

KIC 010817620

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})
010817620-01	OBS	No	1.473088	132.237872	13.4	2.560	10.9	1.8	2.77	8239	1.36	32909.56
010817620-02	OBS	No	2.945410	134.055955	230.0	14.215	9.7	12.0	2.77	8239	5.23	13064.70
010817620-03	OBS	No	44.260716	134.222375	686.2	7.793	13.7	8.8	2.77	8239	10.83	352.32
010817620-04	OBS	No	138.595003	194.015148	253.1	4.344	13.3	3.4	2.77	8239	4.90	76.91
010817620-05	OBS	No	138.572114	193.538093	479.3	5.399	13.5	4.9	2.77	8239	6.66	76.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010817620-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
010817620-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010817620-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010817620-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
010817620-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD

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

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

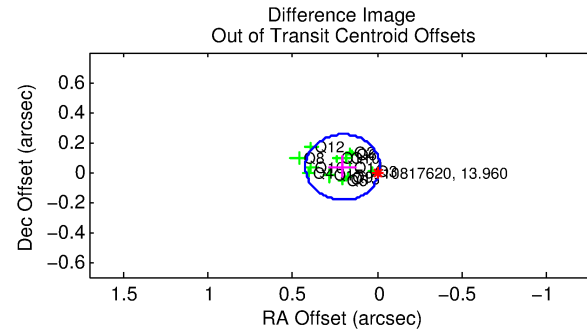
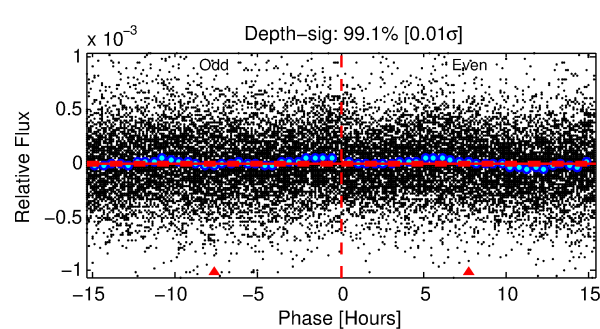
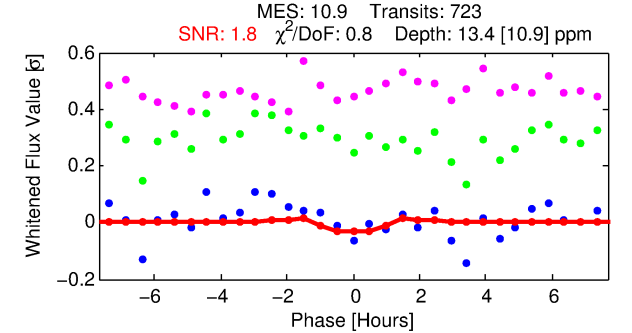
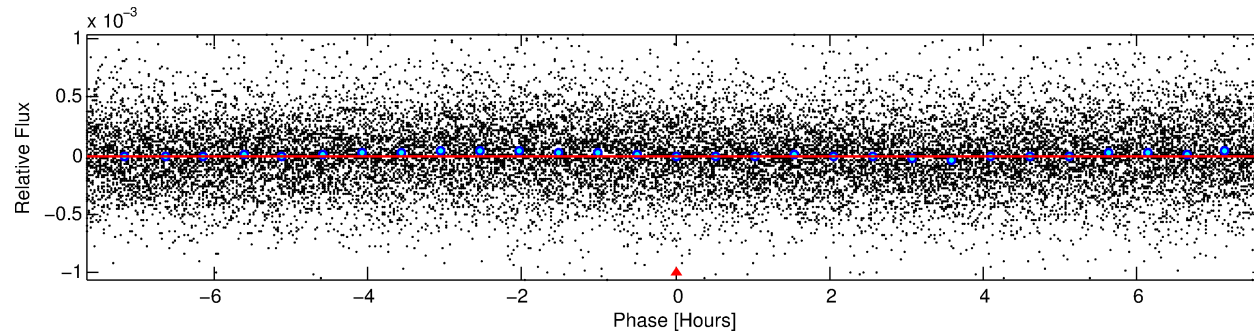
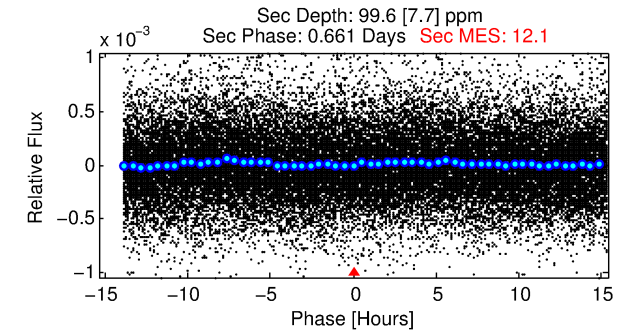
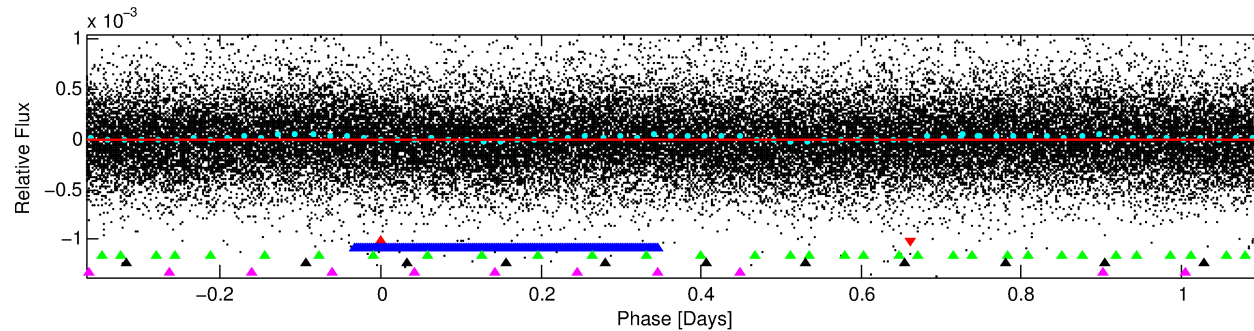
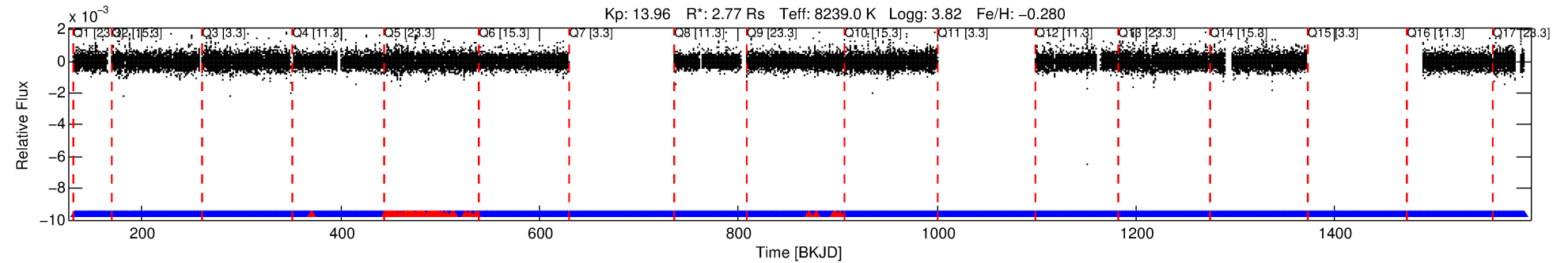
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010817620-01

No Significant Match Found

DV One-Page Summary

KIC: 10817620 Candidate: 1 of 5 Period: 1.473 d



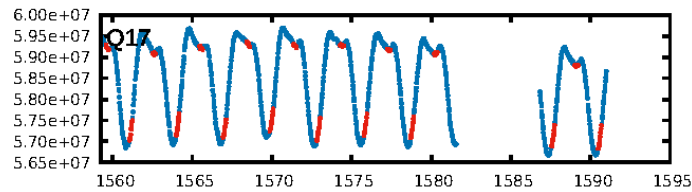
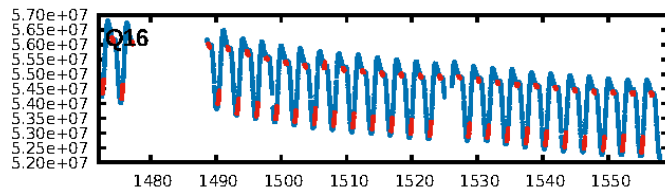
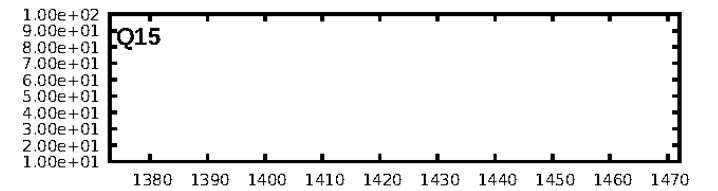
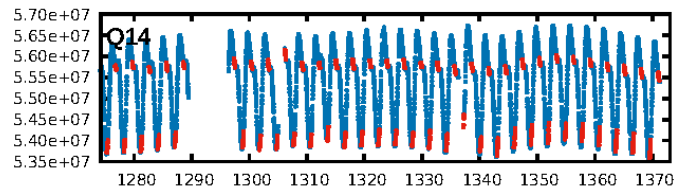
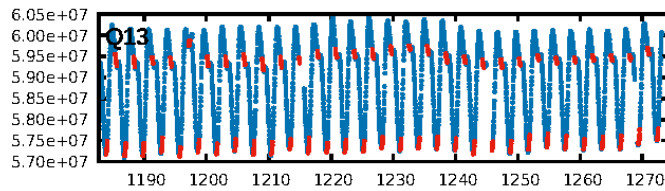
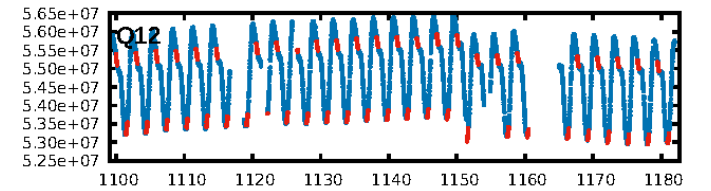
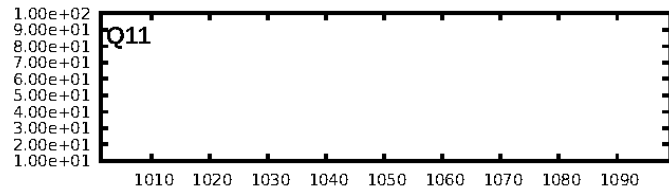
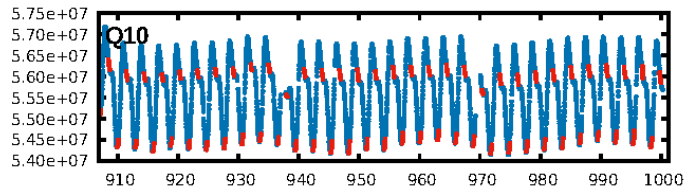
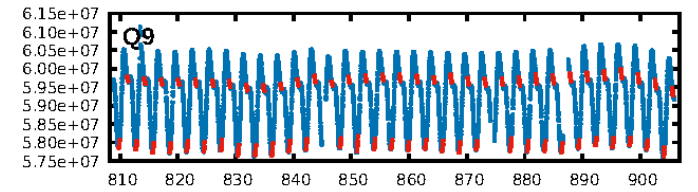
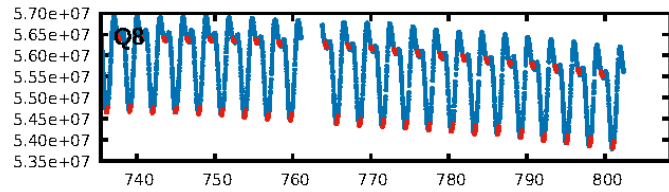
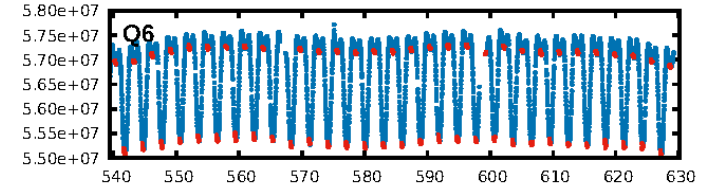
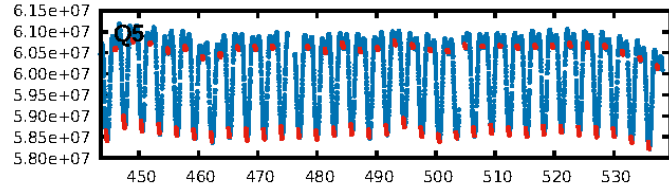
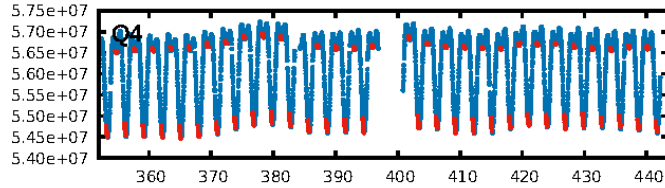
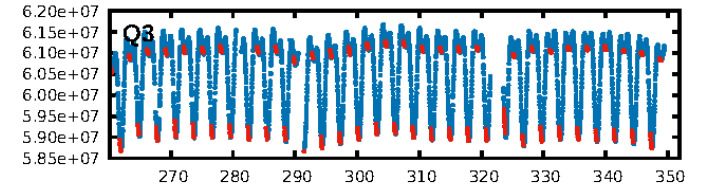
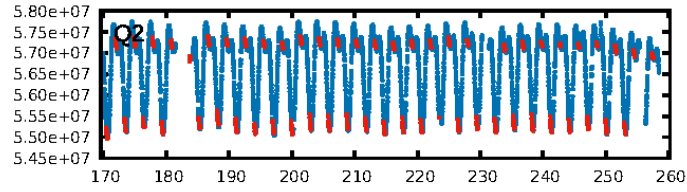
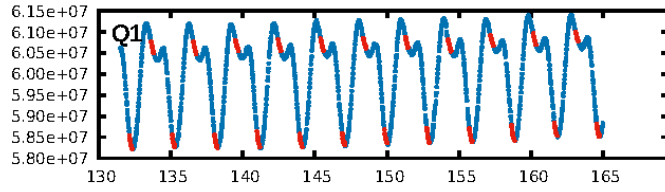
DV Fit Results:

Period = 1.47309 [0.00006] d
Epoch = 132.2379 [0.0136] BKJD
Rp/R* = 0.0045 [0.0025]
a/R* = 1.26 [1.22]
b = 0.99 [0.06]
Seff = 32909.56 [22106.26]
Teff = 3434 [577] K
Rp = 1.36 [0.94] Re
a = 0.0310 [0.0126] AU
Ag = 28.30 [36.11] [0.76σ]
Teffp = 12247 [3398] K [2.56σ]

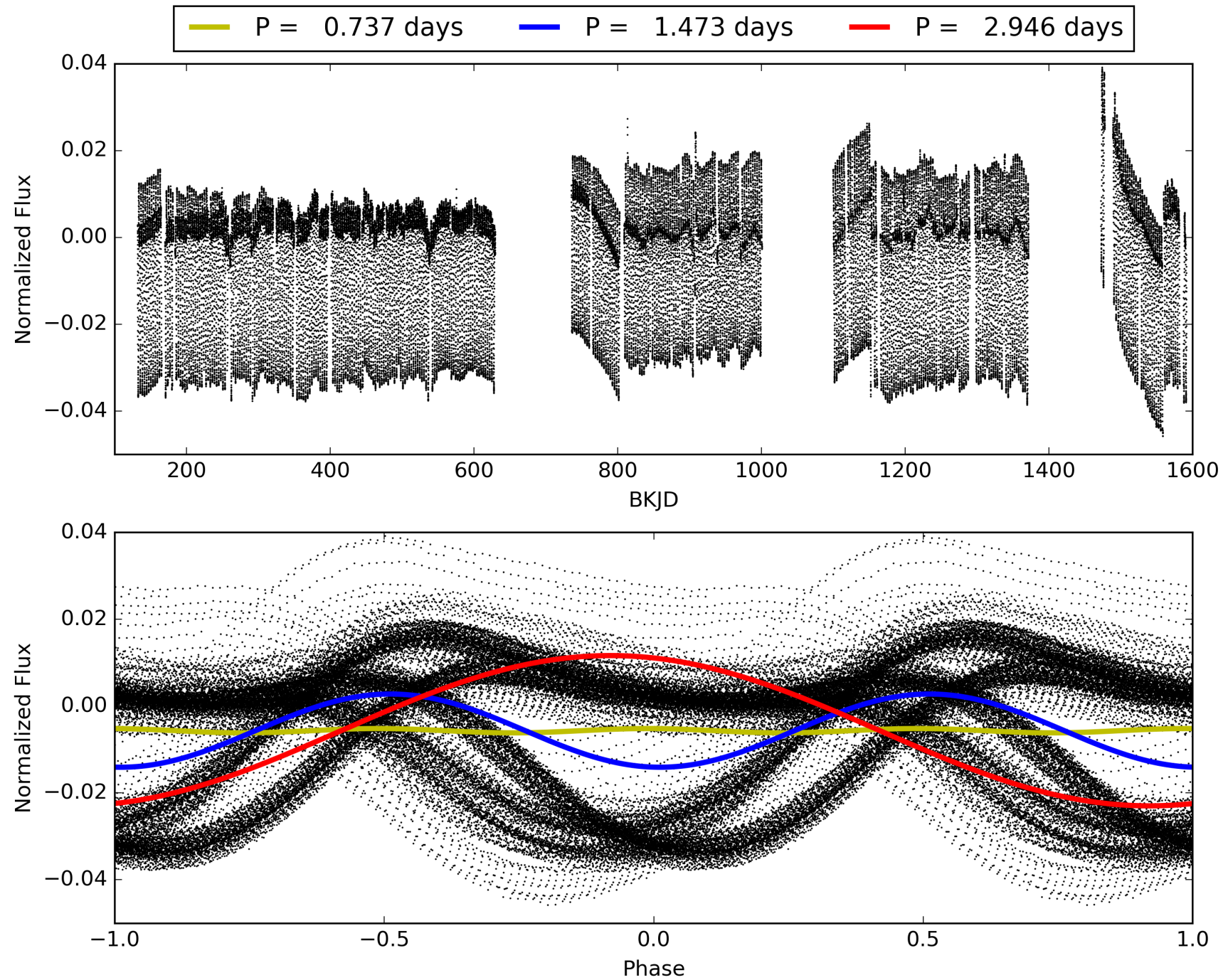
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.6% [2.45σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [638/682]
GhostDiagnostic-chr: -3.093
Centroid-sig: 0.9%
Centroid-so: 9.301 arcsec [1.19σ]
OotOffset-rm: 0.208 arcsec [2.83σ]
KicOffset-rm: 0.096 arcsec [1.41σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010817620-01, PDC Light Curves

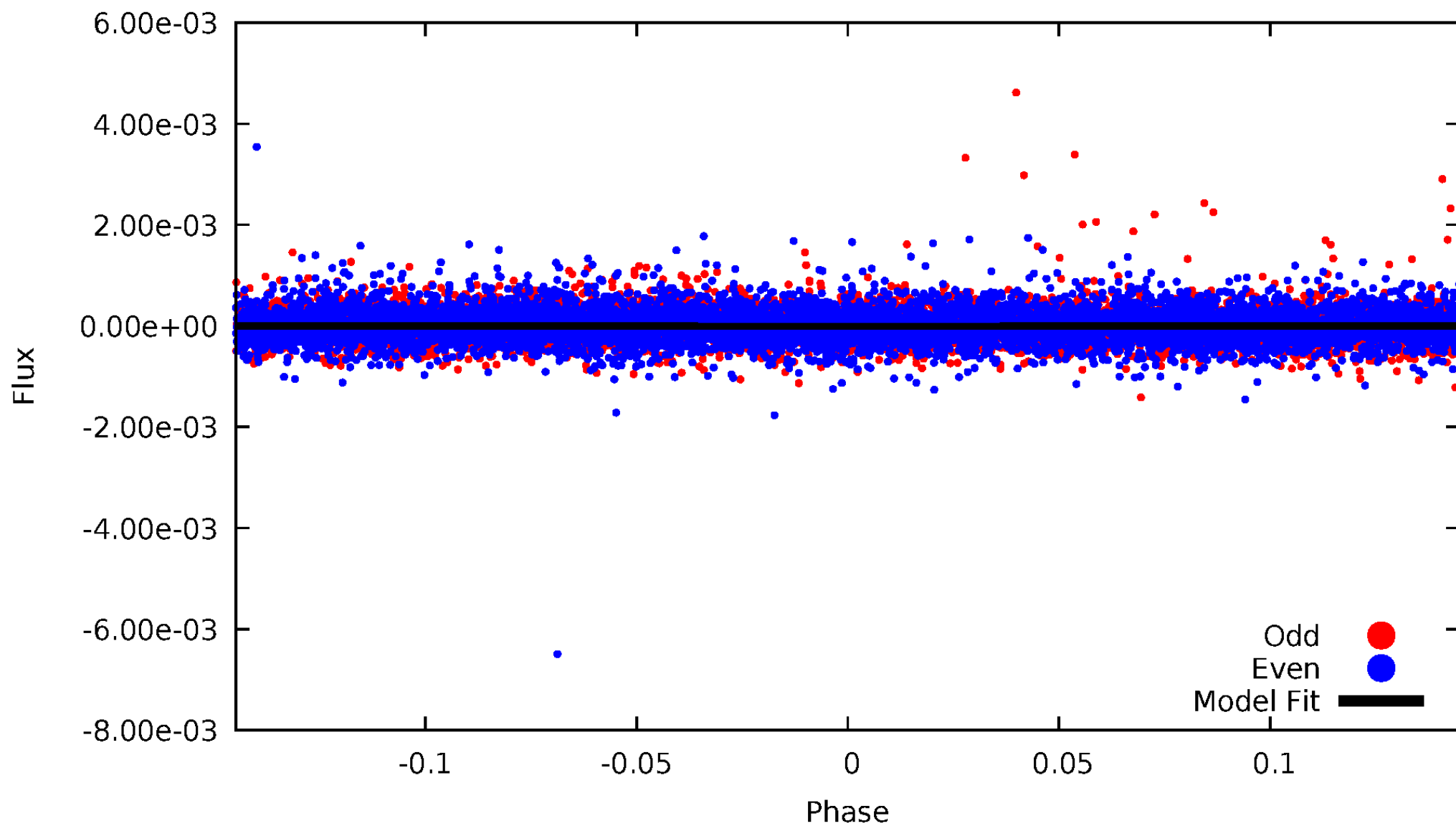


TCE 010817620-01



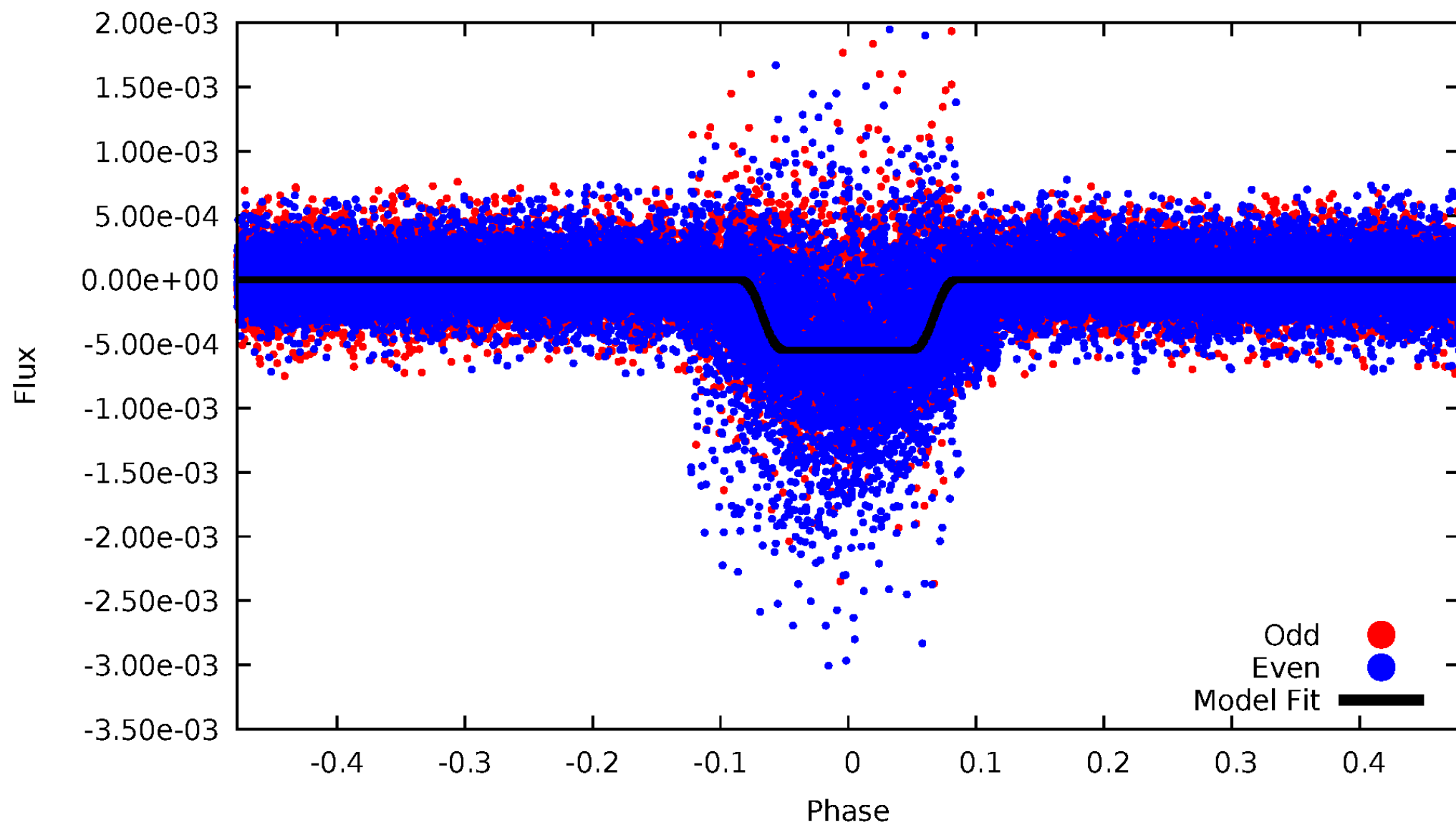
DV Odd/Even

TCE 010817620-01



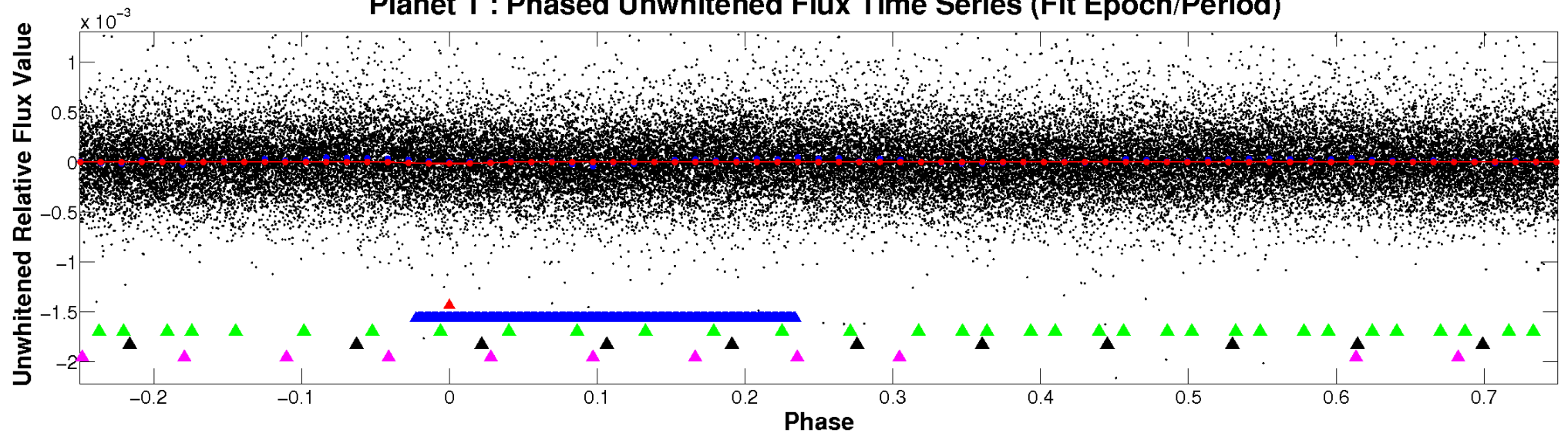
ALT Odd/Even

TCE 010817620-01

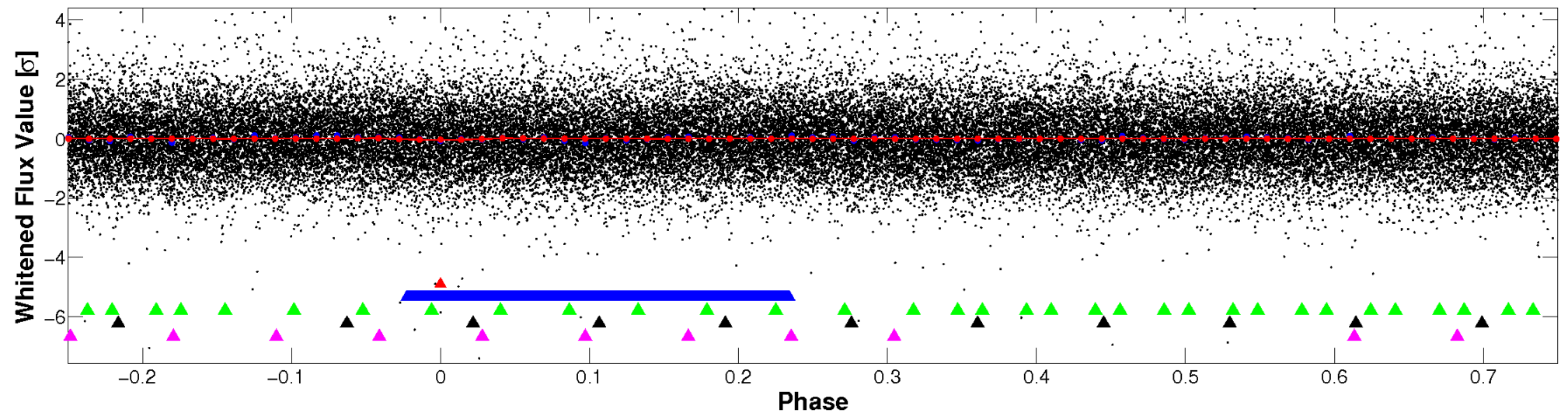


Non-Whitened Vs. Whitened Light Curve

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

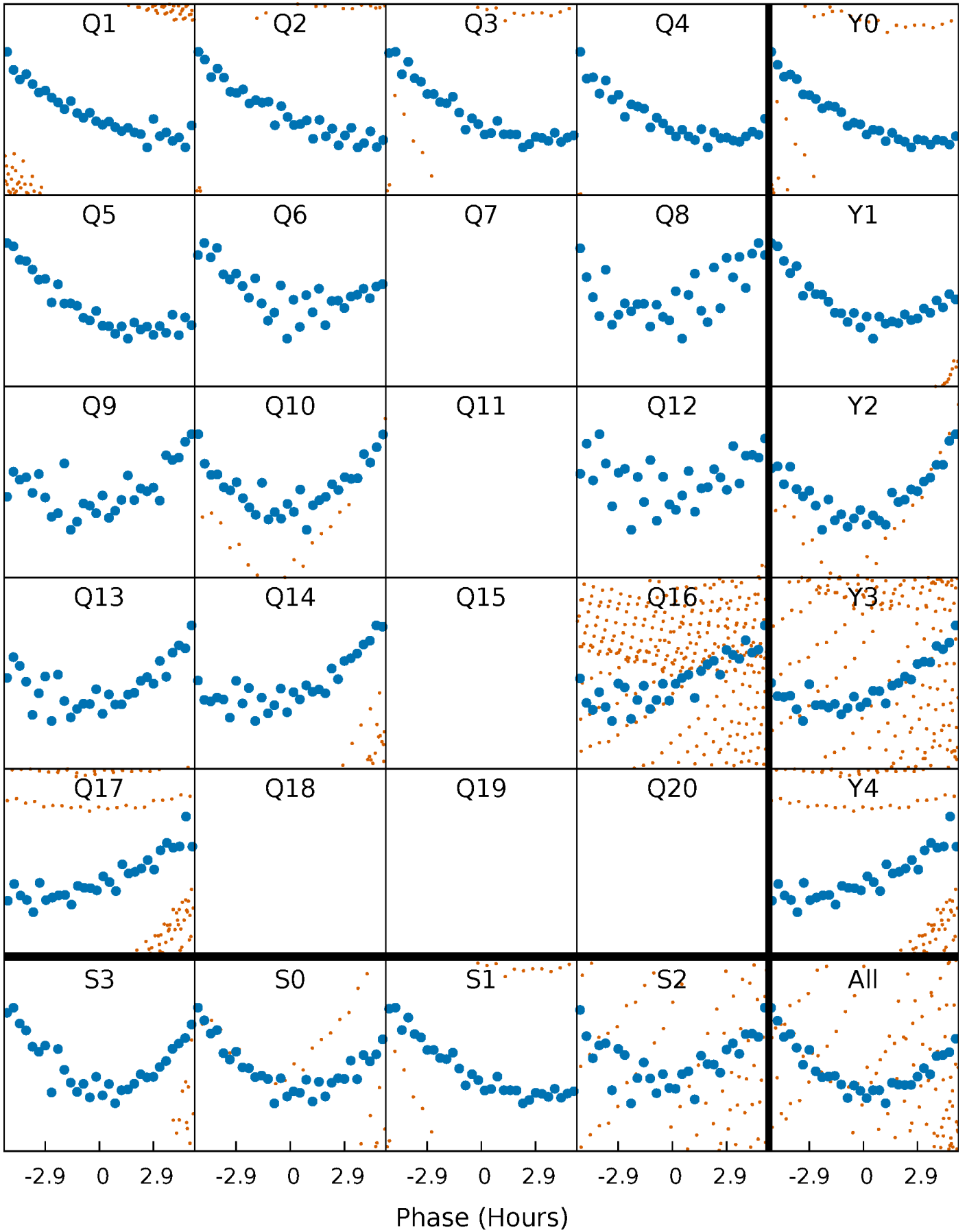


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



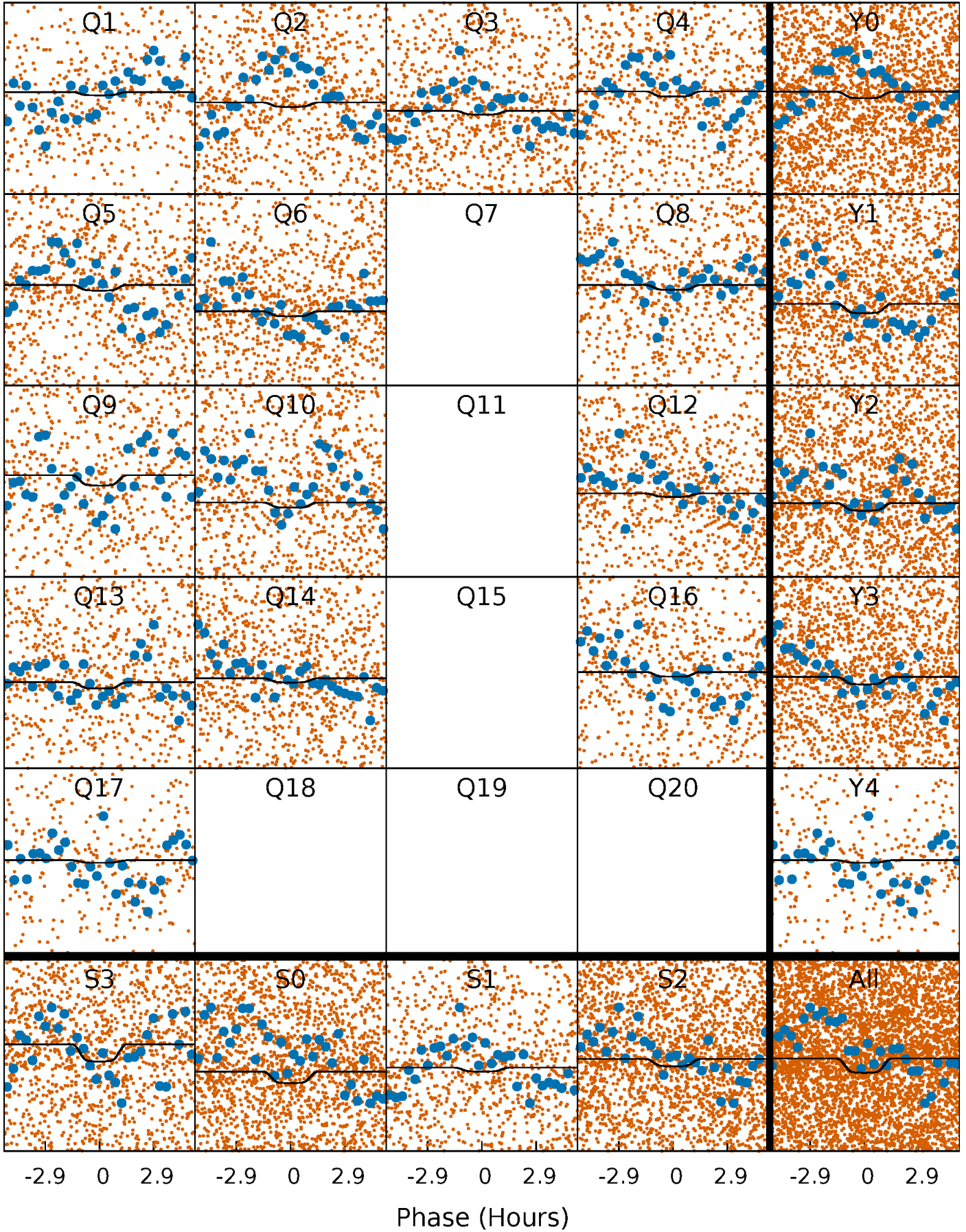
PDC Quarter-Phased Transit Curves

TCE 010817620-01 P= 1.473088 Days $T_0=132.237872$ (BKJD)



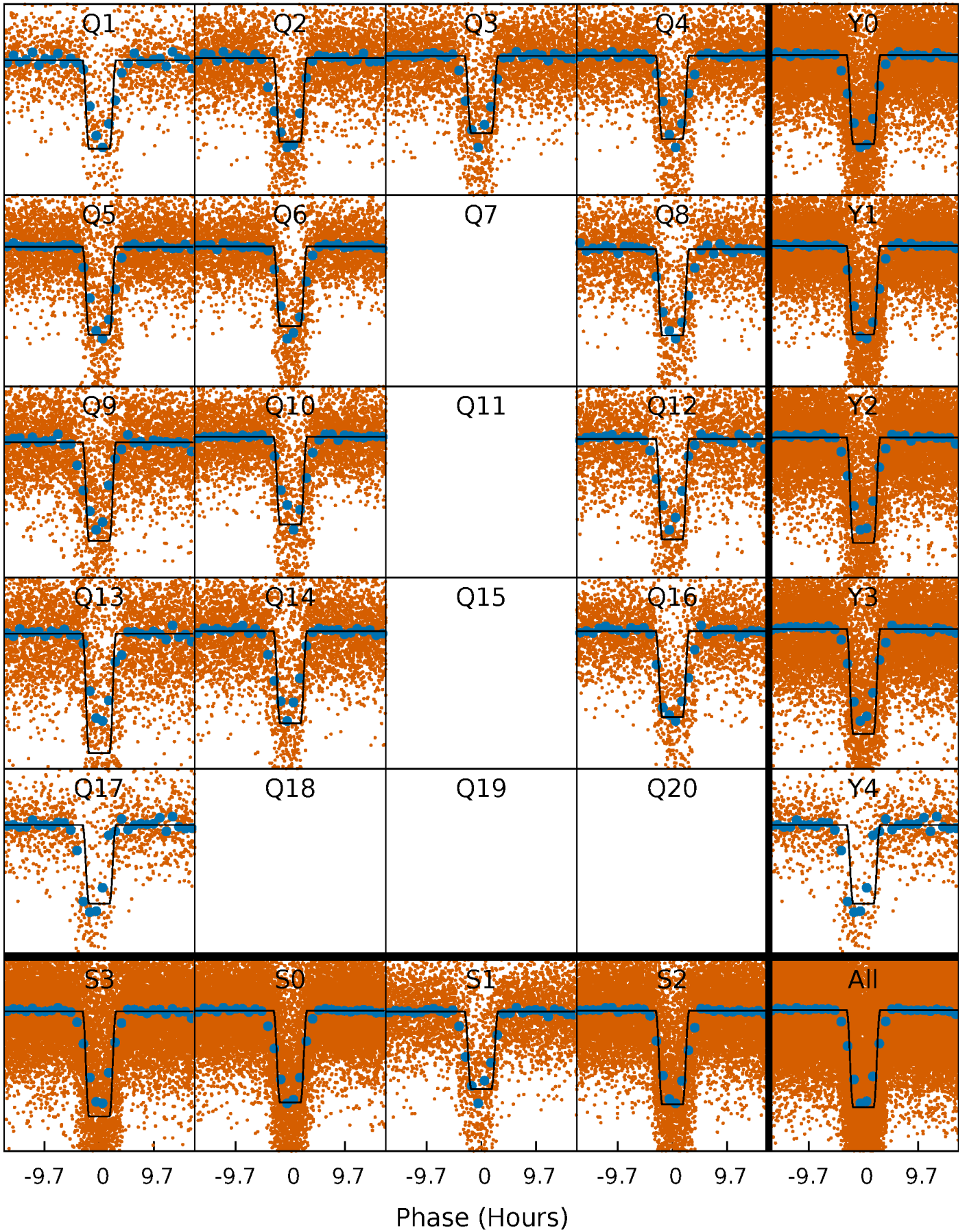
DV Quarter-Phased Transit Curves

TCE 010817620-01 P= 1.473088 Days $T_0=132.237872$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

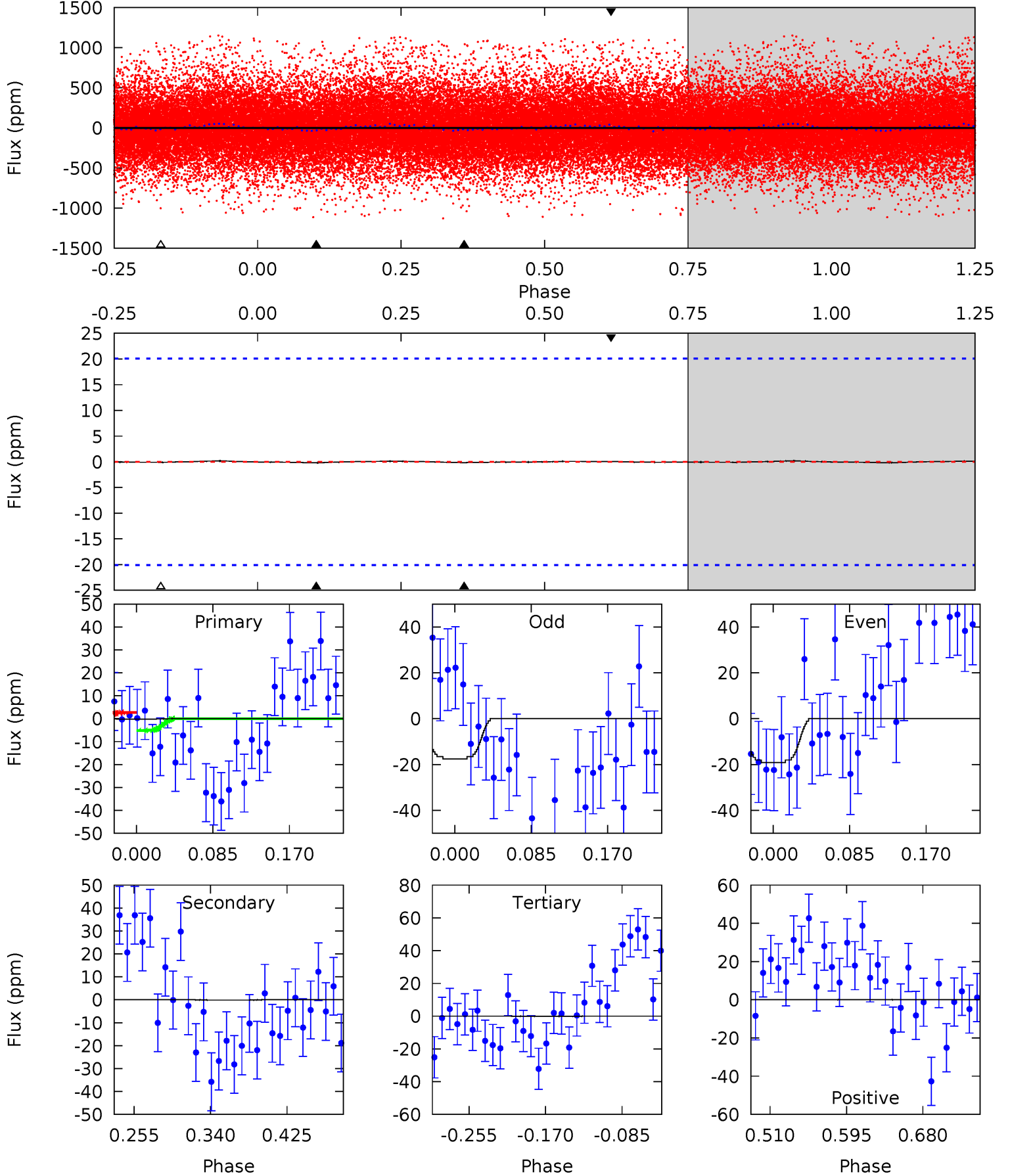
TCE 010817620-01 P= 1.472692 Days $T_0=132.089720$ (BKJD)



DV Model-Shift Uniqueness Test

010817620-01, P = 1.473088 Days, E = 130.764784 Days

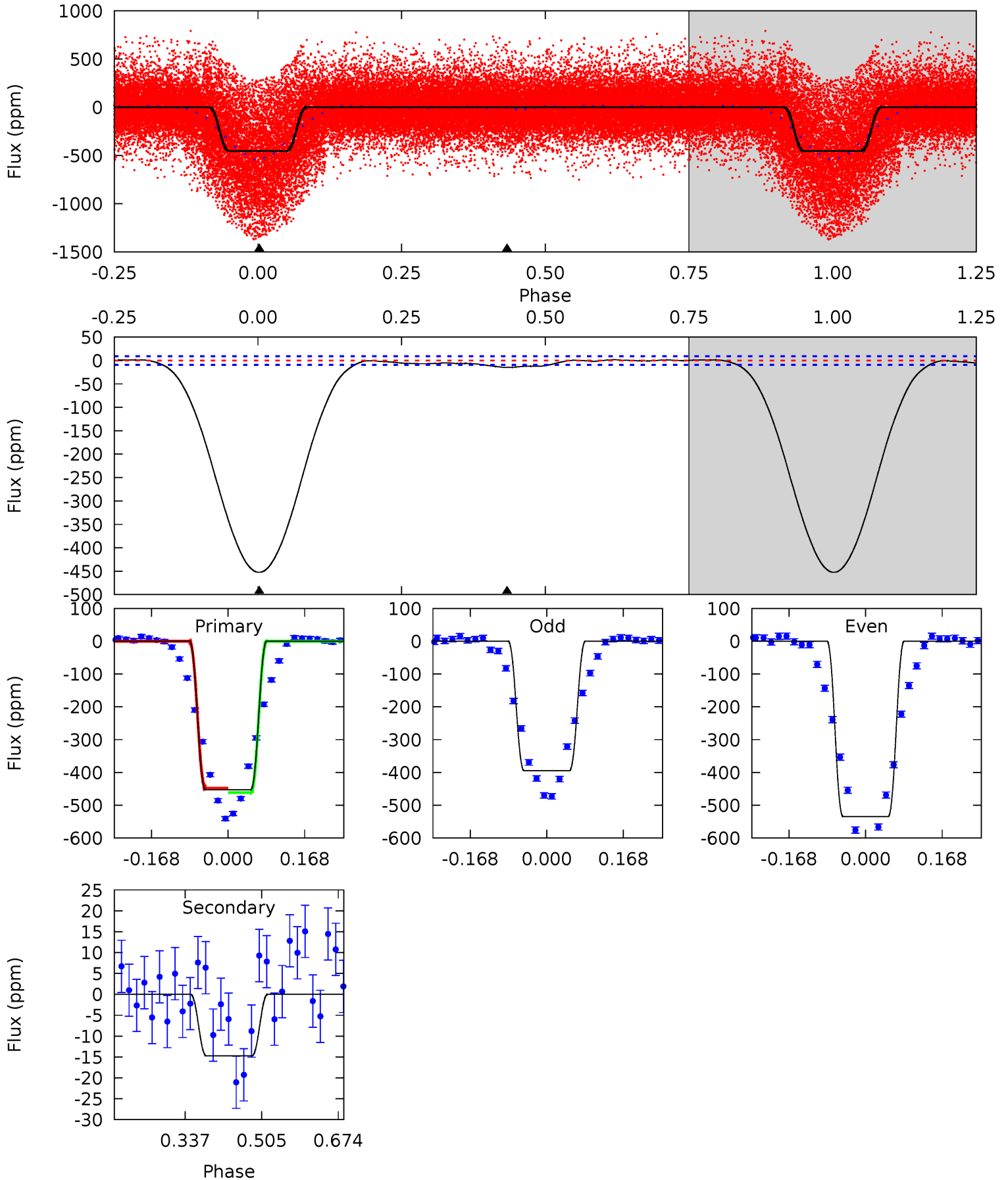
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.04	0.04	0.02	0.01	4.60	1.72	0.02	0.01	0.03	0.01	0.02	0.18	0.66	0.47	0.28



Alt Model-Shift Uniqueness Test

010817620-01, P = 1.472692 Days, E = 130.617028 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
217.6	7.10	0	0	4.45	1.38	1.14	217.6	217.6	7.10	7.10	33.4	1.00	0.00	0



Stellar Parameters For KIC 010817620

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8239^{+228}_{-342}	$3.816^{+0.382}_{-0.067}$	$-0.280^{+0.200}_{-0.300}$	$2.766^{+0.293}_{-1.172}$	$1.827^{+0.086}_{-0.366}$	$0.122^{+0.374}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-42%	+5%/-20%	+308%/-22%
Source	KIC0	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 010817620-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-0 ± 4	$1.23^{+0.76}_{-0.58}$	4640^{+293}_{-489}	-3895^{+9452}_{-1957}	$0.034^{+1.985}_{-1.995}$
Alt.	-15 ± 2	$6.59^{+1.13}_{-1.46}$	4630^{+329}_{-486}	-3453^{+890}_{-315}	$0.178^{+0.101}_{-0.052}$

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

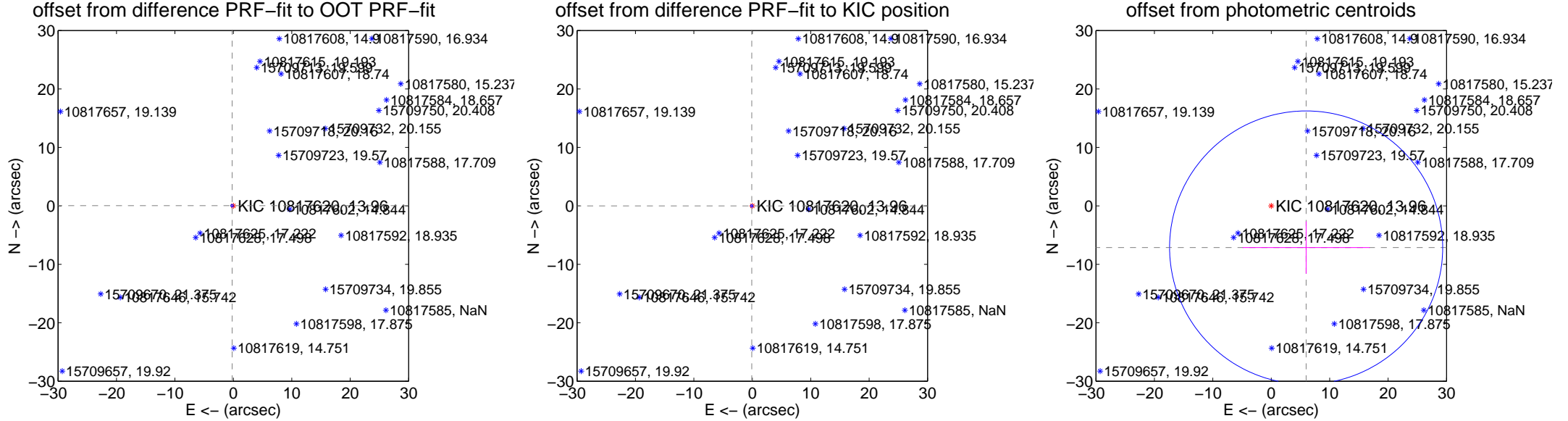
DV Centroid Data

Supplemental centroid analysis for 010817620-01. Kepler magnitude: 13.96. Transit SNR 1.75

