

KIC 005200084

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})
005200084-01	OBS	3159.01	2.903843	133.882741	5.3	9.226	11.9	9.1	3.05	7846	0.81	11456.62
005200084-02	OBS	No	217.793329	240.644215	17.2	2.000	20.5	3.2	3.05	7846	1.66	36.22
005200084-03	OBS	No	376.636565	140.557825	46.2	26.162	8.8	6.0	3.05	7846	2.22	17.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005200084-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005200084-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005200084-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED

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 005200084-01

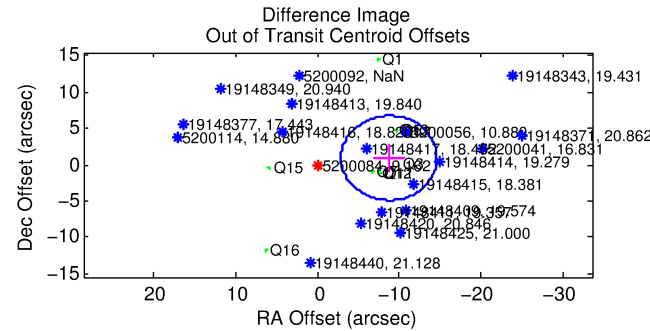
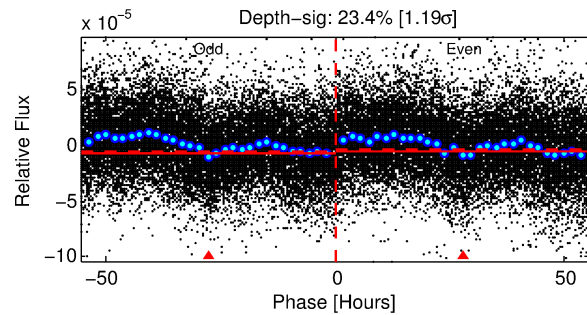
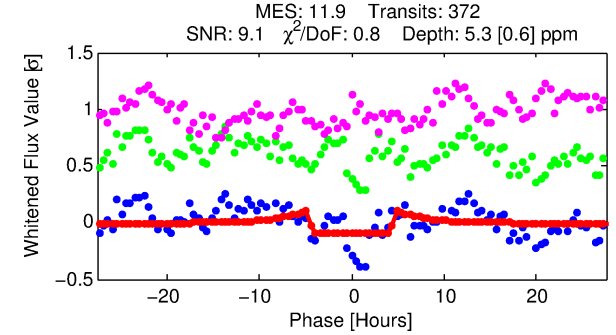
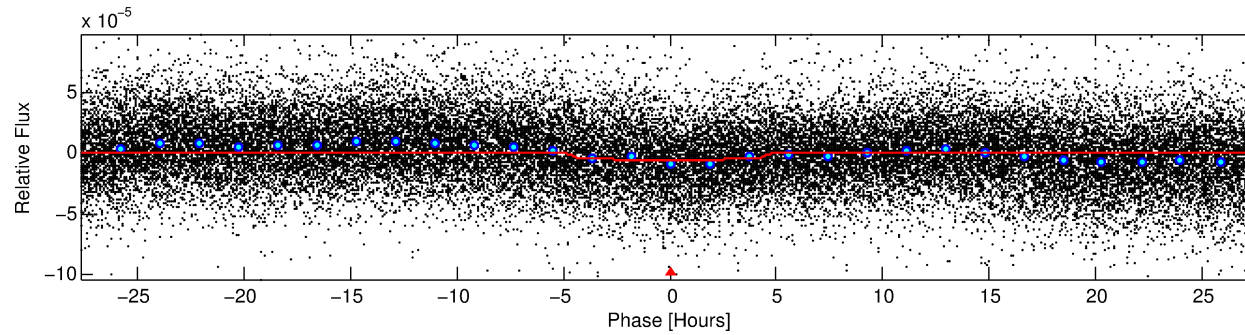
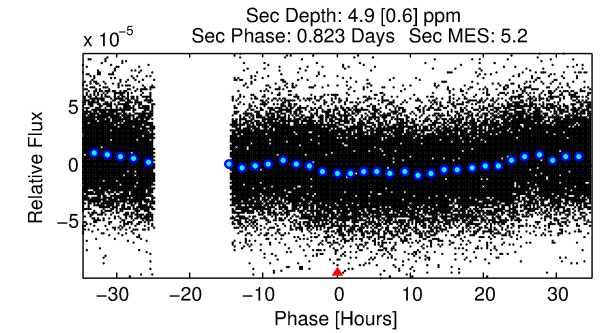
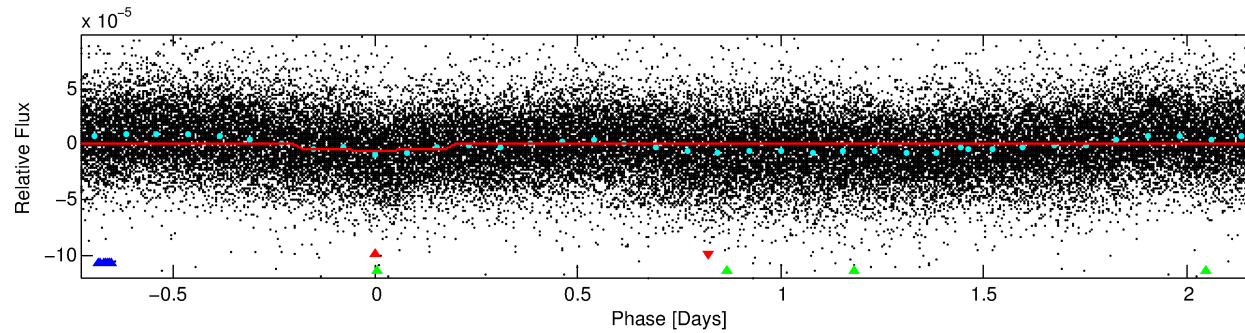
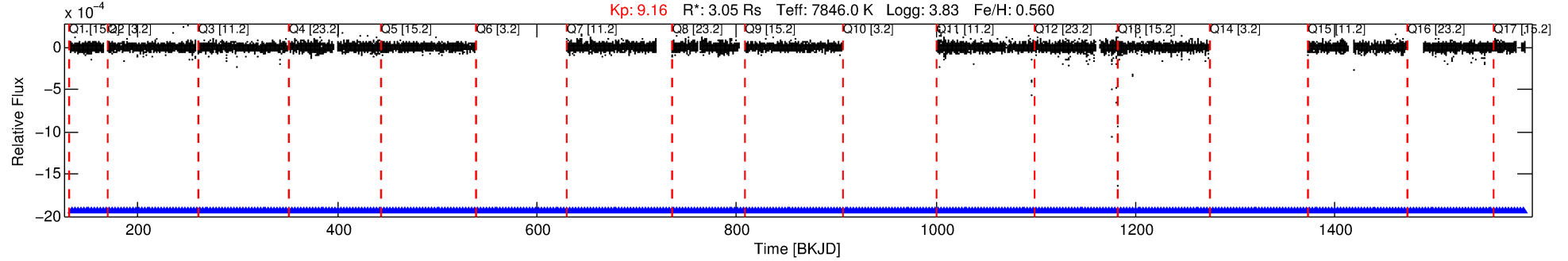
No Significant Match Found

