

KIC 005360129

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})
005360129-01	OBS	No	408.074942	358.029375	1621.7	4.960	13.0	4.6	0.51	3746	2.06	0.06
005360129-02	OBS	No	346.549555	451.273563	4005.9	15.956	12.2	7.6	0.51	3746	4.93	0.08
005360129-03	OBS	No	365.280099	285.378812	2760.2	6.908	10.2	6.5	0.51	3746	5.13	0.07
005360129-04	OBS	No	219.755949	339.682240	1623.0	4.066	9.9	5.6	0.51	3746	2.50	0.14
005360129-05	OBS	No	283.555784	232.234665	1971.8	3.460	10.0	6.0	0.51	3746	2.54	0.10
005360129-06	OBS	No	396.965694	516.625869	2551.8	3.000	11.3	-1.0	0.51	3746	2.54	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005360129-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005360129-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
005360129-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005360129-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_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.

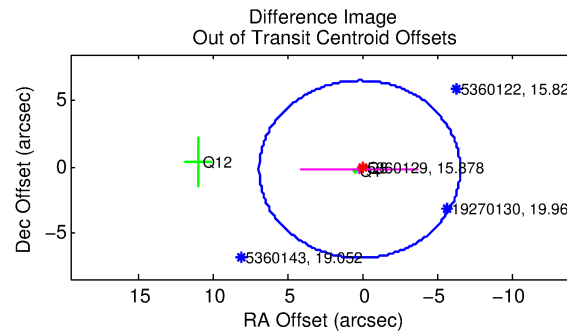
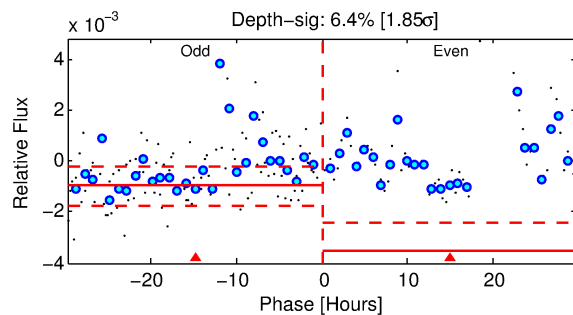
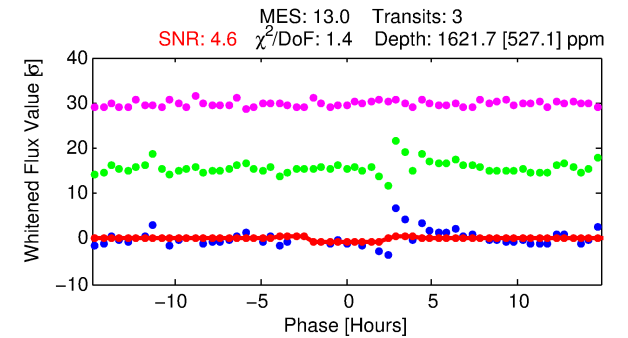
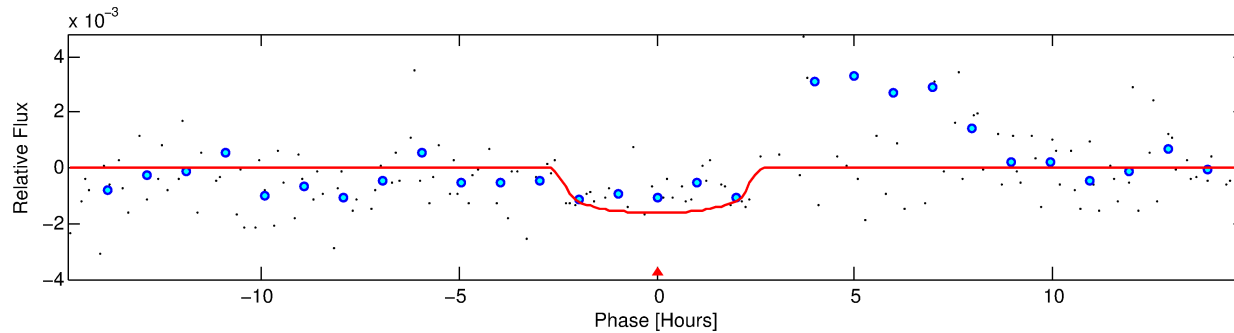
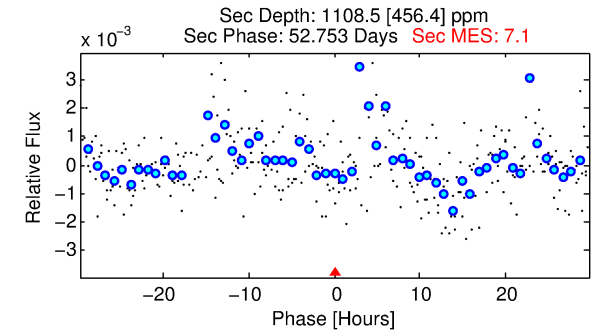
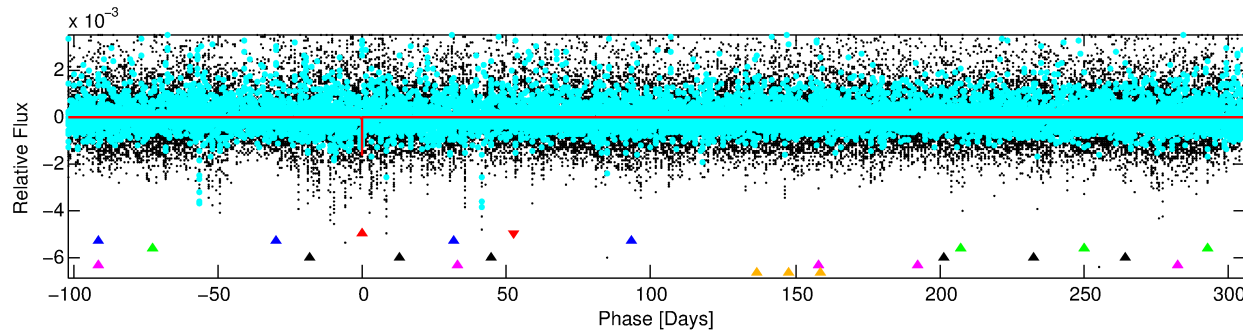
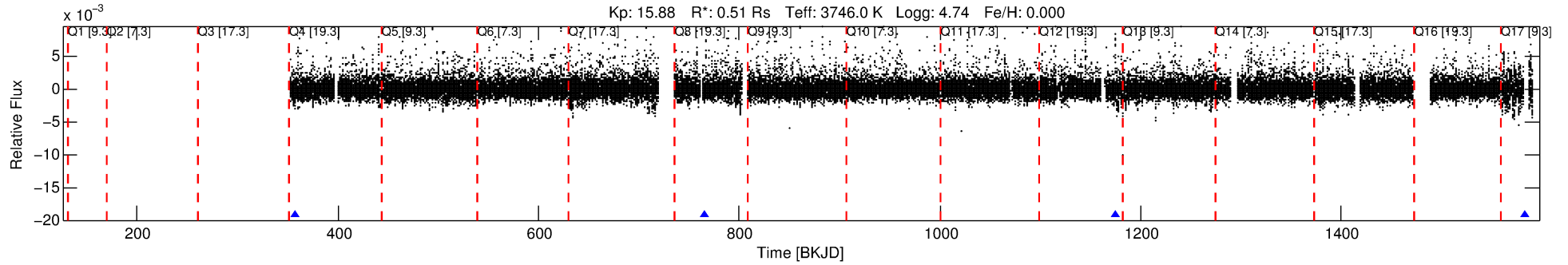
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005360129-01

No Significant Match Found

DV One-Page Summary

KIC: 5360129 Candidate: 1 of 6 Period: 408.075 d



DV Fit Results:

Period = 408.07494 [0.01274] d
Epoch = 358.0294 [0.0178] BKJD
Rp/R* = 0.0370 [0.0797]
a/R* = 608.65 [5482.25]
b = 0.37 [21.06]
Seff = 0.06 [0.01]
Teq = 127 [3] K
Rp = 2.06 [4.44] Re
a = 0.8641 [0.0375] AU
Ag = 107330.55 [464275.56] [0.23 σ]
Teffp = 3553 [3842] K [0.89 σ]

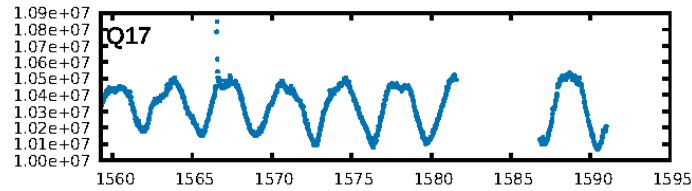
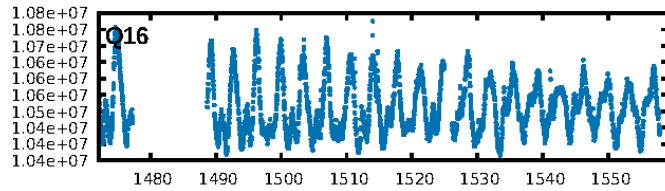
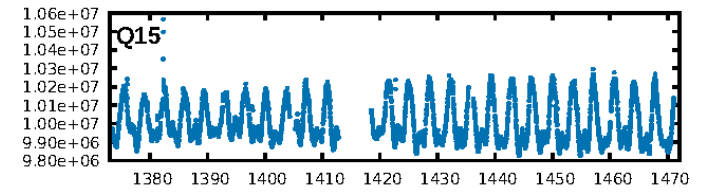
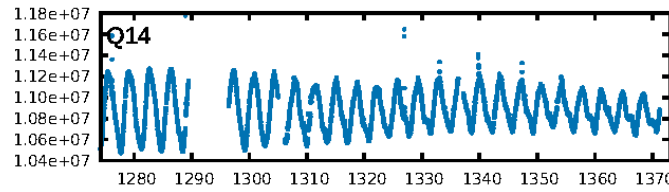
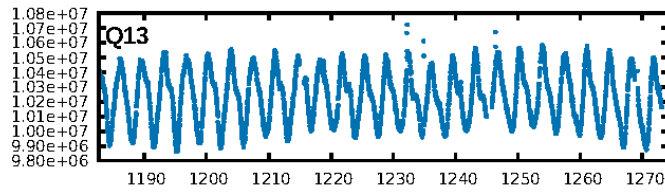
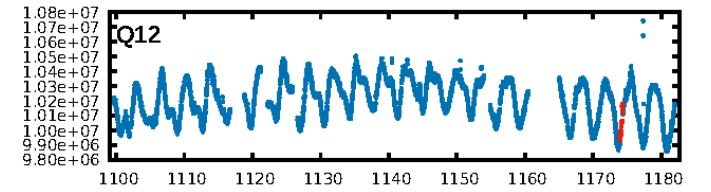
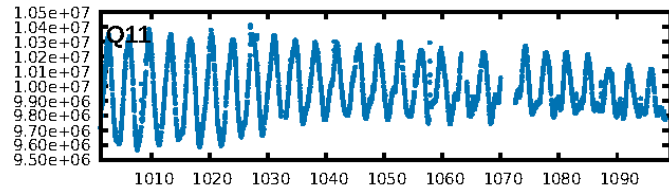
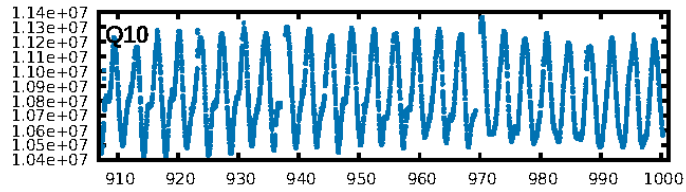
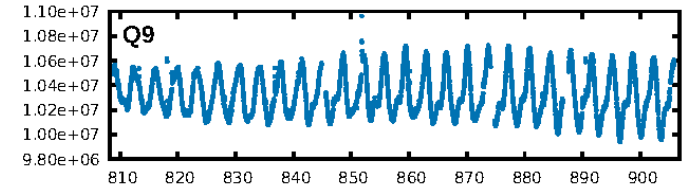
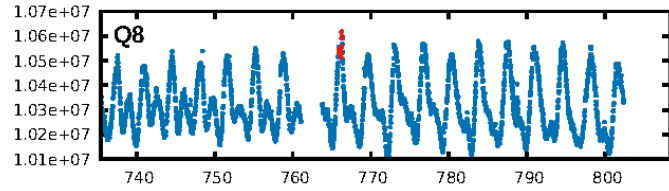
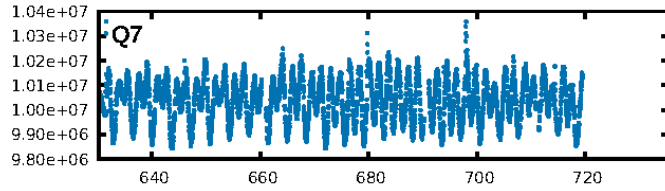
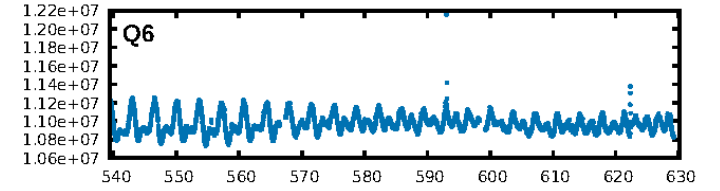
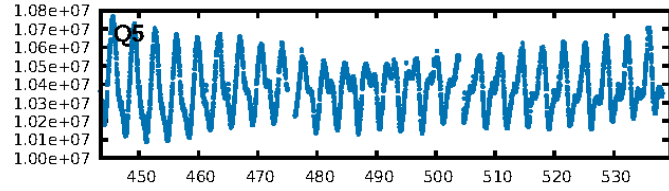
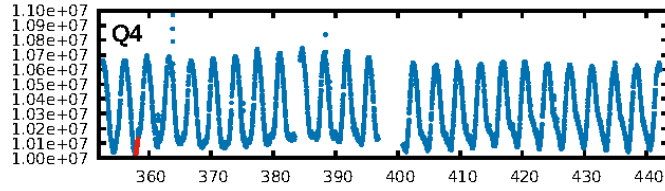
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.99 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.8%
ModelChiSquareGof-sig: 82.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.2451
Centroid-sig: 13.3%
Centroid-so: 0.815 arcsec [0.53 σ]
OotOffset-rm: 0.256 arcsec [0.11 σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 0.115 arcsec [0.06 σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

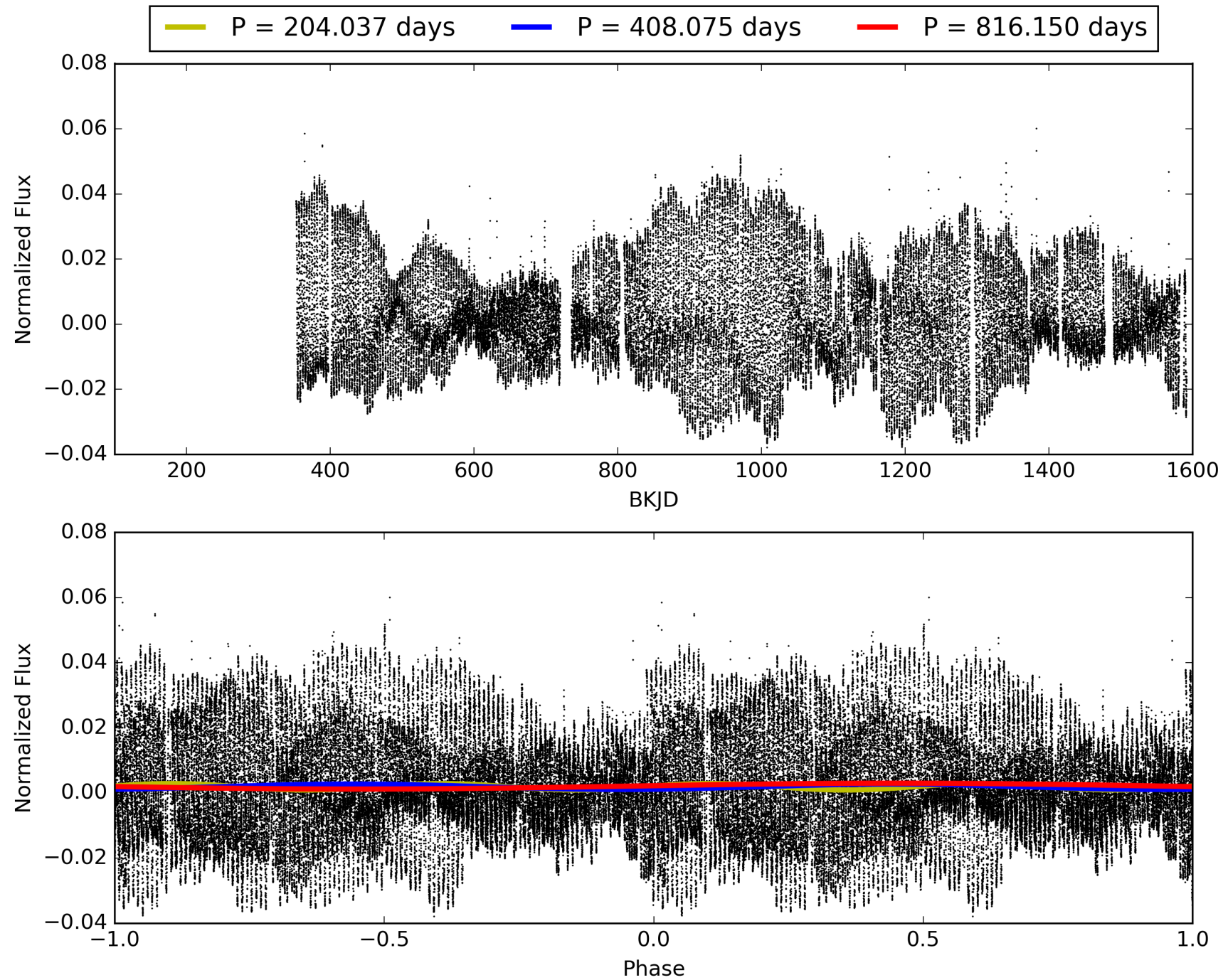
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:27 Z

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

TCE 005360129-01, PDC Light Curves

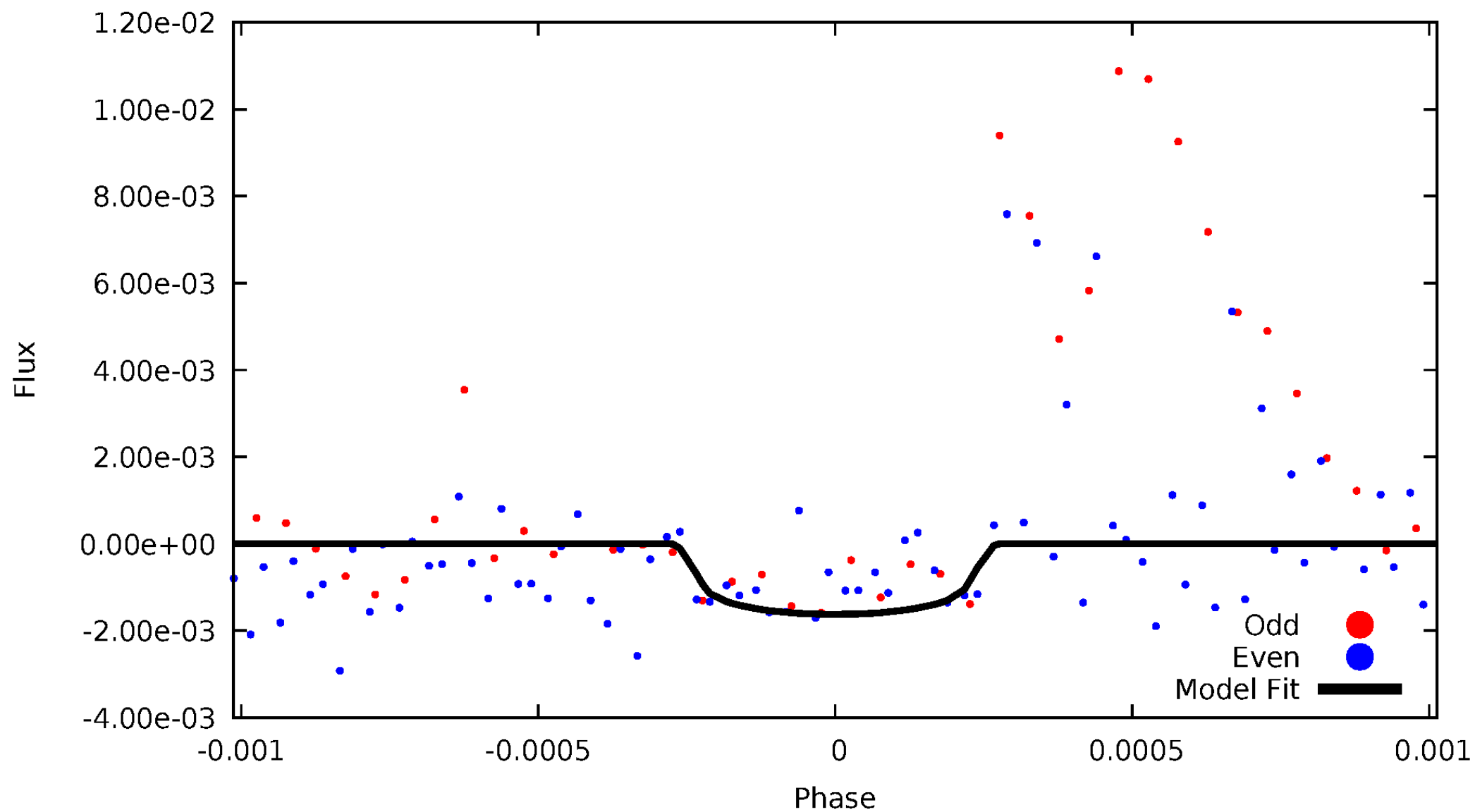


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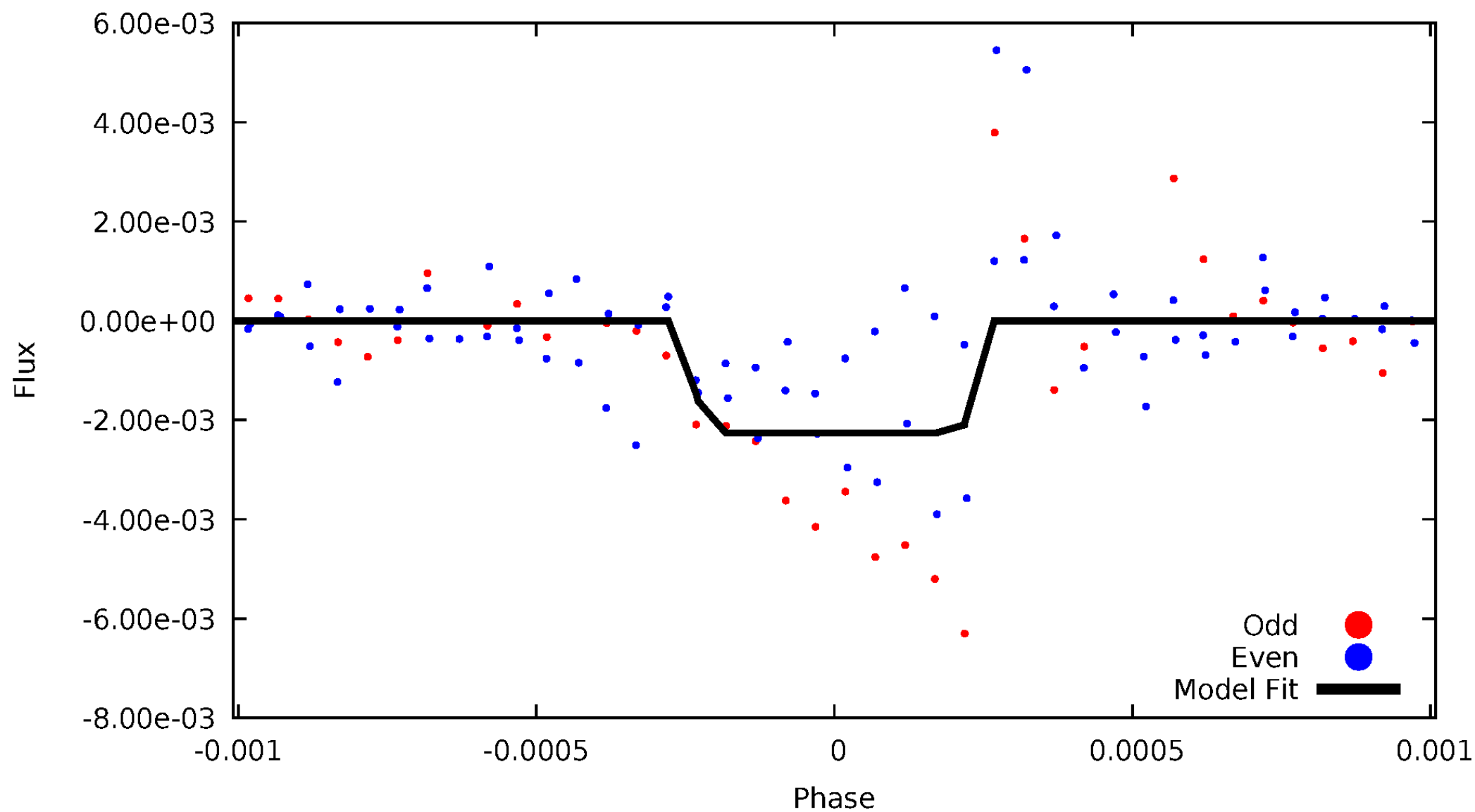
DV Odd/Even

TCE 005360129-01

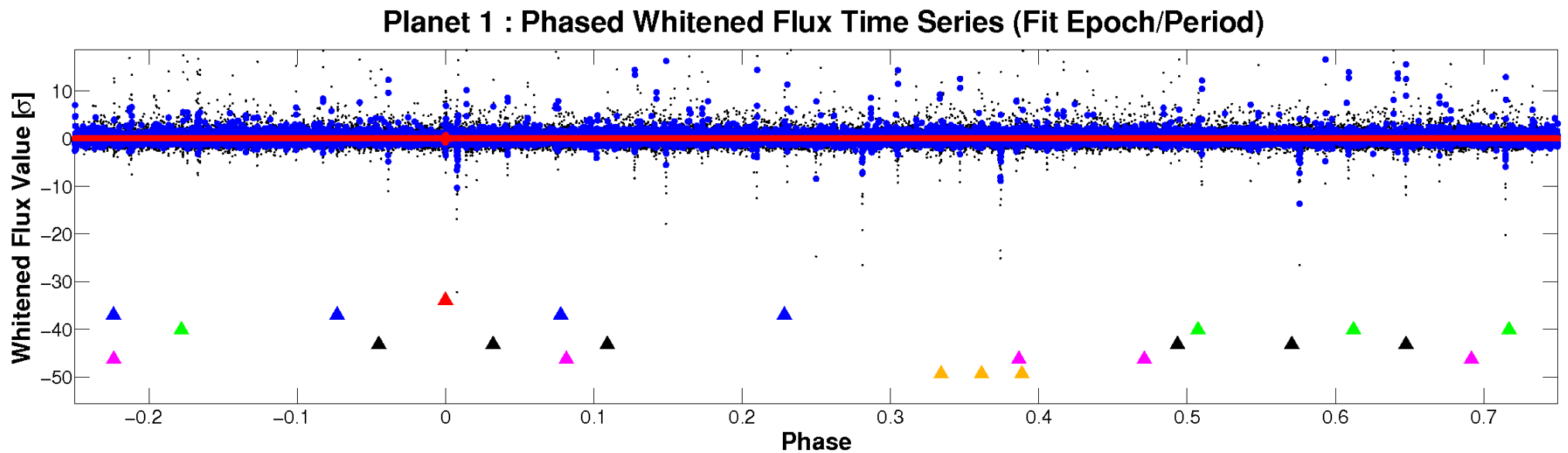
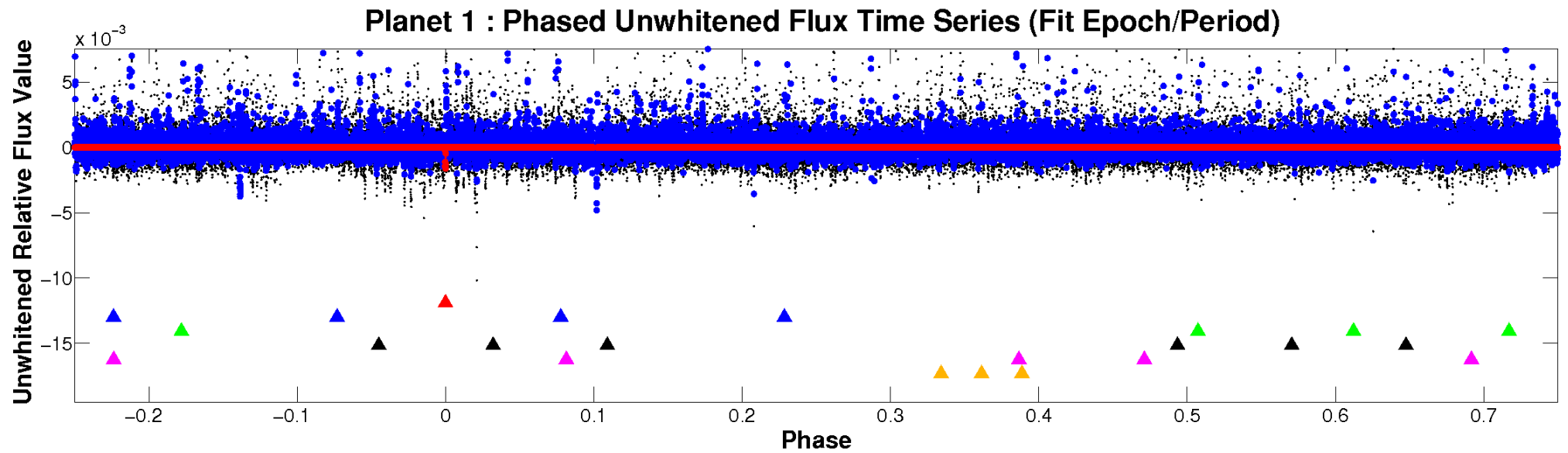


ALT Odd/Even

TCE 005360129-01

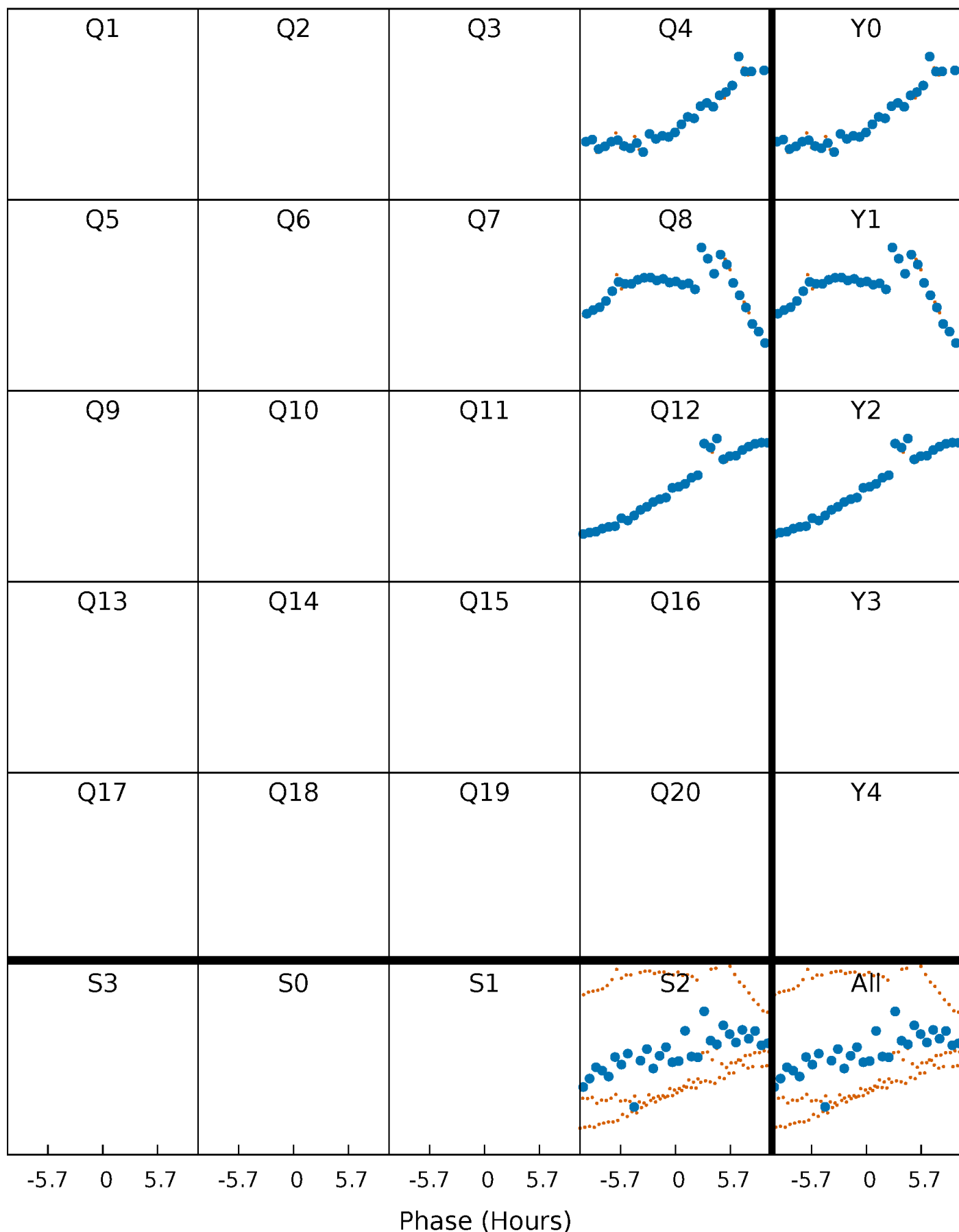


Non-Whitened Vs. Whitened Light Curve



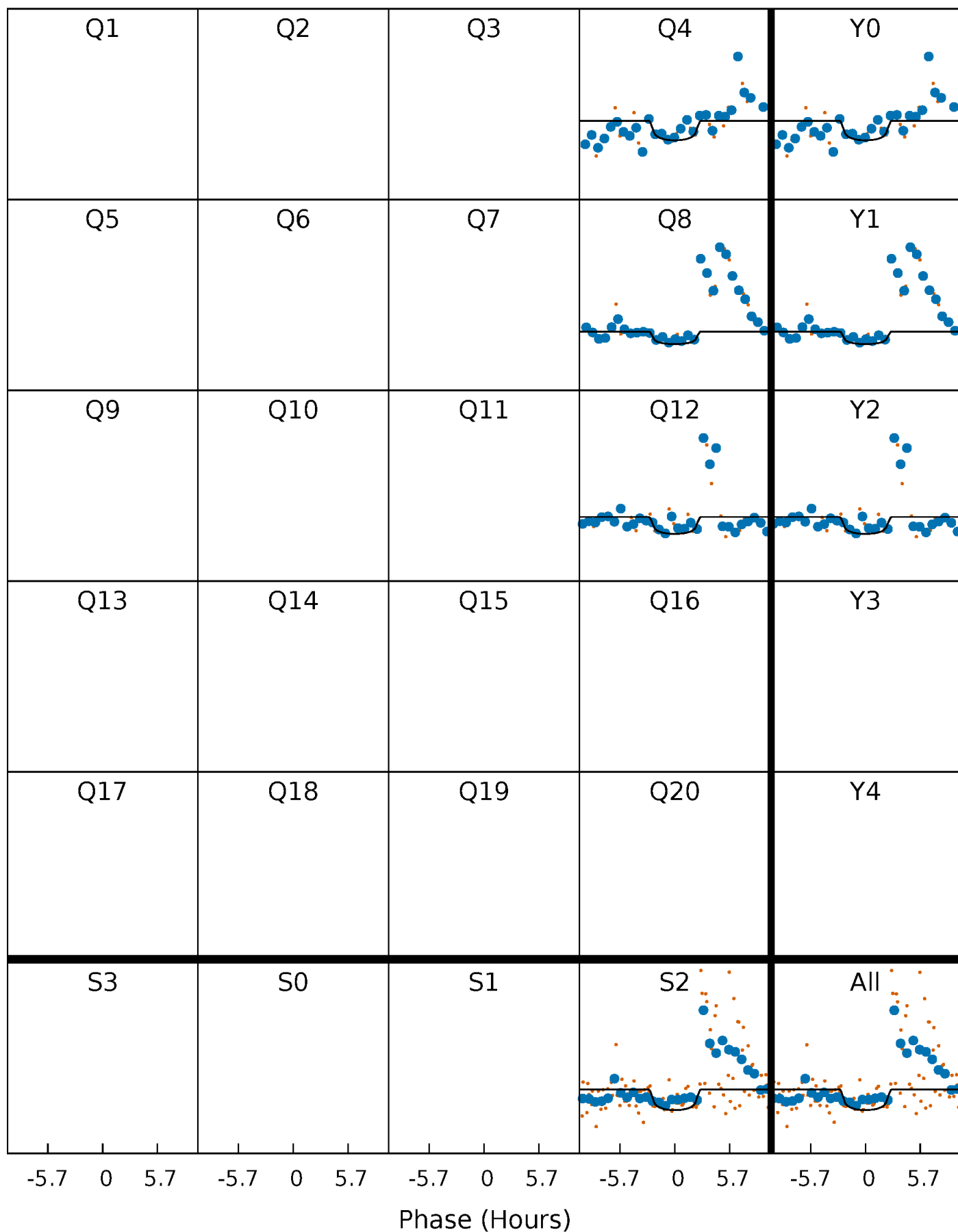
PDC Quarter-Phased Transit Curves

TCE 005360129-01 P=408.074942 Days $T_0=358.029375$ (BKJD)



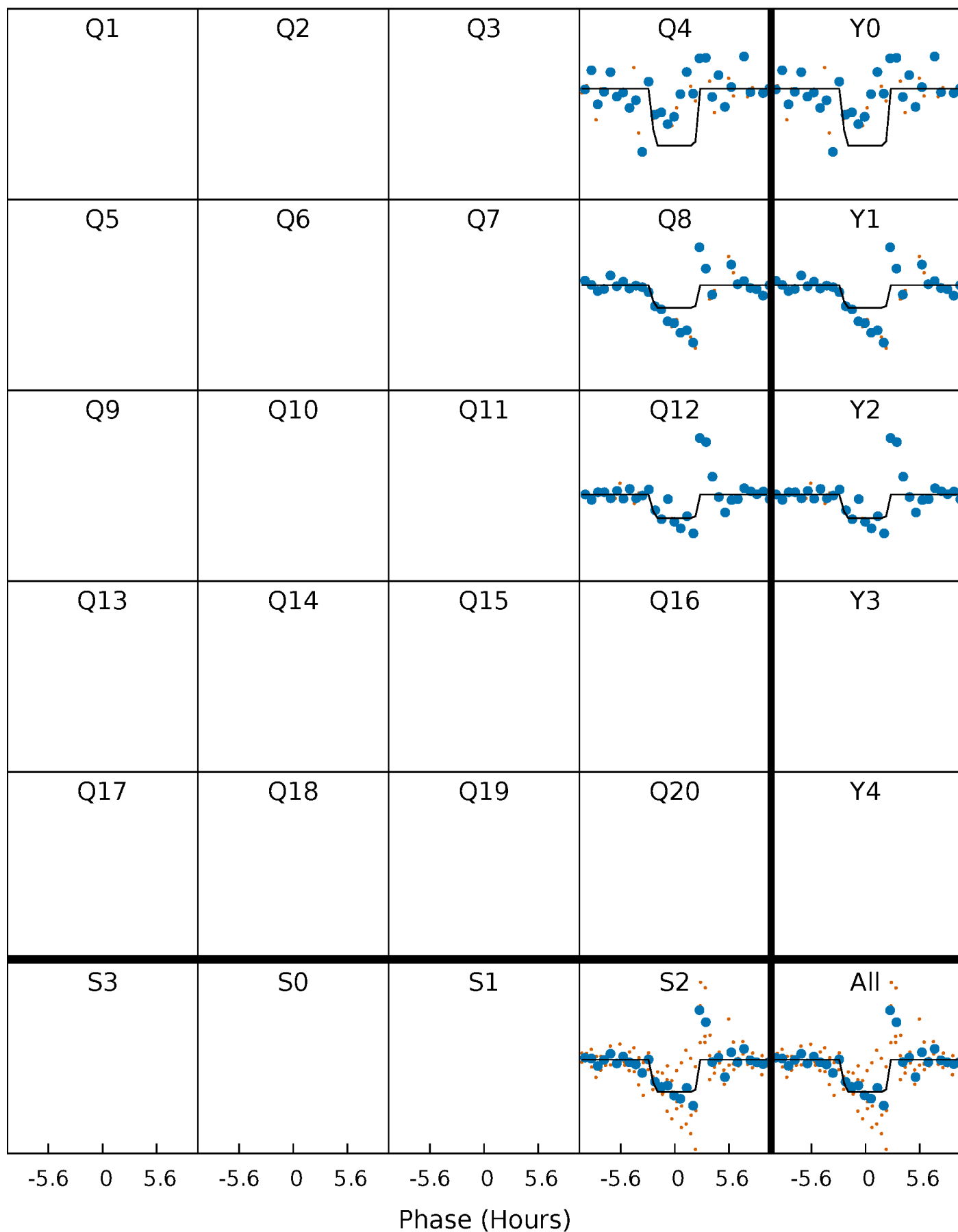
DV Quarter-Phased Transit Curves

TCE 005360129-01 P=408.074942 Days $T_0=358.029375$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

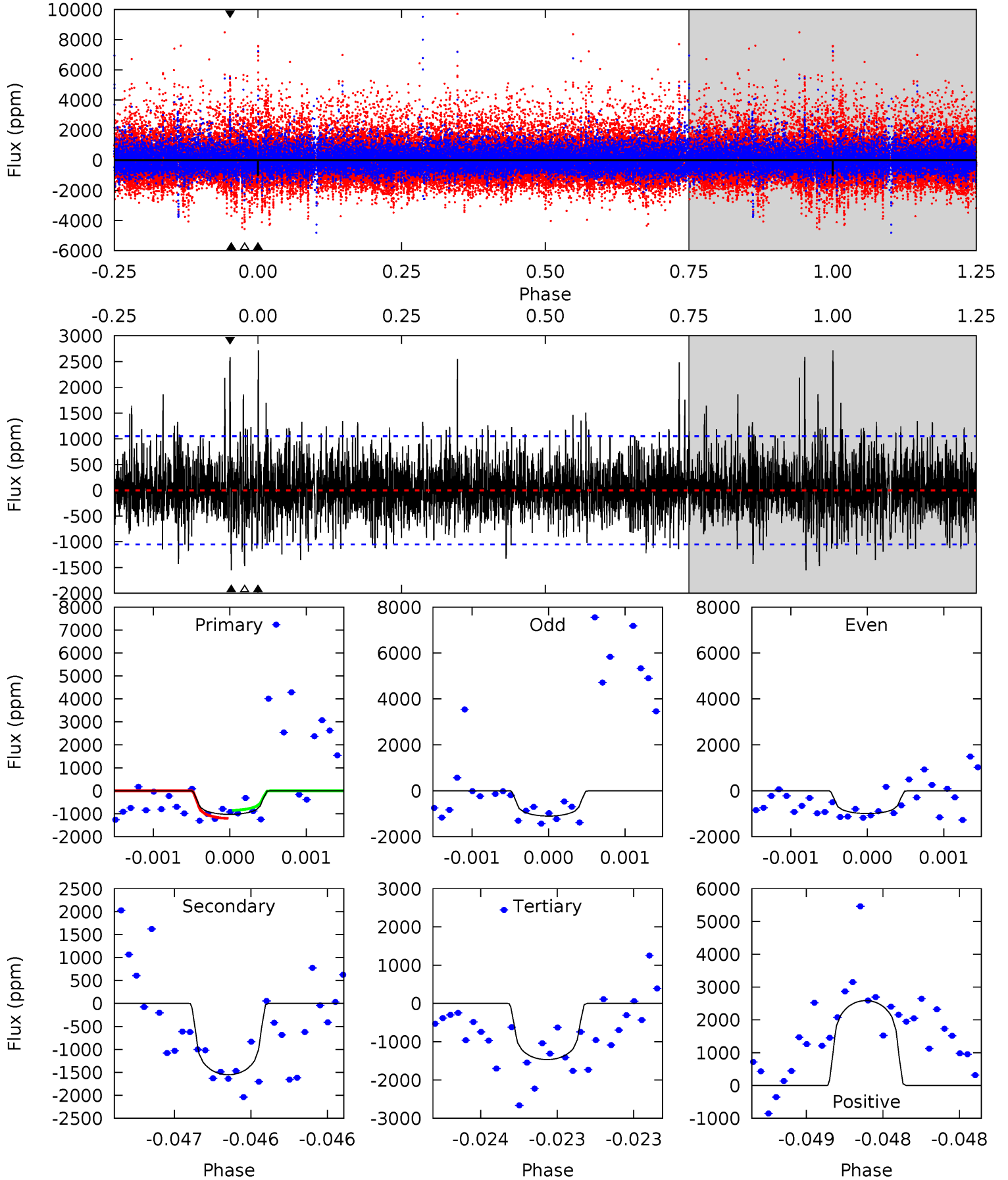
TCE 005360129-01 P=408.078627 Days $T_0=358.029074$ (BKJD)



DV Model-Shift Uniqueness Test

005360129-01, P = 408.074942 Days, E = 358.029375 Days

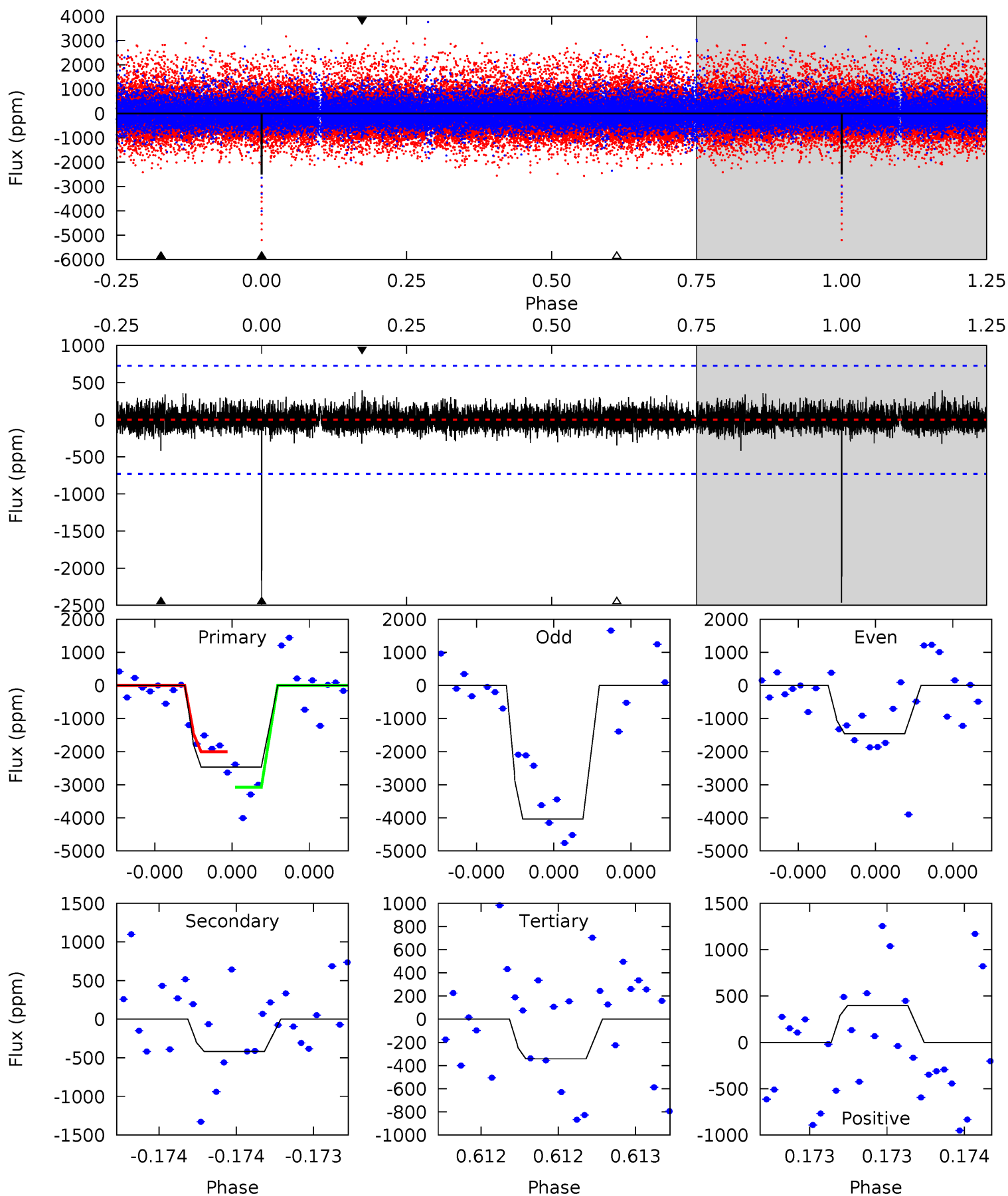
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.45	8.20	7.76	13.7	5.56	3.45	2.24	-2.31	-8.23	0.45	-5.48	0.21	0.93	0.64	0.94



Alt Model-Shift Uniqueness Test

005360129-01, P = 408.078627 Days, E = 358.029074 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	3.22	2.64	3.06	5.59	3.51	0.64	16.3	15.9	0.58	0.16	10.1	0.96	0.14	4.10



Stellar Parameters For KIC 005360129

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3746^{+45}_{-50}	$4.736^{+0.033}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.510^{+0.020}_{-0.027}$	$0.516^{+0.026}_{-0.021}$	$5.482^{+0.725}_{-0.383}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005360129-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1551 ± 189	$3.89^{+3.59}_{-2.61}$	177^{+3}_{-3}	3123^{+1453}_{-511}	$42699^{+357459}_{-31628}$
Alt.	-418 ± 130	$4.08^{+3.53}_{-2.60}$	177^{+3}_{-3}	2568^{+866}_{-377}	9783^{+70406}_{-7209}

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

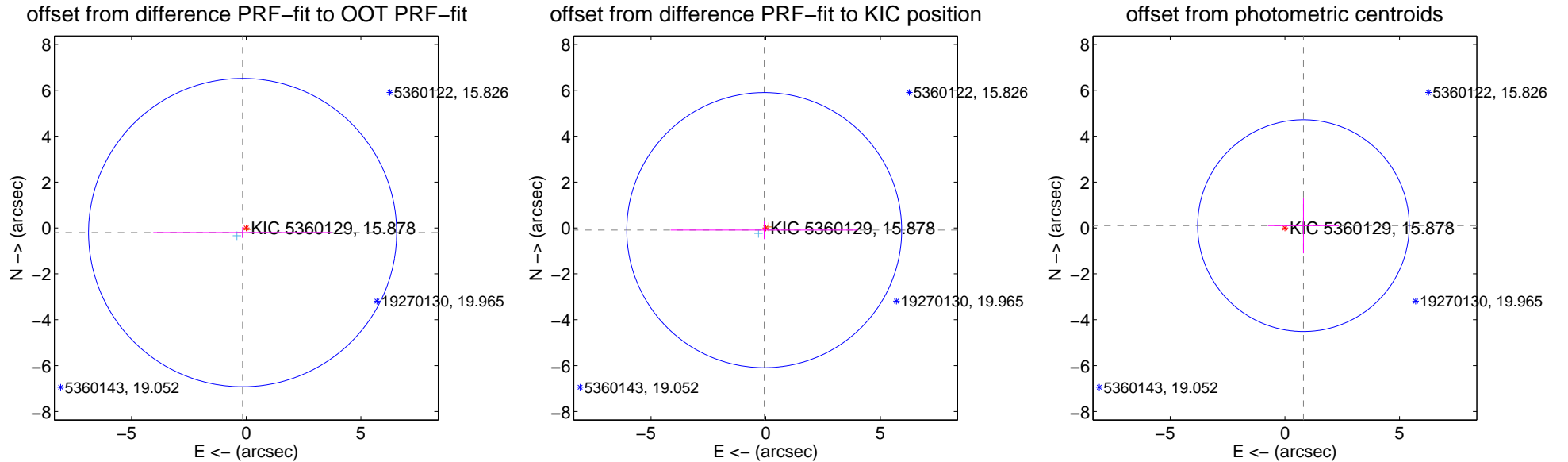
DV Centroid Data

Supplemental centroid analysis for 005360129-01. Kepler magnitude: 15.88. Transit SNR 4.63

There are 1 quarters with good PRF difference image offsets

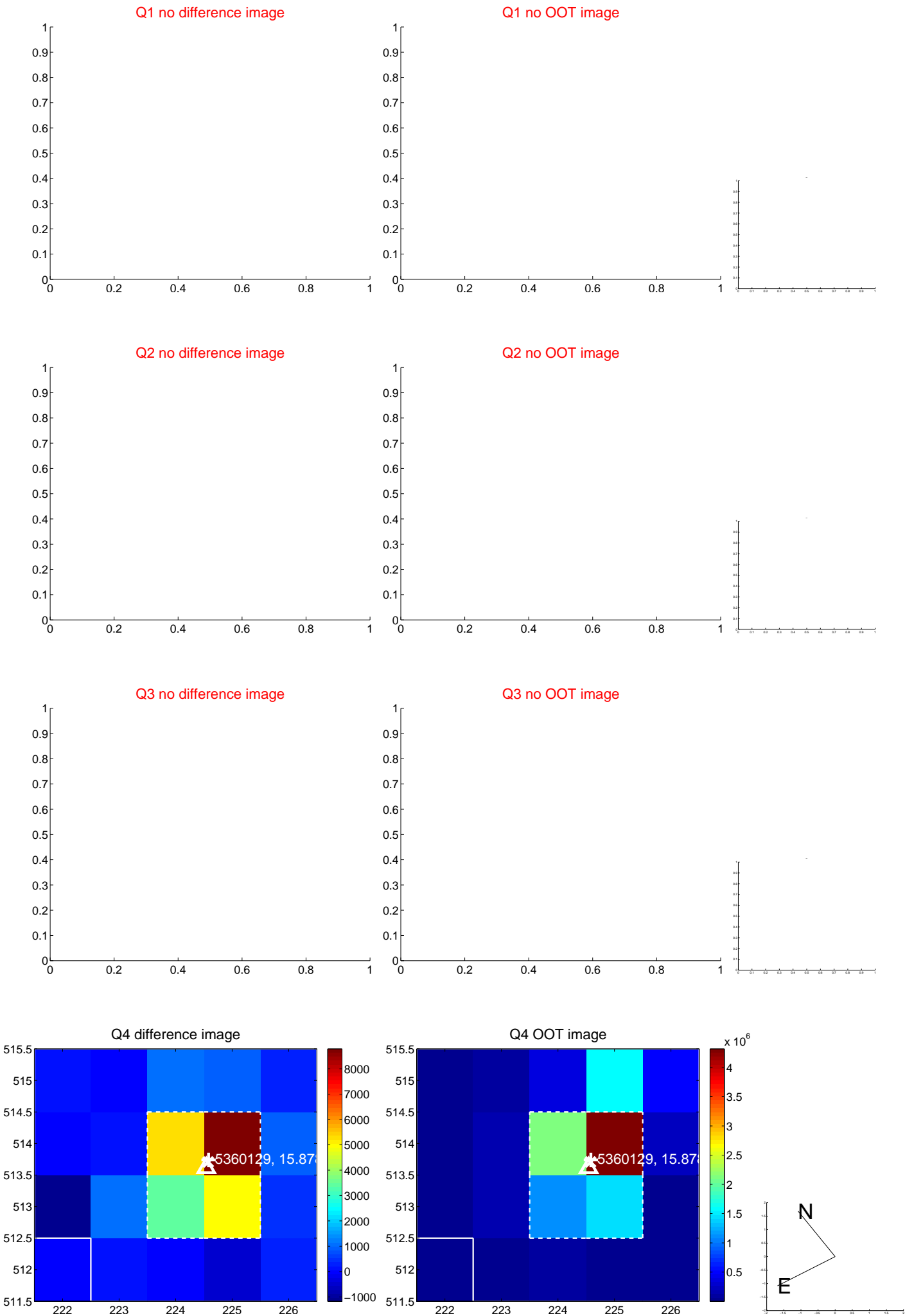
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.256 ± 2.239	0.11	0.159 ± 3.895	-0.201 ± 0.242
PRF-fit source offset from KIC position	0.115 ± 1.998	0.06	0.065 ± 4.082	-0.095 ± 0.395
photometric centroid source offset	0.82 ± 1.54	0.53	-0.81 ± 1.54	0.10 ± 1.21



