

KIC 010724379

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})
010724379-01	OBS	No	0.745032	131.870194	17.9	4.916	8.2	4.0	0.77	5580	0.32	2233.70
010724379-02	OBS	No	71.332053	182.331832	514.3	8.579	9.0	7.0	0.77	5580	2.08	5.10
010724379-03	OBS	No	169.377922	207.943304	1233.1	2.500	8.8	-1.0	0.77	5580	2.69	1.61
010724379-04	OBS	No	47.989144	145.335881	1038.3	1.215	8.1	8.5	0.77	5580	2.48	8.65
010724379-05	OBS	No	135.968084	137.416445	547.0	4.931	8.8	7.9	0.77	5580	2.06	2.16
010724379-06	OBS	No	48.599286	145.457815	880.3	1.470	9.6	8.5	0.77	5580	2.42	8.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010724379-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010724379-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
010724379-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010724379-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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.

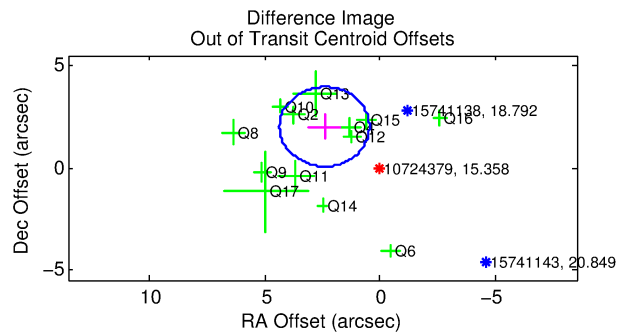
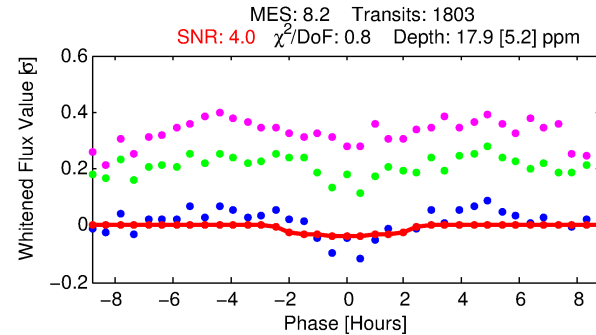
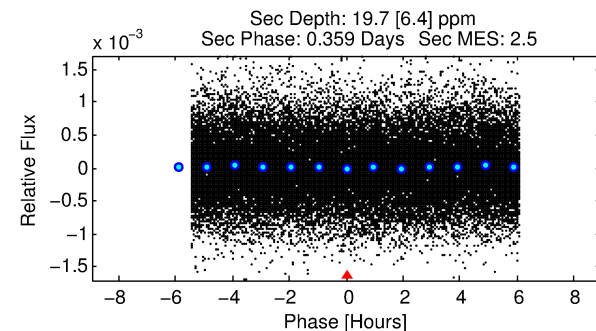
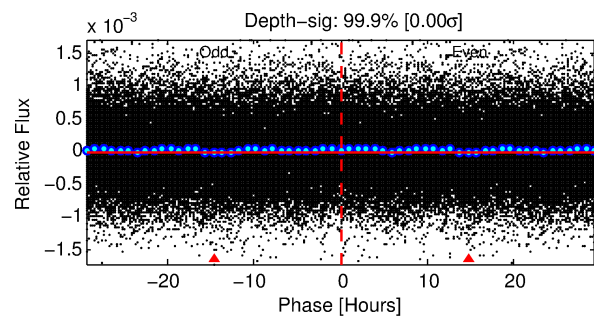
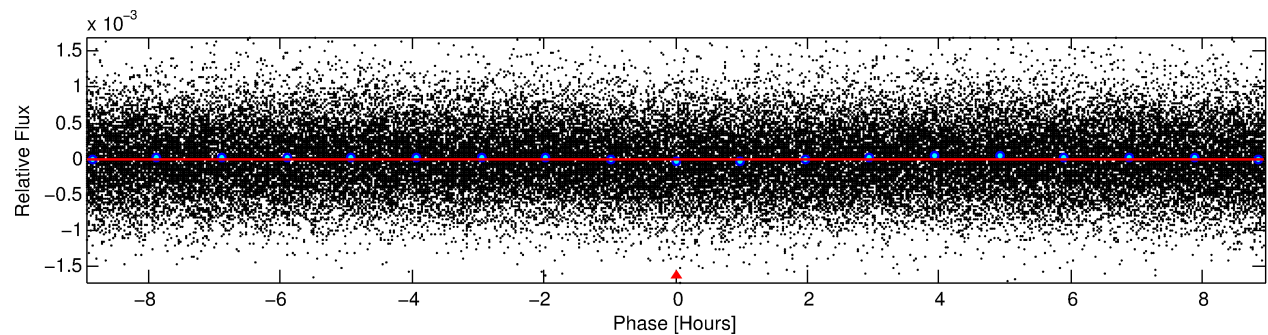
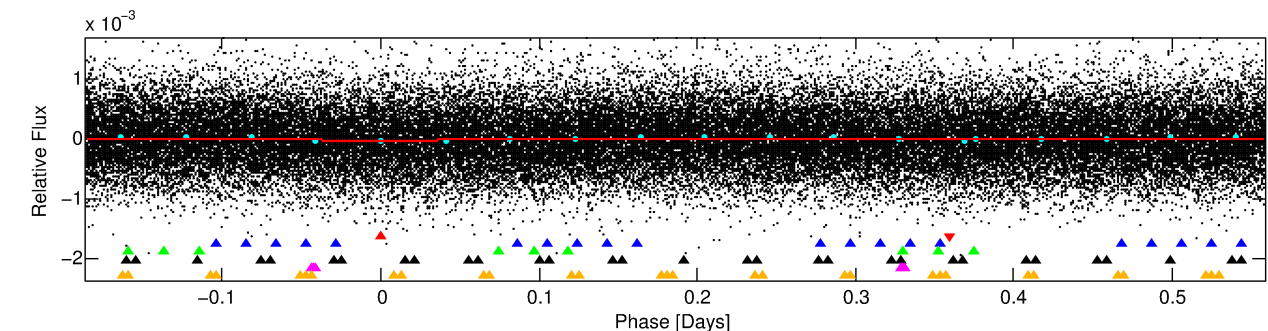
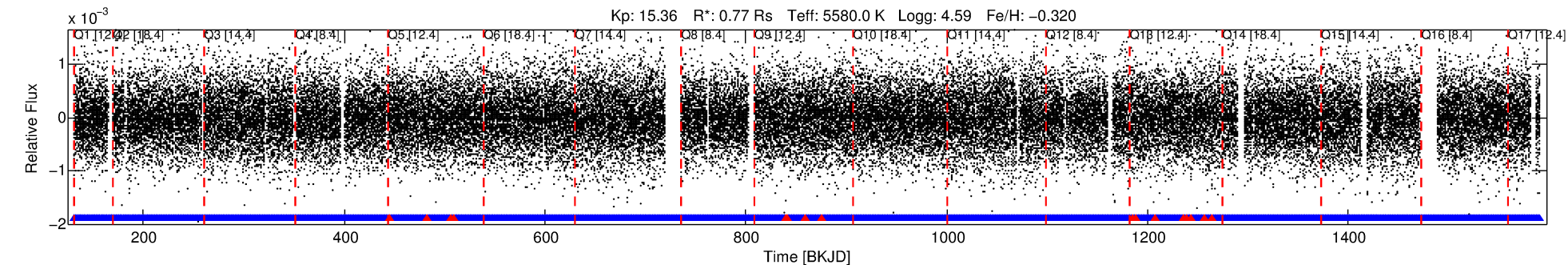
Ephemeris Match Information For 010724379-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010724379-01	10724379	010724429-01	10724429	1:1	69.7	-16	6	14.91	15.36	0.50	Direct-PRF	1	1.41	2.02

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

DV One-Page Summary

KIC: 10724379 Candidate: 1 of 6 Period: 0.745 d



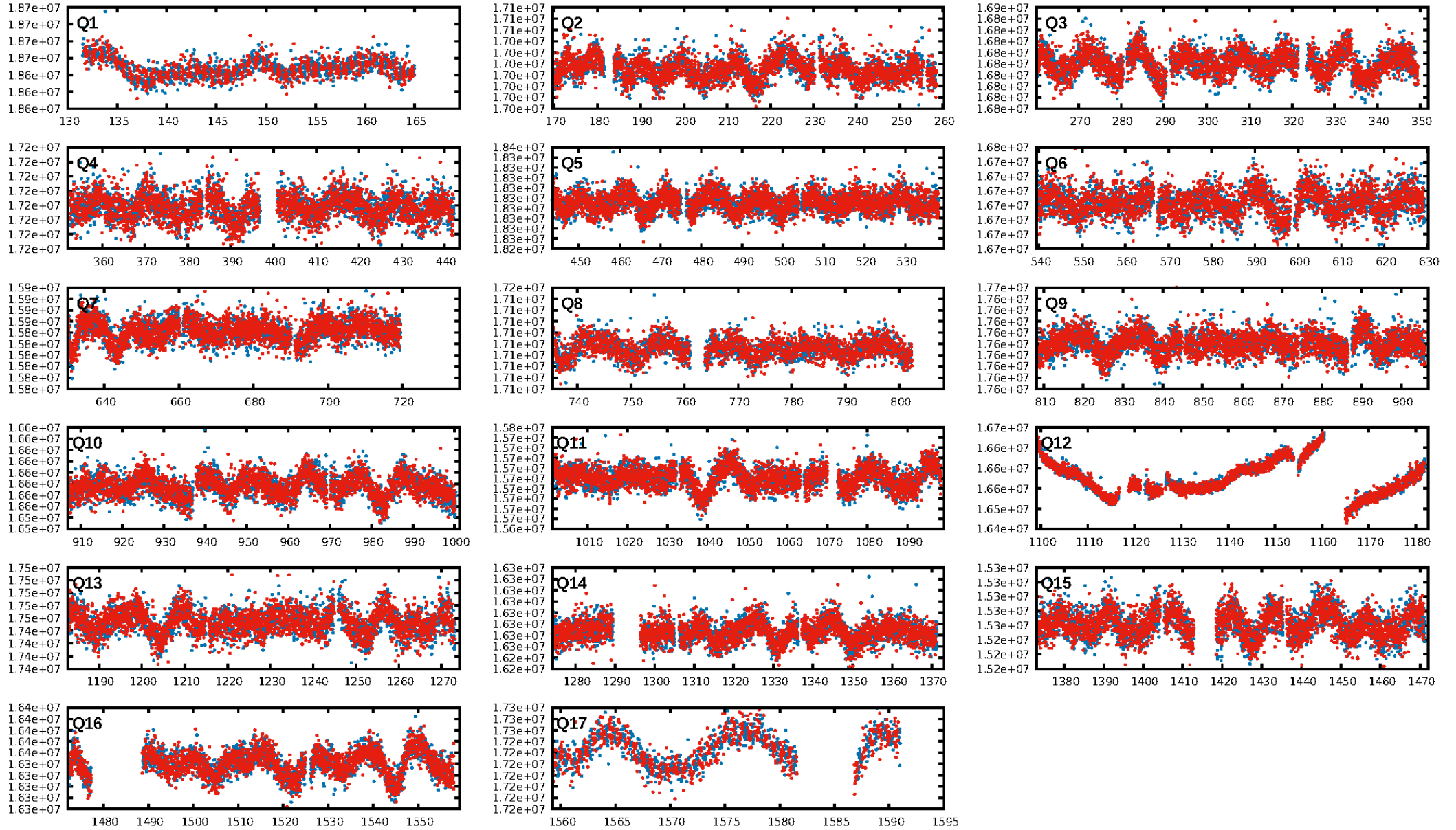
DV Fit Results:

Period = 0.74503 [0.00003] d
Epoch = 131.8702 [0.0134] BKJD
Rp/R* = 0.0038 [0.0149]
a/R* = 1.32 [9.49]
b = 0.10 [169.72]
Seff = 2233.70 [618.95]
Teq = 1753 [121] K
Rp = 0.32 [1.26] Re
a = 0.0153 [0.0026] AU
Ag = 23.99 [186.96] [0.12σ]
Teffp = 5999 [11681] K [0.36σ]

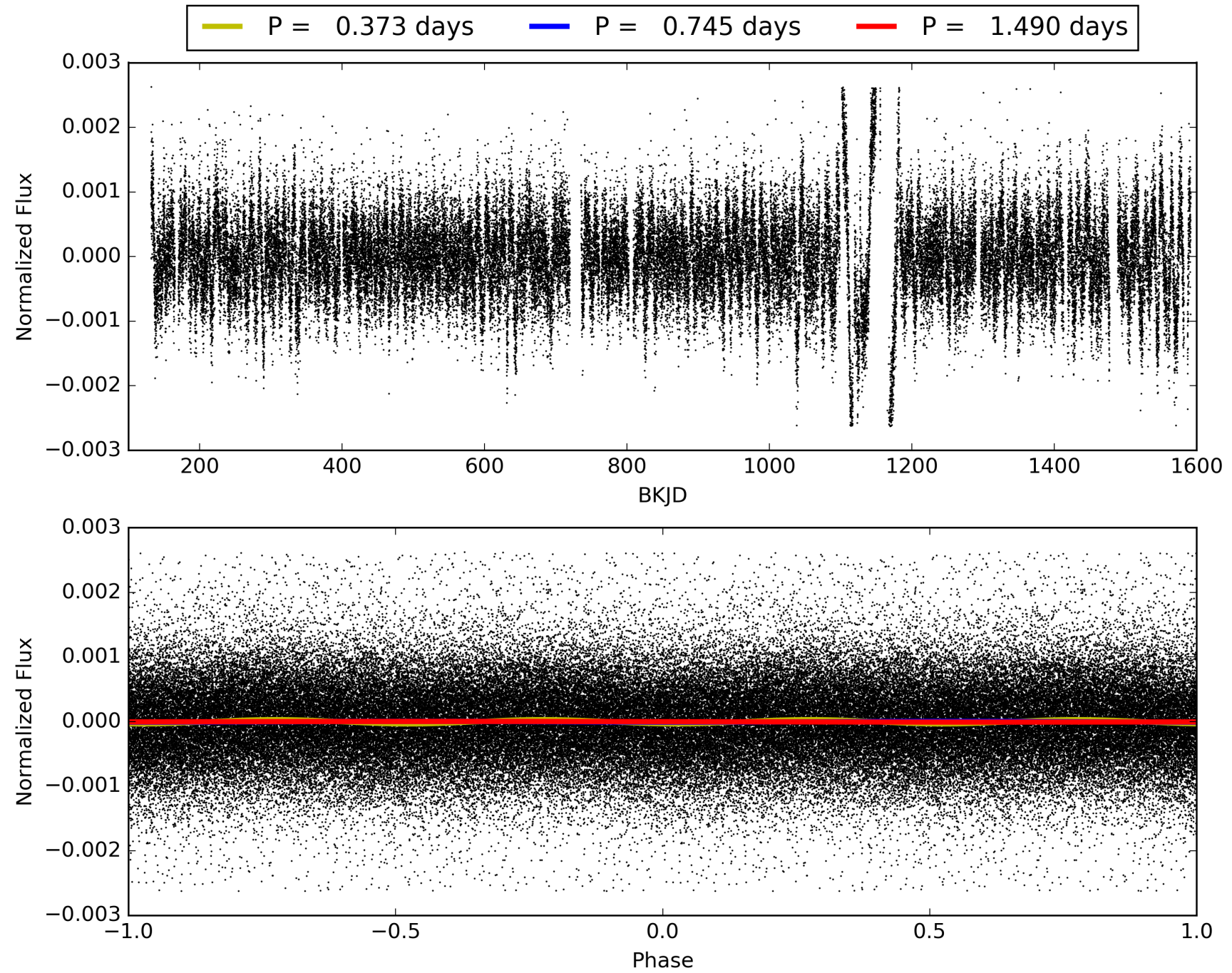
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [223.92σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.33e-10
RollingBand-fgt: 0.99 [1706/1722]
GhostDiagnostic-chr: 0.04422
Centroid-sig: 59.2%
Centroid-so: 2.819 arcsec [0.82σ]
OotOffset-rm: 3.139 arcsec [4.84σ]
KicOffset-rm: 3.327 arcsec [5.00σ]
OotOffset-st: 4/2/4/3 [13]
KicOffset-st: 4/2/4/3 [13]
DiffImageQuality-fgm: 0.15 [2/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010724379-01, PDC Light Curves

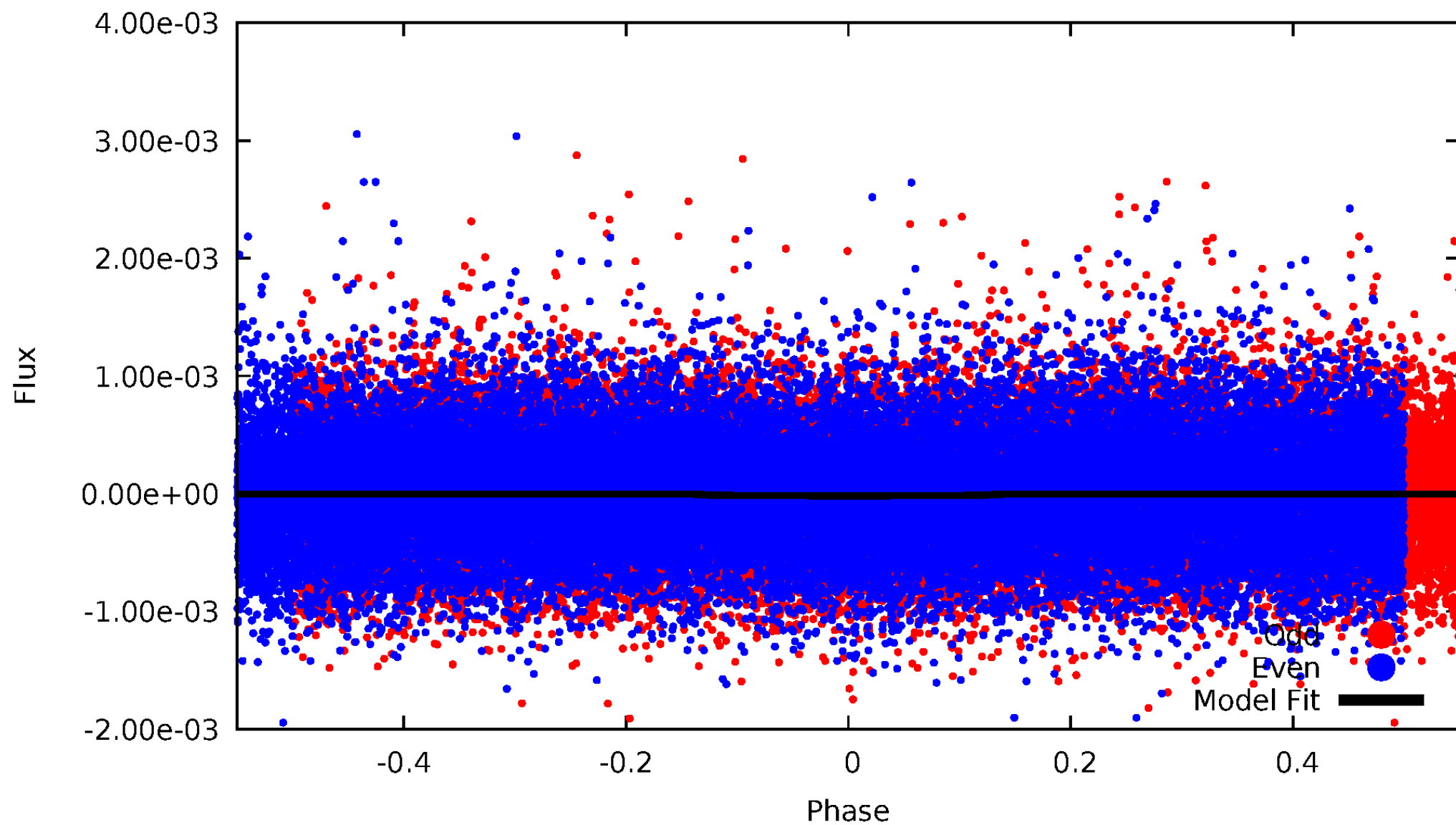


TCE 010724379-01



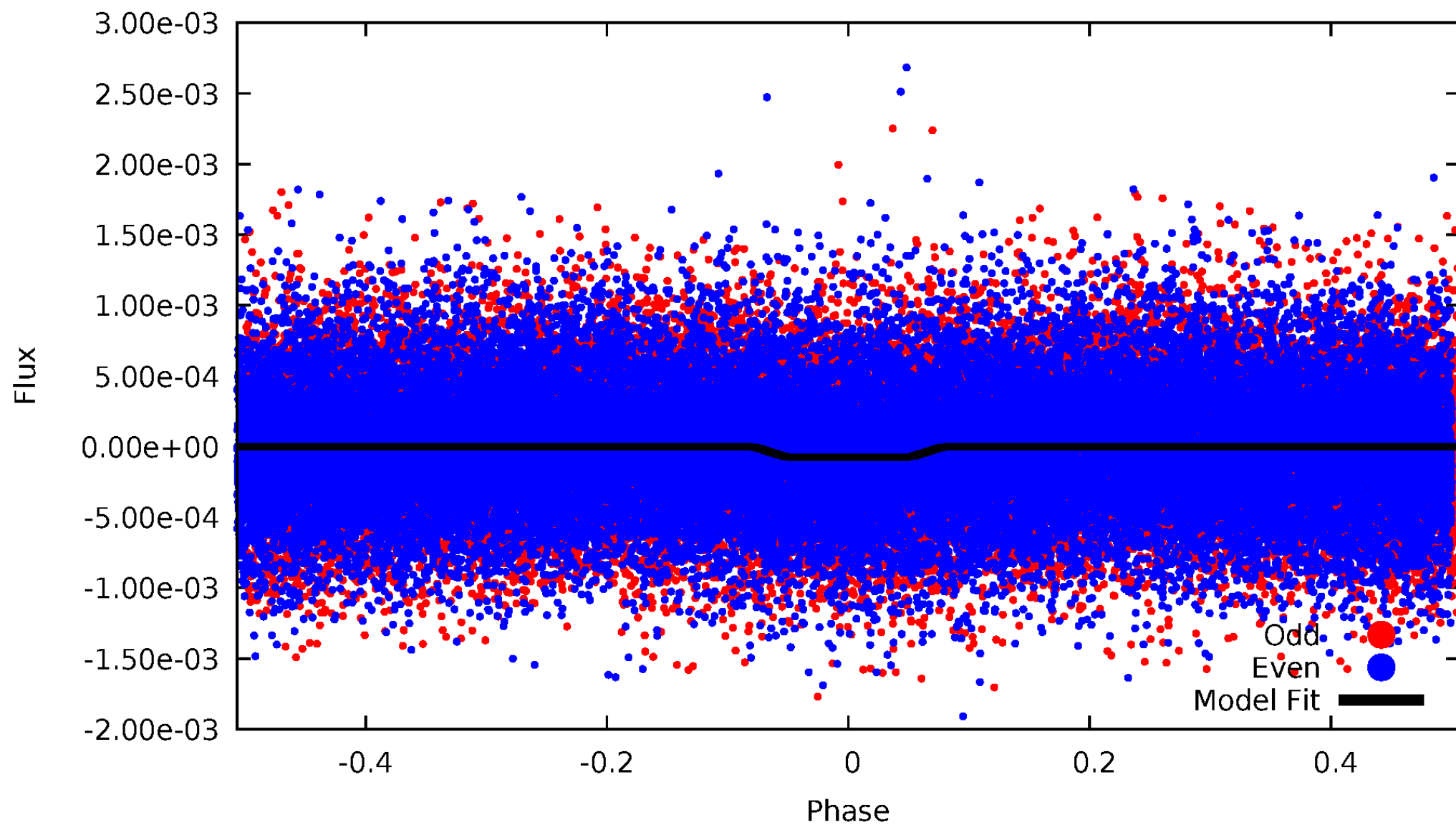
DV Odd/Even

TCE 010724379-01

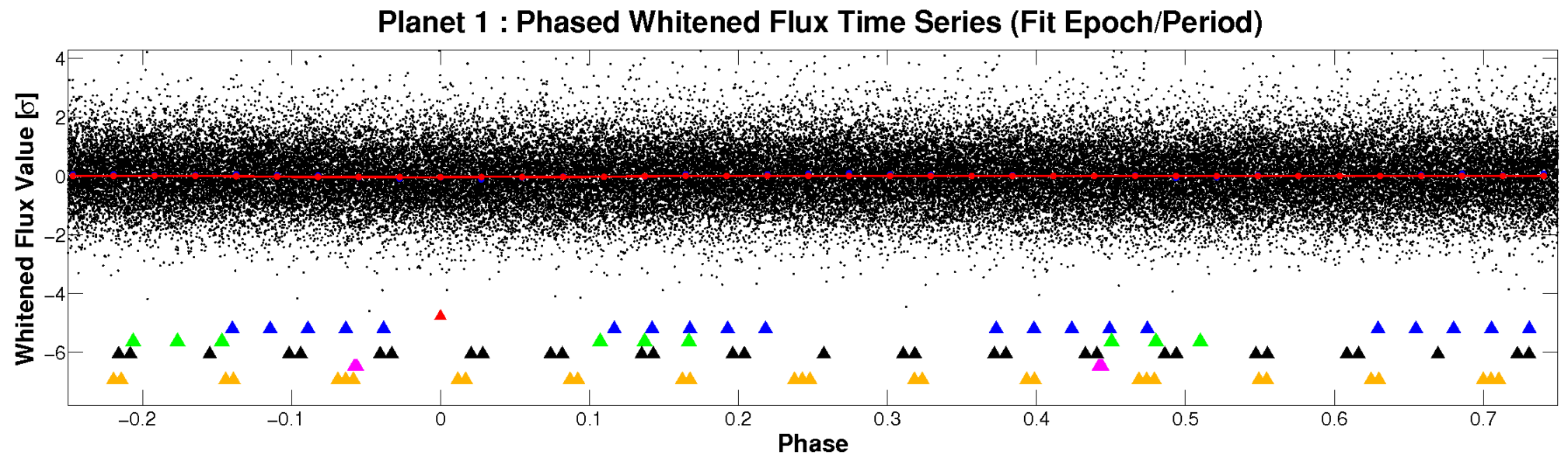
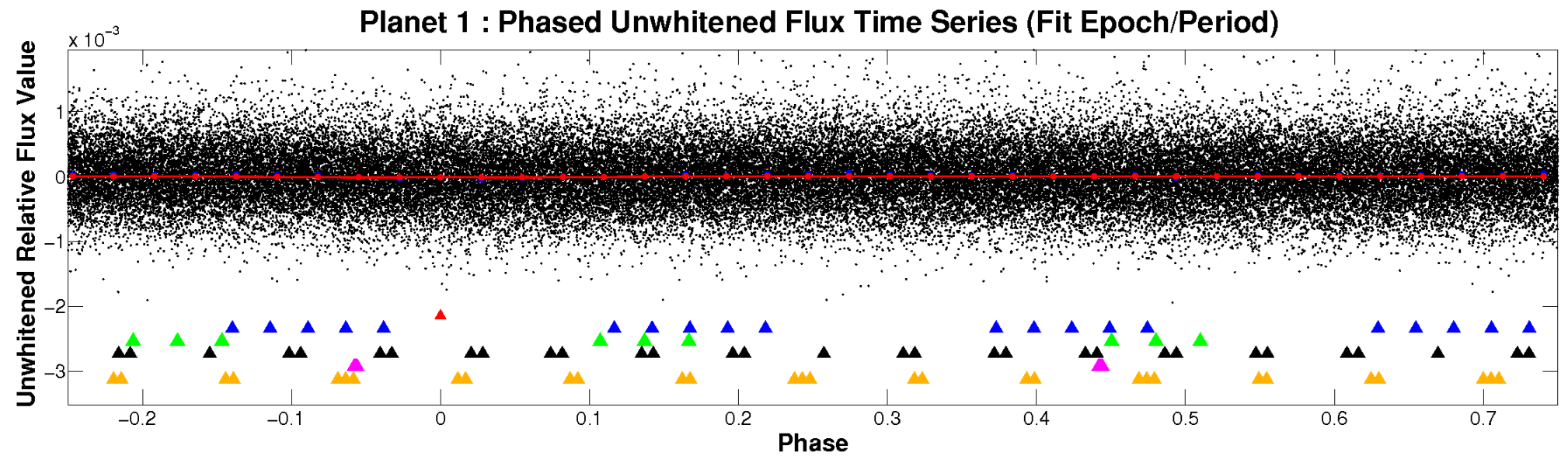


ALT Odd/Even

TCE 010724379-01

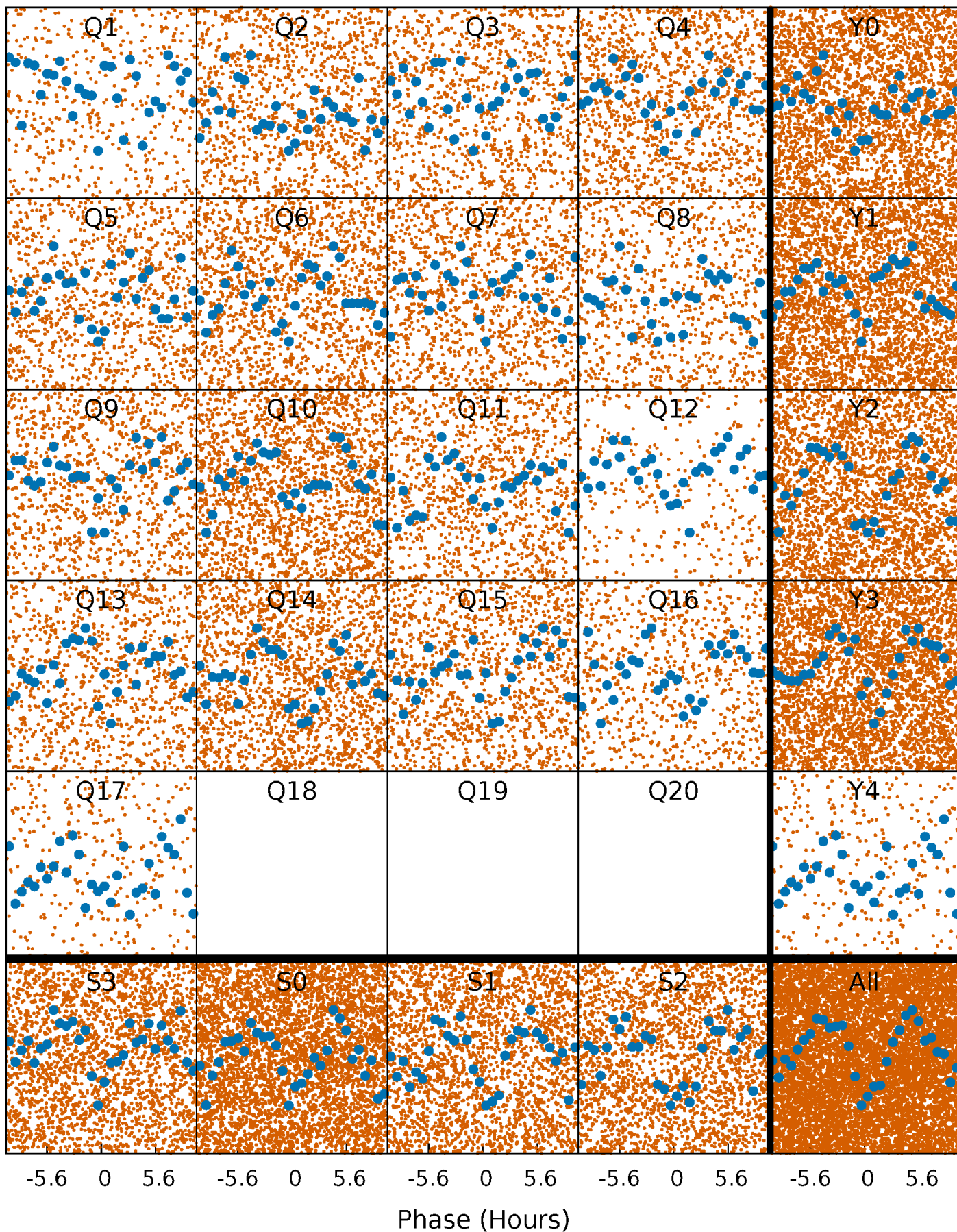


Non-Whitened Vs. Whitened Light Curve



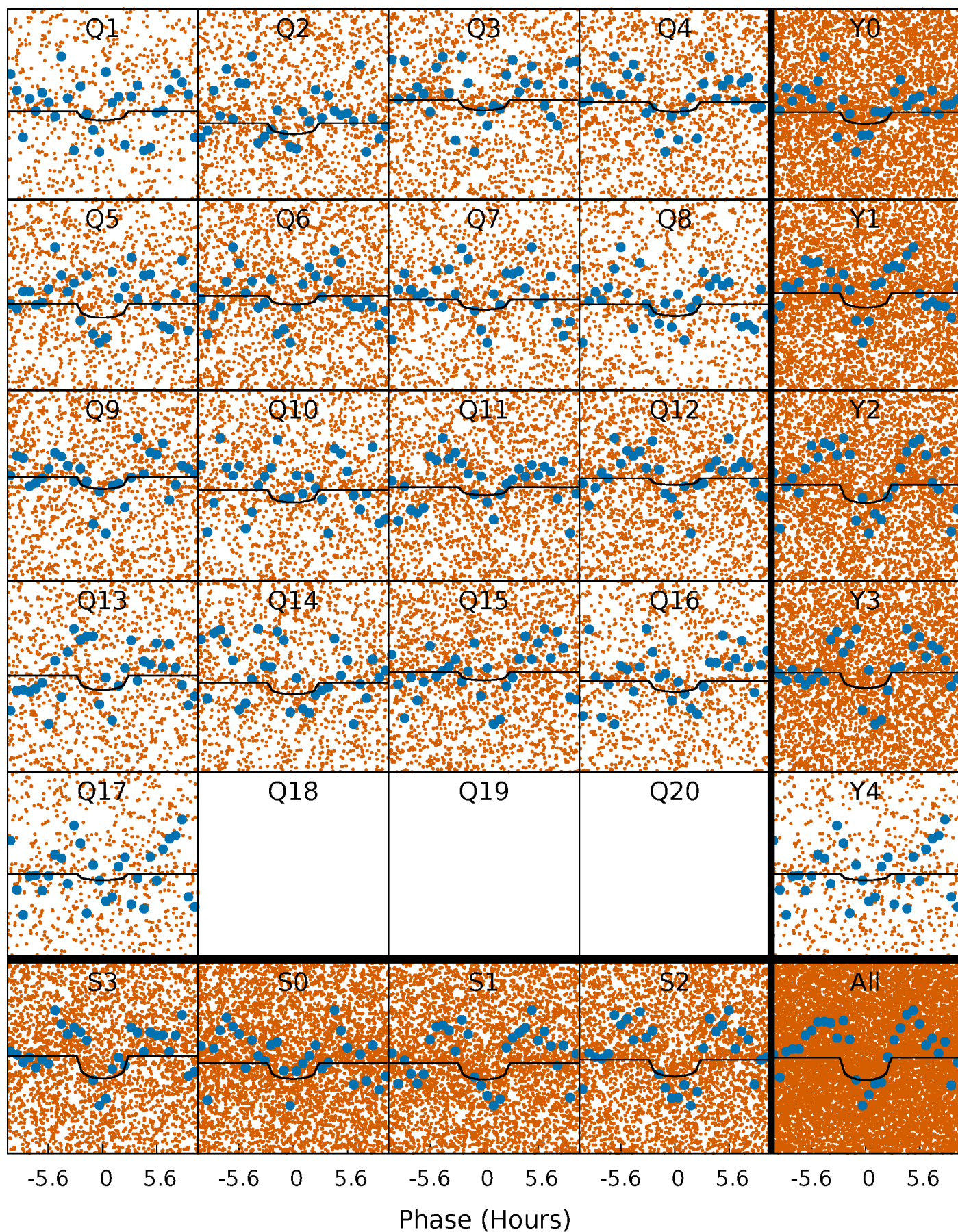
PDC Quarter-Phased Transit Curves

TCE 010724379-01 P= 0.745032 Days $T_0=131.870194$ (BKJD)



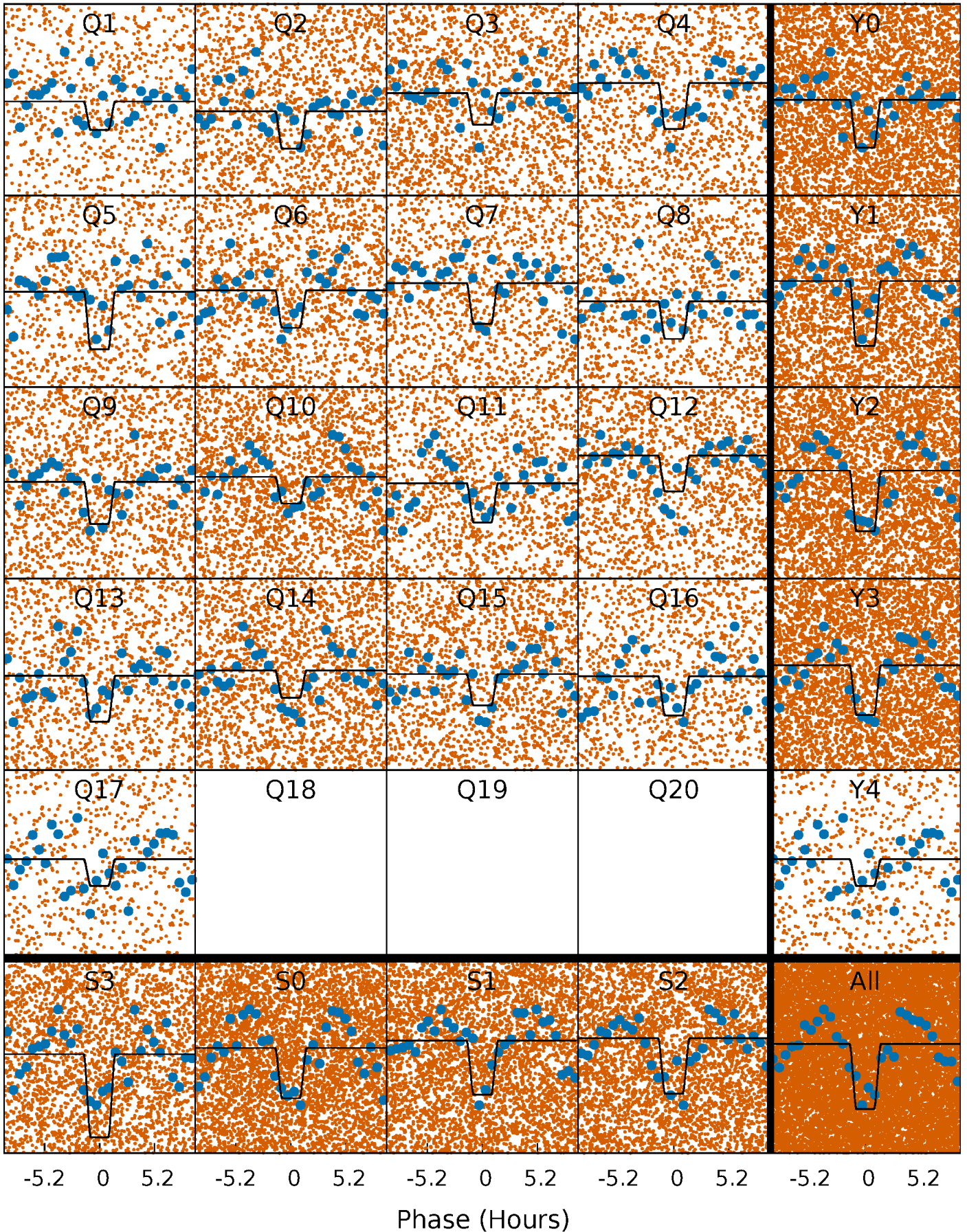
DV Quarter-Phased Transit Curves

TCE 010724379-01 P= 0.745032 Days $T_0=131.870194$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

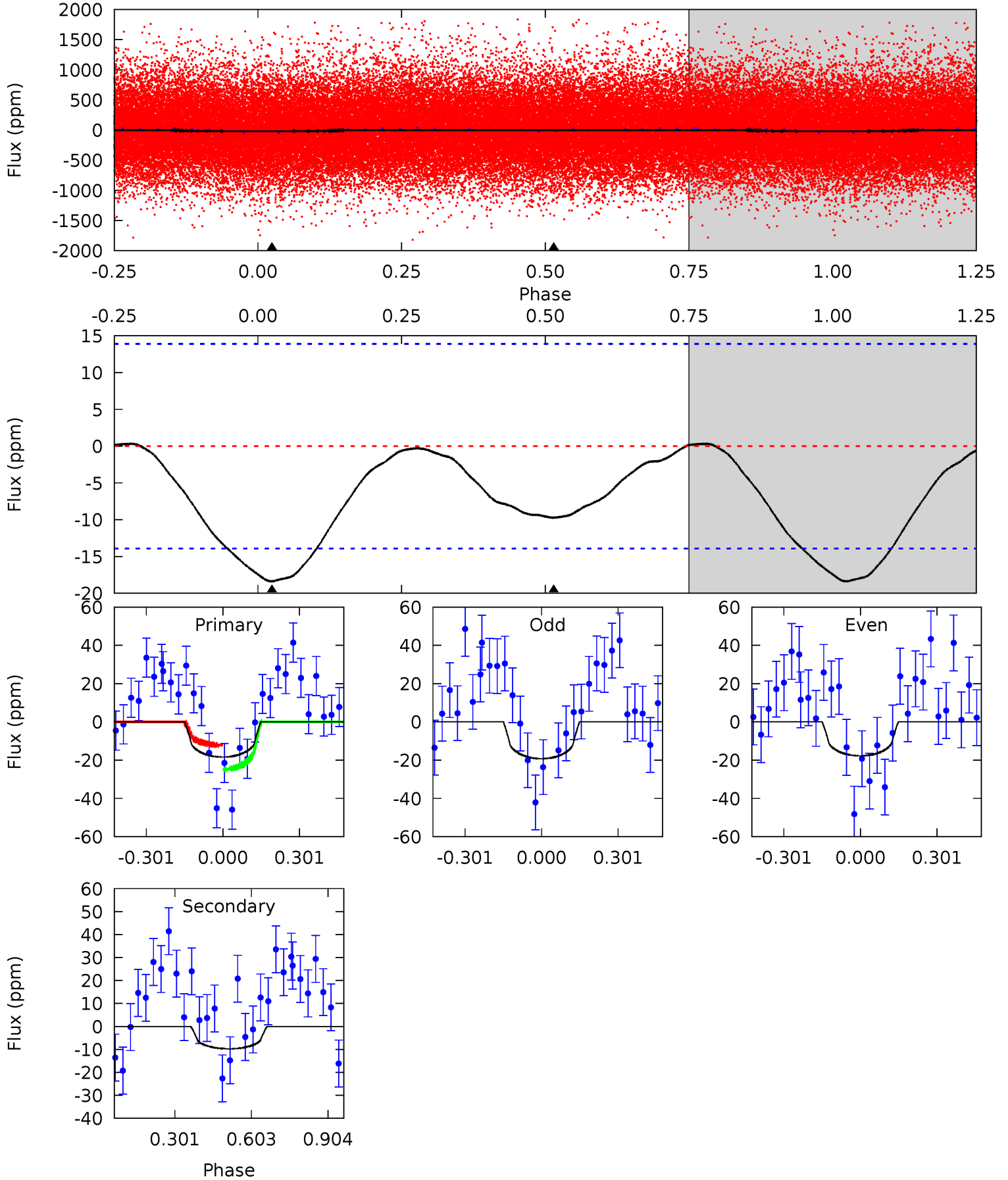
TCE 010724379-01 P= 0.745089 Days $T_0=131.822063$ (BKJD)



DV Model-Shift Uniqueness Test

010724379-01, P = 0.745032 Days, E = 131.125162 Days

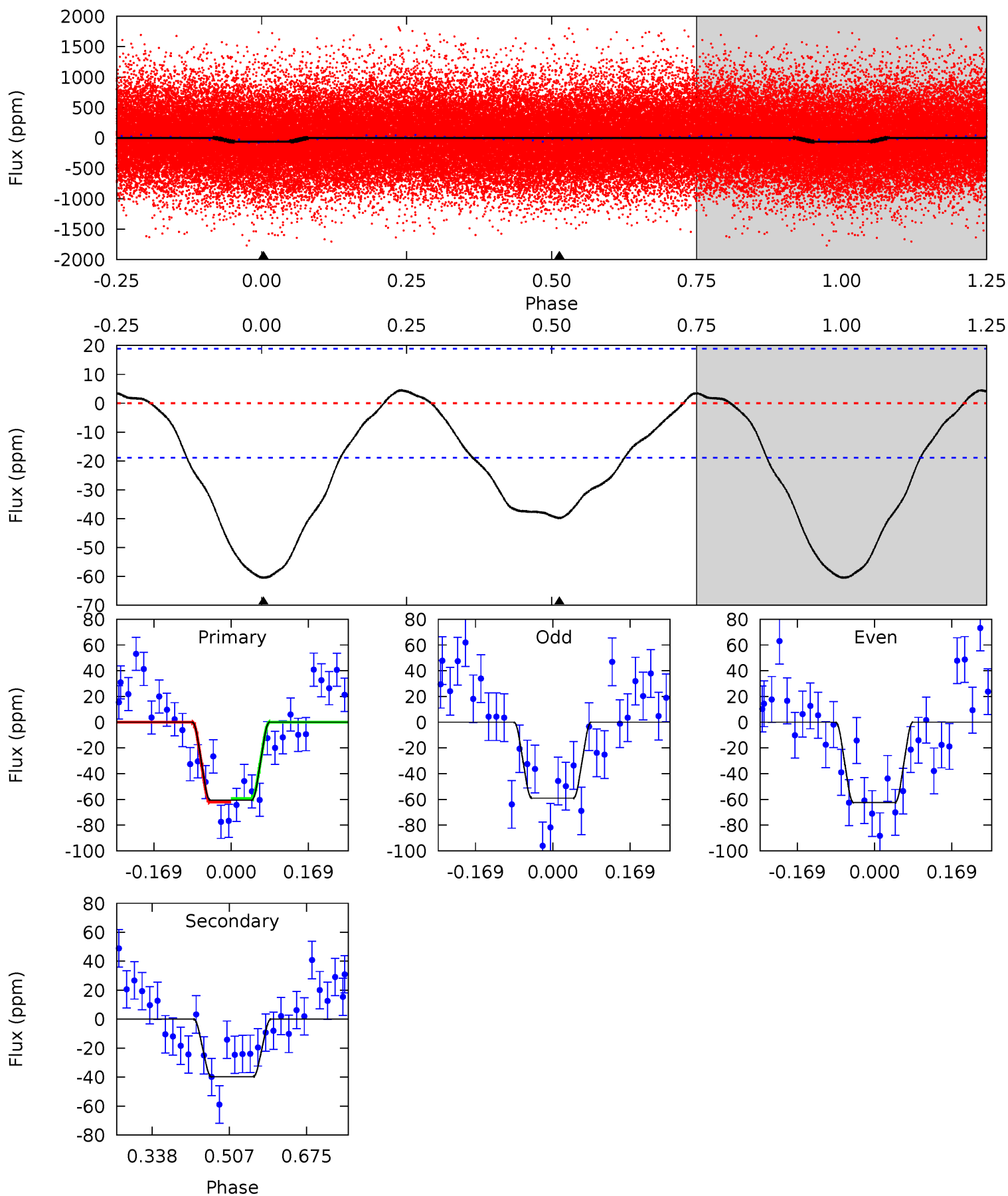
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.72	3.03	0	0	4.33	1.03	0.10	5.72	5.72	3.03	3.03	0.23	0.92	0.02	1.99



Alt Model-Shift Uniqueness Test

010724379-01, P = 0.745089 Days, E = 131.076974 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	9.40	0	0	4.45	1.38	1.00	14.3	14.3	9.40	9.40	0.40	1.54	0.07	0.34



Stellar Parameters For KIC 010724379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5580^{+152}_{-169}	$4.592^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.774^{+0.158}_{-0.068}$	$0.865^{+0.080}_{-0.106}$	$2.633^{+0.474}_{-1.027}$
	+3%/-3%	+1%/-3%	+94%/-94%	+20%/-9%	+9%/-12%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010724379-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 3	$1.02^{+1.01}_{-0.67}$	2499^{+121}_{-100}	3186^{+1707}_{-5334}	$1.098^{+8.543}_{-0.833}$
Alt.	-40 ± 4	$1.21^{+1.20}_{-0.81}$	2490^{+121}_{-95}	3985^{+2488}_{-929}	$3.402^{+28.543}_{-2.526}$

T_{max} = Theoretical Maximum Planetary Temperature

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

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

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

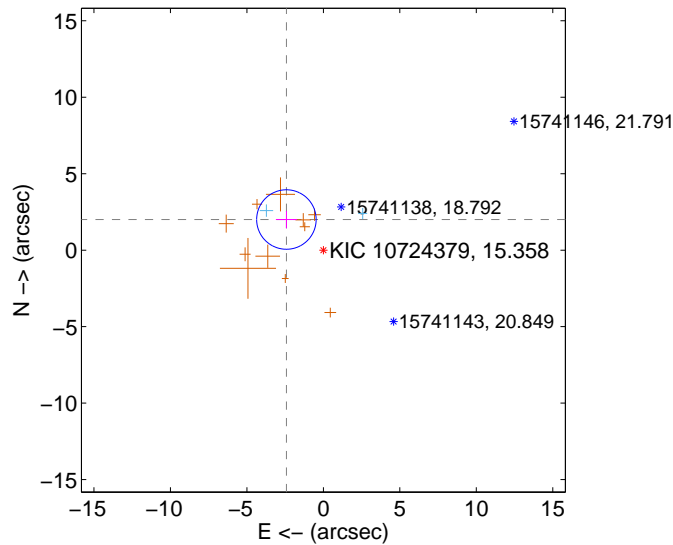
Supplemental centroid analysis for 010724379-01. Kepler magnitude: 15.36. Transit SNR 4.05

There are 2 quarters with good PRF difference image offsets

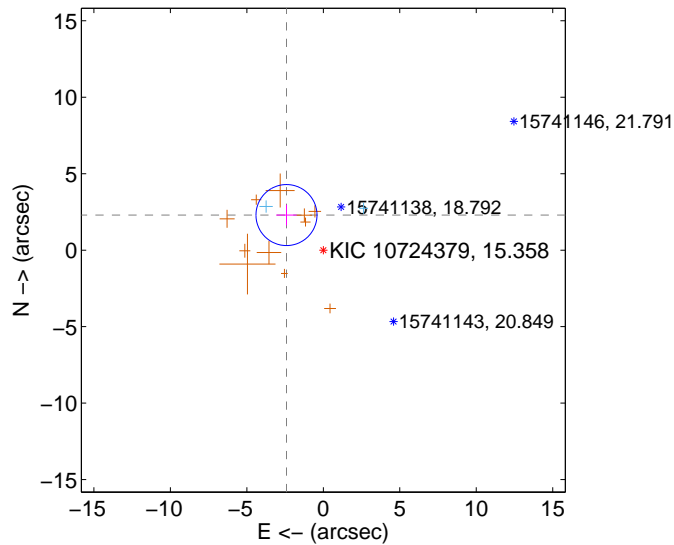
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.139 ± 0.648	4.84	2.417 ± 0.687	2.004 ± 0.570
PRF-fit source offset from KIC position	3.327 ± 0.665	5.00	2.408 ± 0.670	2.296 ± 0.676
photometric centroid source offset	2.82 ± 3.45	0.82	2.80 ± 3.46	-0.29 ± 3.39

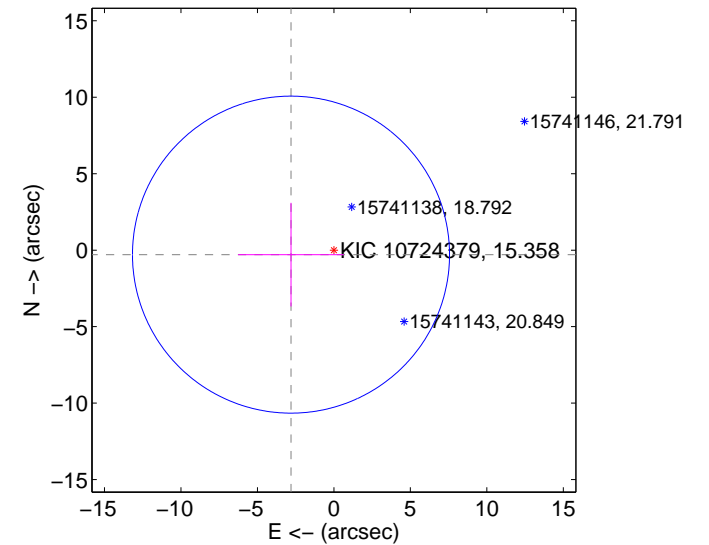
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

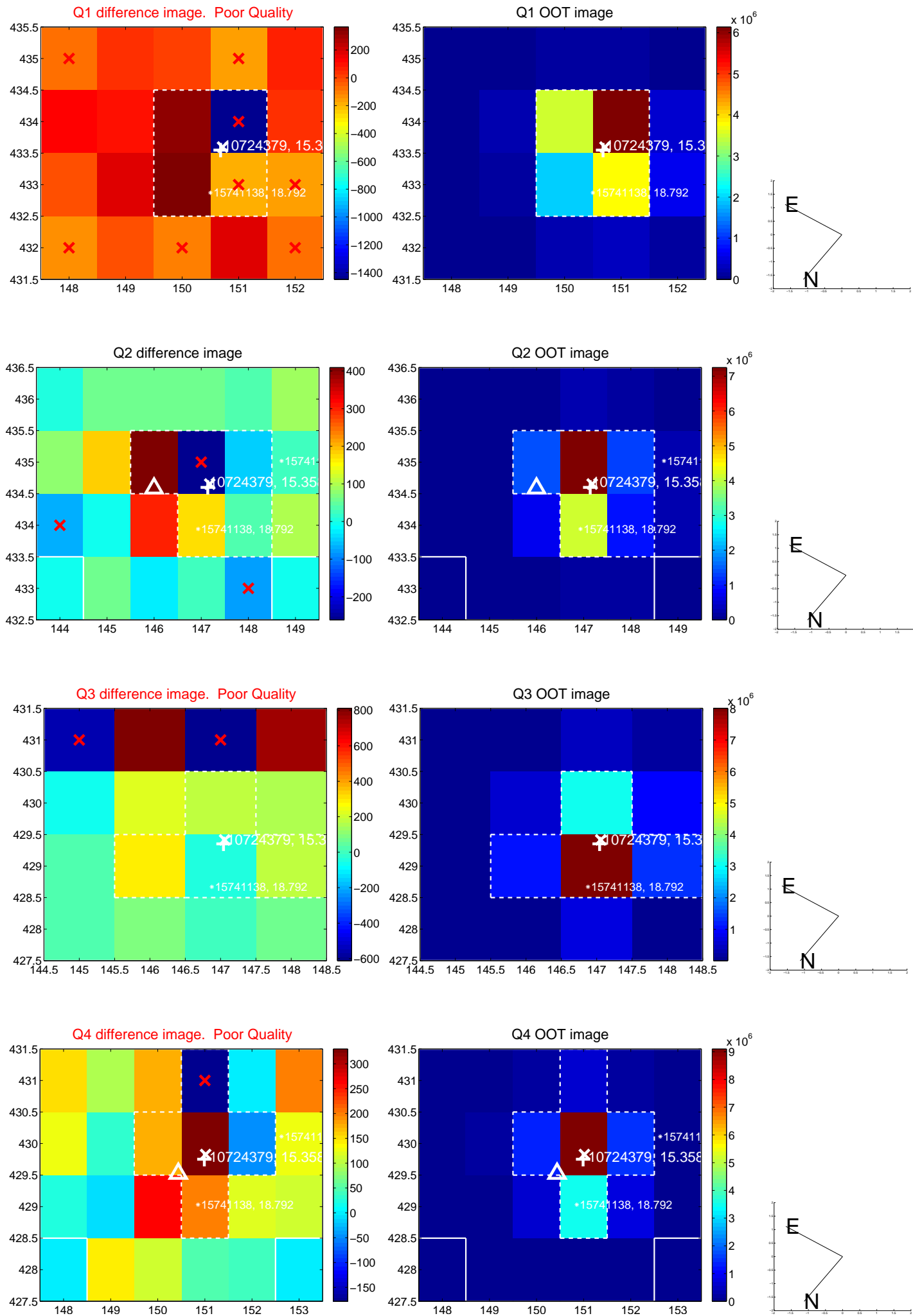


offset from photometric centroids

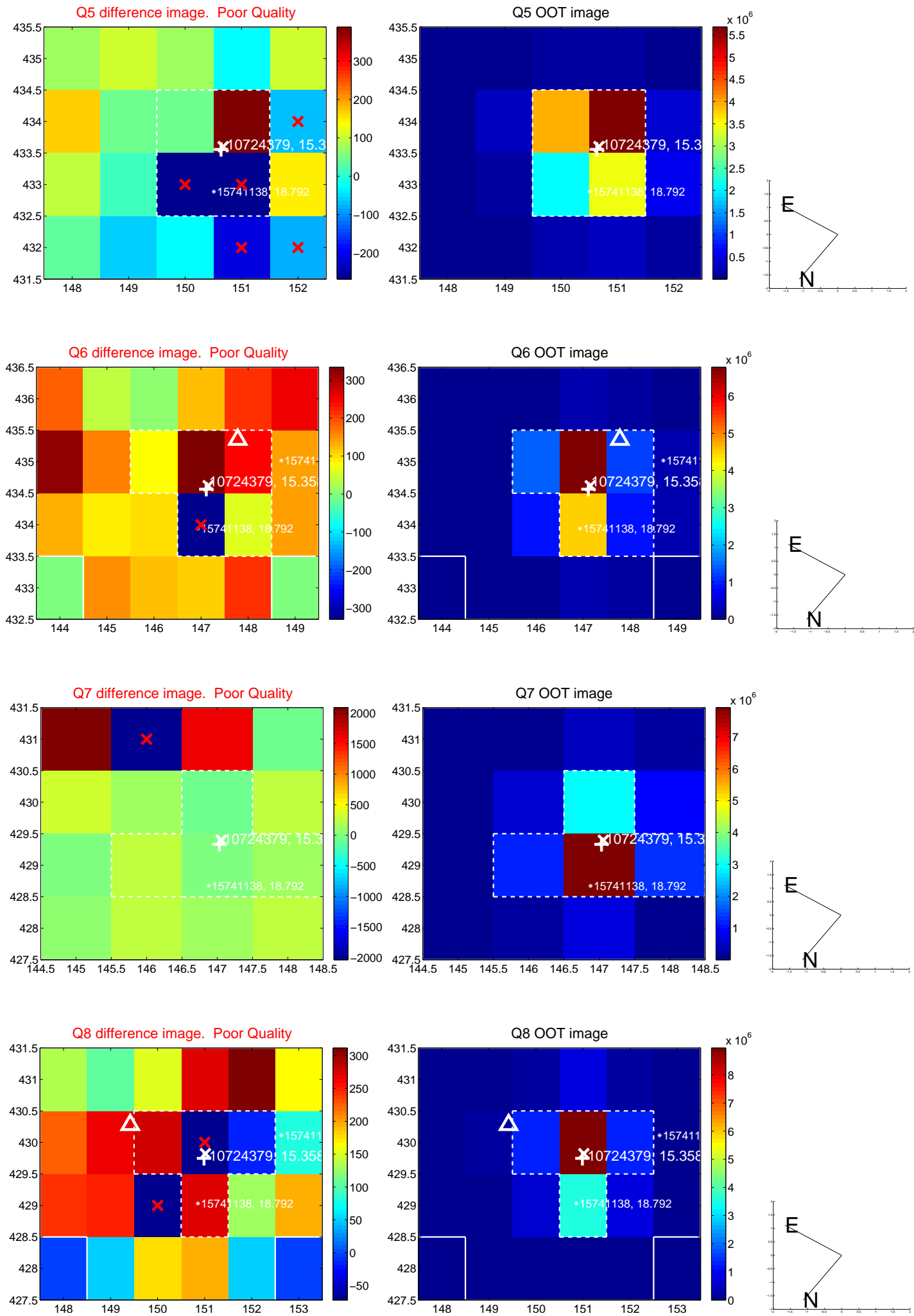


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

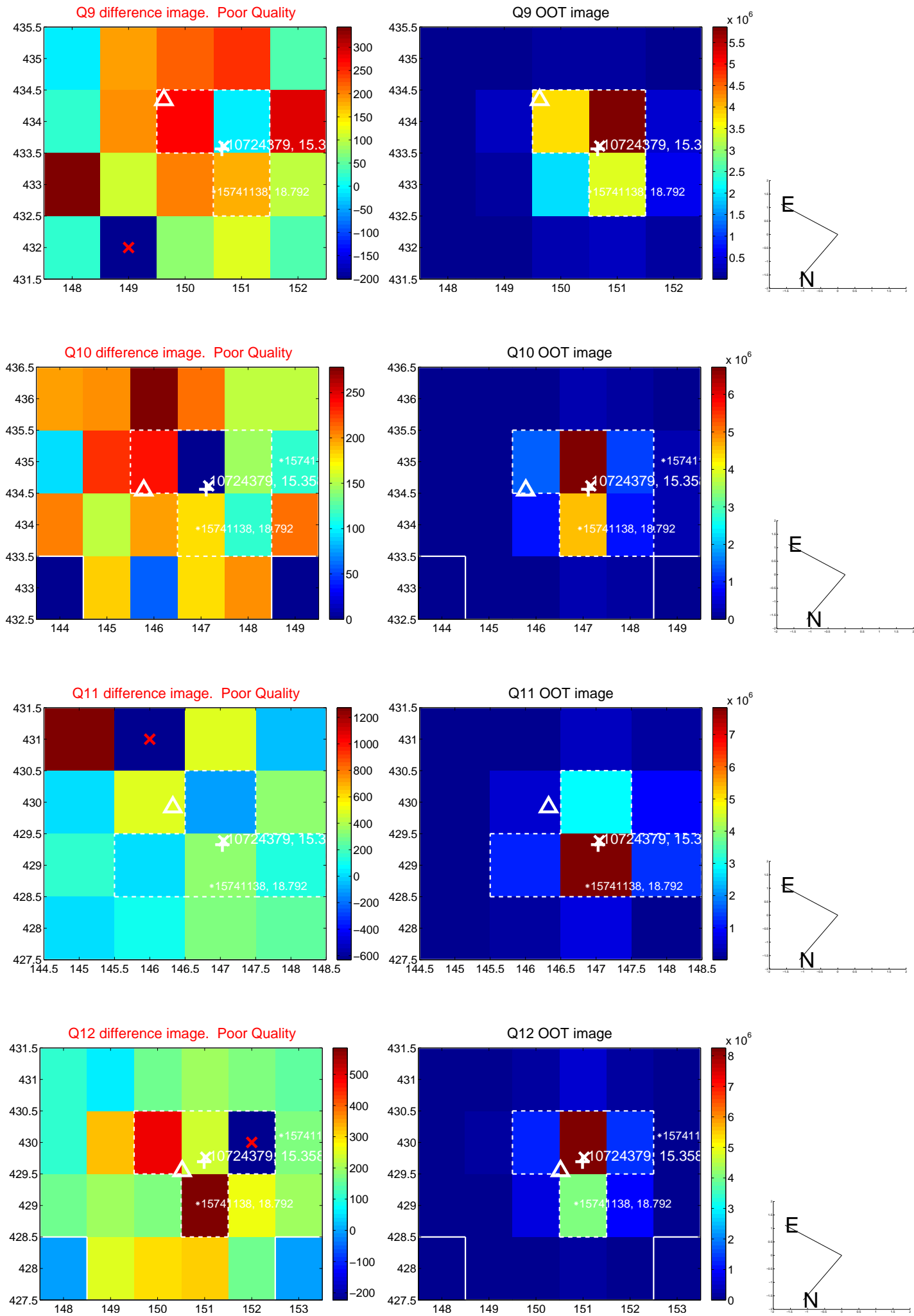
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