DV One-Page Summary

KIC: 5200084 Candidate: 1 of 3 Period: 2.904 d

KOI: K03159.01 Corr: 0.851

Kp: 9.16 R*: 3.05 Rs Teff: 7846.0 K Logg: 3.83 Fe/H: 0.560



DV Fit Results:

Period = 2.90384 [0.00002] d
Epoch = 133.8827 [0.0046] BKJD
Rp/R* = 0.0024 [0.0003]
a/R* = 1.49 [0.47]
b = 0.88 [0.15]
Seff = 11456.62 [7178.68]
Teq = 2638 [413] K
Rp = 0.81 [0.29] Re
a = 0.0525 [0.0161] AU
Ag = 11.55 [6.16] [1.71σ]
Teffp = 7520 [926] K [4.81σ]

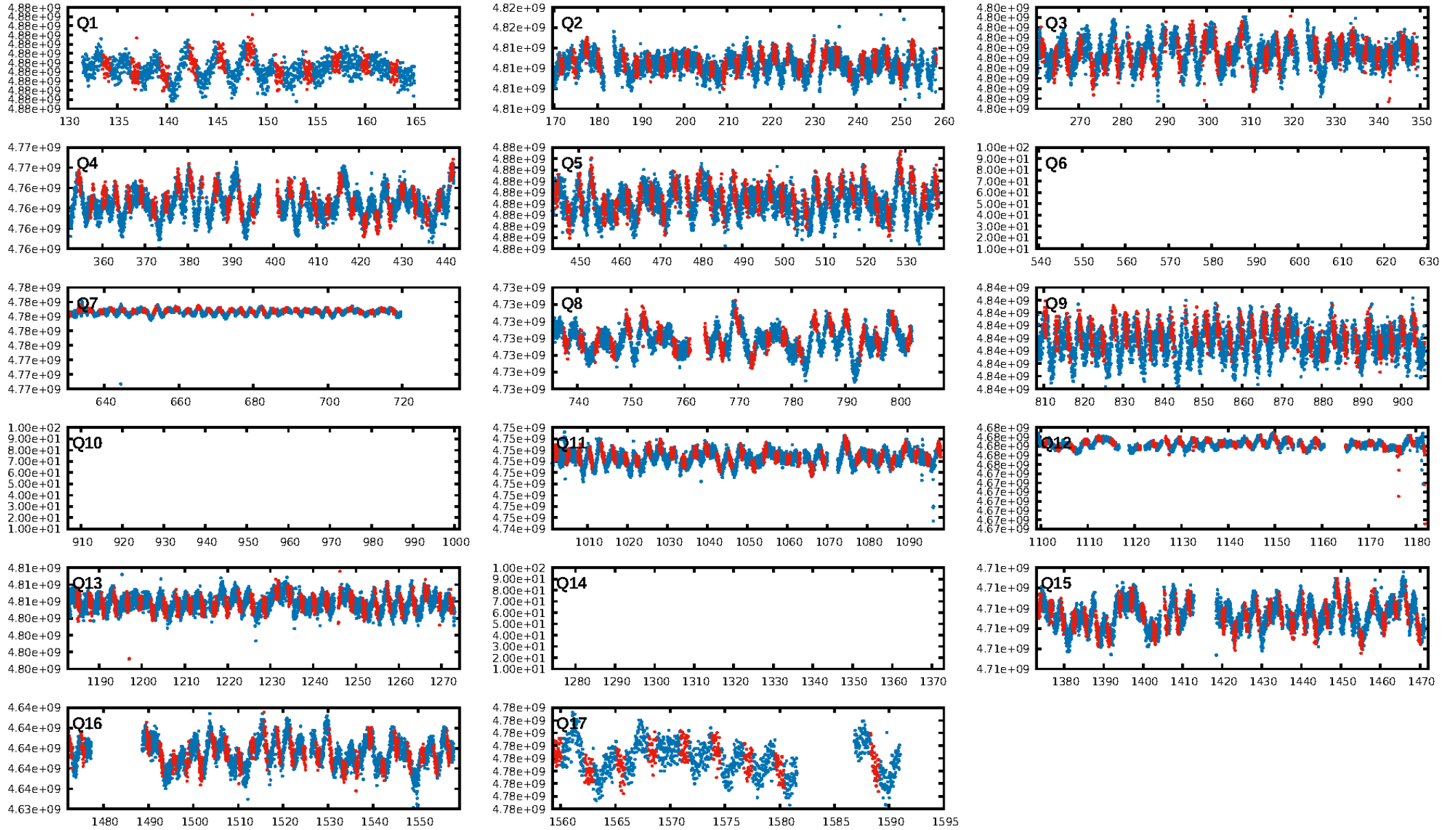
