

KIC 006721123

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})
006721123-01	OBS	0114.01	7.361795	132.249382	230.7	4.987	46.2	47.5	1.96	6227	5.94	768.97
006721123-02	OBS	No	7.361631	136.018049	34.8	2.259	7.2	7.3	1.96	6227	1.24	768.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721123-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET
006721123-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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.

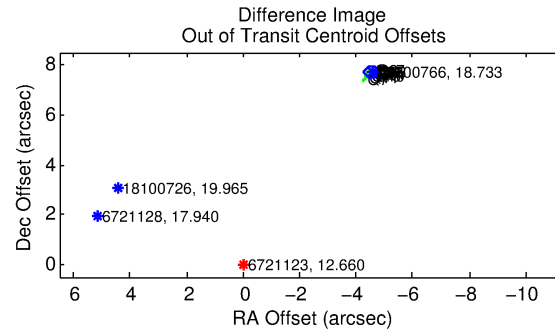
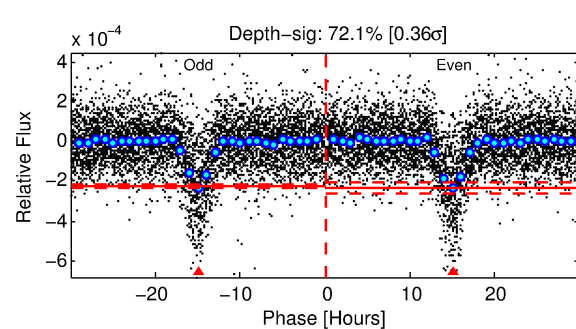
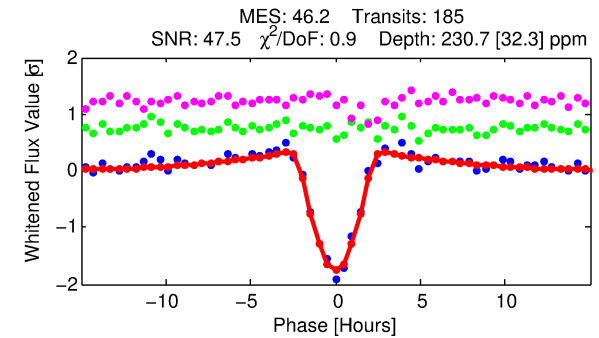
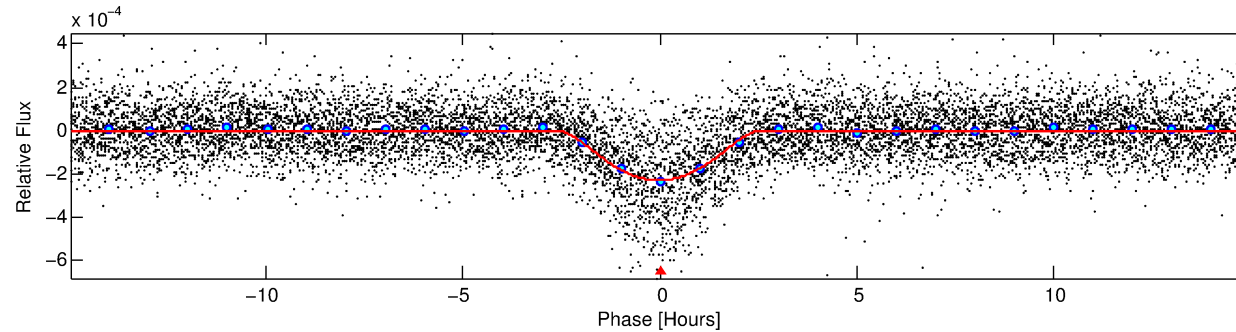
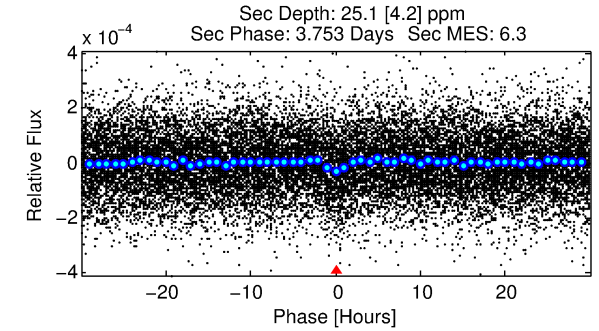
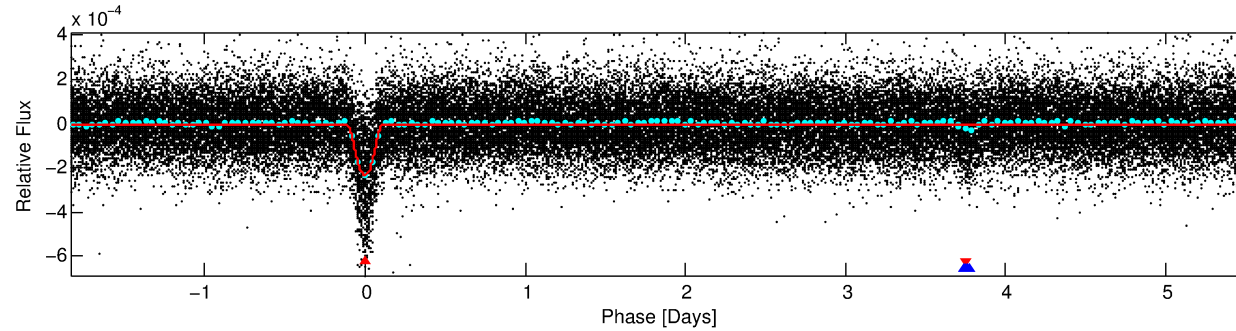
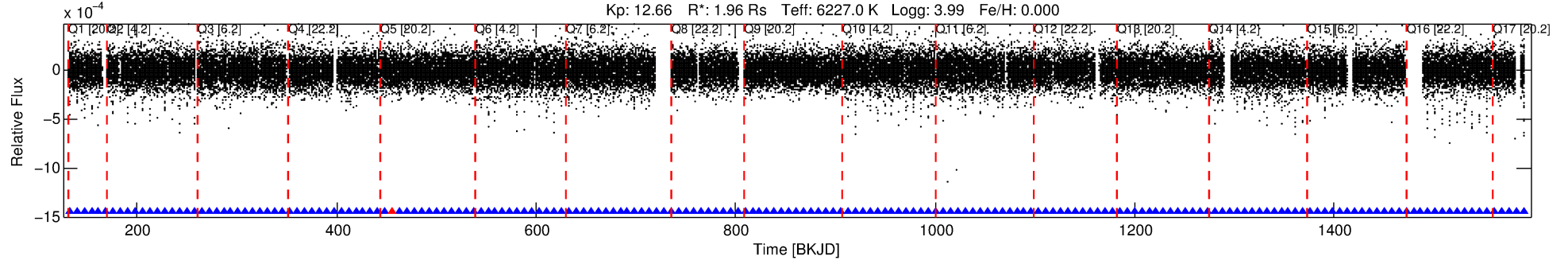
Ephemeris Match Information For 006721123-01

No Significant Match Found

DV One-Page Summary

KIC: 6721123 Candidate: 1 of 2 Period: 7.362 d
KOI: K00114.01 Corr: 0.994

Kp: 12.66 R*: 1.96 Rs Teff: 6227.0 K Logg: 3.99 Fe/H: 0.000



DV Fit Results:

Period = 7.36179 [0.00002] d
Epoch = 132.2494 [0.0022] BKJD
Rp/R* = 0.0278 [0.0195]
a/R* = 2.86 [0.46]
b = 1.00 [0.03]
Seff = 768.97 [256.70]
Teq = 1343 [112] K
Rp = 5.94 [4.41] Re
a = 0.0820 [0.0177] AU
Ag = 2.63 [3.80] [0.43σ]
Teff = 2643 [933] K [1.38σ]

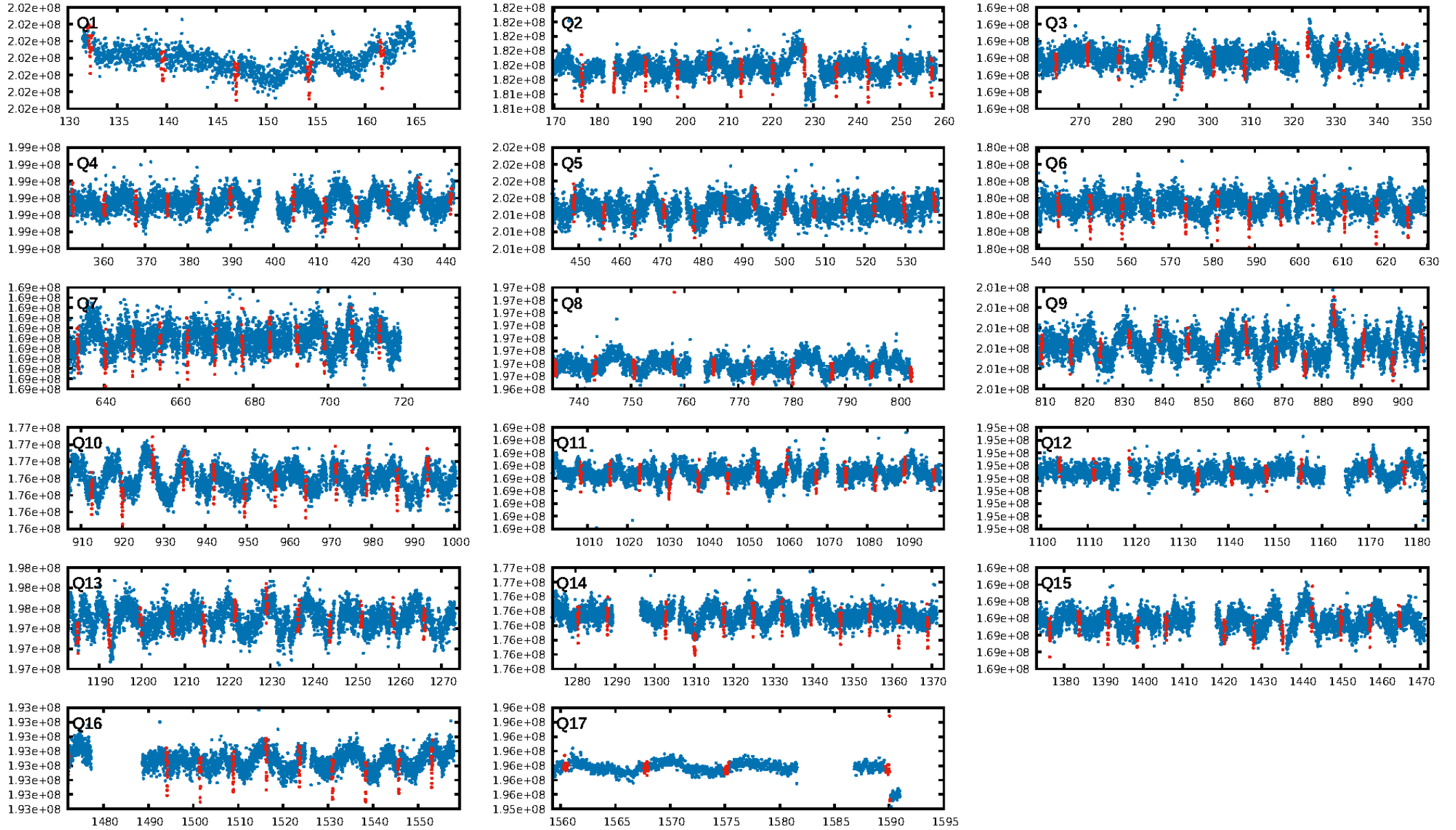
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [175/176]
GhostDiagnostic-chr: -0.3379
Centroid-sig: 0.0%
Centroid-so: 27.589 arcsec [119.77σ]
OotOffset-rm: 8.930 arcsec [120.01σ]
KicOffset-rm: 8.948 arcsec [116.03σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

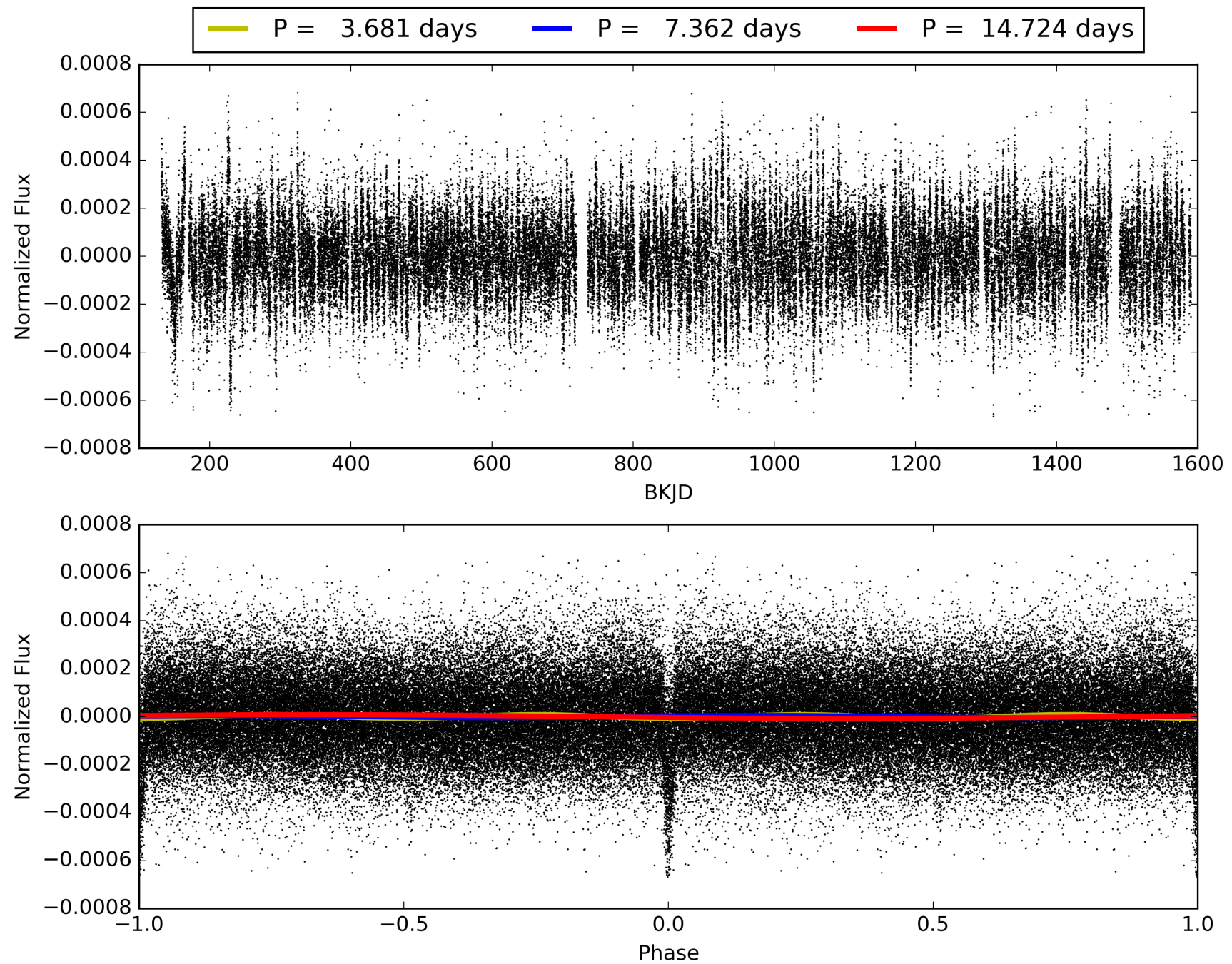
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:31:21 Z

