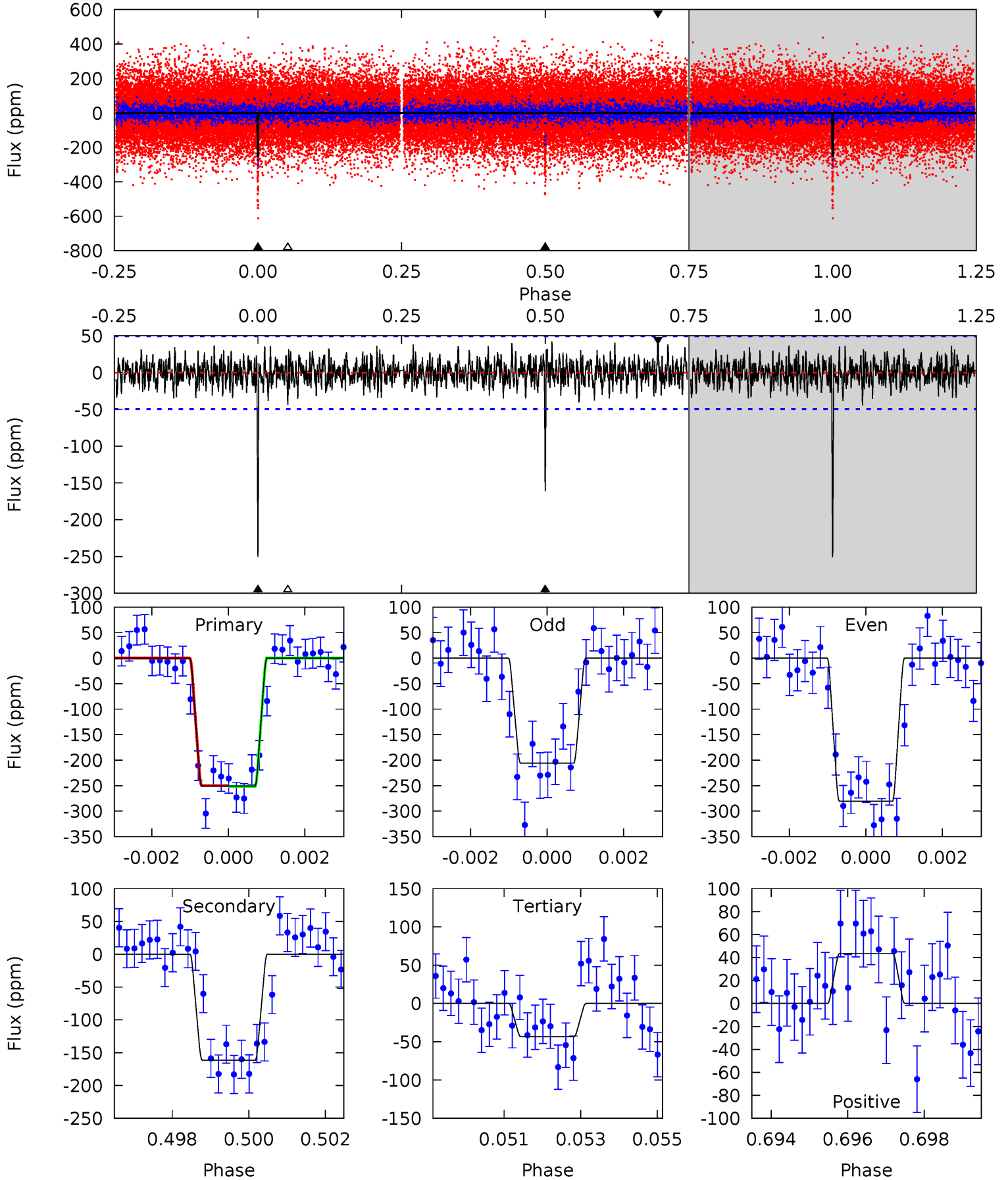
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.1	26.4	6.92	8.85	5.27	3.00	1.92	25.2	23.2	19.5	17.6	4.08	1.03	0.22	1.01



Alt Model-Shift Uniqueness Test

010514430-03, P = 82.878109 Days, E = 122.568830 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	17.3	4.66	4.66	5.32	3.09	1.40	22.3	22.3	12.7	12.7	3.96	1.04	0.15	0.09



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-228 ± 9	$3.48^{+0.18}_{-0.19}$	720^{+13}_{-13}	4986^{+120}_{-114}	1432^{+168}_{-141}
Alt.	-161 ± 9	$2.67^{+0.16}_{-0.16}$	721^{+12}_{-12}	5192^{+153}_{-146}	1726^{+225}_{-198}

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 $A_{obs} \gg 1.0$

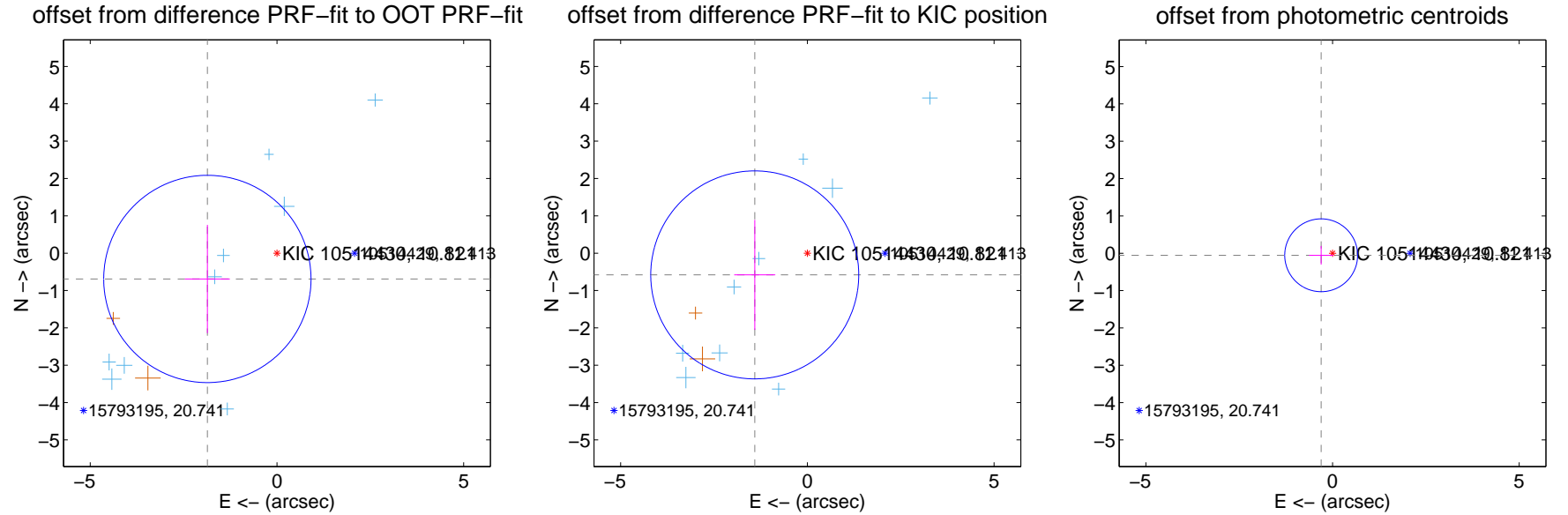
DV Centroid Data

Supplemental centroid analysis for 010514430-03. **Kepler magnitude: 10.82.** Transit SNR 20.02

There are 9 quarters with good PRF difference image offsets

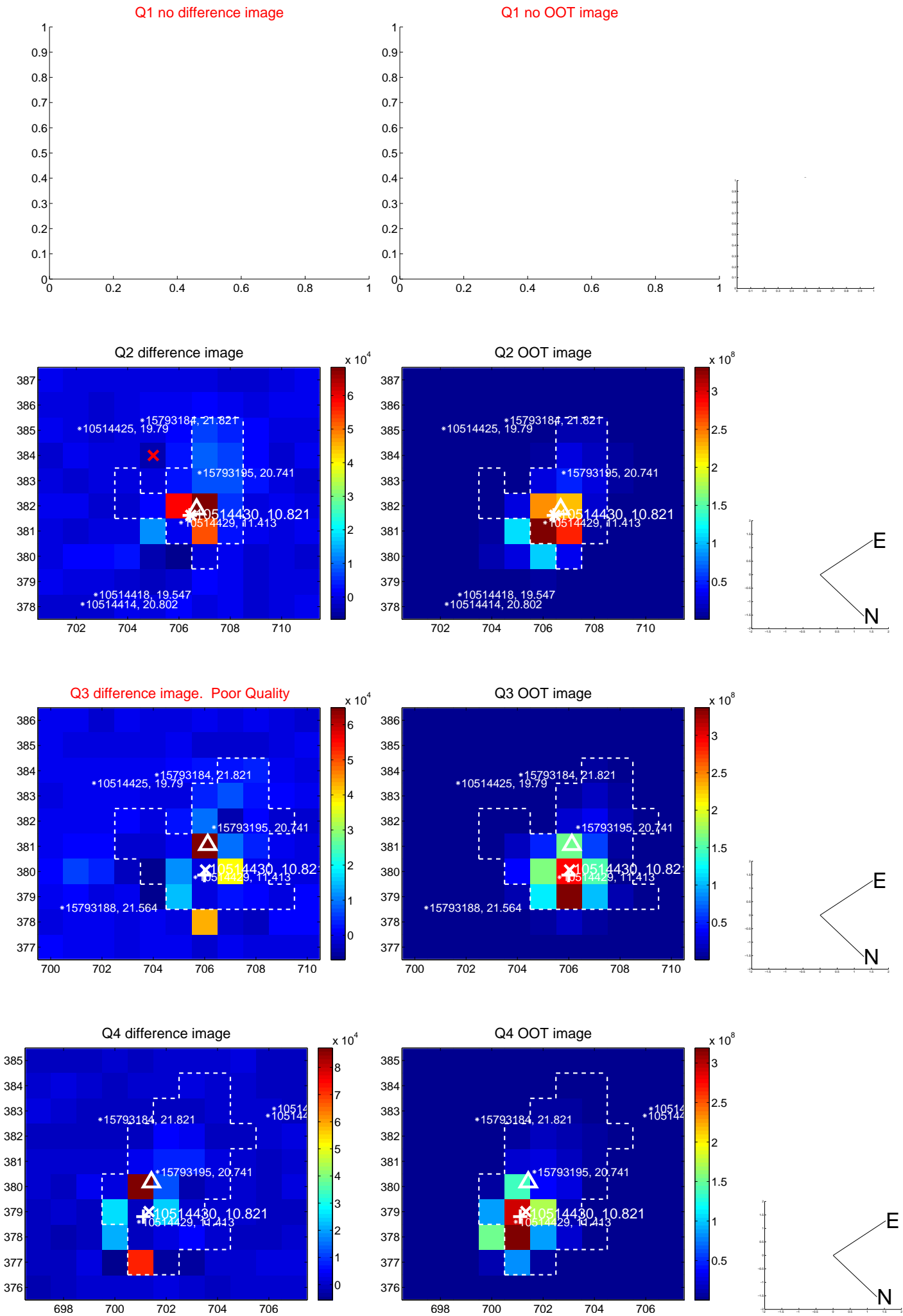
The direct PRF centroid is offset from the target star catalog position by about 1.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.987 ± 0.925	2.15	1.863 ± 0.601	-0.690 ± 1.450
PRF-fit source offset from KIC position	1.524 ± 0.928	1.64	1.409 ± 0.549	-0.581 ± 1.474
photometric centroid source offset	0.31 ± 0.33	0.95	0.30 ± 0.33	-0.05 ± 0.25

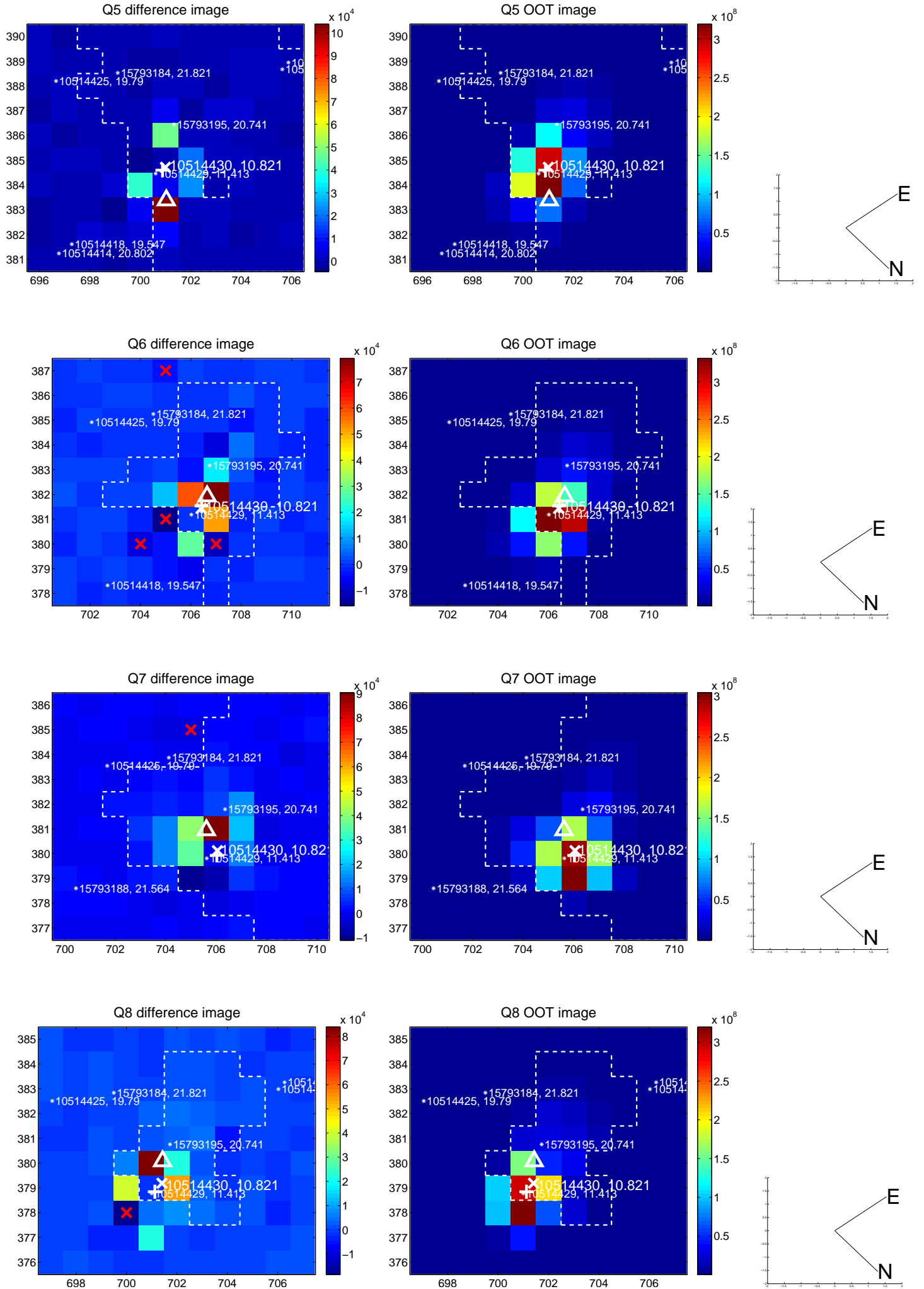


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

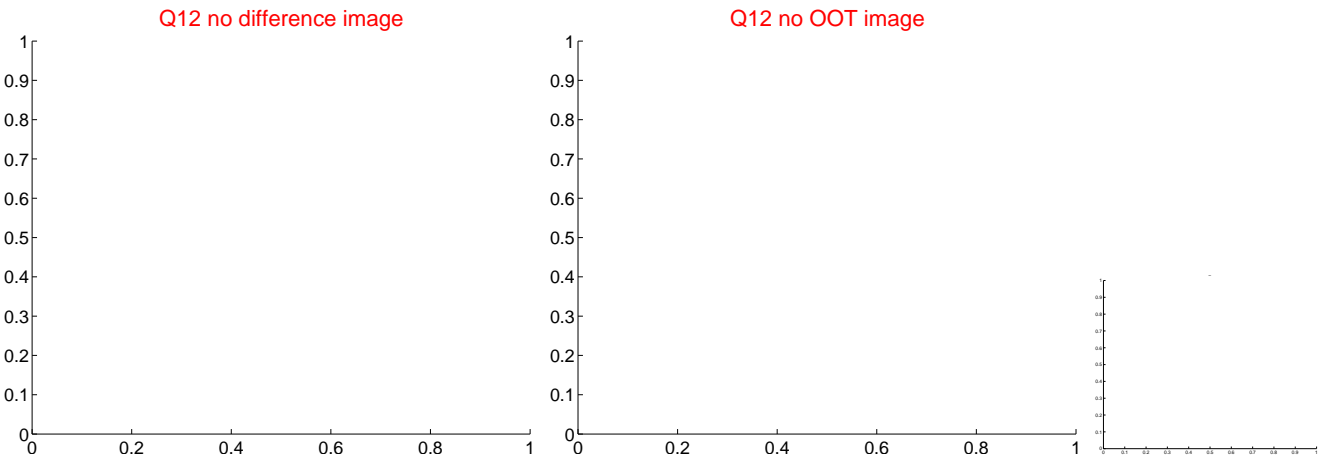
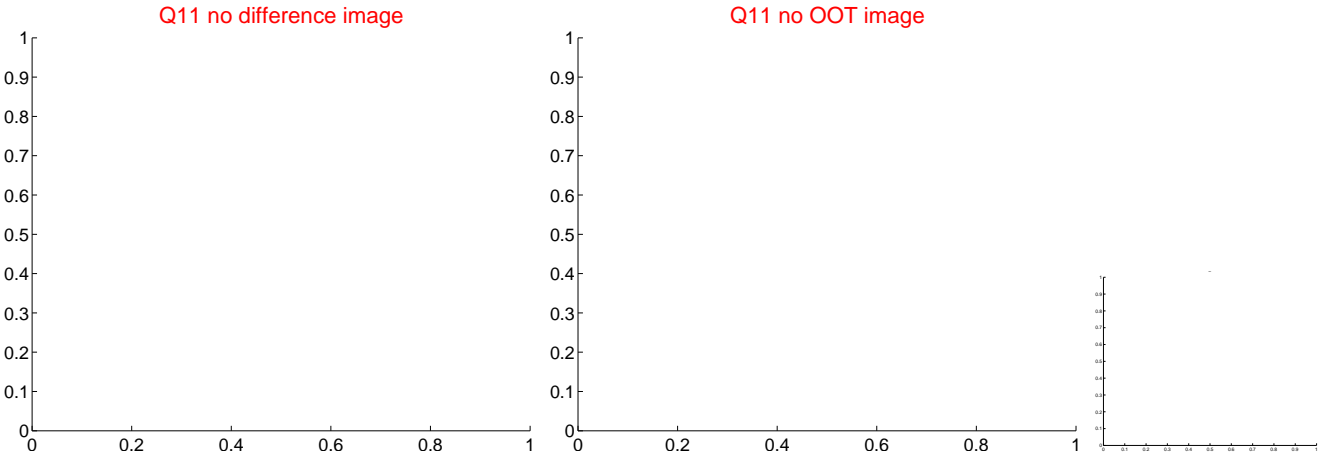
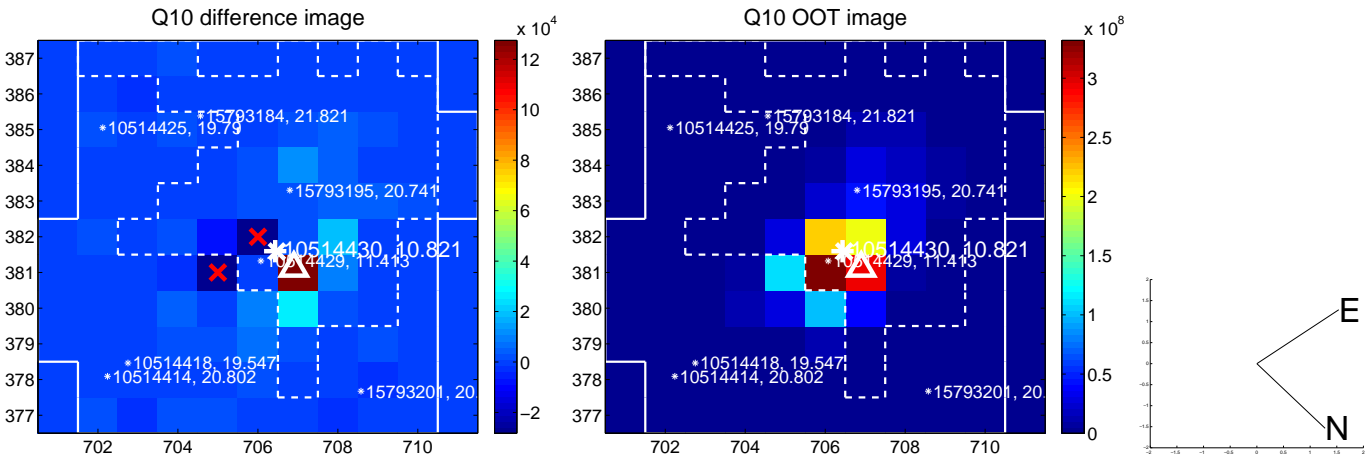
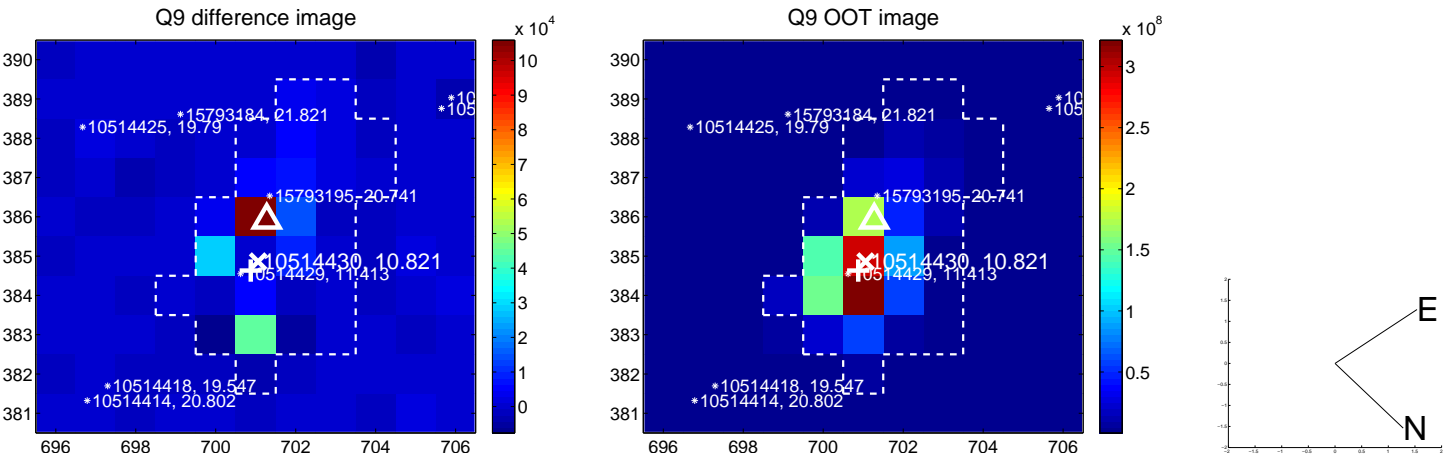
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



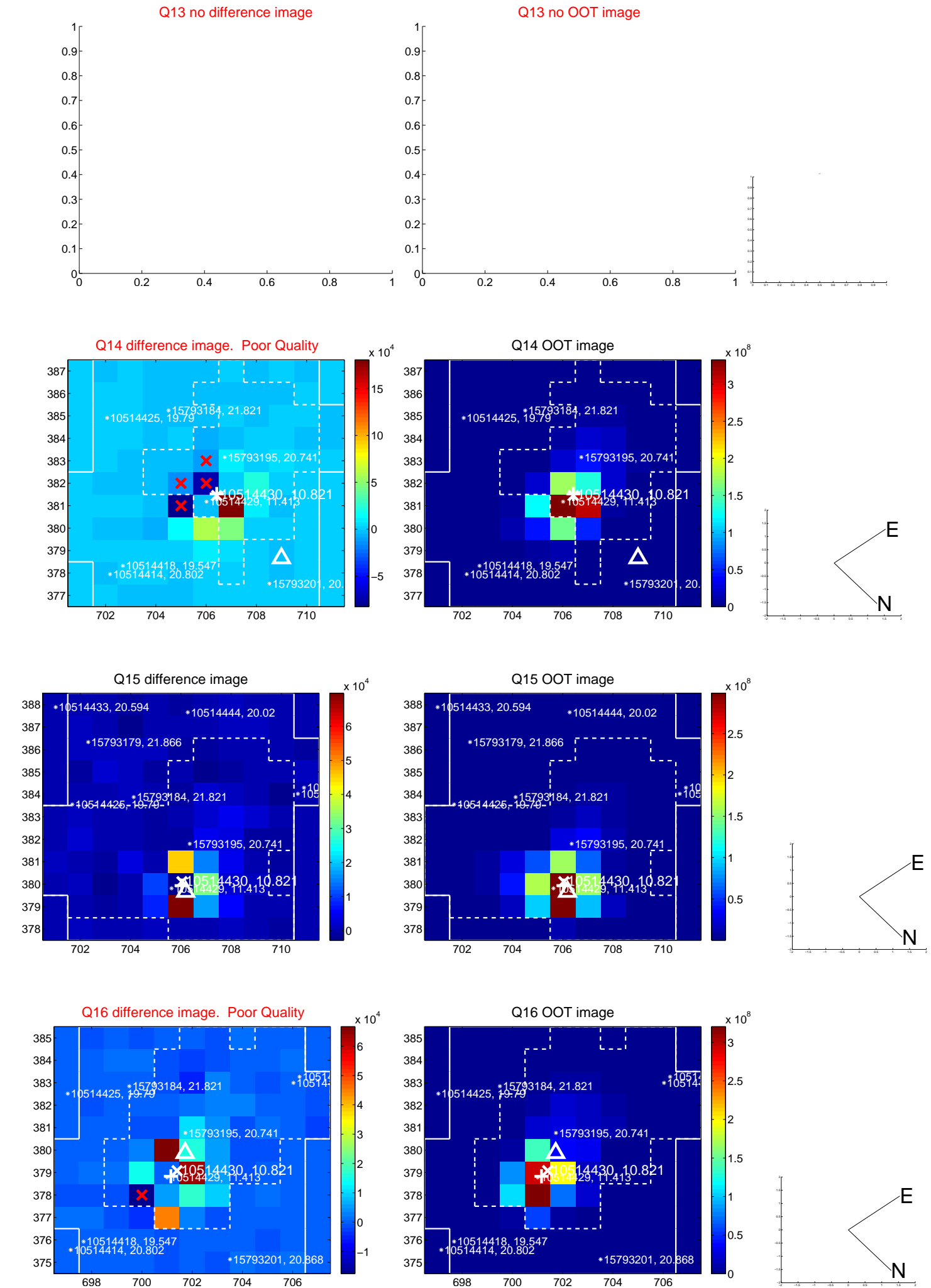
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



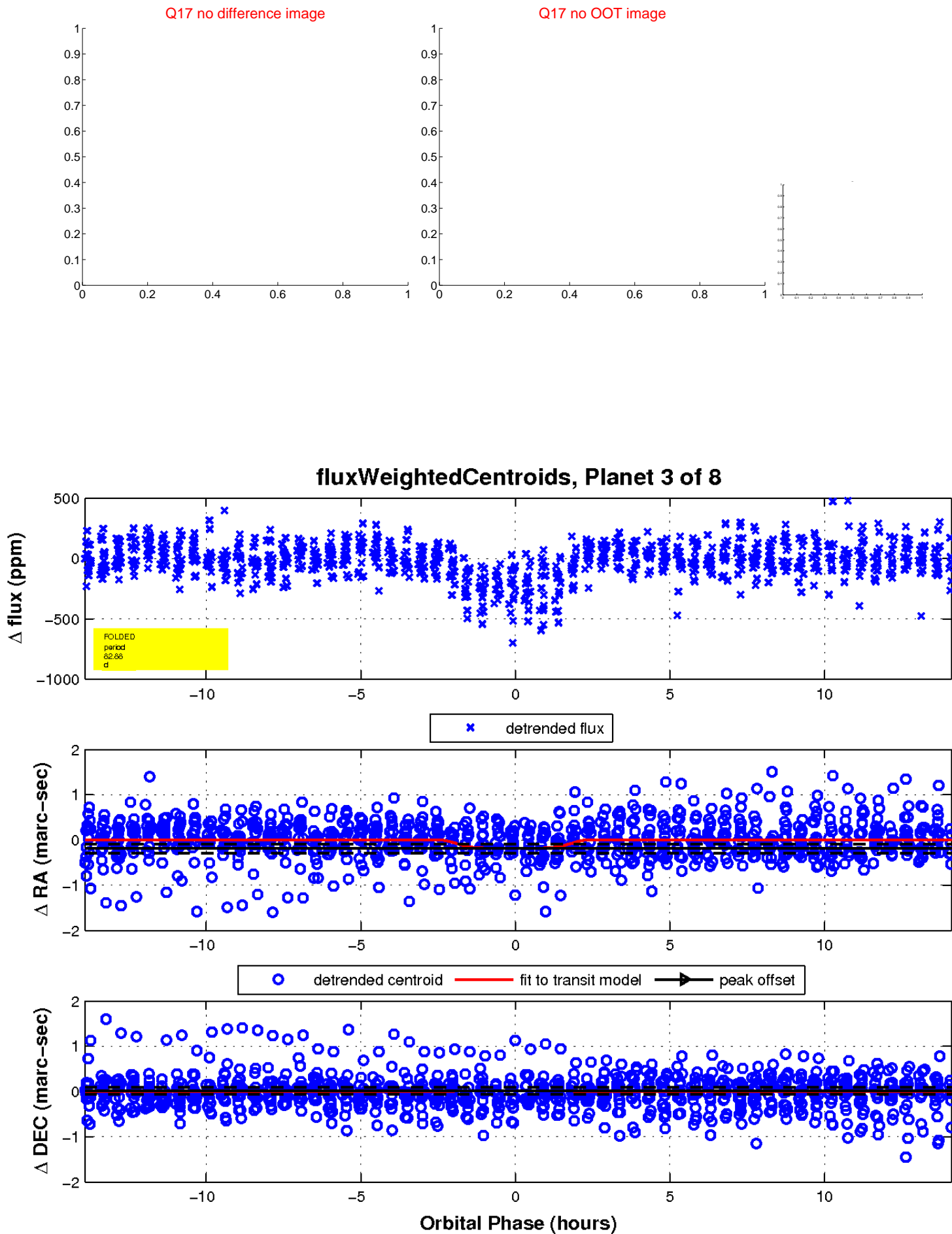
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

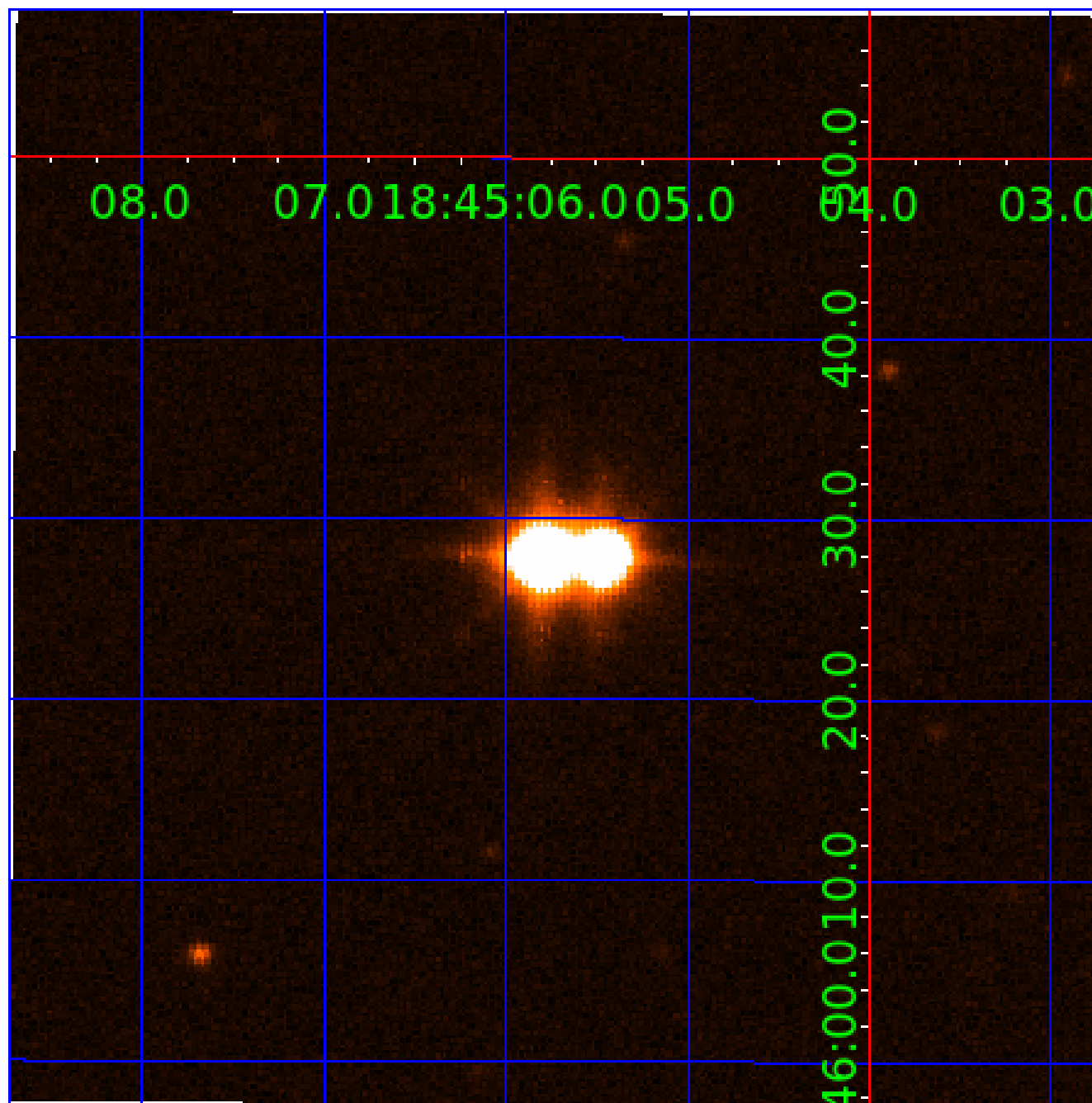


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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

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

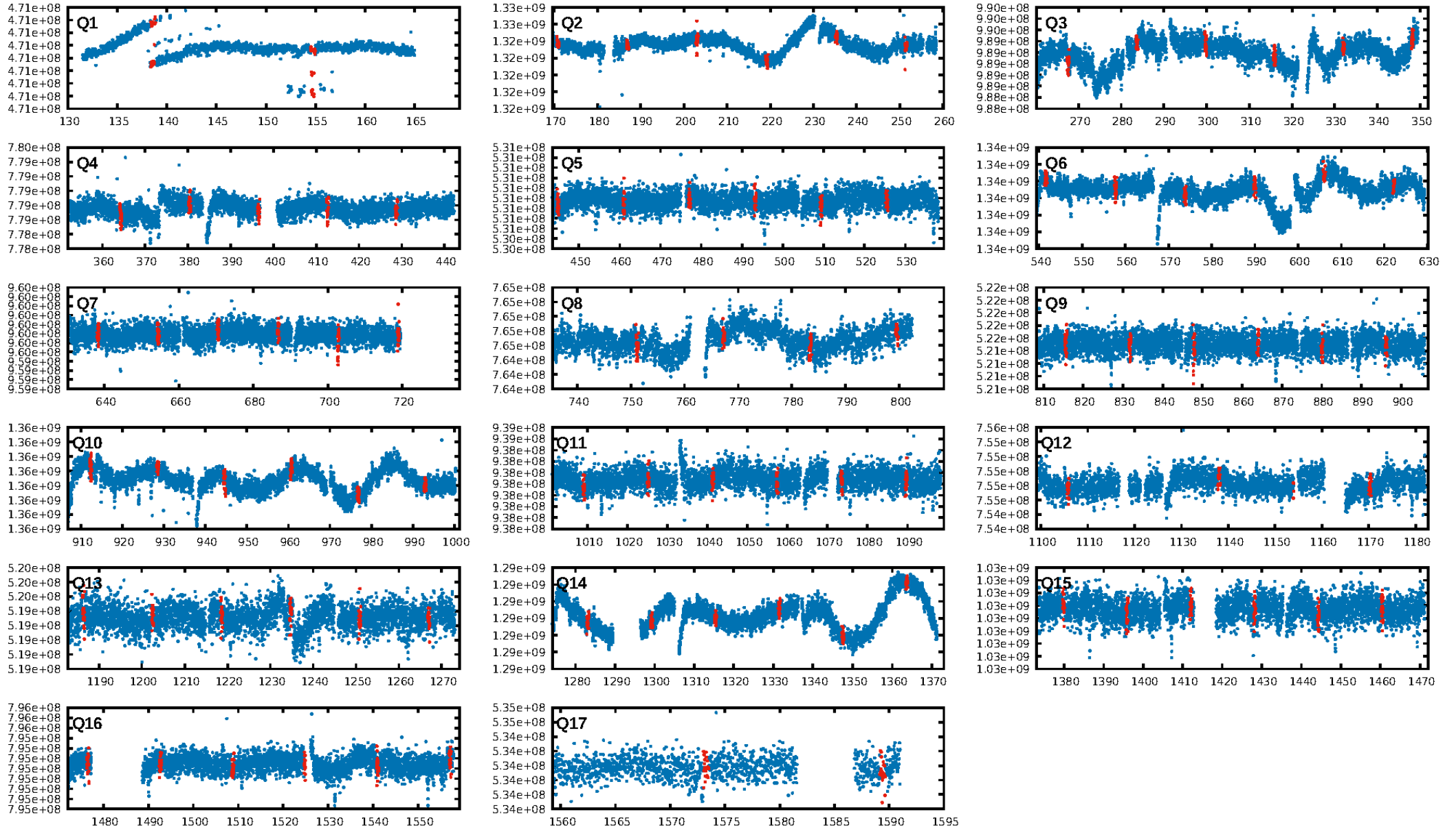
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010514430-04

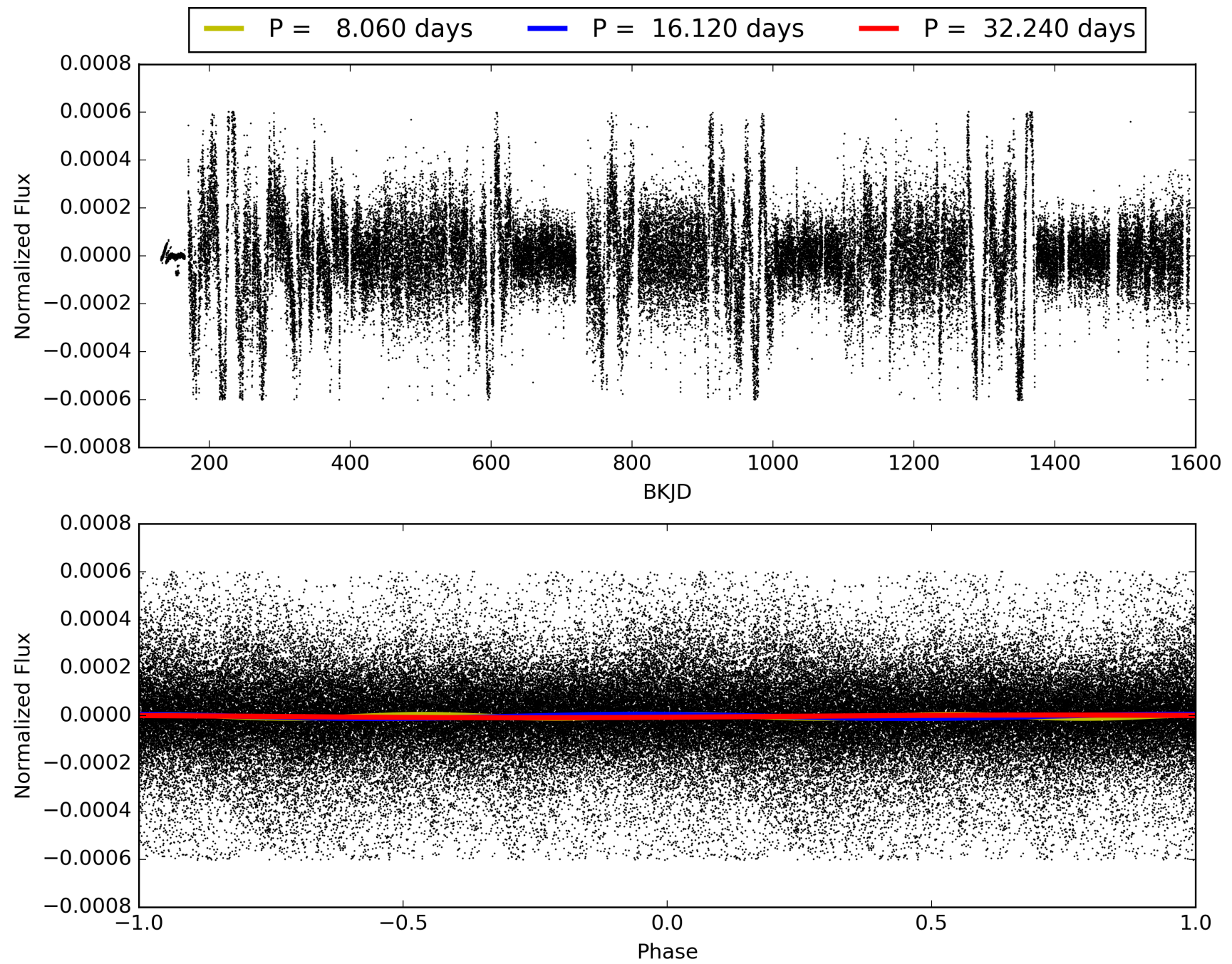
No Significant Match Found

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

TCE 010514430-04, PDC Light Curves

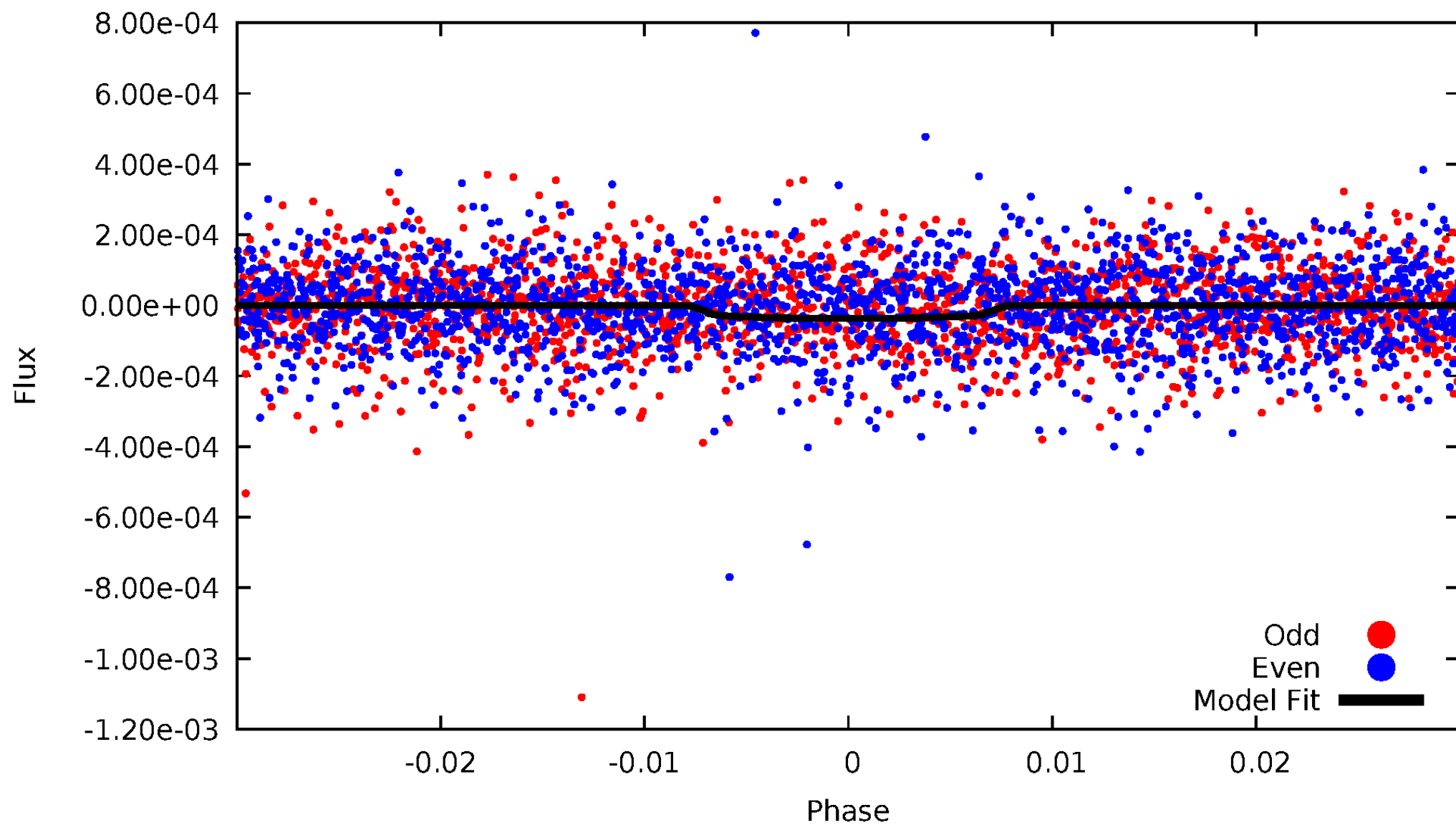


TCE 010514430-04



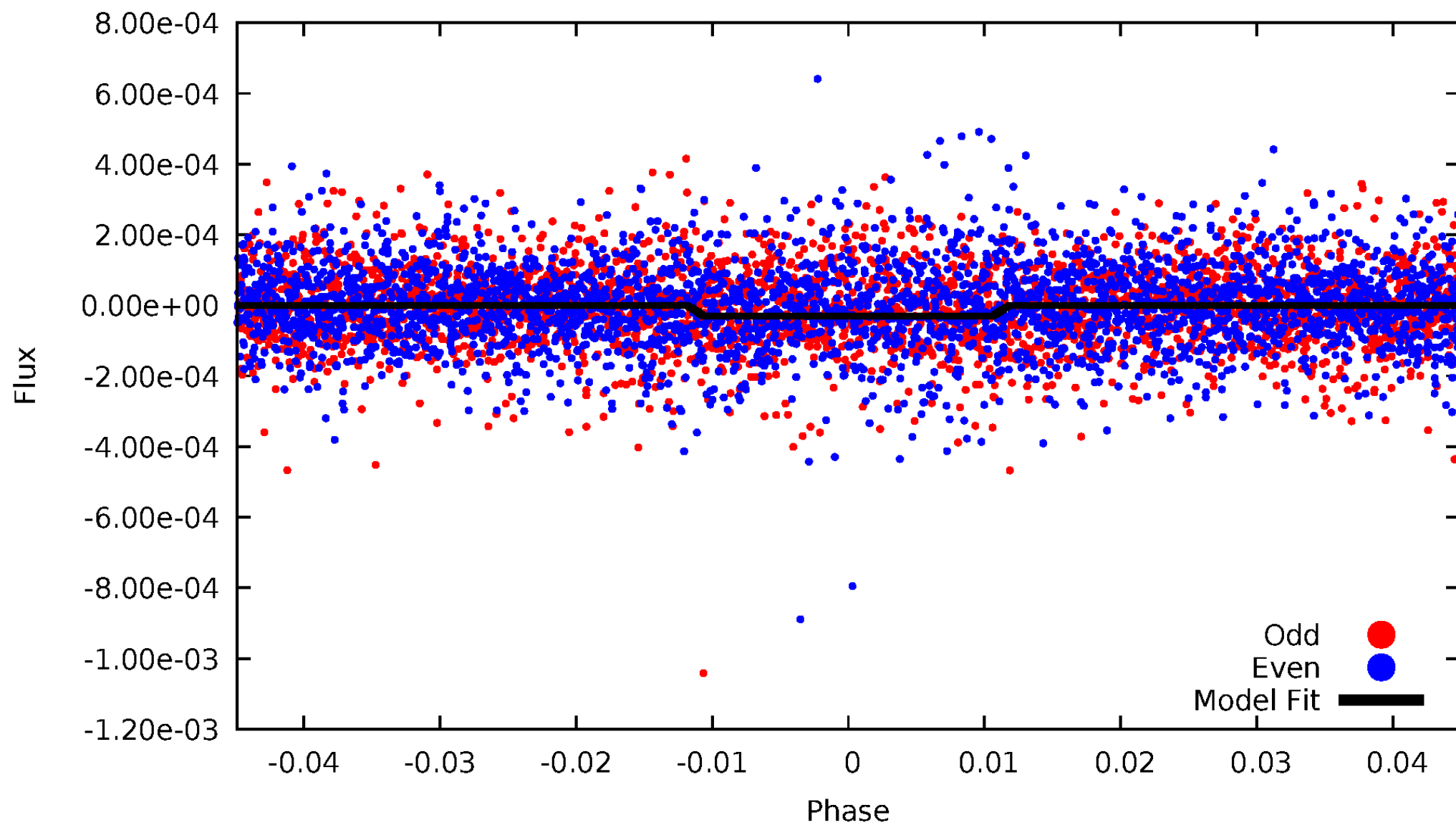
DV Odd/Even

TCE 010514430-04



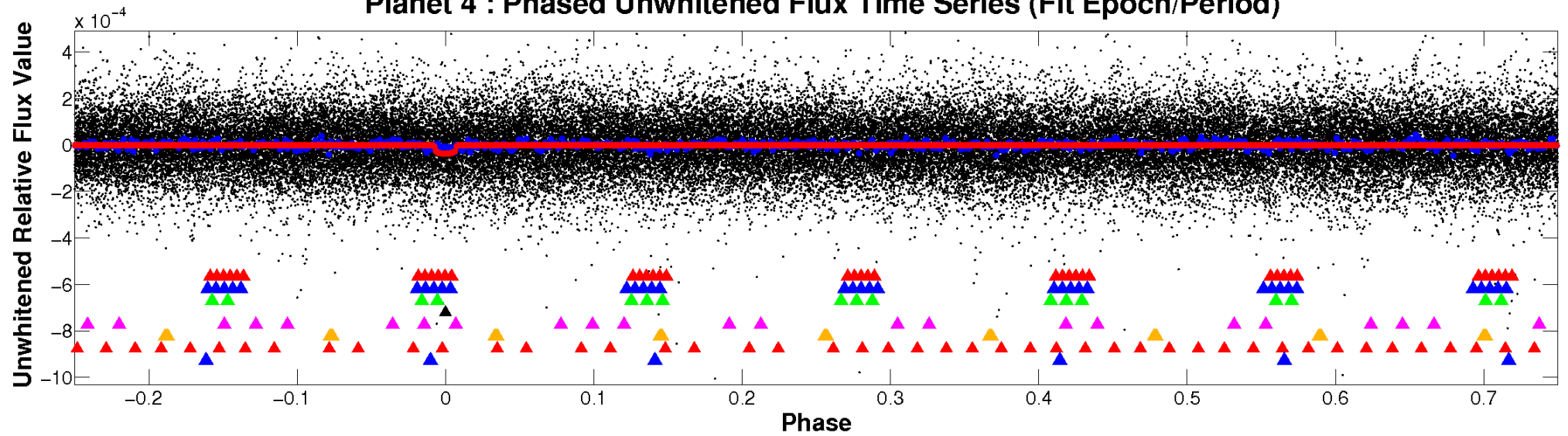
ALT Odd/Even

TCE 010514430-04

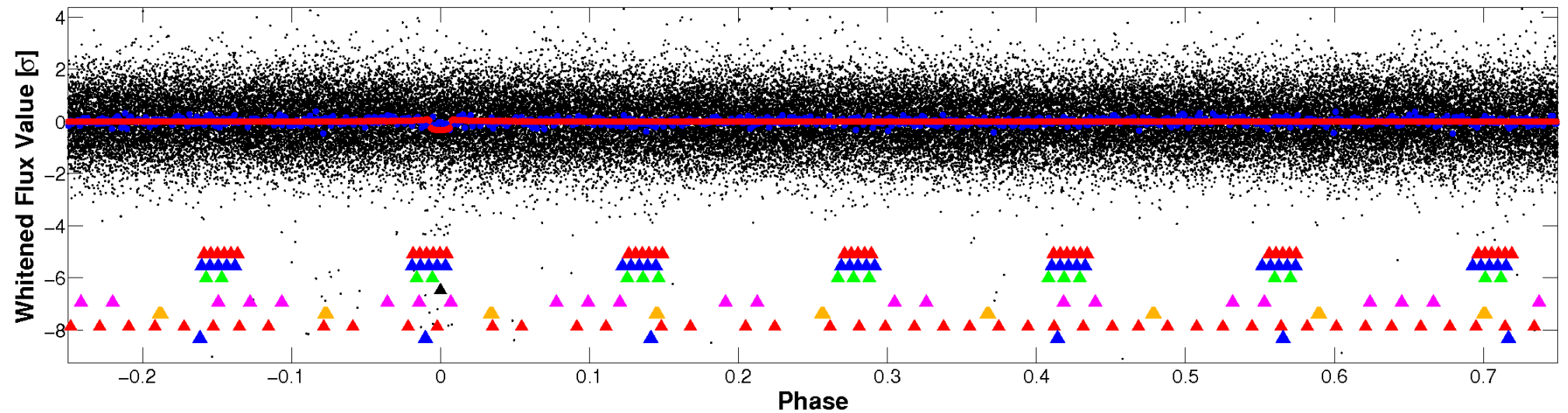


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

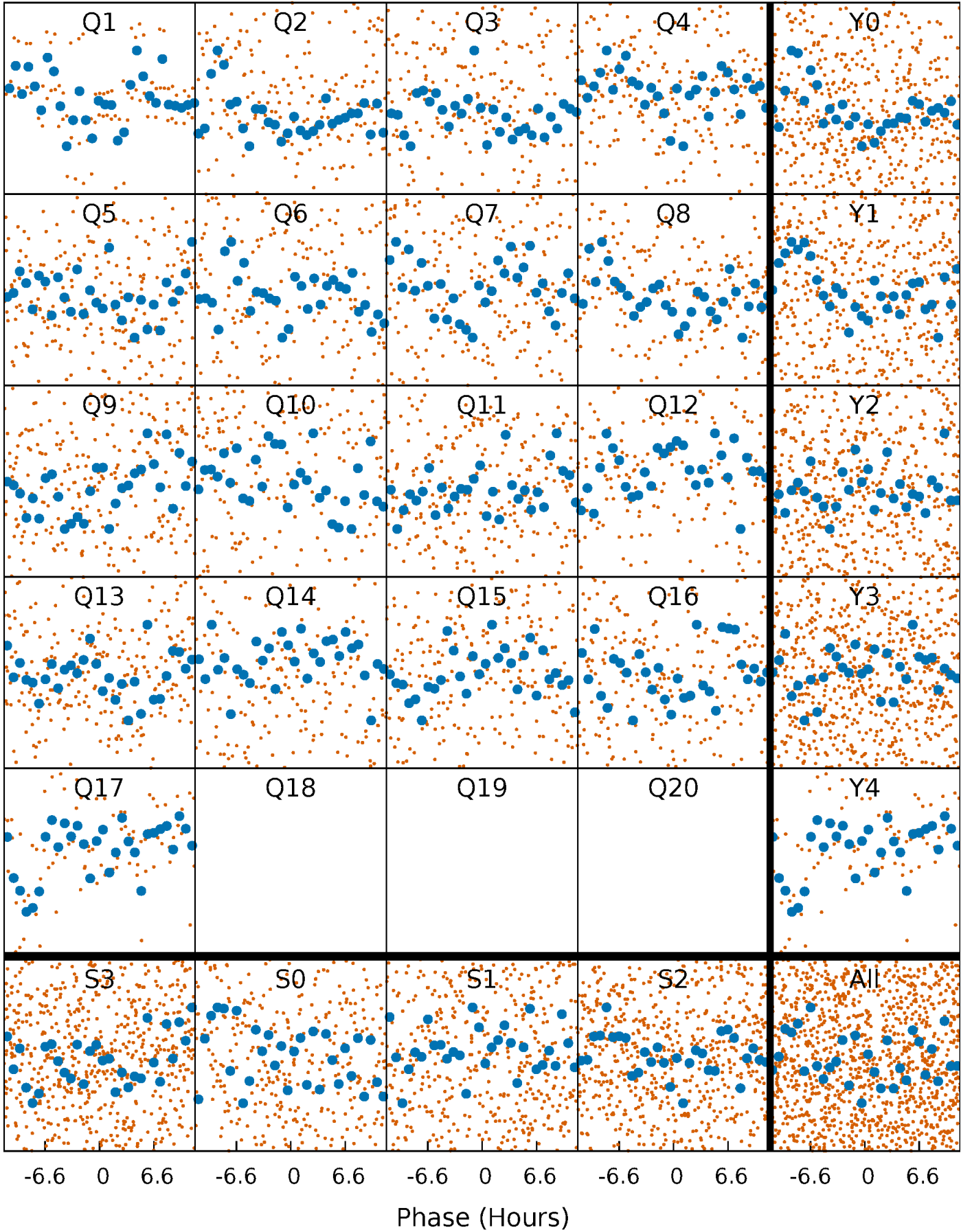


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



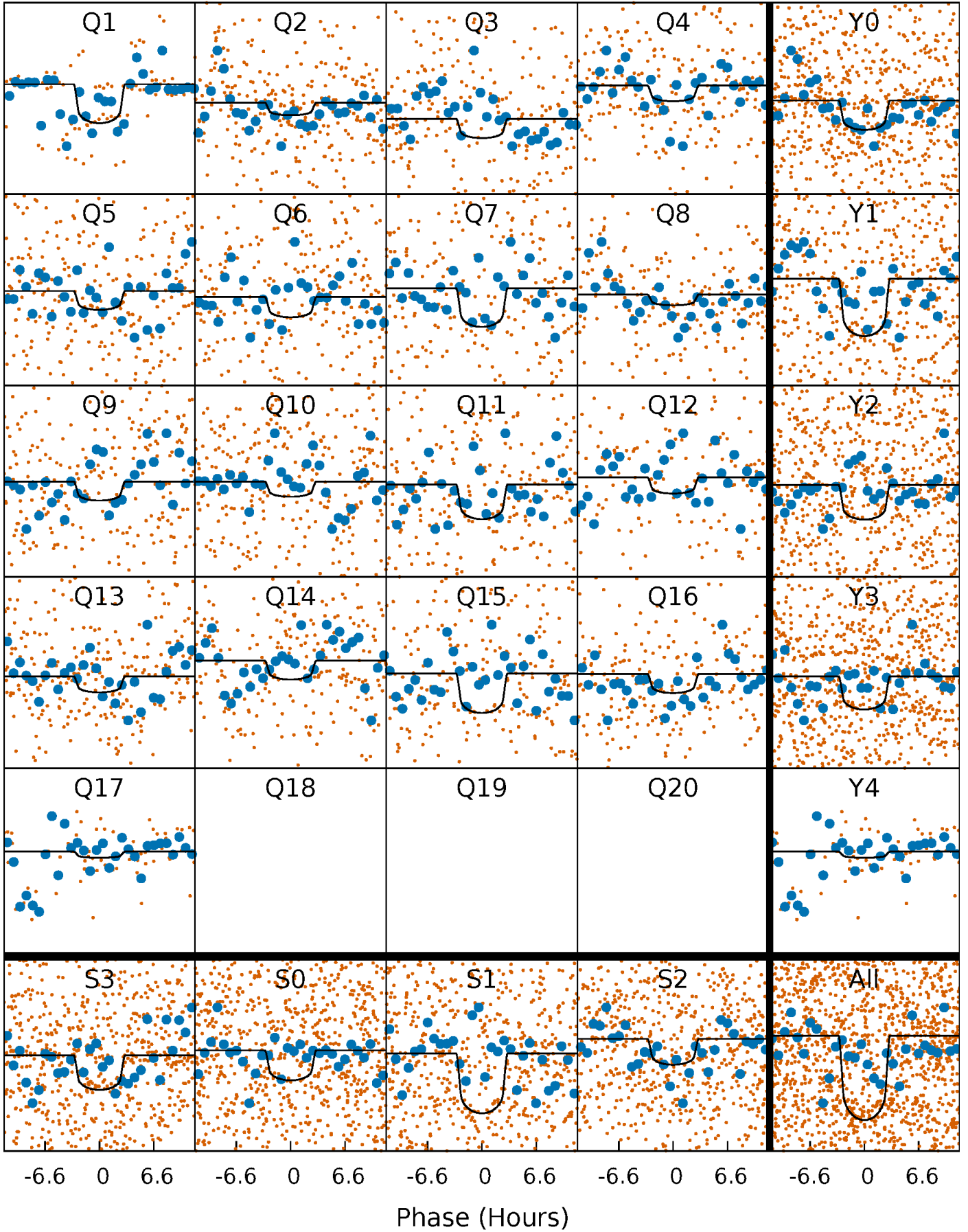
PDC Quarter-Phased Transit Curves

TCE 010514430-04 P= 16.119939 Days $T_0=138.604716$ (BKJD)