There are 14 quarters with good PRF difference image offsets

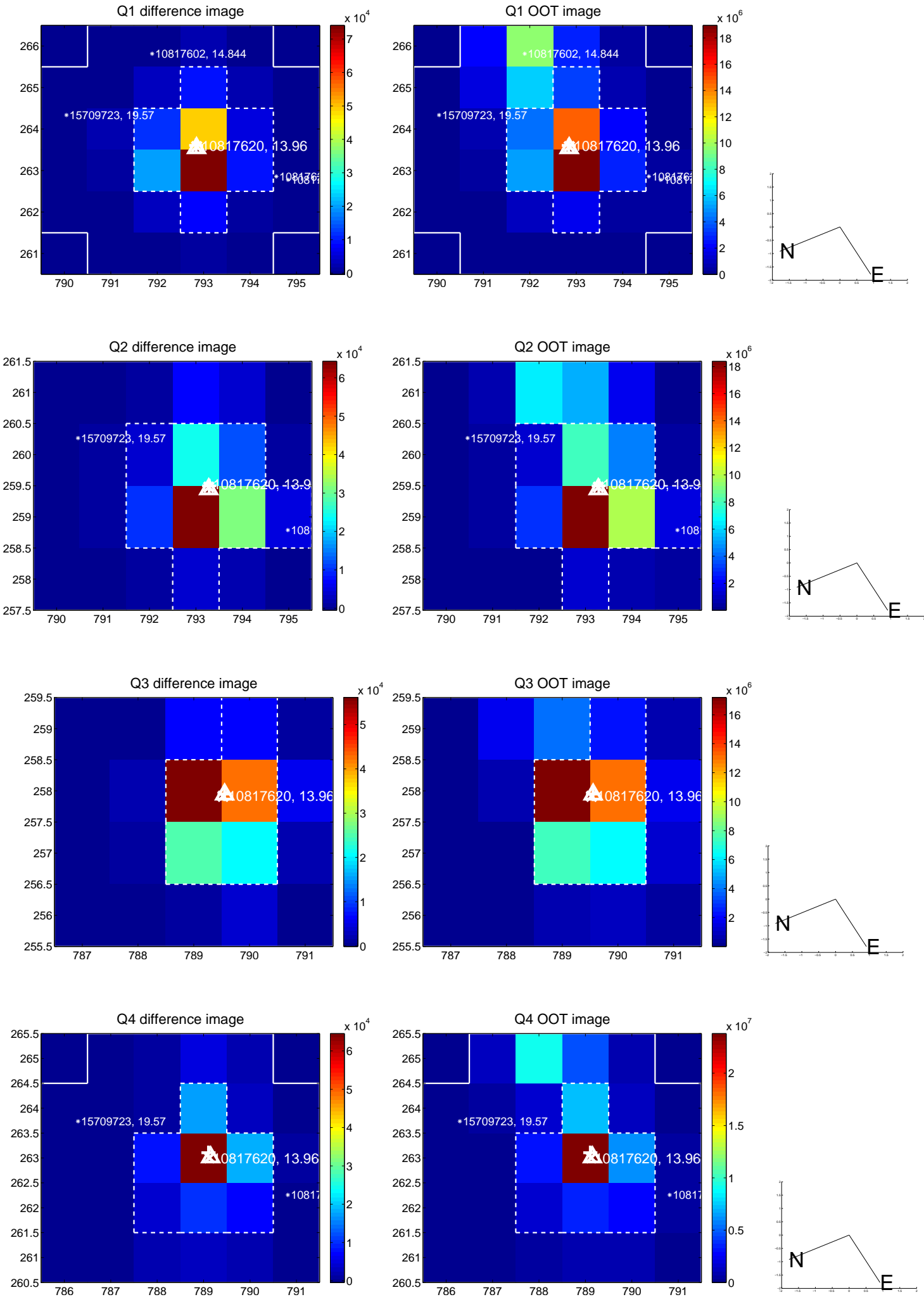
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.208 ± 0.073	2.83	0.205 ± 0.073	0.033 ± 0.069
PRF-fit source offset from KIC position	0.096 ± 0.068	1.41	0.095 ± 0.068	-0.010 ± 0.069
photometric centroid source offset	9.30 ± 7.79	1.19	-5.97 ± 10.89	-7.13 ± 4.47

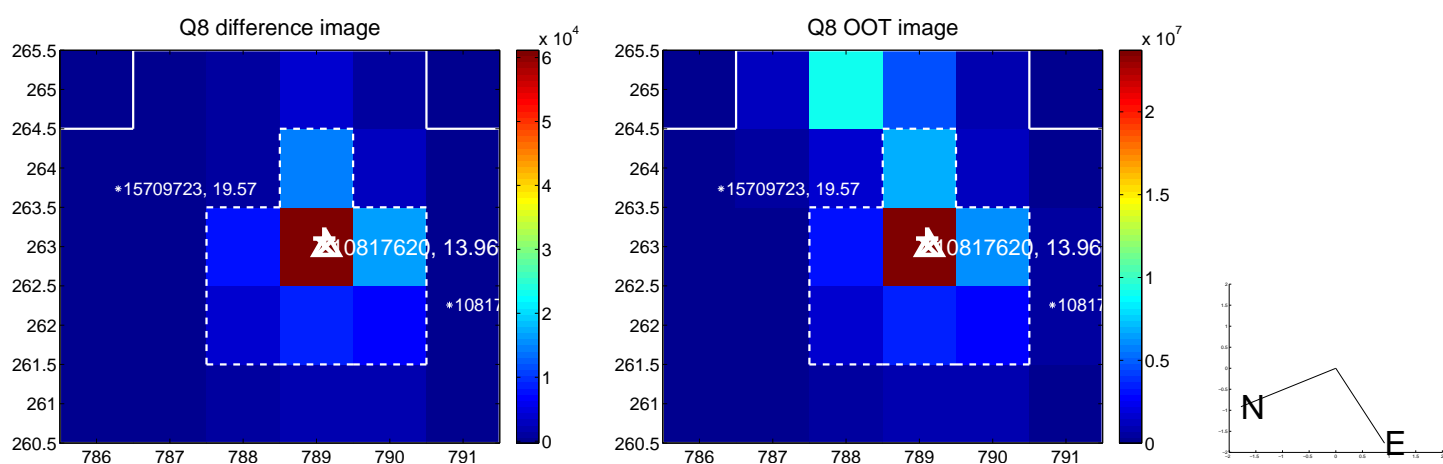
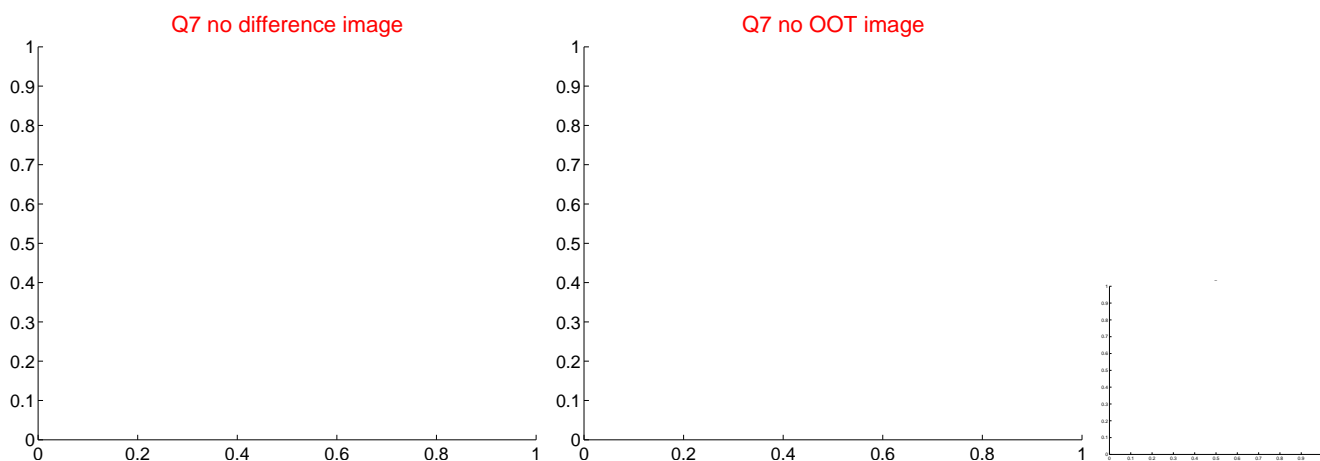
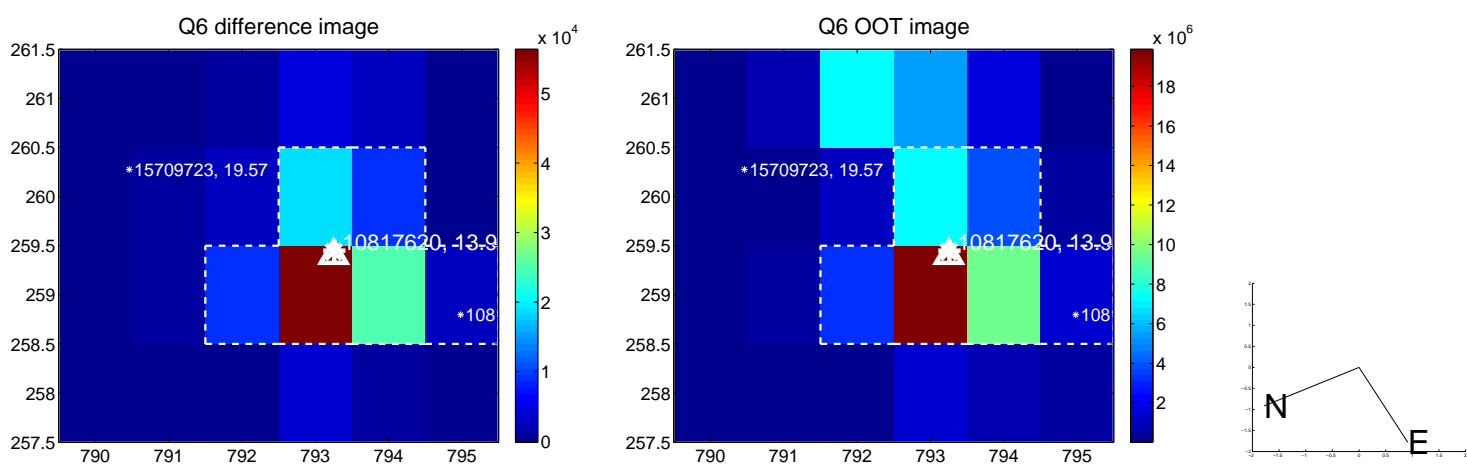
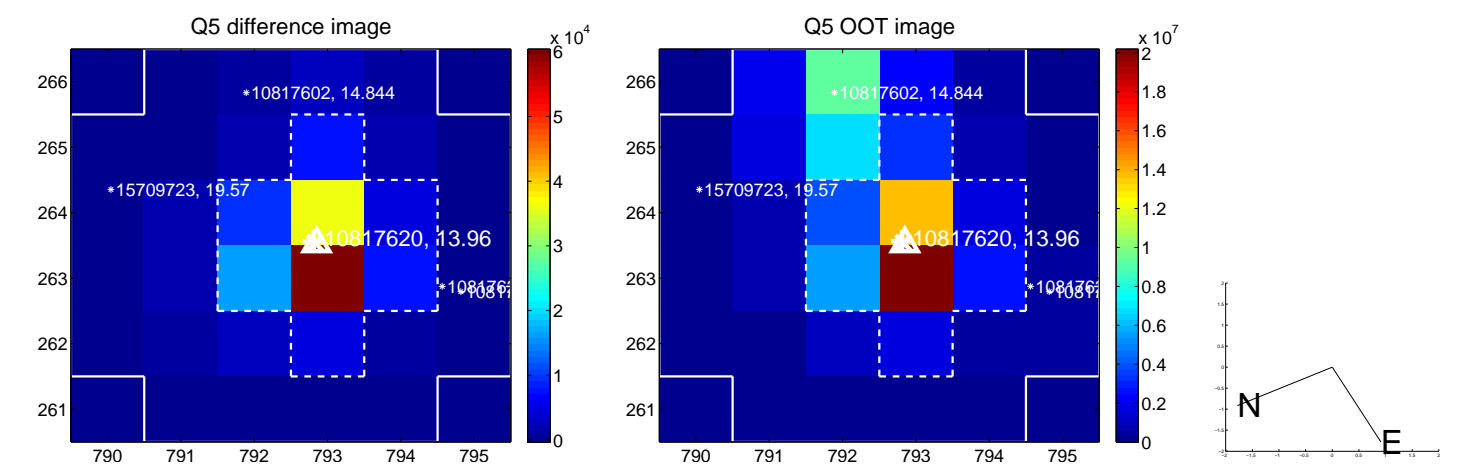


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

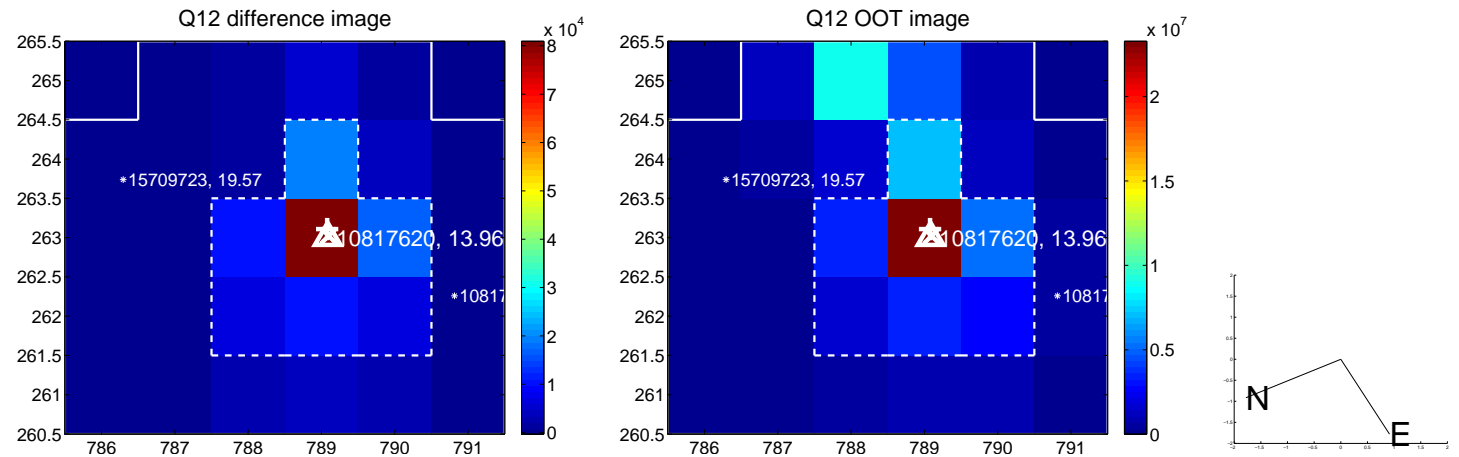
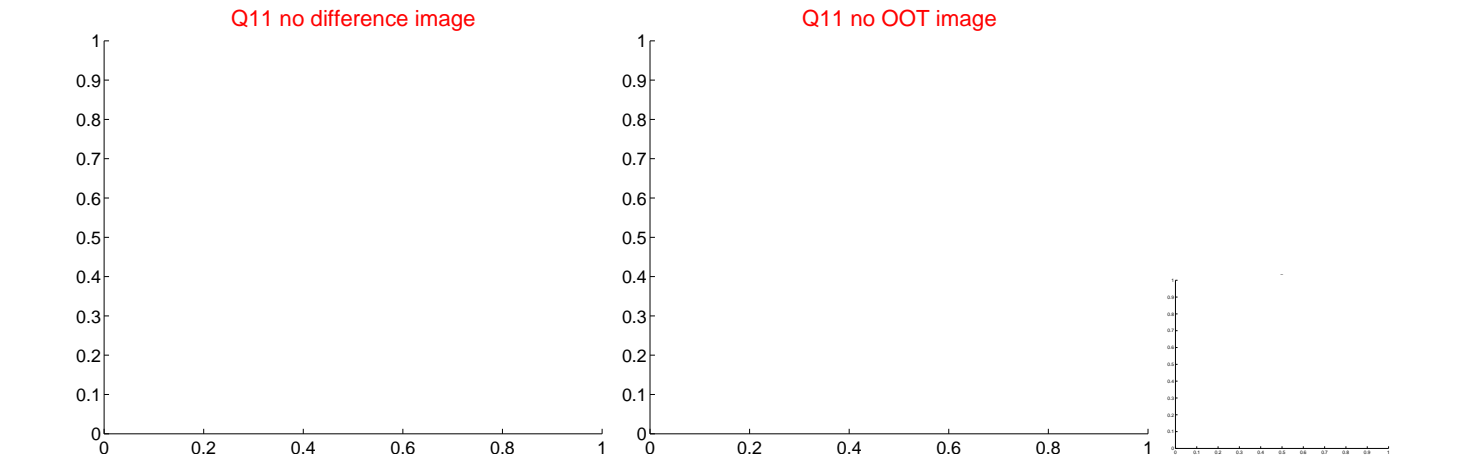
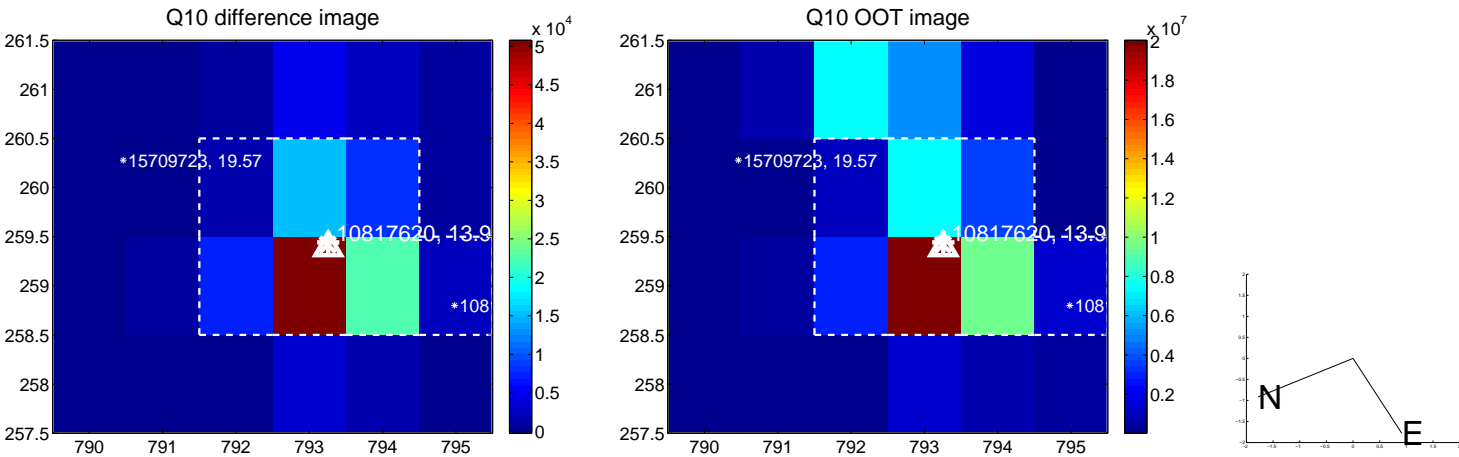
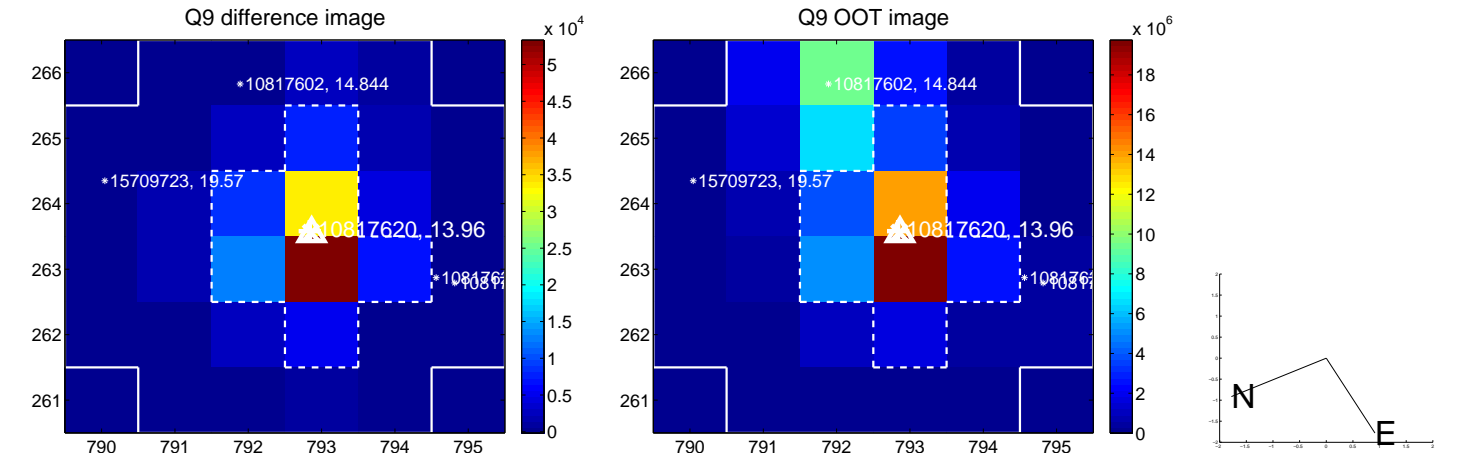
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



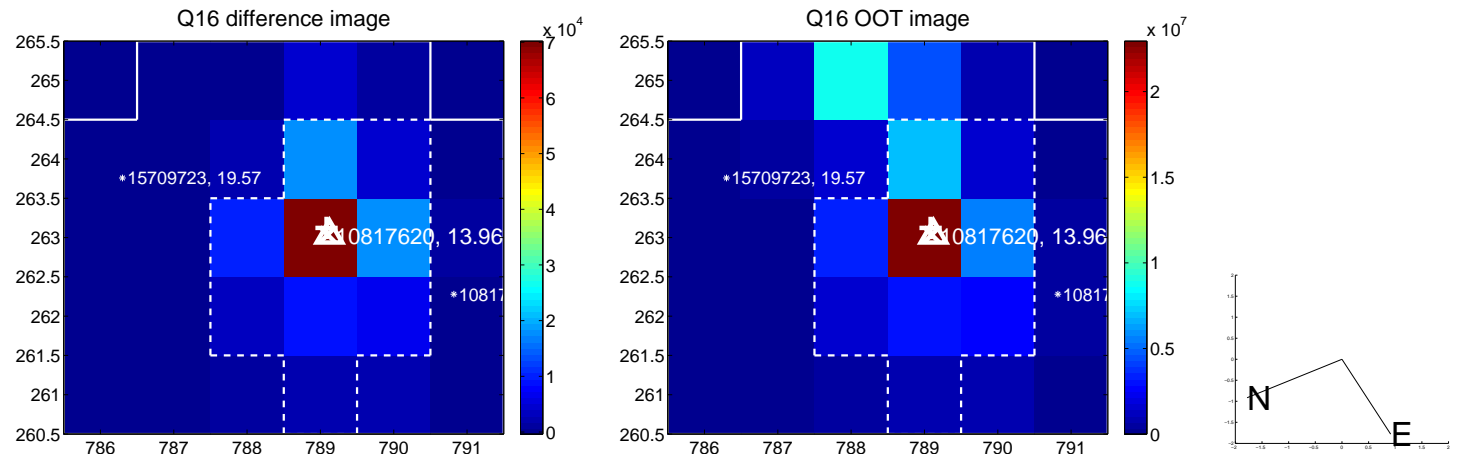
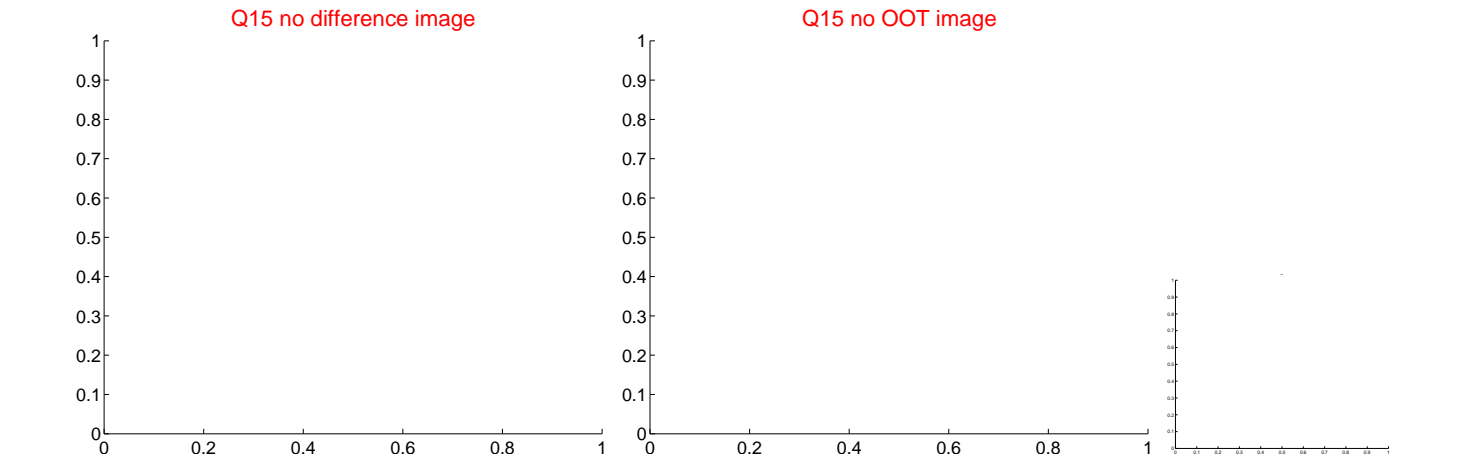
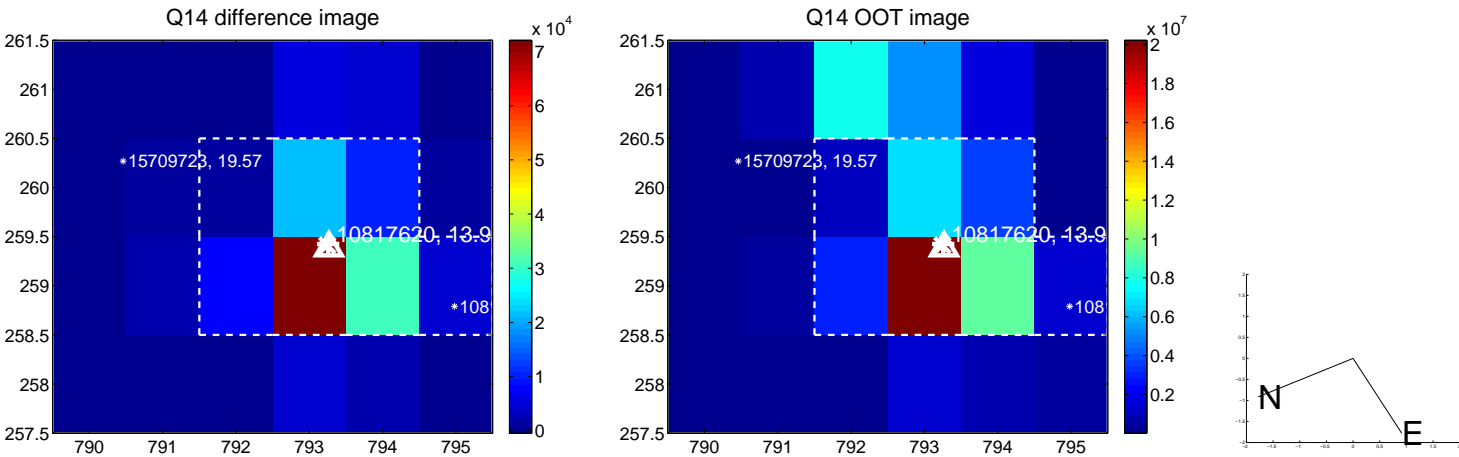
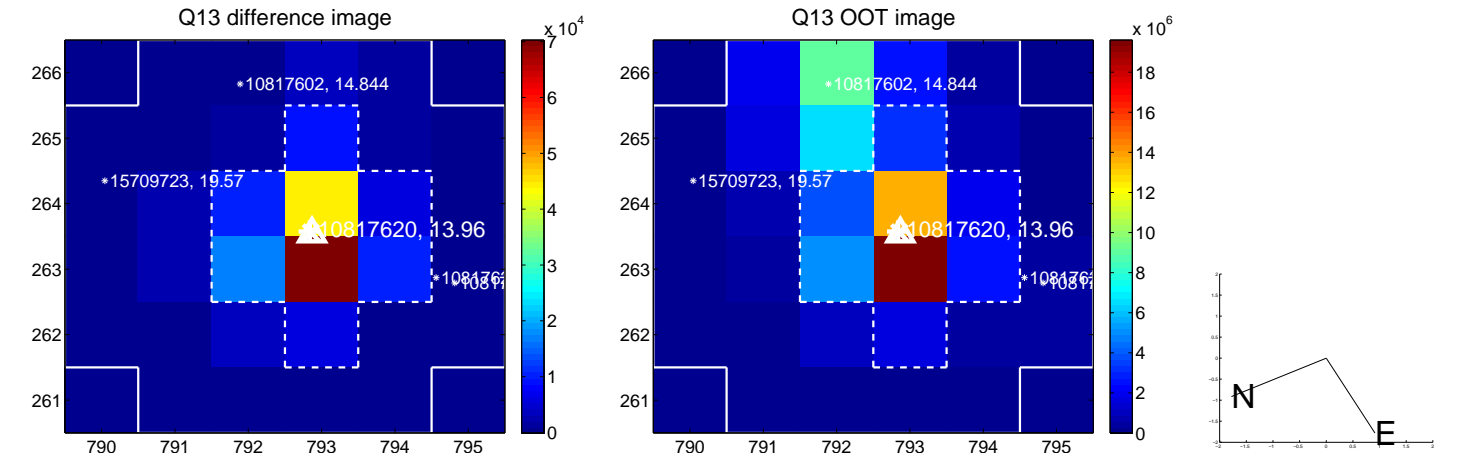
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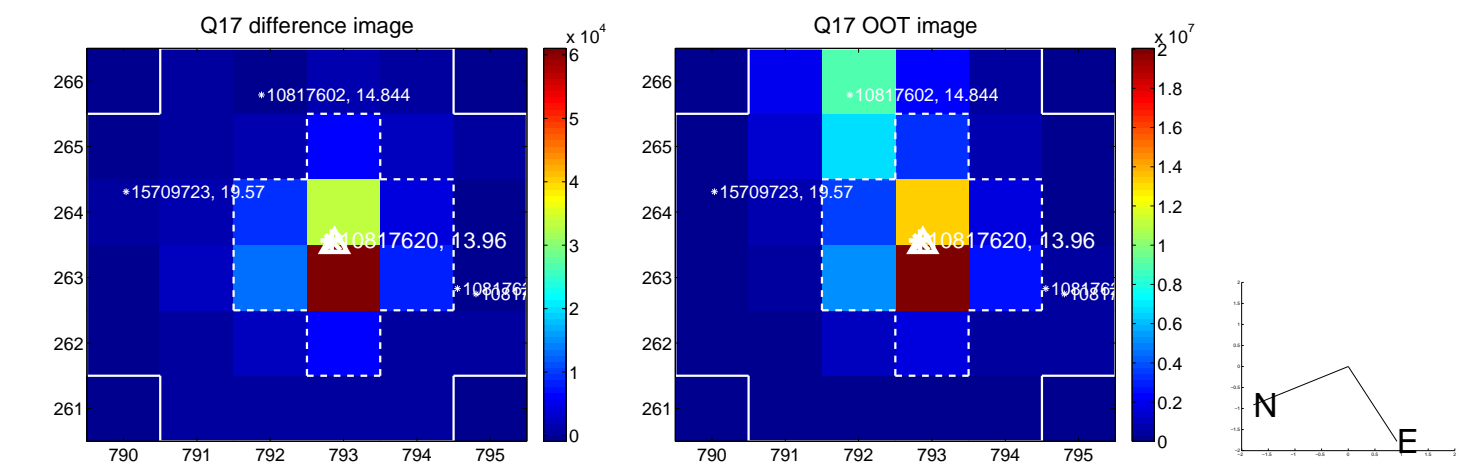
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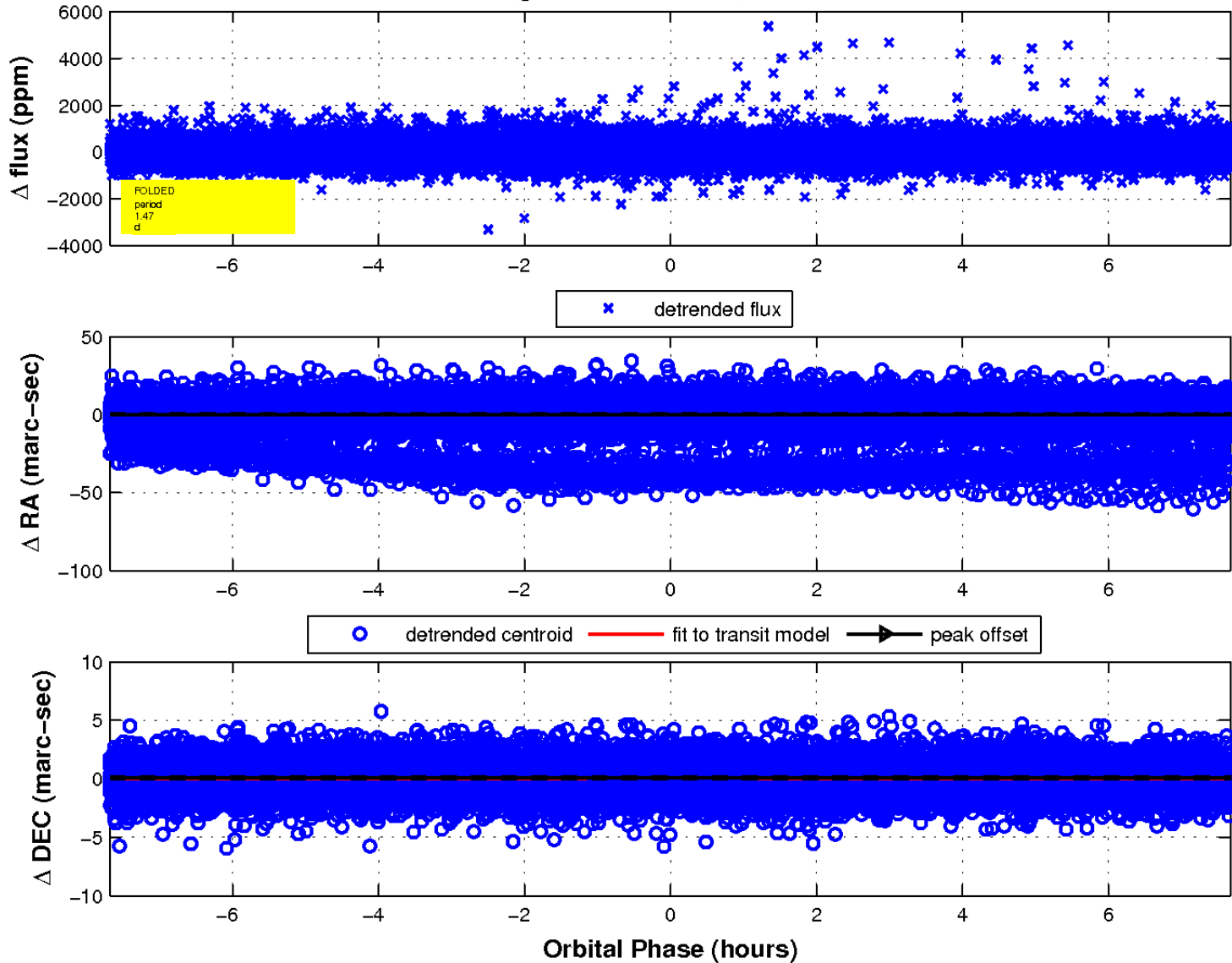
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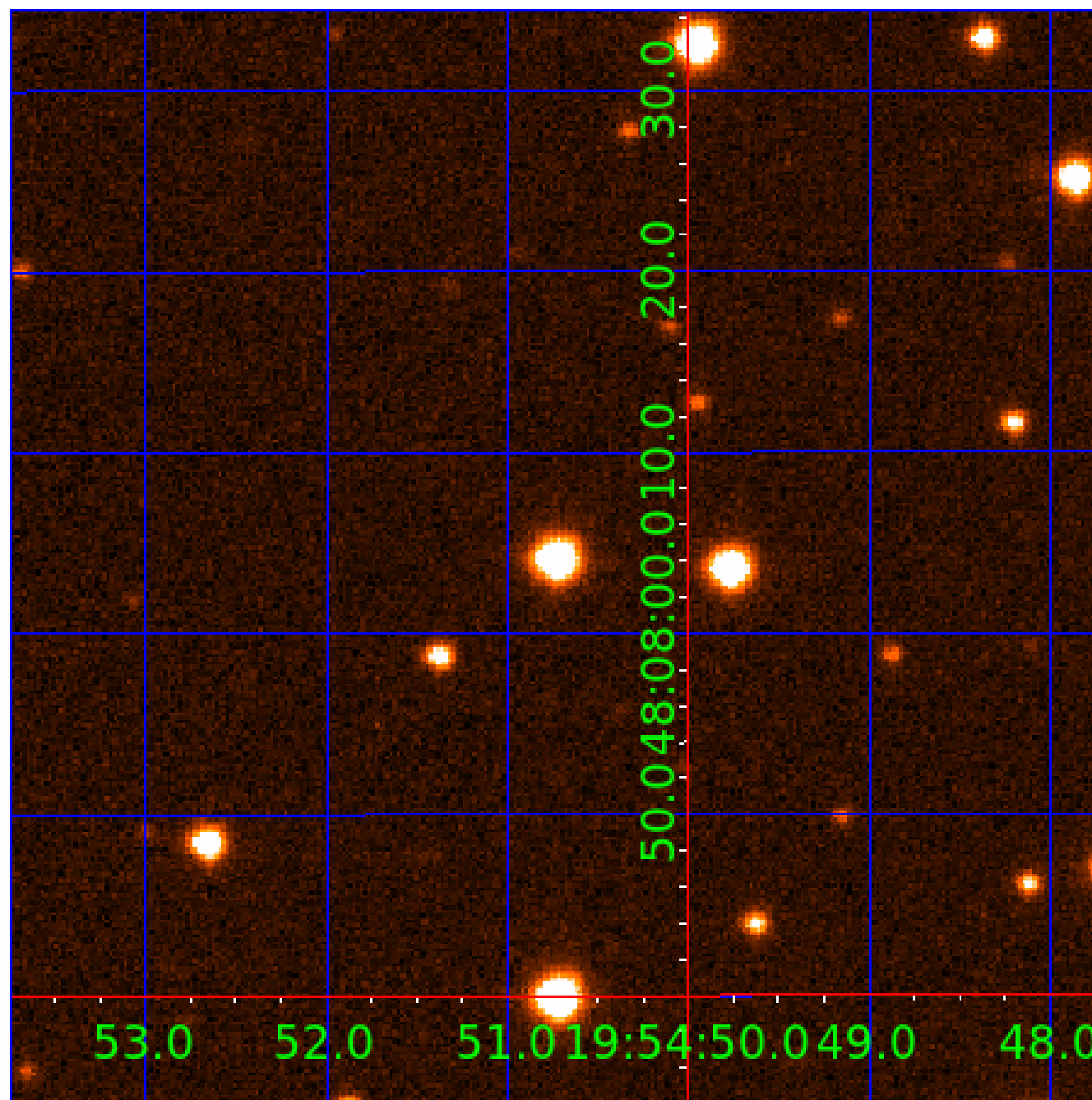


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 010817620

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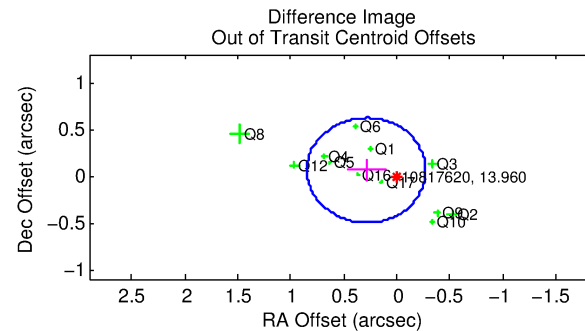
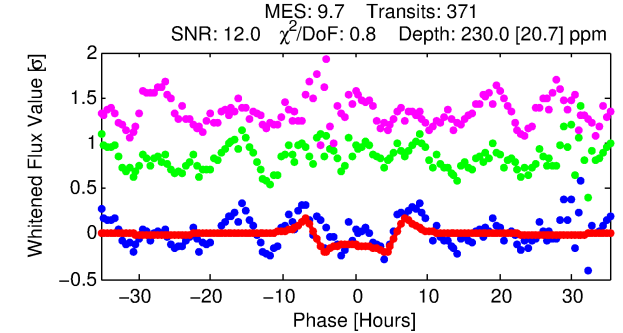
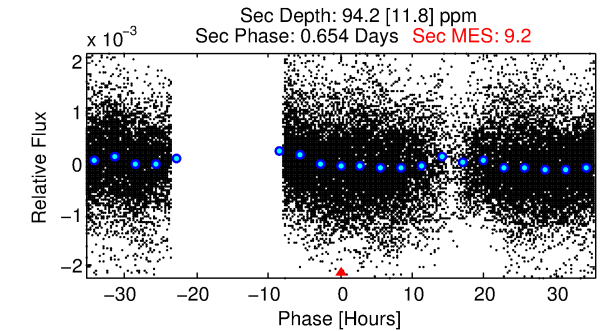
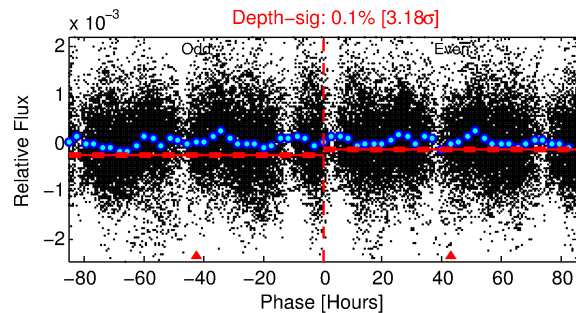
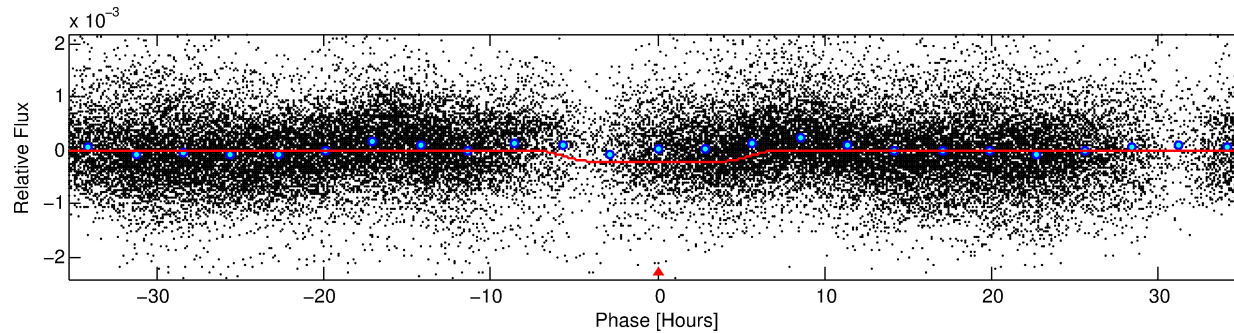
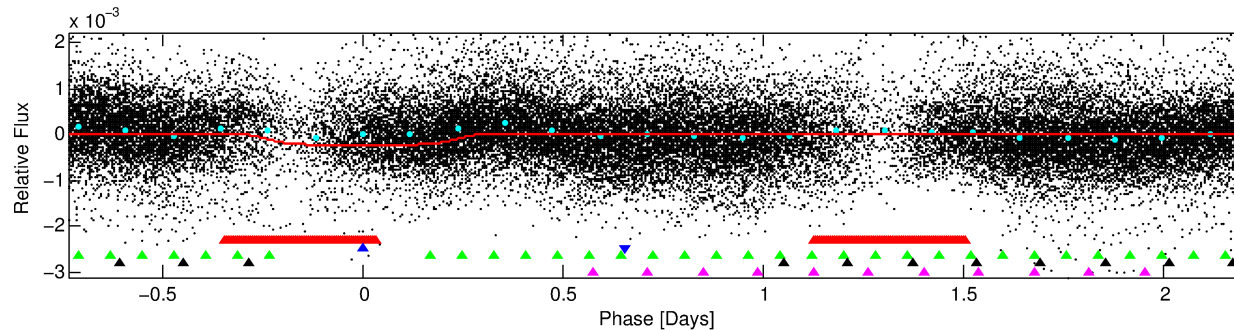
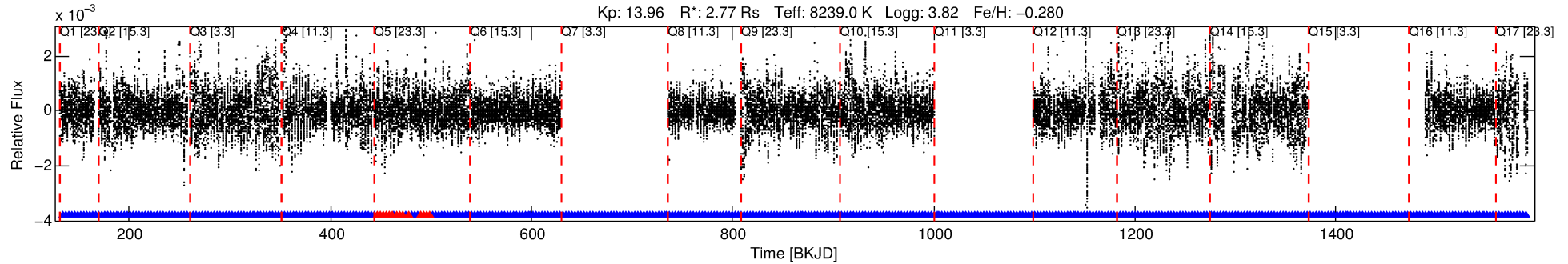
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010817620-02

No Significant Match Found

DV One-Page Summary

KIC: 10817620 Candidate: 2 of 5 Period: 2.945 d



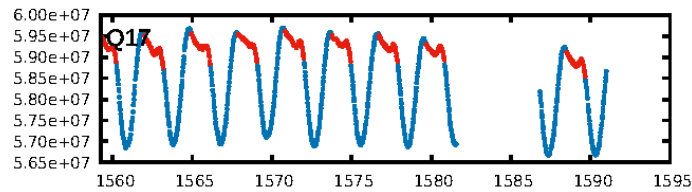
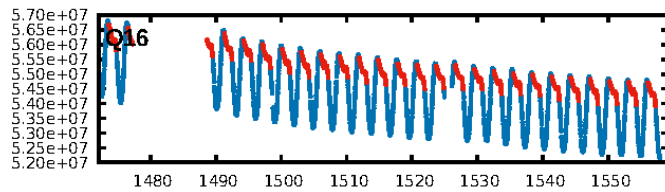
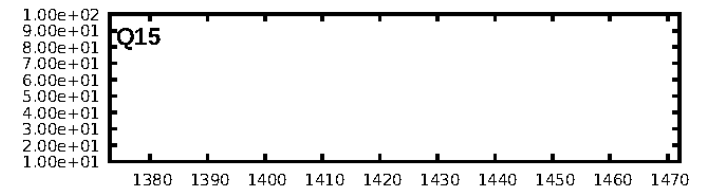
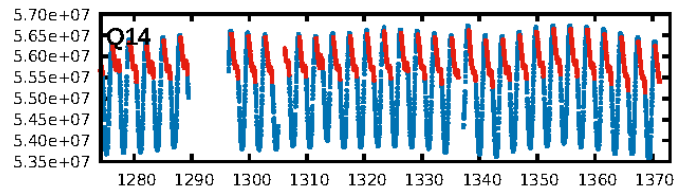
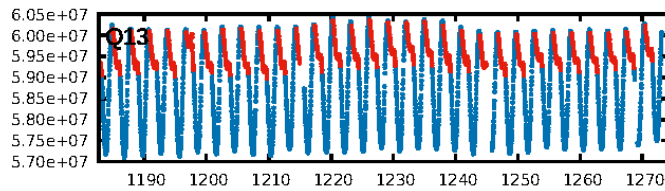
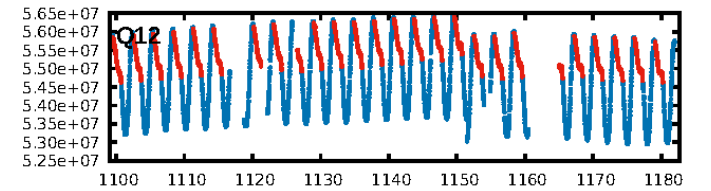
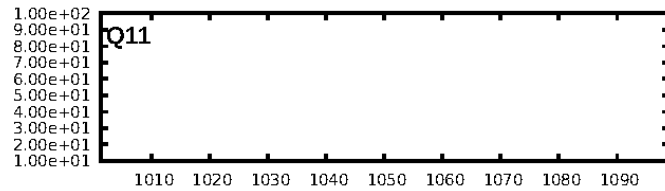
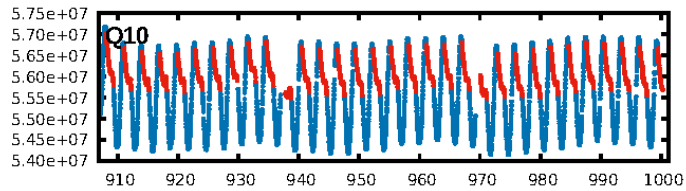
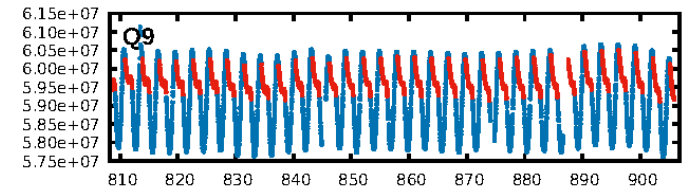
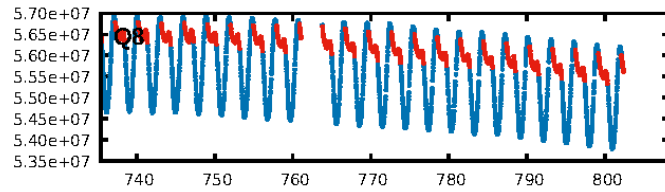
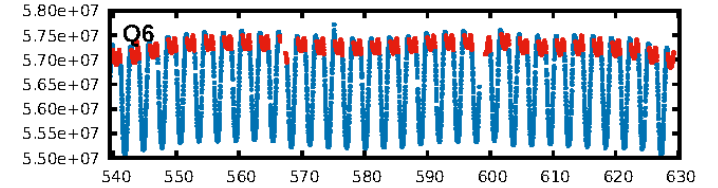
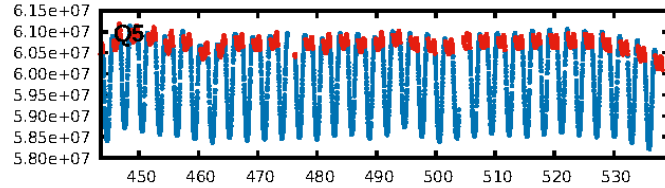
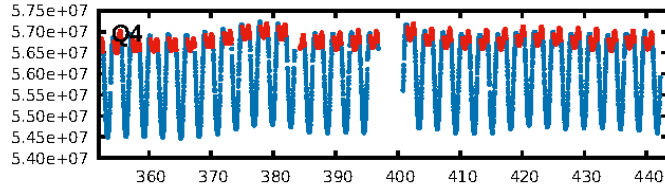
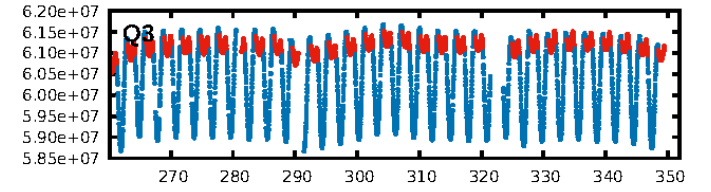
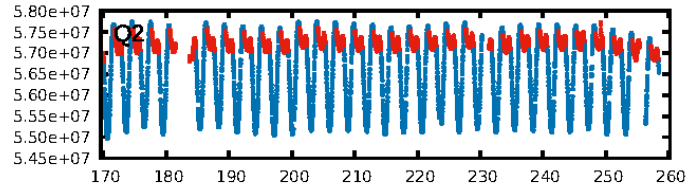
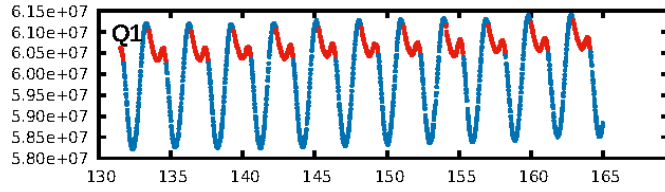
DV Fit Results:

Period = 2.94541 [0.00003] d
Epoch = 134.0560 [0.0104] BKJD
Rp/R* = 0.0173 [0.0008]
a/R* = 1.11 [0.01]
b = 0.96 [0.01]
Seff = 13064.70 [8775.92]
Teq = 2726 [458] K
Rp = 5.23 [2.23] Re
a = 0.0492 [0.0200] AU
Ag = 4.58 [3.06] [1.17 σ]
Teffp = 6165 [351] K [5.96 σ]

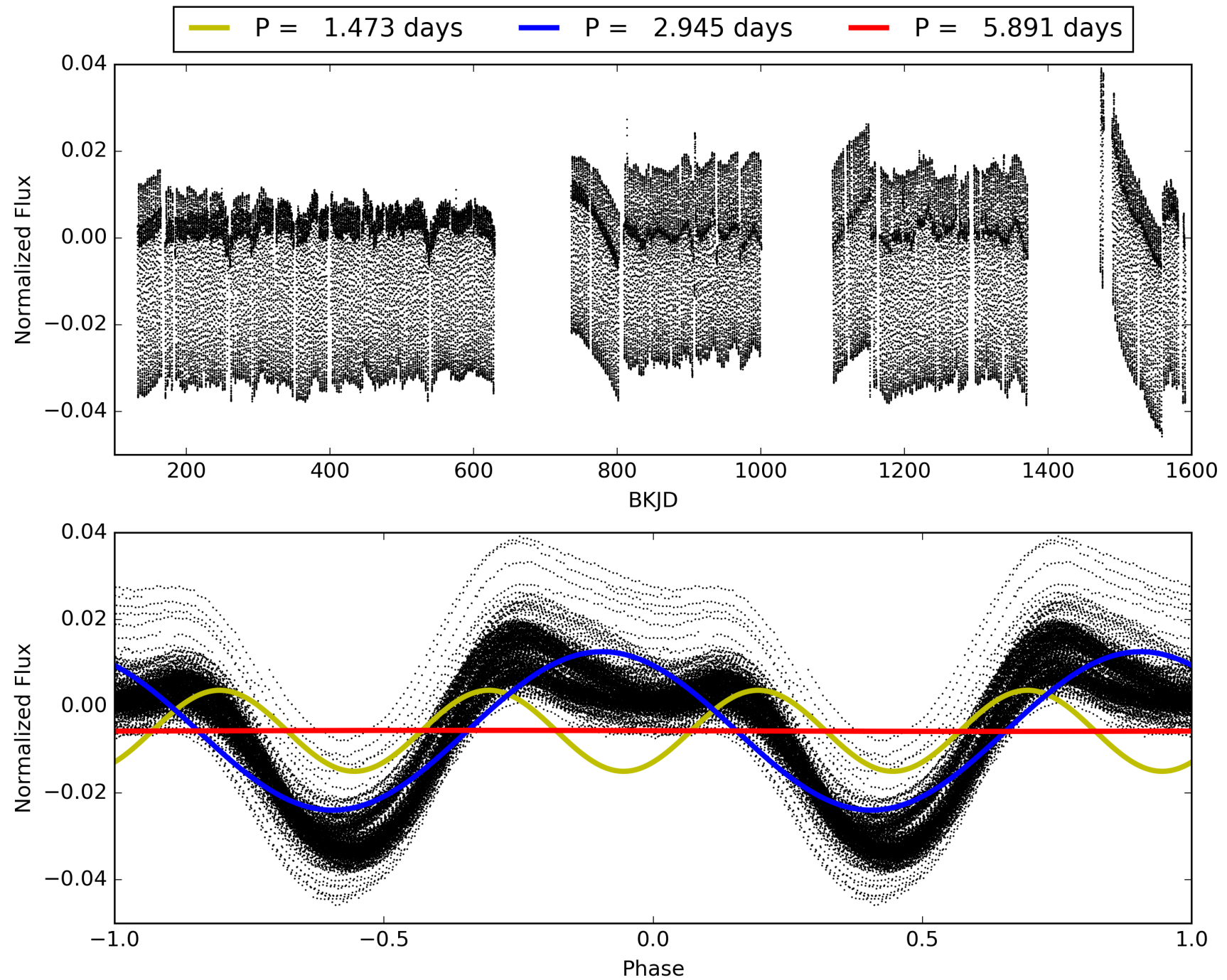
DV Diagnostic Results:

ShortPeriod-sig: 98.6% [2.45 σ]
LongPeriod-sig: 100.0% [61.17 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [337/351]
GhostDiagnostic-chr: 0.4423
Centroid-sig: 0.0%
Centroid-so: 2.991 arcsec [3.33 σ]
OotOffset-rm: 0.292 arcsec [1.57 σ]
KicOffset-rm: 0.137 arcsec [0.80 σ]
OotOffset-st: 3/1/4/4 [12]
KicOffset-st: 3/1/4/4 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 010817620-02, PDC Light Curves

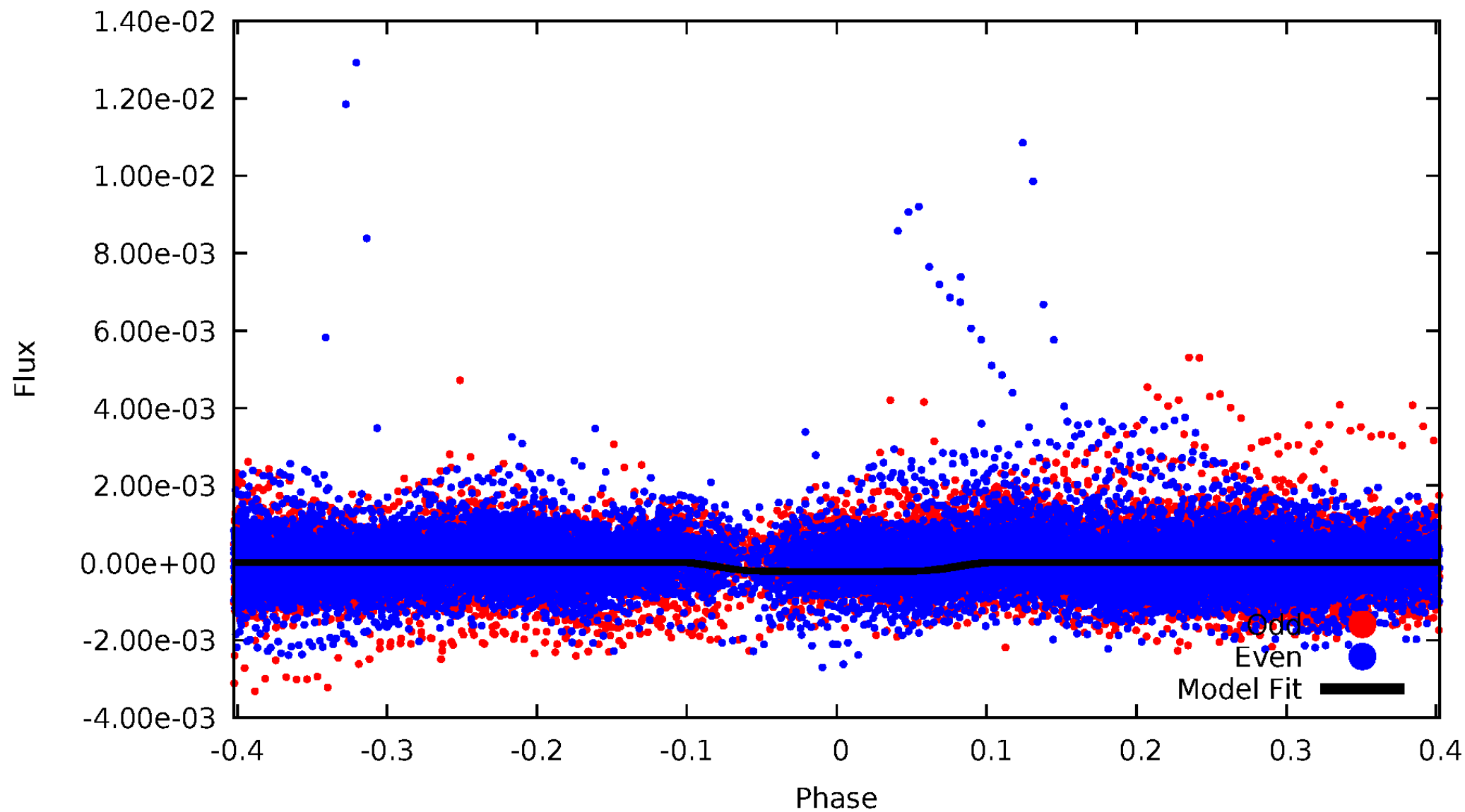


TCE 010817620-02



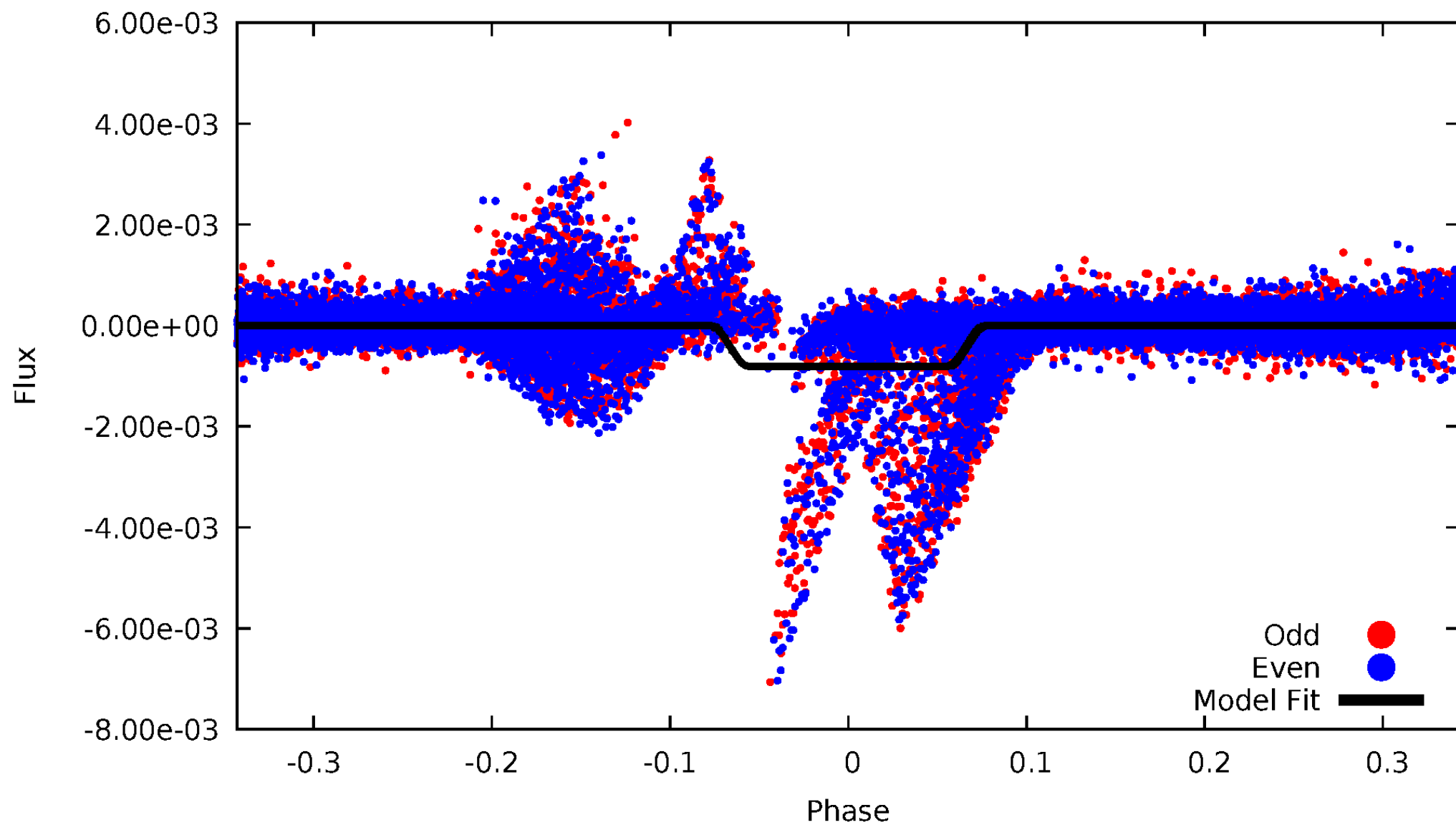
DV Odd/Even

TCE 010817620-02



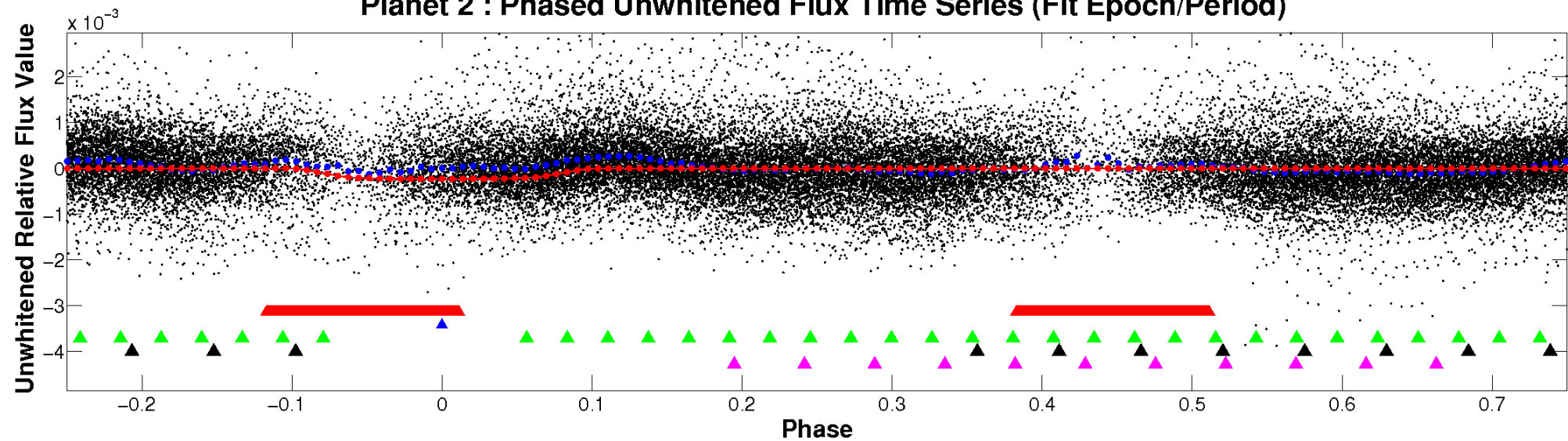
ALT Odd/Even

TCE 010817620-02

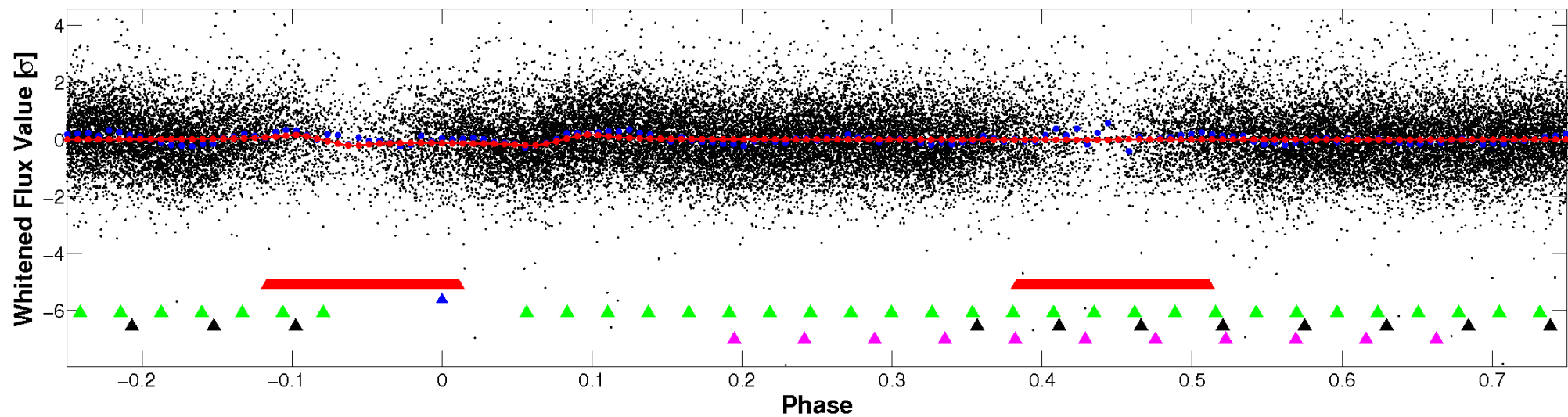


Non-Whitened Vs. Whitened Light Curve

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

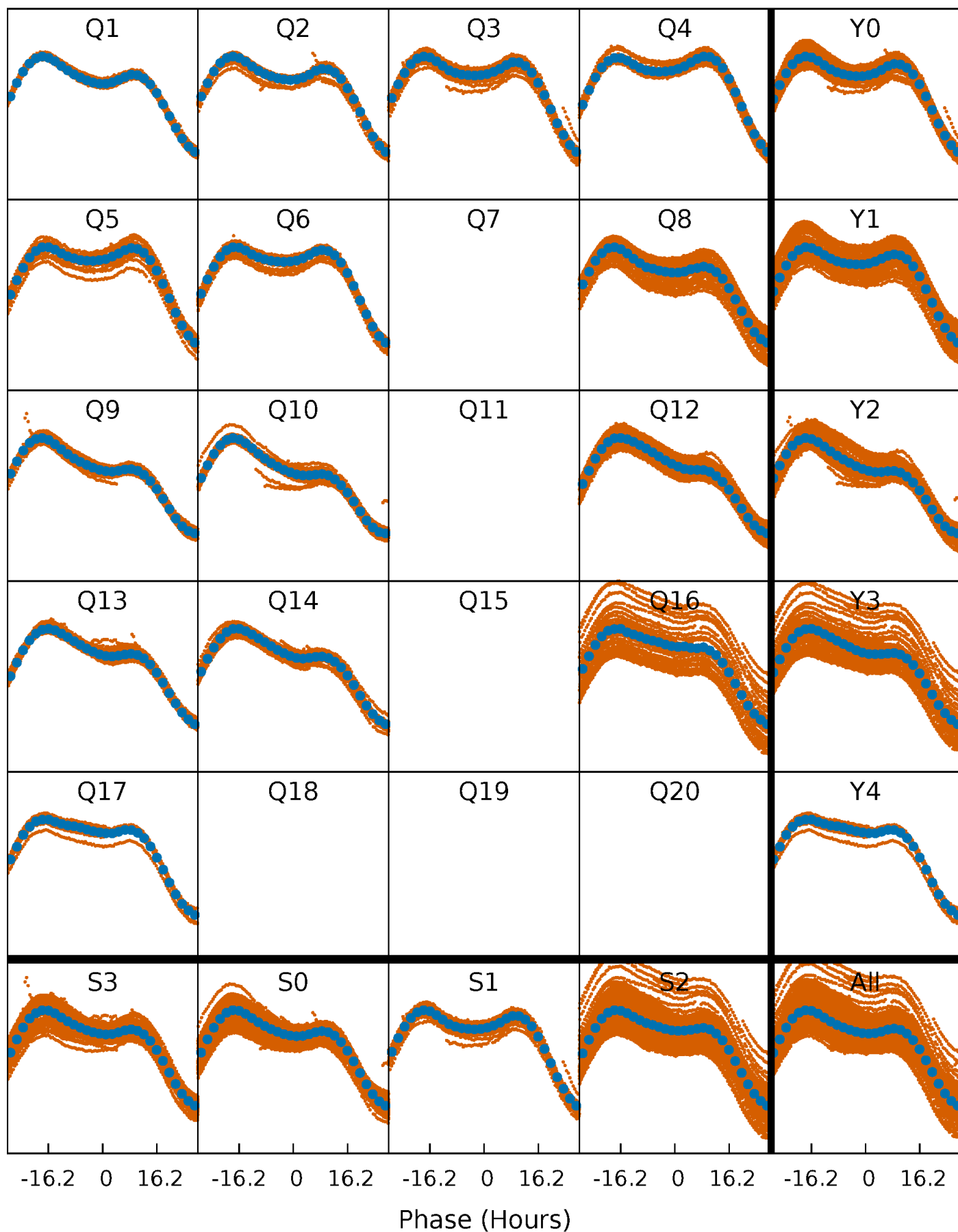


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



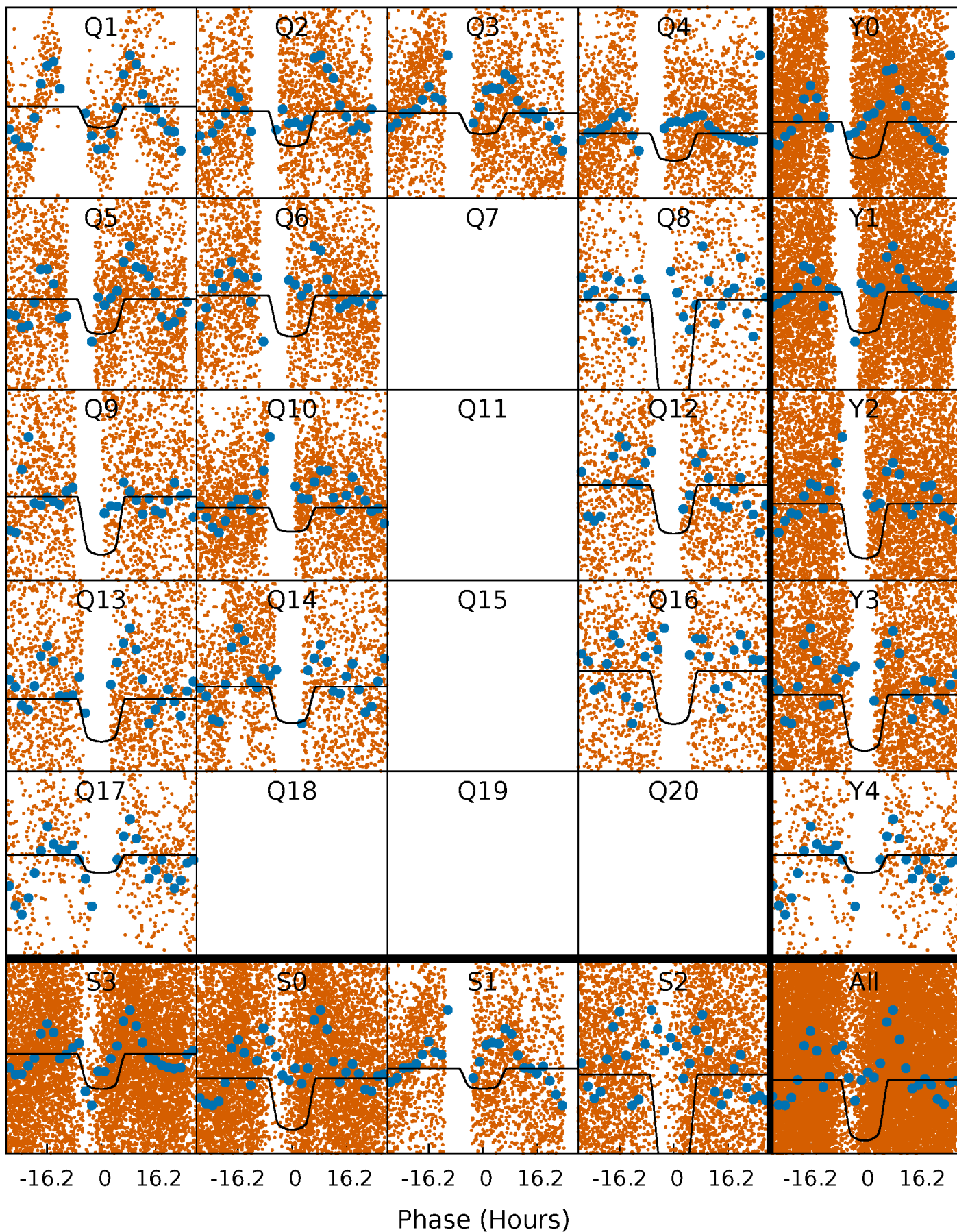
PDC Quarter-Phased Transit Curves

TCE 010817620-02 P= 2.945410 Days $T_0=134.055955$ (BKJD)



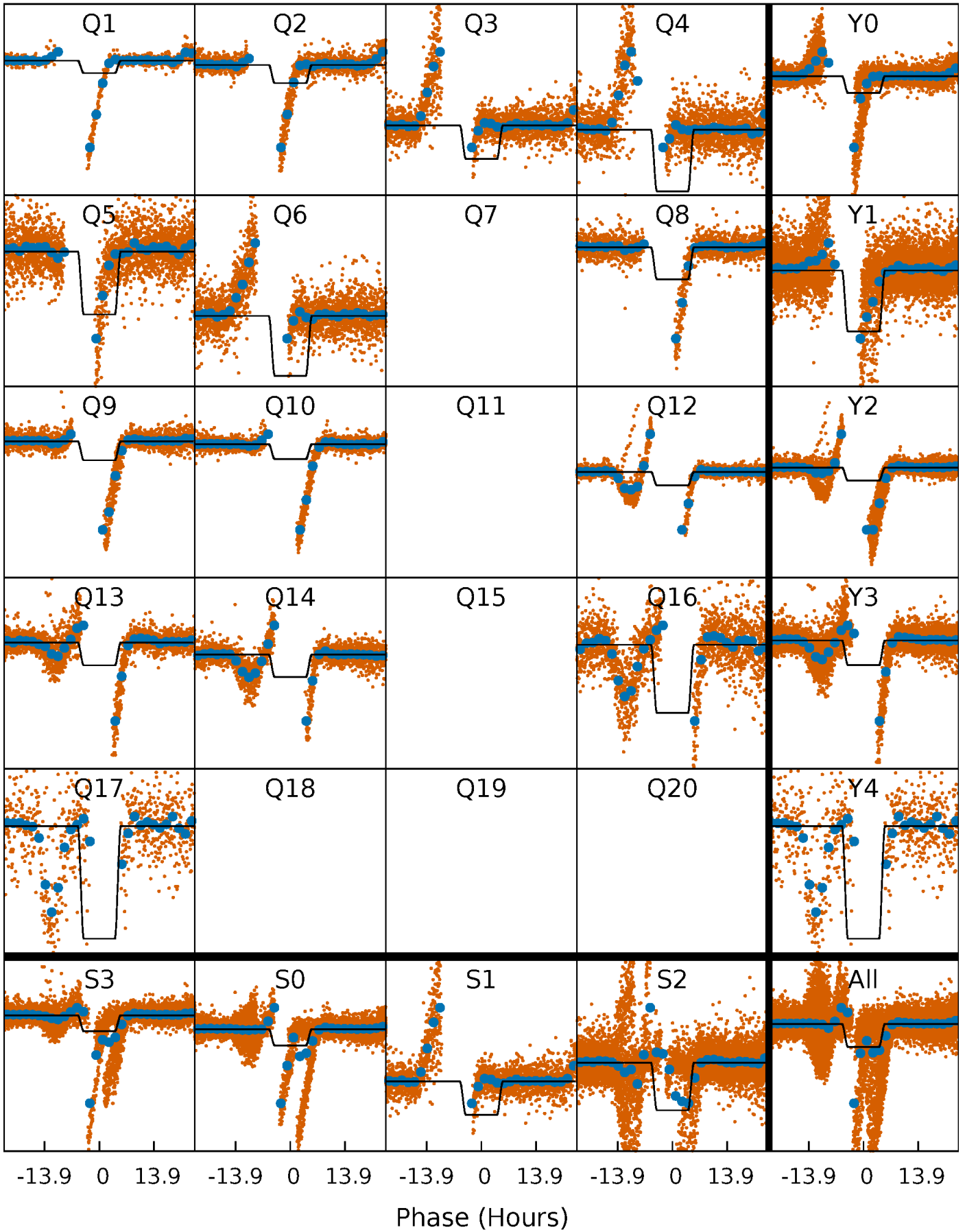
DV Quarter-Phased Transit Curves

TCE 010817620-02 P= 2.945410 Days $T_0=134.055955$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

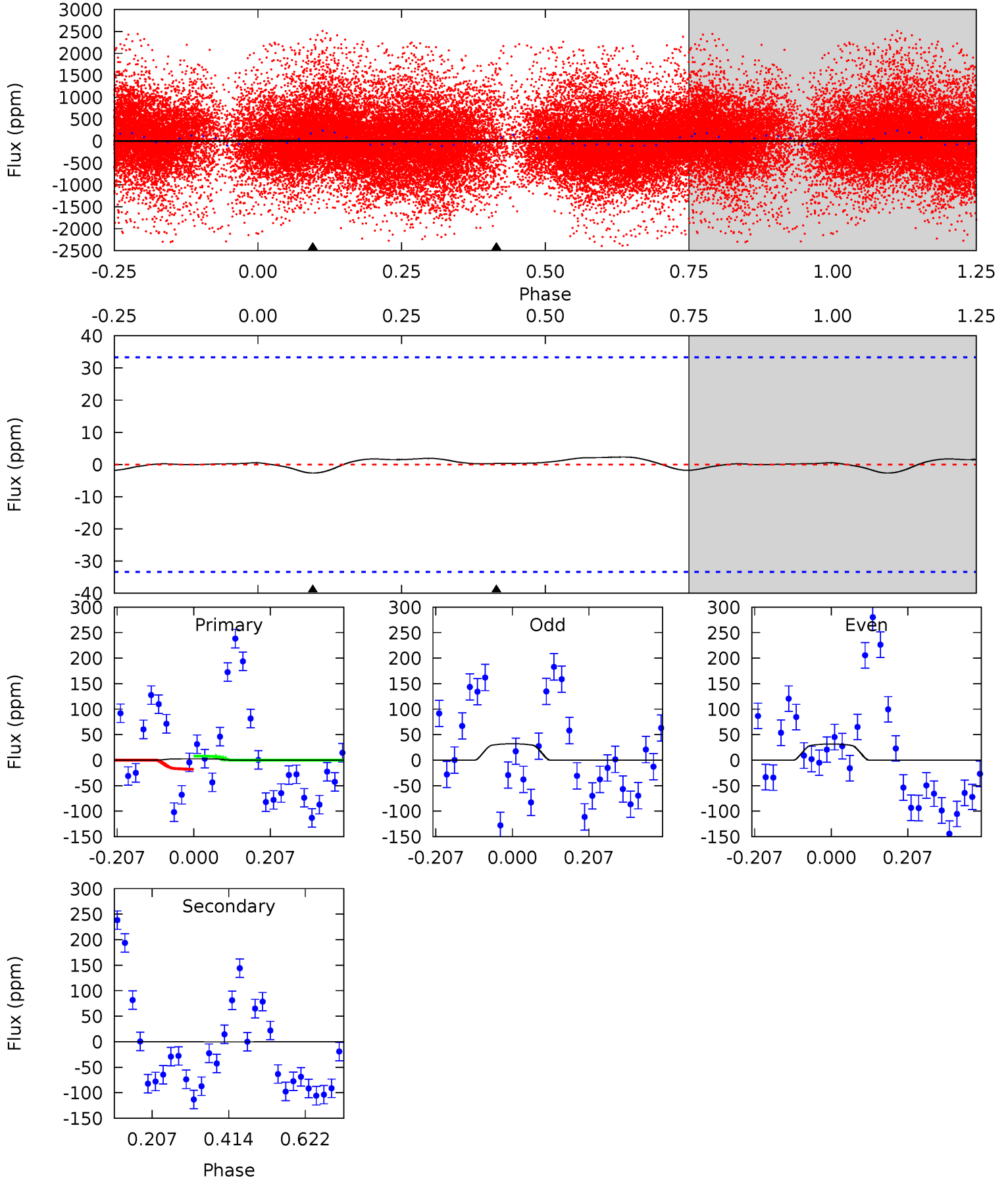
TCE 010817620-02 P= 2.945439 Days $T_0=134.011083$ (BKJD)



DV Model-Shift Uniqueness Test

010817620-02, P = 2.945410 Days, E = 131.110545 Days

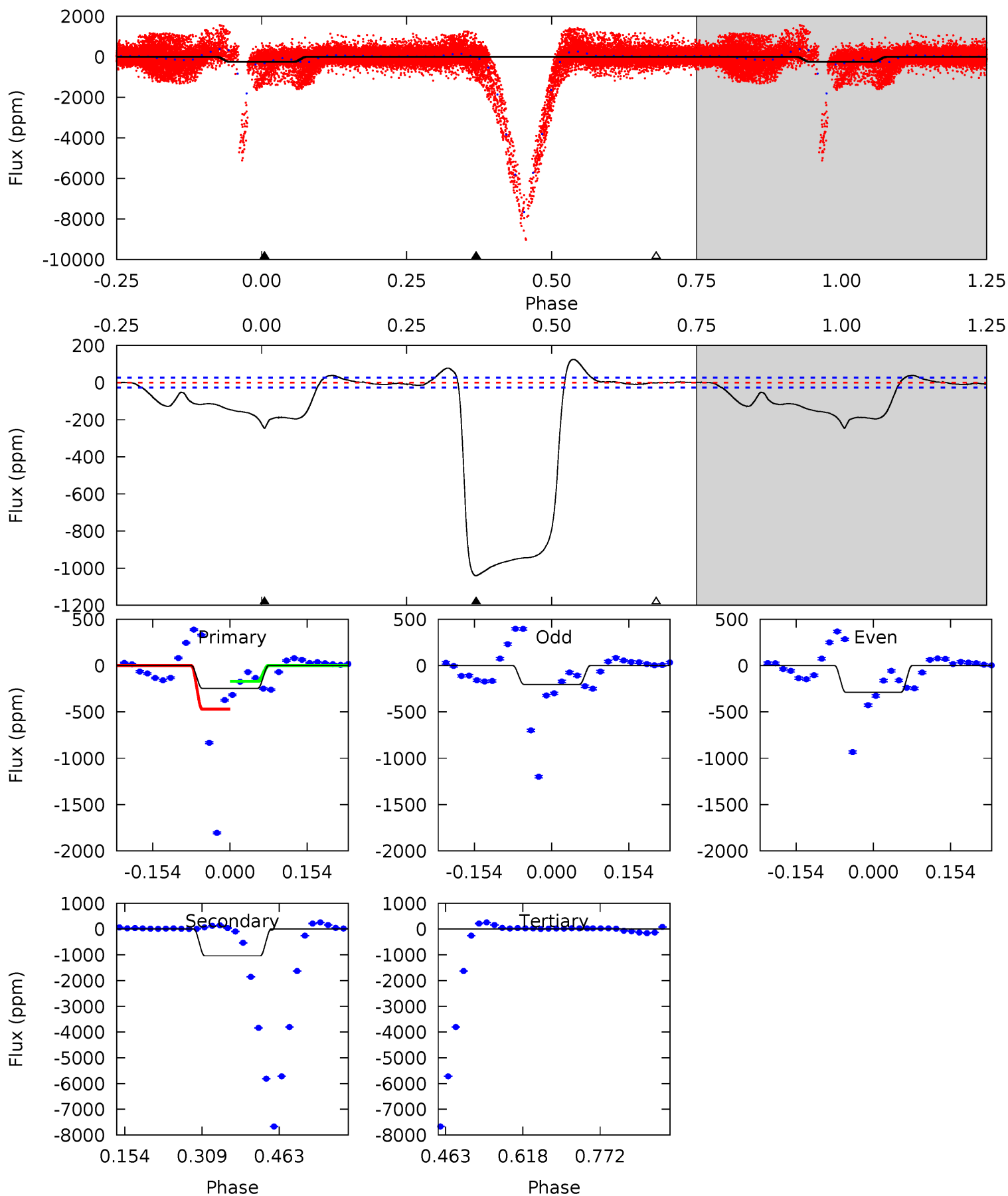
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.35	-0.04	0	0	4.41	1.26	0.17	0.35	0.35	-0.04	-0.04	0.03	-1.10	0.47	0.50



Alt Model-Shift Uniqueness Test

010817620-02, P = 2.945439 Days, E = 131.065644 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.1	173.7	0.44	0	4.47	1.42	7.49	40.6	41.1	173.3	173.7	7.15	1.56	0.11	22.6



Stellar Parameters For KIC 010817620

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8239^{+228}_{-342}	$3.816^{+0.382}_{-0.067}$	$-0.280^{+0.200}_{-0.300}$	$2.766^{+0.293}_{-1.172}$	$1.827^{+0.086}_{-0.366}$	$0.122^{+0.374}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-42%	+5%/-20%	+308%/-22%
Source	KIC0	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 010817620-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 8	$4.98^{+0.55}_{-1.17}$	3686^{+228}_{-405}	-3437^{+6393}_{-531}	$0.002^{+0.432}_{-0.457}$
Alt.	-1041 ± 6	$8.20^{+0.83}_{-1.77}$	3686^{+231}_{-383}	8880^{+334}_{-379}	20^{+11}_{-3}

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

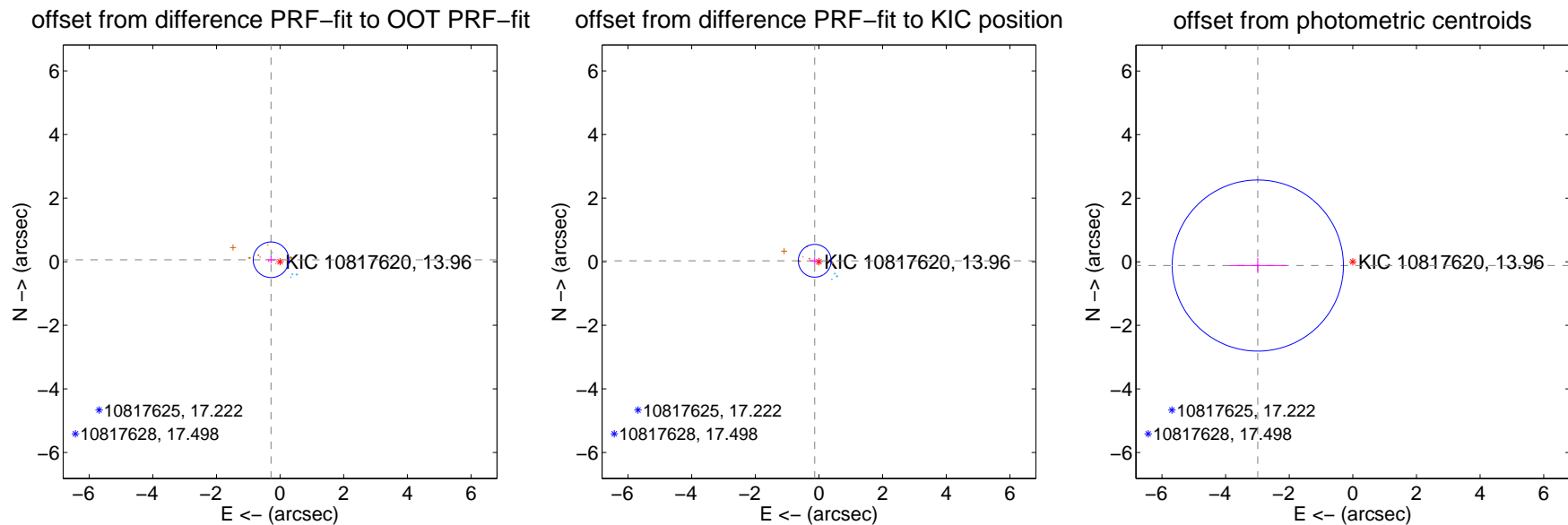
DV Centroid Data

Supplemental centroid analysis for 010817620-02. Kepler magnitude: 13.96. Transit SNR 11.95

There are 4 quarters with good PRF difference image offsets

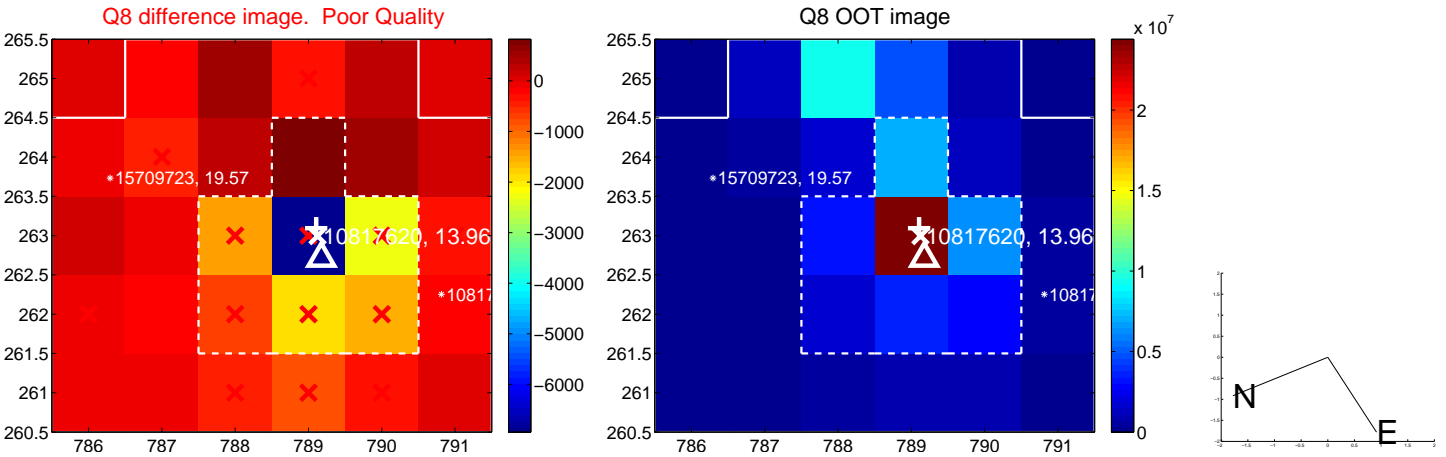
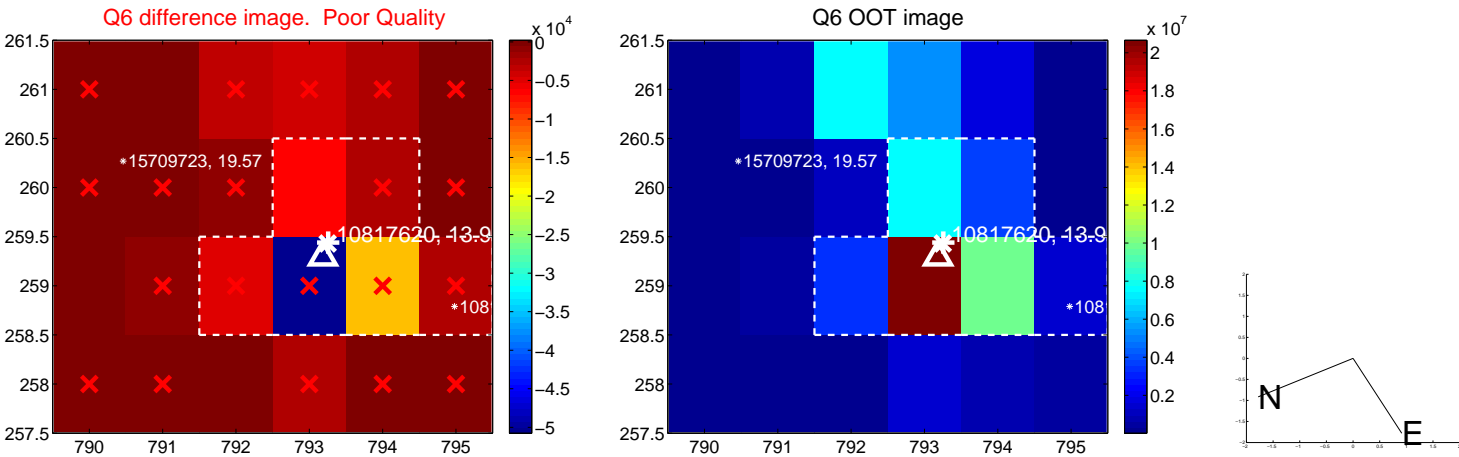
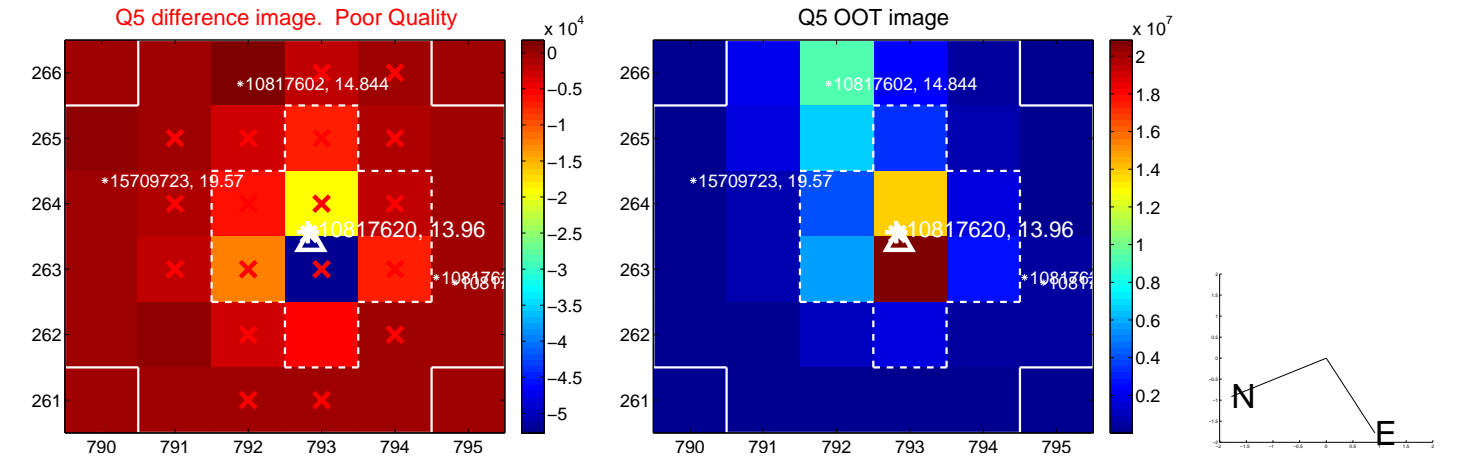
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.292 ± 0.187	1.57	0.286 ± 0.177	0.061 ± 0.111
PRF-fit source offset from KIC position	0.137 ± 0.172	0.80	0.134 ± 0.162	0.029 ± 0.109
photometric centroid source offset	2.99 ± 0.90	3.33	2.99 ± 0.90	-0.12 ± 0.24

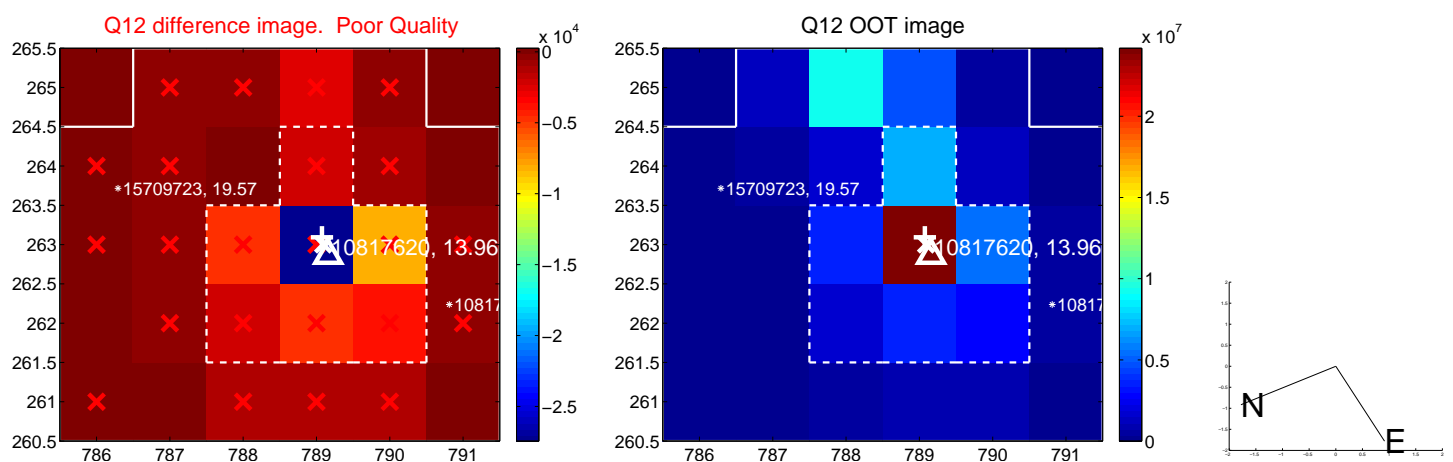
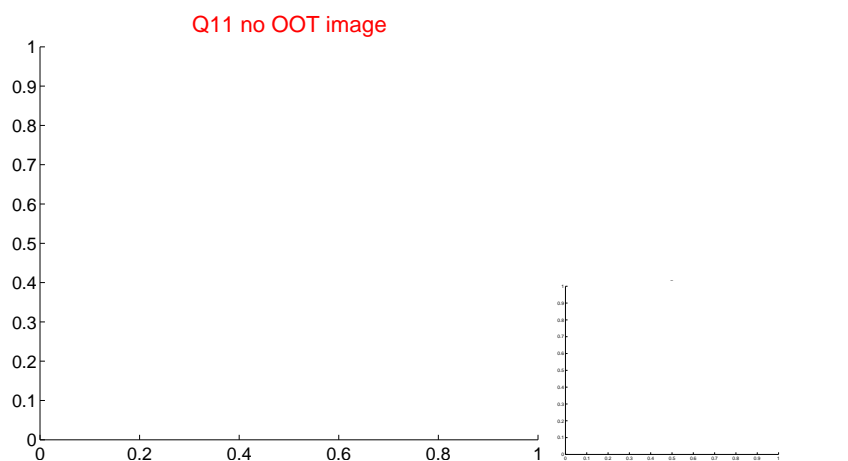
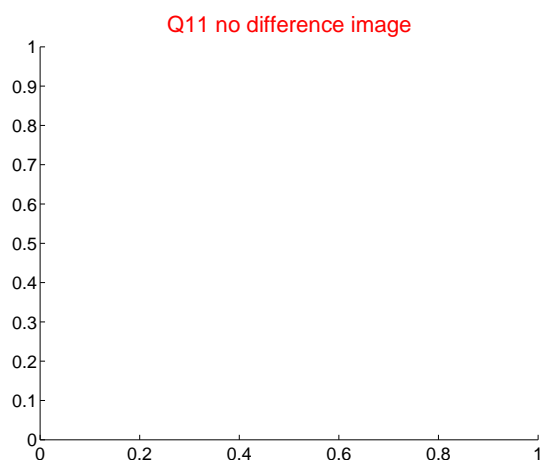
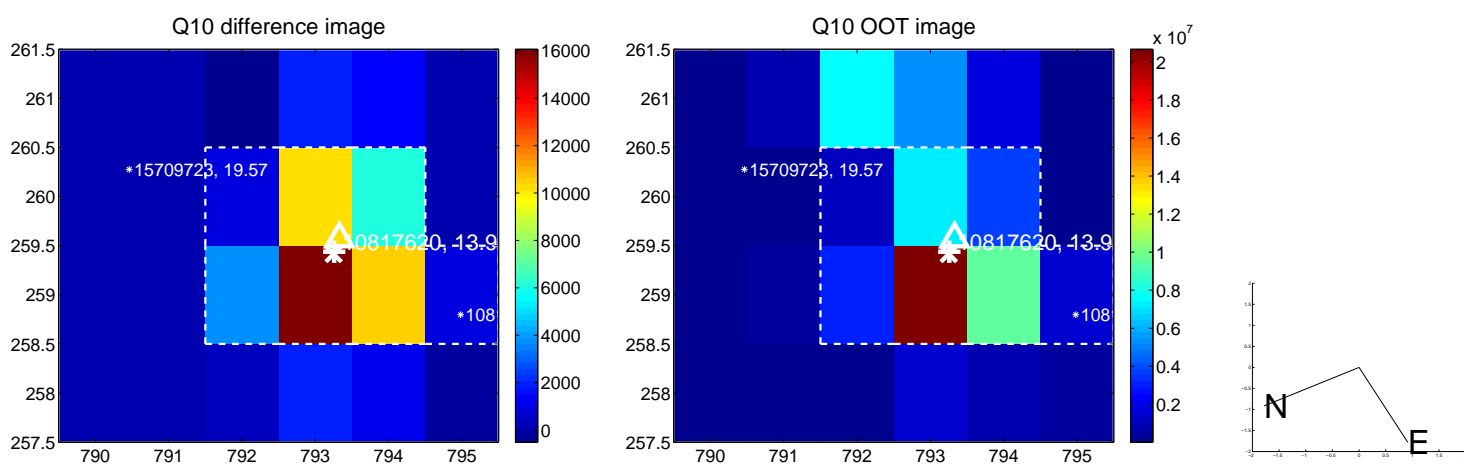
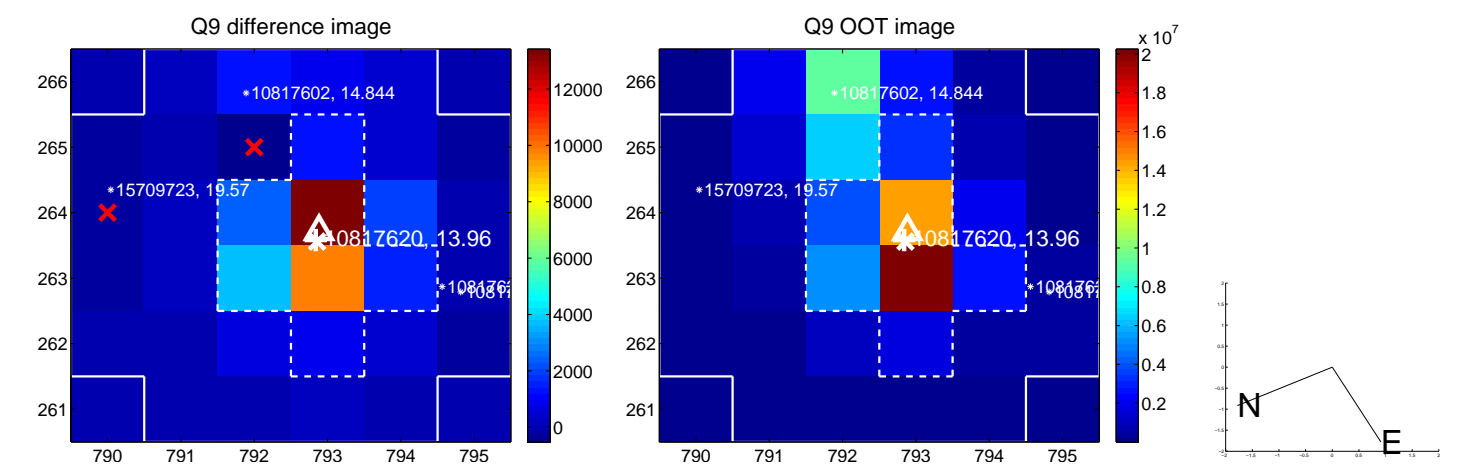