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

TCE 006721123-01, PDC Light Curves

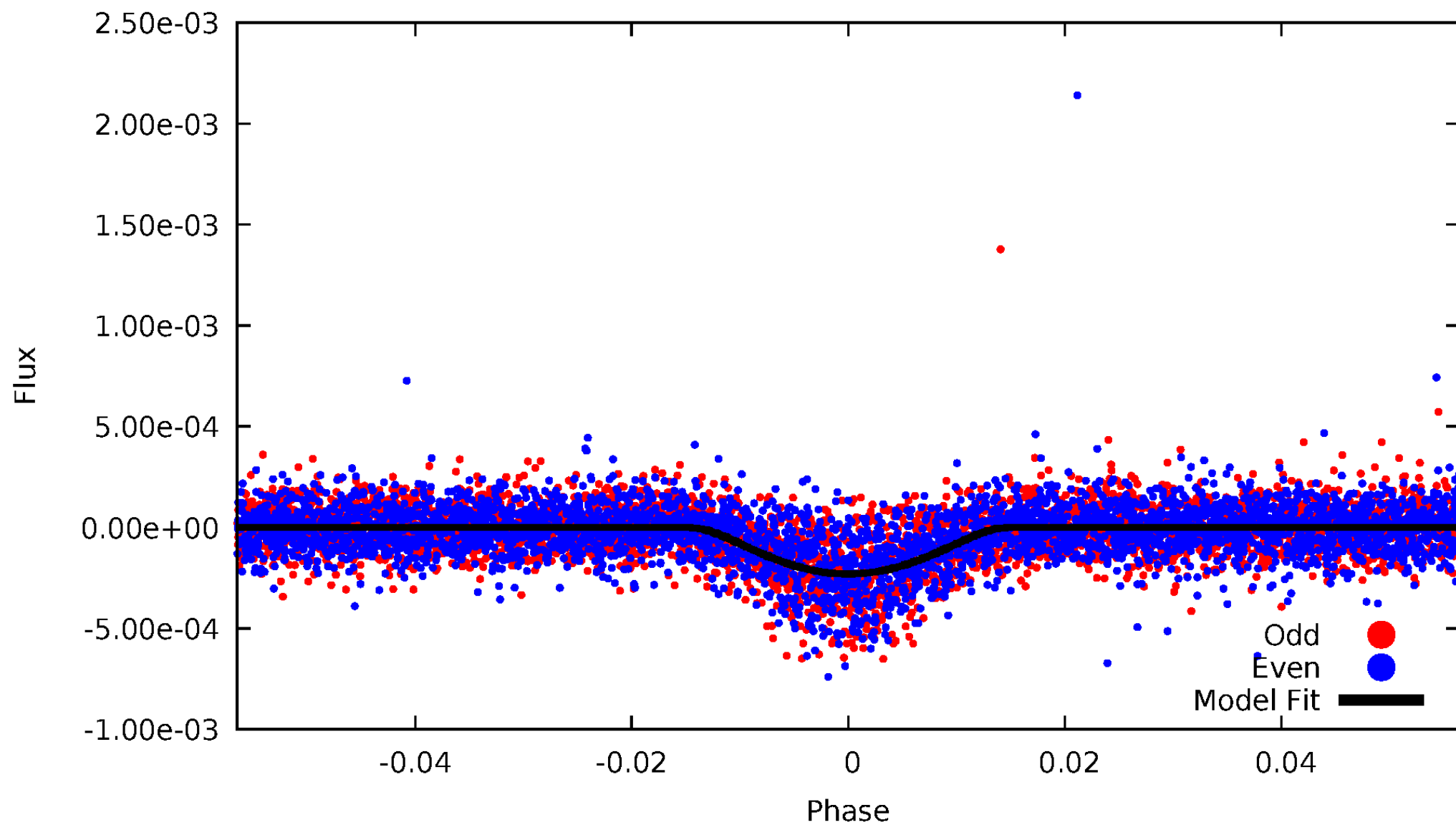


TCE 006721123-01



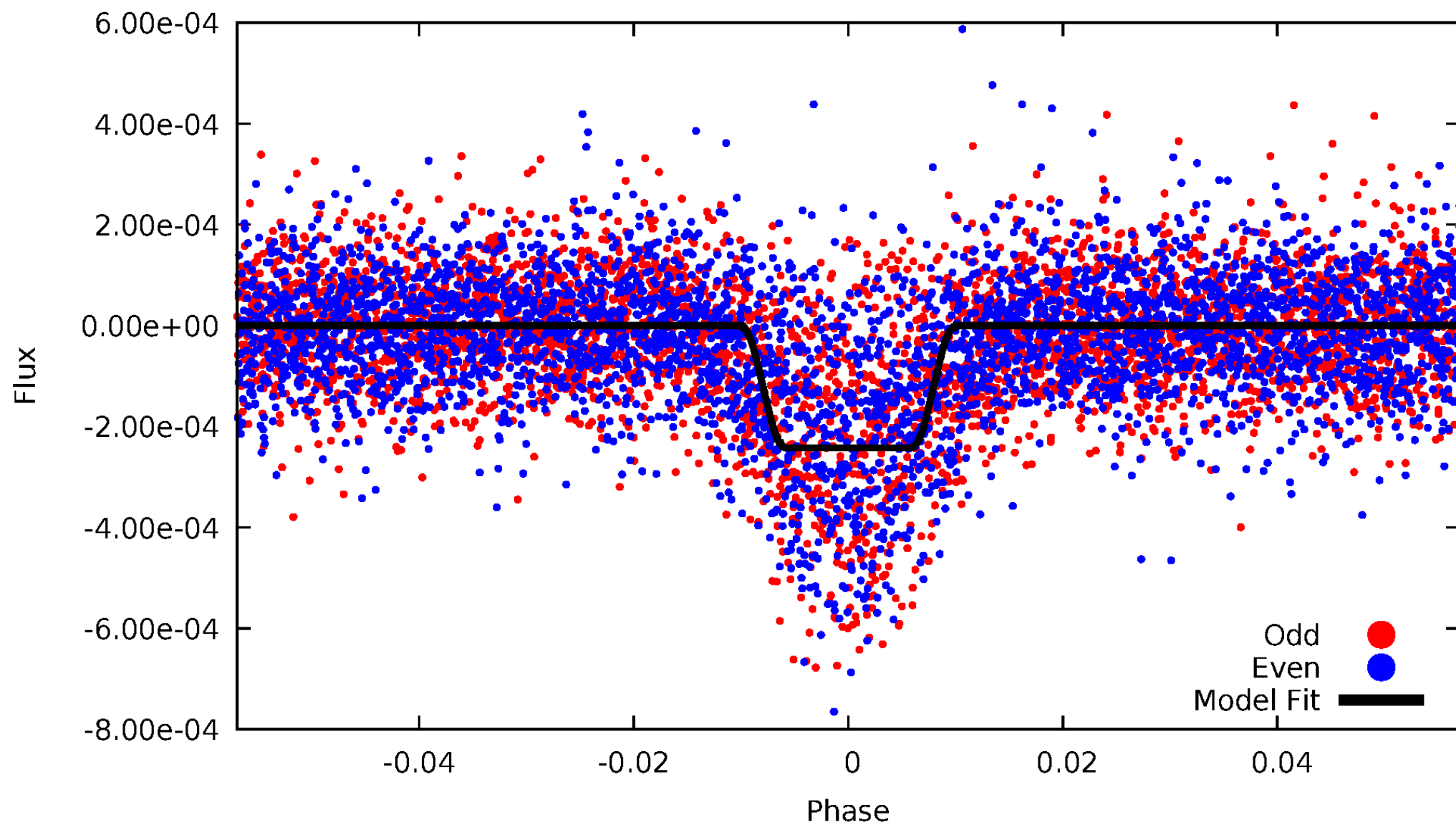
DV Odd/Even

TCE 006721123-01



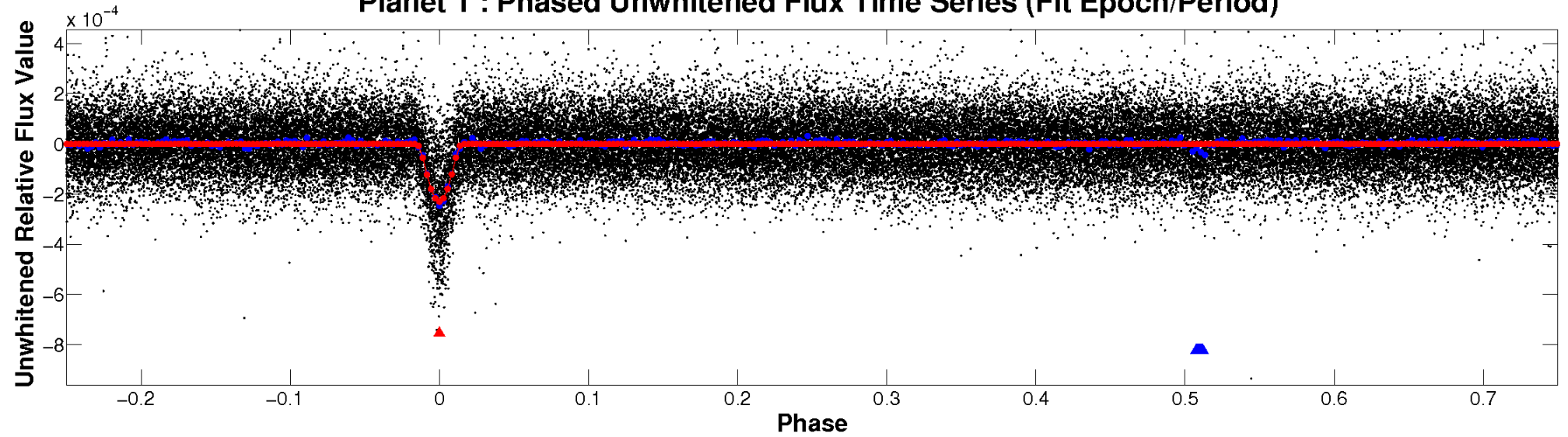
ALT Odd/Even

TCE 006721123-01

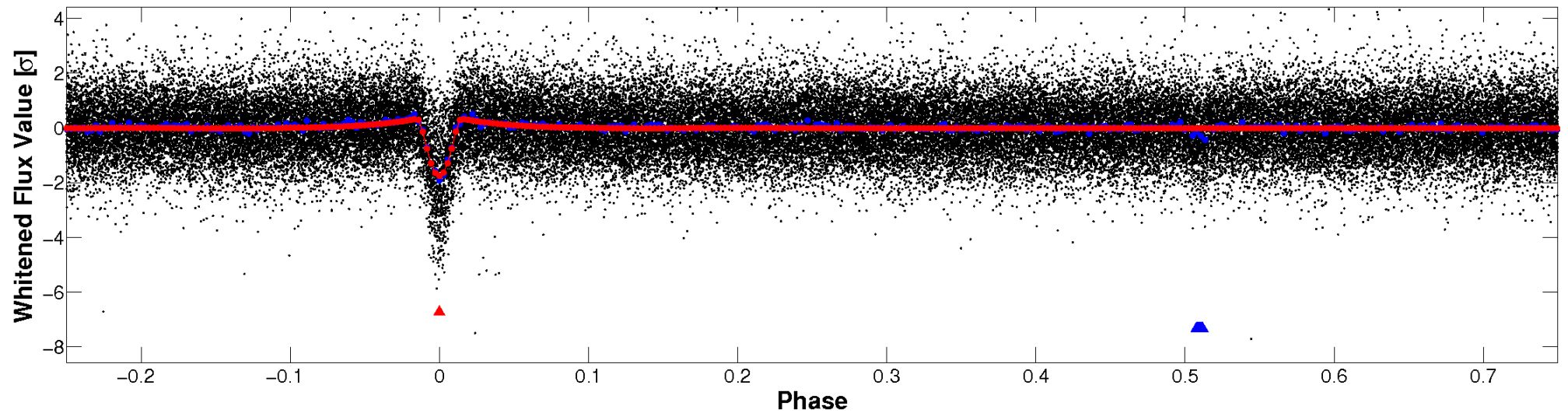


Non-Whitened Vs. Whitened Light Curve

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

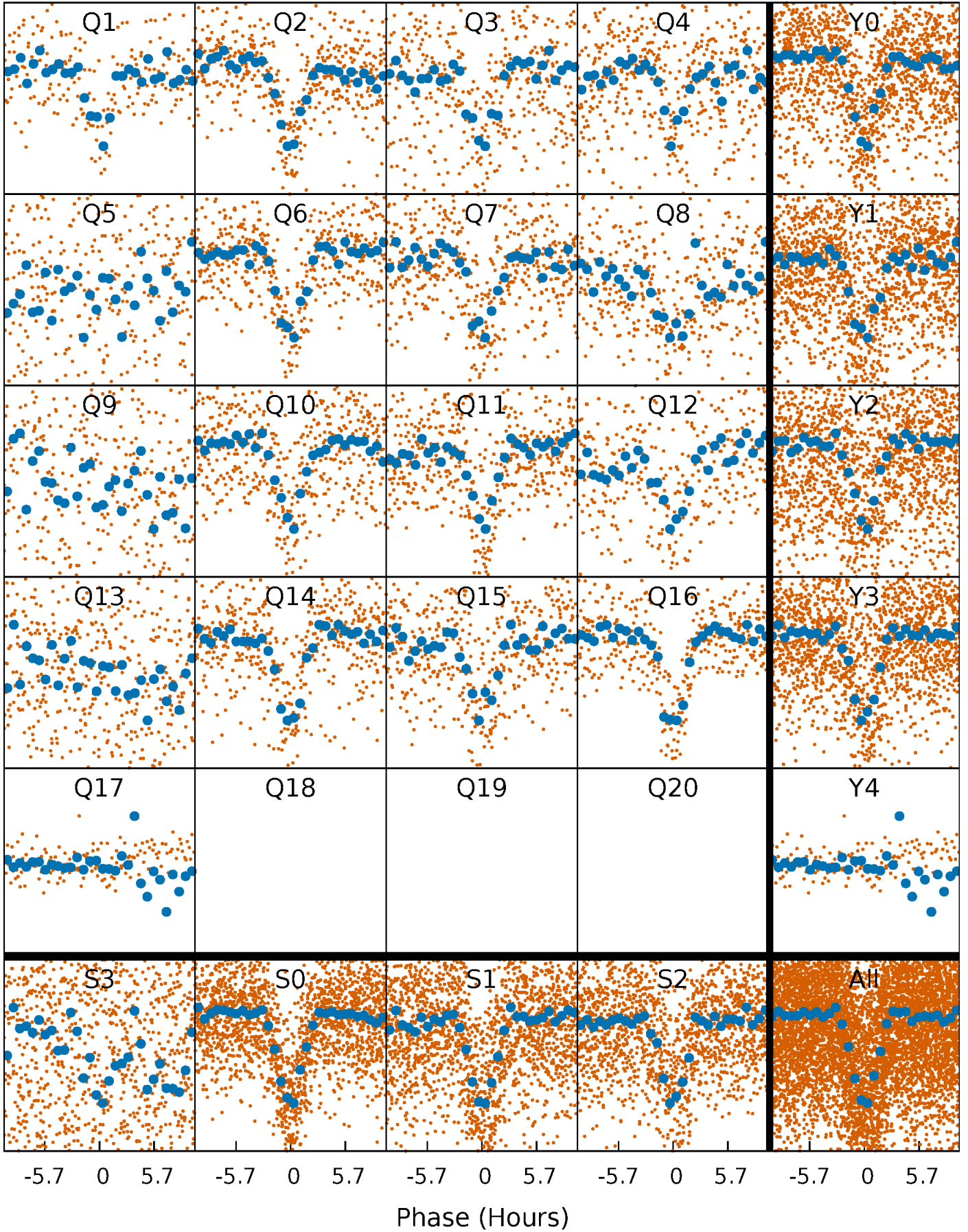


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



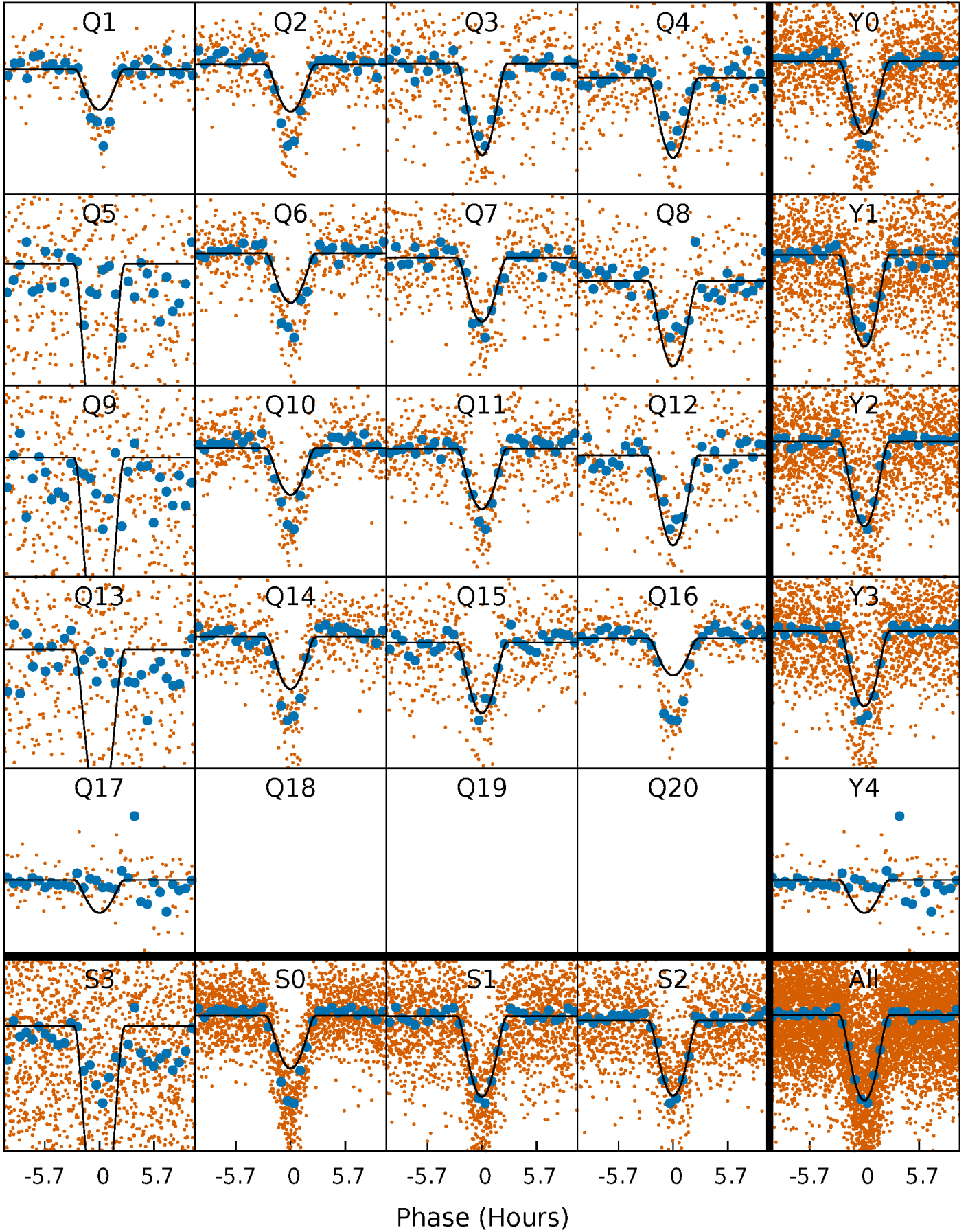
PDC Quarter-Phased Transit Curves

TCE 006721123-01 P= 7.361795 Days $T_0=132.249382$ (BKJD)



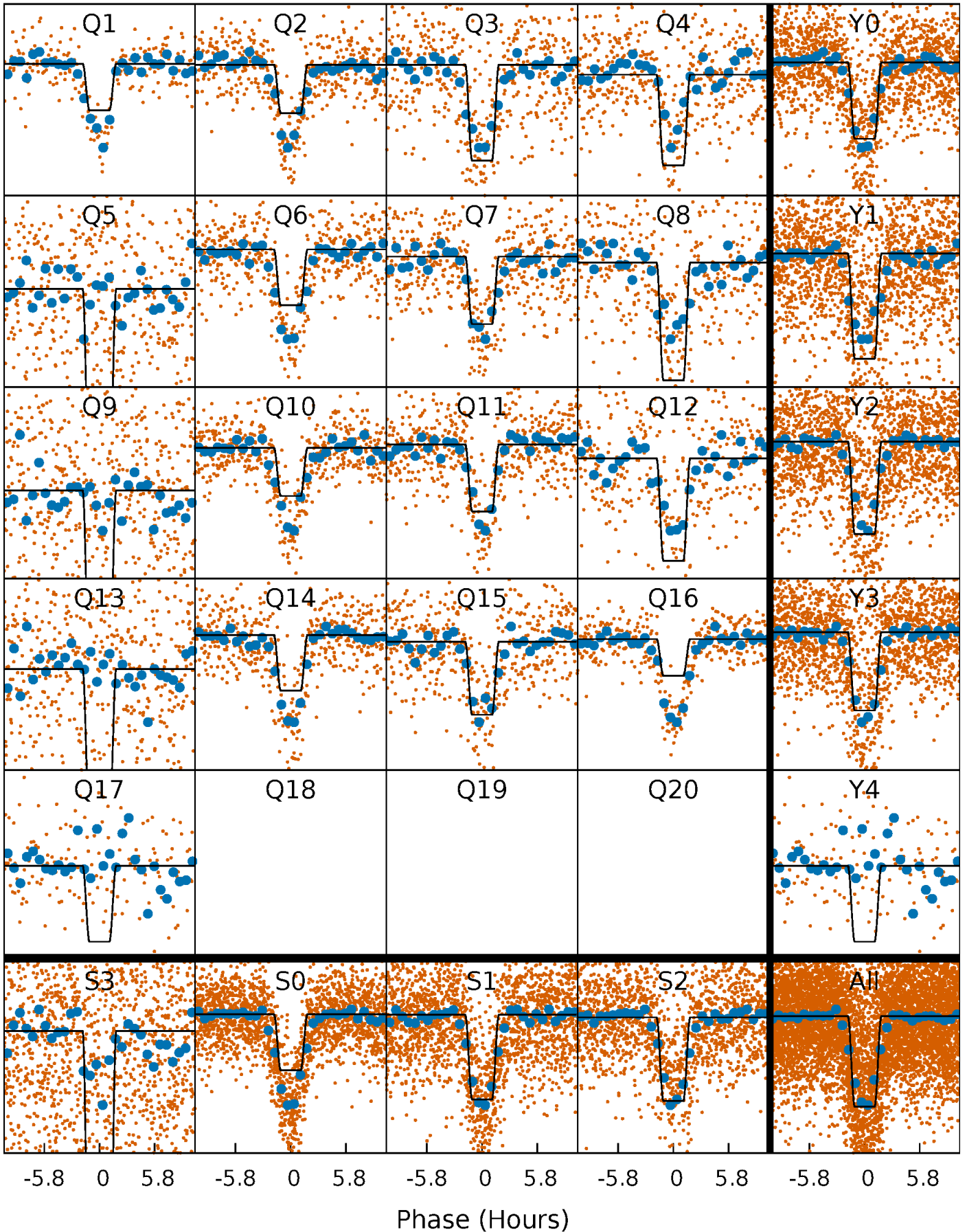
DV Quarter-Phased Transit Curves

TCE 006721123-01 P= 7.361795 Days $T_0=132.249382$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

