

KIC 009752973

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})
009752973-01	OBS	3162.01	0.716713	132.048089	56.7	0.637	20.4	58.0	1.17	6109	1.07	7783.59
009752973-02	OBS	No	2.866679	132.433365	13.3	9.630	9.5	8.2	1.17	6109	0.51	1225.94
009752973-03	OBS	No	422.778462	236.389029	101.5	7.651	10.6	5.9	1.17	6109	1.40	1.57
009752973-04	OBS	No	2.866379	133.924140	15.7	10.032	9.2	10.5	1.17	6109	0.57	1226.11
009752973-05	OBS	No	32.888072	153.795656	57.2	3.630	13.8	4.6	1.17	6109	1.03	47.38
009752973-06	OBS	No	49.900710	163.023818	65.4	18.739	11.2	4.5	1.17	6109	1.01	27.18
009752973-07	OBS	No	61.516324	185.532040	106.4	3.000	10.5	-1.0	1.17	6109	1.22	20.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—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 009752973-01

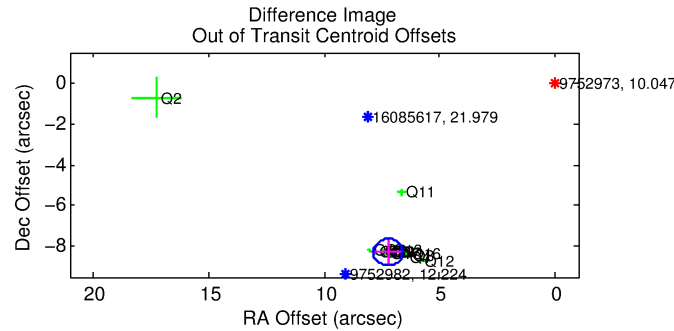
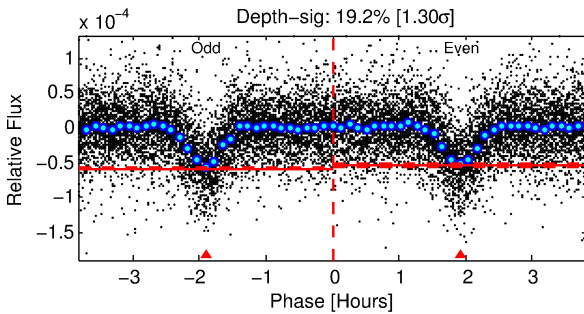
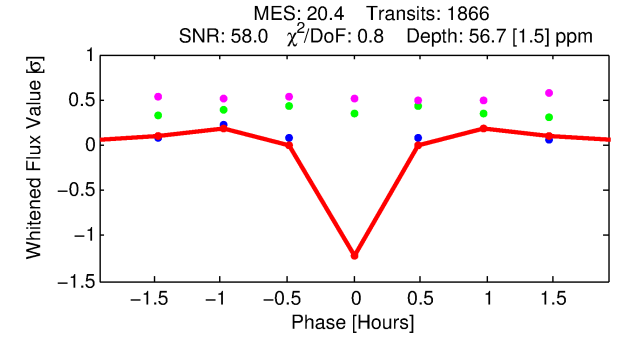
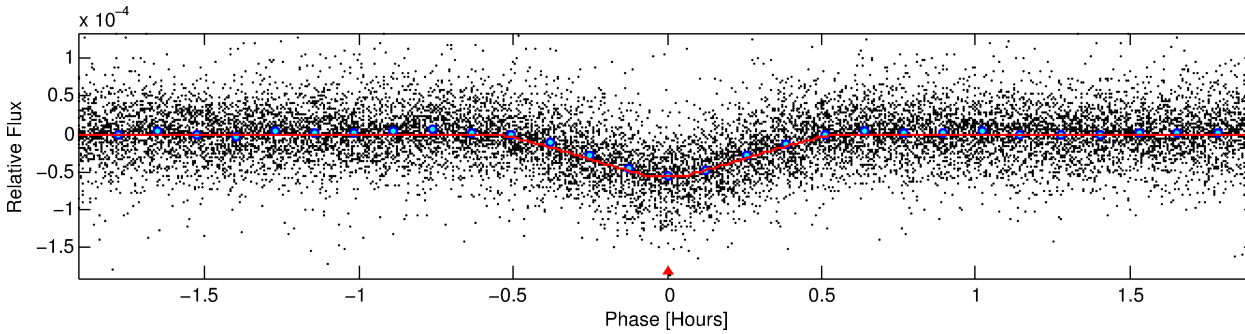
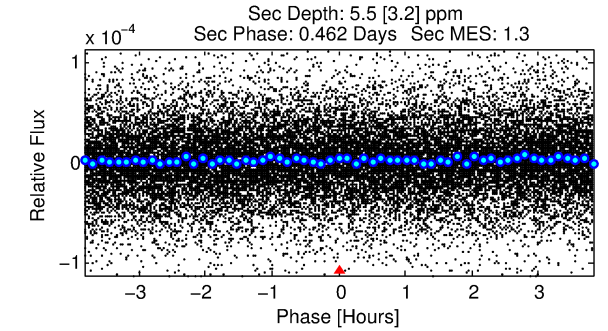
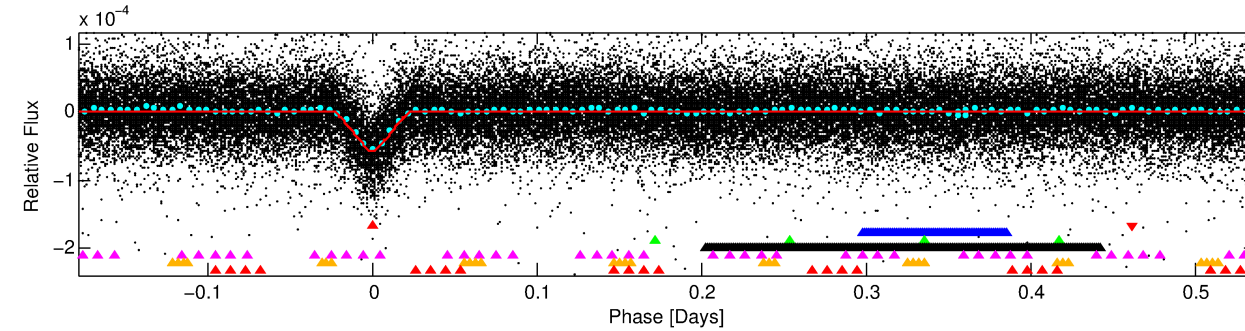
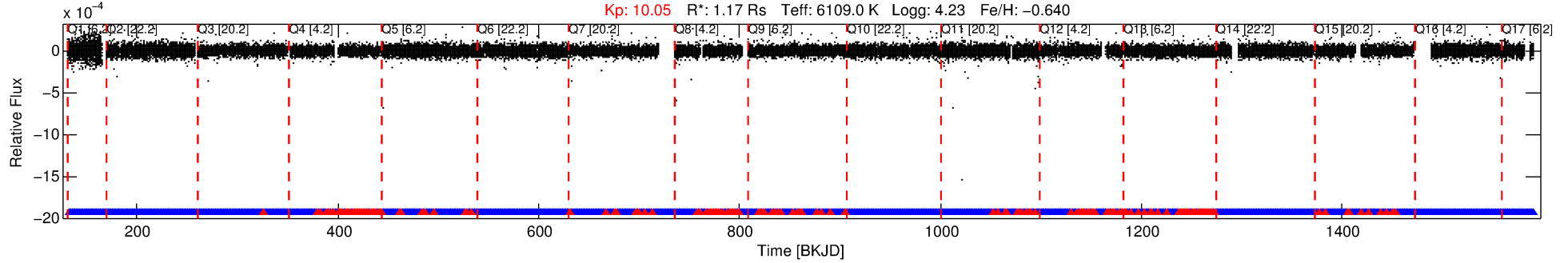
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009752973-01	9752973	3871.01	9752982	1:1	13.0	3	0	12.22	10.04	15.33	Direct-PRF	0	0.46	0.25

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: 9752973 Candidate: 1 of 7 Period: 0.717 d
KOI: K03162.01 Corr: 0.922

Kp: 10.05 R*: 1.17 Rs Teff: 6109.0 K Logg: 4.23 Fe/H: -0.640



DV Fit Results:

Period = 0.71671 [0.00000] d
Epoch = 132.0481 [0.0002] BKJD
Rp/R* = 0.0083 [0.0004]
a/R* = 3.86 [0.97]
b = 0.91 [0.05]
Seff = 7783.59 [3135.02]
Teq = 2395 [241] K
Rp = 1.07 [0.24] Re
a = 0.0149 [0.0034] AU
Ag = 0.59 [0.42] [-0.99σ]
Teffp = 3239 [493] K [1.54σ]

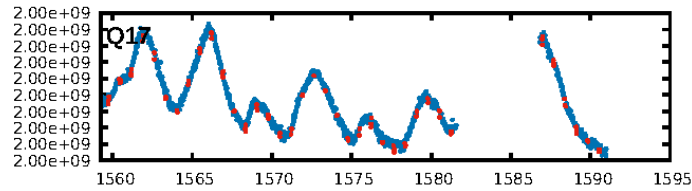
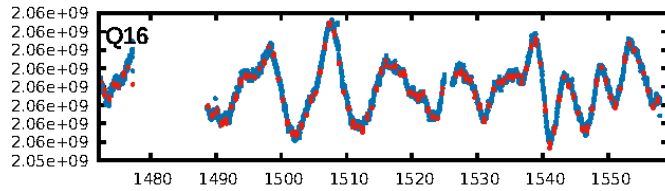
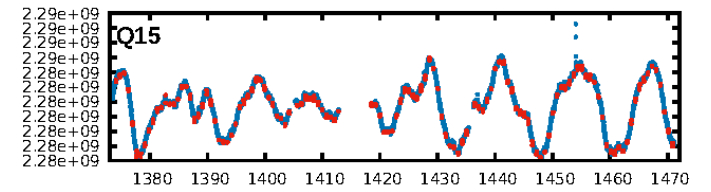
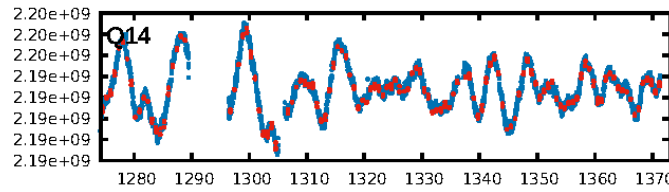
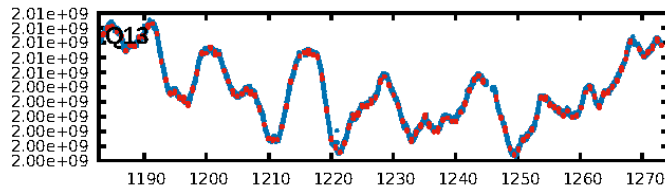
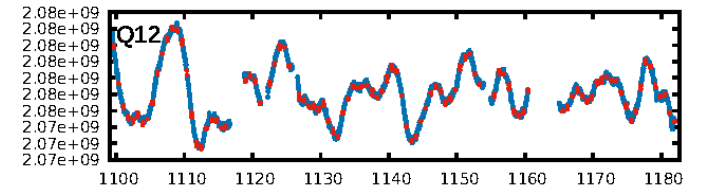
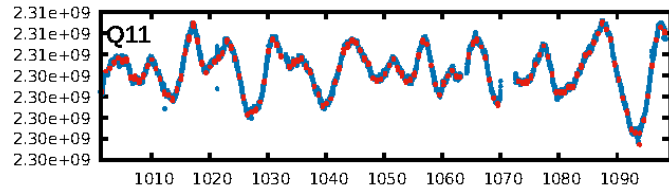
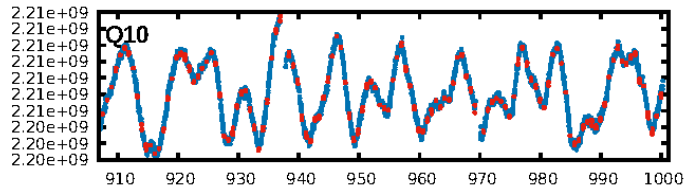
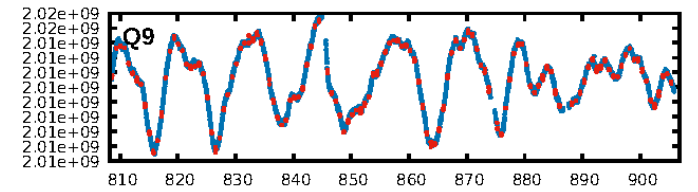
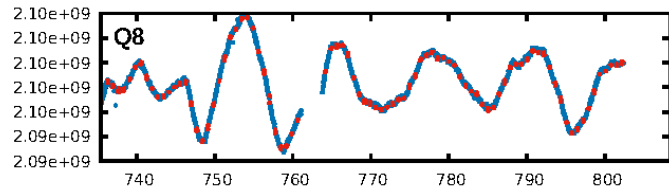
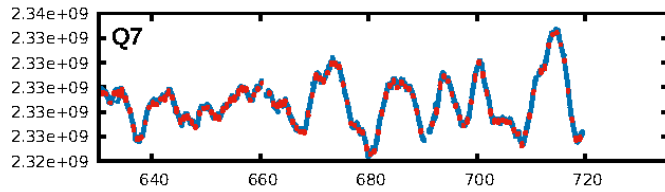
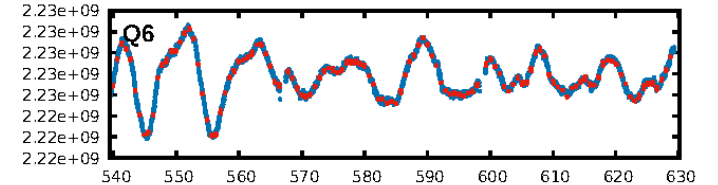
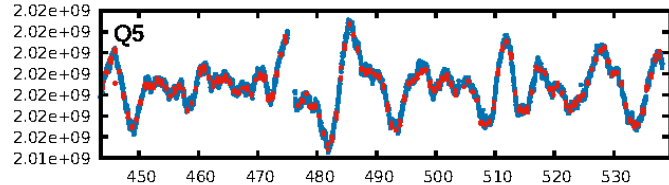
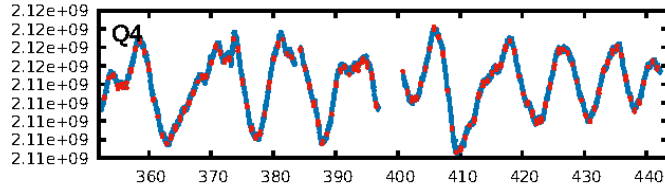
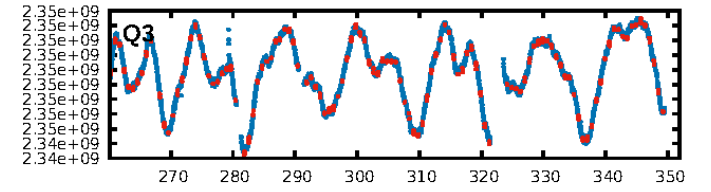
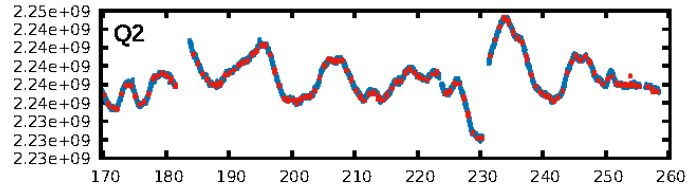
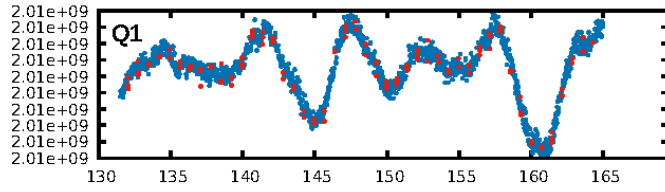
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.13σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.90 [1598/1782]
GhostDiagnostic-chr: 0.2906
Centroid-sig: 0.0%
Centroid-so: 17.043 arcsec [31.58σ]
OotOffset-rm: 11.002 arcsec [51.19σ]
KicOffset-rm: 13.200 arcsec [74.57σ]
OotOffset-st: 4/2/4/4 [14]
KicOffset-st: 4/2/4/4 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 0.53 [9/17]

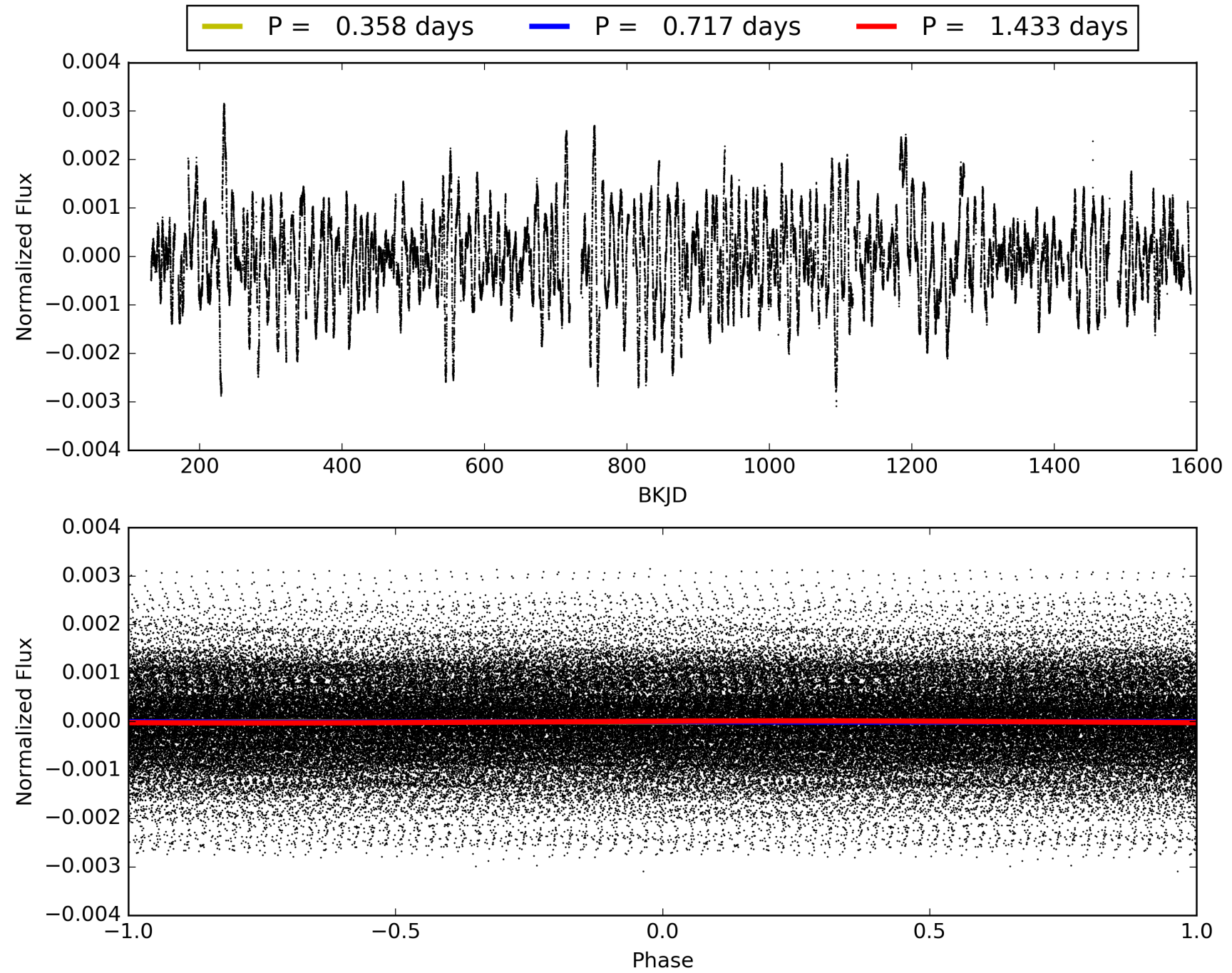
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009752973-01, PDC Light Curves

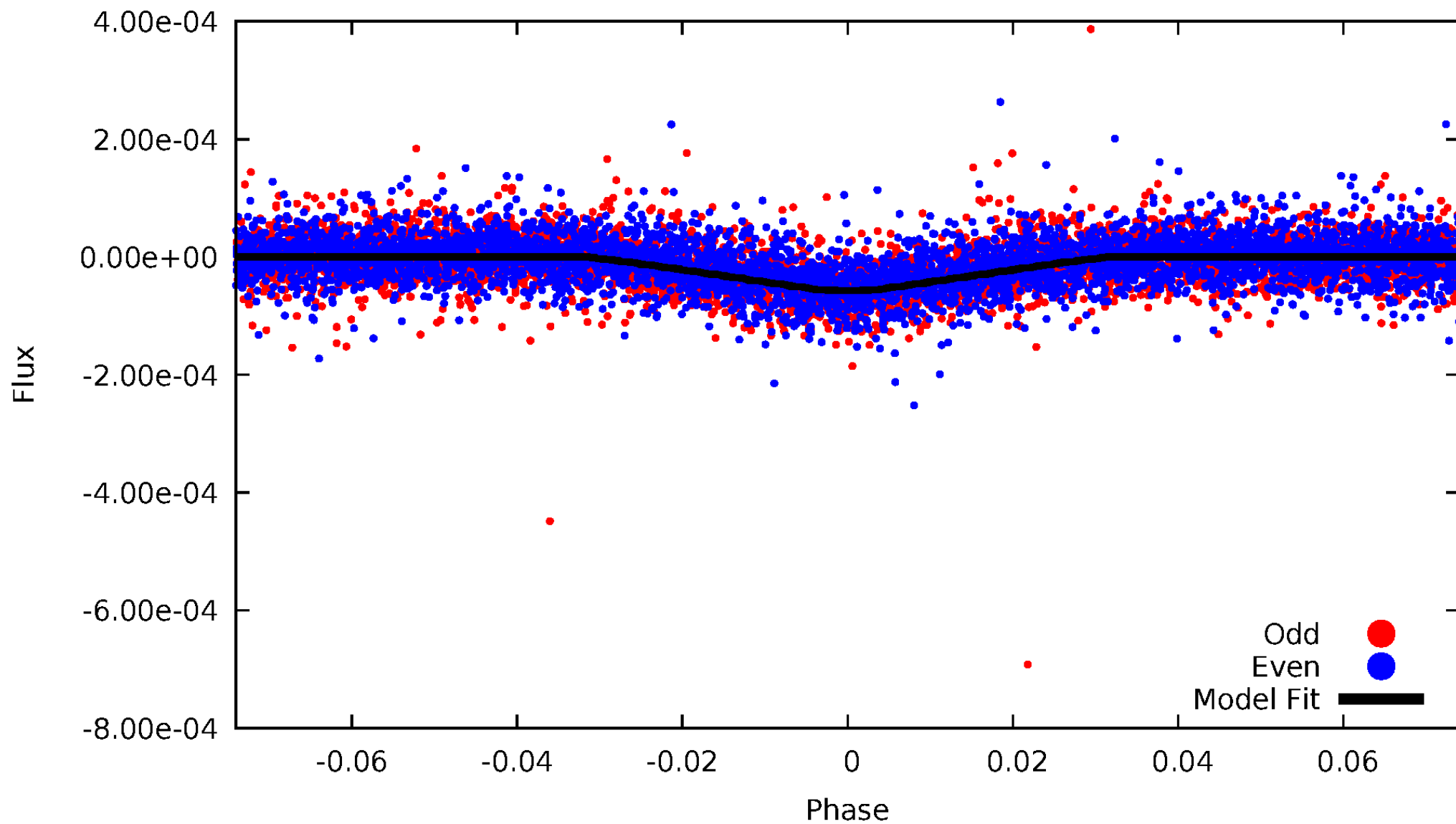


TCE 009752973-01



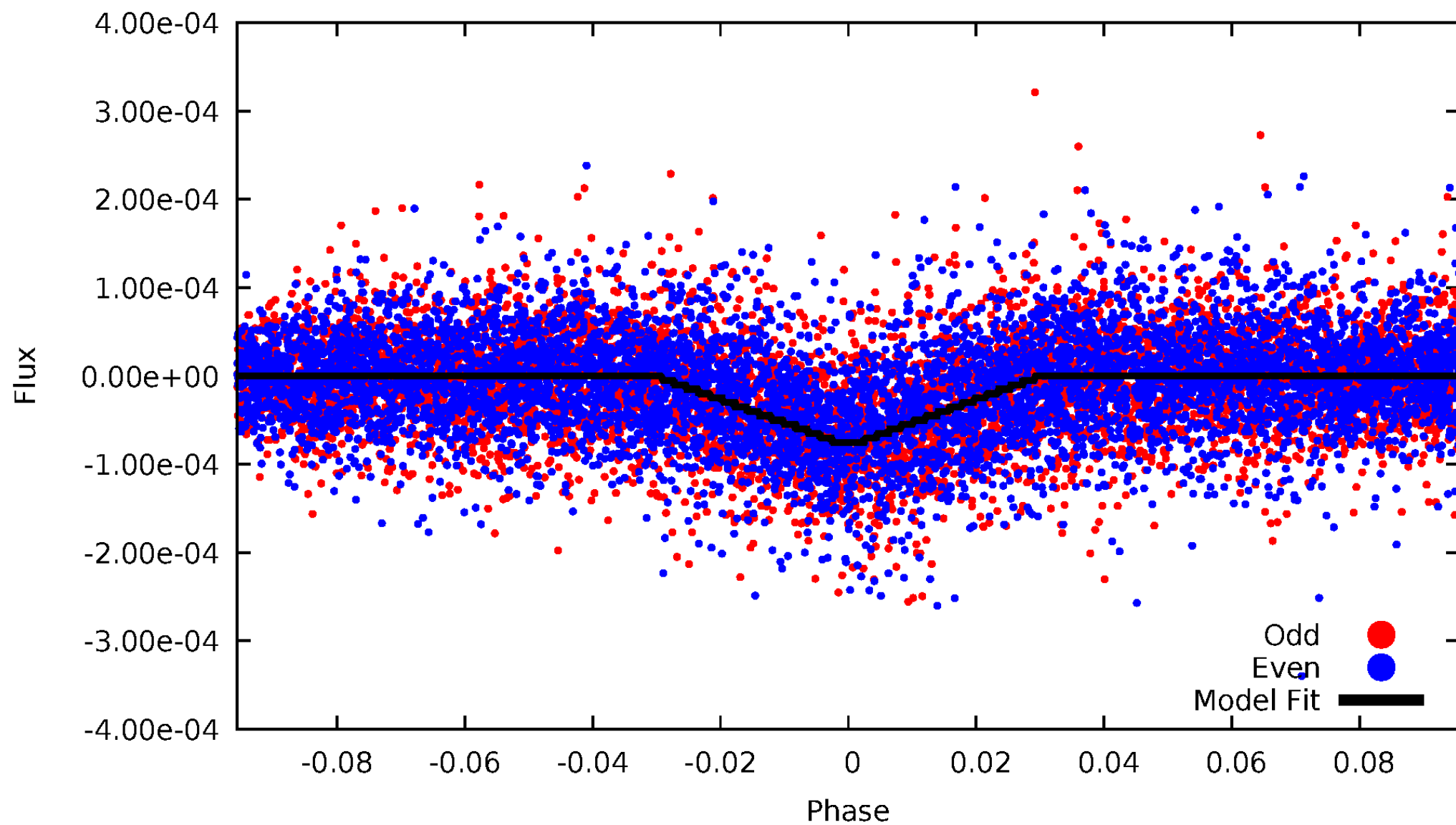
DV Odd/Even

TCE 009752973-01



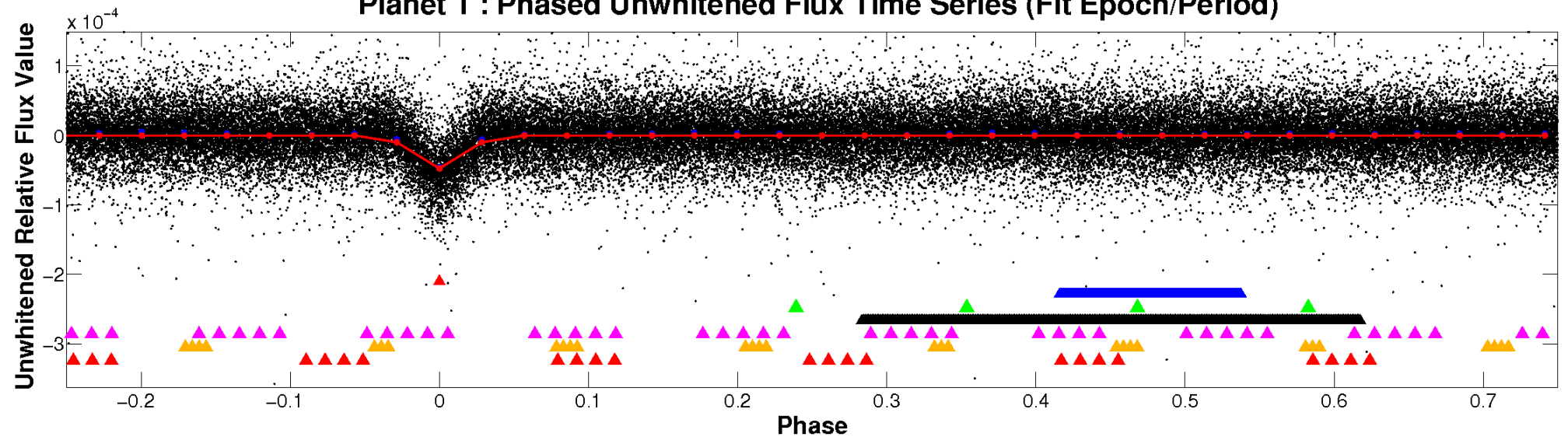
ALT Odd/Even

TCE 009752973-01

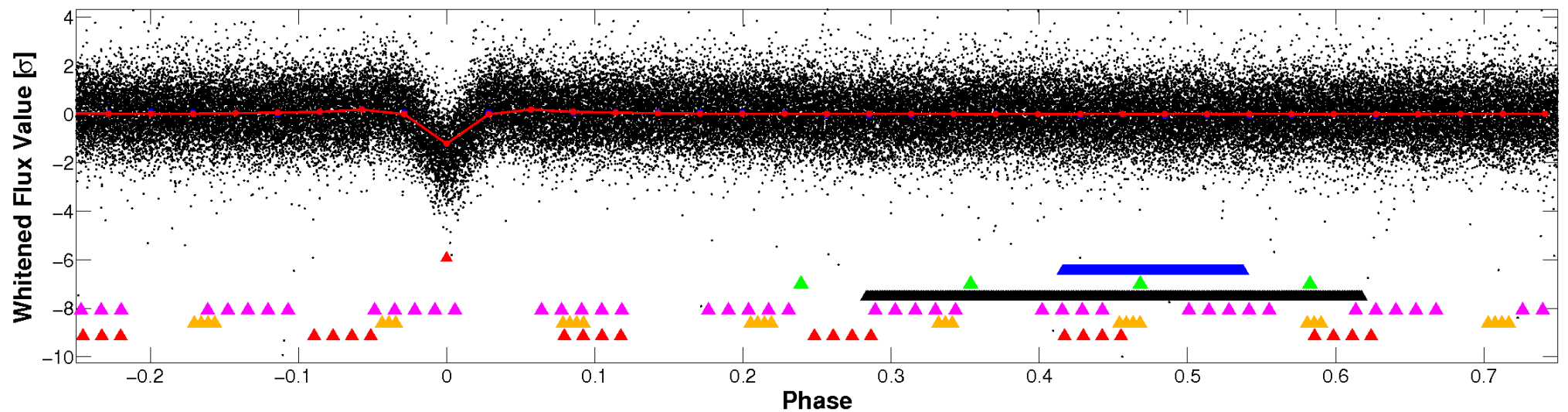


Non-Whitened Vs. Whitened Light Curve

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

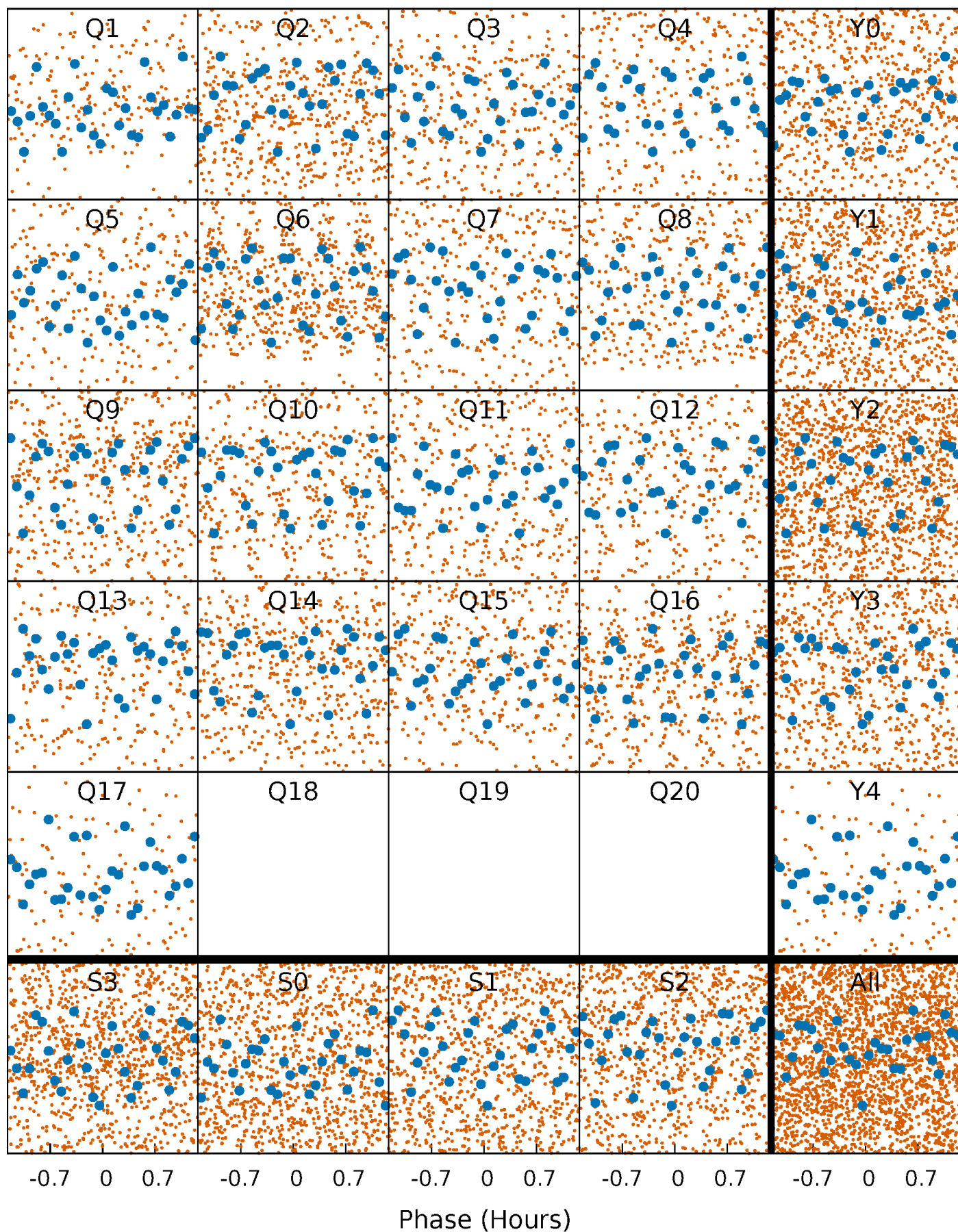


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



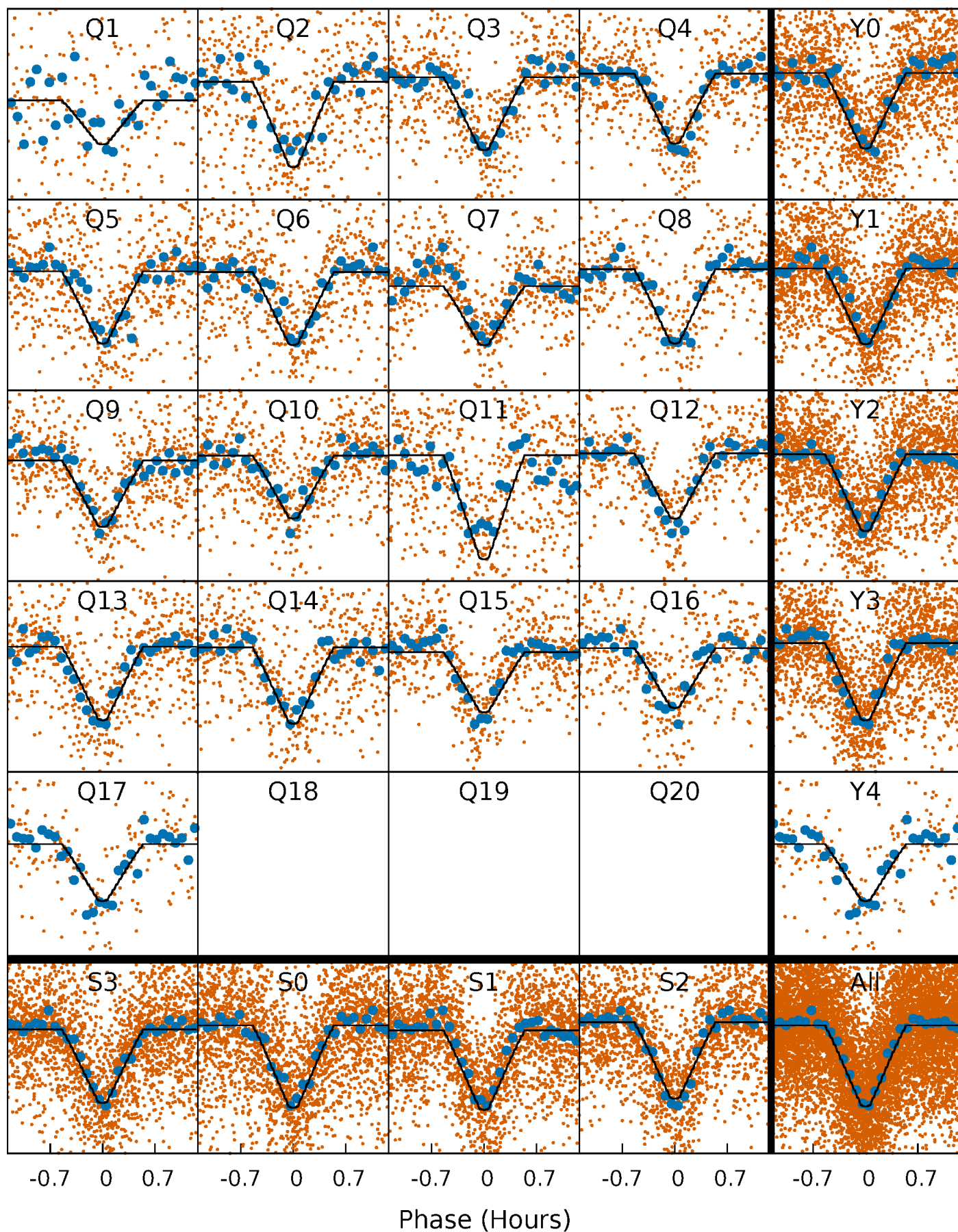
PDC Quarter-Phased Transit Curves

TCE 009752973-01 P= 0.716713 Days $T_0=132.048089$ (BKJD)



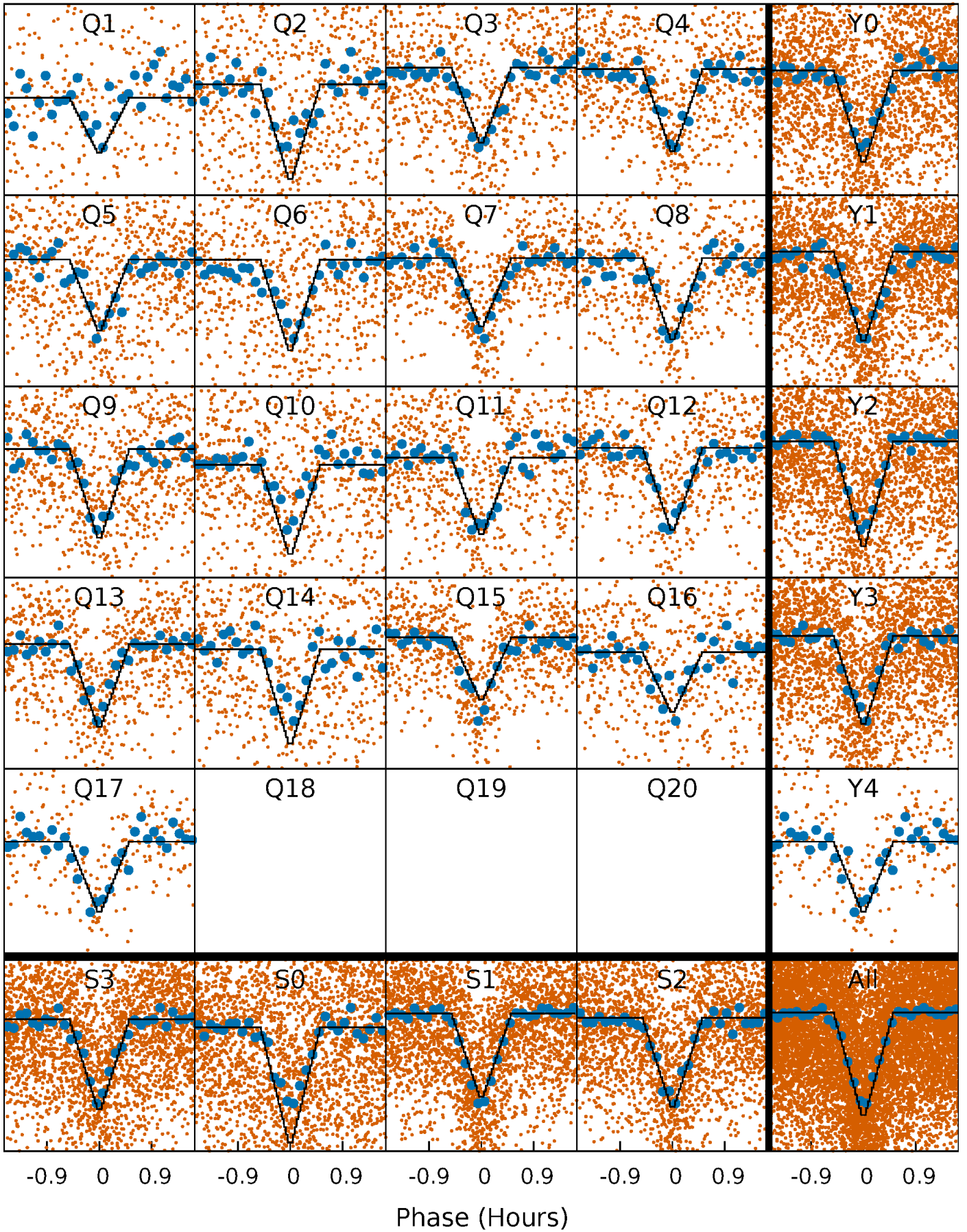
DV Quarter-Phased Transit Curves

TCE 009752973-01 P= 0.716713 Days $T_0=132.048089$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

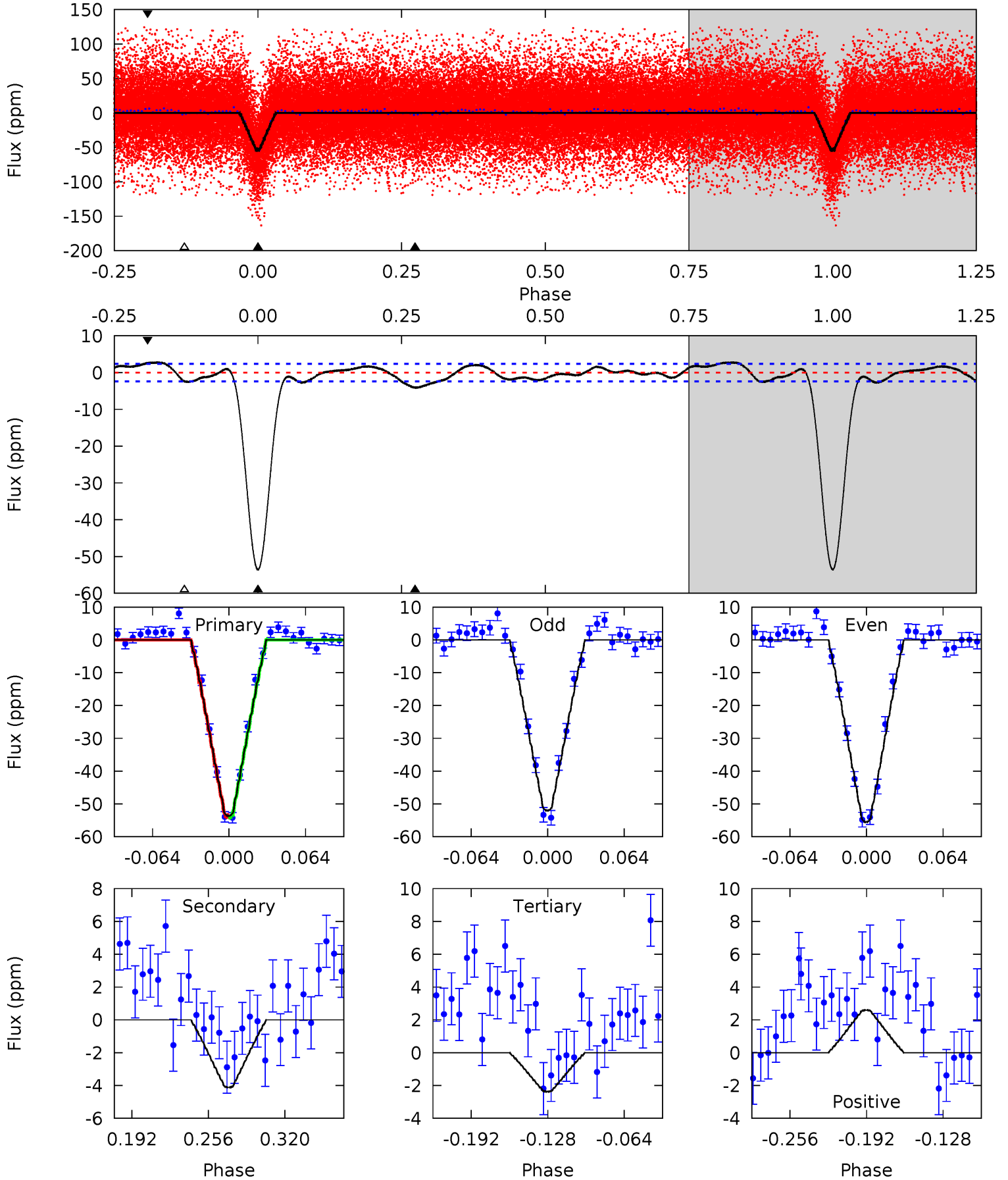
TCE 009752973-01 P= 0.716711 Days $T_0=132.049350$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-01, P = 0.716713 Days, E = 131.331376 Days

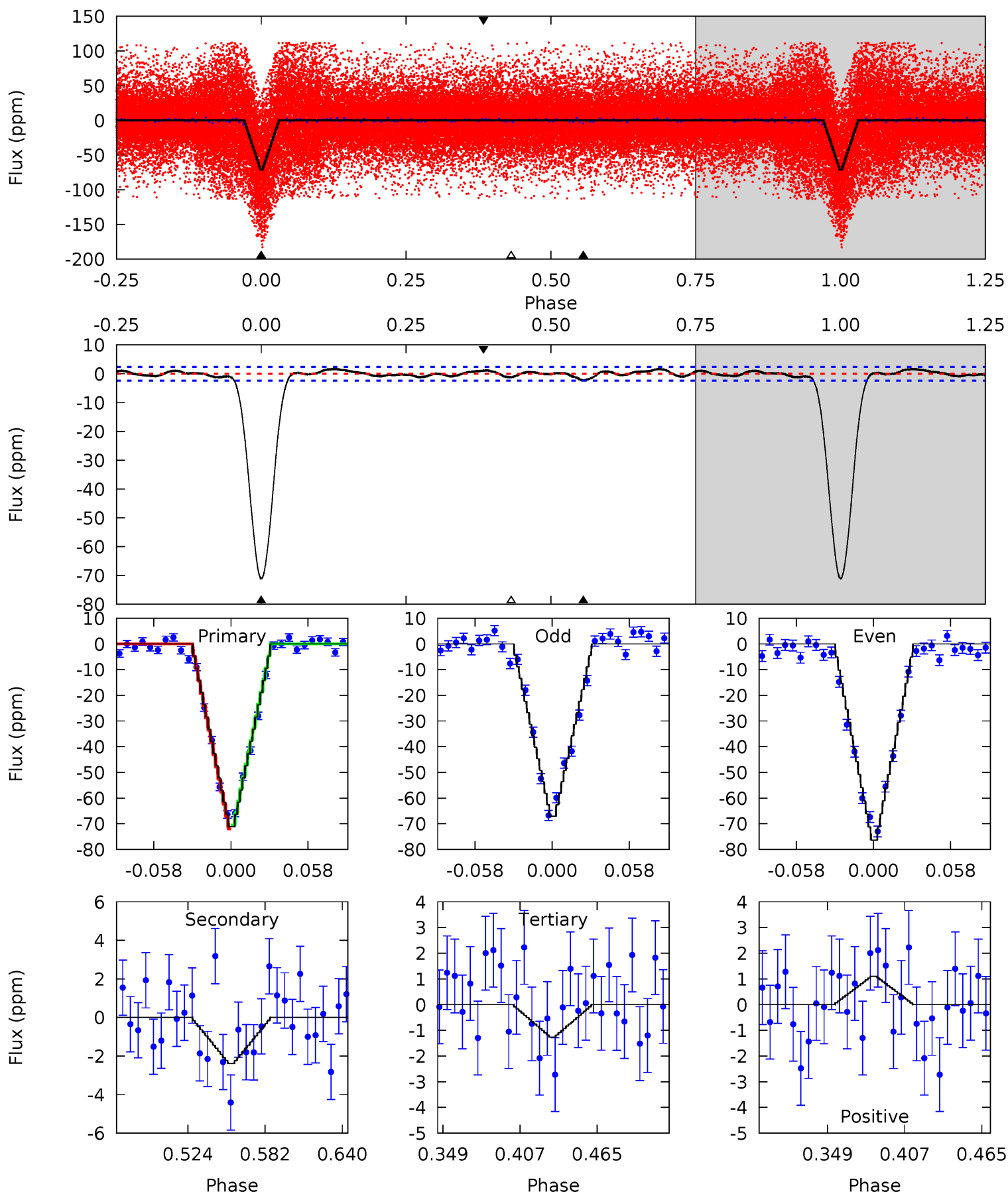
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
104.4	8.02	4.62	5.04	4.66	1.85	2.75	99.7	99.3	3.39	2.97	3.41	1.00	0.05	0.06



Alt Model-Shift Uniqueness Test

009752973-01, P = 0.716711 Days, E = 131.332639 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
139.6	4.70	2.47	2.17	4.68	1.89	1.47	137.2	137.5	2.22	2.53	9.13	1.00	0.02	1.50



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-01 / KOI 3162.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4 ± 1	$1.05^{+0.14}_{-0.14}$	3308^{+196}_{-241}	2996^{+227}_{-341}	$0.461^{+0.176}_{-0.100}$
Alt.	-2 ± 1	$1.10^{+0.15}_{-0.15}$	3306^{+213}_{-234}	-2582^{+5080}_{-379}	$0.245^{+0.109}_{-0.069}$

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

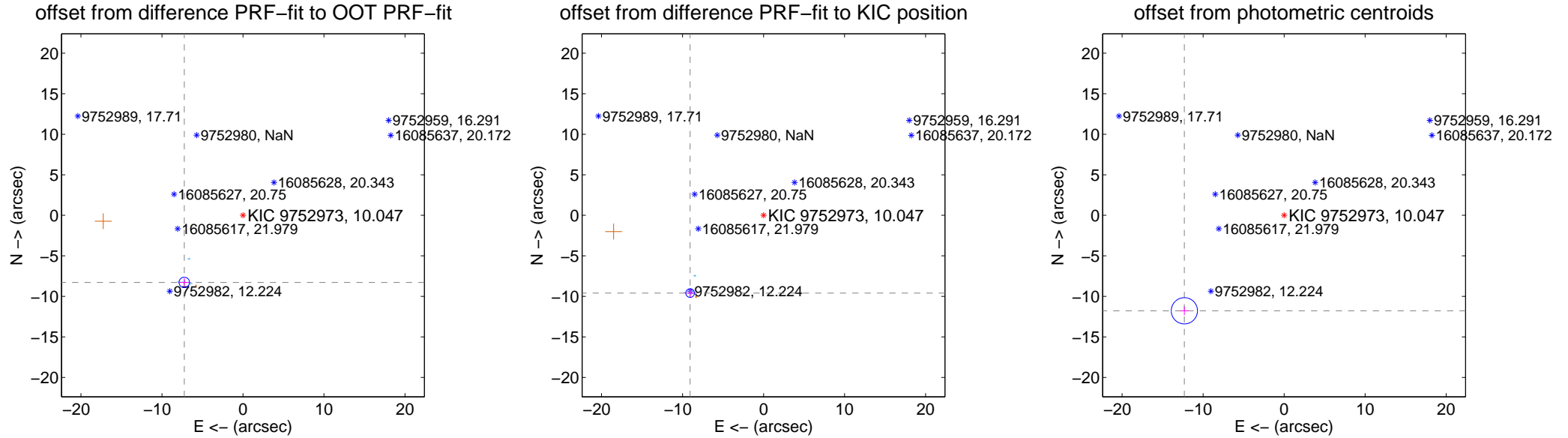
DV Centroid Data

Supplemental centroid analysis for 009752973-01. **Kepler magnitude: 10.05.** Transit SNR 58.00

There are 12 quarters with good PRF difference image offsets

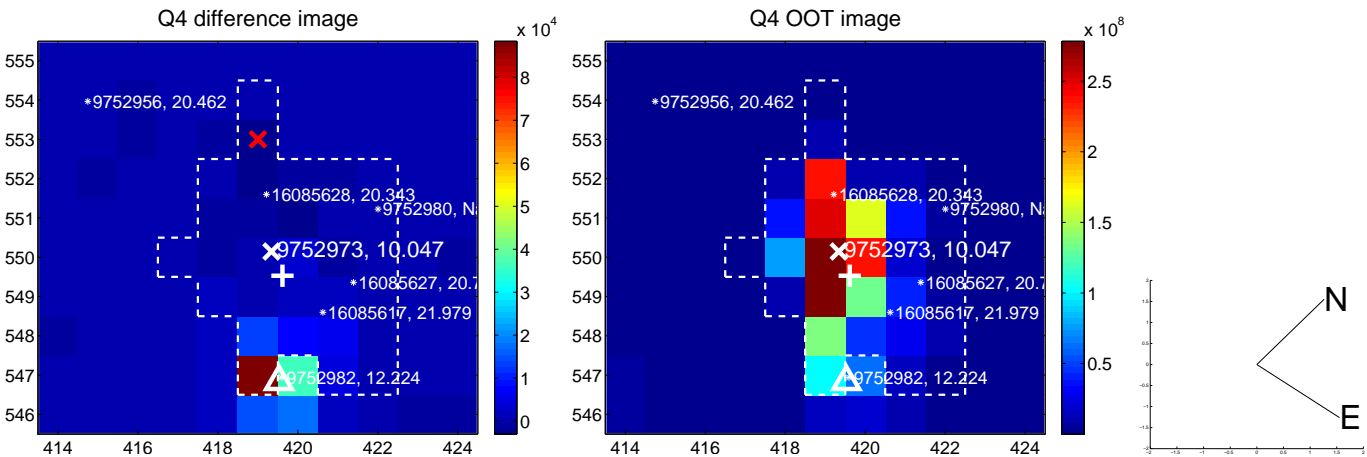
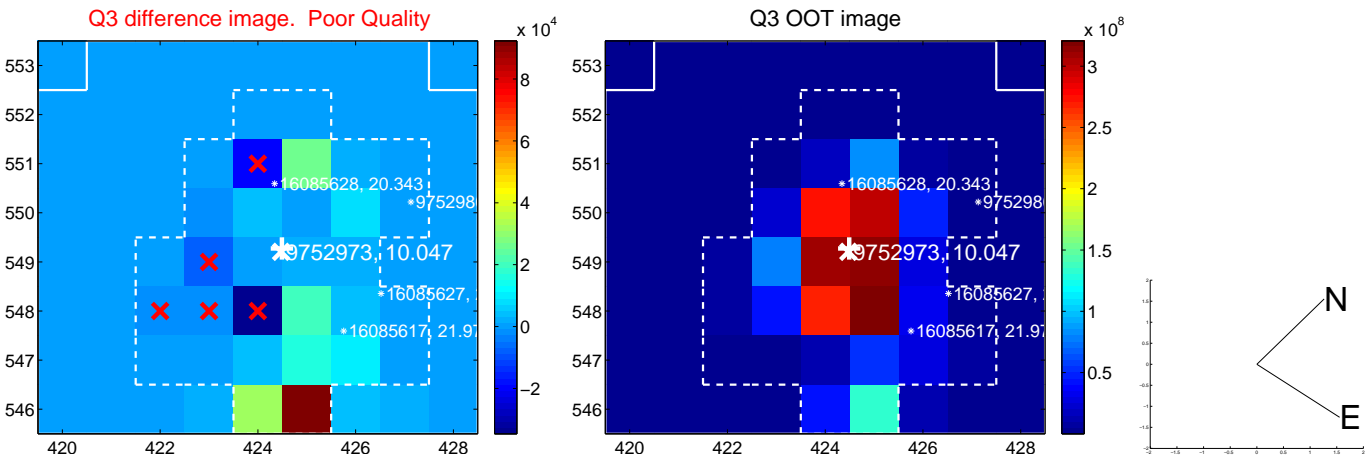
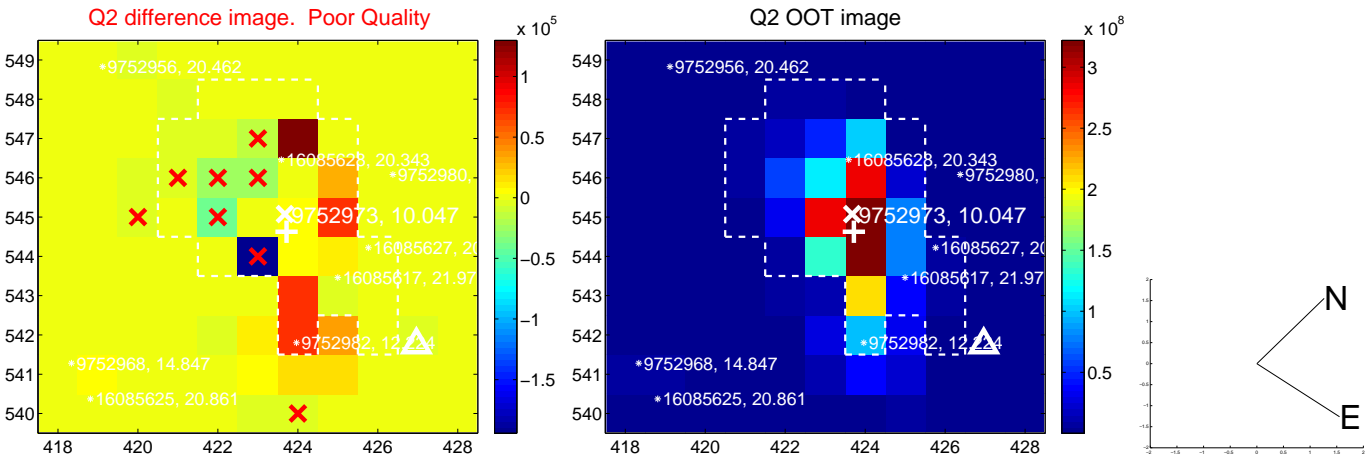
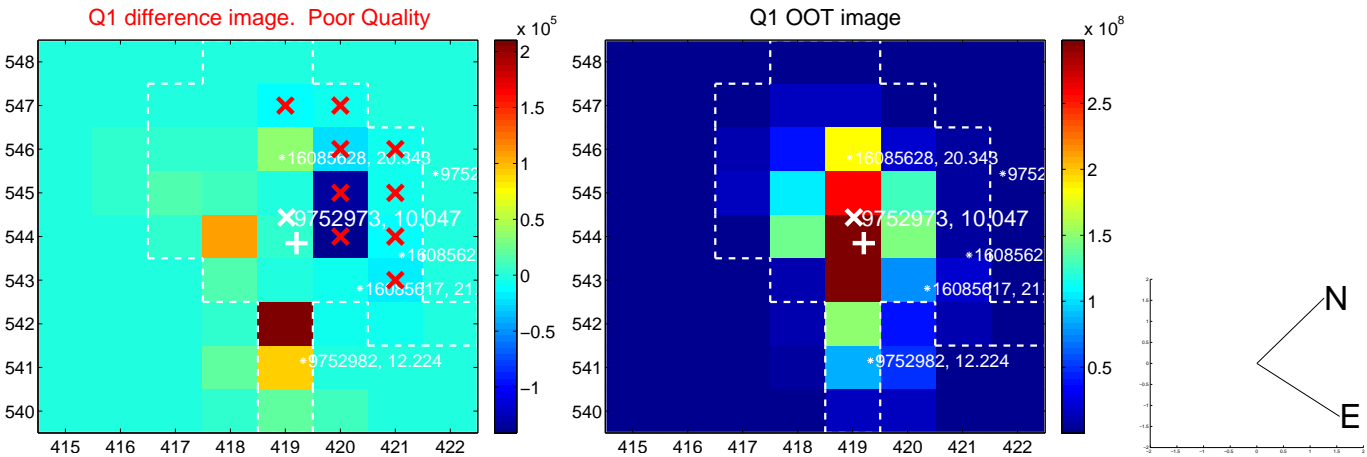
The OOT PRF centroid is offset from the target star catalog position by about 2.21 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.002 \pm 0.215	51.19	7.247 \pm 0.720	-8.278 \pm 0.543
PRF-fit source offset from KIC position	13.200 \pm 0.177	74.57	9.067 \pm 0.647	-9.593 \pm 0.523
photometric centroid source offset	17.04 \pm 0.54	31.58	12.32 \pm 0.54	-11.78 \pm 0.54

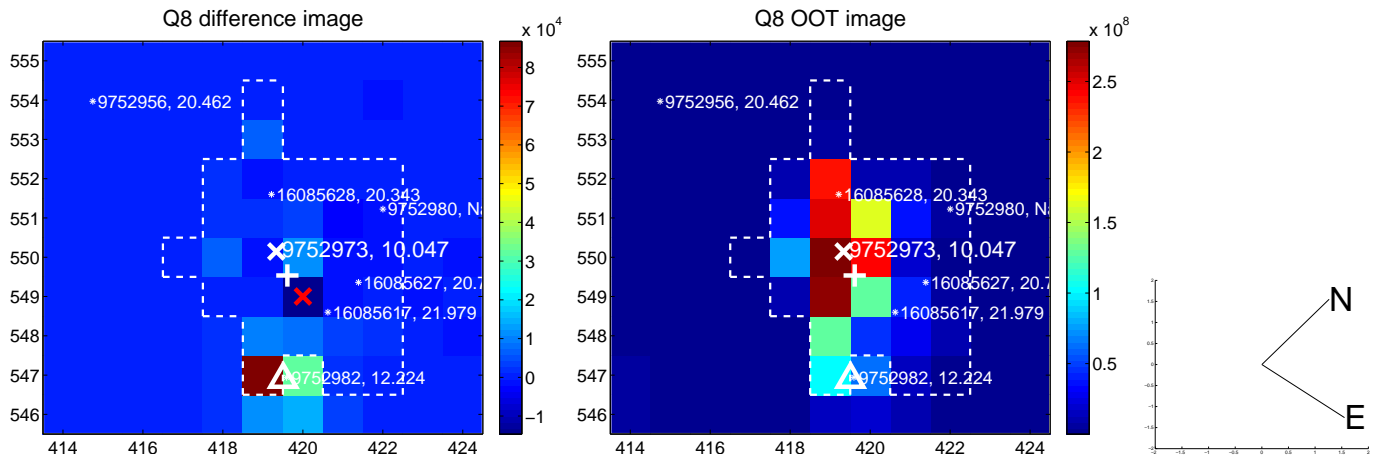
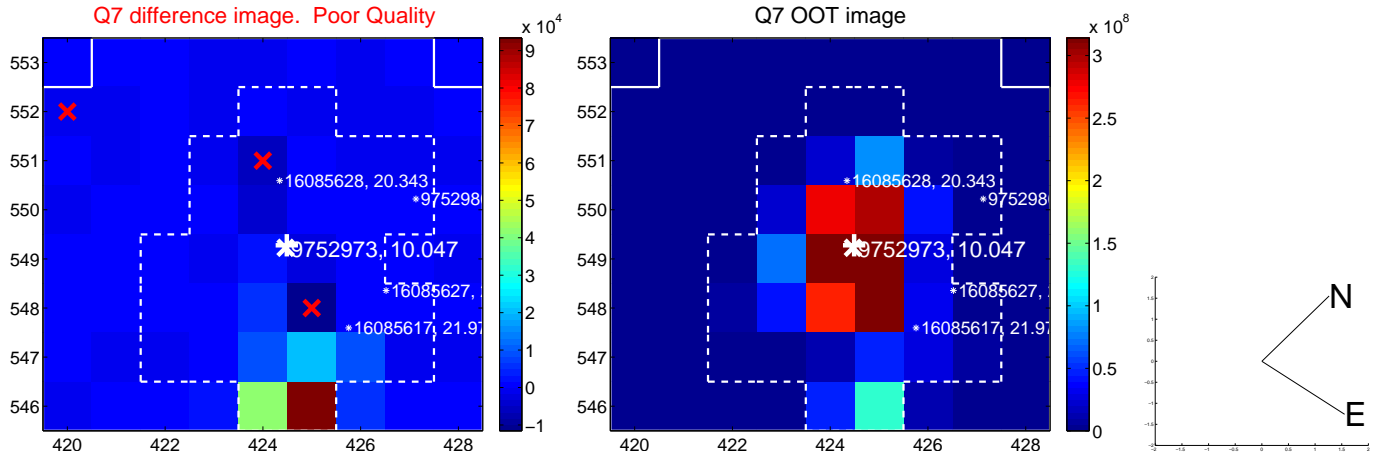
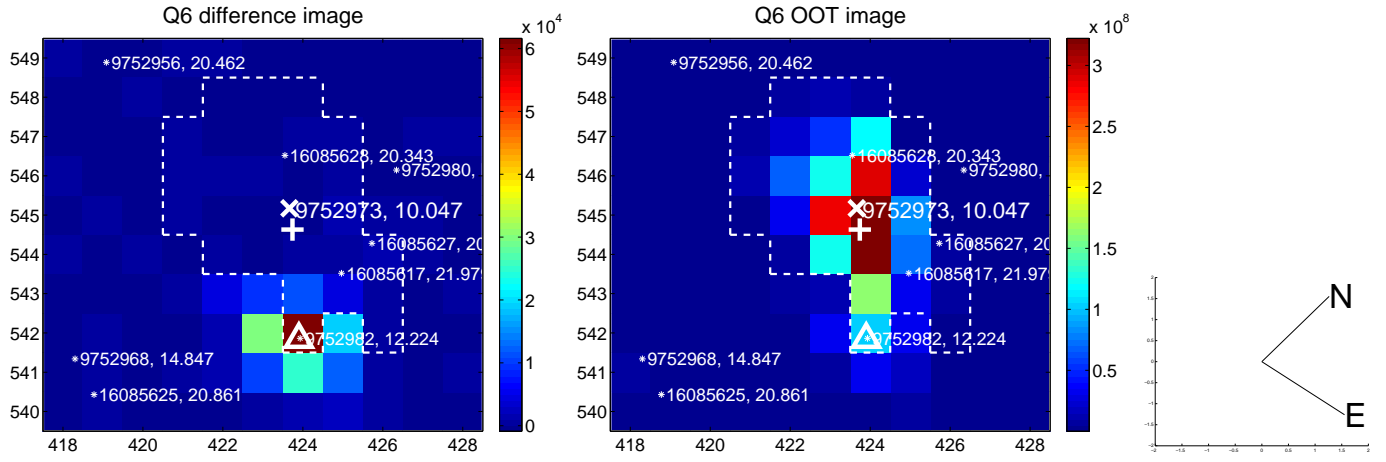
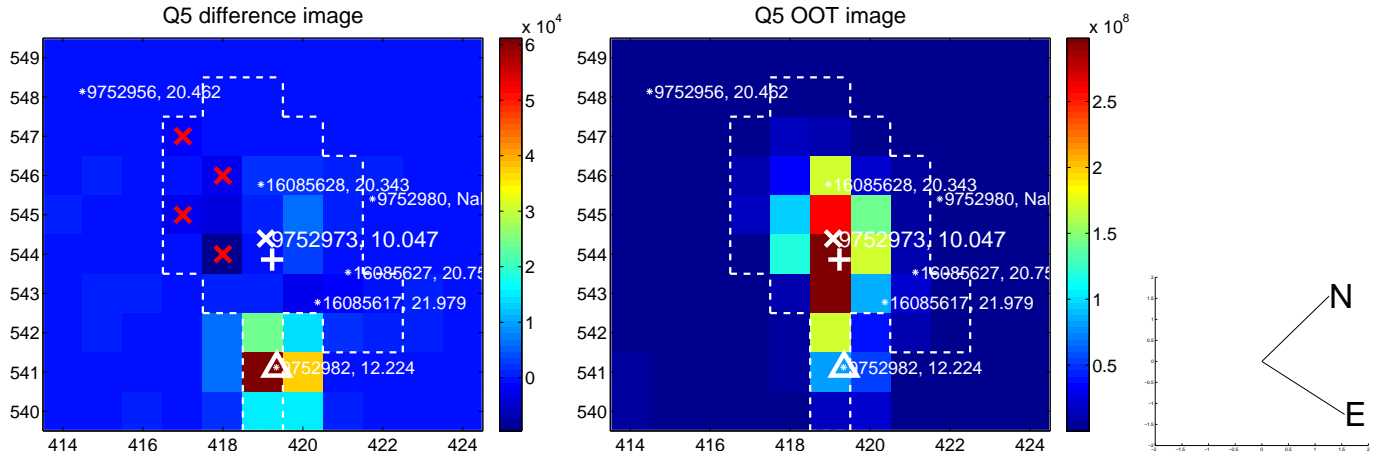


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

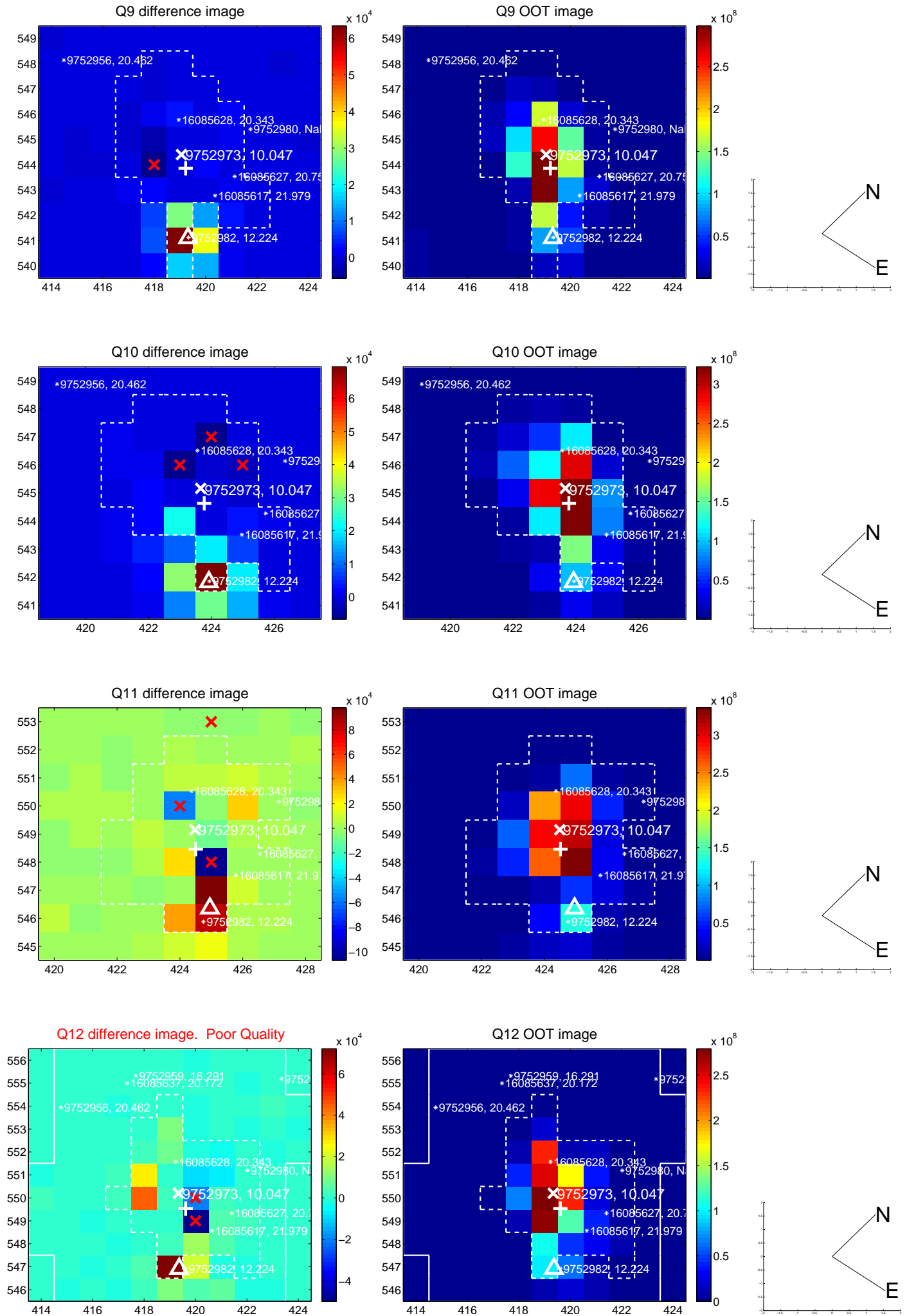
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



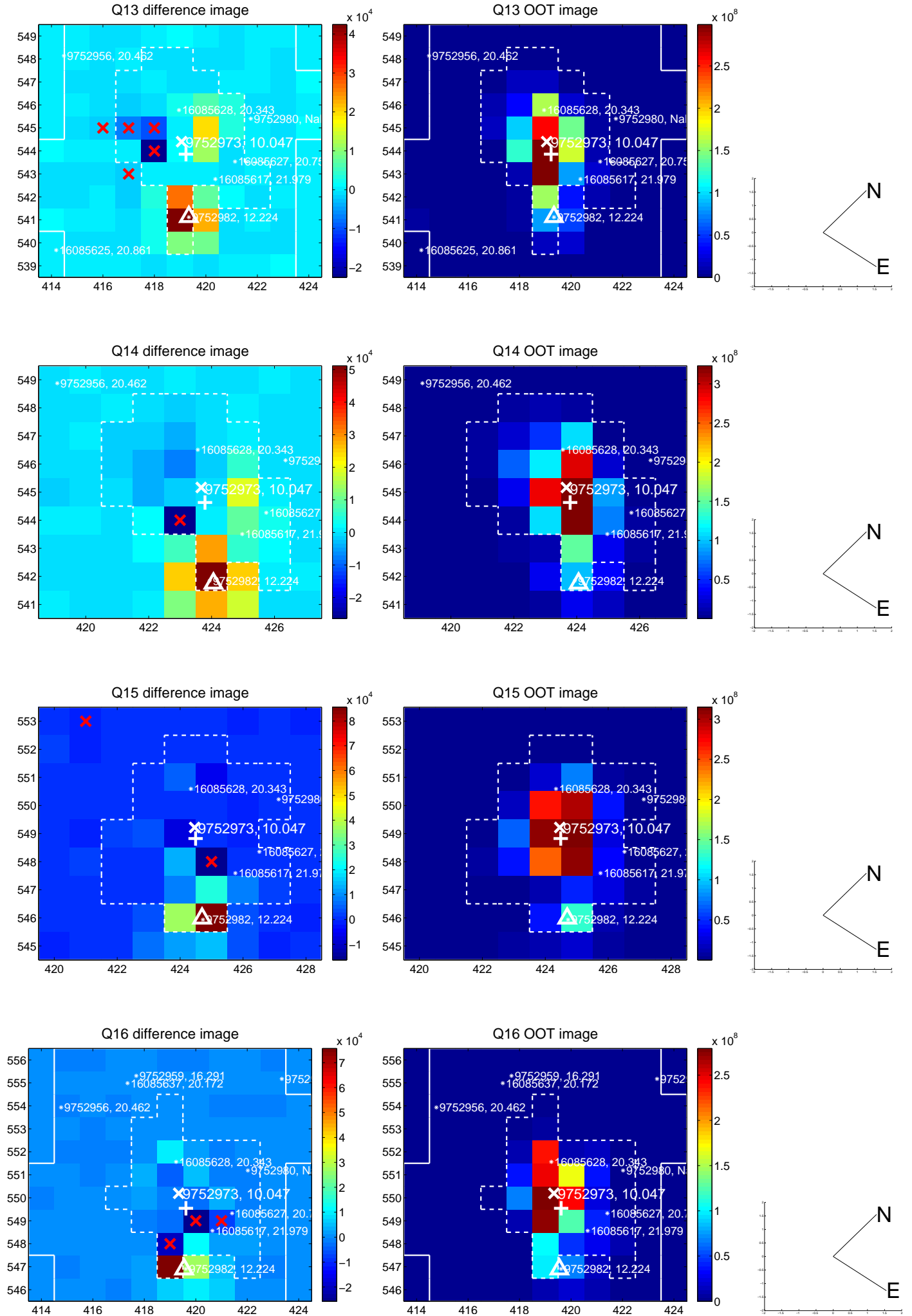
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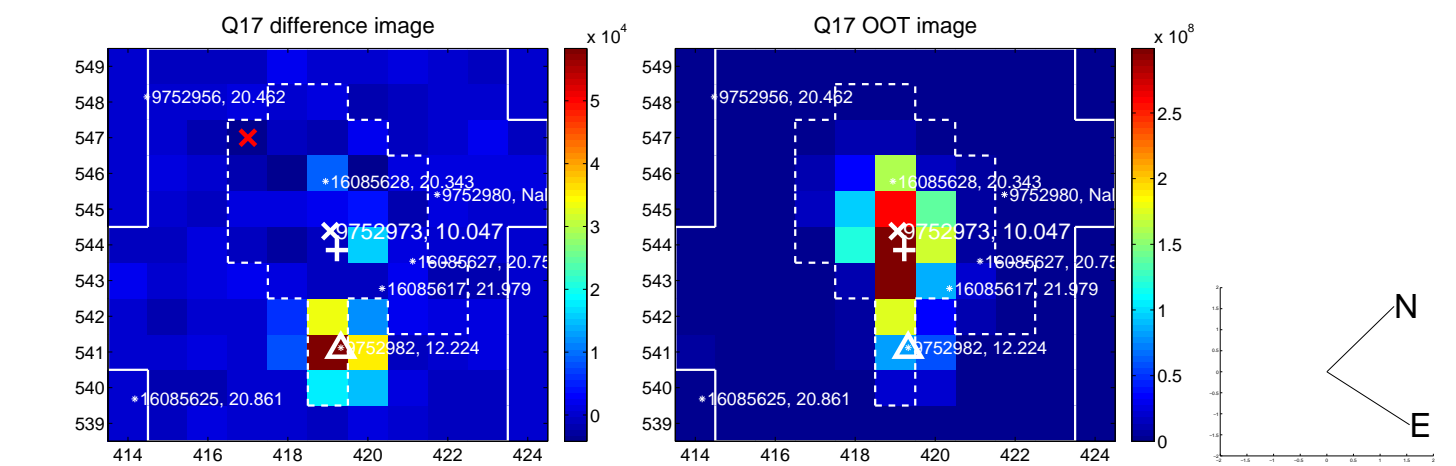
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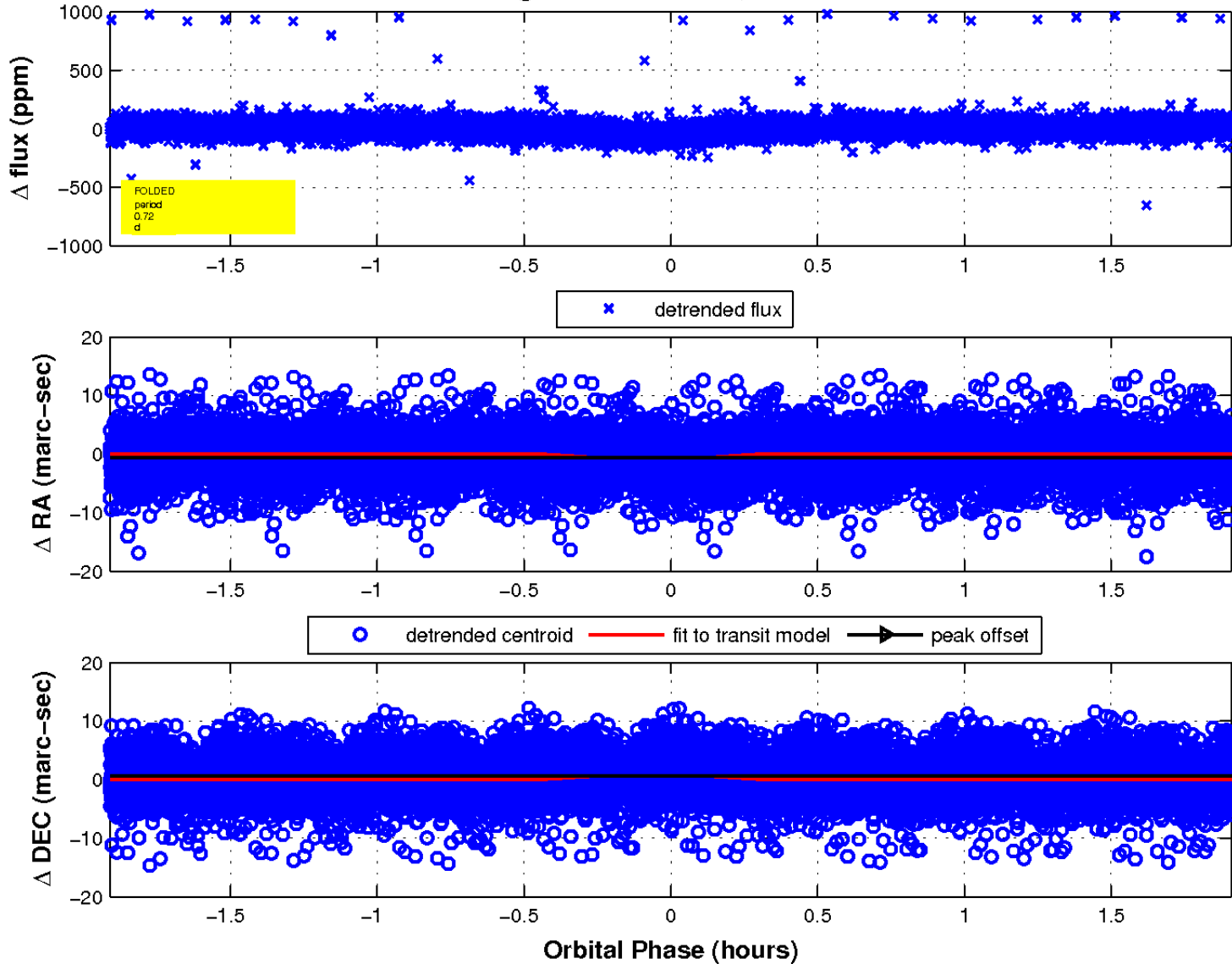
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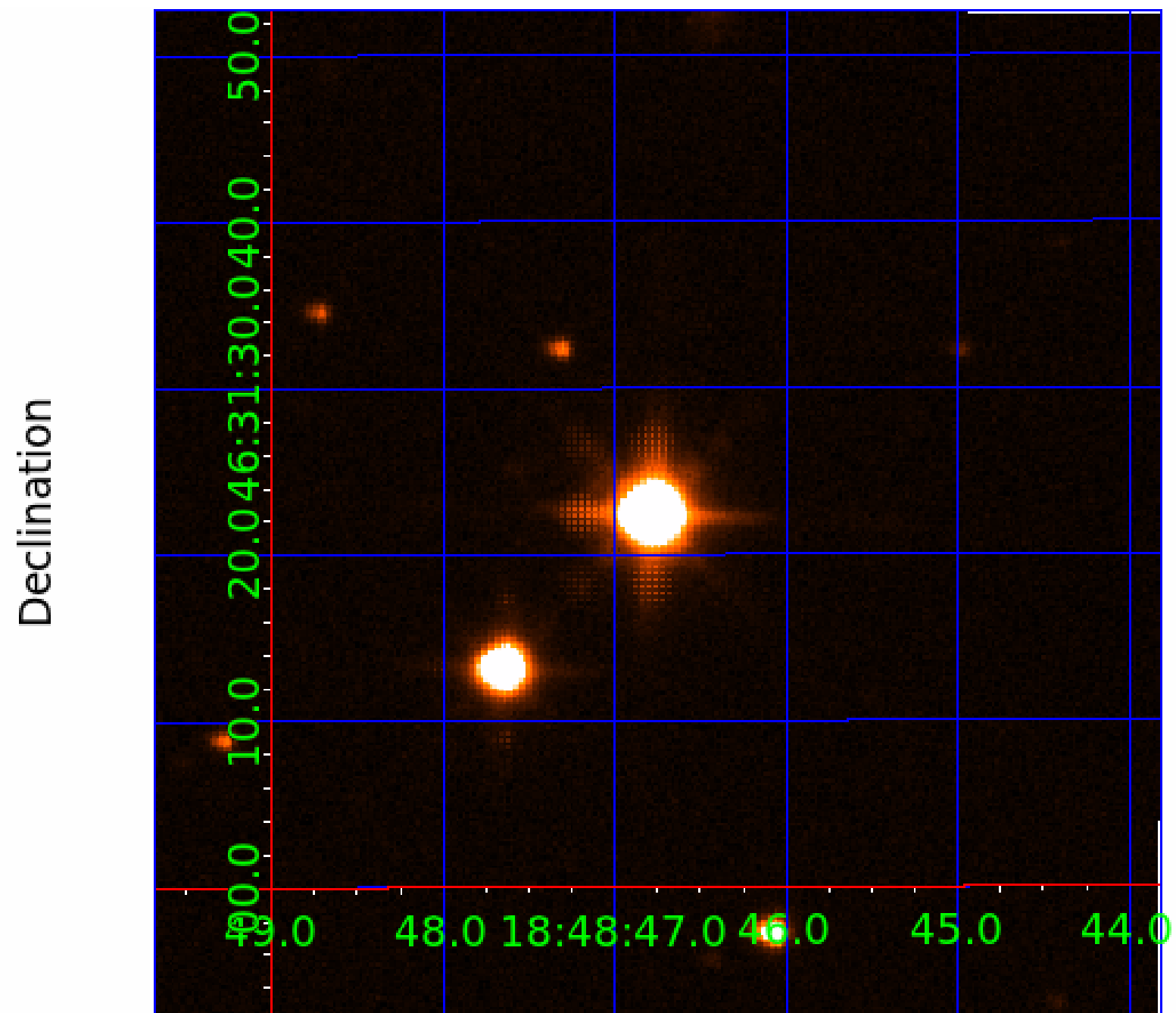
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 7



UKIRT Image



KIC 009752973

Q1-17 DR25 TCE Parameters

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009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—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.