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

Q5 no difference image



Q5 no OOT image



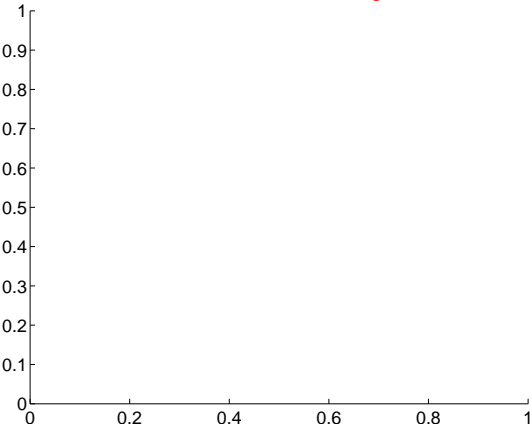
Q6 no difference image



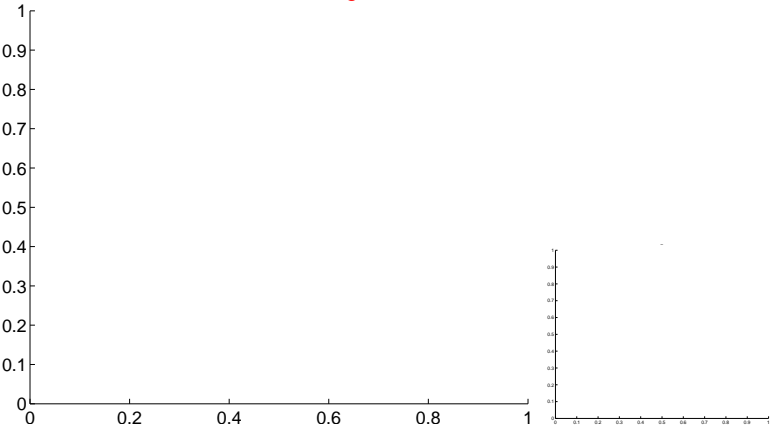
Q6 no OOT image



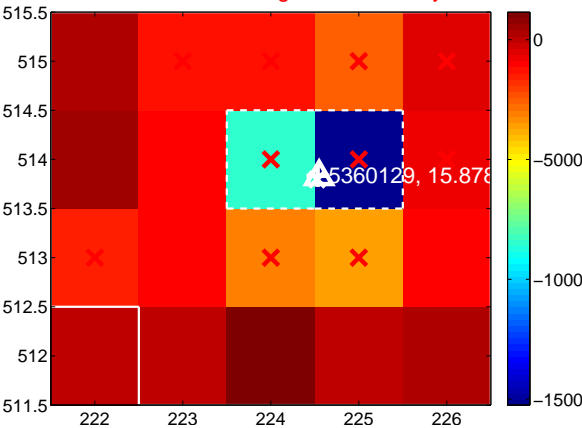
Q7 no difference image



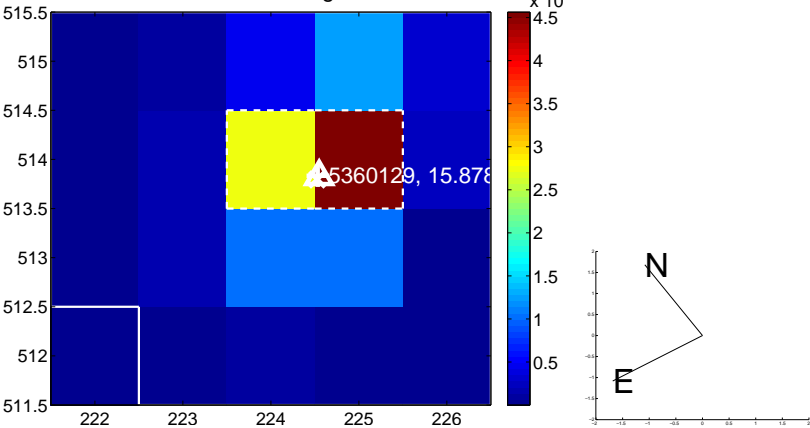
Q7 no OOT image



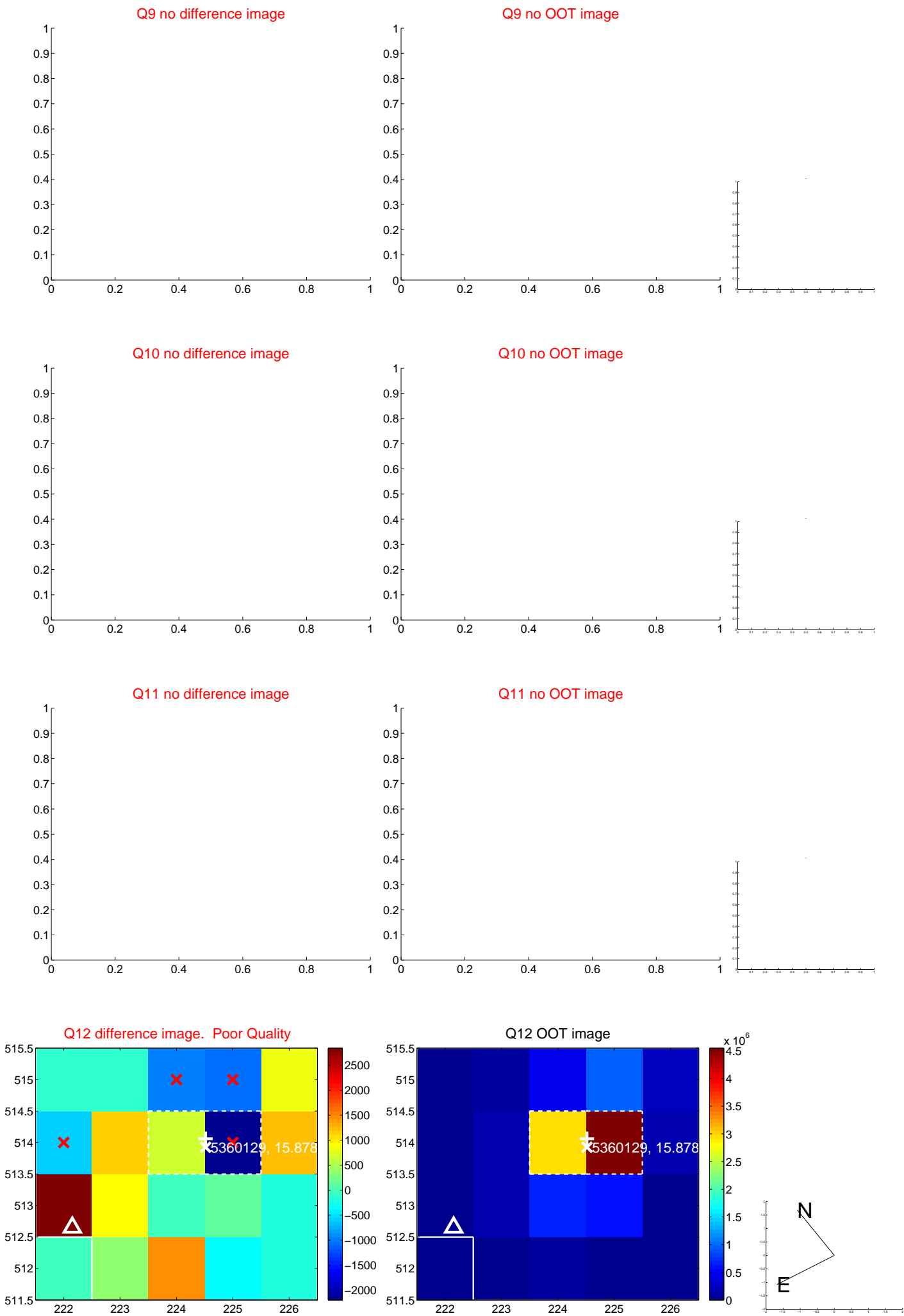
Q8 difference image. Poor Quality



Q8 OOT image



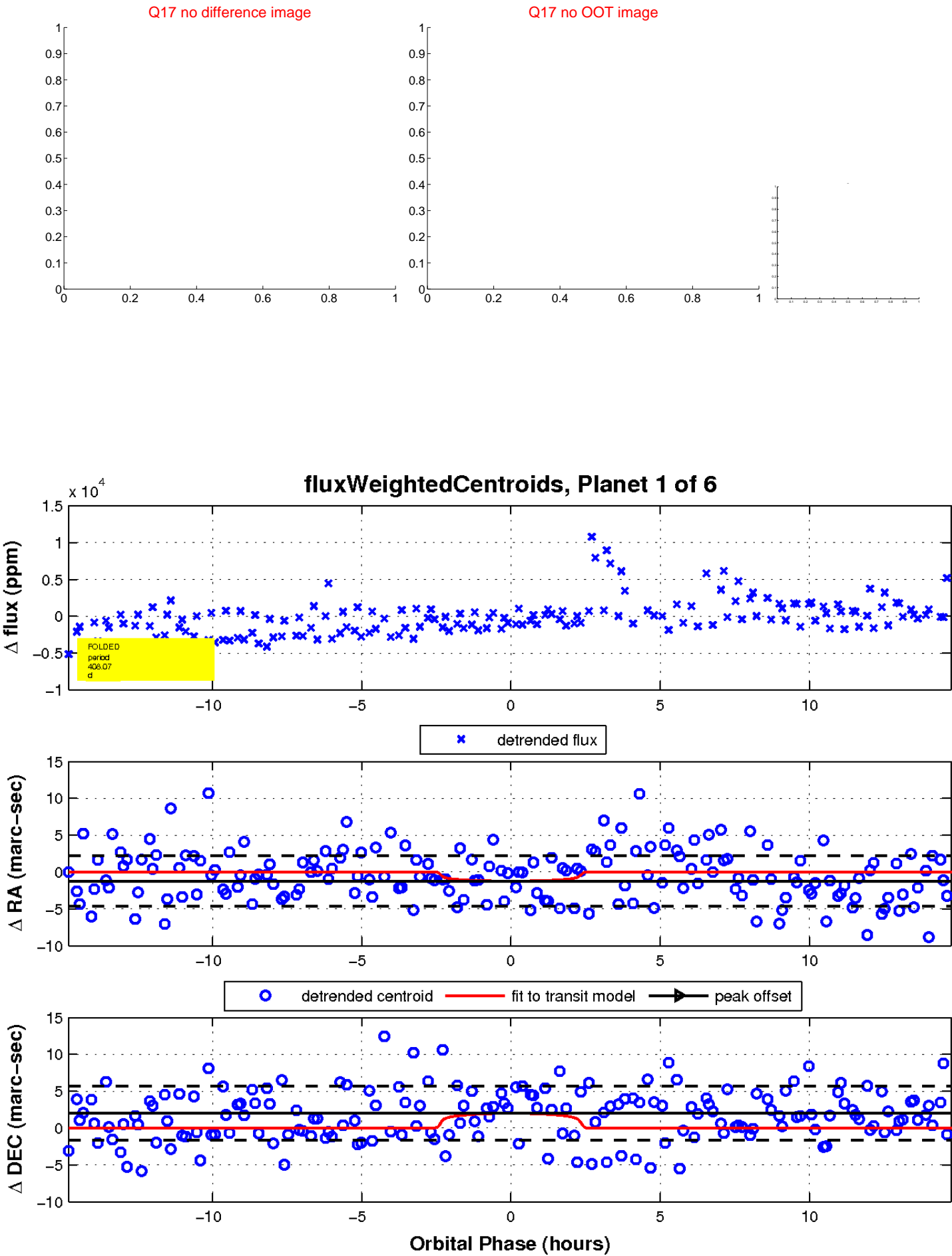
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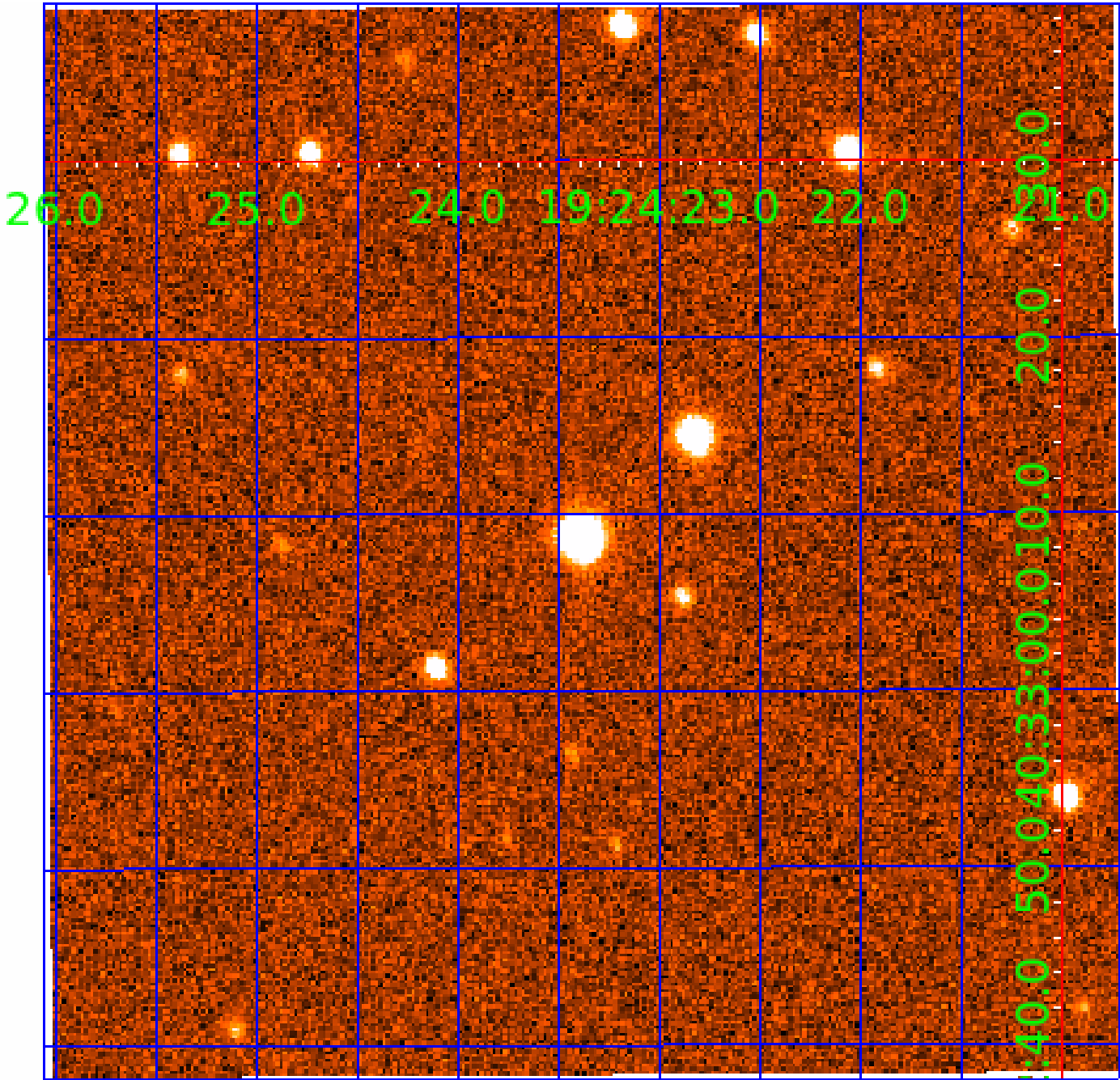


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005360129

Q1-17 DR25 TCE Parameters

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Robovetter Results

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005360129-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
005360129-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005360129-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_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.

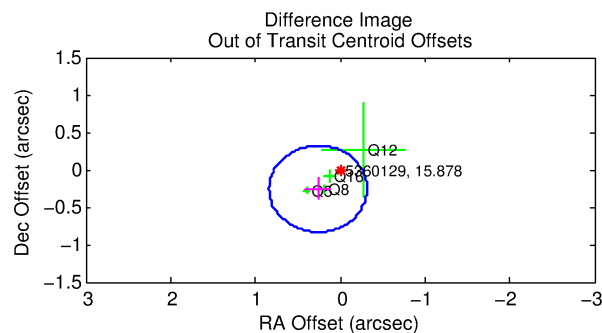
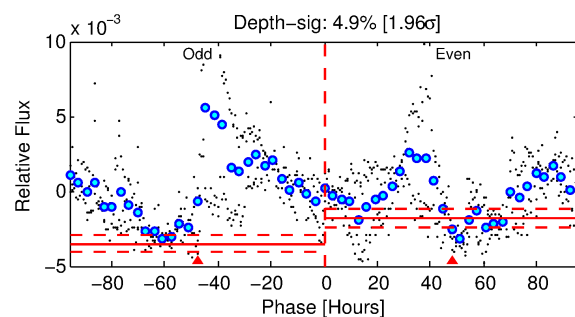
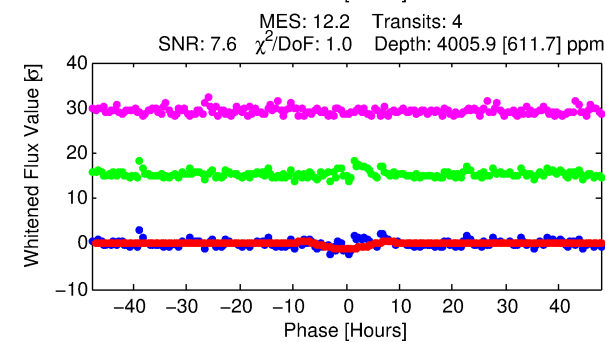
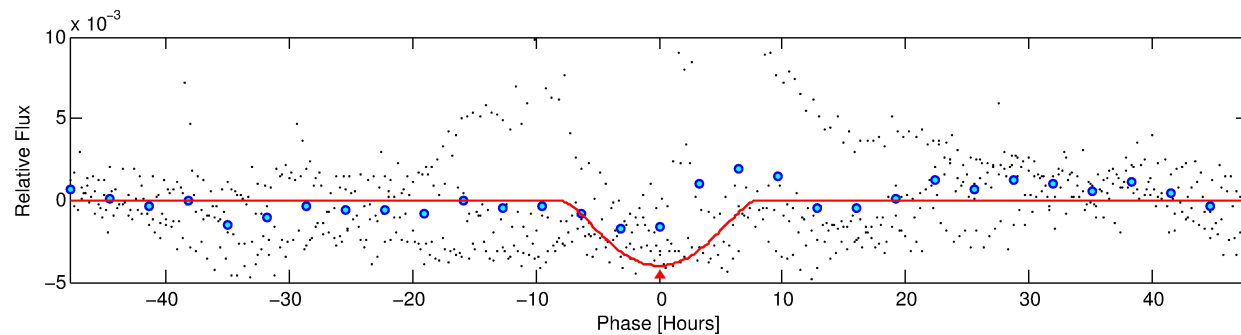
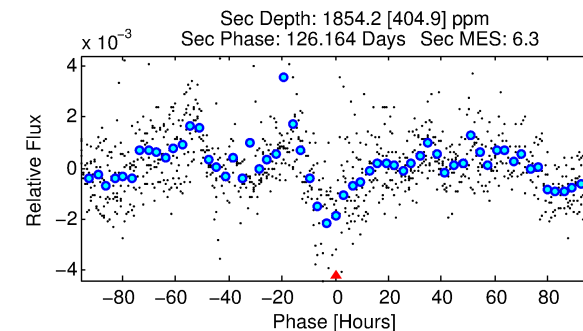
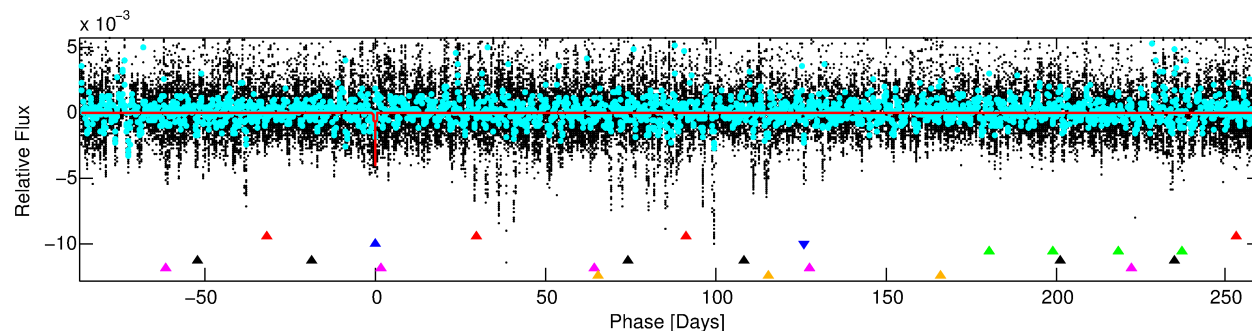
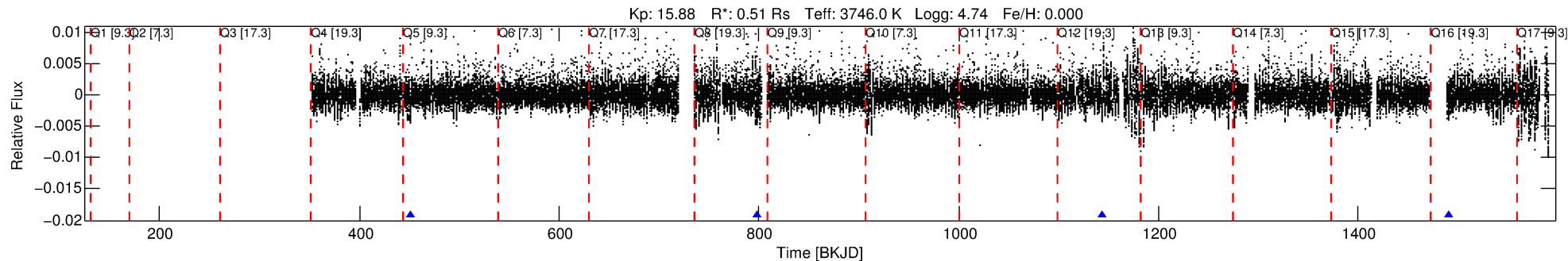
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005360129-02

No Significant Match Found

DV One-Page Summary

KIC: 5360129 Candidate: 2 of 6 Period: 346.550 d



DV Fit Results:

Period = 346.54956 [0.01475] d
Epoch = 451.2736 [0.0282] BKJD
Rp/R* = 0.0886 [0.0799]
a/R* = 82.87 [21.25]
b = 0.97 [0.14]
Seff = 0.08 [0.01]
Teq = 134 [3] K
Rp = 4.93 [4.46] Re
a = 0.7749 [0.0337] AU
Ag = 25210.78 [45858.84] [0.55 σ]
Teff = 2612 [1188] K [2.09 σ]

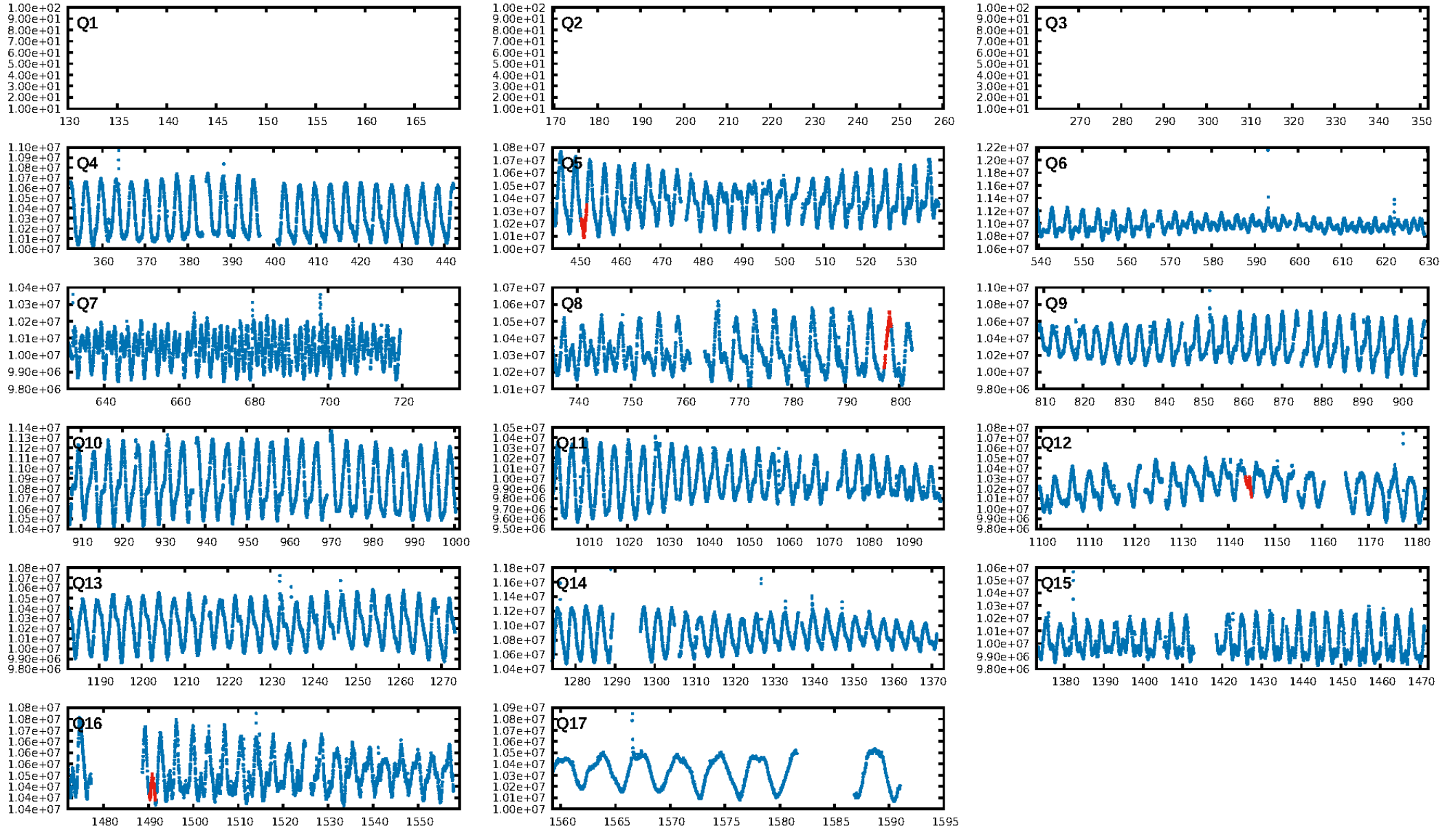
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [92.60 σ]
LongPeriod-sig: 100.0% [25.85 σ]
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -4.673
Centroid-sig: 32.3%
Centroid-so: 2.174 arcsec [4.32 σ]
OotOffset-rm: 0.366 arcsec [1.91 σ]
KicOffset-rm: 0.065 arcsec [0.40 σ]
OotOffset-st: 0/0/3/1 [4]
KicOffset-st: 0/0/3/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

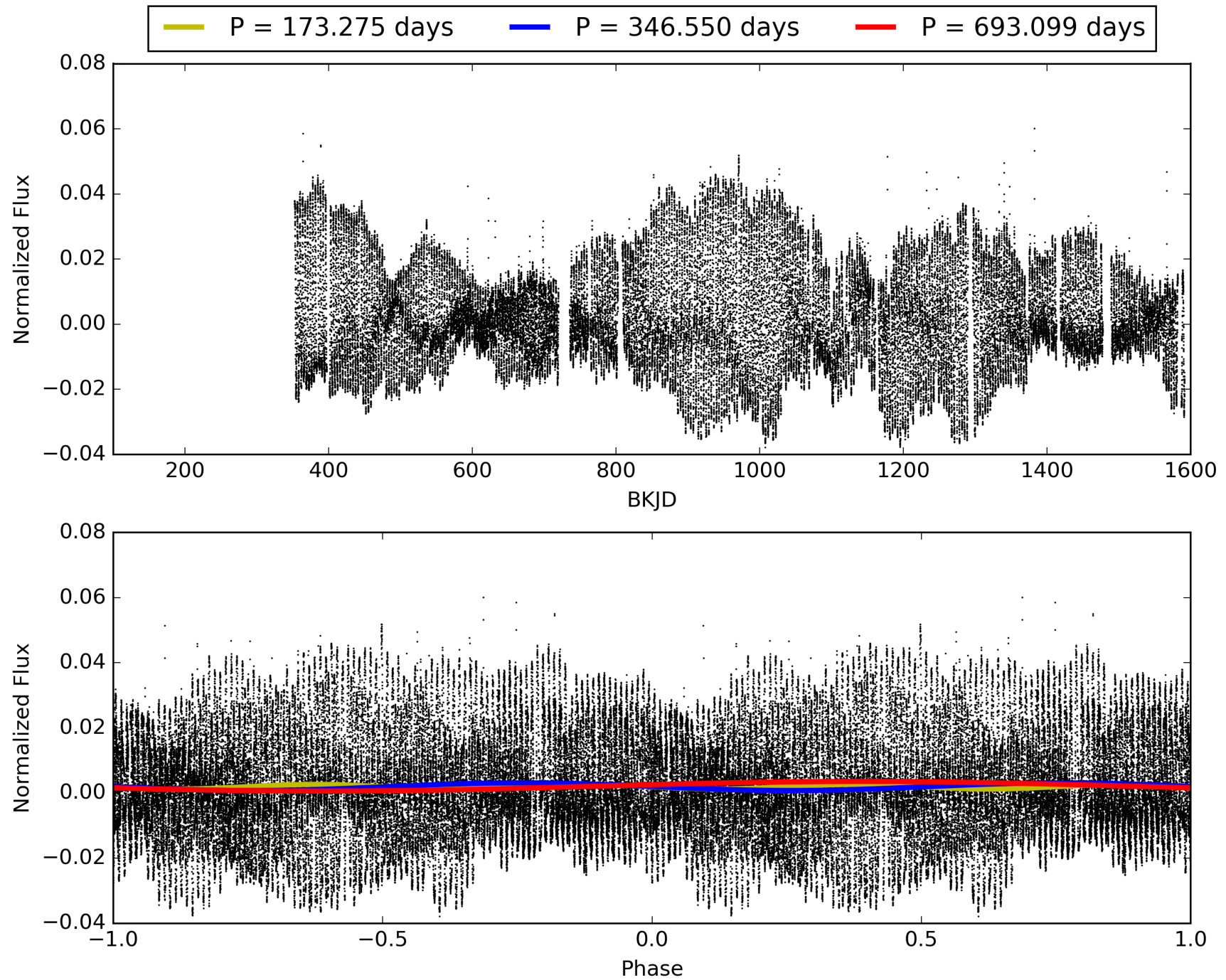
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:35 Z

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

TCE 005360129-02, PDC Light Curves

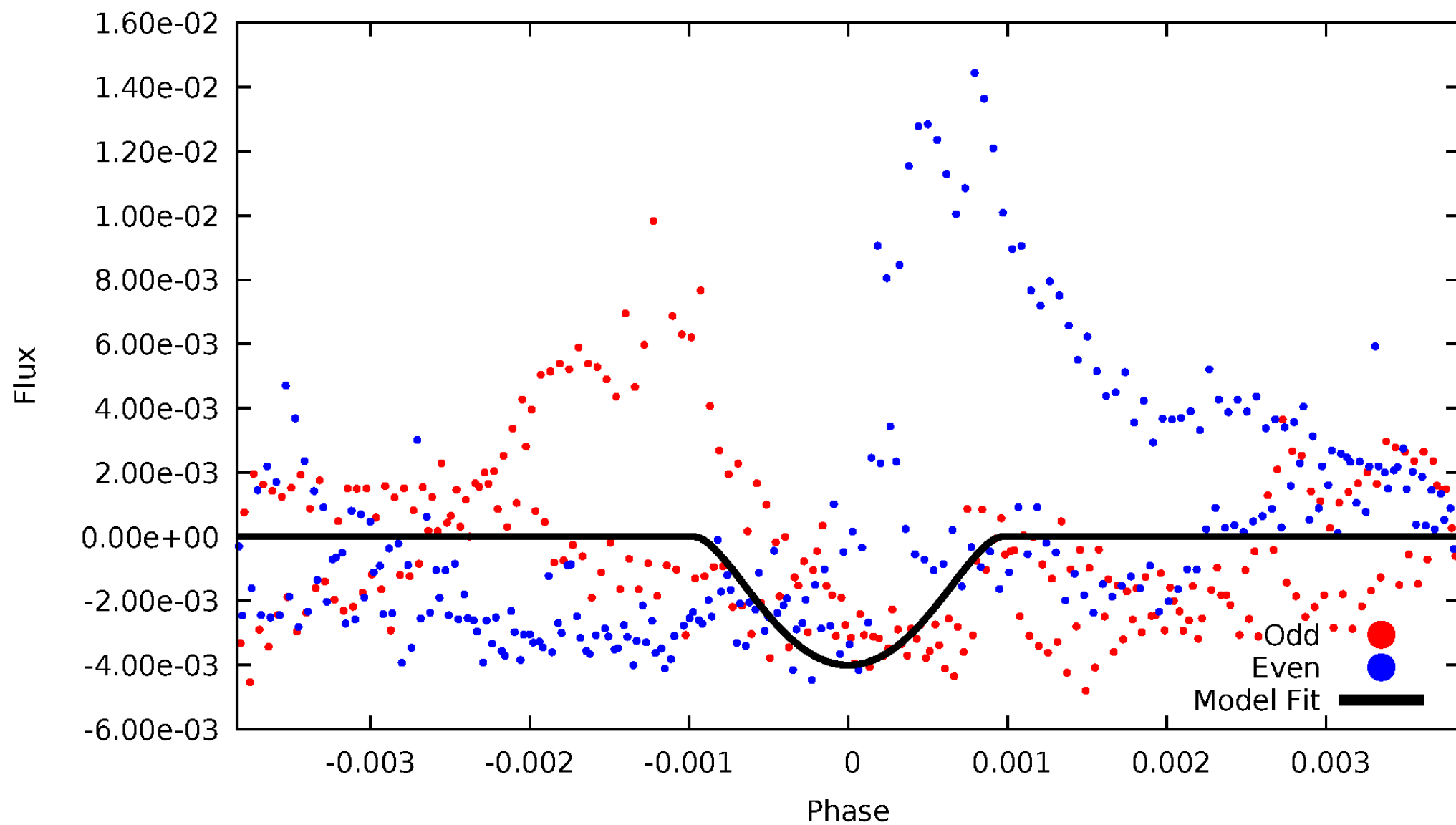


TCE 005360129-02



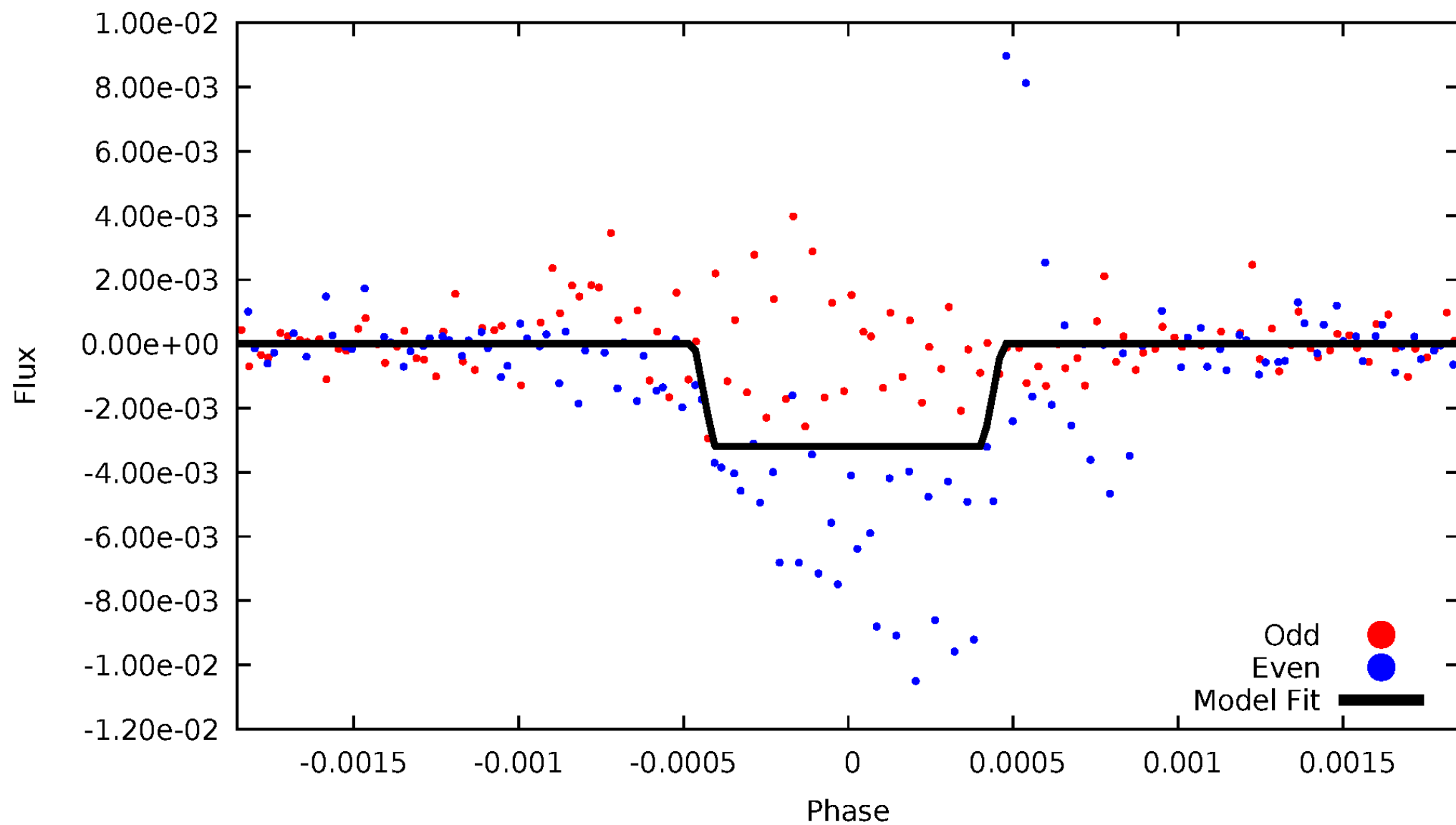
DV Odd/Even

TCE 005360129-02



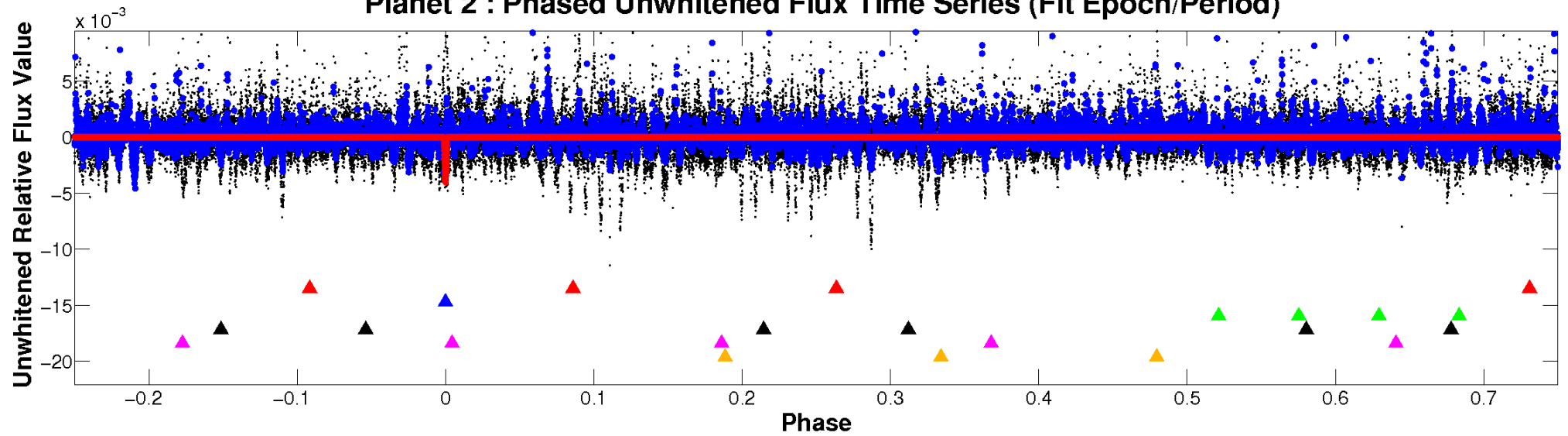
ALT Odd/Even

TCE 005360129-02

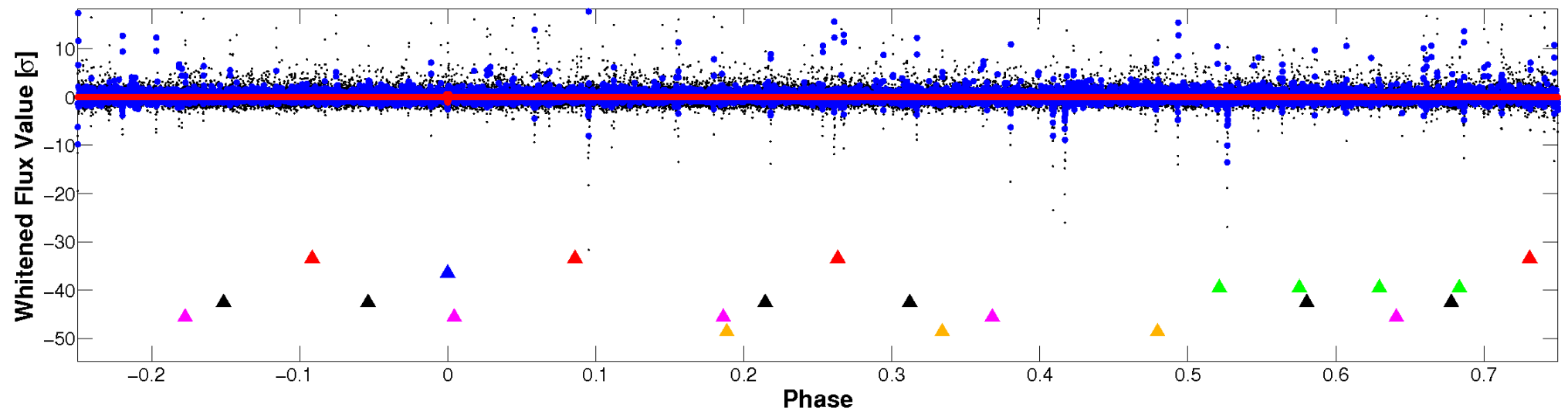


Non-Whitened Vs. Whitened Light Curve

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

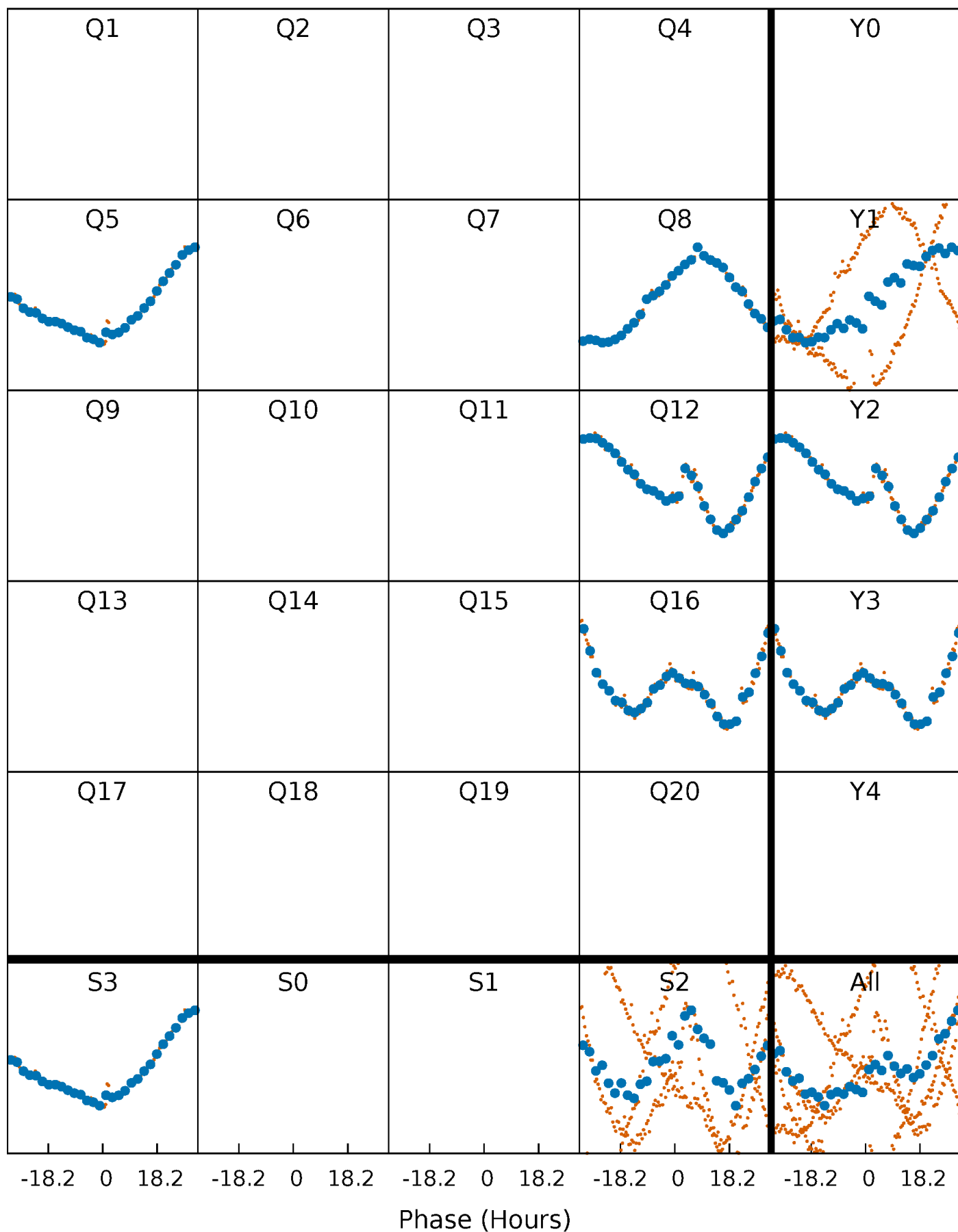


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



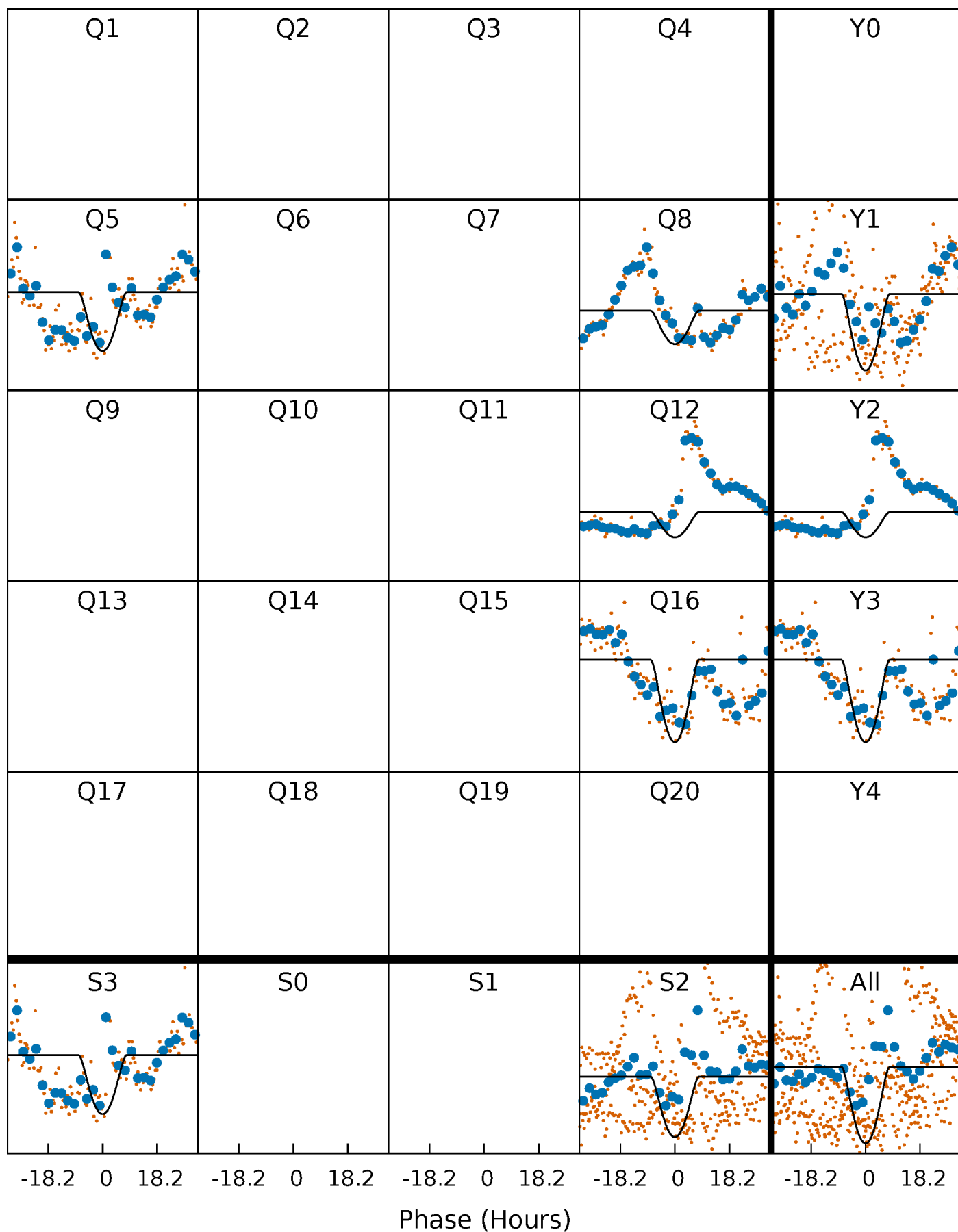
PDC Quarter-Phased Transit Curves

TCE 005360129-02 $P=346.549555$ Days $T_0=451.273563$ (BKJD)



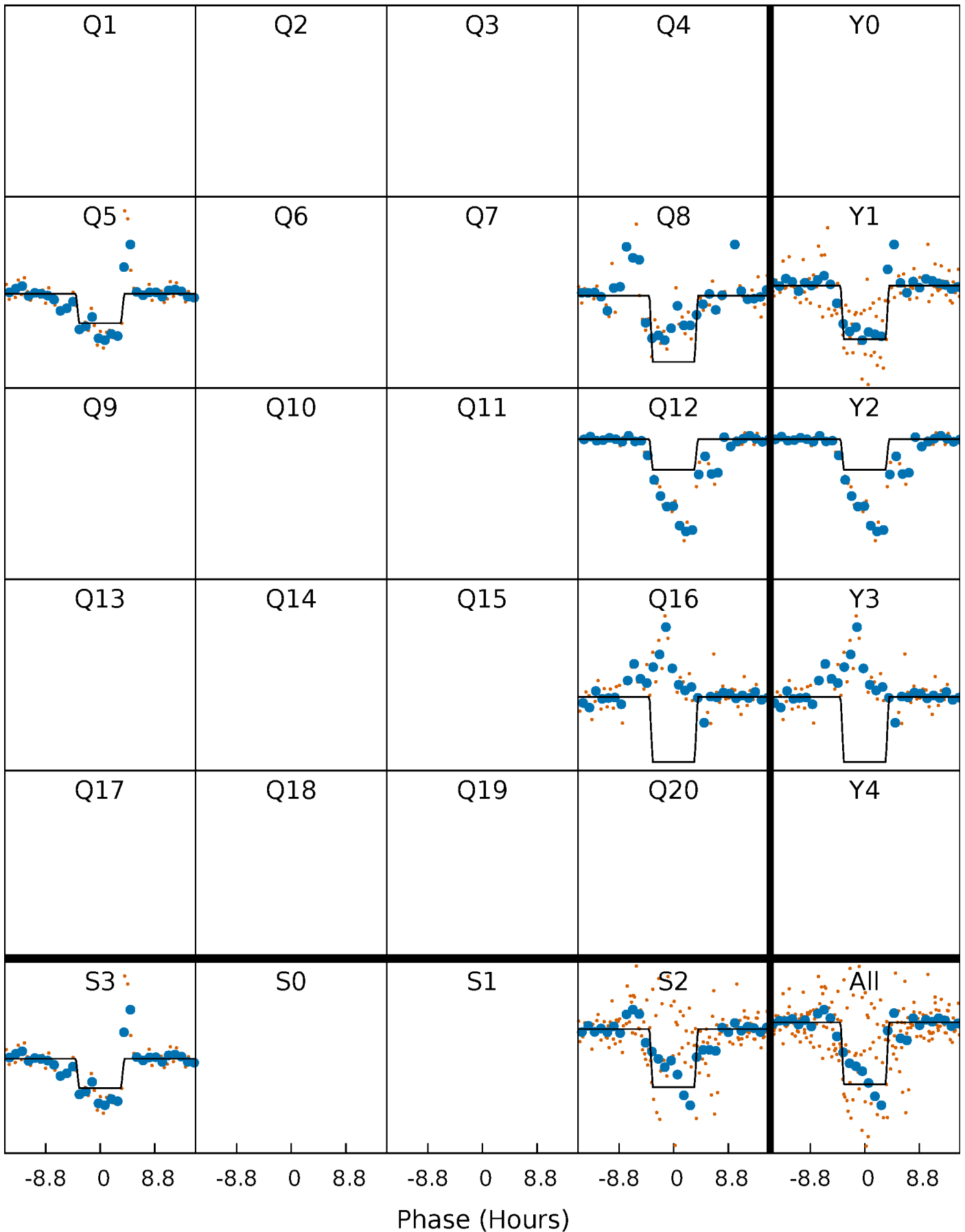
DV Quarter-Phased Transit Curves

TCE 005360129-02 $P=346.549555$ Days $T_0=451.273563$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