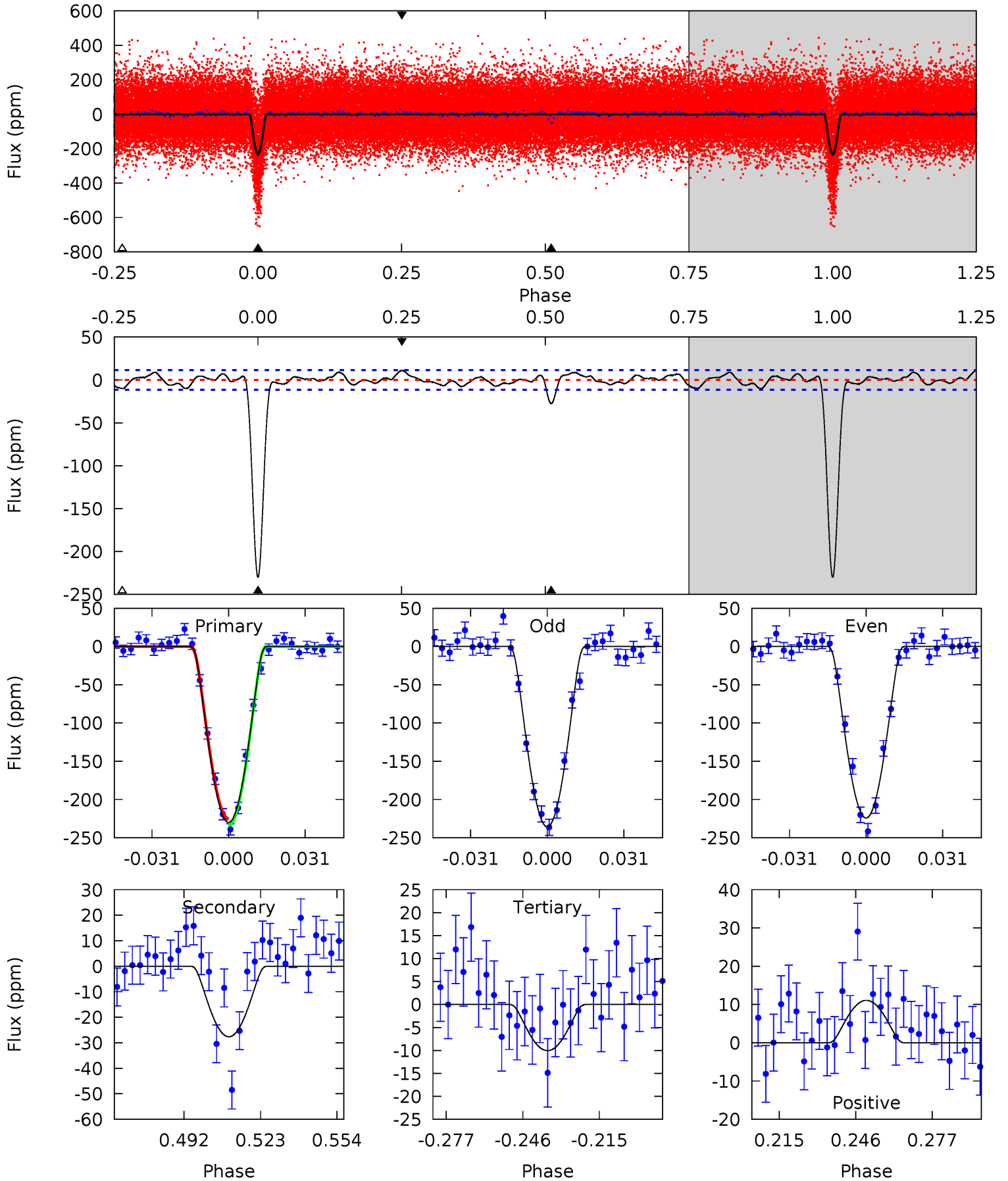
TCE 006721123-01 P= 7.361745 Days $T_0=132.254845$ (BKJD)



DV Model-Shift Uniqueness Test

006721123-01, P = 7.361795 Days, E = 124.887587 Days

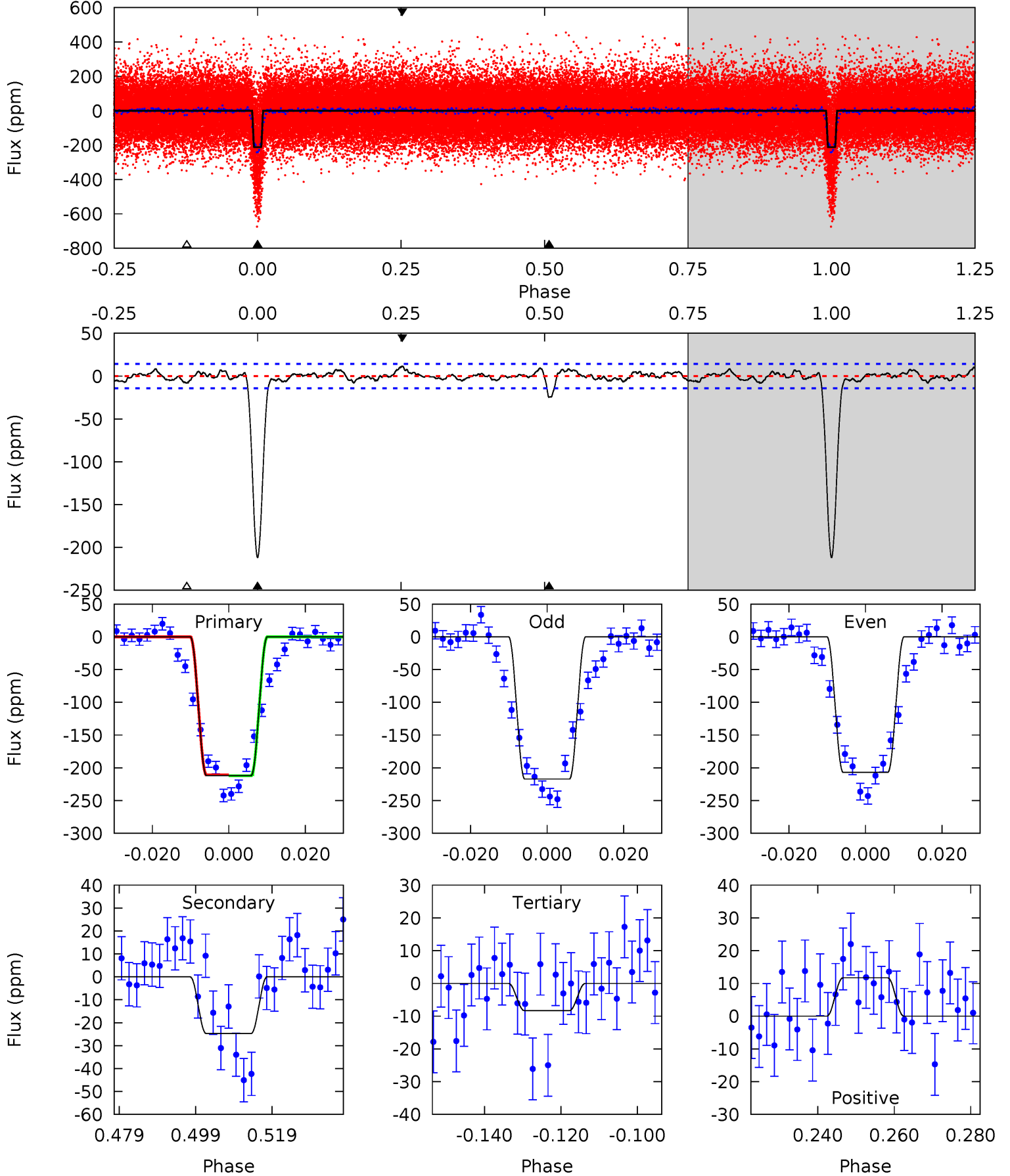
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
97.6	11.7	4.26	4.70	4.81	2.16	1.89	93.3	92.8	7.47	7.03	2.46	1.00	0.05	1.74



Alt Model-Shift Uniqueness Test

006721123-01, P = 7.361745 Days, E = 124.893100 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.0	8.53	2.87	4.03	4.89	2.33	1.28	70.1	68.9	5.66	4.50	1.78	0.96	0.05	0.20



Stellar Parameters For KIC 006721123

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6227^{+111}_{-124}	$3.986^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.958^{+0.322}_{-0.483}$	$1.358^{+0.121}_{-0.207}$	$0.255^{+0.252}_{-0.079}$
	+2%/-2%	+5%/-2%	+inf%/-inf%	+16%/-25%	+9%/-15%	+99%/-31%
Source	SPE18	SPE18	SPE18	DSEP		

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

Secondary Eclipse Parameters for KIC 006721123-01 / KOI 0114.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 2	$5.73^{+4.37}_{-3.10}$	1860^{+101}_{-102}	3223^{+1060}_{-541}	$3.127^{+11.755}_{-2.103}$
Alt.	-25 ± 3	$4.24^{+3.71}_{-2.86}$	1860^{+93}_{-116}	3488^{+1874}_{-635}	$4.948^{+40.954}_{-3.503}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

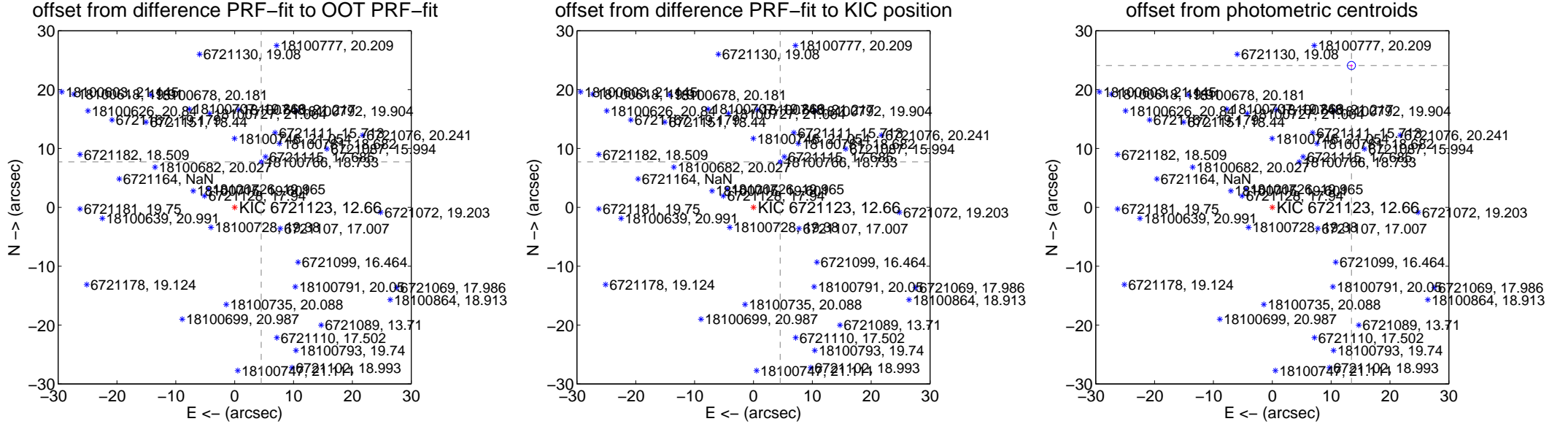
A_{obs} = Observed Albedo (Assuming $T=0$)

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

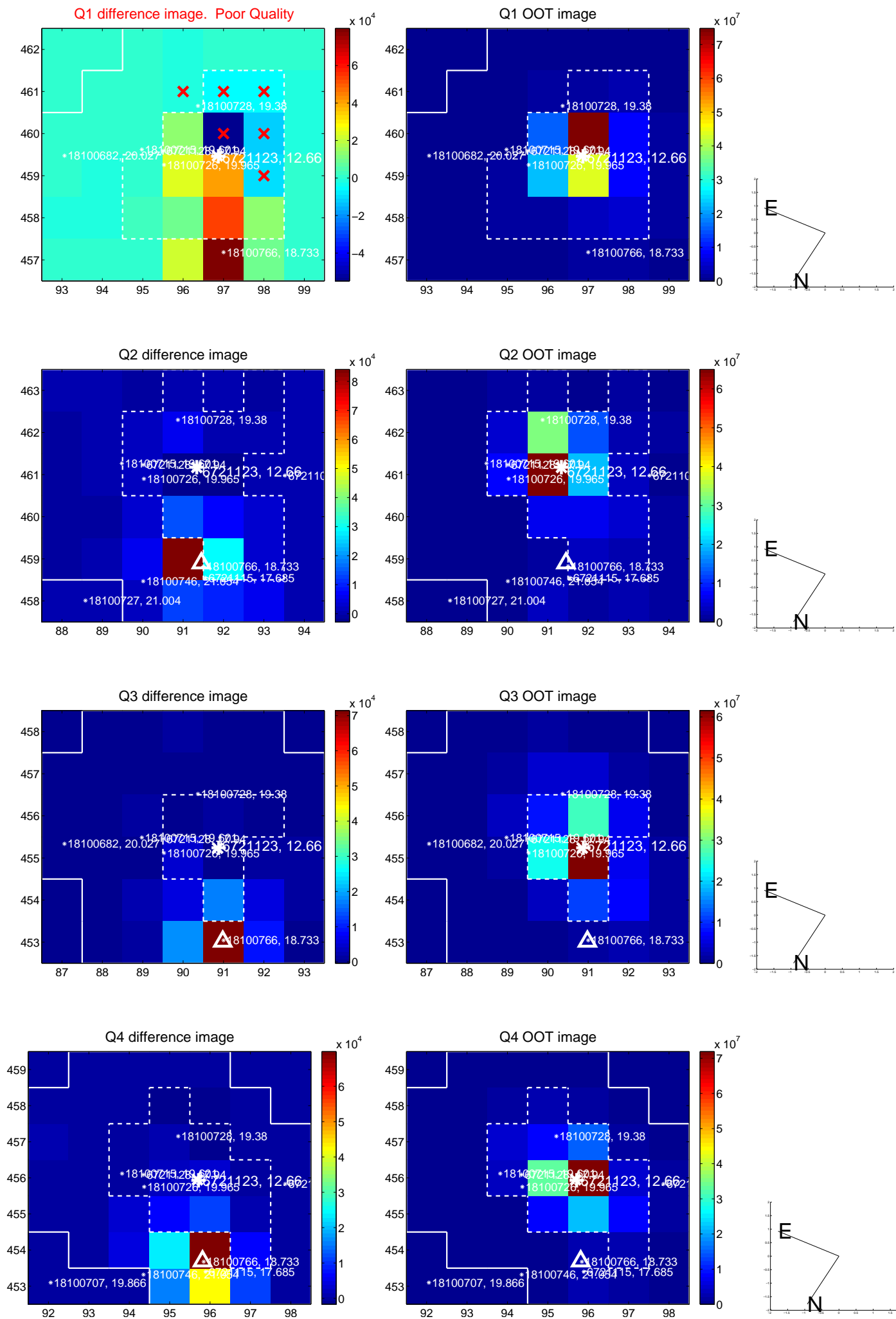
Supplemental centroid analysis for 006721123-01. Kepler magnitude: 12.66. Transit SNR 47.53
 There are 16 quarters with good PRF difference image offsets
 The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.930 \pm 0.074	120.01	-4.506 \pm 0.071	7.710 \pm 0.072
PRF-fit source offset from KIC position	8.948 \pm 0.077	116.03	-4.537 \pm 0.071	7.713 \pm 0.074
photometric centroid source offset	27.59 \pm 0.23	119.78	-13.45 \pm 0.25	24.09 \pm 0.22