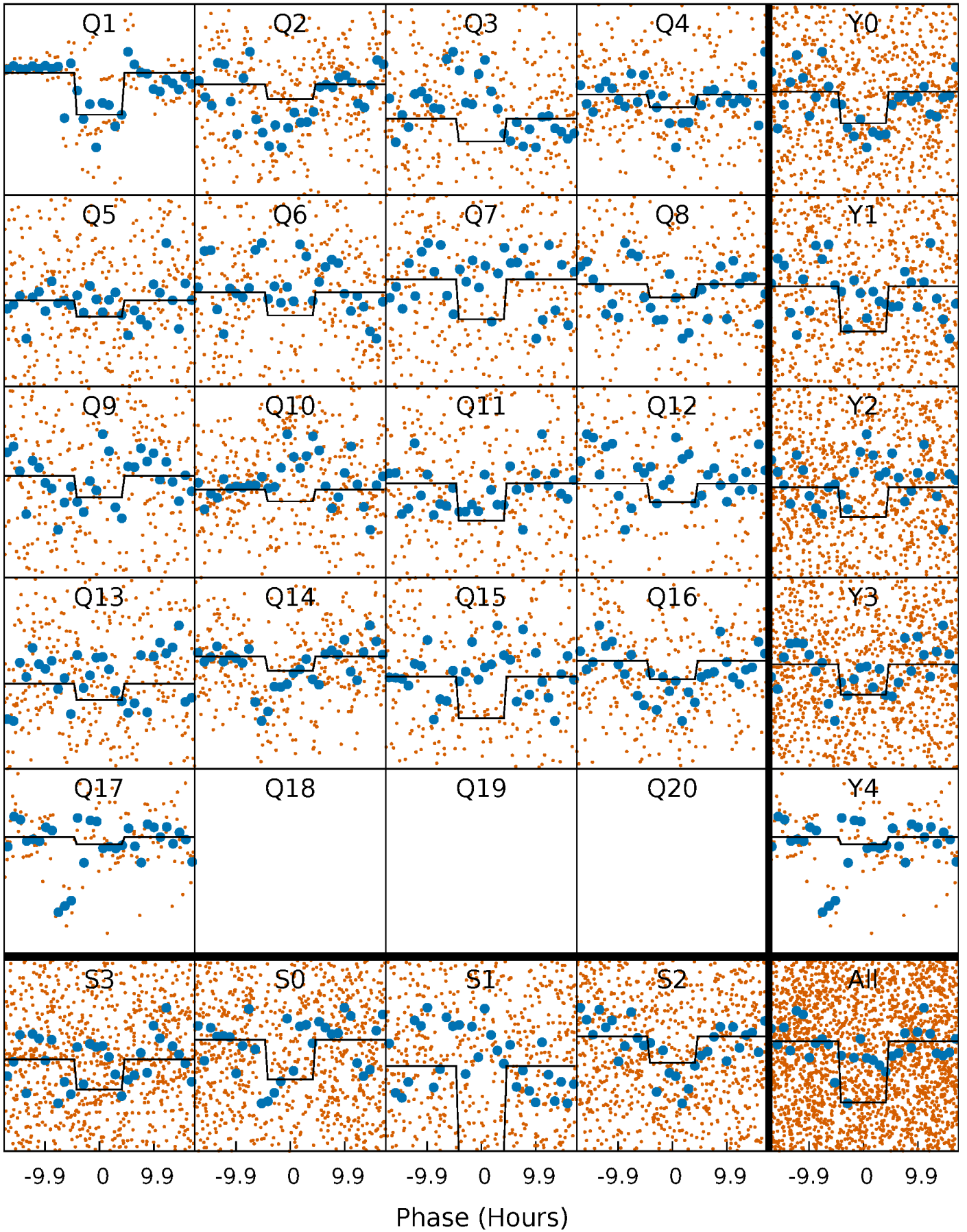
DV Quarter-Phased Transit Curves

TCE 010514430-04 P= 16.119939 Days $T_0=138.604716$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

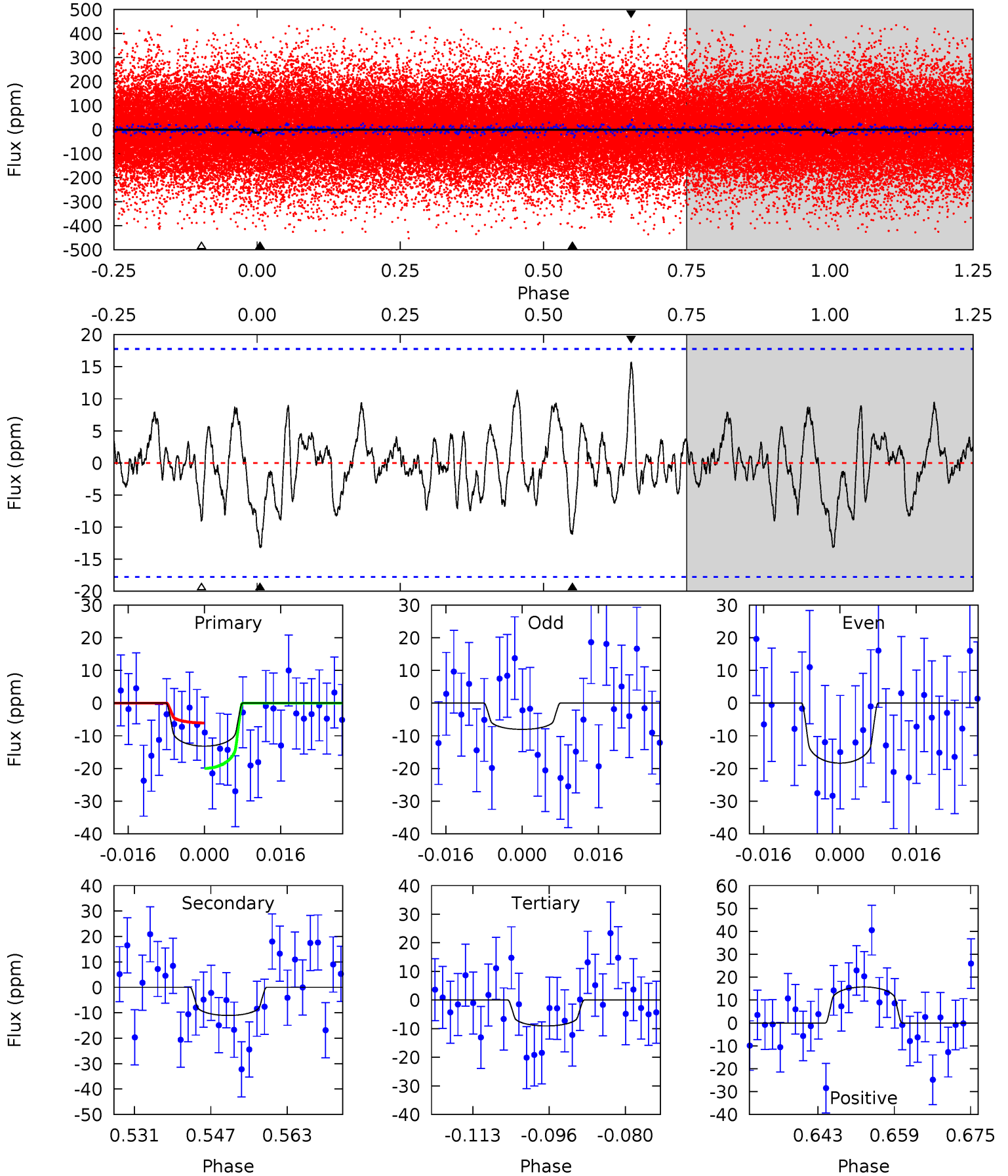
TCE 010514430-04 P= 16.119292 Days $T_0=138.570013$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-04, P = 16.119939 Days, E = 122.484777 Days

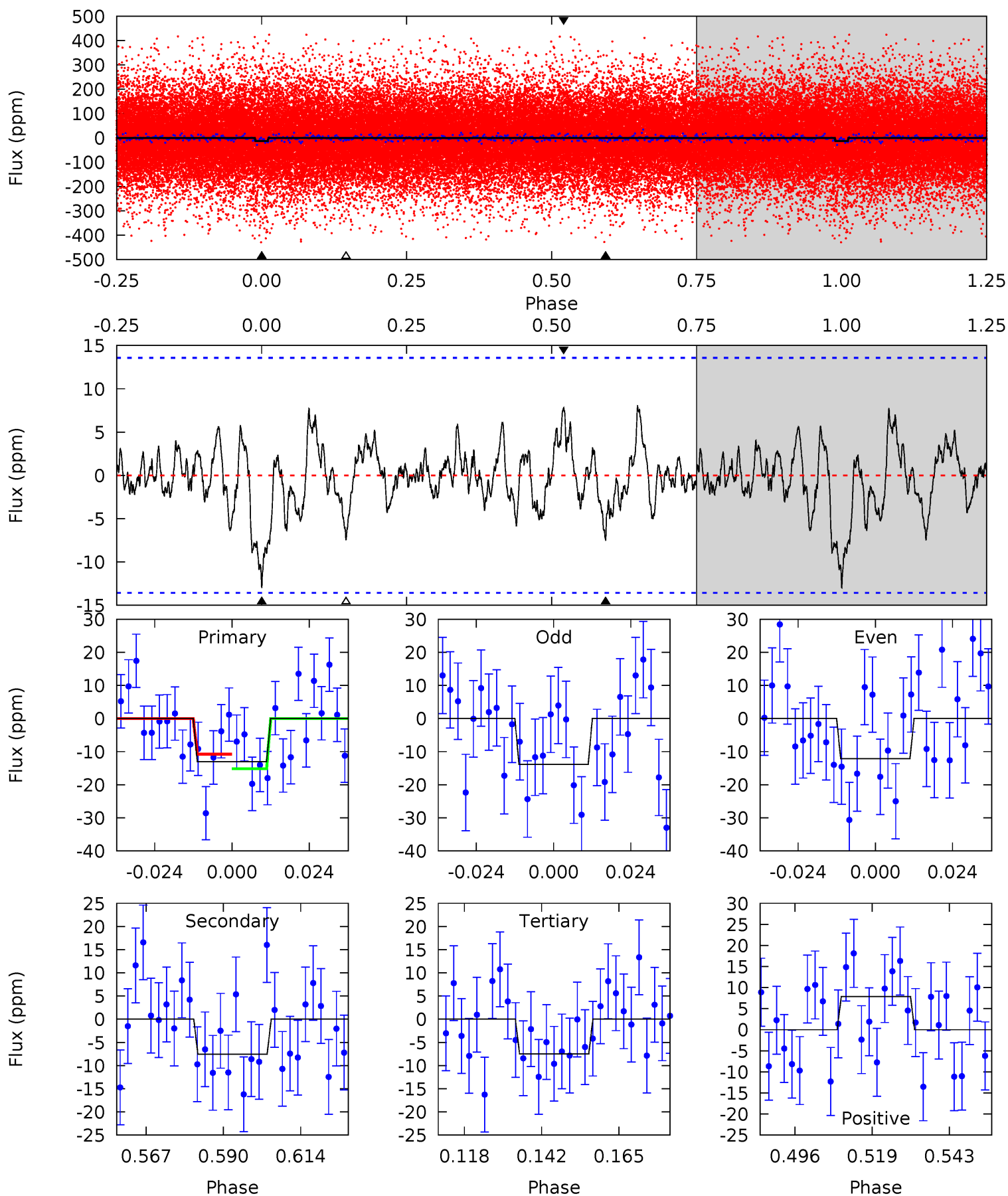
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.66	3.07	2.51	4.36	4.93	2.41	1.14	1.15	-0.70	0.56	-1.29	1.43	0.93	0.54	1.94



Alt Model-Shift Uniqueness Test

010514430-04, P = 16.119292 Days, E = 122.450721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.66	2.70	2.68	2.81	4.86	2.26	1.00	1.98	1.84	0.02	-0.11	0.31	2.19	0.38	0.78



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 4	$1.13^{+0.23}_{-0.24}$	1243^{+23}_{-22}	4256^{+498}_{-365}	73^{+55}_{-28}
Alt.	-8 ± 3	$0.94^{+0.24}_{-0.22}$	1244^{+22}_{-24}	4232^{+585}_{-446}	70^{+67}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

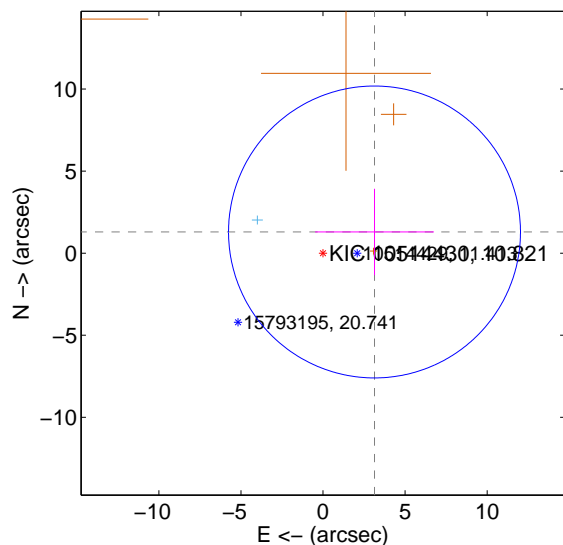
Supplemental centroid analysis for 010514430-04. **Kepler magnitude: 10.82.** Transit SNR 14.41

There are 1 quarters with good PRF difference image offsets

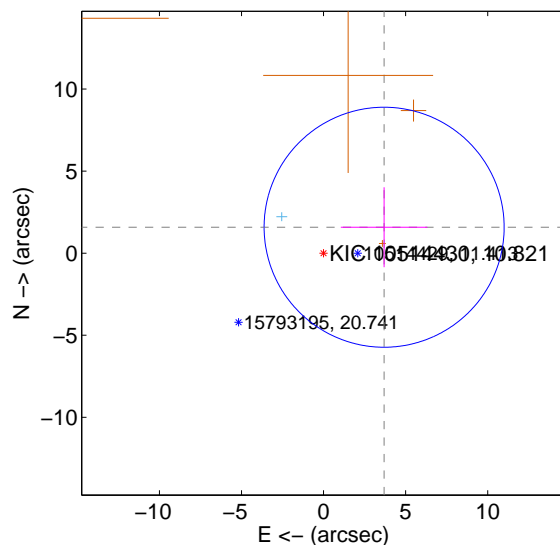
The direct PRF centroid is offset from the target star catalog position by about 1.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.391 ± 2.964	1.14	-3.135 ± 3.619	1.292 ± 2.631
PRF-fit source offset from KIC position	4.012 ± 2.437	1.65	-3.688 ± 2.637	1.580 ± 2.437
photometric centroid source offset	1.15 ± 0.84	1.37	-0.70 ± 0.96	-0.92 ± 0.76

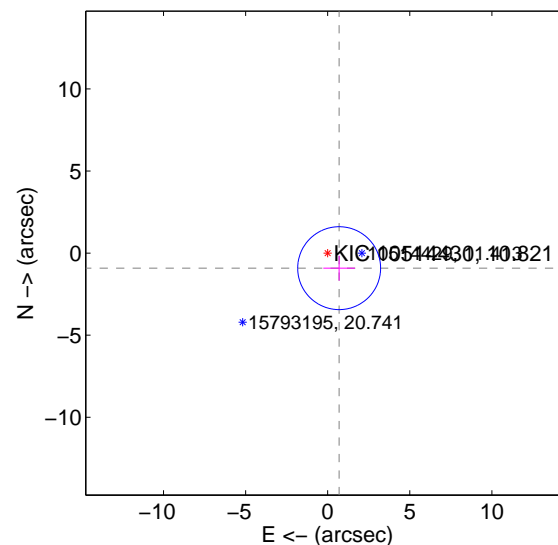
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

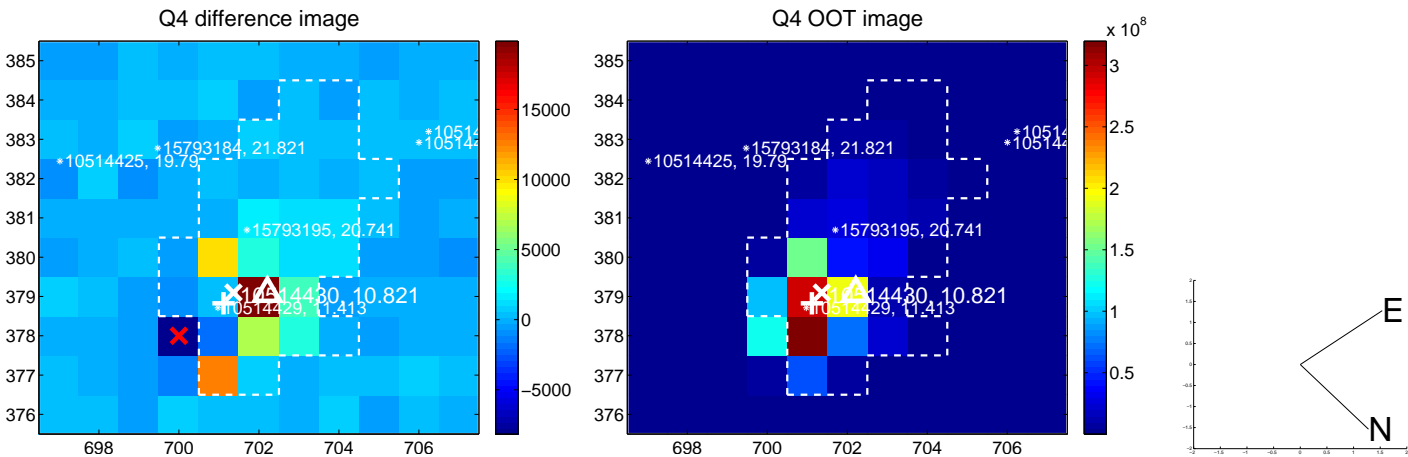
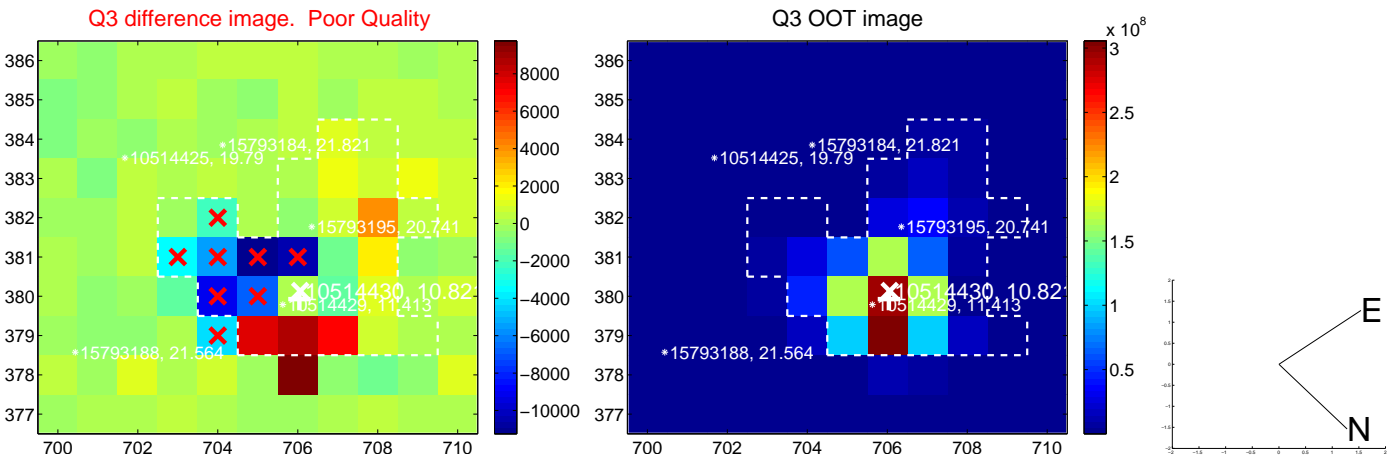
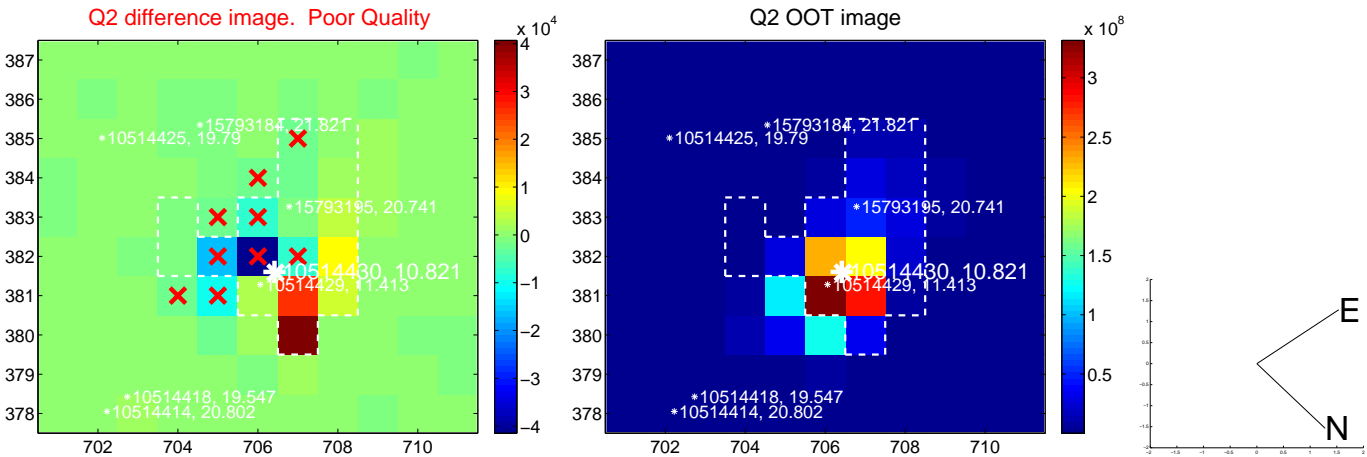
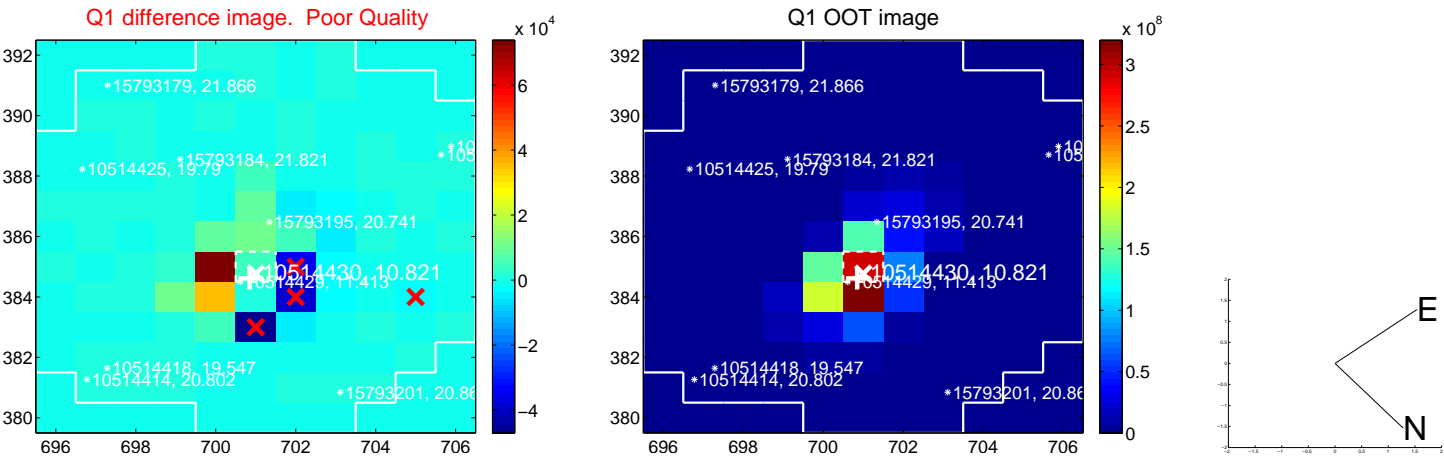


offset from photometric centroids

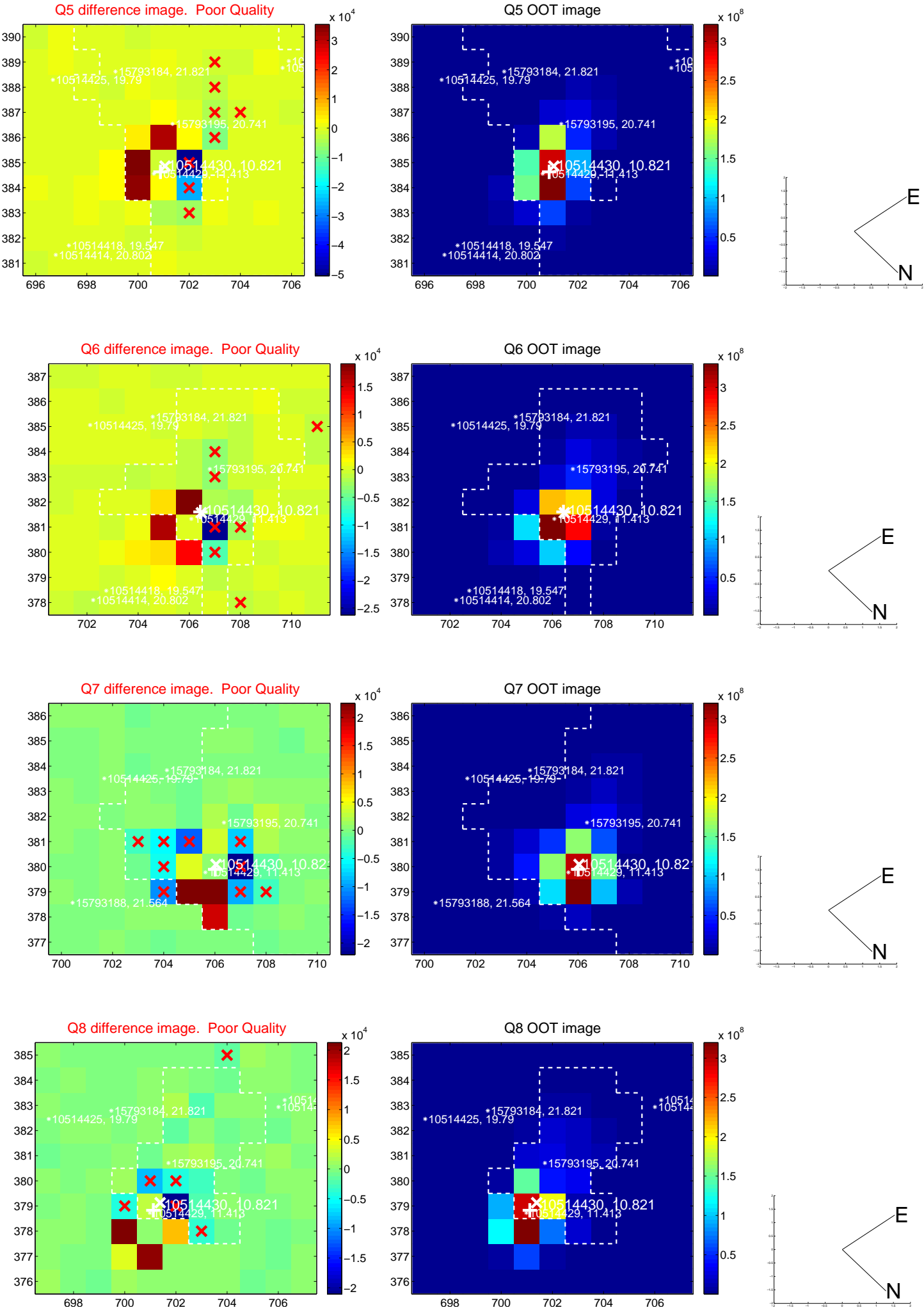


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

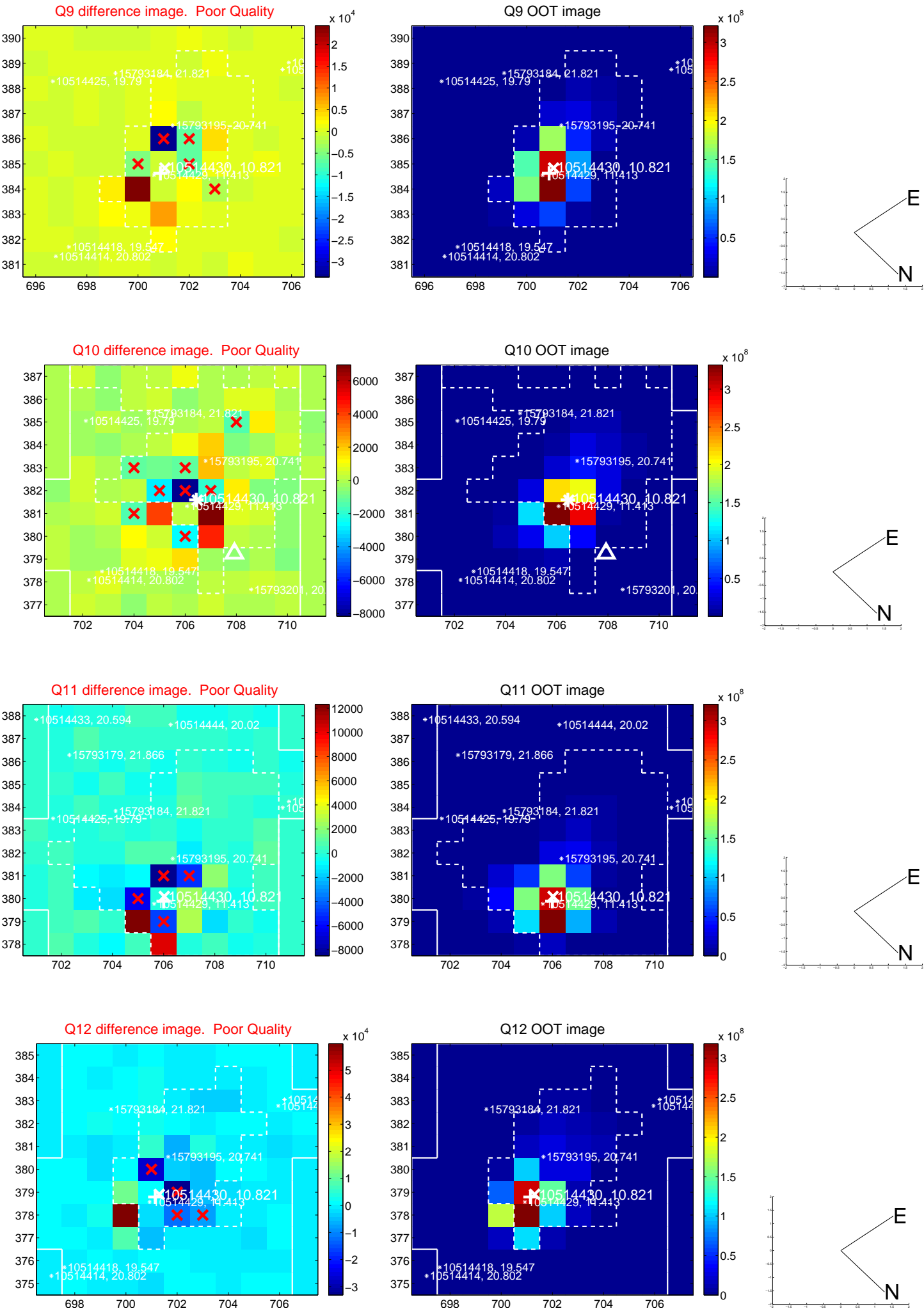
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



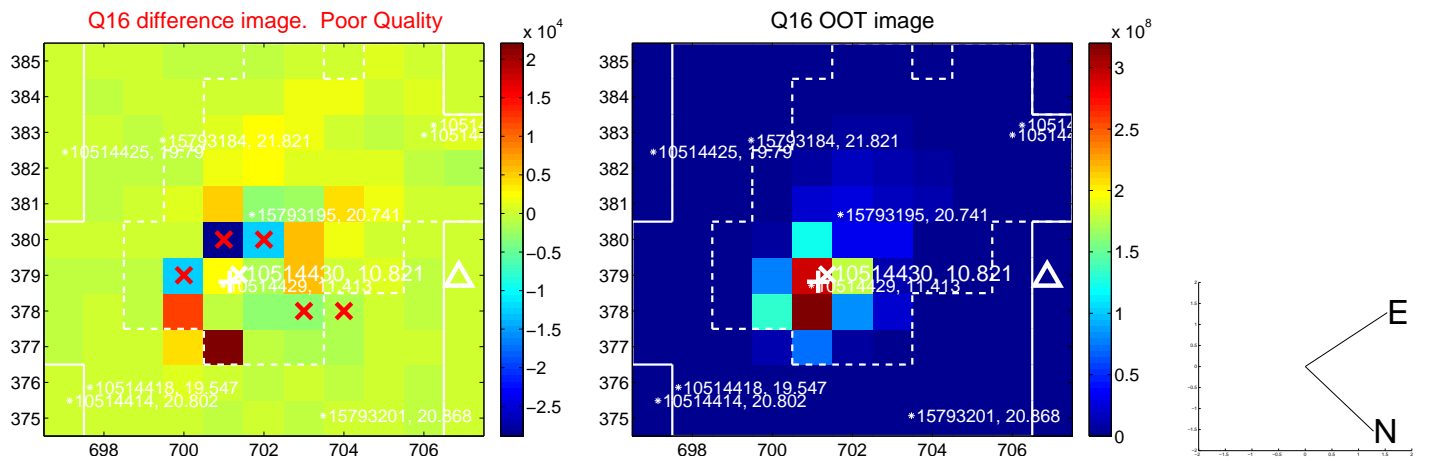
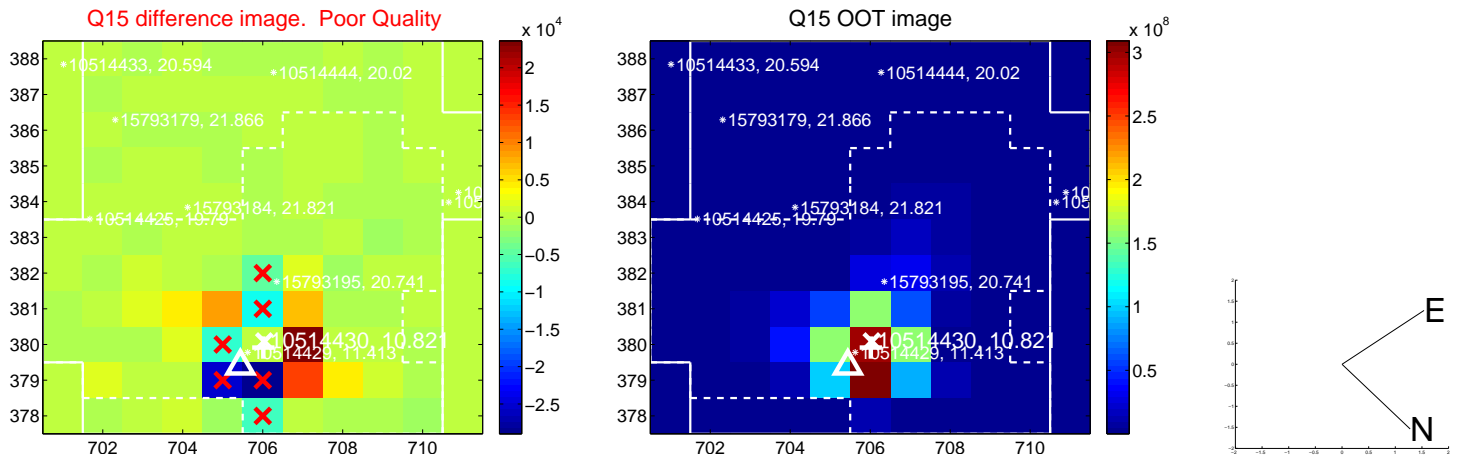
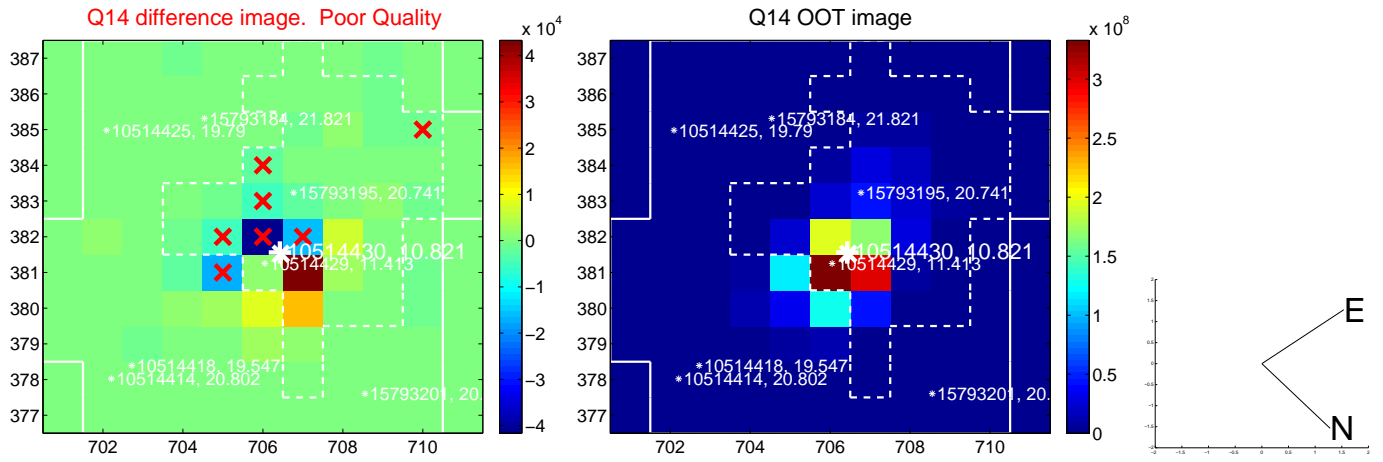
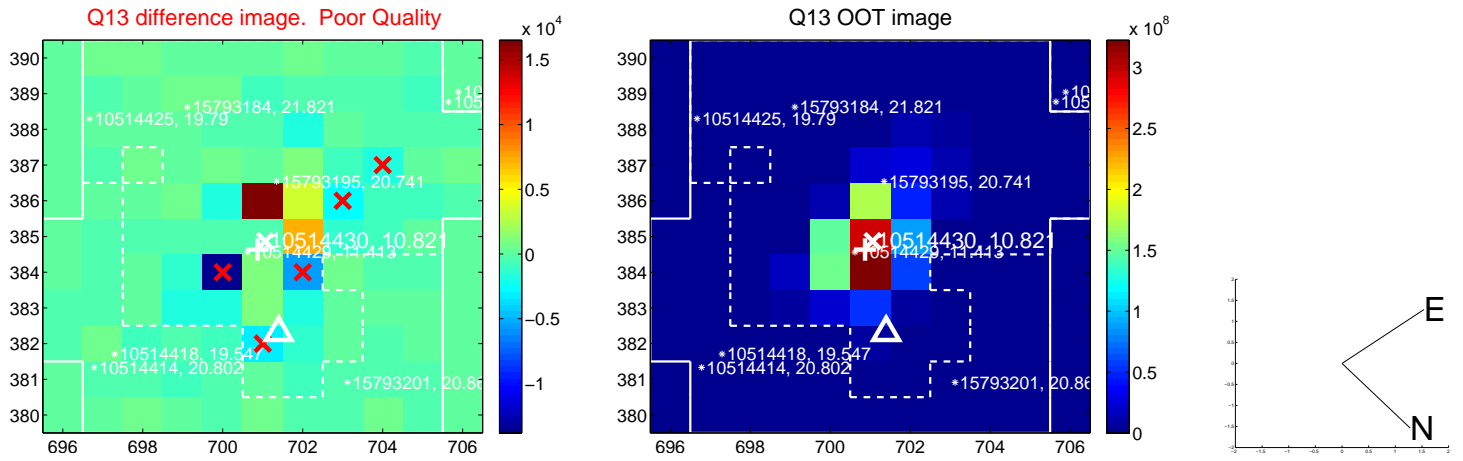
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



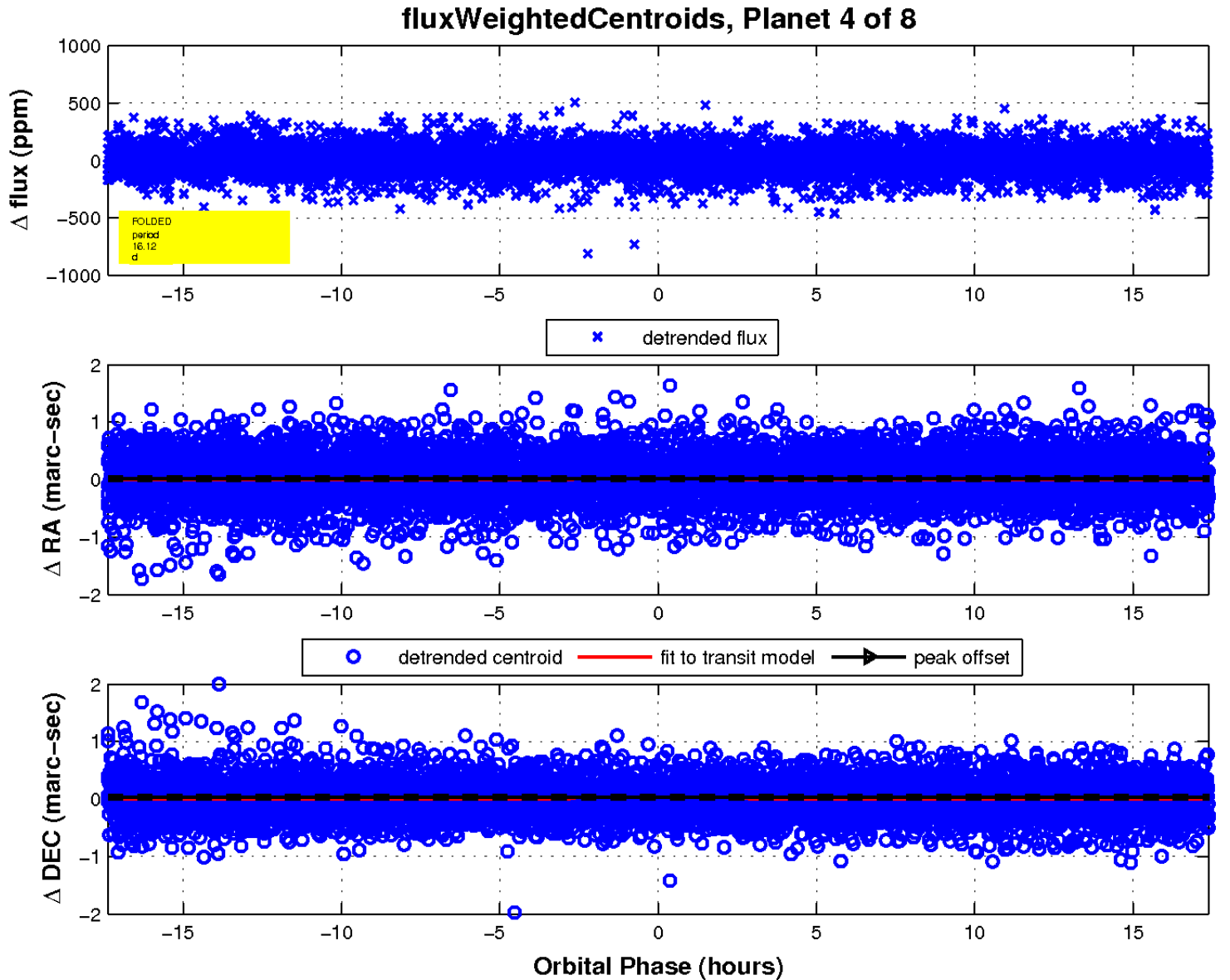
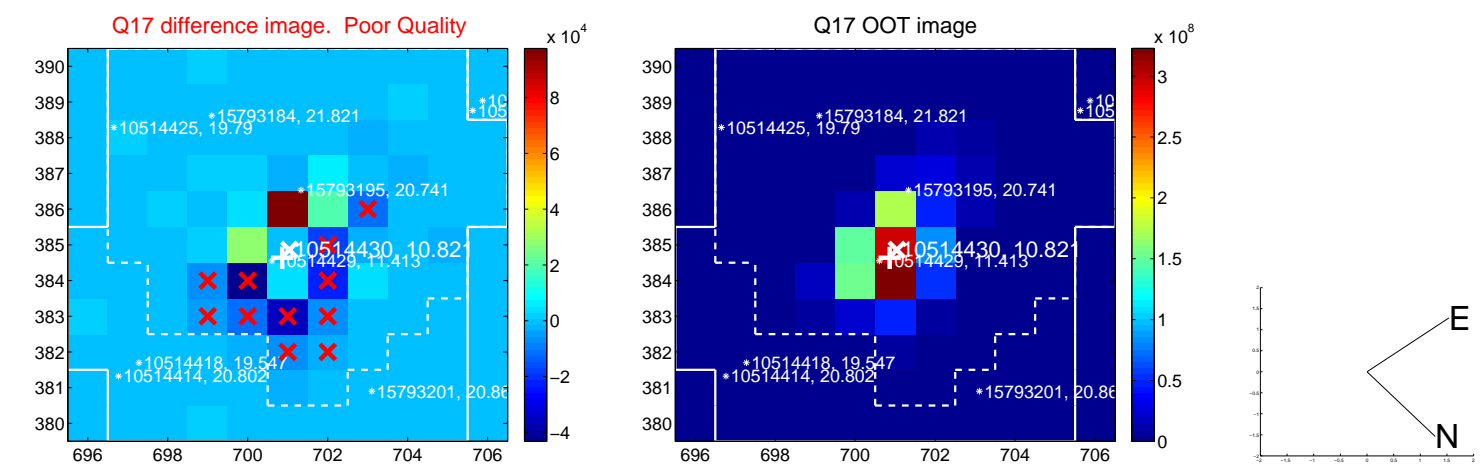
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

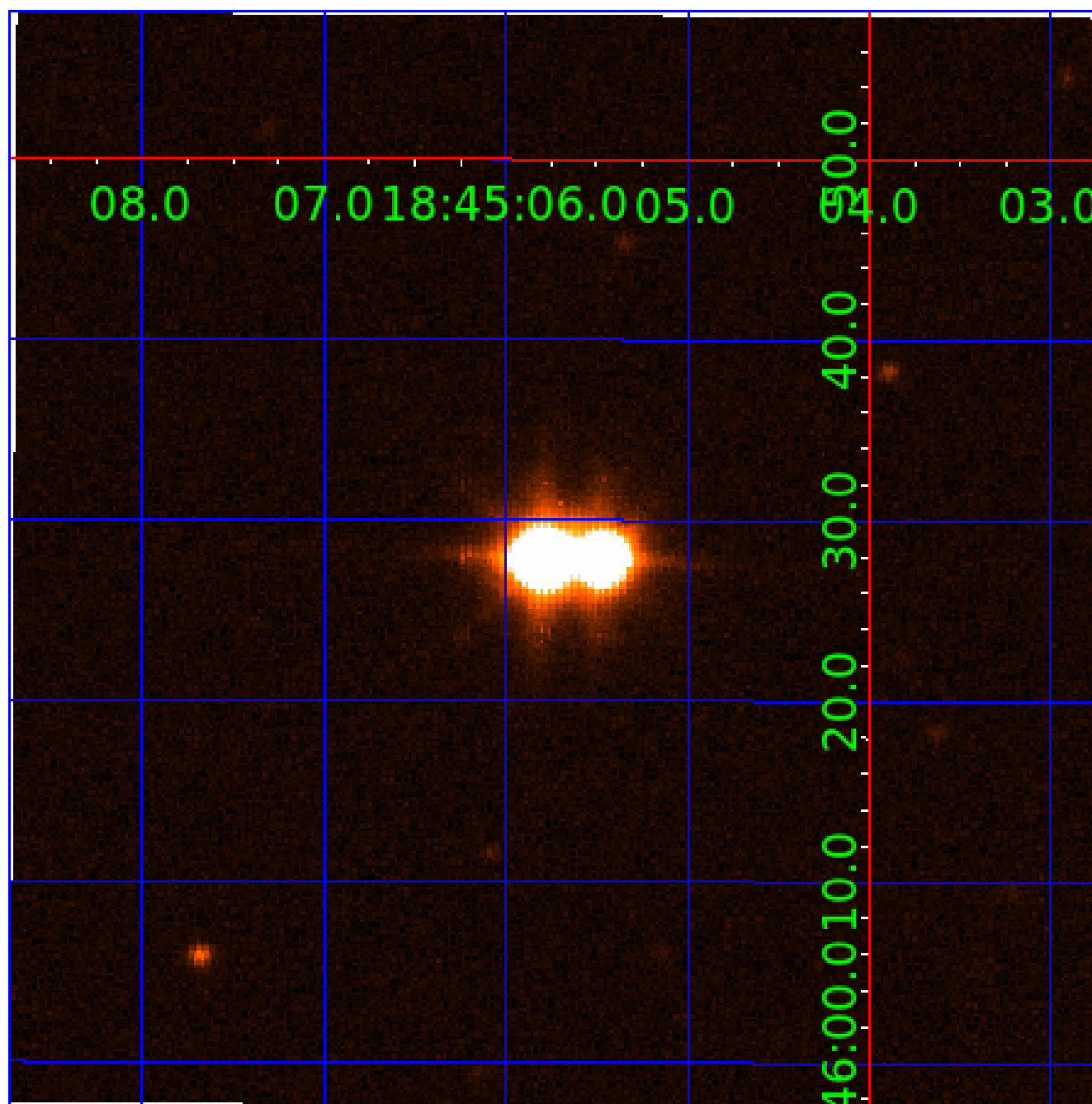


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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 010514430-05