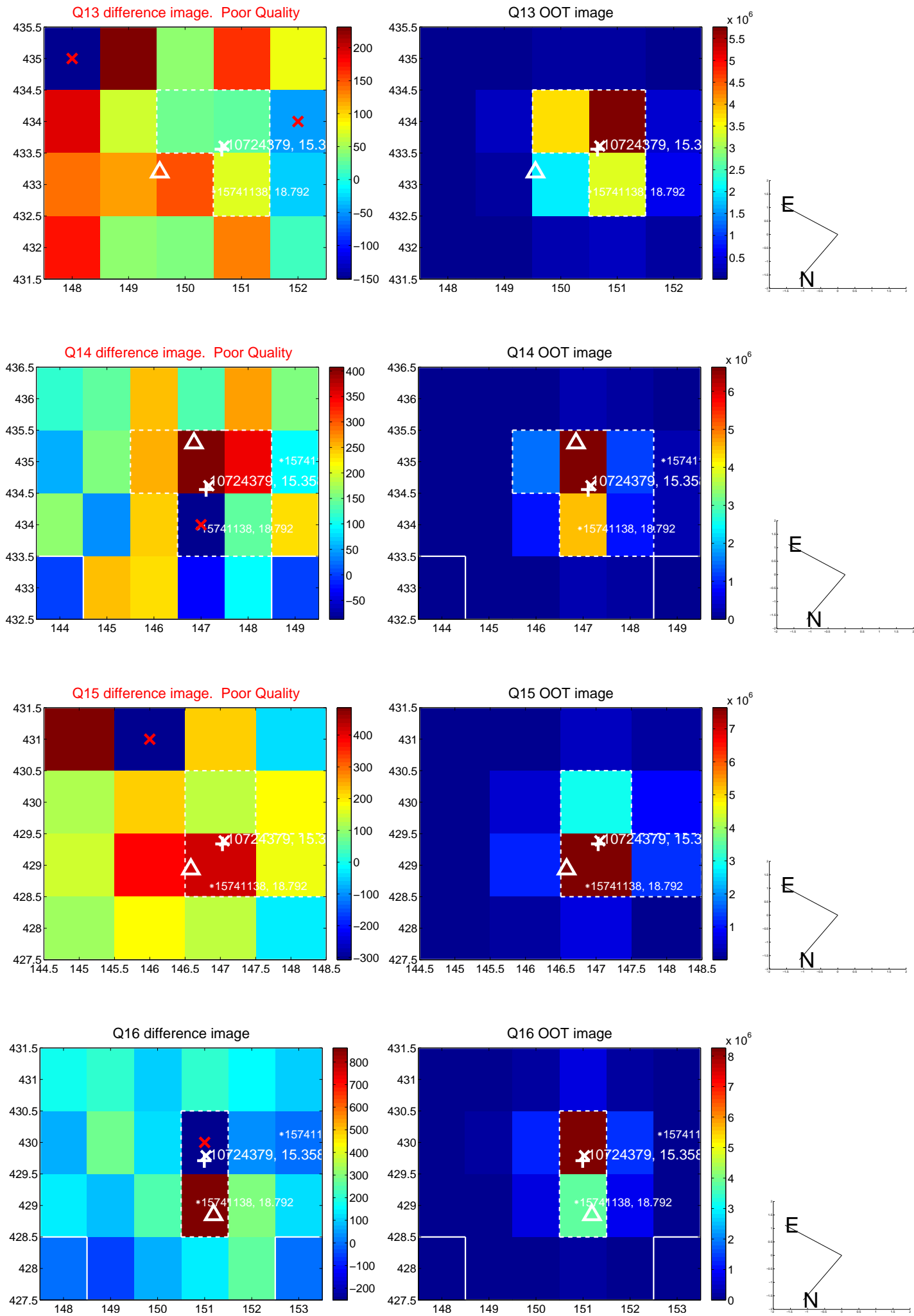
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



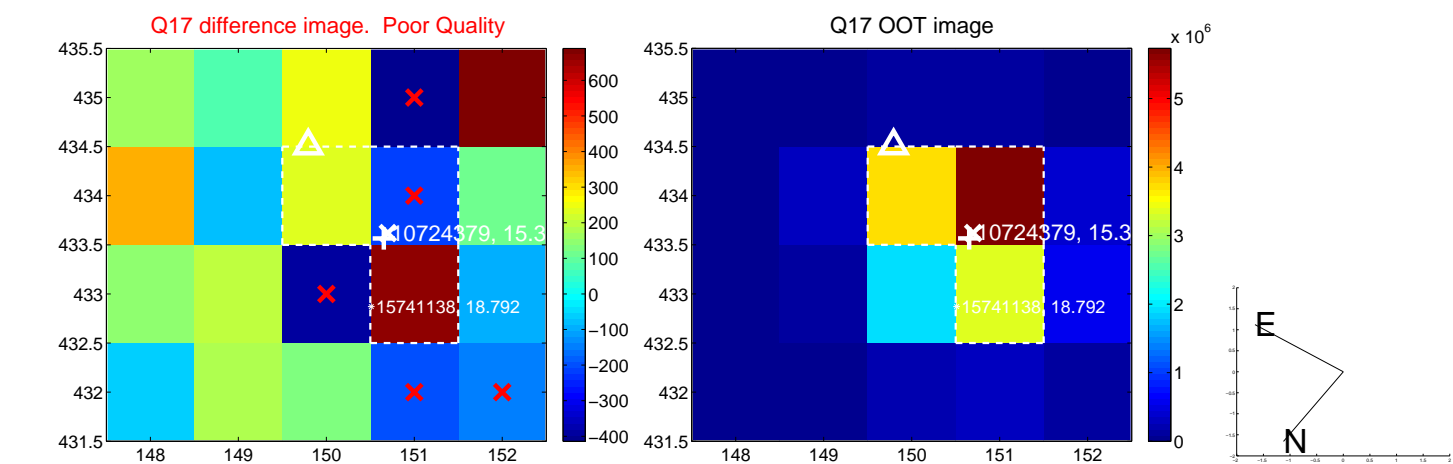
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



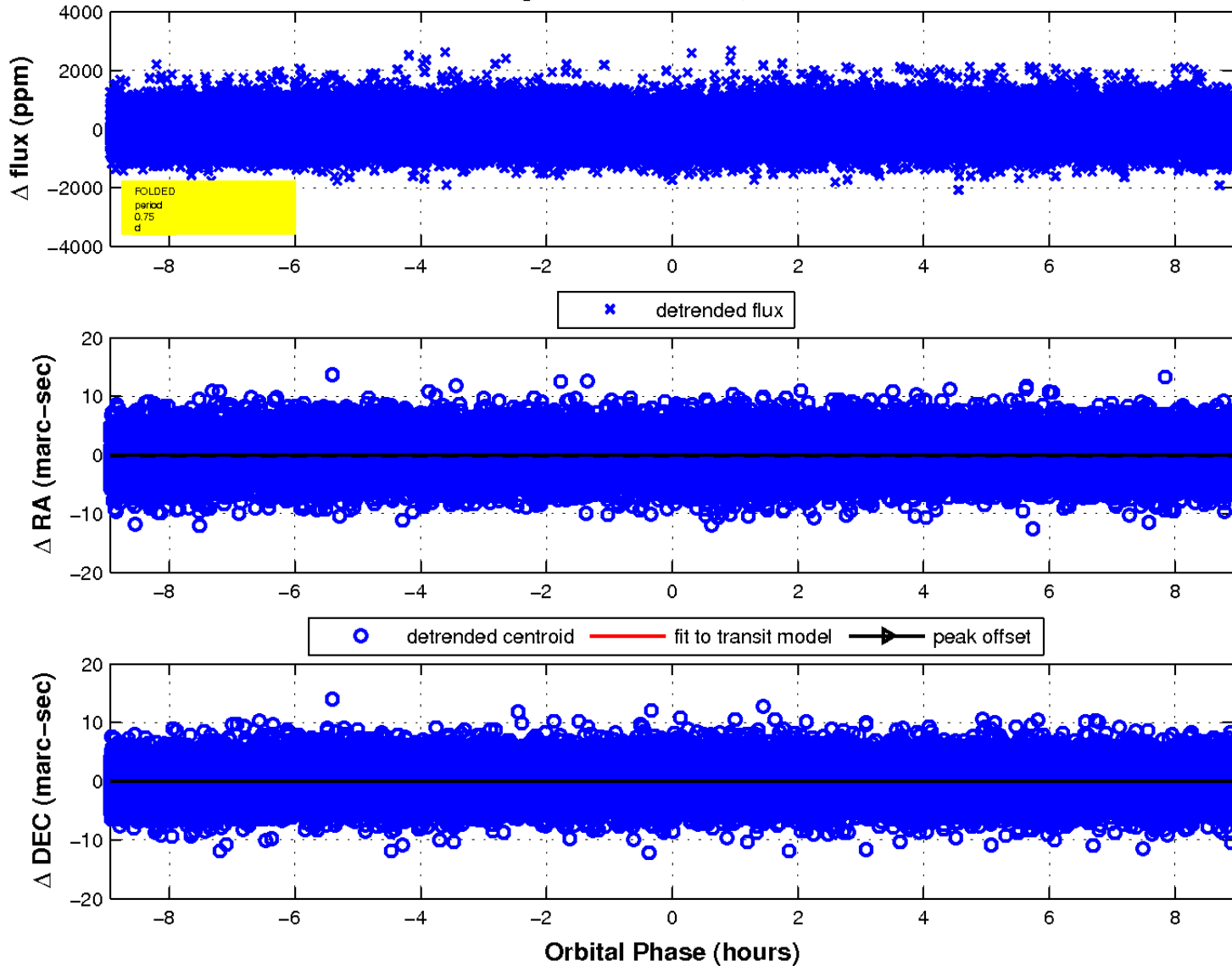
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



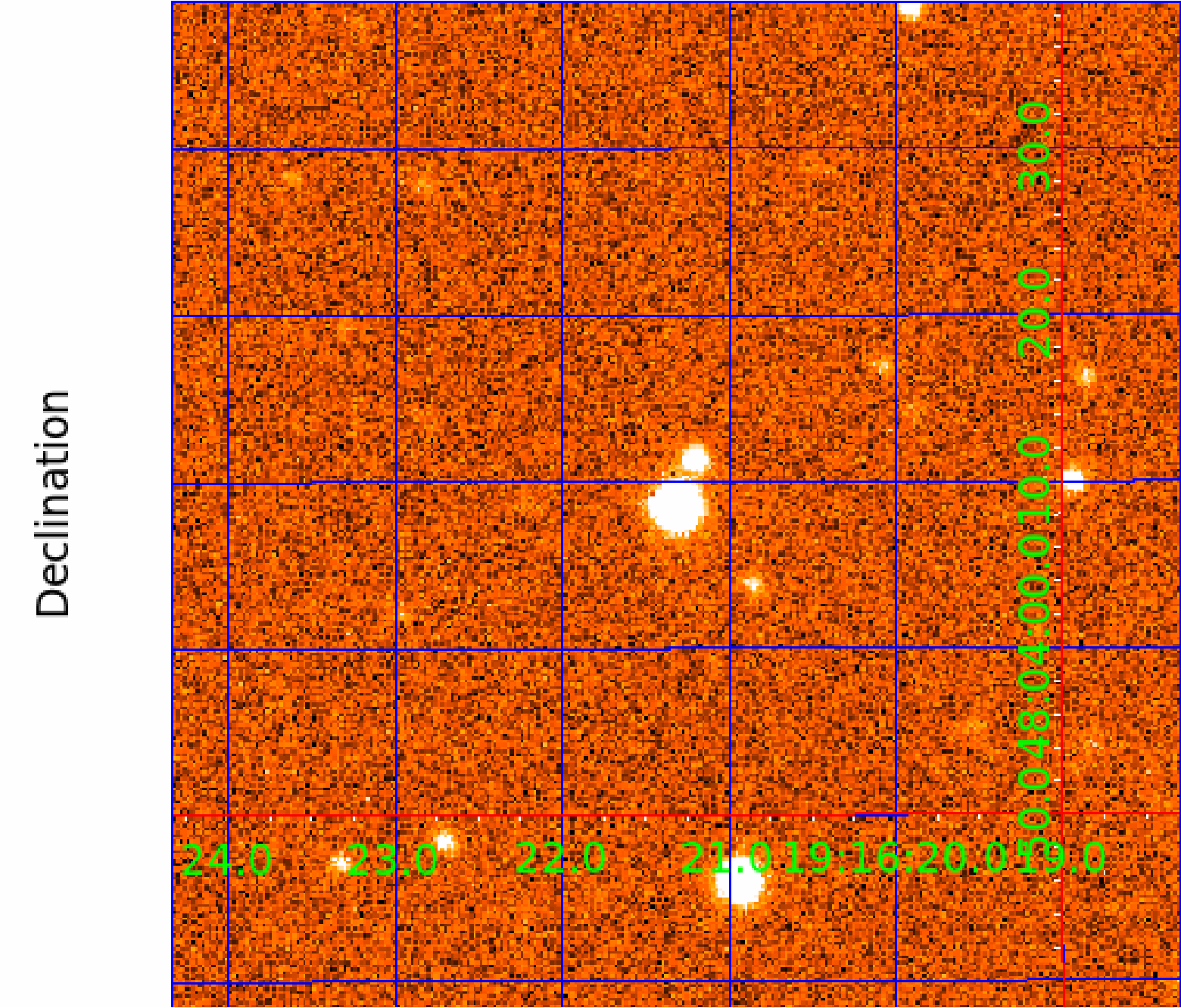
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 6



UKIRT Image



KIC 010724379

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010724379-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
010724379-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010724379-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

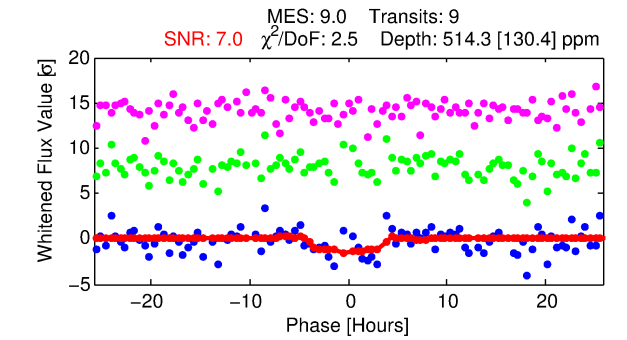
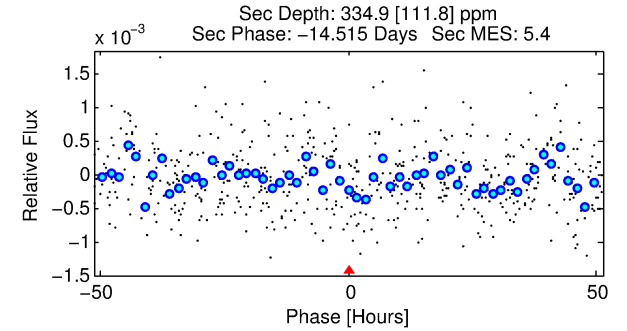
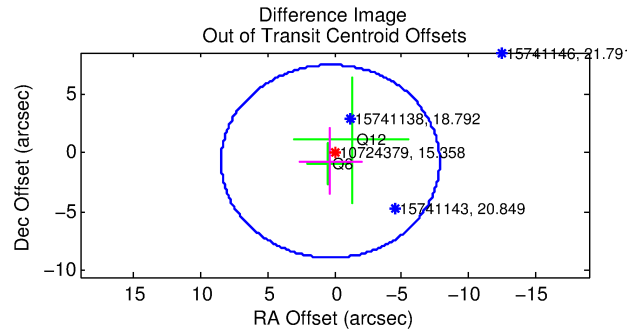
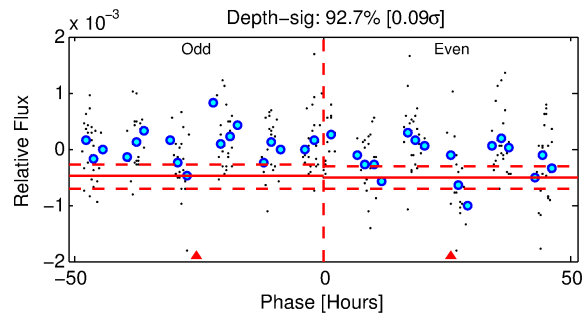
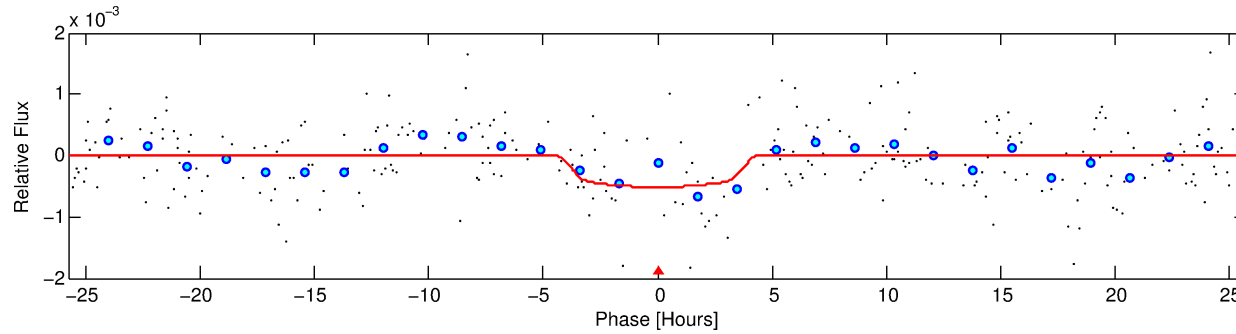
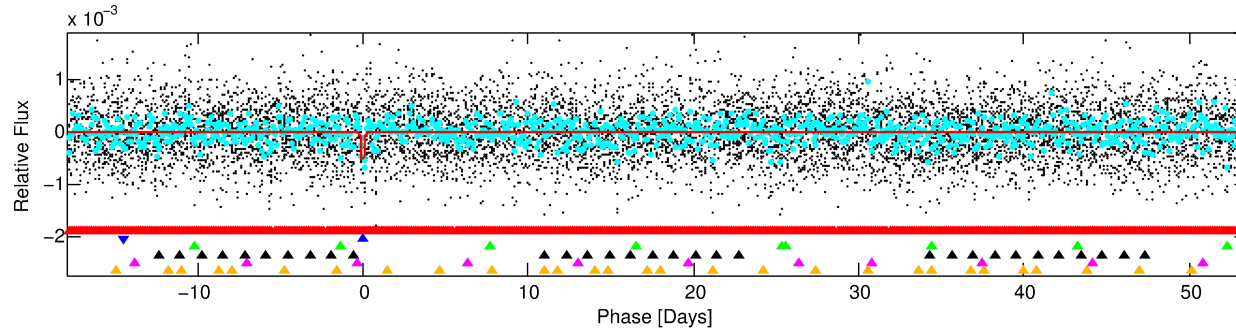
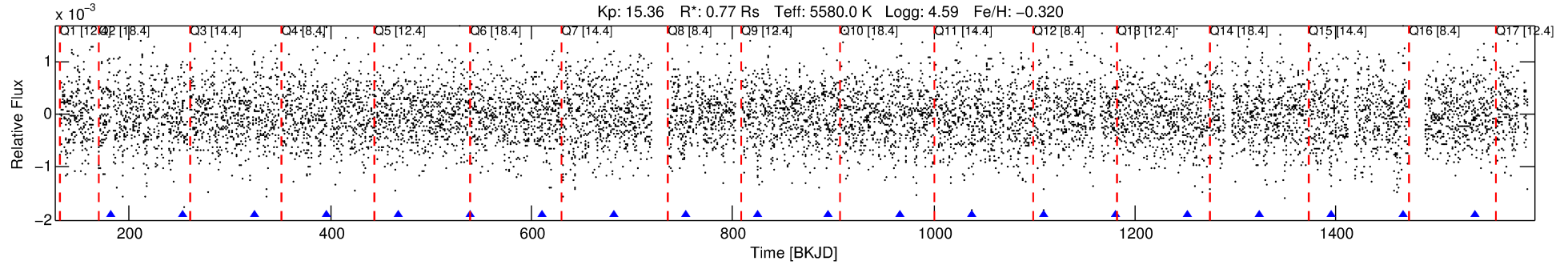
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010724379-02

No Significant Match Found

DV One-Page Summary

KIC: 10724379 Candidate: 2 of 6 Period: 71.332 d



DV Fit Results:

Period = 71.33205 [0.00598] d
Epoch = 182.3318 [0.0477] BKJD
Rp/R* = 0.0247 [0.0089]
a/R* = 31.32 [46.05]
b = 0.90 [0.33]
Seff = 5.10 [1.41]
Teq = 383 [27] K
Rp = 2.09 [0.86] Re
a = 0.3194 [0.0548] AU
Ag = 4322.57 [3586.02] [1.21σ]
Teffp = 4804 [961] K [4.60σ]

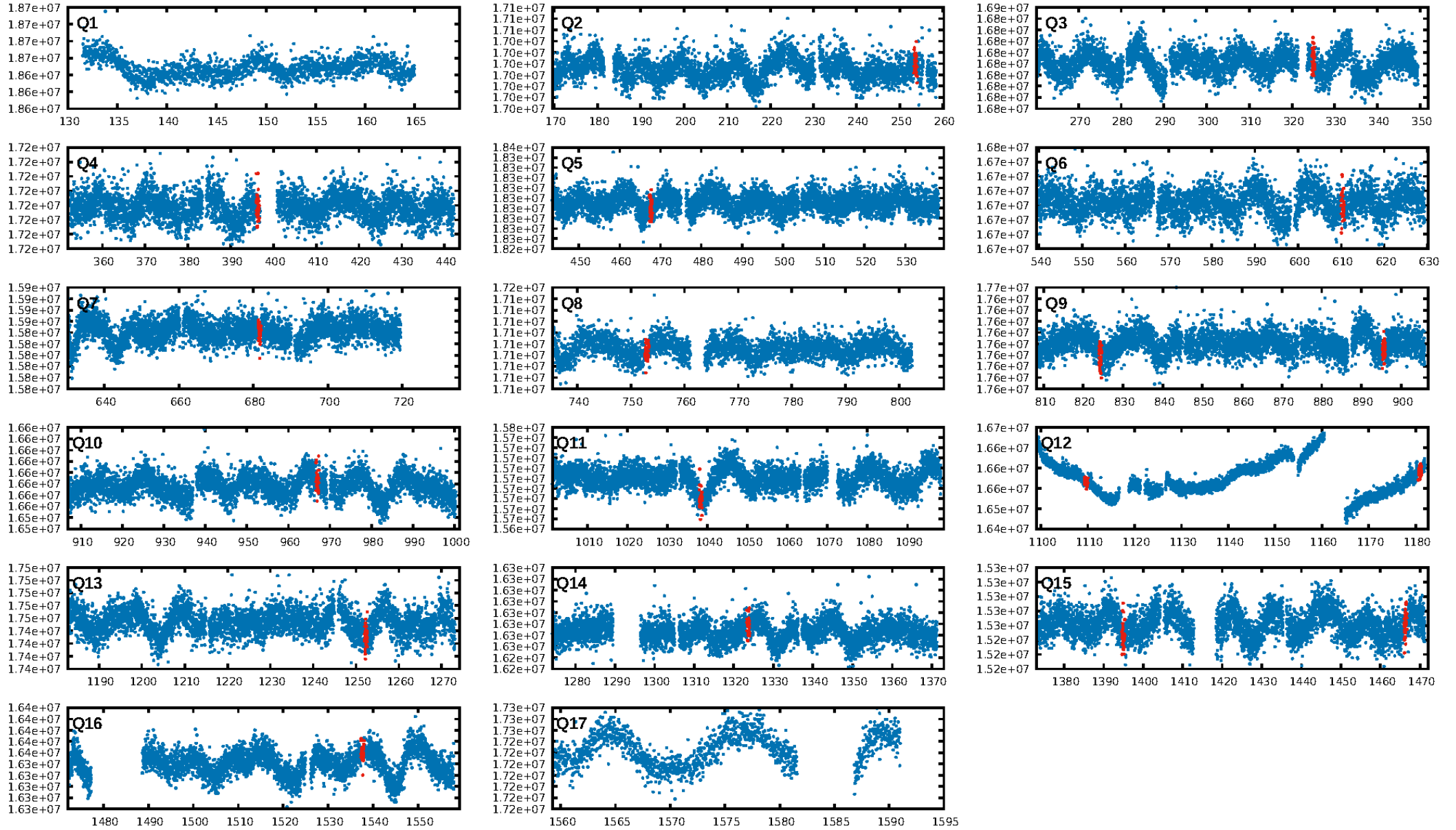
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [62.68σ]
LongPeriod-sig: 100.0% [156.77σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-10
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.6075
Centroid-sig: 0.7%
Centroid-so: 1.617 arcsec [1.65σ]
OotOffset-rm: 0.787 arcsec [0.29σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-rm: 0.490 arcsec [0.18σ]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/11]

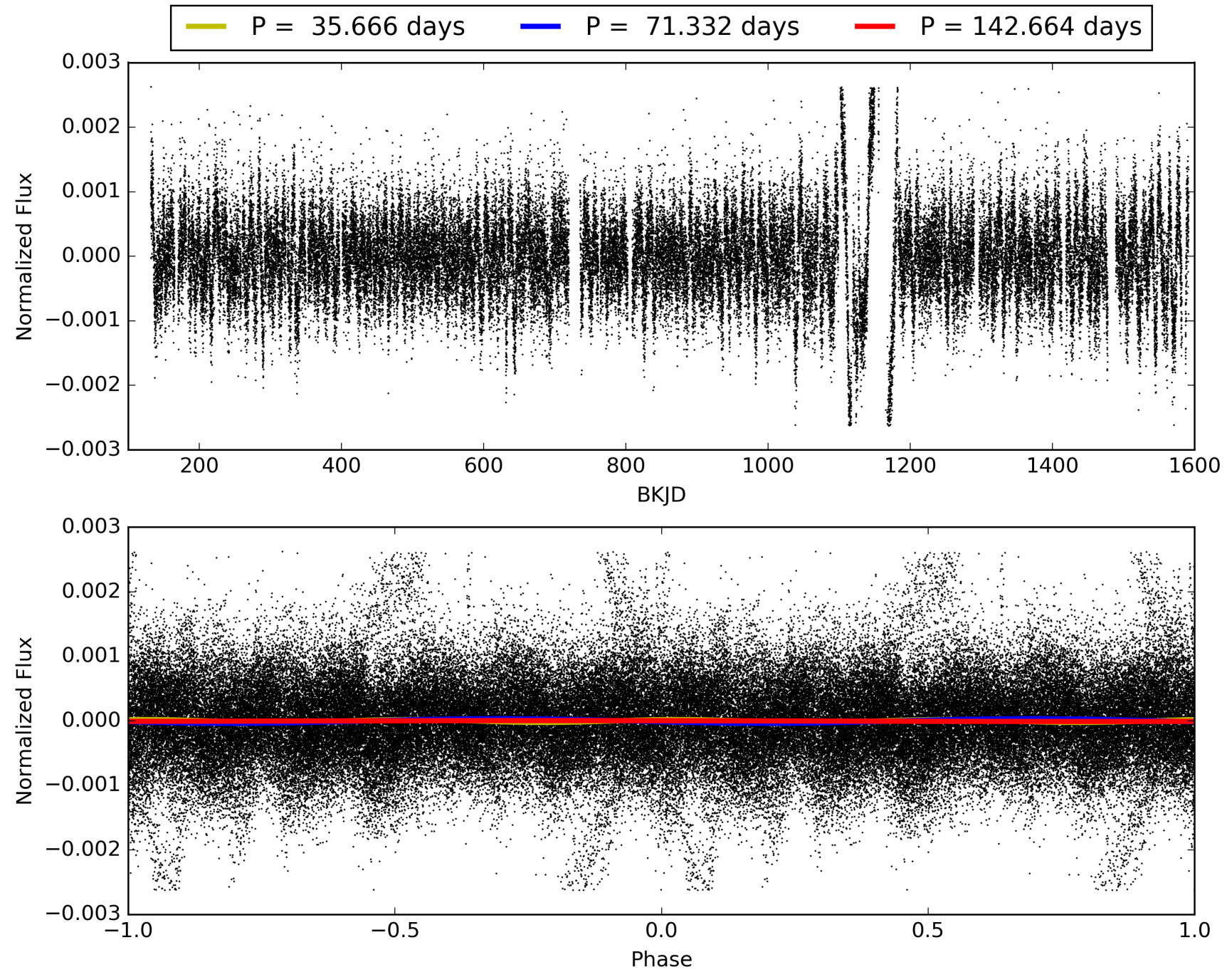
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010724379-02, PDC Light Curves

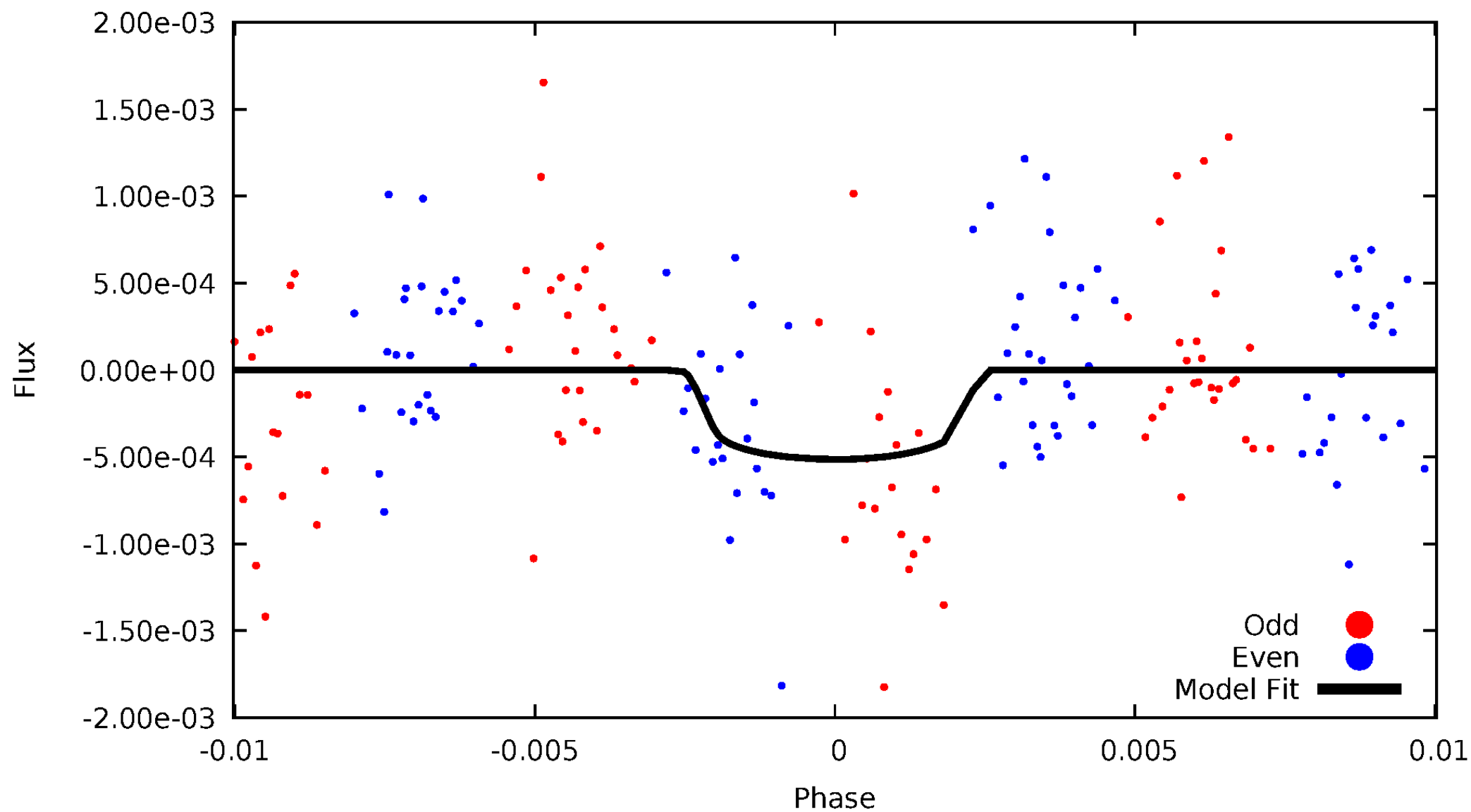


TCE 010724379-02



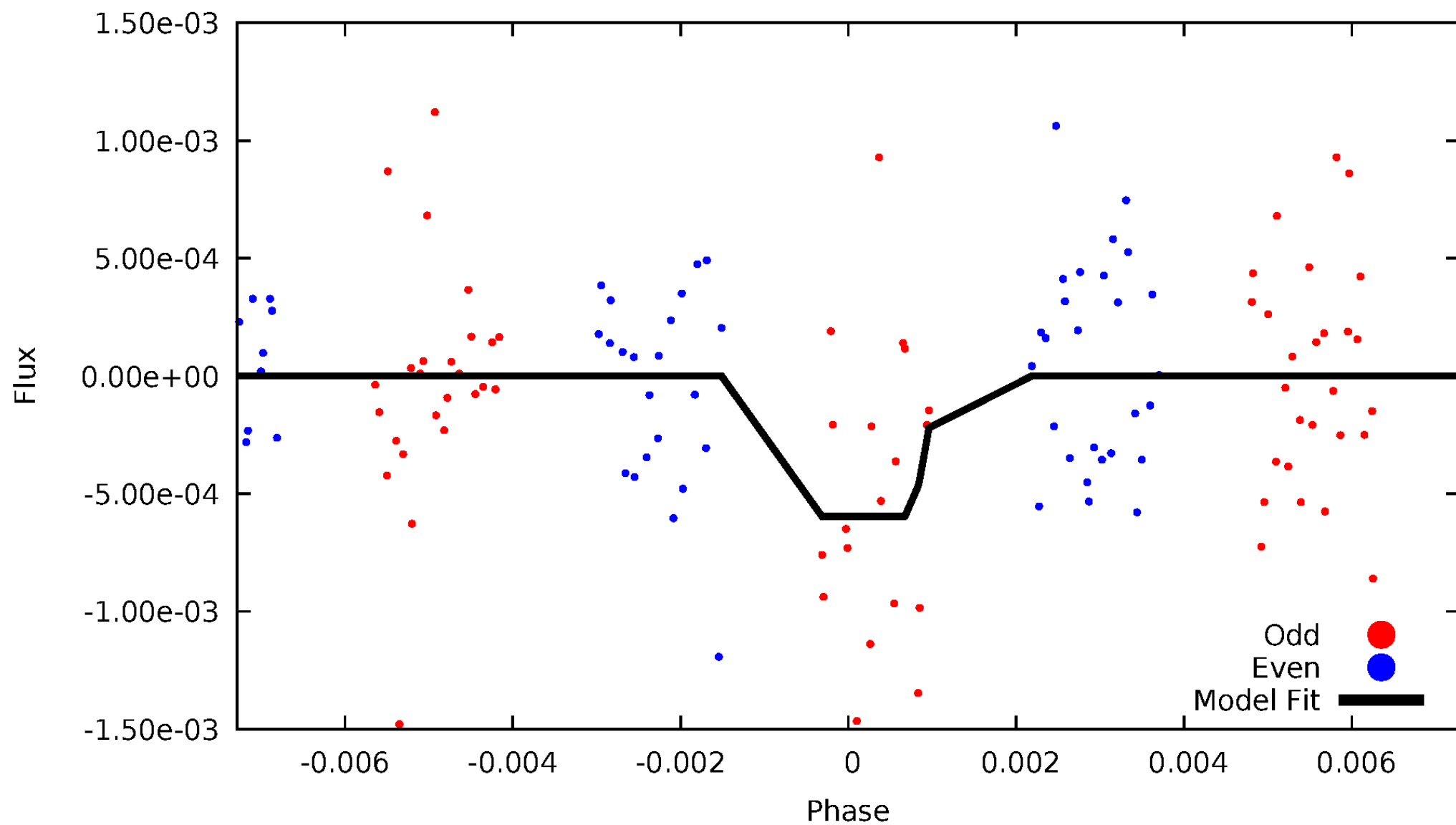
DV Odd/Even

TCE 010724379-02



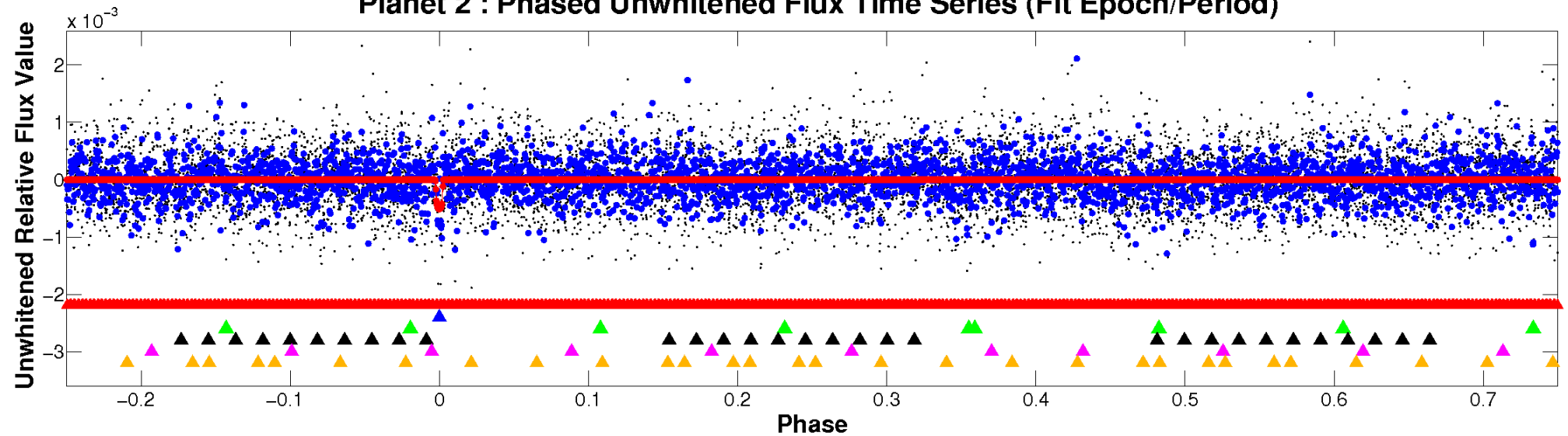
ALT Odd/Even

TCE 010724379-02

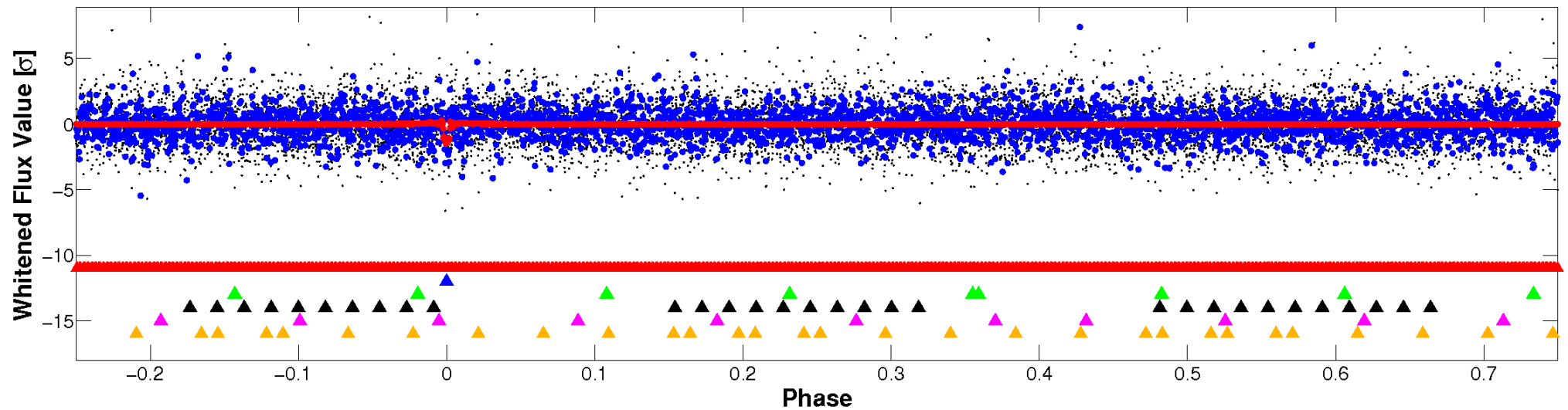


Non-Whitened Vs. Whitened Light Curve

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

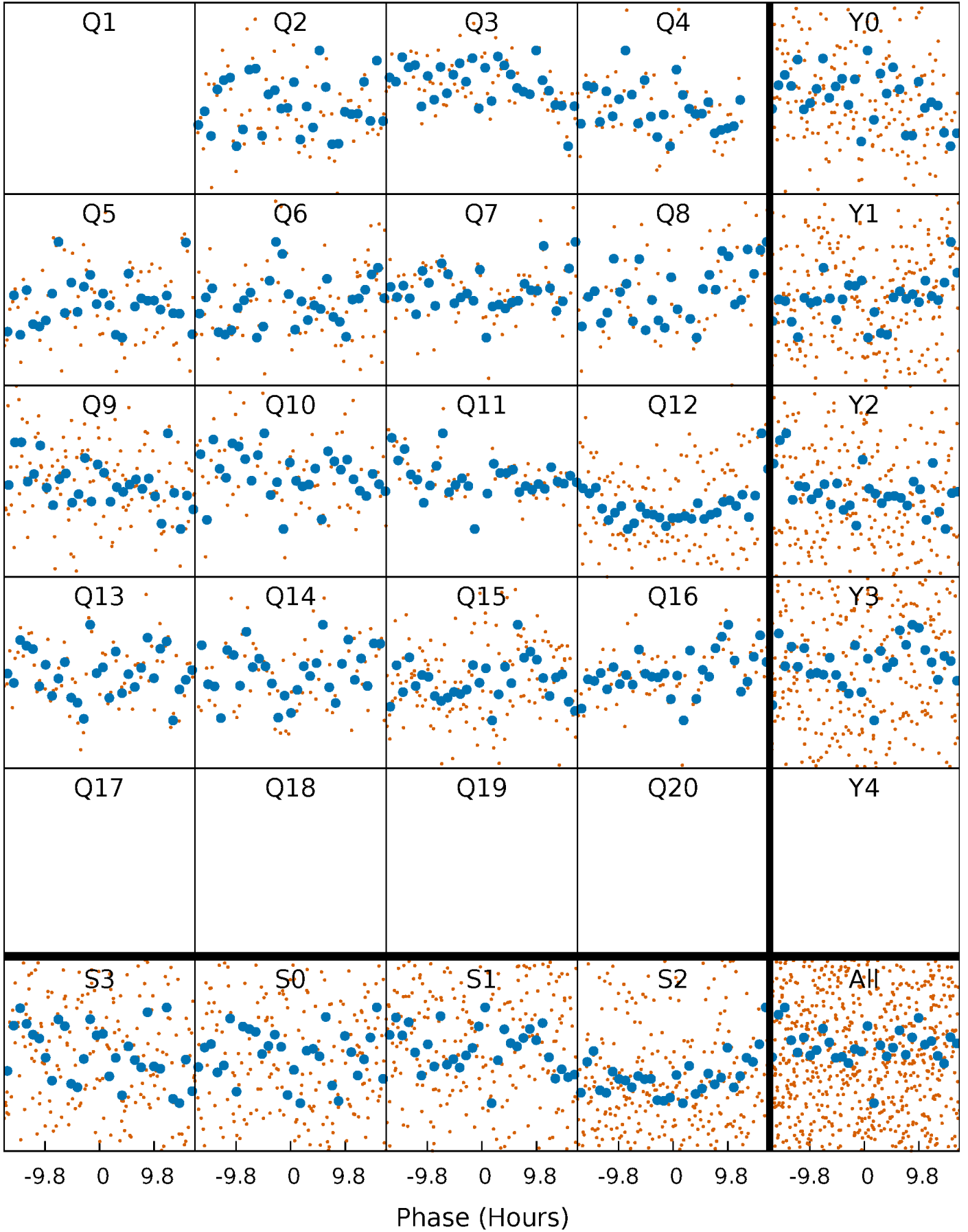


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



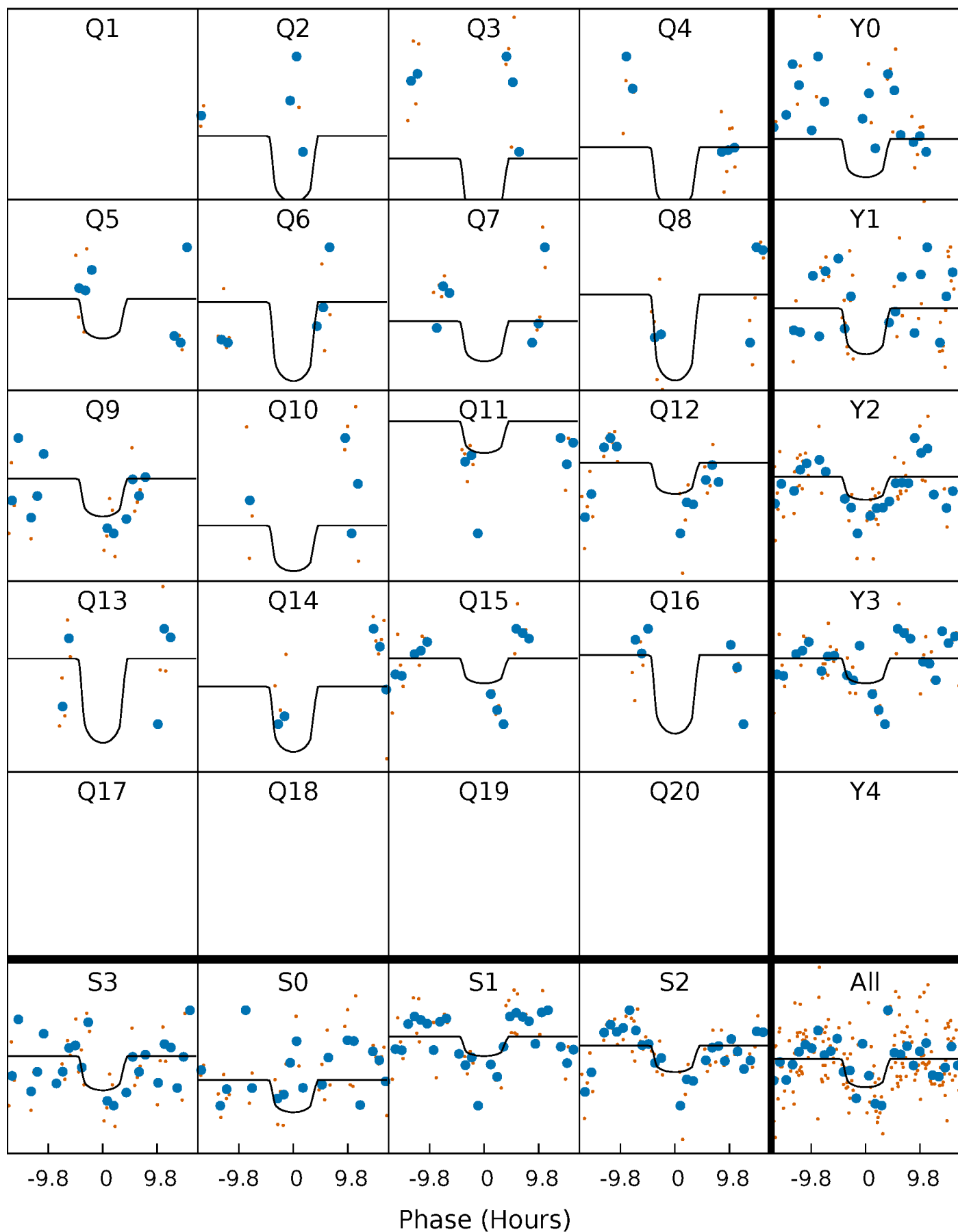
PDC Quarter-Phased Transit Curves

TCE 010724379-02 P= 71.332053 Days $T_0=182.331832$ (BKJD)



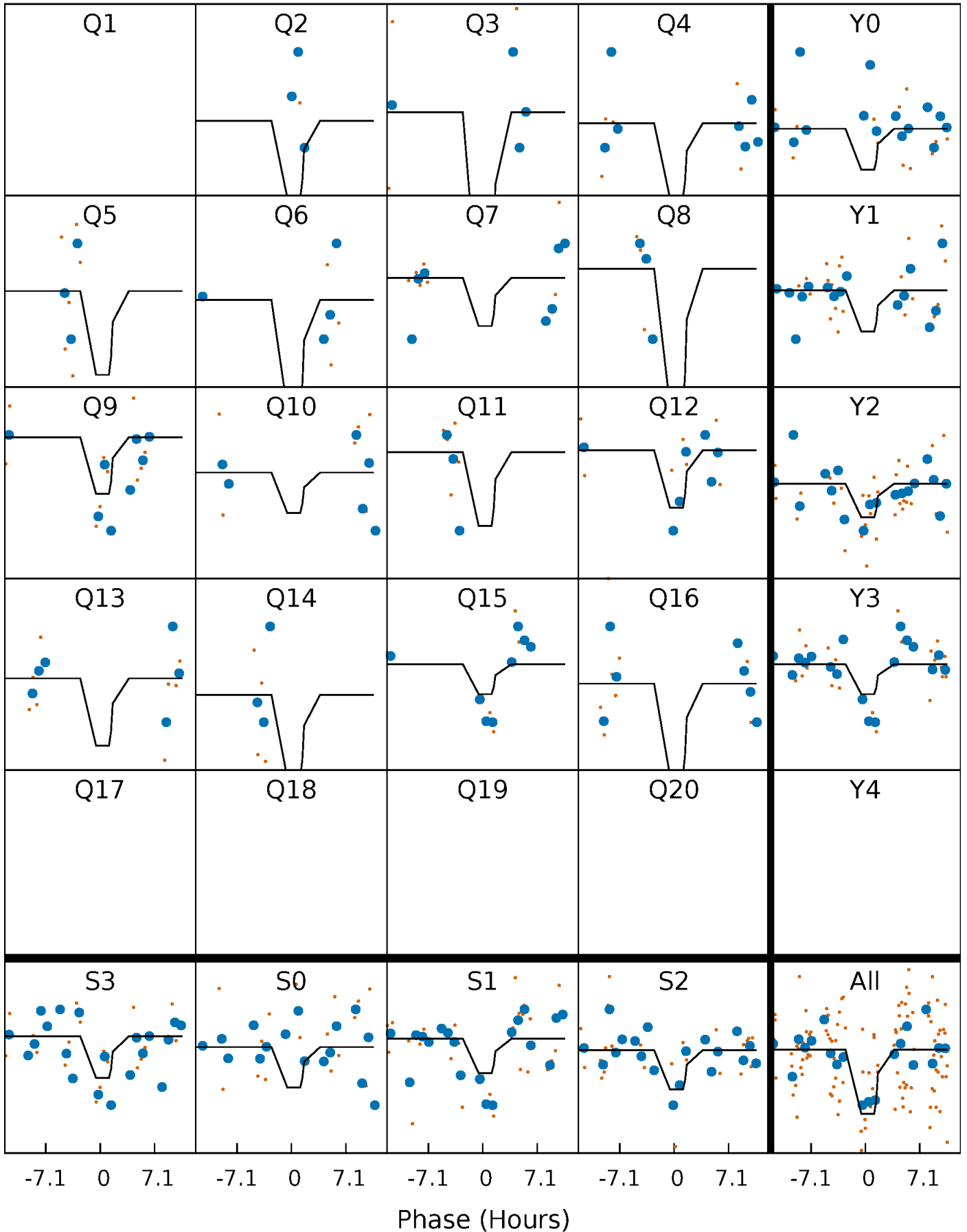
DV Quarter-Phased Transit Curves

TCE 010724379-02 $P = 71.332053$ Days $T_0 = 182.331832$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

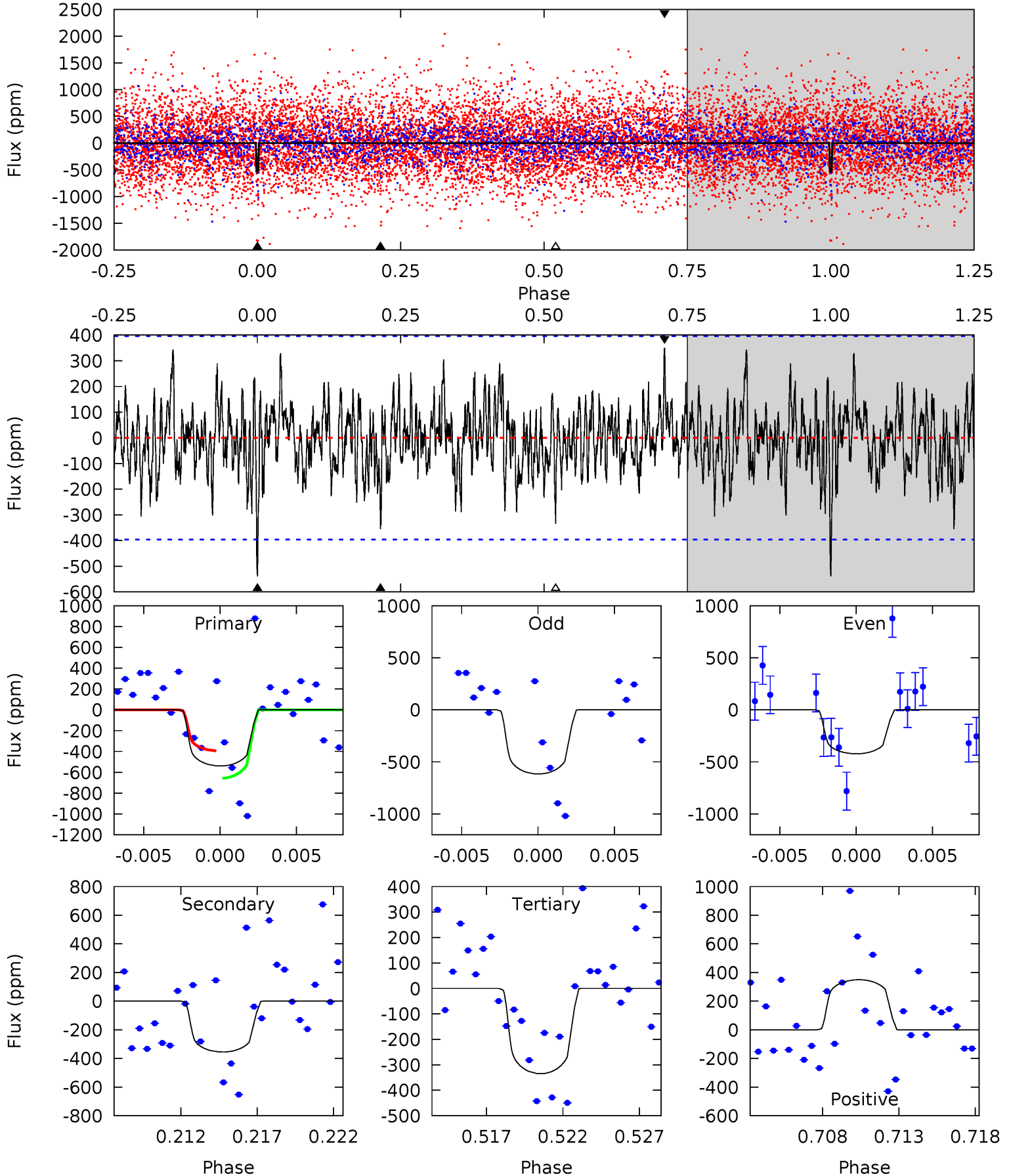
TCE 010724379-02 $P = 71.336673$ Days $T_0 = 182.323212$ (BKJD)



DV Model-Shift Uniqueness Test

010724379-02, P = 71.332053 Days, E = 110.999779 Days

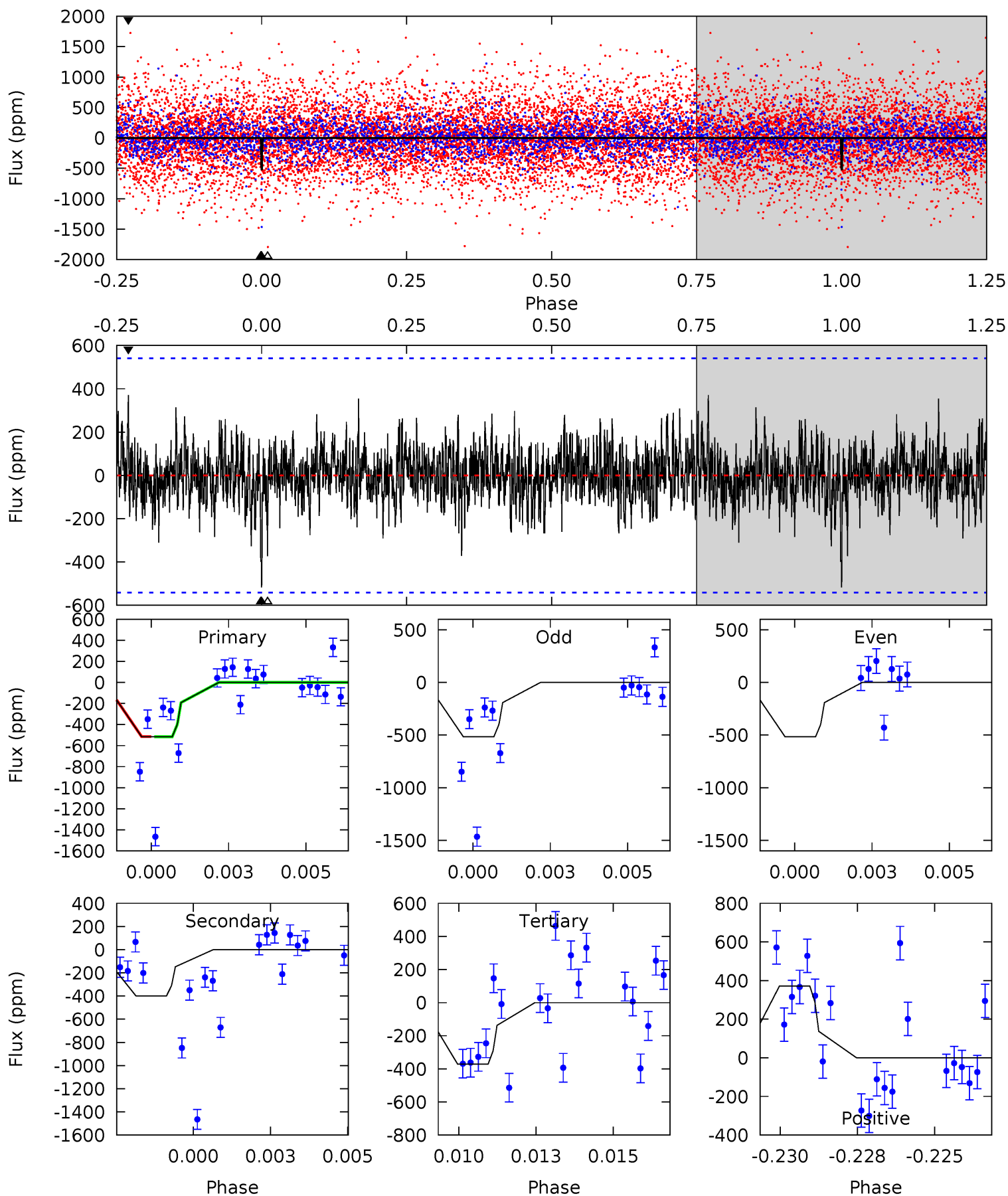
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.00	4.61	4.35	4.54	5.15	2.80	1.40	2.66	2.46	0.26	0.07	1.26	0.05	0.39	1.71



