

KIC 010735279

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})
010735279-01	OBS	No	375.025030	480.419045	2372.5	10.685	36.0	4.2	1.78	6892	15.81	5.20
010735279-02	OBS	No	411.143661	404.152579	382.4	5.000	25.6	-1.0	1.78	6892	3.52	4.60
010735279-03	OBS	No	493.307183	276.606545	7268.3	8.661	26.4	14.9	1.78	6892	26.85	3.61
010735279-04	OBS	No	275.861052	399.285986	276.3	4.500	18.2	-1.0	1.78	6892	2.99	7.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010735279-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010735279-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010735279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
010735279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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.

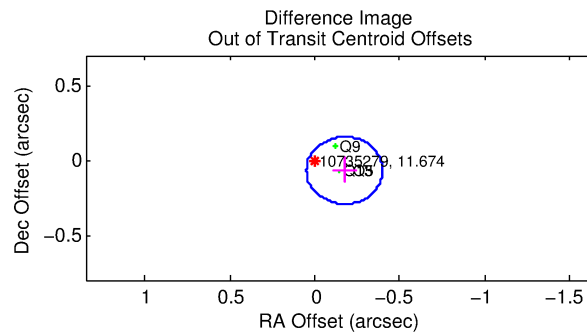
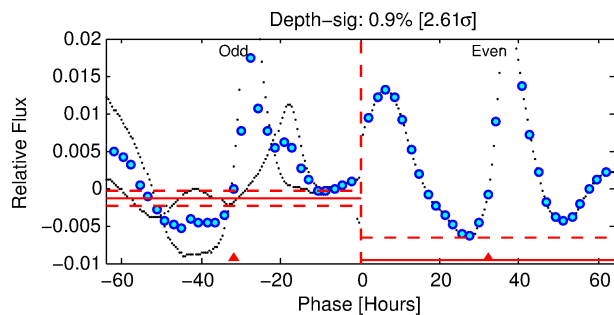
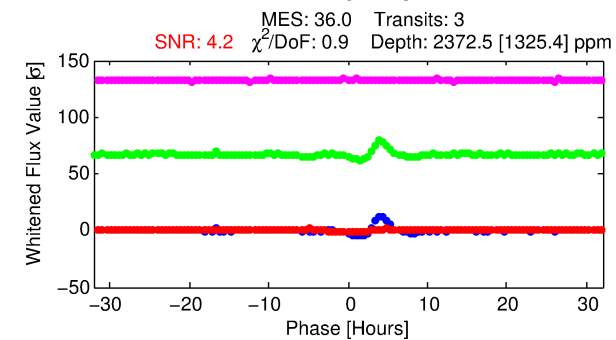
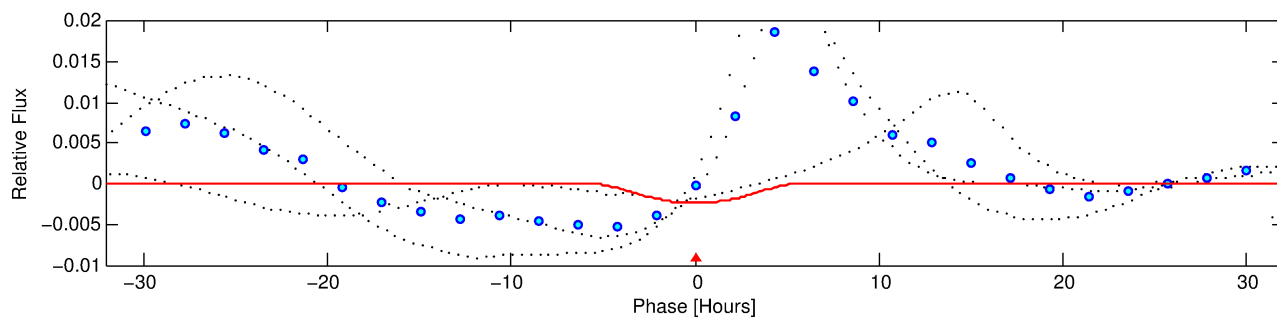
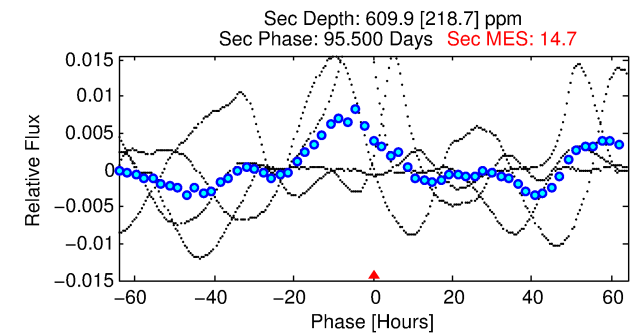
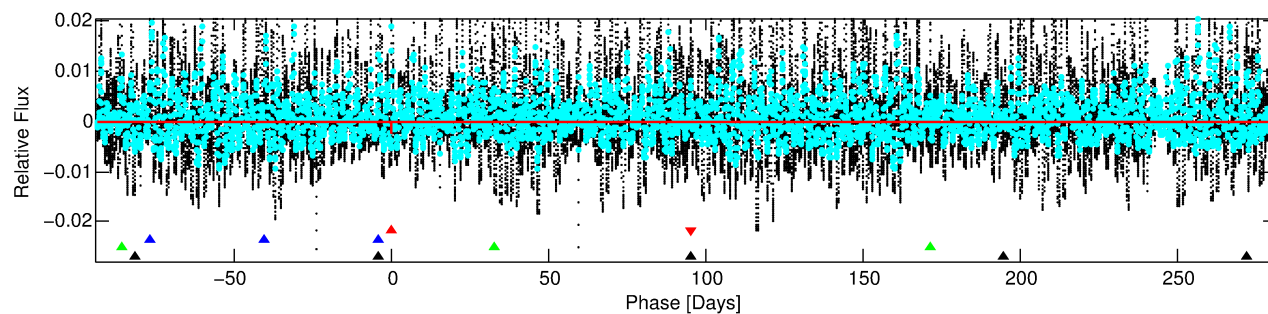
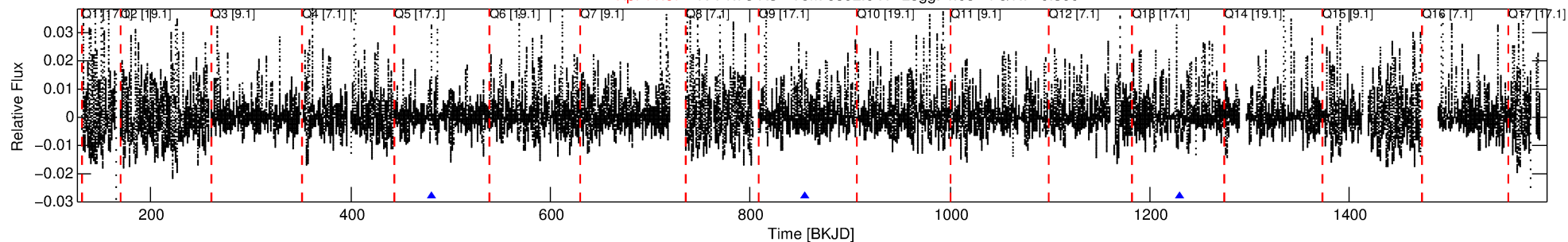
Ephemeris Match Information For 010735279-01

No Significant Match Found

DV One-Page Summary

KIC: 10735279 Candidate: 1 of 4 Period: 375.025 d

Kp: 11.67 R*: 1.78 Rs Teff: 6892.0 K Logg: 4.05 Fe/H: -0.360



DV Fit Results:

Period = 375.02503 [0.01026] d
Epoch = 480.4190 [0.0144] BKJD
Rp/R* = 0.0814 [0.0876]
a/R* = 110.36 [21.02]
b = 1.00 [0.10]
Seff = 5.20 [2.39]
Teq = 385 [44] K
Rp = 15.81 [17.63] Re
a = 1.1101 [0.3053] AU
Ag = 1654.60 [3680.40] [0.45σ]
Teff = 3797 [2076] K [1.64σ]

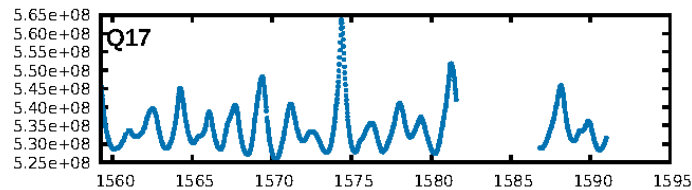
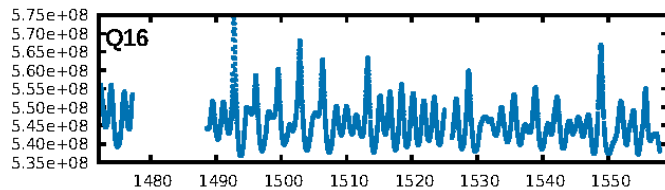
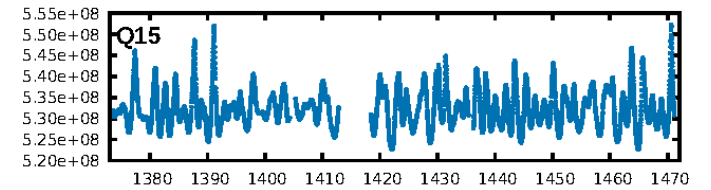
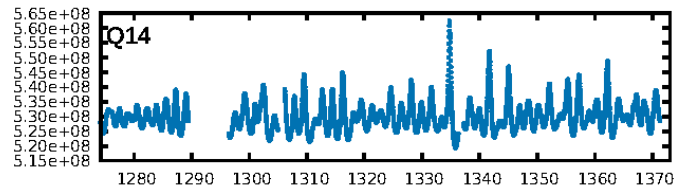
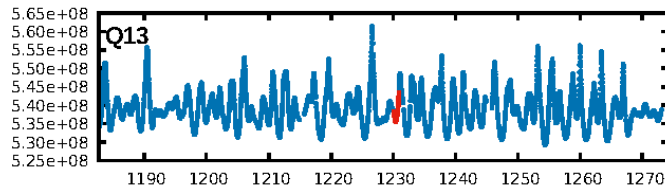
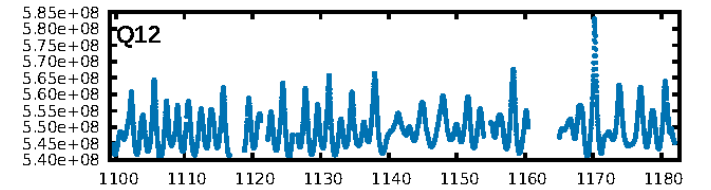
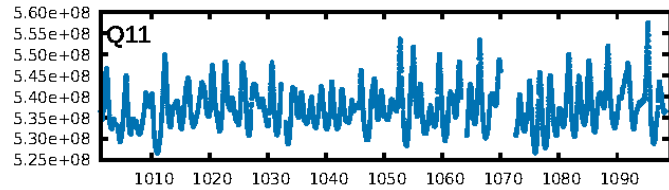
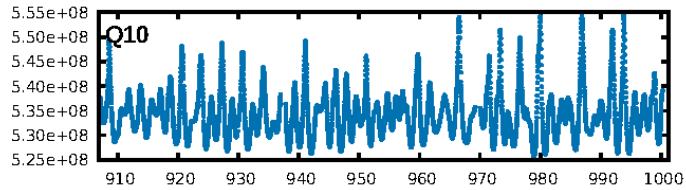
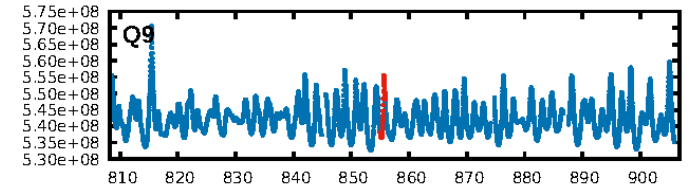
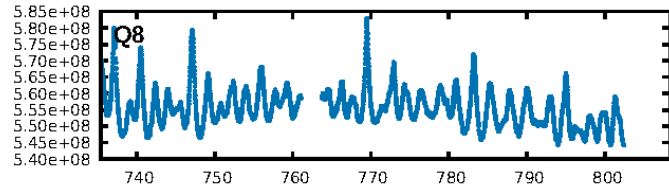
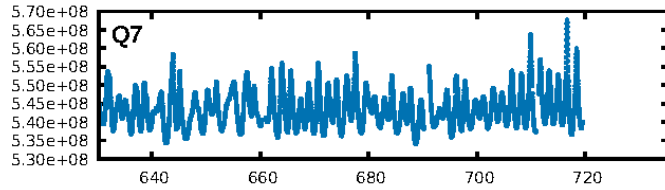
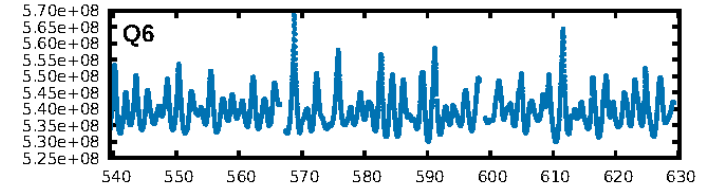
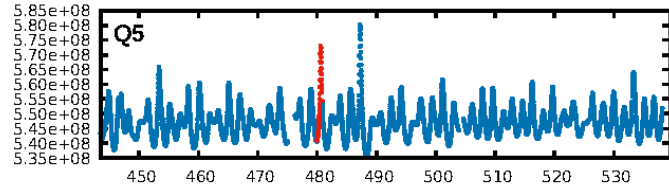
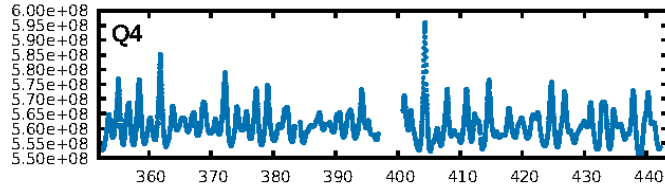
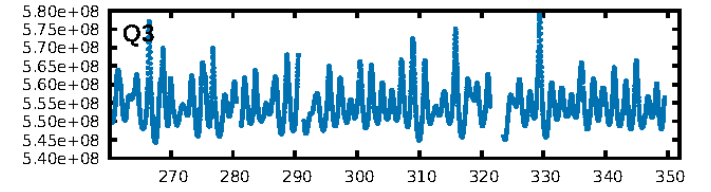
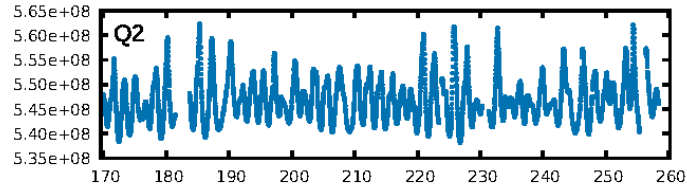
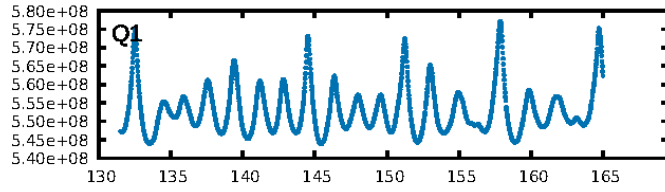
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [205.27σ]
LongPeriod-sig: 100.0% [73.48σ]
ModelChiSquare2-sig: 28.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.387
Centroid-sig: 51.8%
Centroid-so: 2.892 arcsec [4.52σ]
OotOffset-rm: 0.188 arcsec [2.52σ]
KicOffset-rm: 0.558 arcsec [6.89σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

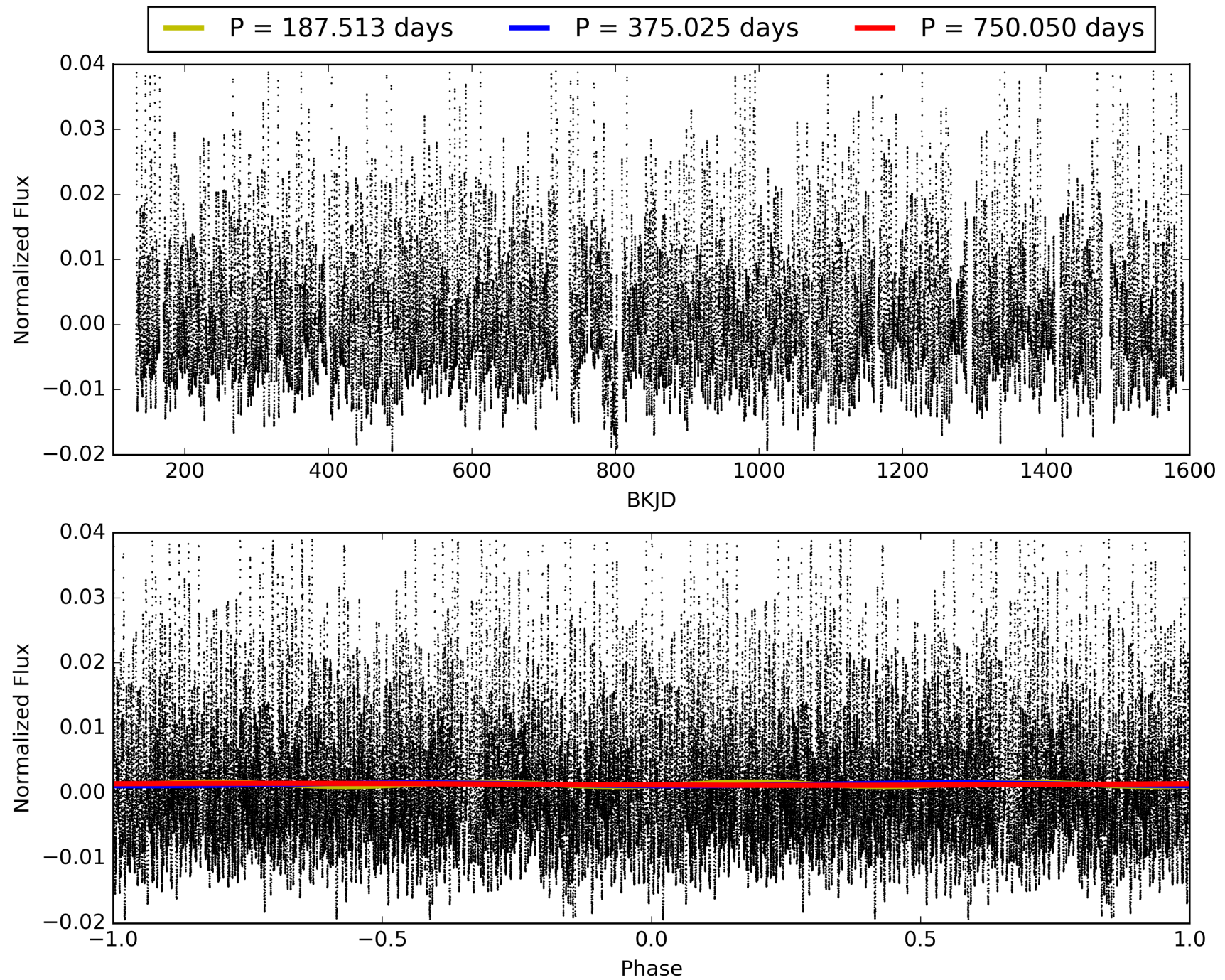
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010735279-01, PDC Light Curves

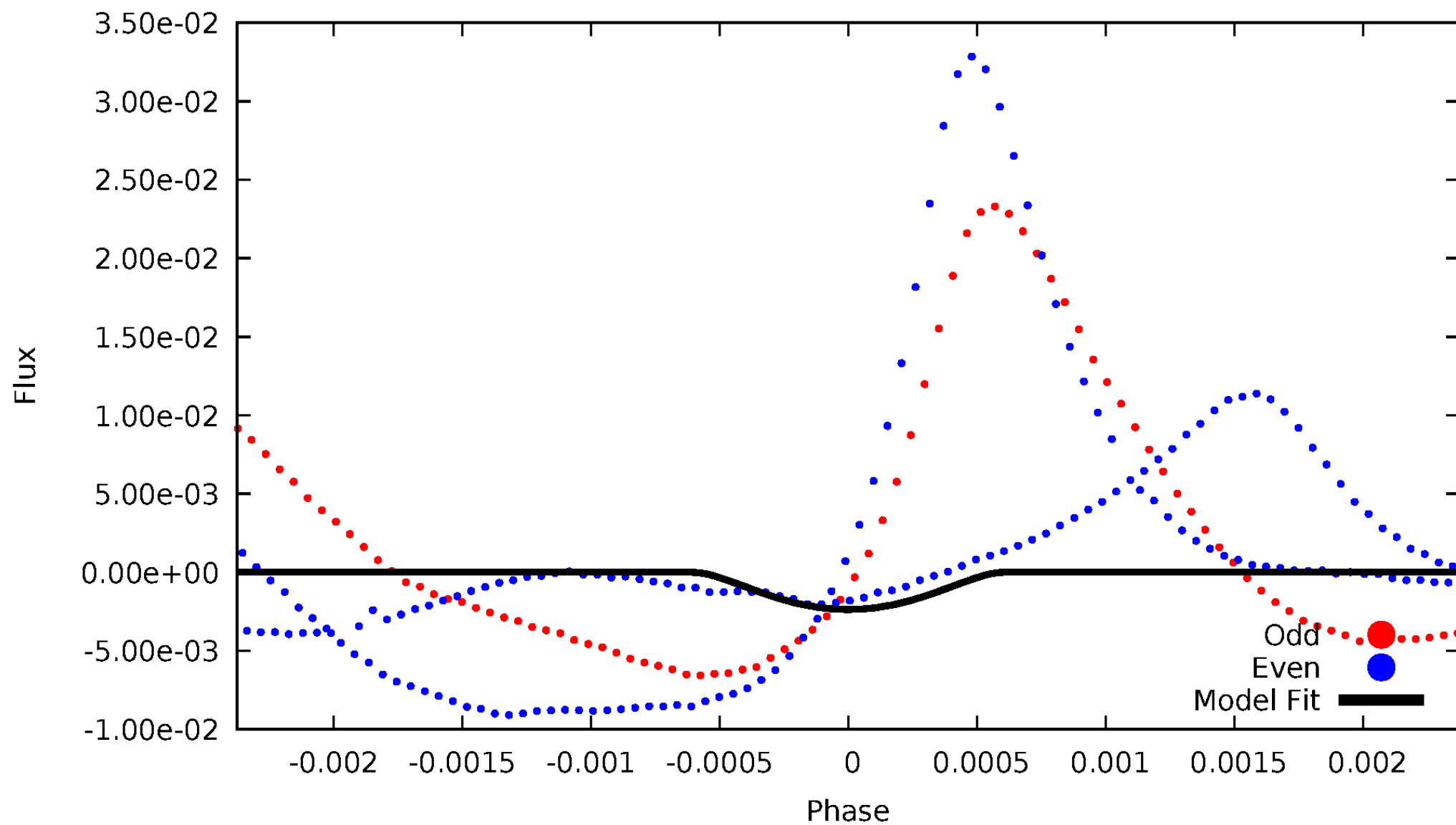


TCE 010735279-01



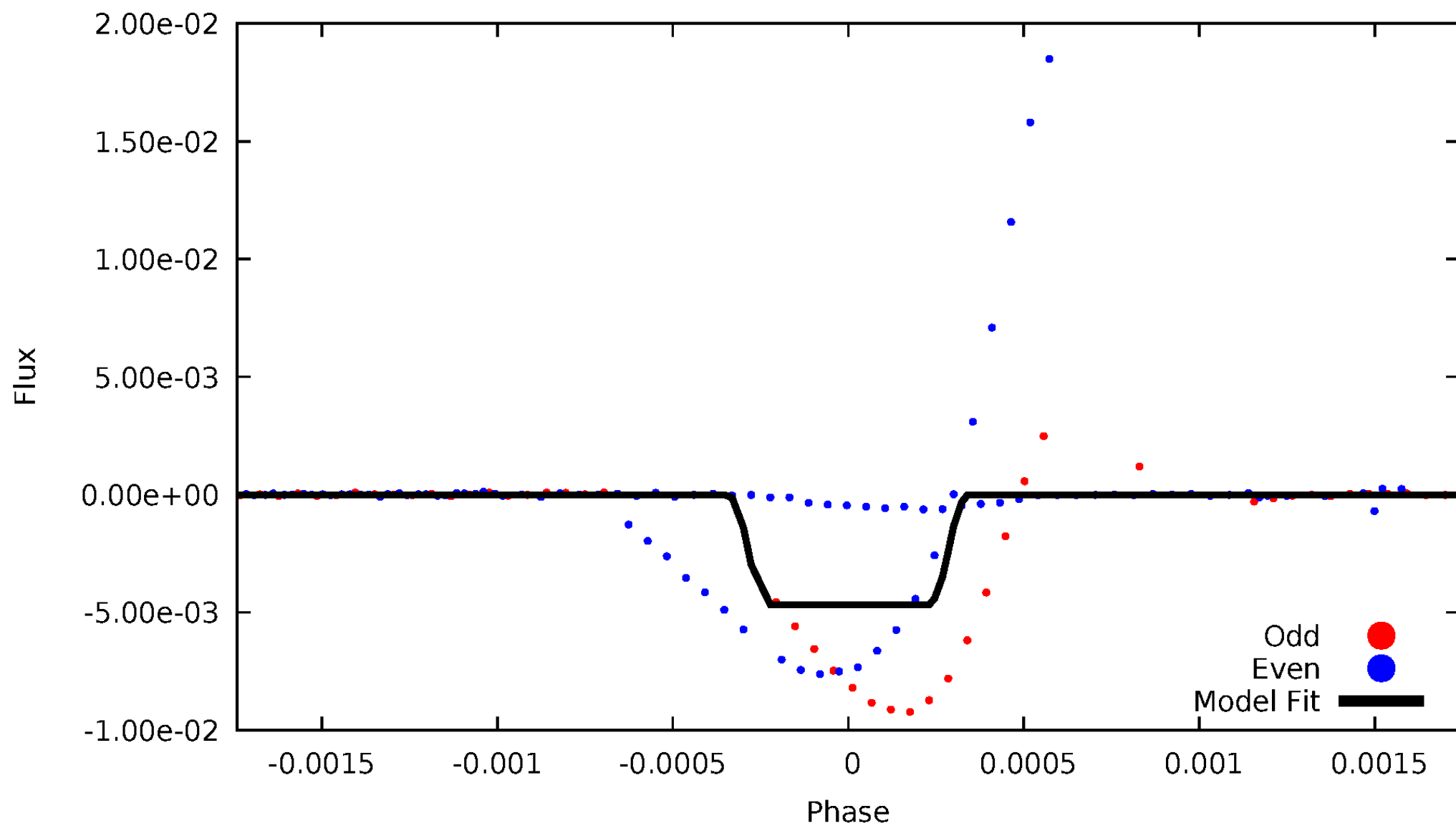
DV Odd/Even

TCE 010735279-01



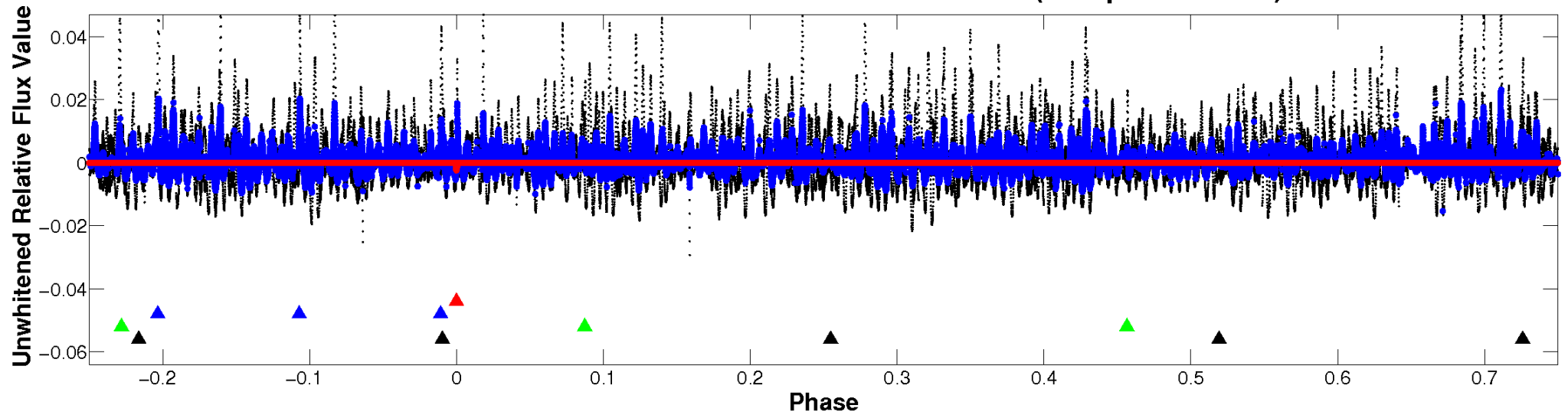
ALT Odd/Even

TCE 010735279-01

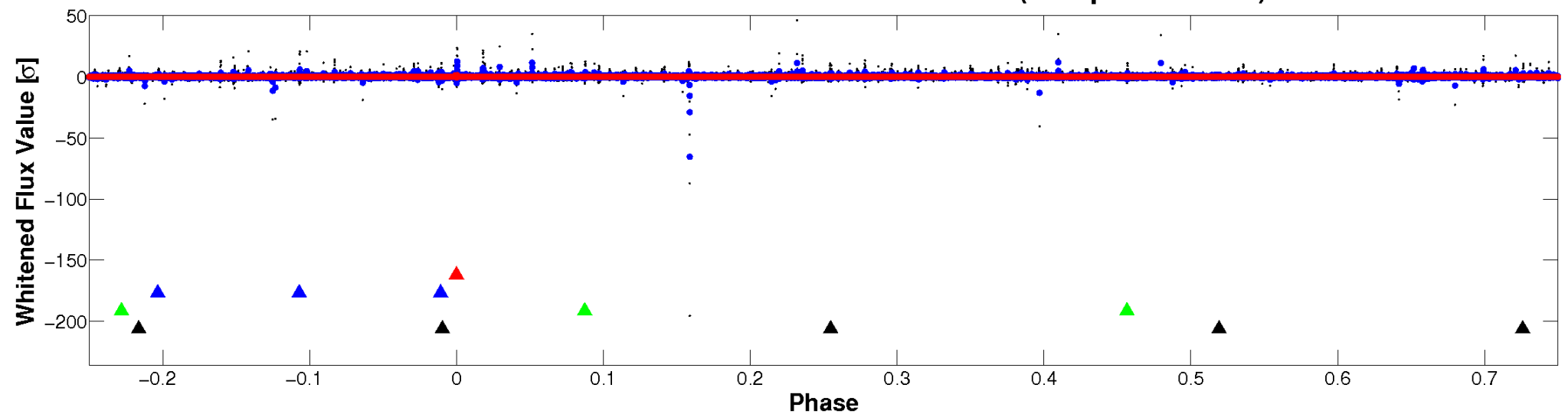


Non-Whitened Vs. Whitened Light Curve

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

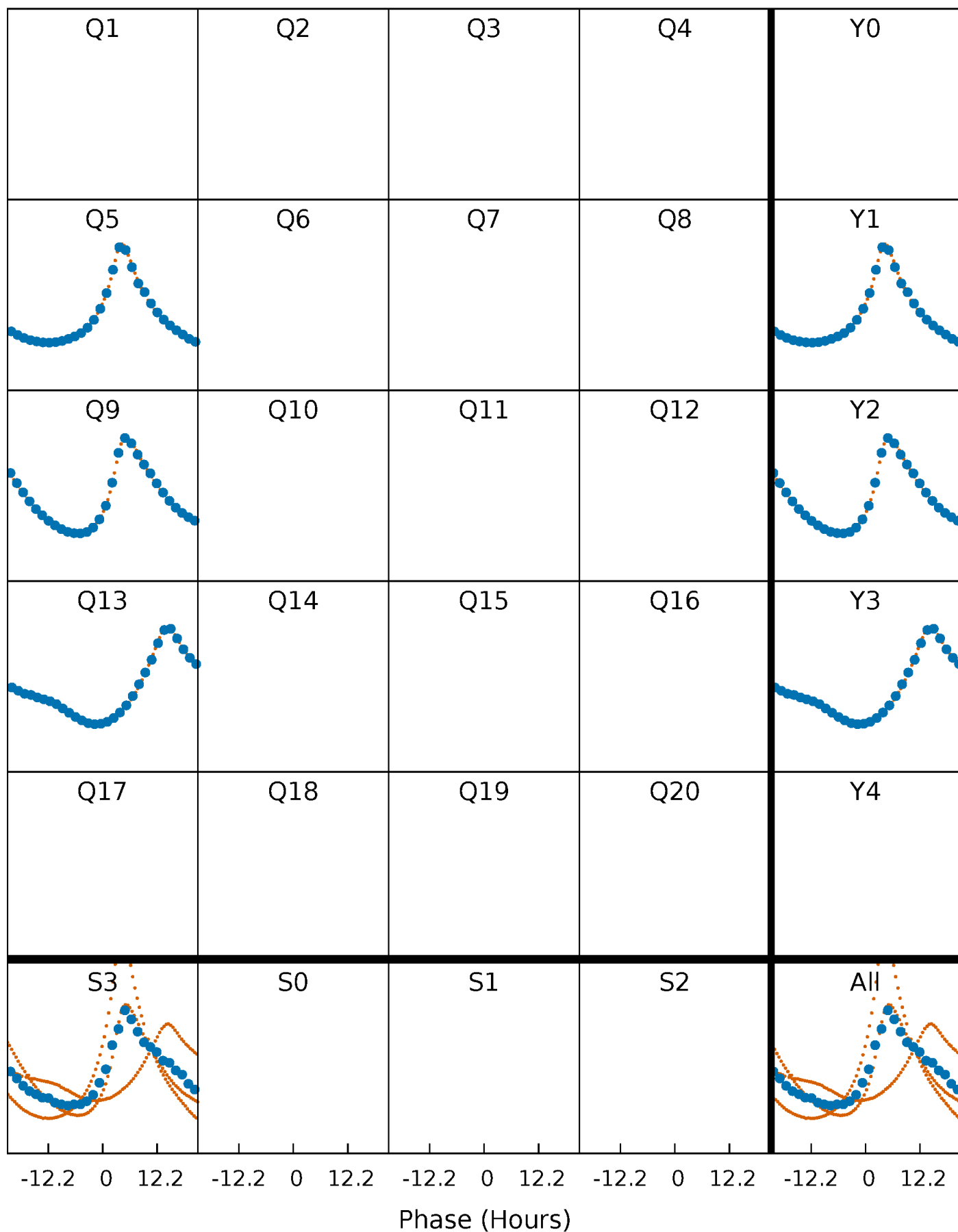


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



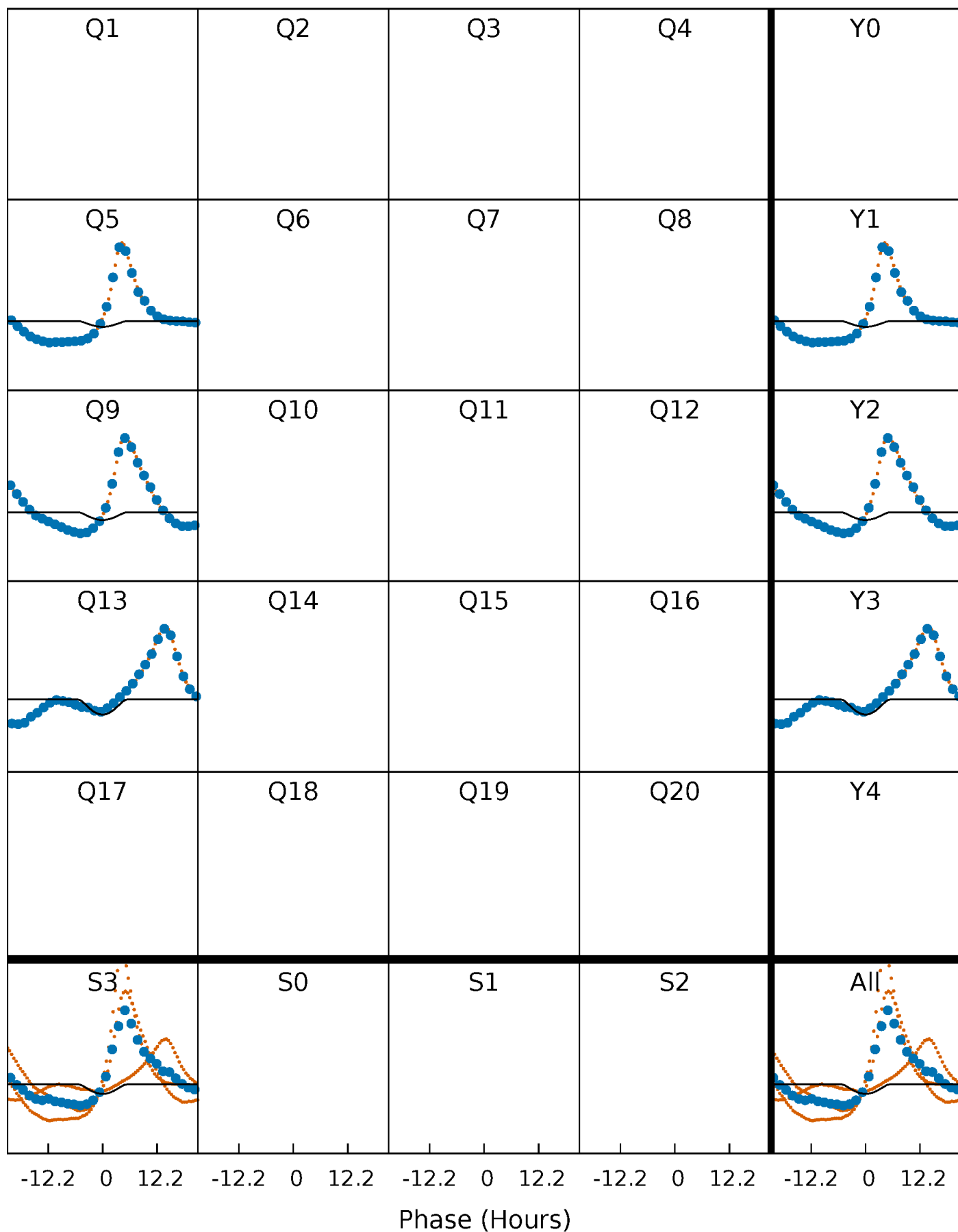
PDC Quarter-Phased Transit Curves

TCE 010735279-01 P=375.025030 Days $T_0=480.419045$ (BKJD)