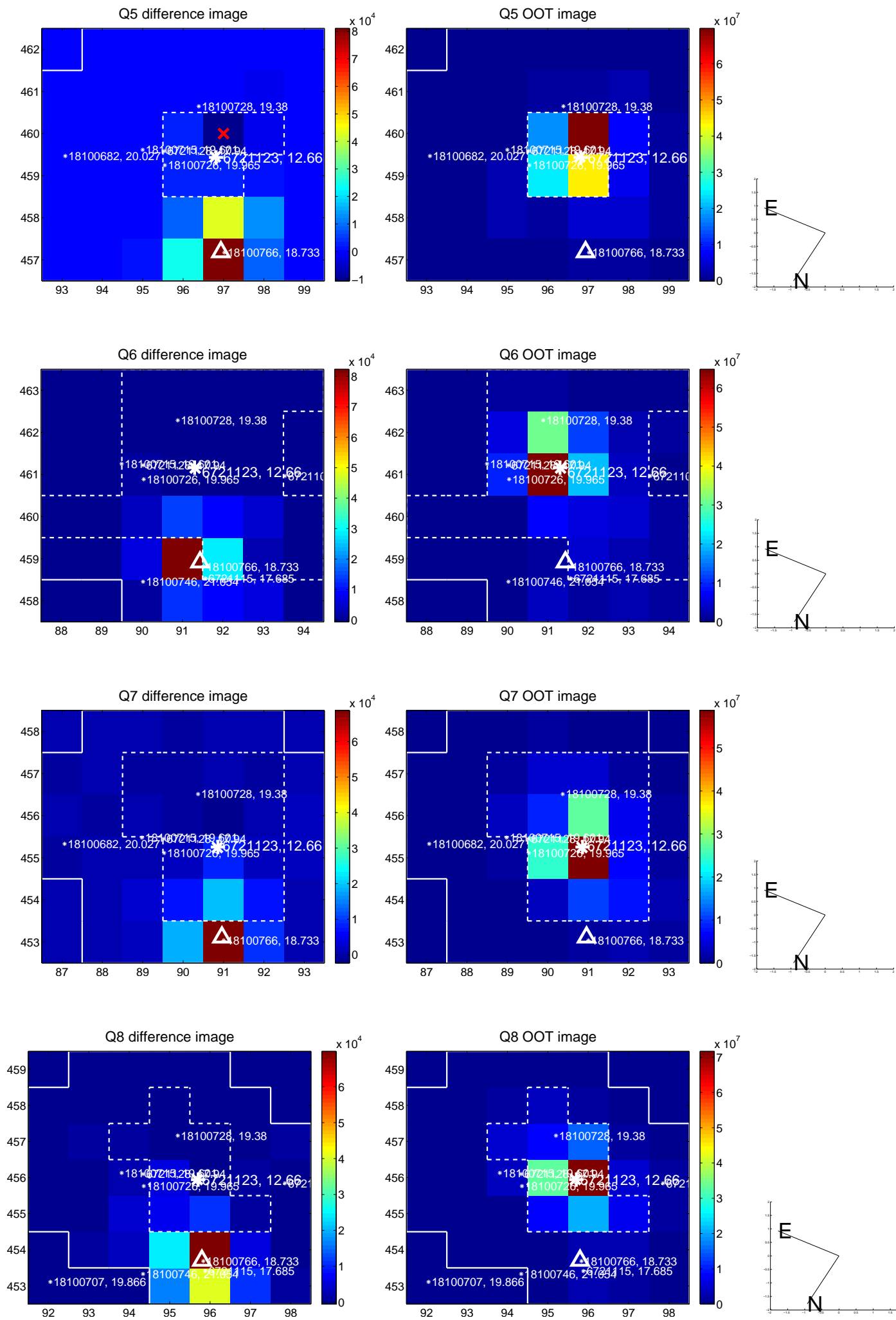


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

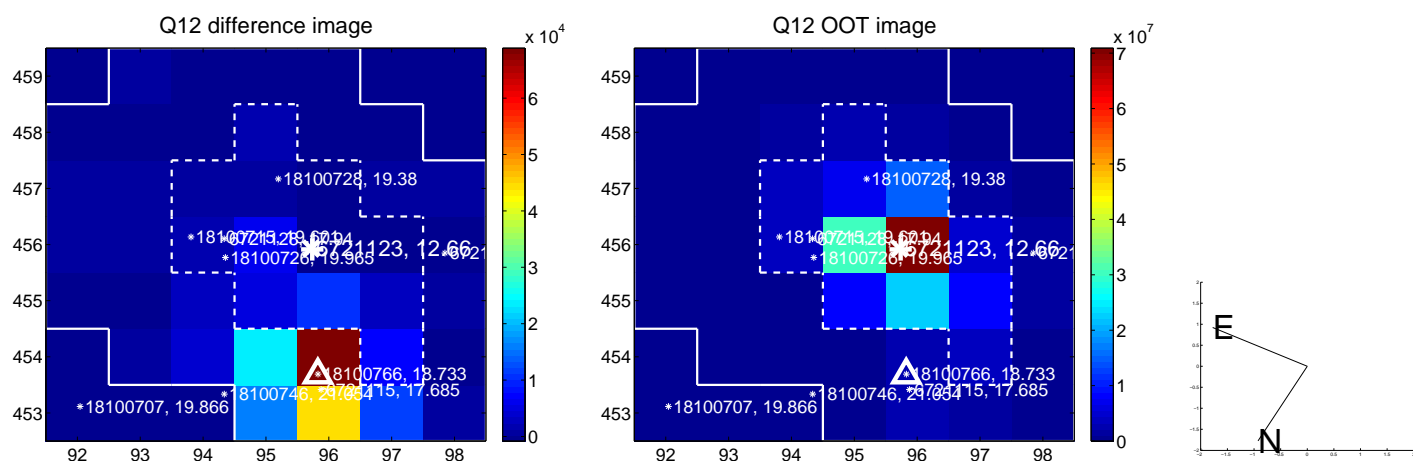
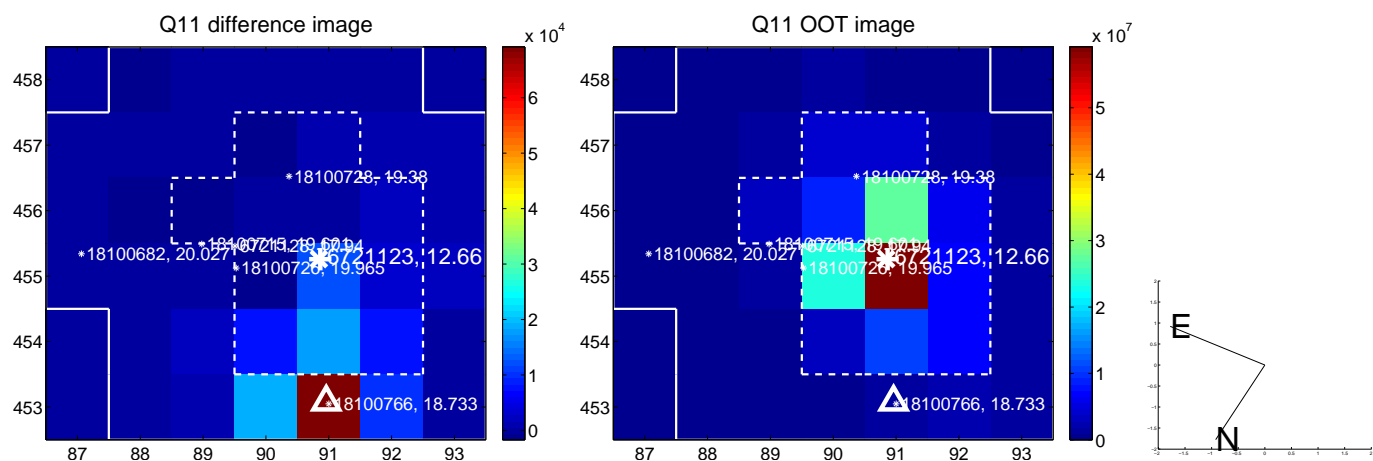
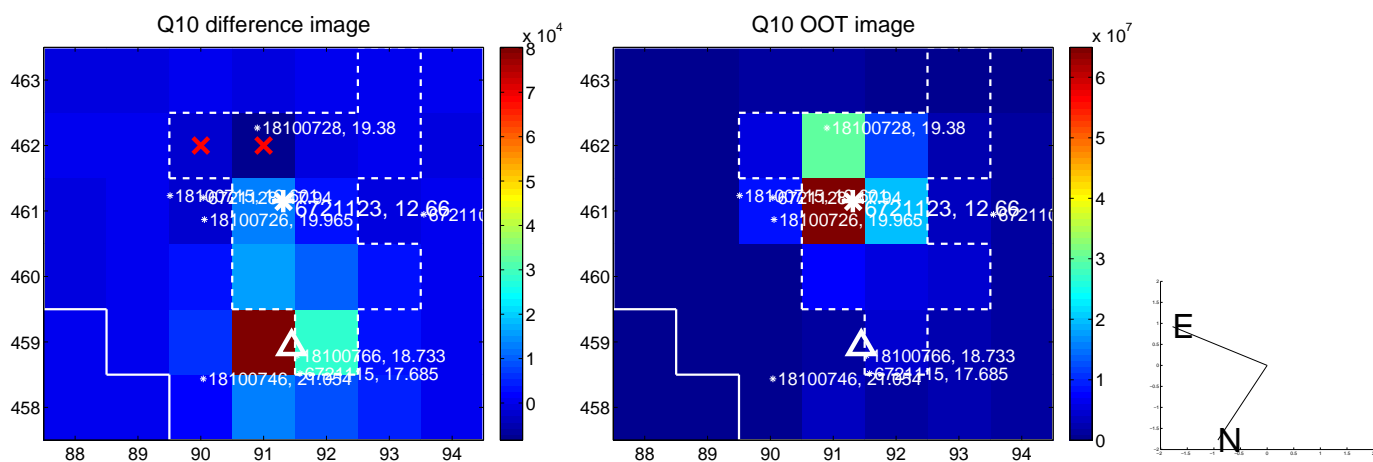
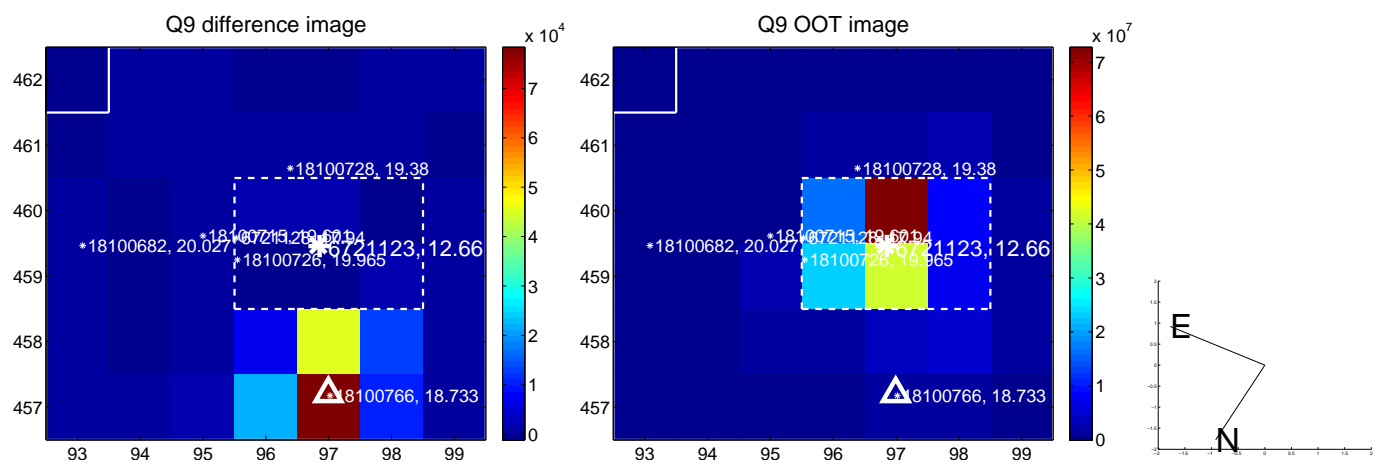
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



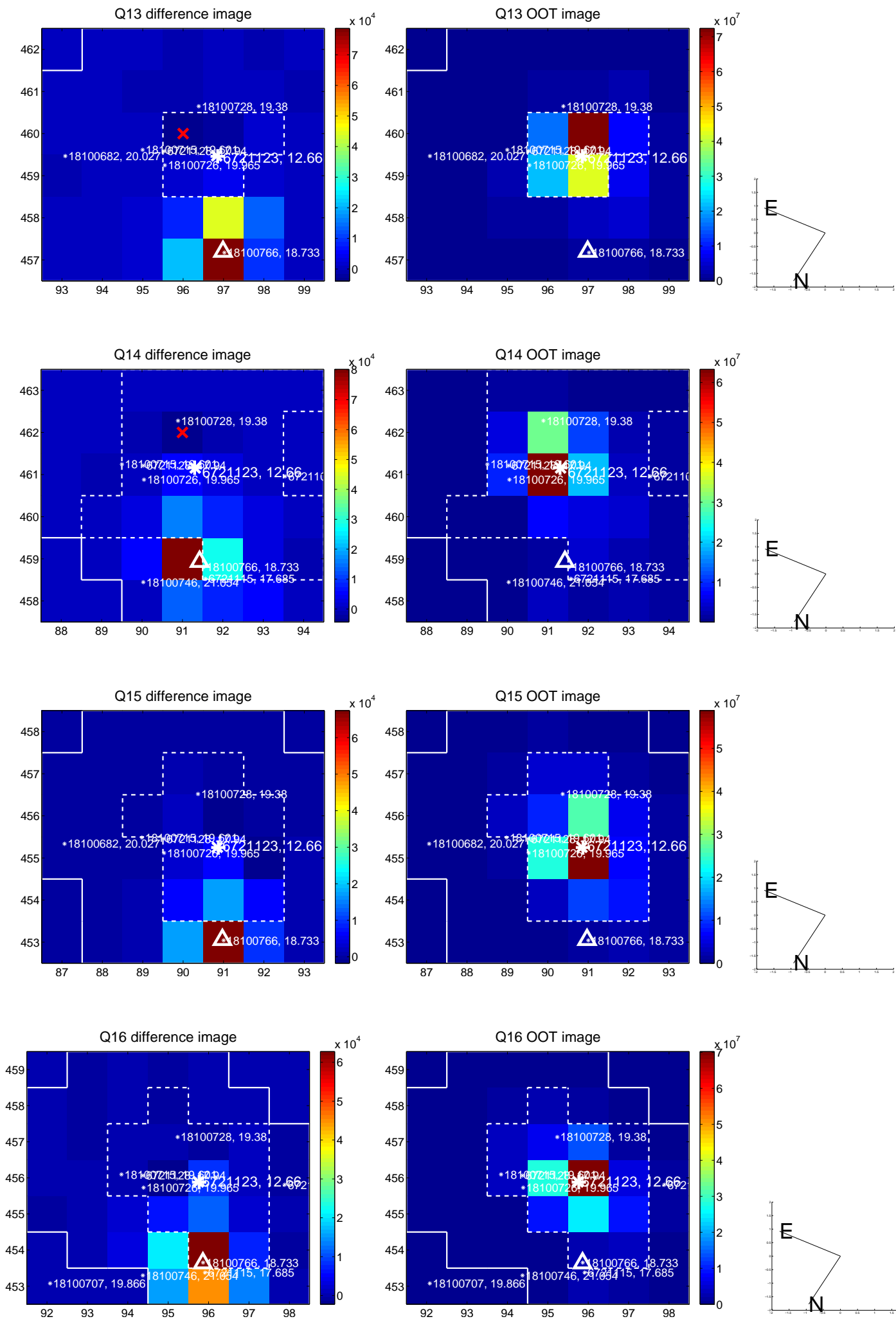
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



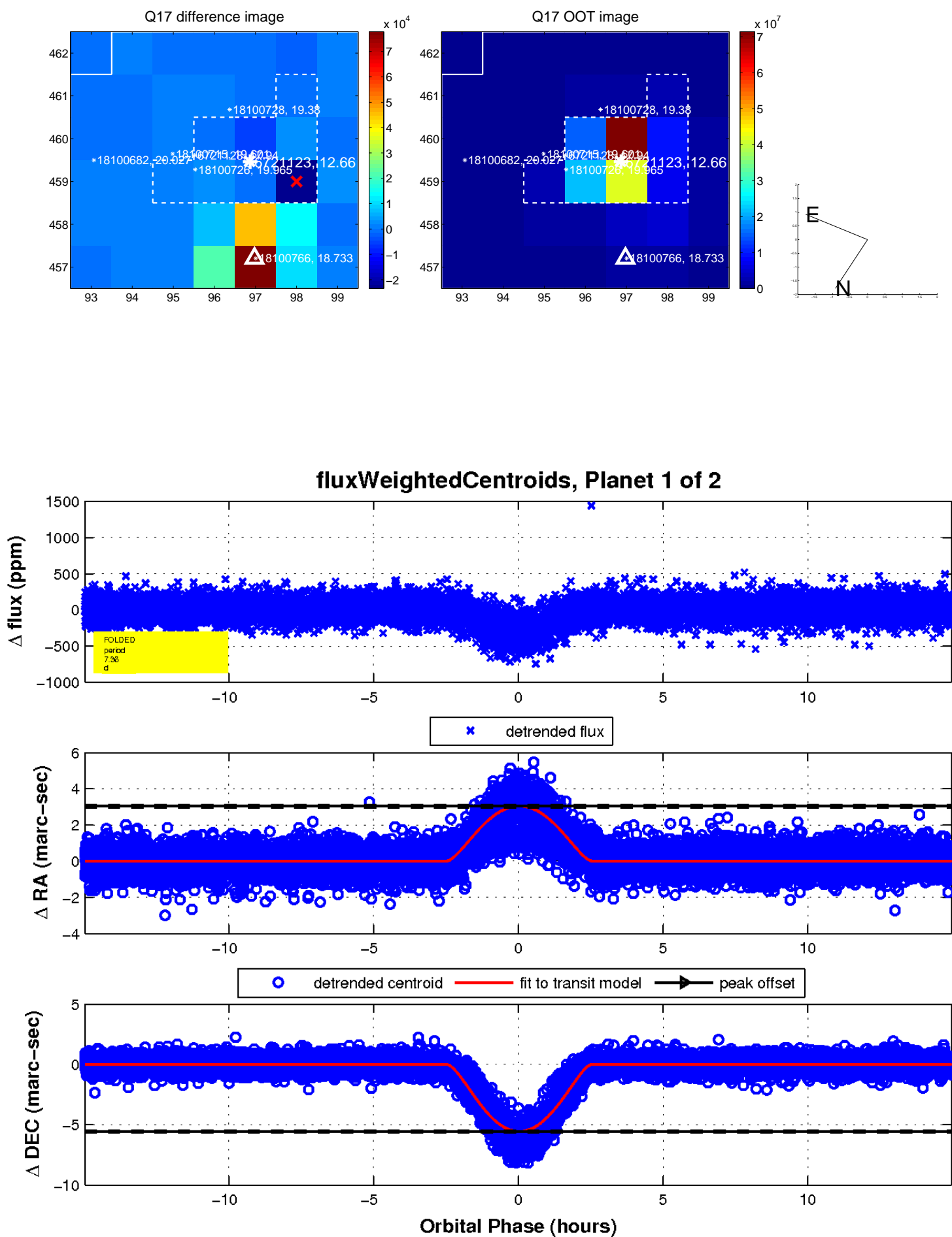
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