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

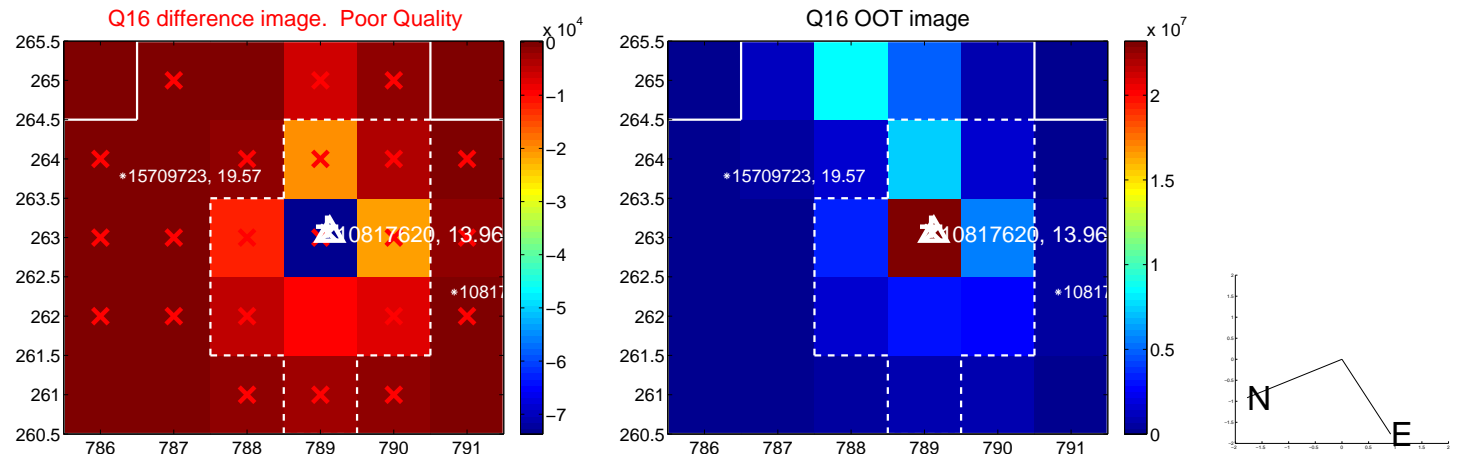
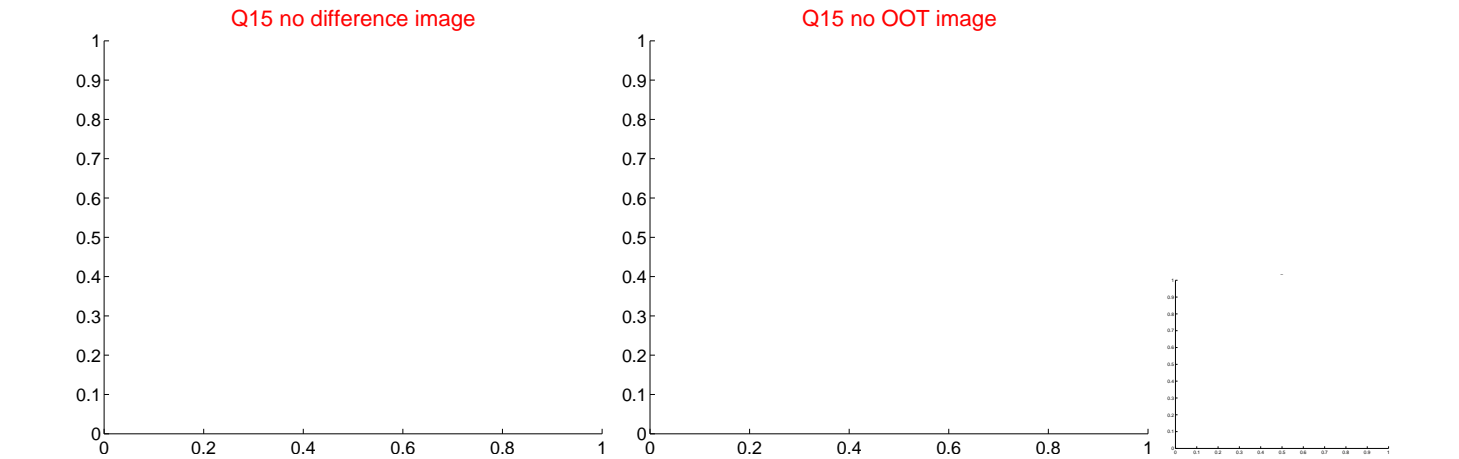
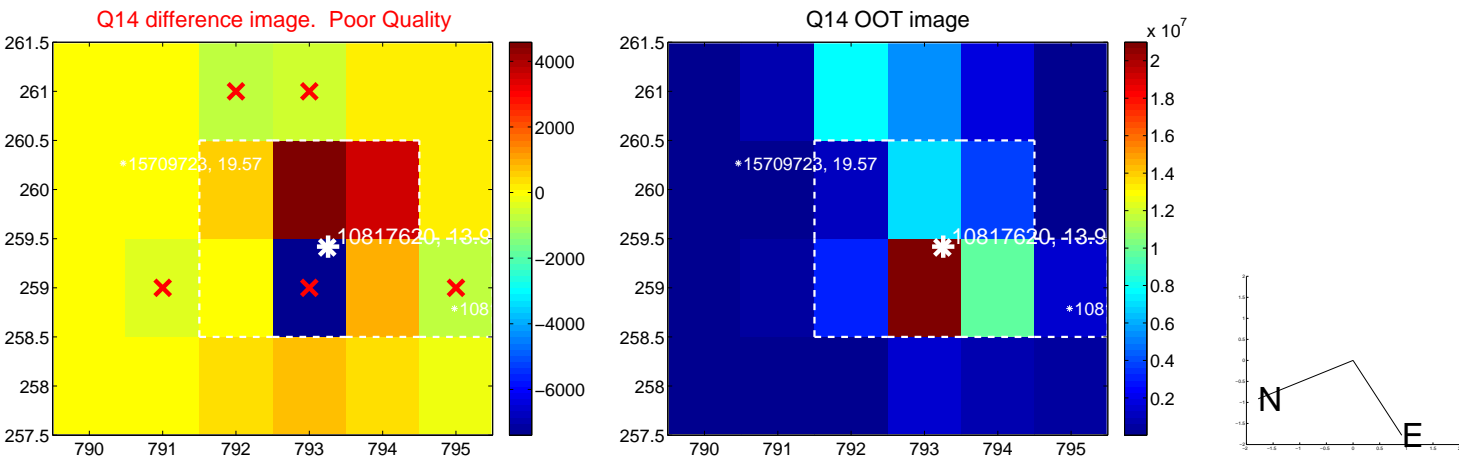
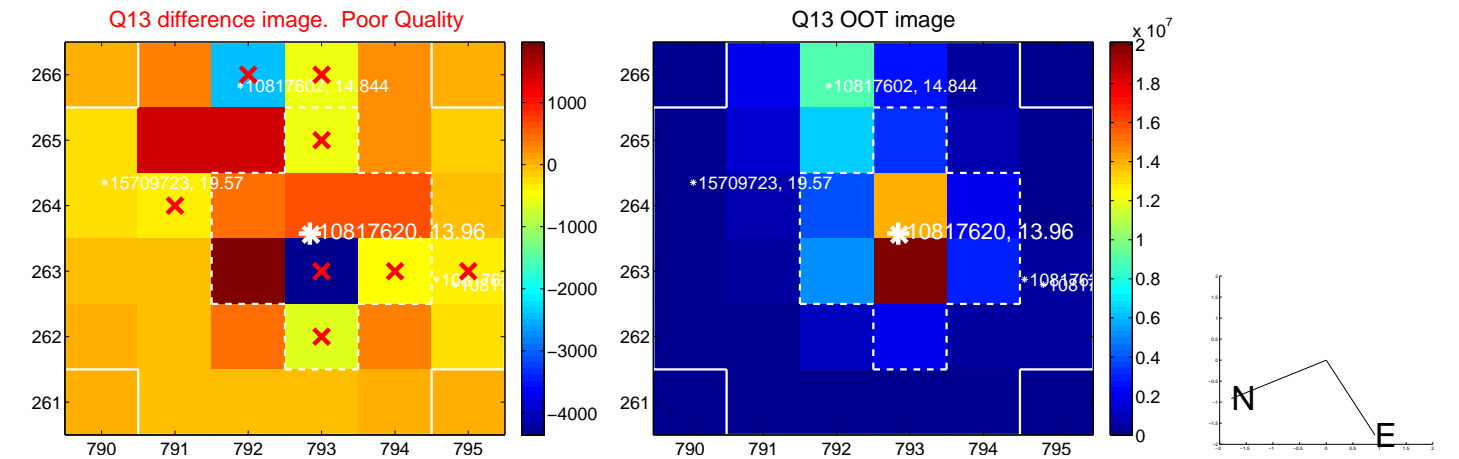
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



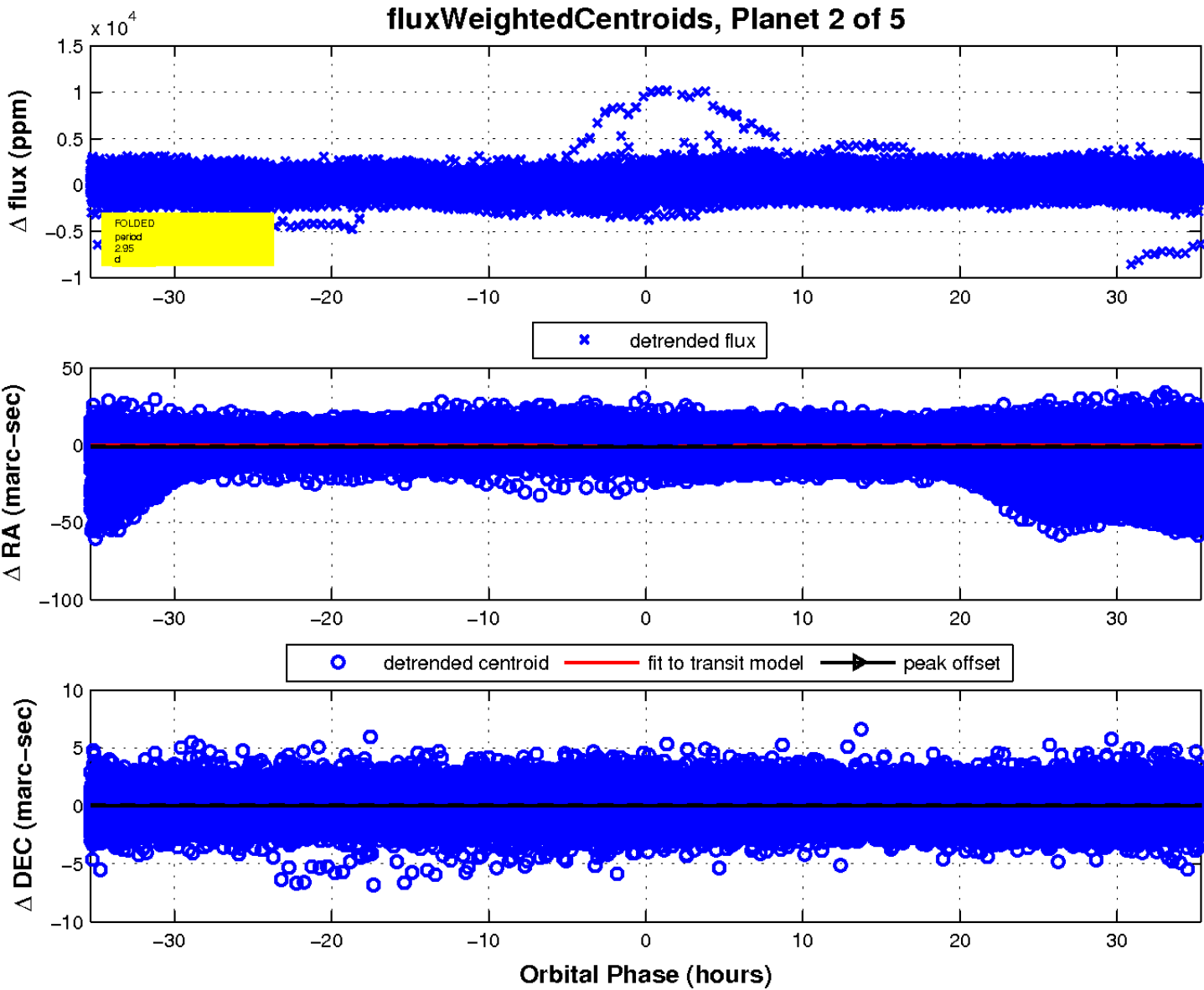
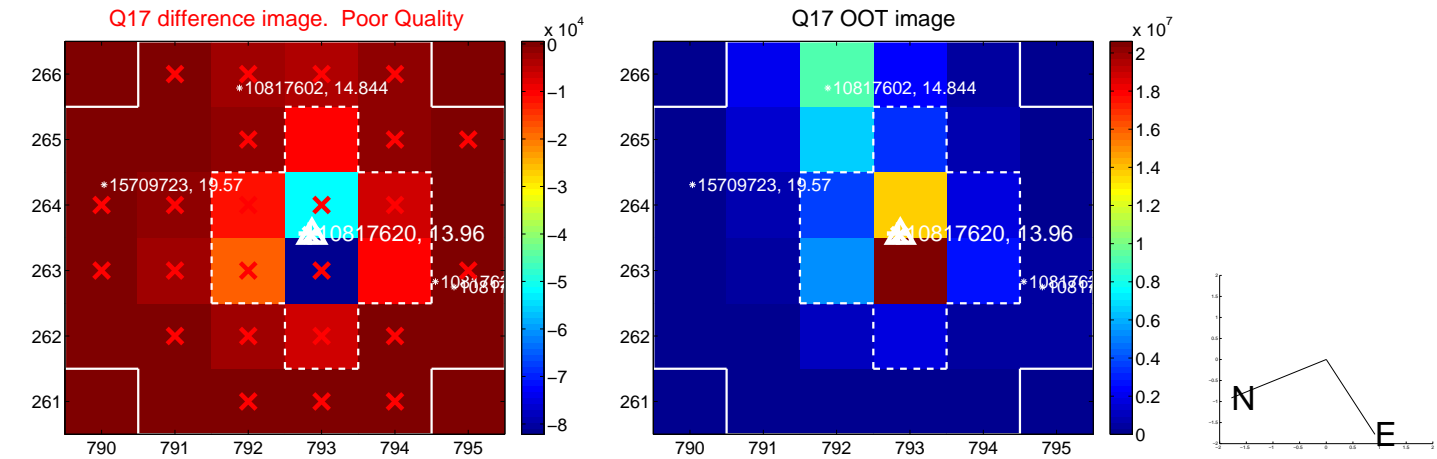
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

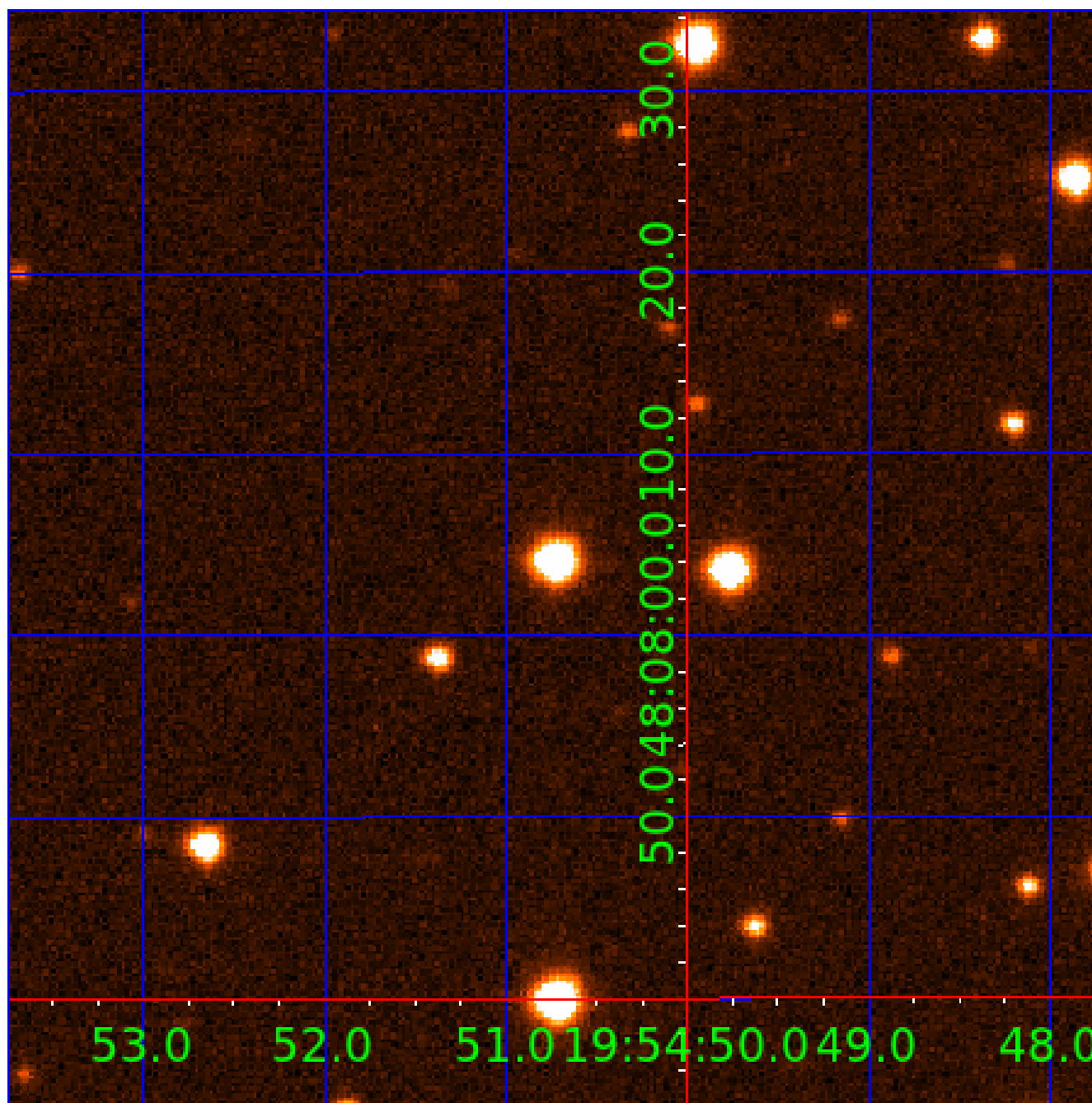


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010817620

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})
010817620-01	OBS	No	1.473088	132.237872	13.4	2.560	10.9	1.8	2.77	8239	1.36	32909.56
010817620-02	OBS	No	2.945410	134.055955	230.0	14.215	9.7	12.0	2.77	8239	5.23	13064.70
010817620-03	OBS	No	44.260716	134.222375	686.2	7.793	13.7	8.8	2.77	8239	10.83	352.32
010817620-04	OBS	No	138.595003	194.015148	253.1	4.344	13.3	3.4	2.77	8239	4.90	76.91
010817620-05	OBS	No	138.572114	193.538093	479.3	5.399	13.5	4.9	2.77	8239	6.66	76.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010817620-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
010817620-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010817620-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010817620-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
010817620-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD

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

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

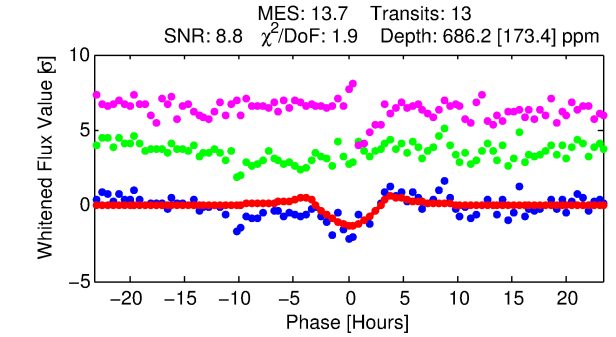
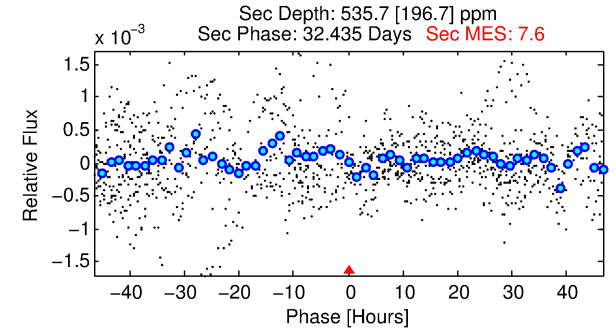
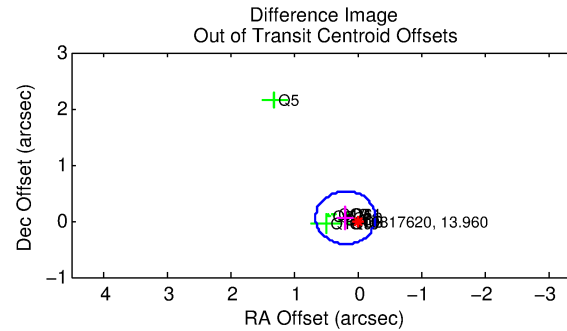
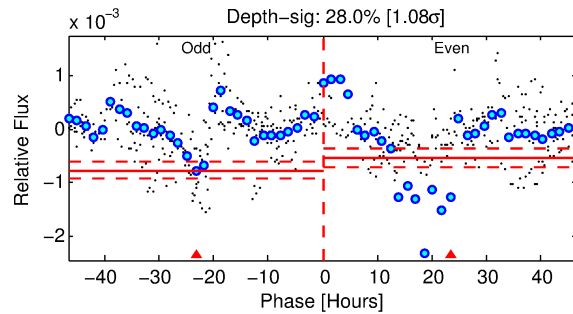
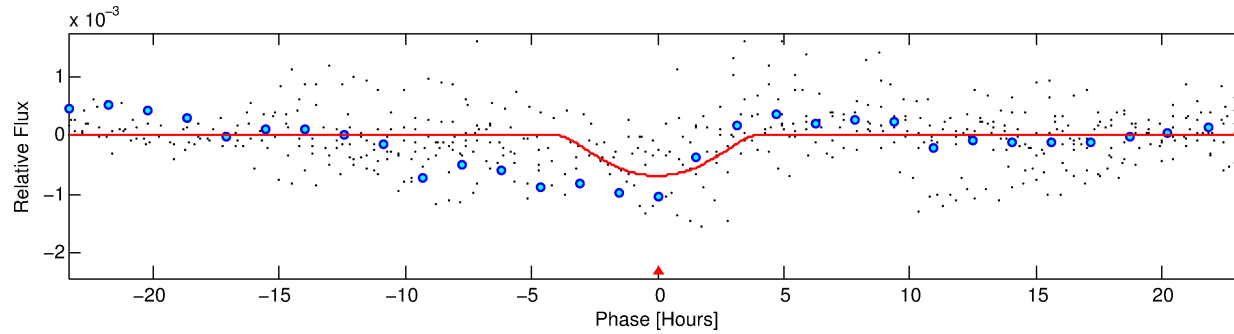
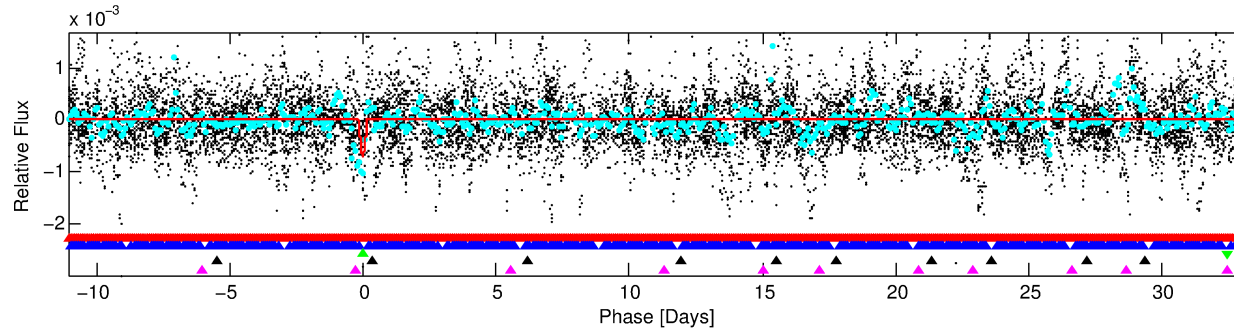
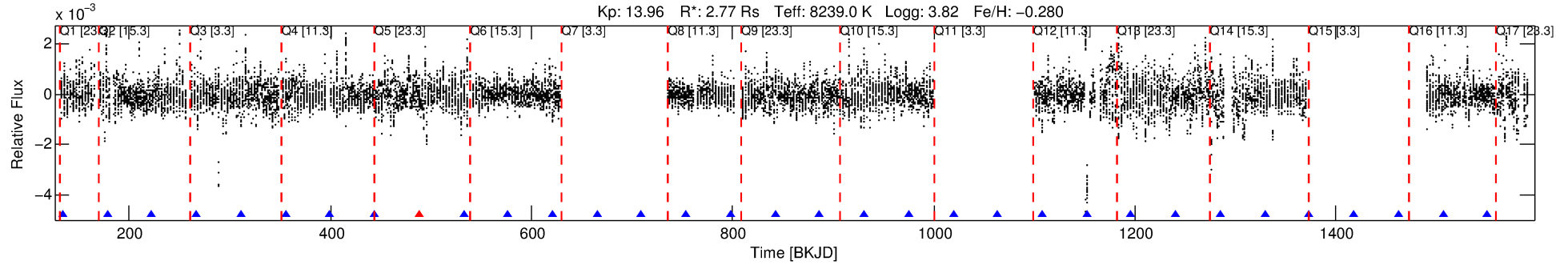
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010817620-03

No Significant Match Found

DV One-Page Summary

KIC: 10817620 Candidate: 3 of 5 Period: 44.261 d



DV Fit Results:

Period = 44.26072 [0.00247] d
Epoch = 134.2224 [0.0440] BKJD
Rp/R* = 0.0359 [0.0443]
a/R* = 13.99 [7.09]
b = 0.98 [0.09]
Seff = 352.32 [236.66]
Teq = 1105 [186] K
Rp = 10.83 [14.15] Re
a = 0.2994 [0.1219] AU
Ag = 225.18 [581.39] [0.39 σ]
Teffp = 6617 [4142] K [1.33 σ]

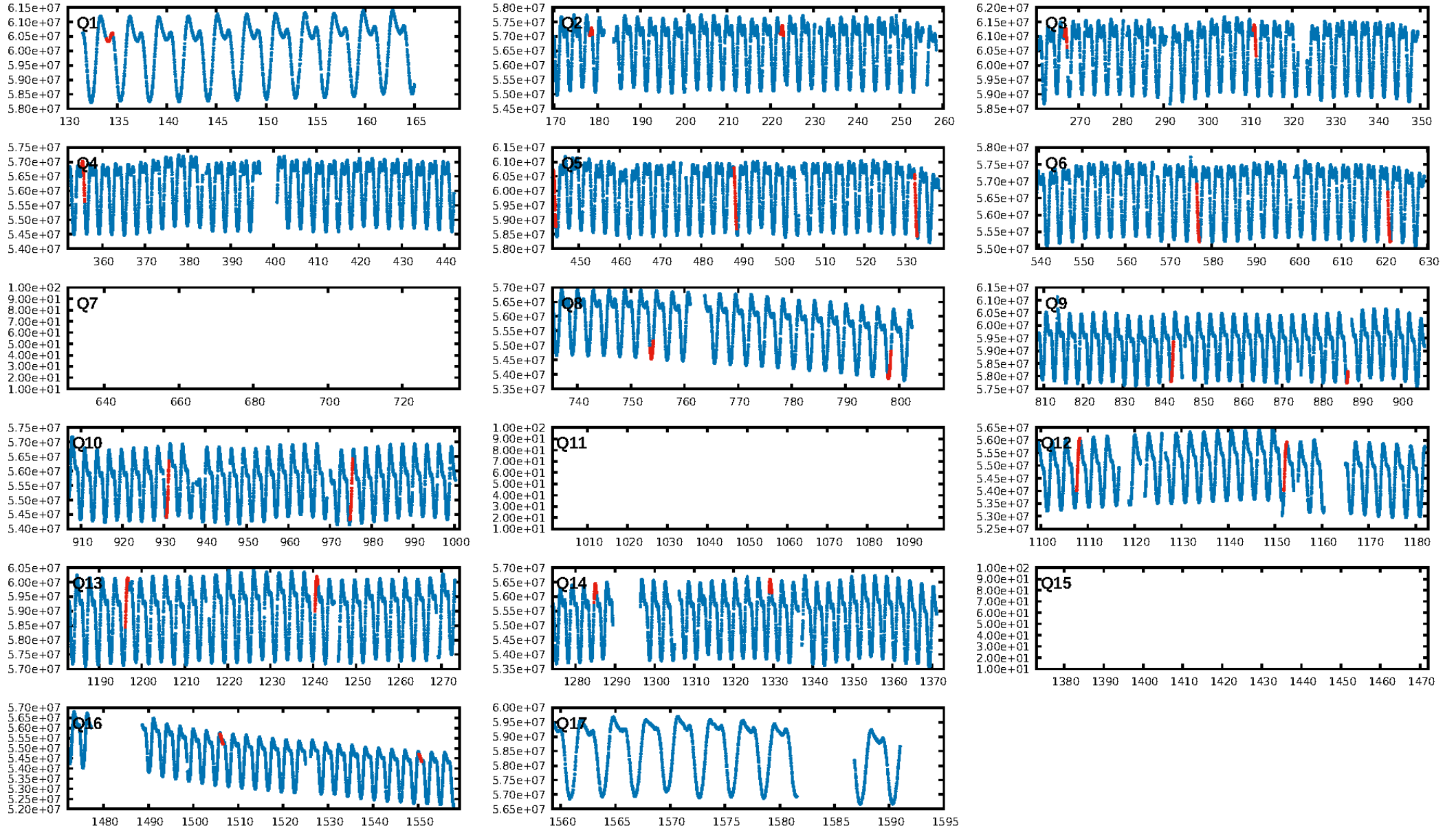
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.17 σ]
LongPeriod-sig: 100.0% [238.76 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.92 [12/13]
GhostDiagnostic-chr: 7.808
Centroid-sig: 2.2%
Centroid-so: 2.801 arcsec [2.07 σ]
OotOffset-rm: 0.194 arcsec [1.23 σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-rm: 0.080 arcsec [0.75 σ]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/13]

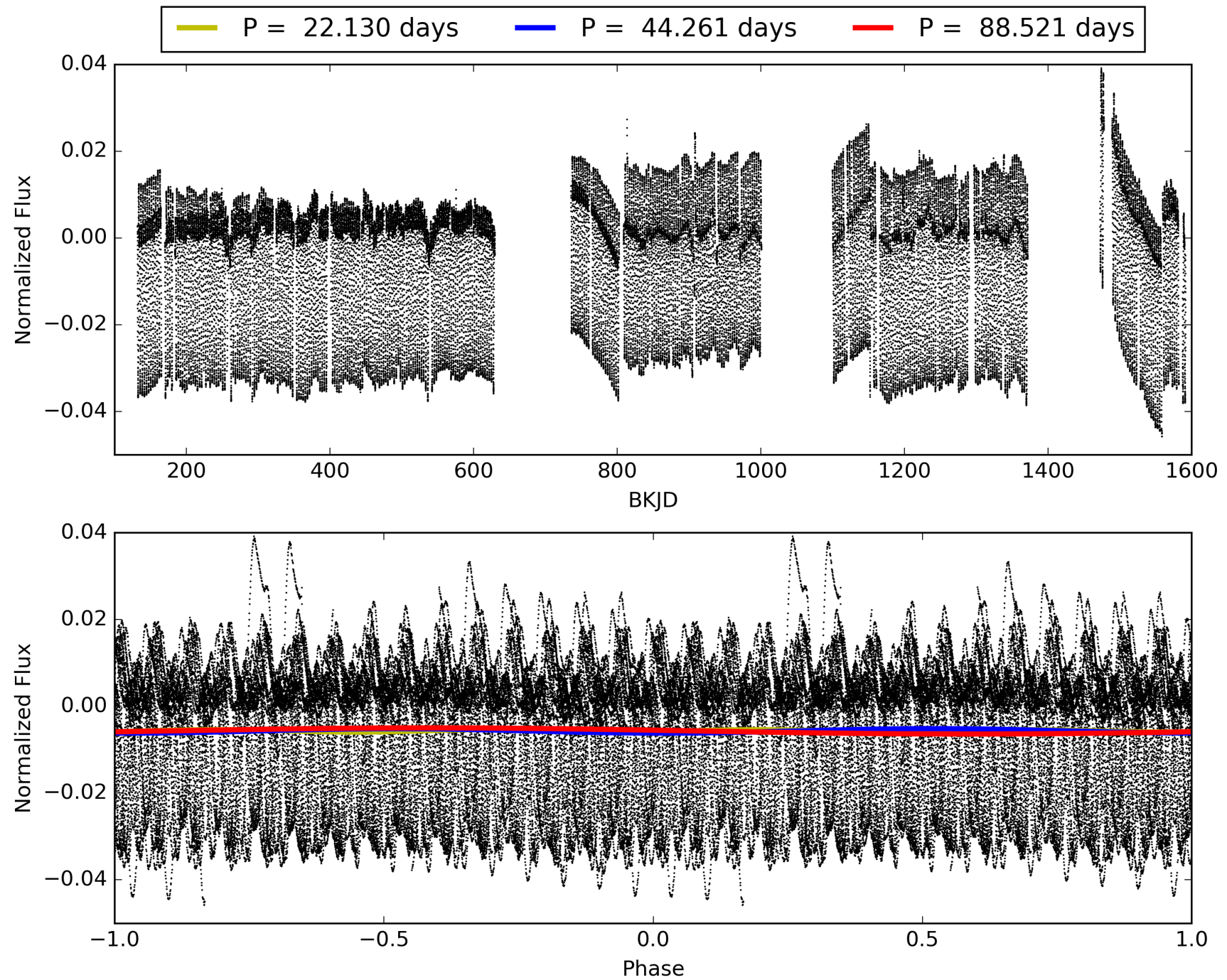
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:30:15 Z

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

TCE 010817620-03, PDC Light Curves

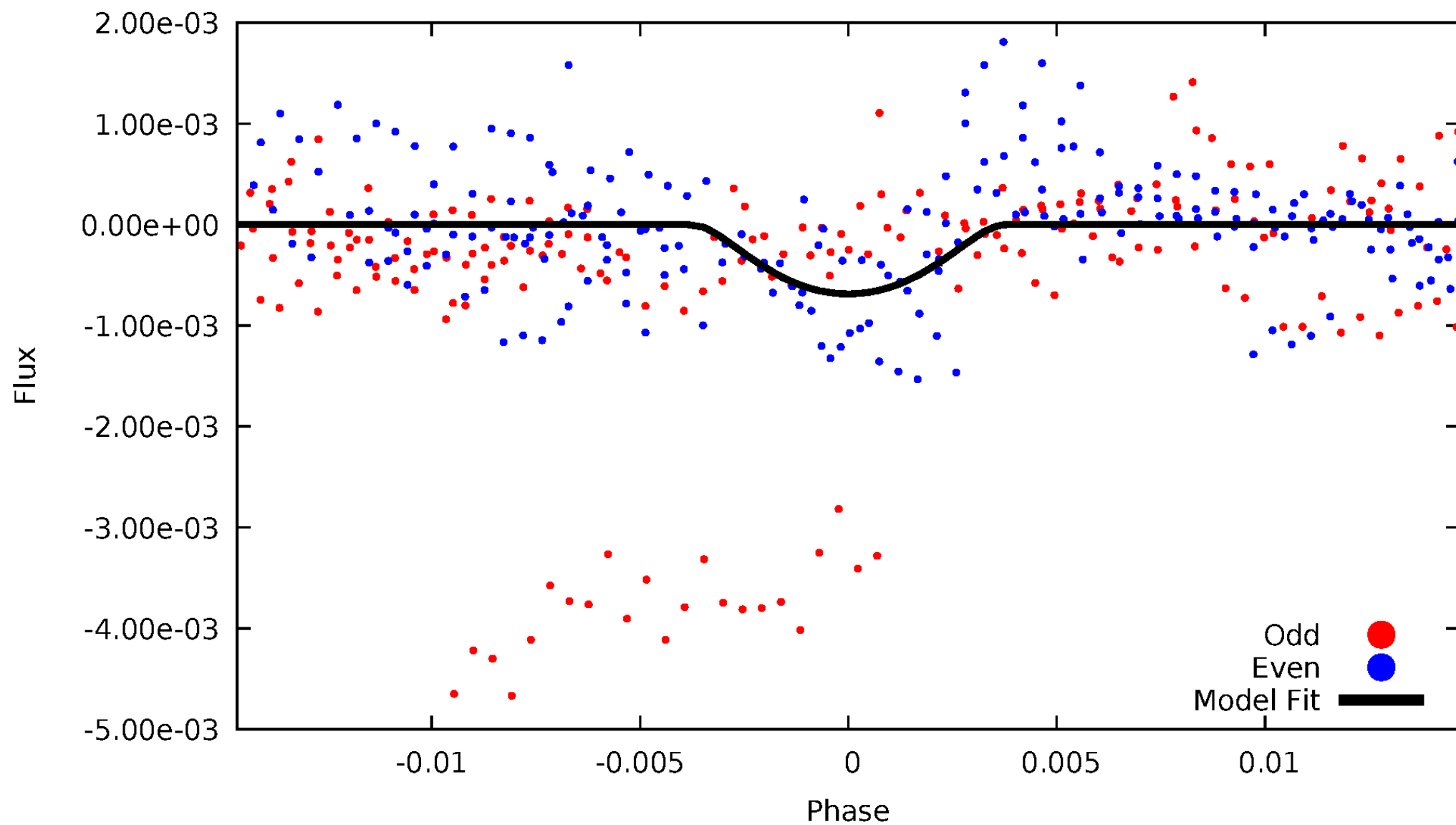


TCE 010817620-03



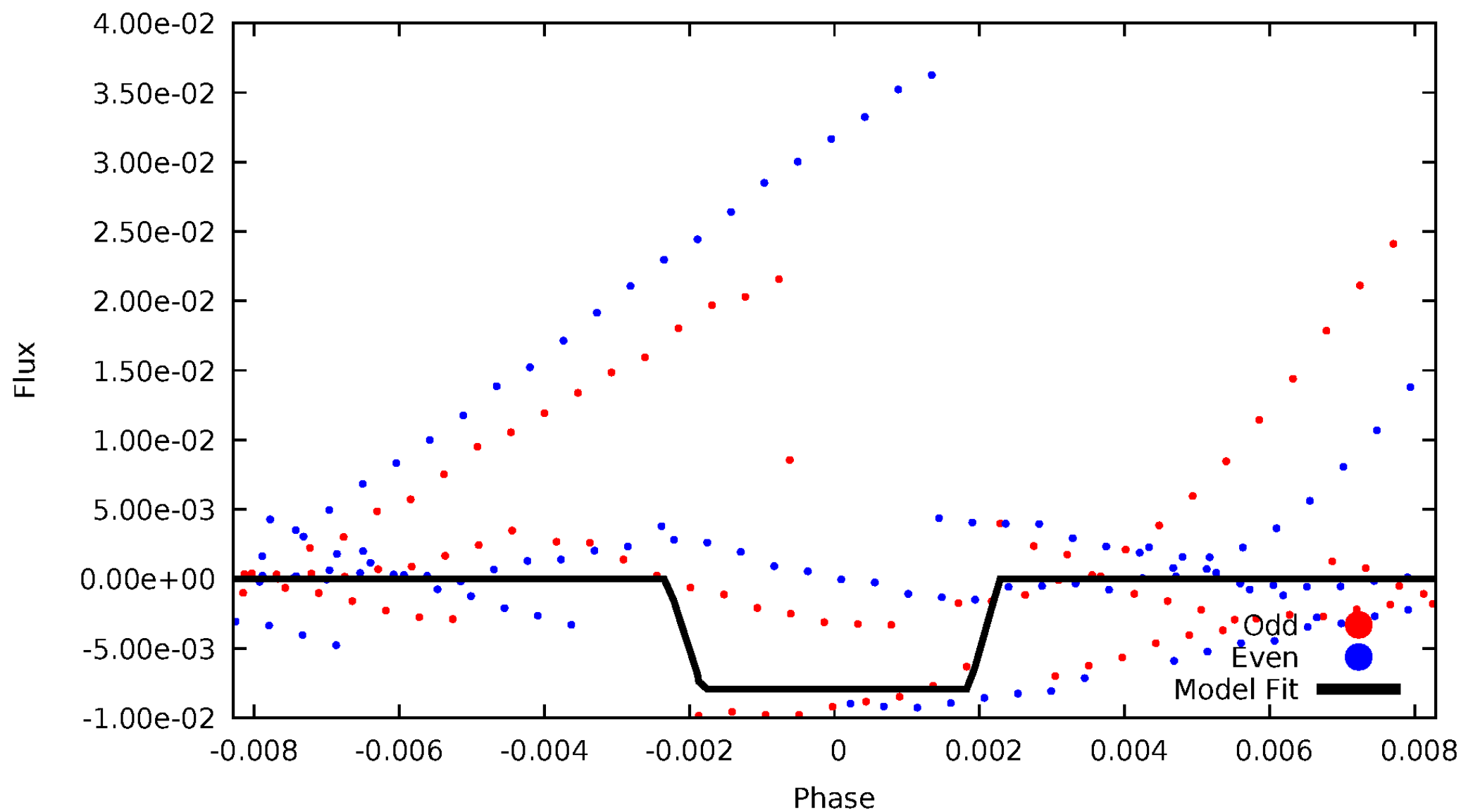
DV Odd/Even

TCE 010817620-03



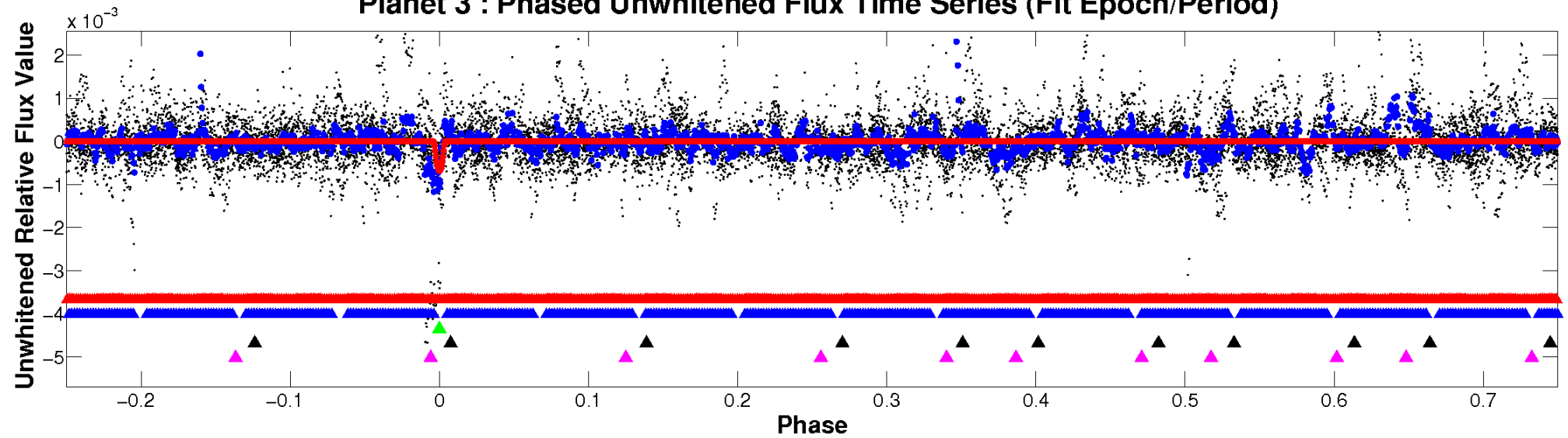
ALT Odd/Even

TCE 010817620-03

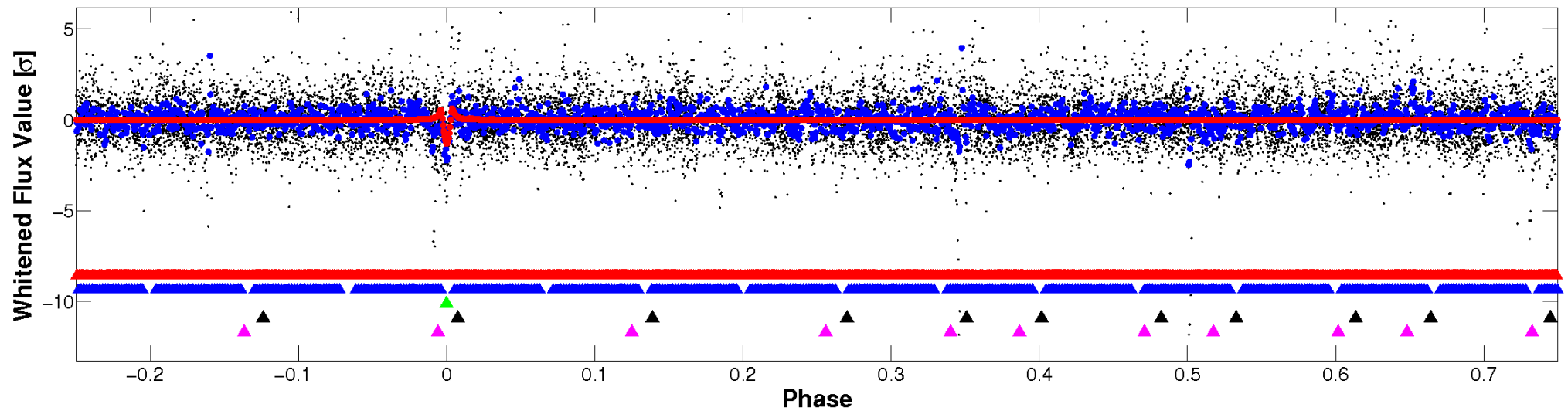


Non-Whitened Vs. Whitened Light Curve

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

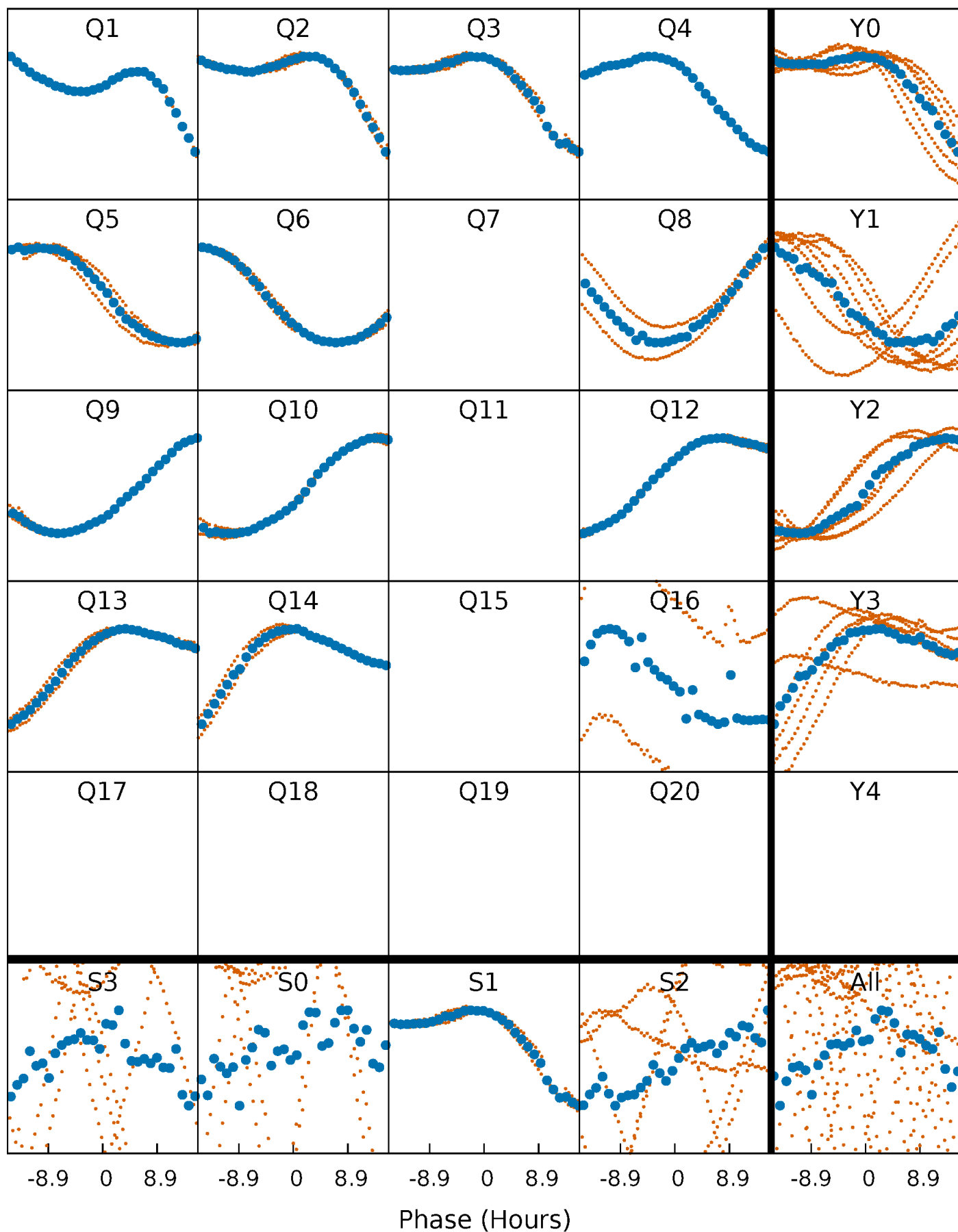


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



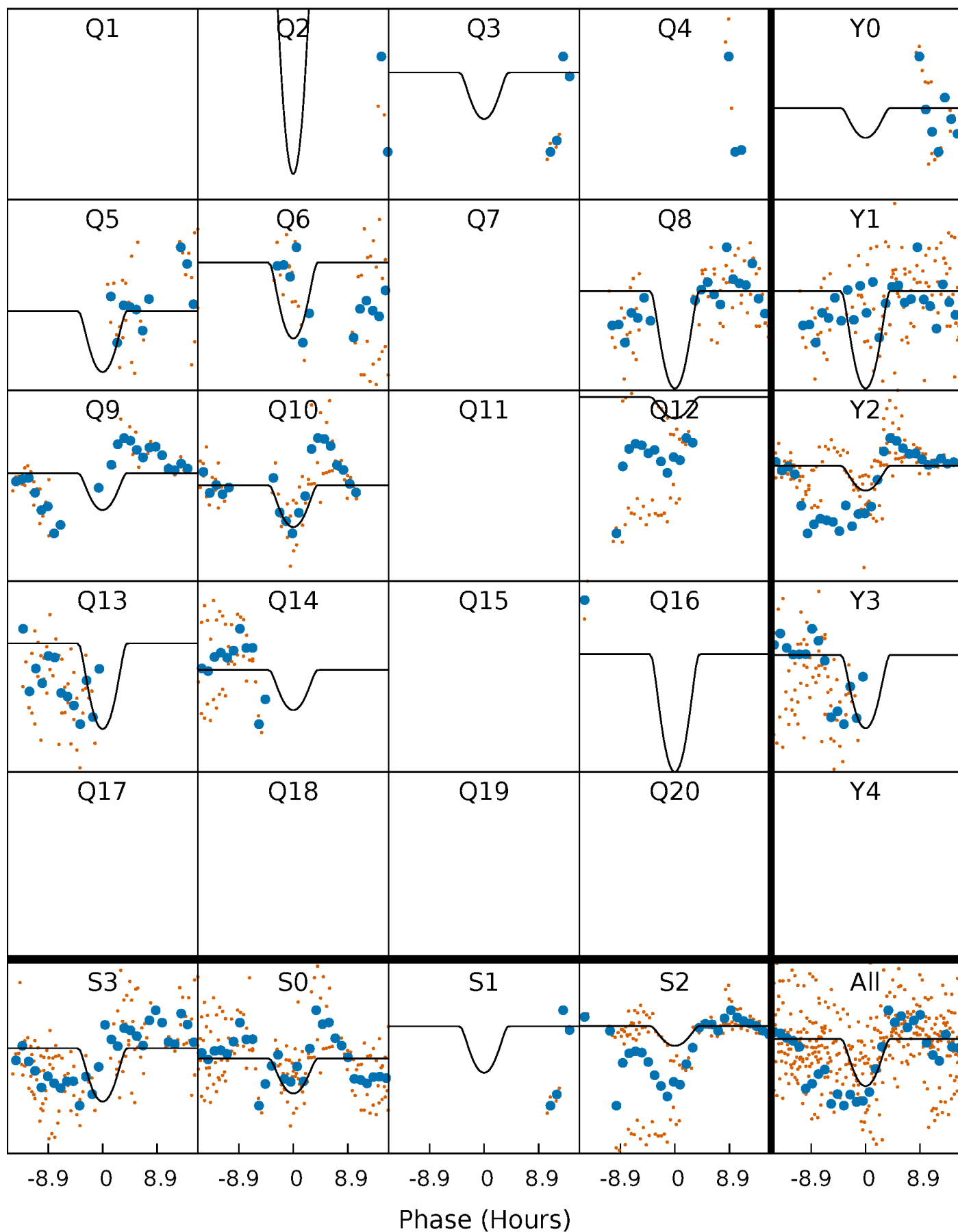
PDC Quarter-Phased Transit Curves

TCE 010817620-03 P= 44.260716 Days $T_0=134.222375$ (BKJD)



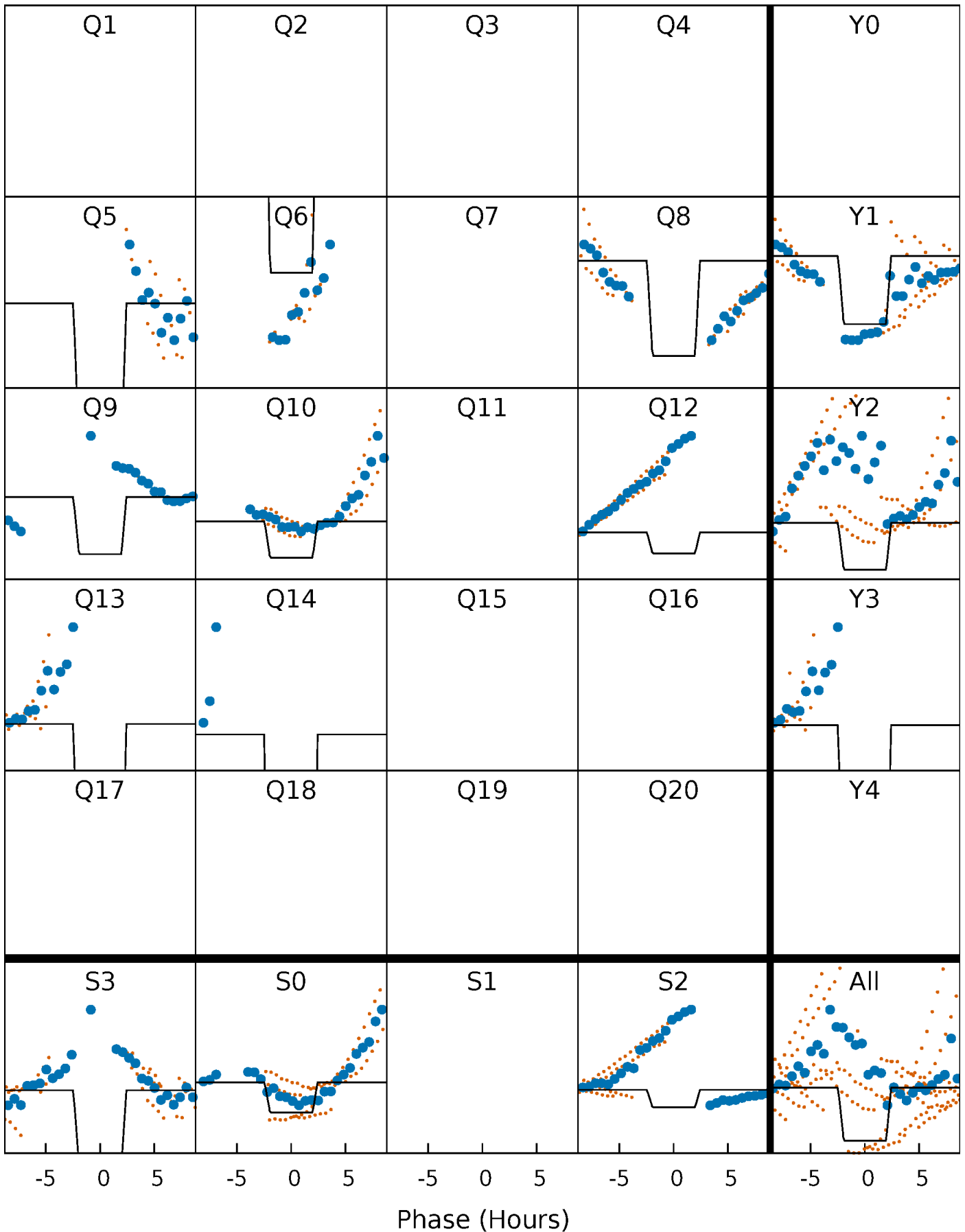
DV Quarter-Phased Transit Curves

TCE 010817620-03 P= 44.260716 Days $T_0=134.222375$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