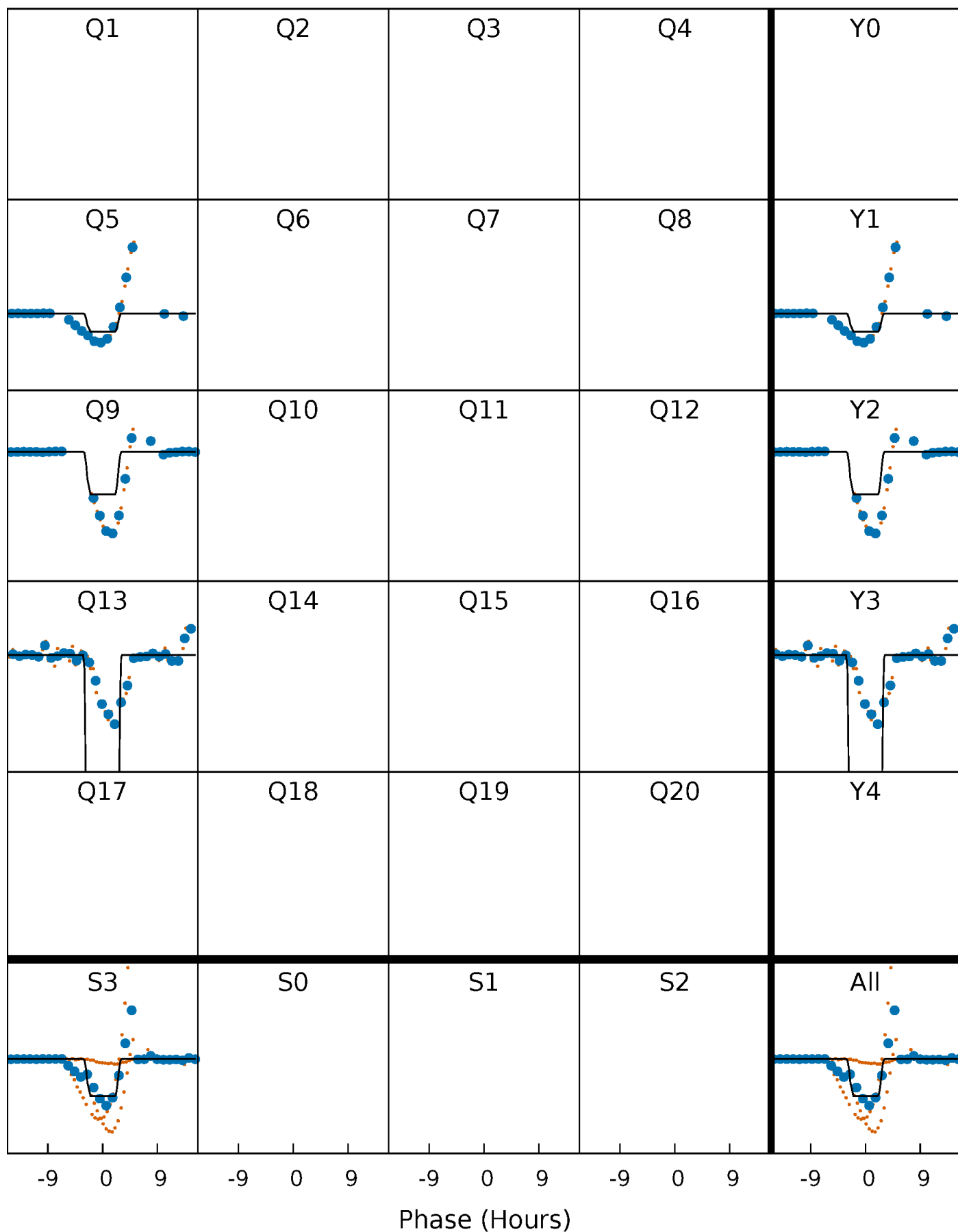
DV Quarter-Phased Transit Curves

TCE 010735279-01 P=375.025030 Days $T_0=480.419045$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

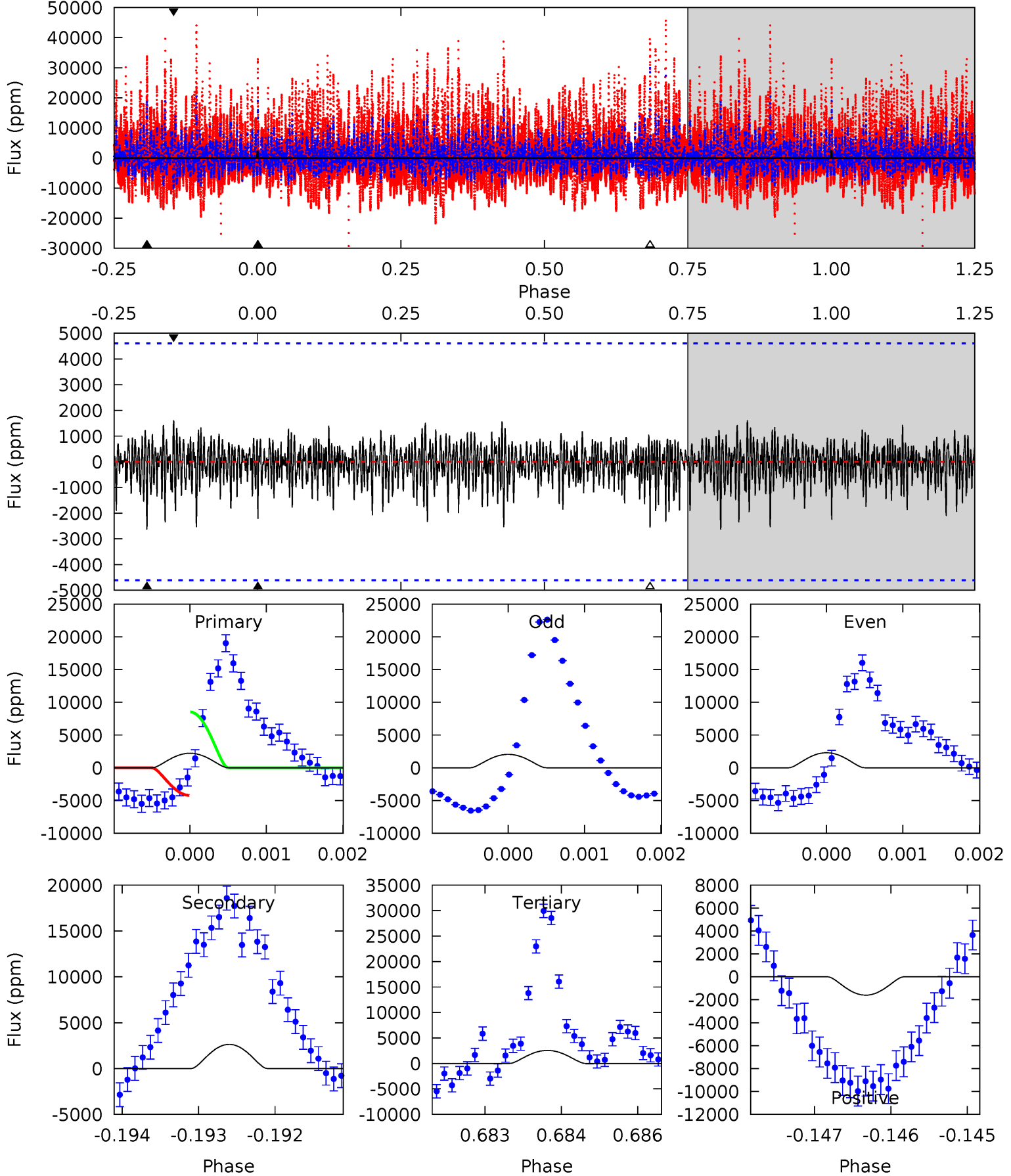
TCE 010735279-01 P=375.044371 Days $T_0=480.363571$ (BKJD)



DV Model-Shift Uniqueness Test

010735279-01, P = 375.025030 Days, E = 105.394015 Days

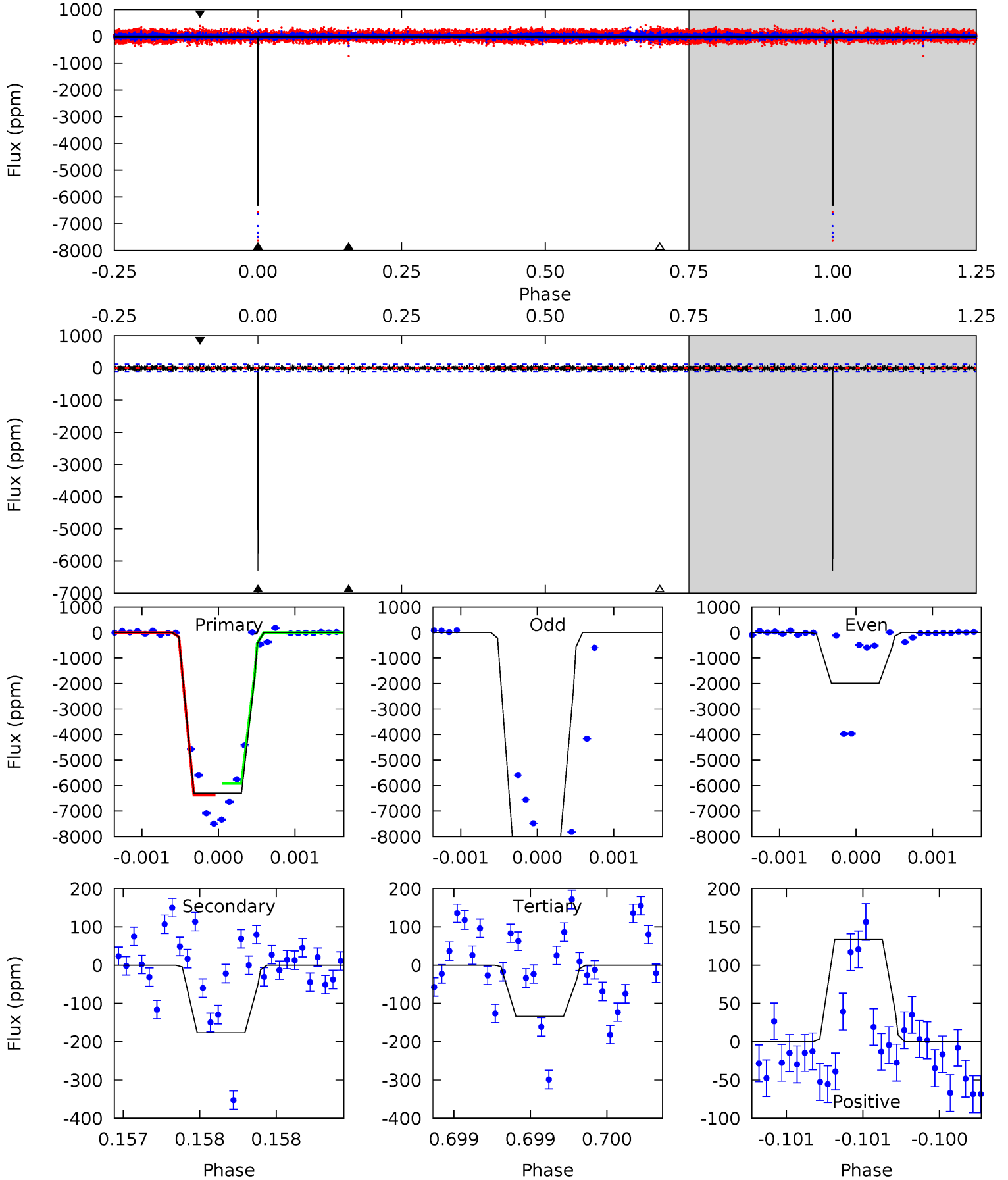
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.61	3.10	3.01	1.88	5.42	3.24	0.77	-0.40	0.73	0.09	1.22	0.12	1.08	0.38	2.55



Alt Model-Shift Uniqueness Test

010735279-01, P = 375.044371 Days, E = 105.319200 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
307.2	8.60	6.52	6.51	5.53	3.41	1.24	300.7	300.7	2.08	2.09	152.9	0.76	0.02	0



Stellar Parameters For KIC 010735279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6892^{+190}_{-262}	$4.050^{+0.252}_{-0.168}$	$-0.360^{+0.300}_{-0.300}$	$1.780^{+0.470}_{-0.522}$	$1.300^{+0.182}_{-0.223}$	$0.325^{+0.529}_{-0.156}$
	+3%/-4%	+6%/-4%	+83%/-83%	+26%/-29%	+14%/-17%	+163%/-48%
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 010735279-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2636 ± 851	$18.22^{+15.75}_{-11.83}$	530^{+42}_{-44}	4973^{+3351}_{-1007}	5398^{+35624}_{-3907}
Alt.	-176 ± 20	$16.83^{+14.86}_{-11.23}$	534^{+38}_{-48}	3225^{+1459}_{-515}	417^{+3451}_{-300}

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 $A_{obs} \gg 1.0$

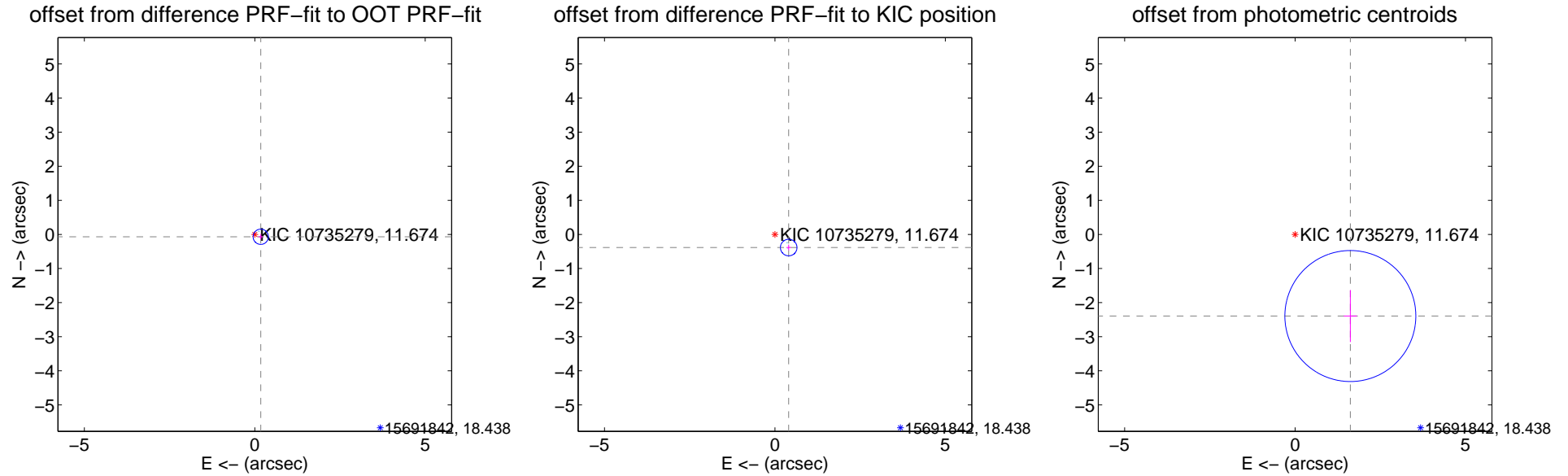
DV Centroid Data

Supplemental centroid analysis for 010735279-01. **Kepler magnitude: 11.67.** Transit SNR 4.22

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.188 ± 0.075	2.52	-0.175 ± 0.069	-0.069 ± 0.081
PRF-fit source offset from KIC position	0.558 ± 0.081	6.89	-0.404 ± 0.069	-0.385 ± 0.085
photometric centroid source offset	2.89 ± 0.64	4.52	-1.62 ± 0.19	-2.39 ± 0.76

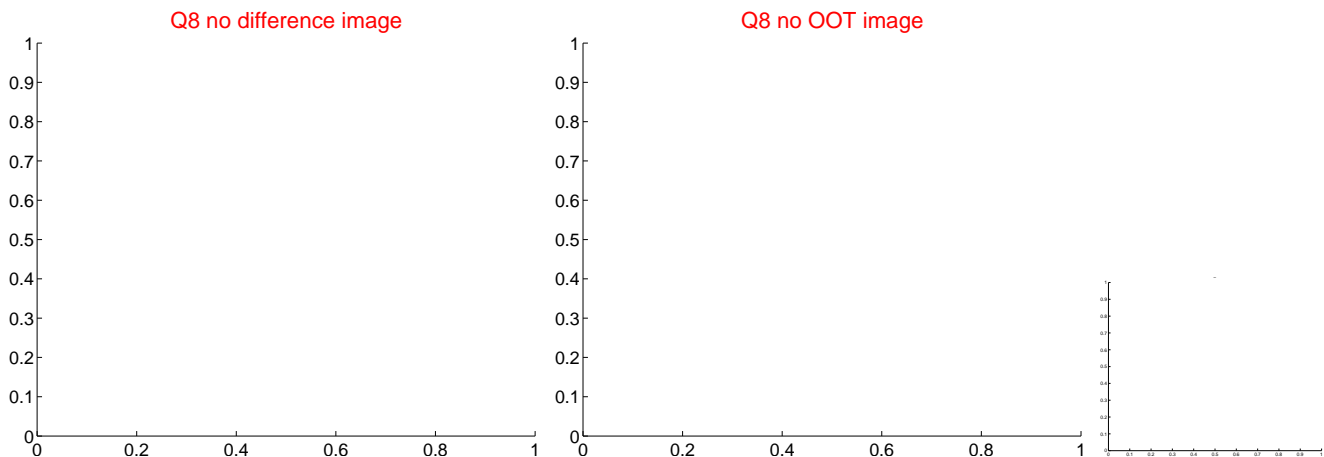
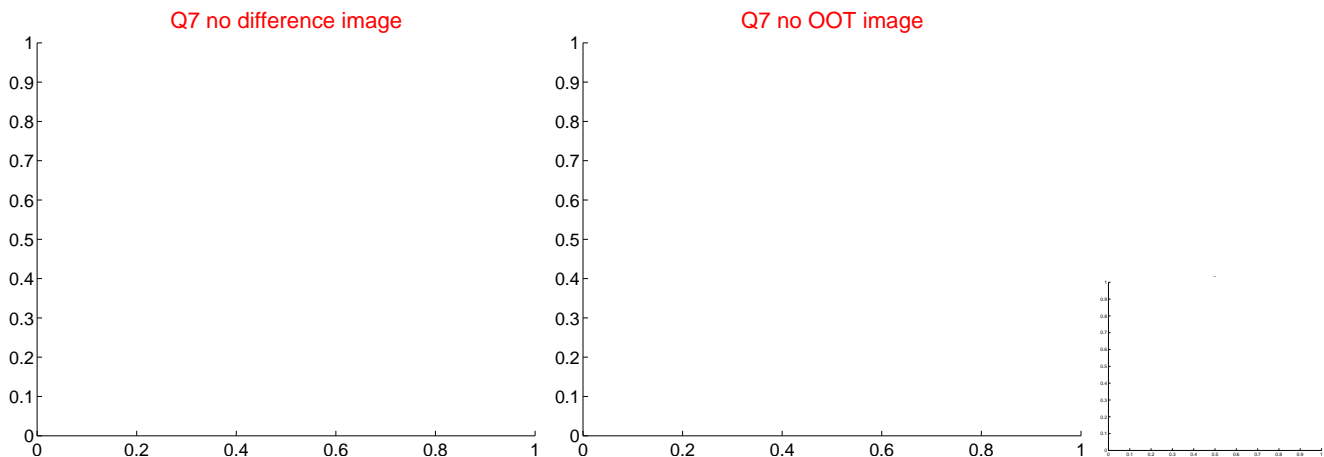
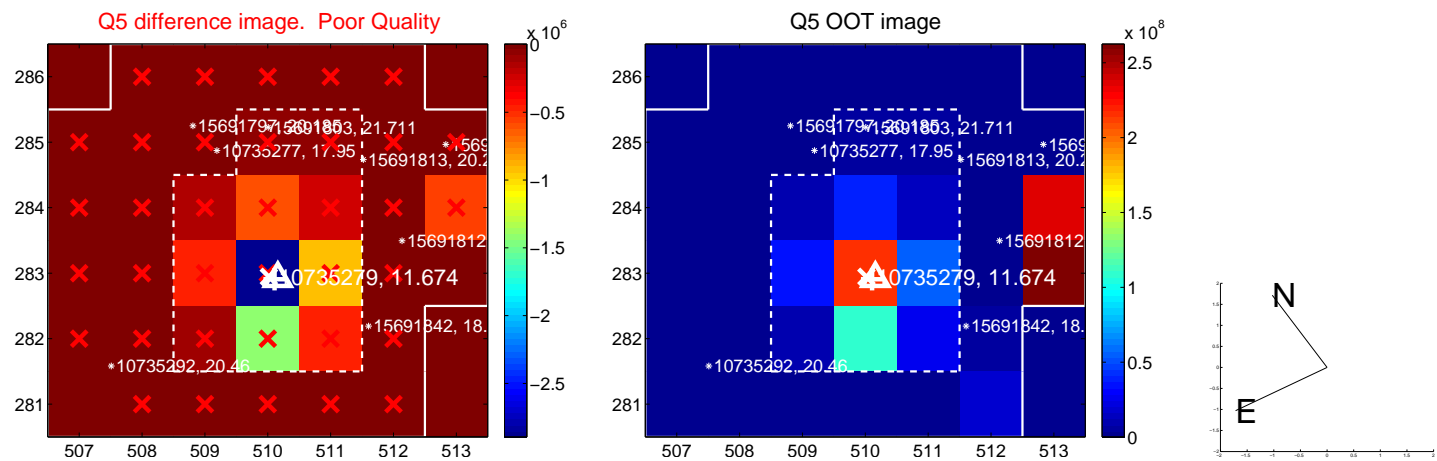


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

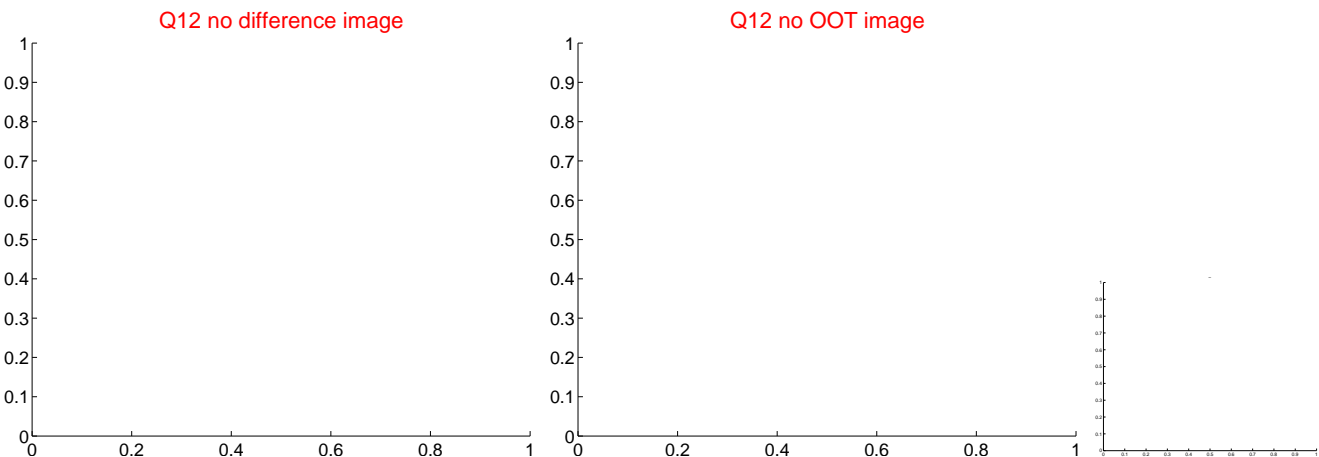
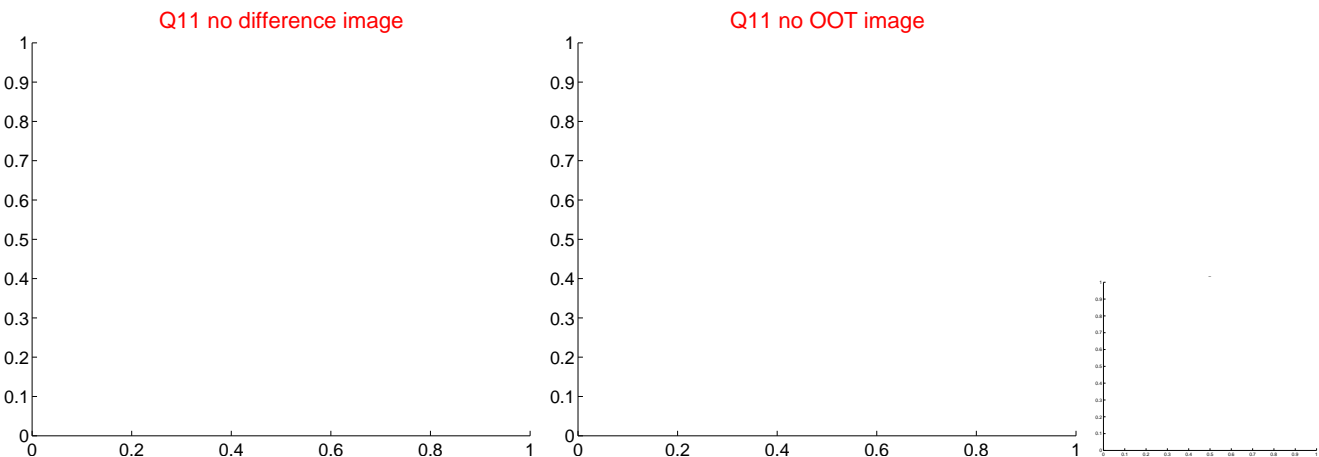
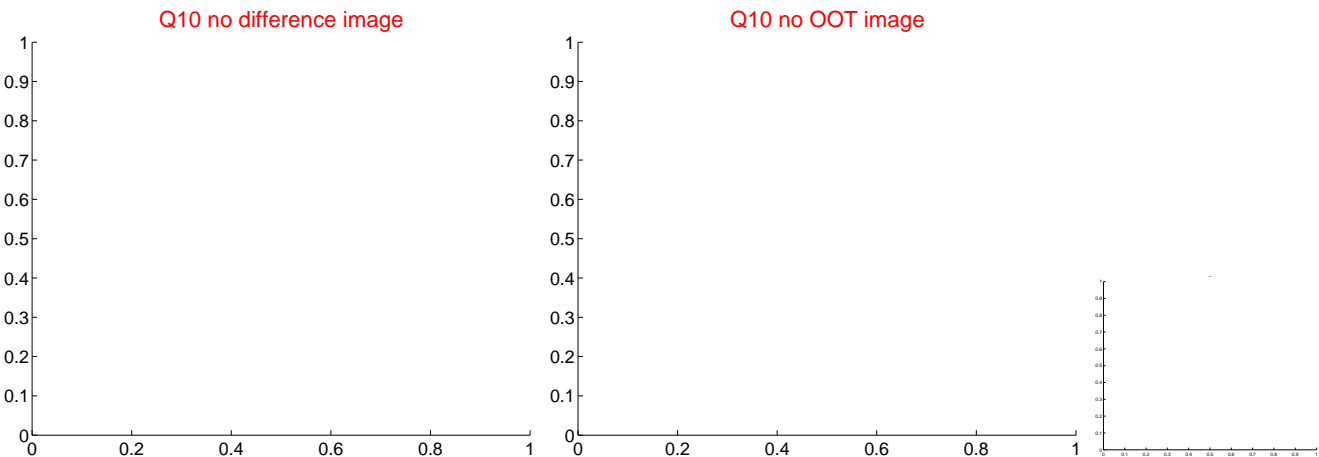
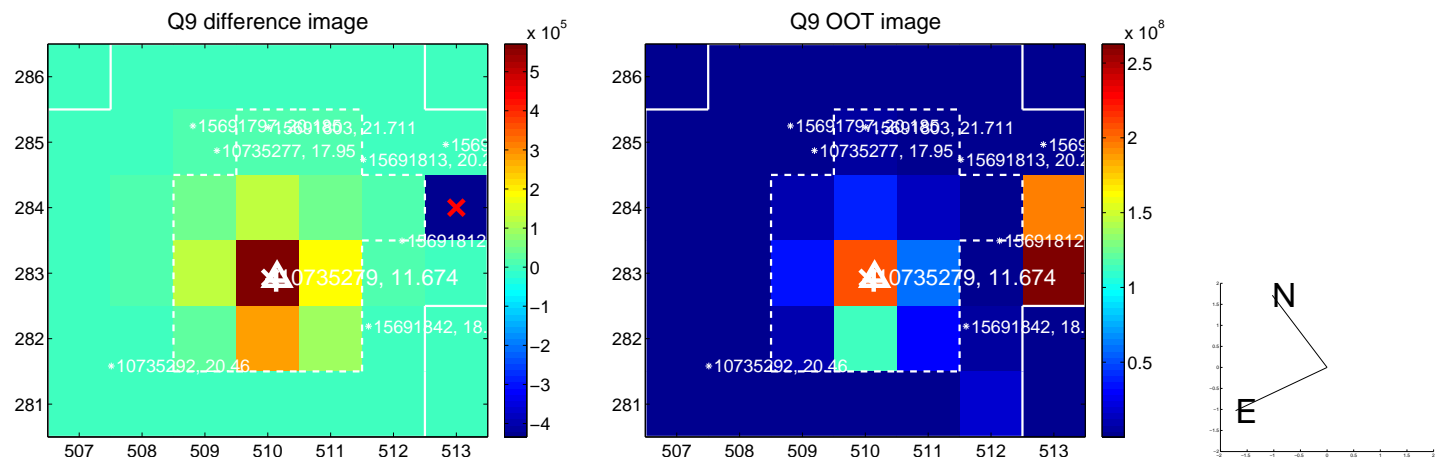
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



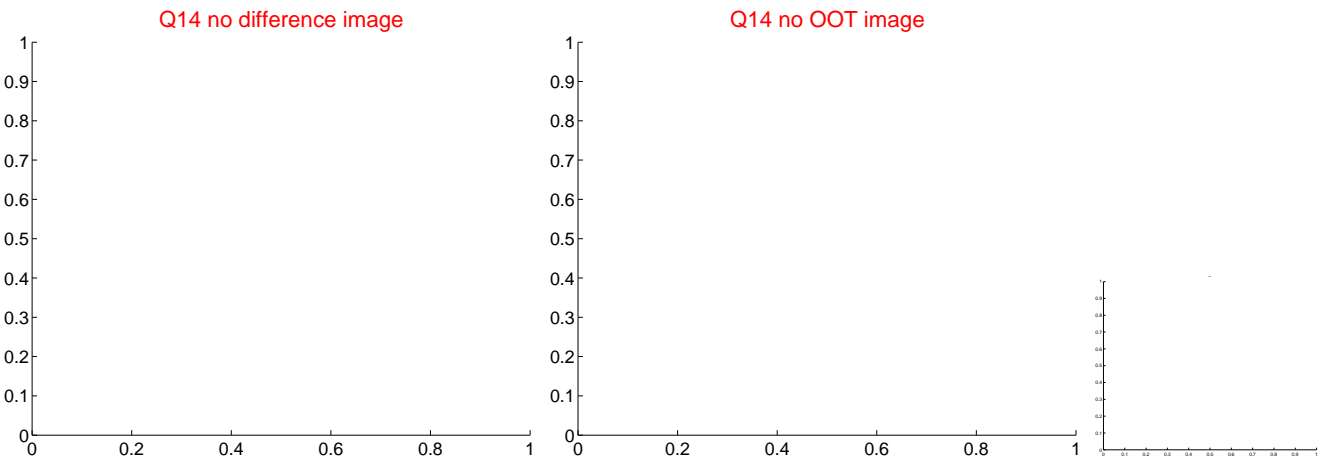
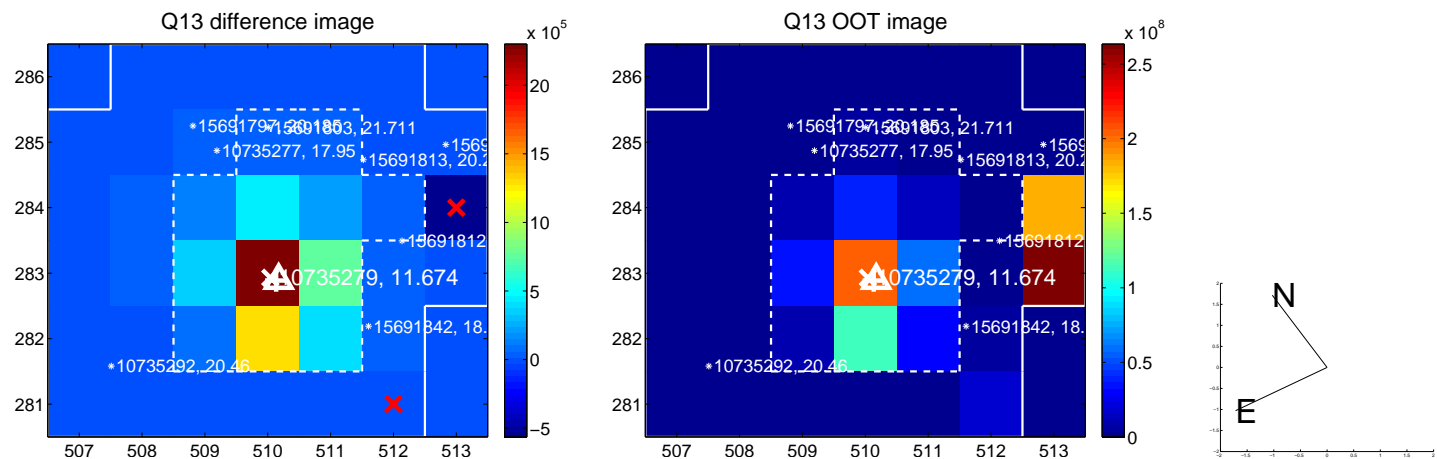
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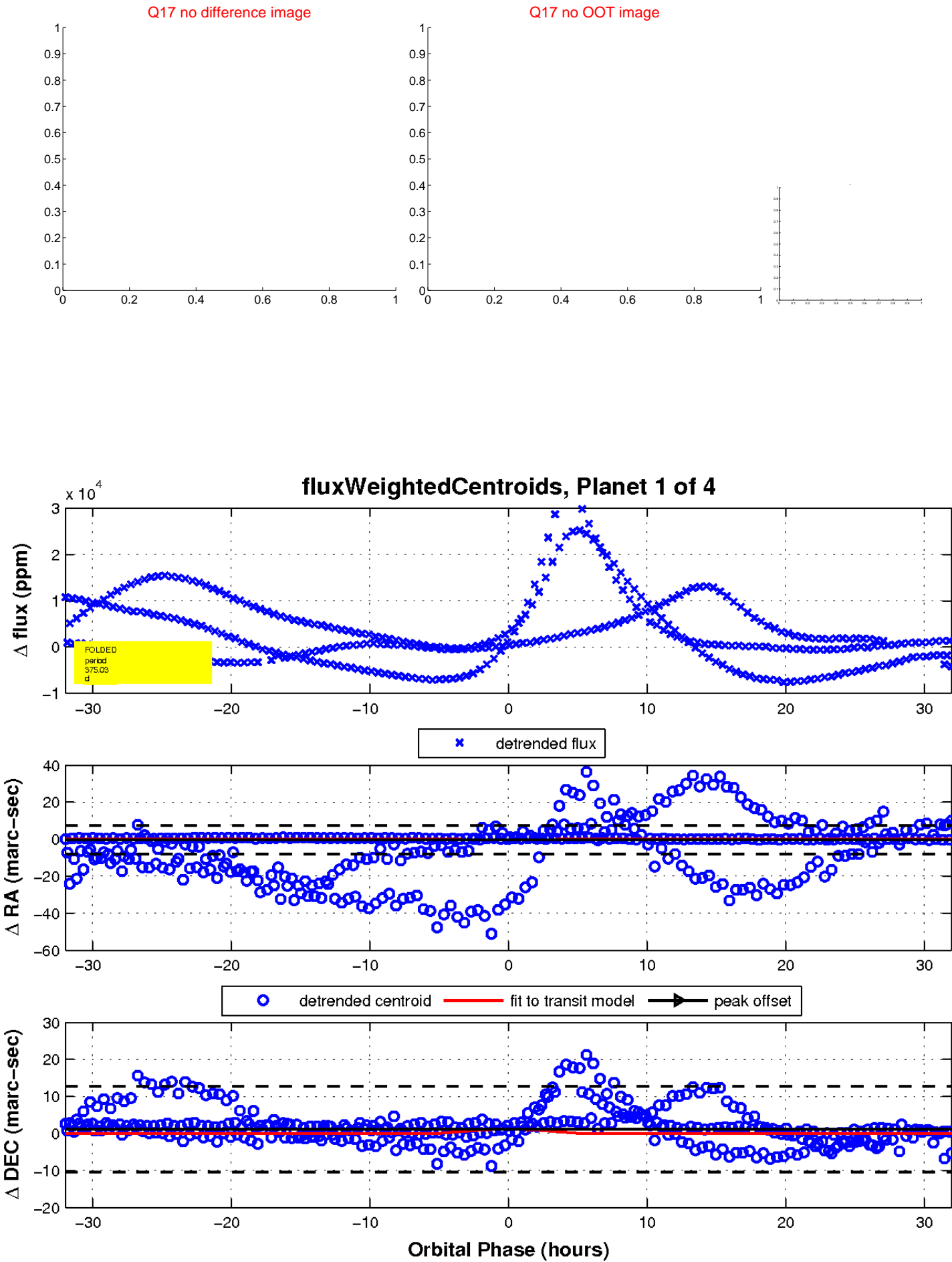
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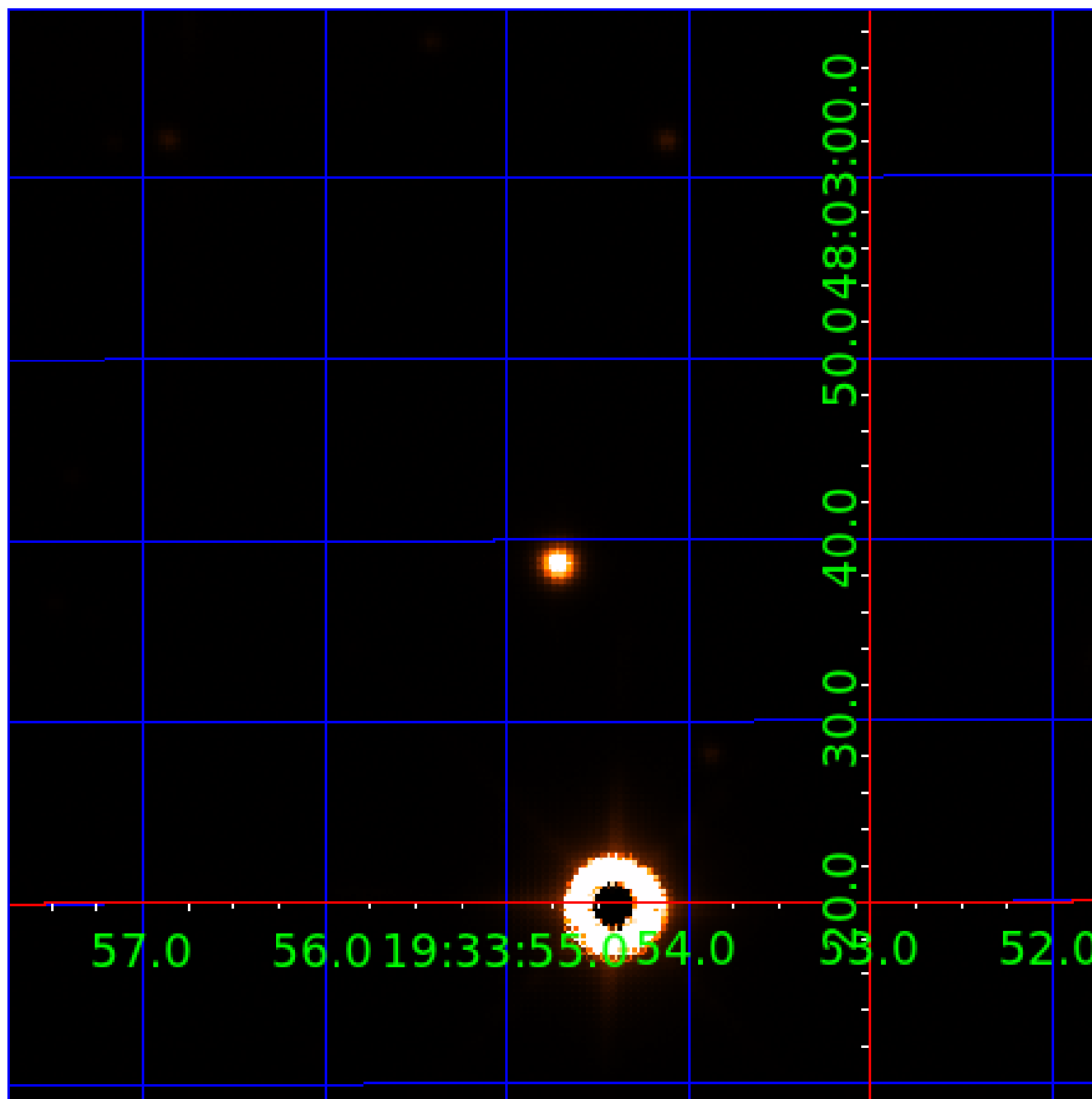