Alt Model-Shift Uniqueness Test

010724379-02, $P = 71.336673$ Days, $E = 110.986539$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.04	3.90	3.63	3.63	5.29	3.02	0.98	1.41	1.42	0.27	0.28	0	0.77	0.42	0.00



Stellar Parameters For KIC 010724379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5580^{+152}_{-169}	$4.592^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.774^{+0.158}_{-0.068}$	$0.865^{+0.080}_{-0.106}$	$2.633^{+0.474}_{-1.027}$
	+3%/-3%	+1%/-3%	+94%/-94%	+20%/-9%	+9%/-12%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010724379-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-355 ± 77	$2.19^{+0.78}_{-0.80}$	545^{+28}_{-21}	4940^{+1052}_{-601}	4042^{+6003}_{-1908}
Alt.	-400 ± 102	$2.07^{+0.85}_{-0.69}$	546^{+27}_{-23}	5117^{+1175}_{-704}	4952^{+7045}_{-2503}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

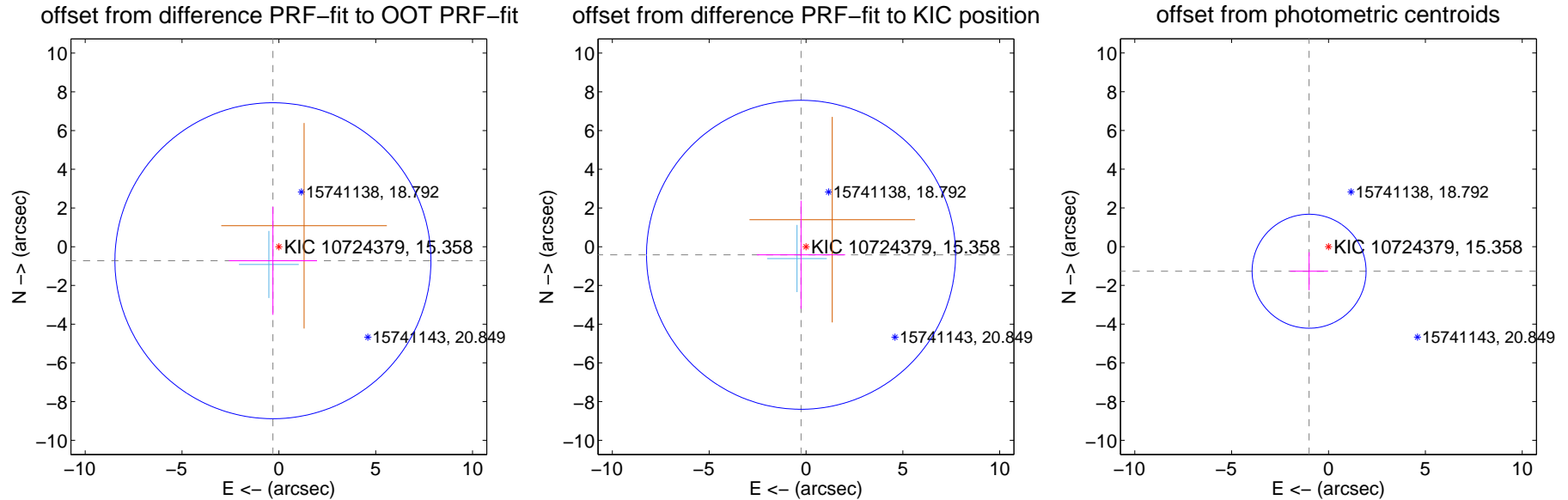
DV Centroid Data

Supplemental centroid analysis for 010724379-02. Kepler magnitude: 15.36. Transit SNR 6.98

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.787 ± 2.720	0.29	0.306 ± 2.274	-0.725 ± 2.792
PRF-fit source offset from KIC position	0.490 ± 2.660	0.18	0.257 ± 2.274	-0.417 ± 2.792
photometric centroid source offset	1.62 ± 0.98	1.65	1.00 ± 0.98	-1.27 ± 0.98



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

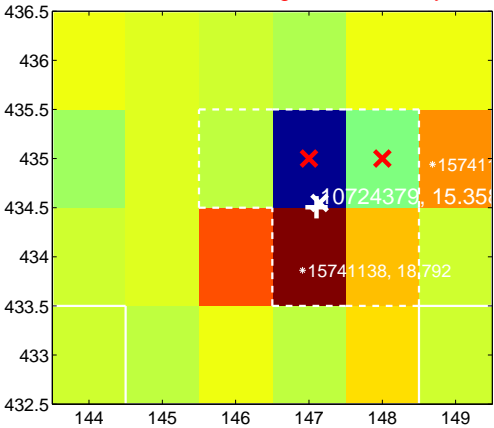
Q1 no difference image



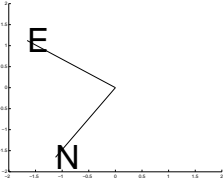
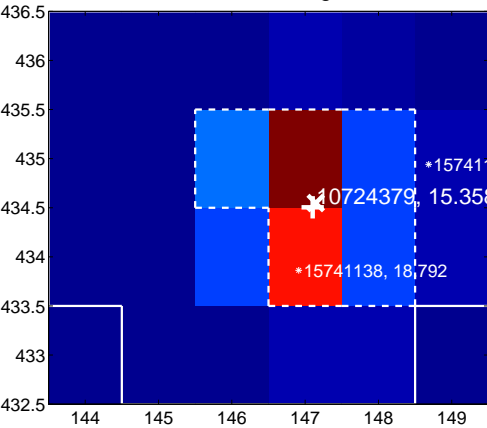
Q1 no OOT image



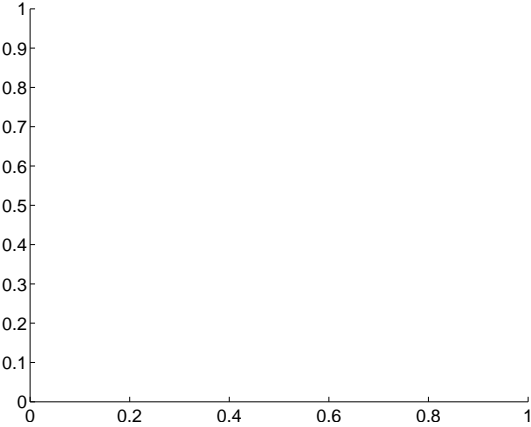
Q2 difference image. Poor Quality



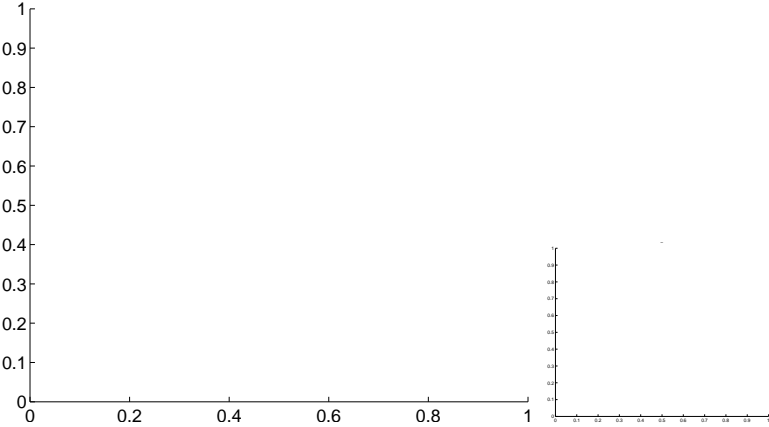
Q2 OOT image



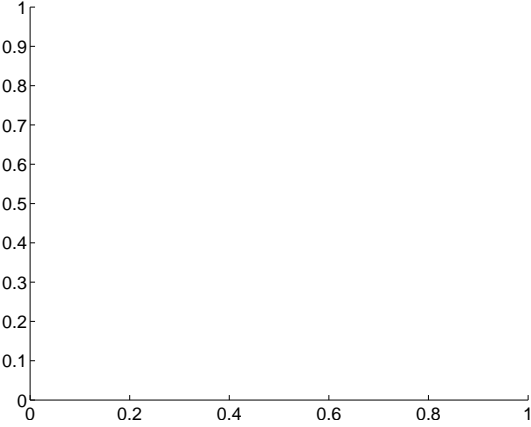
Q3 no difference image



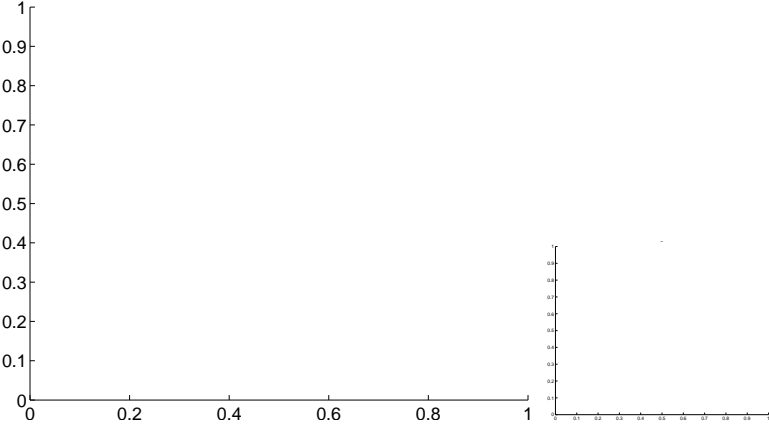
Q3 no OOT image



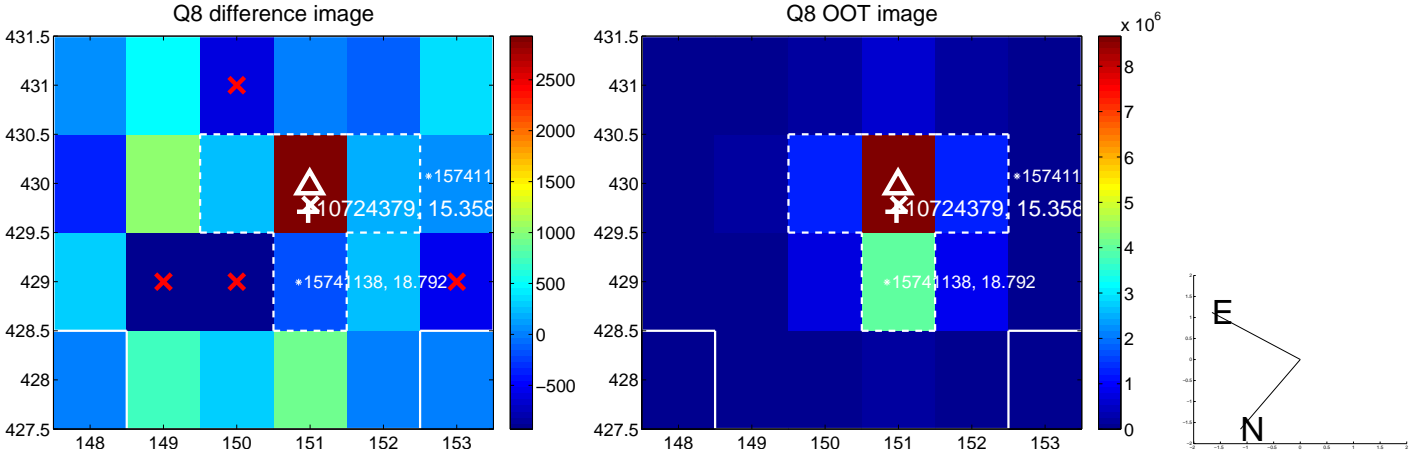
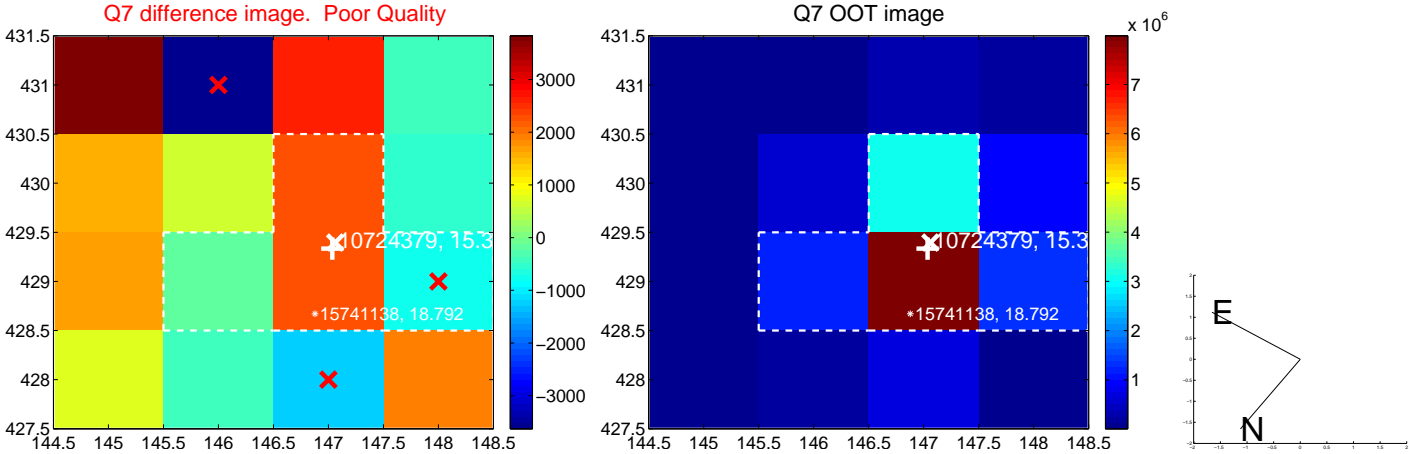
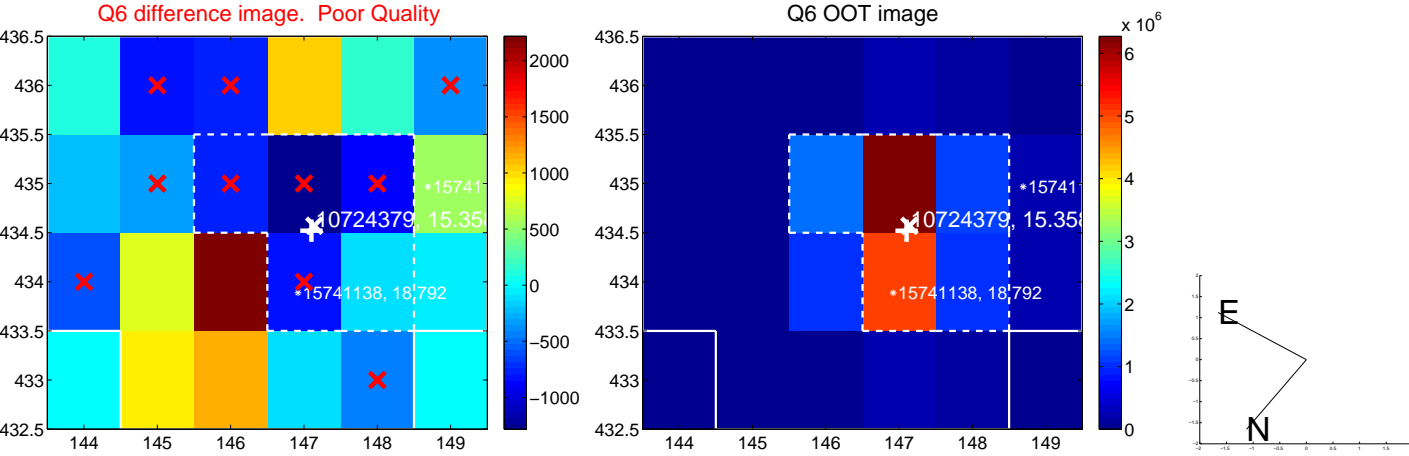
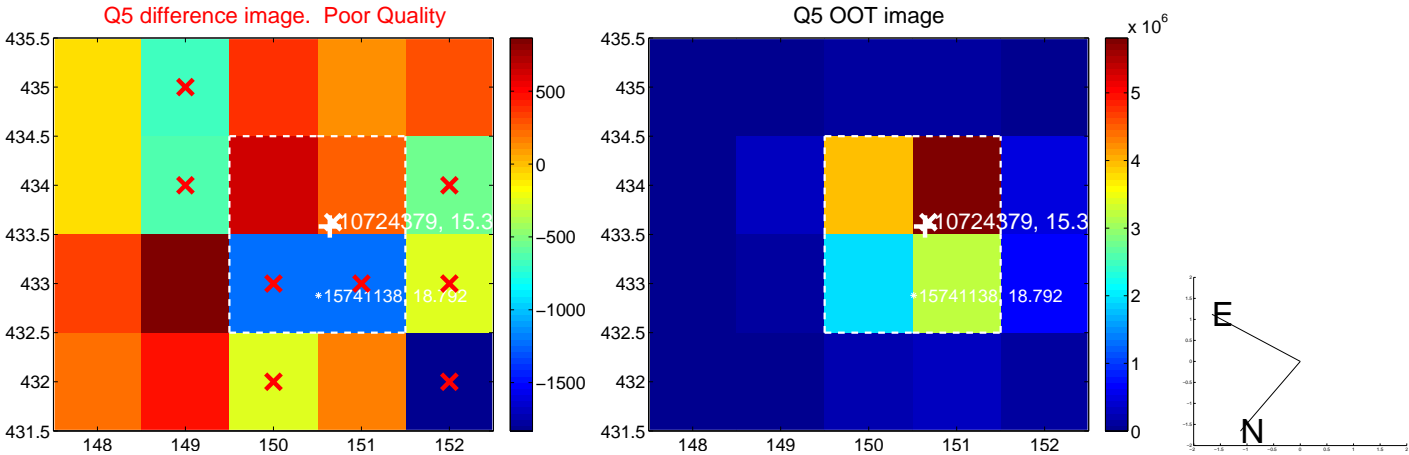
Q4 no difference image



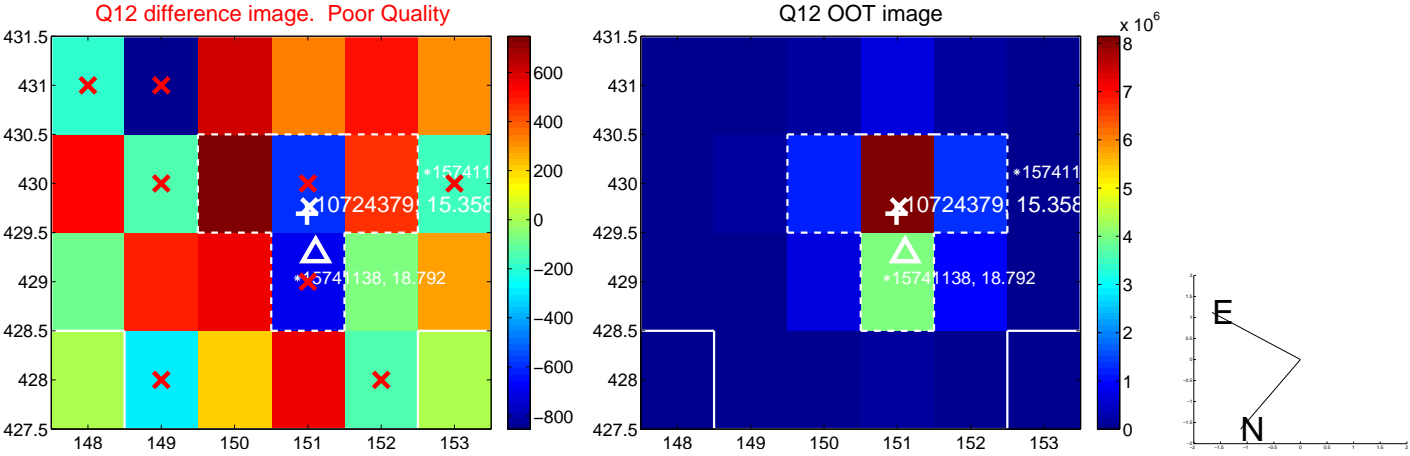
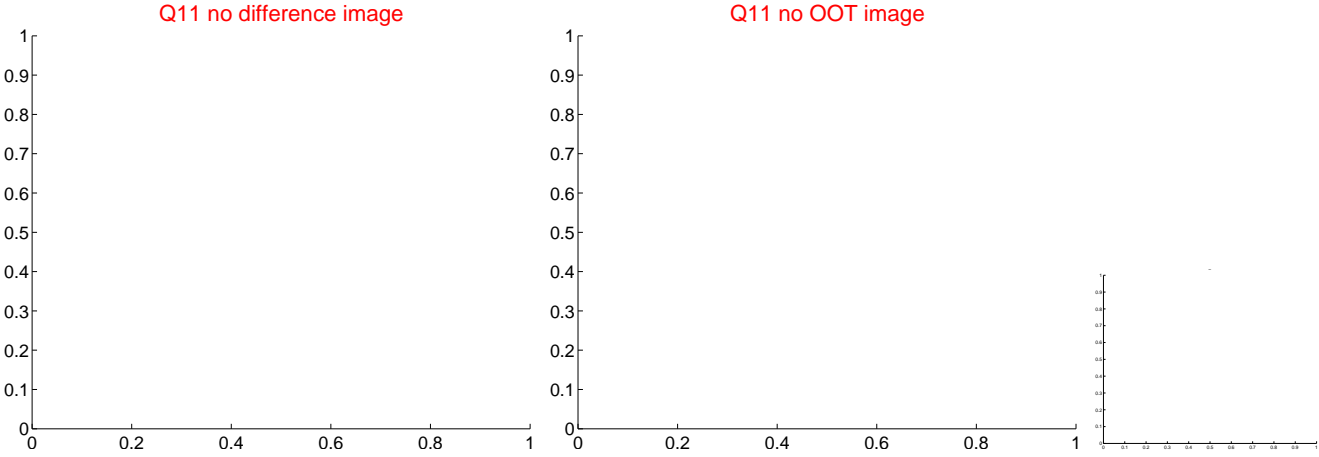
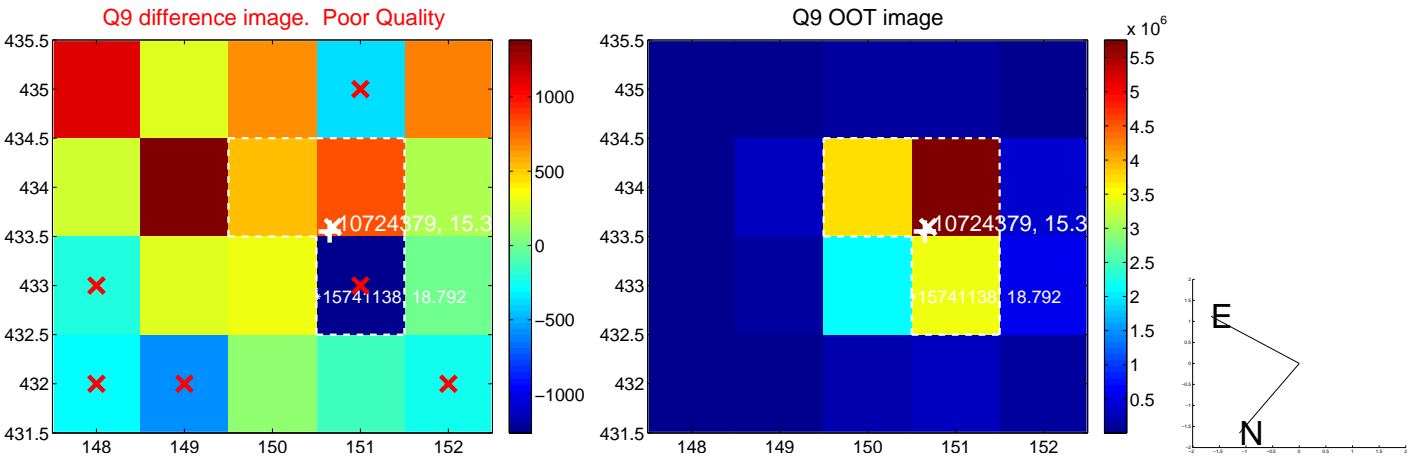
Q4 no OOT image



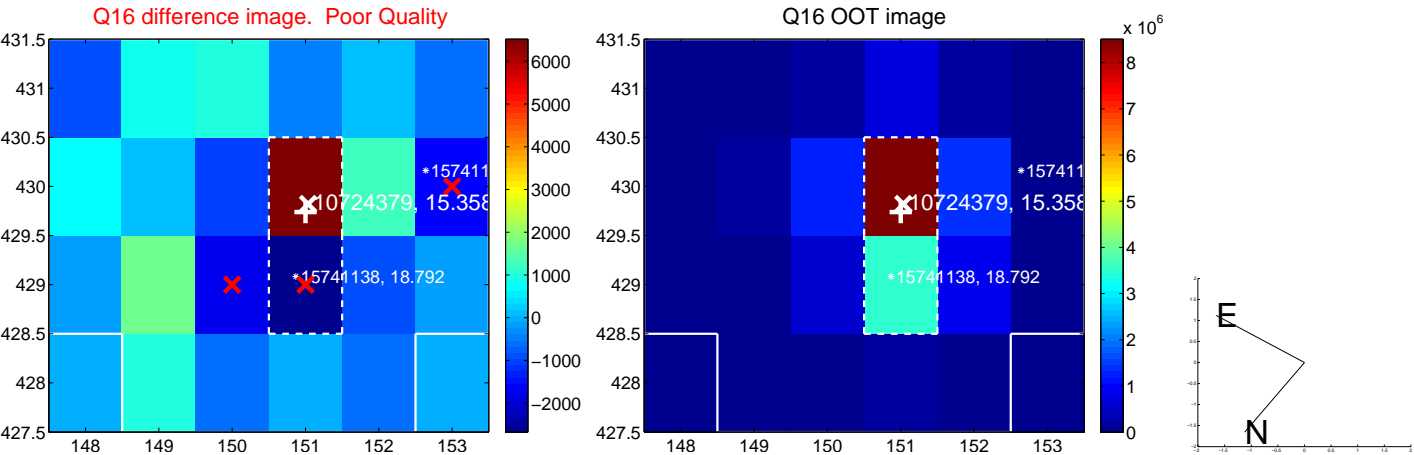
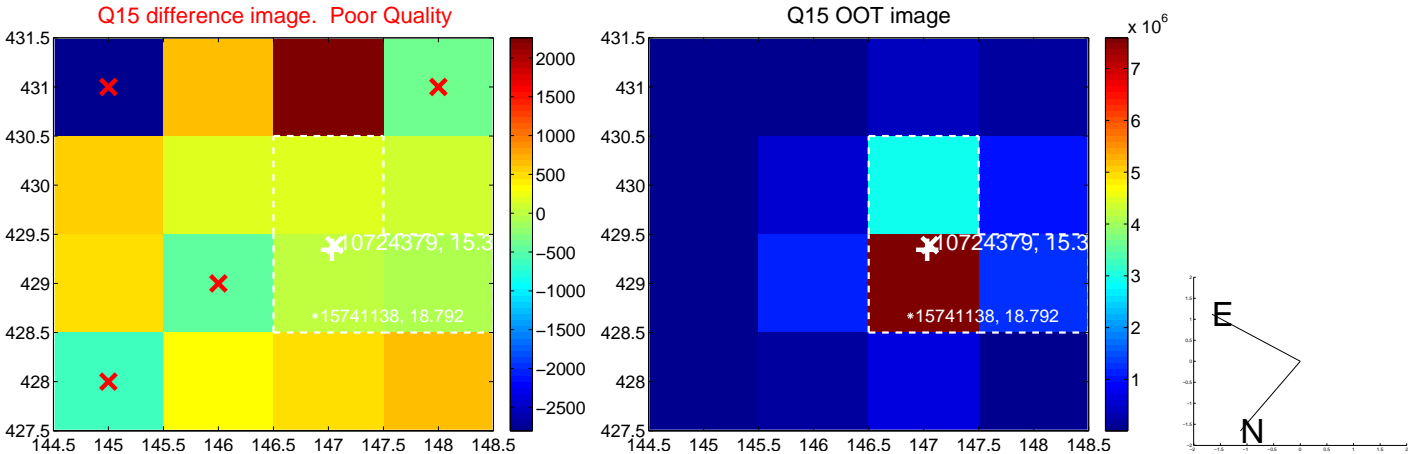
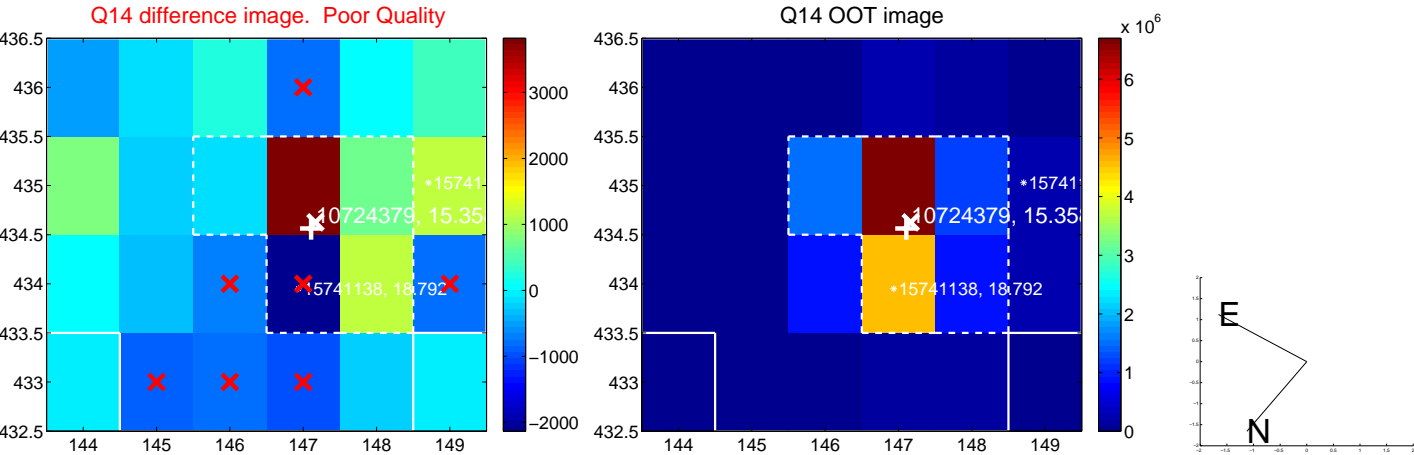
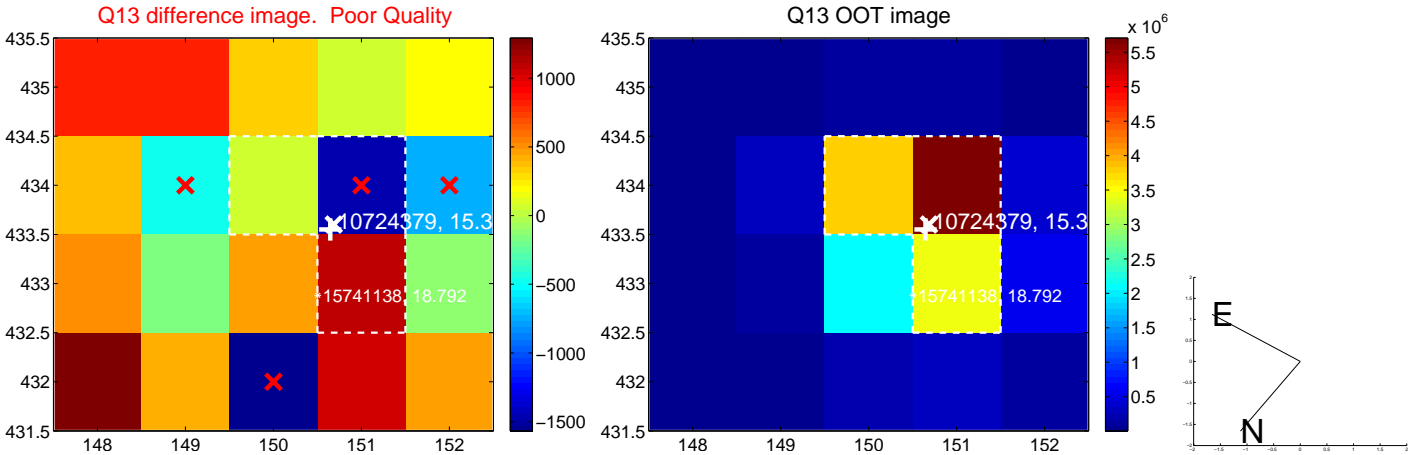
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



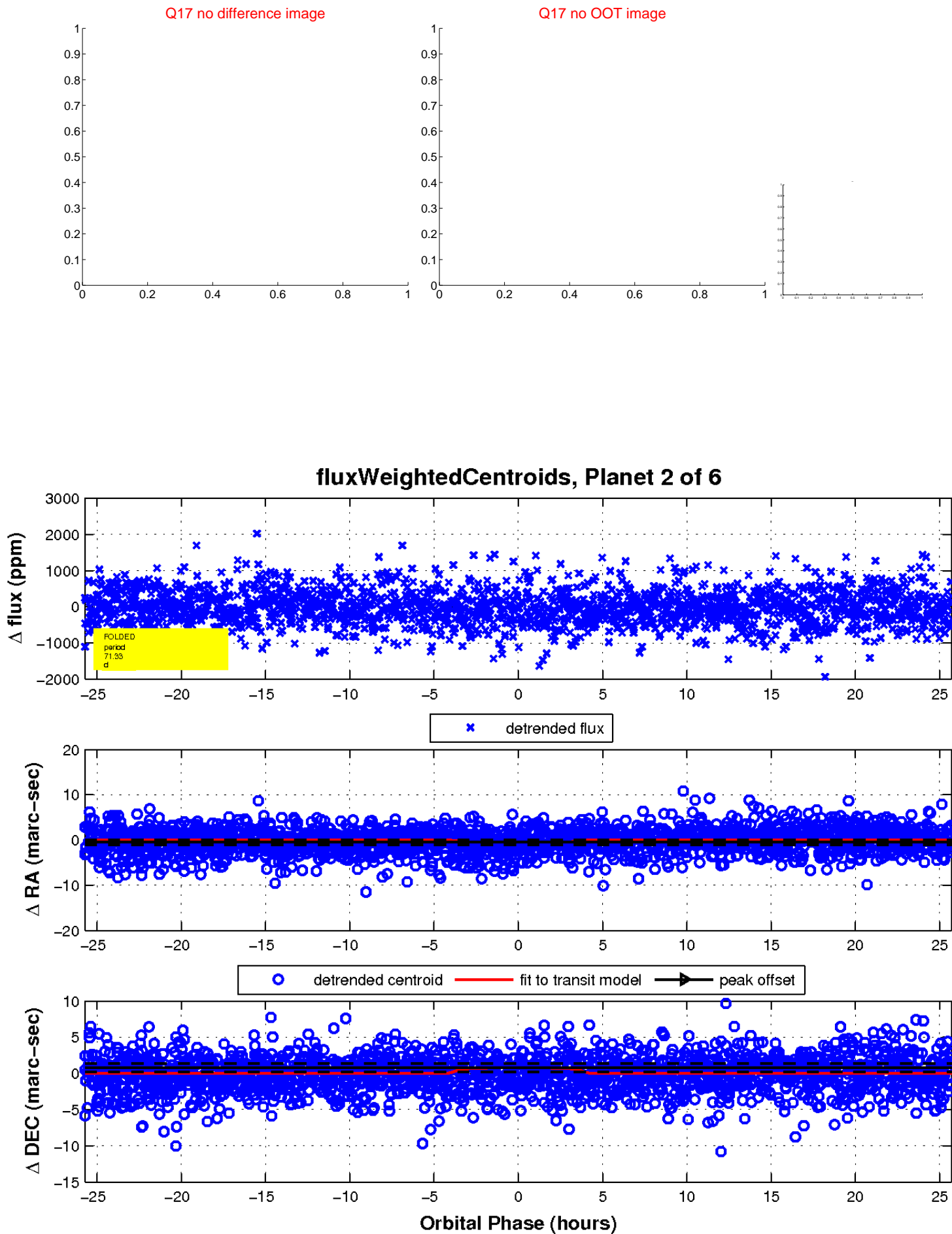
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



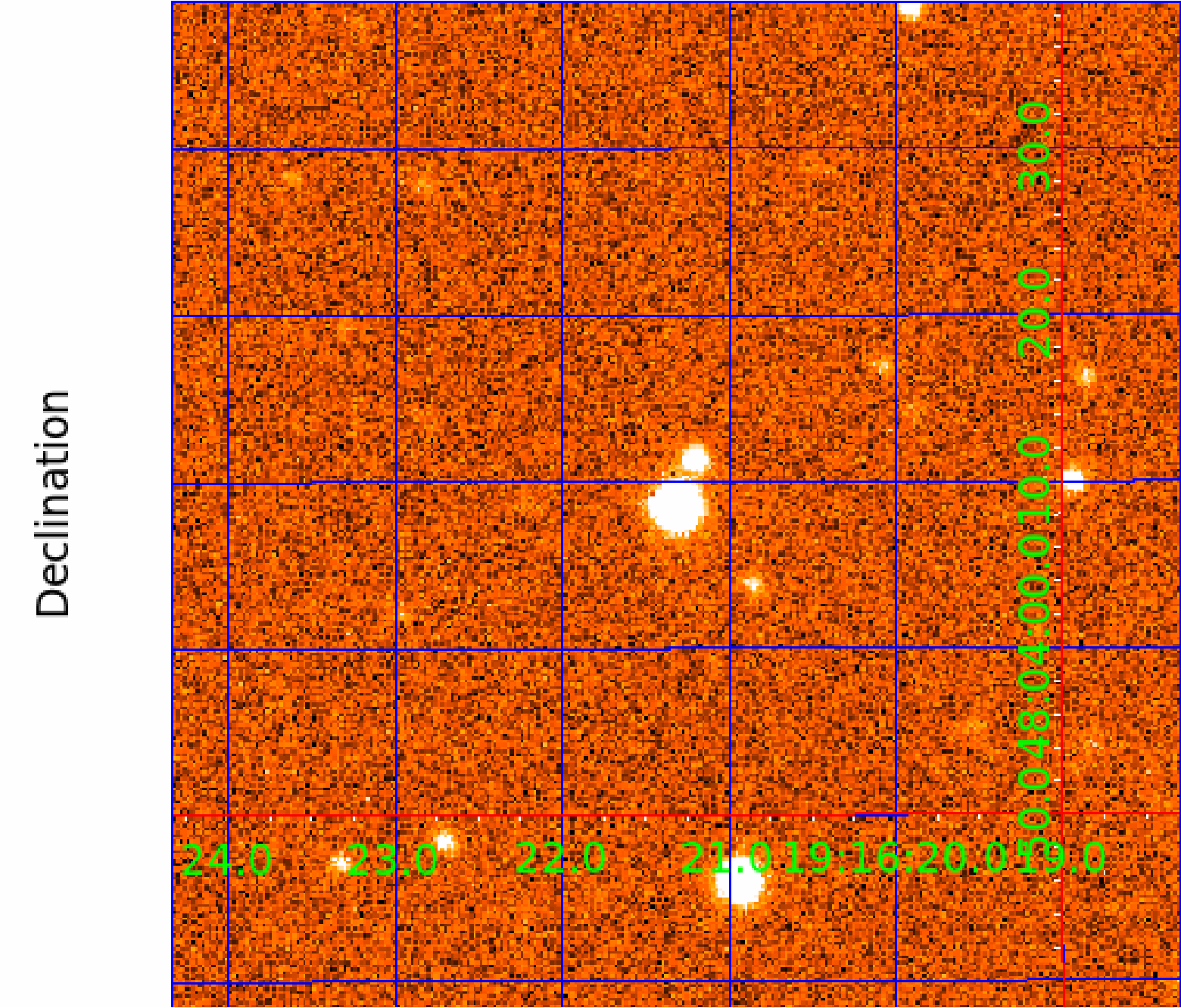
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010724379

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})
010724379-01	OBS	No	0.745032	131.870194	17.9	4.916	8.2	4.0	0.77	5580	0.32	2233.70
010724379-02	OBS	No	71.332053	182.331832	514.3	8.579	9.0	7.0	0.77	5580	2.08	5.10
010724379-03	OBS	No	169.377922	207.943304	1233.1	2.500	8.8	-1.0	0.77	5580	2.69	1.61
010724379-04	OBS	No	47.989144	145.335881	1038.3	1.215	8.1	8.5	0.77	5580	2.48	8.65
010724379-05	OBS	No	135.968084	137.416445	547.0	4.931	8.8	7.9	0.77	5580	2.06	2.16
010724379-06	OBS	No	48.599286	145.457815	880.3	1.470	9.6	8.5	0.77	5580	2.42	8.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010724379-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010724379-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
010724379-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010724379-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

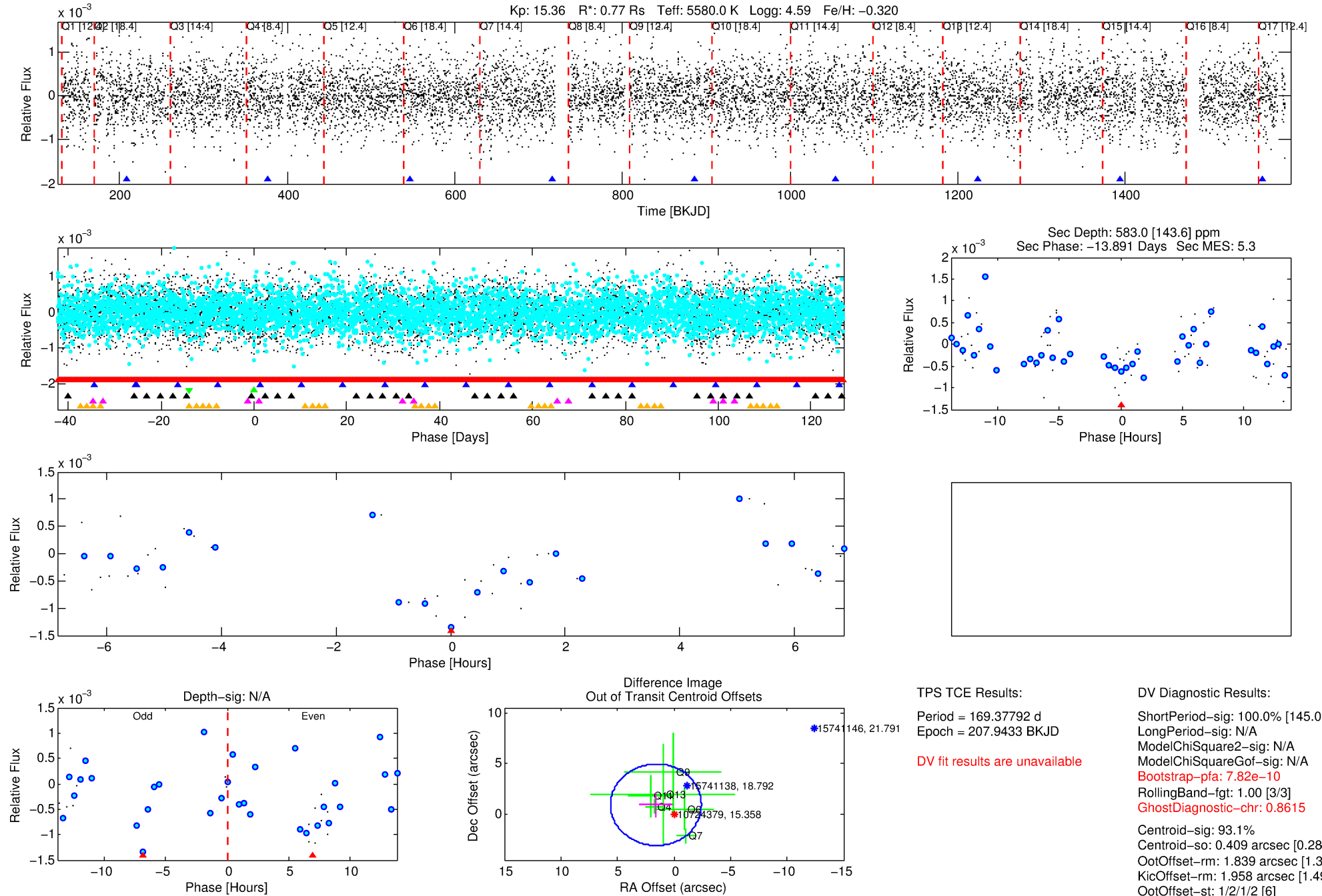
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010724379-03

No Significant Match Found

DV One-Page Summary

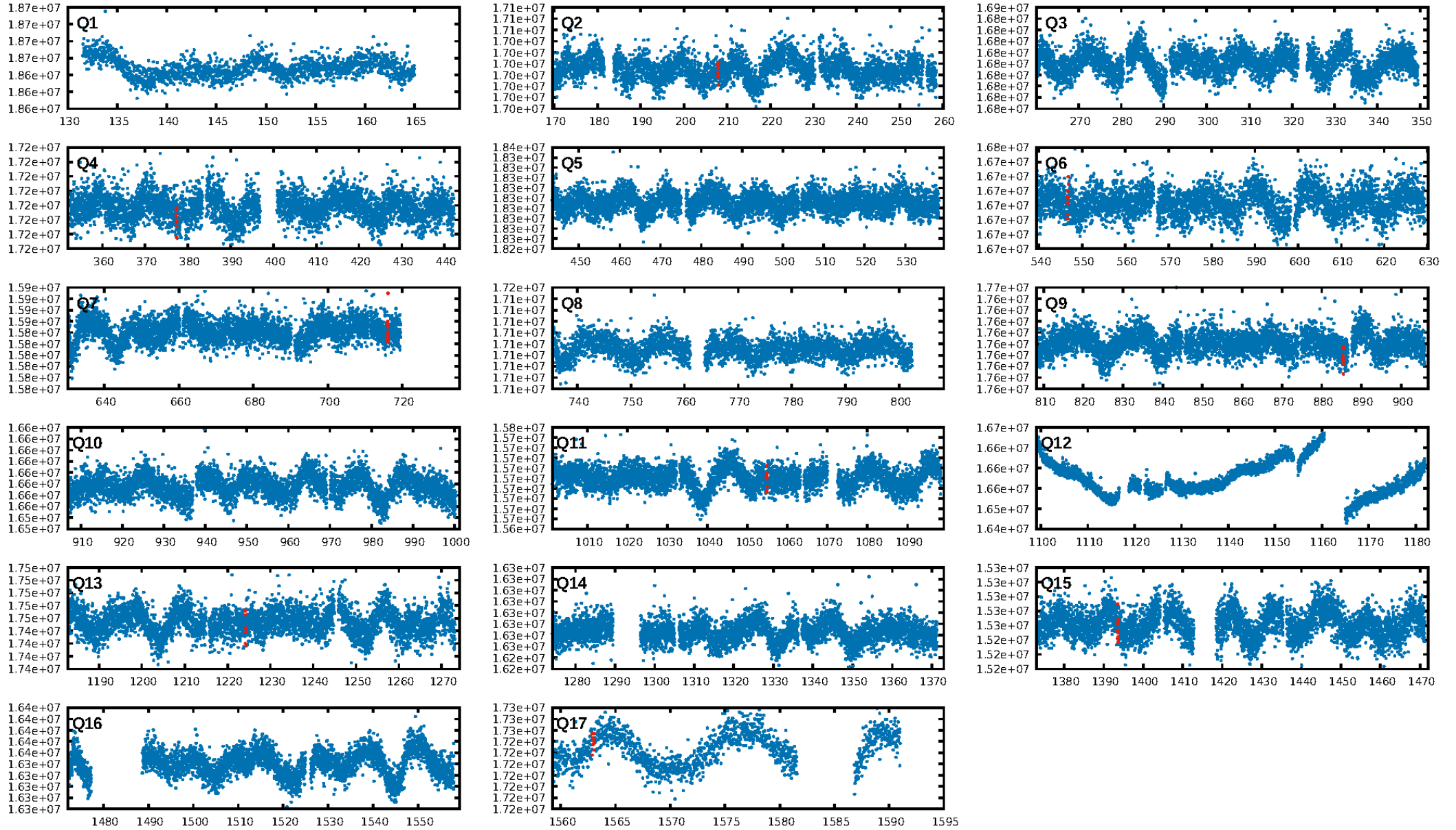
KIC: 10724379 Candidate: 3 of 6 Period: 169.378 d



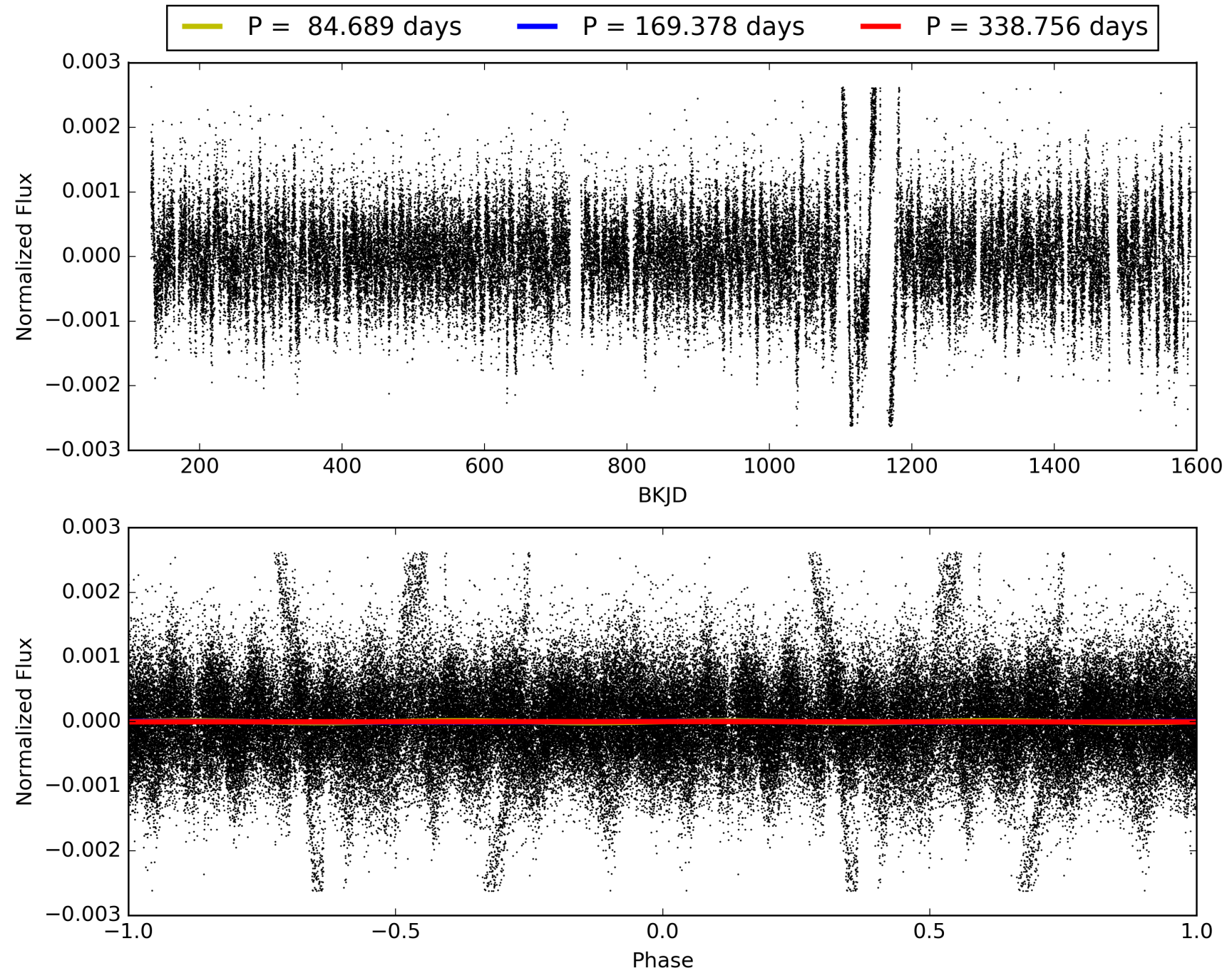
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:59:01 Z