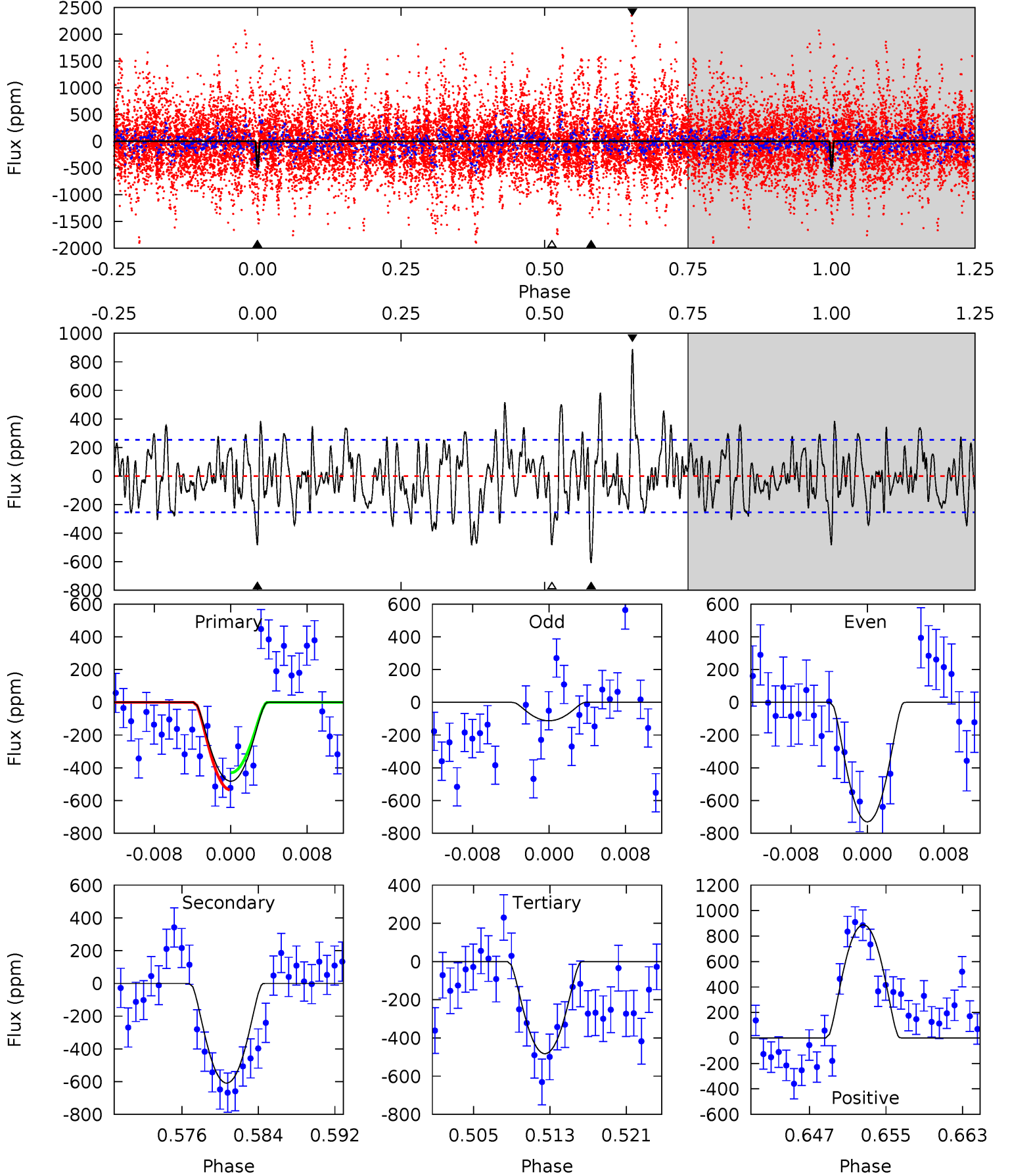
TCE 010817620-03 $P = 44.270048$ Days $T_0 = 134.072242$ (BKJD)



DV Model-Shift Uniqueness Test

010817620-03, P = 44.260716 Days, E = 89.961659 Days

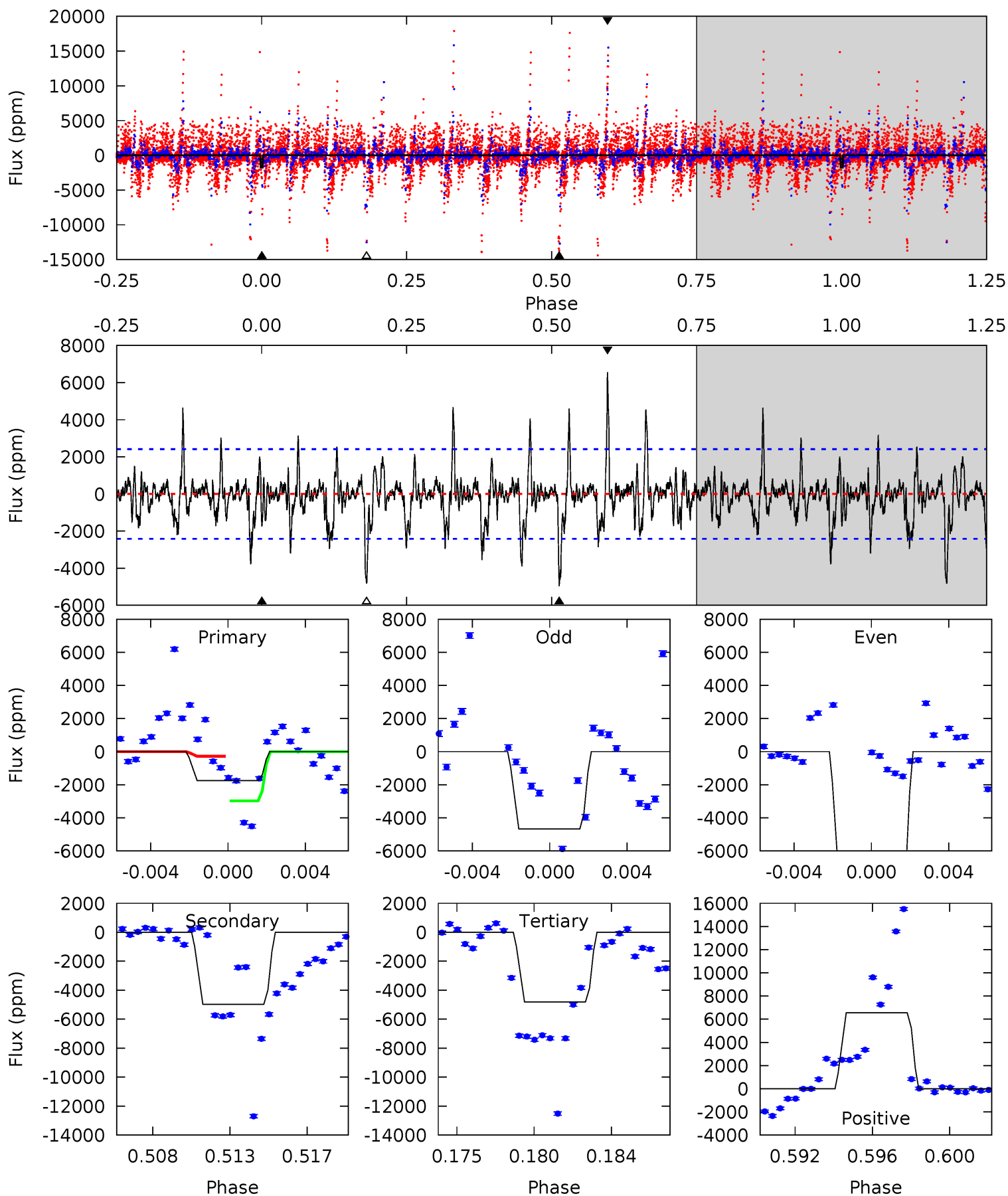
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.65	12.2	9.65	17.8	5.07	2.66	3.52	-0.00	-8.12	2.53	-5.59	6.01	1.88	0.59	1.05



Alt Model-Shift Uniqueness Test

010817620-03, P = 44.270048 Days, E = 89.802194 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.76	10.7	10.3	14.1	5.18	2.85	1.91	-6.54	-10.3	0.36	-3.40	4.14	17.2	0.57	0



Stellar Parameters For KIC 010817620

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8239^{+228}_{-342}	$3.816^{+0.382}_{-0.067}$	$-0.280^{+0.200}_{-0.300}$	$2.766^{+0.293}_{-1.172}$	$1.827^{+0.086}_{-0.366}$	$0.122^{+0.374}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-42%	+5%/-20%	+308%/-22%
Source	KIC0	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 010817620-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-609 ± 50	$12.29^{+11.89}_{-8.28}$	1492^{+100}_{-161}	5808^{+5643}_{-1364}	197^{+1598}_{-147}
Alt.	-4971 ± 466	$24.30^{+13.67}_{-12.23}$	1502^{+96}_{-171}	7137^{+3971}_{-1368}	401^{+1213}_{-235}

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

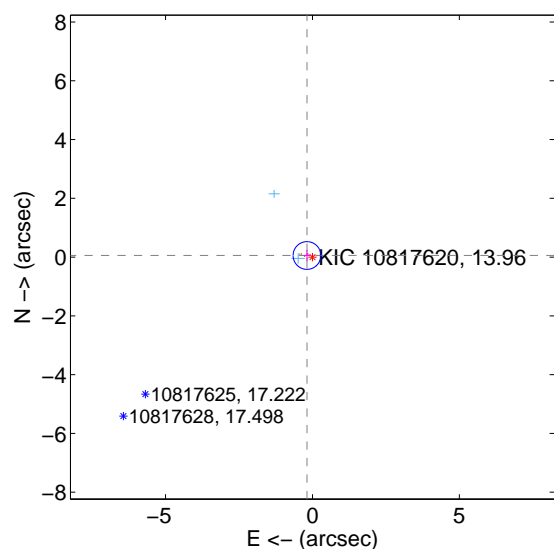
Supplemental centroid analysis for 010817620-03. Kepler magnitude: 13.96. Transit SNR 8.78

There are 6 quarters with good PRF difference image offsets

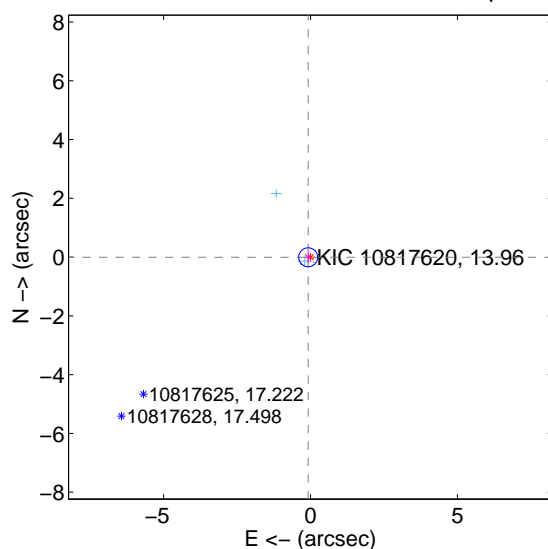
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.194 ± 0.157	1.23	0.186 ± 0.119	0.055 ± 0.193
PRF-fit source offset from KIC position	0.080 ± 0.107	0.75	0.080 ± 0.118	-0.006 ± 0.203
photometric centroid source offset	2.80 ± 1.35	2.07	-2.75 ± 1.38	-0.54 ± 0.41

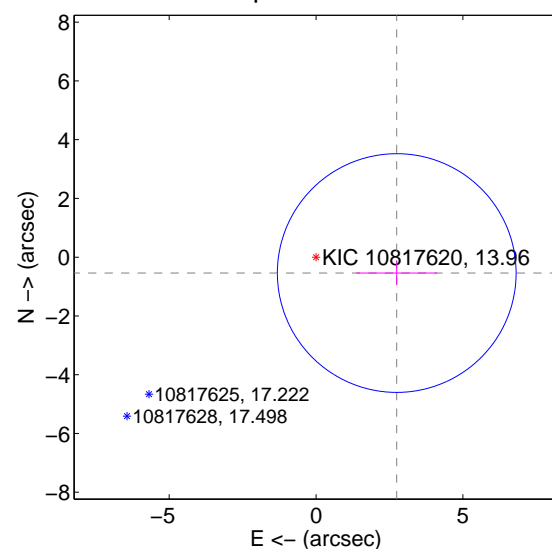
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

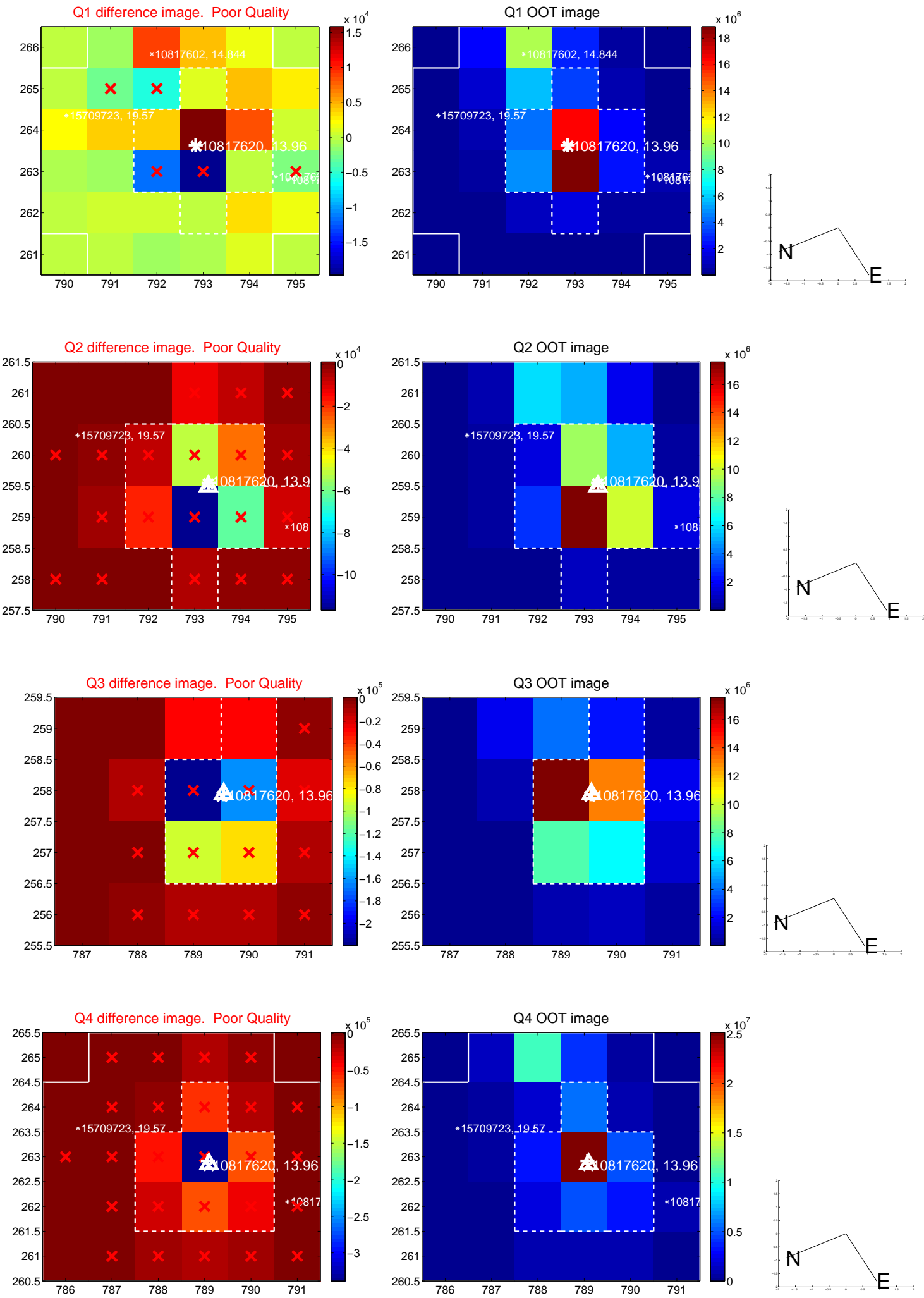


offset from photometric centroids

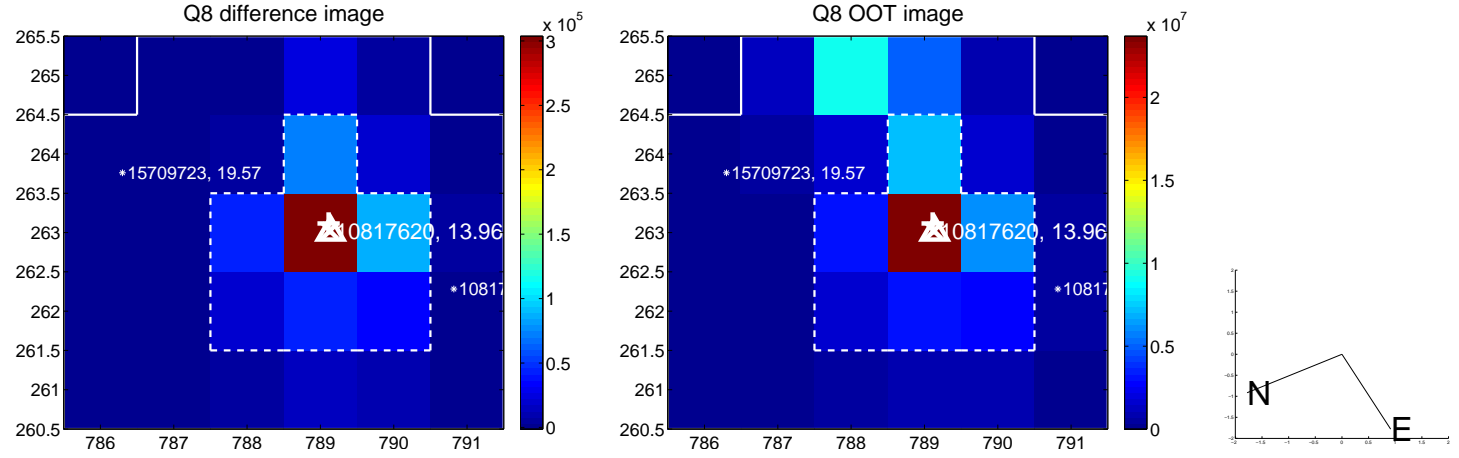
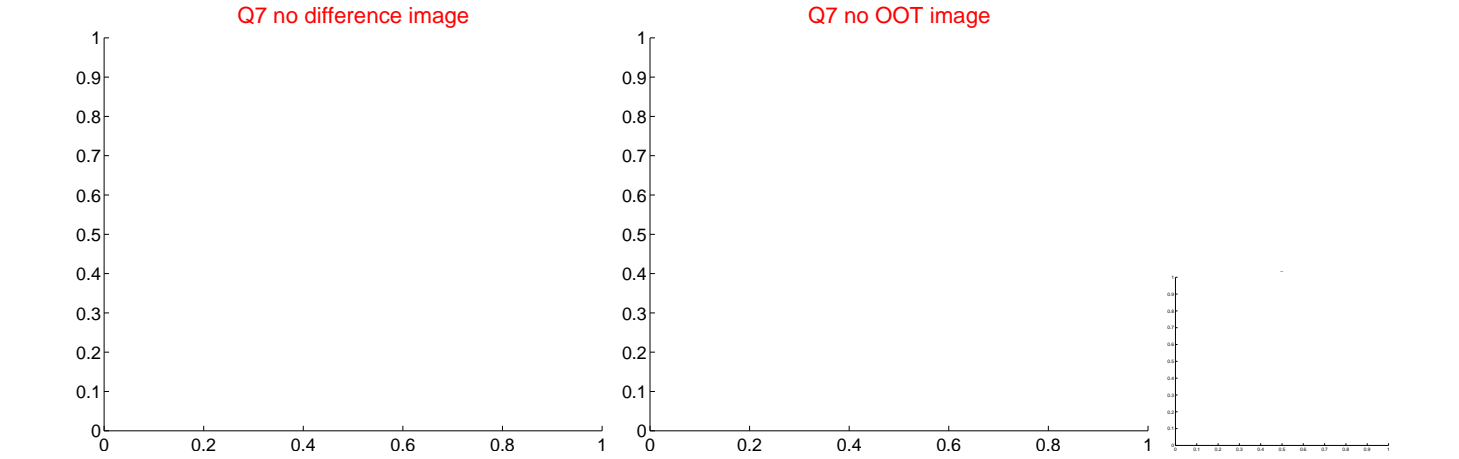
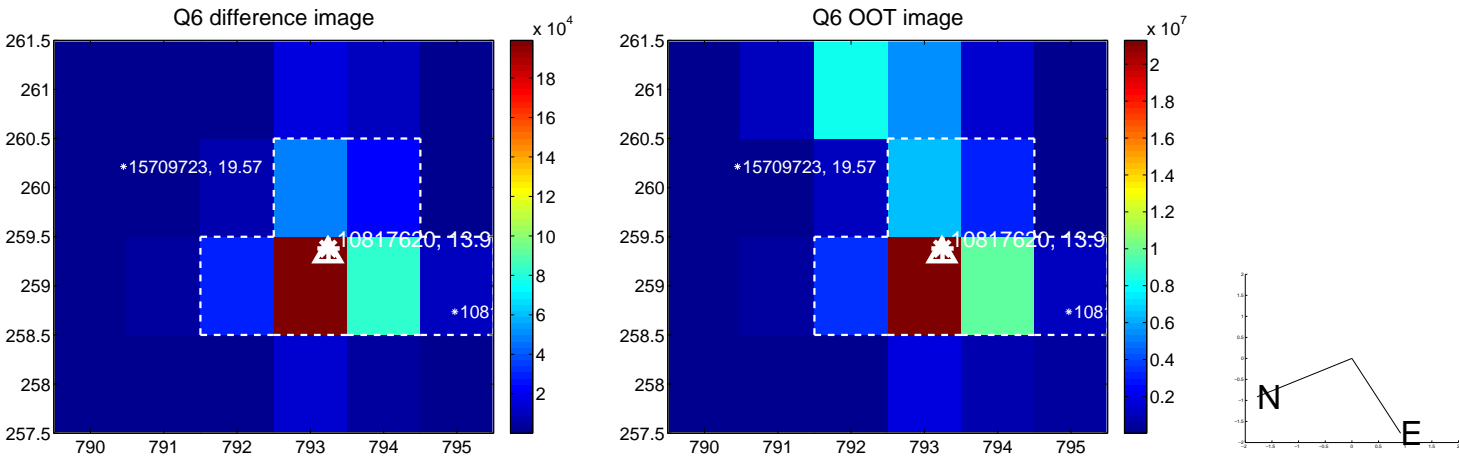
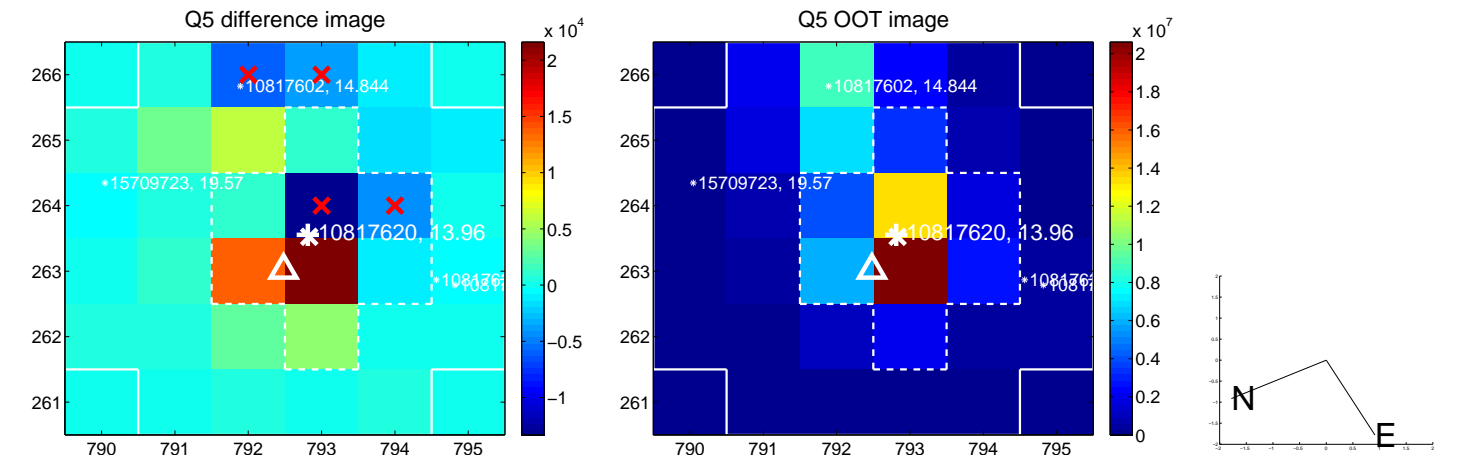


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

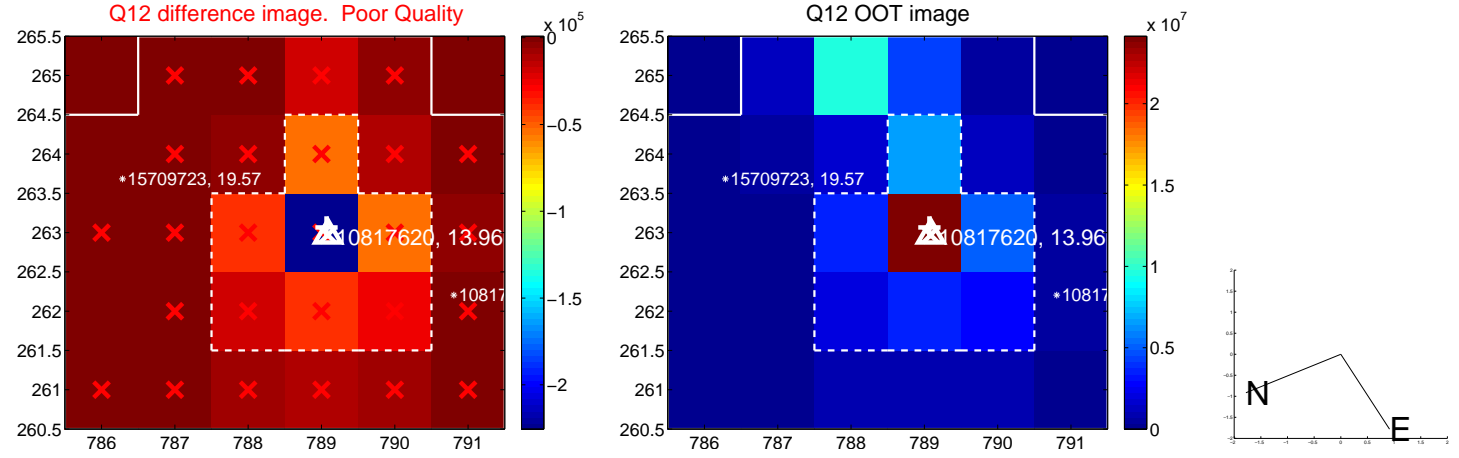
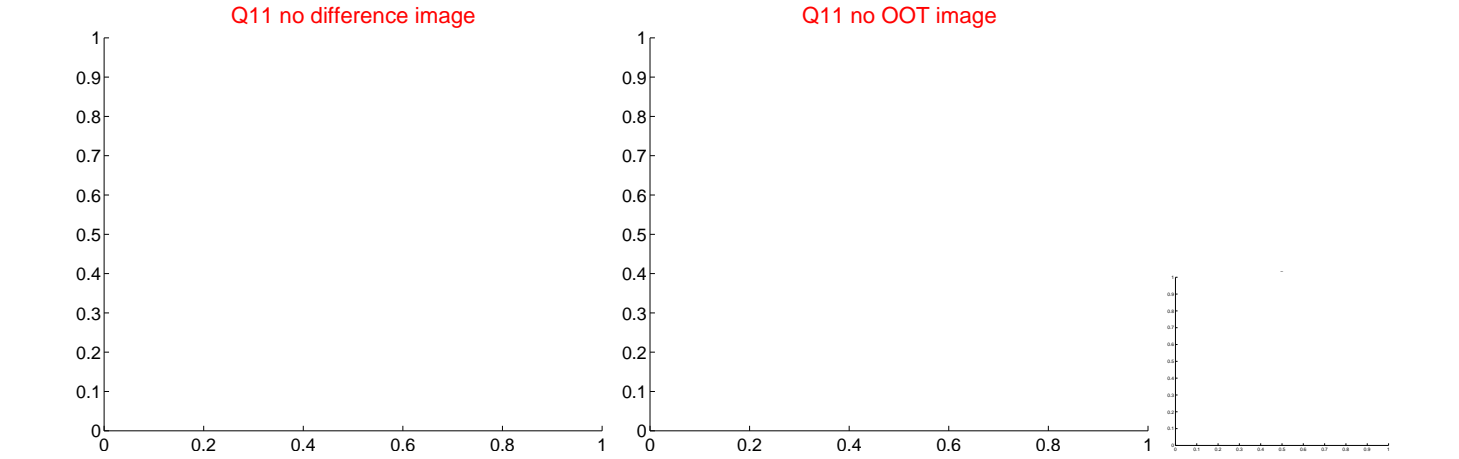
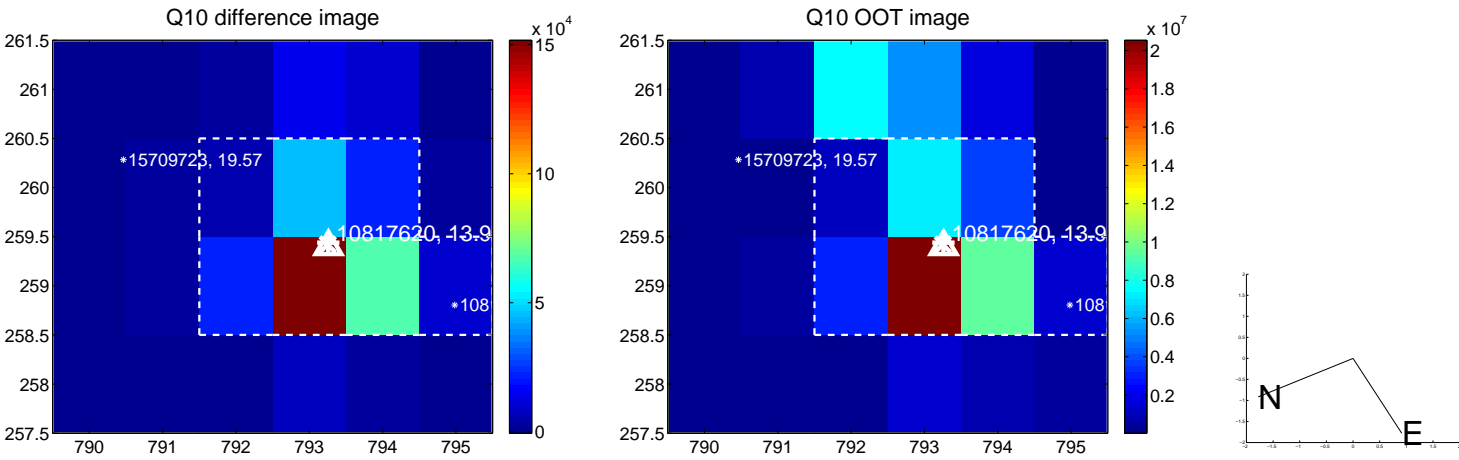
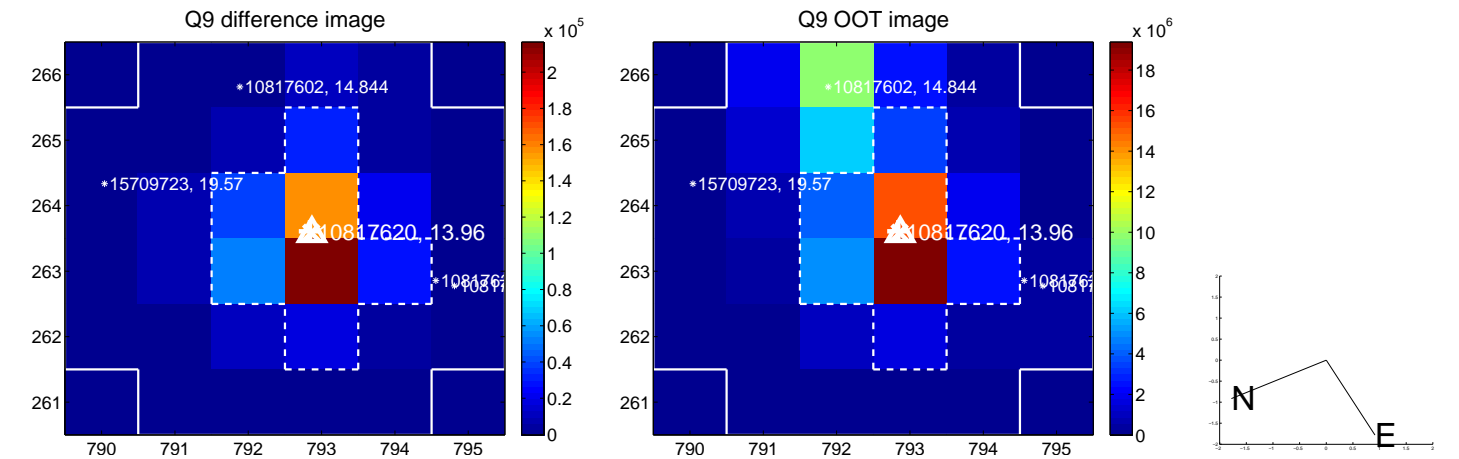
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



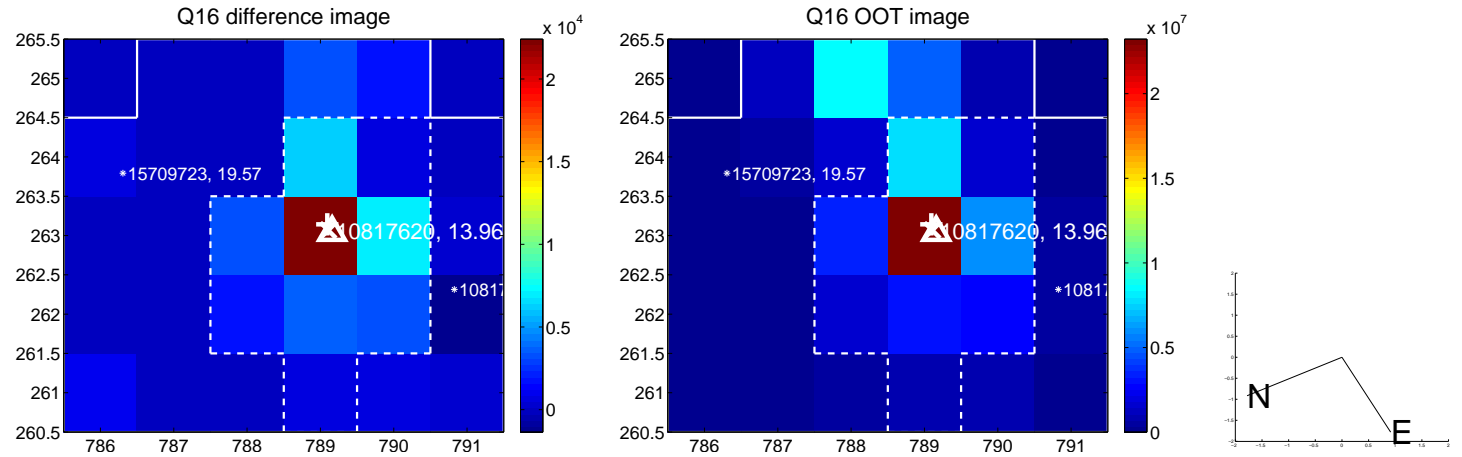
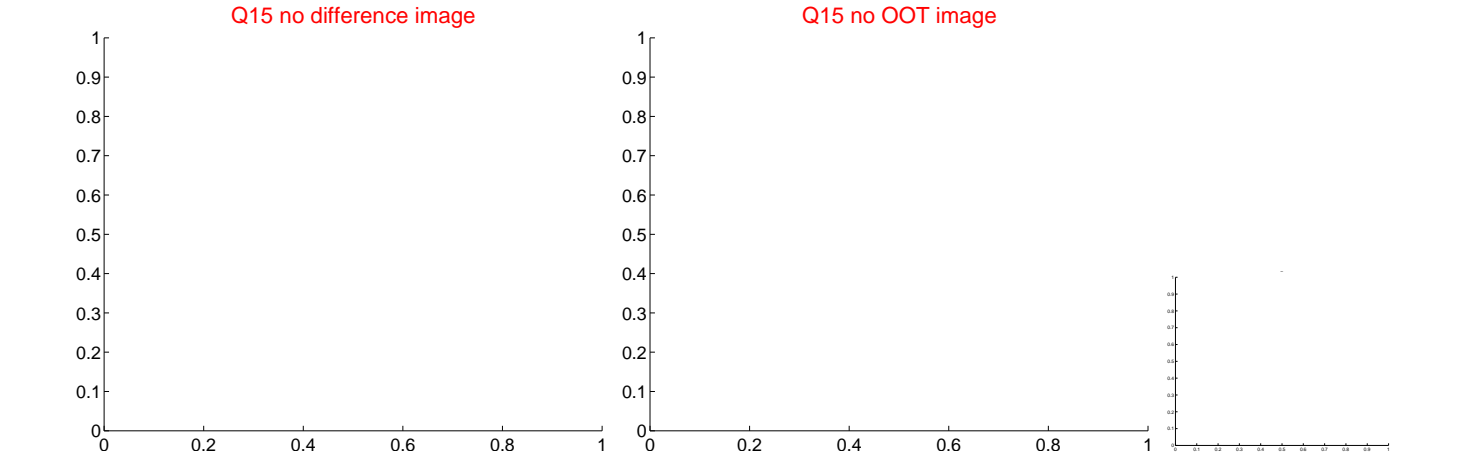
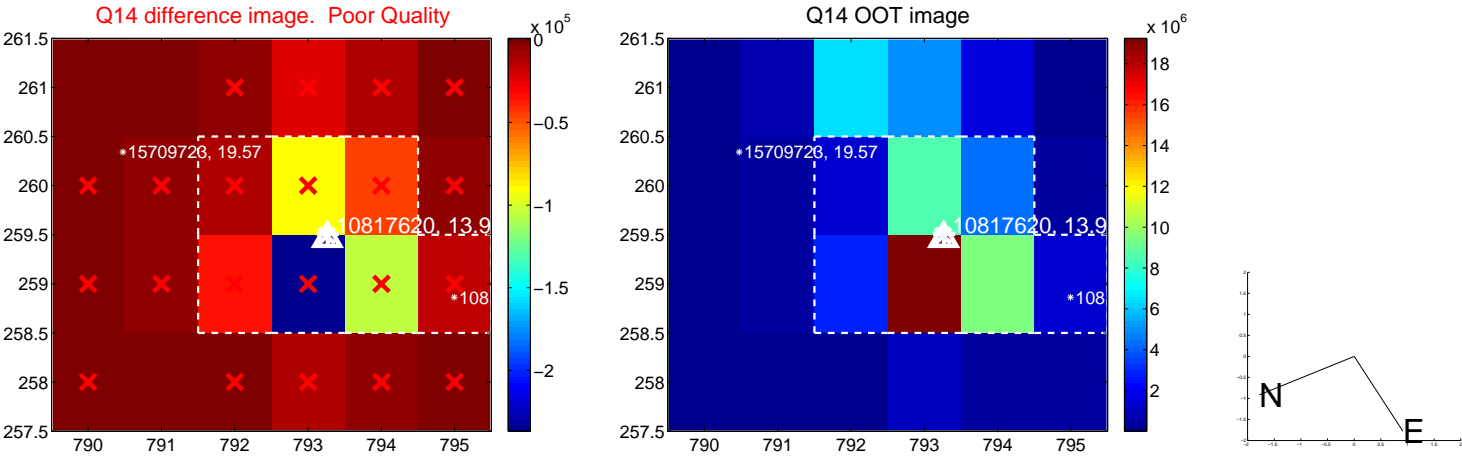
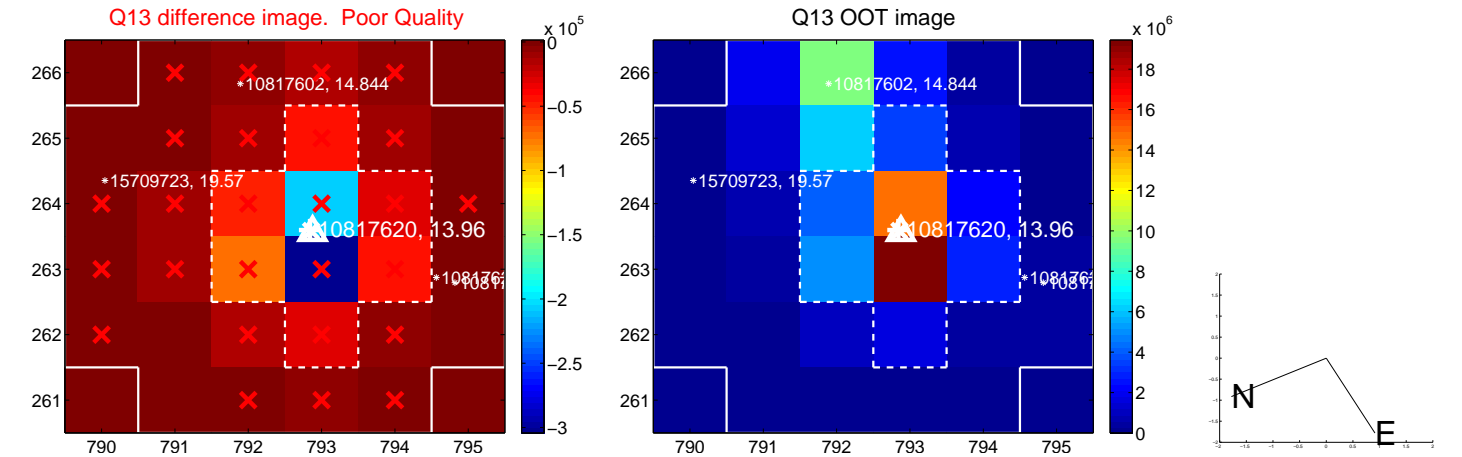
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



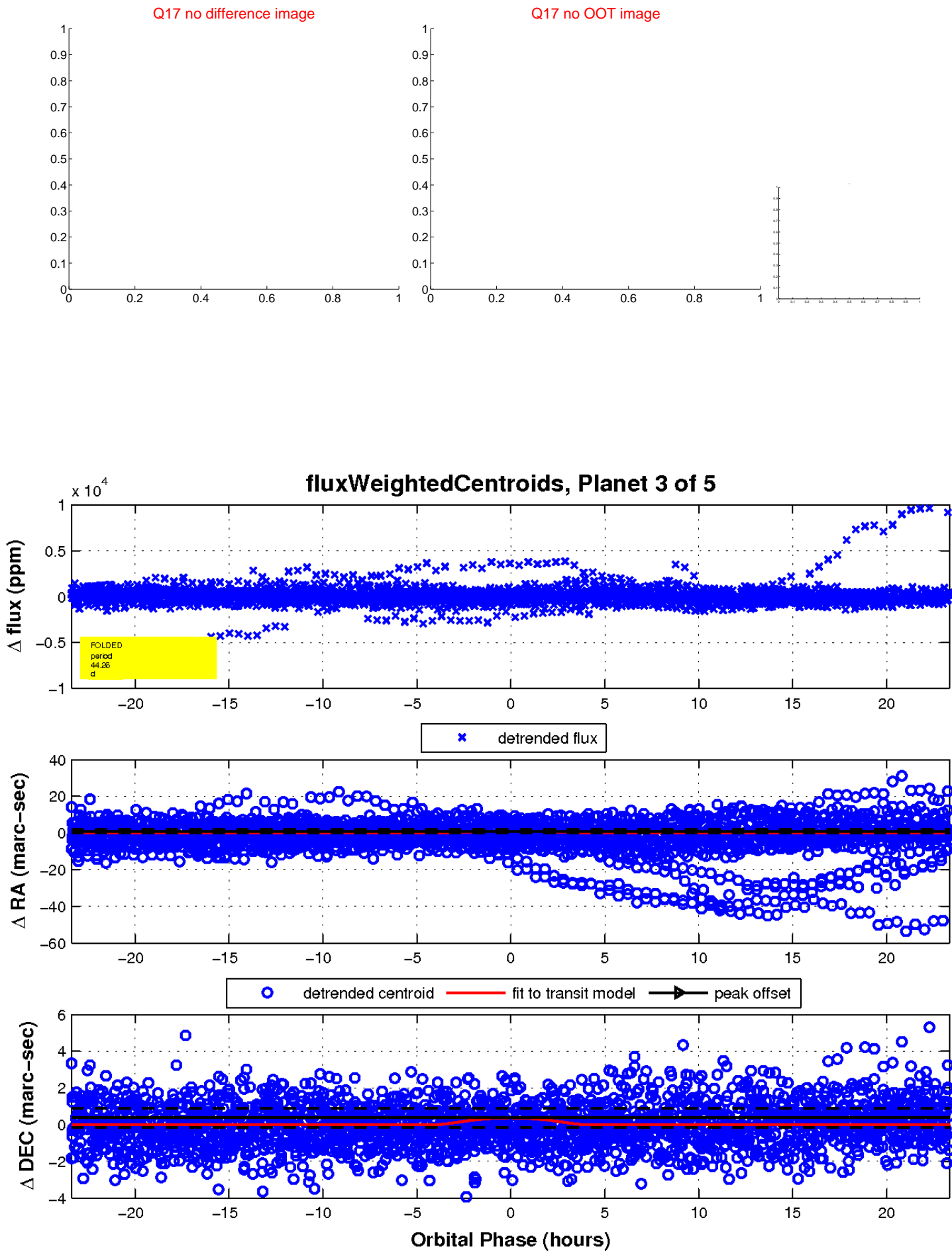
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

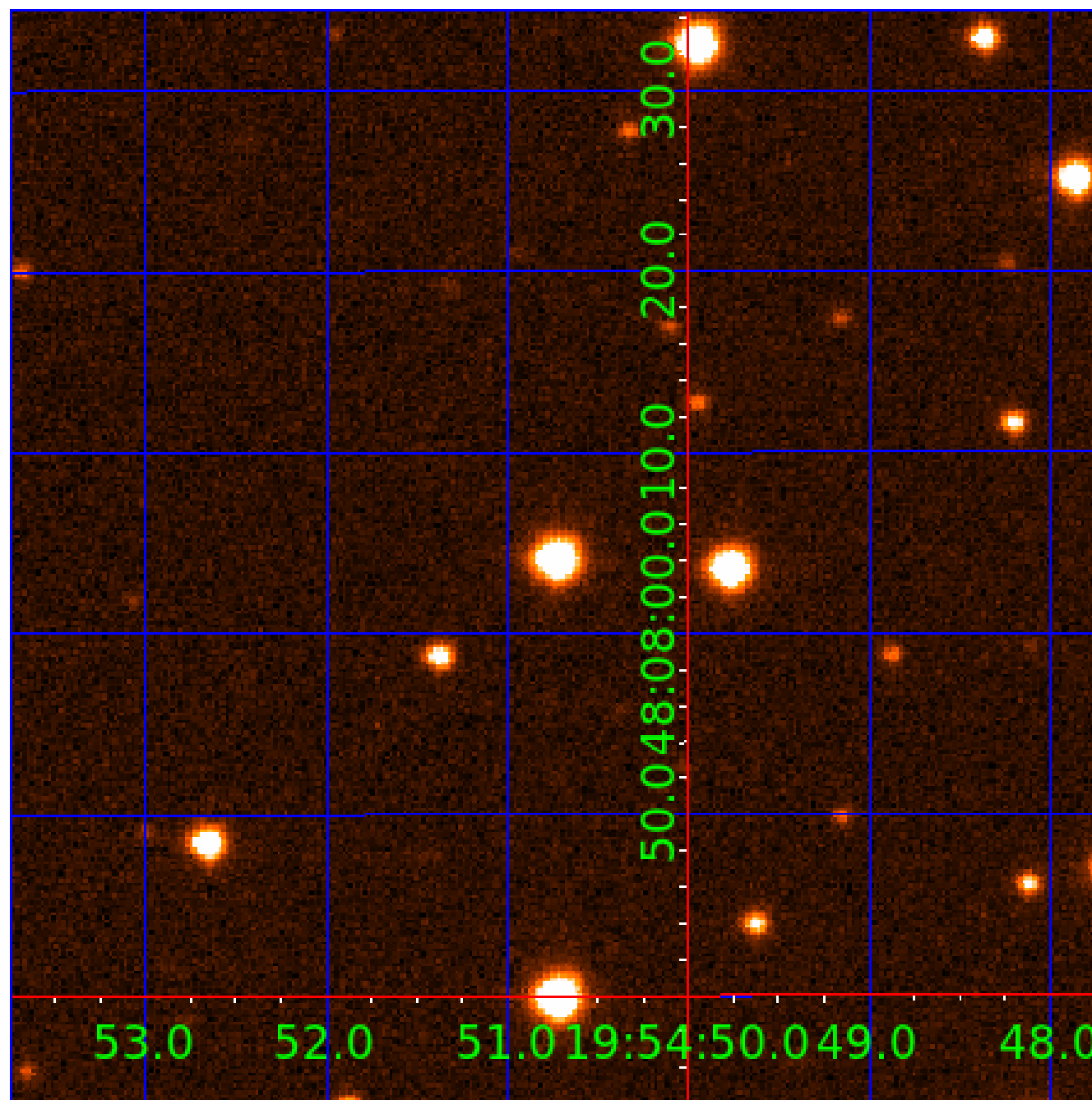


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010817620

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})
010817620-01	OBS	No	1.473088	132.237872	13.4	2.560	10.9	1.8	2.77	8239	1.36	32909.56
010817620-02	OBS	No	2.945410	134.055955	230.0	14.215	9.7	12.0	2.77	8239	5.23	13064.70
010817620-03	OBS	No	44.260716	134.222375	686.2	7.793	13.7	8.8	2.77	8239	10.83	352.32
010817620-04	OBS	No	138.595003	194.015148	253.1	4.344	13.3	3.4	2.77	8239	4.90	76.91
010817620-05	OBS	No	138.572114	193.538093	479.3	5.399	13.5	4.9	2.77	8239	6.66	76.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010817620-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
010817620-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010817620-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010817620-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
010817620-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD

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

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

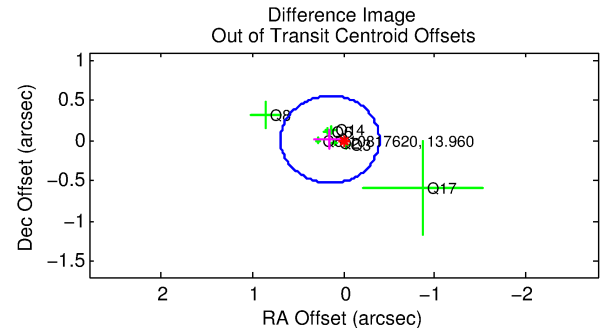
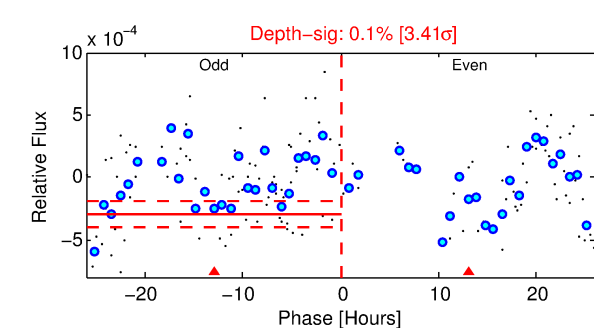
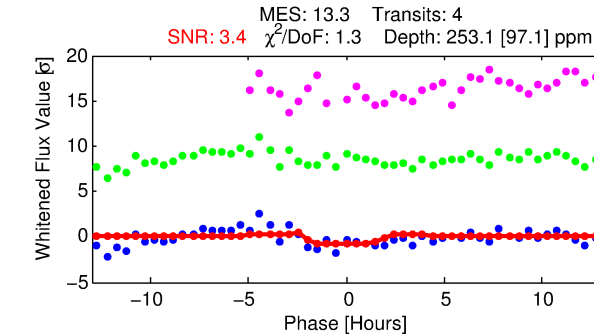
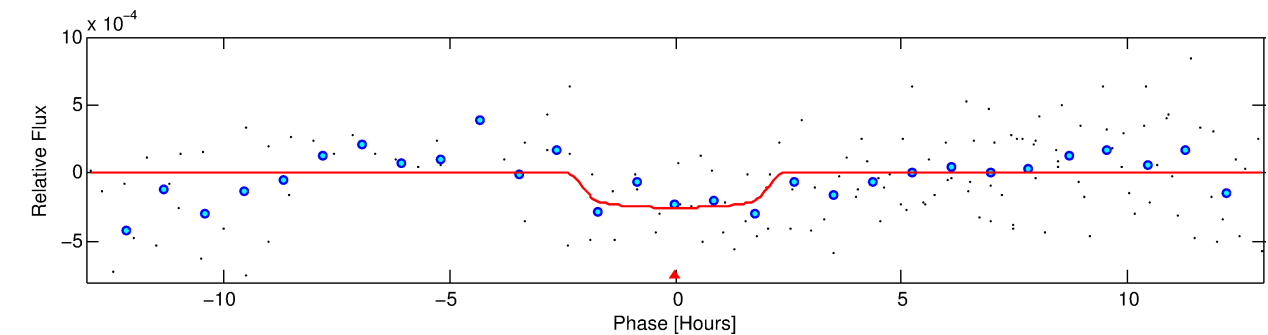
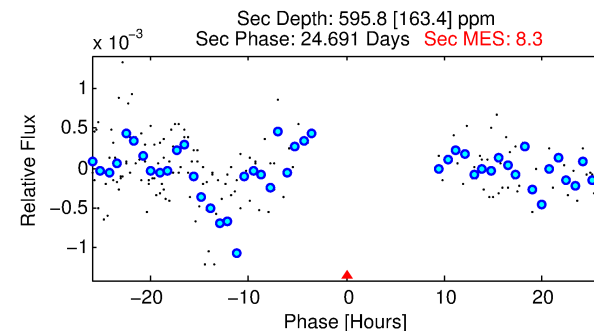
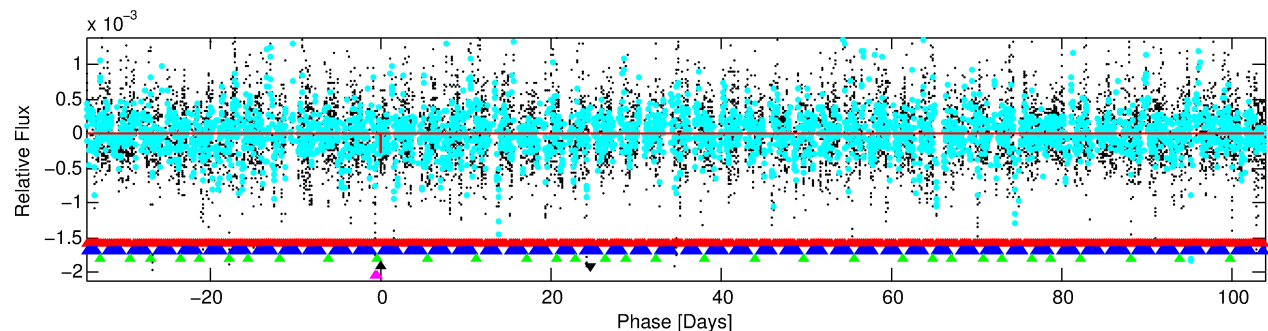
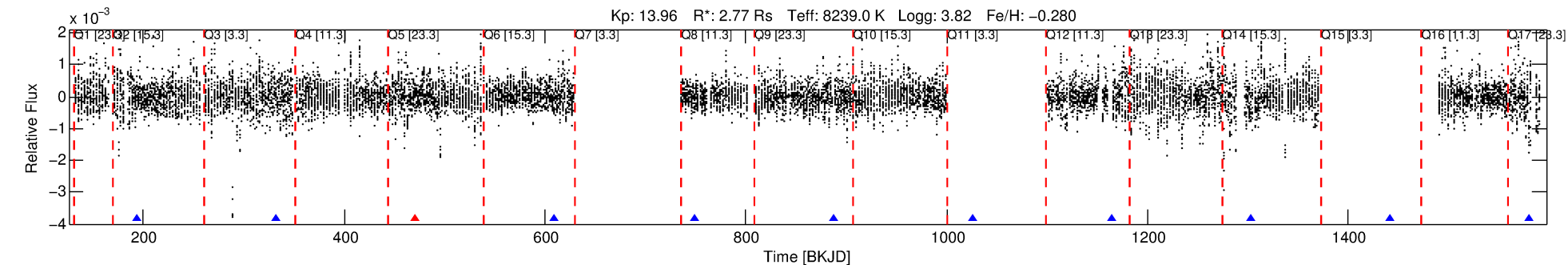
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010817620-04