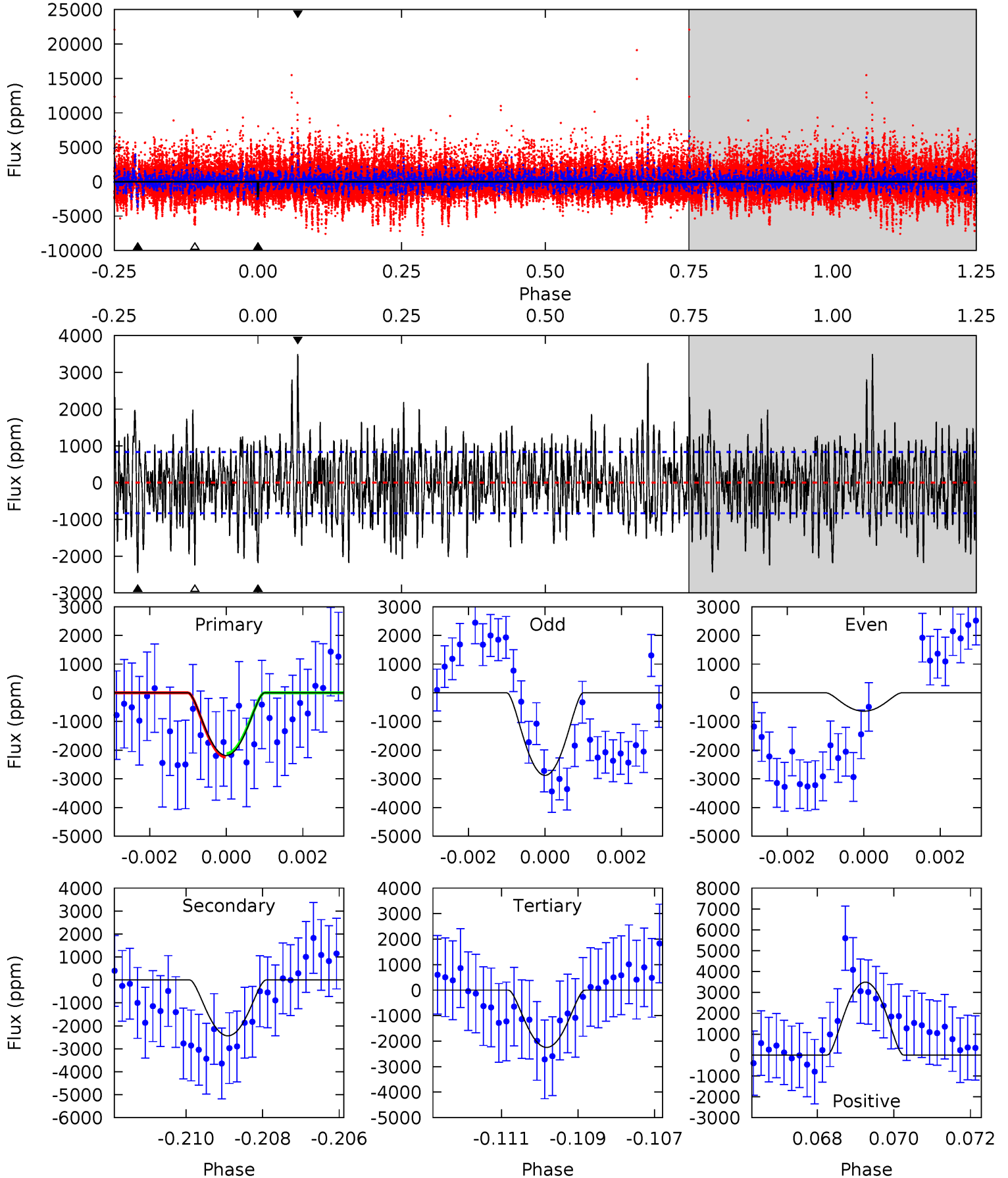
TCE 005360129-02 P=346.580422 Days $T_0=451.170902$ (BKJD)



DV Model-Shift Uniqueness Test

005360129-02, P = 346.549555 Days, E = 104.724008 Days

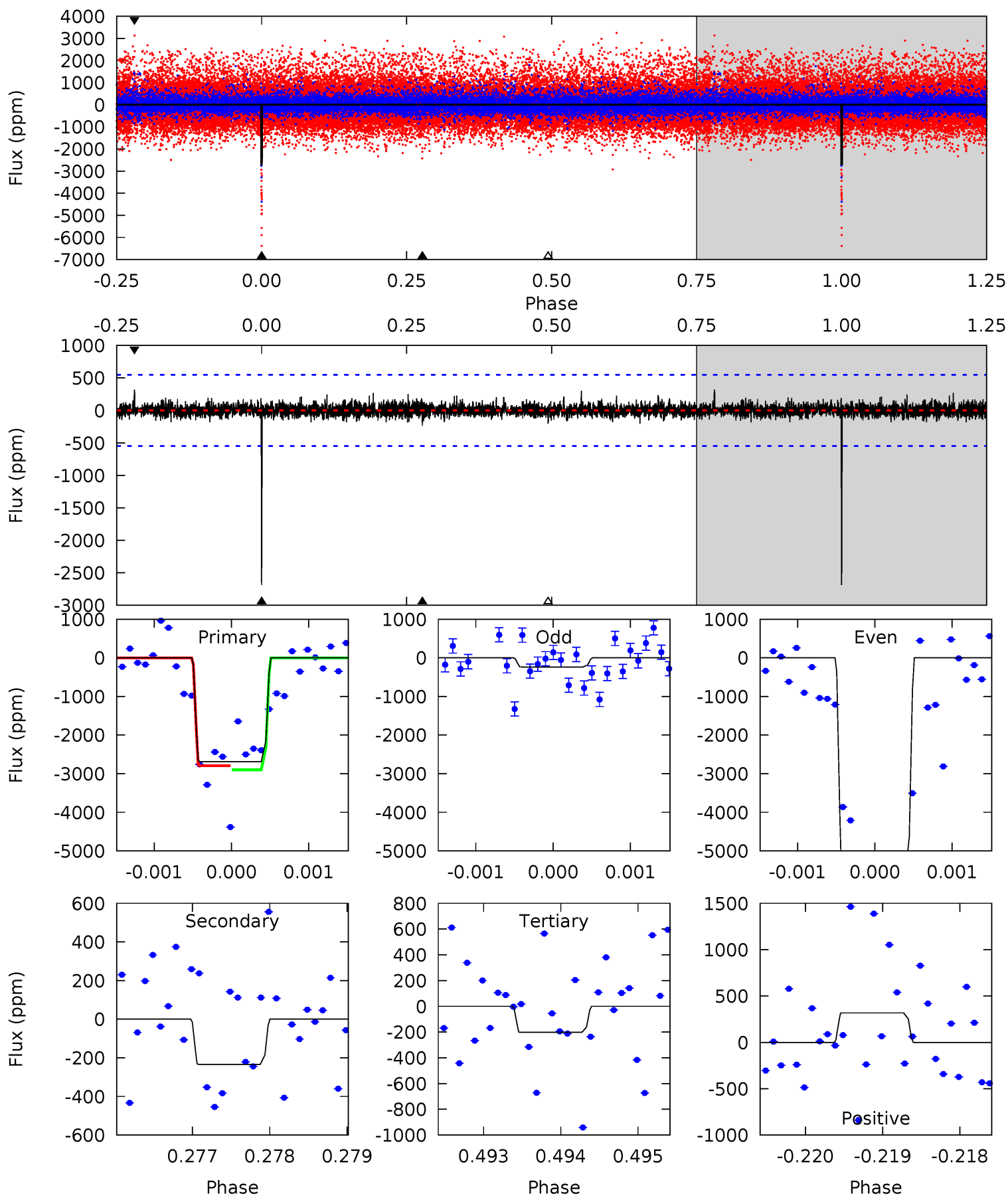
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	15.6	14.4	22.4	5.33	3.10	4.89	-0.39	-8.39	1.21	-6.79	6.74	0.52	0.59	0.41



Alt Model-Shift Uniqueness Test

005360129-02, P = 346.580422 Days, E = 104.590480 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	2.34	2.02	3.17	5.46	3.31	0.54	24.8	23.6	0.32	-0.83	33.2	1.04	0.11	0.50



Stellar Parameters For KIC 005360129

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3746^{+45}_{-50}	$4.736^{+0.033}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.510^{+0.020}_{-0.027}$	$0.516^{+0.026}_{-0.021}$	$5.482^{+0.725}_{-0.383}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005360129-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2435 ± 156	$5.66^{+4.00}_{-3.52}$	187^{+3}_{-3}	3007^{+1082}_{-405}	$25532^{+152444}_{-16925}$
Alt.	-234 ± 100	$4.50^{+3.89}_{-2.96}$	187^{+3}_{-3}	2337^{+759}_{-341}	3741^{+27730}_{-2911}

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

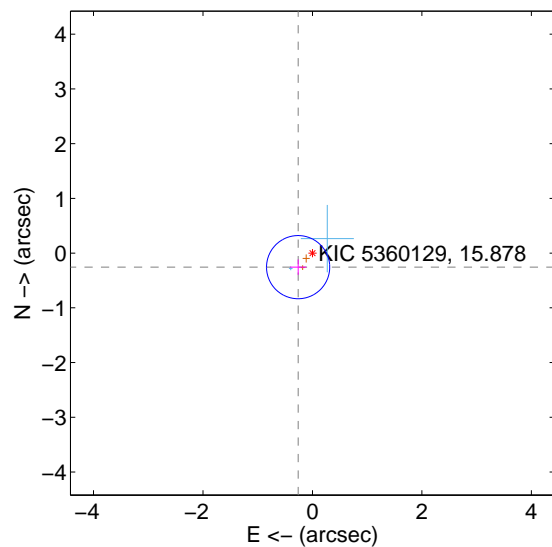
Supplemental centroid analysis for 005360129-02. Kepler magnitude: 15.88. Transit SNR 7.63

There are 2 quarters with good PRF difference image offsets

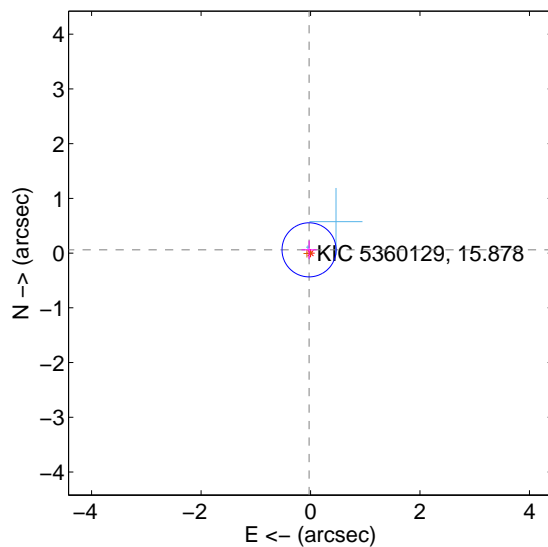
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.366 ± 0.192	1.91	0.262 ± 0.150	-0.257 ± 0.140
PRF-fit source offset from KIC position	0.065 ± 0.165	0.40	0.027 ± 0.140	0.060 ± 0.169
photometric centroid source offset	2.17 ± 0.50	4.32	-1.32 ± 0.59	1.73 ± 0.45

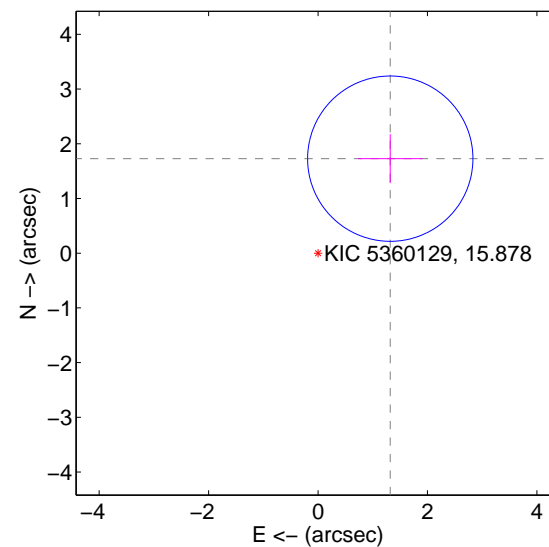
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

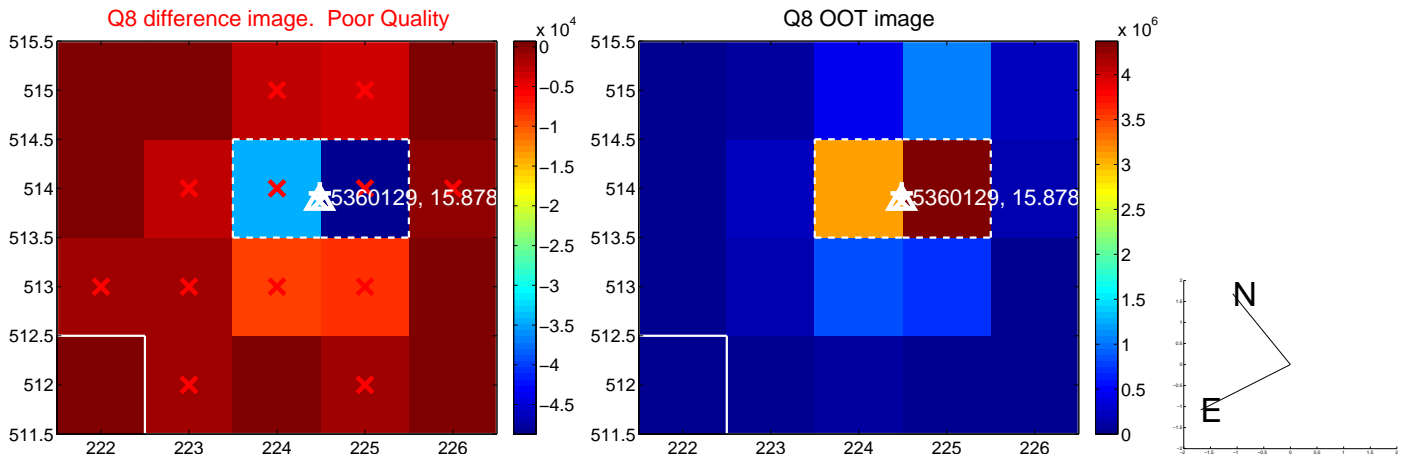
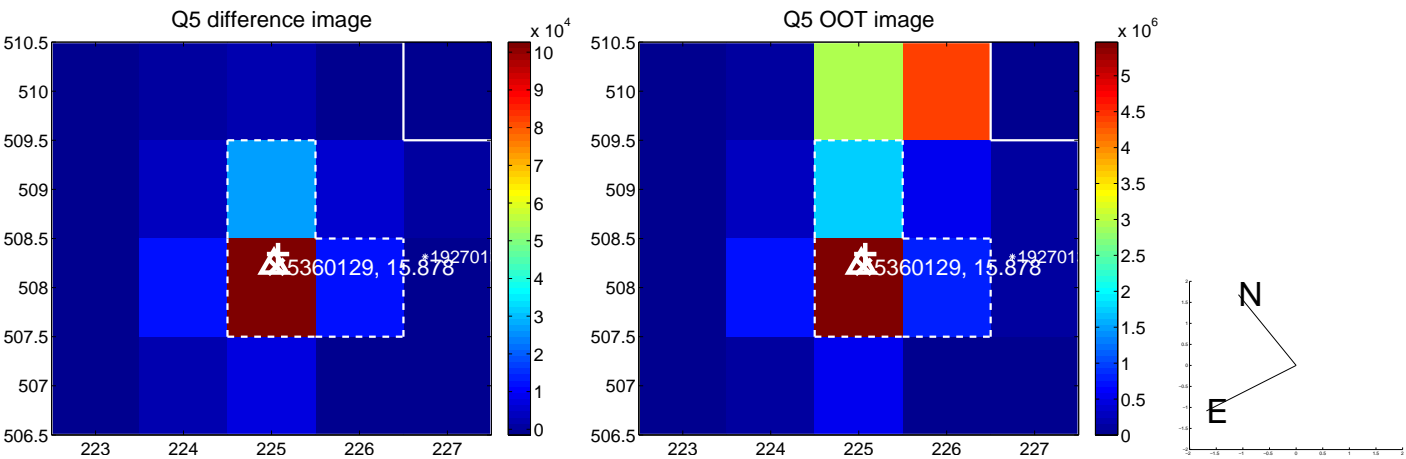


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

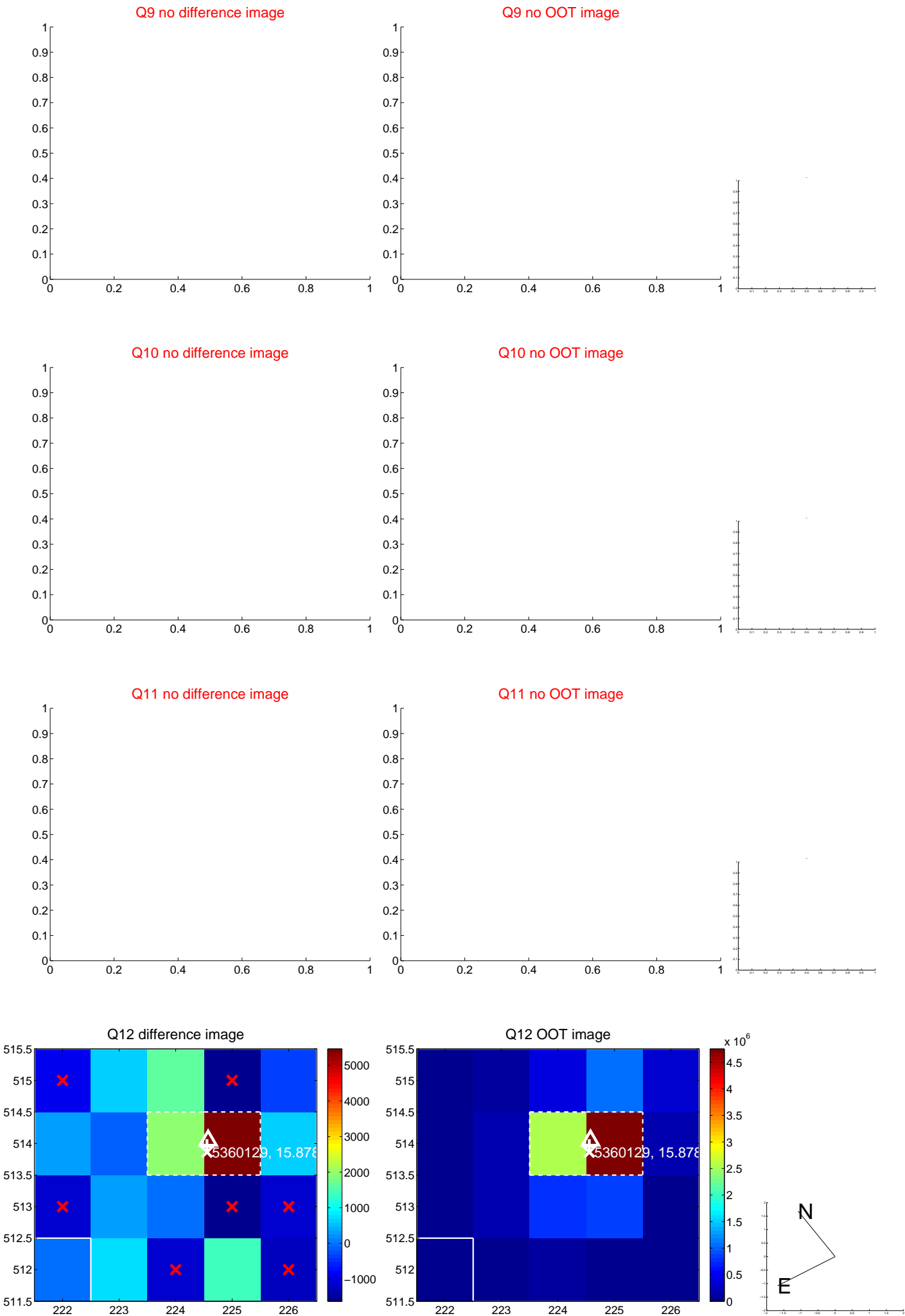
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



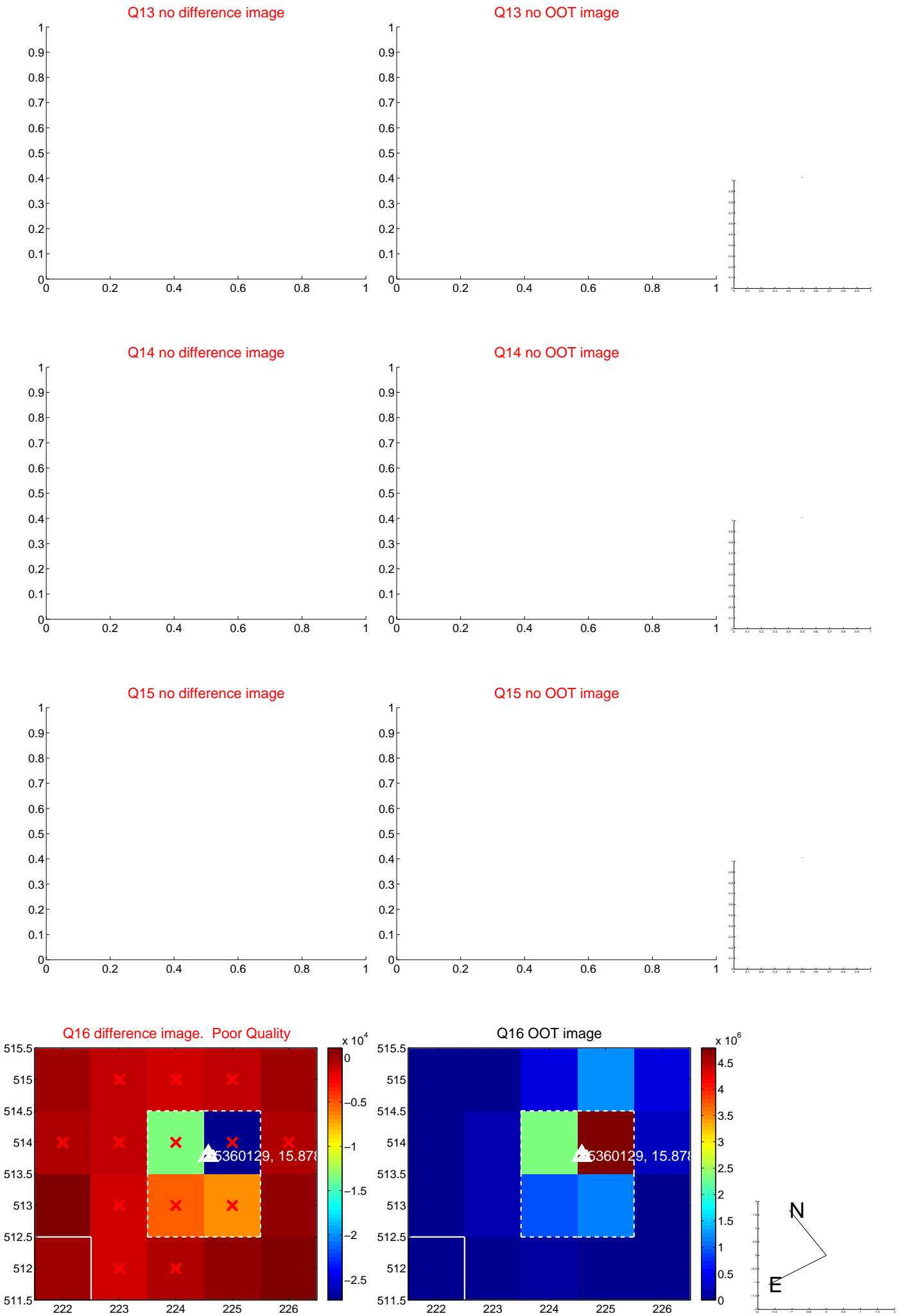
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



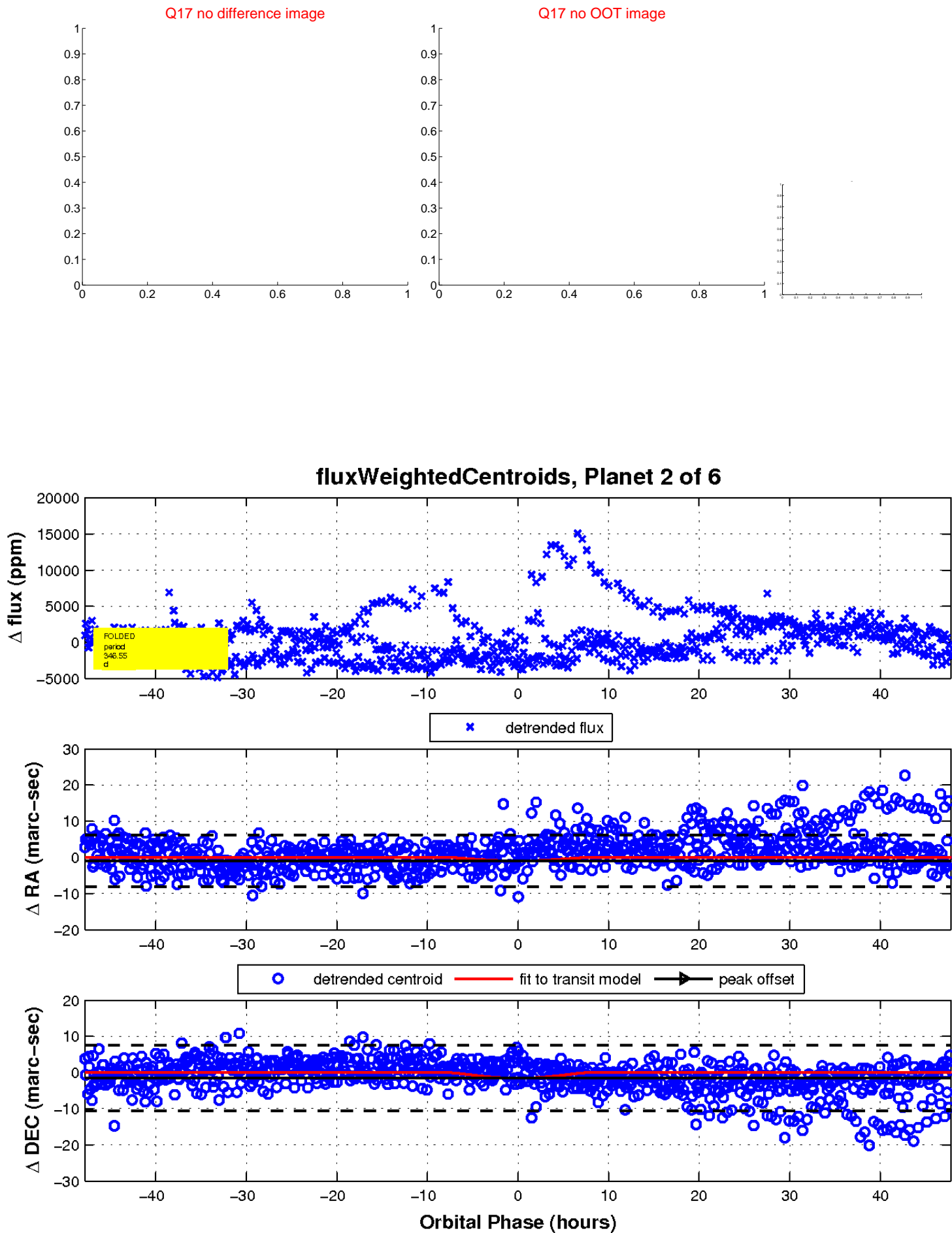
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

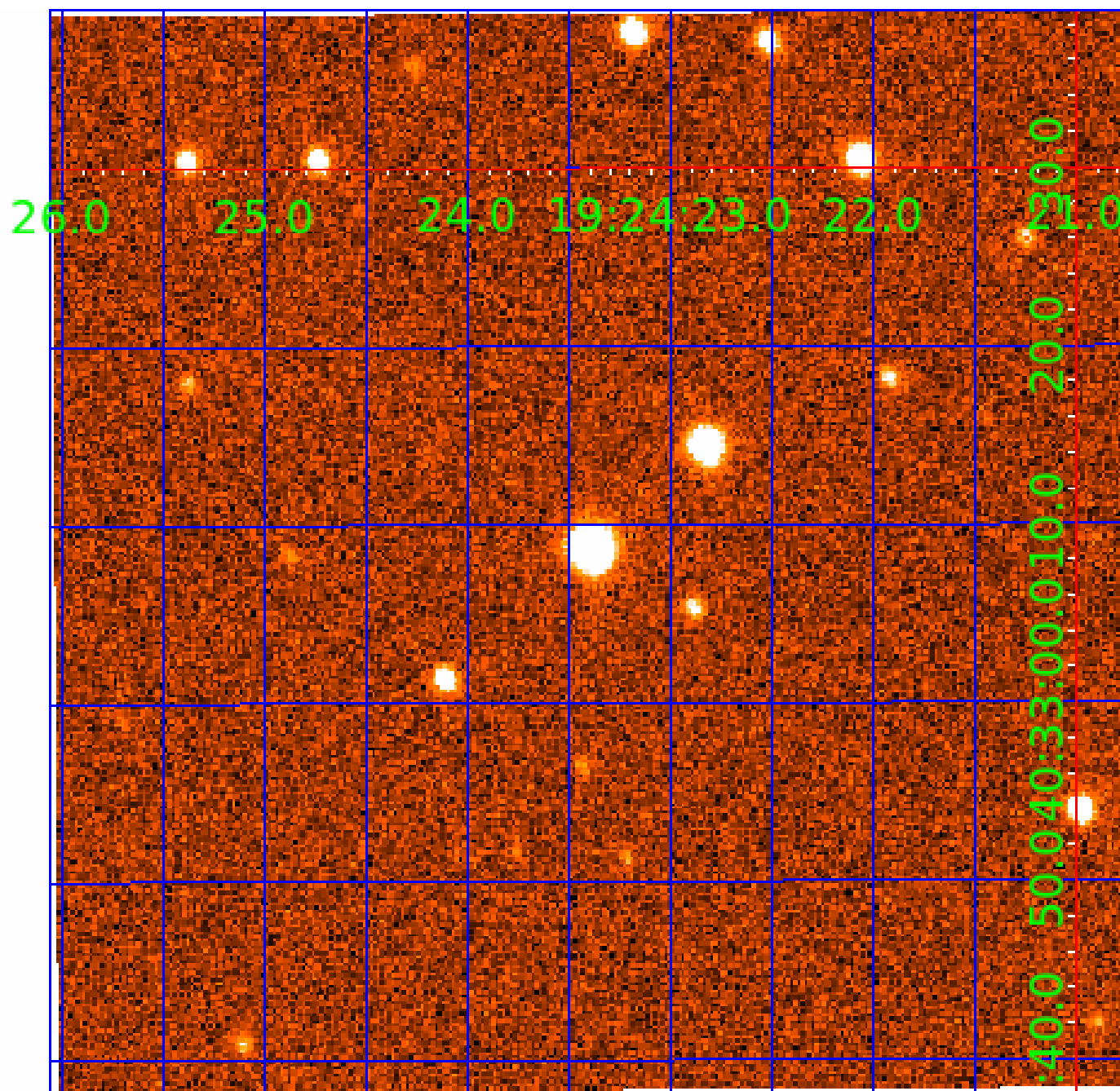


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005360129

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})
005360129-01	OBS	No	408.074942	358.029375	1621.7	4.960	13.0	4.6	0.51	3746	2.06	0.06
005360129-02	OBS	No	346.549555	451.273563	4005.9	15.956	12.2	7.6	0.51	3746	4.93	0.08
005360129-03	OBS	No	365.280099	285.378812	2760.2	6.908	10.2	6.5	0.51	3746	5.13	0.07
005360129-04	OBS	No	219.755949	339.682240	1623.0	4.066	9.9	5.6	0.51	3746	2.50	0.14
005360129-05	OBS	No	283.555784	232.234665	1971.8	3.460	10.0	6.0	0.51	3746	2.54	0.10
005360129-06	OBS	No	396.965694	516.625869	2551.8	3.000	11.3	-1.0	0.51	3746	2.54	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005360129-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005360129-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
005360129-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005360129-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_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.

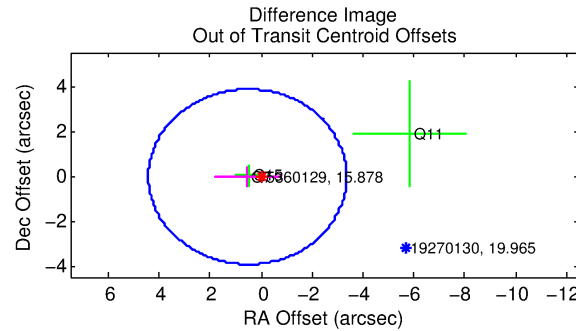
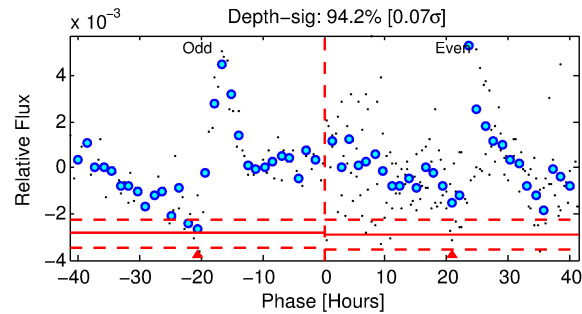
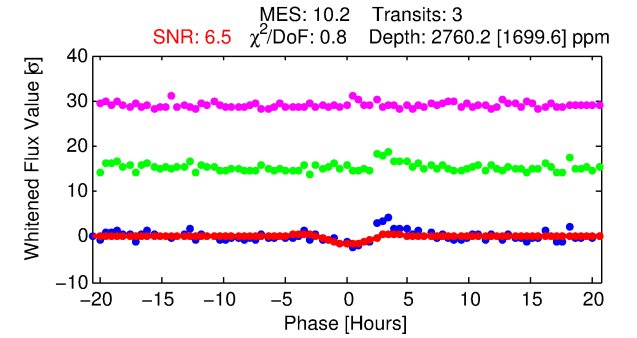
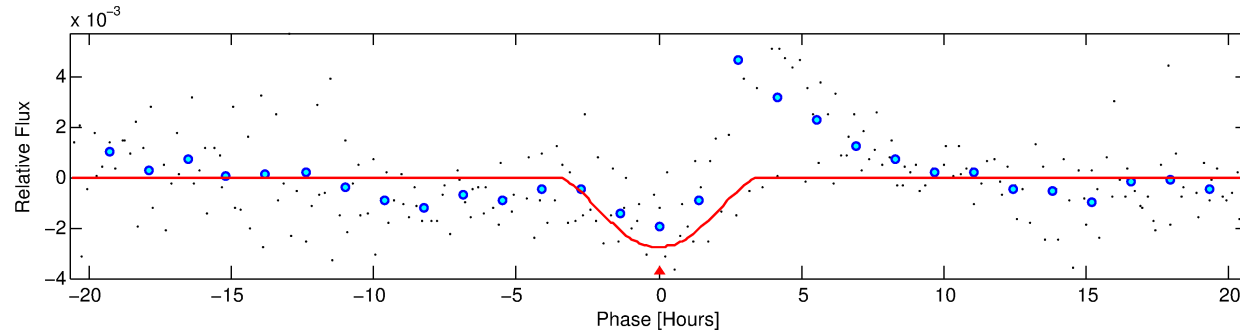
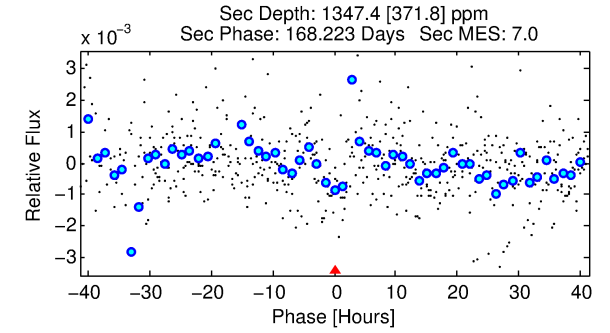
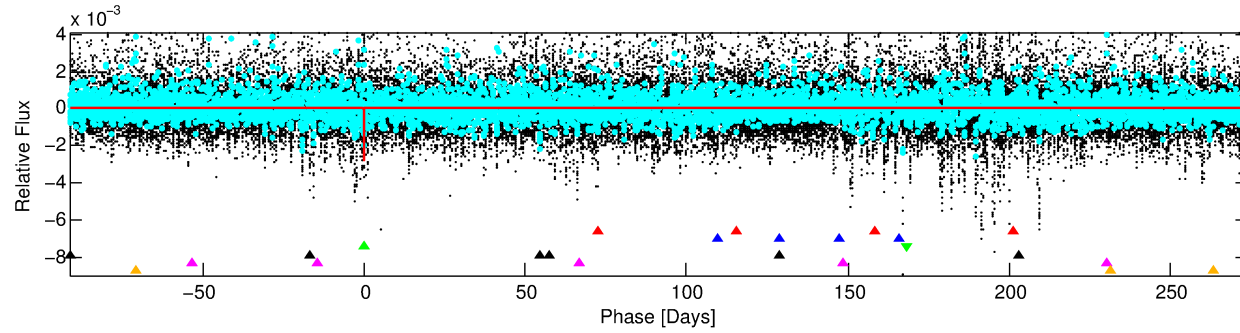
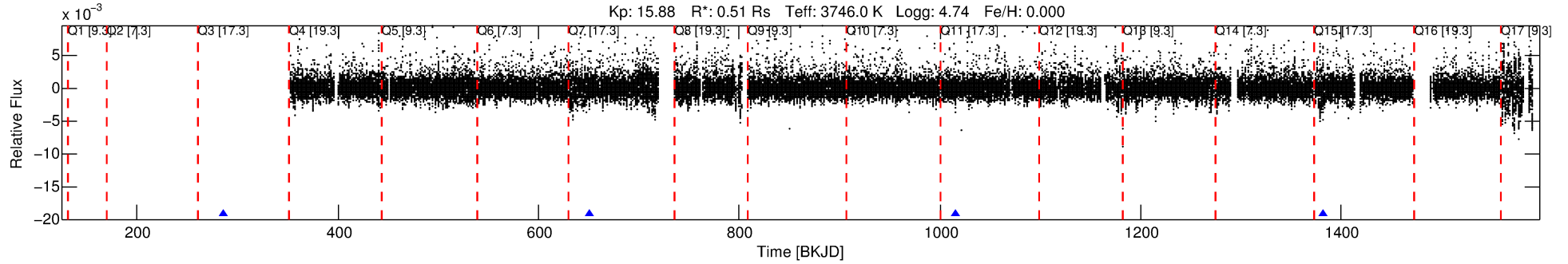
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005360129-03

No Significant Match Found

DV One-Page Summary

KIC: 5360129 Candidate: 3 of 6 Period: 365.280 d



DV Fit Results:

Period = 365.28010 [0.01300] d
Epoch = 285.3788 [0.0261] BKJD
Rp/R* = 0.0922 [0.3500]
a/R* = 177.44 [133.35]
b = 1.00 [0.46]
Seff = 0.07 [0.01]
Teq = 132 [3] K
Rp = 5.13 [19.48] Re
a = 0.8026 [0.0349] AU
Ag = 18144.19 [137896.99] [0.13 σ]
Teffp = 2364 [4491] K [0.50 σ]

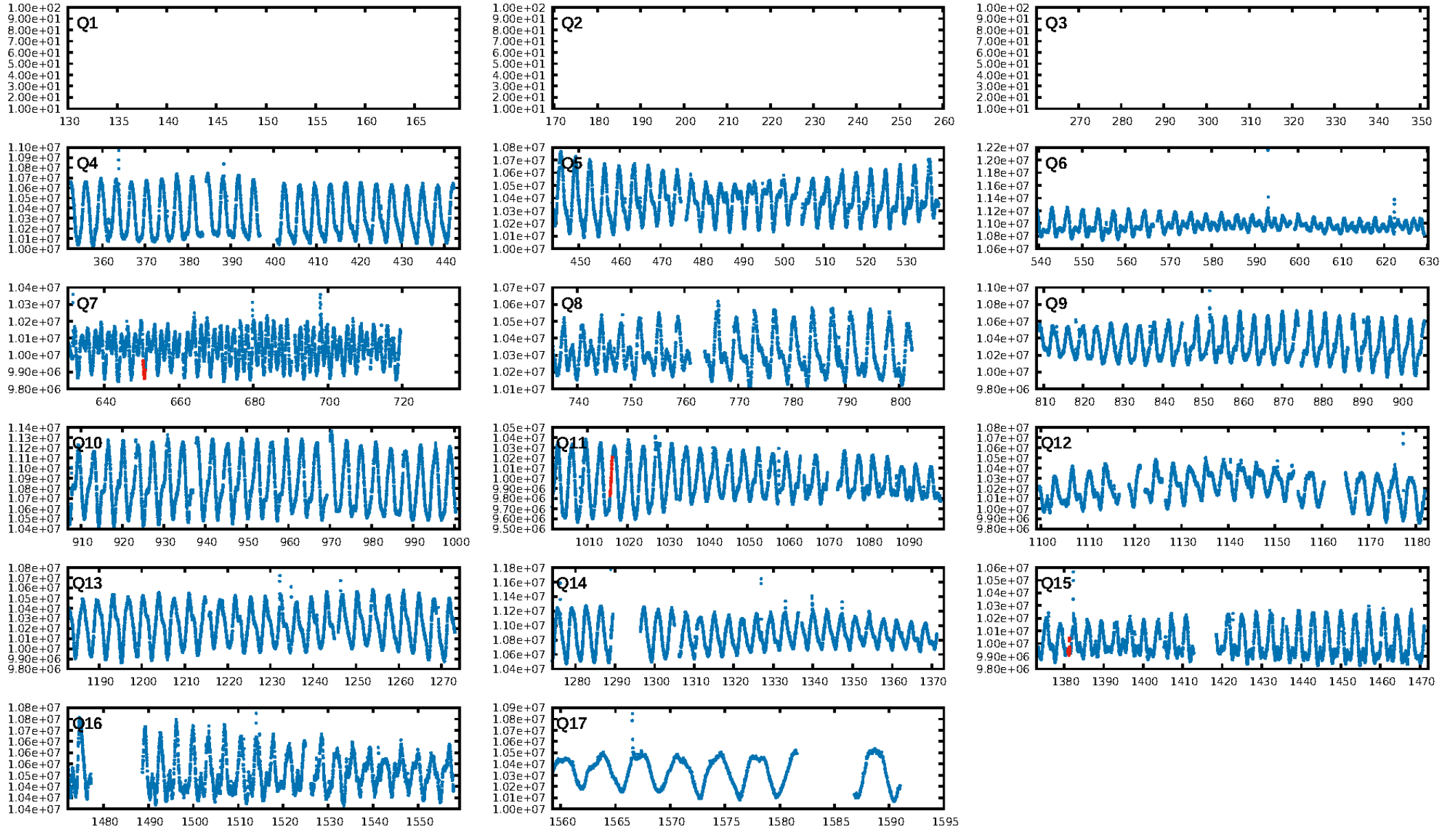
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [25.85 σ]
LongPeriod-sig: 100.0% [100.97 σ]
ModelChiSquare2-sig: 31.5%
ModelChiSquareGof-sig: 96.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.2164
Centroid-sig: 0.9%
Centroid-so: 0.836 arcsec [0.65 σ]
OotOffset-rm: 0.529 arcsec [0.41 σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-rm: 0.091 arcsec [0.06 σ]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

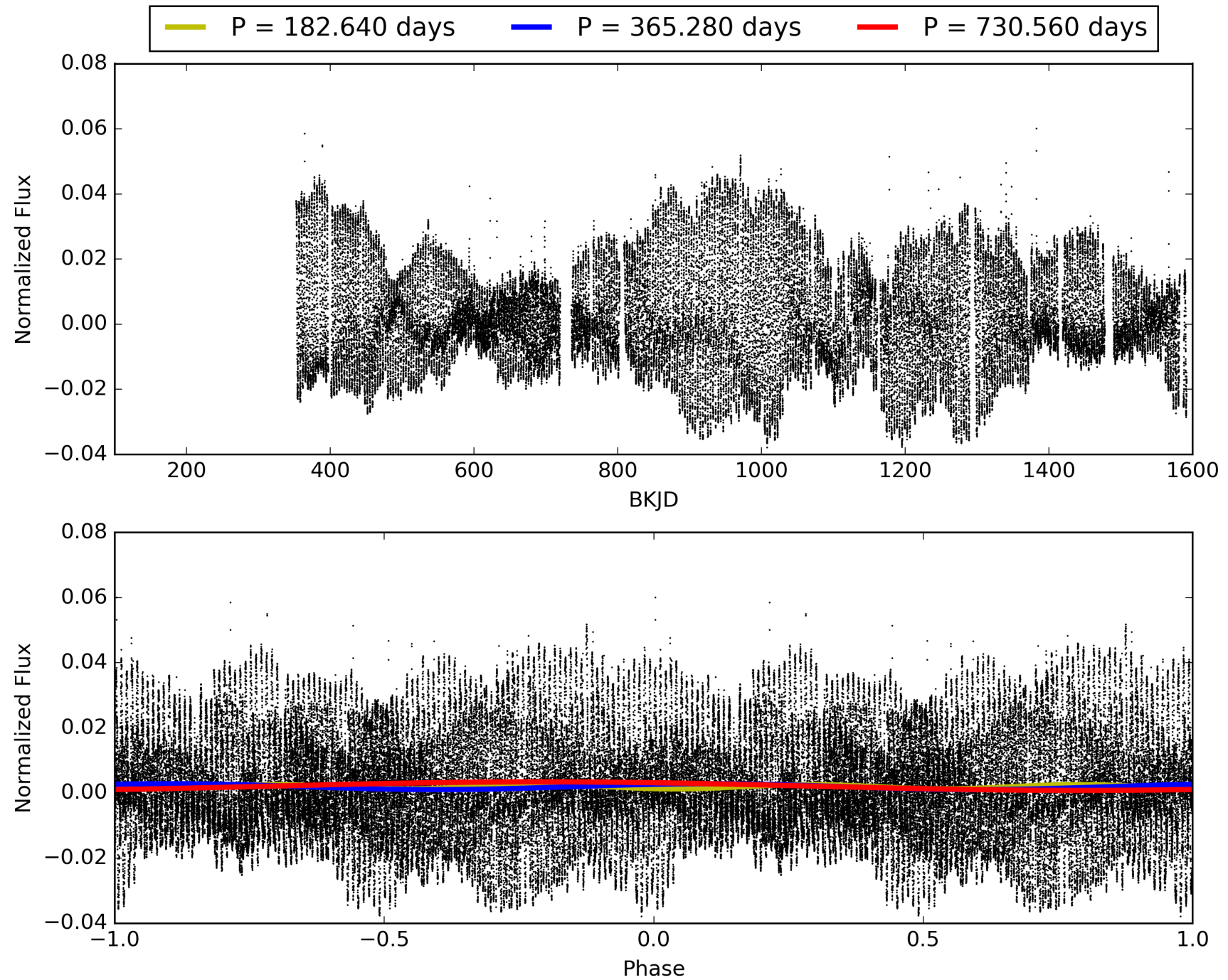
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:44 Z