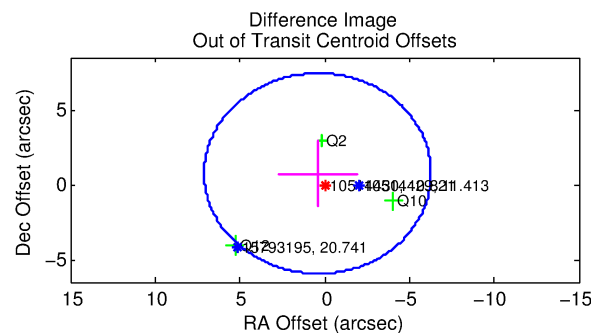
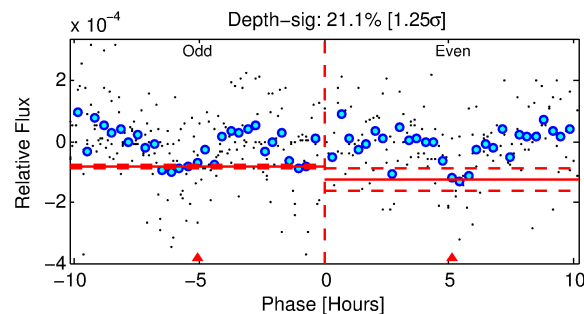
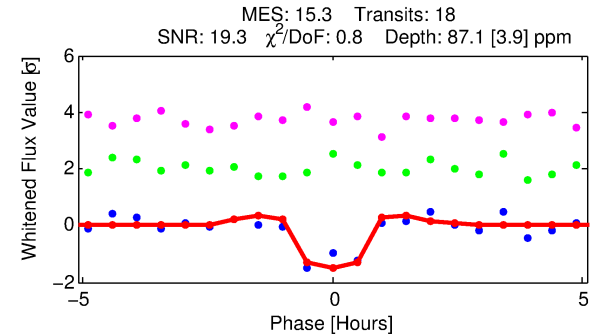
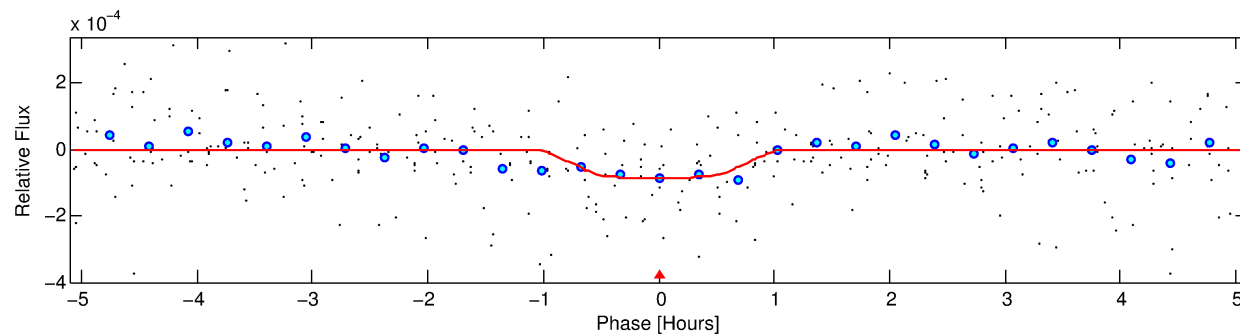
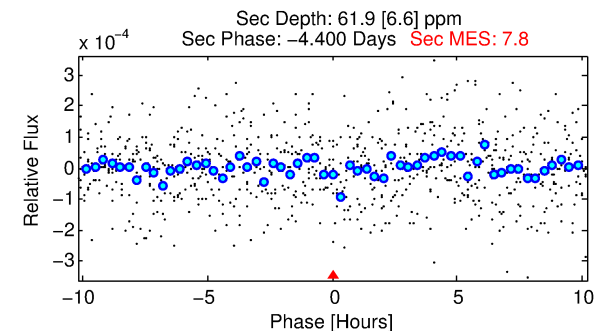
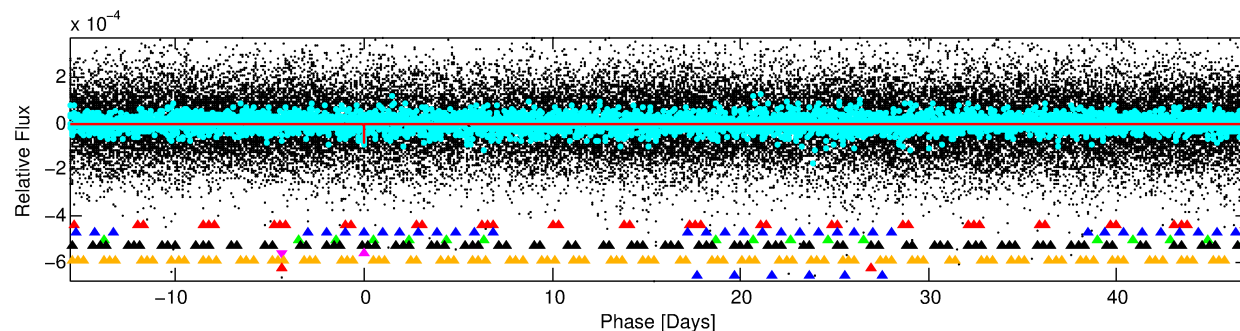
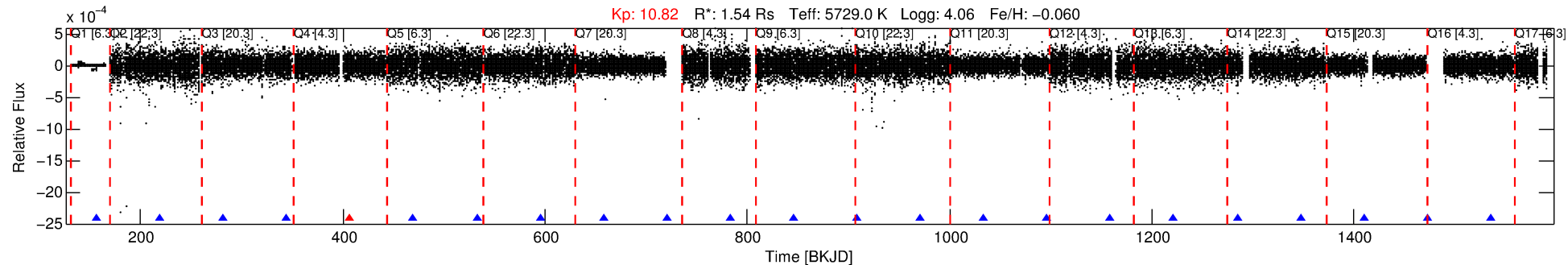
No Significant Match Found

DV One-Page Summary

KIC: 10514430 Candidate: 5 of 8 Period: 62.651 d

KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 62.65054 [0.00033] d
Epoch = 156.6657 [0.0017] BKJD
Rp/R* = 0.0102 [0.0039]
a/R* = 130.60 [252.57]
b = 0.90 [0.42]
Seff = 24.24 [2.10]
Teq = 566 [12] K
Rp = 1.71 [0.66] Re
a = 0.3083 [0.0137] AU
Ag = 1102.35 [857.48] [1.28σ]
Teffp = 5041 [980] K [4.57σ]

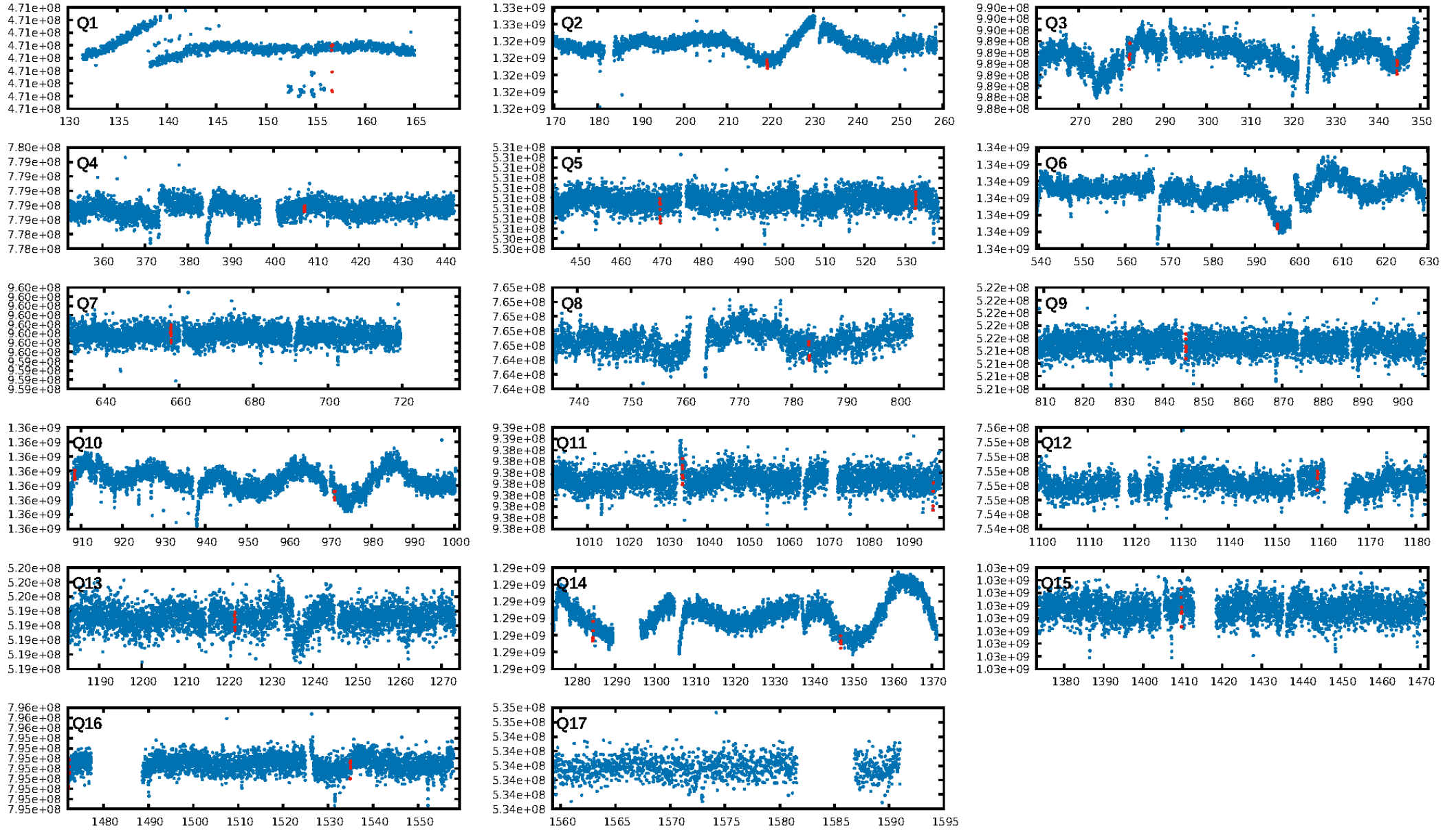
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [113.68σ]
LongPeriod-sig: 100.0% [97.03σ]
ModelChiSquare2-sig: 68.8%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 4.08e-21
RollingBand-fgt: 0.94 [16/17]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.0%
Centroid-so: 1.816 arcsec [1.62σ]
OotOffset-rm: 0.851 arcsec [0.38σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 0.741 arcsec [0.35σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.85 [11/13]

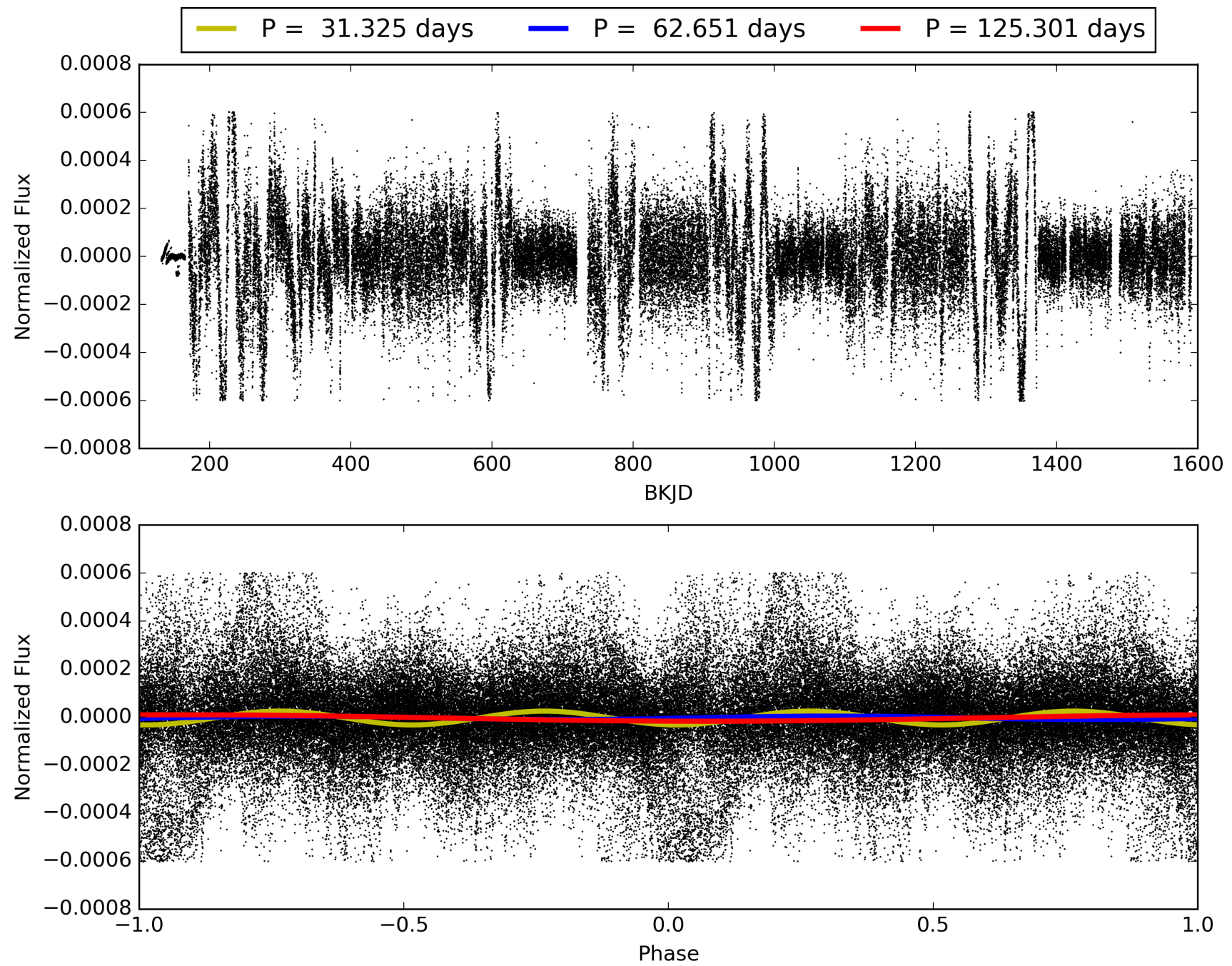
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:35:12 Z

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

TCE 010514430-05, PDC Light Curves

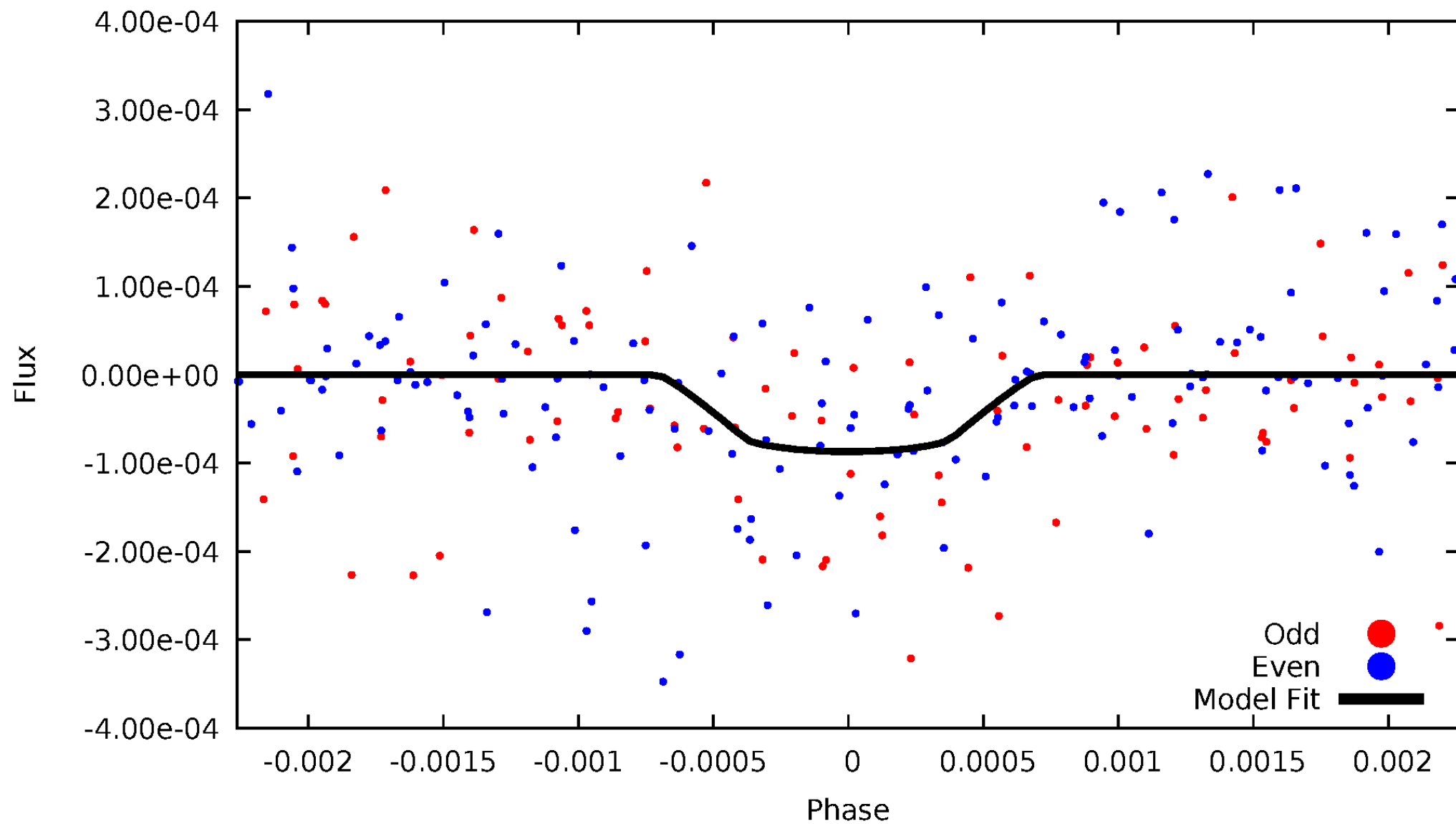


TCE 010514430-05



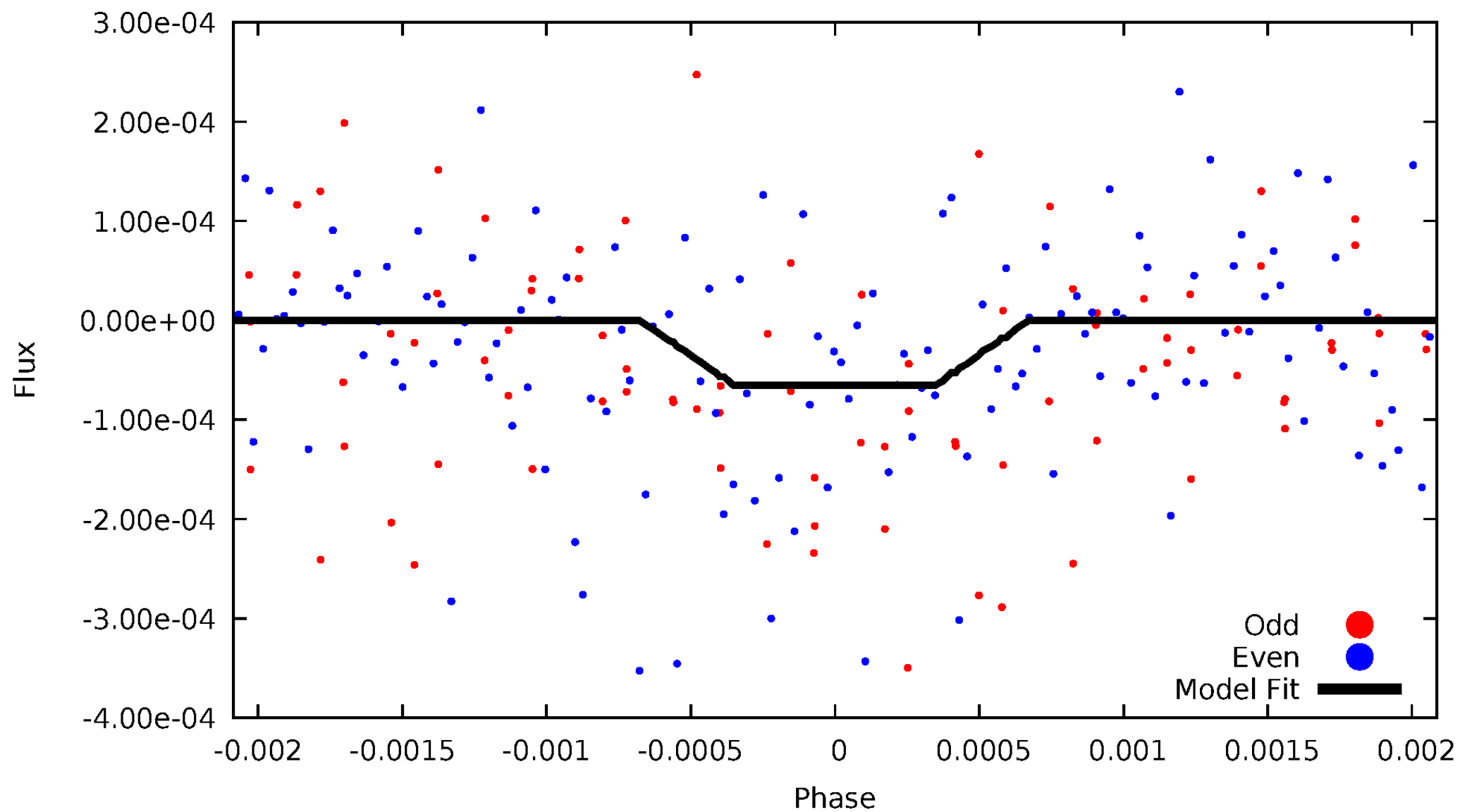
DV Odd/Even

TCE 010514430-05



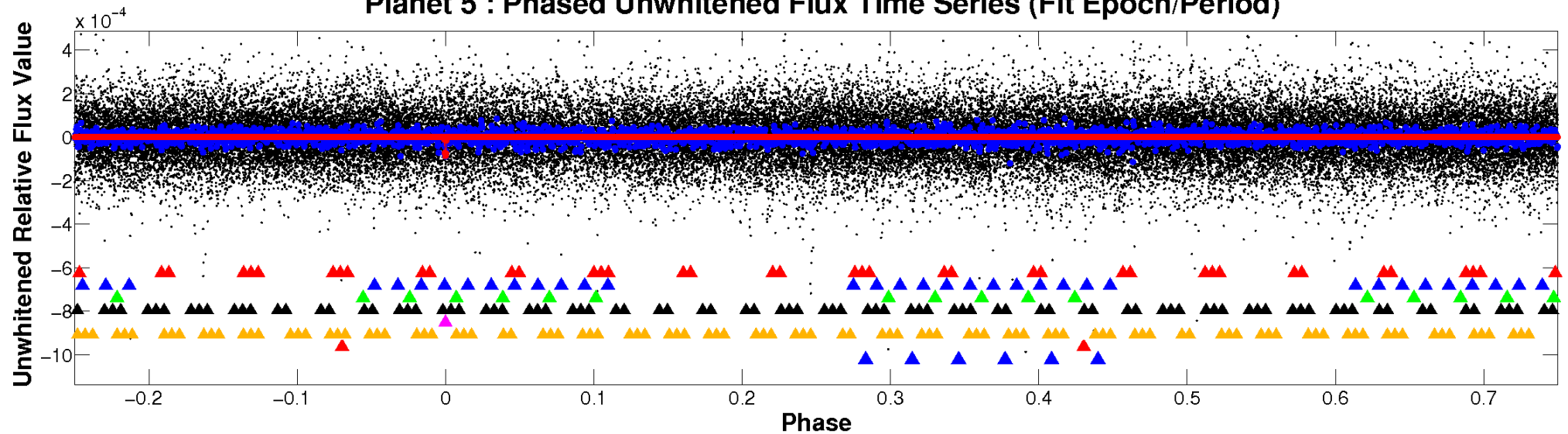
ALT Odd/Even

TCE 010514430-05

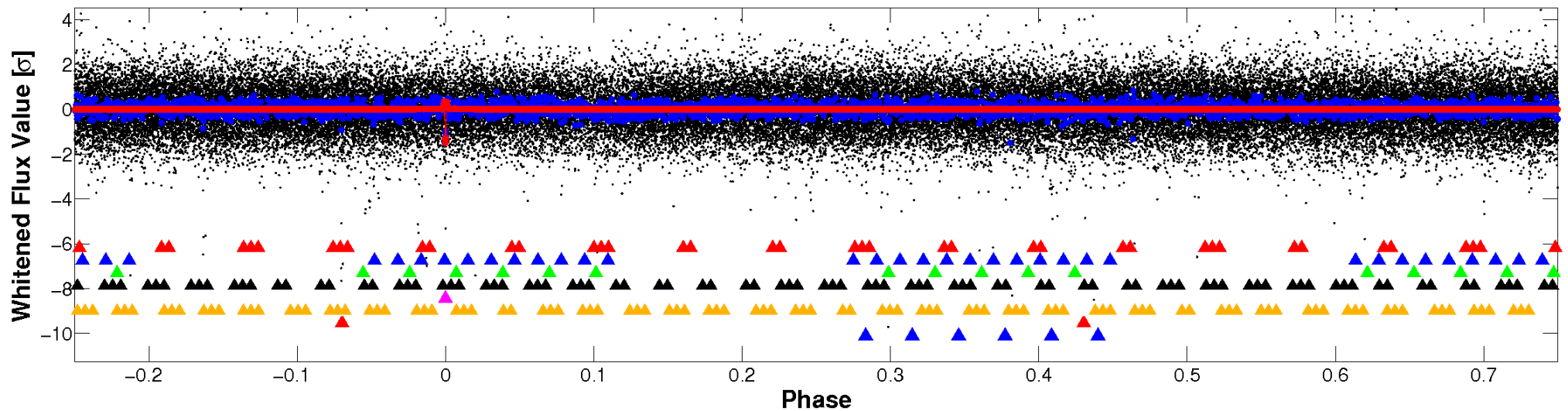


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

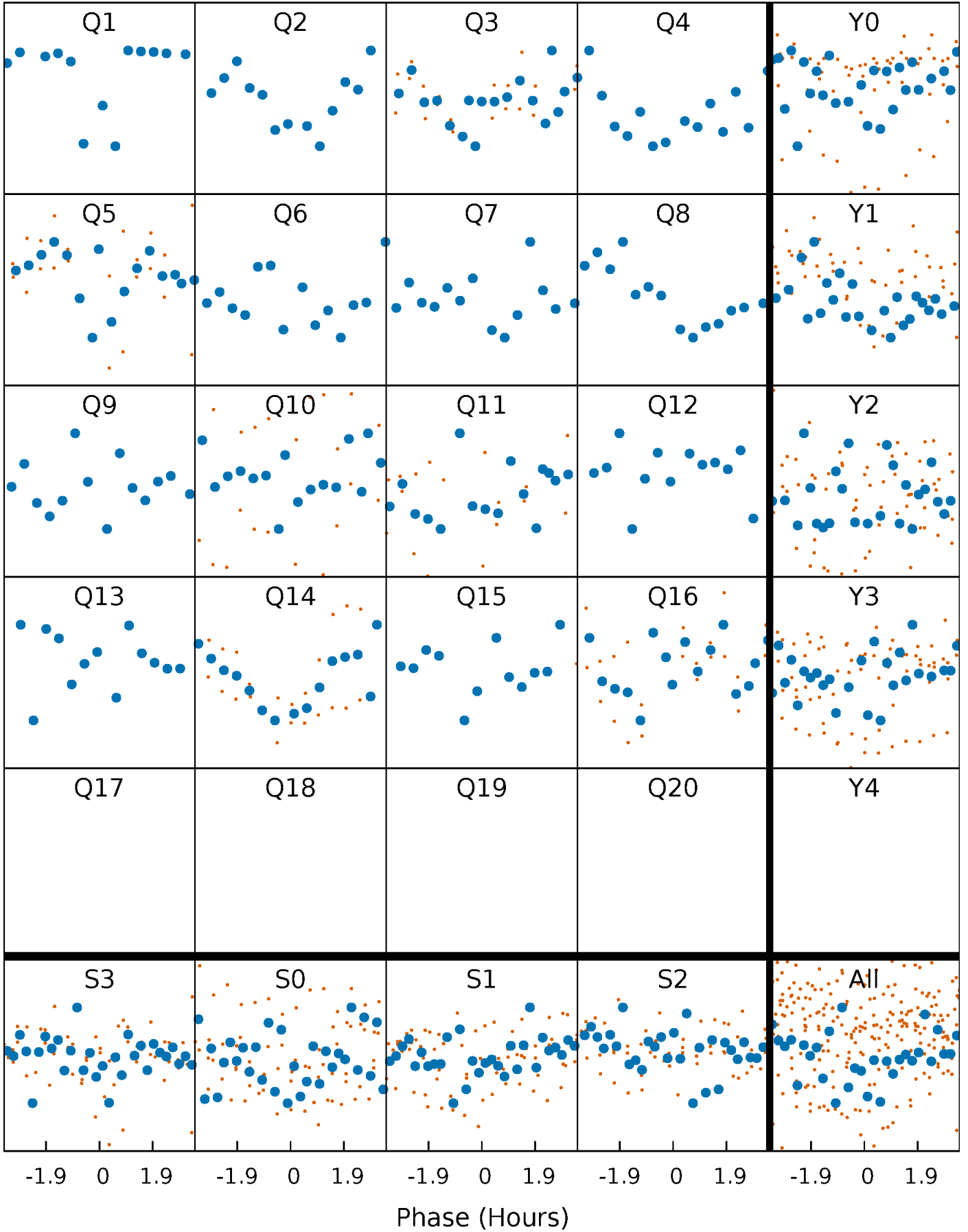


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



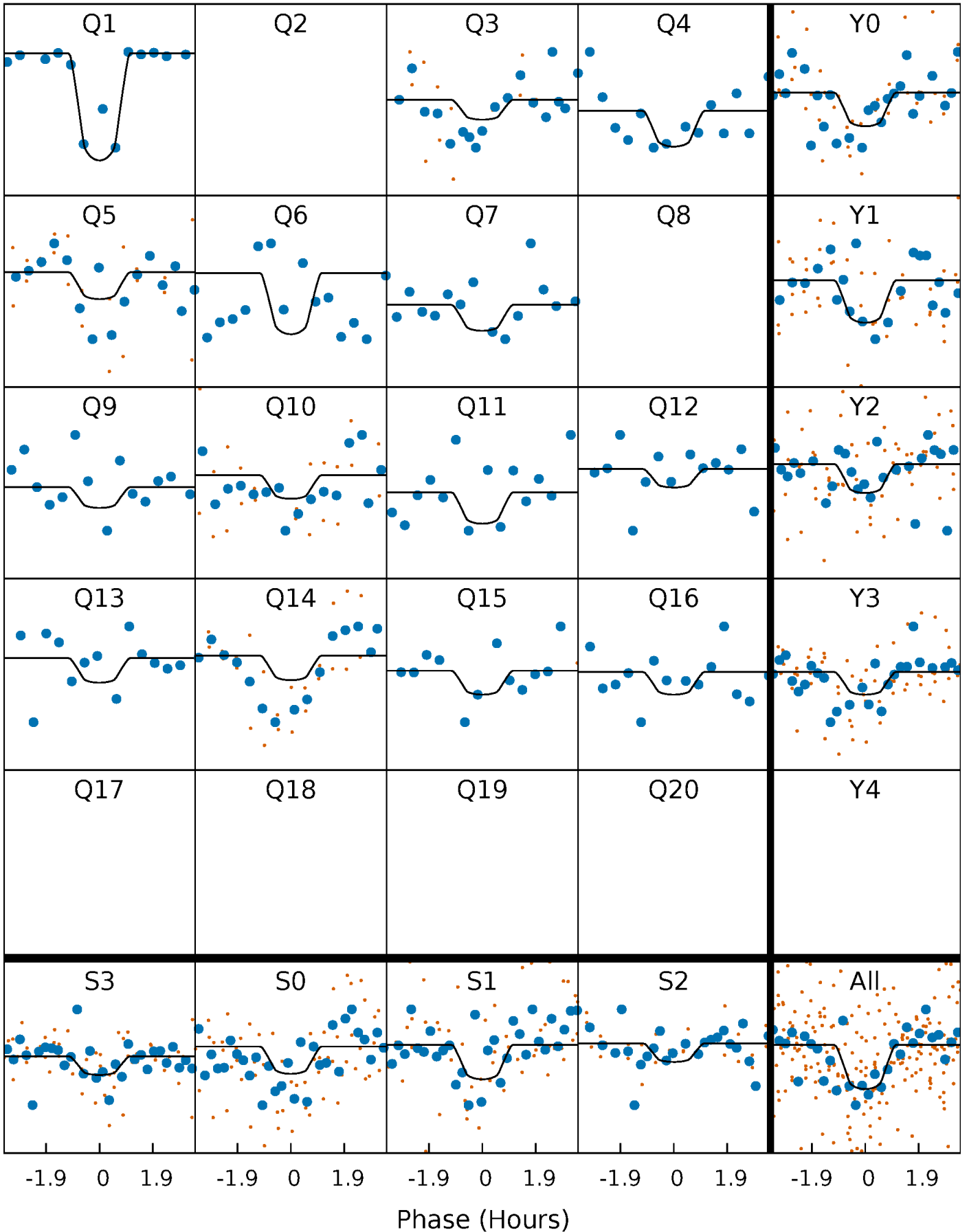
PDC Quarter-Phased Transit Curves

TCE 010514430-05 P= 62.650542 Days $T_0=156.665716$ (BKJD)



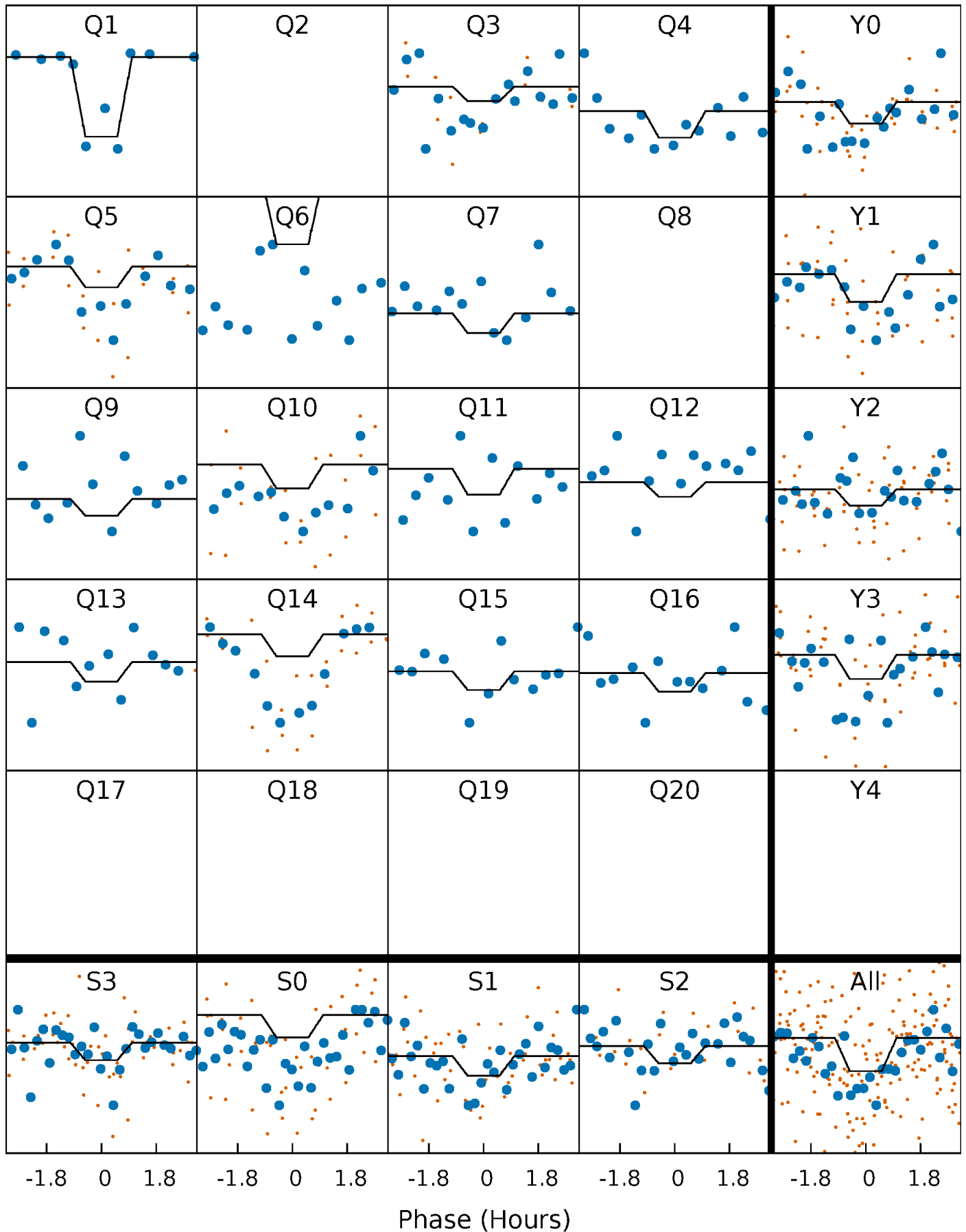
DV Quarter-Phased Transit Curves

TCE 010514430-05 $P = 62.650542$ Days $T_0 = 156.665716$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

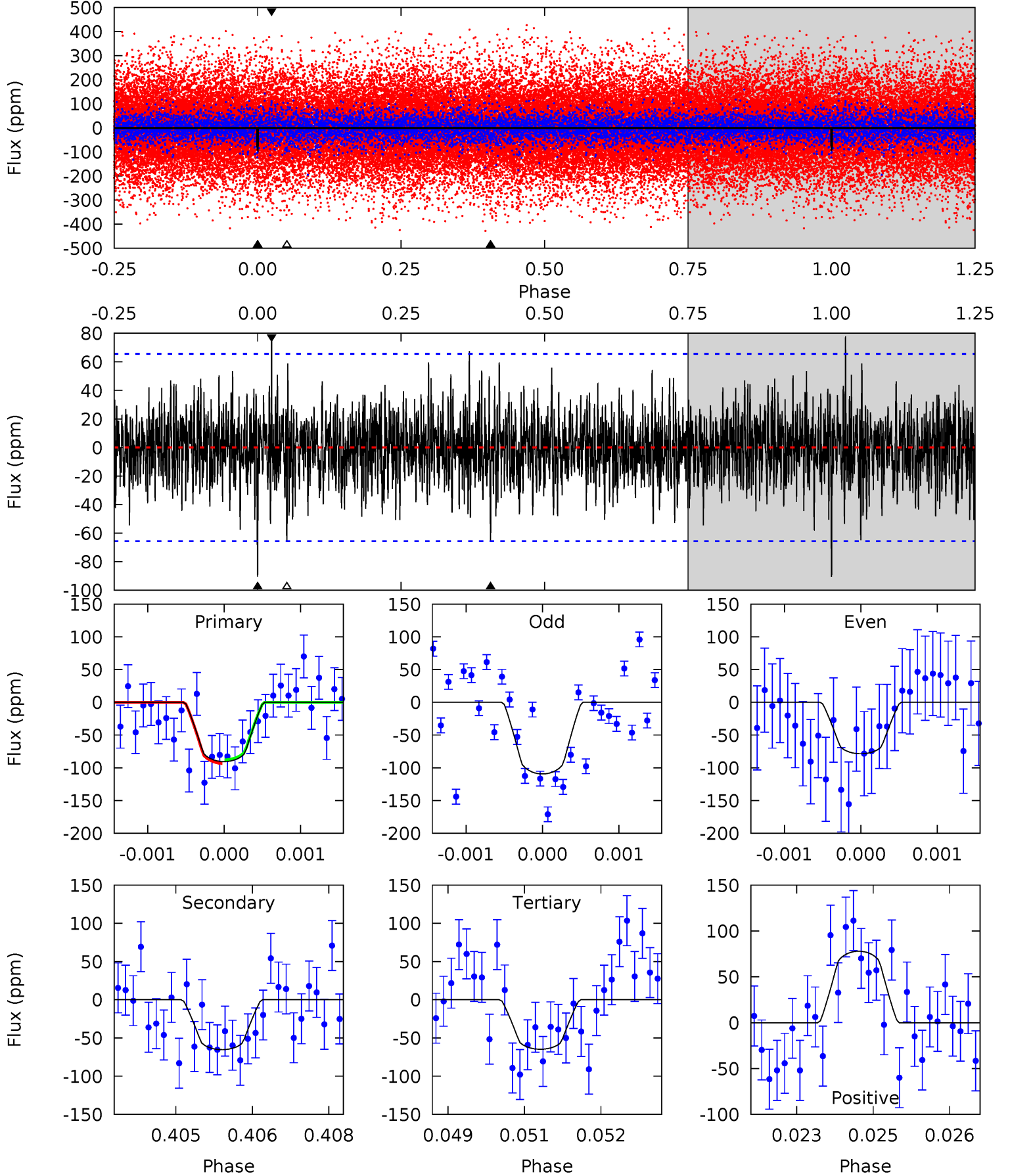
TCE 010514430-05 $P = 62.650269$ Days $T_0 = 156.665795$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-05, P = 62.650542 Days, E = 94.015174 Days

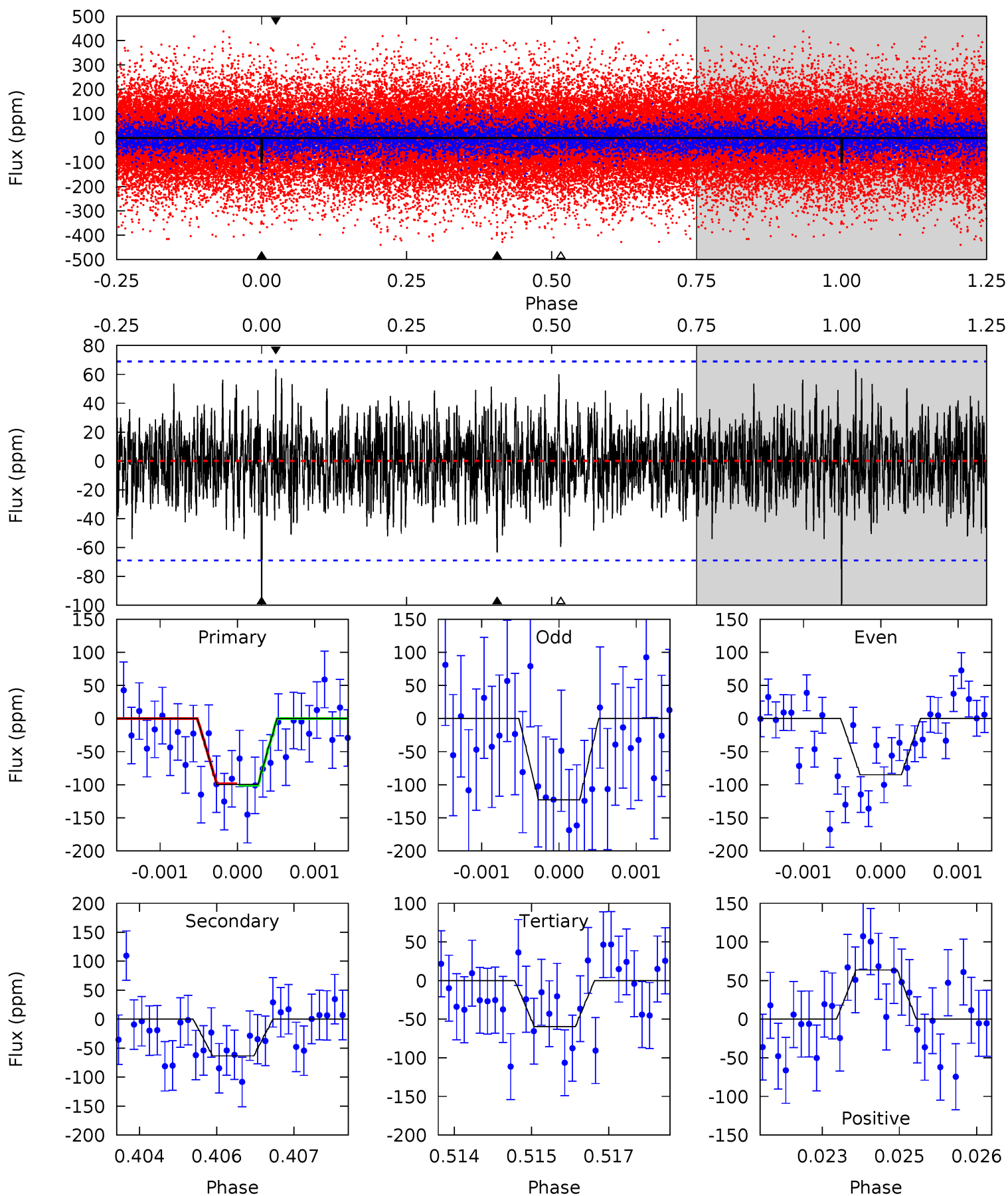
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	5.37	5.33	6.41	5.40	3.20	1.52	2.12	1.04	0.04	-1.04	1.22	1.32	0.46	0.23



Alt Model-Shift Uniqueness Test

010514430-05, P = 62.650269 Days, E = 94.015526 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.80	4.97	4.66	5.00	5.40	3.21	1.43	3.14	2.81	0.31	-0.03	1.45	1.12	0.39	0.09



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-65 ± 12	$1.75^{+0.60}_{-0.64}$	790^{+15}_{-13}	5125^{+1270}_{-625}	1118^{+1738}_{-512}
Alt.	-63 ± 13	$1.38^{+0.66}_{-0.68}$	789^{+16}_{-12}	5631^{+2446}_{-879}	1738^{+4813}_{-956}

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

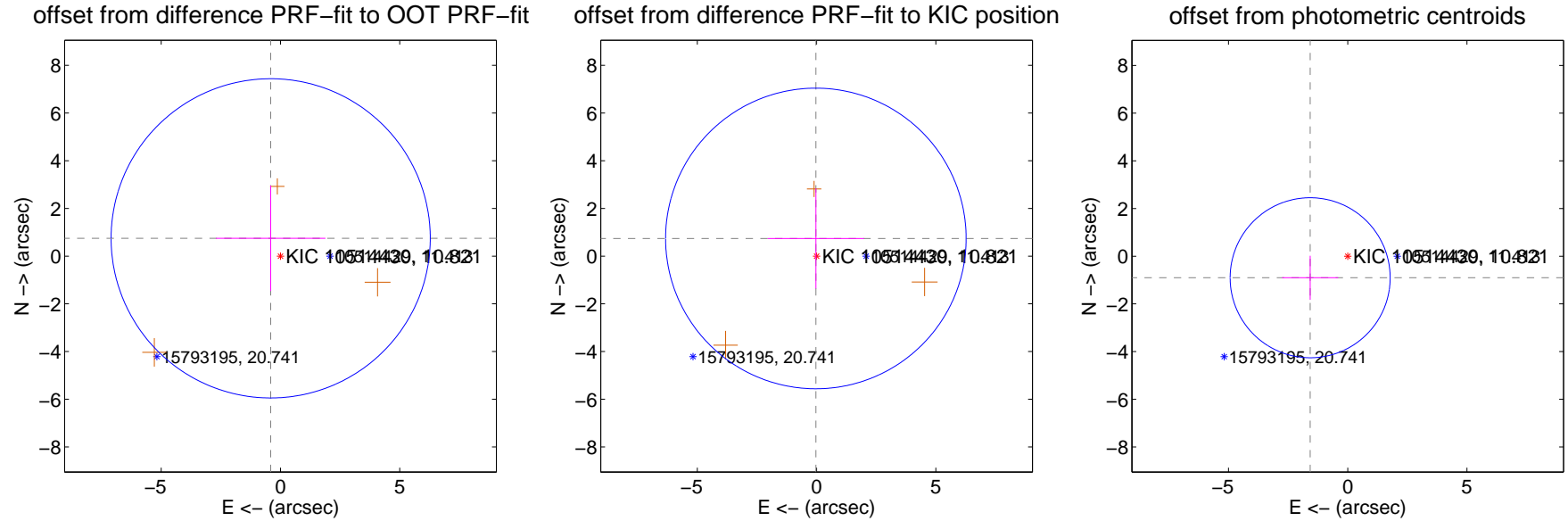
DV Centroid Data

Supplemental centroid analysis for 010514430-05. **Kepler magnitude: 10.82.** Transit SNR 19.34

There are 0 quarters with good PRF difference image offsets

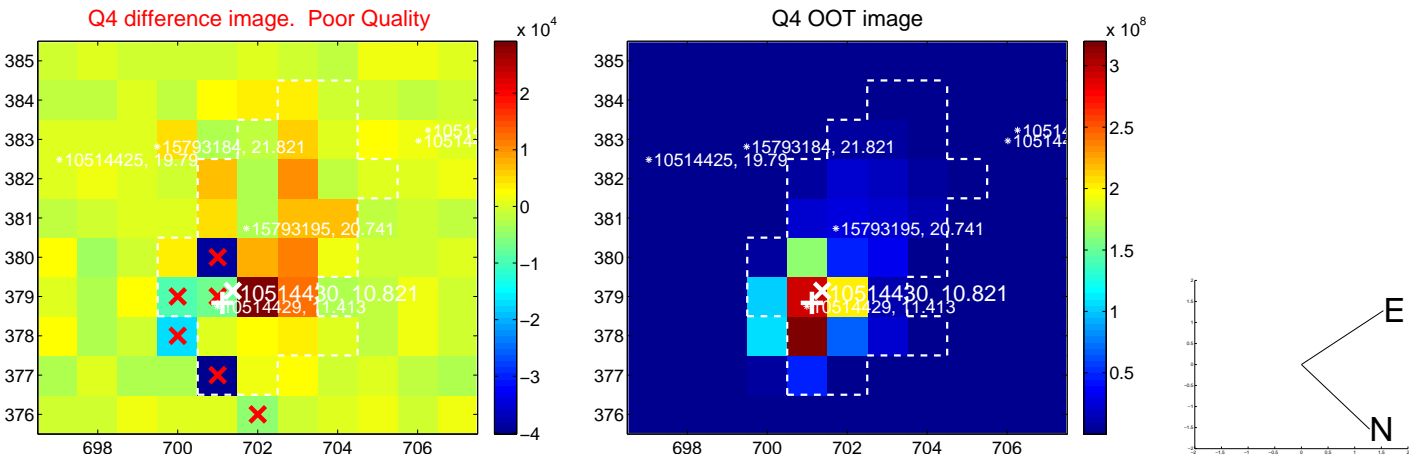
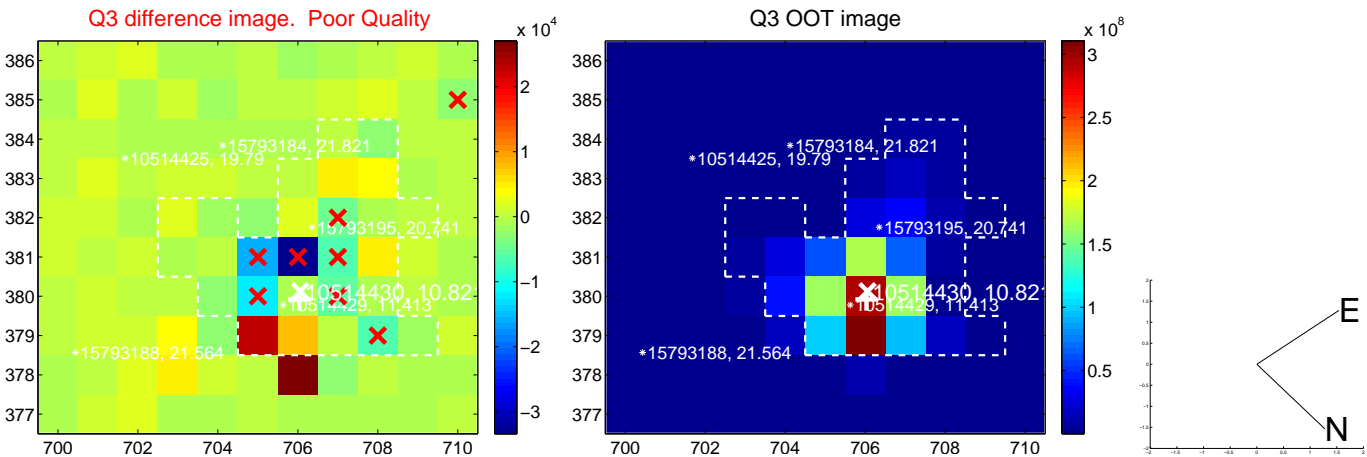
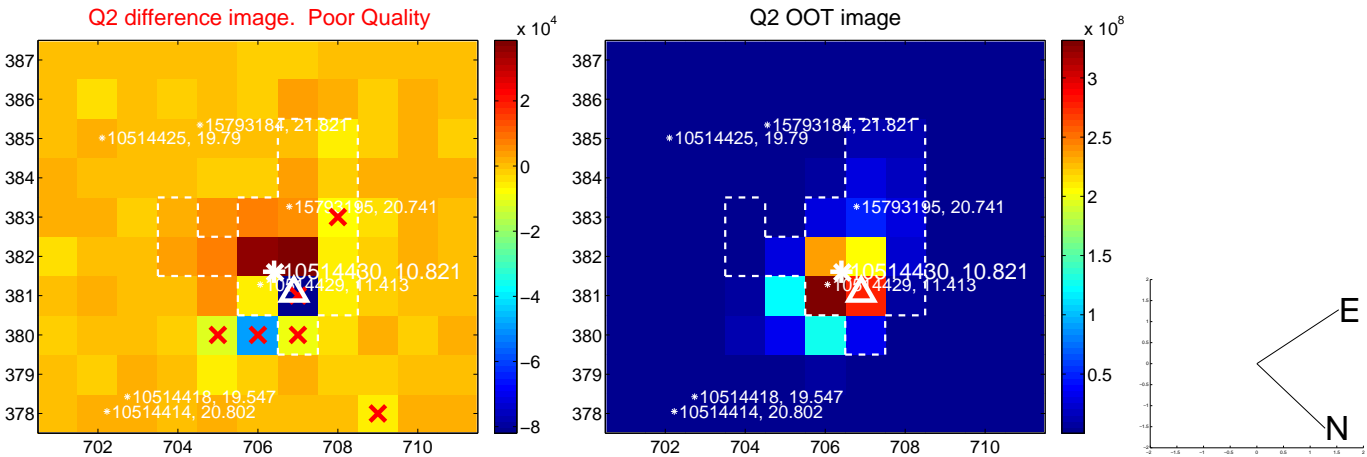
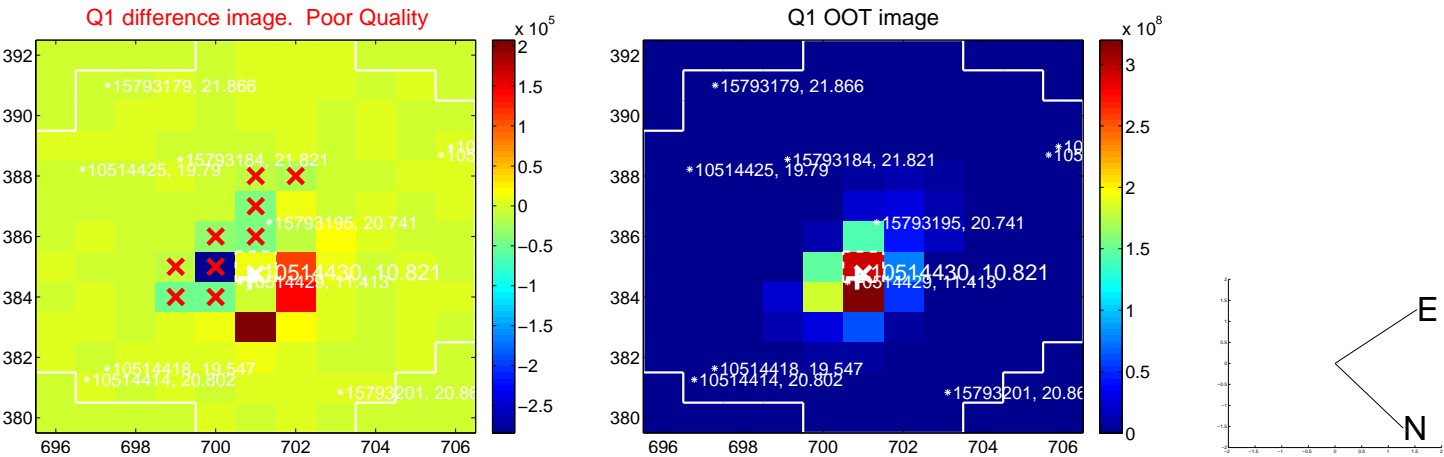
The direct PRF centroid is offset from the target star catalog position by about 1.50 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.851 ± 2.230	0.38	0.410 ± 2.296	0.746 ± 2.210
PRF-fit source offset from KIC position	0.741 ± 2.100	0.35	0.030 ± 2.021	0.741 ± 2.100
photometric centroid source offset	1.82 ± 1.12	1.62	1.58 ± 1.18	-0.90 ± 0.92

