

KIC 010420279

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})
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

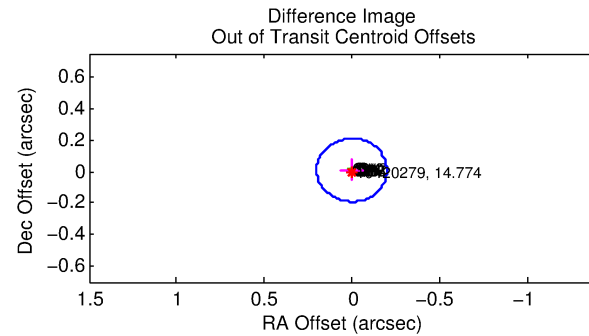
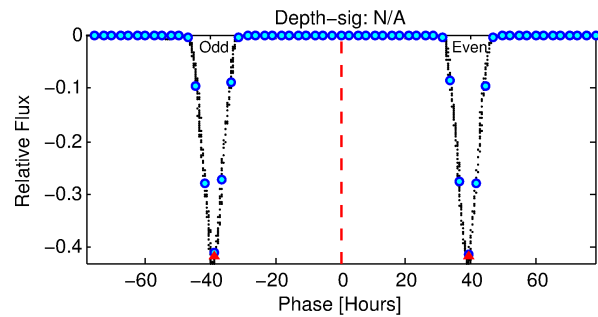
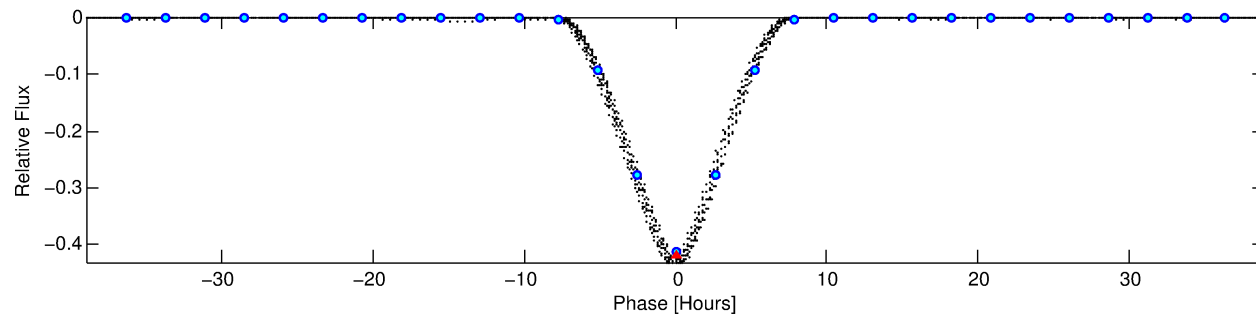
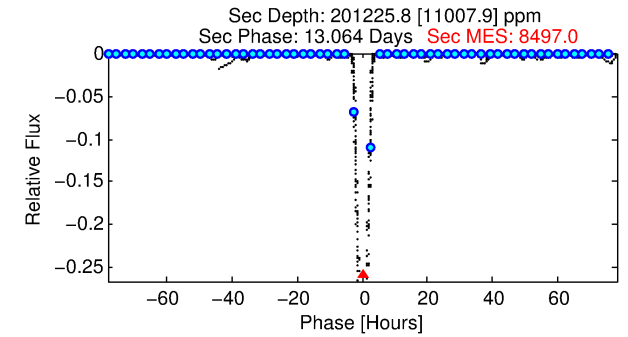
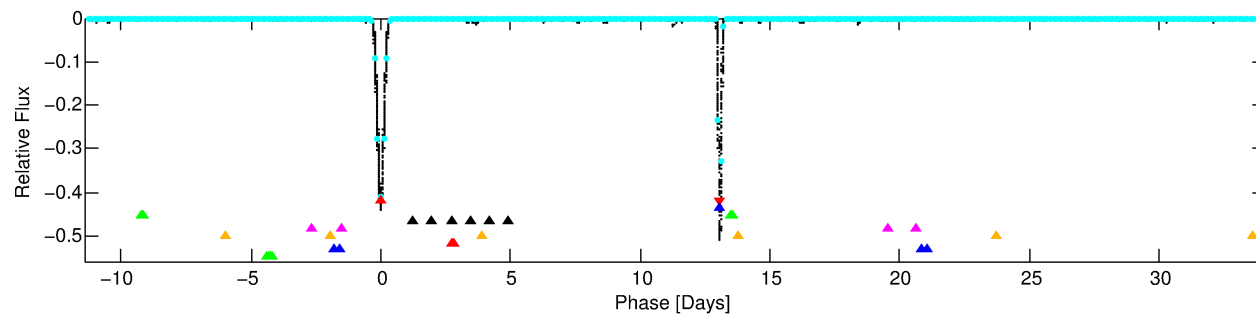
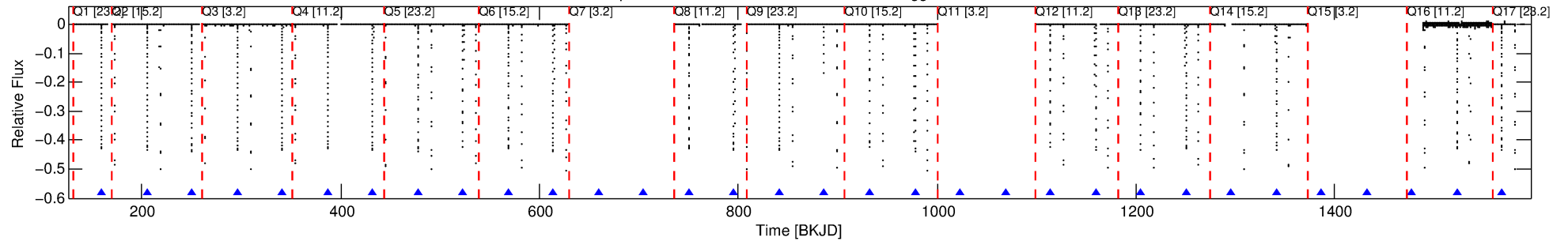
Ephemeris Match Information For 010420279-01

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 1 of 9 Period: 45.434 d
KOI: K07325.01 Corr: 0.794

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



TPS TCE Results:

Period = 45.43414 d
Epoch = 159.8626 BKJD

DV fit results are unavailable

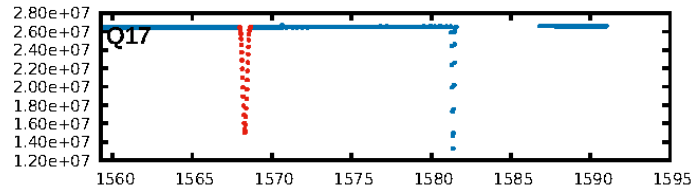
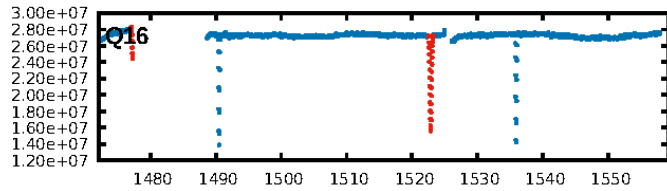
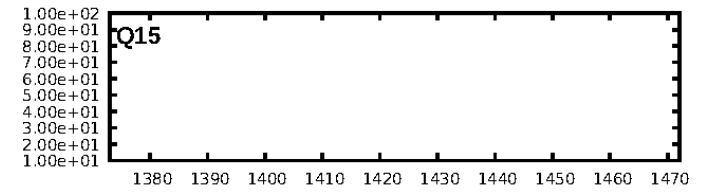
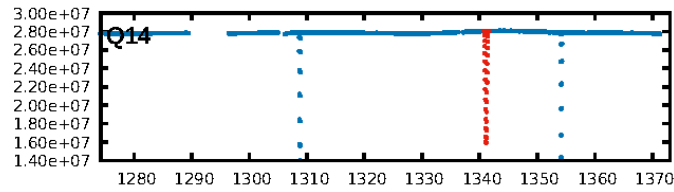
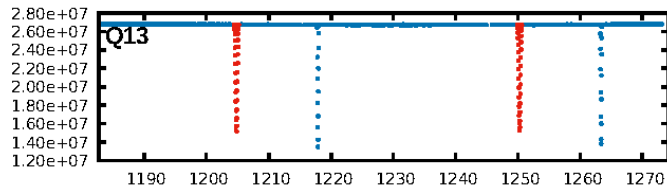
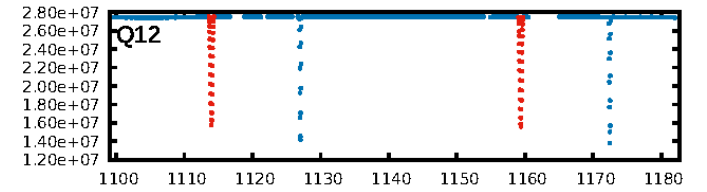
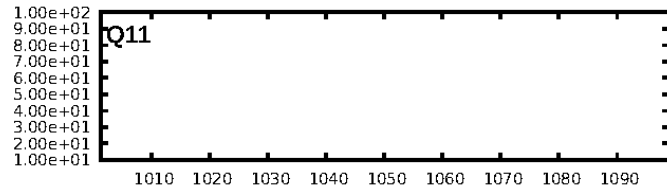
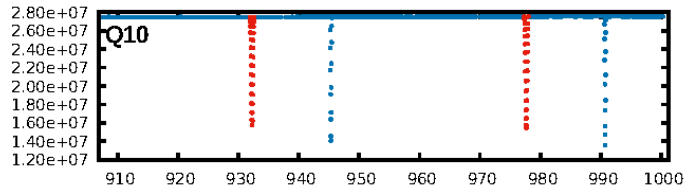
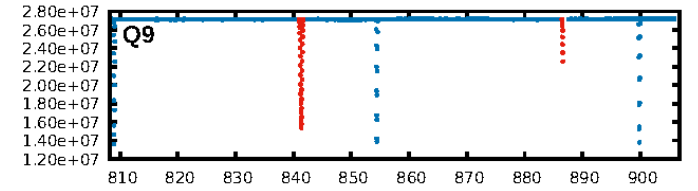
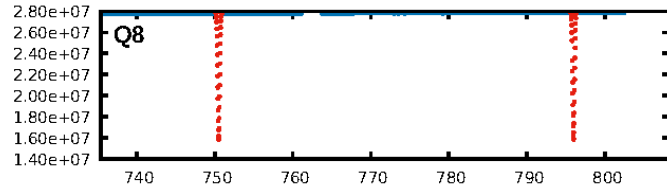
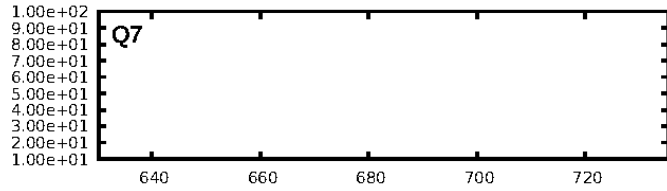
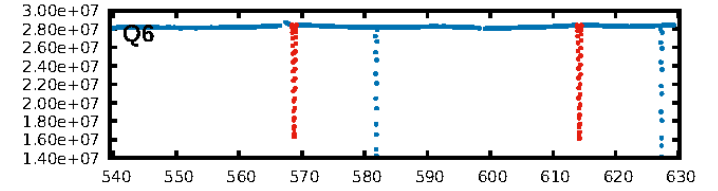
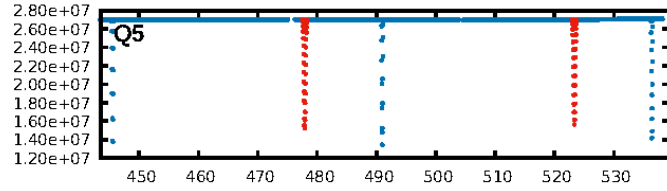
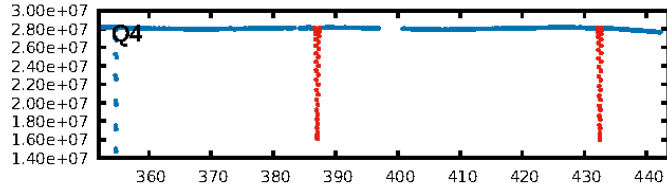
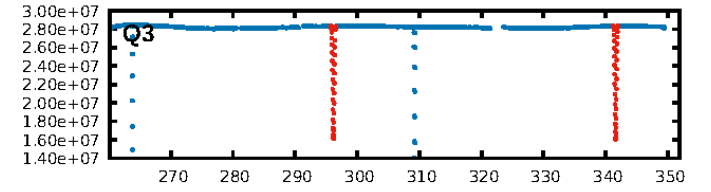
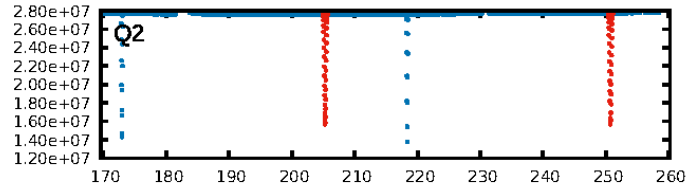
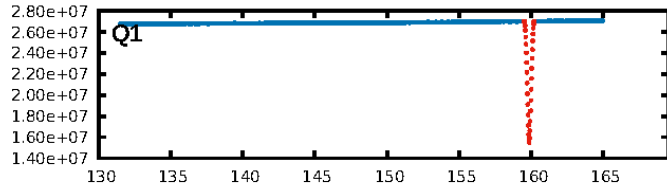
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.4% [0.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 4.764
Centroid-sig: N/A
Centroid-so: 0.065 arcsec [86.50σ]
OotOffset-rm: 0.010 arcsec [0.15σ]
KicOffset-rm: 0.117 arcsec [1.69σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

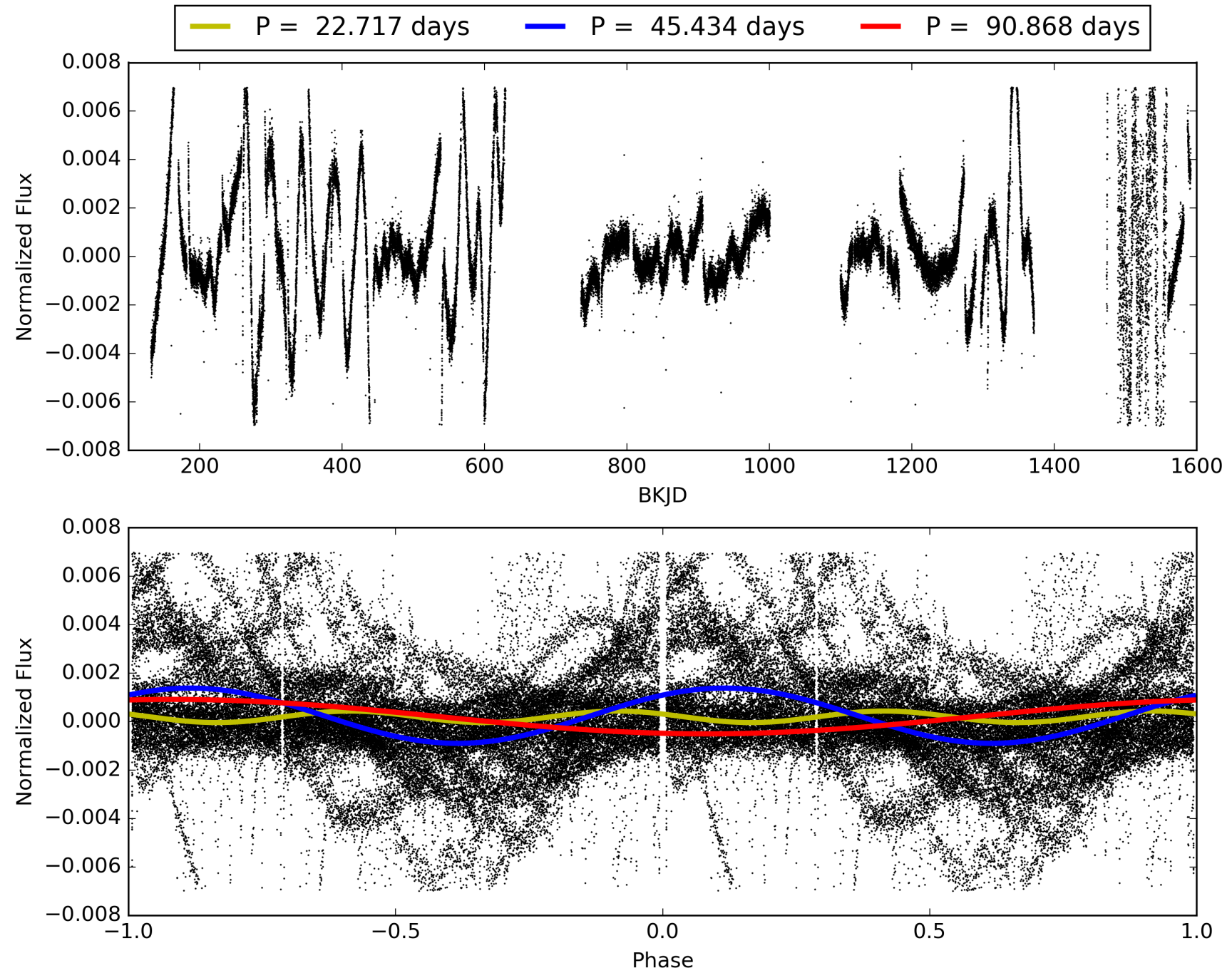
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:39:41 Z

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

TCE 010420279-01, PDC Light Curves

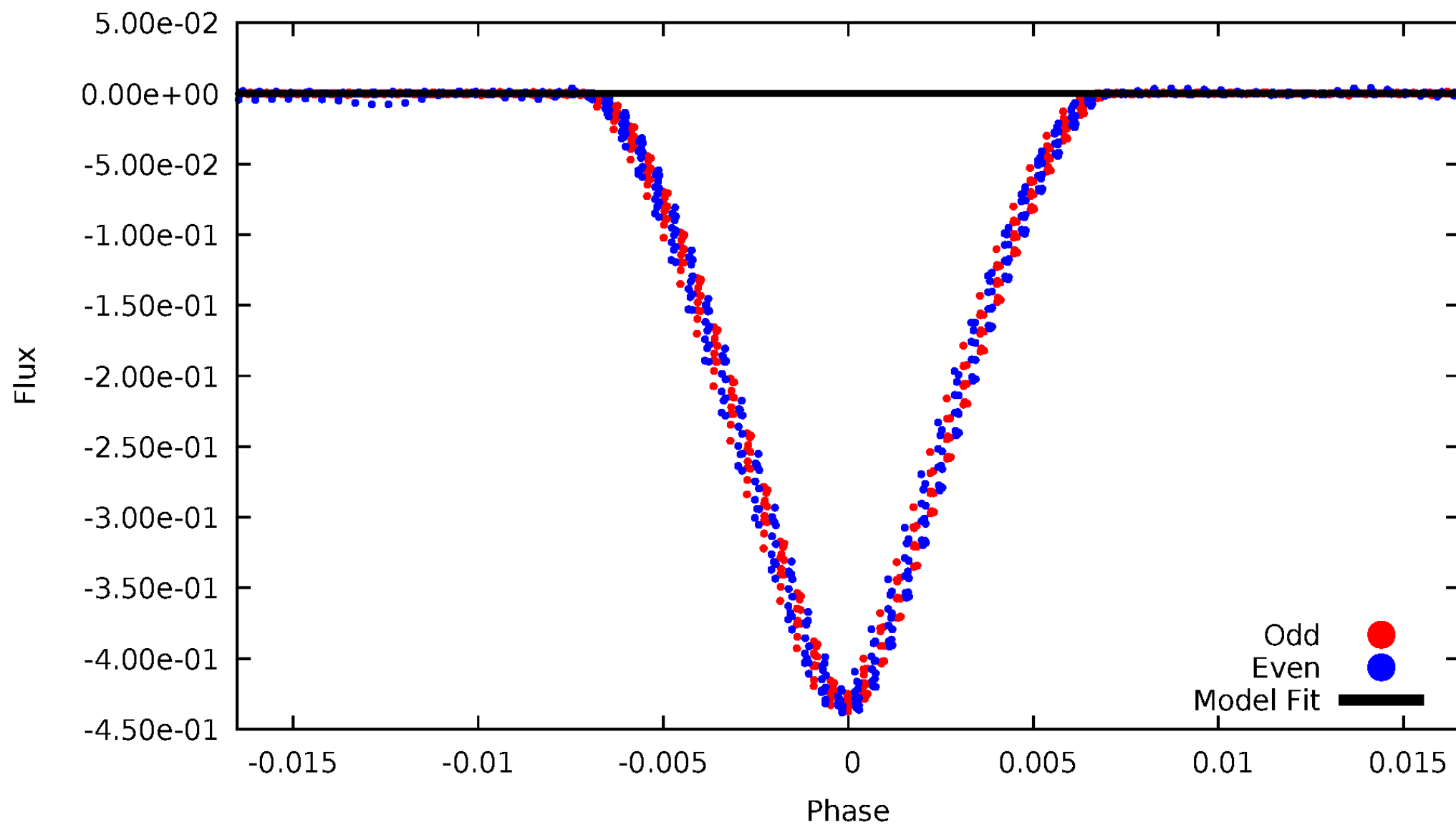


TCE 010420279-01



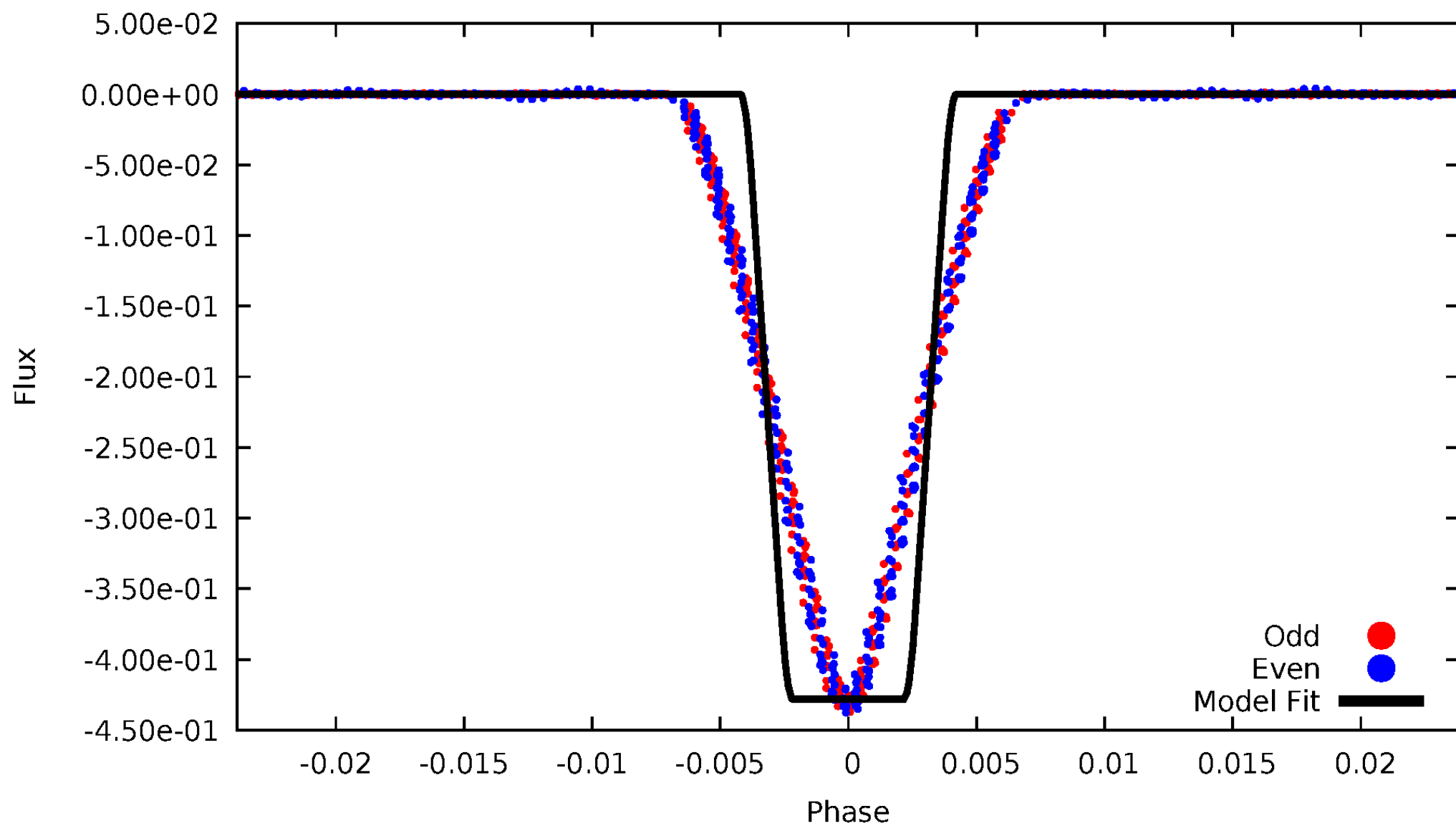
DV Odd/Even

TCE 010420279-01



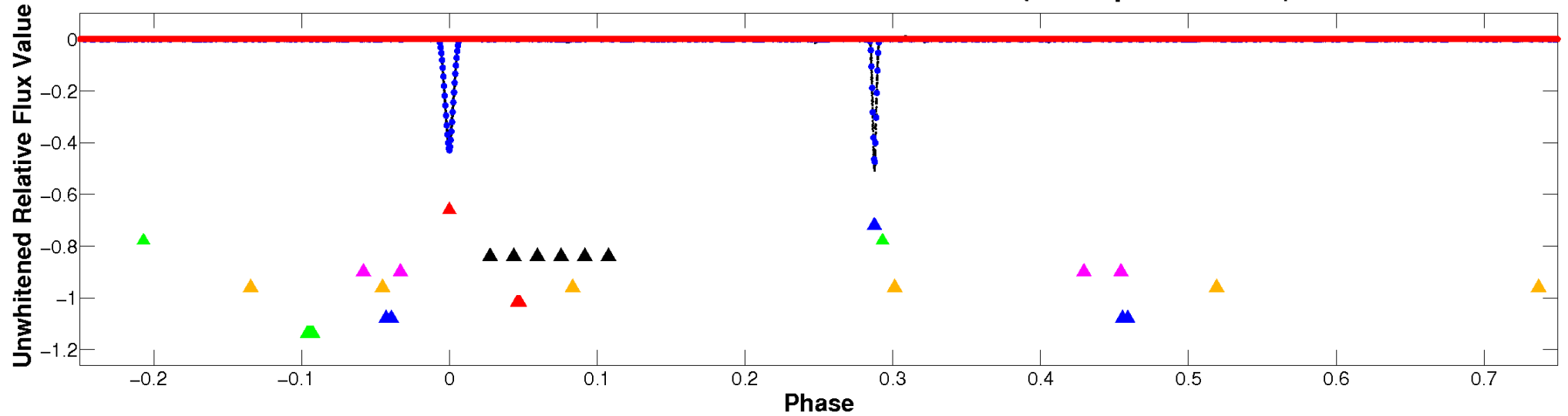
ALT Odd/Even

TCE 010420279-01

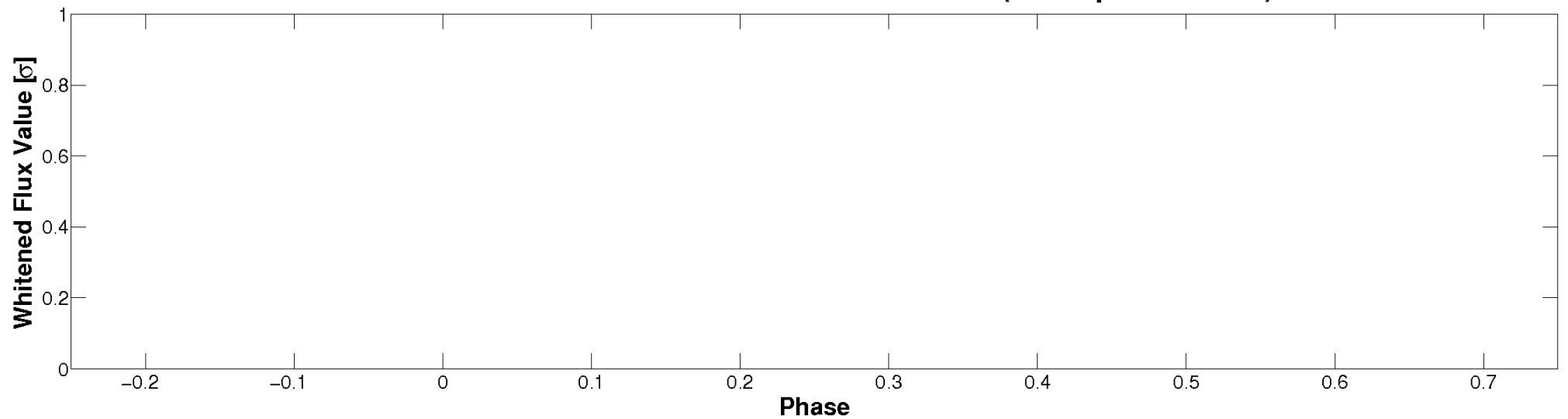


Non-Whitened Vs. Whitened Light Curve

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

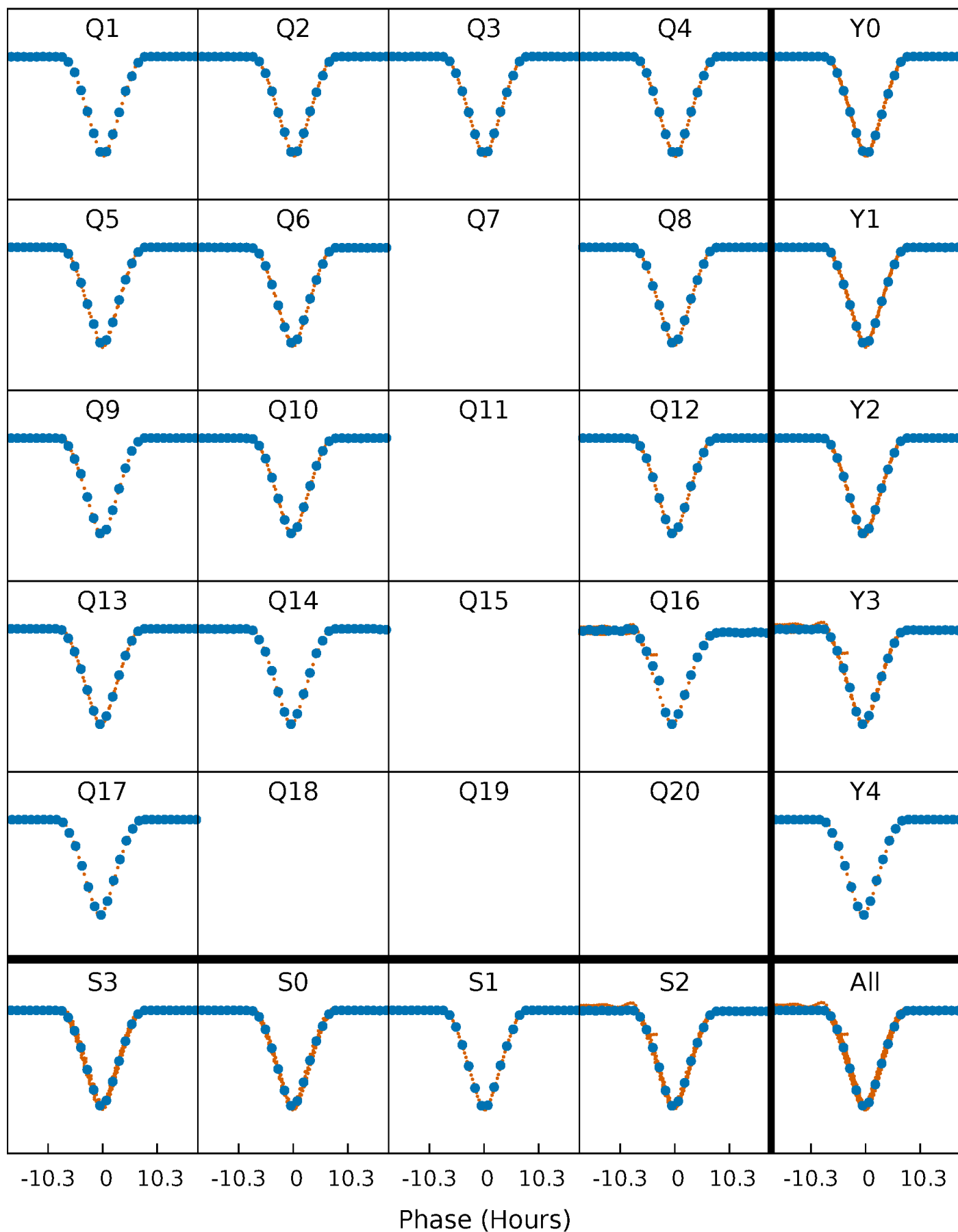


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



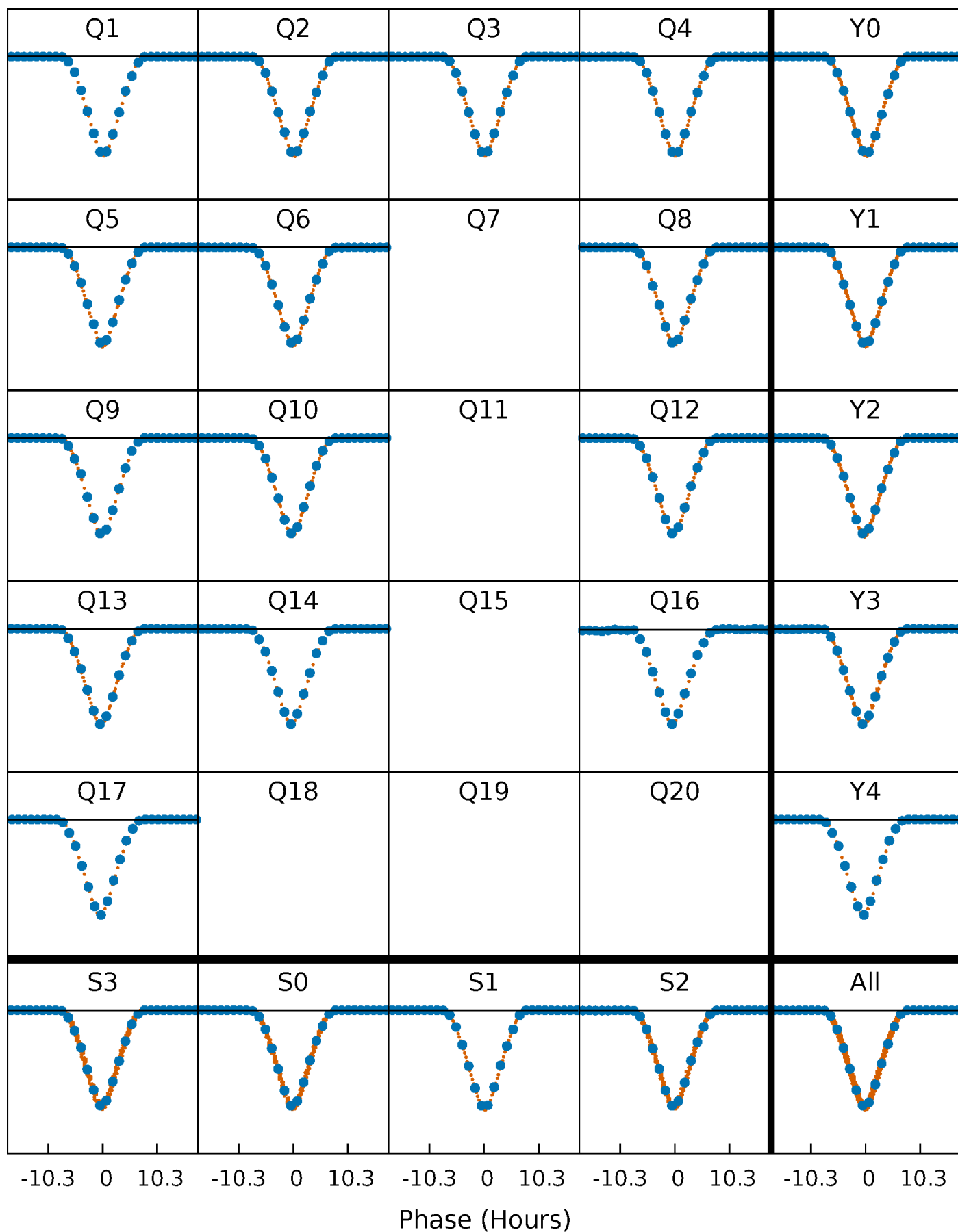
PDC Quarter-Phased Transit Curves

TCE 010420279-01 P= 45.434136 Days $T_0=159.862558$ (BKJD)



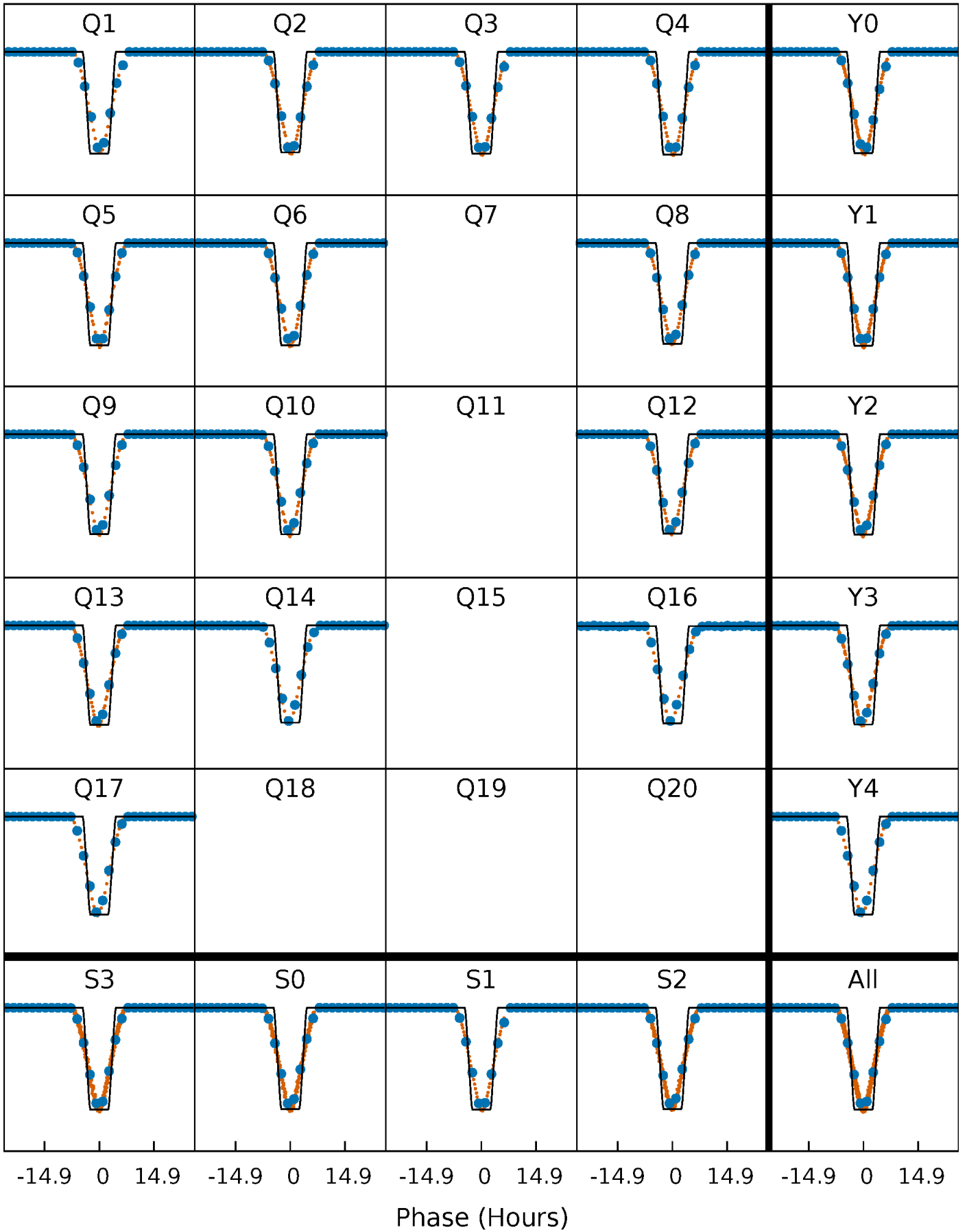
DV Quarter-Phased Transit Curves

TCE 010420279-01 P= 45.434136 Days $T_0=159.862558$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

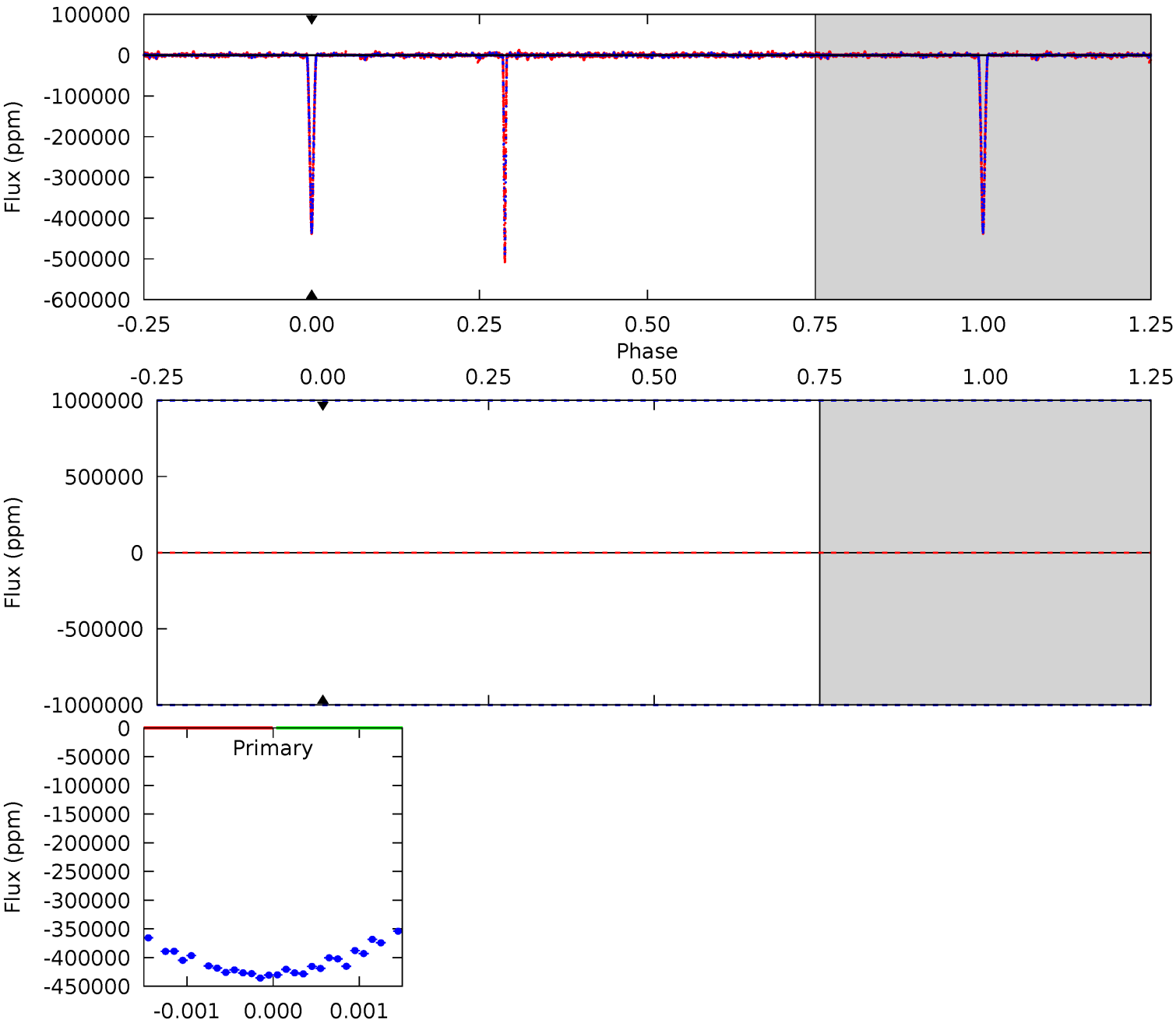
TCE 010420279-01 P= 45.434136 Days $T_0=159.859105$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-01, P = 45.434136 Days, E = 114.428422 Days

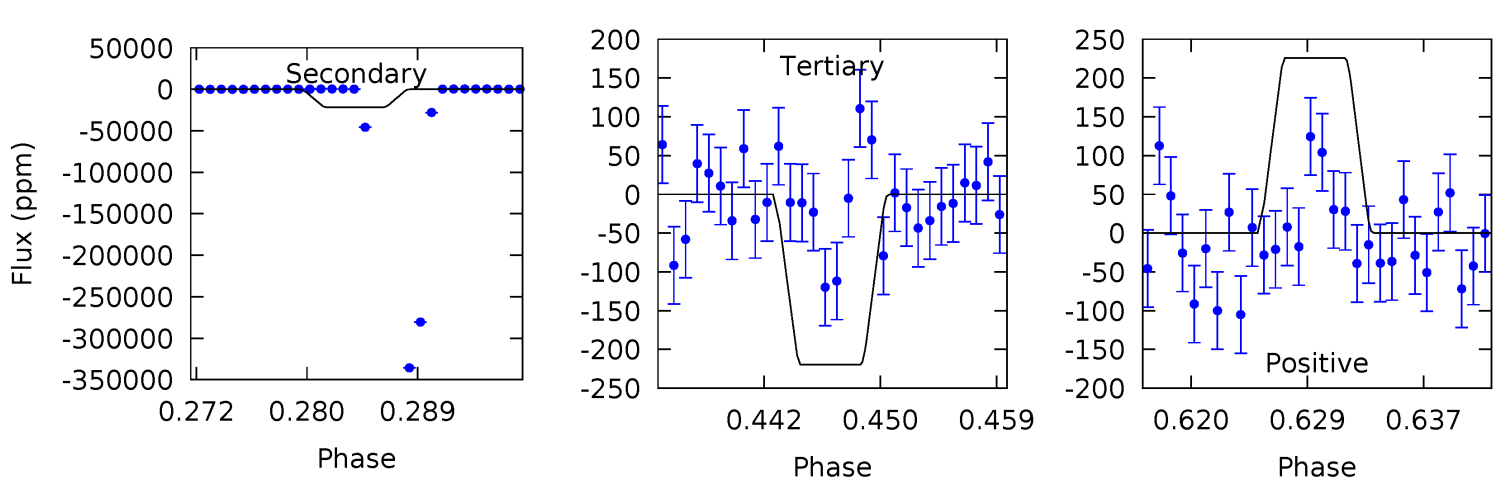
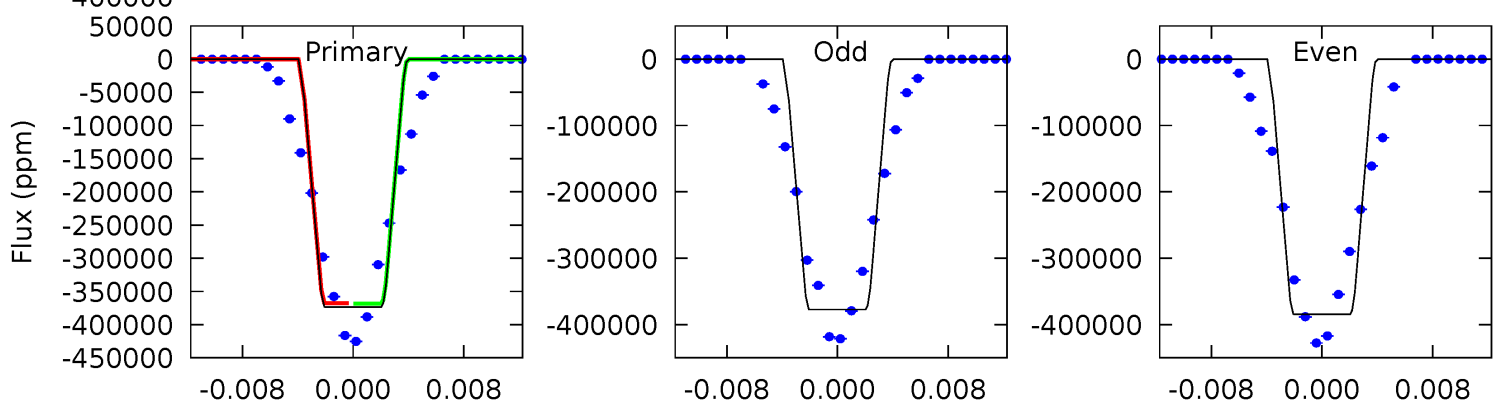
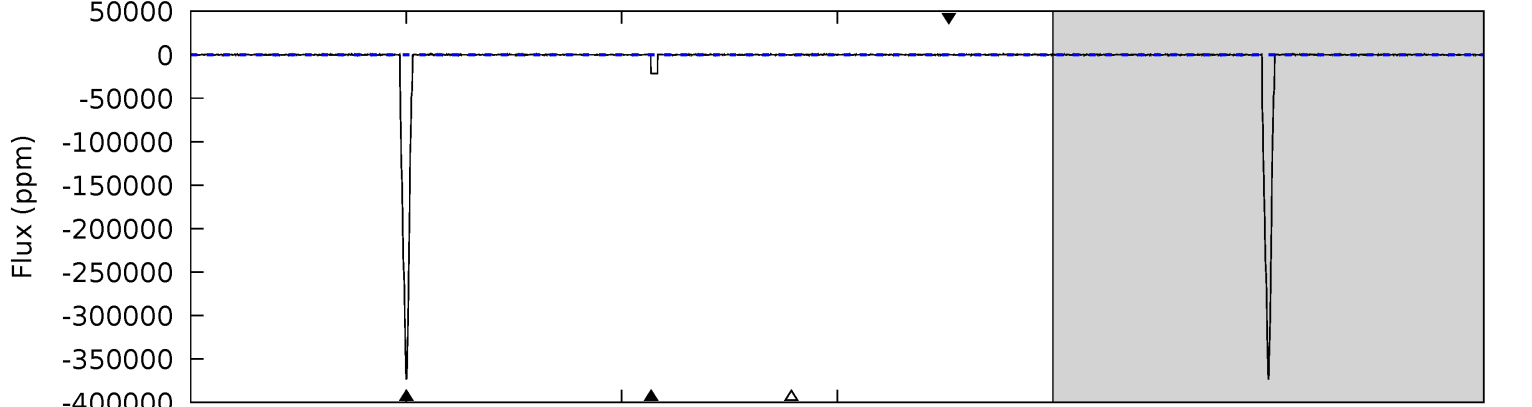
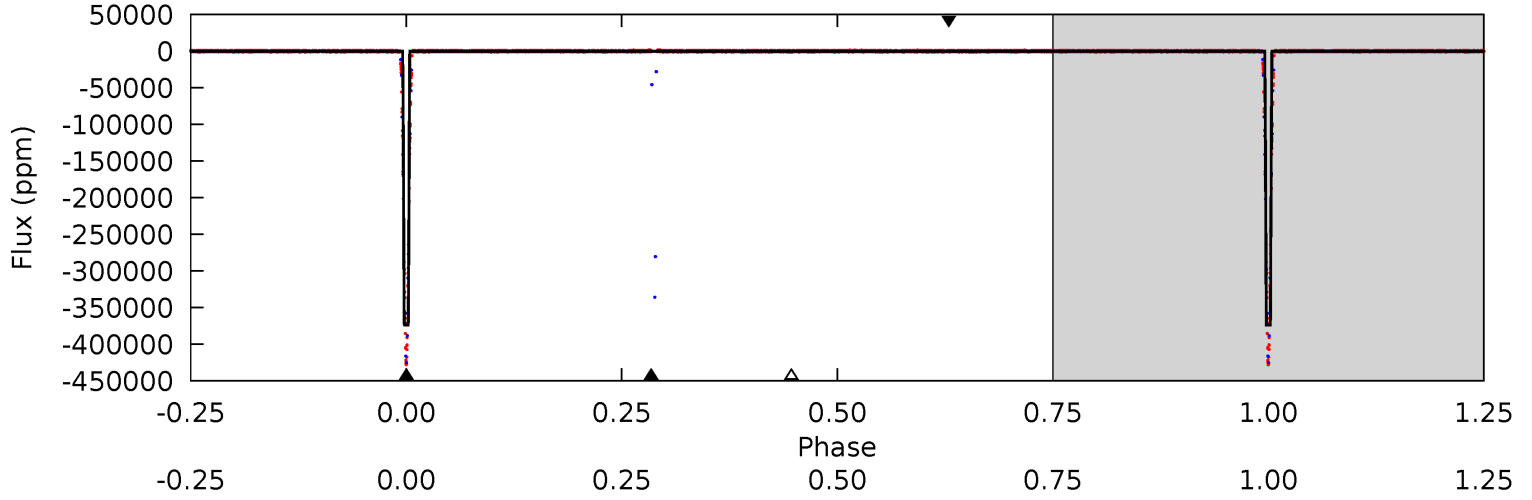
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010420279-01, P = 45.434136 Days, E = 114.424969 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7390	429.5	4.35	4.47	5.06	2.63	1.24	7385	7385	425.1	425.0	83.8	1.07	0.00	0



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-01 / KOI 7325.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$60.01^{+14.53}_{-14.05}$	743^{+56}_{-41}	-2631^{+7518}_{-2020}	$-22.825^{+1133.936}_{-890.552}$
Alt.	-21709 ± 51	$78.90^{+17.64}_{-14.51}$	744^{+52}_{-43}	3288^{+176}_{-144}	121^{+57}_{-39}

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

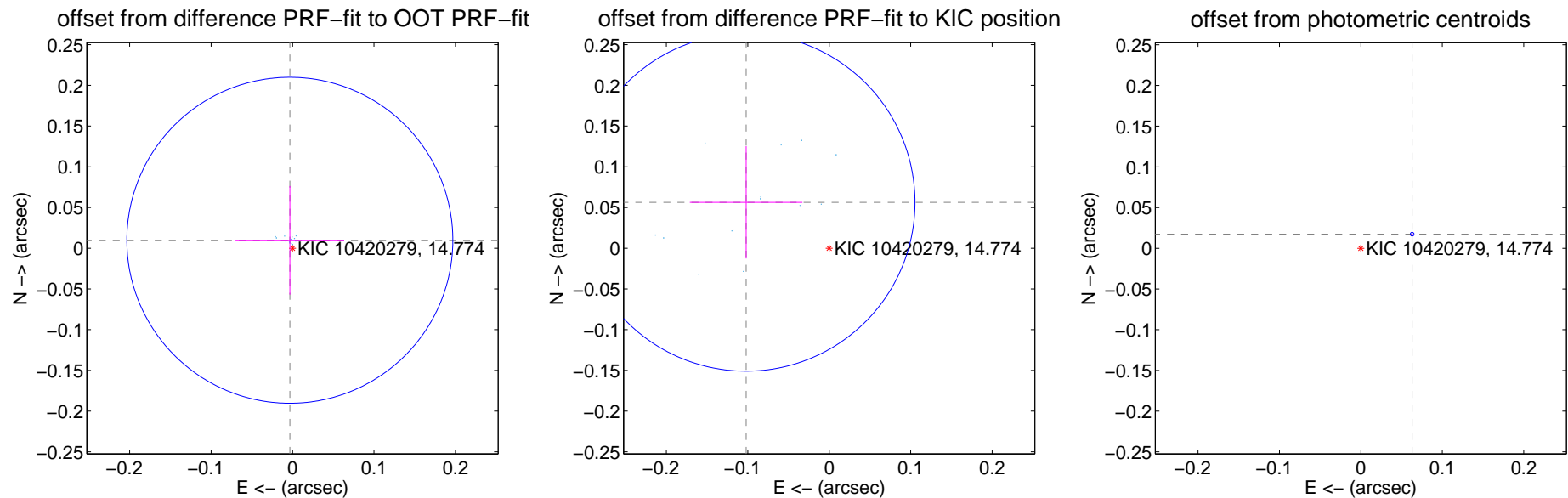
DV Centroid Data

Supplemental centroid analysis for 010420279-01. Kepler magnitude: 14.77. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

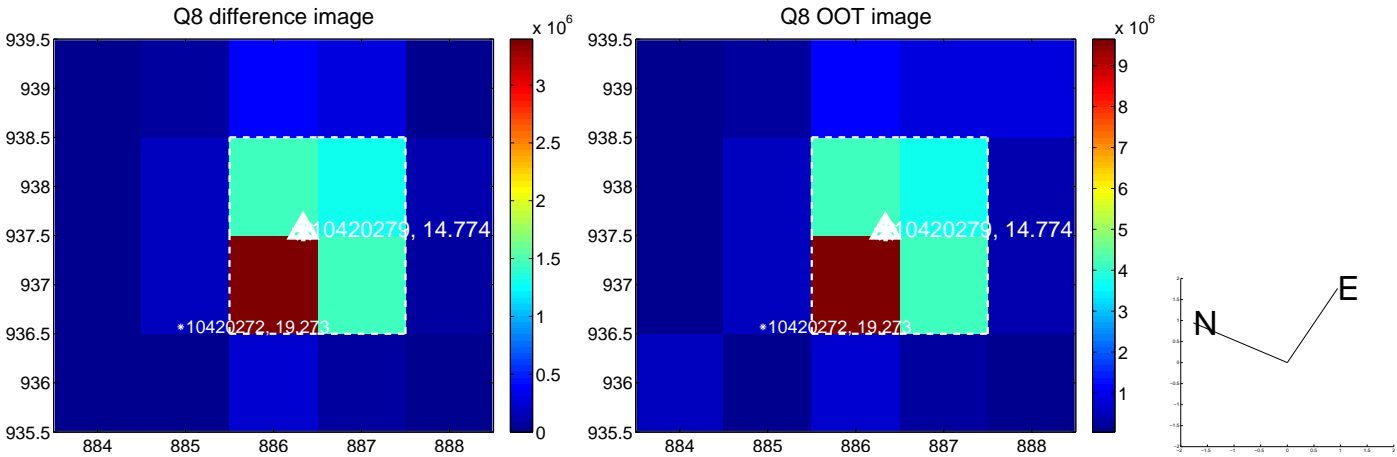
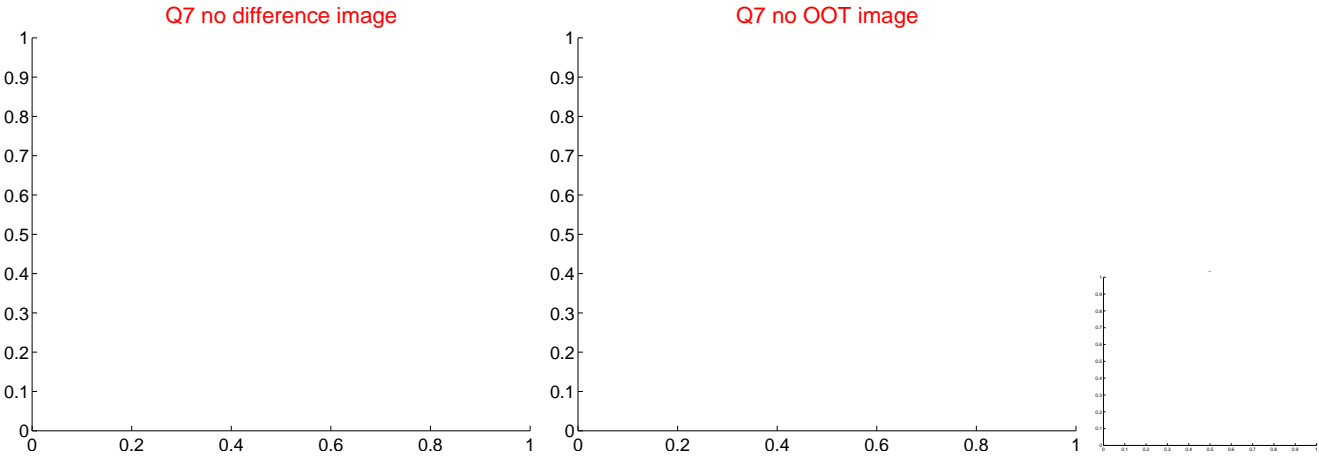
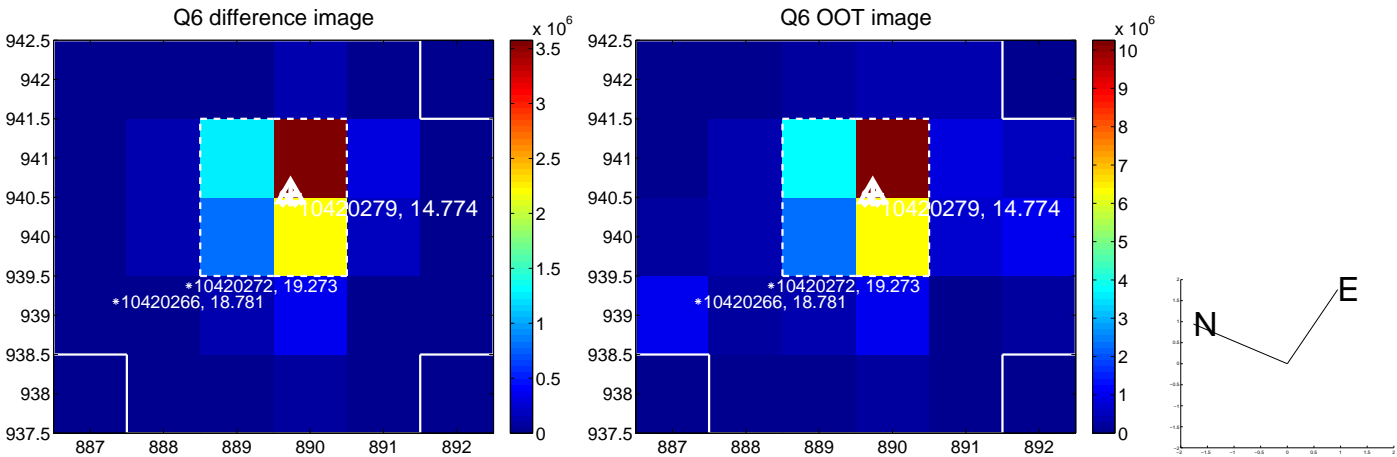
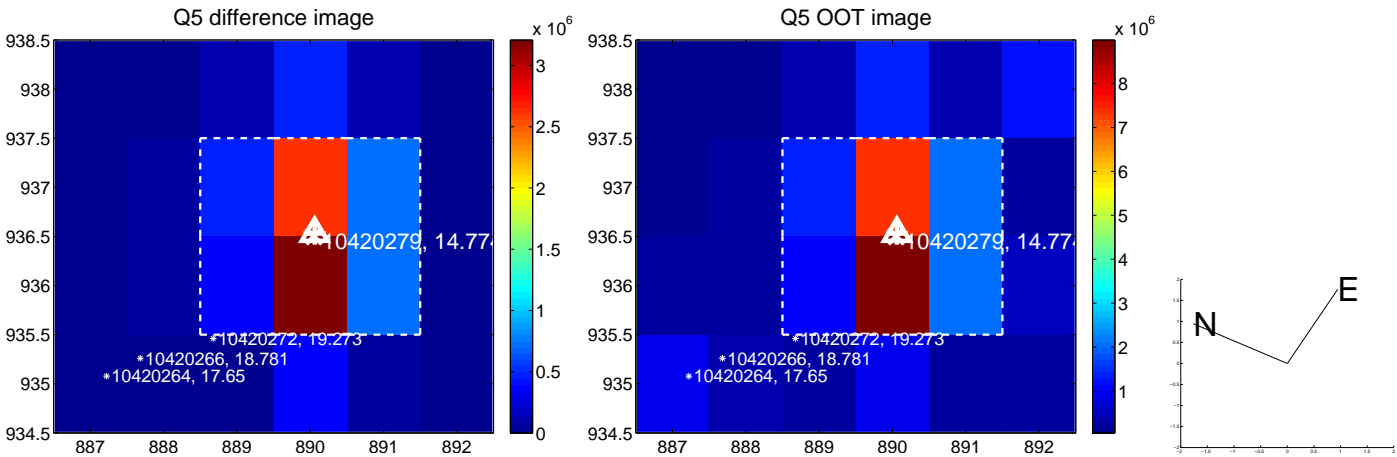
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.010 ± 0.067	0.15	0.003 ± 0.067	0.010 ± 0.067
PRF-fit source offset from KIC position	0.117 ± 0.069	1.69	0.102 ± 0.069	0.056 ± 0.069
photometric centroid source offset	0.07 ± 0.00	86.50	-0.06 ± 0.00	0.02 ± 0.00

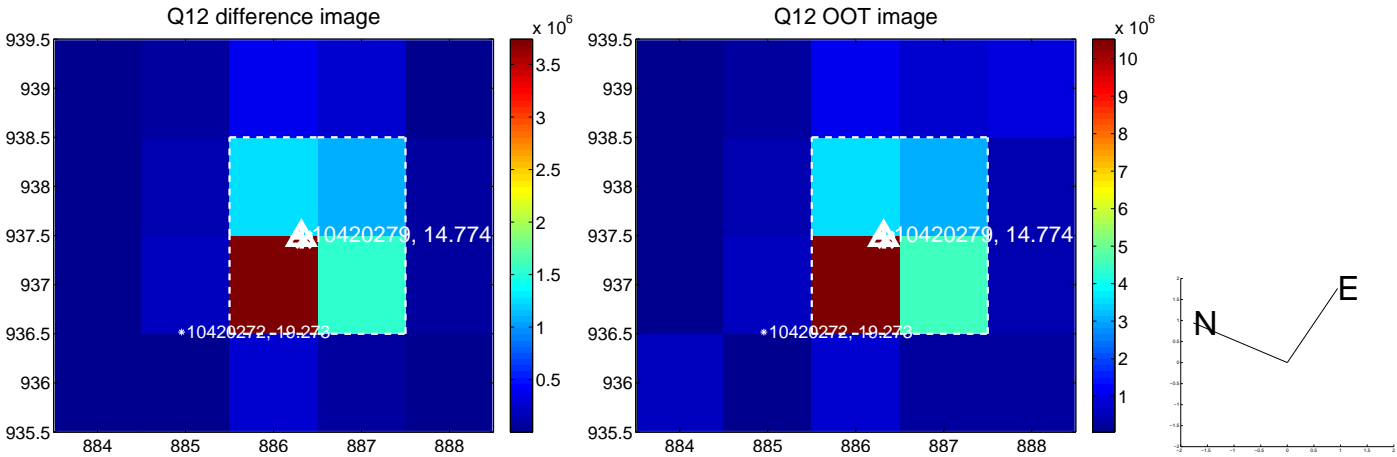
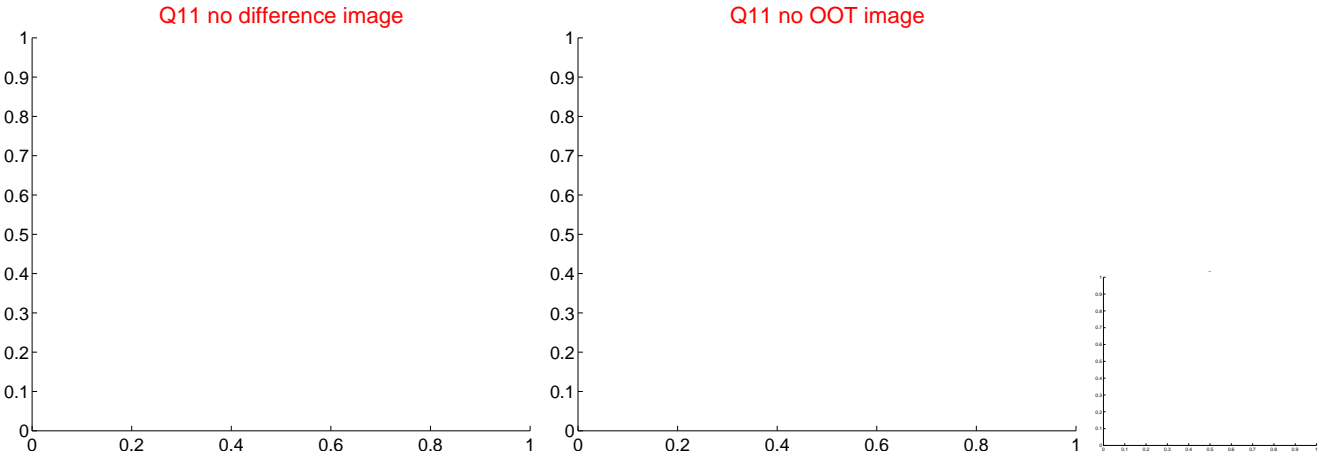
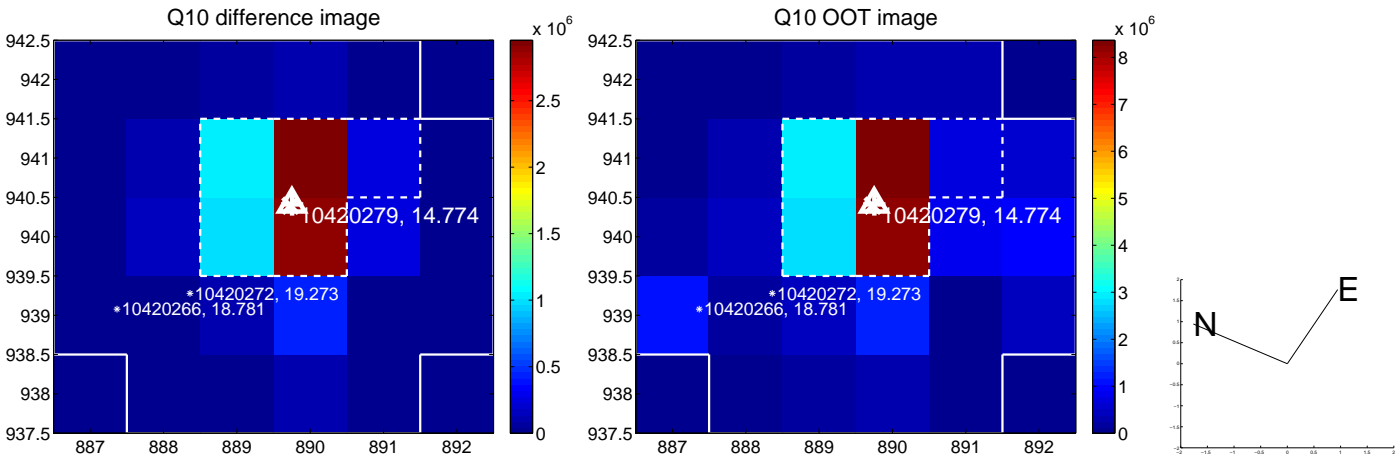
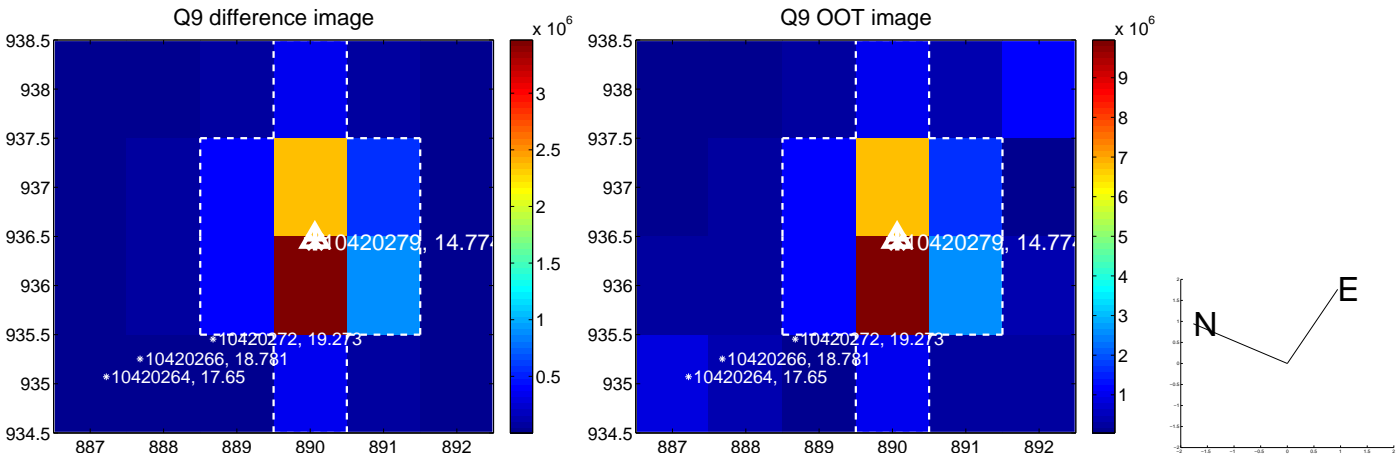


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

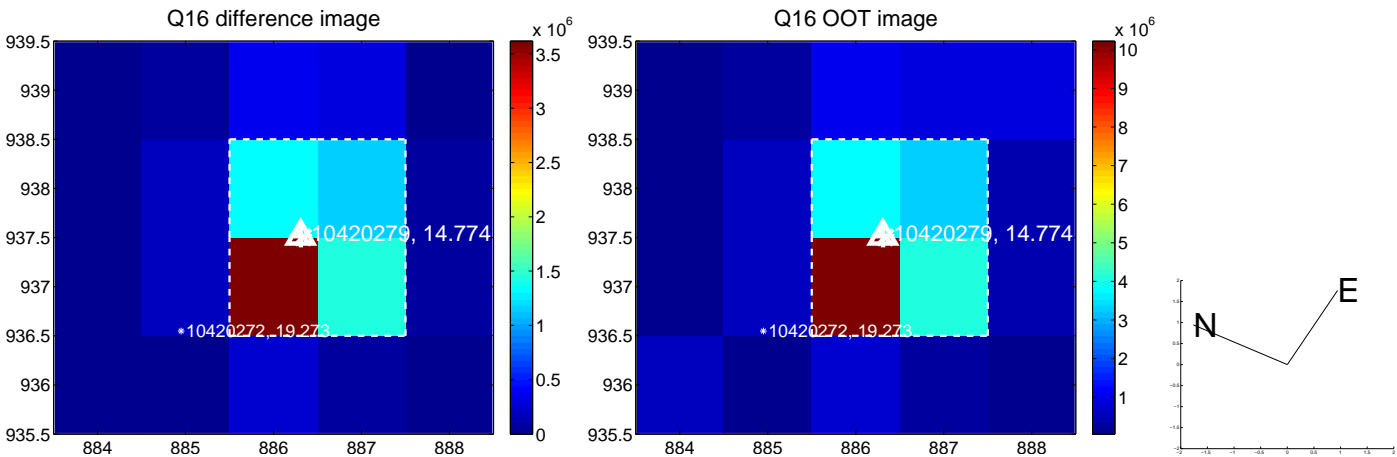
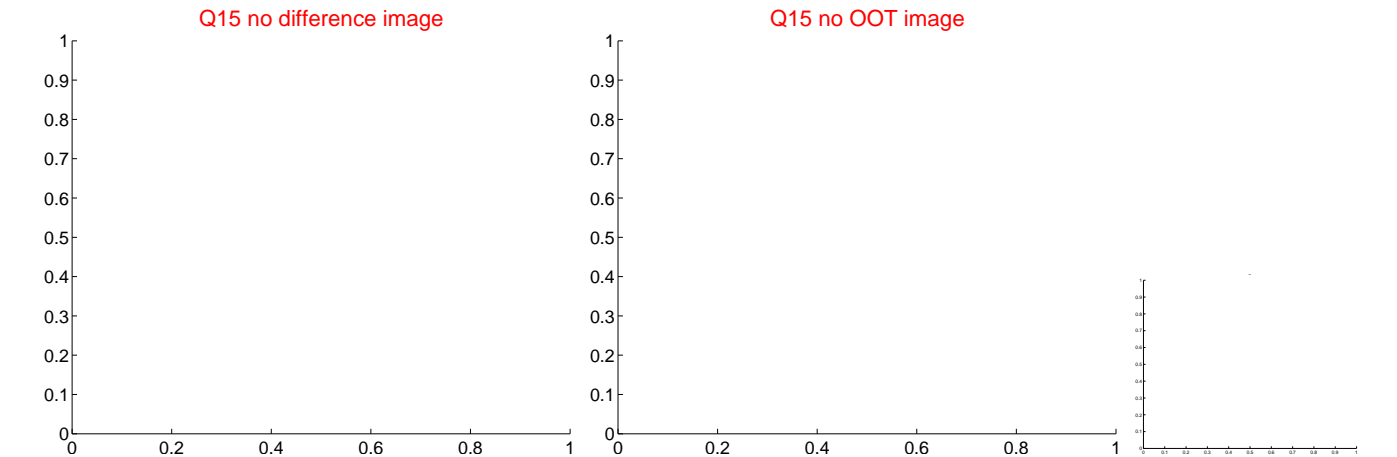
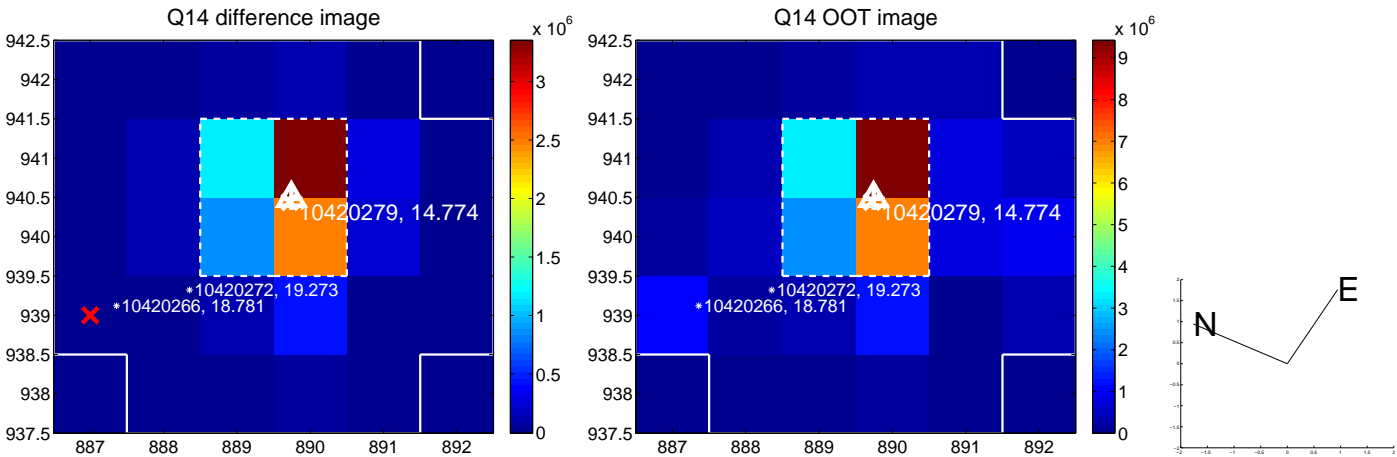
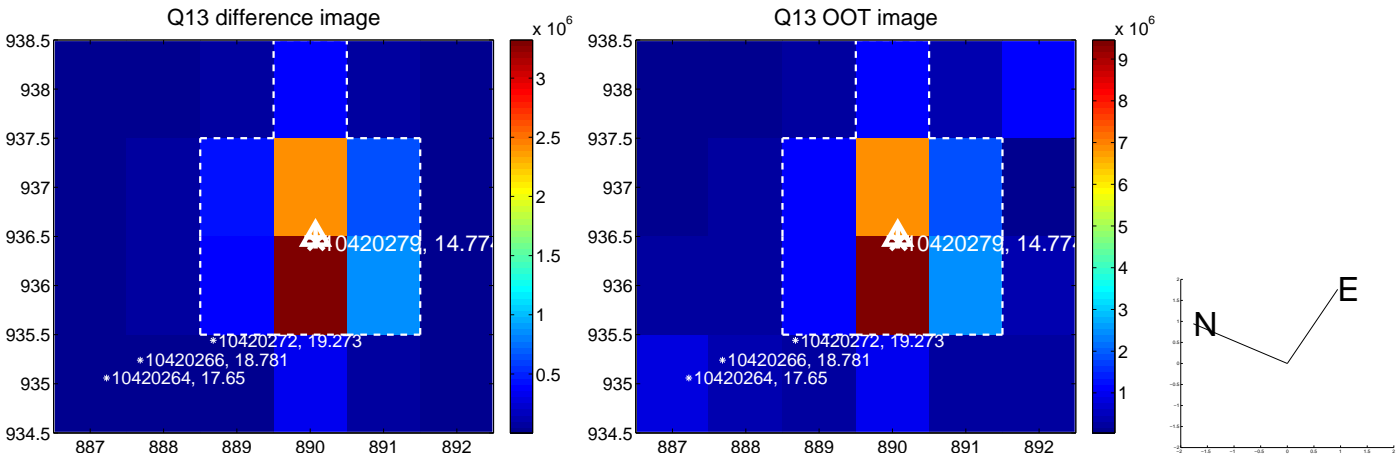
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