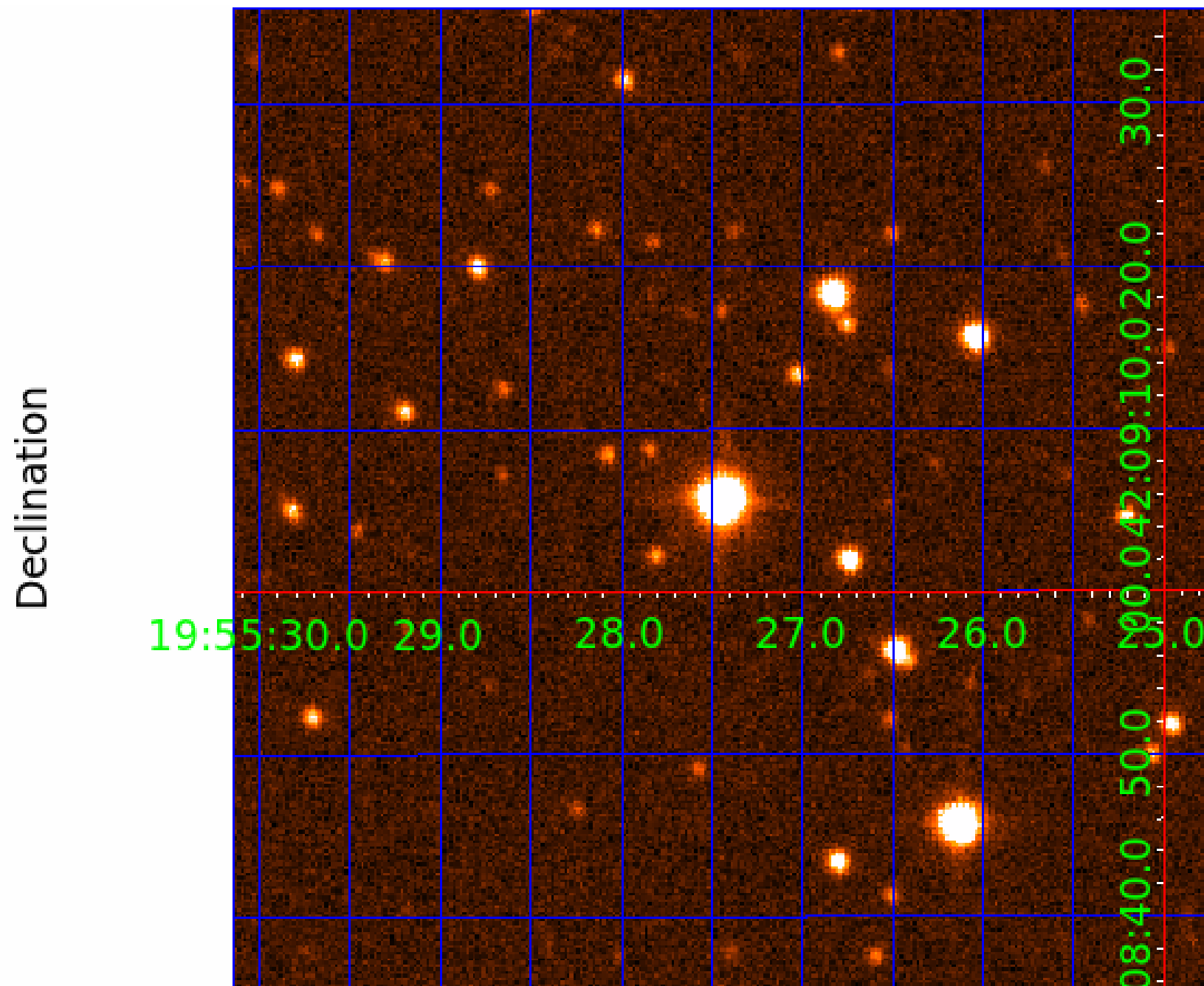
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006721123

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})
006721123-01	OBS	0114.01	7.361795	132.249382	230.7	4.987	46.2	47.5	1.96	6227	5.94	768.97
006721123-02	OBS	No	7.361631	136.018049	34.8	2.259	7.2	7.3	1.96	6227	1.24	768.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006721123-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET
006721123-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

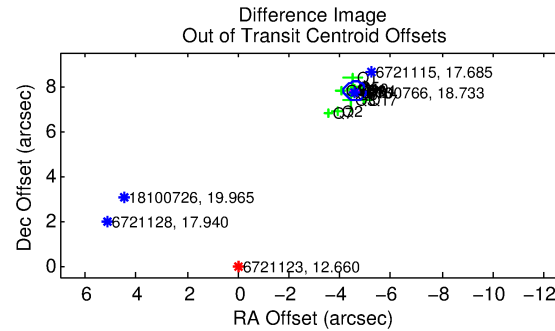
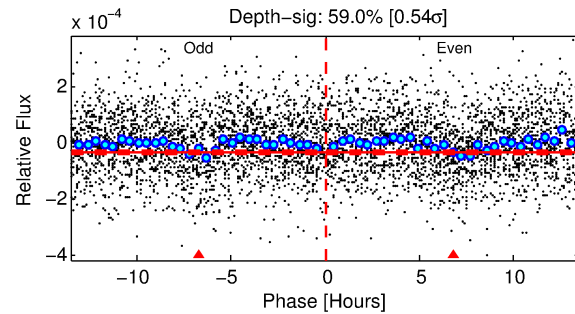
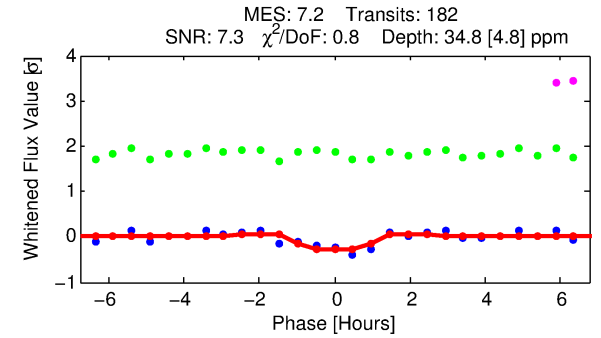
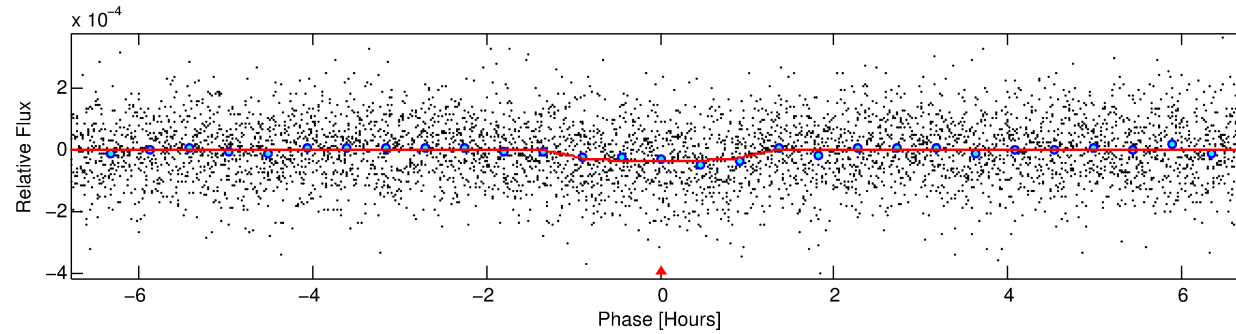
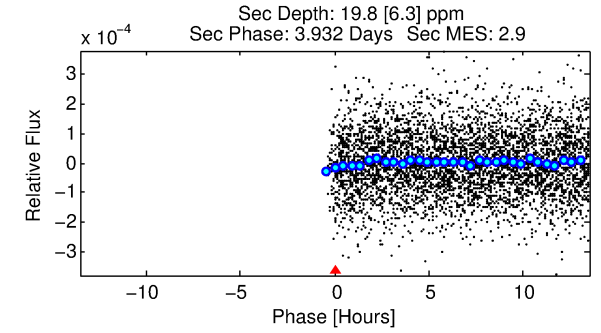
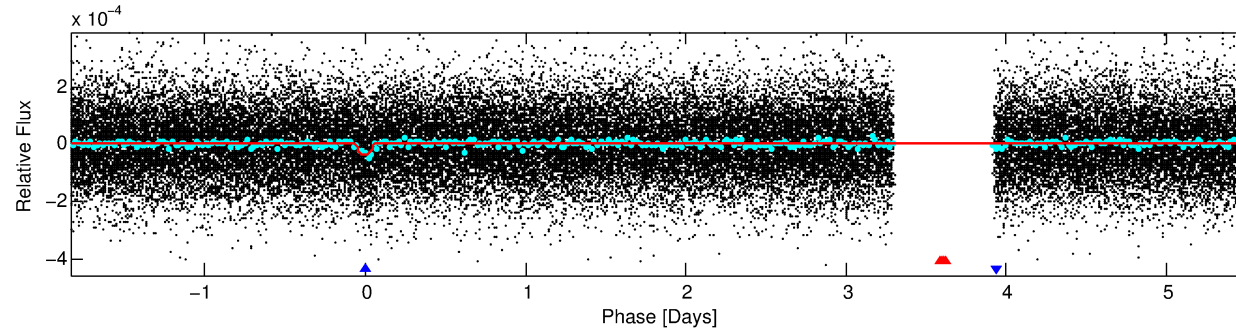
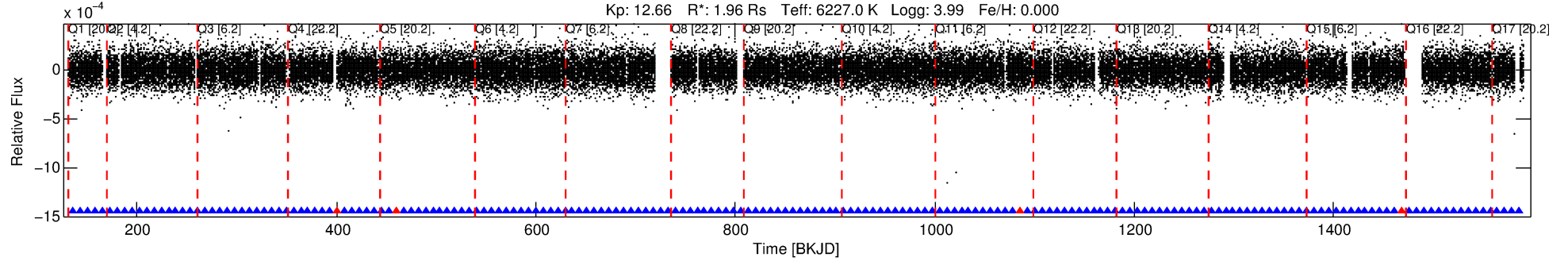
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006721123-02

No Significant Match Found

DV One-Page Summary

KIC: 6721123 Candidate: 2 of 2 Period: 7.362 d
KOI: K00114 Corr: No Ephemeris Match



DV Fit Results:

Period = 7.36163 [0.00006] d
Epoch = 136.0180 [0.0061] BKJD
Rp/R* = 0.0058 [0.0023]
a/R* = 17.97 [36.19]
b = 0.70 [1.48]
Seff = 768.99 [256.71]
Teff = 1343 [112] K
Rp = 1.24 [0.58] Re
a = 0.0820 [0.0177] AU
Ag = 47.88 [44.15] [1.06σ]
Teffp = 5461 [1183] K [3.46σ]

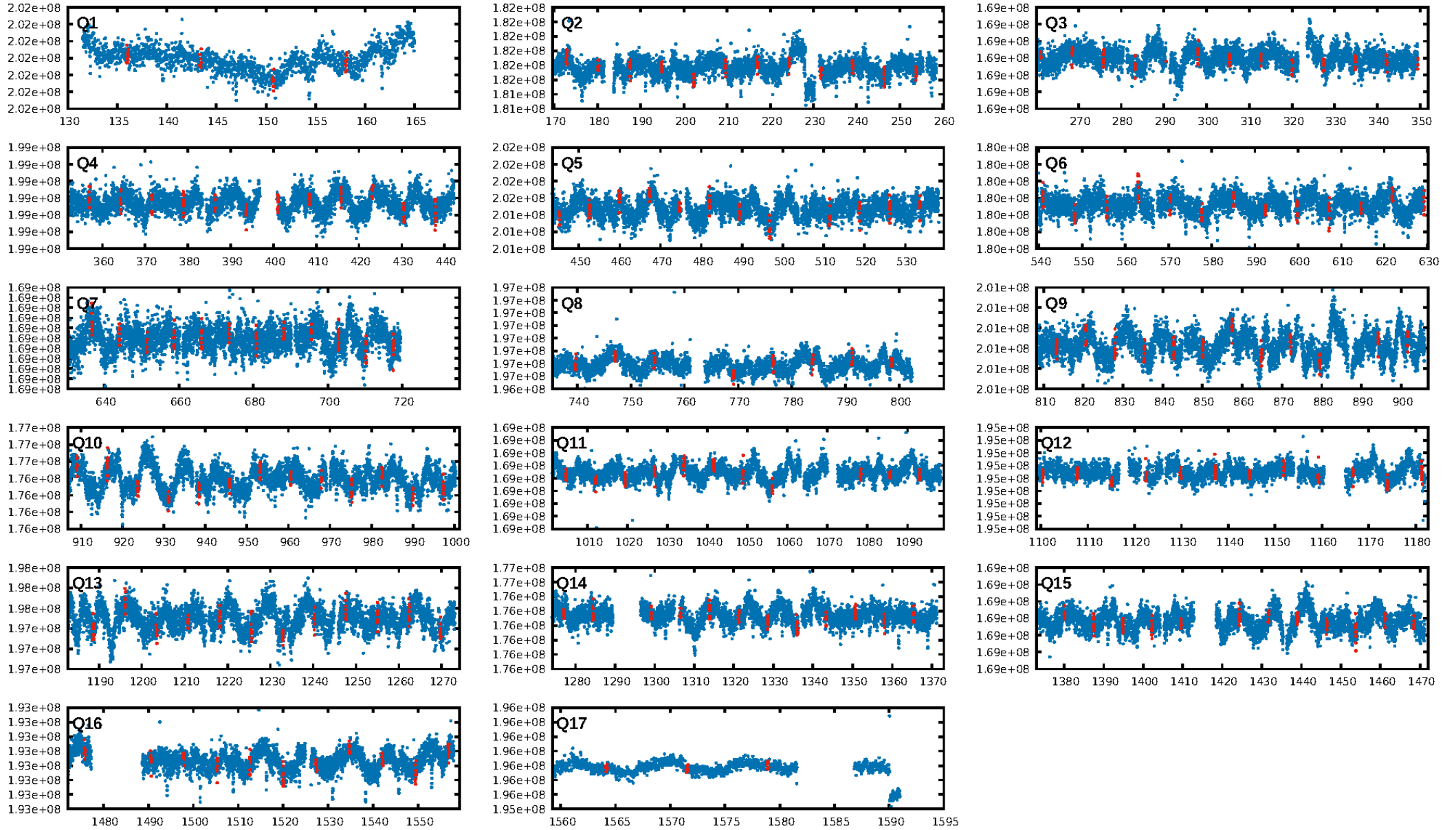
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.70e-12
RollingBand-fgt: 0.98 [171/175]
GhostDiagnostic-chr: -0.1525
Centroid-sig: 0.0%
Centroid-so: 24.855 arcsec [15.07σ]
OotOffset-rm: 9.014 arcsec [64.26σ]
KicOffset-rm: 9.035 arcsec [60.44σ]
OotOffset-st: 4/2/3/5 [14]
KicOffset-st: 4/2/3/5 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

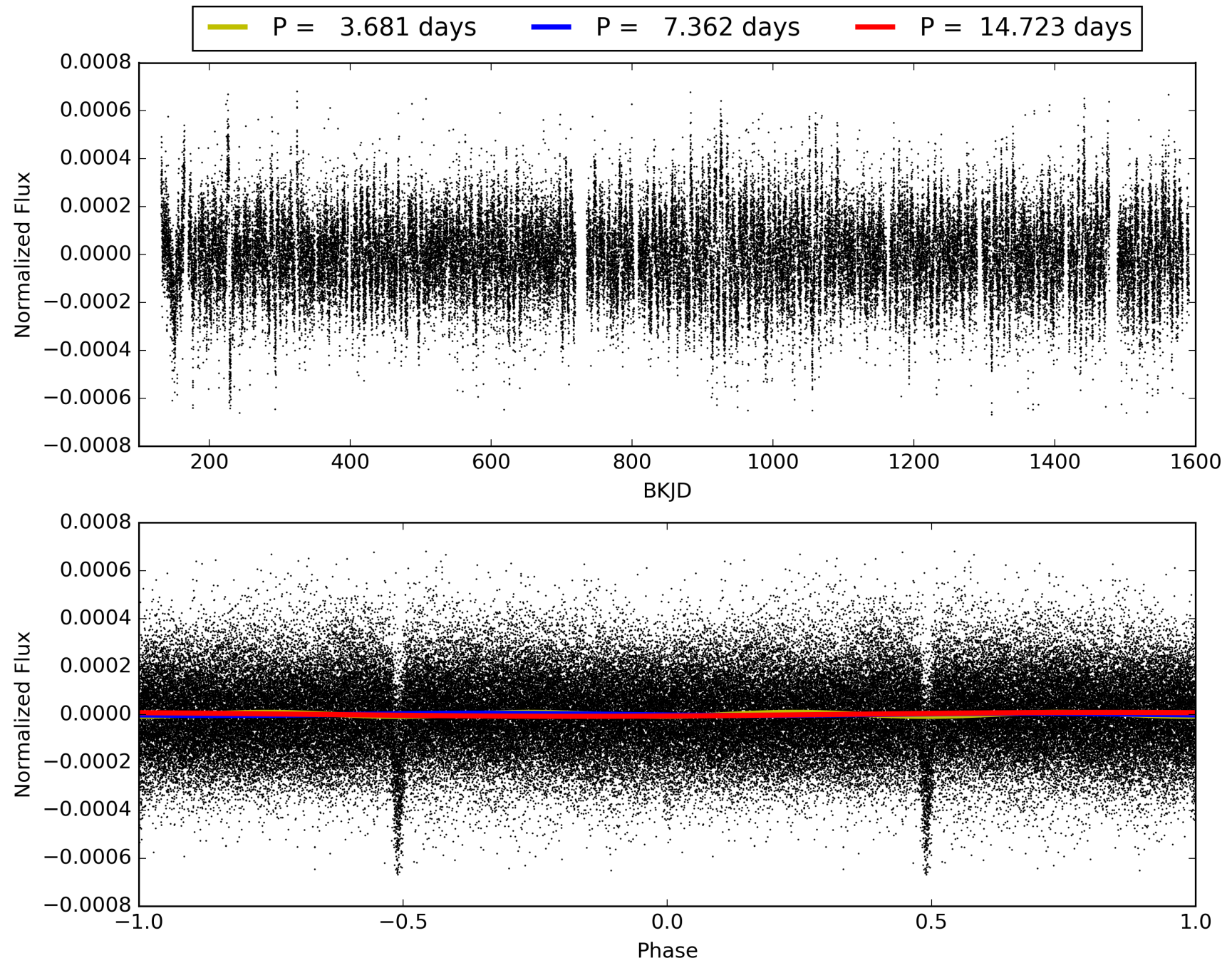
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:31:29 Z