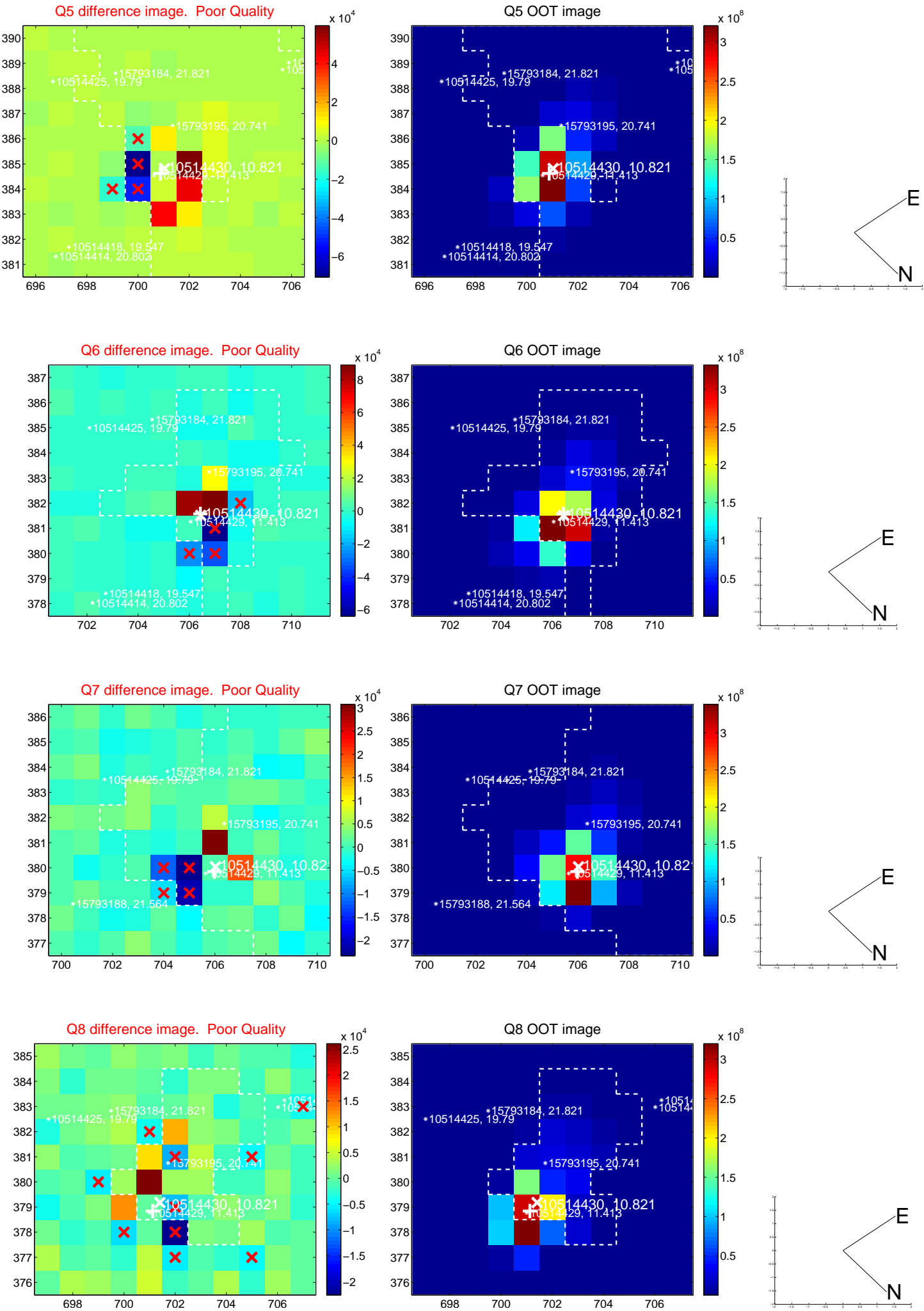


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

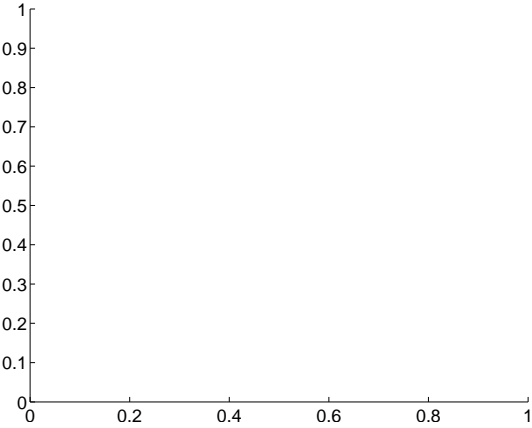


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

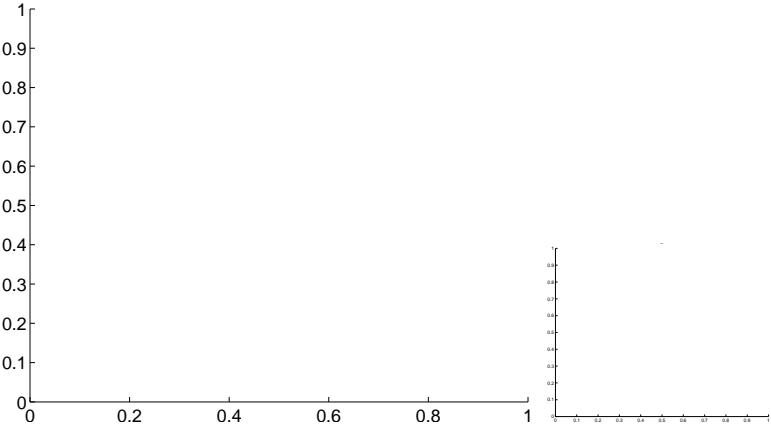


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

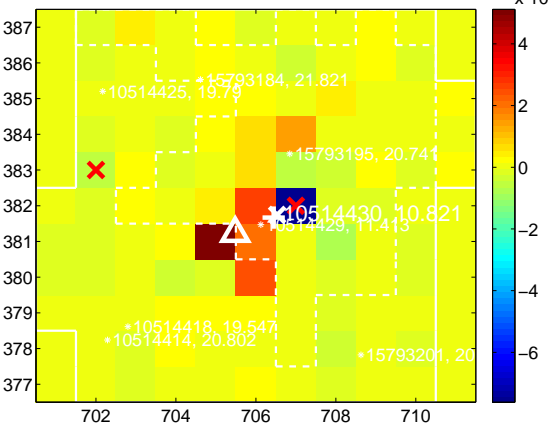
Q9 no difference image



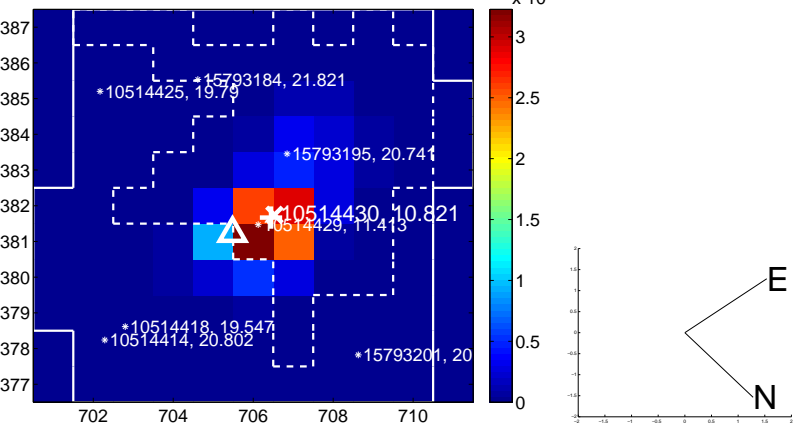
Q9 no OOT image



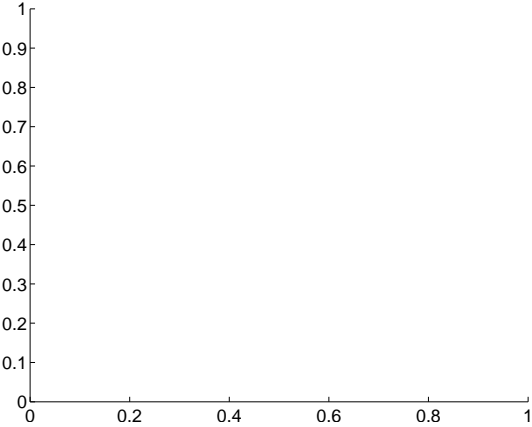
Q10 difference image. Poor Quality



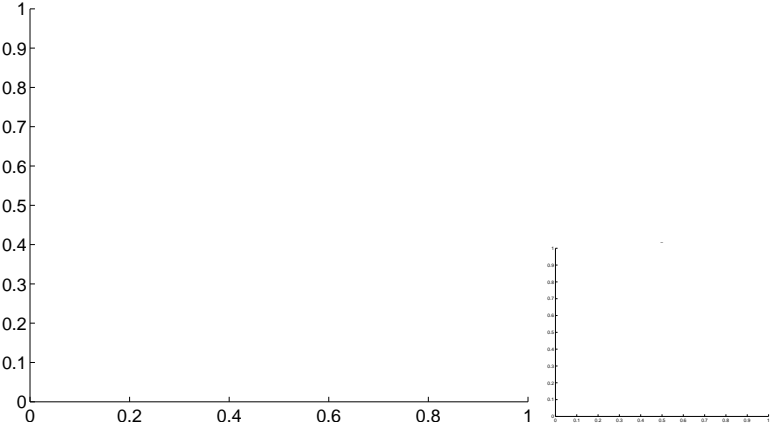
Q10 OOT image



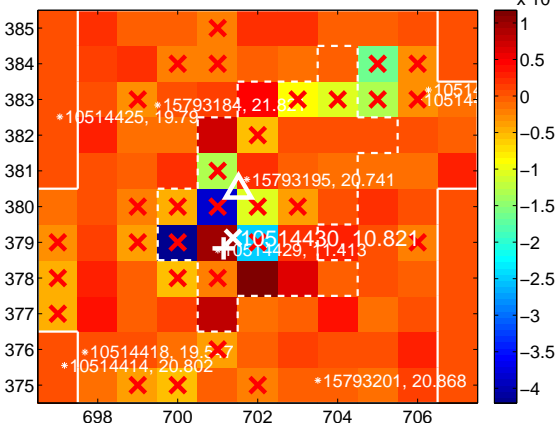
Q11 no difference image



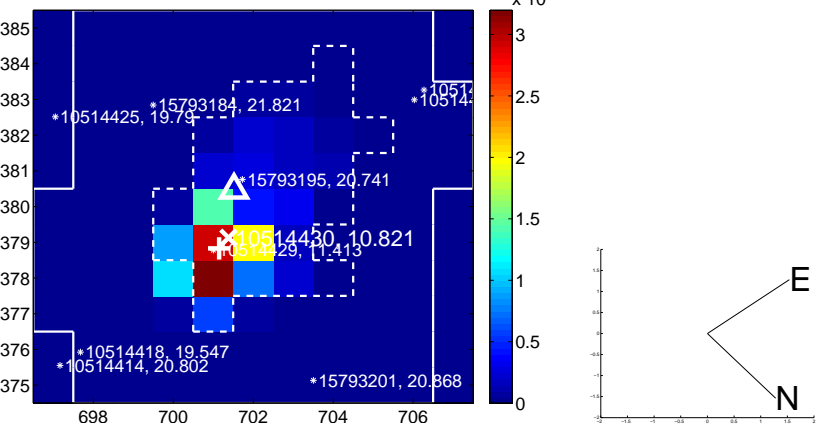
Q11 no OOT image



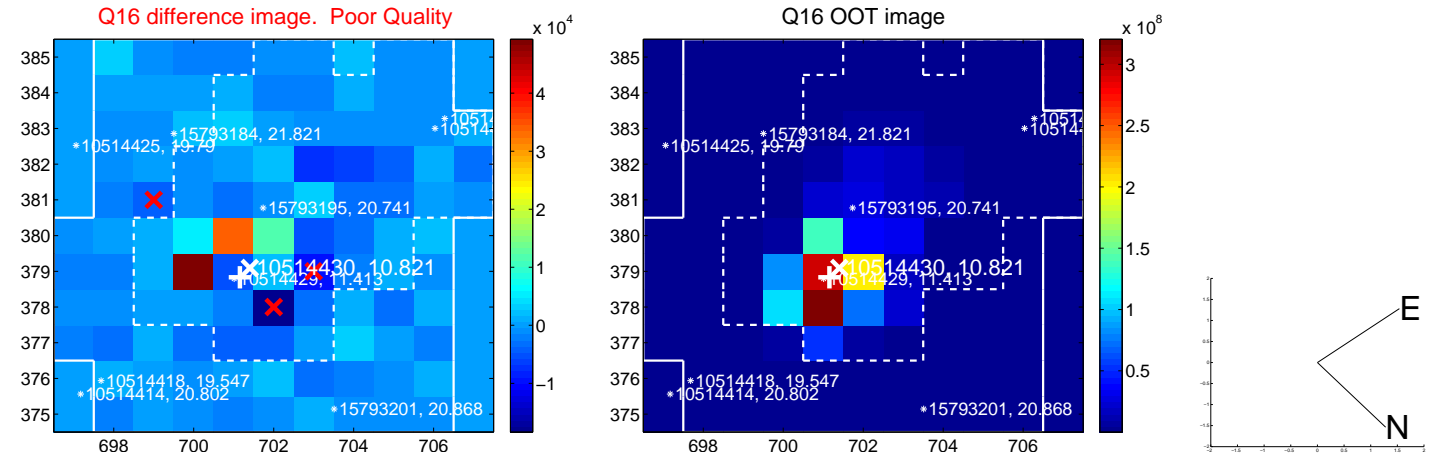
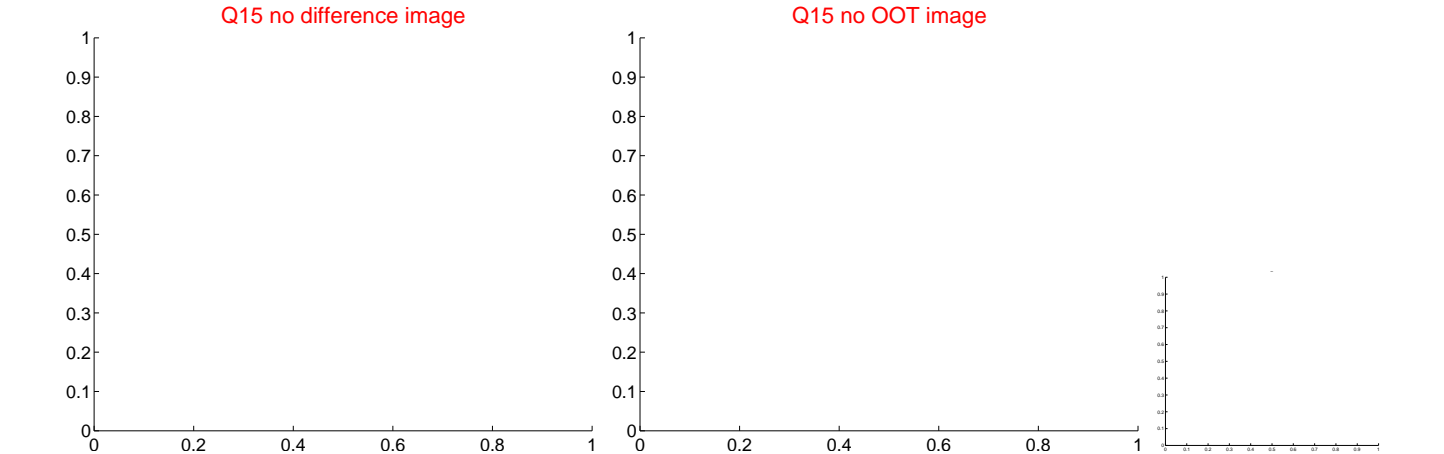
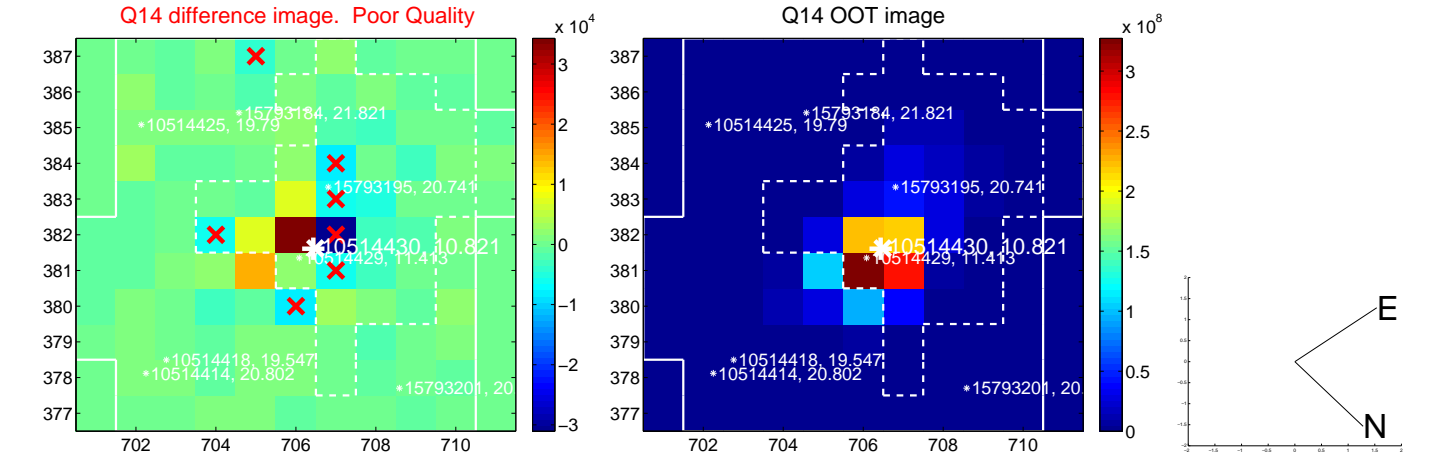
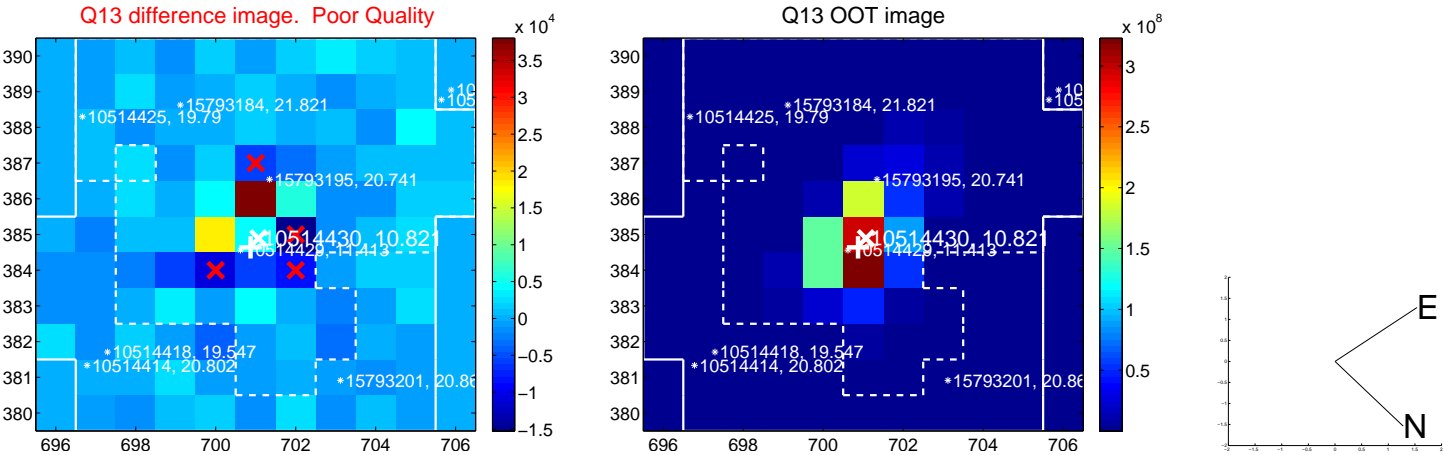
Q12 difference image. Poor Quality



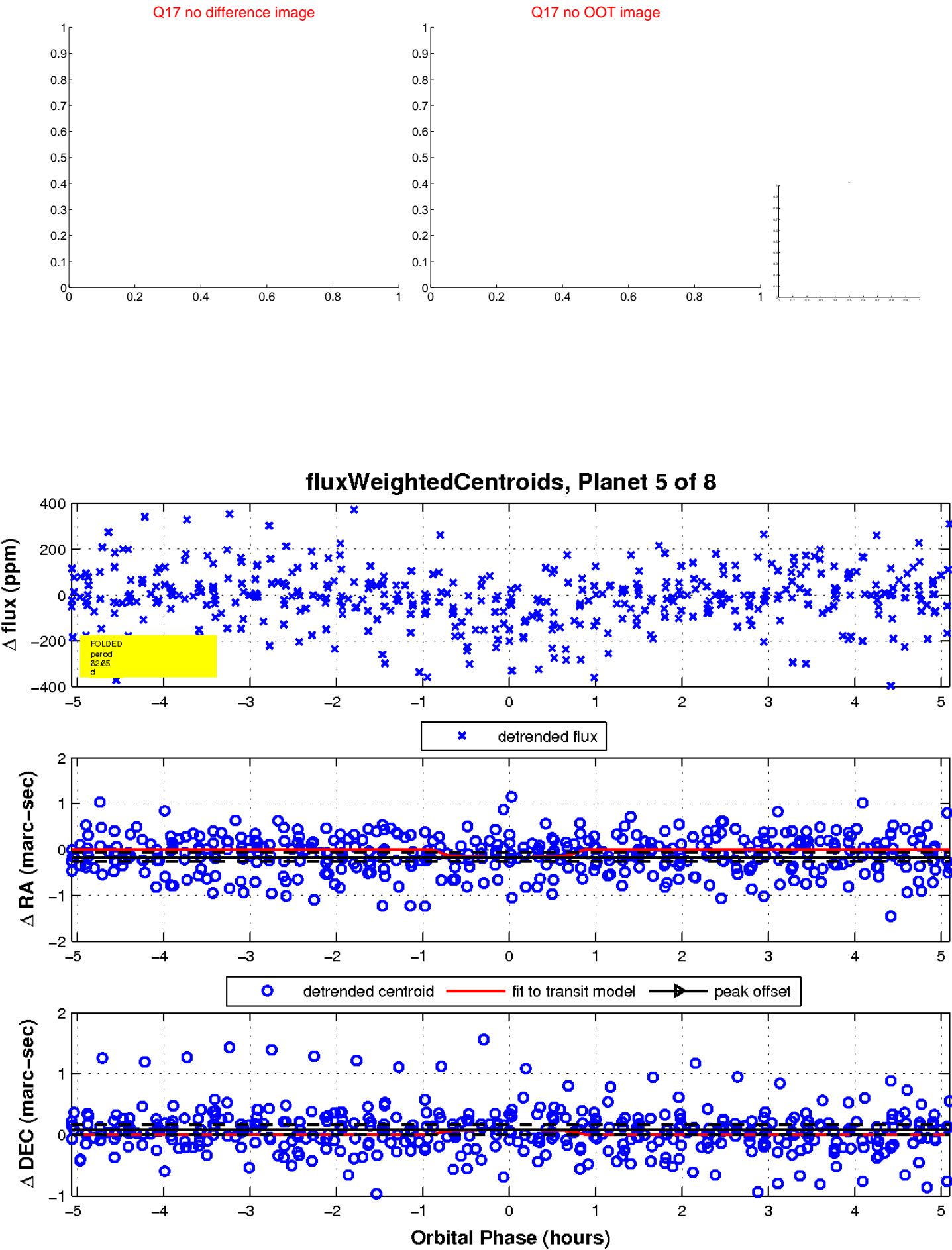
Q12 OOT image



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

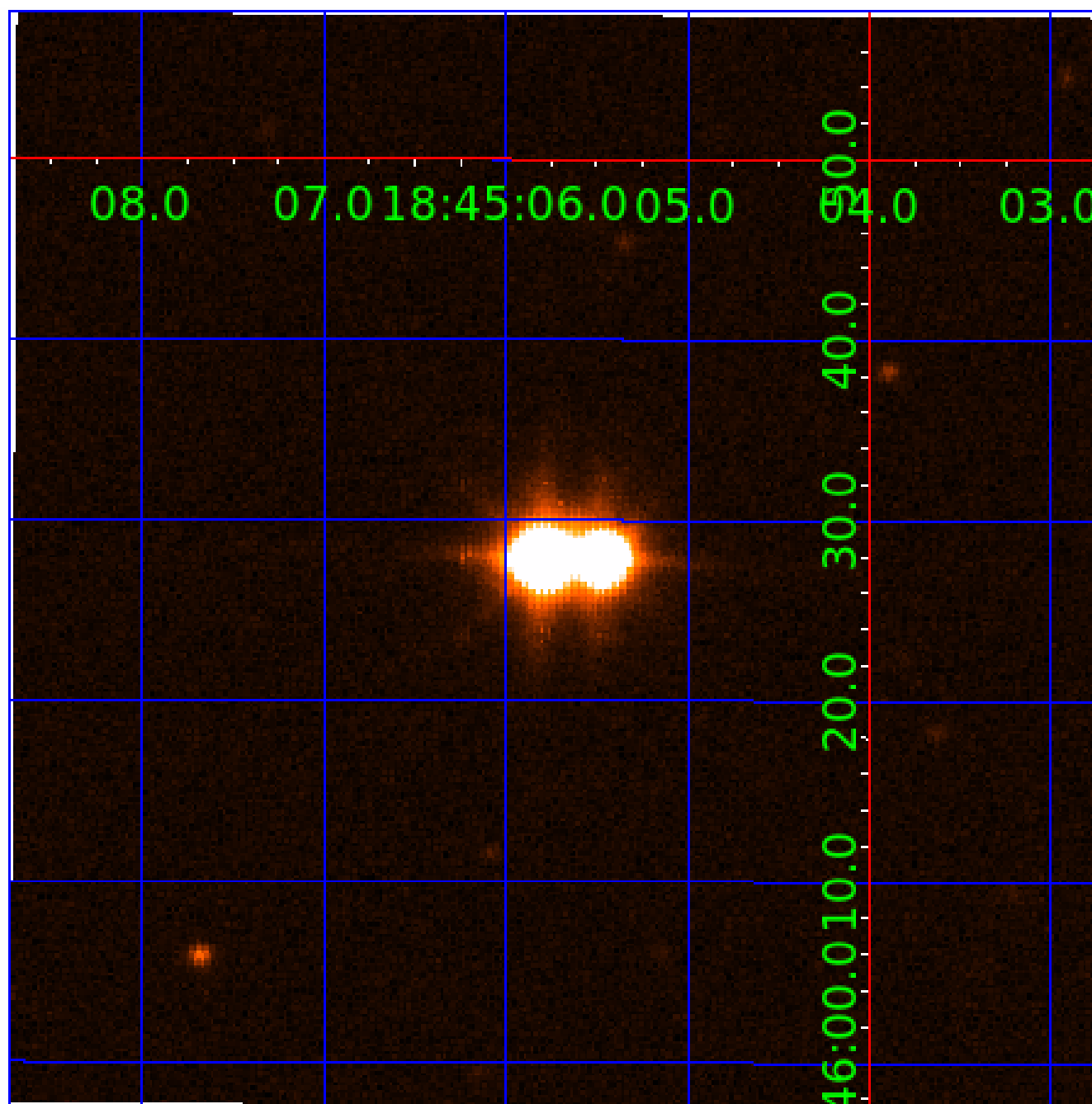


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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 010514430-06

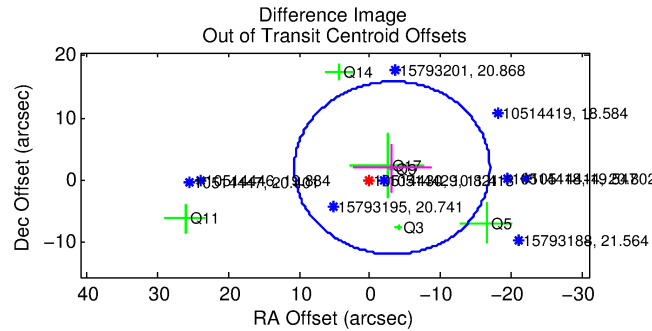
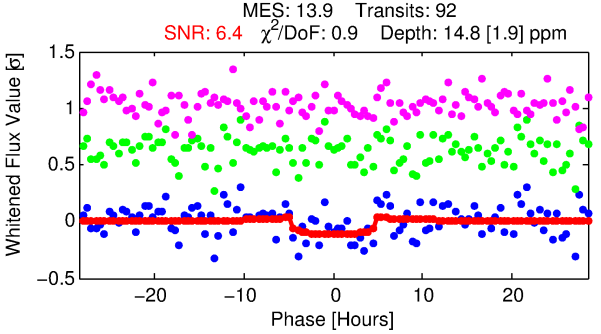
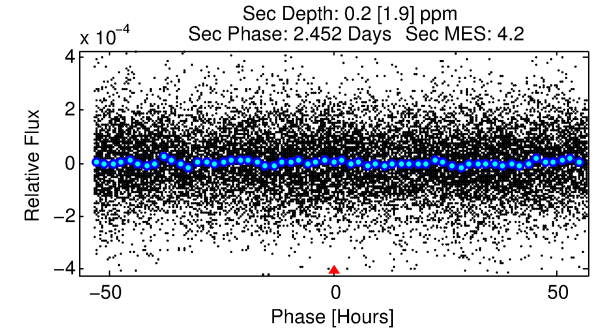
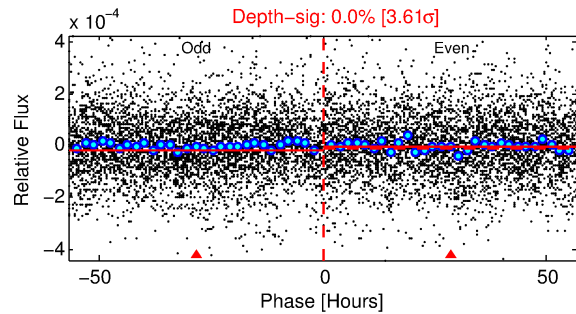
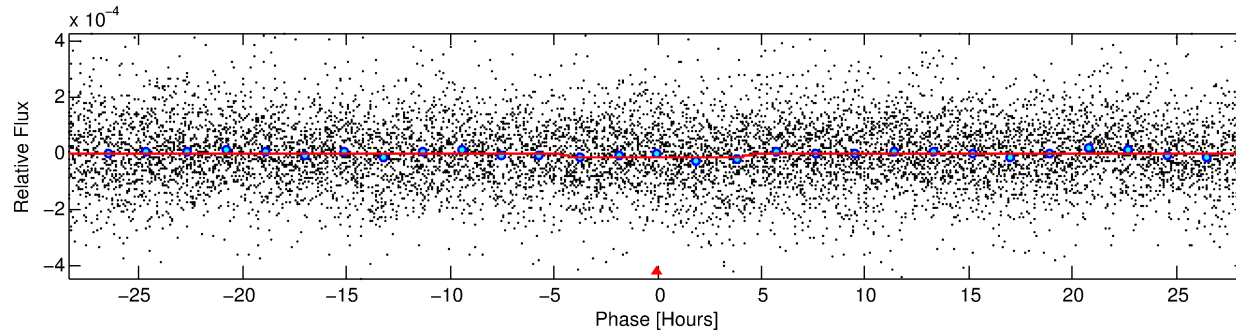
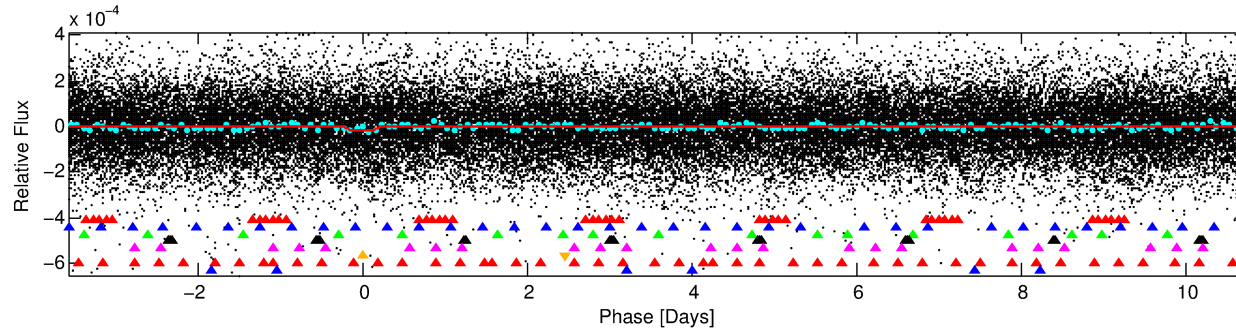
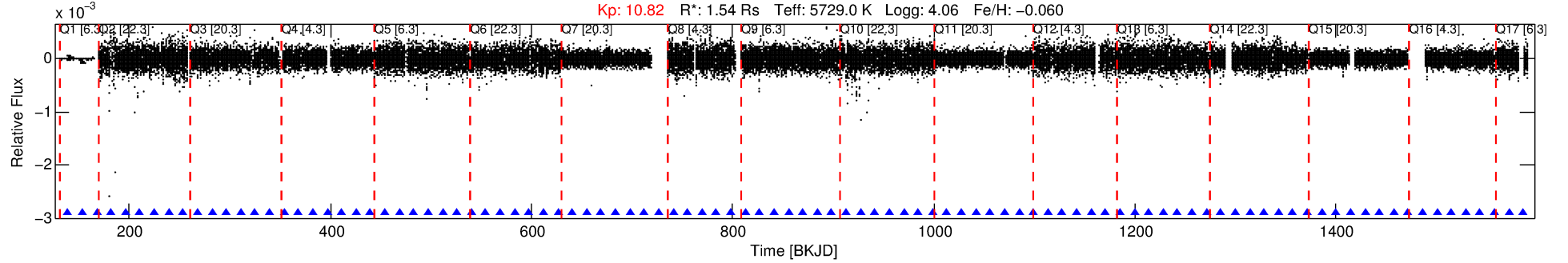
No Significant Match Found

DV One-Page Summary

KIC: 10514430 Candidate: 6 of 8 Period: 14.329 d

KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 14.32925 [0.00032] d
Epoch = 139.1337 [0.0094] BKJD
Rp/R* = 0.0040 [0.0015]
a/R* = 6.11 [10.38]
b = 0.86 [0.55]
Seff = 173.33 [15.03]
Teq = 925 [20] K
Rp = 0.68 [0.26] Re
a = 0.1153 [0.0051] AU
Ag = 2.99 [29.49] [0.07σ]
Teffp = 1881 [4640] K [0.21σ]

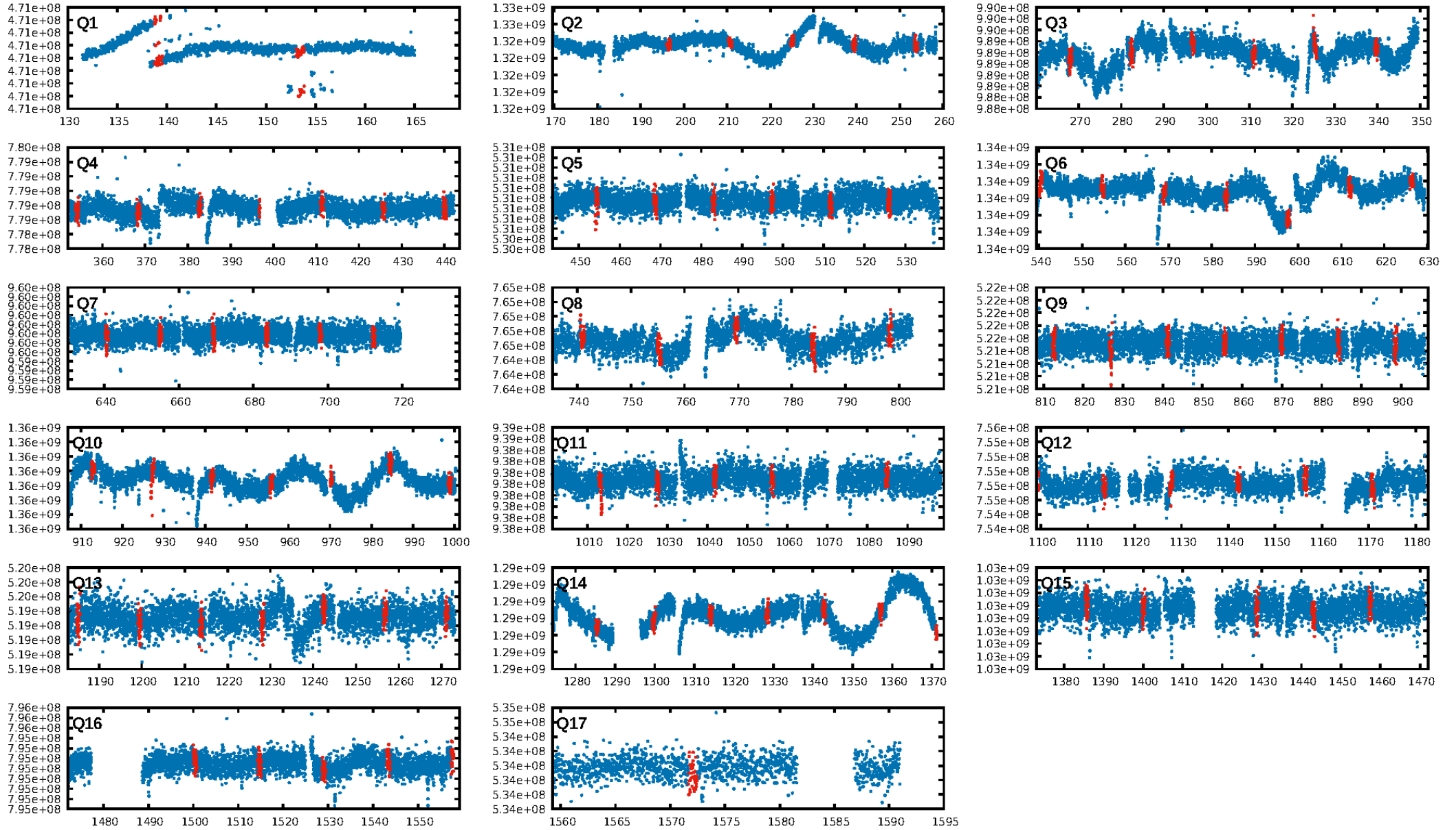
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.87σ]
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.06e-17
RollingBand-fgt: 1.00 [89/89]
GhostDiagnostic-chr: N/A
Centroid-sig: 54.4%
Centroid-so: 1.140 arcsec [0.61σ]
OotOffset-rm: 3.738 arcsec [0.81σ]
KicOffset-rm: 4.724 arcsec [1.06σ]
OotOffset-st: 1/2/0/3 [6]
KicOffset-st: 1/2/0/3 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 1.00 [17/17]

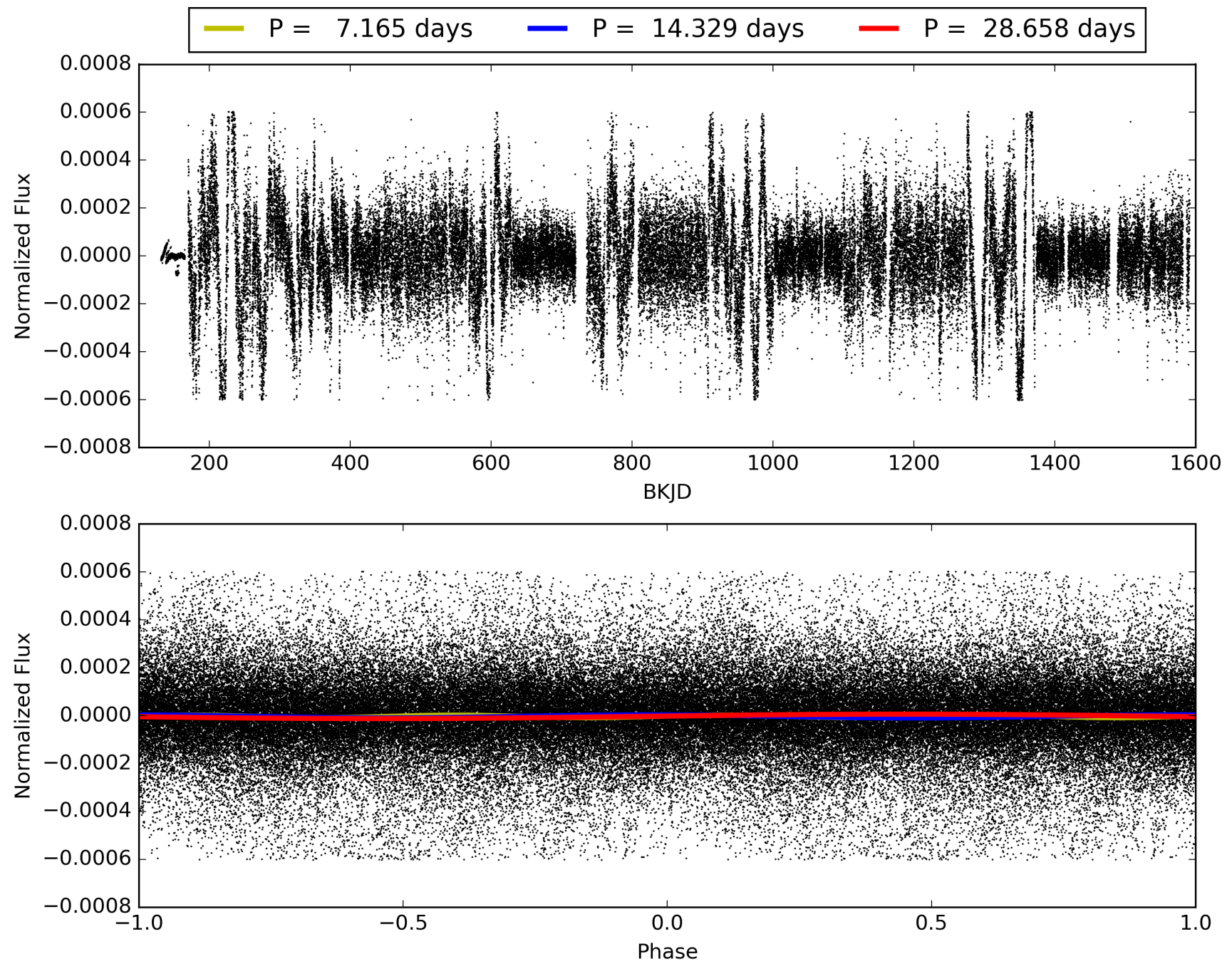
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:35:18 Z

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

TCE 010514430-06, PDC Light Curves

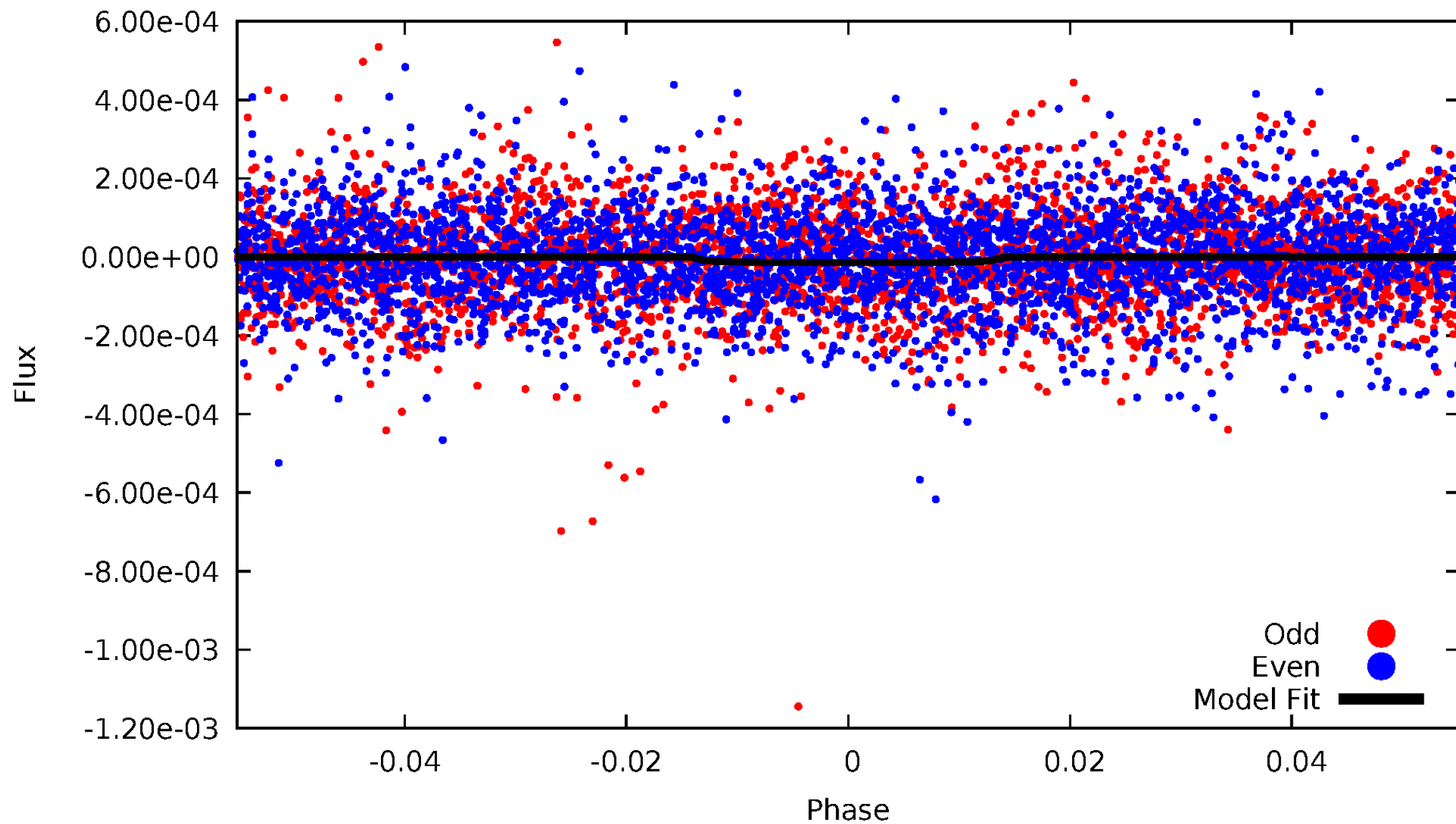


TCE 010514430-06



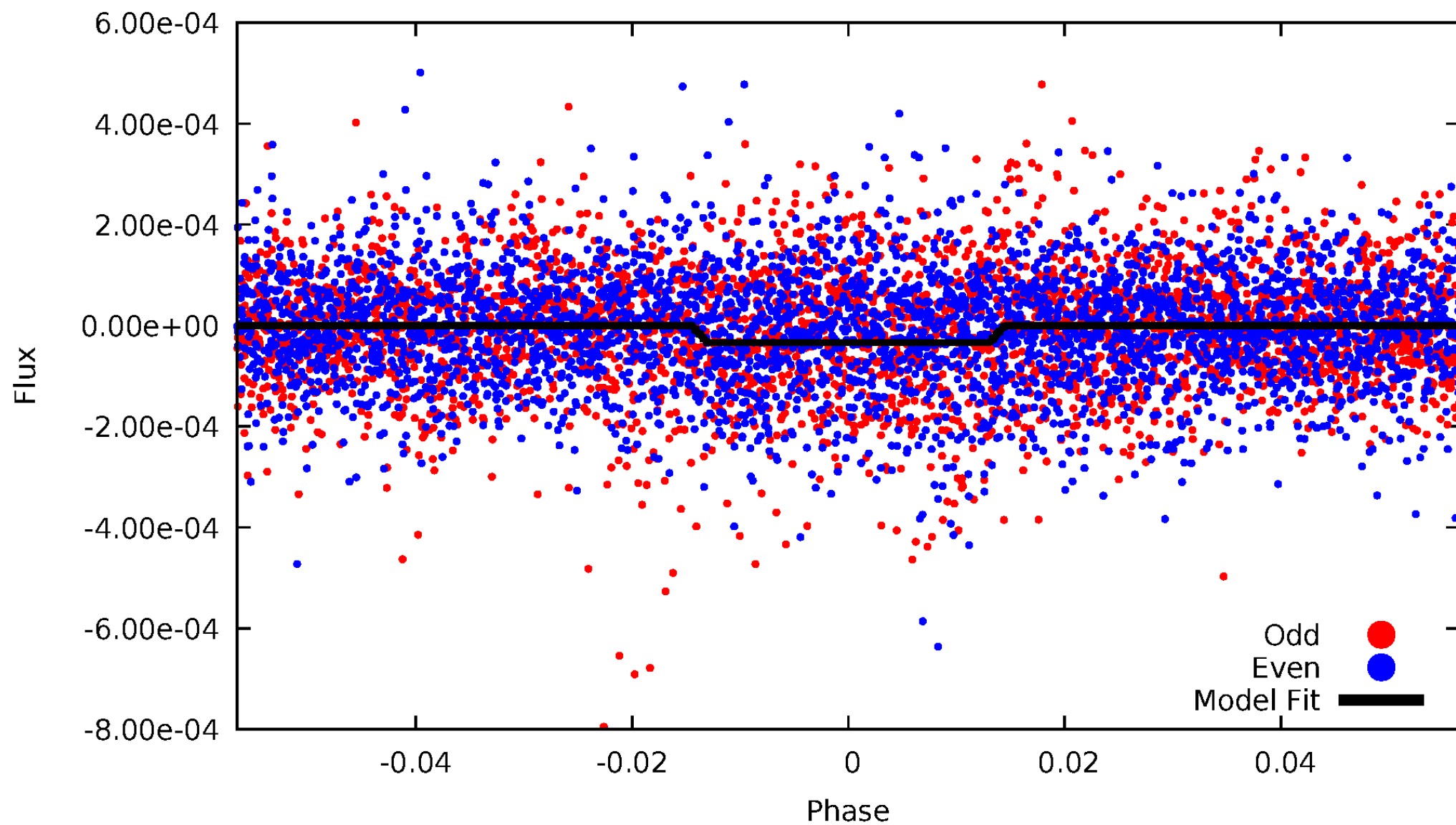
DV Odd/Even

TCE 010514430-06



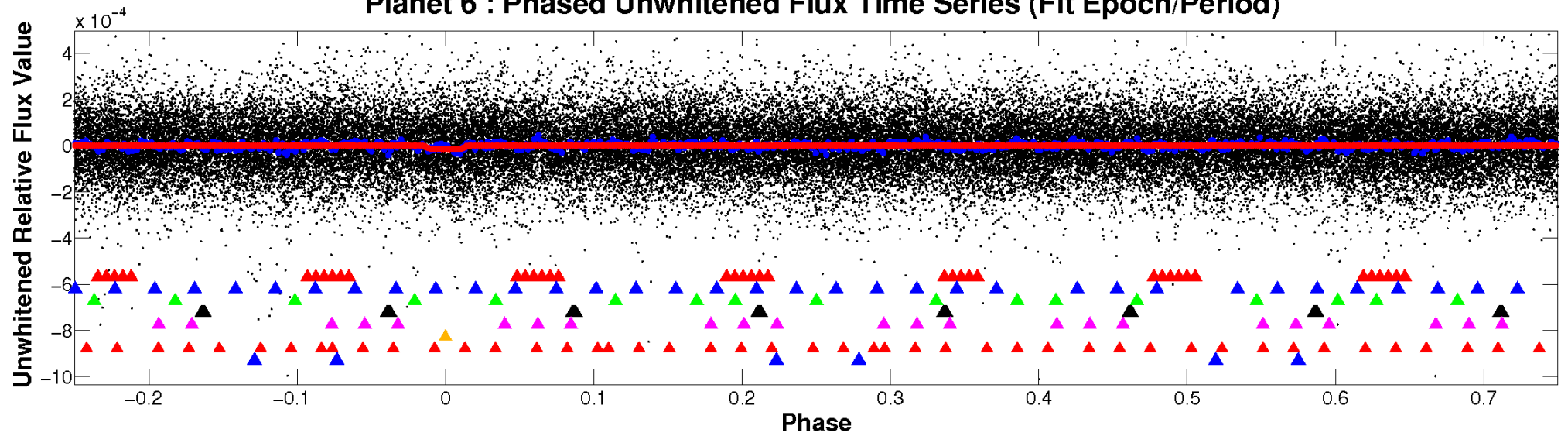
ALT Odd/Even

TCE 010514430-06

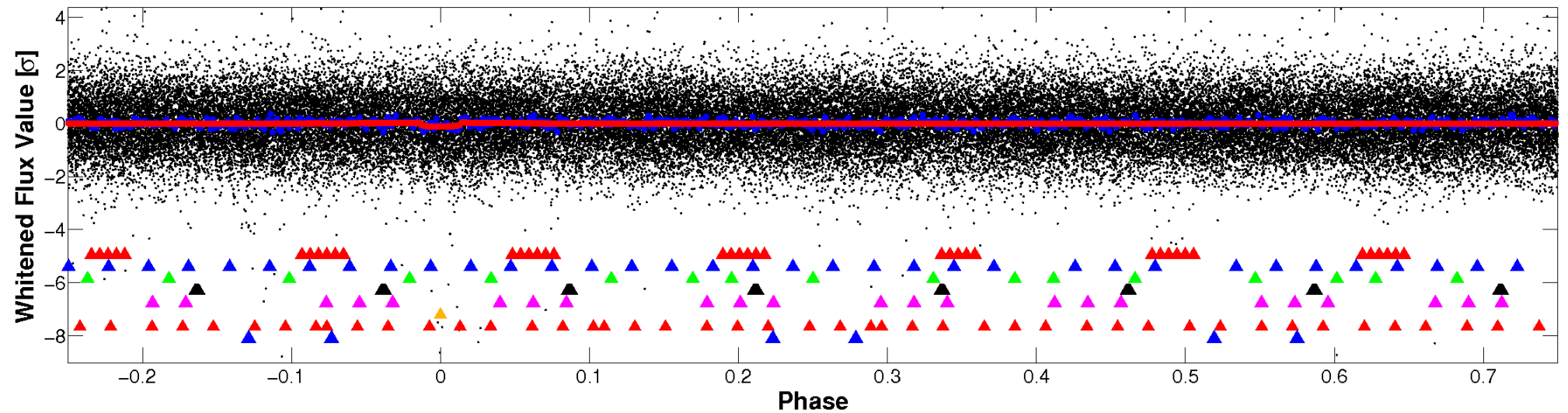


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

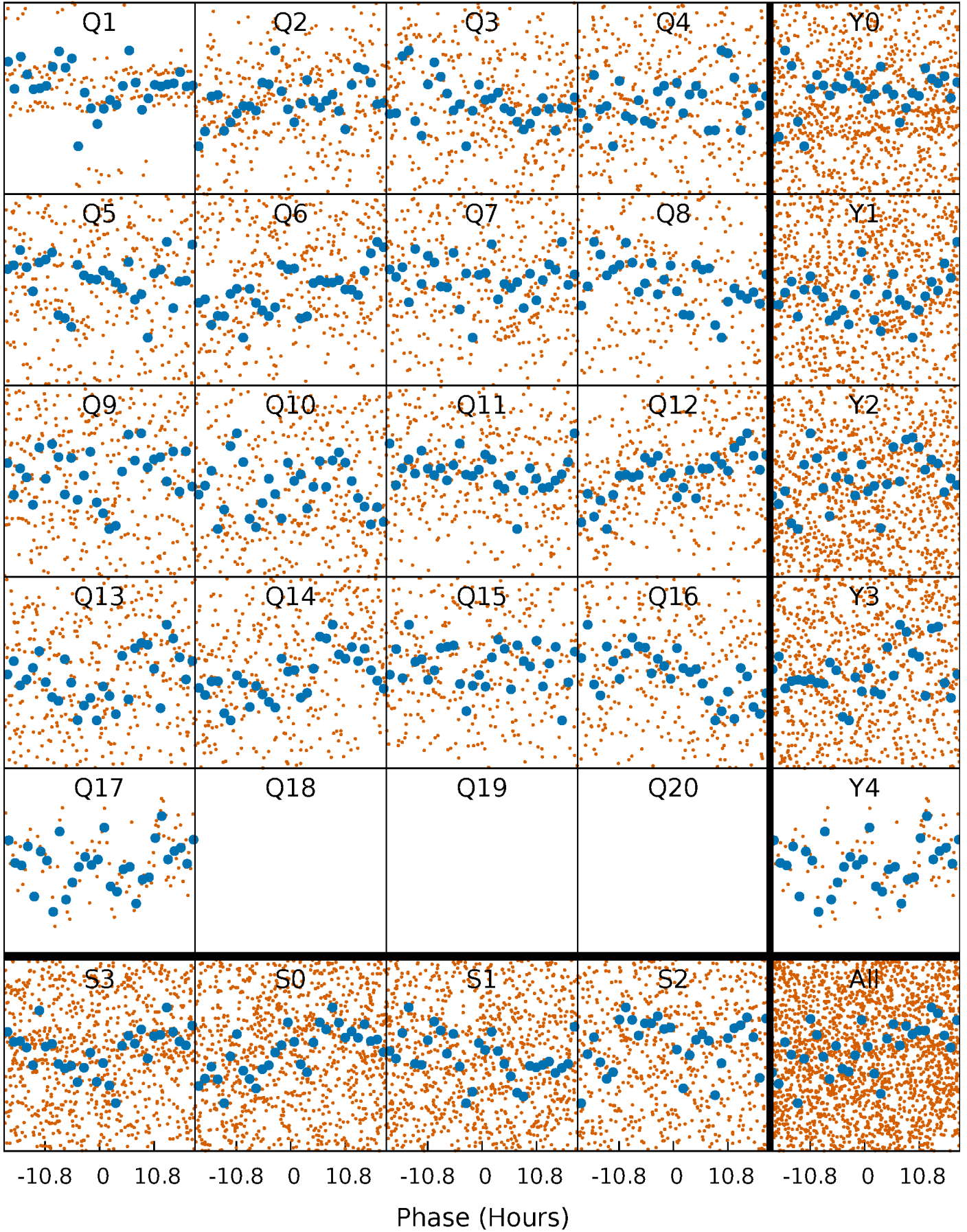


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



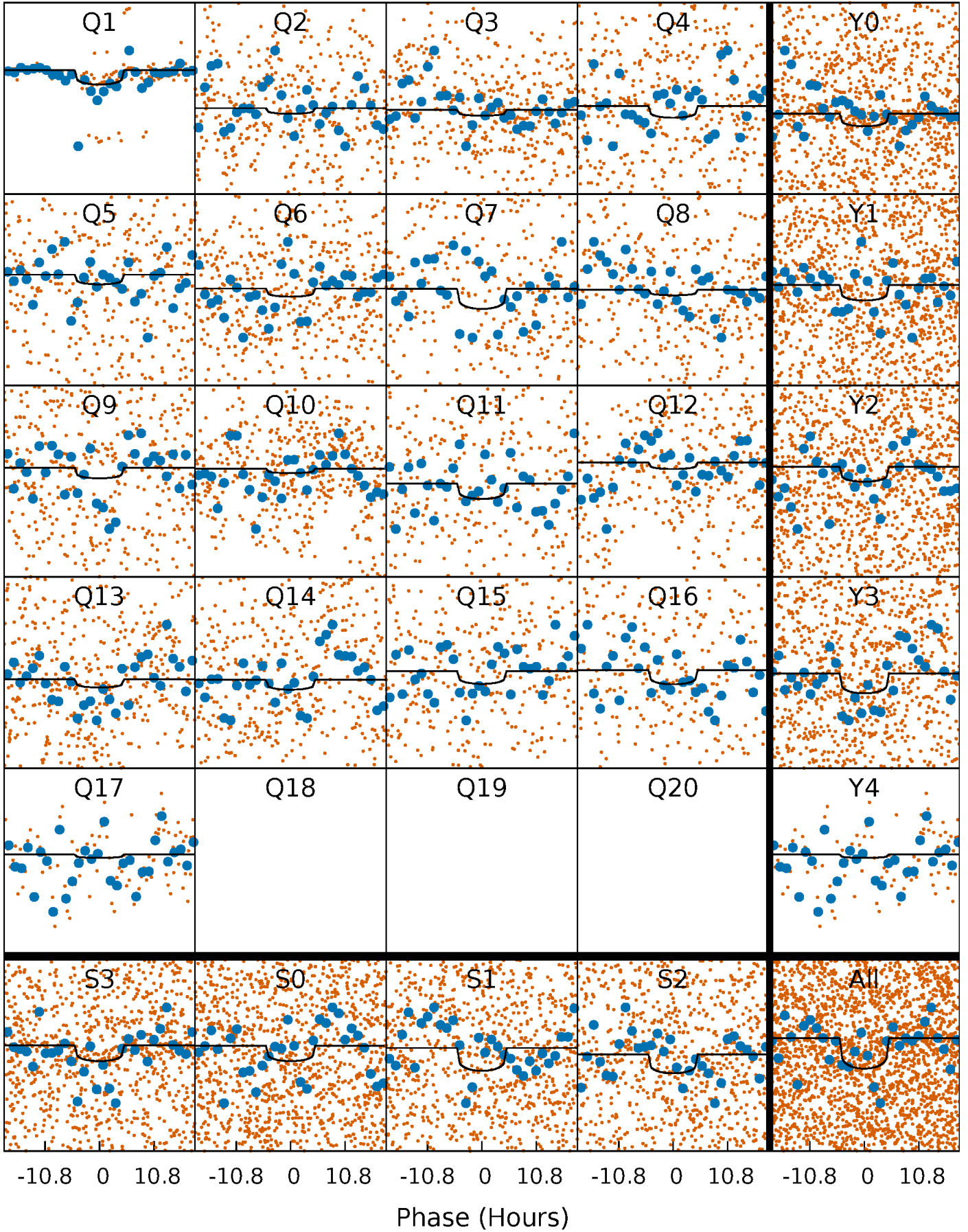
PDC Quarter-Phased Transit Curves

TCE 010514430-06 P= 14.329249 Days $T_0=139.133682$ (BKJD)