No Significant Match Found

DV One-Page Summary

KIC: 10817620 Candidate: 4 of 5 Period: 138.595 d



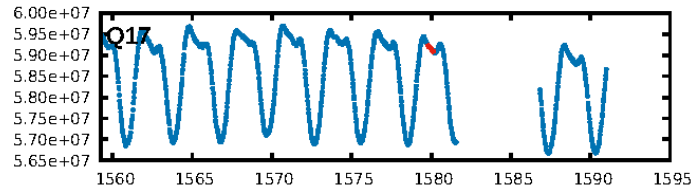
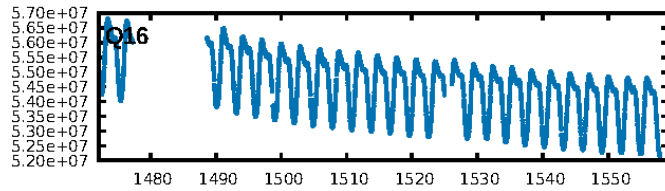
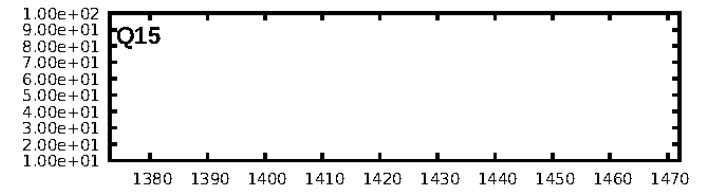
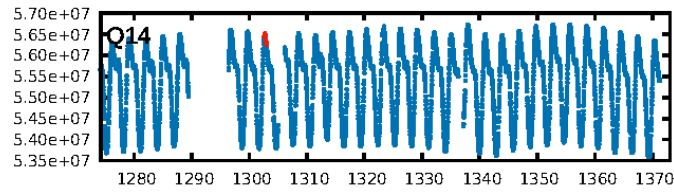
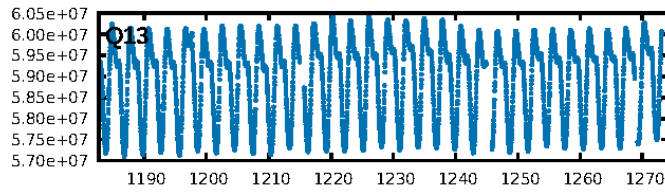
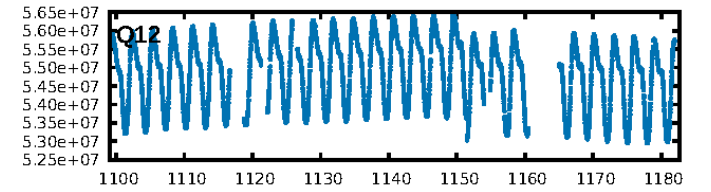
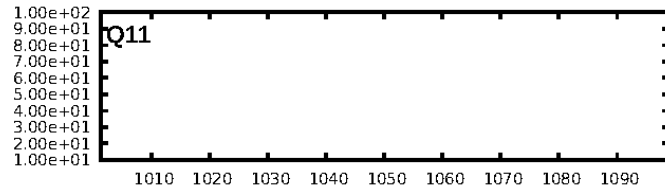
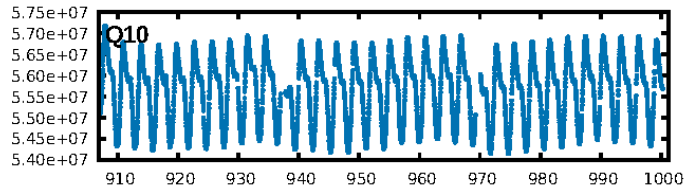
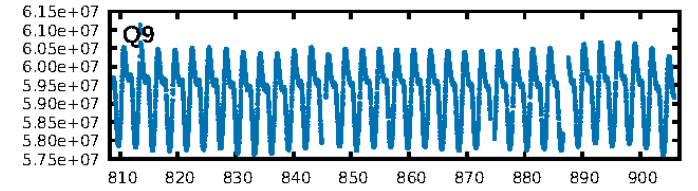
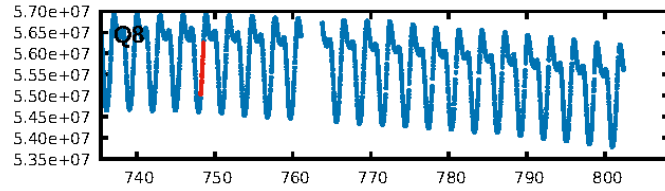
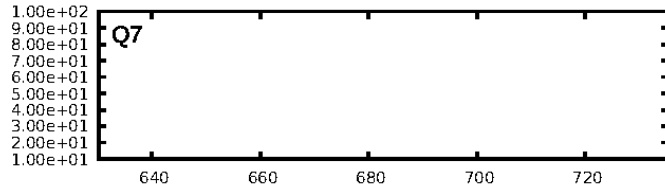
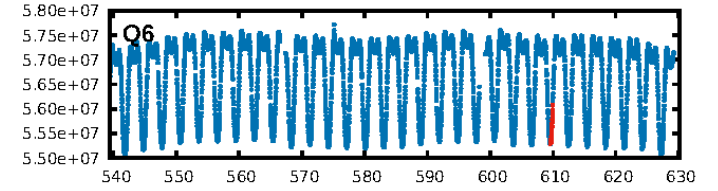
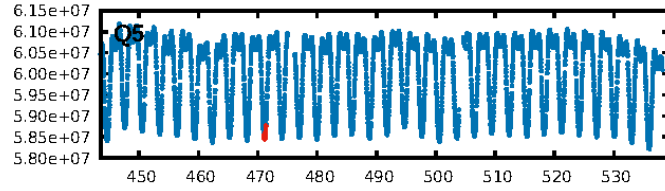
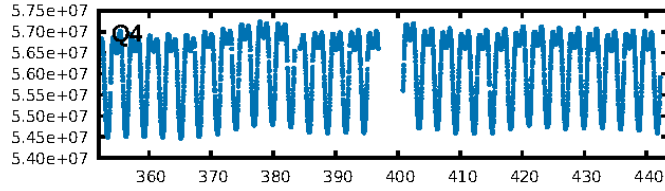
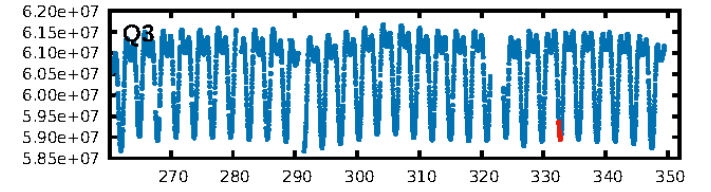
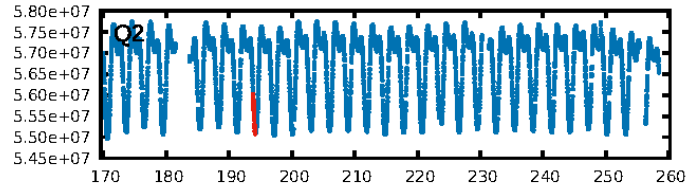
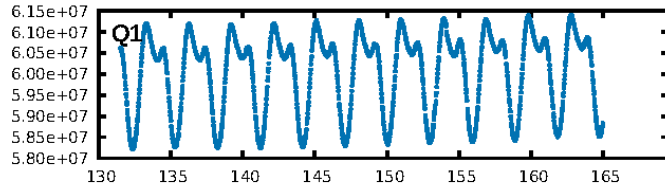
DV Fit Results:

Period = 138.59500 [0.01788] d
Epoch = 194.0151 [0.0643] BKJD
Rp/R* = 0.0162 [0.0233]
a/R* = 145.86 [1211.47]
b = 0.82 [3.33]
Seff = 76.91 [51.66]
Teq = 755 [127] K
Rp = 4.90 [7.35] Re
a = 0.6409 [0.2609] AU
Ag = 5605.28 [16599.69] [0.34 σ]
Teffp = 10102 [7308] K [1.28 σ]

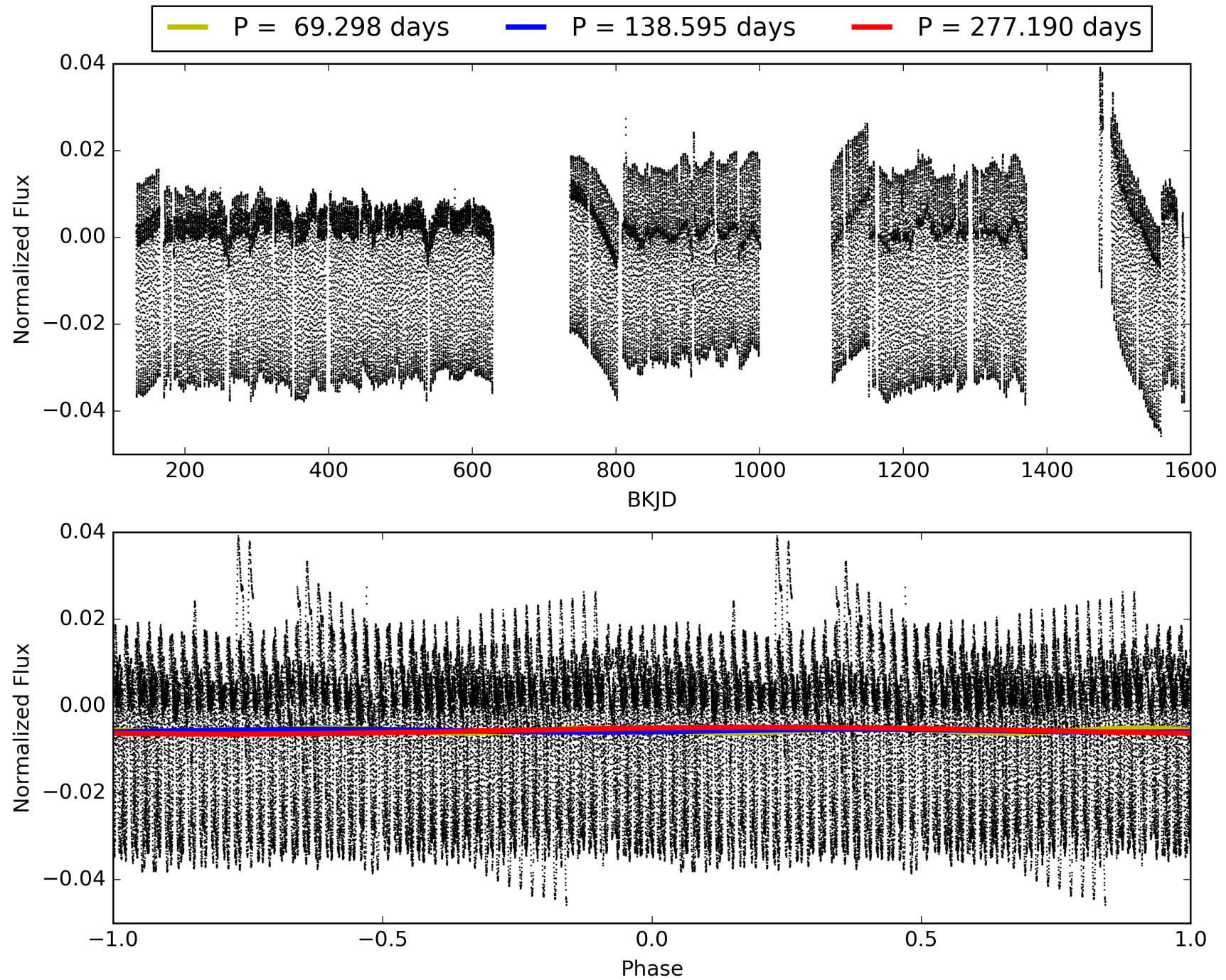
DV Diagnostic Results:

ShortPeriod-sig: 6.3% [0.08 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 28.2%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 2.212
Centroid-sig: 40.8%
Centroid-so: 6.616 arcsec [1.34 σ]
OotOffset-rm: 0.151 arcsec [0.83 σ]
KicOffset-rm: 0.105 arcsec [0.66 σ]
OotOffset-st: 3/1/1/2 [7]
KicOffset-st: 3/1/1/2 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 0.00 [0/7]

TCE 010817620-04, PDC Light Curves

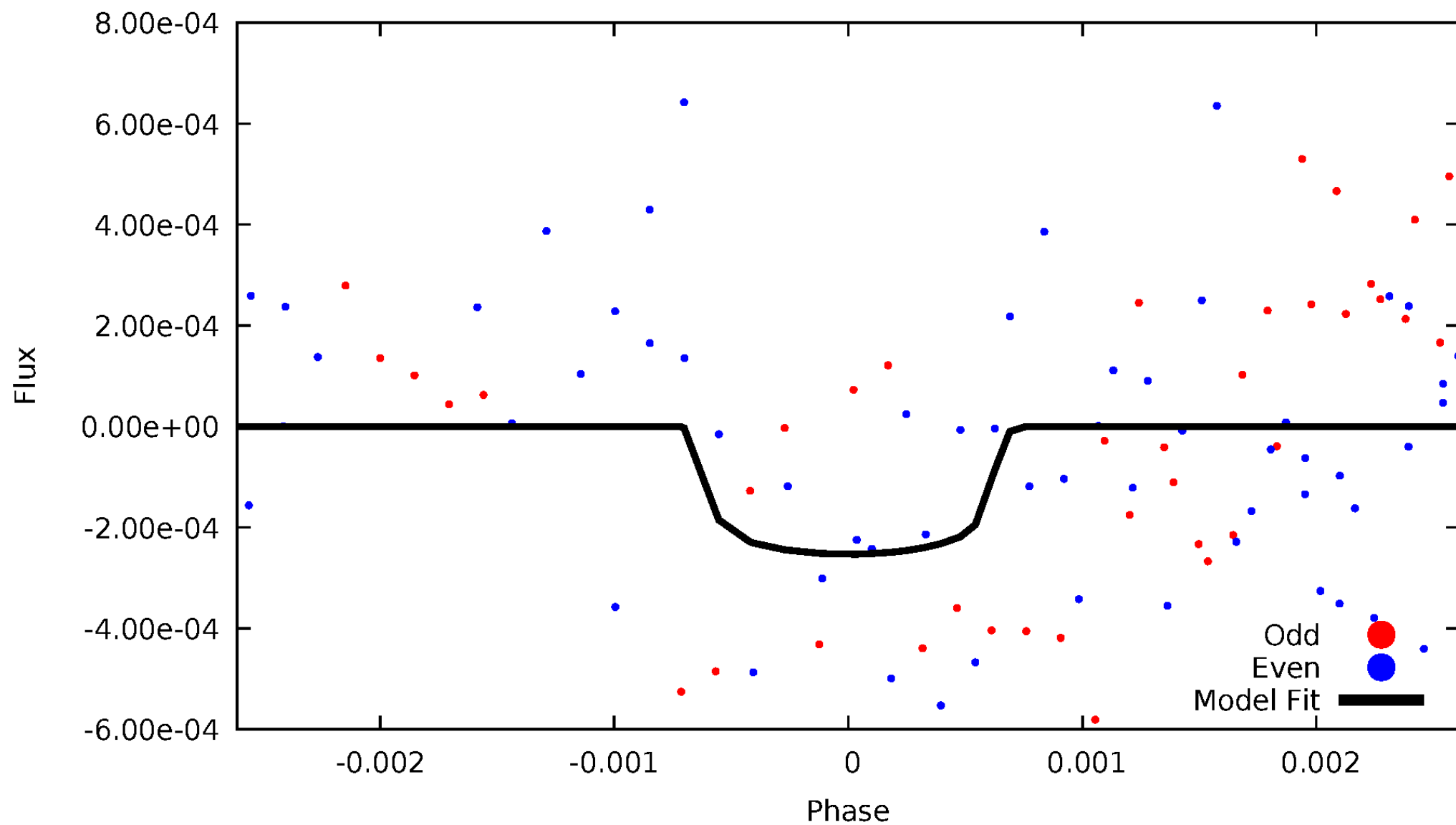


TCE 010817620-04



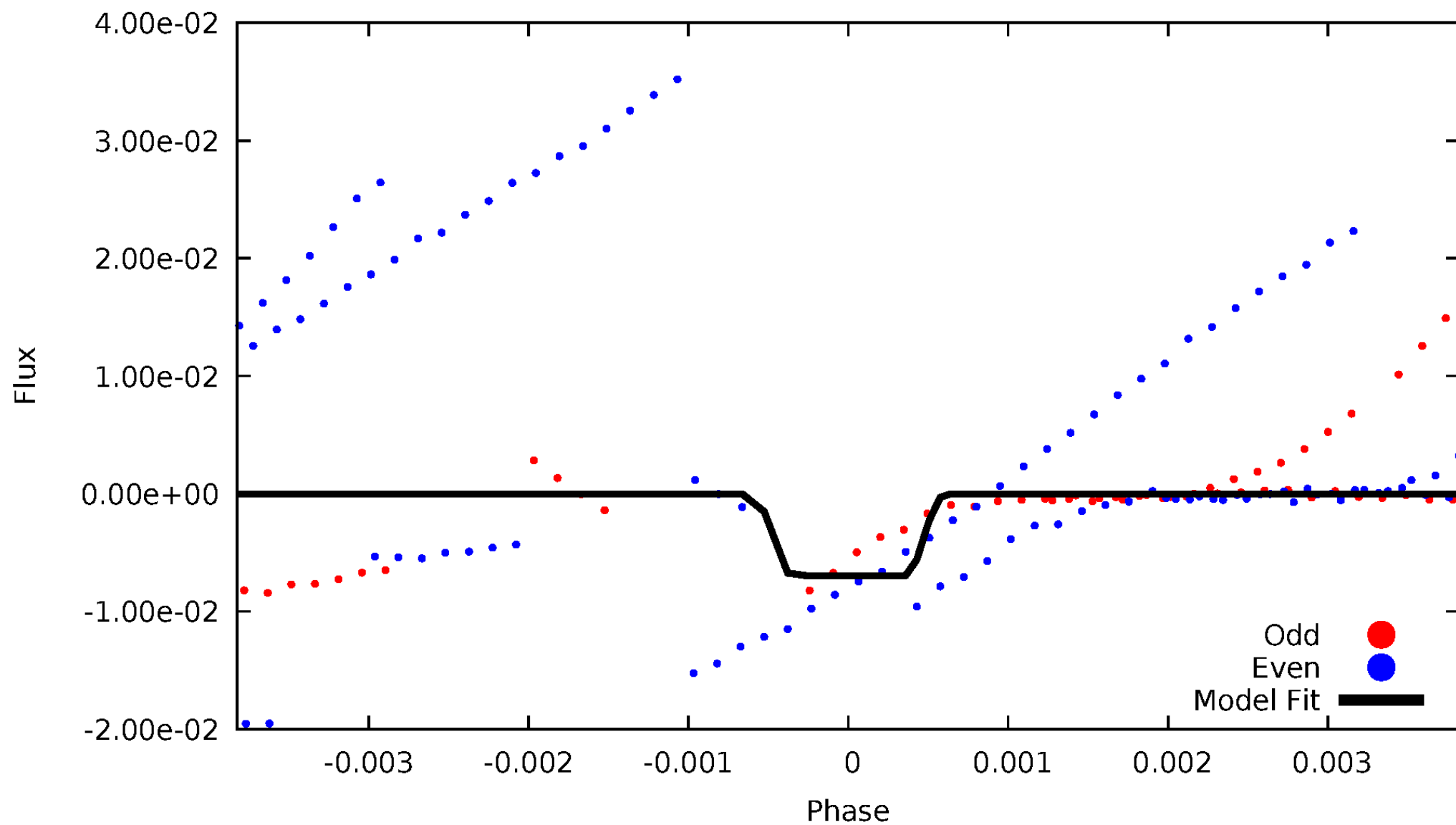
DV Odd/Even

TCE 010817620-04



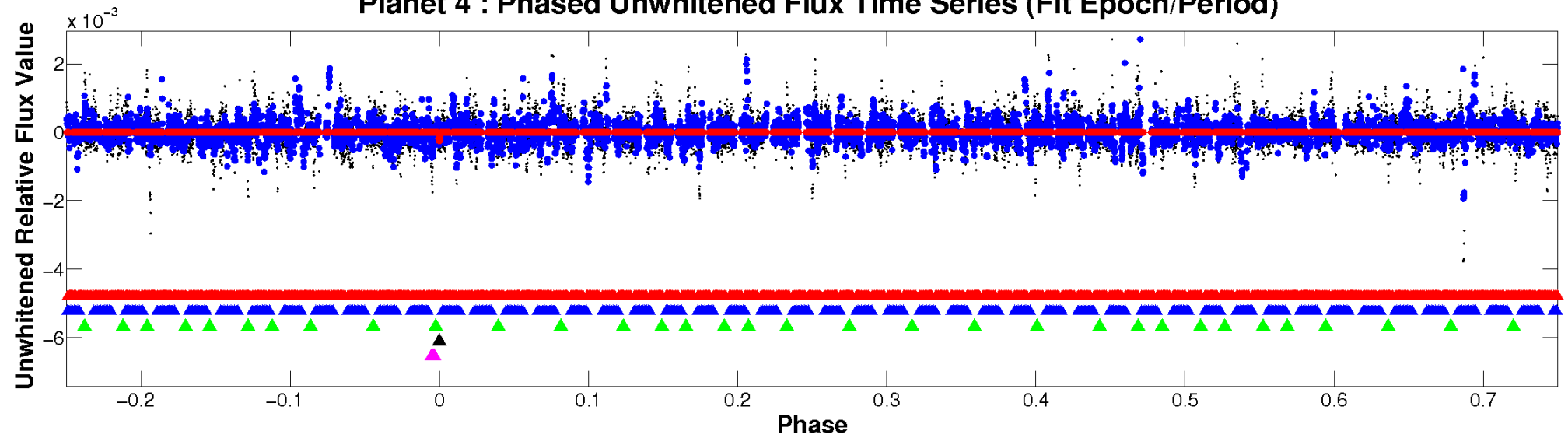
ALT Odd/Even

TCE 010817620-04

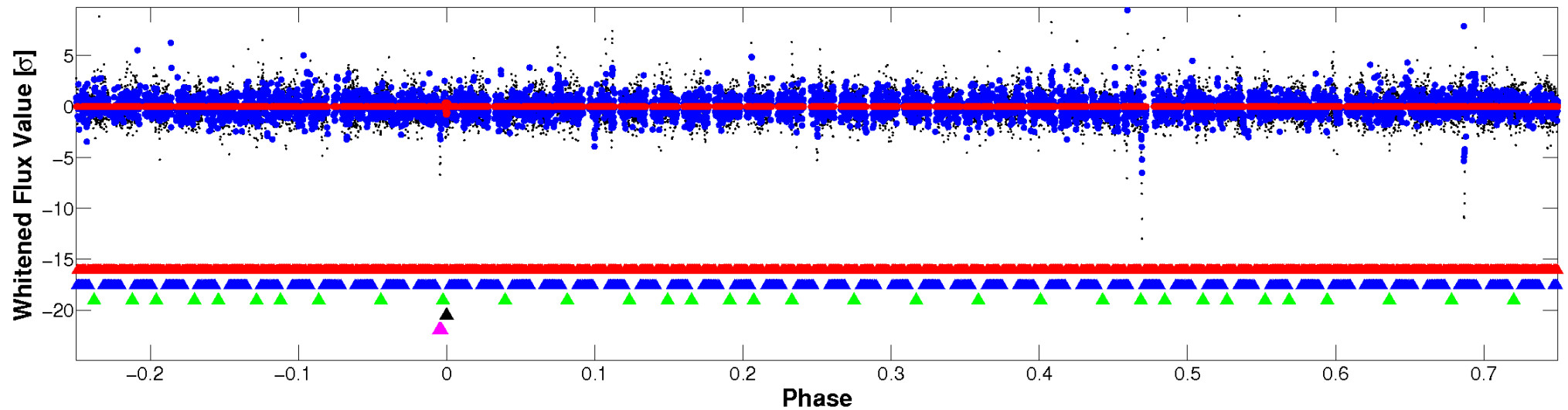


Non-Whitened Vs. Whitened Light Curve

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

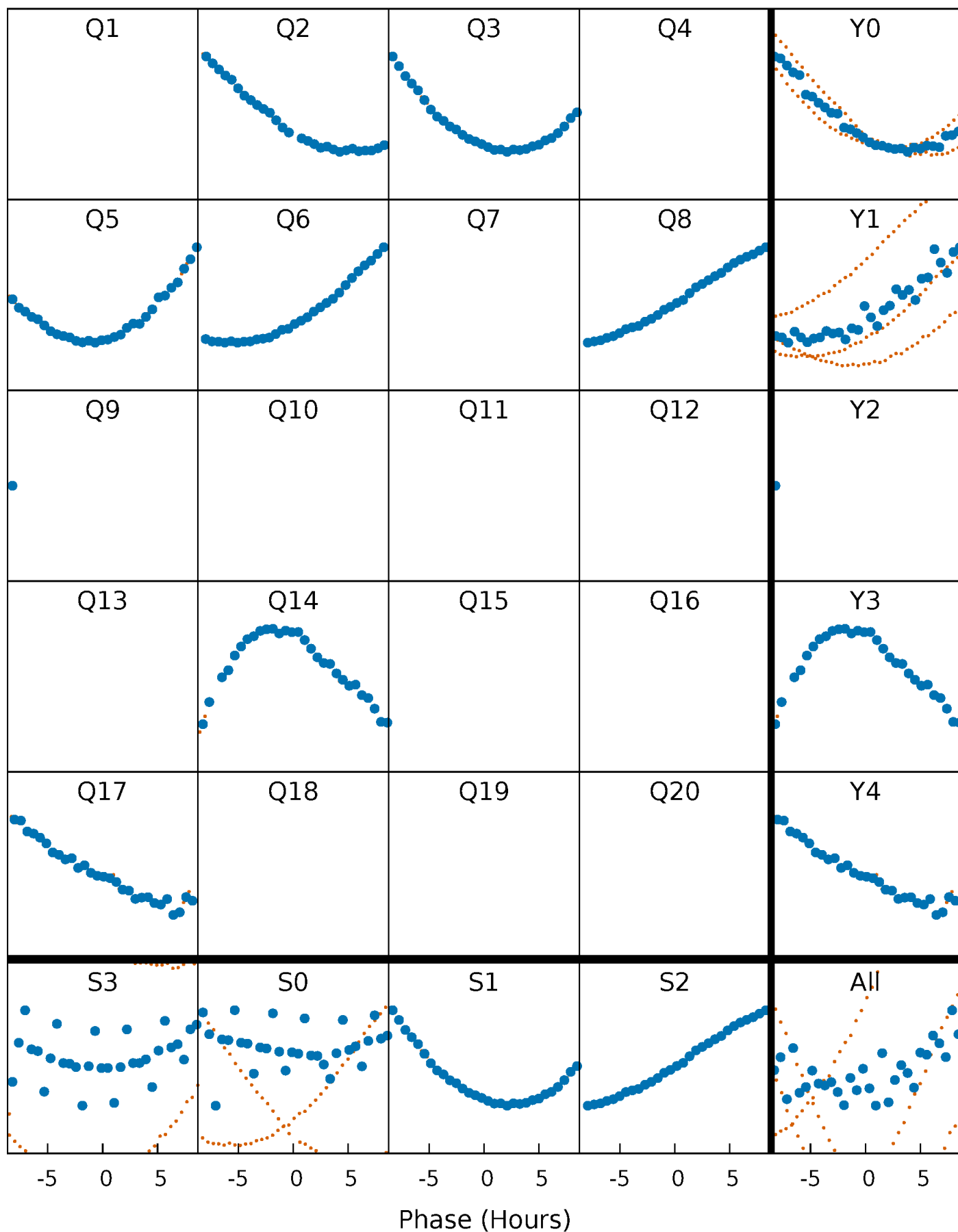


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



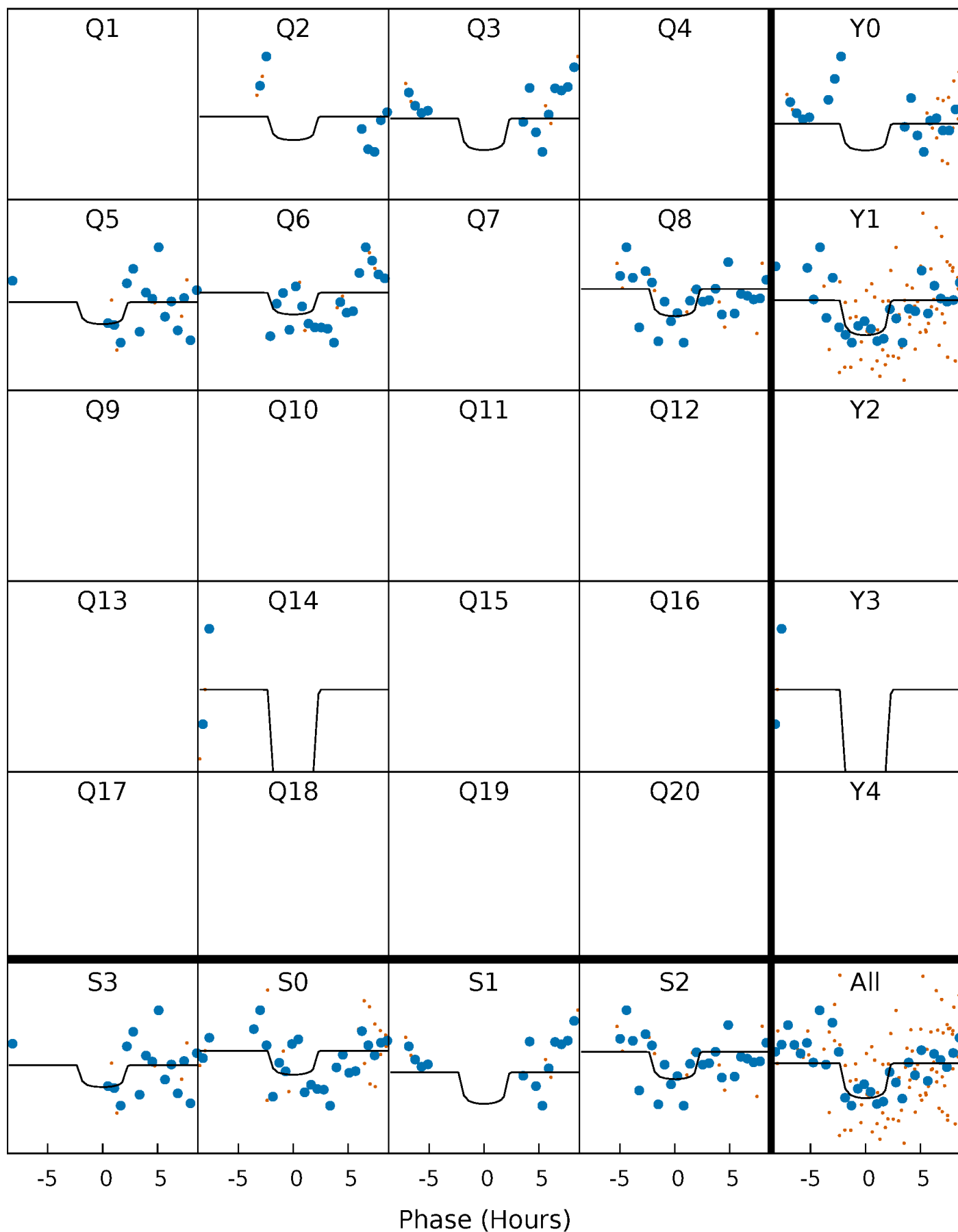
PDC Quarter-Phased Transit Curves

TCE 010817620-04 P=138.595003 Days $T_0=194.015148$ (BKJD)



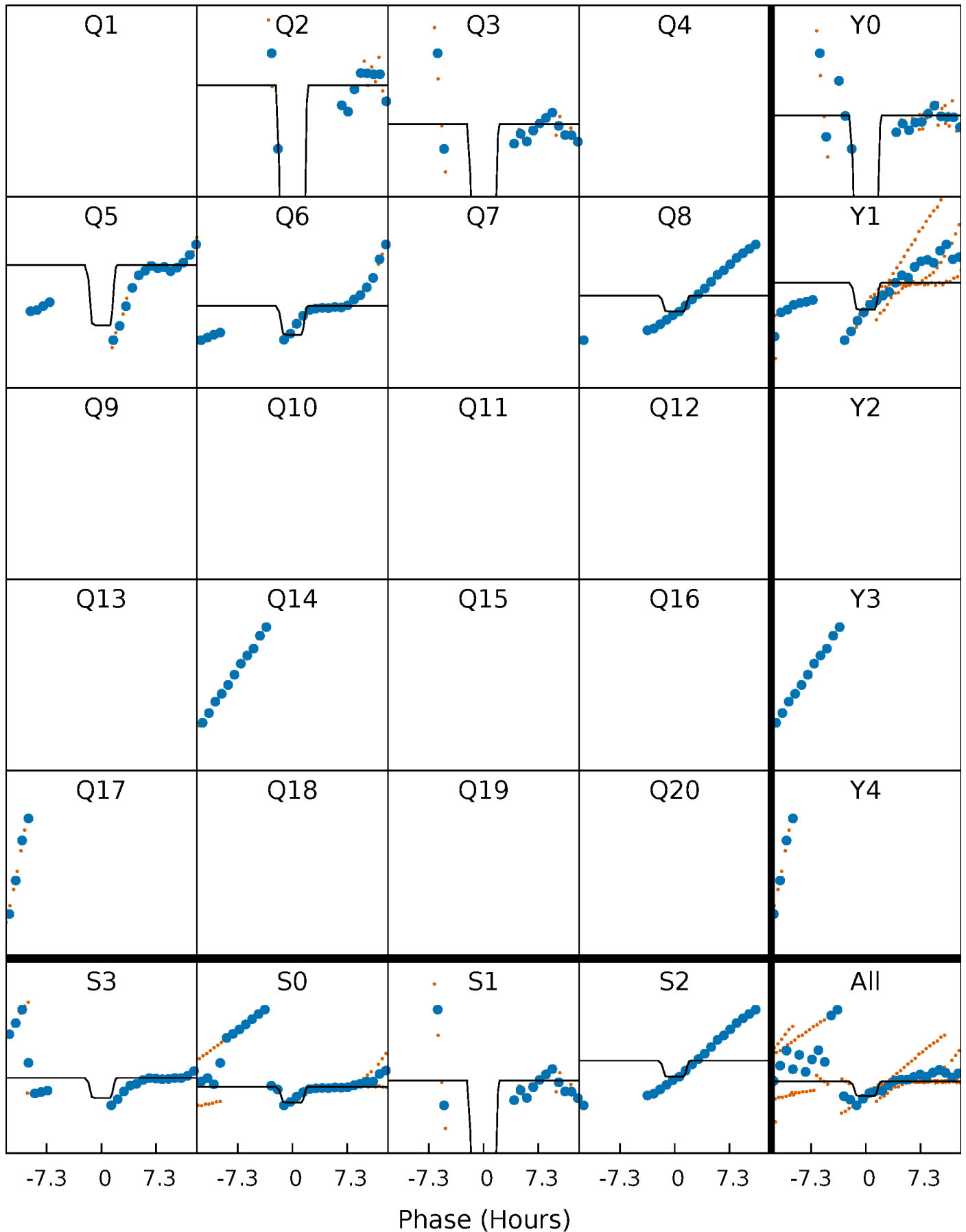
DV Quarter-Phased Transit Curves

TCE 010817620-04 P=138.595003 Days $T_0=194.015148$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

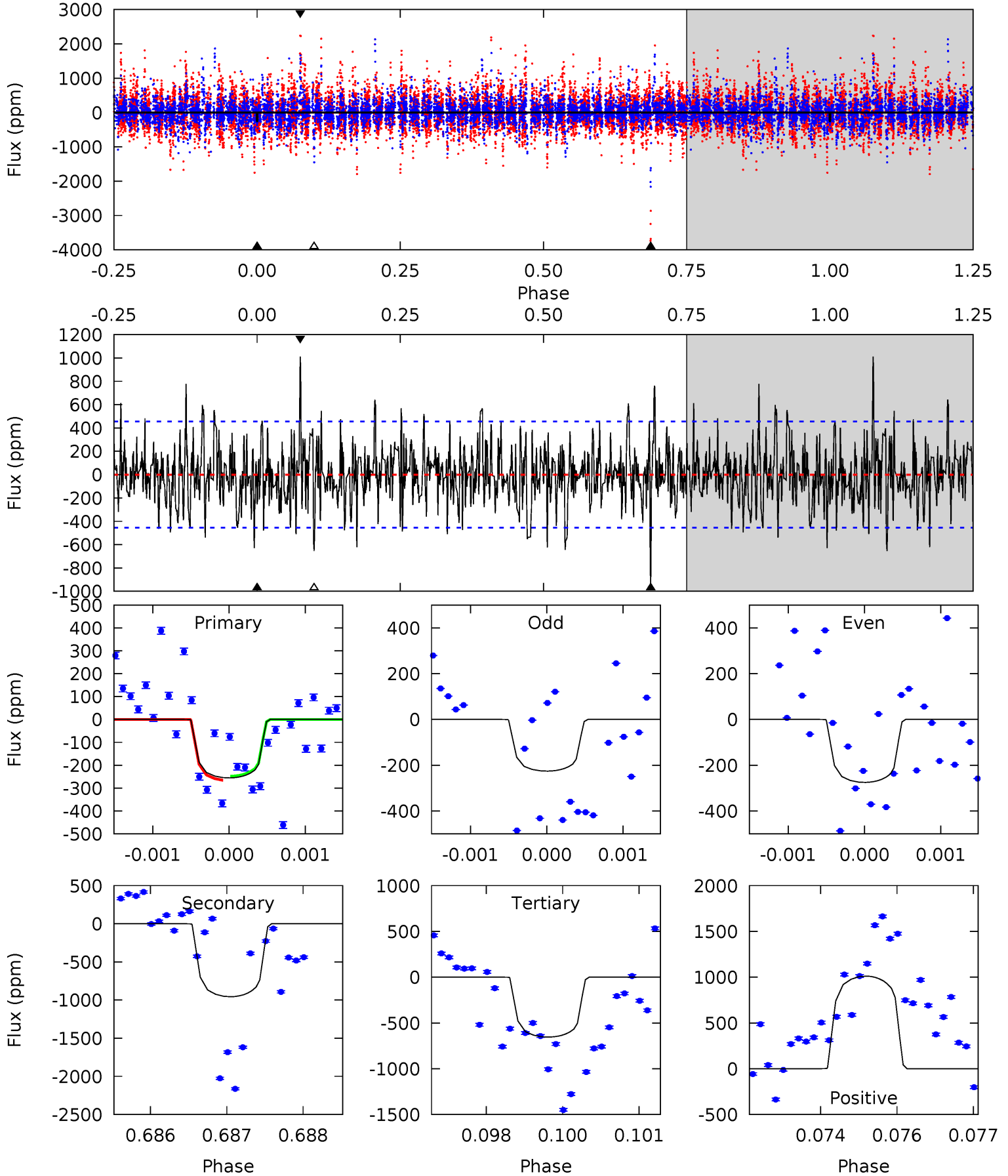
TCE 010817620-04 P=138.574909 Days $T_0=194.009977$ (BKJD)



DV Model-Shift Uniqueness Test

010817620-04, $P = 138.595003$ Days, $E = 55.420145$ Days

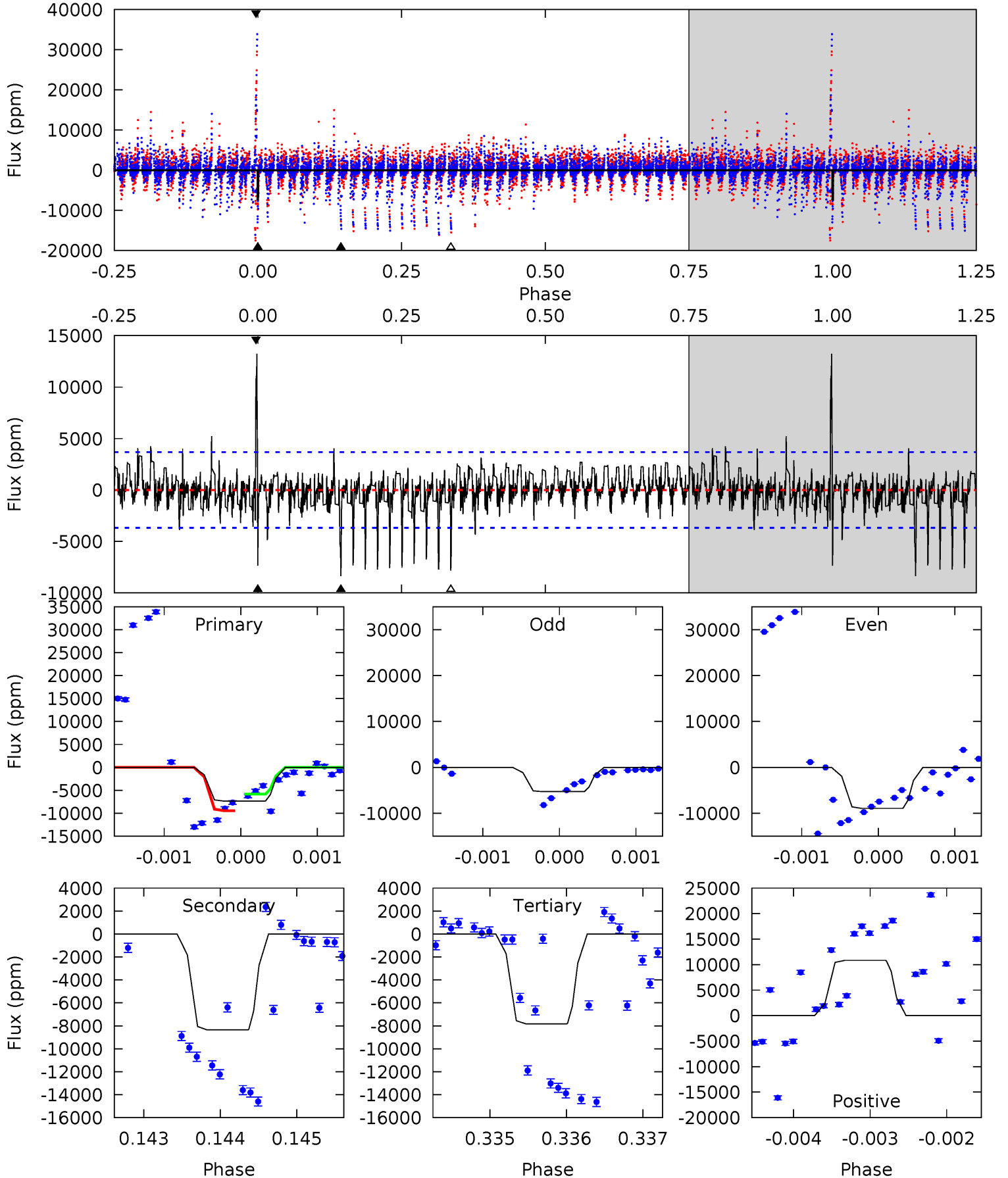
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.02	11.3	7.75	12.0	5.39	3.19	2.24	-4.73	-8.95	3.58	-0.65	0.28	1.04	0.51	0.10



Alt Model-Shift Uniqueness Test

010817620-04, P = 138.574909 Days, E = 55.435068 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	12.3	11.6	16.0	5.43	3.26	1.83	-0.71	-5.13	0.77	-3.66	1.90	1.02	0.61	2.60



Stellar Parameters For KIC 010817620

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8239^{+228}_{-342}	$3.816^{+0.382}_{-0.067}$	$-0.280^{+0.200}_{-0.300}$	$2.766^{+0.293}_{-1.172}$	$1.827^{+0.086}_{-0.366}$	$0.122^{+0.374}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-42%	+5%/-20%	+308%/-22%
Source	KIC0	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 010817620-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-957 ± 84	$6.13^{+6.01}_{-3.89}$	1023^{+63}_{-99}	9949^{+17249}_{-3264}	5586^{+35797}_{-4193}
Alt.	-8354 ± 677	$22.46^{+8.02}_{-7.01}$	1021^{+65}_{-106}	8807^{+2290}_{-1332}	3683^{+4149}_{-1647}

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 $A_{obs} \gg 1.0$

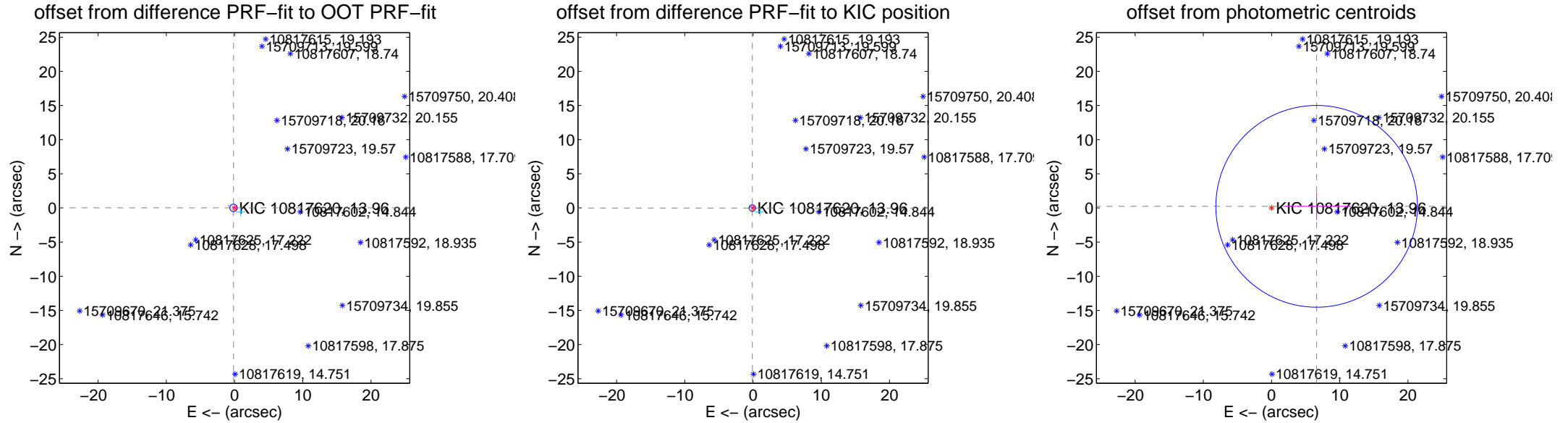
DV Centroid Data

Supplemental centroid analysis for 010817620-04. Kepler magnitude: 13.96. Transit SNR 3.39

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.151 ± 0.181	0.83	0.150 ± 0.175	0.013 ± 0.108
PRF-fit source offset from KIC position	0.105 ± 0.159	0.66	0.103 ± 0.178	-0.020 ± 0.118
photometric centroid source offset	6.62 ± 4.92	1.34	-6.61 ± 4.93	0.24 ± 2.01



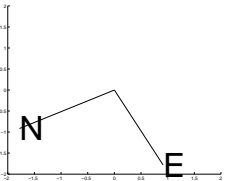
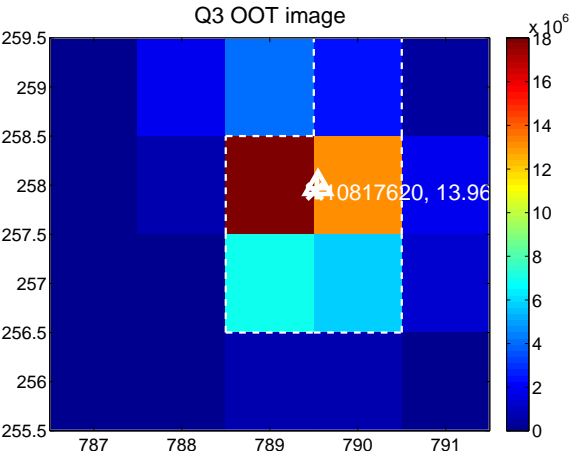
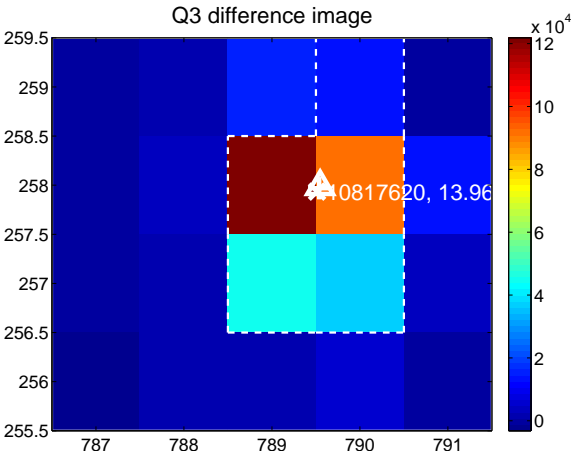
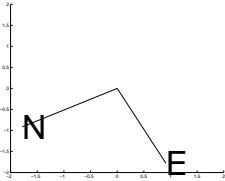
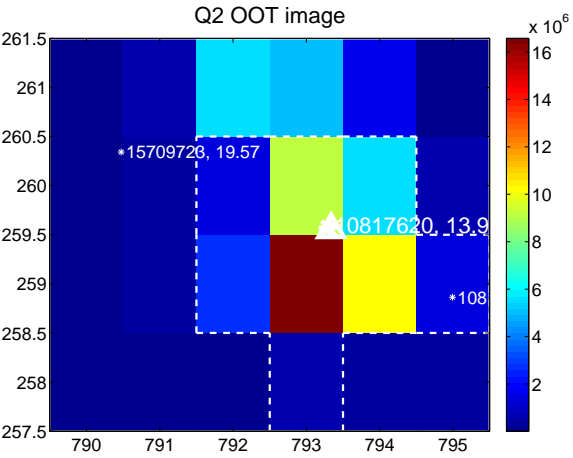
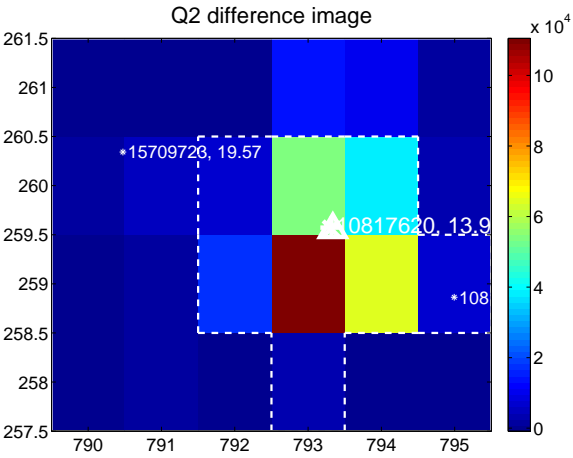
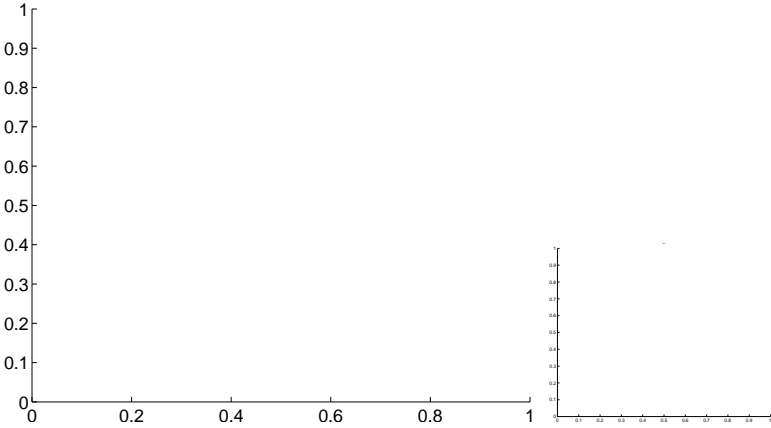
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