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

TCE 005360129-03, PDC Light Curves

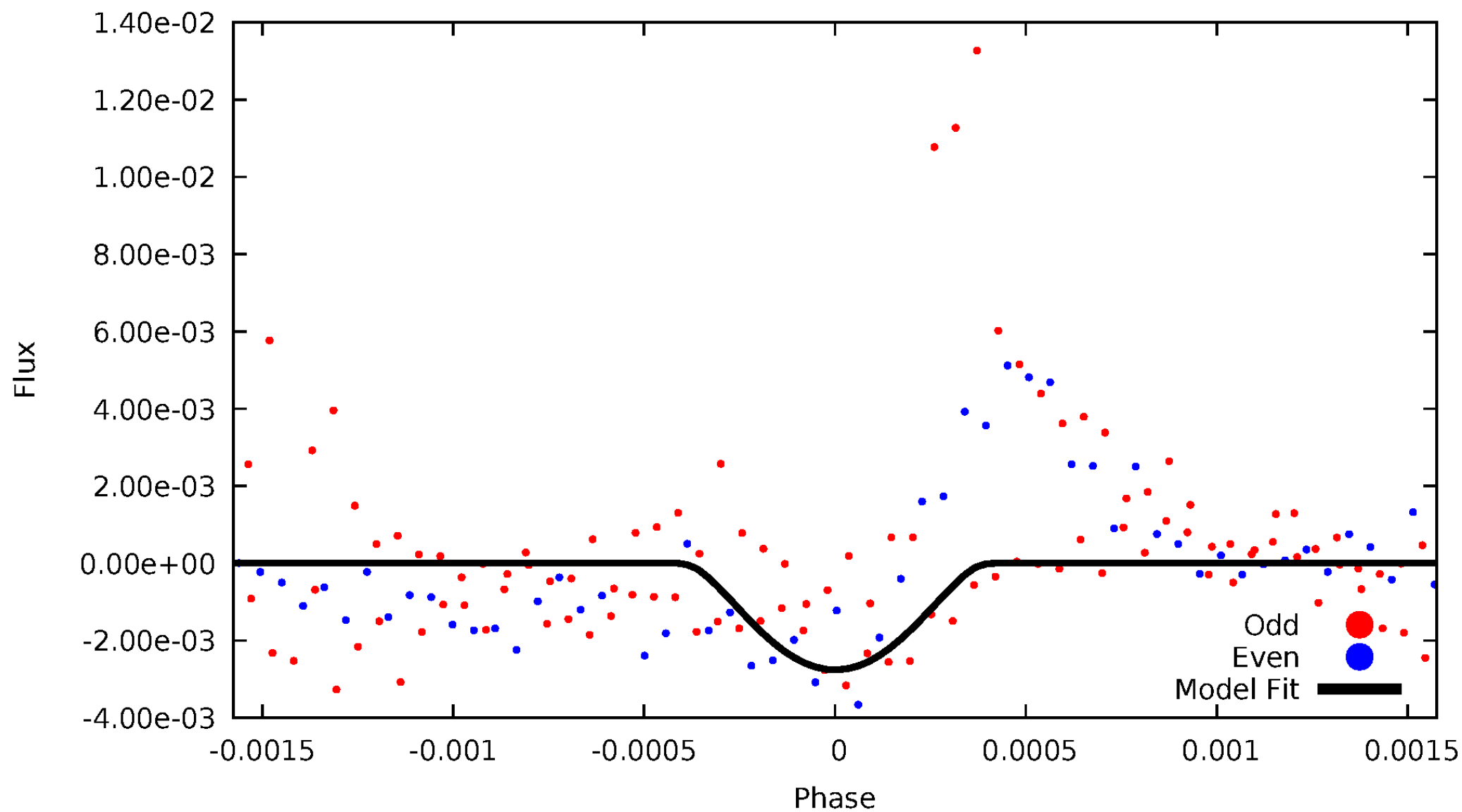


TCE 005360129-03



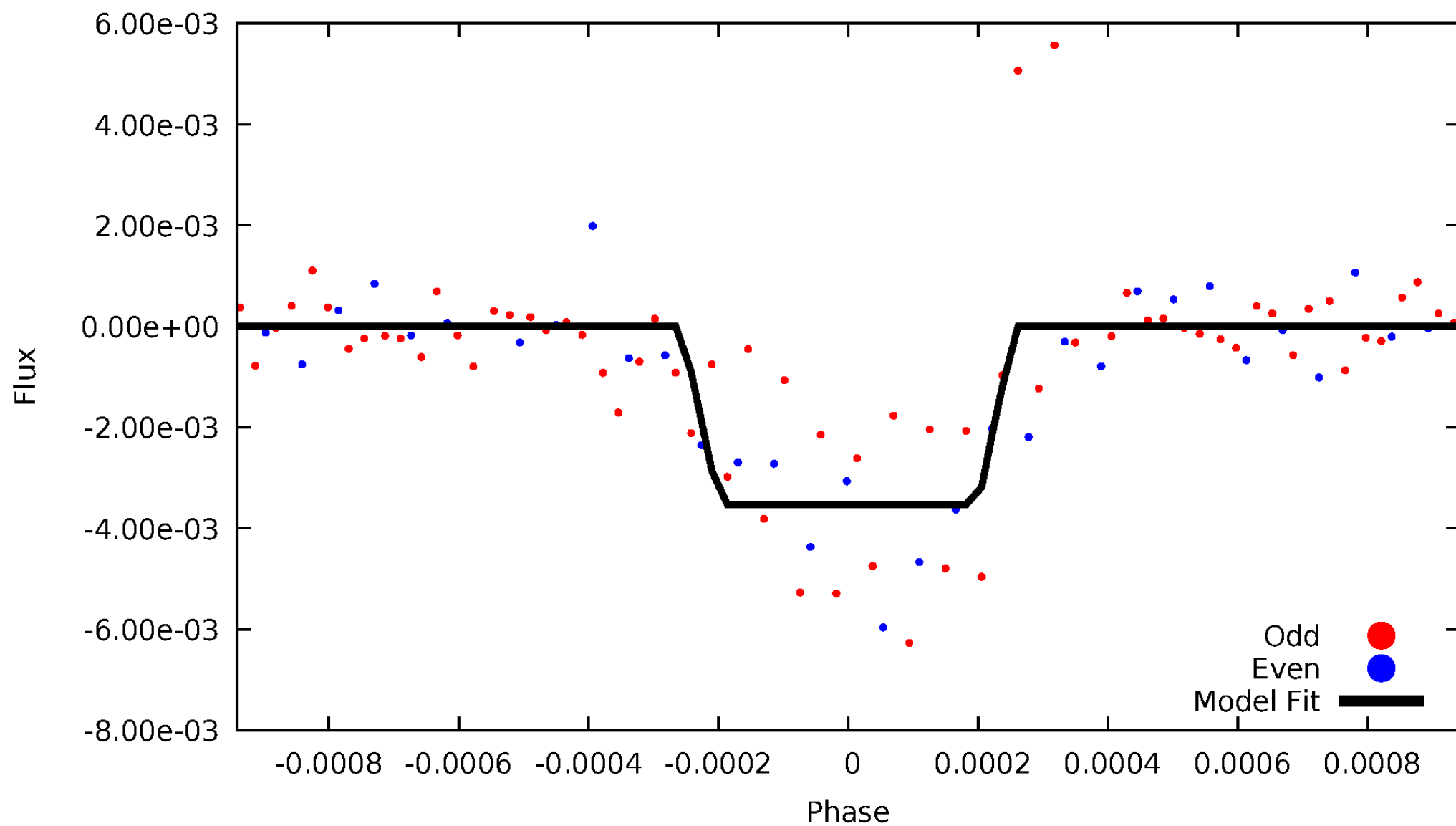
DV Odd/Even

TCE 005360129-03



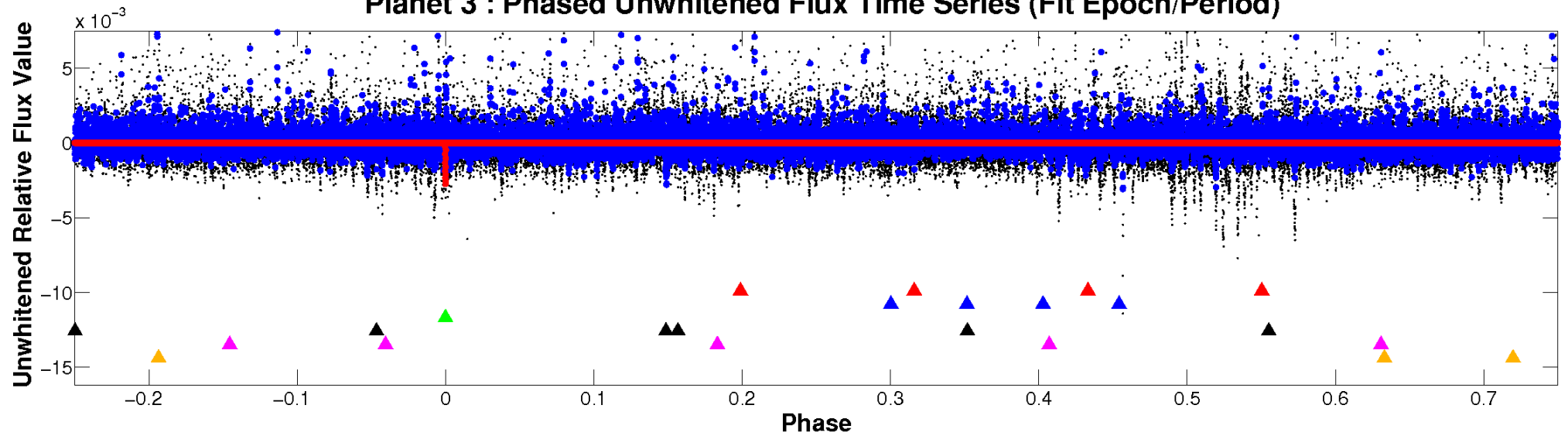
ALT Odd/Even

TCE 005360129-03

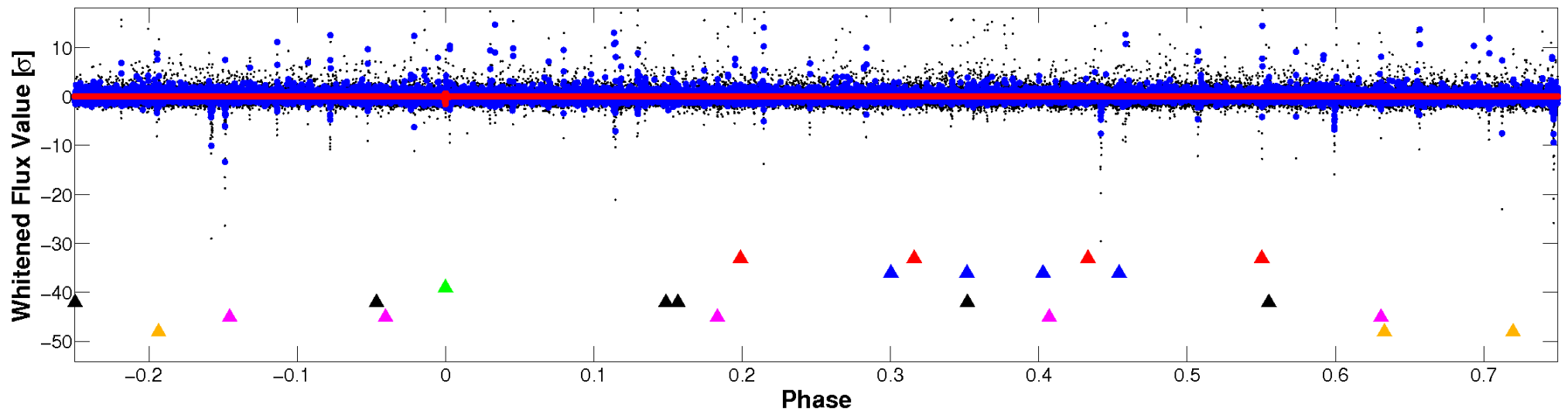


Non-Whitened Vs. Whitened Light Curve

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

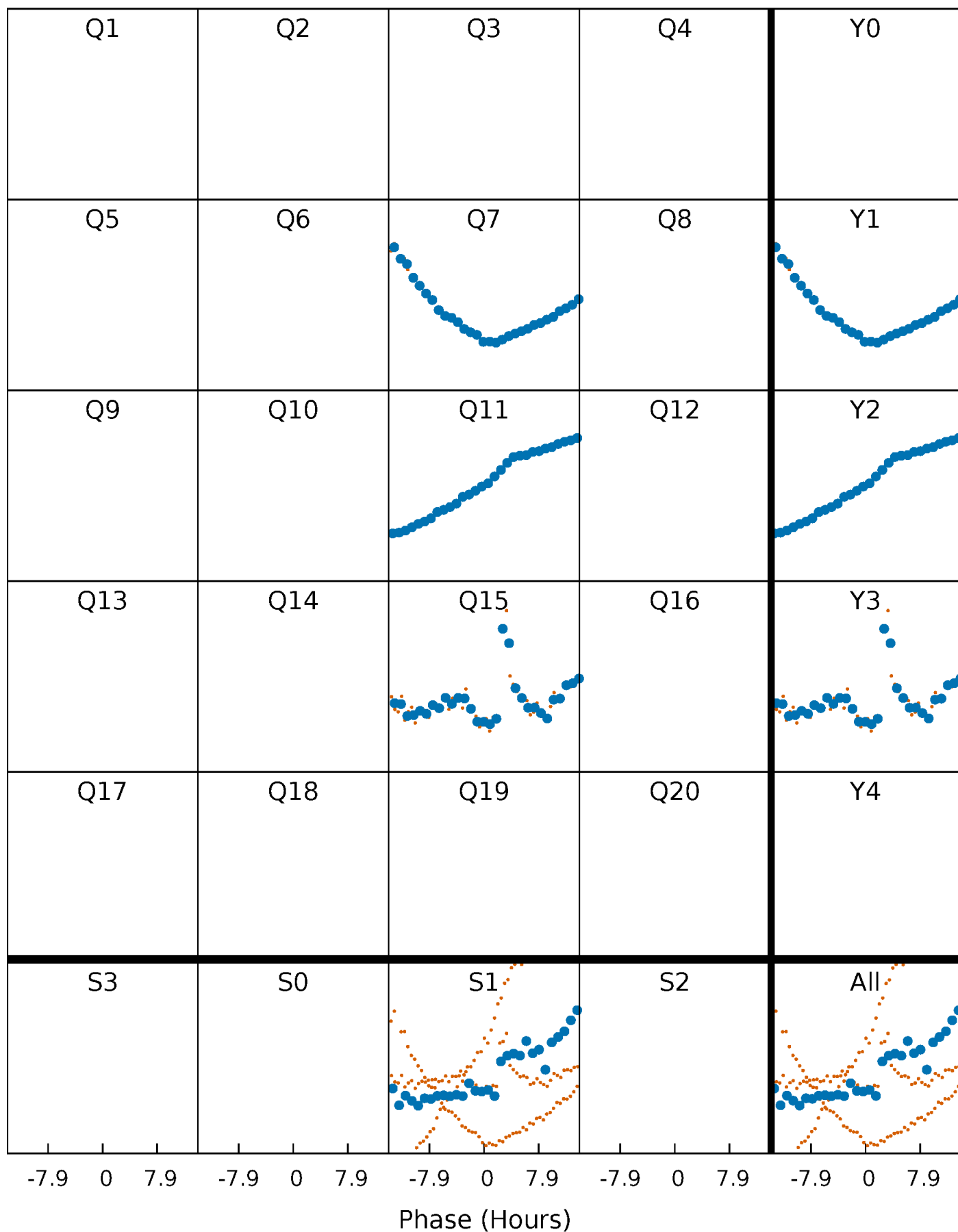


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



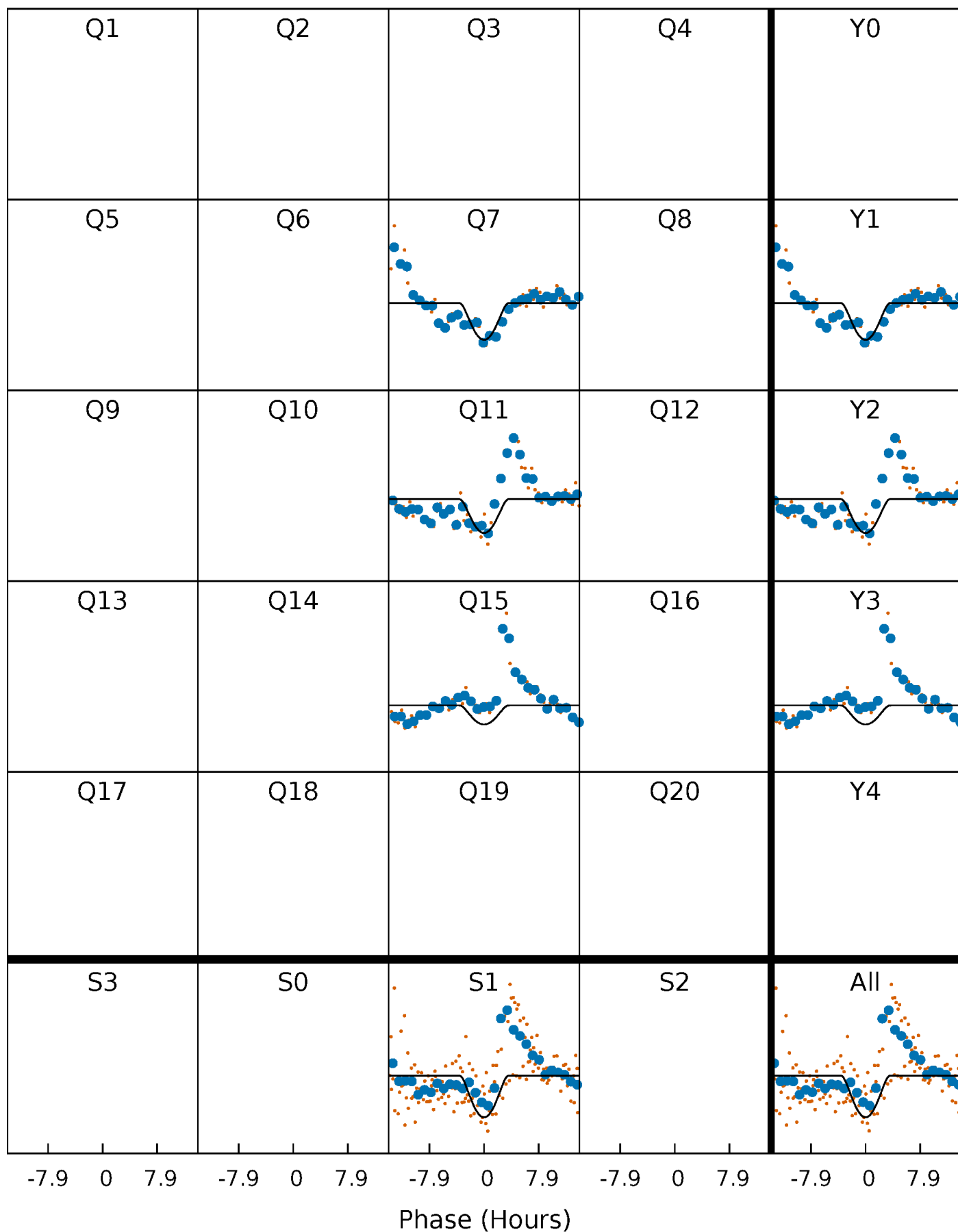
PDC Quarter-Phased Transit Curves

TCE 005360129-03 $P=365.280099$ Days $T_0=285.378812$ (BKJD)



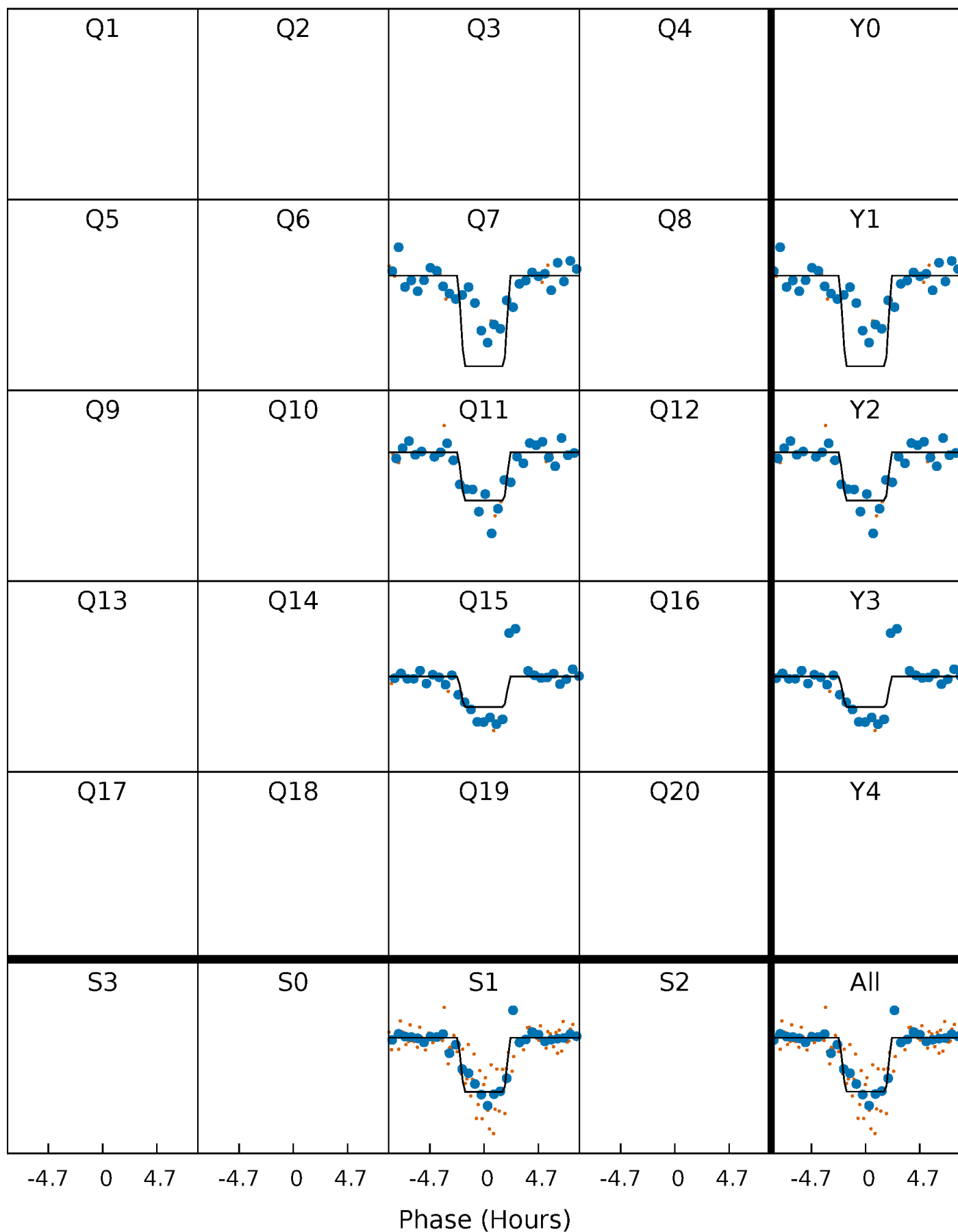
DV Quarter-Phased Transit Curves

TCE 005360129-03 $P=365.280099$ Days $T_0=285.378812$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

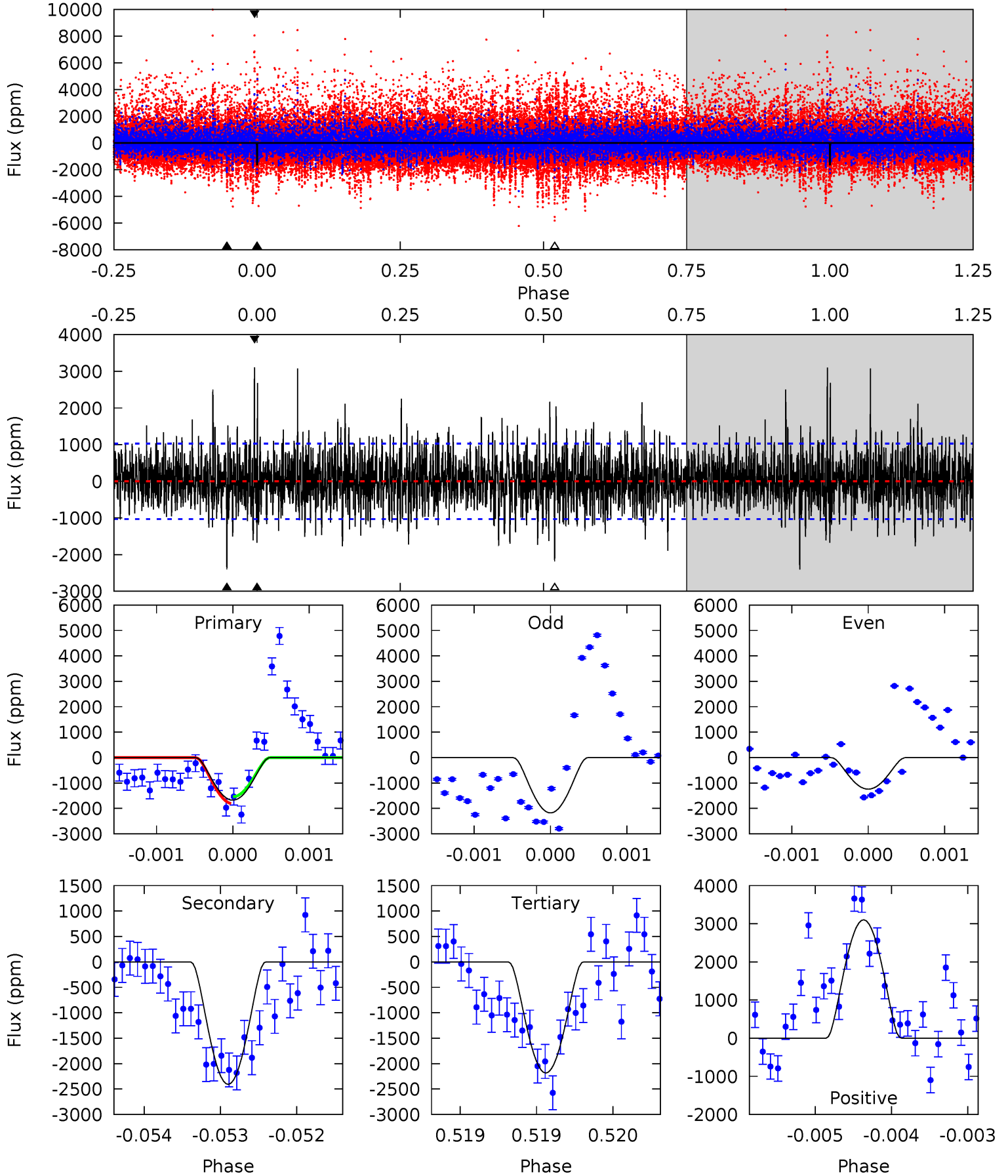
TCE 005360129-03 P=365.277130 Days $T_0=285.387263$ (BKJD)



DV Model-Shift Uniqueness Test

005360129-03, P = 365.280099 Days, E = 285.378812 Days

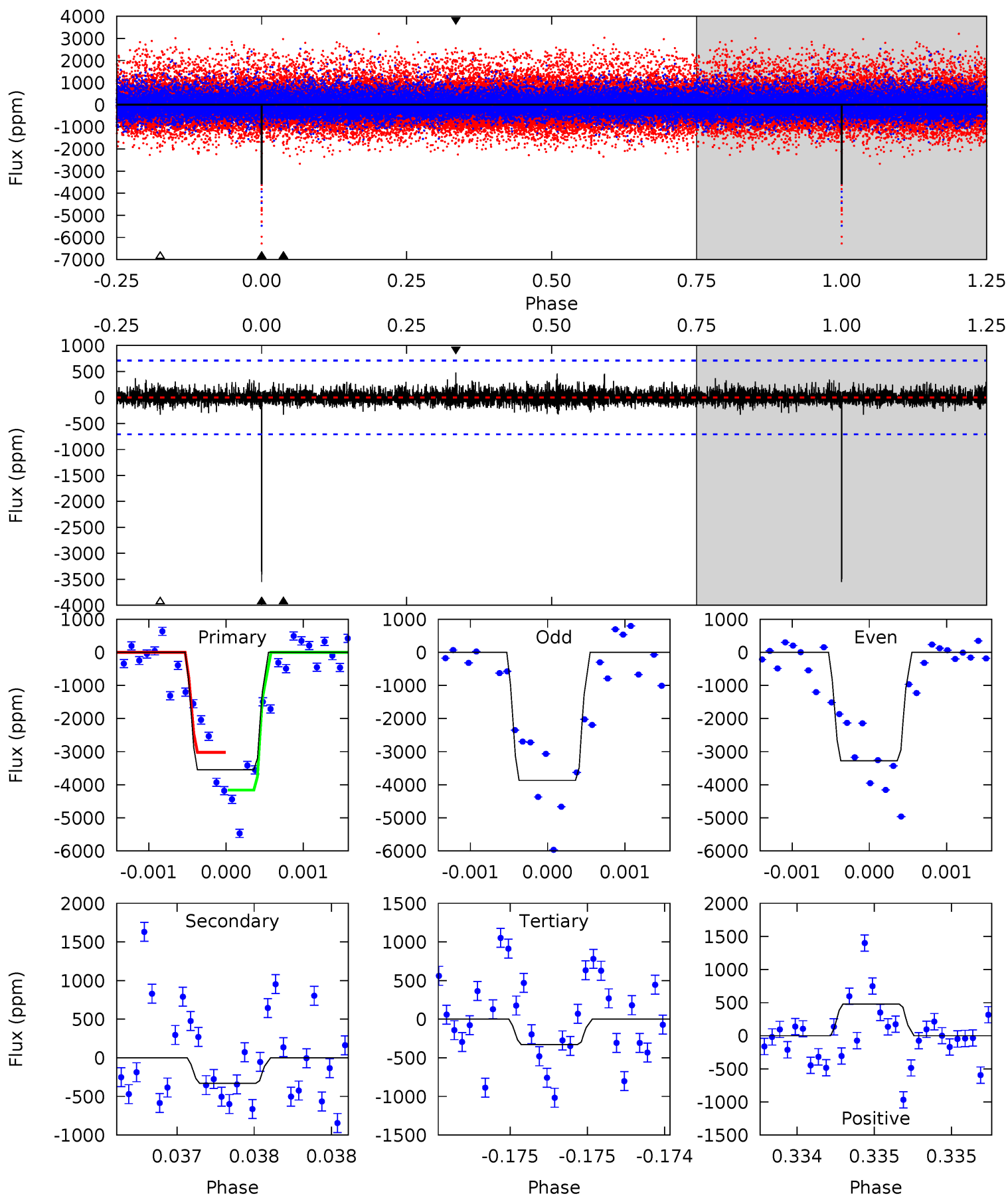
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	12.8	11.6	16.5	5.48	3.34	3.01	-2.70	-7.59	1.19	-3.70	2.06	0.60	0.56	0.71



Alt Model-Shift Uniqueness Test

005360129-03, P = 365.277130 Days, E = 285.387263 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	2.59	2.58	3.75	5.57	3.48	0.67	25.3	24.1	0.01	-1.16	2.28	0.90	0.12	4.50



Stellar Parameters For KIC 005360129

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3746^{+45}_{-50}	$4.736^{+0.033}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.510^{+0.020}_{-0.027}$	$0.516^{+0.026}_{-0.021}$	$5.482^{+0.725}_{-0.383}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005360129-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2407 ± 188	$14.39^{+15.09}_{-9.91}$	183^{+3}_{-3}	2363^{+812}_{-351}	4157^{+36626}_{-3163}
Alt.	-329 ± 127	$14.29^{+14.99}_{-10.53}$	183^{+3}_{-3}	1894^{+668}_{-234}	525^{+7259}_{-398}

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 $A_{obs} \gg 1.0$

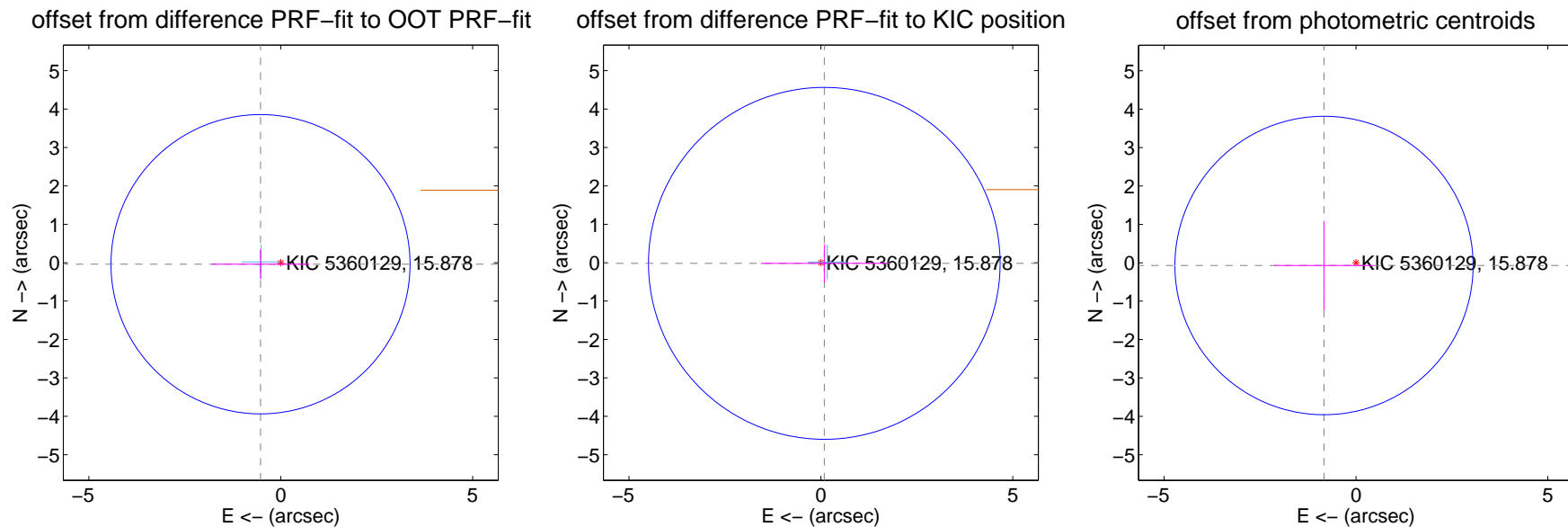
DV Centroid Data

Supplemental centroid analysis for 005360129-03. Kepler magnitude: 15.88. Transit SNR 6.50

There are 2 quarters with good PRF difference image offsets

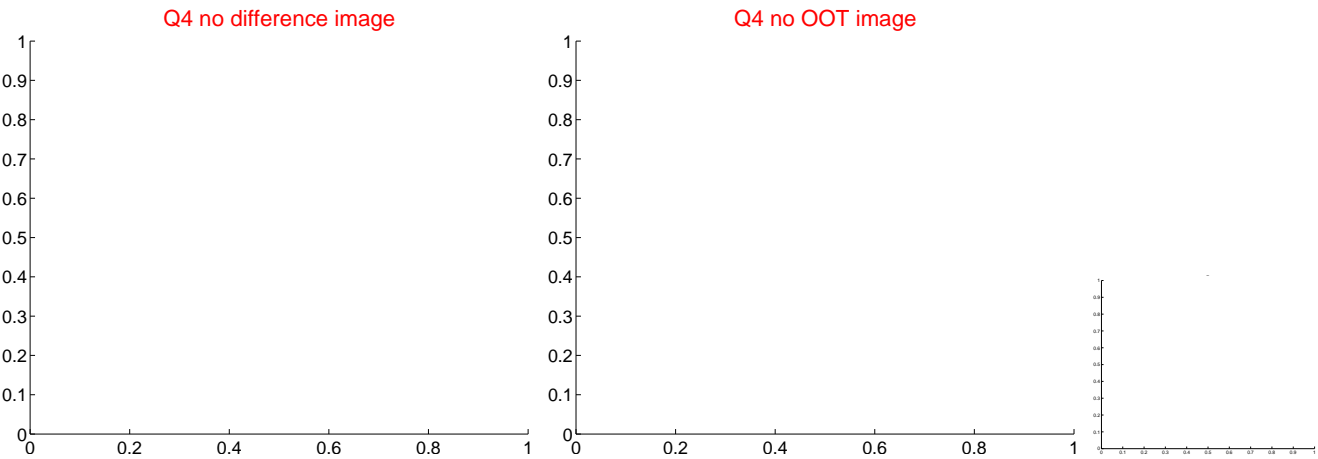
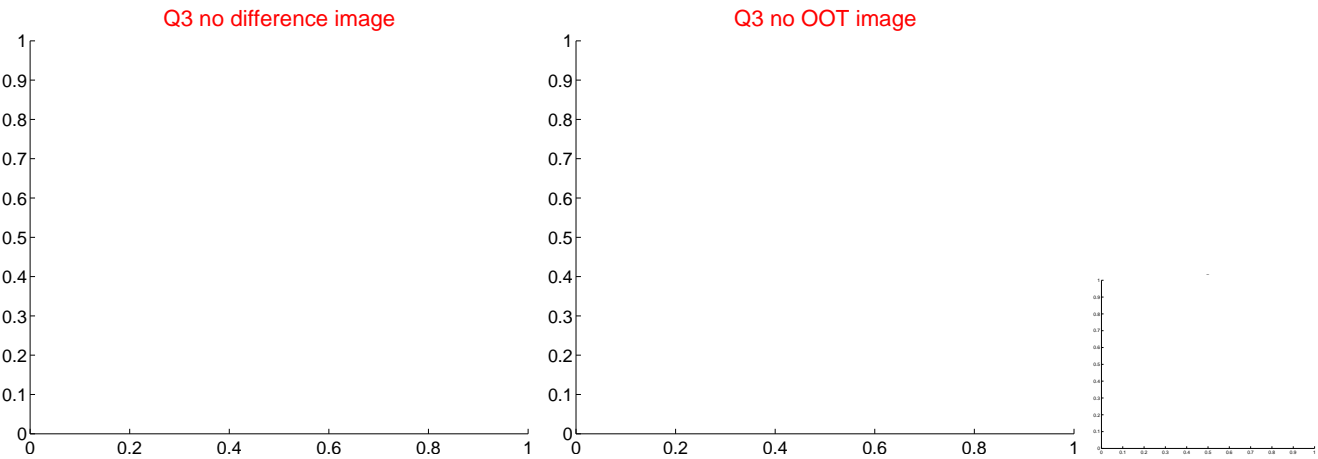
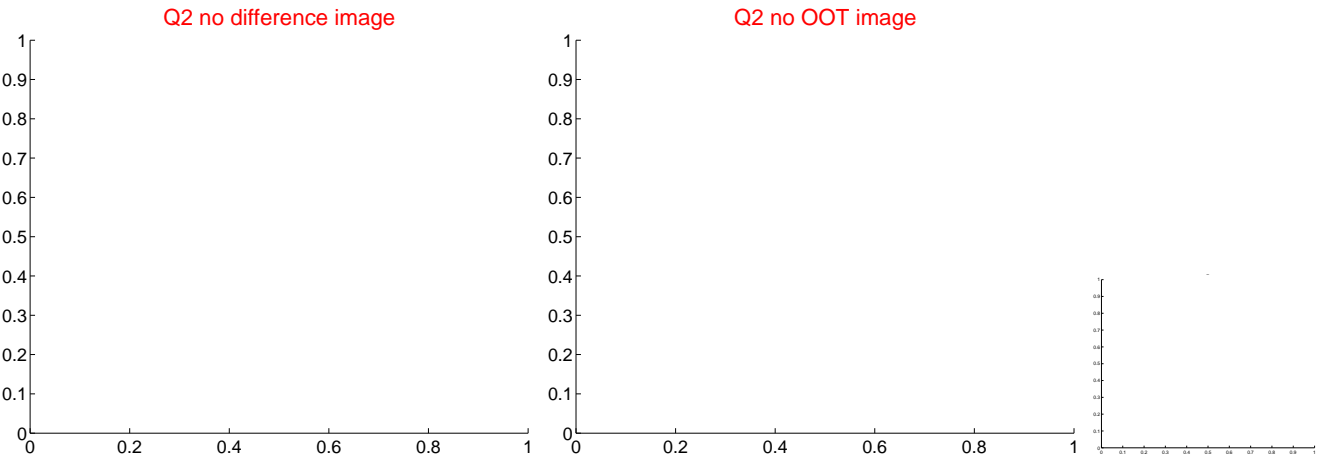
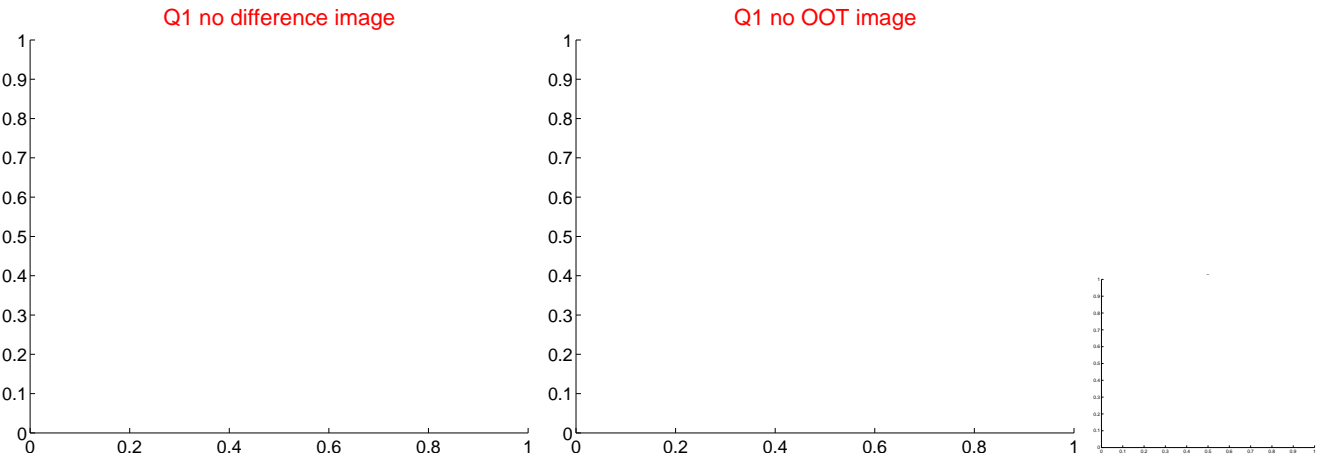
The direct PRF centroid is offset from the target star catalog position by about 0.68 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.529 ± 1.299	0.41	0.527 ± 1.274	-0.040 ± 0.385
PRF-fit source offset from KIC position	0.091 ± 1.527	0.06	-0.090 ± 1.653	-0.018 ± 0.498
photometric centroid source offset	0.84 ± 1.30	0.65	0.83 ± 1.30	-0.07 ± 1.15



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

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

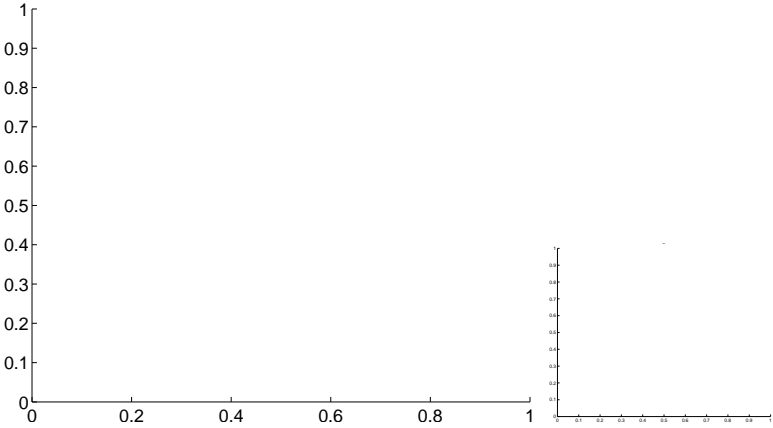


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q5 no difference image



Q5 no OOT image



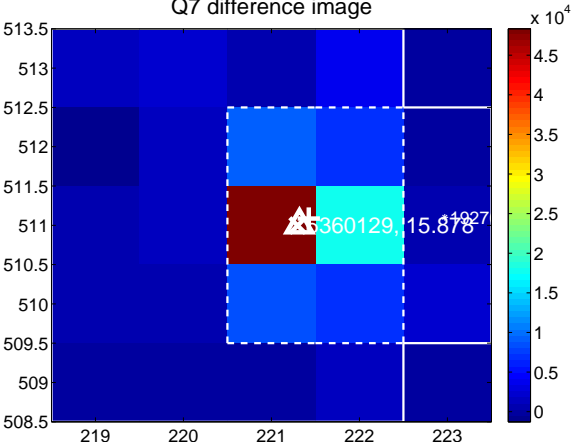
Q6 no difference image



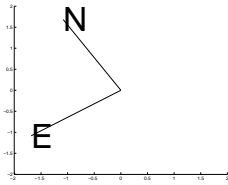
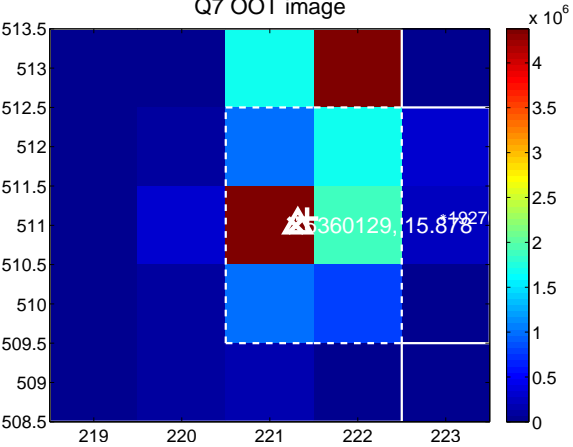
Q6 no OOT image



Q7 difference image



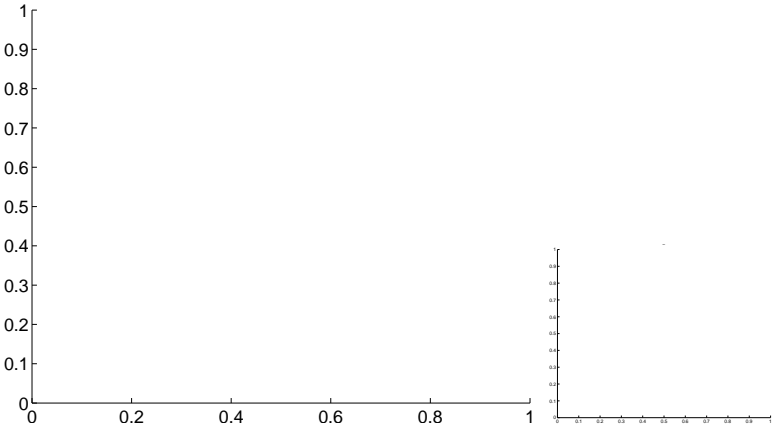
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

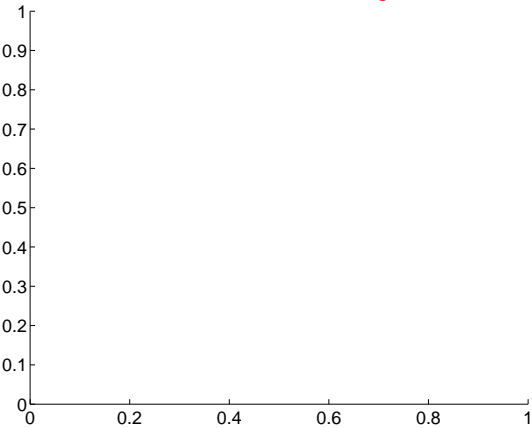
Q9 no difference image



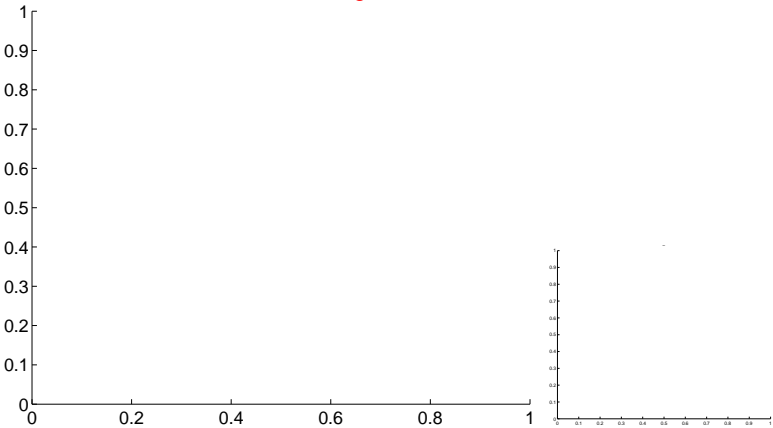
Q9 no OOT image



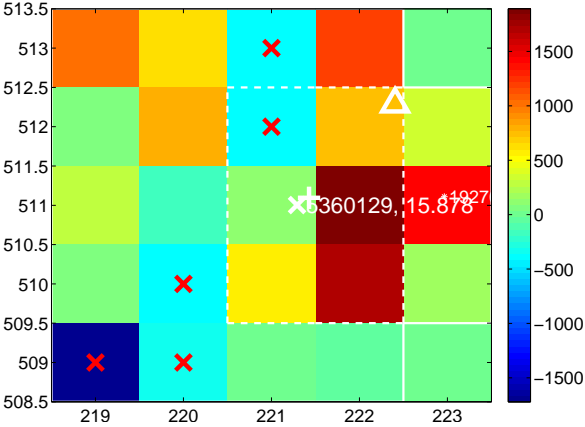
Q10 no difference image



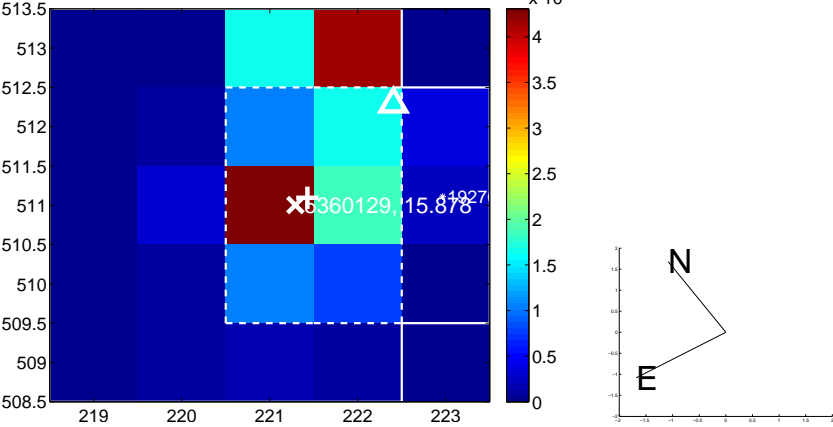
Q10 no OOT image



Q11 difference image. Poor Quality



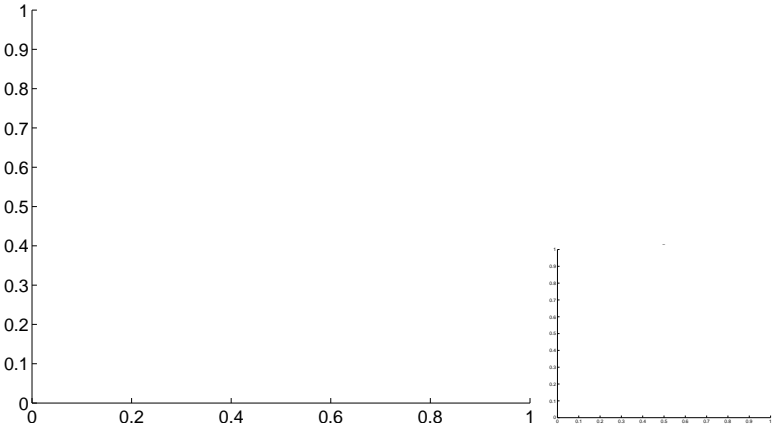
Q11 OOT image



Q12 no difference image

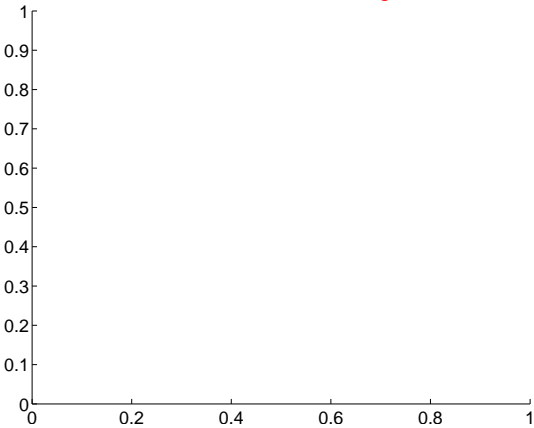


Q12 no OOT image

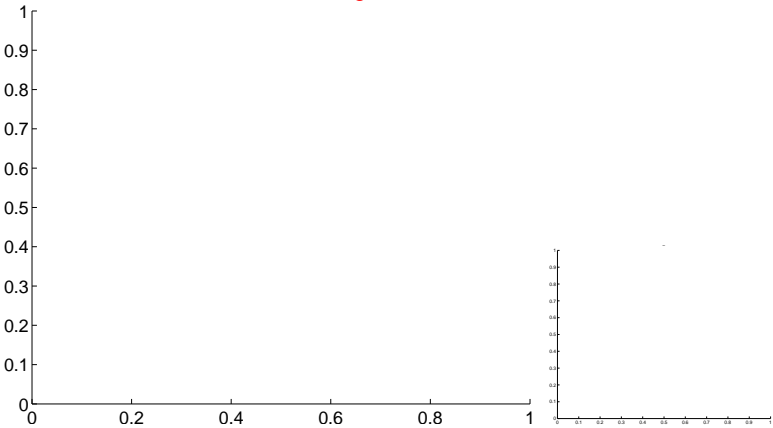


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



Q13 no OOT image



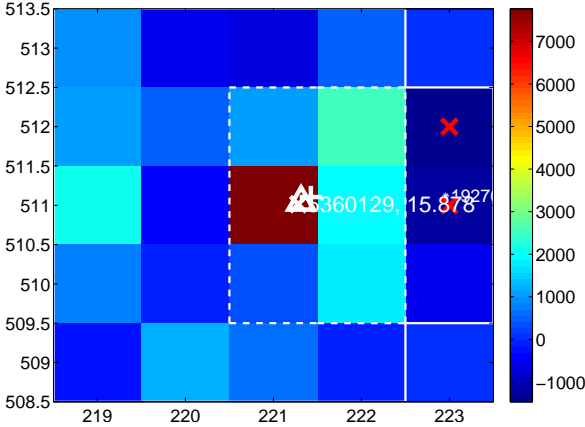
Q14 no difference image



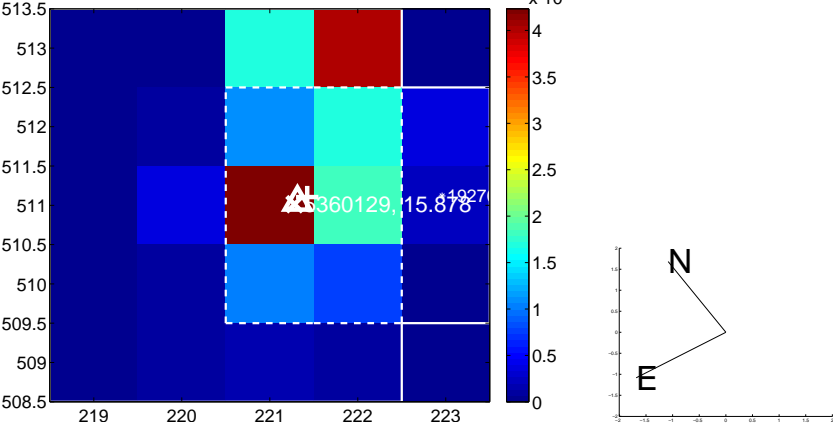
Q14 no OOT image



Q15 difference image



Q15 OOT image



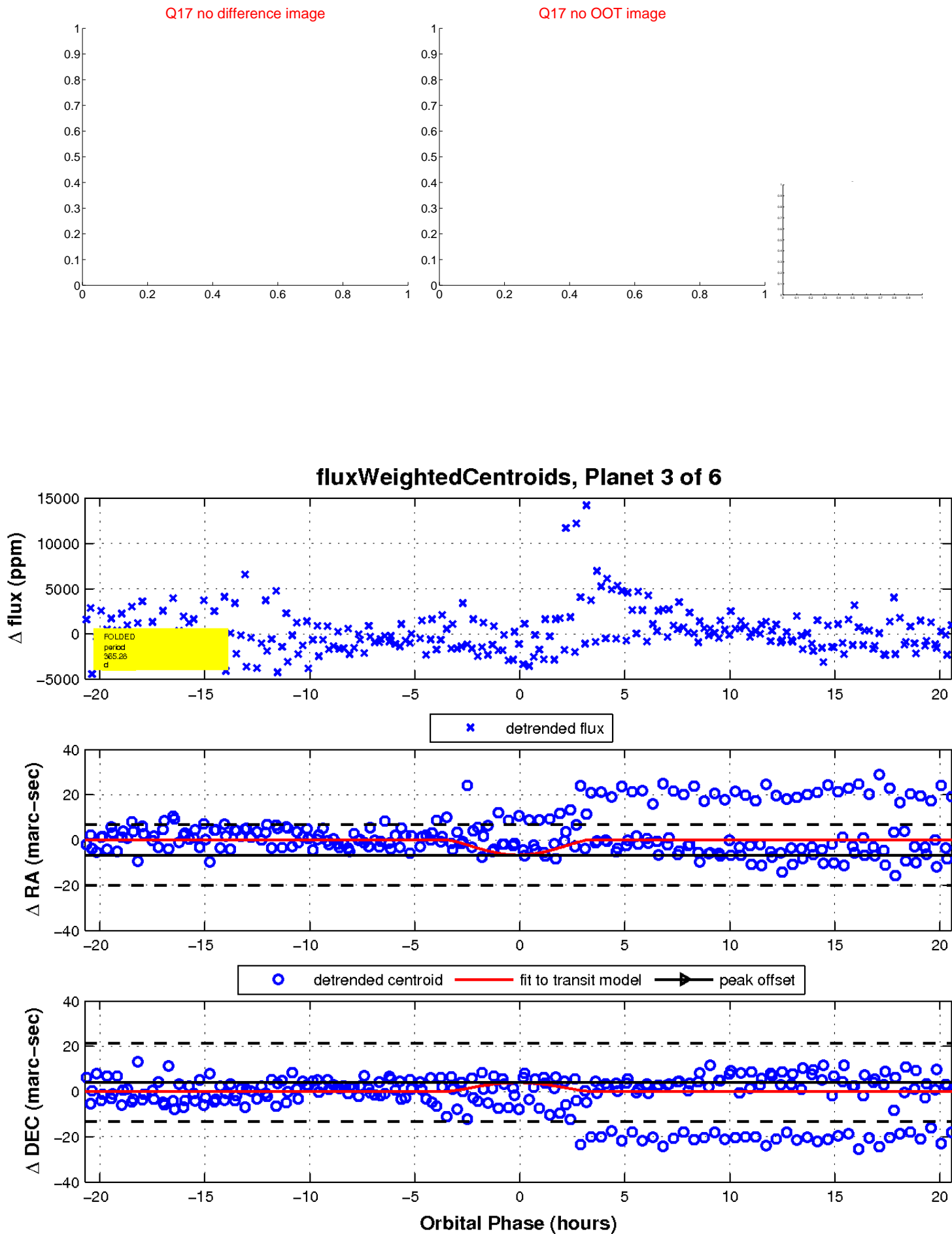
Q16 no difference image



Q16 no OOT image

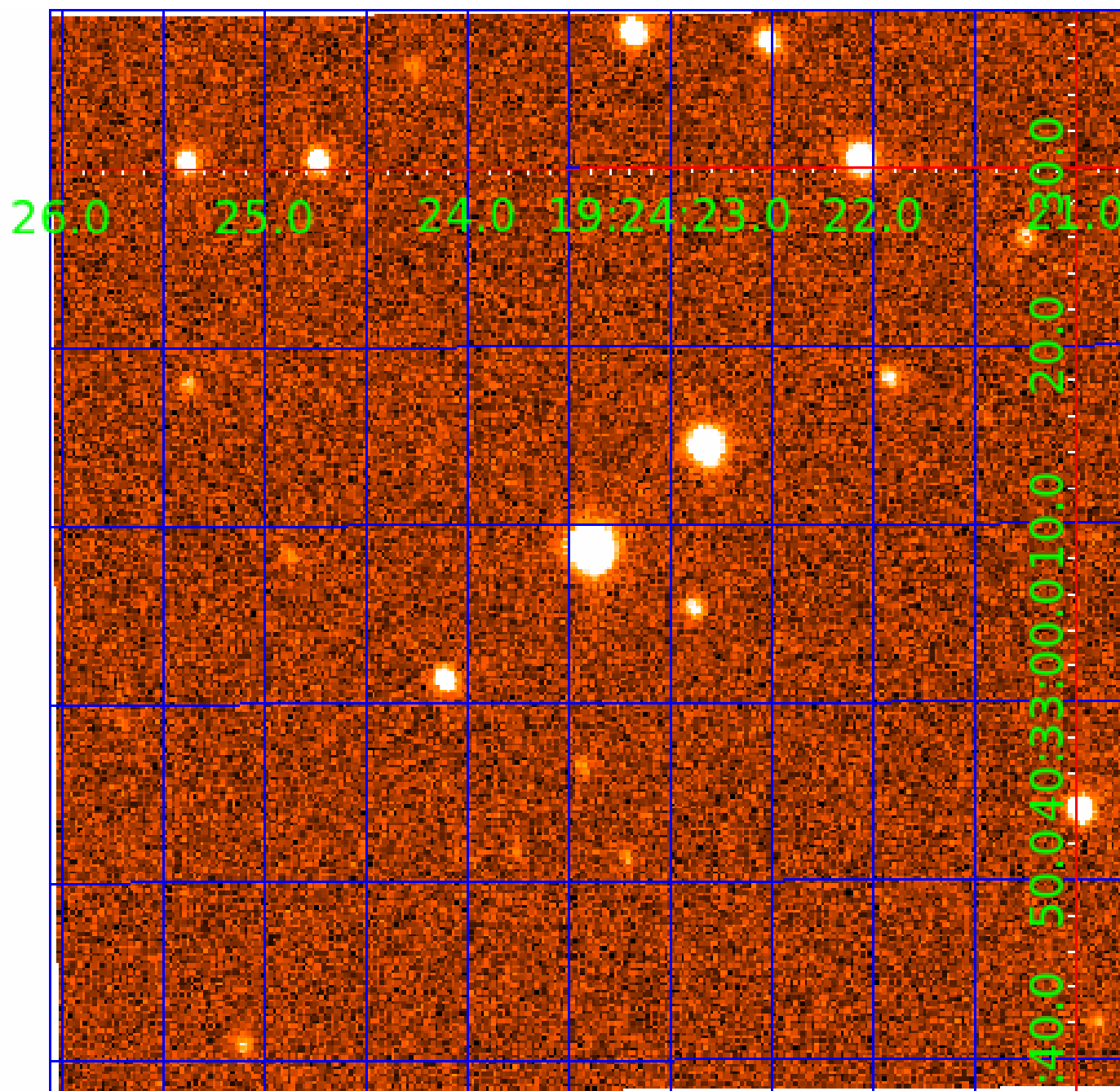


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005360129

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})
005360129-01	OBS	No	408.074942	358.029375	1621.7	4.960	13.0	4.6	0.51	3746	2.06	0.06
005360129-02	OBS	No	346.549555	451.273563	4005.9	15.956	12.2	7.6	0.51	3746	4.93	0.08
005360129-03	OBS	No	365.280099	285.378812	2760.2	6.908	10.2	6.5	0.51	3746	5.13	0.07
005360129-04	OBS	No	219.755949	339.682240	1623.0	4.066	9.9	5.6	0.51	3746	2.50	0.14
005360129-05	OBS	No	283.555784	232.234665	1971.8	3.460	10.0	6.0	0.51	3746	2.54	0.10
005360129-06	OBS	No	396.965694	516.625869	2551.8	3.000	11.3	-1.0	0.51	3746	2.54	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005360129-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005360129-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
005360129-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005360129-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_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.