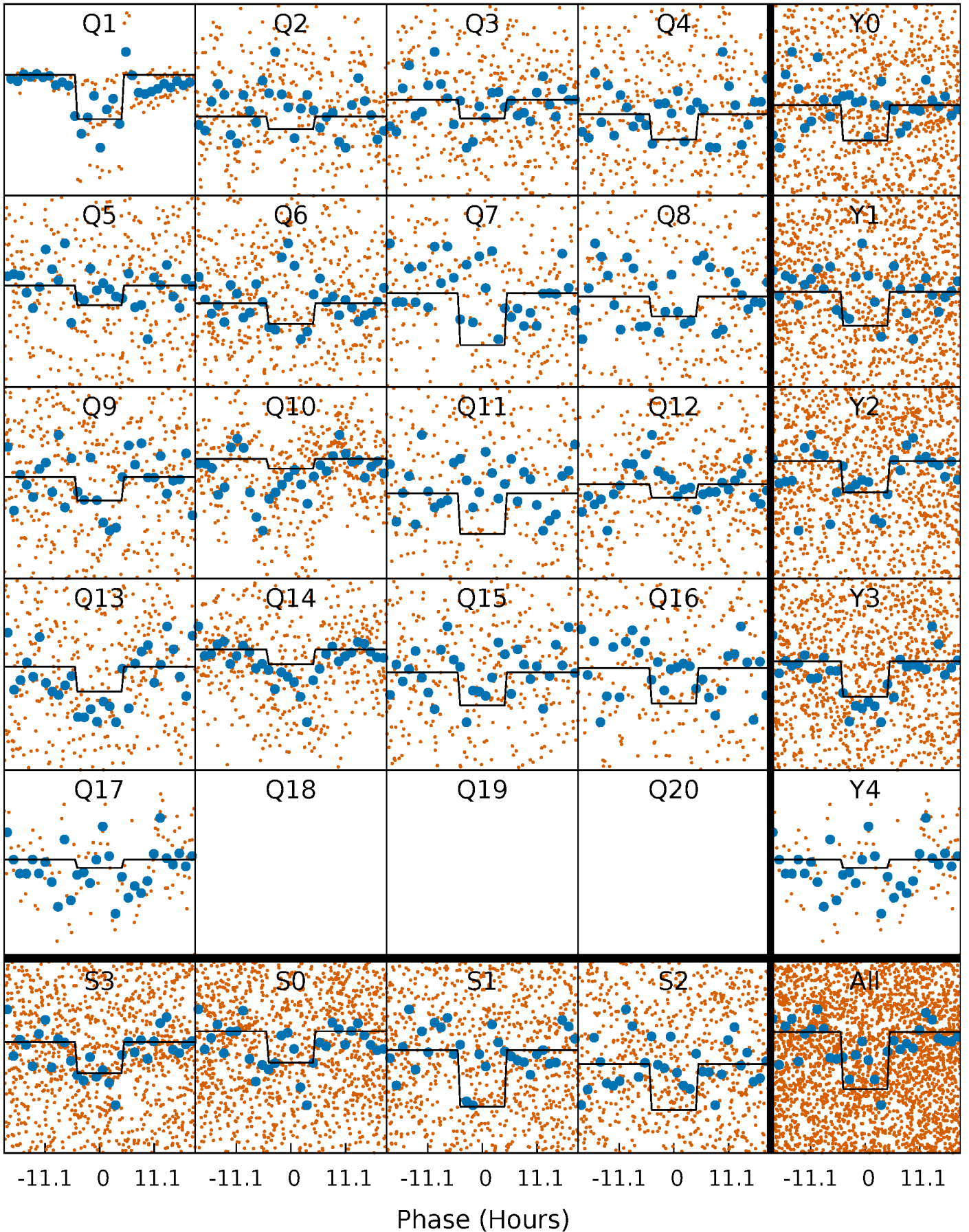
DV Quarter-Phased Transit Curves

TCE 010514430-06 P= 14.329249 Days $T_0=139.133682$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

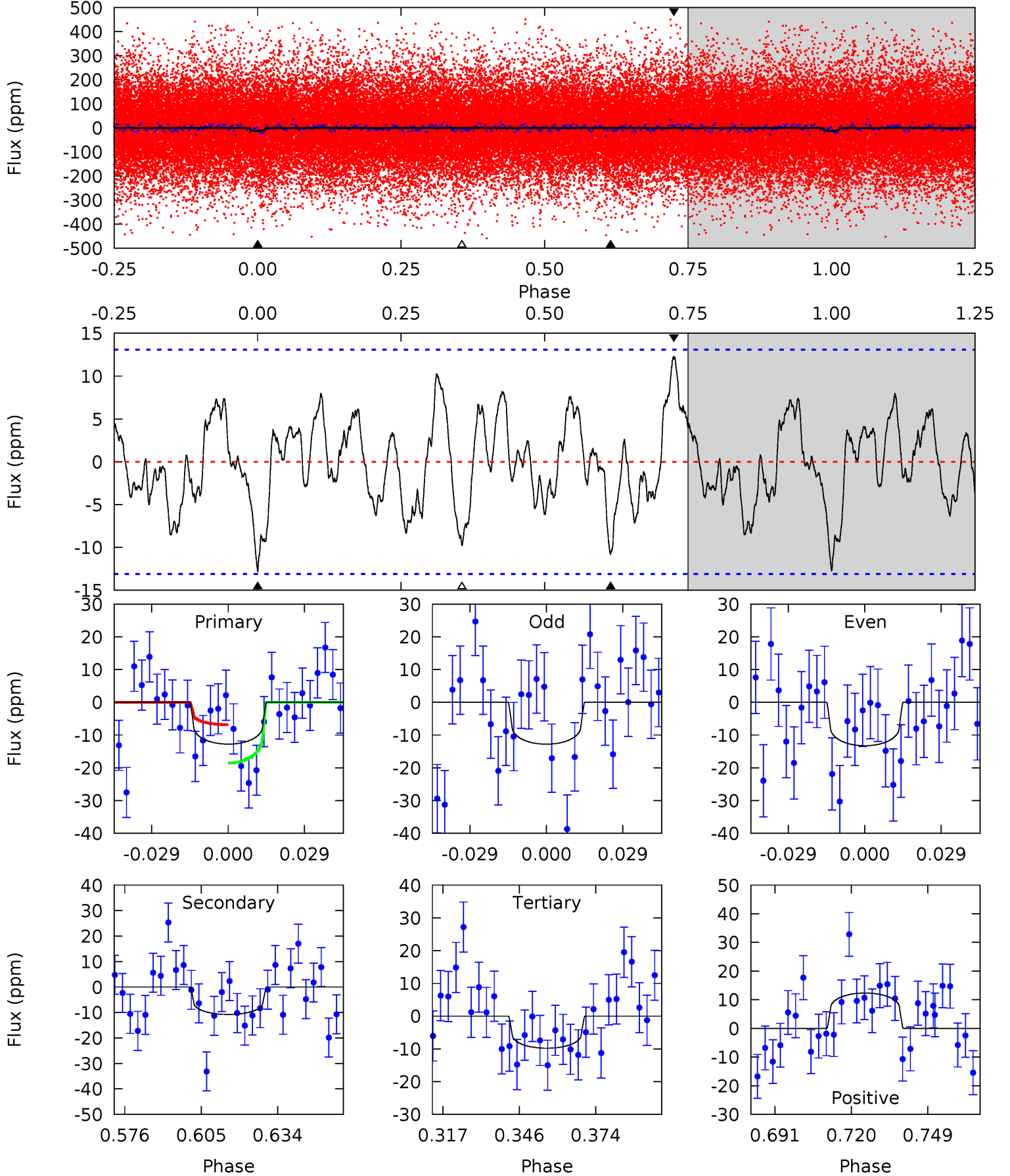
TCE 010514430-06 P= 14.329230 Days $T_0=139.128348$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-06, P = 14.329249 Days, E = 124.804433 Days

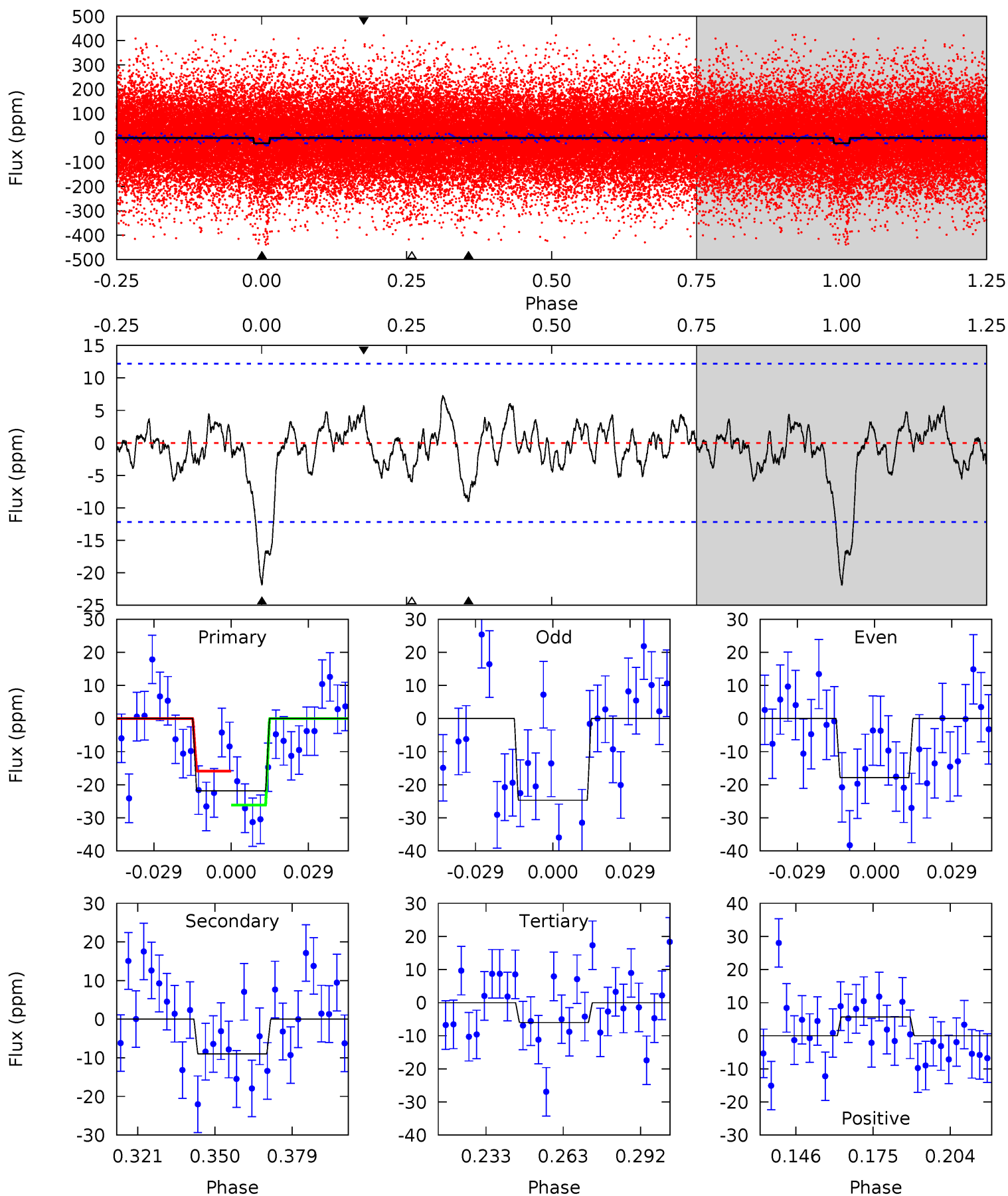
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.70	3.97	3.60	4.54	4.82	2.19	1.69	1.09	0.16	0.36	-0.57	0.09	1.31	0.49	2.17



Alt Model-Shift Uniqueness Test

010514430-06, P = 14.329230 Days, E = 124.799118 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.63	3.54	2.37	2.25	4.82	2.18	1.01	6.26	6.38	1.17	1.28	1.36	1.39	0.25	2.03



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 3	$0.69^{+0.25}_{-0.26}$	1293^{+23}_{-22}	5217^{+1377}_{-717}	169^{+289}_{-86}
Alt.	-9 ± 3	$0.95^{+0.27}_{-0.24}$	1291^{+25}_{-19}	4345^{+671}_{-429}	70^{+68}_{-31}

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 $A_{obs} \gg 1.0$

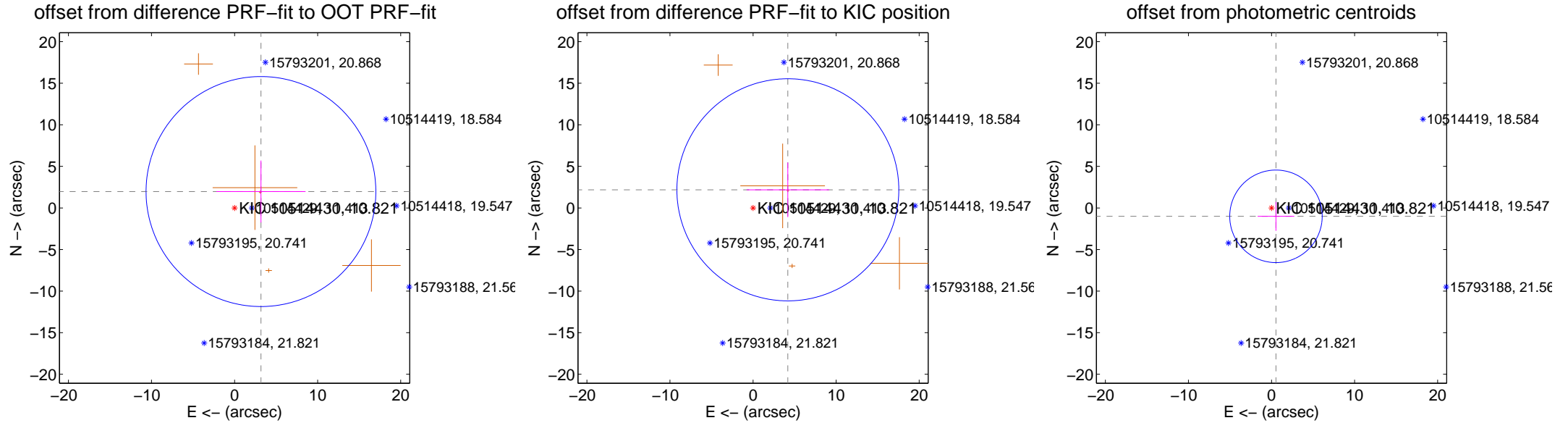
DV Centroid Data

Supplemental centroid analysis for 010514430-06. **Kepler magnitude: 10.82.** Transit SNR 6.38

There are 0 quarters with good PRF difference image offsets

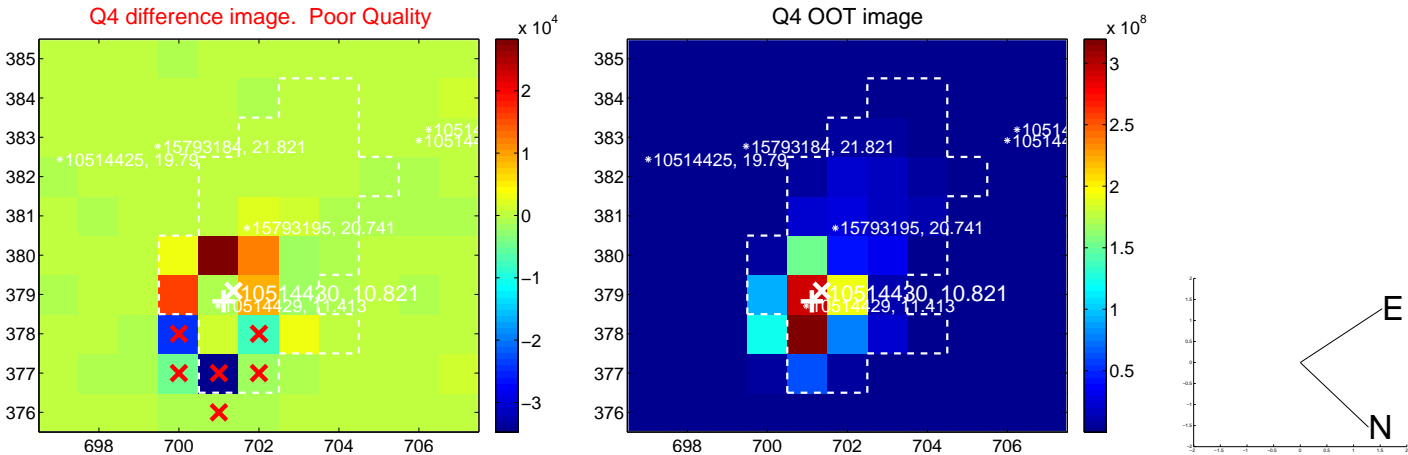
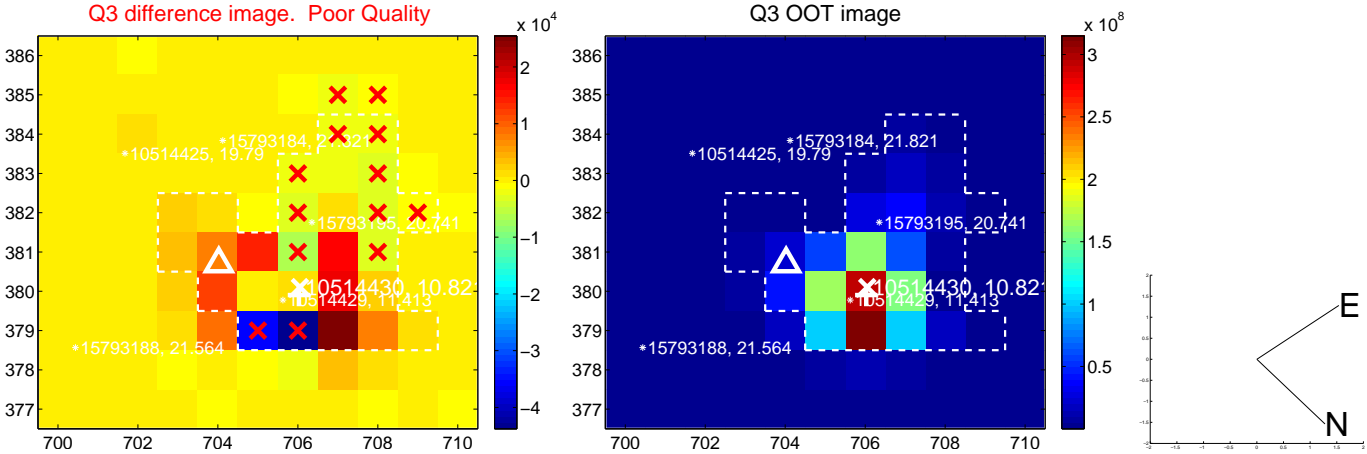
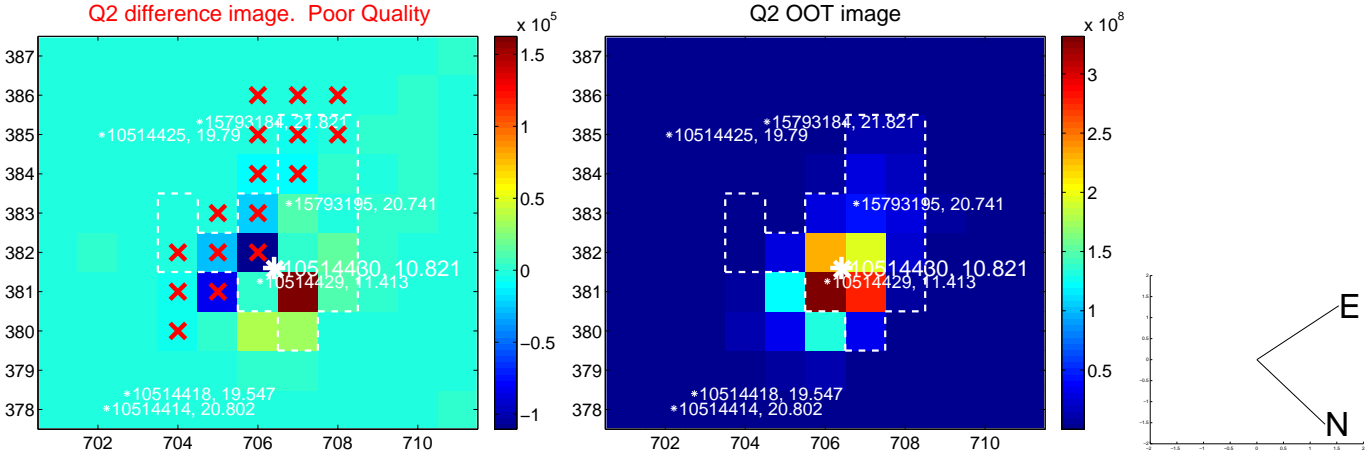
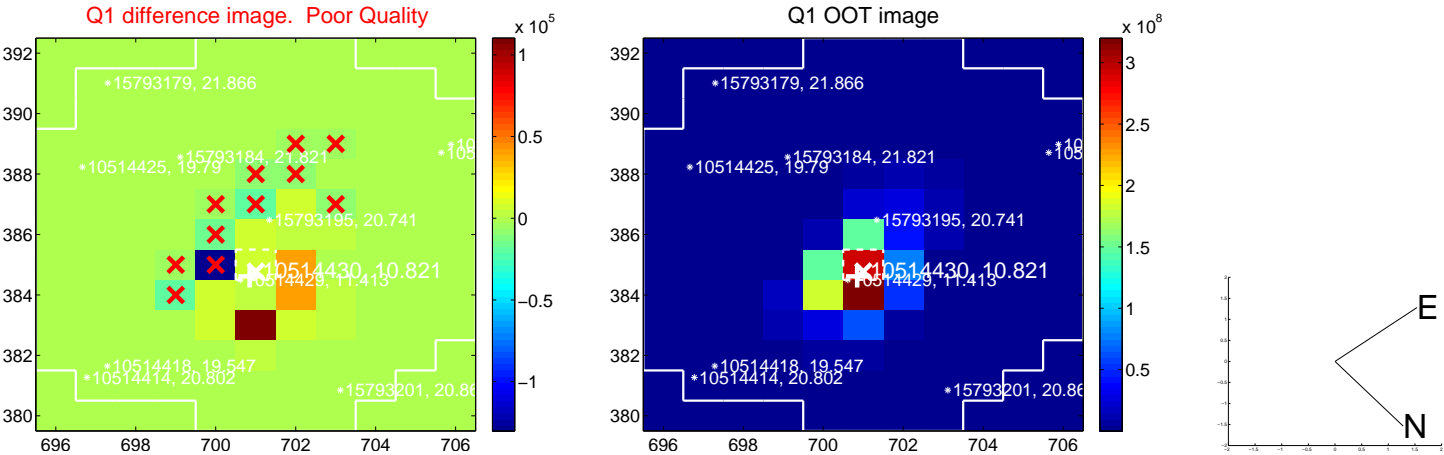
The direct PRF centroid is offset from the target star catalog position by about 1.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.738 ± 4.610	0.81	-3.174 ± 5.369	1.973 ± 3.727
PRF-fit source offset from KIC position	4.724 ± 4.453	1.06	-4.190 ± 4.968	2.182 ± 3.280
photometric centroid source offset	1.14 ± 1.86	0.61	-0.53 ± 2.20	-1.01 ± 1.74

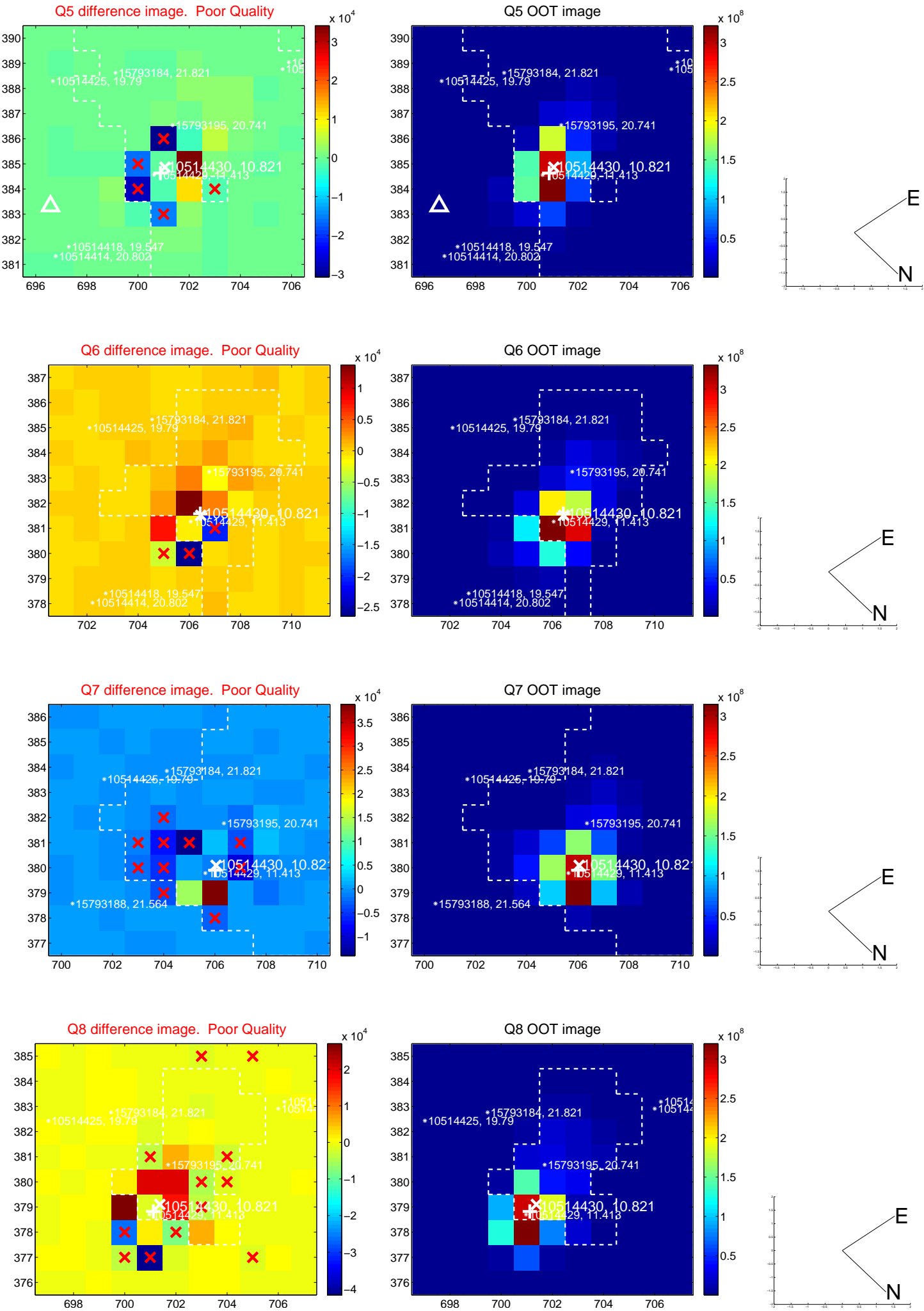


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

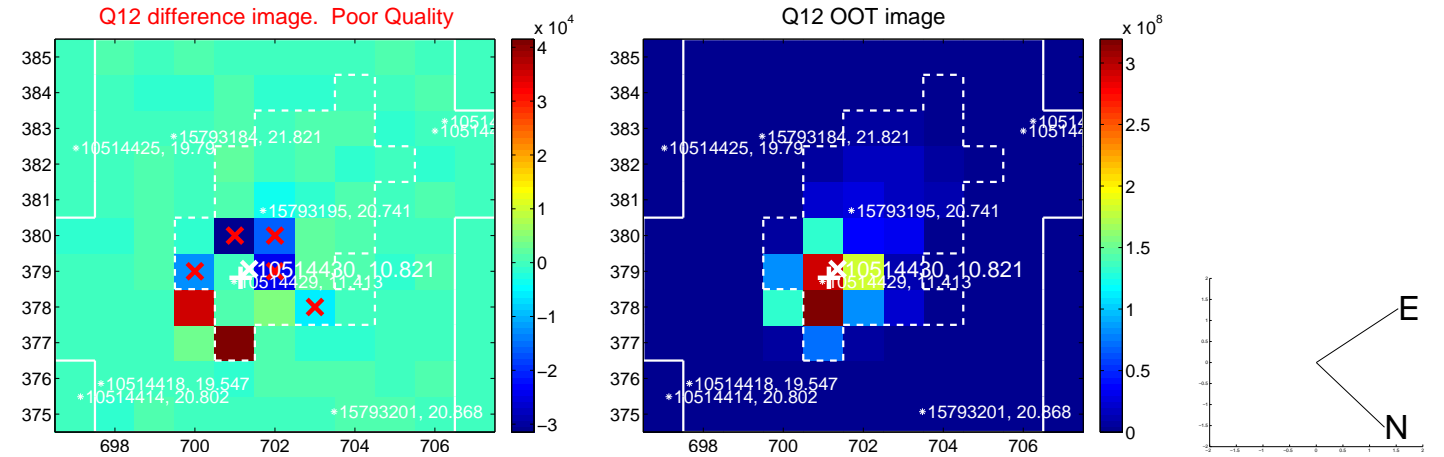
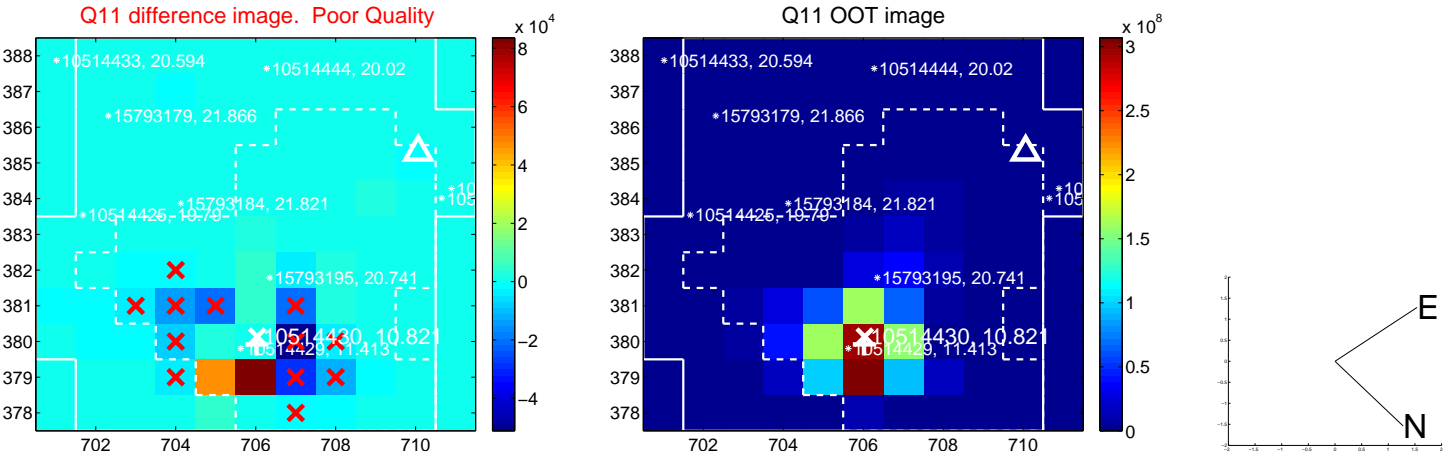
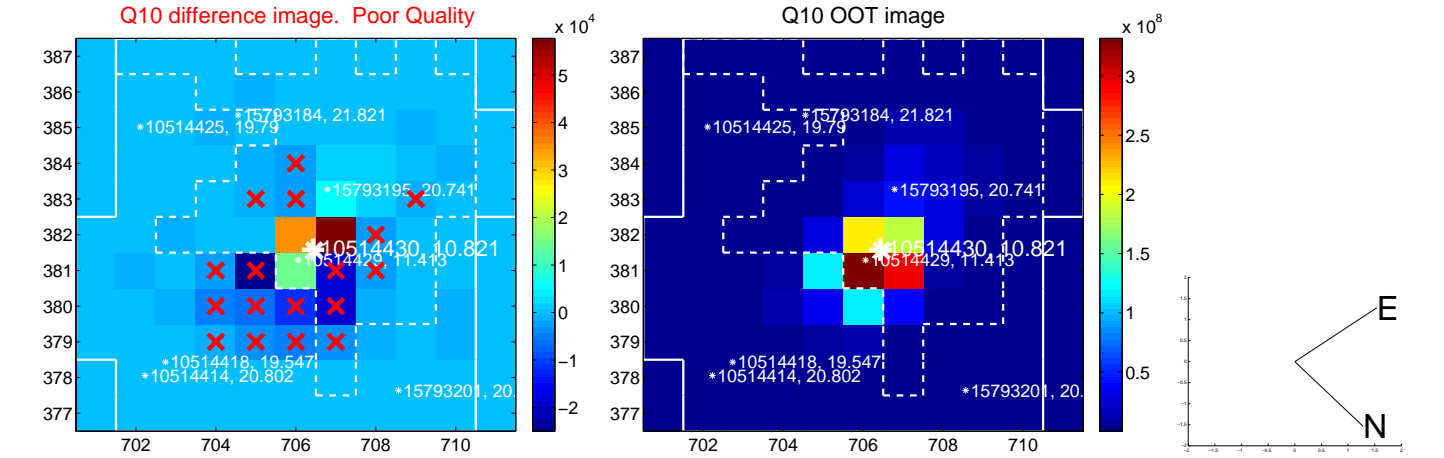
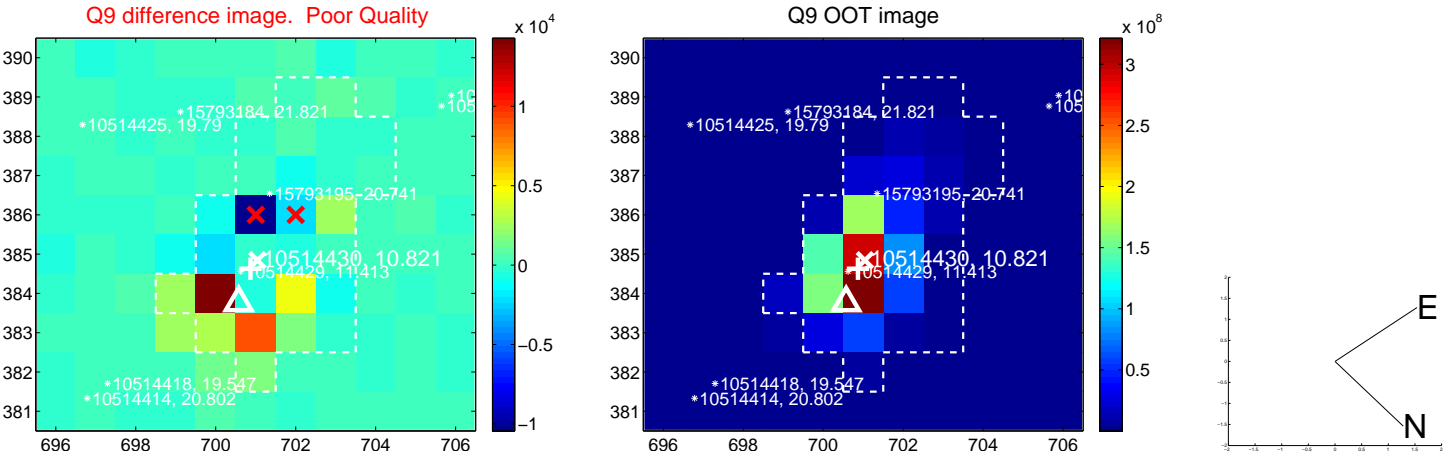
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



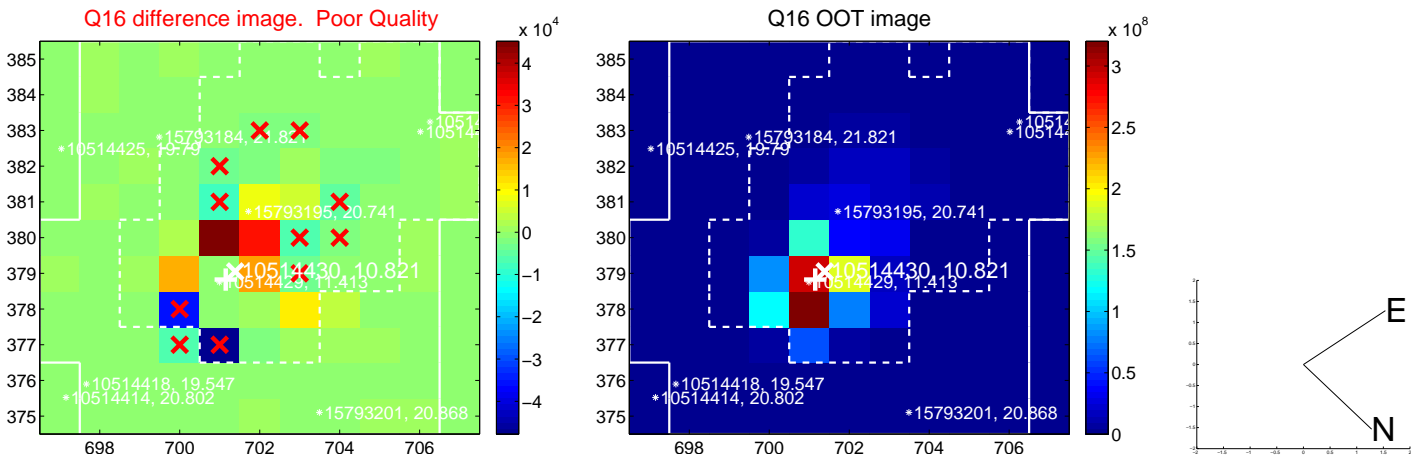
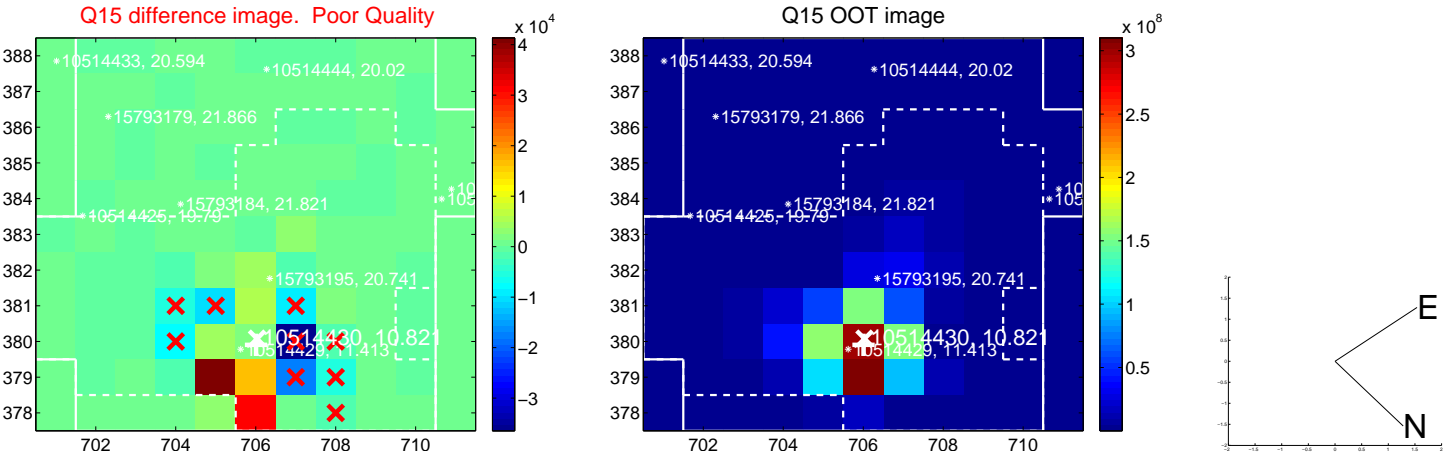
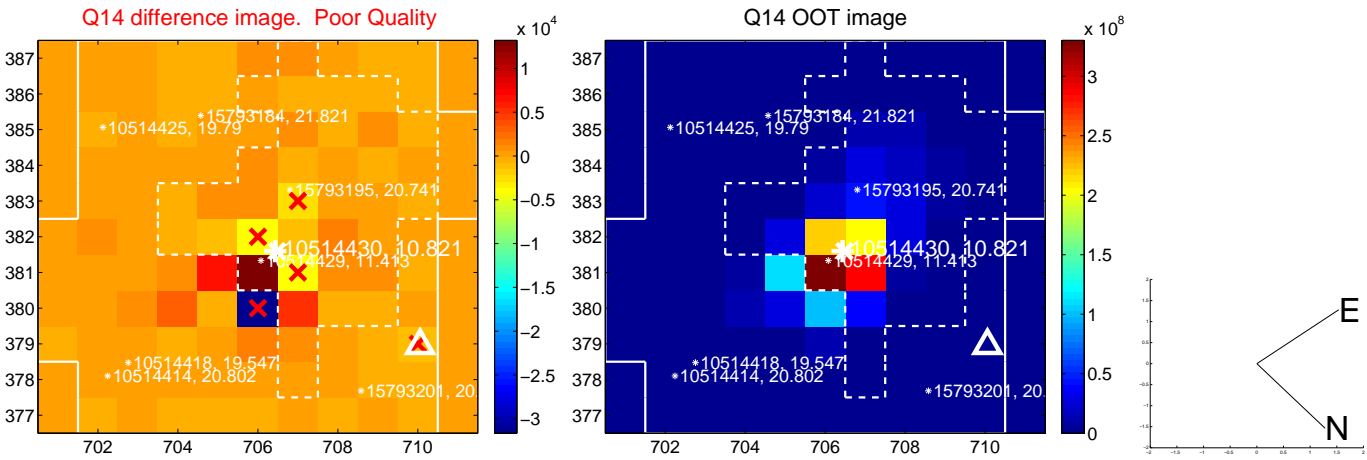
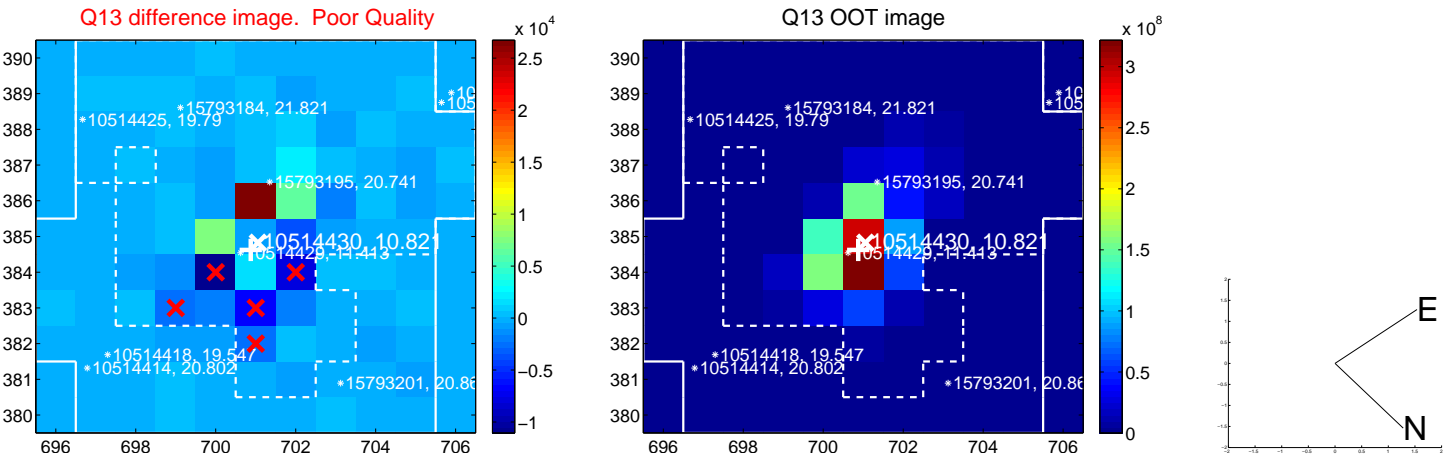
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



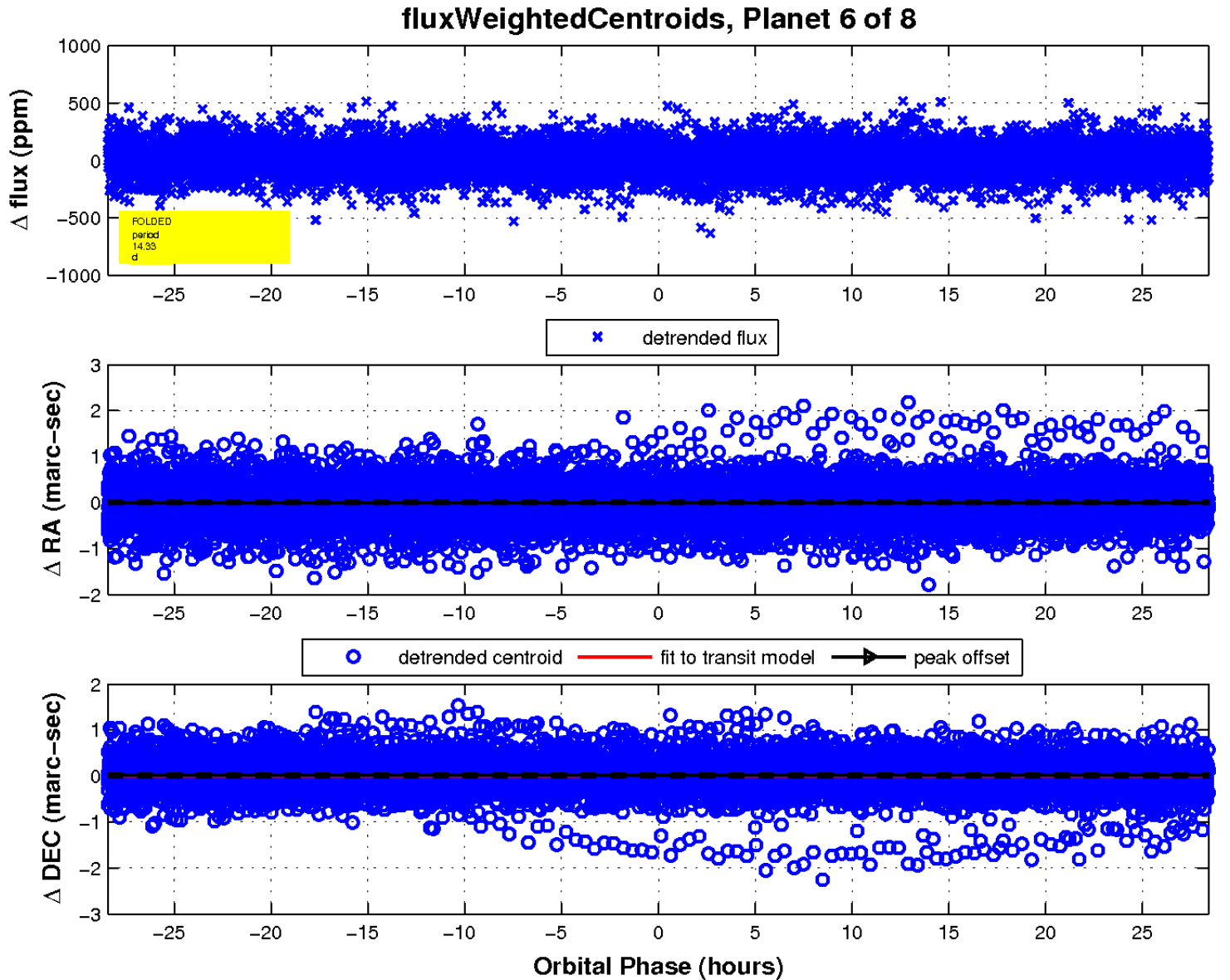
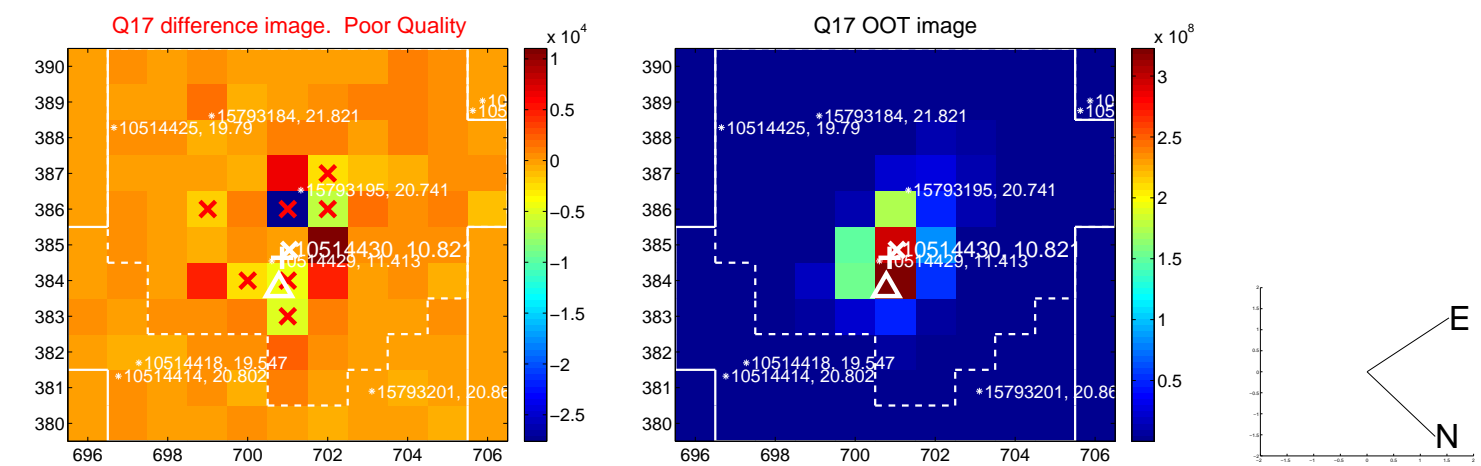
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