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UKIRT Image

Declination



KIC 010735279

Q1-17 DR25 TCE Parameters

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010735279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

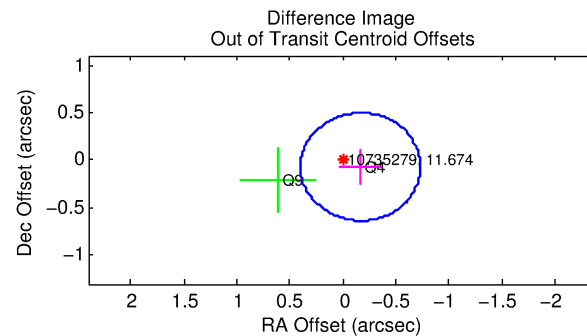
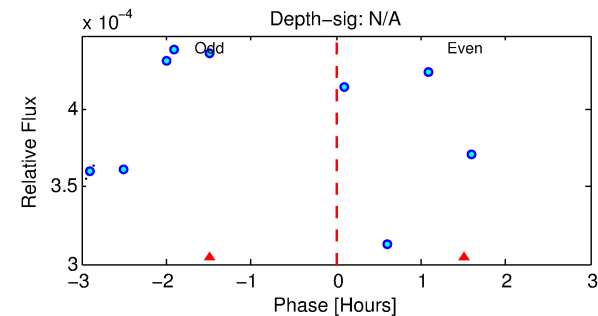
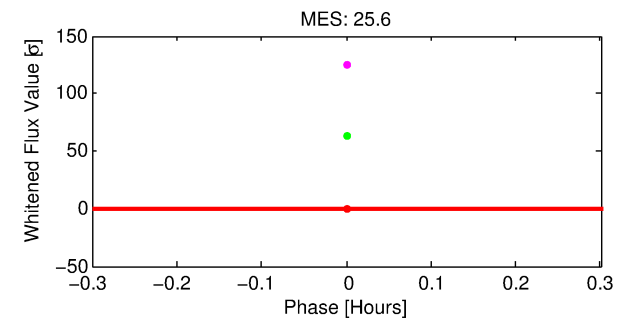
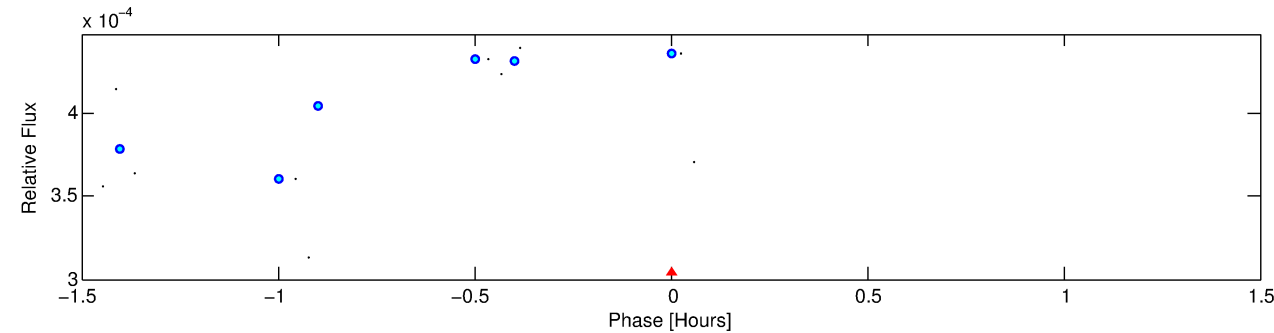
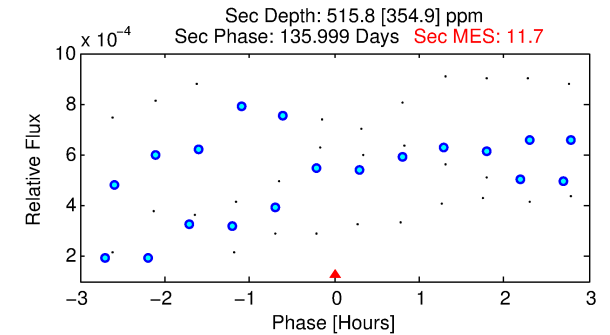
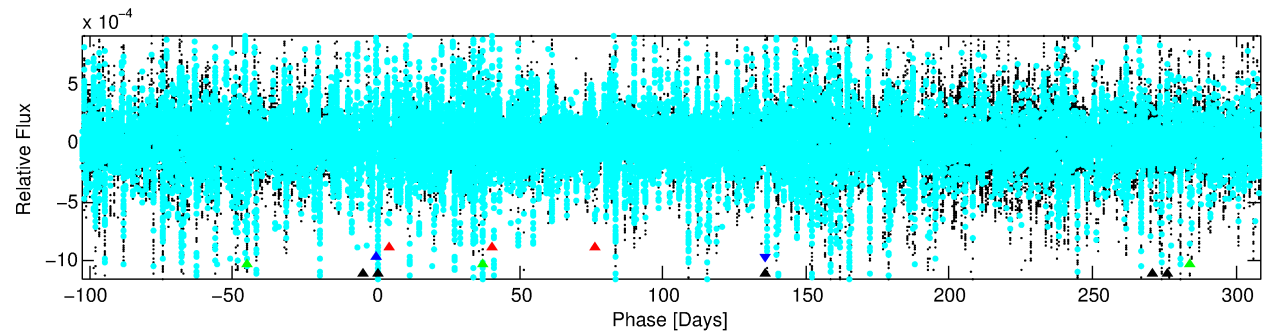
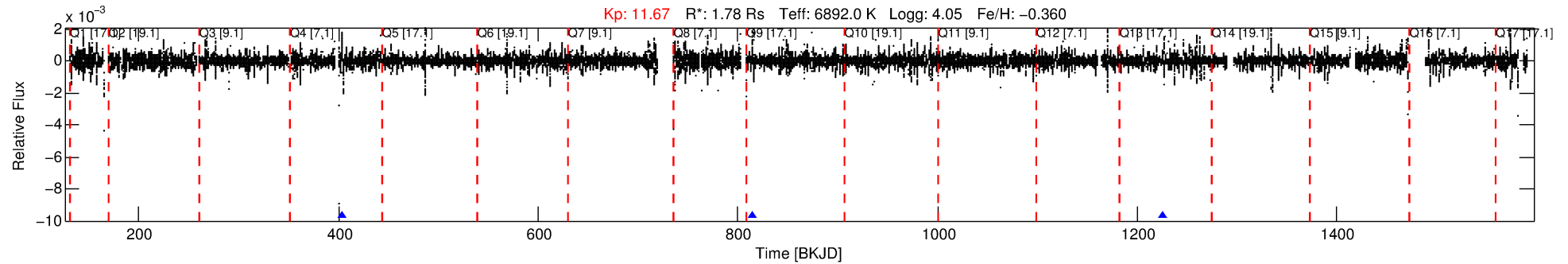
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010735279-02

No Significant Match Found

DV One-Page Summary

KIC: 10735279 Candidate: 2 of 4 Period: 411.144 d



TPS TCE Results:

Period = 411.14366 d
Epoch = 404.1526 BKJD

DV fit results are unavailable

DV Diagnostic Results:

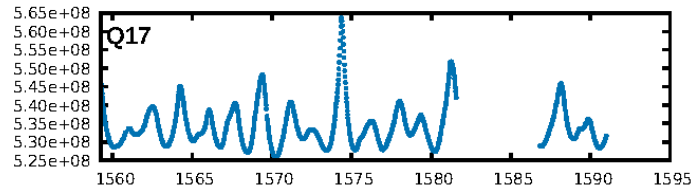
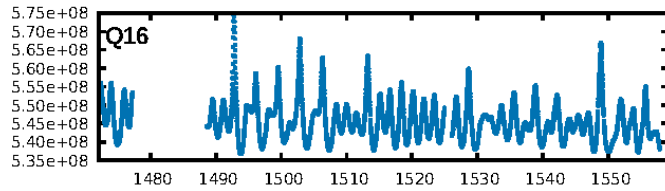
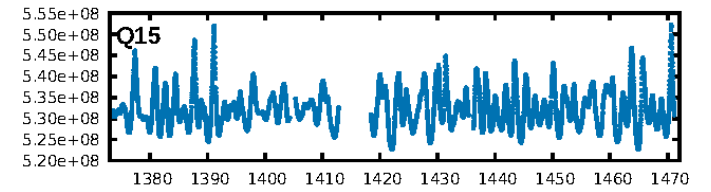
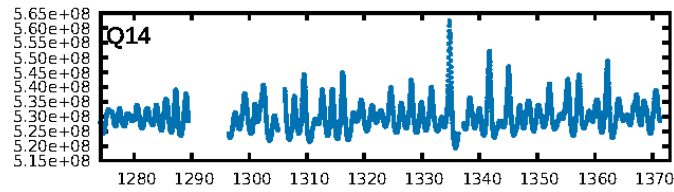
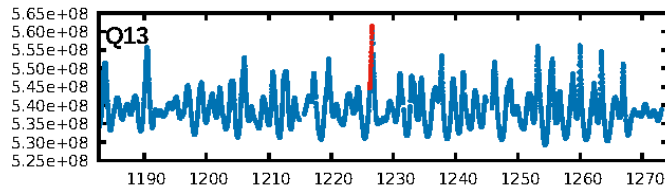
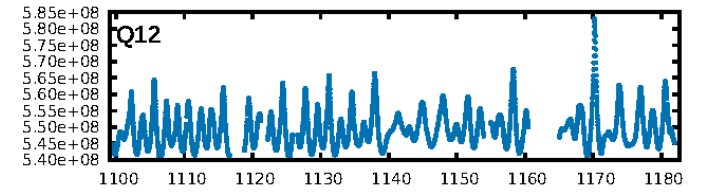
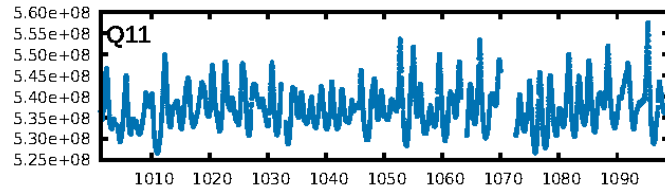
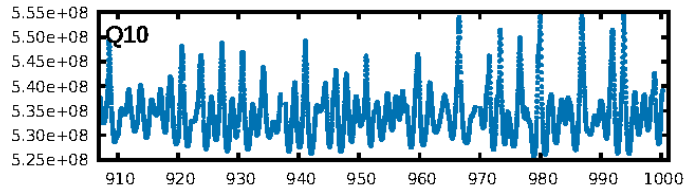
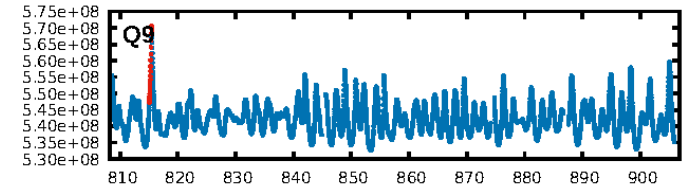
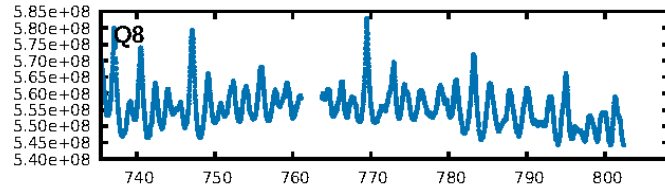
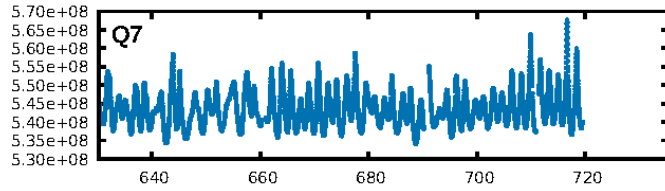
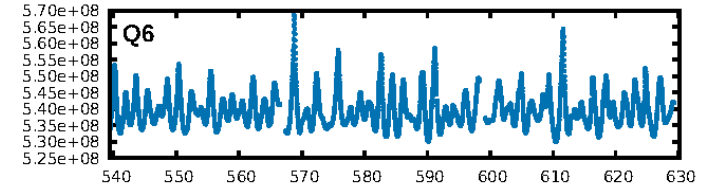
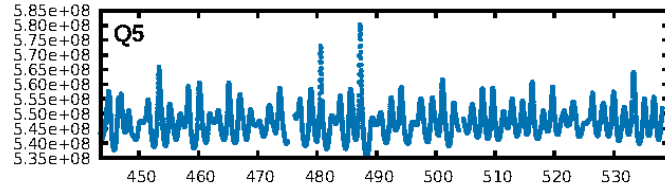
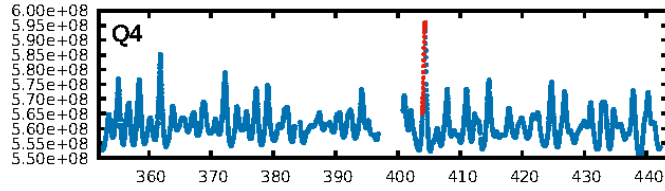
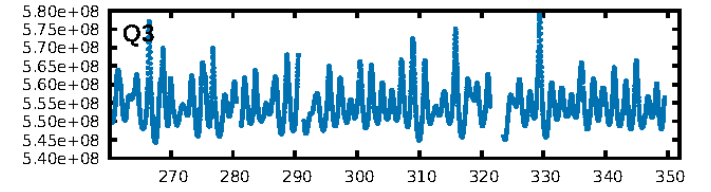
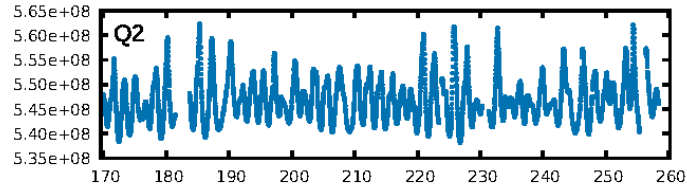
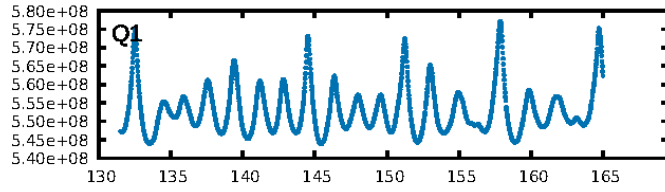
ShortPeriod-sig: 100.0% [73.48σ]
LongPeriod-sig: 100.0% [197.18σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.02786

Centroid-sig: 82.6%
Centroid-so: 48.442 arcsec [1.34σ]
OotOffset-rm: 0.181 arcsec [0.96σ]
KicOffset-rm: 0.531 arcsec [2.19σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

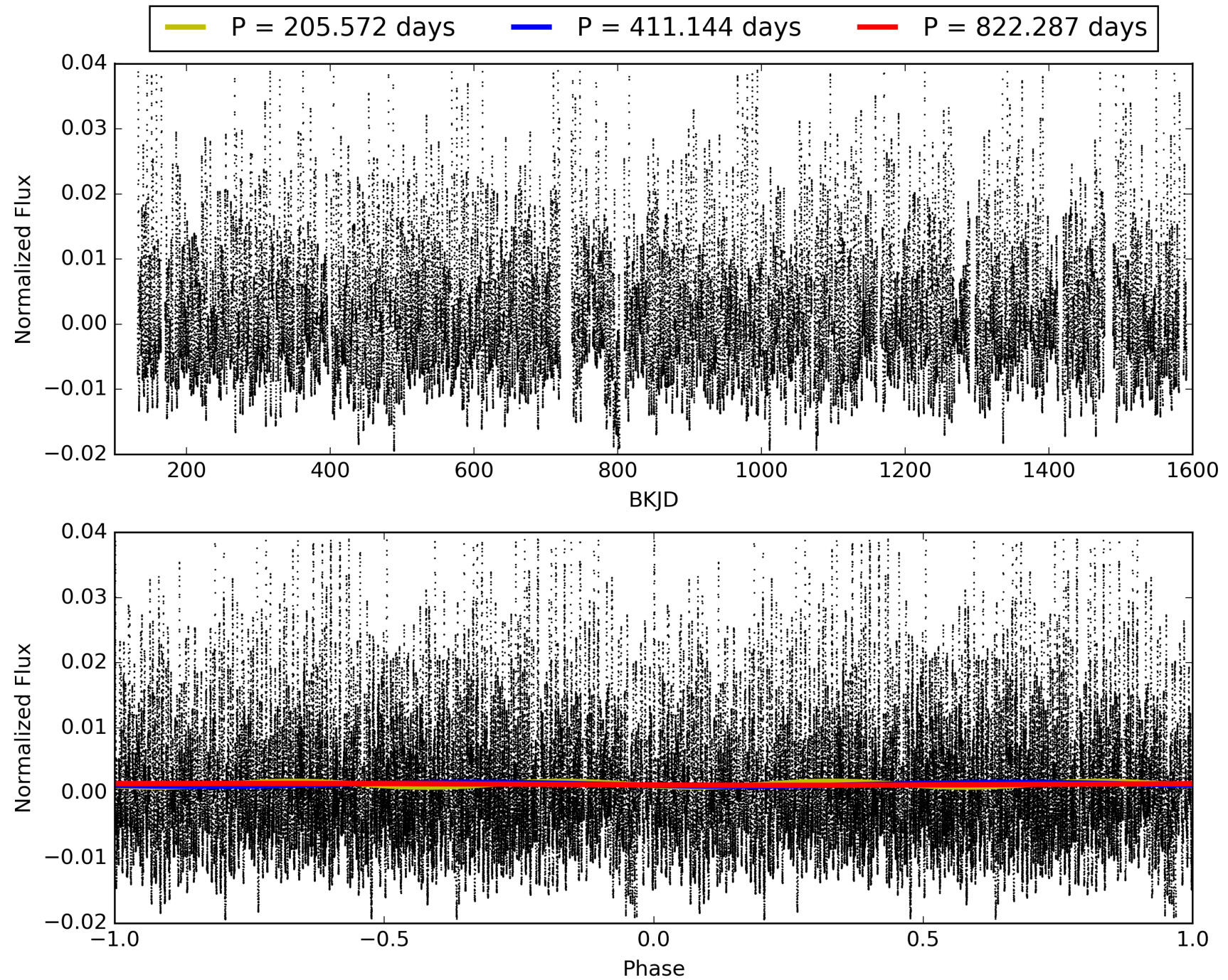
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:12:19 Z

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

TCE 010735279-02, PDC Light Curves

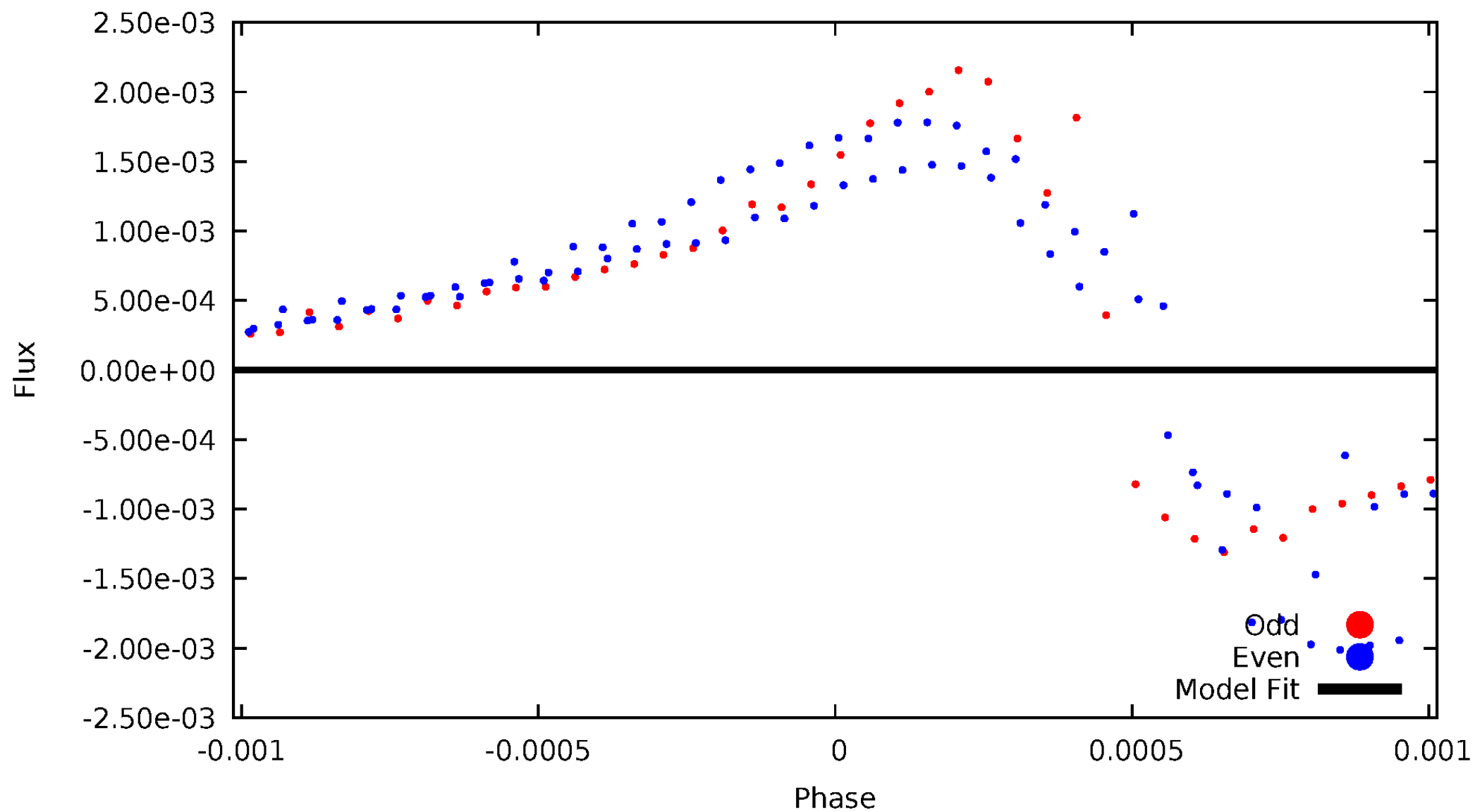


TCE 010735279-02



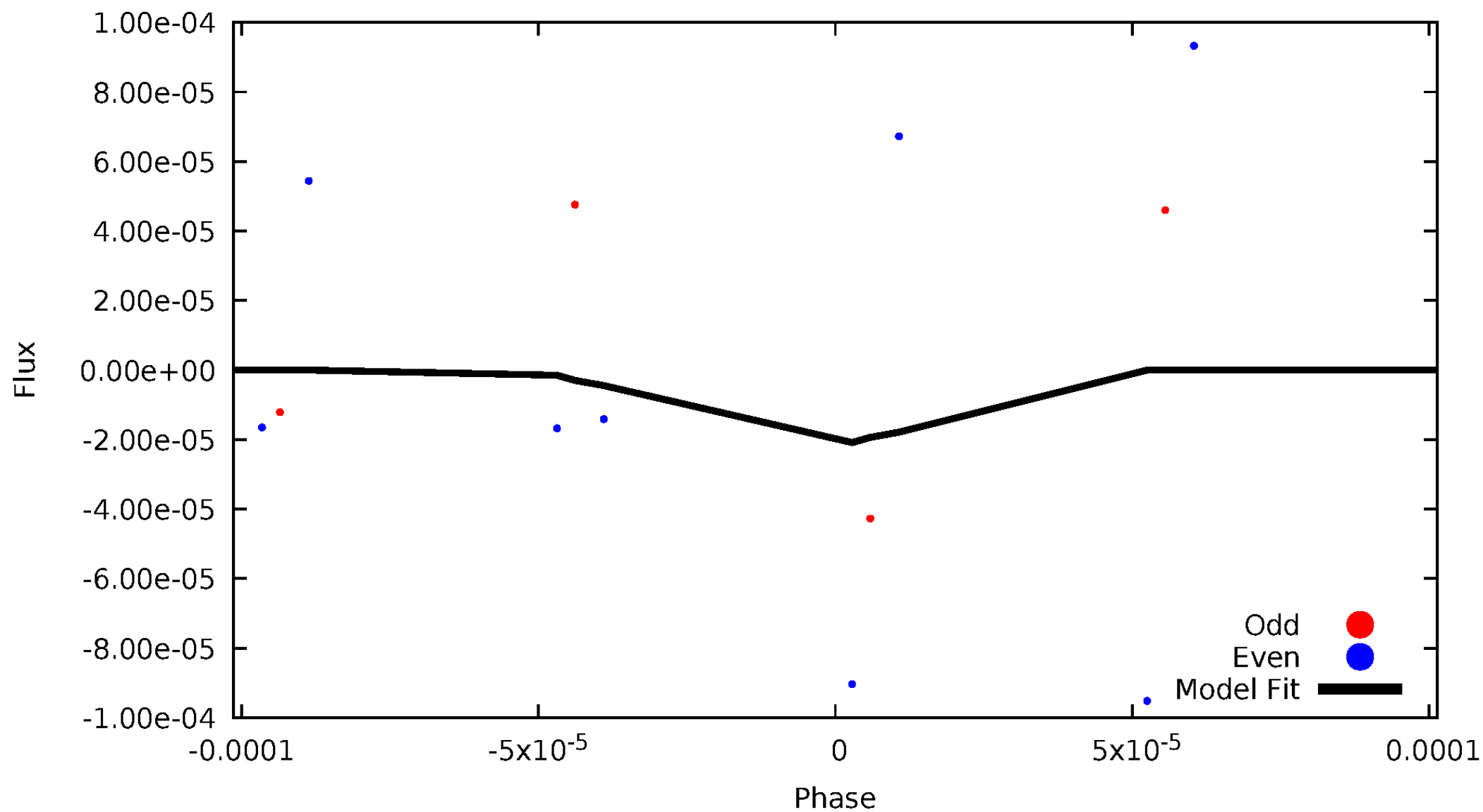
DV Odd/Even

TCE 010735279-02



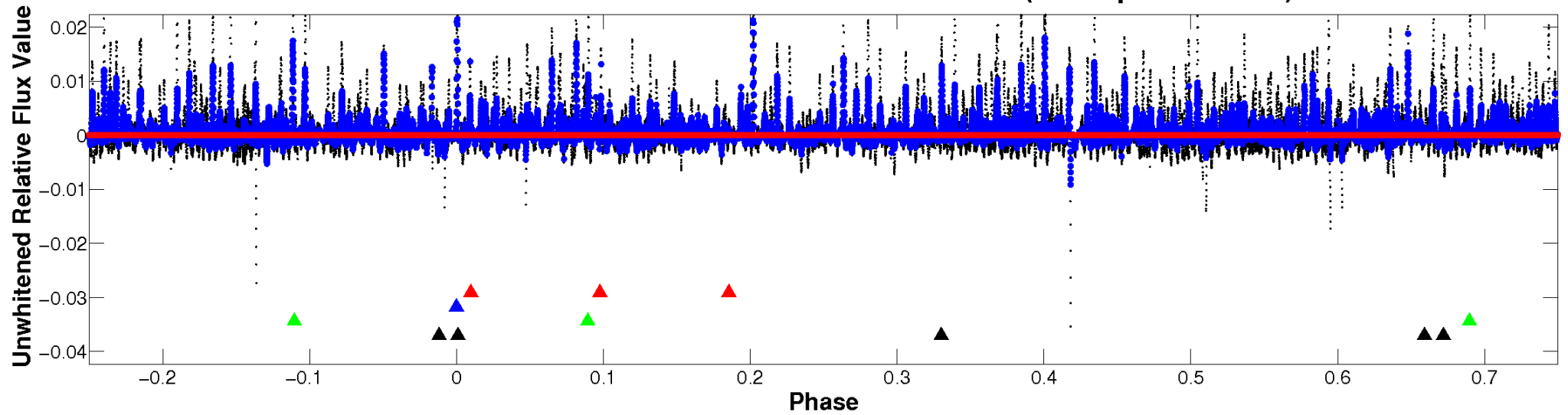
ALT Odd/Even

TCE 010735279-02



Non-Whitened Vs. Whitened Light Curve

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

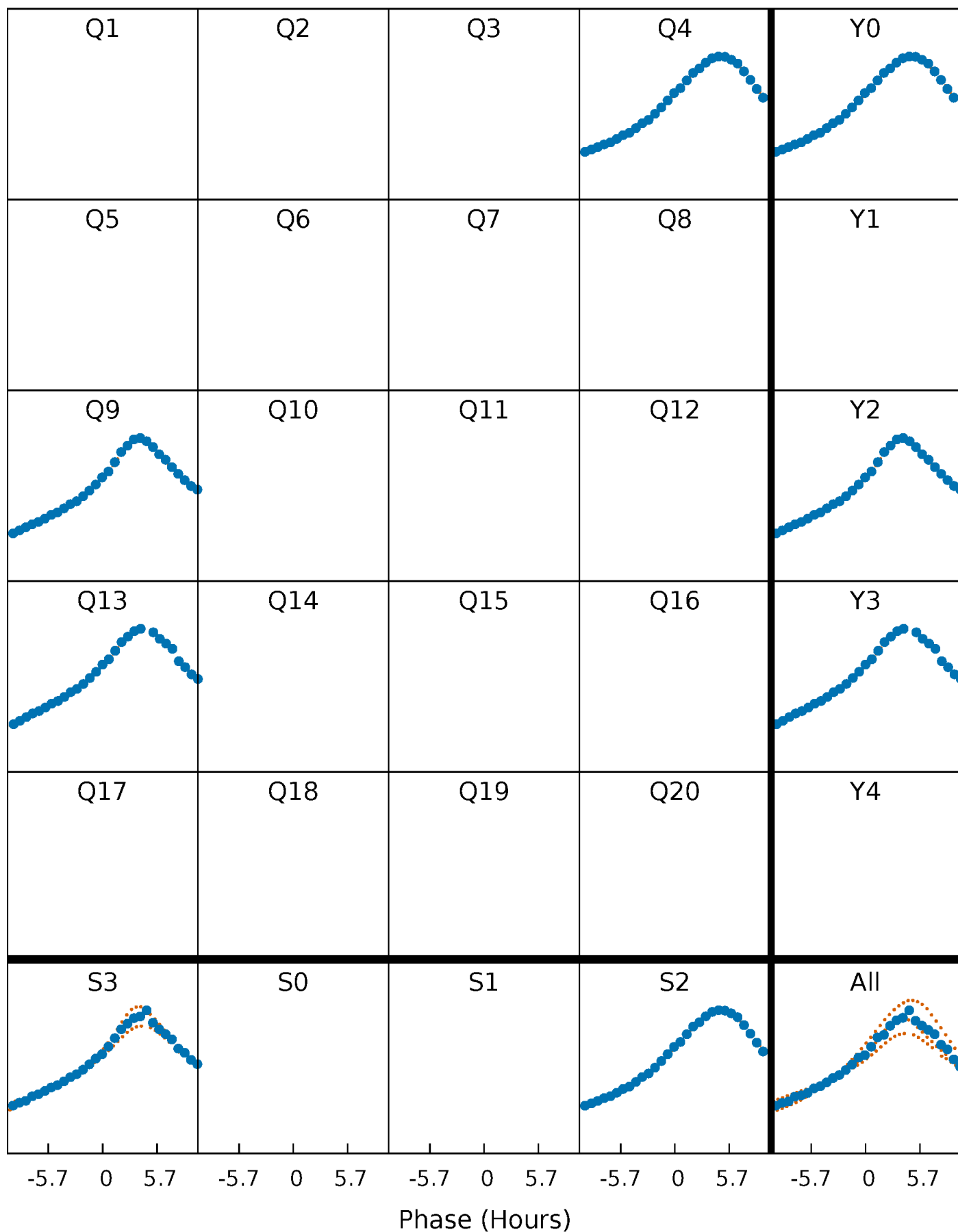


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



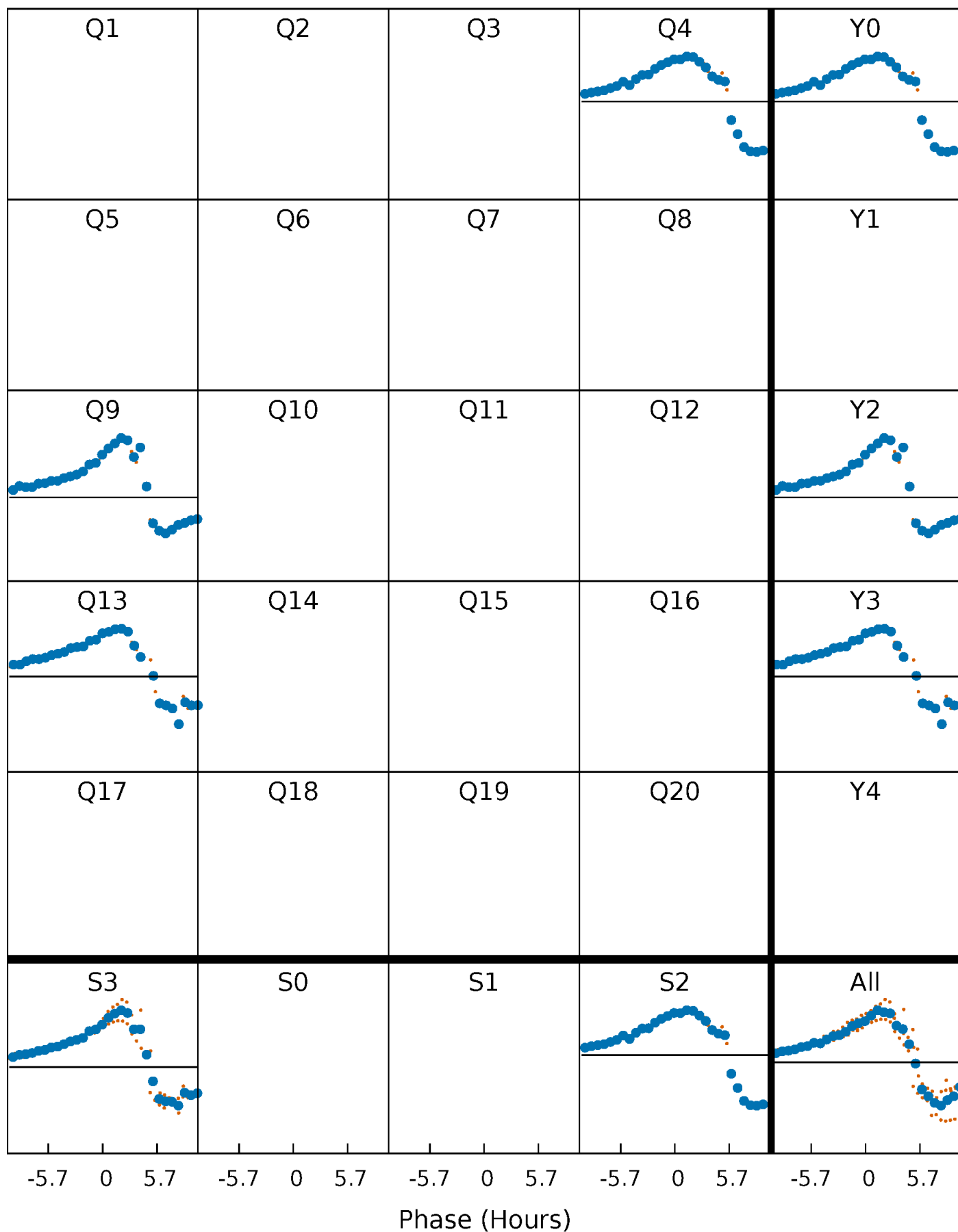
PDC Quarter-Phased Transit Curves

TCE 010735279-02 P=411.143661 Days $T_0=404.152579$ (BKJD)