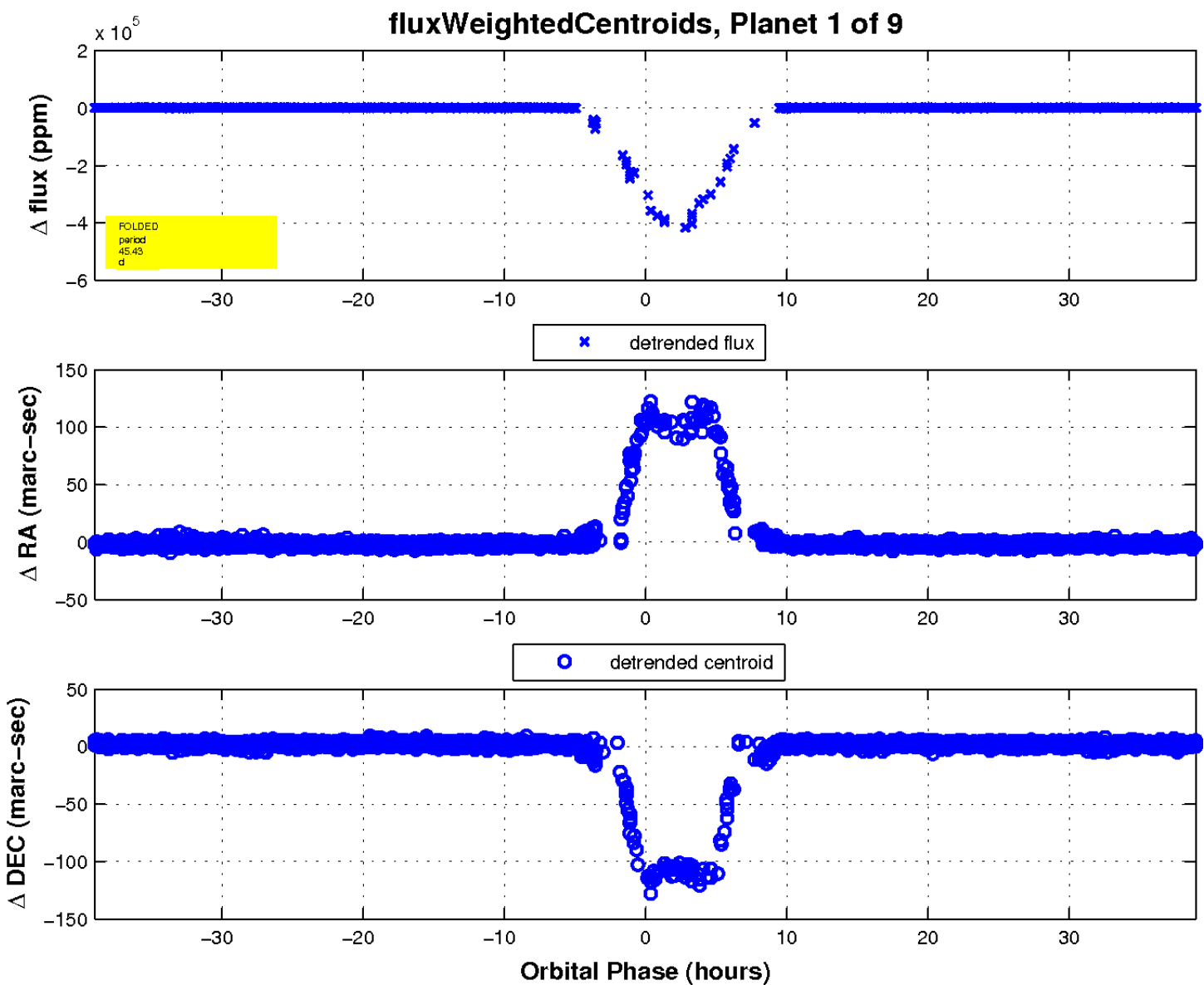
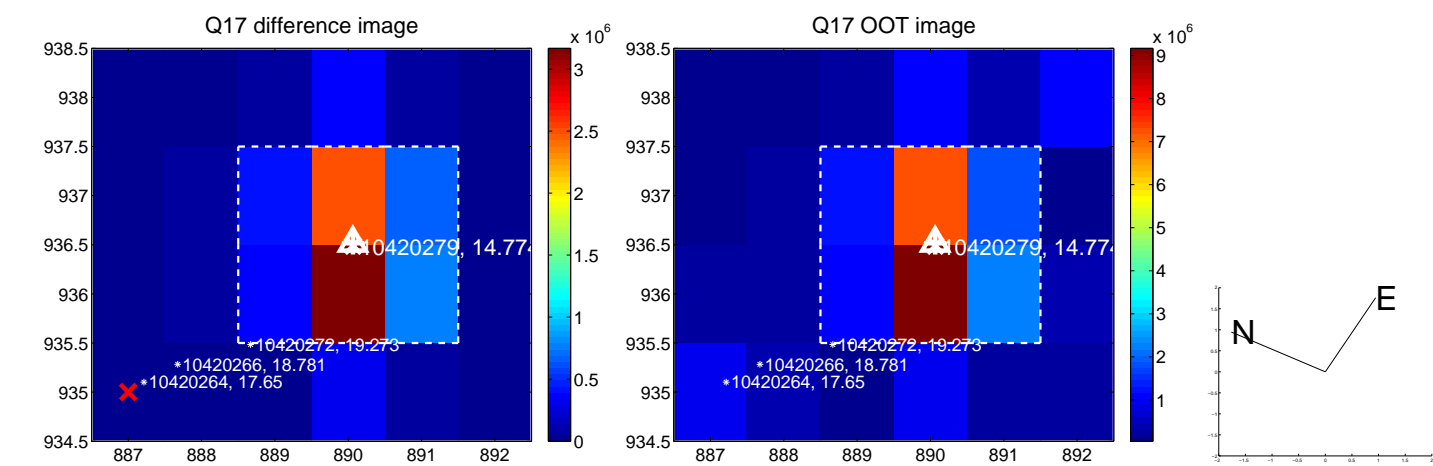
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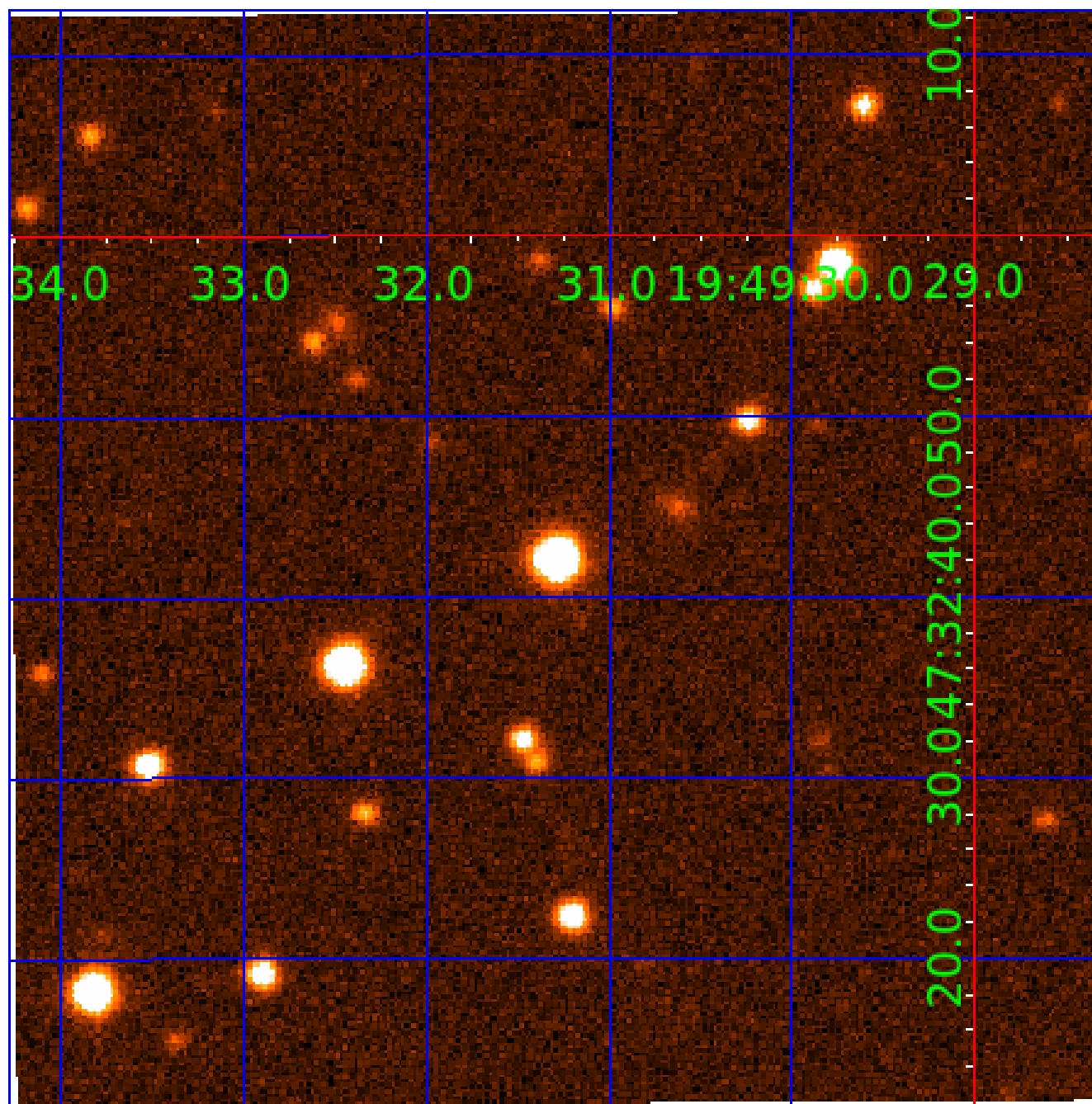


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

Q1-17 DR25 TCE Parameters

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Robovetter Results

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010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

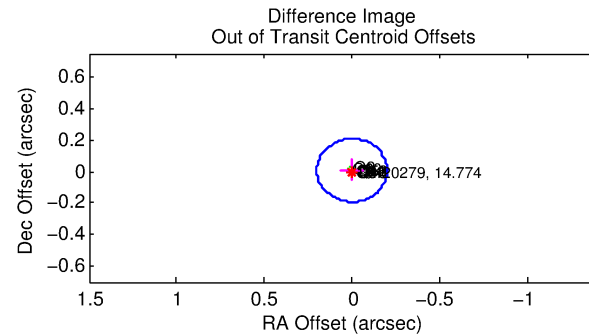
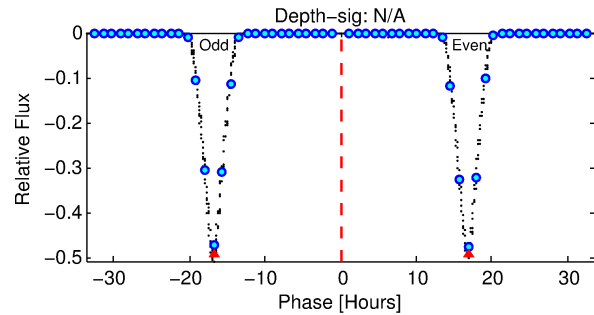
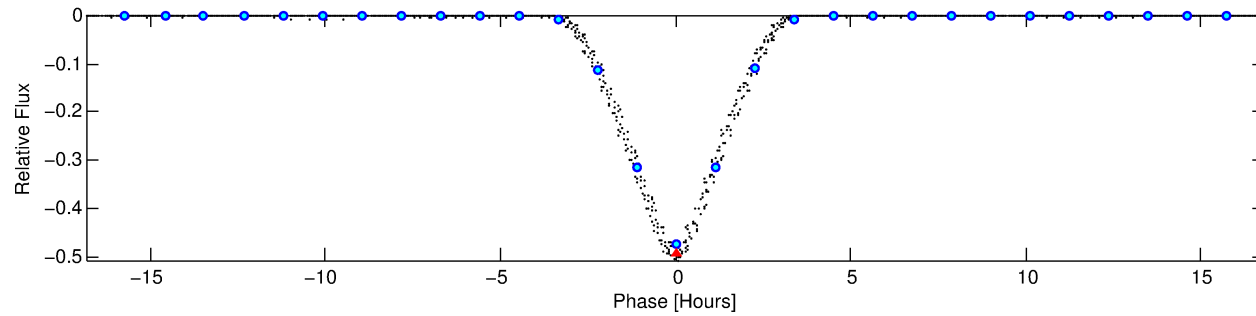
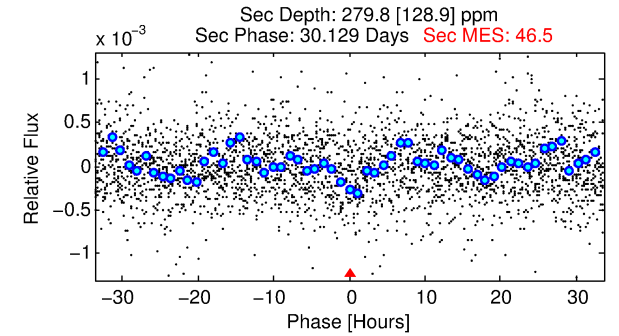
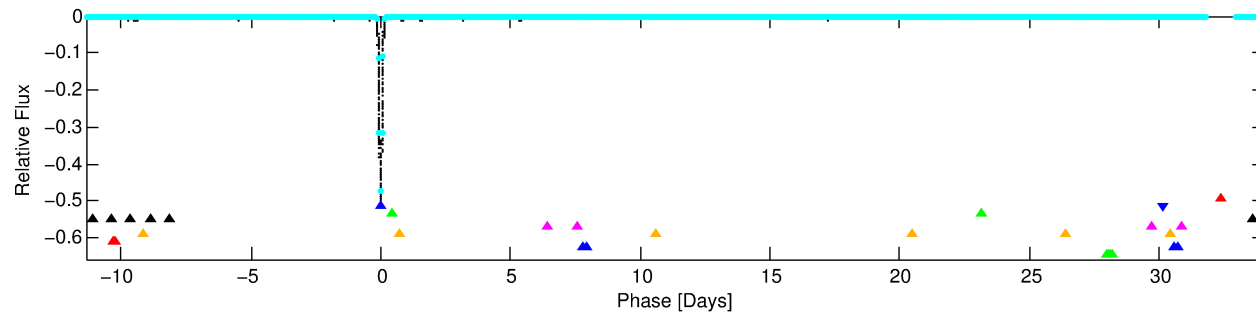
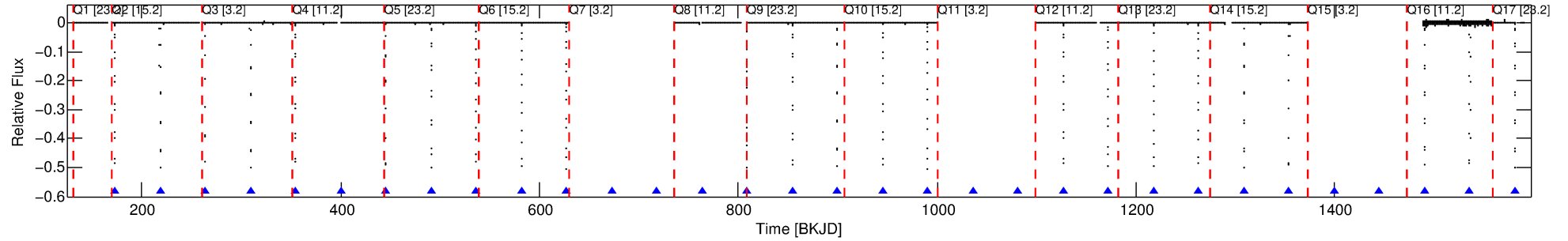
Ephemeris Match Information For 010420279-02

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 2 of 9 Period: 45.434 d
KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



TPS TCE Results:

Period = 45.43366 d
Epoch = 172.9366 BKJD

DV fit results are unavailable

DV Diagnostic Results:

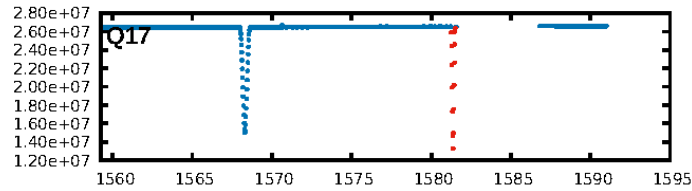
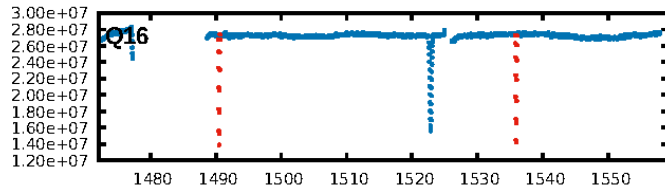
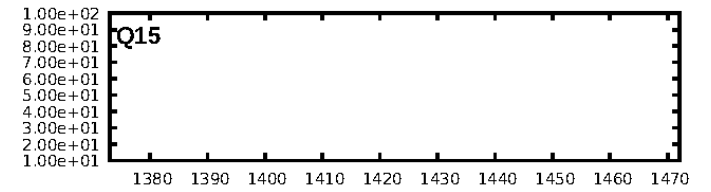
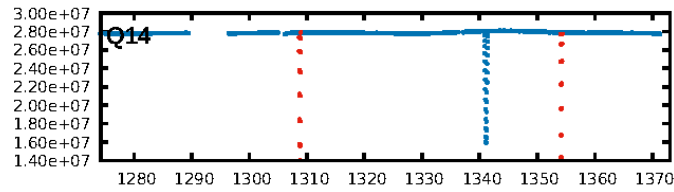
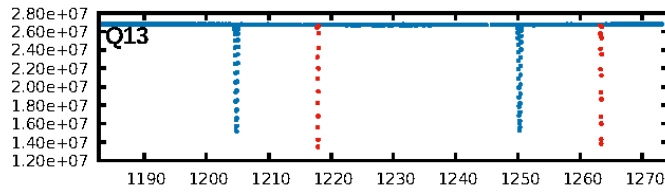
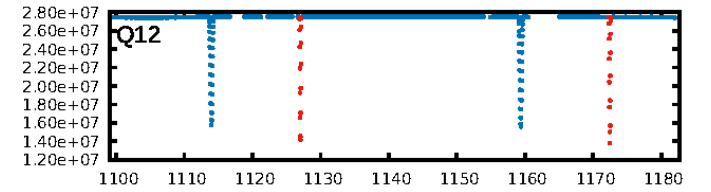
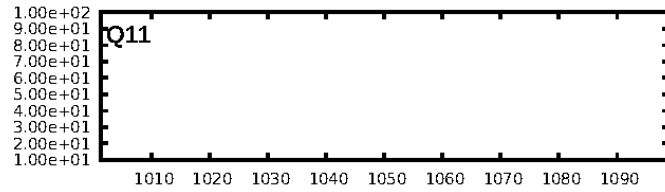
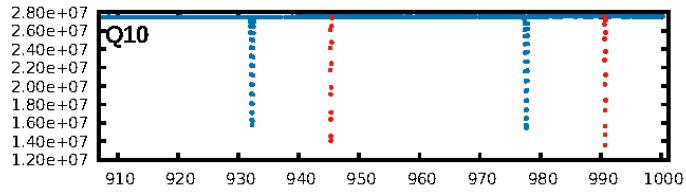
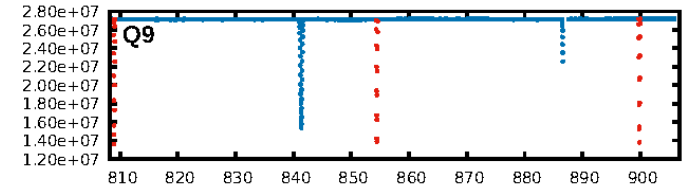
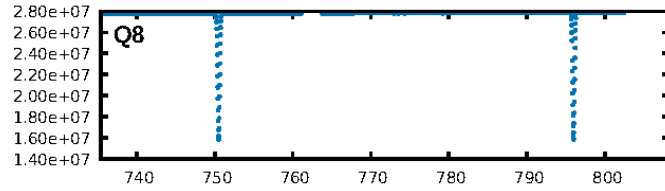
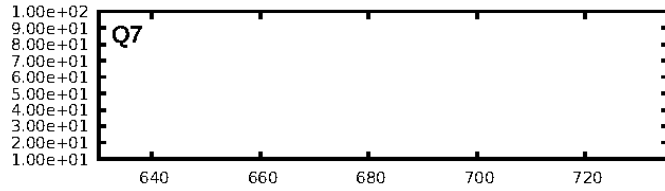
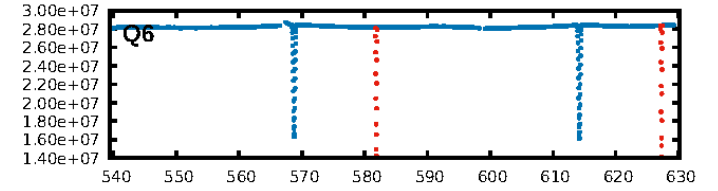
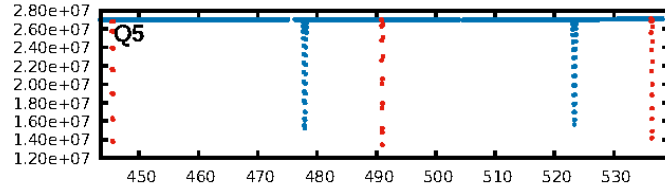
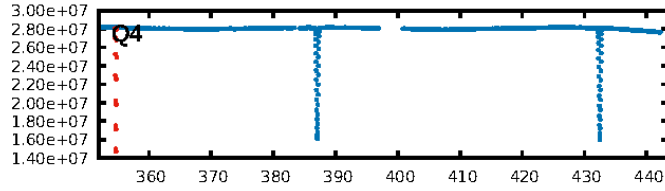
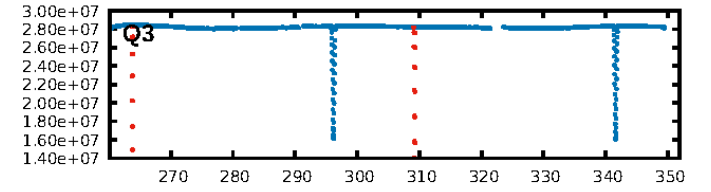
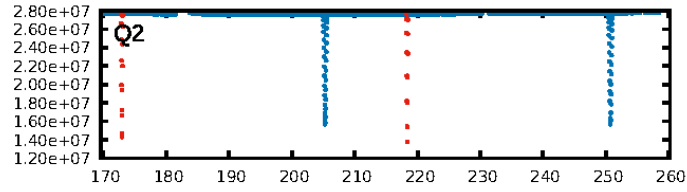
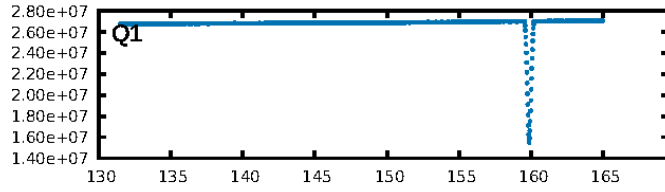
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LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: 5.133

Centroid-sig: N/A
Centroid-so: 0.082 arcsec [93.70 σ]
OotOffset-rm: 0.009 arcsec [0.13 σ]
KicOffset-rm: 0.122 arcsec [1.73 σ]
OotOffset-st: 4/1/3/3 [11]
KicOffset-st: 4/1/3/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 0.00 [0/11]

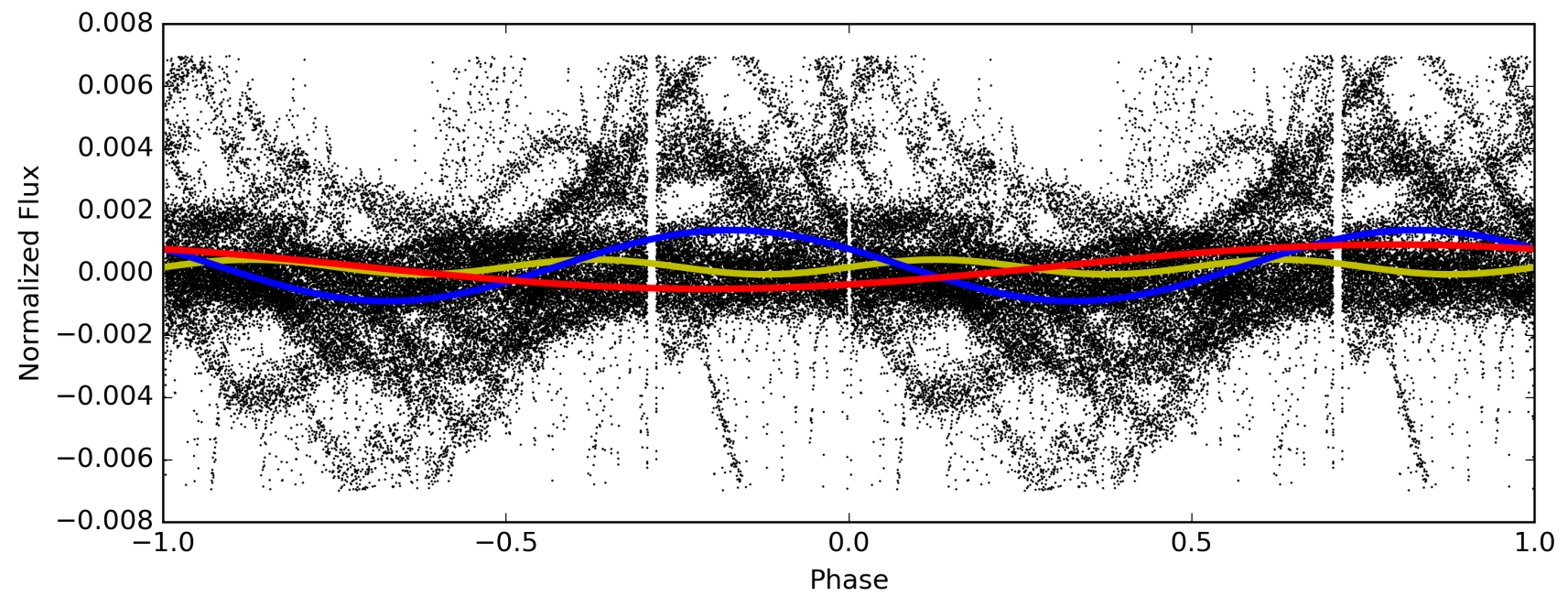
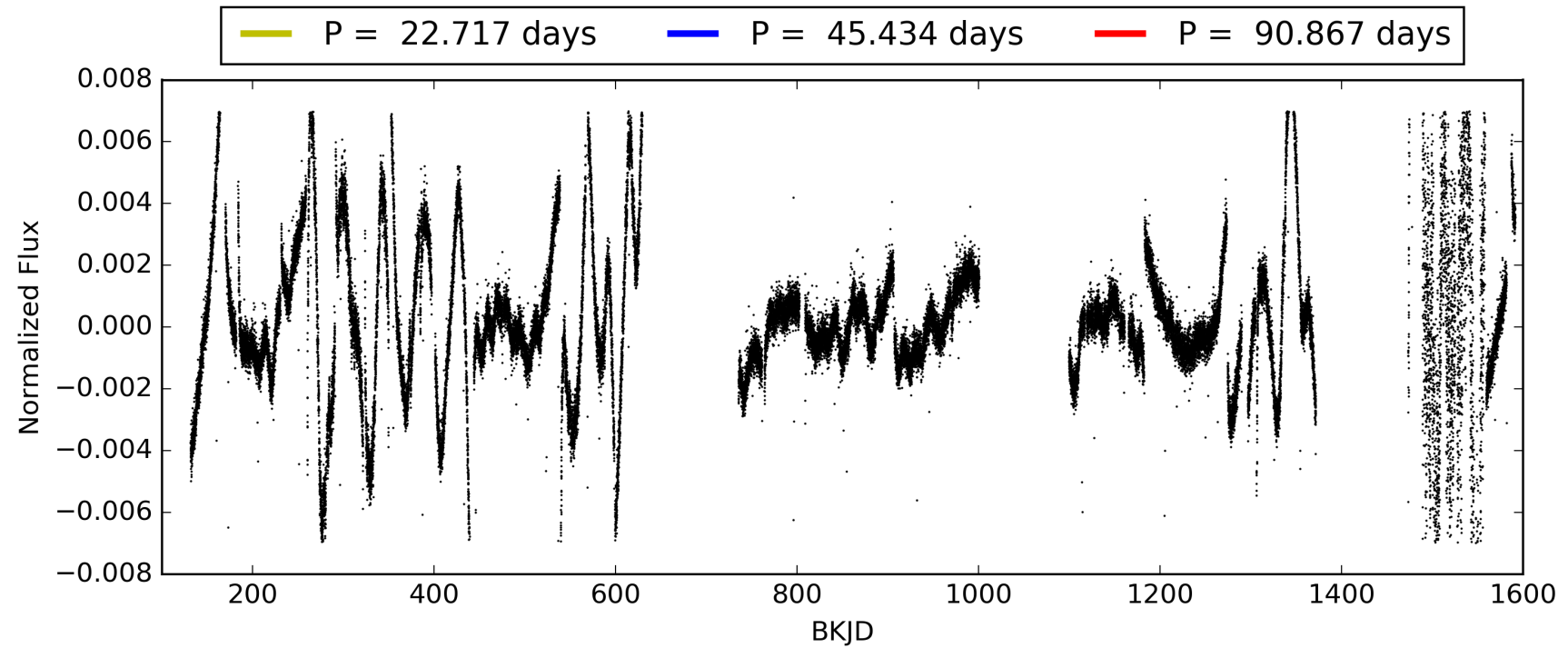
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:39:44 Z

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

TCE 010420279-02, PDC Light Curves

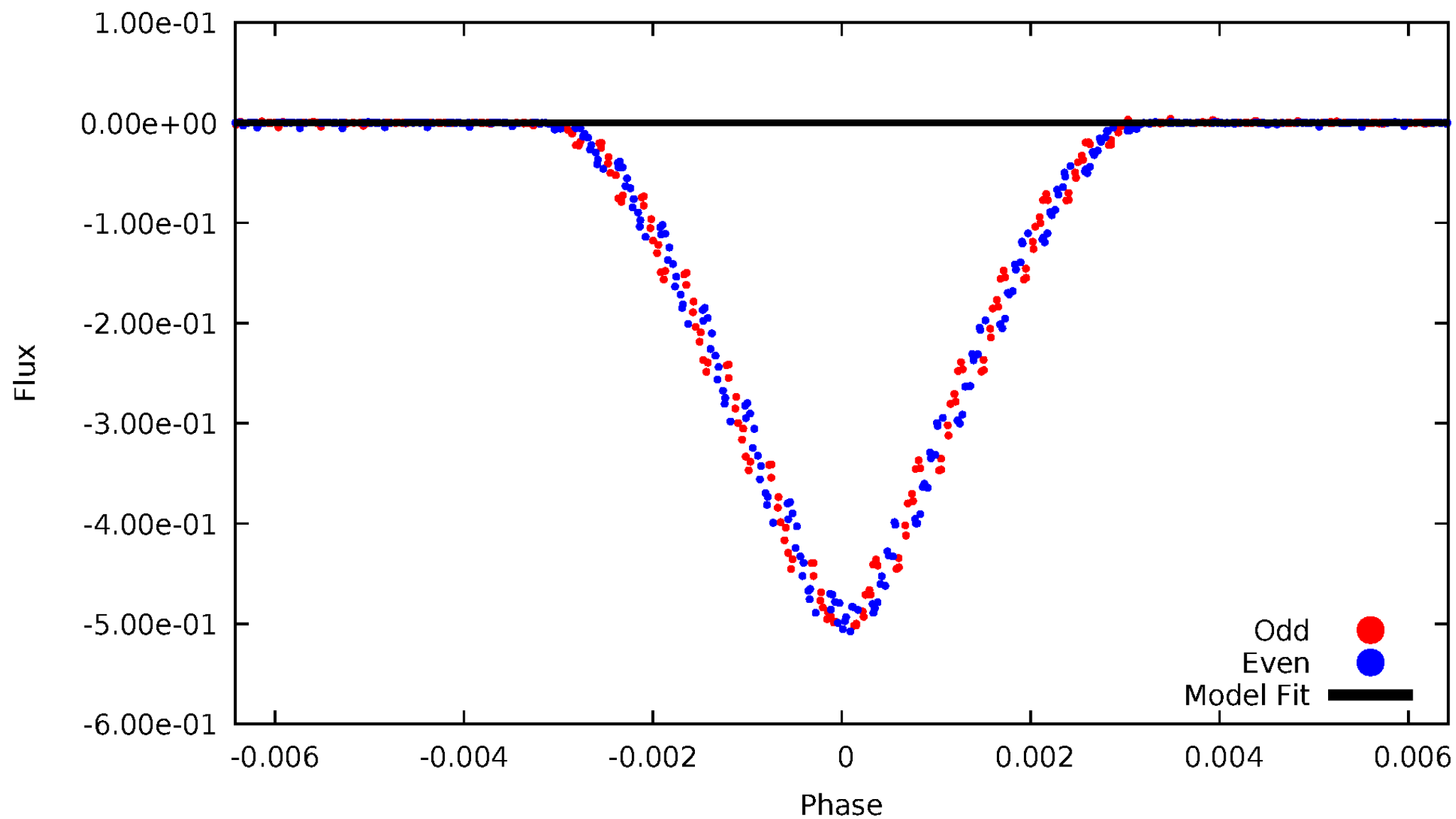


TCE 010420279-02



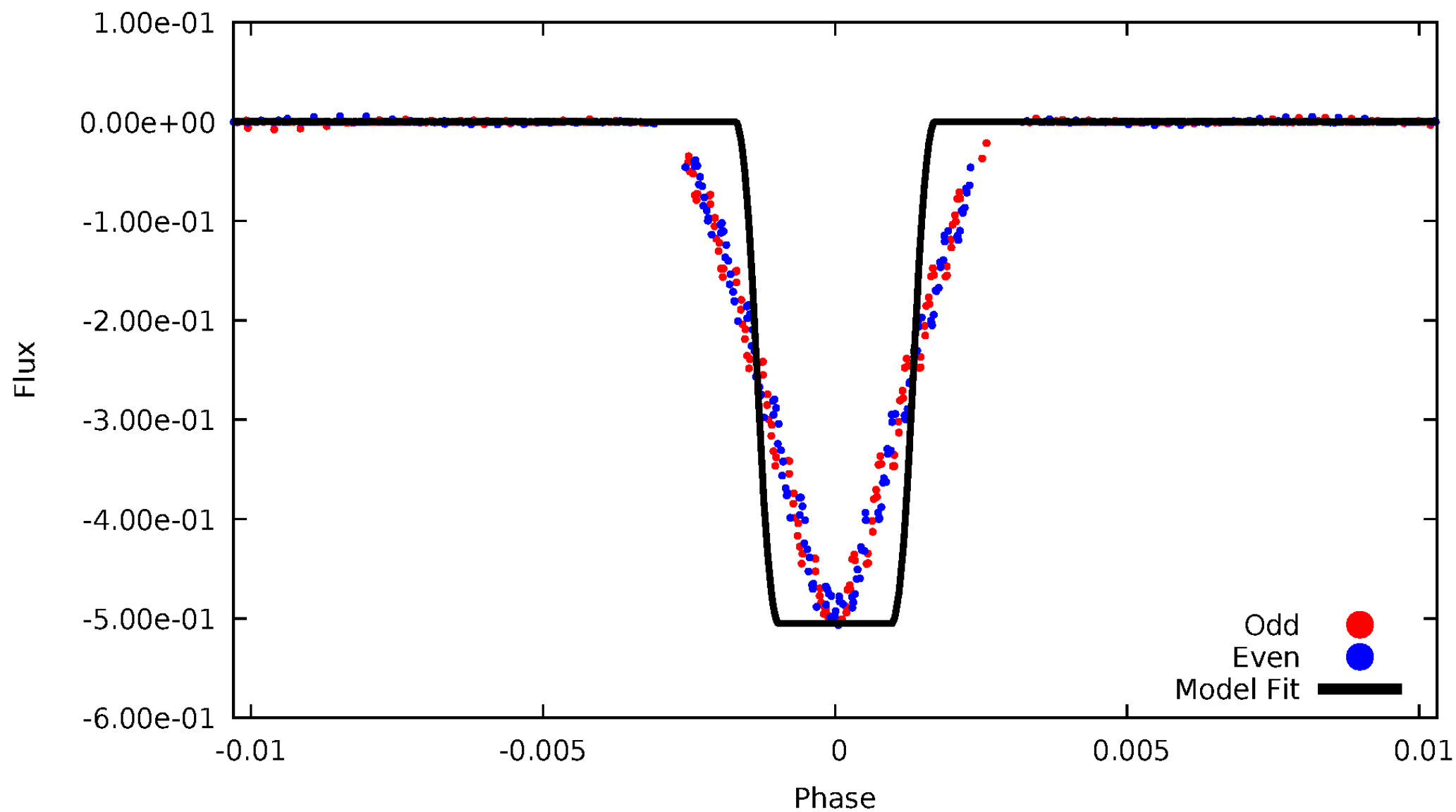
DV Odd/Even

TCE 010420279-02



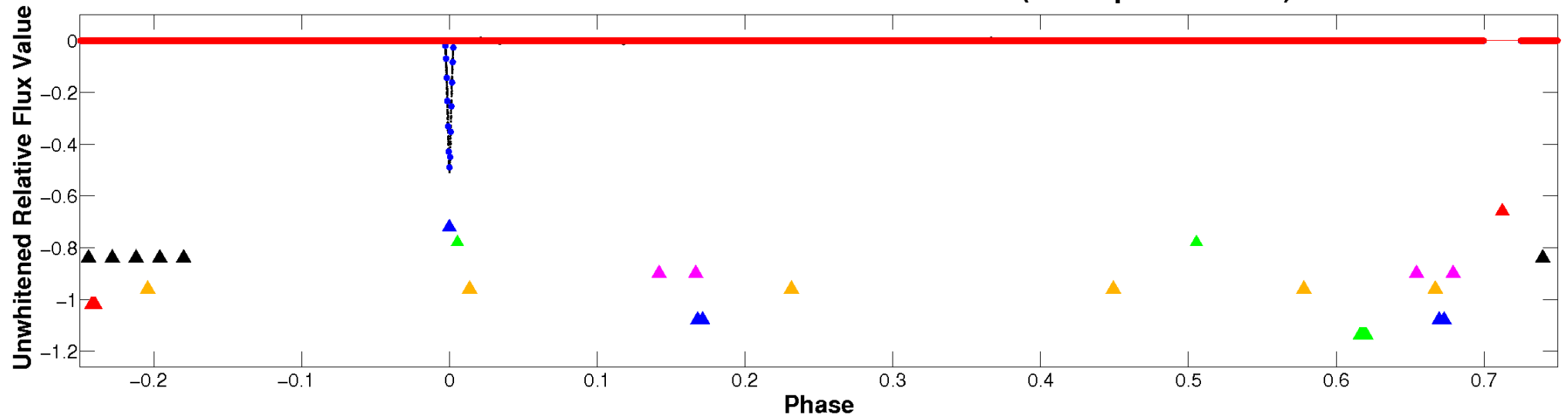
ALT Odd/Even

TCE 010420279-02

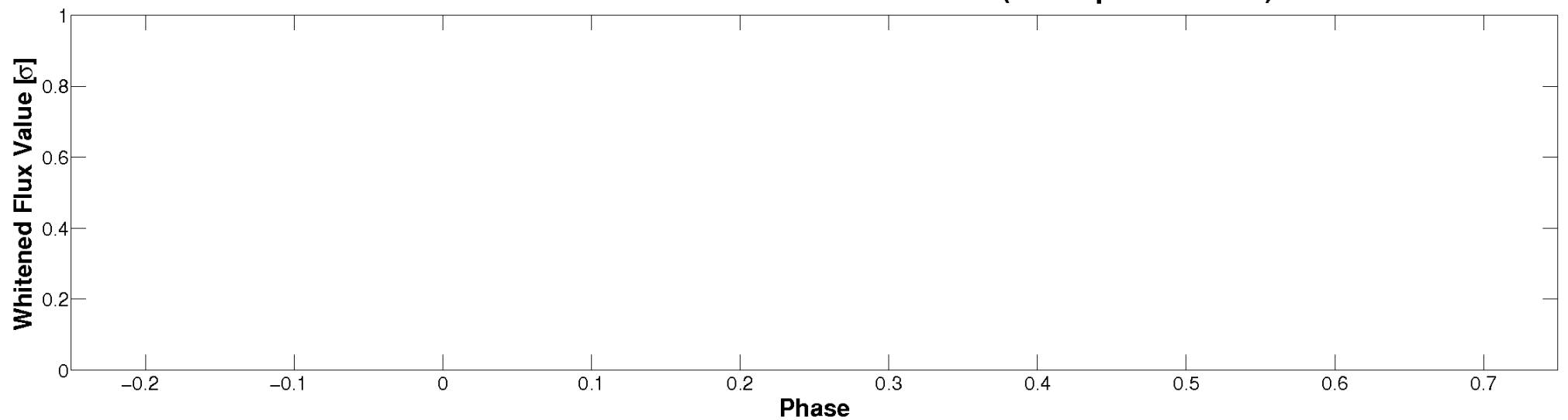


Non-Whitened Vs. Whitened Light Curve

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

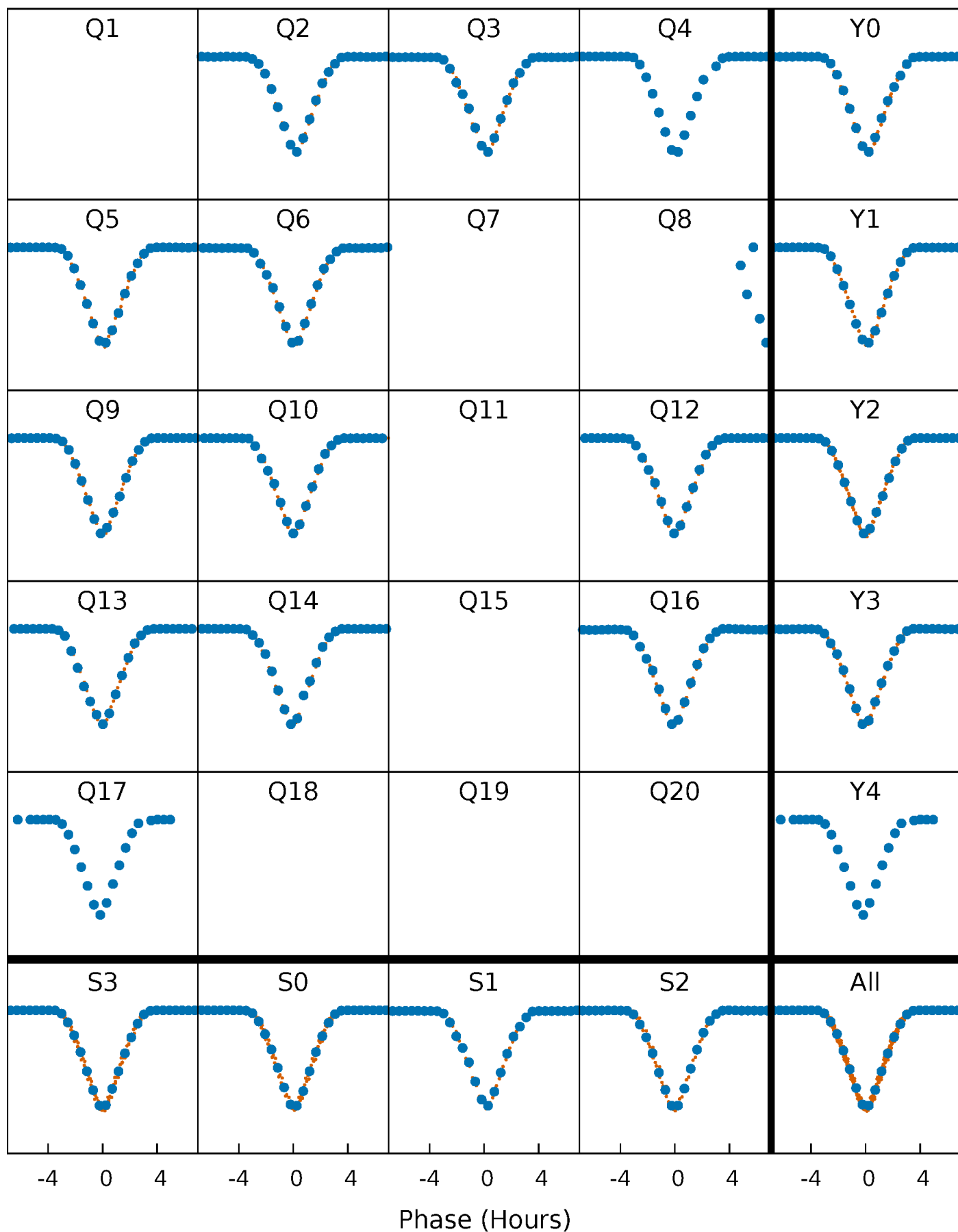


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



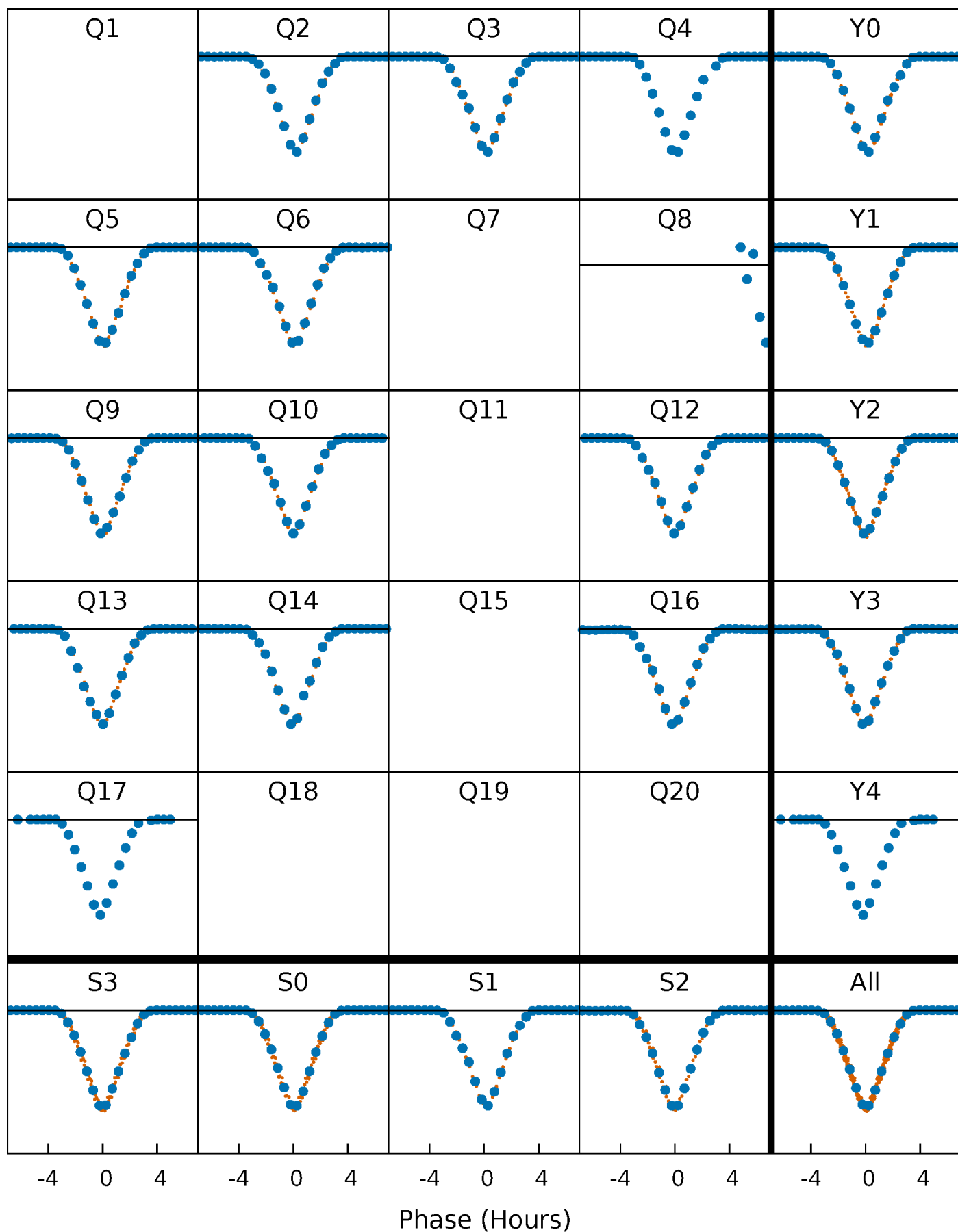
PDC Quarter-Phased Transit Curves

TCE 010420279-02 P= 45.433665 Days $T_0=172.936631$ (BKJD)



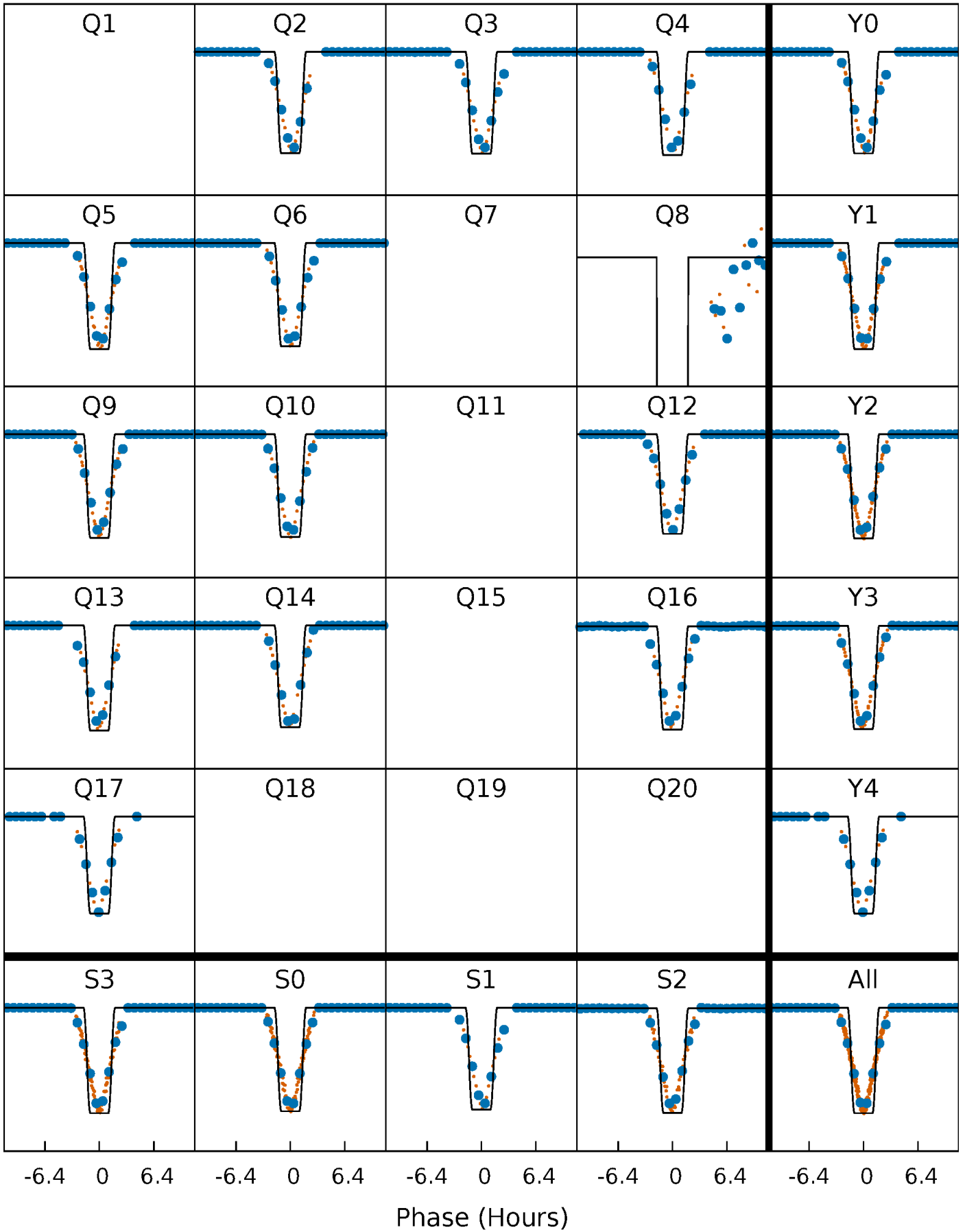
DV Quarter-Phased Transit Curves

TCE 010420279-02 P= 45.433665 Days $T_0=172.936631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

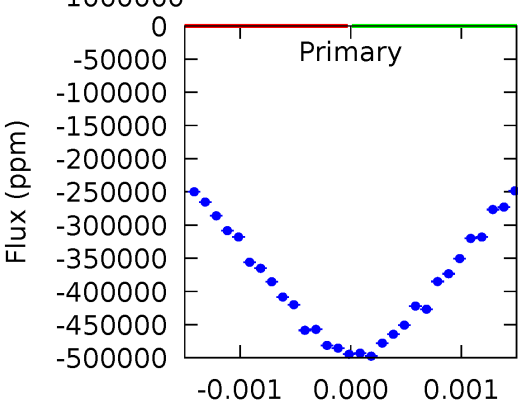
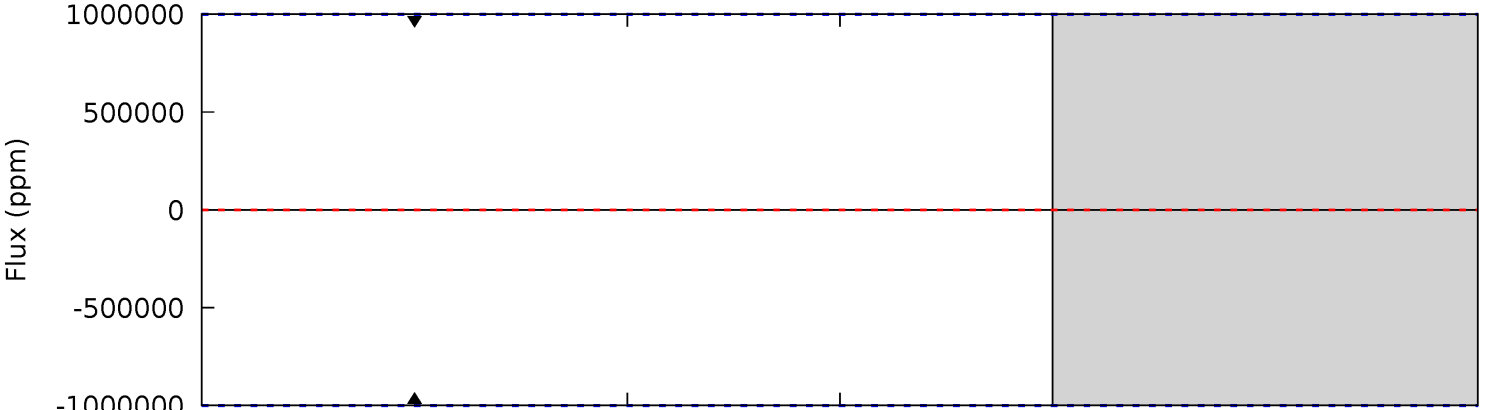
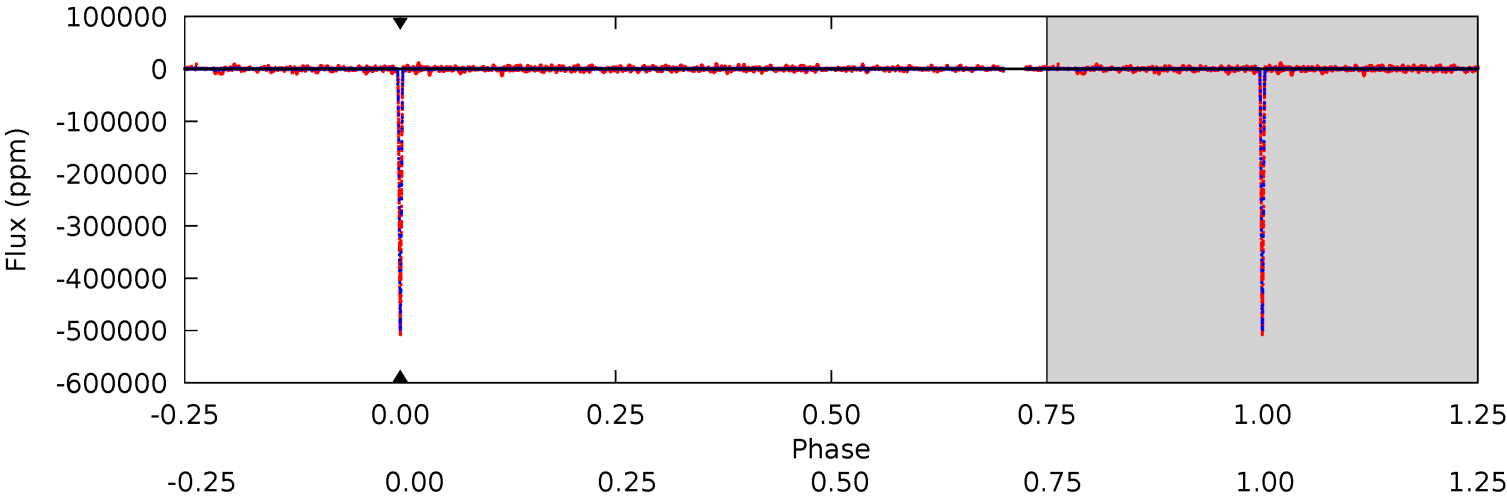
TCE 010420279-02 $P = 45.433665$ Days $T_0 = 172.938487$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-02, P = 45.433665 Days, E = 127.502966 Days

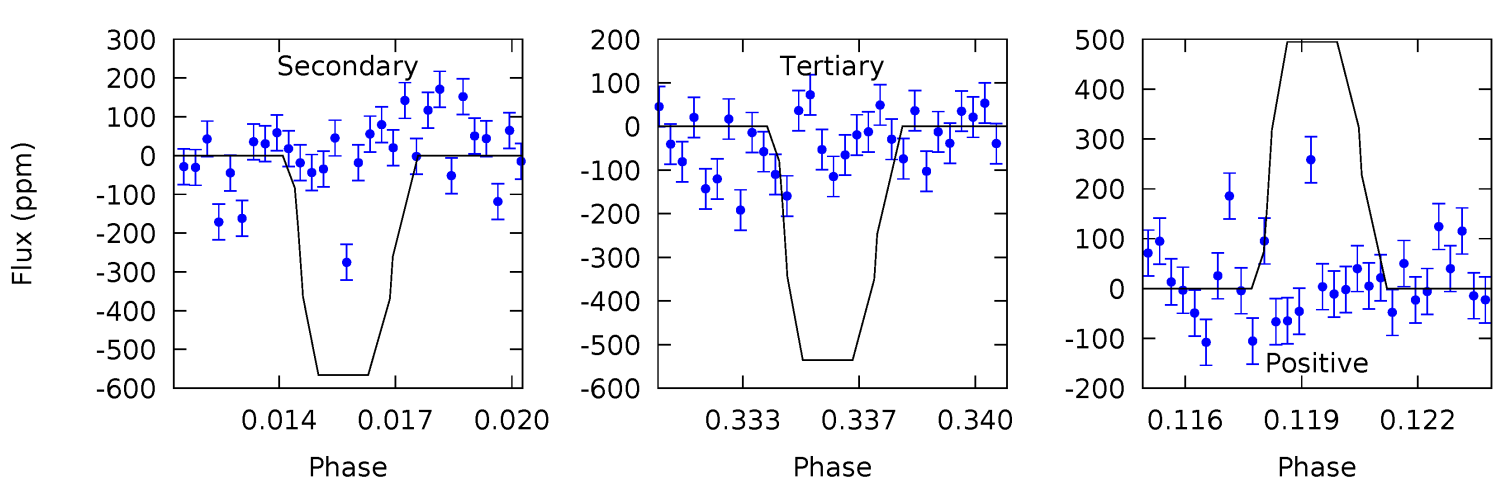
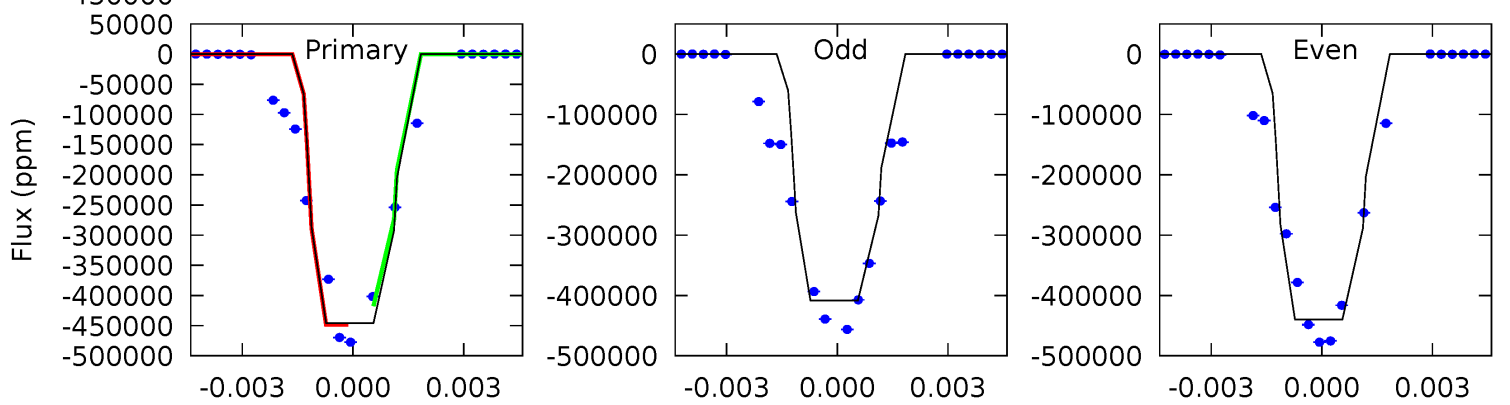
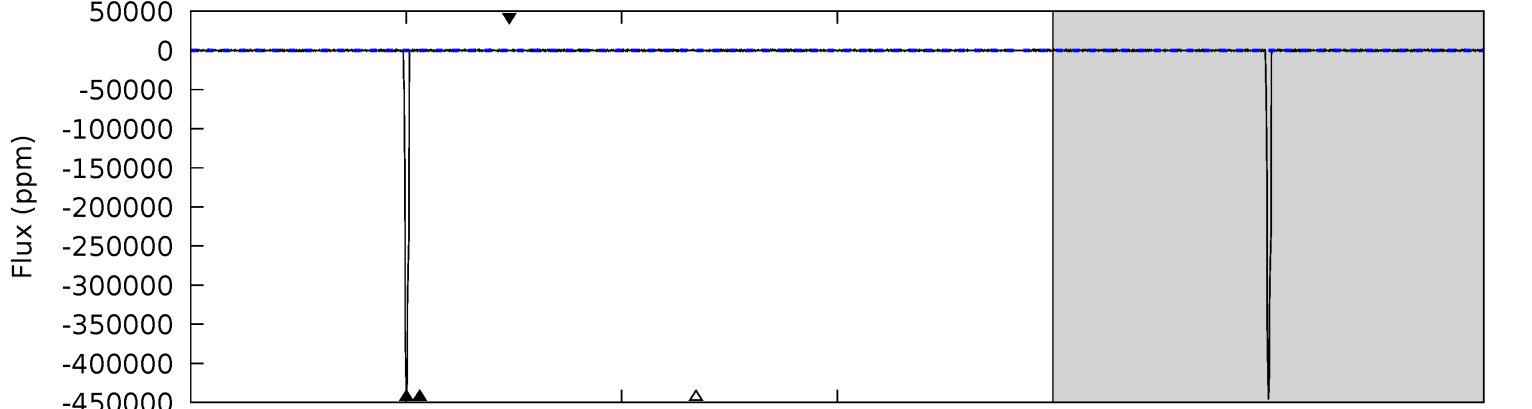
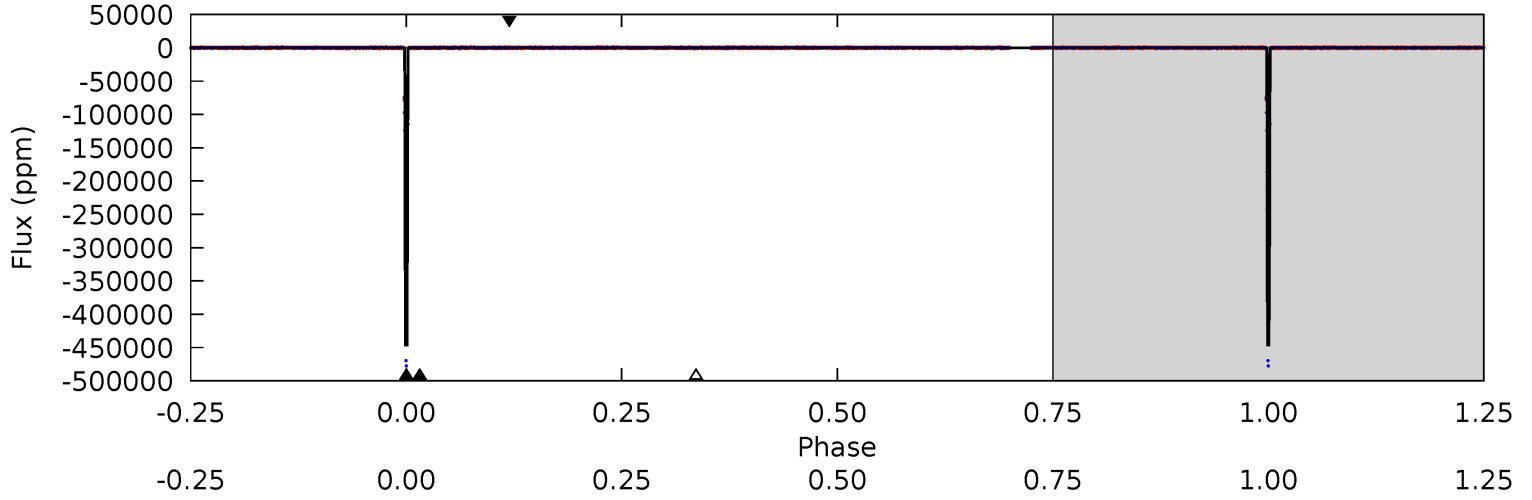
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010420279-02, P = 45.433665 Days, E = 127.504822 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4889	6.20	5.87	5.42	5.23	2.93	2.83	4883	4883	0.33	0.78	272.9	1.00	0.00	0



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$60.81^{+14.56}_{-13.57}$	745^{+54}_{-44}	2958^{+1903}_{-7527}	50^{+1048}_{-881}
Alt.	-566 ± 91	$86.26^{+16.91}_{-15.74}$	744^{+60}_{-43}	2012^{+87}_{-75}	$2.549^{+1.372}_{-0.822}$

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 $A_{obs} \gg 1.0$

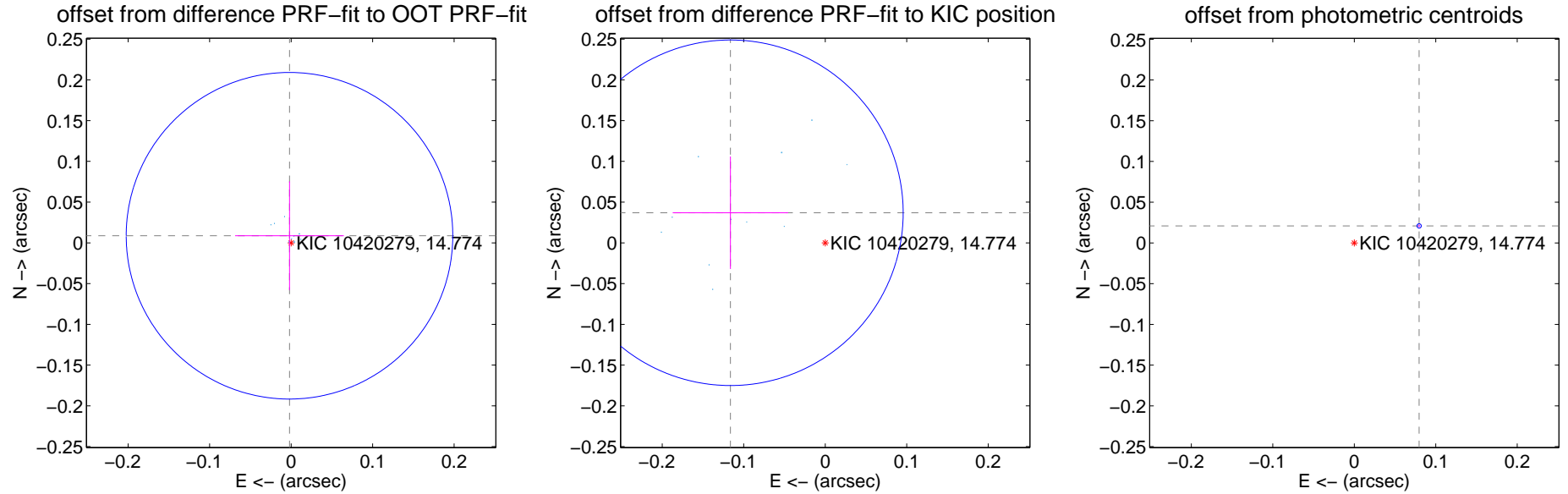
DV Centroid Data

Supplemental centroid analysis for 010420279-02. Kepler magnitude: 14.77. Transit SNR -1.00

There are 11 quarters with good PRF difference image offsets

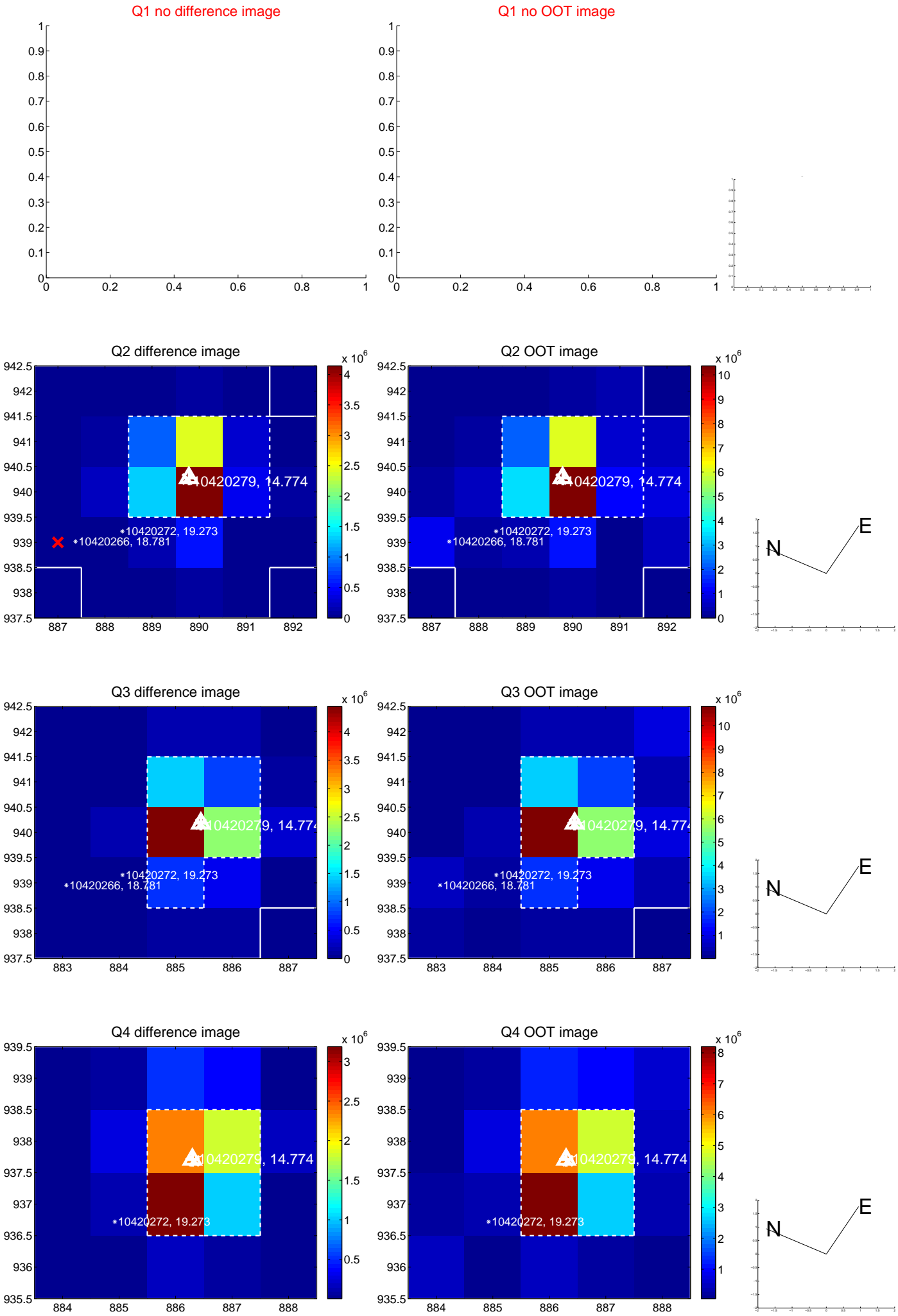
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.009 ± 0.067	0.13	0.002 ± 0.067	0.009 ± 0.067
PRF-fit source offset from KIC position	0.122 ± 0.071	1.73	0.116 ± 0.071	0.037 ± 0.069
photometric centroid source offset	0.08 ± 0.00	93.70	-0.08 ± 0.00	0.02 ± 0.00

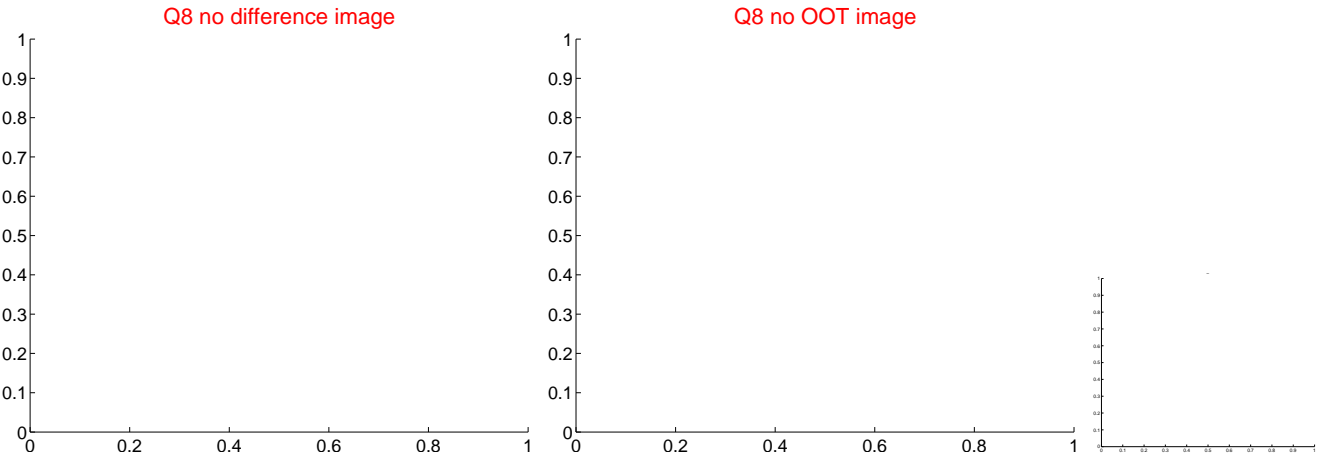
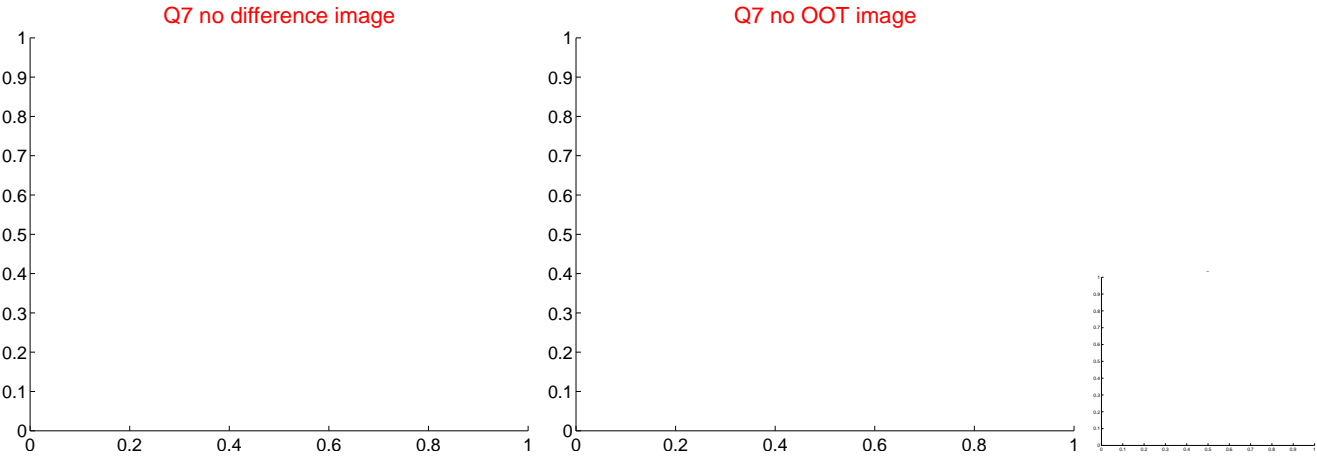
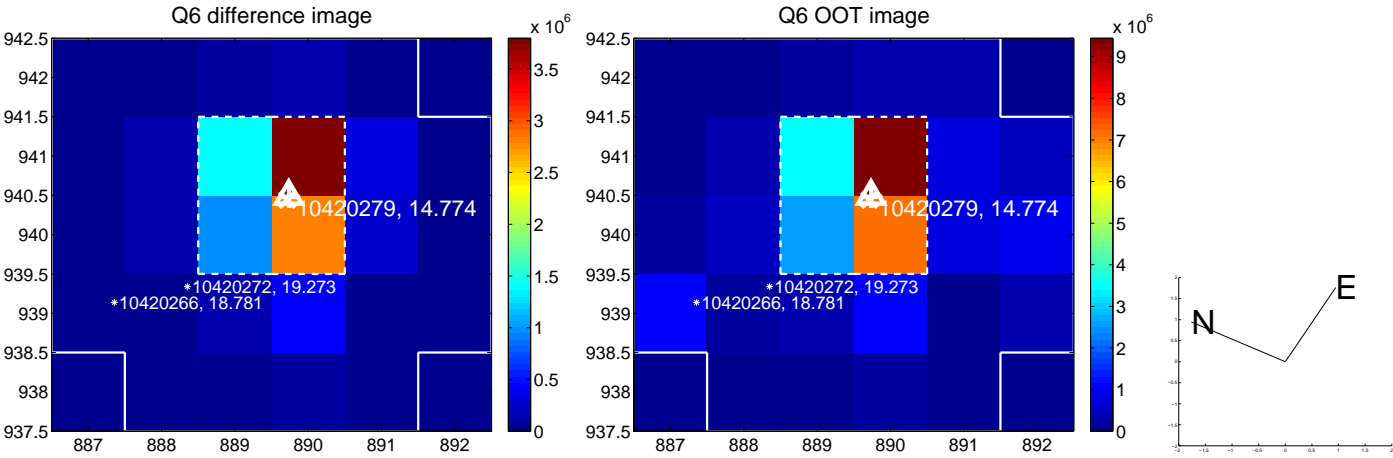
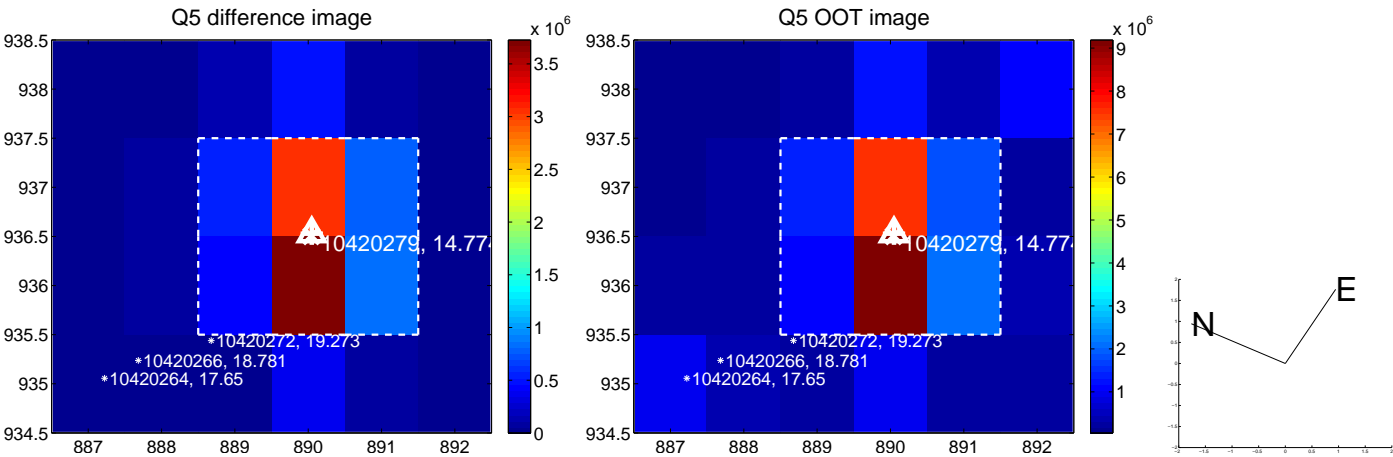


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

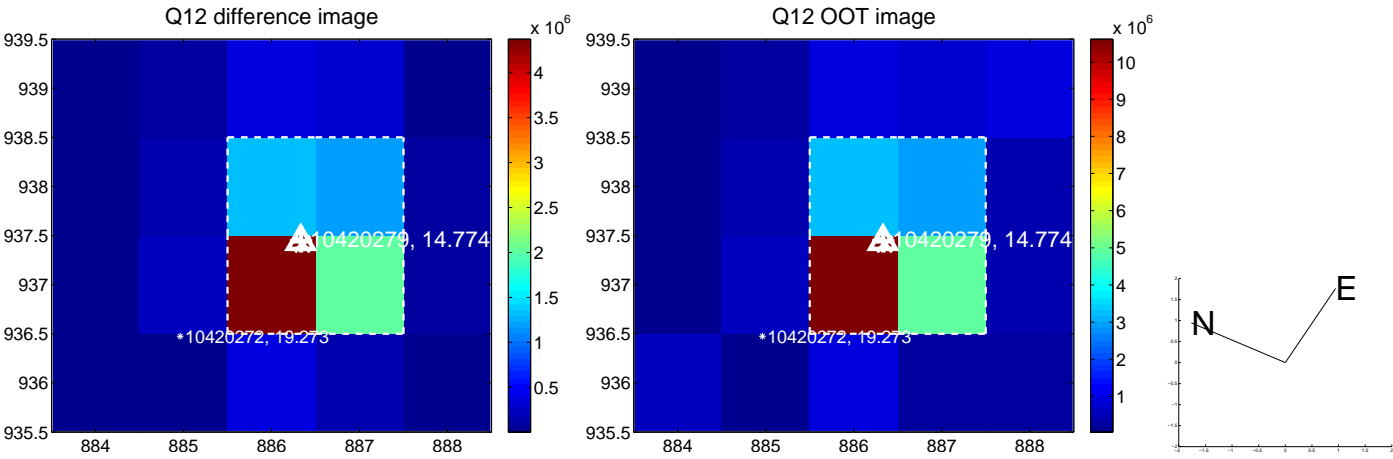
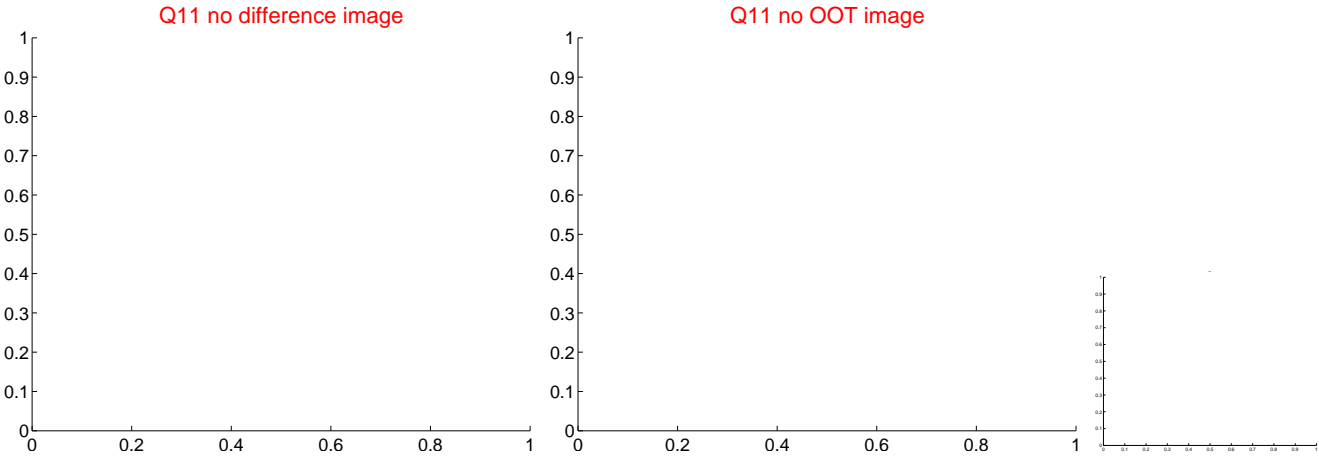
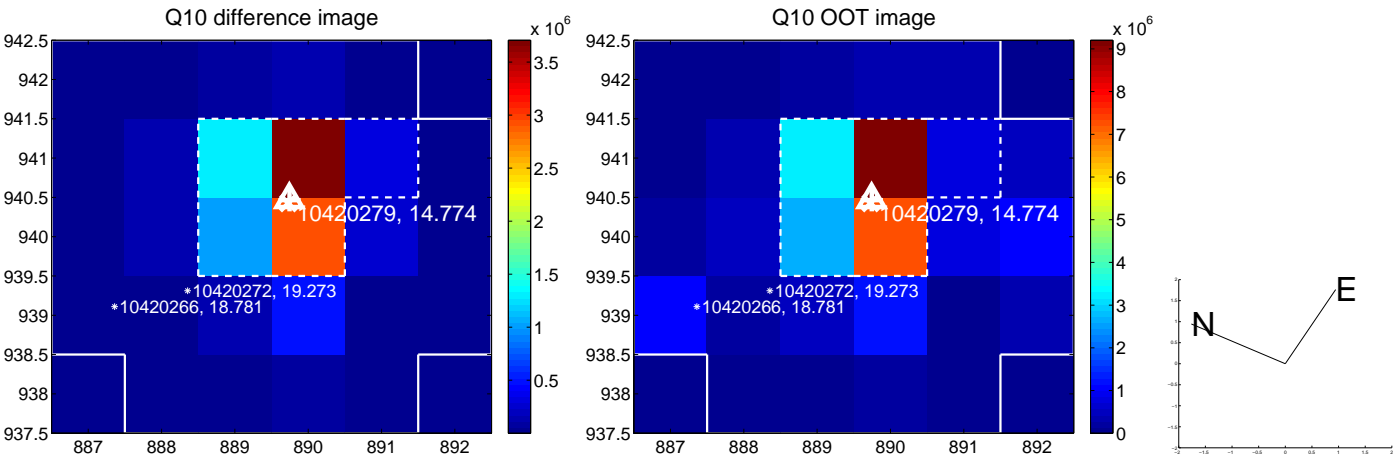
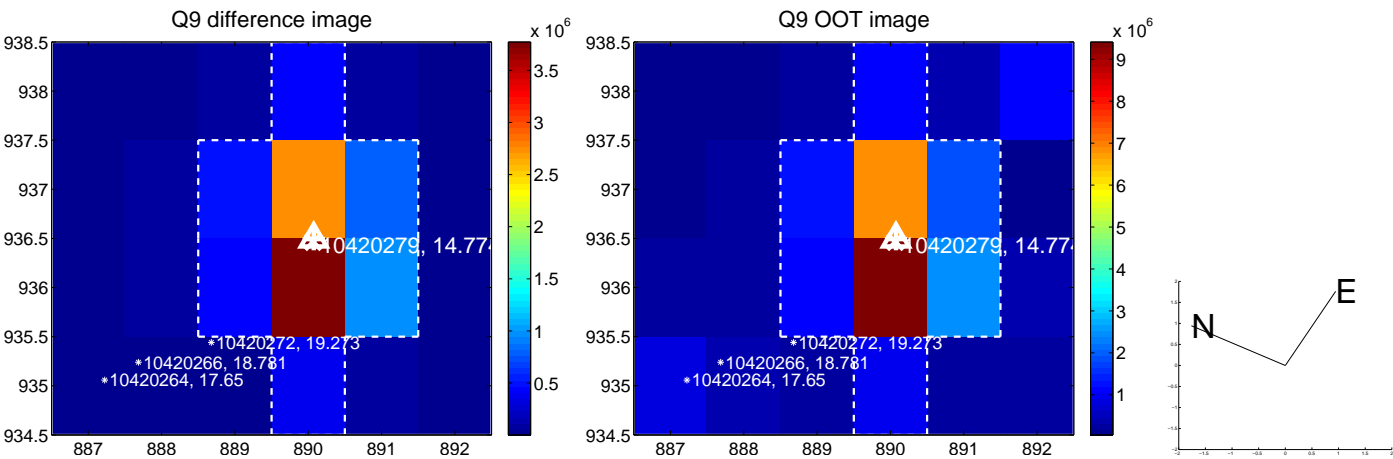
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