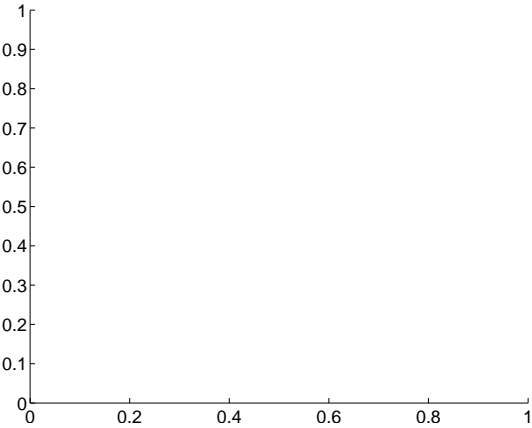
Q1 no difference image



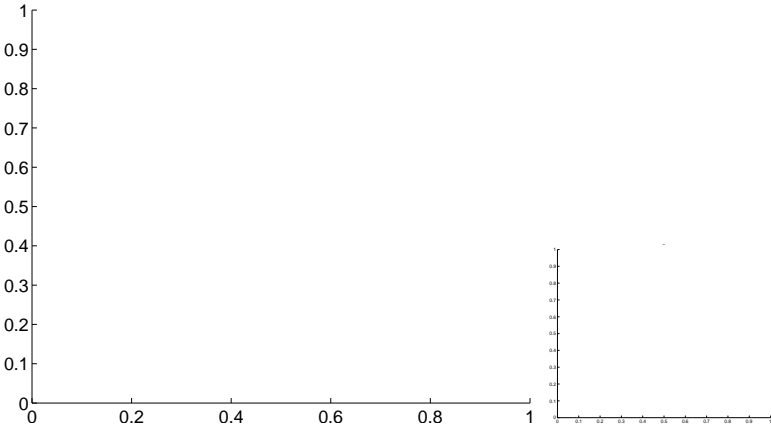
Q1 no OOT image



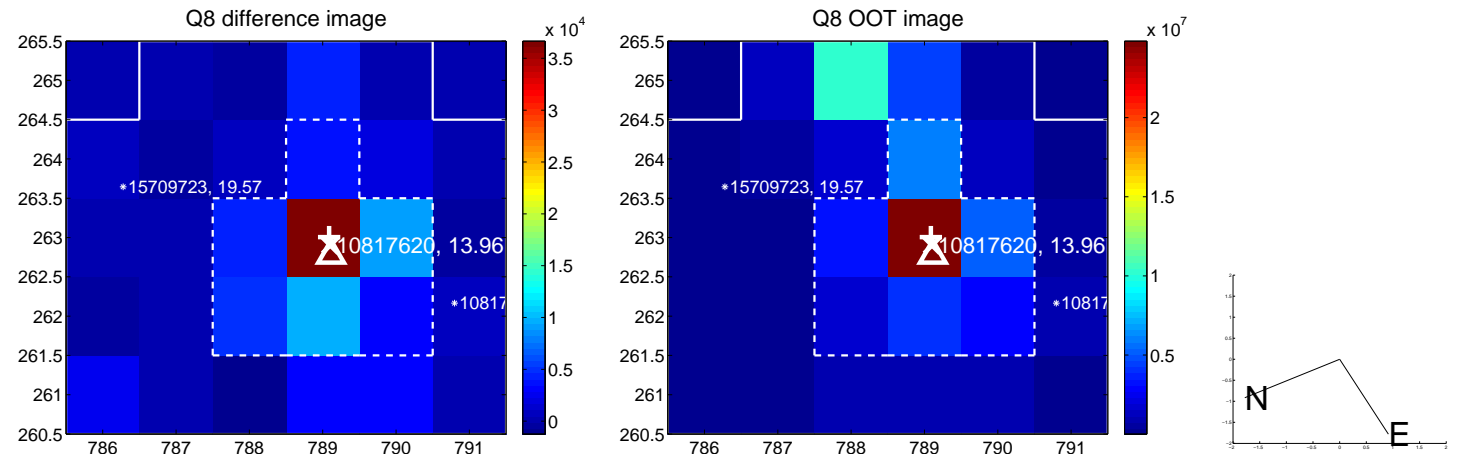
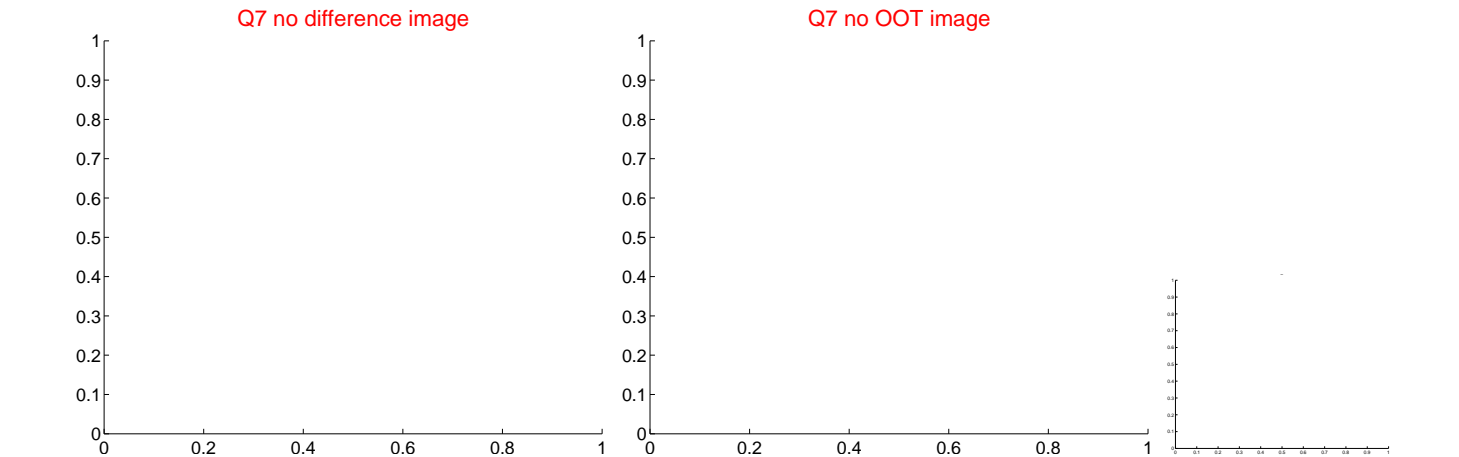
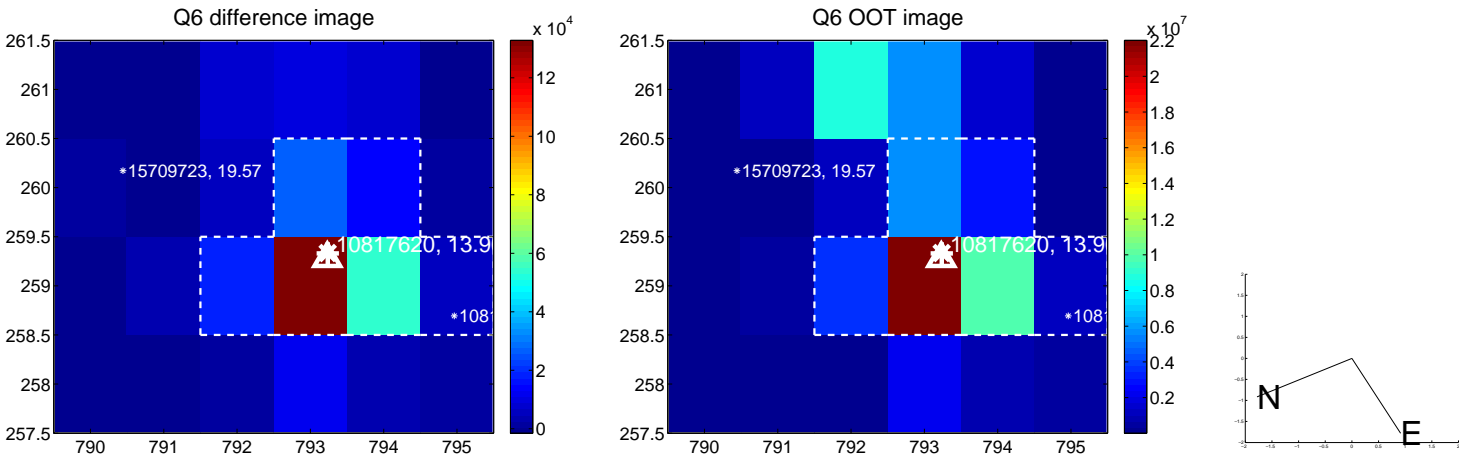
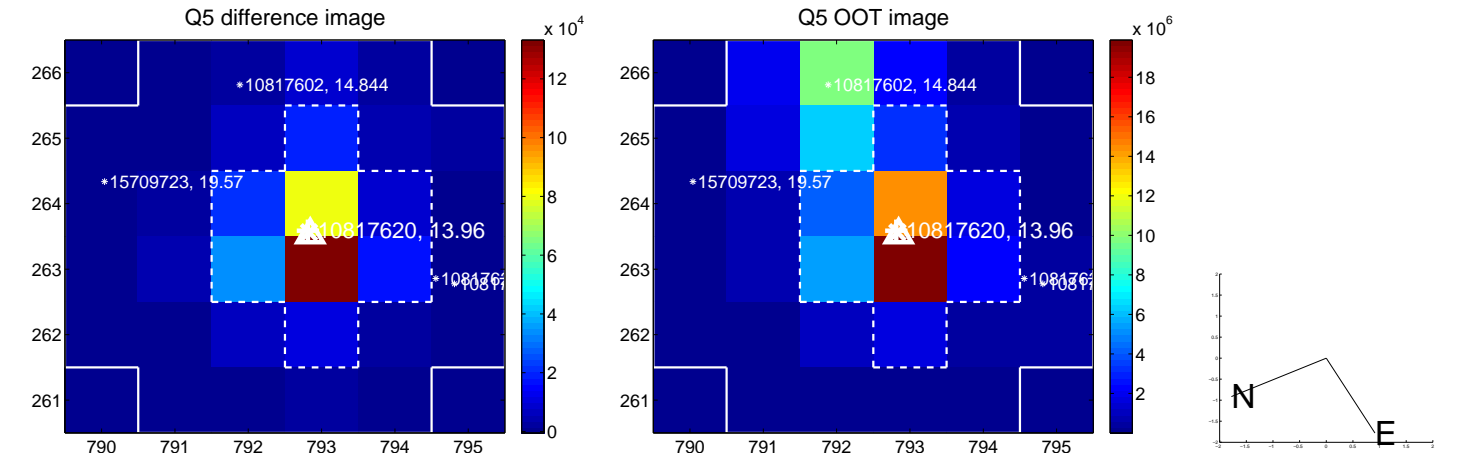
Q4 no difference image



Q4 no OOT image



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



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

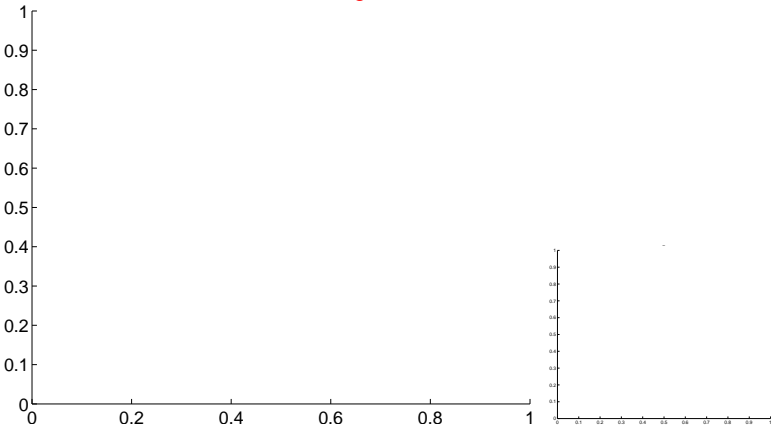


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

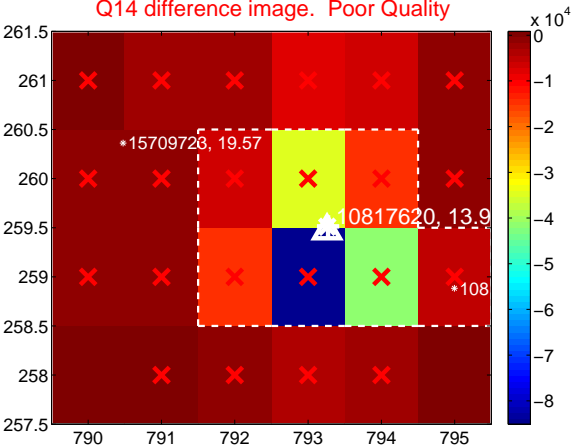
Q13 no difference image



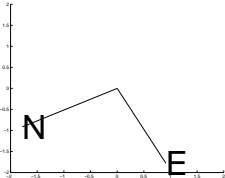
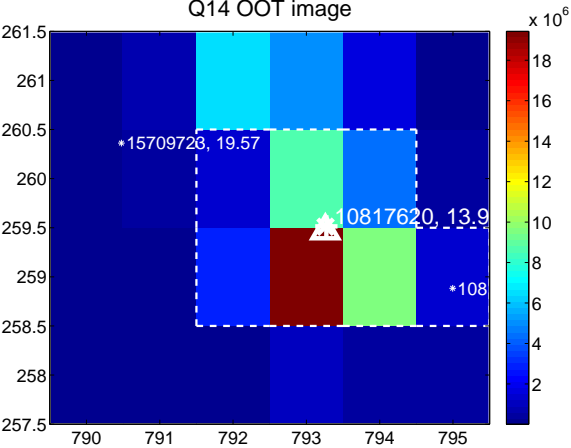
Q13 no OOT image



Q14 difference image. Poor Quality



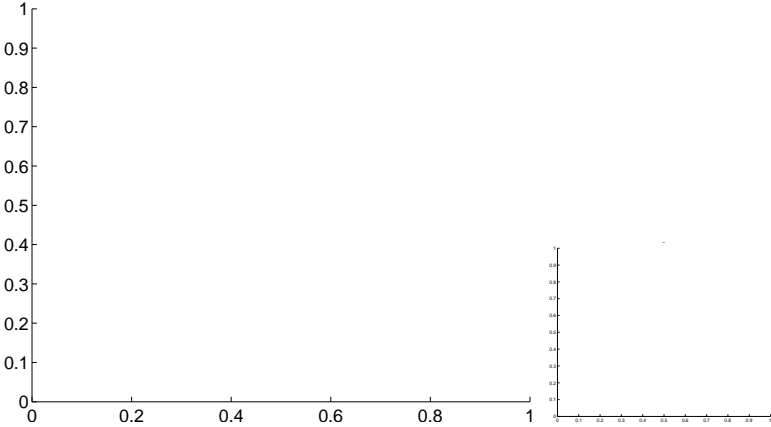
Q14 OOT image



Q15 no difference image



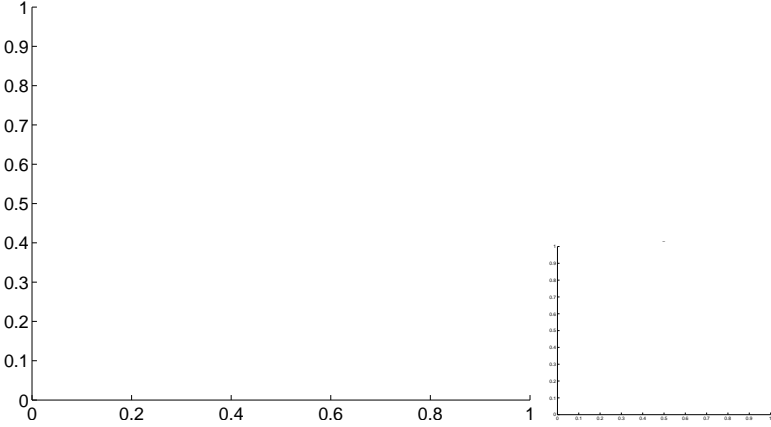
Q15 no OOT image



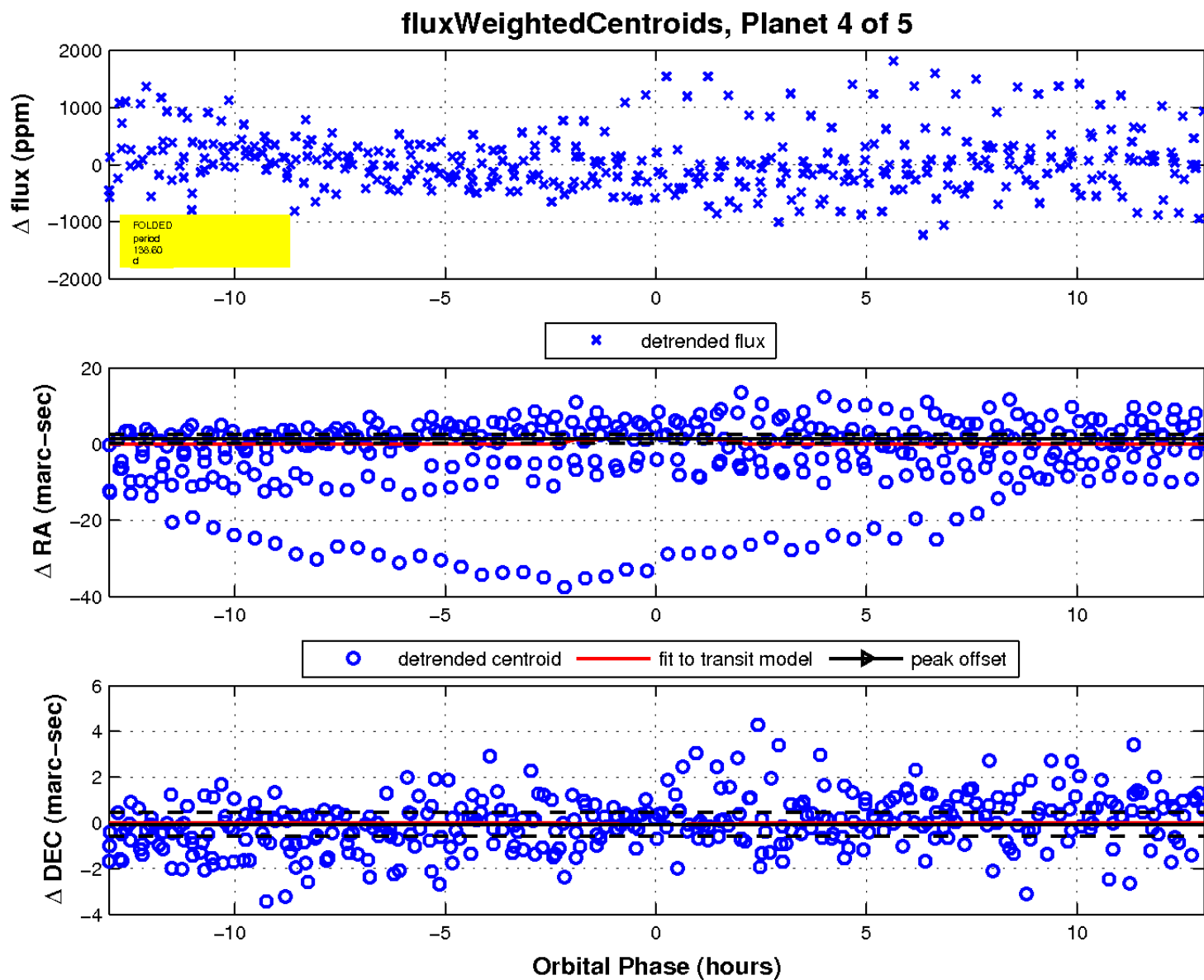
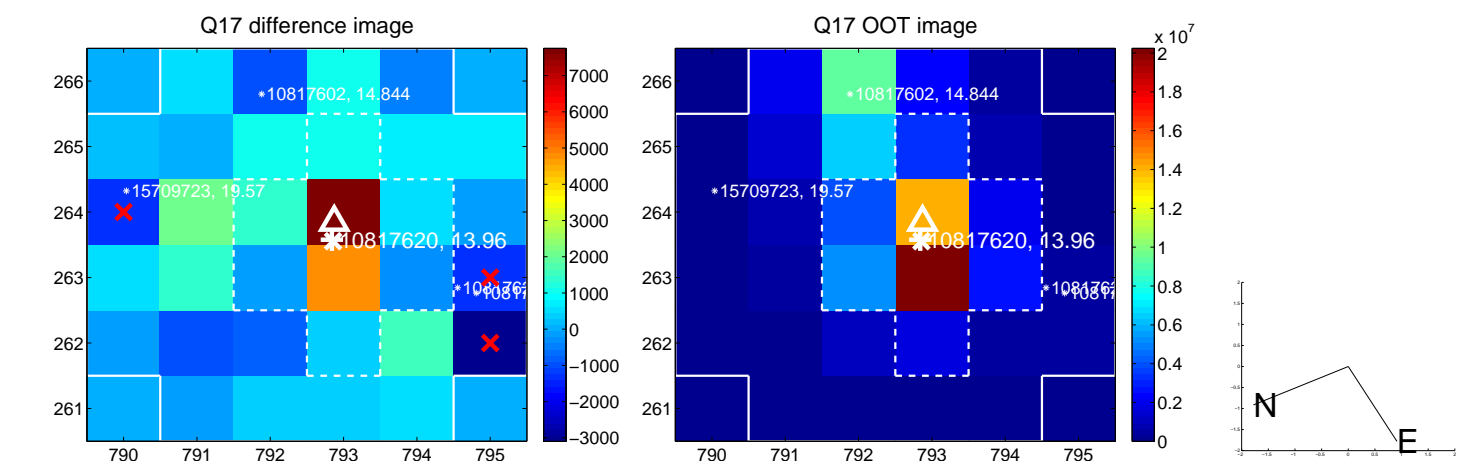
Q16 no difference image



Q16 no OOT image

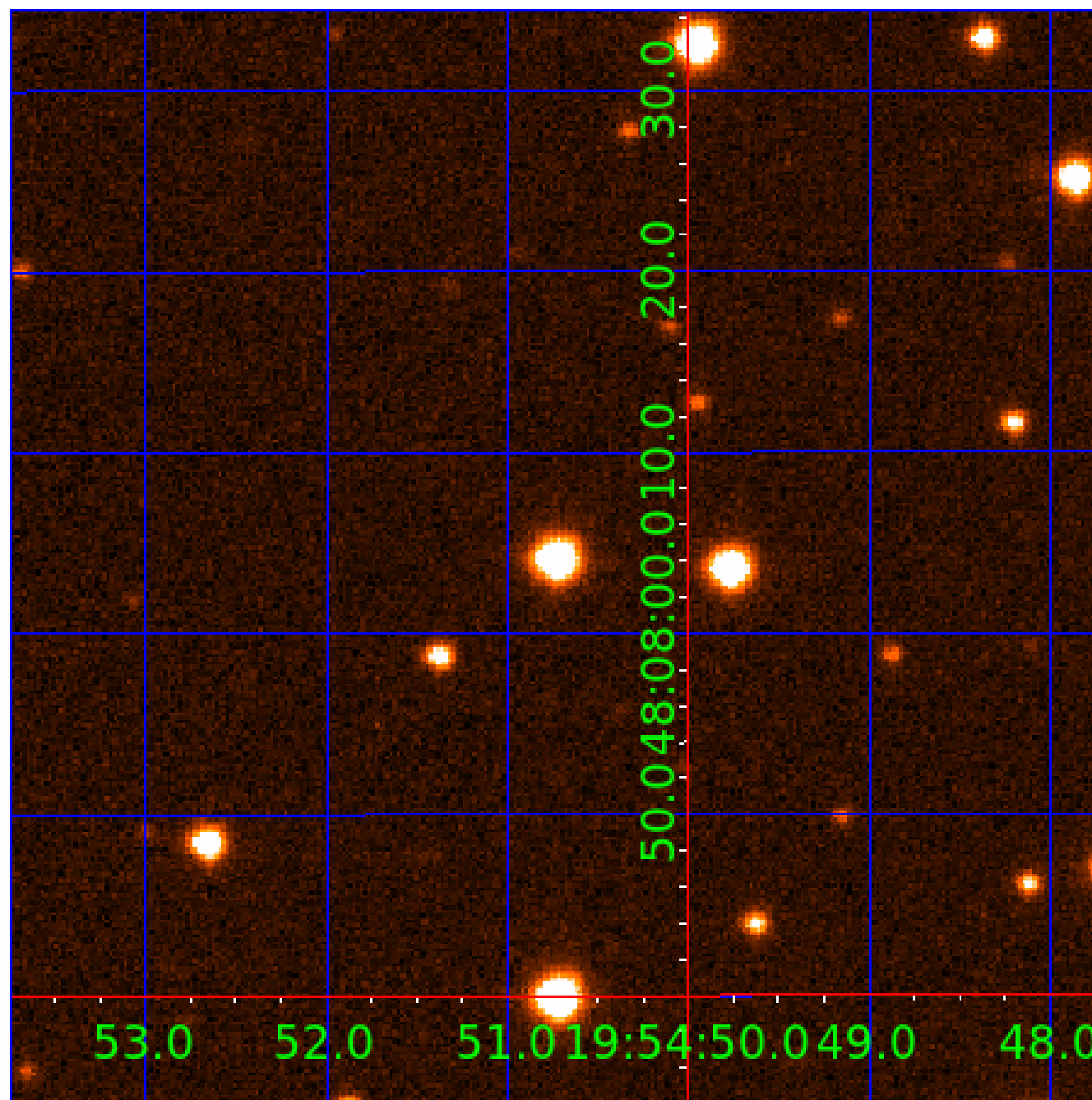


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010817620

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})
010817620-01	OBS	No	1.473088	132.237872	13.4	2.560	10.9	1.8	2.77	8239	1.36	32909.56
010817620-02	OBS	No	2.945410	134.055955	230.0	14.215	9.7	12.0	2.77	8239	5.23	13064.70
010817620-03	OBS	No	44.260716	134.222375	686.2	7.793	13.7	8.8	2.77	8239	10.83	352.32
010817620-04	OBS	No	138.595003	194.015148	253.1	4.344	13.3	3.4	2.77	8239	4.90	76.91
010817620-05	OBS	No	138.572114	193.538093	479.3	5.399	13.5	4.9	2.77	8239	6.66	76.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010817620-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
010817620-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010817620-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
010817620-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
010817620-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—SAME_NTL_PERIOD

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

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

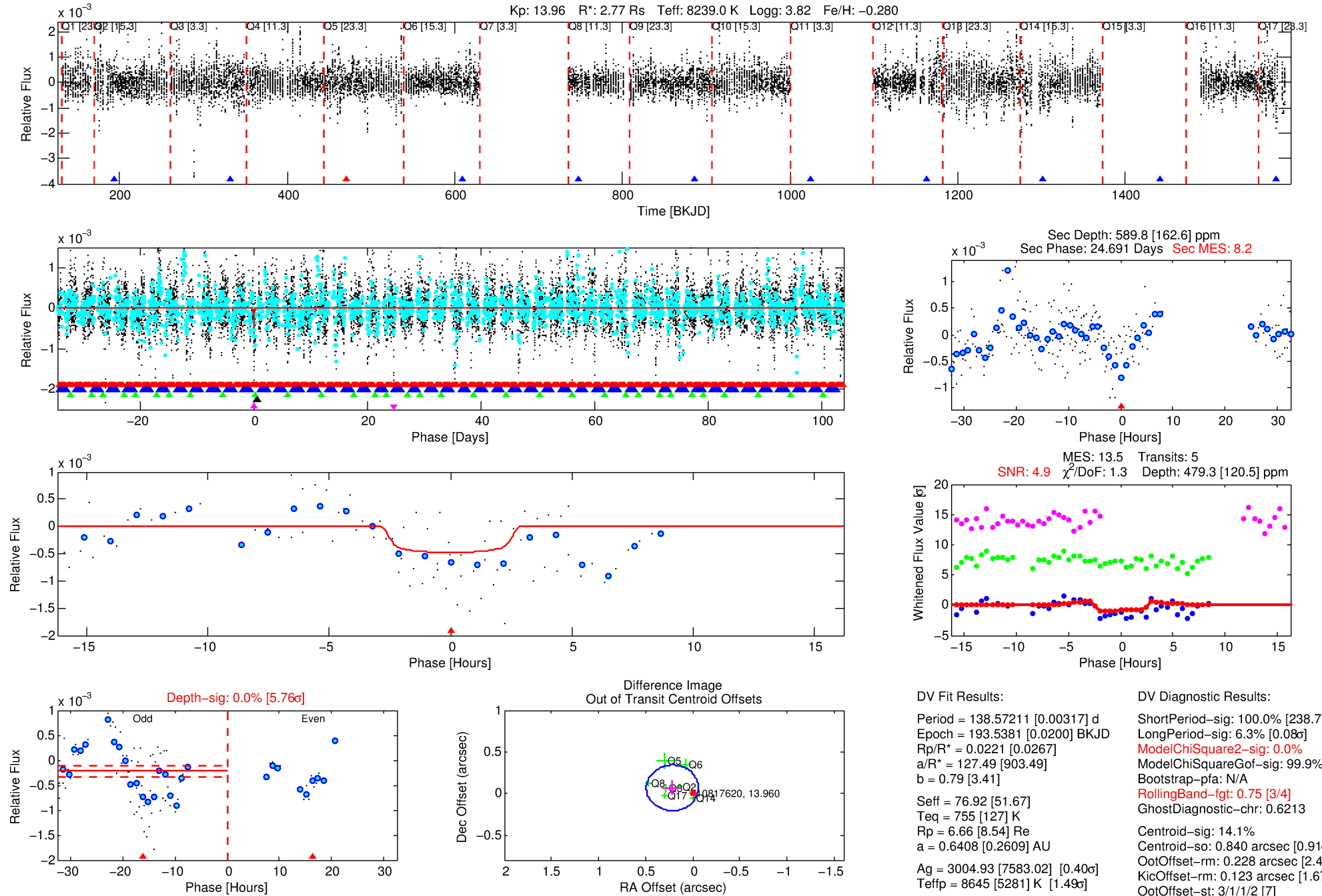
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010817620-05

No Significant Match Found

DV One-Page Summary

KIC: 10817620 Candidate: 5 of 5 Period: 138.572 d



DV Fit Results:

Period = 138.57211 [0.00317] d
Epoch = 193.5381 [0.0200] BKJD
Rp/R* = 0.0221 [0.0267]
a/R* = 127.49 [903.49]
b = 0.79 [3.41]
Seff = 76.92 [51.67]
Teq = 755 [127] K
Rp = 6.66 [8.54] Re
a = 0.6408 [0.2609] AU
Ag = 3004.93 [7583.02] [0.40 σ]
Teffp = 8645 [5281] K [1.49 σ]

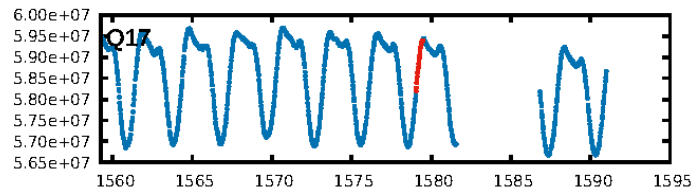
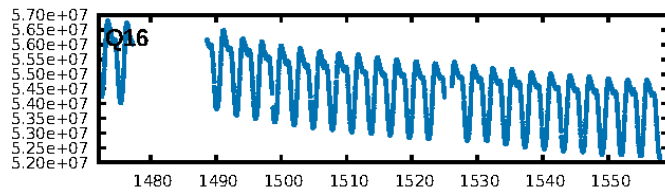
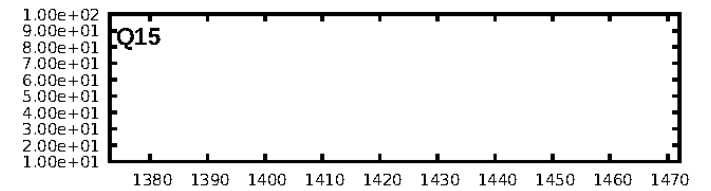
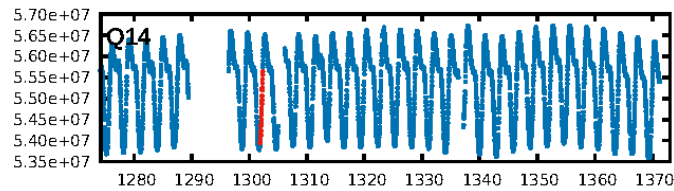
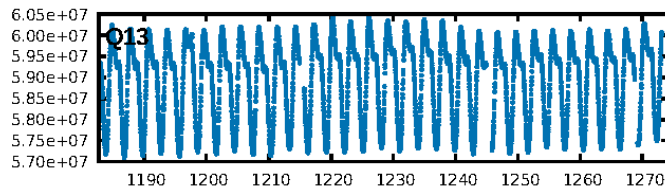
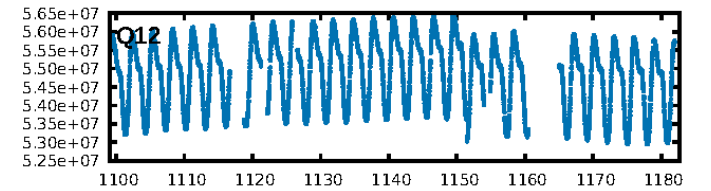
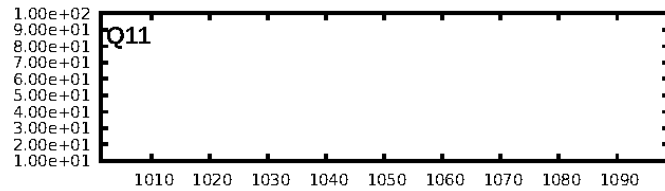
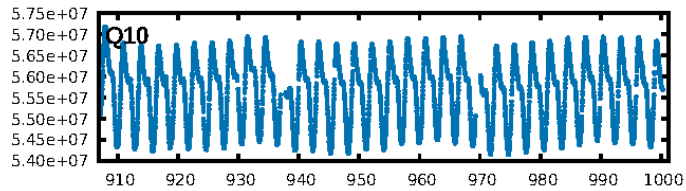
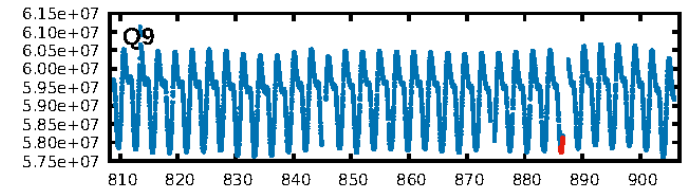
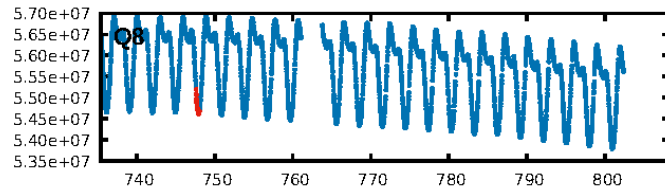
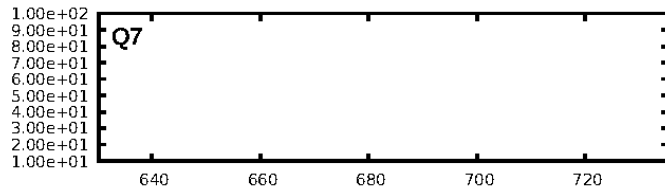
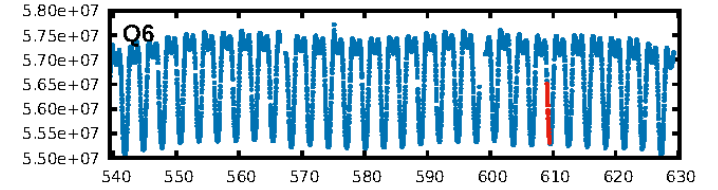
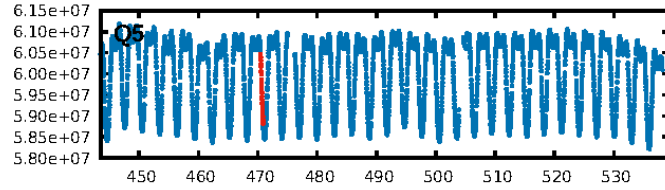
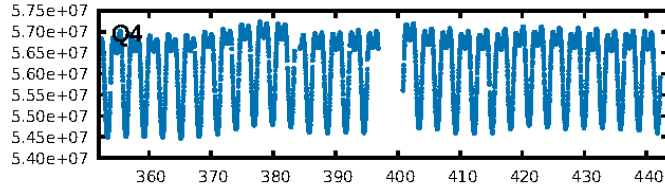
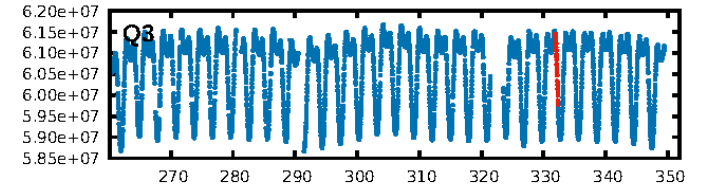
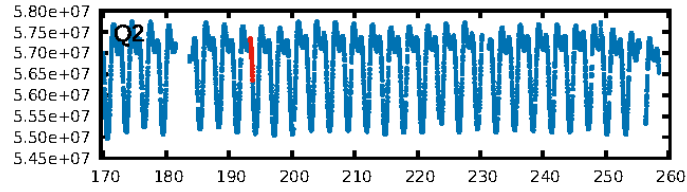
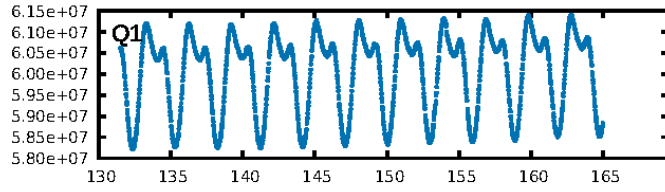
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [238.76 σ]
LongPeriod-sig: 6.3% [0.08 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.75 [3/4]
GhostDiagnostic-chr: 0.6213
Centroid-sig: 14.1%
Centroid-so: 0.840 arcsec [0.91 σ]
OotOffset-rm: 0.228 arcsec [2.49 σ]
KicOffset-rm: 0.123 arcsec [1.67 σ]
OotOffset-st: 3/1/1/2 [7]
KicOffset-st: 3/1/1/2 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.00 [0/7]

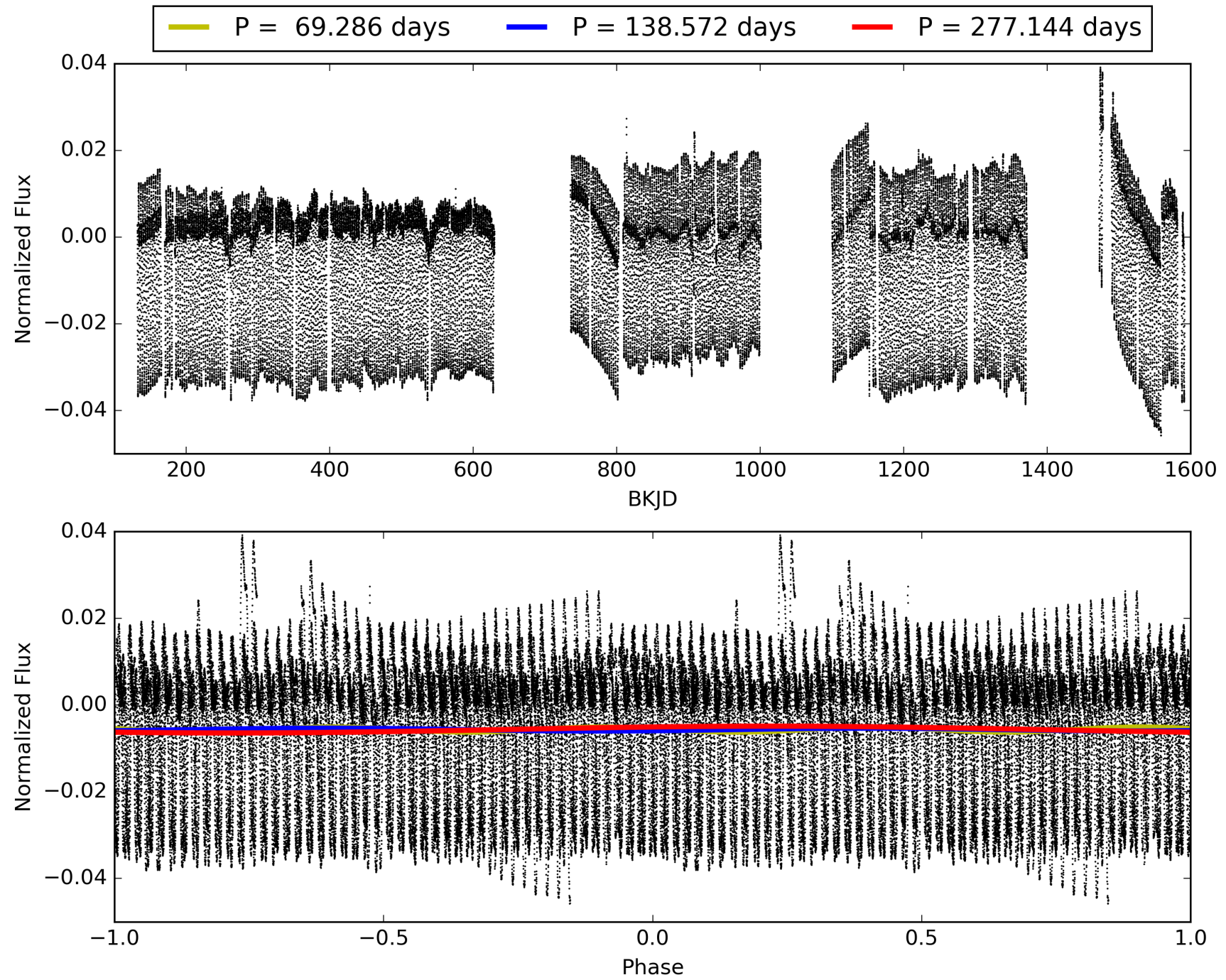
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:30:24 Z

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

TCE 010817620-05, PDC Light Curves

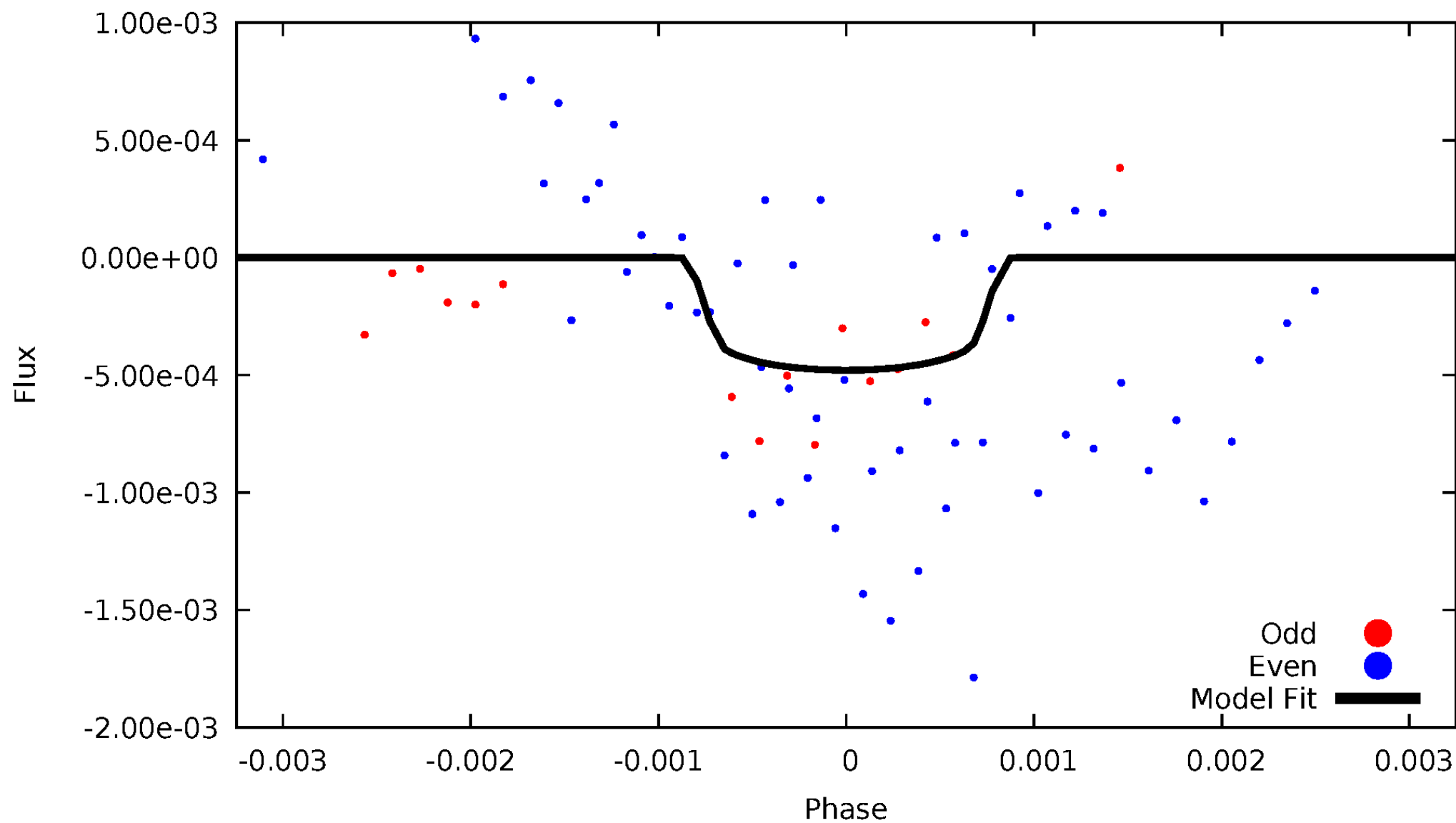


TCE 010817620-05



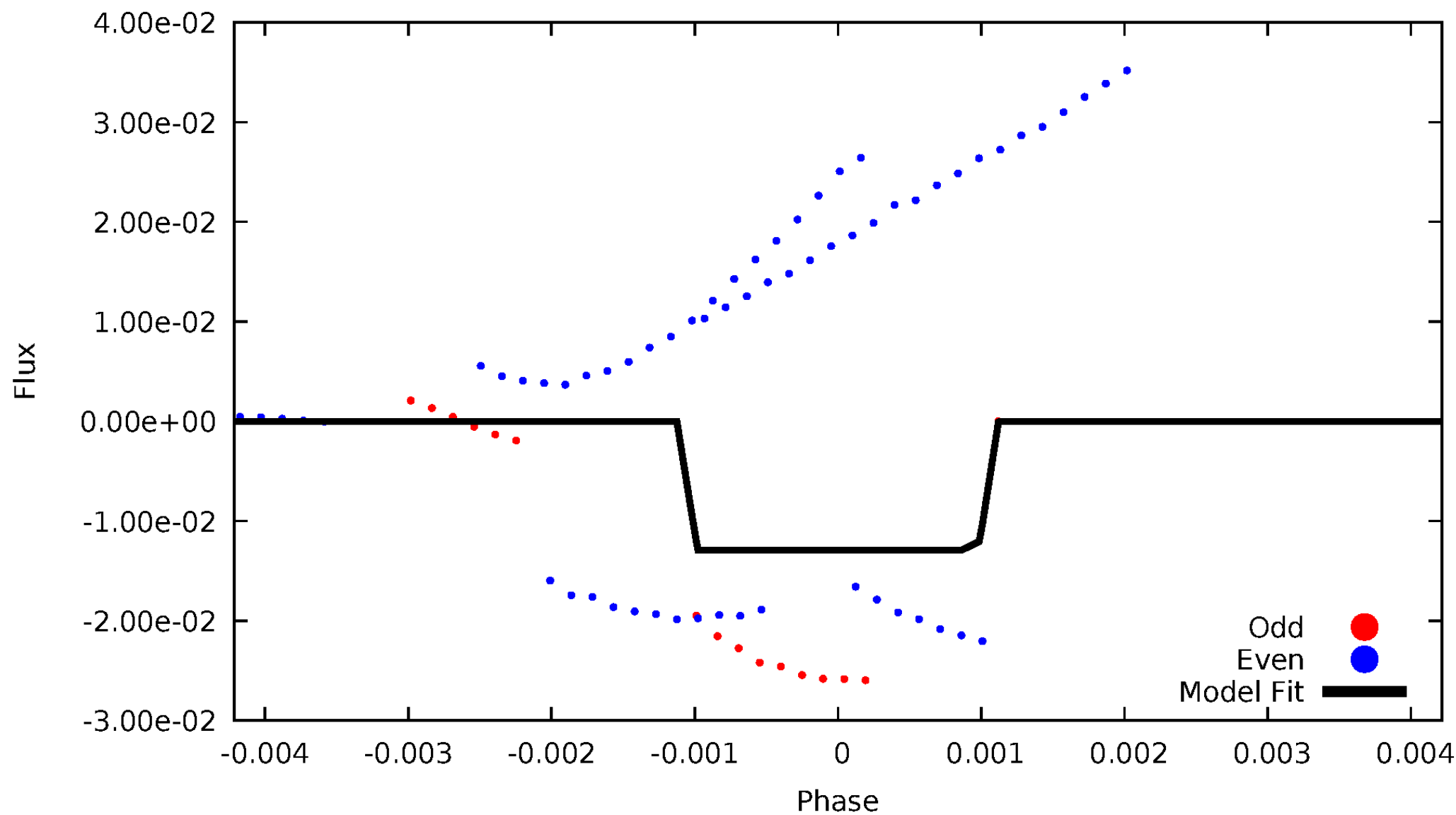
DV Odd/Even

TCE 010817620-05



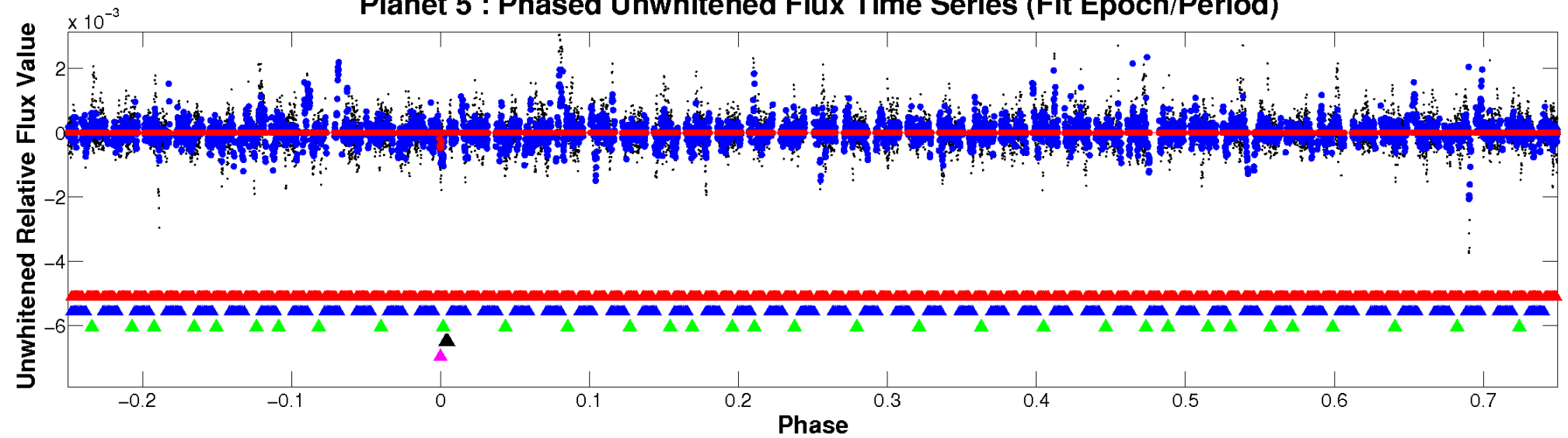
ALT Odd/Even

TCE 010817620-05

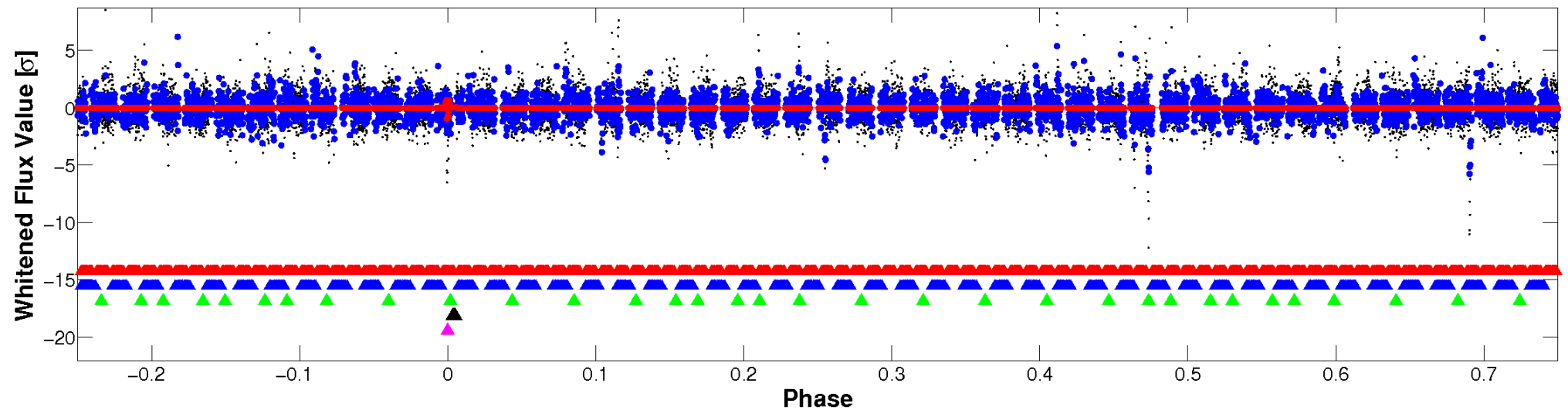


Non-Whitened Vs. Whitened Light Curve

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

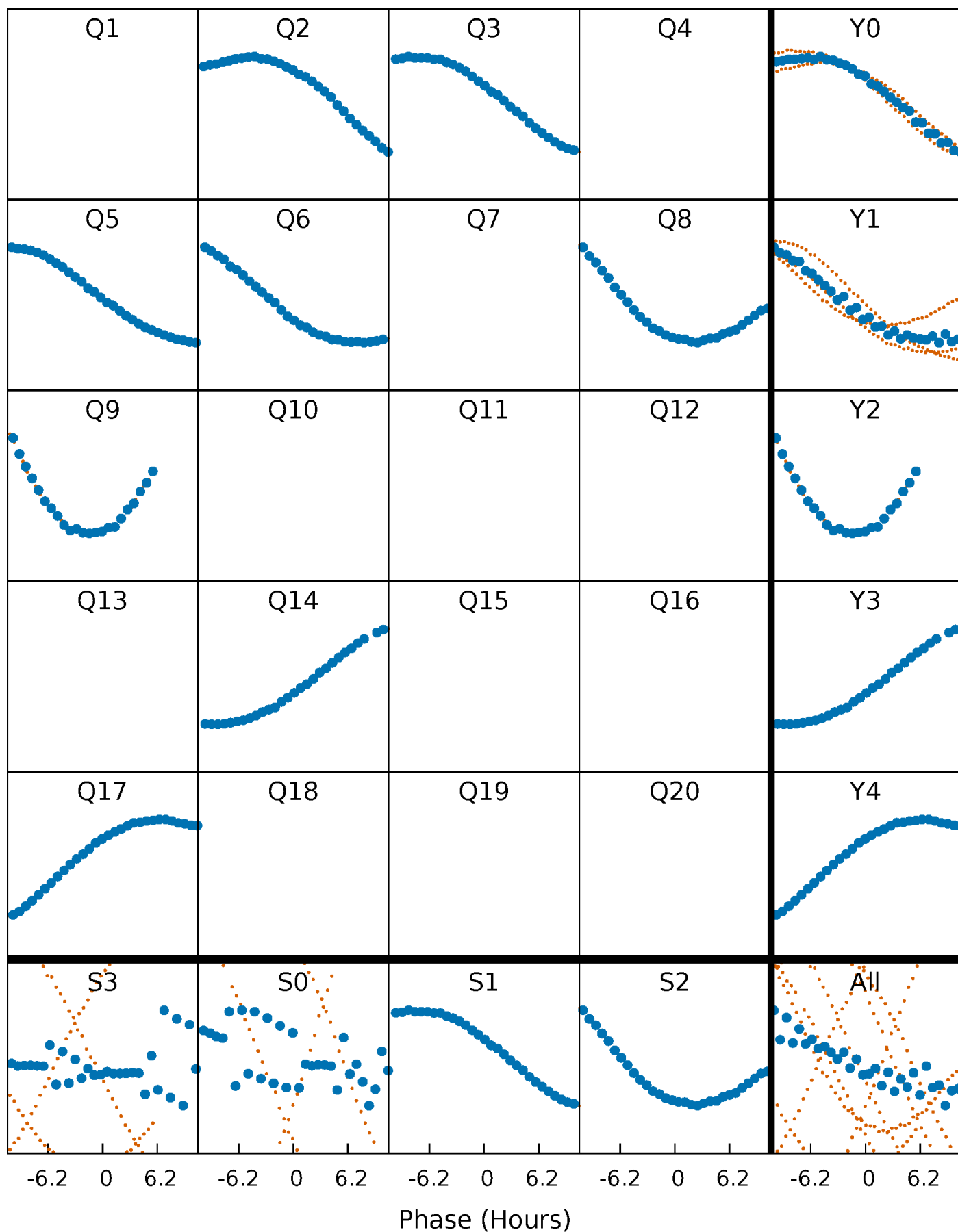


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



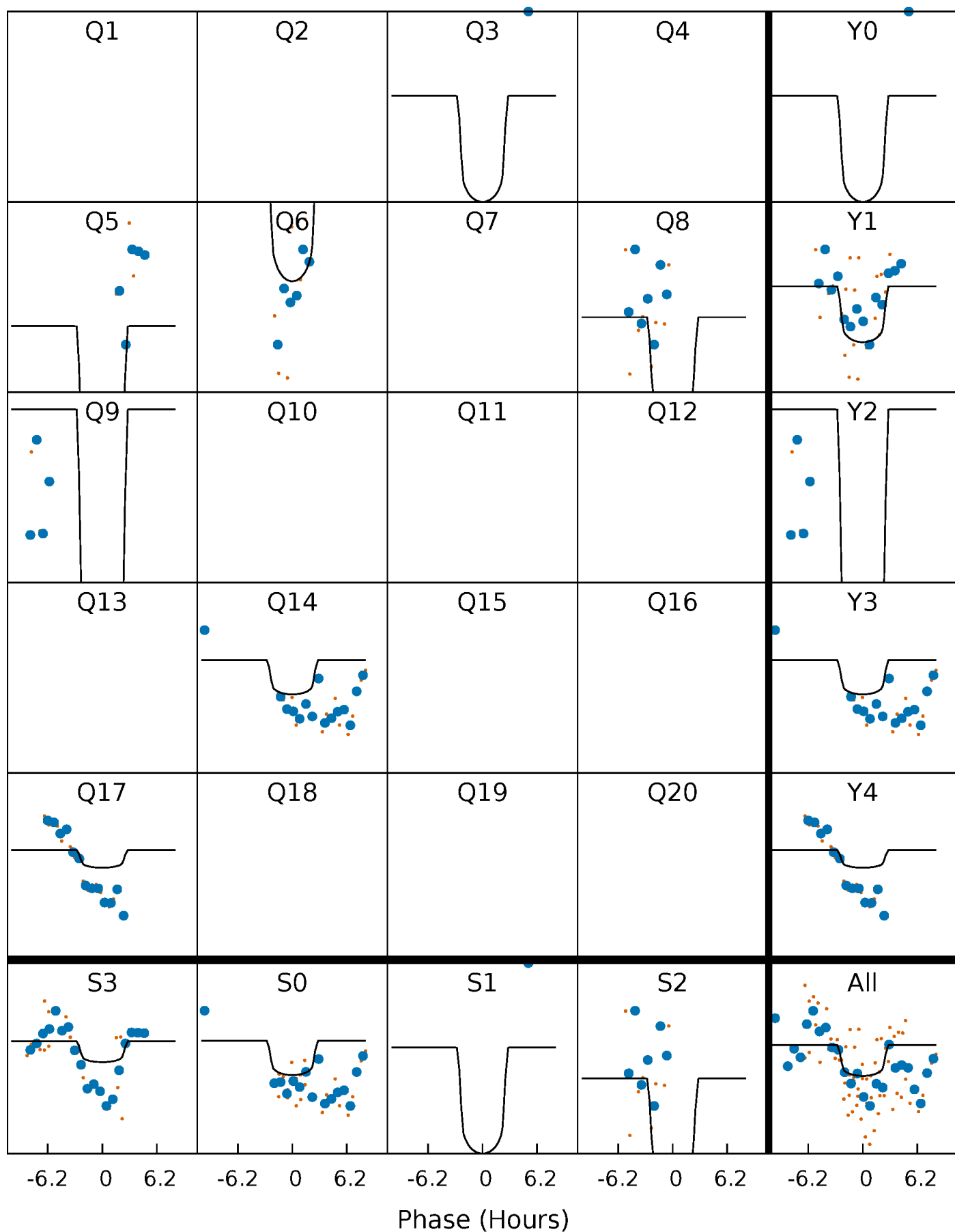
PDC Quarter-Phased Transit Curves

TCE 010817620-05 P=138.572114 Days $T_0=193.538093$ (BKJD)