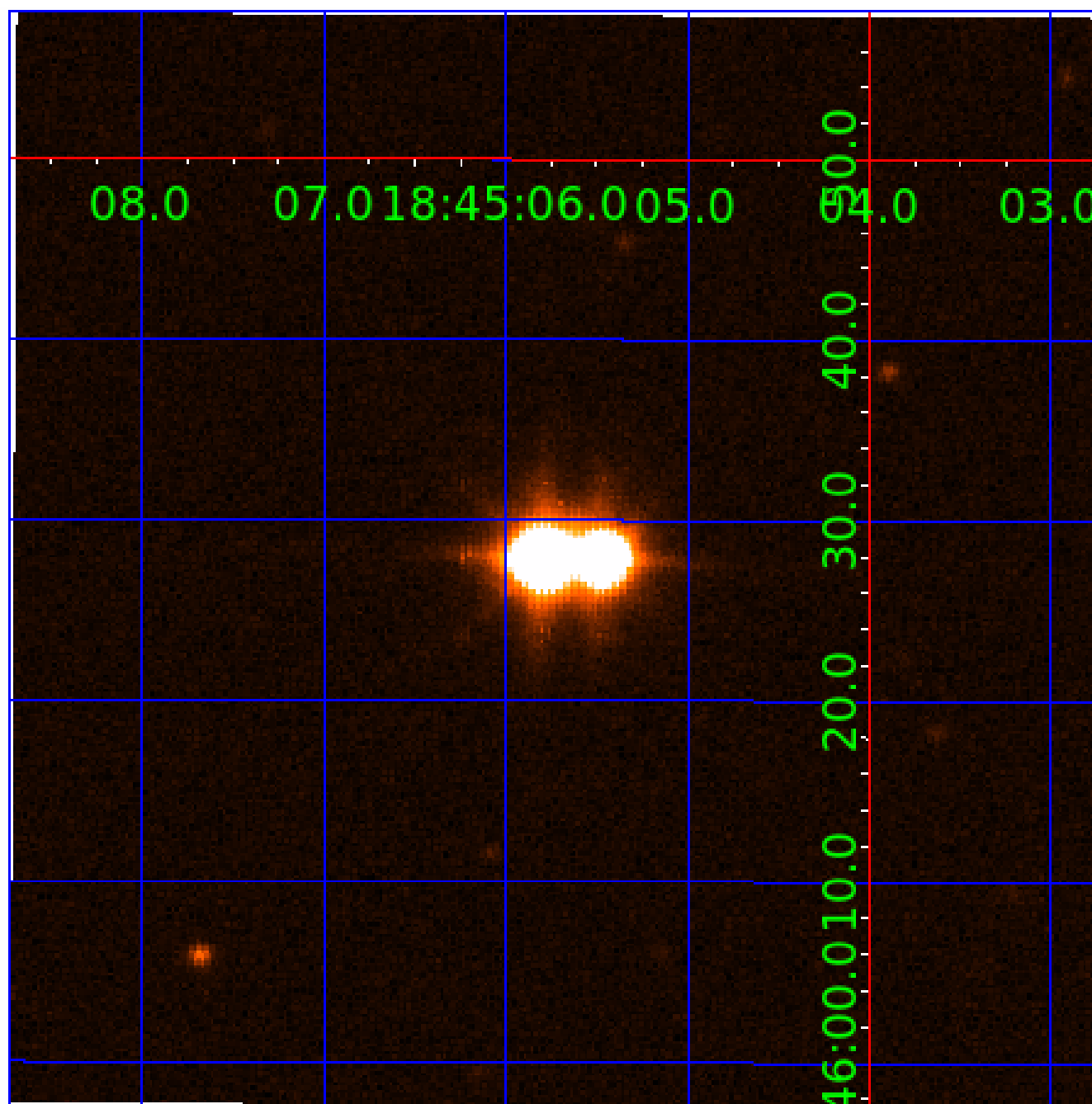


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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 010514430-07

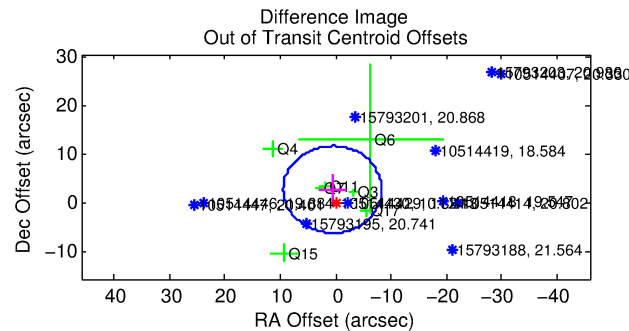
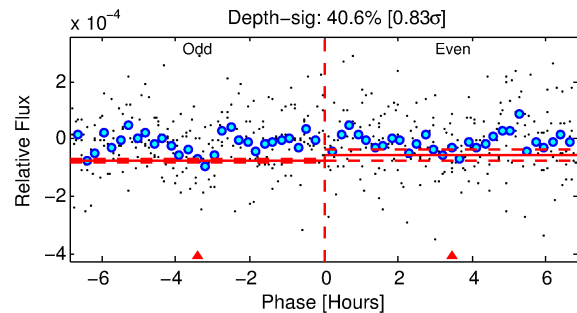
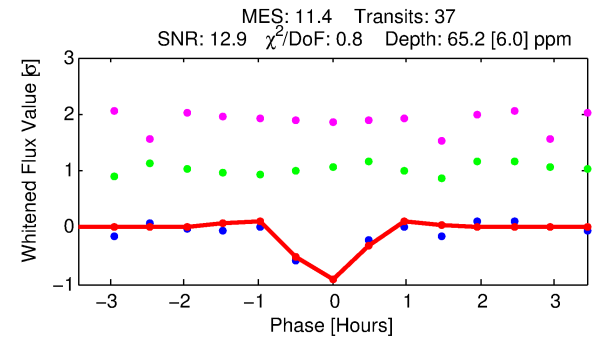
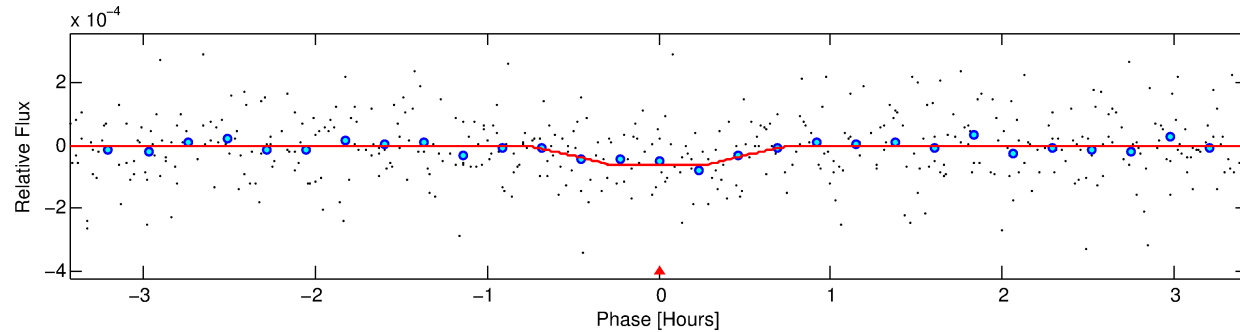
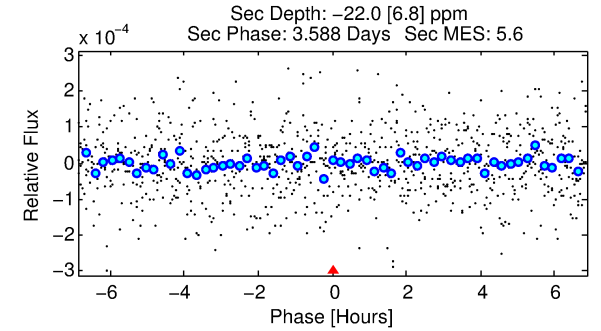
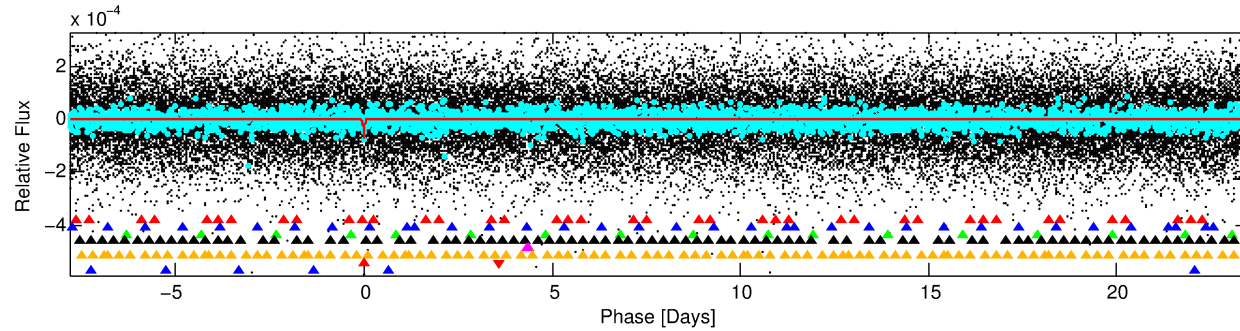
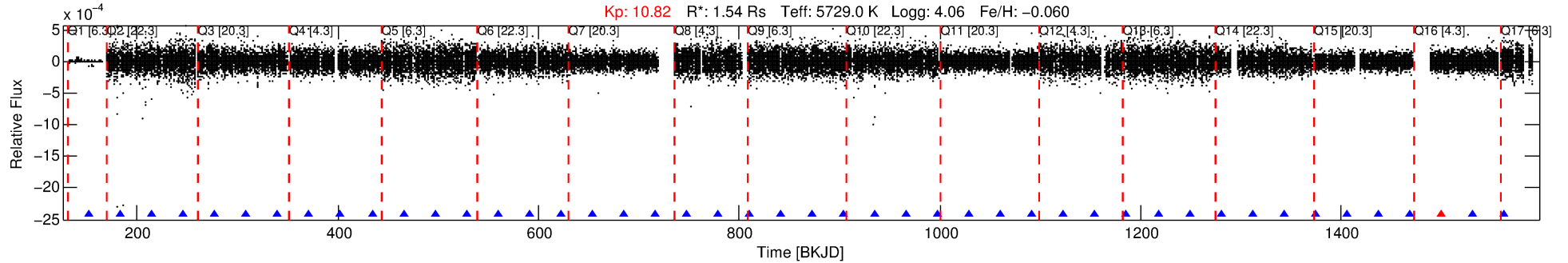
No Significant Match Found

DV One-Page Summary

KIC: 10514430 Candidate: 7 of 8 Period: 31.327 d

KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 31.32682 [0.00014] d
Epoch = 152.2657 [0.0024] BKJD
Rp/R* = 0.0086 [0.0042]
a/R* = 107.87 [235.43]
b = 0.87 [0.66]
Seff = 61.09 [5.30]
Teq = 713 [15] K
Rp = 1.45 [0.72] Re
a = 0.1942 [0.0087] AU
Ag = N/A
Teffp = N/A

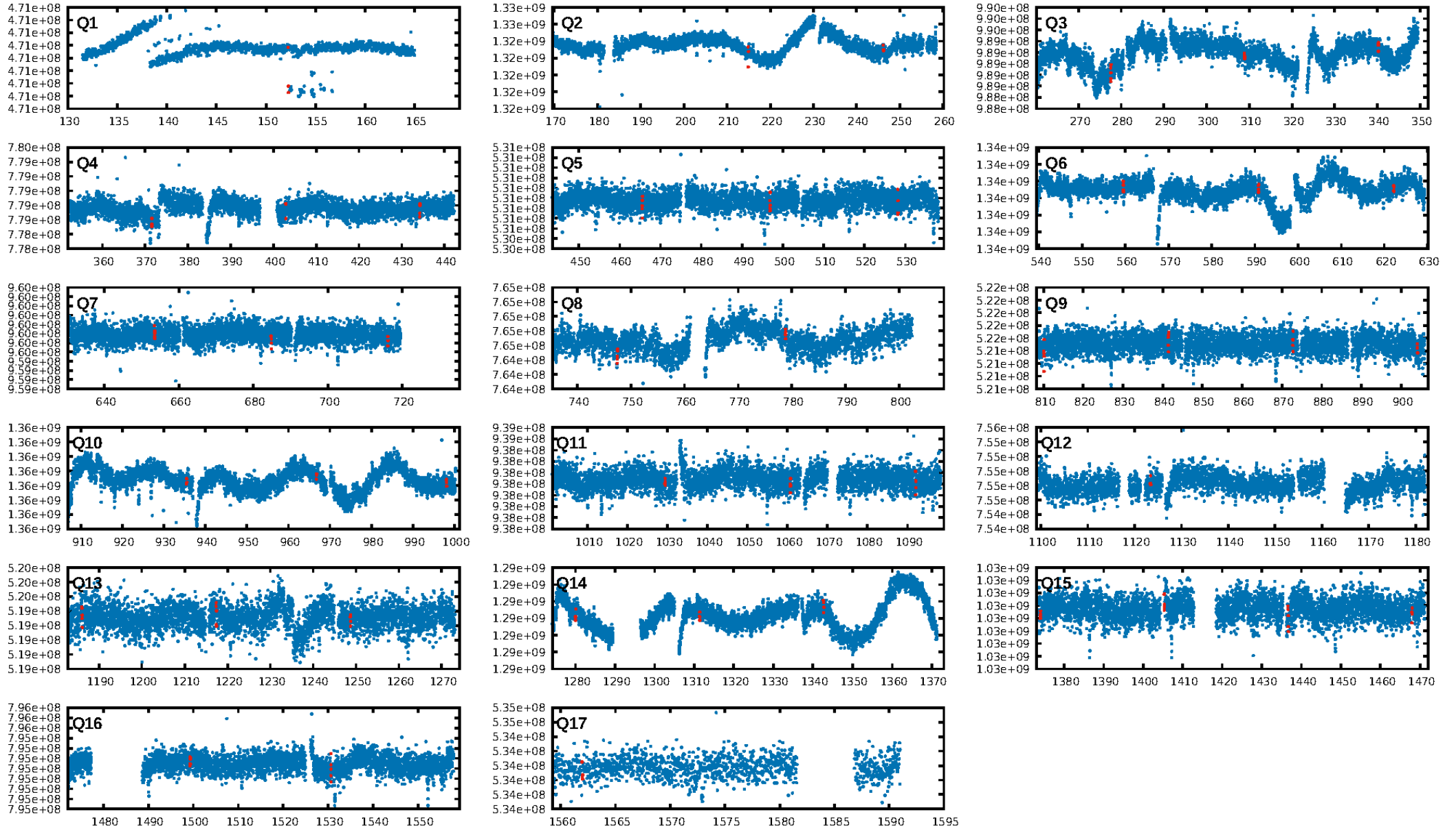
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.76σ]
LongPeriod-sig: 100.0% [56.02σ]
ModelChiSquare2-sig: 86.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-23
RollingBand-fgt: 0.97 [34/35]
GhostDiagnostic-chr: N/A
Centroid-sig: 7.4%
Centroid-so: 1.240 arcsec [1.14σ]
OotOffset-rm: 2.877 arcsec [0.97σ]
KicOffset-rm: 3.357 arcsec [1.49σ]
OotOffset-st: 1/4/1/1 [7]
KicOffset-st: 1/4/1/1 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.94 [15/16]

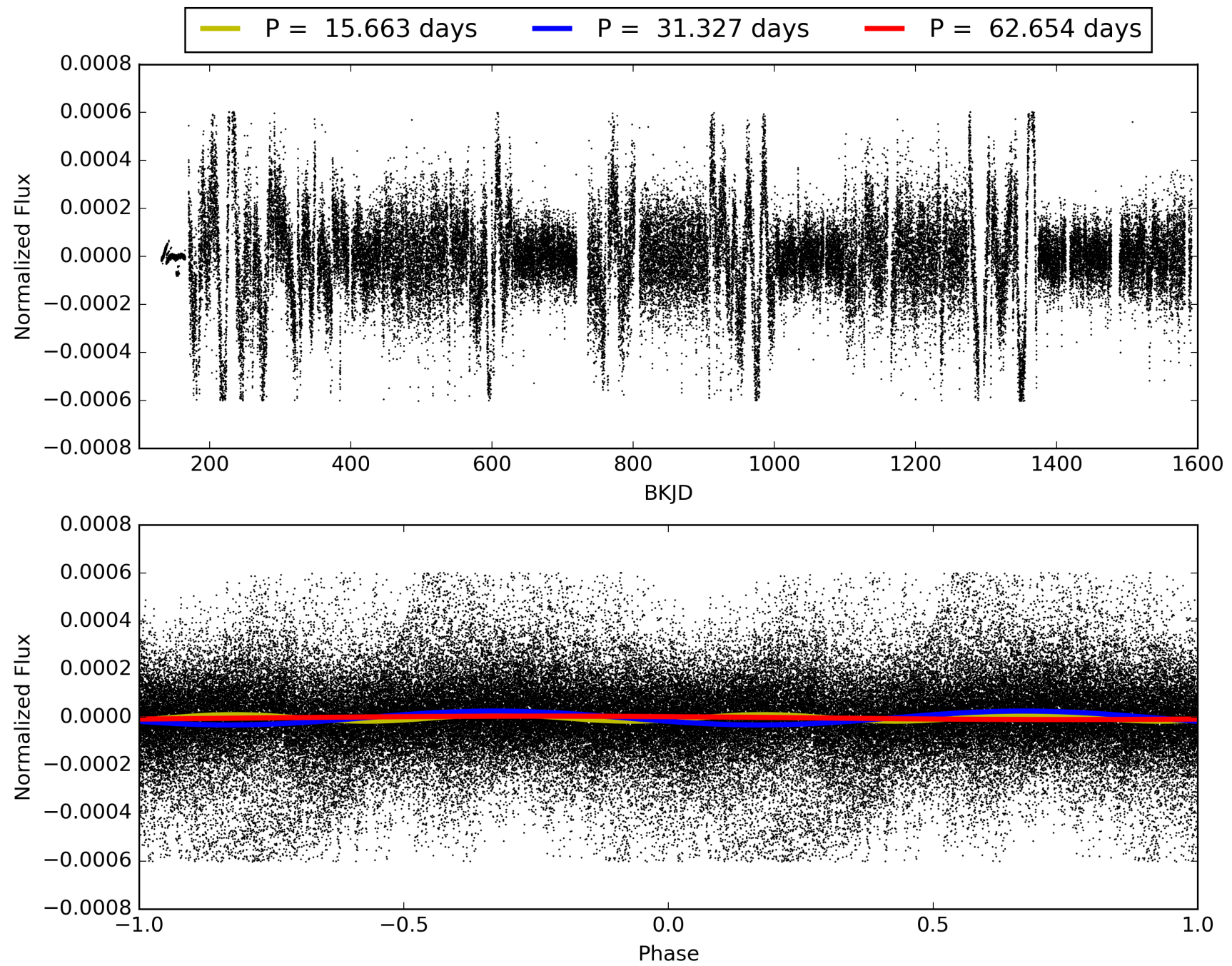
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:35:27 Z

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

TCE 010514430-07, PDC Light Curves

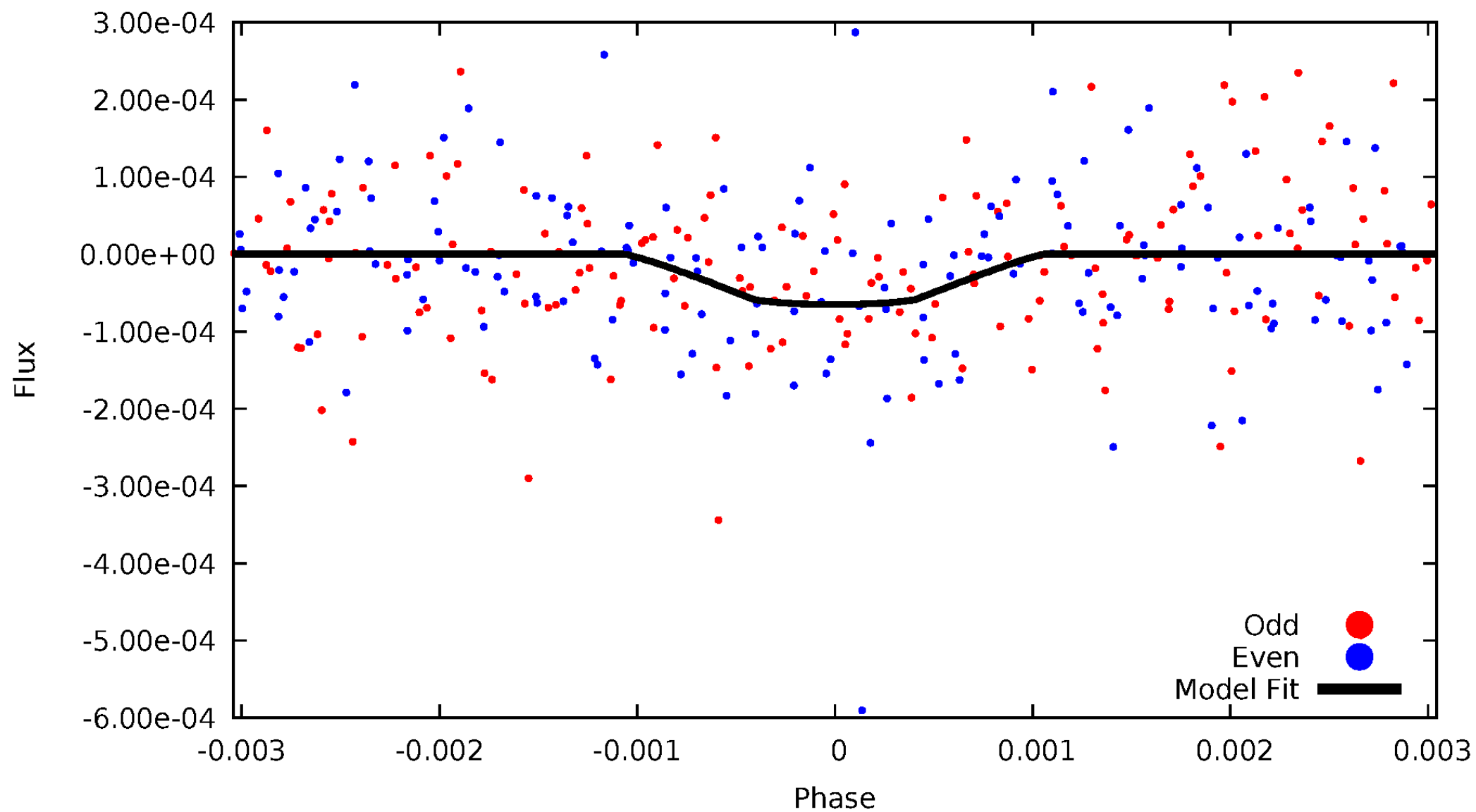


TCE 010514430-07



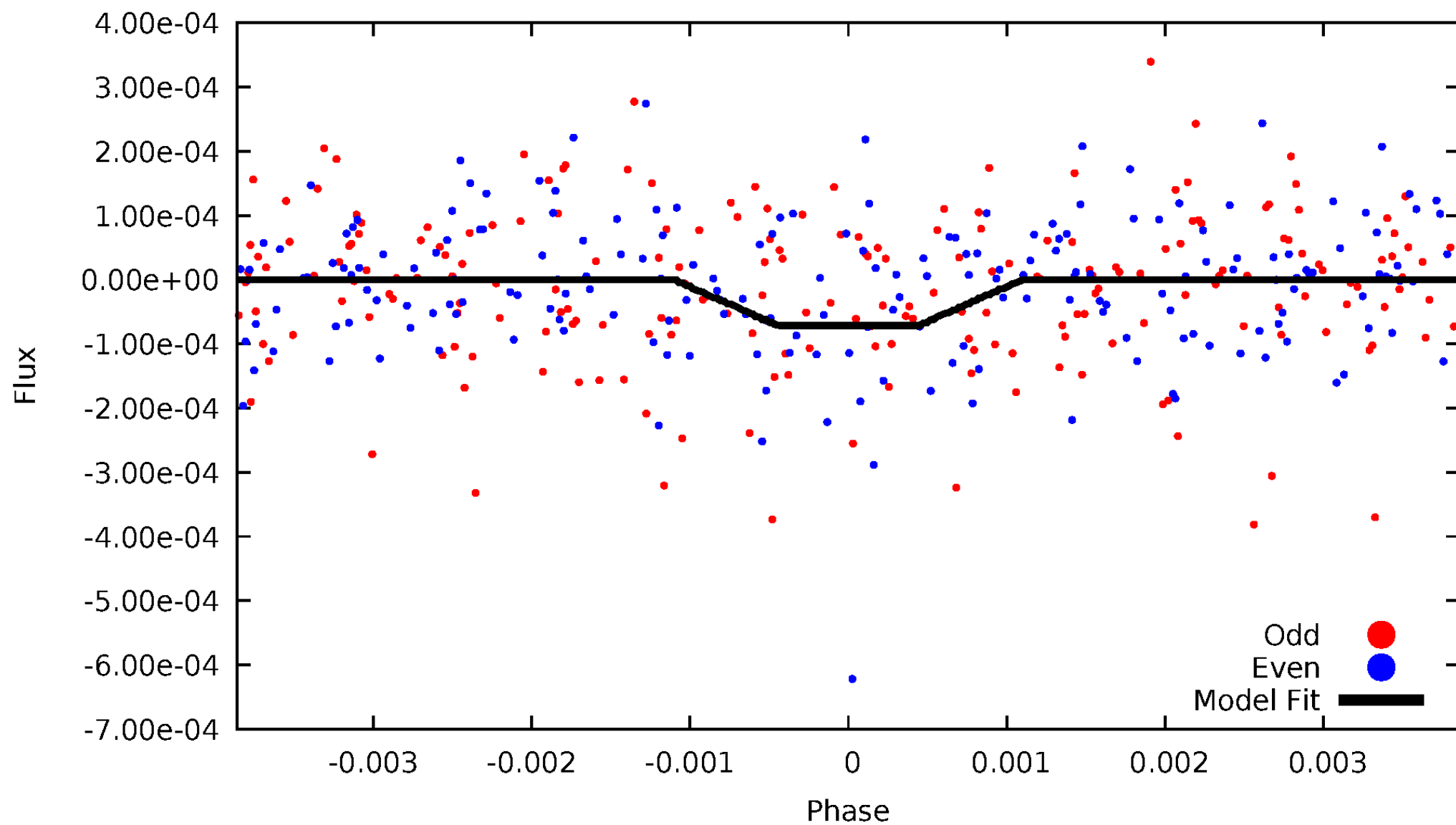
DV Odd/Even

TCE 010514430-07



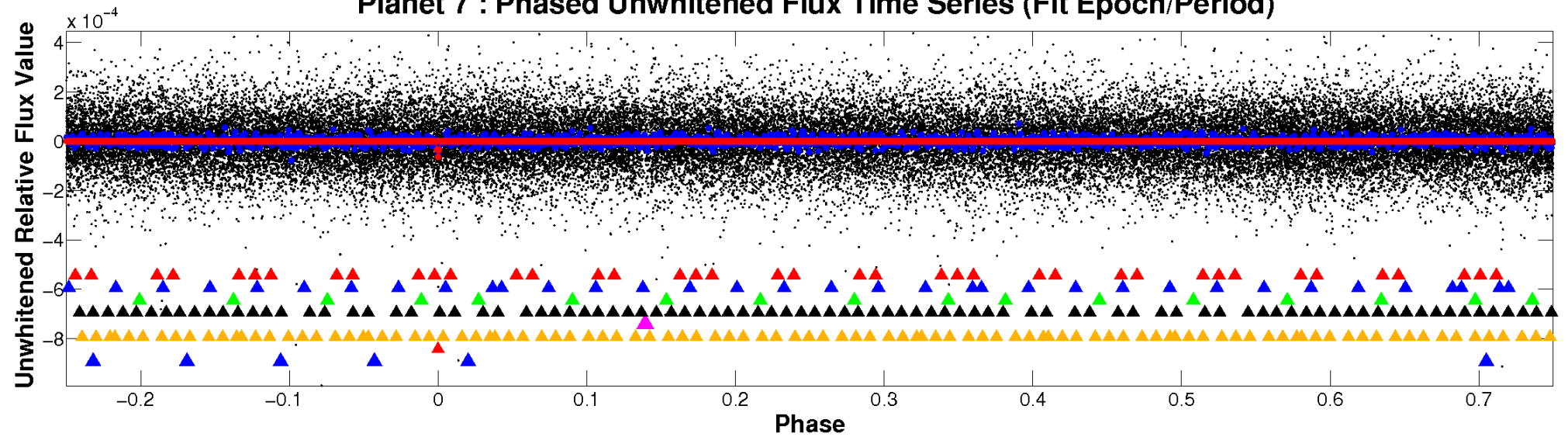
ALT Odd/Even

TCE 010514430-07

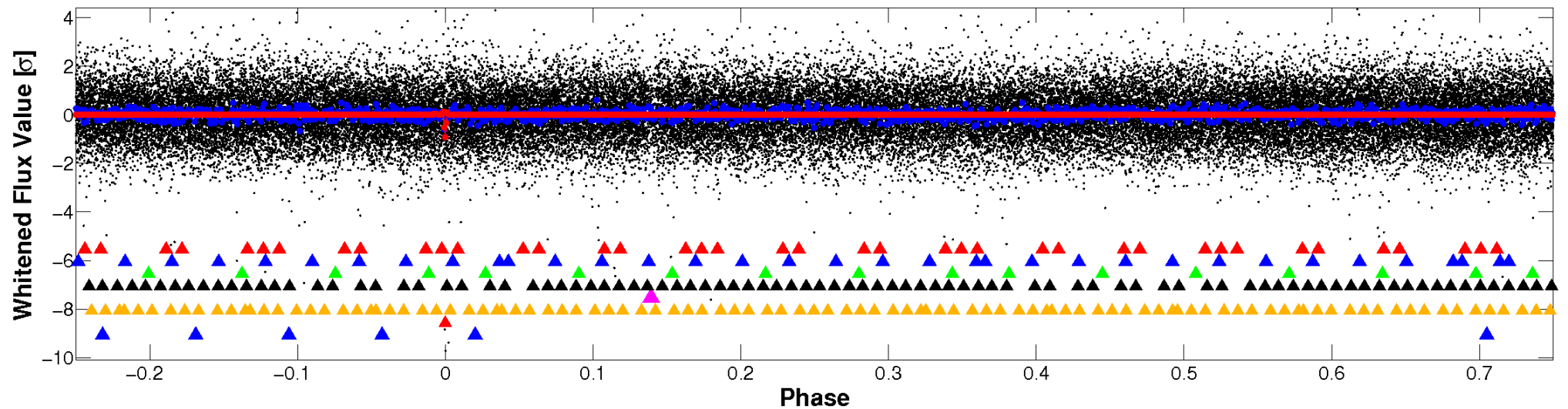


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

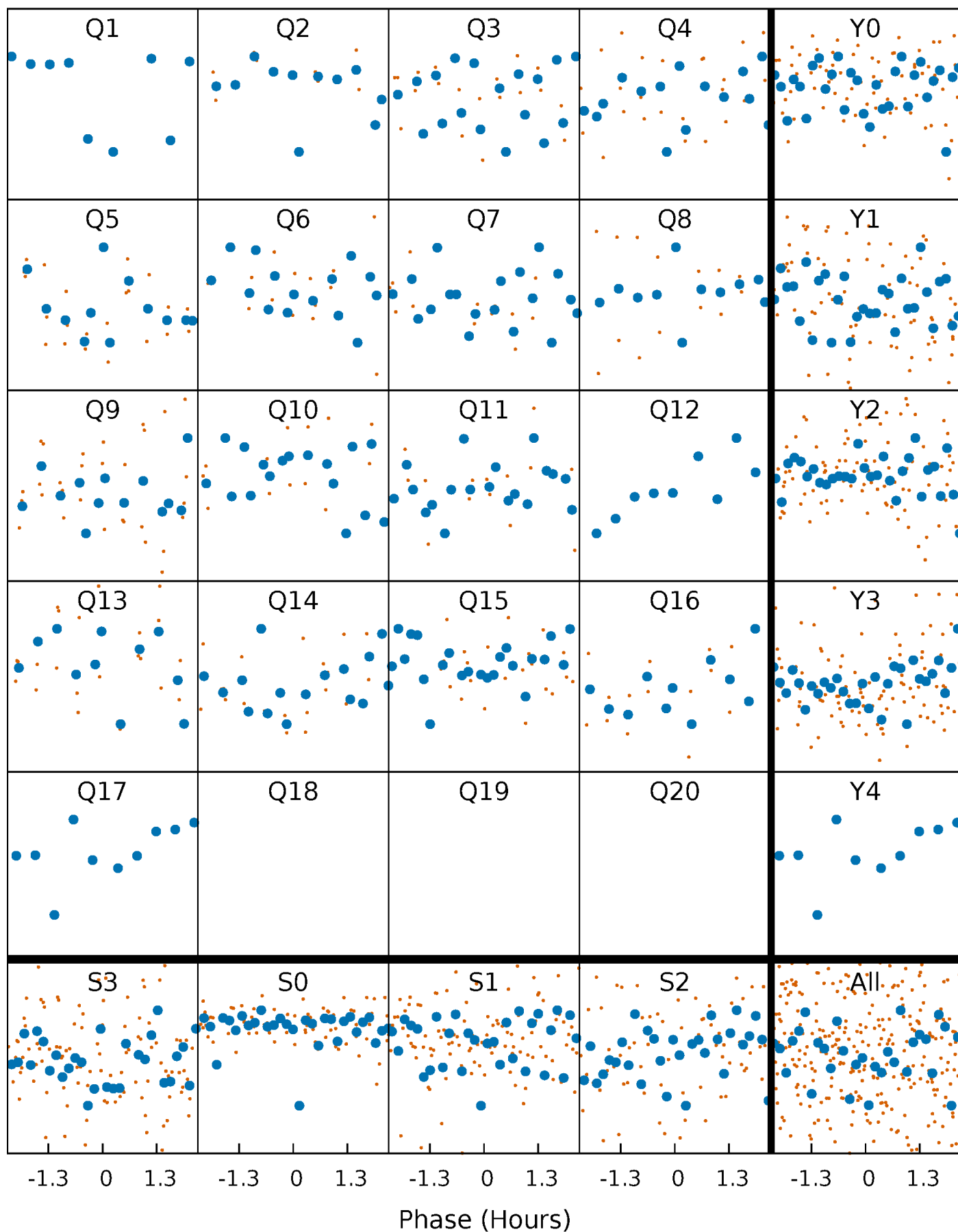


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



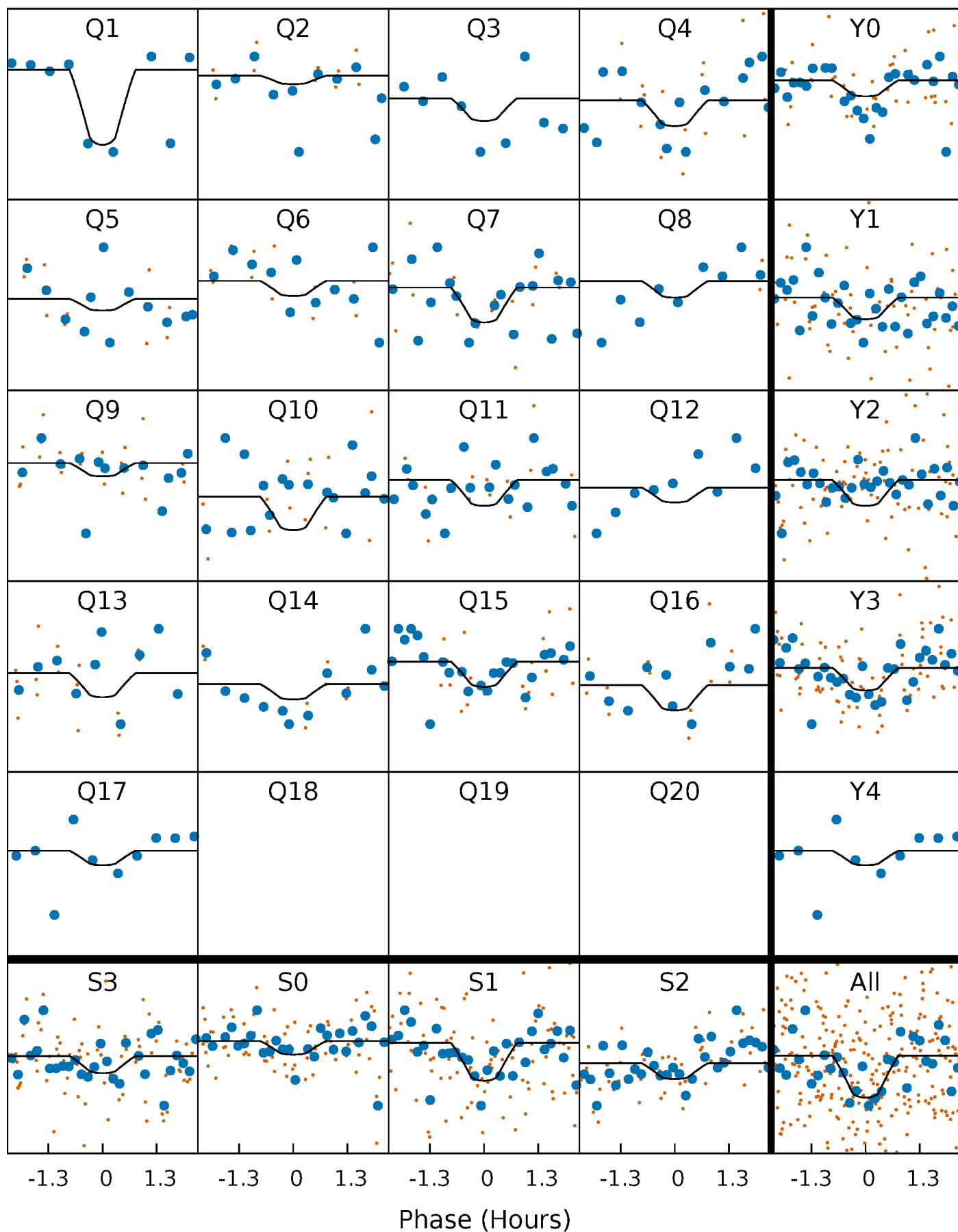
PDC Quarter-Phased Transit Curves

TCE 010514430-07 P= 31.326820 Days $T_0=152.265714$ (BKJD)



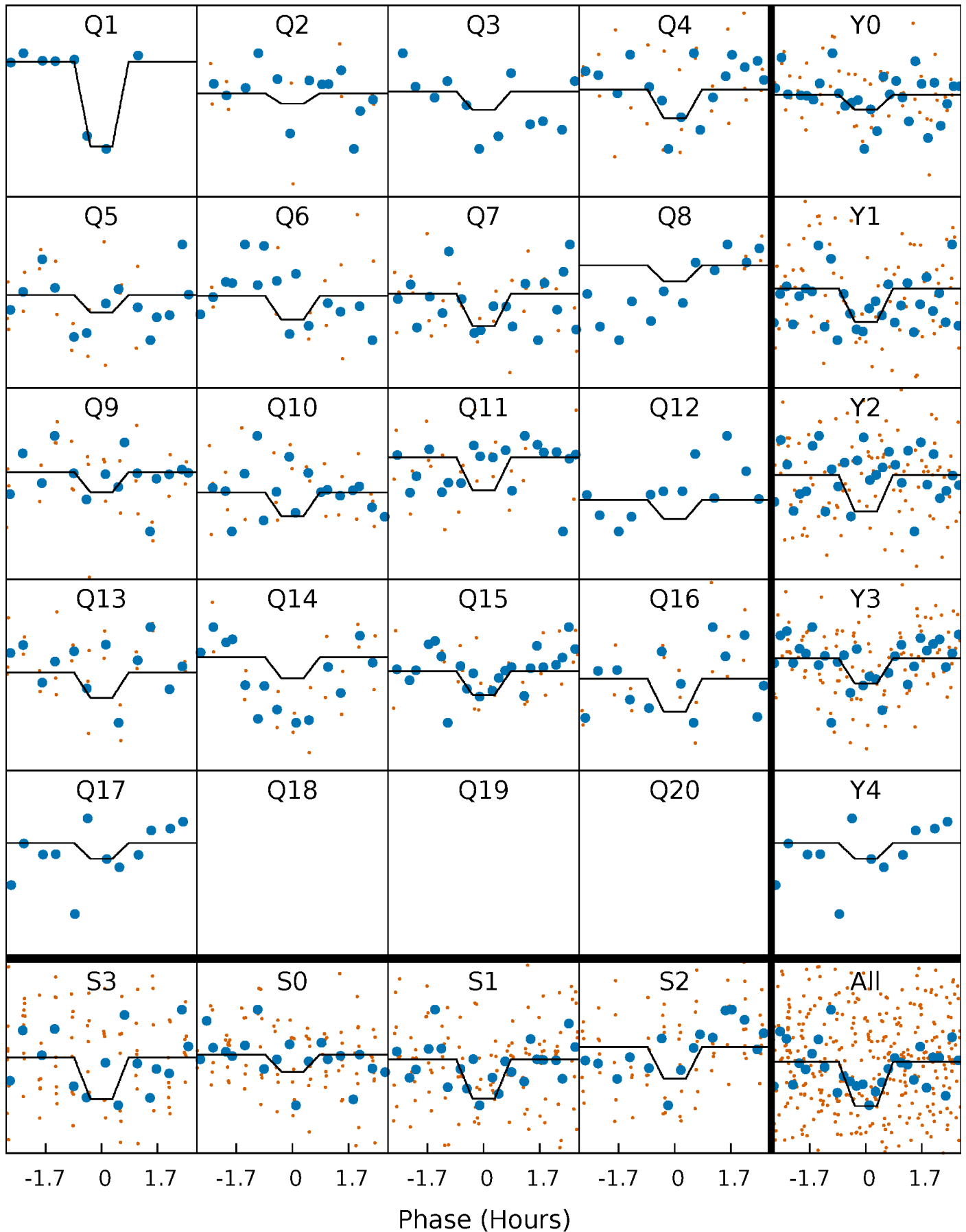
DV Quarter-Phased Transit Curves

TCE 010514430-07 $P = 31.326820$ Days $T_0 = 152.265714$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

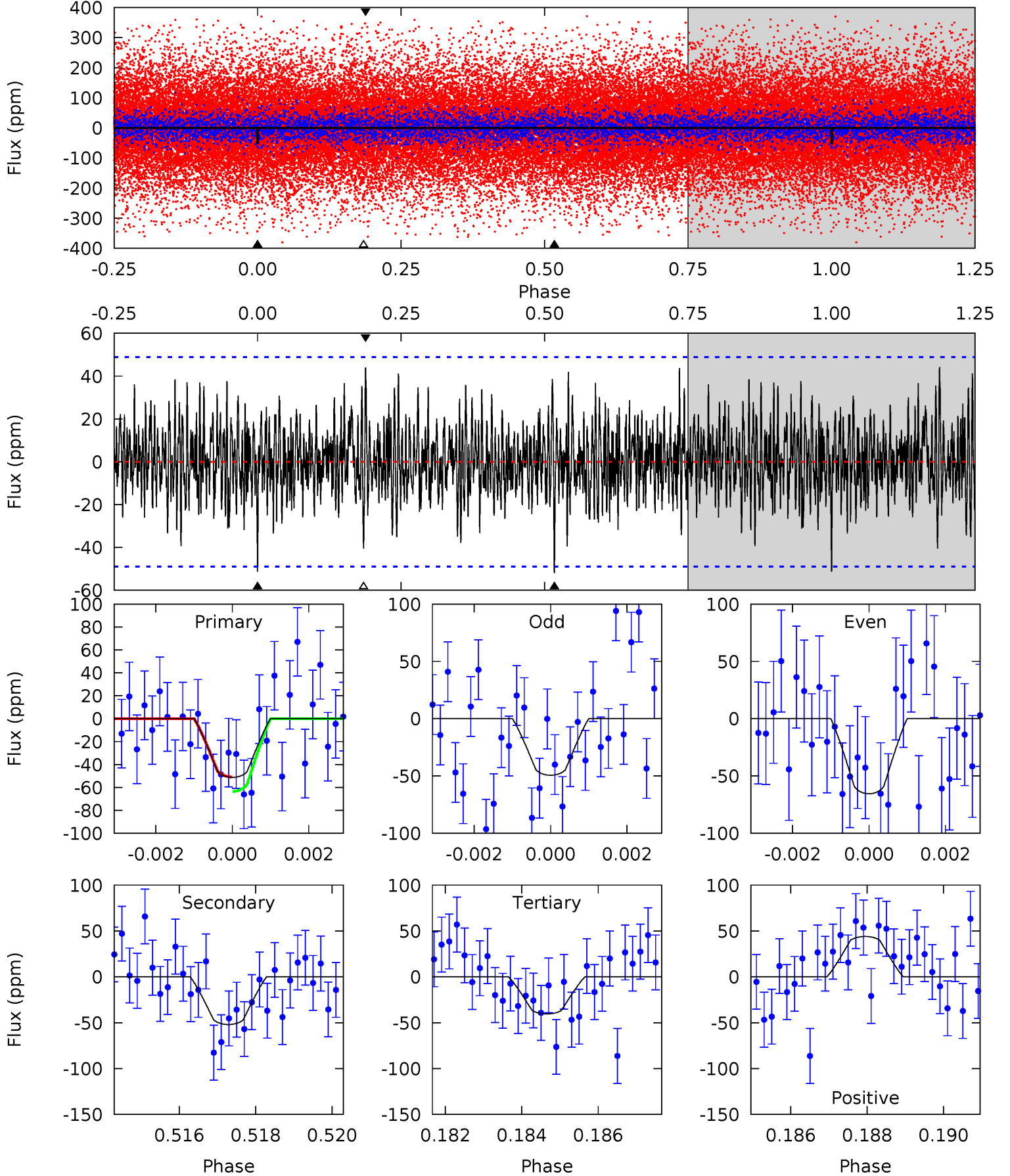
TCE 010514430-07 P= 31.326457 Days $T_0=152.269938$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-07, $P = 31.326820$ Days, $E = 120.938894$ Days

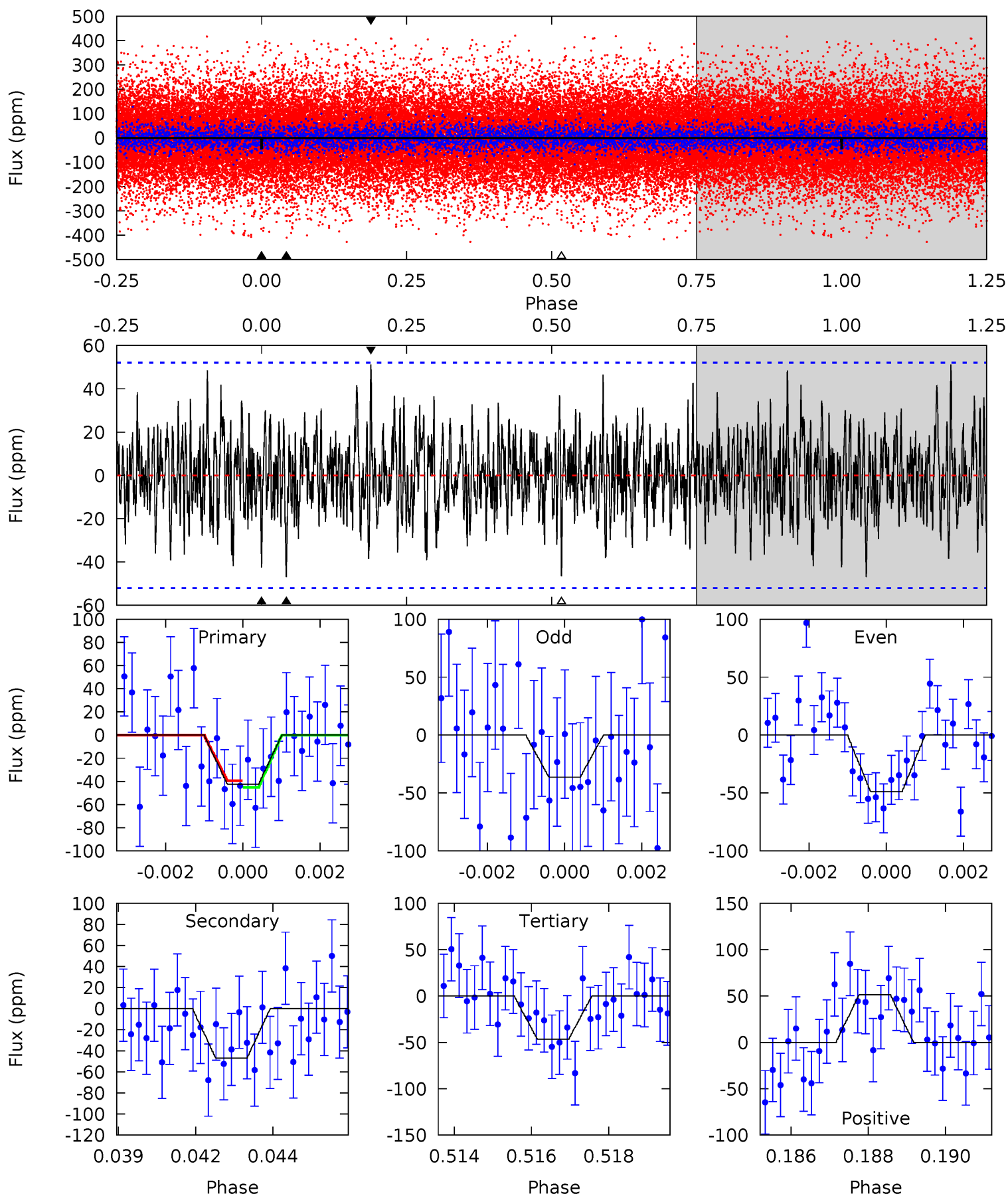
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.58	5.66	4.40	4.79	5.32	3.07	1.49	1.17	0.79	1.26	0.87	0.88	1.15	0.46	0.69



Alt Model-Shift Uniqueness Test

010514430-07, $P = 31.326457$ Days, $E = 120.943481$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.33	4.79	4.76	5.23	5.31	3.06	1.48	-0.43	-0.90	0.03	-0.44	0.64	1.52	0.52	0.30



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52 ± 9	$1.52^{+0.73}_{-0.66}$	995^{+19}_{-15}	5156^{+1694}_{-792}	457^{+1067}_{-260}
Alt.	-47 ± 10	$1.46^{+0.69}_{-0.65}$	995^{+19}_{-17}	5161^{+1716}_{-761}	459^{+1042}_{-248}

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

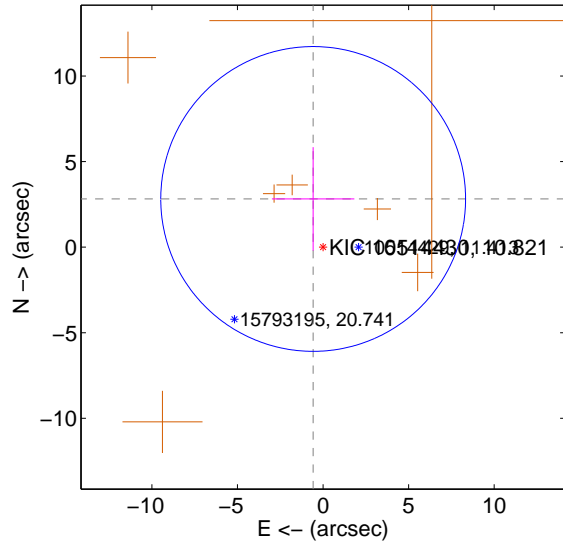
Supplemental centroid analysis for 010514430-07. **Kepler magnitude: 10.82.** Transit SNR 12.91

There are 0 quarters with good PRF difference image offsets

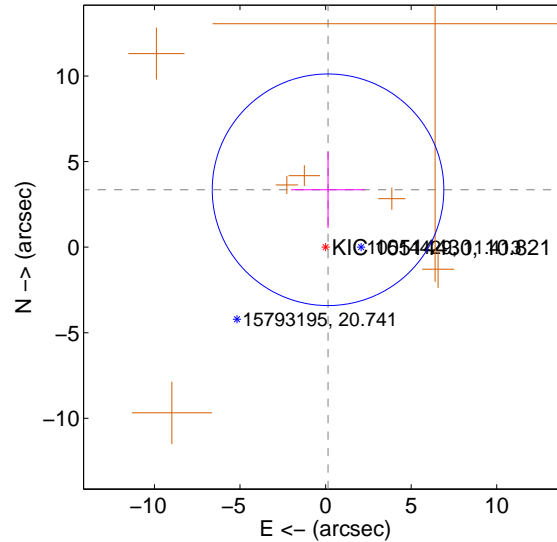
The direct PRF centroid is offset from the target star catalog position by about 1.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.877 ± 2.969	0.97	0.577 ± 2.410	2.818 ± 3.024
PRF-fit source offset from KIC position	3.357 ± 2.256	1.49	-0.143 ± 2.168	3.354 ± 2.233
photometric centroid source offset	1.24 ± 1.09	1.14	-0.40 ± 1.36	-1.17 ± 1.05

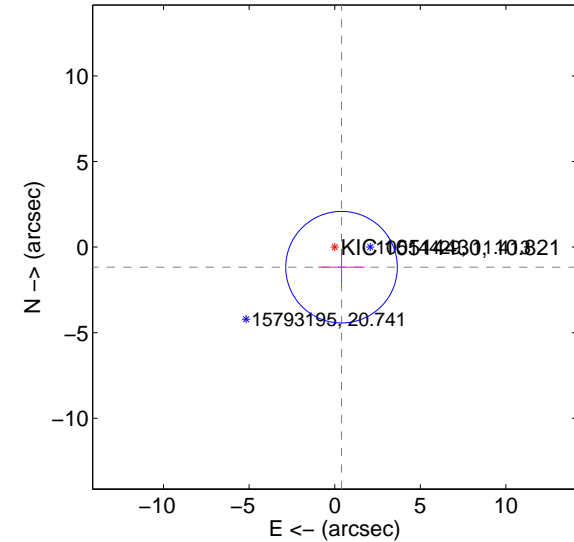
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