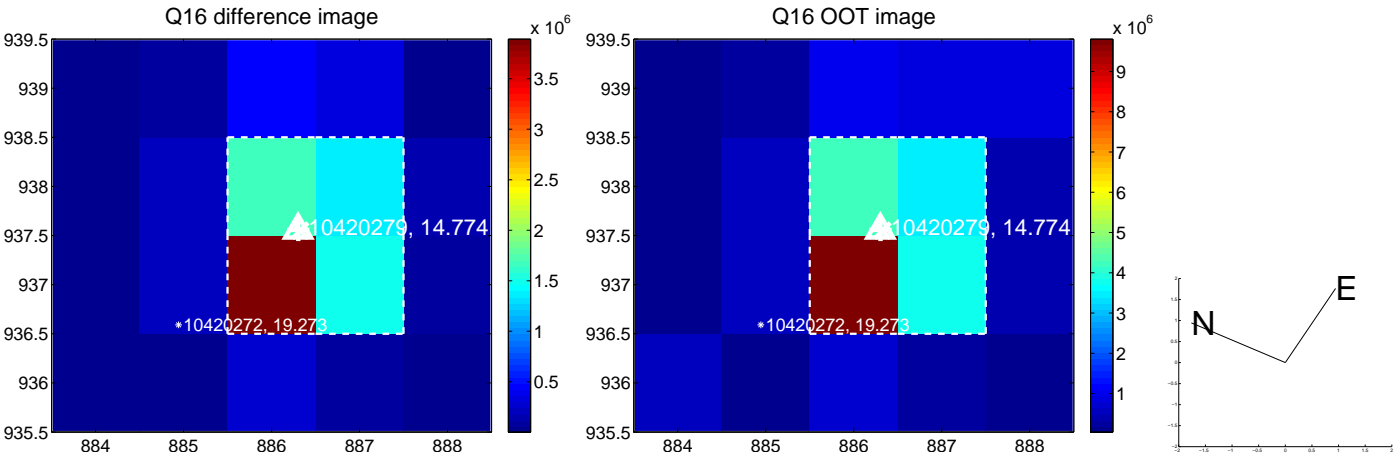
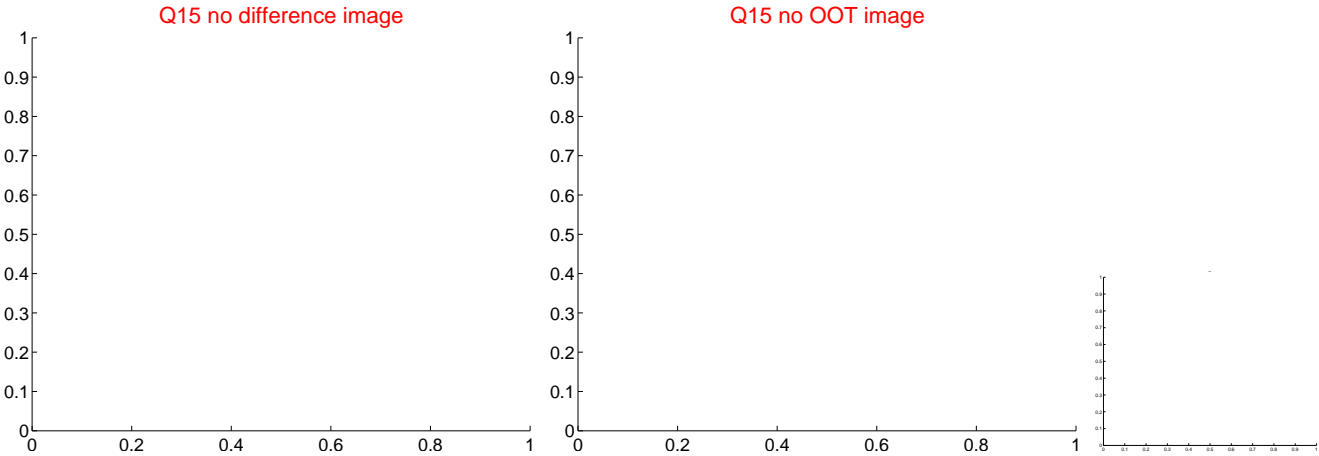
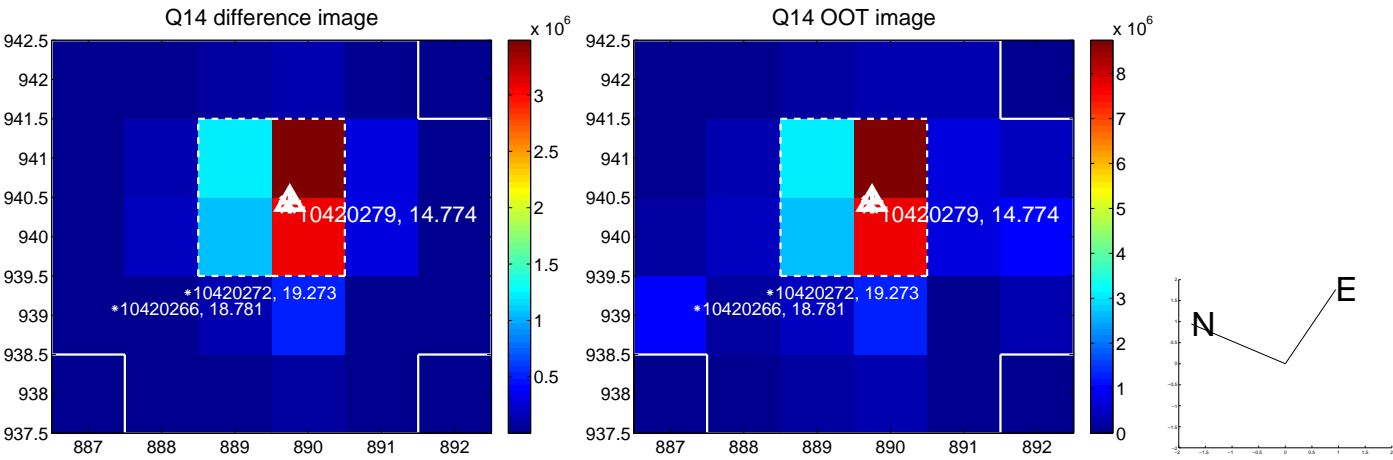
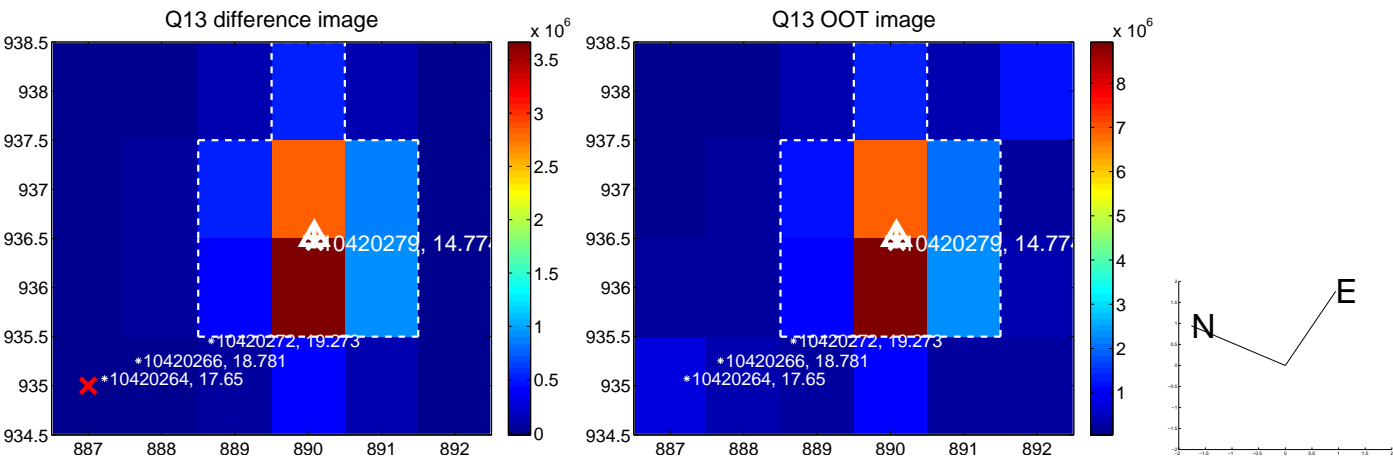
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



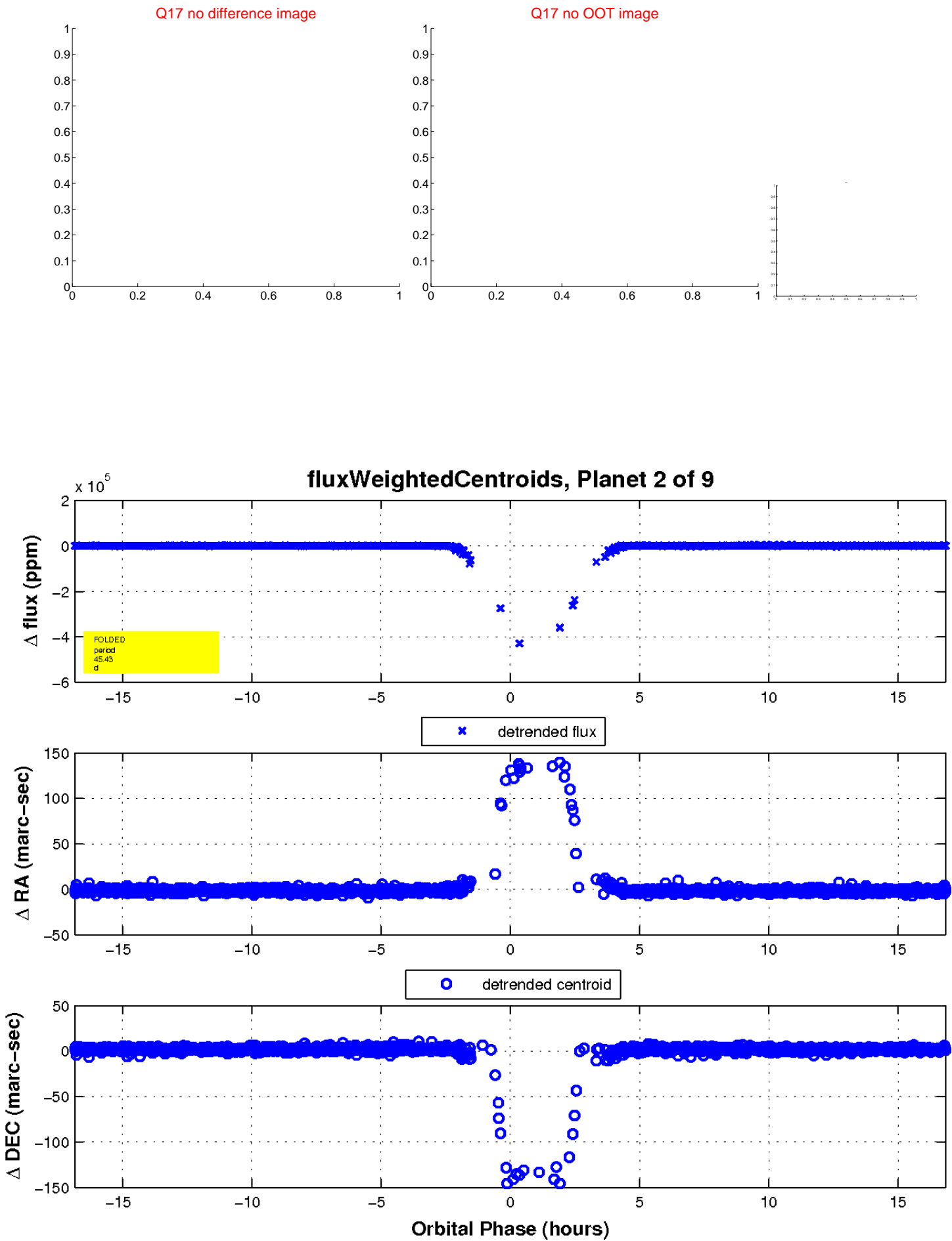
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

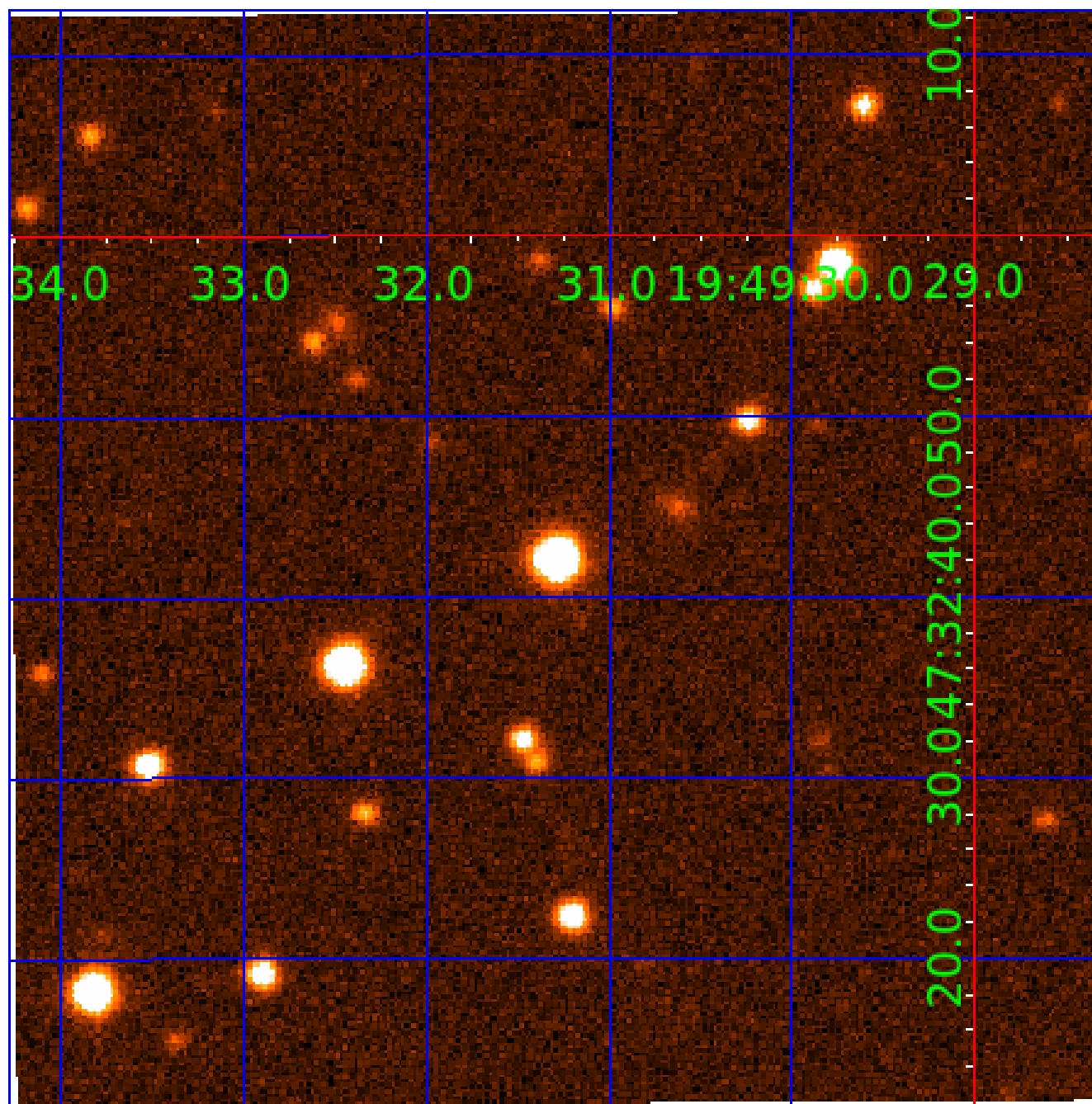


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

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})
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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 010420279-03

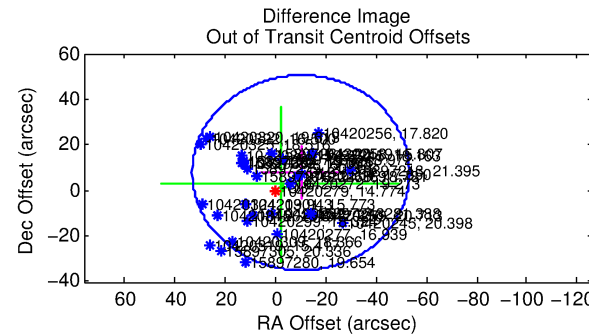
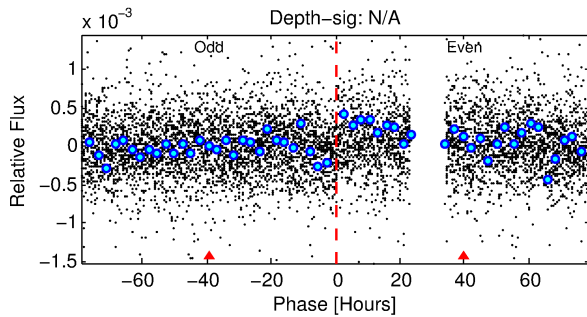
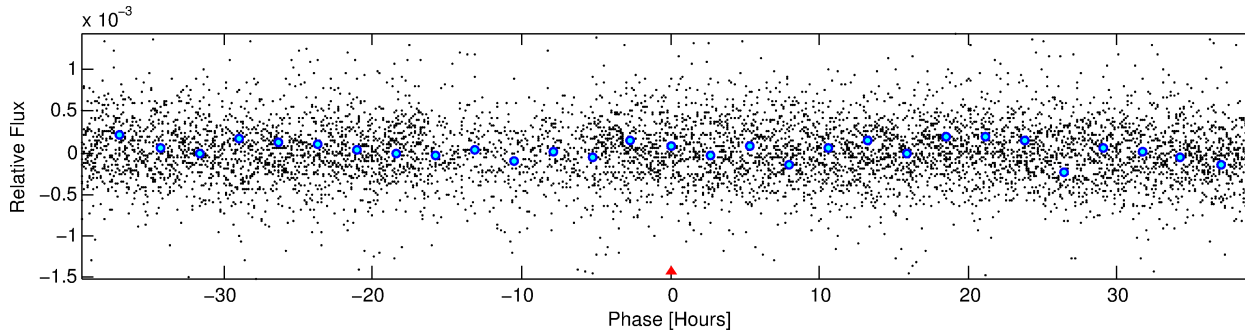
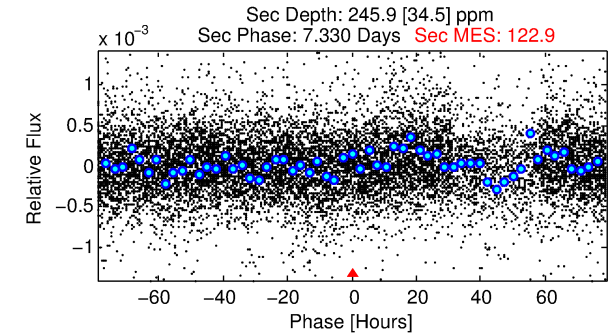
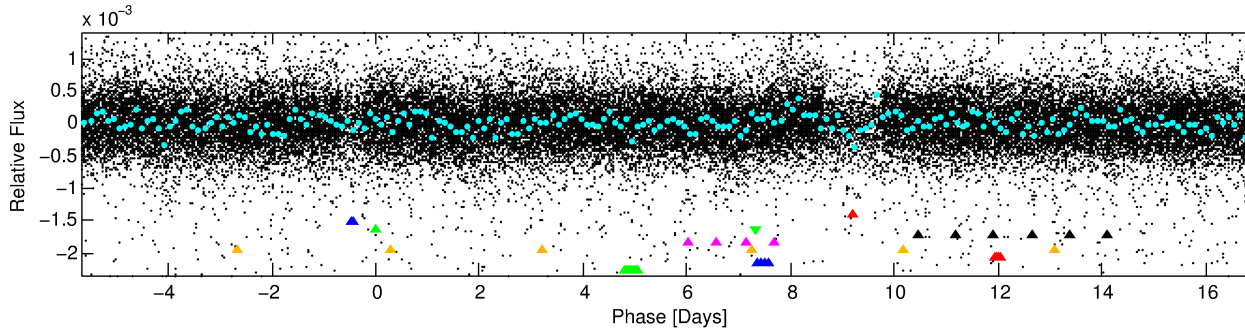
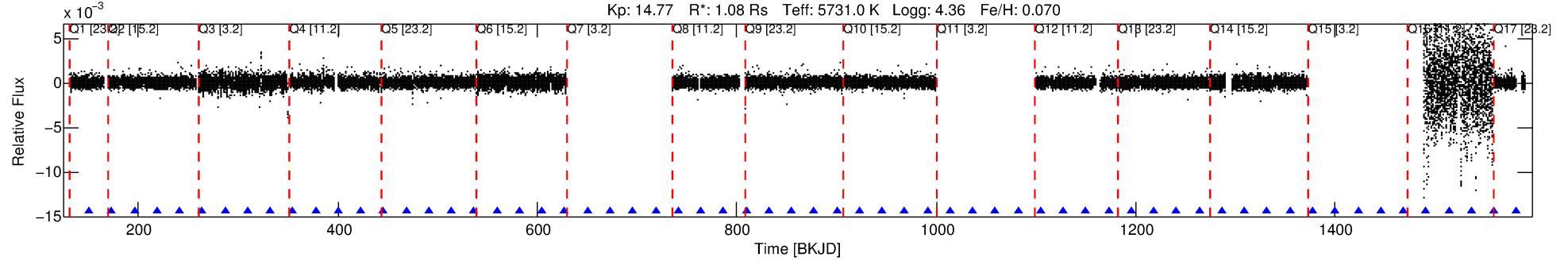
No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 3 of 9 Period: 22.717 d

KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



TPS TCE Results:

Period = 22.71667 d
Epoch = 150.4733 BKJD

DV fit results are unavailable

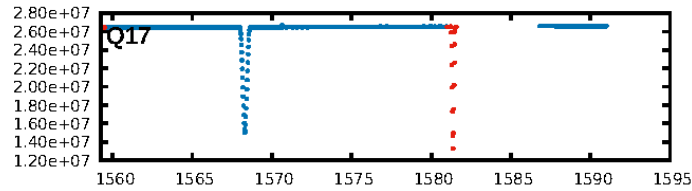
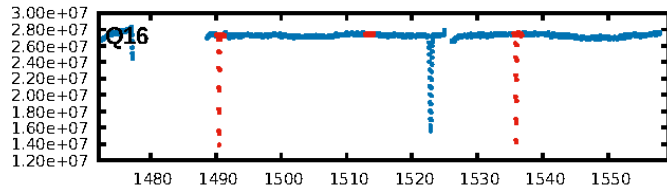
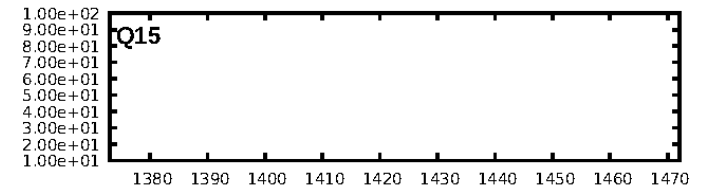
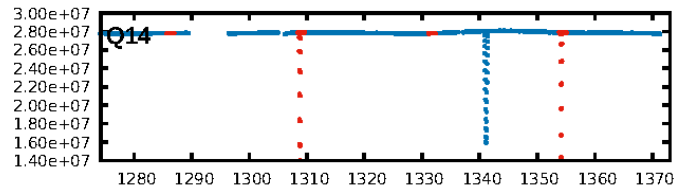
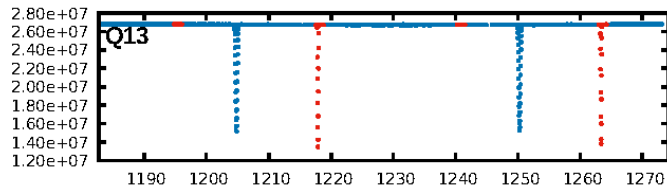
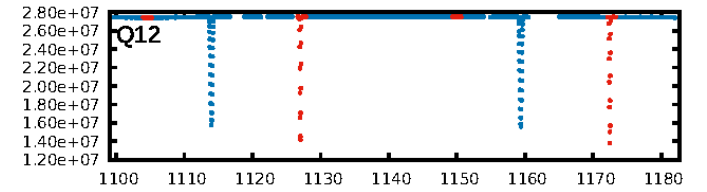
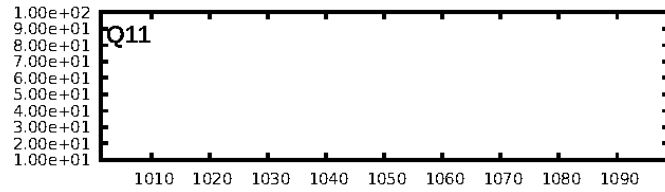
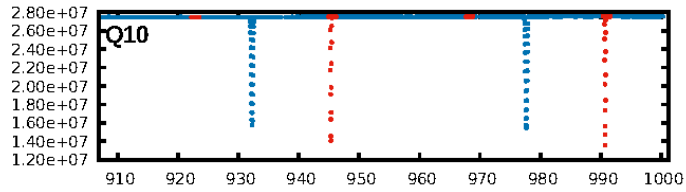
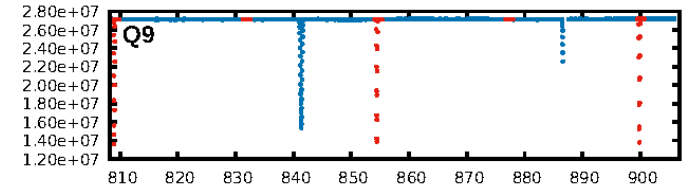
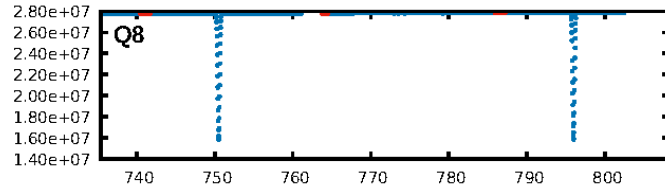
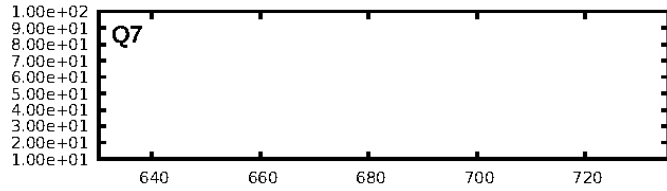
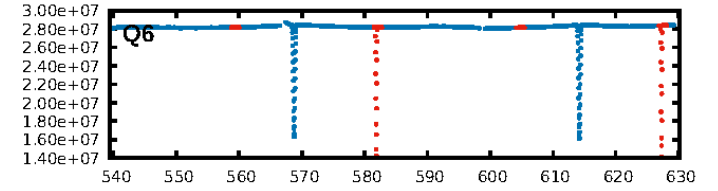
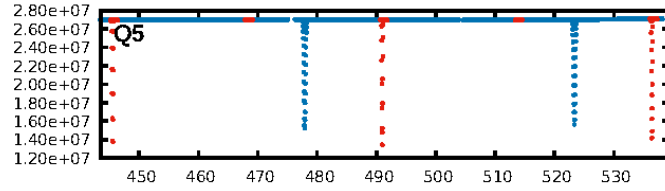
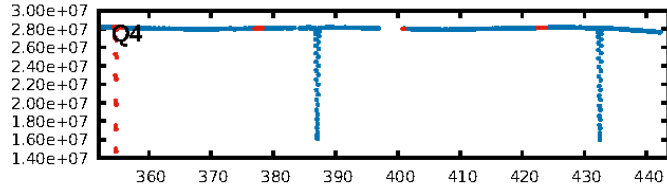
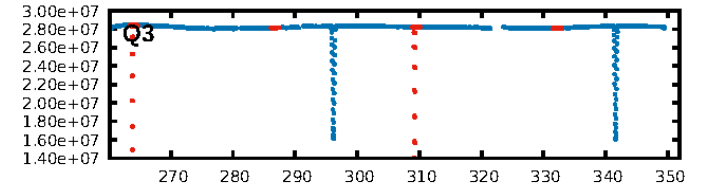
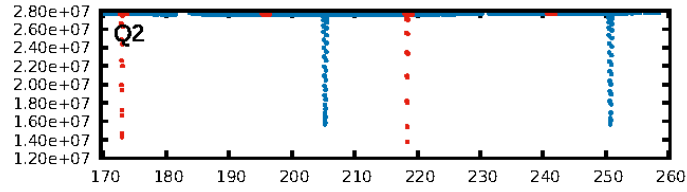
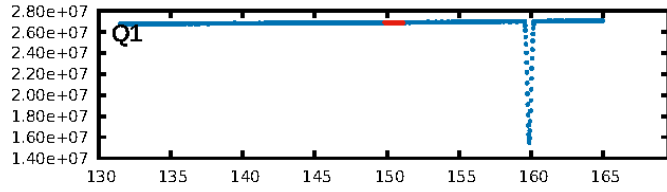
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [35.40σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [47/47]
GhostDiagnostic-chr: -1.607
Centroid-sig: N/A
Centroid-so: 0.793 arcsec [0.31σ]
OotOffset-rm: 12.822 arcsec [0.89σ]
KicOffset-rm: 12.792 arcsec [0.89σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [13/13]

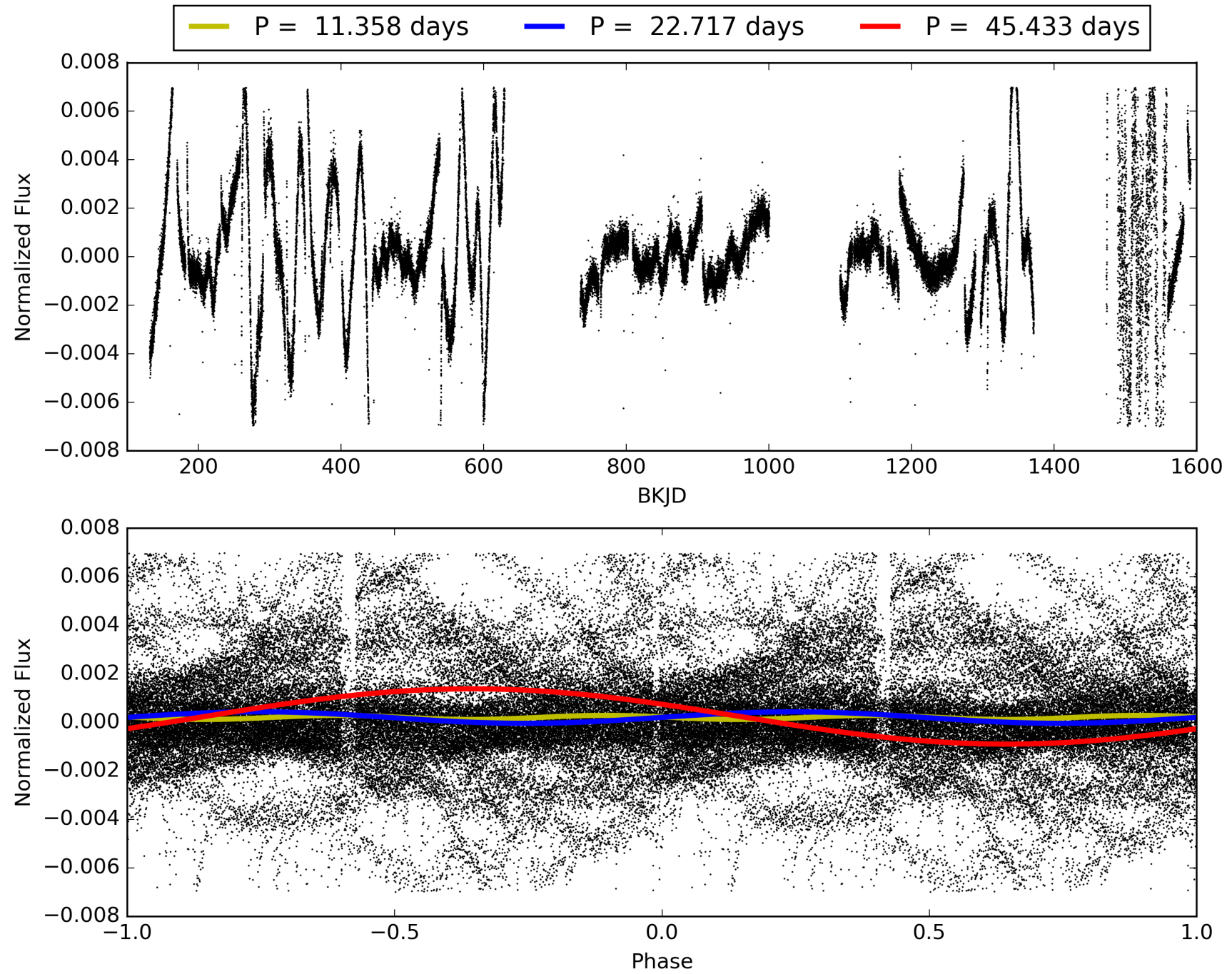
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:39:48 Z

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

TCE 010420279-03, PDC Light Curves

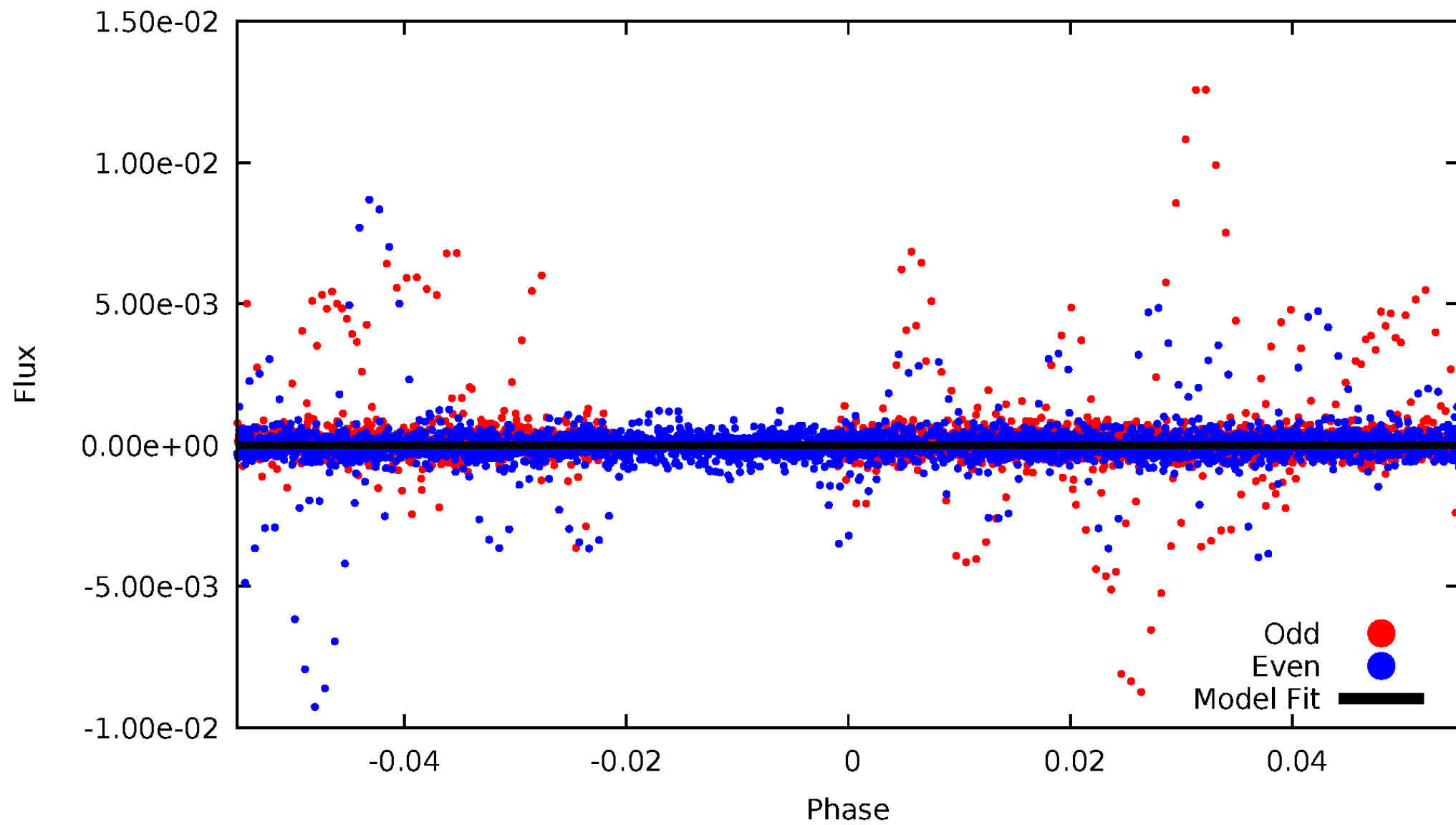


TCE 010420279-03



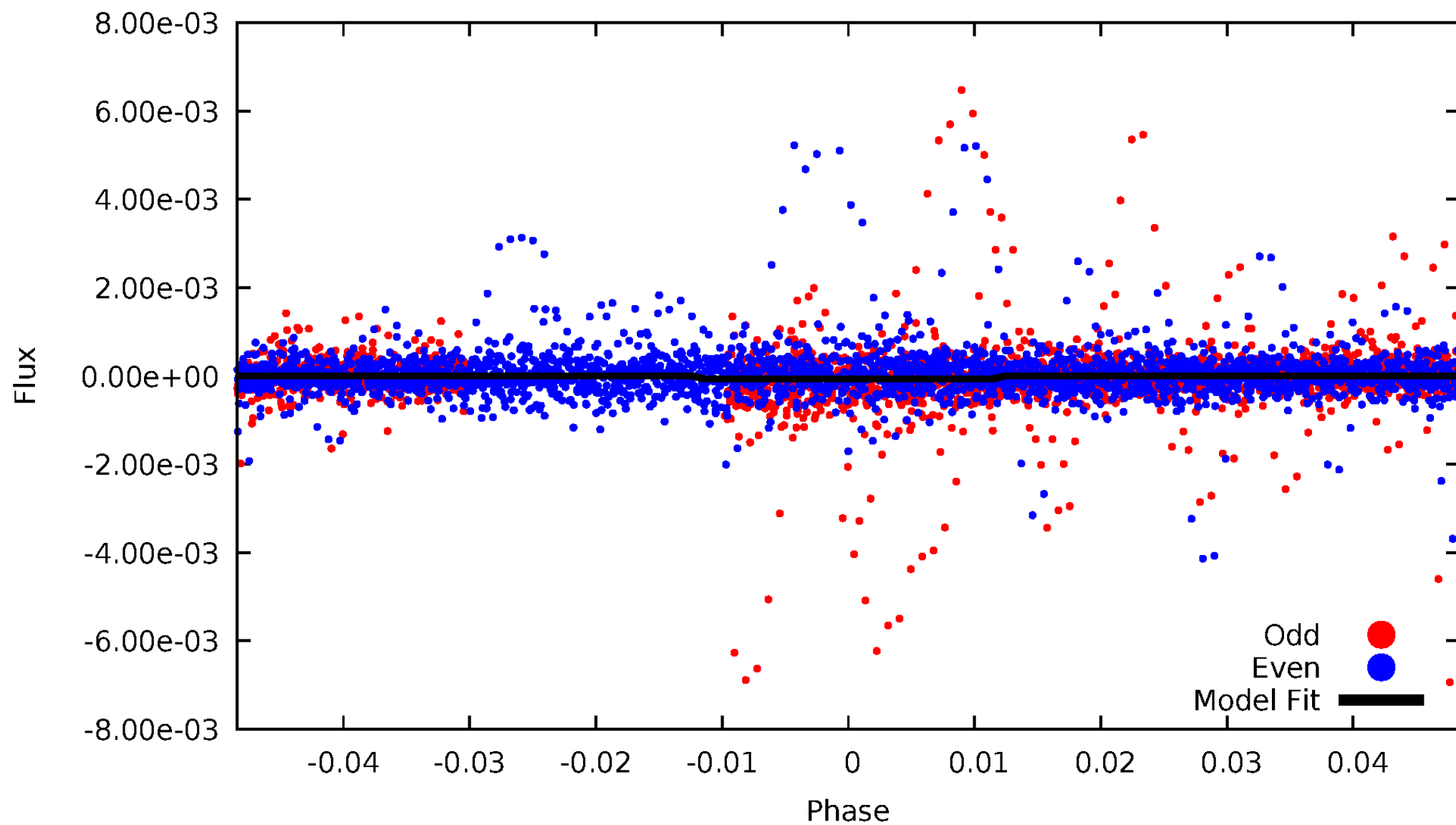
DV Odd/Even

TCE 010420279-03



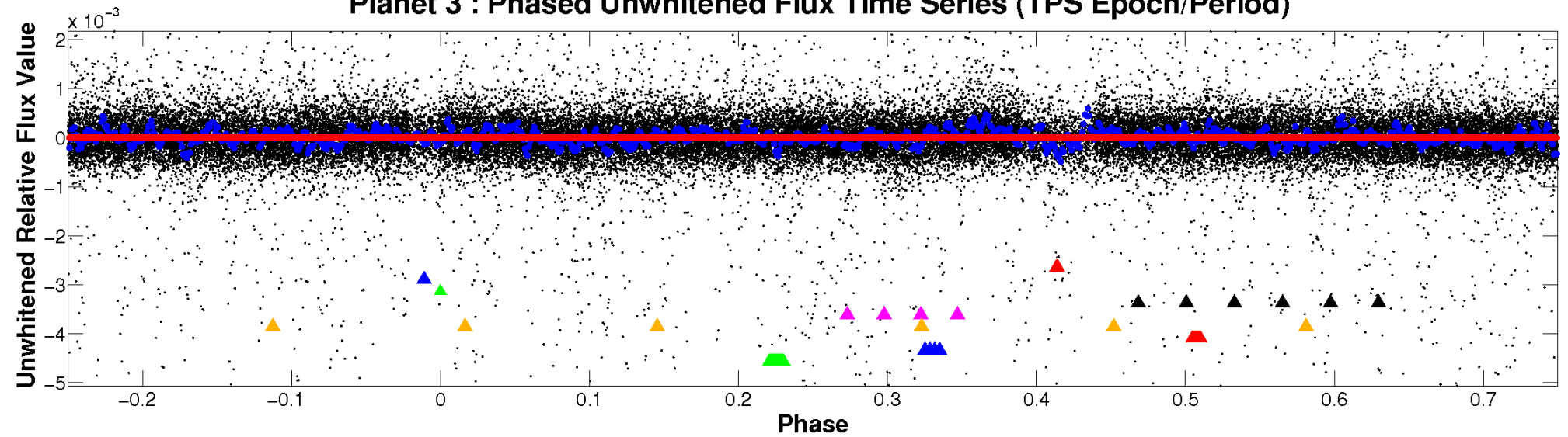
ALT Odd/Even

TCE 010420279-03

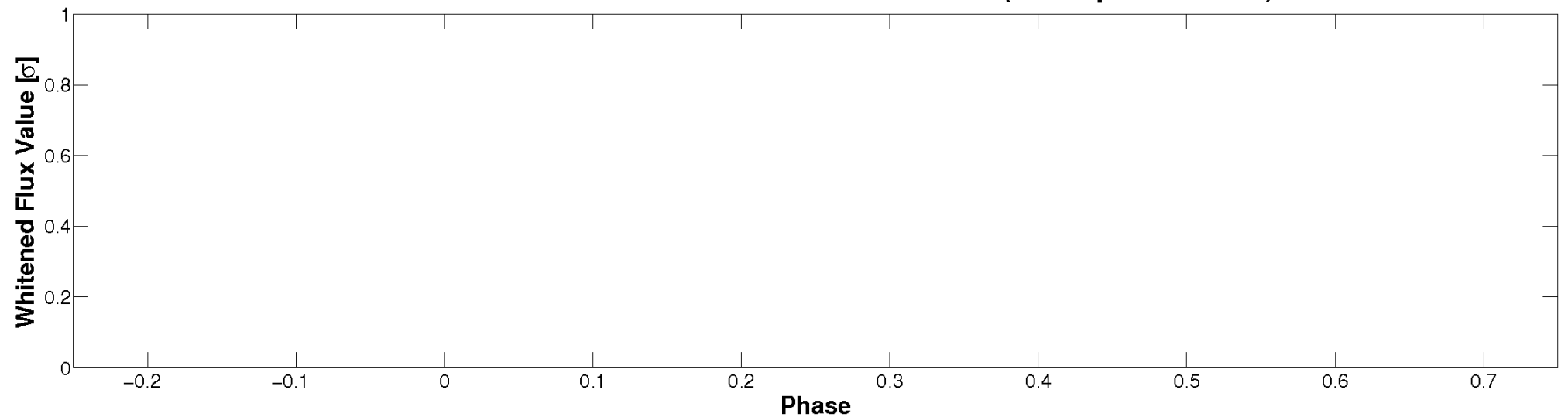


Non-Whitened Vs. Whitened Light Curve

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

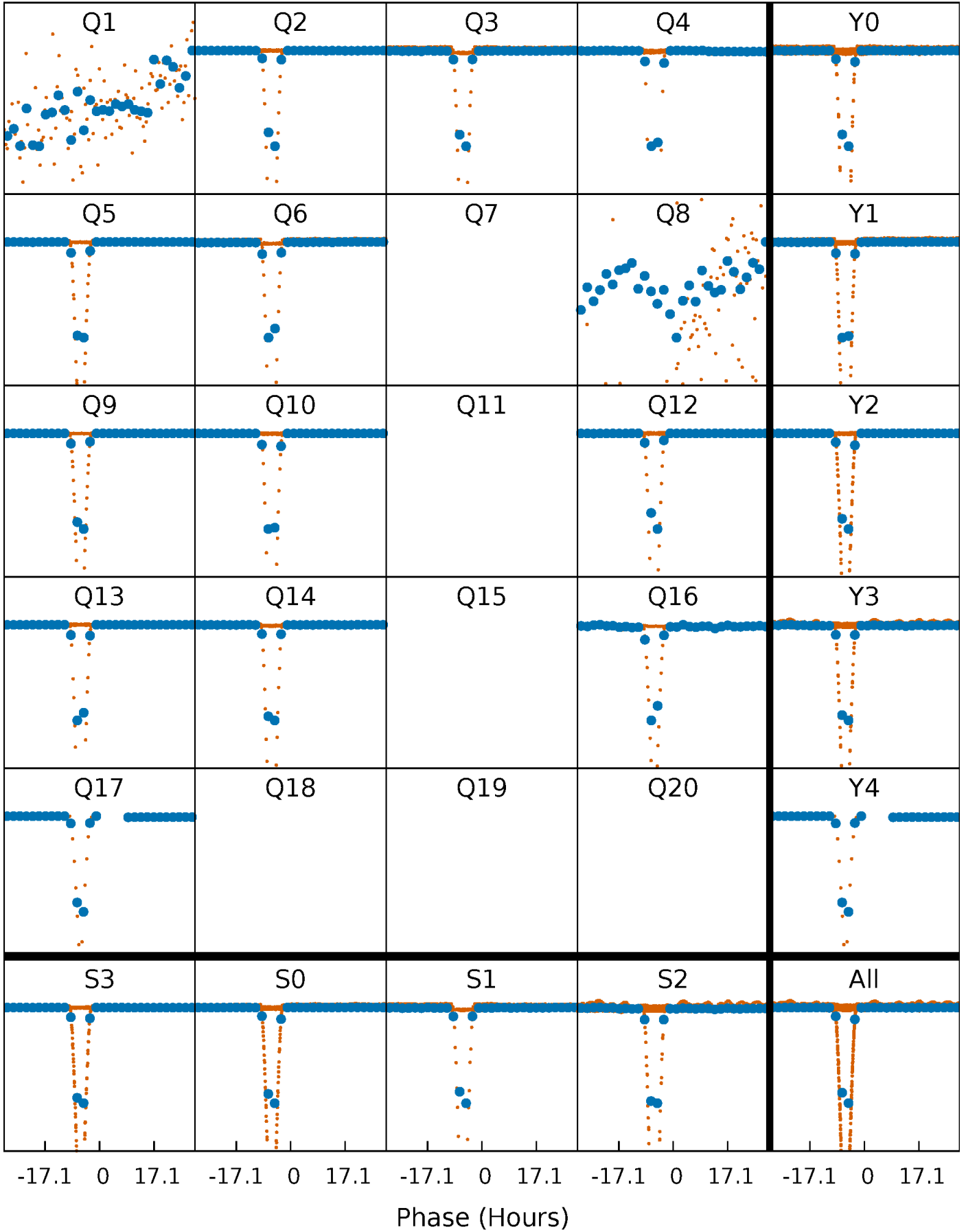


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



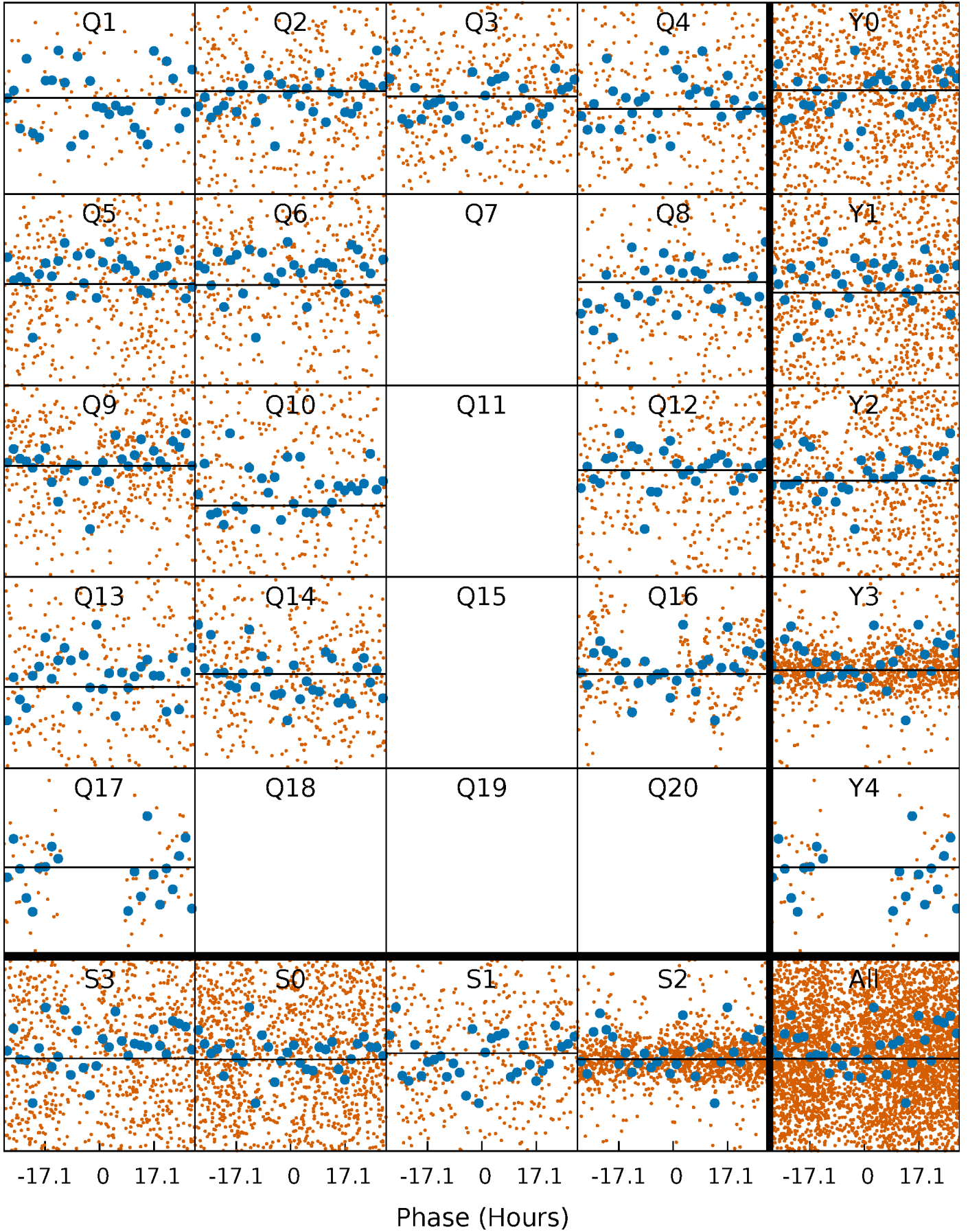
PDC Quarter-Phased Transit Curves

TCE 010420279-03 $P = 22.716672$ Days $T_0 = 150.473338$ (BKJD)



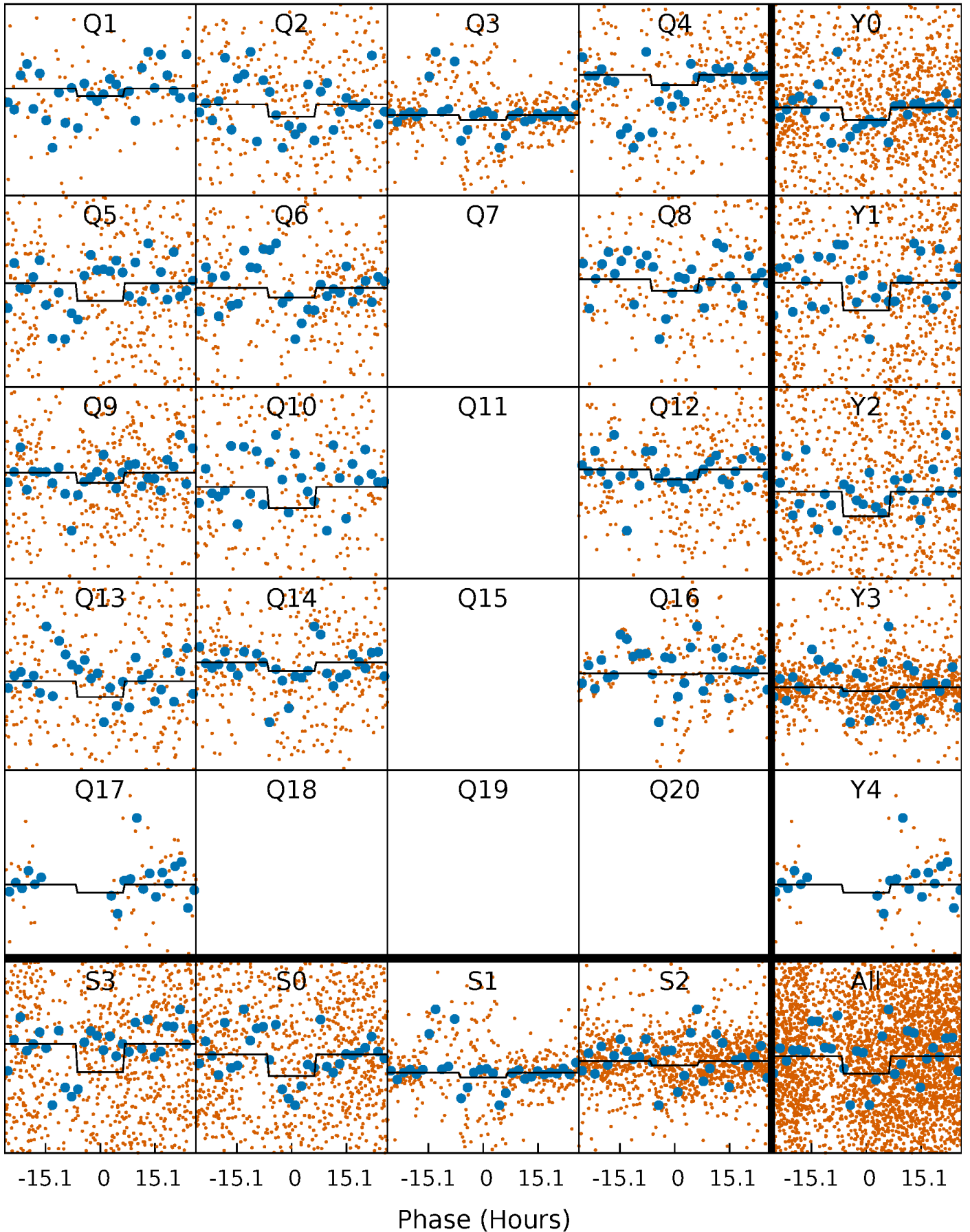
DV Quarter-Phased Transit Curves

TCE 010420279-03 $P = 22.716672$ Days $T_0 = 150.473338$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

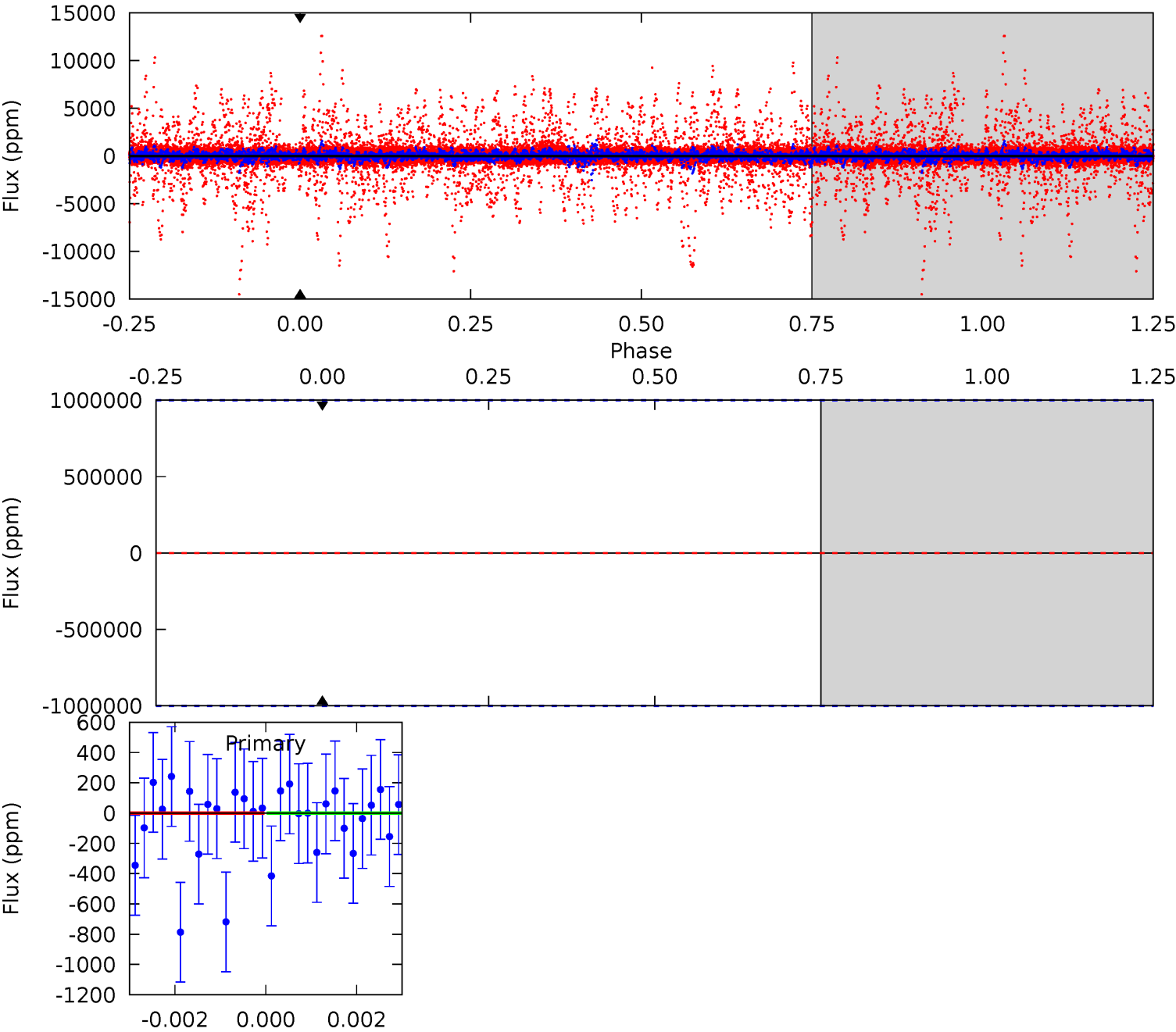
TCE 010420279-03 P= 22.716672 Days $T_0=150.674072$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-03, P = 22.716672 Days, E = 127.756666 Days

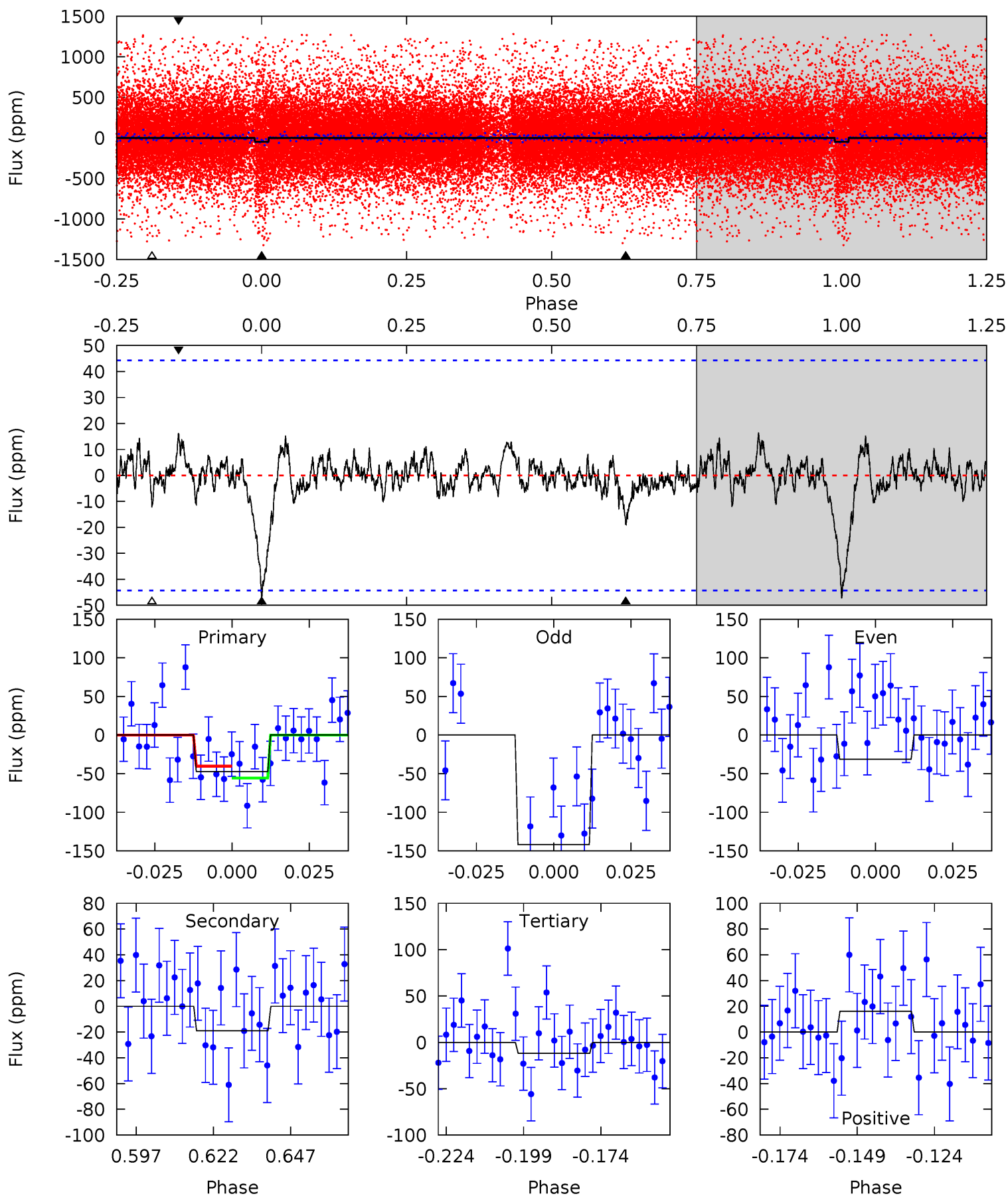
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010420279-03, P = 22.716672 Days, E = 127.957400 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.18	2.09	1.31	1.78	4.85	2.24	0.52	3.87	3.40	0.78	0.31	6.06	2.29	0.26	0



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$20.22^{+12.27}_{-11.18}$	935^{+71}_{-50}	-3414^{+12516}_{-5363}	$-47.852^{+4829.903}_{-4093.129}$
Alt.	-19 ± 9	$8.74^{+9.02}_{-5.96}$	936^{+70}_{-52}	2266^{+789}_{-453}	$3.069^{+28.021}_{-2.452}$

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

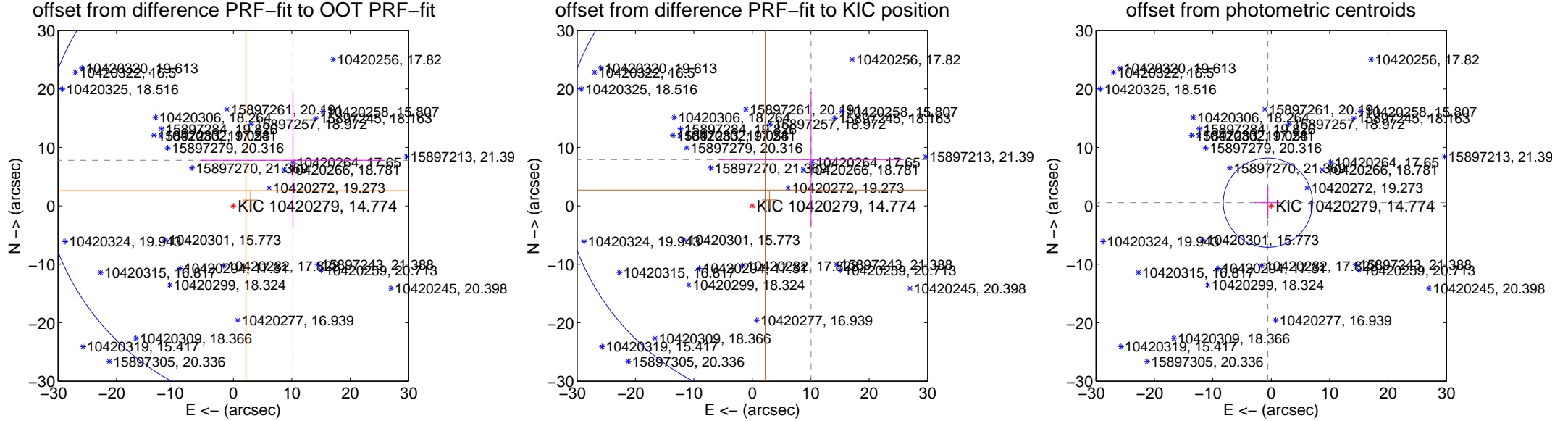
DV Centroid Data

Supplemental centroid analysis for 010420279-03. Kepler magnitude: 14.77. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

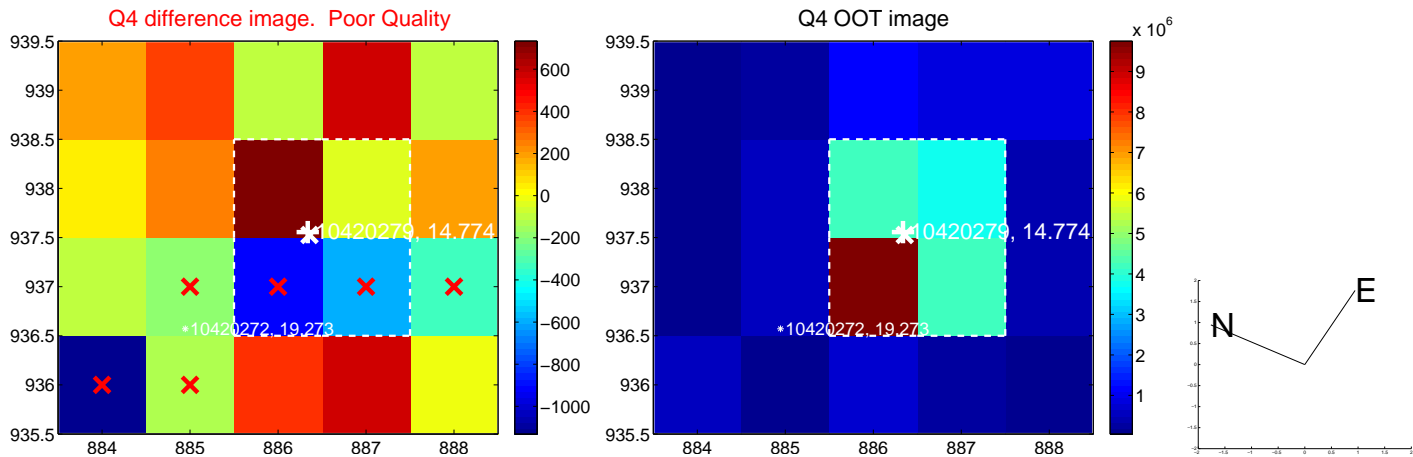
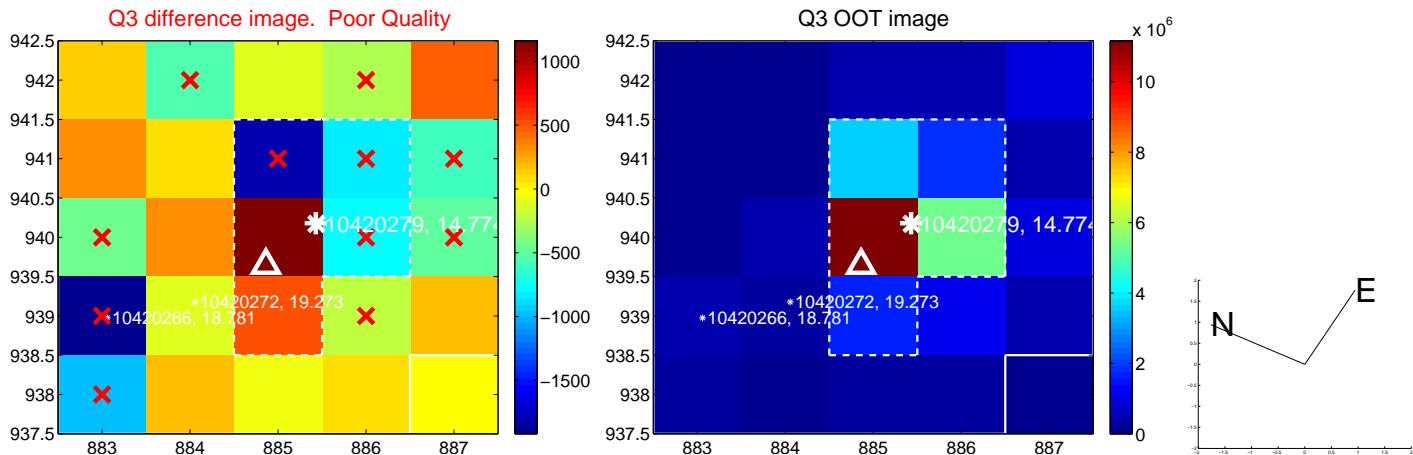
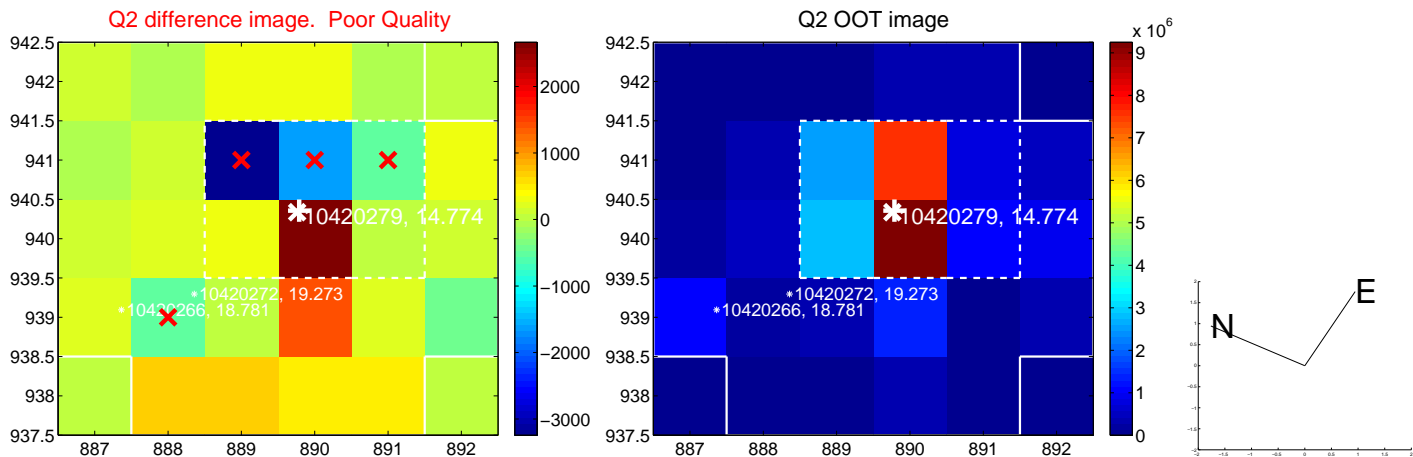
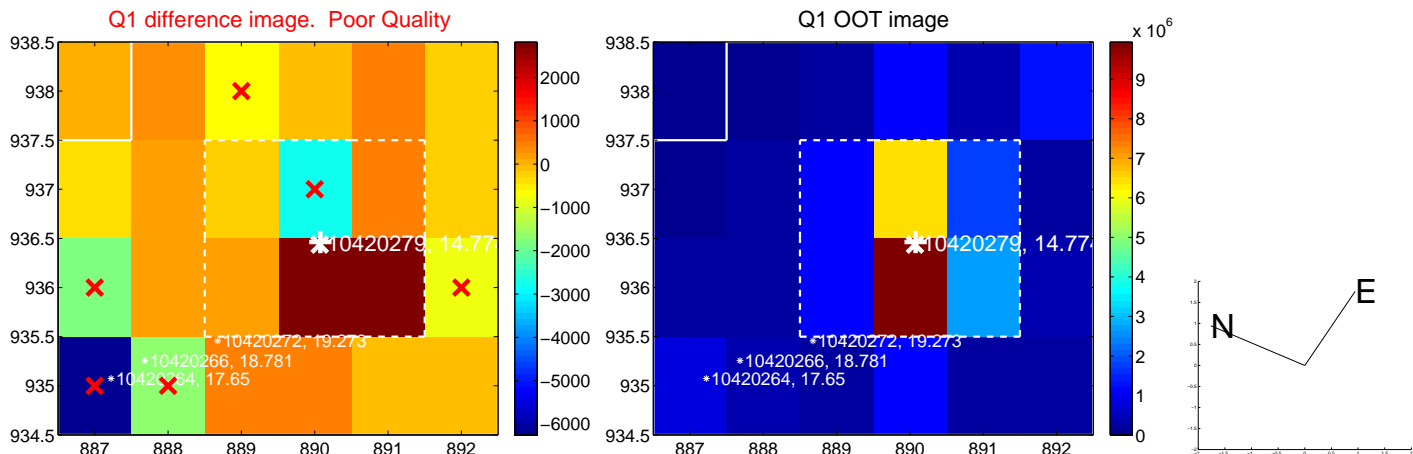
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	12.822 ± 14.373	0.89	-10.190 ± 15.783	7.783 ± 11.561
PRF-fit source offset from KIC position	12.792 ± 14.316	0.89	-10.052 ± 15.783	7.911 ± 11.561
photometric centroid source offset	0.79 ± 2.55	0.31	0.58 ± 2.34	0.54 ± 2.76

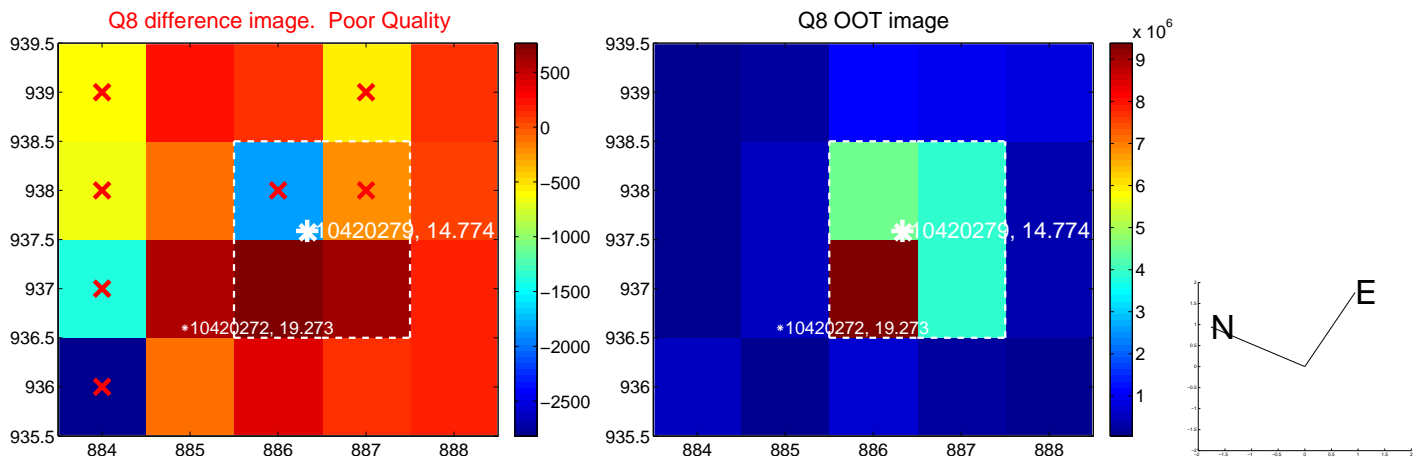
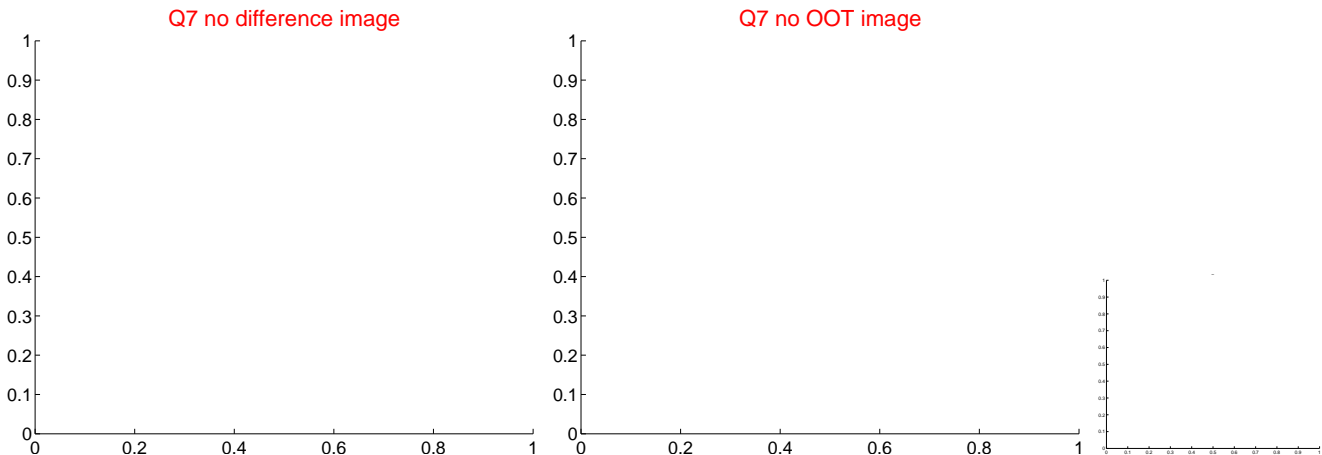
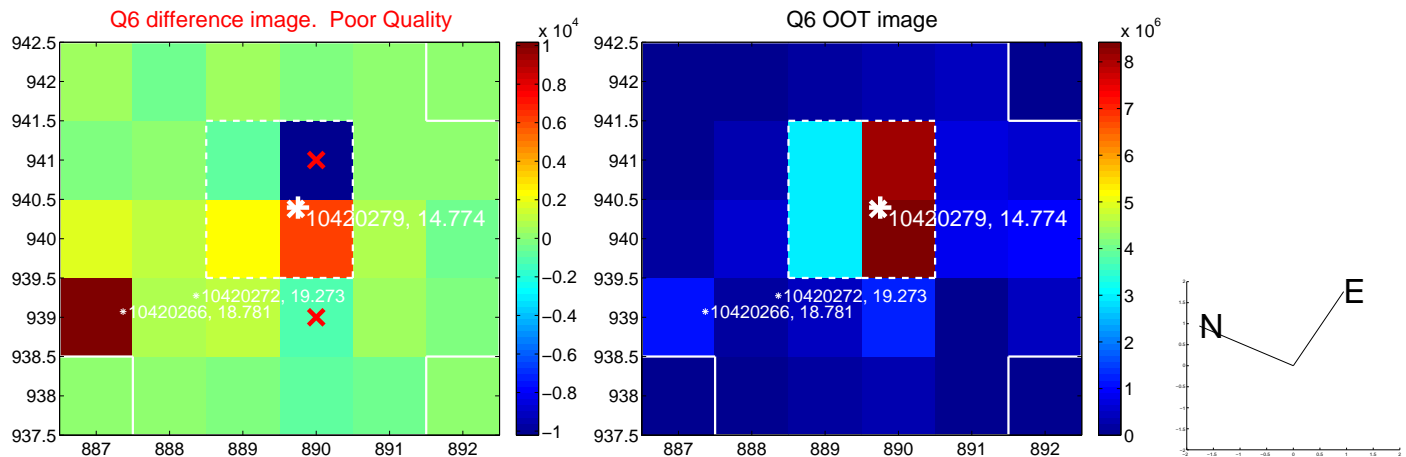
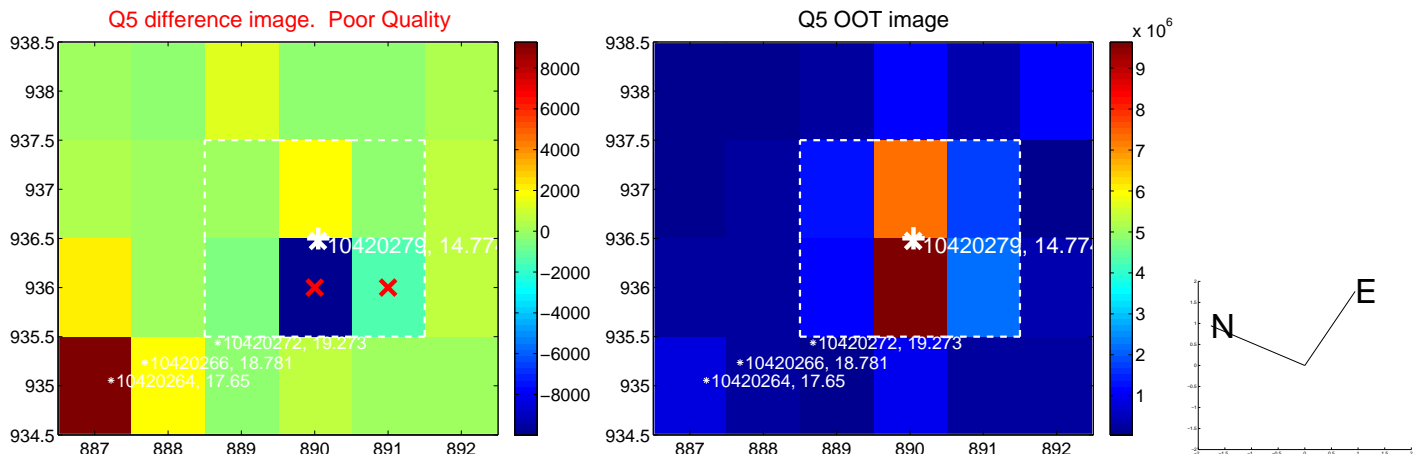