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

TCE 006721123-02, PDC Light Curves

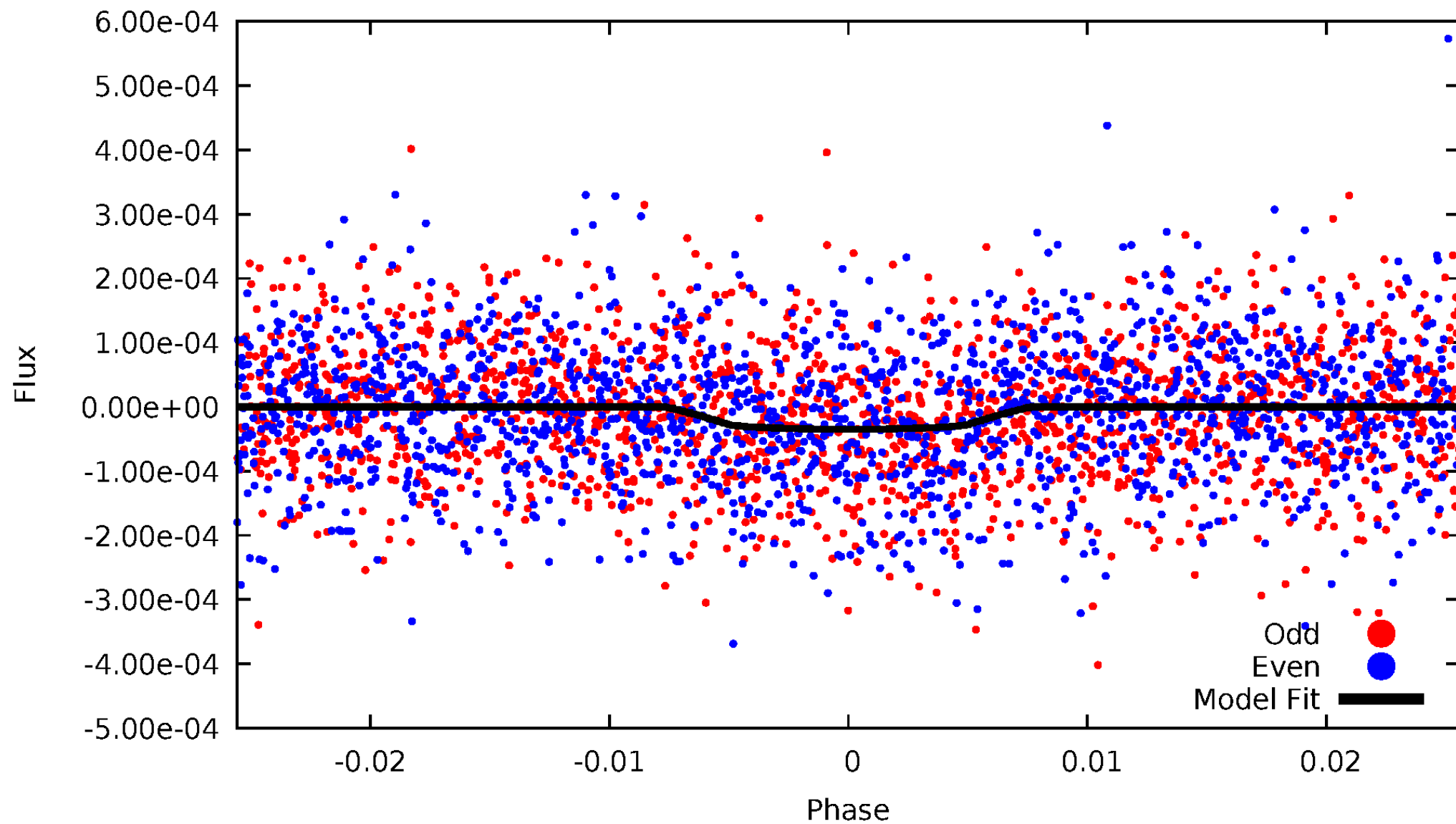


TCE 006721123-02



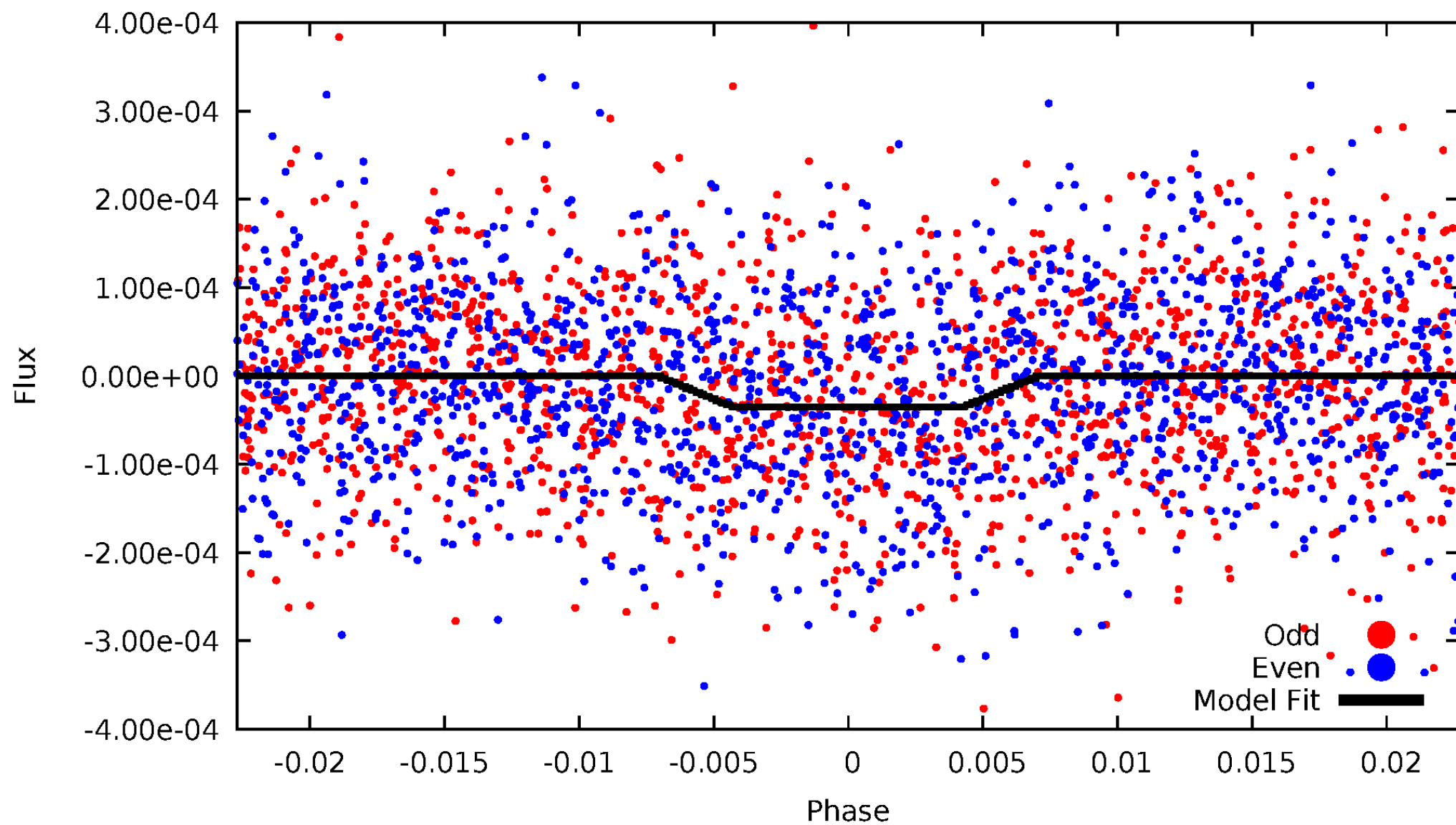
DV Odd/Even

TCE 006721123-02



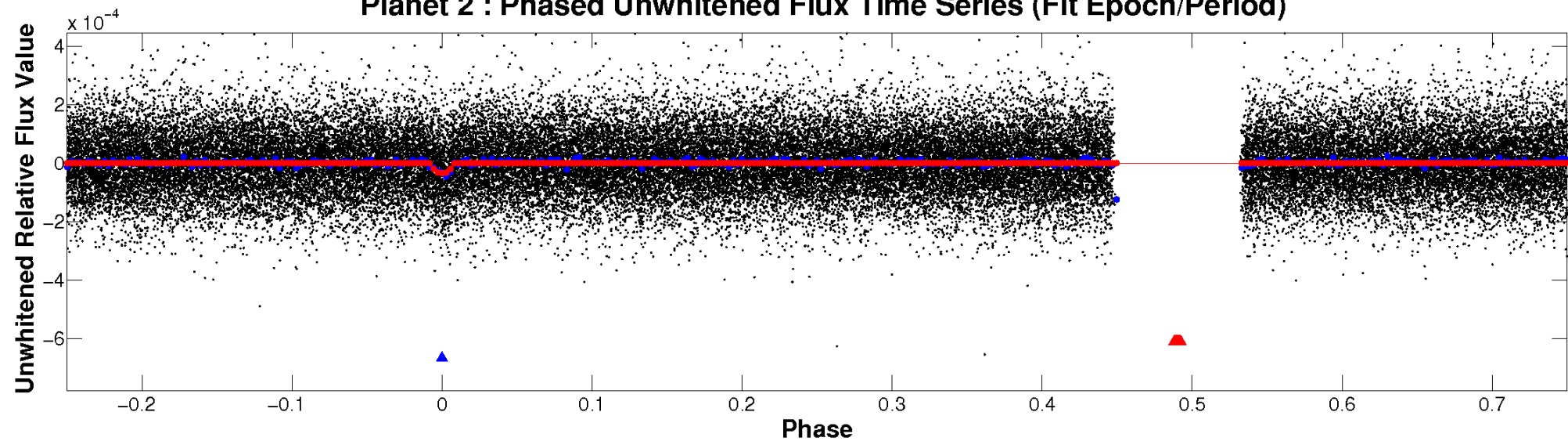
ALT Odd/Even

TCE 006721123-02

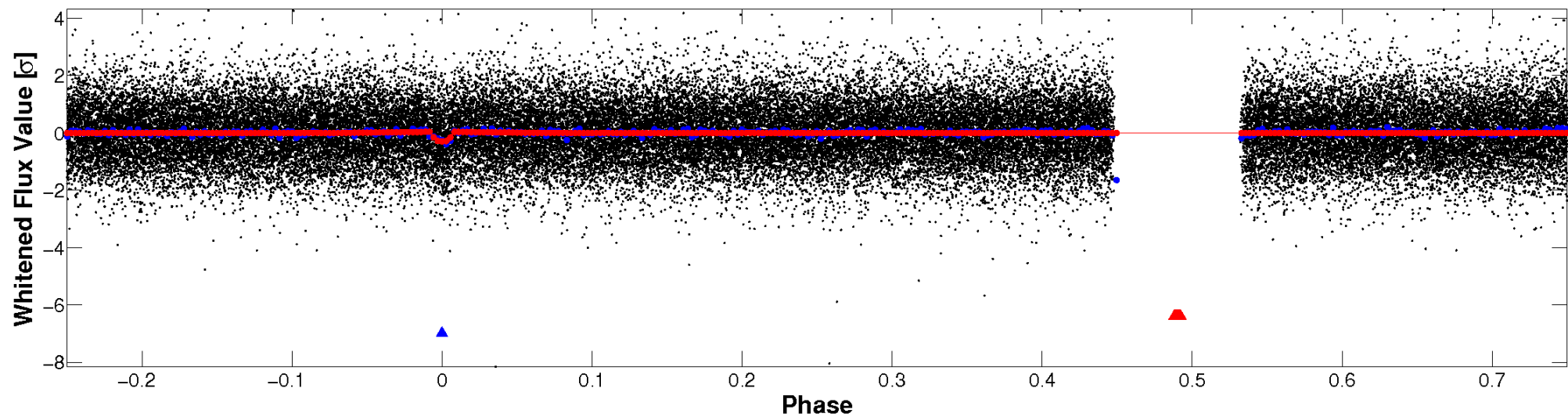


Non-Whitened Vs. Whitened Light Curve

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

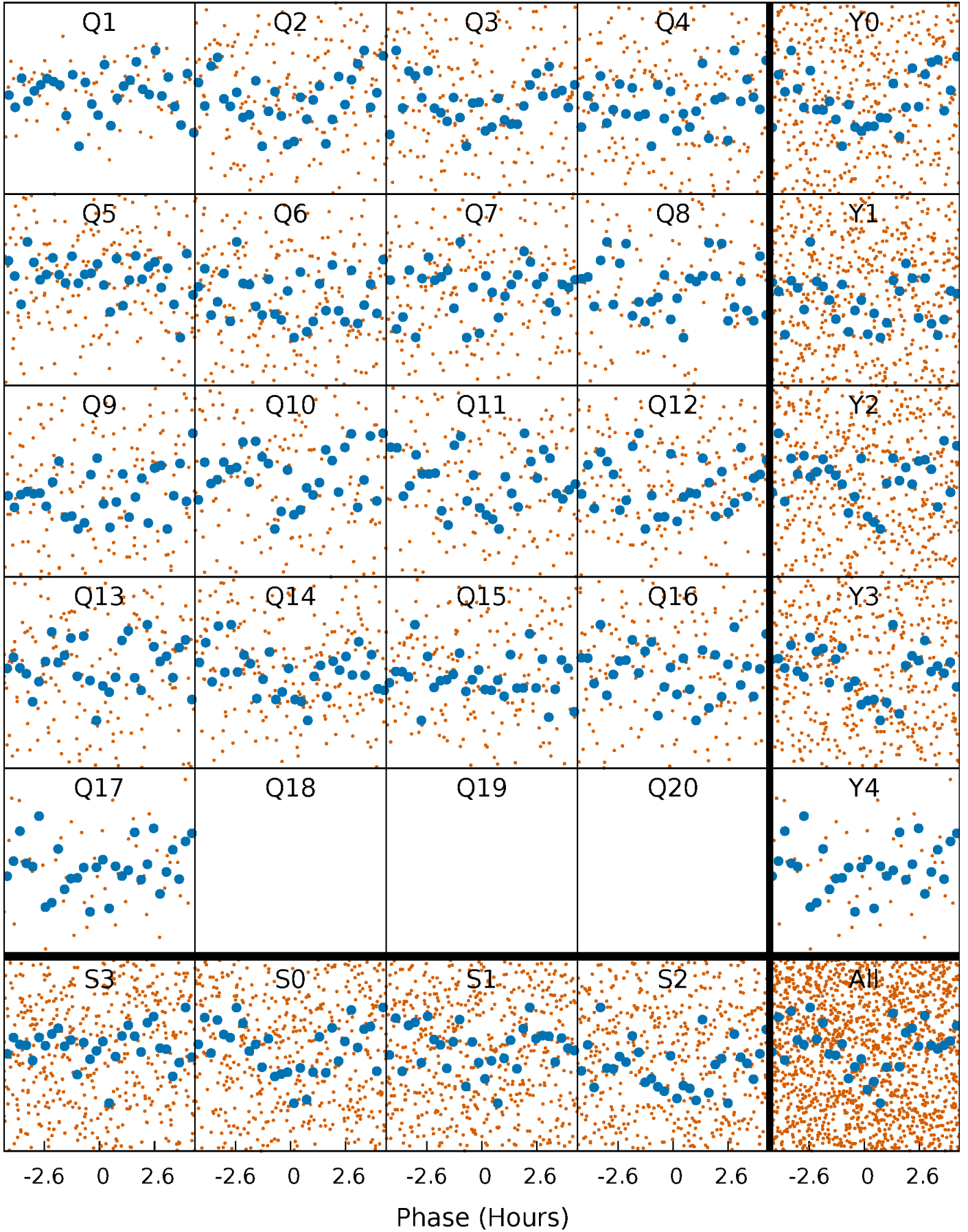


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



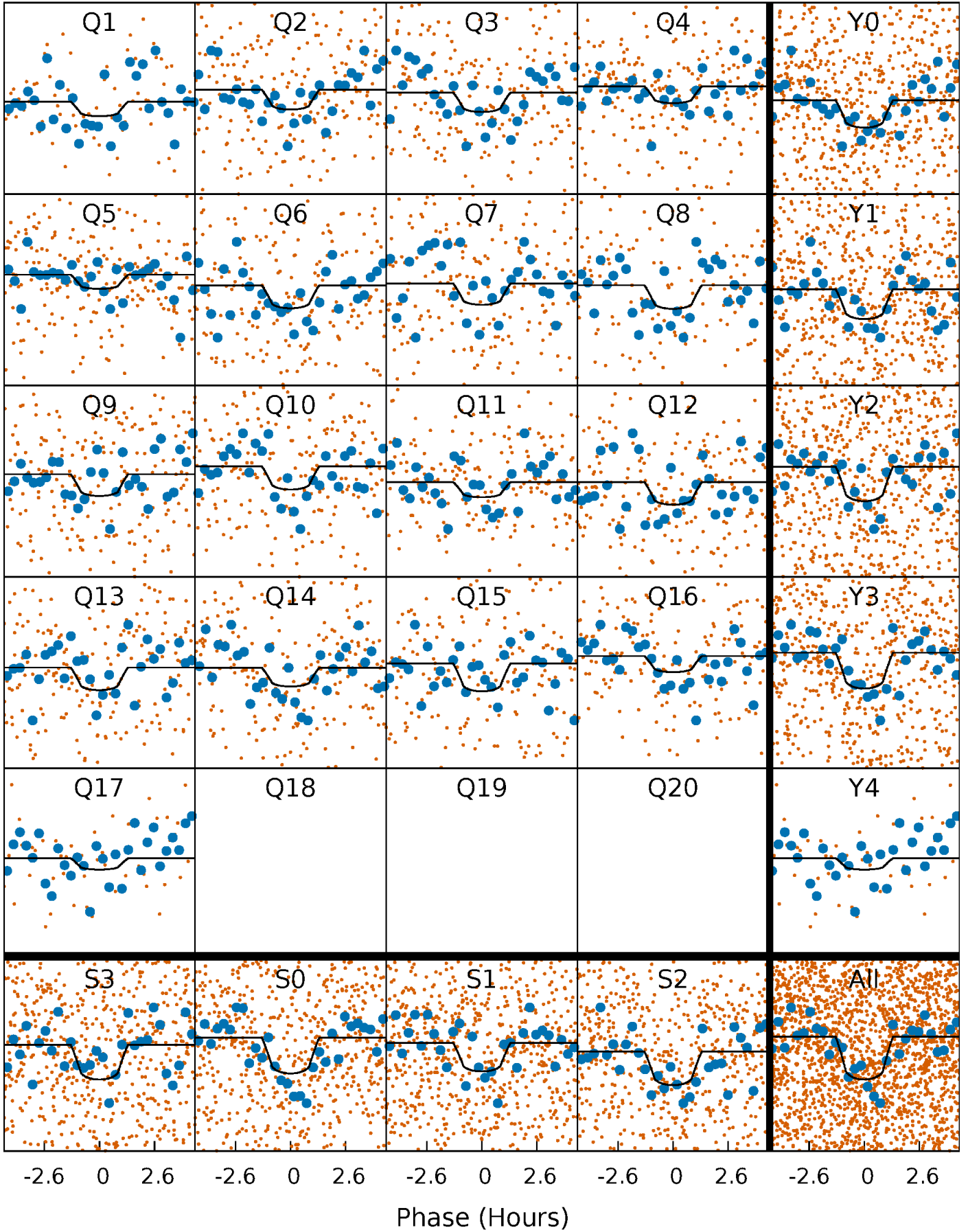
PDC Quarter-Phased Transit Curves

TCE 006721123-02 P= 7.361631 Days $T_0=136.018049$ (BKJD)