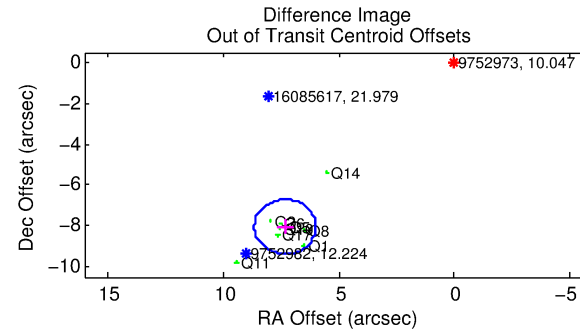
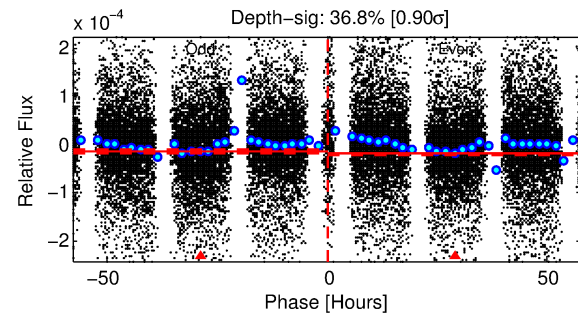
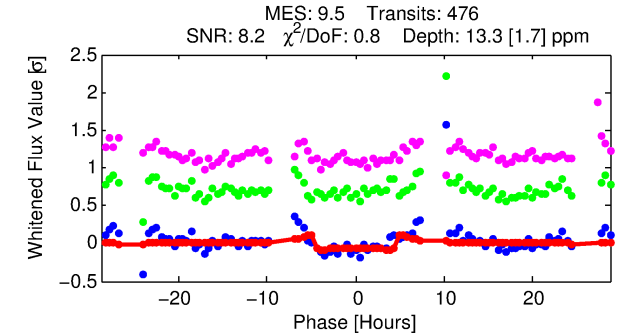
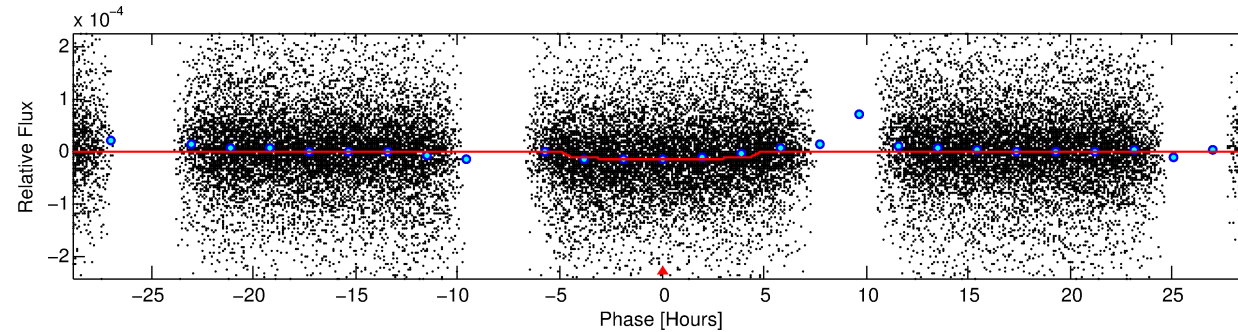
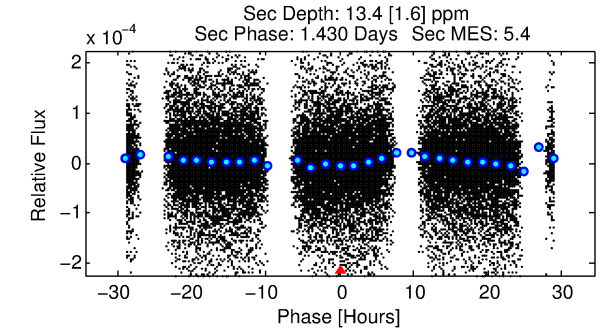
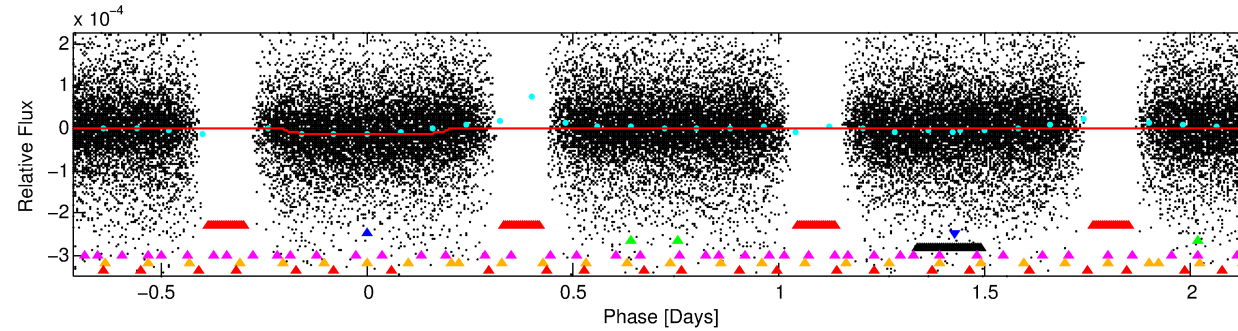
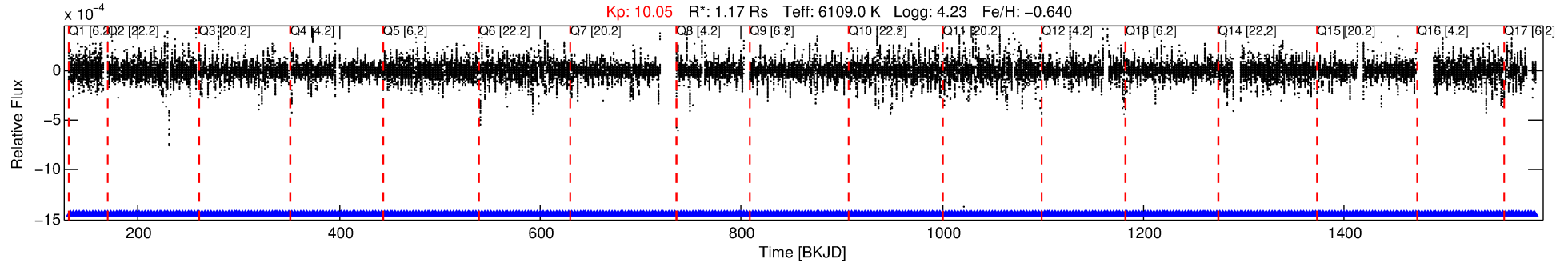
Ephemeris Match Information For 009752973-02

No Significant Match Found

DV One-Page Summary

KIC: 9752973 Candidate: 2 of 7 Period: 2.867 d
KOI: K03162 Corr: No Ephemeris Match

Kp: 10.05 R*: 1.17 Rs Teff: 6109.0 K Logg: 4.23 Fe/H: -0.640



DV Fit Results:

Period = 2.86668 [0.00002] d
Epoch = 132.4334 [0.0036] BKJD
Rp/R* = 0.0040 [0.0005]
a/R* = 1.31 [0.28]
b = 0.92 [0.08]
Seff = 1225.94 [493.77]
Teq = 1509 [152] K
Rp = 0.51 [0.13] Re
a = 0.0374 [0.0087] AU
Ag = 39.60 [18.55] [2.08σ]
Teff = 5852 [414] K [9.84σ]

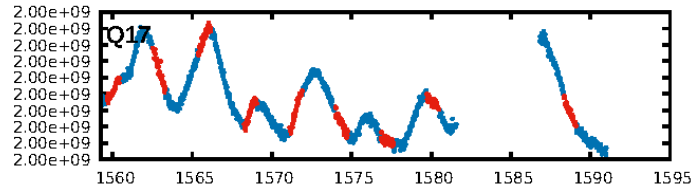
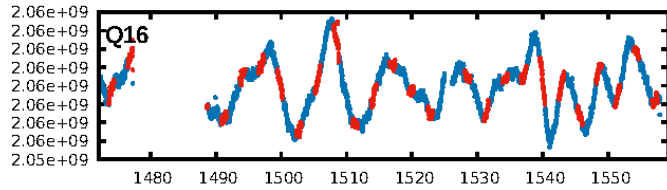
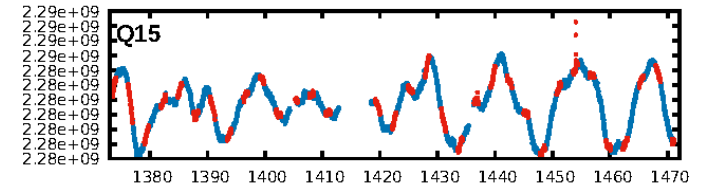
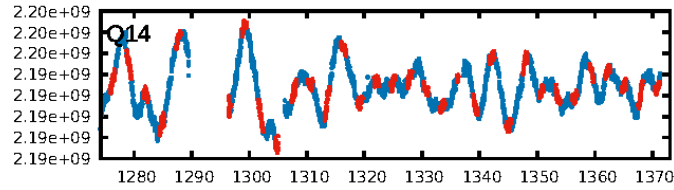
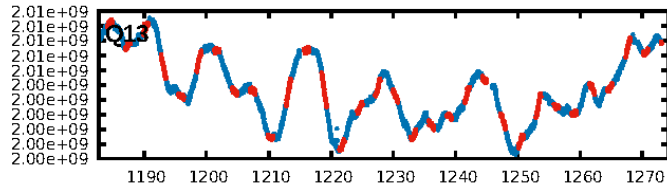
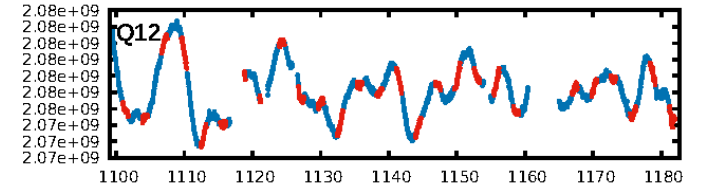
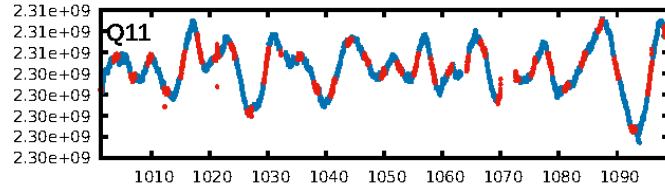
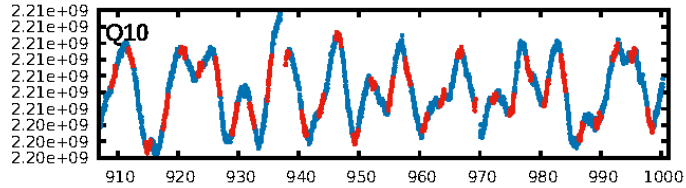
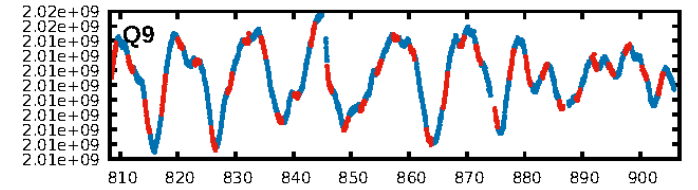
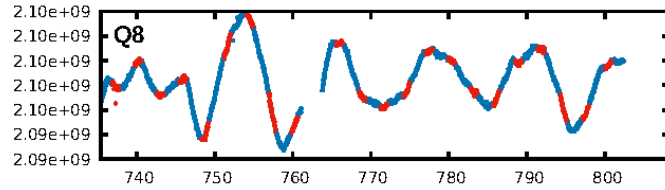
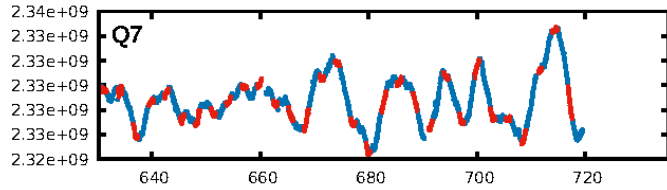
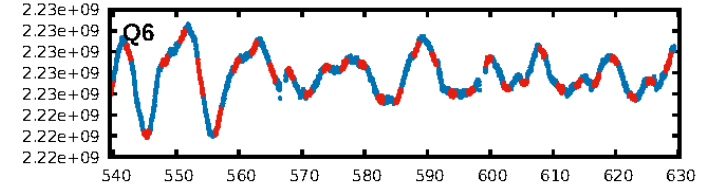
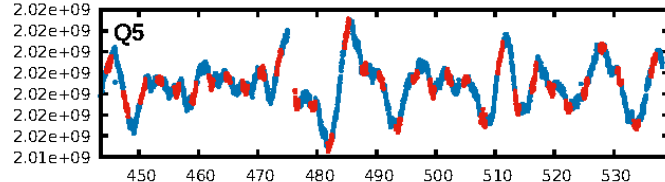
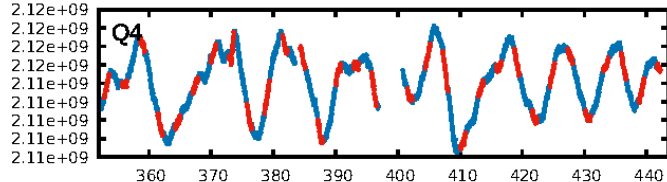
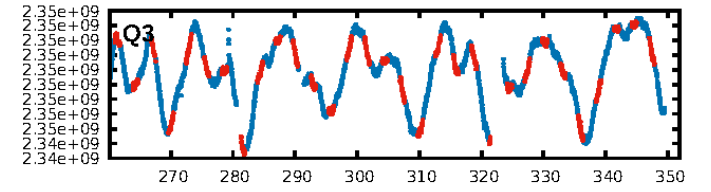
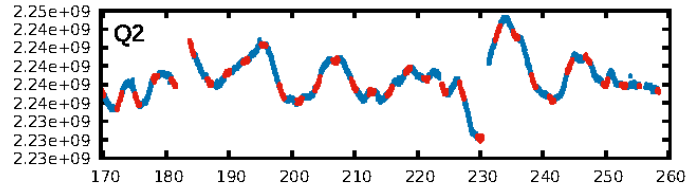
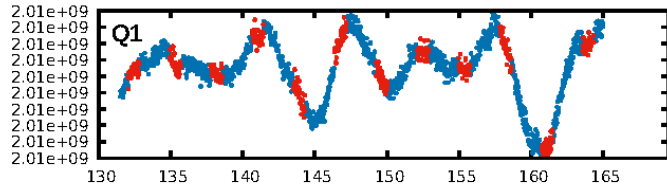
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [70.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [455/455]
GhostDiagnostic-chr: 0.5603
Centroid-sig: 0.0%
Centroid-so: 12.447 arcsec [3.46σ]
OotOffset-rm: 10.878 arcsec [24.53σ]
KicOffset-rm: 12.991 arcsec [37.09σ]
OotOffset-st: 4/1/1/3 [9]
KicOffset-st: 4/1/1/3 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 0.00 [0/17]

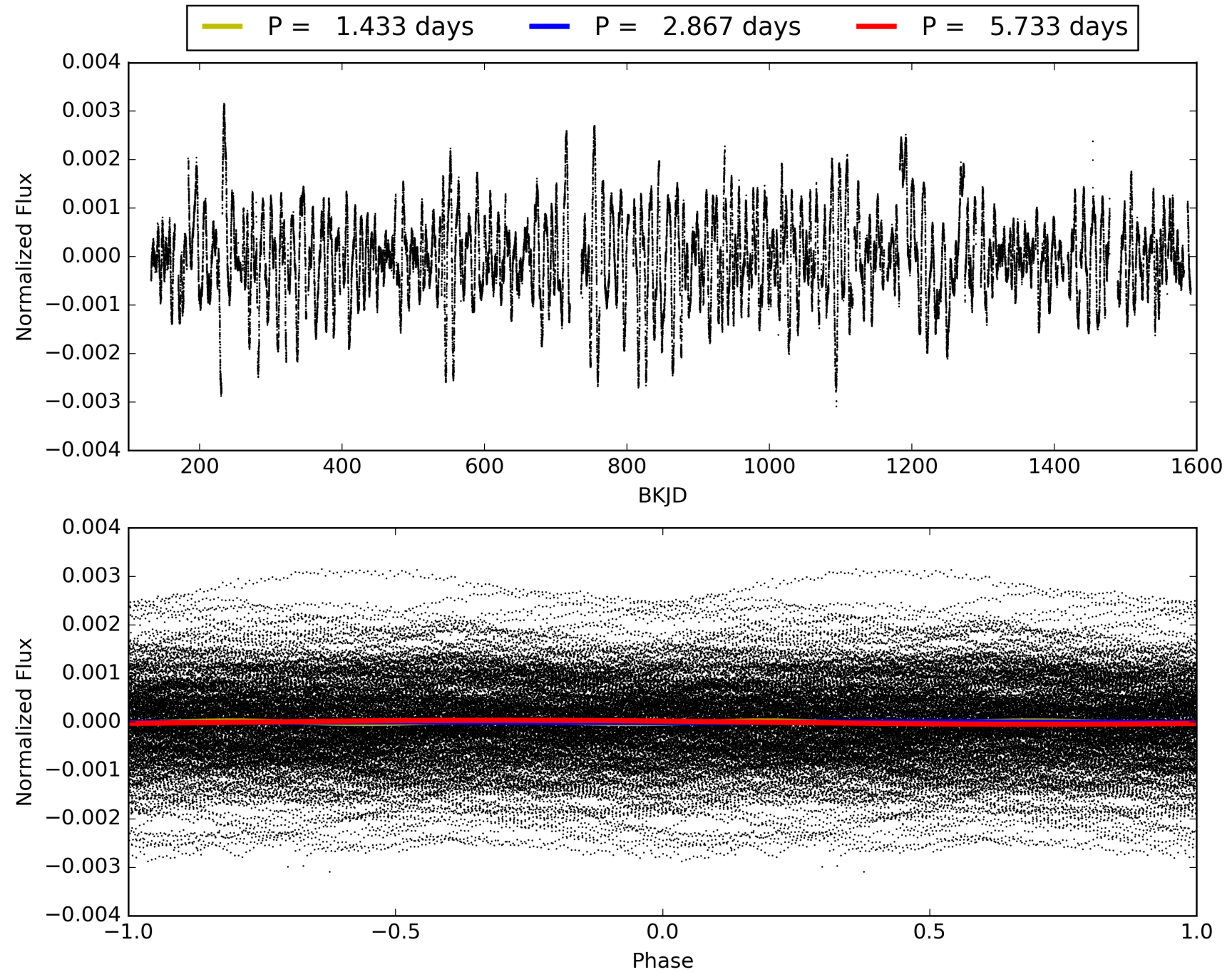
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:42:35 Z

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

TCE 009752973-02, PDC Light Curves

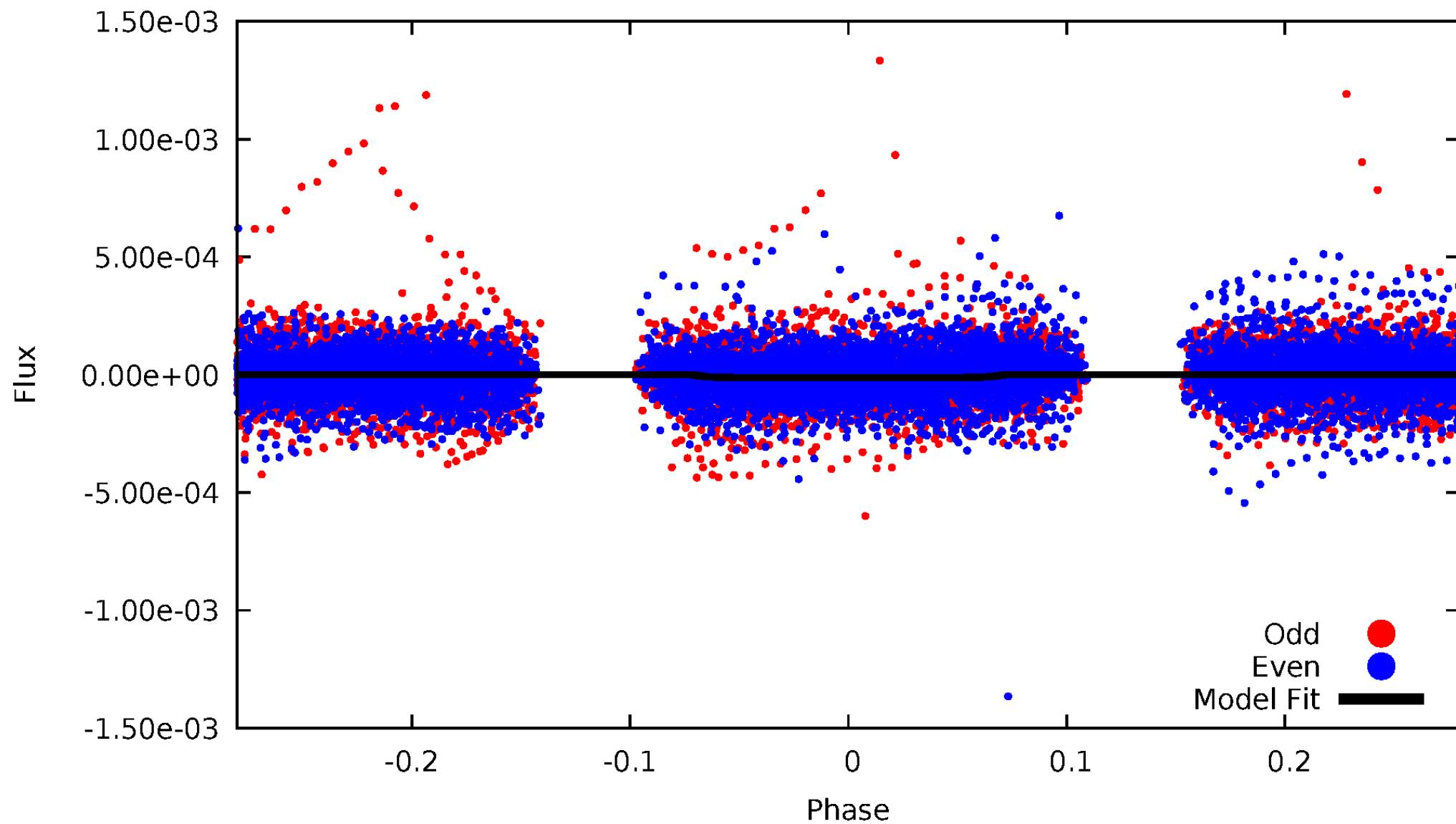


TCE 009752973-02



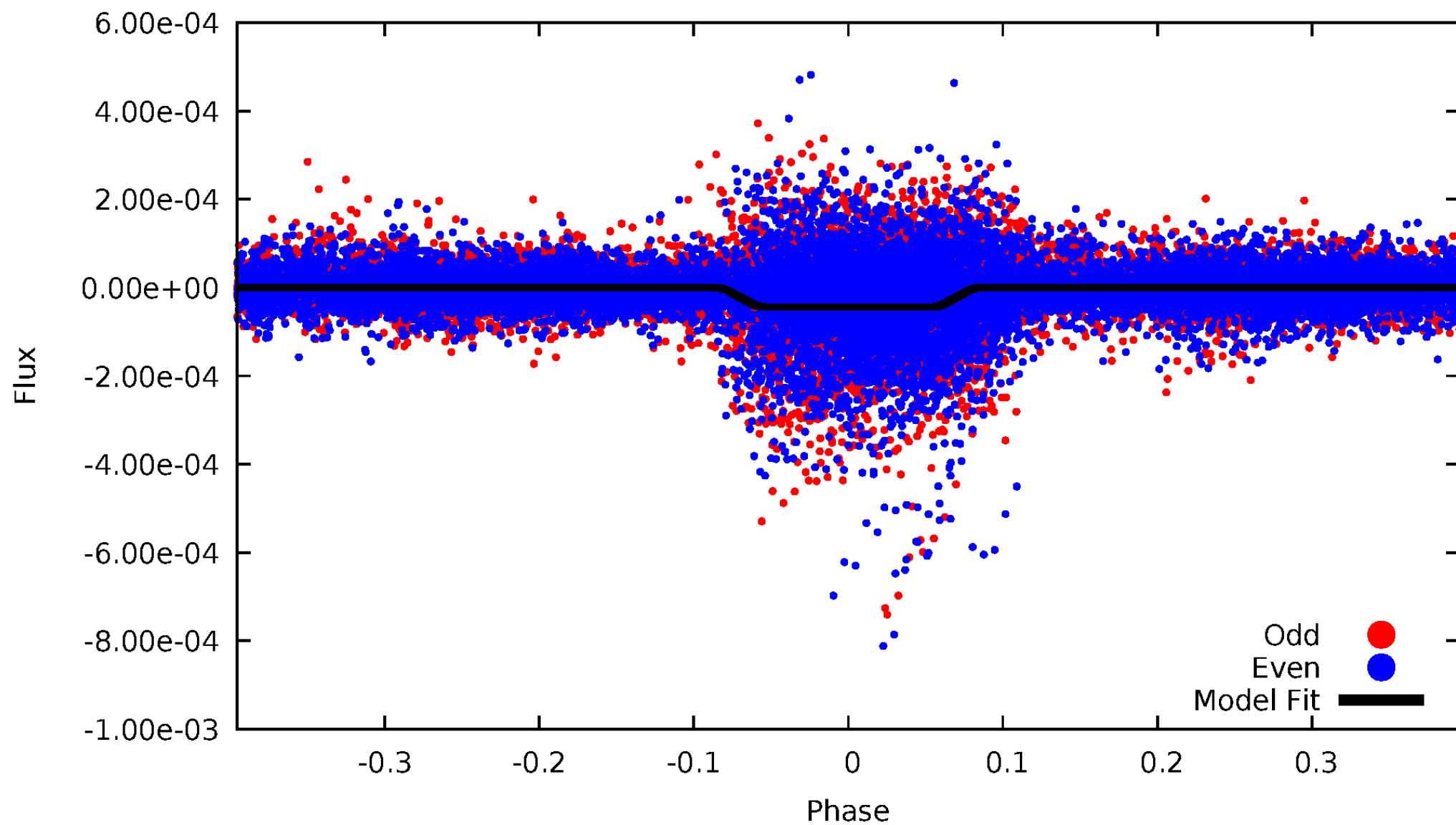
DV Odd/Even

TCE 009752973-02



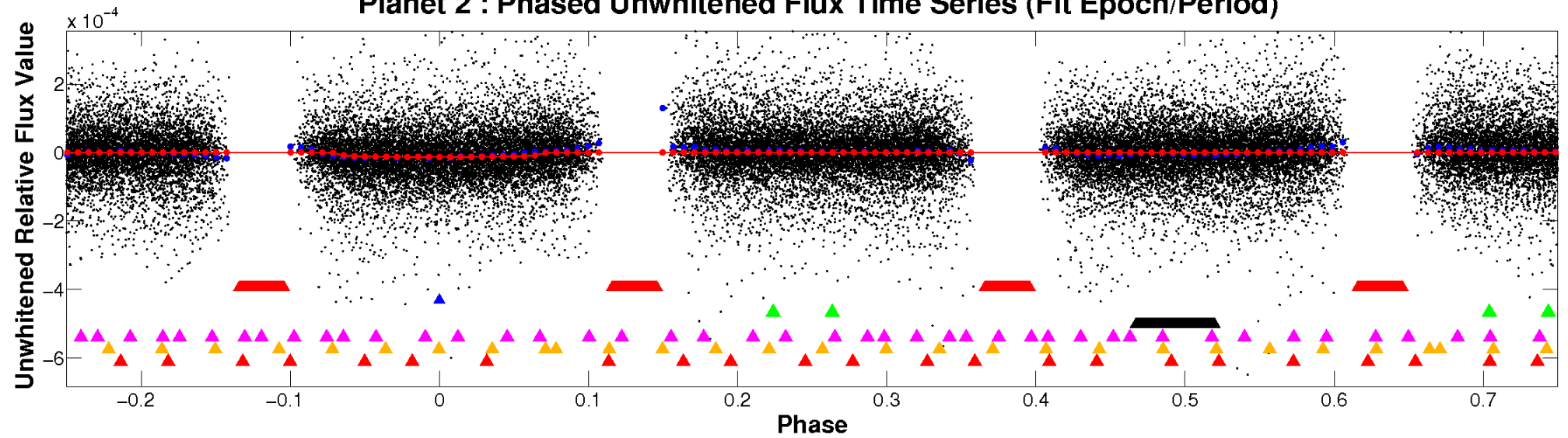
ALT Odd/Even

TCE 009752973-02

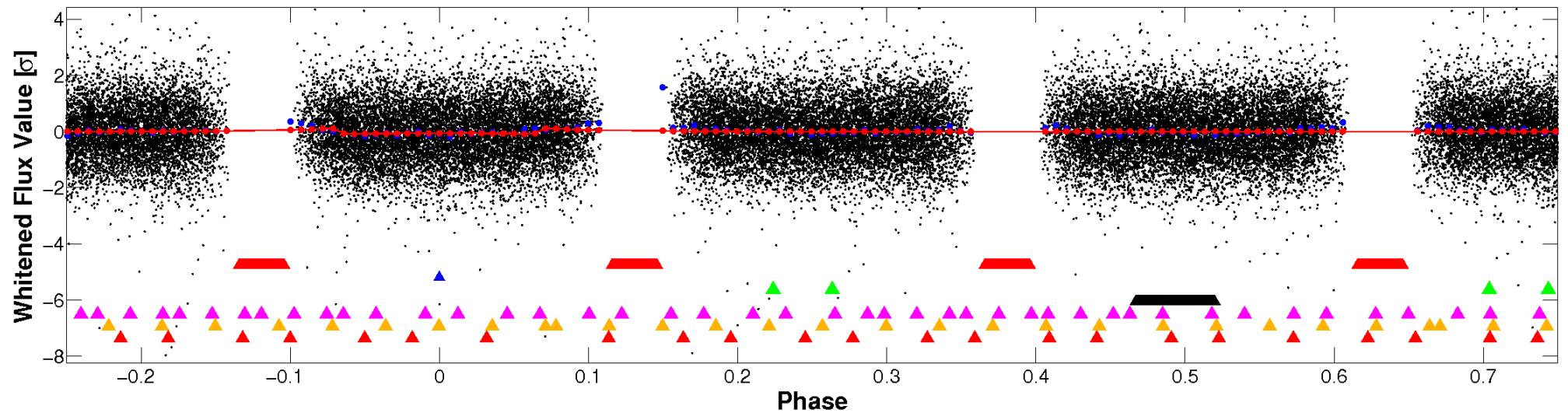


Non-Whitened Vs. Whitened Light Curve

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

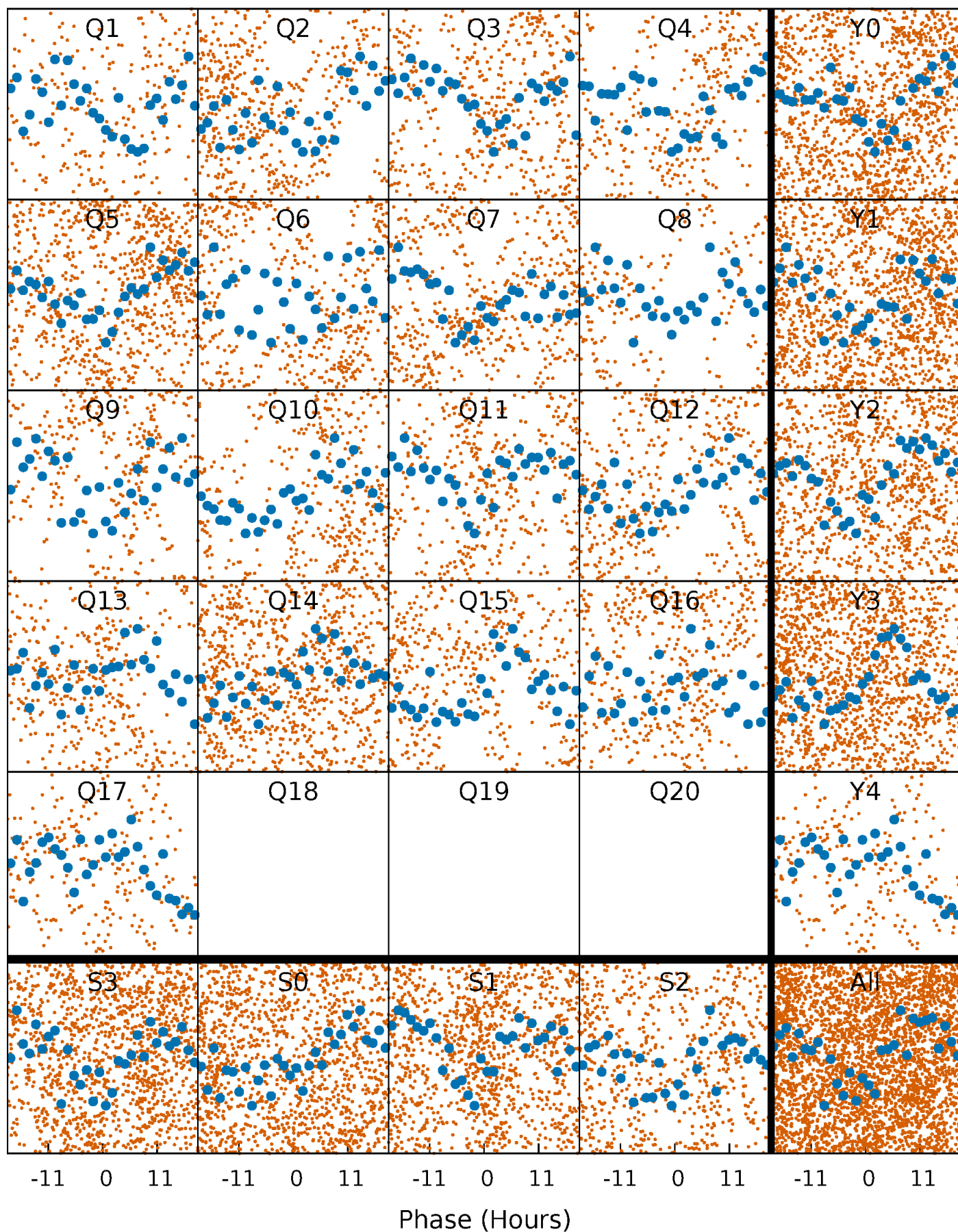


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



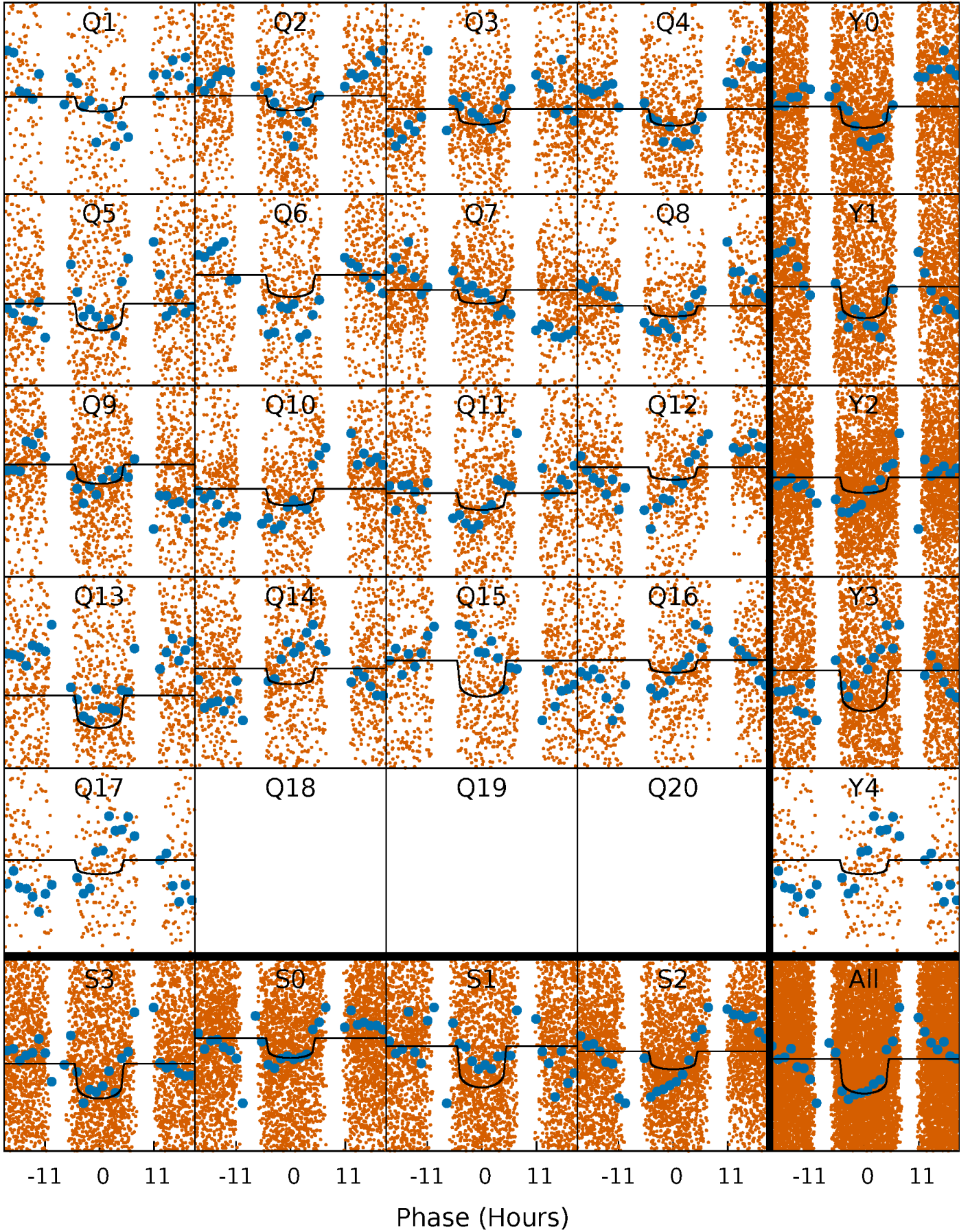
PDC Quarter-Phased Transit Curves

TCE 009752973-02 P= 2.866679 Days $T_0=132.433366$ (BKJD)



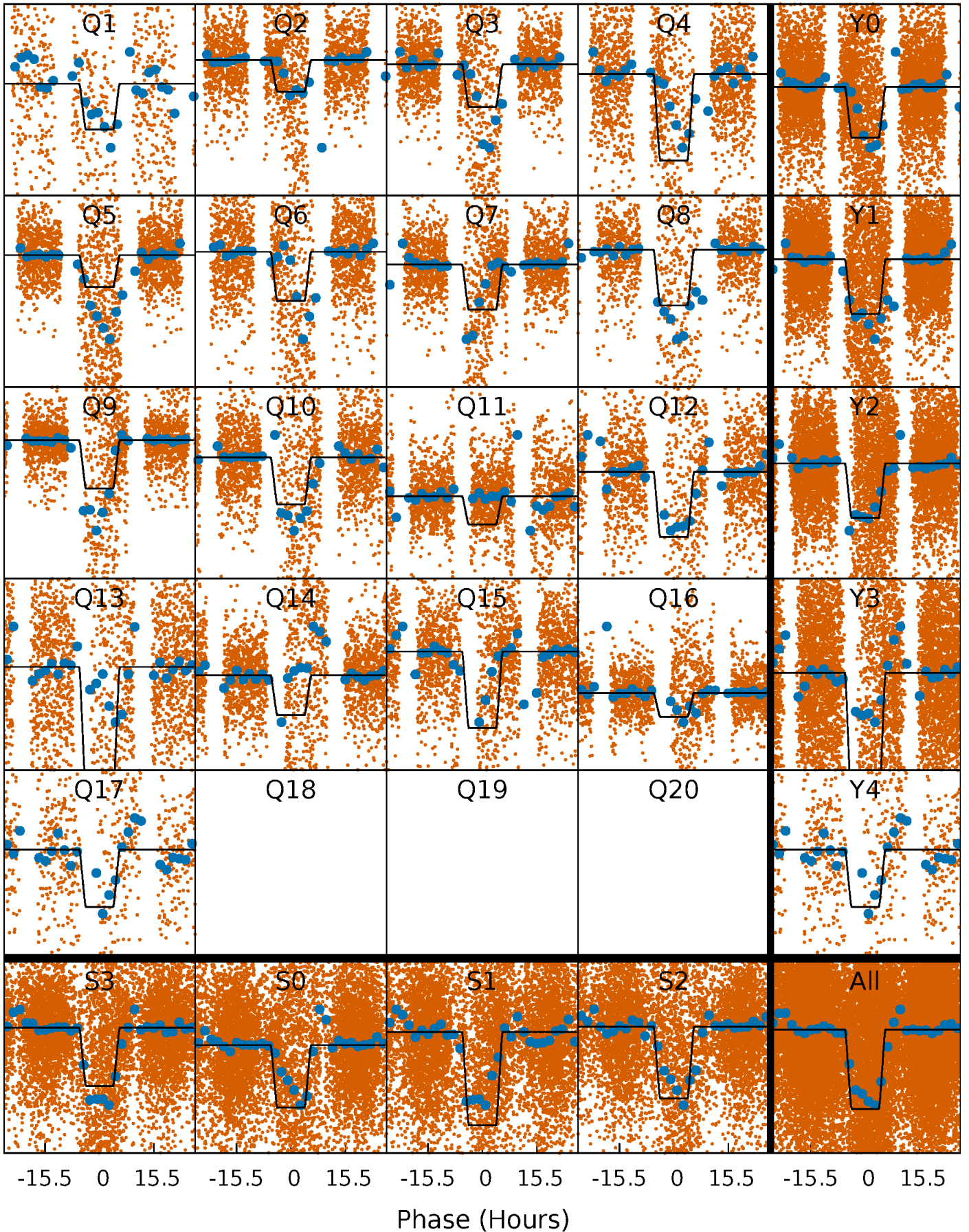
DV Quarter-Phased Transit Curves

TCE 009752973-02 P= 2.866679 Days $T_0=132.433366$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

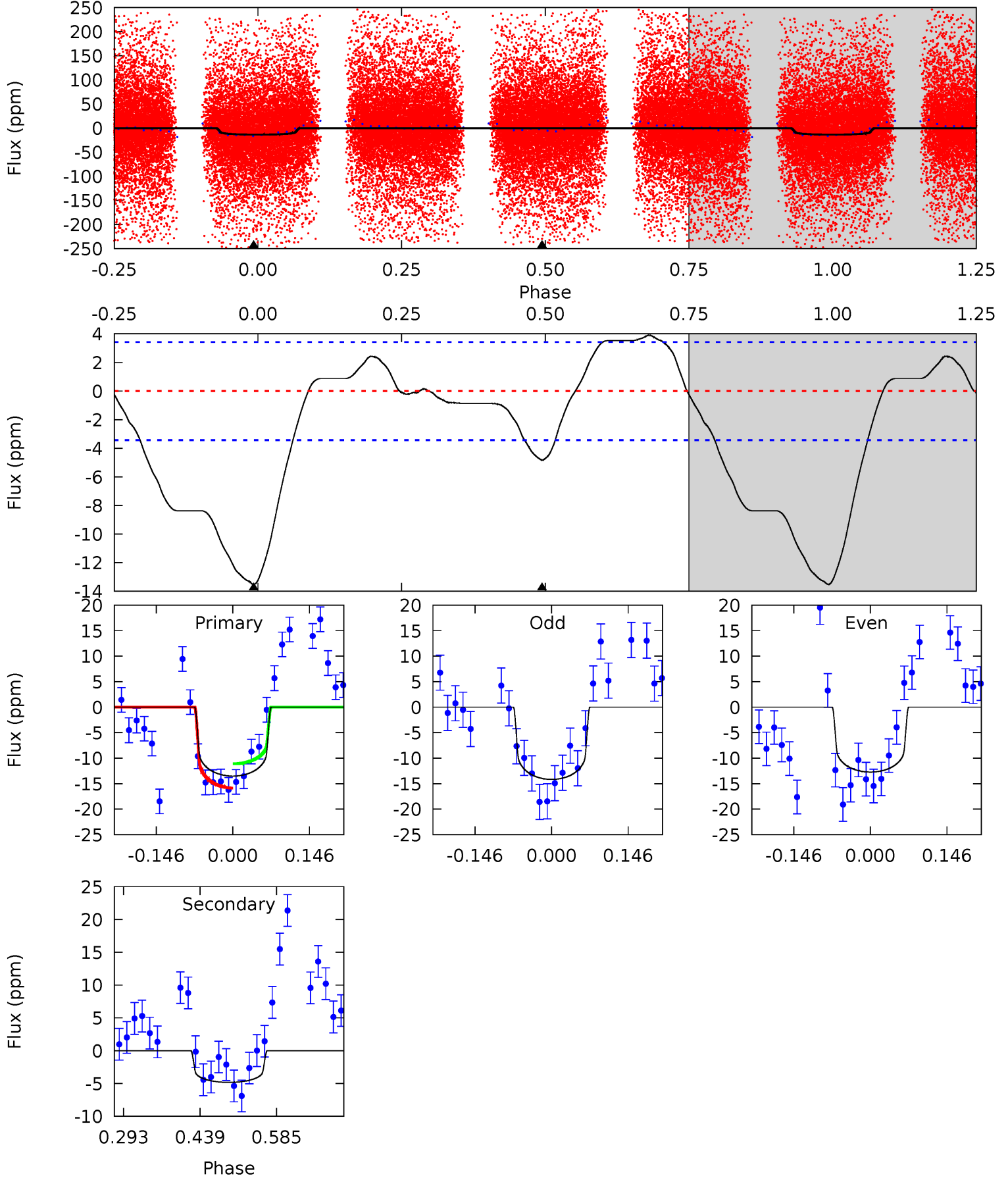
TCE 009752973-02 P= 2.866253 Days $T_0=132.477283$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-02, P = 2.866679 Days, E = 129.566687 Days

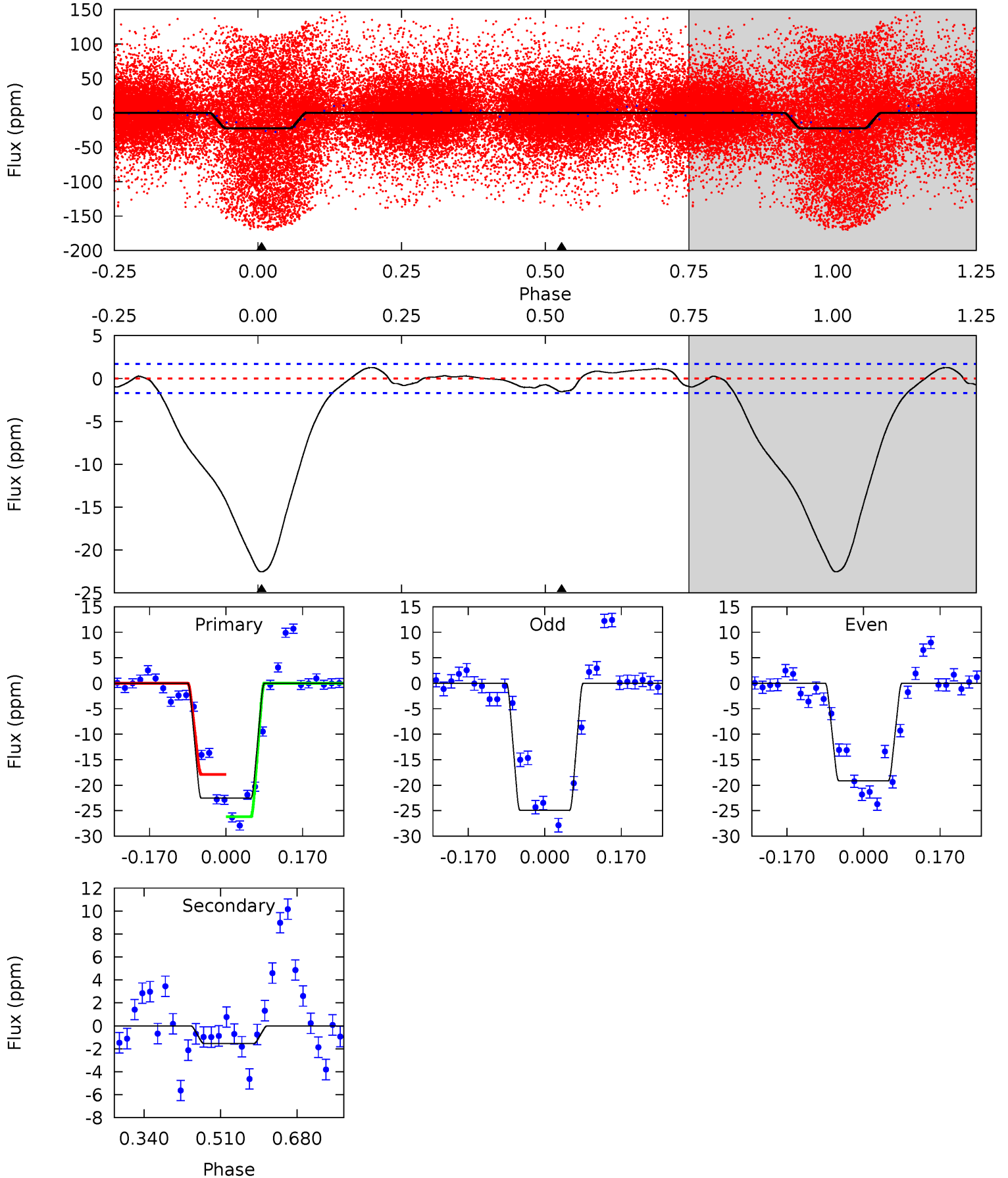
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	6.32	0	0	4.48	1.45	3.69	17.7	17.7	6.32	6.32	0.95	0.96	0.22	3.15



Alt Model-Shift Uniqueness Test

009752973-02, P = 2.866253 Days, E = 129.611030 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.4	4.07	0	0	4.45	1.37	1.85	59.4	59.4	4.07	4.07	7.51	1.85	0.05	10.7



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-5 ± 1	$0.51^{+0.08}_{-0.09}$	2093^{+115}_{-139}	4658^{+324}_{-267}	15^{+7}_{-4}
Alt.	-2 ± 0	$0.83^{+0.12}_{-0.12}$	2077^{+138}_{-135}	3146^{+158}_{-181}	$1.737^{+0.844}_{-0.531}$

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

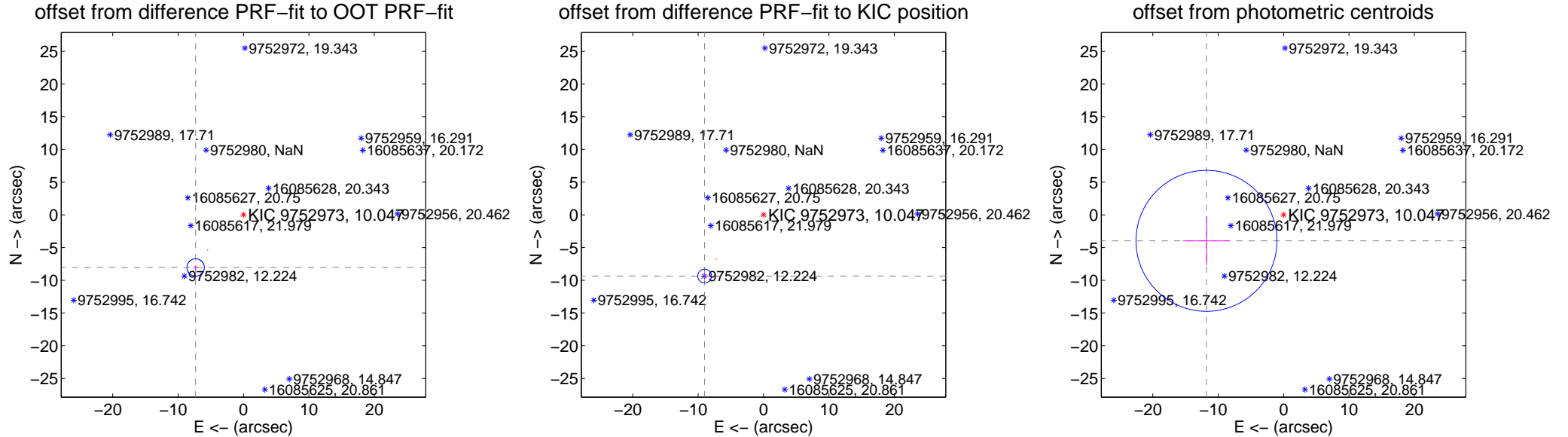
DV Centroid Data

Supplemental centroid analysis for 009752973-02. **Kepler magnitude: 10.05.** Transit SNR 8.17

There are 5 quarters with good PRF difference image offsets

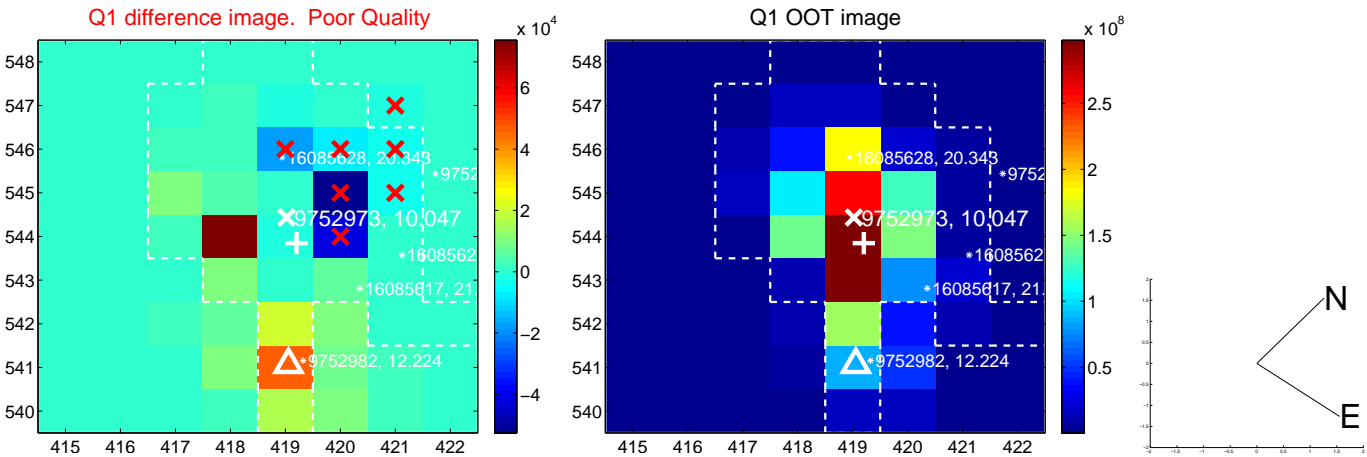
The OOT PRF centroid is offset from the target star catalog position by about 2.22 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.878 ± 0.443	24.53	7.322 ± 0.333	-8.045 ± 0.339
PRF-fit source offset from KIC position	12.991 ± 0.350	37.09	9.016 ± 0.215	-9.354 ± 0.310
photometric centroid source offset	12.45 ± 3.59	3.46	11.80 ± 3.57	-3.97 ± 3.74

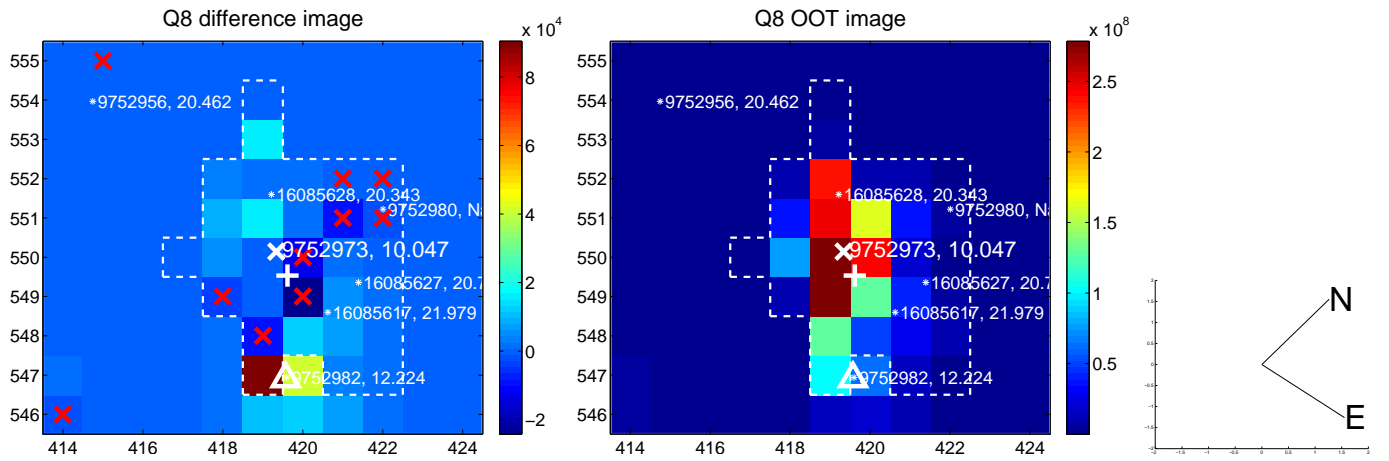
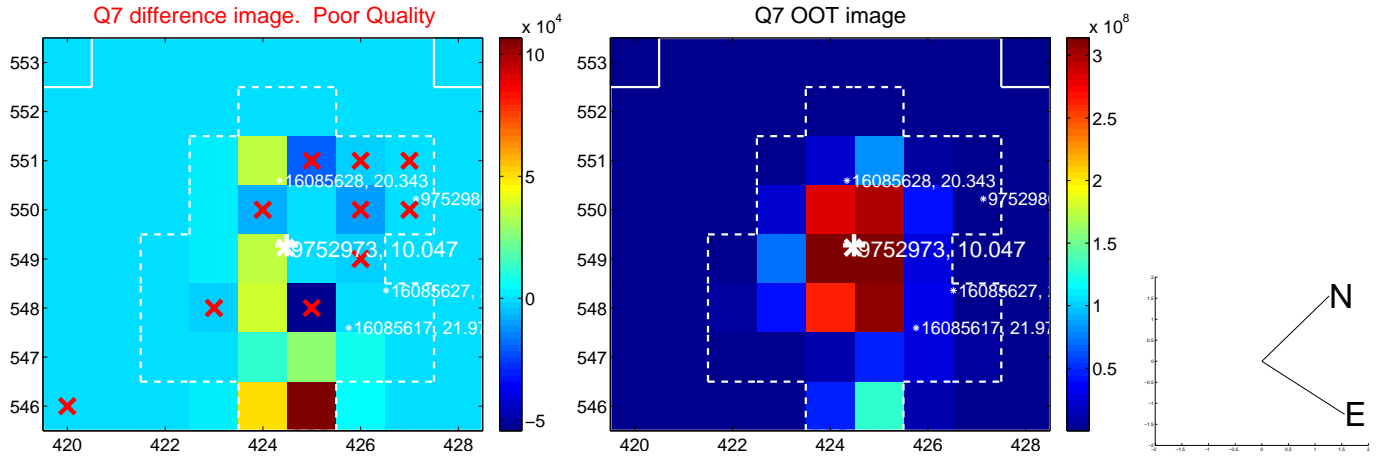
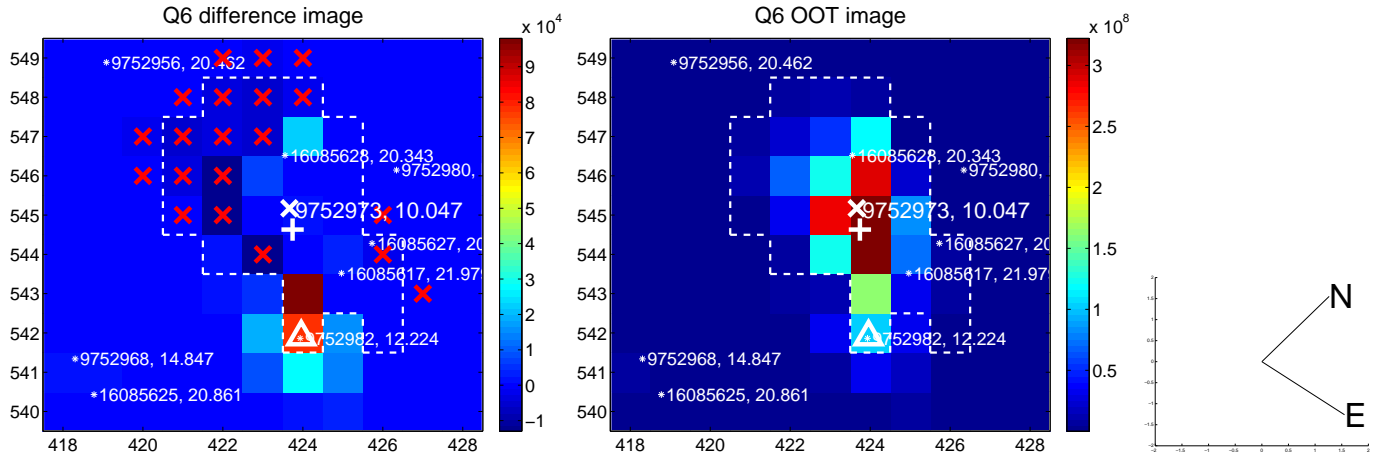
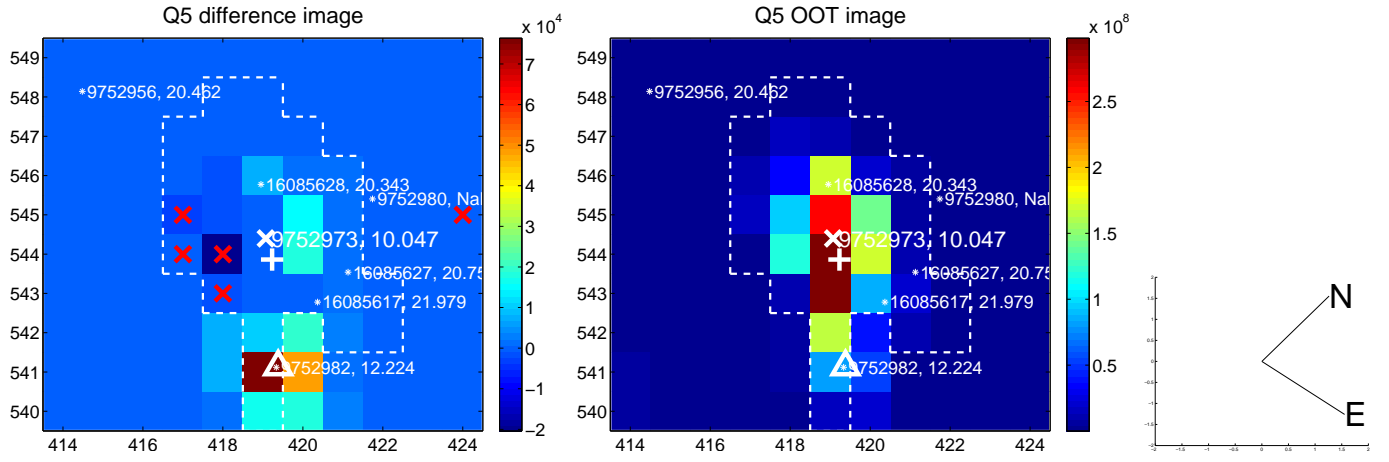