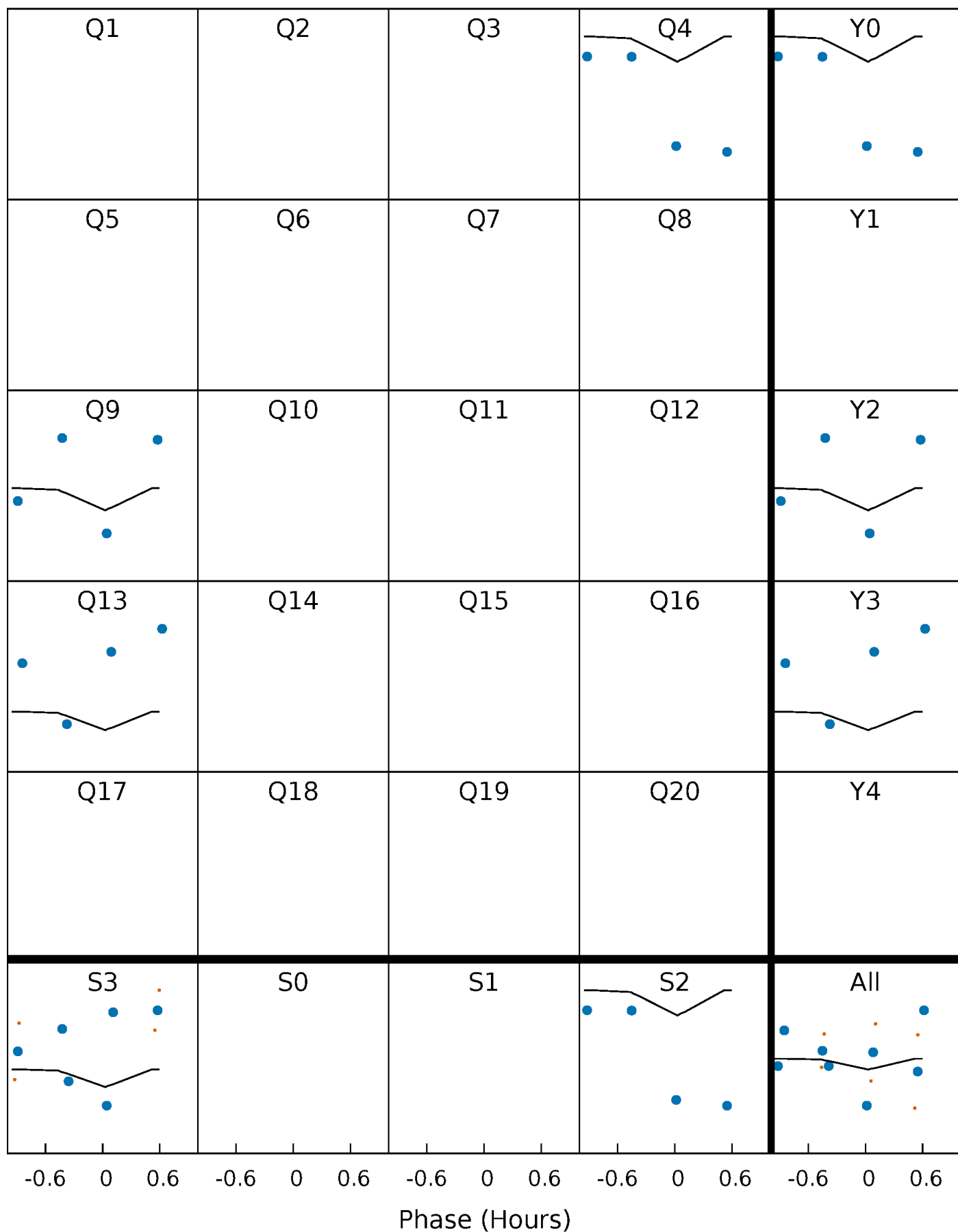
DV Quarter-Phased Transit Curves

TCE 010735279-02 P=411.143661 Days $T_0=404.152579$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

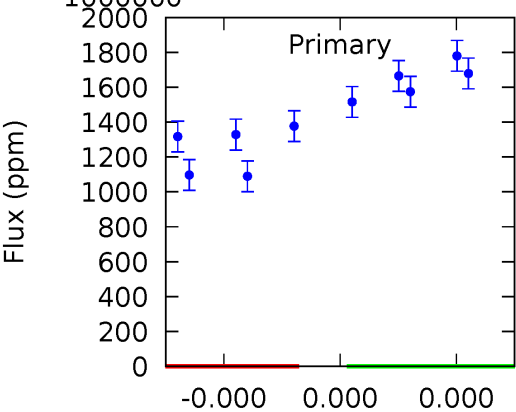
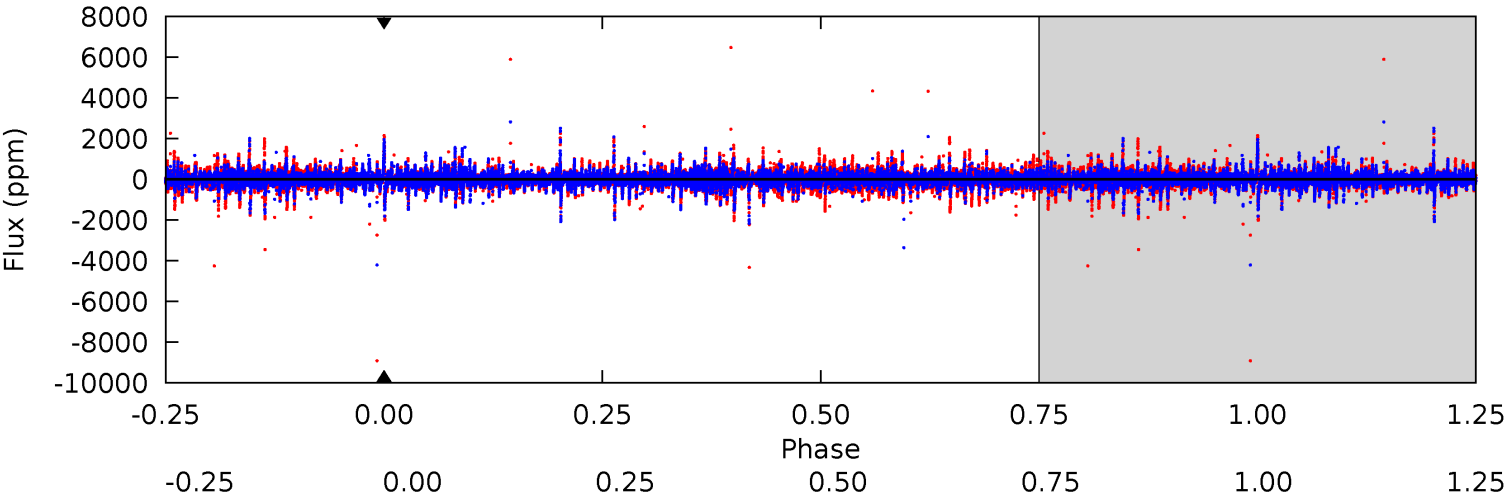
TCE 010735279-02 P=411.143661 Days $T_0=403.847403$ (BKJD)



DV Model-Shift Uniqueness Test

010735279-02, P = 411.143661 Days, E = 404.152579 Days

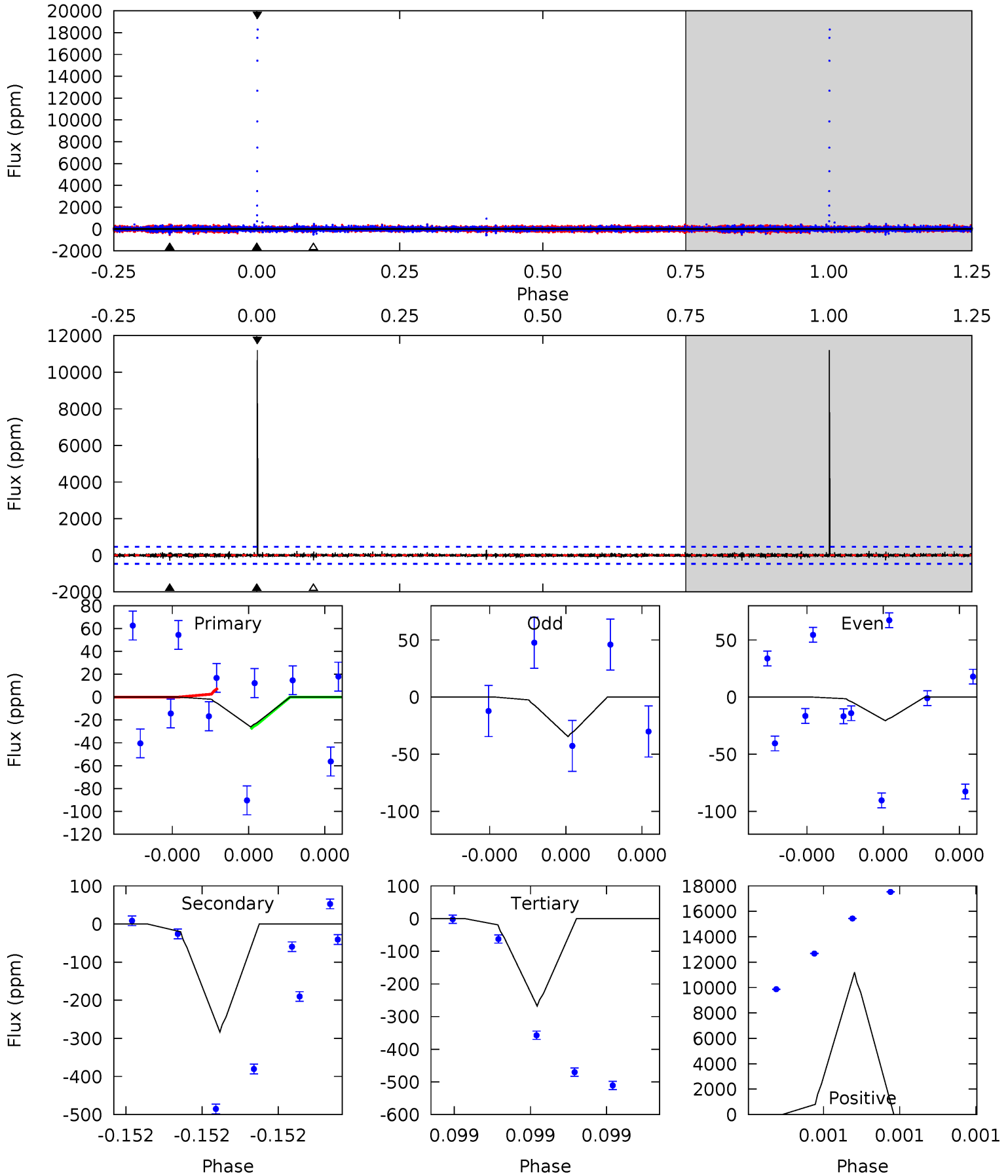
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010735279-02, P = 411.143661 Days, E = 403.847403 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.33	3.54	3.34	139.8	5.85	3.90	1.15	-3.02	-139.5	0.20	-136.3	0.06	0.52	0.98	0.14



Stellar Parameters For KIC 010735279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6892^{+190}_{-262}	$4.050^{+0.252}_{-0.168}$	$-0.360^{+0.300}_{-0.300}$	$1.780^{+0.470}_{-0.522}$	$1.300^{+0.182}_{-0.223}$	$0.325^{+0.529}_{-0.156}$
	+3%/-4%	+6%/-4%	+83%/-83%	+26%/-29%	+14%/-17%	+163%/-48%
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 010735279-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$14.68^{+15.70}_{-9.86}$	518^{+39}_{-45}	3922^{+29986}_{-27785}	$1501^{+794289}_{-420449}$
Alt.	-283 ± 80	$13.18^{+15.01}_{-9.37}$	515^{+39}_{-41}	3743^{+2453}_{-798}	1172^{+13909}_{-923}

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 $A_{obs} \gg 1.0$

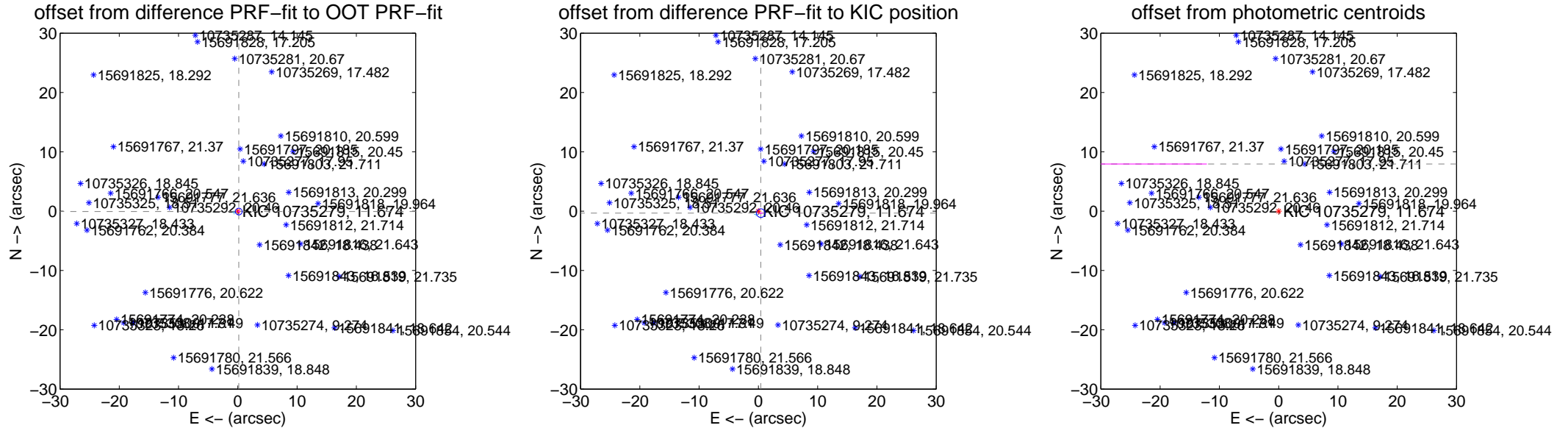
DV Centroid Data

Supplemental centroid analysis for 010735279-02. **Kepler magnitude: 11.67.** Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

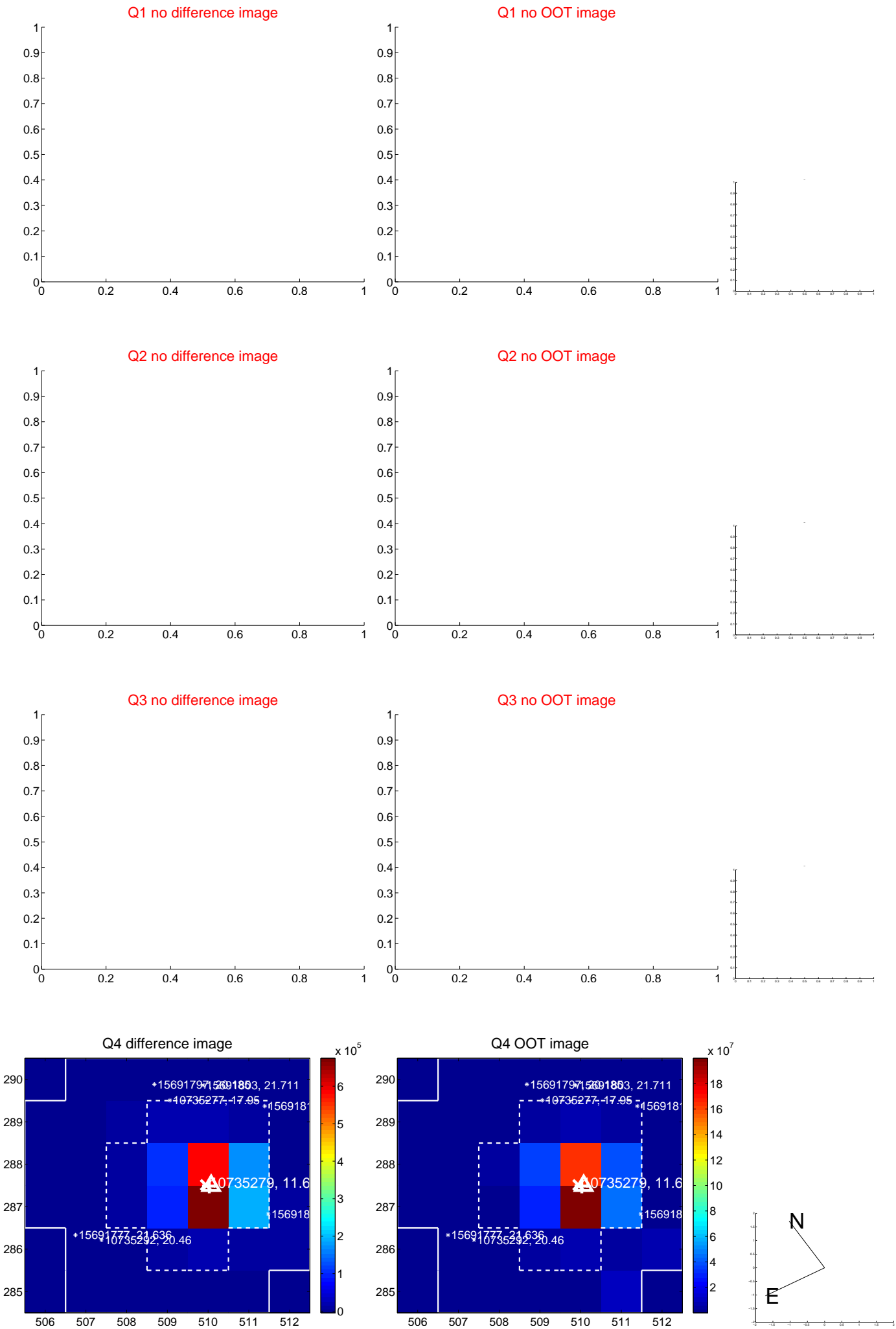
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.181 ± 0.189	0.96	-0.168 ± 0.190	-0.069 ± 0.181
PRF-fit source offset from KIC position	0.531 ± 0.242	2.19	-0.411 ± 0.387	-0.336 ± 0.120
photometric centroid source offset	48.44 ± 36.12	1.34	47.78 ± 35.67	7.94 ± 49.83



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.

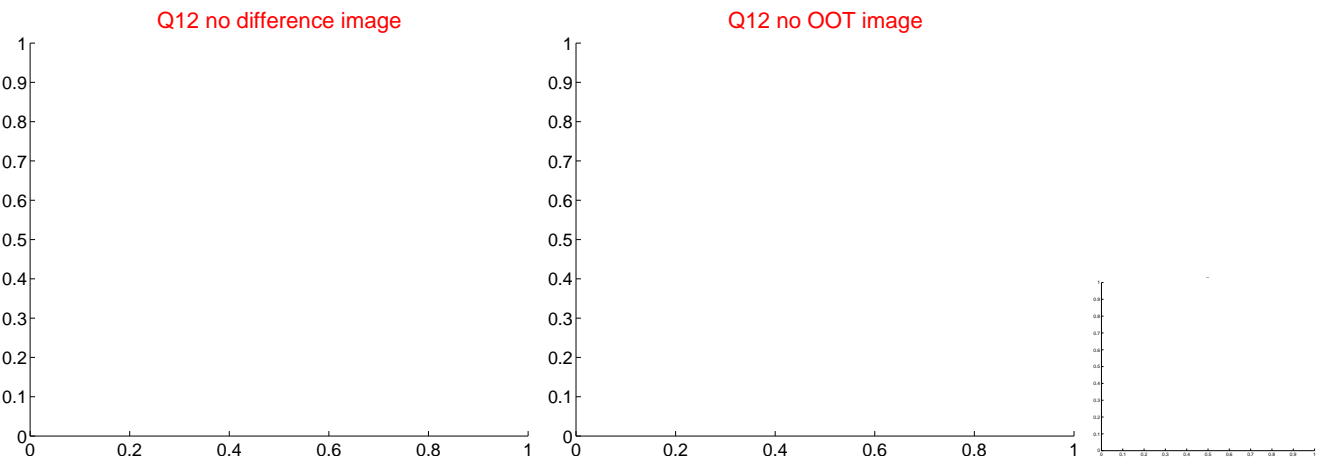
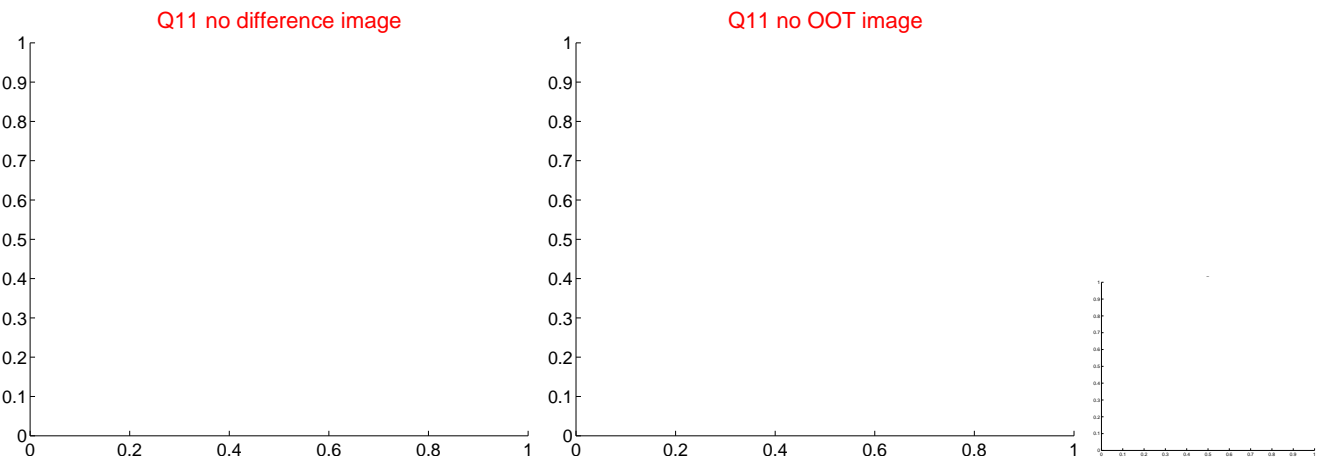
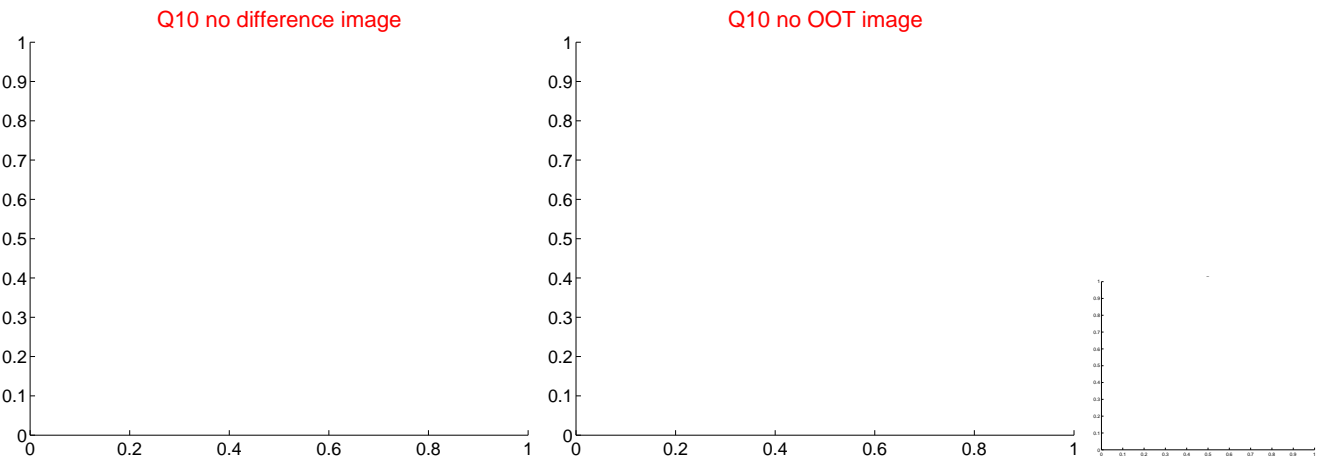
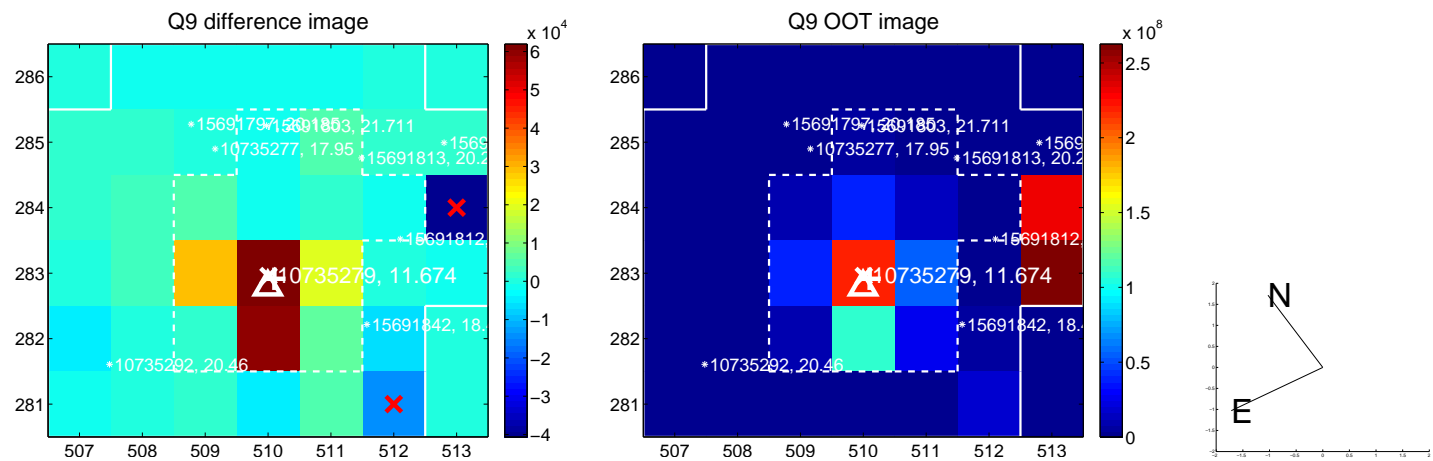
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



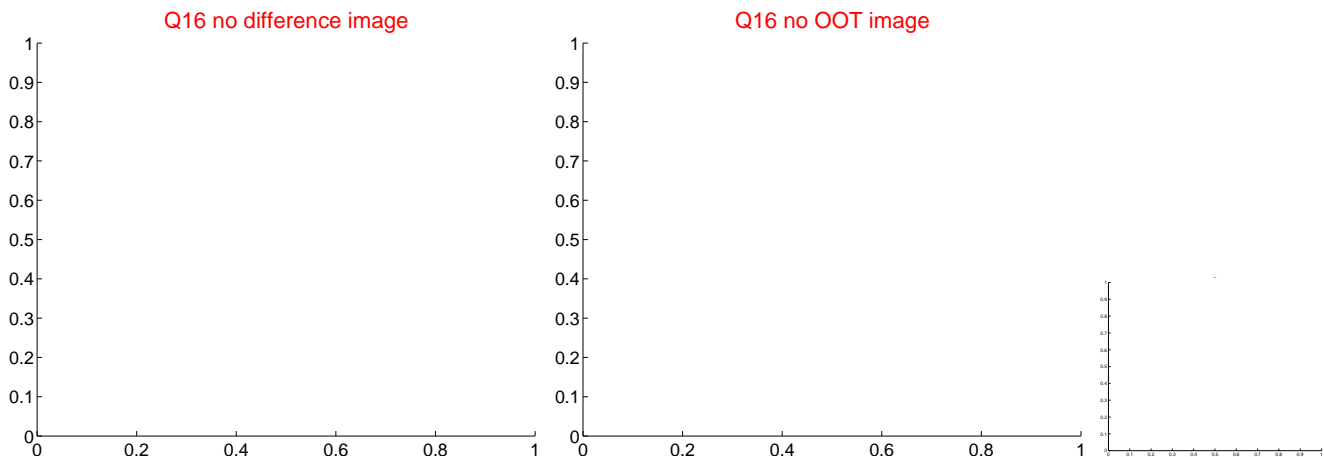
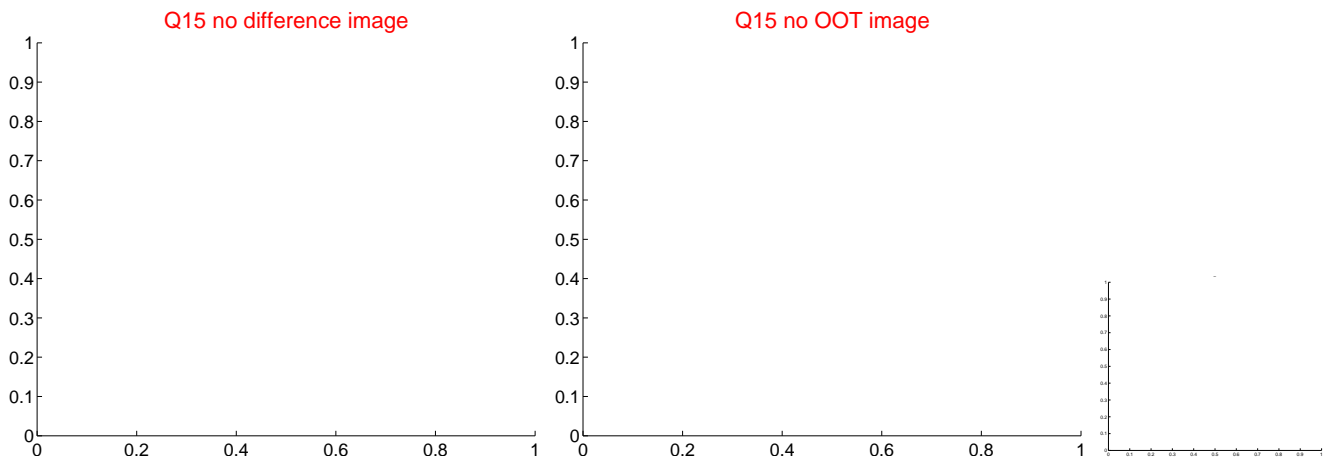
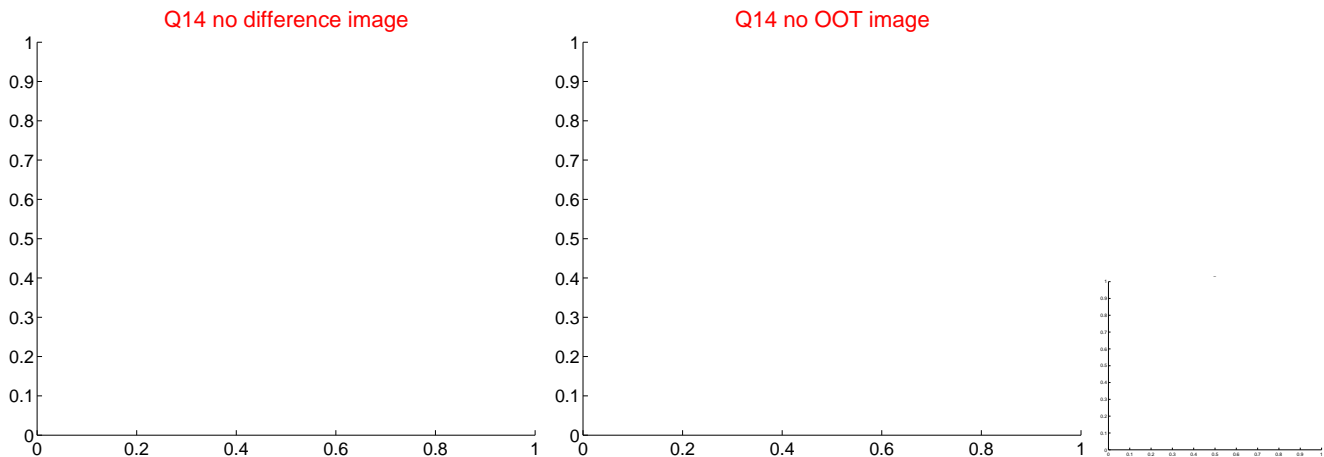
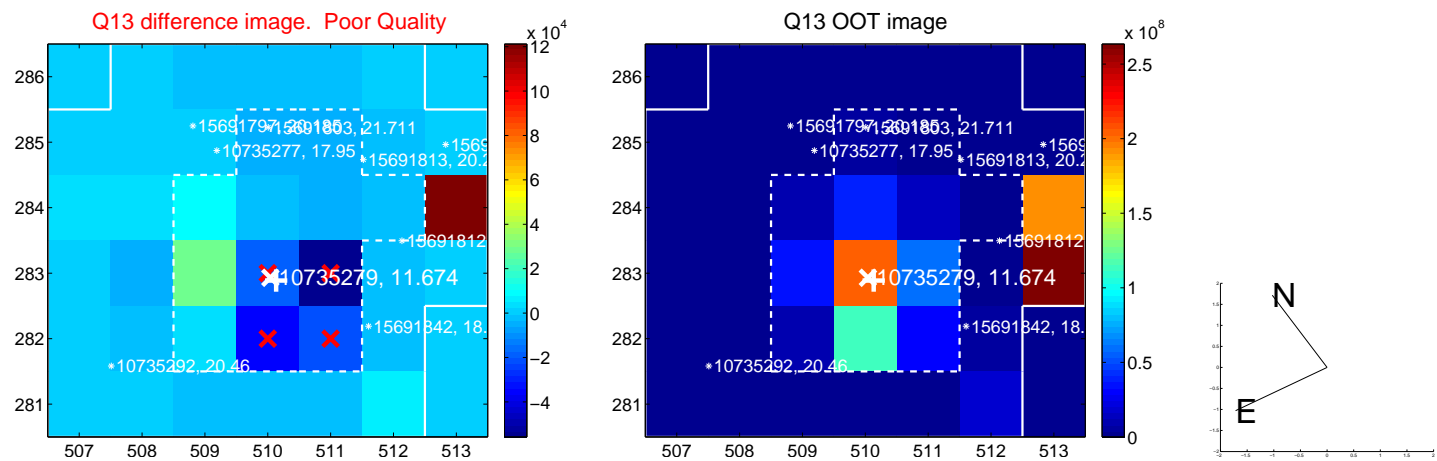
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



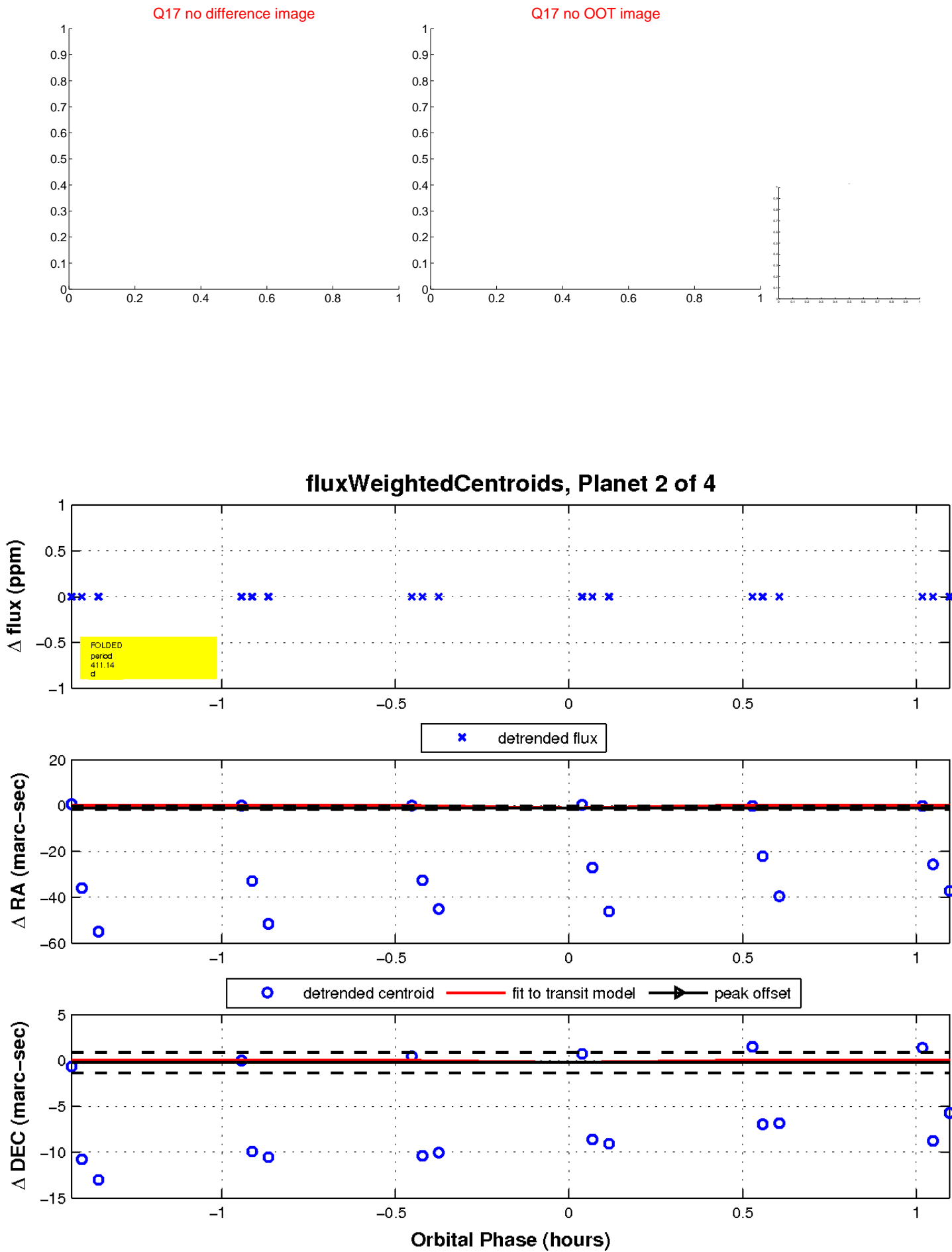
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

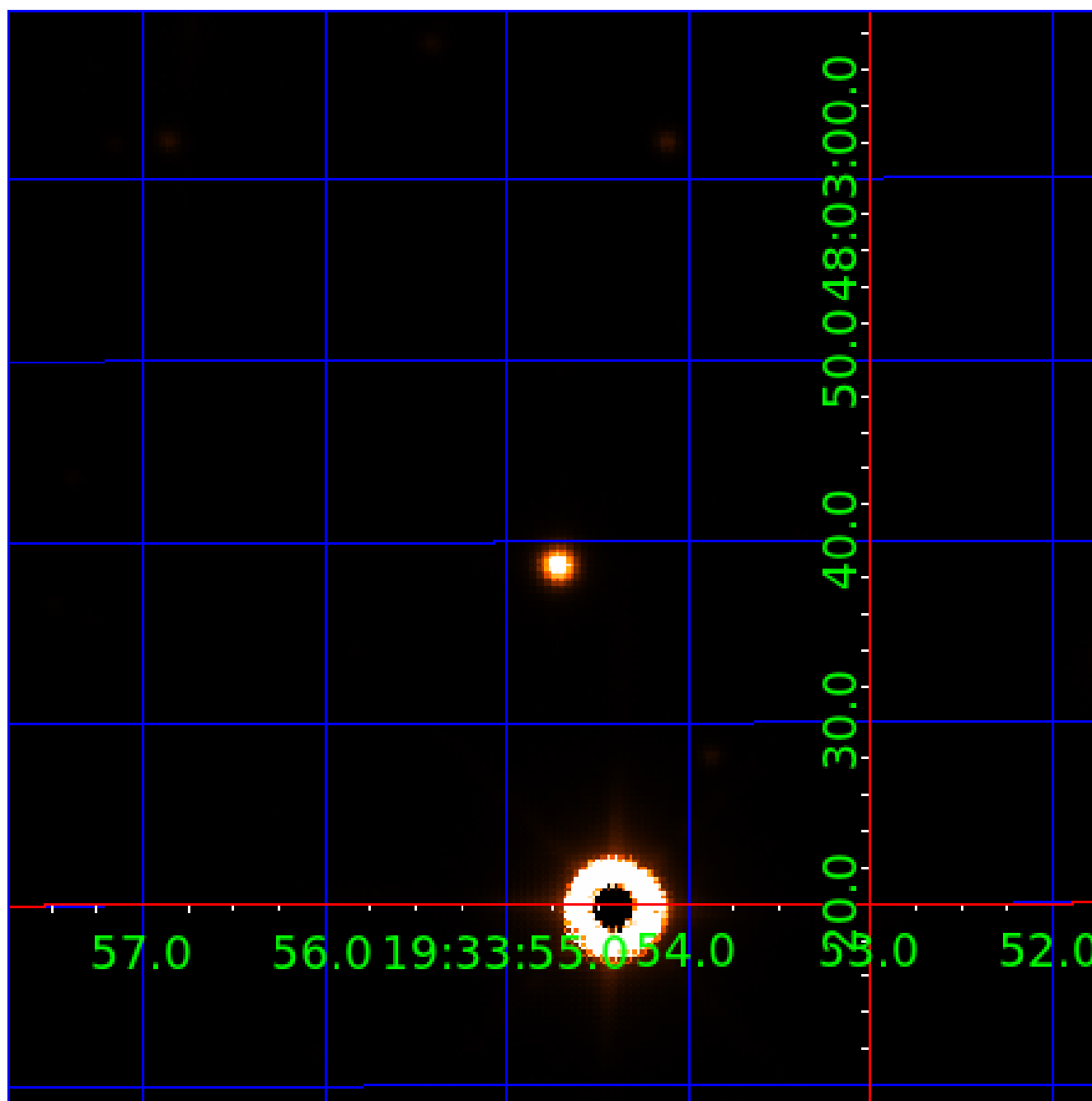


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010735279

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})
010735279-01	OBS	No	375.025030	480.419045	2372.5	10.685	36.0	4.2	1.78	6892	15.81	5.20
010735279-02	OBS	No	411.143661	404.152579	382.4	5.000	25.6	-1.0	1.78	6892	3.52	4.60
010735279-03	OBS	No	493.307183	276.606545	7268.3	8.661	26.4	14.9	1.78	6892	26.85	3.61
010735279-04	OBS	No	275.861052	399.285986	276.3	4.500	18.2	-1.0	1.78	6892	2.99	7.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010735279-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010735279-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010735279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
010735279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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.