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [546.32σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.50e-25
RollingBand-fgt: 1.00 [352/352]
GhostDiagnostic-chr: N/A
Centroid-sig: 46.7%
Centroid-so: 6.785 arcsec [1.25σ]
OotOffset-rm: 8.773 arcsec [4.51σ]
KicOffset-rm: 11.183 arcsec [4.62σ]
OotOffset-st: 0/4/2/4 [10]
KicOffset-st: 0/4/2/4 [10]
DiffImageQuality-fgm: 0.00 [0/10]
DiffImageOverlap-fno: 1.00 [14/14]

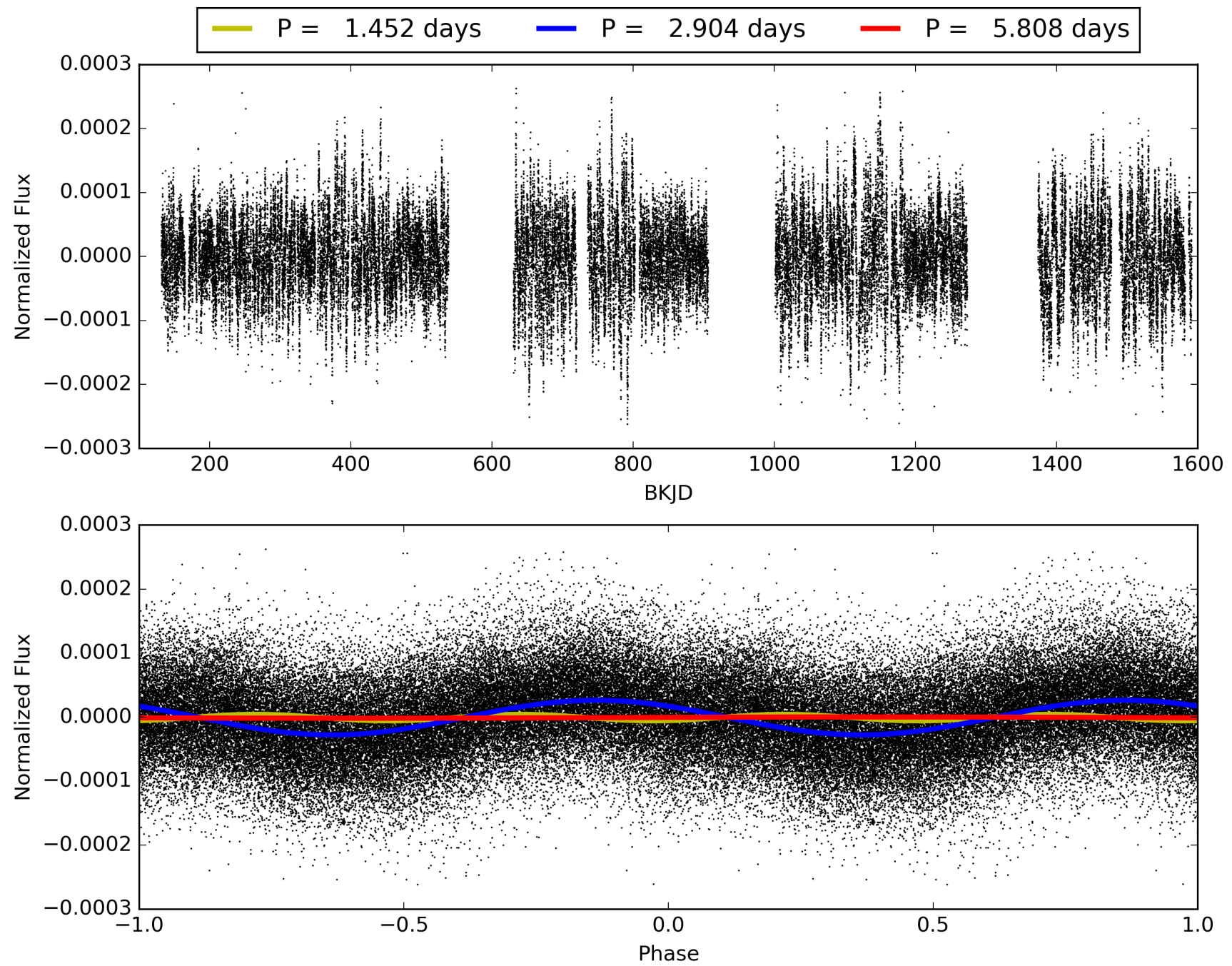
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:16:22 Z