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

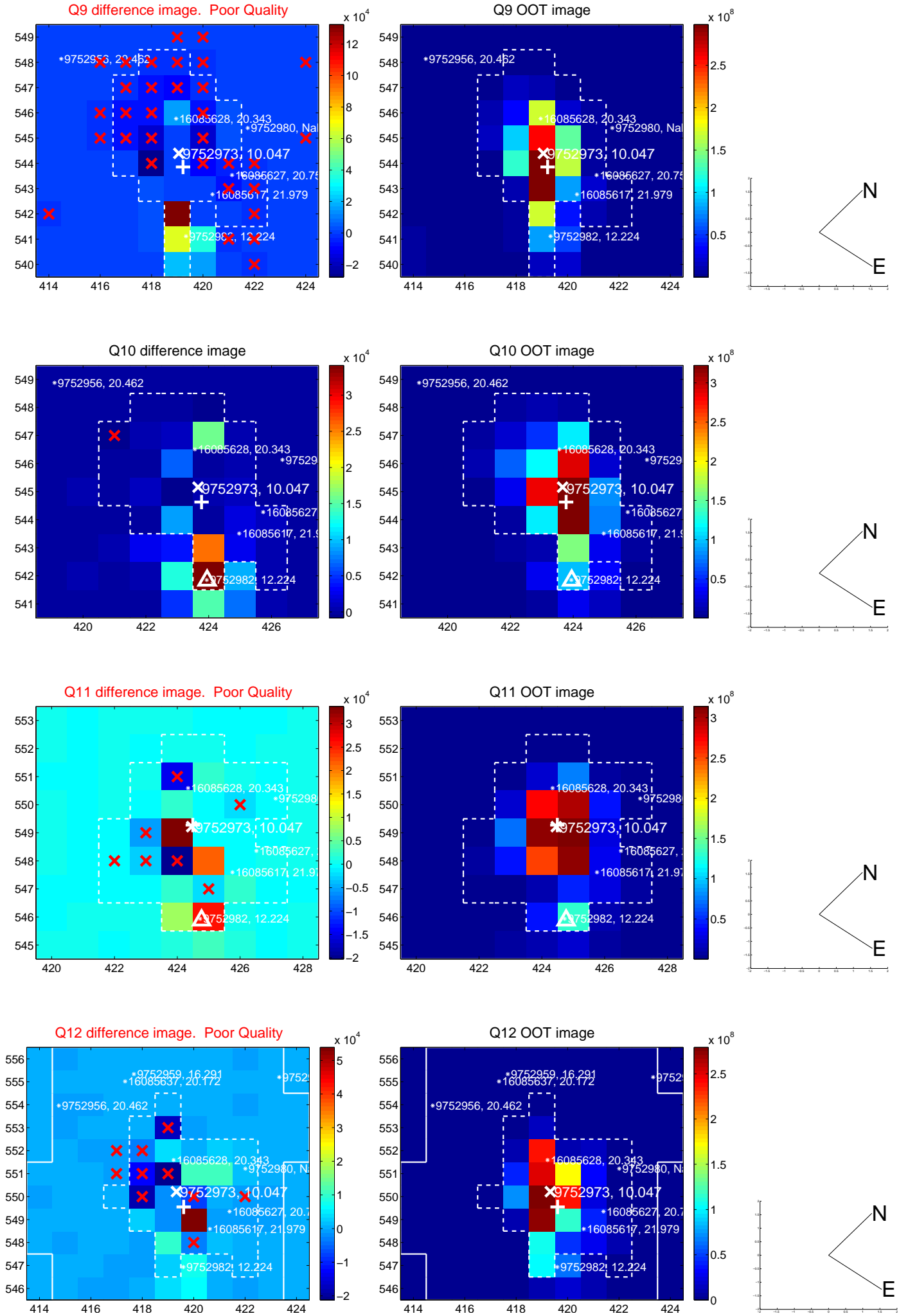
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



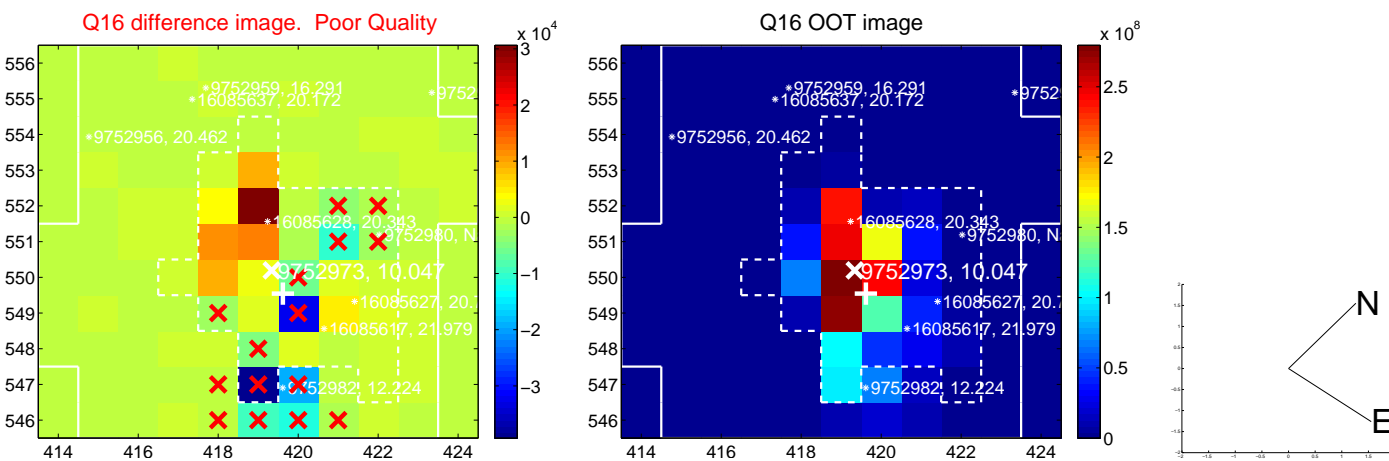
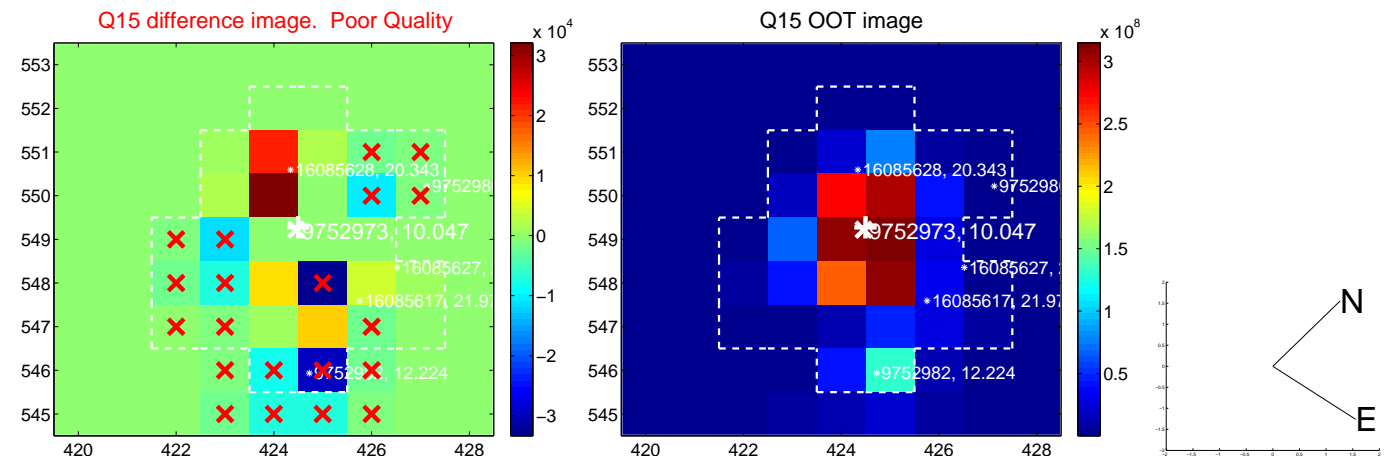
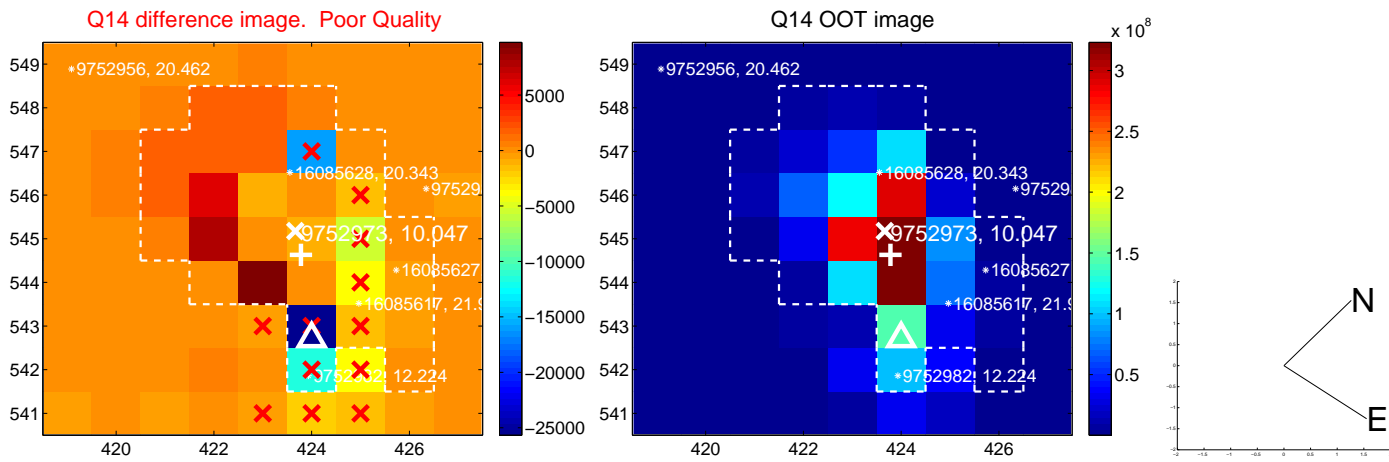
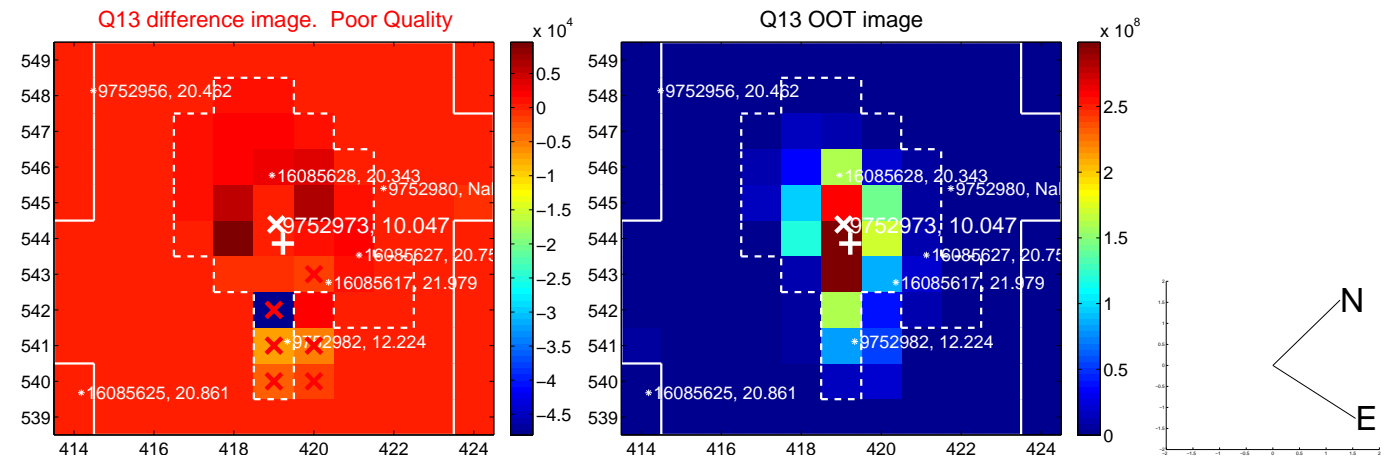
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



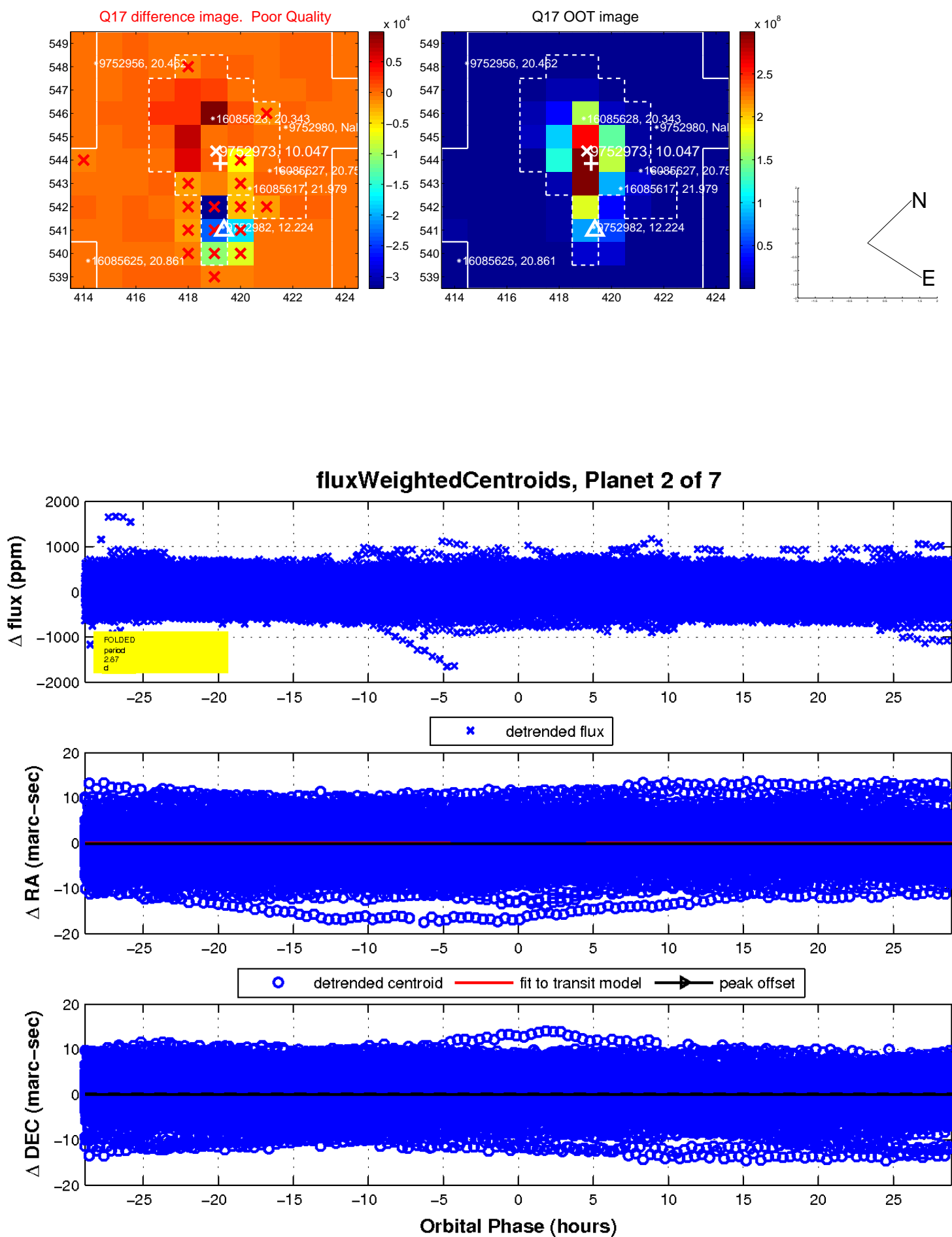
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



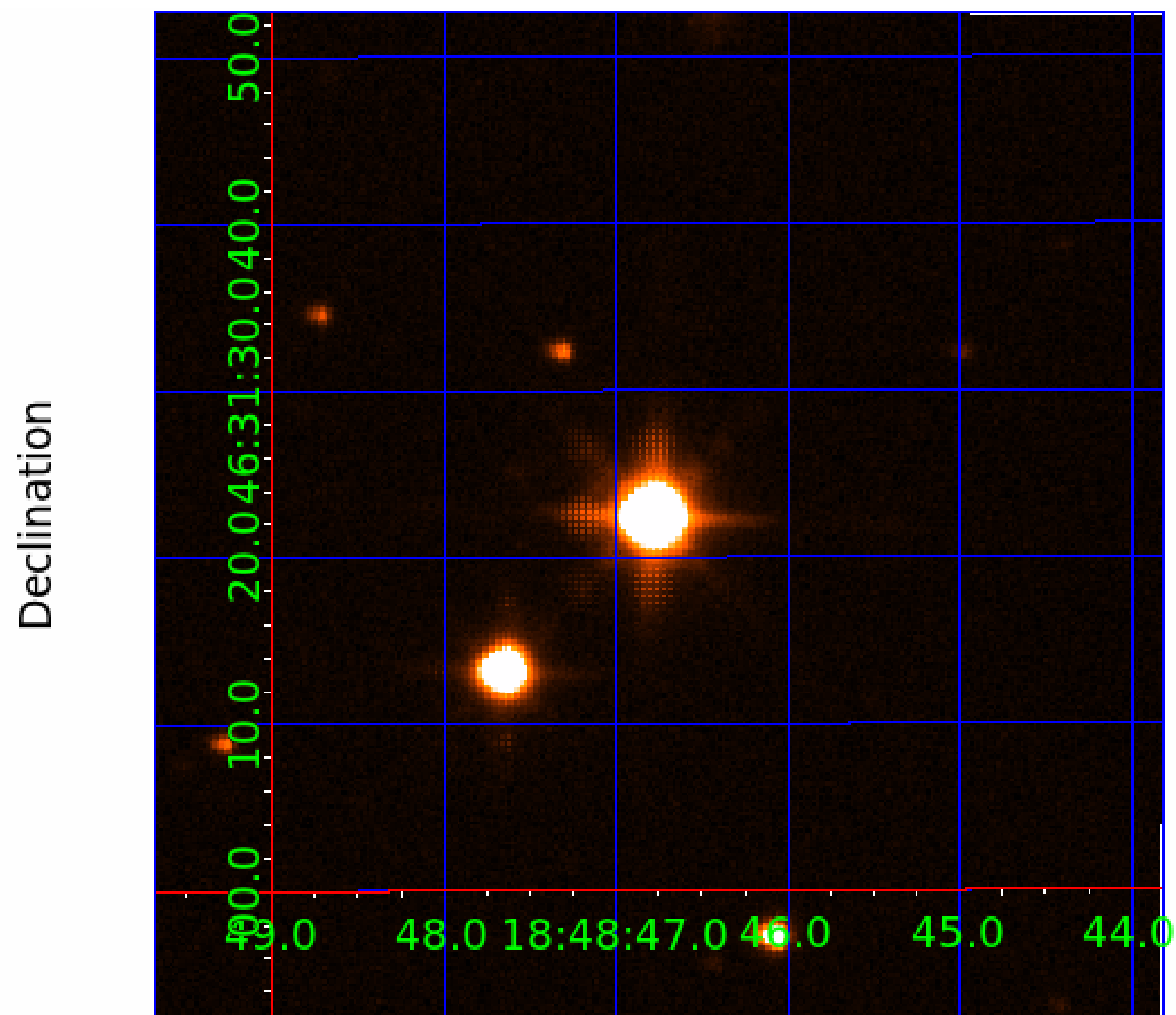
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009752973

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})
009752973-01	OBS	3162.01	0.716713	132.048089	56.7	0.637	20.4	58.0	1.17	6109	1.07	7783.59
009752973-02	OBS	No	2.866679	132.433365	13.3	9.630	9.5	8.2	1.17	6109	0.51	1225.94
009752973-03	OBS	No	422.778462	236.389029	101.5	7.651	10.6	5.9	1.17	6109	1.40	1.57
009752973-04	OBS	No	2.866379	133.924140	15.7	10.032	9.2	10.5	1.17	6109	0.57	1226.11
009752973-05	OBS	No	32.888072	153.795656	57.2	3.630	13.8	4.6	1.17	6109	1.03	47.38
009752973-06	OBS	No	49.900710	163.023818	65.4	18.739	11.2	4.5	1.17	6109	1.01	27.18
009752973-07	OBS	No	61.516324	185.532040	106.4	3.000	10.5	-1.0	1.17	6109	1.22	20.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—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 009752973-03

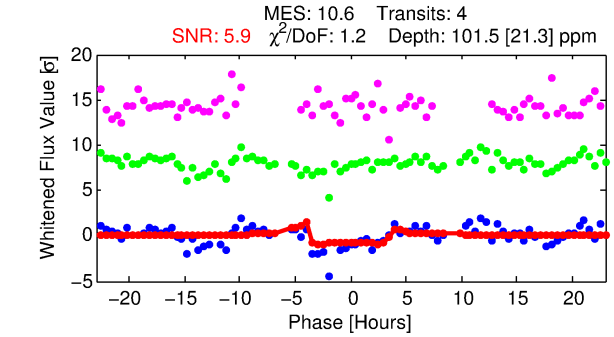
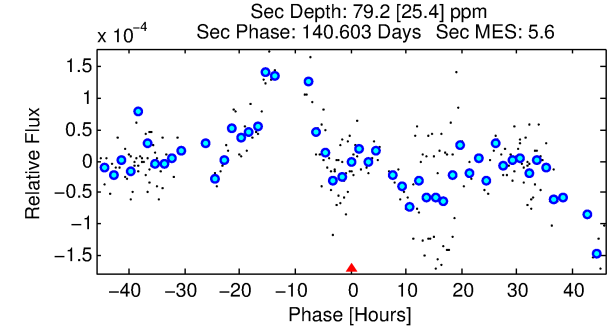
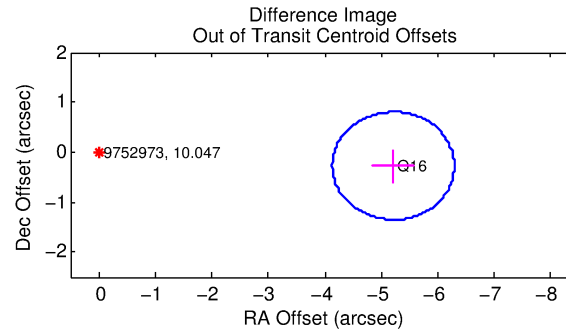
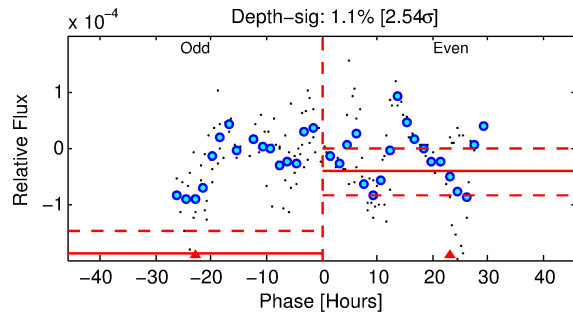
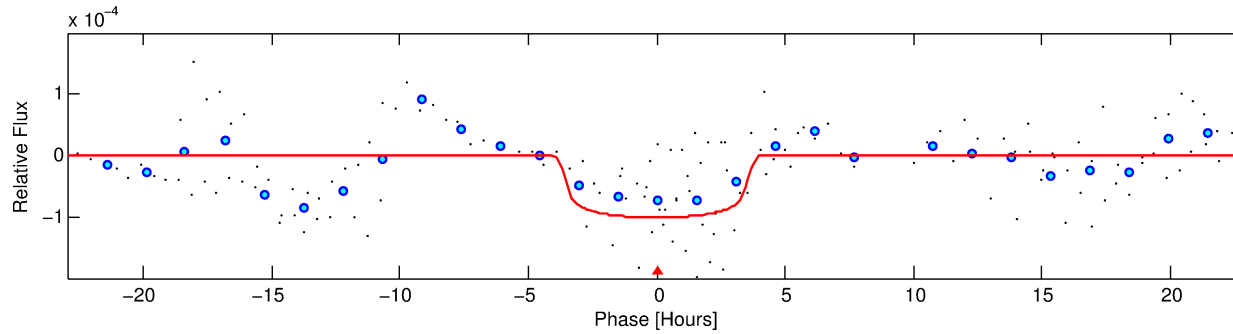
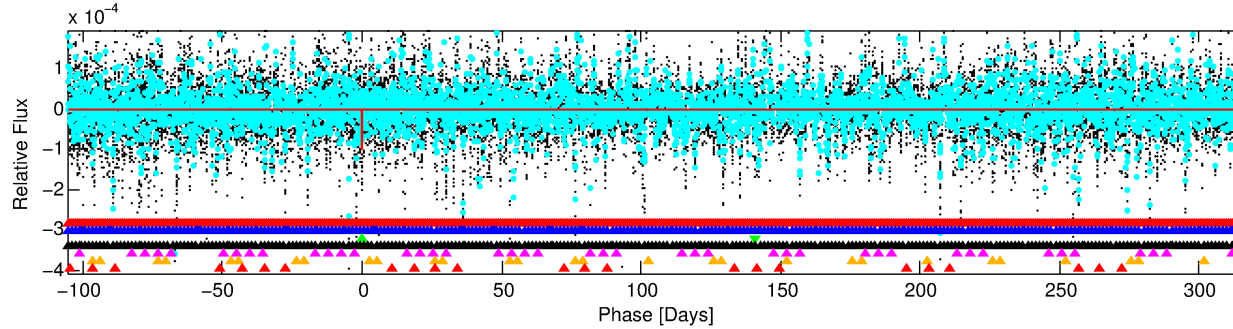
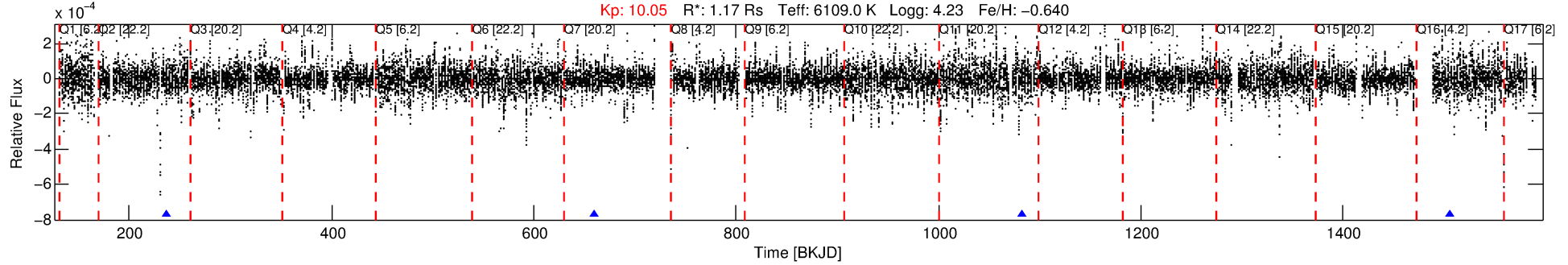
No Significant Match Found

DV One-Page Summary

KIC: 9752973 Candidate: 3 of 7 Period: 422.778 d

KOI: K03162 Corr: No Ephemeris Match

Kp: 10.05 R*: 1.17 Rs Teff: 6109.0 K Logg: 4.23 Fe/H: -0.640



DV Fit Results:

Period = 422.77846 [0.00744] d
Epoch = 236.3890 [0.0141] BKJD
Rp/R* = 0.0110 [0.0028]
a/R* = 180.67 [219.84]
b = 0.92 [0.22]
Seff = 1.57 [0.63]
Teq = 286 [29] K
Rp = 1.40 [0.47] Re
a = 1.0447 [0.2426] AU
Ag = 24142.42 [17288.16] [1.40σ]
Teff = 5504 [841] K [6.20σ]

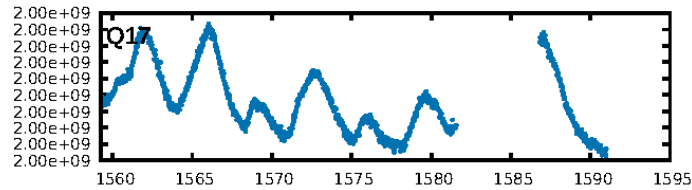
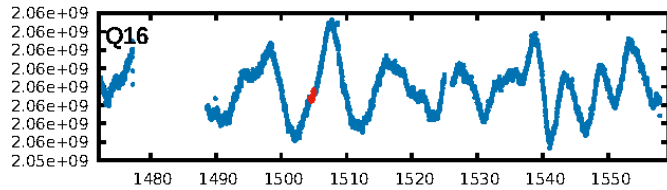
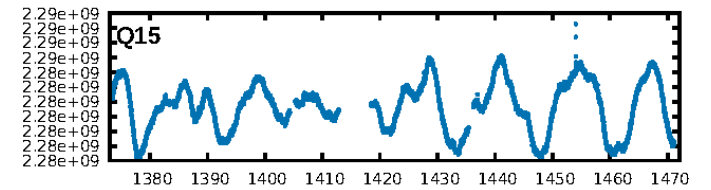
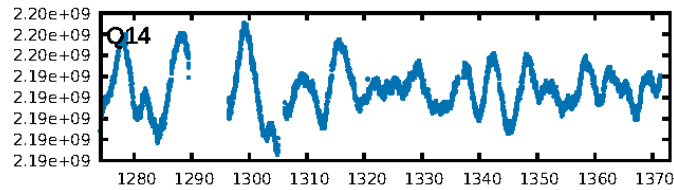
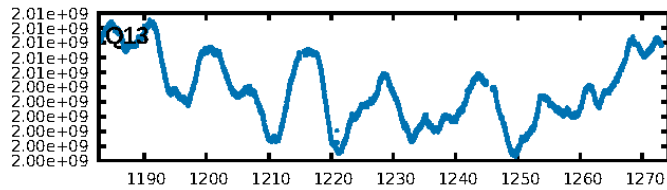
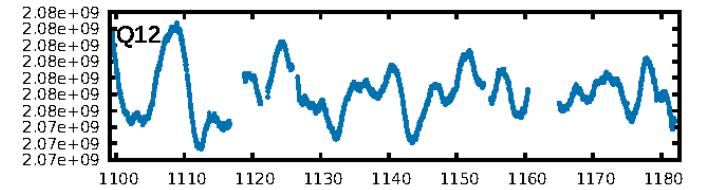
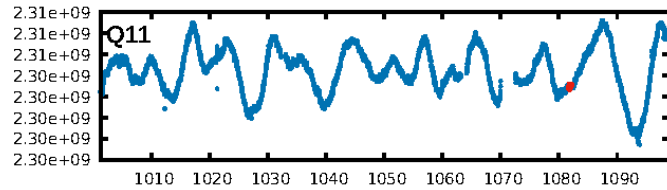
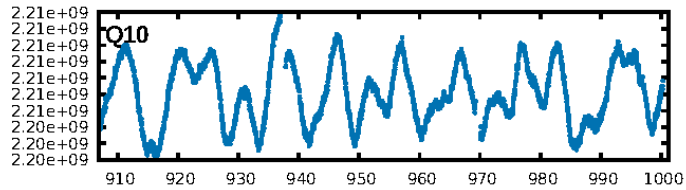
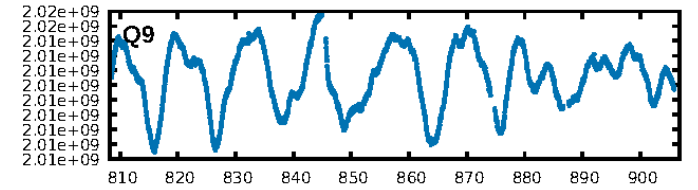
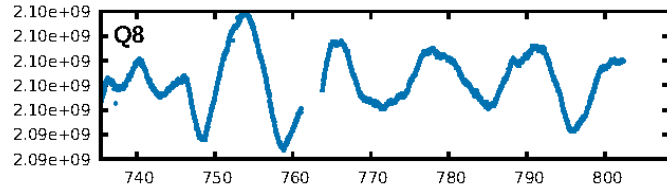
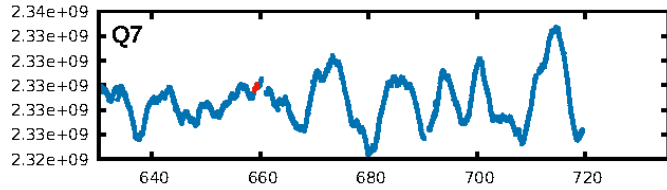
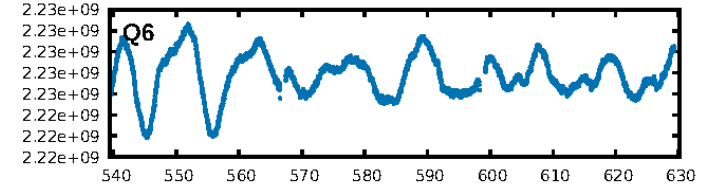
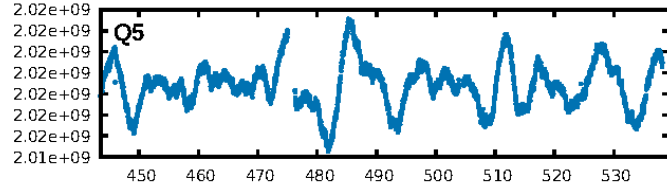
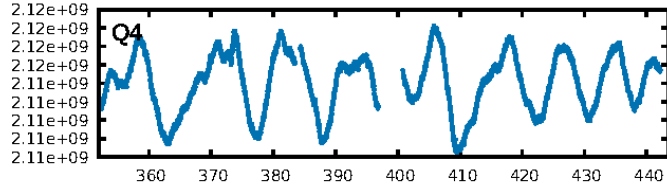
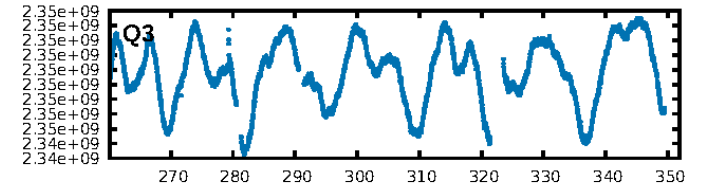
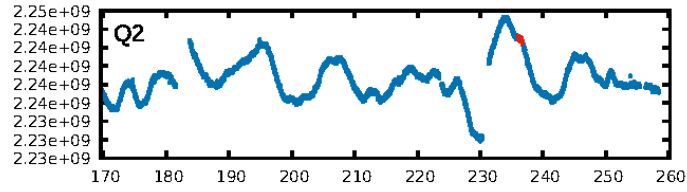
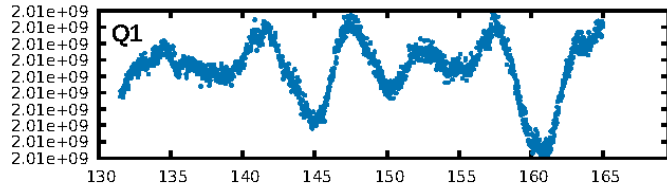
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1054.97σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.046
Centroid-sig: 51.4%
Centroid-so: 6.663 arcsec [1.26σ]
OotOffset-rm: 5.217 arcsec [14.50σ]
KicOffset-rm: 3.094 arcsec [8.87σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/4]

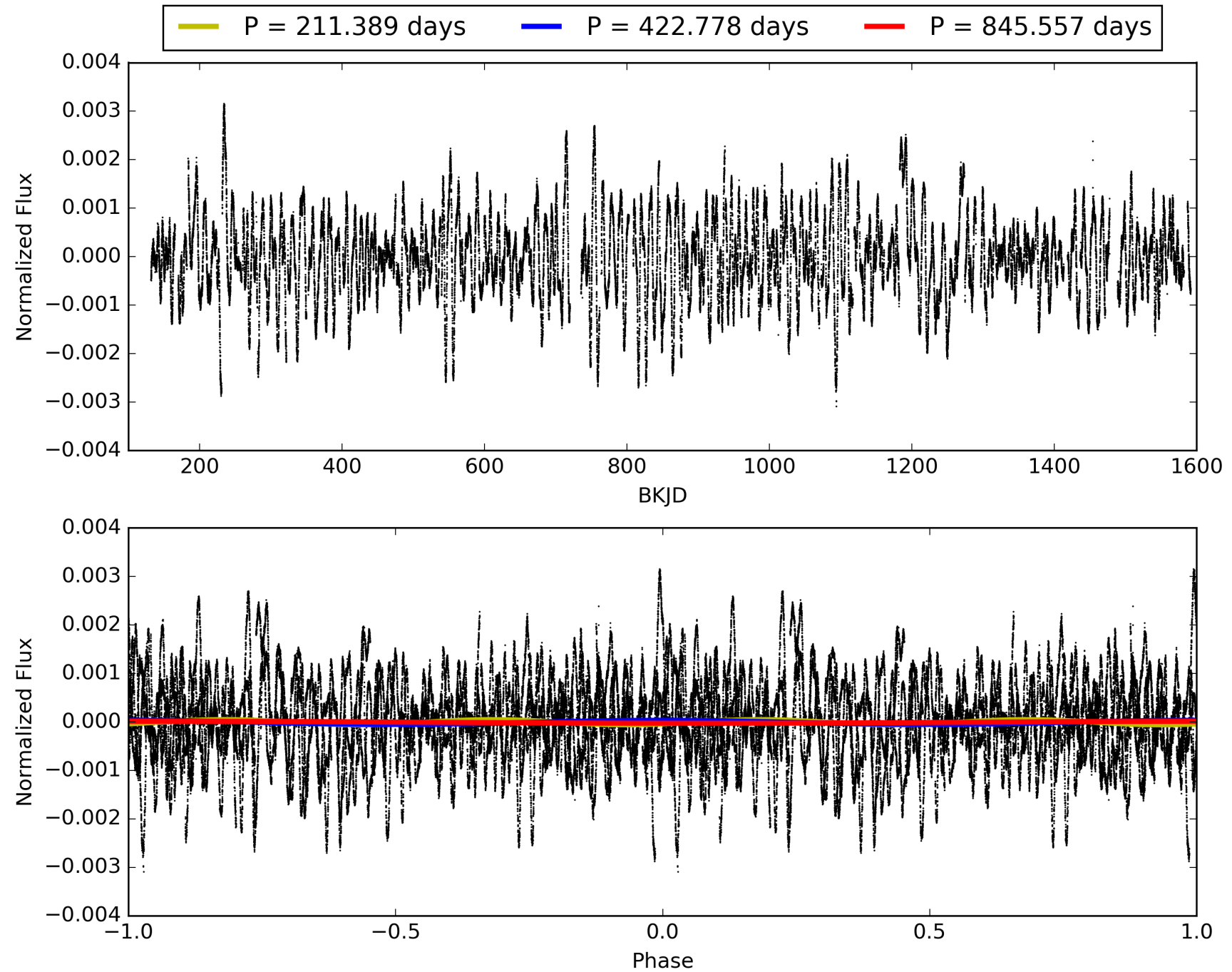
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:42:45 Z

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

TCE 009752973-03, PDC Light Curves

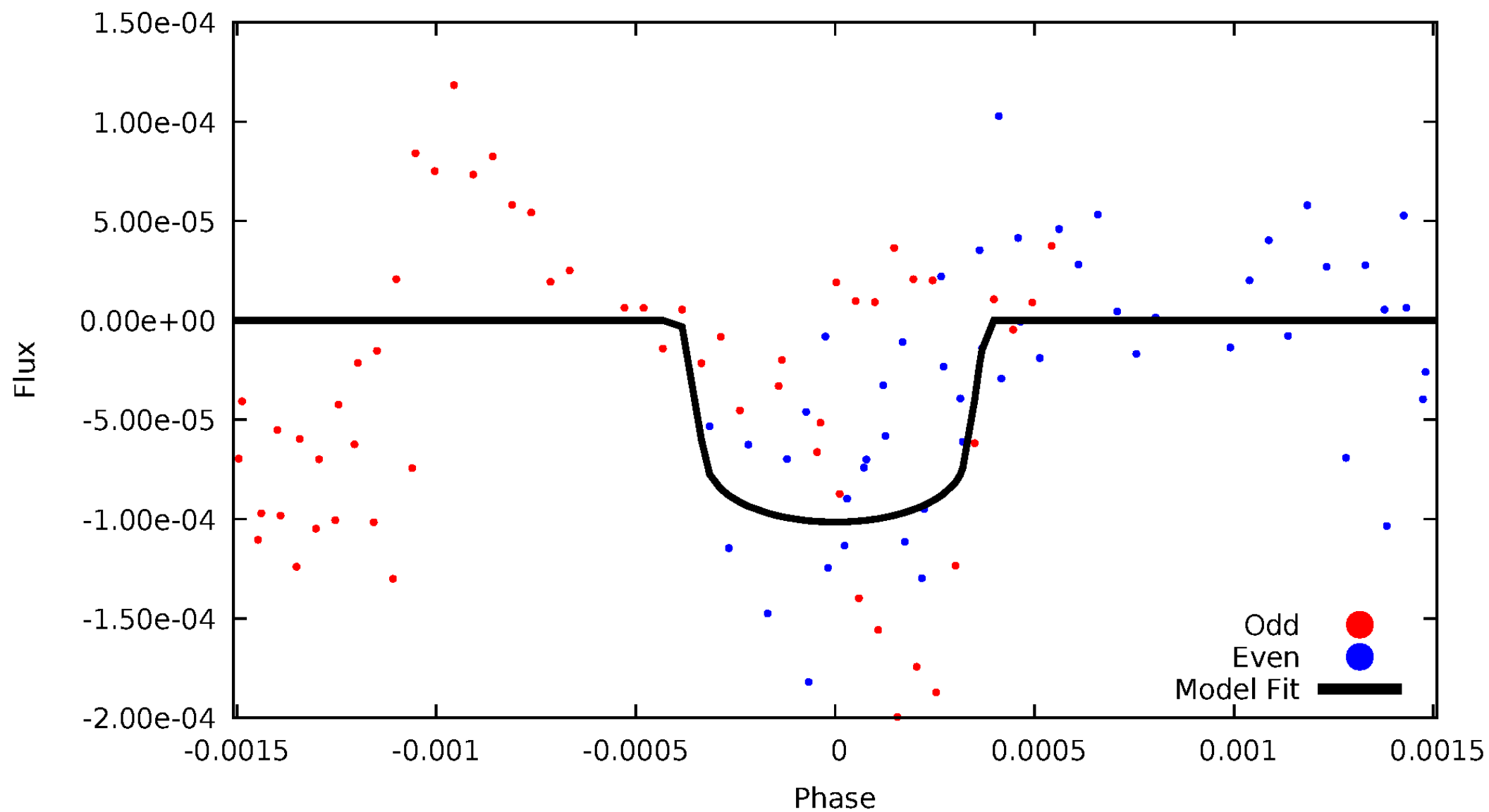


TCE 009752973-03



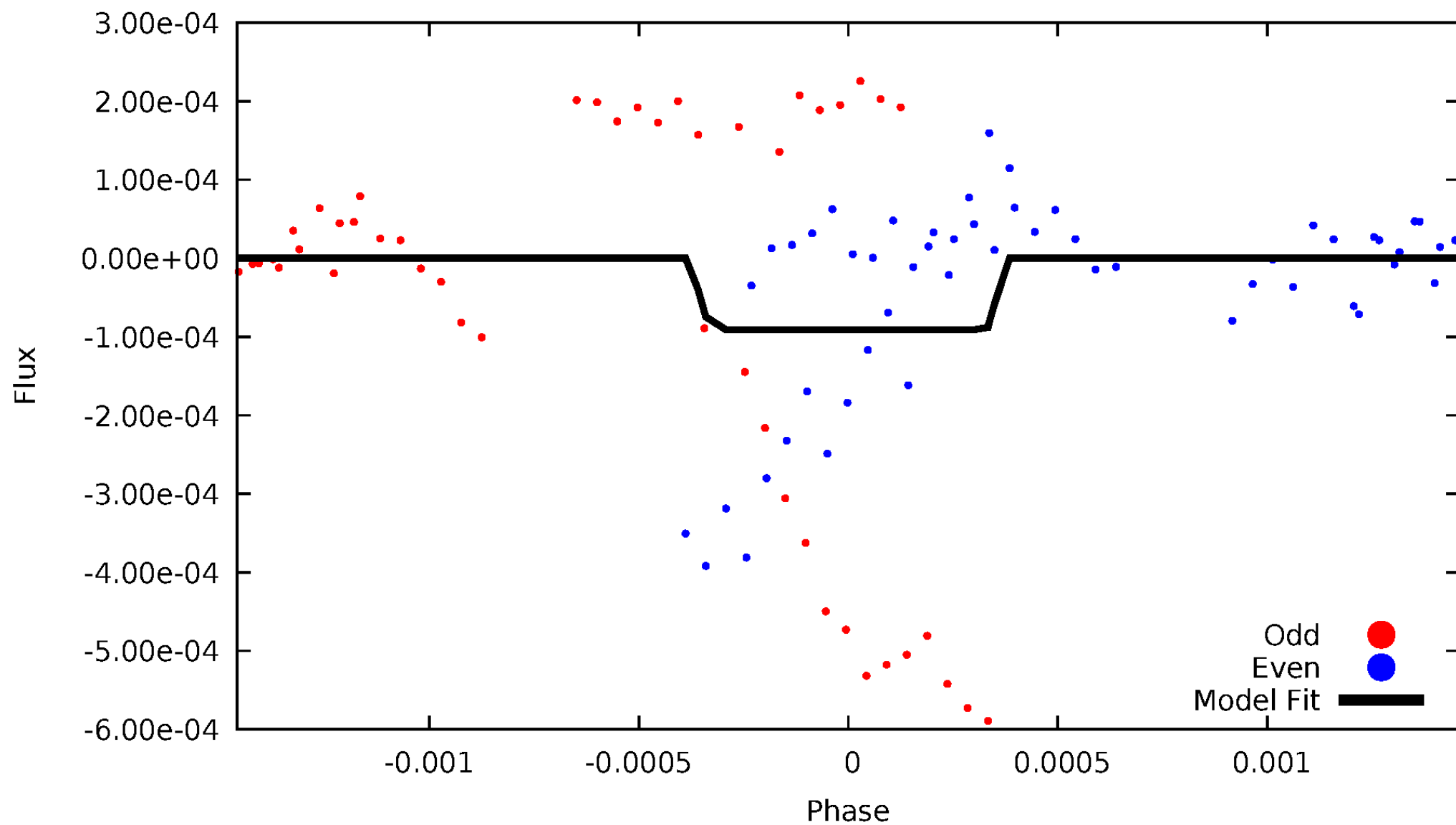
DV Odd/Even

TCE 009752973-03



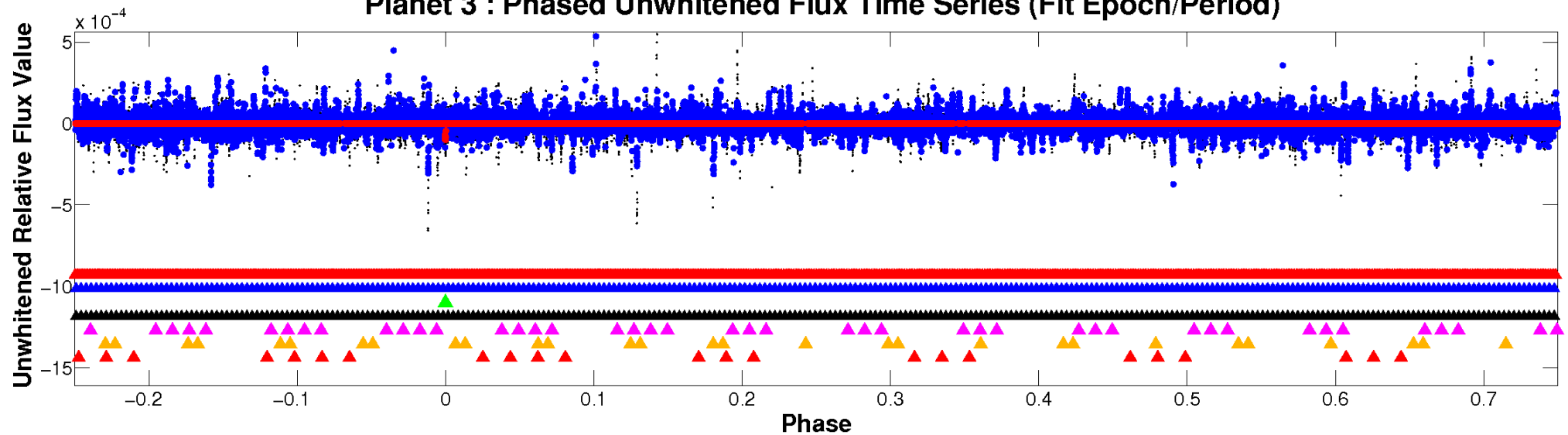
ALT Odd/Even

TCE 009752973-03

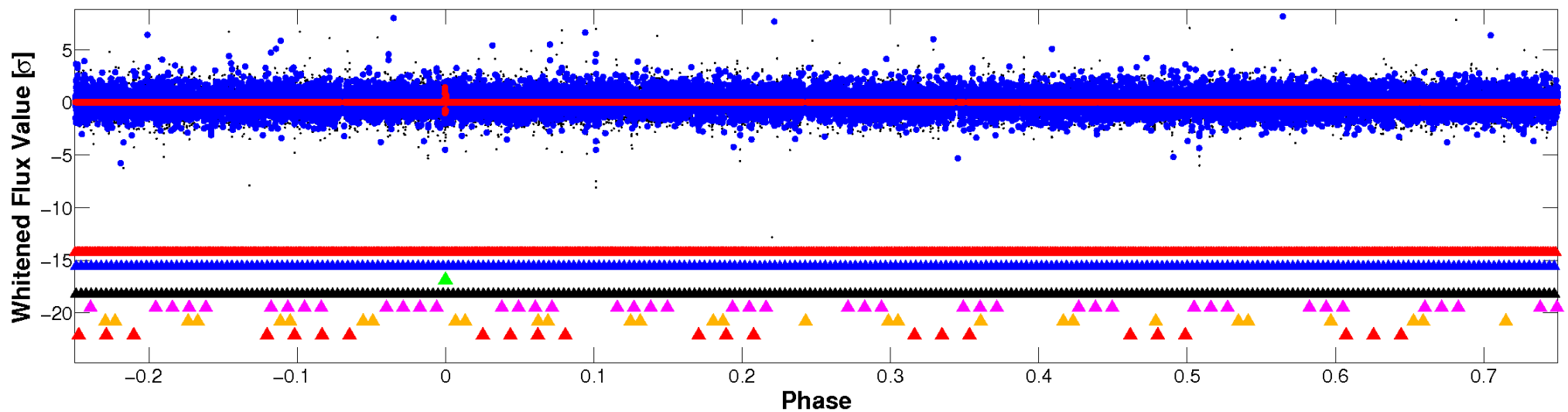


Non-Whitened Vs. Whitened Light Curve

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

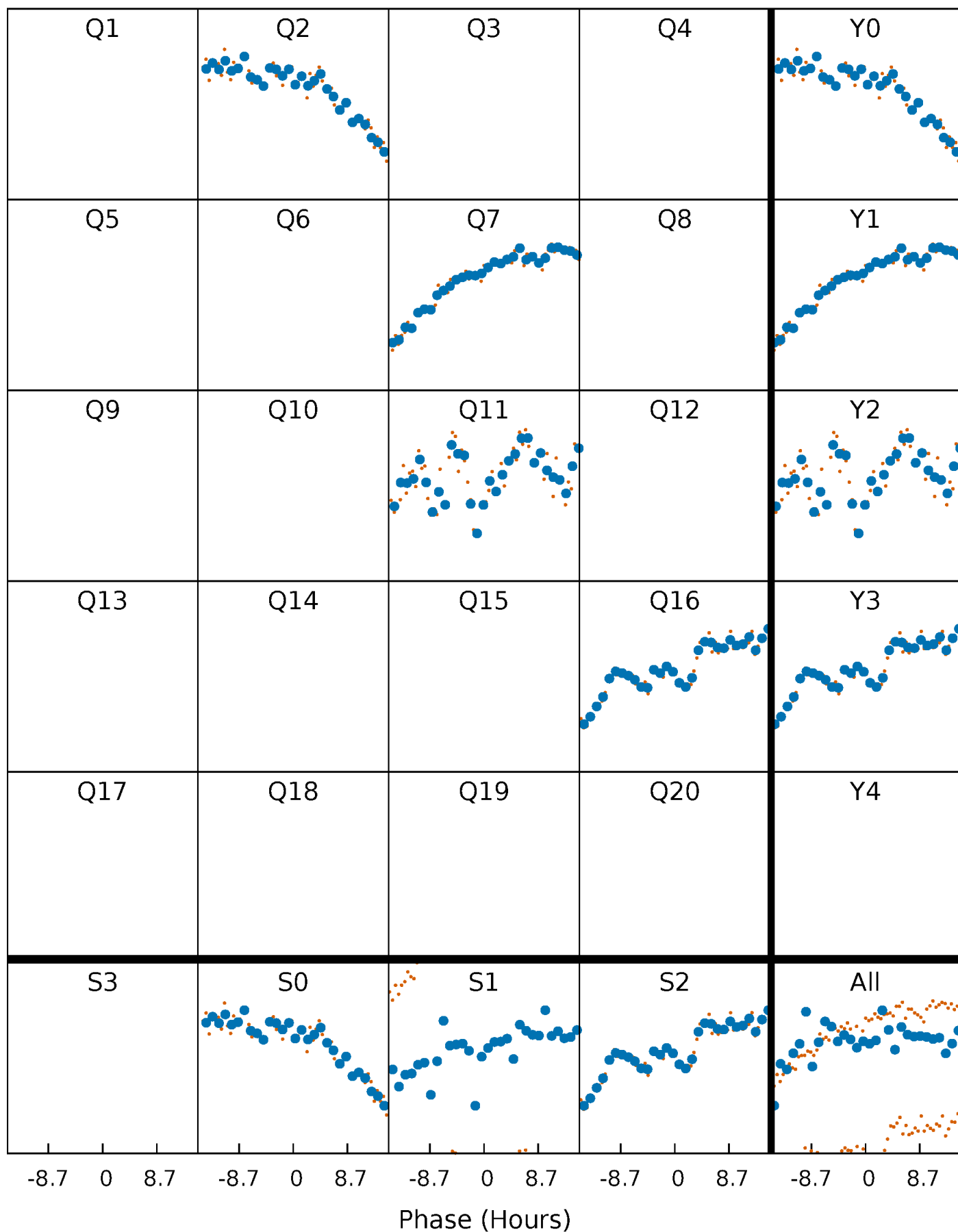


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



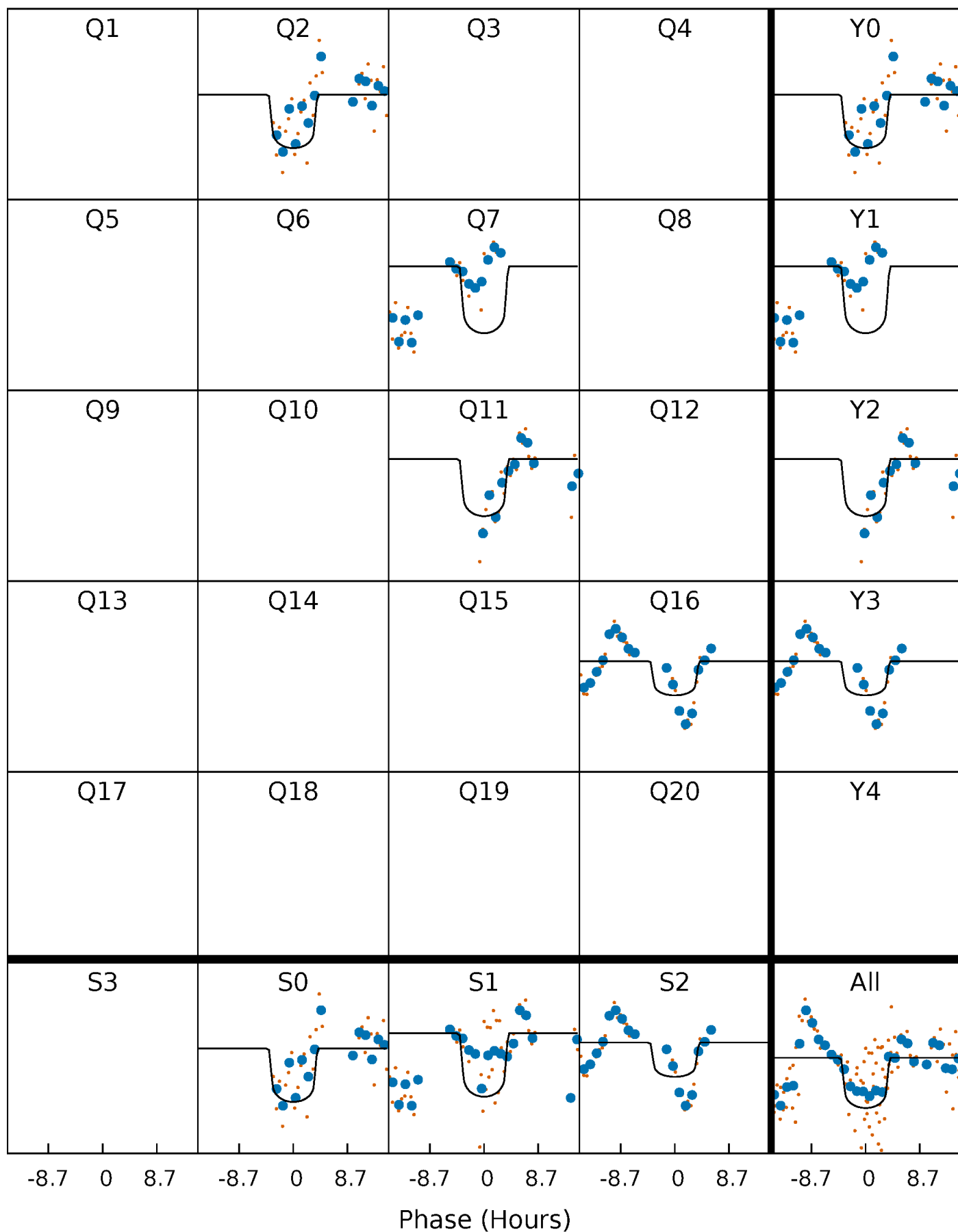
PDC Quarter-Phased Transit Curves

TCE 009752973-03 $P=422.778462$ Days $T_0=236.389029$ (BKJD)



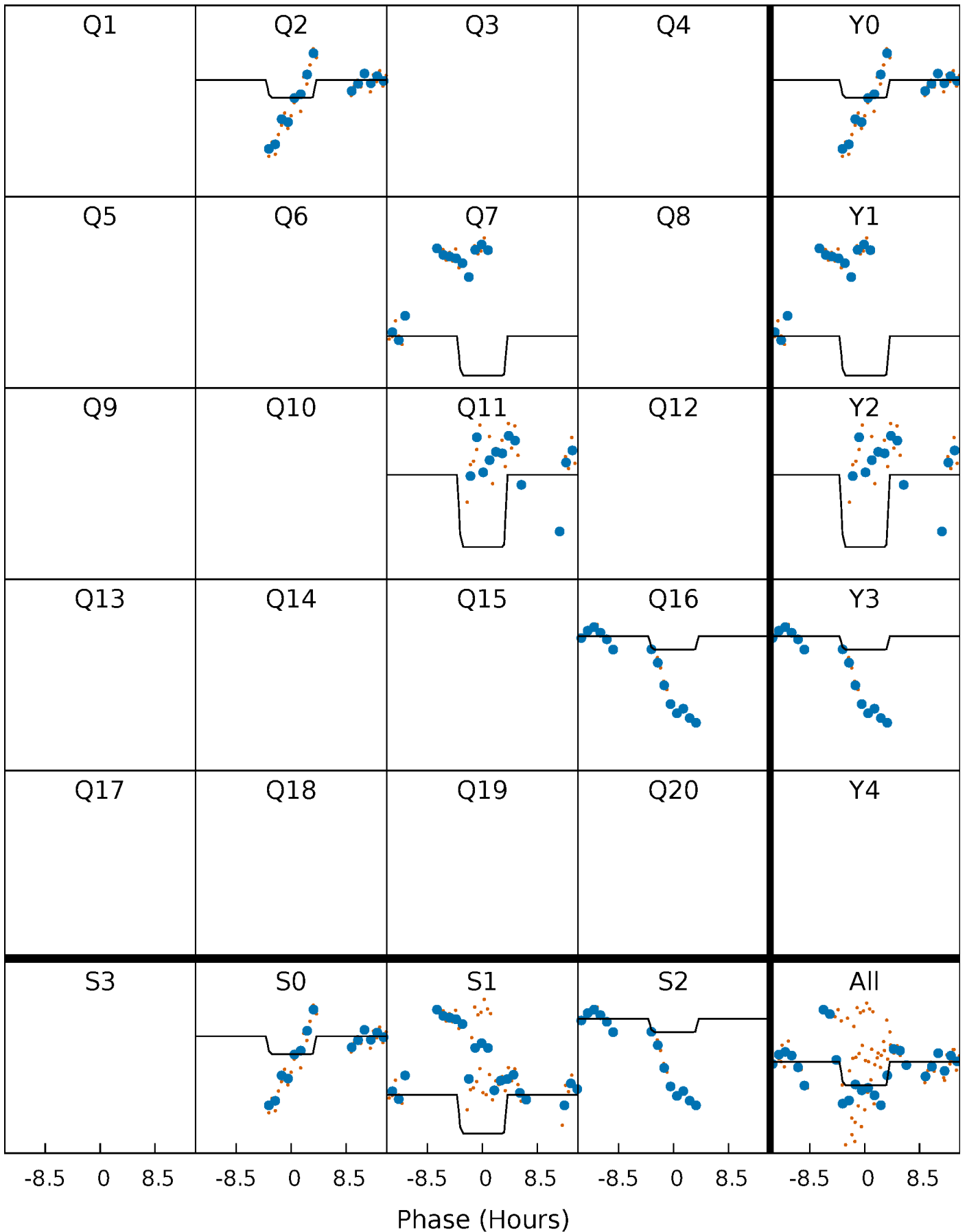
DV Quarter-Phased Transit Curves

TCE 009752973-03 $P=422.778462$ Days $T_0=236.389029$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

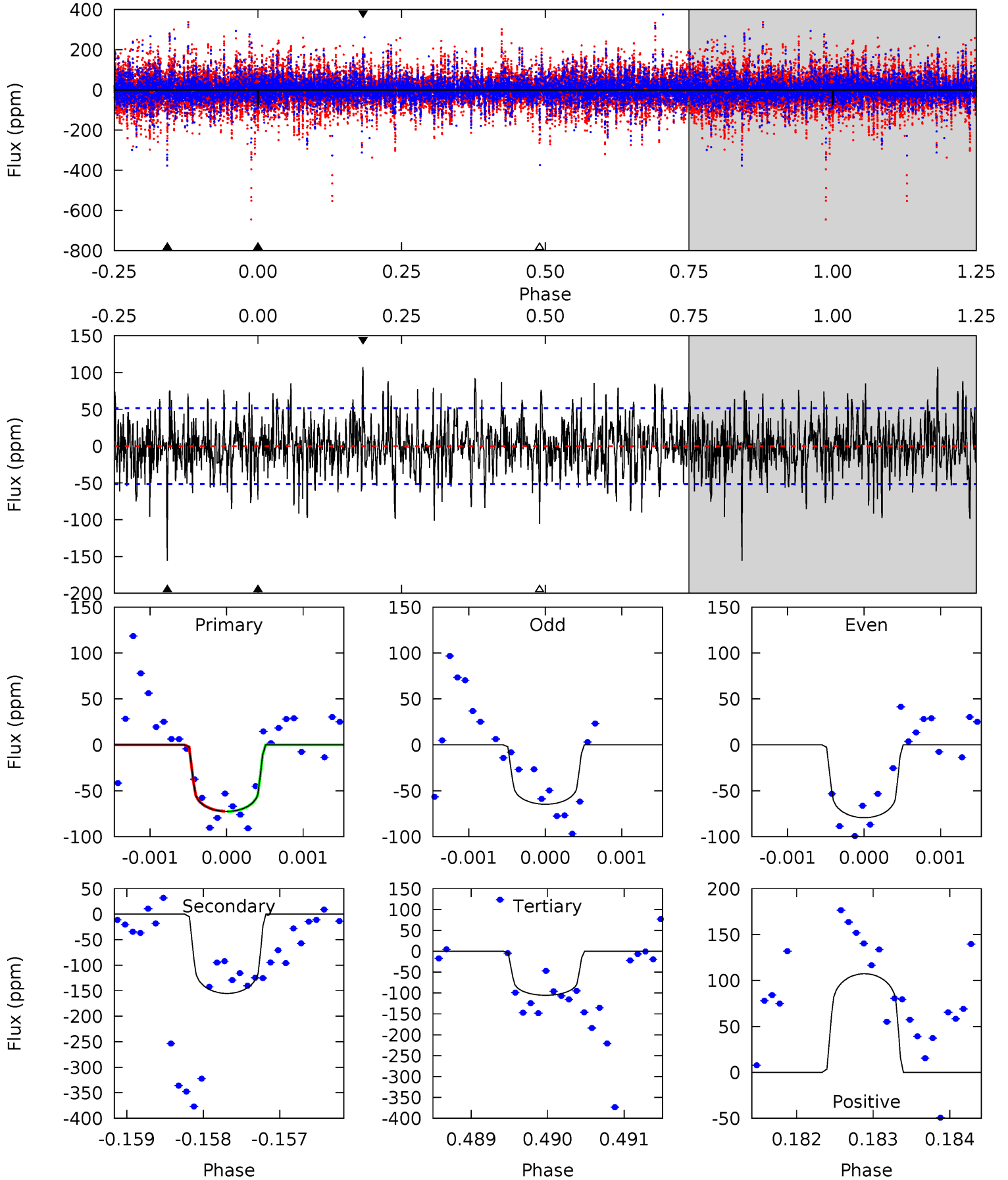
TCE 009752973-03 $P=422.797601$ Days $T_0=236.420413$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-03, P = 422.778462 Days, E = 236.389029 Days

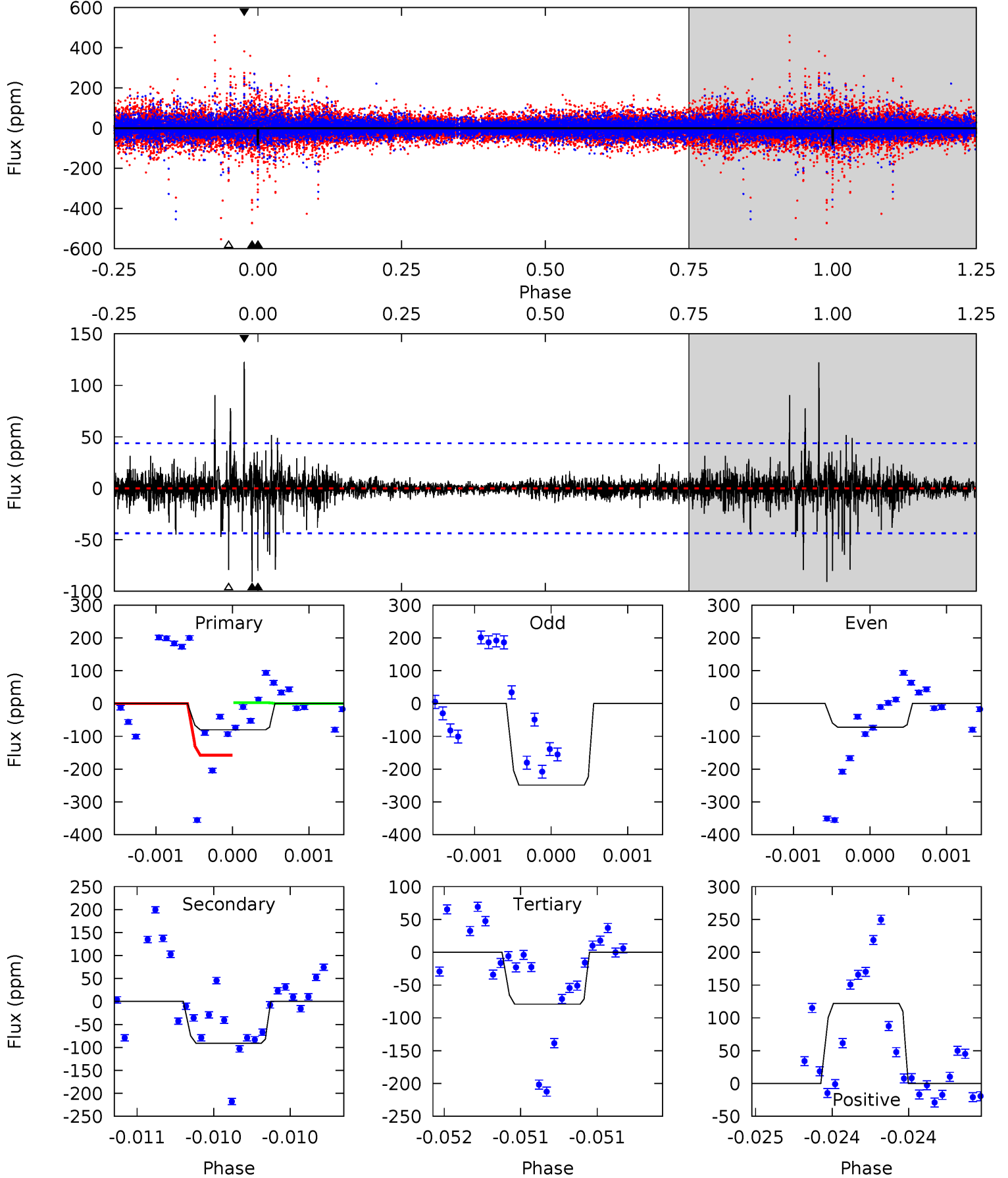
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.73	16.6	11.2	11.4	5.49	3.36	2.98	-3.51	-3.72	5.33	5.13	0.76	0.92	0.41	0.01



Alt Model-Shift Uniqueness Test

009752973-03, P = 422.797601 Days, E = 236.420413 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	11.5	9.99	15.4	5.52	3.39	1.20	0.12	-5.29	1.48	-3.94	10.7	1.34	0.57	9.51



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-155 ± 9	$1.37^{+0.42}_{-0.37}$	394^{+25}_{-27}	6536^{+1173}_{-713}	51870^{+44186}_{-22060}
Alt.	-91 ± 8	$1.22^{+0.38}_{-0.37}$	396^{+24}_{-30}	6071^{+1137}_{-664}	37185^{+40179}_{-15082}

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

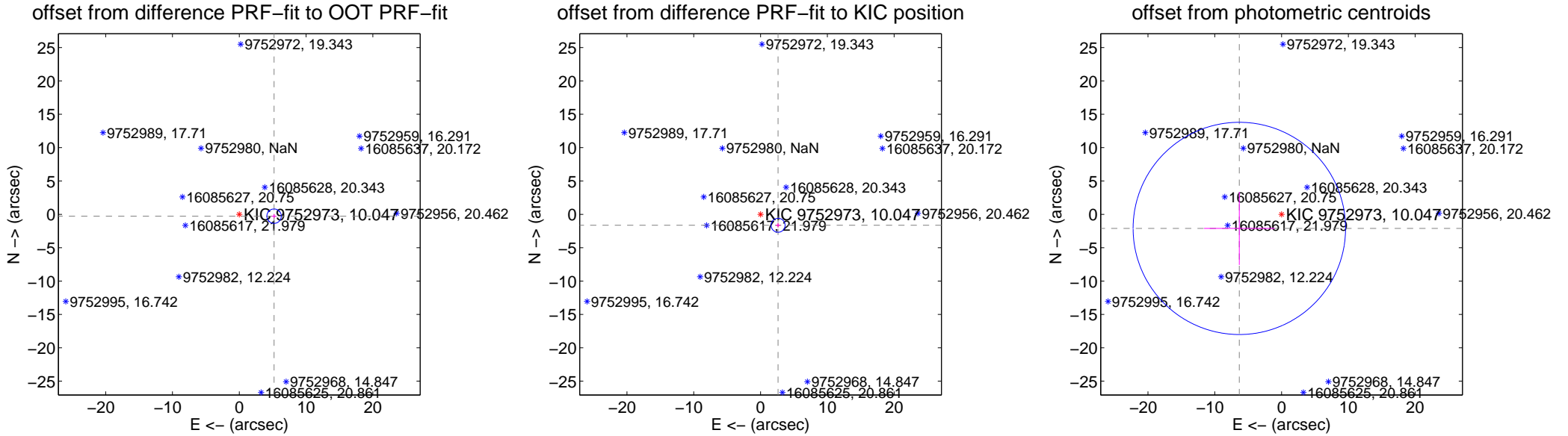
DV Centroid Data

Supplemental centroid analysis for 009752973-03. **Kepler magnitude: 10.05.** Transit SNR 5.86

There are 0 quarters with good PRF difference image offsets

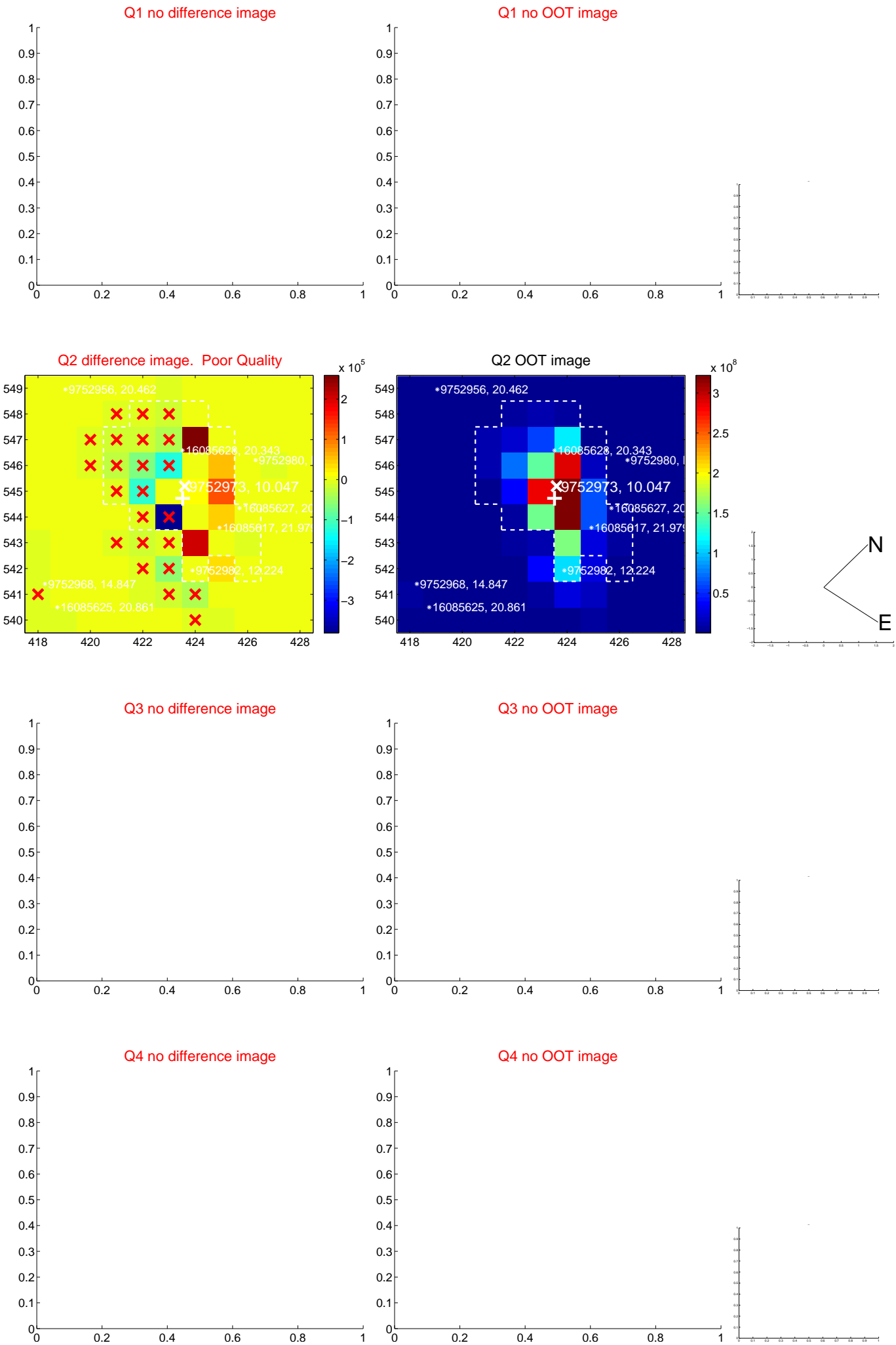
The OOT PRF centroid is offset from the target star catalog position by about 2.92 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.217 ± 0.360	14.50	-5.210 ± 0.360	-0.273 ± 0.319
PRF-fit source offset from KIC position	3.094 ± 0.349	8.87	-2.625 ± 0.360	-1.638 ± 0.319
photometric centroid source offset	6.66 ± 5.30	1.26	6.32 ± 5.28	-2.11 ± 5.48



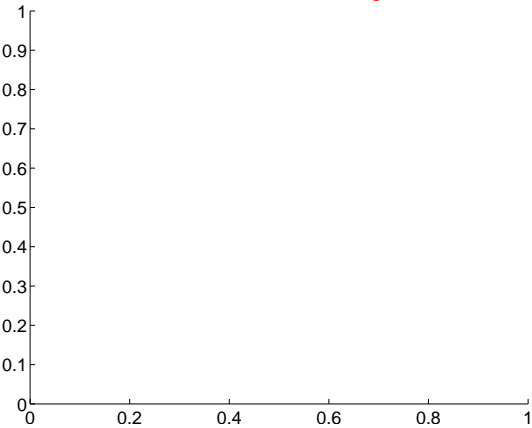
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