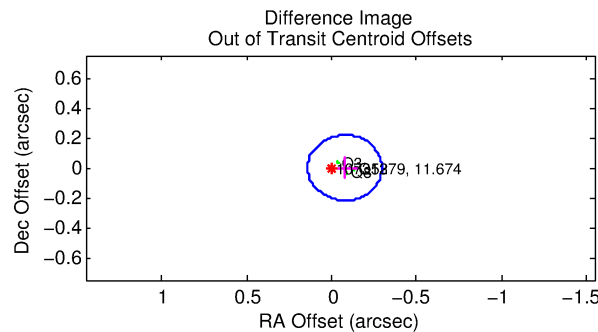
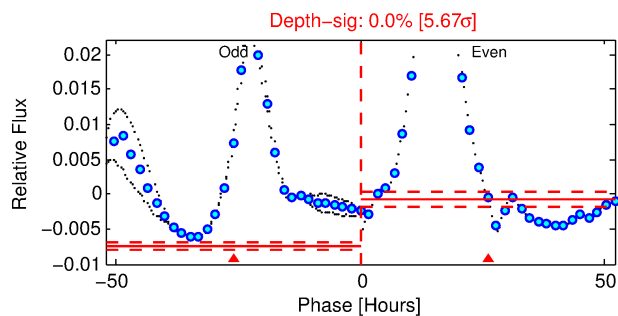
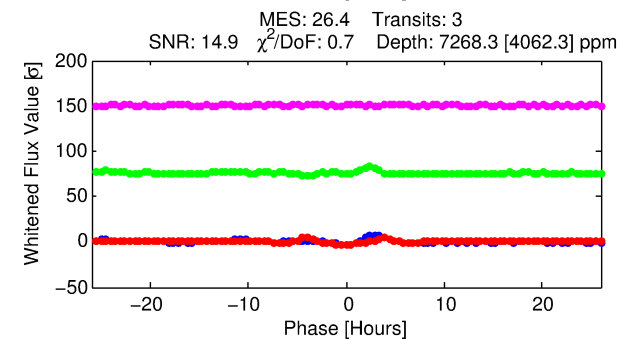
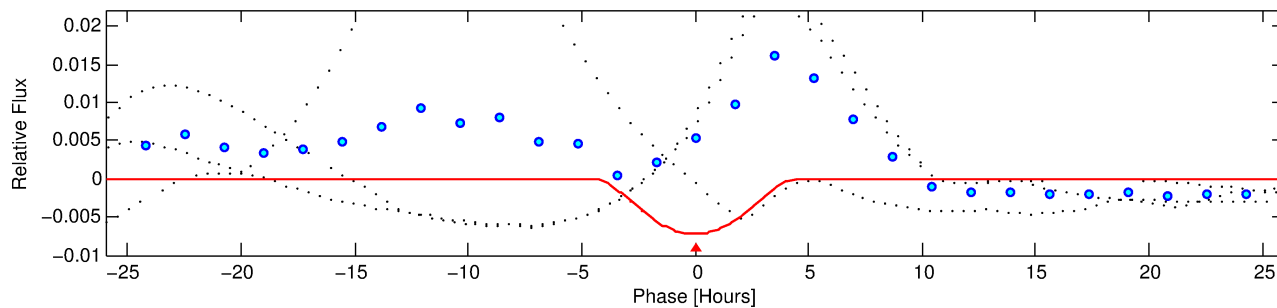
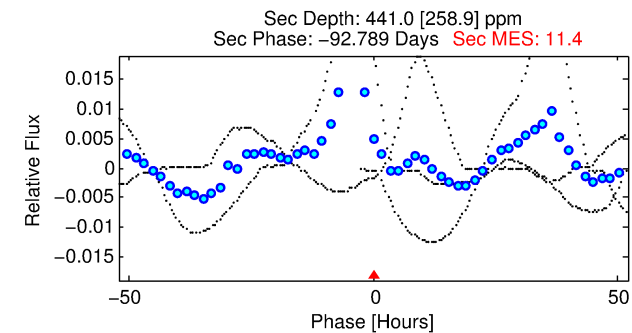
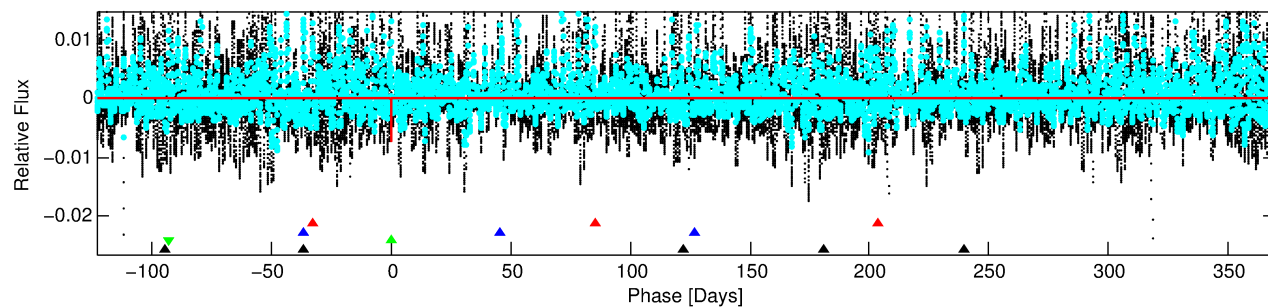
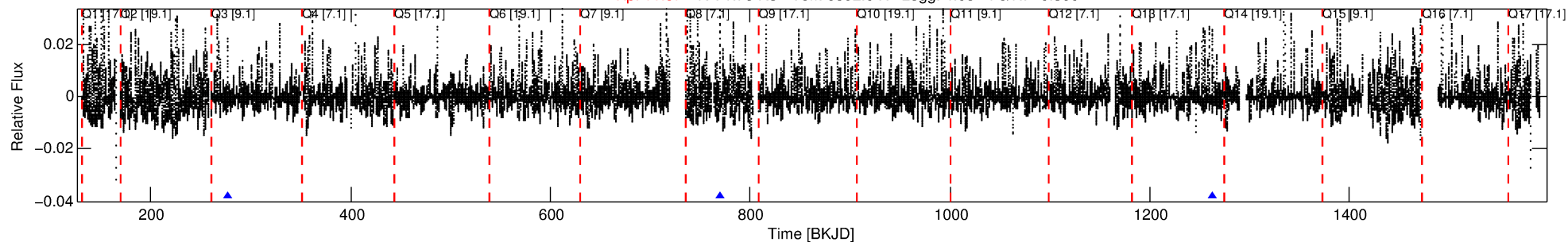
Ephemeris Match Information For 010735279-03

No Significant Match Found

DV One-Page Summary

KIC: 10735279 Candidate: 3 of 4 Period: 493.307 d

Kp: 11.67 R*: 1.78 Rs Teff: 6892.0 K Logg: 4.05 Fe/H: -0.360



DV Fit Results:

Period = 493.30718 [0.00204] d
Epoch = 276.6065 [0.0030] BKJD
Rp/R* = 0.1382 [0.0443]
a/R* = 236.54 [11.88]
b = 1.00 [0.01]
Seff = 3.61 [1.66]
Teq = 351 [40] K
Rp = 26.85 [11.67] Re
a = 1.3327 [0.3665] AU
Ag = 597.90 [580.93] [1.03σ]
Teffp = 2687 [593] K [3.93σ]

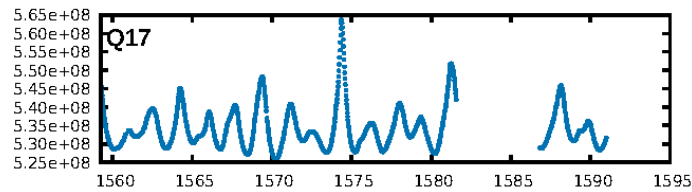
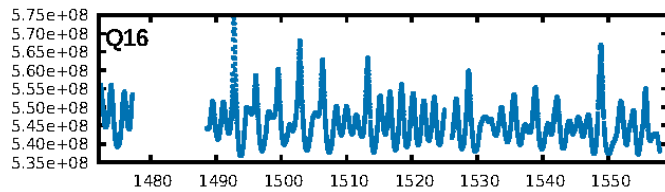
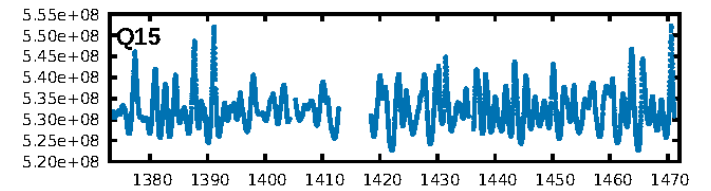
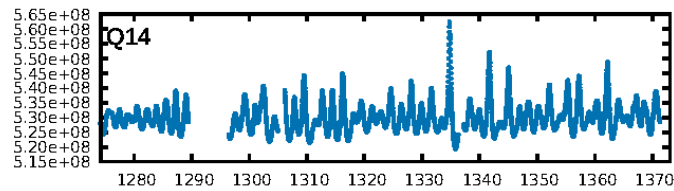
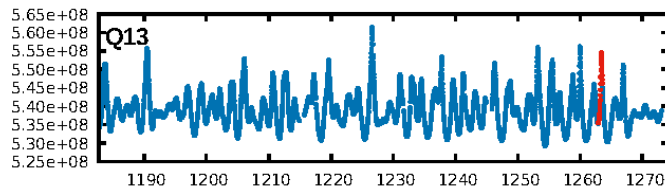
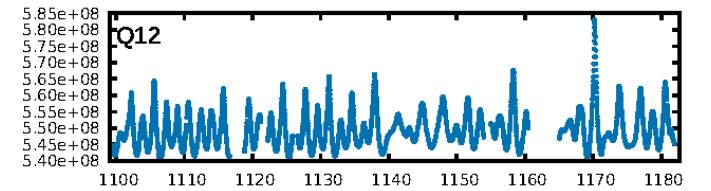
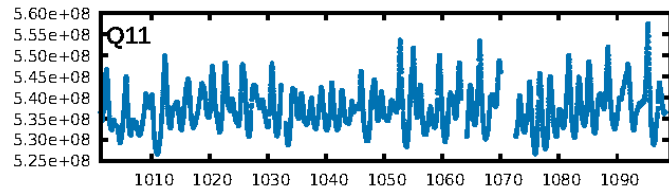
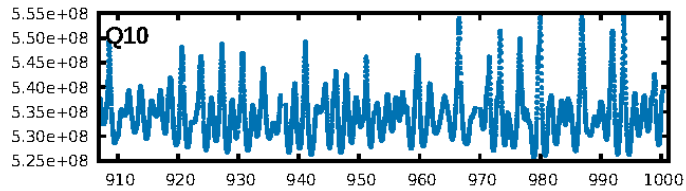
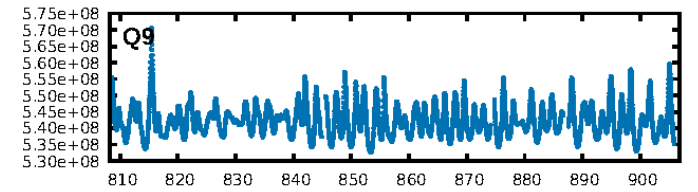
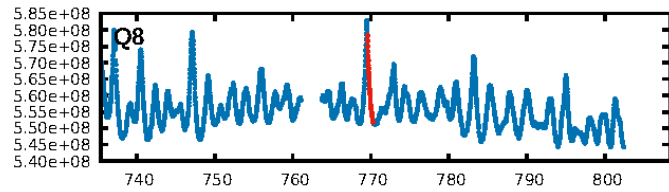
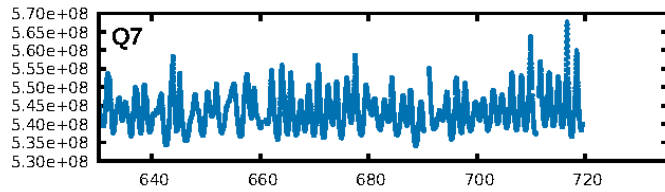
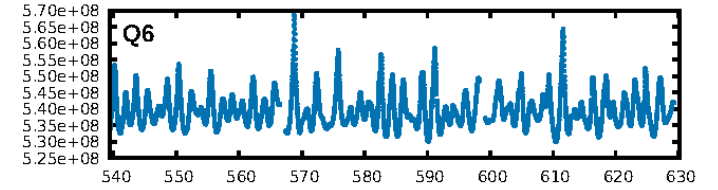
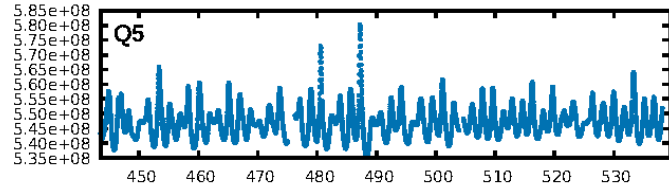
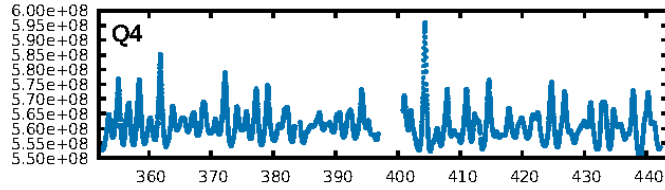
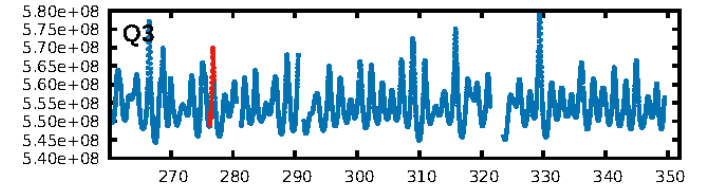
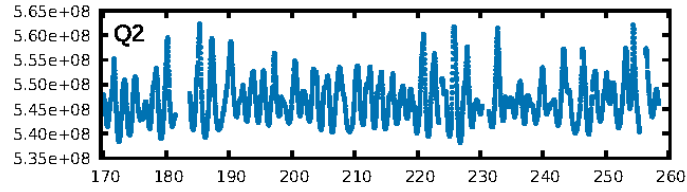
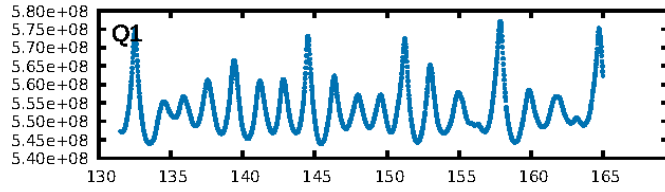
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [197.18σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.4031
Centroid-sig: 90.2%
Centroid-so: 2.650 arcsec [17.55σ]
OotOffset-rm: 0.077 arcsec [1.06σ]
KicOffset-rm: 0.378 arcsec [4.29σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

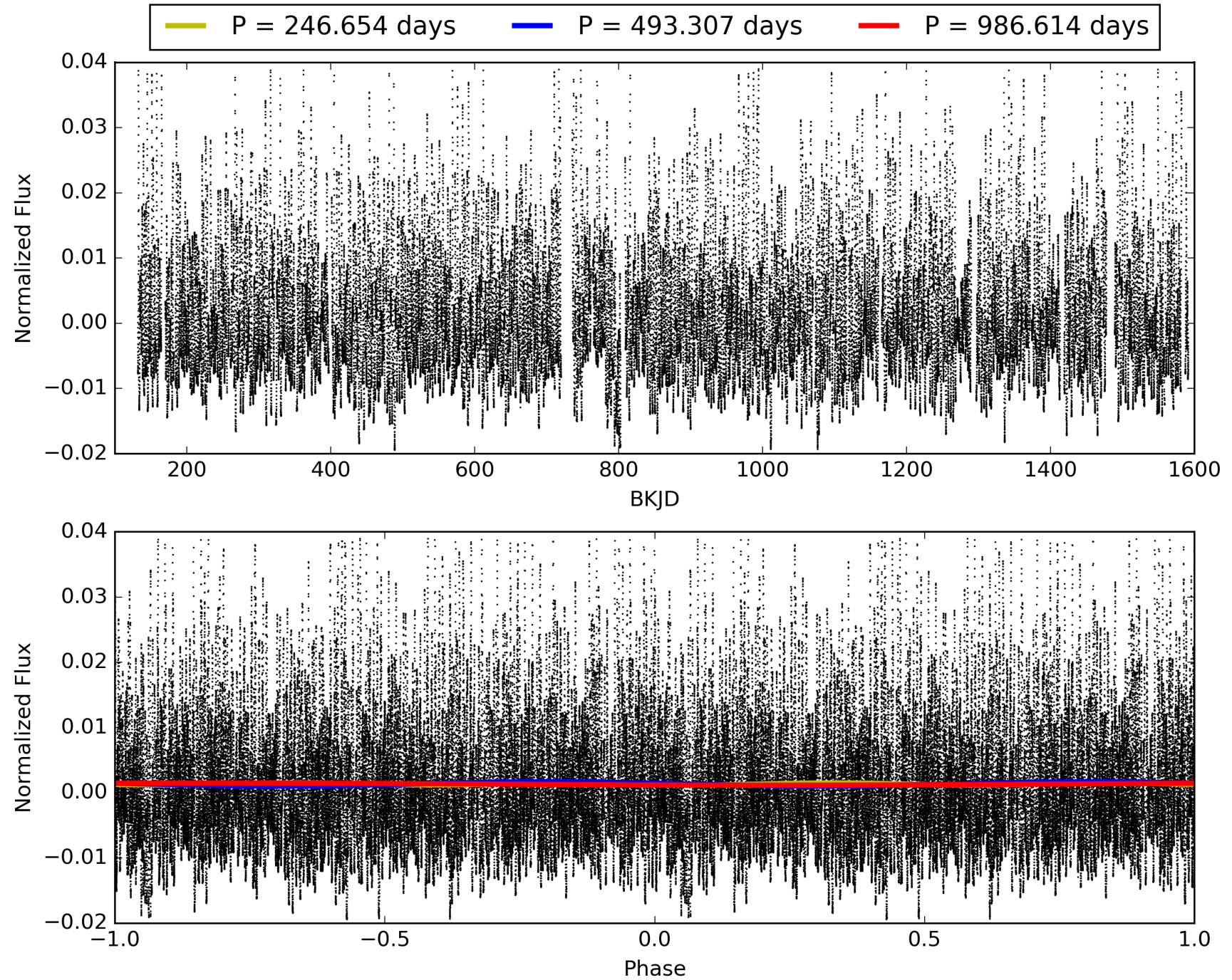
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:12:31 Z

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

TCE 010735279-03, PDC Light Curves

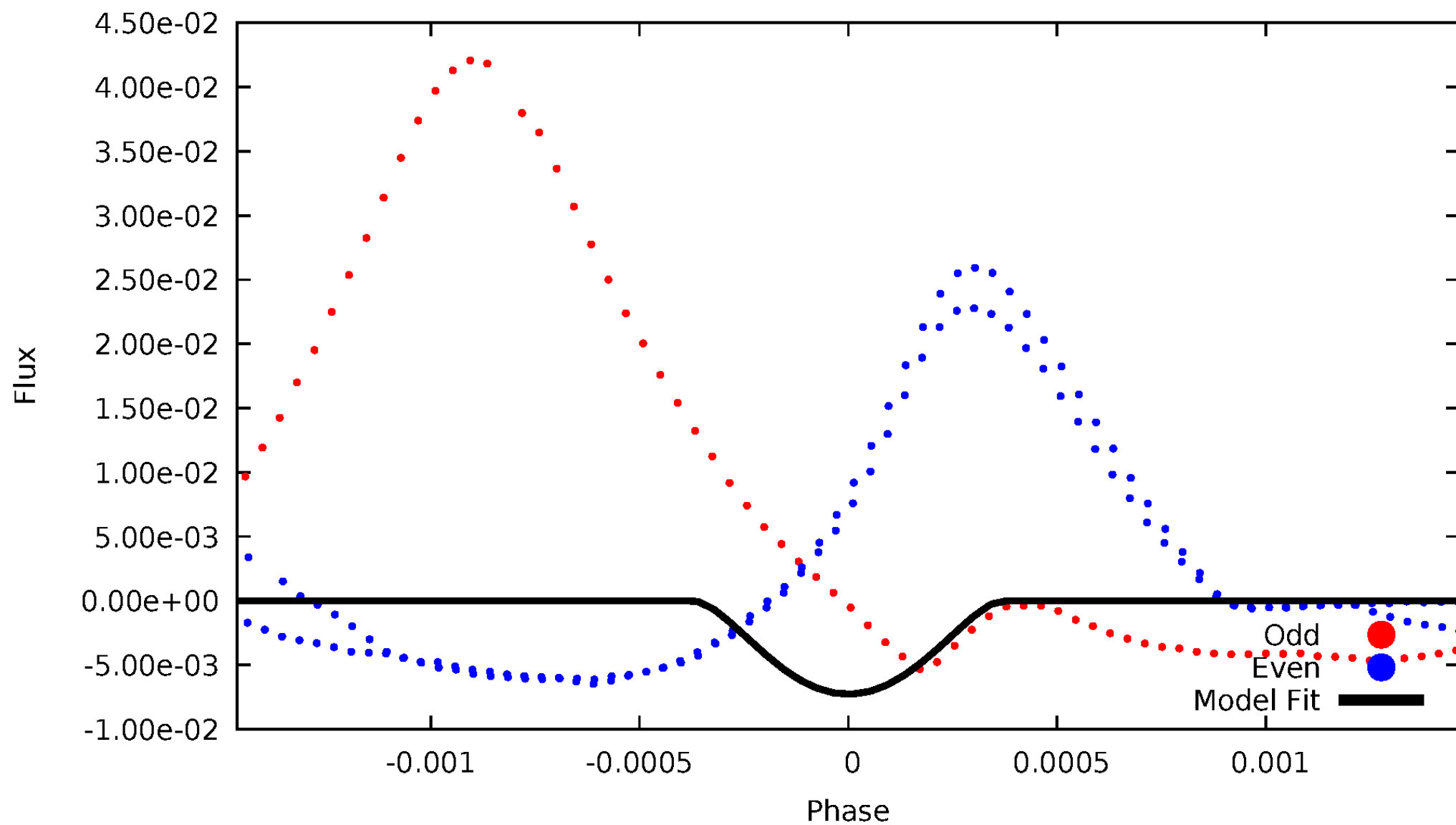


TCE 010735279-03



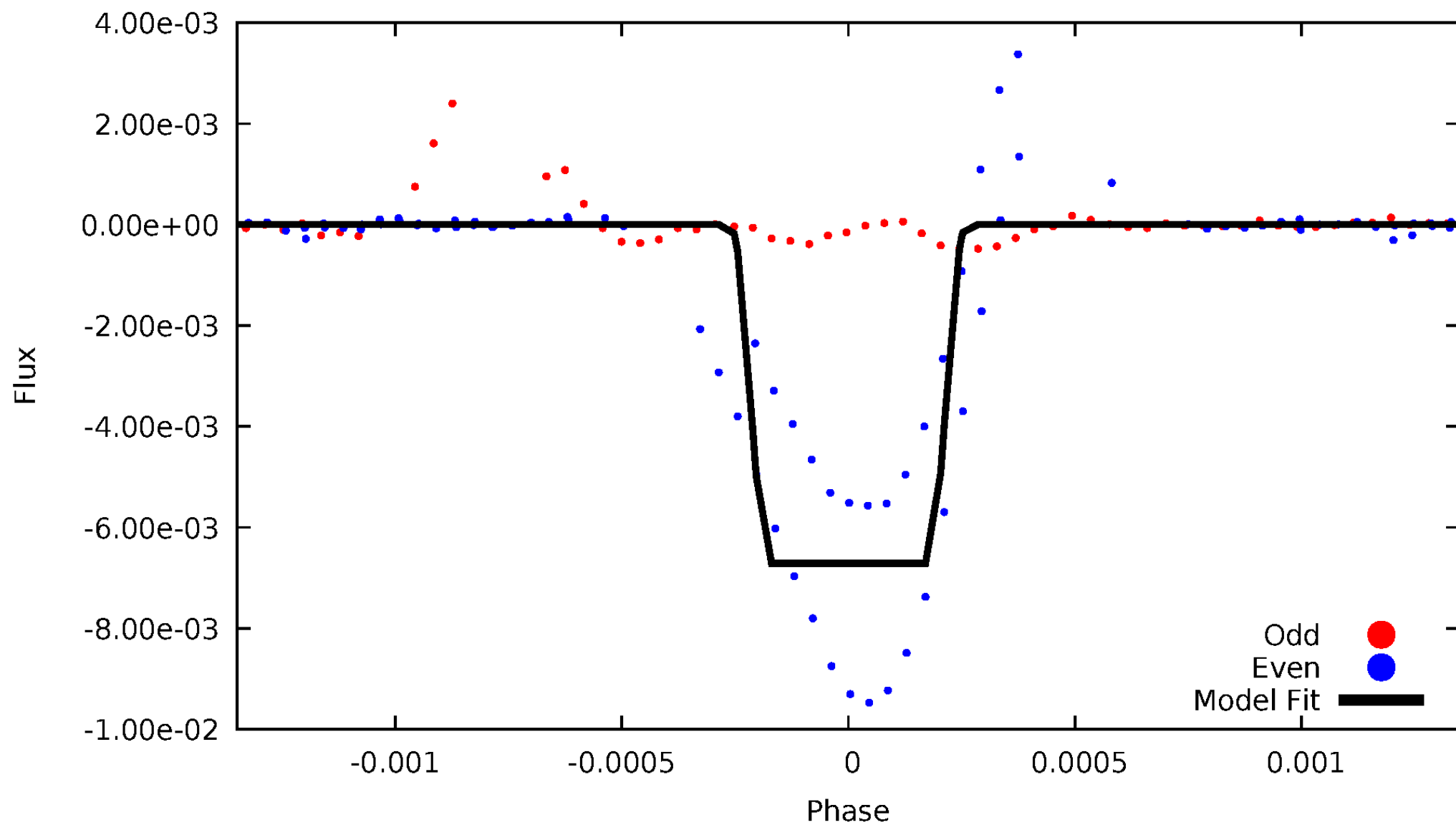
DV Odd/Even

TCE 010735279-03



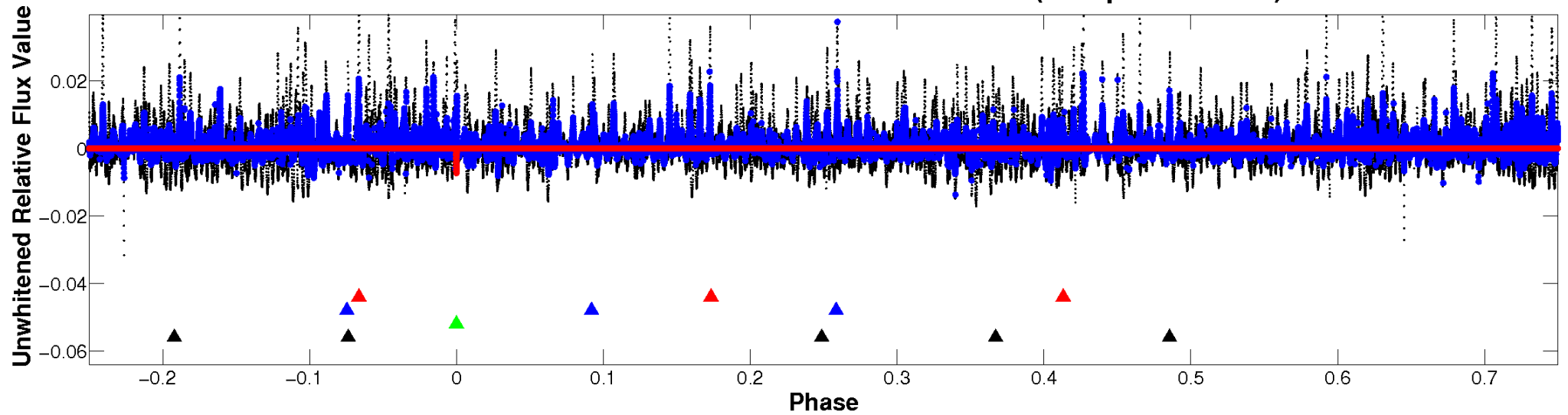
ALT Odd/Even

TCE 010735279-03

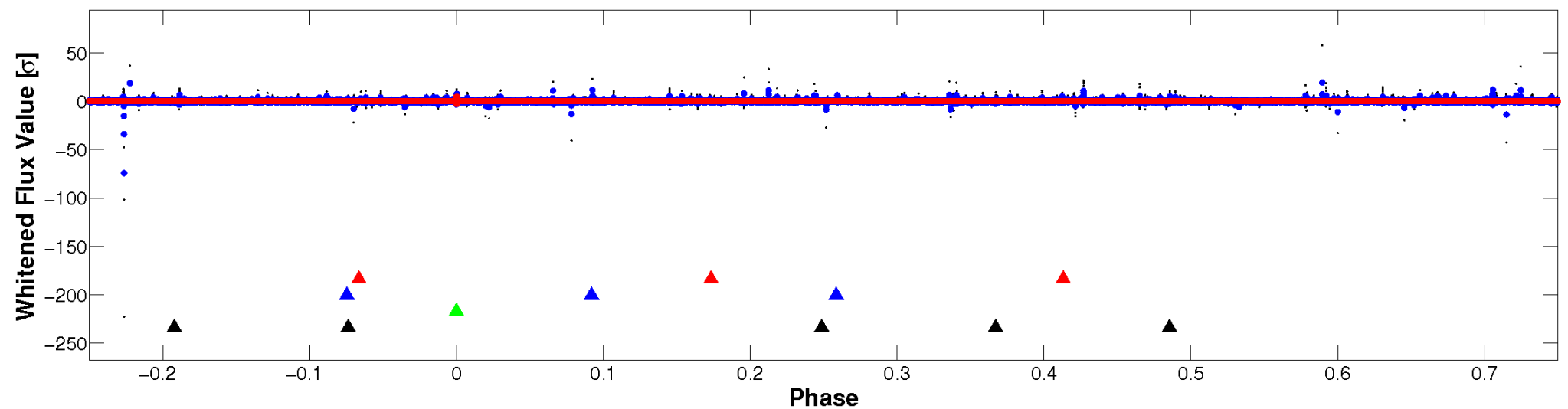


Non-Whitened Vs. Whitened Light Curve

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

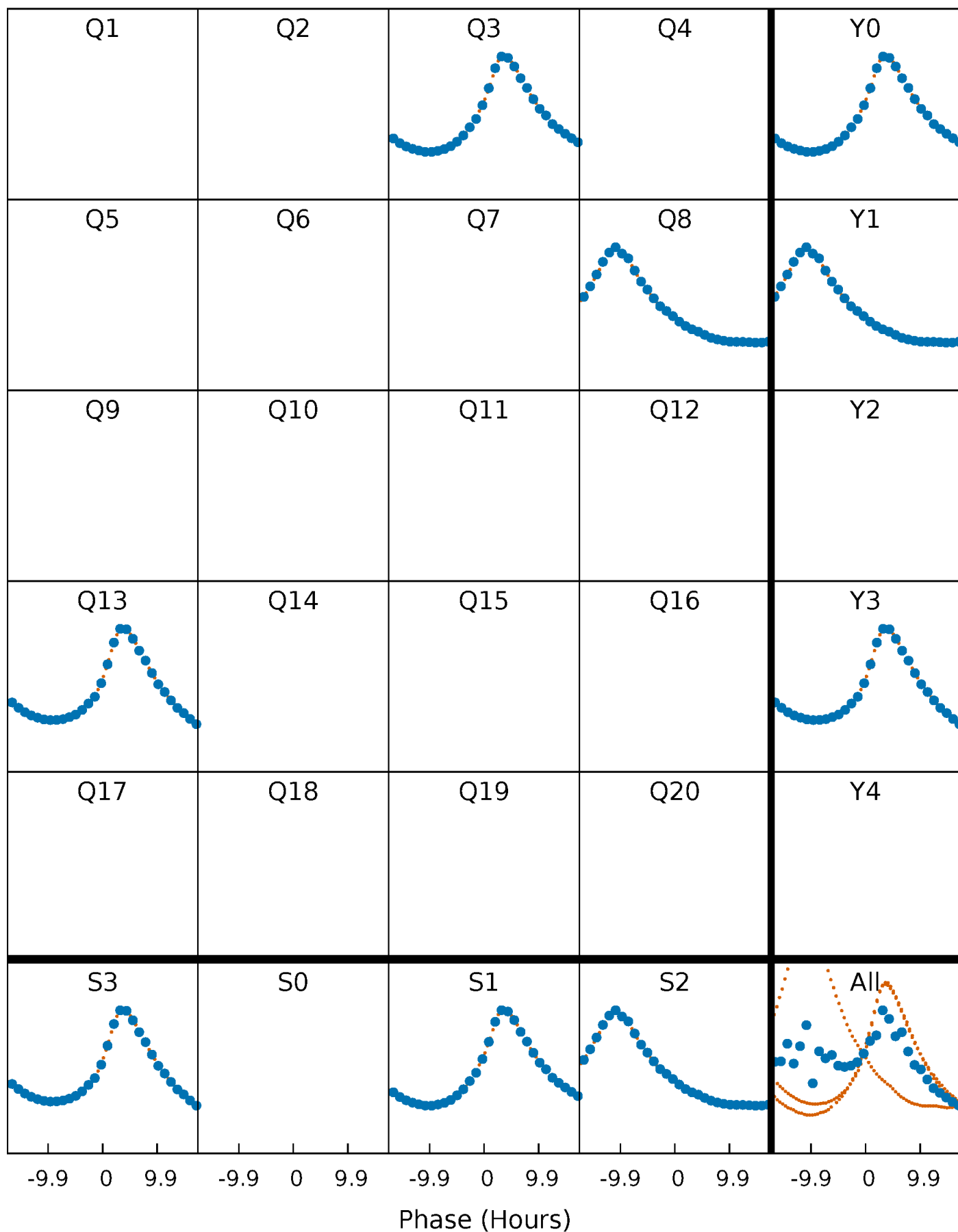


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



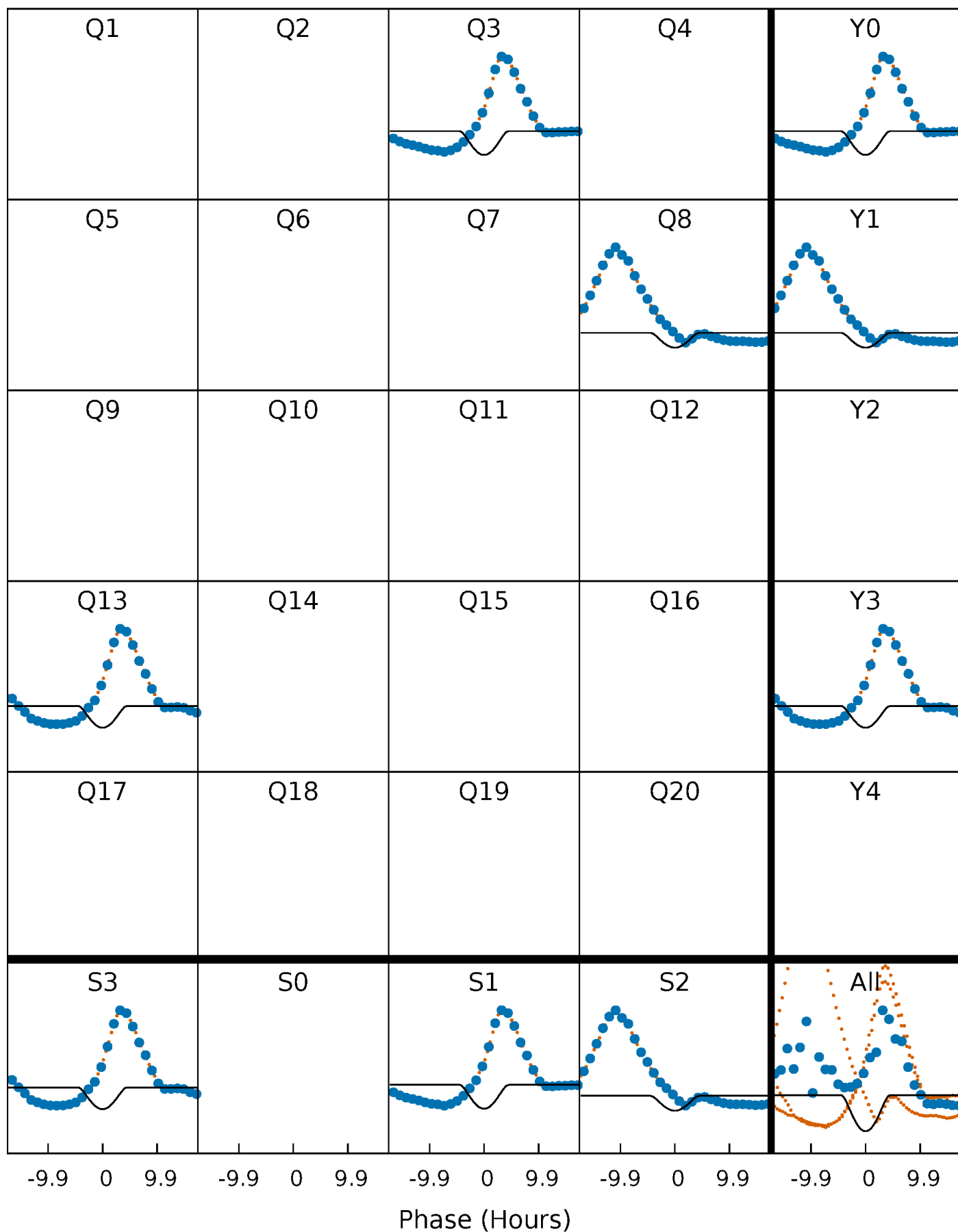
PDC Quarter-Phased Transit Curves

TCE 010735279-03 $P=493.307183$ Days $T_0=276.606545$ (BKJD)