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

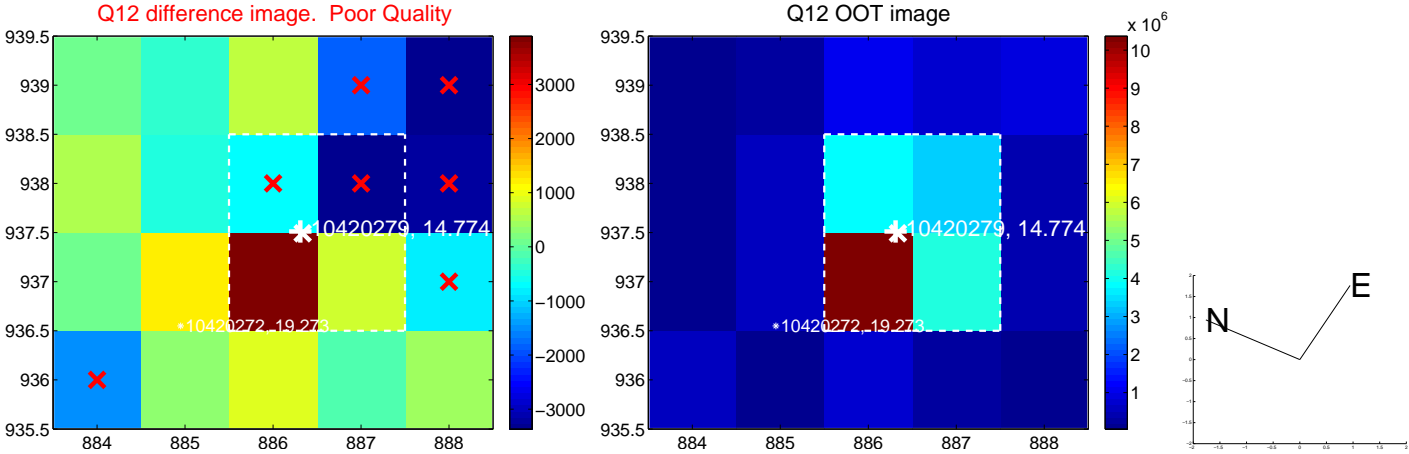
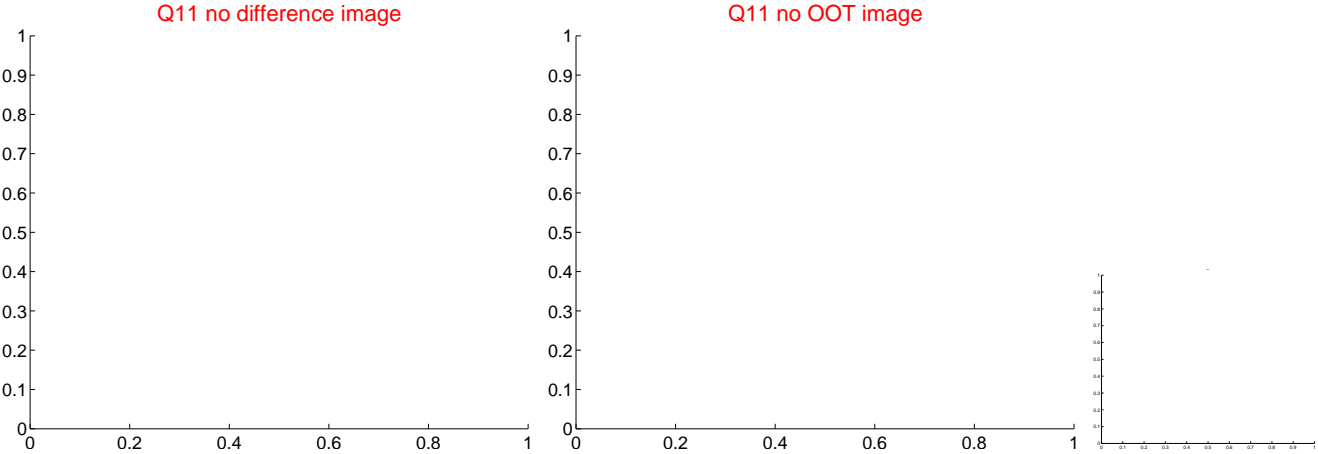
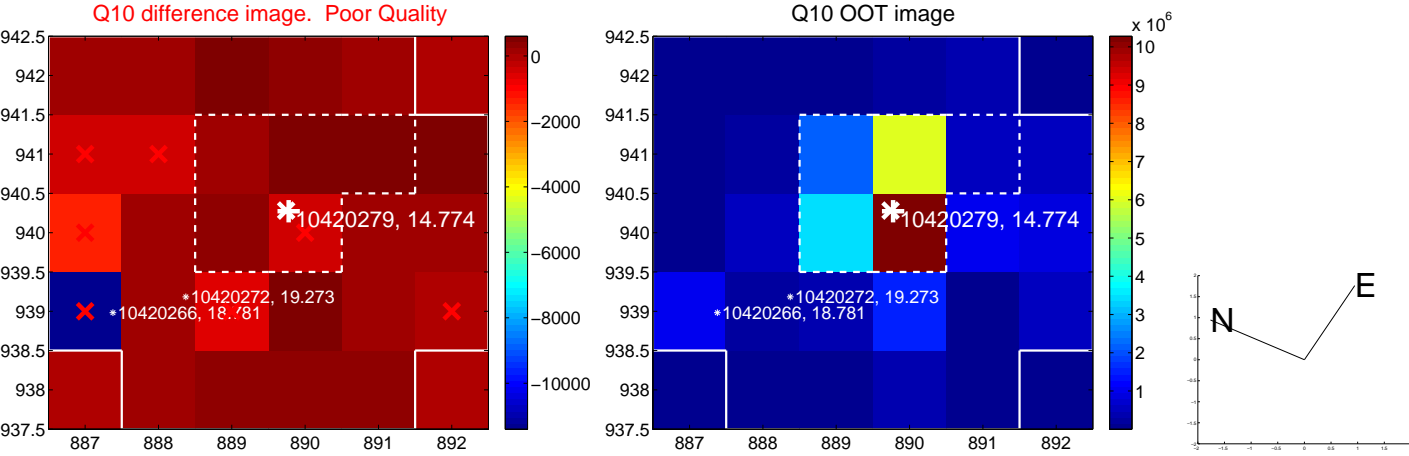
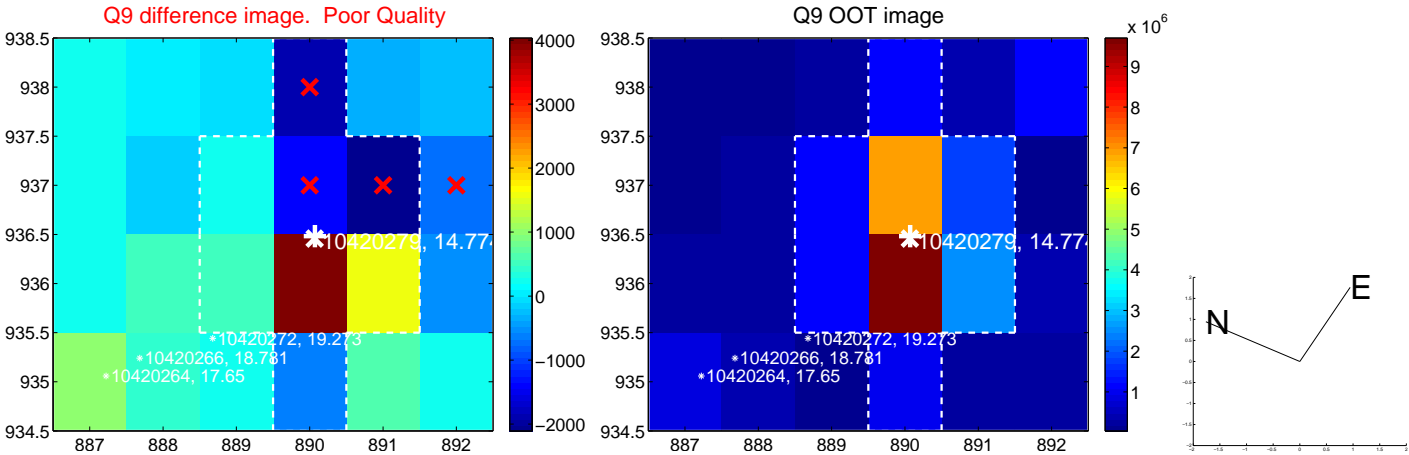
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



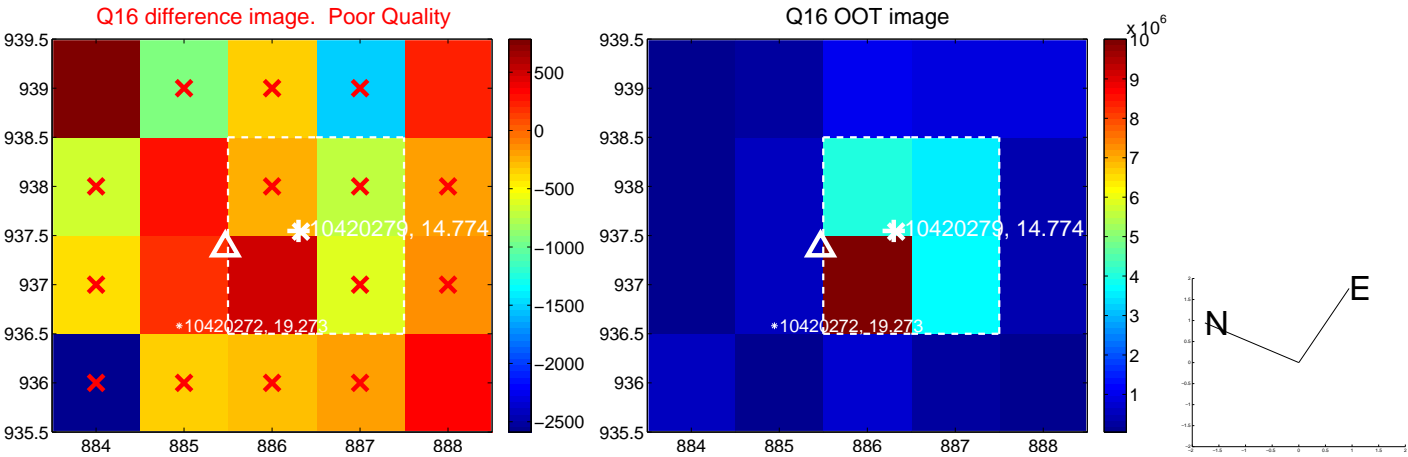
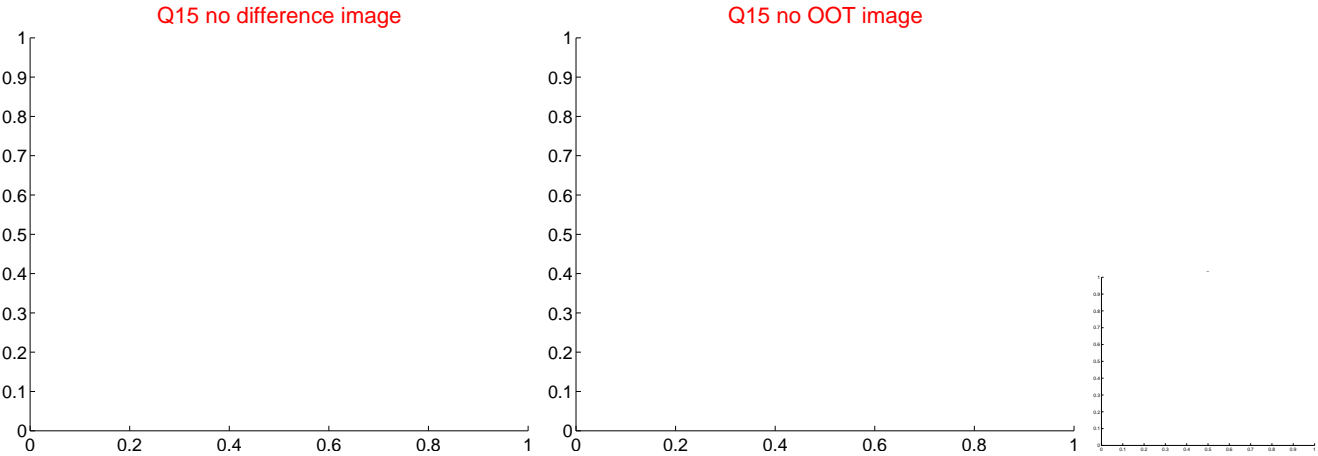
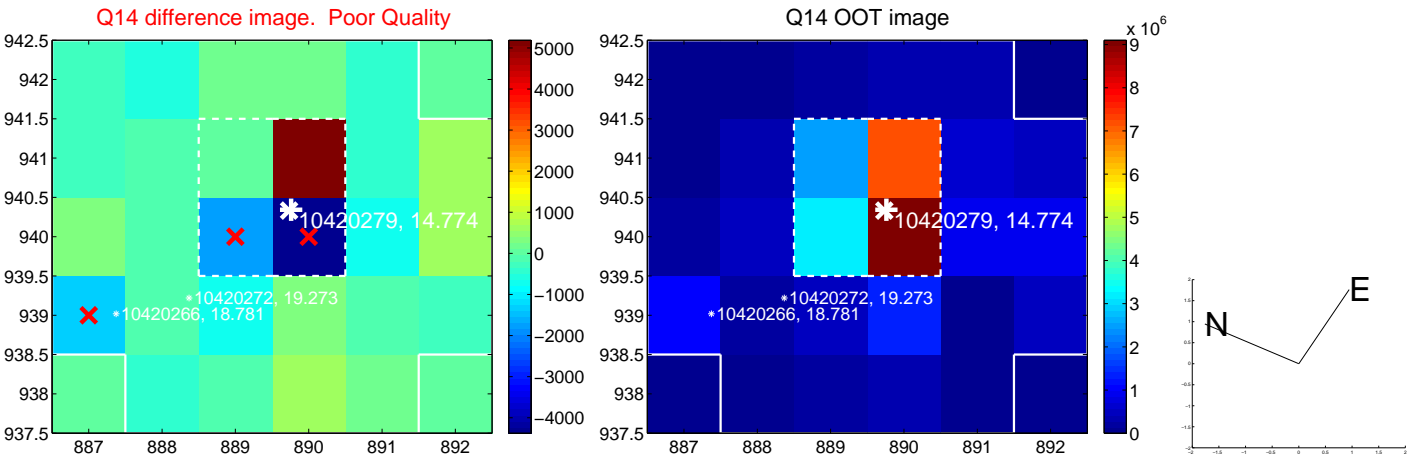
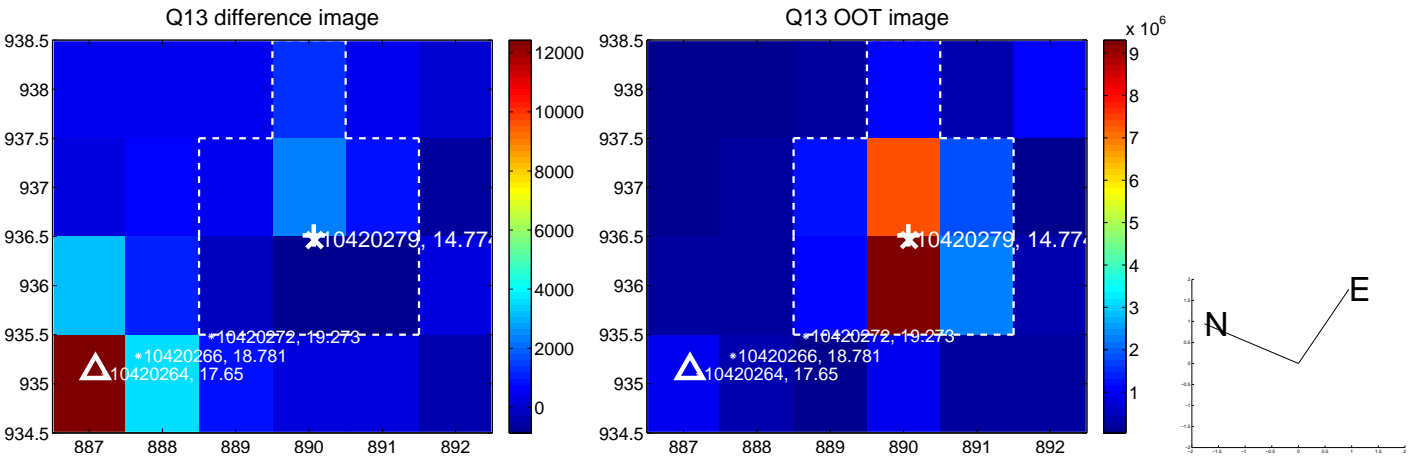
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



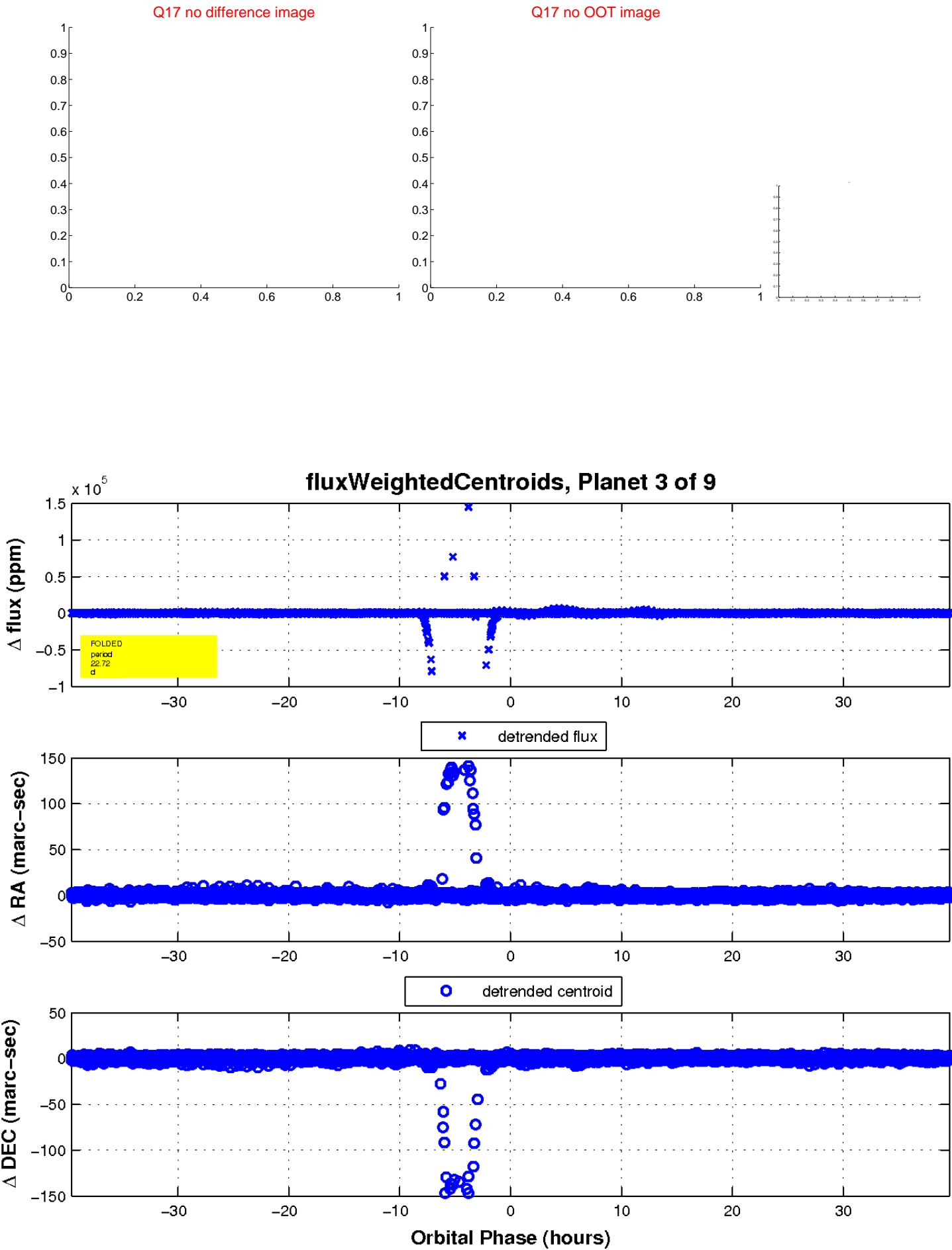
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

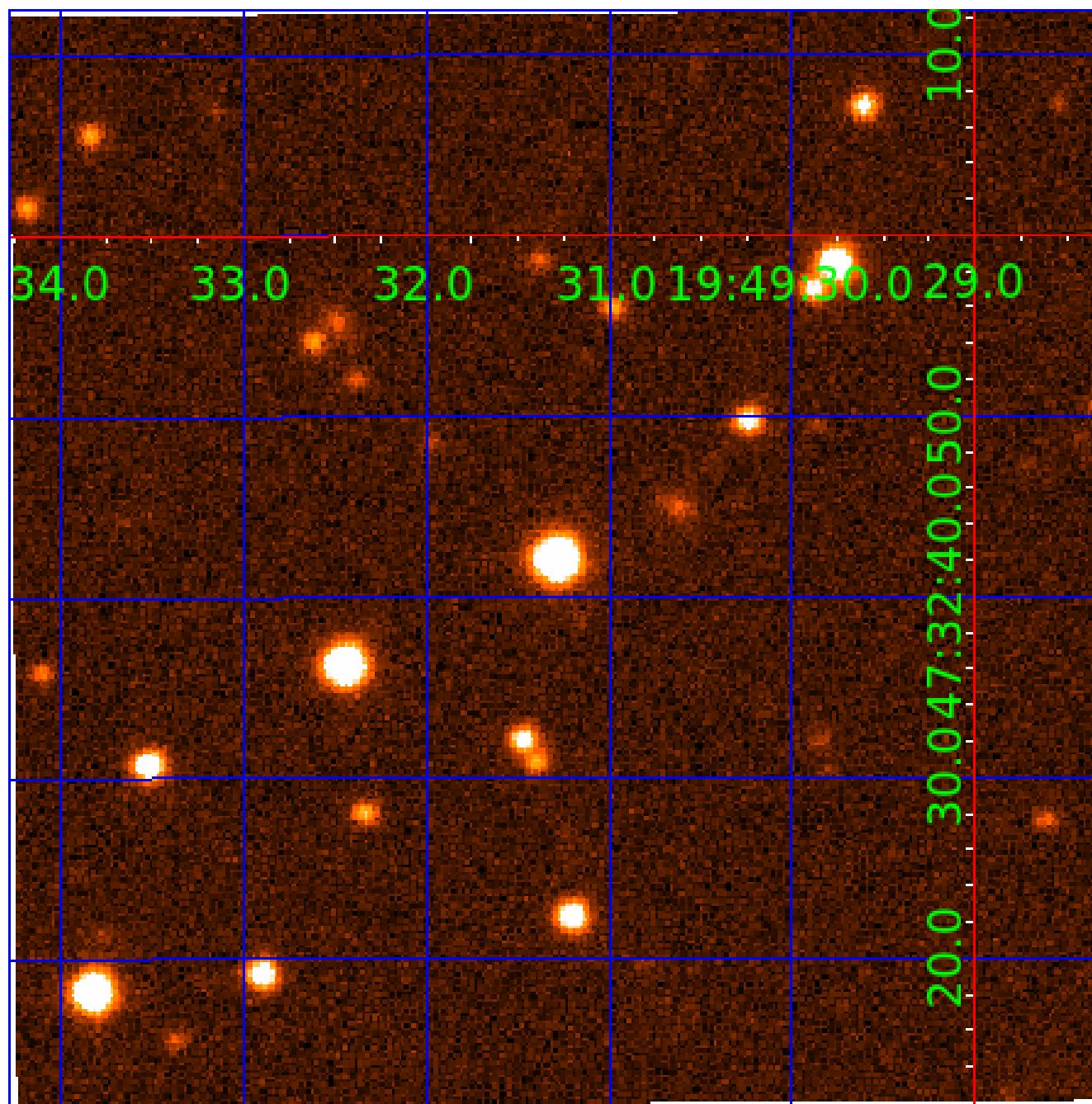


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

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})
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

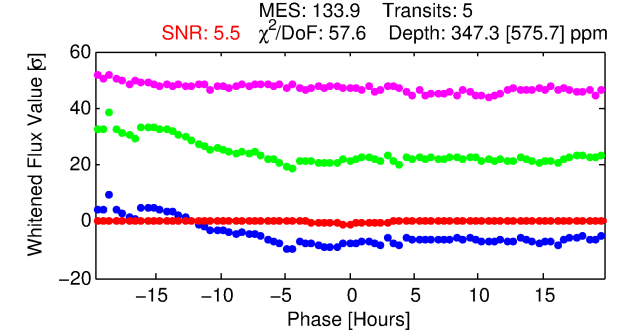
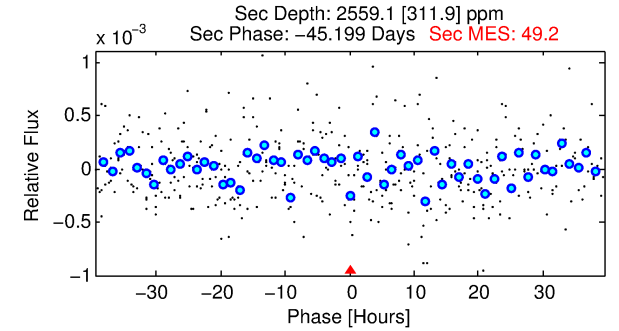
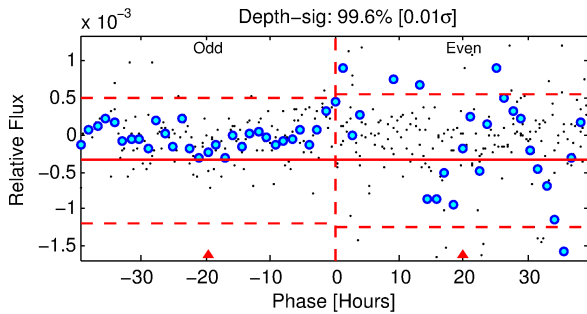
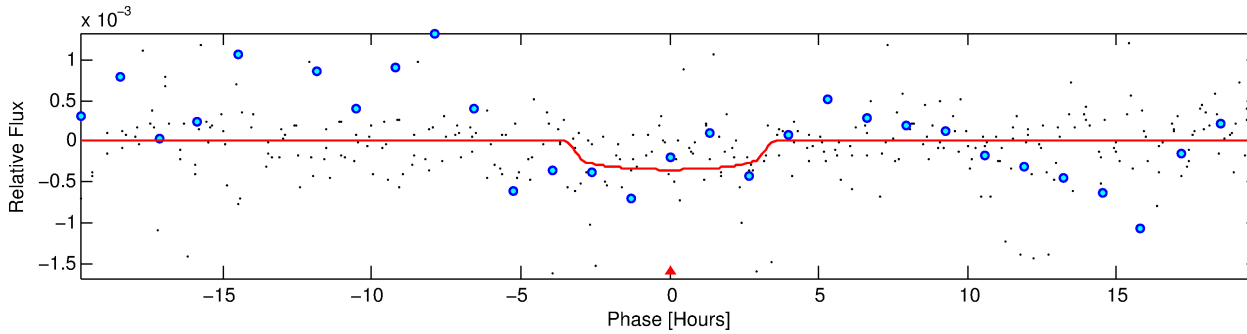
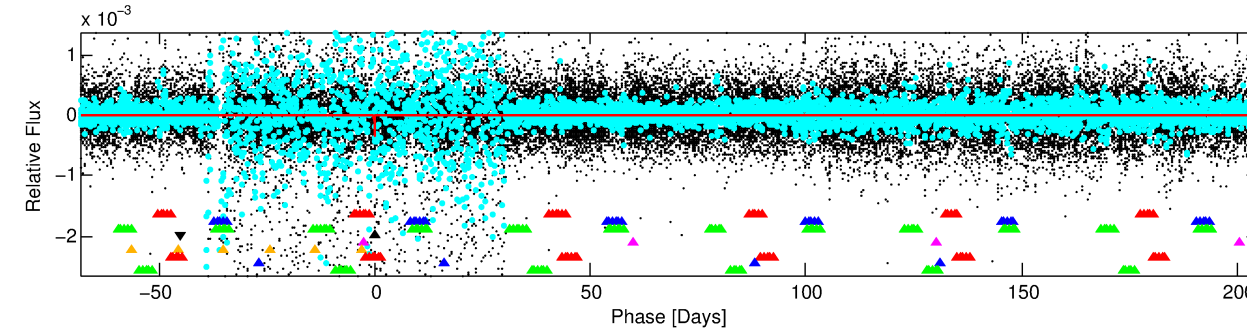
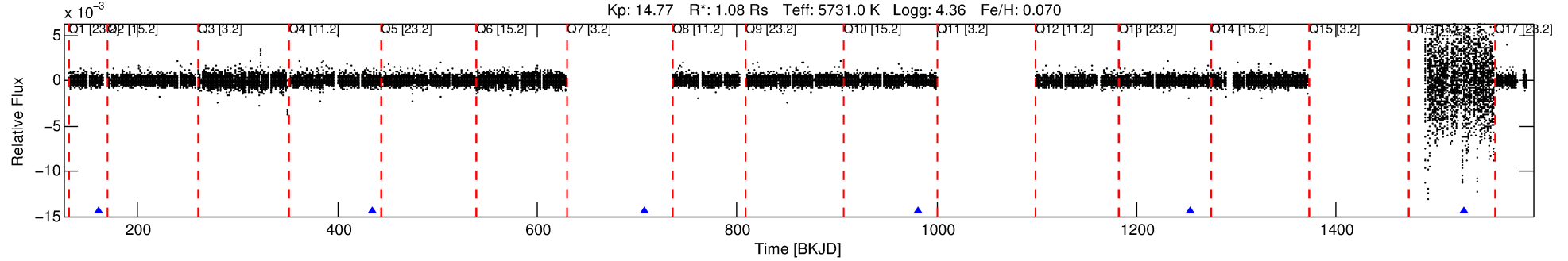
Ephemeris Match Information For 010420279-04

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 4 of 9 Period: 273.333 d
KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



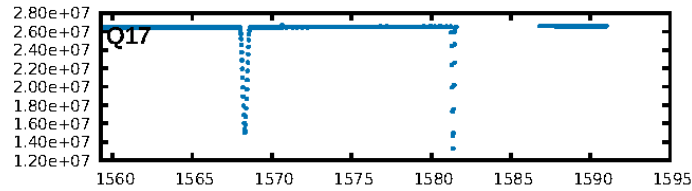
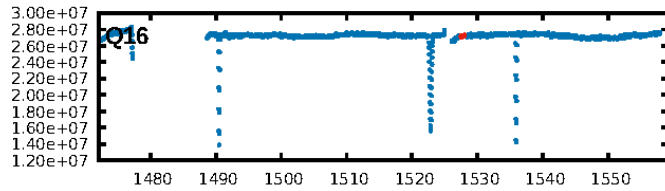
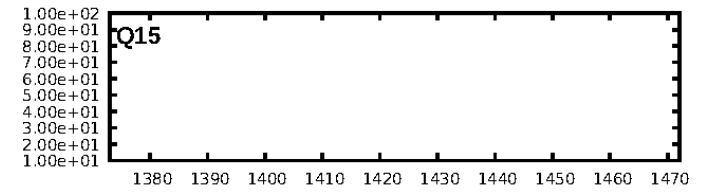
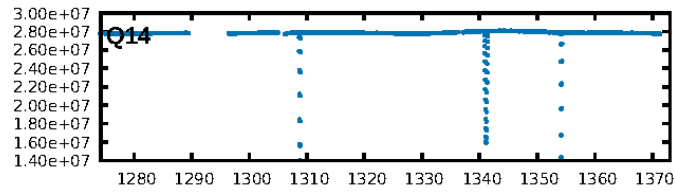
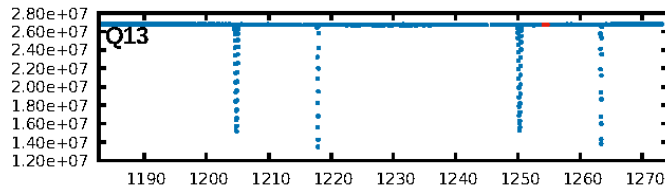
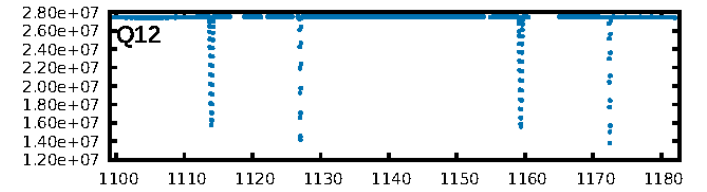
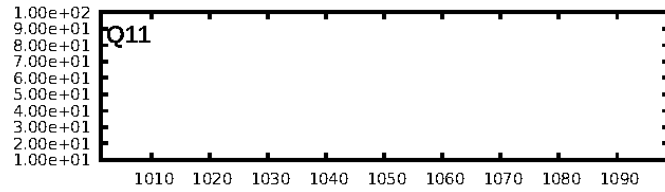
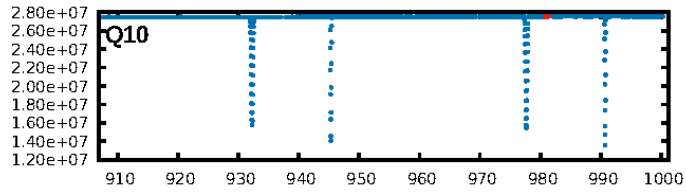
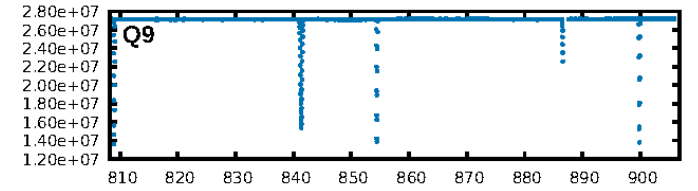
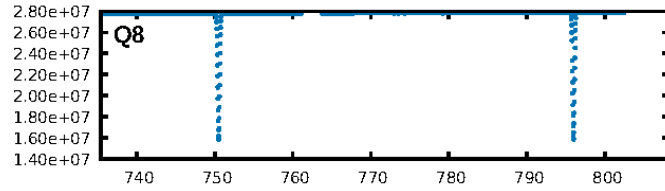
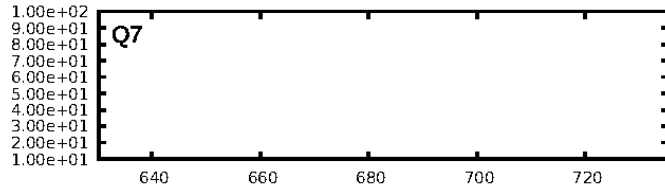
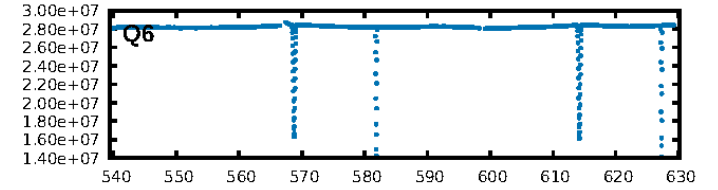
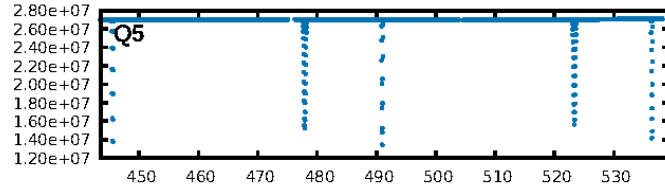
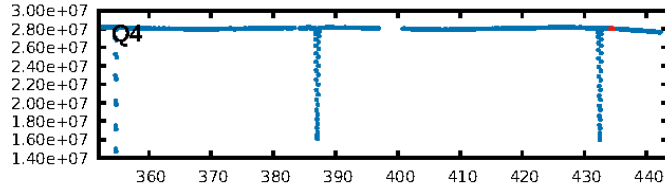
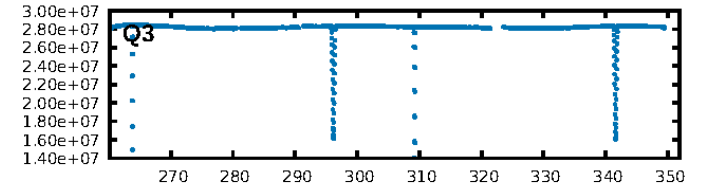
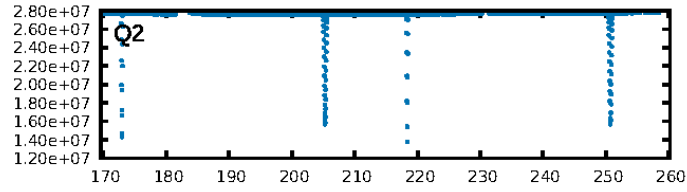
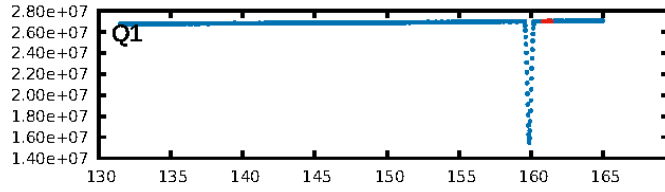
DV Fit Results:

Period = 273.33295 [0.05855] d
Epoch = 161.1140 [0.1715] BKJD
Rp/R* = 0.0169 [0.8027]
a/R* = 321.71 [65906.35]
b = 0.04 [4825.89]
Seff = 1.69 [0.63]
Teq = 291 [27] K
Rp = 1.99 [94.60] Re
a = 0.8168 [0.1969] AU
Ag = 237786.57 [22635776.96] [0.01σ]
Teffp = 9926 [236222] K [0.04σ]

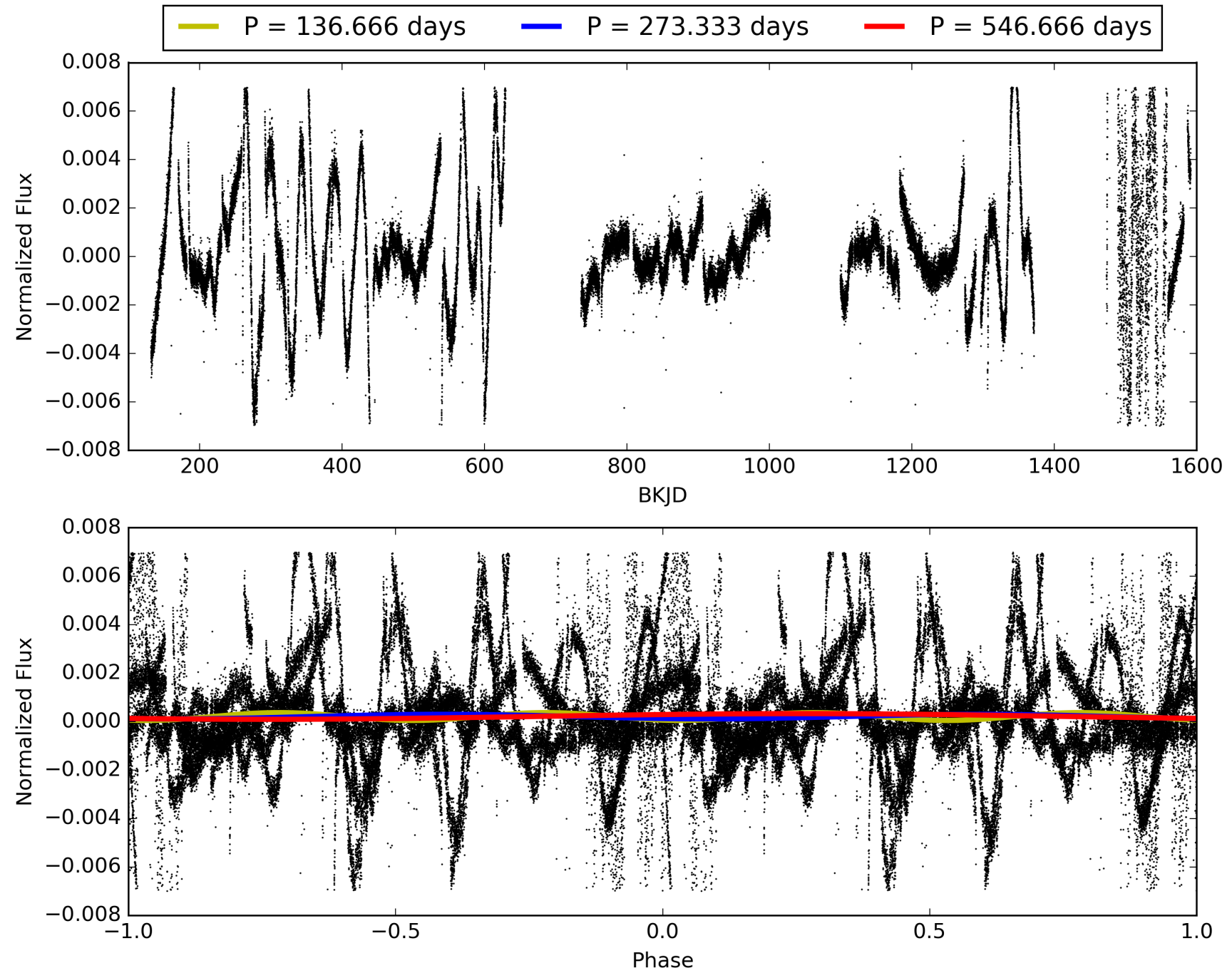
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.56σ]
LongPeriod-sig: 100.0% [380.21σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 0.0%
Bootstrap-pfa: 3.12e-94
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.187
Centroid-sig: N/A
Centroid-so: 2.140 arcsec [1.10σ]
OotOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-rm: N/A
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [5/5]

TCE 010420279-04, PDC Light Curves

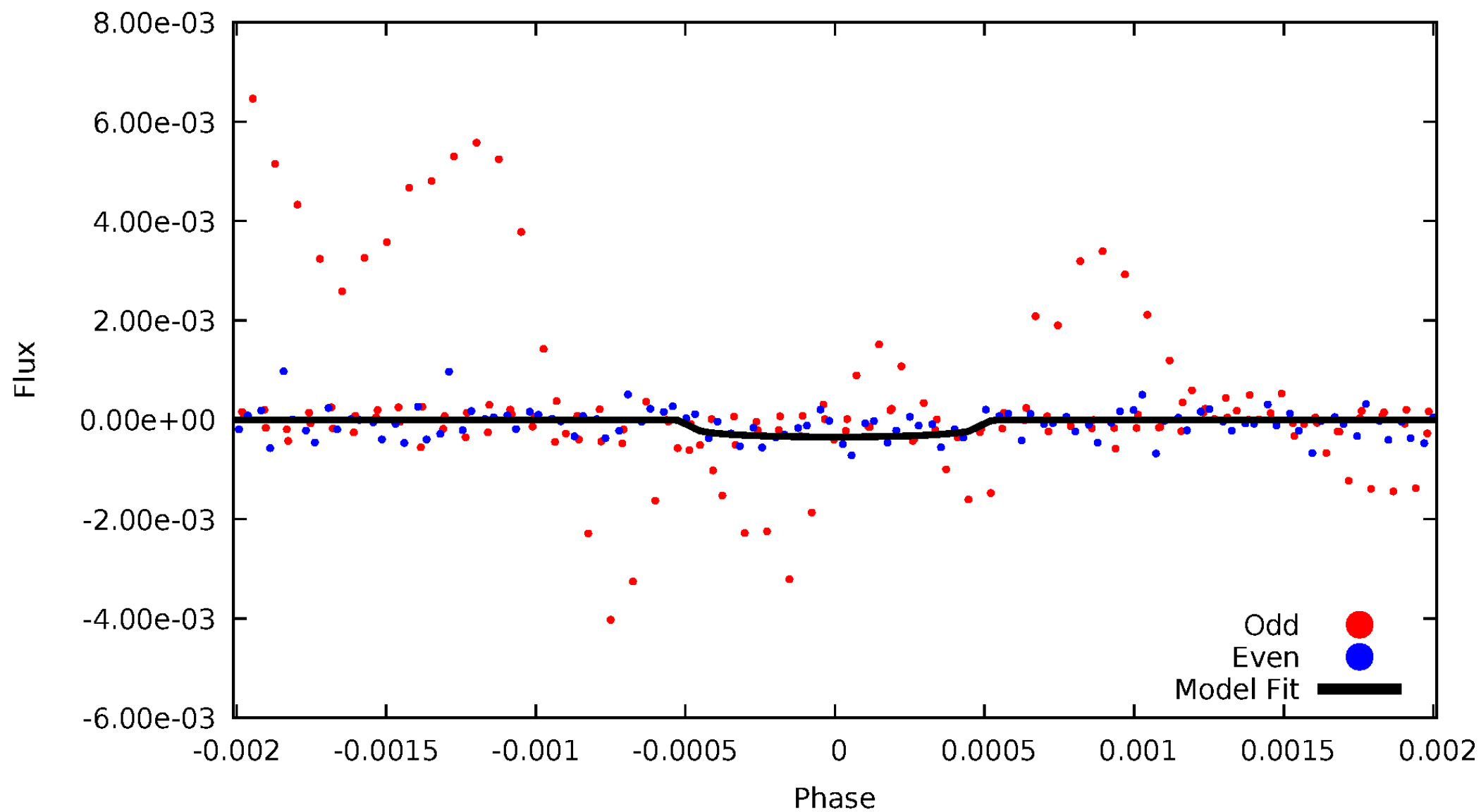


TCE 010420279-04



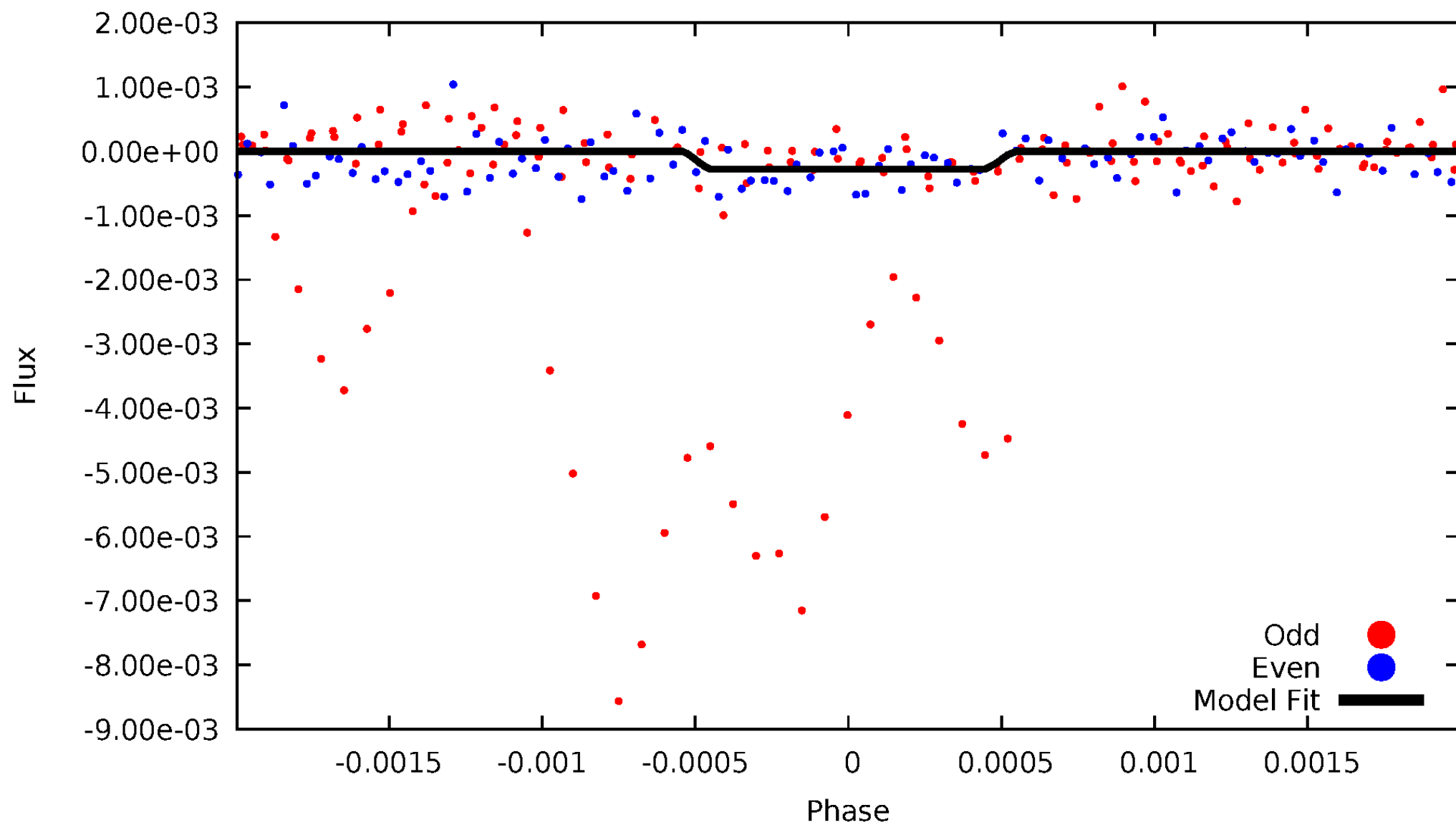
DV Odd/Even

TCE 010420279-04



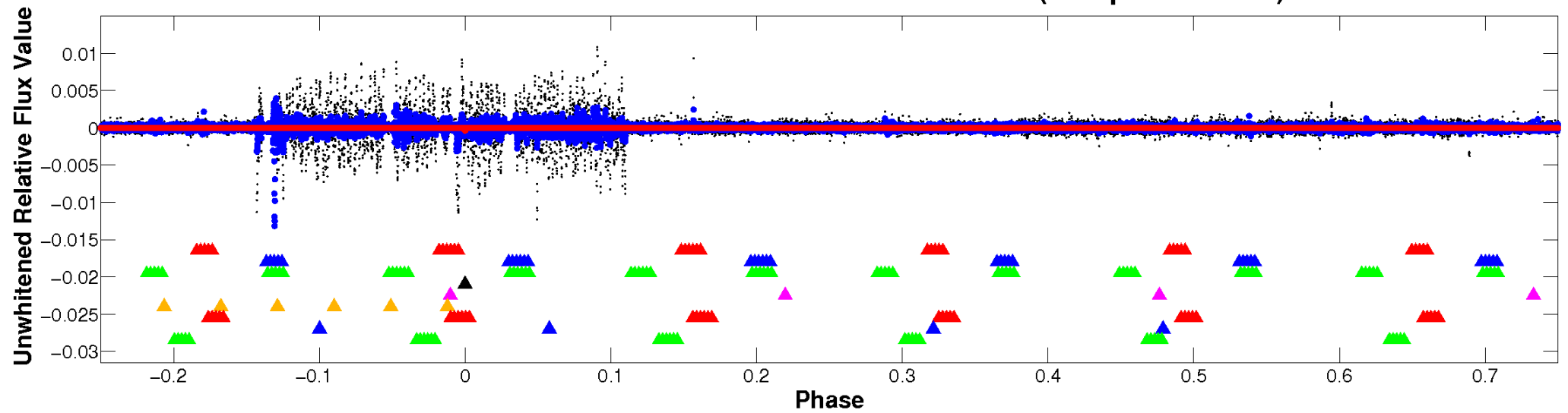
ALT Odd/Even

TCE 010420279-04

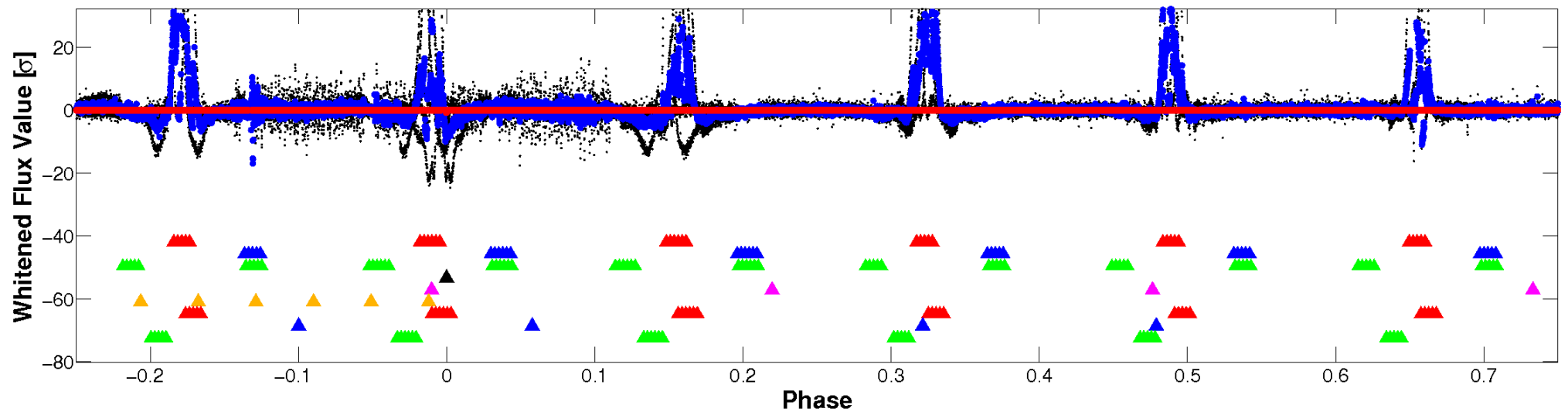


Non-Whitened Vs. Whitened Light Curve

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

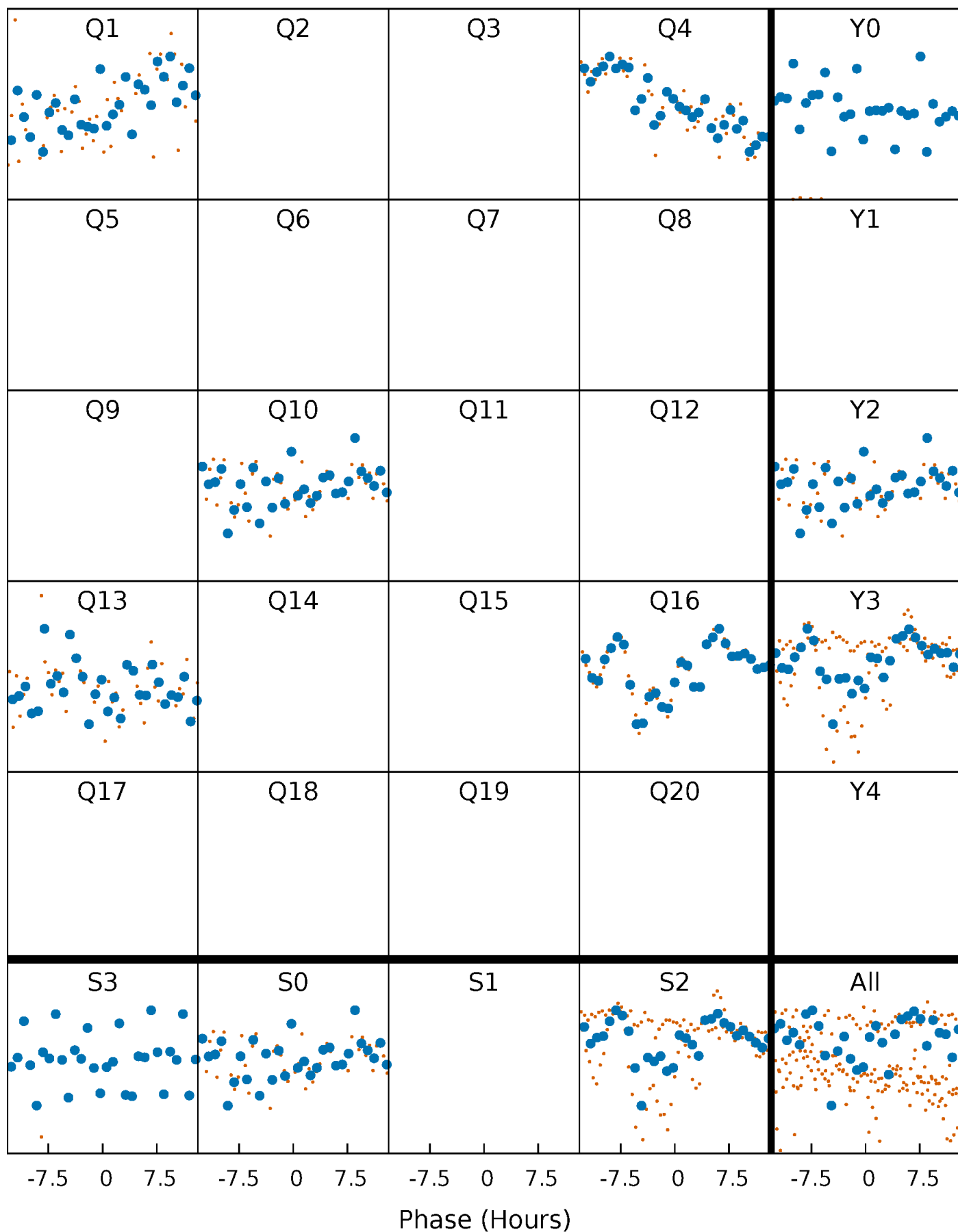


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



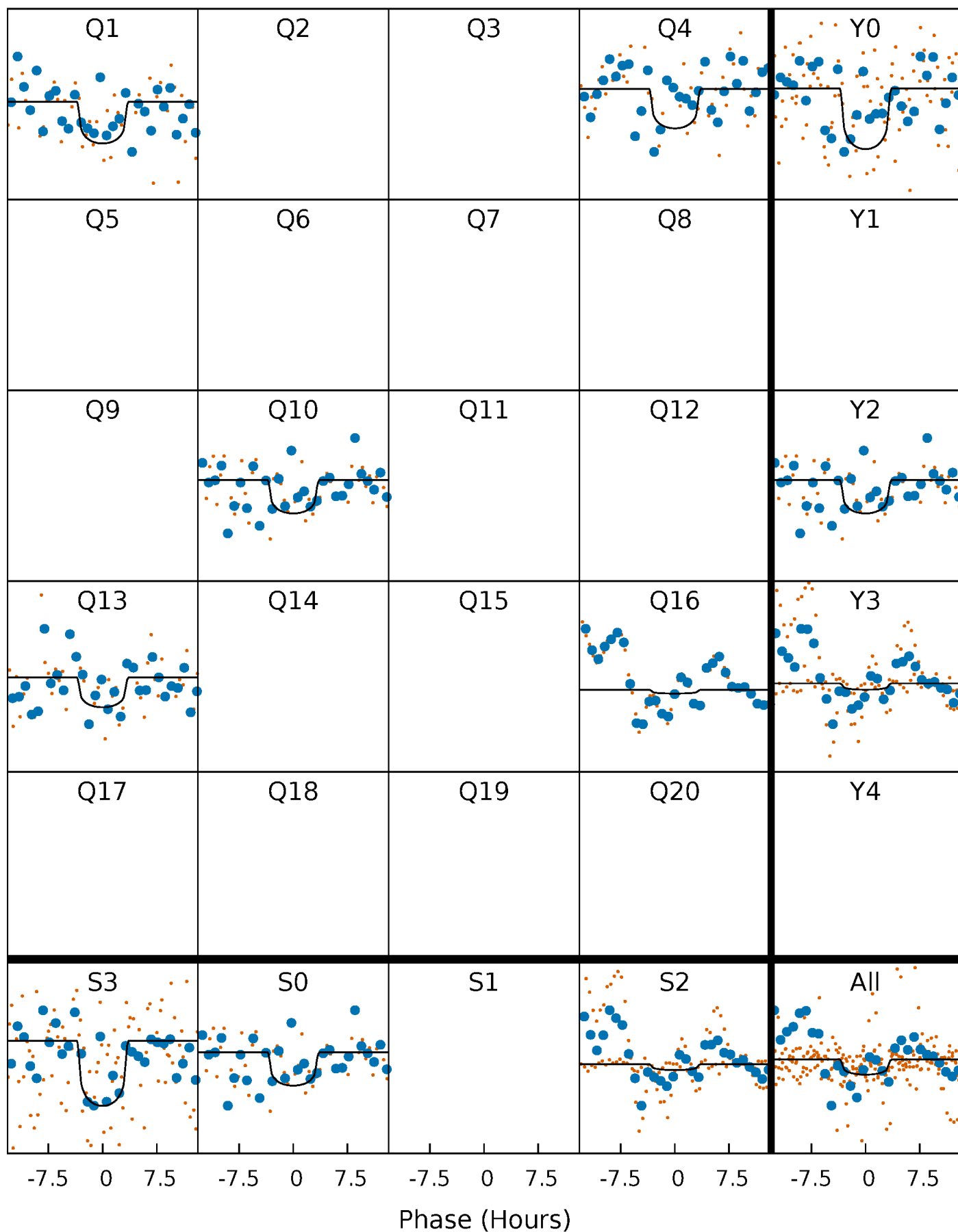
PDC Quarter-Phased Transit Curves

TCE 010420279-04 $P=273.332949$ Days $T_0=161.114000$ (BKJD)



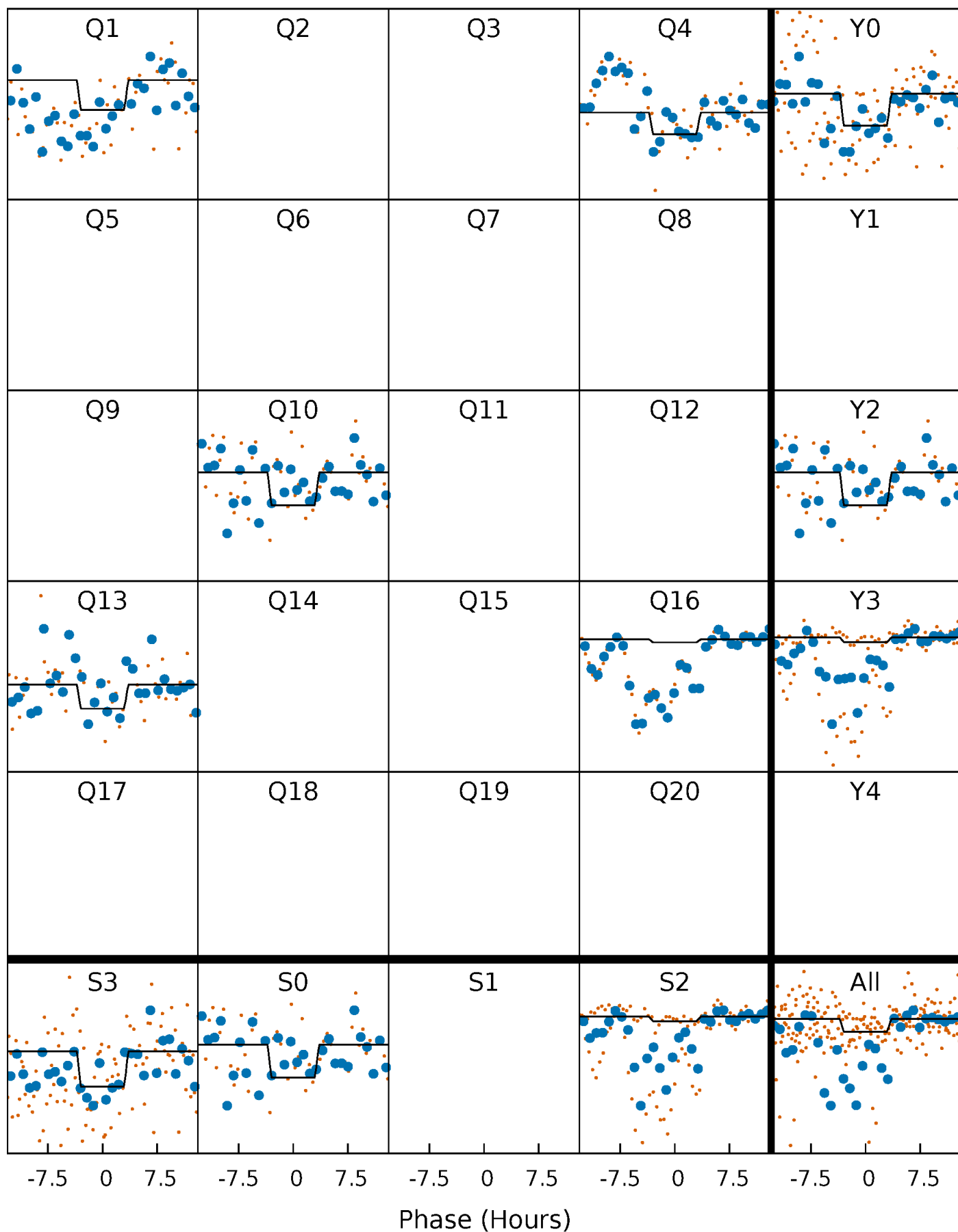
DV Quarter-Phased Transit Curves

TCE 010420279-04 $P=273.332949$ Days $T_0=161.114000$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

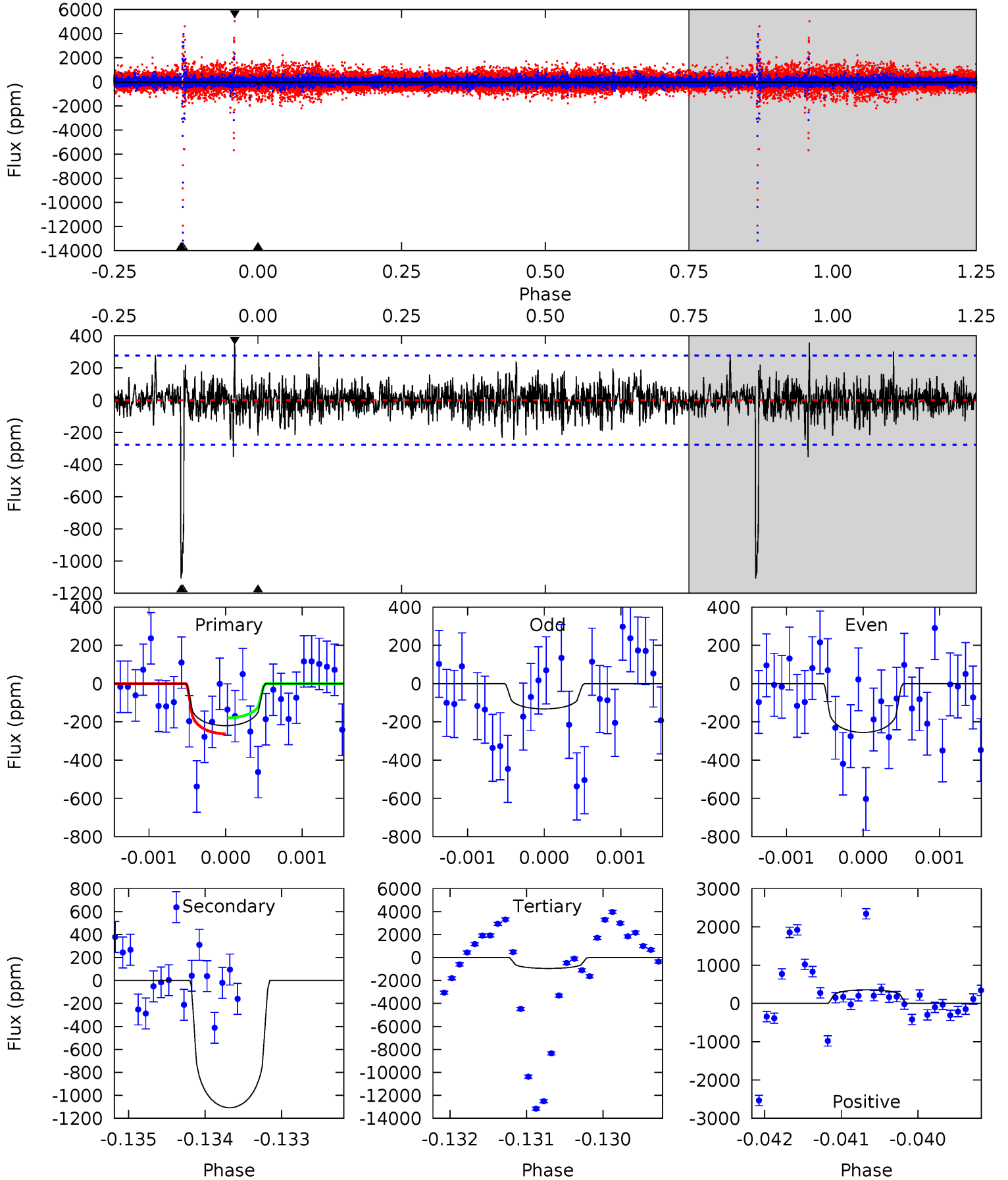
TCE 010420279-04 P=273.332921 Days $T_0=161.114131$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-04, P = 273.332949 Days, E = 161.114000 Days

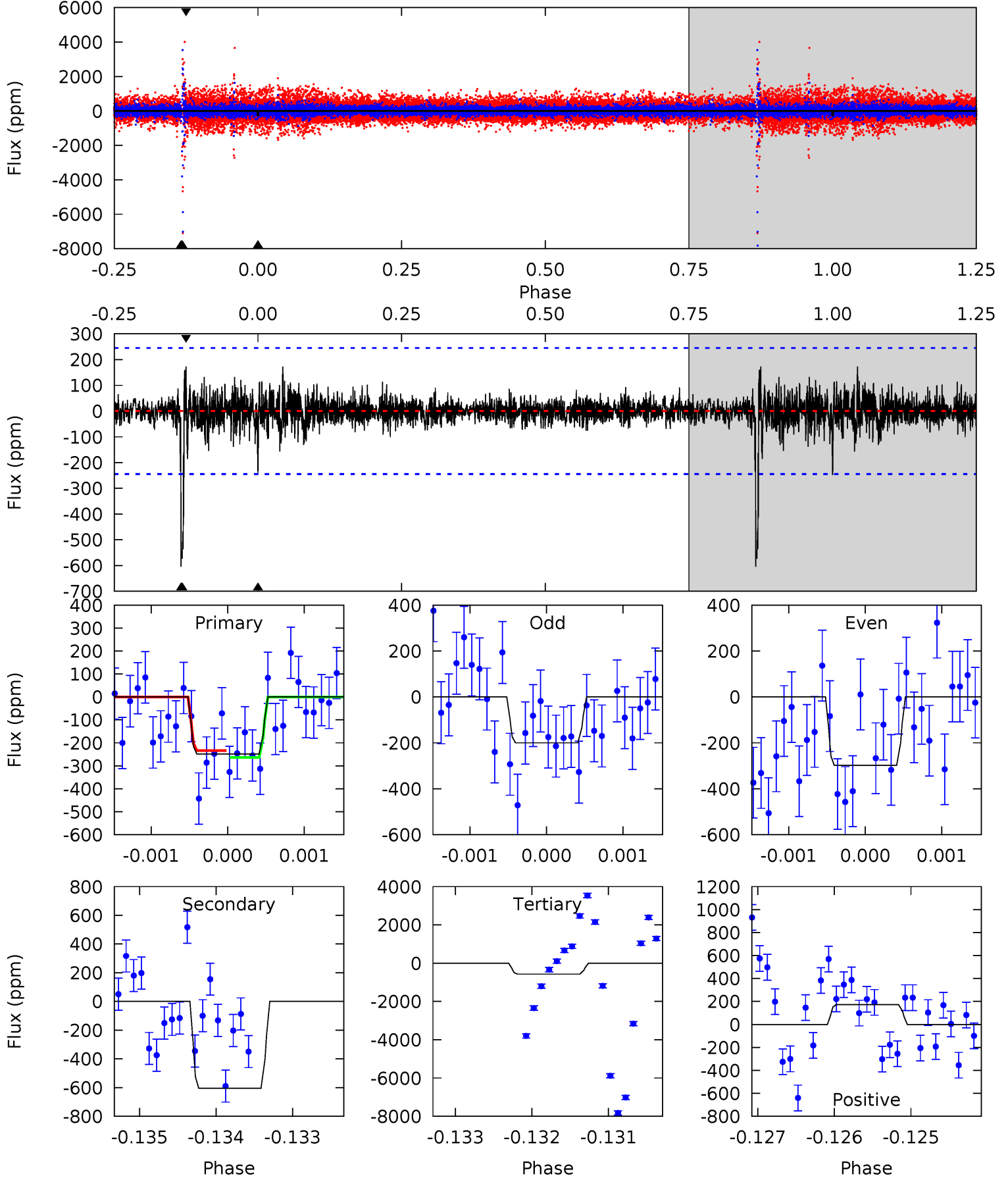
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.32	21.8	18.7	7.02	5.44	3.28	1.40	-14.4	-2.70	3.04	14.7	1.00	1.65	0.24	0.87



Alt Model-Shift Uniqueness Test

010420279-04, P = 273.332921 Days, E = 161.114131 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.52	13.4	12.7	3.85	5.44	3.28	0.80	-7.14	1.67	0.76	9.57	0.97	3.85	0.22	0



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1108 ± 51	$66.74^{+76.41}_{-44.79}$	409^{+29}_{-23}	2311^{+789}_{-346}	93^{+733}_{-73}
Alt.	-604 ± 45	$65.57^{+77.13}_{-44.28}$	408^{+30}_{-23}	2157^{+732}_{-310}	50^{+460}_{-40}

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

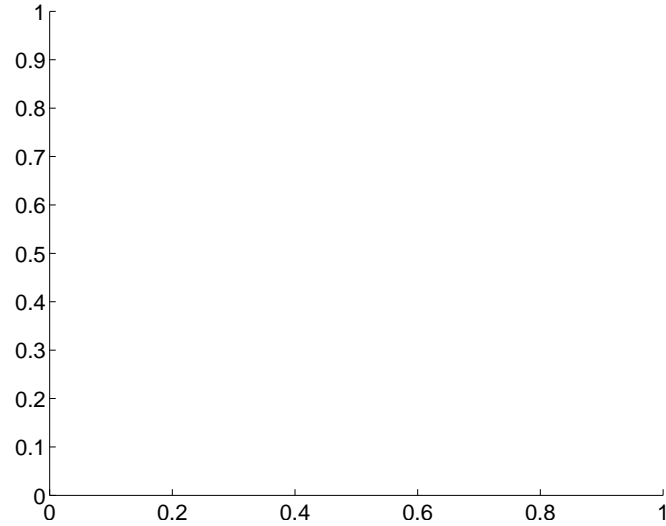
Supplemental centroid analysis for 010420279-04. Kepler magnitude: 14.77. Transit SNR 5.51

There are 0 quarters with good PRF difference image offsets

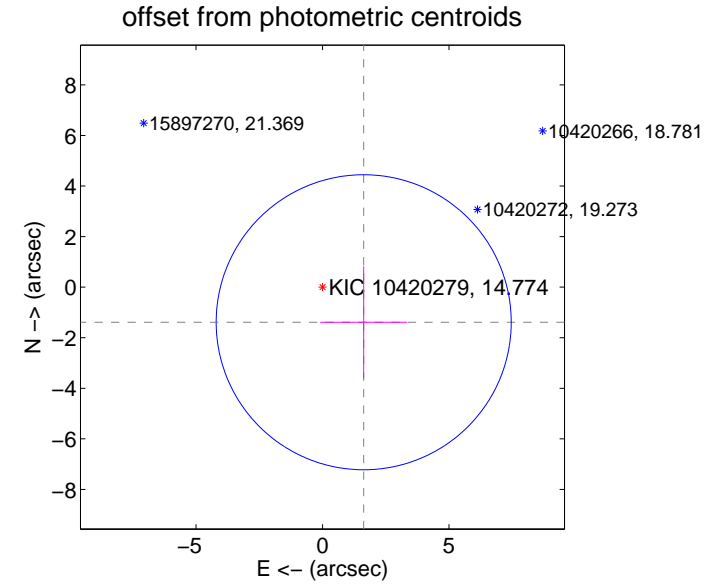
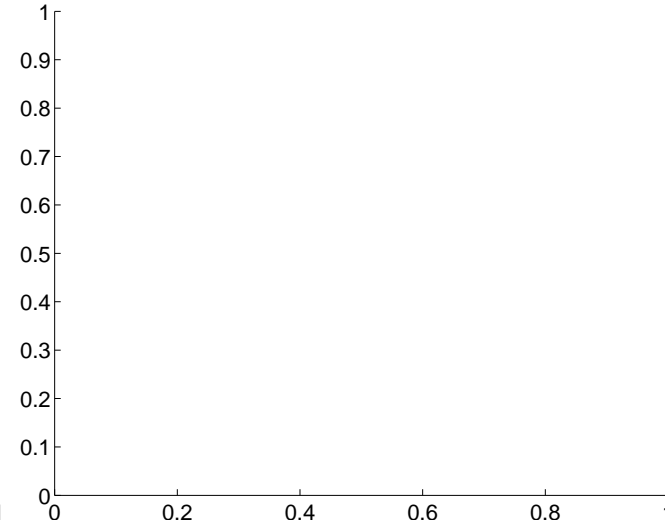
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.14 ± 1.94	1.10	-1.63 ± 1.72	-1.39 ± 2.22

There is no PRF-fit offset from OOT-fit

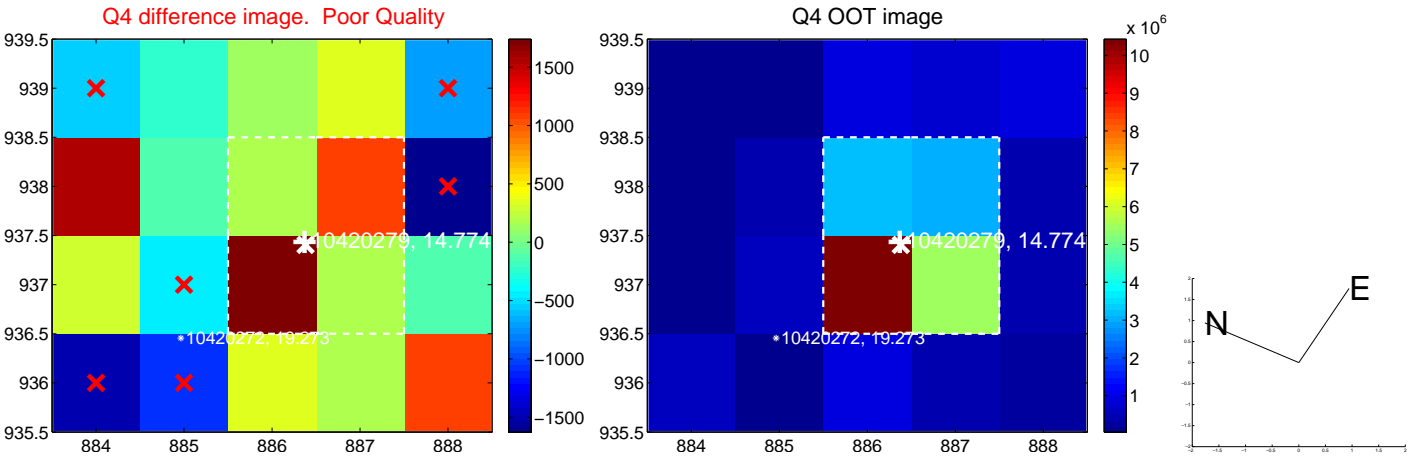
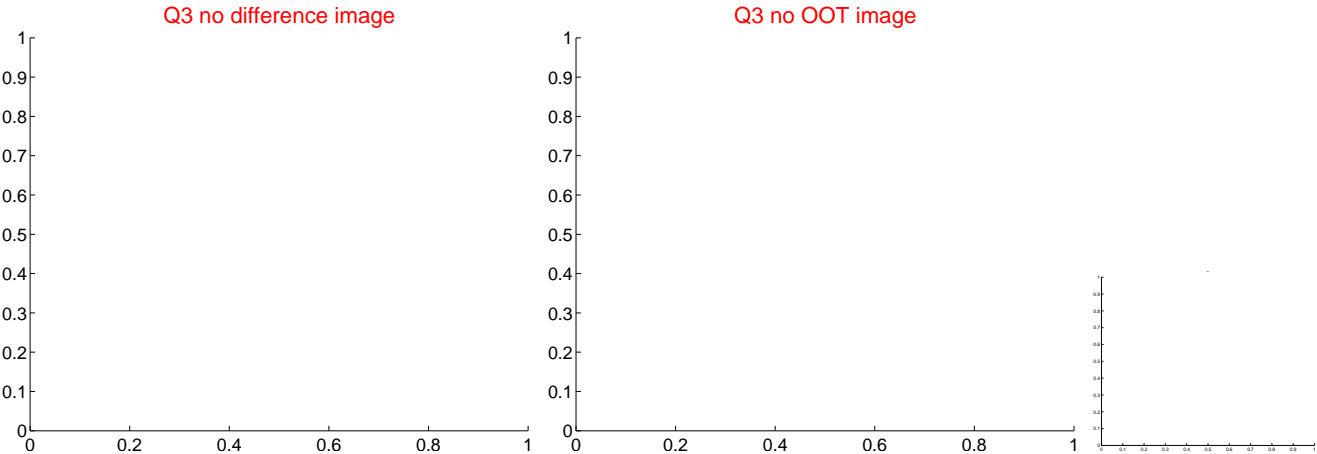
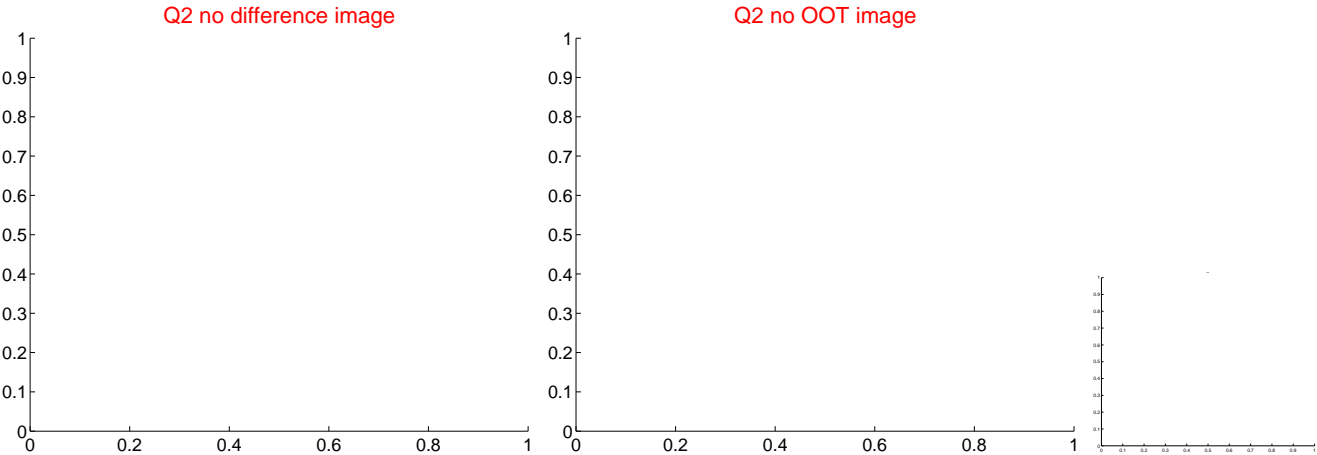
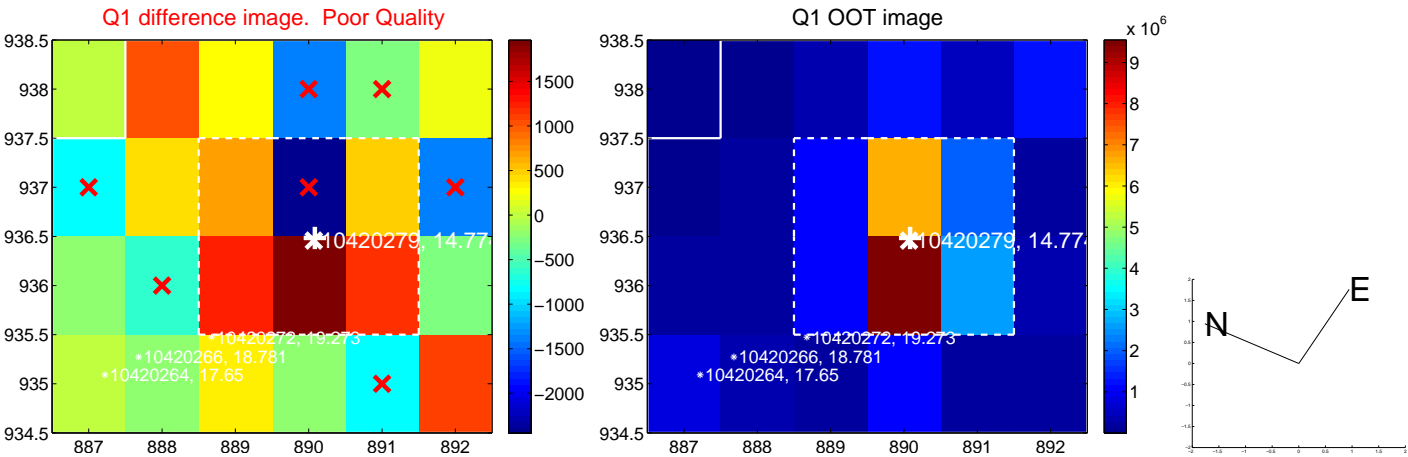


There is no PRF-fit offset from KIC



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.