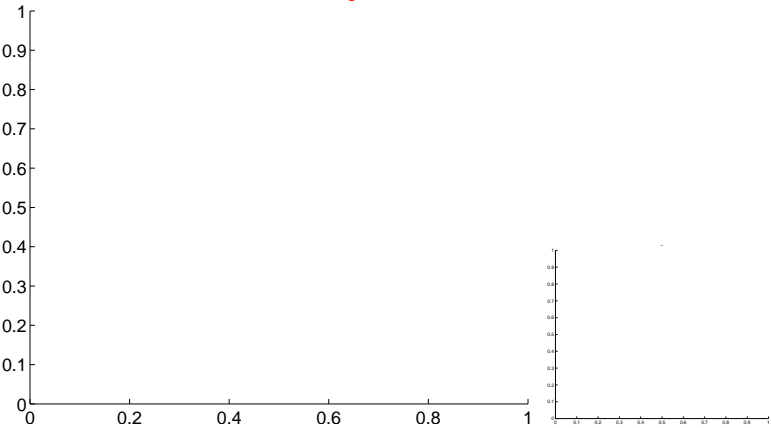


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

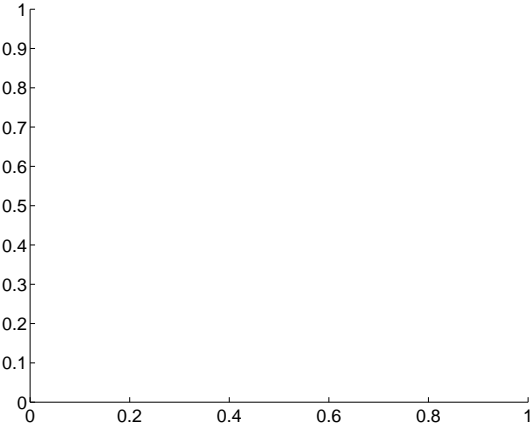
Q5 no difference image



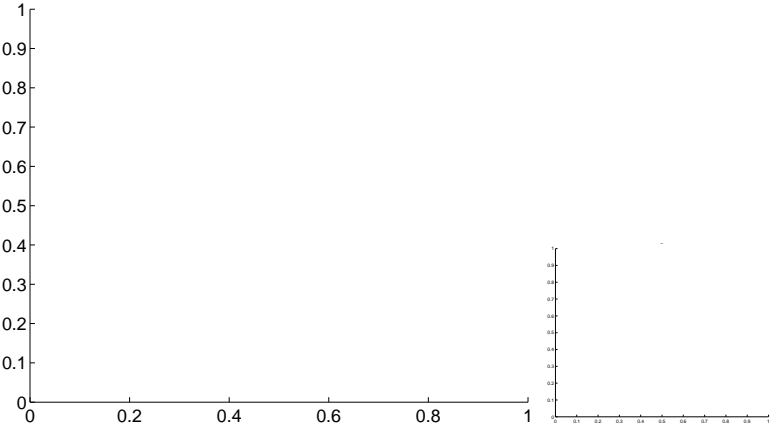
Q5 no OOT image



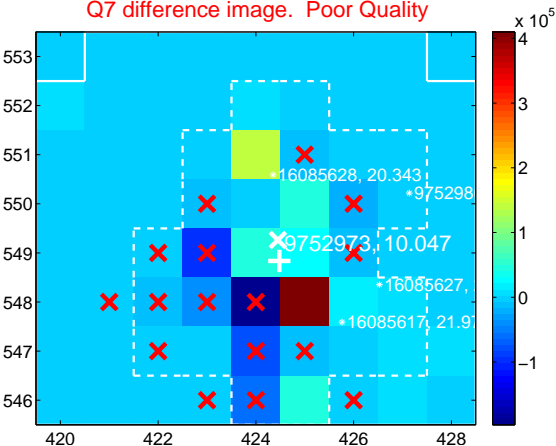
Q6 no difference image



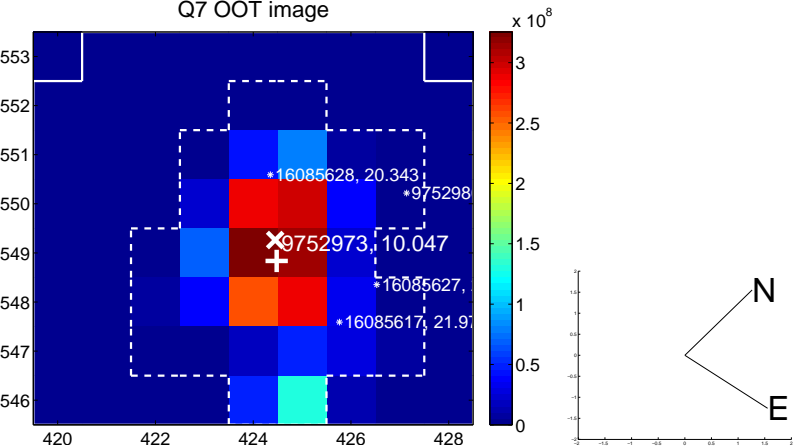
Q6 no OOT image



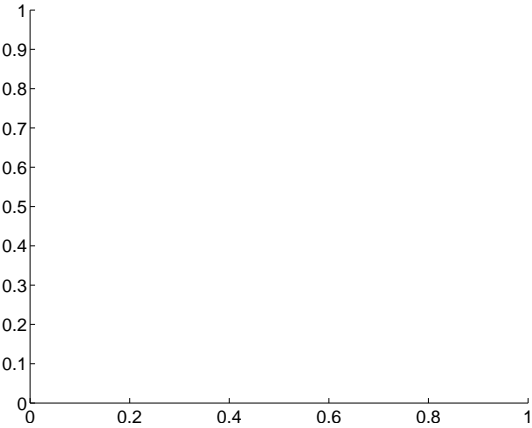
Q7 difference image. Poor Quality



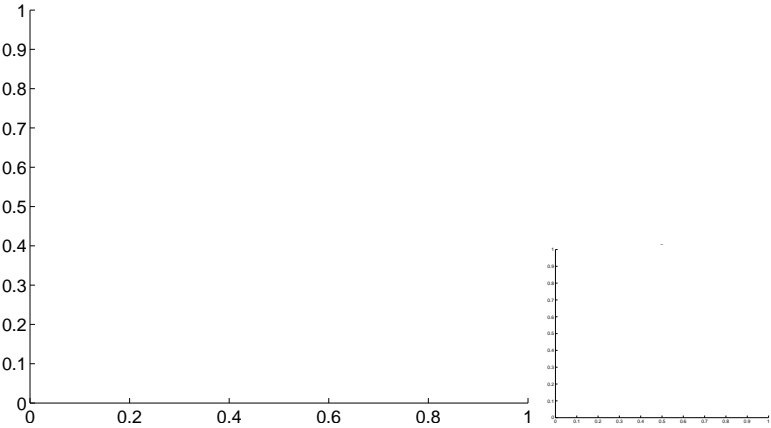
Q7 OOT image



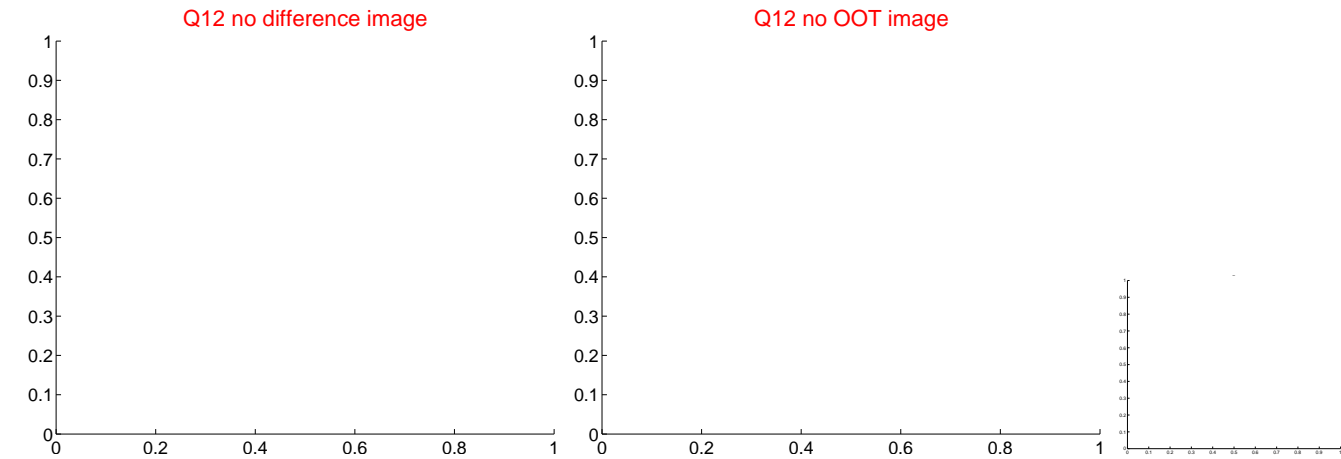
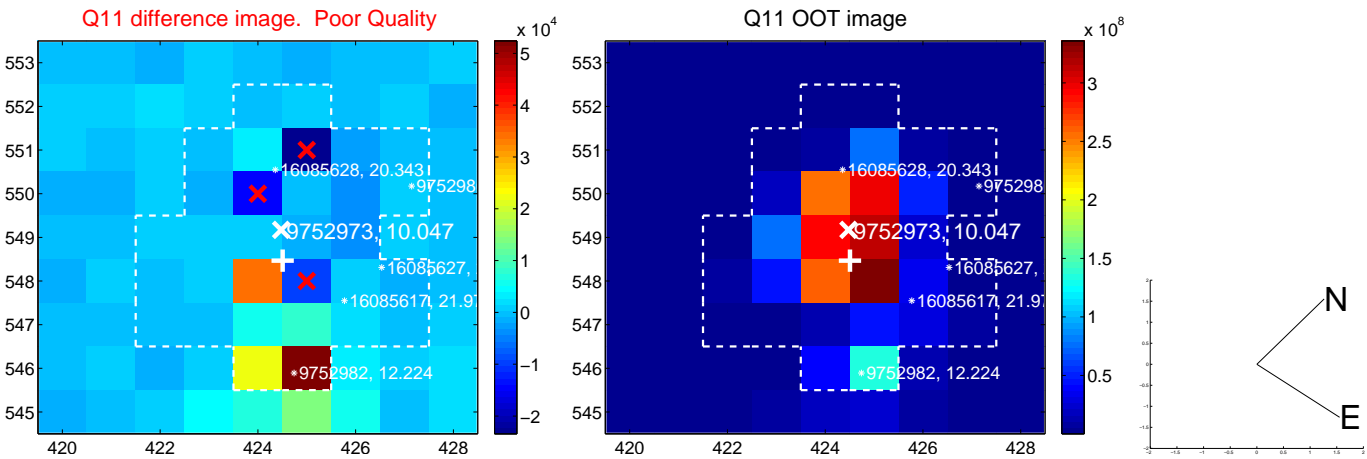
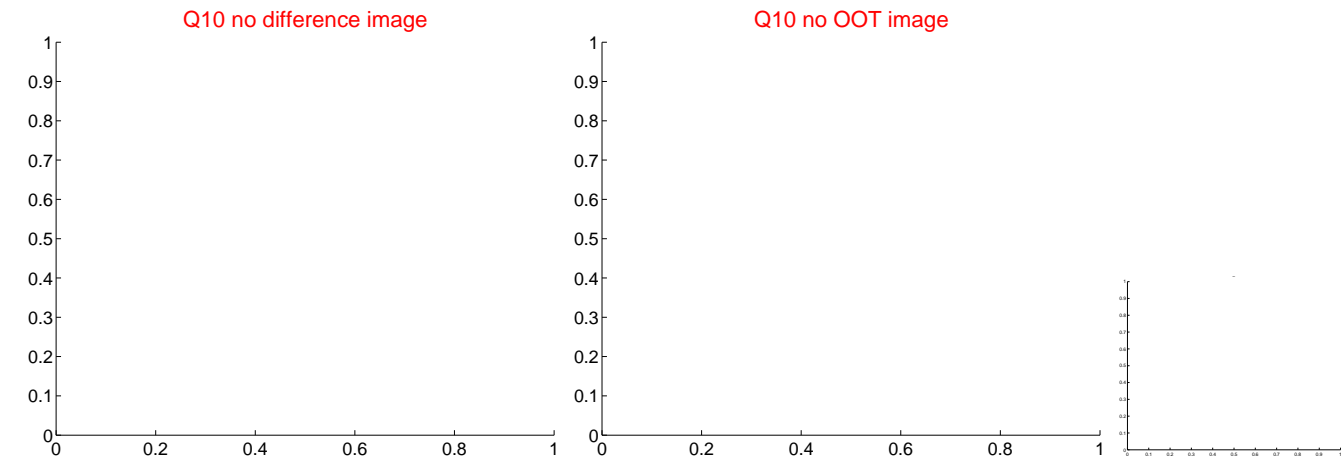
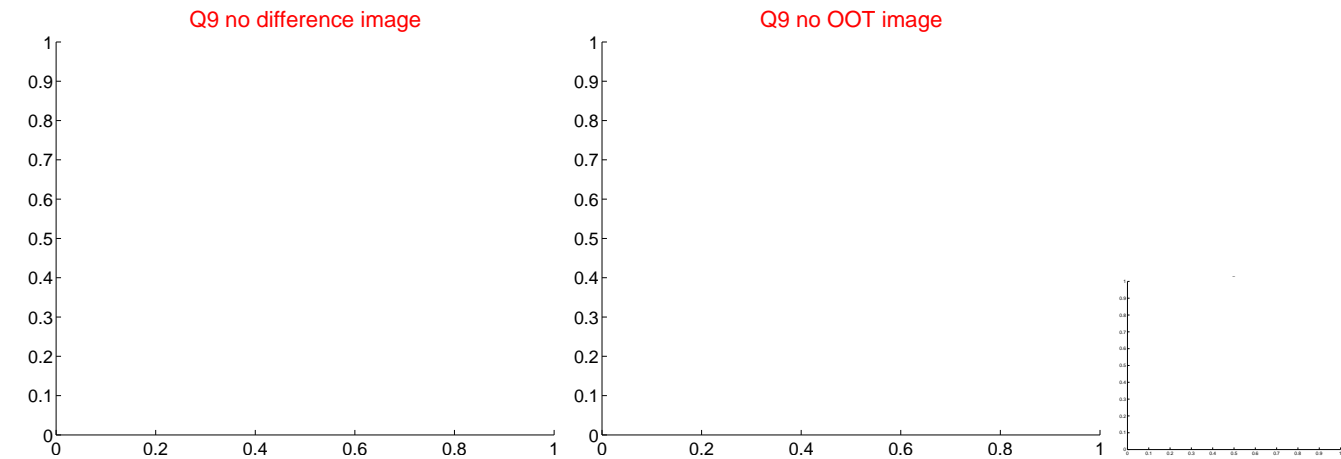
Q8 no difference image



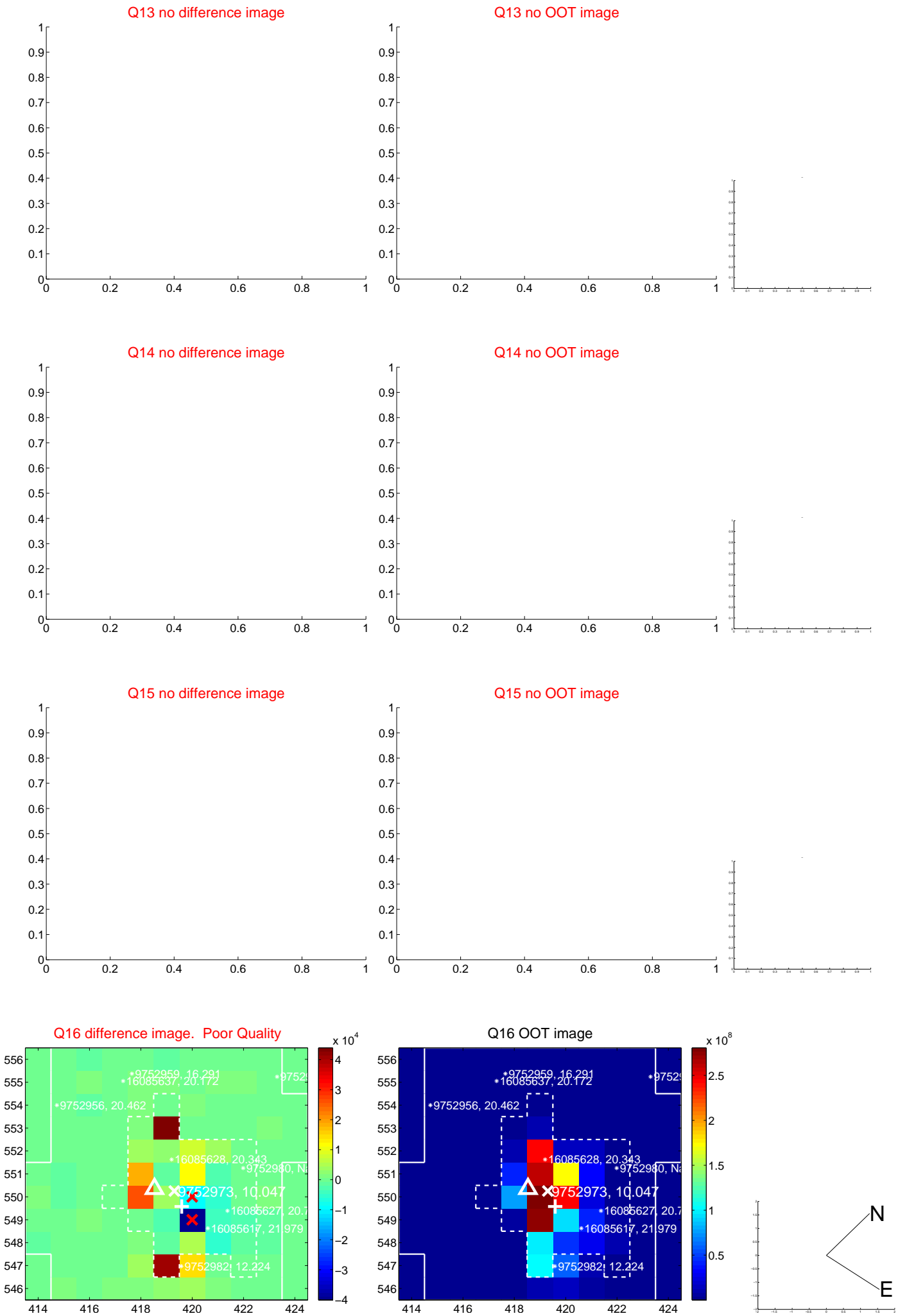
Q8 no OOT image



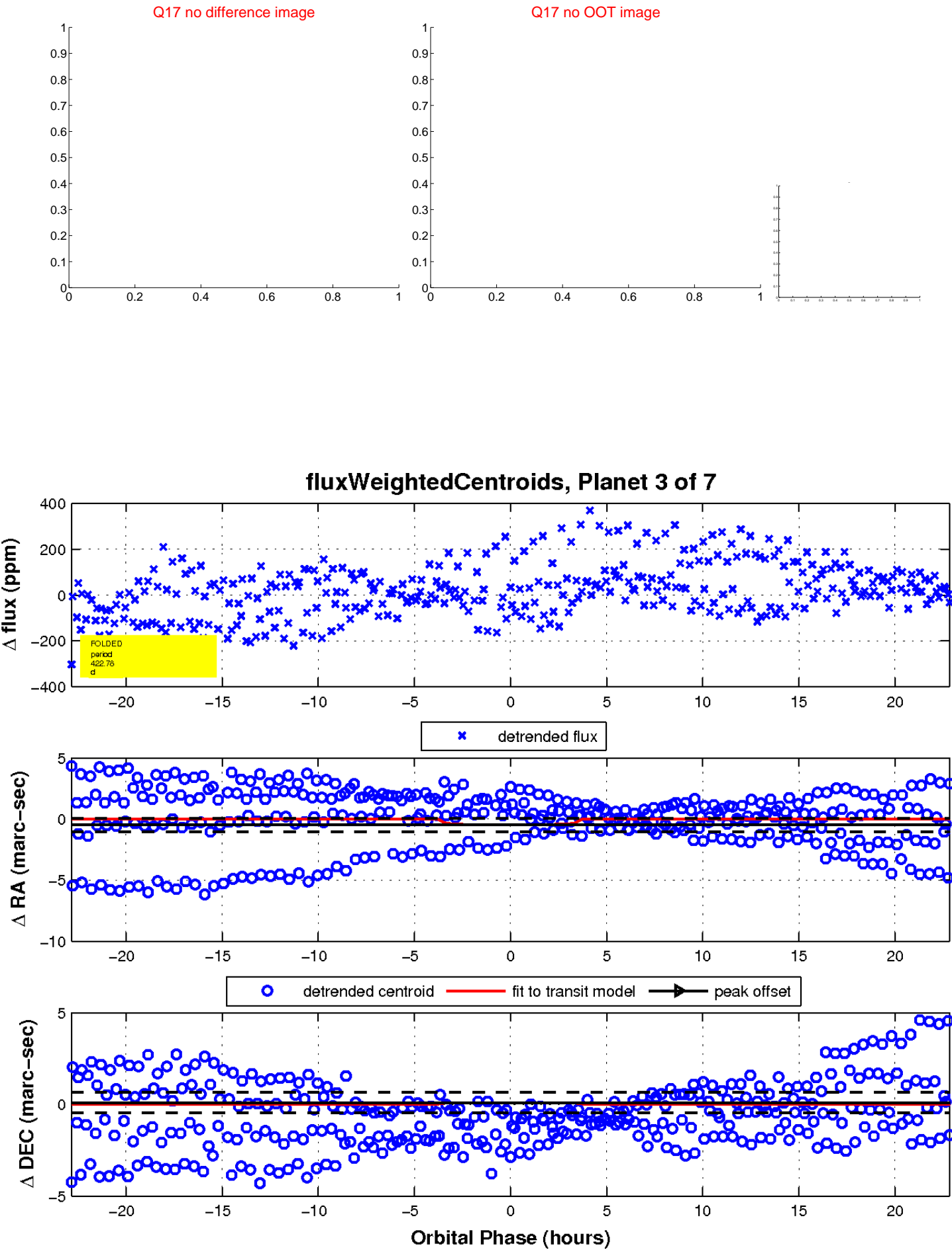
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



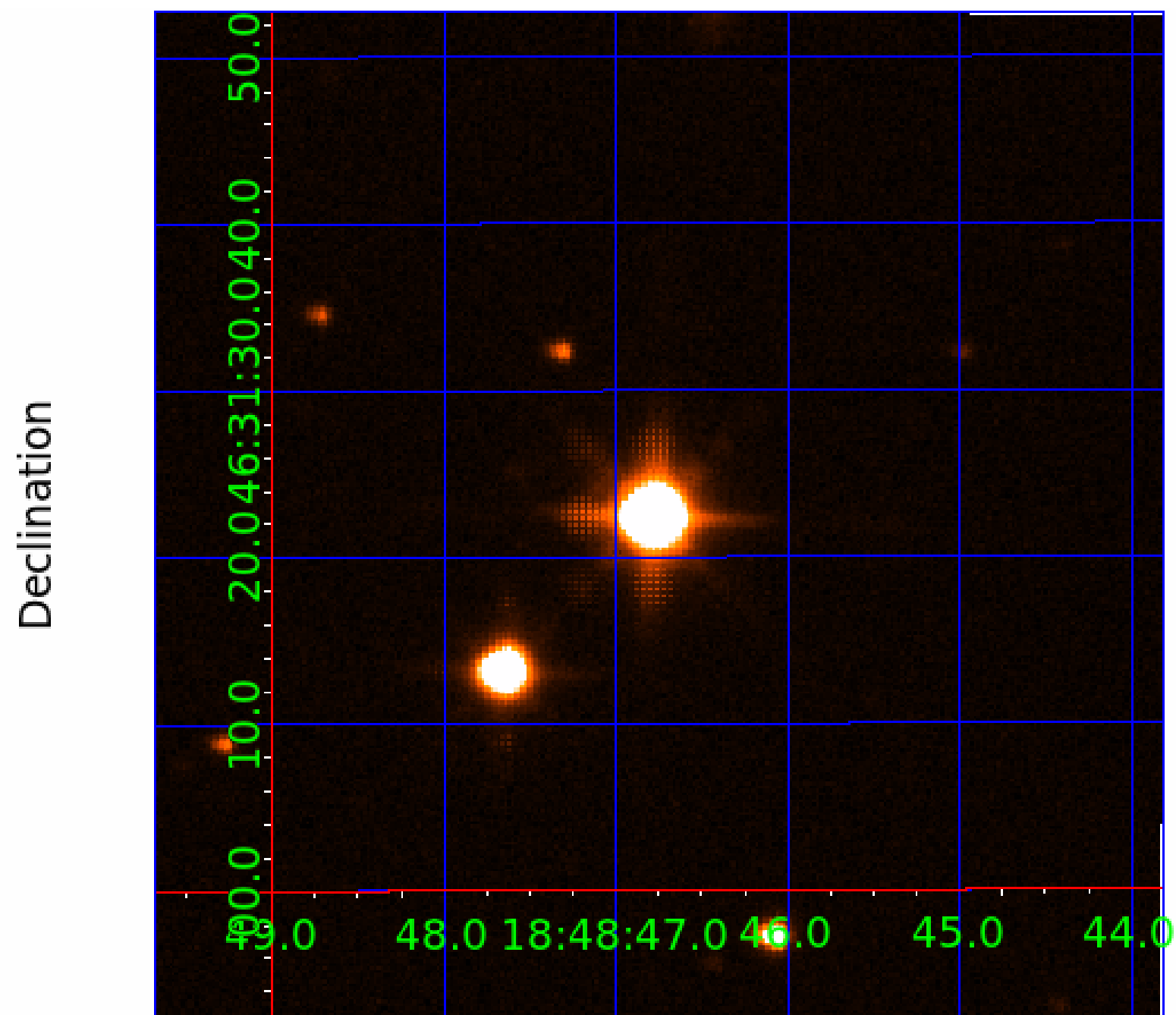
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009752973

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})
009752973-01	OBS	3162.01	0.716713	132.048089	56.7	0.637	20.4	58.0	1.17	6109	1.07	7783.59
009752973-02	OBS	No	2.866679	132.433365	13.3	9.630	9.5	8.2	1.17	6109	0.51	1225.94
009752973-03	OBS	No	422.778462	236.389029	101.5	7.651	10.6	5.9	1.17	6109	1.40	1.57
009752973-04	OBS	No	2.866379	133.924140	15.7	10.032	9.2	10.5	1.17	6109	0.57	1226.11
009752973-05	OBS	No	32.888072	153.795656	57.2	3.630	13.8	4.6	1.17	6109	1.03	47.38
009752973-06	OBS	No	49.900710	163.023818	65.4	18.739	11.2	4.5	1.17	6109	1.01	27.18
009752973-07	OBS	No	61.516324	185.532040	106.4	3.000	10.5	-1.0	1.17	6109	1.22	20.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—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.

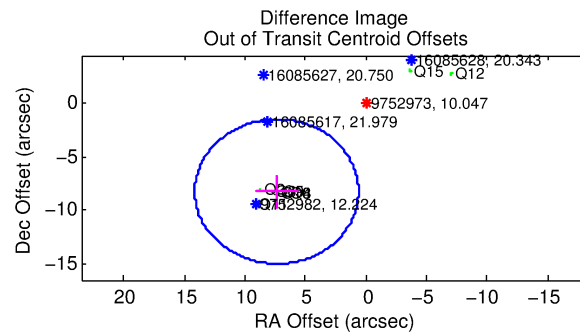
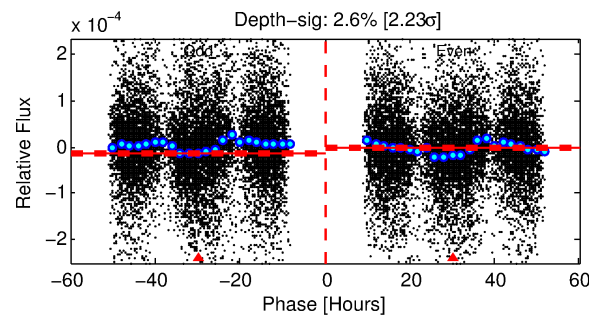
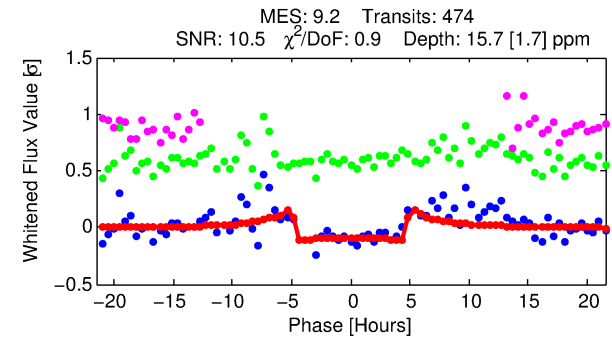
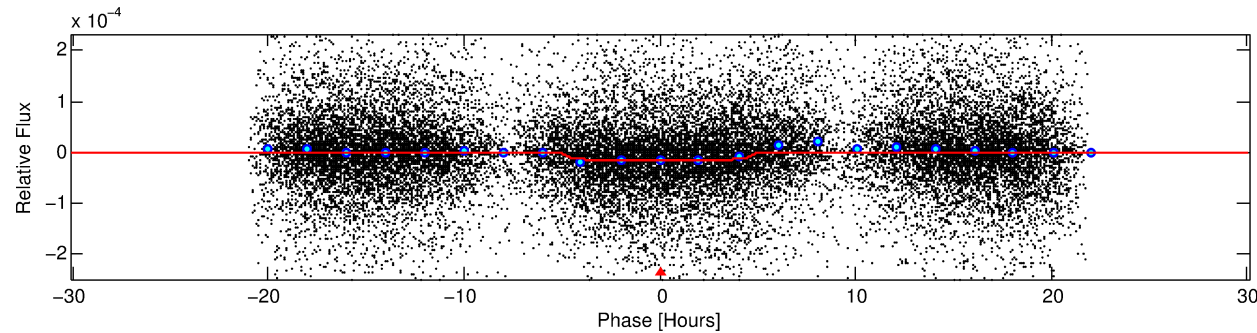
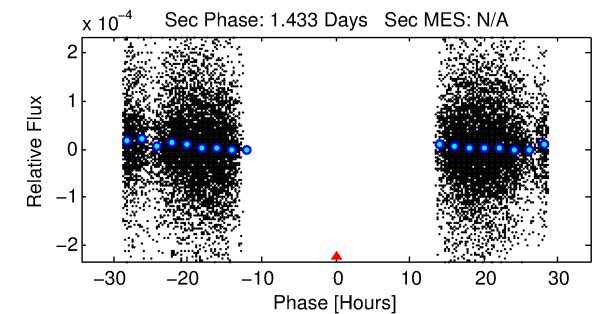
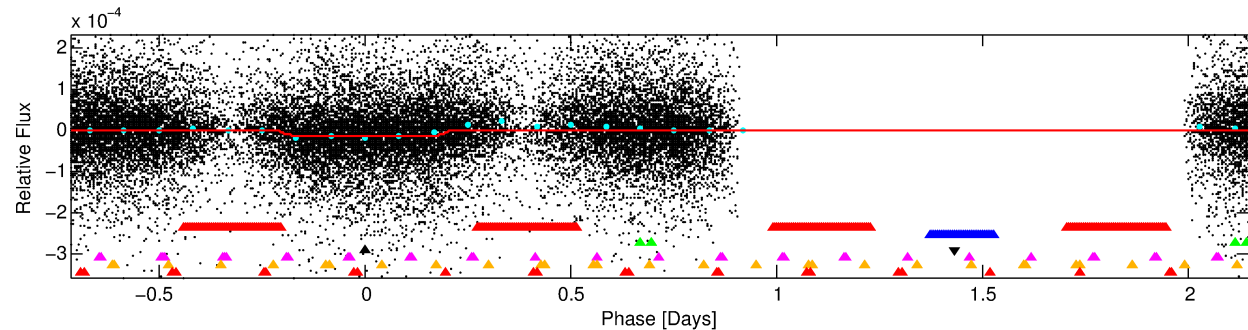
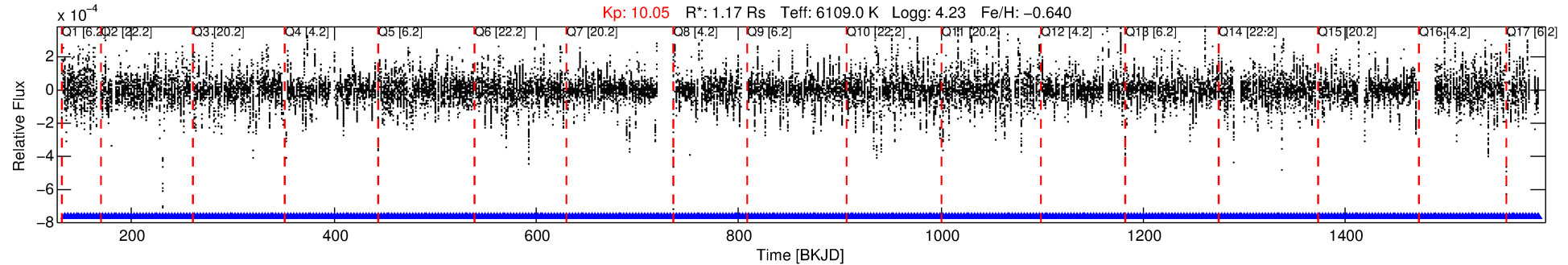
Ephemeris Match Information For 009752973-04

No Significant Match Found

DV One-Page Summary

KIC: 9752973 Candidate: 4 of 7 Period: 2.866 d
KOI: K03162 Corr: No Ephemeris Match

Kp: 10.05 R*: 1.17 Rs Teff: 6109.0 K Logg: 4.23 Fe/H: -0.640



DV Fit Results:

Period = 2.86638 [0.00002] d
Epoch = 133.9241 [0.0041] BKJD
Rp/R* = 0.0045 [0.0004]
a/R* = 1.21 [0.15]
b = 0.95 [0.04]
Seff = 1226.11 [493.84]
Teq = 1509 [152] K
Rp = 0.57 [0.14] Re
a = 0.0374 [0.0087] AU

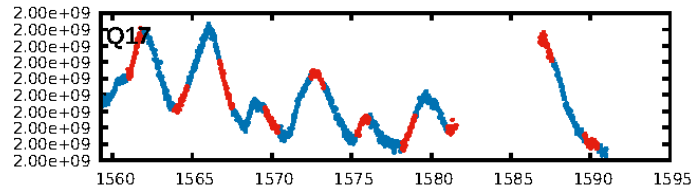
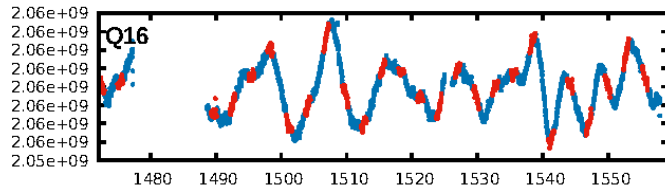
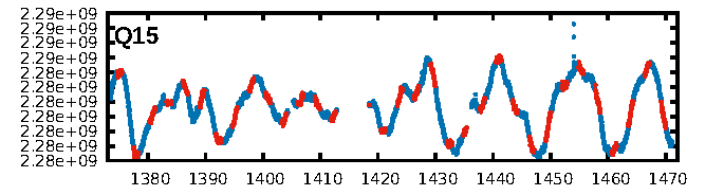
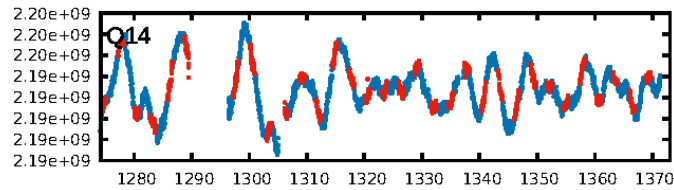
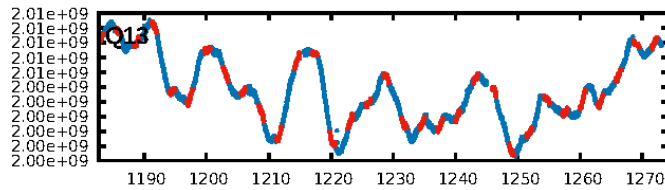
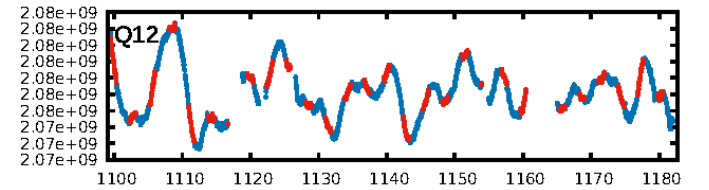
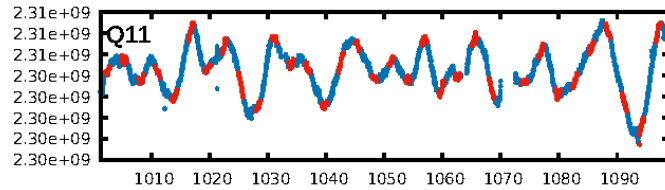
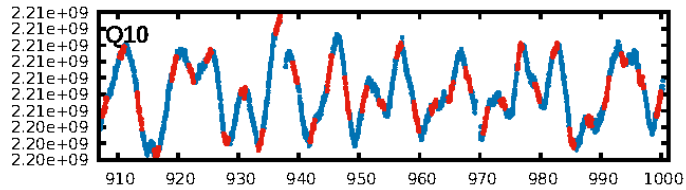
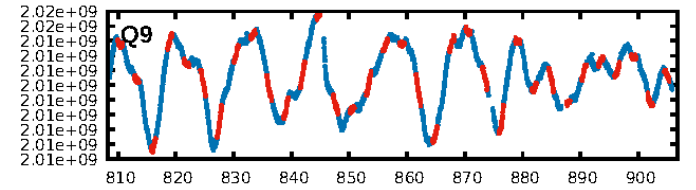
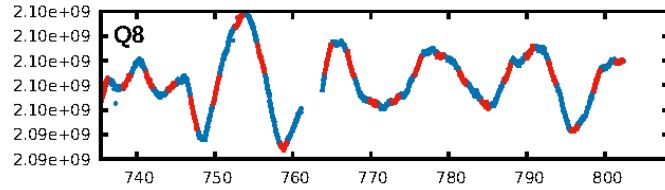
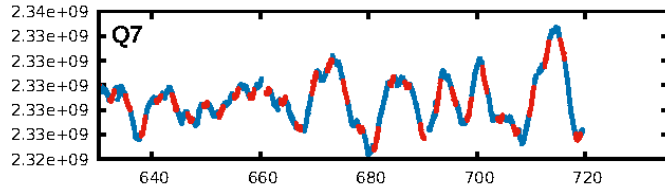
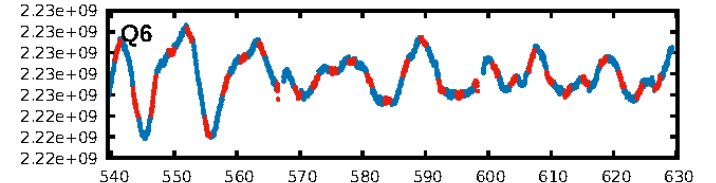
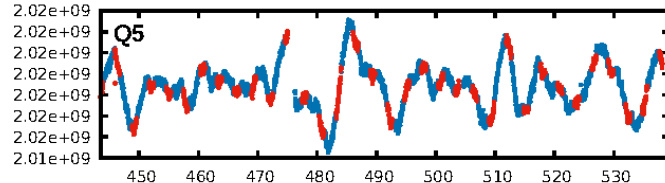
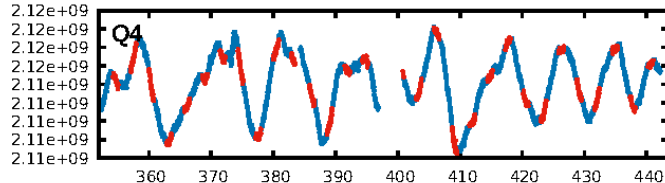
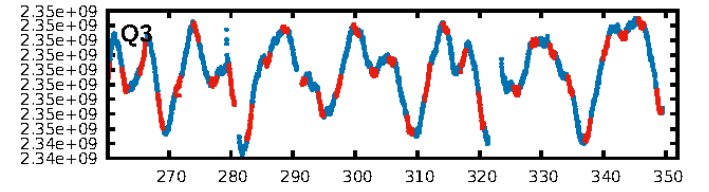
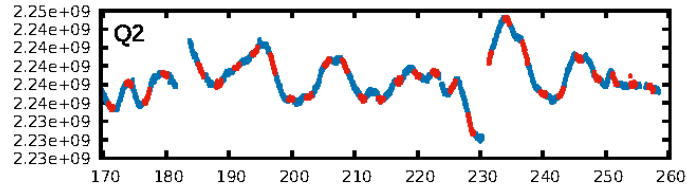
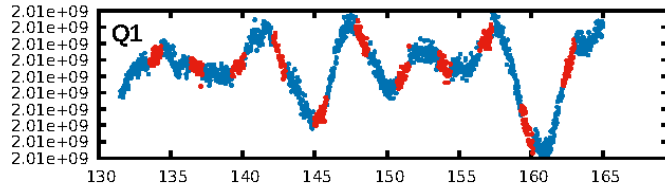
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.13σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [453/453]
GhostDiagnostic-chr: 0.2573
Centroid-sig: 0.0%
Centroid-so: 11.861 arcsec [3.82σ]
OotOffset-rm: 11.051 arcsec [4.91σ]
KicOffset-rm: 13.245 arcsec [6.16σ]
OotOffset-st: 3/2/3/2 [10]
KicOffset-st: 3/2/3/2 [10]
DiffImageQuality-fgm: 0.70 [7/10]
DiffImageOverlap-fno: 0.00 [0/17]

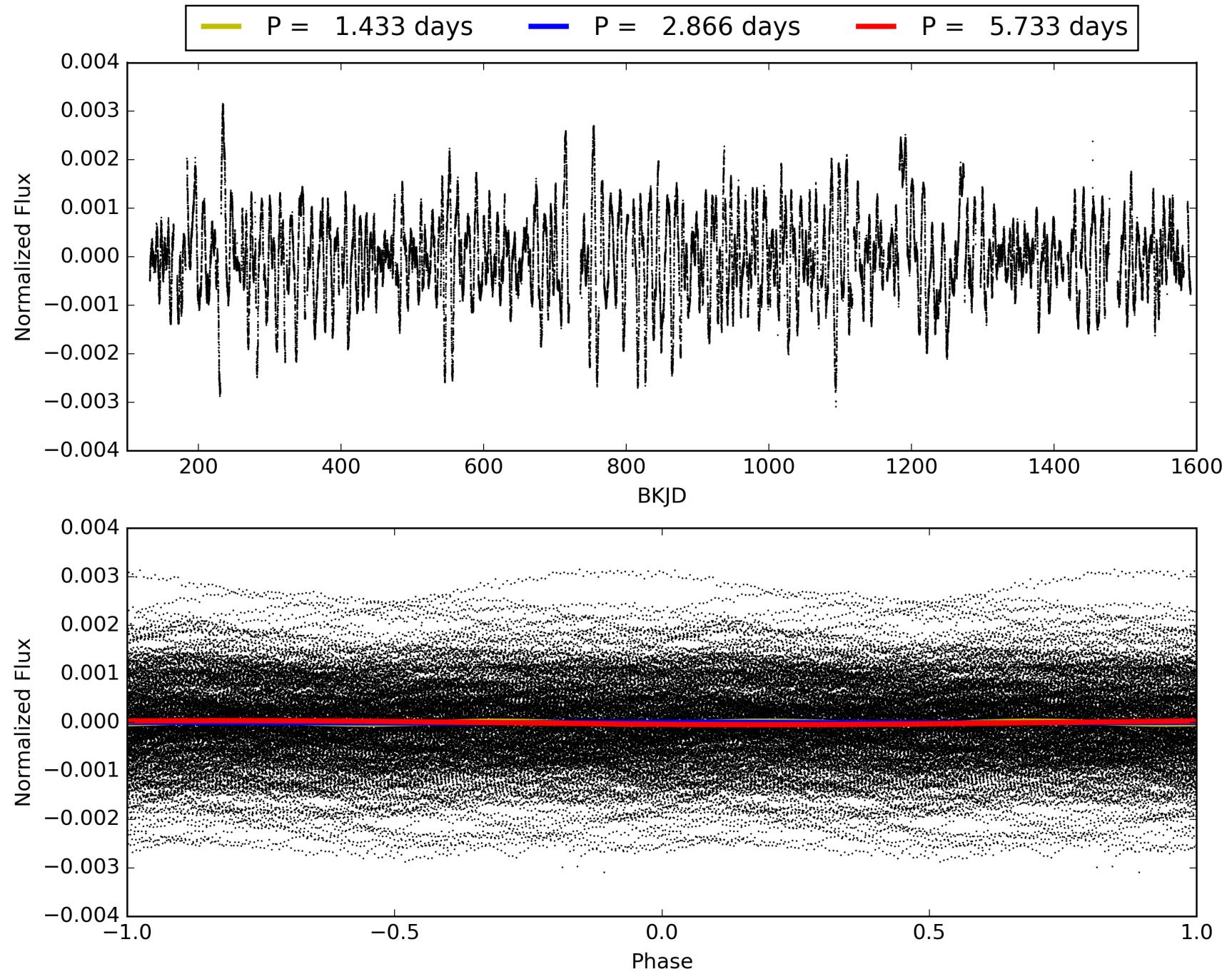
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:42:51 Z

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

TCE 009752973-04, PDC Light Curves

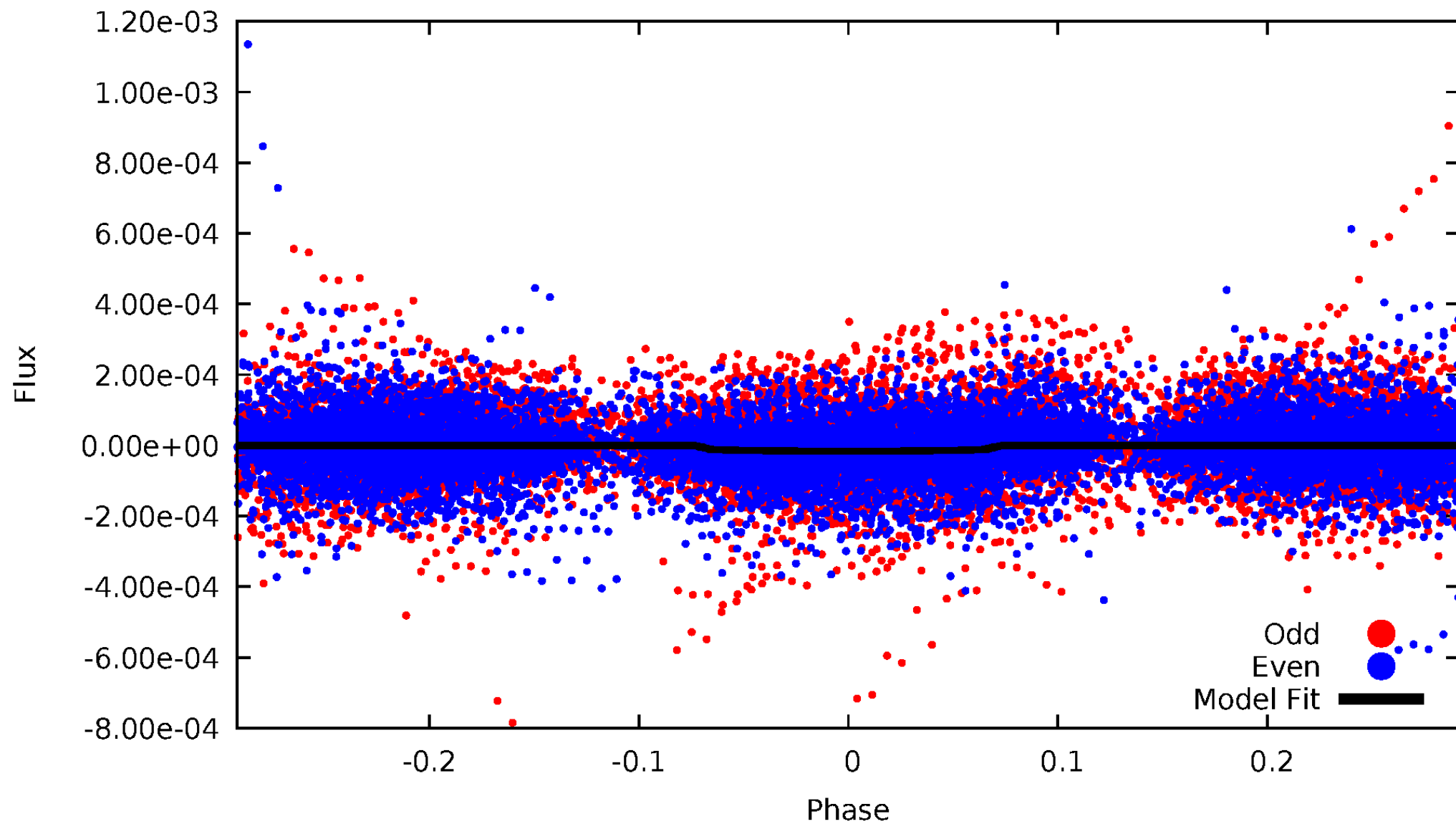


TCE 009752973-04



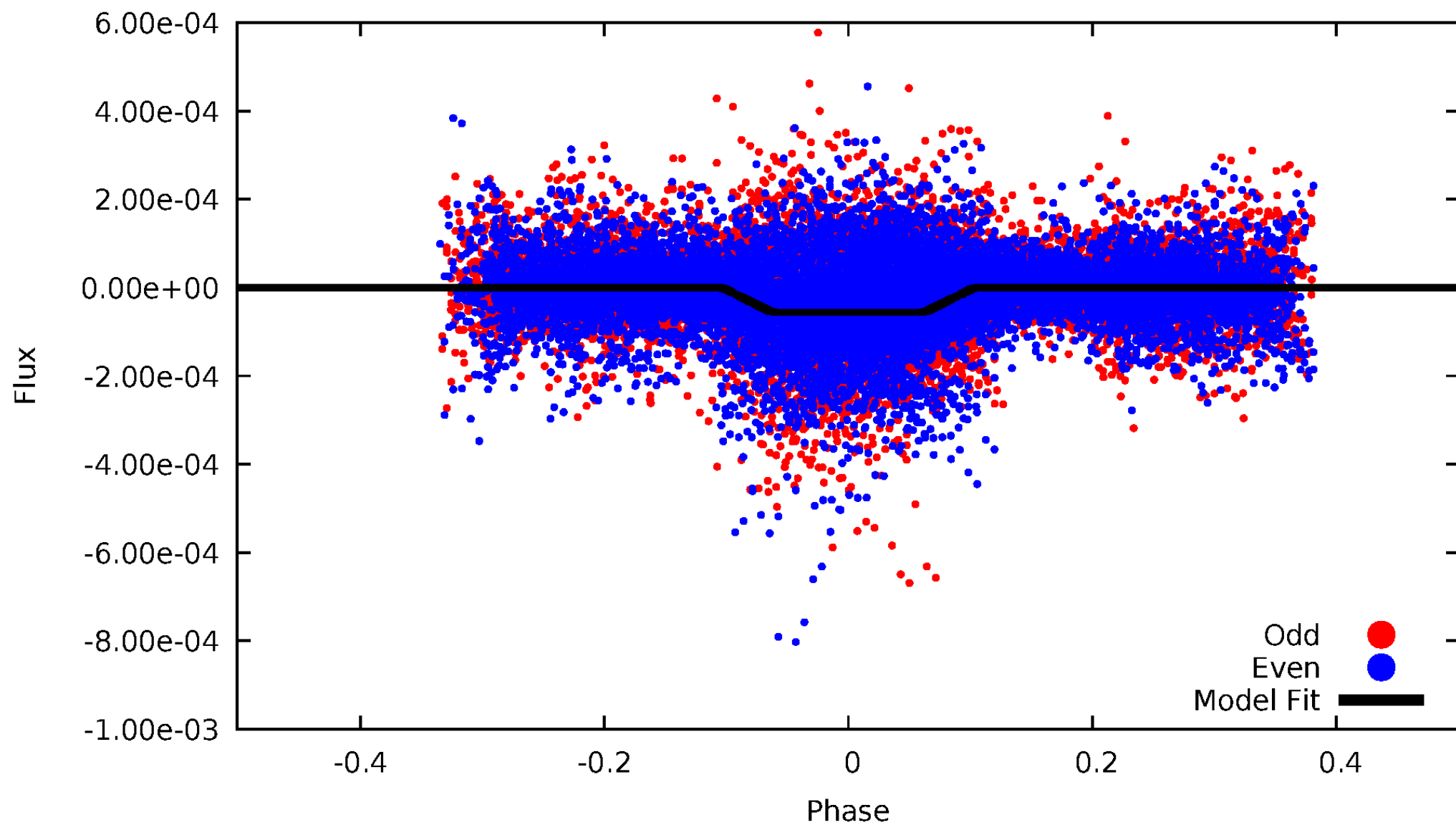
DV Odd/Even

TCE 009752973-04



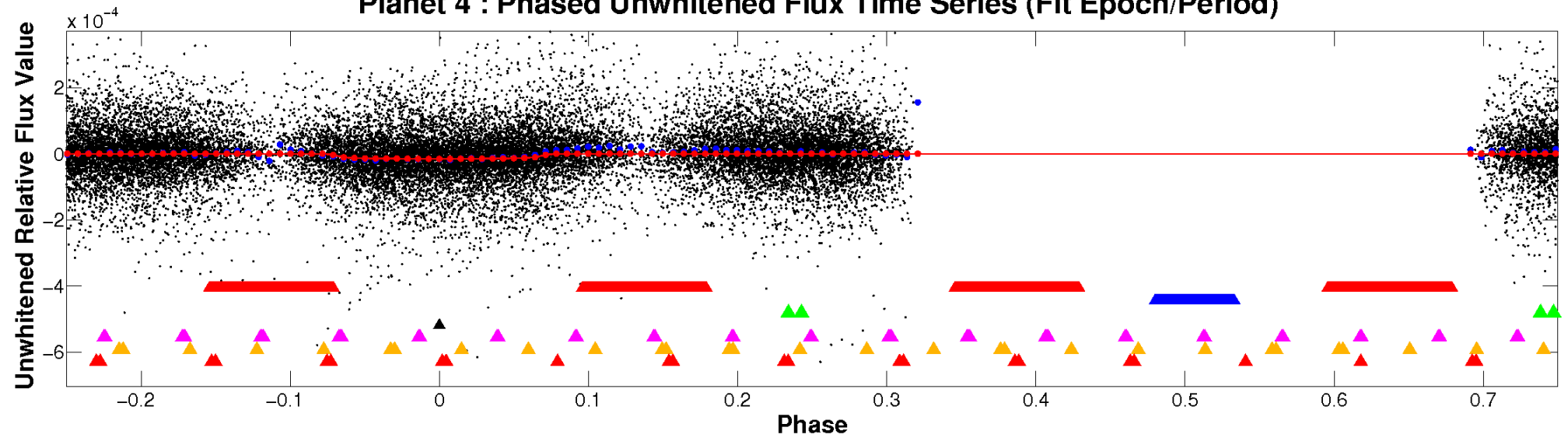
ALT Odd/Even

TCE 009752973-04

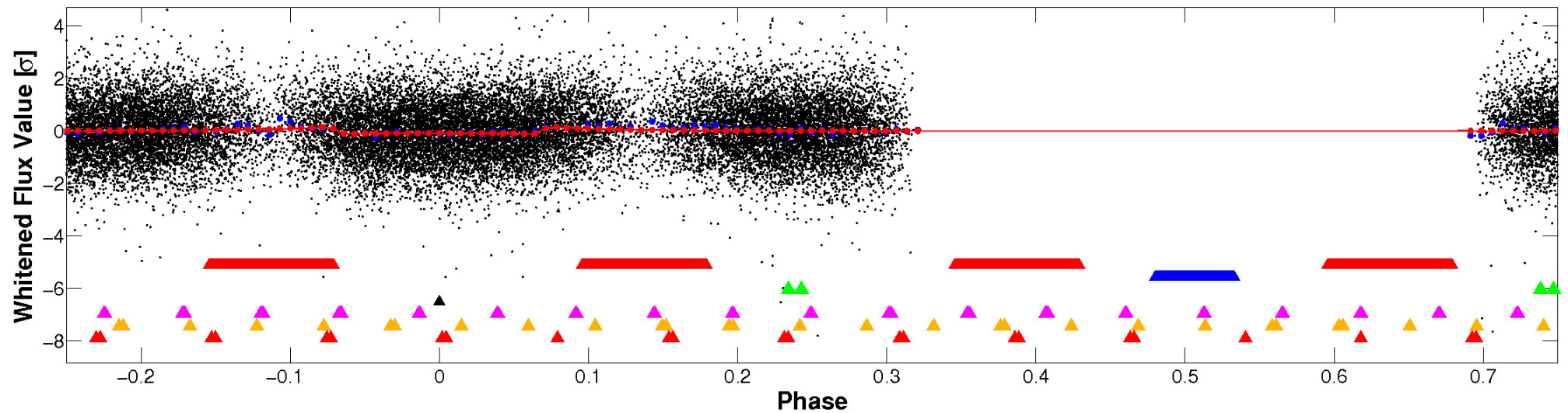


Non-Whitened Vs. Whitened Light Curve

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

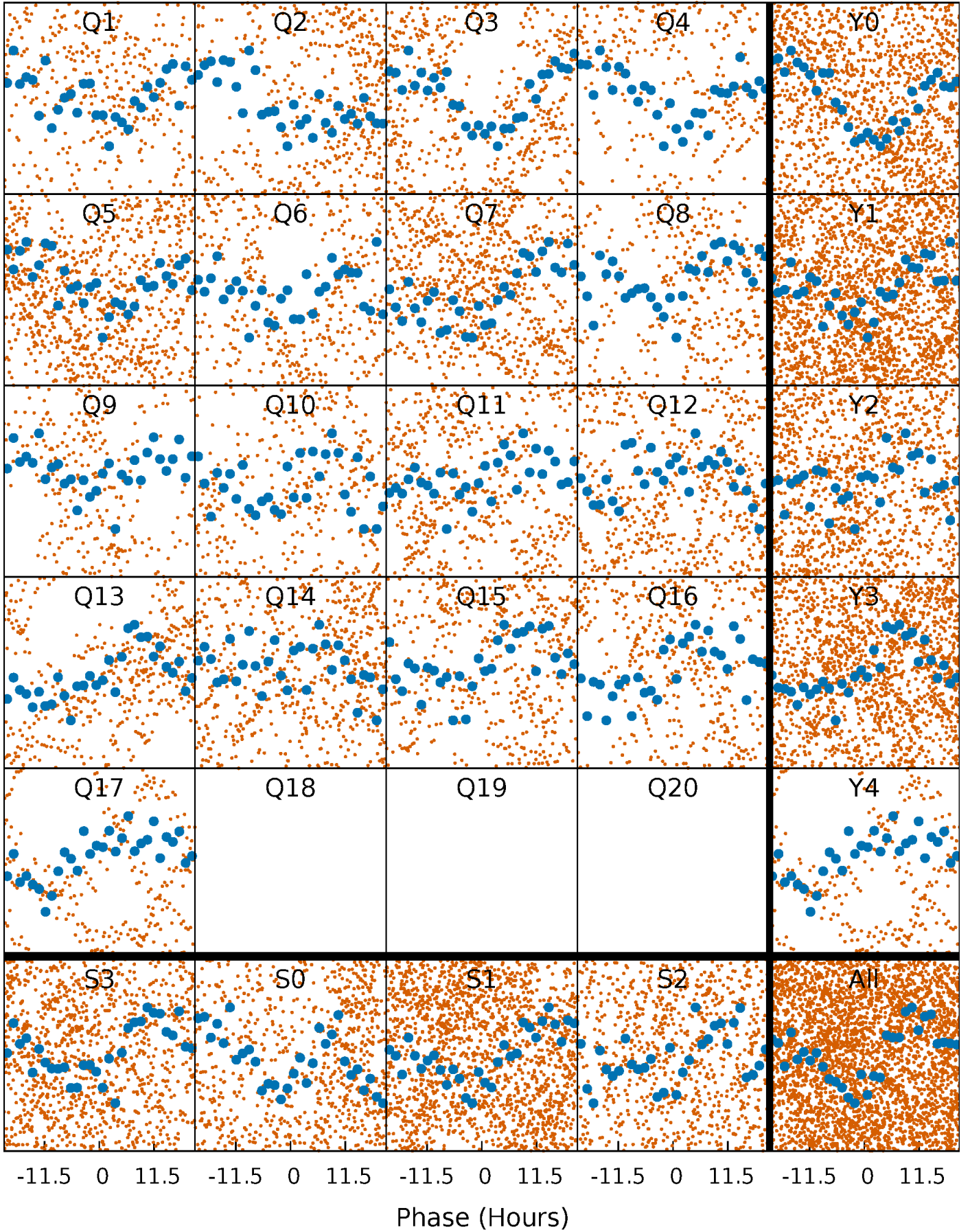


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



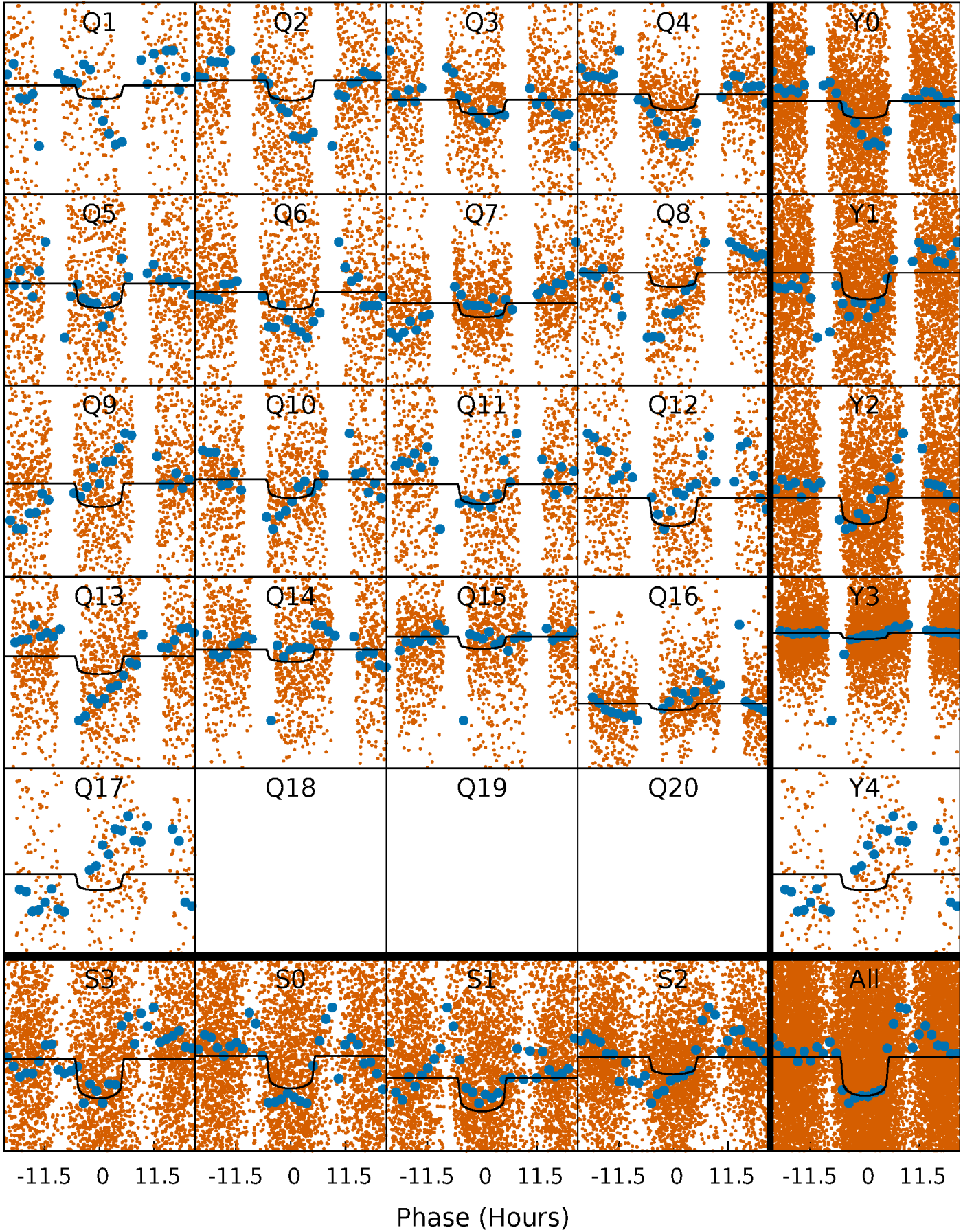
PDC Quarter-Phased Transit Curves

TCE 009752973-04 P= 2.866379 Days $T_0=133.924140$ (BKJD)



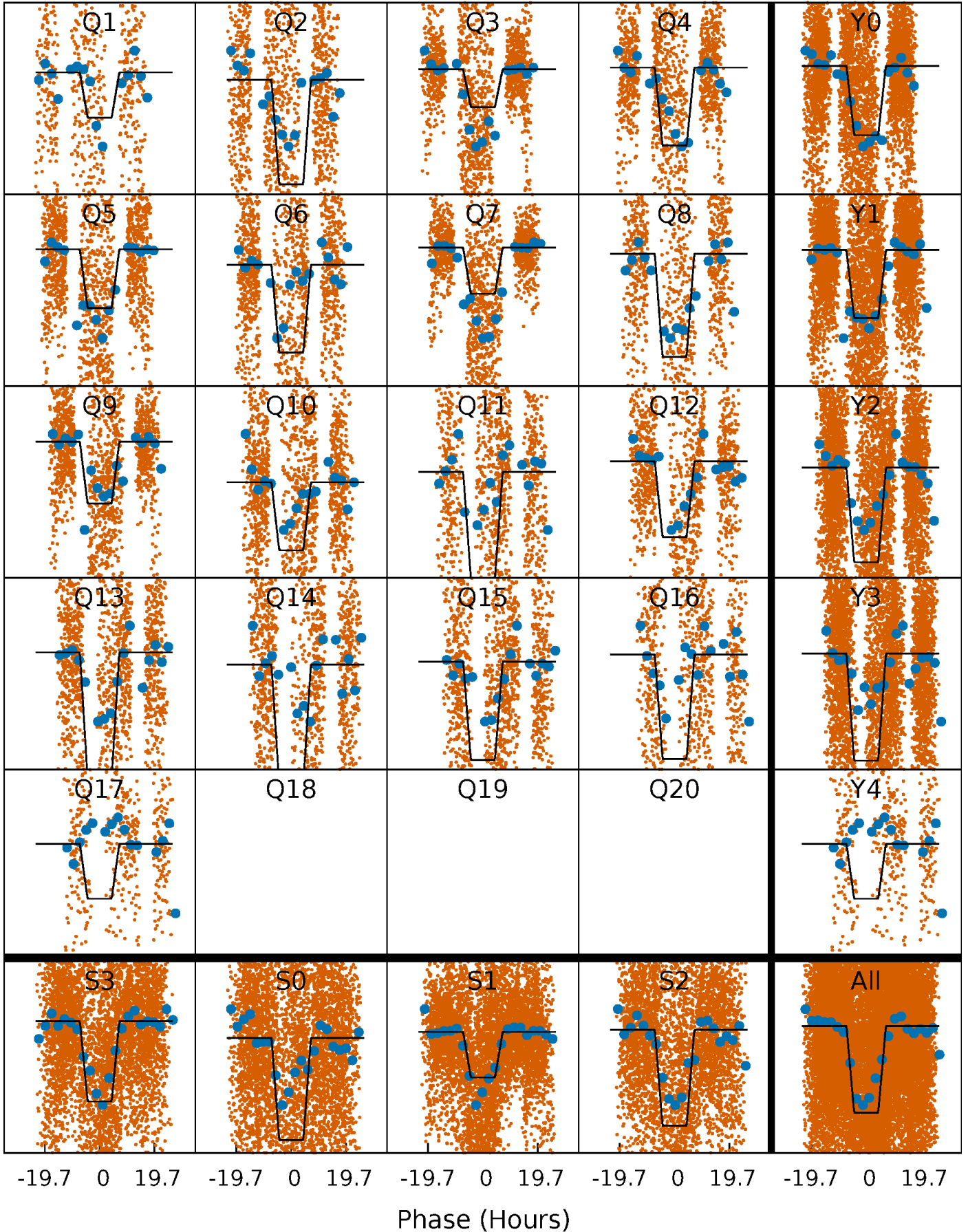
DV Quarter-Phased Transit Curves

TCE 009752973-04 P= 2.866379 Days $T_0=133.924140$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

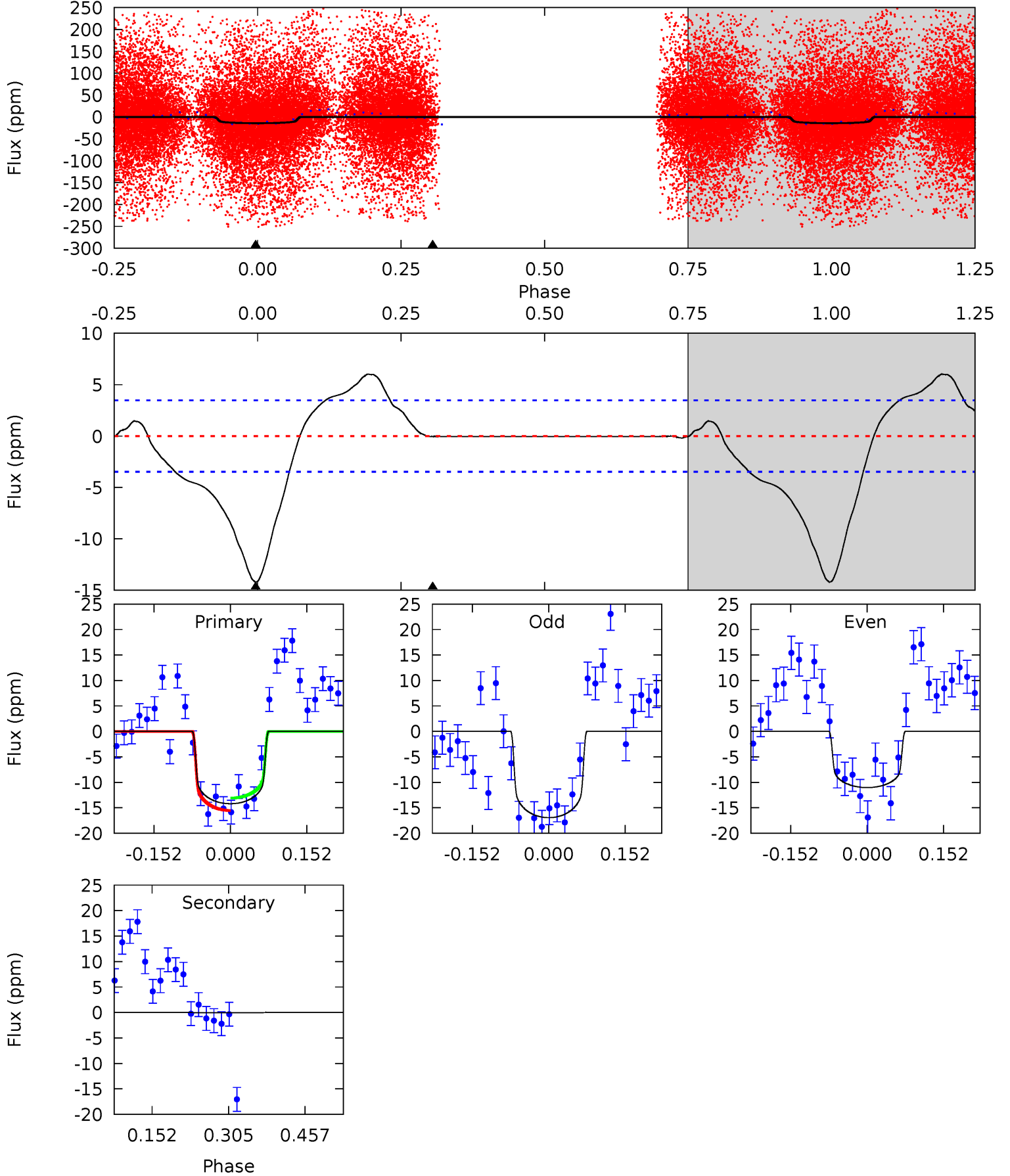
TCE 009752973-04 P= 2.865831 Days $T_0=134.009665$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-04, P = 2.866379 Days, E = 131.057761 Days

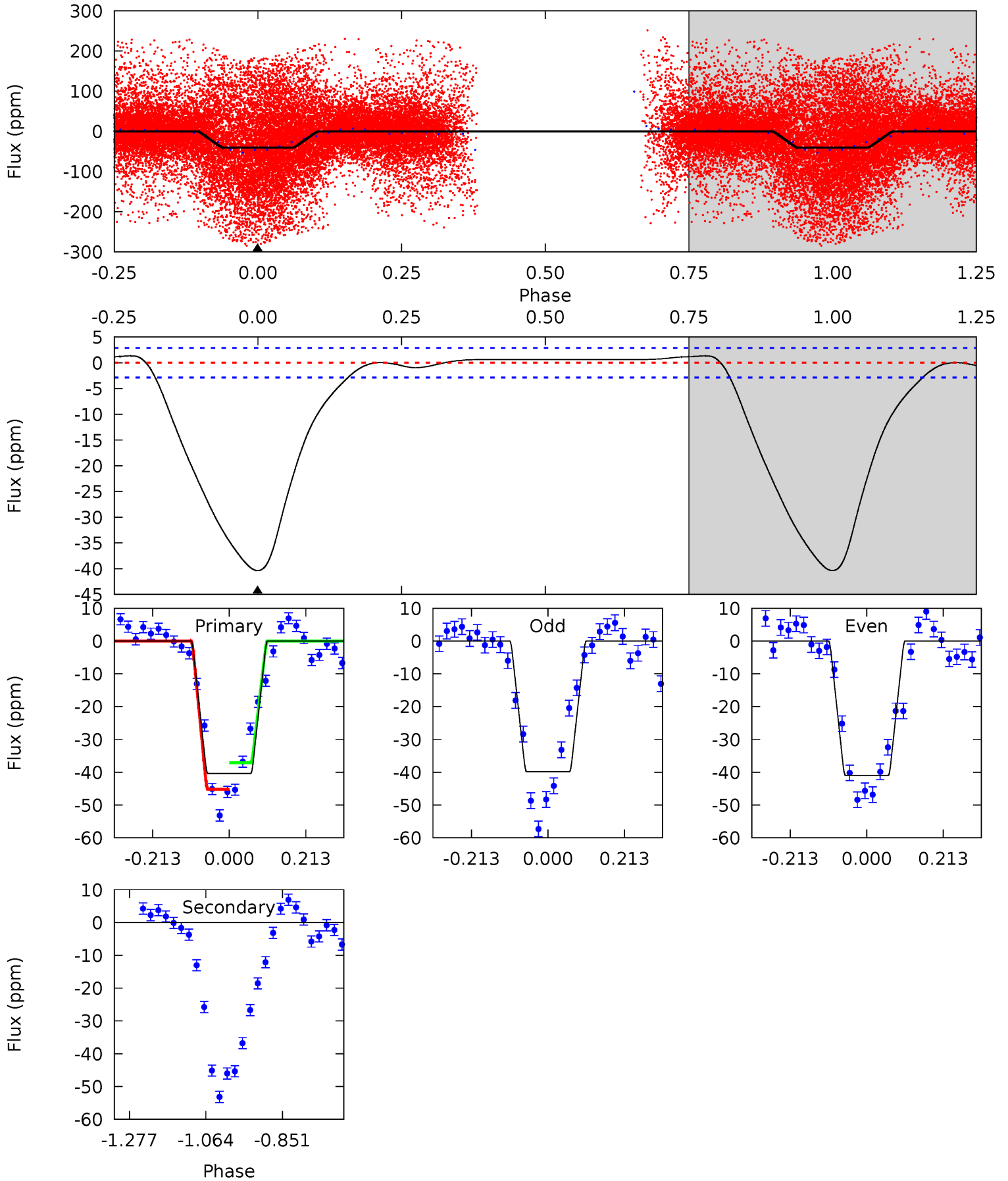
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	0.06	0	0	4.48	1.43	1.43	18.3	18.3	0.06	0.06	3.69	1.32	0.30	1.58



Alt Model-Shift Uniqueness Test

009752973-04, P = 2.865831 Days, E = 131.143834 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.6	0	0	0	4.40	1.25	1.25	61.6	61.6	0	0	0.85	0.90	0.03	5.42