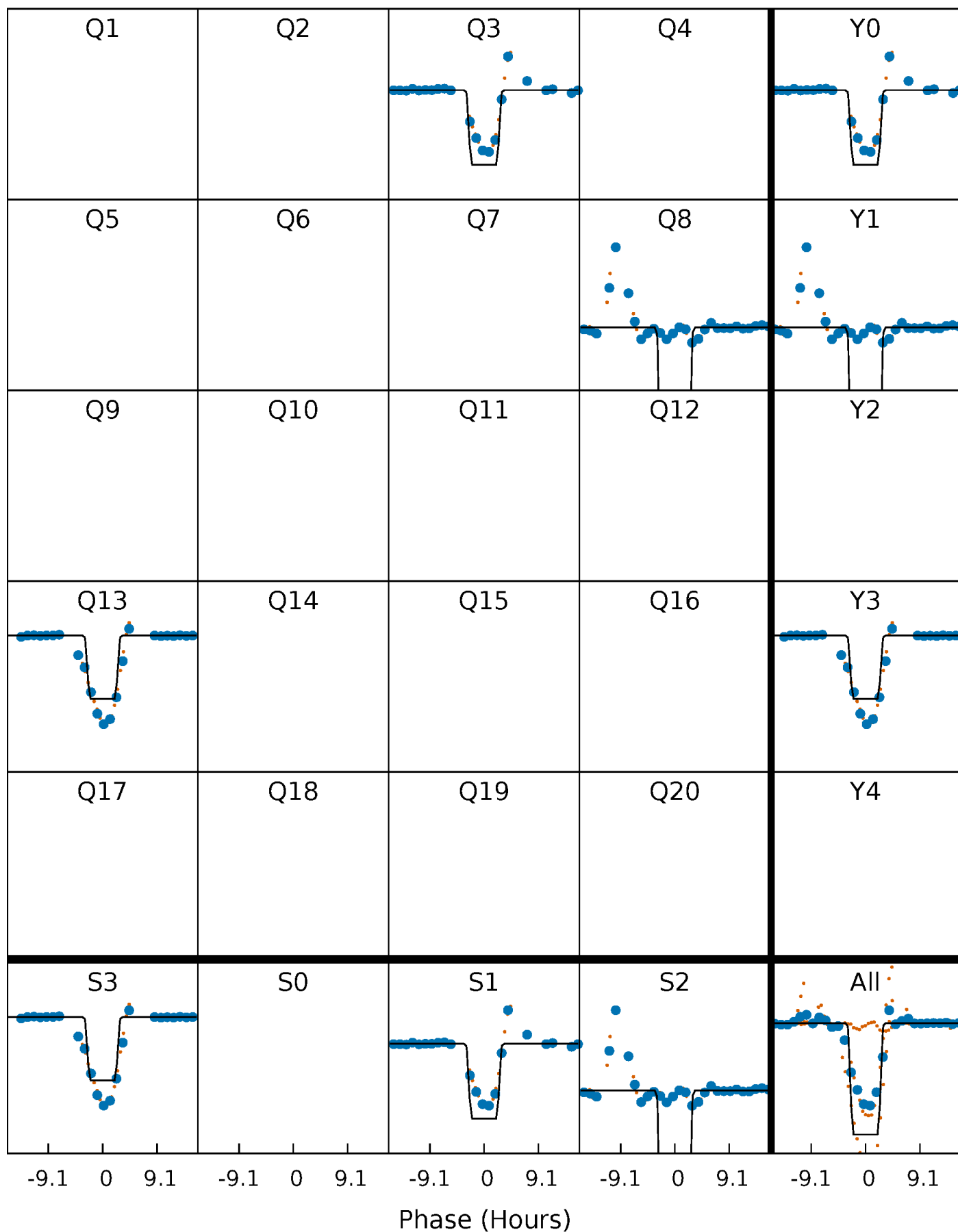
DV Quarter-Phased Transit Curves

TCE 010735279-03 $P=493.307183$ Days $T_0=276.606545$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

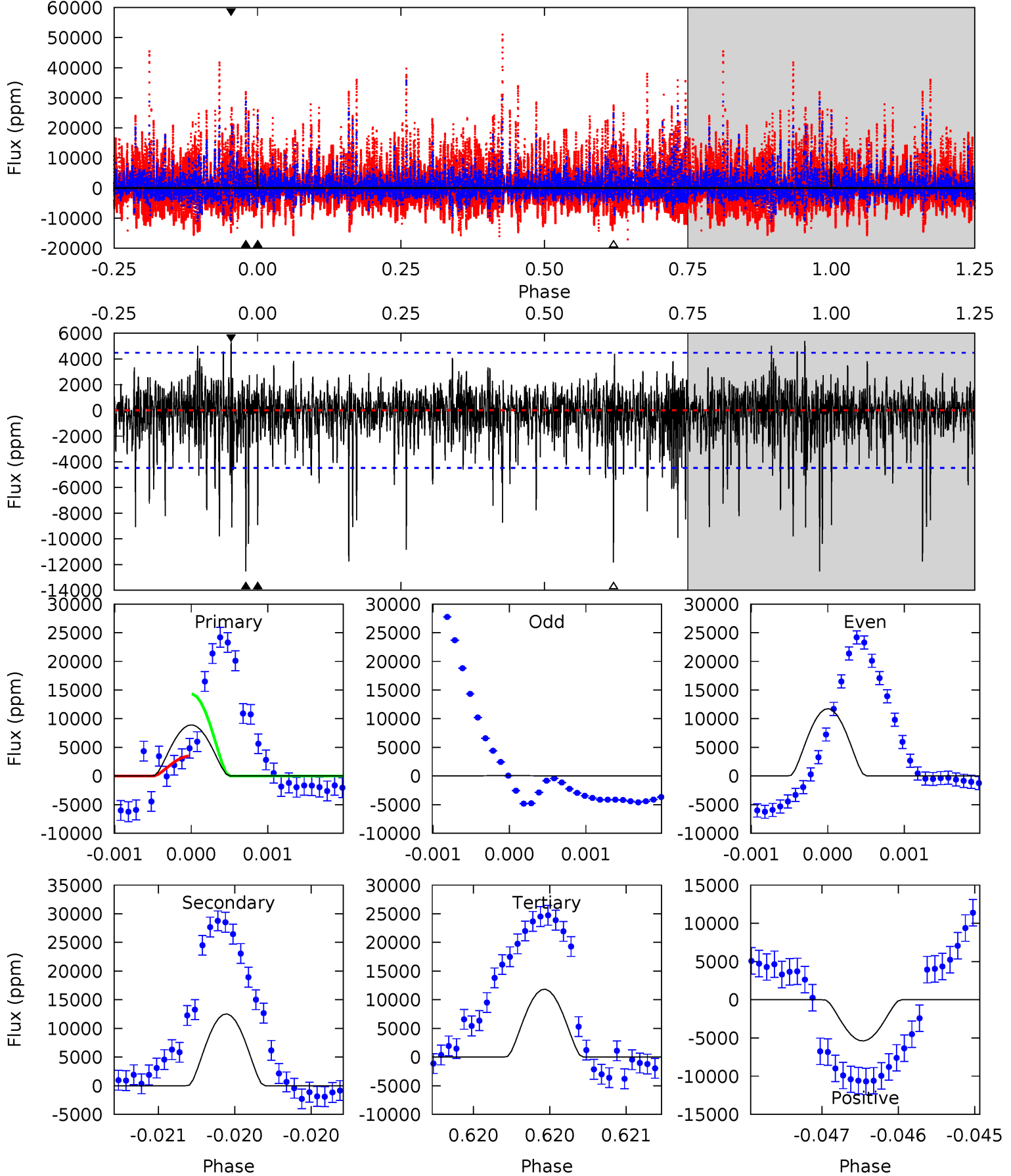
TCE 010735279-03 P=493.307006 Days $T_0=276.549970$ (BKJD)



DV Model-Shift Uniqueness Test

010735279-03, P = 493.307183 Days, E = 276.606545 Days

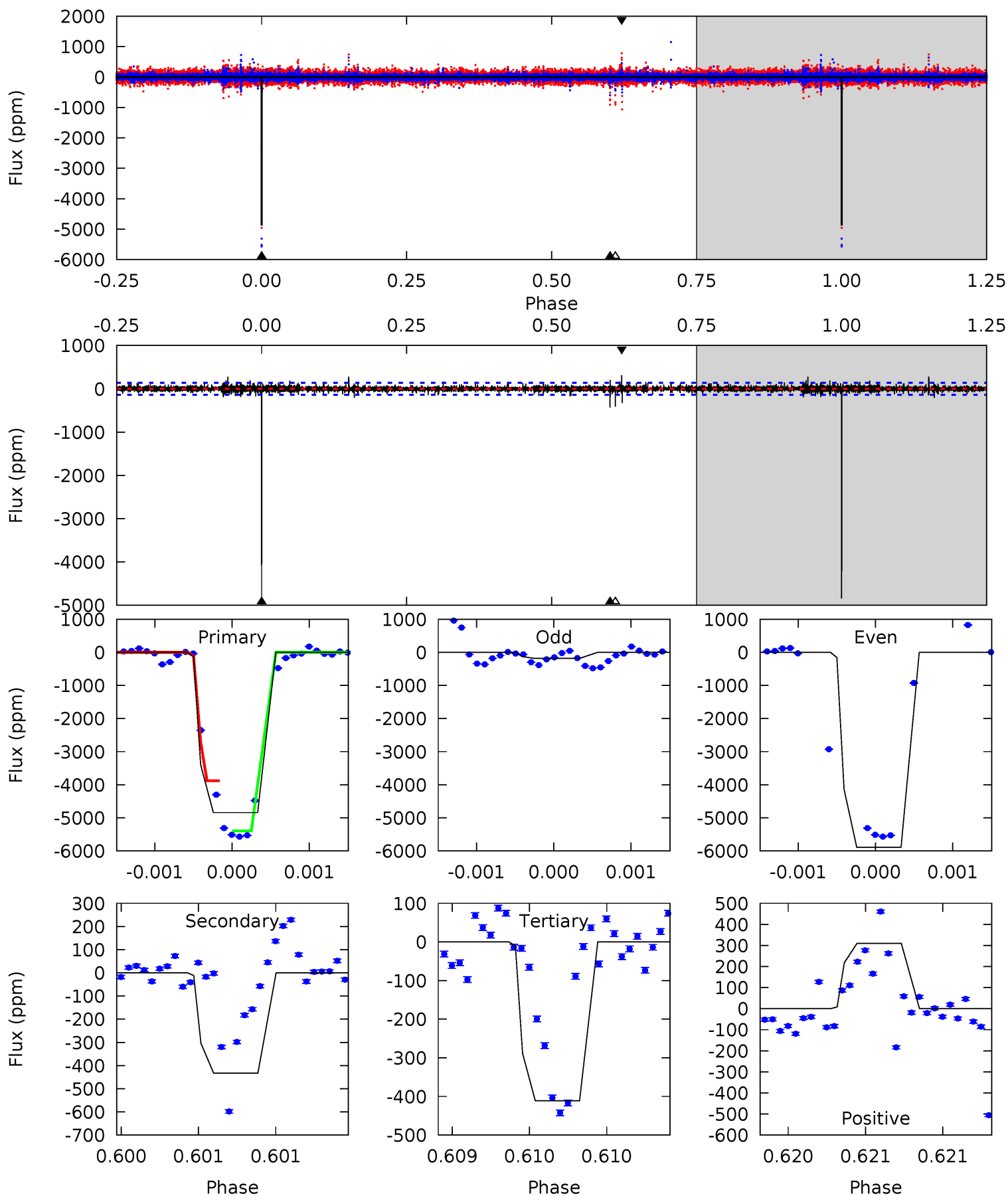
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	15.4	14.5	6.62	5.50	3.37	2.08	-3.60	4.33	0.85	8.78	6.53	0.72	0.30	6.73



Alt Model-Shift Uniqueness Test

010735279-03, P = 493.307006 Days, E = 276.549970 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
193.9	17.3	16.4	12.4	5.57	3.48	1.23	177.4	181.5	0.87	4.91	127.4	0.93	0.06	0



Stellar Parameters For KIC 010735279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6892^{+190}_{-262}	$4.050^{+0.252}_{-0.168}$	$-0.360^{+0.300}_{-0.300}$	$1.780^{+0.470}_{-0.522}$	$1.300^{+0.182}_{-0.223}$	$0.325^{+0.529}_{-0.156}$
	+3%/-4%	+6%/-4%	+83%/-83%	+26%/-29%	+14%/-17%	+163%/-48%
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 010735279-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12526 ± 813	$26.12^{+10.78}_{-9.50}$	487^{+36}_{-40}	6190^{+1396}_{-831}	17704^{+25162}_{-8518}
Alt.	-433 ± 25	$16.34^{+9.69}_{-8.02}$	490^{+38}_{-43}	3752^{+1030}_{-464}	1589^{+4183}_{-980}

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

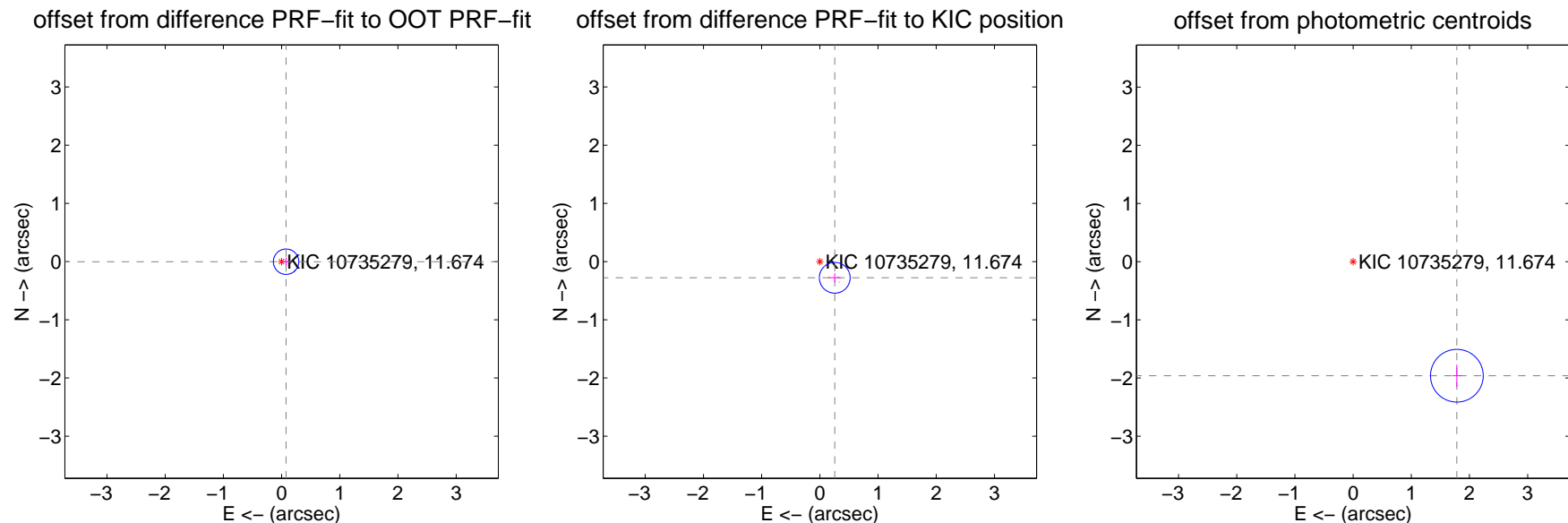
DV Centroid Data

Supplemental centroid analysis for 010735279-03. **Kepler magnitude: 11.67.** Transit SNR 14.88

There are 1 quarters with good PRF difference image offsets

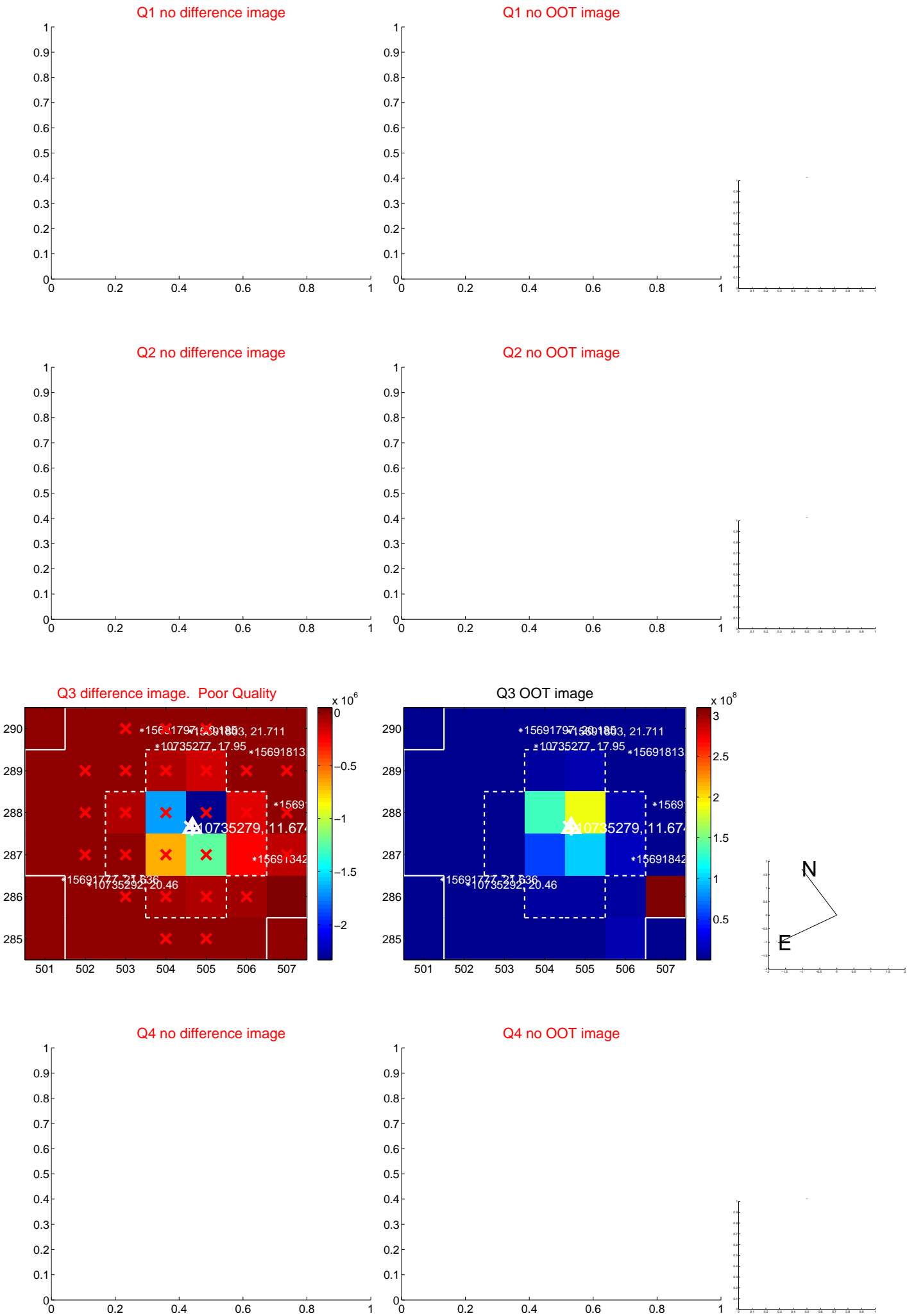
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.077 ± 0.073	1.06	-0.077 ± 0.073	-0.002 ± 0.071
PRF-fit source offset from KIC position	0.378 ± 0.088	4.29	-0.256 ± 0.099	-0.278 ± 0.078
photometric centroid source offset	2.65 ± 0.15	17.55	-1.78 ± 0.08	-1.96 ± 0.19



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.

Q5 no difference image



Q5 no OOT image



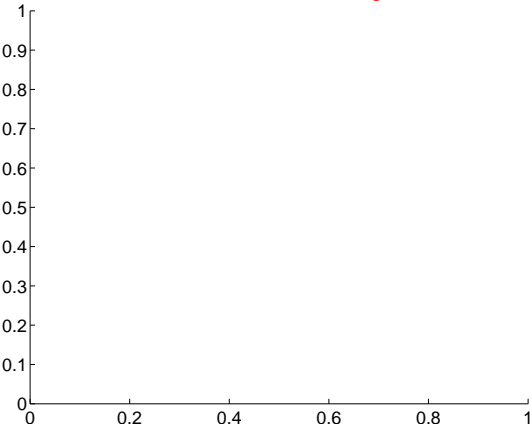
Q6 no difference image



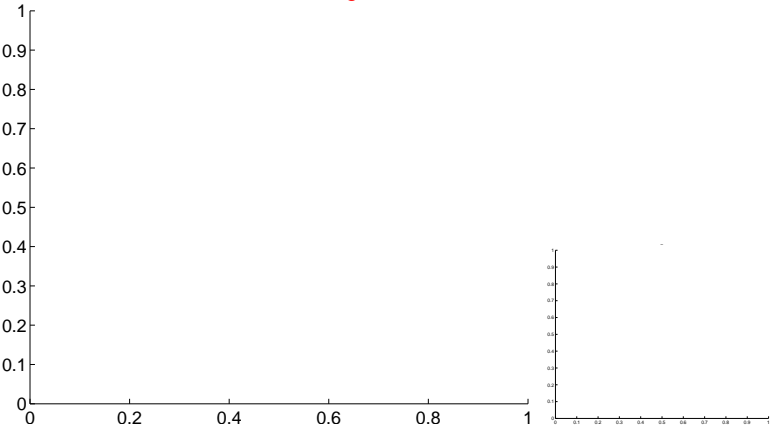
Q6 no OOT image



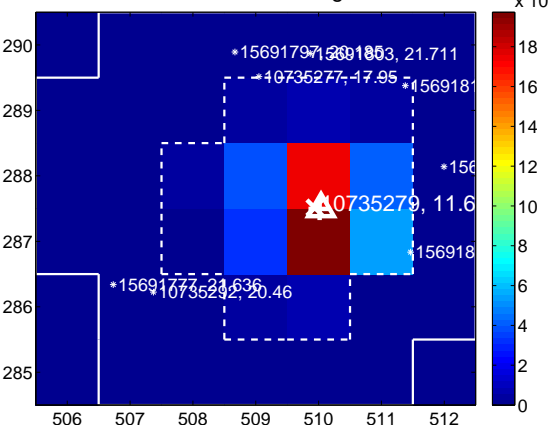
Q7 no difference image



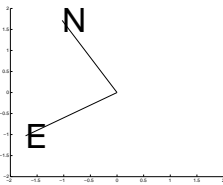
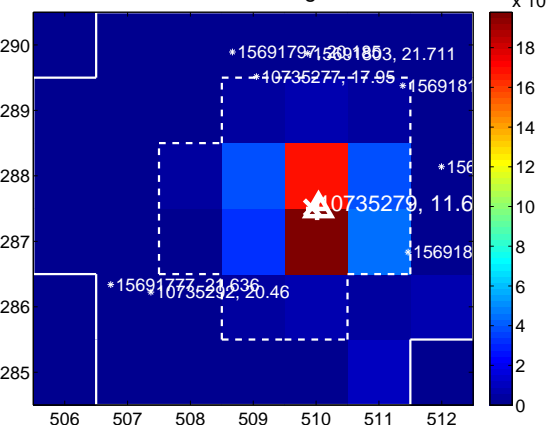
Q7 no OOT image



Q8 difference image



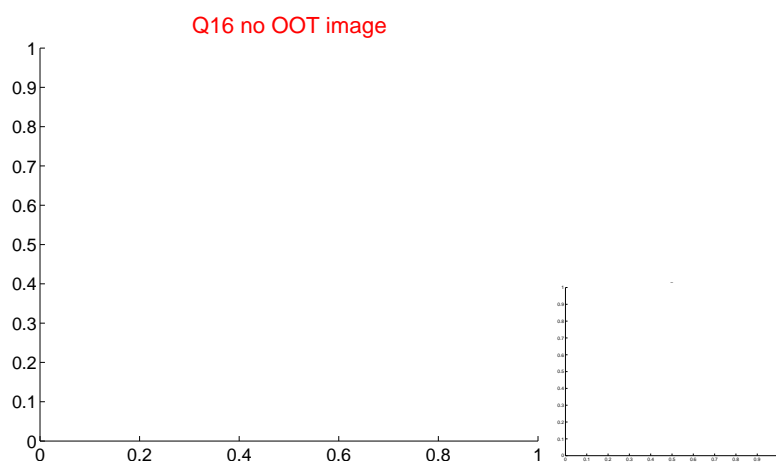
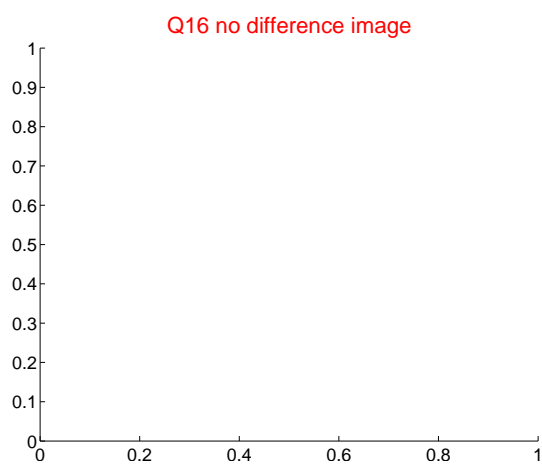
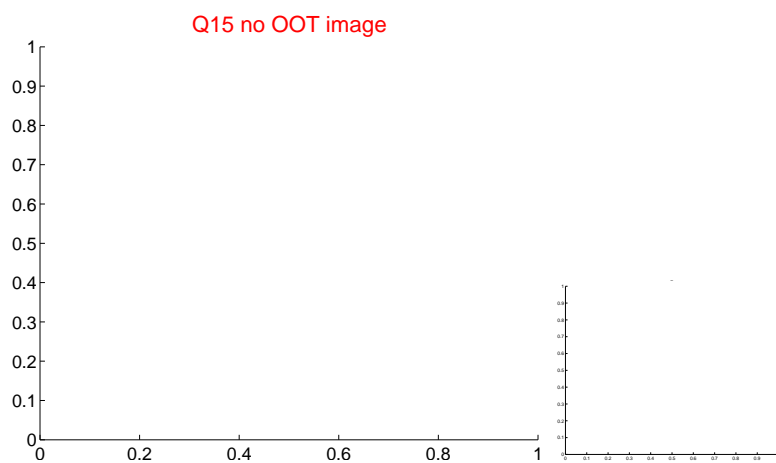
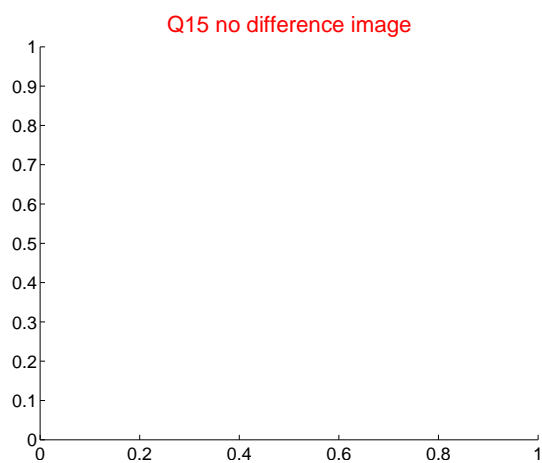
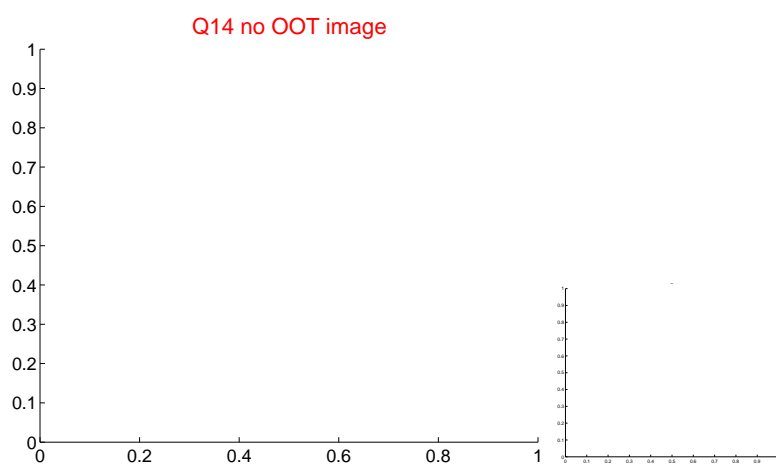
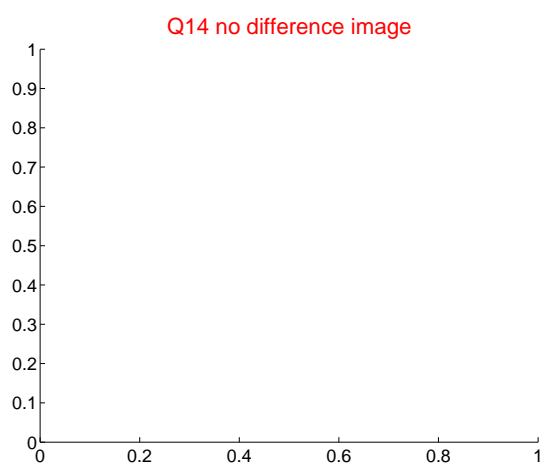
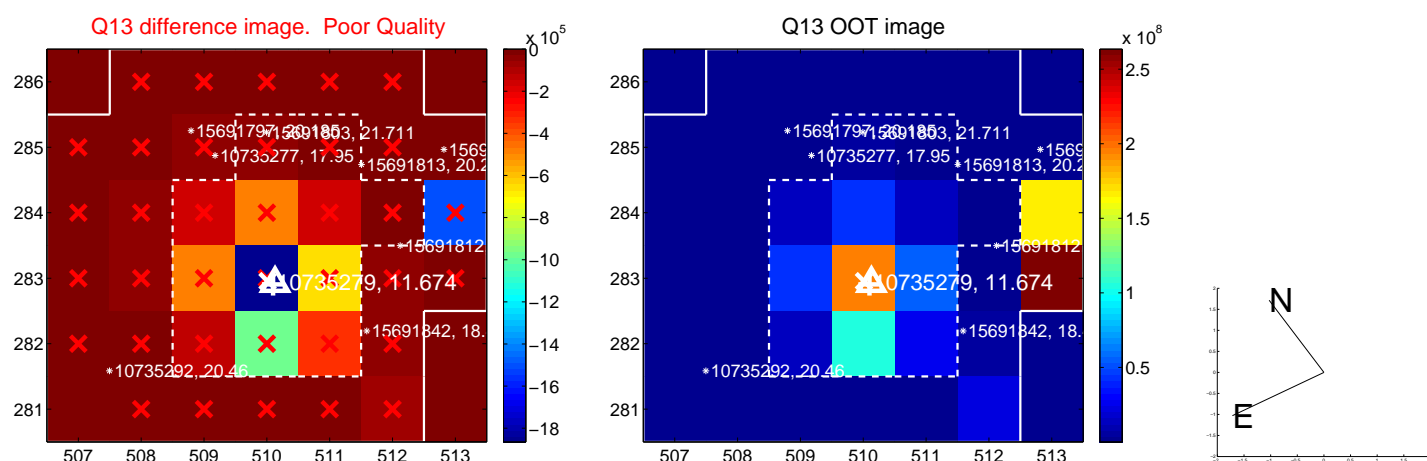
Q8 OOT image



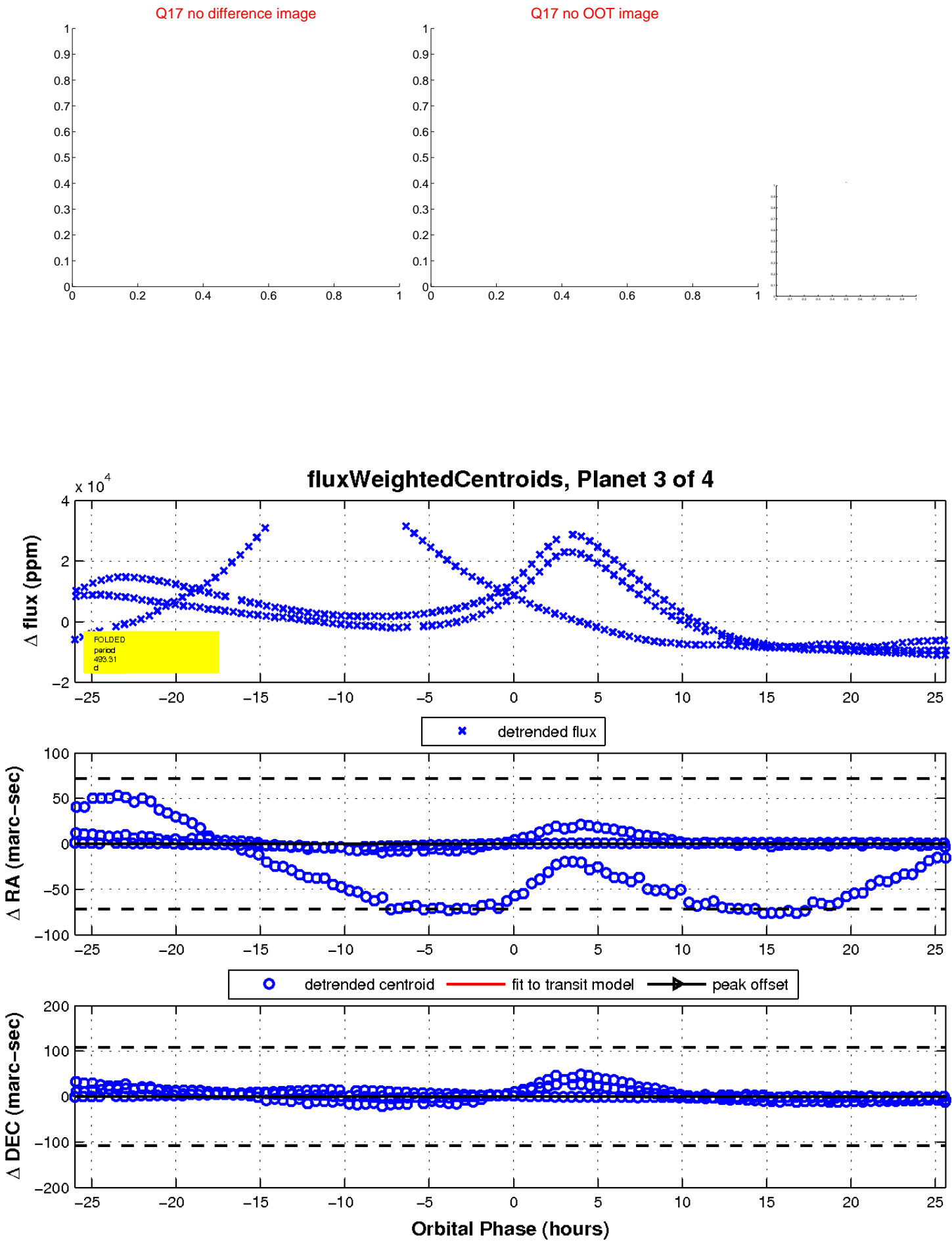
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

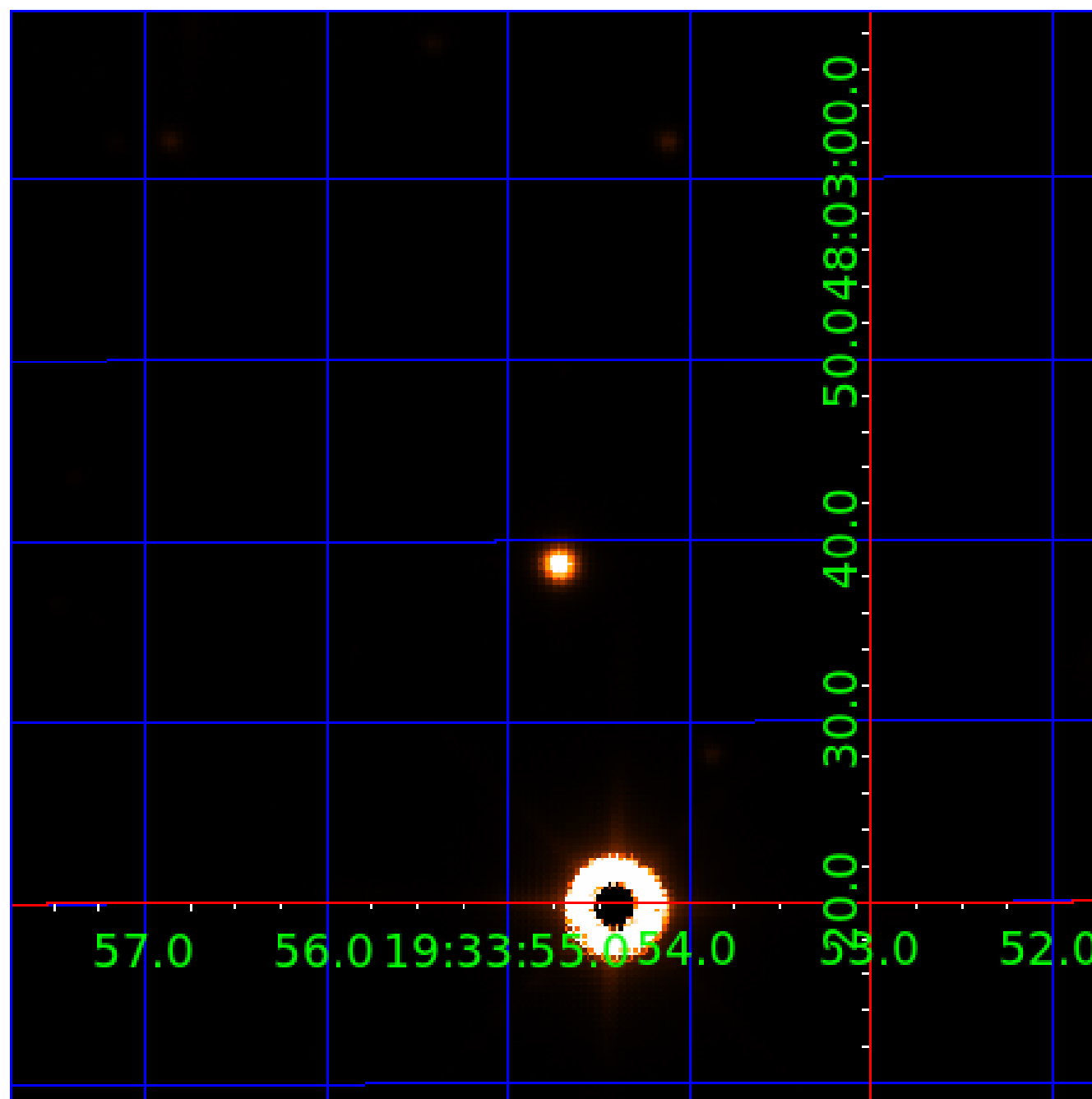


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010735279

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})
010735279-01	OBS	No	375.025030	480.419045	2372.5	10.685	36.0	4.2	1.78	6892	15.81	5.20
010735279-02	OBS	No	411.143661	404.152579	382.4	5.000	25.6	-1.0	1.78	6892	3.52	4.60
010735279-03	OBS	No	493.307183	276.606545	7268.3	8.661	26.4	14.9	1.78	6892	26.85	3.61
010735279-04	OBS	No	275.861052	399.285986	276.3	4.500	18.2	-1.0	1.78	6892	2.99	7.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010735279-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010735279-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST
010735279-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS
010735279-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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.