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

TCE 005200084-01, PDC Light Curves

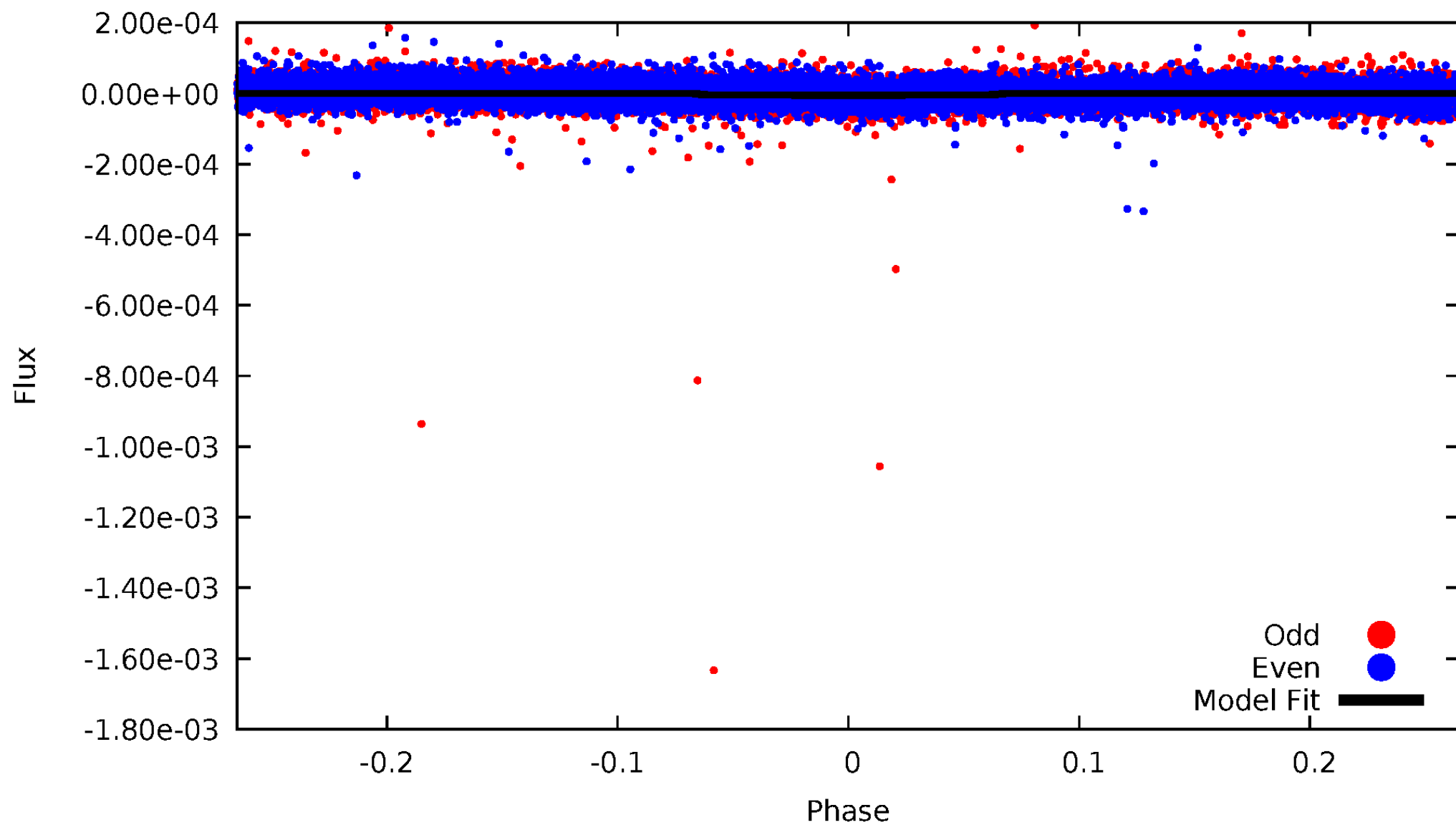


TCE 005200084-01



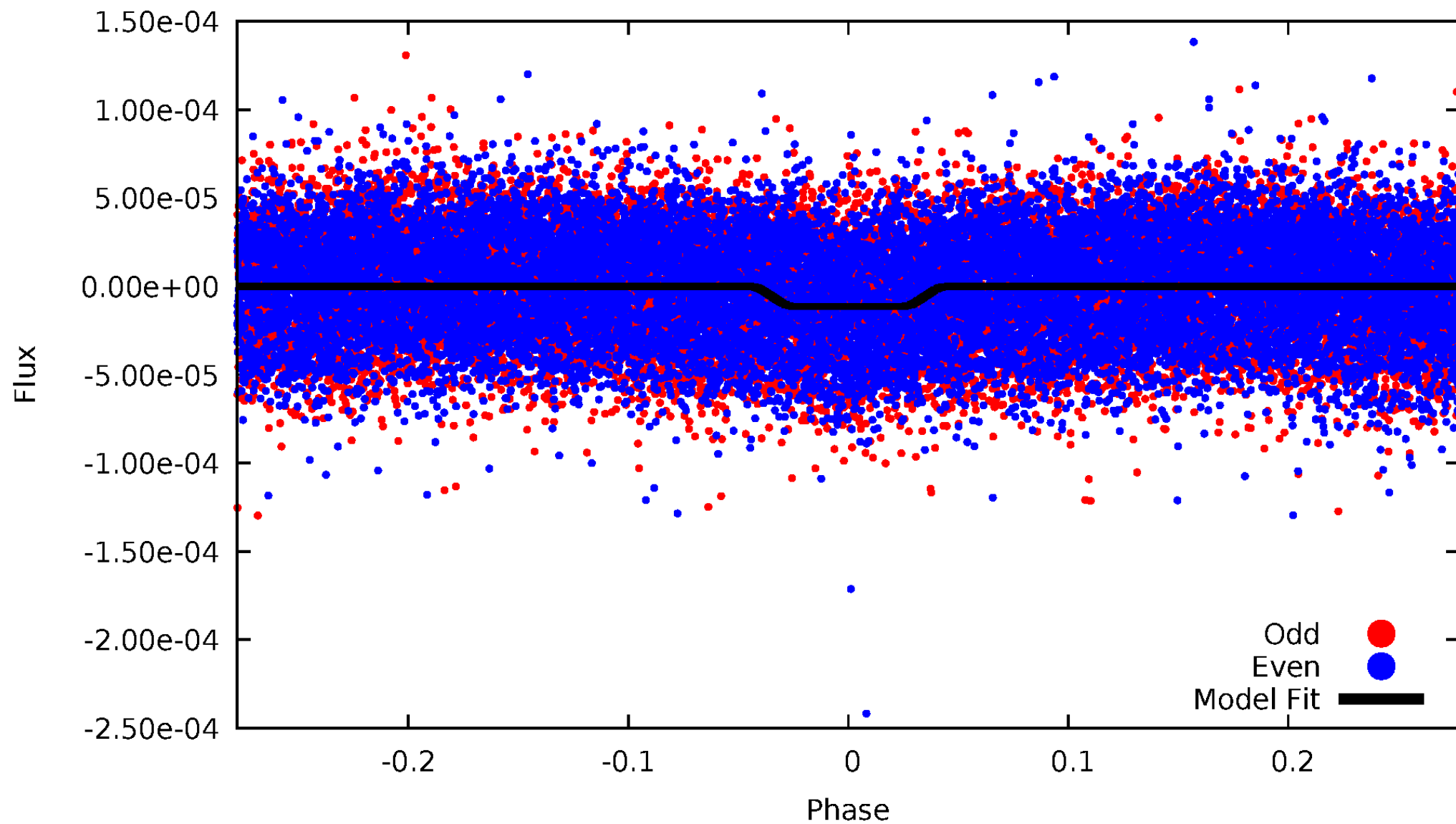
DV Odd/Even