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

TCE 010724379-03, PDC Light Curves

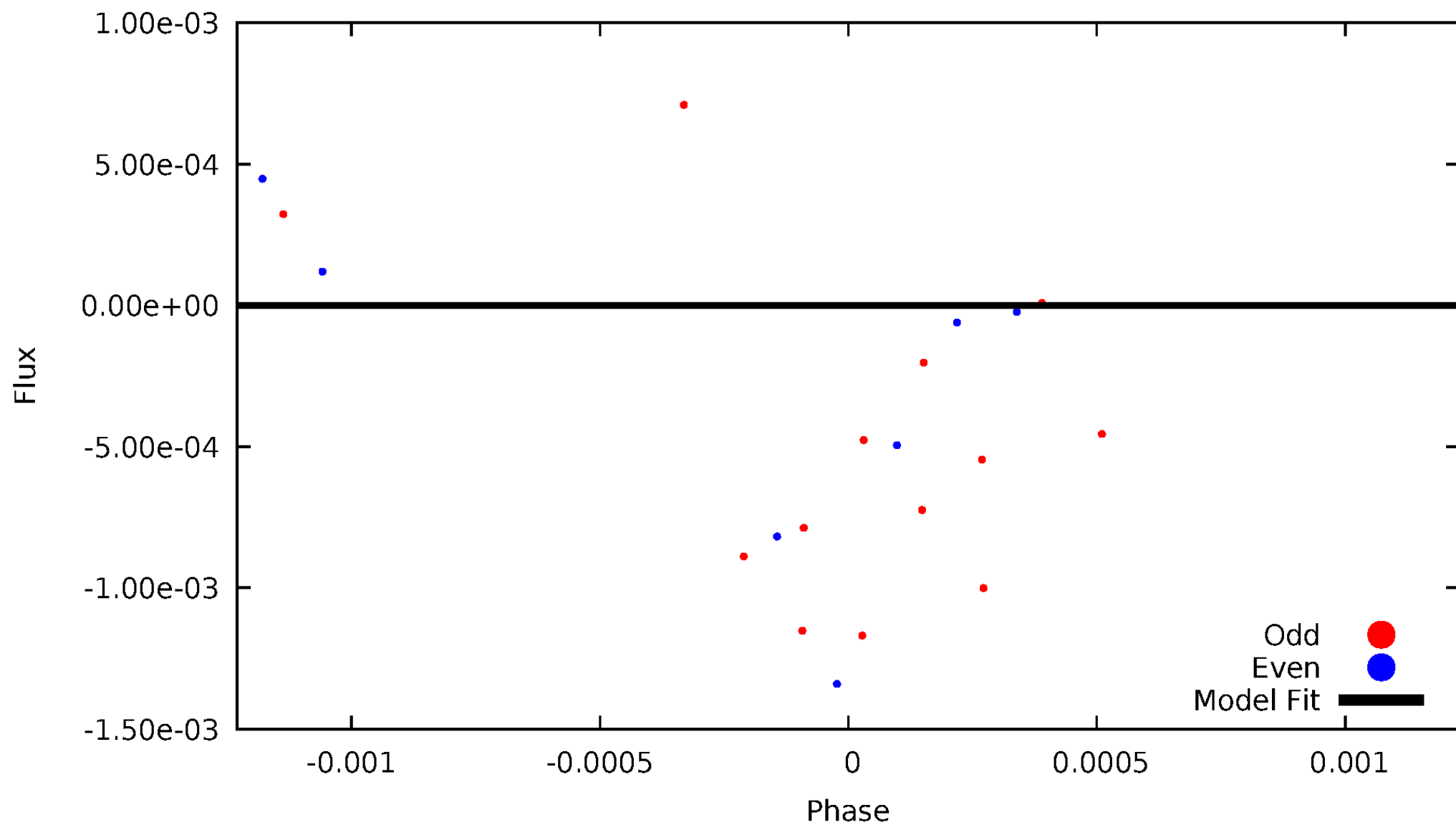


TCE 010724379-03



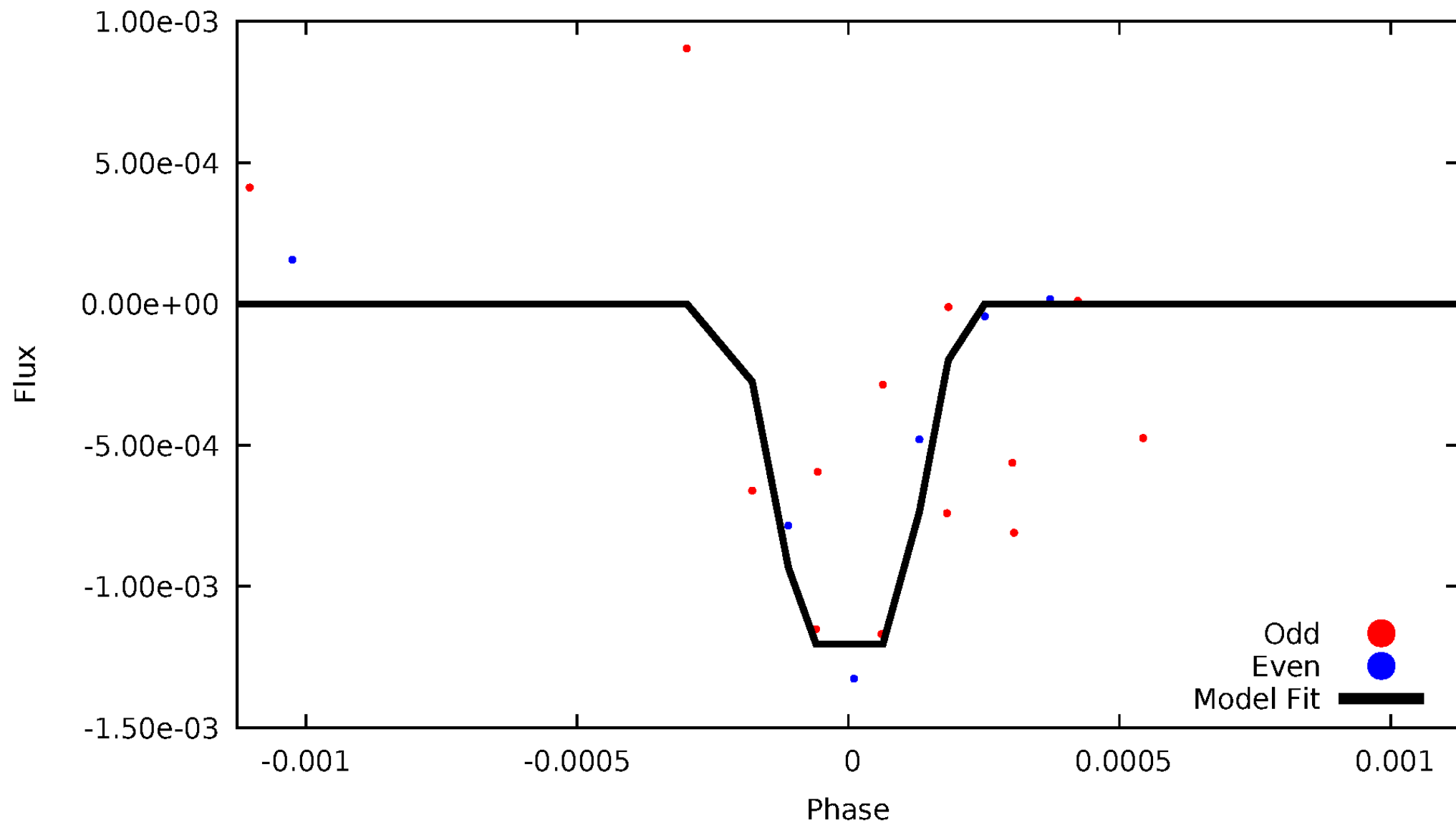
DV Odd/Even

TCE 010724379-03



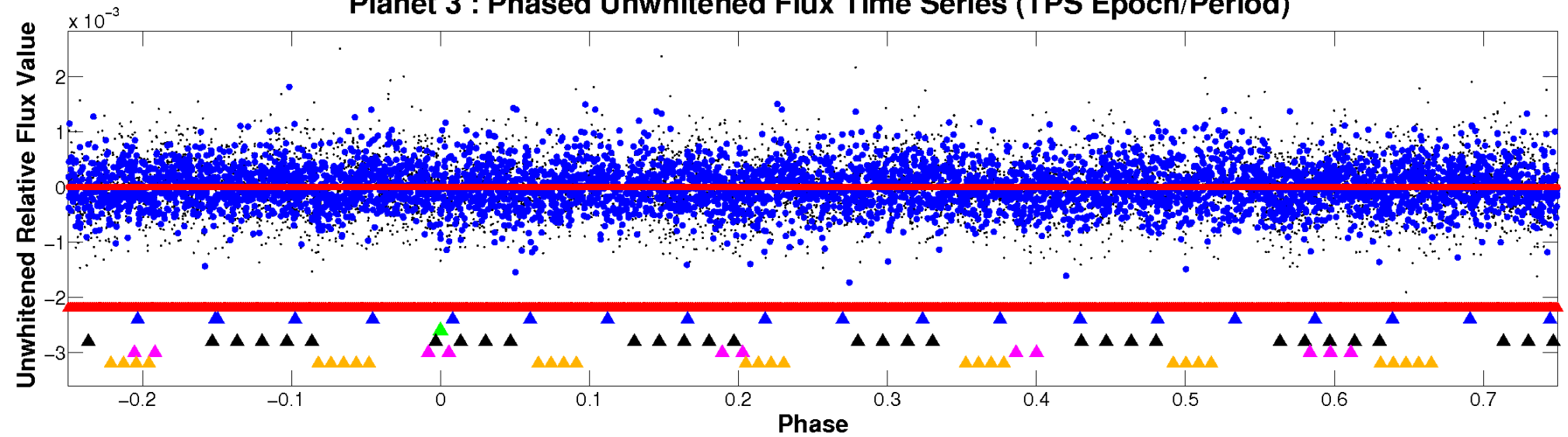
ALT Odd/Even

TCE 010724379-03

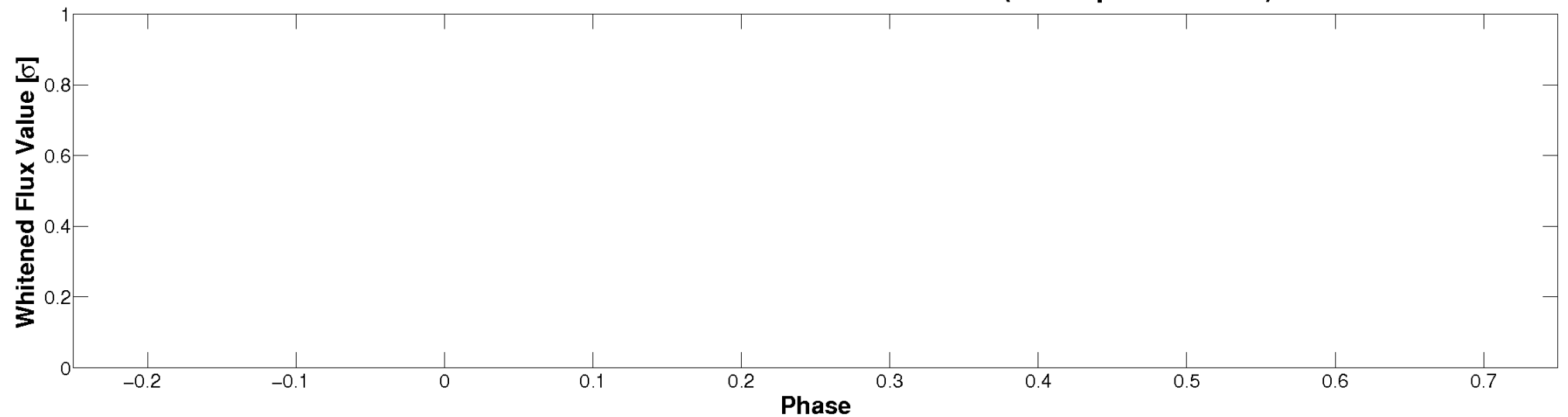


Non-Whitened Vs. Whitened Light Curve

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

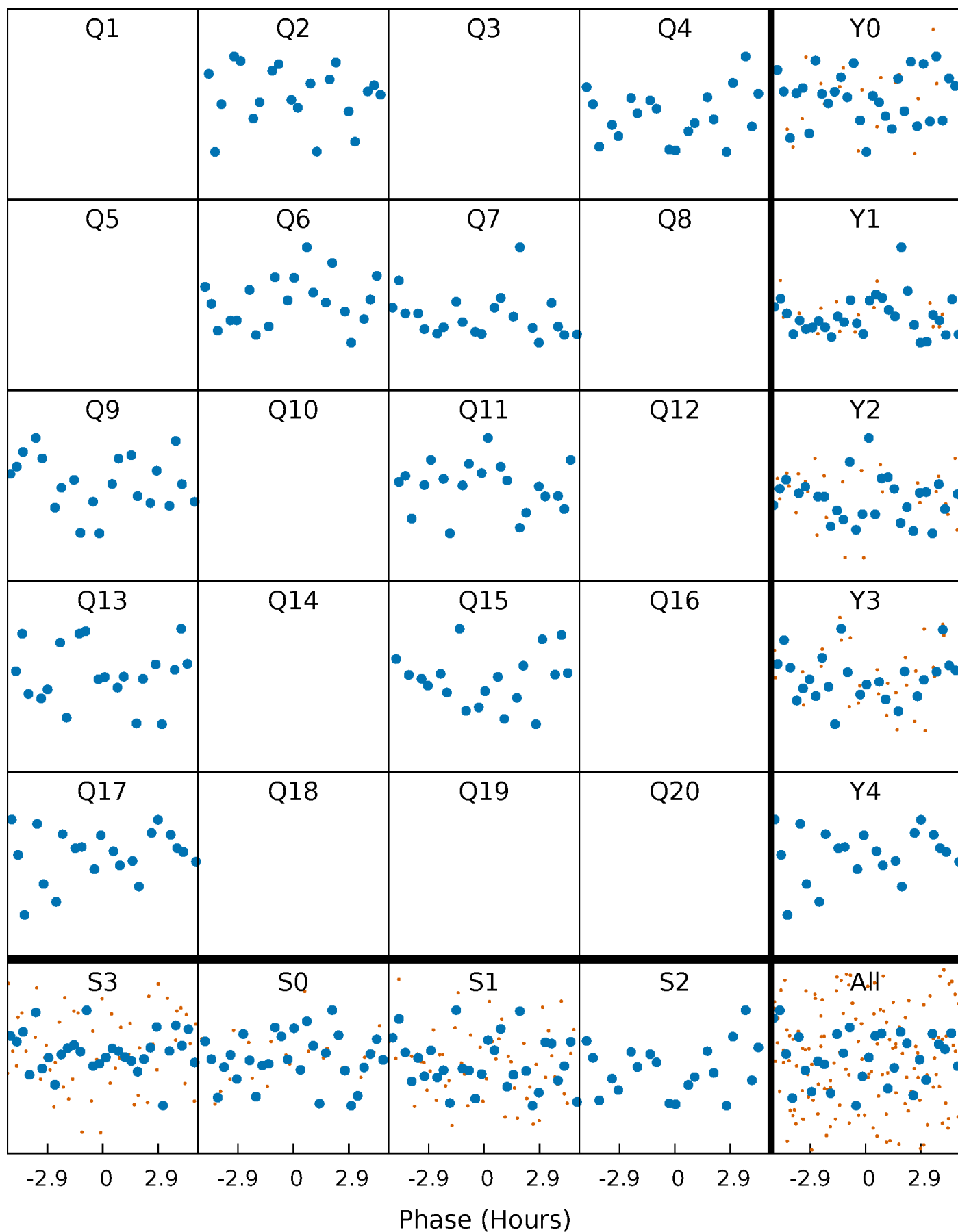


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



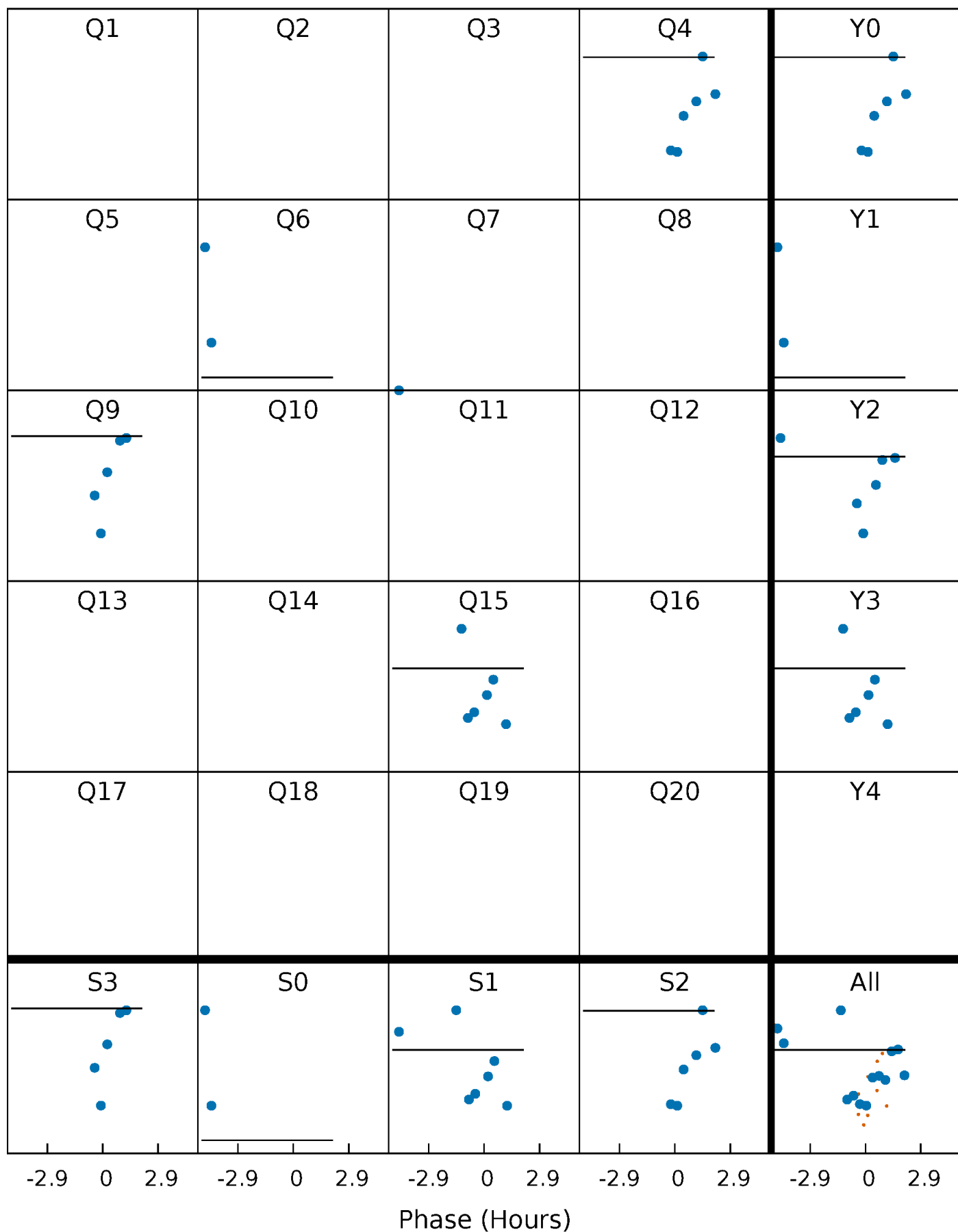
PDC Quarter-Phased Transit Curves

TCE 010724379-03 P=169.377922 Days $T_0=207.943304$ (BKJD)



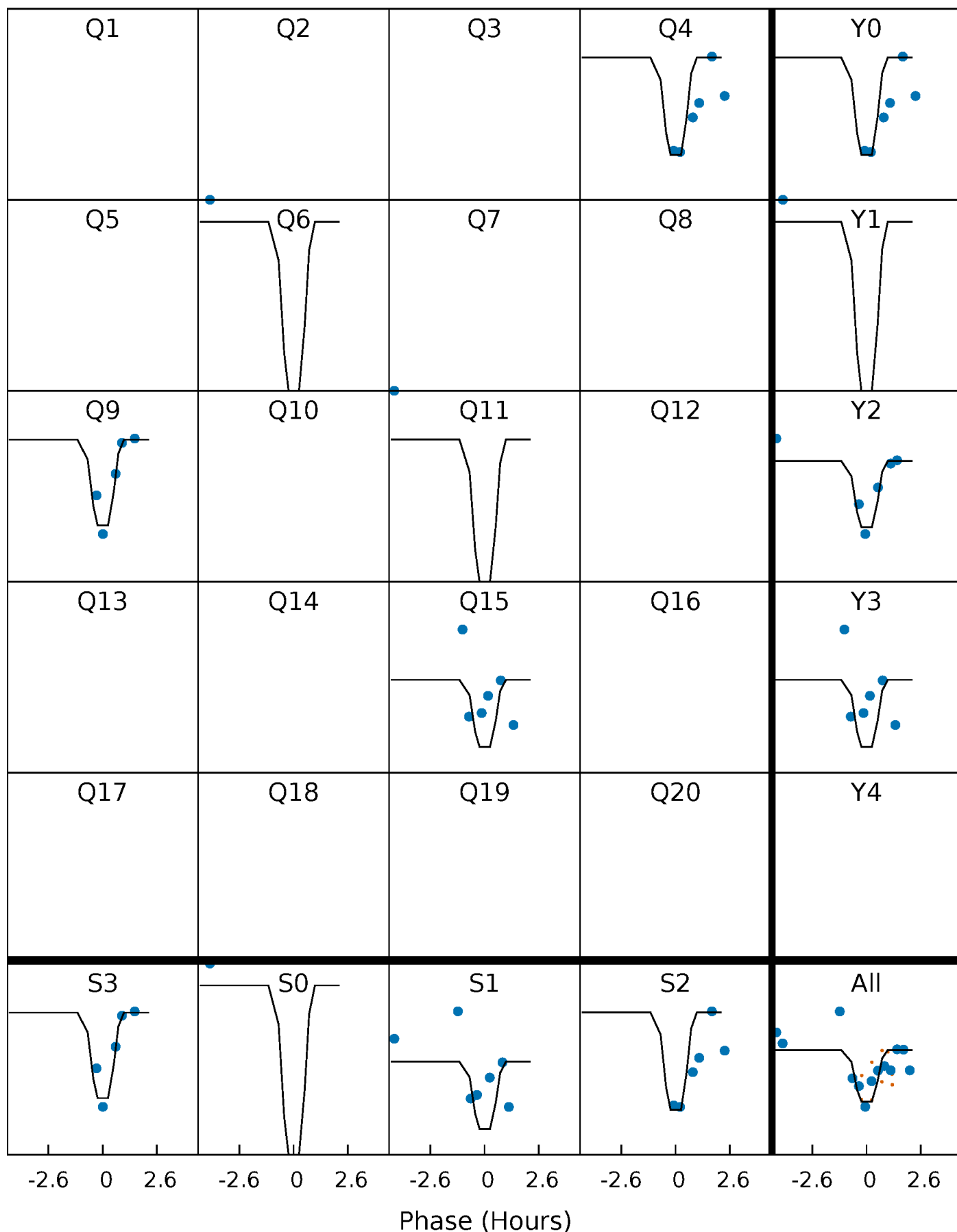
DV Quarter-Phased Transit Curves

TCE 010724379-03 P=169.377922 Days $T_0=207.943304$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

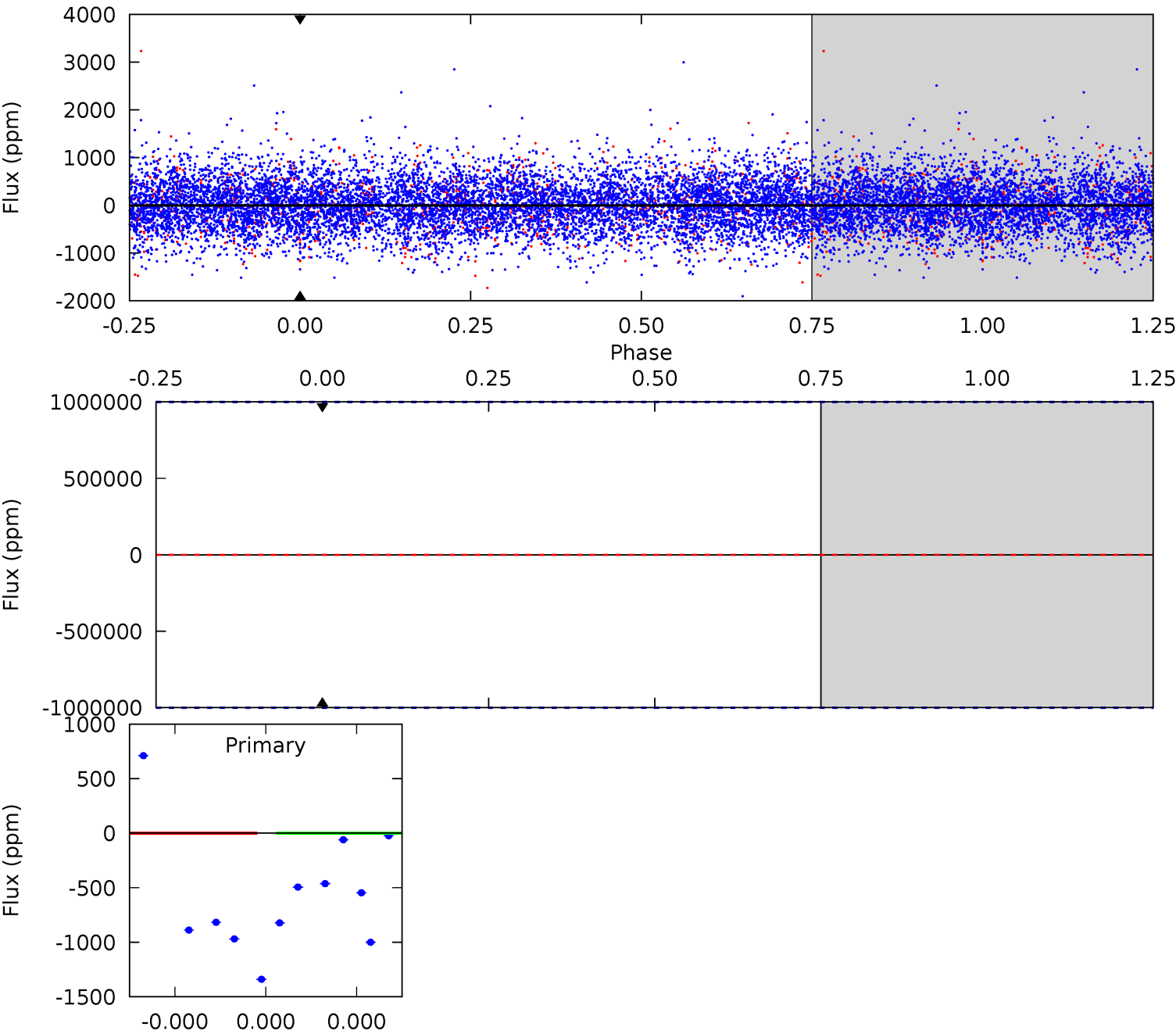
TCE 010724379-03 P=169.377922 Days $T_0=207.937684$ (BKJD)



DV Model-Shift Uniqueness Test

010724379-03, P = 169.377922 Days, E = 38.565382 Days

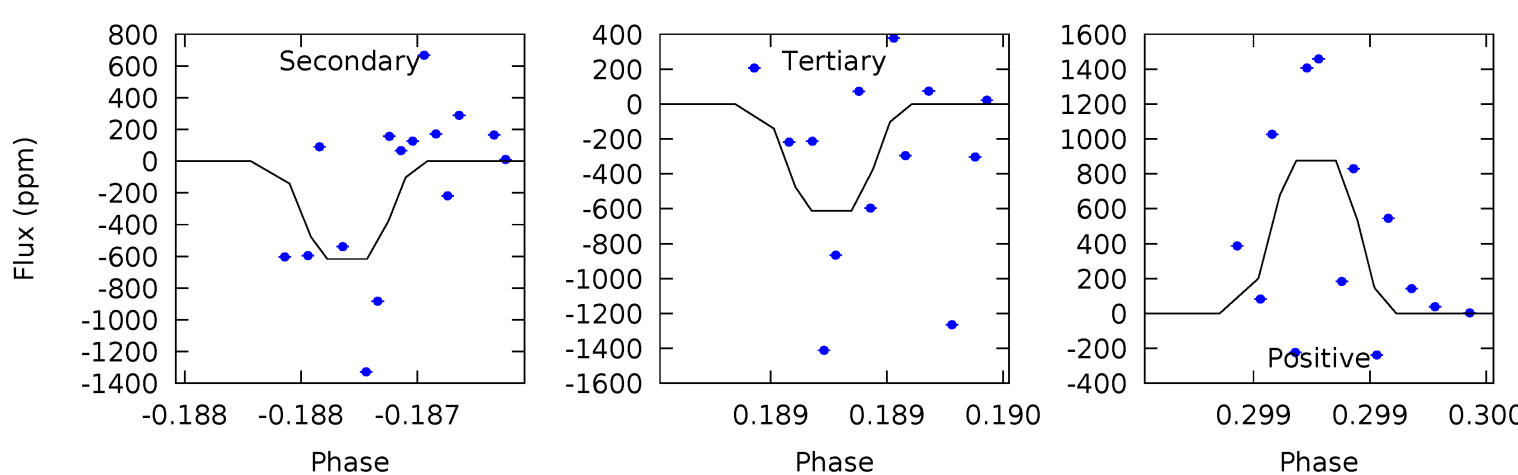
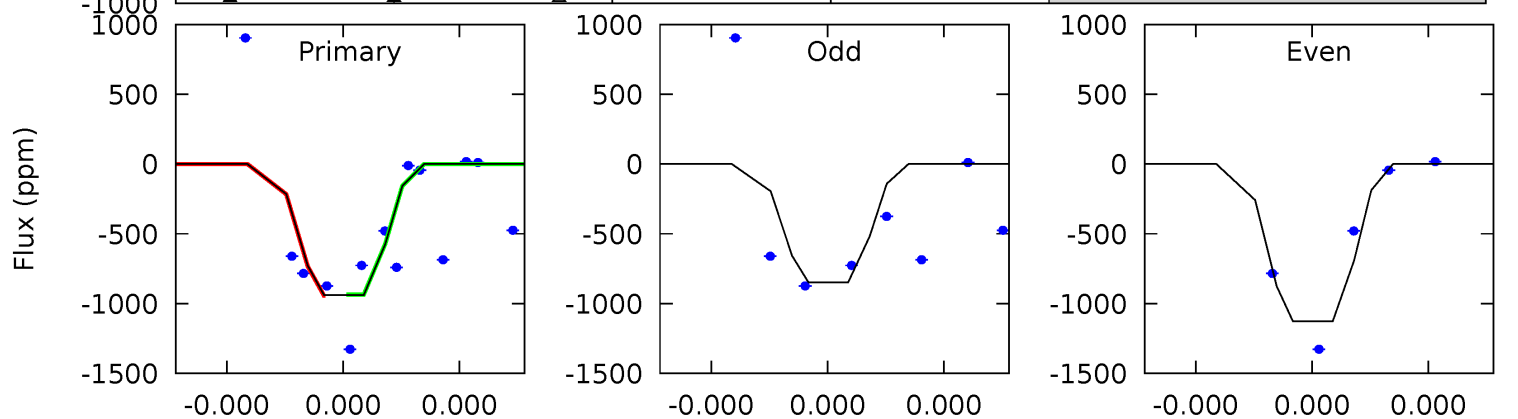
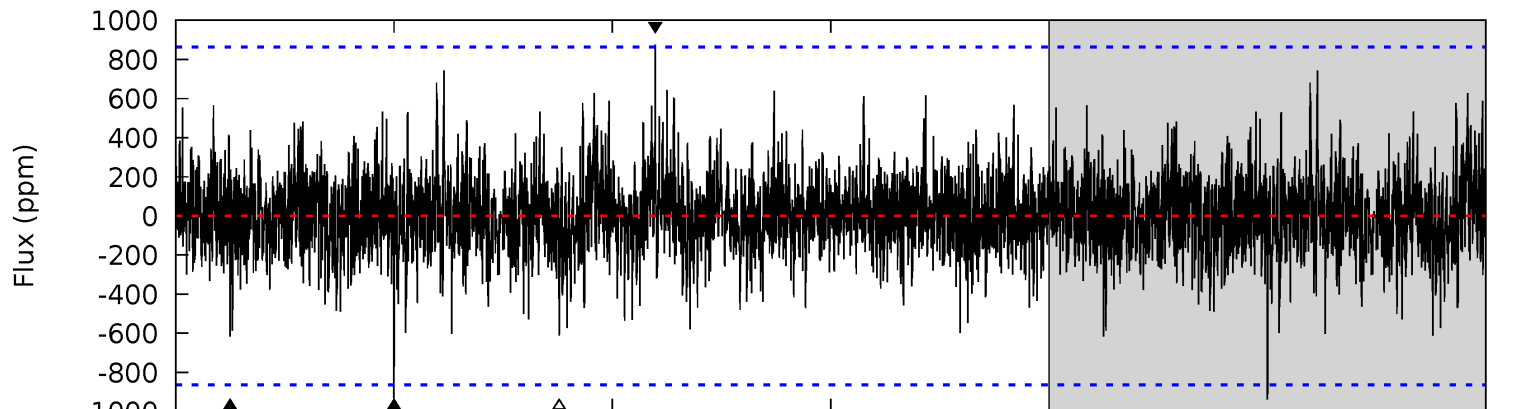
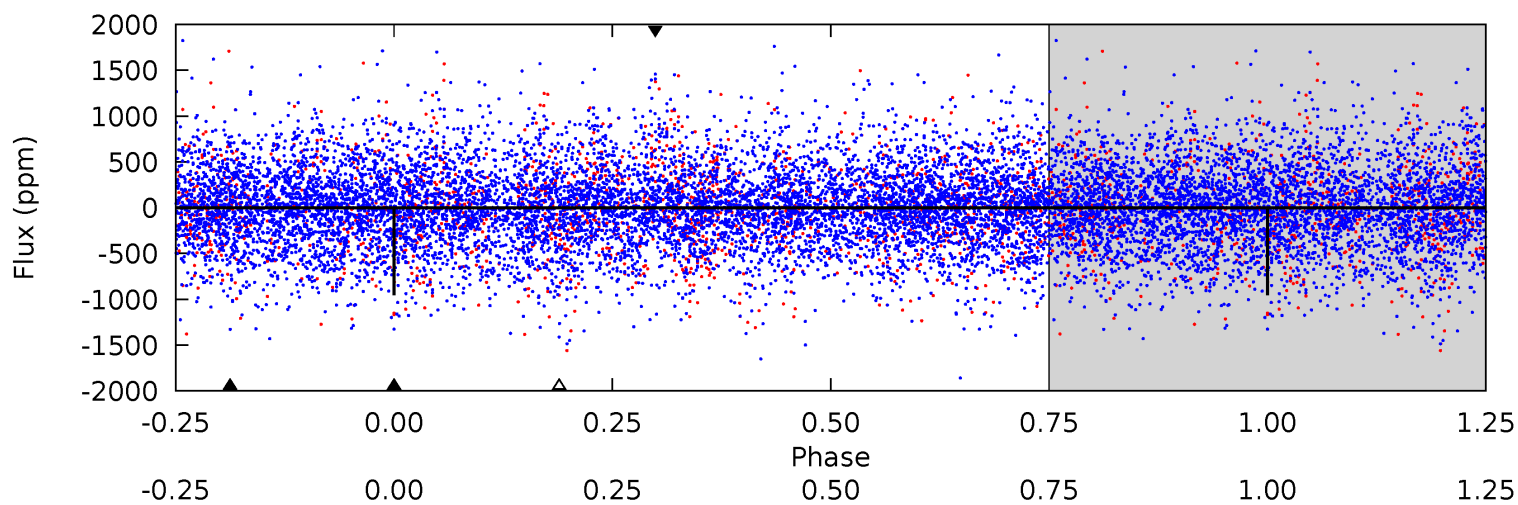
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010724379-03, P = 169.377922 Days, E = 38.559762 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.12	4.02	3.99	5.70	5.63	3.57	1.14	2.13	0.42	0.03	-1.68	0.89	0.84	0.48	0.03



Stellar Parameters For KIC 010724379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5580^{+152}_{-169}	$4.592^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.774^{+0.158}_{-0.068}$	$0.865^{+0.080}_{-0.106}$	$2.633^{+0.474}_{-1.027}$
	+3%/-3%	+1%/-3%	+94%/-94%	+20%/-9%	+9%/-12%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010724379-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$7.21^{+7.39}_{-5.03}$	408^{+21}_{-17}	-4186^{+21865}_{-12033}	$-5301.781^{+662942.128}_{-537983.781}$
Alt.	-617 ± 154	$7.47^{+6.99}_{-5.38}$	409^{+20}_{-17}	3484^{+2172}_{-658}	1932^{+21392}_{-1449}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

DV Centroid Data

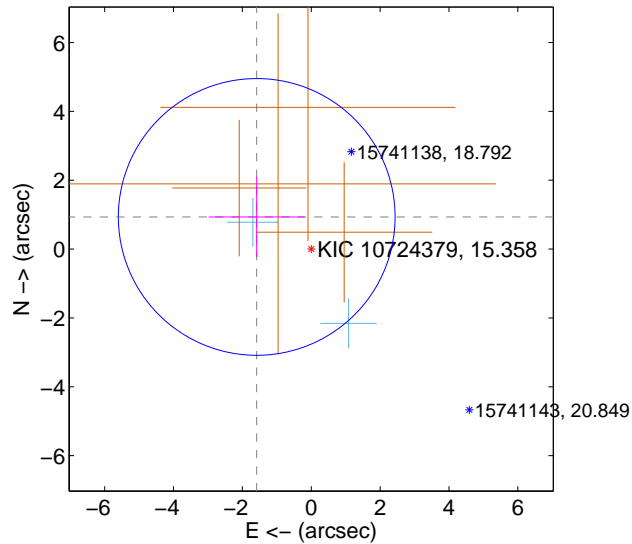
Supplemental centroid analysis for 010724379-03. Kepler magnitude: 15.36. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

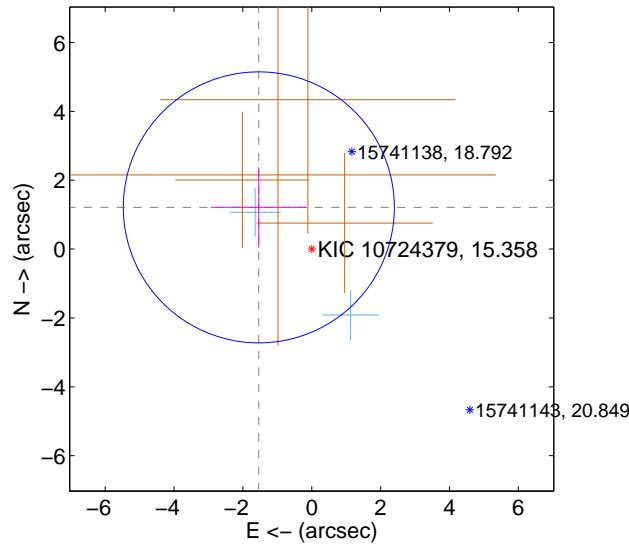
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.839 ± 1.340	1.37	1.584 ± 1.396	0.935 ± 1.166
PRF-fit source offset from KIC position	1.958 ± 1.312	1.49	1.537 ± 1.396	1.212 ± 1.166
photometric centroid source offset	0.41 ± 1.45	0.28	0.40 ± 1.46	0.10 ± 1.37

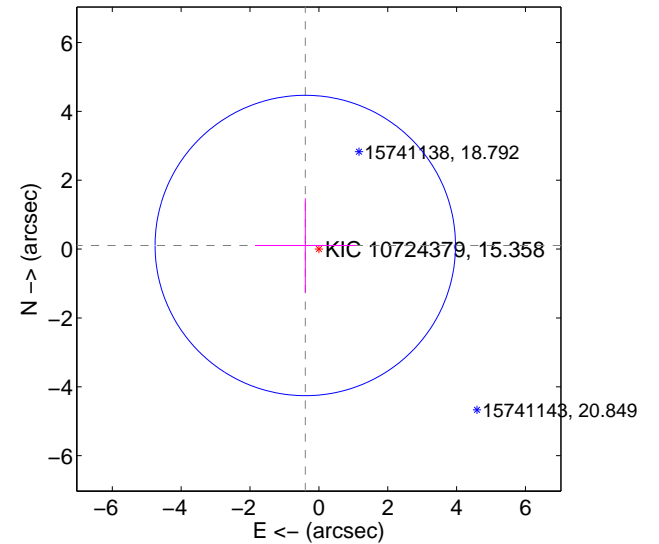
offset from difference PRF-fit to OOT PRF-fit



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.

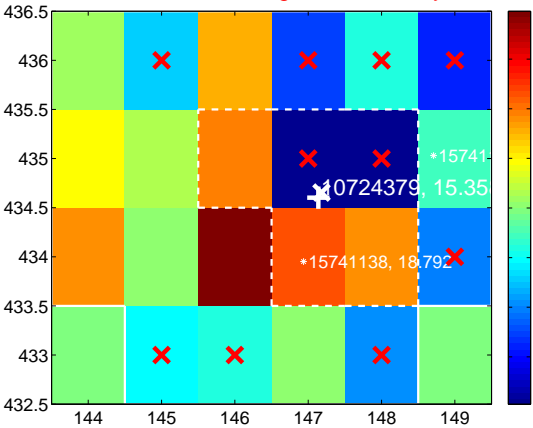
Q1 no difference image



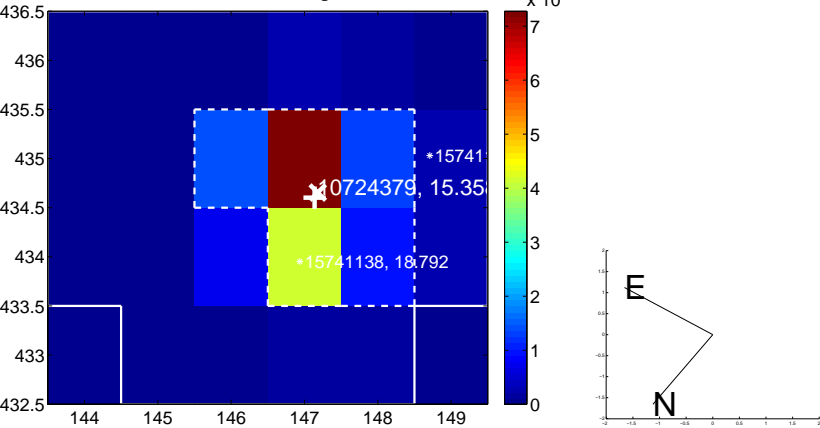
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



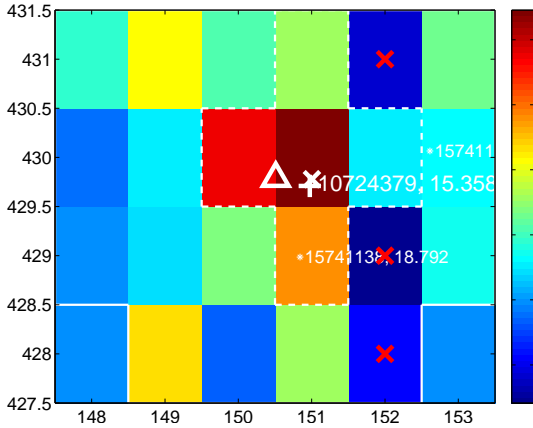
Q3 no difference image



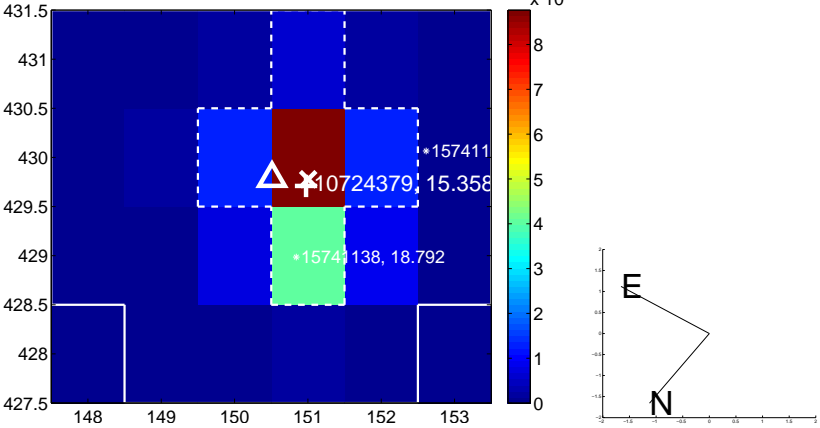
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

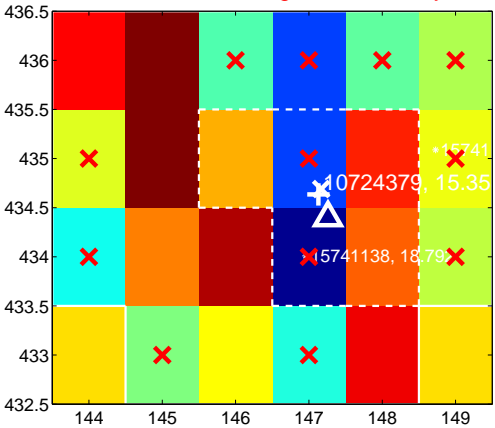
Q5 no difference image



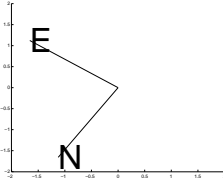
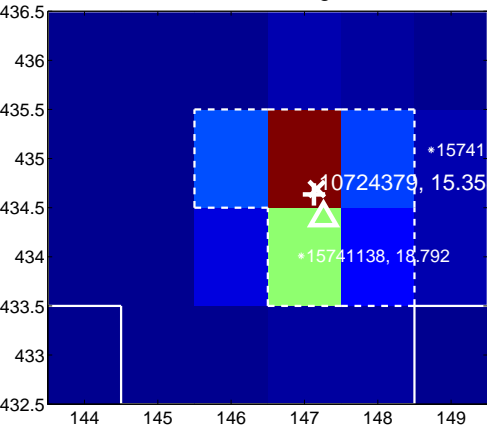
Q5 no OOT image



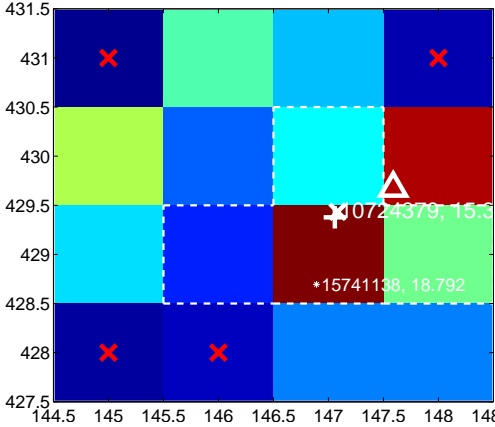
Q6 difference image. Poor Quality



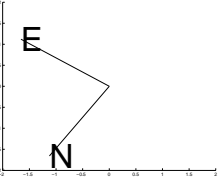
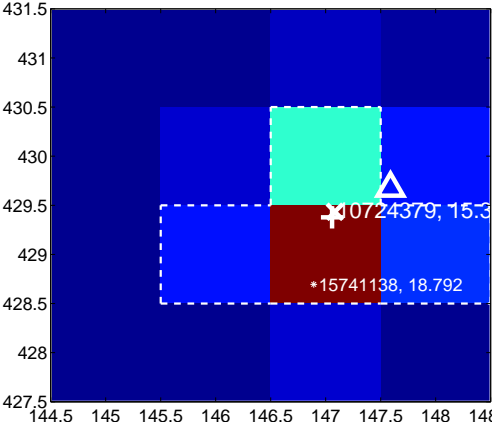
Q6 OOT image



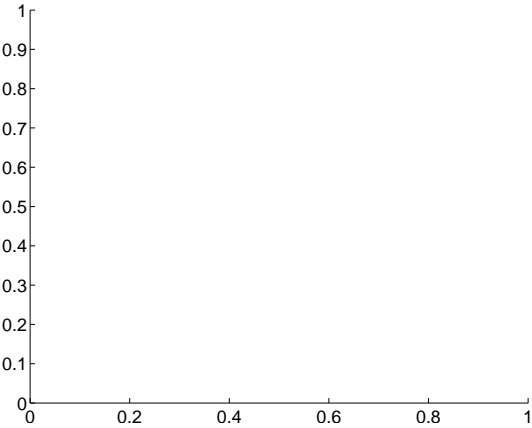
Q7 difference image



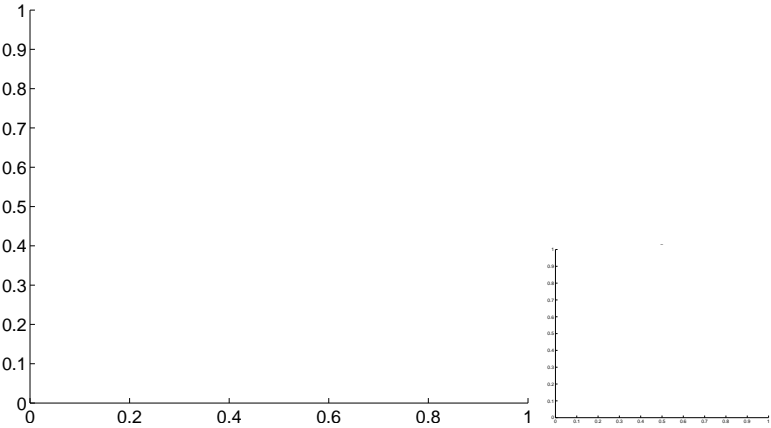
Q7 OOT image



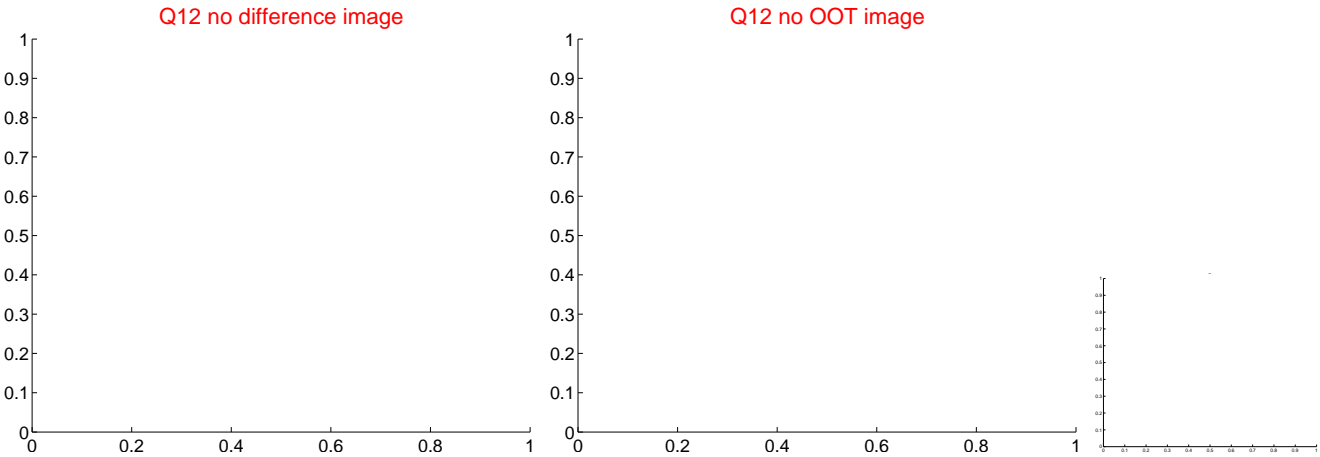
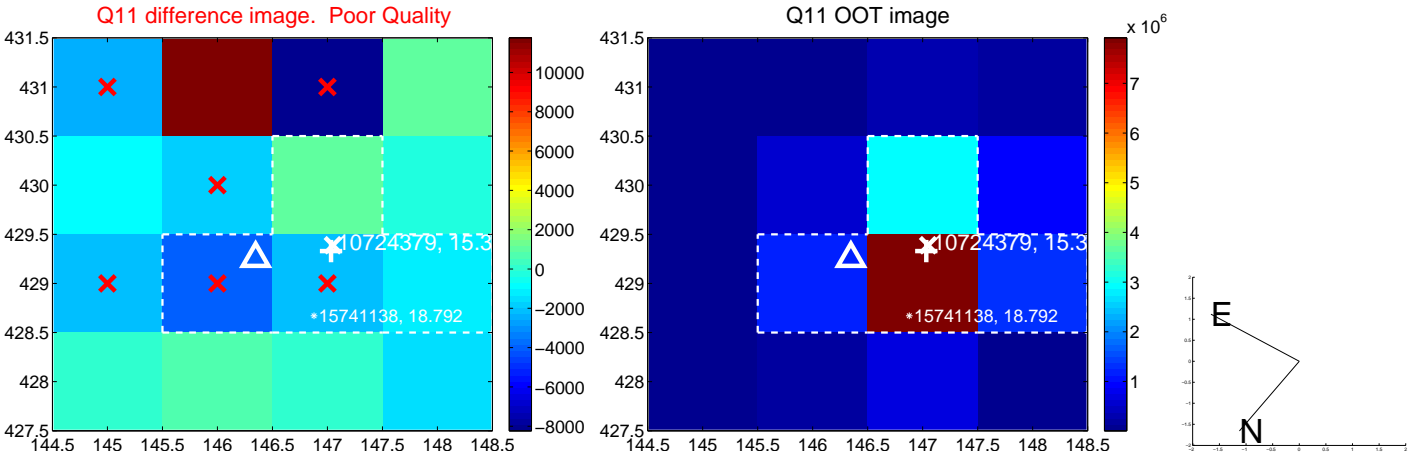
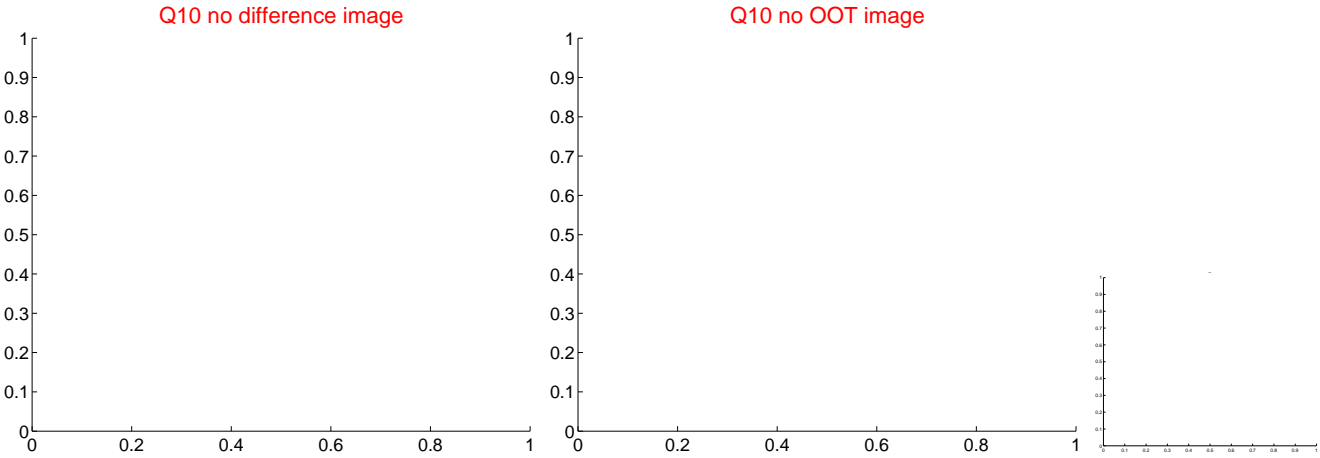
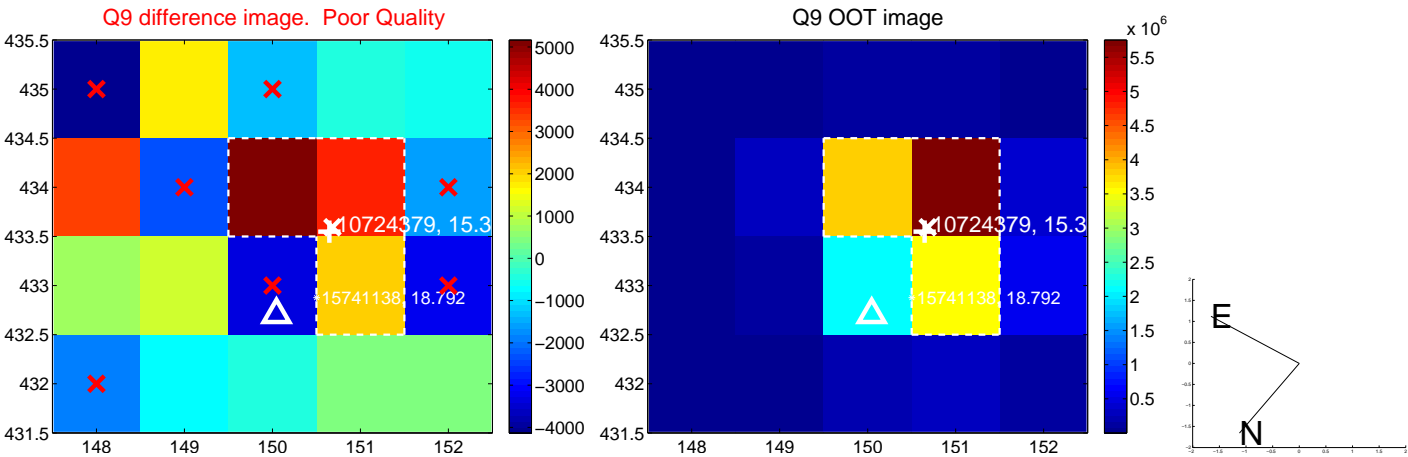
Q8 no difference image



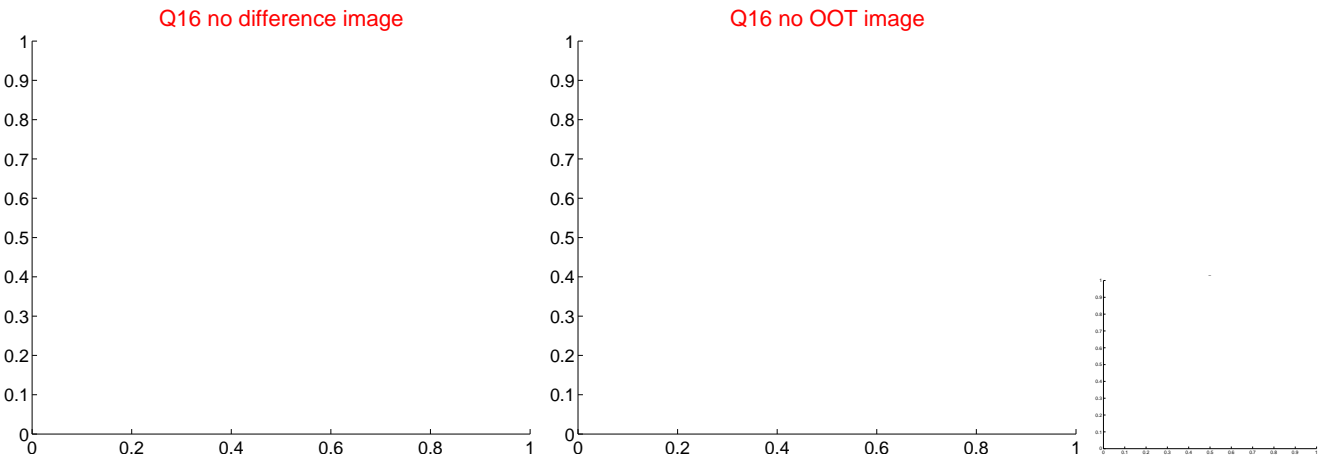
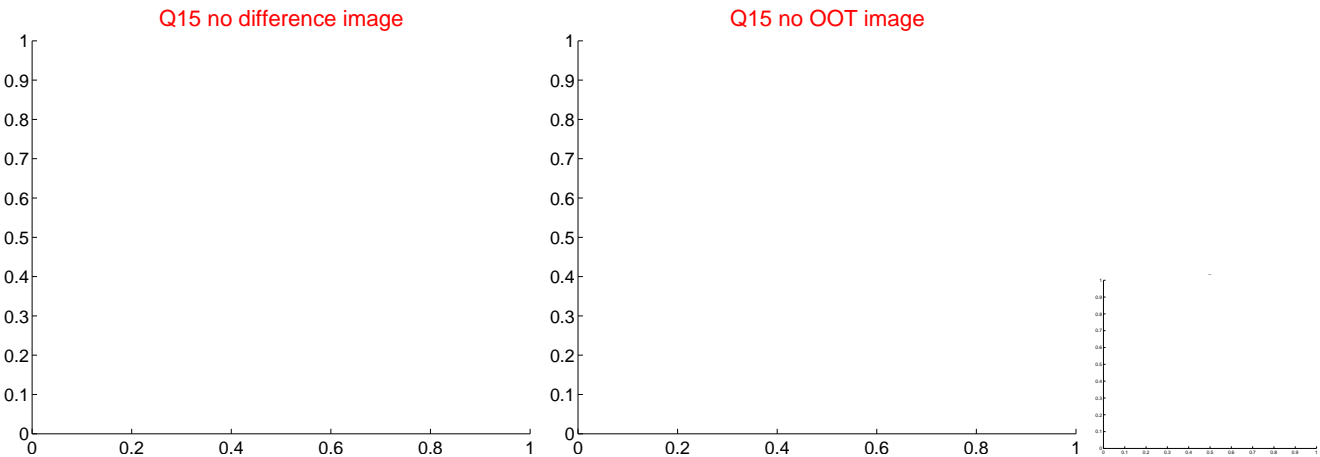
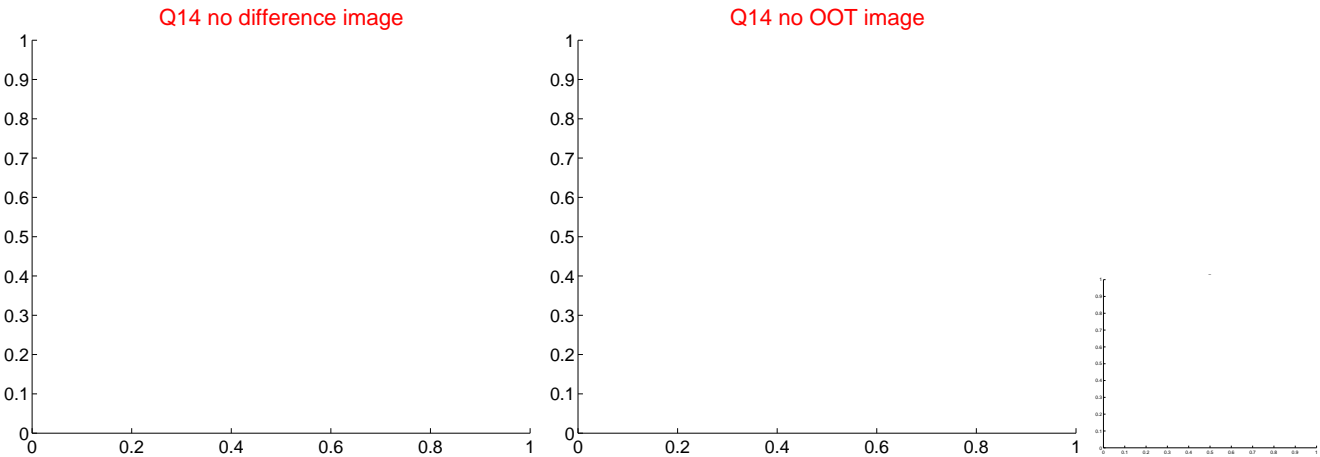
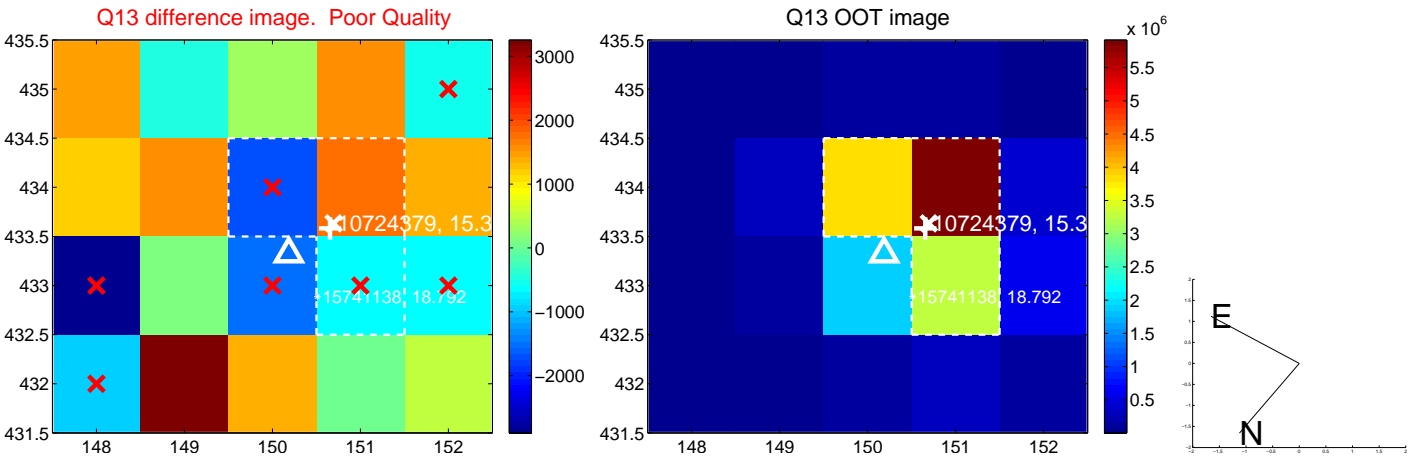
Q8 no OOT image



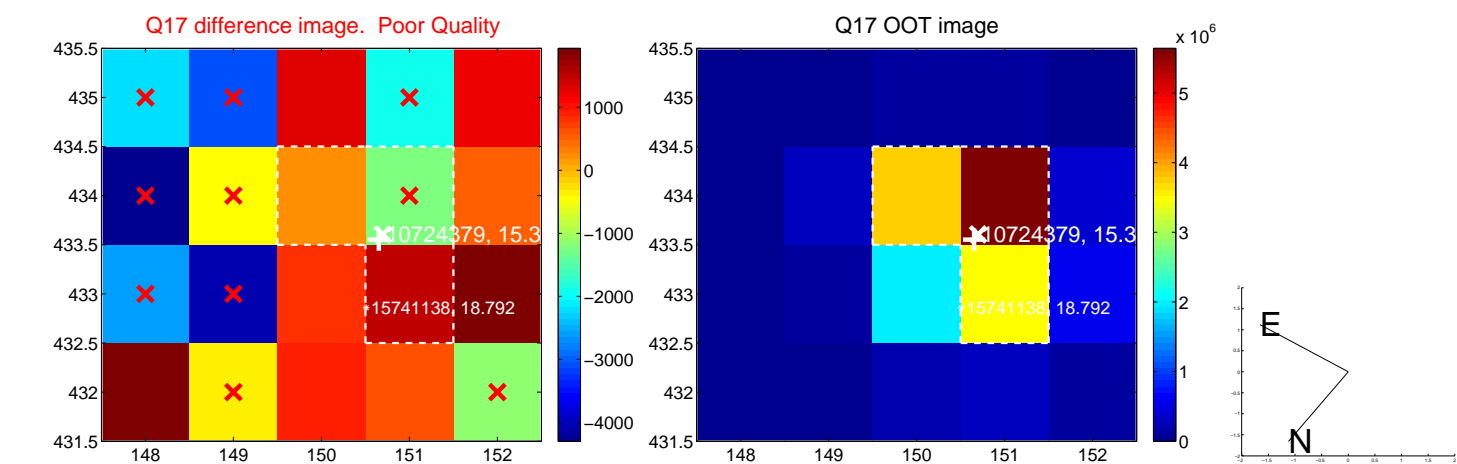
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