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-0 ± 1	$0.56^{+0.09}_{-0.09}$	2087^{+125}_{-152}	-2230^{+5487}_{-1074}	$0.192^{+2.005}_{-1.988}$
Alt.	0 ± 1	$0.94^{+0.12}_{-0.13}$	2088^{+127}_{-140}	-2548^{+5056}_{-428}	$-0.026^{+0.597}_{-0.612}$

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

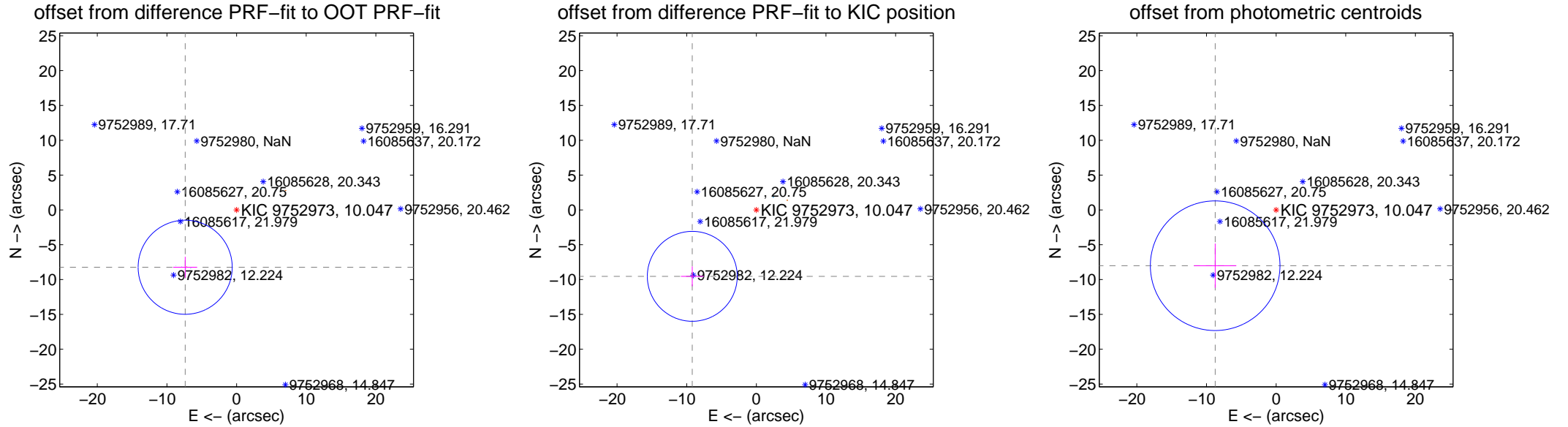
DV Centroid Data

Supplemental centroid analysis for 009752973-04. **Kepler magnitude: 10.05**. Transit SNR 10.54

There are 7 quarters with good PRF difference image offsets

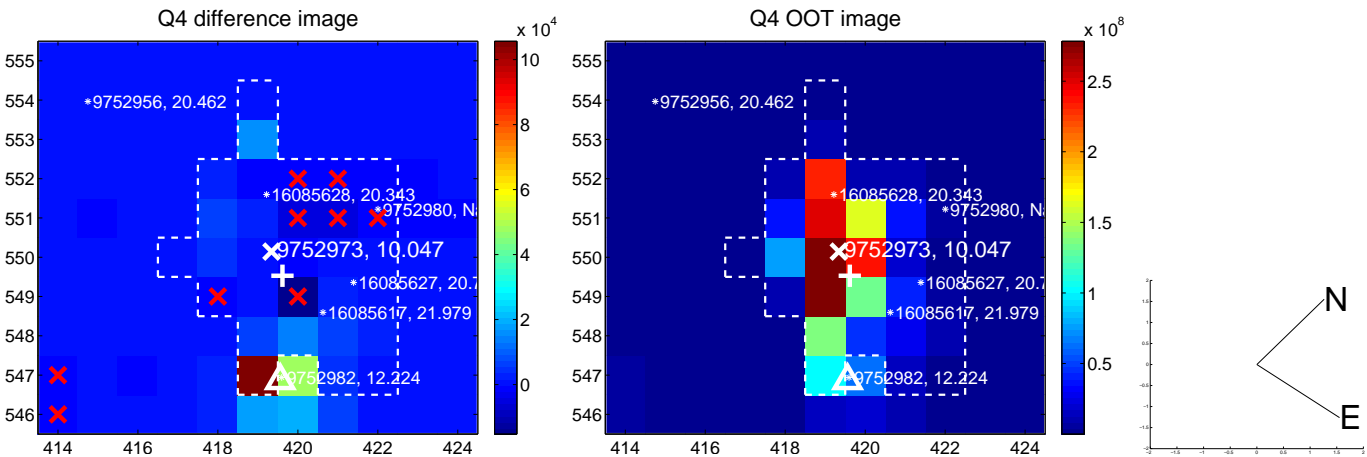
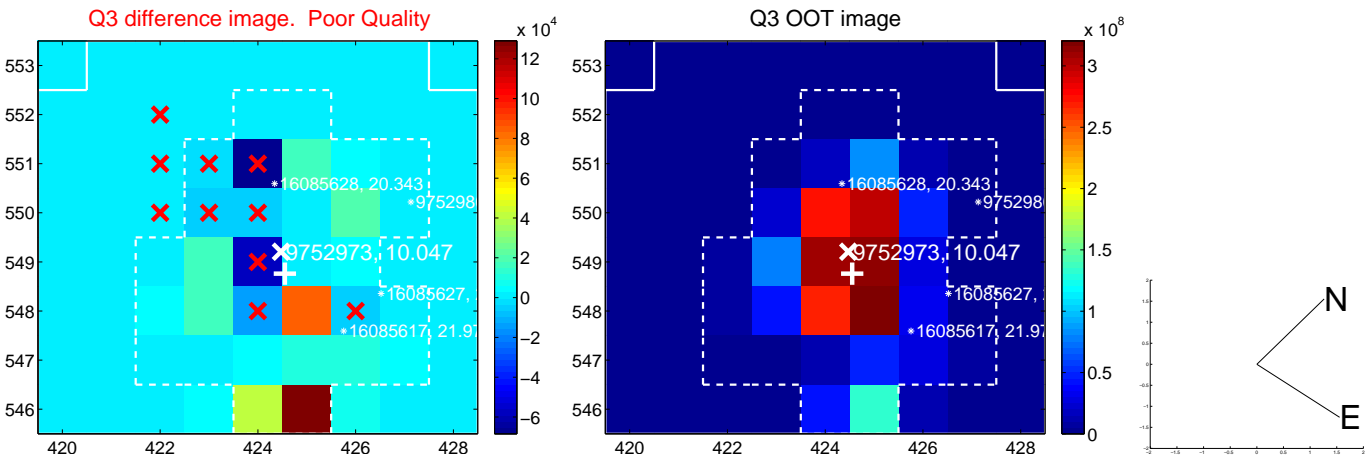
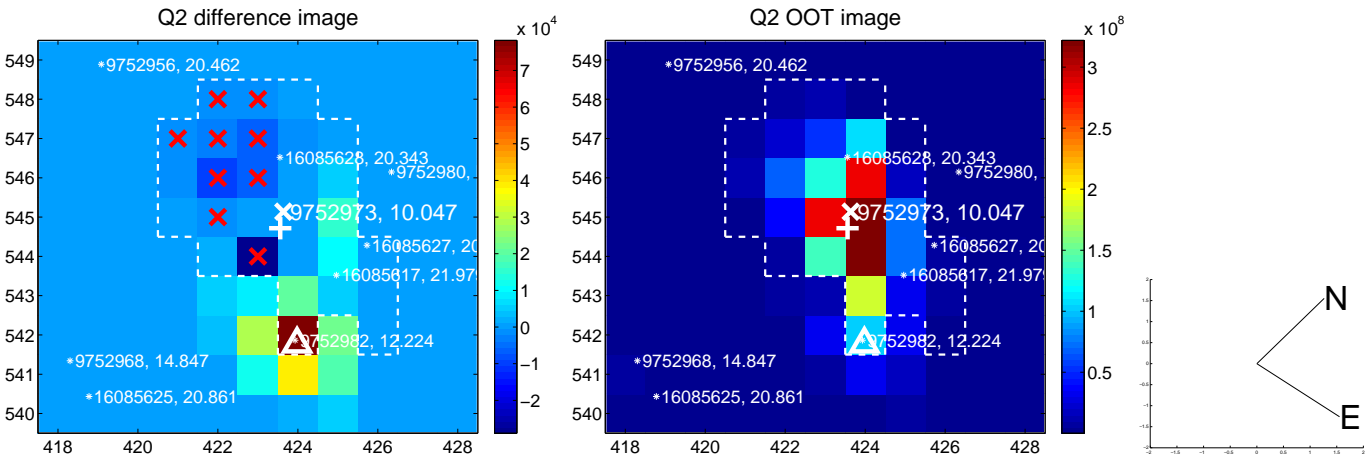
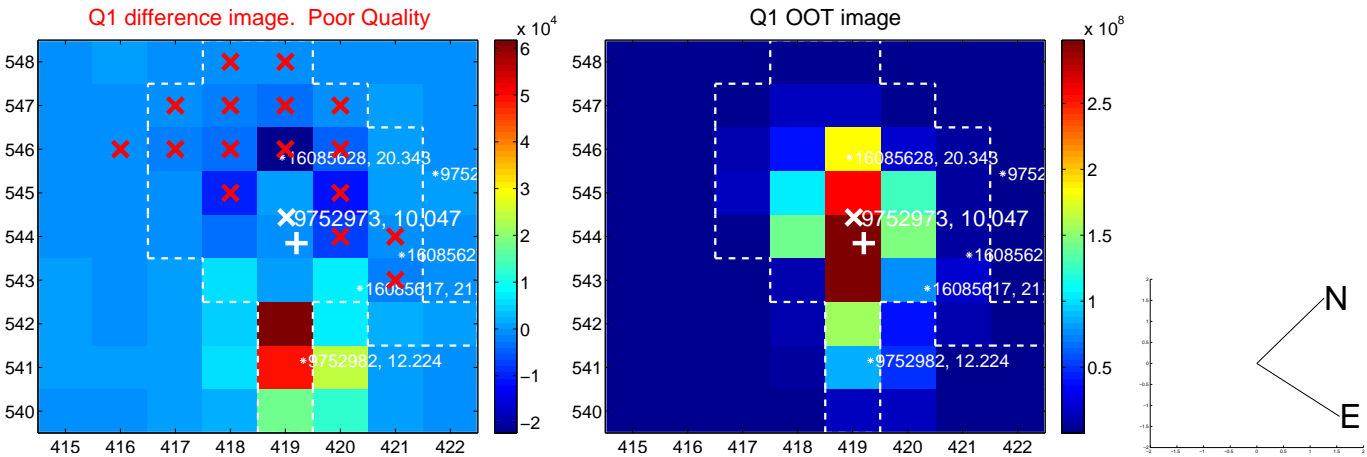
The direct PRF centroid is offset from the target star catalog position by about 1.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.051 \pm 2.251	4.91	7.377 \pm 1.723	-8.228 \pm 1.497
PRF-fit source offset from KIC position	13.245 \pm 2.151	6.16	9.197 \pm 1.631	-9.532 \pm 1.423
photometric centroid source offset	11.86 \pm 3.10	3.82	8.75 \pm 3.04	-8.01 \pm 3.18

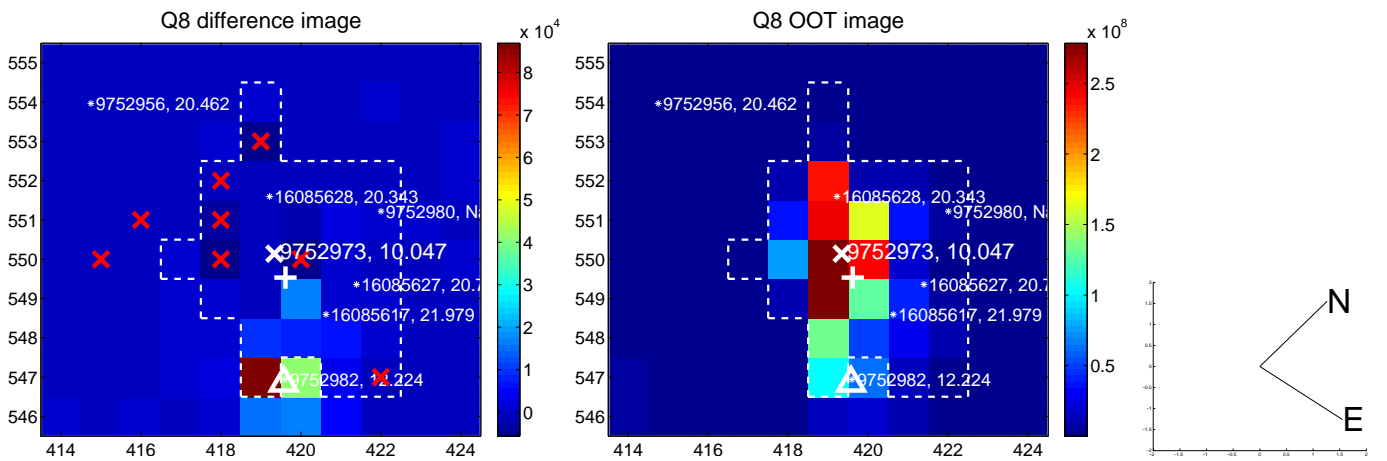
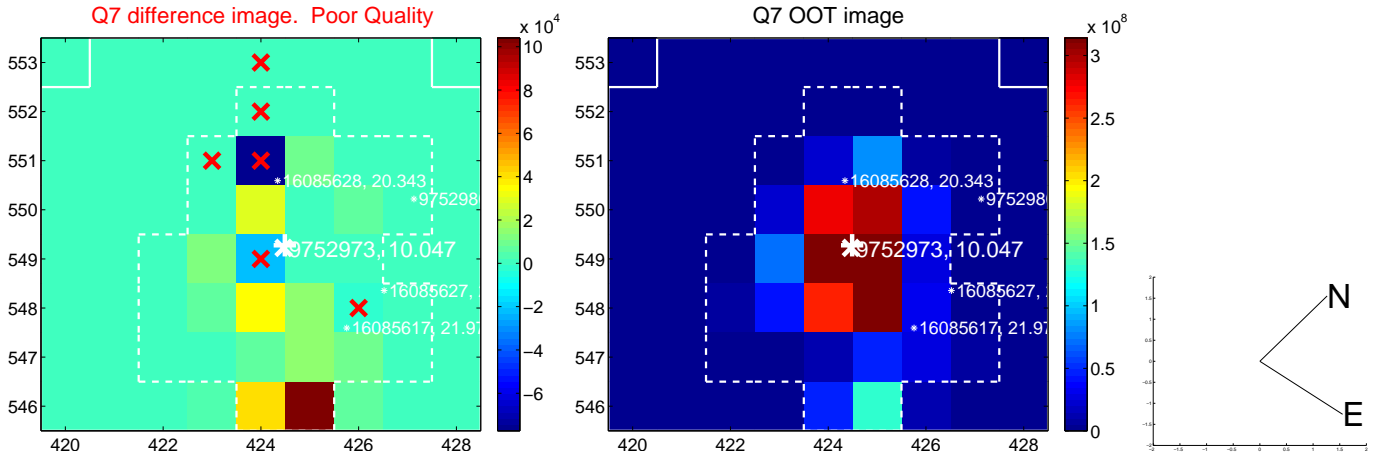
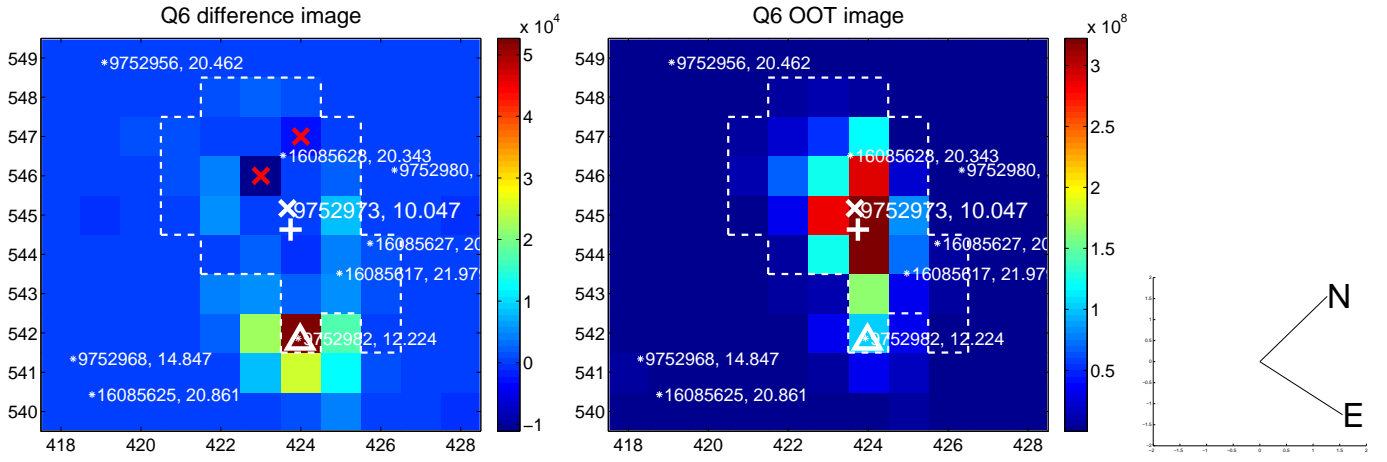
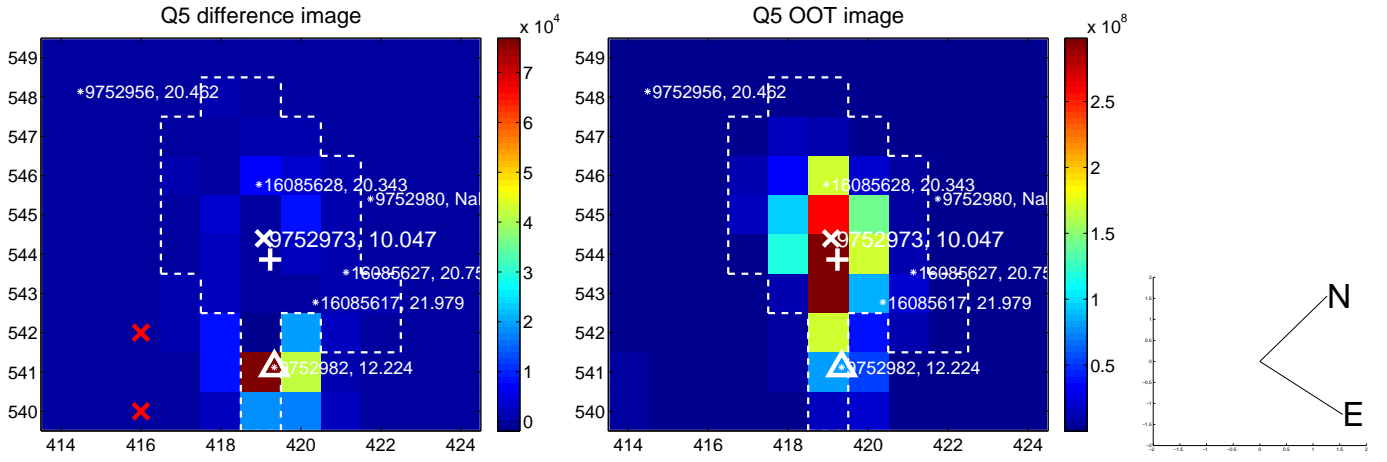


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

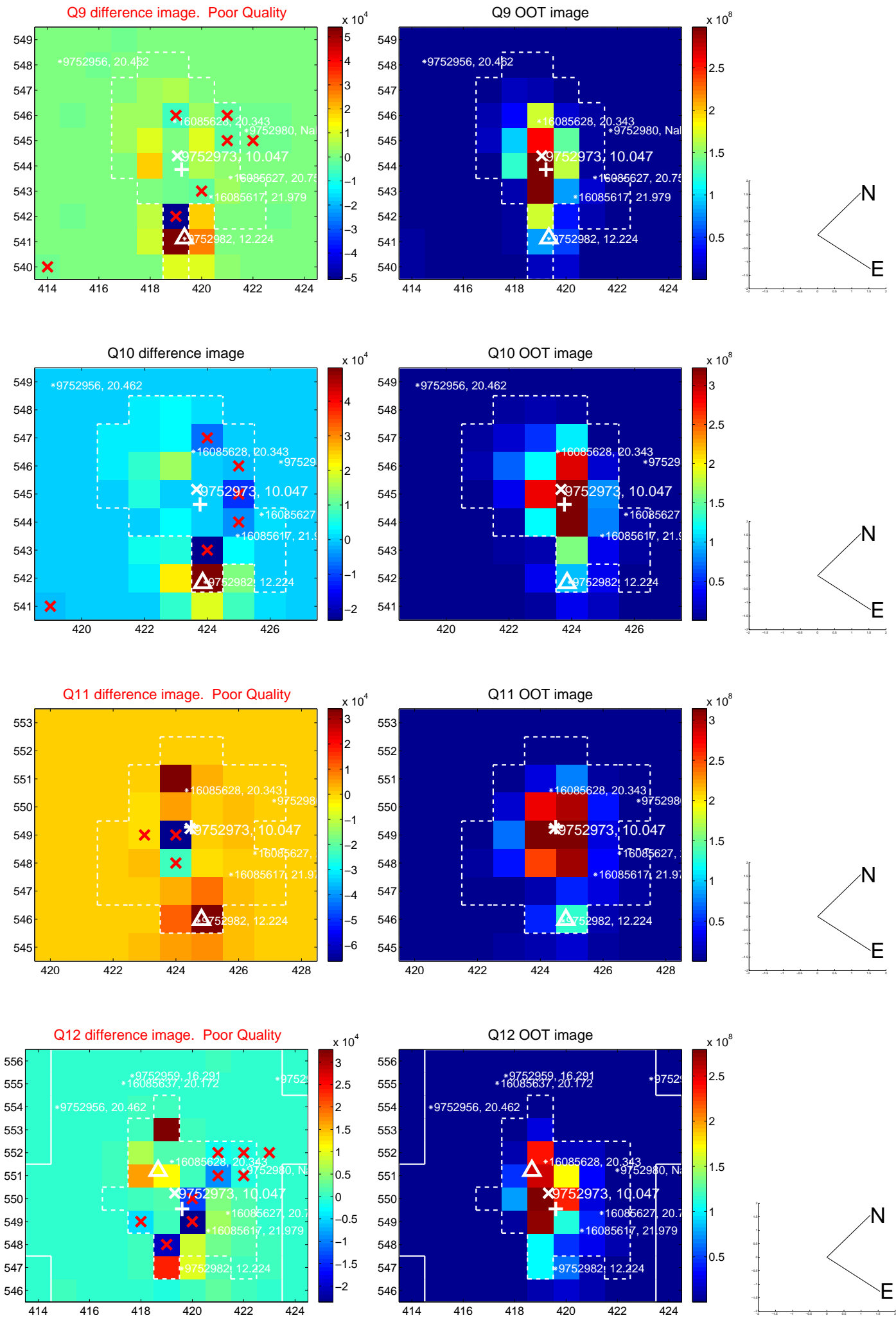
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



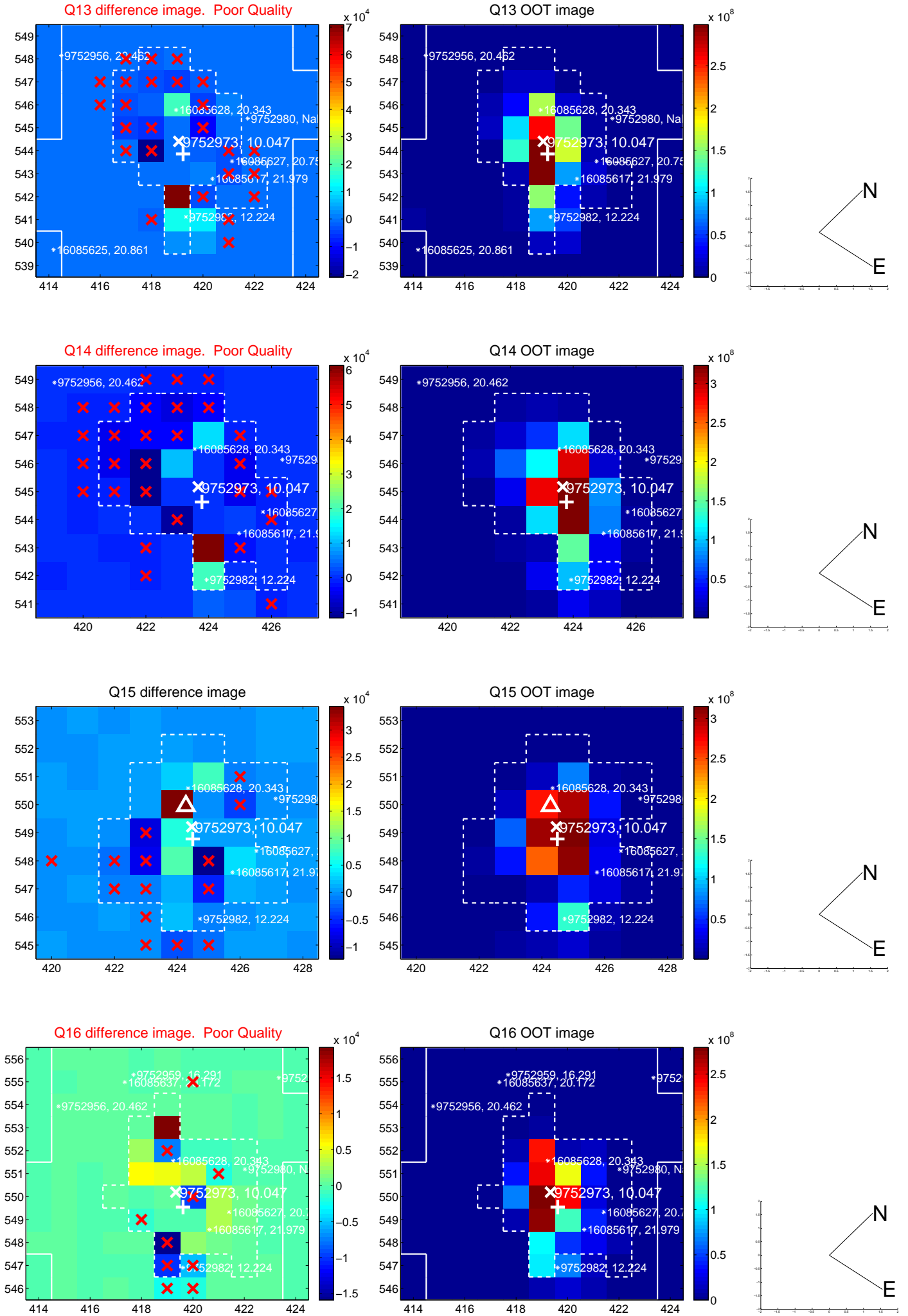
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



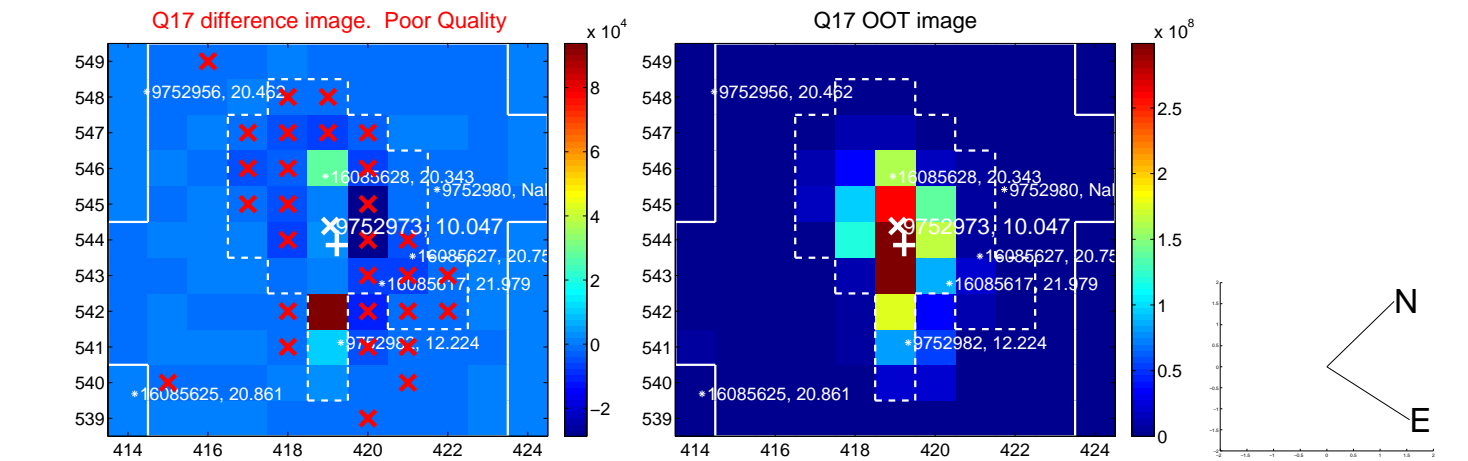
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



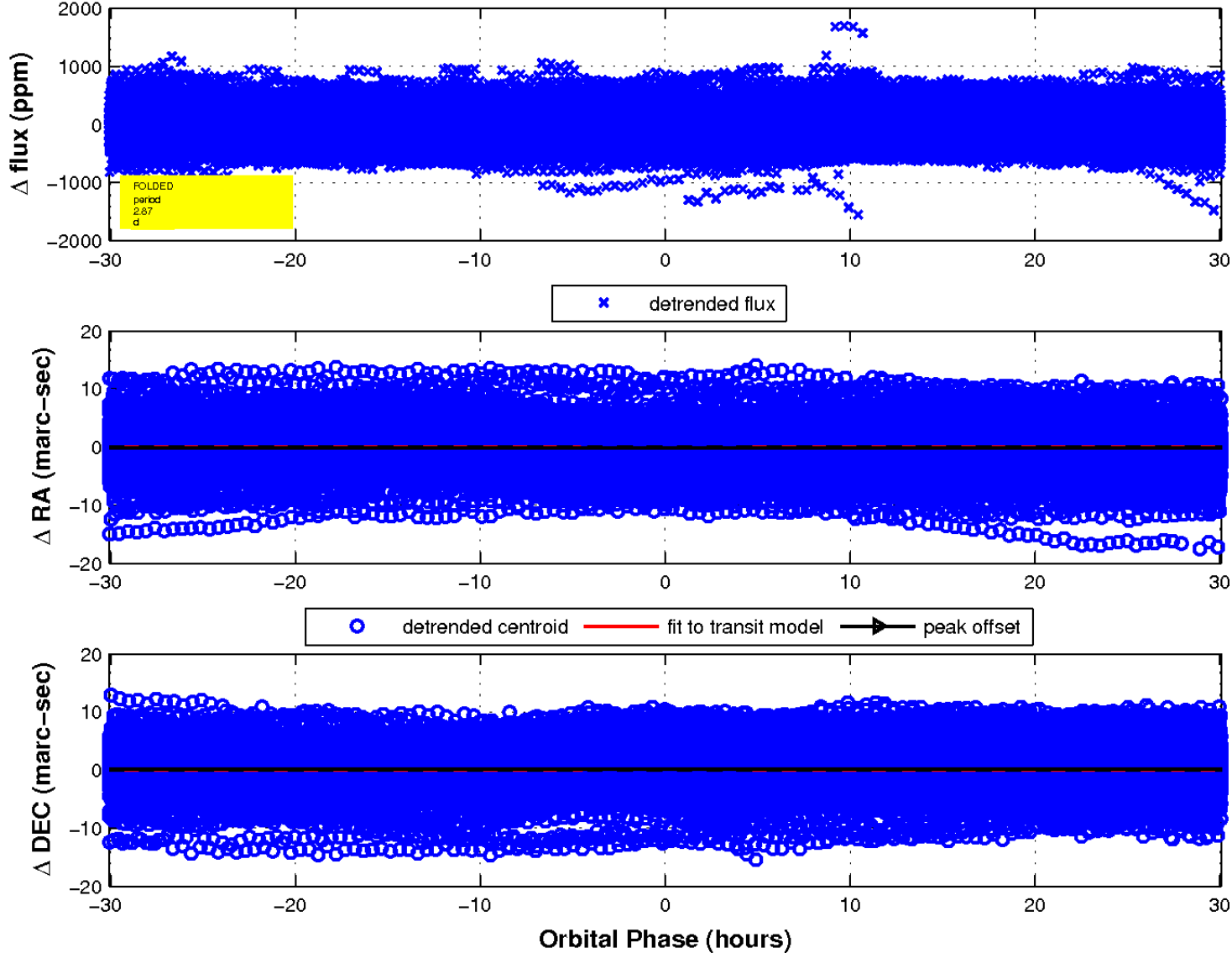
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



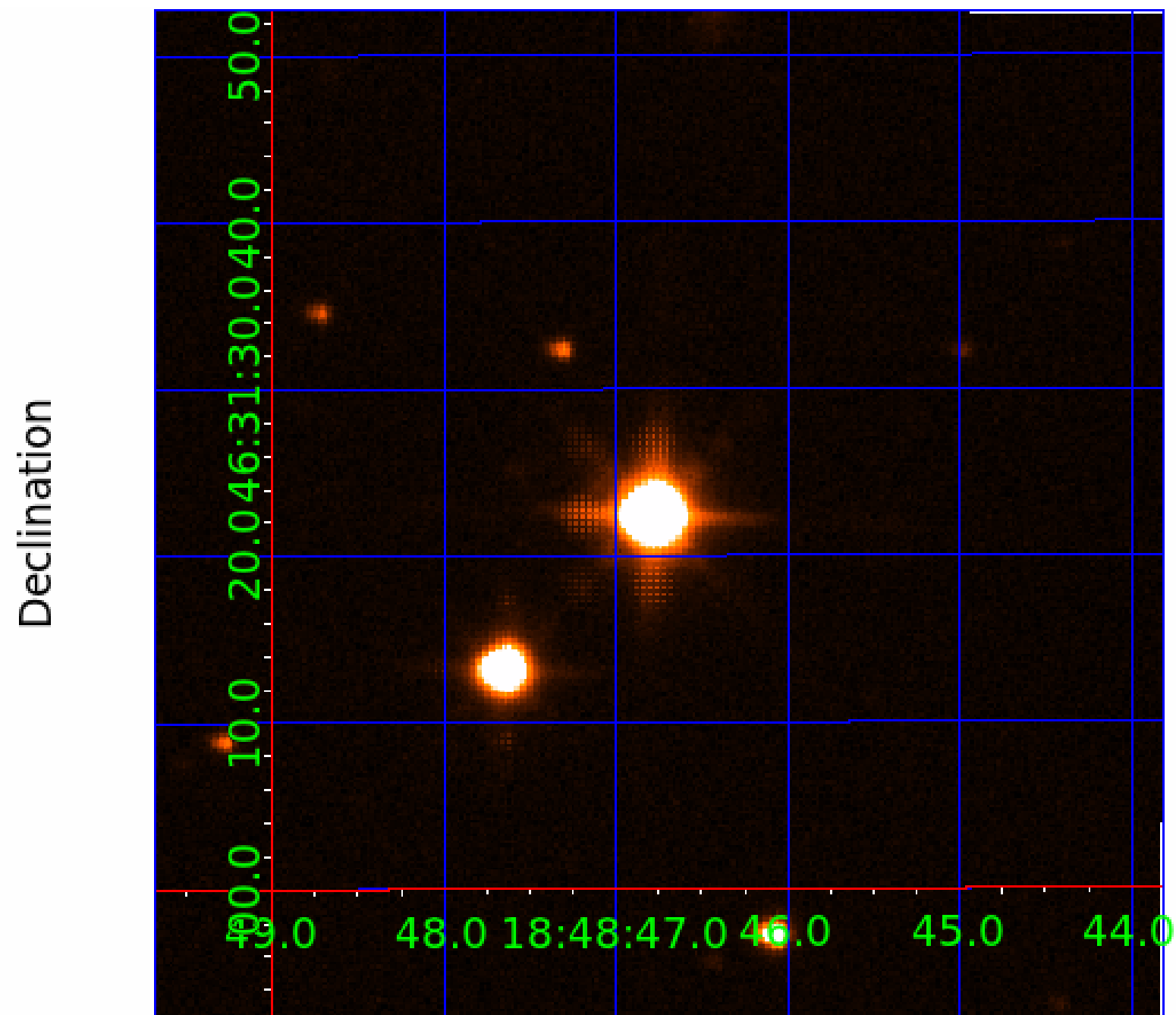
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 4 of 7



UKIRT Image



KIC 009752973

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})
009752973-01	OBS	3162.01	0.716713	132.048089	56.7	0.637	20.4	58.0	1.17	6109	1.07	7783.59
009752973-02	OBS	No	2.866679	132.433365	13.3	9.630	9.5	8.2	1.17	6109	0.51	1225.94
009752973-03	OBS	No	422.778462	236.389029	101.5	7.651	10.6	5.9	1.17	6109	1.40	1.57
009752973-04	OBS	No	2.866379	133.924140	15.7	10.032	9.2	10.5	1.17	6109	0.57	1226.11
009752973-05	OBS	No	32.888072	153.795656	57.2	3.630	13.8	4.6	1.17	6109	1.03	47.38
009752973-06	OBS	No	49.900710	163.023818	65.4	18.739	11.2	4.5	1.17	6109	1.01	27.18
009752973-07	OBS	No	61.516324	185.532040	106.4	3.000	10.5	-1.0	1.17	6109	1.22	20.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—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 009752973-05

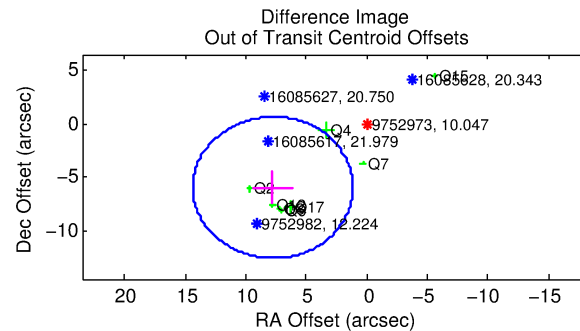
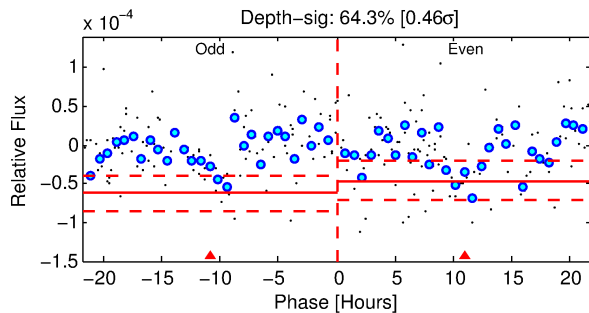
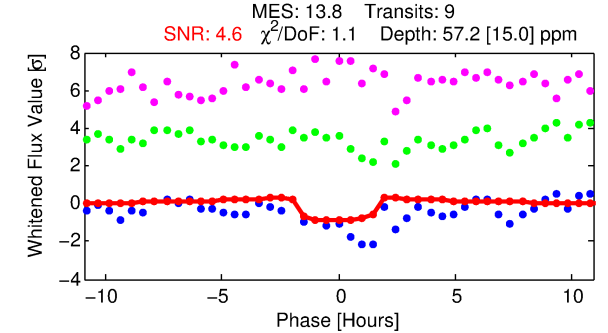
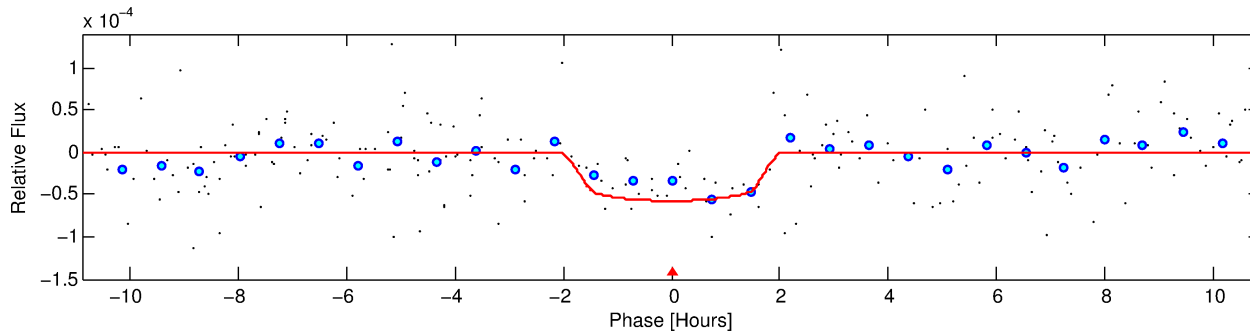
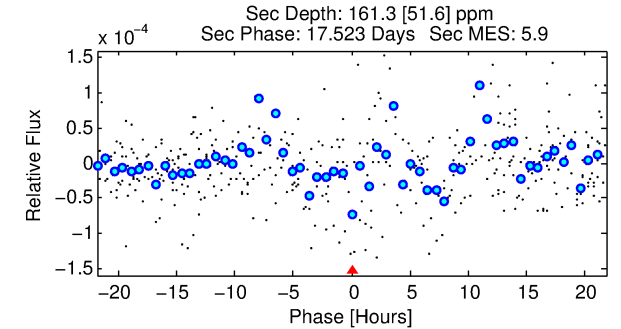
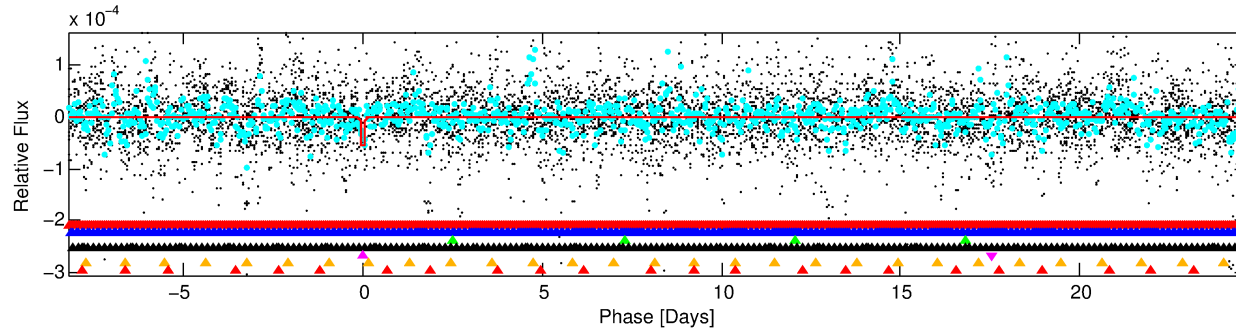
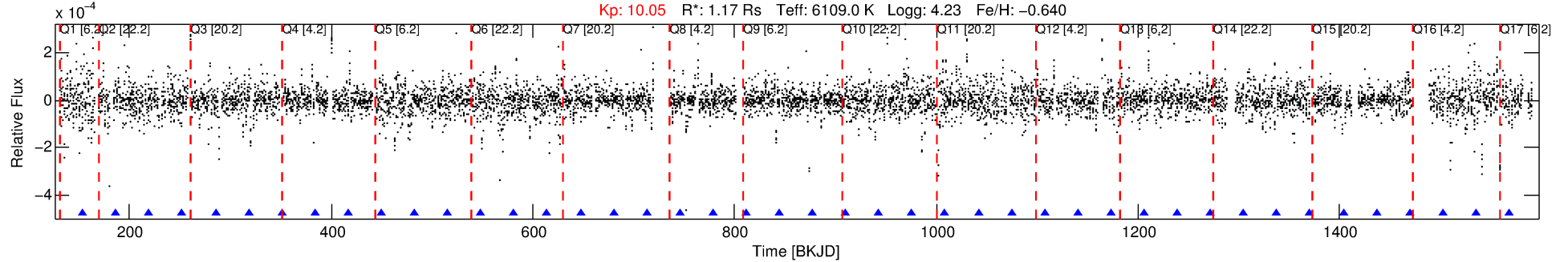
No Significant Match Found

DV One-Page Summary

KIC: 9752973 Candidate: 5 of 7 Period: 32.888 d

KOI: K03162 Corr: No Ephemeris Match

Kp: 10.05 R*: 1.17 Rs Teff: 6109.0 K Logg: 4.23 Fe/H: -0.640



DV Fit Results:

Period = 32.88807 [0.00086] d
Epoch = 153.7957 [0.0212] BKJD
Rp/R* = 0.0080 [0.0100]
a/R* = 33.28 [229.38]
b = 0.89 [1.70]
Seff = 47.38 [19.08]
Teff = 669 [67] K
Rp = 1.03 [1.30] Re
a = 0.1904 [0.0442] AU
Ag = 3045.48 [7762.70] [0.39σ]
Teffp = 7684 [4844] K [1.45σ]

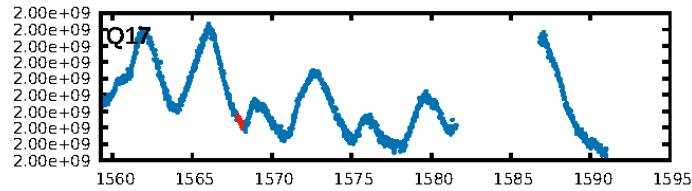
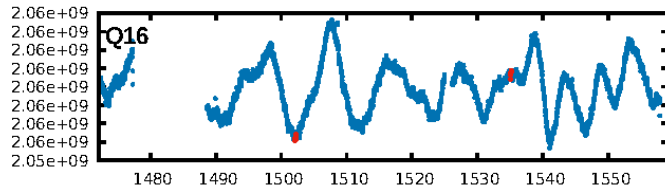
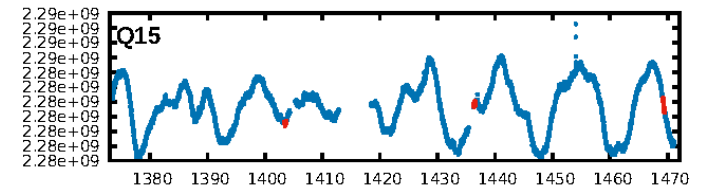
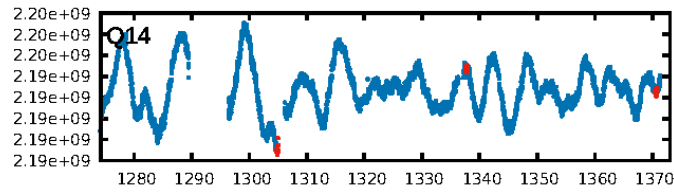
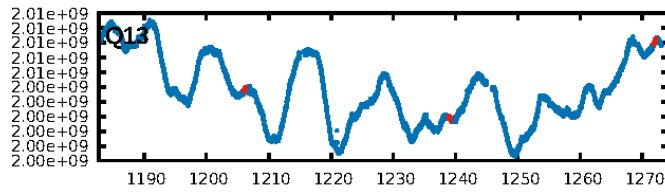
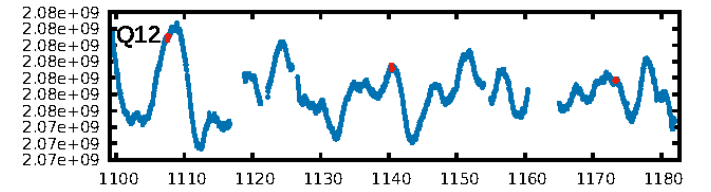
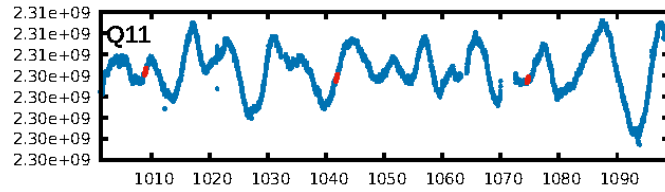
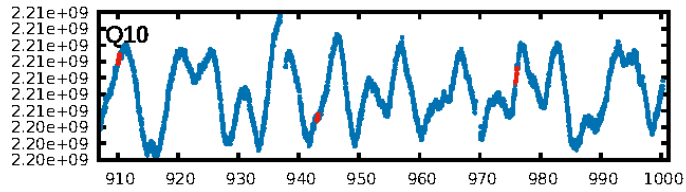
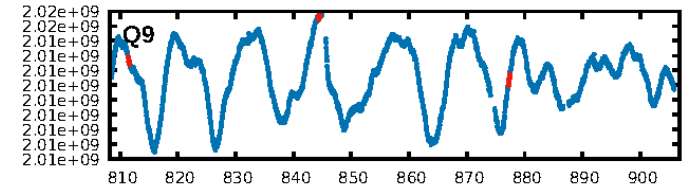
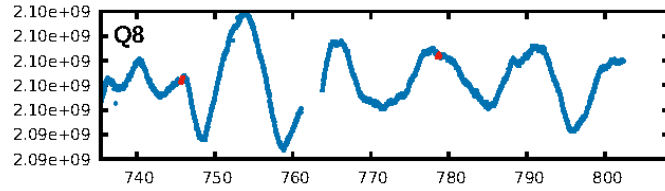
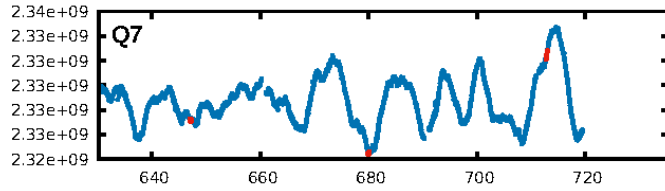
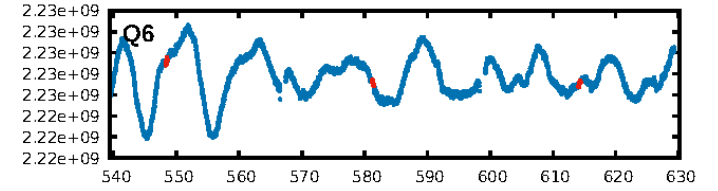
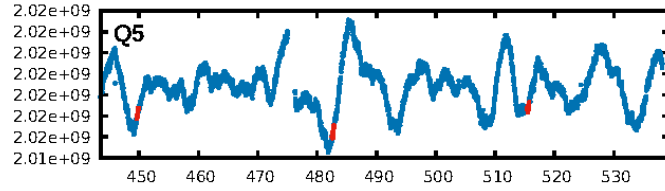
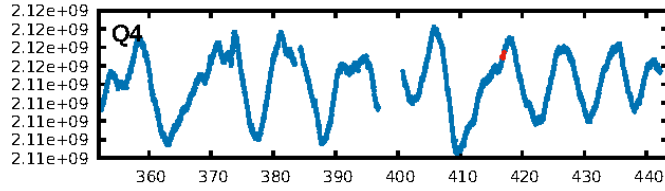
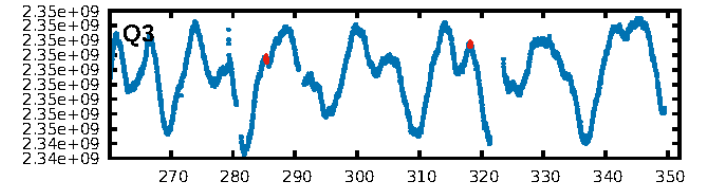
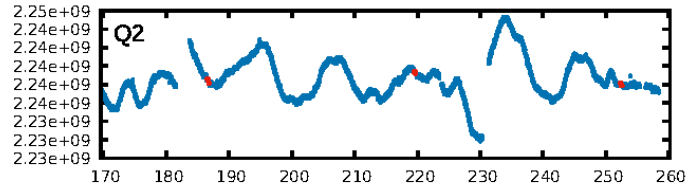
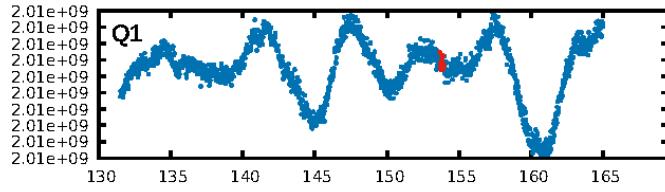
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [70.02σ]
LongPeriod-sig: 100.0% [21.39σ]
ModelChiSquare2-sig: 14.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.08765
Centroid-sig: 49.4%
Centroid-so: 2.266 arcsec [0.89σ]
OotOffset-rm: 9.788 arcsec [4.44σ]
KicOffset-rm: 12.169 arcsec [5.68σ]
OotOffset-st: 1/2/3/2 [8]
KicOffset-st: 1/2/3/2 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.00 [0/17]

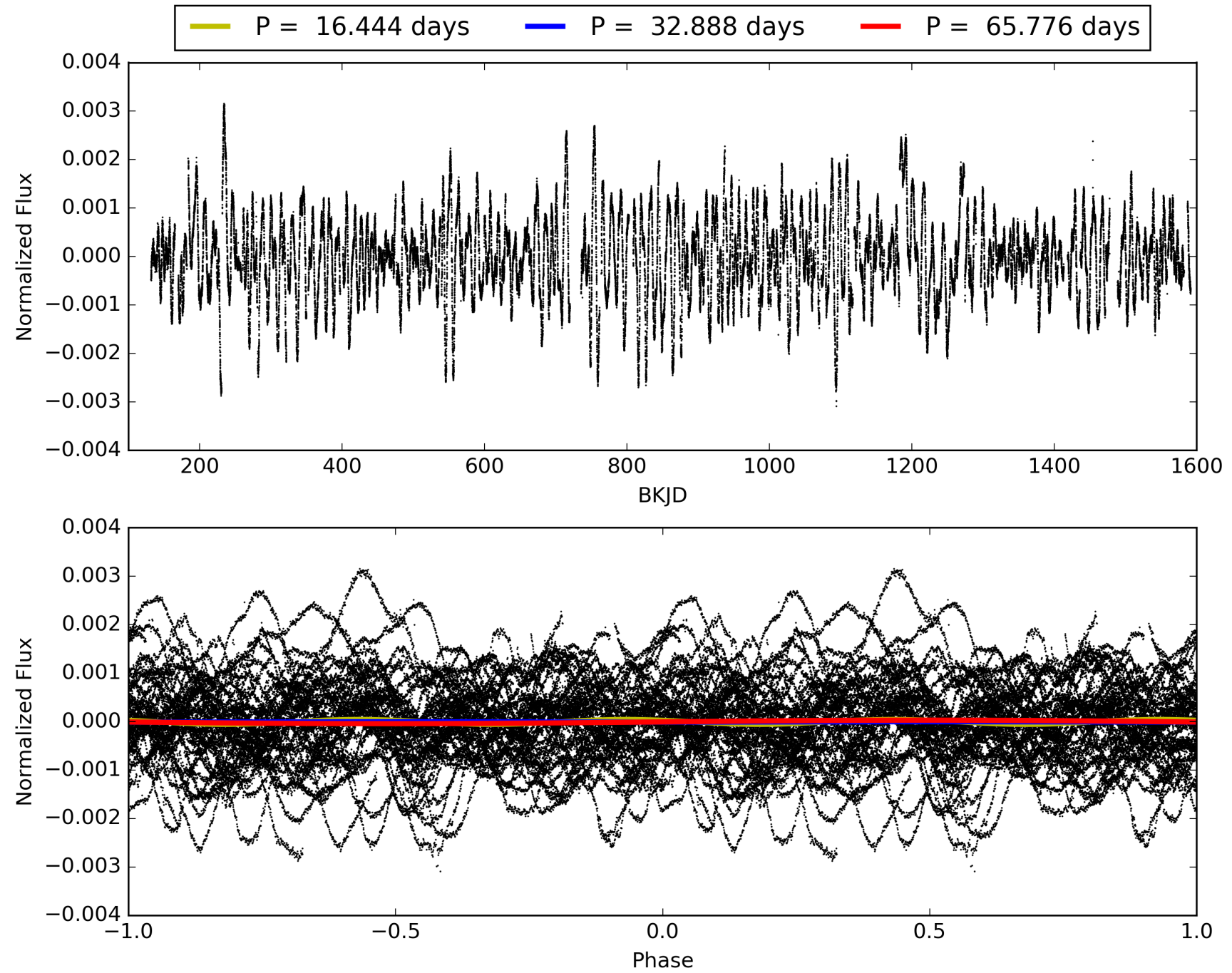
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:42:58 Z

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

TCE 009752973-05, PDC Light Curves

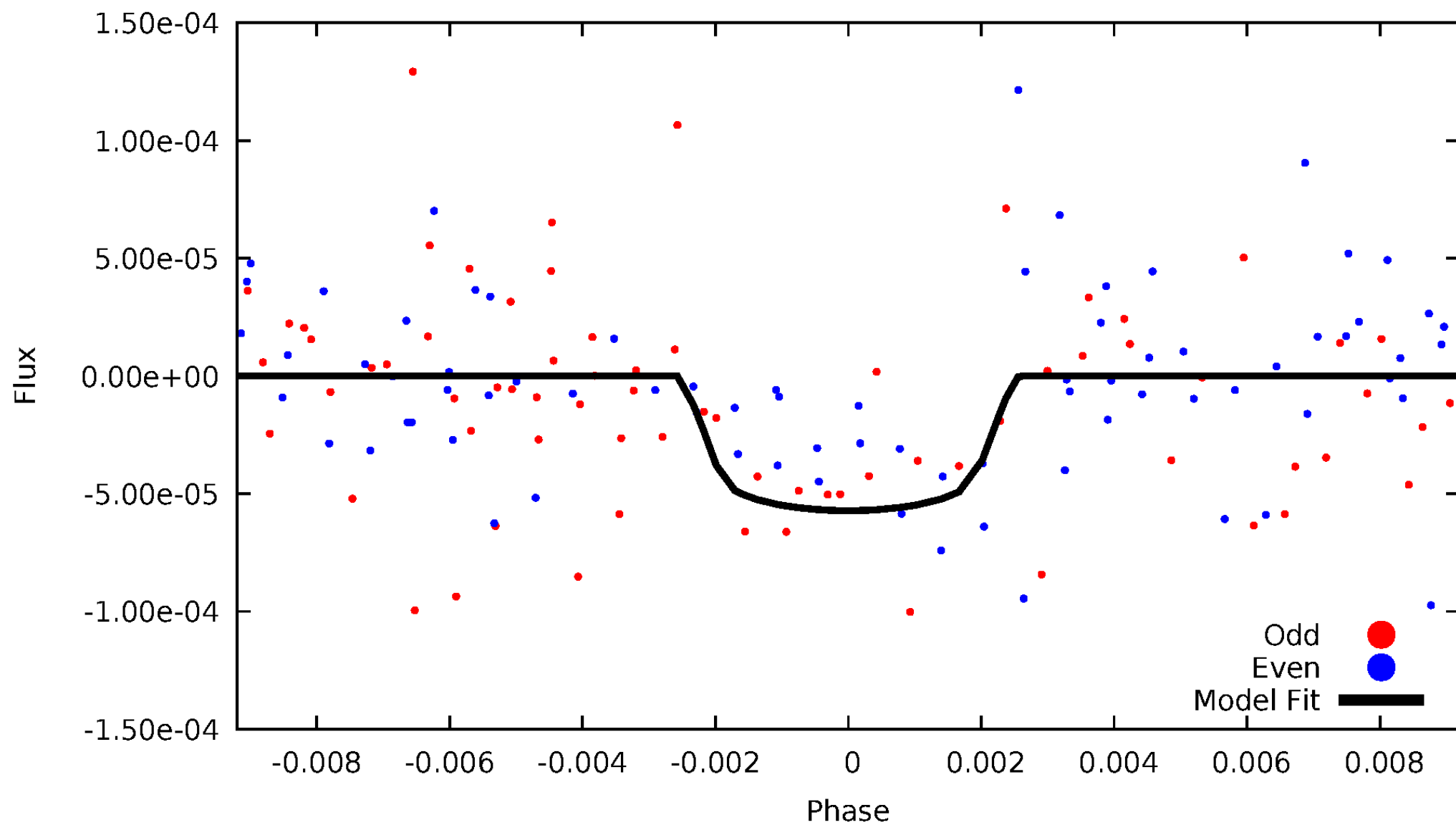


TCE 009752973-05



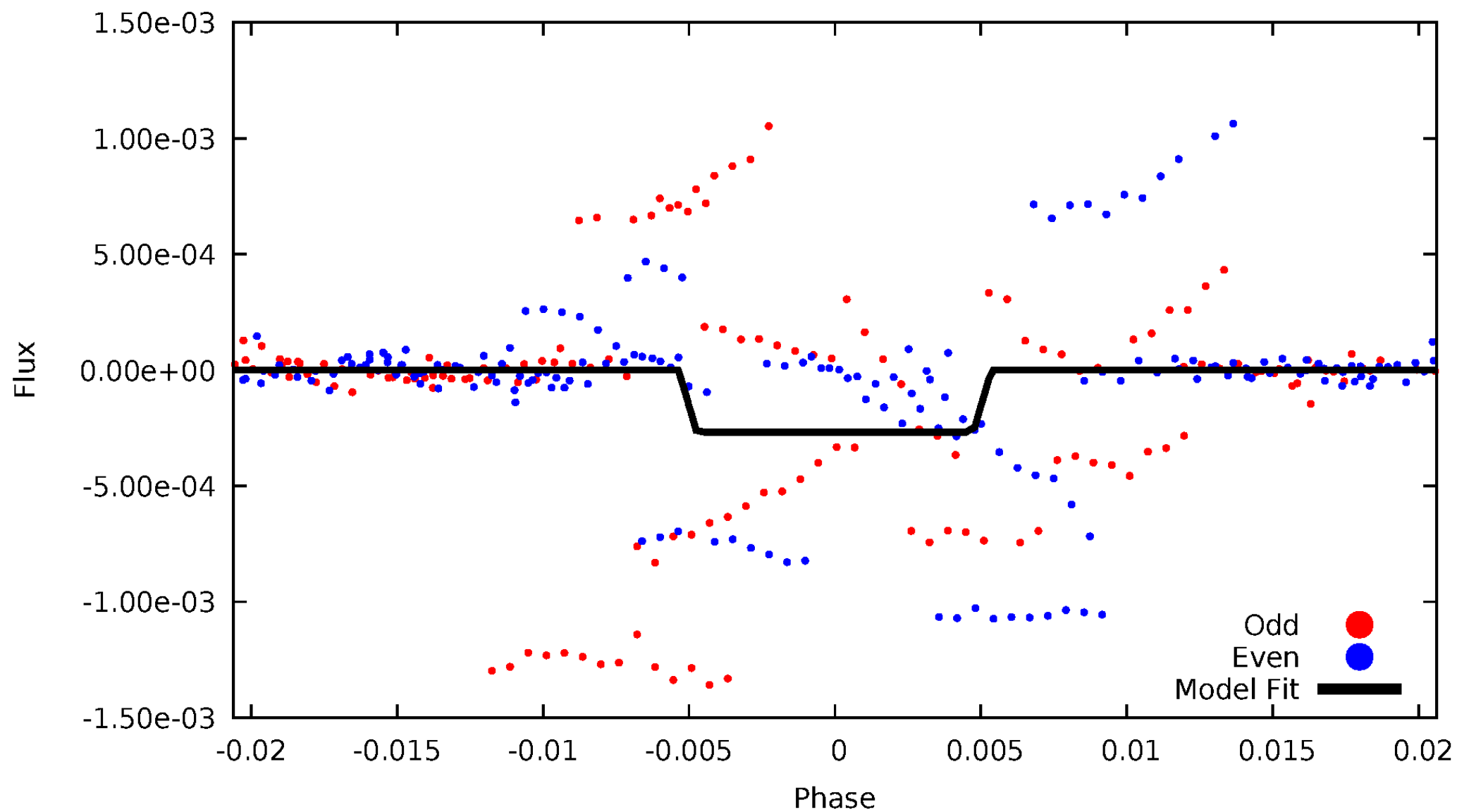
DV Odd/Even

TCE 009752973-05



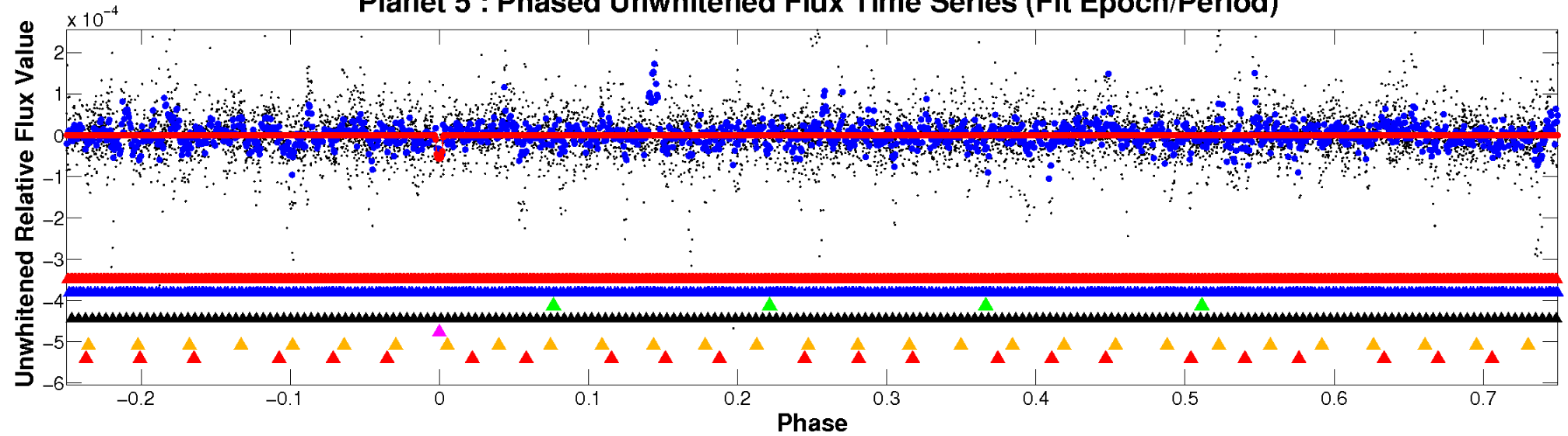
ALT Odd/Even

TCE 009752973-05

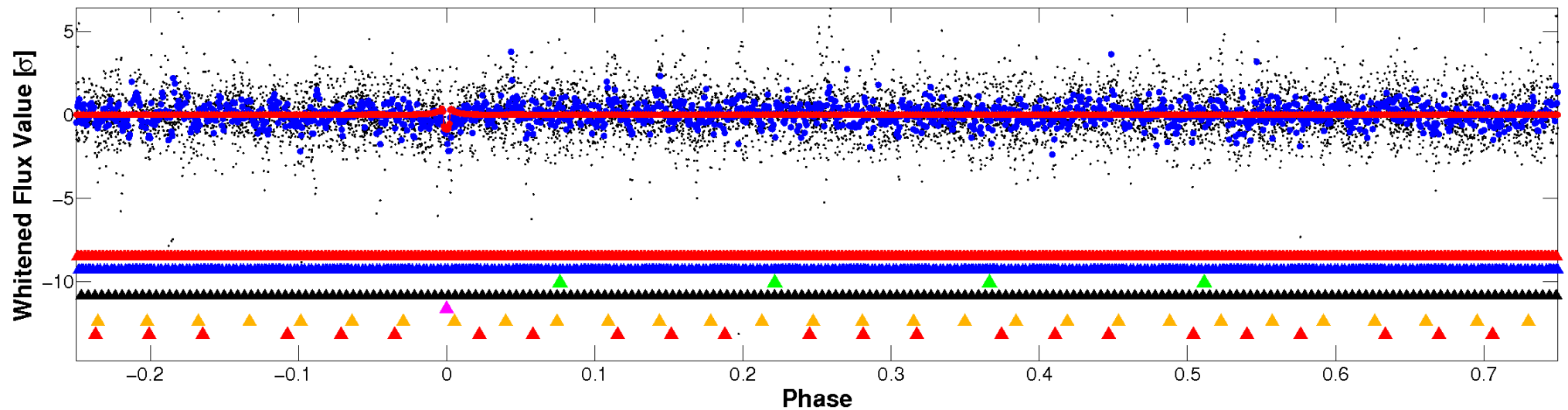


Non-Whitened Vs. Whitened Light Curve

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

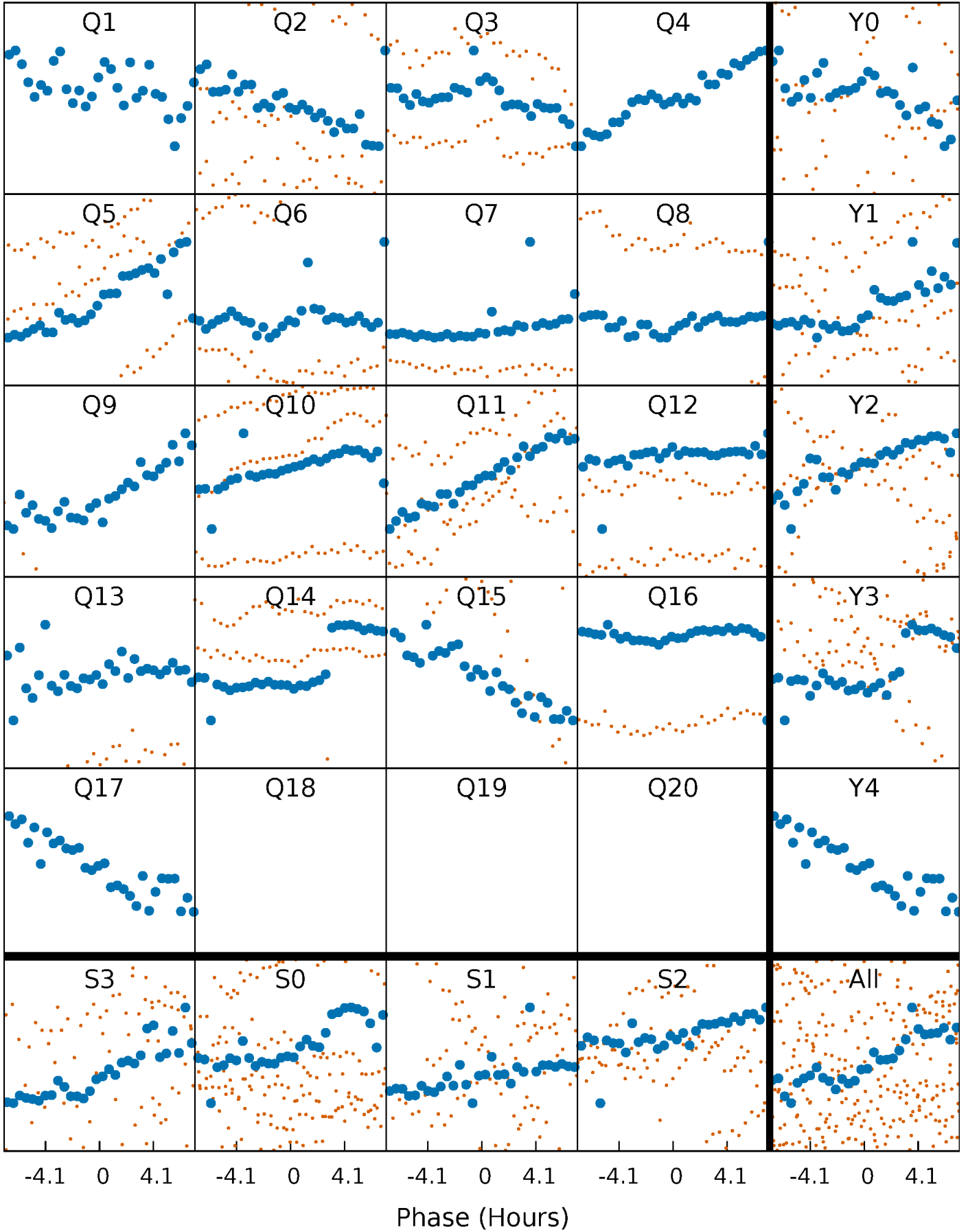


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



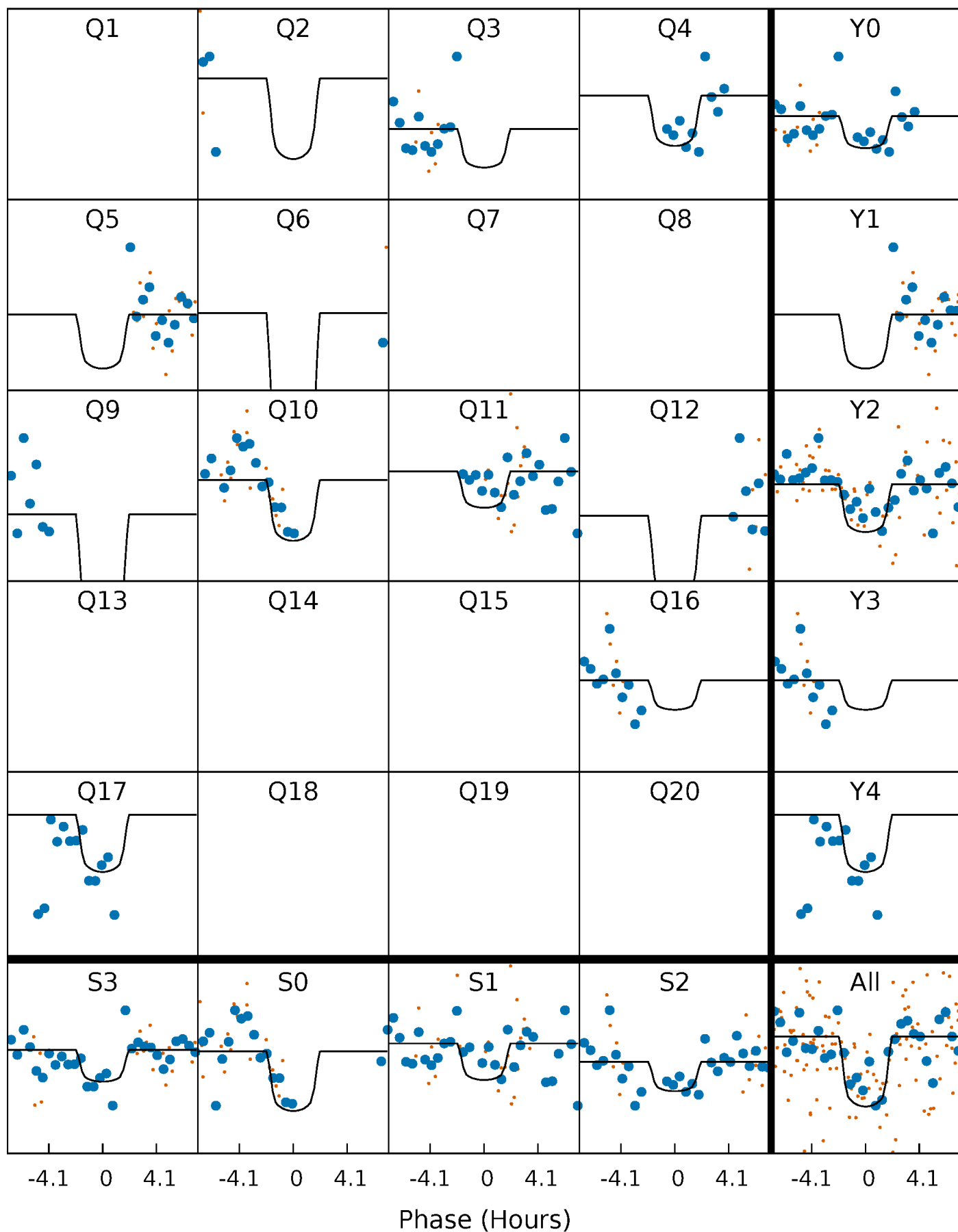
PDC Quarter-Phased Transit Curves

TCE 009752973-05 $P = 32.888072$ Days $T_0 = 153.795656$ (BKJD)