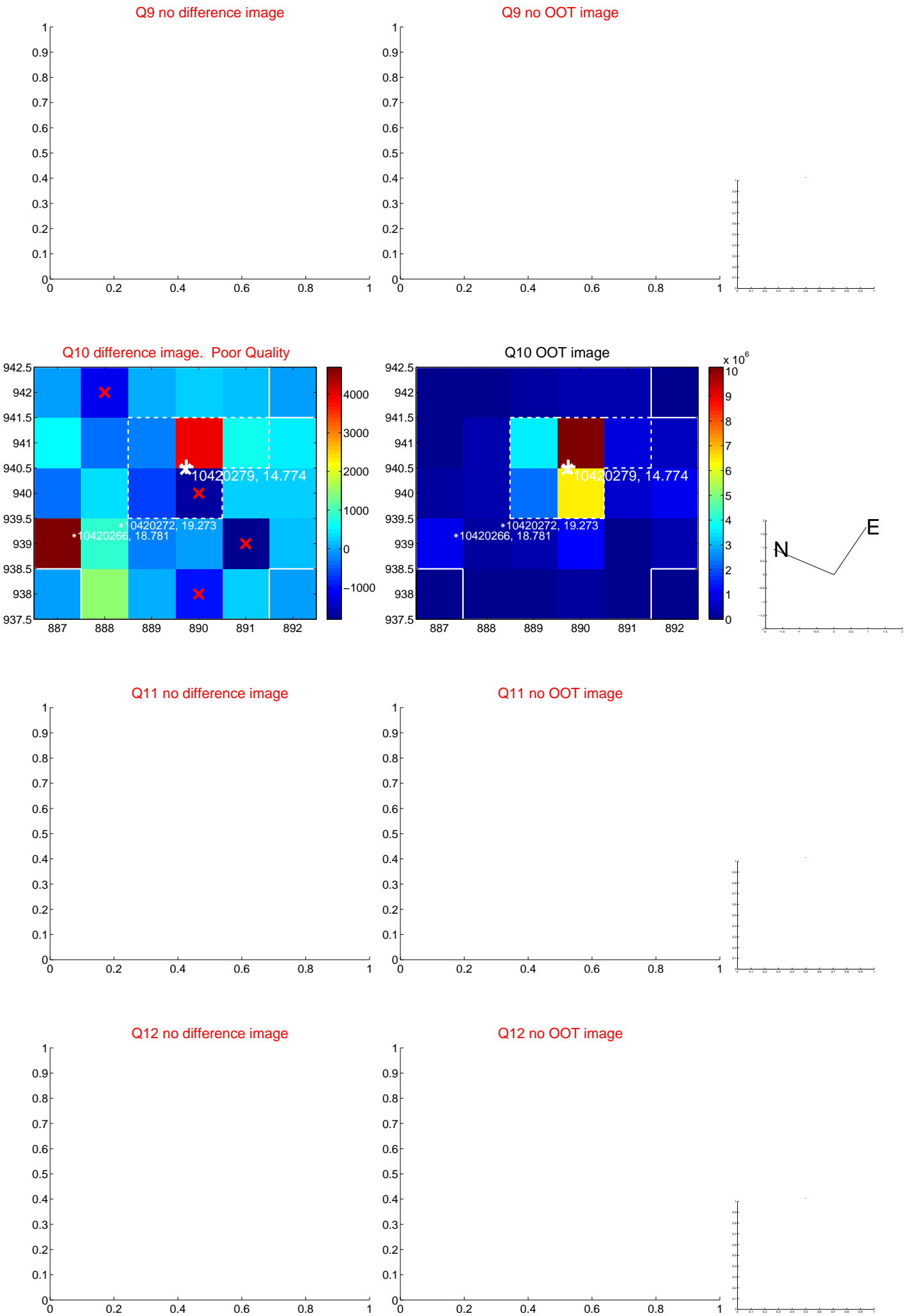
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



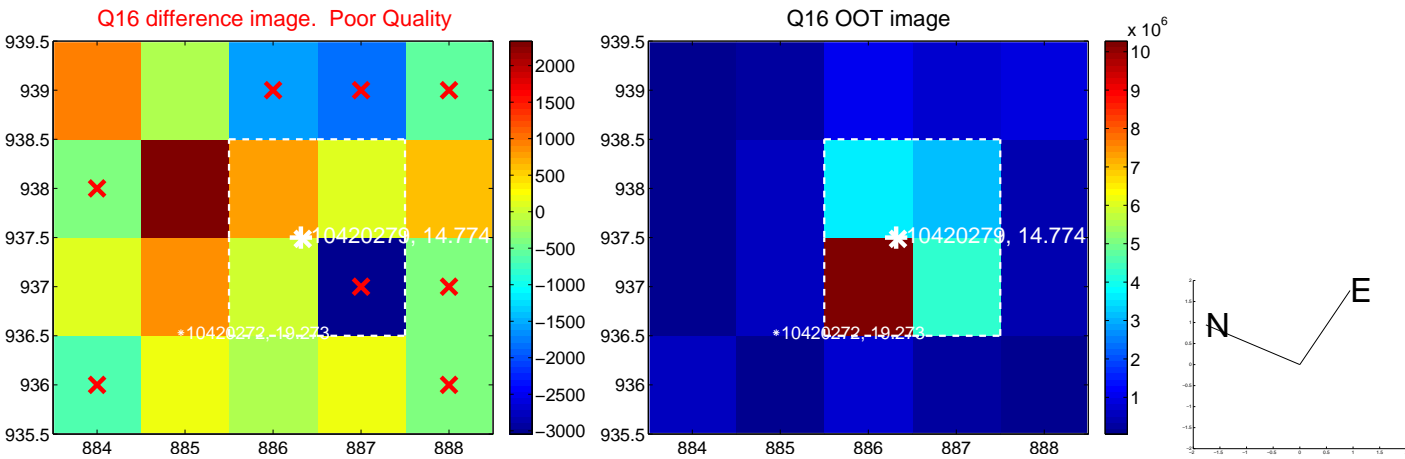
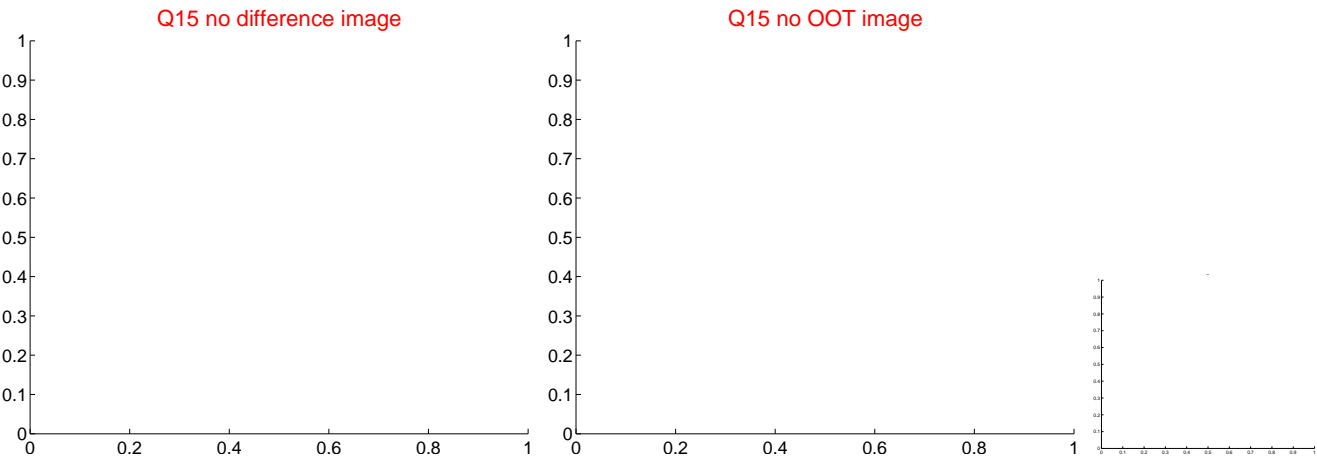
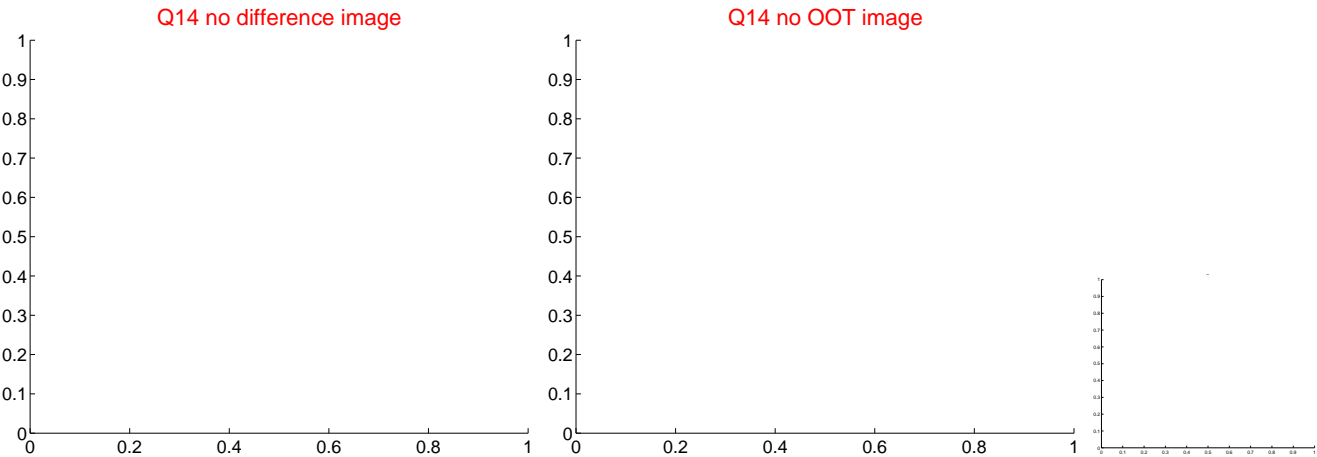
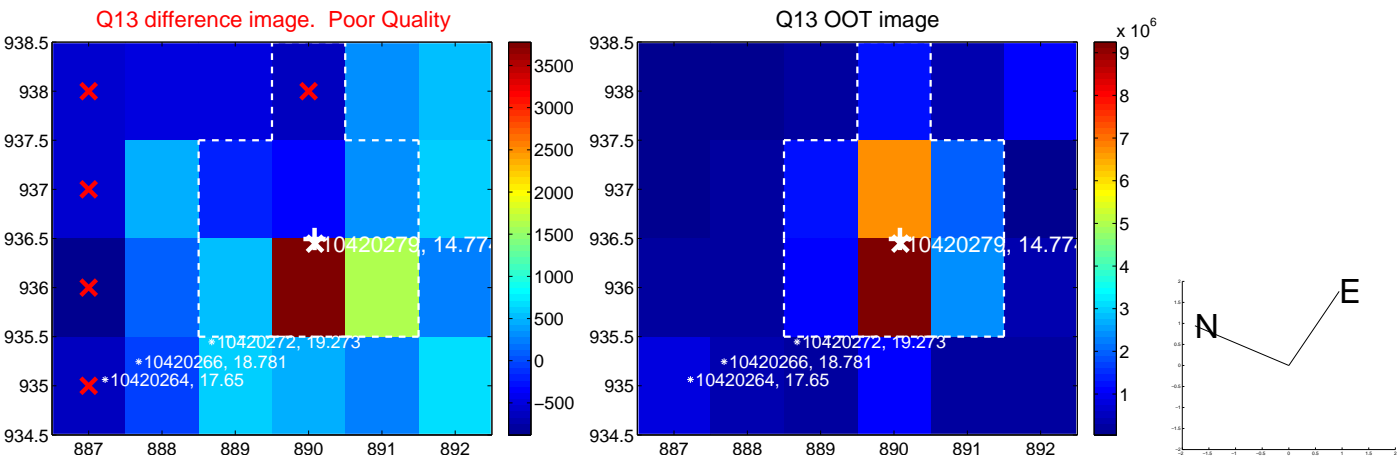
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



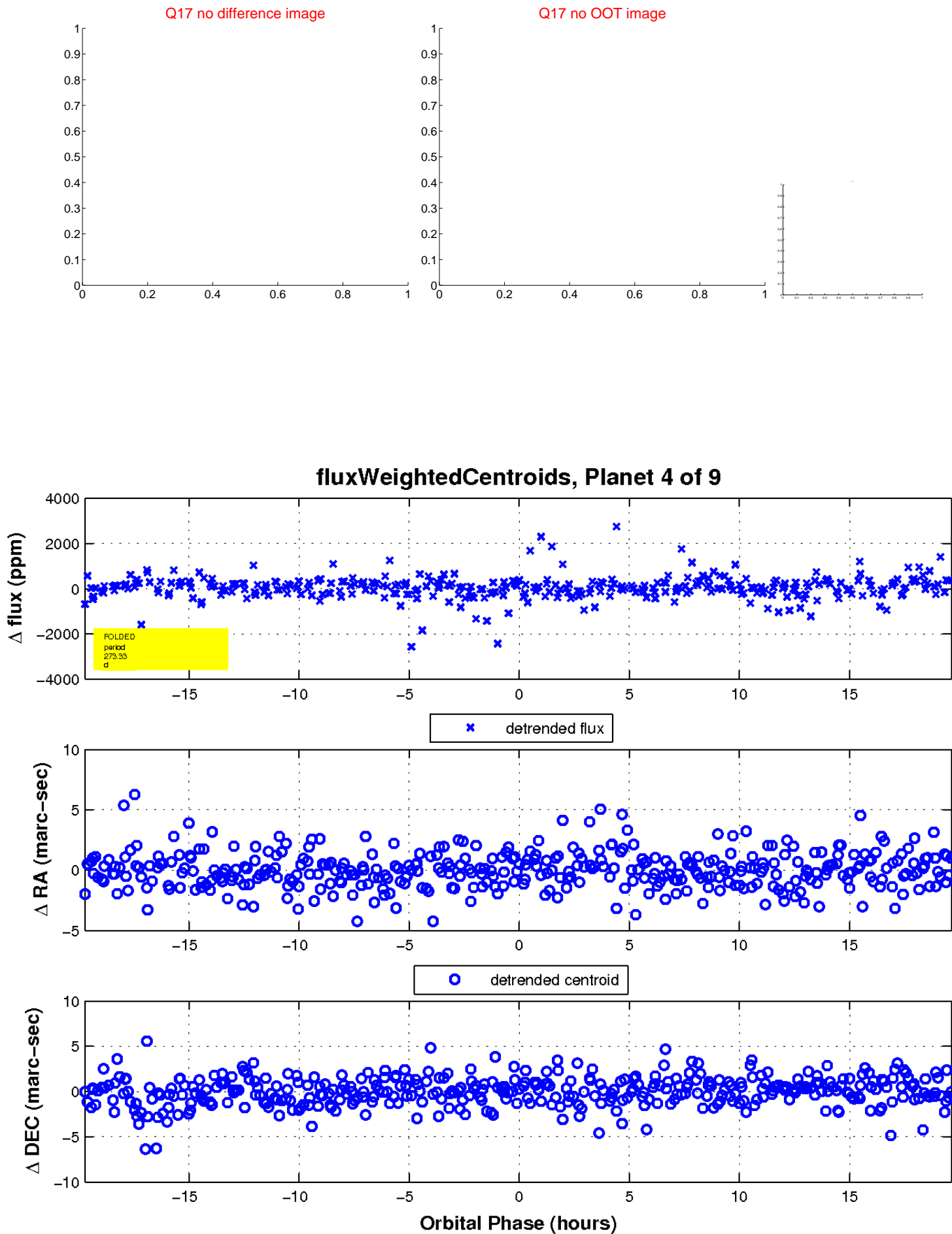
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

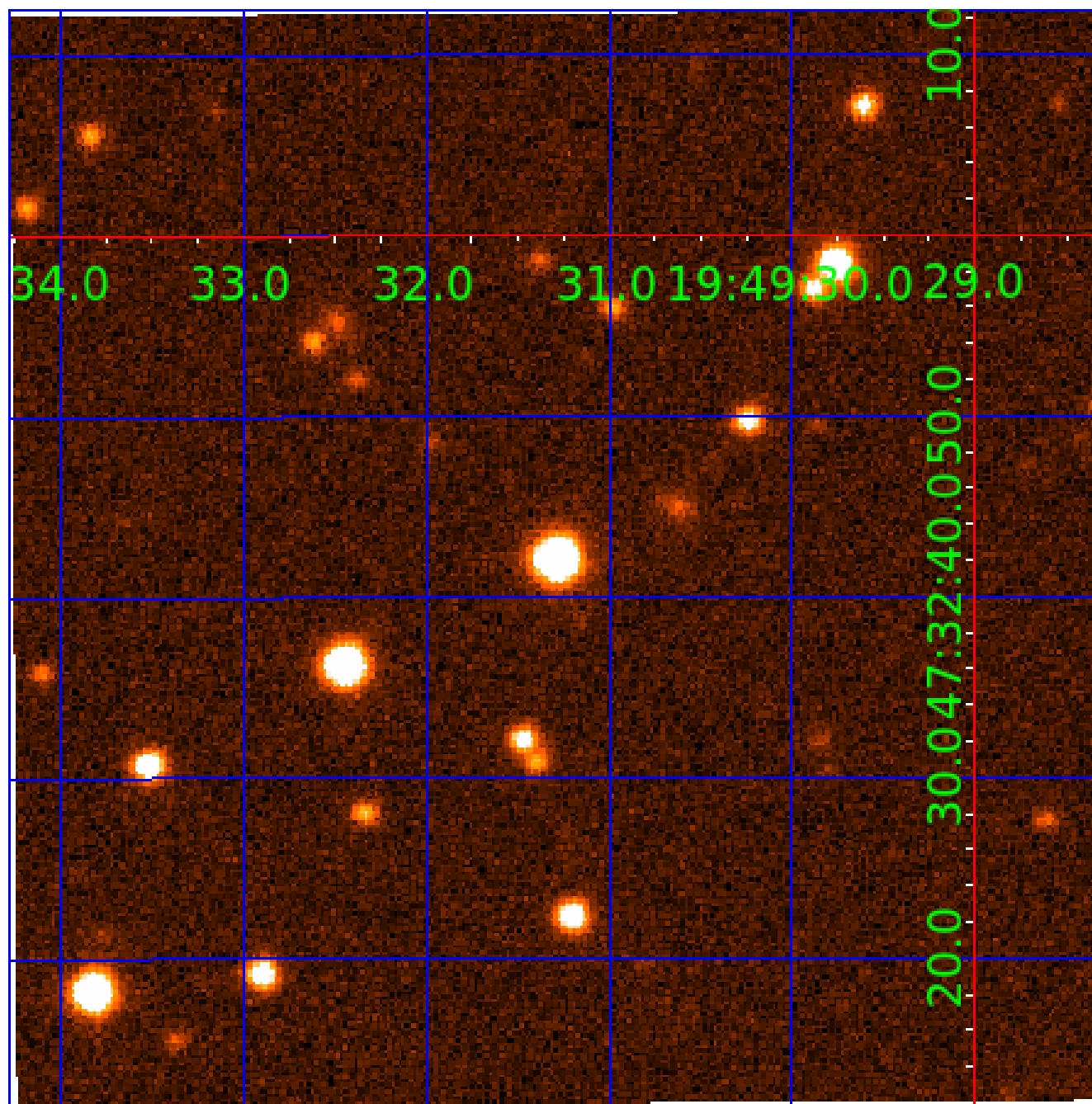


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

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})
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

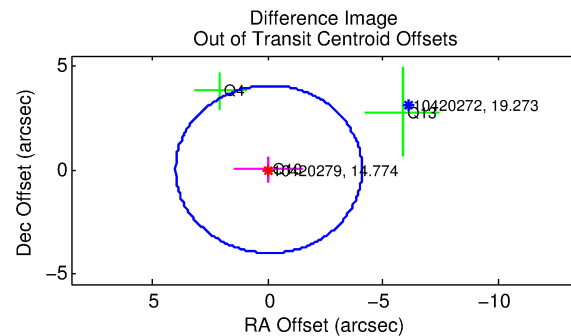
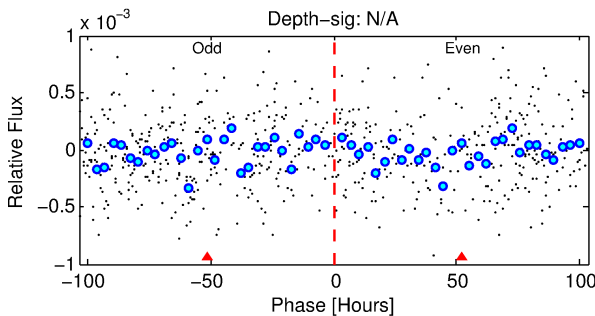
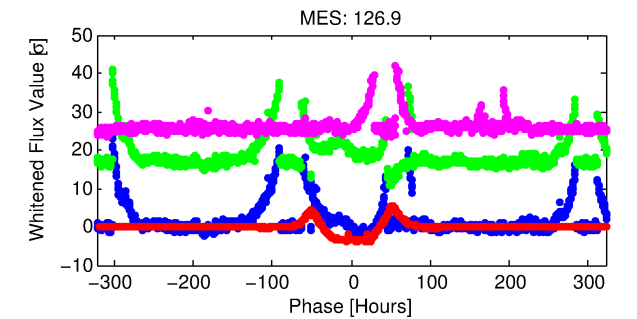
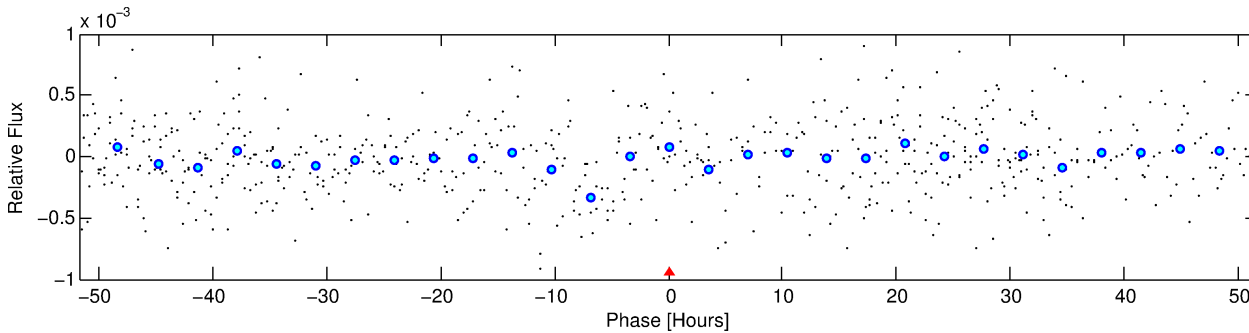
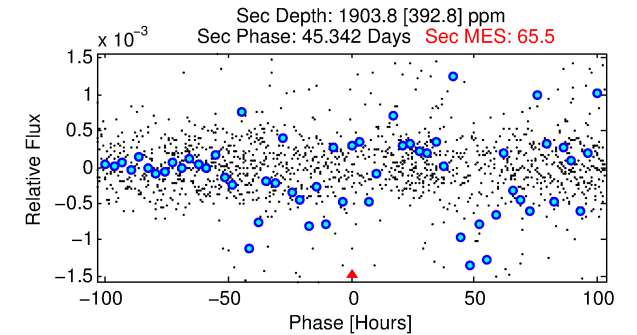
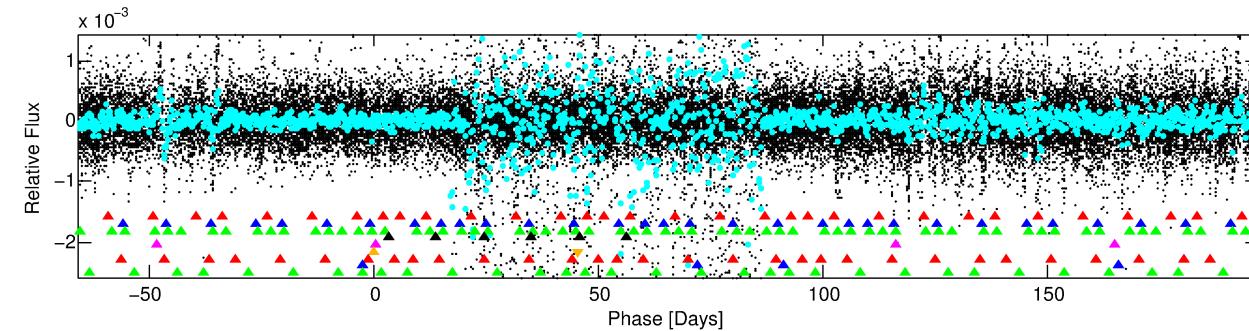
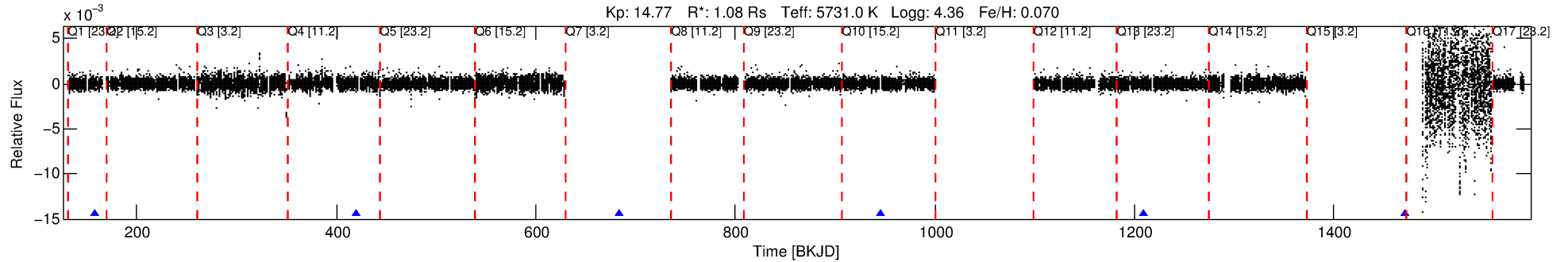
Ephemeris Match Information For 010420279-06

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 6 of 9 Period: 262.707 d
KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



TPS TCE Results:

Period = 262.70747 d
Epoch = 157.8090 BKJD

DV fit results are unavailable

DV Diagnostic Results:

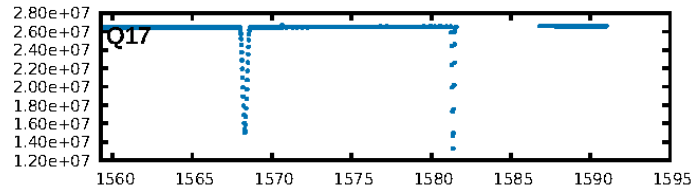
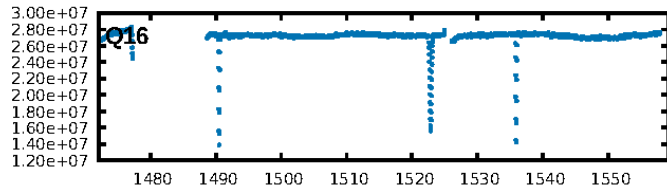
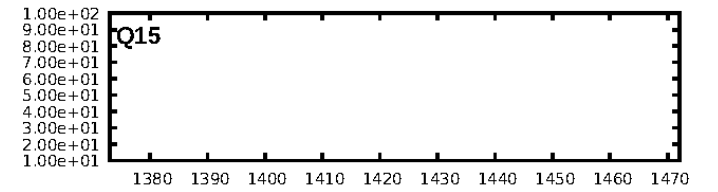
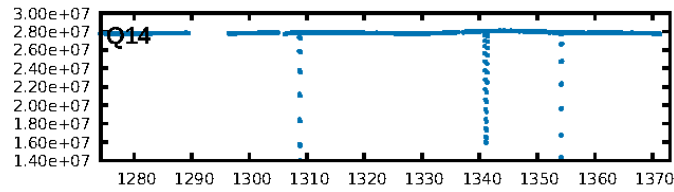
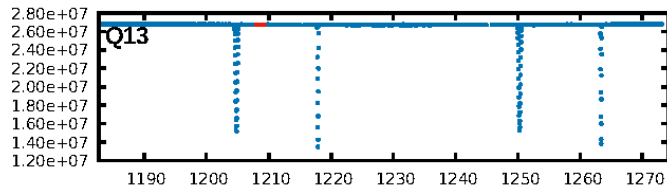
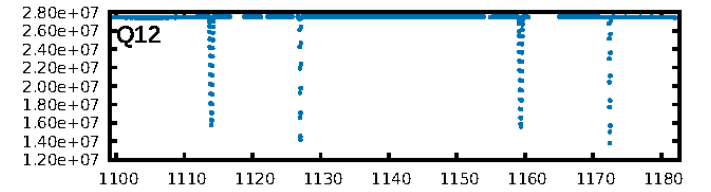
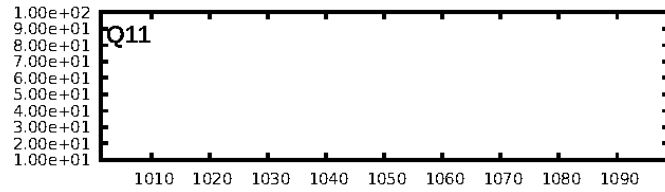
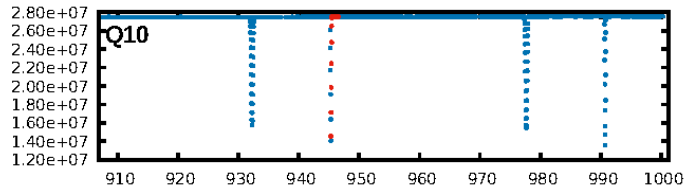
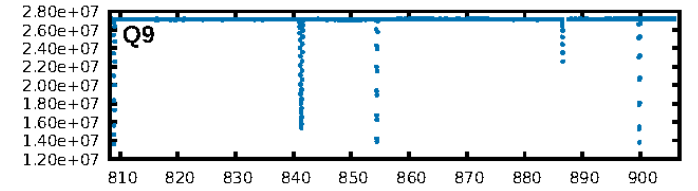
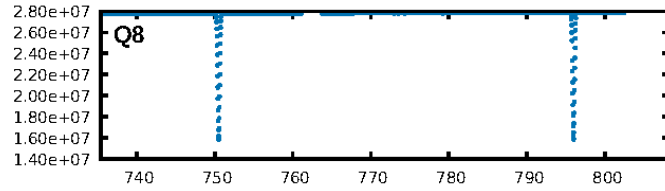
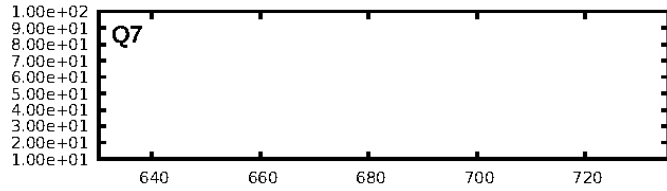
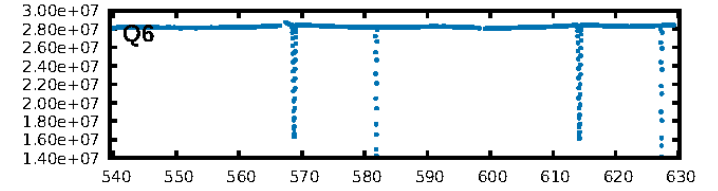
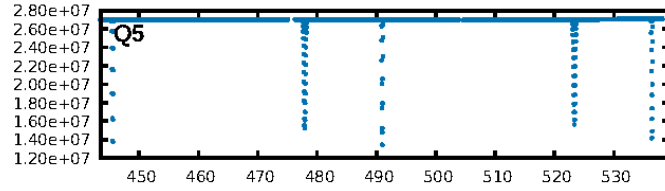
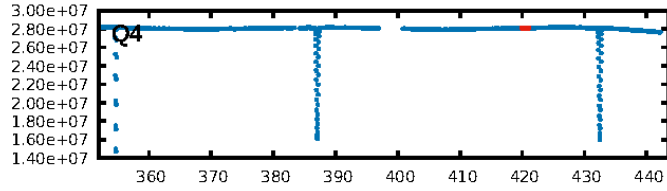
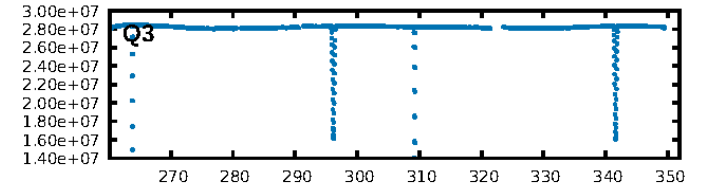
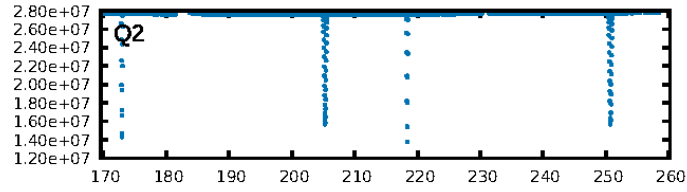
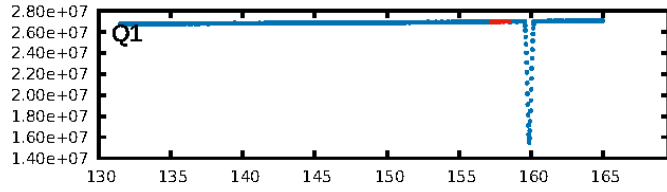
ShortPeriod-sig: 100.0% [70.69σ]
LongPeriod-sig: 100.0% [15.56σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.84e-86
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.06807

Centroid-sig: N/A
Centroid-so: 1.929 arcsec [0.89σ]
OotOffset-rm: 0.058 arcsec [0.04σ]
KicOffset-rm: 0.045 arcsec [0.03σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.25 [1/4]

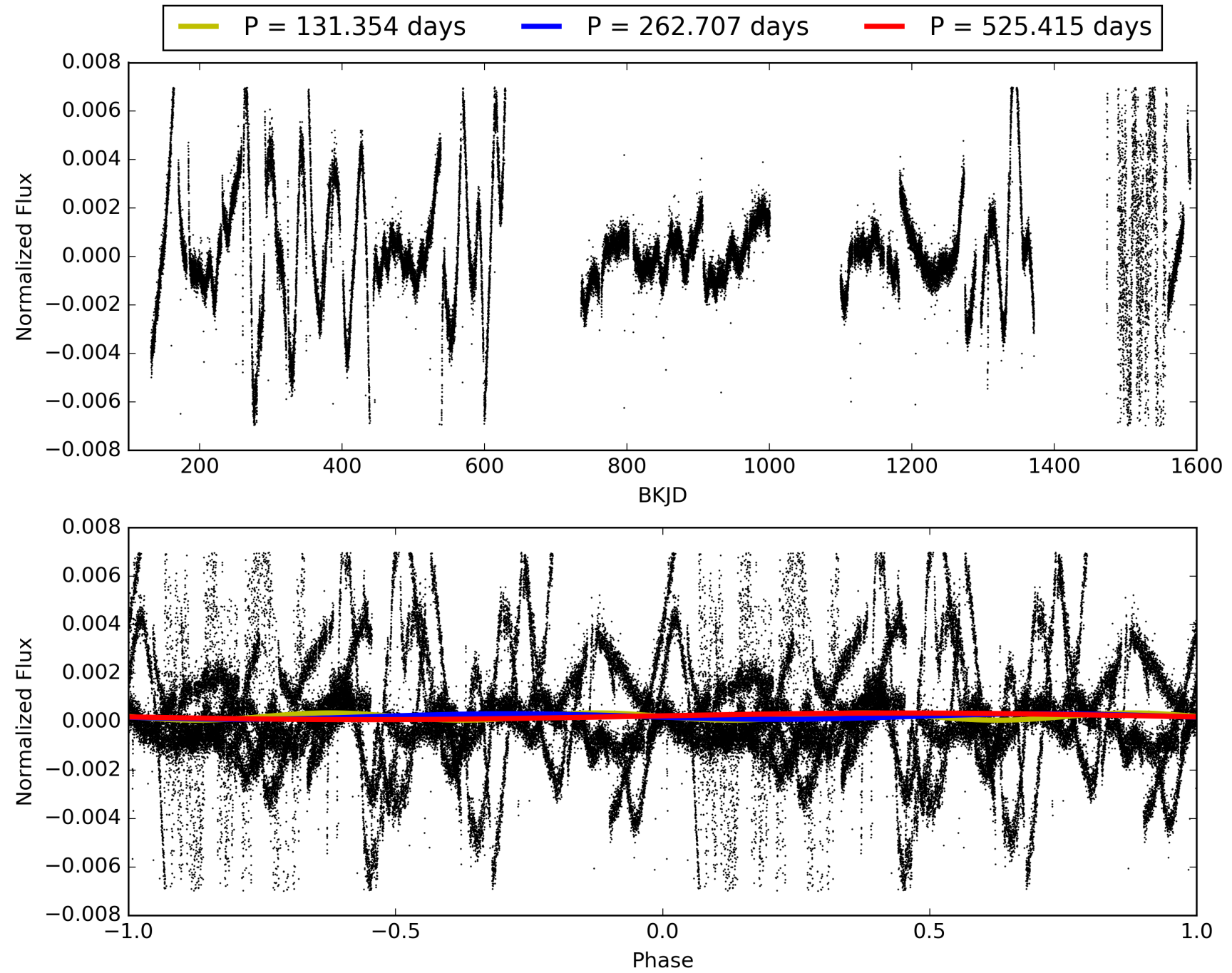
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:40:17 Z

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

TCE 010420279-06, PDC Light Curves

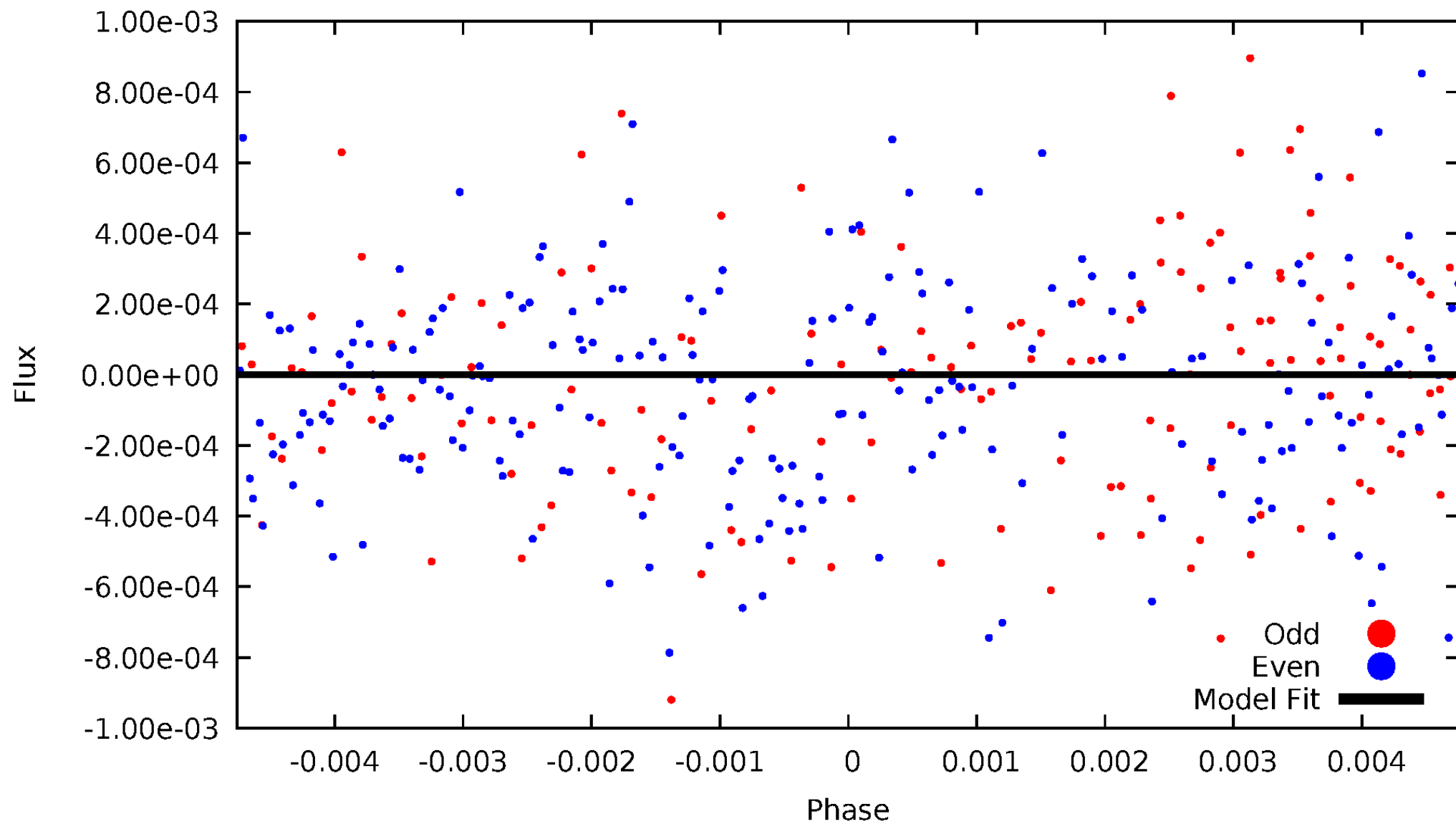


TCE 010420279-06



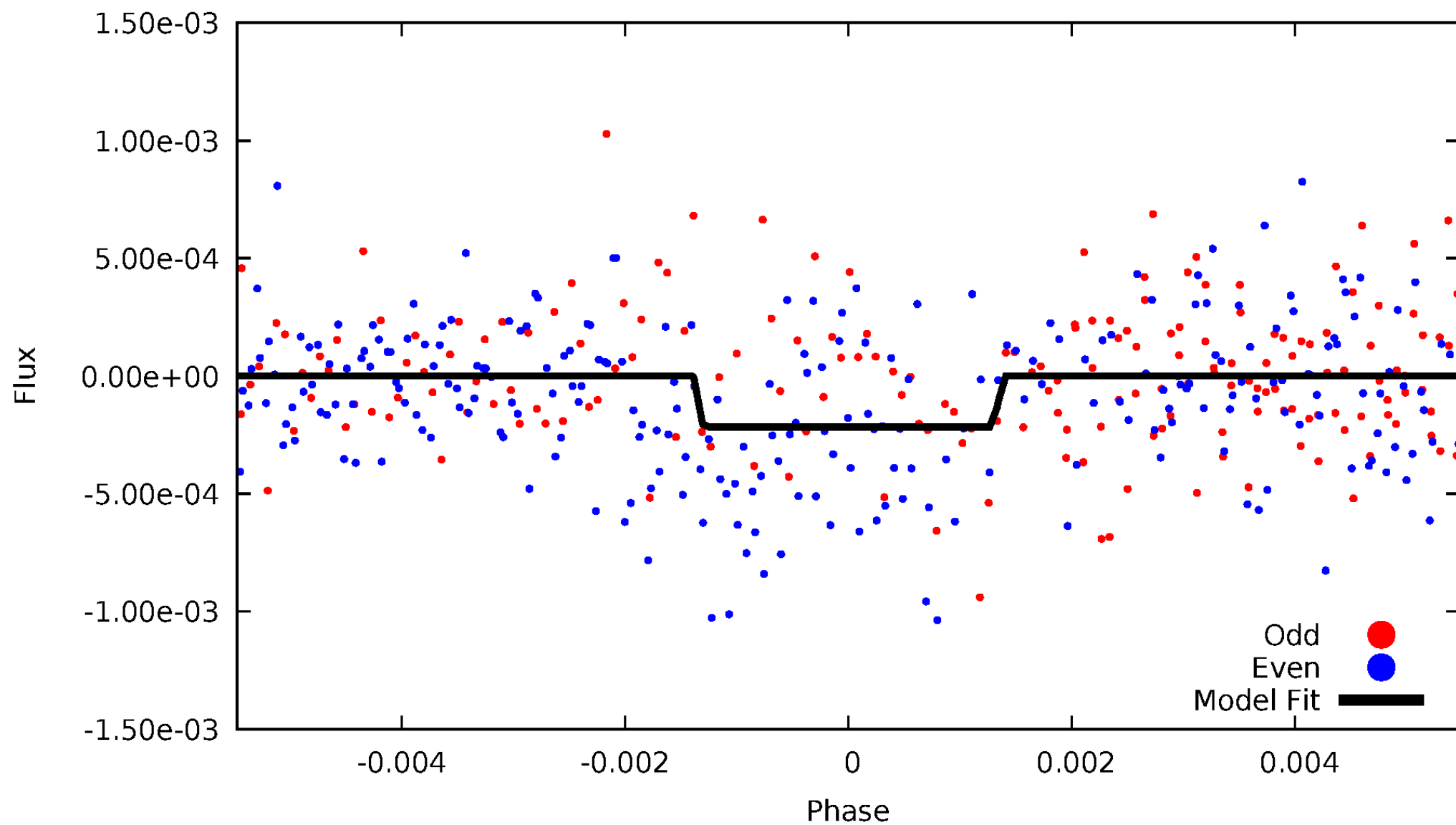
DV Odd/Even

TCE 010420279-06



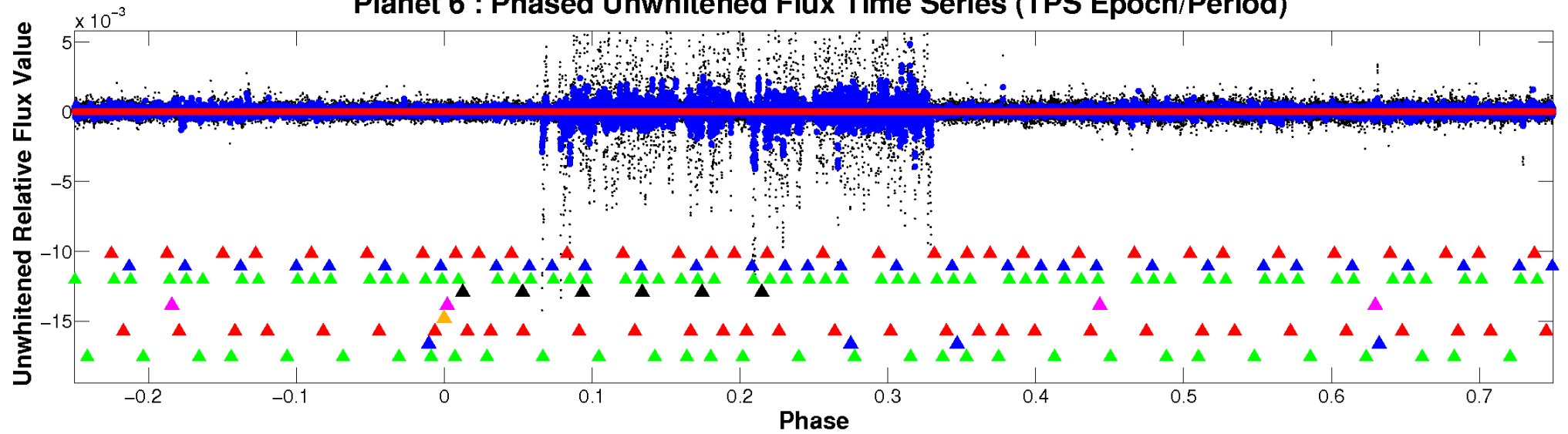
ALT Odd/Even

TCE 010420279-06

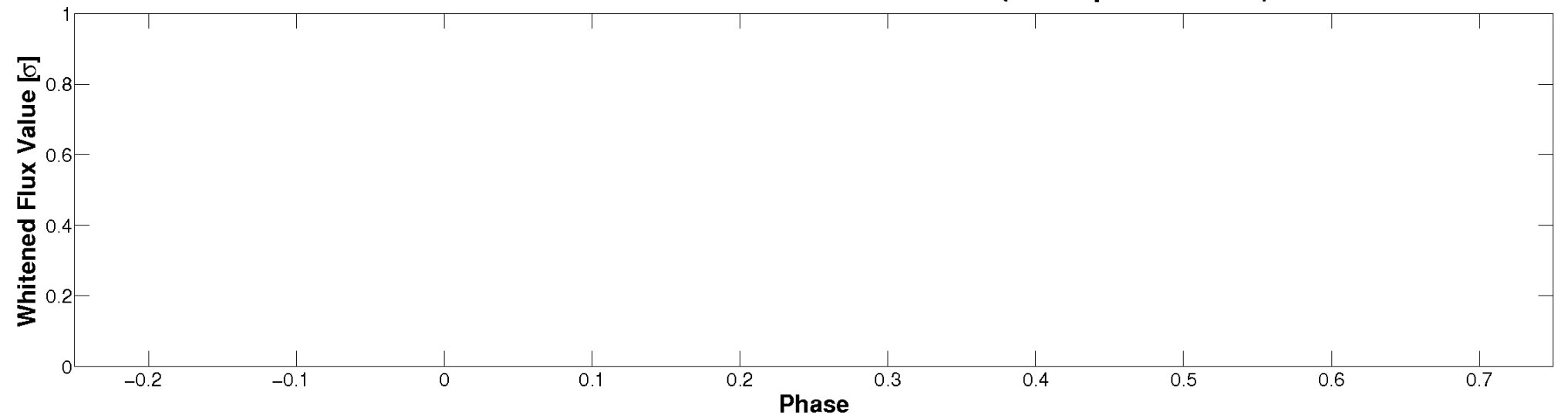


Non-Whitened Vs. Whitened Light Curve

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

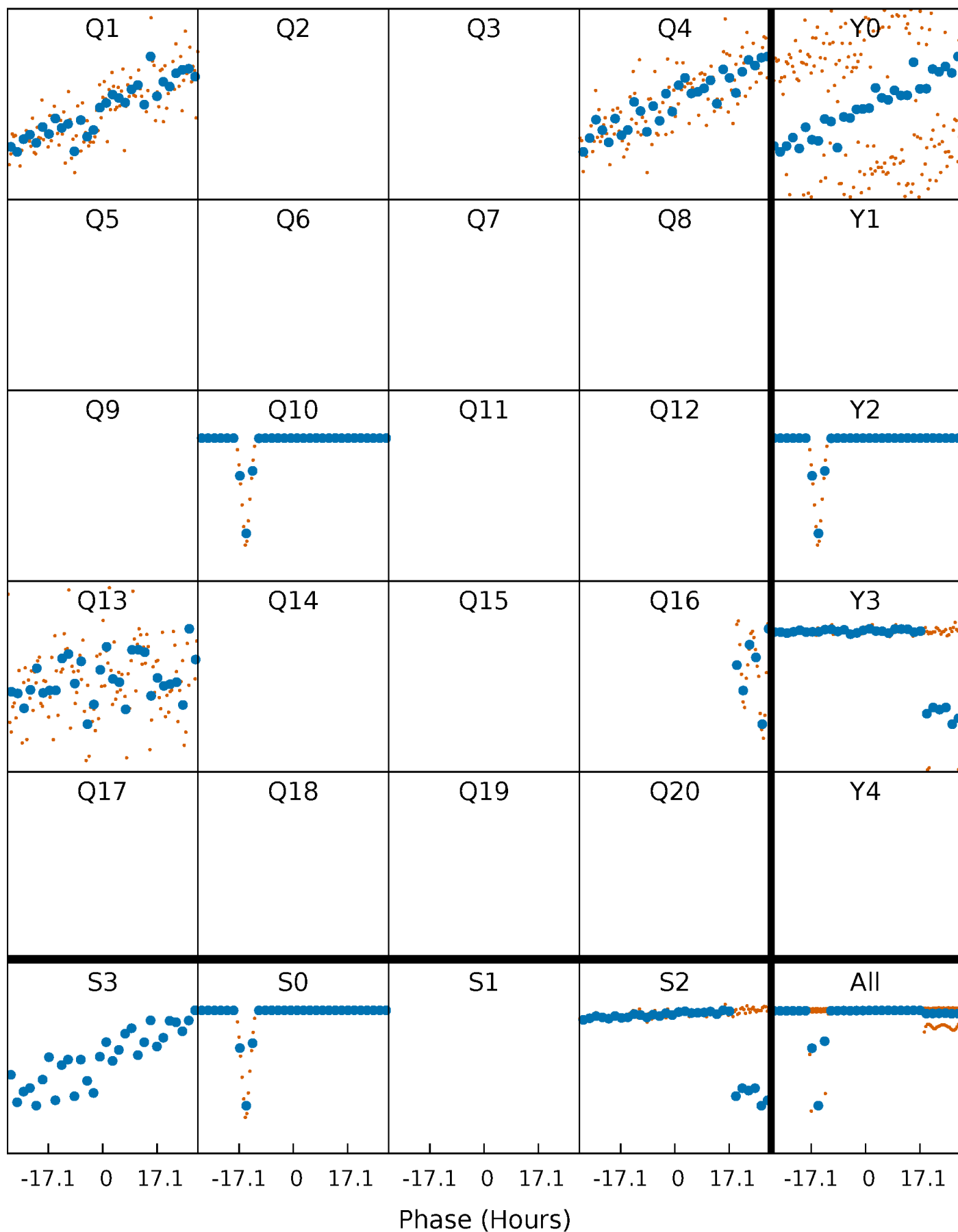


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



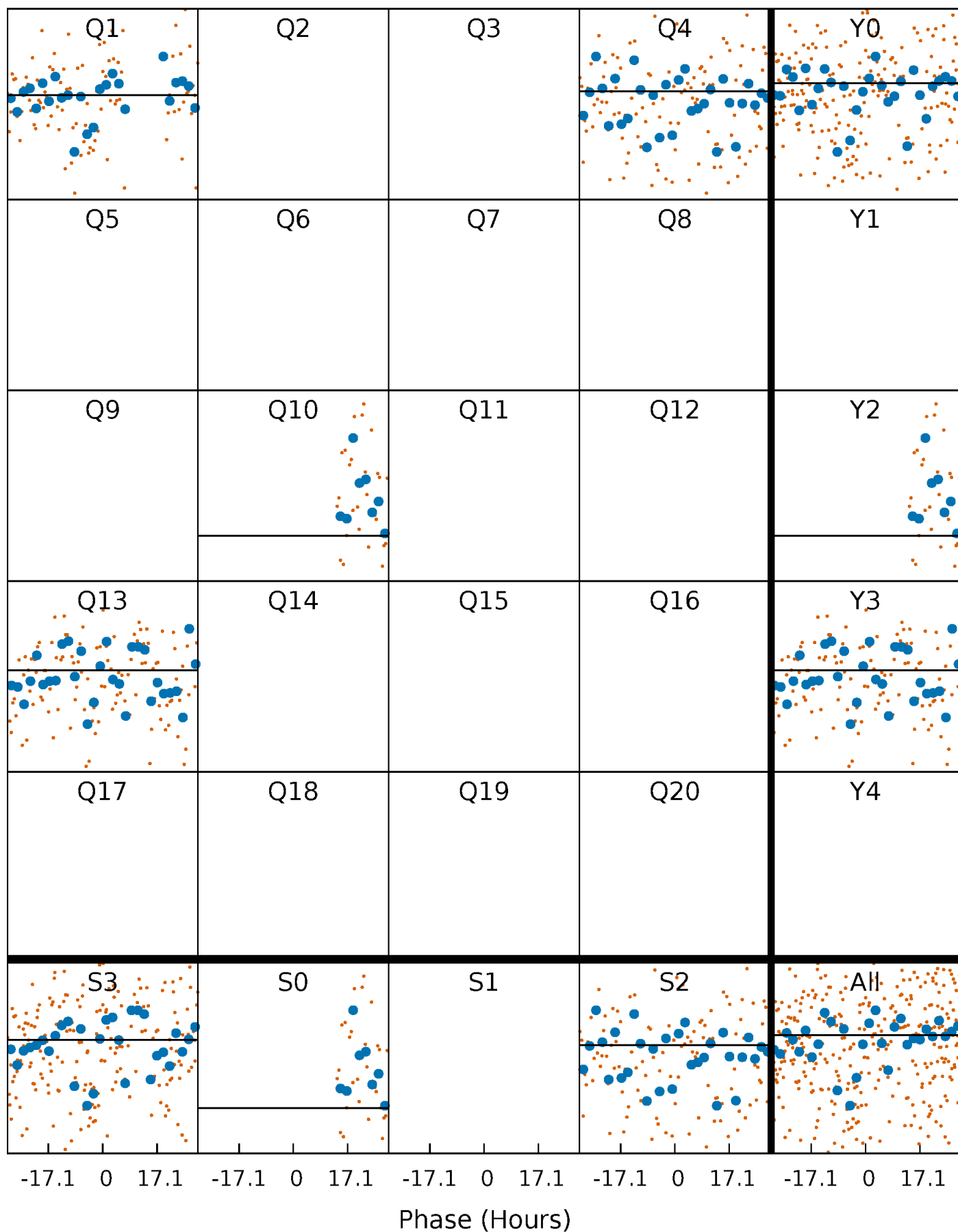
PDC Quarter-Phased Transit Curves

TCE 010420279-06 $P=262.707470$ Days $T_0=157.808986$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010420279-06 P=262.707470 Days $T_0=157.808986$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

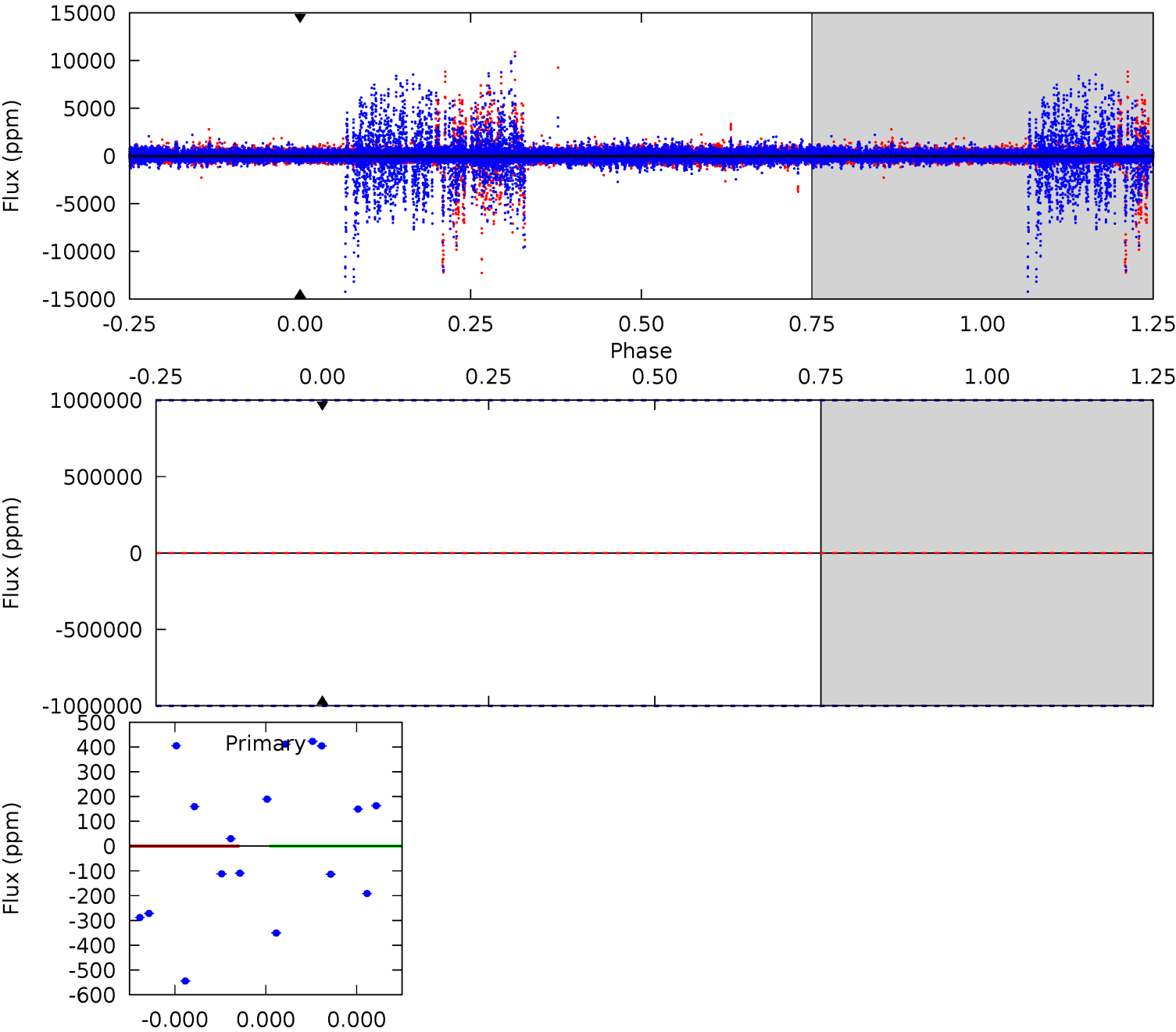
TCE 010420279-06 P=262.707470 Days $T_0=157.914005$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-06, P = 262.707470 Days, E = 157.808986 Days

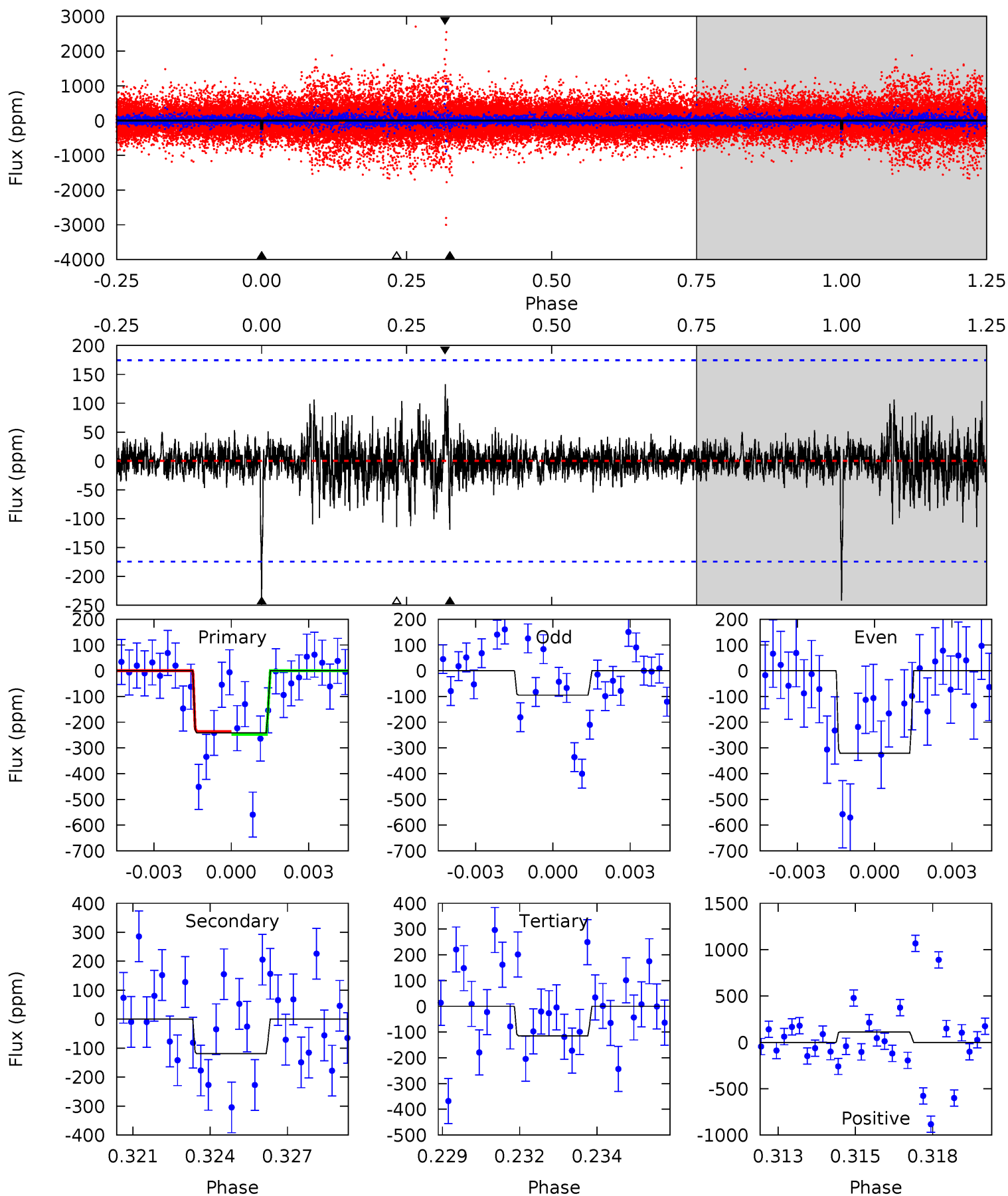
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010420279-06, P = 262.707470 Days, E = 157.914005 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.30	3.60	3.45	3.38	5.27	2.99	0.69	3.84	3.92	0.14	0.22	2.41	1.53	0.35	0.17



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$12.13^{+10.93}_{-7.78}$	414^{+30}_{-23}	-4620^{+17798}_{-9211}	$-8123.710^{+341480.578}_{-373380.620}$
Alt.	-119 ± 33	$9.48^{+9.00}_{-6.80}$	416^{+31}_{-25}	2855^{+1355}_{-456}	473^{+4994}_{-363}

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 $A_{obs} \gg 1.0$

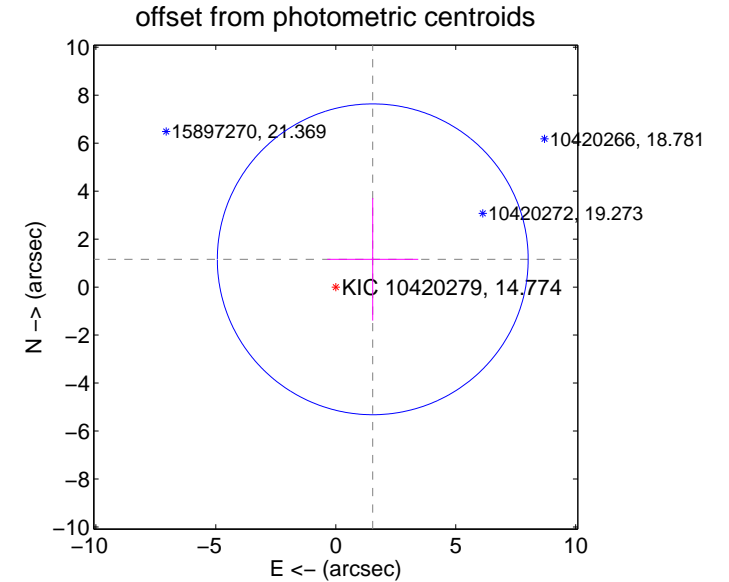
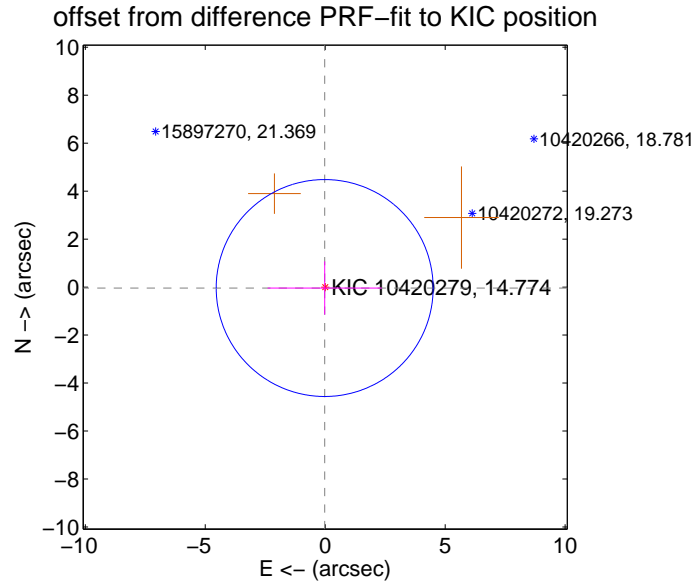
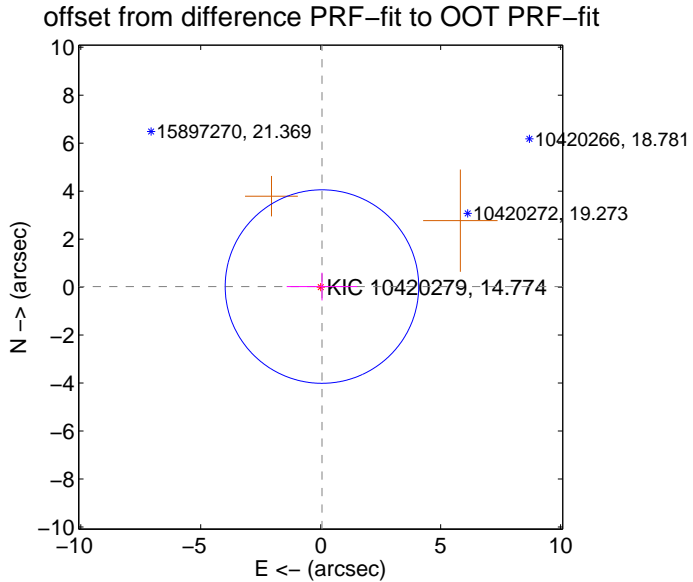
DV Centroid Data

Supplemental centroid analysis for 010420279-06. Kepler magnitude: 14.77. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

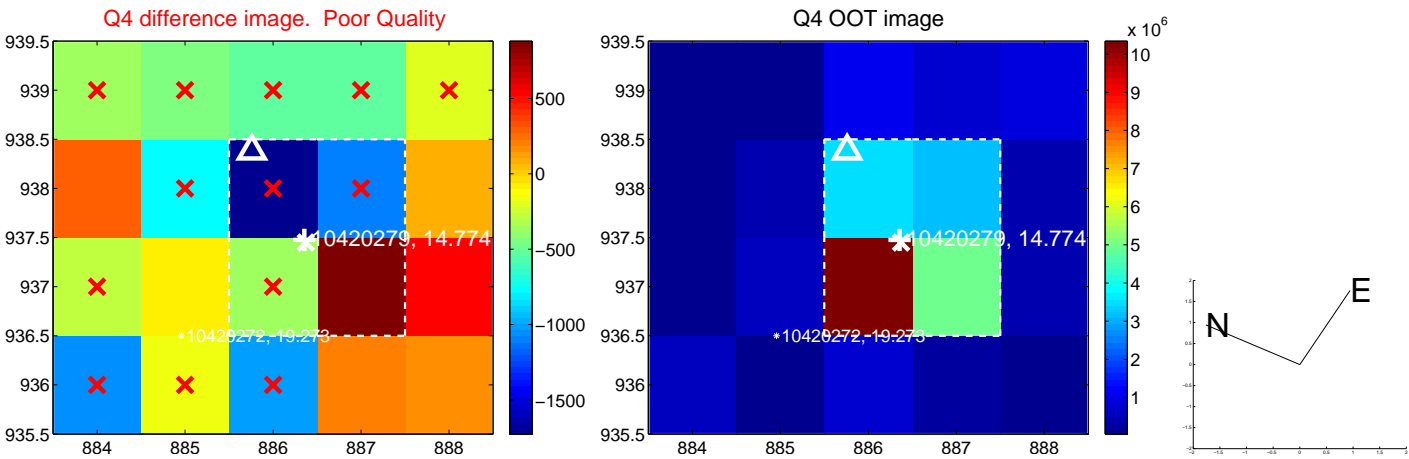
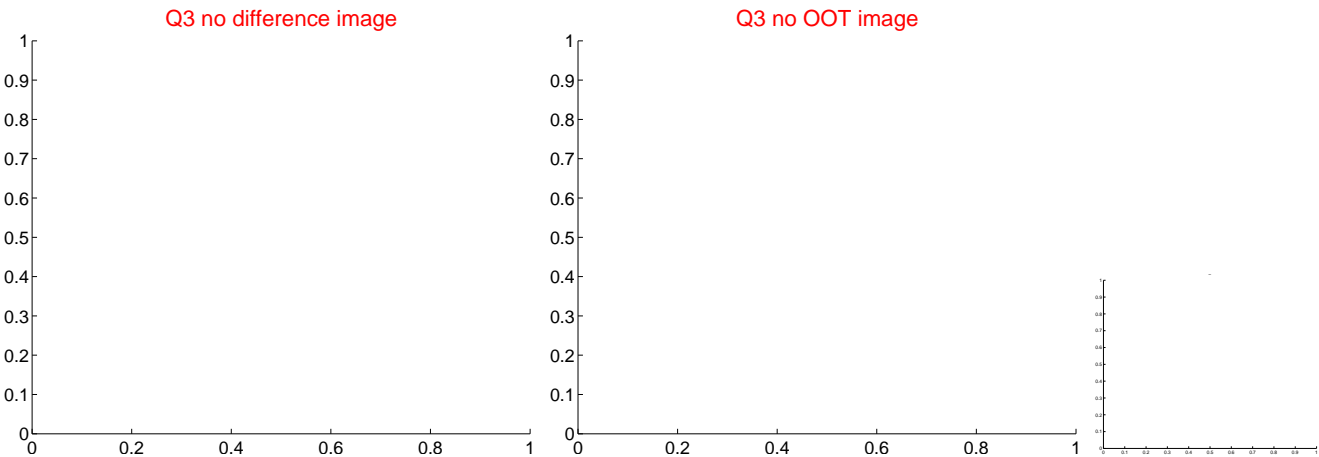
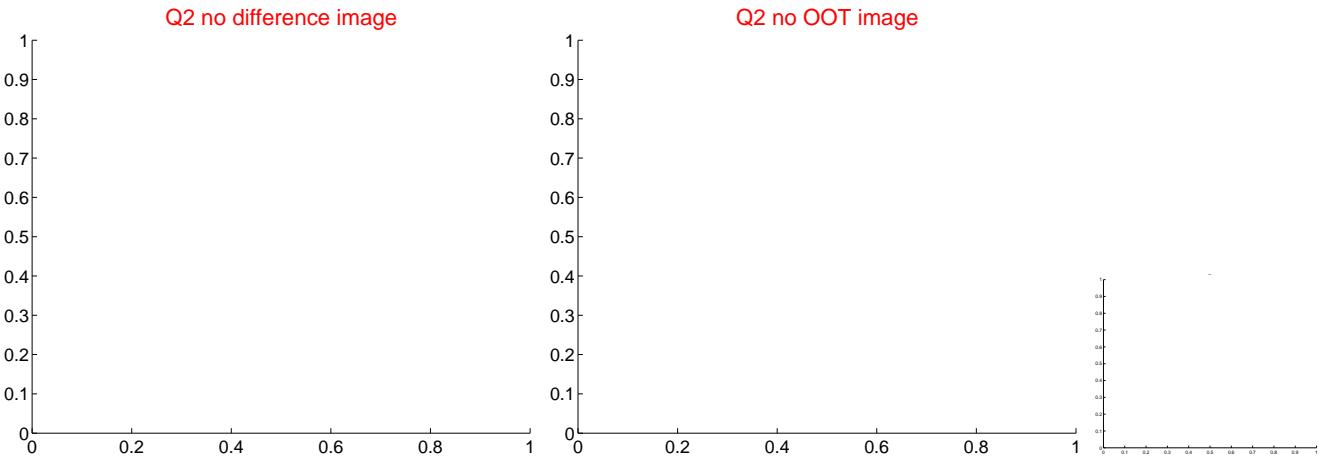
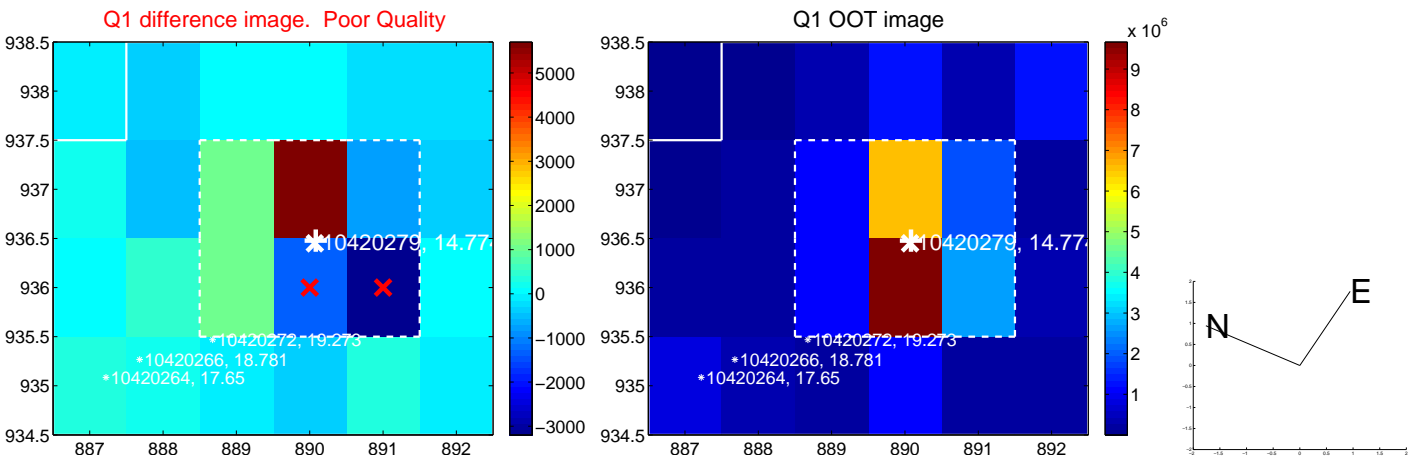
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.058 ± 1.345	0.04	-0.053 ± 1.468	0.022 ± 0.578
PRF-fit source offset from KIC position	0.045 ± 1.507	0.03	0.023 ± 2.381	-0.039 ± 1.111
photometric centroid source offset	1.93 ± 2.16	0.89	-1.54 ± 1.90	1.16 ± 2.56



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.