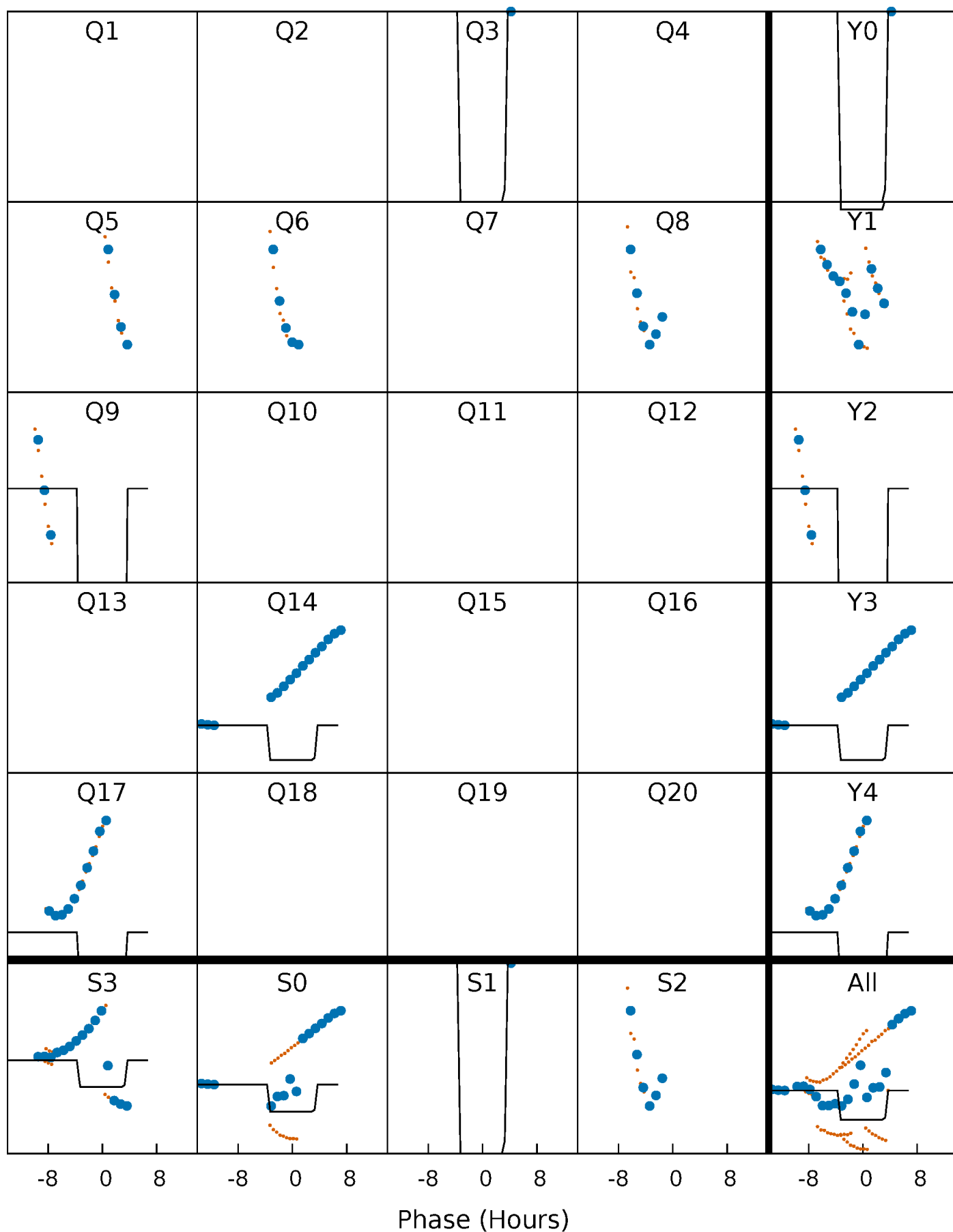
DV Quarter-Phased Transit Curves

TCE 010817620-05 $P=138.572114$ Days $T_0=193.538093$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

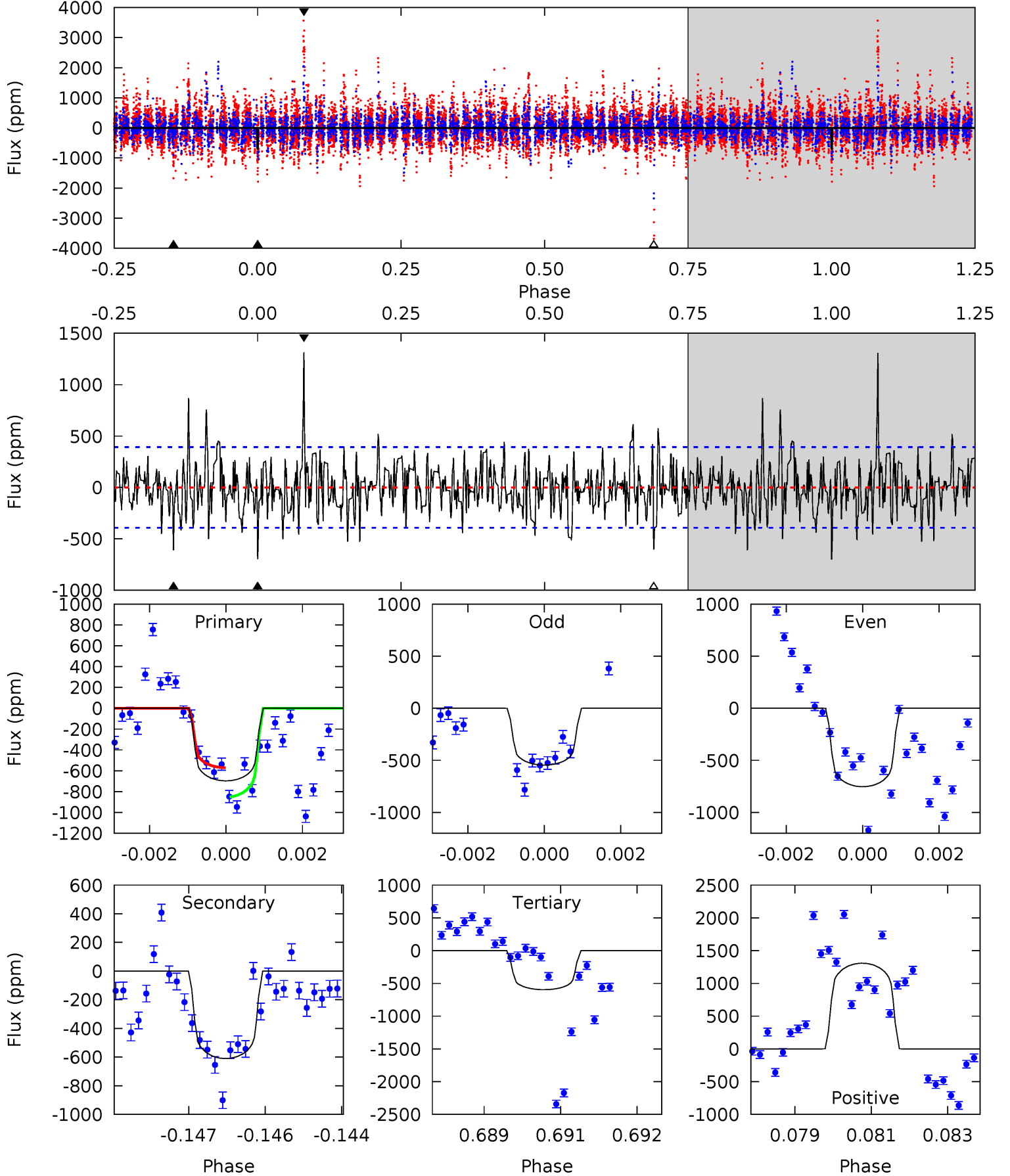
TCE 010817620-05 P=138.574909 Days $T_0=193.582151$ (BKJD)



DV Model-Shift Uniqueness Test

010817620-05, $P = 138.572114$ Days, $E = 54.965979$ Days

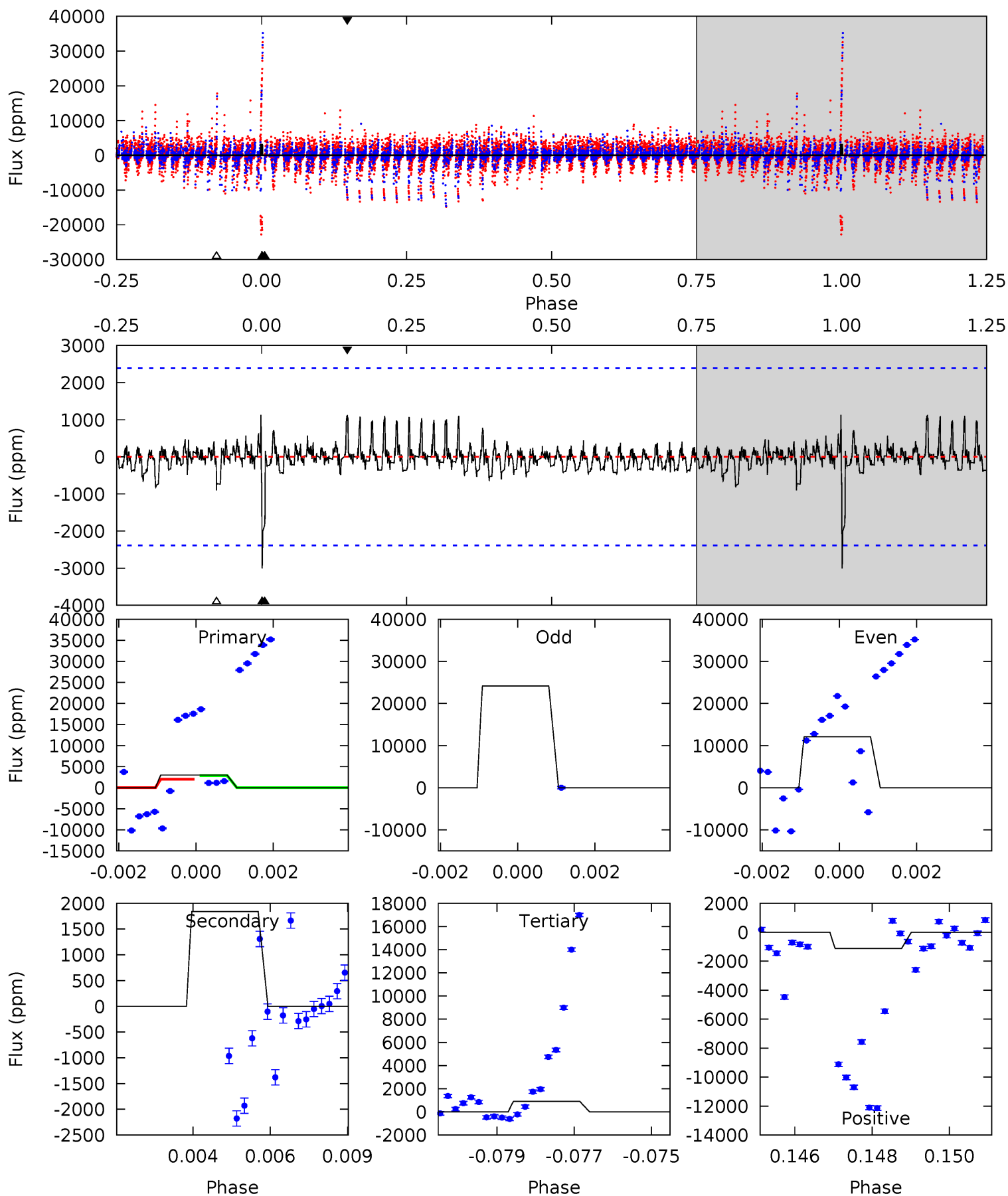
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.49	8.31	8.13	17.8	5.35	3.12	2.46	1.37	-8.32	0.19	-9.50	1.21	0.88	0.65	1.92



Alt Model-Shift Uniqueness Test

010817620-05, P = 138.574909 Days, E = 55.007242 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.69	4.10	2.02	2.50	5.31	3.07	0.49	4.67	4.19	2.09	1.60	9.73	0.27	0.27	0.89



Stellar Parameters For KIC 010817620

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8239^{+228}_{-342}	$3.816^{+0.382}_{-0.067}$	$-0.280^{+0.200}_{-0.300}$	$2.766^{+0.293}_{-1.172}$	$1.827^{+0.086}_{-0.366}$	$0.122^{+0.374}_{-0.026}$
	+3%/-4%	+10%/-2%	+71%/-107%	+11%/-42%	+5%/-20%	+308%/-22%
Source	KIC0	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 010817620-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-610 ± 73	$8.15^{+6.93}_{-5.35}$	1020^{+67}_{-107}	7259^{+7489}_{-1846}	2022^{+15211}_{-1433}
Alt.	-1842 ± 449	$32.69^{+8.89}_{-9.72}$	1029^{+61}_{-105}	4956^{+665}_{-495}	386^{+422}_{-169}

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

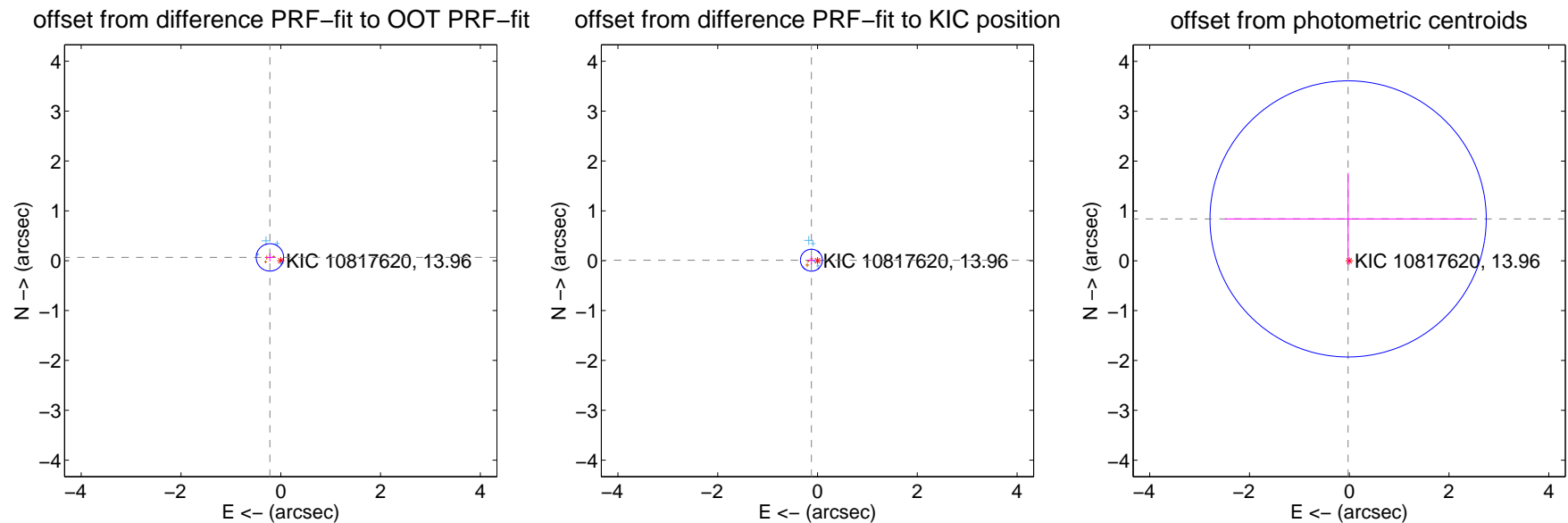
DV Centroid Data

Supplemental centroid analysis for 010817620-05. Kepler magnitude: 13.96. Transit SNR 4.86

There are 4 quarters with good PRF difference image offsets

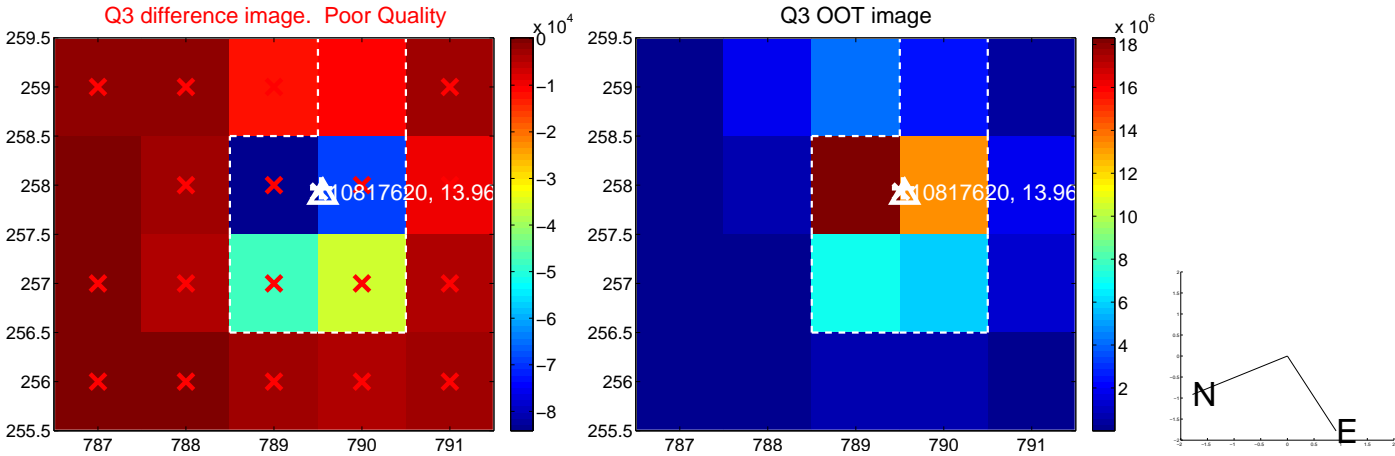
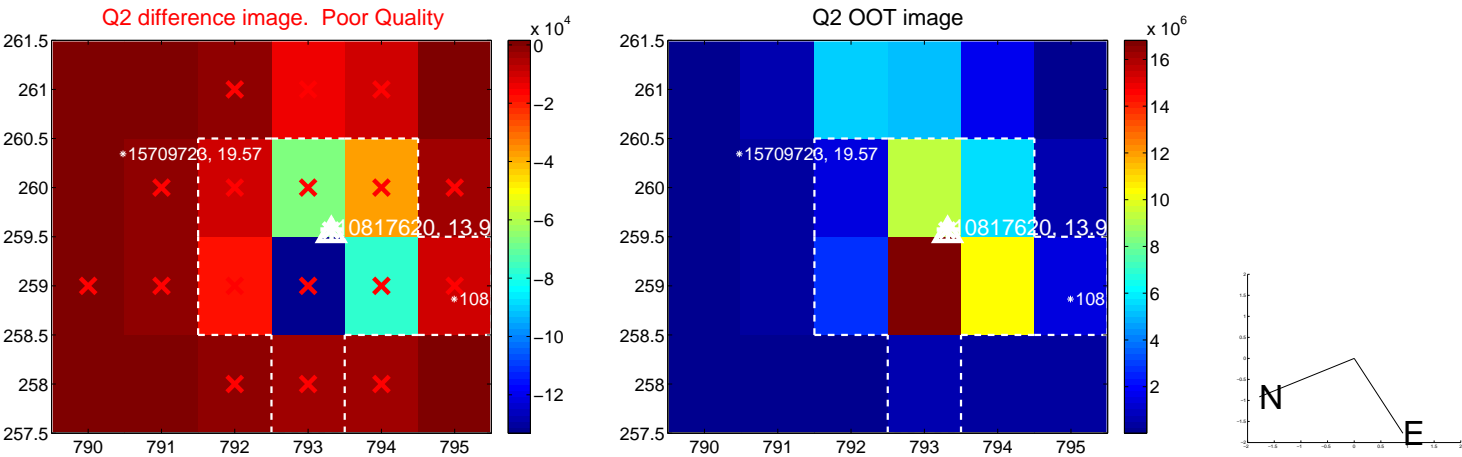
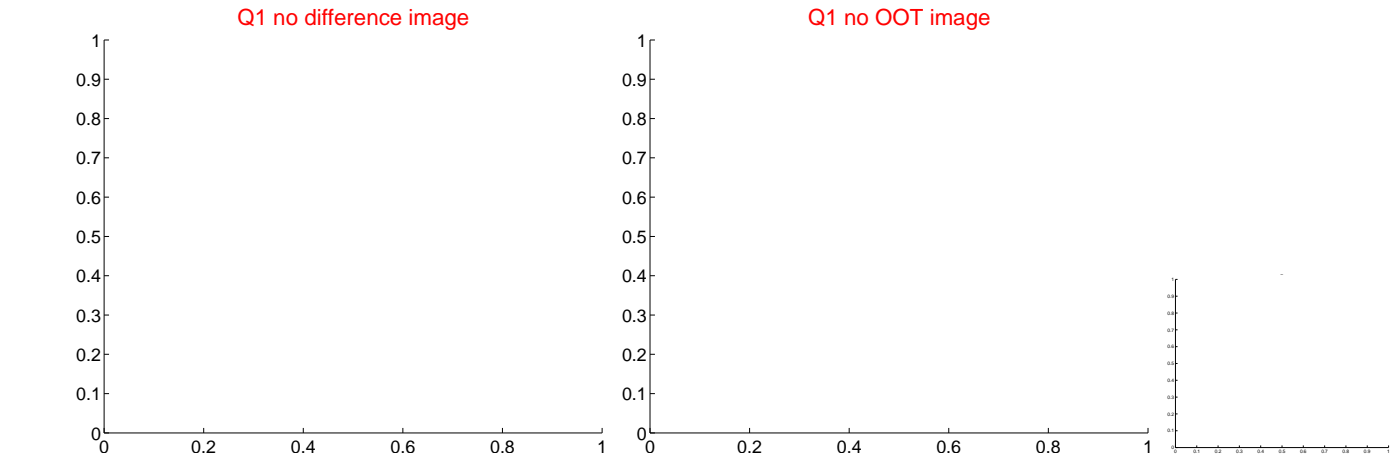
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.228 ± 0.092	2.49	0.218 ± 0.093	0.067 ± 0.080
PRF-fit source offset from KIC position	0.123 ± 0.073	1.67	0.122 ± 0.073	0.010 ± 0.084
photometric centroid source offset	0.84 ± 0.92	0.91	0.02 ± 2.47	0.84 ± 0.92

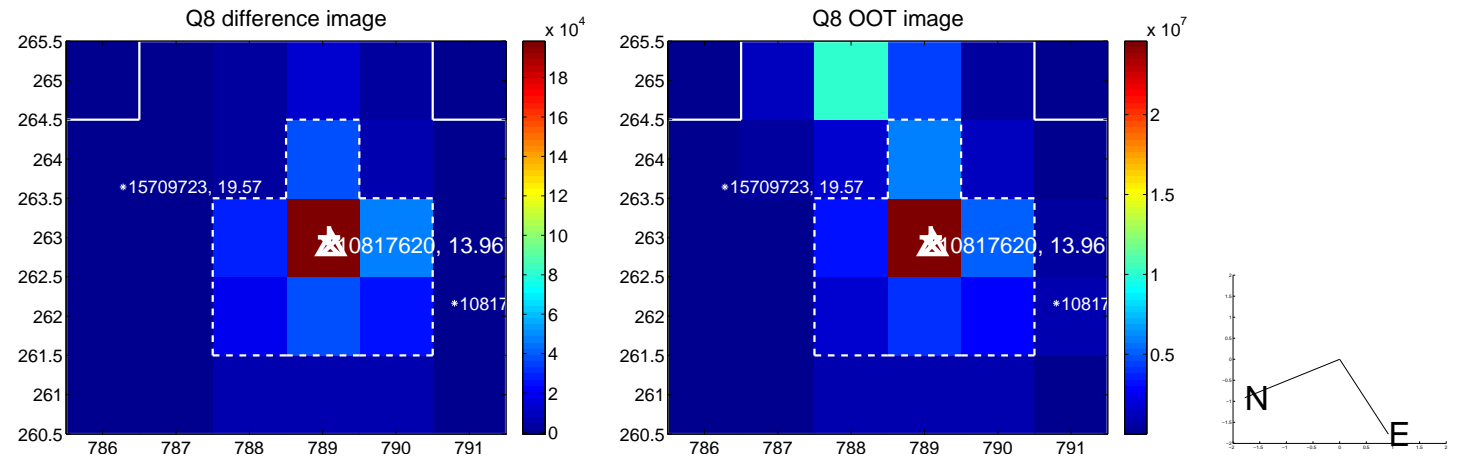
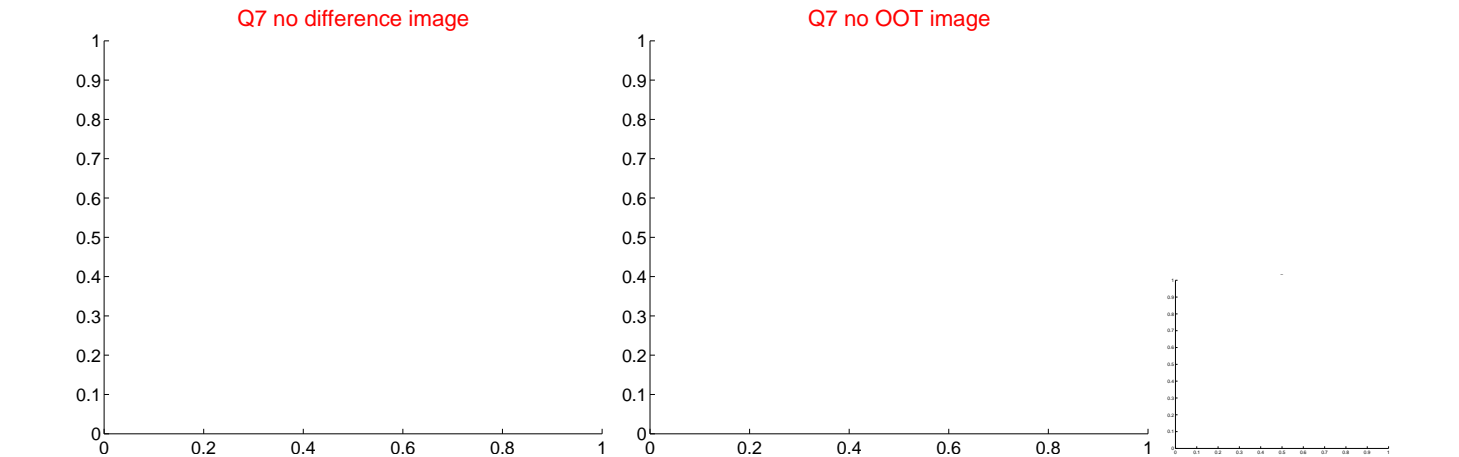
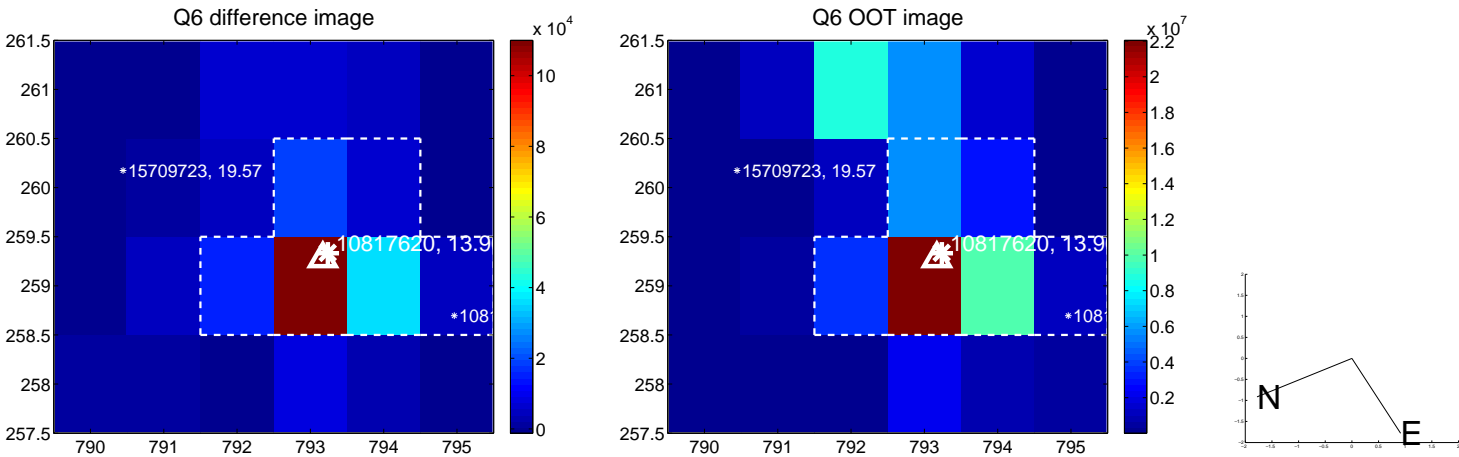
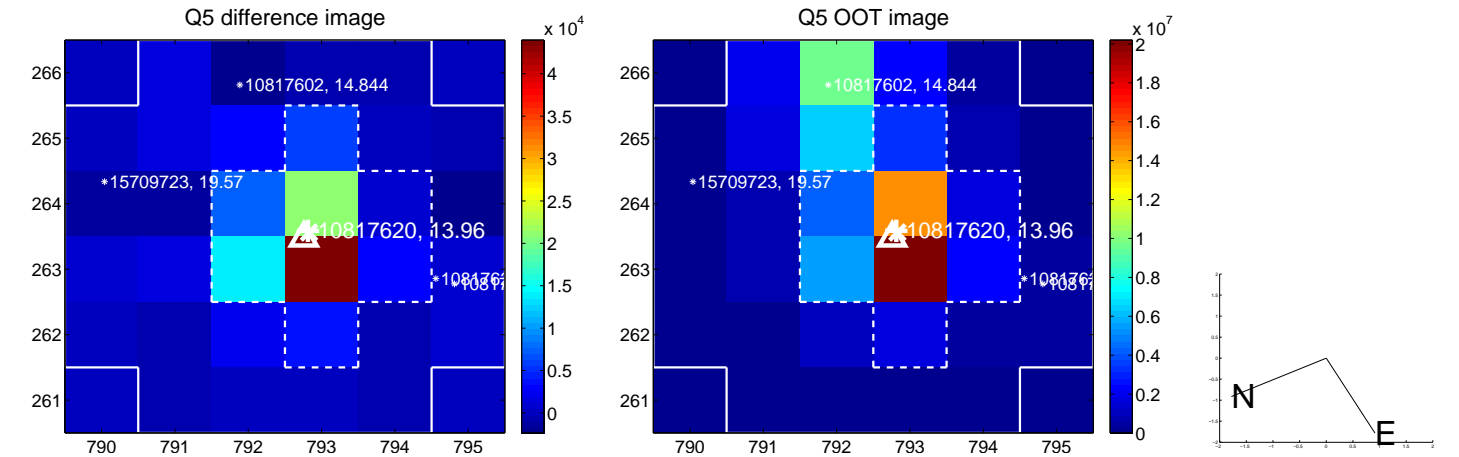


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

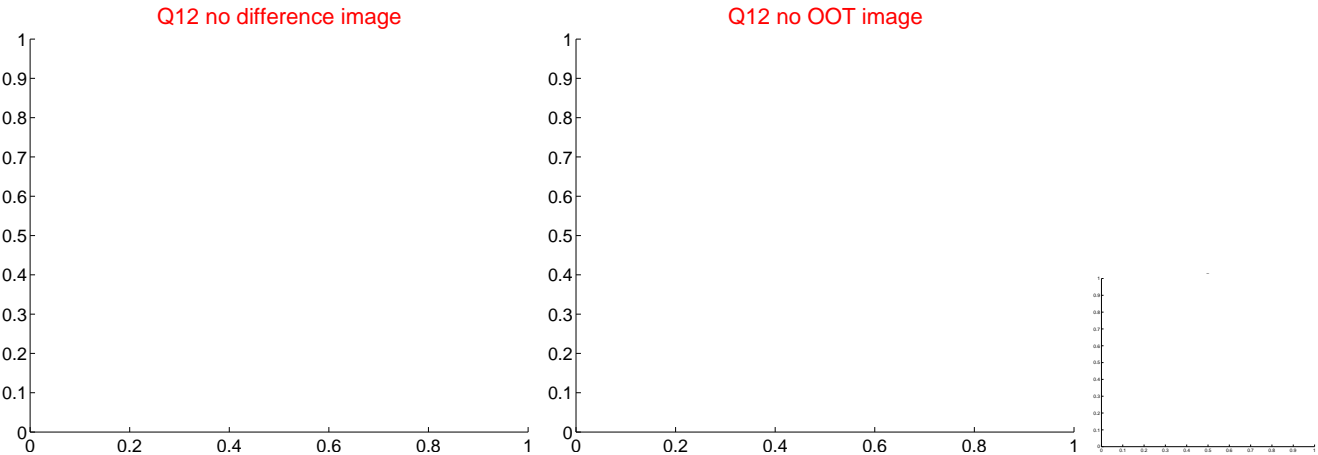
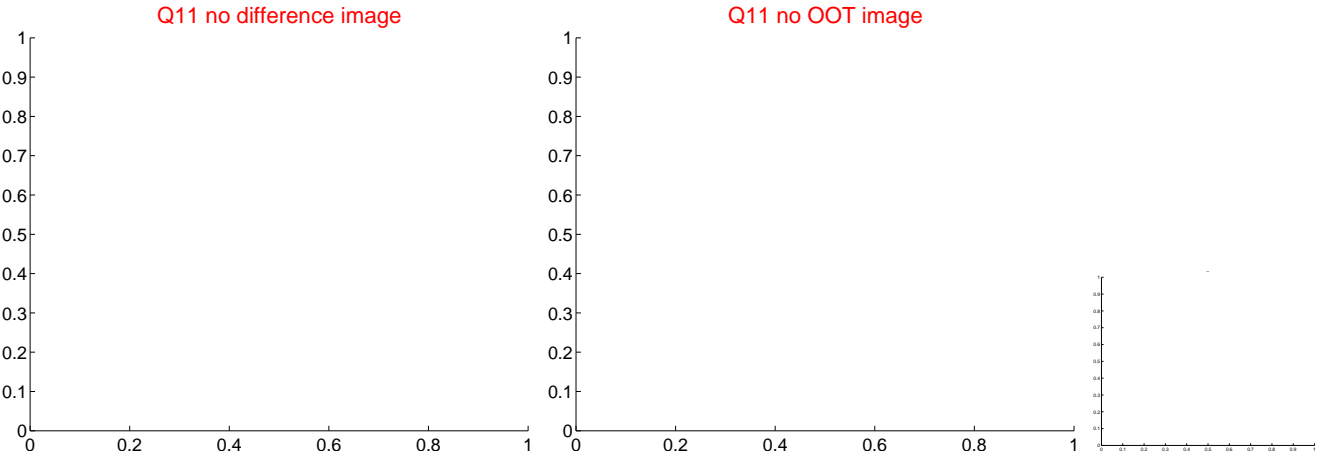
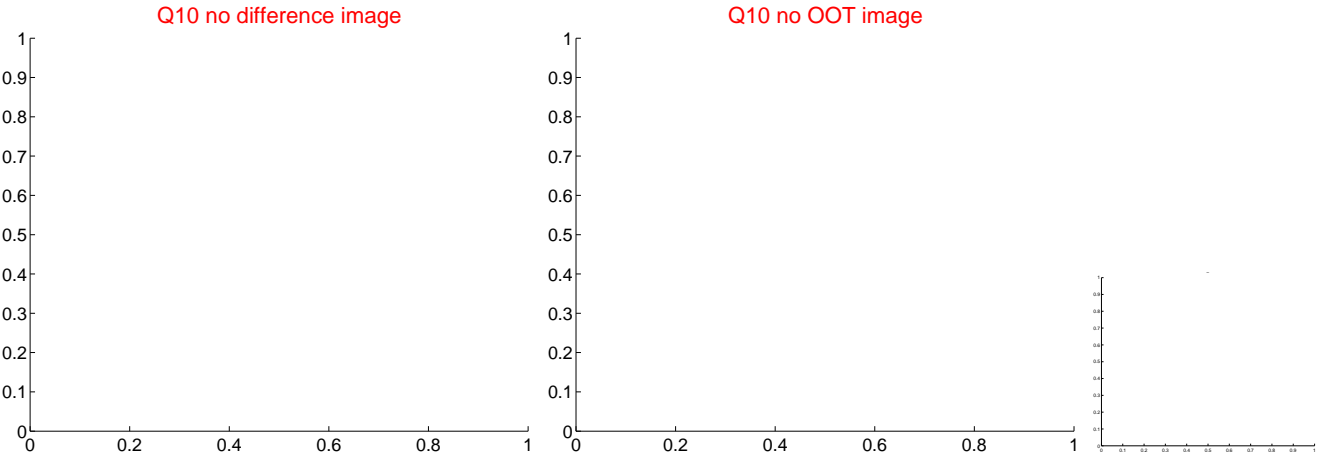
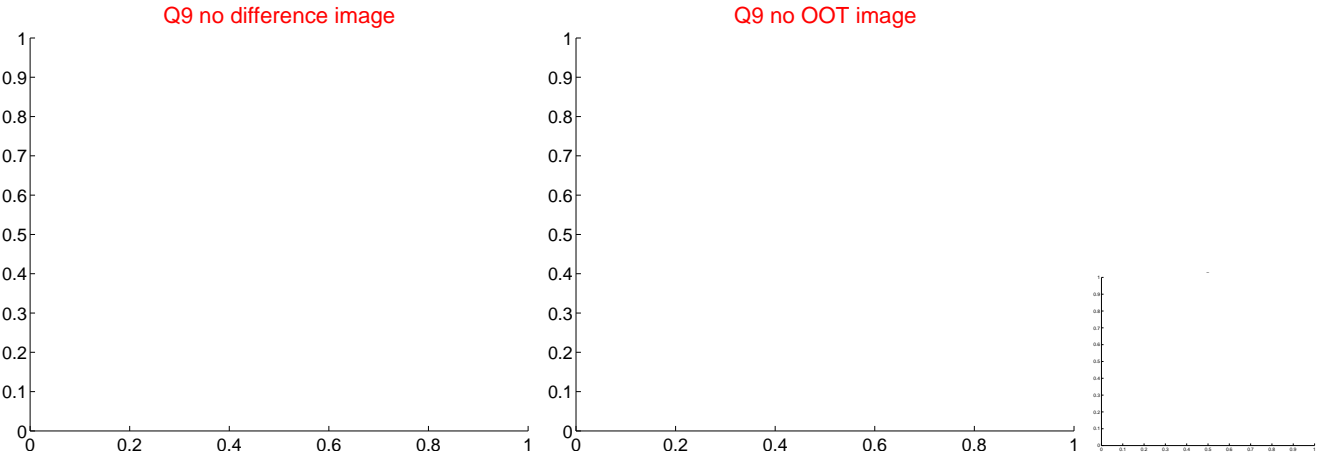
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

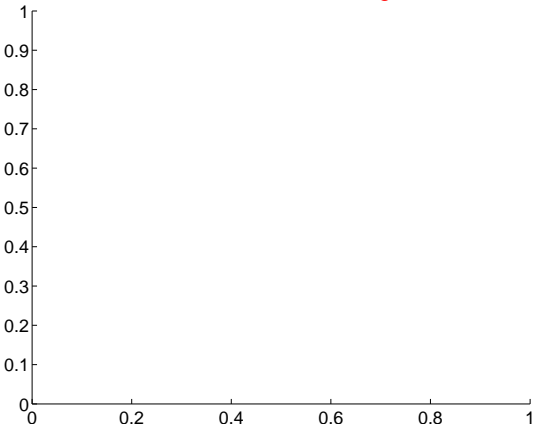


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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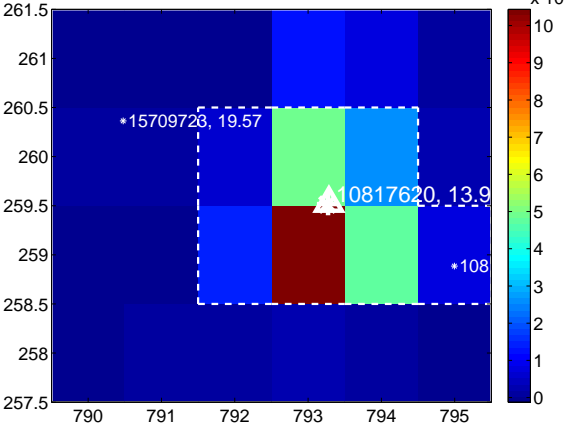
Q13 no difference image



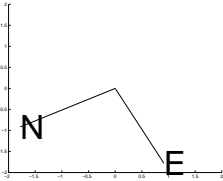
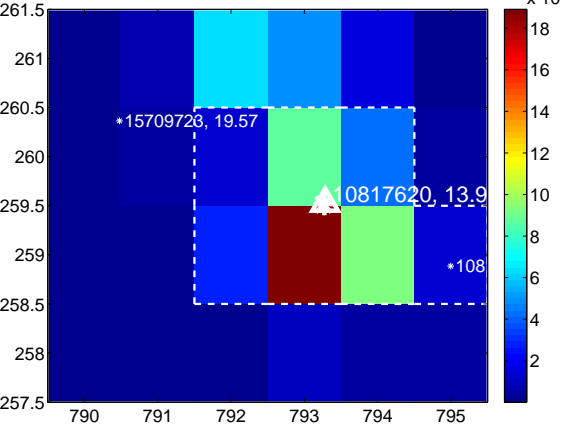
Q13 no OOT image



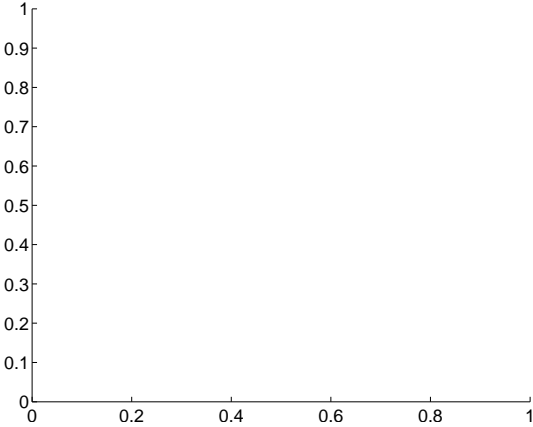
Q14 difference image



Q14 OOT image



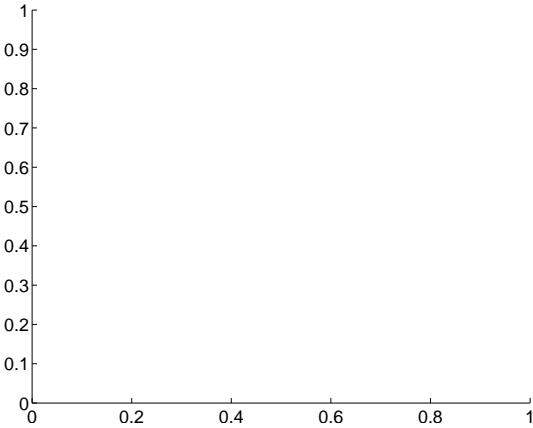
Q15 no difference image



Q15 no OOT image



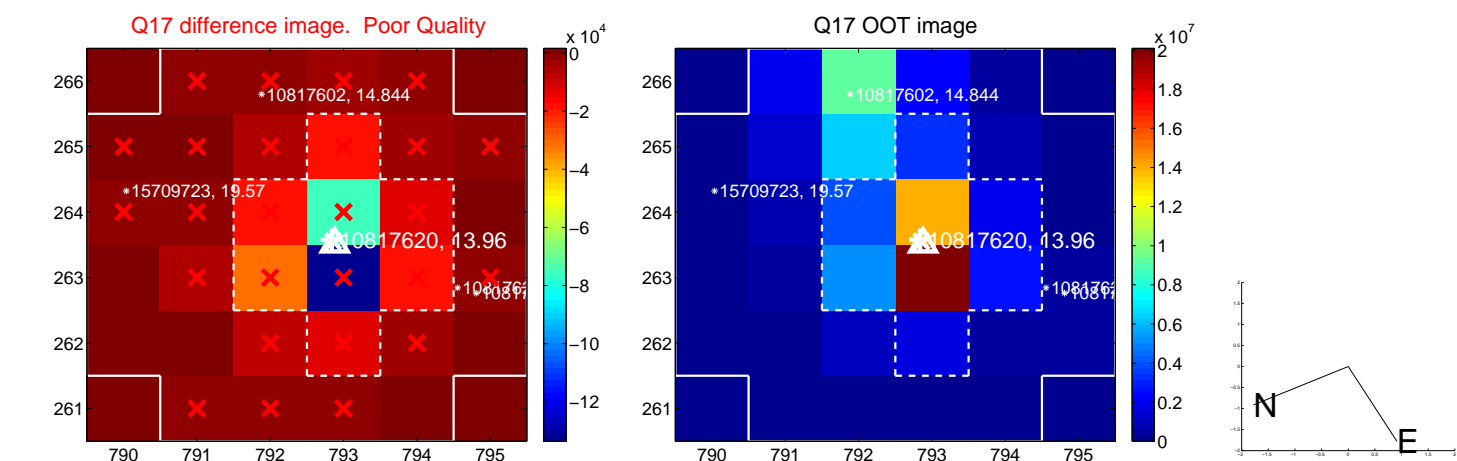
Q16 no difference image



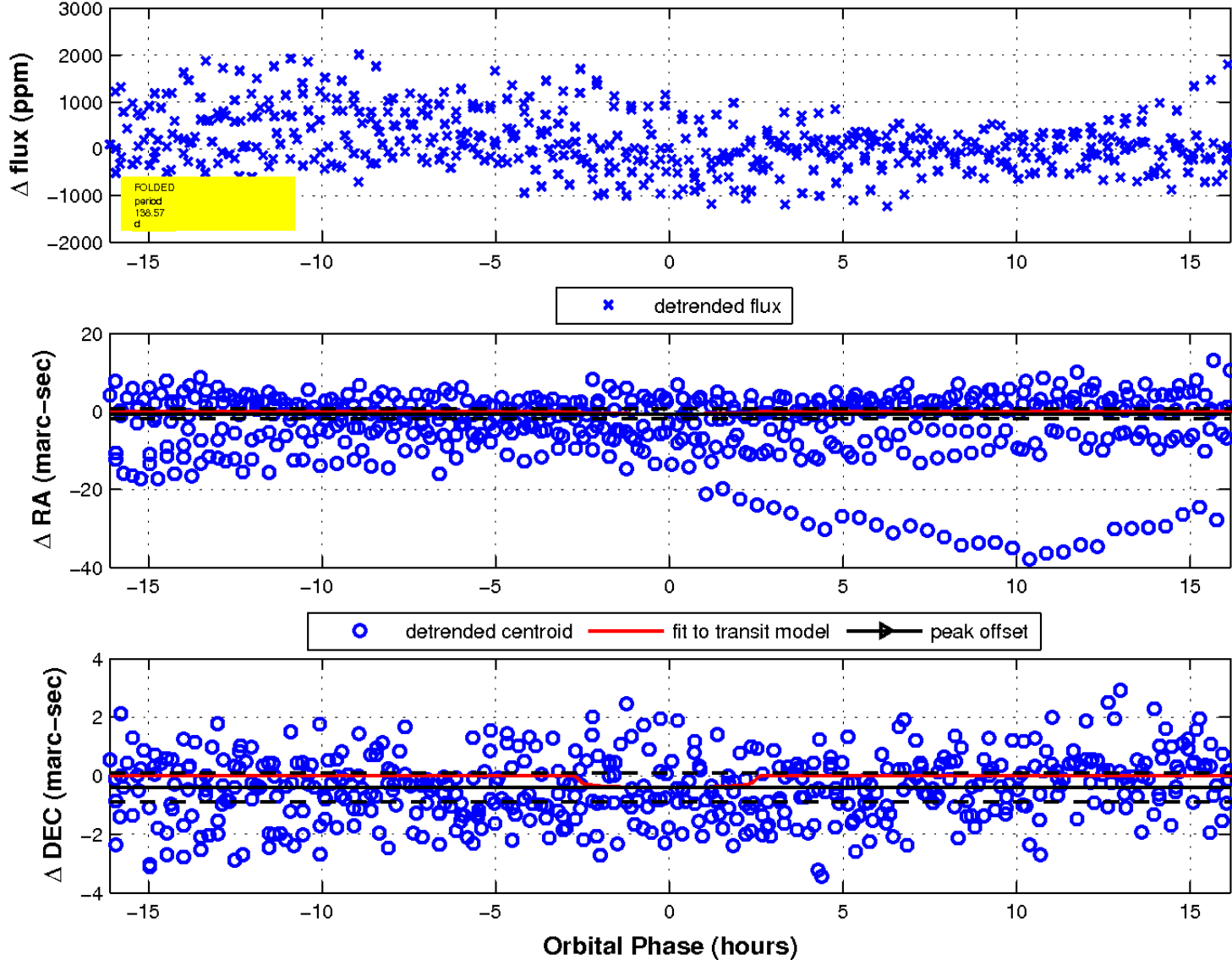
Q16 no OOT image



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