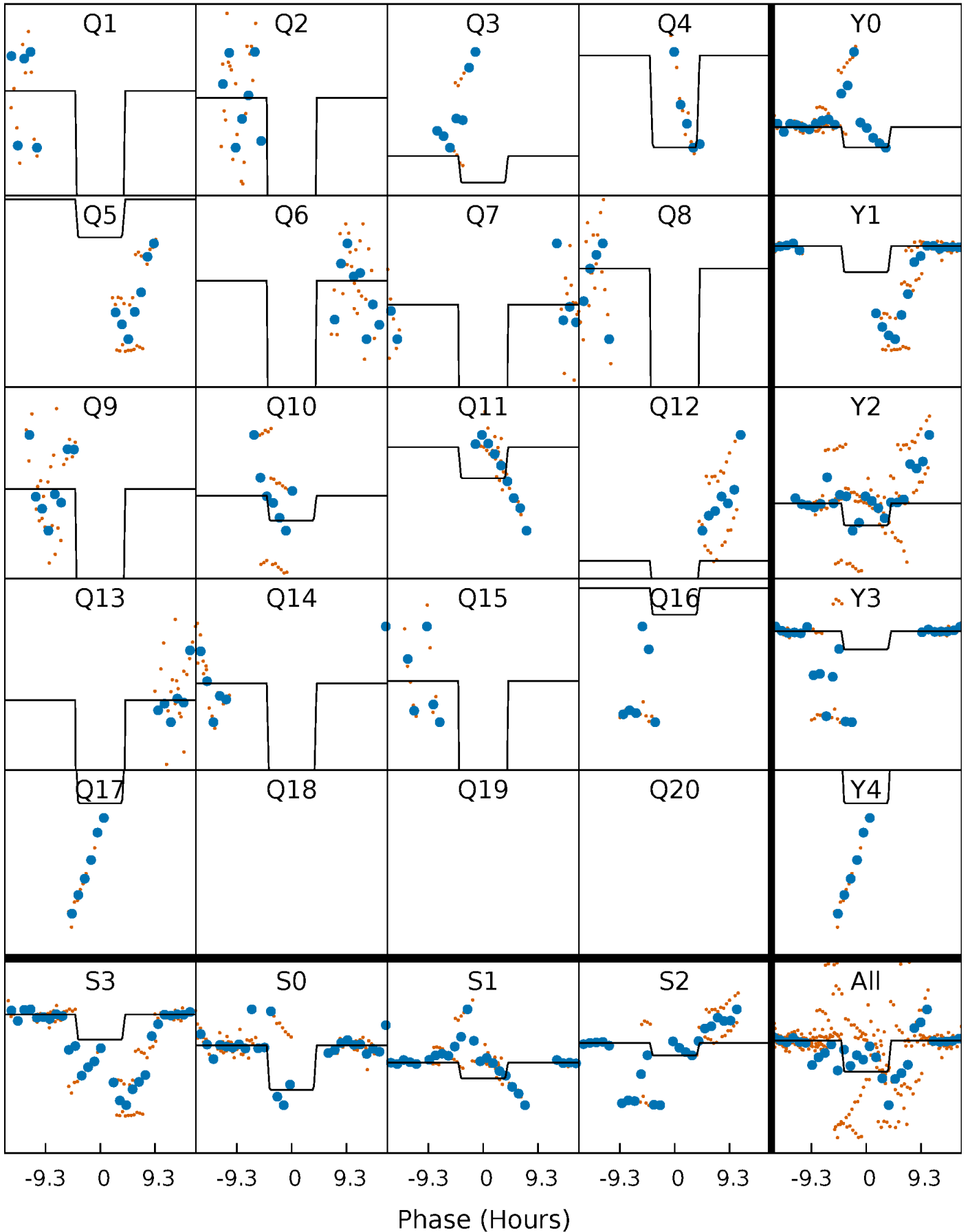
DV Quarter-Phased Transit Curves

TCE 009752973-05 P= 32.888072 Days $T_0=153.795656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

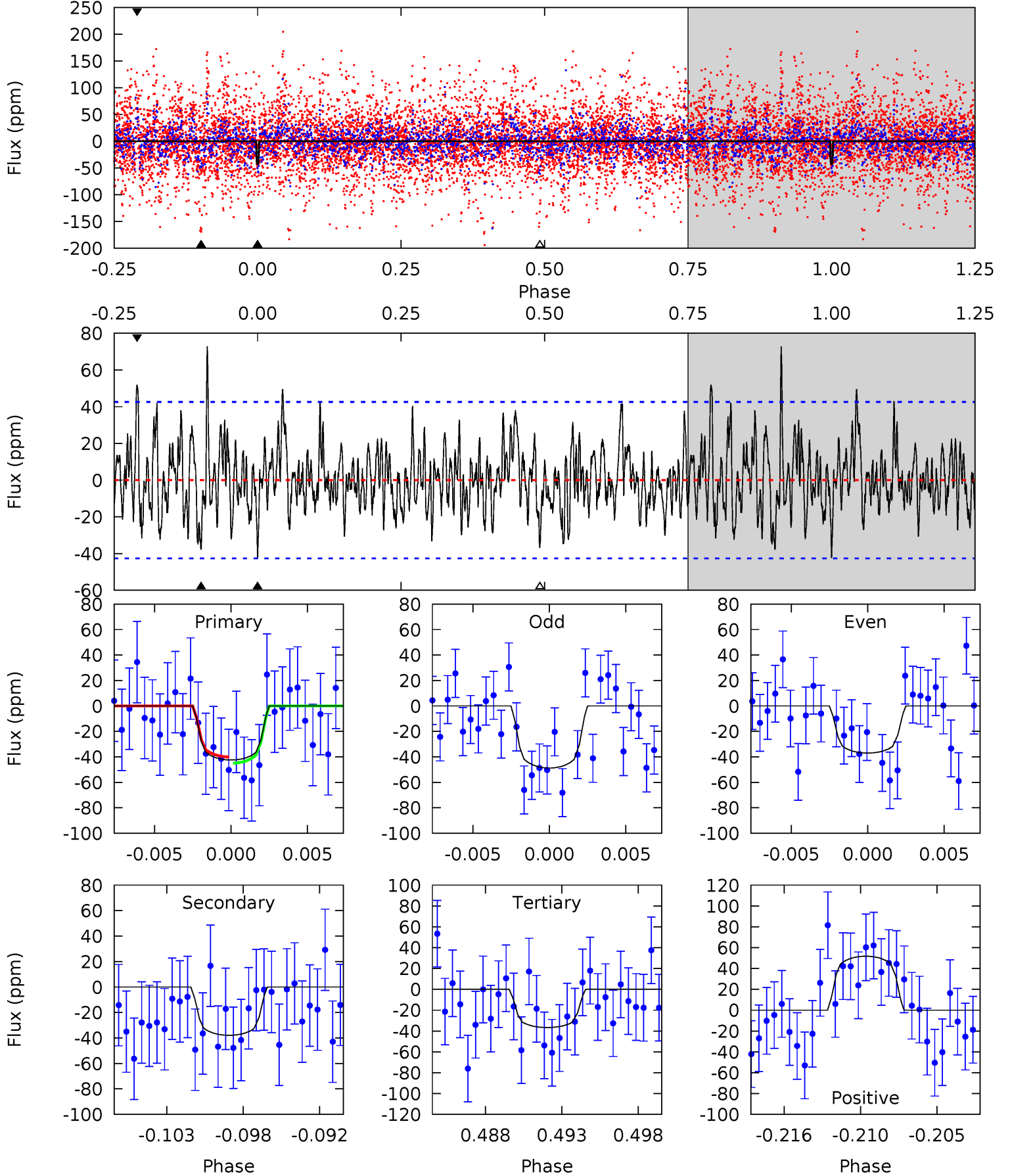
TCE 009752973-05 $P = 32.888556$ Days $T_0 = 153.783278$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-05, P = 32.888072 Days, E = 120.907584 Days

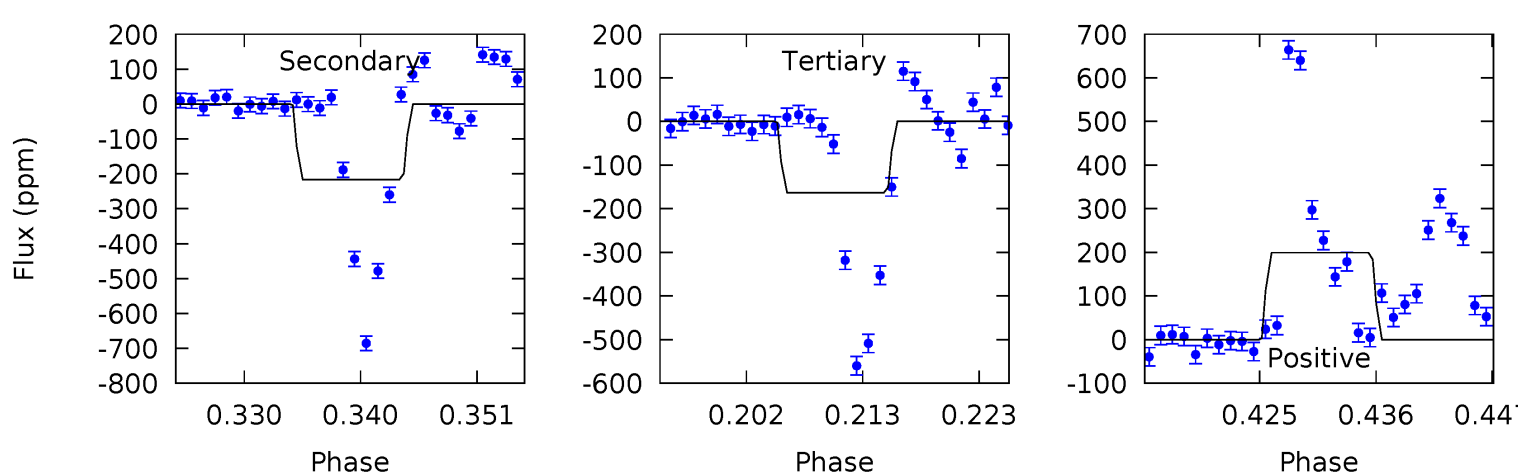
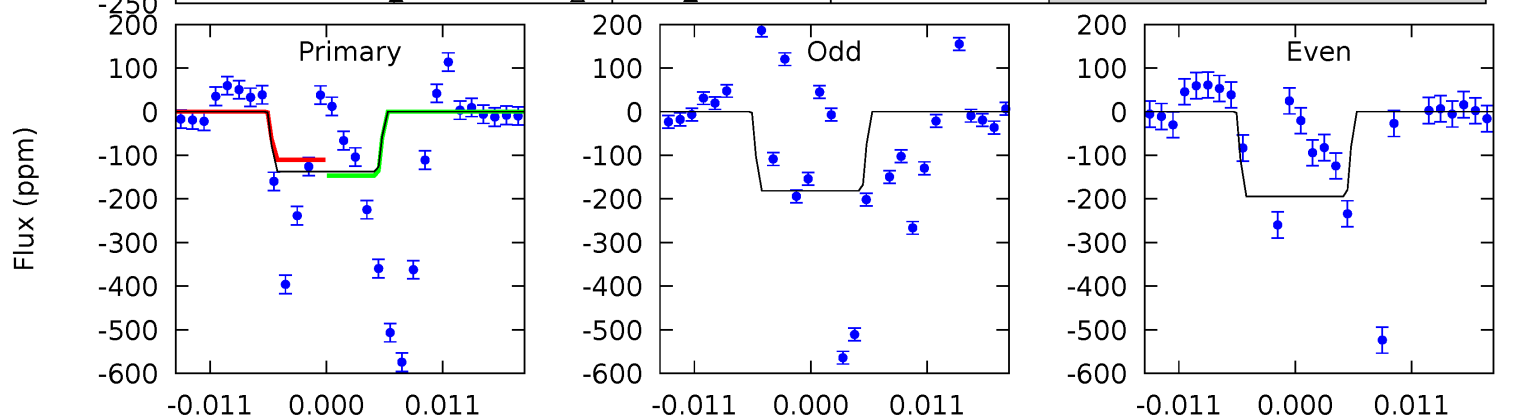
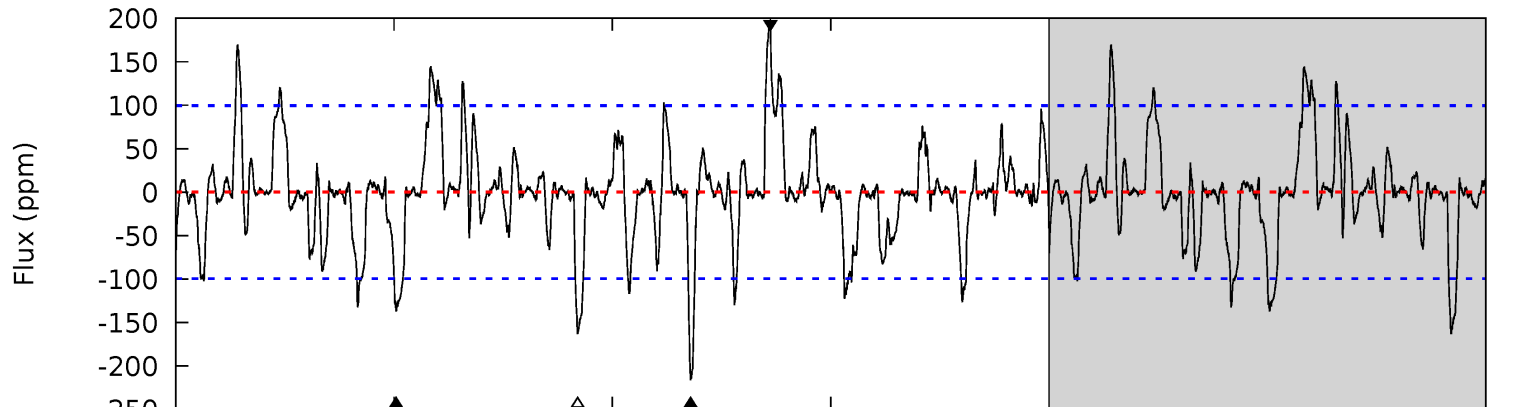
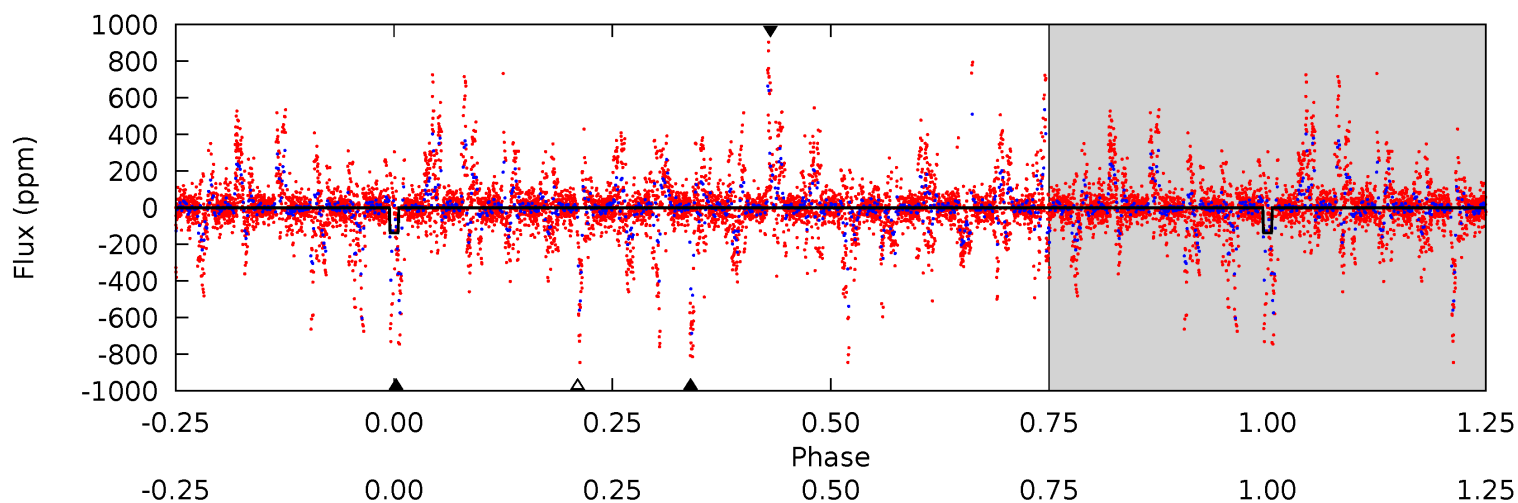
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.13	4.58	4.43	6.26	5.15	2.80	1.85	0.70	-1.13	0.15	-1.68	0.67	1.04	0.63	0.30



Alt Model-Shift Uniqueness Test

009752973-05, P = 32.888556 Days, E = 120.894722 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.91	10.9	8.22	10.0	5.01	2.55	2.31	-1.32	-3.14	2.66	0.84	0.24	2.34	0.48	0.92



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-38 ± 8	$1.36^{+1.11}_{-0.90}$	927^{+61}_{-64}	4709^{+3460}_{-930}	409^{+3408}_{-288}
Alt.	-216 ± 20	$2.16^{+1.36}_{-1.13}$	929^{+58}_{-63}	5668^{+2720}_{-1064}	949^{+3168}_{-595}

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

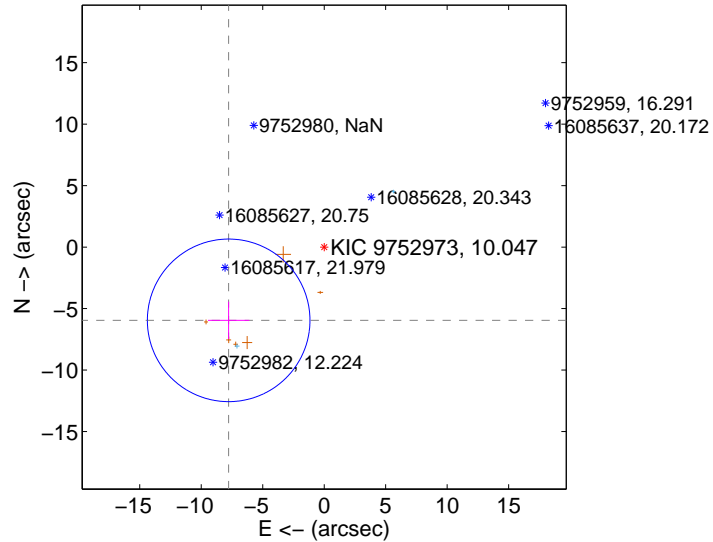
Supplemental centroid analysis for 009752973-05. **Kepler magnitude: 10.05.** Transit SNR 4.64

There are 2 quarters with good PRF difference image offsets

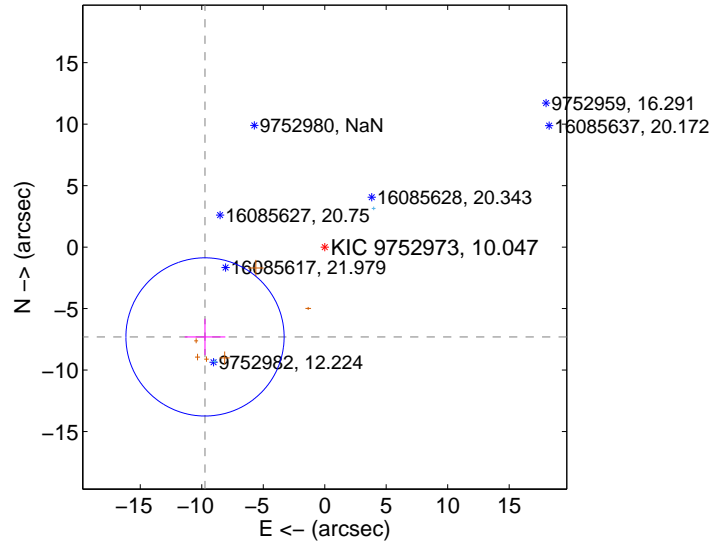
The OOT PRF centroid is offset from the target star catalog position by about 2.25 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.788 ± 2.203	4.44	7.767 ± 1.678	-5.956 ± 1.522
PRF-fit source offset from KIC position	12.169 ± 2.144	5.68	9.733 ± 1.653	-7.304 ± 1.483
photometric centroid source offset	2.27 ± 2.53	0.89	-0.36 ± 2.46	-2.24 ± 2.53

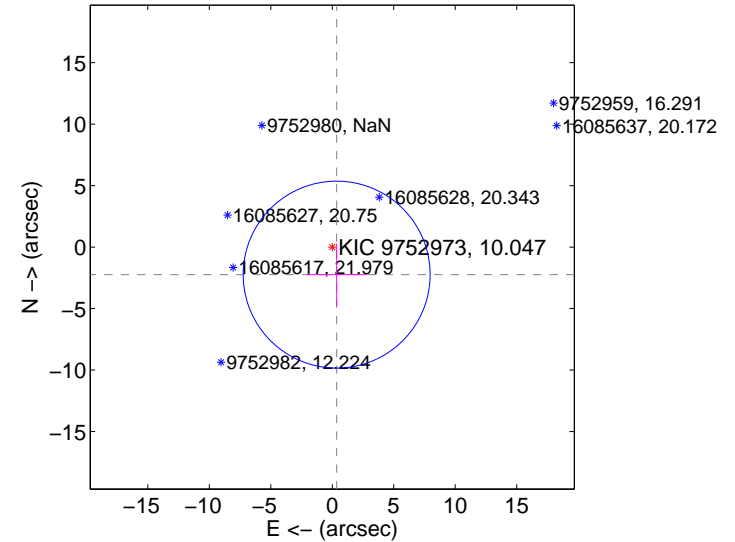
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

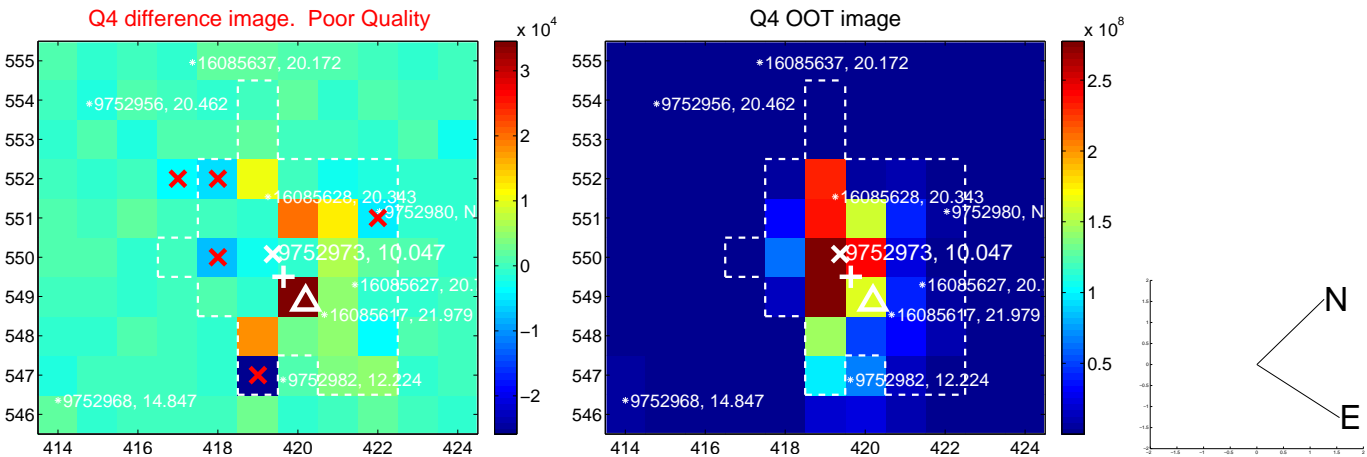
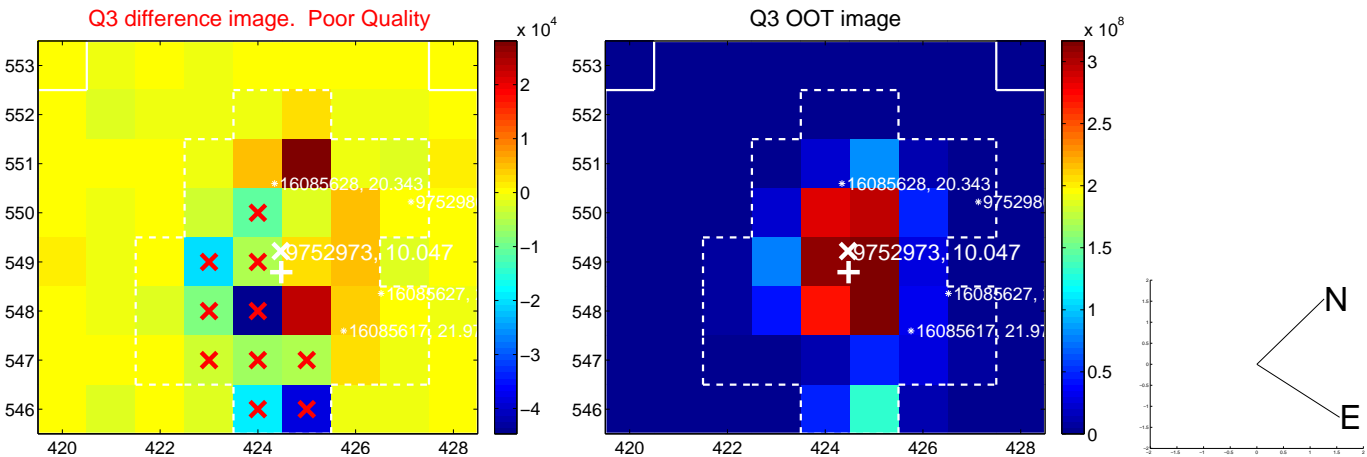
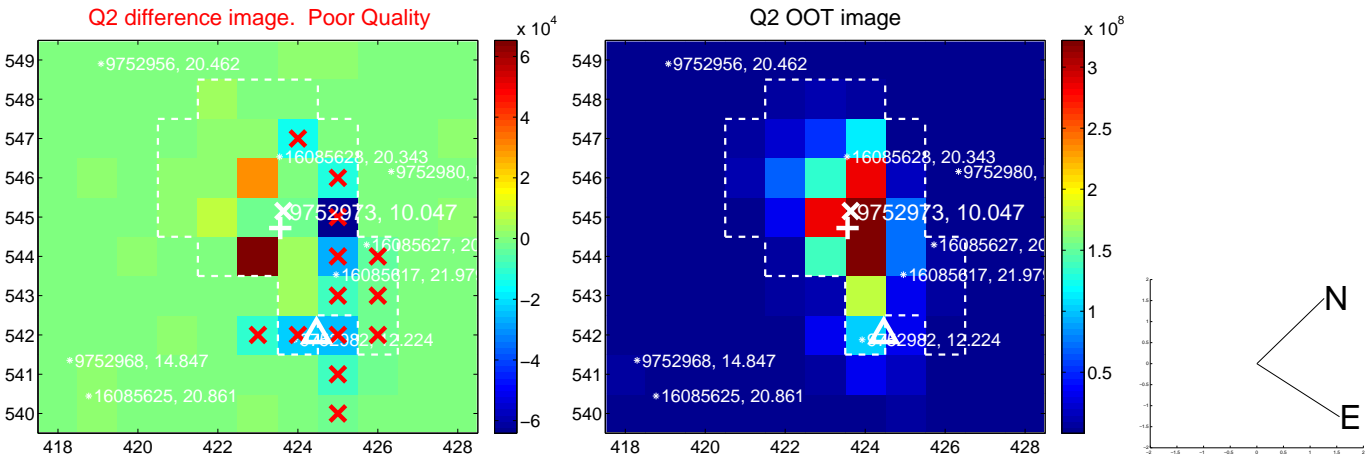
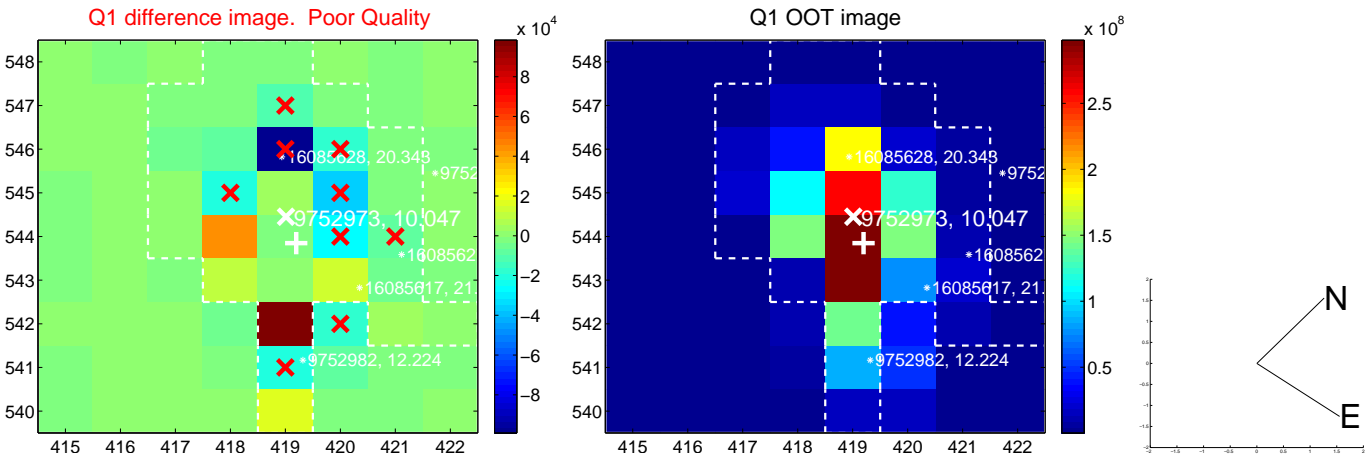


offset from photometric centroids

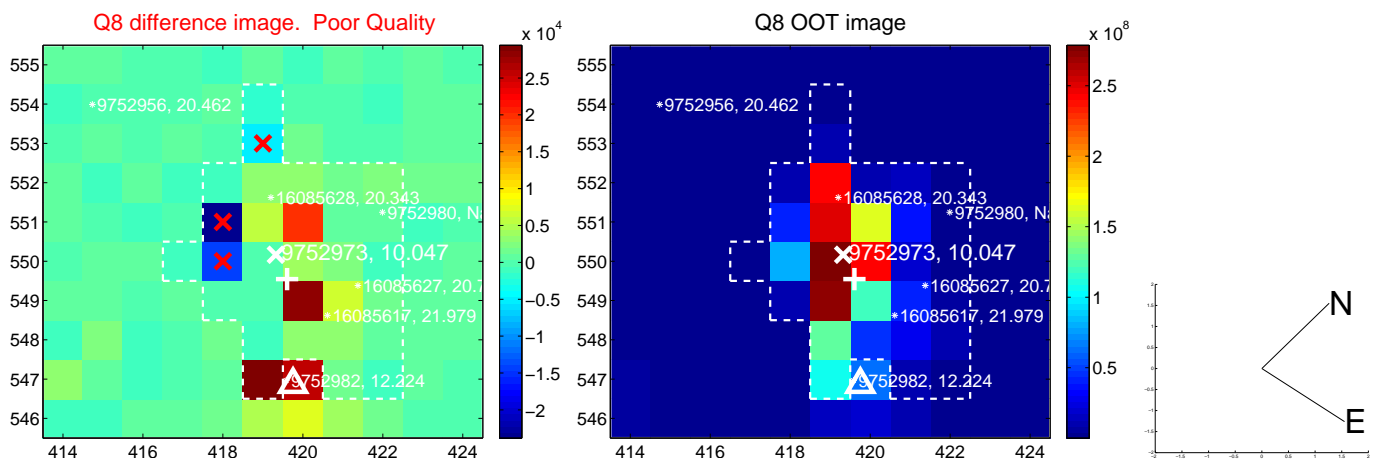
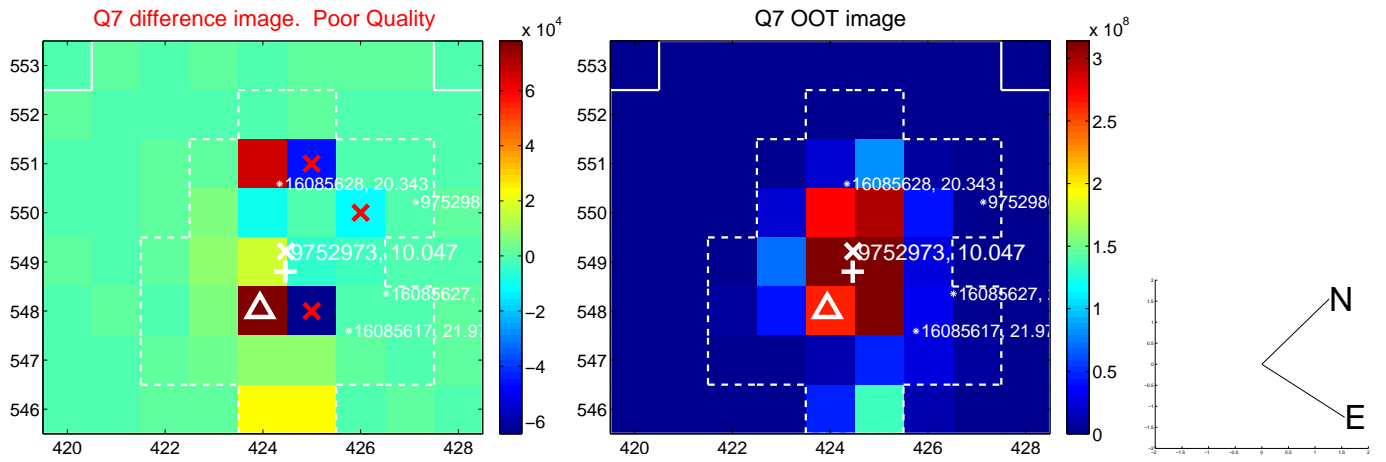
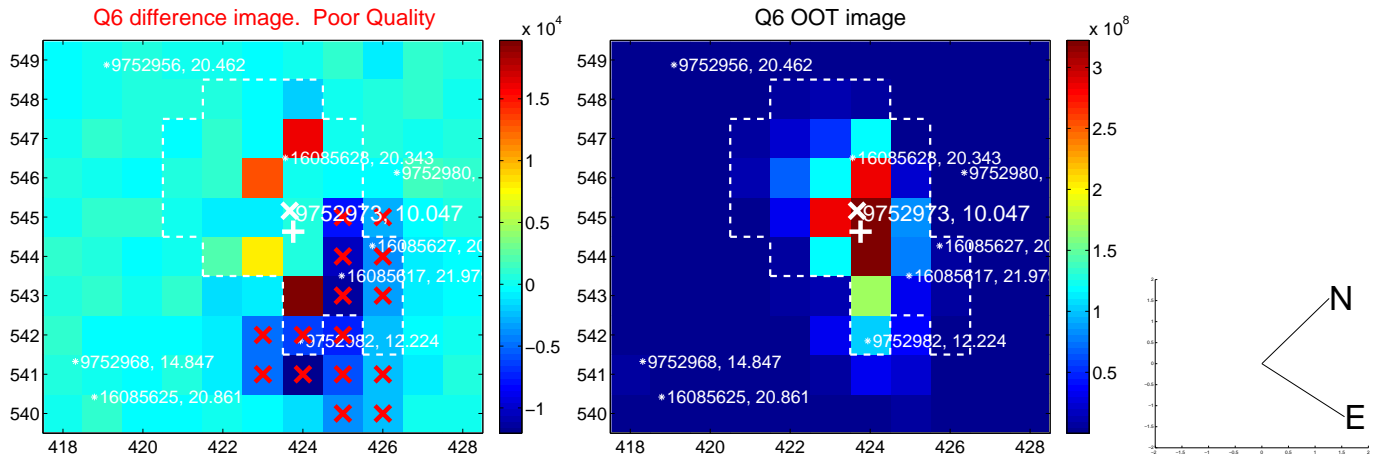
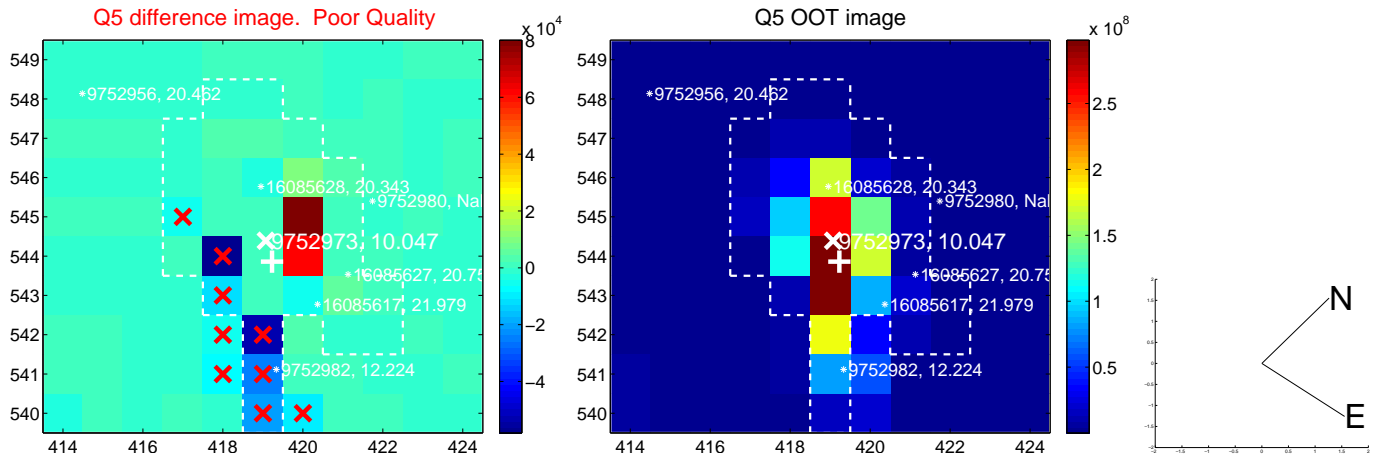


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

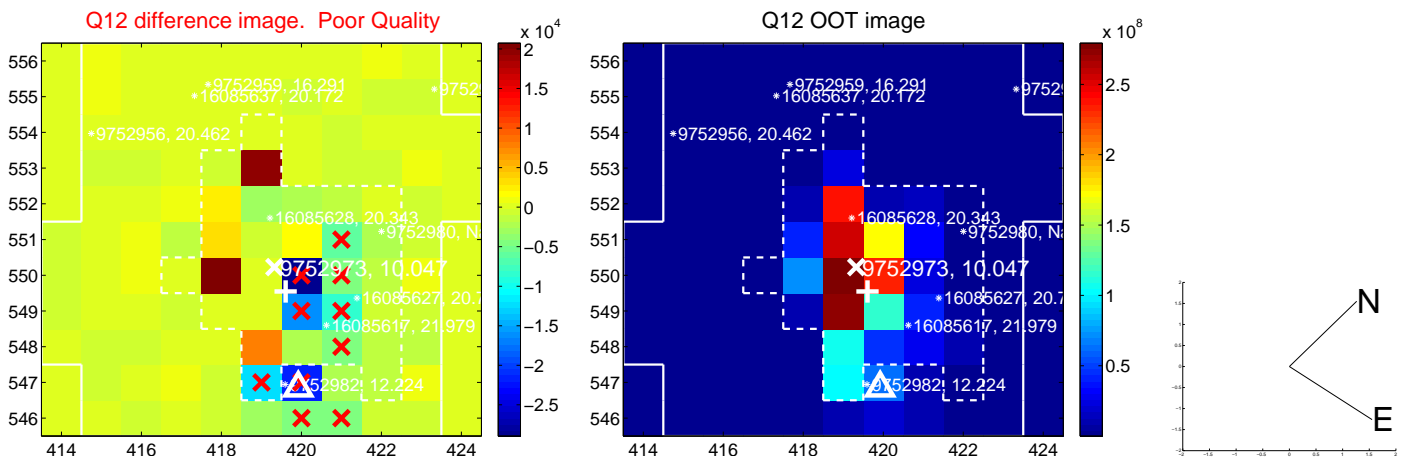
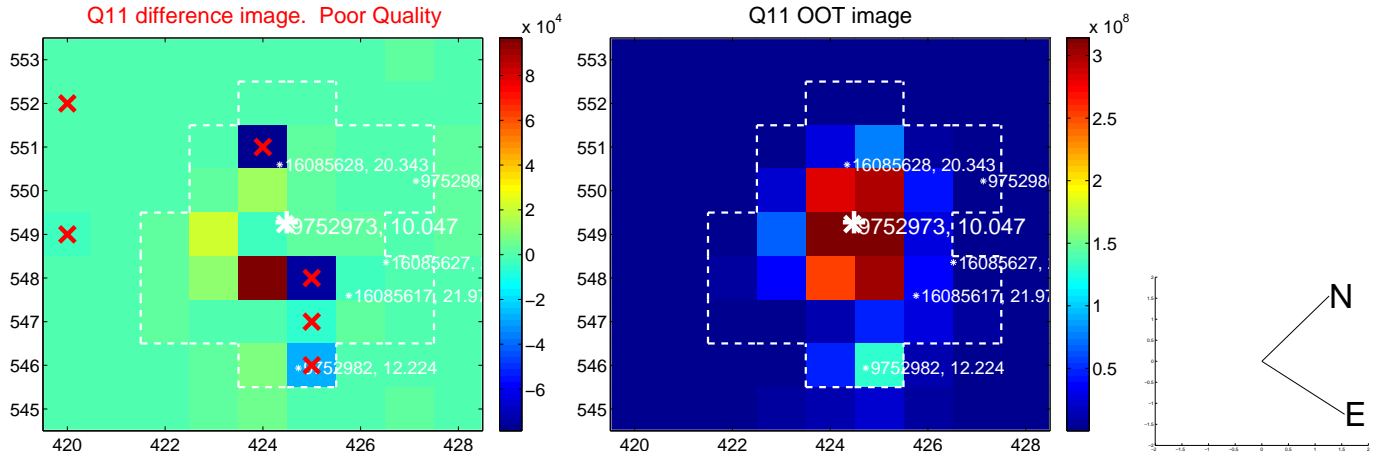
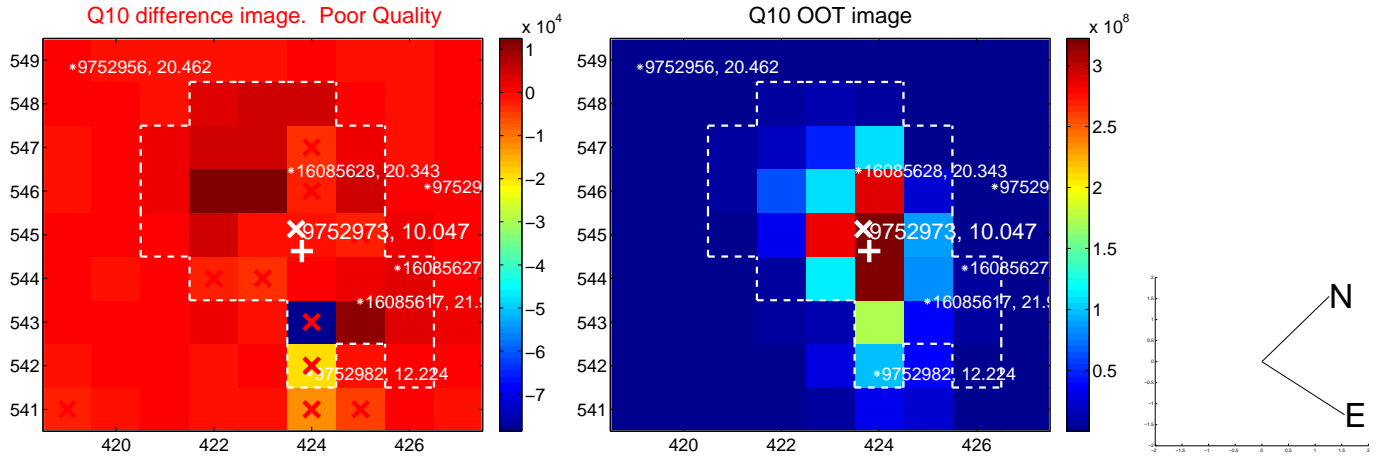
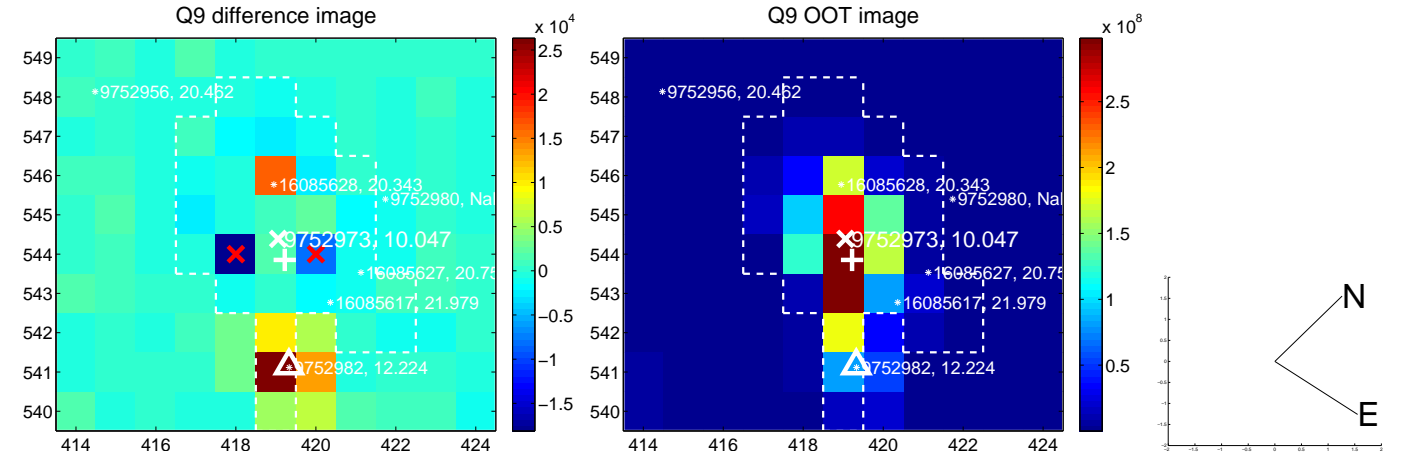
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



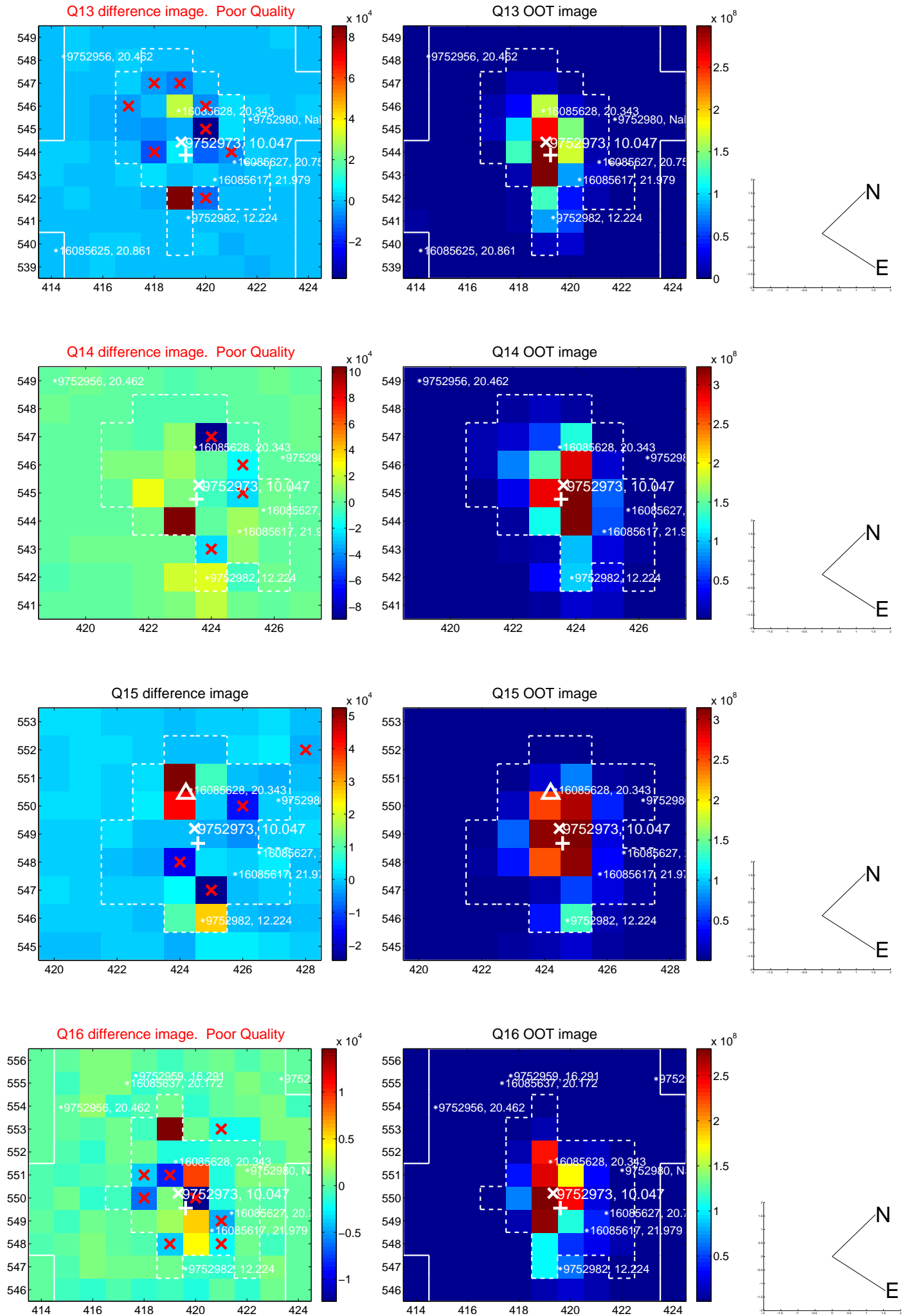
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



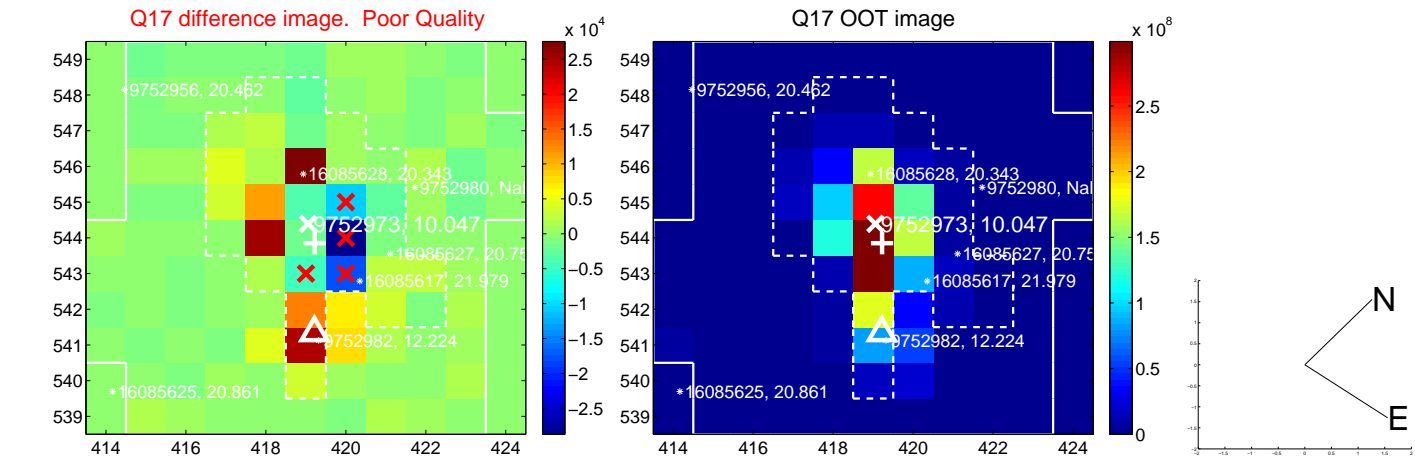
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



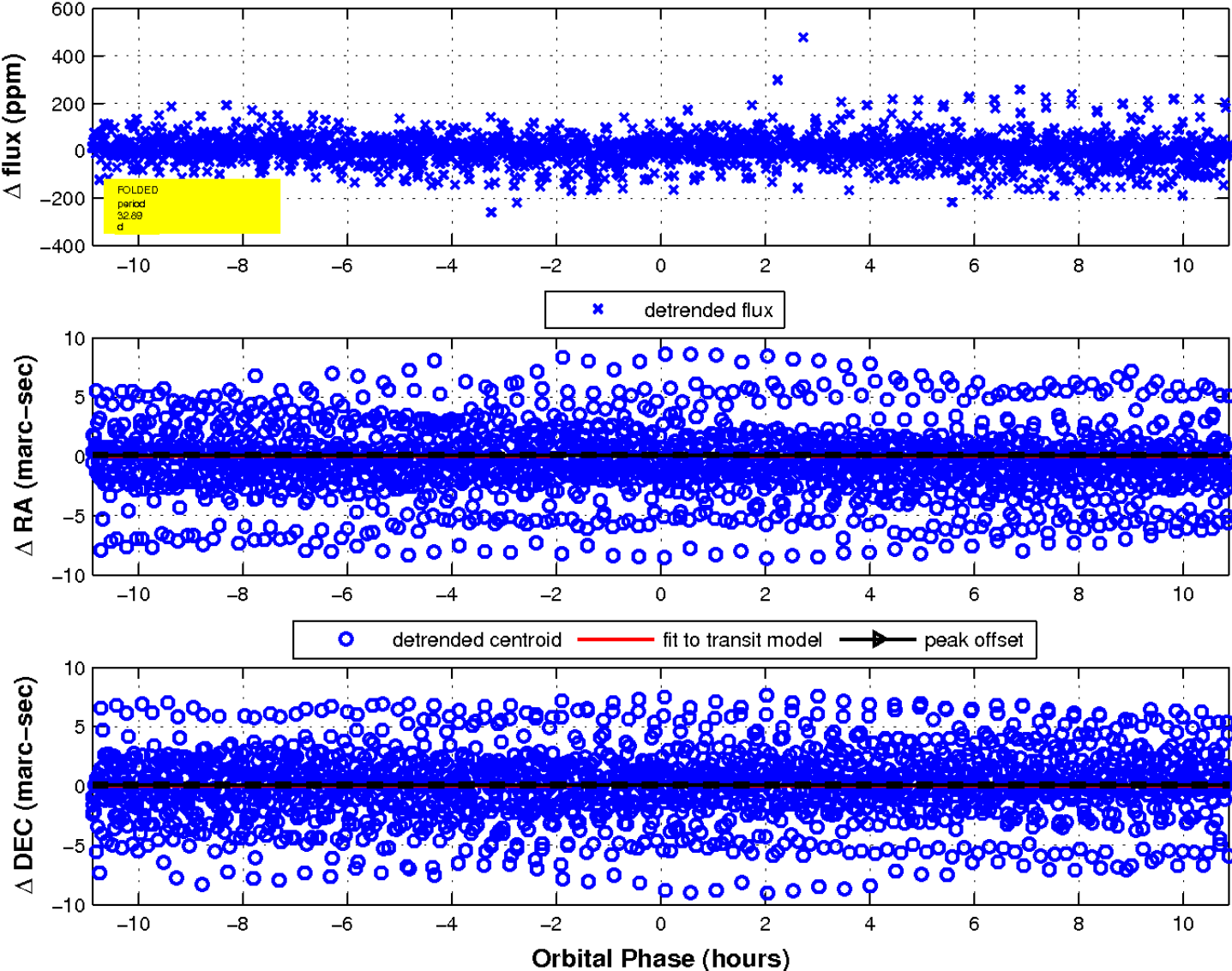
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



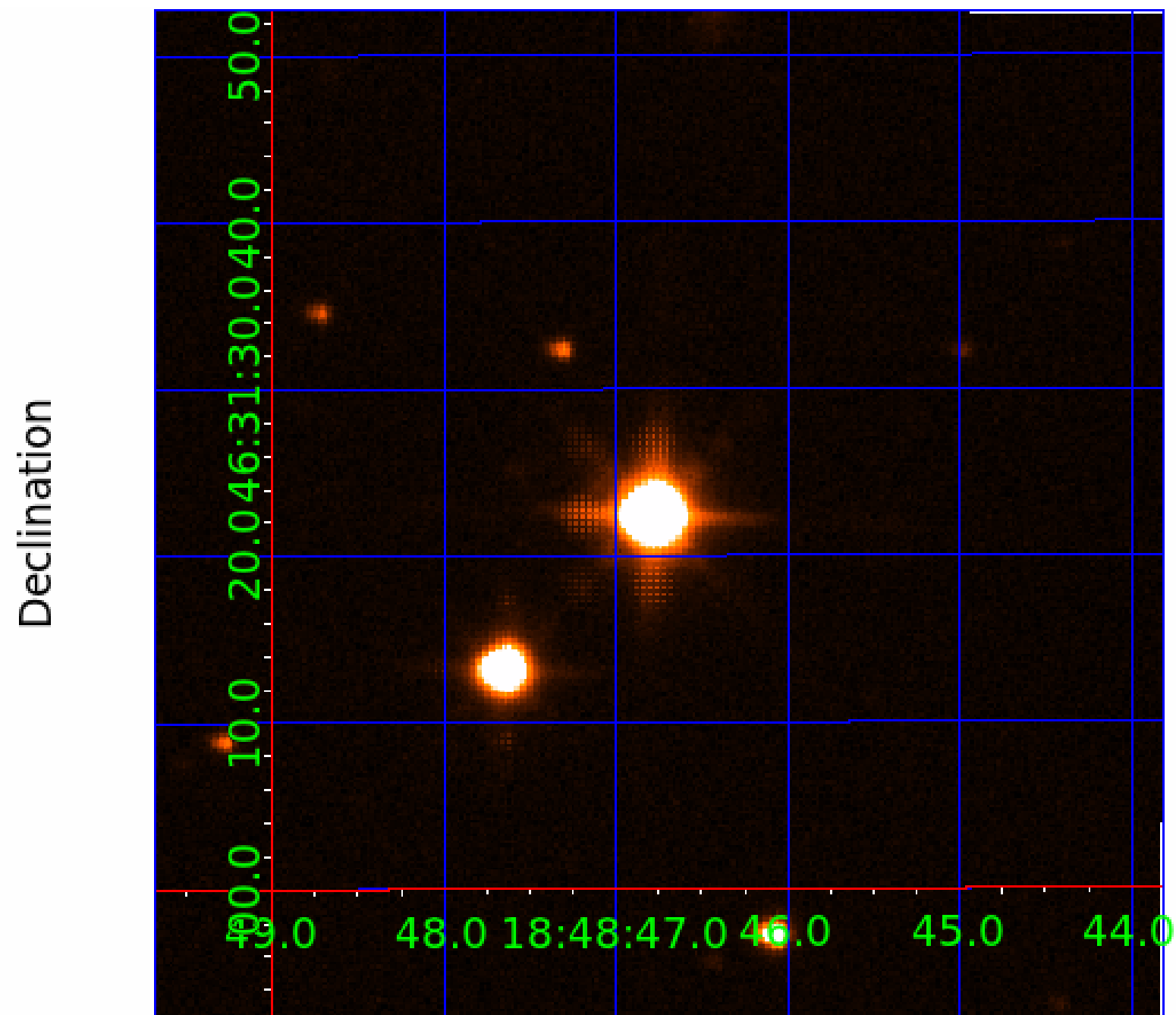
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 5 of 7



UKIRT Image



KIC 009752973

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})
009752973-01	OBS	3162.01	0.716713	132.048089	56.7	0.637	20.4	58.0	1.17	6109	1.07	7783.59
009752973-02	OBS	No	2.866679	132.433365	13.3	9.630	9.5	8.2	1.17	6109	0.51	1225.94
009752973-03	OBS	No	422.778462	236.389029	101.5	7.651	10.6	5.9	1.17	6109	1.40	1.57
009752973-04	OBS	No	2.866379	133.924140	15.7	10.032	9.2	10.5	1.17	6109	0.57	1226.11
009752973-05	OBS	No	32.888072	153.795656	57.2	3.630	13.8	4.6	1.17	6109	1.03	47.38
009752973-06	OBS	No	49.900710	163.023818	65.4	18.739	11.2	4.5	1.17	6109	1.01	27.18
009752973-07	OBS	No	61.516324	185.532040	106.4	3.000	10.5	-1.0	1.17	6109	1.22	20.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

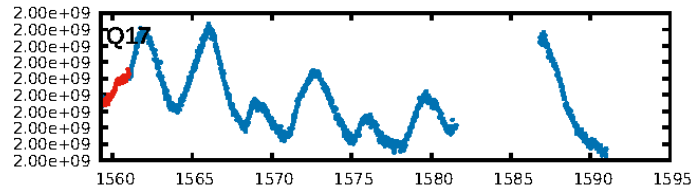
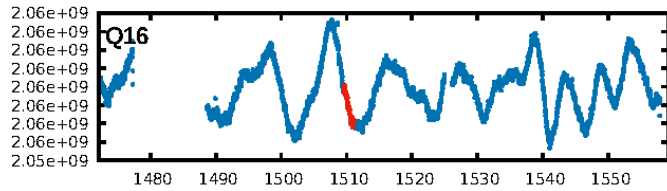
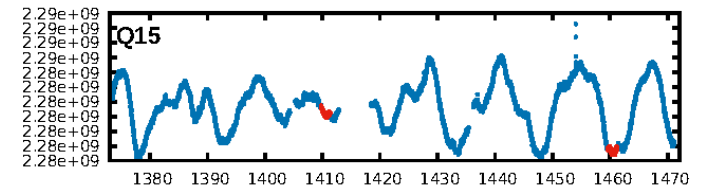
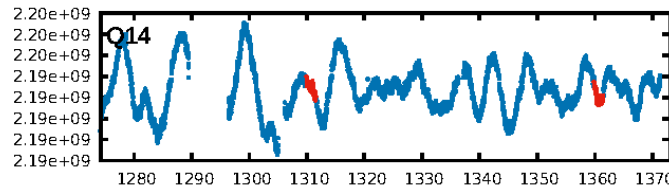
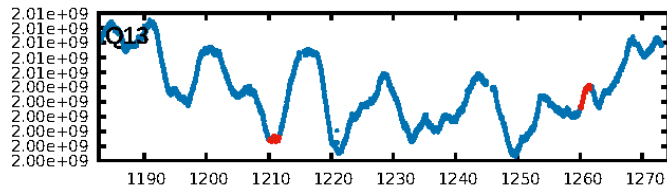
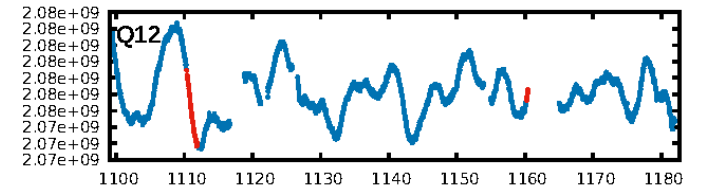
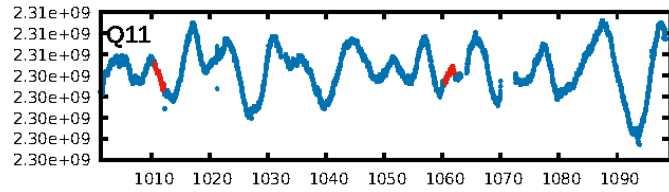
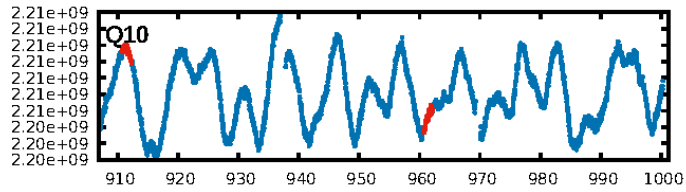
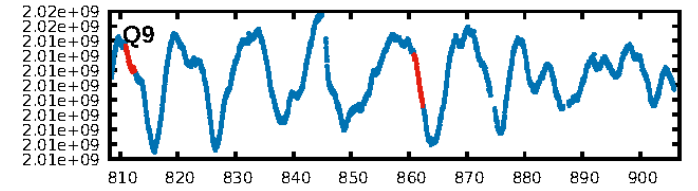
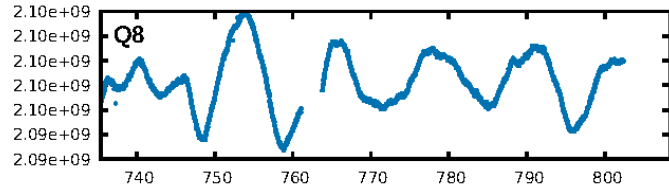
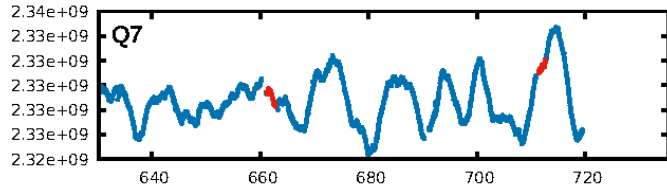
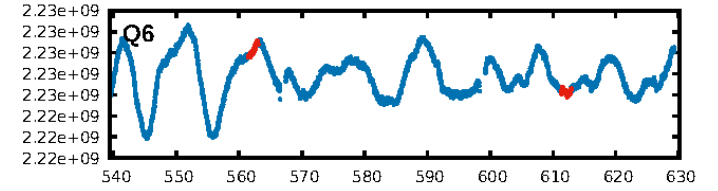
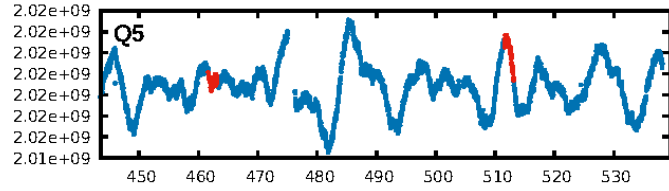
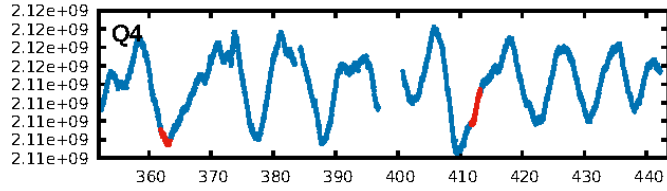
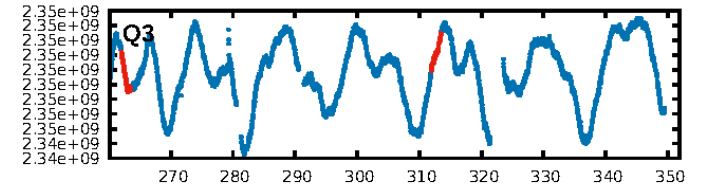
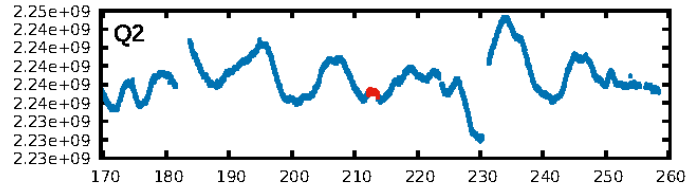
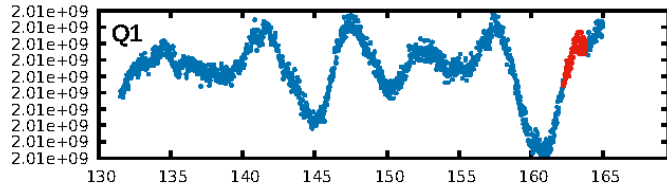
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009752973-06