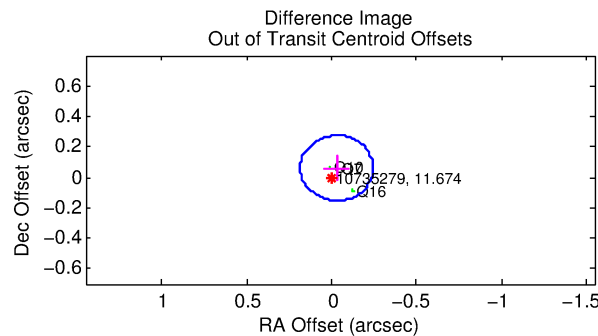
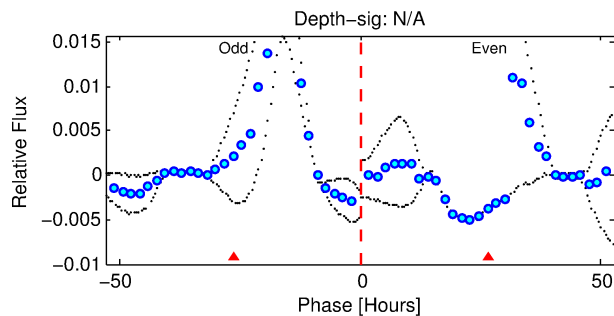
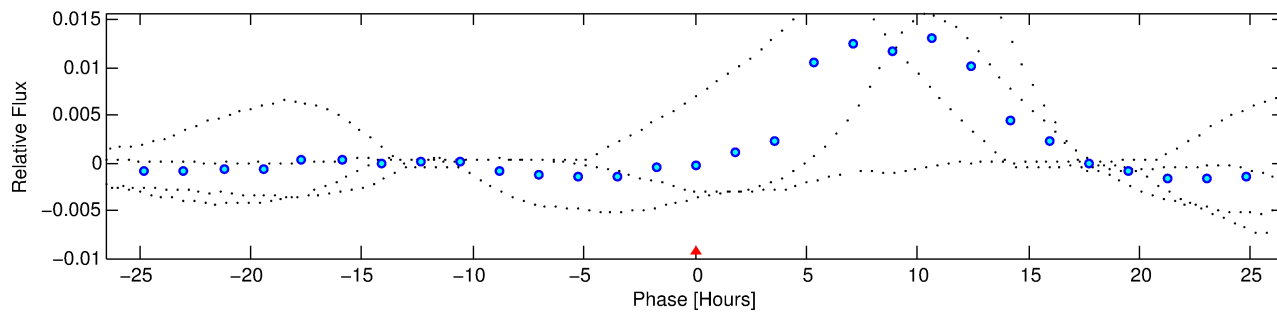
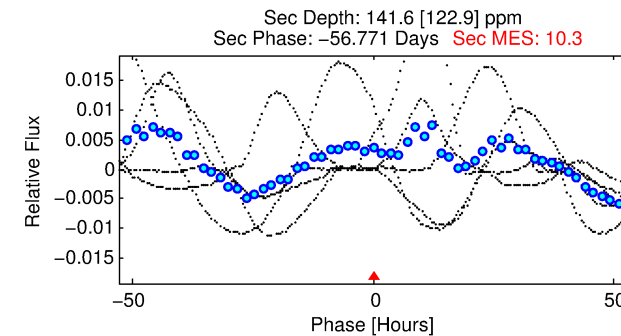
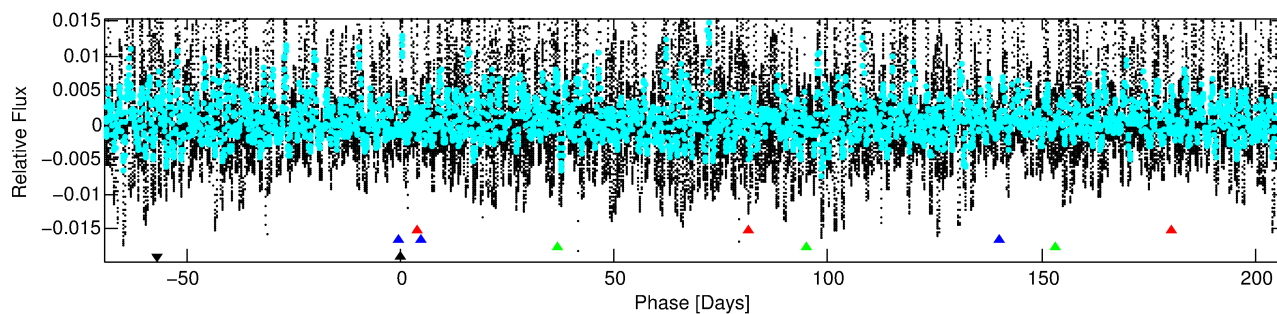
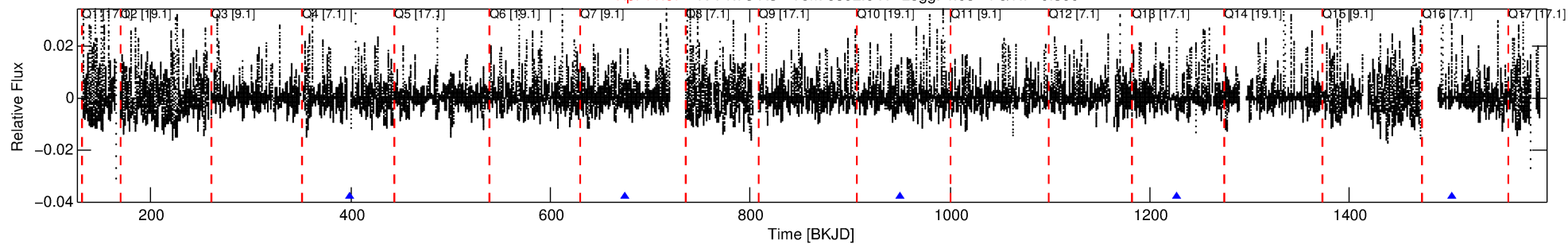
Ephemeris Match Information For 010735279-04

No Significant Match Found

DV One-Page Summary

KIC: 10735279 Candidate: 4 of 4 Period: 275.861 d

Kp: 11.67 R*: 1.78 Rs Teff: 6892.0 K Logg: 4.05 Fe/H: -0.360



TPS TCE Results:

Period = 275.86105 d
Epoch = 399.2860 BKJD

DV fit results are unavailable

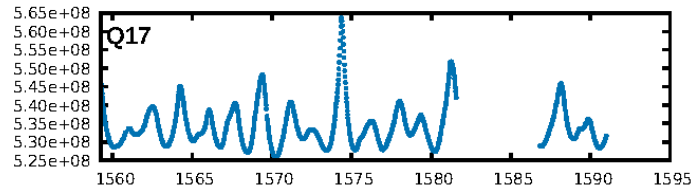
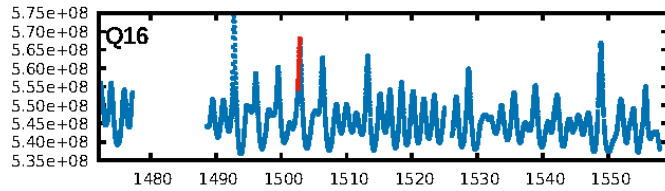
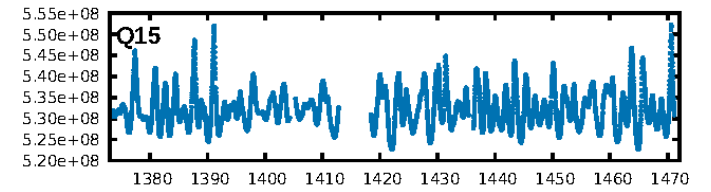
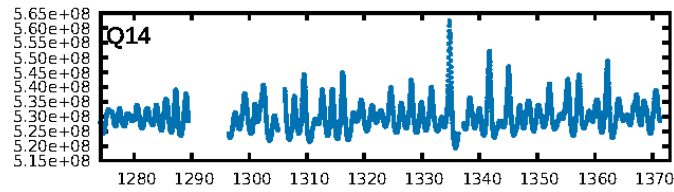
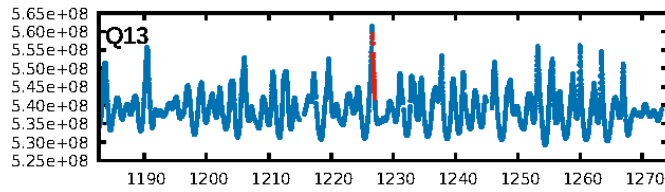
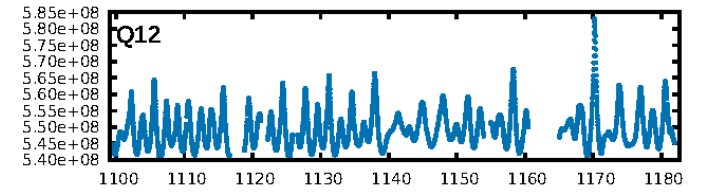
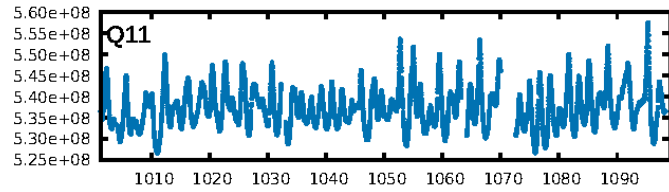
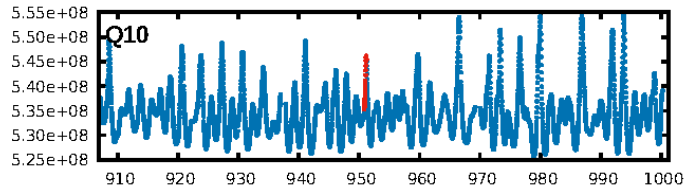
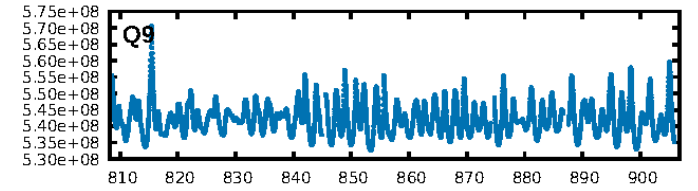
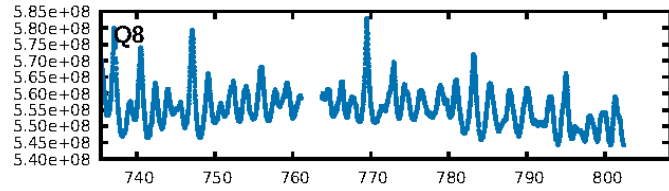
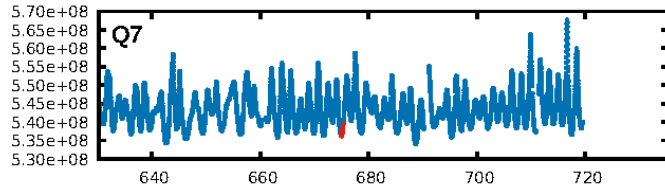
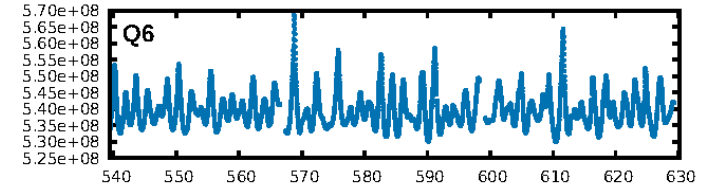
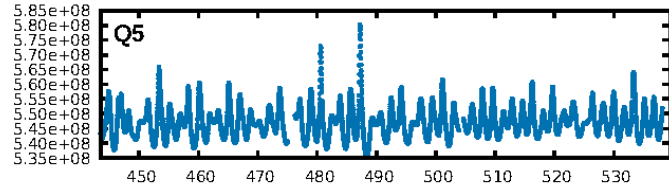
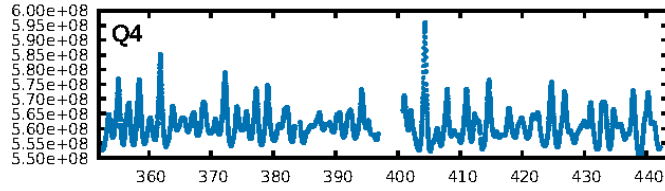
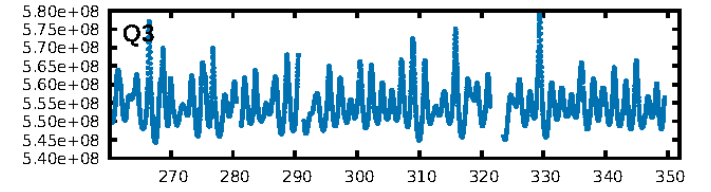
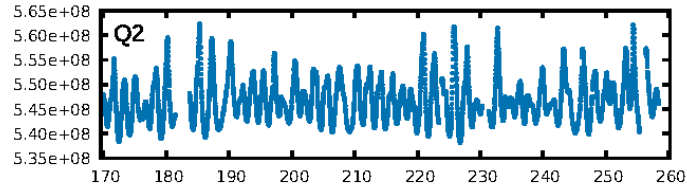
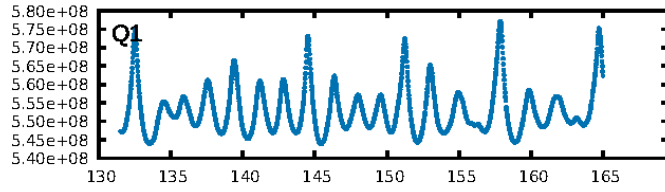
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [205.27σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.9098
Centroid-sig: 4.2%
Centroid-so: 4.960 arcsec [2.94σ]
OotOffset-rm: 0.068 arcsec [0.95σ]
KicOffset-rm: 0.342 arcsec [3.54σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
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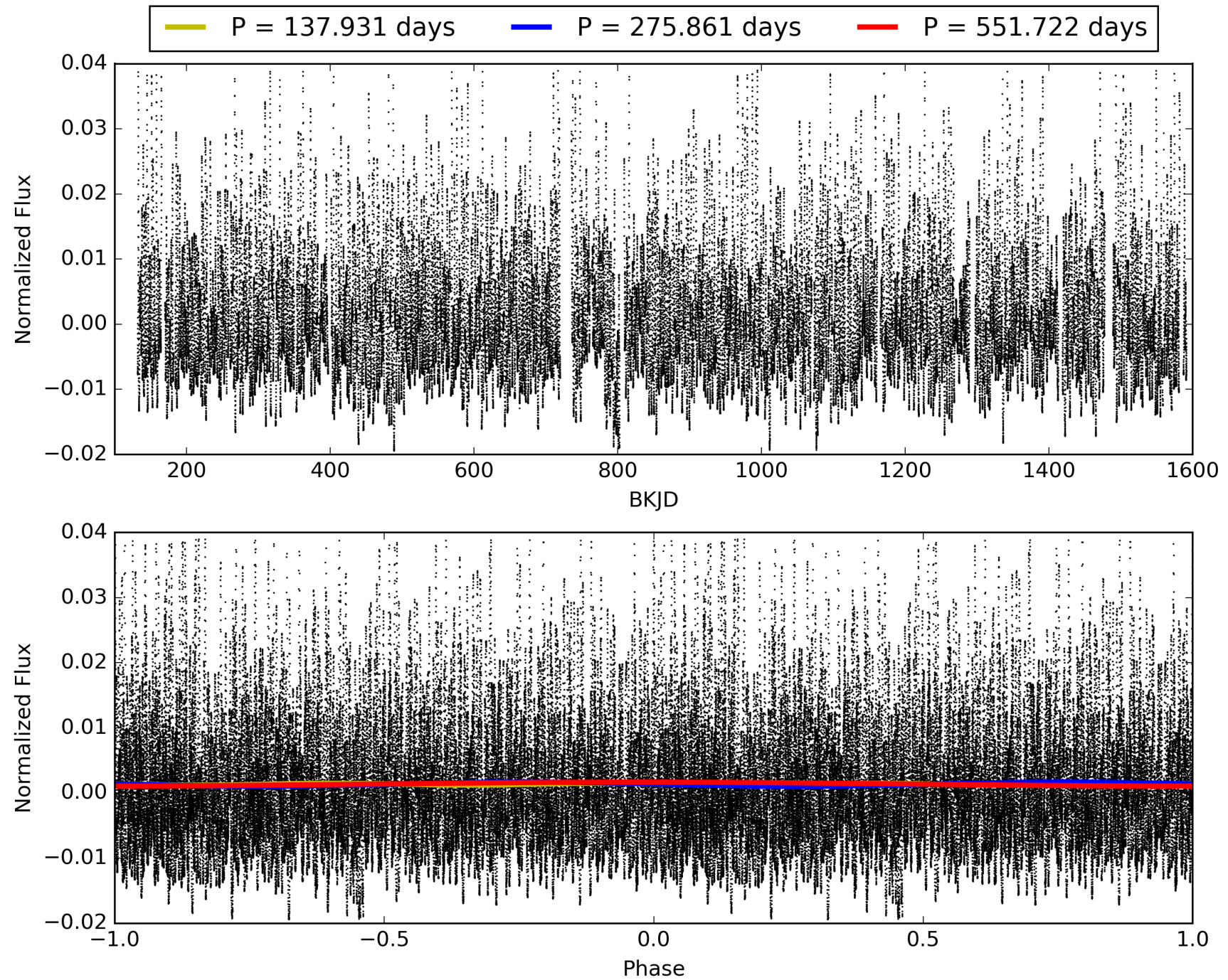
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:12:39 Z

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

TCE 010735279-04, PDC Light Curves

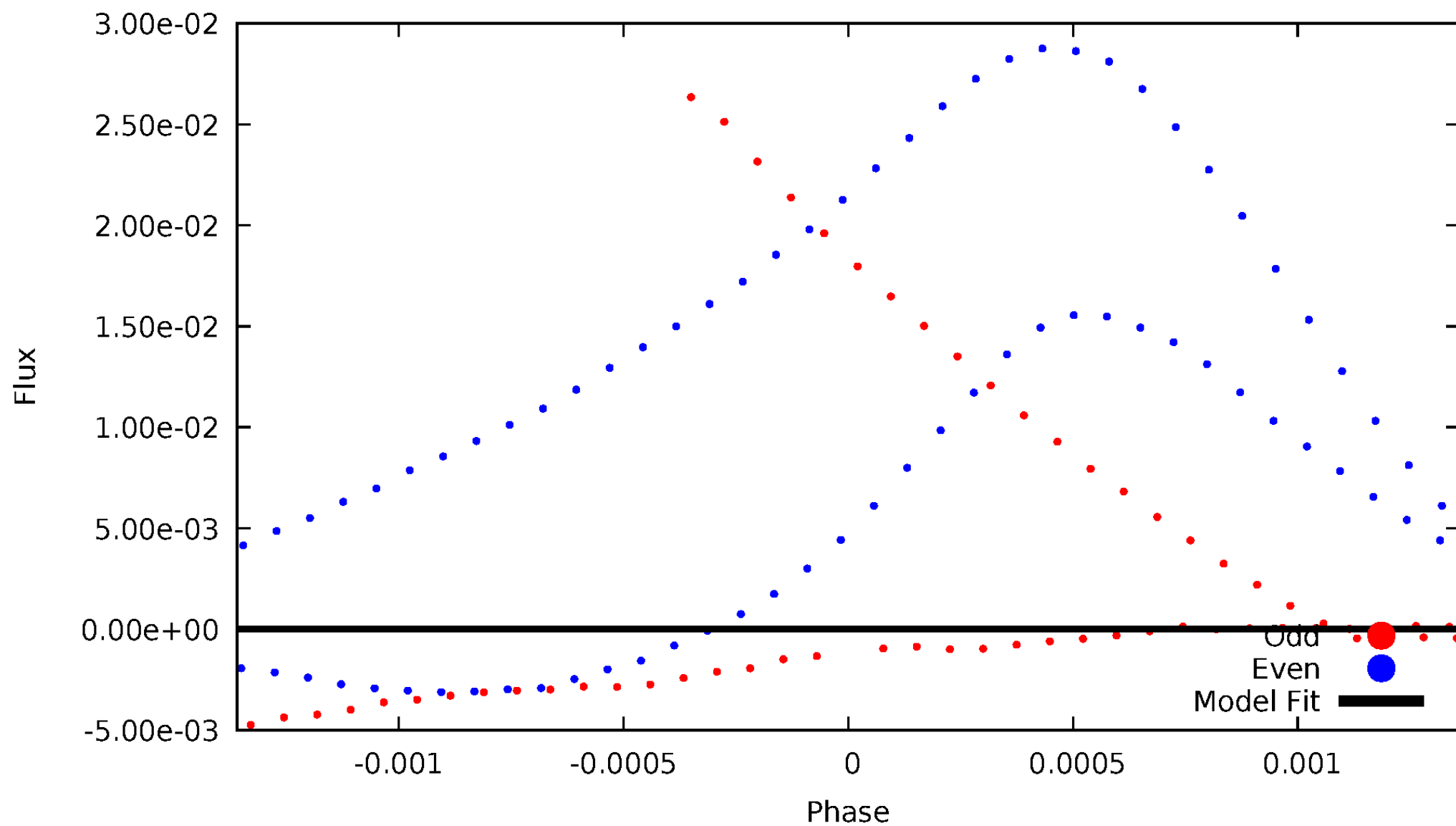


TCE 010735279-04



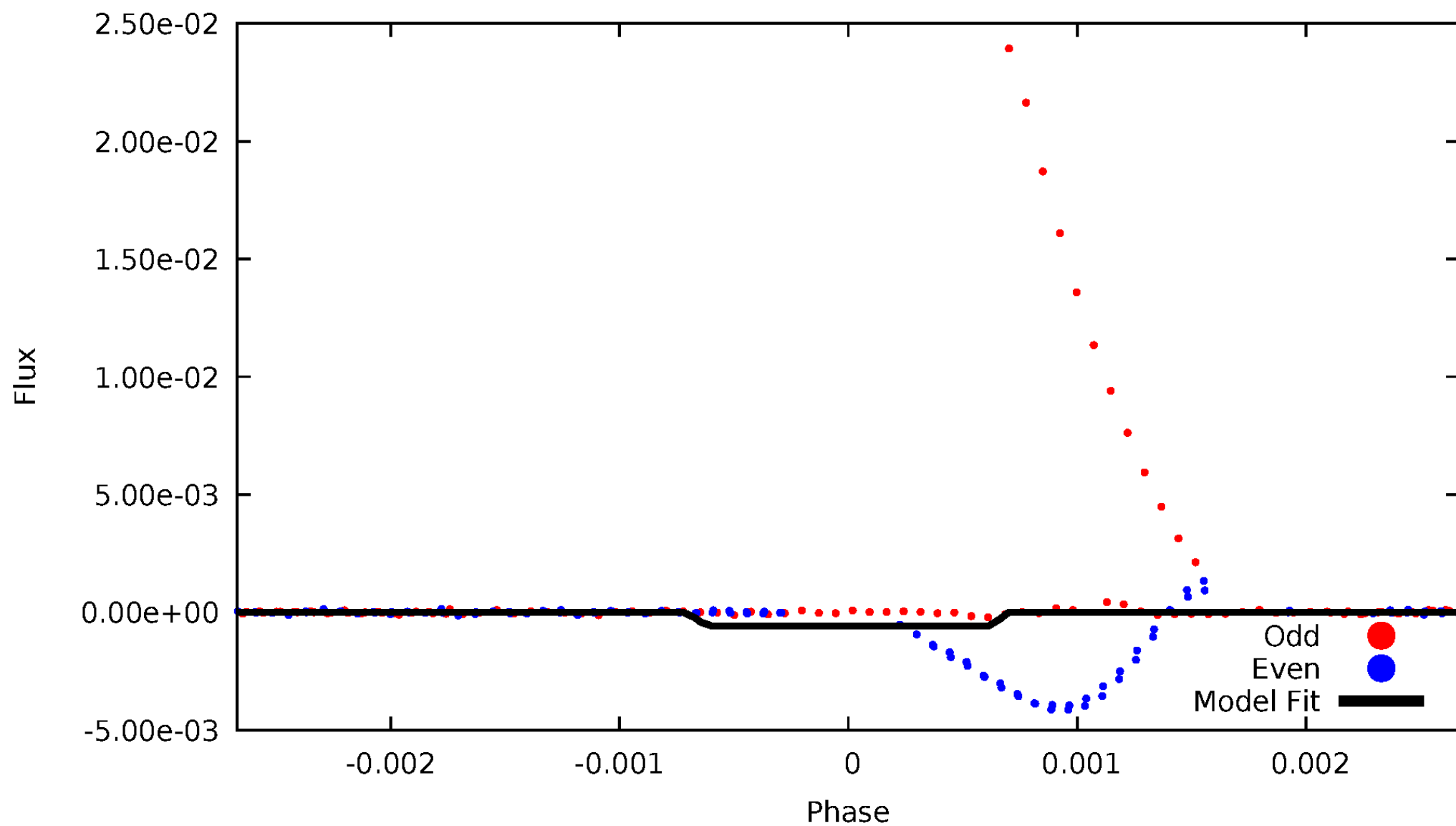
DV Odd/Even

TCE 010735279-04



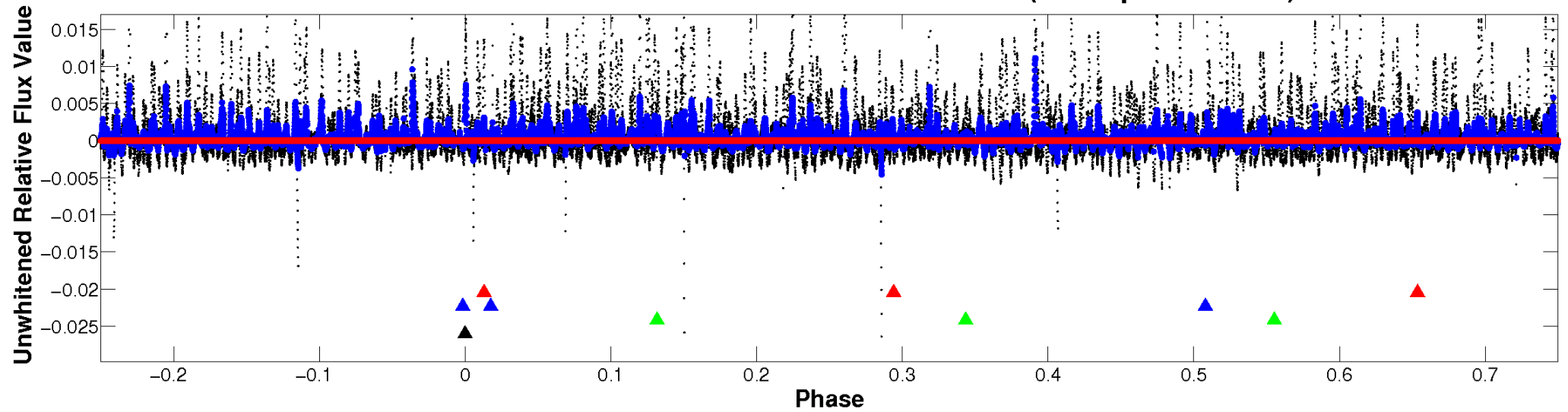
ALT Odd/Even

TCE 010735279-04

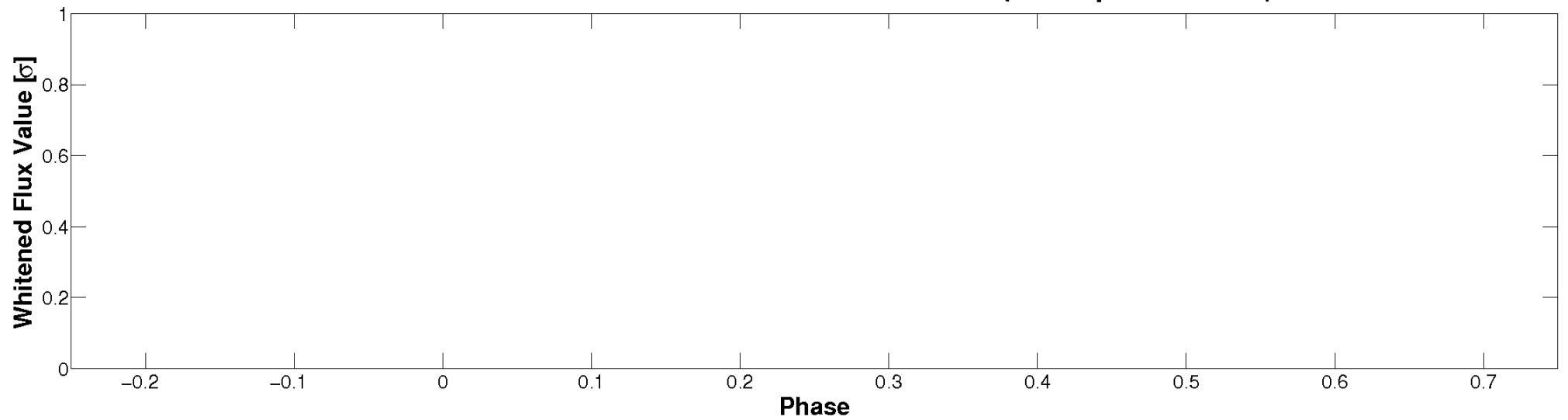


Non-Whitened Vs. Whitened Light Curve

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

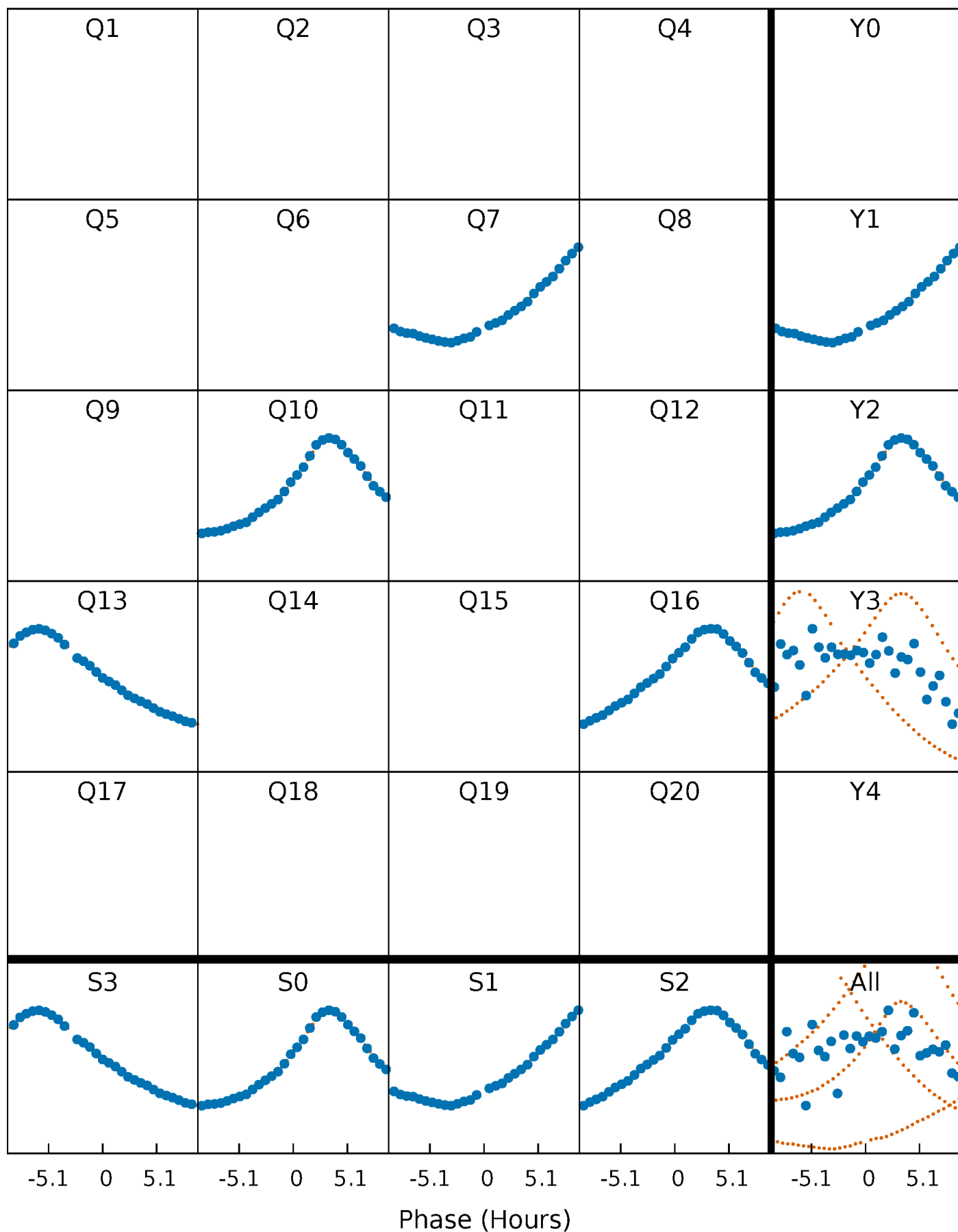


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



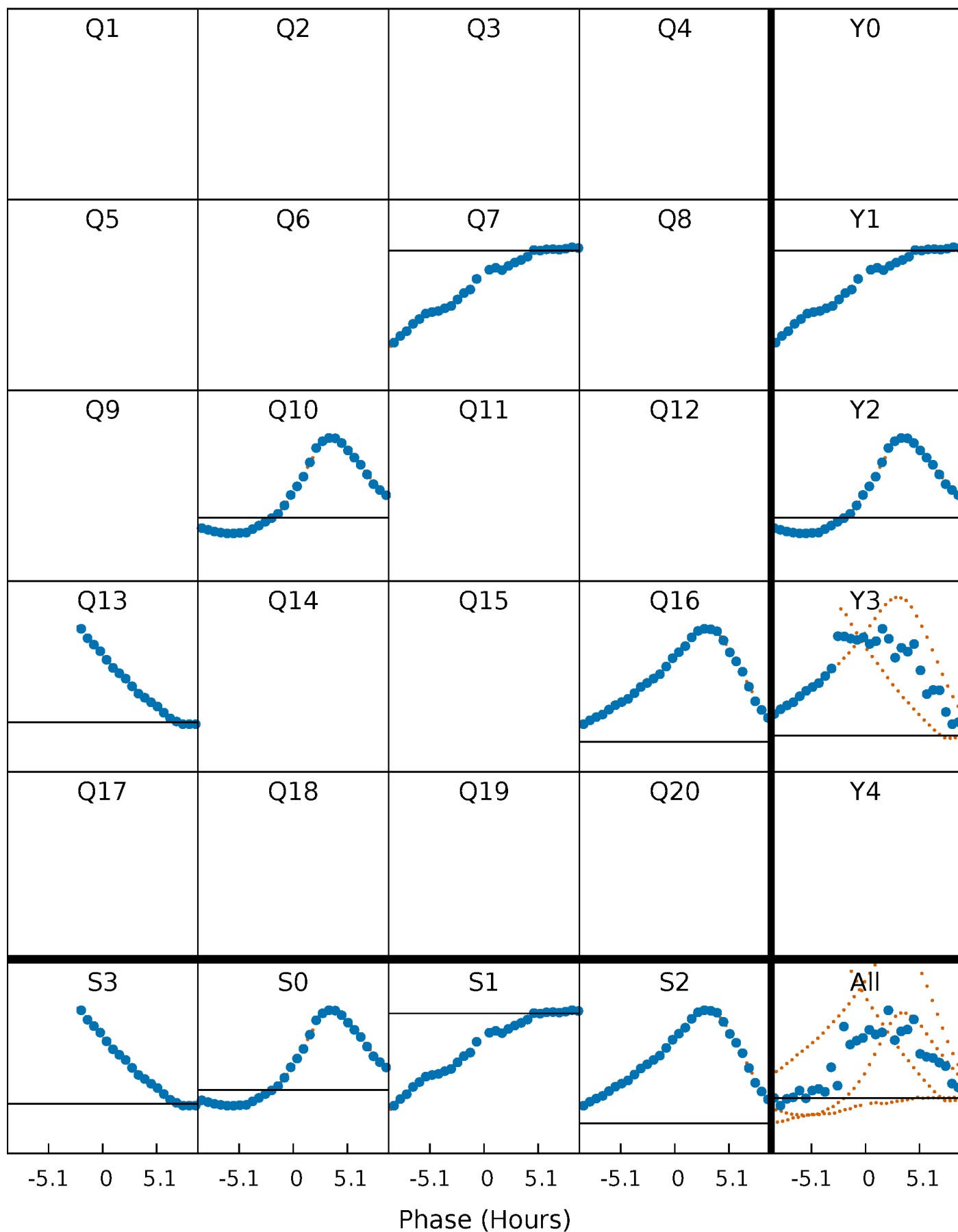
PDC Quarter-Phased Transit Curves

TCE 010735279-04 $P=275.861052$ Days $T_0=399.285986$ (BKJD)