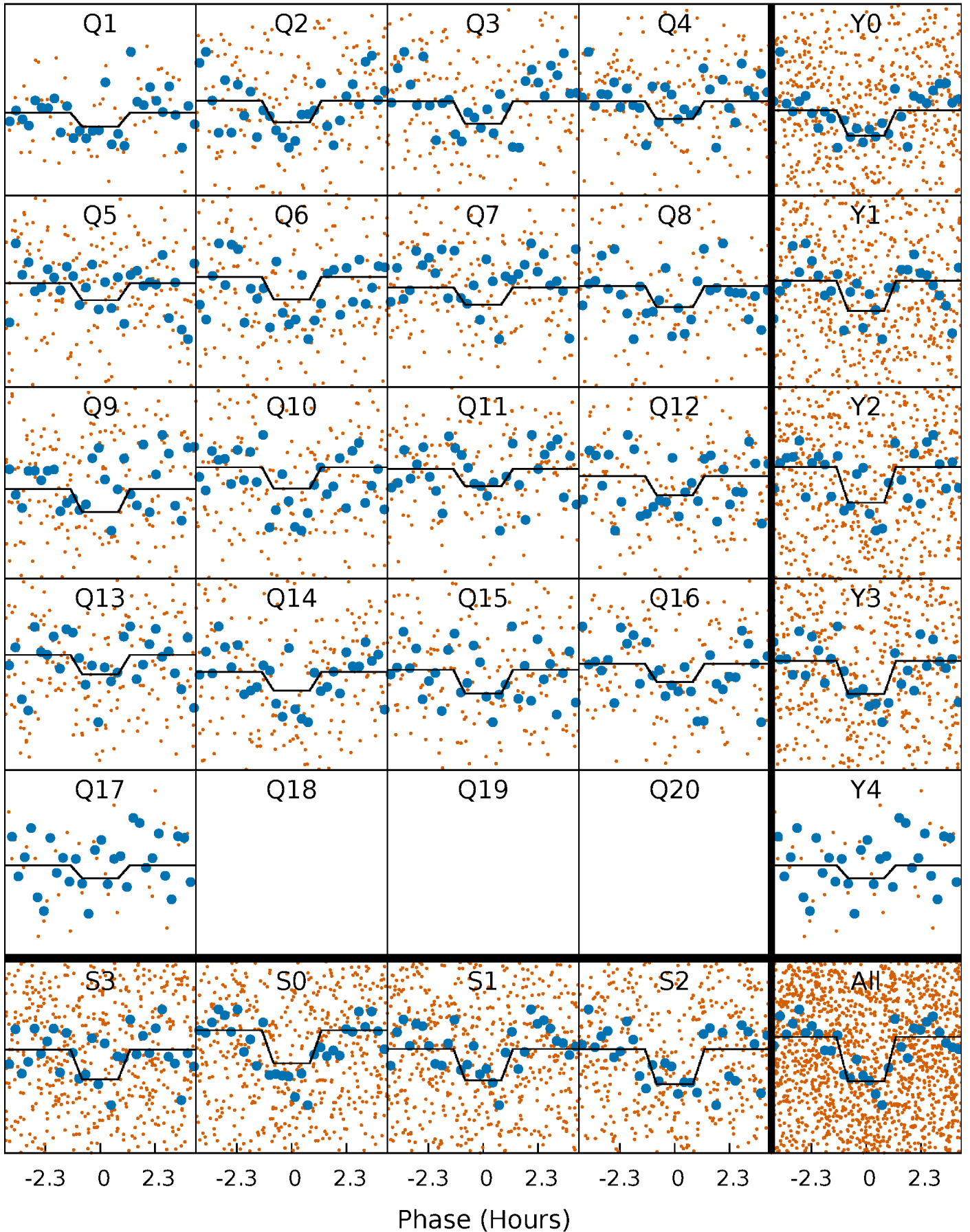
DV Quarter-Phased Transit Curves

TCE 006721123-02 P= 7.361631 Days $T_0=136.018049$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

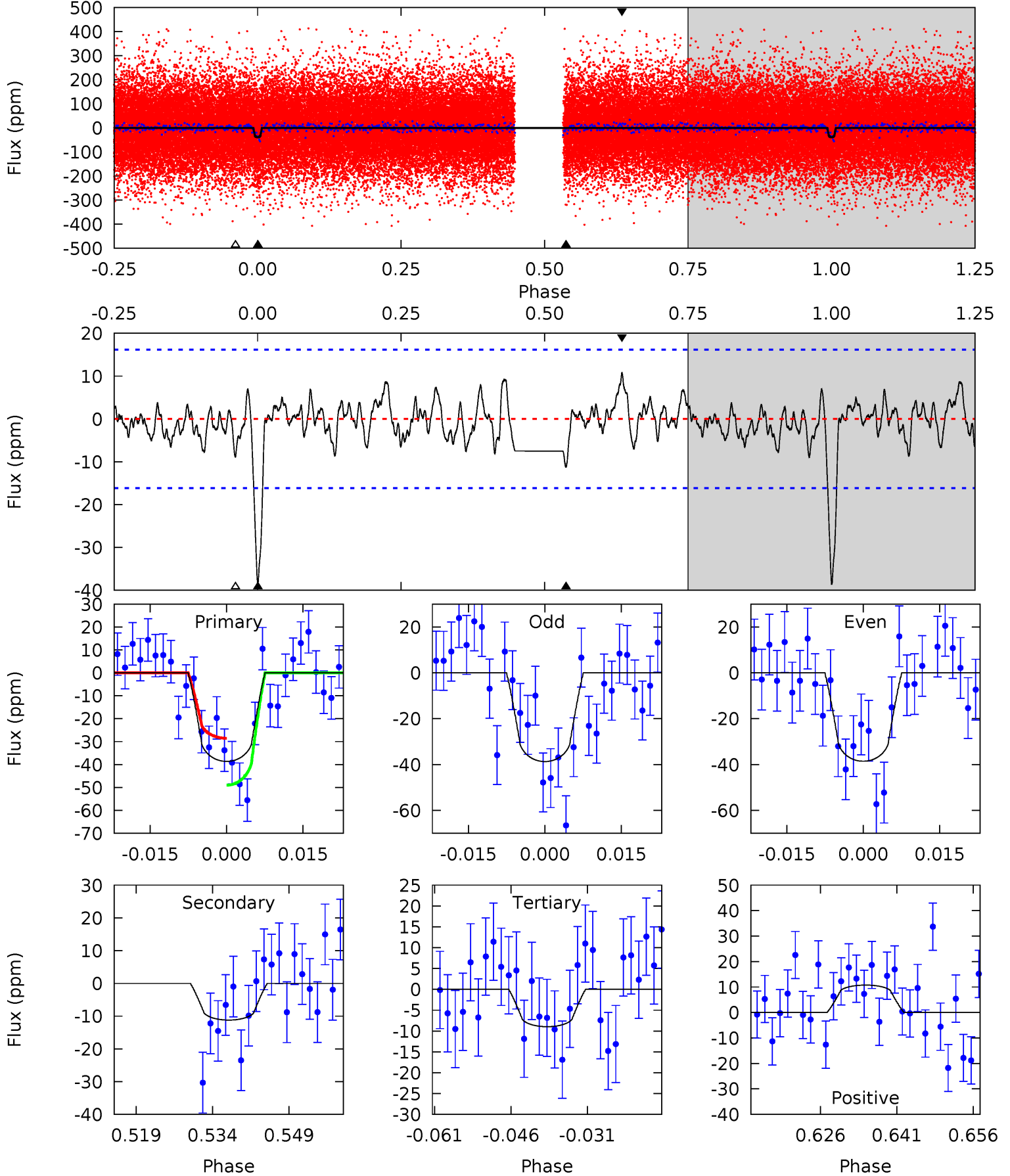
TCE 006721123-02 P= 7.361616 Days $T_0=136.022973$ (BKJD)



DV Model-Shift Uniqueness Test

006721123-02, P = 7.361631 Days, E = 128.656418 Days

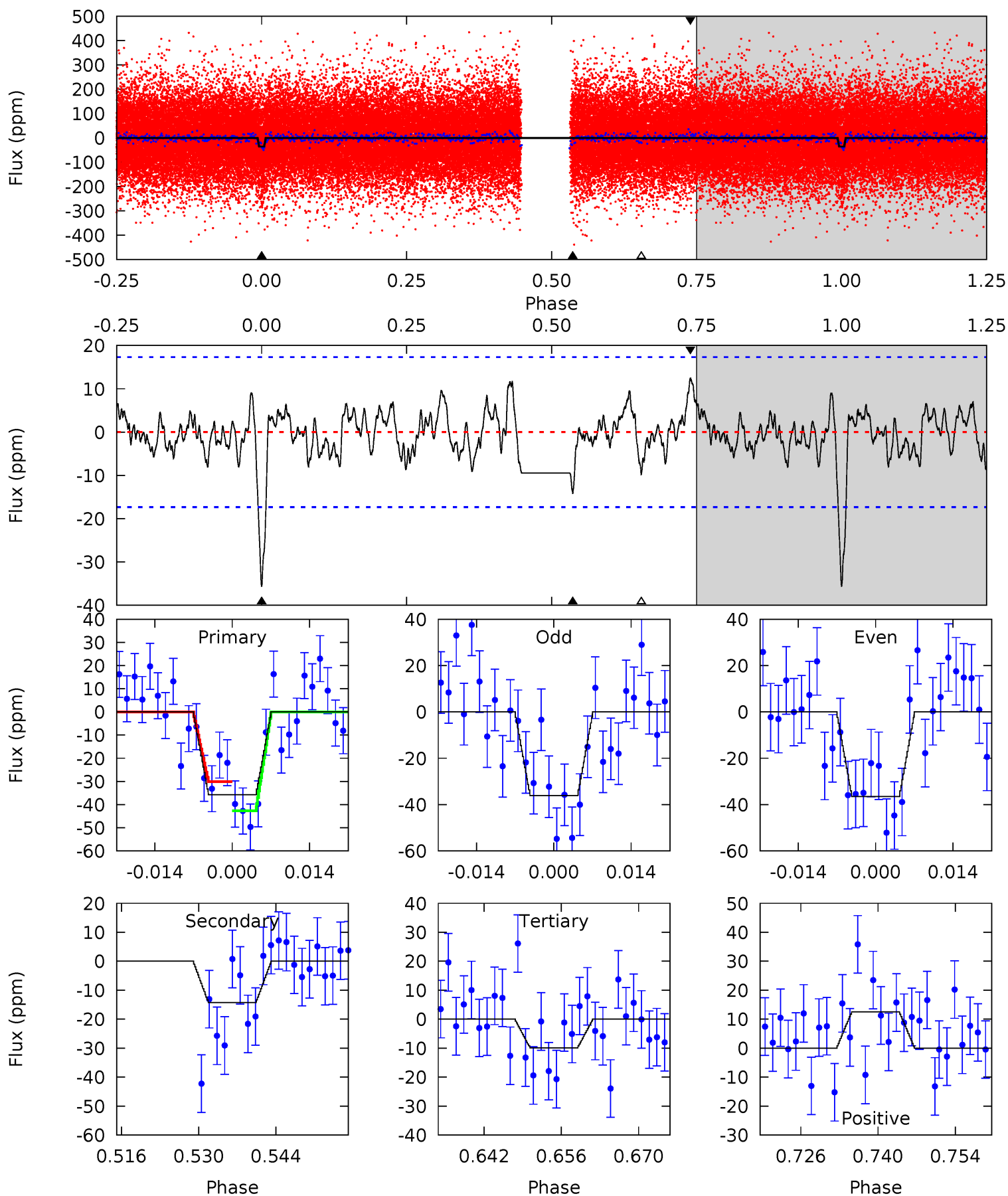
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	3.43	2.74	3.29	4.94	2.43	1.10	9.08	8.53	0.69	0.14	0.02	1.00	0.22	3.13



Alt Model-Shift Uniqueness Test

006721123-02, P = 7.361616 Days, E = 128.661357 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	4.09	2.83	3.60	4.96	2.46	1.20	7.39	6.63	1.25	0.49	0.06	0.97	0.26	1.80



Stellar Parameters For KIC 006721123

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6227^{+111}_{-124}	$3.986^{+0.182}_{-0.098}$	$0.000^{+0.150}_{-0.150}$	$1.958^{+0.322}_{-0.483}$	$1.358^{+0.121}_{-0.207}$	$0.255^{+0.252}_{-0.079}$
	+2%/-2%	+5%/-2%	+inf%/-inf%	+16%/-25%	+9%/-15%	+99%/-31%
Source	SPE18	SPE18	SPE18	DSEP		

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

Secondary Eclipse Parameters for KIC 006721123-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 3	$1.19^{+0.53}_{-0.51}$	1862^{+97}_{-107}	4829^{+1339}_{-679}	29^{+56}_{-16}
Alt.	-14 ± 3	$1.24^{+0.52}_{-0.48}$	1866^{+83}_{-115}	5007^{+1264}_{-714}	33^{+57}_{-18}

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 $A_{obs} \gg 1.0$

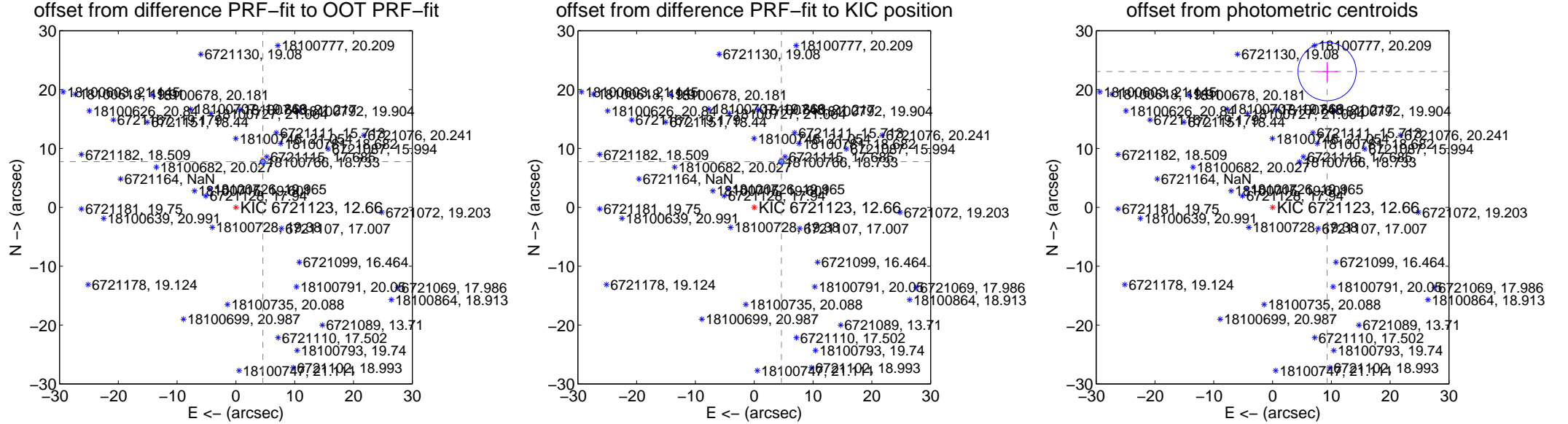
DV Centroid Data

Supplemental centroid analysis for 006721123-02. Kepler magnitude: 12.66. Transit SNR 7.32

There are 12 quarters with good PRF difference image offsets

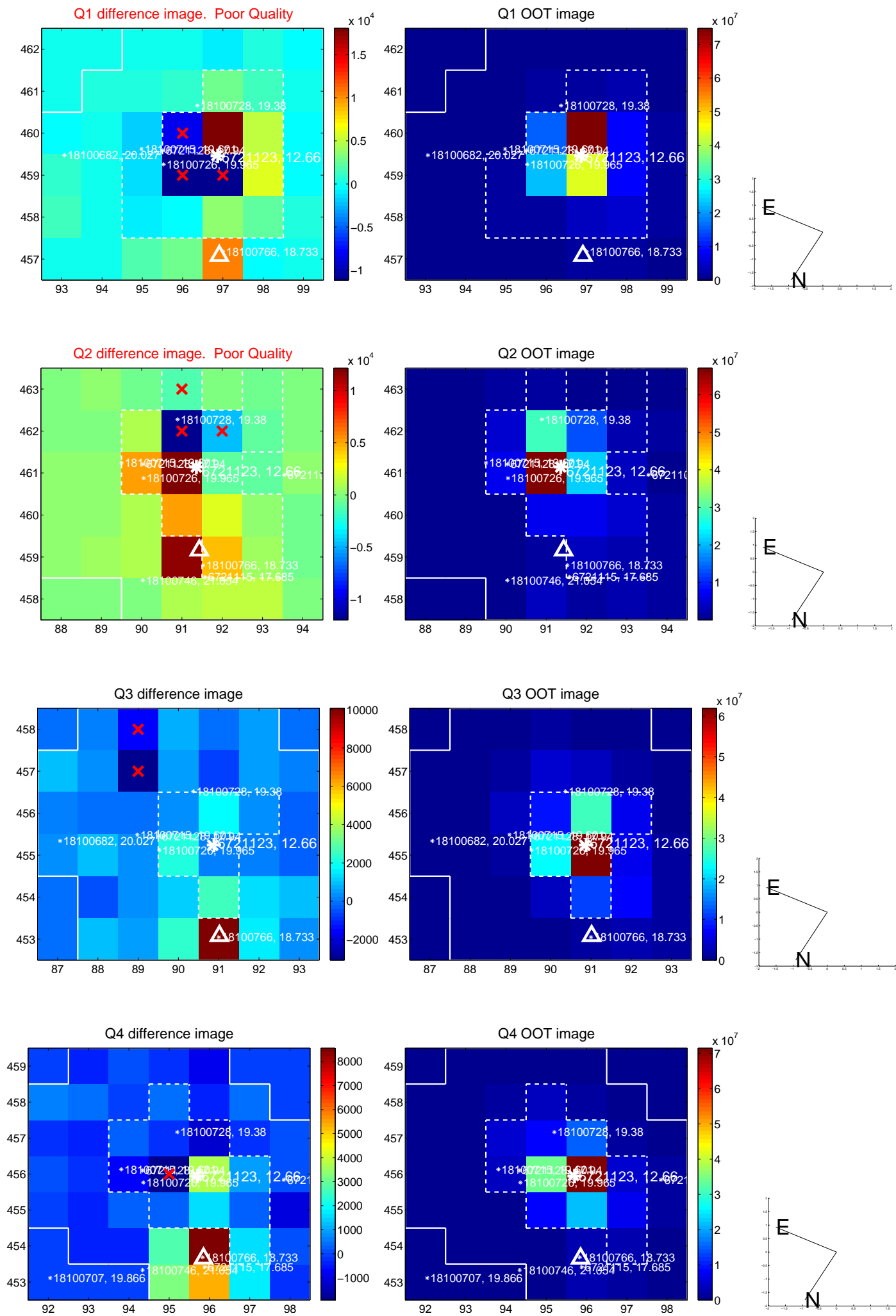
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.014 \pm 0.140	64.26	-4.579 \pm 0.120	7.764 \pm 0.119
PRF-fit source offset from KIC position	9.035 \pm 0.149	60.44	-4.622 \pm 0.117	7.764 \pm 0.131
photometric centroid source offset	24.85 \pm 1.65	15.07	-9.27 \pm 1.82	23.06 \pm 1.62