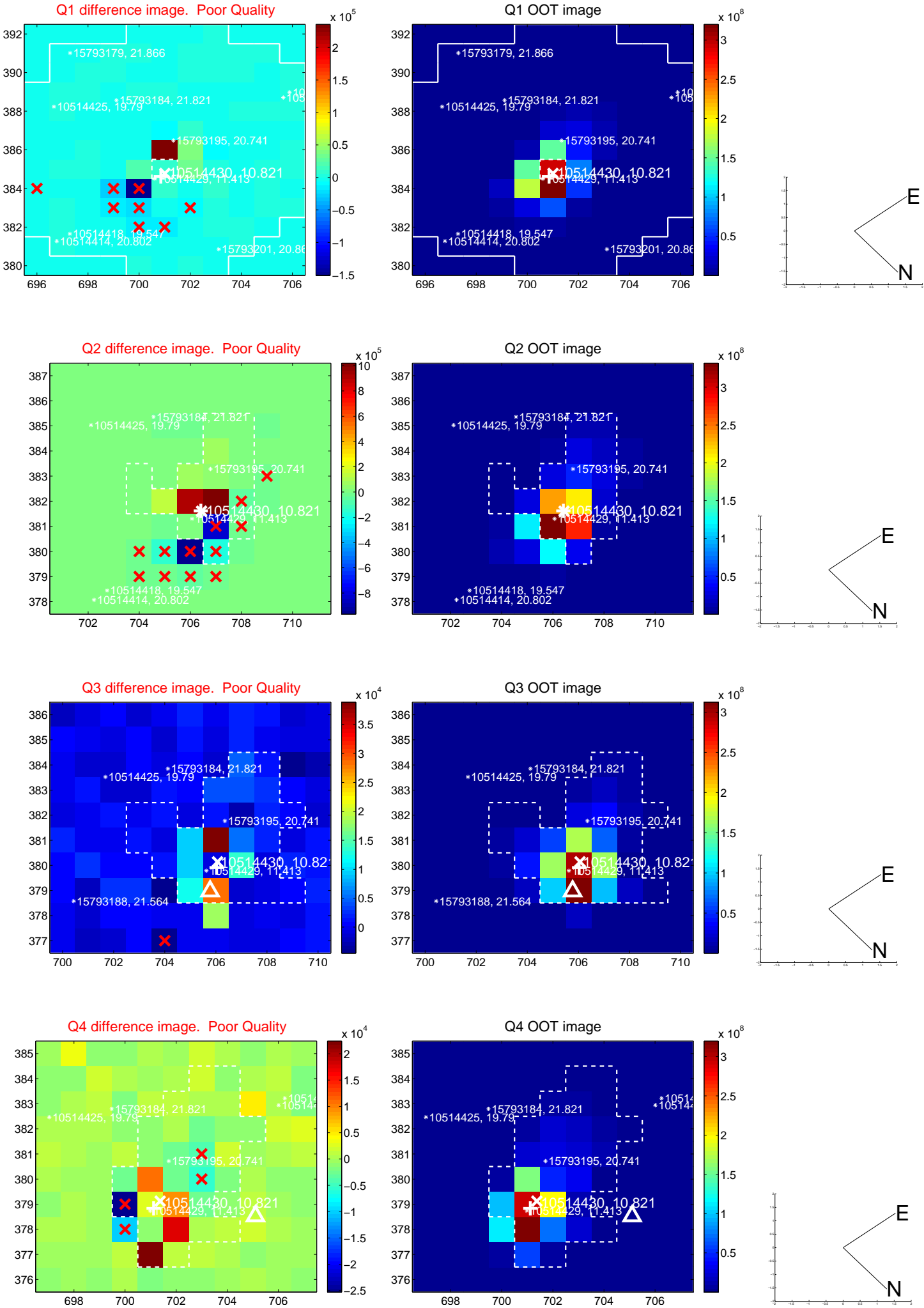


offset from photometric centroids

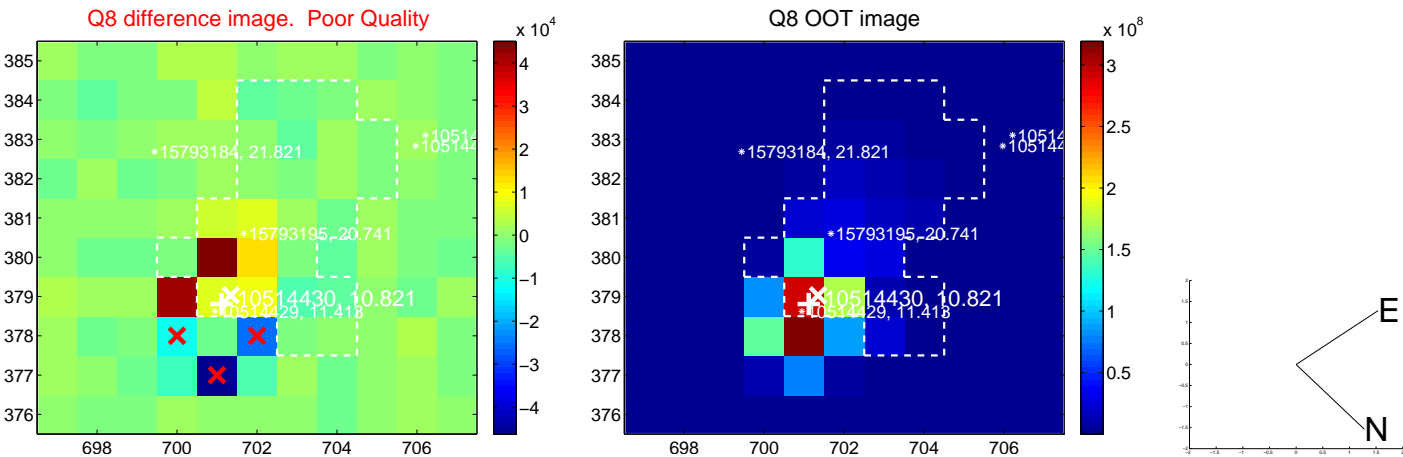
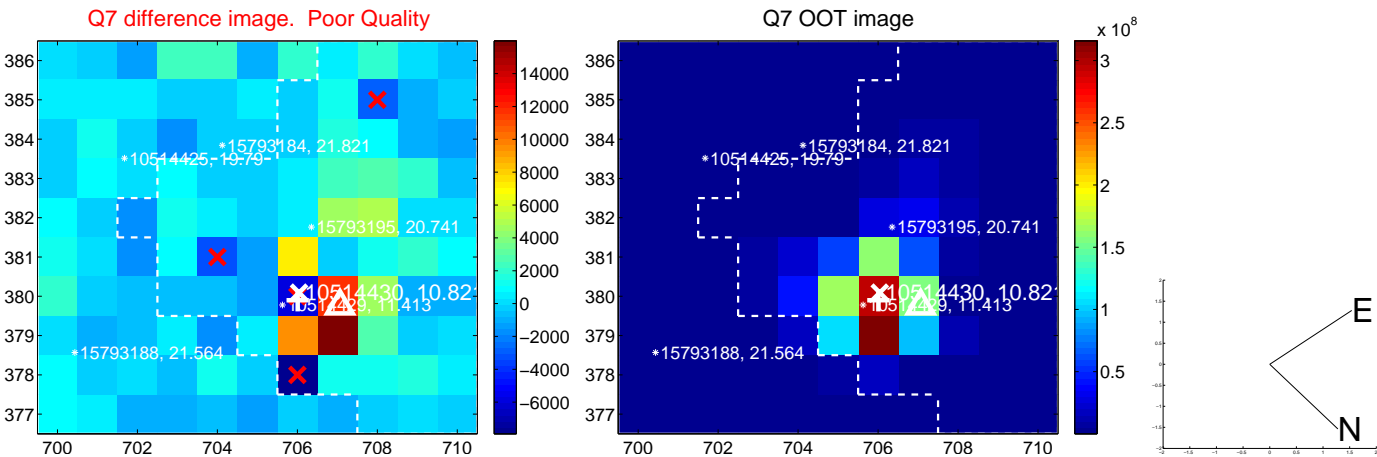
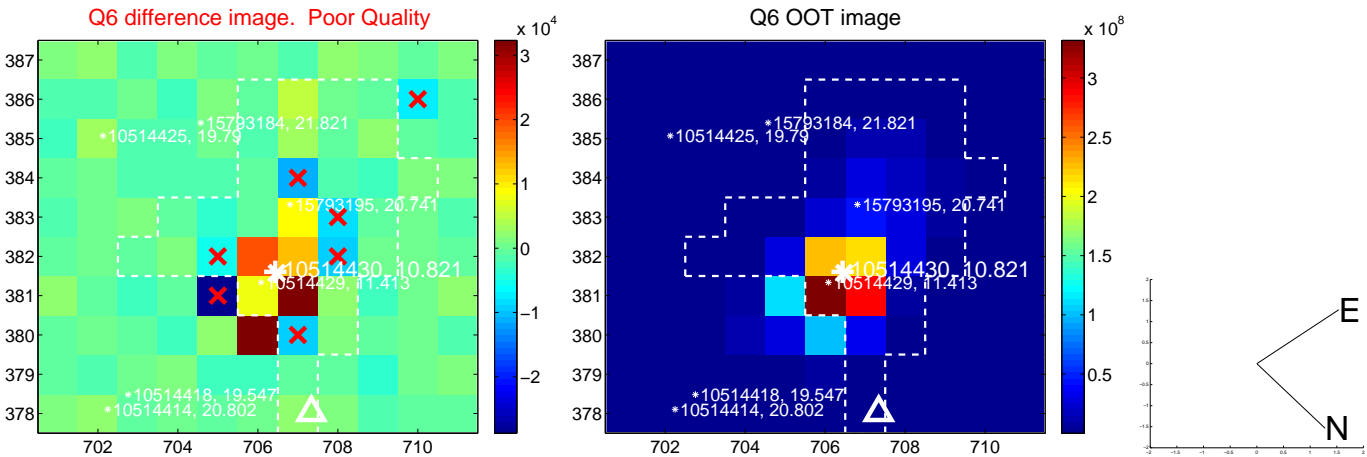
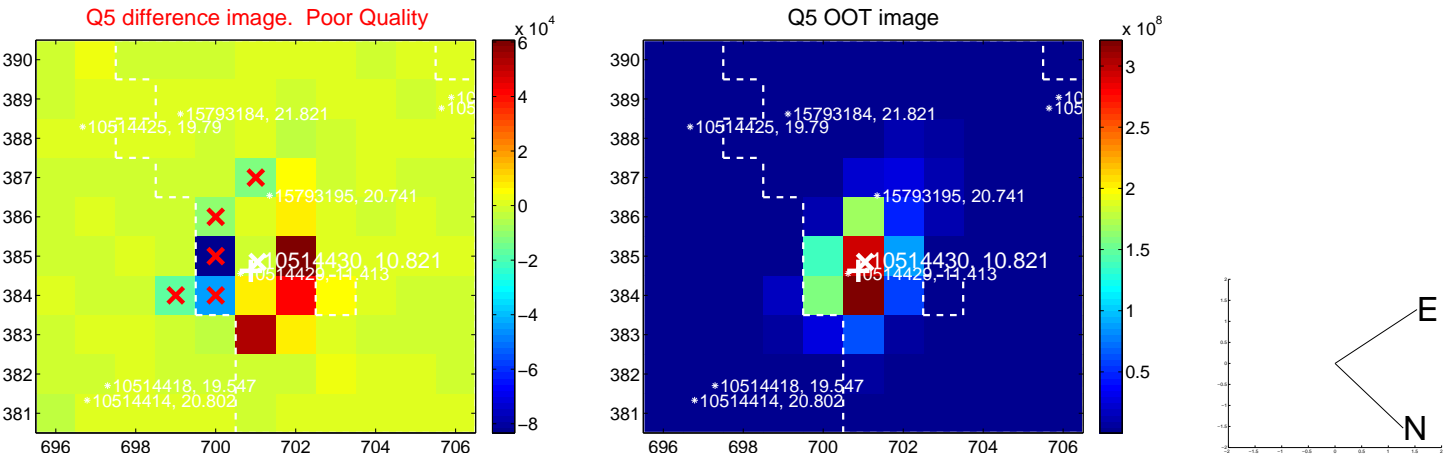


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

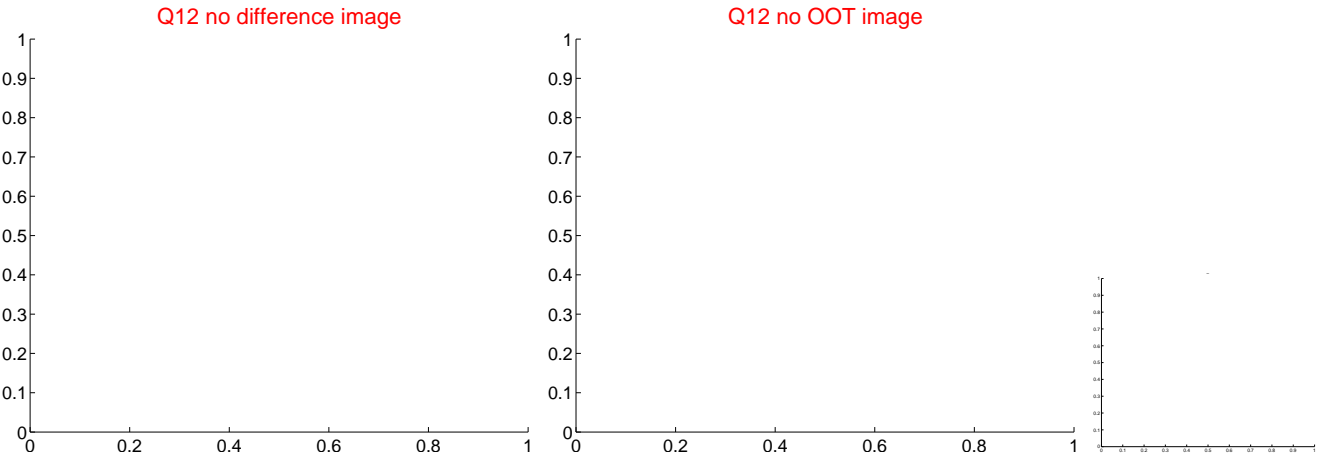
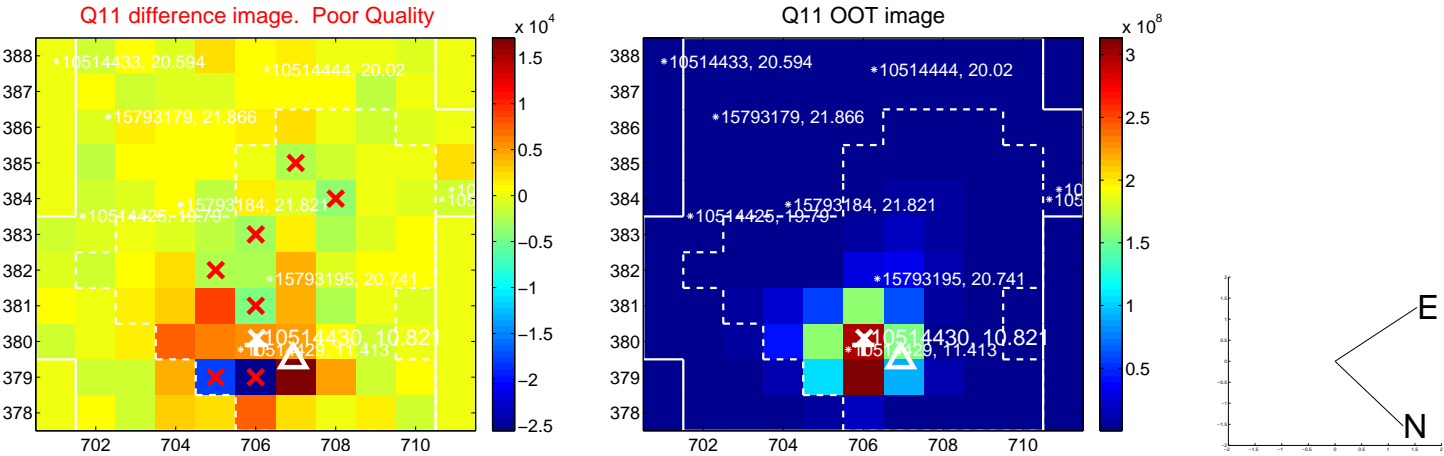
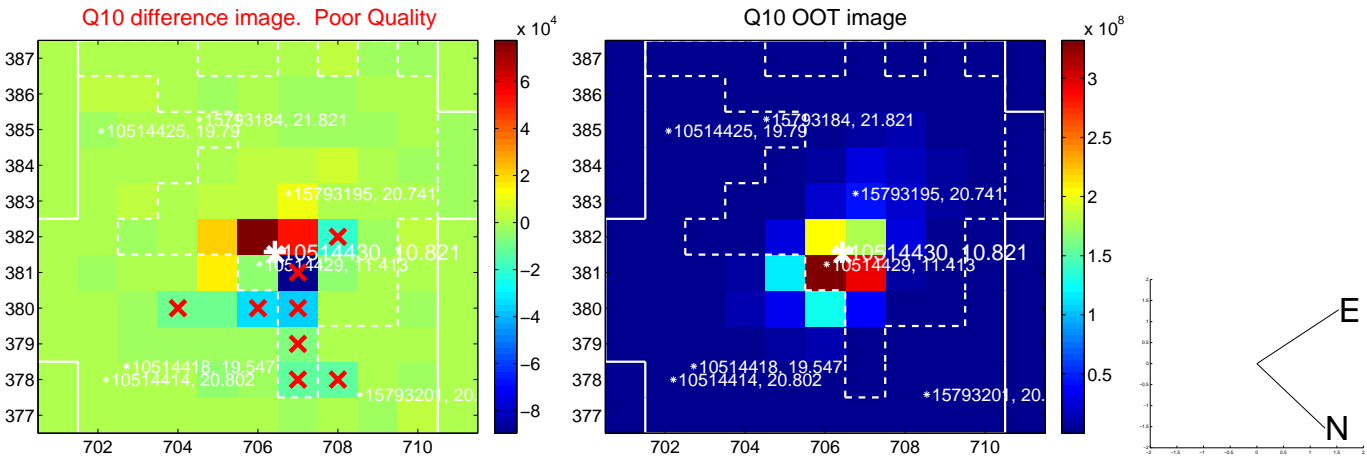
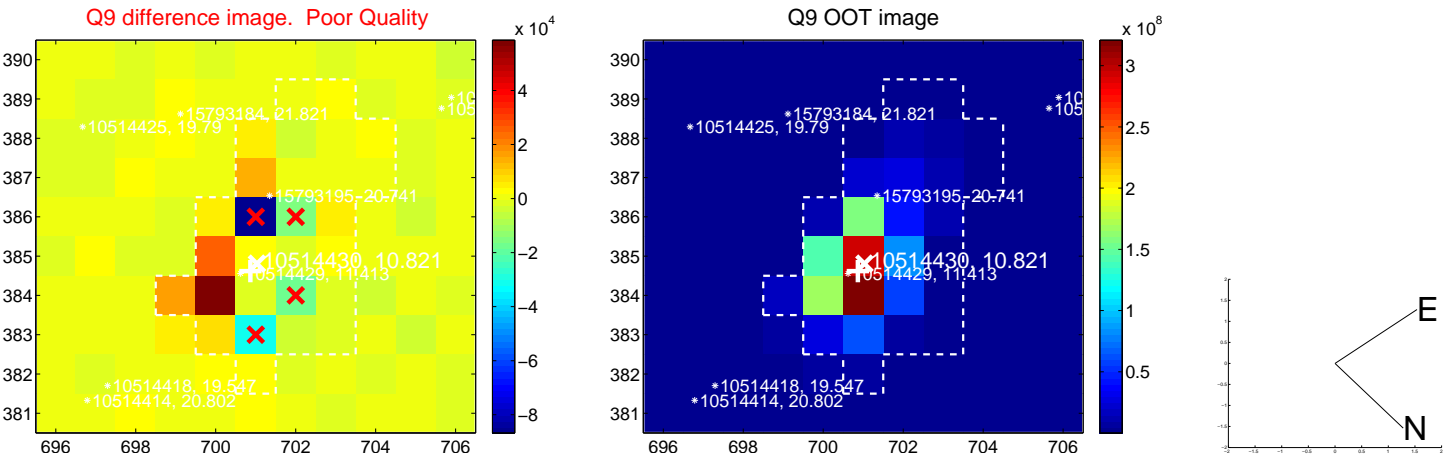
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



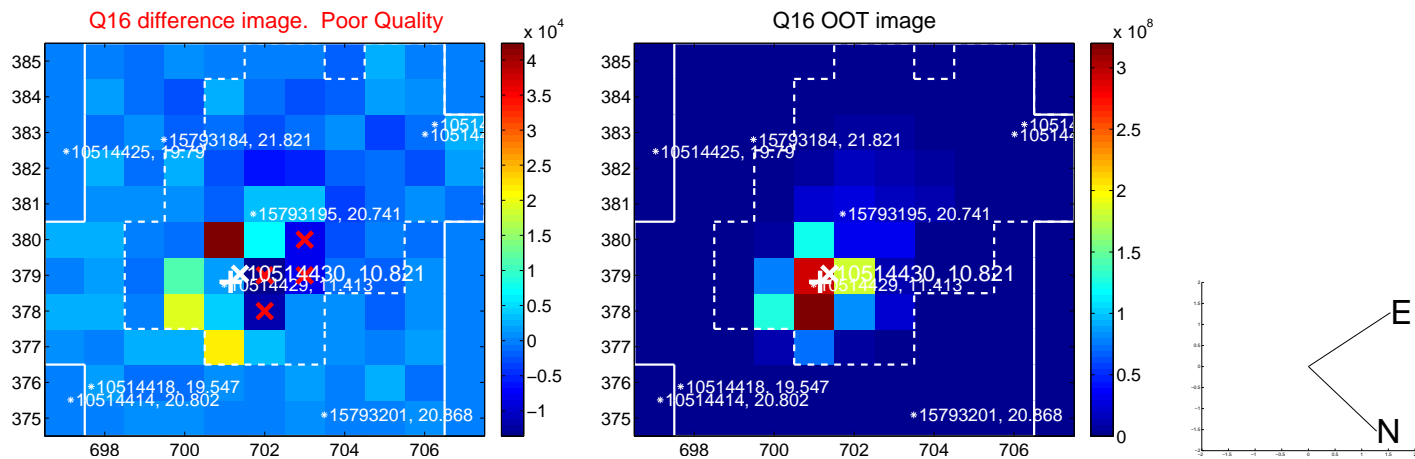
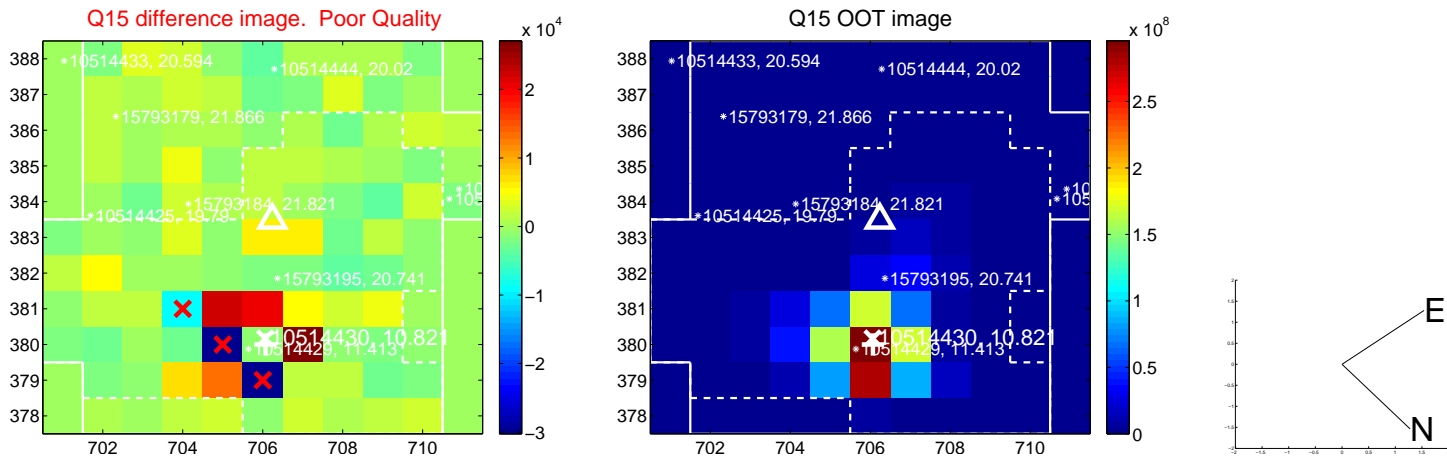
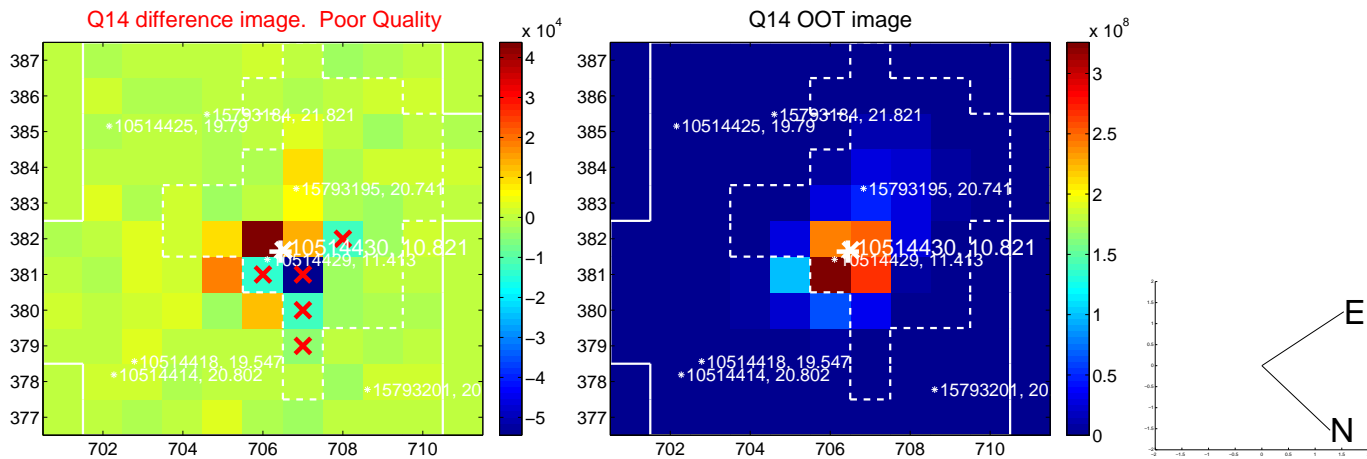
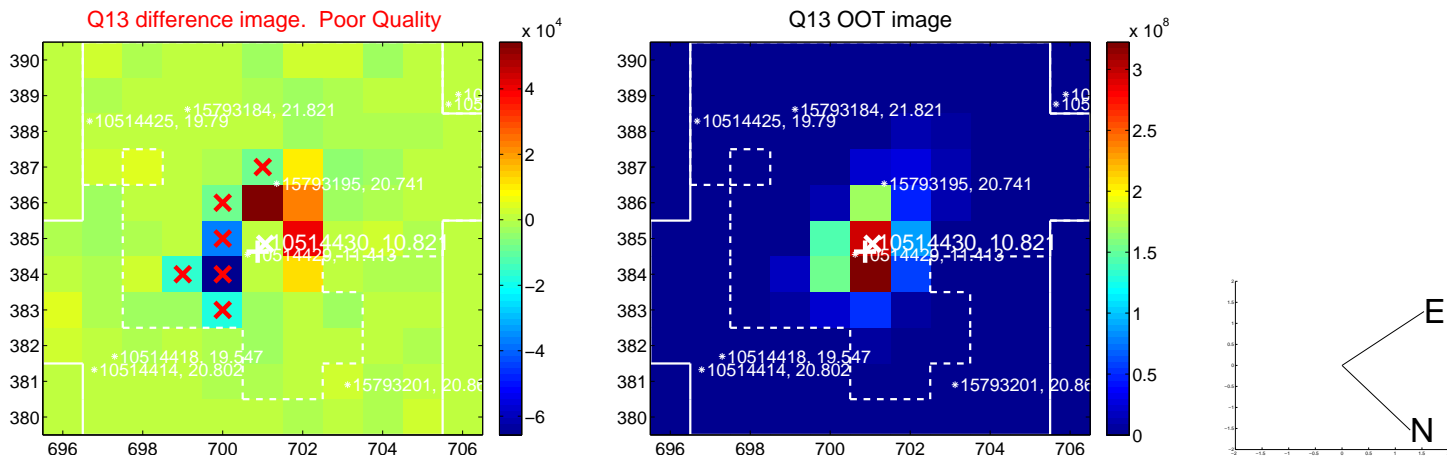
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



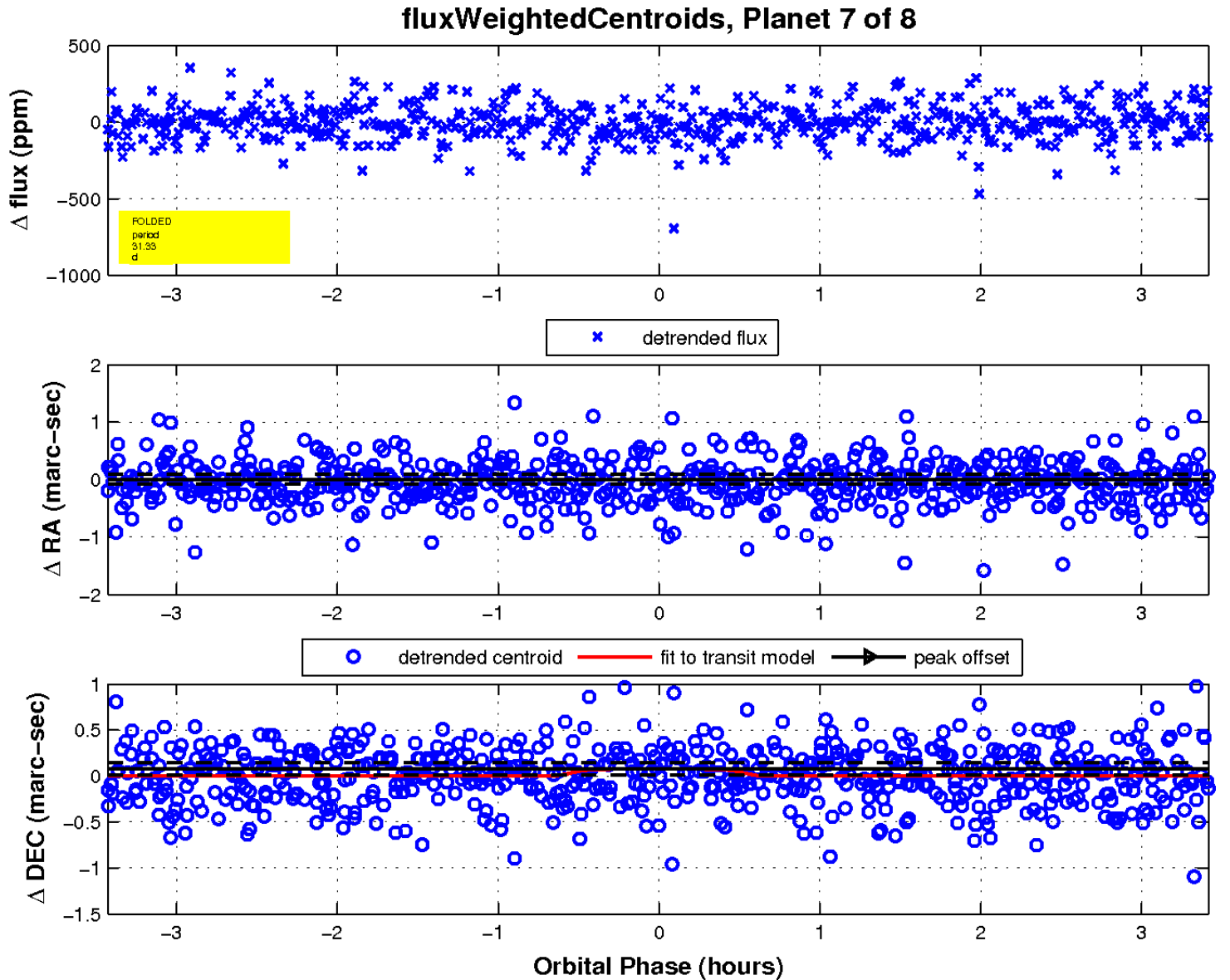
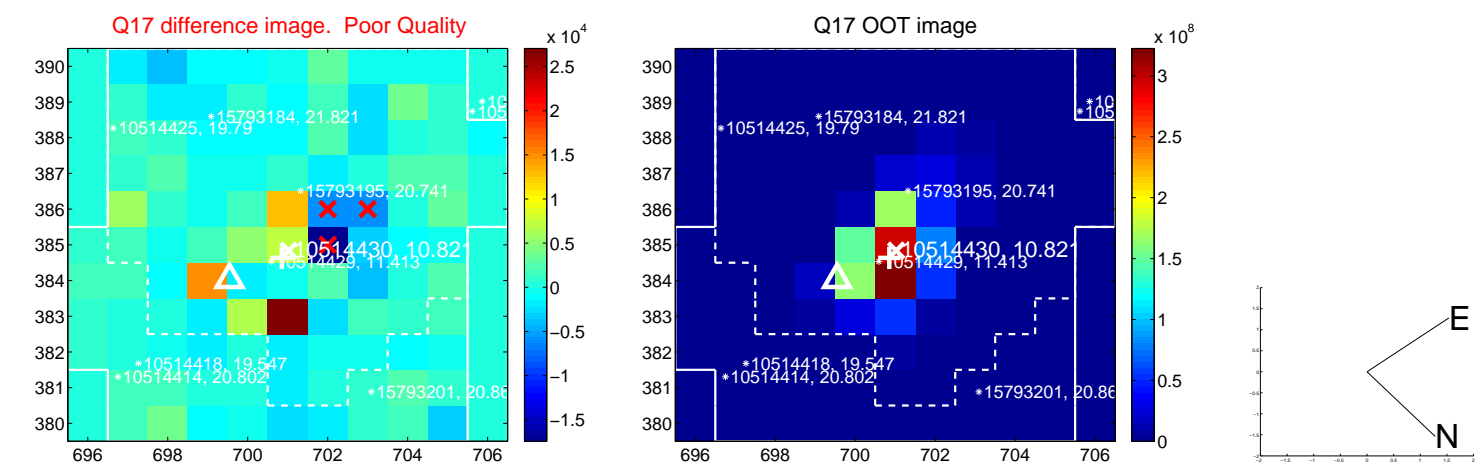
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

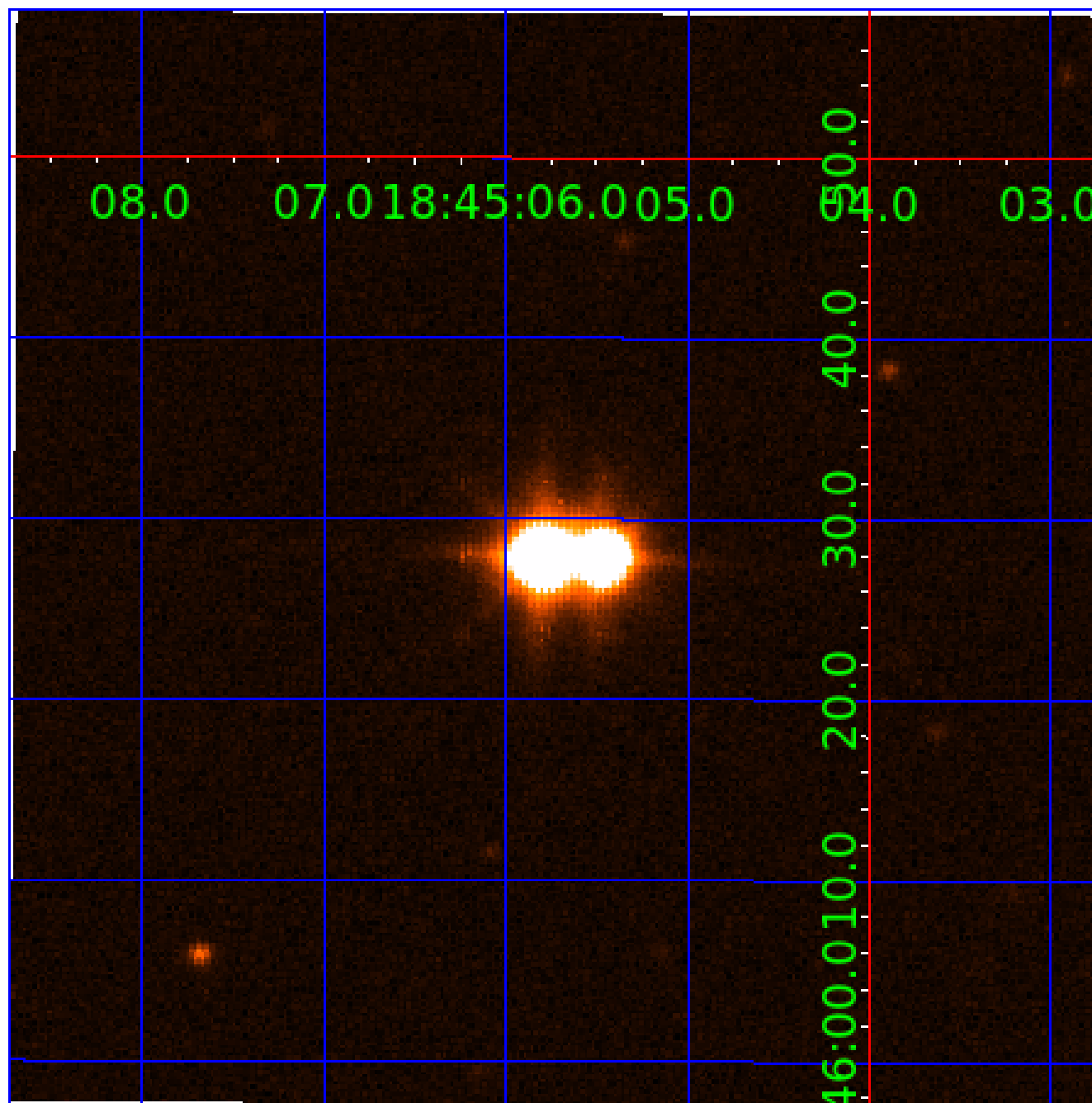


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010514430

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})
010514430-01	OBS	No	36.835222	152.530034	63.7	2.064	33.4	9.8	1.54	5729	1.46	49.22
010514430-02	OBS	0263.01	41.438343	143.303742	202.6	4.142	20.3	20.6	1.54	5729	2.70	42.07
010514430-03	OBS	No	82.878292	205.445061	298.6	4.705	19.3	20.0	1.54	5729	3.48	16.70
010514430-04	OBS	No	16.119939	138.604716	37.2	5.797	17.2	14.4	1.54	5729	1.13	148.14
010514430-05	OBS	No	62.650542	156.665716	87.1	1.701	15.3	19.3	1.54	5729	1.71	24.24
010514430-06	OBS	No	14.329249	139.133682	14.8	9.475	13.9	6.4	1.54	5729	0.68	173.33
010514430-07	OBS	No	31.326820	152.265714	65.2	1.144	11.4	12.9	1.54	5729	1.45	61.09
010514430-08	OBS	No	248.639389	246.880600	382.7	4.300	11.2	12.7	1.54	5729	3.38	3.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010514430-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-02	OBS	FP	0.00	0	0	0	1	MOD_SEC_DV—PLANET_PERIOD_IS_HALF_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
010514430-03	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
010514430-04	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-05	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_SATURATED
010514430-06	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
010514430-07	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010514430-08	OBS	FP	0.00	1	0	0	0	INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_SATURATED

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.

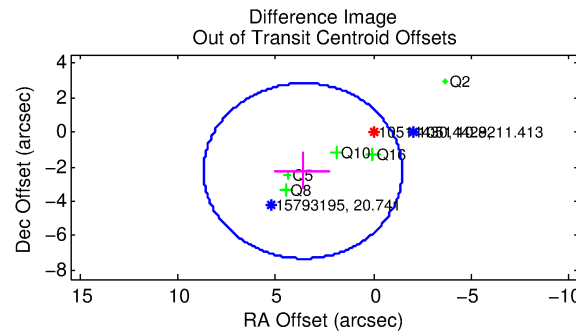
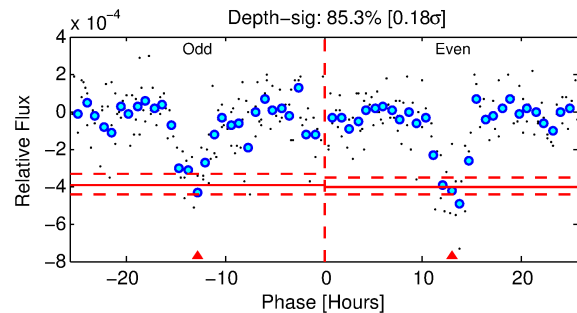
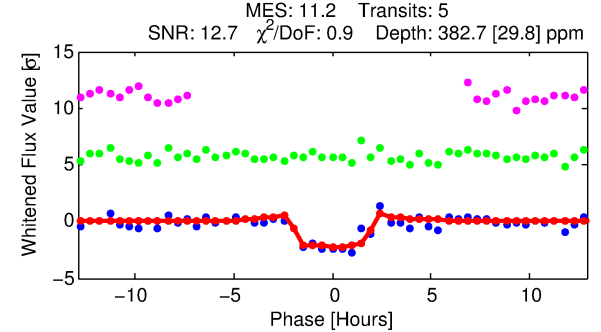
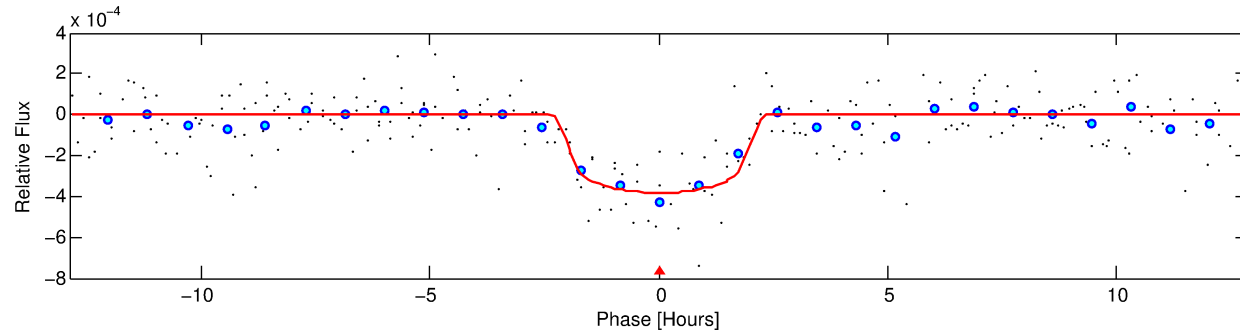
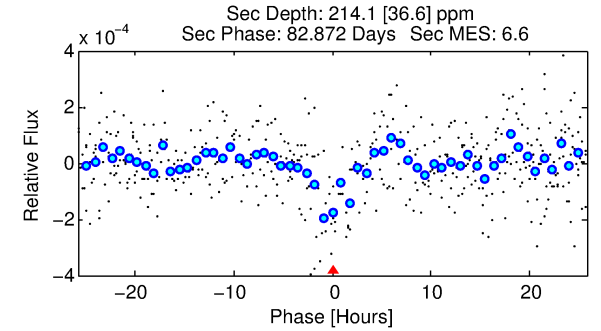
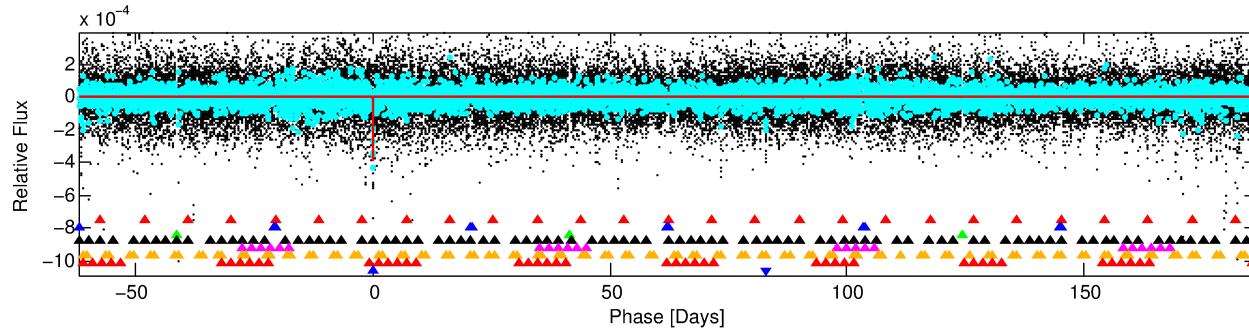
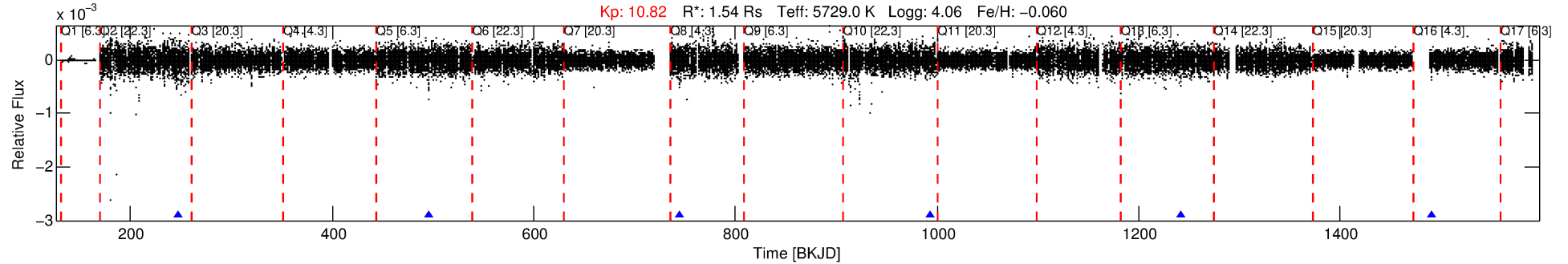
Ephemeris Match Information For 010514430-08

No Significant Match Found

DV One-Page Summary

KIC: 10514430 Candidate: 8 of 8 Period: 248.639 d
KOI: K00263 Corr: No Ephemeris Match

Kp: 10.82 R*: 1.54 Rs Teff: 5729.0 K Logg: 4.06 Fe/H: -0.060



DV Fit Results:

Period = 248.63939 [0.00133] d
Epoch = 246.8806 [0.0048] BKJD
Rp/R* = 0.0201 [0.0063]
a/R* = 270.62 [377.73]
b = 0.82 [0.58]
Seff = 3.86 [0.33]
Teq = 357 [8] K
Rp = 3.38 [1.08] Re
a = 0.7727 [0.0344] AU
Ag = 6148.26 [4012.79] [1.53sigma]
Teffp = 4893 [798] K [5.68sigma]

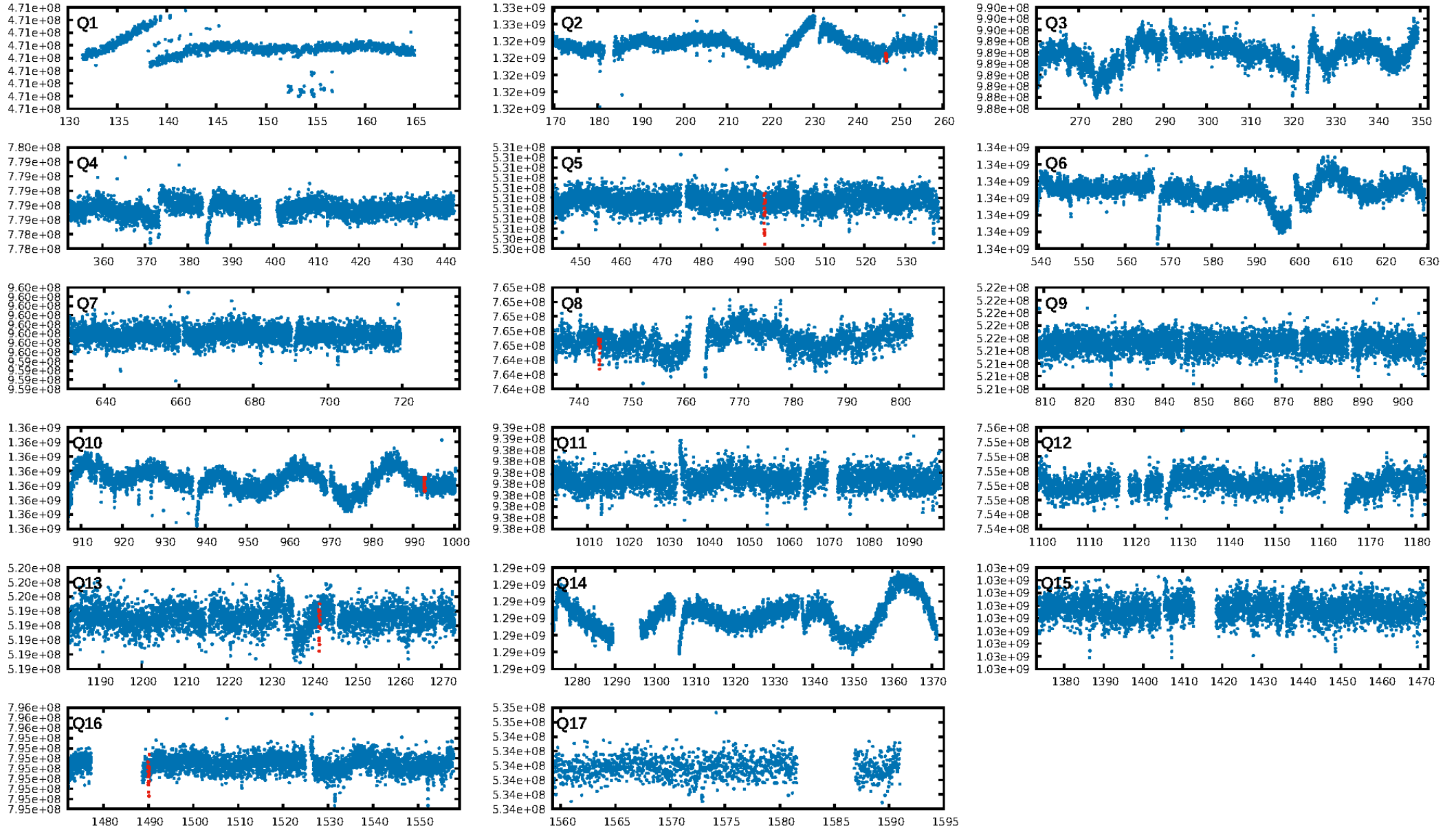
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [624.12sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 8.13e-15
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 2.0%
Centroid-so: 0.742 arcsec [1.91sigma]
OotOffset-rm: 4.253 arcsec [2.51sigma]
KicOffset-rm: 3.448 arcsec [2.48sigma]
OotOffset-st: 2/0/2/1 [5]
KicOffset-st: 2/0/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.80 [4/5]

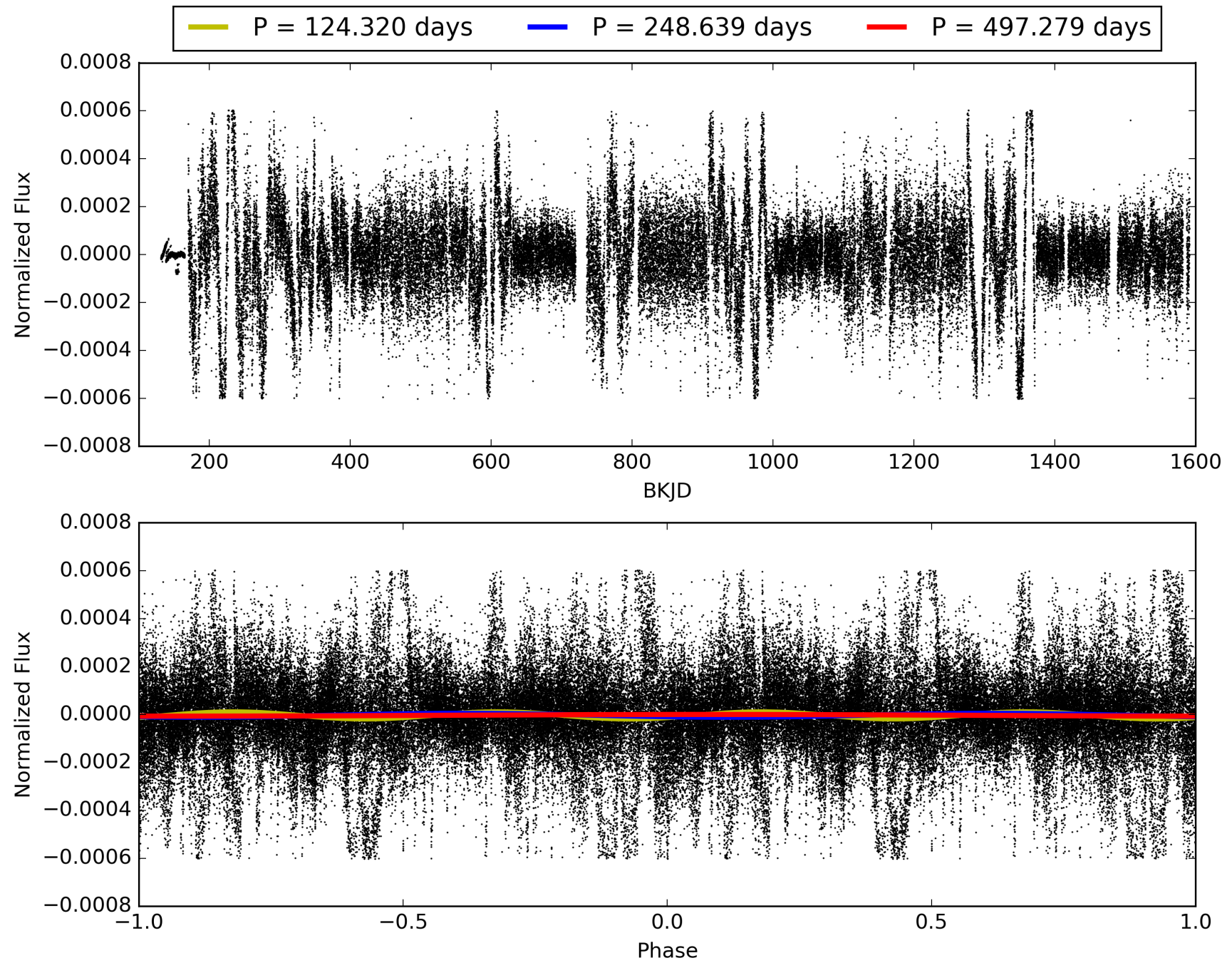
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:35:38 Z