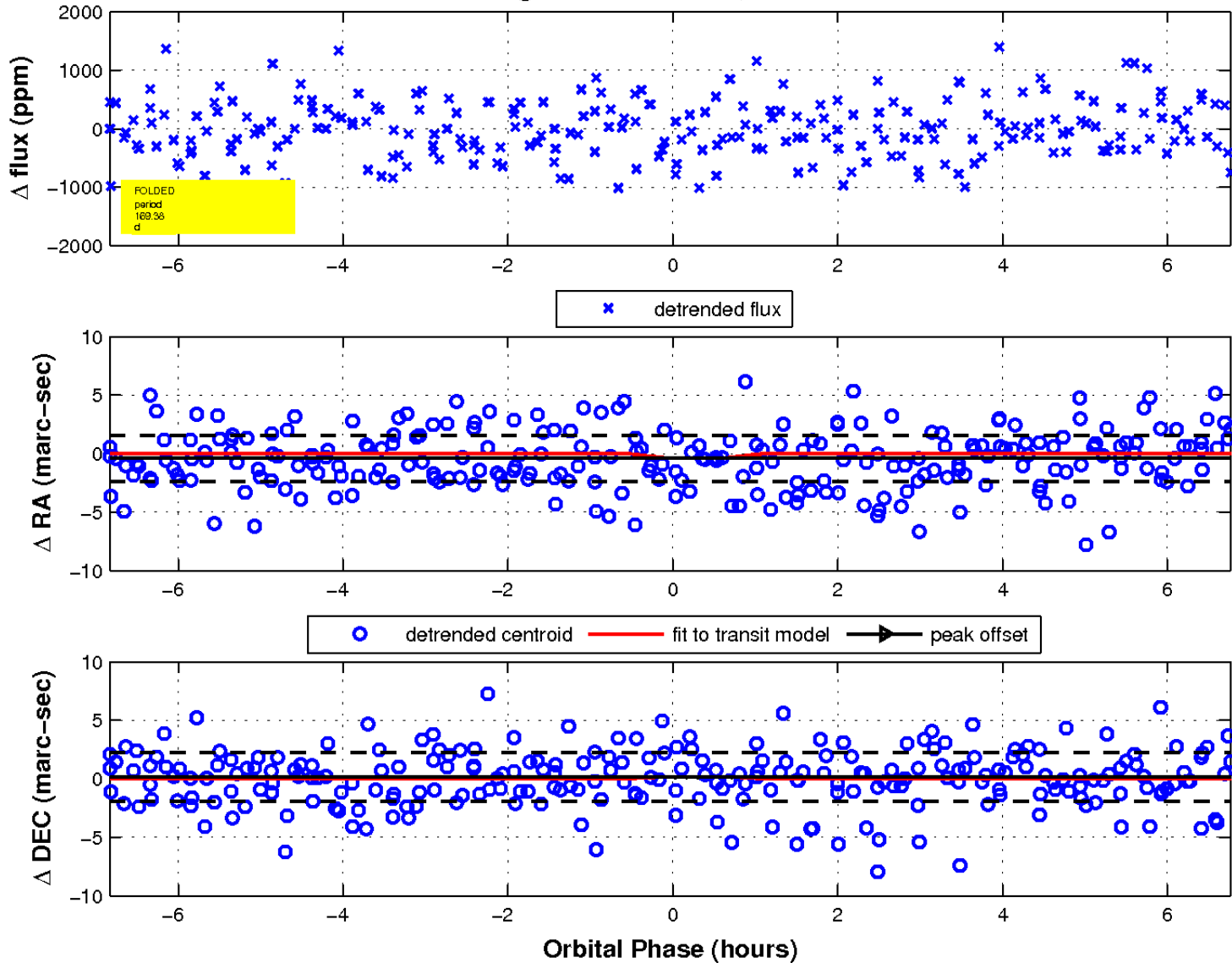
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

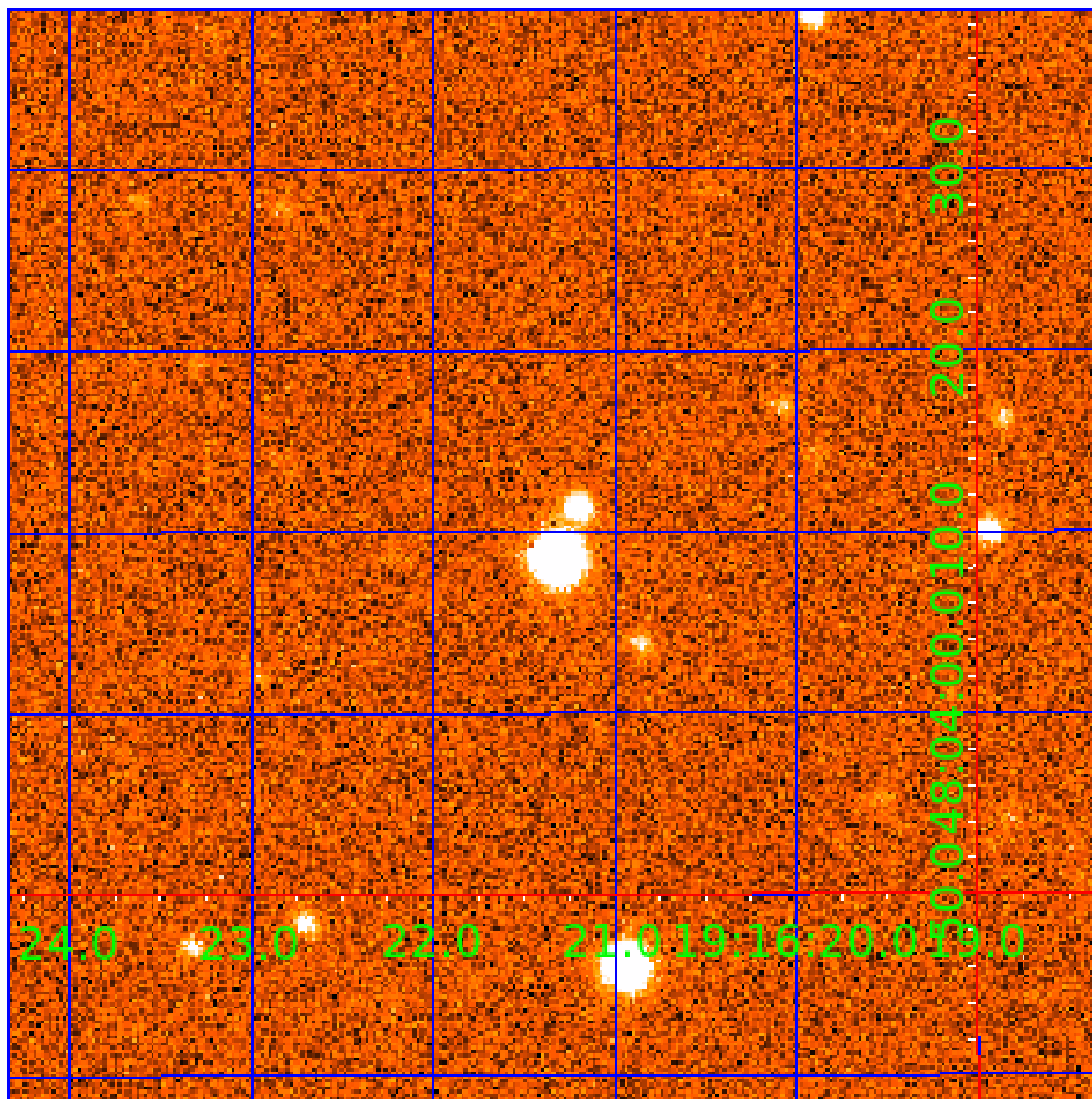


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 010724379

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})
010724379-01	OBS	No	0.745032	131.870194	17.9	4.916	8.2	4.0	0.77	5580	0.32	2233.70
010724379-02	OBS	No	71.332053	182.331832	514.3	8.579	9.0	7.0	0.77	5580	2.08	5.10
010724379-03	OBS	No	169.377922	207.943304	1233.1	2.500	8.8	-1.0	0.77	5580	2.69	1.61
010724379-04	OBS	No	47.989144	145.335881	1038.3	1.215	8.1	8.5	0.77	5580	2.48	8.65
010724379-05	OBS	No	135.968084	137.416445	547.0	4.931	8.8	7.9	0.77	5580	2.06	2.16
010724379-06	OBS	No	48.599286	145.457815	880.3	1.470	9.6	8.5	0.77	5580	2.42	8.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010724379-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010724379-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
010724379-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010724379-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

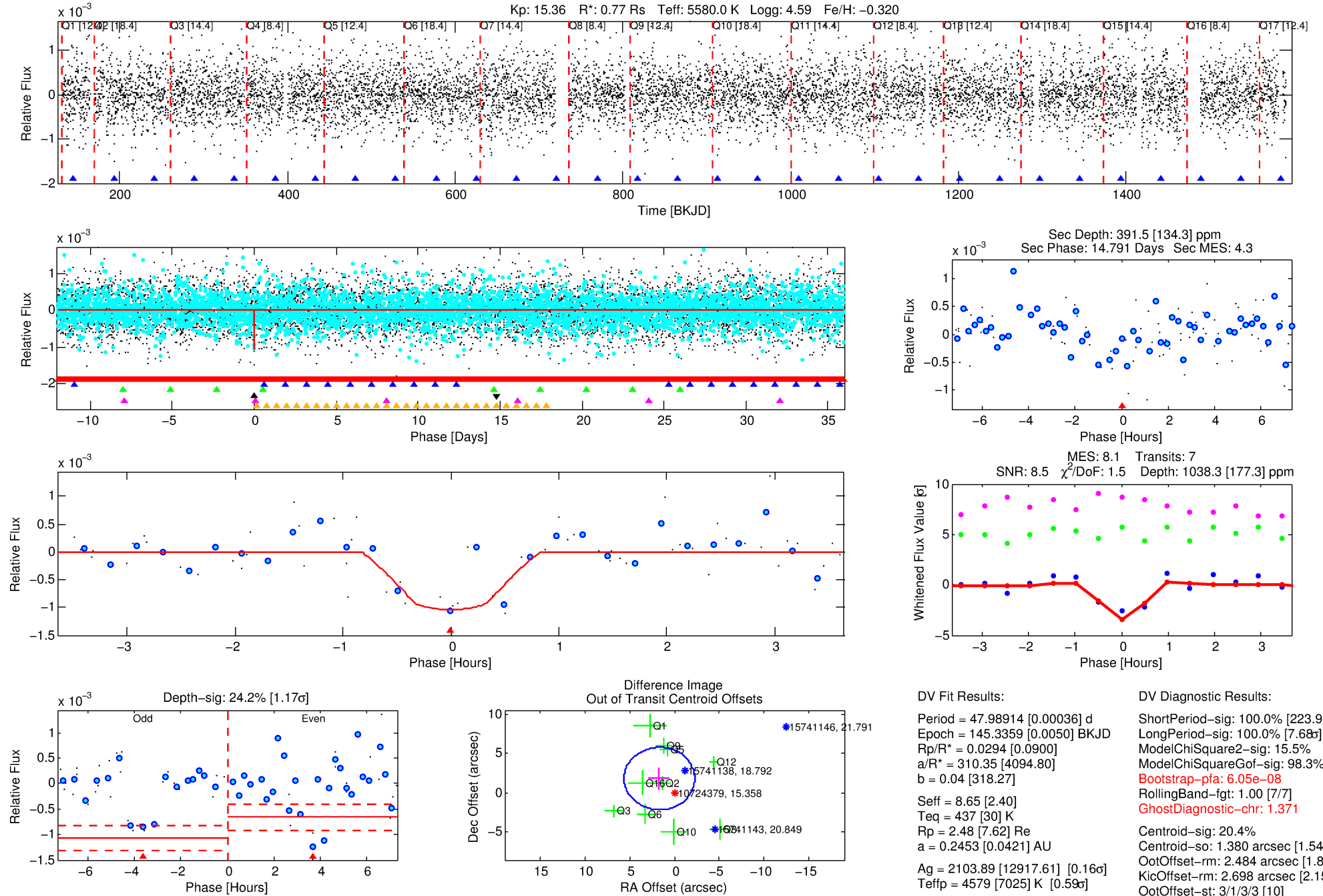
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010724379-04

No Significant Match Found

DV One-Page Summary

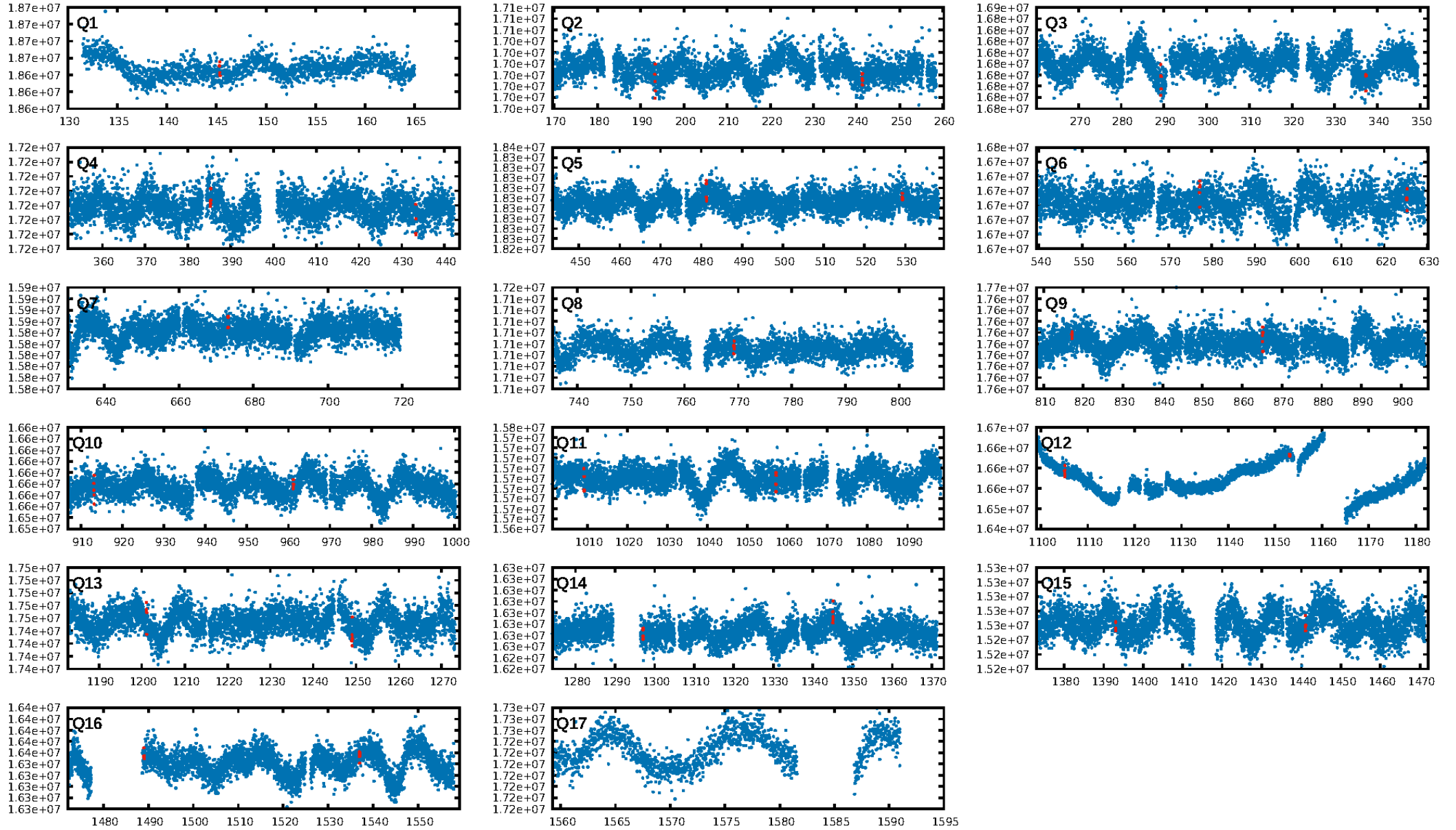
KIC: 10724379 Candidate: 4 of 6 Period: 47.989 d



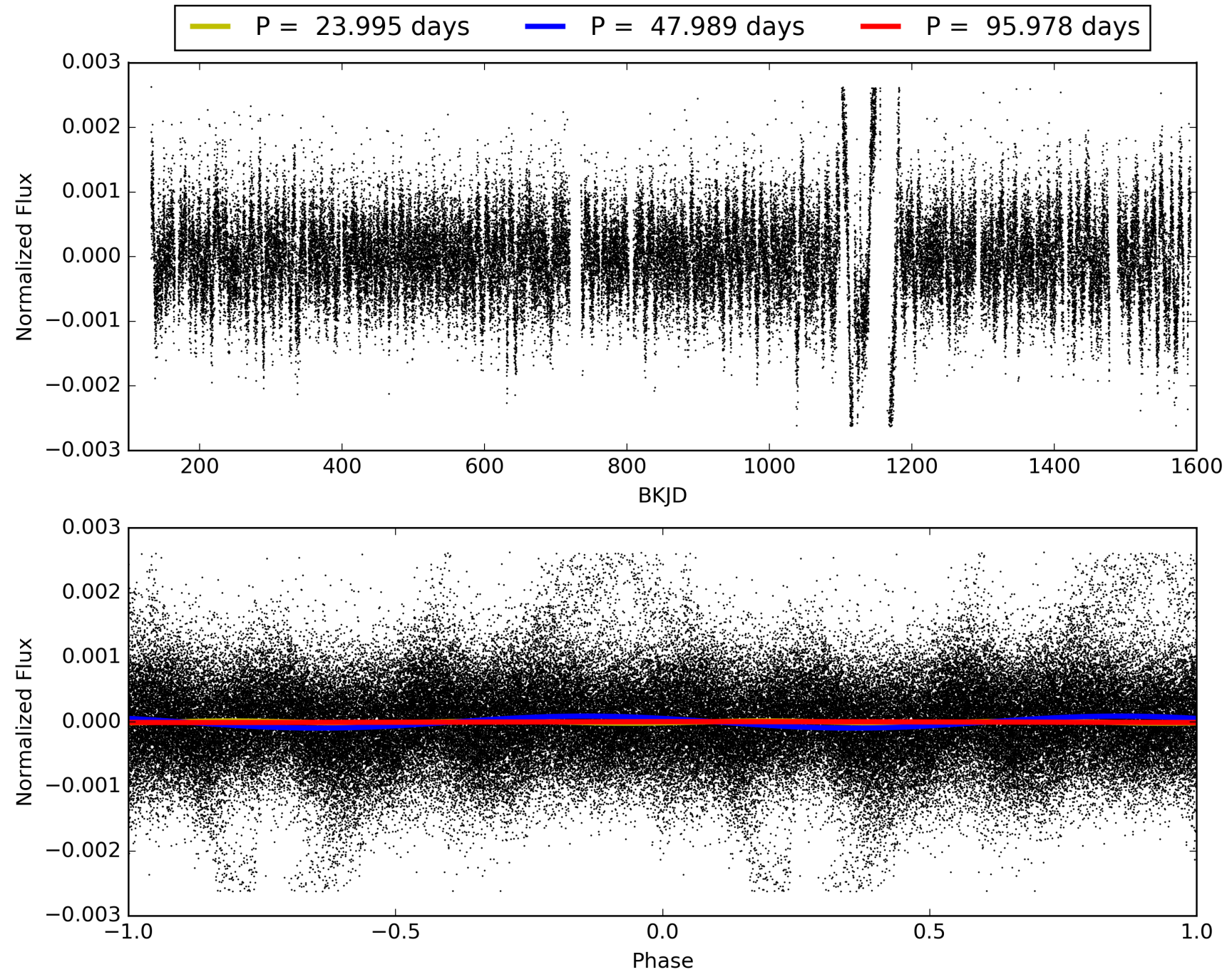
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:59:05 Z

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

TCE 010724379-04, PDC Light Curves

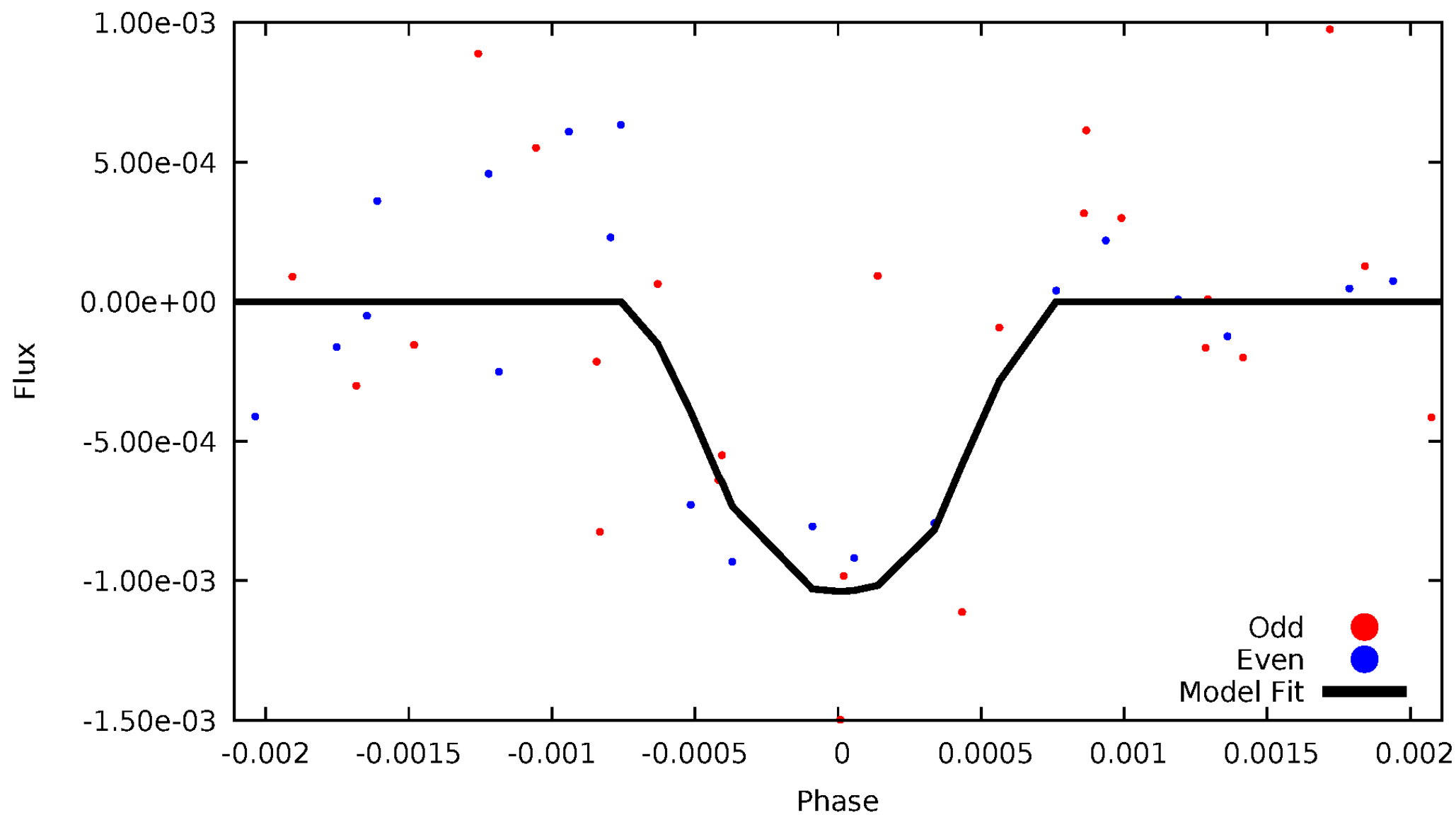


TCE 010724379-04



DV Odd/Even

TCE 010724379-04

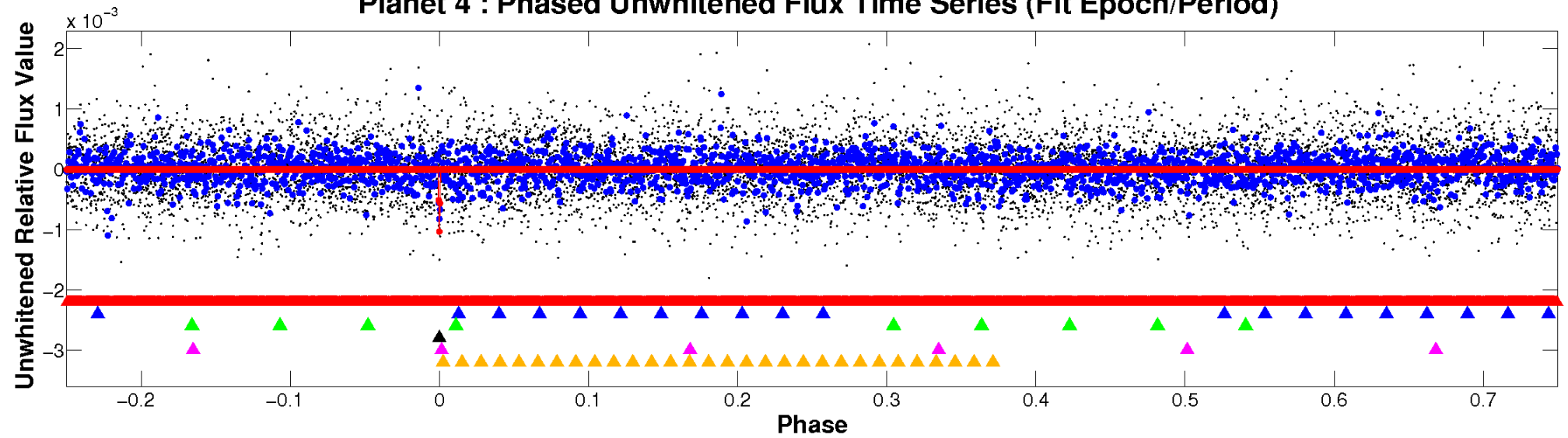


ALT Odd/Even

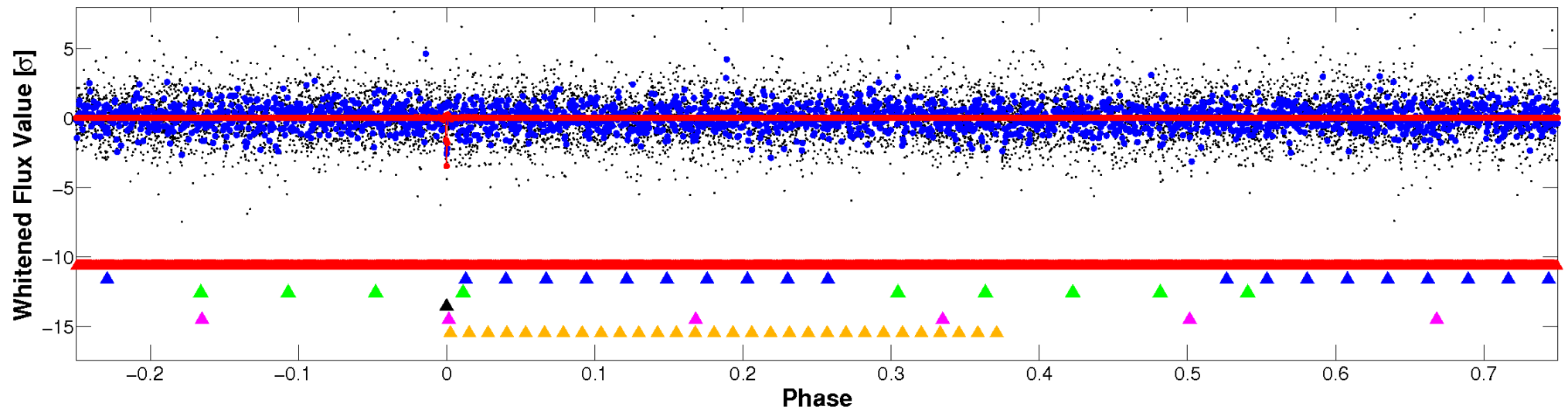
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

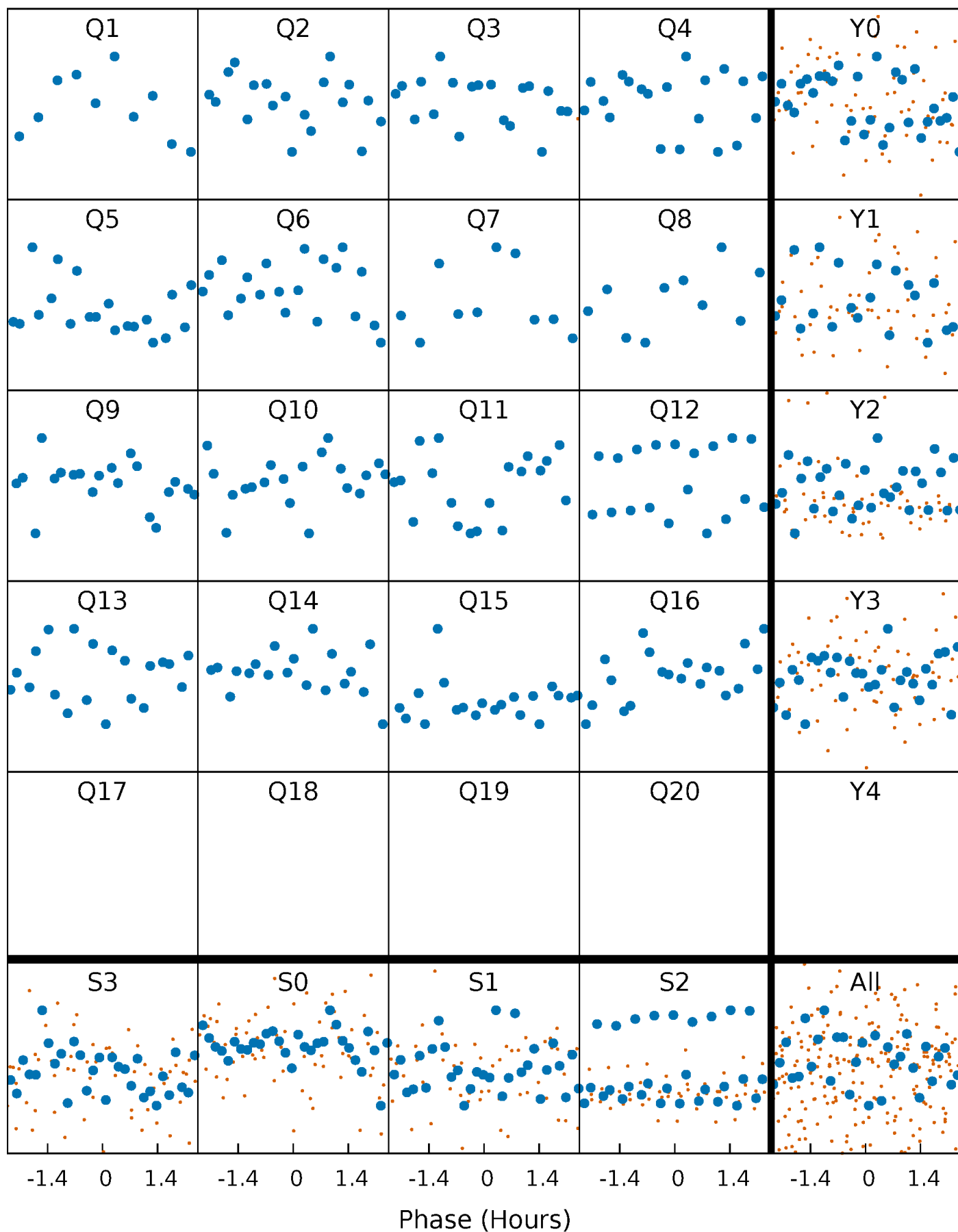


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



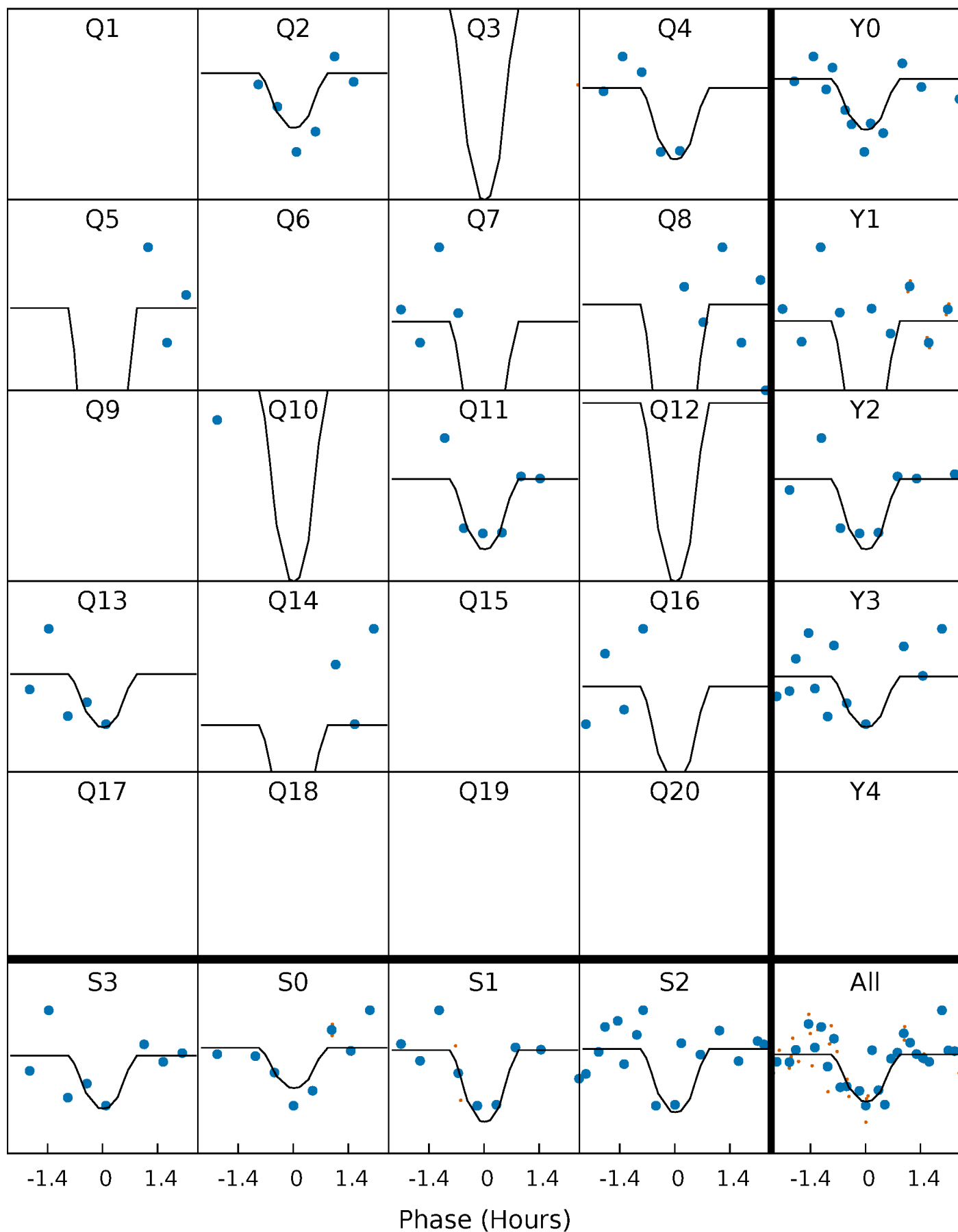
PDC Quarter-Phased Transit Curves

TCE 010724379-04 P= 47.989144 Days $T_0=145.335881$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010724379-04 P= 47.989144 Days $T_0=145.335881$ (BKJD)

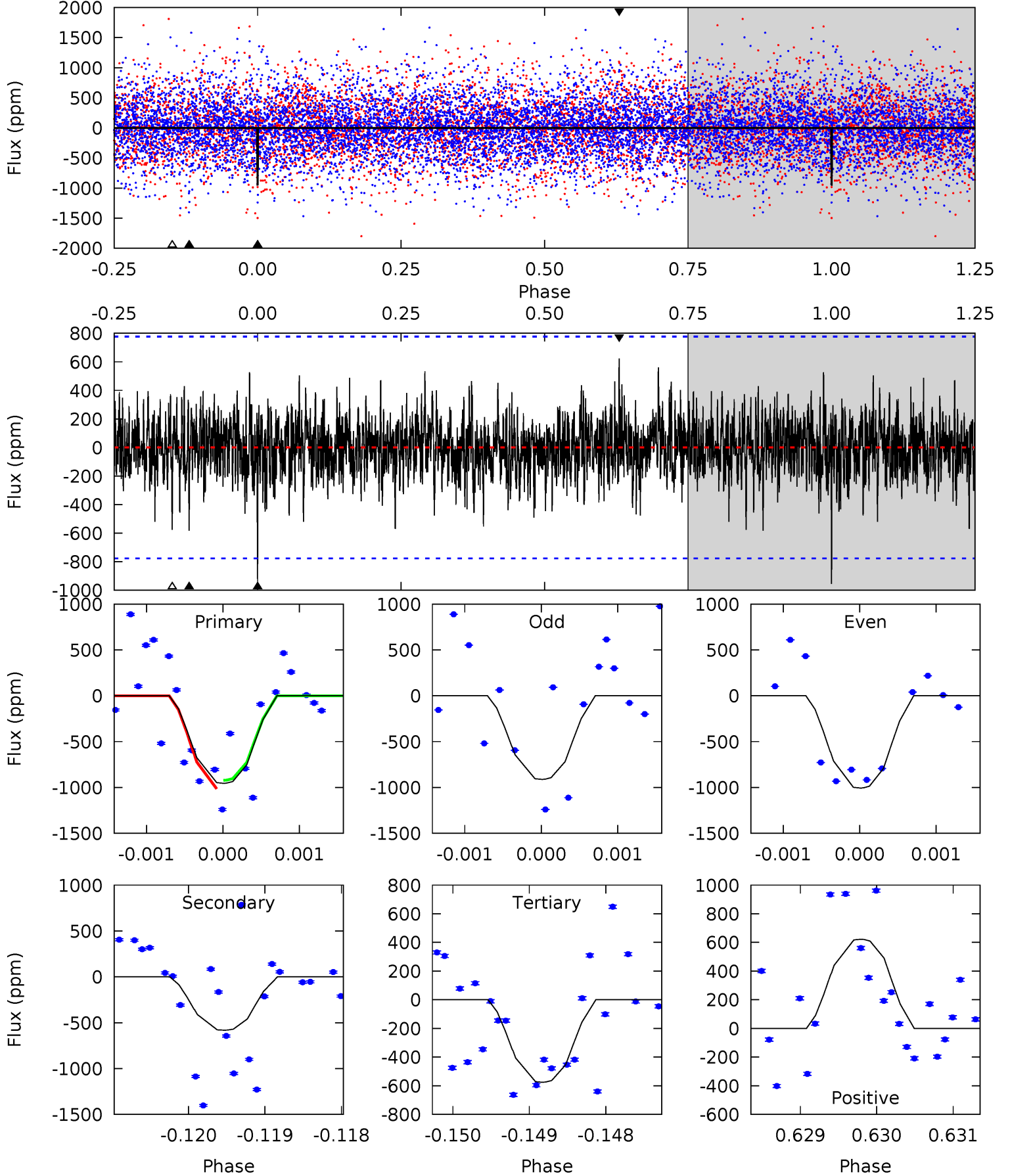


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010724379-04, P = 47.989144 Days, E = 97.346737 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.69	4.08	4.03	4.36	5.44	3.27	1.13	2.66	2.33	0.04	-0.28	0.33	0.91	0.39	0.32



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010724379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5580^{+152}_{-169}	$4.592^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.774^{+0.158}_{-0.068}$	$0.865^{+0.080}_{-0.106}$	$2.633^{+0.474}_{-1.027}$
	+3%/-3%	+1%/-3%	+94%/-94%	+20%/-9%	+9%/-12%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010724379-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-582 ± 143	$6.40^{+6.62}_{-4.46}$	621^{+32}_{-25}	3605^{+2253}_{-693}	461^{+4702}_{-353}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

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

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

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

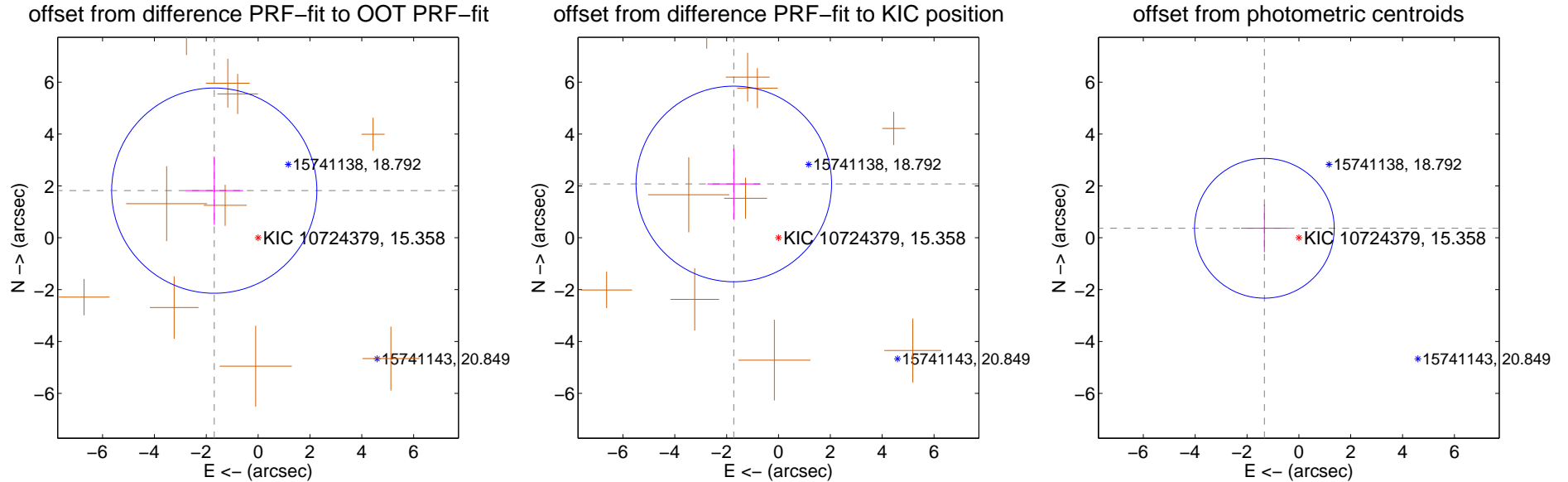
DV Centroid Data

Supplemental centroid analysis for 010724379-04. Kepler magnitude: 15.36. Transit SNR 8.51

There are 0 quarters with good PRF difference image offsets

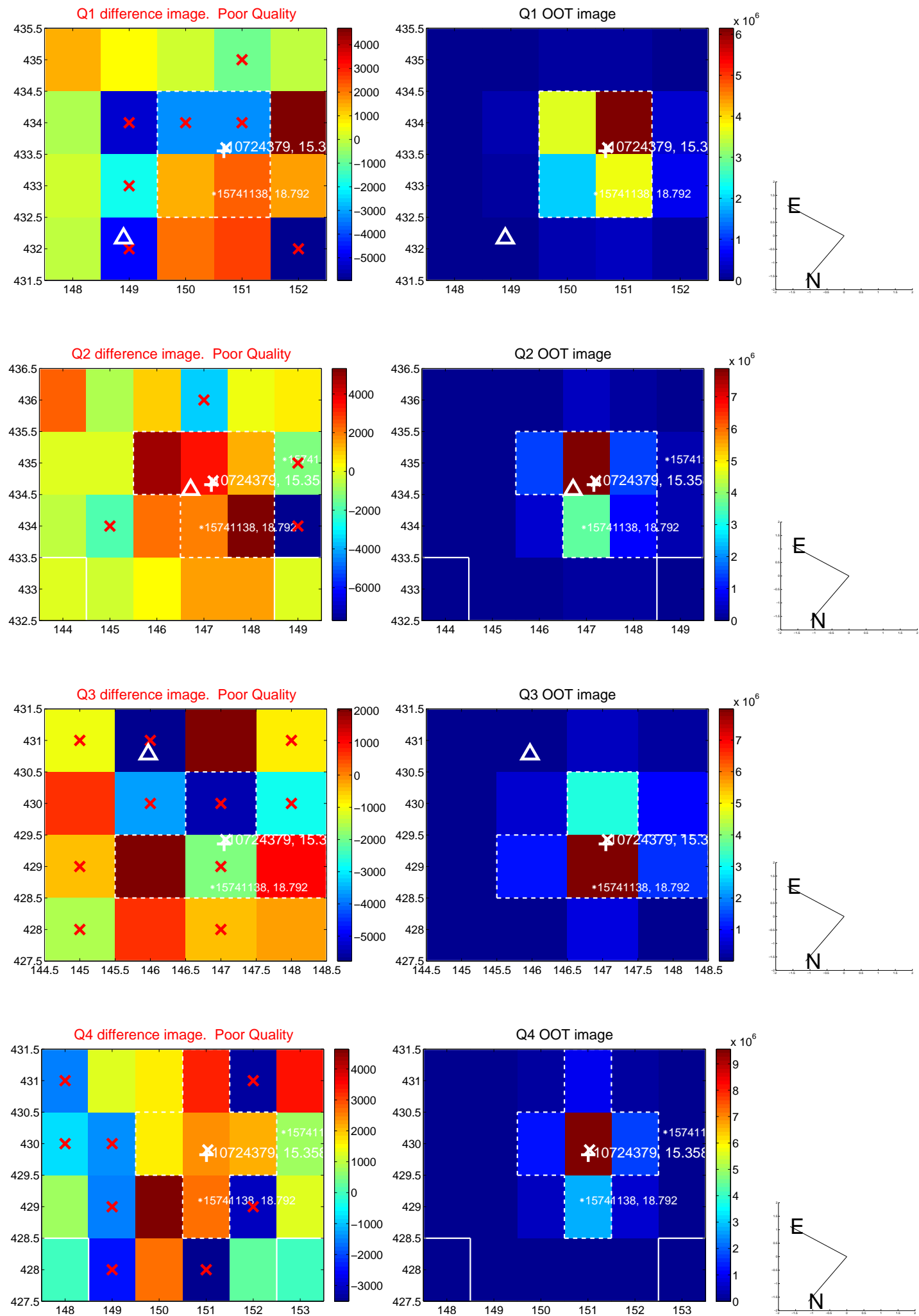
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.484 ± 1.319	1.88	1.692 ± 1.114	1.818 ± 1.318
PRF-fit source offset from KIC position	2.698 ± 1.257	2.15	1.724 ± 1.023	2.076 ± 1.366
photometric centroid source offset	1.38 ± 0.90	1.54	1.33 ± 0.90	0.37 ± 0.92

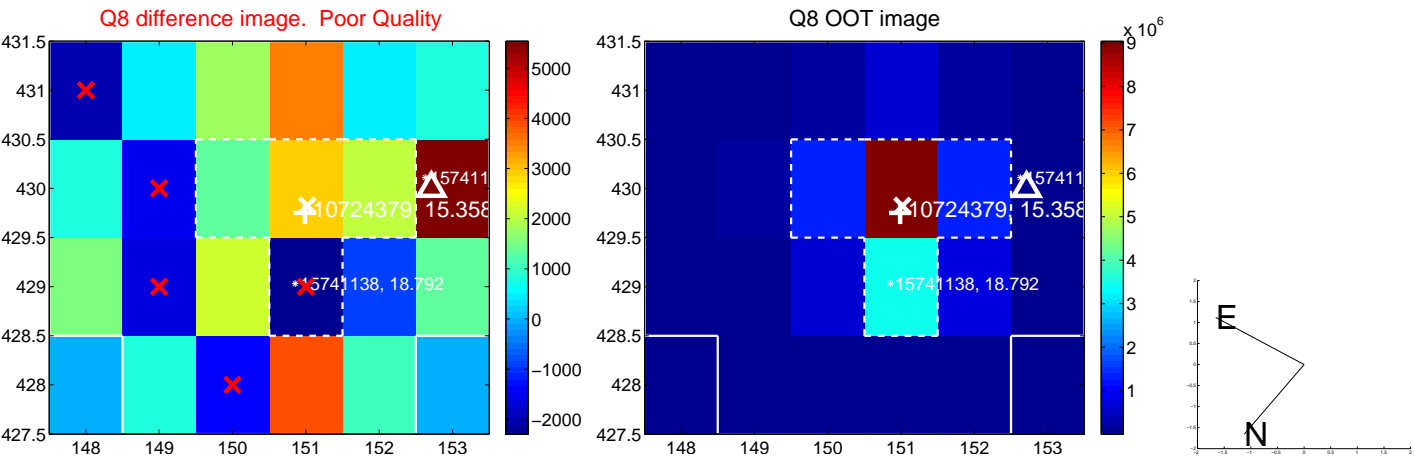
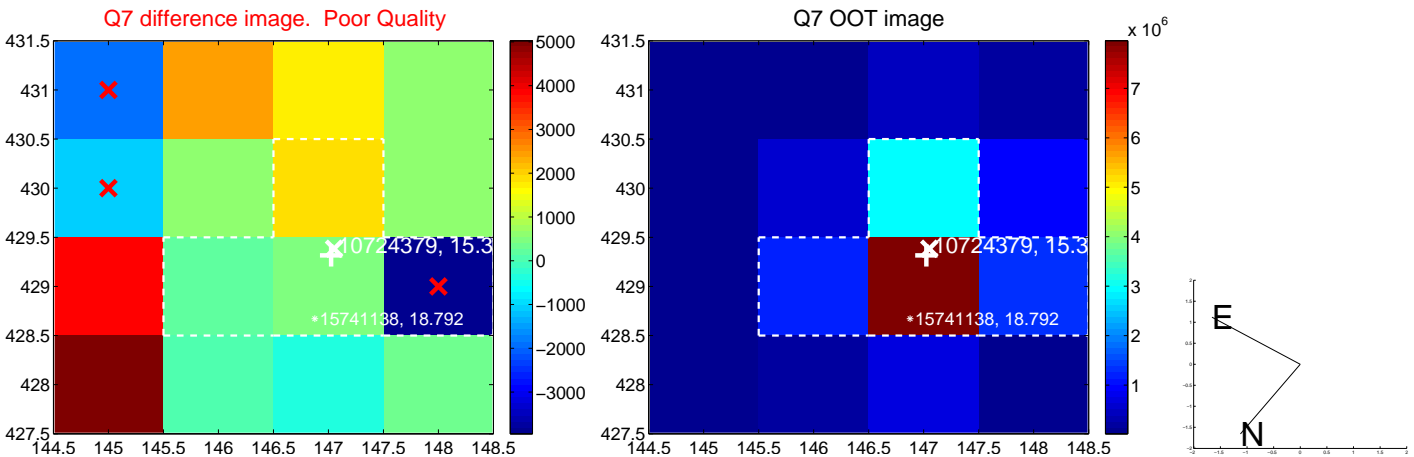
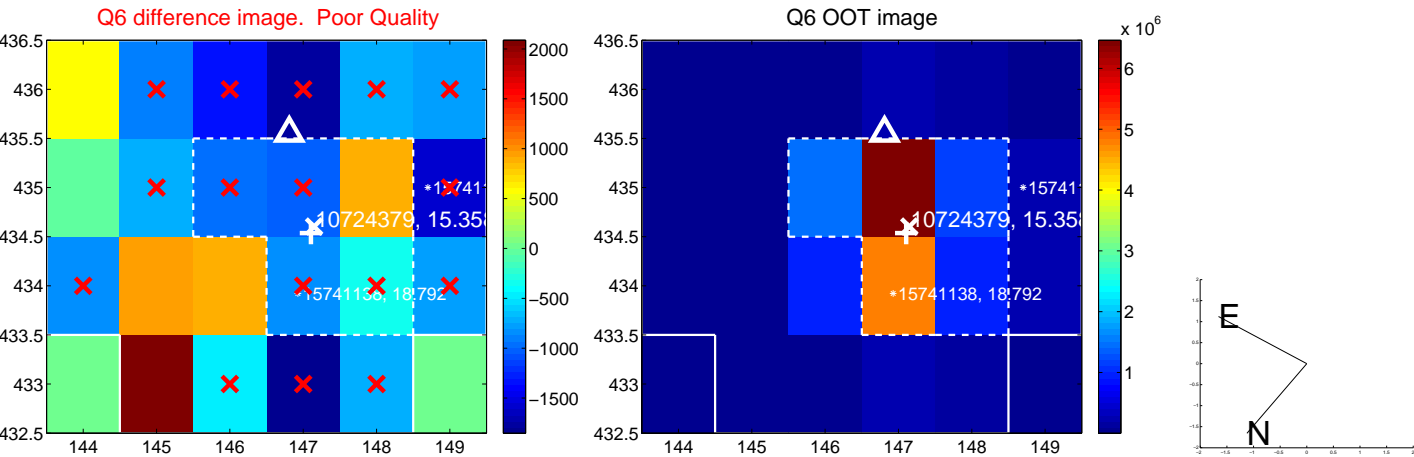
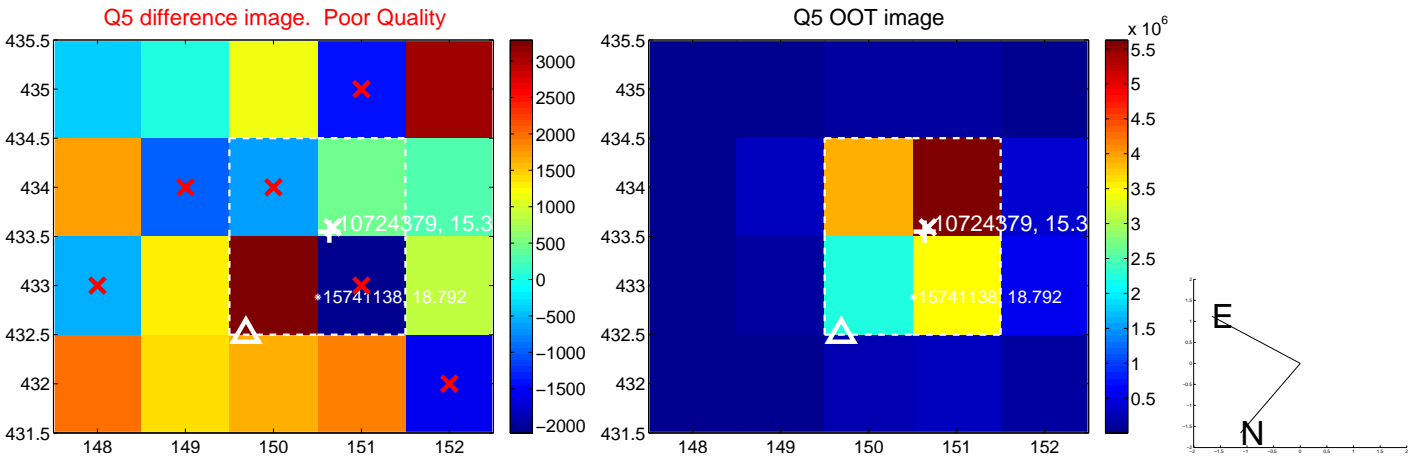


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

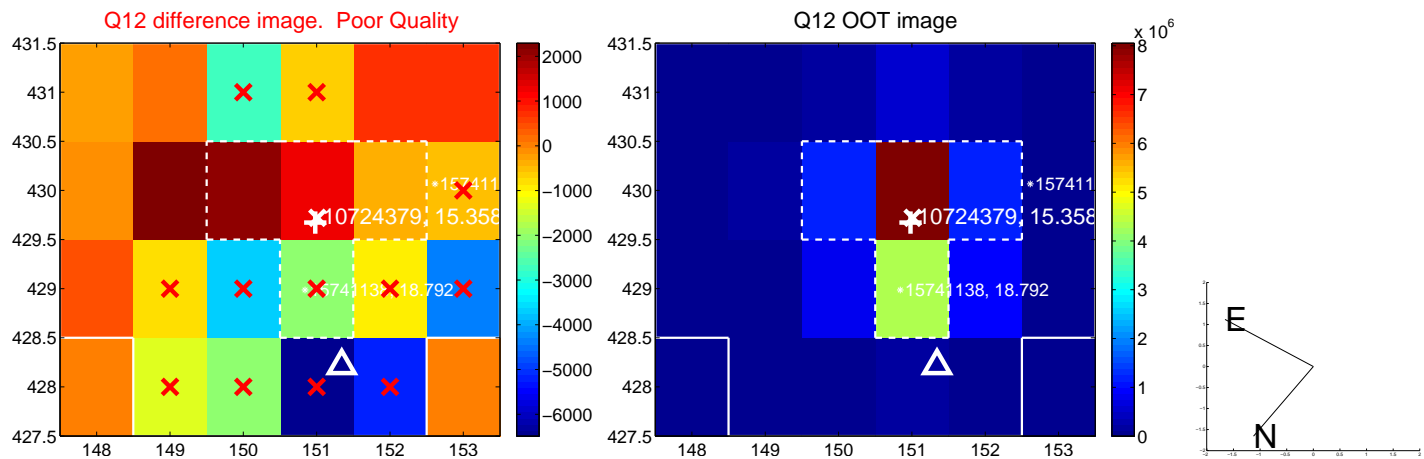
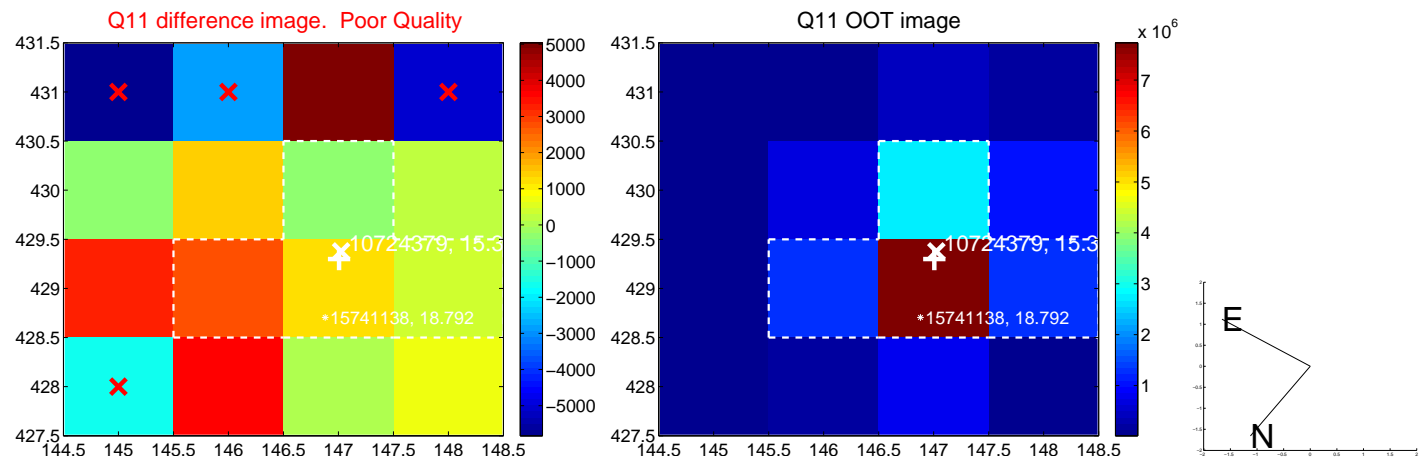
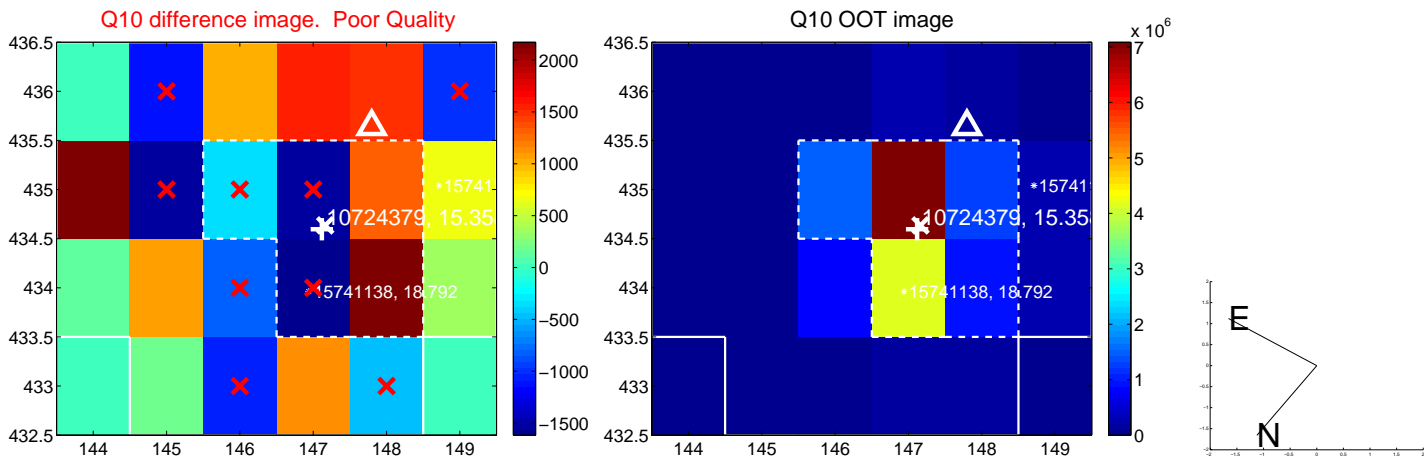
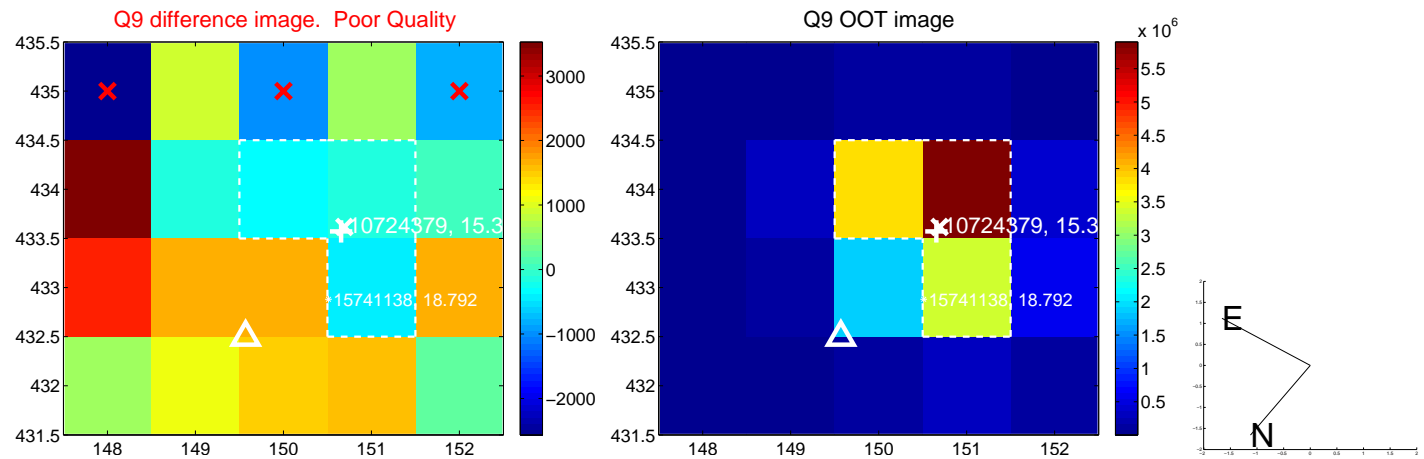
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