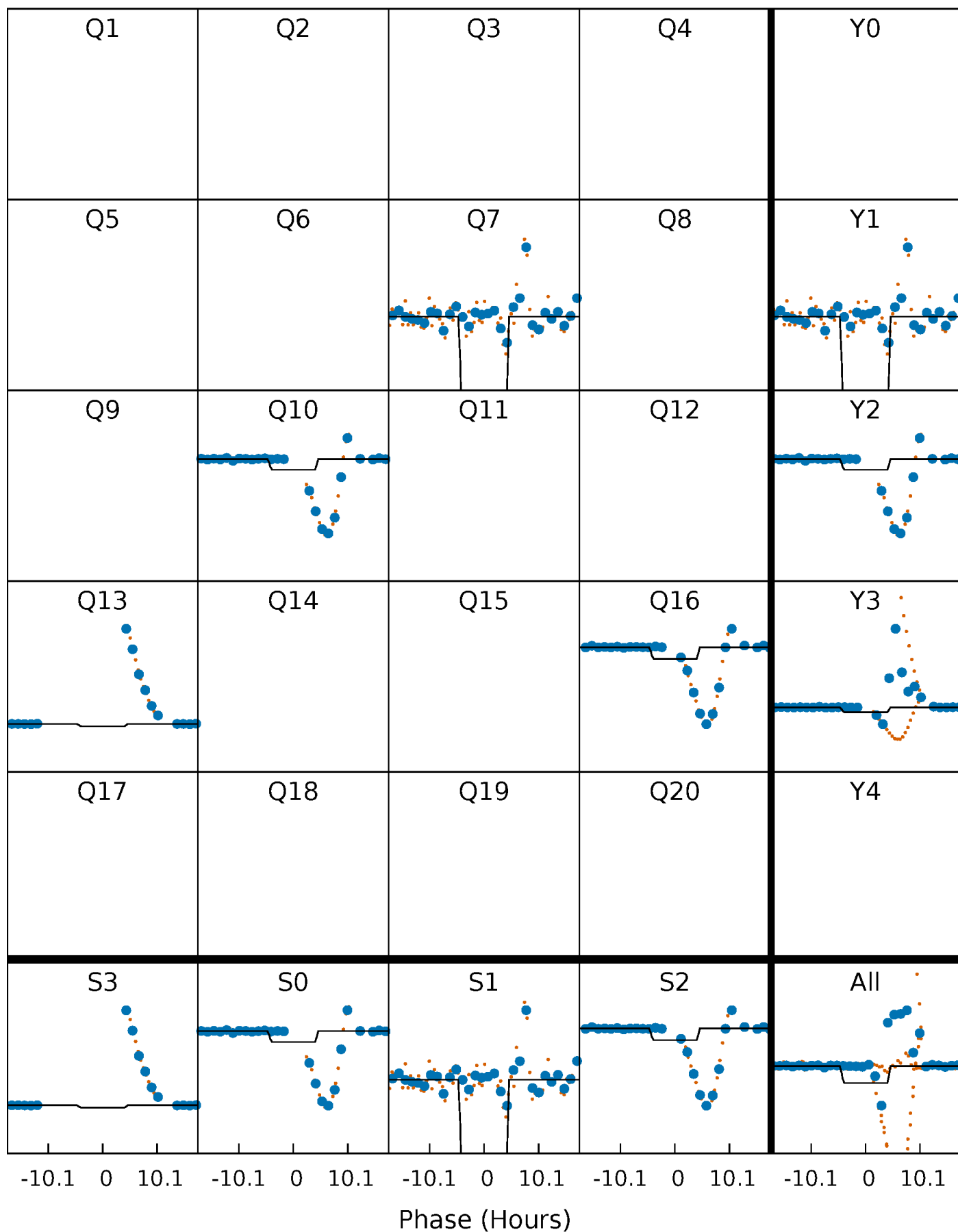
DV Quarter-Phased Transit Curves

TCE 010735279-04 P=275.861052 Days $T_0=399.285986$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

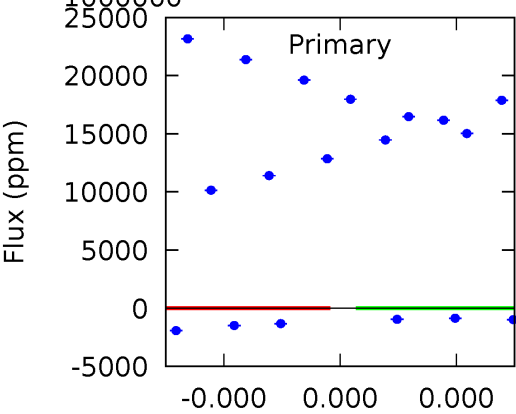
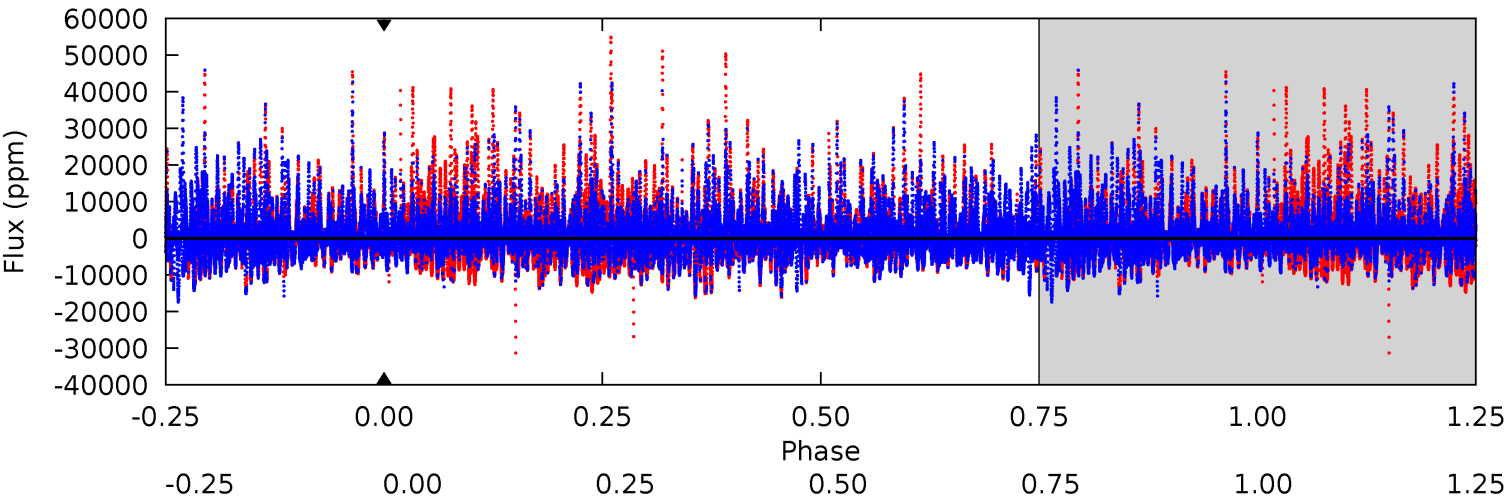
TCE 010735279-04 P=275.861052 Days $T_0=398.995678$ (BKJD)



DV Model-Shift Uniqueness Test

010735279-04, P = 275.861052 Days, E = 123.424934 Days

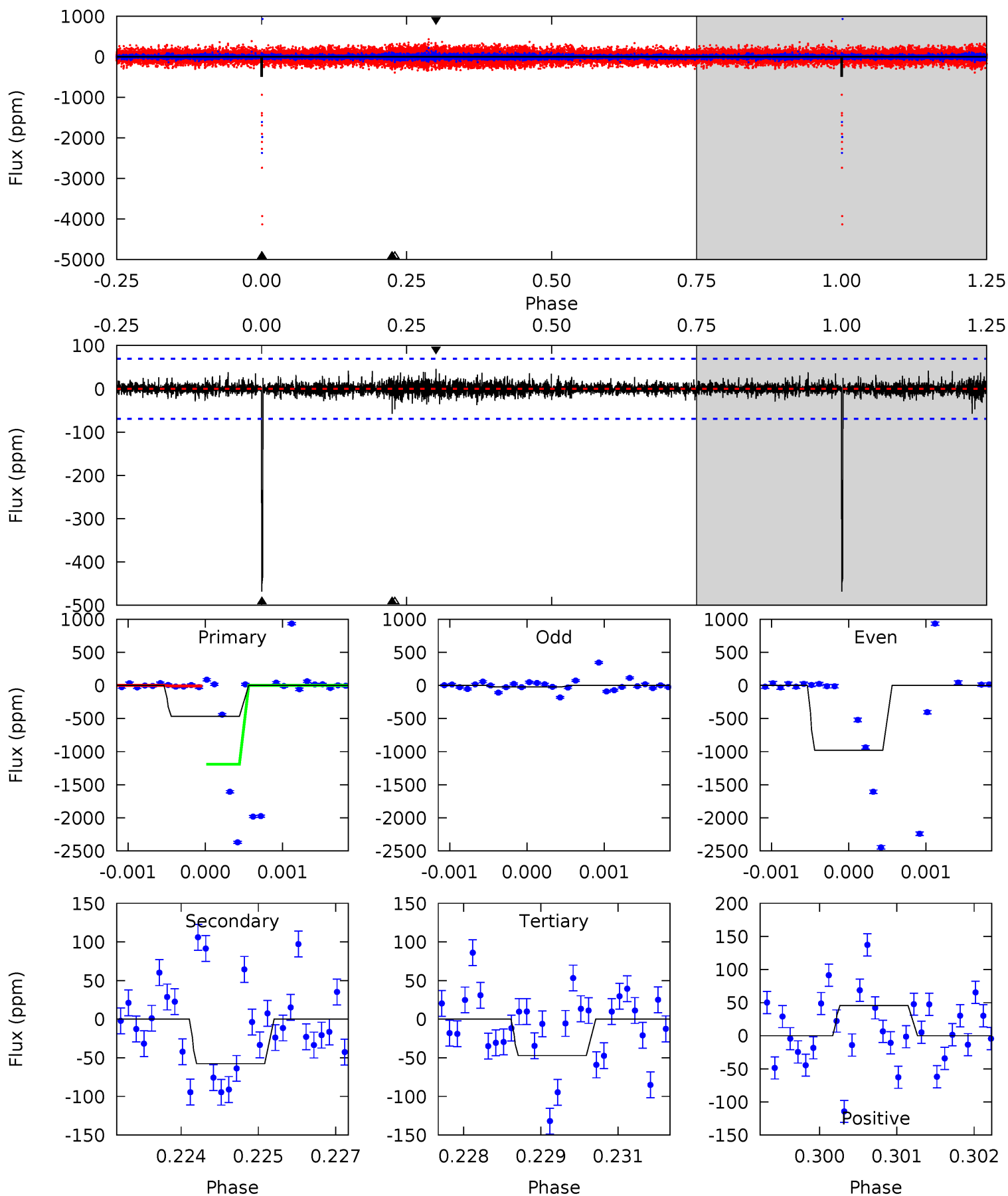
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010735279-04, P = 275.861052 Days, E = 123.134626 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.6	4.49	3.68	3.57	5.40	3.21	0.69	32.9	33.0	0.82	0.93	39.1	0.68	0.09	43.8



Stellar Parameters For KIC 010735279

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6892^{+190}_{-262}	$4.050^{+0.252}_{-0.168}$	$-0.360^{+0.300}_{-0.300}$	$1.780^{+0.470}_{-0.522}$	$1.300^{+0.182}_{-0.223}$	$0.325^{+0.529}_{-0.156}$
	+3%/-4%	+6%/-4%	+83%/-83%	+26%/-29%	+14%/-17%	+163%/-48%
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 010735279-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$13.64^{+14.05}_{-9.28}$	588^{+47}_{-45}	3758^{+27777}_{-32866}	$521^{+385498}_{-378243}$
Alt.	-58 ± 13	$14.53^{+15.63}_{-10.37}$	592^{+47}_{-52}	2876^{+1265}_{-493}	120^{+1275}_{-93}

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 $A_{obs} \gg 1.0$

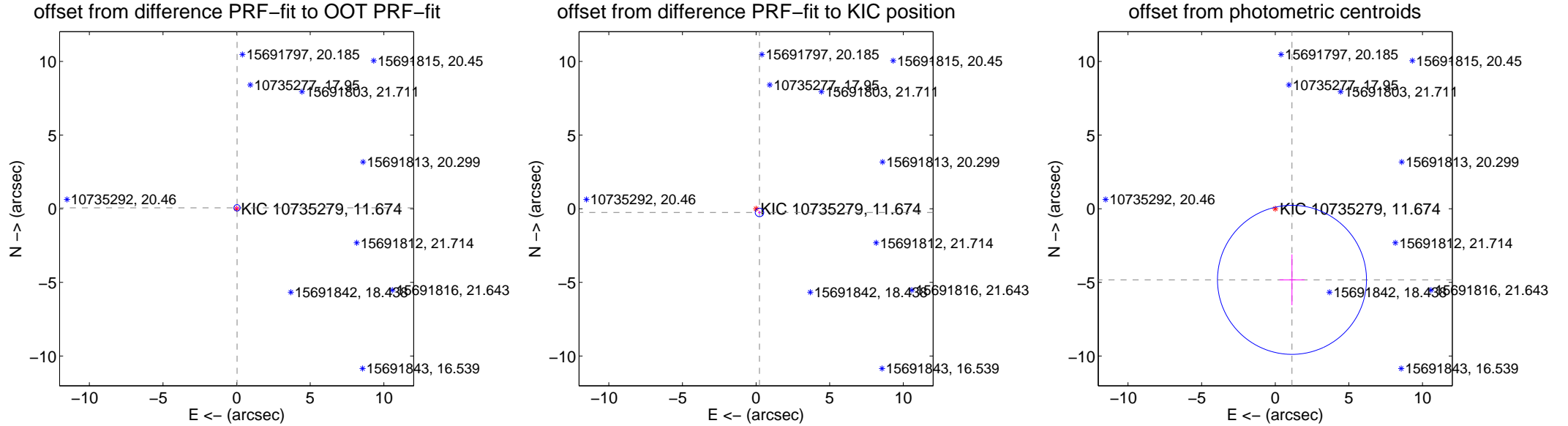
DV Centroid Data

Supplemental centroid analysis for 010735279-04. **Kepler magnitude: 11.67.** Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.068 ± 0.072	0.95	-0.029 ± 0.075	0.061 ± 0.080
PRF-fit source offset from KIC position	0.342 ± 0.097	3.54	-0.233 ± 0.092	-0.251 ± 0.100
photometric centroid source offset	4.96 ± 1.69	2.94	-1.14 ± 0.85	-4.83 ± 1.72

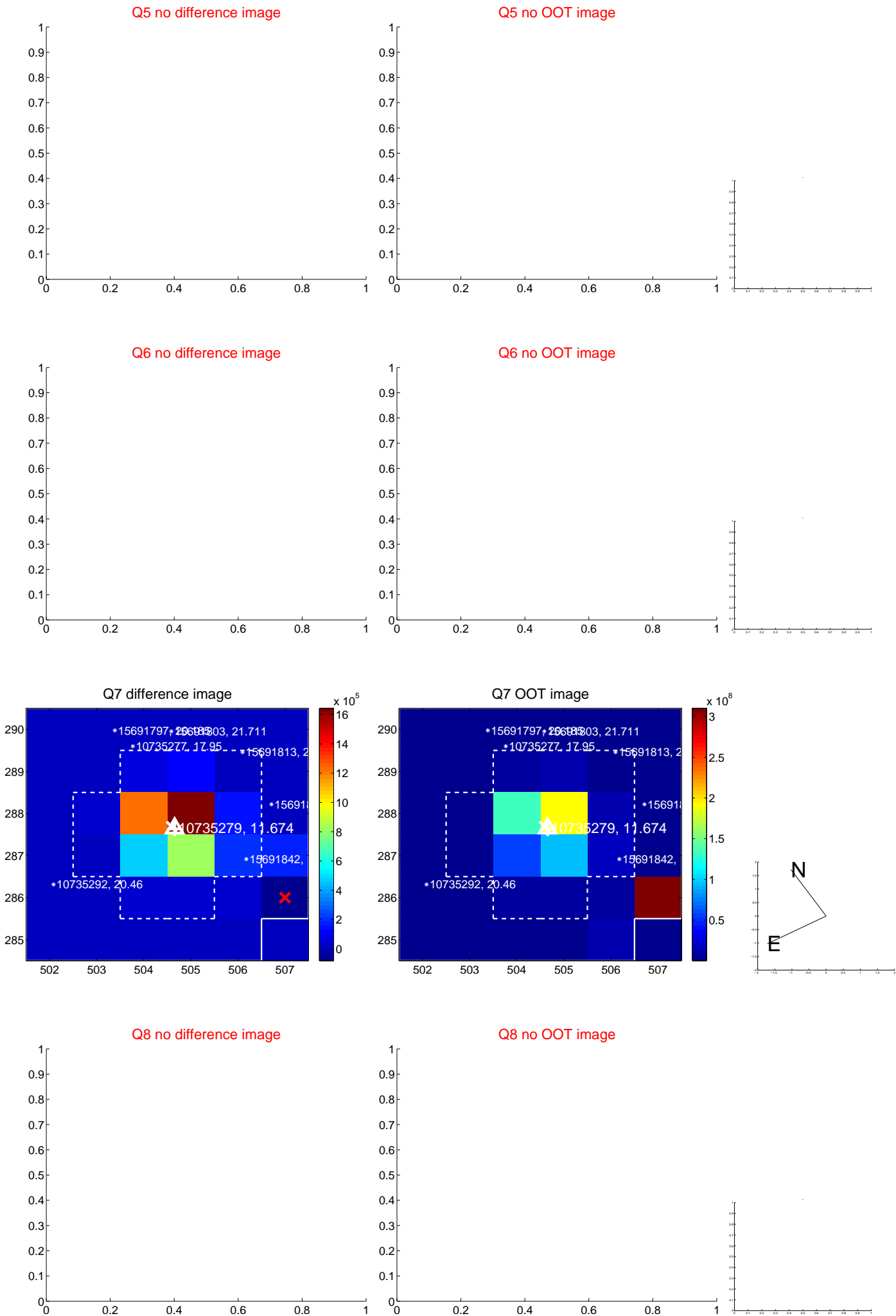


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

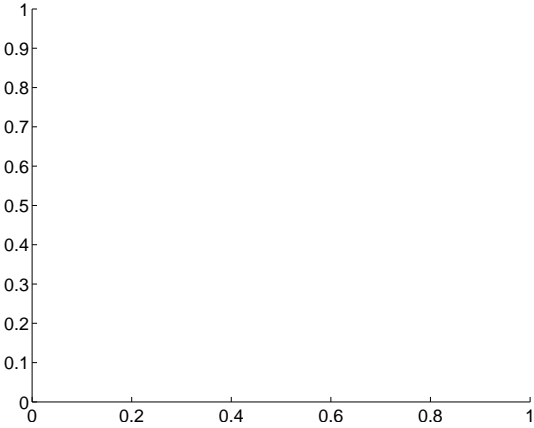


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

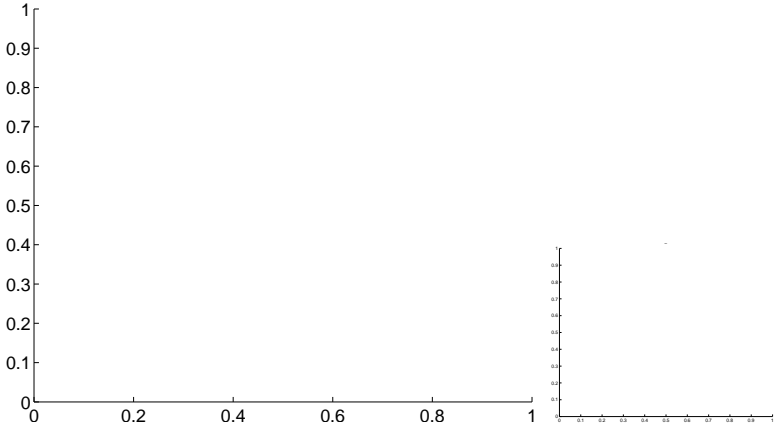


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

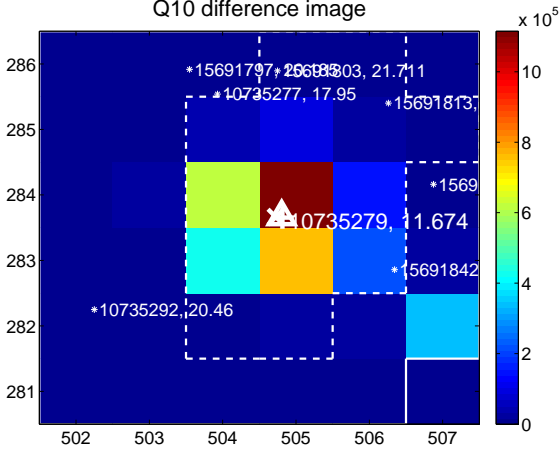
Q9 no difference image



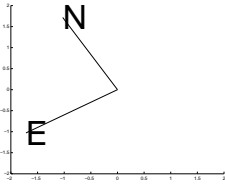
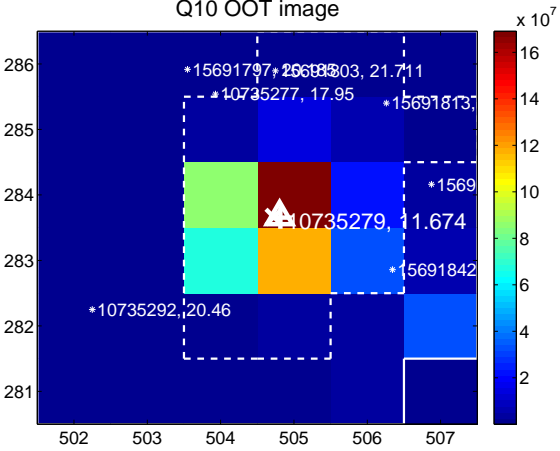
Q9 no OOT image



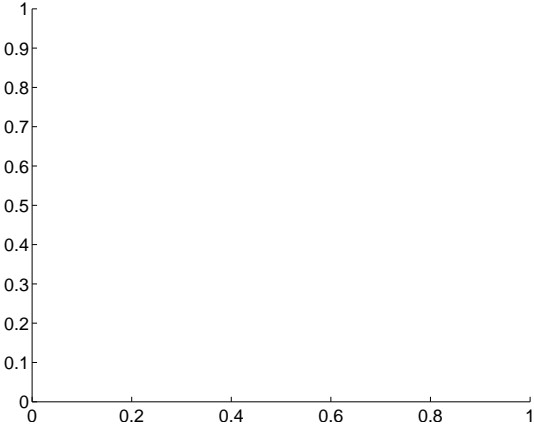
Q10 difference image



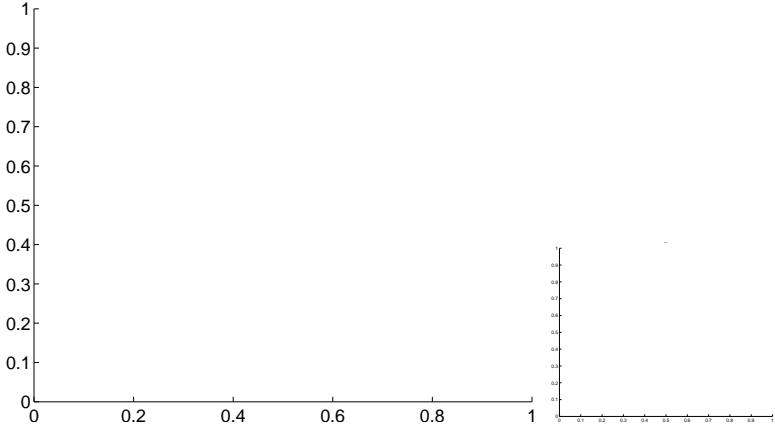
Q10 OOT image



Q11 no difference image



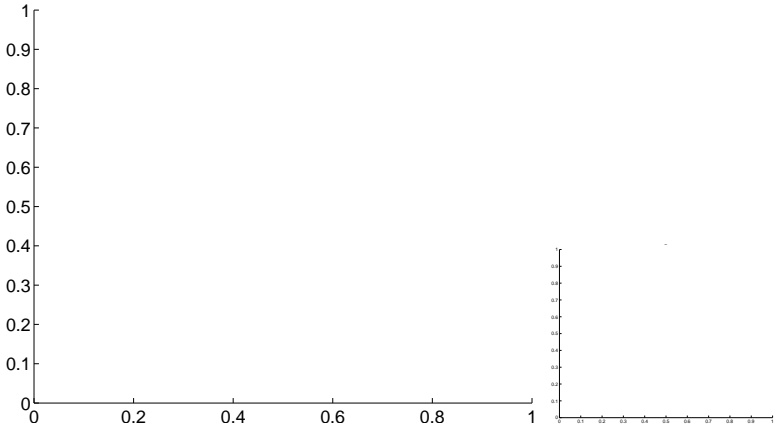
Q11 no OOT image



Q12 no difference image

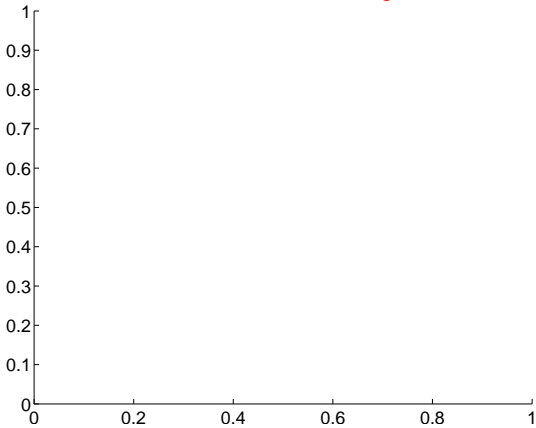


Q12 no OOT image



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

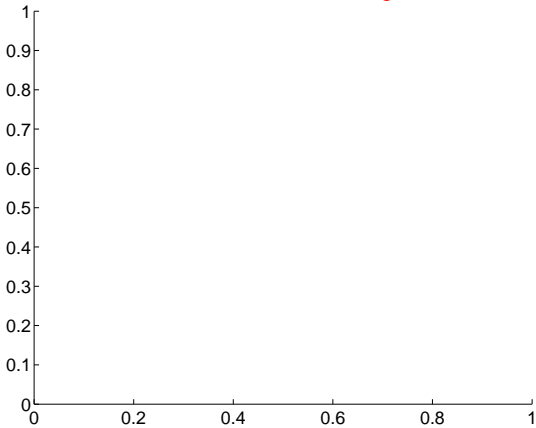
Q13 no difference image



Q13 no OOT image



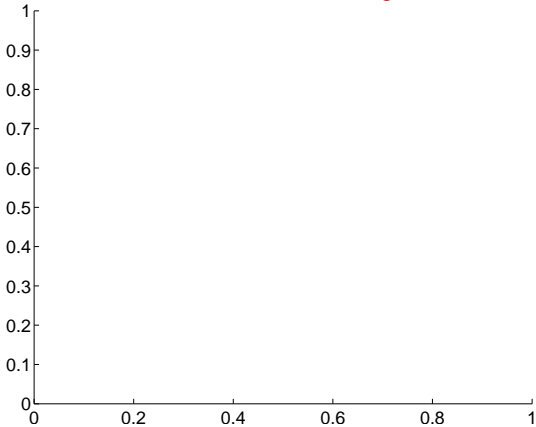
Q14 no difference image



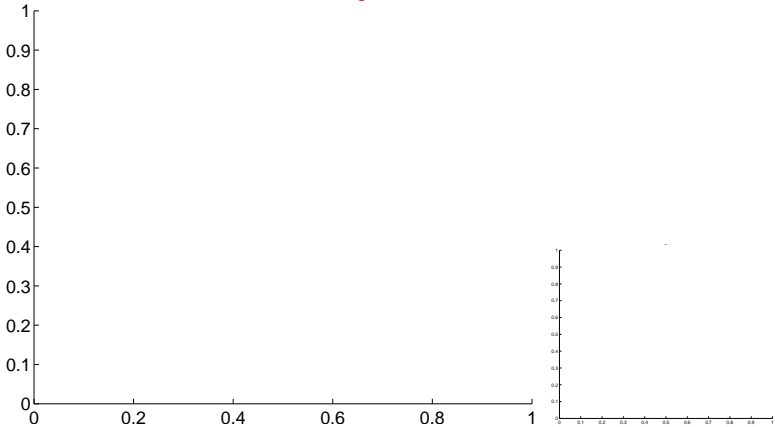
Q14 no OOT image



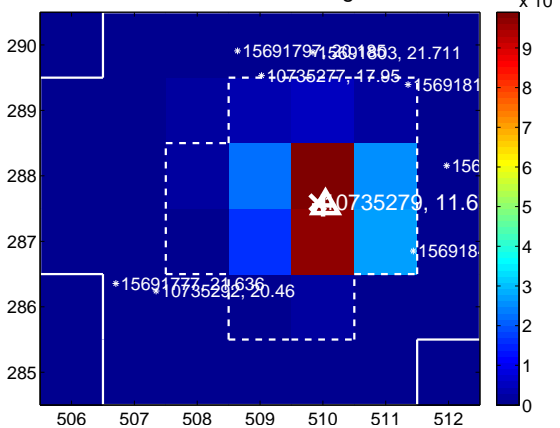
Q15 no difference image



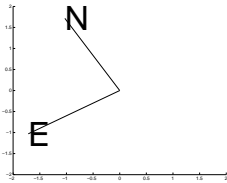
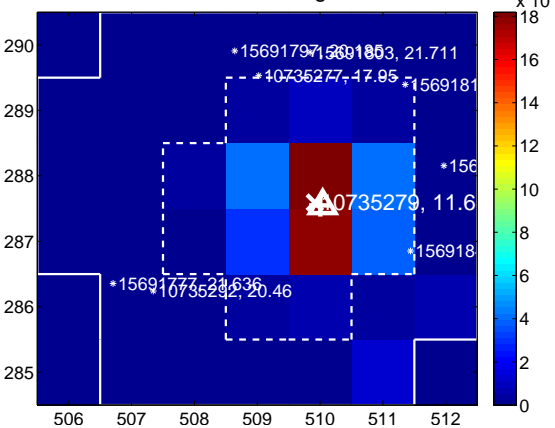
Q15 no OOT image



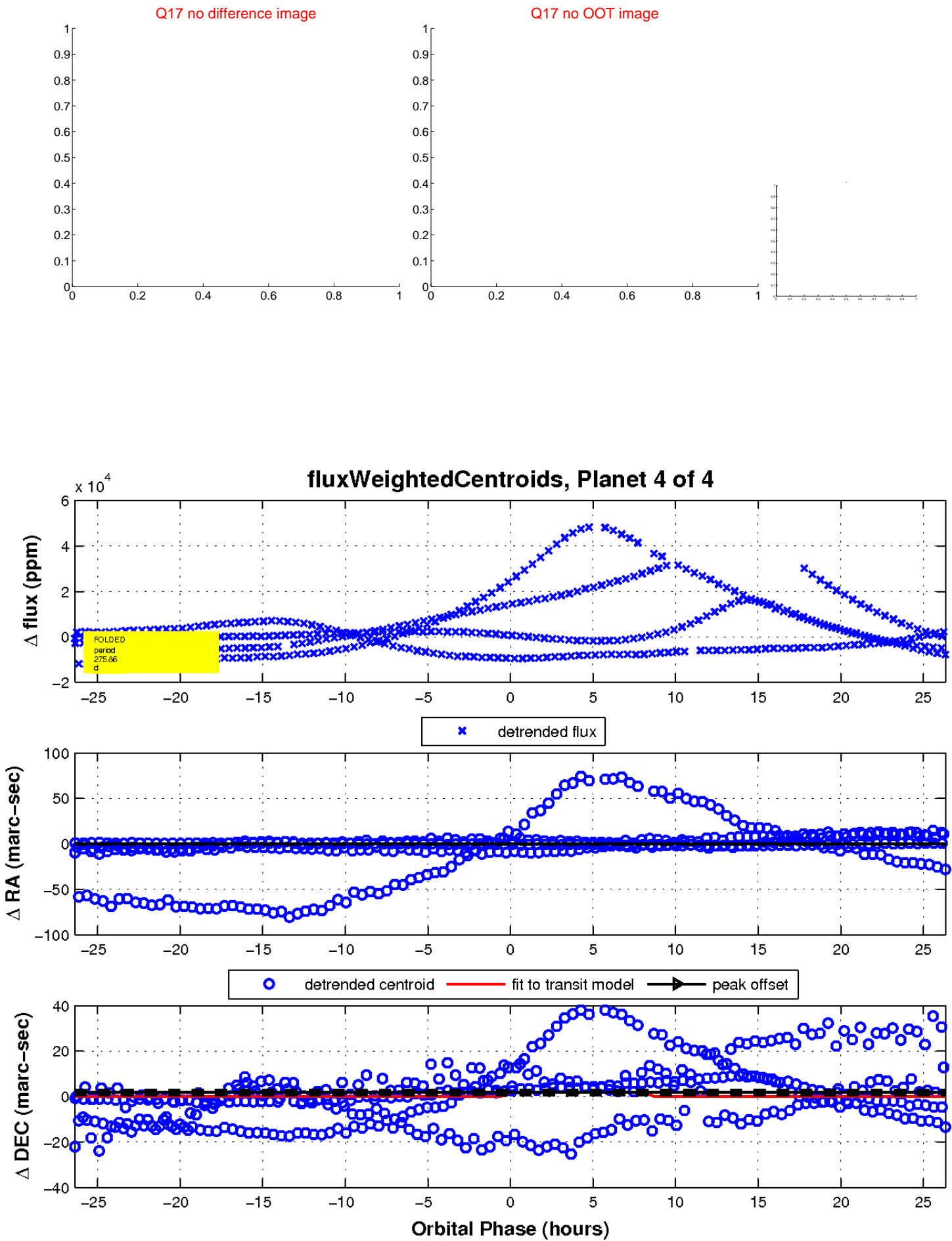
Q16 difference image



Q16 OOT image



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



UKIRT Image

Declination