TCE 005200084-01

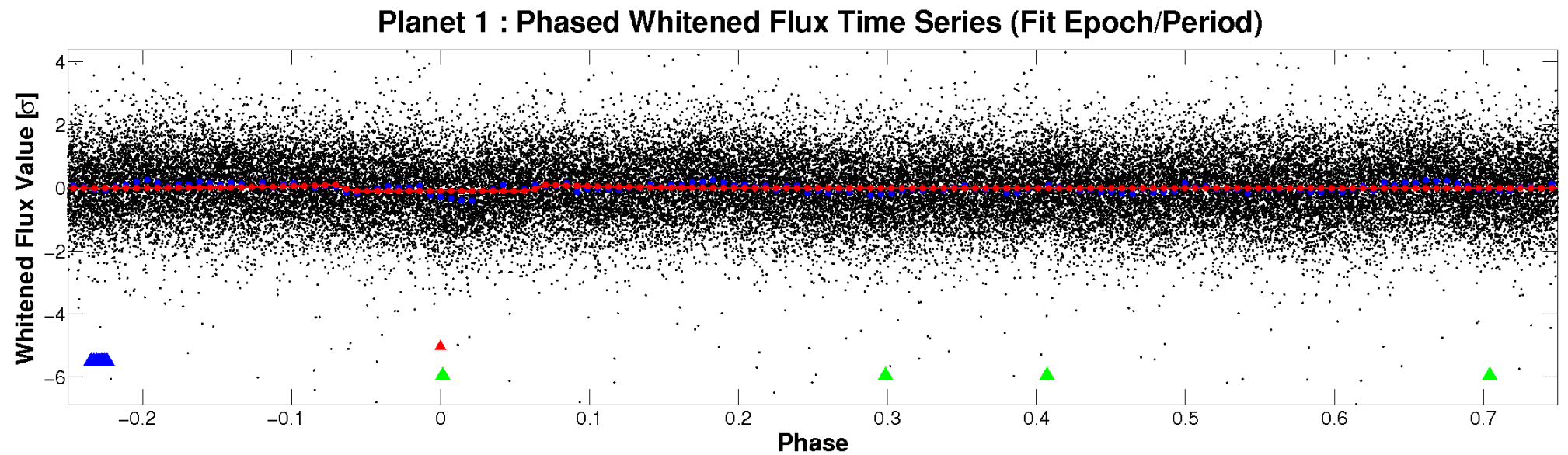
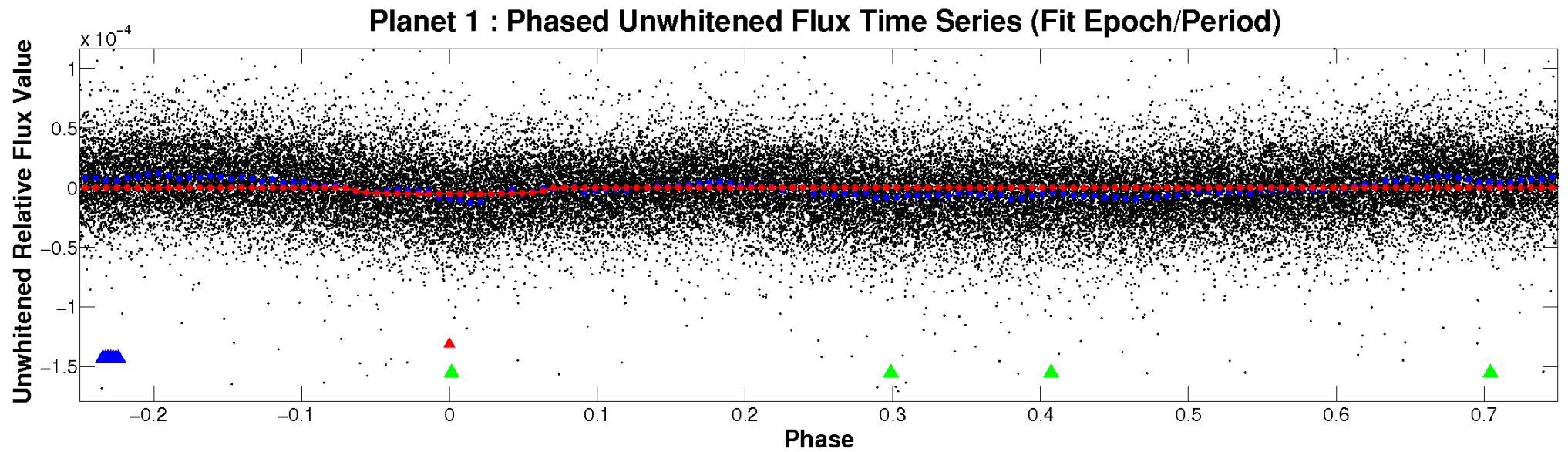