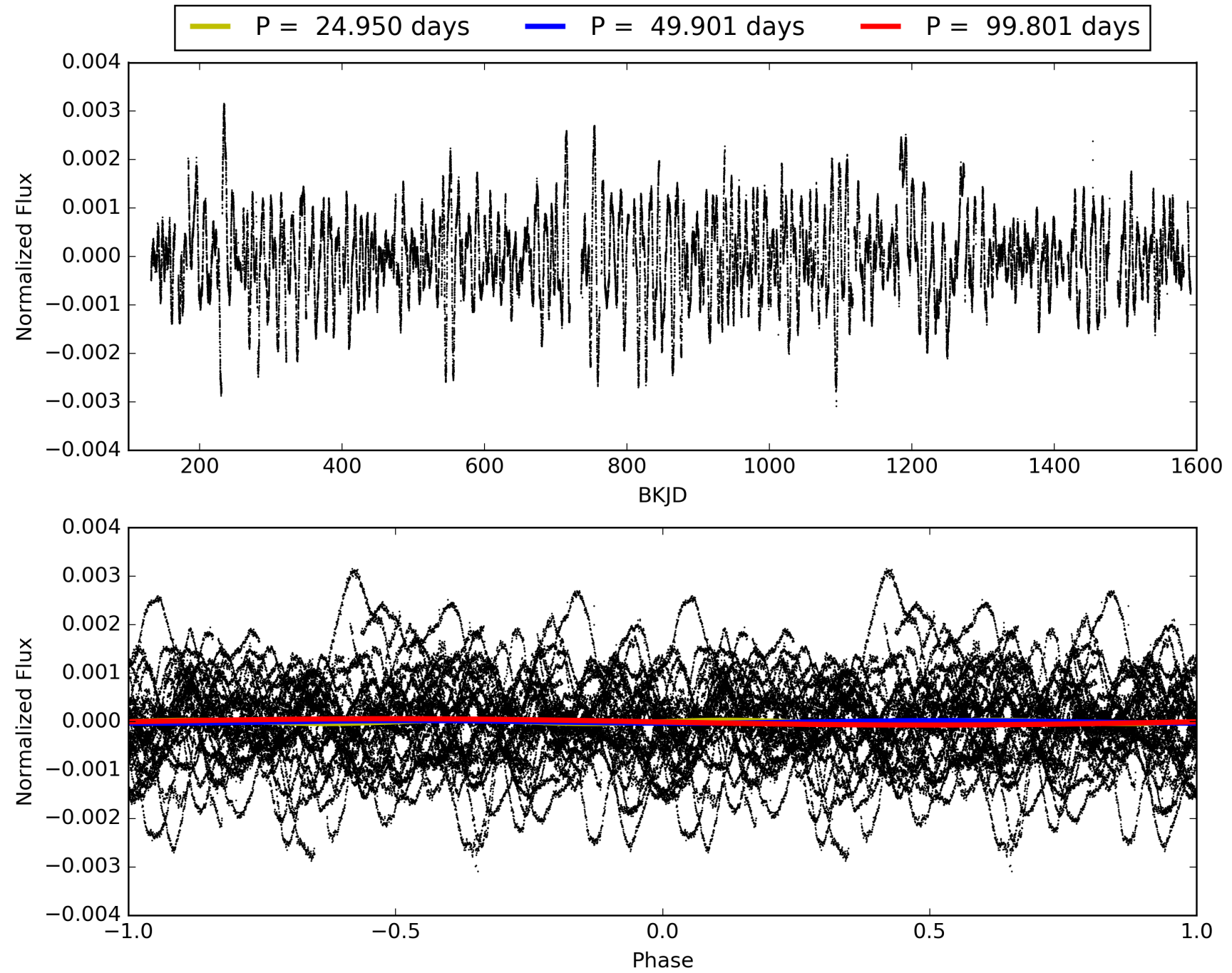
No Significant Match Found

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

TCE 009752973-06, PDC Light Curves

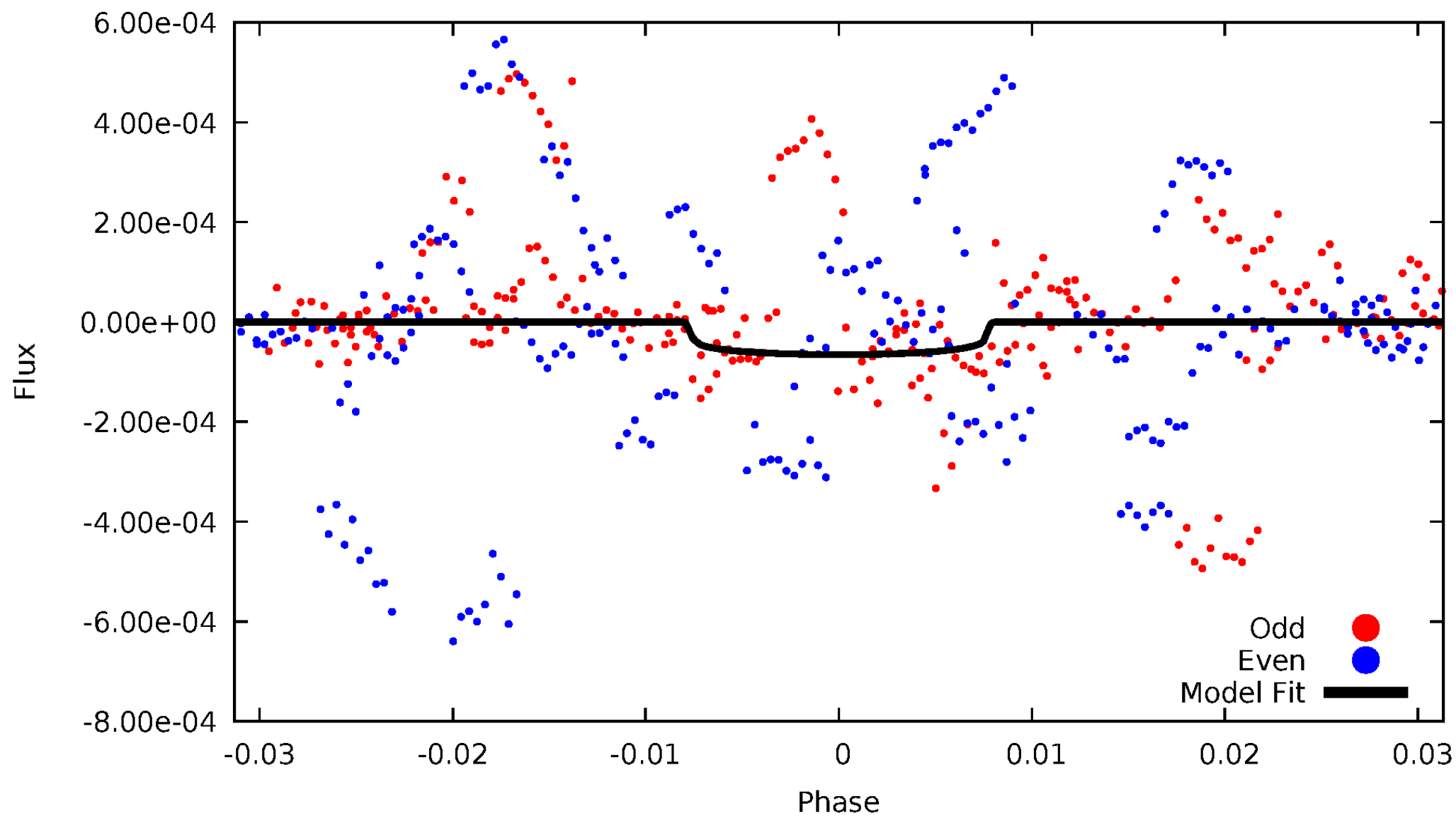


TCE 009752973-06



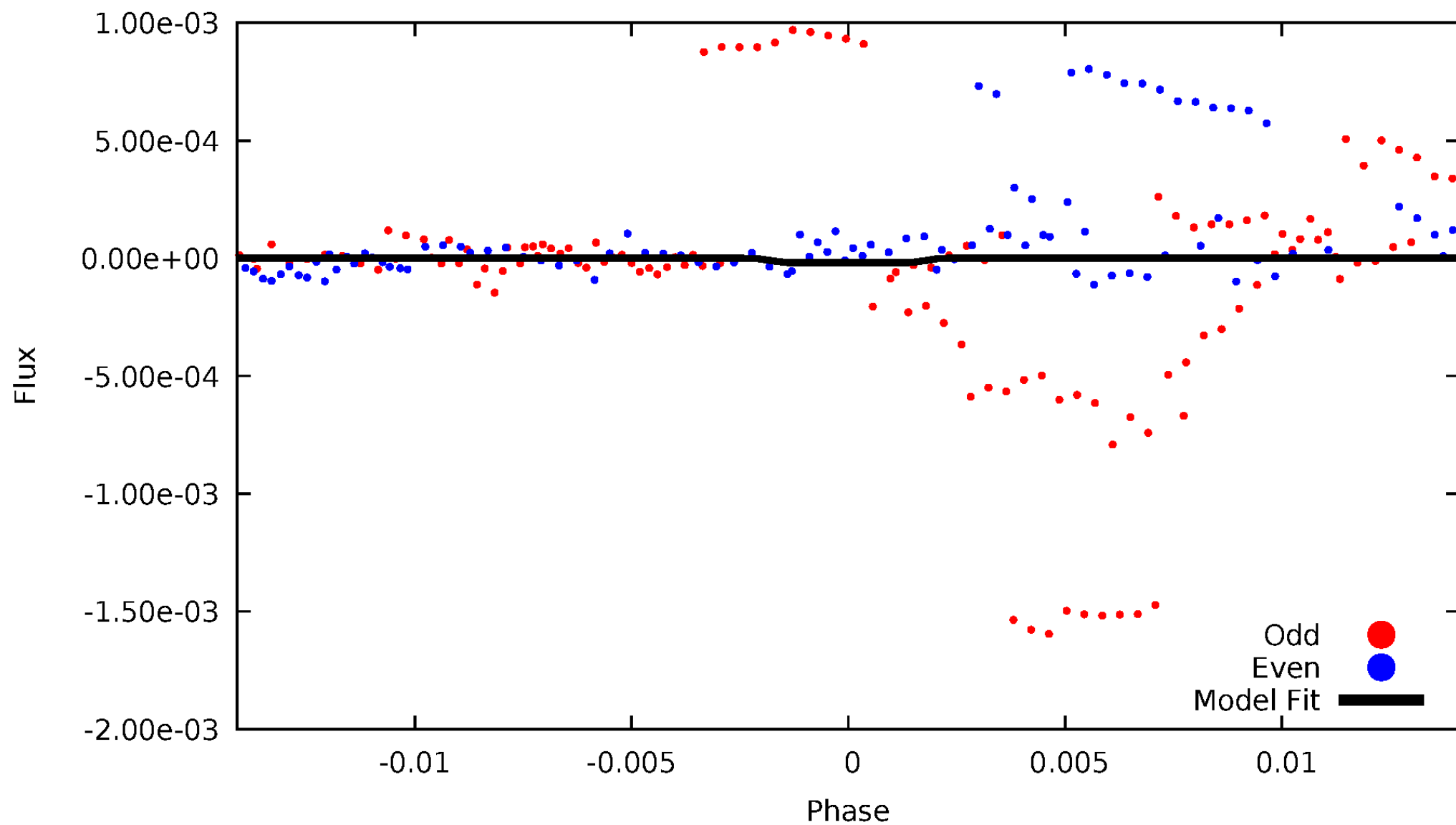
DV Odd/Even

TCE 009752973-06



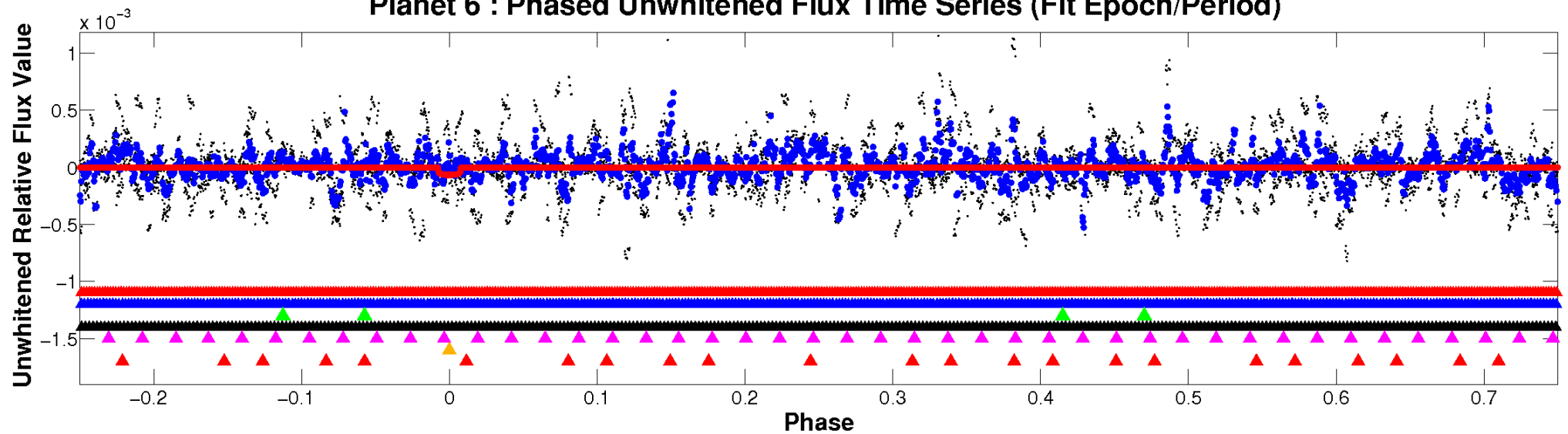
ALT Odd/Even

TCE 009752973-06

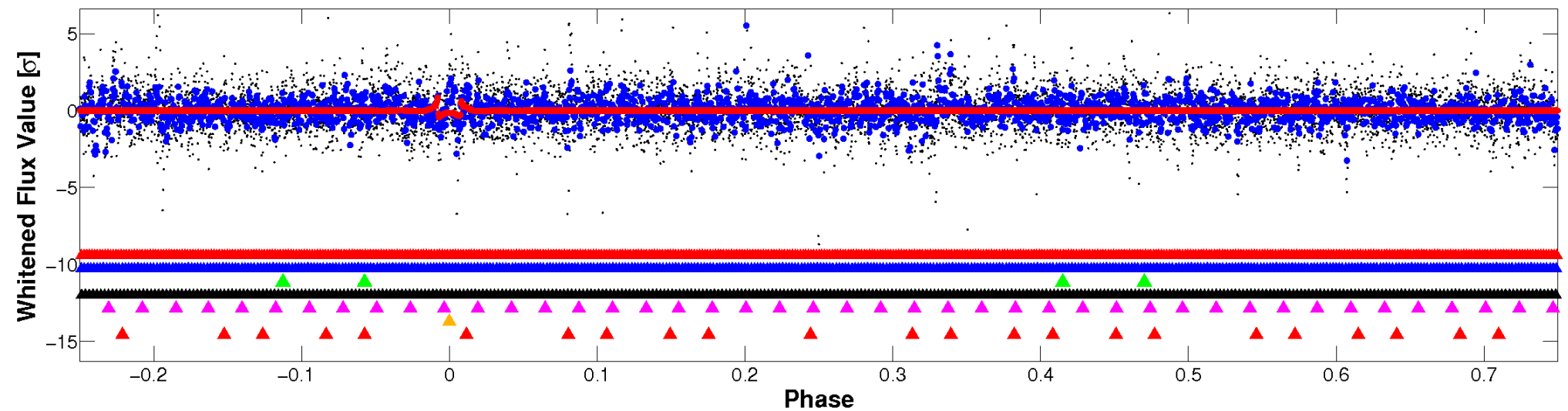


Non-Whitened Vs. Whitened Light Curve

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

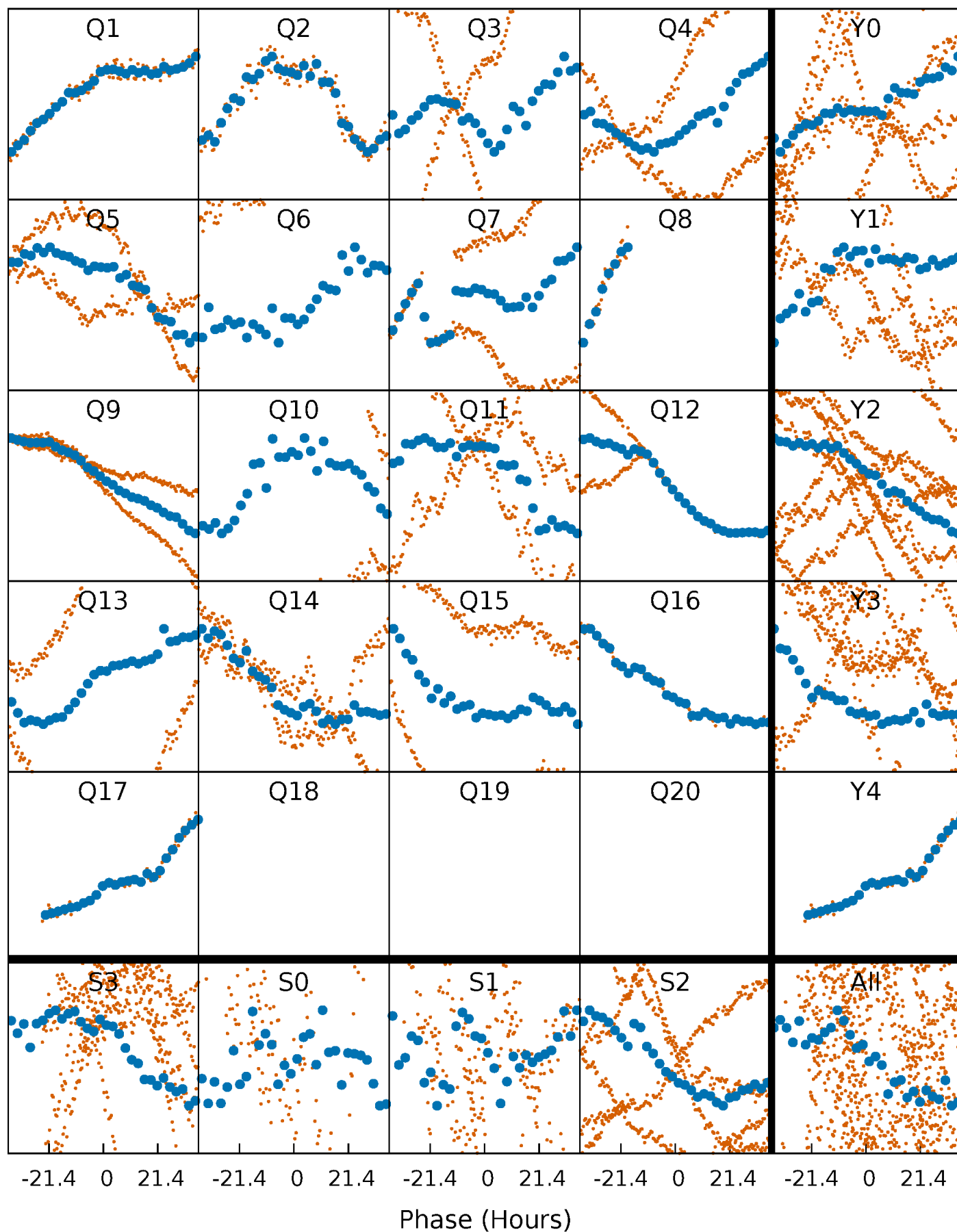


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



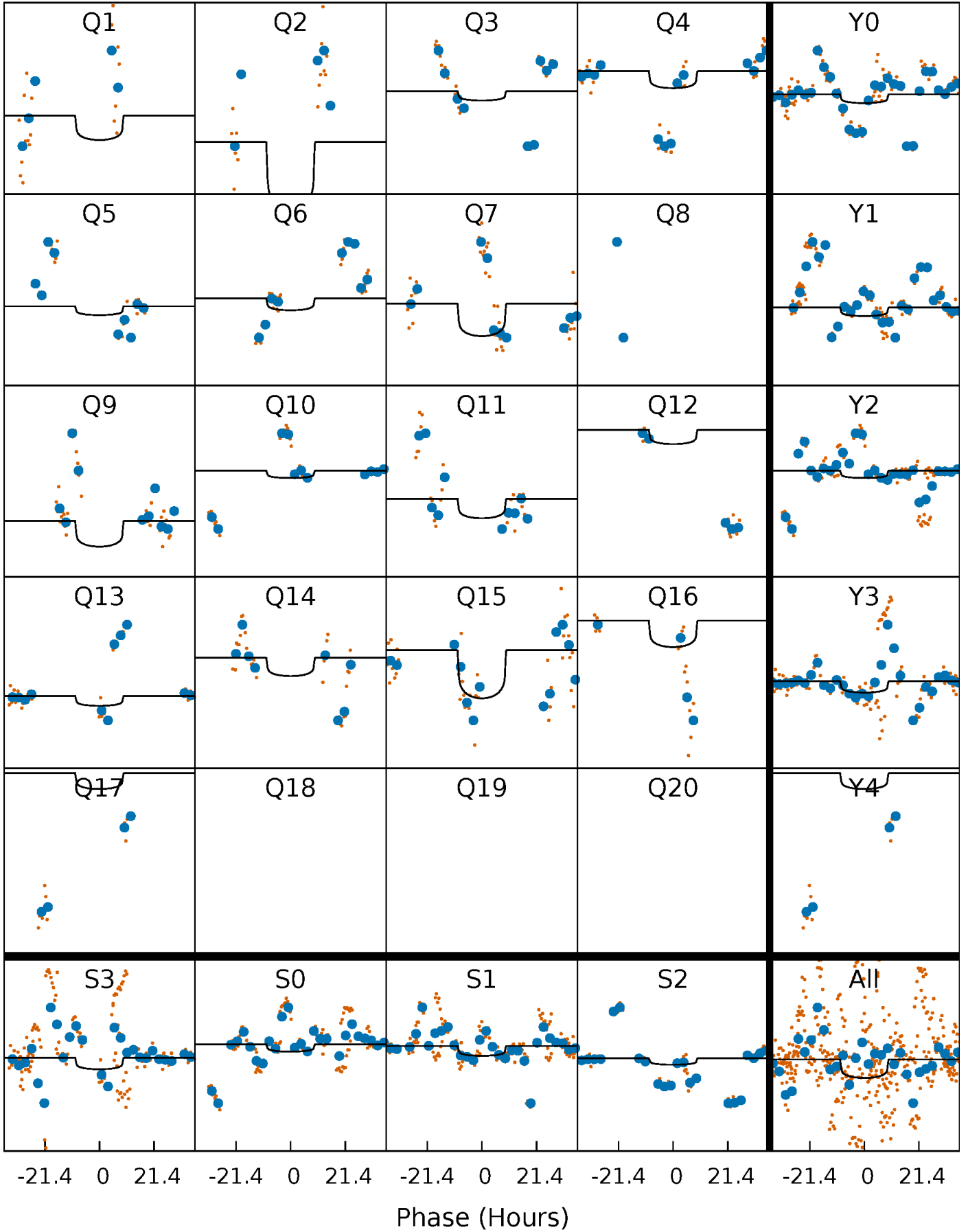
PDC Quarter-Phased Transit Curves

TCE 009752973-06 P= 49.900710 Days $T_0=163.023818$ (BKJD)



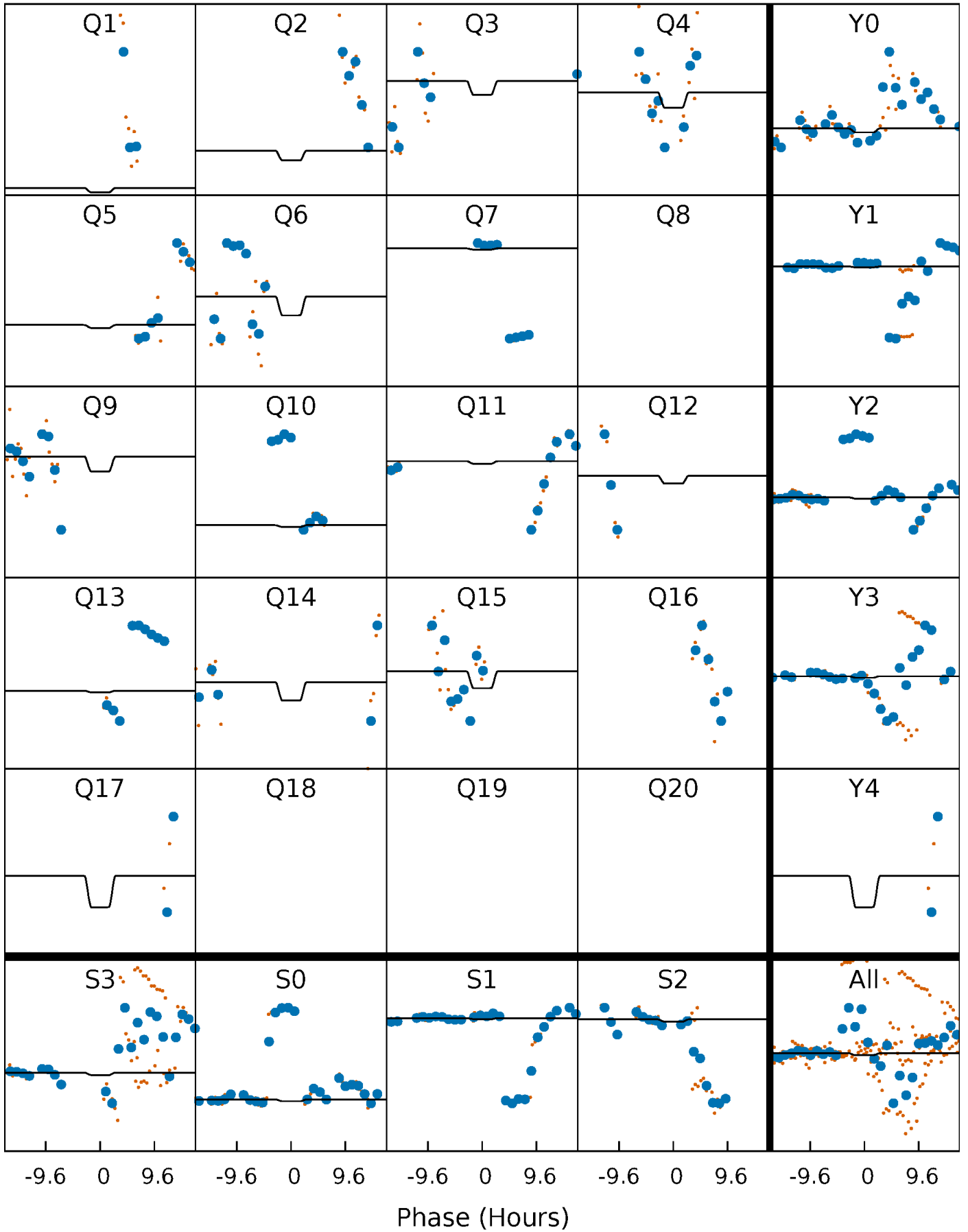
DV Quarter-Phased Transit Curves

TCE 009752973-06 P= 49.900710 Days $T_0=163.023818$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

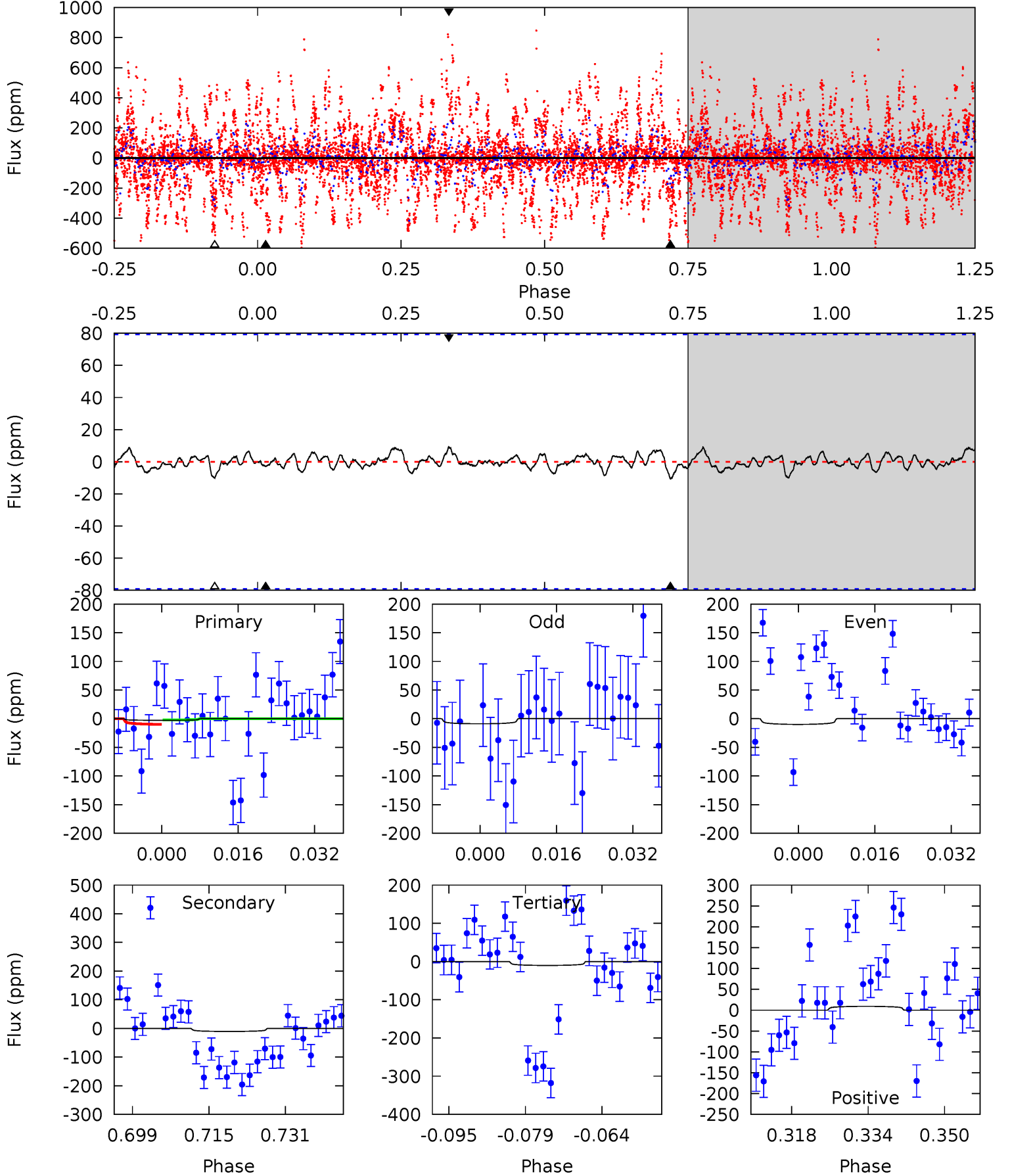
TCE 009752973-06 P= 49.896775 Days $T_0=163.076493$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-06, P = 49.900710 Days, E = 113.123108 Days

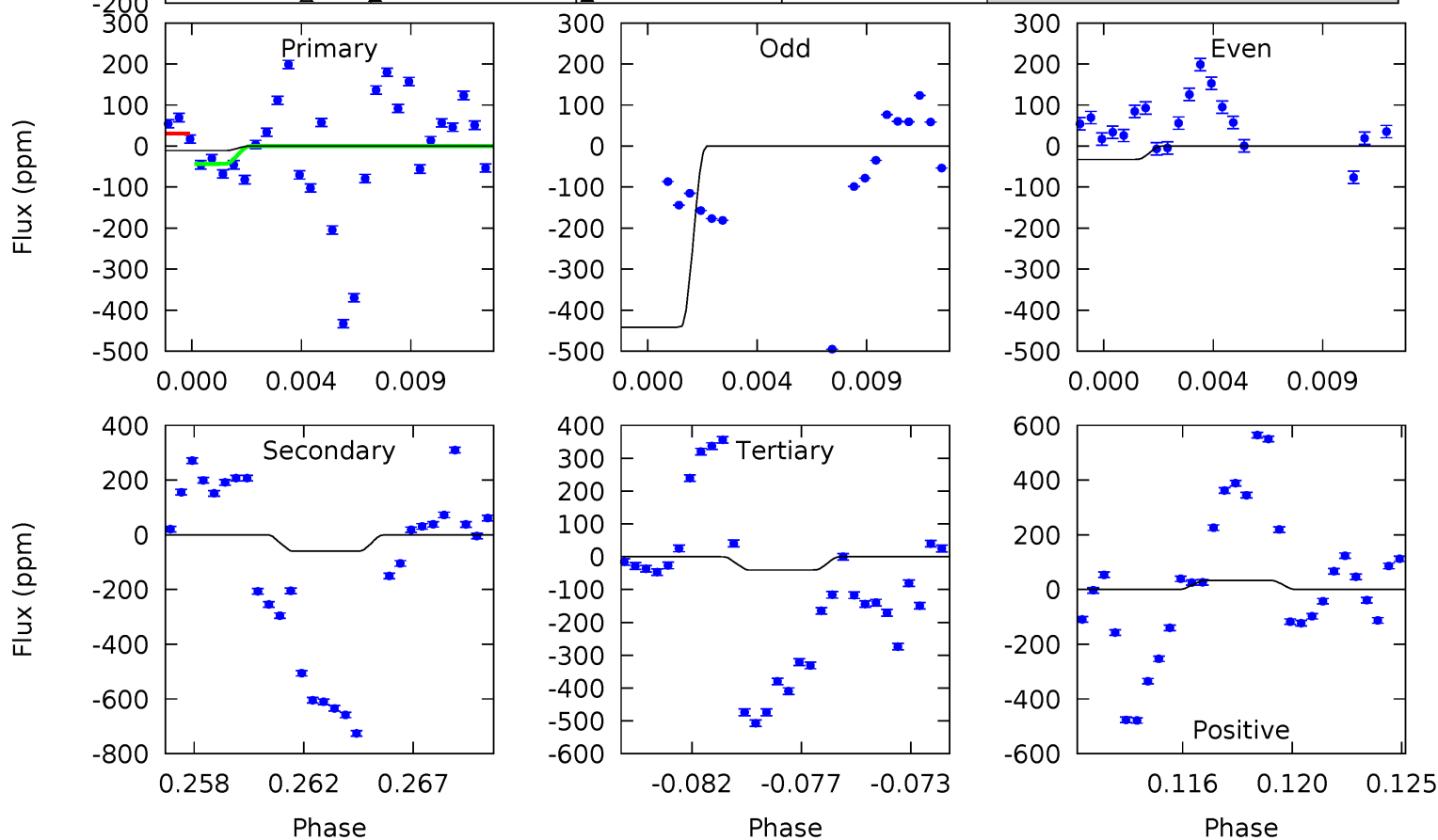
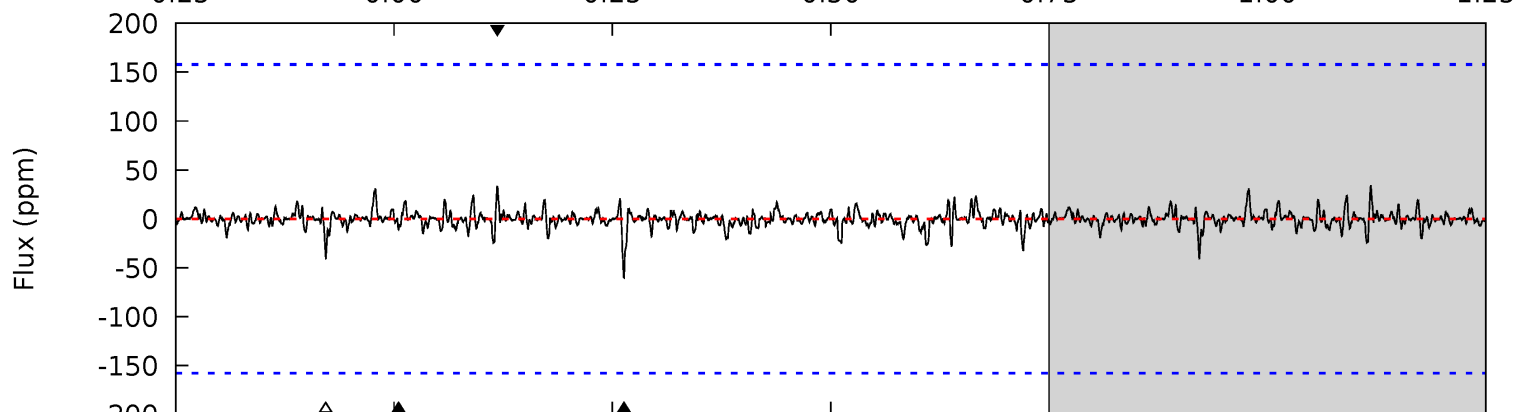
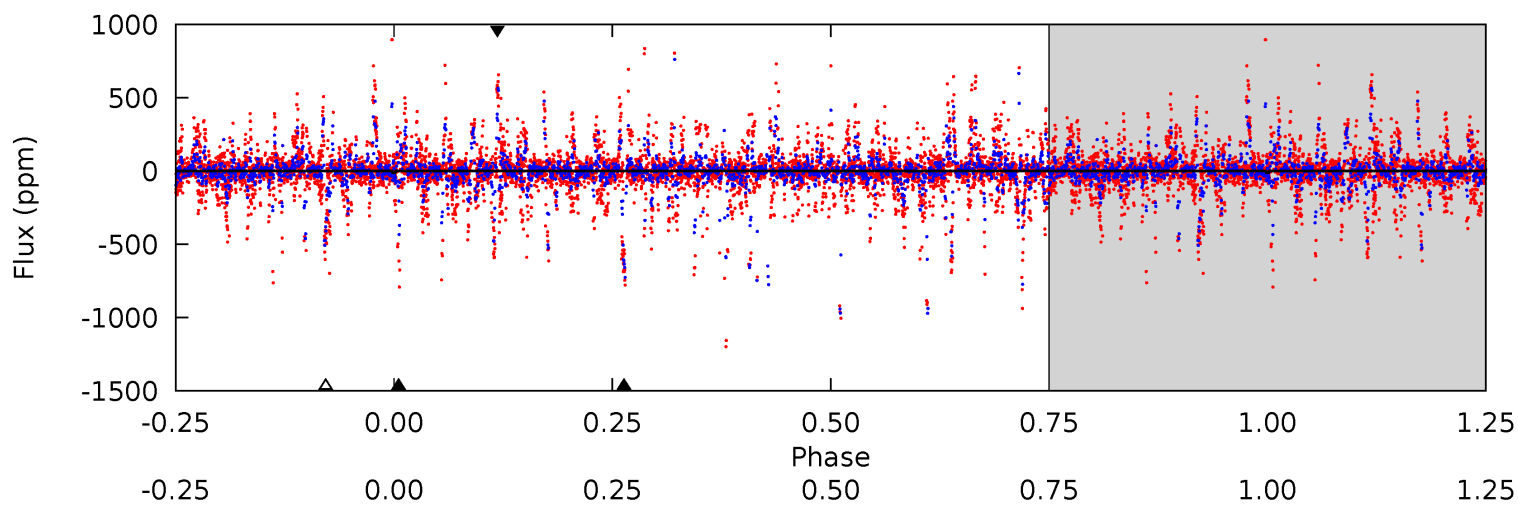
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.18	0.65	0.63	0.57	4.94	2.41	0.23	-0.45	-0.39	0.02	0.08	0.03	0.19	0.47	0.24



Alt Model-Shift Uniqueness Test

009752973-06, P = 49.896775 Days, E = 113.179718 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.36	1.96	1.33	1.10	5.19	2.86	0.23	-0.97	-0.74	0.63	0.86	4.44	-4.58	0.36	0



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 16	$0.99^{+0.38}_{-0.36}$	805^{+47}_{-60}	4178^{+1205}_{-7914}	368^{+977}_{-565}
Alt.	-60 ± 30	$0.56^{+0.34}_{-0.29}$	806^{+51}_{-53}	8054^{+6279}_{-2126}	6248^{+22041}_{-4331}

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

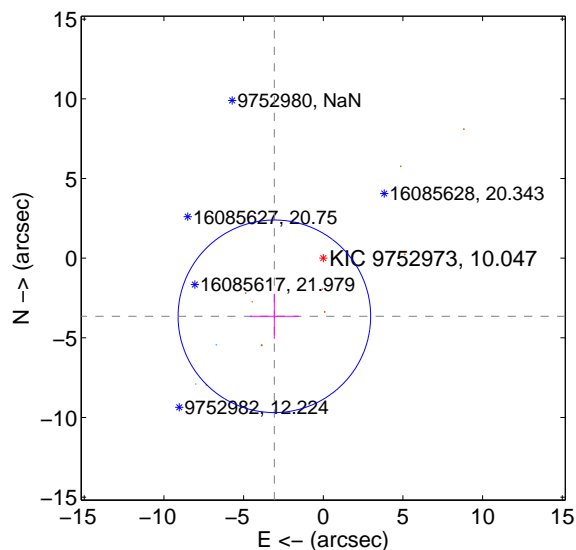
Supplemental centroid analysis for 009752973-06. **Kepler magnitude: 10.05.** Transit SNR 4.46

There are 2 quarters with good PRF difference image offsets

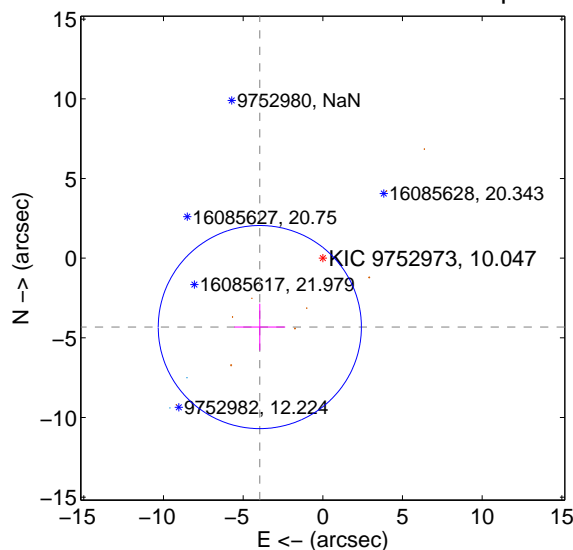
The OOT PRF centroid is offset from the target star catalog position by about 2.75 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.768 ± 2.014	2.37	3.069 ± 1.541	-3.649 ± 1.414
PRF-fit source offset from KIC position	5.859 ± 2.125	2.76	3.954 ± 1.596	-4.324 ± 1.469
photometric centroid source offset	2.76 ± 3.30	0.84	2.28 ± 3.24	-1.55 ± 3.43

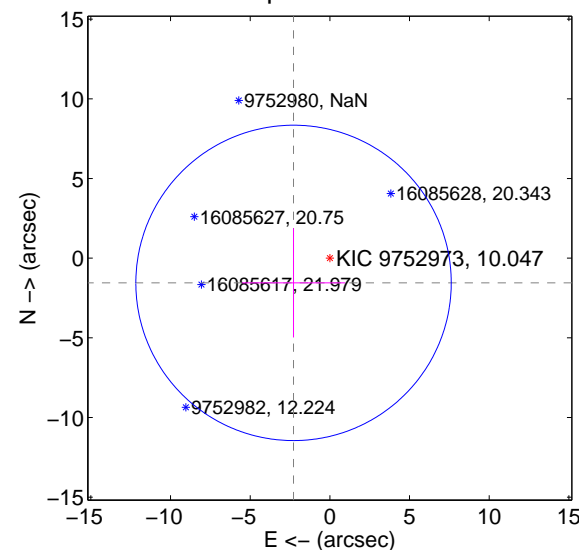
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

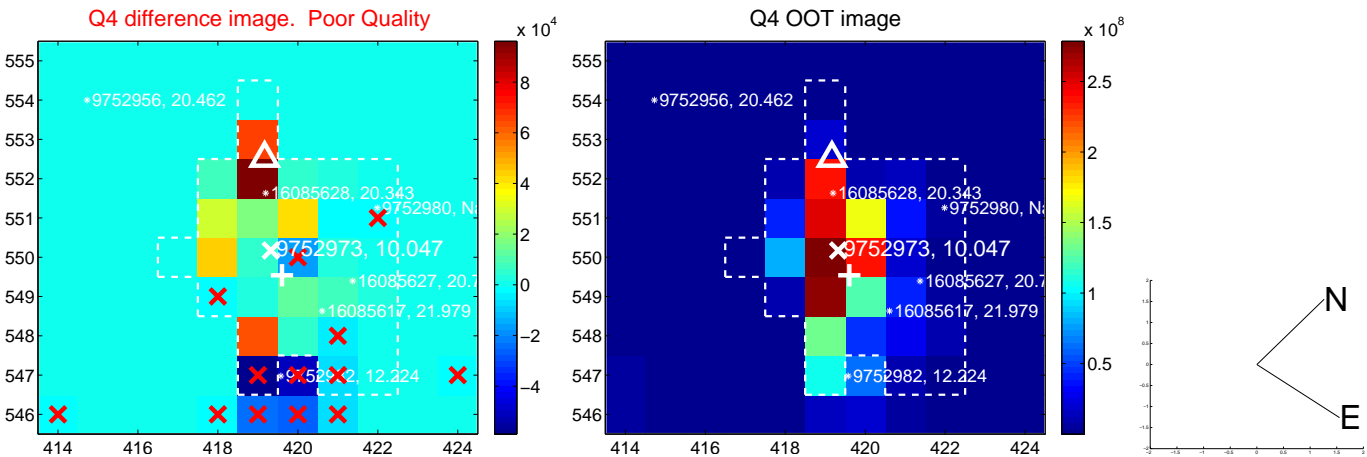
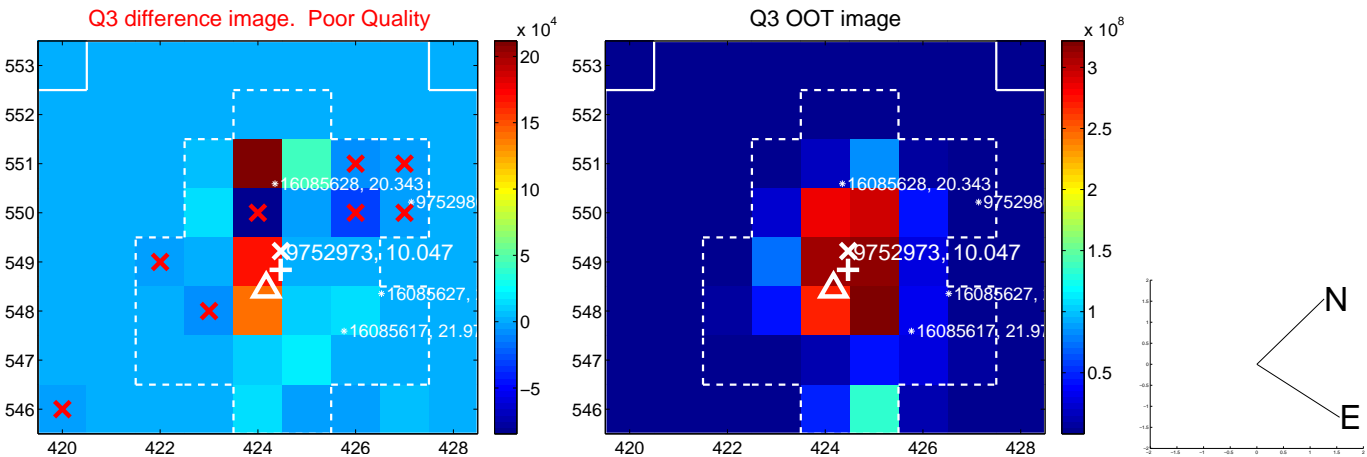
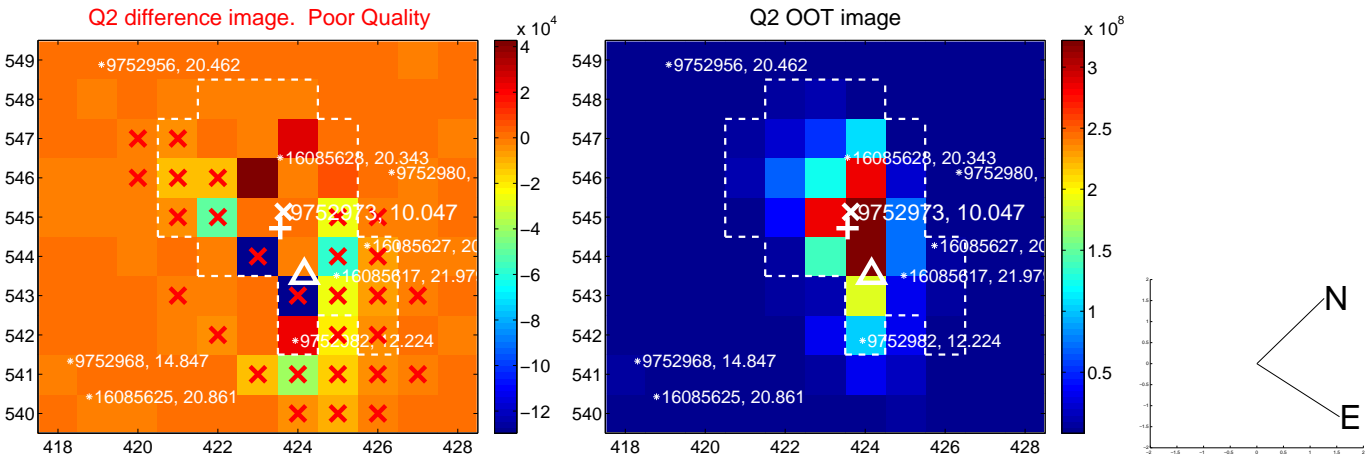
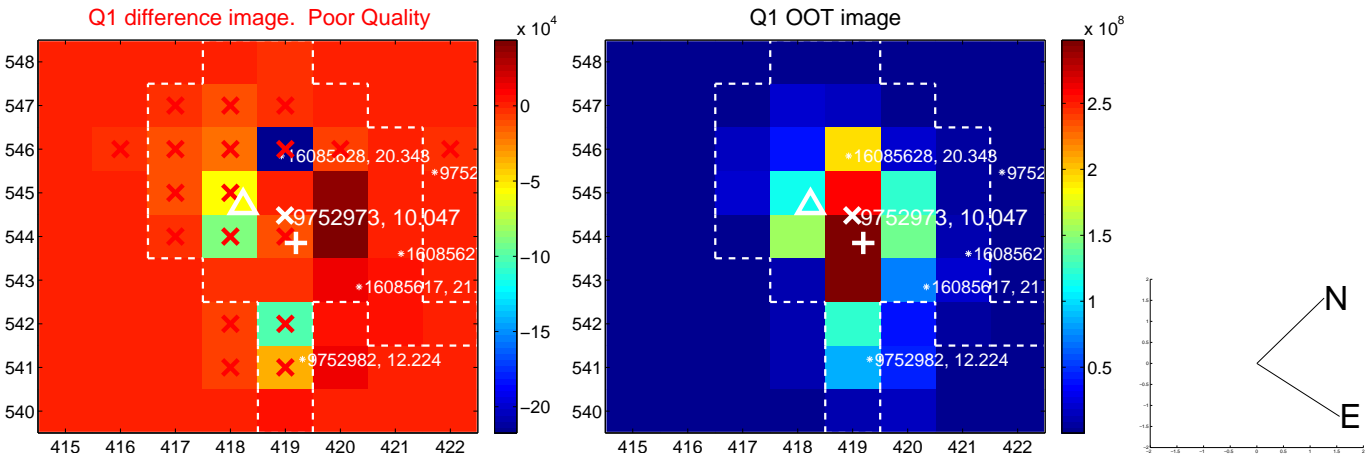


offset from photometric centroids

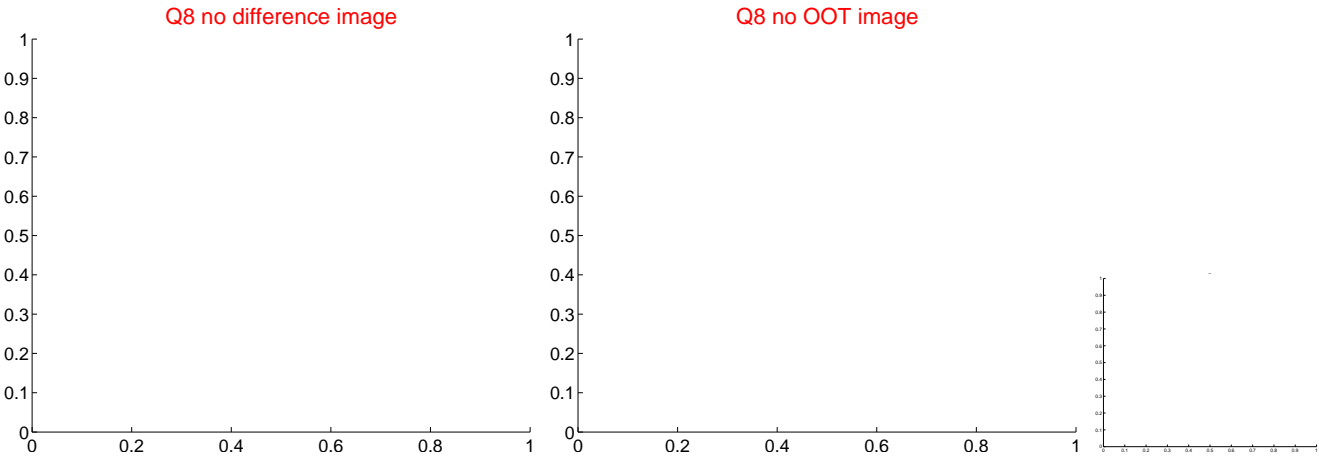
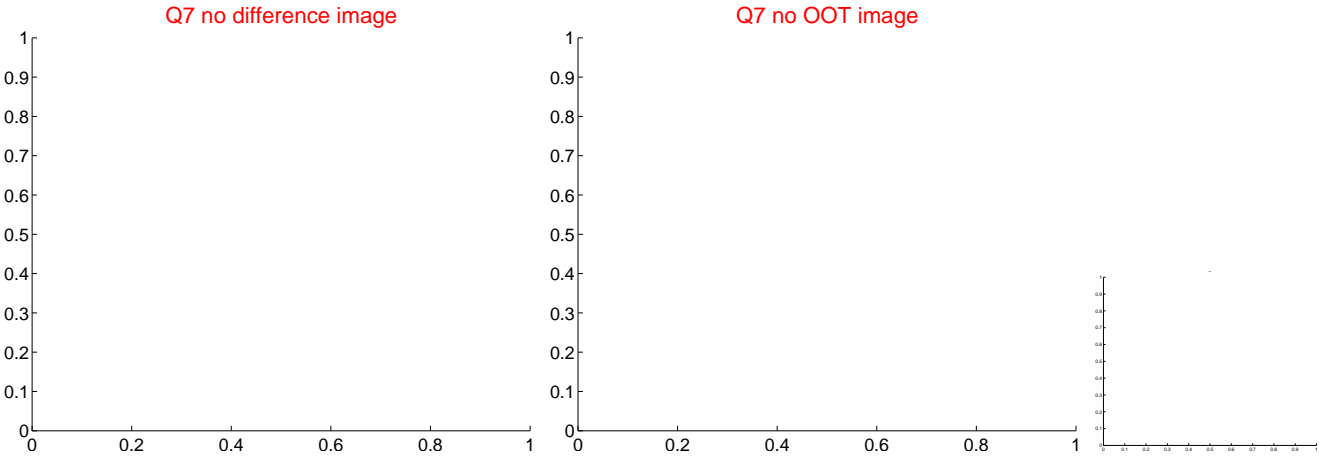
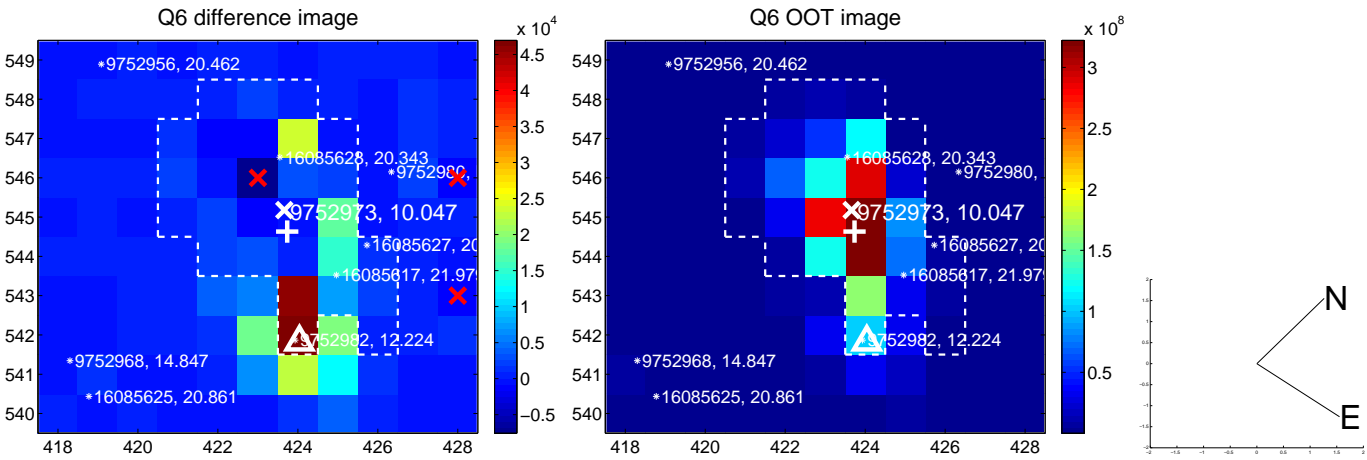
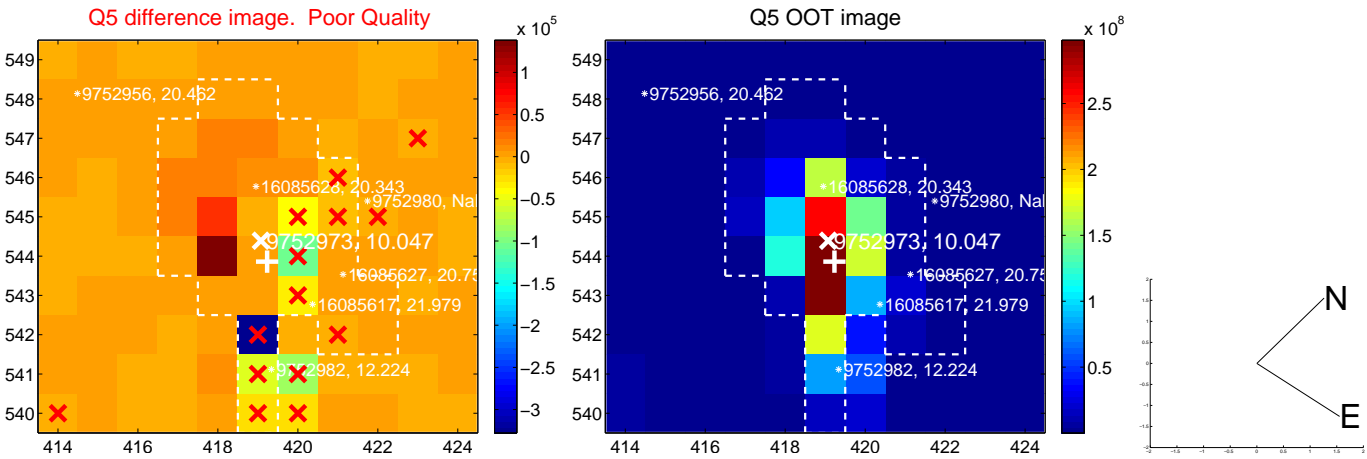


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

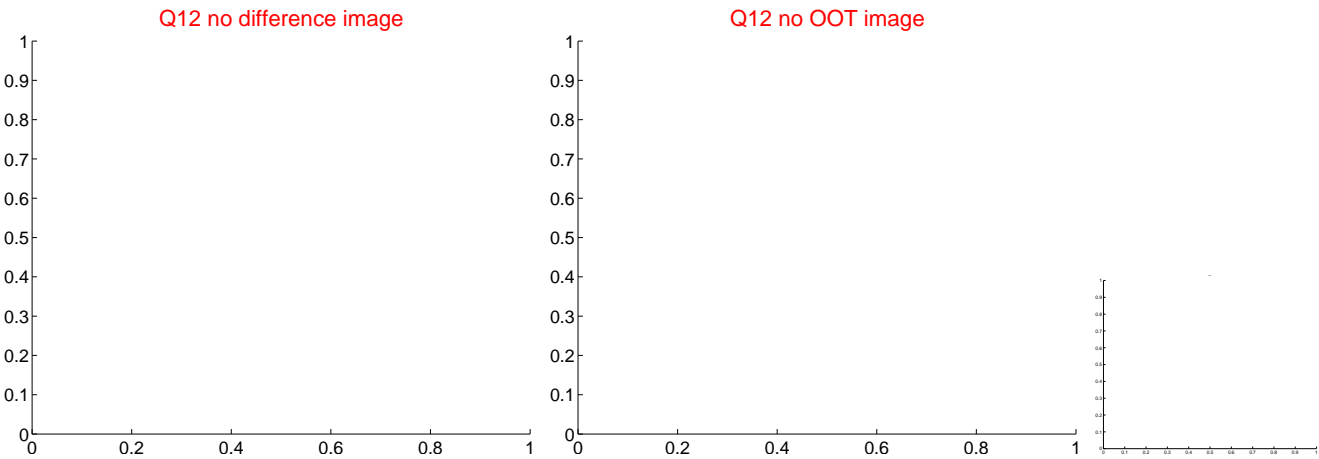
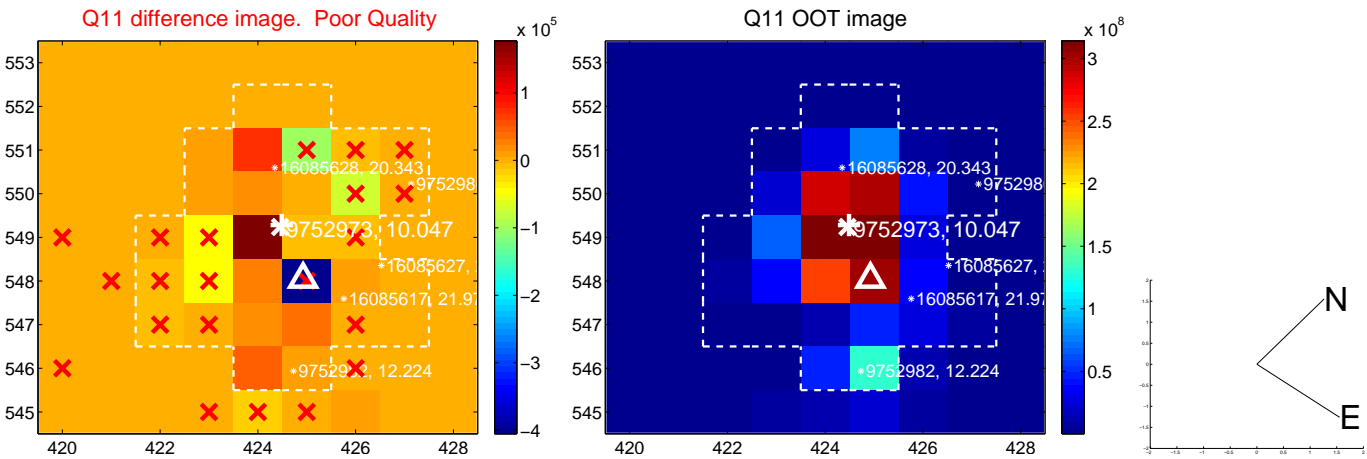
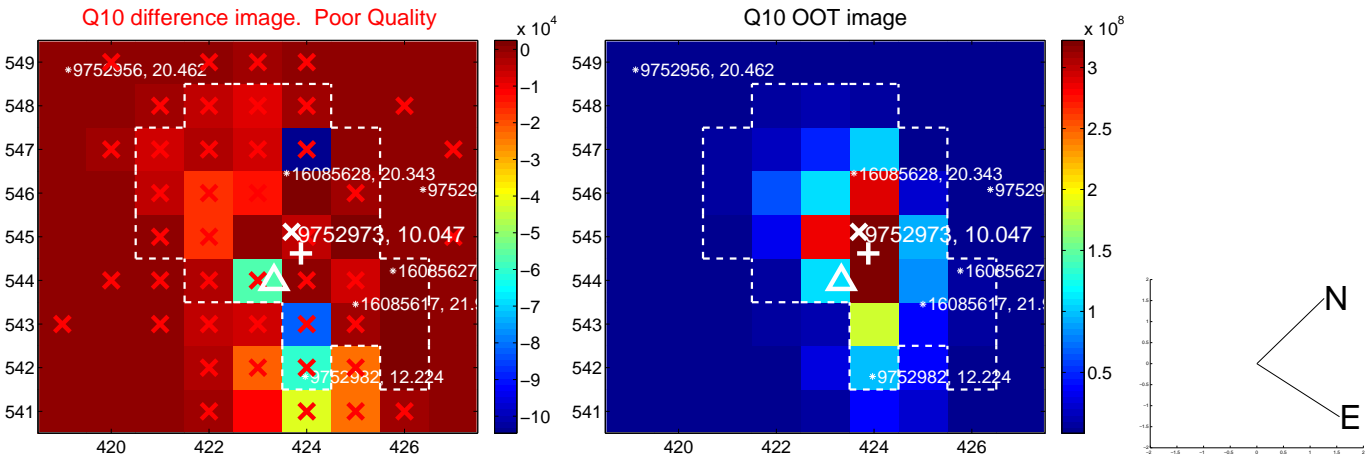
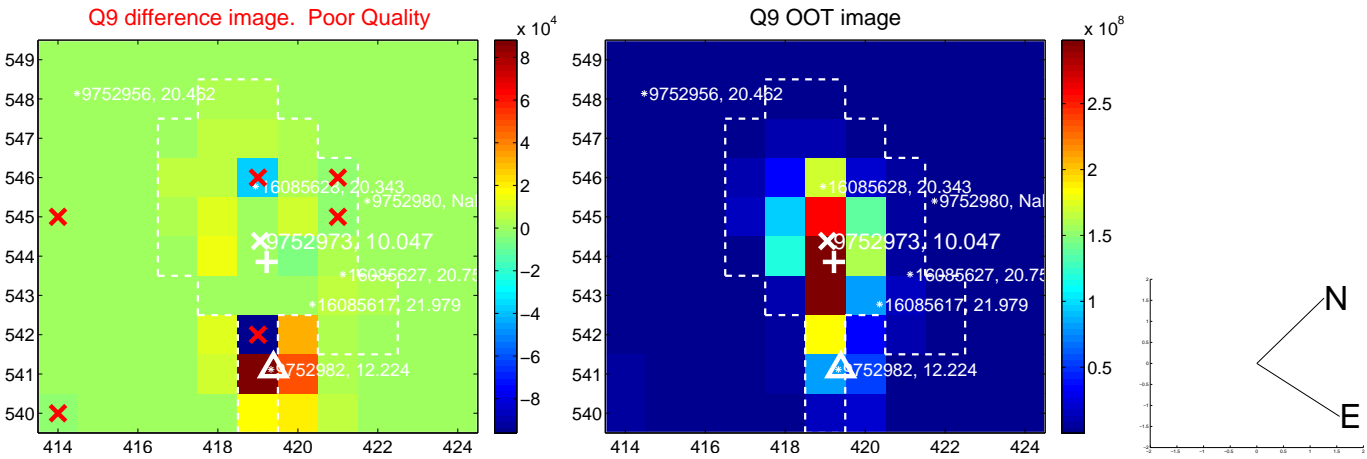
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



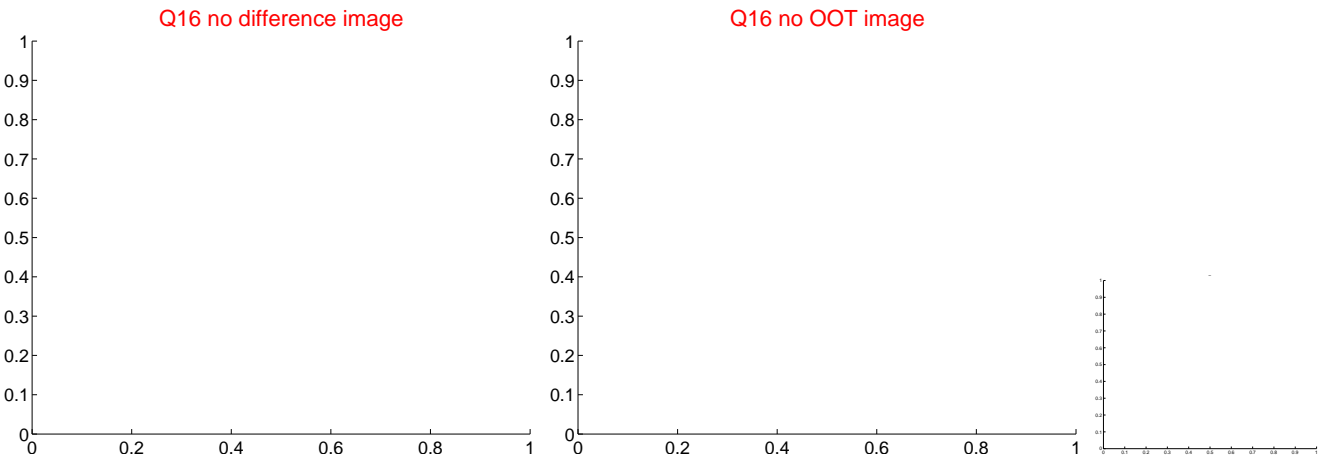
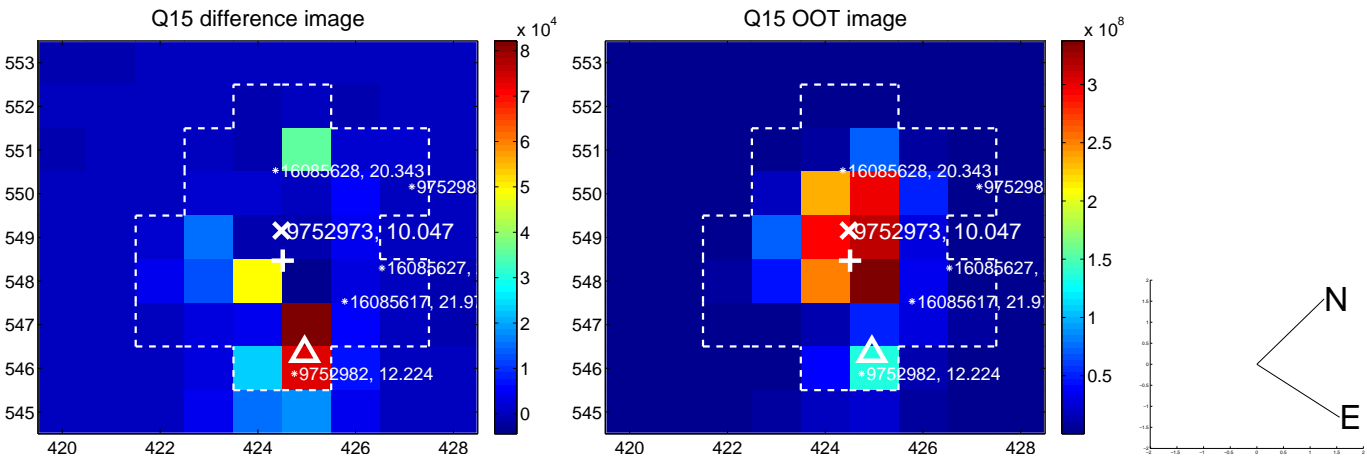
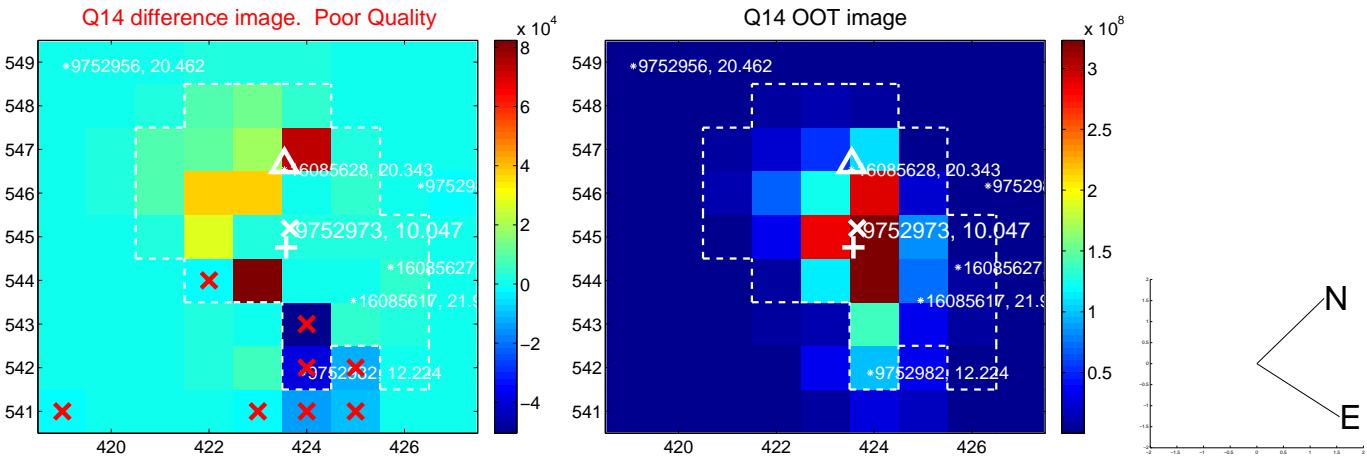
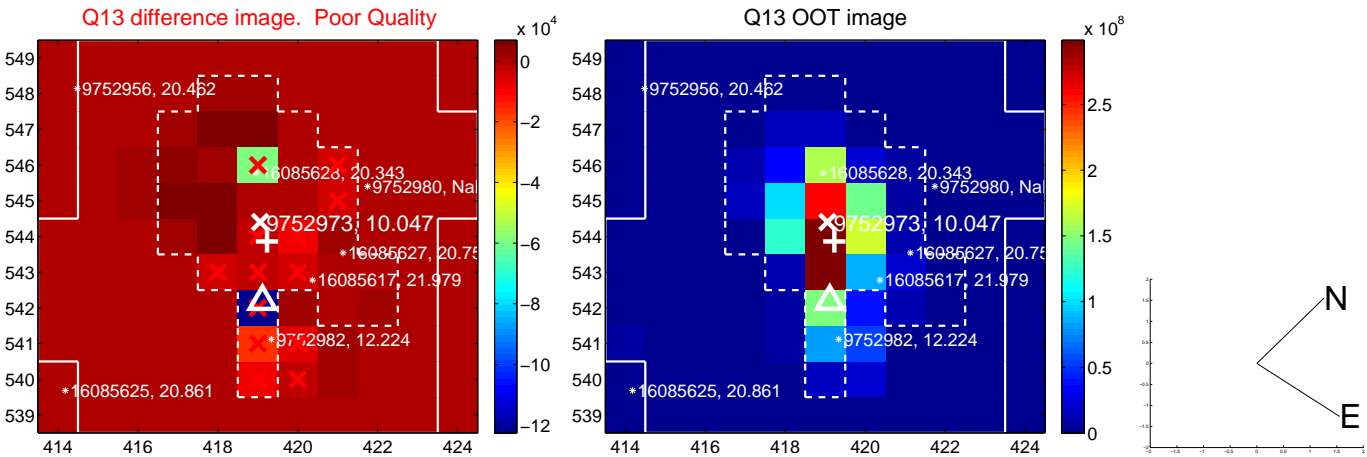
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



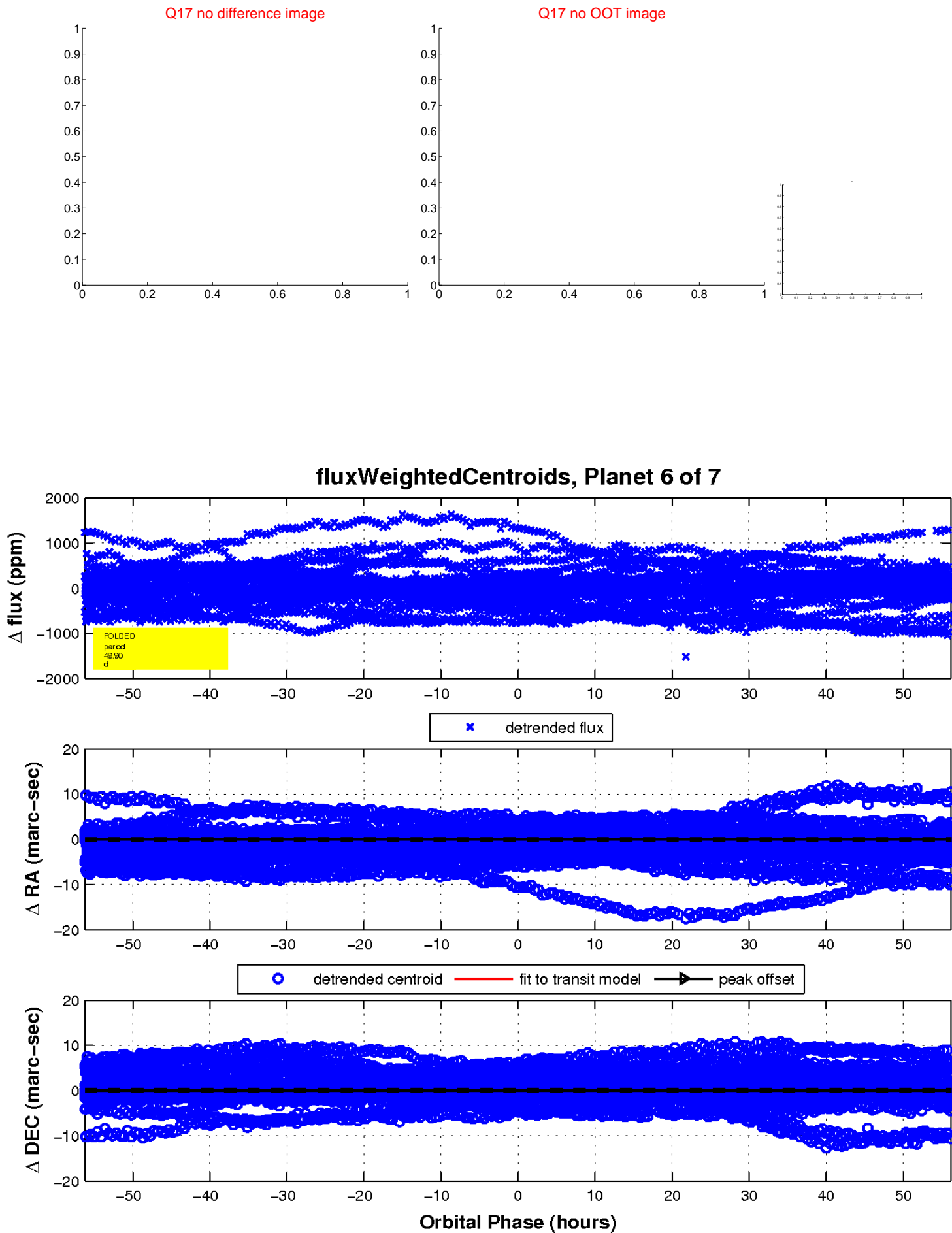
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



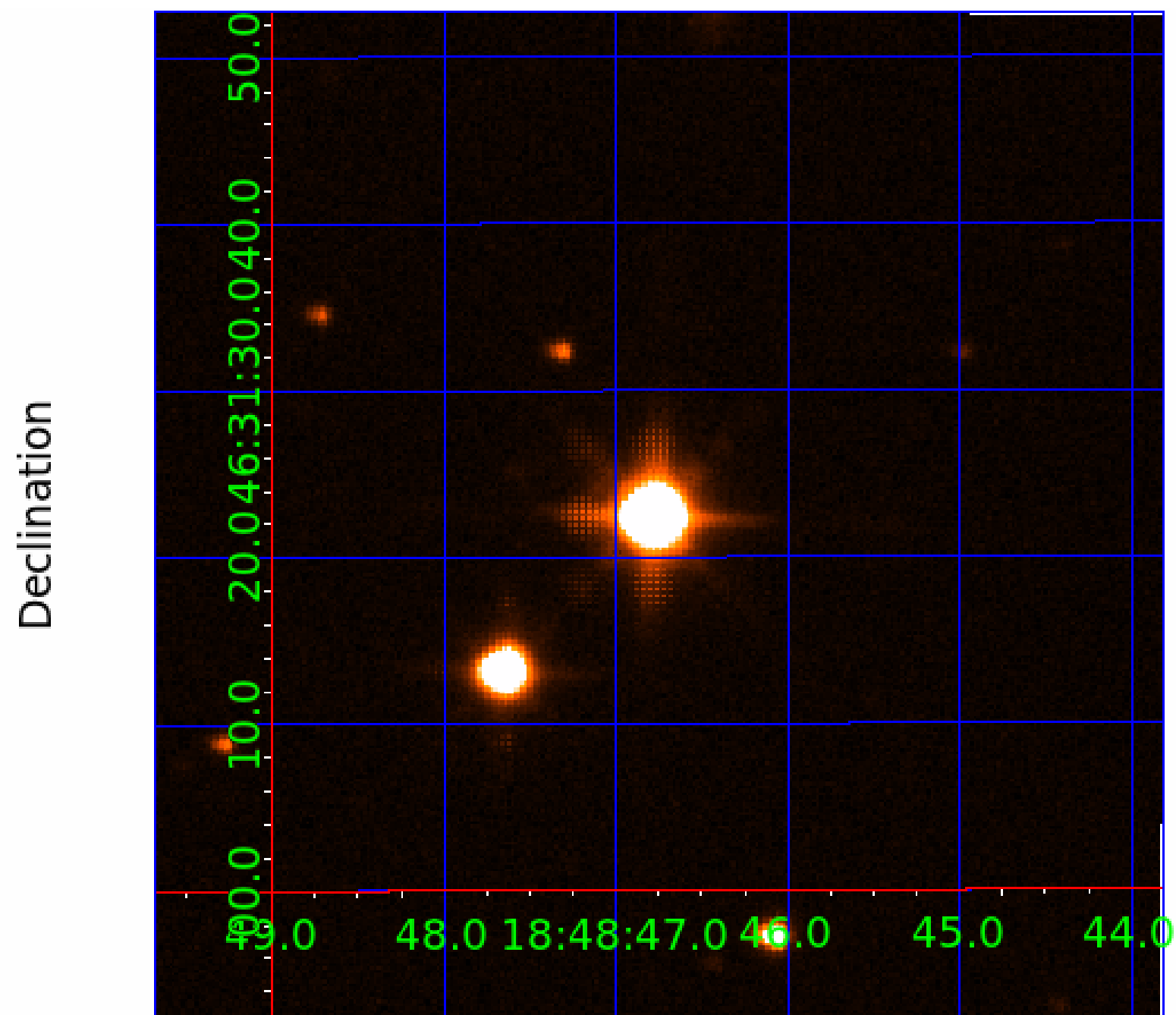
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009752973

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})
009752973-01	OBS	3162.01	0.716713	132.048089	56.7	0.637	20.4	58.0	1.17	6109	1.07	7783.59
009752973-02	OBS	No	2.866679	132.433365	13.3	9.630	9.5	8.2	1.17	6109	0.51	1225.94
009752973-03	OBS	No	422.778462	236.389029	101.5	7.651	10.6	5.9	1.17	6109	1.40	1.57
009752973-04	OBS	No	2.866379	133.924140	15.7	10.032	9.2	10.5	1.17	6109	0.57	1226.11
009752973-05	OBS	No	32.888072	153.795656	57.2	3.630	13.8	4.6	1.17	6109	1.03	47.38
009752973-06	OBS	No	49.900710	163.023818	65.4	18.739	11.2	4.5	1.17	6109	1.01	27.18
009752973-07	OBS	No	61.516324	185.532040	106.4	3.000	10.5	-1.0	1.17	6109	1.22	20.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009752973-01	OBS	FP	0.00	0	1	0	1	HAS_SEC_TCE—CENT_SATURATED—EPHEM_MATCH
009752973-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
009752973-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
009752973-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED
009752973-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— CENT_SATURATED—HALO_GHOST
009752973-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—CENT_SATURATED
009752973-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—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 009752973-07