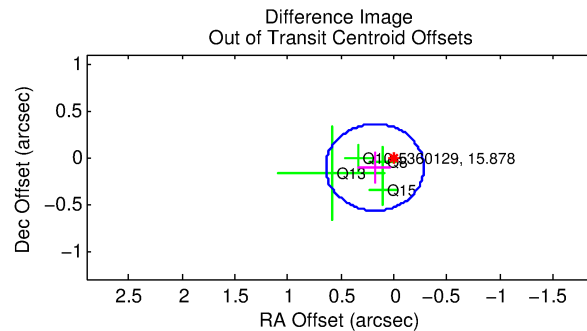
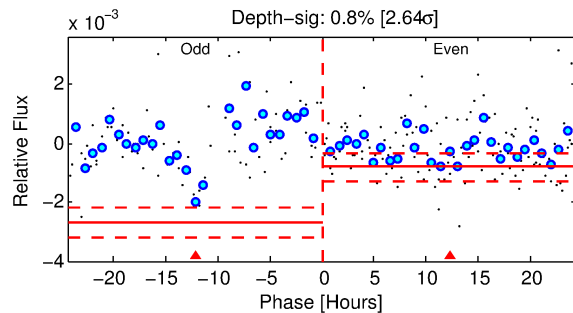
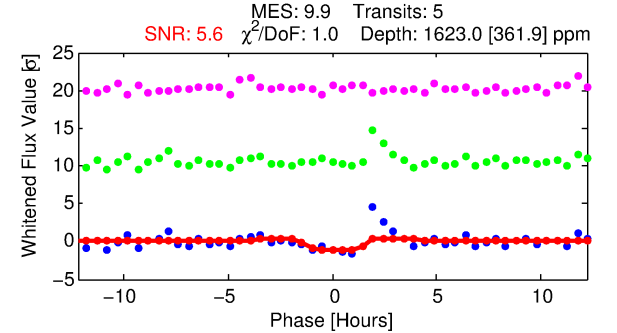
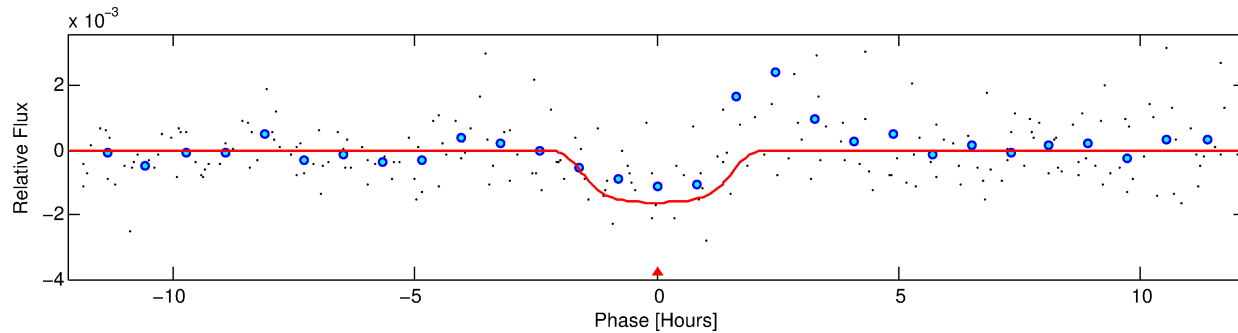
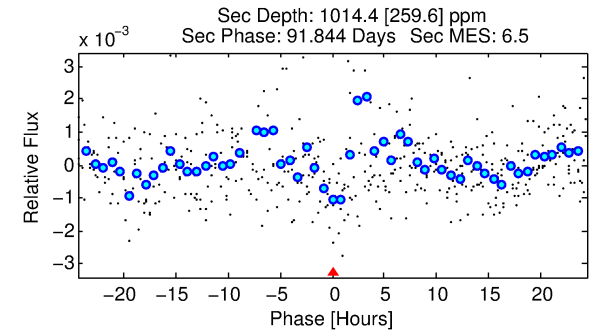
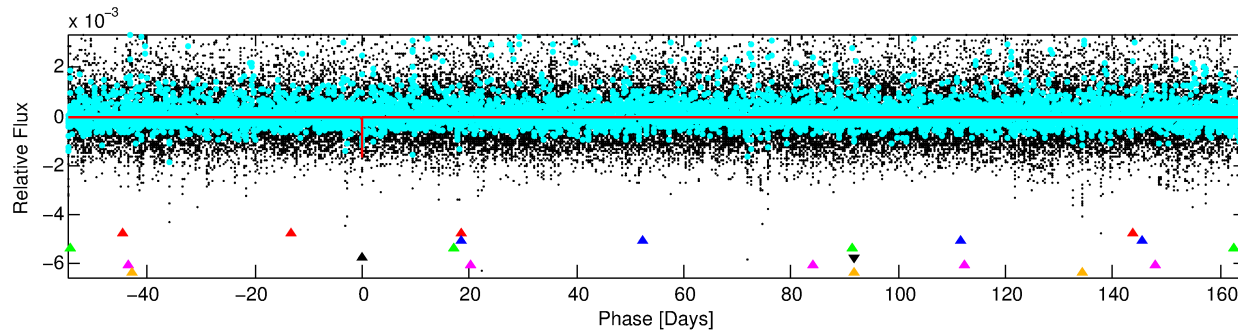
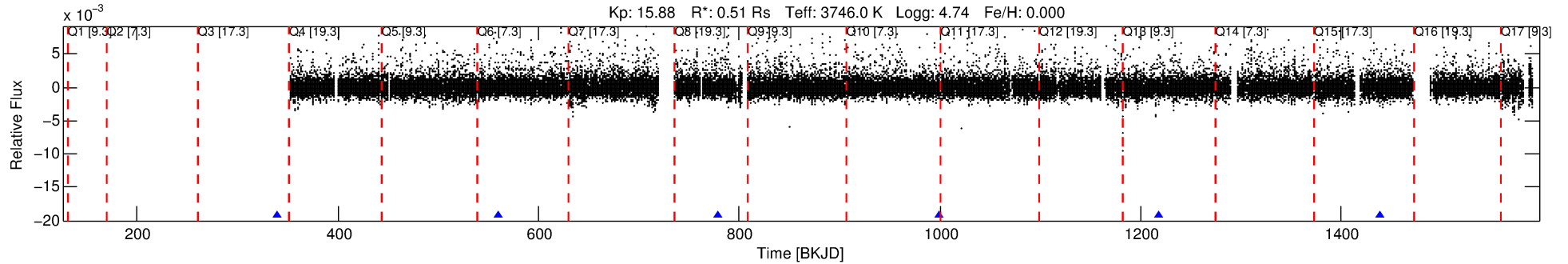
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005360129-04

No Significant Match Found

DV One-Page Summary

KIC: 5360129 Candidate: 4 of 6 Period: 219.756 d



DV Fit Results:

Period = 219.75595 [0.00503] d
Epoch = 339.6822 [0.0162] BKJD
Rp/R* = 0.0450 [0.0083]
a/R* = 207.17 [101.27]
b = 0.92 [0.09]
Seff = 0.14 [0.01]
Teq = 156 [3] K
Rp = 2.50 [0.48] Re
a = 0.5720 [0.0248] AU
Ag = 29115.20 [13155.70] [2.21 σ]
Teffp = 3152 [355] K [8.43 σ]

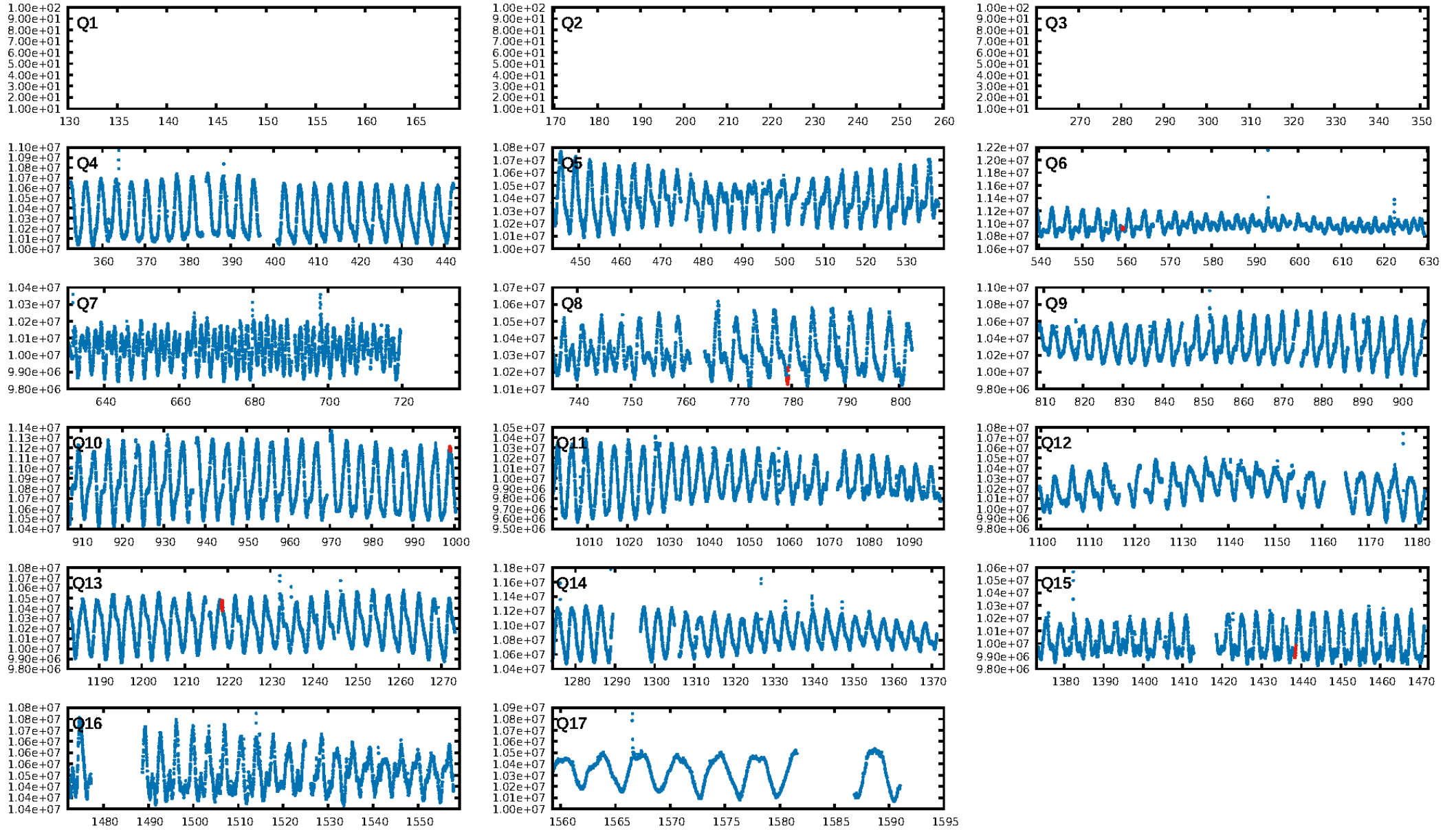
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [286.79 σ]
ModelChiSquare2-sig: 2.0%
ModelChiSquareGof-sig: 88.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 4.234
Centroid-sig: 24.0%
Centroid-so: 0.680 arcsec [0.57 σ]
OotOffset-rm: 0.208 arcsec [1.35 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-rm: 0.230 arcsec [1.47 σ]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [5/5]

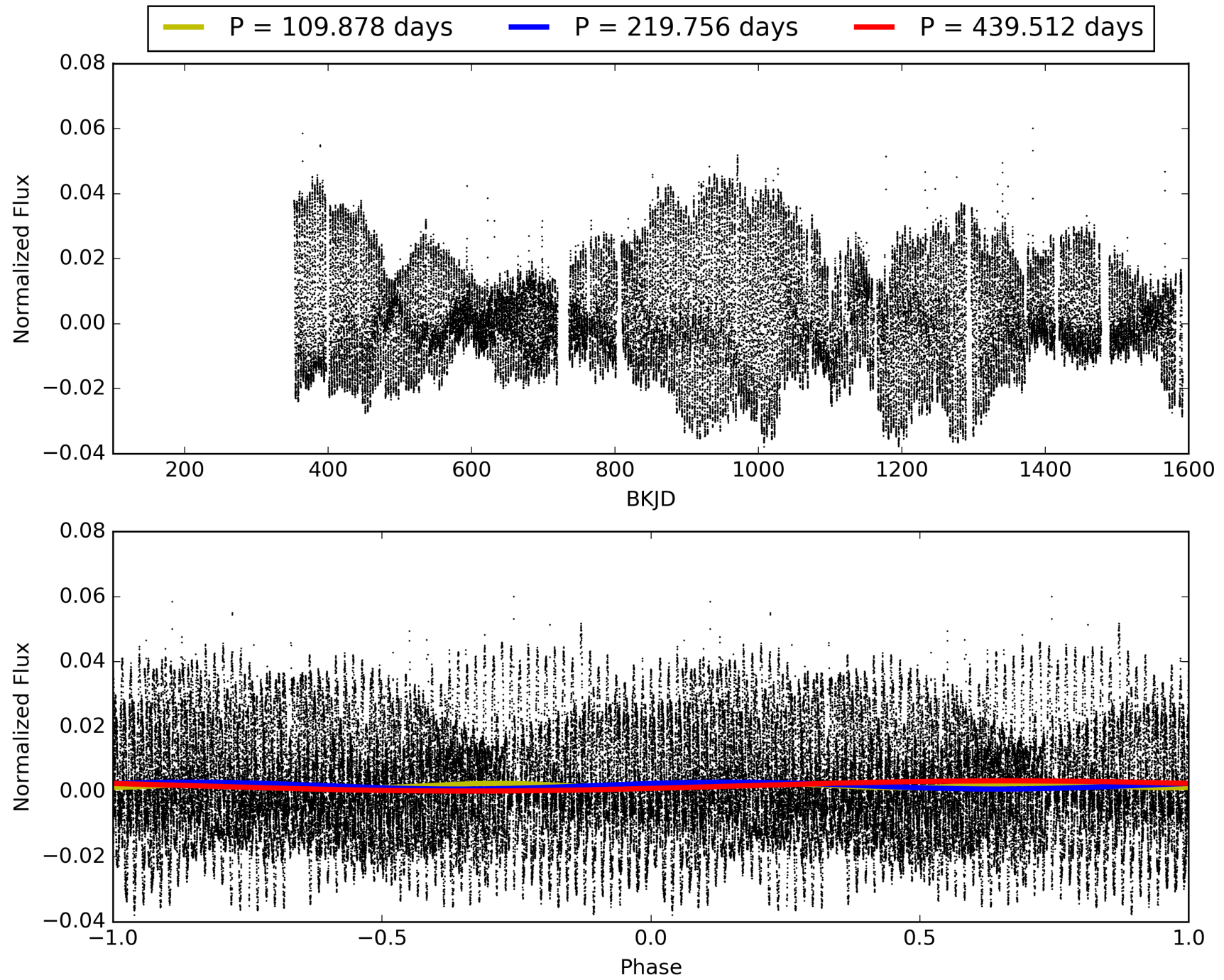
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:54:54 Z

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

TCE 005360129-04, PDC Light Curves

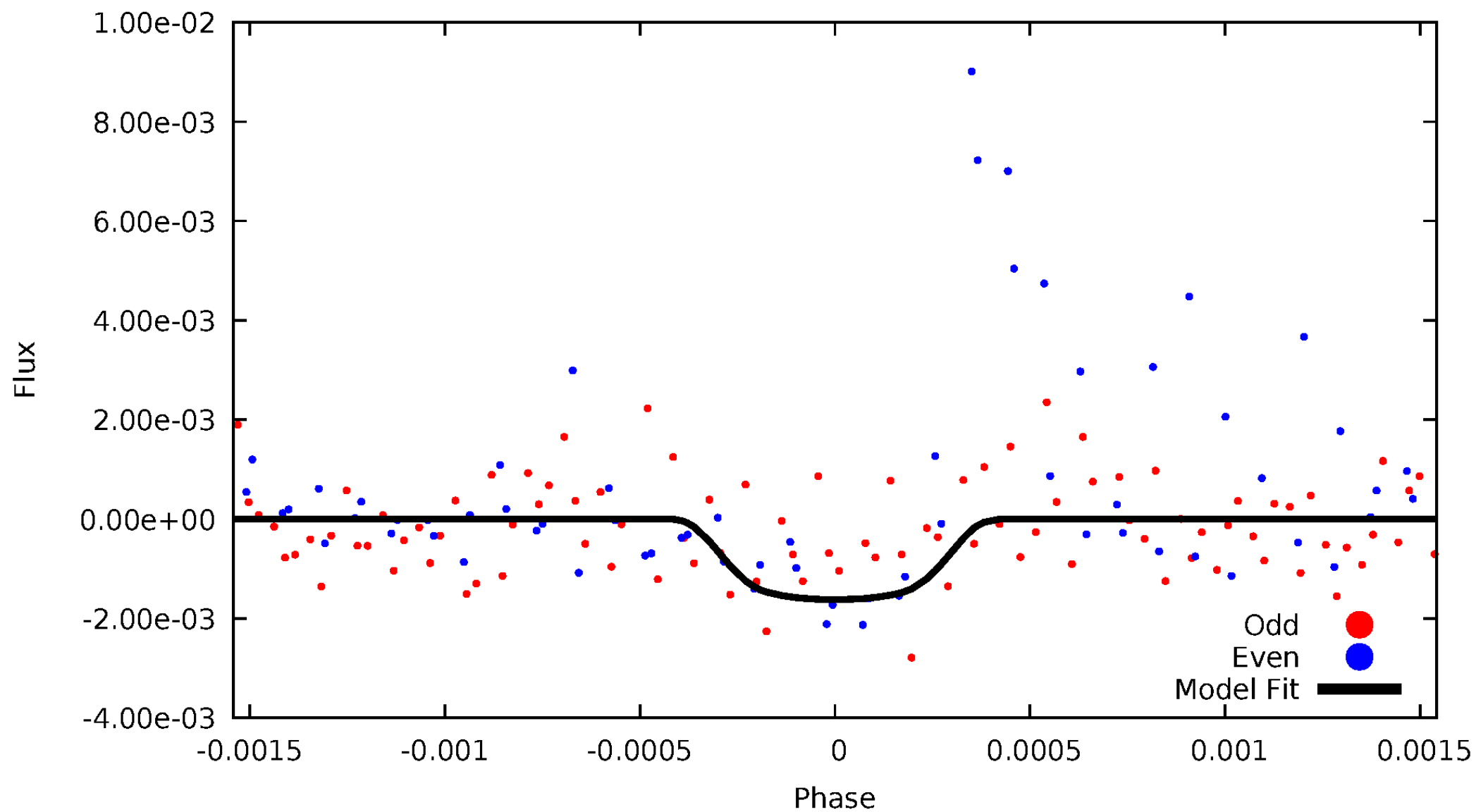


TCE 005360129-04



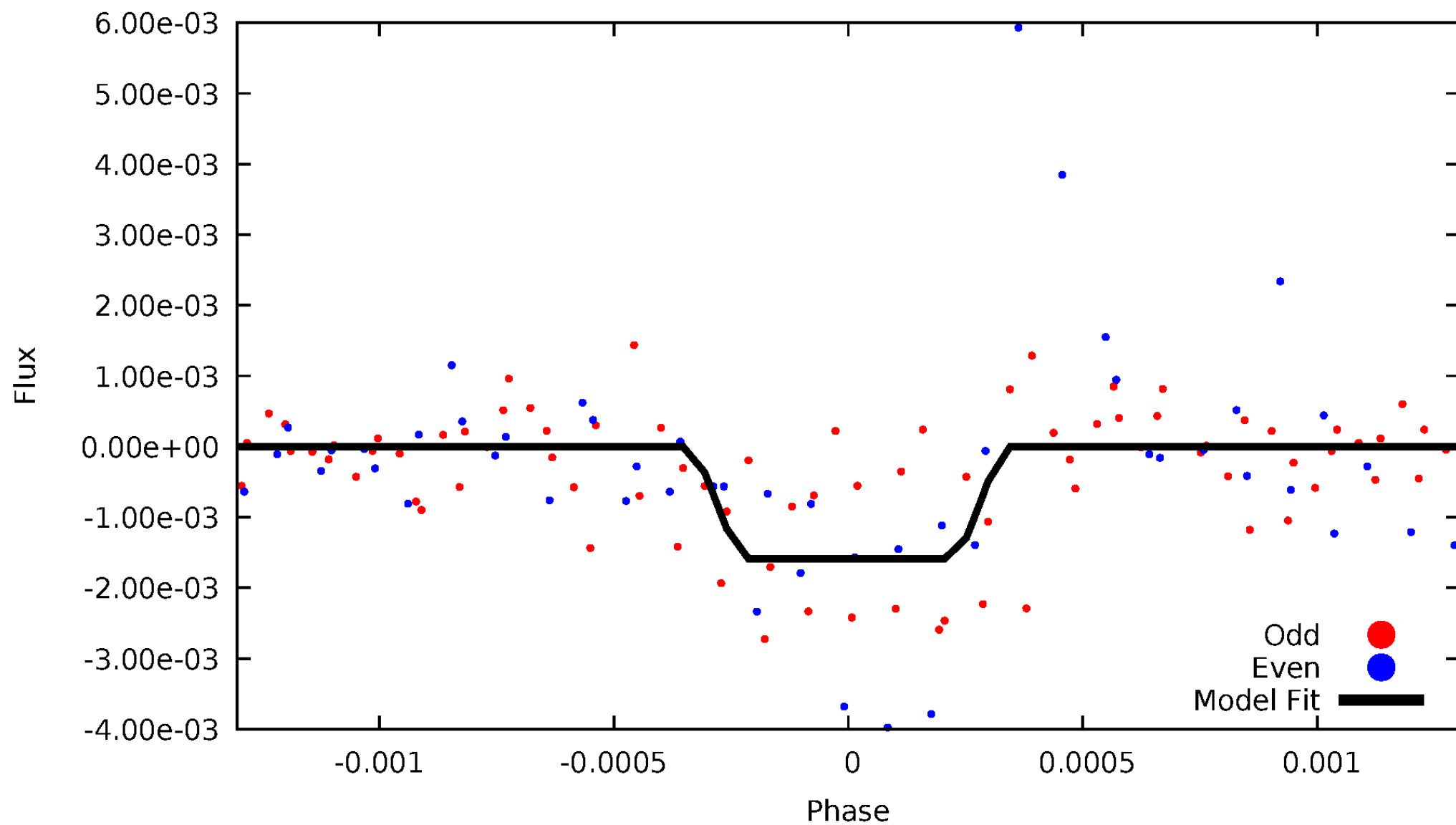
DV Odd/Even

TCE 005360129-04



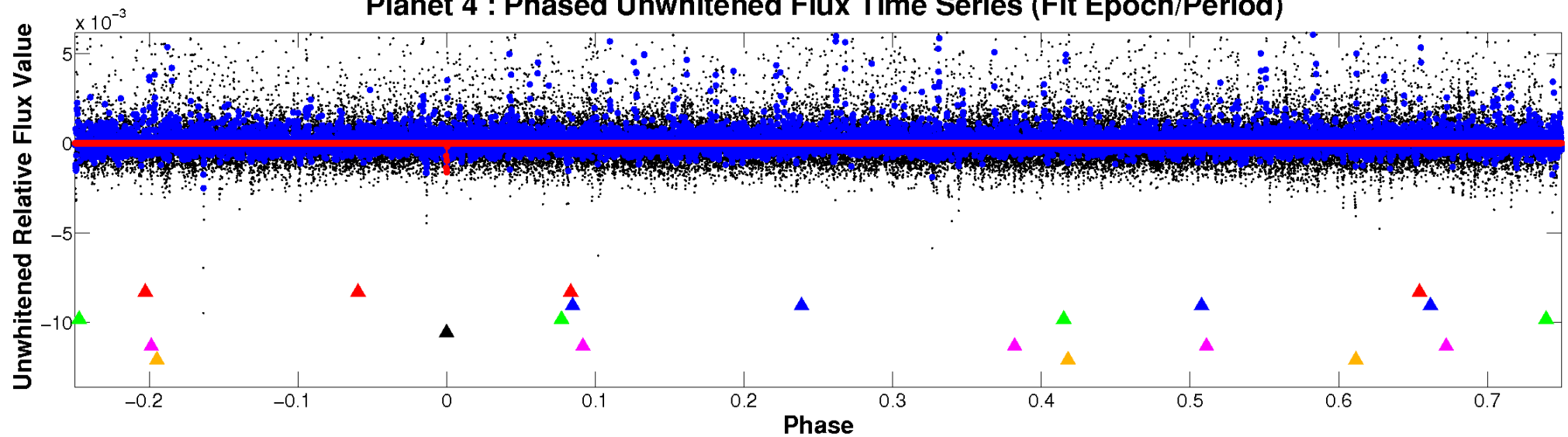
ALT Odd/Even

TCE 005360129-04

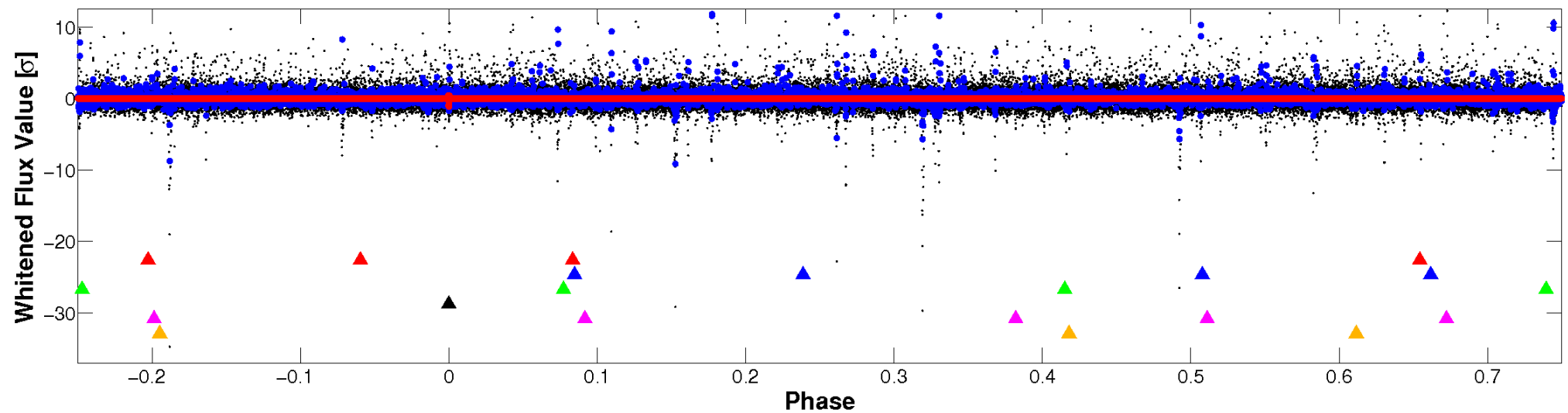


Non-Whitened Vs. Whitened Light Curve

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

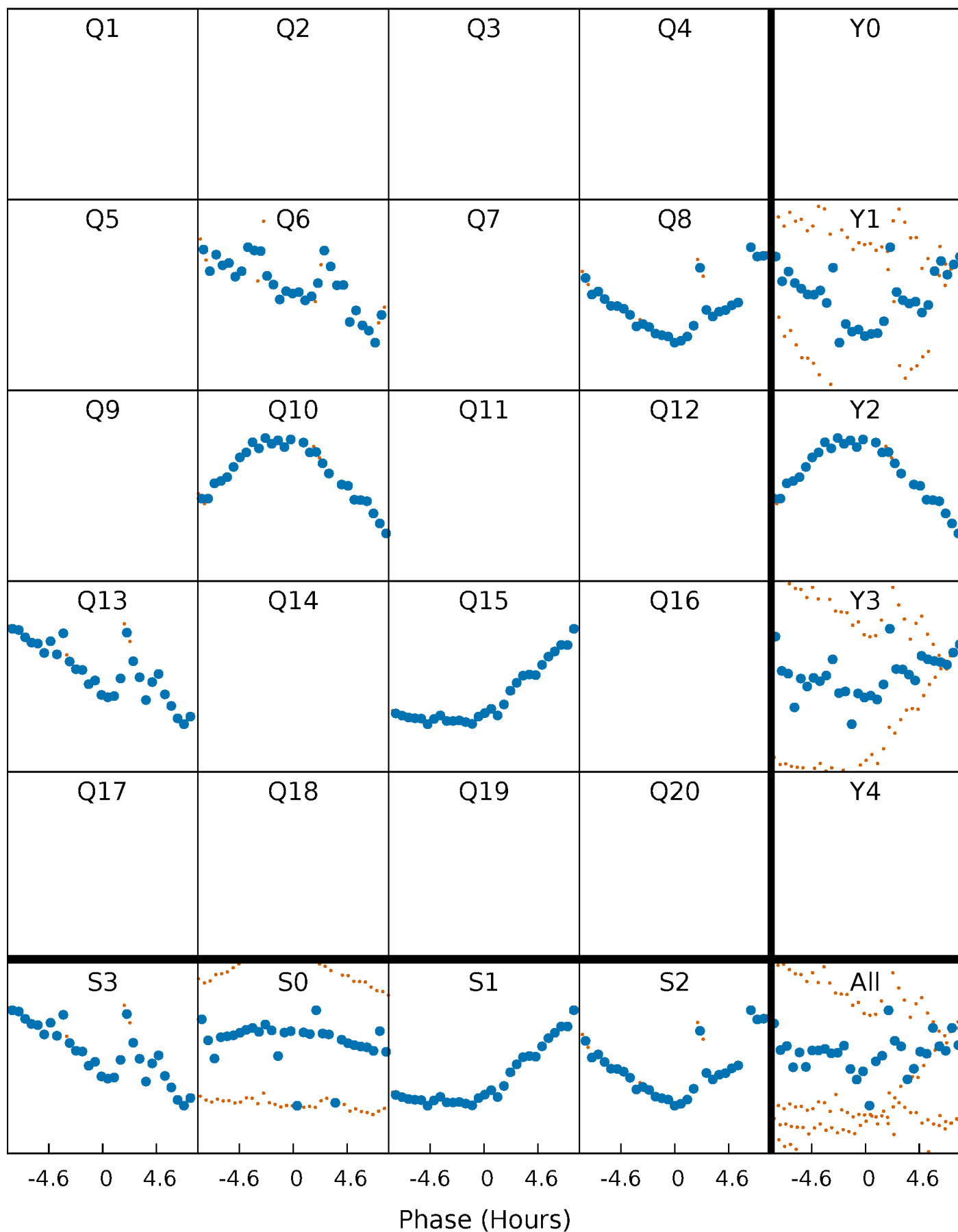


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



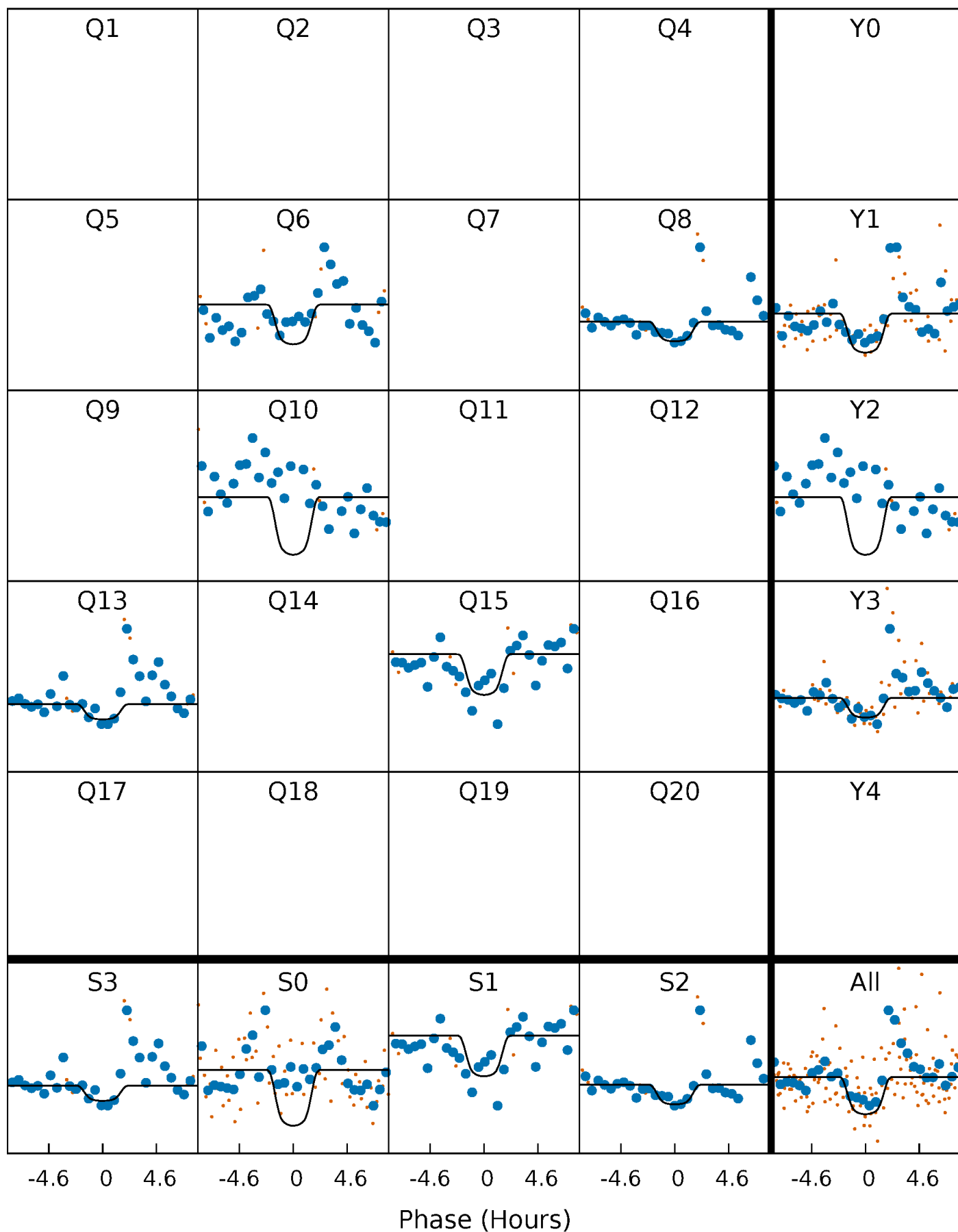
PDC Quarter-Phased Transit Curves

TCE 005360129-04 P=219.755949 Days $T_0=339.682240$ (BKJD)



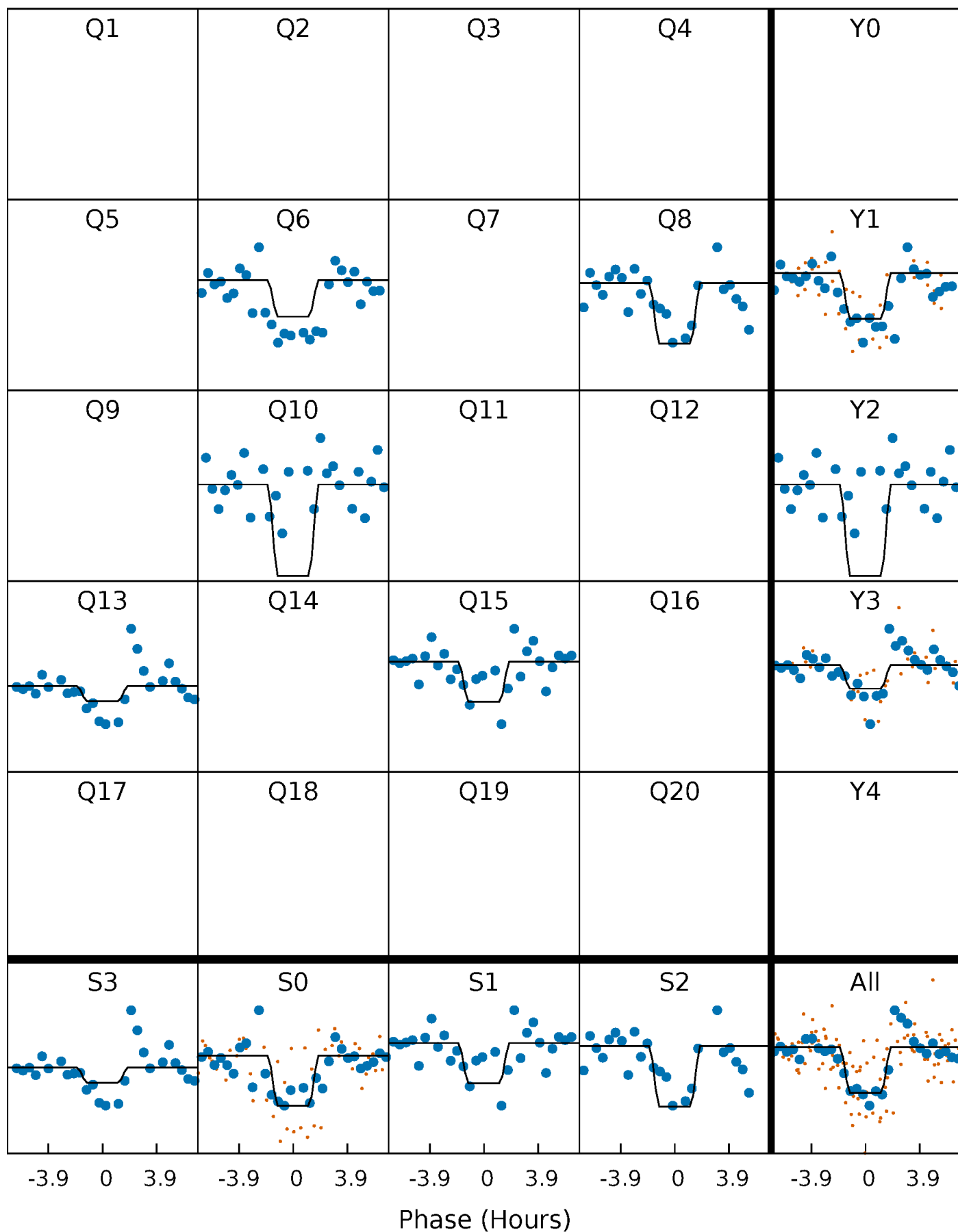
DV Quarter-Phased Transit Curves

TCE 005360129-04 P=219.755949 Days $T_0=339.682240$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

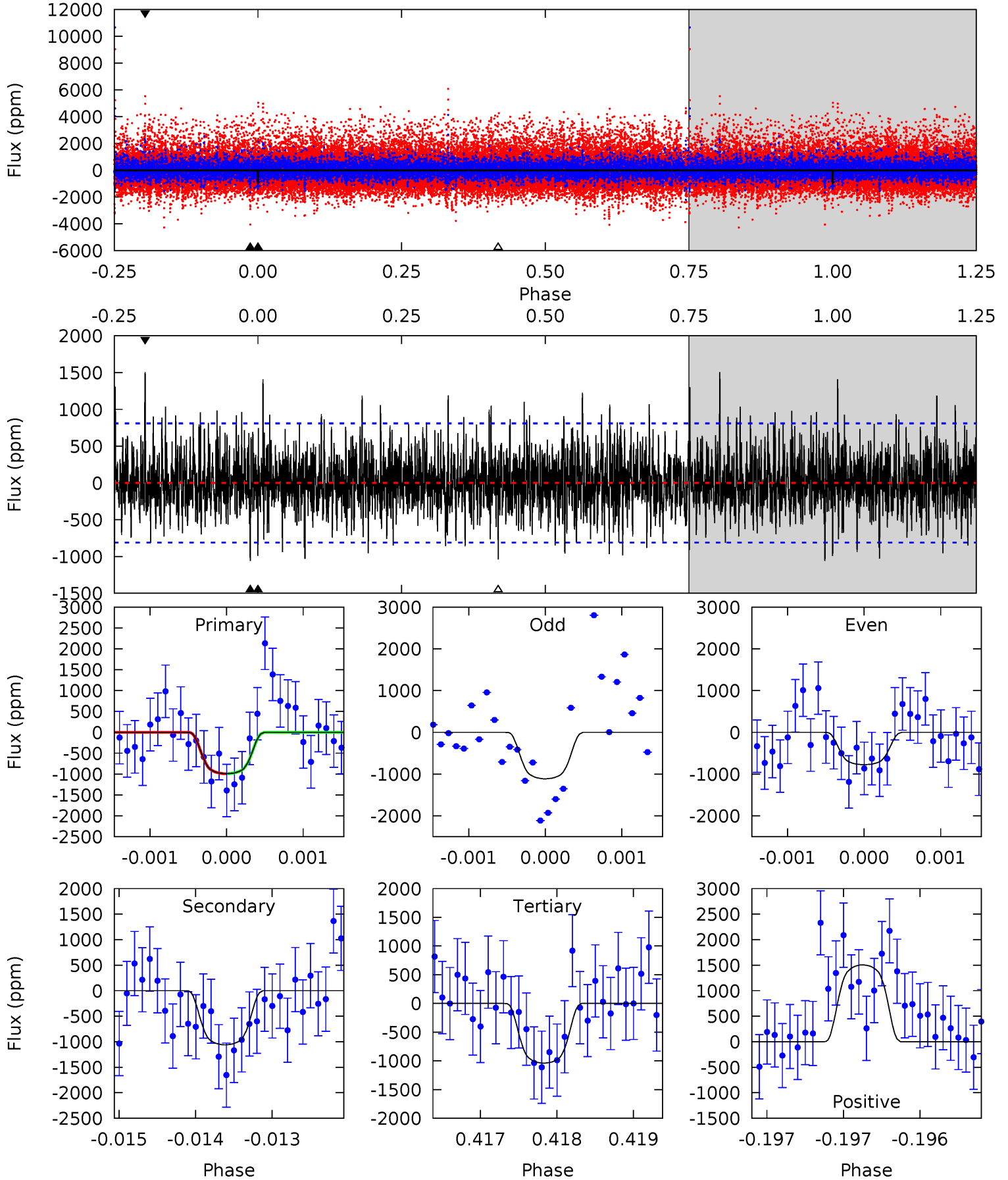
TCE 005360129-04 $P=219.756724$ Days $T_0=339.676401$ (BKJD)



DV Model-Shift Uniqueness Test

005360129-04, P = 219.755949 Days, E = 339.682240 Days

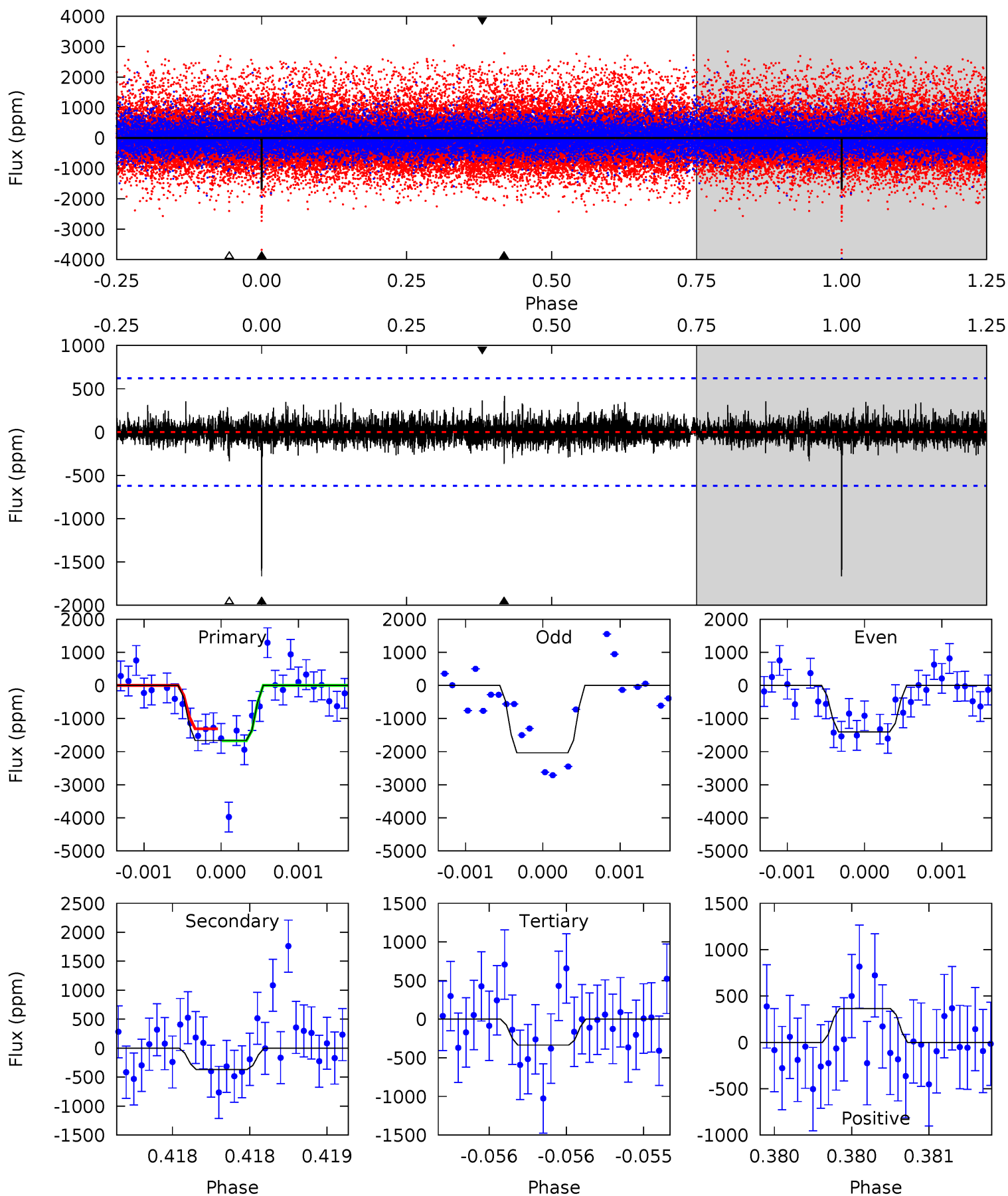
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.70	7.17	7.02	10.2	5.48	3.33	2.11	-0.32	-3.48	0.14	-3.01	0.98	0.83	0.59	0.01



Alt Model-Shift Uniqueness Test

005360129-04, P = 219.756724 Days, E = 339.676401 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	3.27	2.98	3.24	5.53	3.42	0.76	11.9	11.6	0.29	0.03	2.76	1.35	0.20	0



Stellar Parameters For KIC 005360129

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3746^{+45}_{-50}	$4.736^{+0.033}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.510^{+0.020}_{-0.027}$	$0.516^{+0.026}_{-0.021}$	$5.482^{+0.725}_{-0.383}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005360129-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1061±148	$2.49^{+0.43}_{-0.46}$	217^{+3}_{-3}	3376^{+240}_{-181}	30987^{+15822}_{-9015}
Alt.	-367±112	$2.22^{+0.47}_{-0.46}$	217^{+3}_{-3}	2983^{+240}_{-216}	13397^{+8834}_{-5791}

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

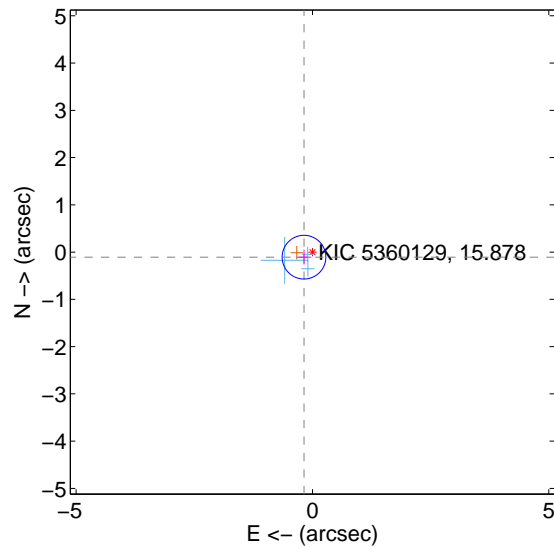
Supplemental centroid analysis for 005360129-04. Kepler magnitude: 15.88. Transit SNR 5.65

There are 3 quarters with good PRF difference image offsets

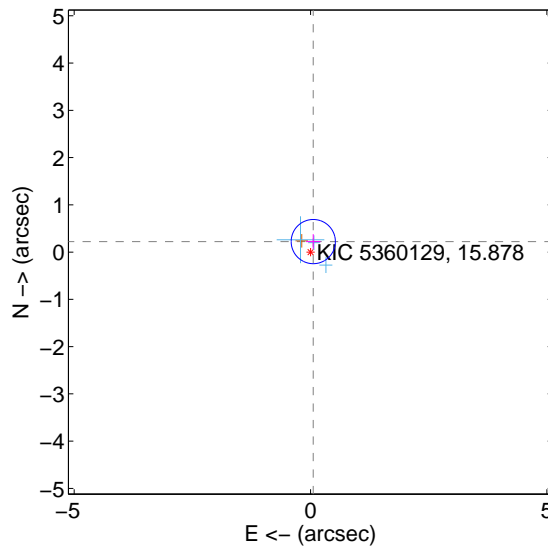
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.208 ± 0.154	1.35	0.179 ± 0.153	-0.107 ± 0.156
PRF-fit source offset from KIC position	0.230 ± 0.156	1.47	-0.058 ± 0.153	0.222 ± 0.156
photometric centroid source offset	0.68 ± 1.20	0.57	-0.10 ± 1.50	0.67 ± 1.19

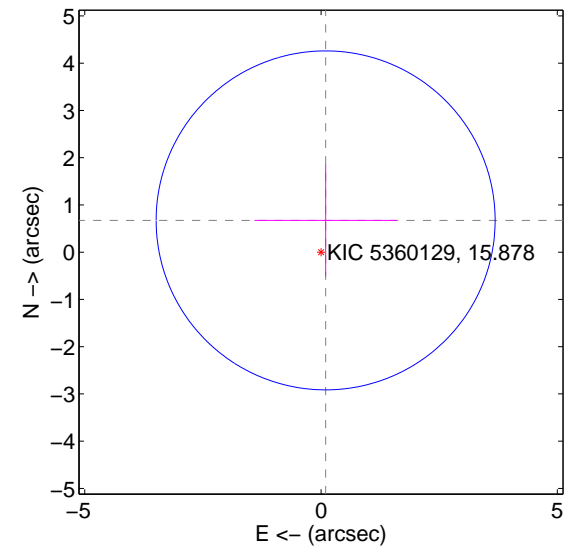
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