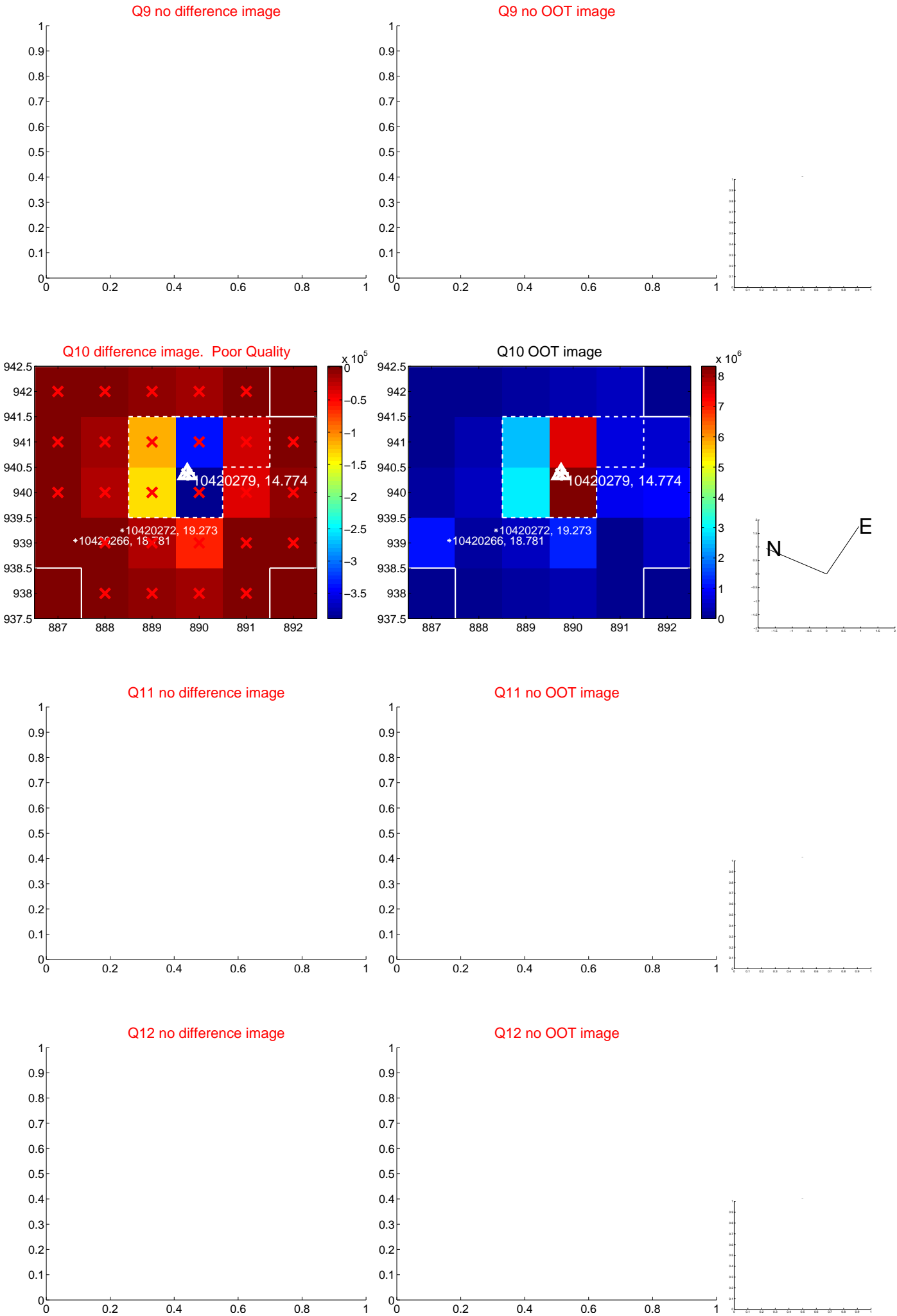
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



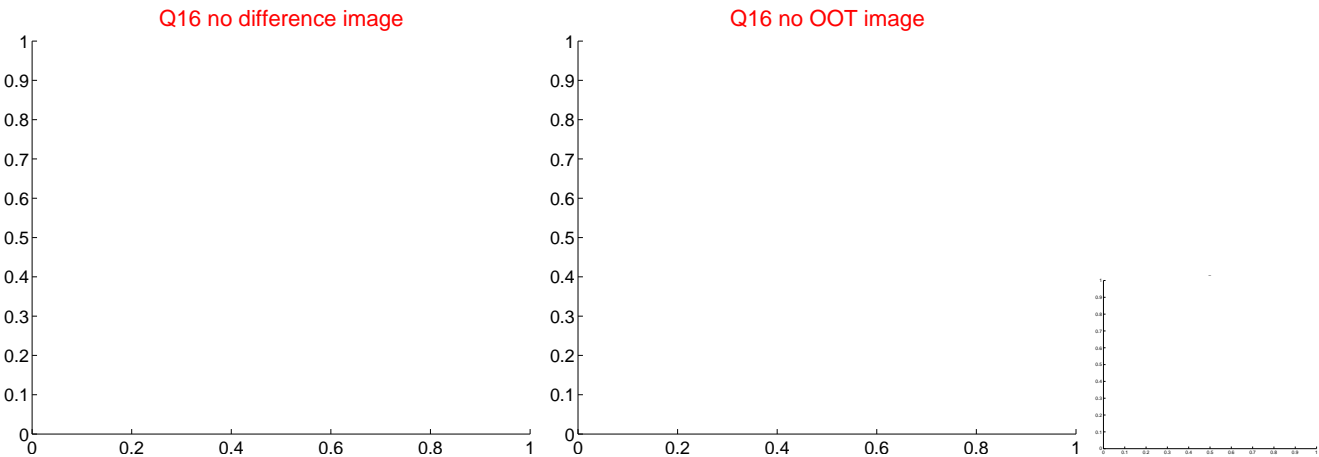
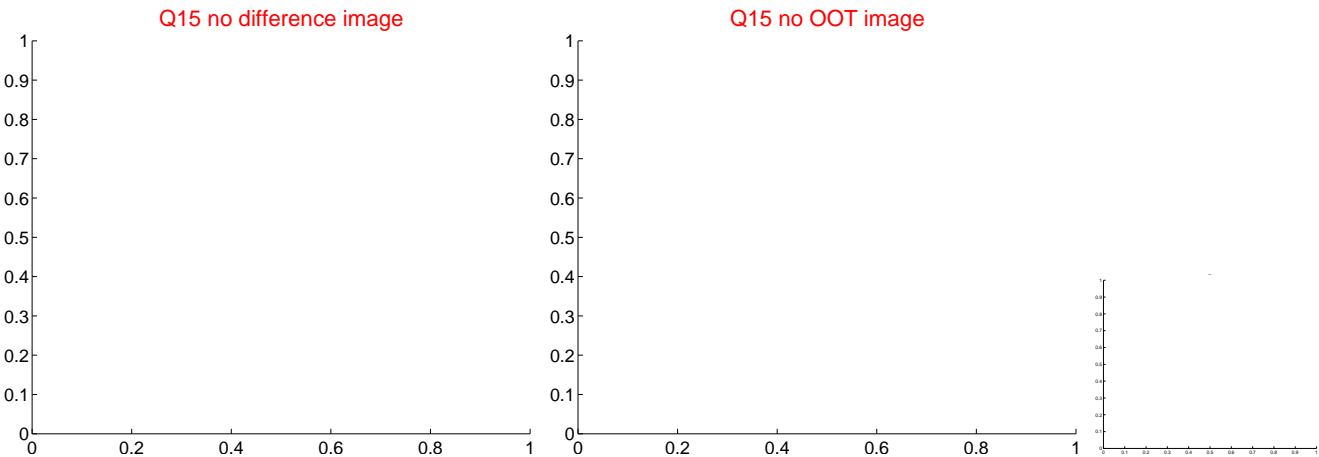
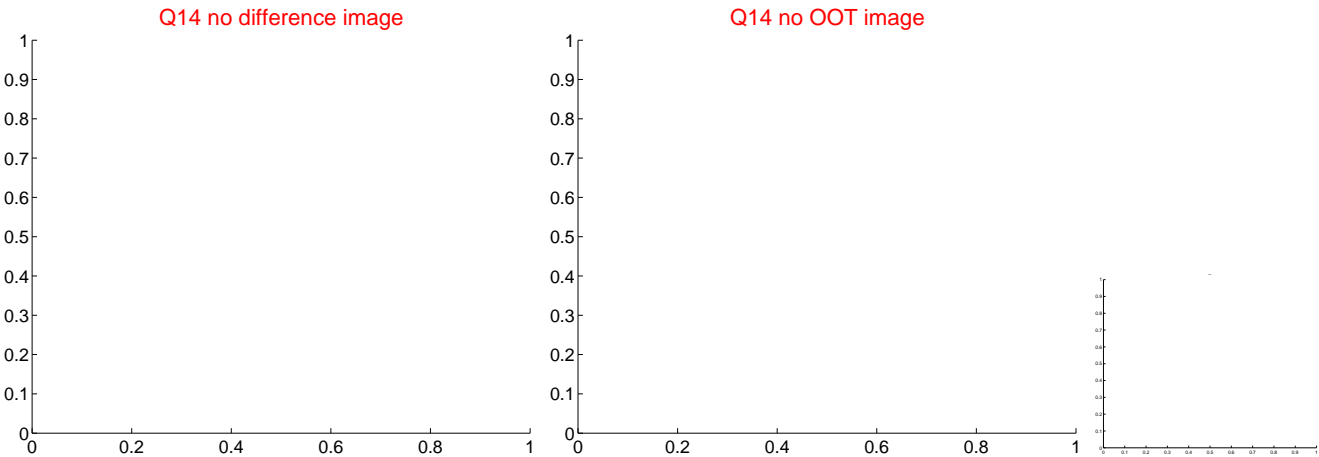
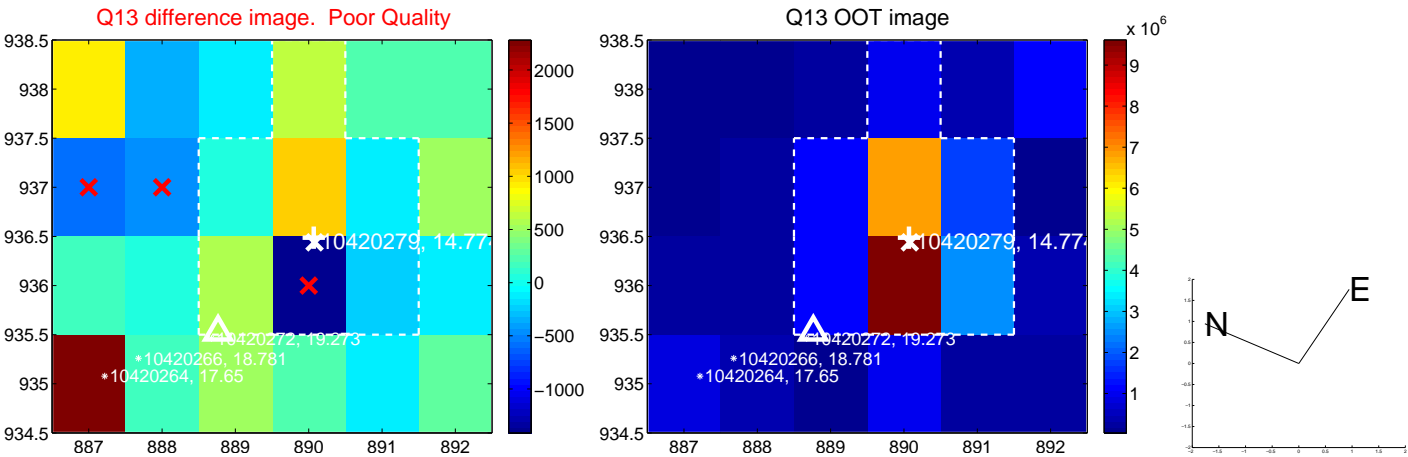
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



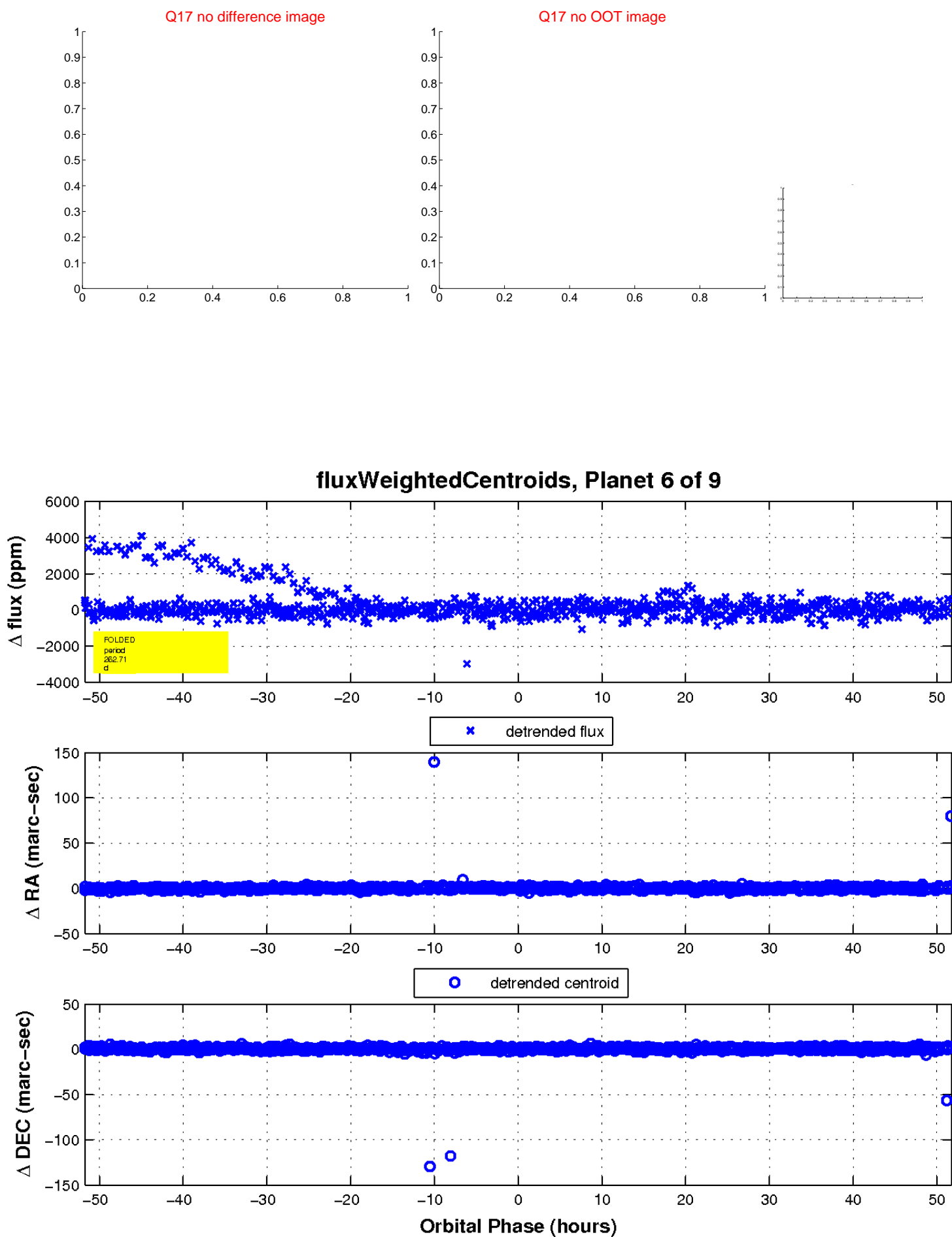
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

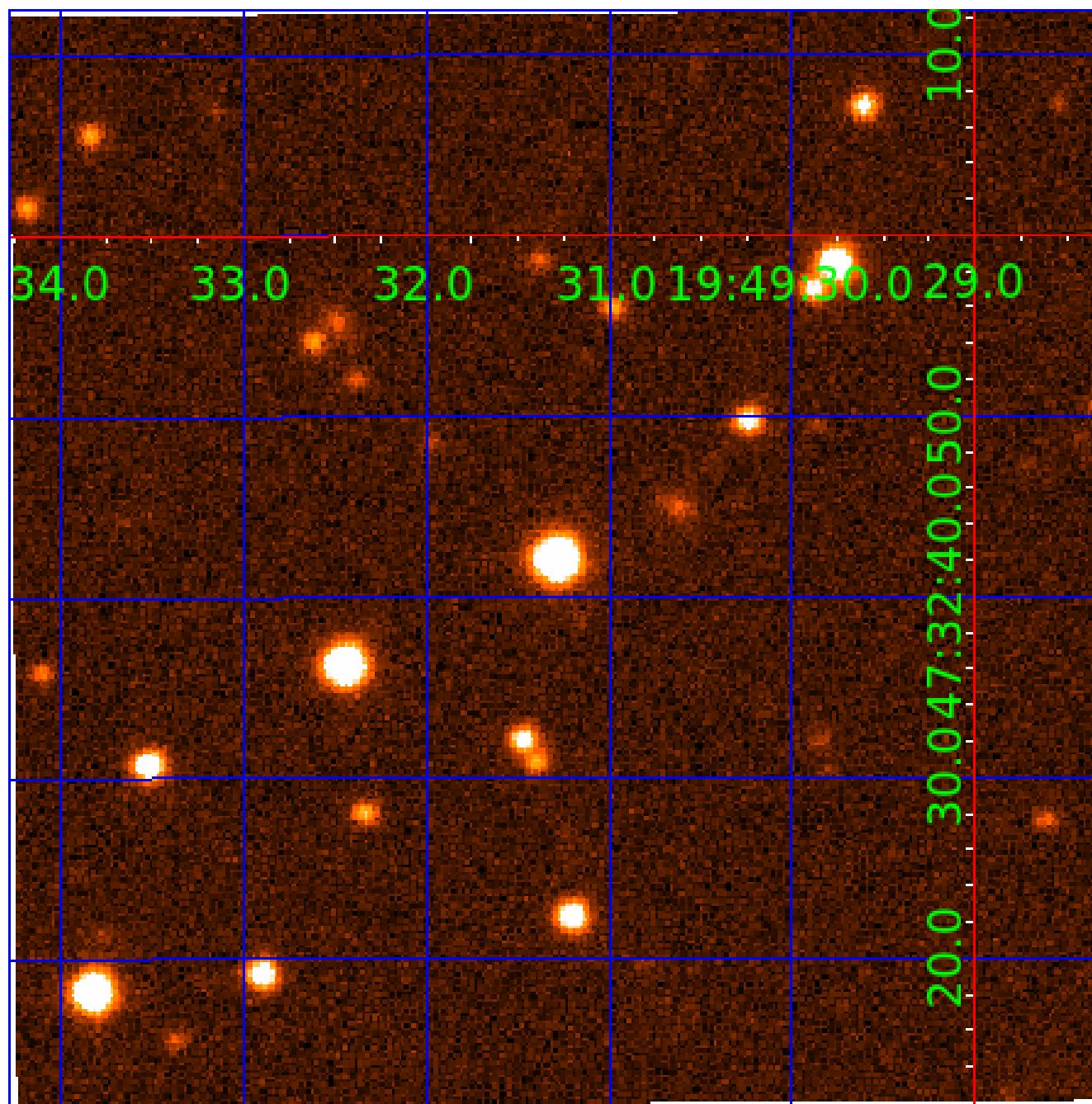


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

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})
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

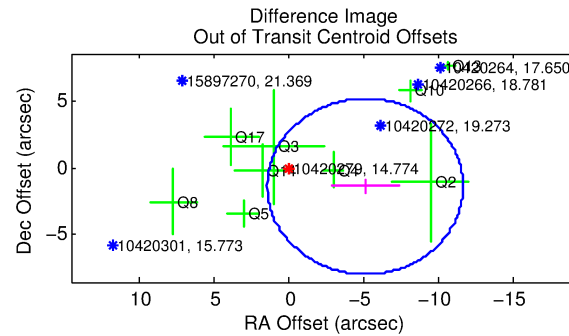
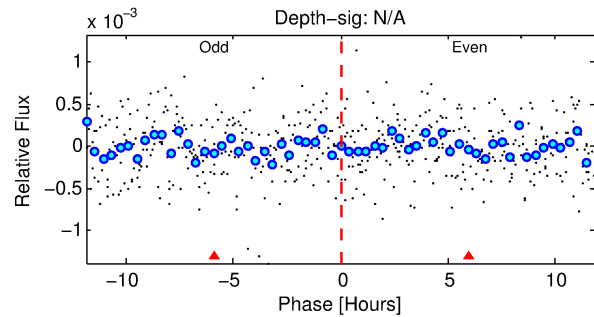
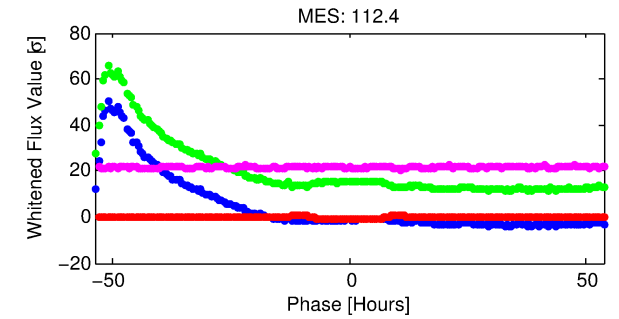
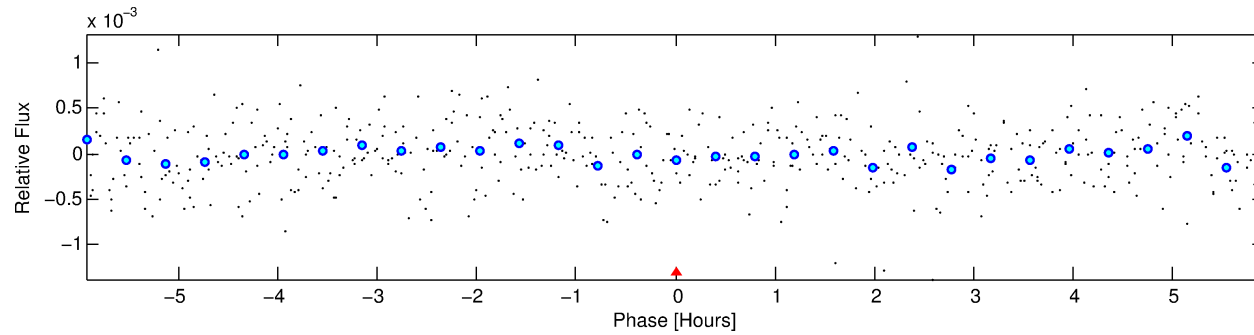
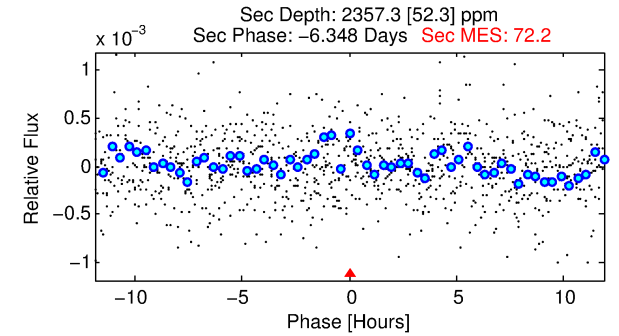
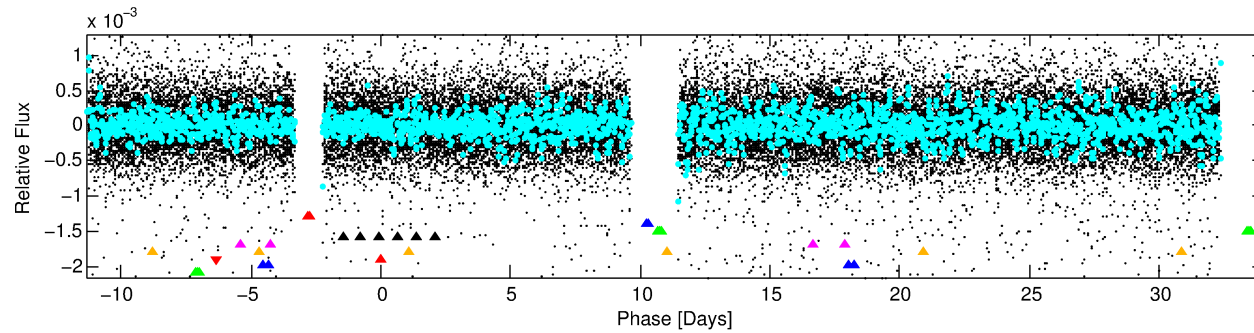
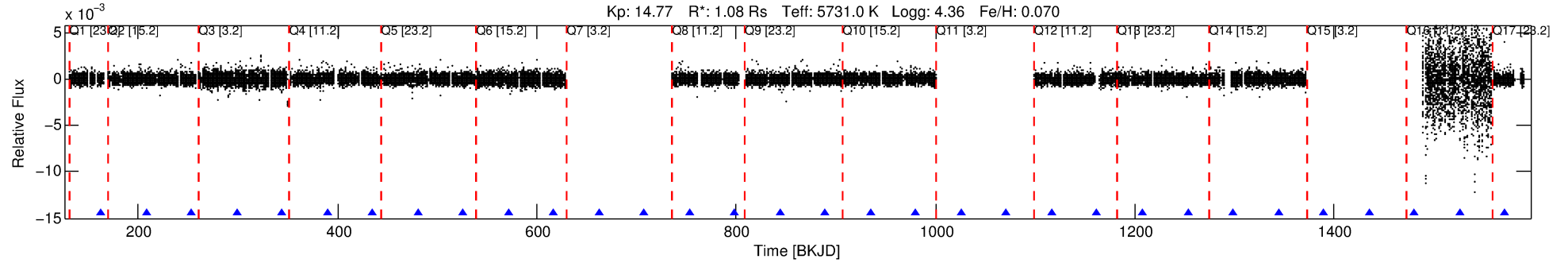
Ephemeris Match Information For 010420279-07

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 7 of 9 Period: 45.437 d
KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



TPS TCE Results:

Period = 45.43741 d
Epoch = 161.9366 BKJD

DV fit results are unavailable

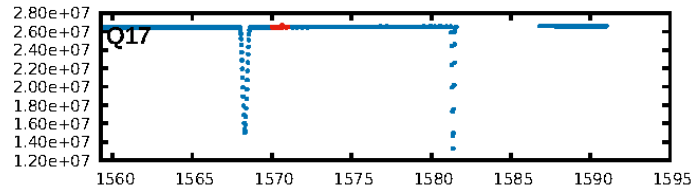
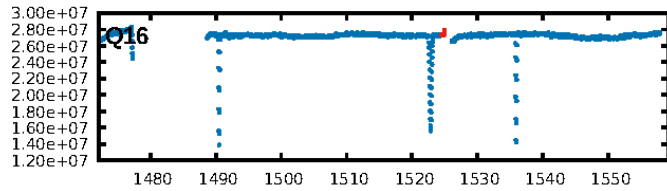
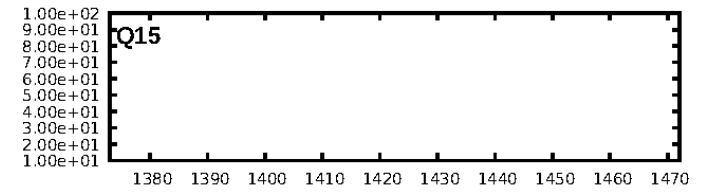
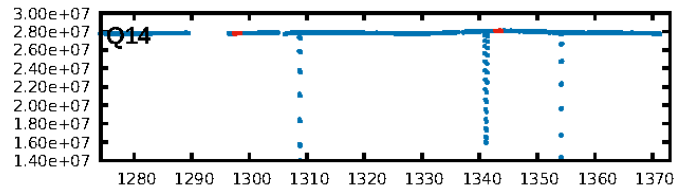
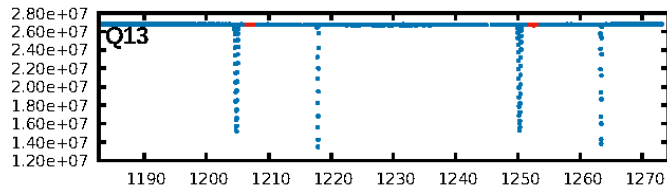
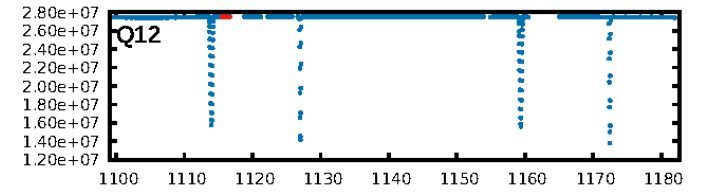
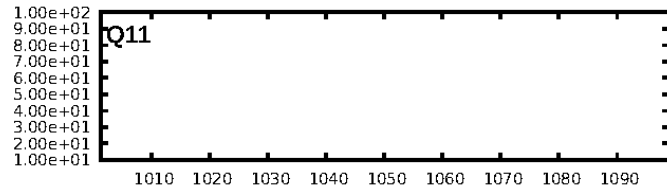
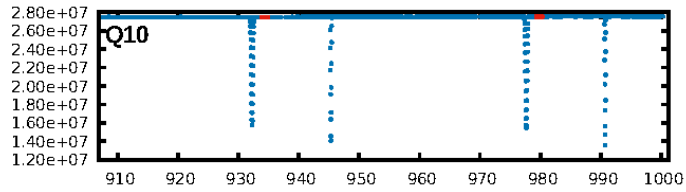
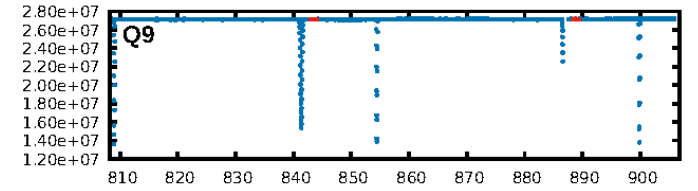
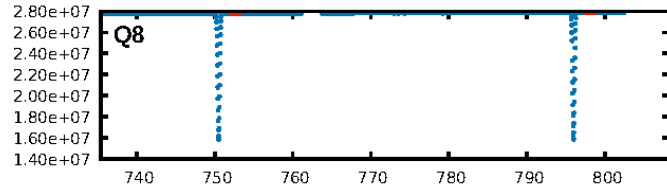
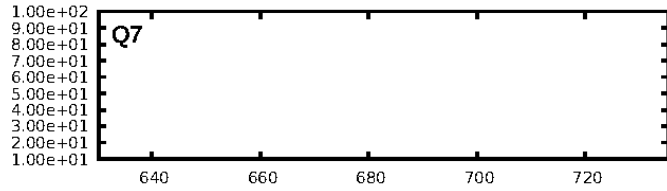
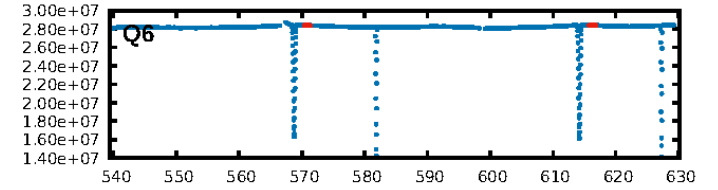
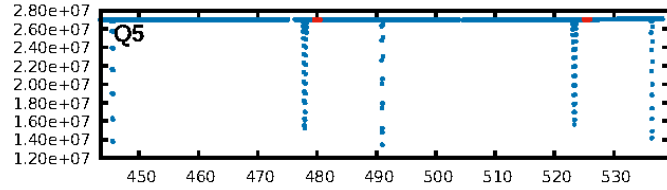
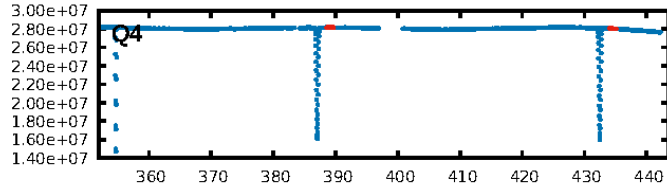
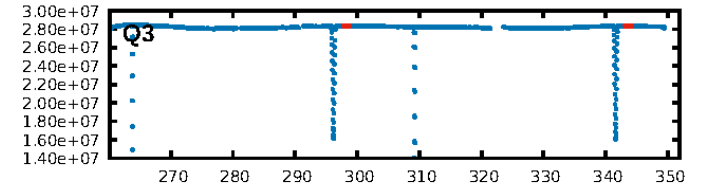
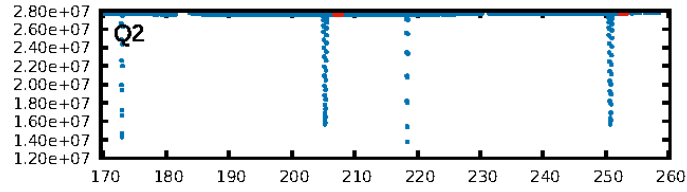
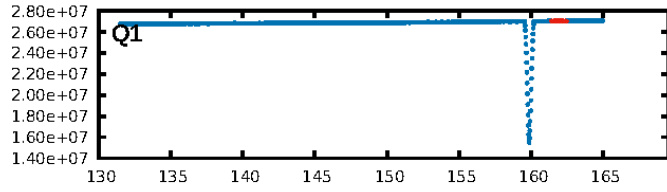
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.01σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [20/20]
GhostDiagnostic-chr: -2.762
Centroid-sig: N/A
Centroid-so: 21.889 arcsec [2.22σ]
OotOffset-rm: 5.339 arcsec [2.45σ]
KicOffset-rm: 5.240 arcsec [2.41σ]
OotOffset-st: 3/1/2/3 [9]
KicOffset-st: 3/1/2/3 [9]
DiffImageQuality-fgm: 0.11 [1/9]
DiffImageOverlap-fno: 1.00 [12/12]

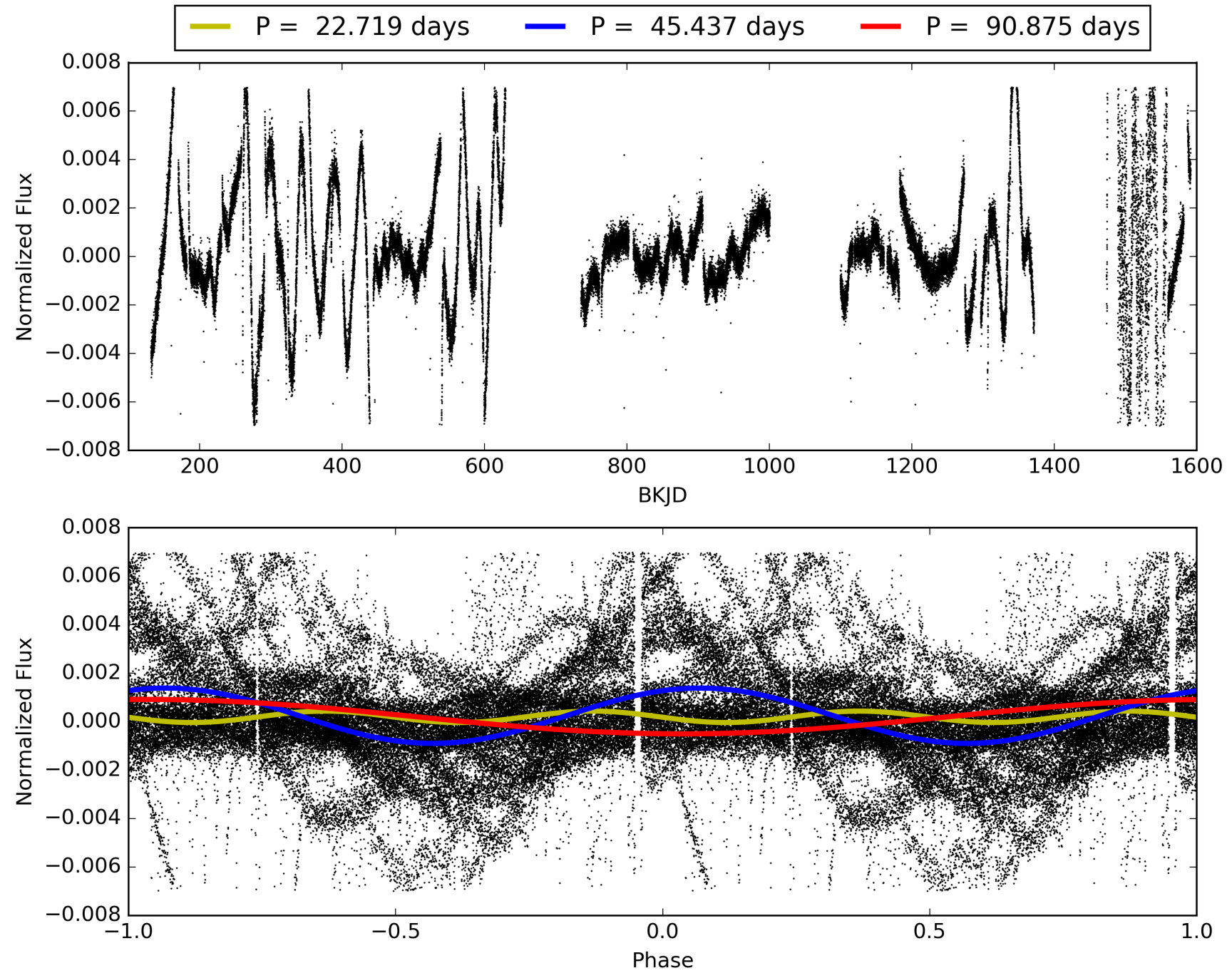
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:40:23 Z

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

TCE 010420279-07, PDC Light Curves

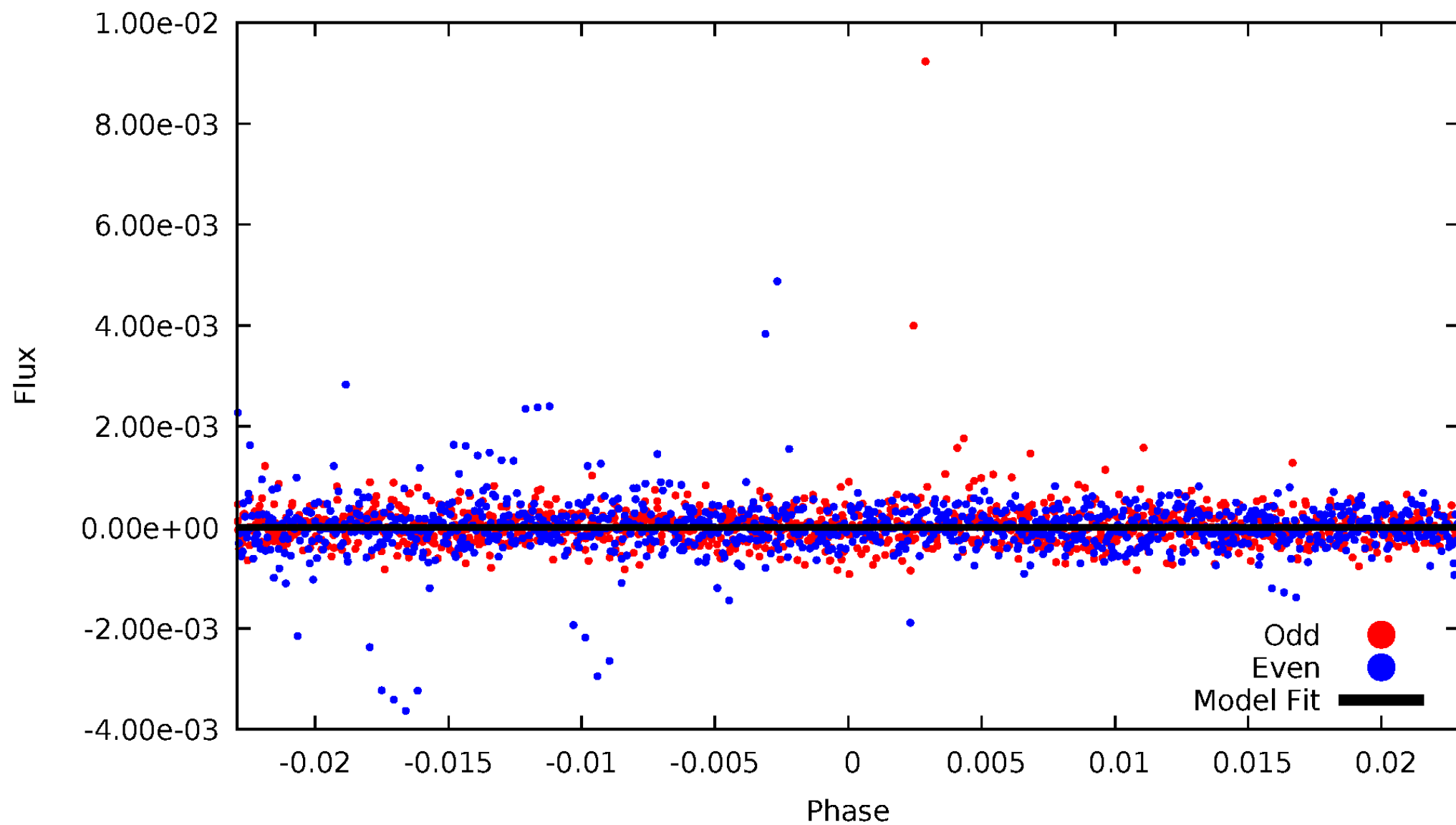


TCE 010420279-07



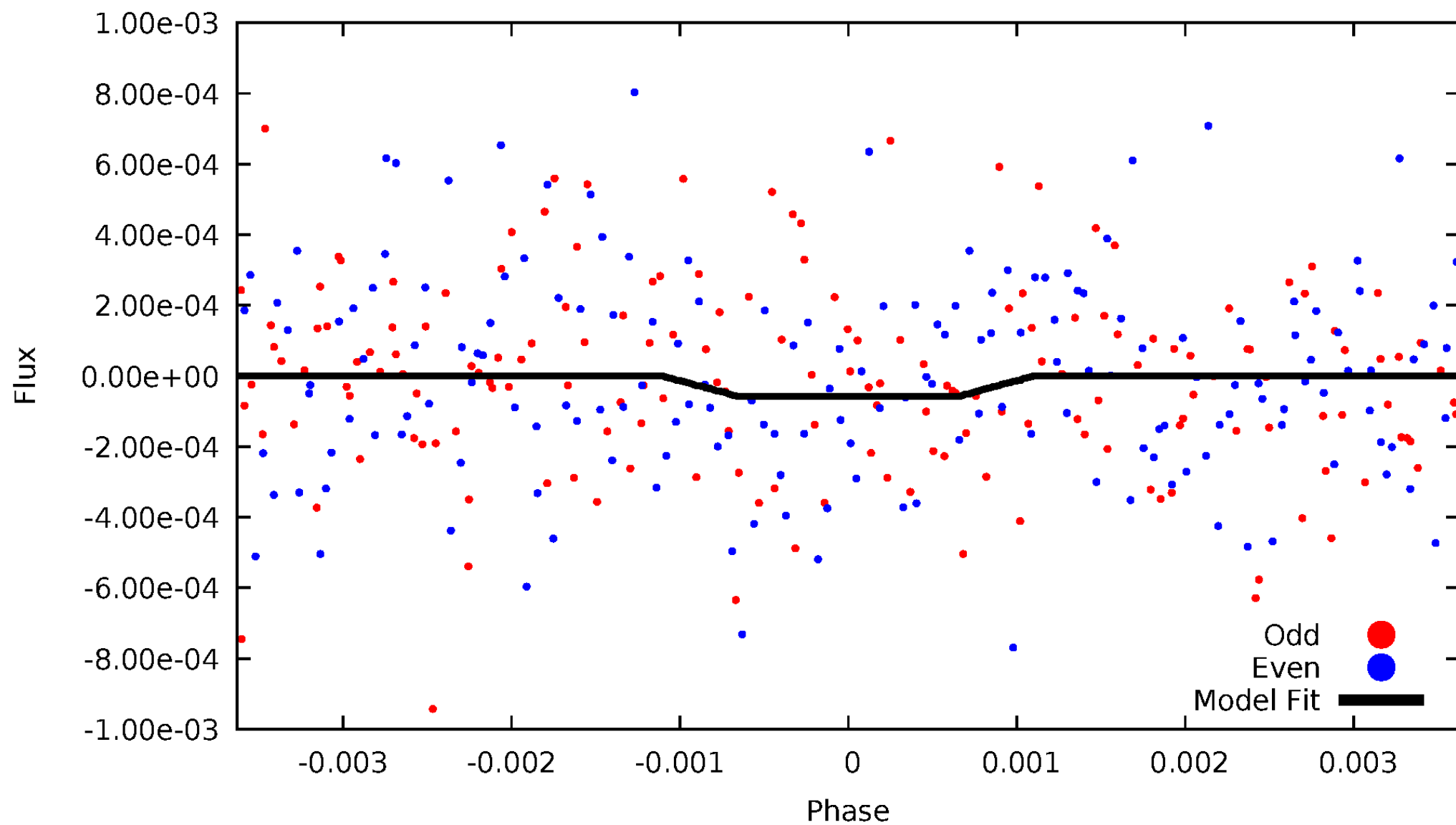
DV Odd/Even

TCE 010420279-07



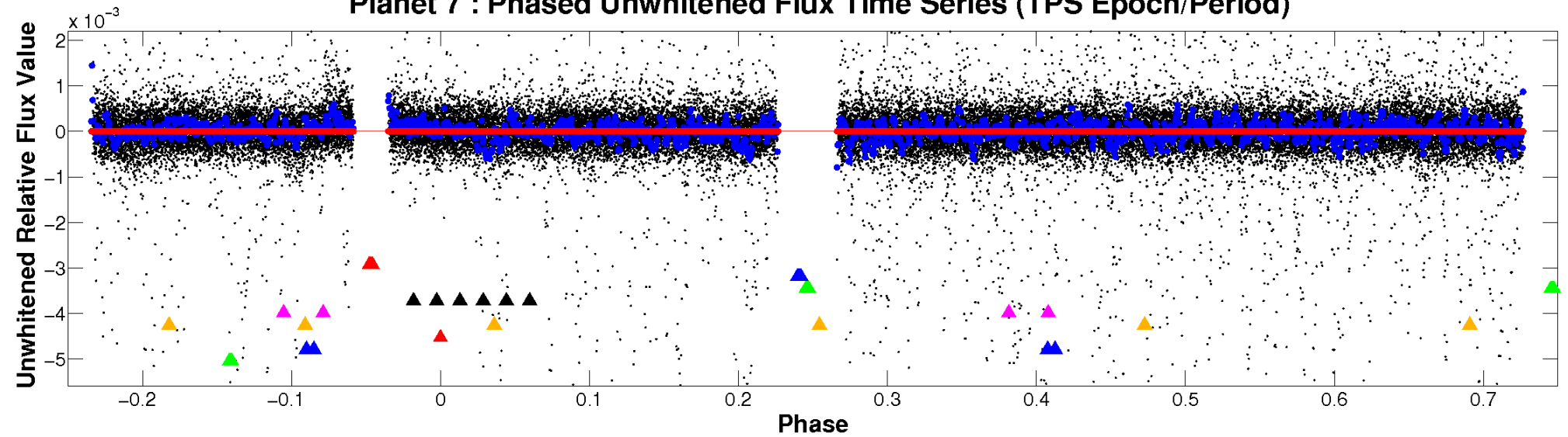
ALT Odd/Even

TCE 010420279-07

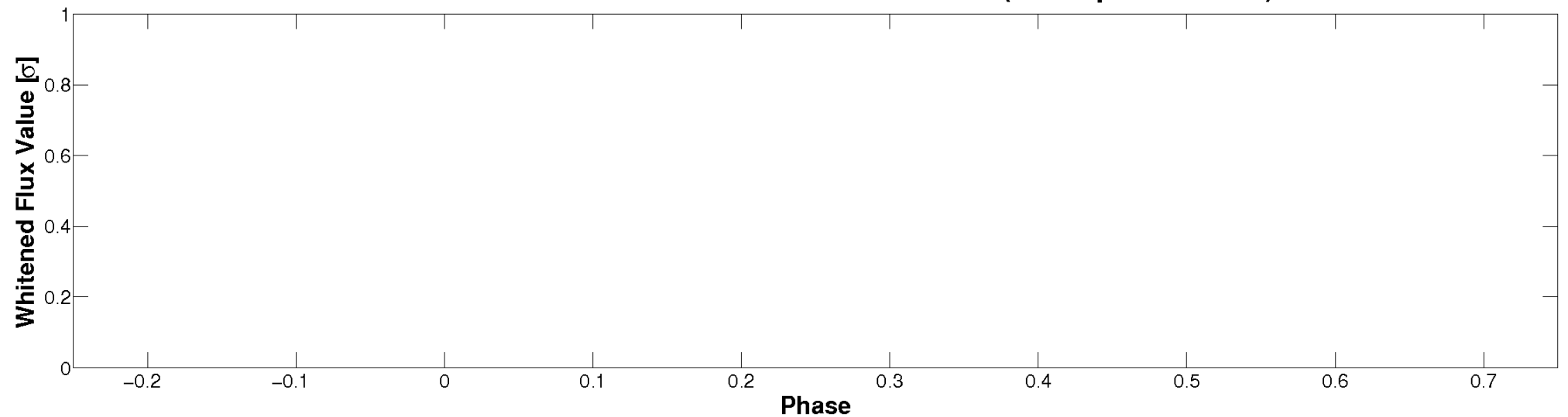


Non-Whitened Vs. Whitened Light Curve

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

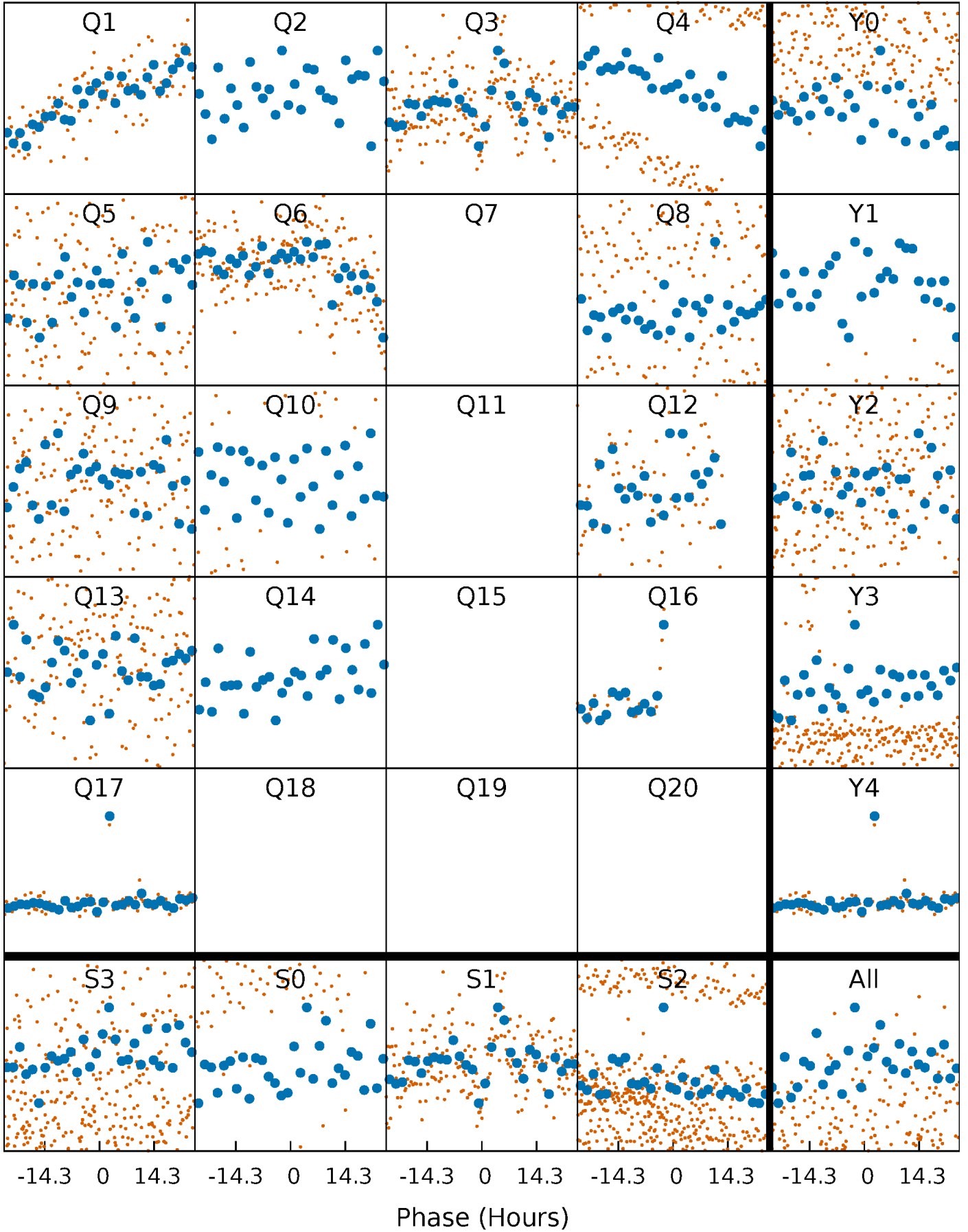


Planet 7 : Phased Whitened Flux Time Series (TPS Epoch/Period)



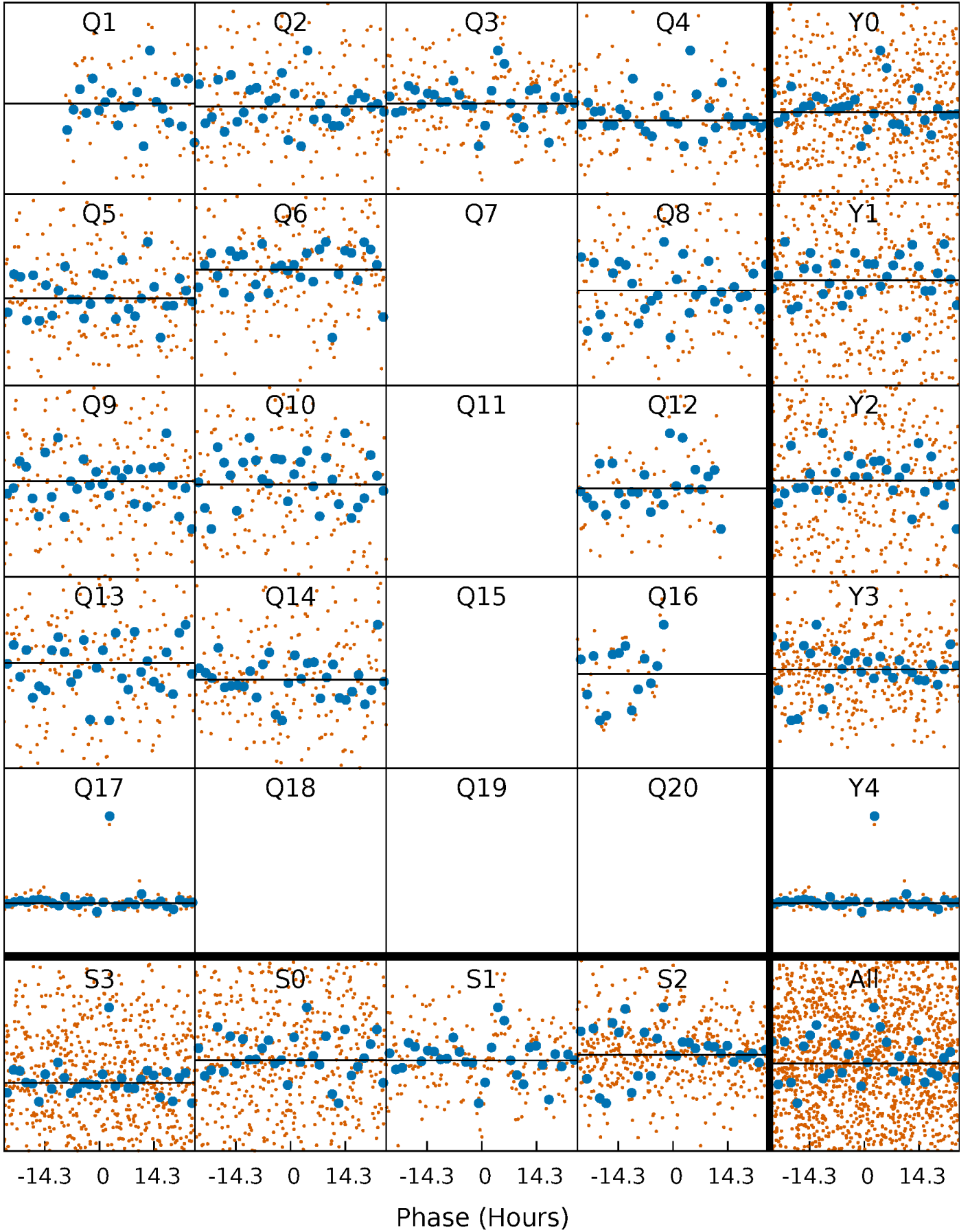
PDC Quarter-Phased Transit Curves

TCE 010420279-07 $P = 45.437411$ Days $T_0 = 161.936565$ (BKJD)



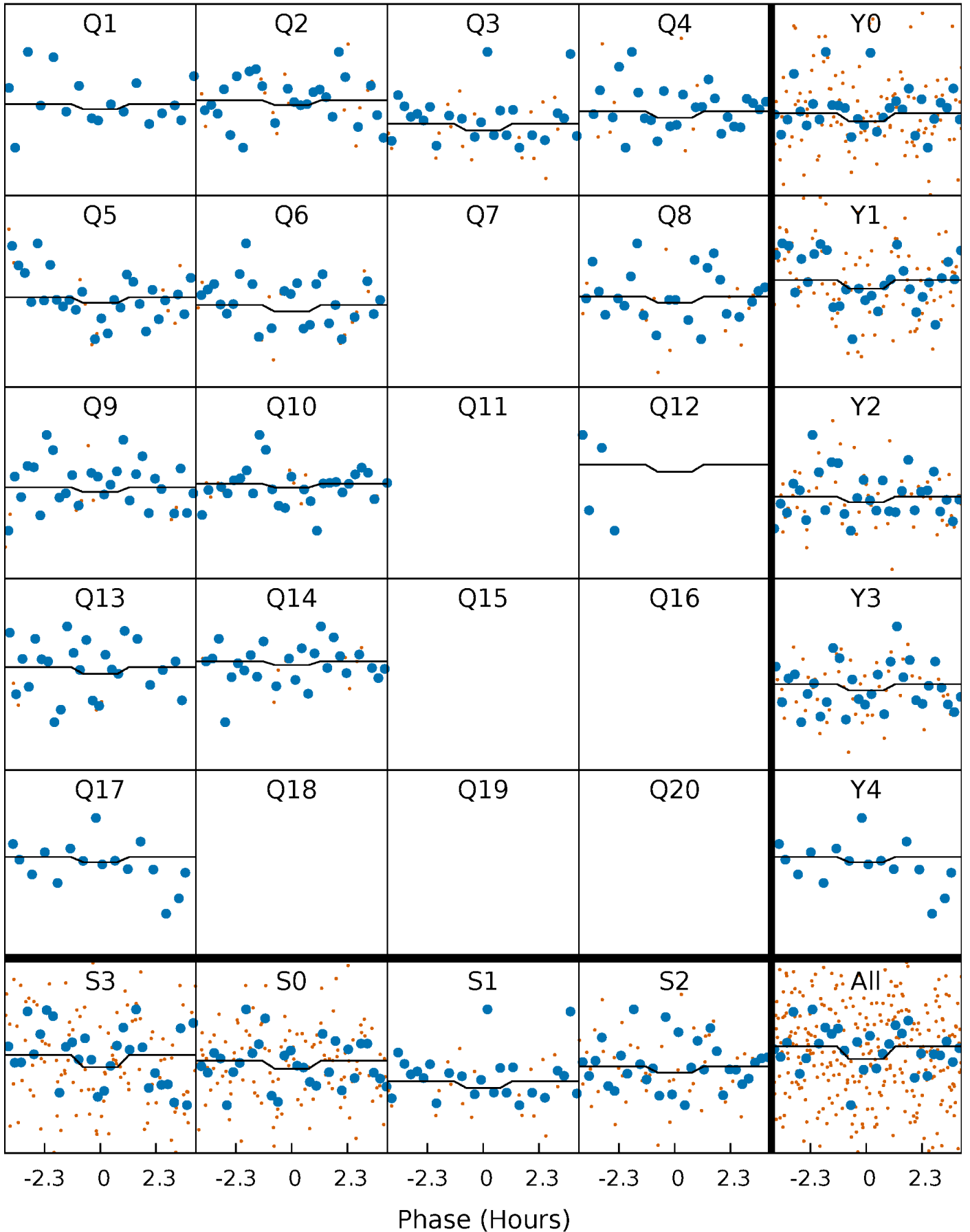
DV Quarter-Phased Transit Curves

TCE 010420279-07 $P = 45.437411$ Days $T_0 = 161.936565$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

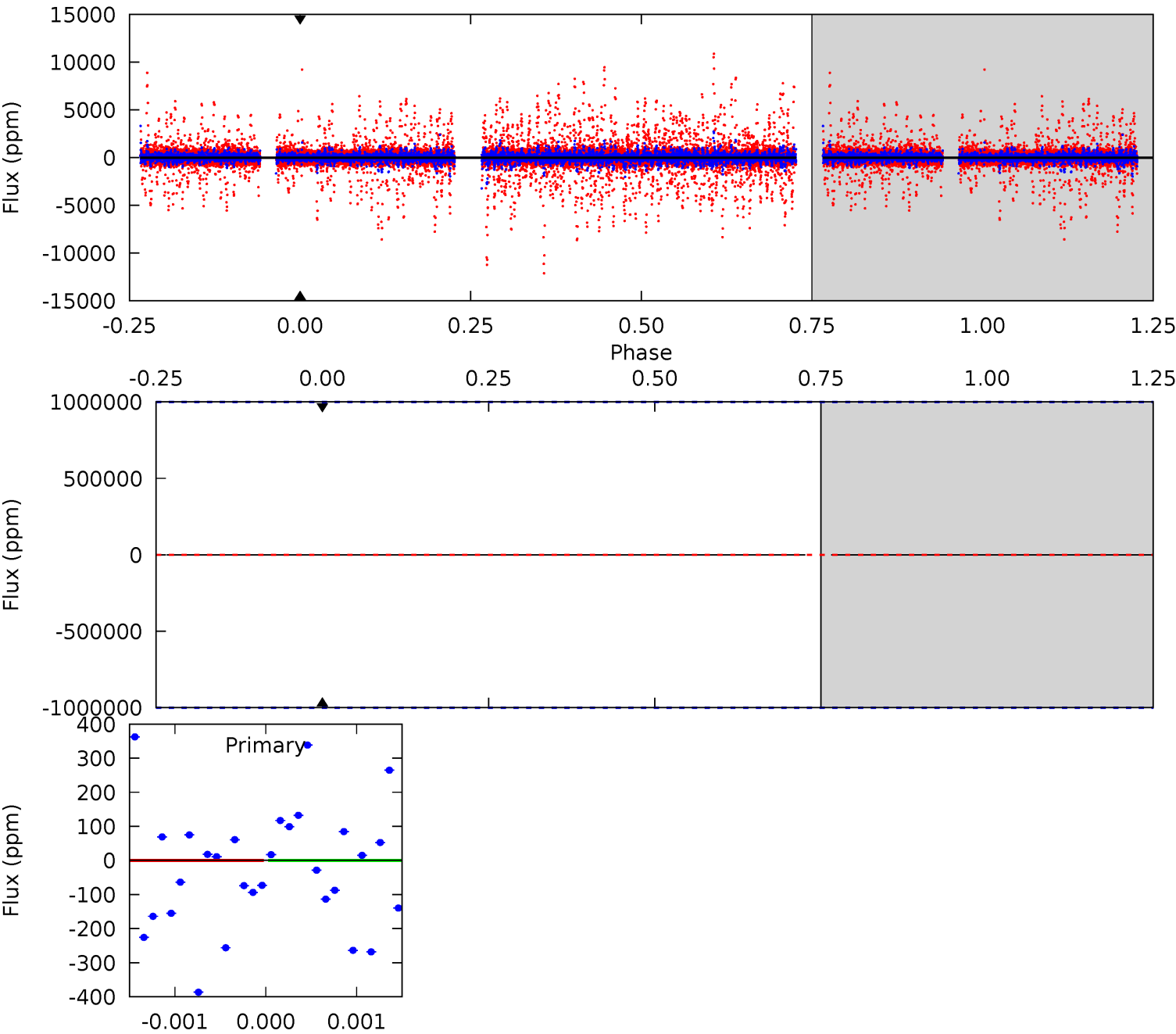
TCE 010420279-07 $P = 45.437411$ Days $T_0 = 162.591834$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-07, P = 45.437411 Days, E = 116.499154 Days

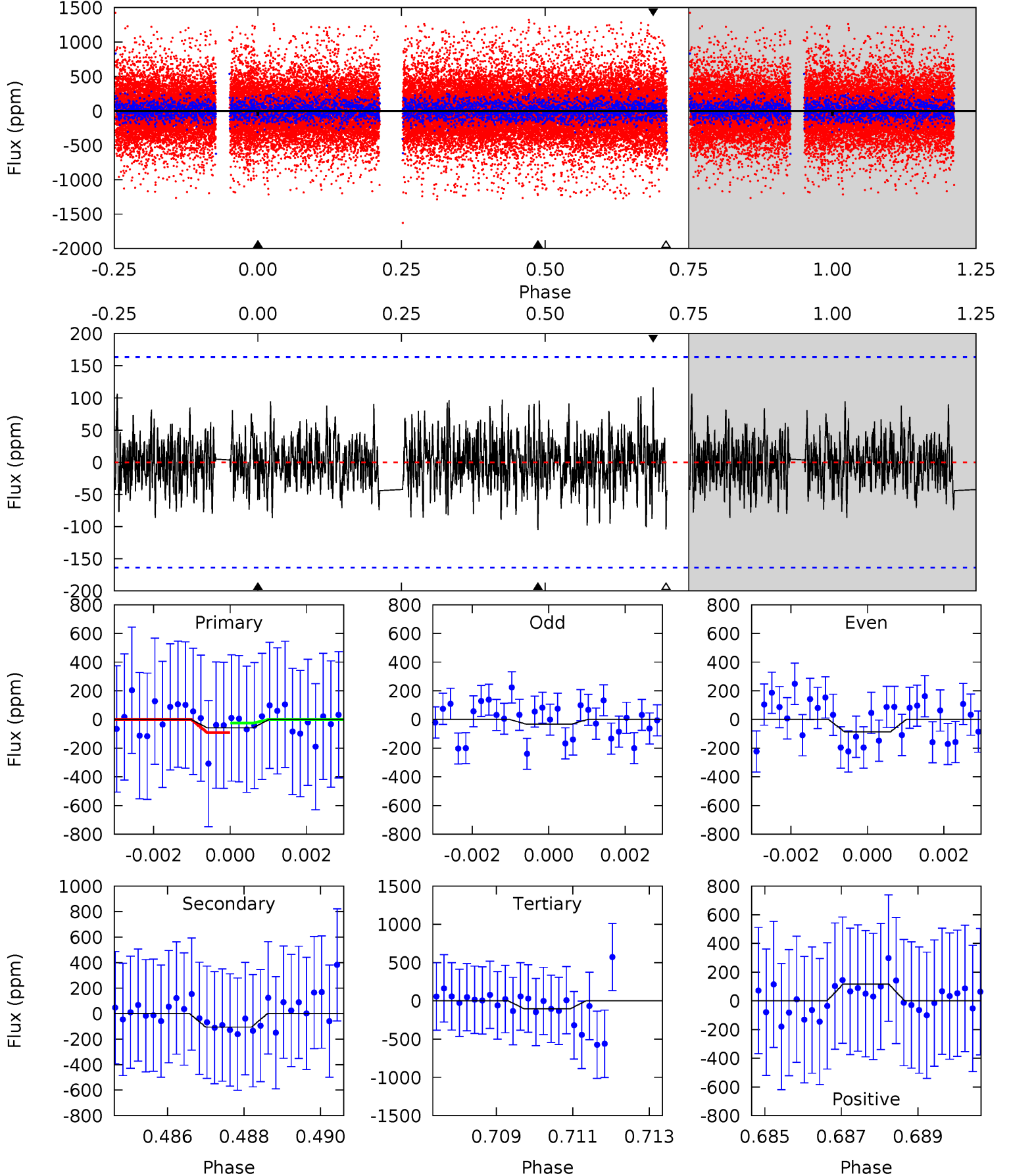
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010420279-07, P = 45.437411 Days, E = 117.154423 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.89	3.42	3.38	3.77	5.31	3.07	1.08	-1.48	-1.88	0.04	-0.36	0.88	0.90	0.52	1.09



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$12.43^{+10.45}_{-7.80}$	746^{+52}_{-46}	-4383^{+18926}_{-8449}	$-598.346^{+36419.900}_{-29343.393}$
Alt.	-105 ± 31	$8.43^{+9.44}_{-5.78}$	741^{+54}_{-43}	2840^{+1335}_{-465}	45^{+408}_{-34}

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 $A_{obs} \gg 1.0$

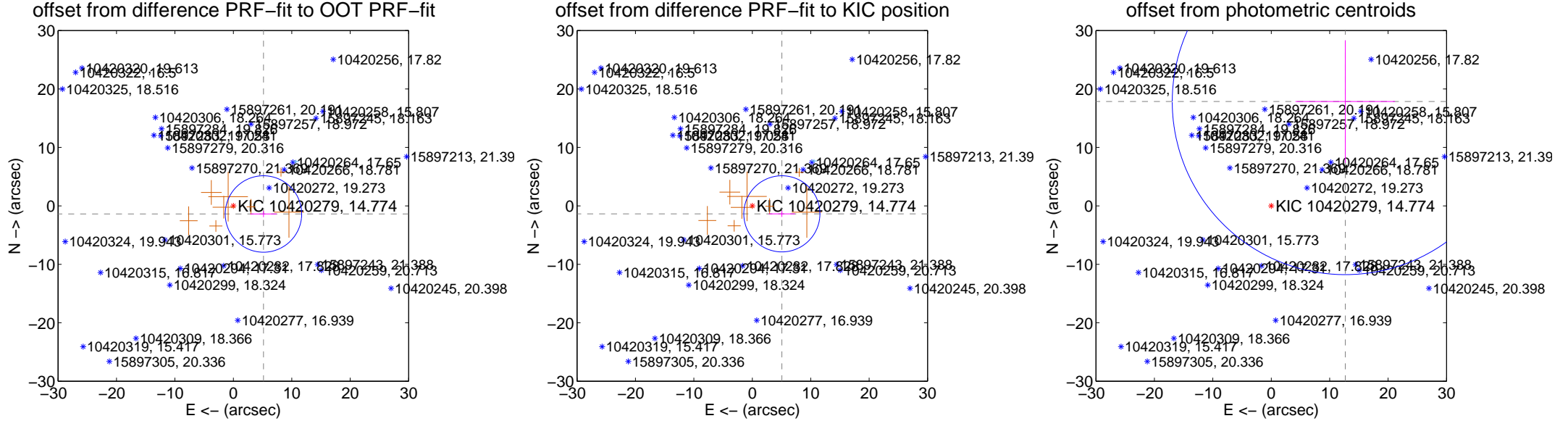
DV Centroid Data

Supplemental centroid analysis for 010420279-07. Kepler magnitude: 14.77. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

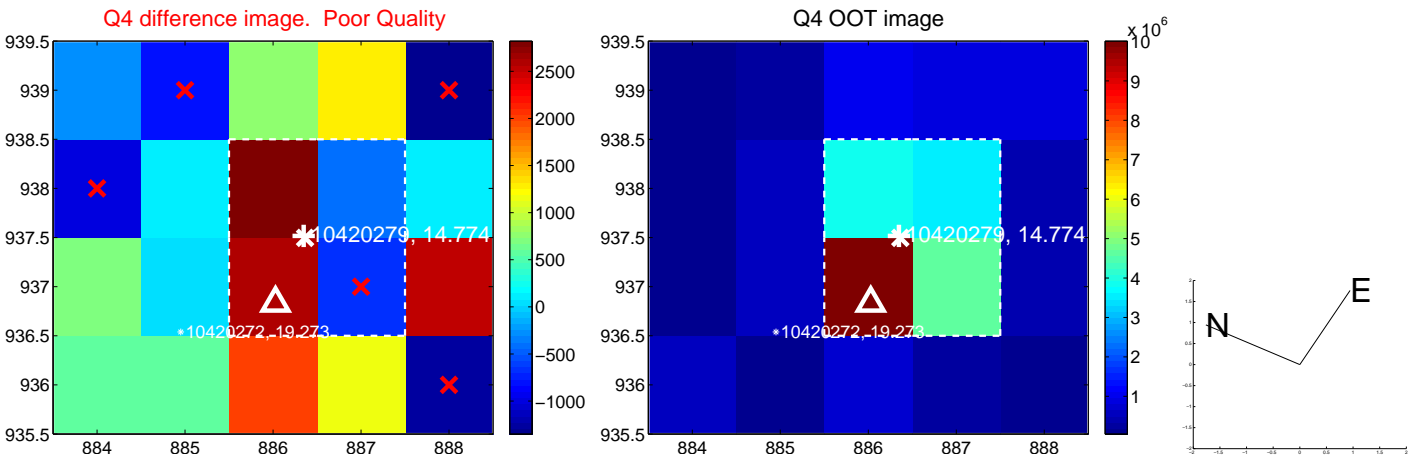
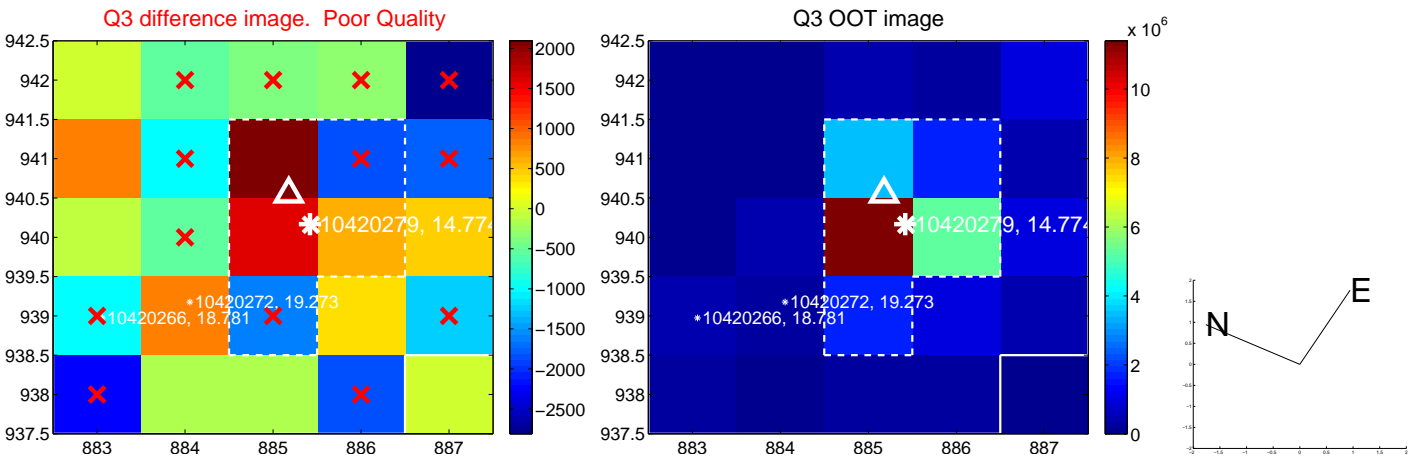
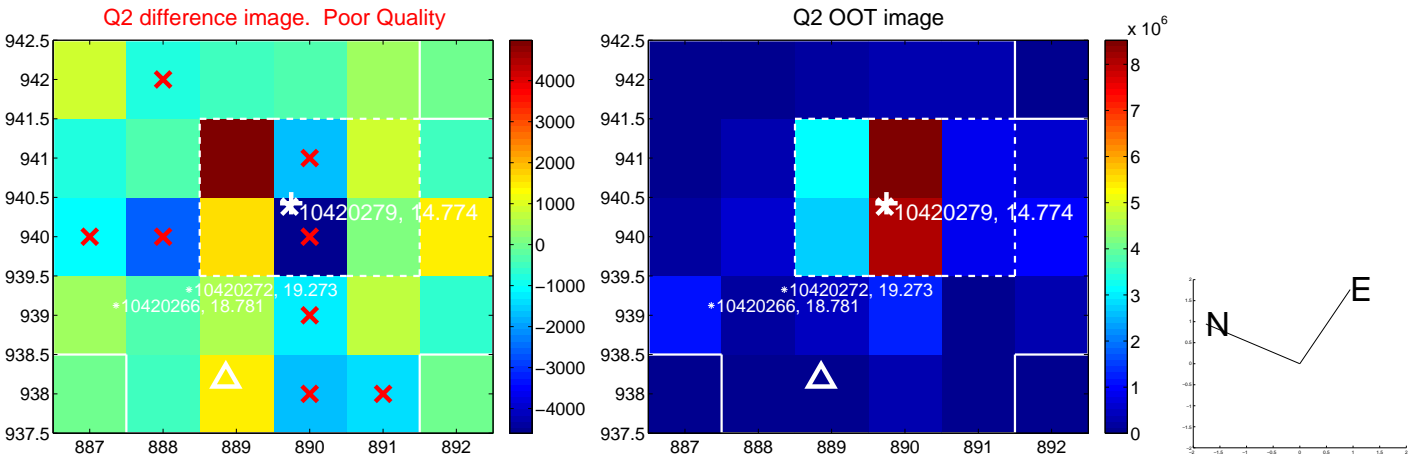
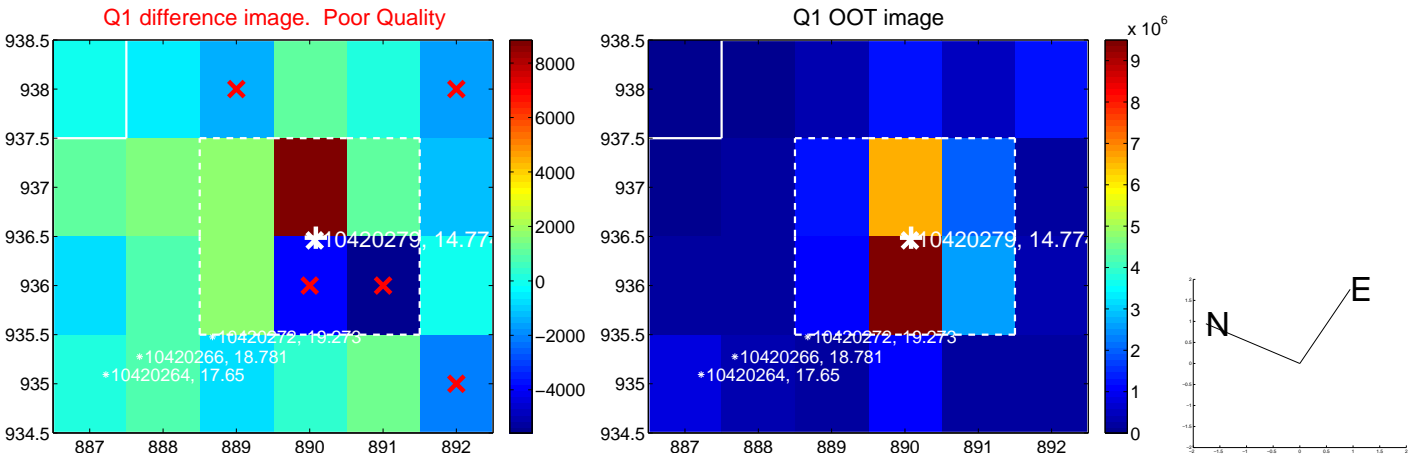
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.339 ± 2.180	2.45	-5.155 ± 2.254	-1.391 ± 0.533
PRF-fit source offset from KIC position	5.240 ± 2.171	2.41	-5.060 ± 2.244	-1.363 ± 0.534
photometric centroid source offset	21.89 ± 9.87	2.22	-12.67 ± 8.51	17.85 ± 10.49

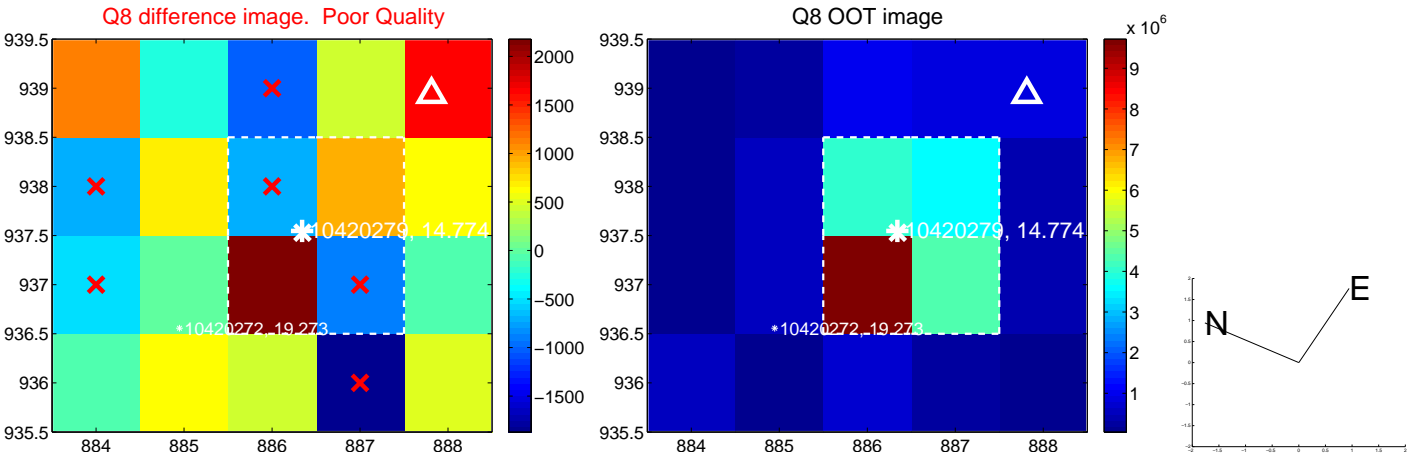
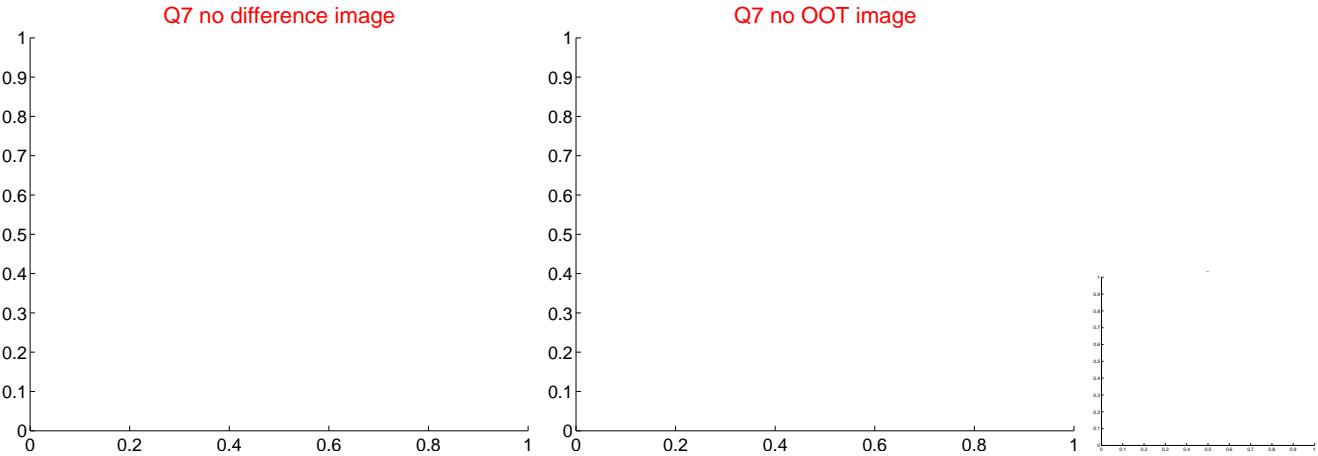
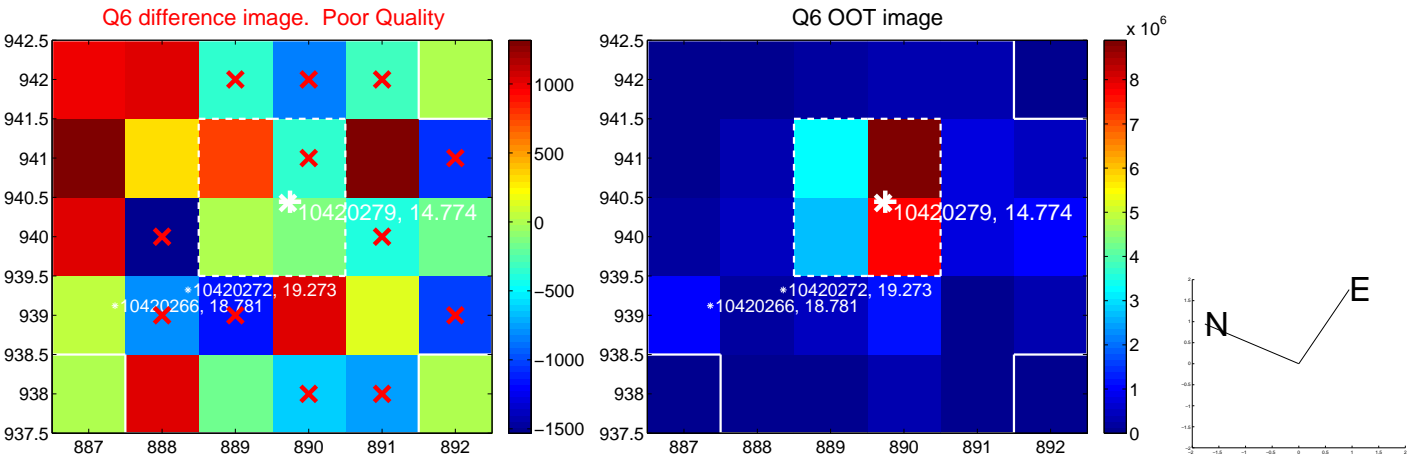
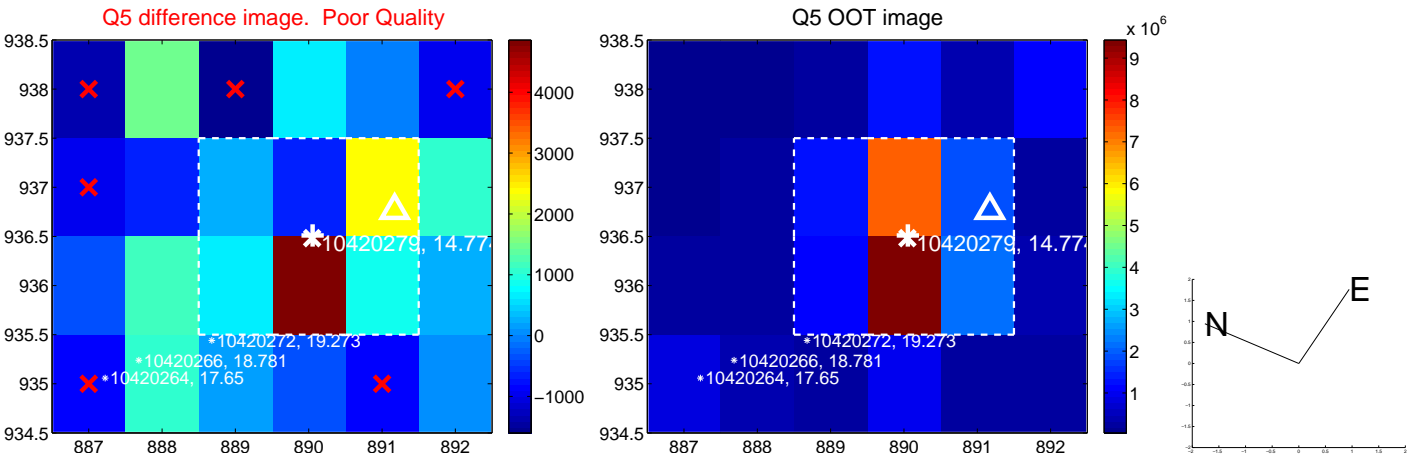


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

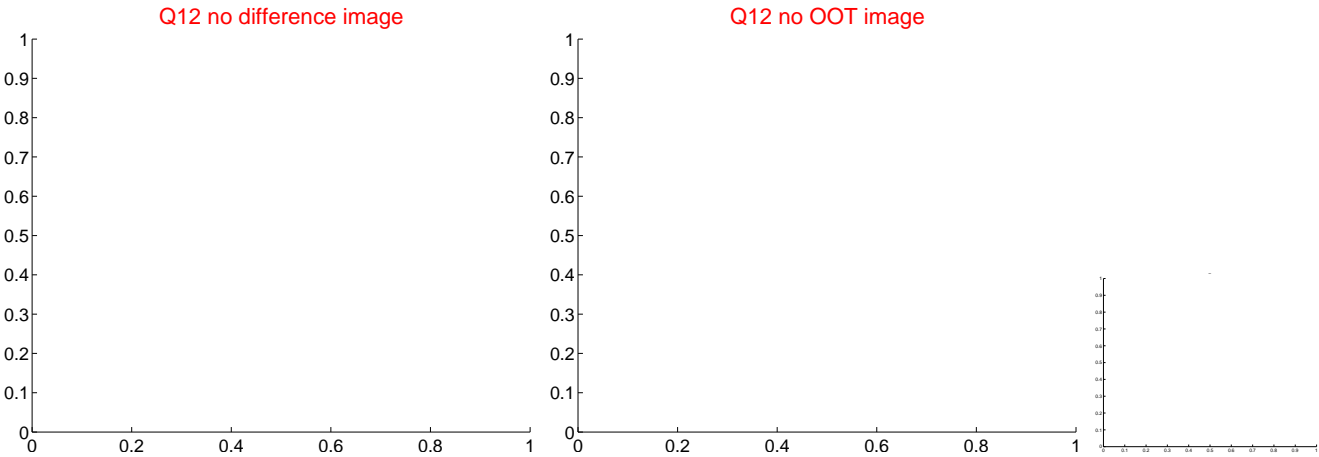
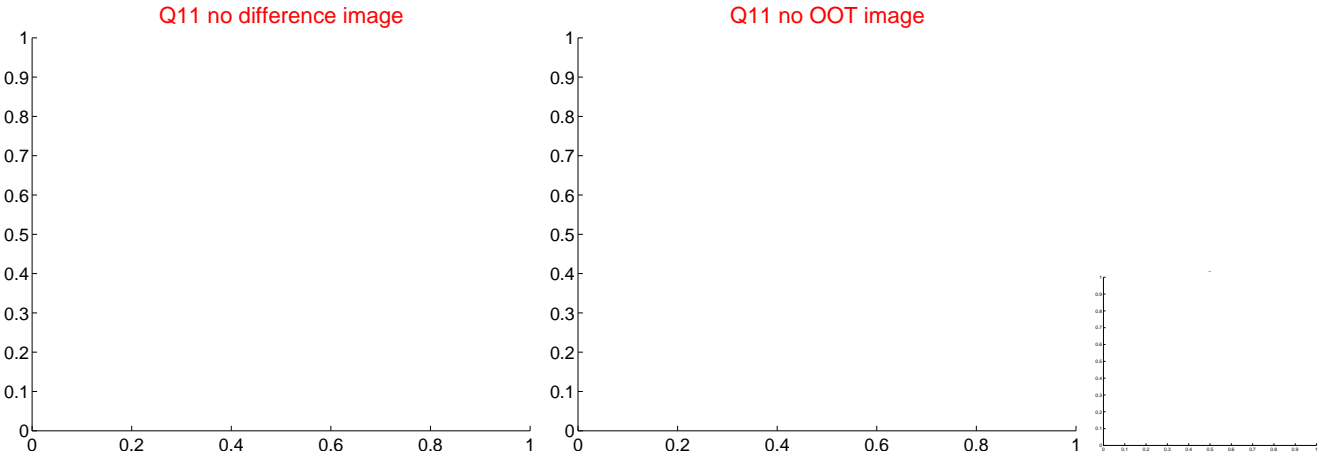
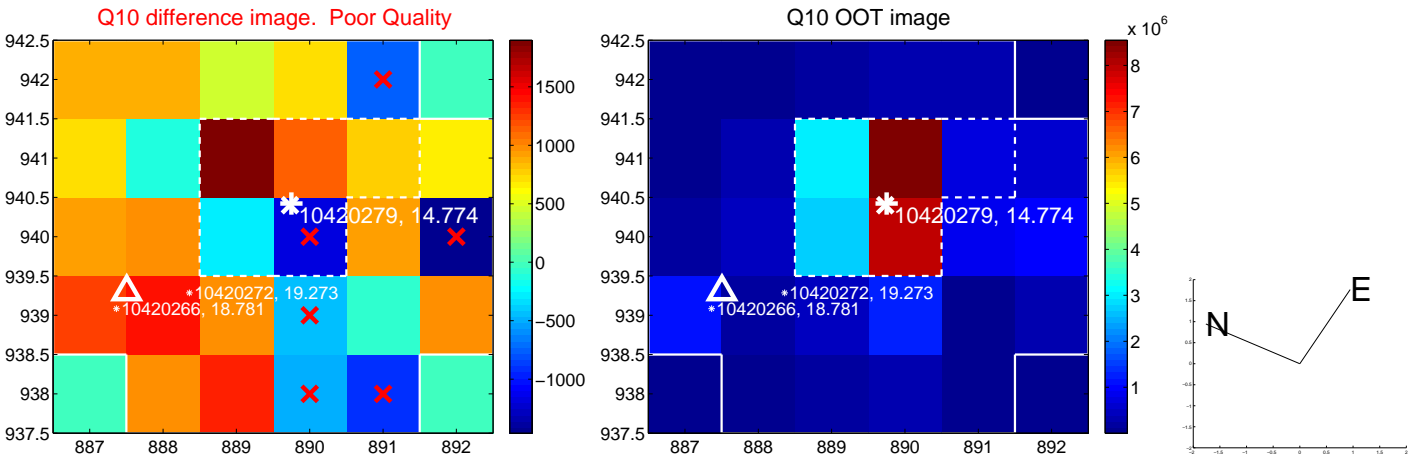
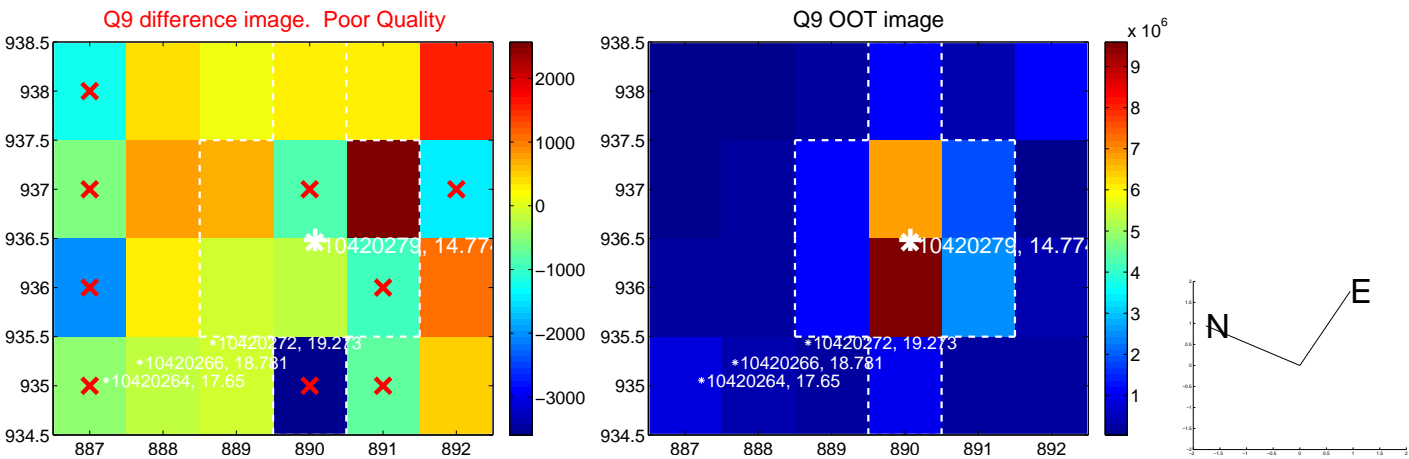
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