ALT Odd/Even

TCE 005200084-01

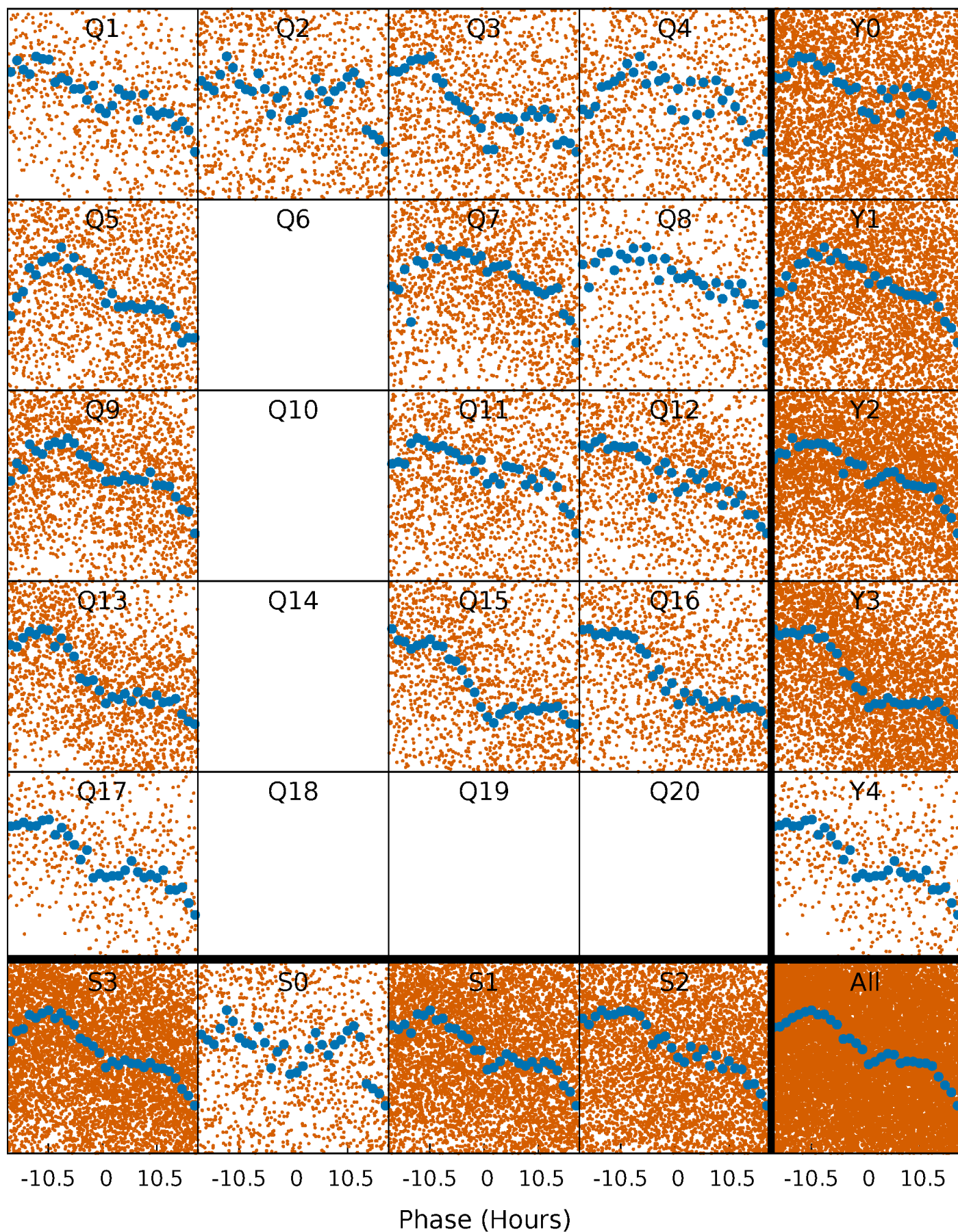


Non-Whitened Vs. Whitened Light Curve



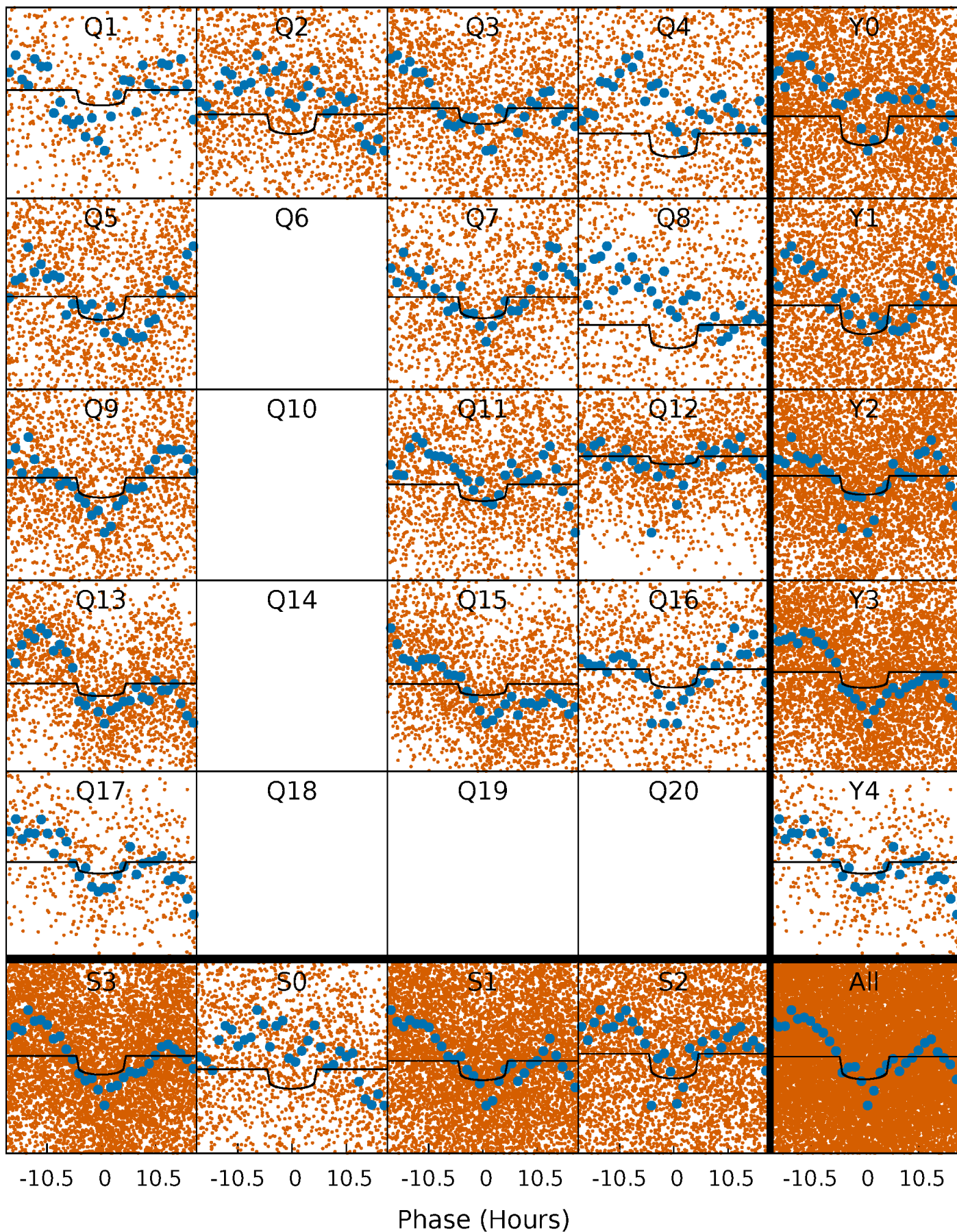
PDC Quarter-Phased Transit Curves