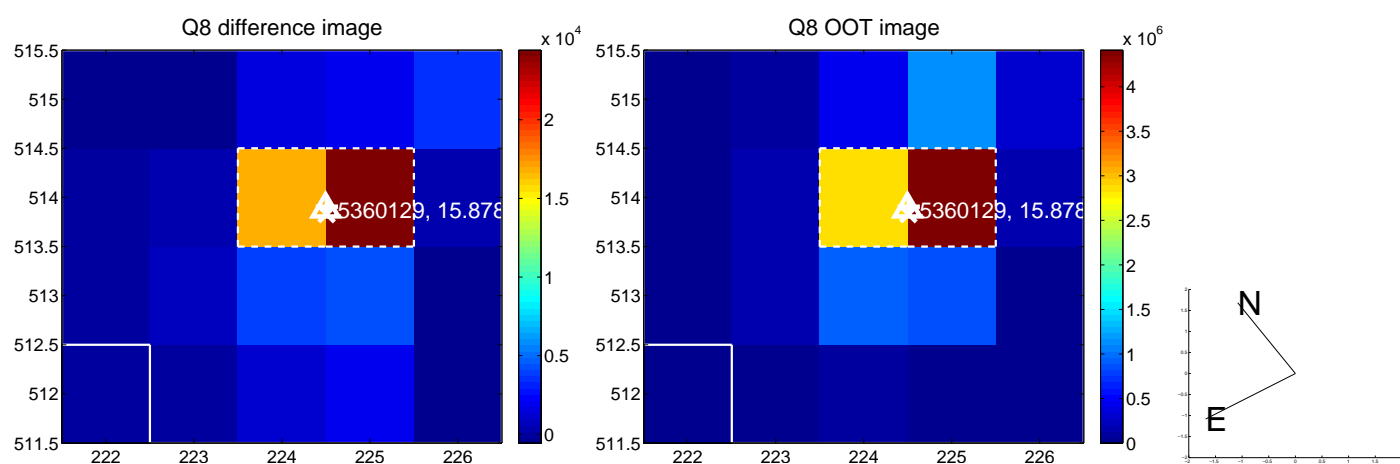
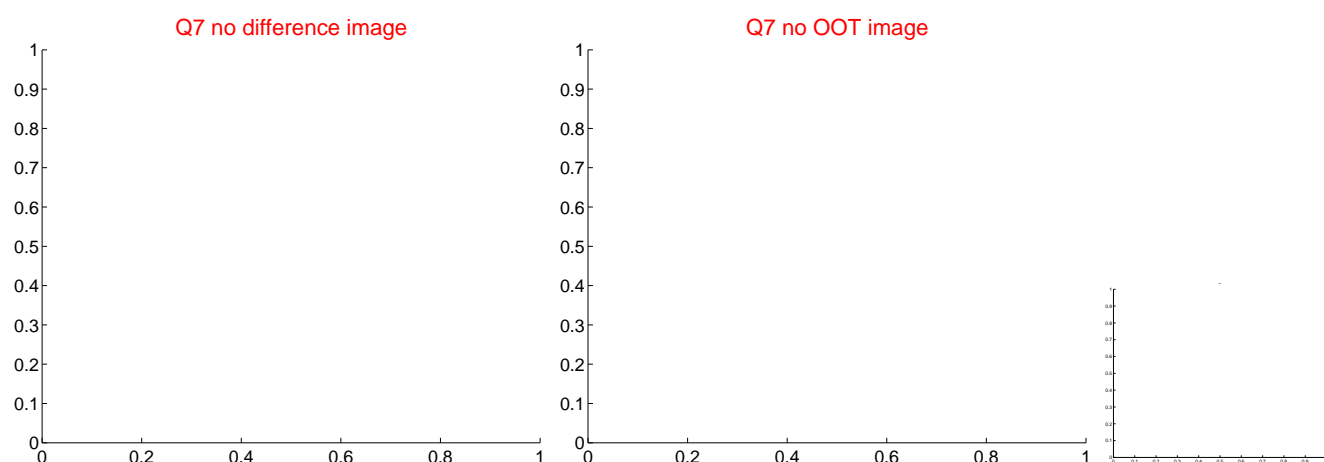
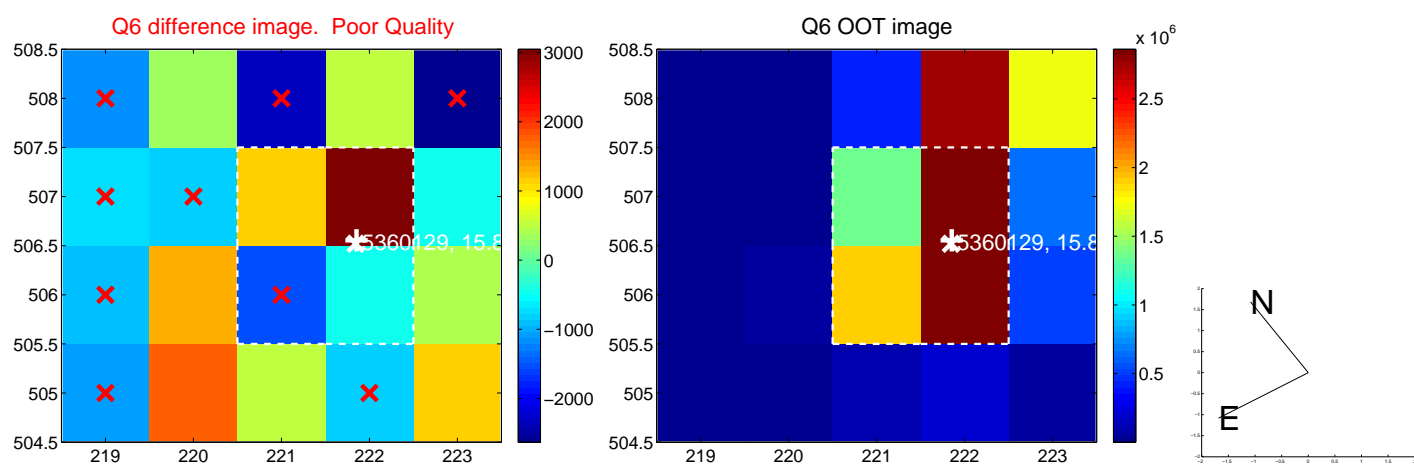
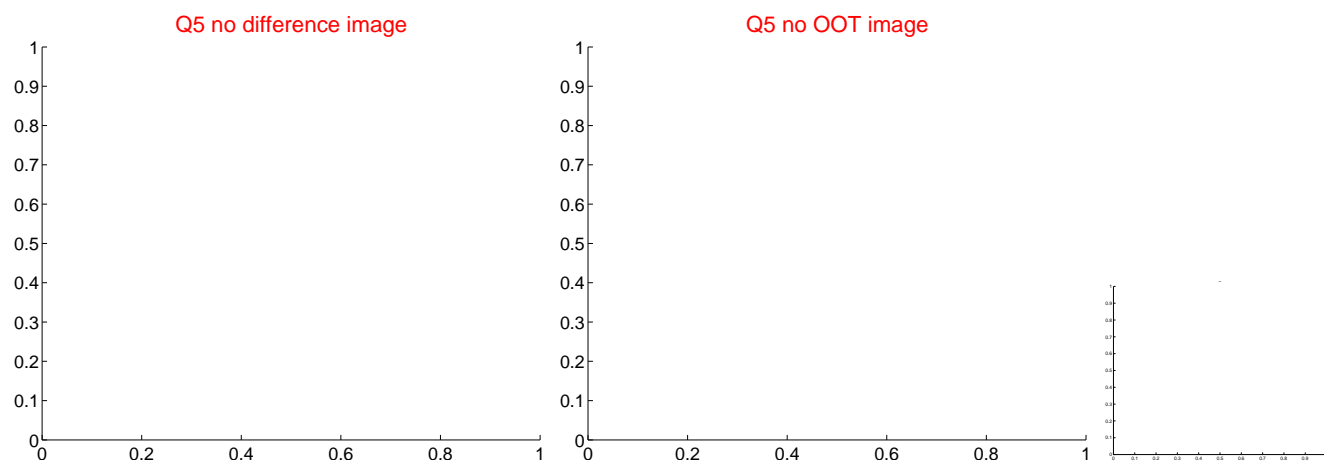


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

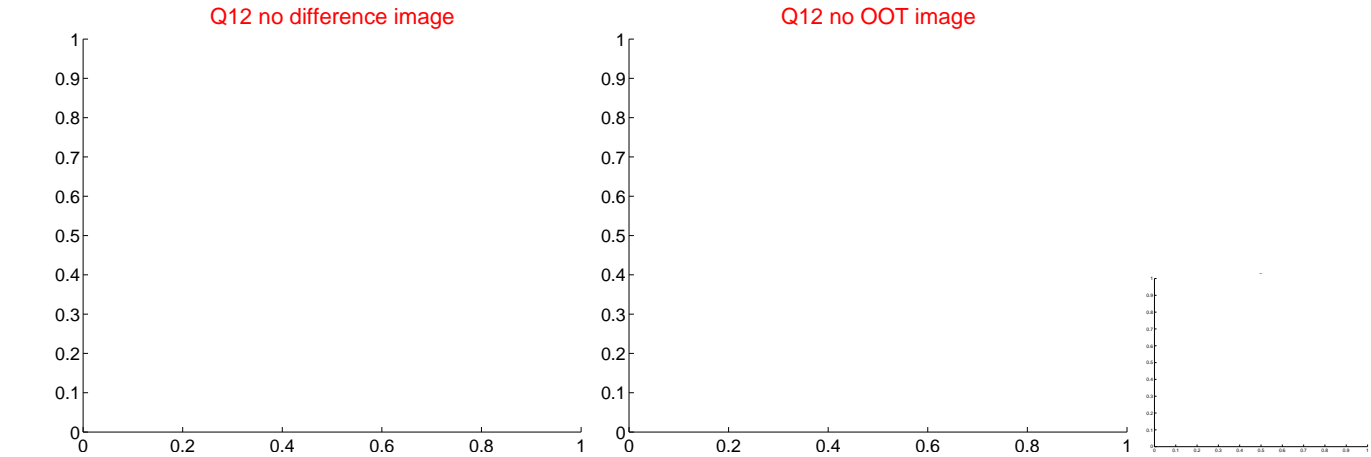
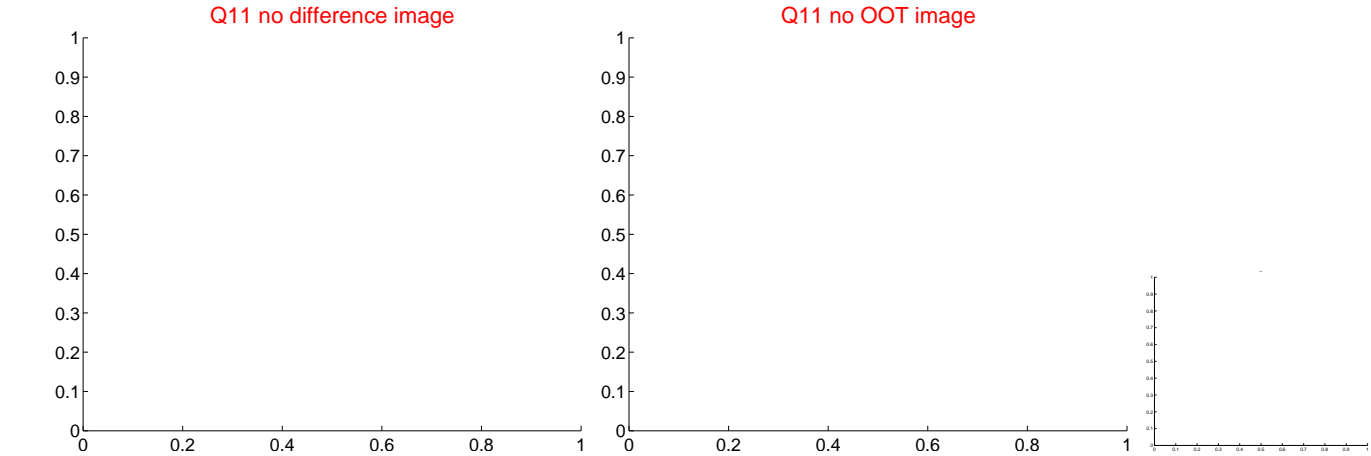
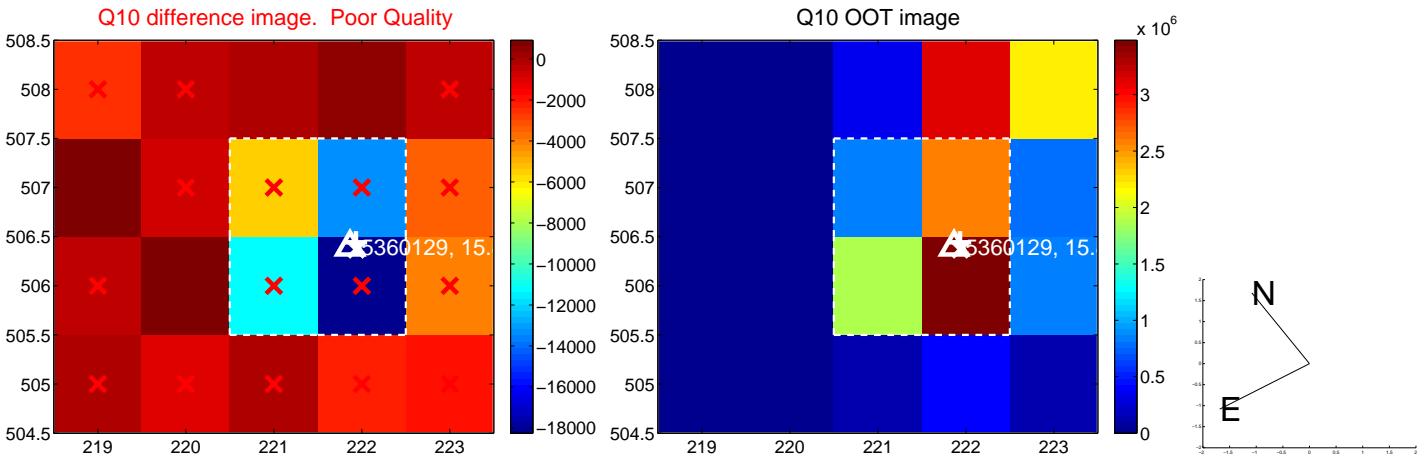
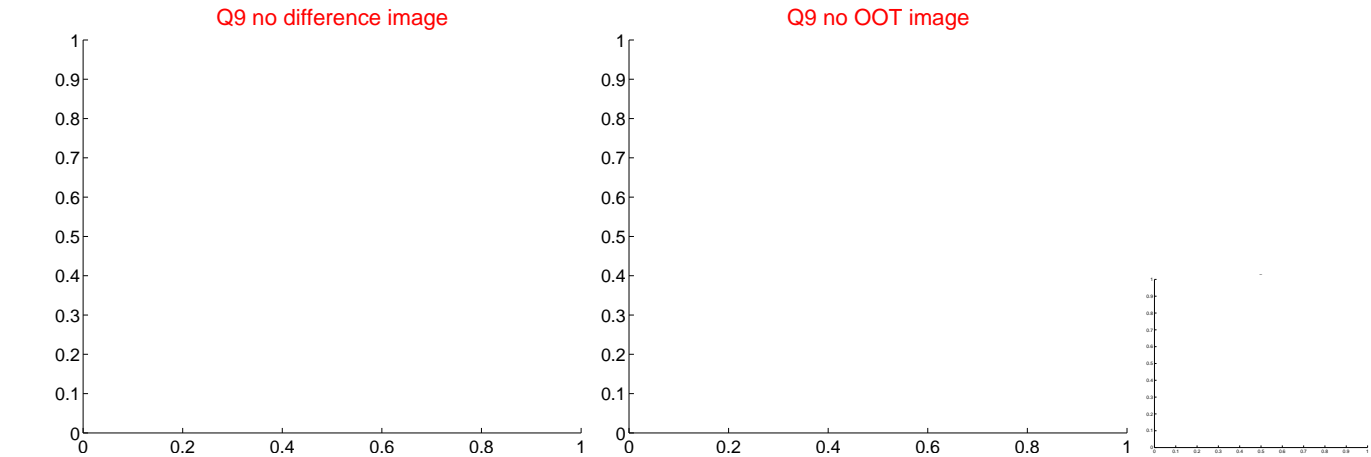
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



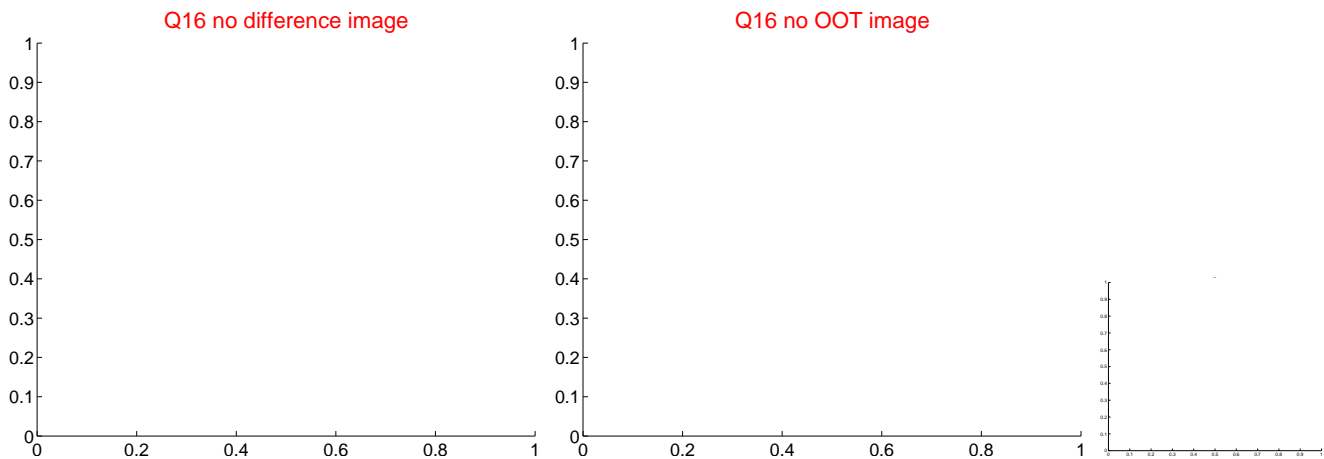
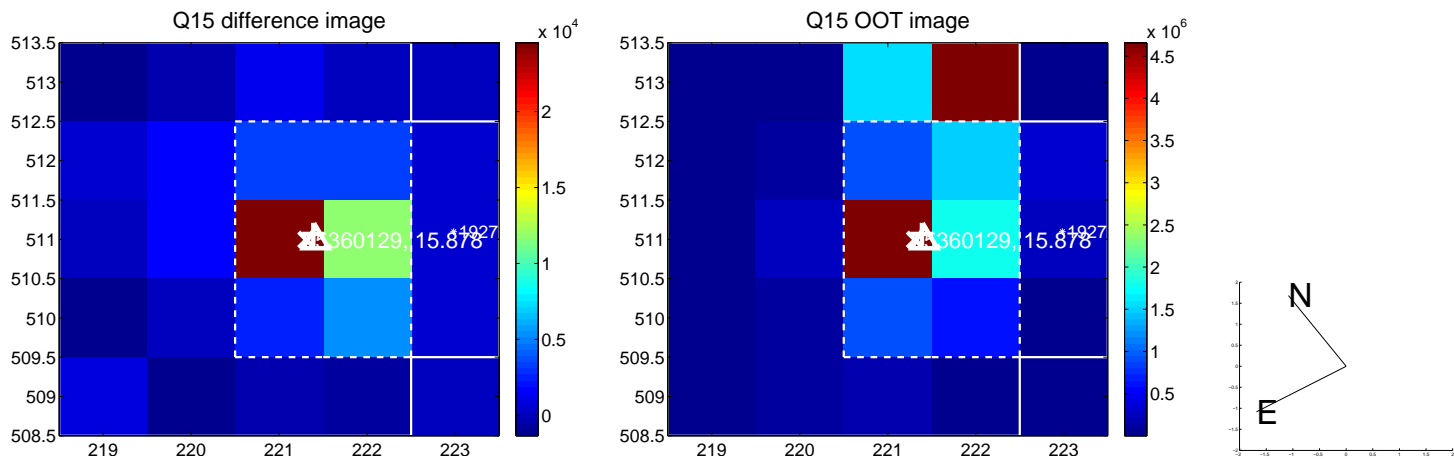
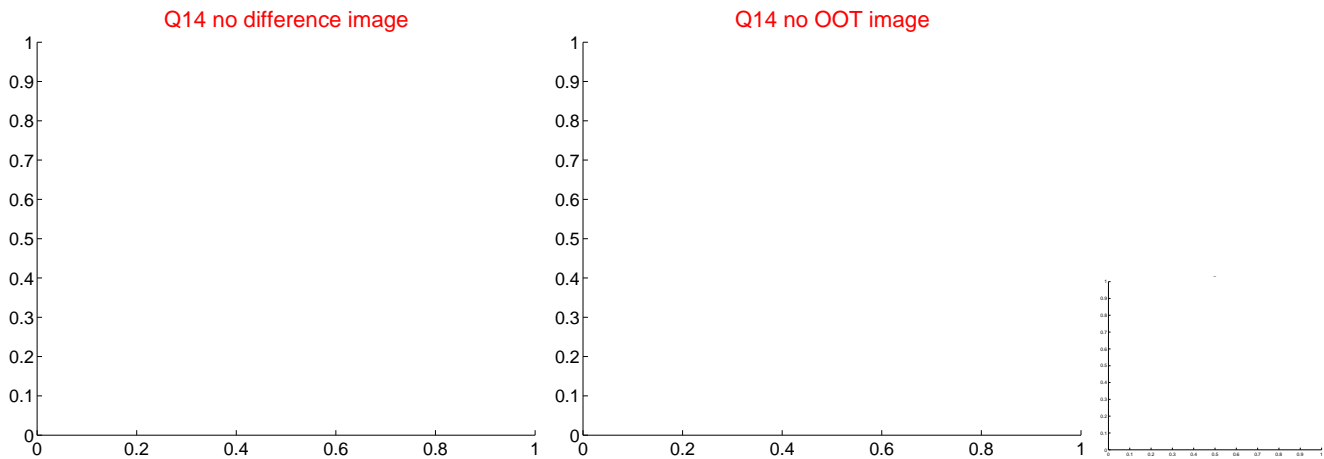
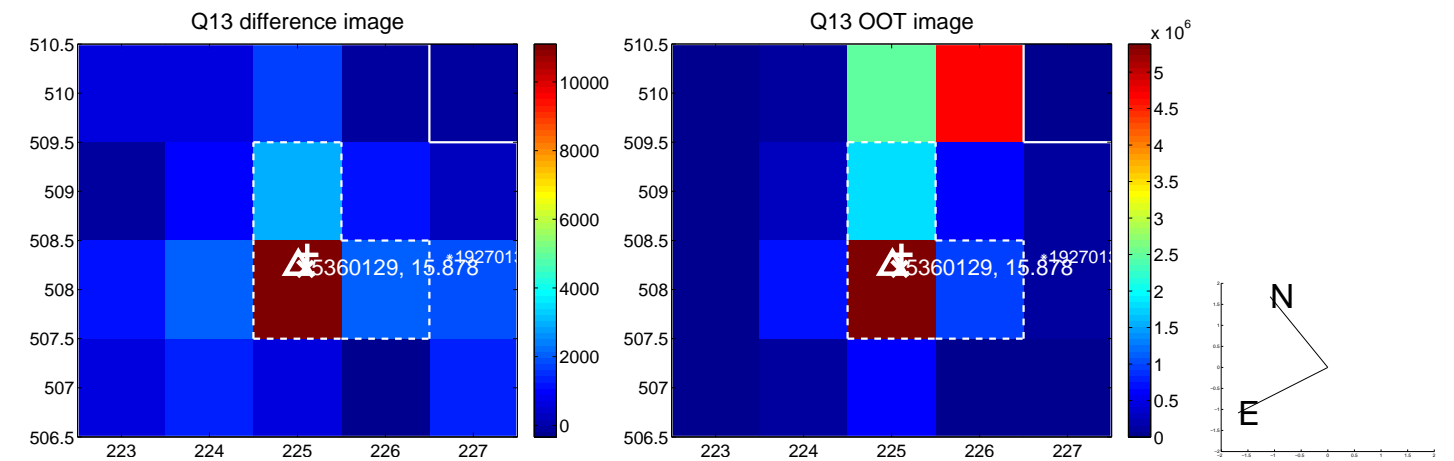
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



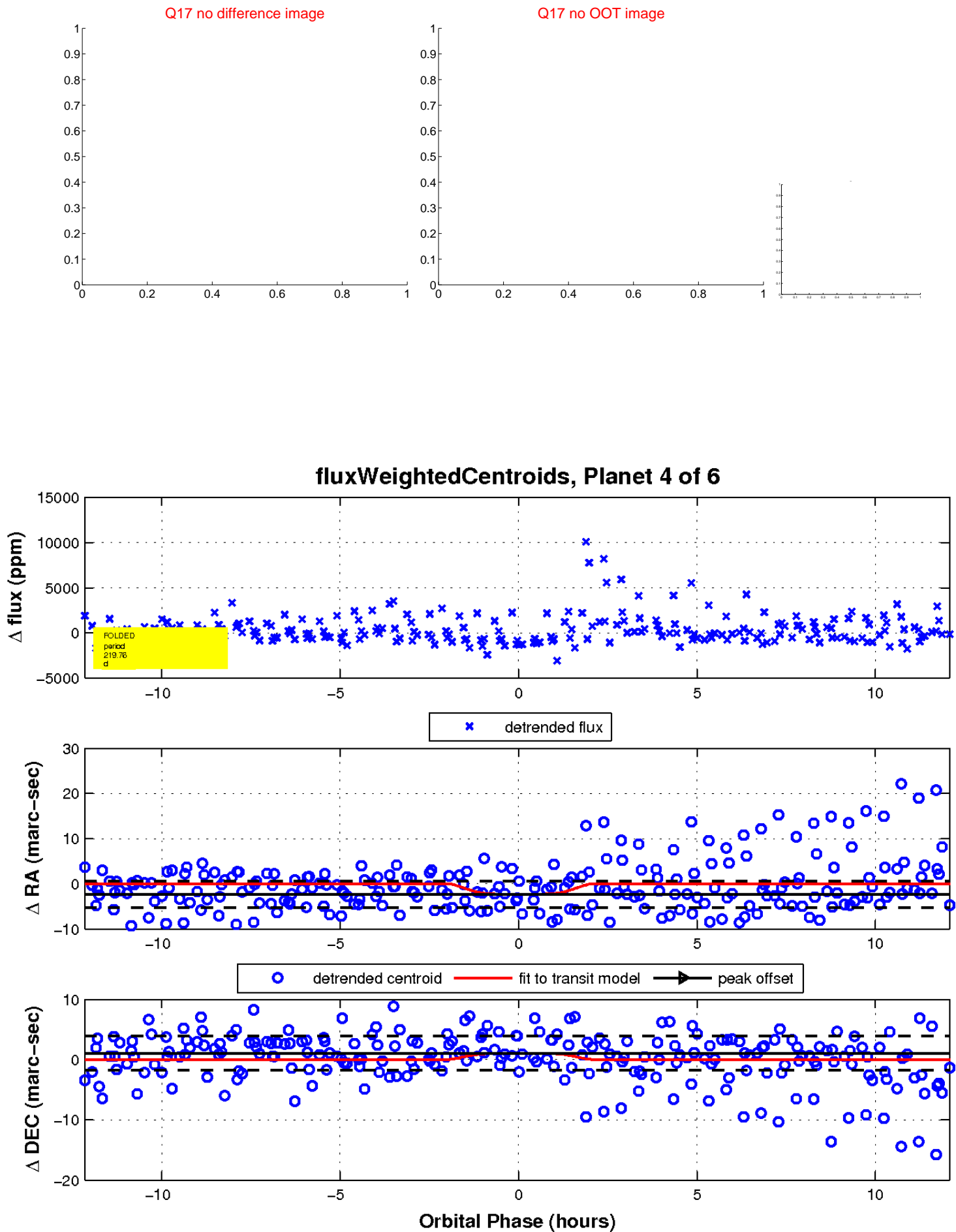
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

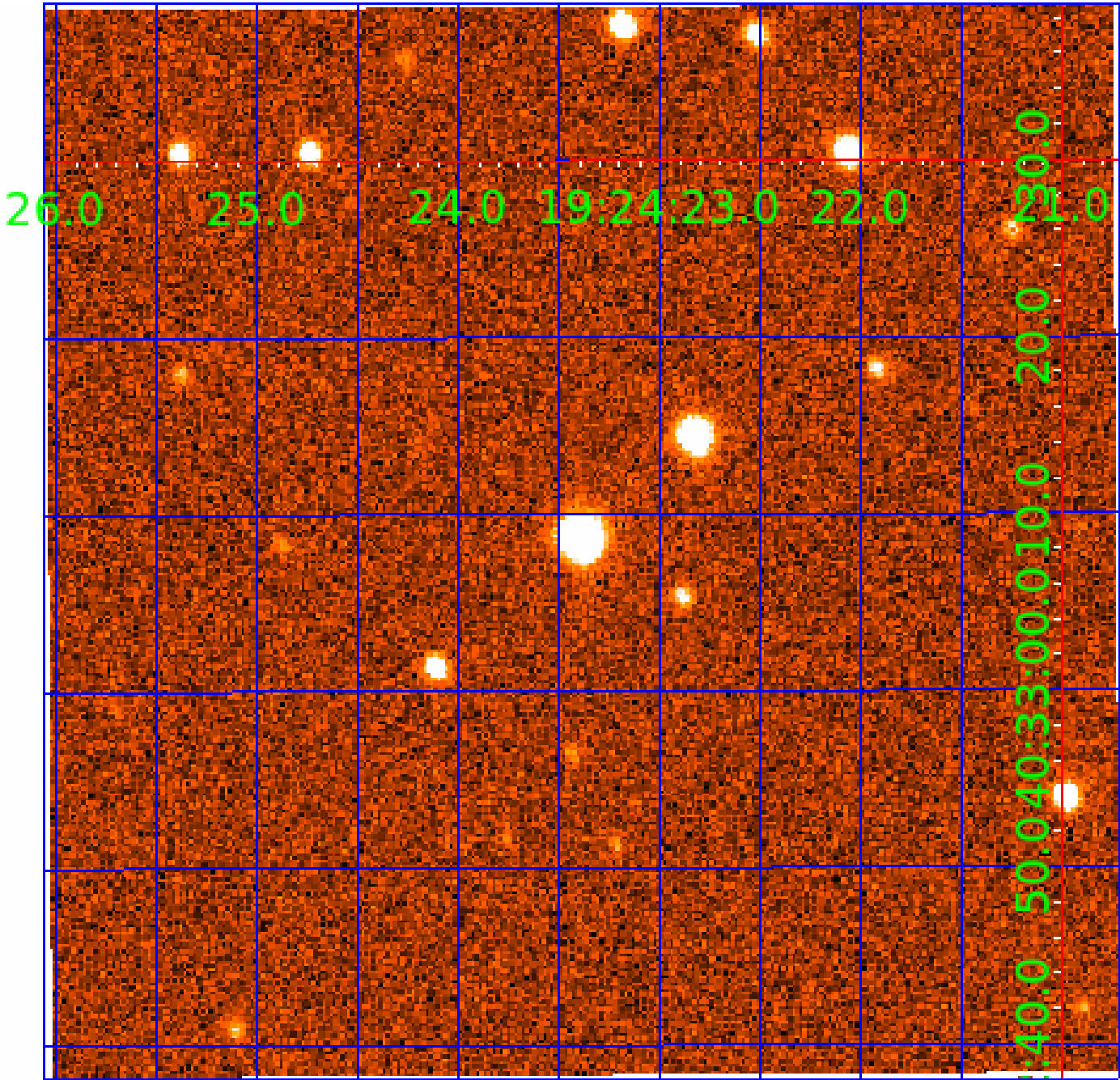


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005360129

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})
005360129-01	OBS	No	408.074942	358.029375	1621.7	4.960	13.0	4.6	0.51	3746	2.06	0.06
005360129-02	OBS	No	346.549555	451.273563	4005.9	15.956	12.2	7.6	0.51	3746	4.93	0.08
005360129-03	OBS	No	365.280099	285.378812	2760.2	6.908	10.2	6.5	0.51	3746	5.13	0.07
005360129-04	OBS	No	219.755949	339.682240	1623.0	4.066	9.9	5.6	0.51	3746	2.50	0.14
005360129-05	OBS	No	283.555784	232.234665	1971.8	3.460	10.0	6.0	0.51	3746	2.54	0.10
005360129-06	OBS	No	396.965694	516.625869	2551.8	3.000	11.3	-1.0	0.51	3746	2.54	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005360129-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005360129-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
005360129-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005360129-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_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.

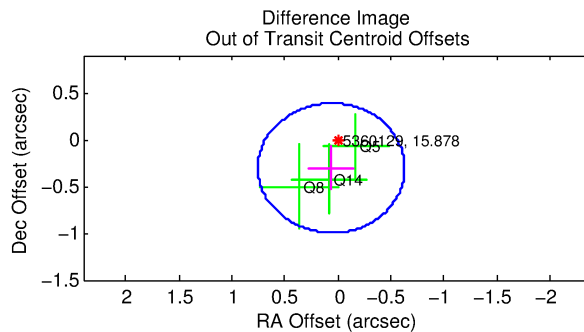
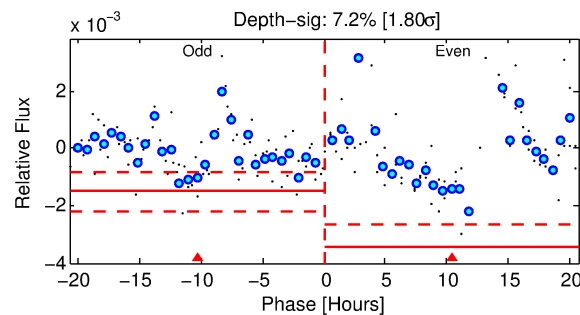
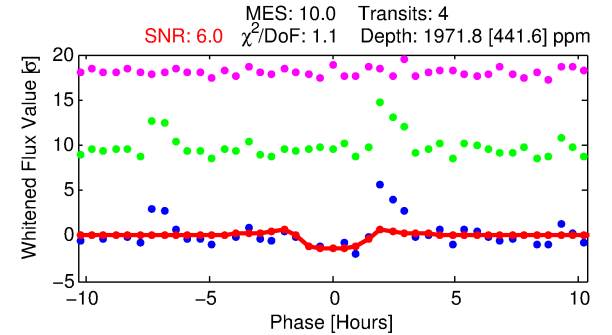
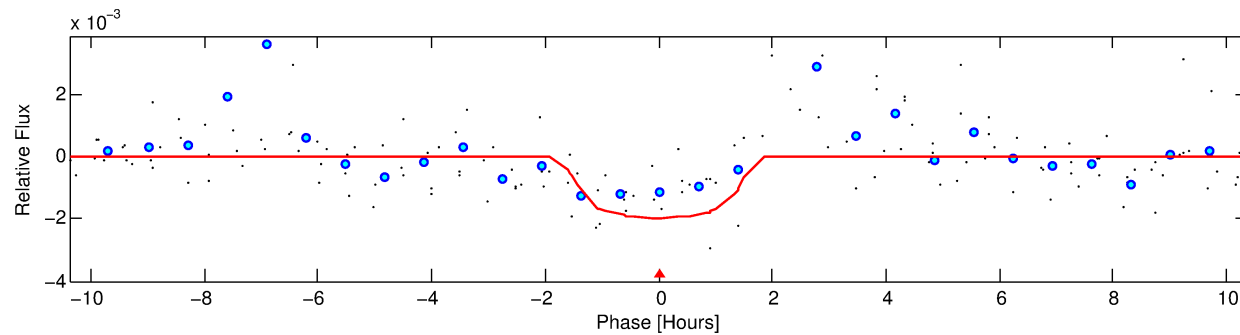
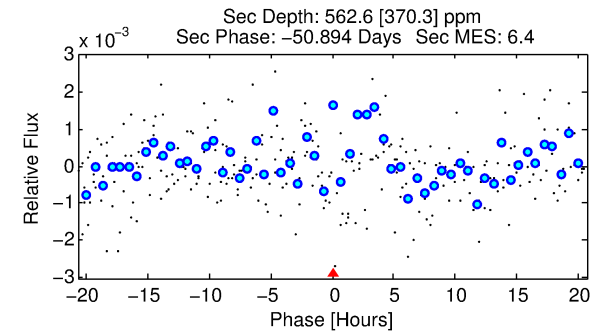
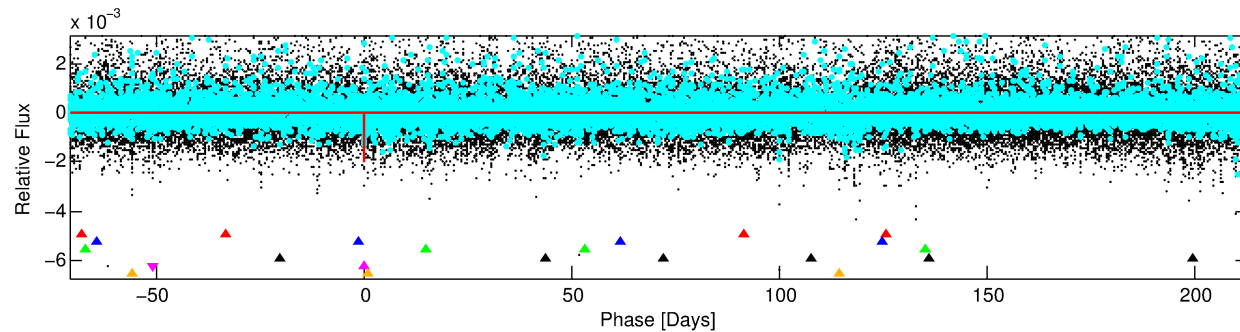
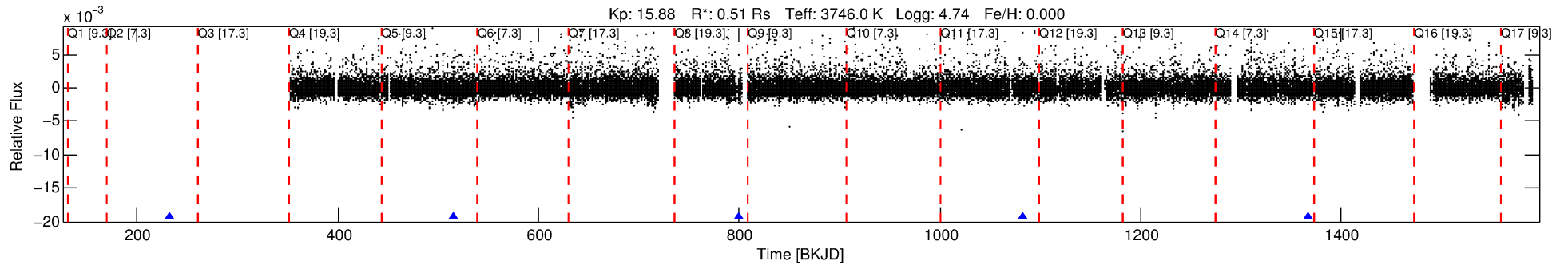
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005360129-05

No Significant Match Found

DV One-Page Summary

KIC: 5360129 Candidate: 5 of 6 Period: 283.556 d



DV Fit Results:

Period = 283.55578 [0.00525] d
Epoch = 232.2347 [0.0169] BKJD
Rp/R* = 0.0457 [0.0285]
a/R* = 404.88 [1015.51]
b = 0.82 [1.00]
Seff = 0.10 [0.01]
Teq = 143 [3] K
Rp = 2.55 [1.59] Re
a = 0.6779 [0.0294] AU
Ag = 21954.83 [31012.70] [0.71σ]
Teffp = 2698 [952] K [2.68σ]

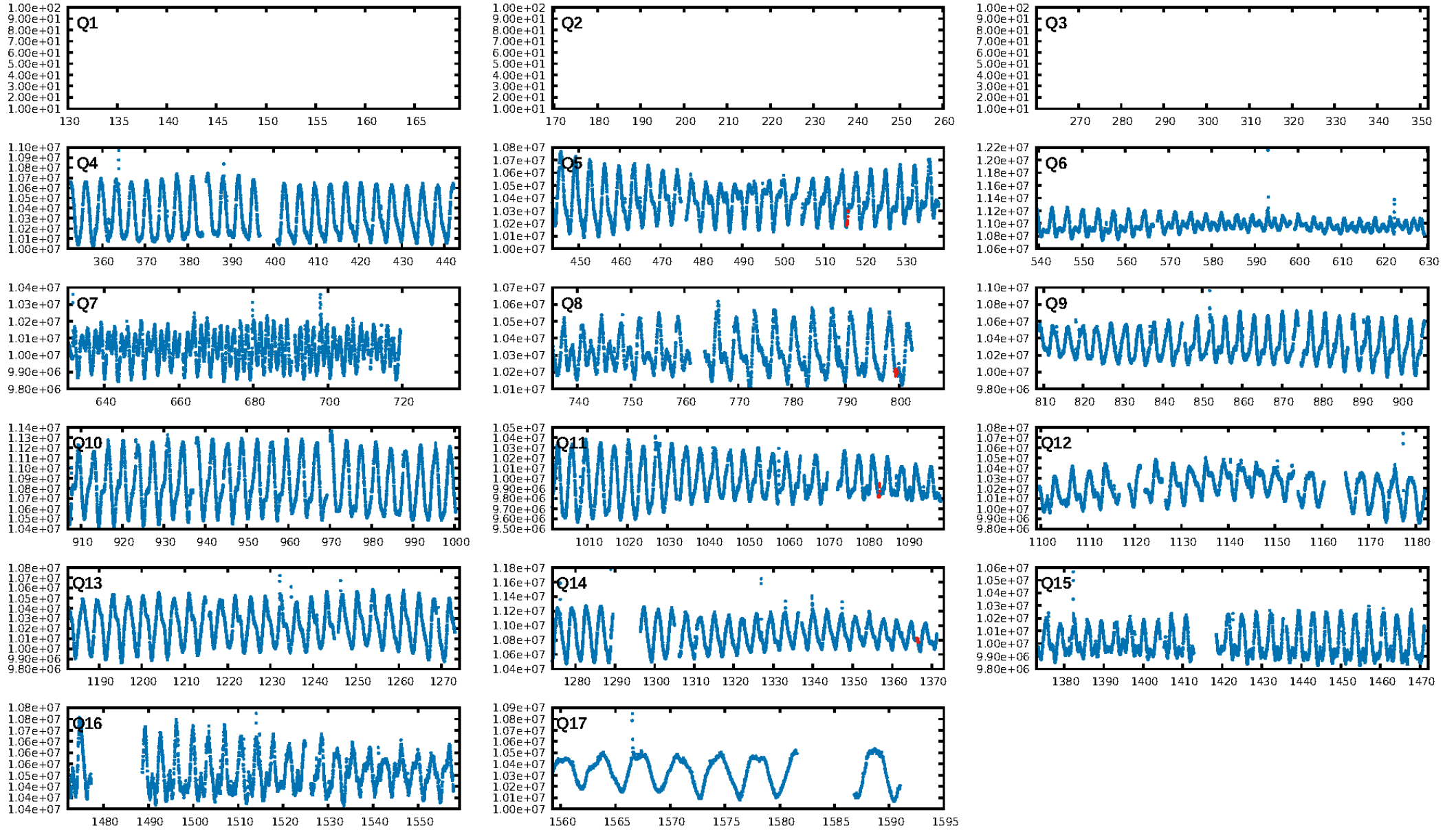
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [286.79σ]
LongPeriod-sig: 100.0% [92.60σ]
ModelChiSquare2-sig: 5.6%
ModelChiSquareGof-sig: 89.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -7.257
Centroid-sig: 64.3%
Centroid-so: 1.566 arcsec [1.20σ]
OotOffset-rm: 0.310 arcsec [1.34σ]
KicOffset-rm: 0.247 arcsec [0.78σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

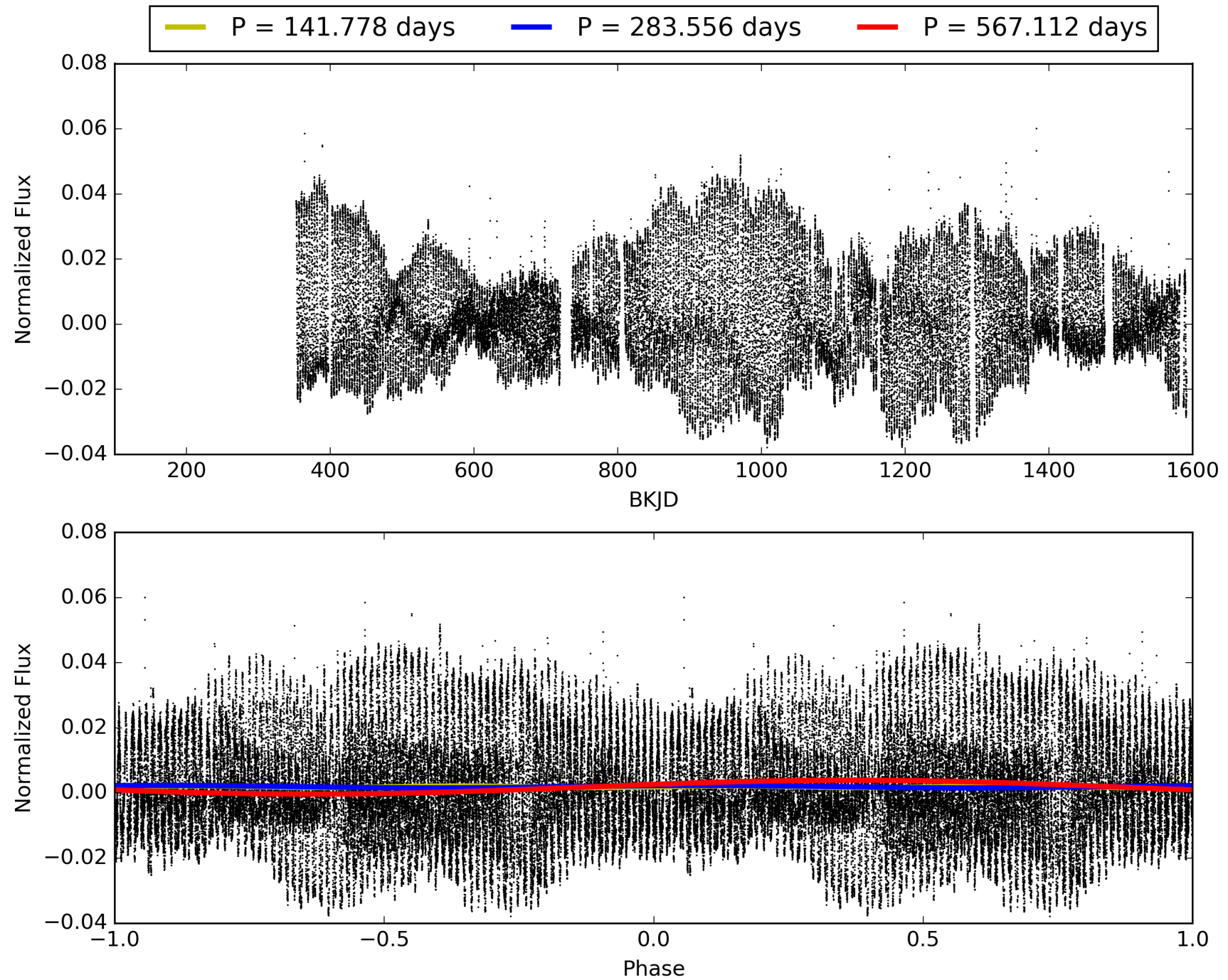
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:06 Z

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

TCE 005360129-05, PDC Light Curves

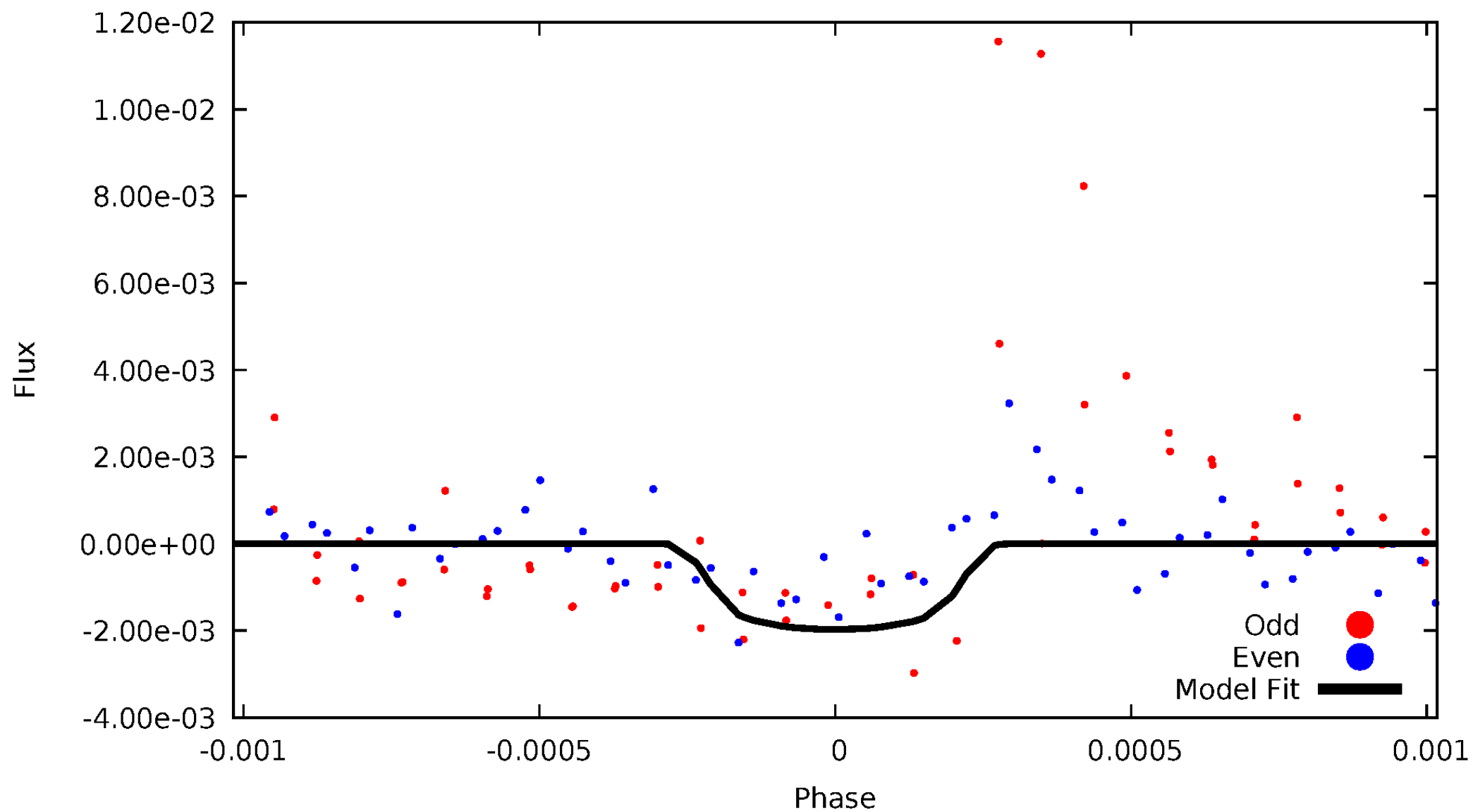


TCE 005360129-05



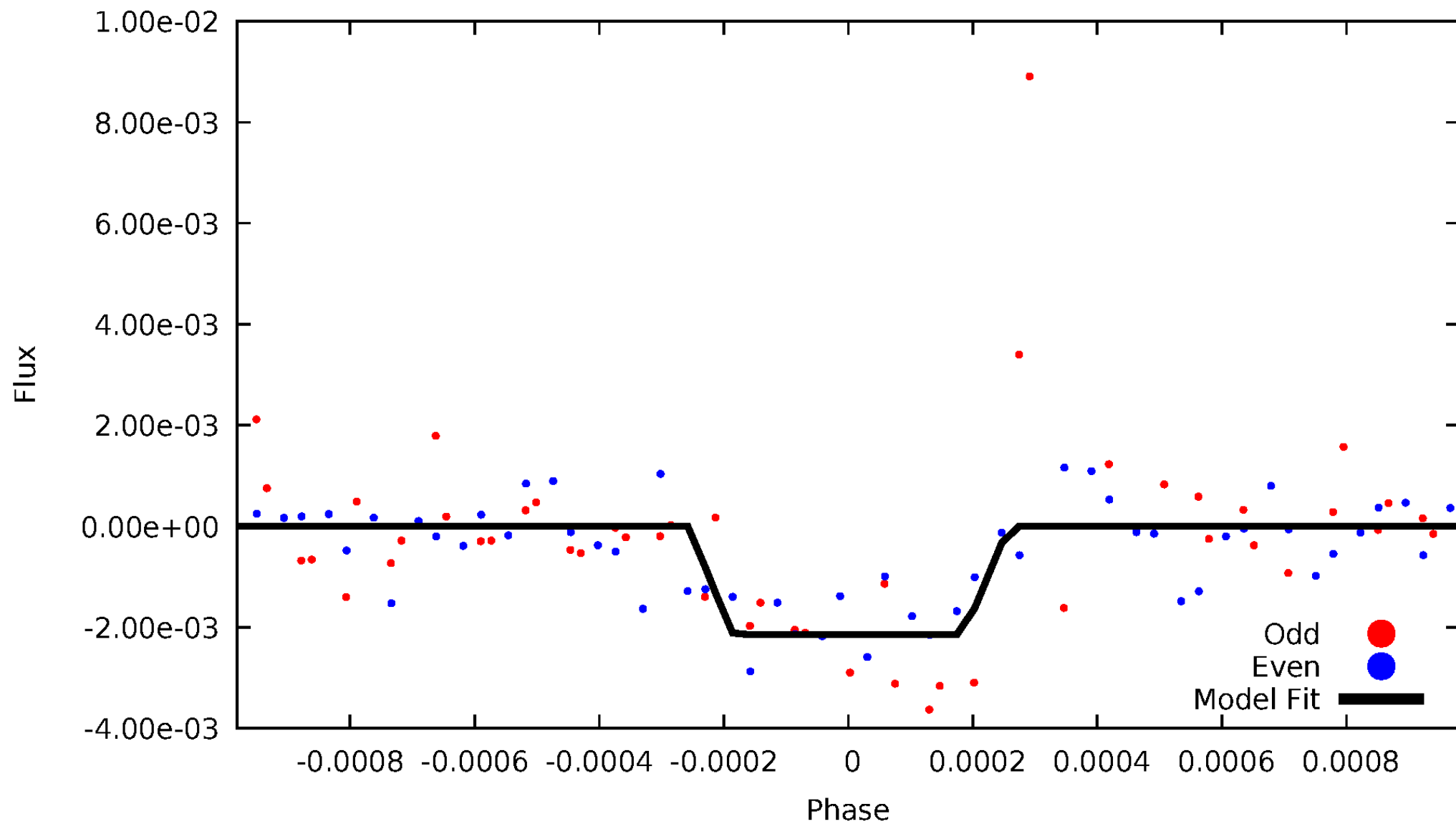
DV Odd/Even

TCE 005360129-05

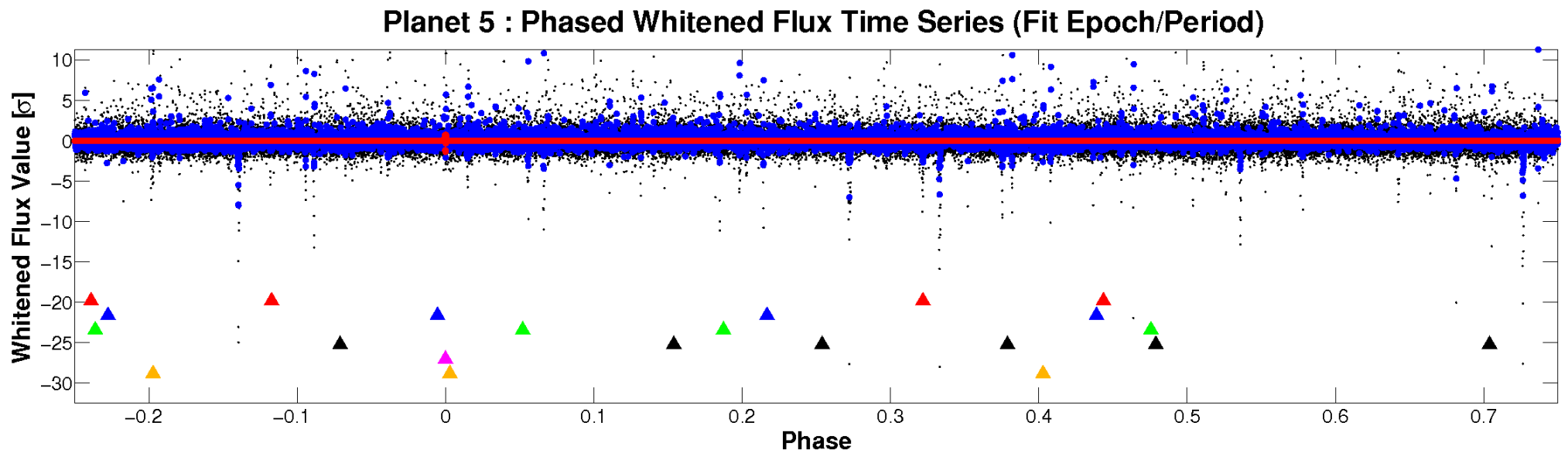
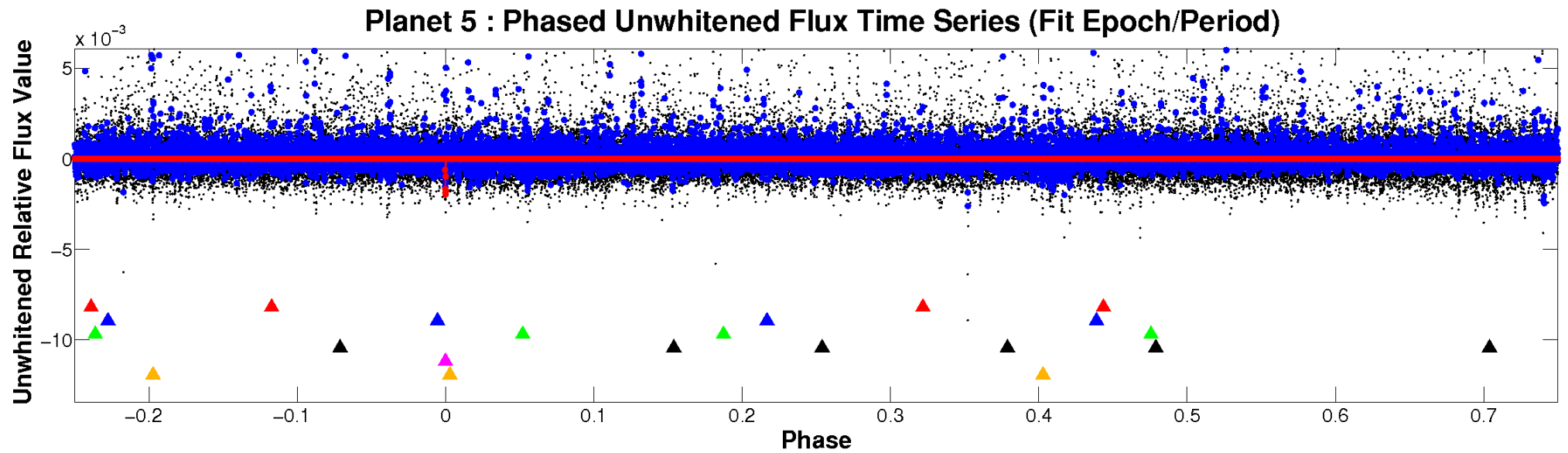