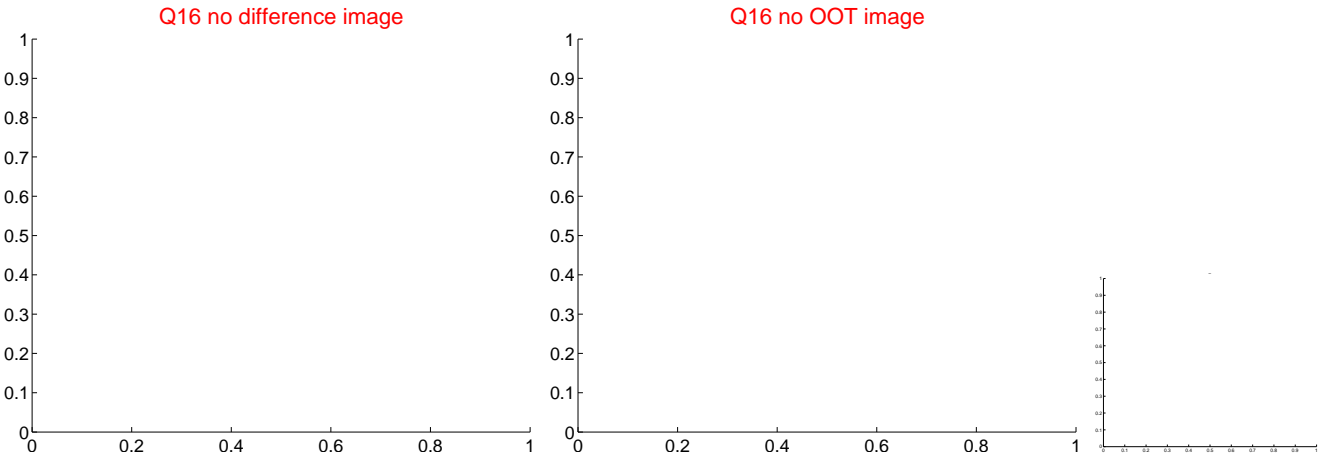
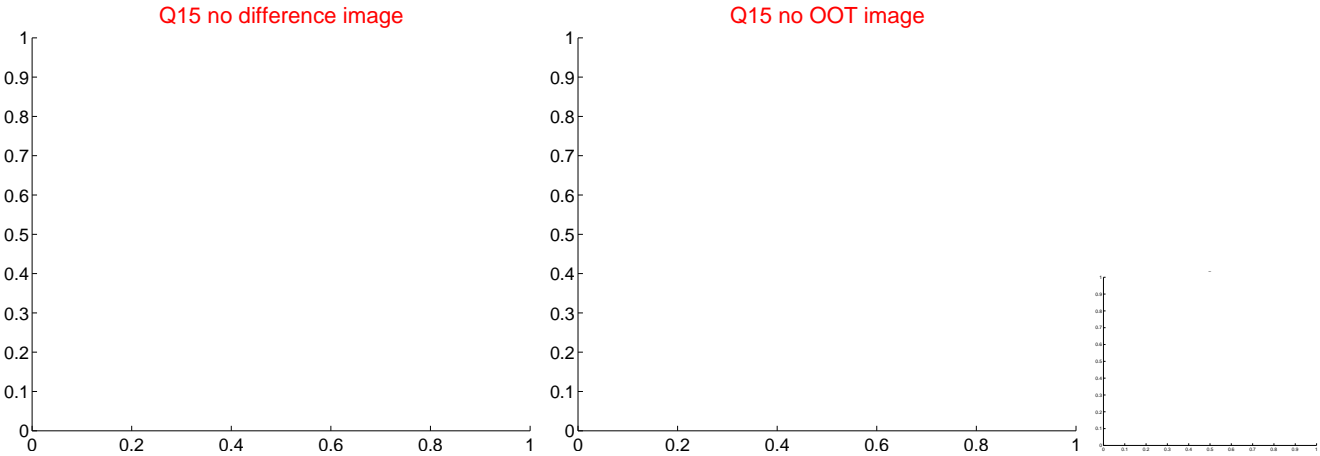
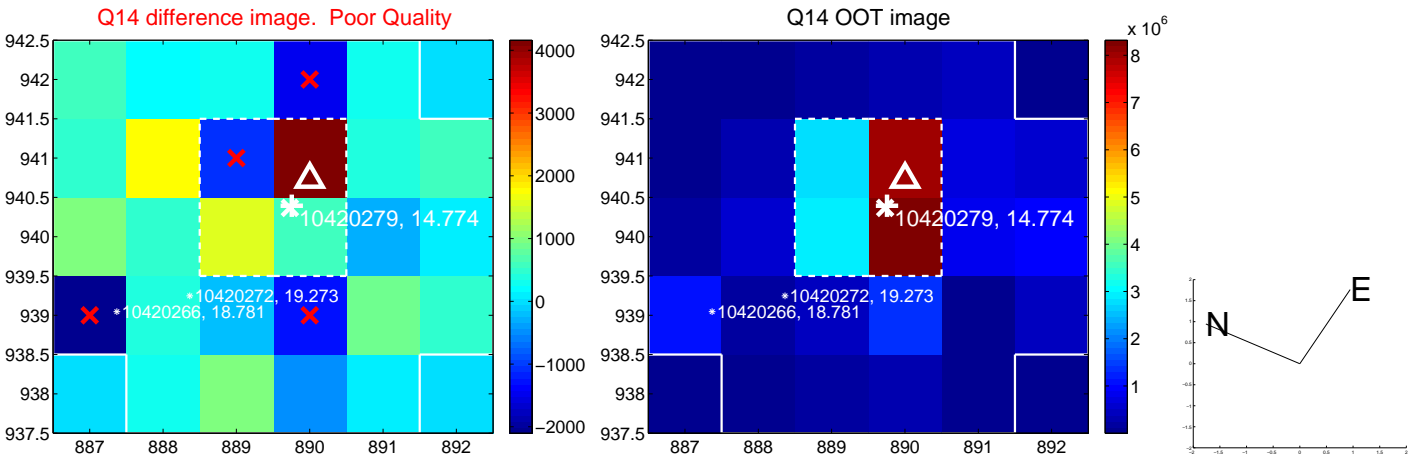
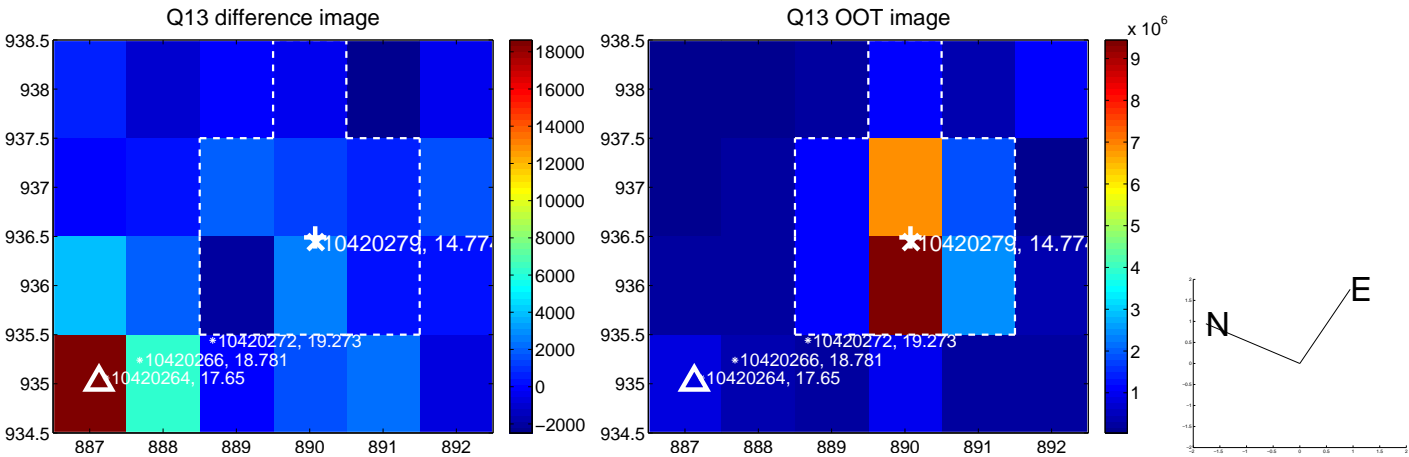
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



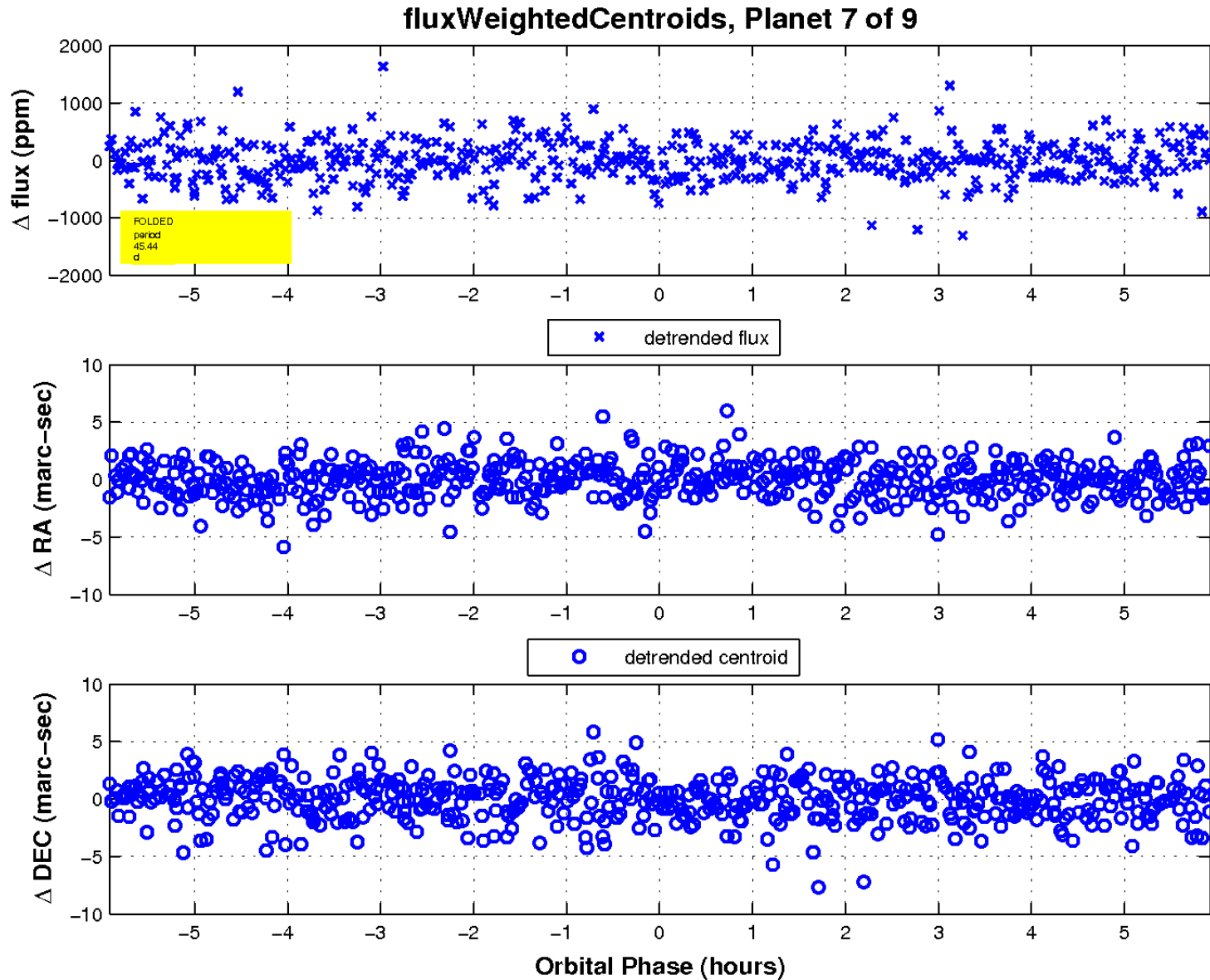
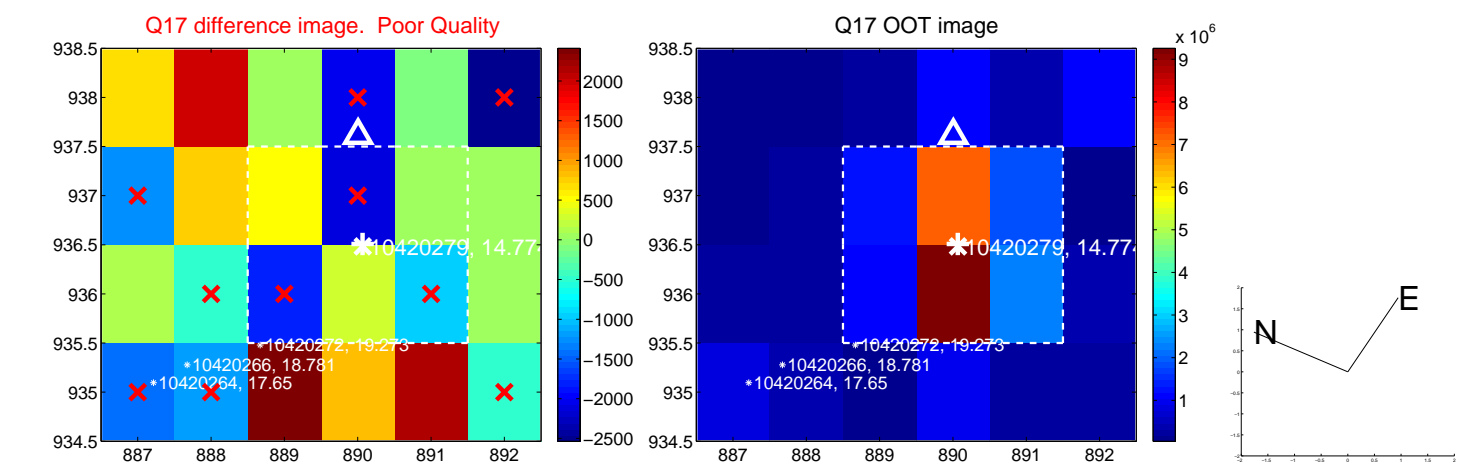
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

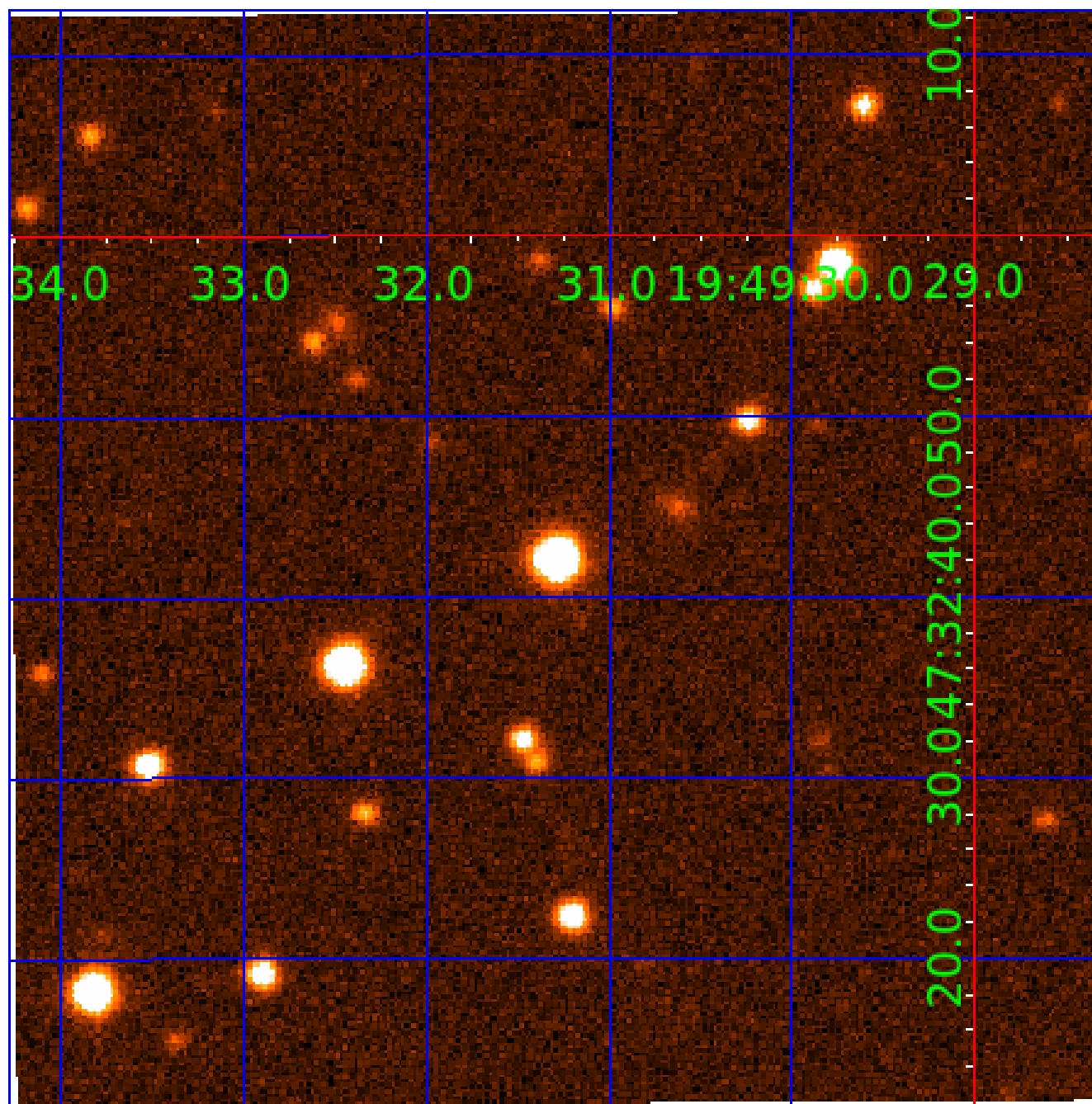


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

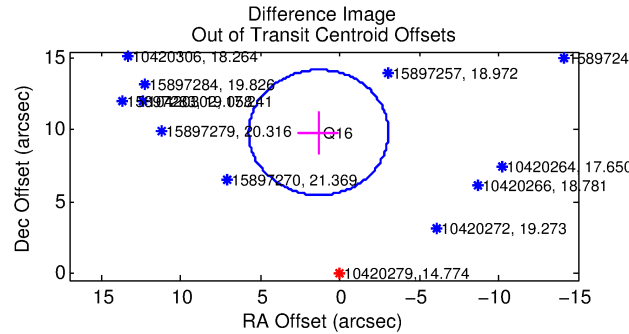
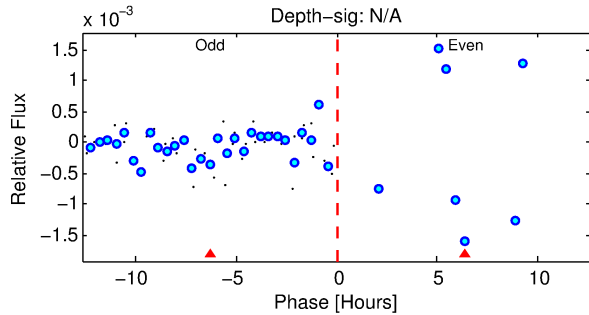
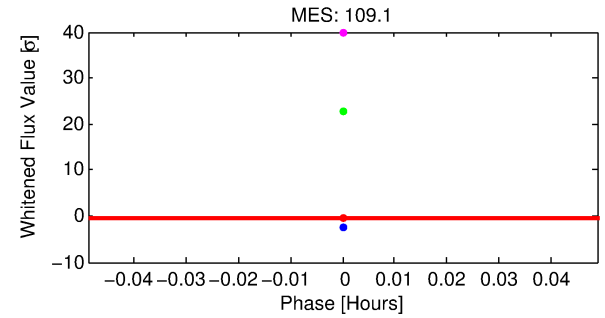
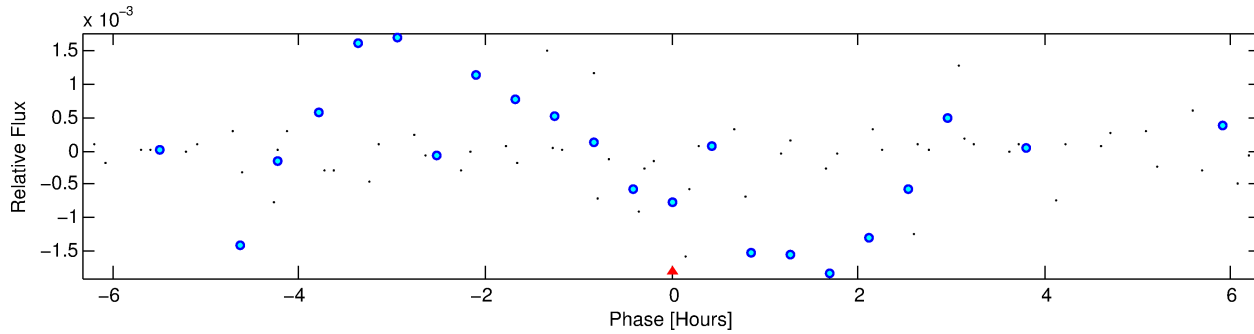
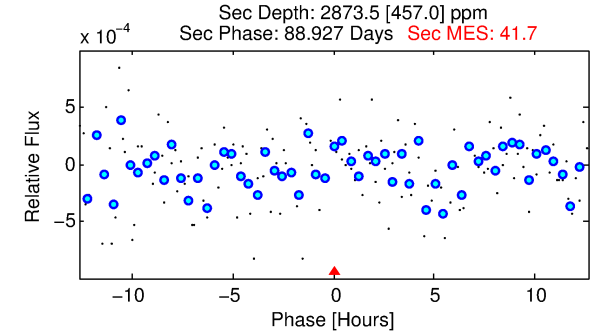
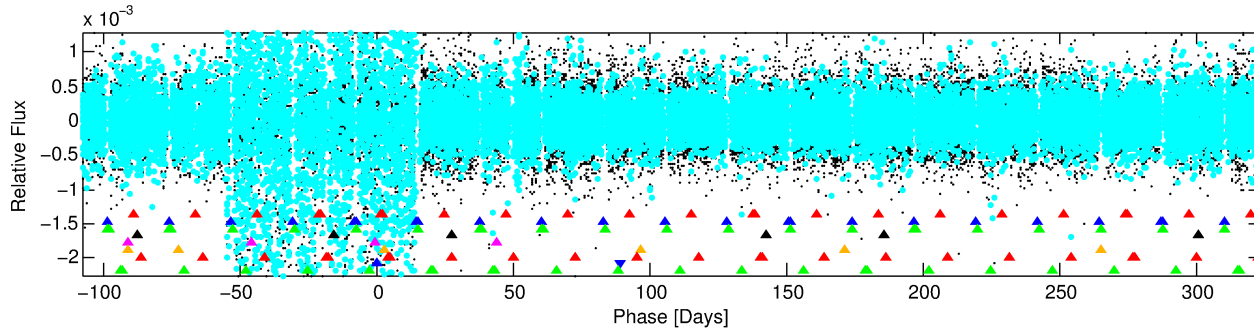
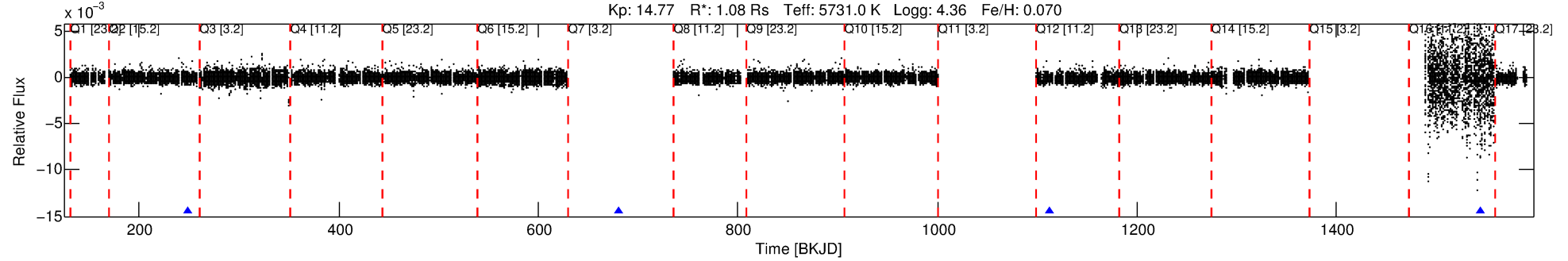
Ephemeris Match Information For 010420279-08

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 8 of 9 Period: 431.543 d
KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



TPS TCE Results:

Period = 431.54316 d
Epoch = 248.9495 BKJD

DV fit results are unavailable

DV Diagnostic Results:

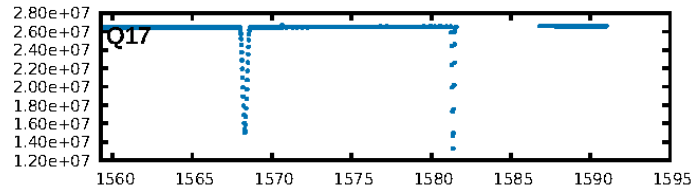
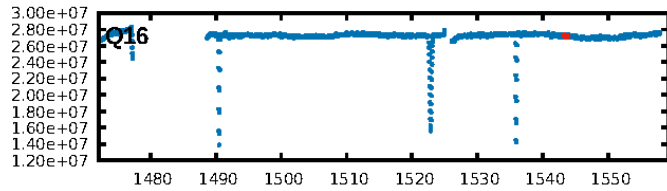
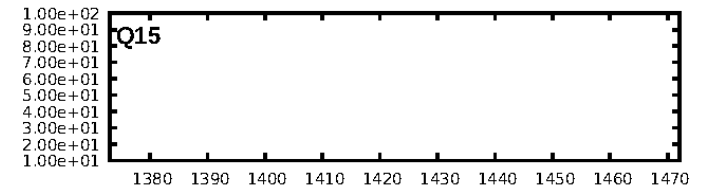
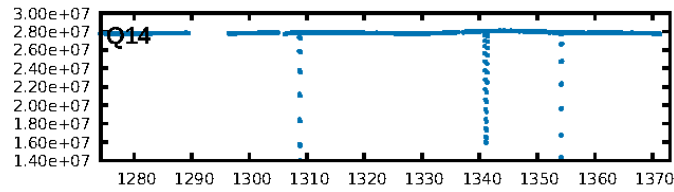
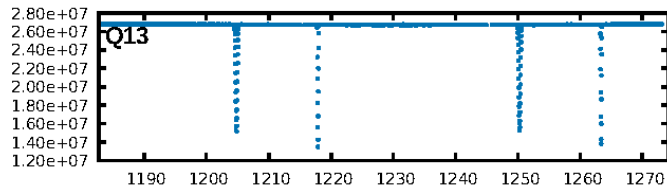
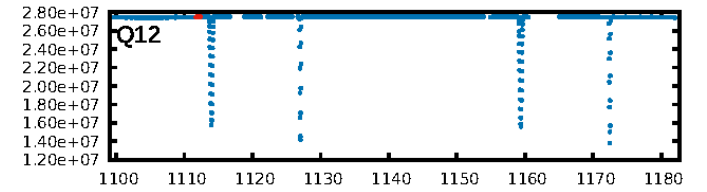
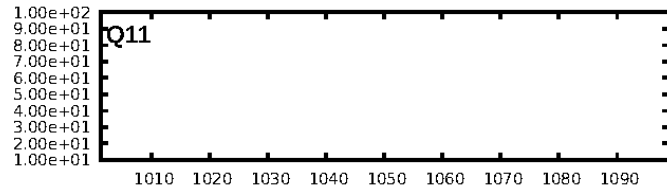
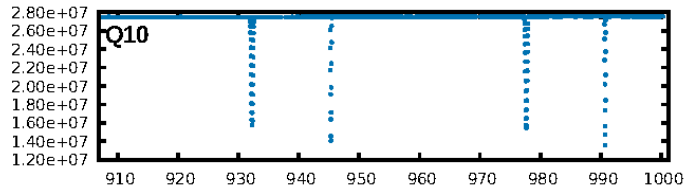
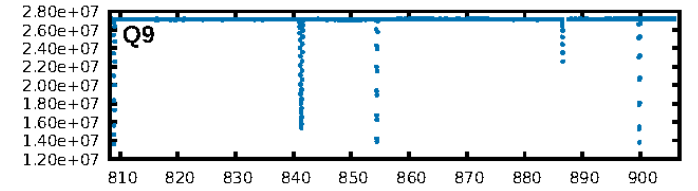
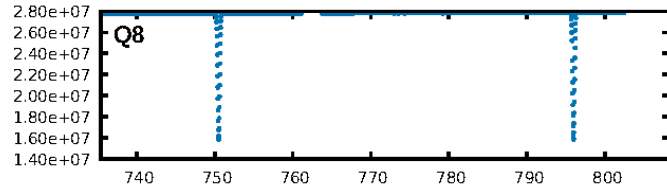
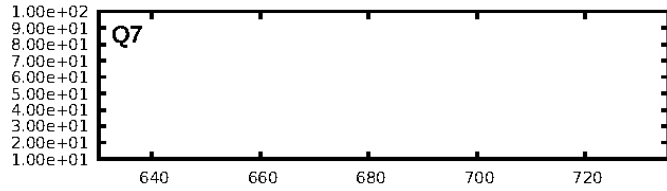
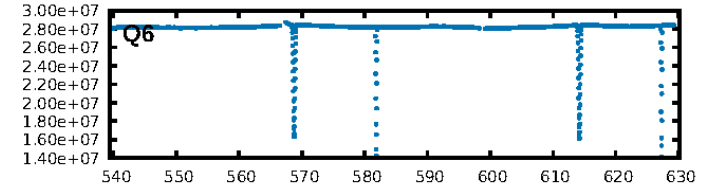
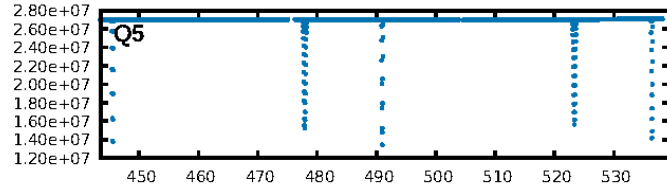
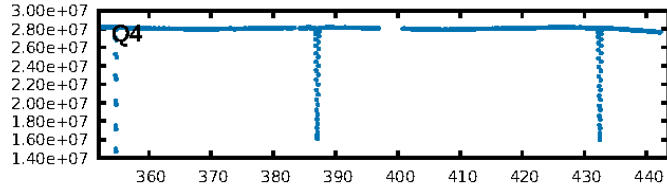
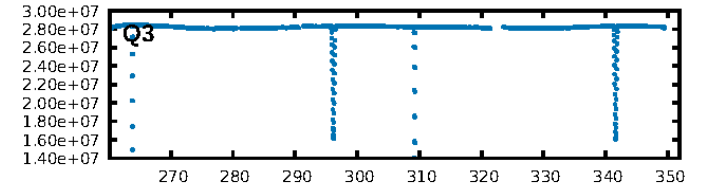
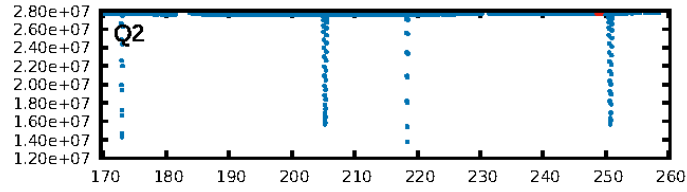
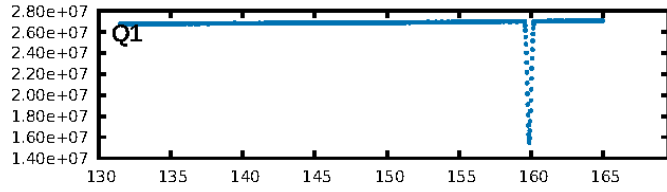
ShortPeriod-sig: 100.0% [380.21σ]
LongPeriod-sig: 100.0% [127.64σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.48e-59
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -2.869

Centroid-sig: N/A
Centroid-so: 7.735 arcsec [0.87σ]
OotOffset-rm: 9.924 arcsec [6.79σ]
KicOffset-rm: 10.017 arcsec [6.85σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

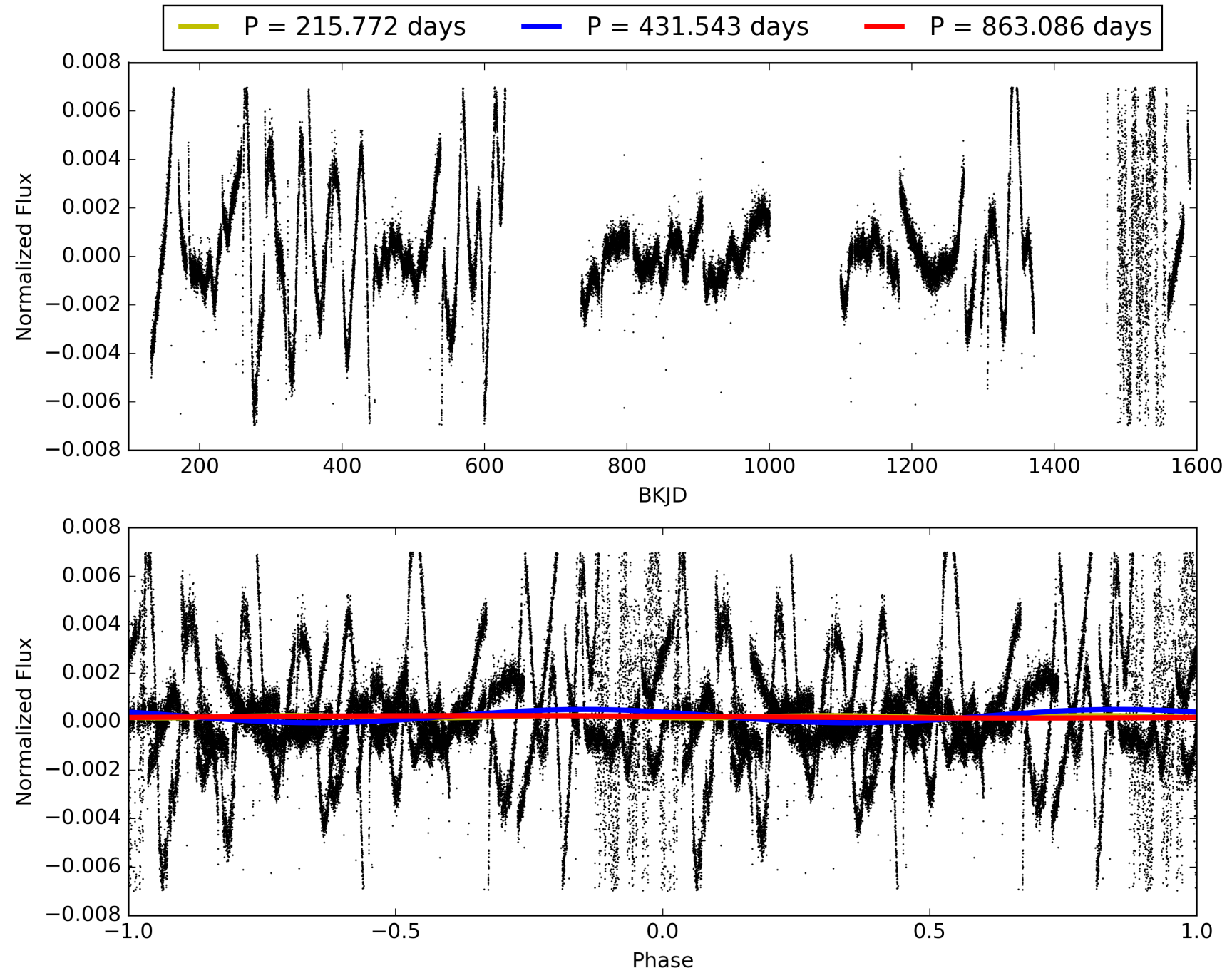
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:40:42 Z

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

TCE 010420279-08, PDC Light Curves

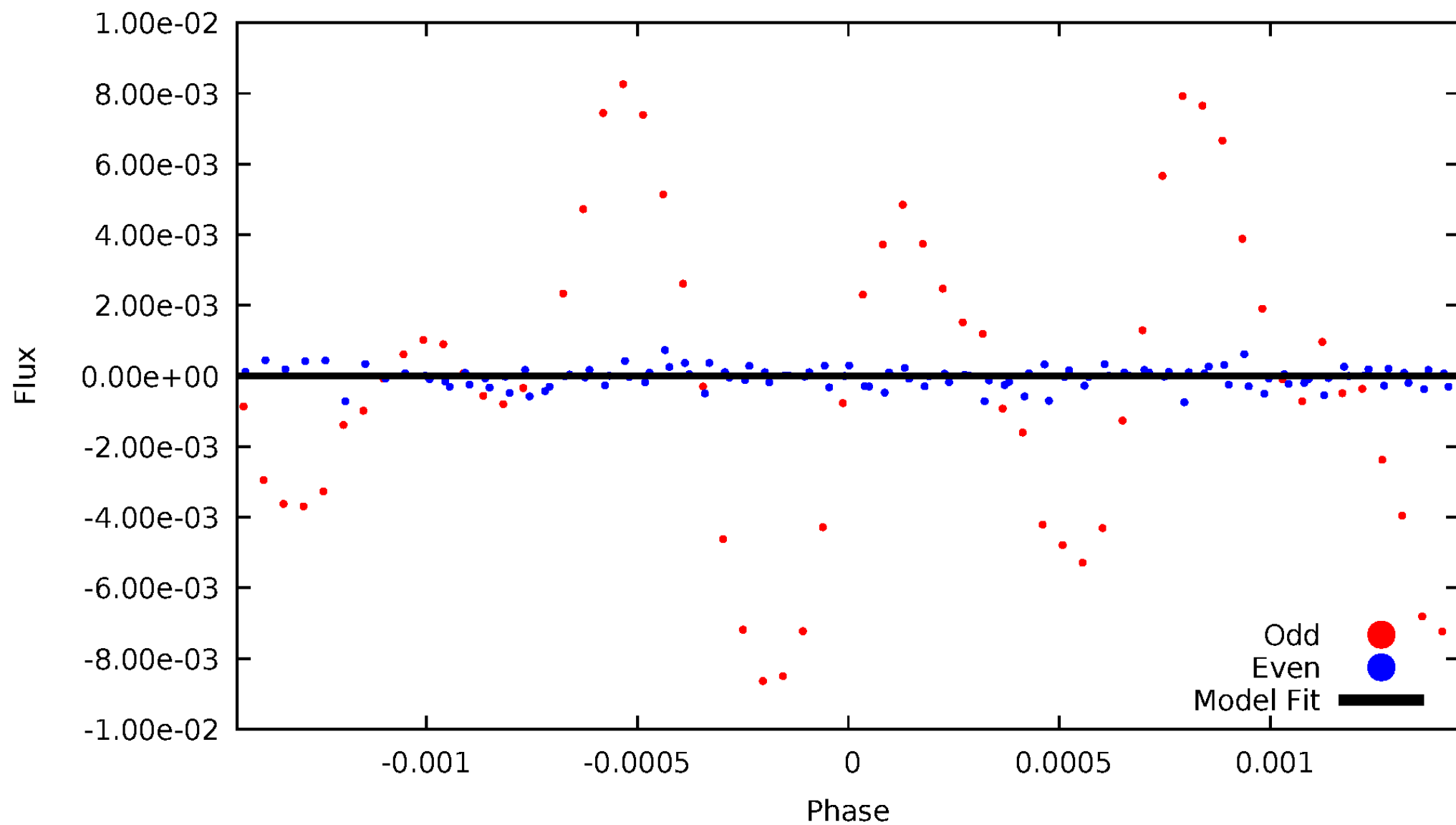


TCE 010420279-08



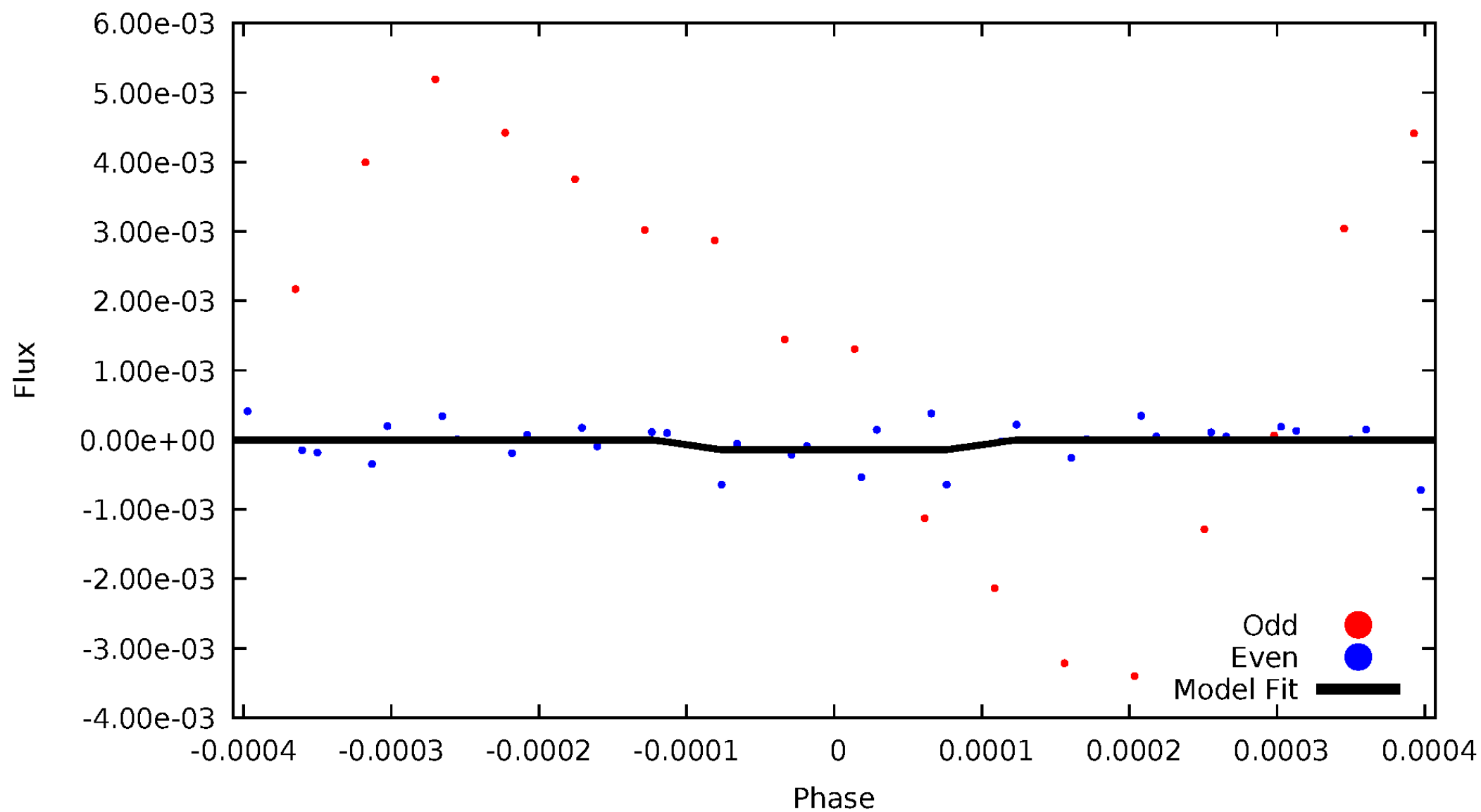
DV Odd/Even

TCE 010420279-08



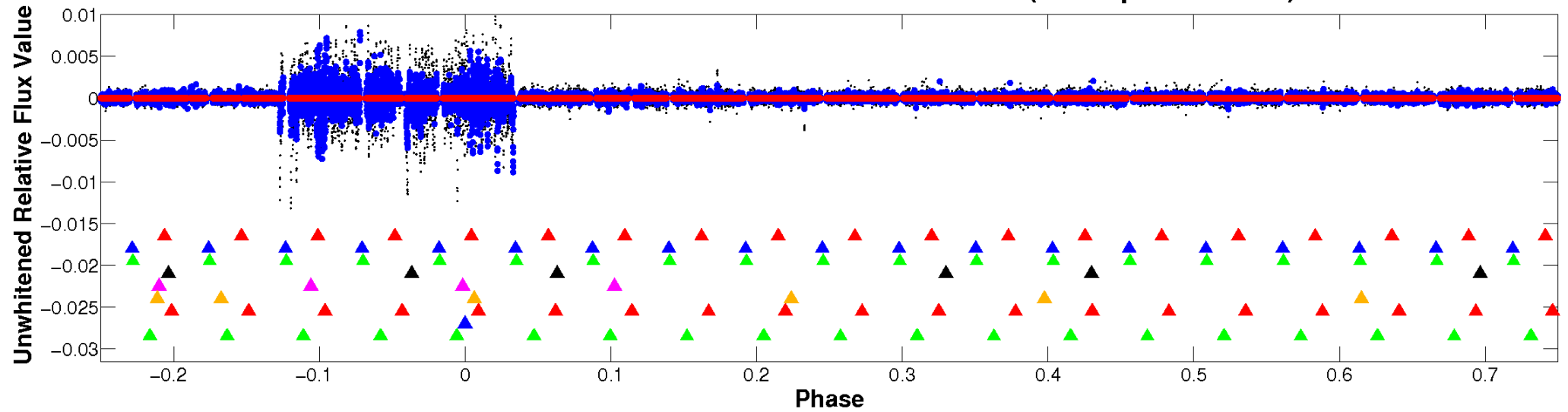
ALT Odd/Even

TCE 010420279-08

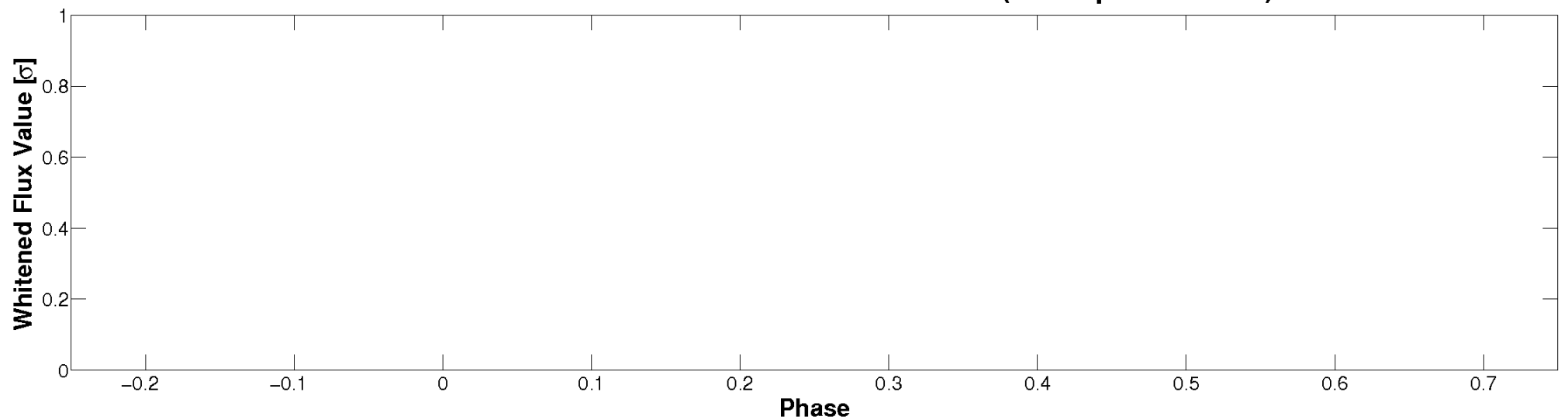


Non-Whitened Vs. Whitened Light Curve

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

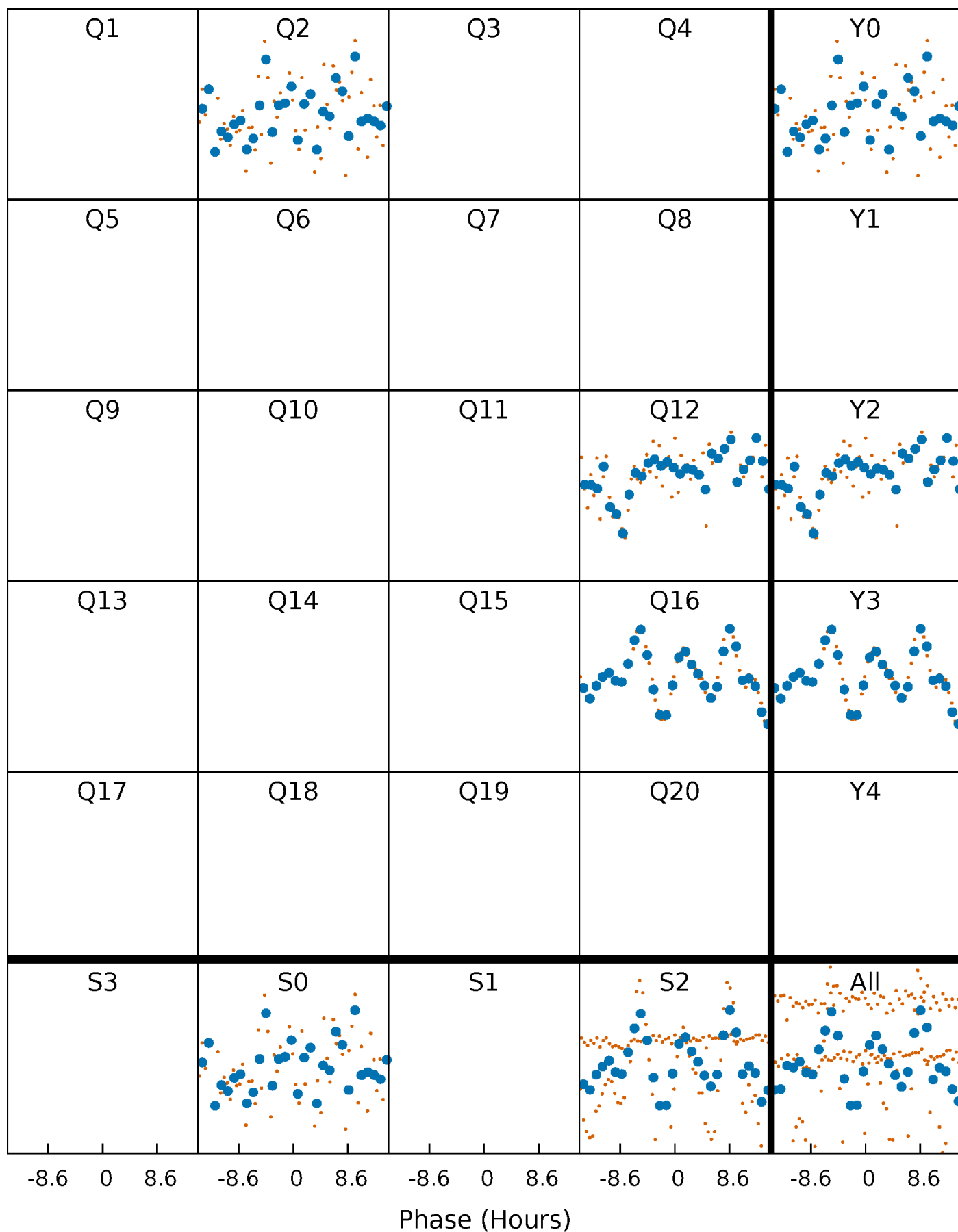


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



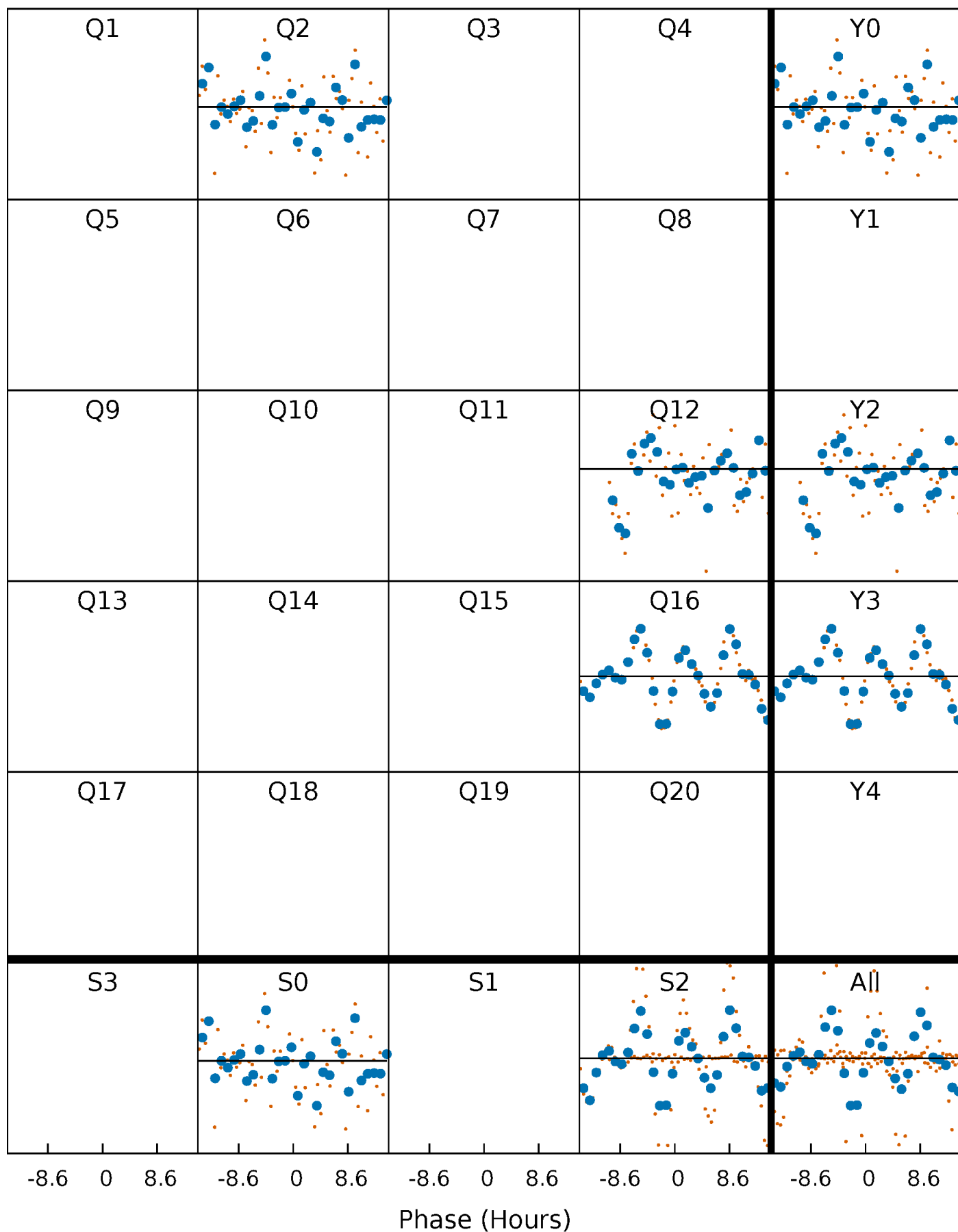
PDC Quarter-Phased Transit Curves

TCE 010420279-08 $P=431.543165$ Days $T_0=248.949474$ (BKJD)



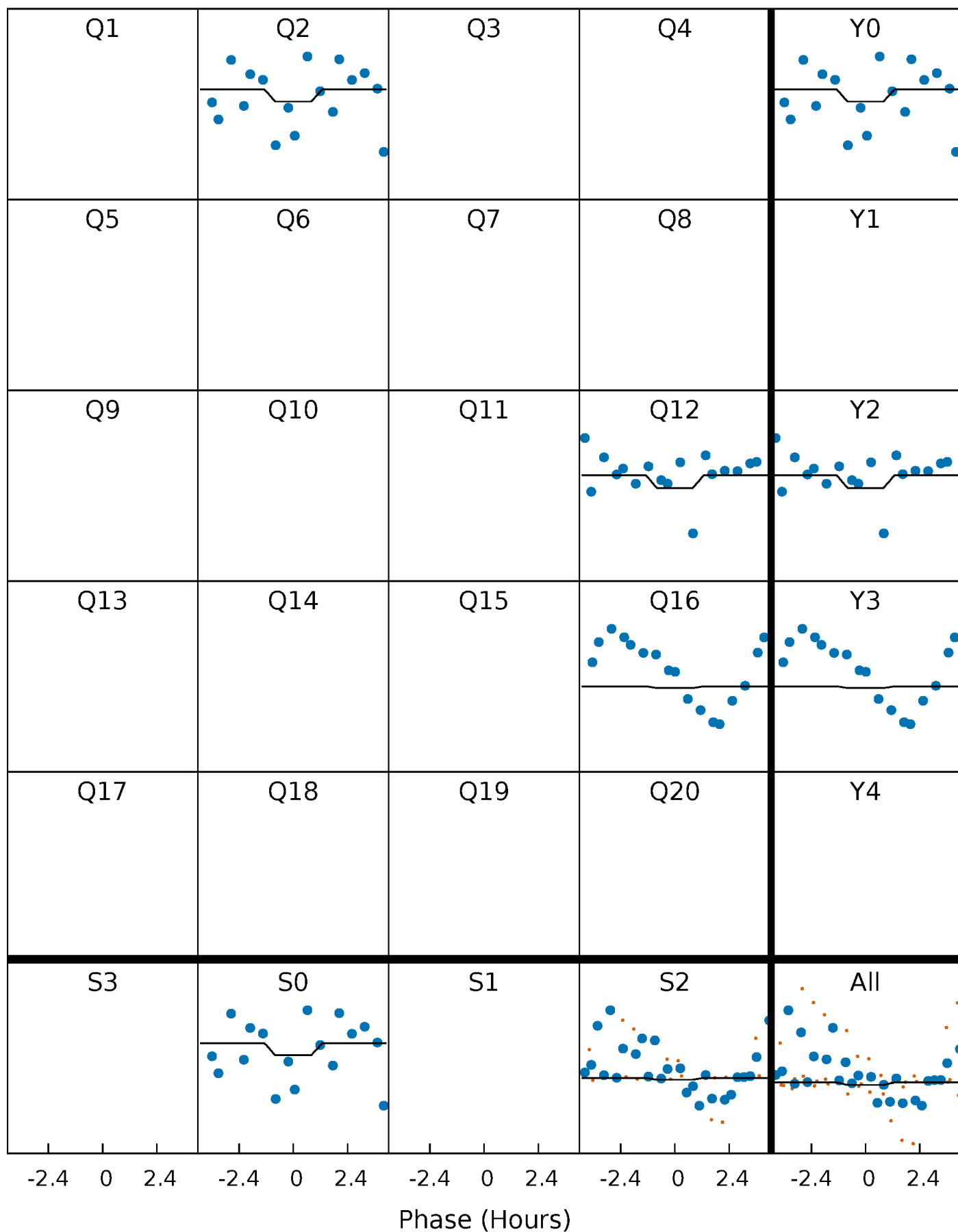
DV Quarter-Phased Transit Curves

TCE 010420279-08 $P=431.543165$ Days $T_0=248.949474$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

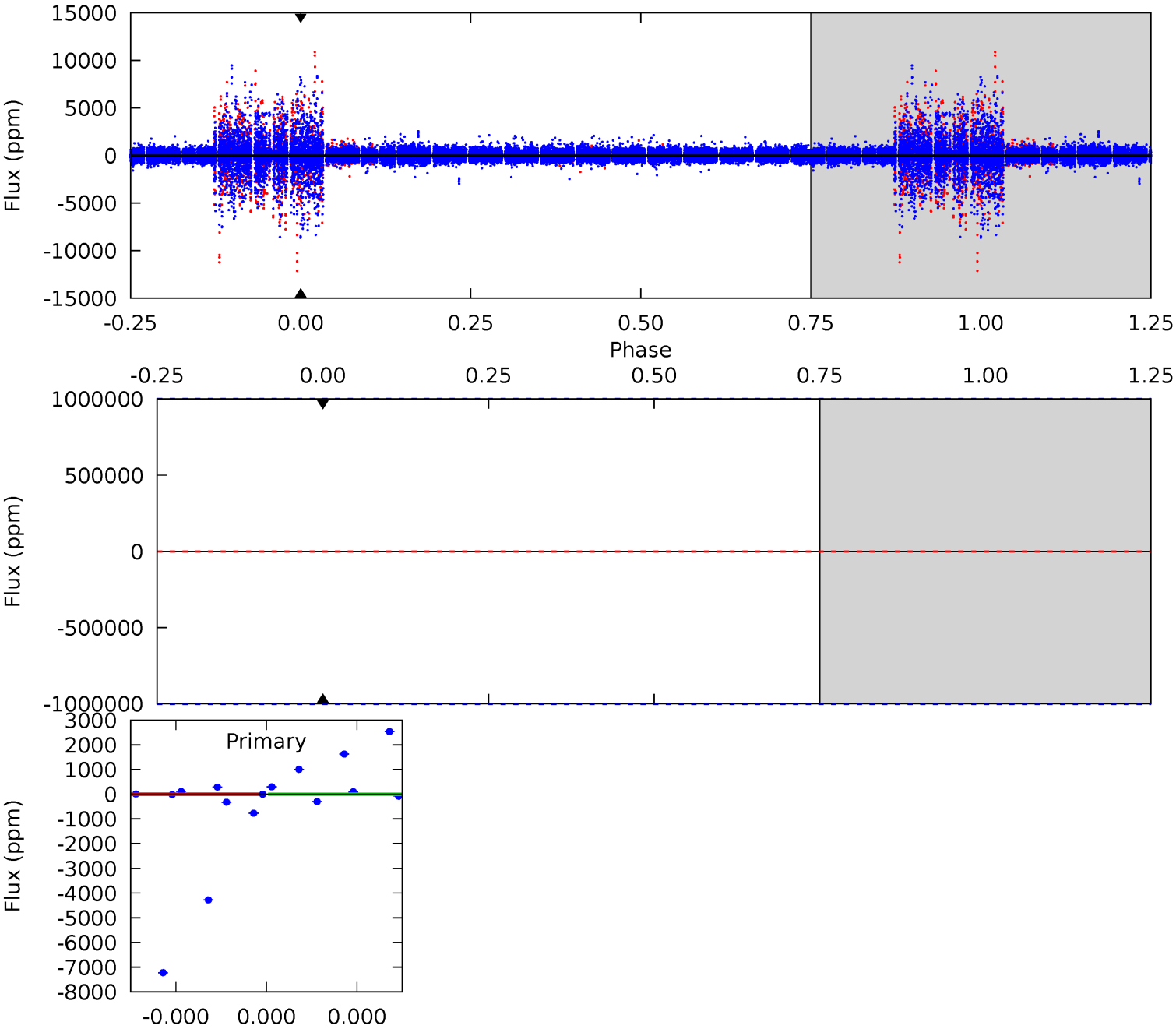
TCE 010420279-08 P=431.543165 Days $T_0=249.121763$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-08, P = 431.543165 Days, E = 248.949474 Days

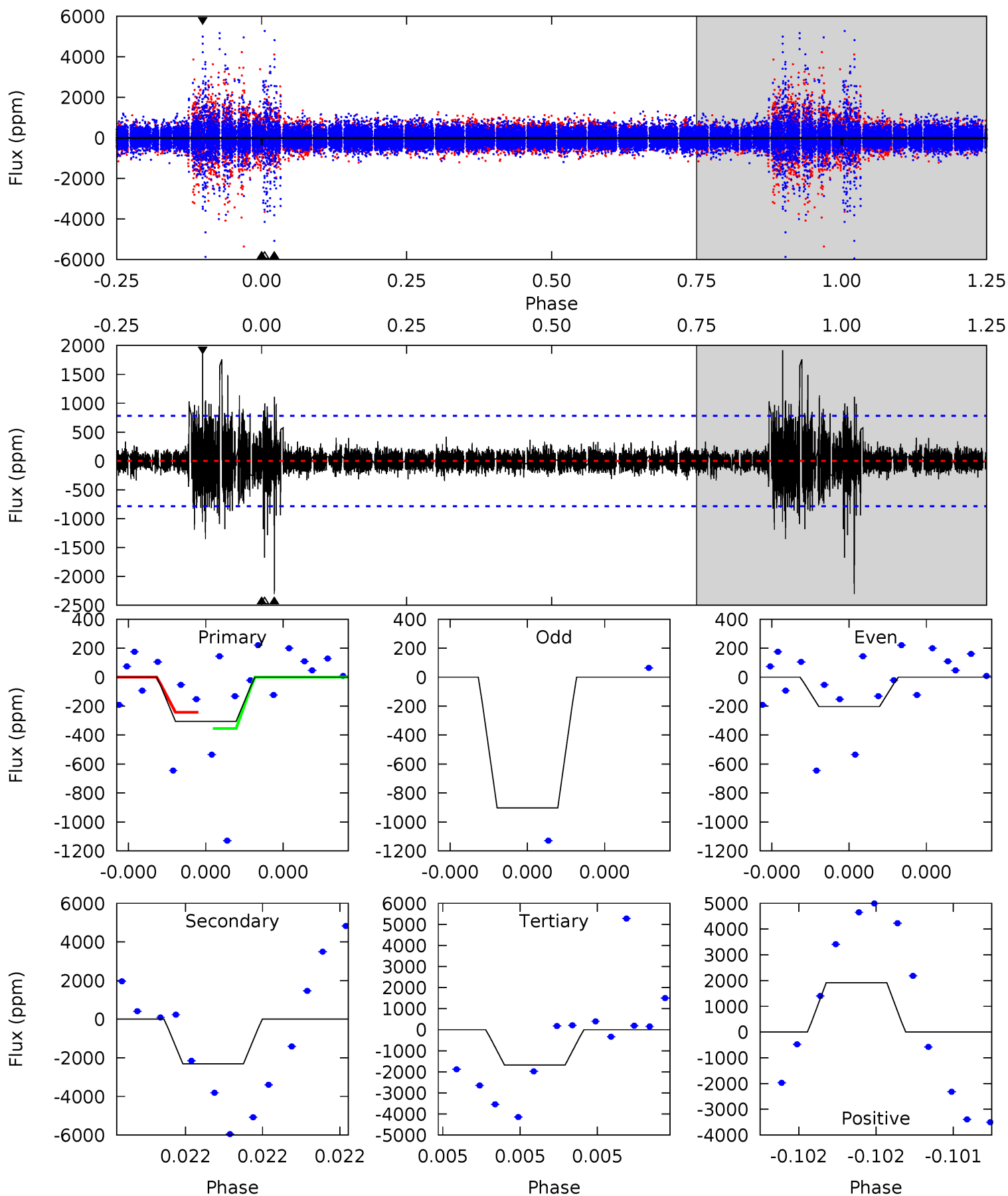
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010420279-08, P = 431.543165 Days, E = 249.121763 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.23	16.9	12.3	14.0	5.74	3.73	1.08	-10.0	-11.8	4.63	2.88	1.84	-1.07	0.45	0.39



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$12.68^{+10.79}_{-7.80}$	352^{+25}_{-21}	-3973^{+17859}_{-9531}	$-7378.507^{+747364.597}_{-711773.168}$
Alt.	-2305 ± 136	$9.20^{+9.63}_{-6.27}$	352^{+25}_{-20}	4733^{+3498}_{-1091}	$18366^{+157405}_{-13935}$

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 $A_{obs} \gg 1.0$

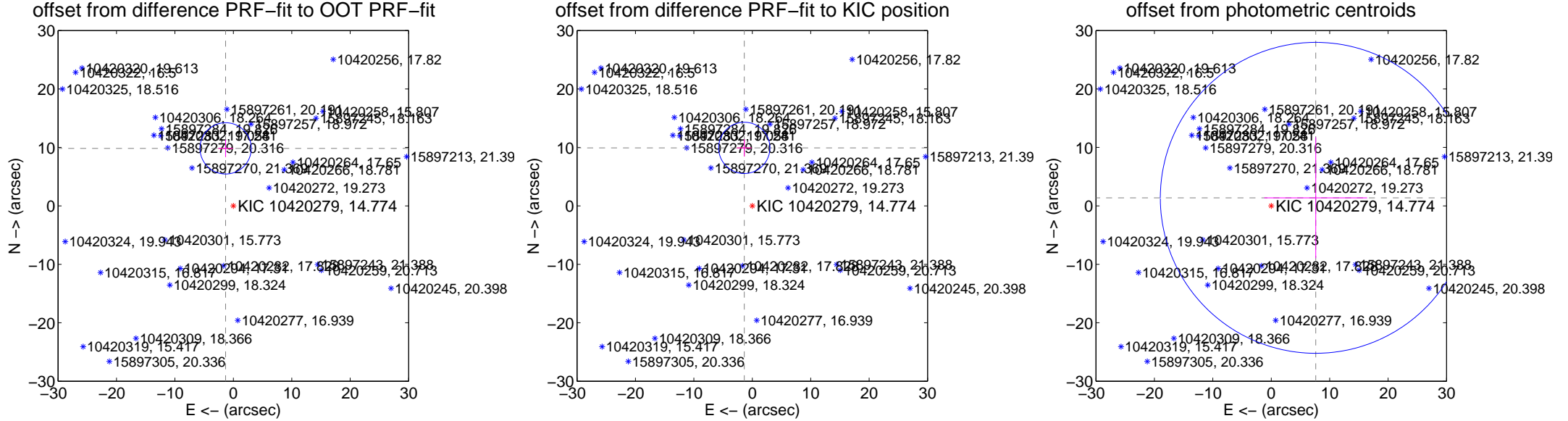
DV Centroid Data

Supplemental centroid analysis for 010420279-08. Kepler magnitude: 14.77. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

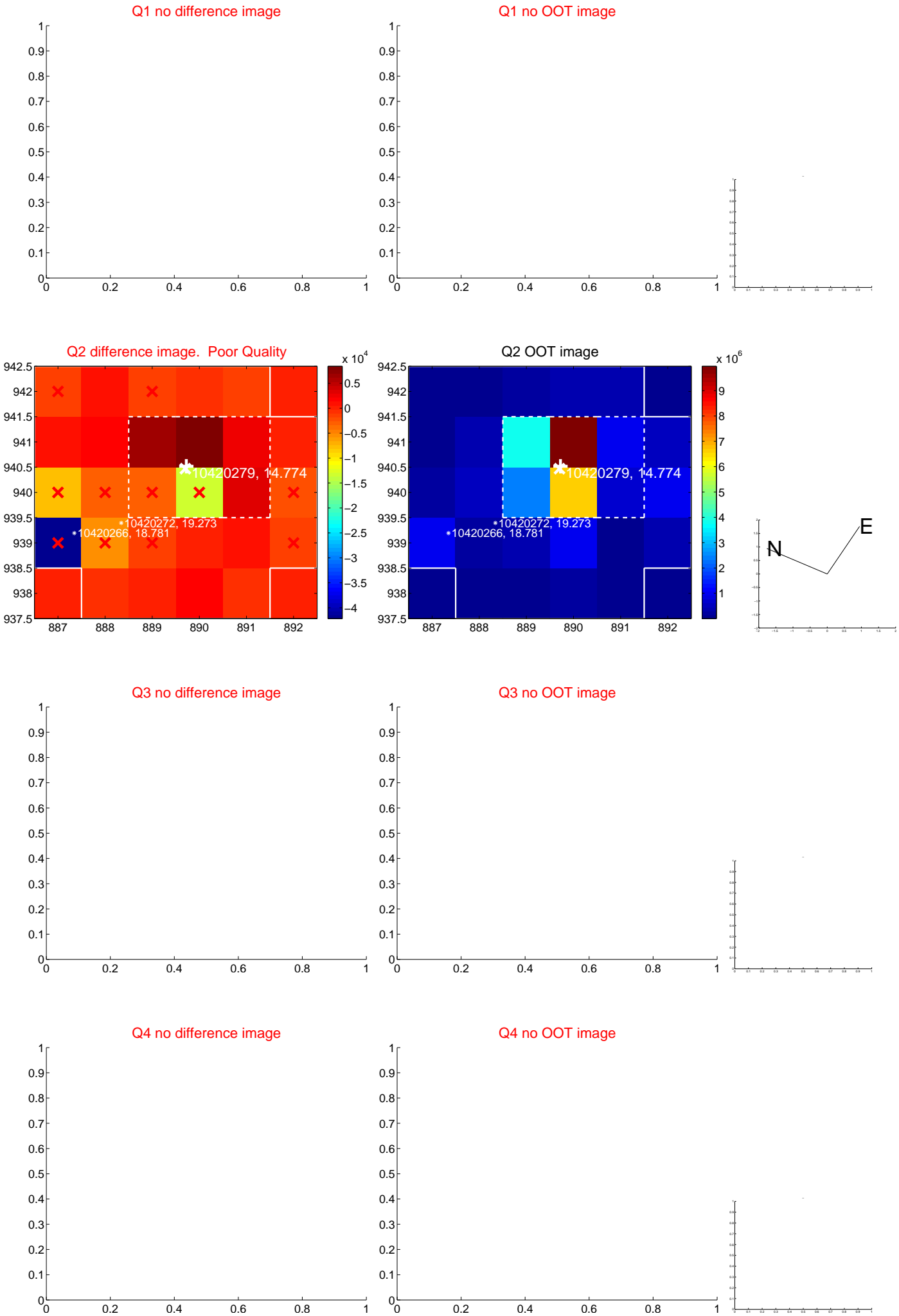
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.924 \pm 1.463	6.79	1.322 \pm 1.256	9.836 \pm 1.466
PRF-fit source offset from KIC position	10.017 \pm 1.462	6.85	1.373 \pm 1.256	9.922 \pm 1.466
photometric centroid source offset	7.74 \pm 8.87	0.87	-7.61 \pm 8.81	1.38 \pm 10.34



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

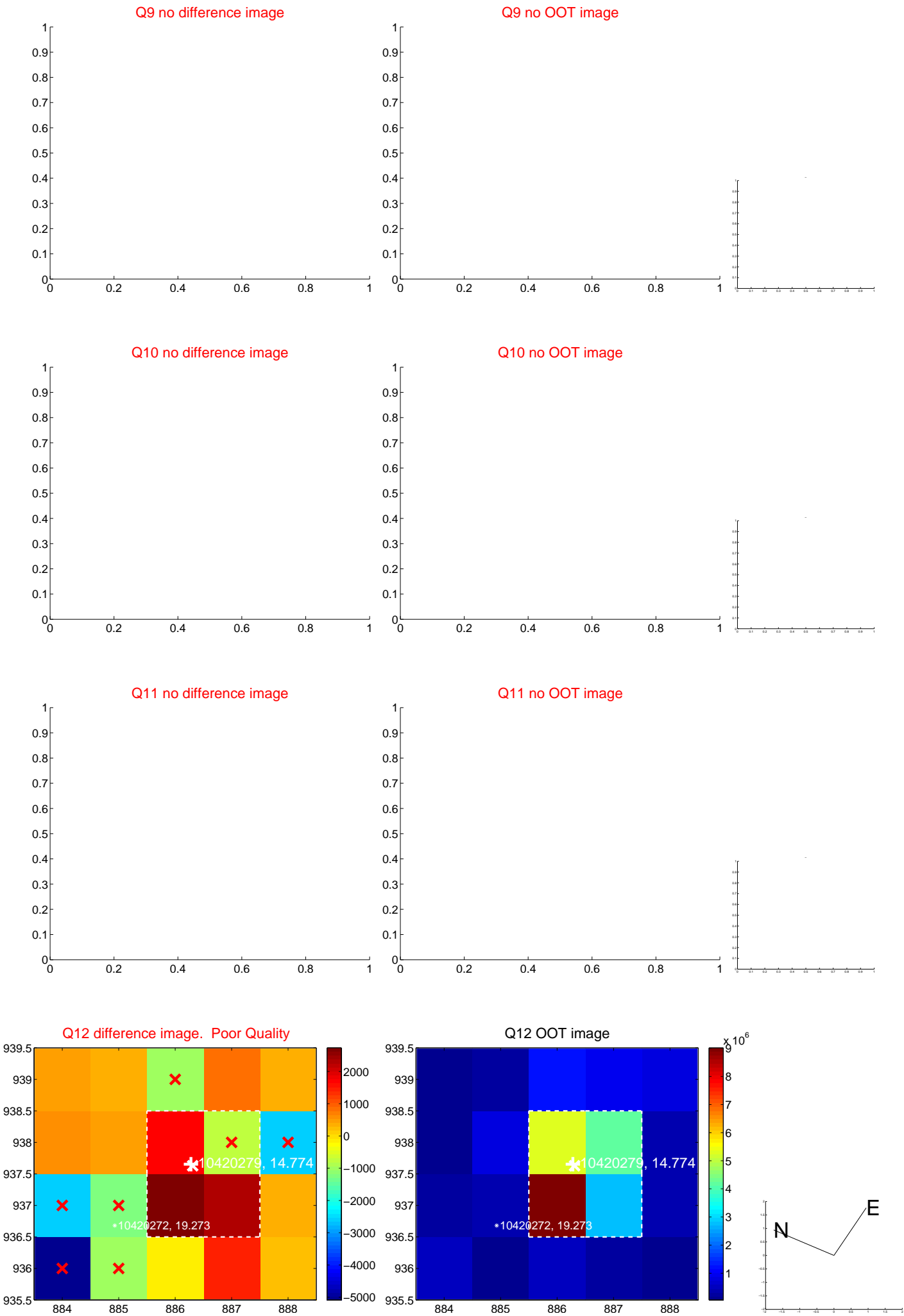
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



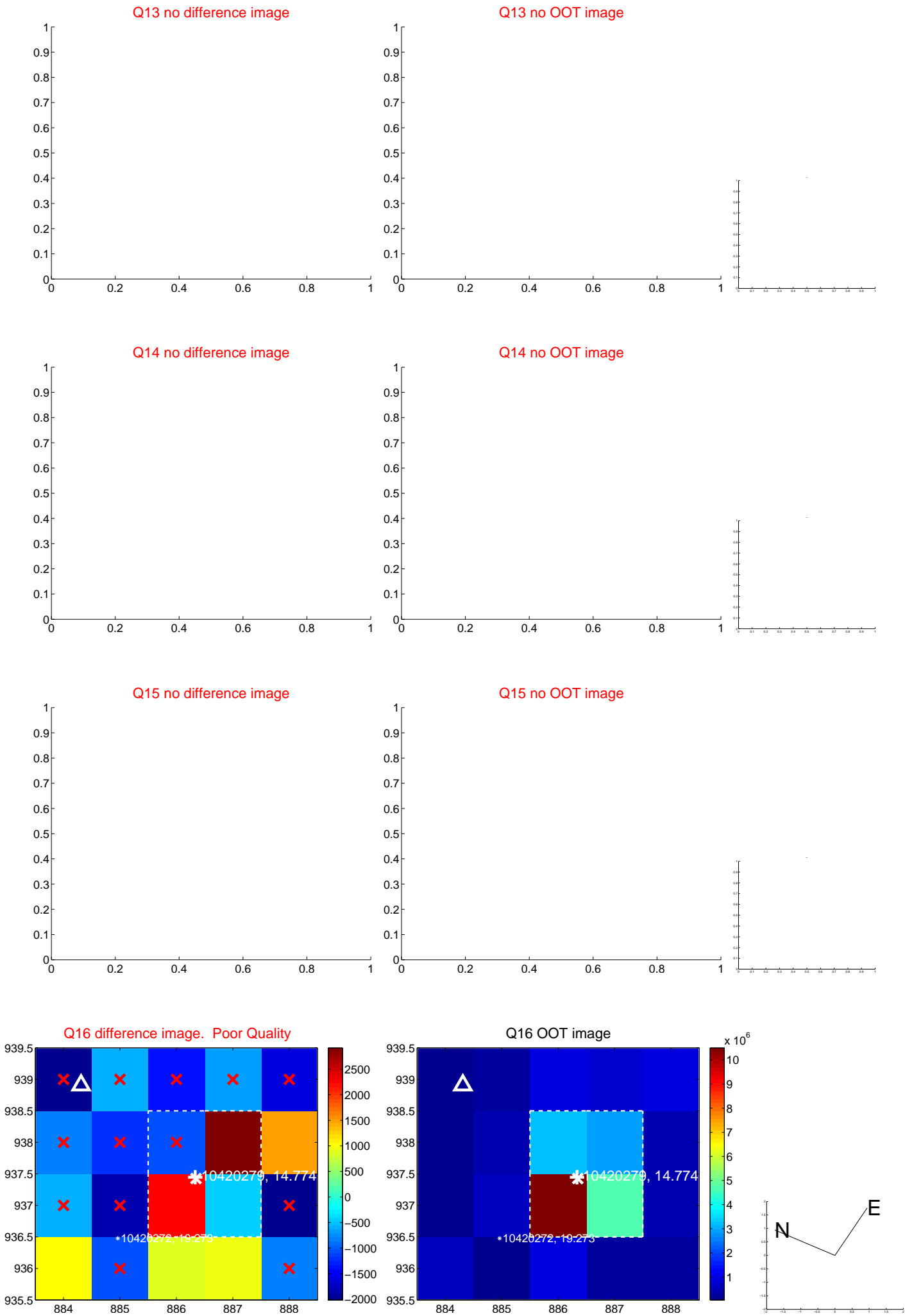
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



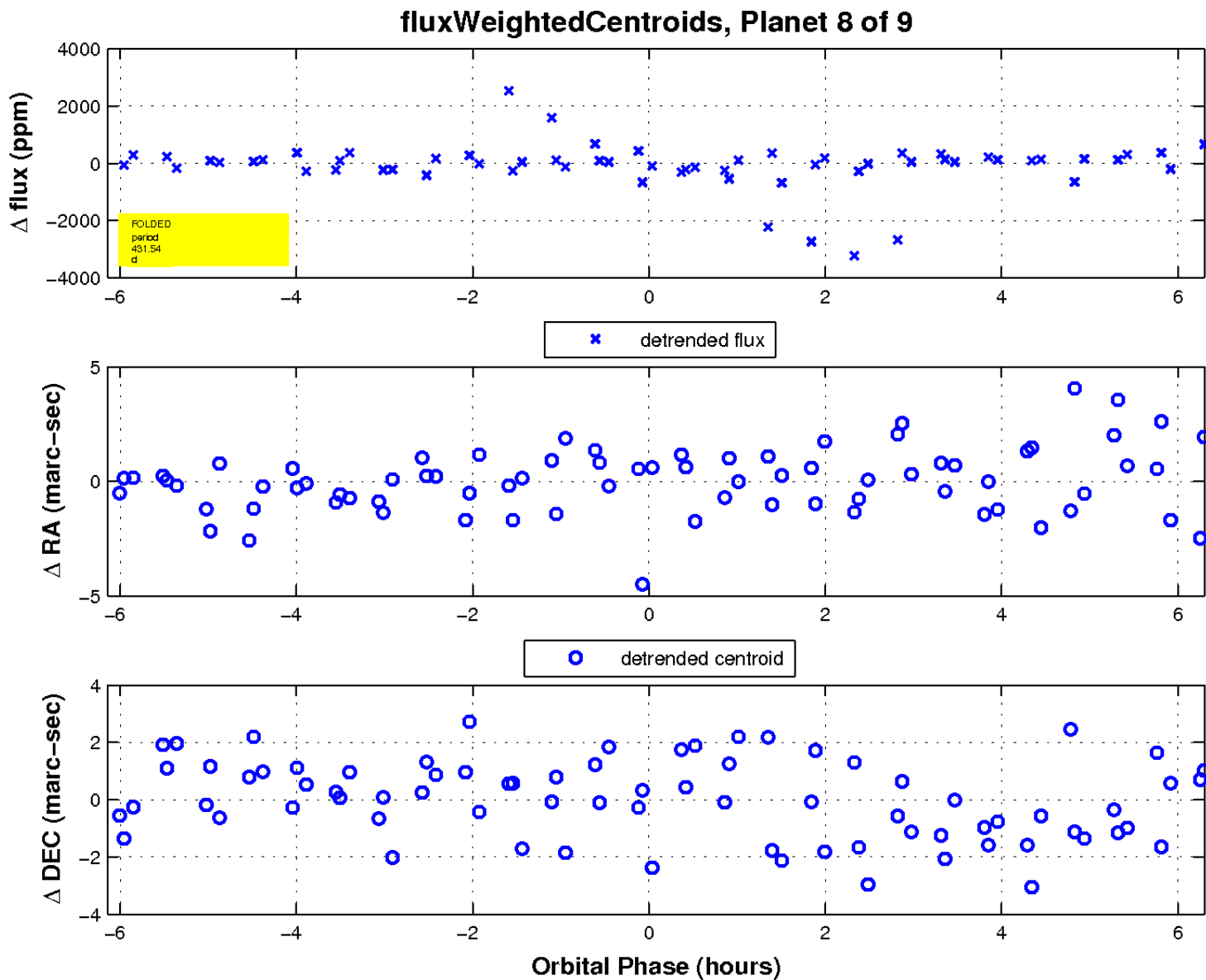
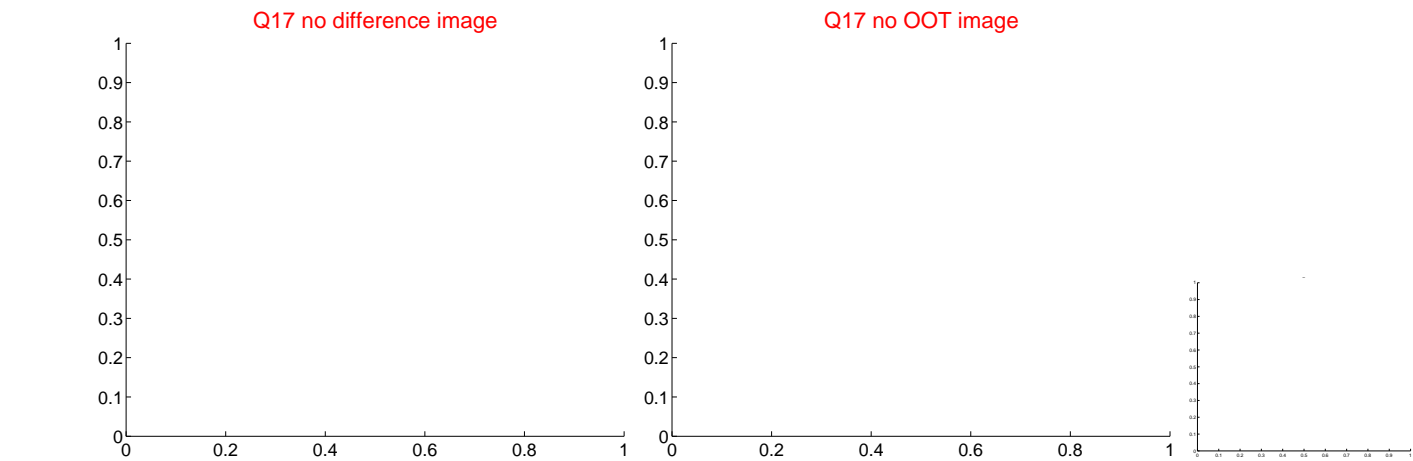
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

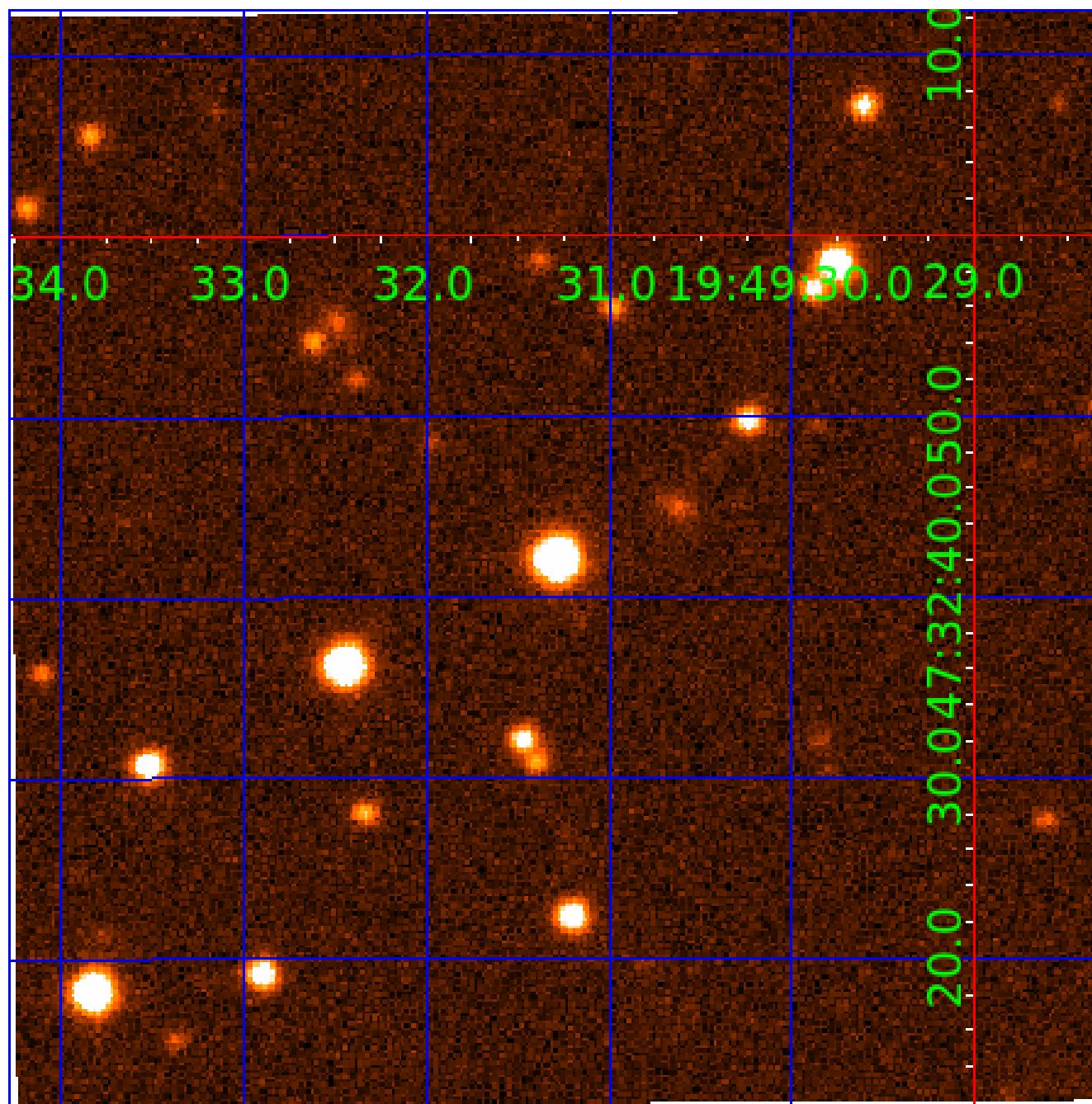


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010420279

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})
010420279-01	OBS	7325.01	45.434136	159.862558	431292.0	9.000	14578.2	-1.0	1.08	5731	58.93	18.49
010420279-02	OBS	No	45.433665	172.936631	493239.9	3.500	11170.9	-1.0	1.08	5731	58.93	18.49
010420279-03	OBS	No	22.716672	150.473338	33847.2	15.000	1314.7	-1.0	1.08	5731	19.67	46.59
010420279-04	OBS	No	273.332949	161.114000	347.3	6.594	133.9	5.5	1.08	5731	1.99	1.69
010420279-06	OBS	No	262.707470	157.808986	7489.6	15.000	126.9	-1.0	1.08	5731	9.24	1.78
010420279-07	OBS	No	45.437411	161.936565	6459.9	12.500	112.4	-1.0	1.08	5731	8.58	18.49
010420279-08	OBS	No	431.543165	248.949474	7868.6	7.500	109.1	-1.0	1.08	5731	9.47	0.92
010420279-09	OBS	No	45.440648	155.482698	3404.1	72.226	96.8	81.0	1.08	5731	11.83	18.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010420279-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_NOFITS
010420279-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_NOFITS
010420279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_TRACKER—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_FEW_DIFFS
010420279-06	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010420279-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS
010420279-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
010420279-09	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—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.