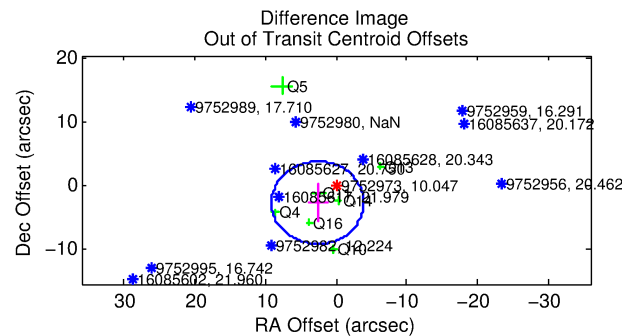
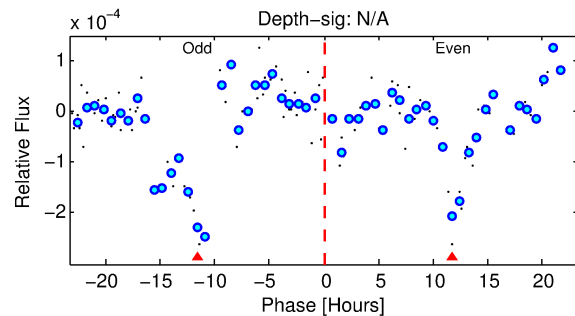
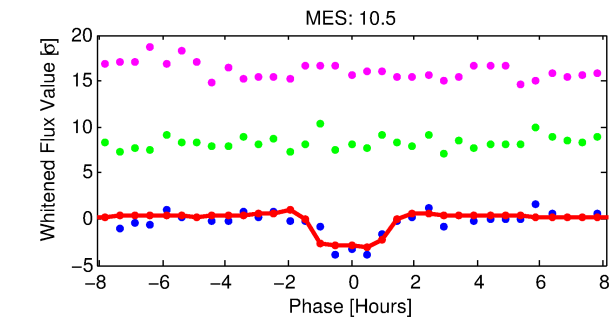
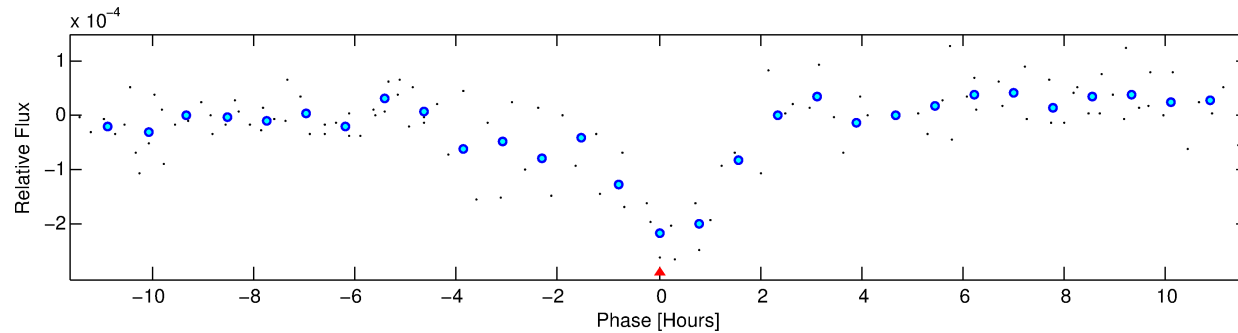
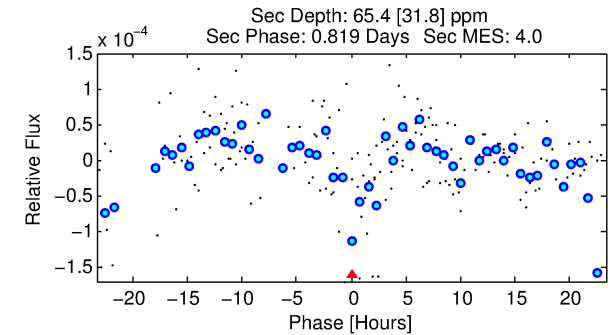
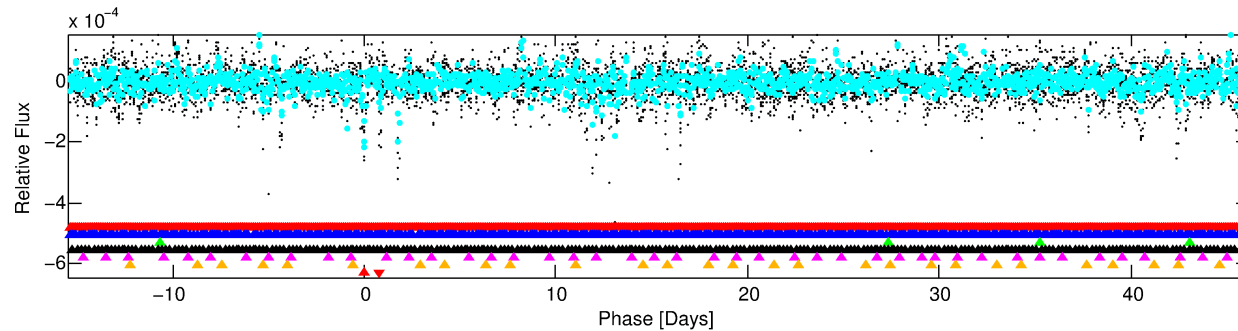
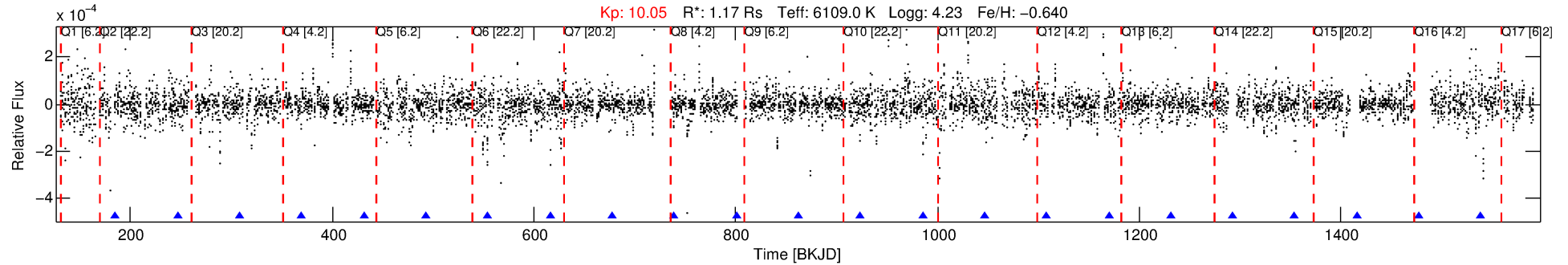
No Significant Match Found

DV One-Page Summary

KIC: 9752973 Candidate: 7 of 7 Period: 61.516 d

KOI: K03162 Corr: No Ephemeris Match

Kp: 10.05 R*: 1.17 Rs Teff: 6109.0 K Logg: 4.23 Fe/H: -0.640



TPS TCE Results:

Period = 61.51632 d

Epoch = 185.5320 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.69σ]

LongPeriod-sig: 100.0% [1054.97σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: N/A

RollingBand-fgt: 1.00 [5/5]

GhostDiagnostic-chr: -1.285

Centroid-sig: 77.4%

Centroid-so: 2.008 arcsec [9.32σ]

OotOffset-rm: 3.764 arcsec [1.74σ]

KicOffset-rm: 4.904 arcsec [1.81σ]

OotOffset-st: 2/1/2/2 [7]

KicOffset-st: 2/1/2/2 [7]

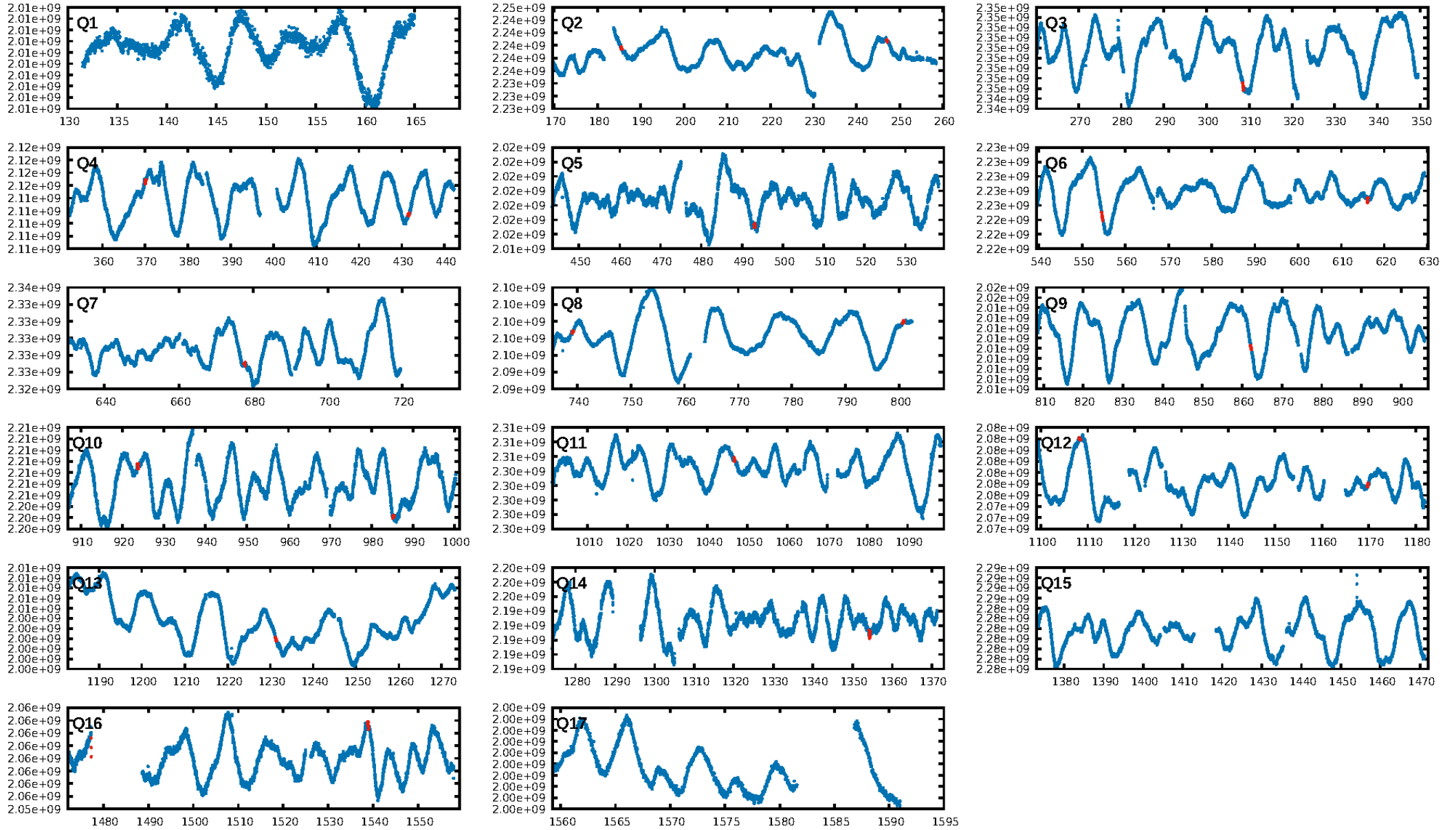
DiffImageQuality-fgm: 0.00 [0/7]

DiffImageOverlap-fno: 0.00 [0/14]

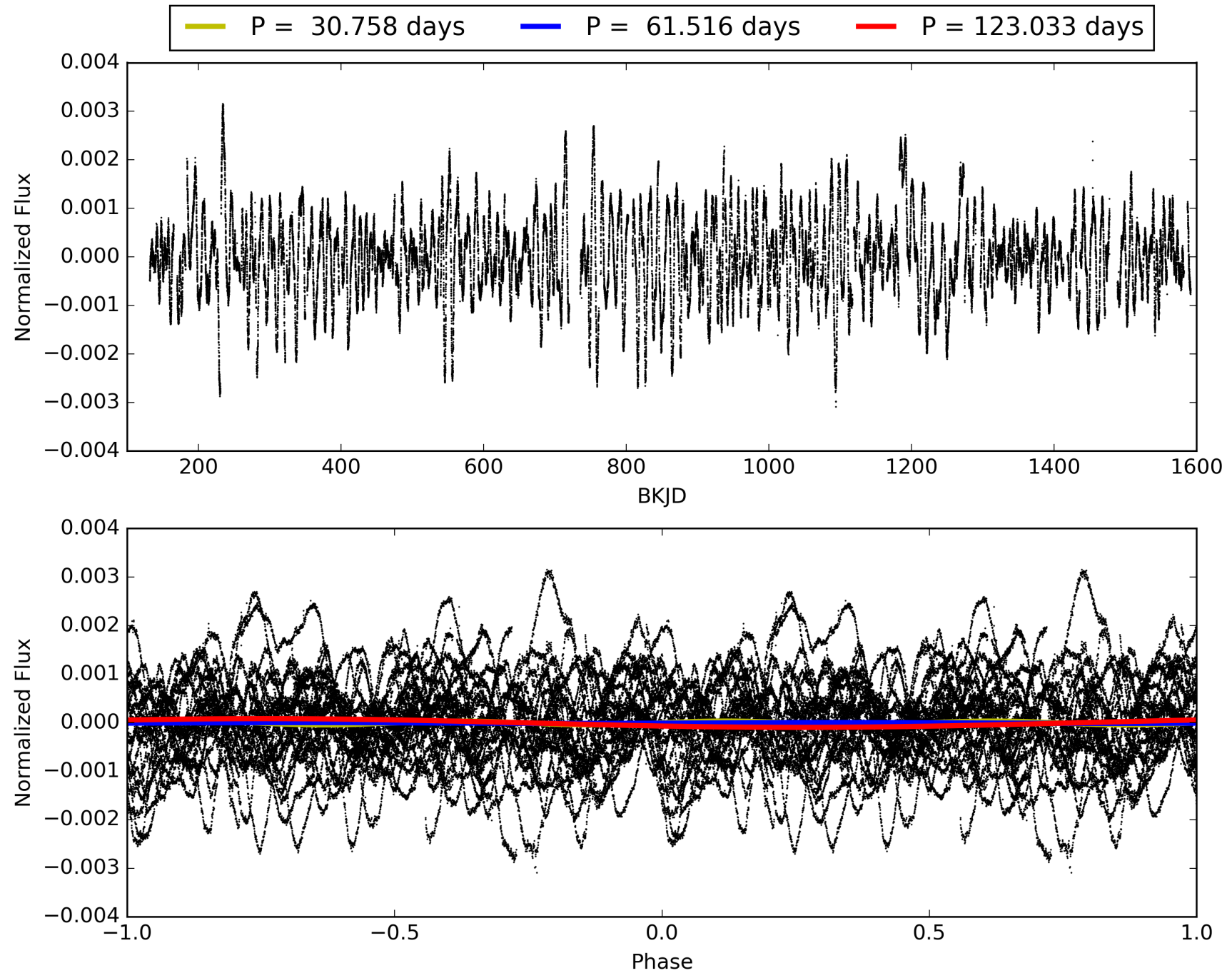
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:43:05 Z

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

TCE 009752973-07, PDC Light Curves

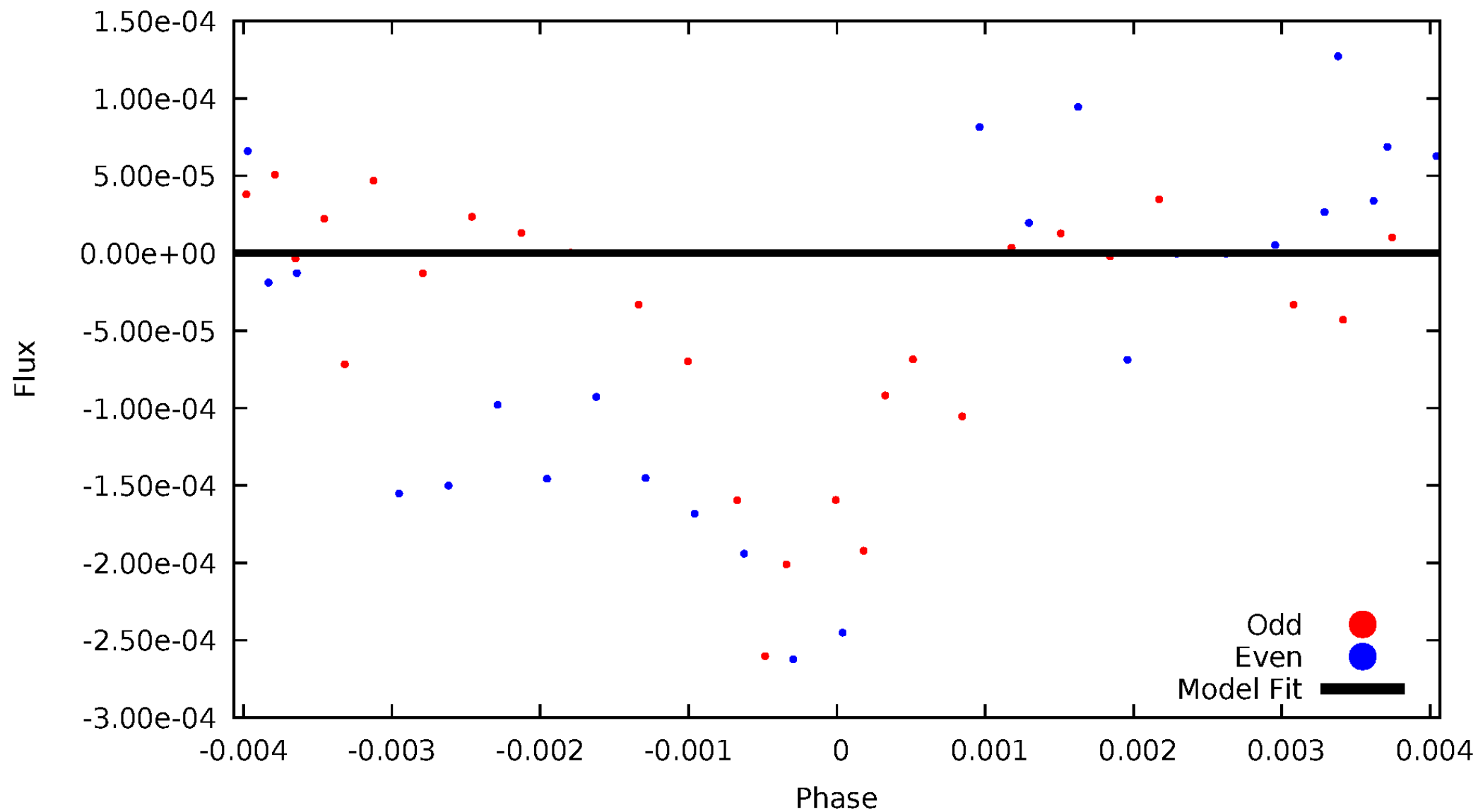


TCE 009752973-07



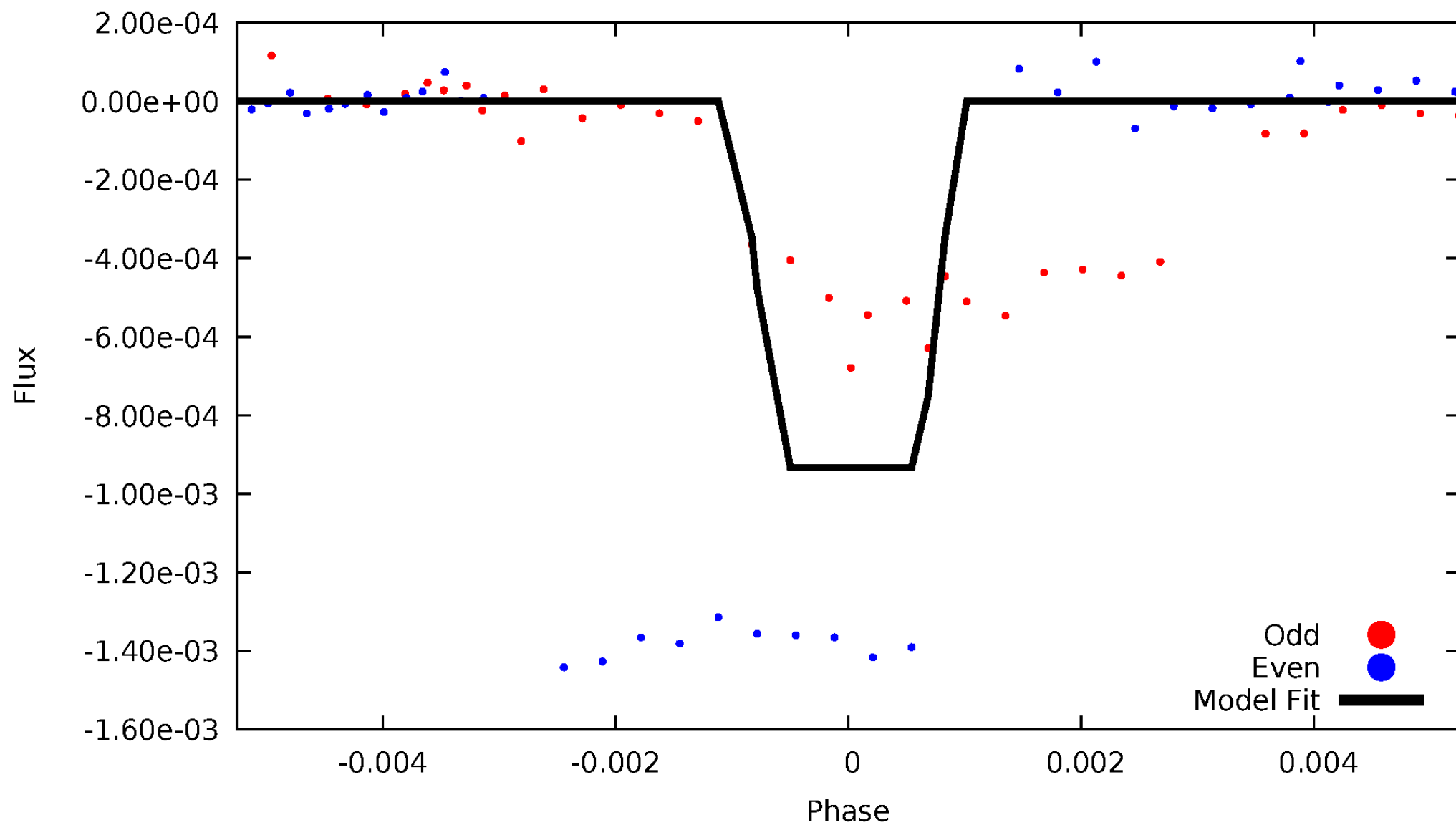
DV Odd/Even

TCE 009752973-07

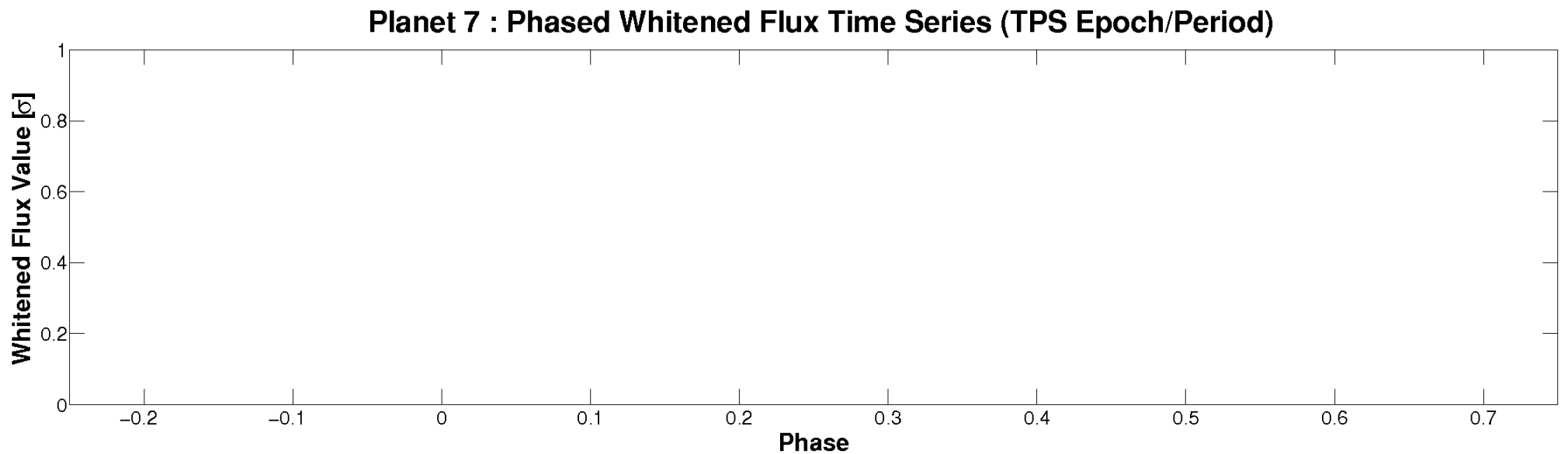
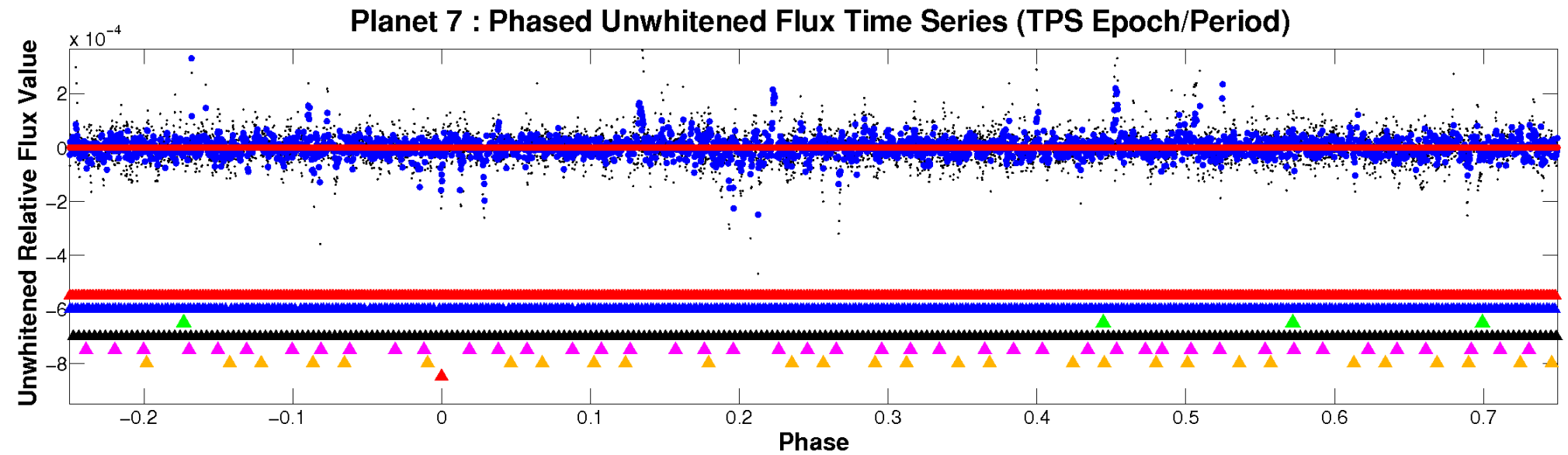


ALT Odd/Even

TCE 009752973-07

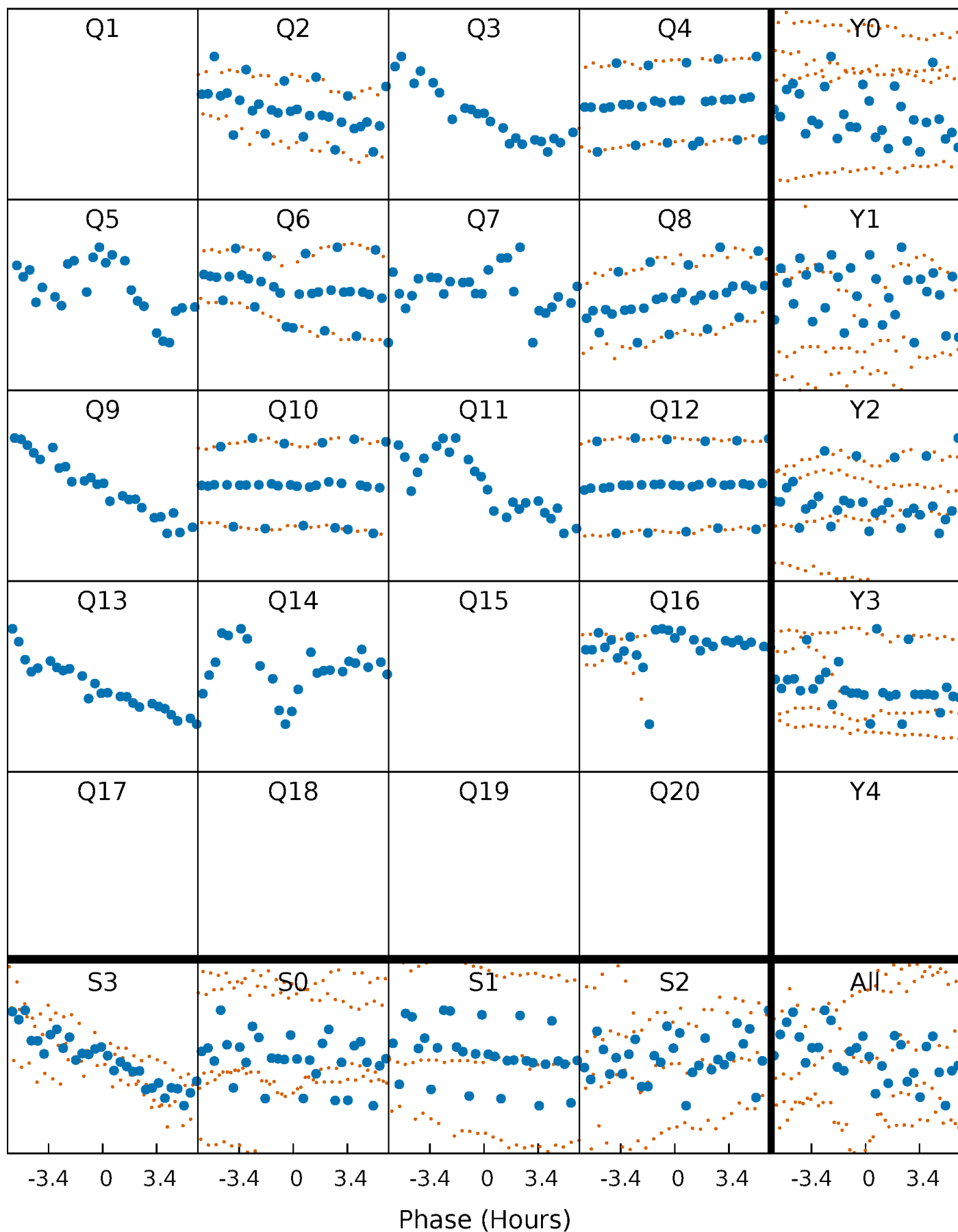


Non-Whitened Vs. Whitened Light Curve



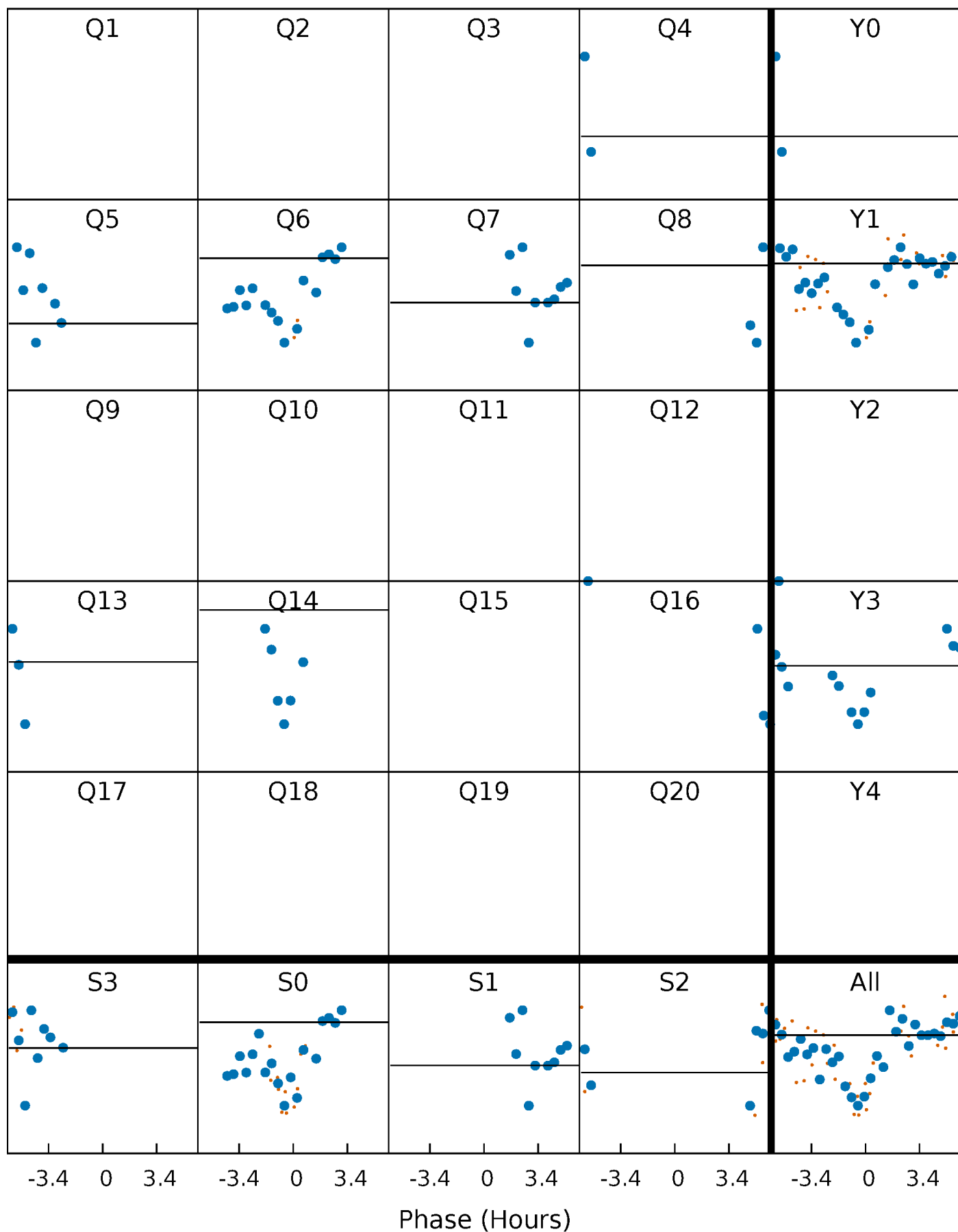
PDC Quarter-Phased Transit Curves

TCE 009752973-07 P= 61.516324 Days $T_0=185.532040$ (BKJD)



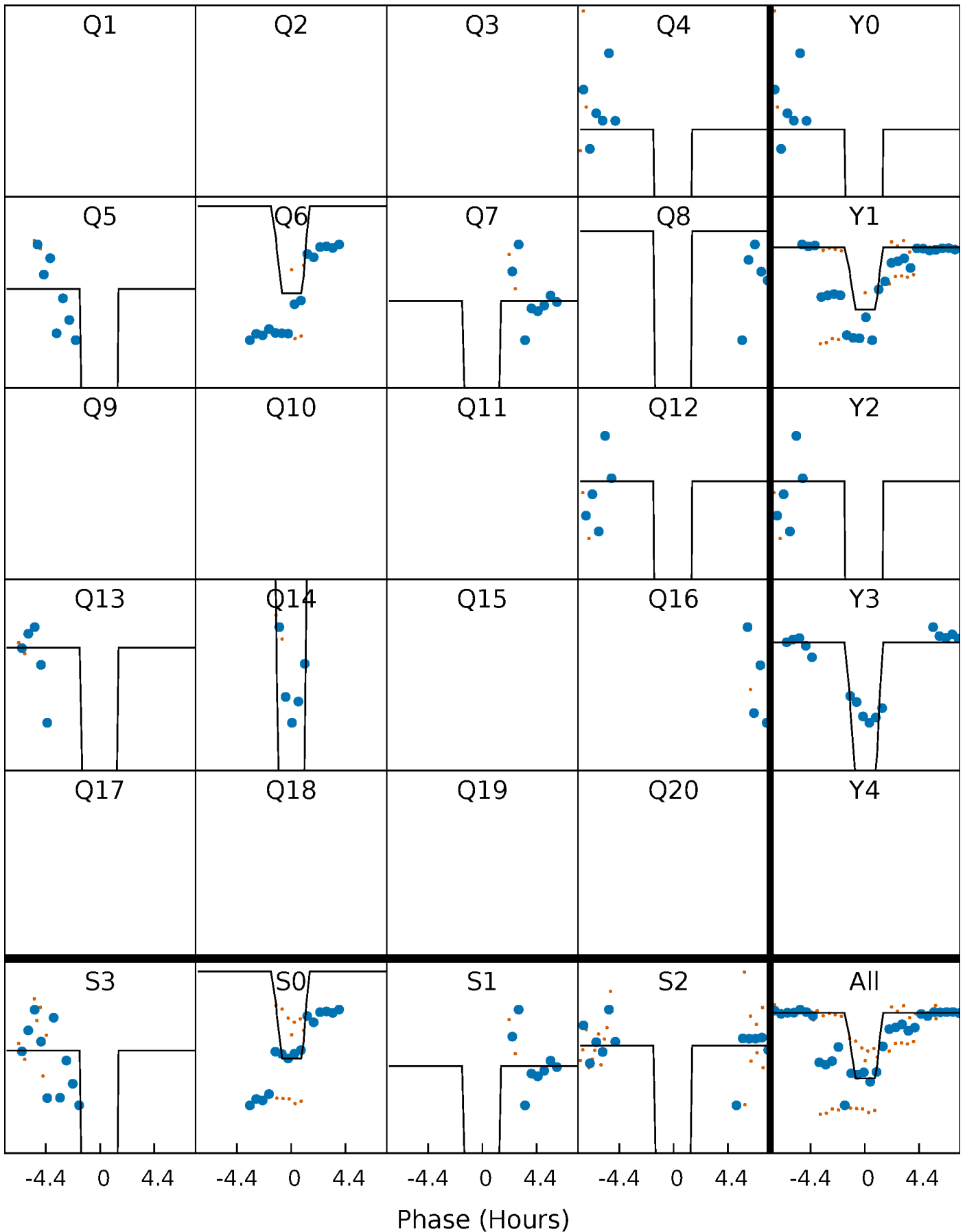
DV Quarter-Phased Transit Curves

TCE 009752973-07 P= 61.516324 Days $T_0=185.532040$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

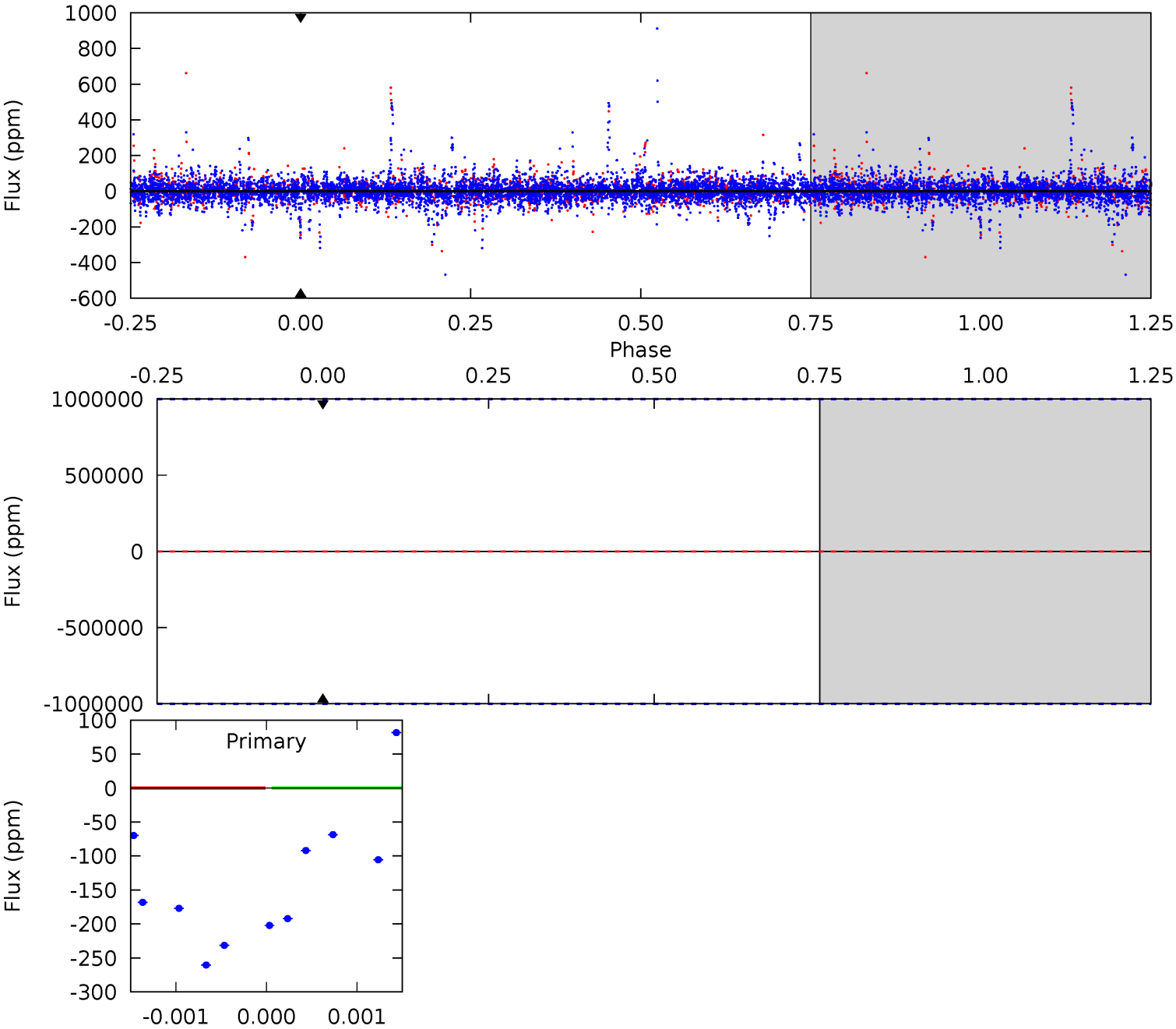
TCE 009752973-07 P= 61.516324 Days $T_0=185.500943$ (BKJD)



DV Model-Shift Uniqueness Test

009752973-07, P = 61.516324 Days, E = 124.015716 Days

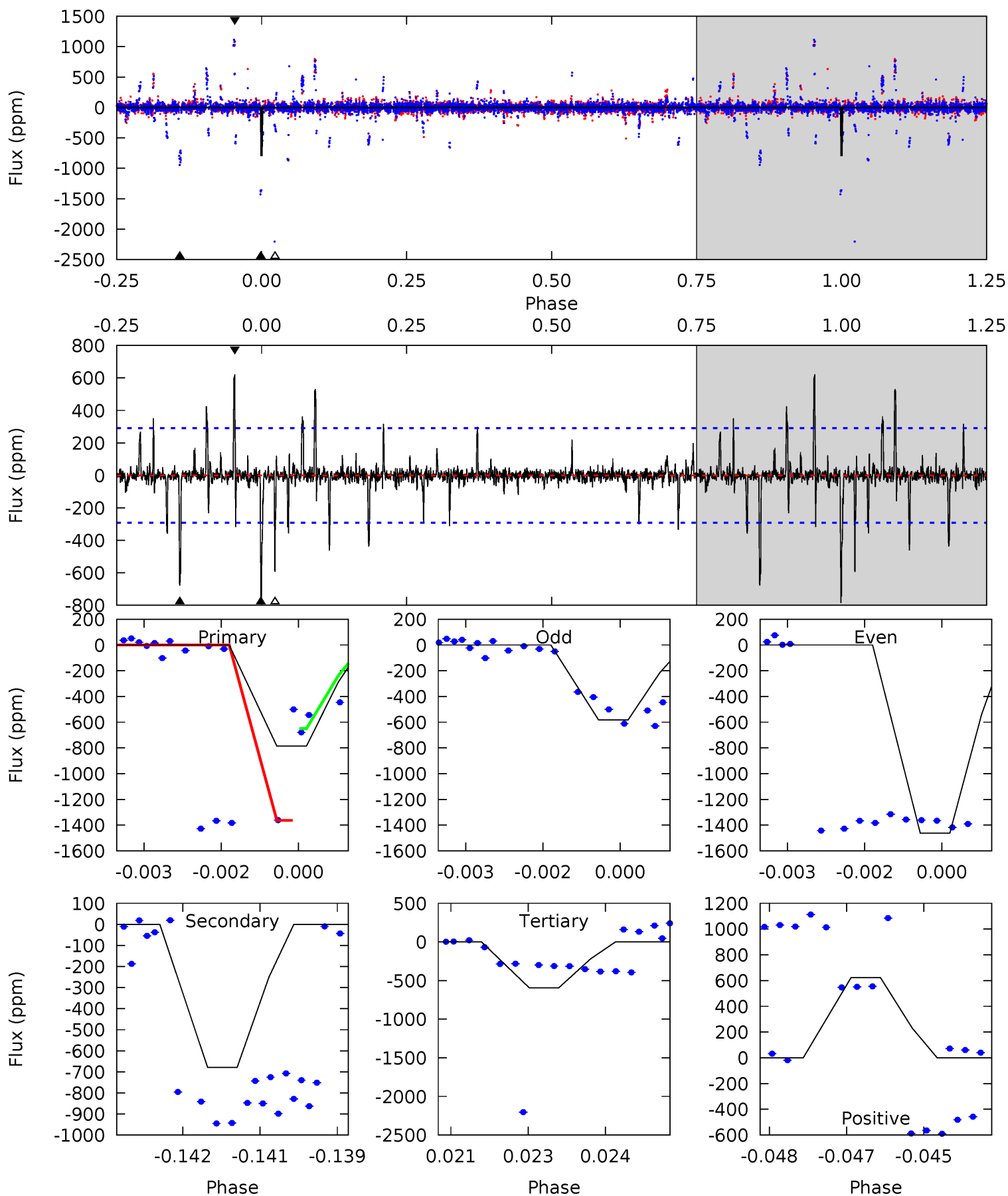
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009752973-07, P = 61.516324 Days, E = 123.984619 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	12.5	10.9	11.4	5.37	3.15	1.17	3.53	3.01	1.57	1.04	7.24	1.25	0.44	6.79



Stellar Parameters For KIC 009752973

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6109^{+164}_{-164}	$4.229^{+0.234}_{-0.126}$	$-0.640^{+0.300}_{-0.250}$	$1.173^{+0.234}_{-0.259}$	$0.850^{+0.118}_{-0.059}$	$0.742^{+0.840}_{-0.293}$
	+3%/-3%	+6%/-3%	+47%/-39%	+20%/-22%	+14%/-7%	+113%/-40%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009752973-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$8.70^{+9.82}_{-5.94}$	747^{+46}_{-52}	-3812^{+31411}_{-18709}	$-249.408^{+120765.350}_{-84324.691}$
Alt.	-679 ± 54	$10.00^{+10.73}_{-7.08}$	751^{+45}_{-51}	3838^{+2651}_{-752}	313^{+3638}_{-239}

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

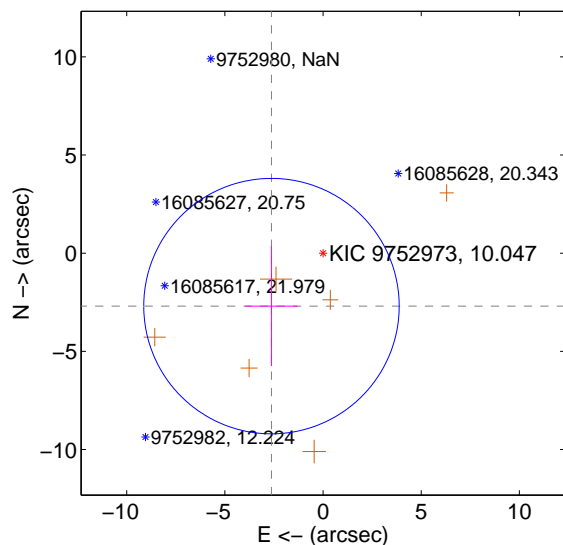
Supplemental centroid analysis for 009752973-07. **Kepler magnitude: 10.05.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

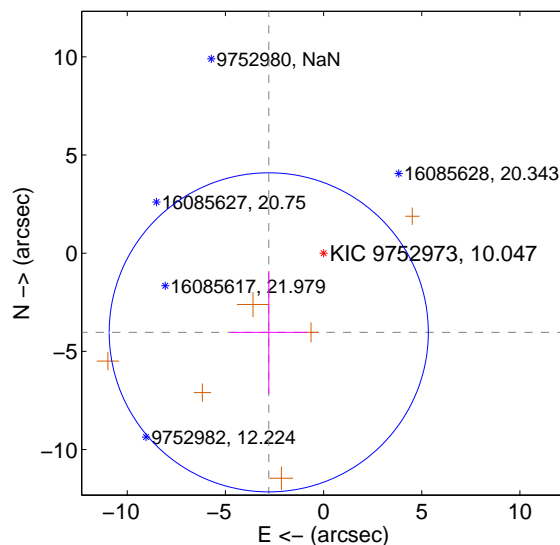
The OOT PRF centroid is offset from the target star catalog position by about 2.71 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.764 ± 2.168	1.74	2.626 ± 1.335	-2.696 ± 3.055
PRF-fit source offset from KIC position	4.904 ± 2.708	1.81	2.792 ± 1.958	-4.032 ± 3.119
photometric centroid source offset	2.01 ± 0.22	9.32	1.57 ± 0.21	-1.26 ± 0.22

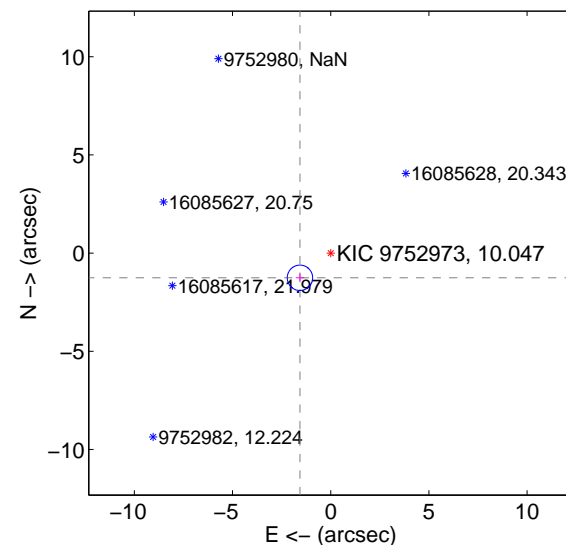
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

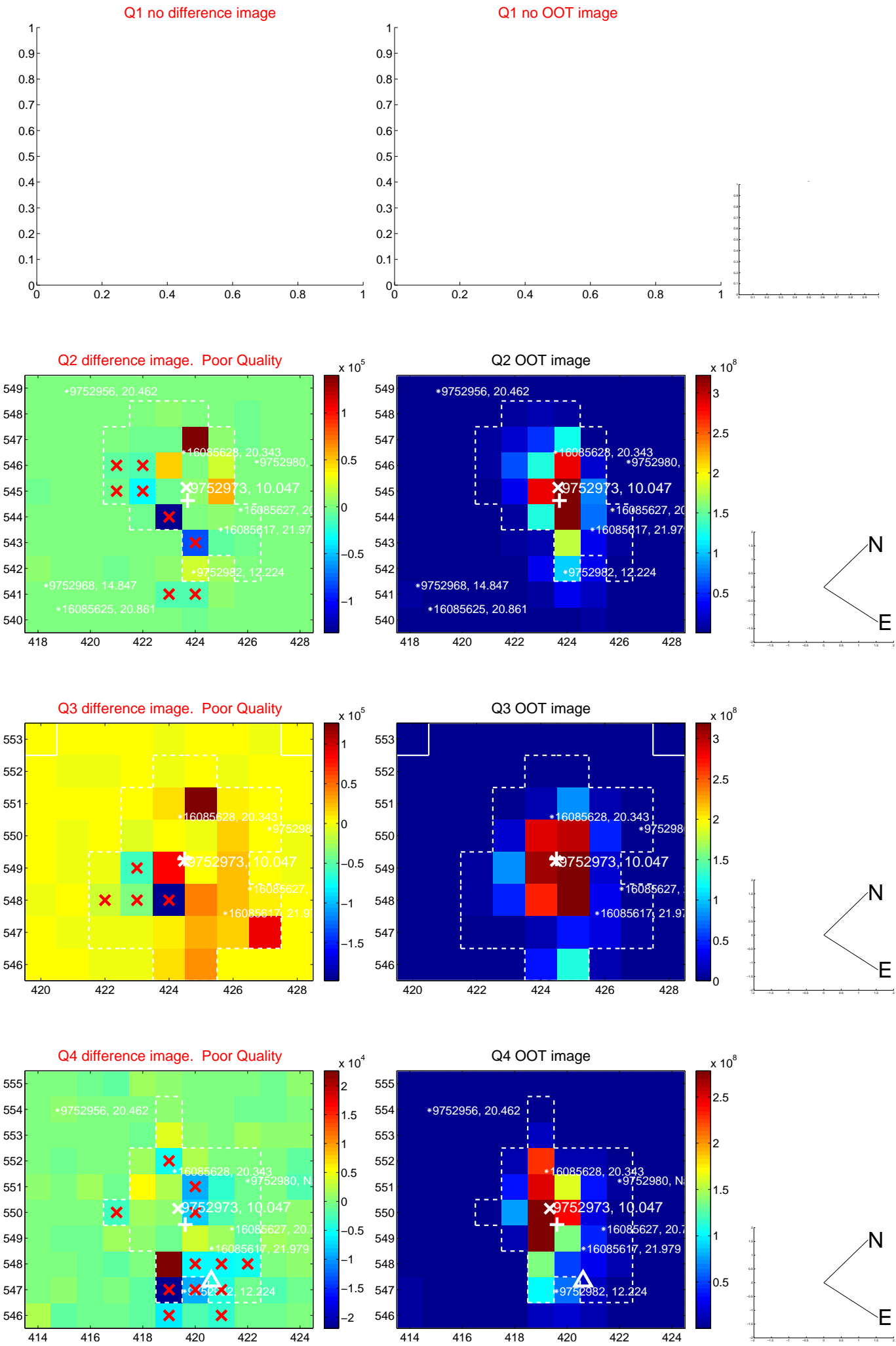


offset from photometric centroids

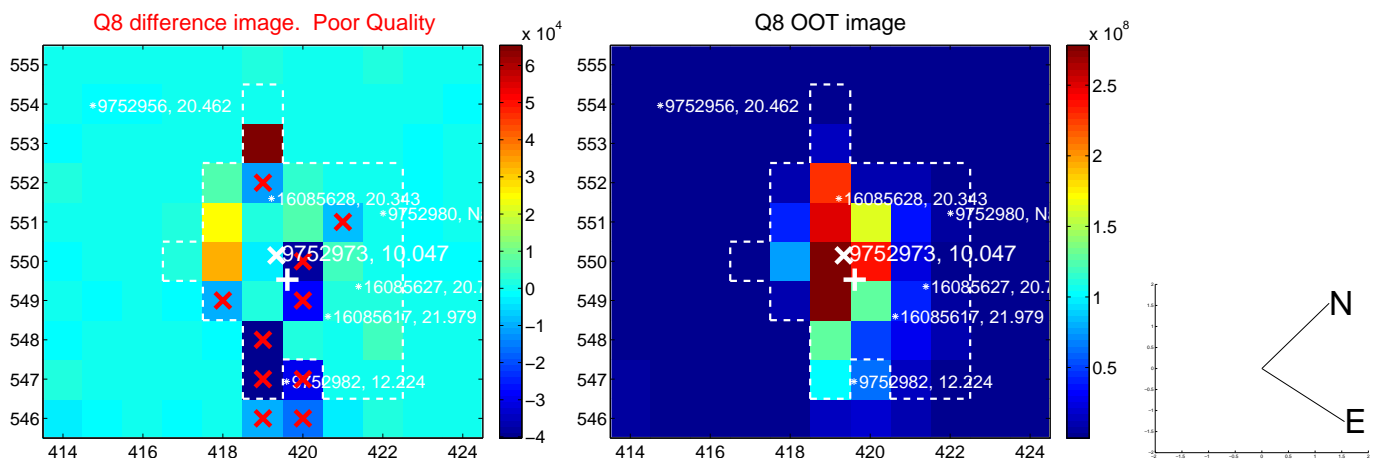
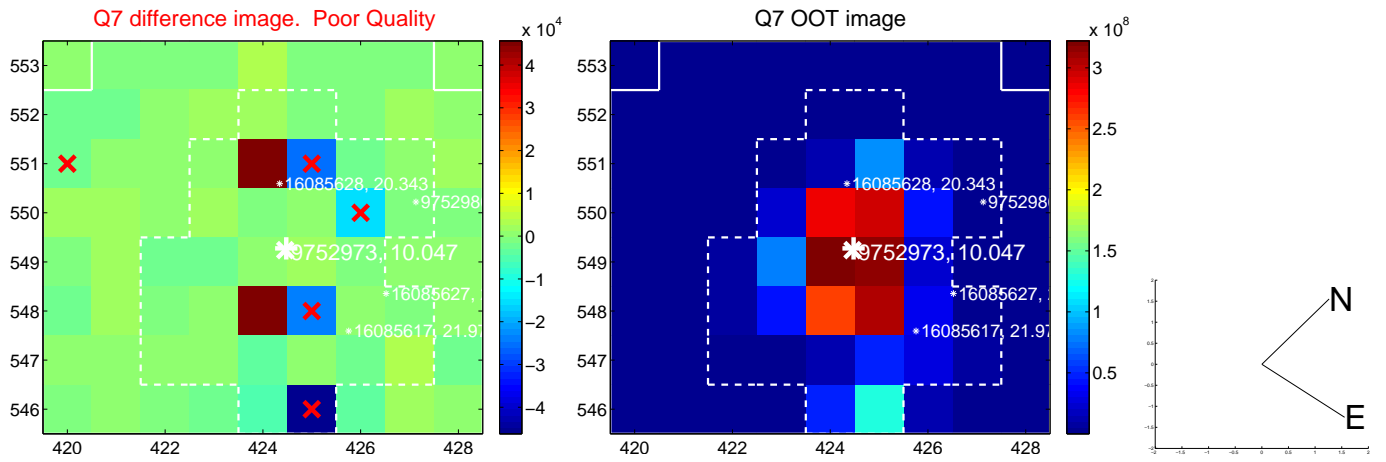
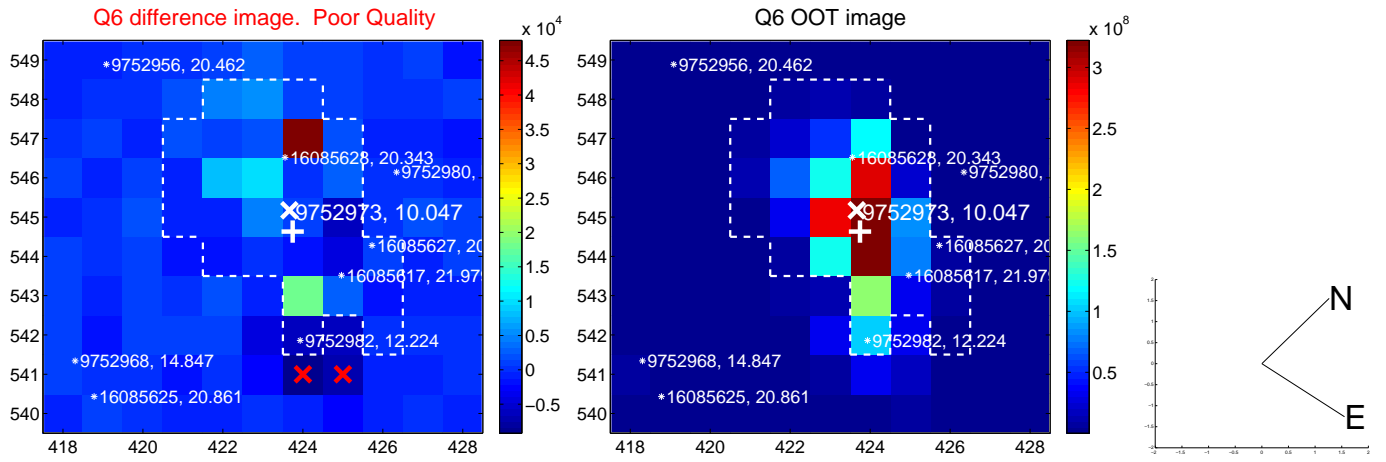
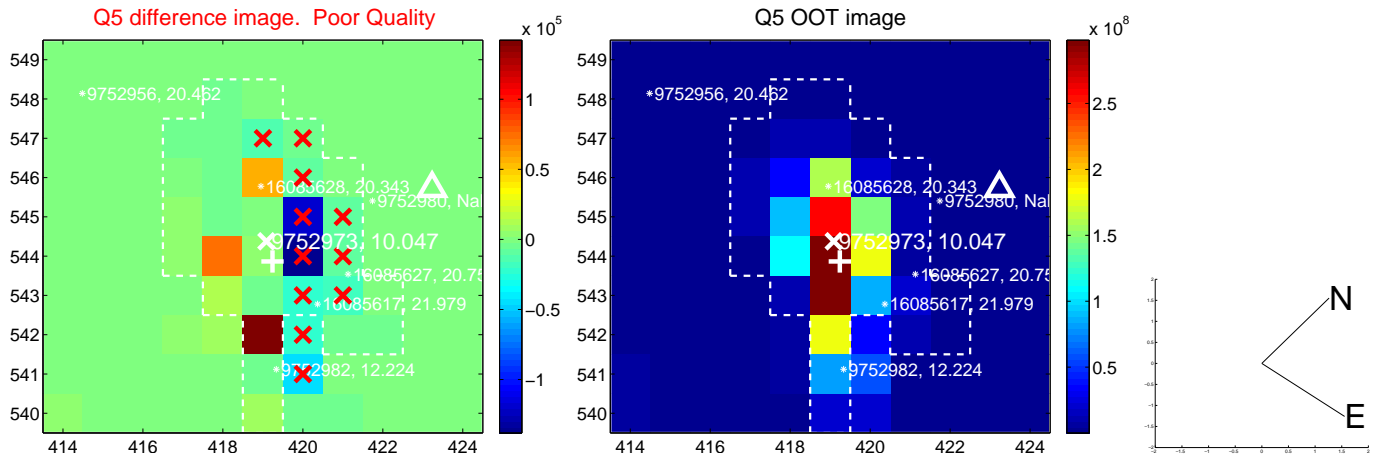


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

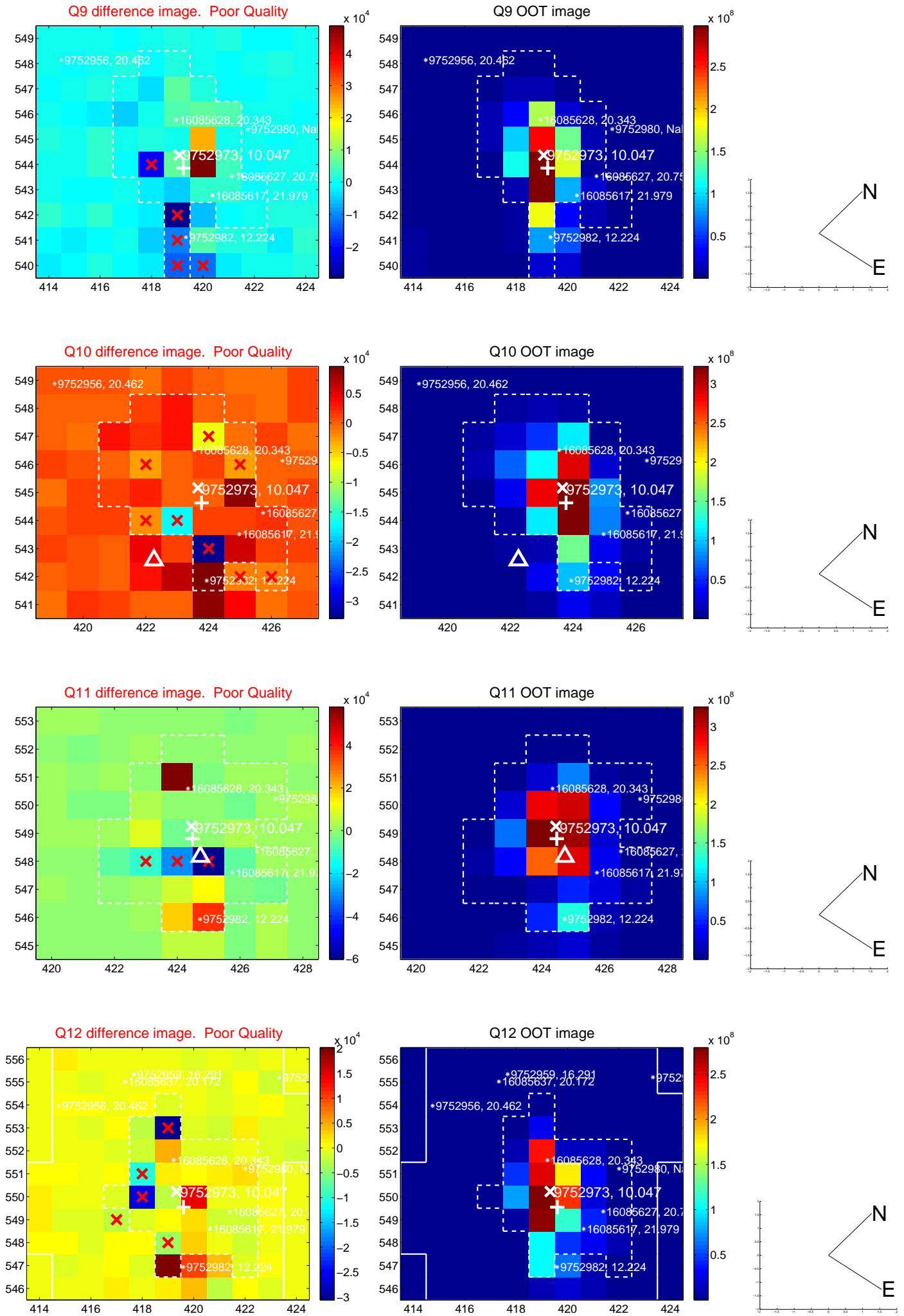
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



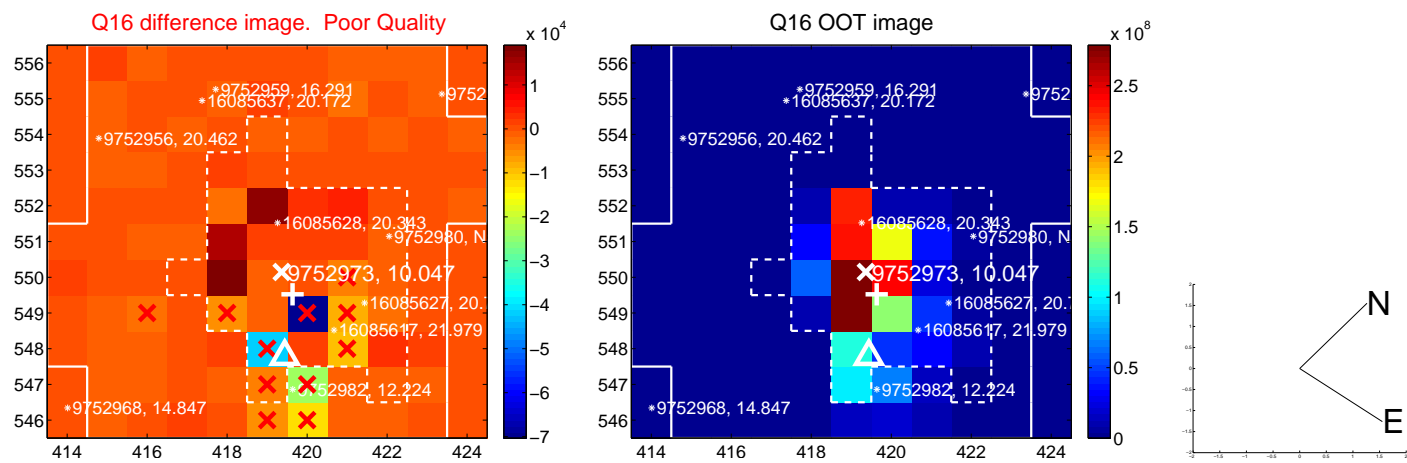
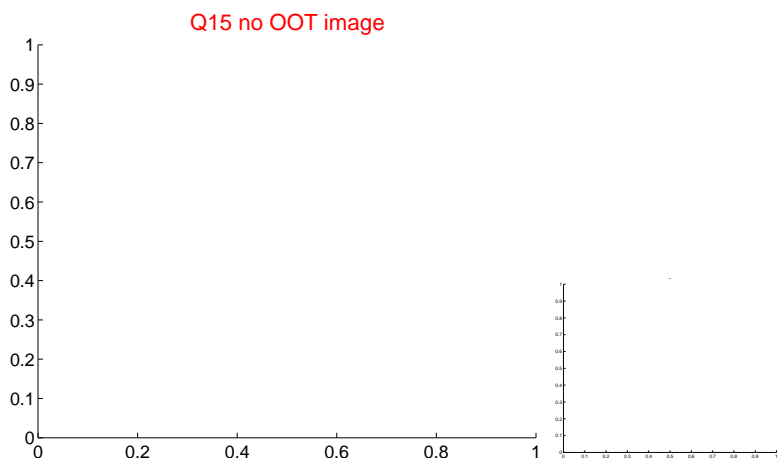
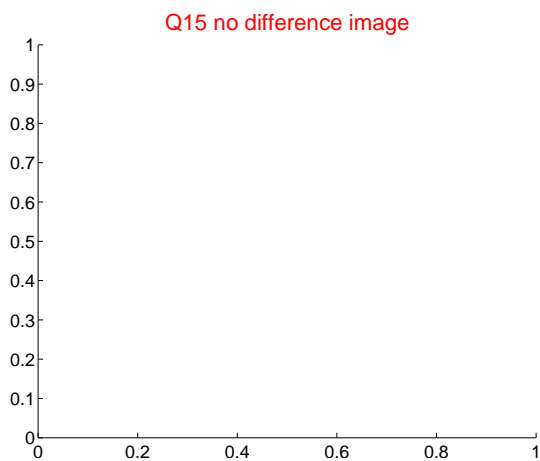
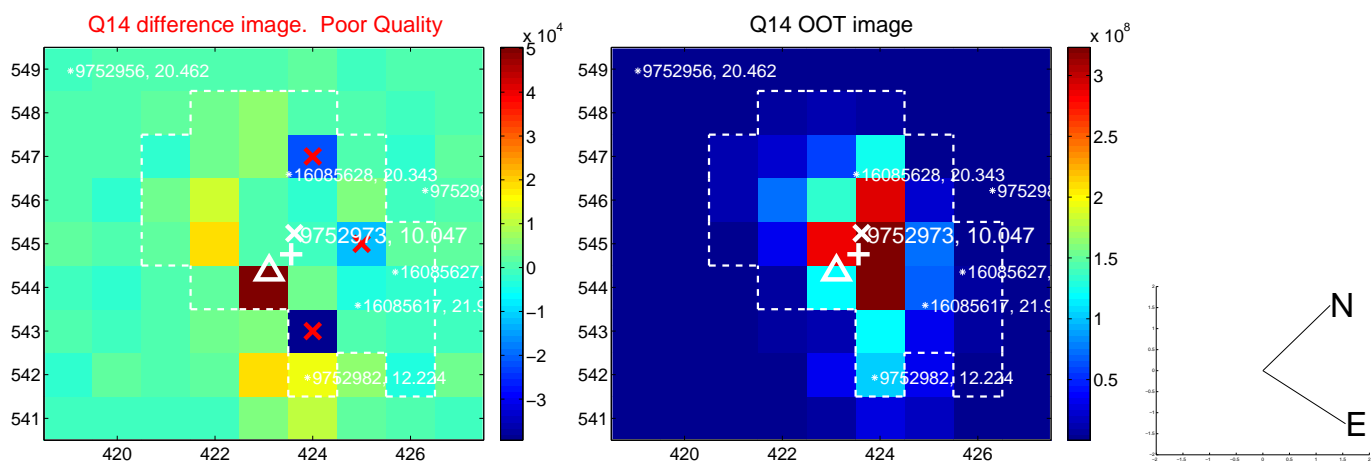
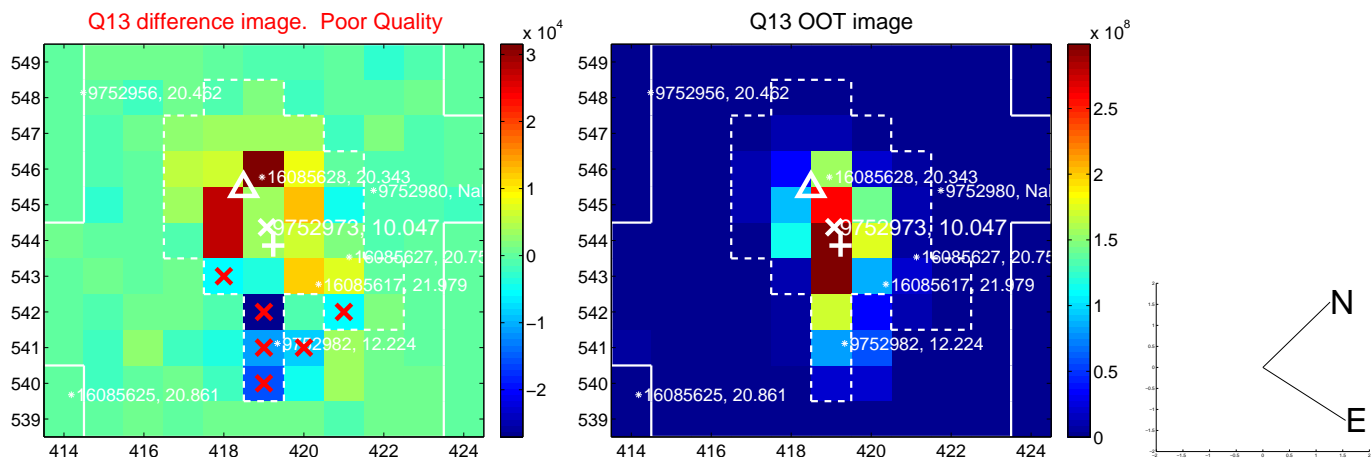
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



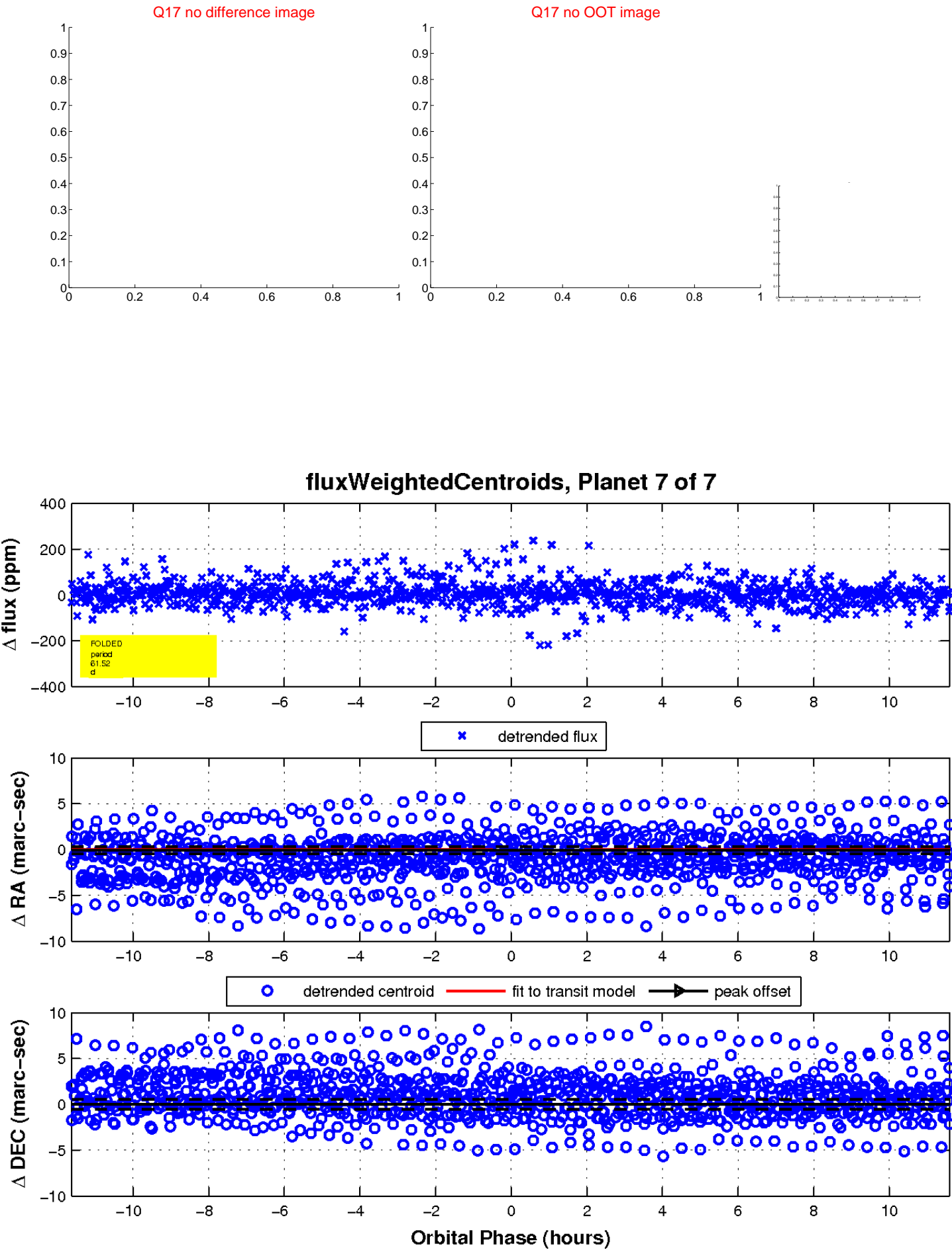
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