ALT Odd/Even

TCE 005360129-05

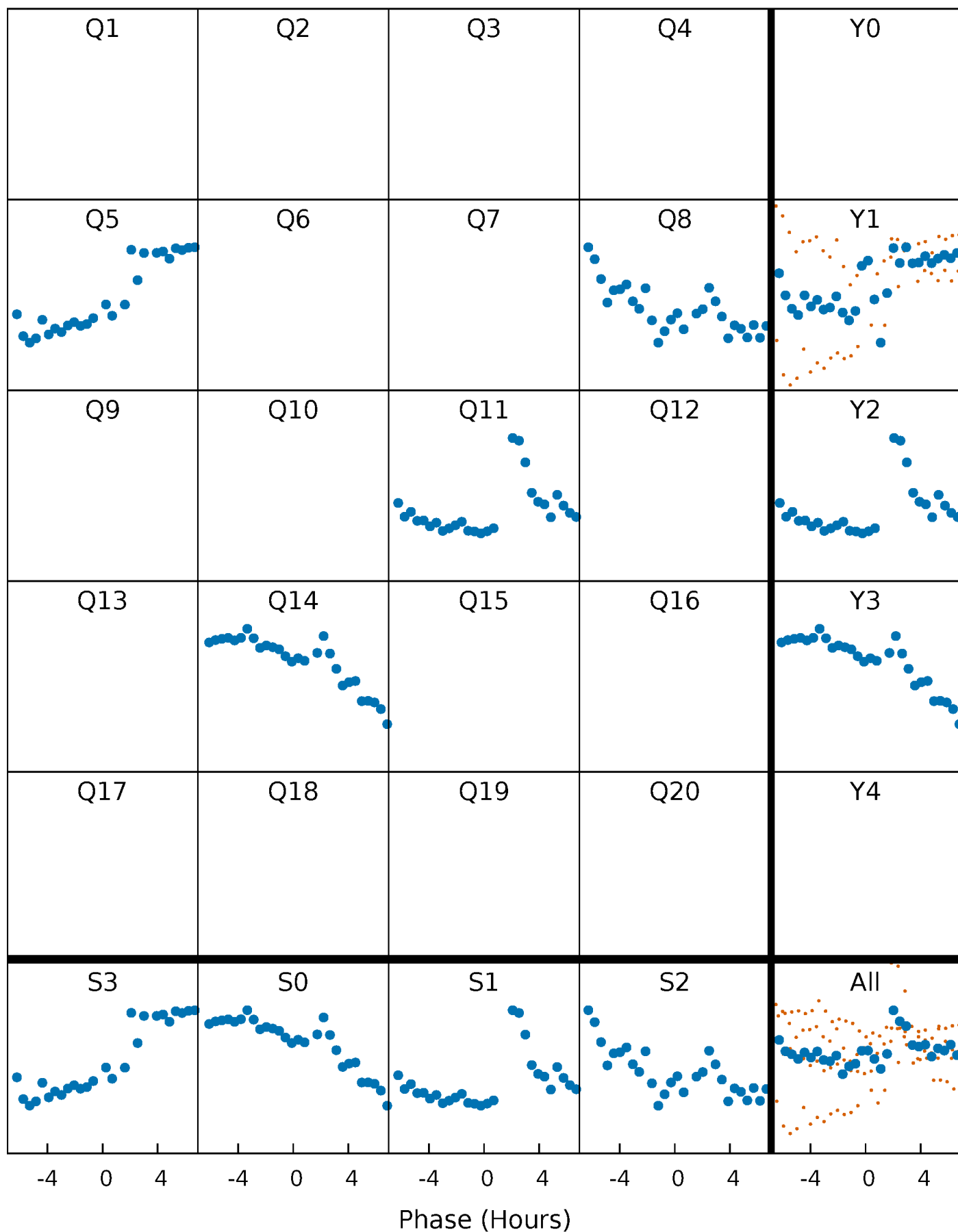


Non-Whitened Vs. Whitened Light Curve



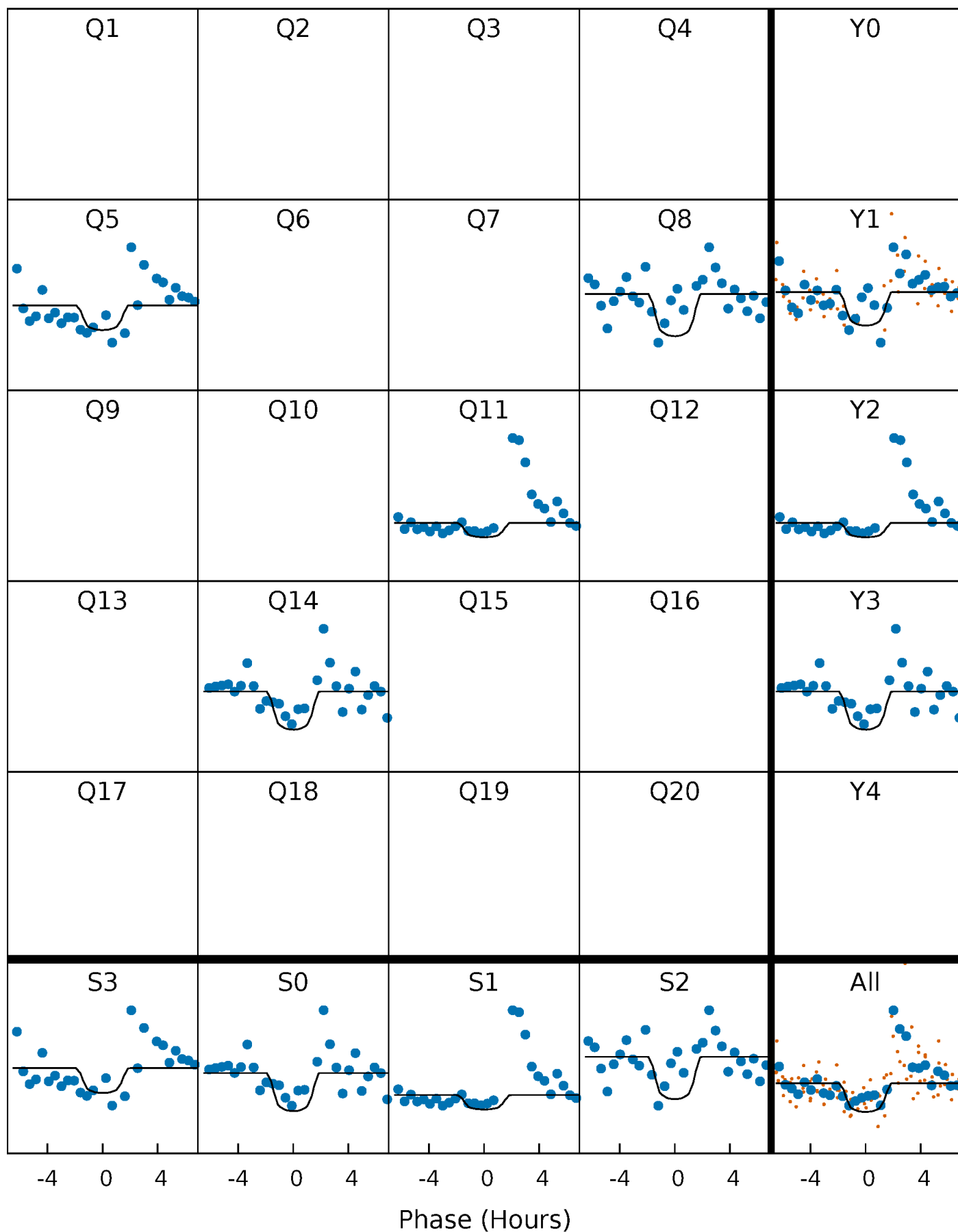
PDC Quarter-Phased Transit Curves

TCE 005360129-05 $P=283.555784$ Days $T_0=232.234665$ (BKJD)



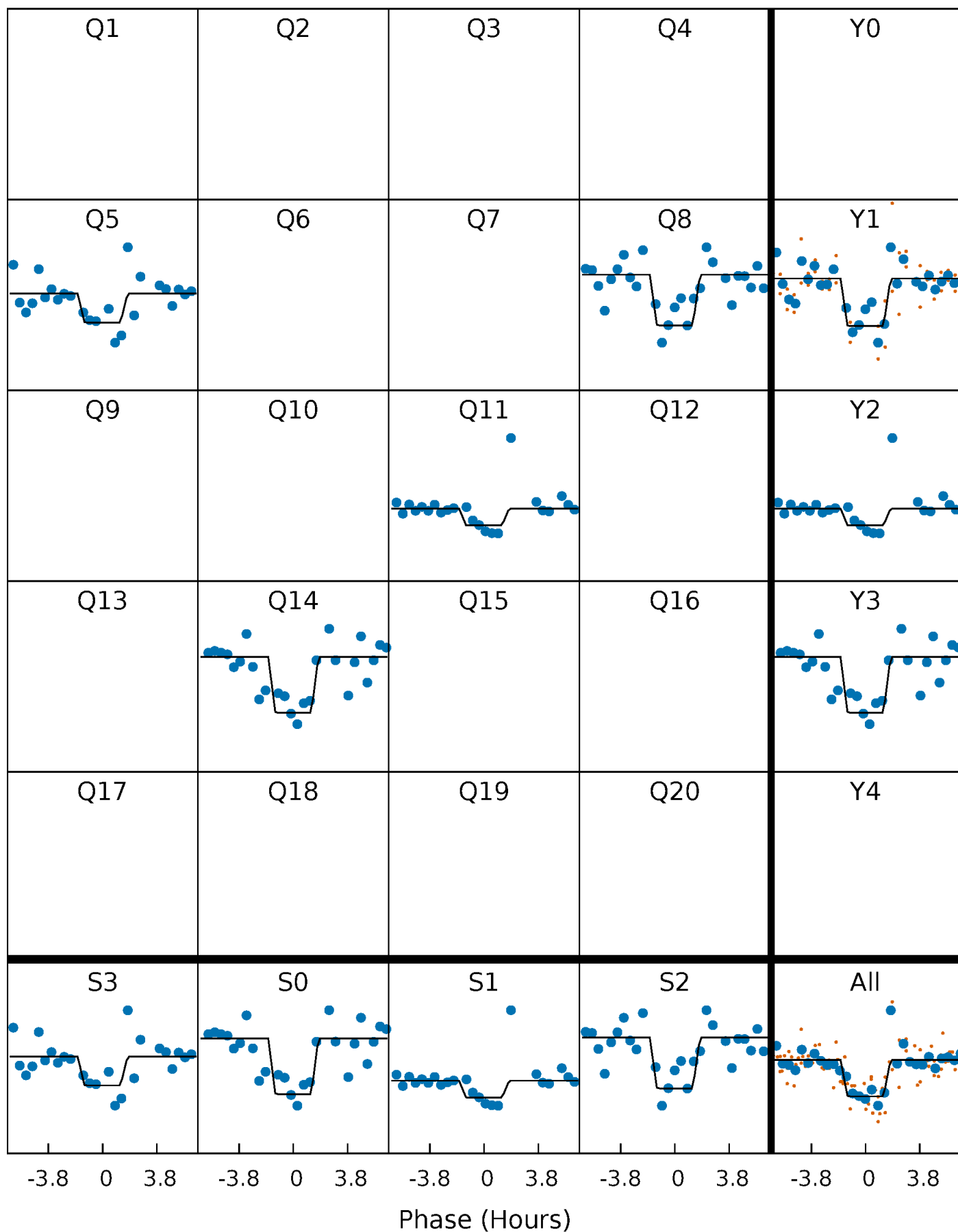
DV Quarter-Phased Transit Curves

TCE 005360129-05 $P=283.555784$ Days $T_0=232.234665$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

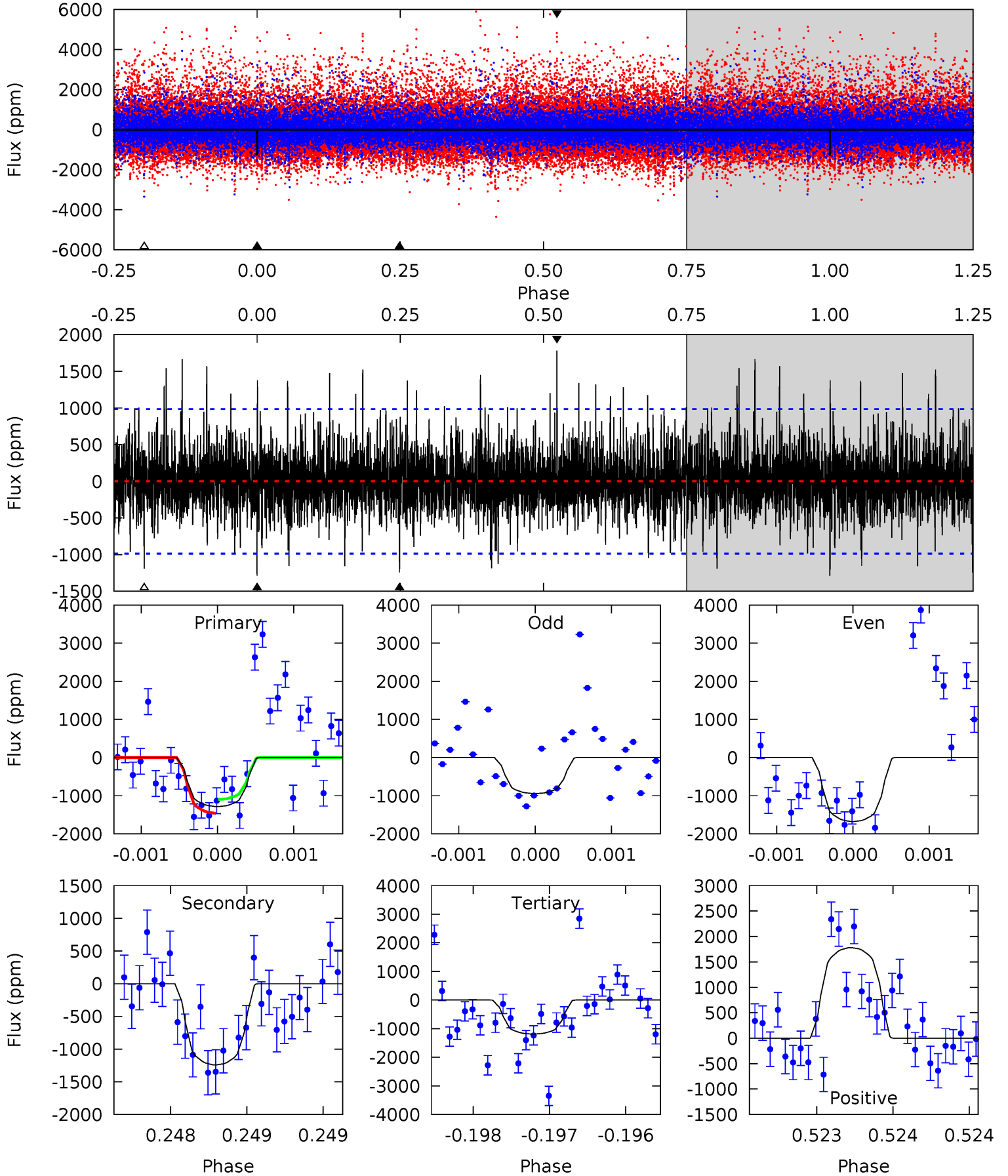
TCE 005360129-05 P=283.553167 Days $T_0=232.238196$ (BKJD)



DV Model-Shift Uniqueness Test

005360129-05, P = 283.555784 Days, E = 232.234665 Days

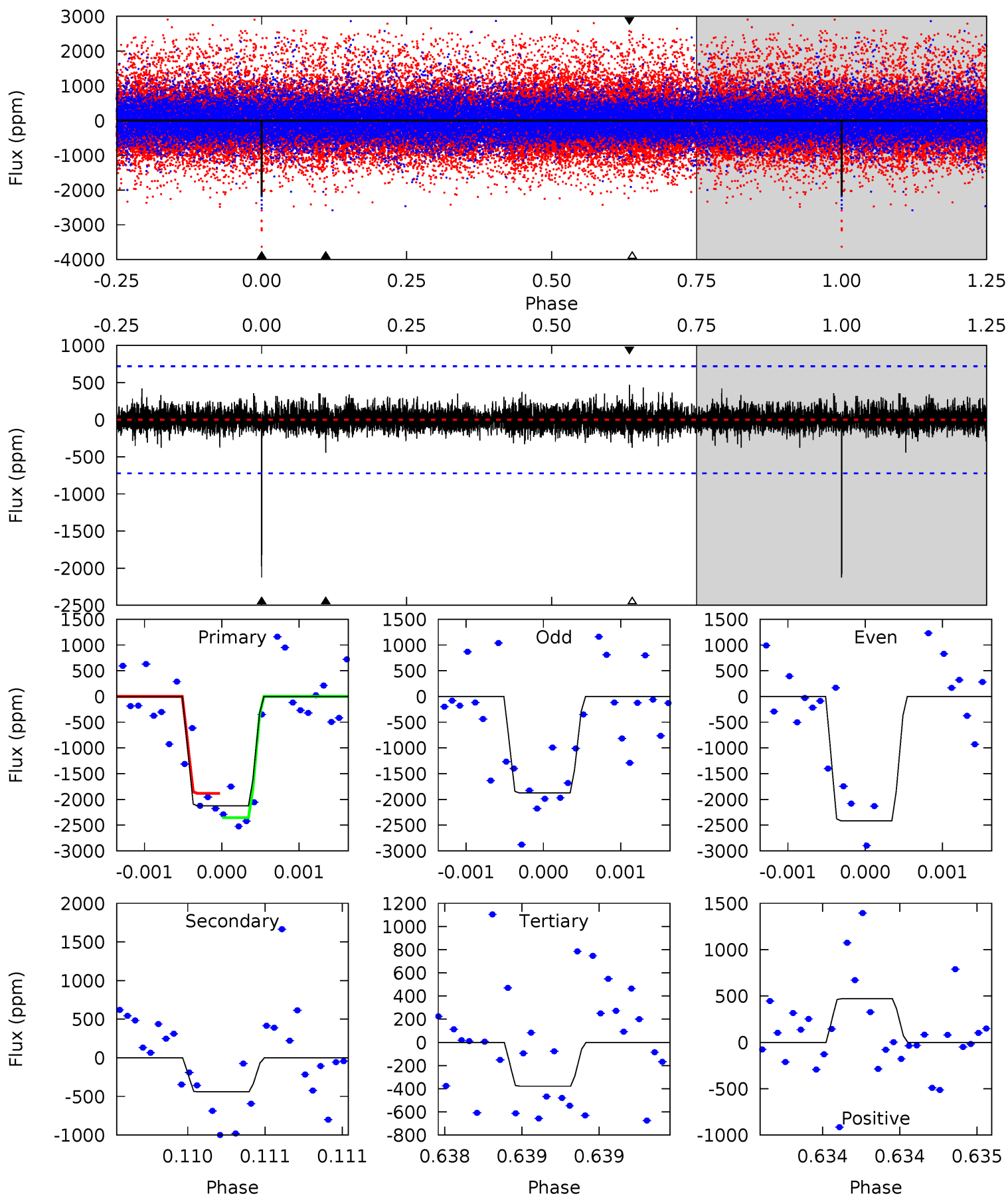
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.24	7.00	6.70	10.0	5.56	3.47	1.83	0.54	-2.80	0.30	-3.04	1.62	1.20	0.58	1.03



Alt Model-Shift Uniqueness Test

005360129-05, P = 283.553167 Days, E = 232.238196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	3.40	2.92	3.63	5.57	3.48	0.73	13.5	12.8	0.49	-0.23	2.07	1.01	0.18	1.82



Stellar Parameters For KIC 005360129

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3746^{+45}_{-50}	$4.736^{+0.033}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.510^{+0.020}_{-0.027}$	$0.516^{+0.026}_{-0.021}$	$5.482^{+0.725}_{-0.383}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005360129-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1242 ± 177	$2.67^{+1.55}_{-1.44}$	200^{+3}_{-3}	3375^{+1092}_{-426}	$43340^{+177008}_{-26389}$
Alt.	-441 ± 130	$2.64^{+1.61}_{-1.46}$	199^{+3}_{-3}	2898^{+811}_{-341}	15728^{+63451}_{-10014}

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 $A_{obs} \gg 1.0$

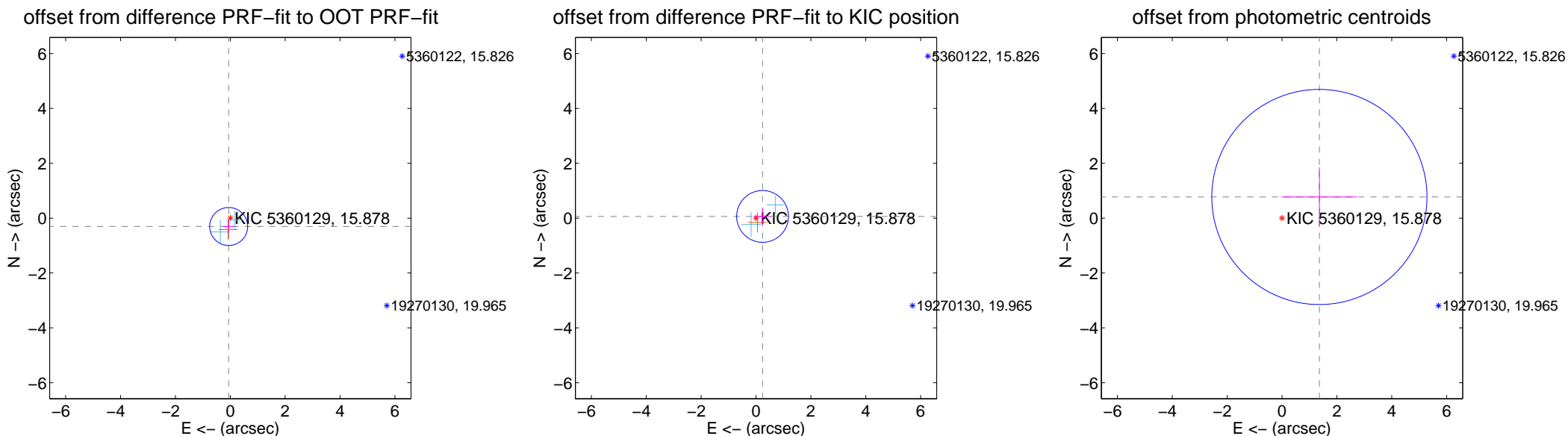
DV Centroid Data

Supplemental centroid analysis for 005360129-05. Kepler magnitude: 15.88. Transit SNR 6.04

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.310 ± 0.231	1.34	0.059 ± 0.208	-0.304 ± 0.232
PRF-fit source offset from KIC position	0.247 ± 0.315	0.78	-0.239 ± 0.315	0.062 ± 0.313
photometric centroid source offset	1.57 ± 1.31	1.20	-1.36 ± 1.37	0.77 ± 1.08

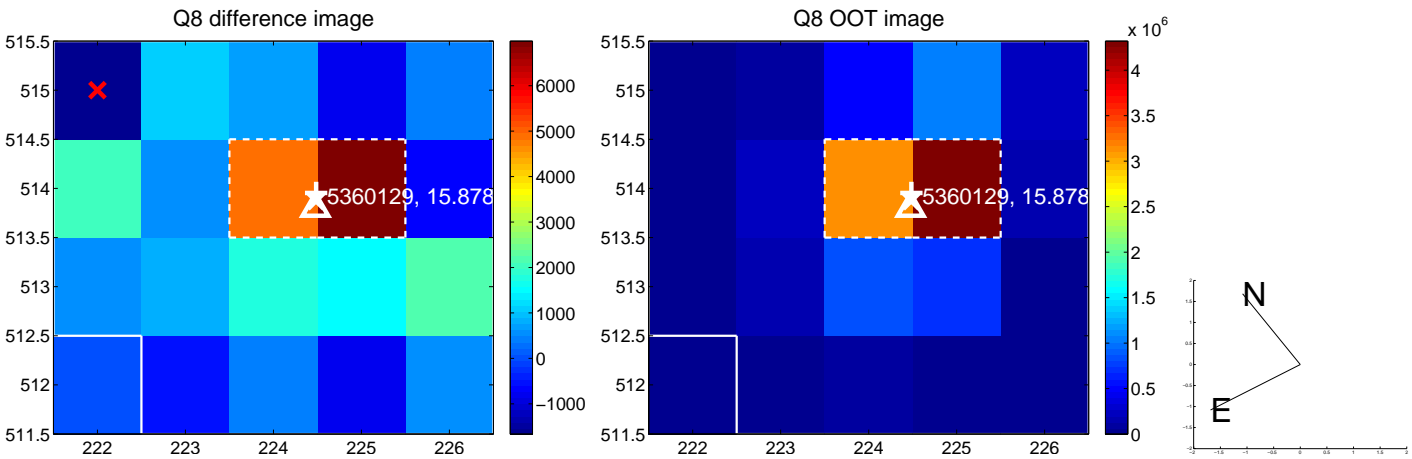
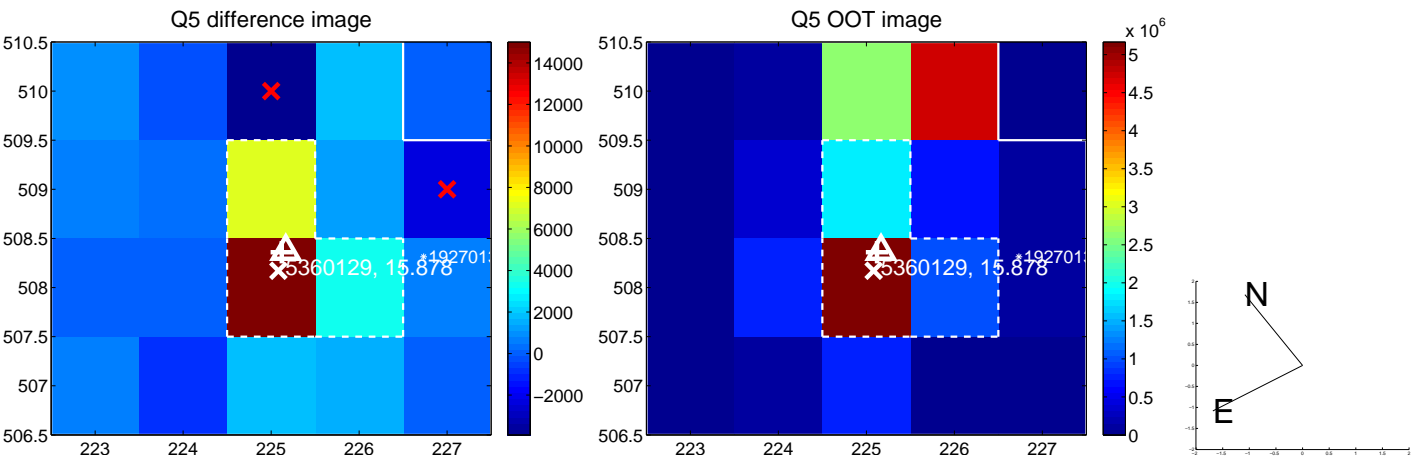


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



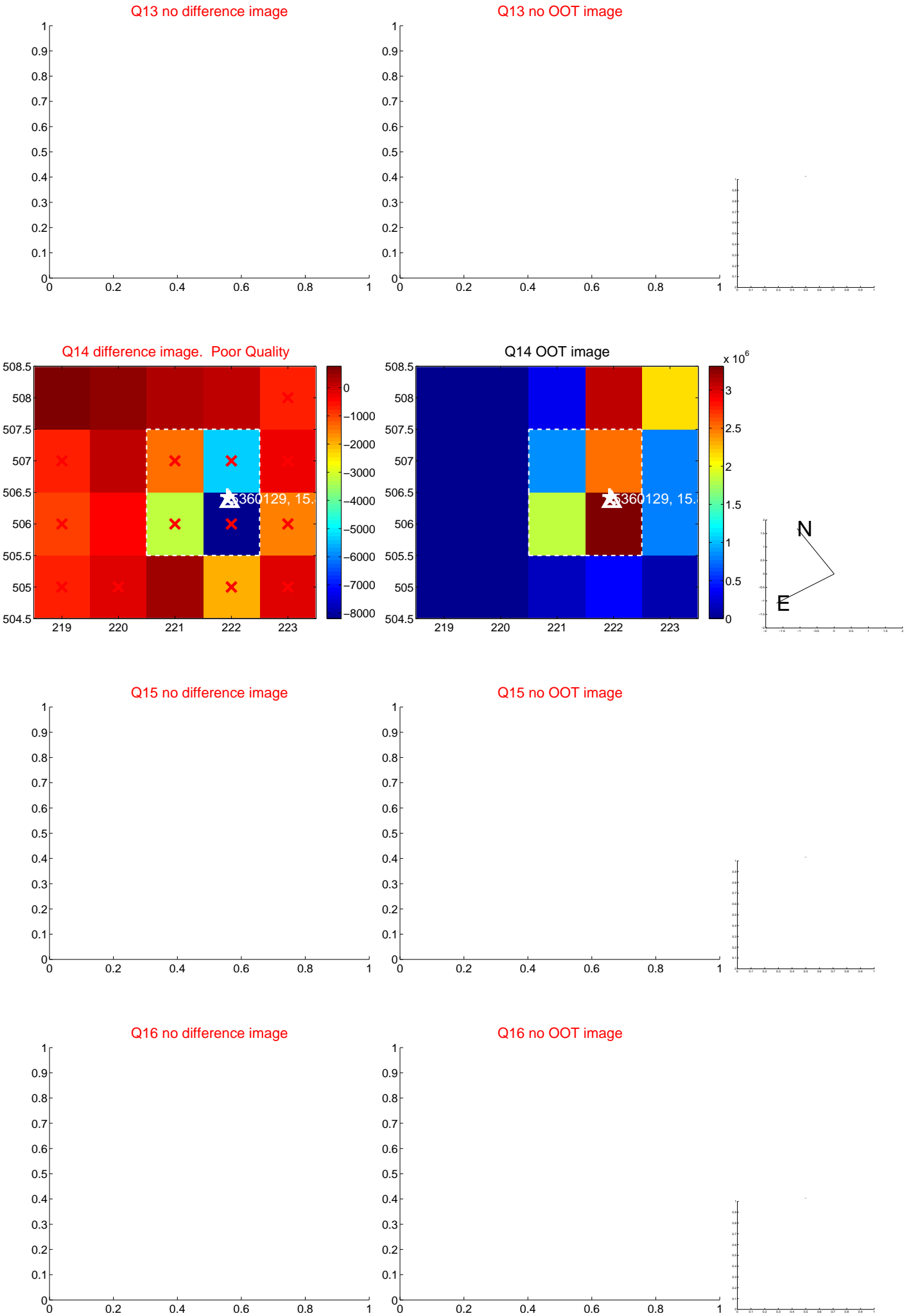
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



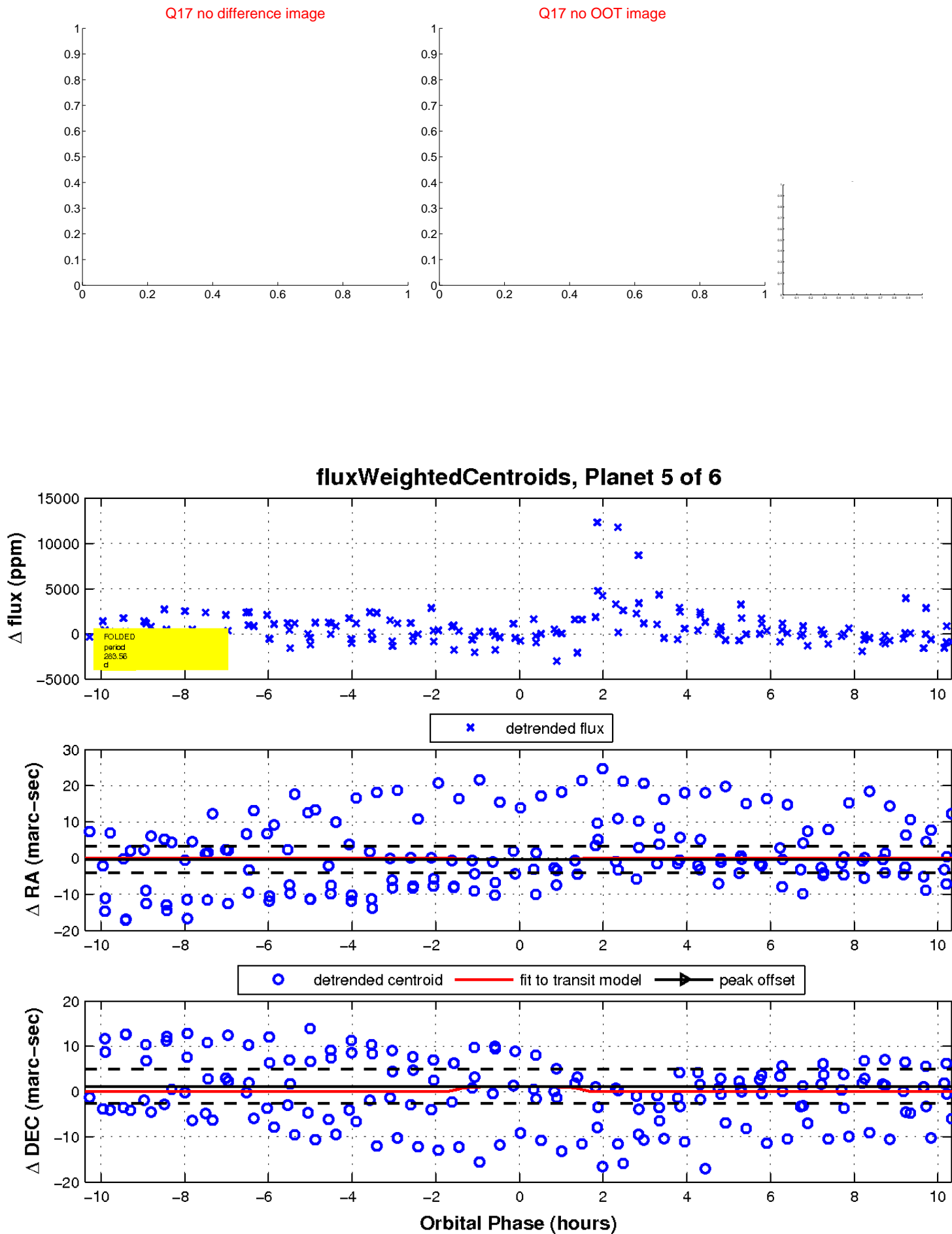
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

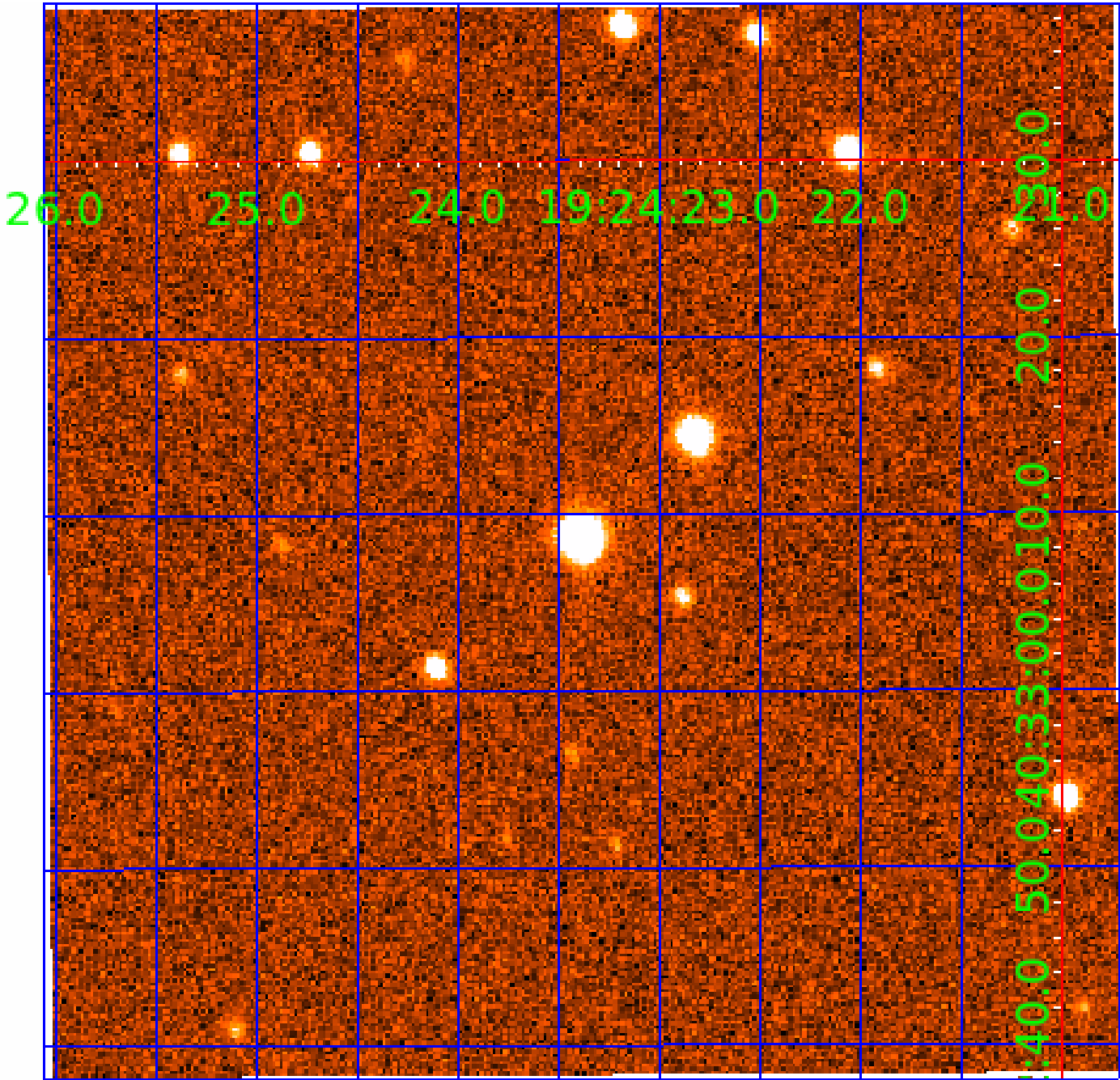


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005360129

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})
005360129-01	OBS	No	408.074942	358.029375	1621.7	4.960	13.0	4.6	0.51	3746	2.06	0.06
005360129-02	OBS	No	346.549555	451.273563	4005.9	15.956	12.2	7.6	0.51	3746	4.93	0.08
005360129-03	OBS	No	365.280099	285.378812	2760.2	6.908	10.2	6.5	0.51	3746	5.13	0.07
005360129-04	OBS	No	219.755949	339.682240	1623.0	4.066	9.9	5.6	0.51	3746	2.50	0.14
005360129-05	OBS	No	283.555784	232.234665	1971.8	3.460	10.0	6.0	0.51	3746	2.54	0.10
005360129-06	OBS	No	396.965694	516.625869	2551.8	3.000	11.3	-1.0	0.51	3746	2.54	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005360129-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005360129-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS—HALO_GHOST
005360129-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
005360129-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005360129-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_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.

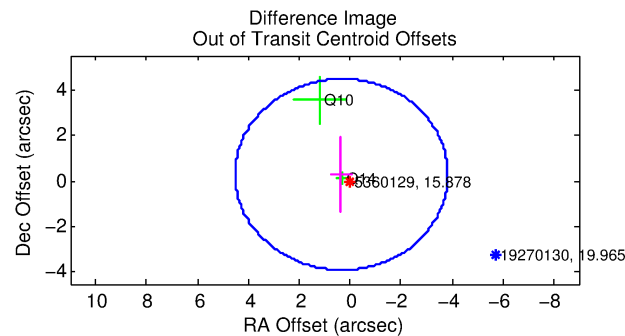
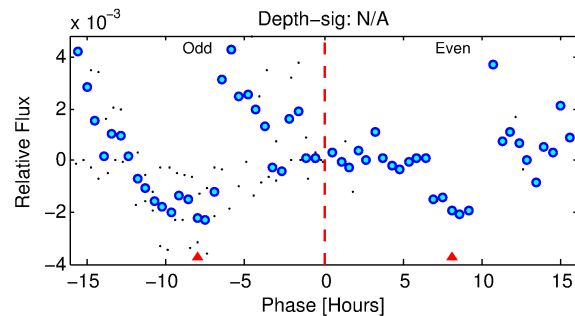
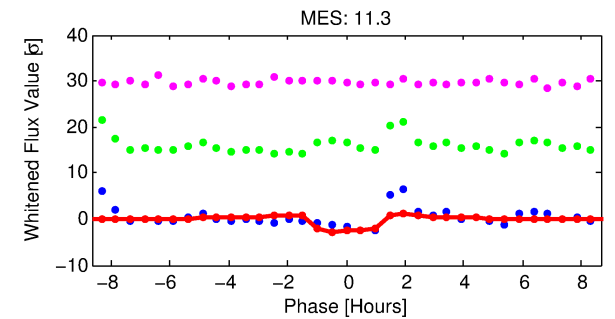
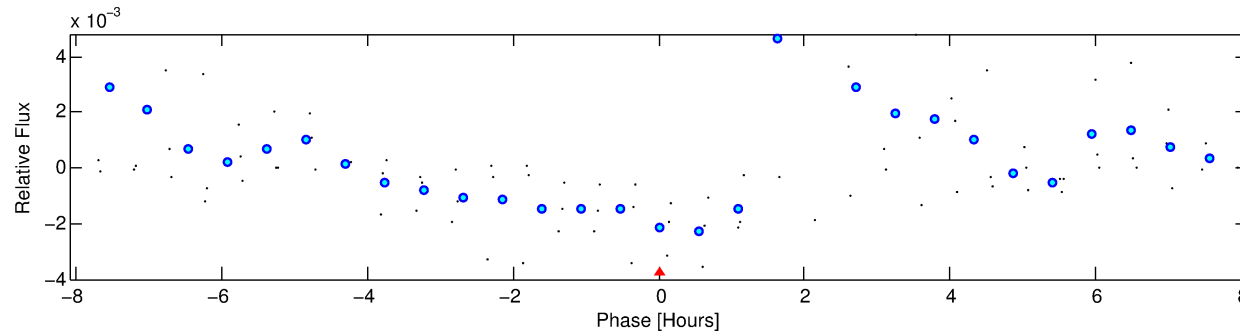
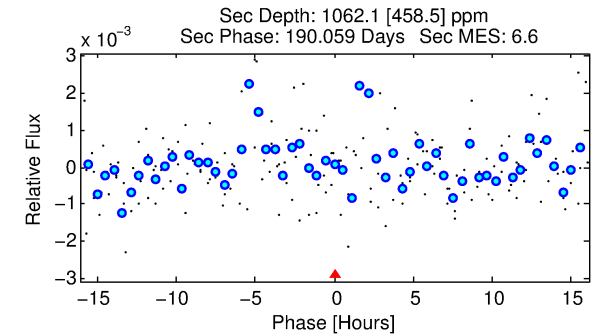
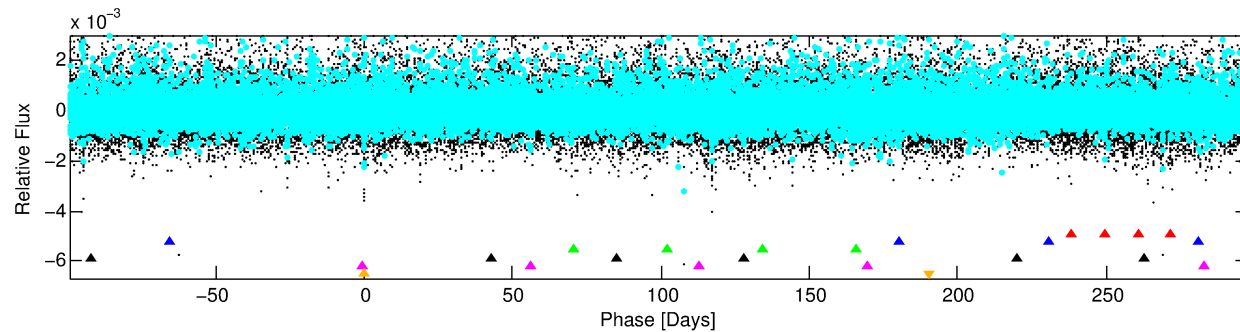
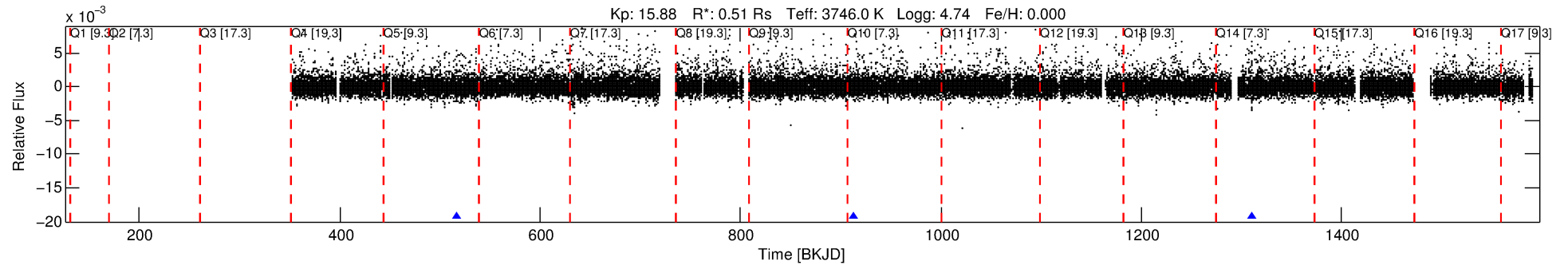
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005360129-06

No Significant Match Found

DV One-Page Summary

KIC: 5360129 Candidate: 6 of 6 Period: 396.966 d



TPS TCE Results:

Period = 396.96569 d
Epoch = 516.6259 BKJD

DV fit results are unavailable

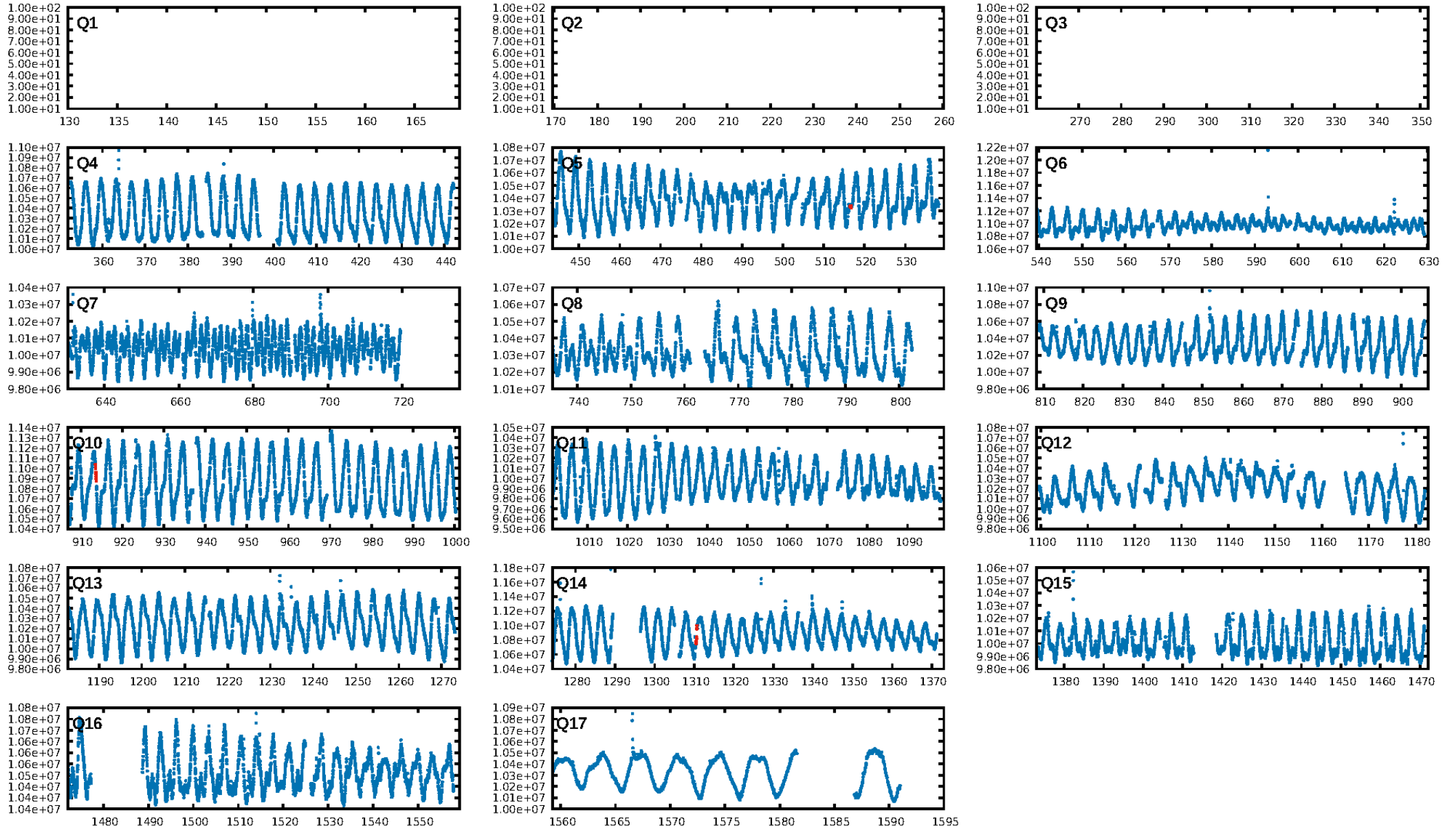
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [100.97σ]
LongPeriod-sig: 100.0% [45.99σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.9214
Centroid-sig: 7.5%
Centroid-so: 0.923 arcsec [0.70σ]
OotOffset-rm: 0.449 arcsec [0.32σ]
KicOffset-rm: 0.496 arcsec [0.36σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