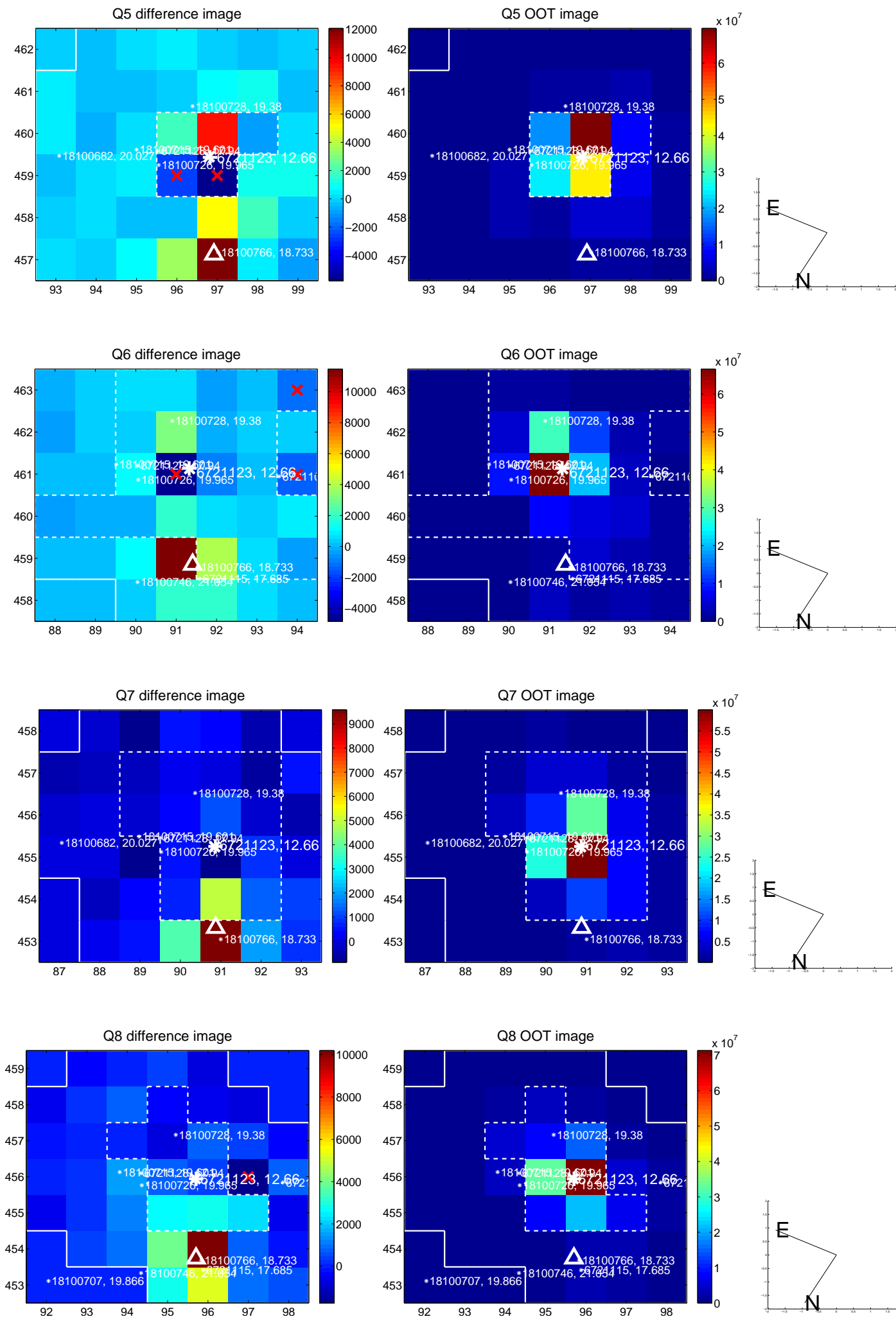


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

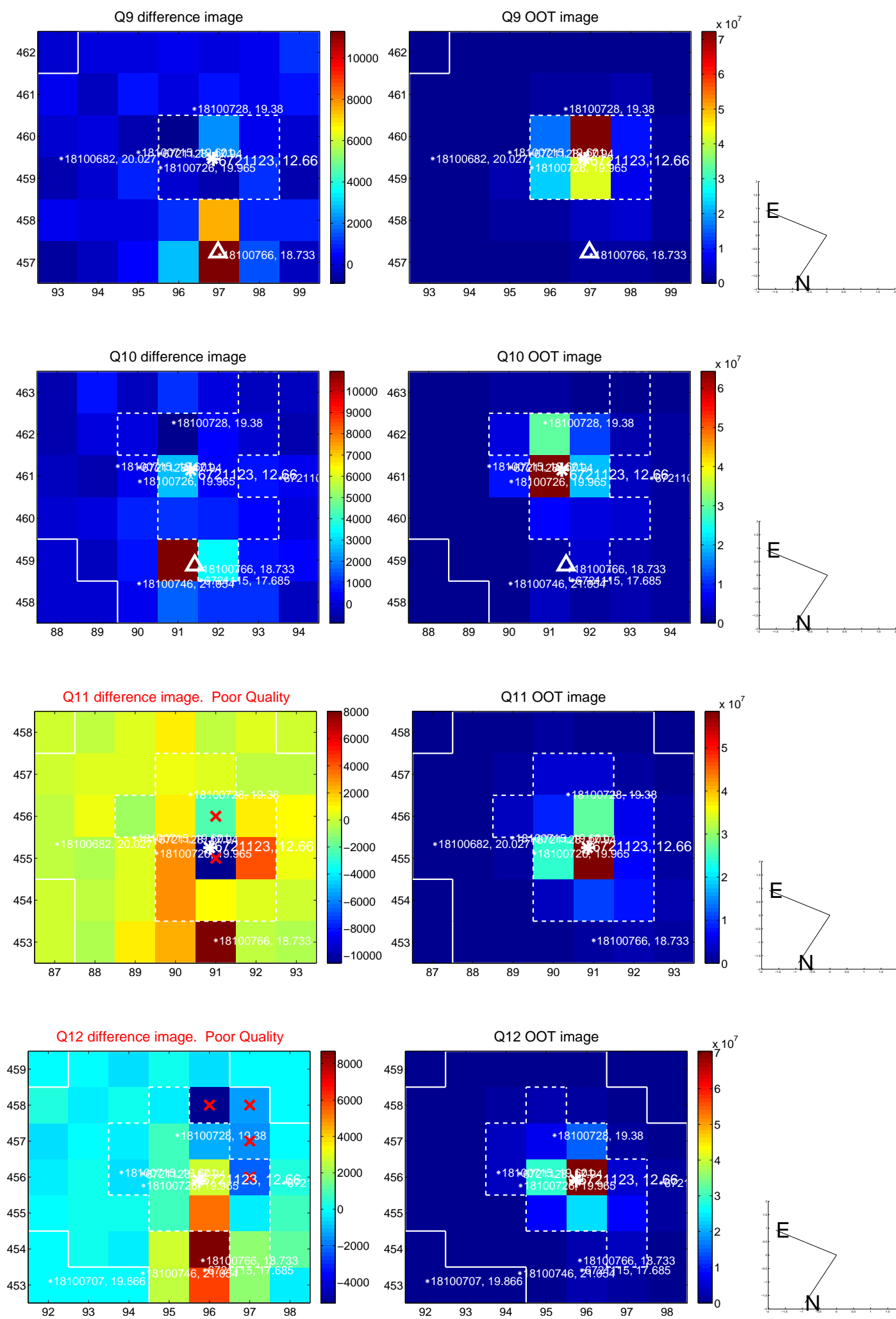
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



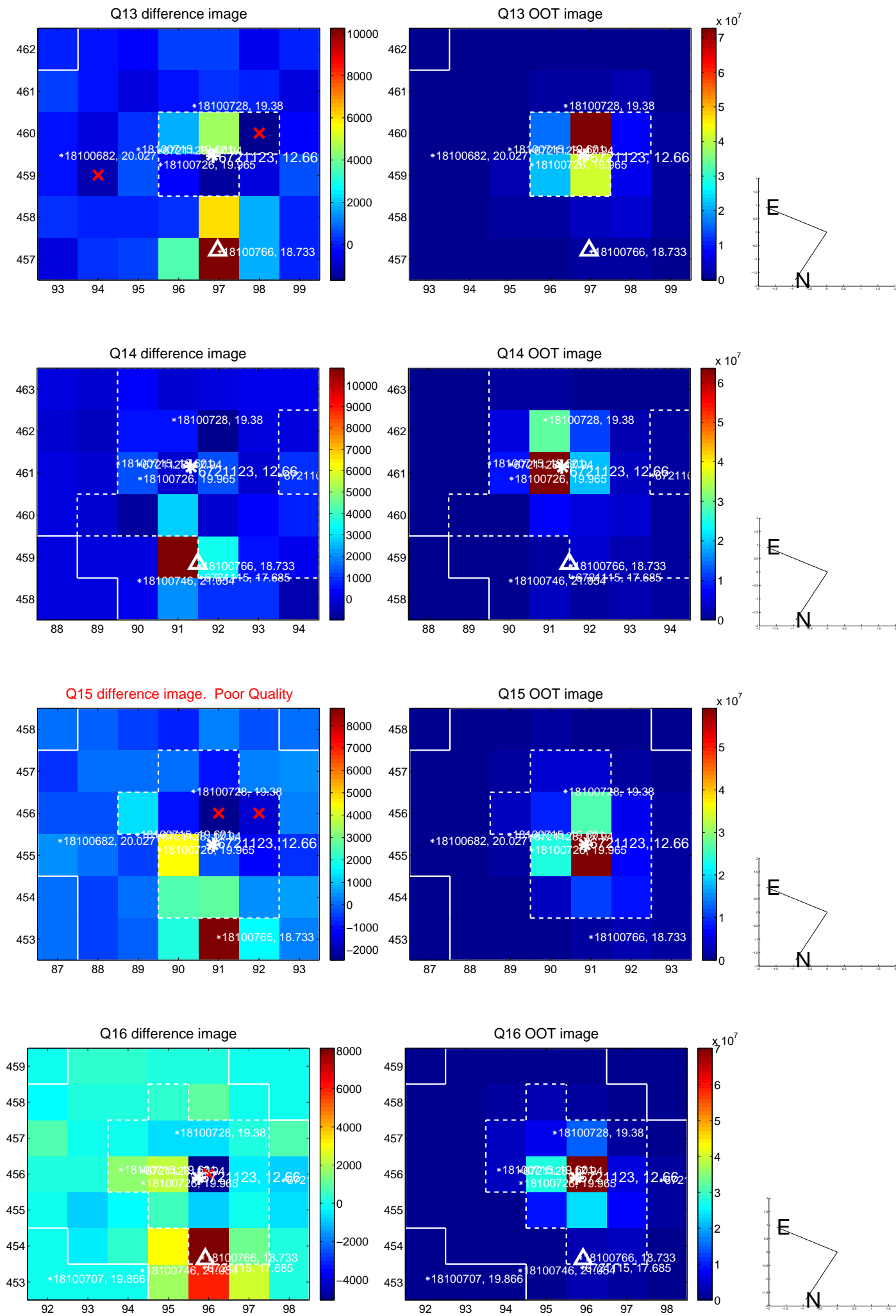
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



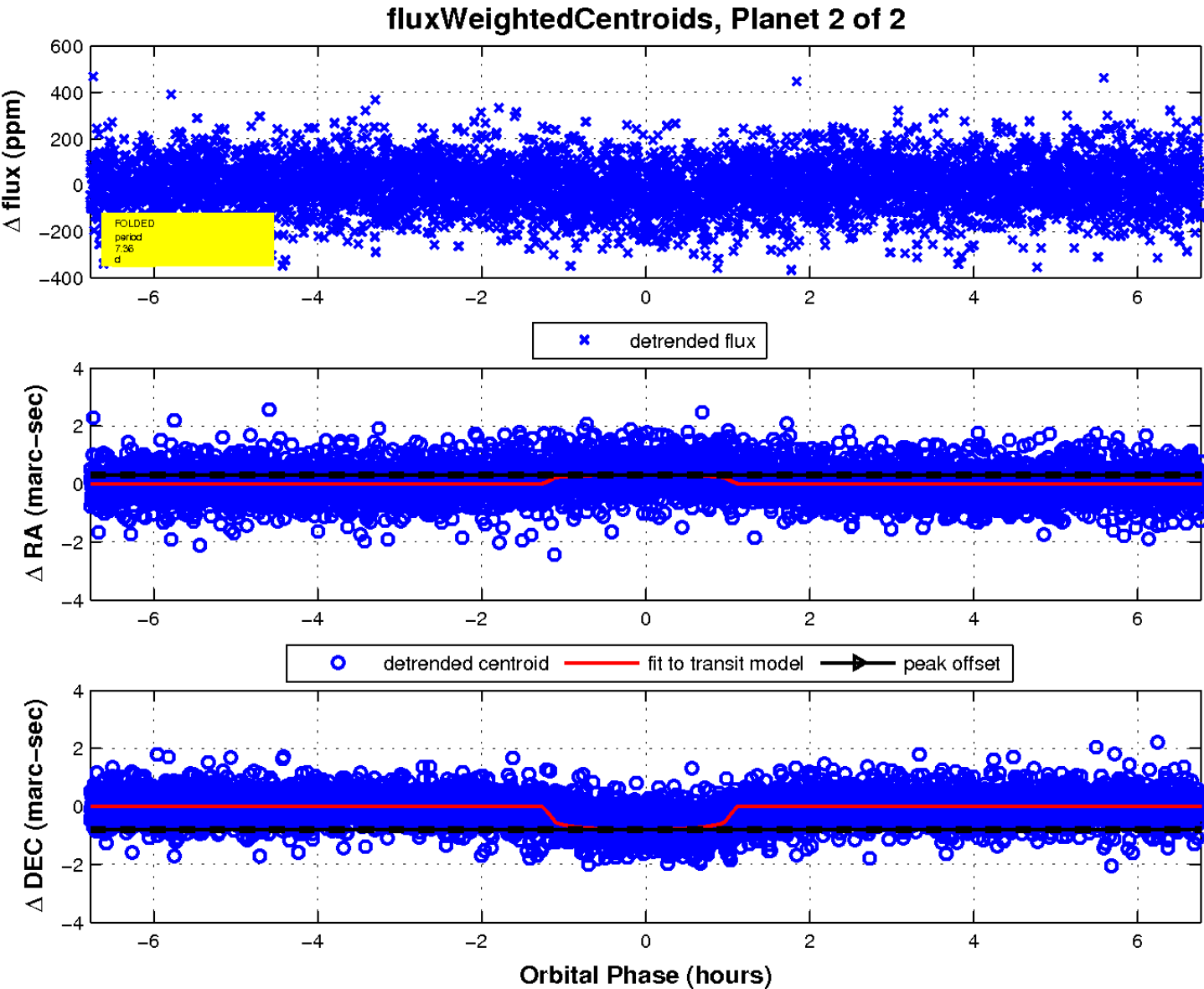
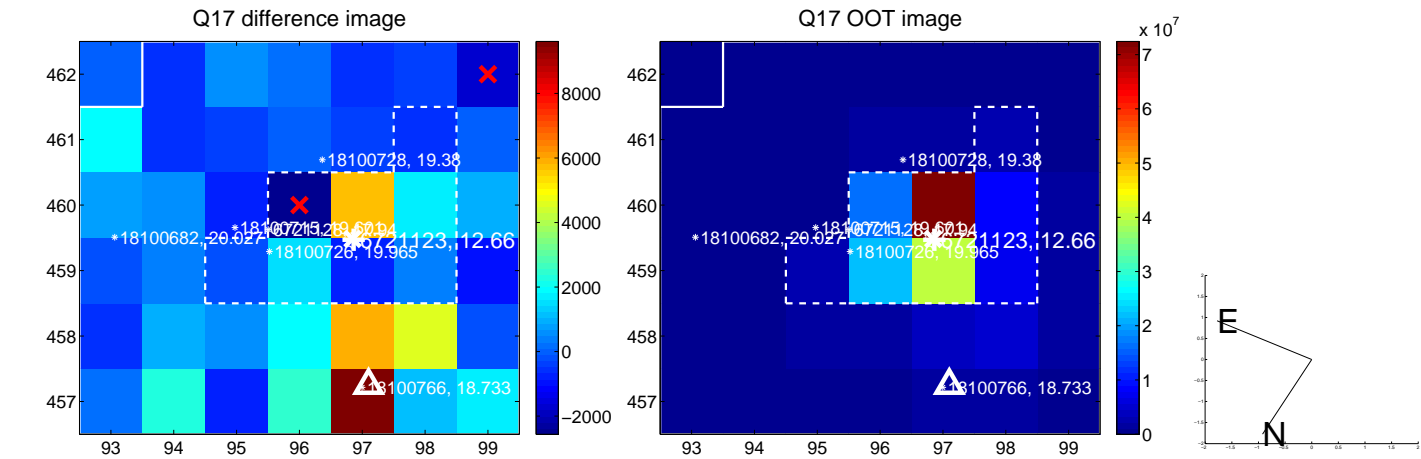
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