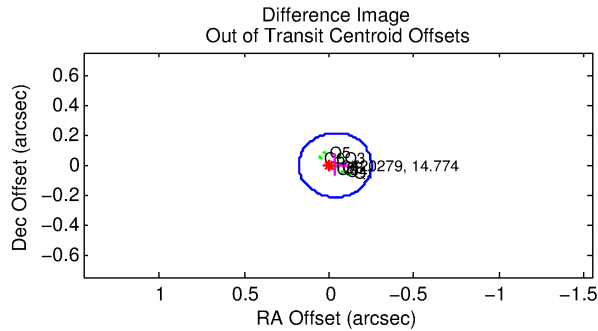
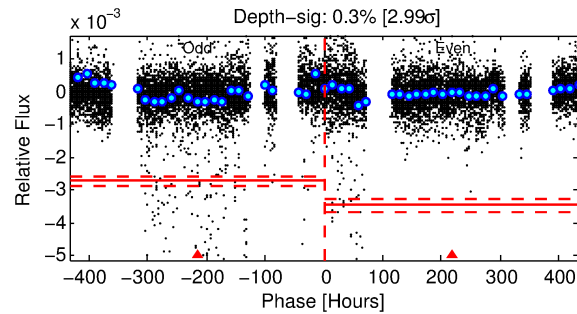
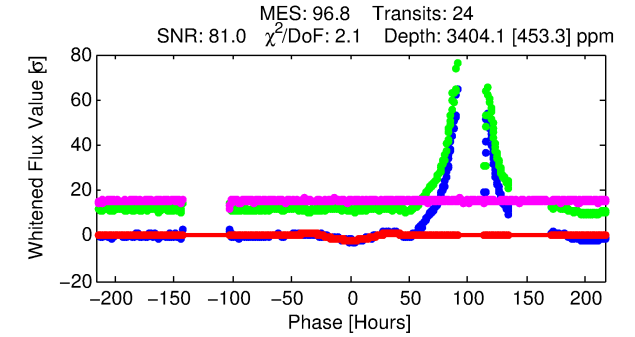
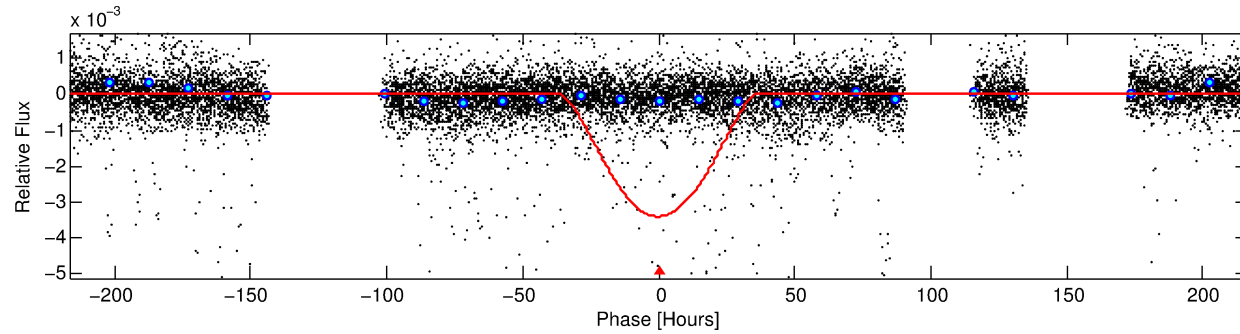
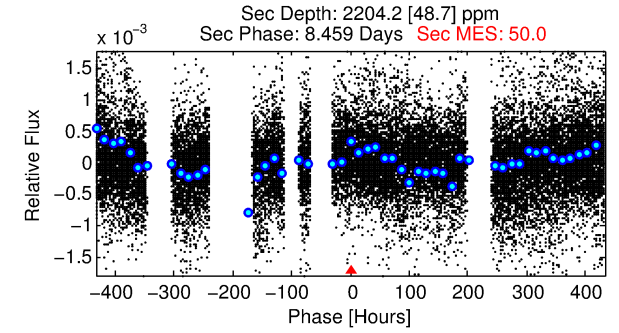
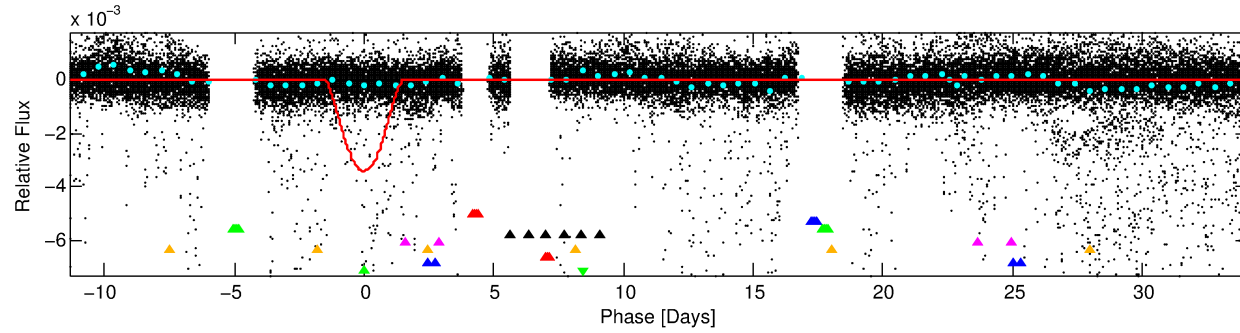
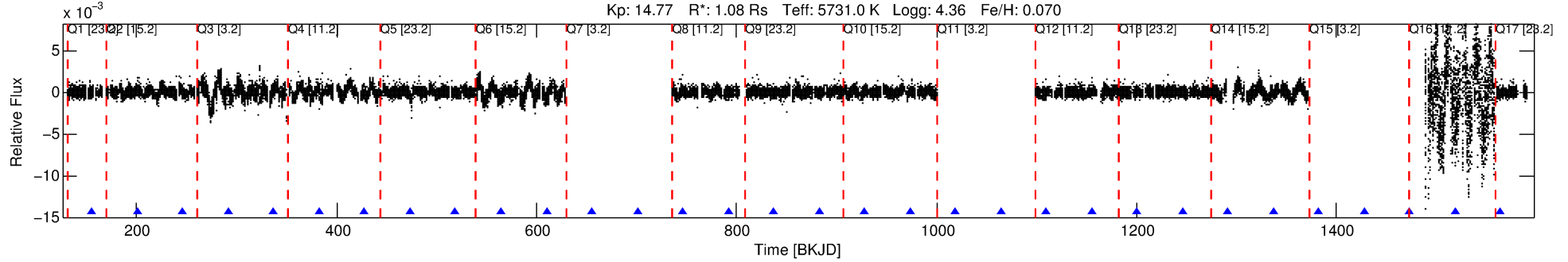
Ephemeris Match Information For 010420279-09

No Significant Match Found

DV One-Page Summary

KIC: 10420279 Candidate: 9 of 9 Period: 45.441 d
KOI: K07325 Corr: No Ephemeris Match

Kp: 14.77 R*: 1.08 Rs Teff: 5731.0 K Logg: 4.36 Fe/H: 0.070



DV Fit Results:

Period = 45.44065 [0.00130] d
Epoch = 155.4827 [0.0213] BKJD
Rp/R* = 0.1004 [0.0299]
a/R* = 2.44 [0.10]
b = 1.00 [0.03]
Seff = 18.49 [6.85]
Teq = 529 [49] K
Rp = 11.83 [4.88] Re
a = 0.2470 [0.0595] AU
Ag = 528.34 [365.11] [1.44σ]
Teffp = 3919 [595] K [5.68σ]

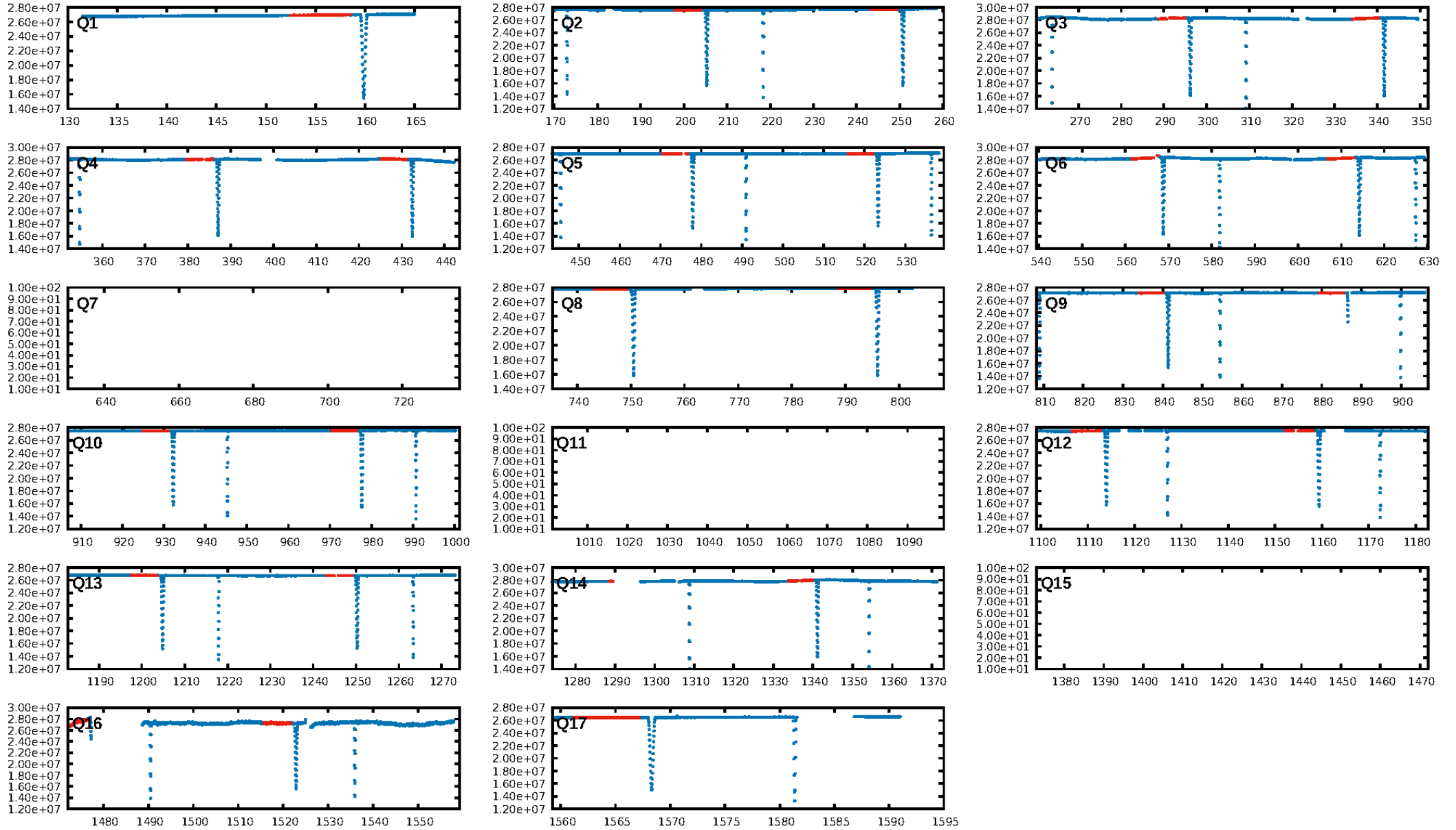
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [70.69σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 0.9119
Centroid-sig: N/A
Centroid-so: 0.222 arcsec [4.56σ]
OotOffset-rm: 0.035 arcsec [0.49σ]
KicOffset-rm: 0.069 arcsec [0.91σ]
OotOffset-st: 1/1/2/3 [7]
KicOffset-st: 1/1/2/3 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/7]

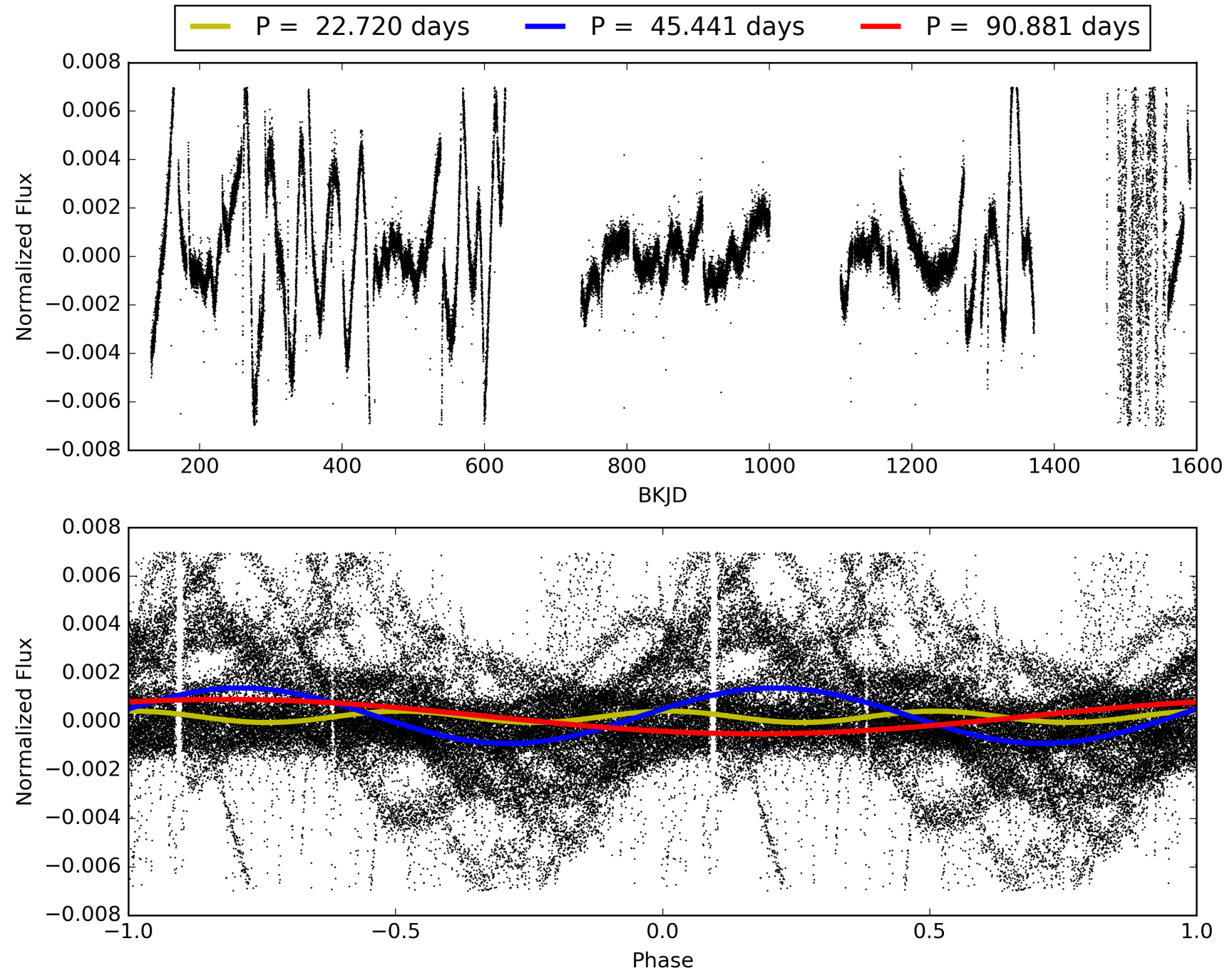
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:40:51 Z

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

TCE 010420279-09, PDC Light Curves

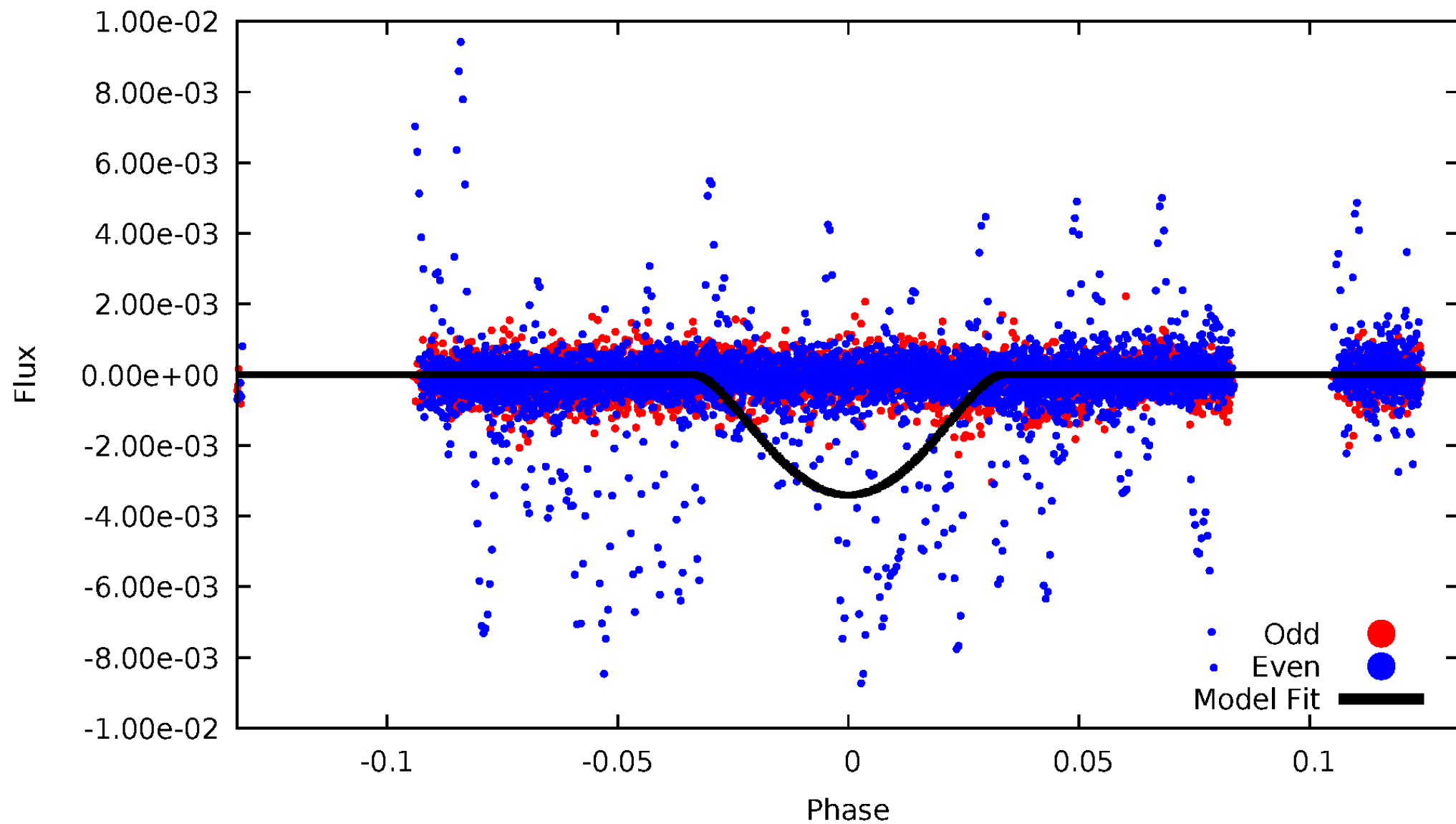


TCE 010420279-09



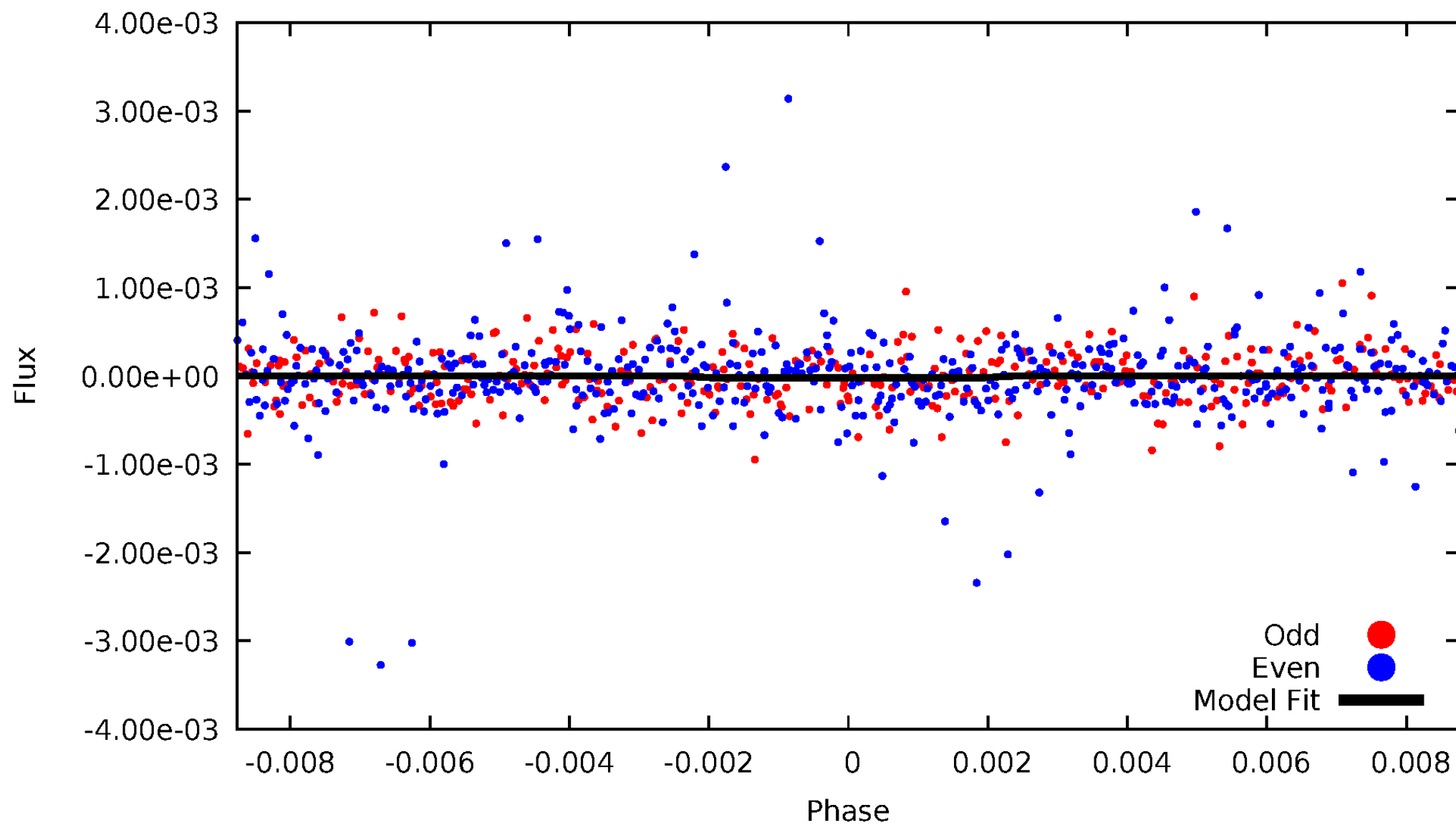
DV Odd/Even

TCE 010420279-09



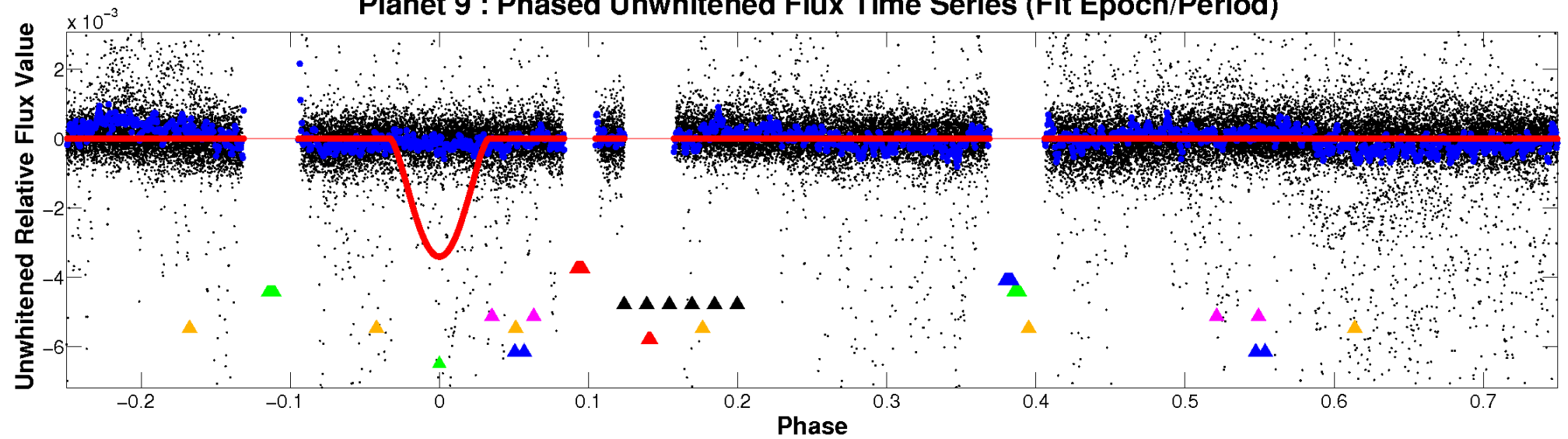
ALT Odd/Even

TCE 010420279-09

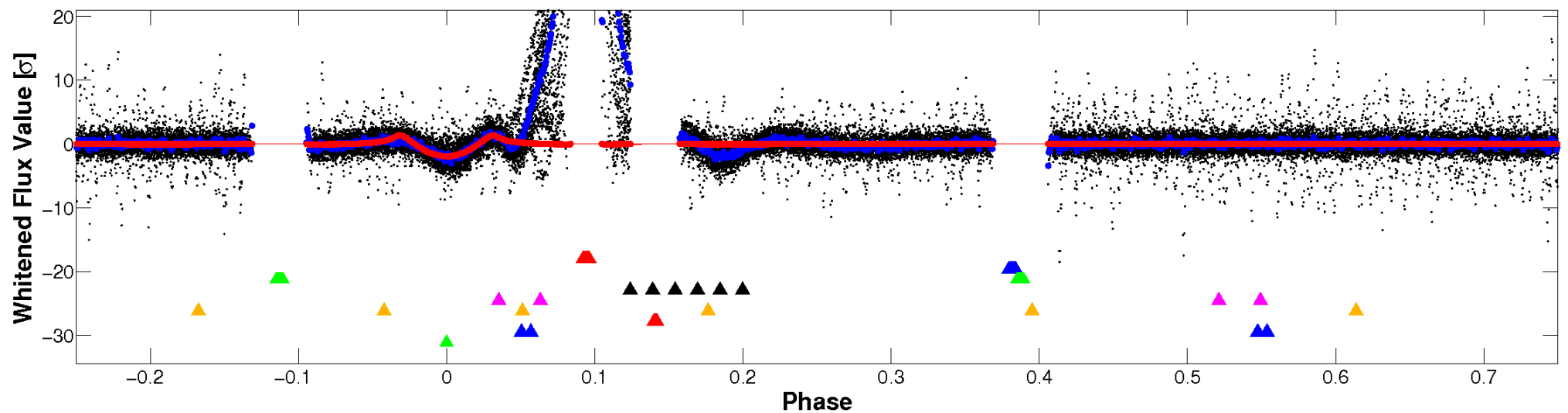


Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

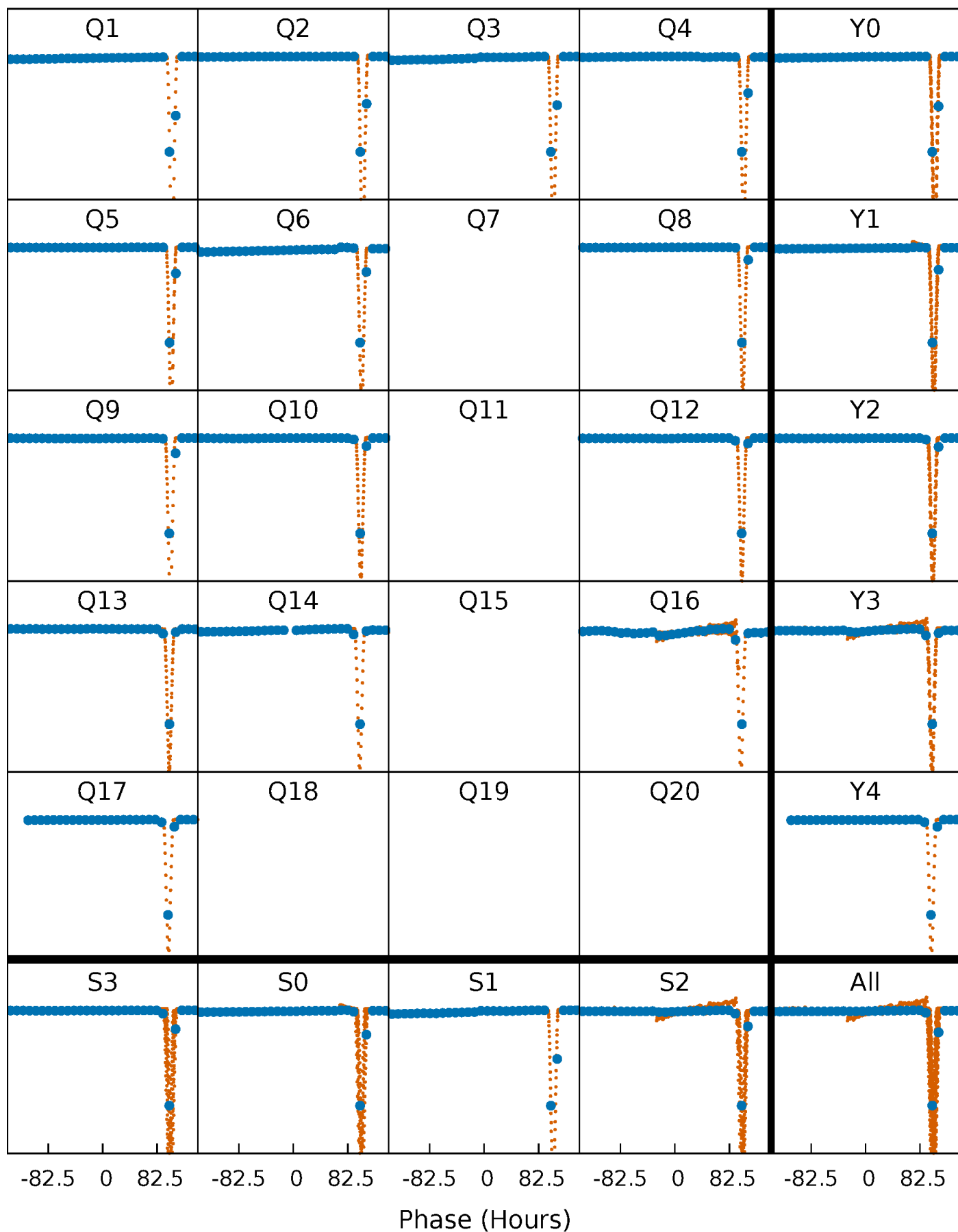


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



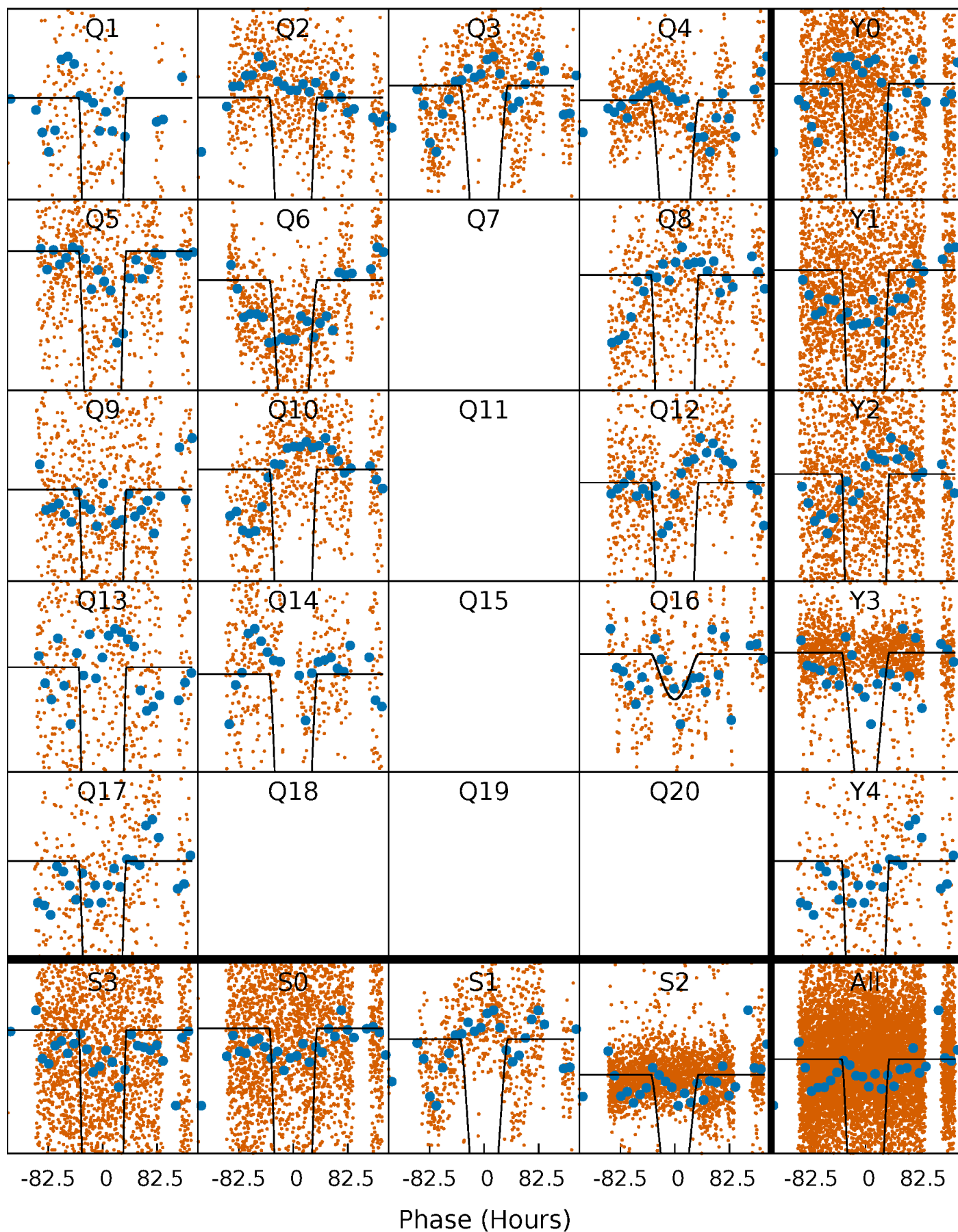
PDC Quarter-Phased Transit Curves

TCE 010420279-09 $P = 45.440648$ Days $T_0 = 155.482698$ (BKJD)



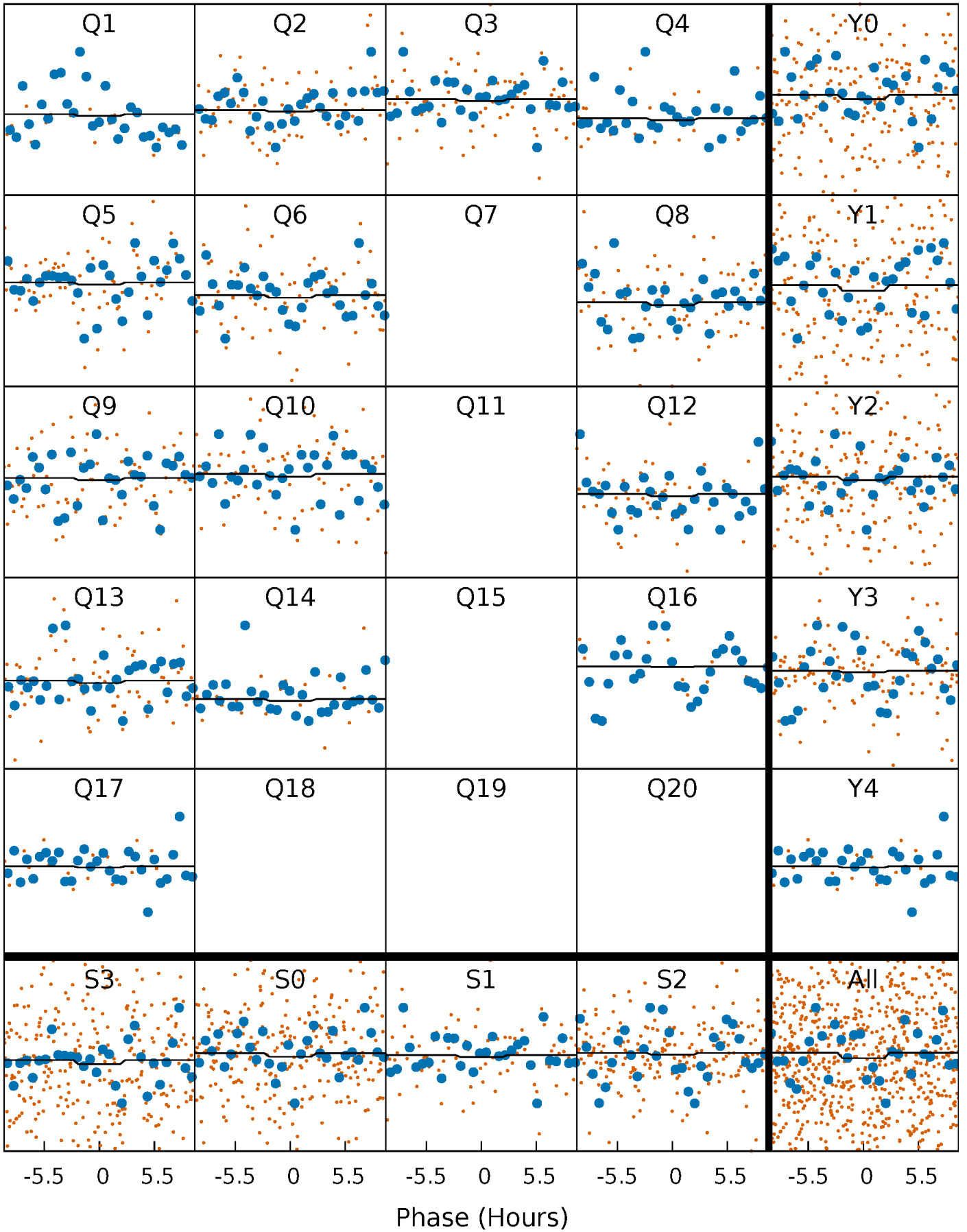
DV Quarter-Phased Transit Curves

TCE 010420279-09 $P = 45.440648$ Days $T_0 = 155.482698$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

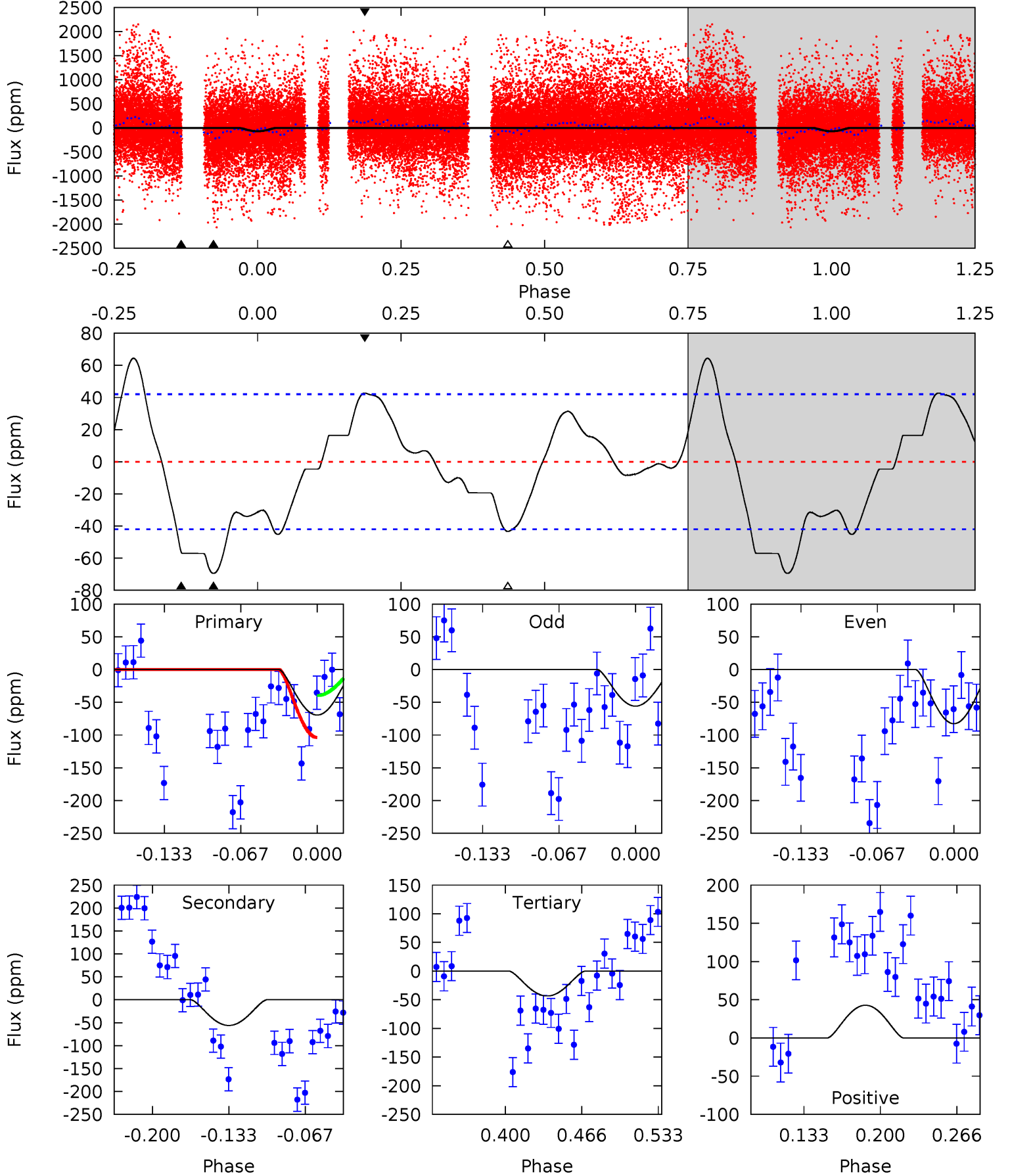
TCE 010420279-09 P= 45.453092 Days $T_0=156.500481$ (BKJD)



DV Model-Shift Uniqueness Test

010420279-09, P = 45.440648 Days, E = 110.042050 Days

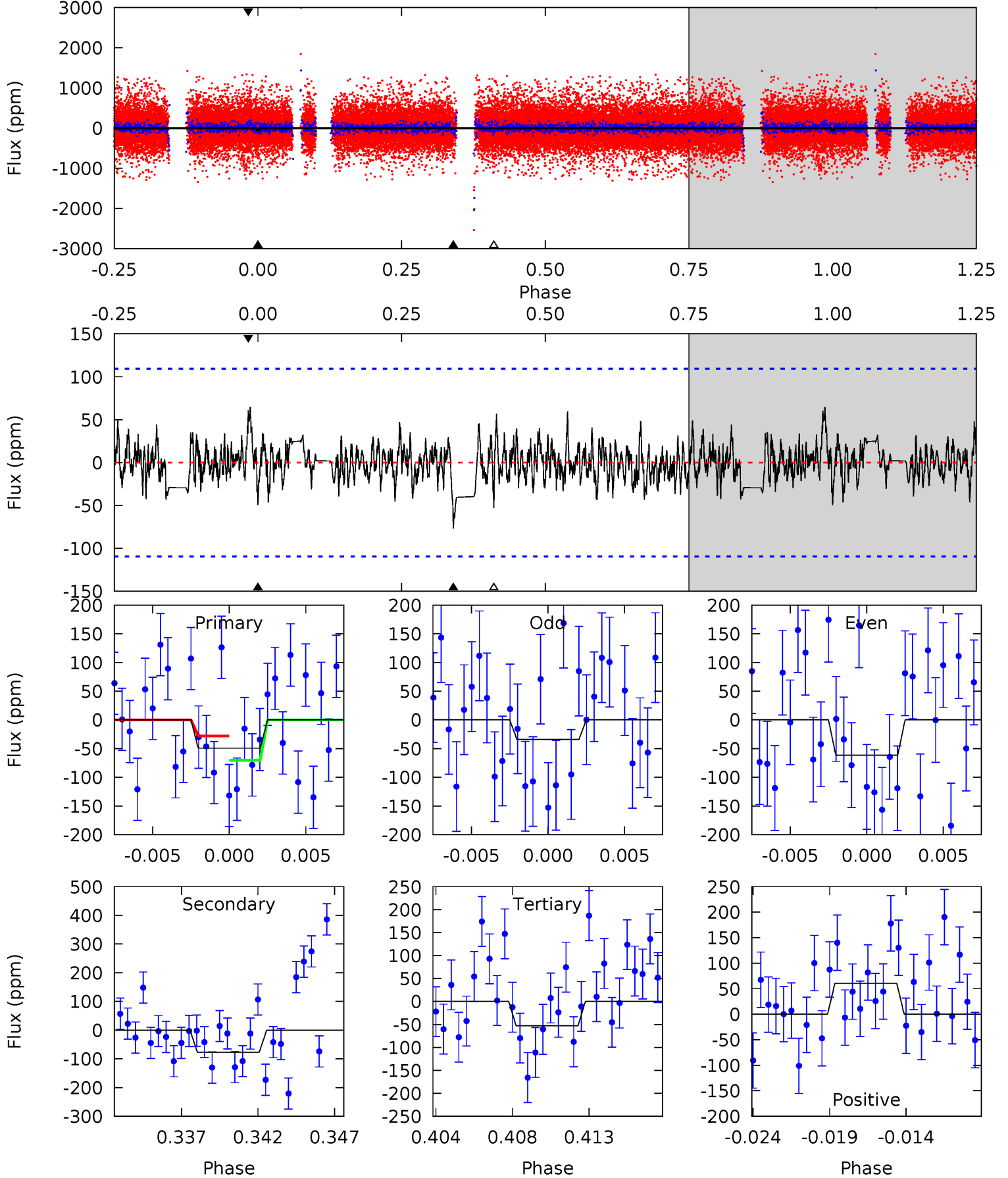
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.69	6.20	4.81	4.74	4.65	1.83	2.92	2.88	2.95	1.39	1.46	1.49	84.0	0.48	3.59



Alt Model-Shift Uniqueness Test

010420279-09, P = 45.453092 Days, E = 111.047389 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.33	3.63	2.50	2.86	5.17	2.82	0.82	-0.17	-0.52	1.13	0.77	0.65	0.99	0.46	1.01



Stellar Parameters For KIC 010420279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+154}_{-171}	$4.359^{+0.128}_{-0.192}$	$0.070^{+0.250}_{-0.300}$	$1.080^{+0.309}_{-0.190}$	$0.972^{+0.122}_{-0.100}$	$1.086^{+0.717}_{-0.527}$
	+3%/-3%	+3%/-4%	+357%/-429%	+29%/-18%	+13%/-10%	+66%/-49%
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 010420279-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-56 ± 9	$12.13^{+4.11}_{-3.97}$	743^{+56}_{-44}	2430^{+245}_{-169}	13^{+17}_{-5}
Alt.	-77 ± 21	$2.81^{+2.51}_{-1.97}$	742^{+59}_{-40}	3873^{+2379}_{-757}	318^{+3255}_{-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 $A_{\text{obs}} \gg 1.0$

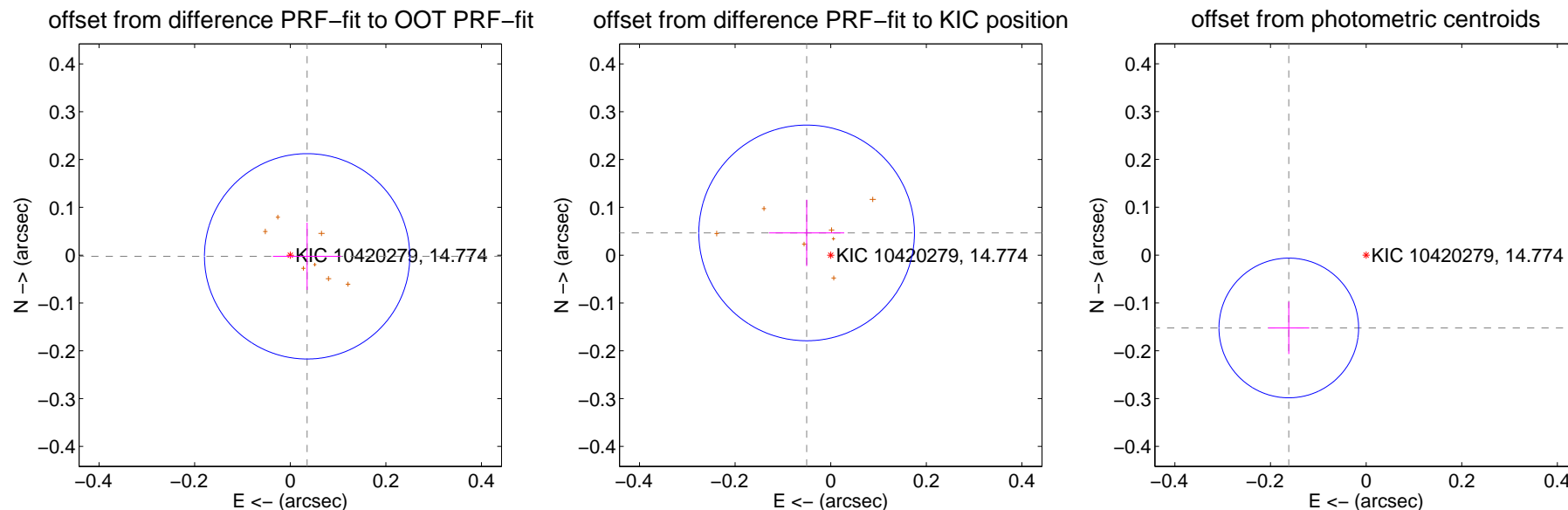
DV Centroid Data

Supplemental centroid analysis for 010420279-09. Kepler magnitude: 14.77. Transit SNR 81.02

There are 0 quarters with good PRF difference image offsets

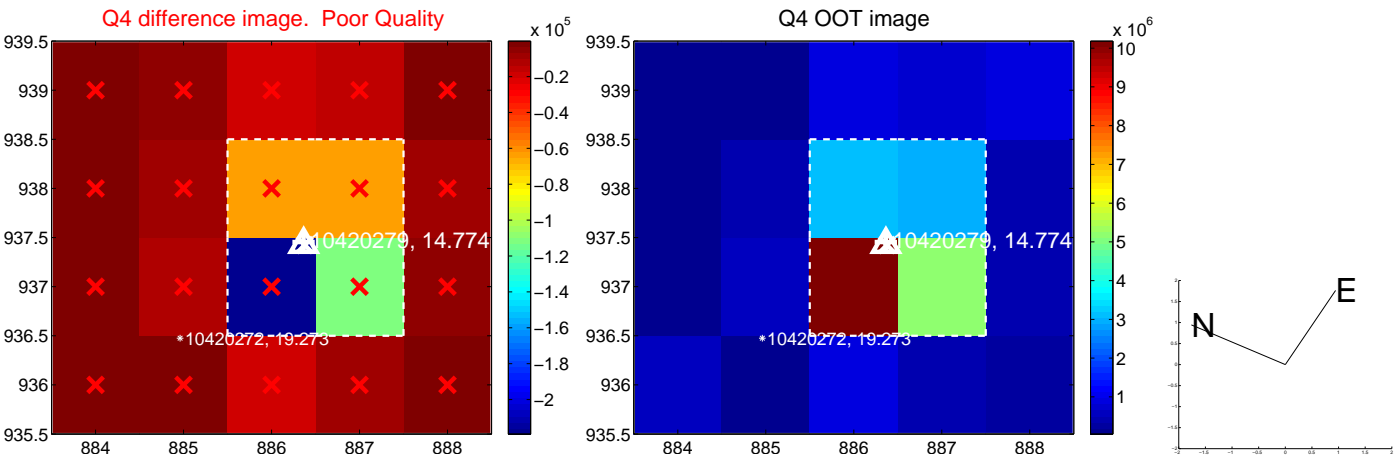
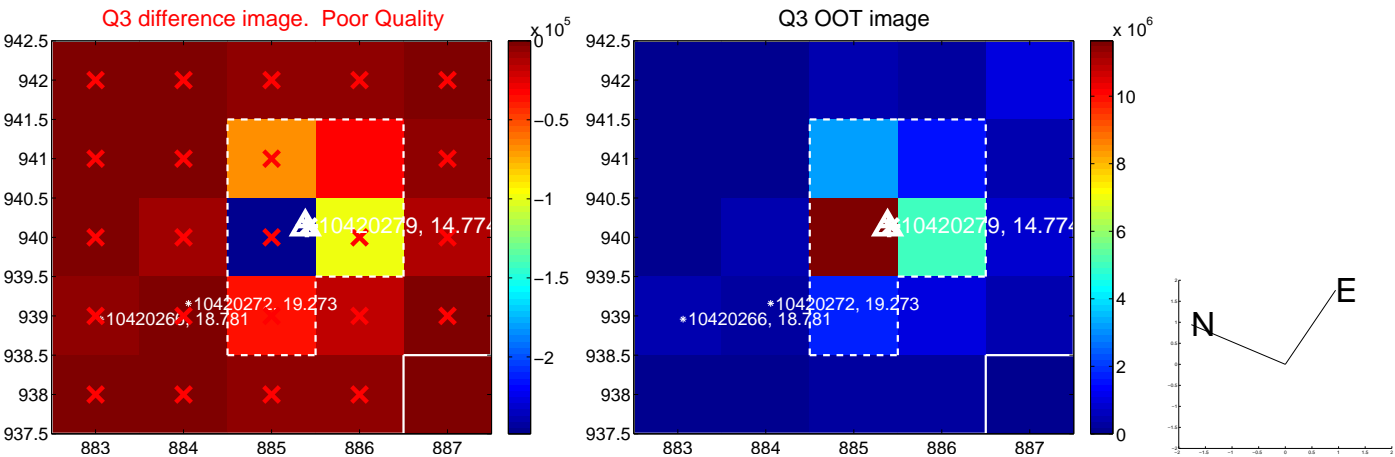
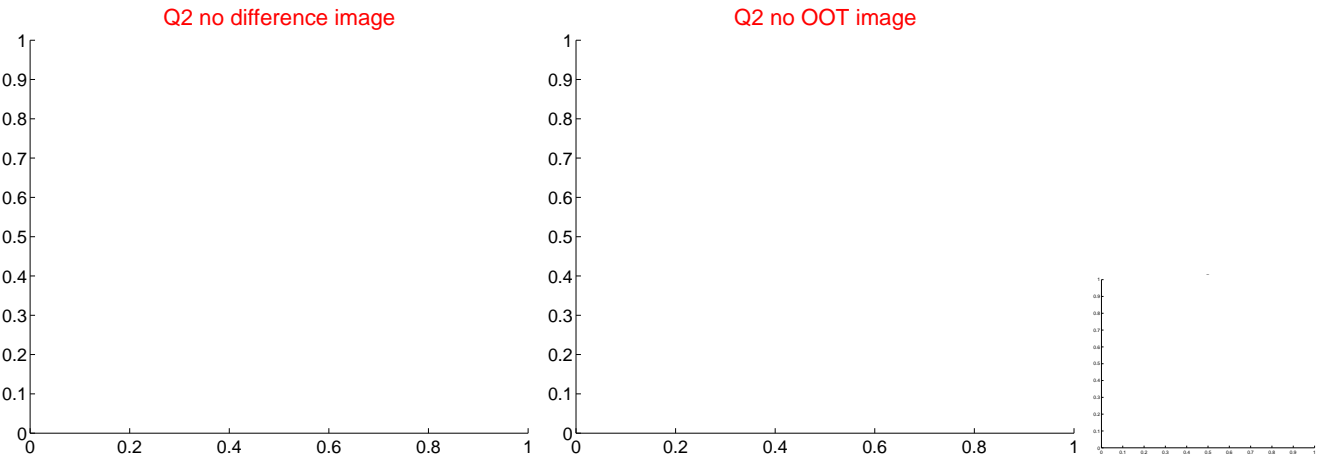
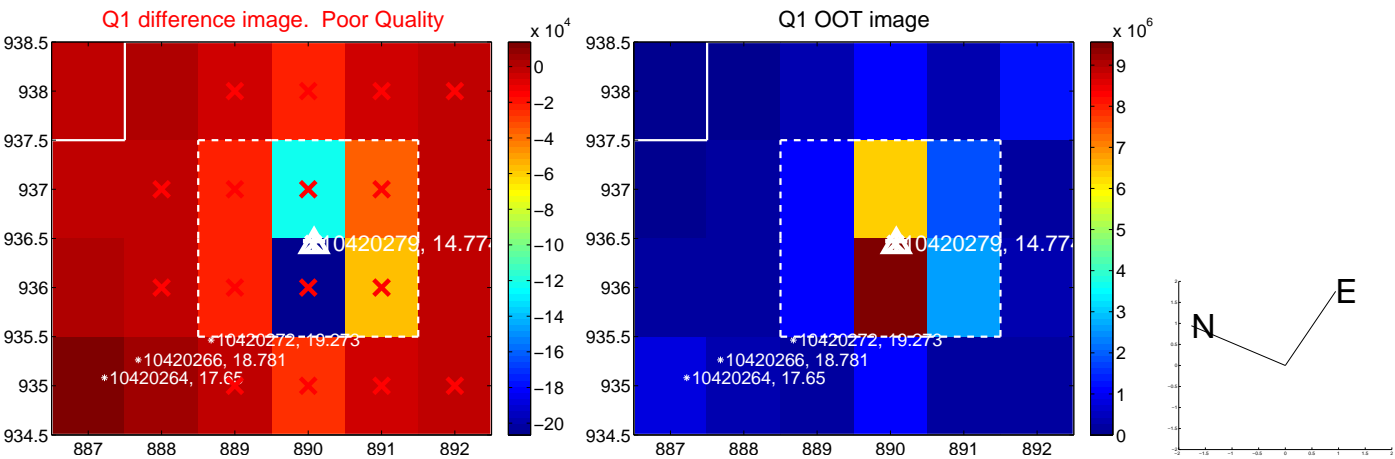
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.035 ± 0.072	0.49	-0.035 ± 0.072	-0.002 ± 0.070
PRF-fit source offset from KIC position	0.069 ± 0.075	0.91	0.050 ± 0.079	0.047 ± 0.069
photometric centroid source offset	0.22 ± 0.05	4.56	0.16 ± 0.04	-0.15 ± 0.05

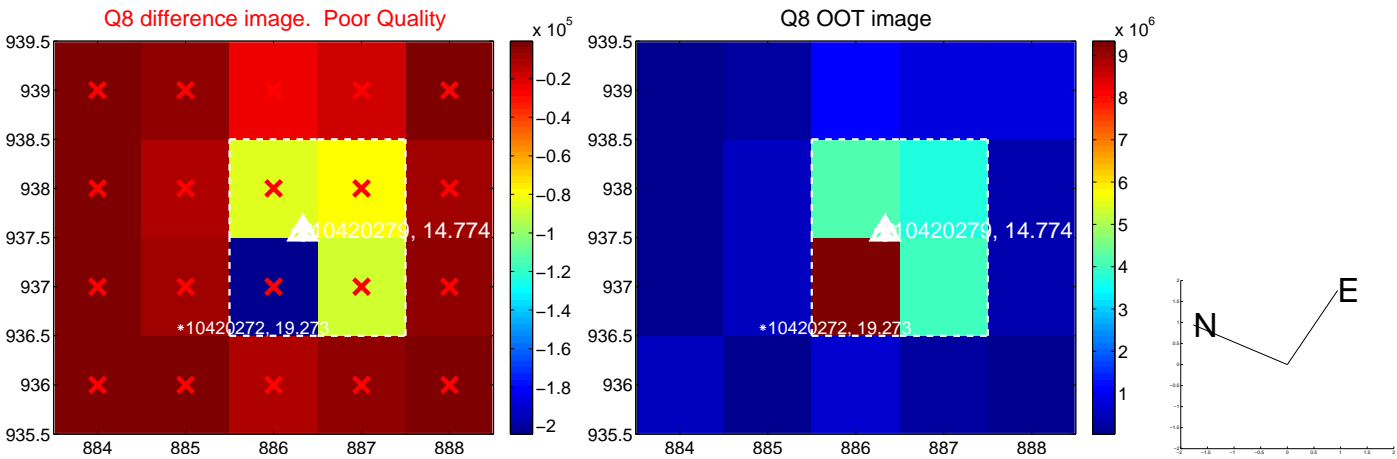
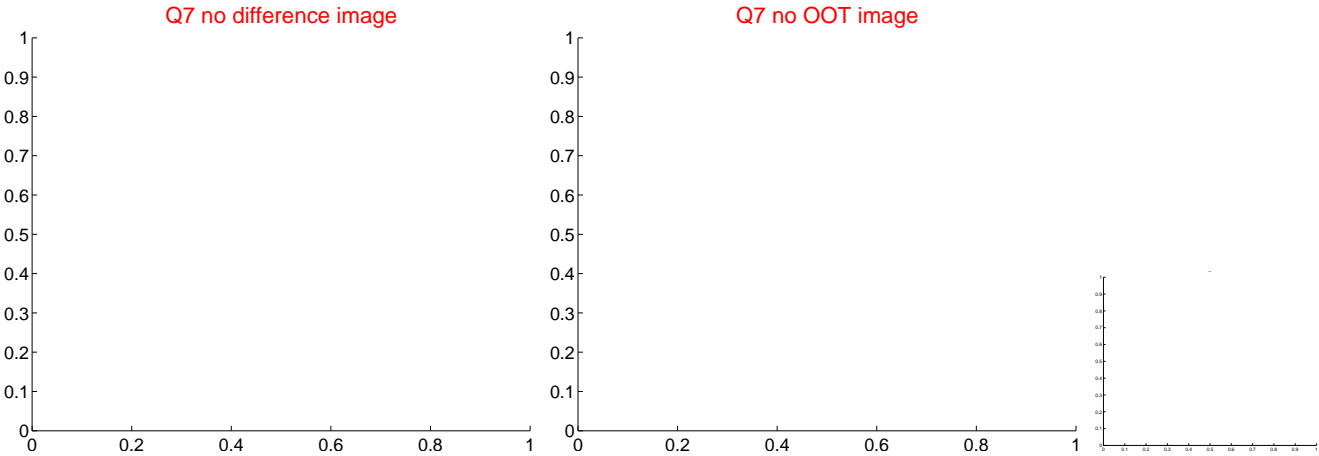
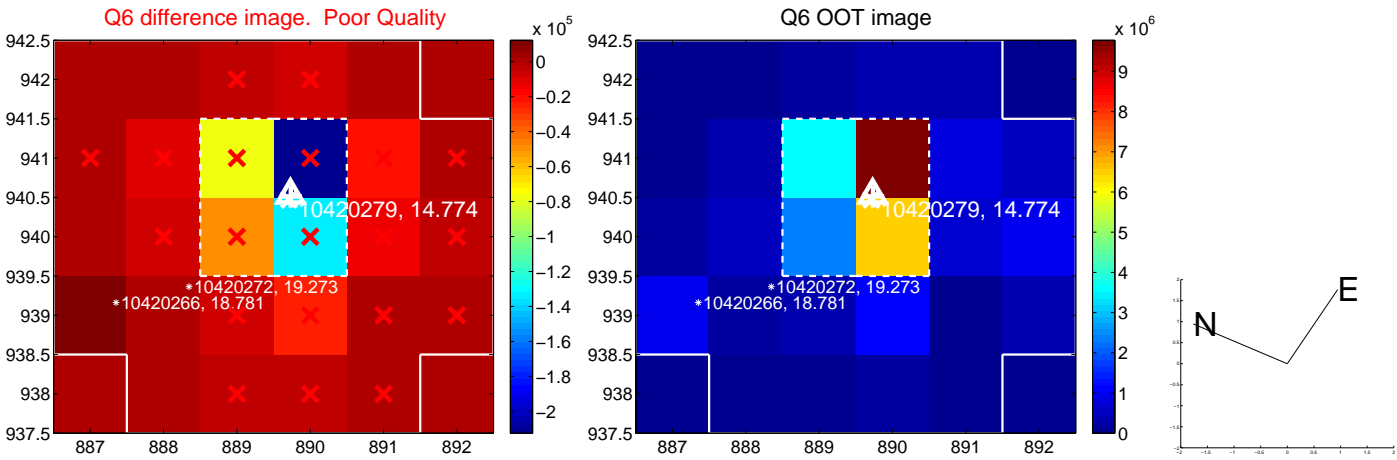
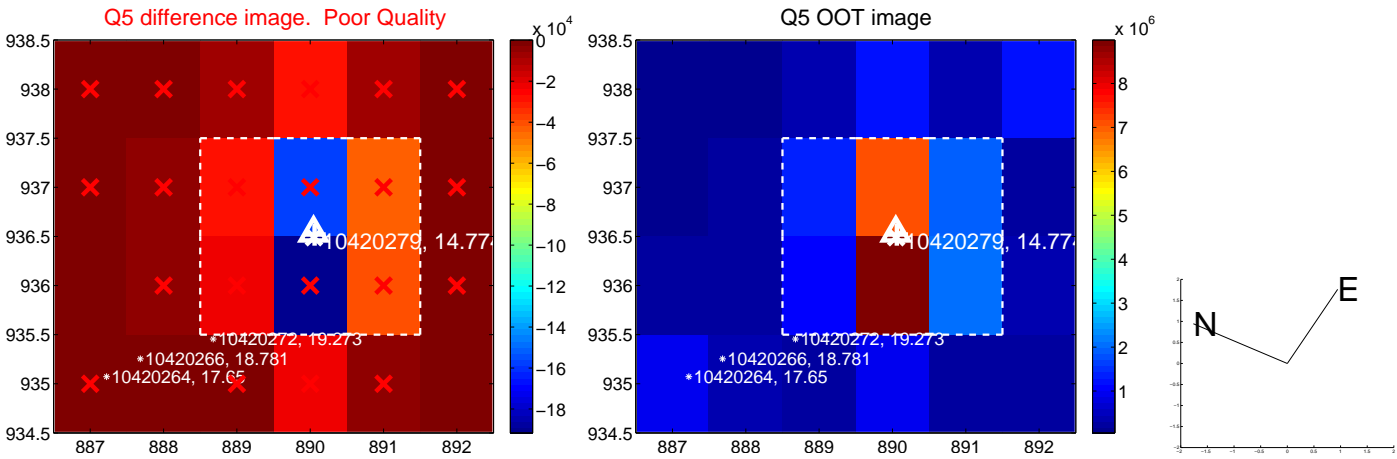


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

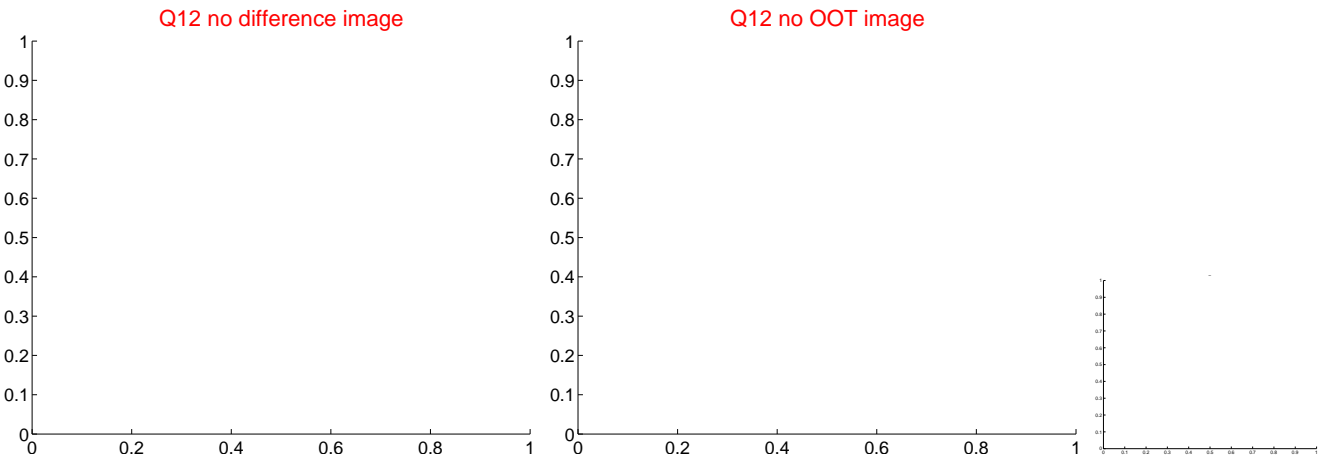
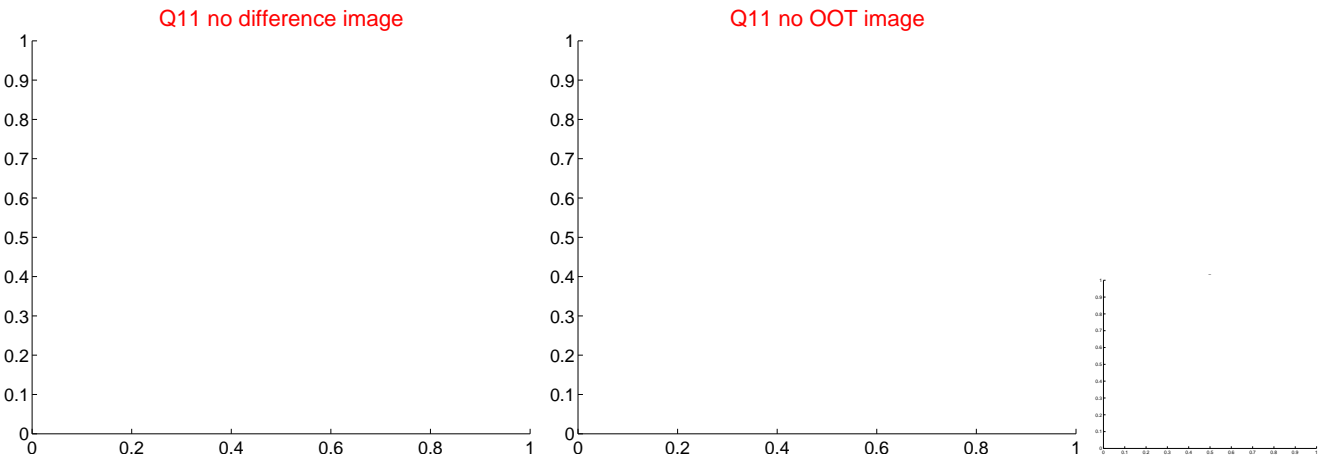
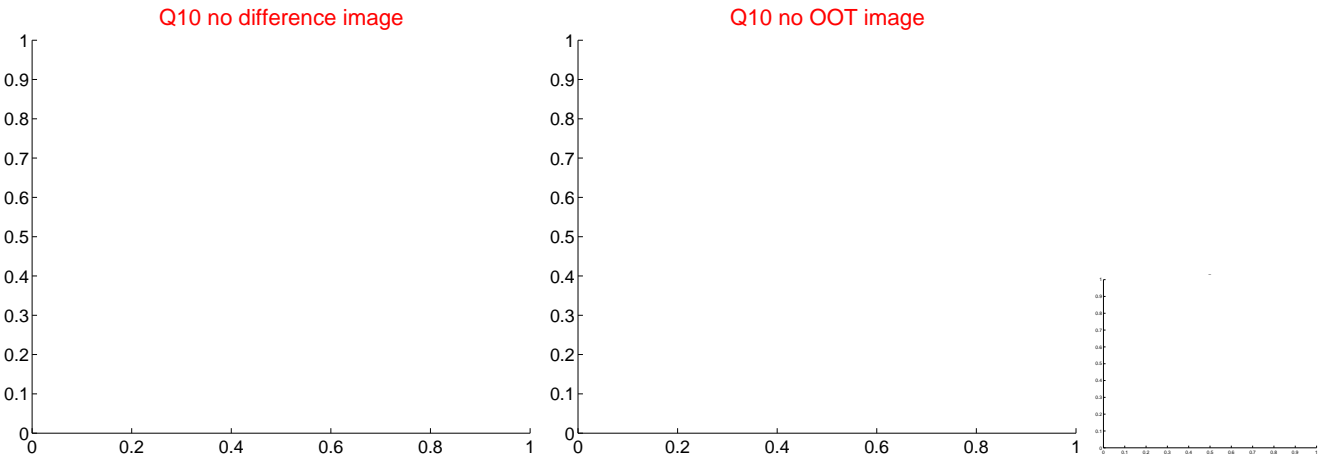
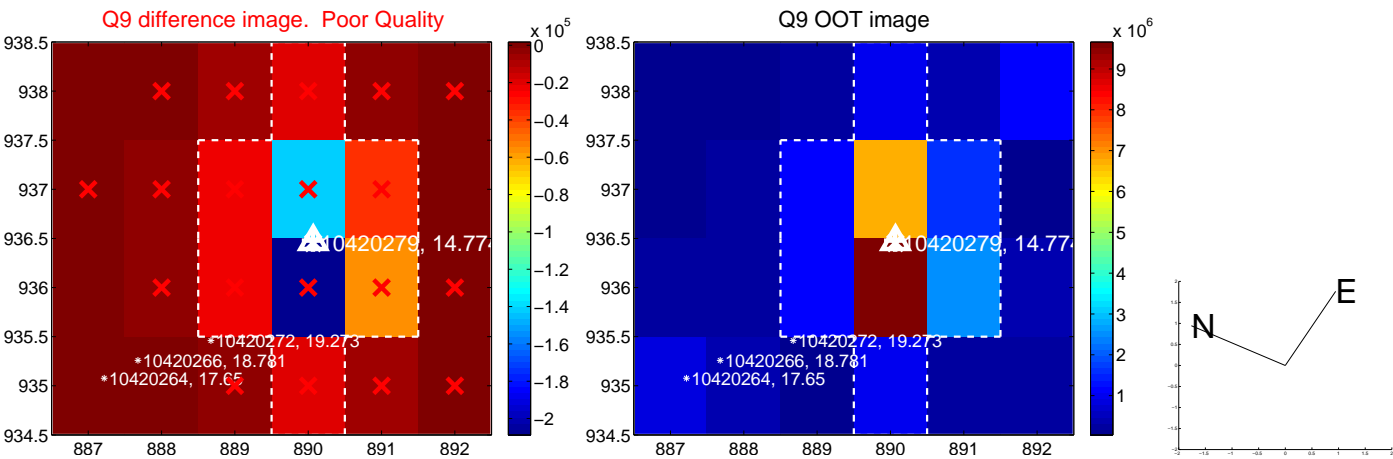
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



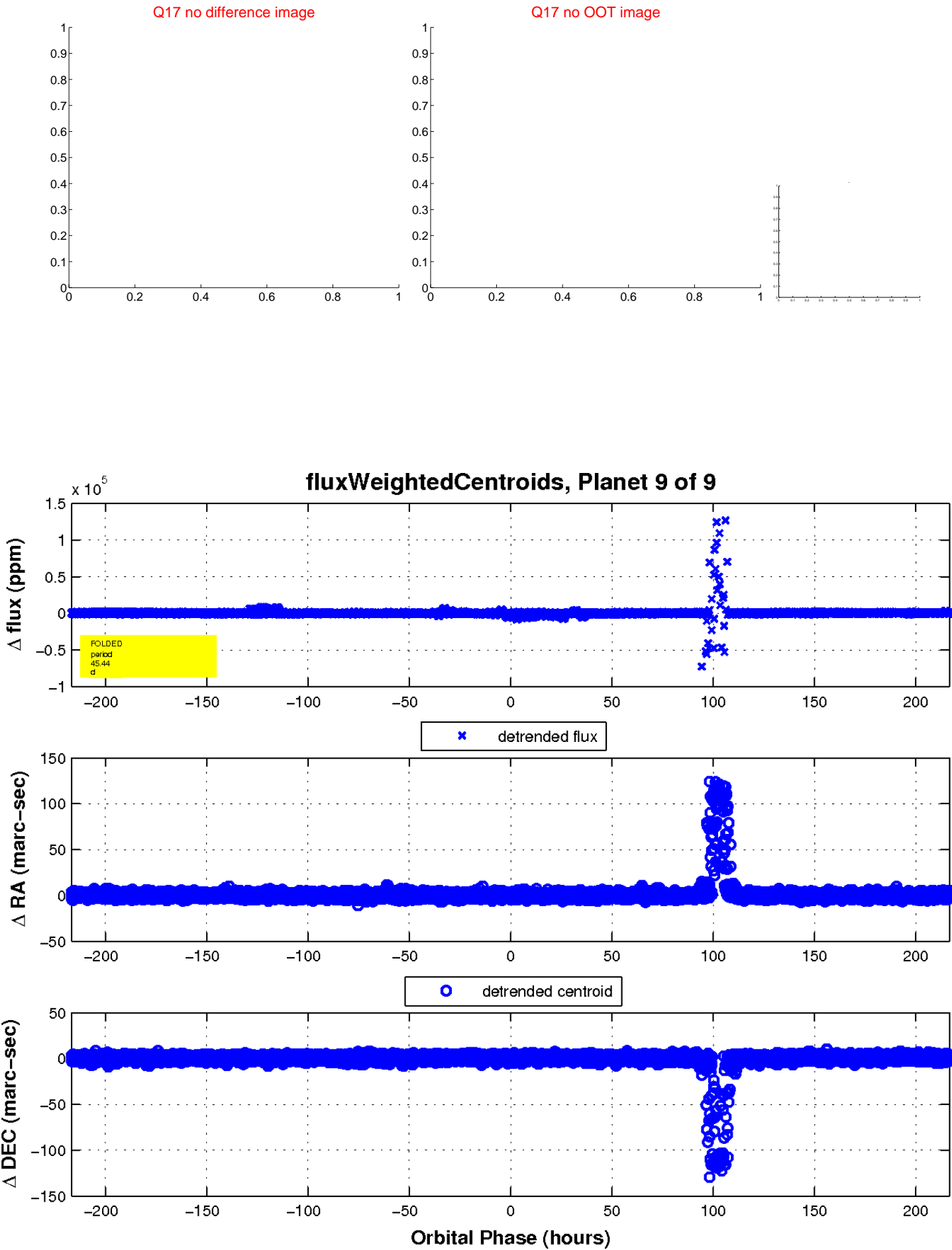
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