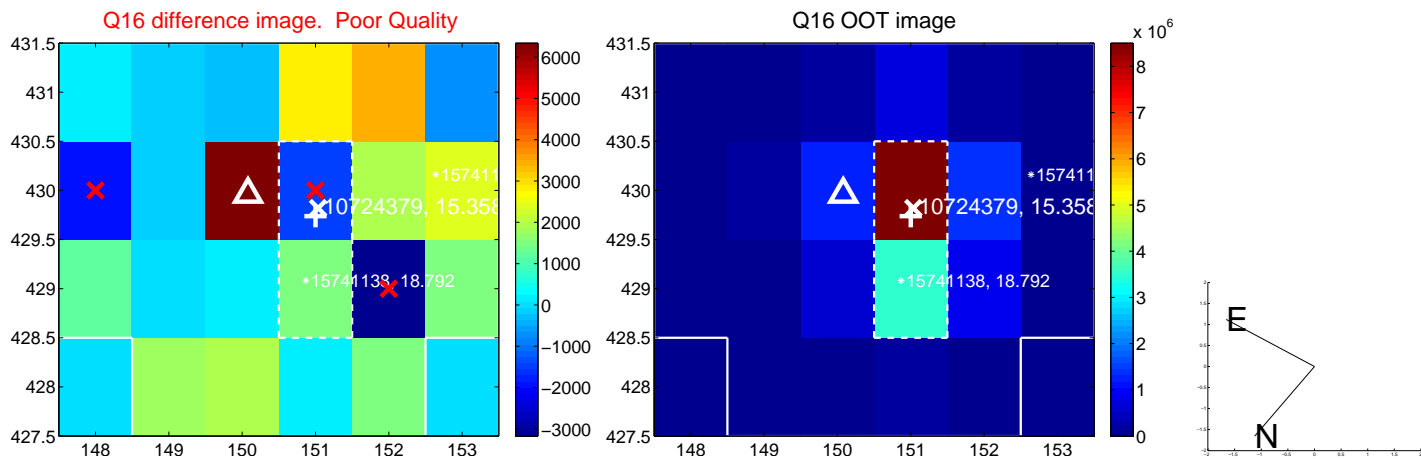
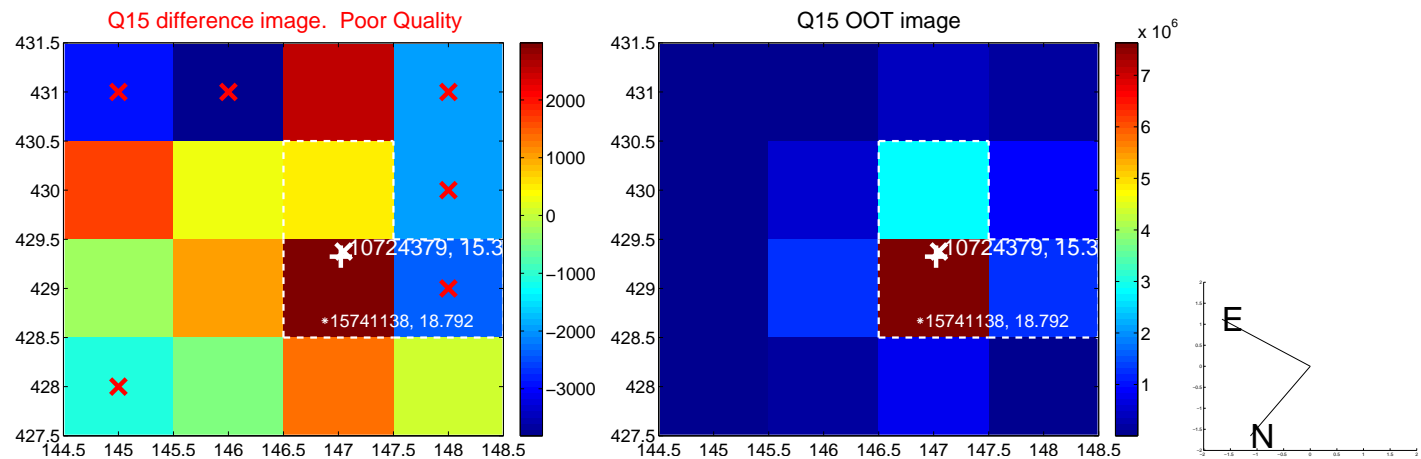
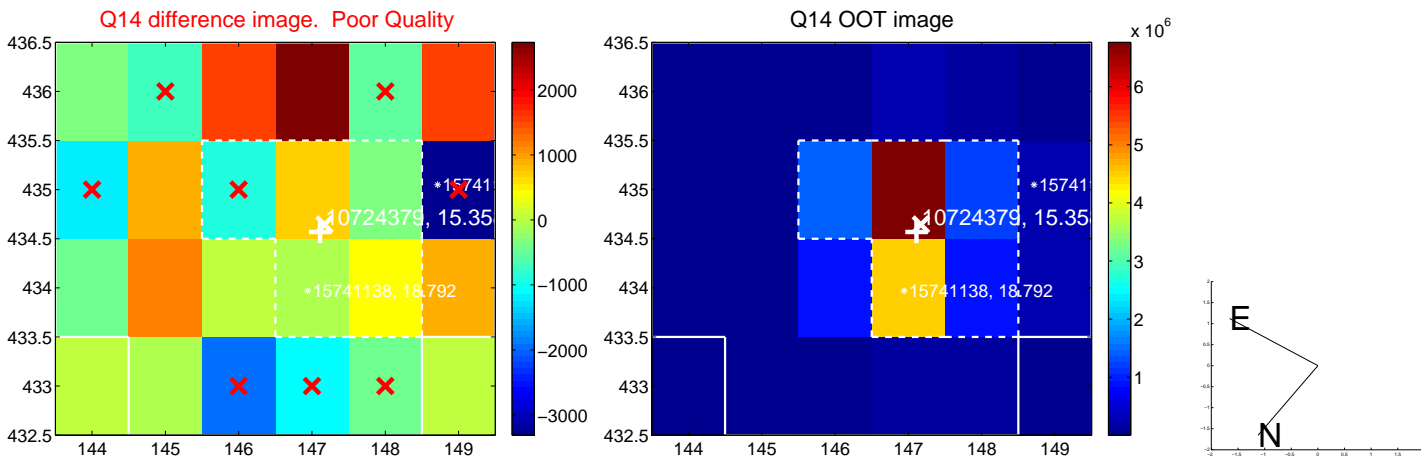
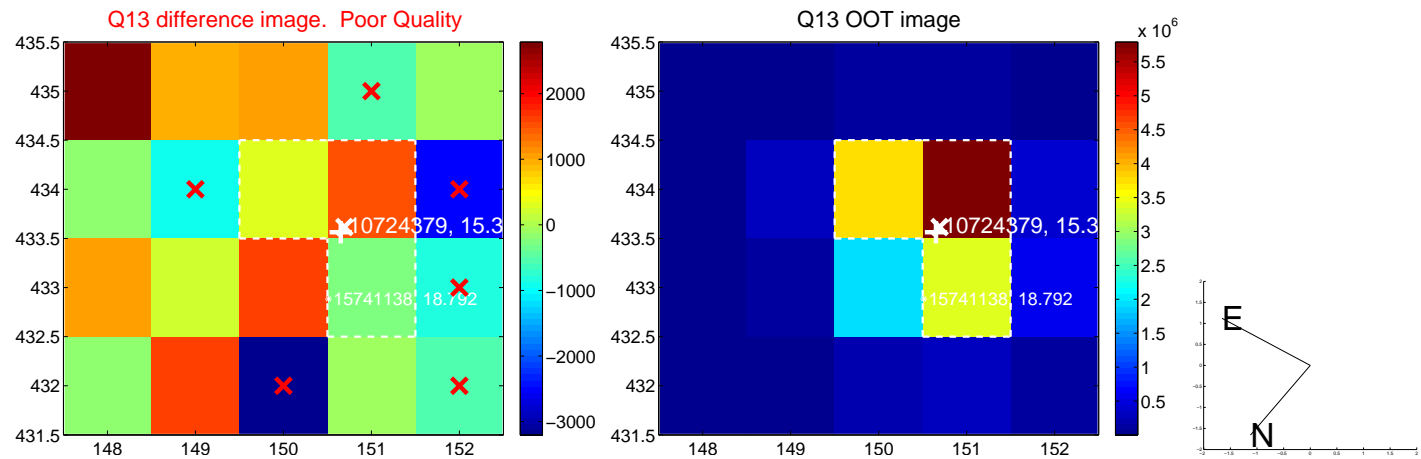
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



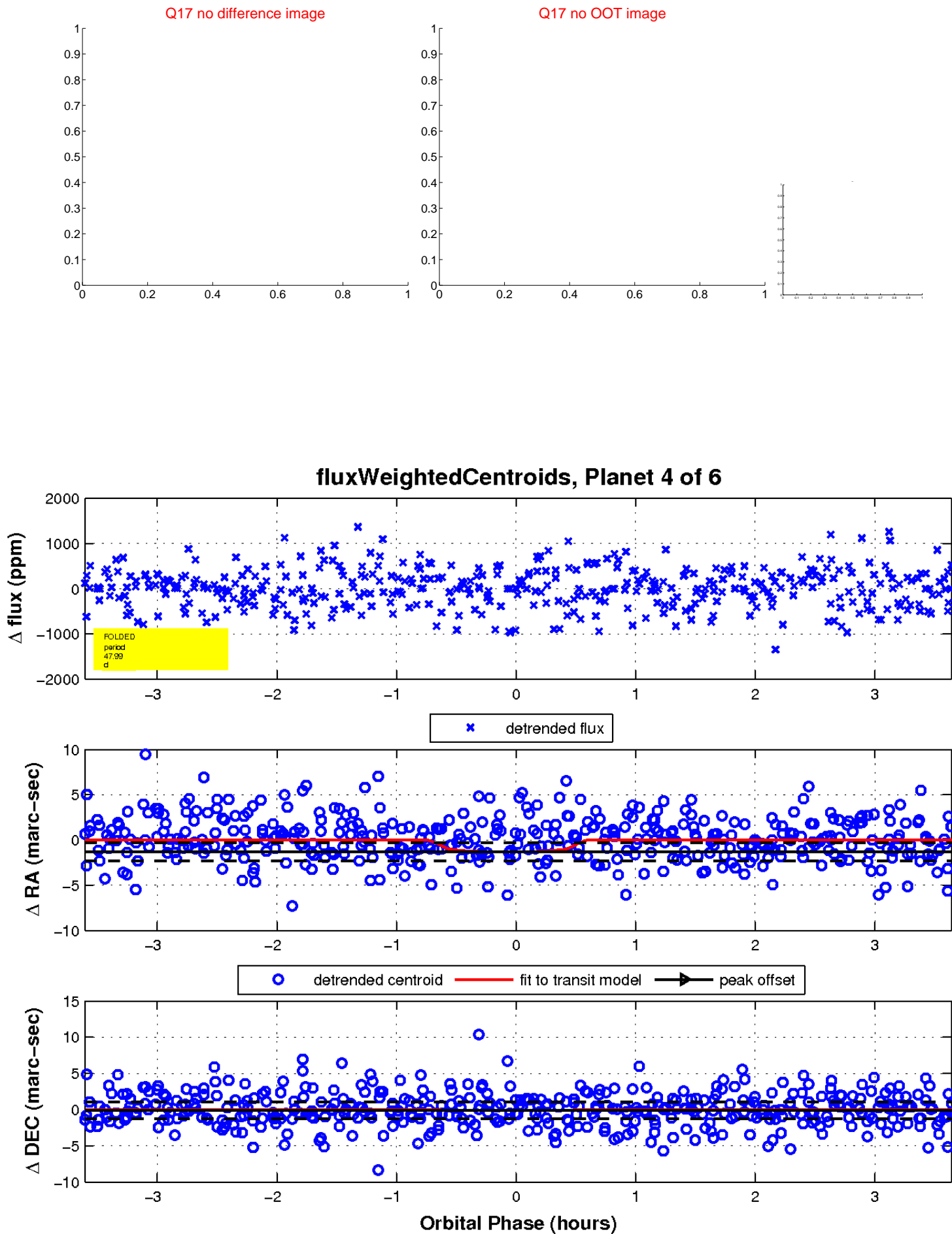
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



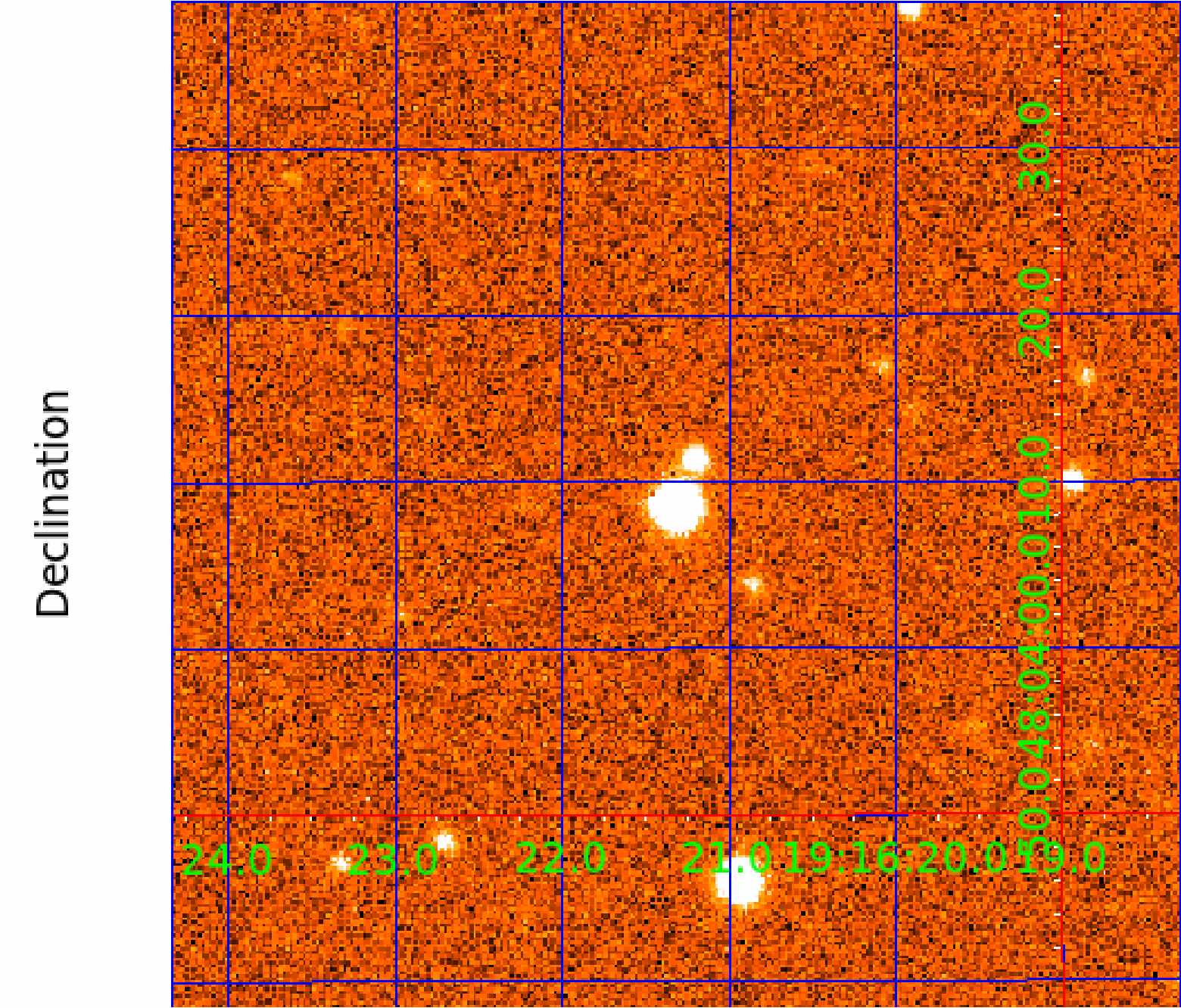
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010724379

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})
010724379-01	OBS	No	0.745032	131.870194	17.9	4.916	8.2	4.0	0.77	5580	0.32	2233.70
010724379-02	OBS	No	71.332053	182.331832	514.3	8.579	9.0	7.0	0.77	5580	2.08	5.10
010724379-03	OBS	No	169.377922	207.943304	1233.1	2.500	8.8	-1.0	0.77	5580	2.69	1.61
010724379-04	OBS	No	47.989144	145.335881	1038.3	1.215	8.1	8.5	0.77	5580	2.48	8.65
010724379-05	OBS	No	135.968084	137.416445	547.0	4.931	8.8	7.9	0.77	5580	2.06	2.16
010724379-06	OBS	No	48.599286	145.457815	880.3	1.470	9.6	8.5	0.77	5580	2.42	8.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010724379-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010724379-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
010724379-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010724379-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

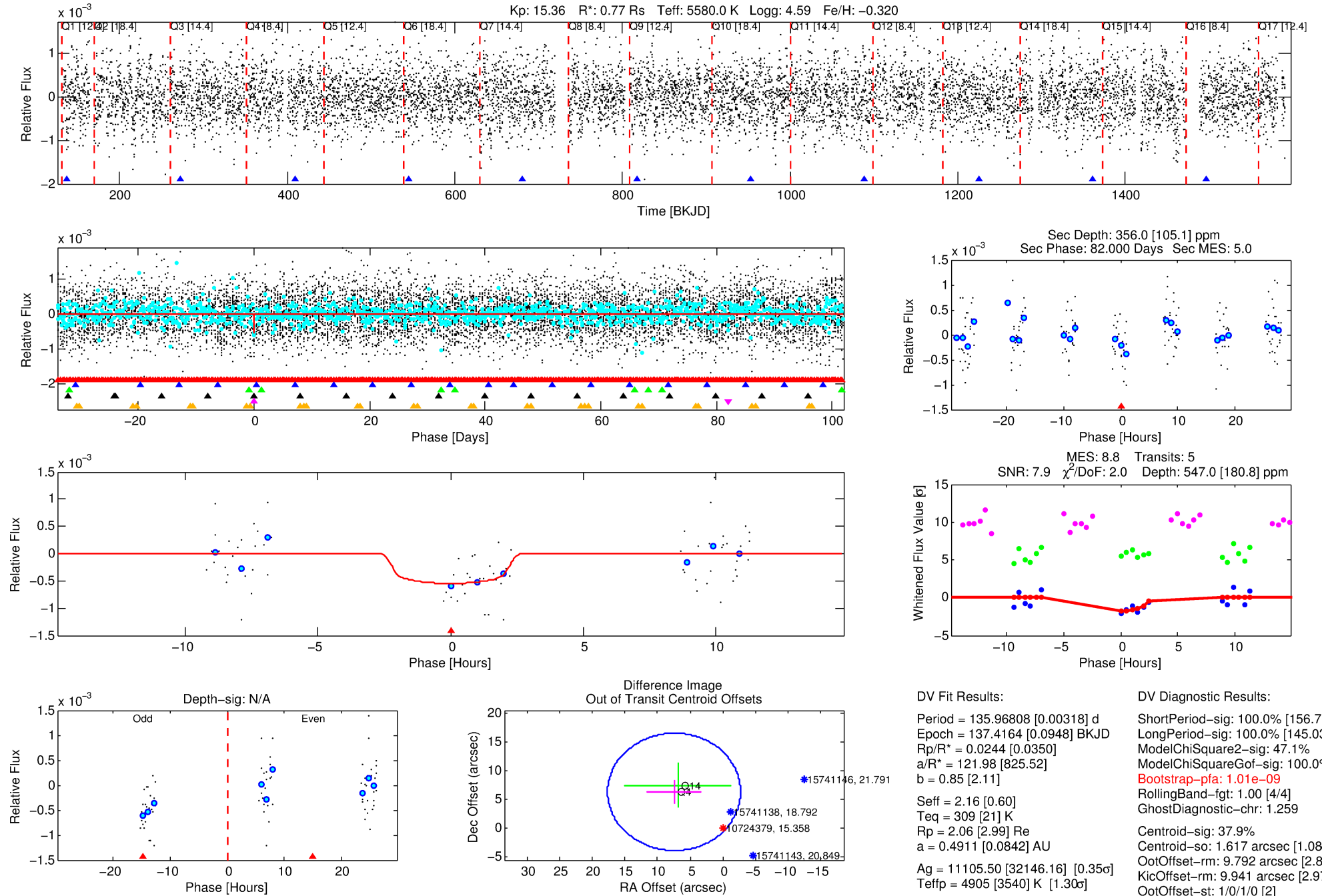
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010724379-05

No Significant Match Found

DV One-Page Summary

KIC: 10724379 Candidate: 5 of 6 Period: 135.968 d



DV Fit Results:

Period = 135.96808 [0.00318] d
Epoch = 137.4164 [0.0948] BKJD
Rp/R* = 0.0244 [0.0350]
a/R* = 121.98 [825.52]
b = 0.85 [2.11]
Seff = 2.16 [0.60]
Teq = 309 [21] K
Rp = 2.06 [2.99] Re
a = 0.4911 [0.0842] AU
Ag = 11105.50 [32146.16] [0.35] σ
Teffp = 4905 [3540] K [1.30] σ

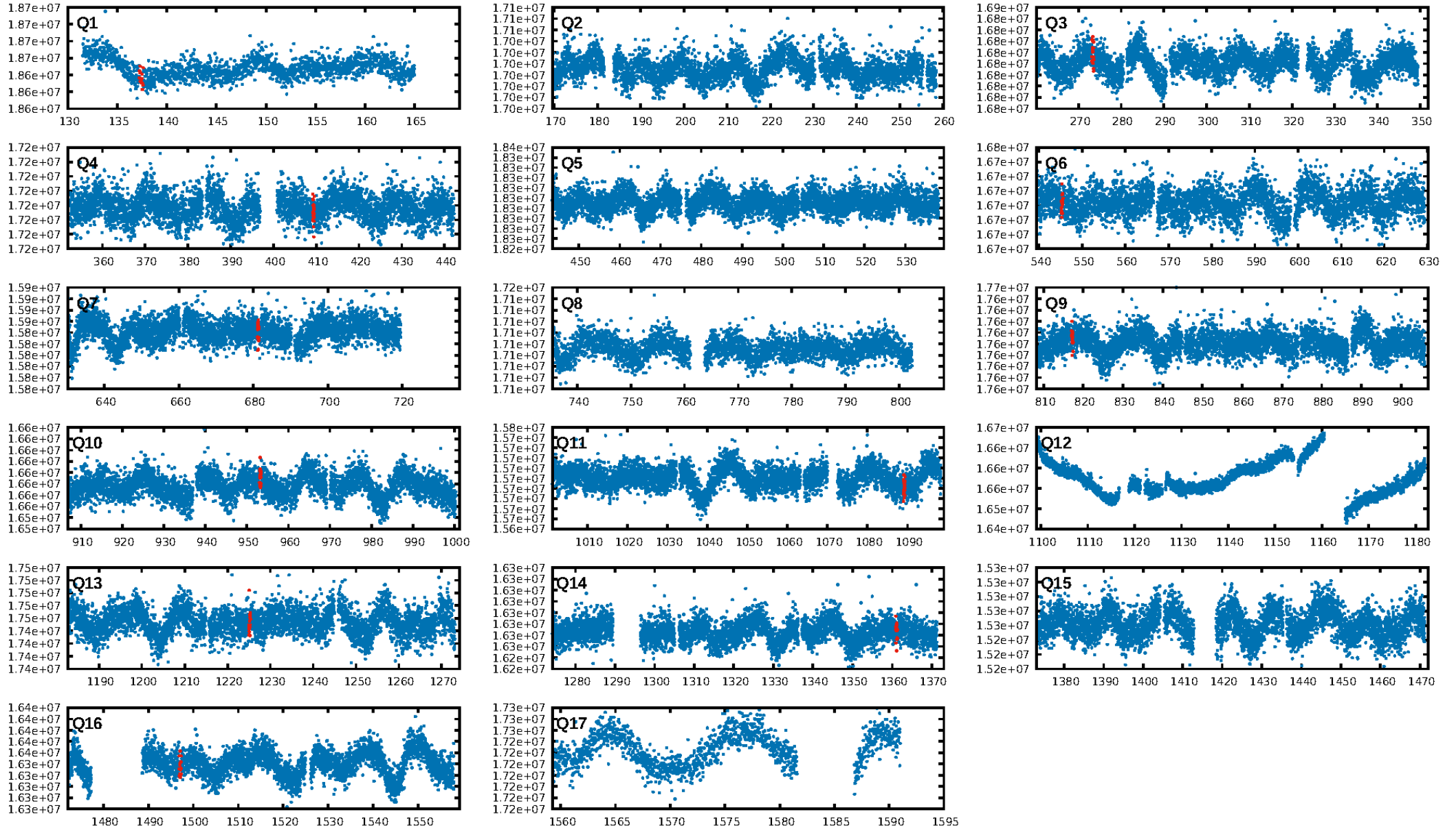
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [156.77 σ]
LongPeriod-sig: 100.0% [145.03 σ]
ModelChiSquare2-sig: 47.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.259
Centroid-sig: 37.9%
Centroid-so: 1.617 arcsec [1.08 σ]
OotOffset-rm: 9.792 arcsec [2.88 σ]
KicOffset-rm: 9.941 arcsec [2.97 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/11]

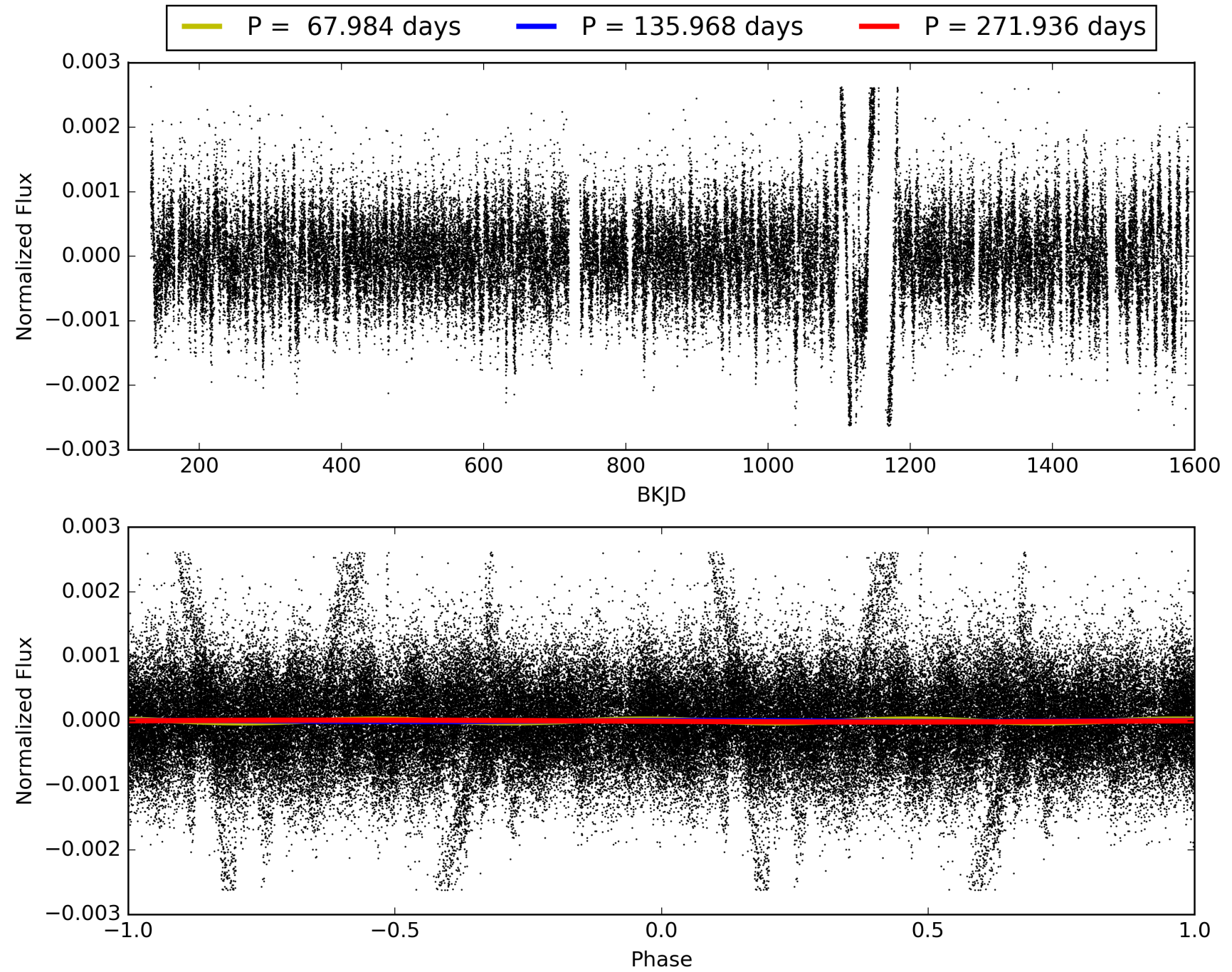
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:59:09 Z

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

TCE 010724379-05, PDC Light Curves

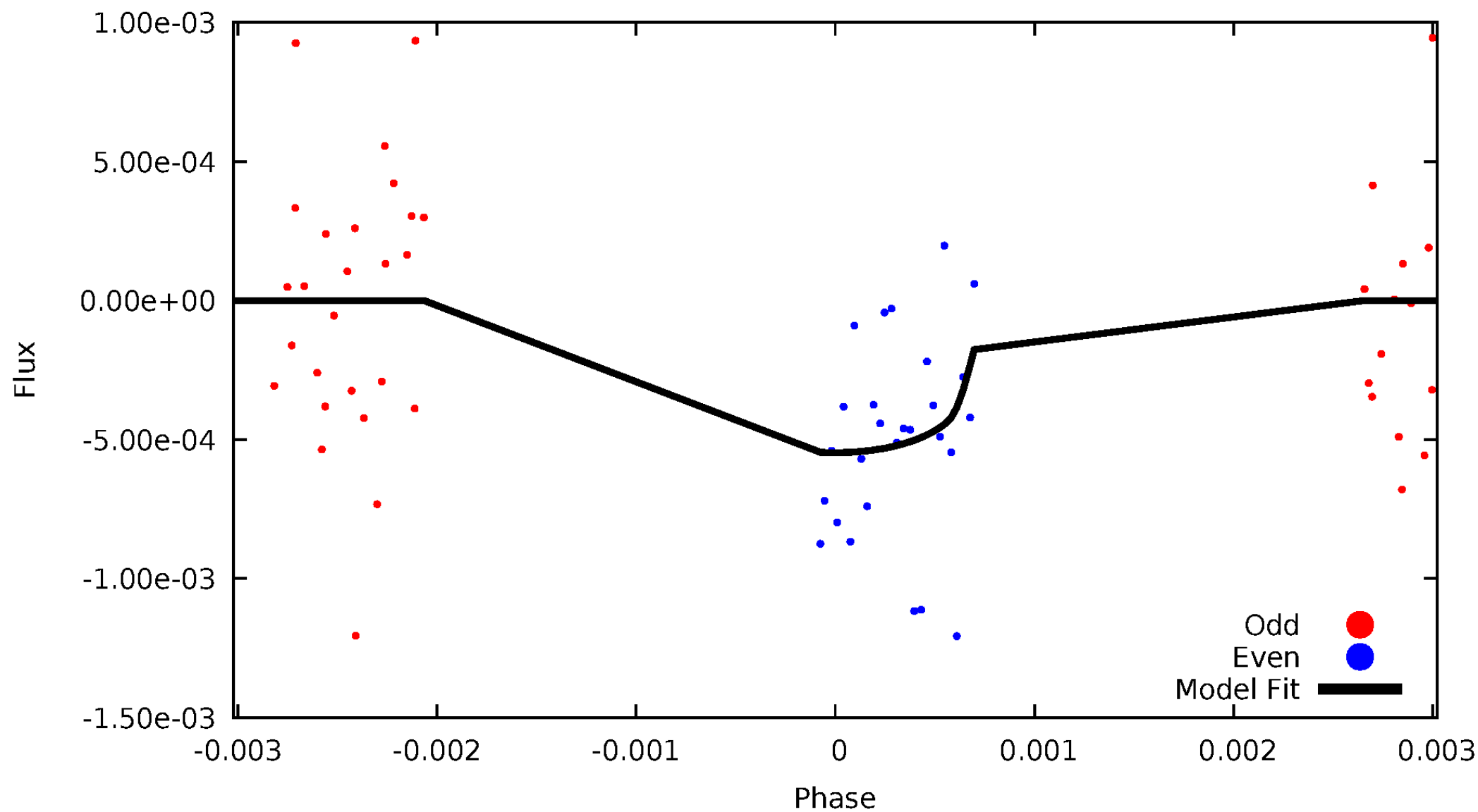


TCE 010724379-05



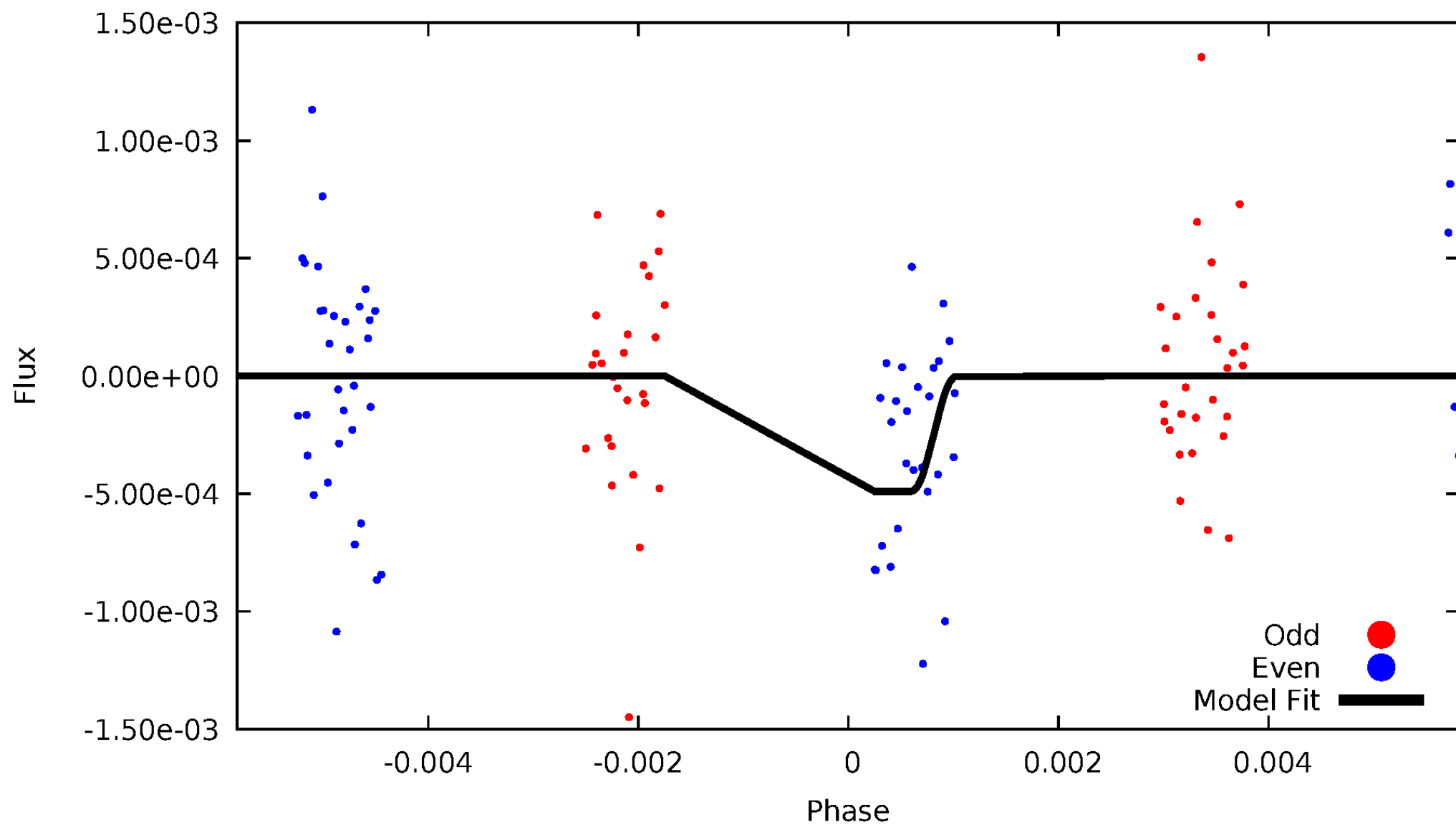
DV Odd/Even

TCE 010724379-05



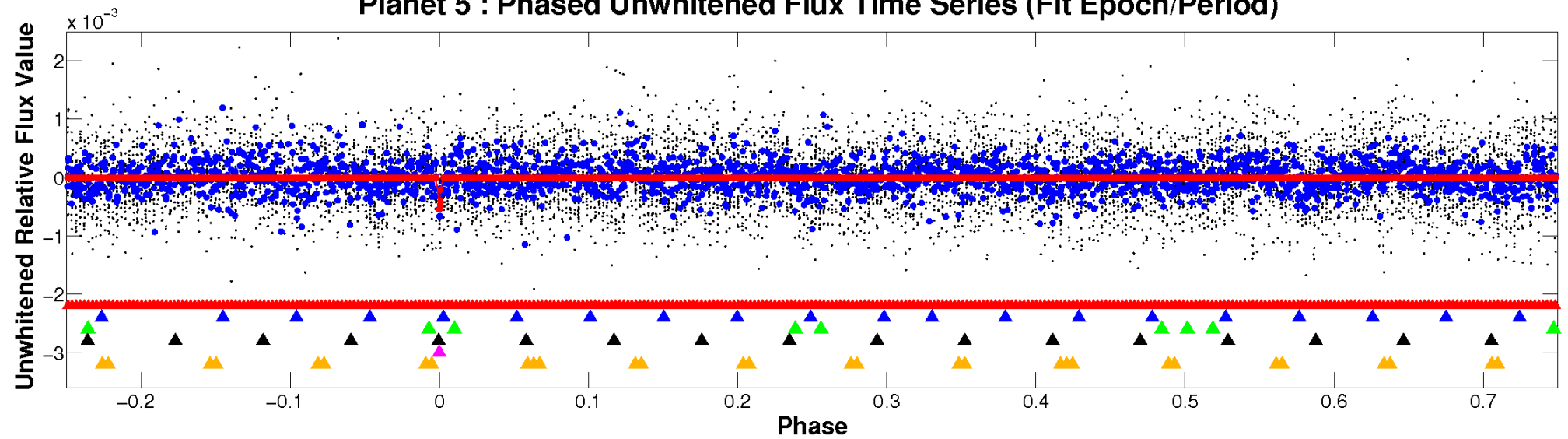
ALT Odd/Even

TCE 010724379-05

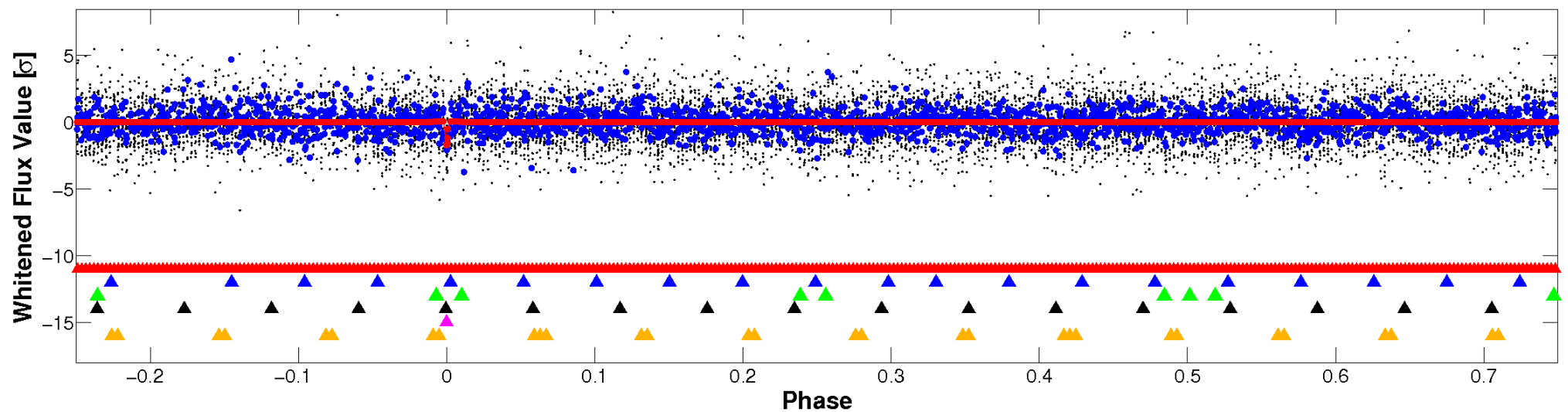


Non-Whitened Vs. Whitened Light Curve

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

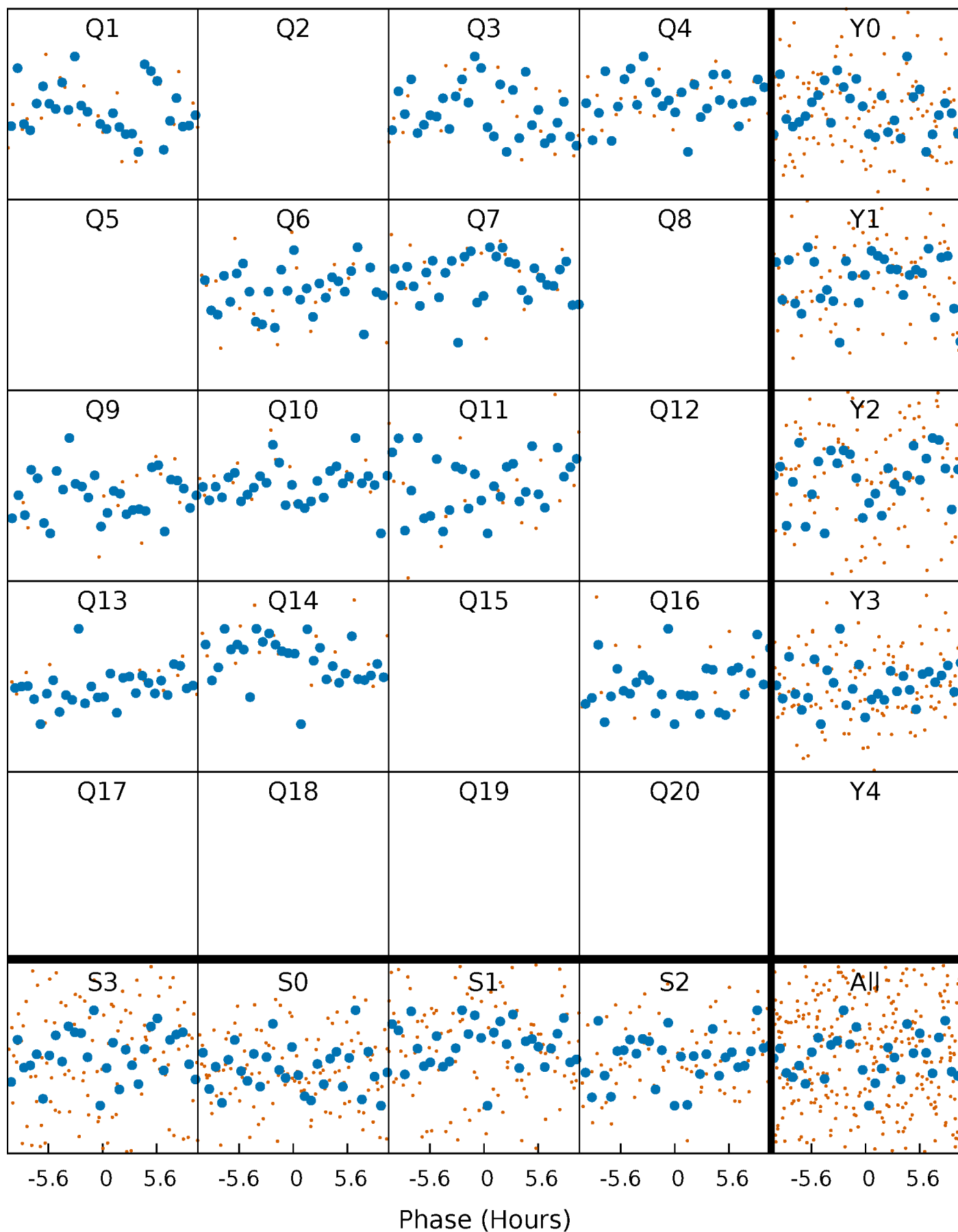


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



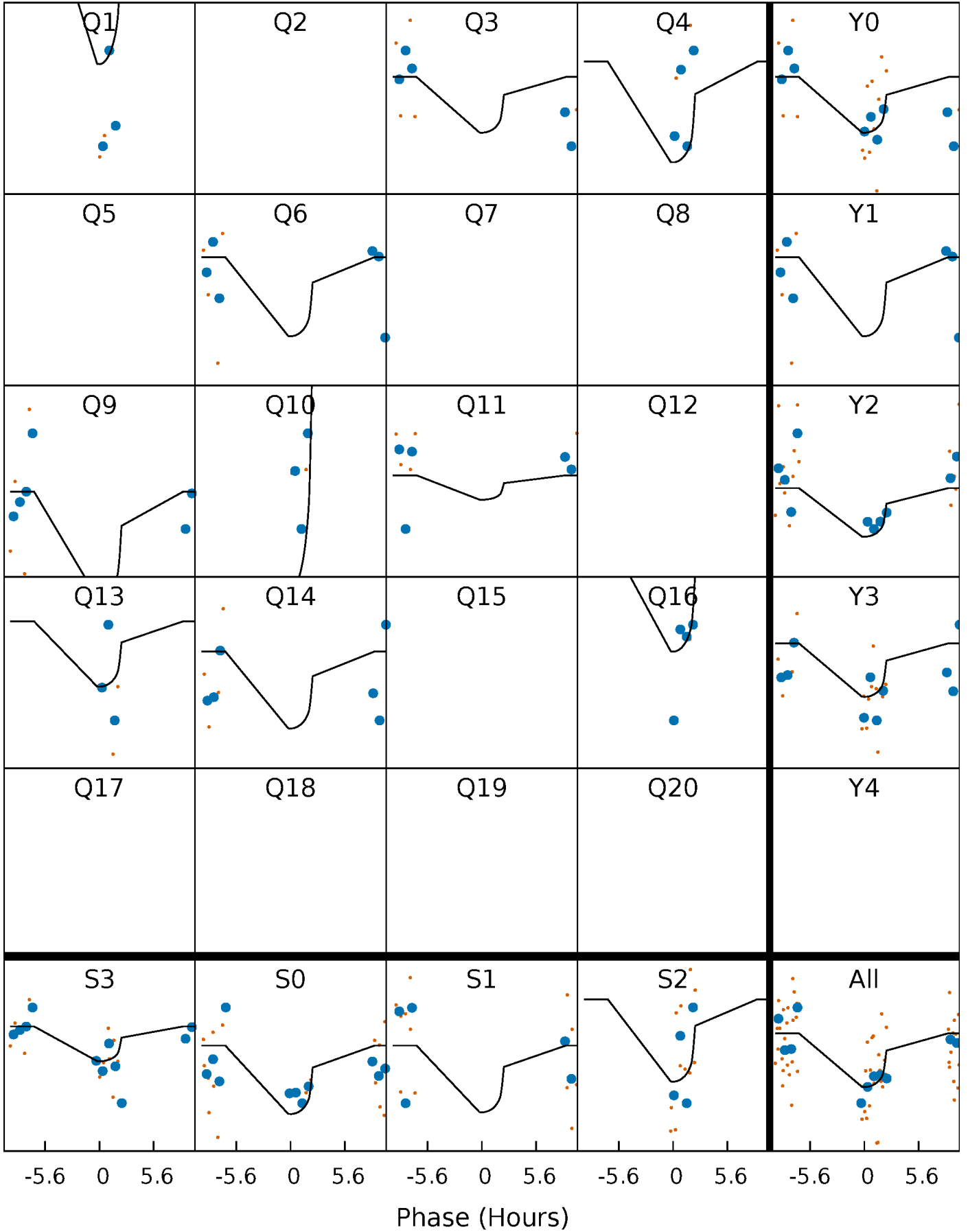
PDC Quarter-Phased Transit Curves

TCE 010724379-05 $P=135.968084$ Days $T_0=137.416445$ (BKJD)



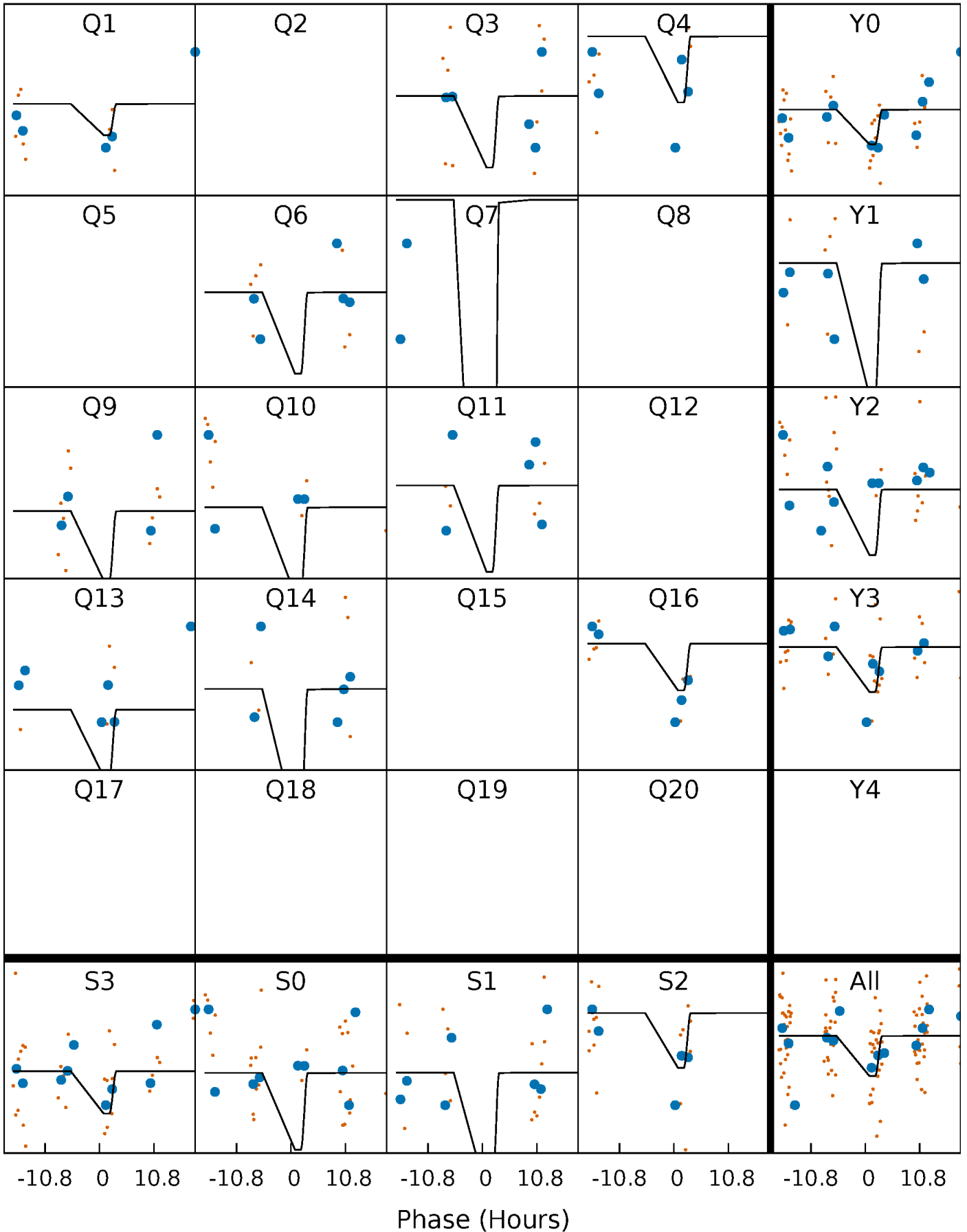
DV Quarter-Phased Transit Curves

TCE 010724379-05 $P=135.968084$ Days $T_0=137.416445$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

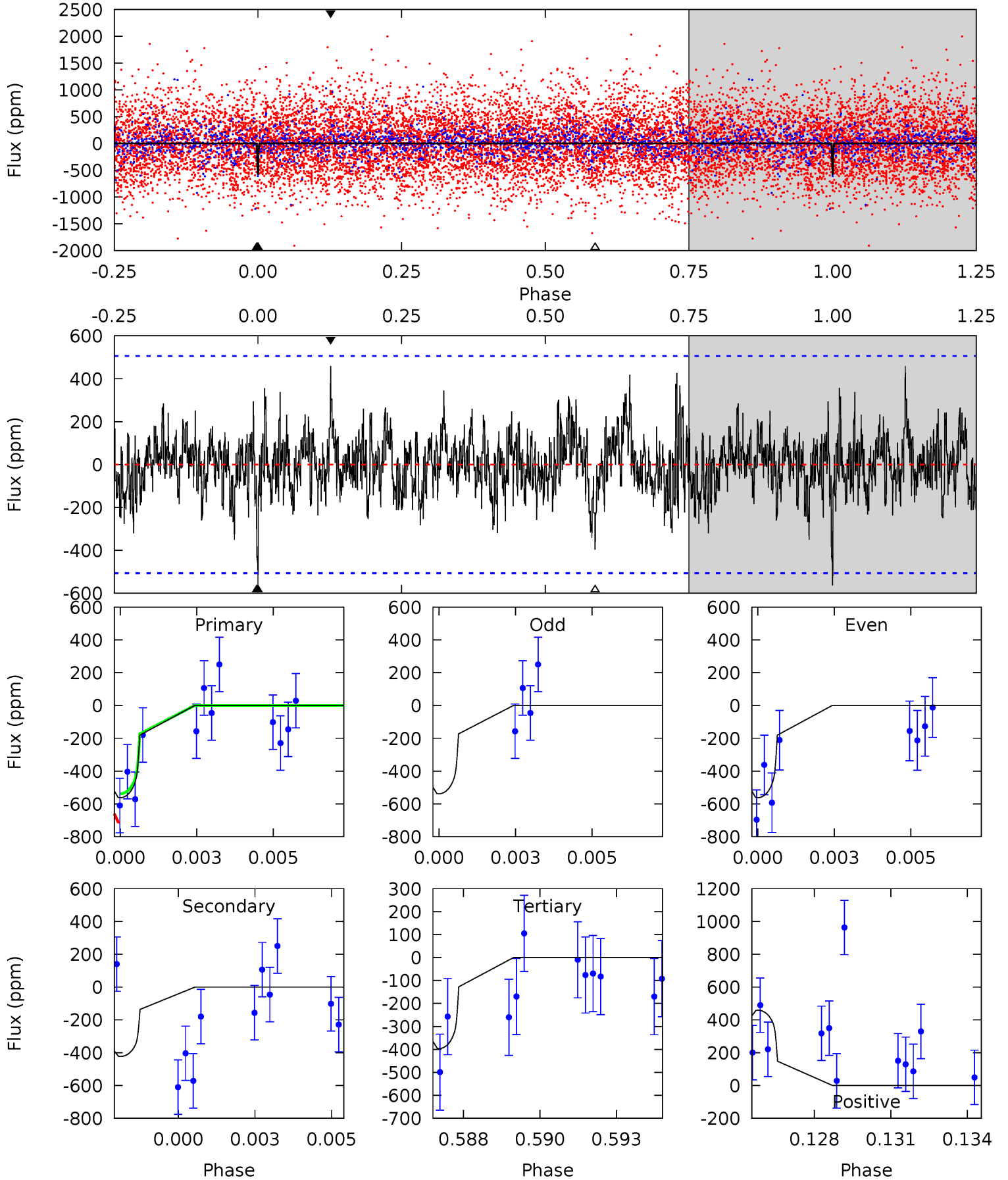
TCE 010724379-05 $P=135.967876$ Days $T_0=137.374145$ (BKJD)



DV Model-Shift Uniqueness Test

010724379-05, P = 135.968084 Days, E = 1.448361 Days

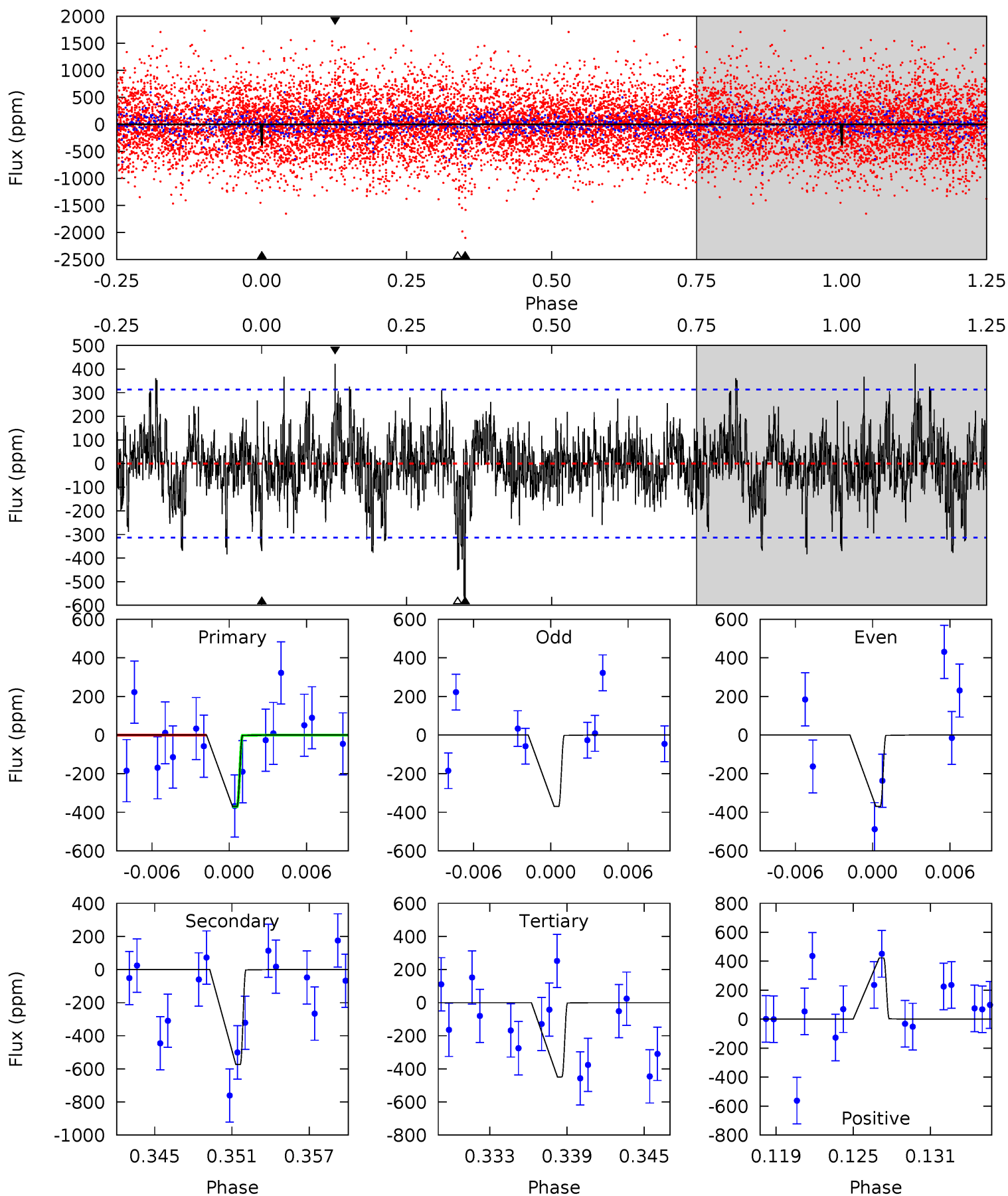
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.86	4.41	4.13	4.78	5.27	3.00	1.22	1.73	1.08	0.28	-0.37	0.17	0.95	0.45	0.48