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

TCE 010514430-08, PDC Light Curves

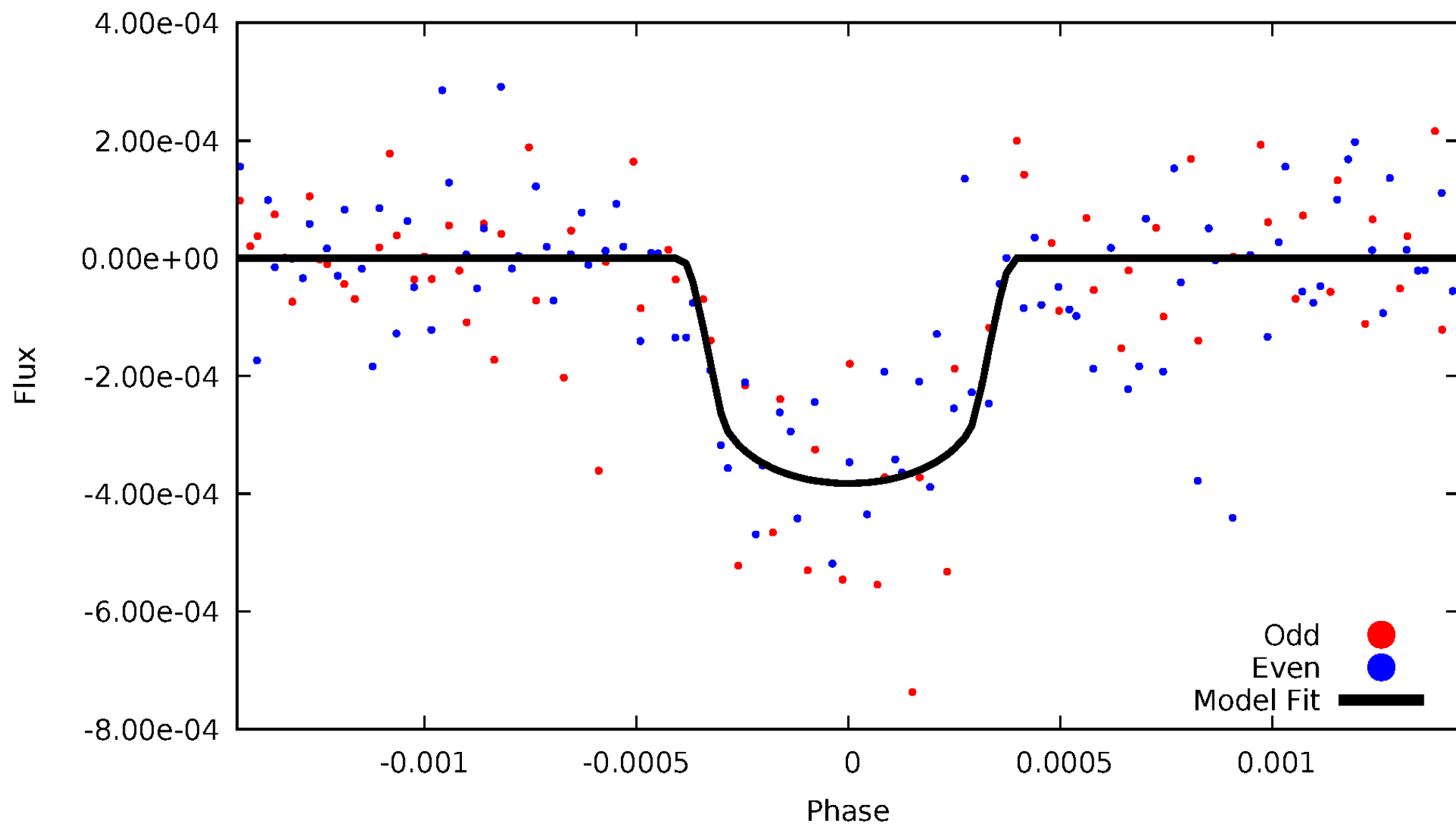


TCE 010514430-08



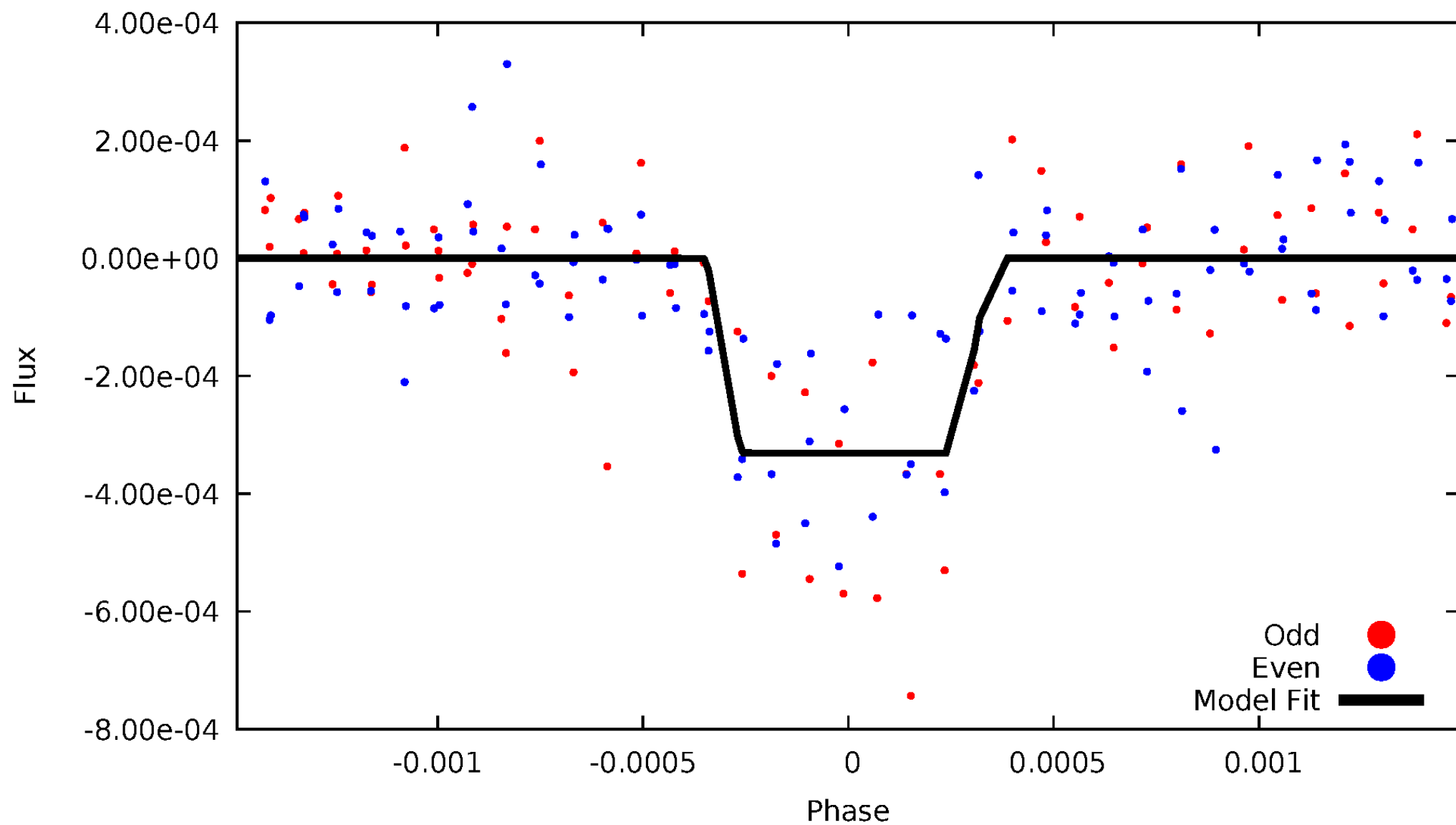
DV Odd/Even

TCE 010514430-08



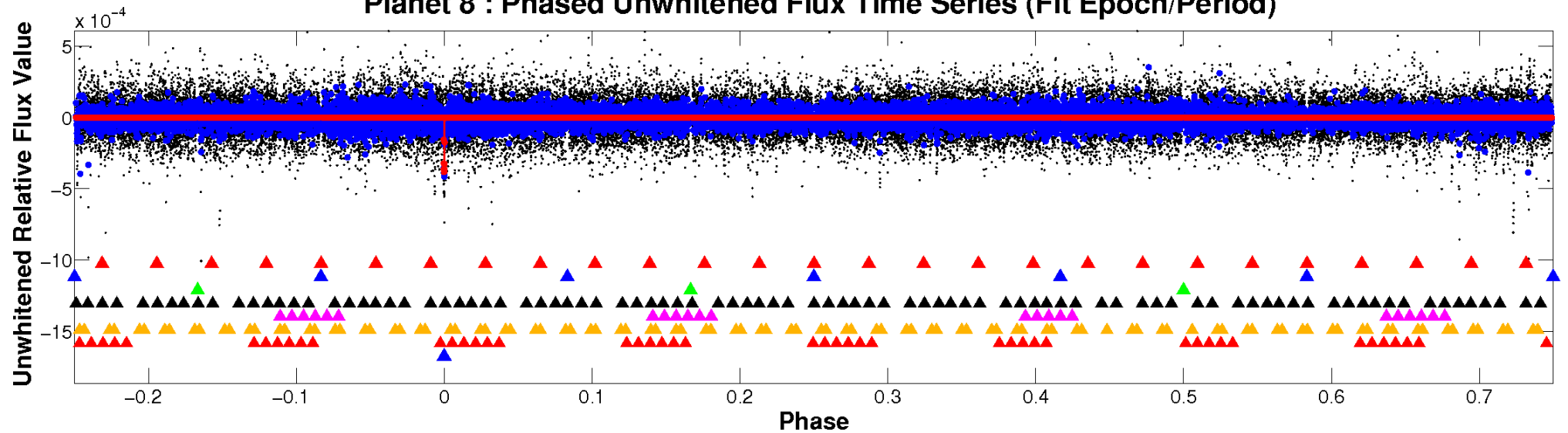
ALT Odd/Even

TCE 010514430-08

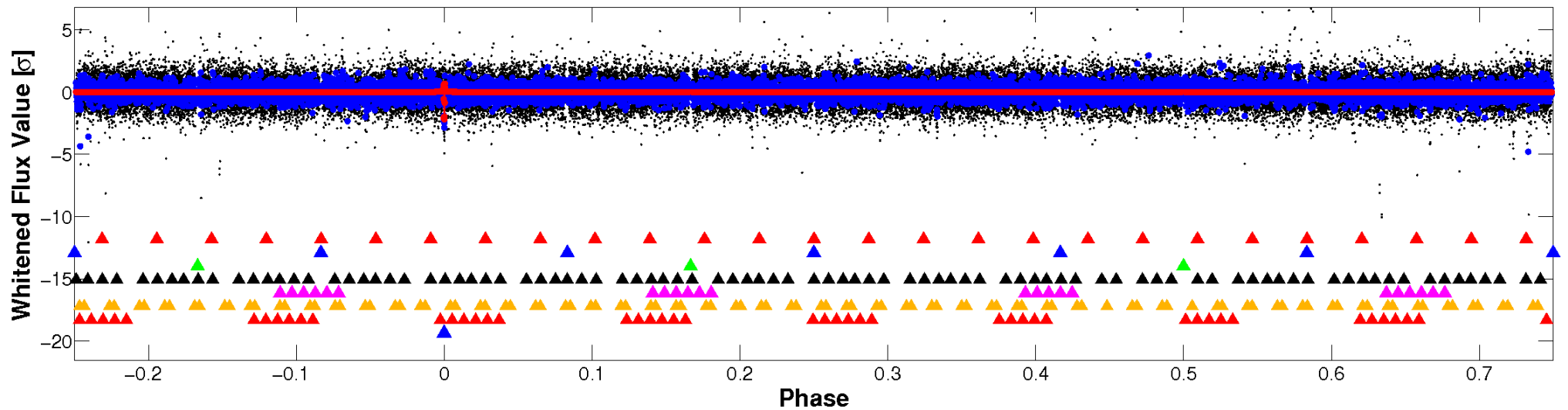


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

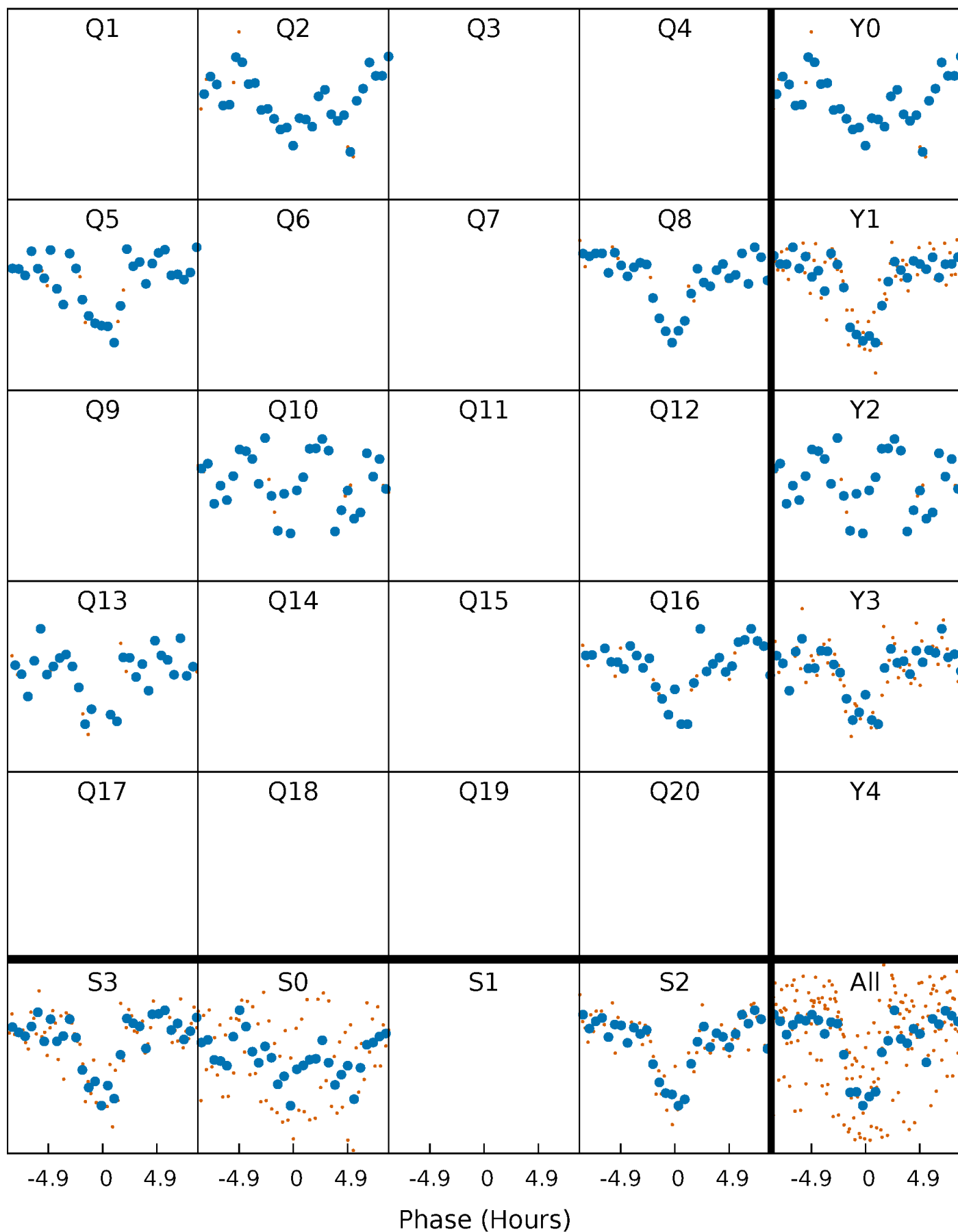


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



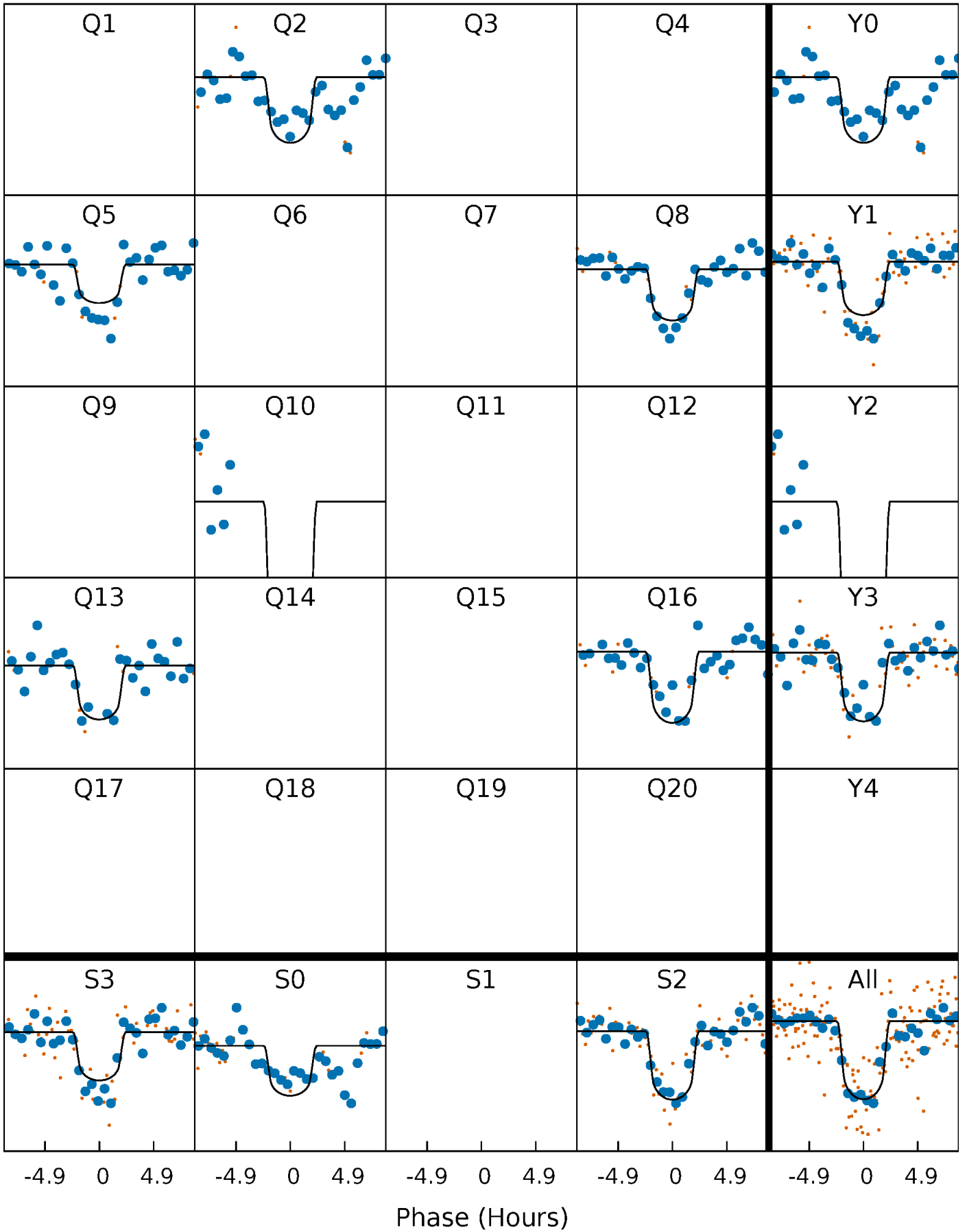
PDC Quarter-Phased Transit Curves

TCE 010514430-08 P=248.639389 Days $T_0=246.880600$ (BKJD)



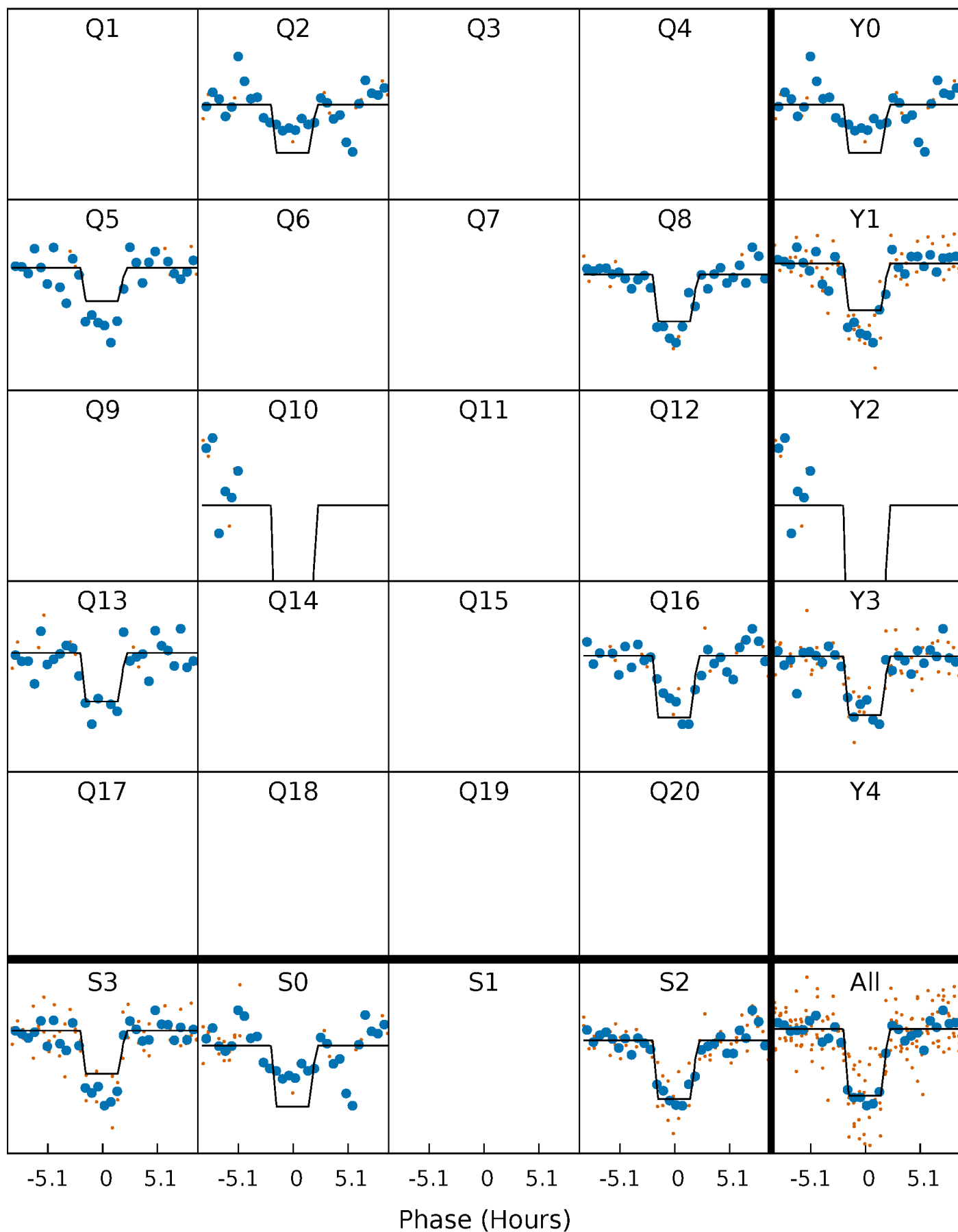
DV Quarter-Phased Transit Curves

TCE 010514430-08 $P=248.639389$ Days $T_0=246.880600$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

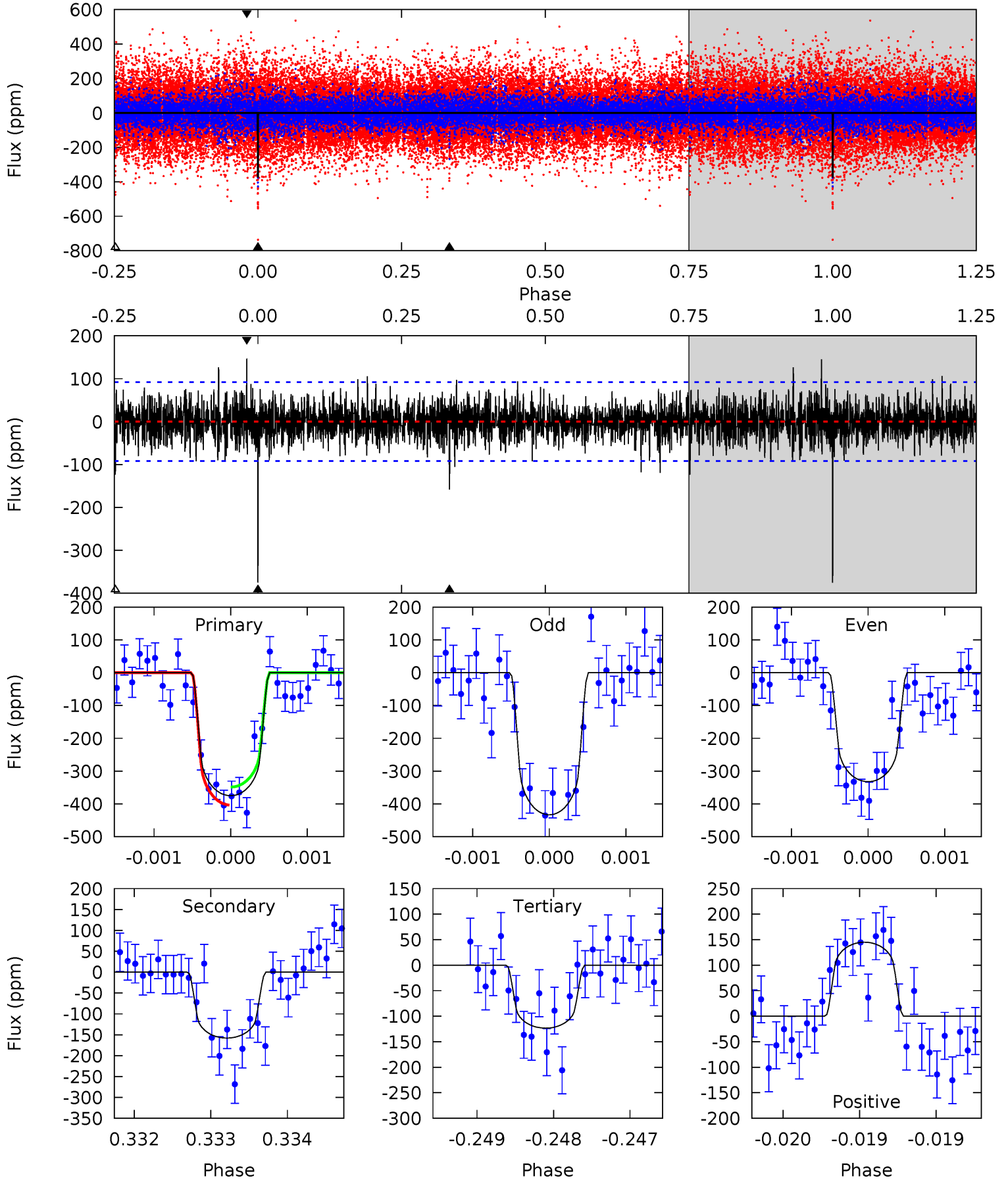
TCE 010514430-08 P=248.636045 Days $T_0=246.883539$ (BKJD)



DV Model-Shift Uniqueness Test

010514430-08, P = 248.639389 Days, E = 246.880600 Days

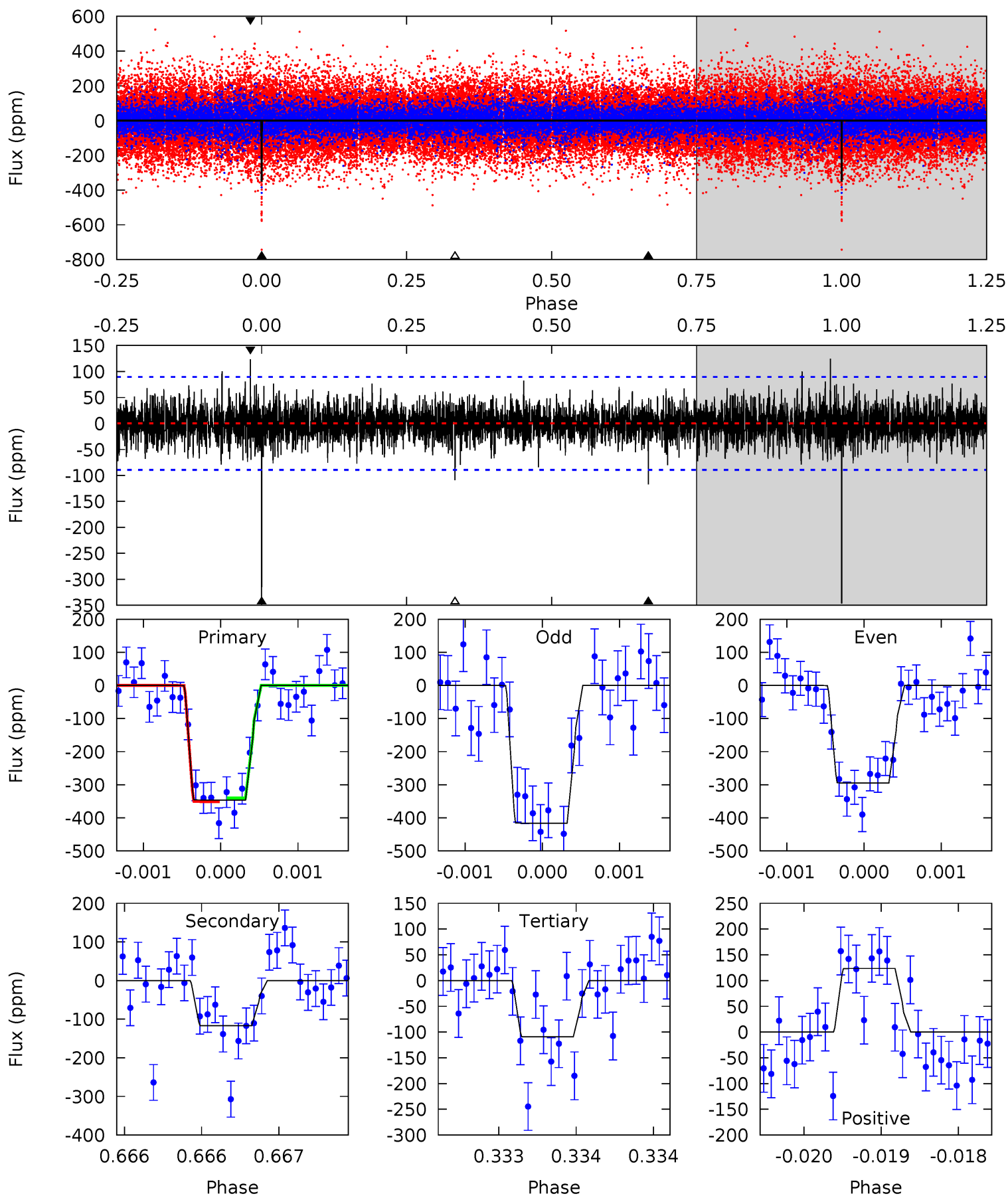
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	9.44	7.37	8.67	5.50	3.36	1.73	15.0	13.7	2.06	0.77	2.99	1.14	0.28	1.64



Alt Model-Shift Uniqueness Test

010514430-08, P = 248.636045 Days, E = 246.883539 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	7.19	6.72	7.60	5.50	3.37	1.43	14.6	13.7	0.46	-0.42	3.69	0.96	0.26	0.34



Stellar Parameters For KIC 010514430

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5729^{+86}_{-68}	$4.058^{+0.033}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$1.545^{+0.085}_{-0.085}$	$0.994^{+0.078}_{-0.064}$	$0.380^{+0.051}_{-0.037}$
	+2%/-1%	+1%/-1%	+250%/-250%	+6%/-6%	+8%/-6%	+14%/-10%
Source	SPE72	AST69	SPE72	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010514430-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-158 ± 17	$3.31^{+1.07}_{-1.00}$	500^{+9}_{-9}	4694^{+784}_{-456}	4662^{+4925}_{-1939}
Alt.	-117 ± 16	$3.11^{+1.04}_{-1.14}$	500^{+10}_{-9}	4581^{+980}_{-513}	4092^{+6004}_{-1945}

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 $A_{obs} \gg 1.0$

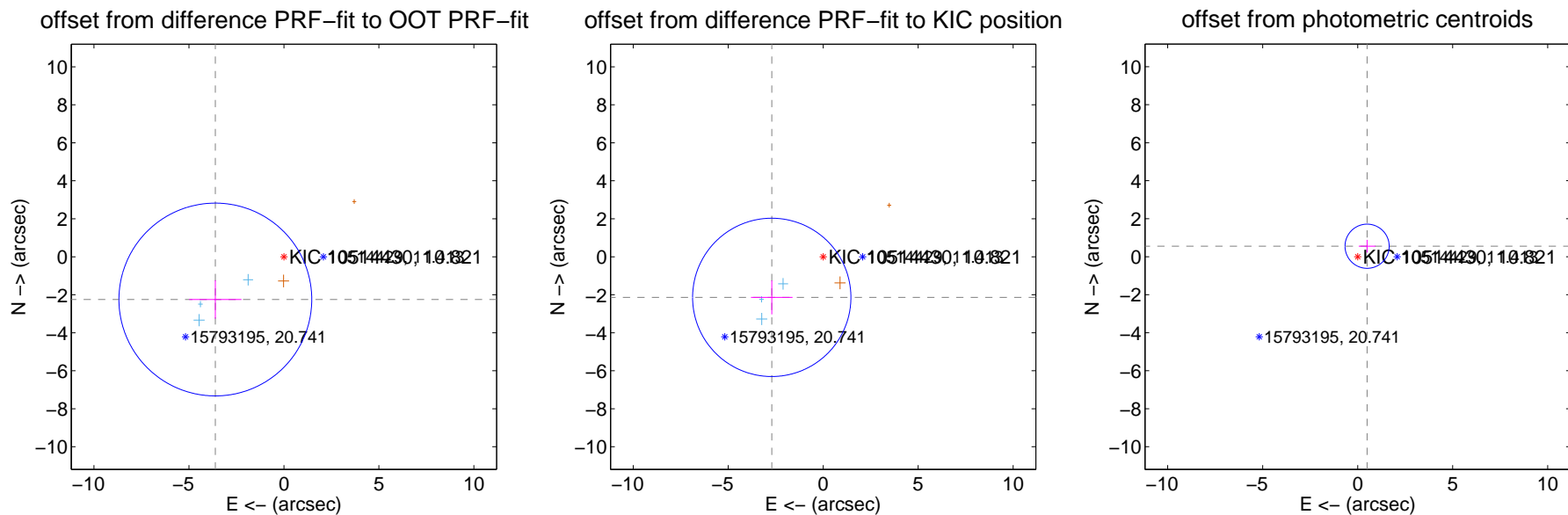
DV Centroid Data

Supplemental centroid analysis for 010514430-08. **Kepler magnitude: 10.82.** Transit SNR 12.68

There are 3 quarters with good PRF difference image offsets

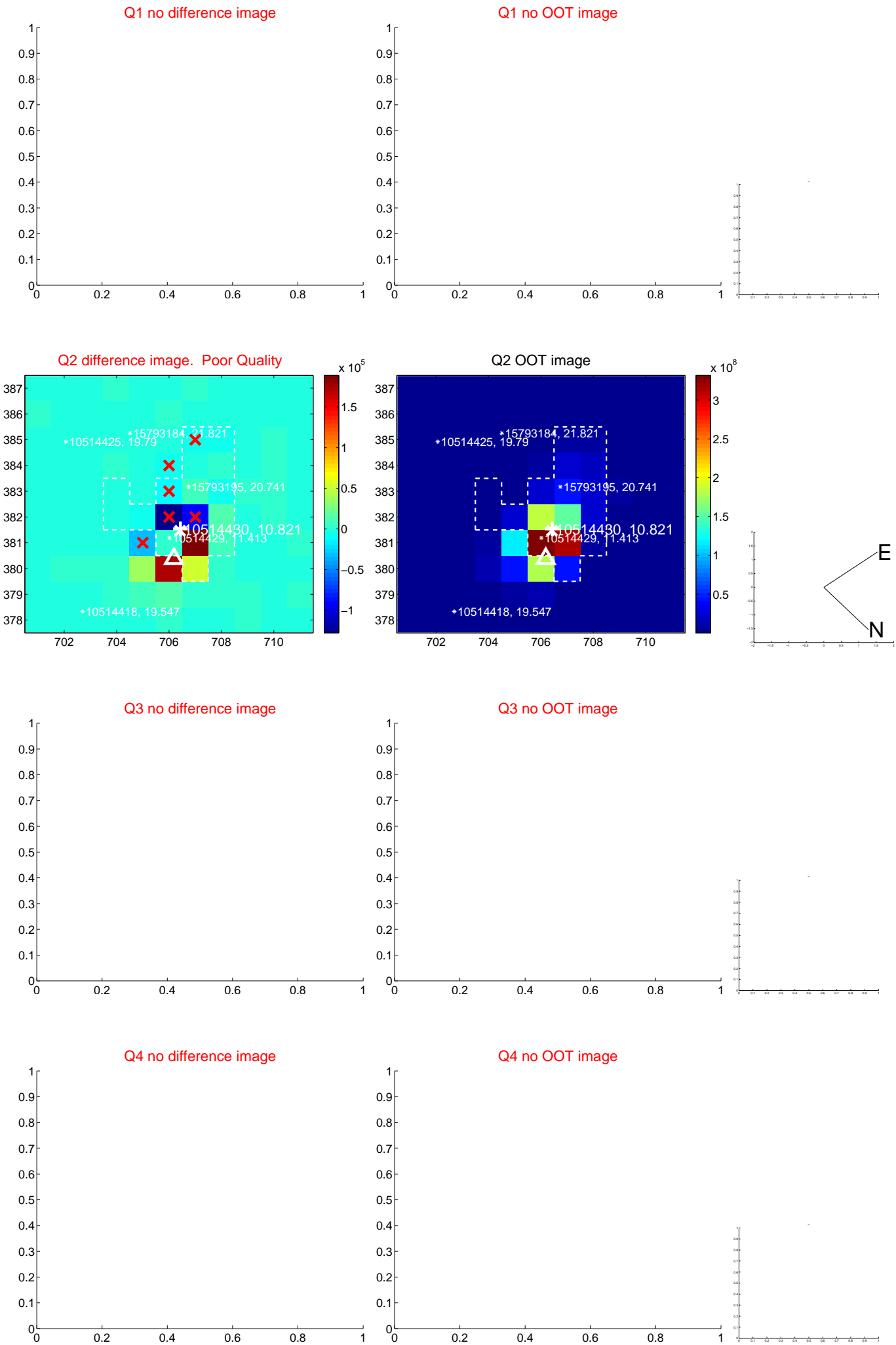
The direct PRF centroid is offset from the target star catalog position by about 0.91 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.253 ± 1.691	2.51	3.609 ± 1.377	-2.250 ± 1.012
PRF-fit source offset from KIC position	3.448 ± 1.389	2.48	2.707 ± 1.095	-2.137 ± 0.896
photometric centroid source offset	0.74 ± 0.39	1.91	-0.50 ± 0.44	0.55 ± 0.34

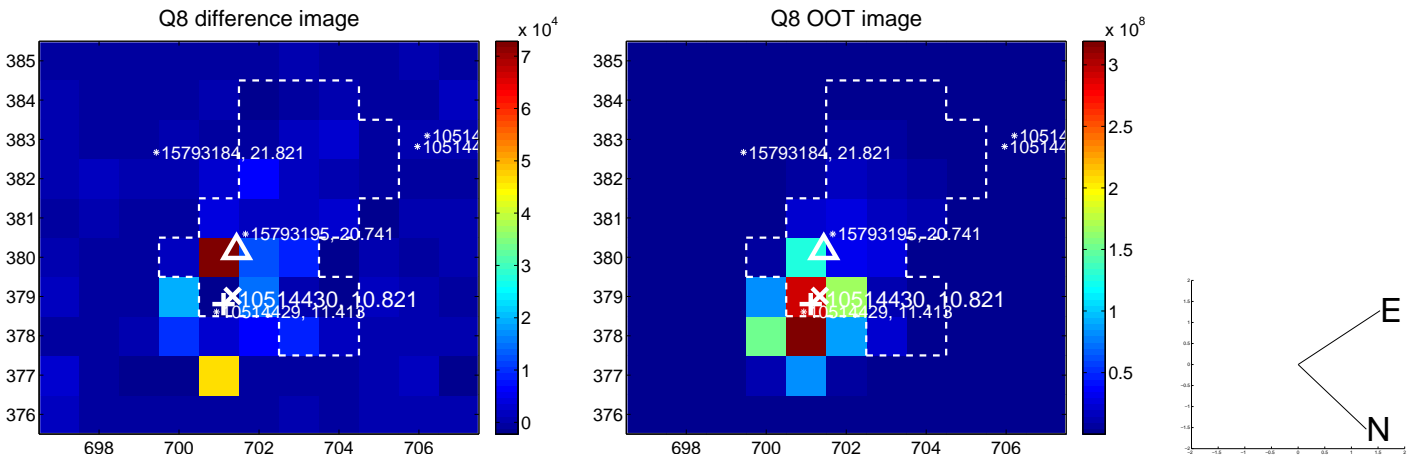
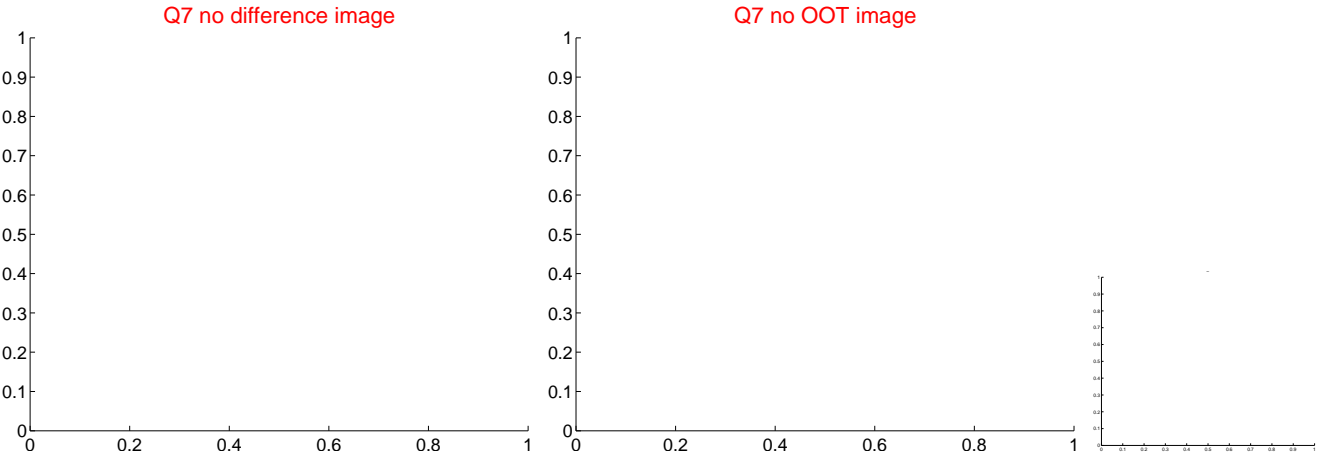
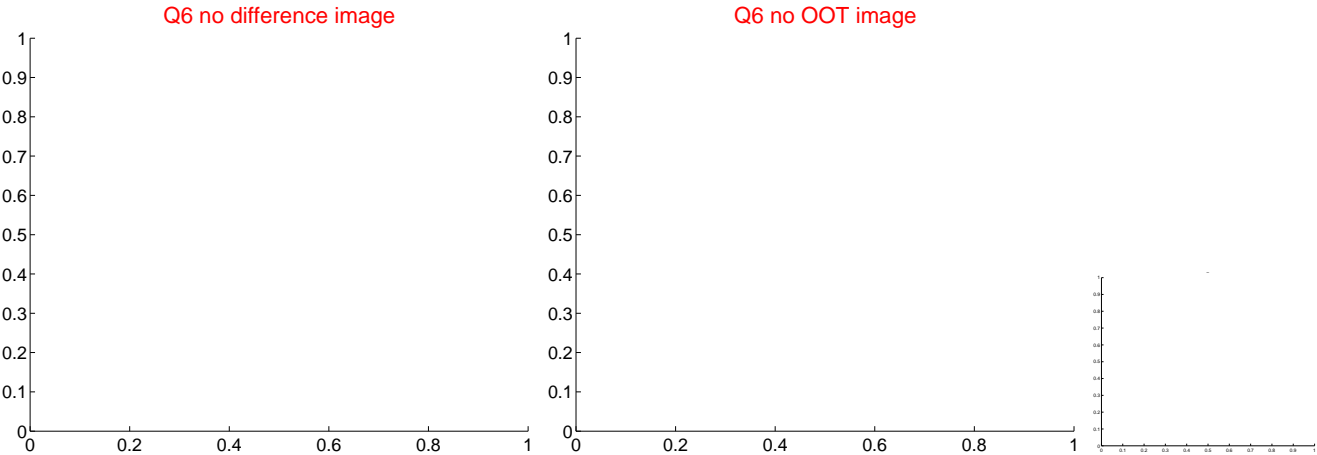
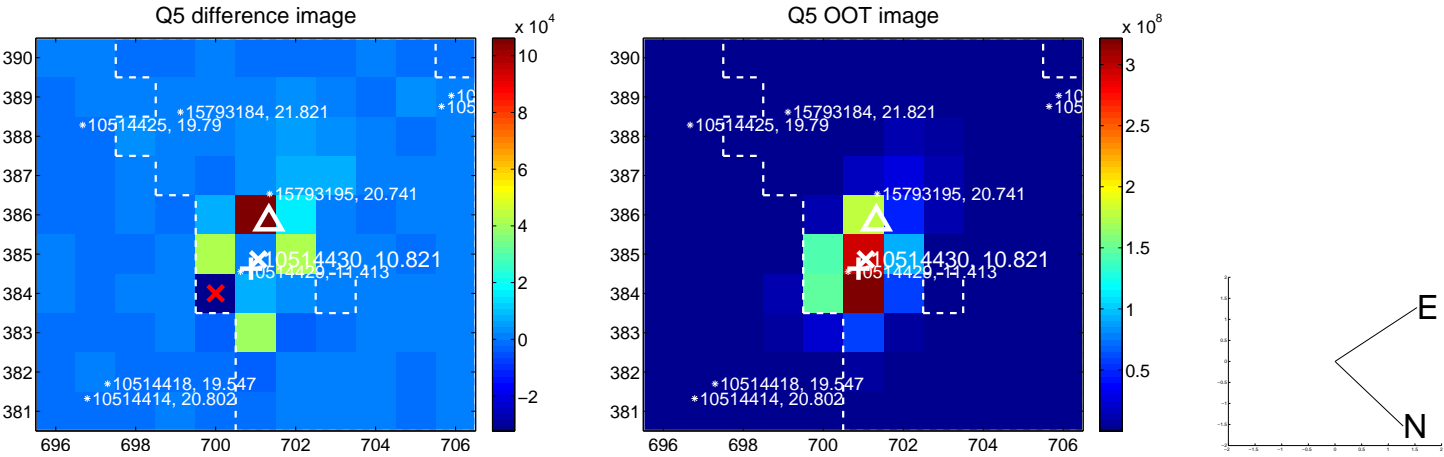


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

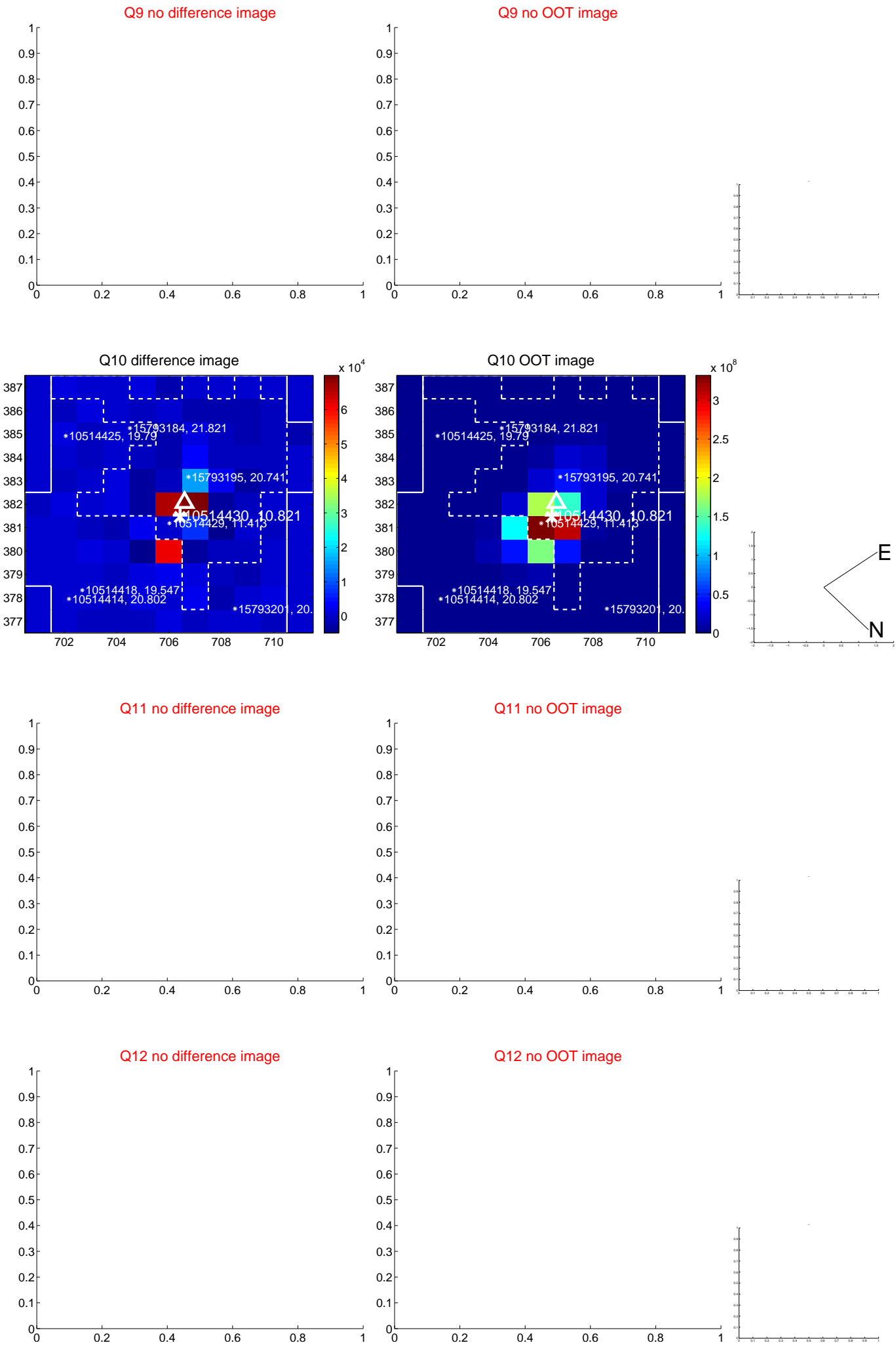
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



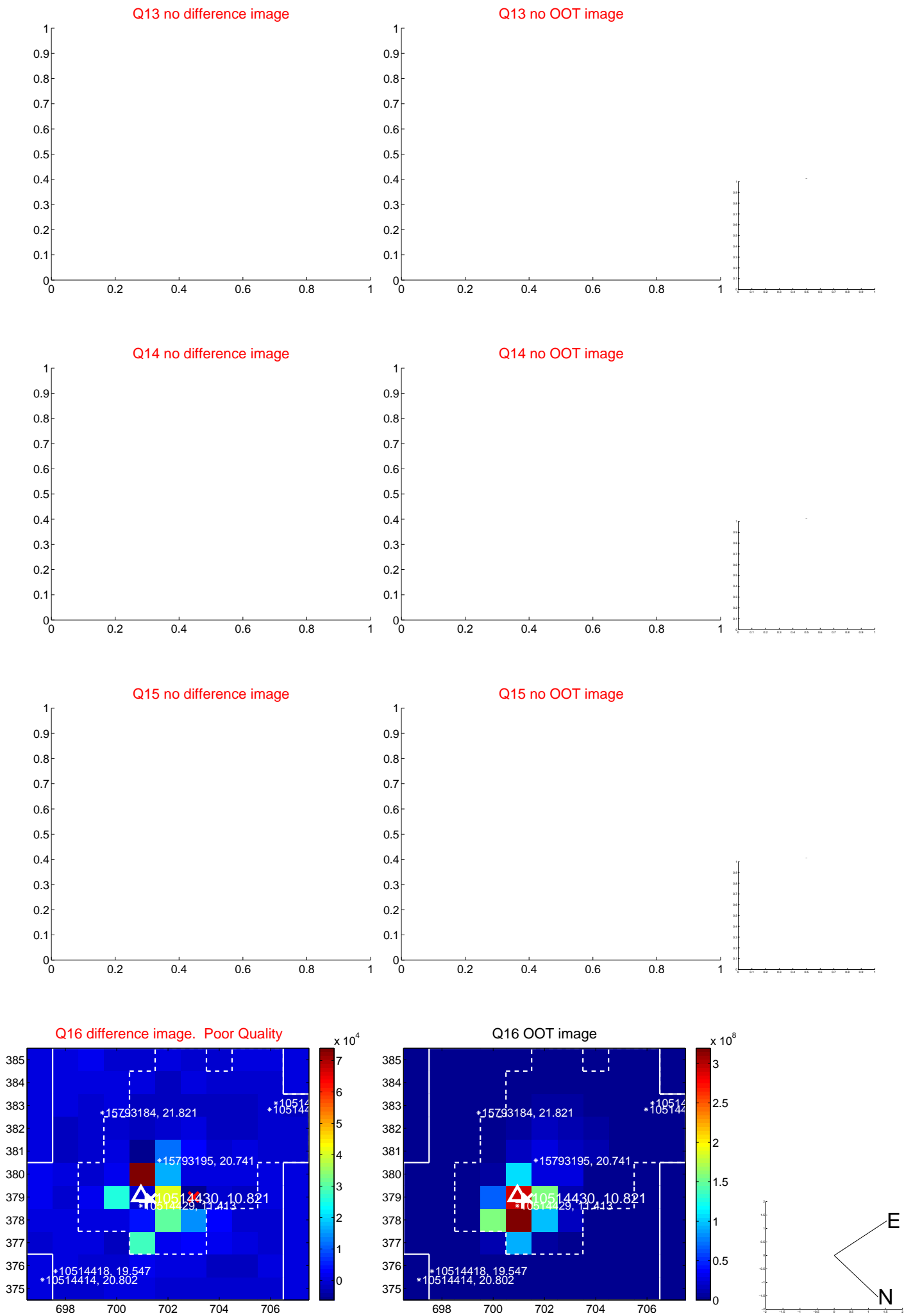
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



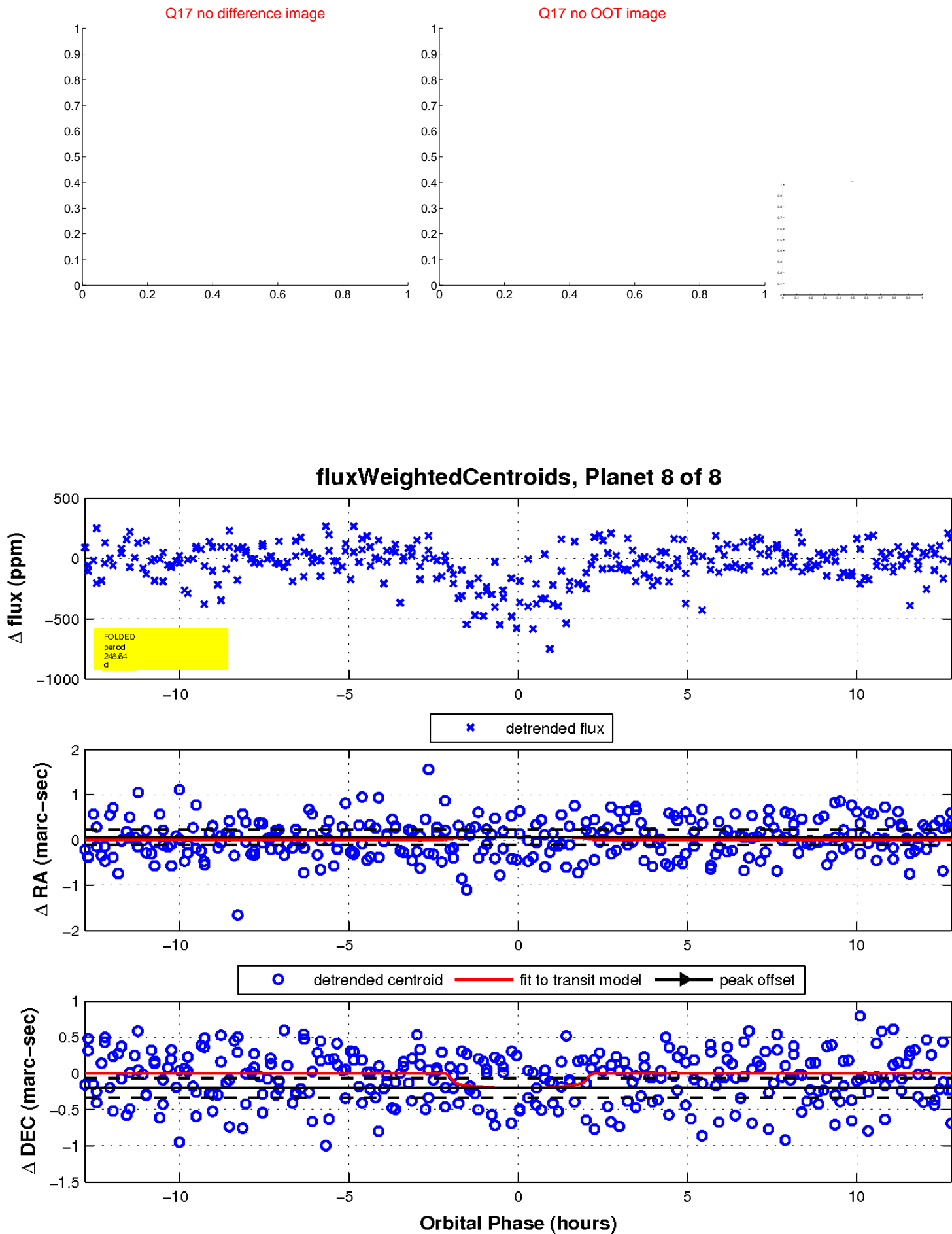
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