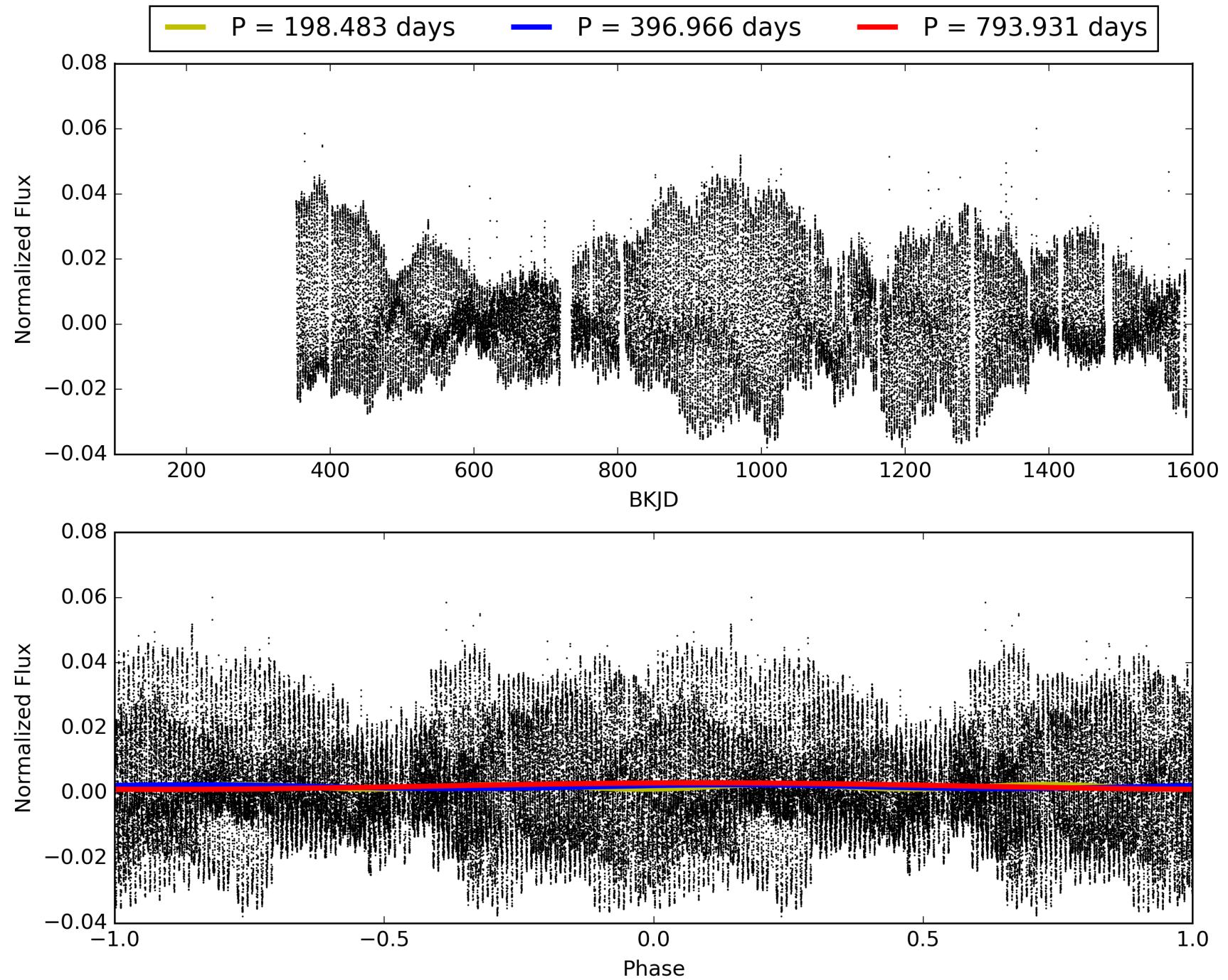
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:55:24 Z

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

TCE 005360129-06, PDC Light Curves

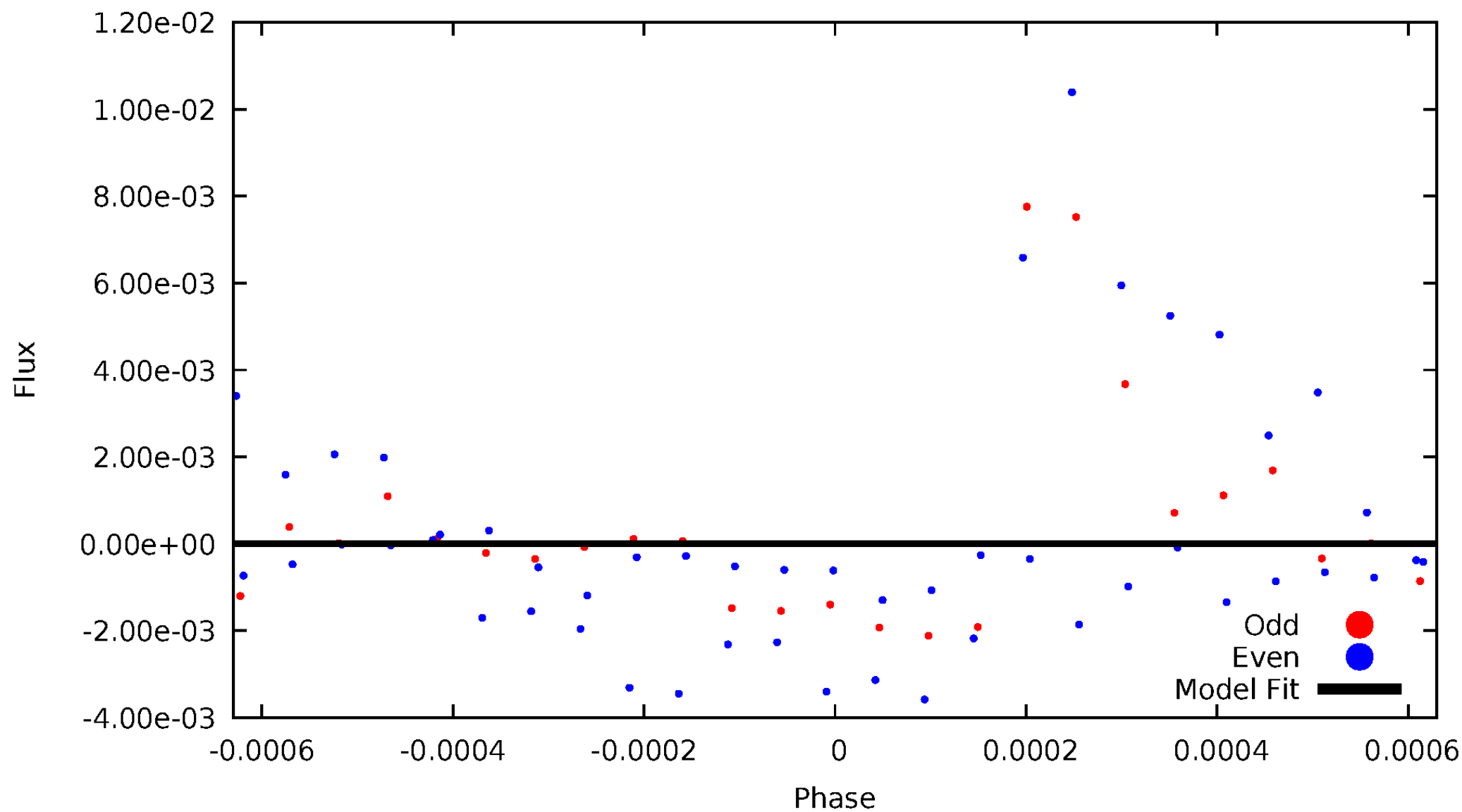


TCE 005360129-06



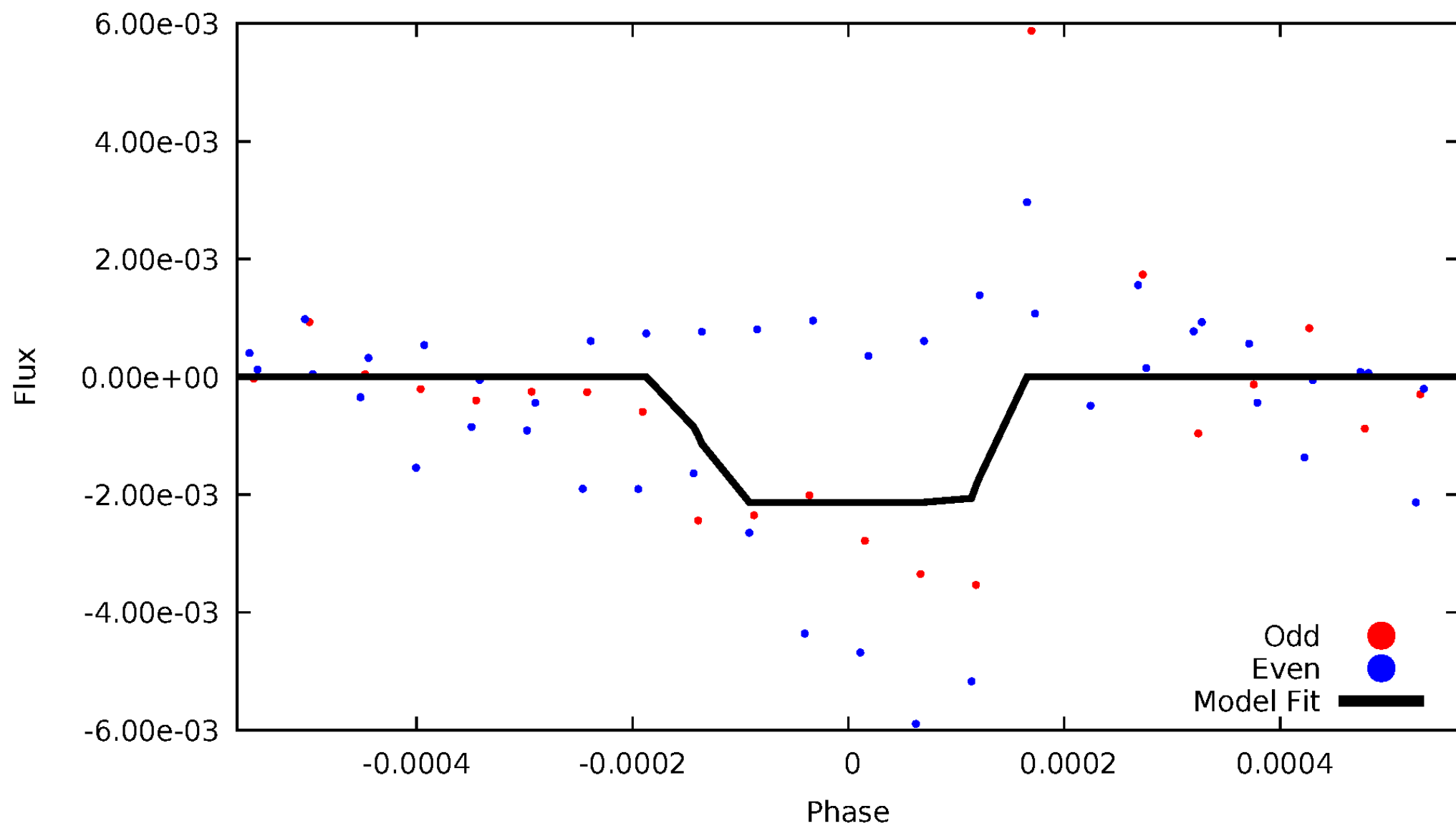
DV Odd/Even

TCE 005360129-06



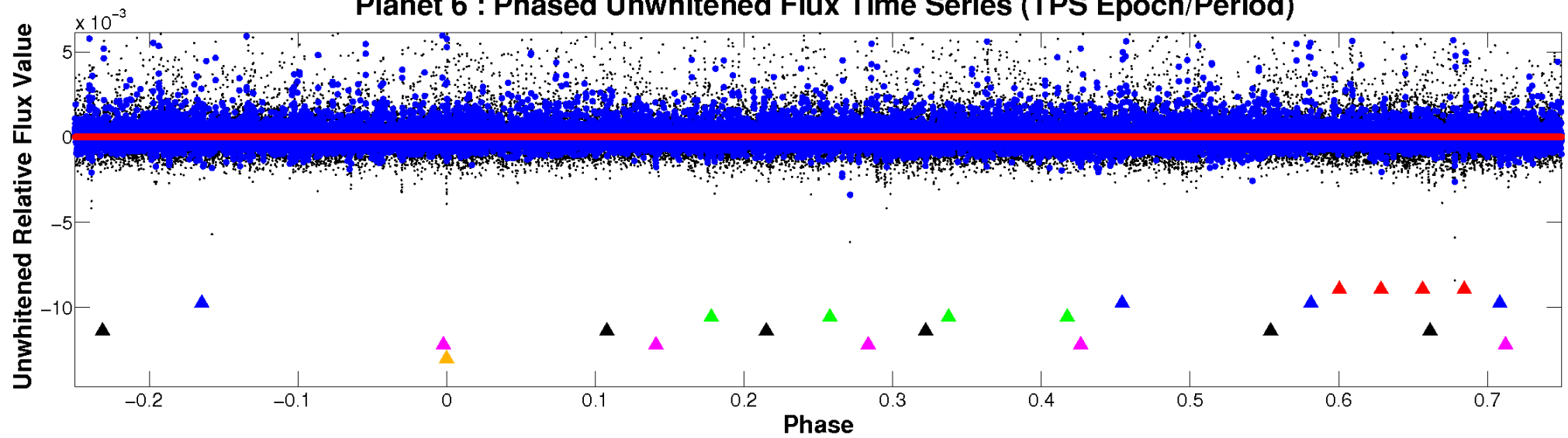
ALT Odd/Even

TCE 005360129-06

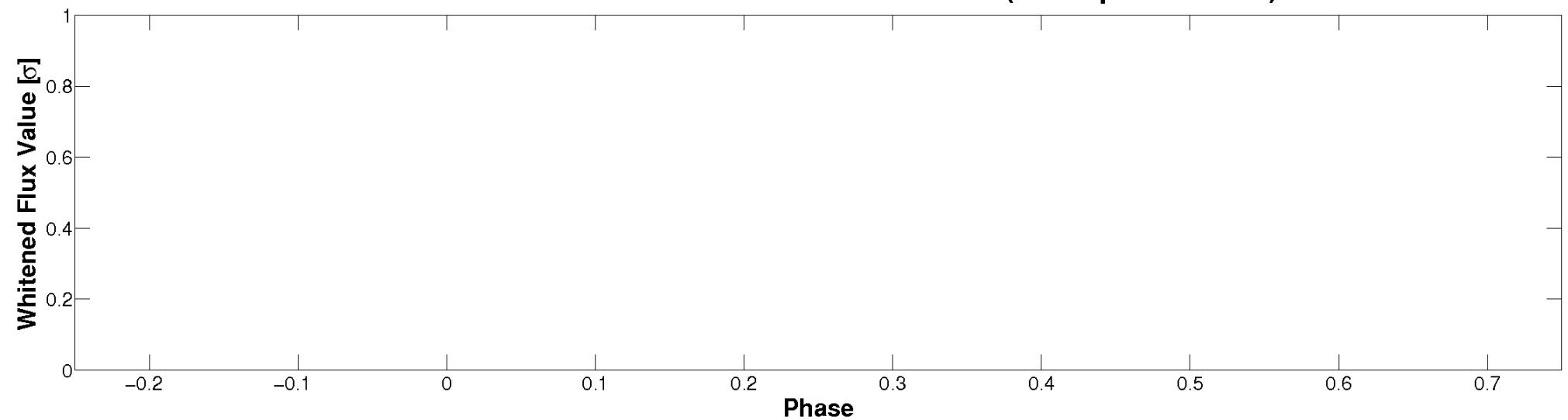


Non-Whitened Vs. Whitened Light Curve

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

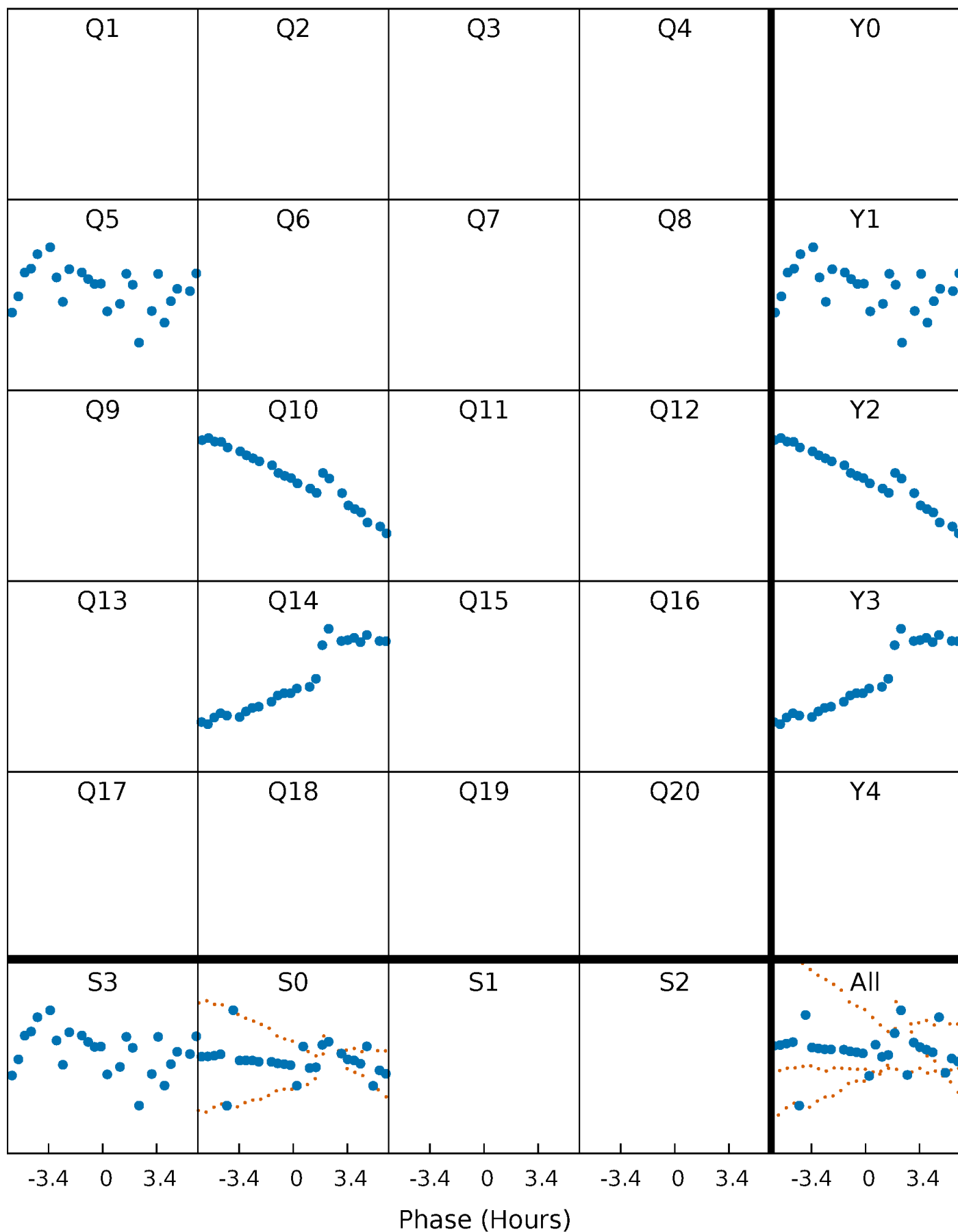


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



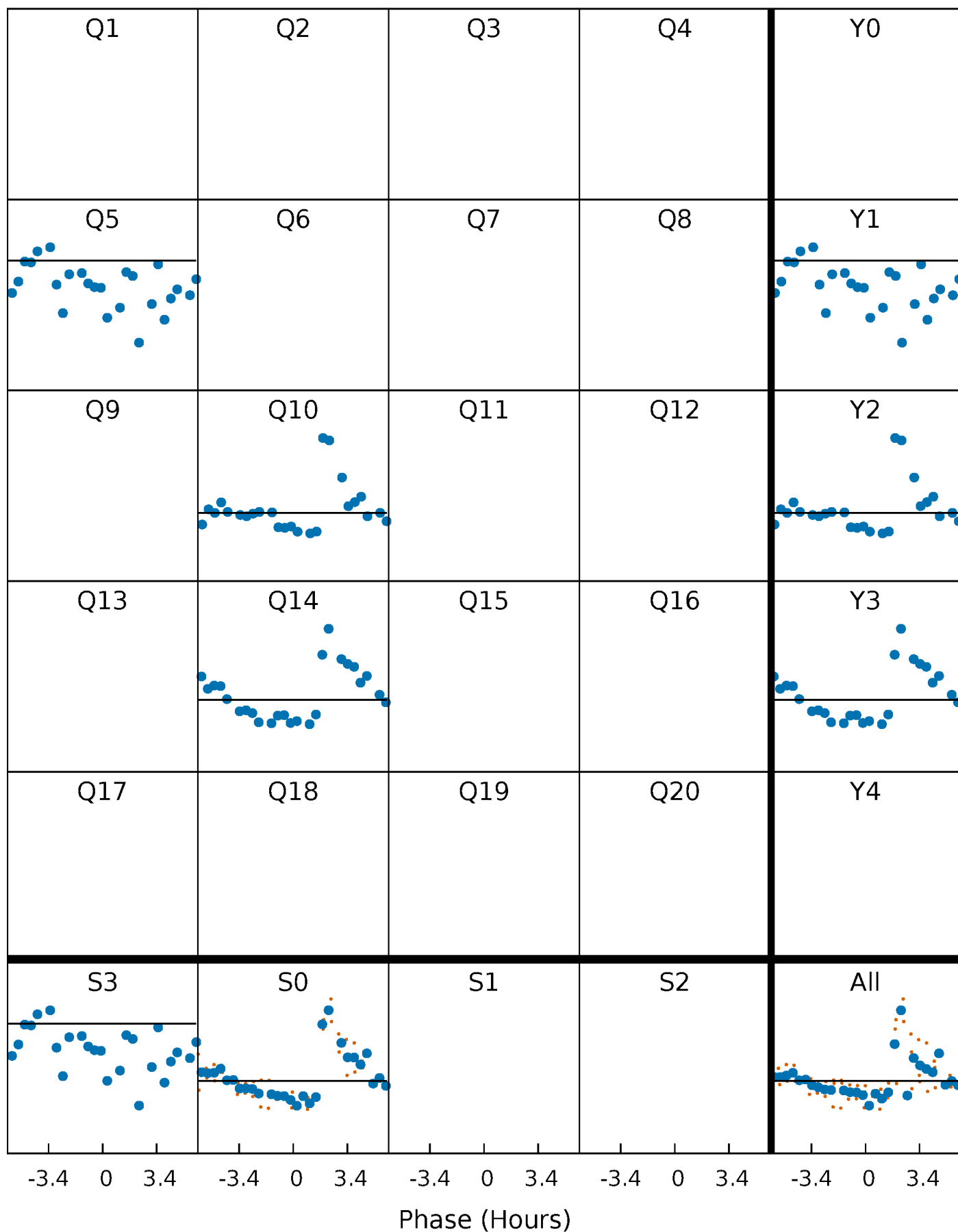
PDC Quarter-Phased Transit Curves

TCE 005360129-06 P=396.965694 Days $T_0=516.625869$ (BKJD)



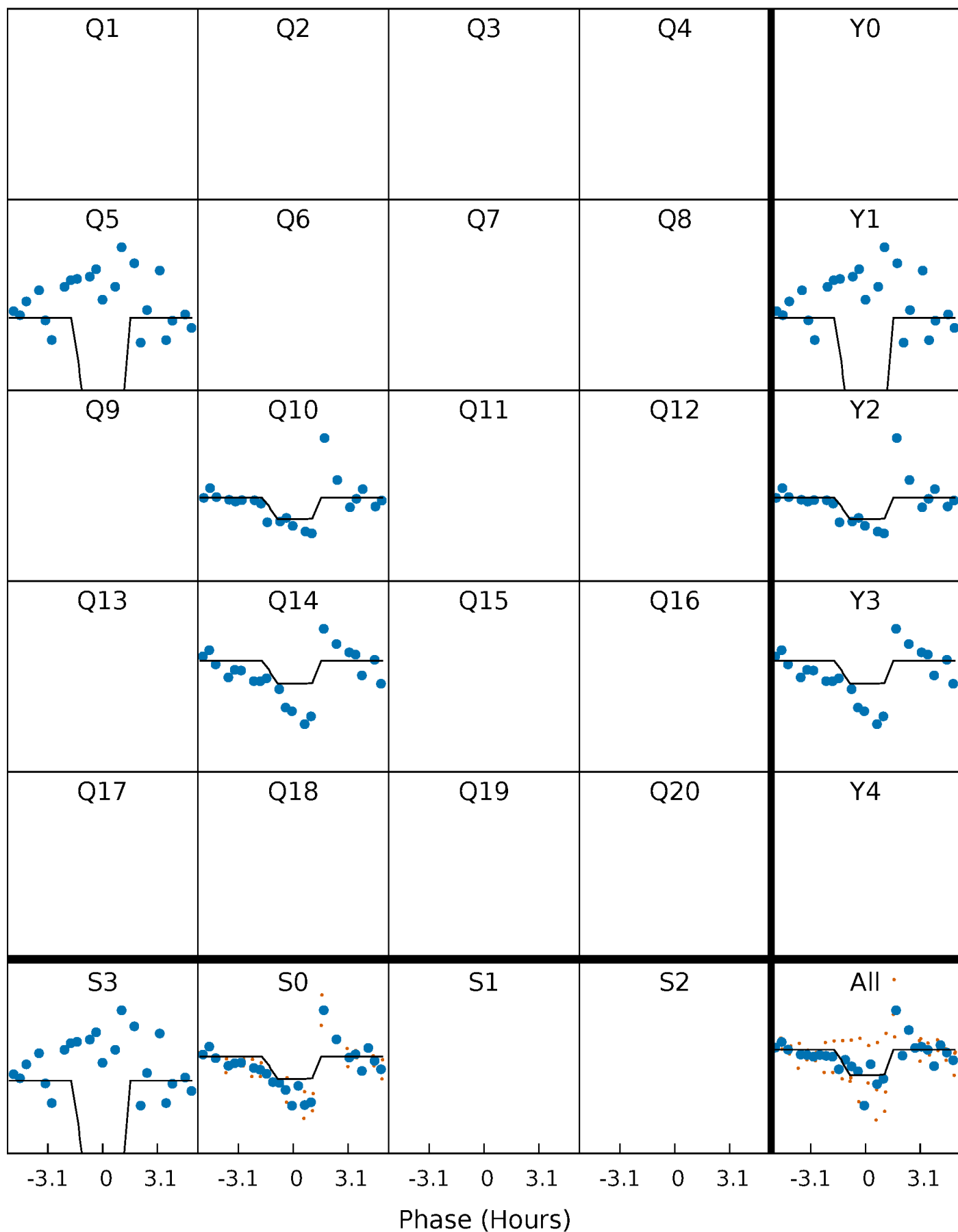
DV Quarter-Phased Transit Curves

TCE 005360129-06 $P=396.965694$ Days $T_0=516.625869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

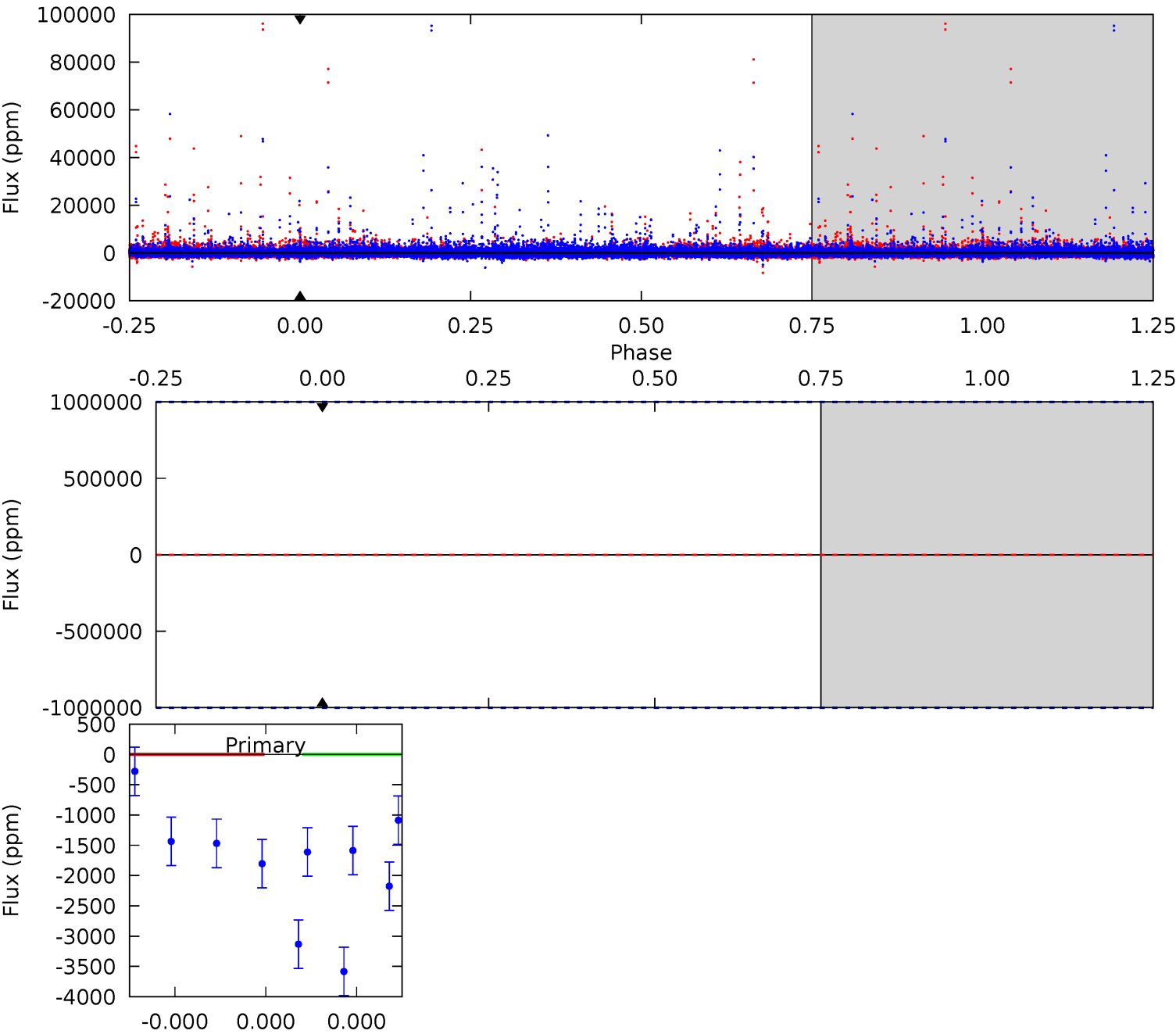
TCE 005360129-06 P=396.965694 Days $T_0=516.638221$ (BKJD)



DV Model-Shift Uniqueness Test

005360129-06, P = 396.965694 Days, E = 119.660175 Days

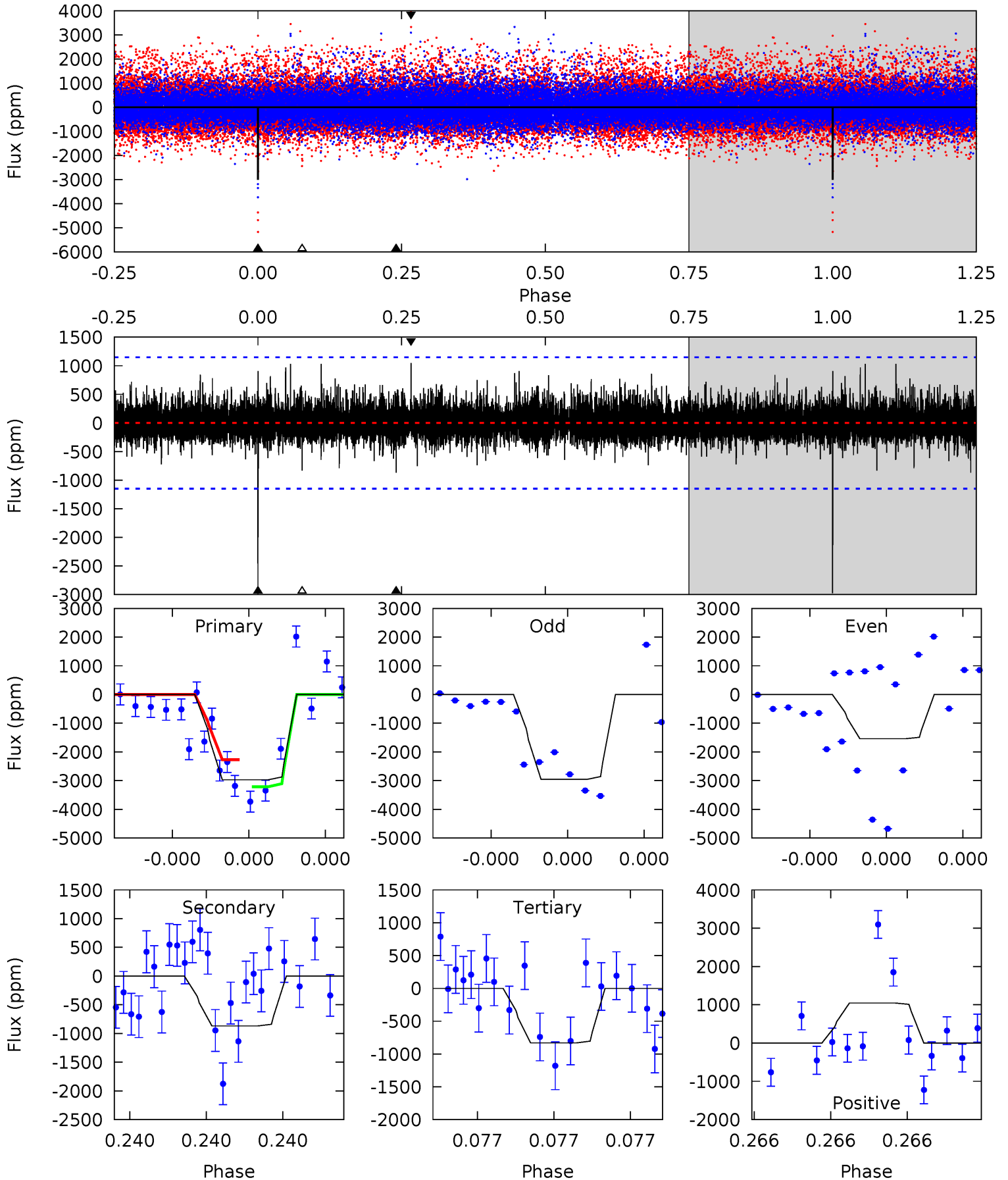
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005360129-06, P = 396.965694 Days, E = 119.672527 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	4.30	4.12	5.18	5.68	3.65	0.92	10.6	9.54	0.19	-0.88	4.14	0.75	0.26	2.28



Stellar Parameters For KIC 005360129

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3746^{+45}_{-50}	$4.736^{+0.033}_{-0.015}$	$0.000^{+0.100}_{-0.100}$	$0.510^{+0.020}_{-0.027}$	$0.516^{+0.026}_{-0.021}$	$5.482^{+0.725}_{-0.383}$
	+1%/-1%	+1%/-0%	+inf%/-inf%	+4%/-5%	+5%/-4%	+13%/-7%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 005360129-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$4.97^{+4.62}_{-3.35}$	178^{+3}_{-3}	-2503^{+9950}_{-4900}	$-7265.041^{+2966098.372}_{-2892145.249}$
Alt.	-869 ± 202	$5.08^{+4.91}_{-3.36}$	178^{+3}_{-3}	2670^{+986}_{-381}	12876^{+99728}_{-9306}

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

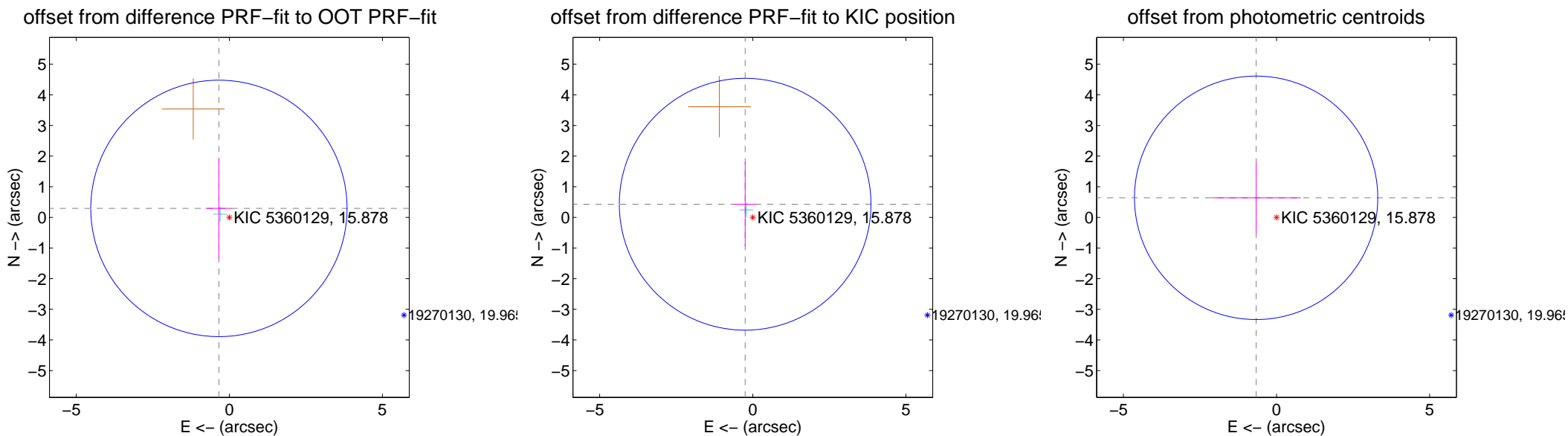
DV Centroid Data

Supplemental centroid analysis for 005360129-06. Kepler magnitude: 15.88. 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 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.449 ± 1.395	0.32	0.340 ± 0.426	0.293 ± 1.646
PRF-fit source offset from KIC position	0.496 ± 1.370	0.36	0.250 ± 0.365	0.429 ± 1.376
photometric centroid source offset	0.92 ± 1.32	0.70	0.67 ± 1.45	0.64 ± 1.17

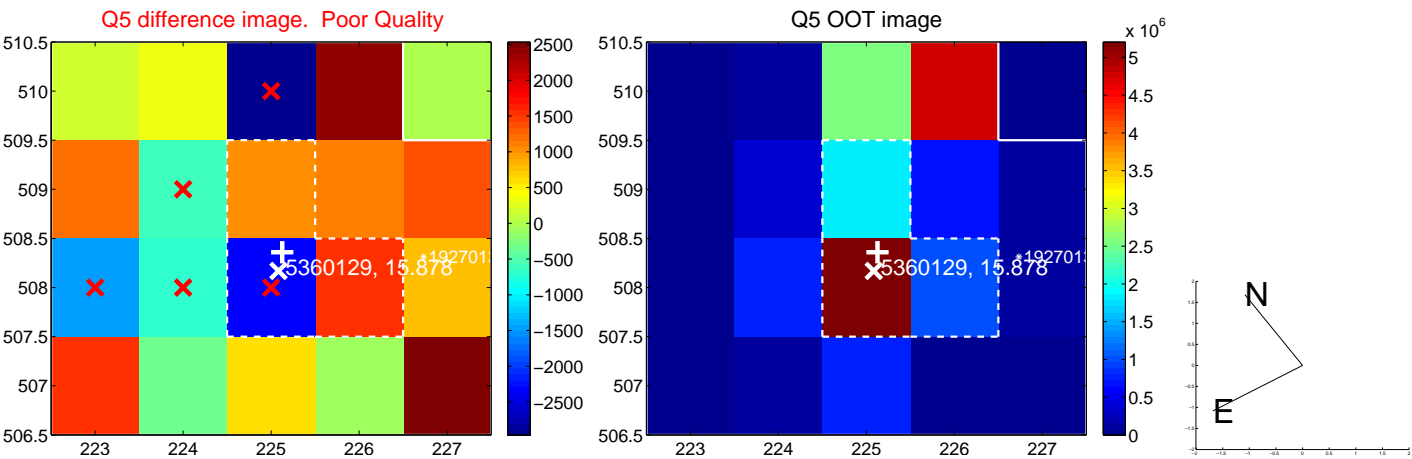


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

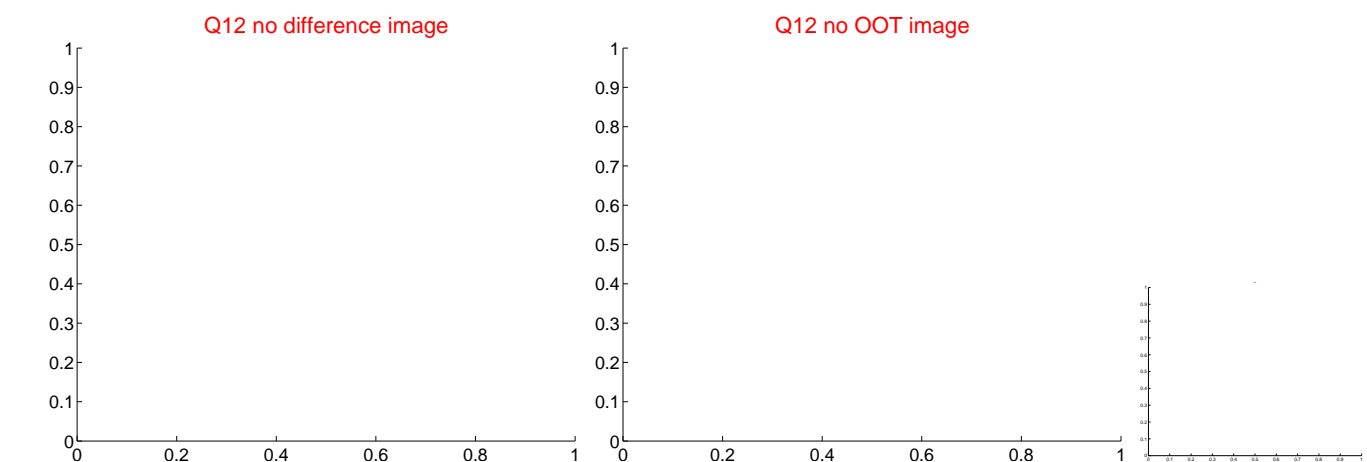
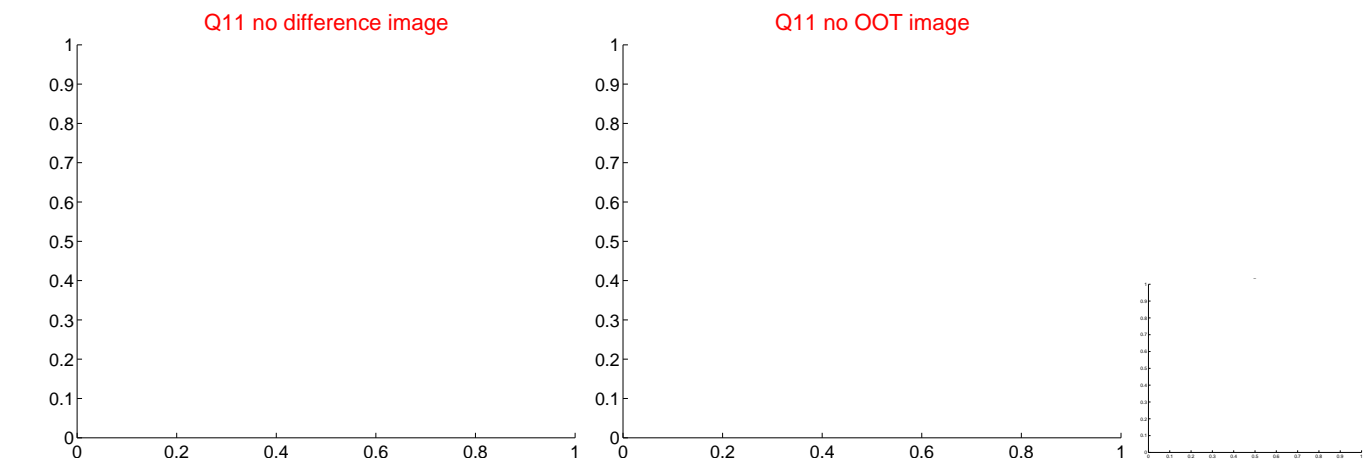
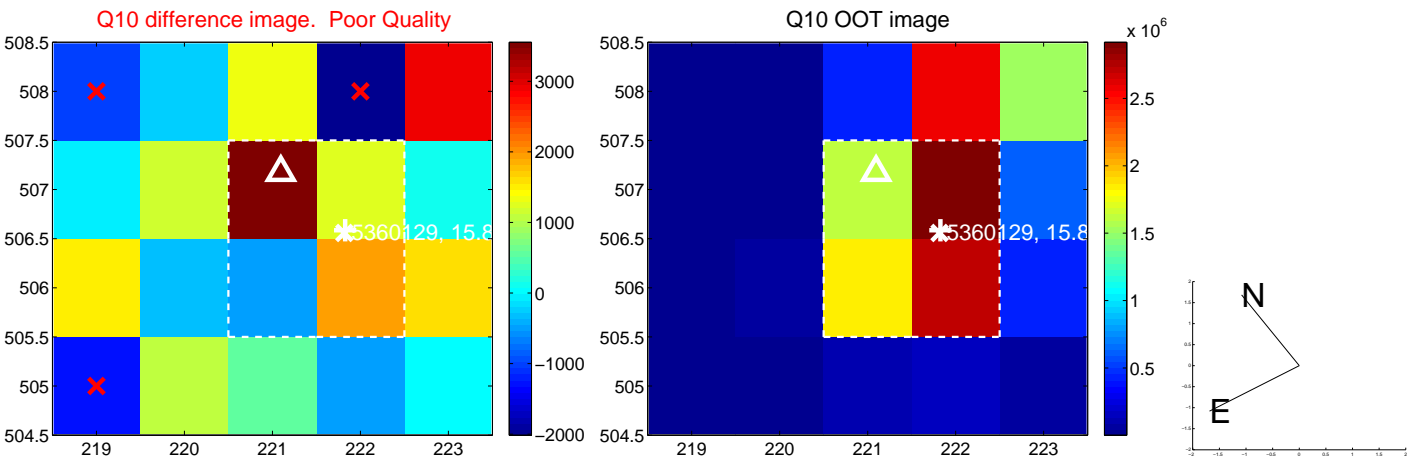
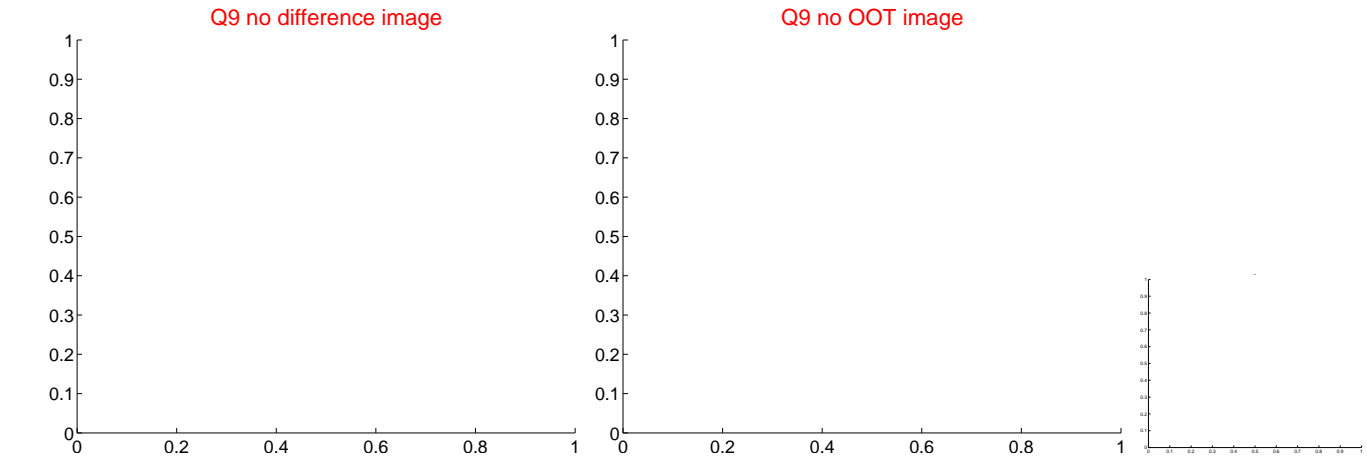
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



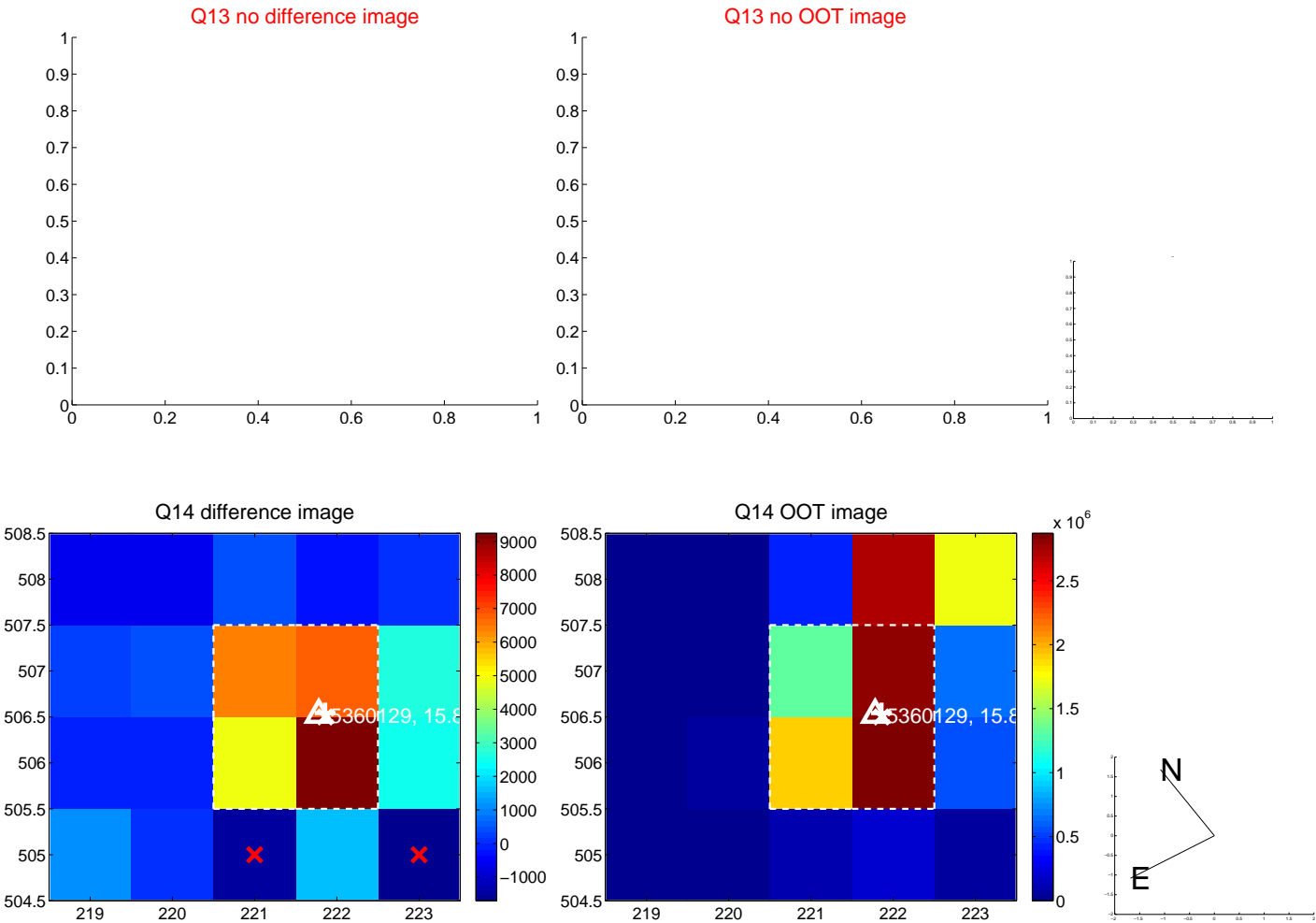
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



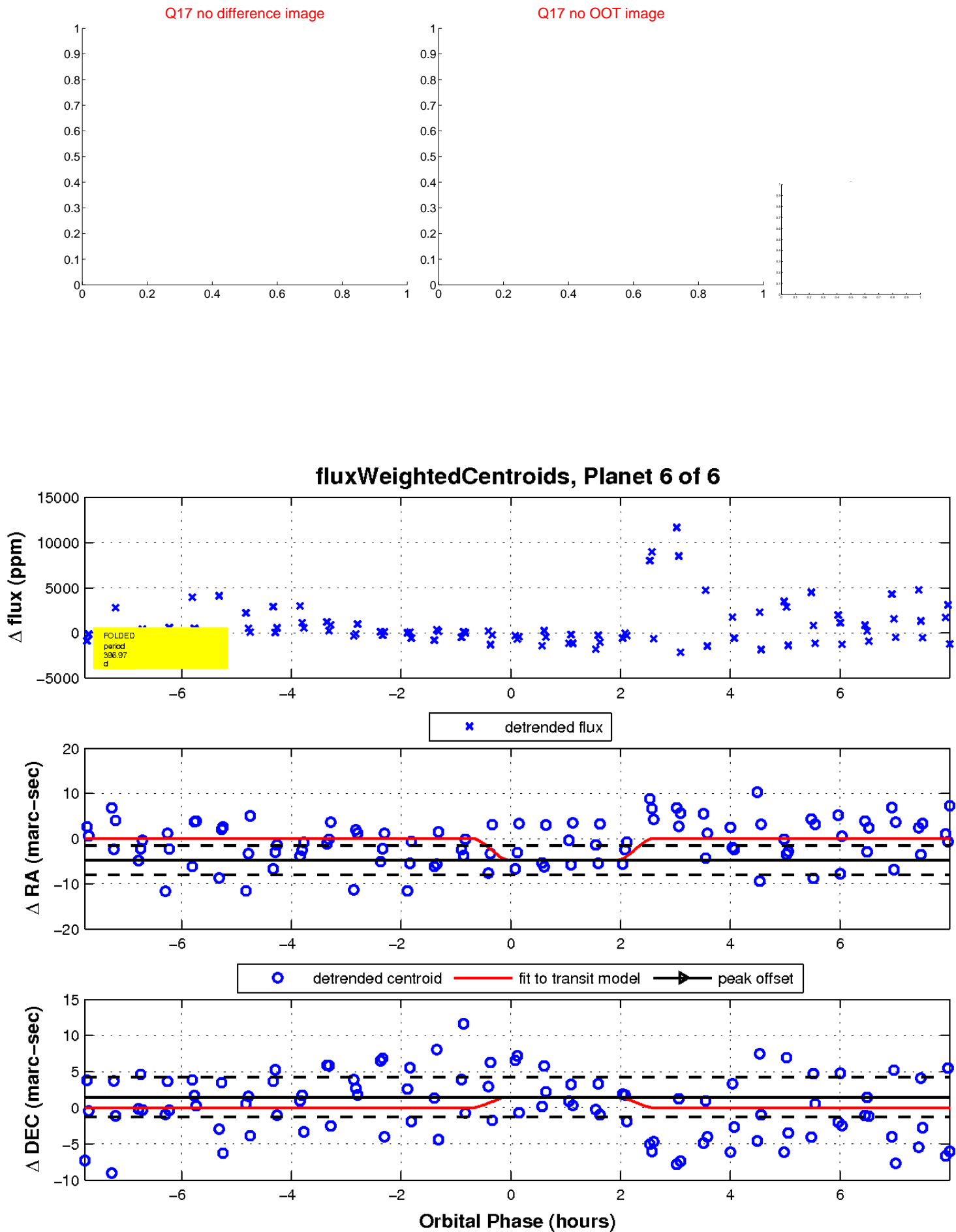
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