Alt Model-Shift Uniqueness Test

010724379-05, P = 135.967876 Days, E = 1.406269 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	9.38	7.33	6.90	5.13	2.75	1.71	-1.28	-0.86	2.05	2.47	0.00	0.62	0.42	0



Stellar Parameters For KIC 010724379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5580^{+152}_{-169}	$4.592^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.774^{+0.158}_{-0.068}$	$0.865^{+0.080}_{-0.106}$	$2.633^{+0.474}_{-1.027}$
	+3%/-3%	+1%/-3%	+94%/-94%	+20%/-9%	+9%/-12%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010724379-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-423 ± 96	$2.99^{+2.52}_{-1.90}$	440^{+23}_{-18}	4494^{+2628}_{-916}	6032^{+40698}_{-4318}
Alt.	-574 ± 61	$3.04^{+2.86}_{-1.91}$	440^{+22}_{-18}	4716^{+2992}_{-993}	7871^{+53318}_{-5684}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

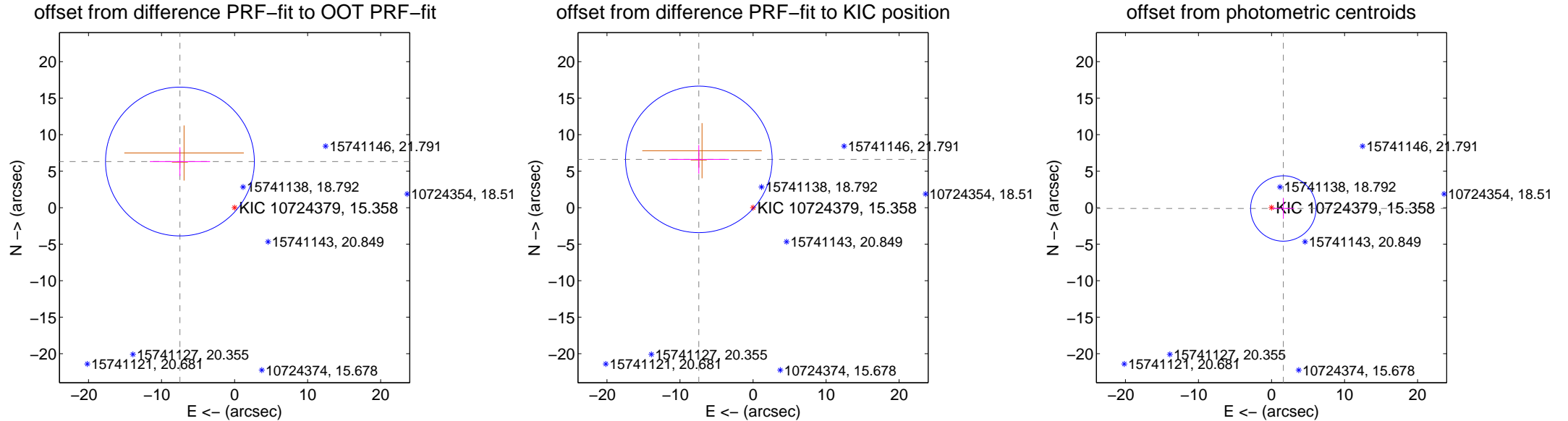
DV Centroid Data

Supplemental centroid analysis for 010724379-05. Kepler magnitude: 15.36. Transit SNR 7.94

There are 0 quarters with good PRF difference image offsets

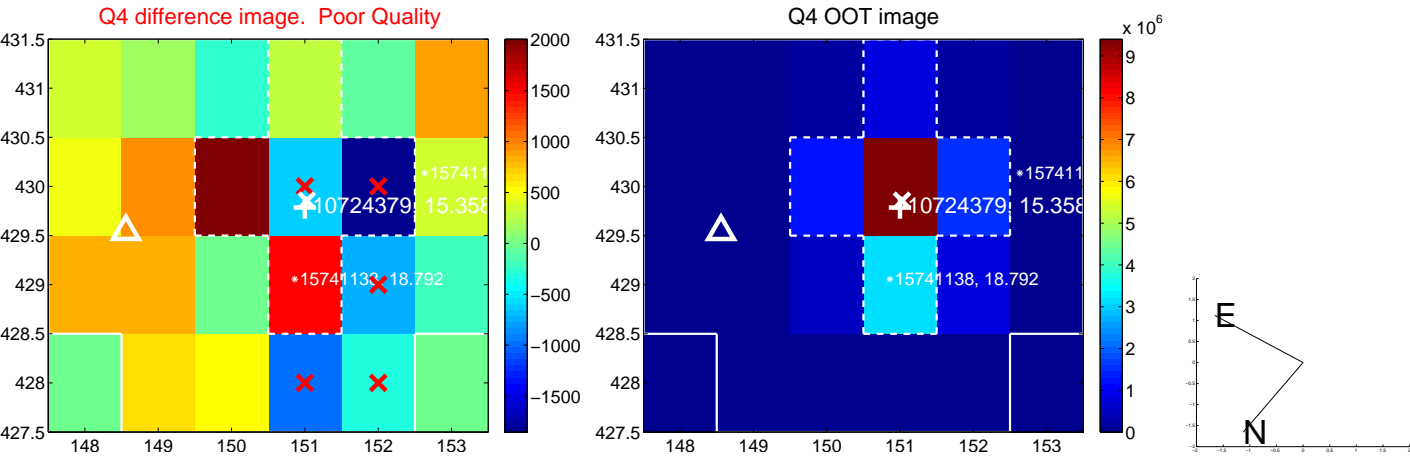
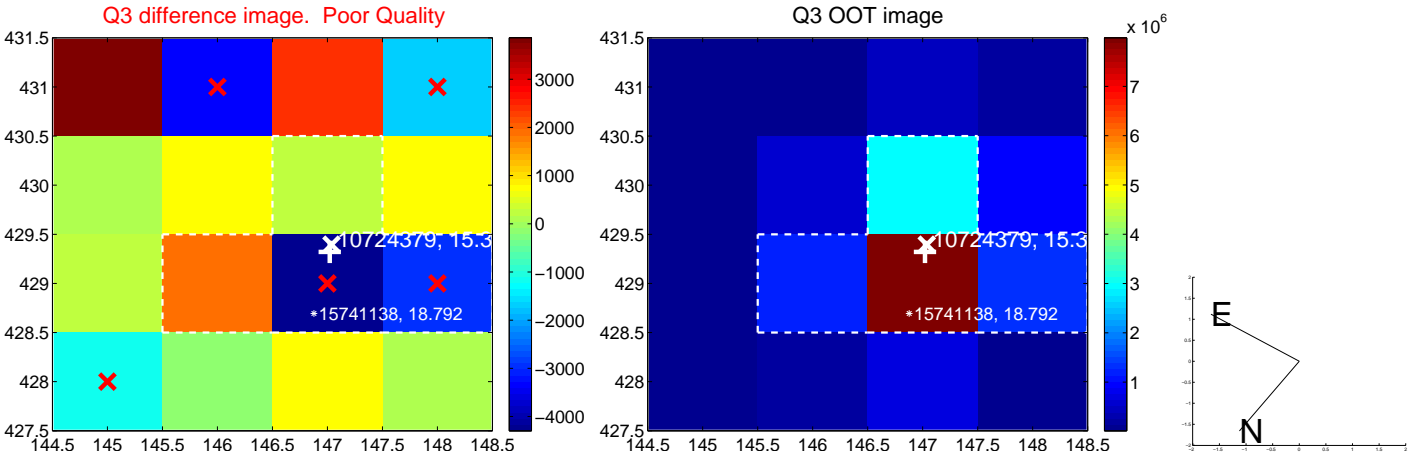
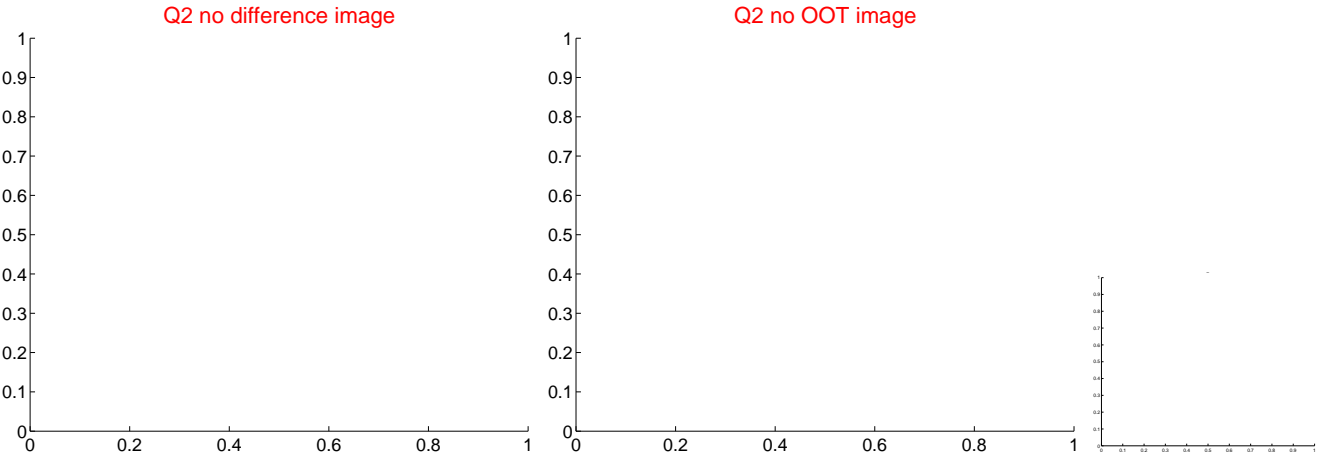
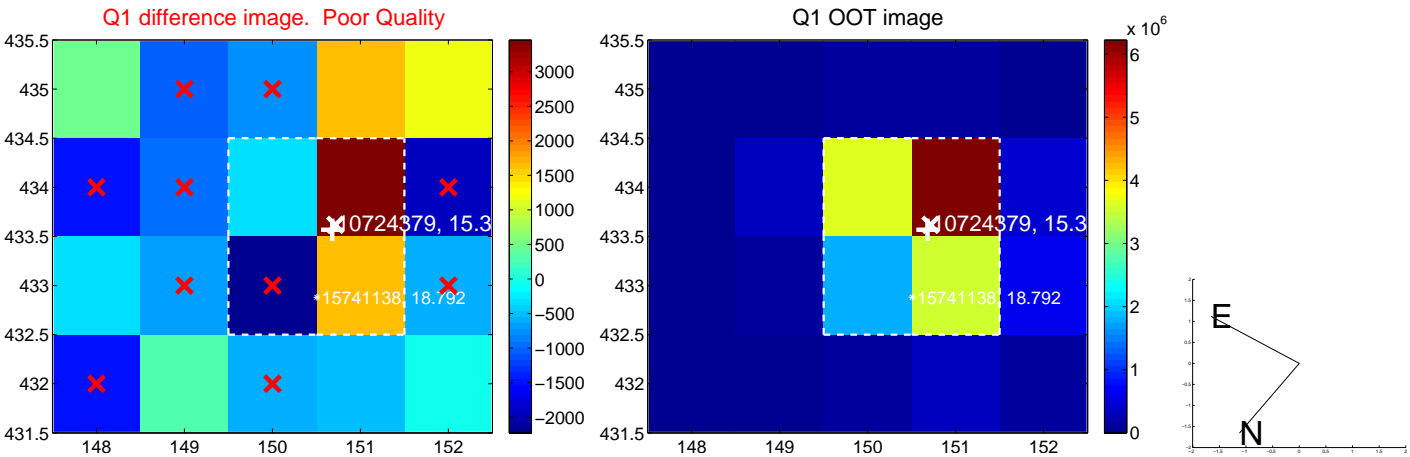
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.792 ± 3.396	2.88	7.480 ± 4.127	6.319 ± 1.955
PRF-fit source offset from KIC position	9.941 ± 3.344	2.97	7.421 ± 4.127	6.615 ± 1.955
photometric centroid source offset	1.62 ± 1.49	1.08	-1.61 ± 1.49	-0.11 ± 1.42



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.

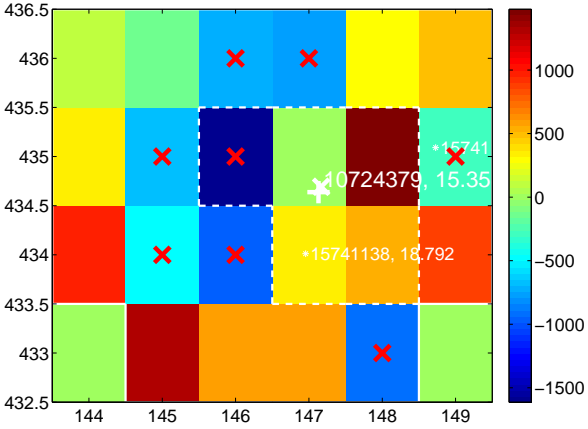
Q5 no difference image



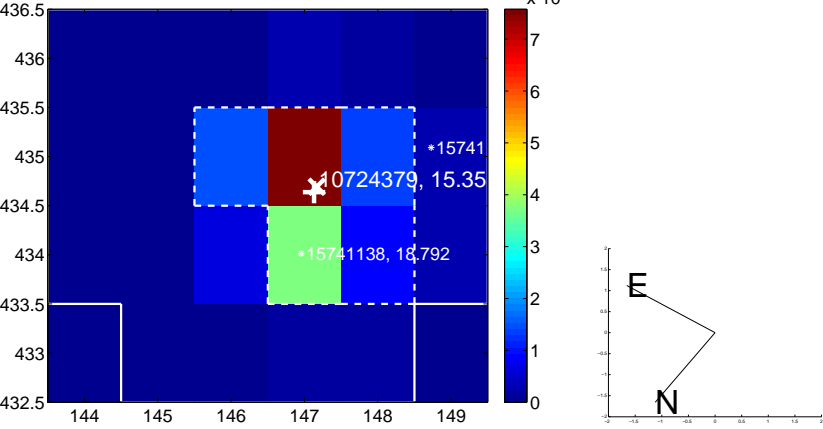
Q5 no OOT image



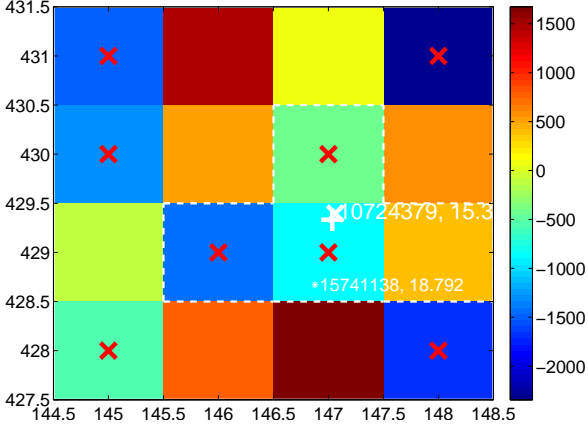
Q6 difference image. Poor Quality



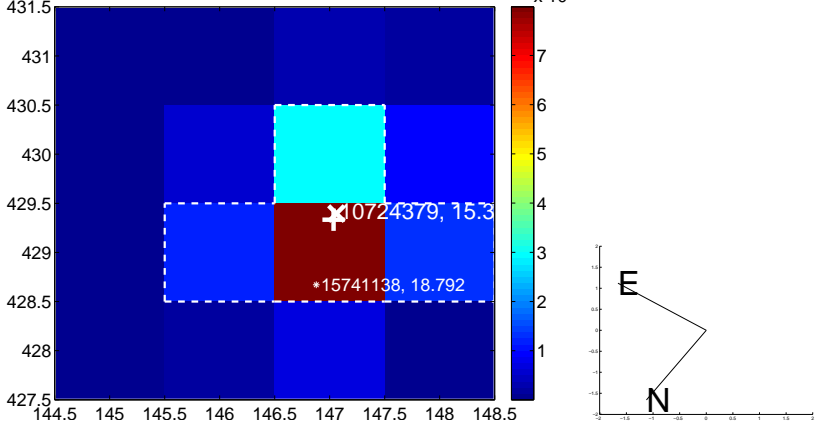
Q6 OOT image



Q7 difference image. Poor Quality



Q7 OOT image



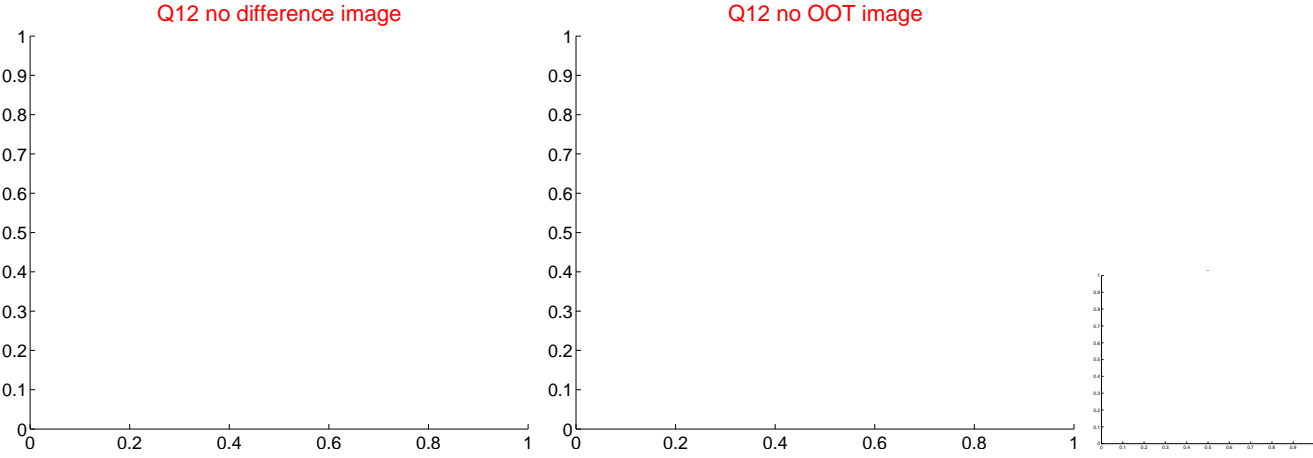
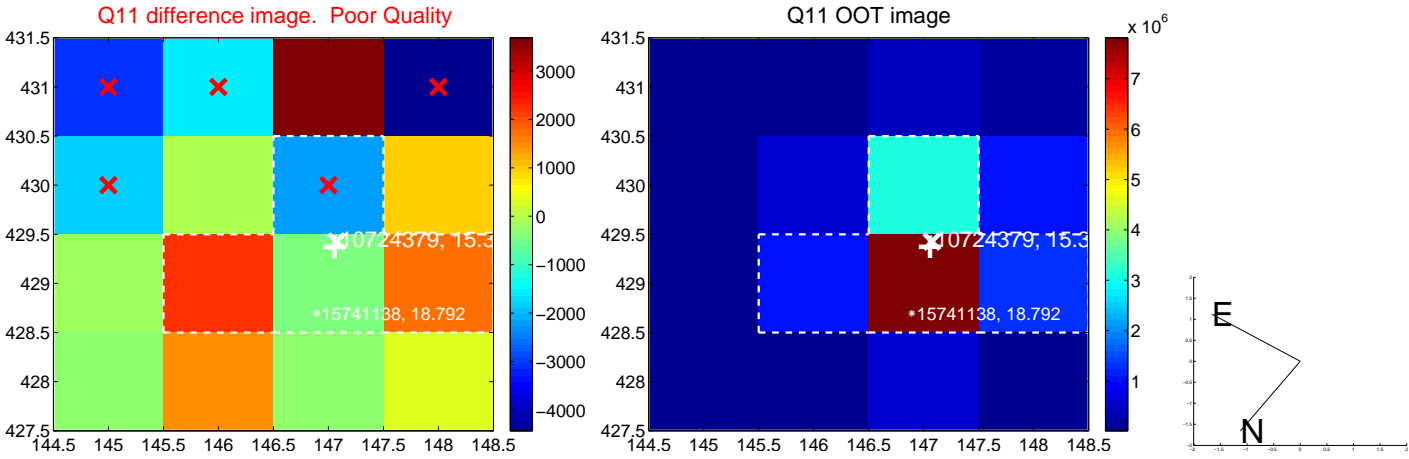
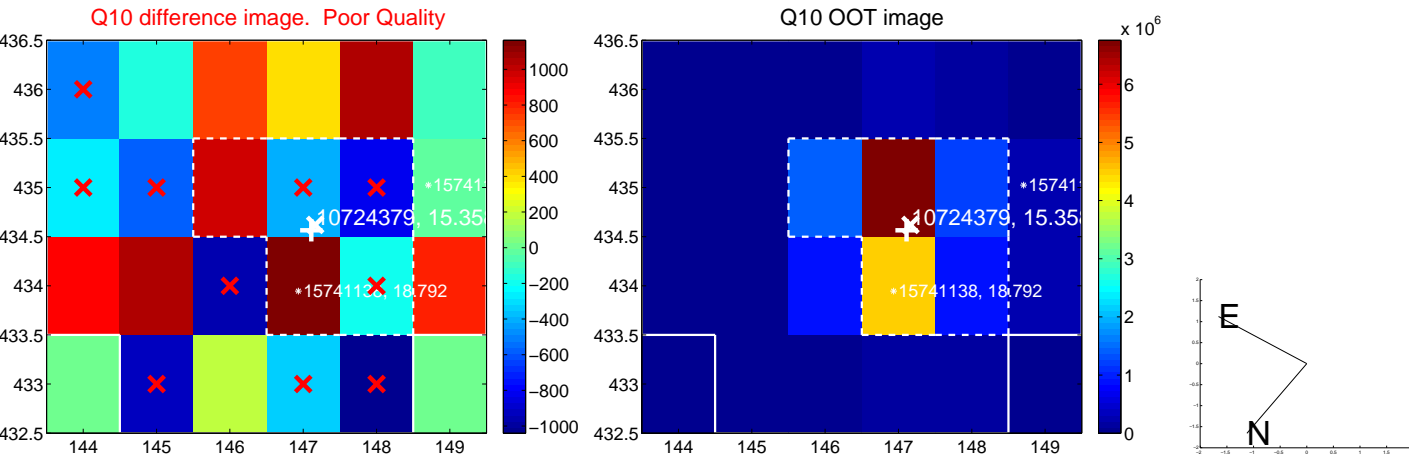
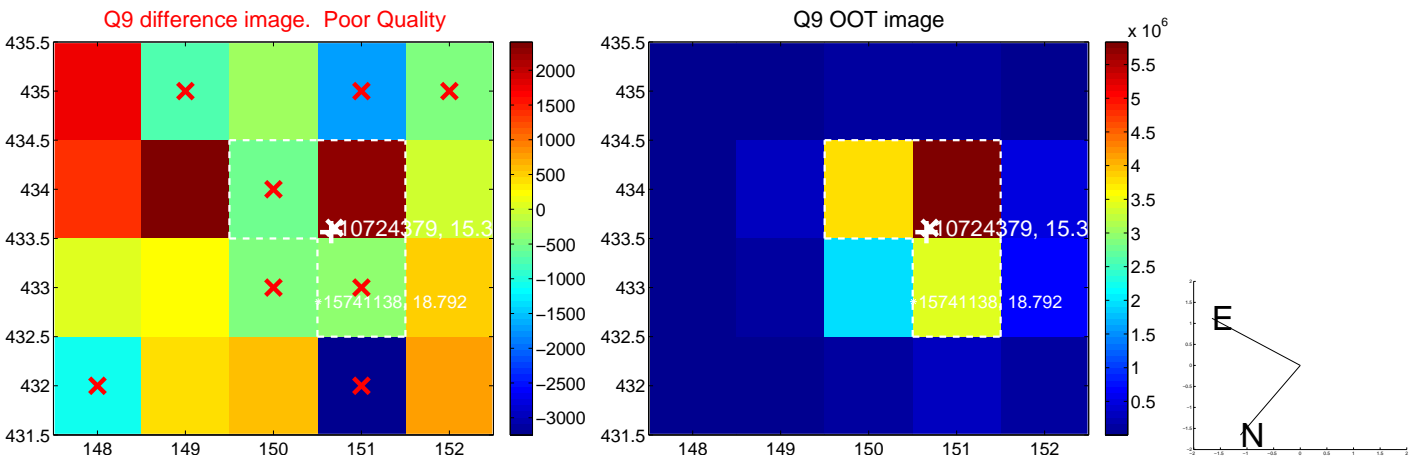
Q8 no difference image



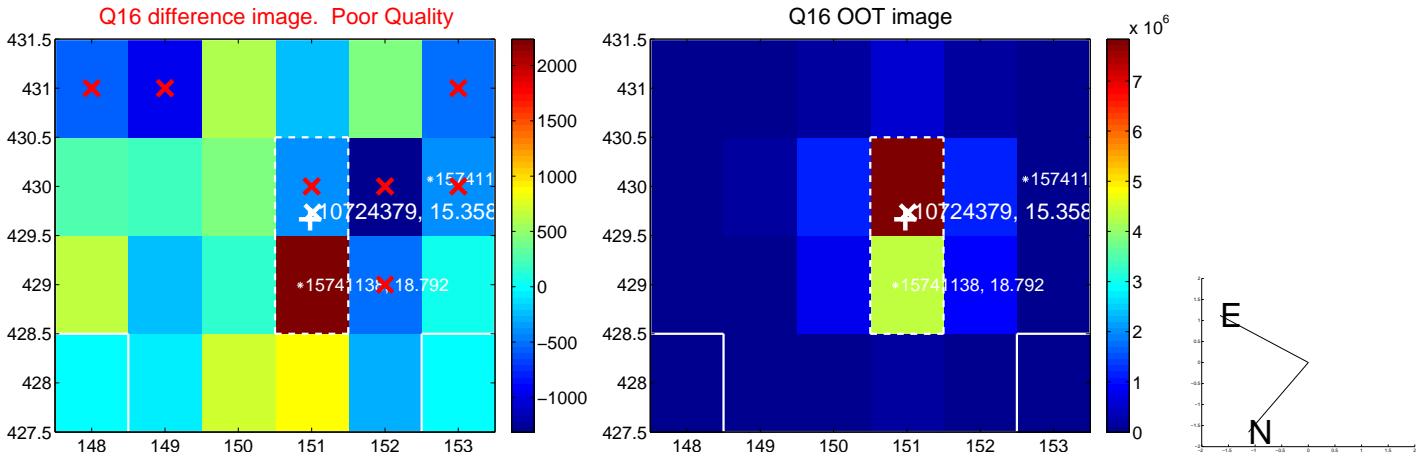
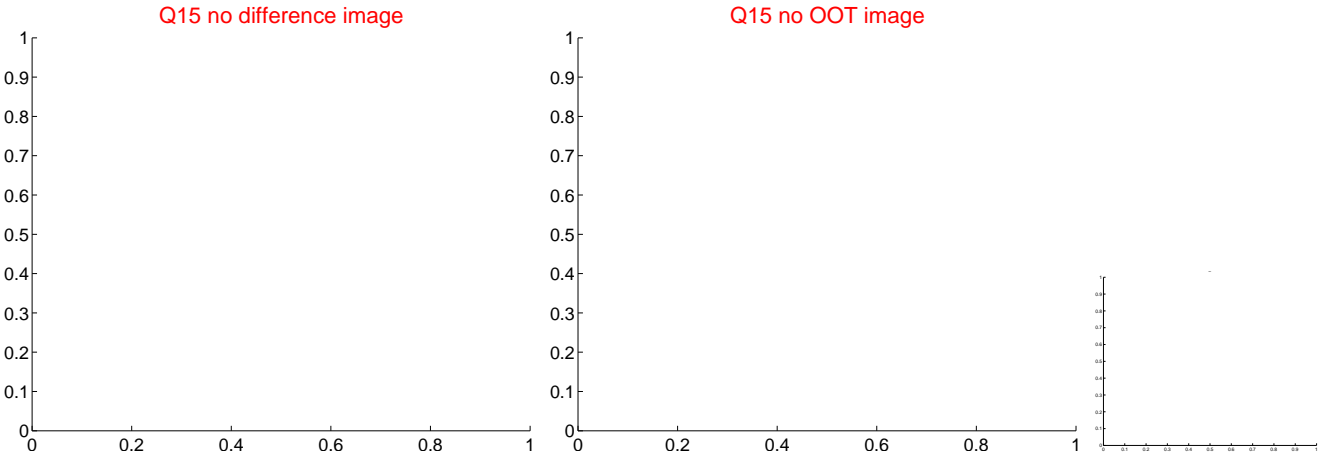
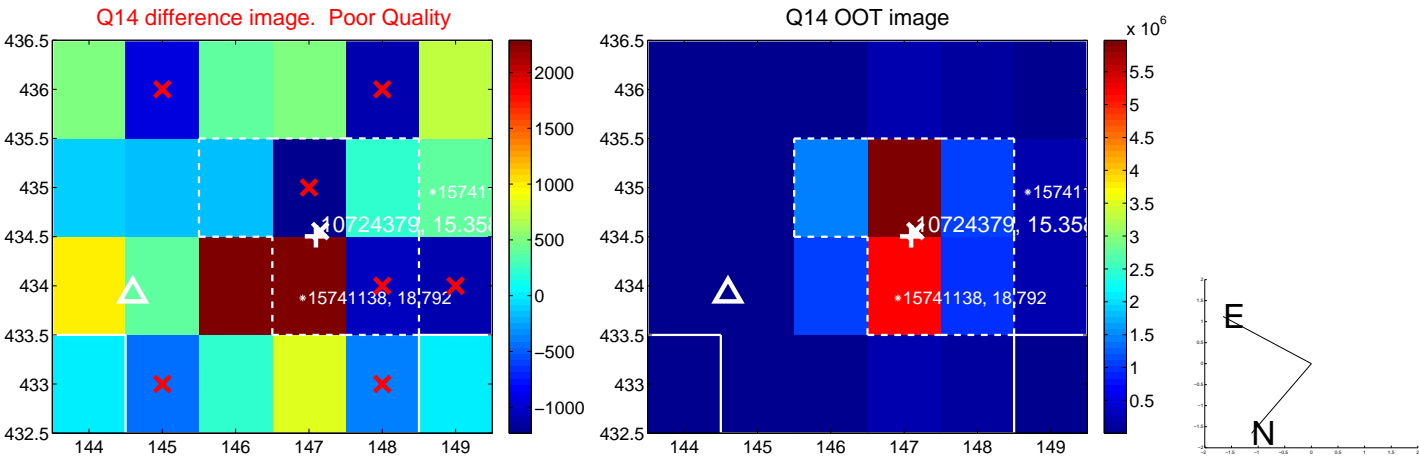
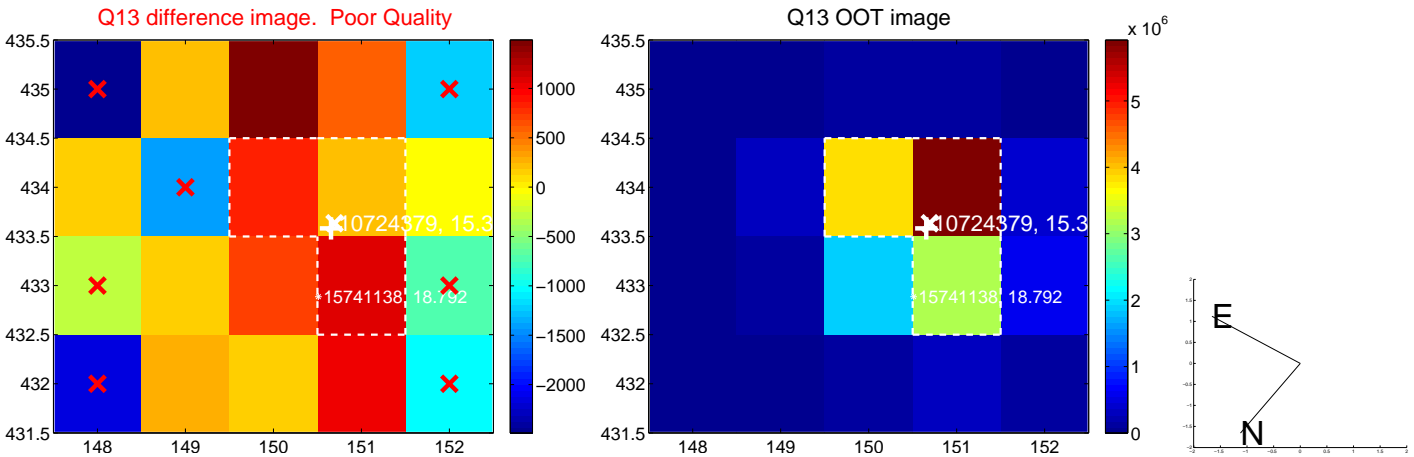
Q8 no OOT image



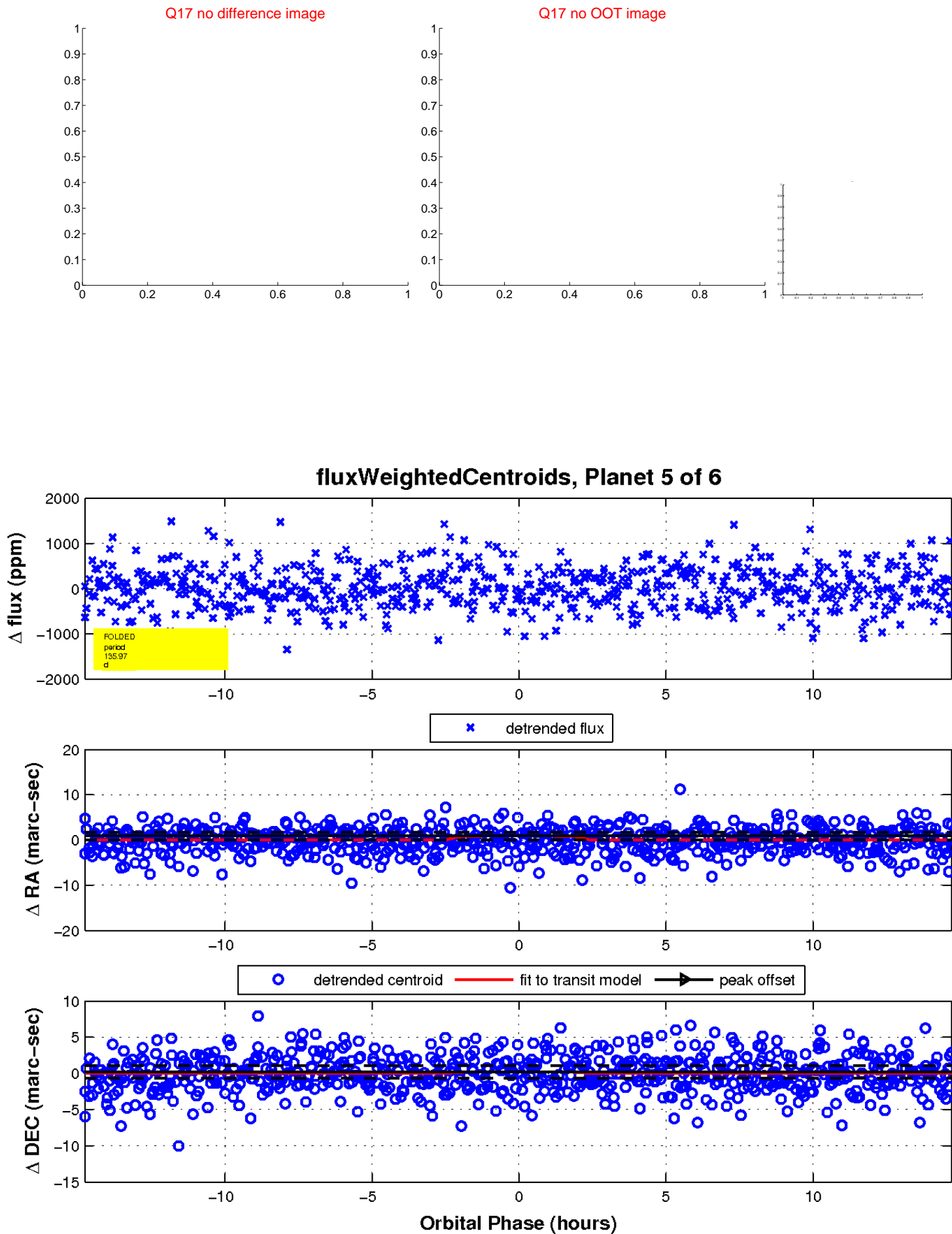
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



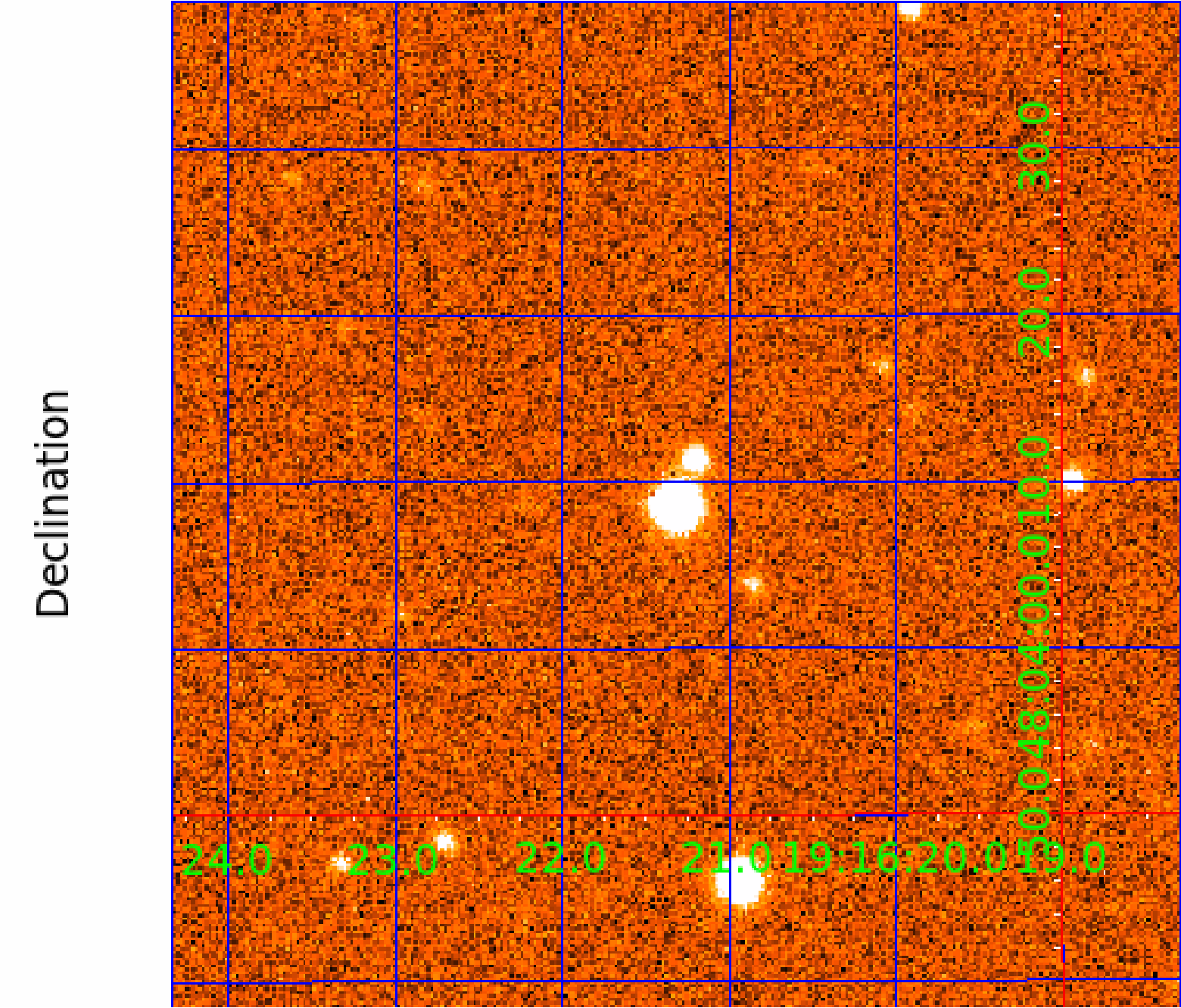
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010724379

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})
010724379-01	OBS	No	0.745032	131.870194	17.9	4.916	8.2	4.0	0.77	5580	0.32	2233.70
010724379-02	OBS	No	71.332053	182.331832	514.3	8.579	9.0	7.0	0.77	5580	2.08	5.10
010724379-03	OBS	No	169.377922	207.943304	1233.1	2.500	8.8	-1.0	0.77	5580	2.69	1.61
010724379-04	OBS	No	47.989144	145.335881	1038.3	1.215	8.1	8.5	0.77	5580	2.48	8.65
010724379-05	OBS	No	135.968084	137.416445	547.0	4.931	8.8	7.9	0.77	5580	2.06	2.16
010724379-06	OBS	No	48.599286	145.457815	880.3	1.470	9.6	8.5	0.77	5580	2.42	8.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010724379-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010724379-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS
010724379-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010724379-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010724379-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

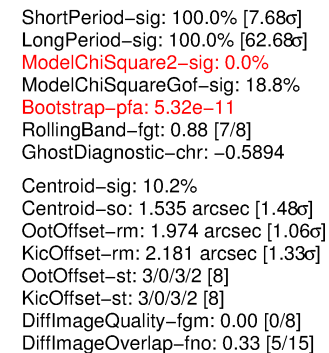
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 010724379-06

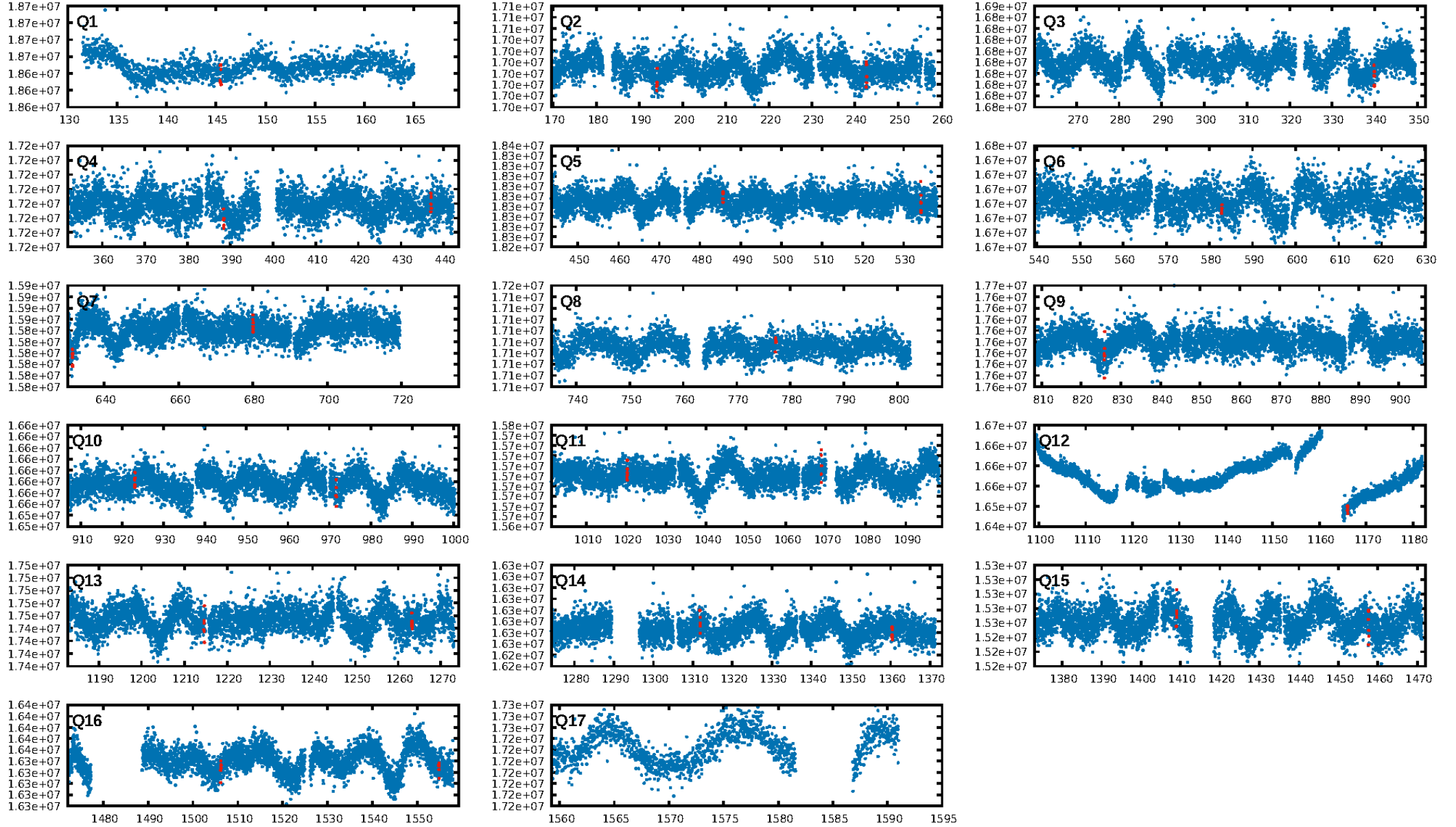
No Significant Match Found

KIC: 10724379 Candidate: 6 of 6 Period: 48.599 d

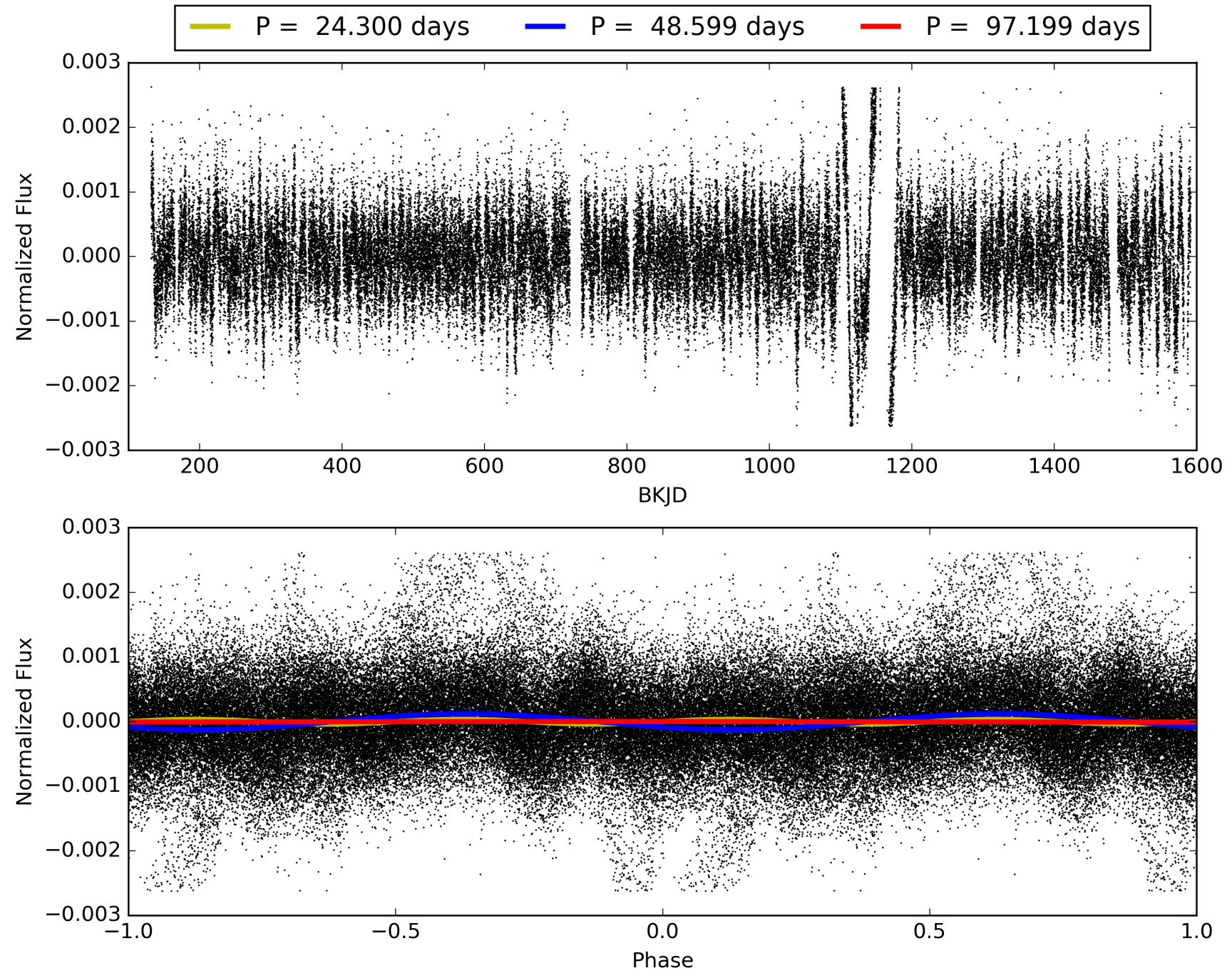


This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010724379-06, PDC Light Curves

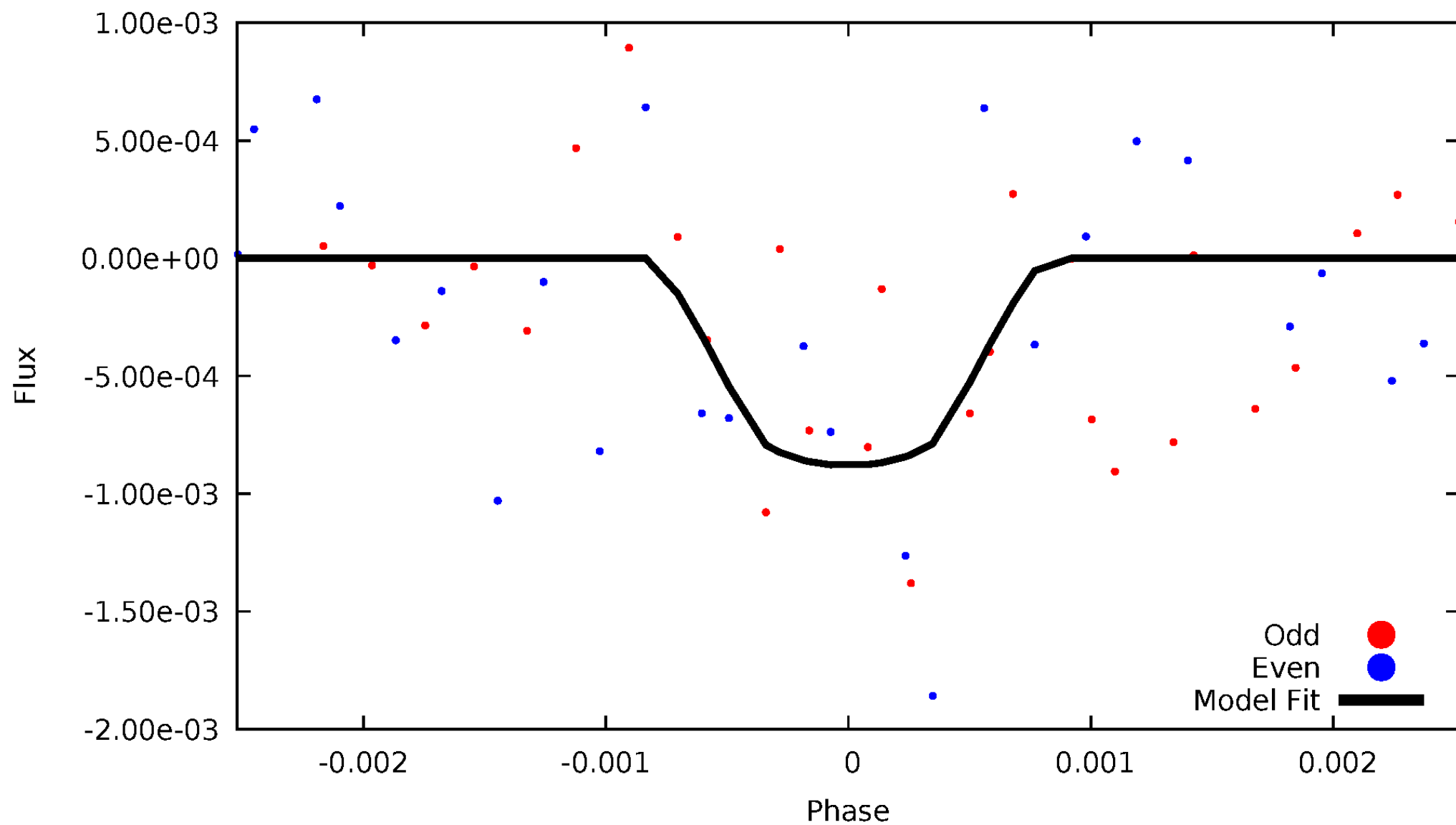


TCE 010724379-06



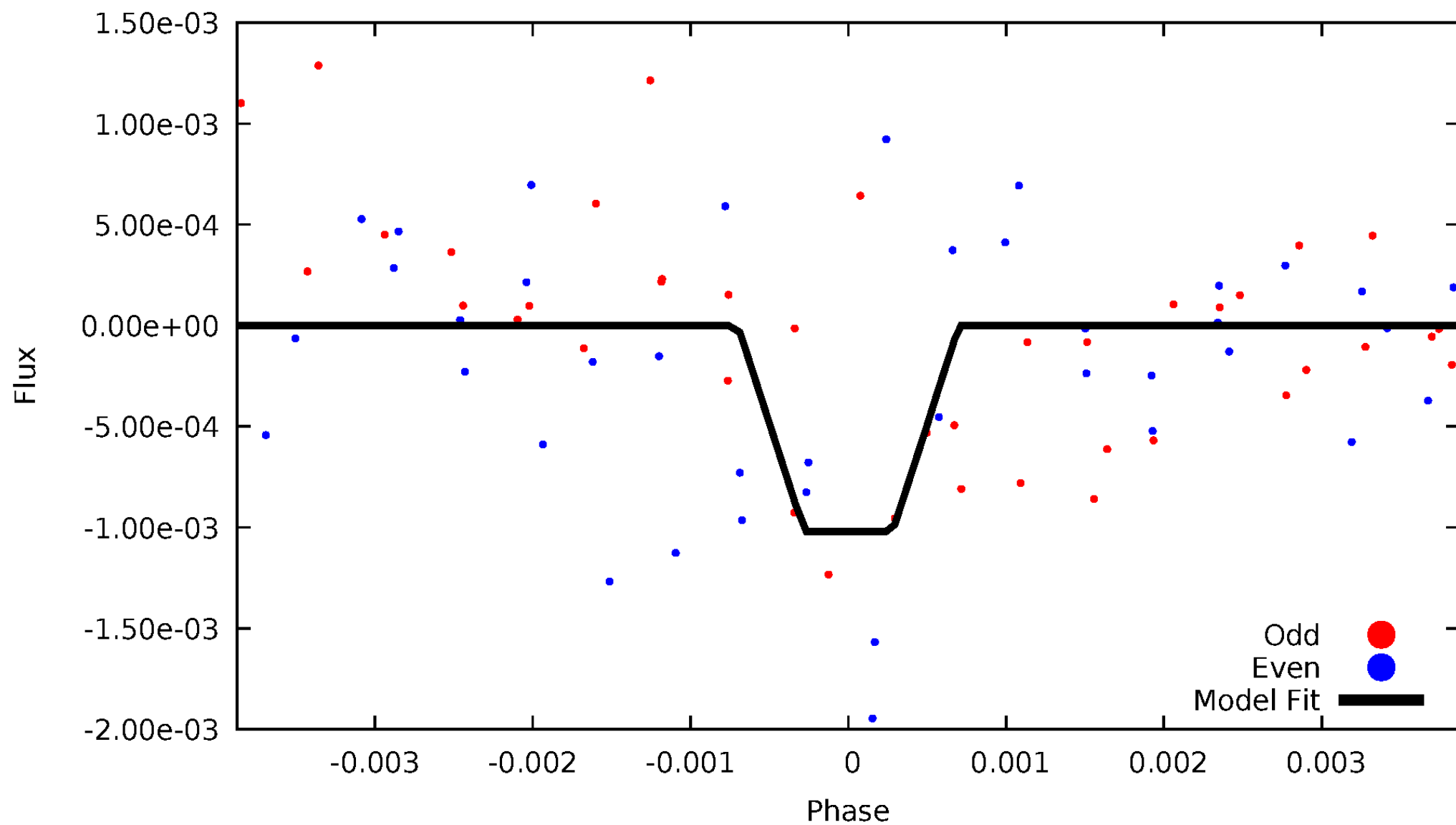
DV Odd/Even

TCE 010724379-06



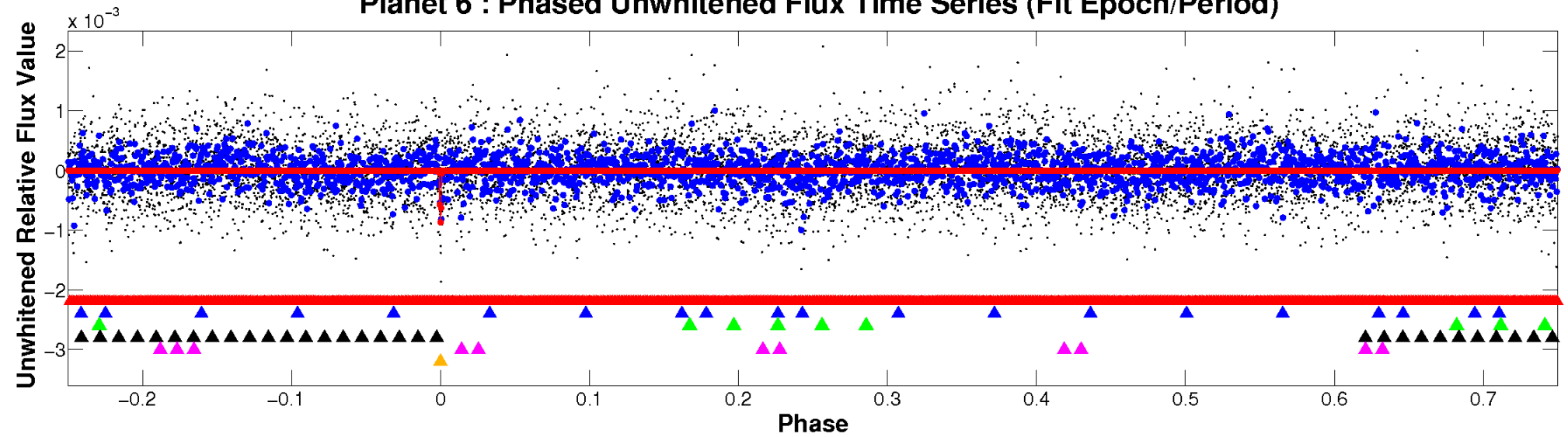
ALT Odd/Even

TCE 010724379-06

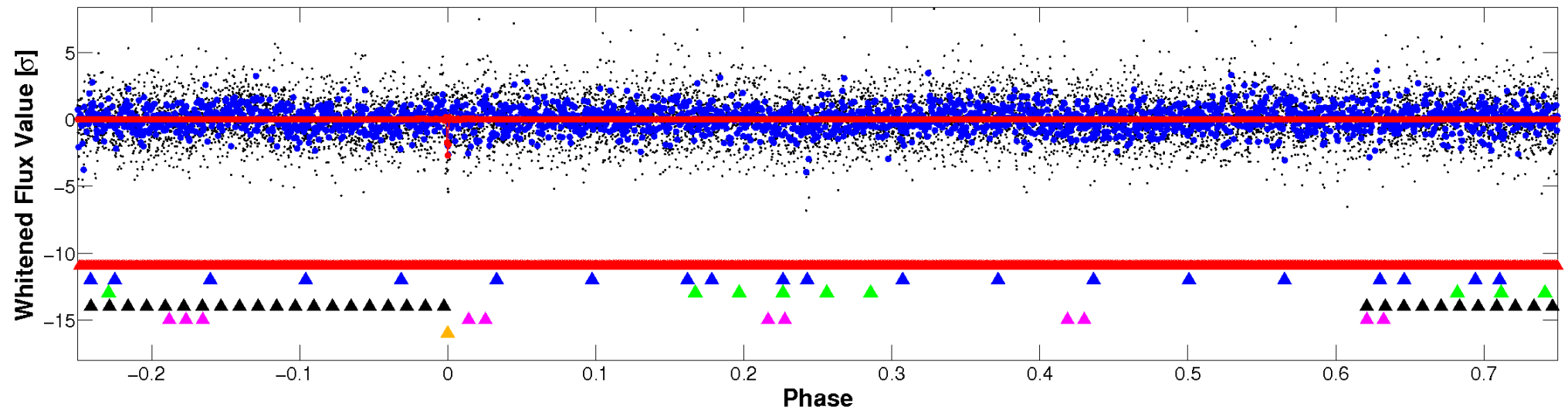


Non-Whitened Vs. Whitened Light Curve

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

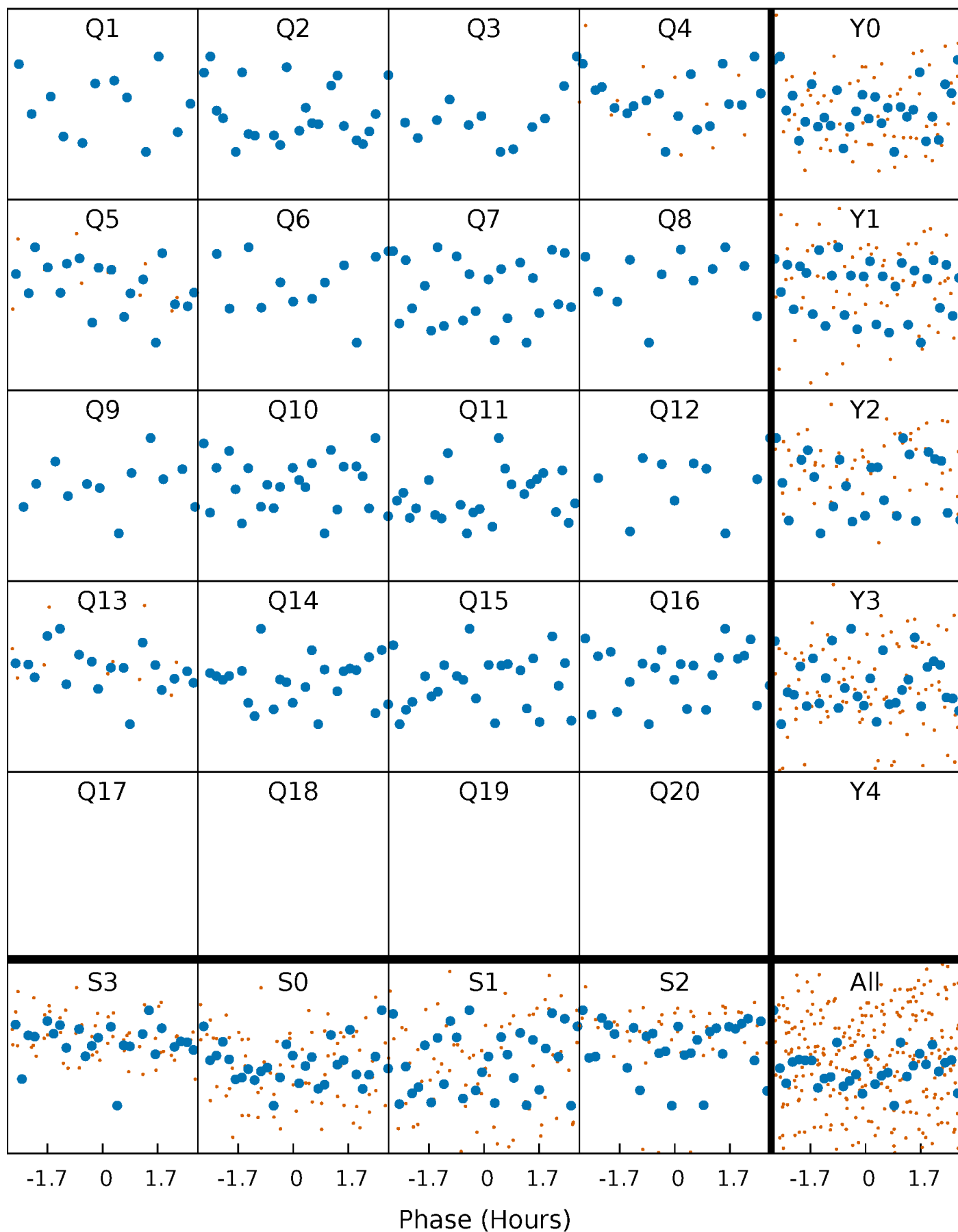


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



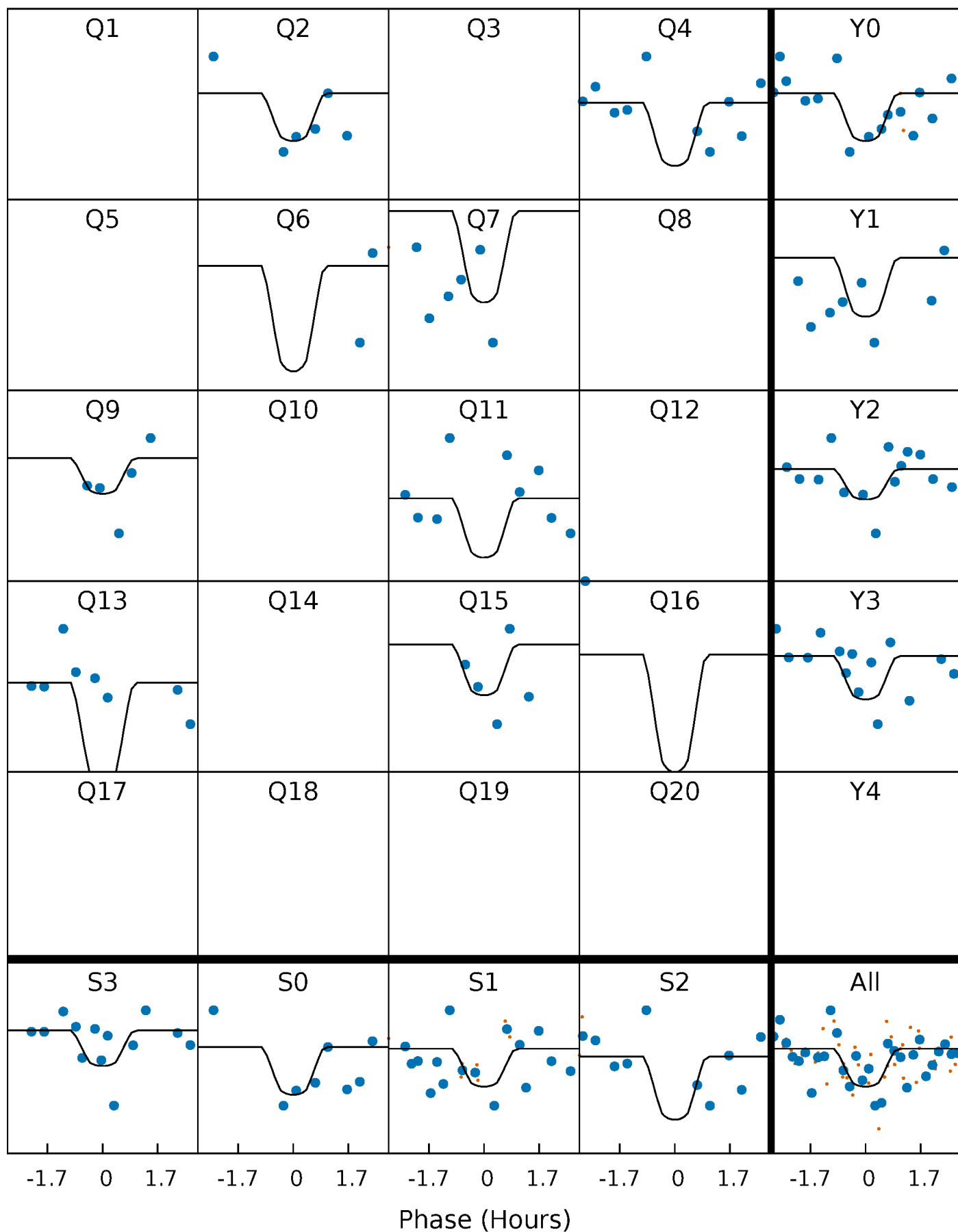
PDC Quarter-Phased Transit Curves

TCE 010724379-06 P= 48.599286 Days $T_0=145.457815$ (BKJD)



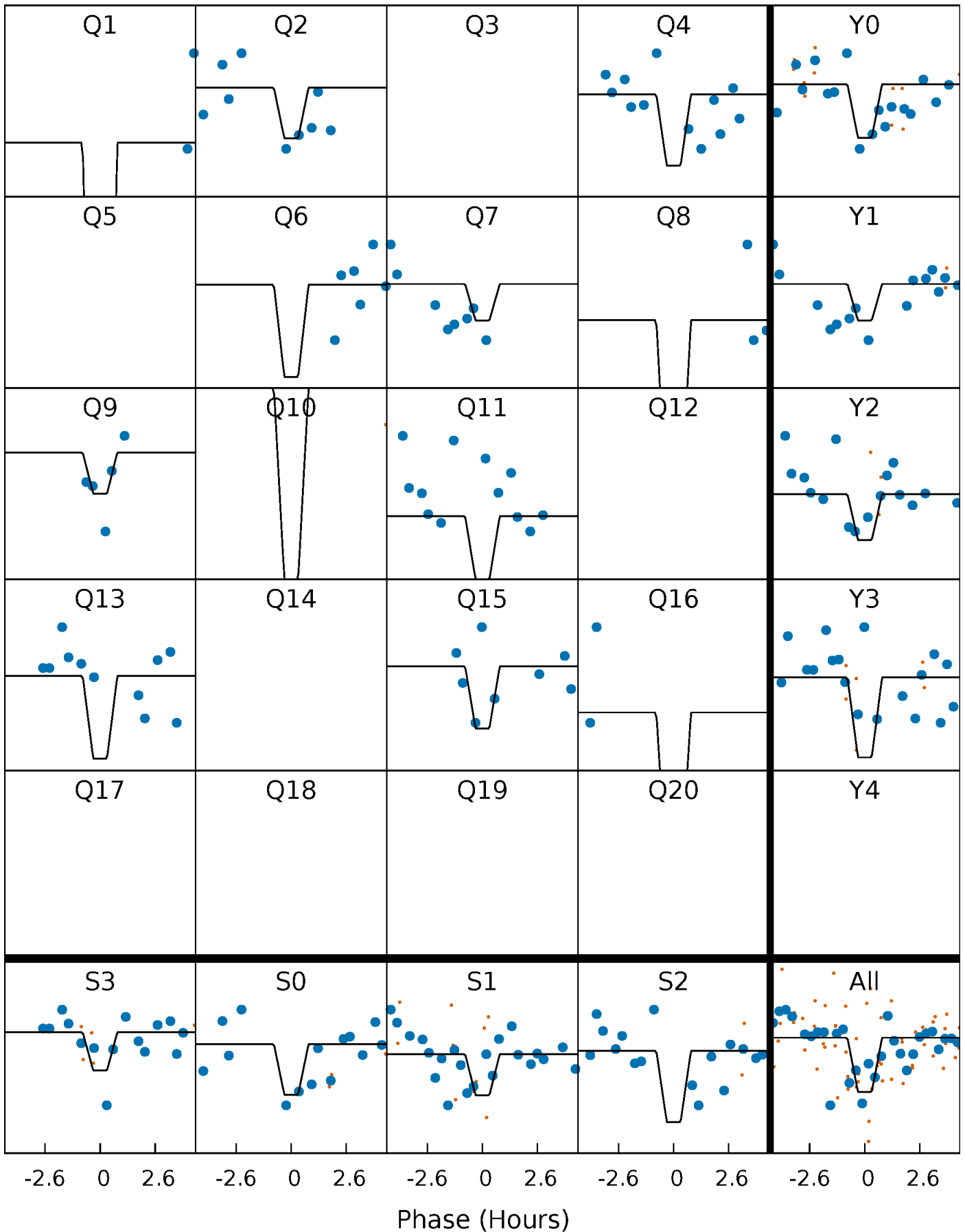
DV Quarter-Phased Transit Curves

TCE 010724379-06 P= 48.599286 Days $T_0=145.457815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

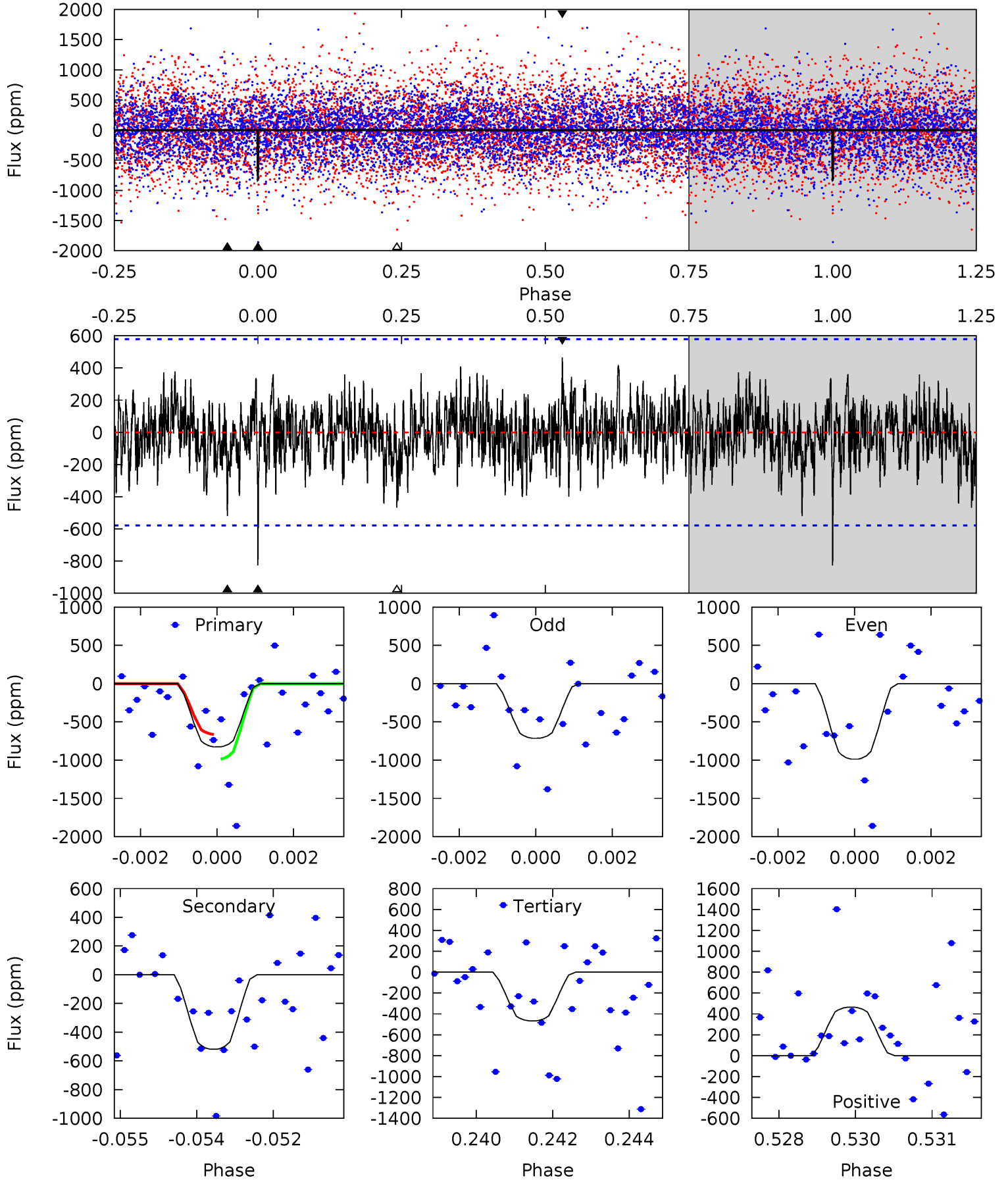
TCE 010724379-06 P= 48.600813 Days $T_0=145.445874$ (BKJD)



DV Model-Shift Uniqueness Test

010724379-06, P = 48.599286 Days, E = 96.858529 Days

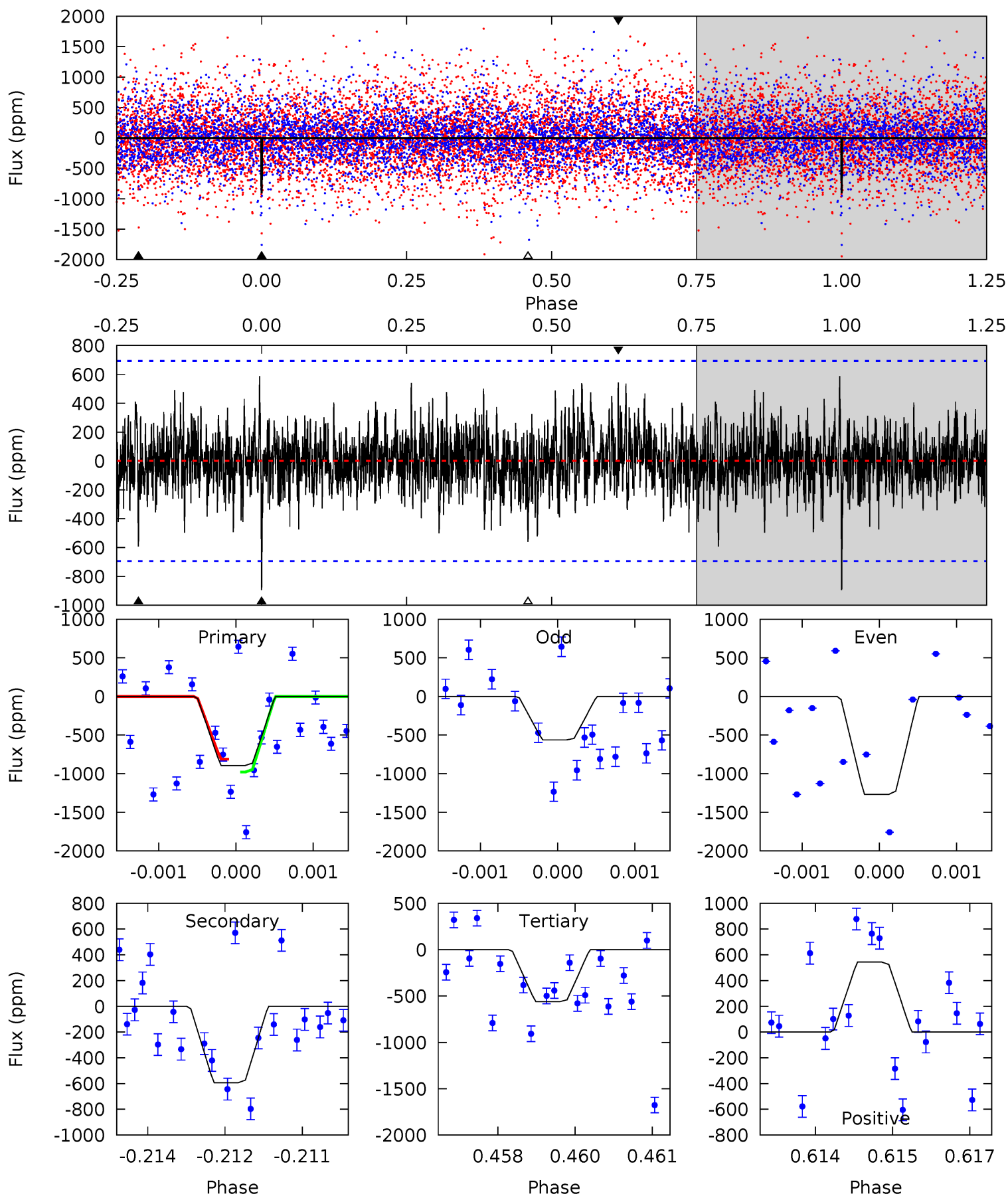
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.66	4.81	4.33	4.30	5.36	3.15	1.33	3.34	3.36	0.49	0.51	1.26	0.85	0.36	1.49



Alt Model-Shift Uniqueness Test

010724379-06, P = 48.600813 Days, E = 96.845061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.95	4.61	4.35	4.23	5.39	3.20	1.24	2.60	2.72	0.26	0.39	2.74	0.52	0.40	0.63



Stellar Parameters For KIC 010724379

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5580^{+152}_{-169}	$4.592^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.774^{+0.158}_{-0.068}$	$0.865^{+0.080}_{-0.106}$	$2.633^{+0.474}_{-1.027}$
	+3%/-3%	+1%/-3%	+94%/-94%	+20%/-9%	+9%/-12%	+18%/-39%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010724379-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-519 ± 108	$16.69^{+19.51}_{-11.95}$	620^{+29}_{-24}	2689^{+1210}_{-453}	61^{+680}_{-49}
Alt.	-593 ± 129	$18.11^{+17.48}_{-12.50}$	621^{+31}_{-26}	2686^{+1158}_{-409}	62^{+559}_{-47}

T_{max} = Theoretical Maximum Planetary Temperature

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

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

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

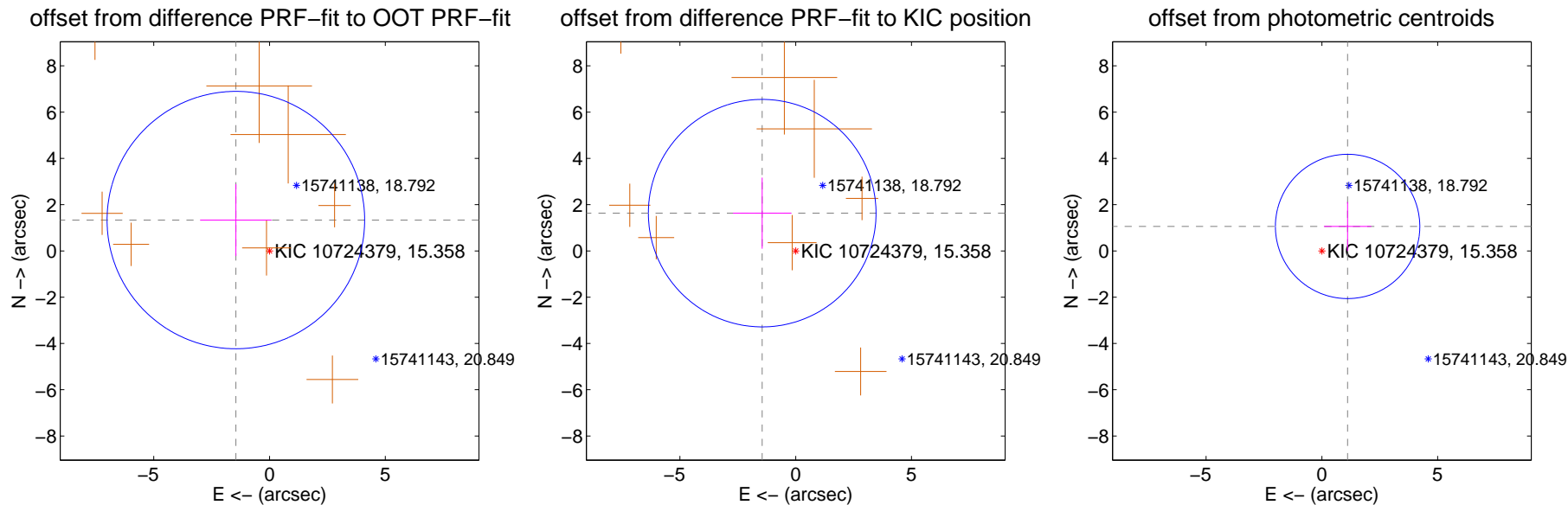
DV Centroid Data

Supplemental centroid analysis for 010724379-06. Kepler magnitude: 15.36. Transit SNR 8.46

There are 0 quarters with good PRF difference image offsets

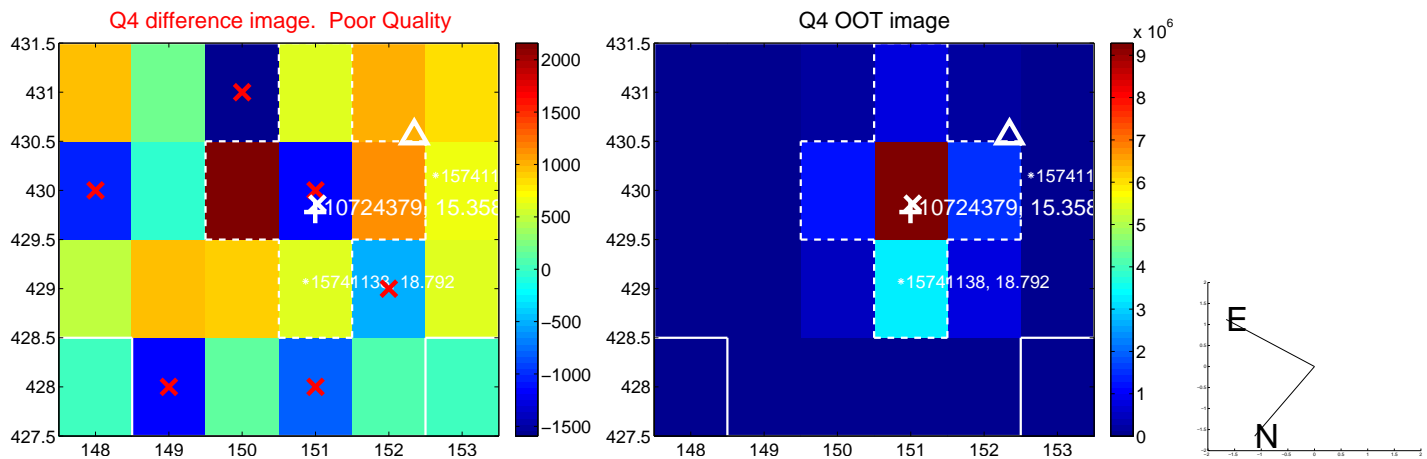
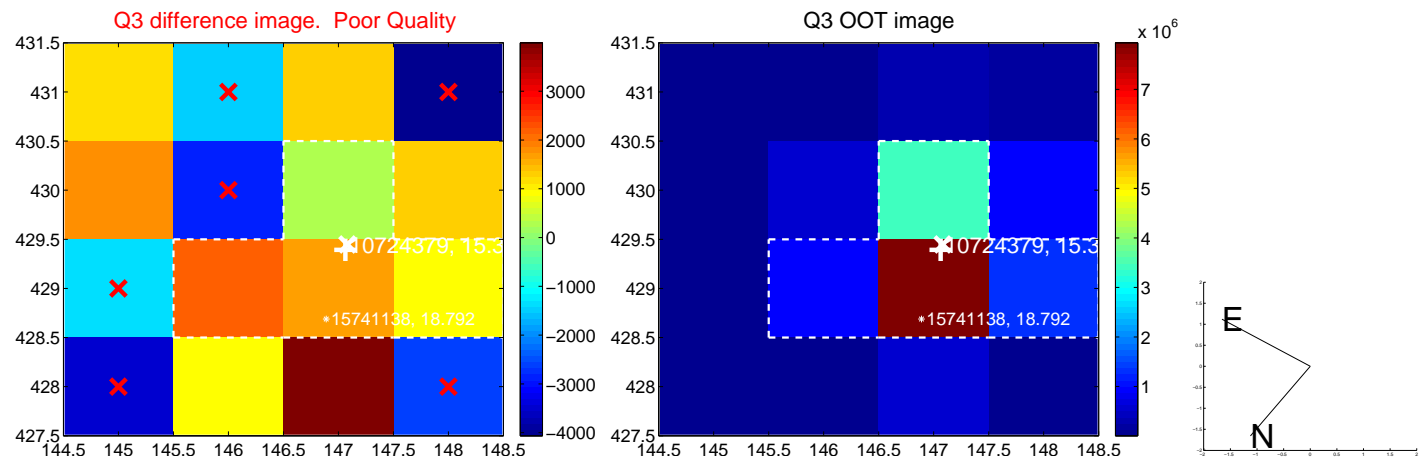
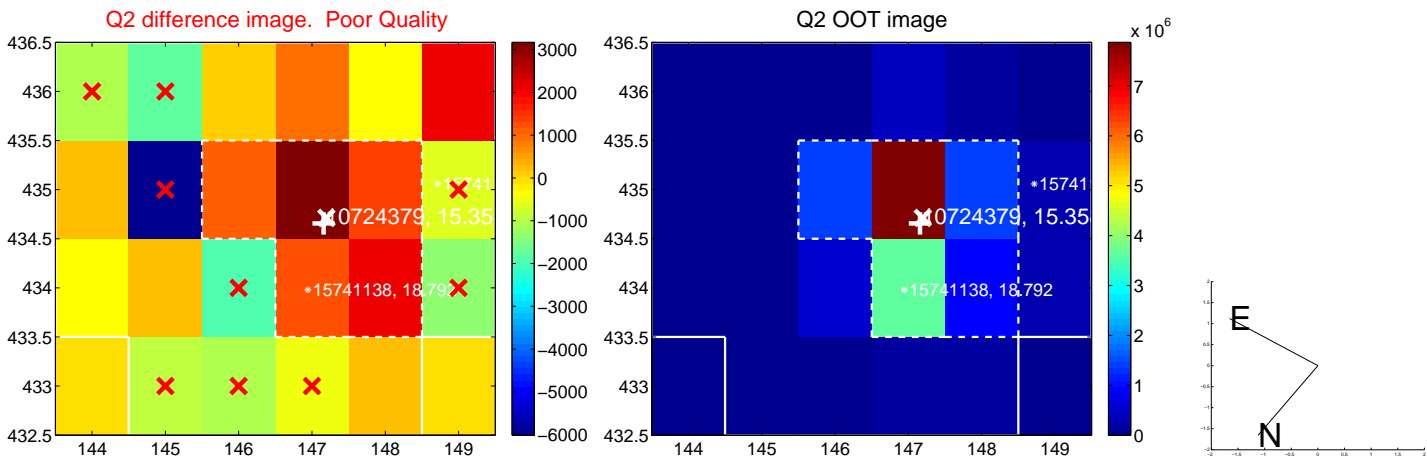
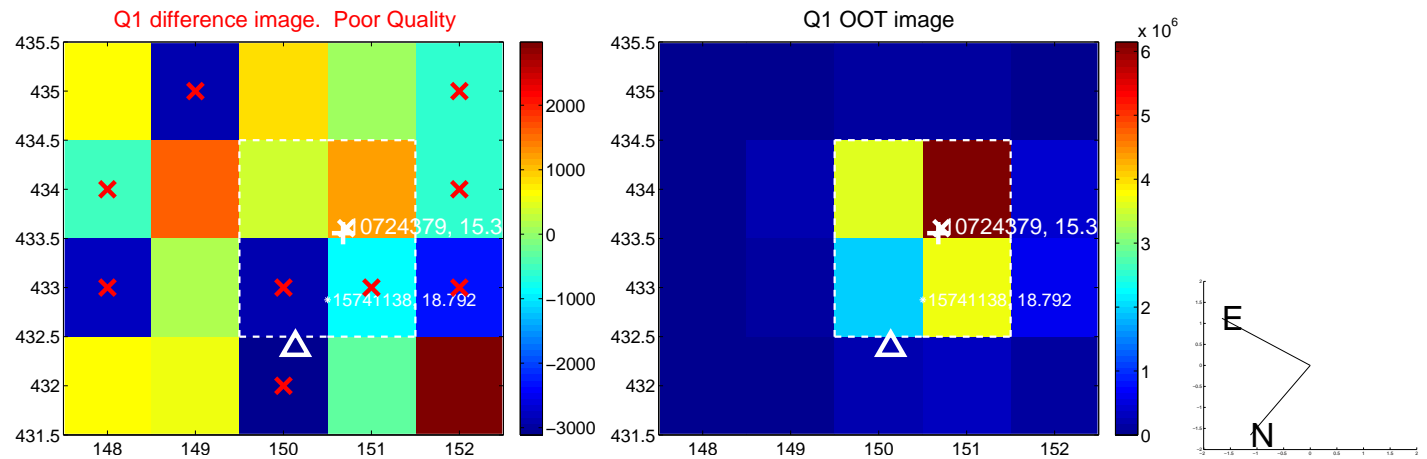
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.974 ± 1.854	1.06	1.455 ± 1.543	1.334 ± 1.549
PRF-fit source offset from KIC position	2.181 ± 1.639	1.33	1.447 ± 1.260	1.633 ± 1.536
photometric centroid source offset	1.53 ± 1.04	1.48	-1.11 ± 1.02	1.06 ± 1.06

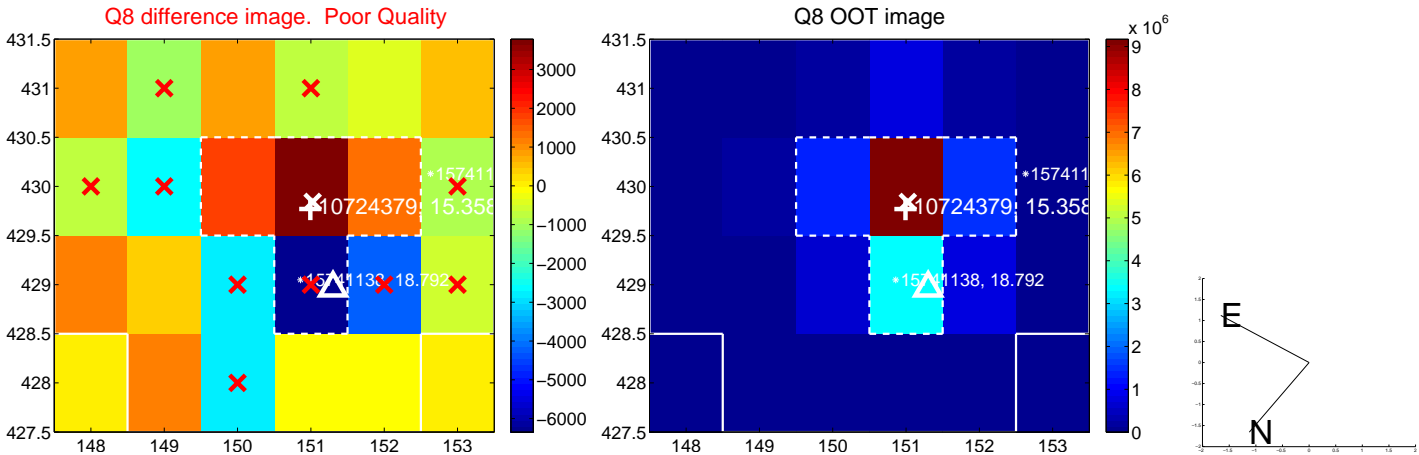
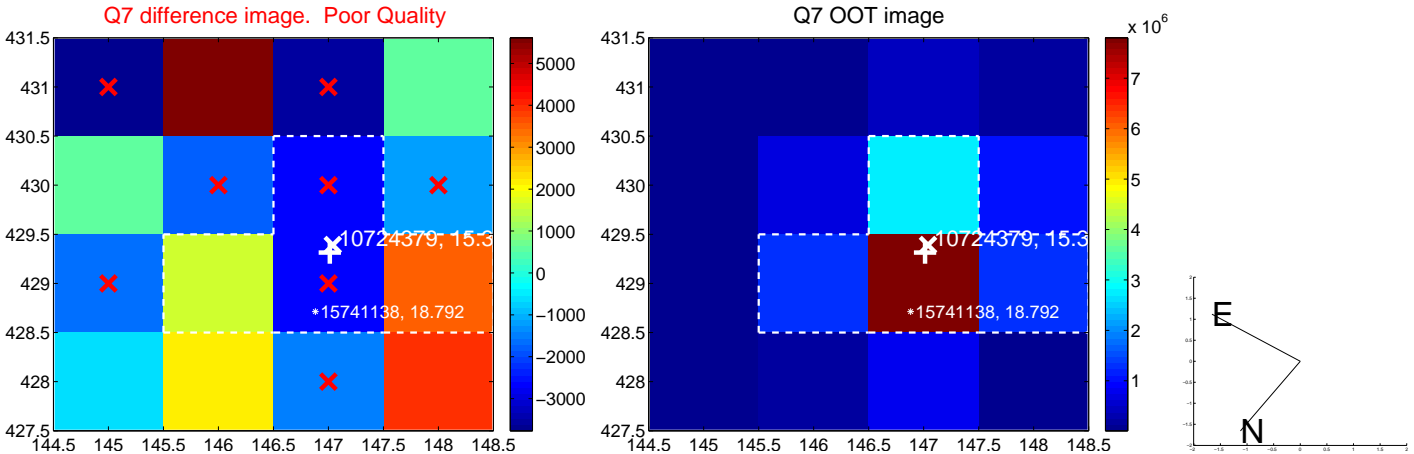
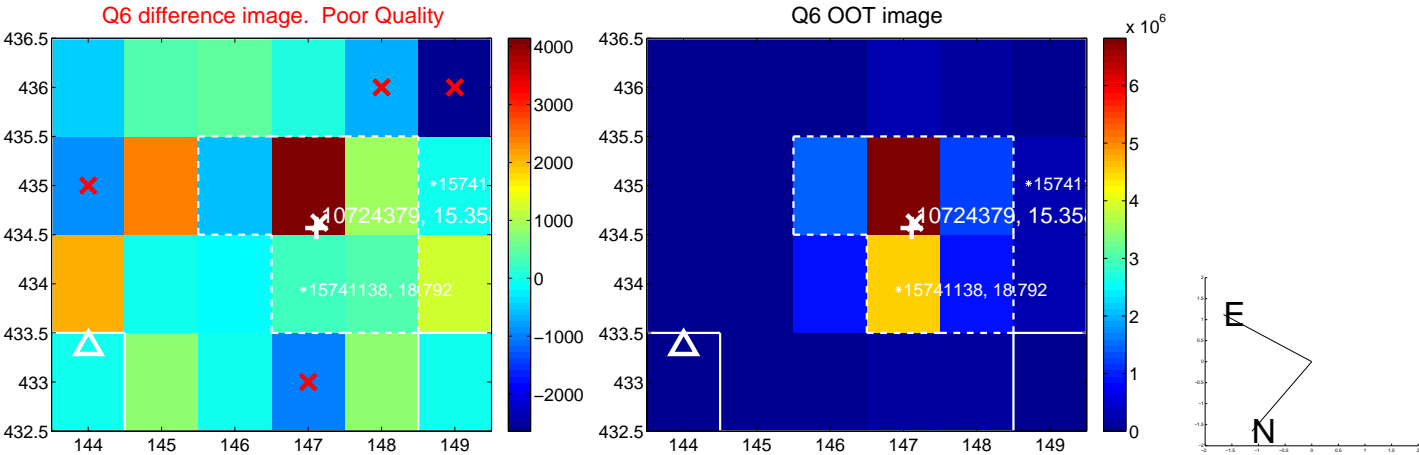
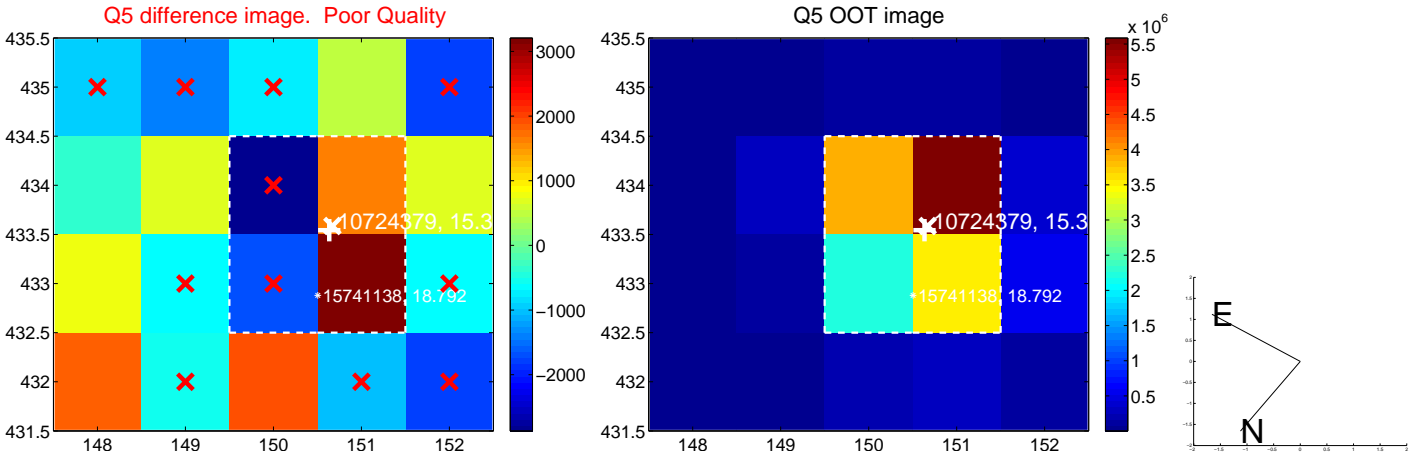


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

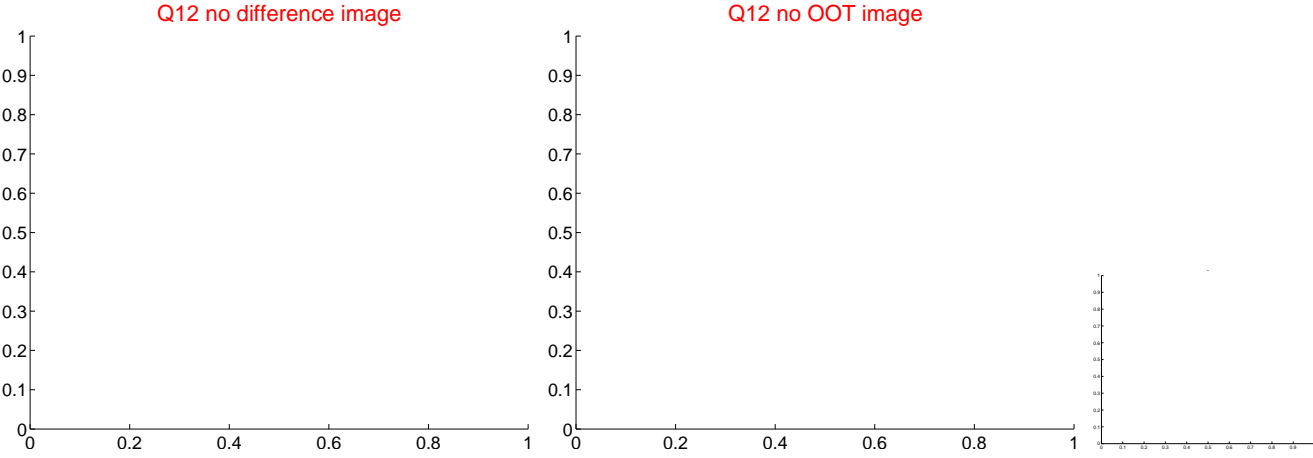
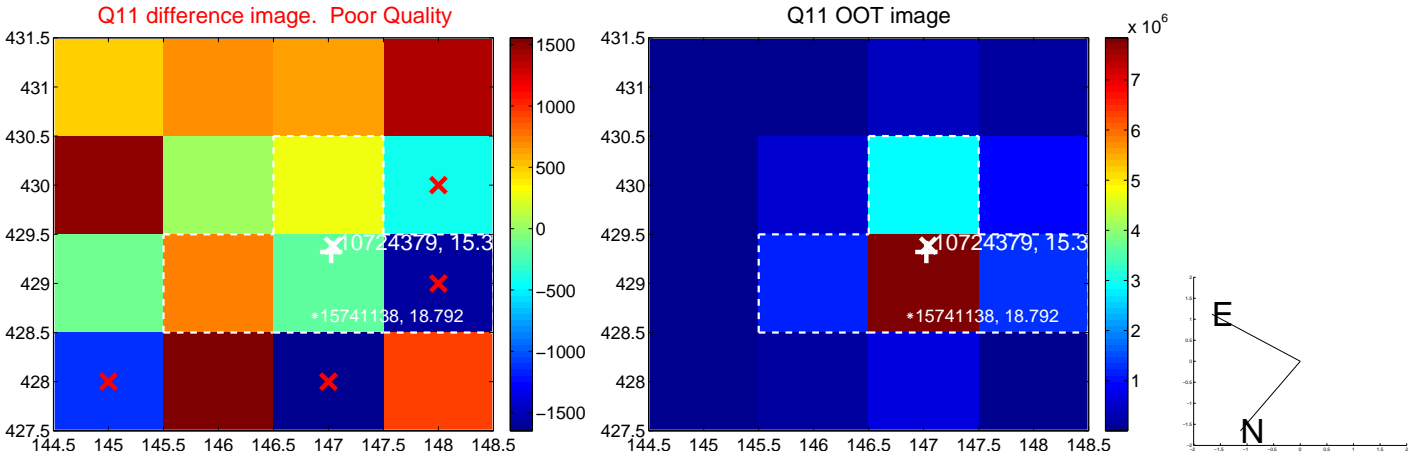
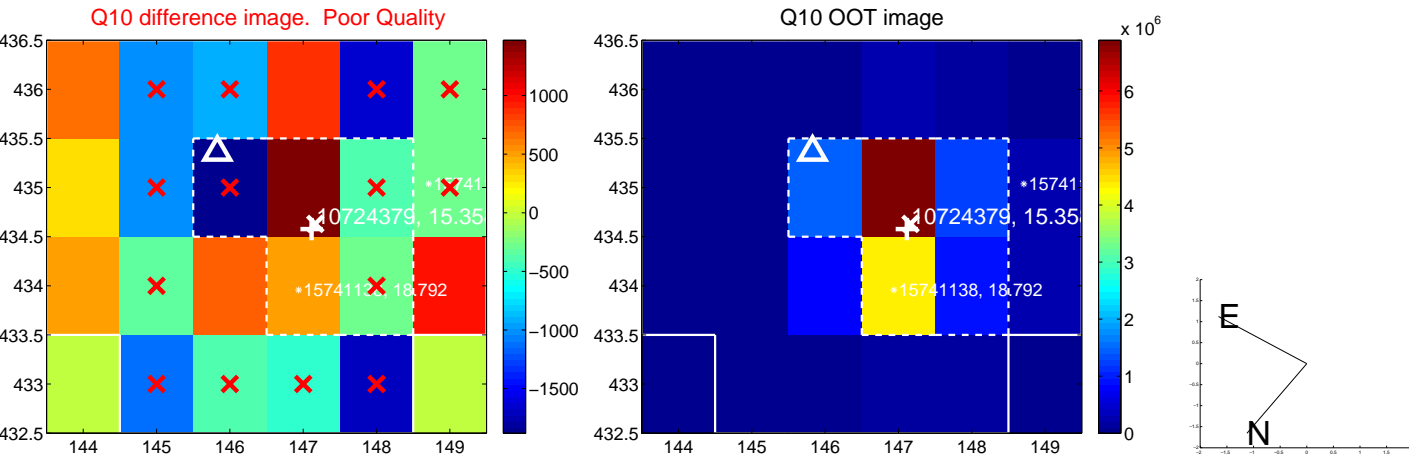
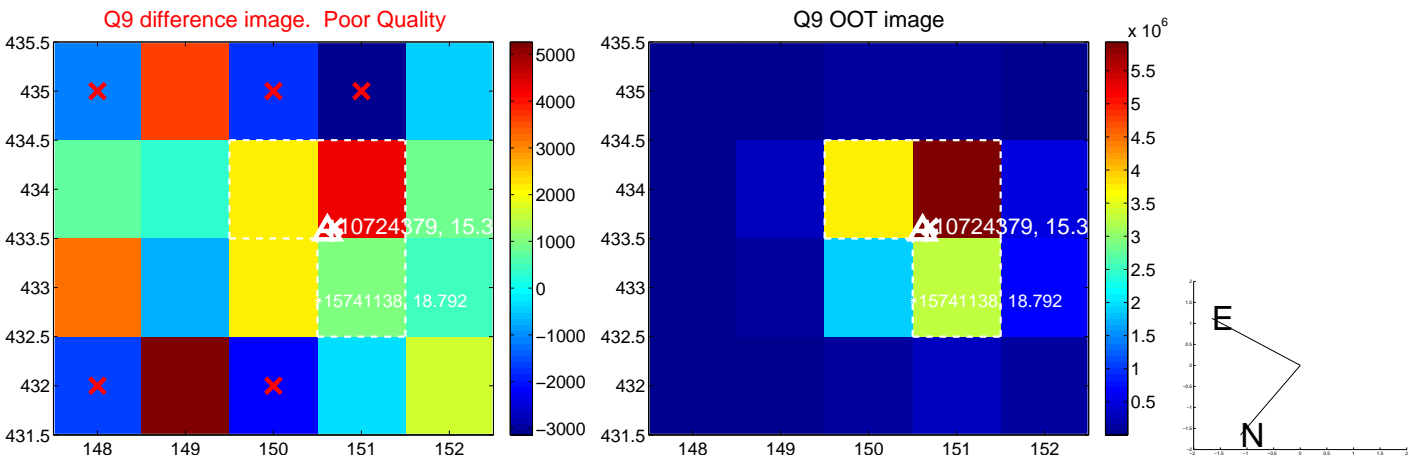
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



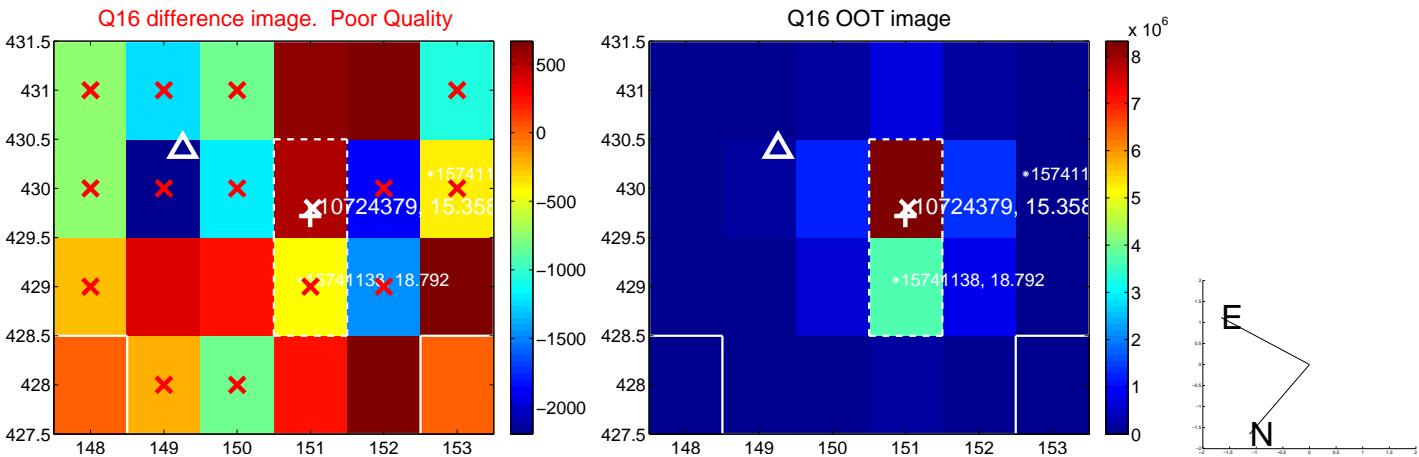
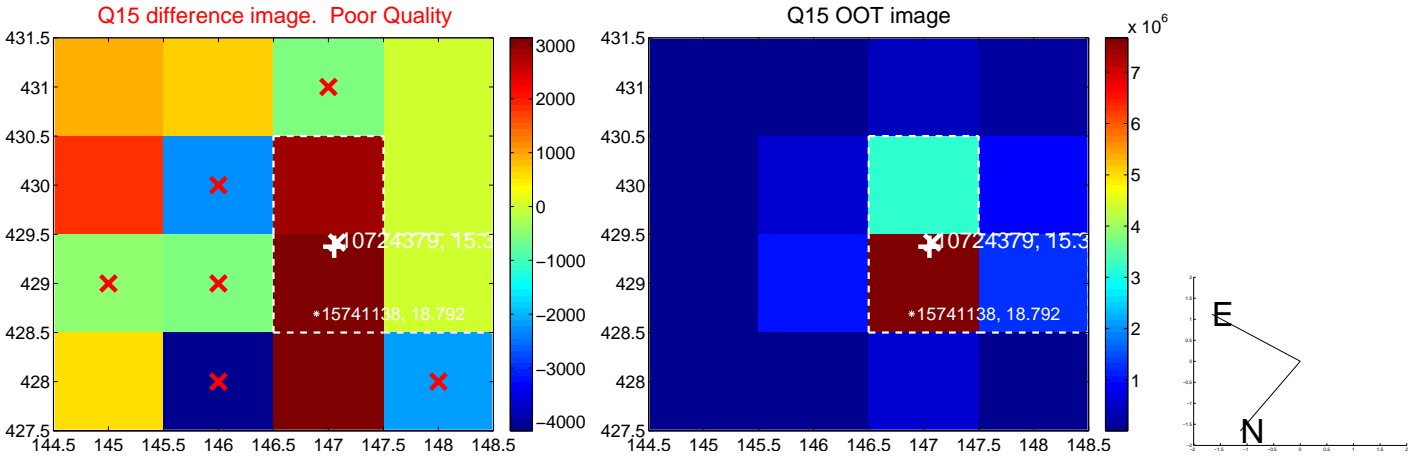
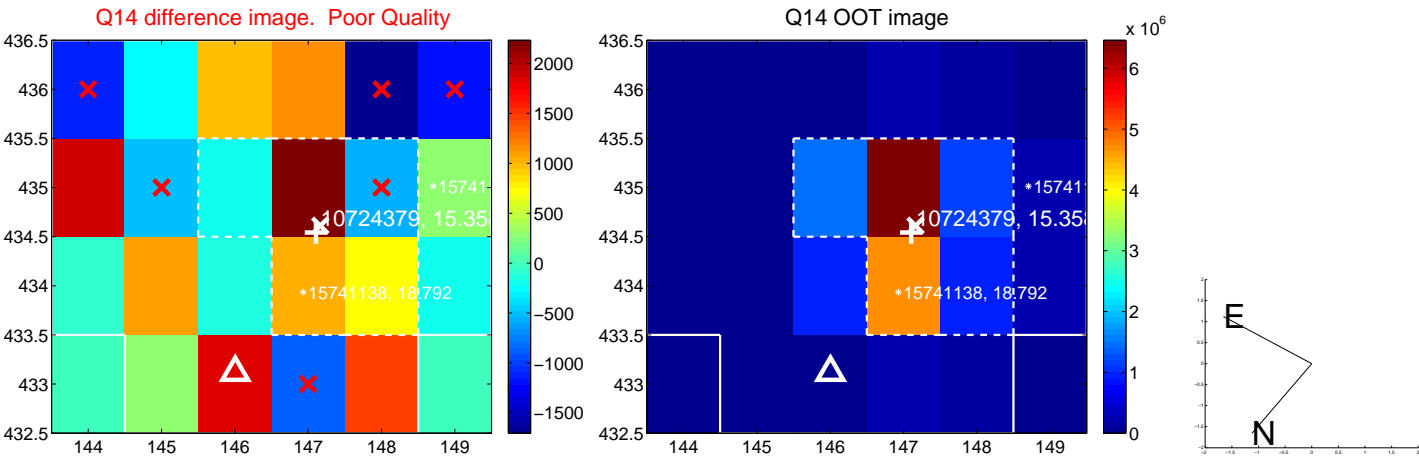
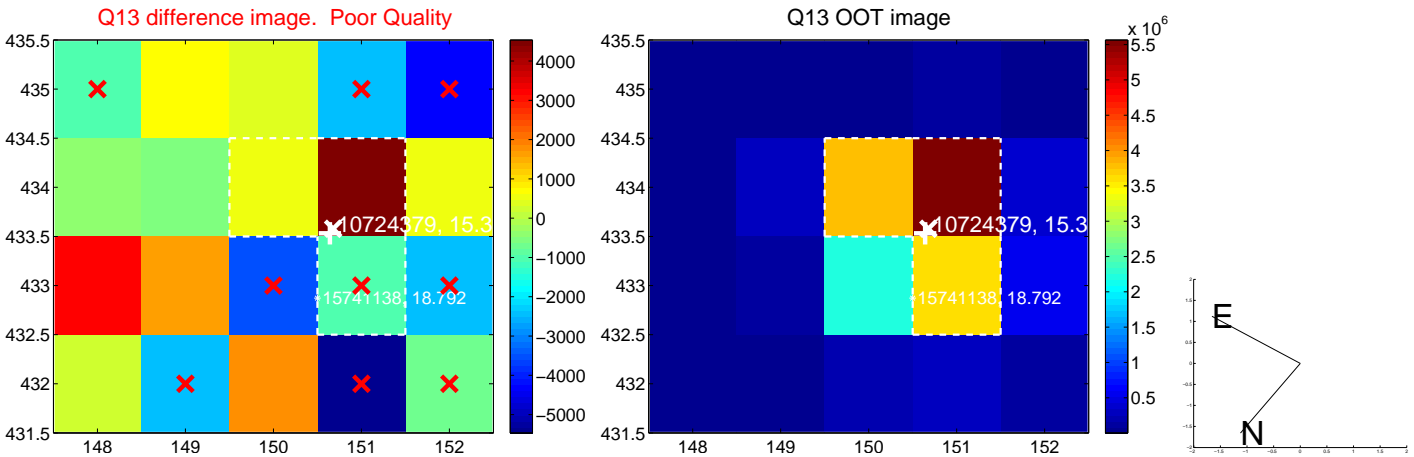
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



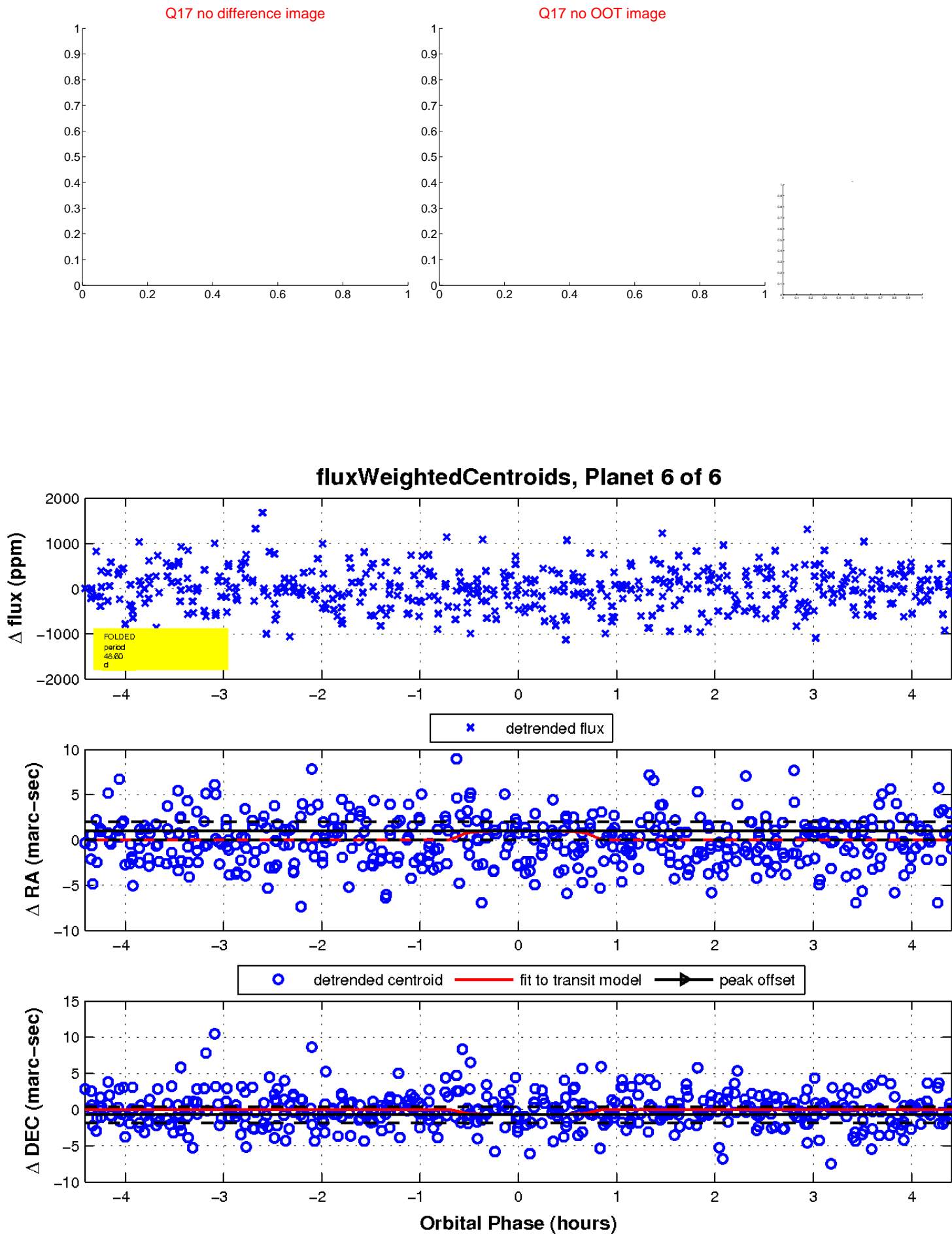
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