TCE 005200084-01 P= 2.903843 Days $T_0=133.882741$ (BKJD)



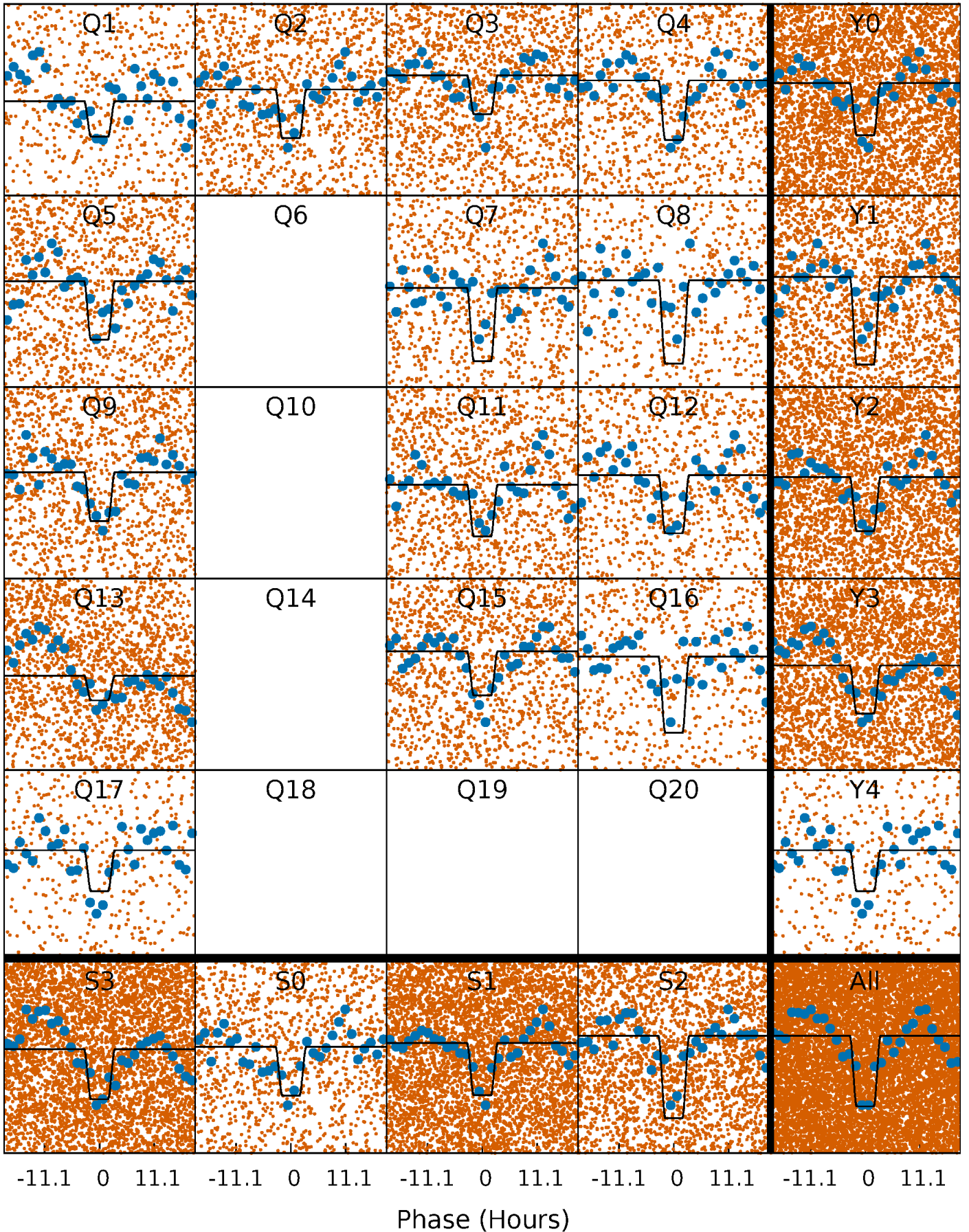
DV Quarter-Phased Transit Curves

TCE 005200084-01 P= 2.903843 Days $T_0=133.882741$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

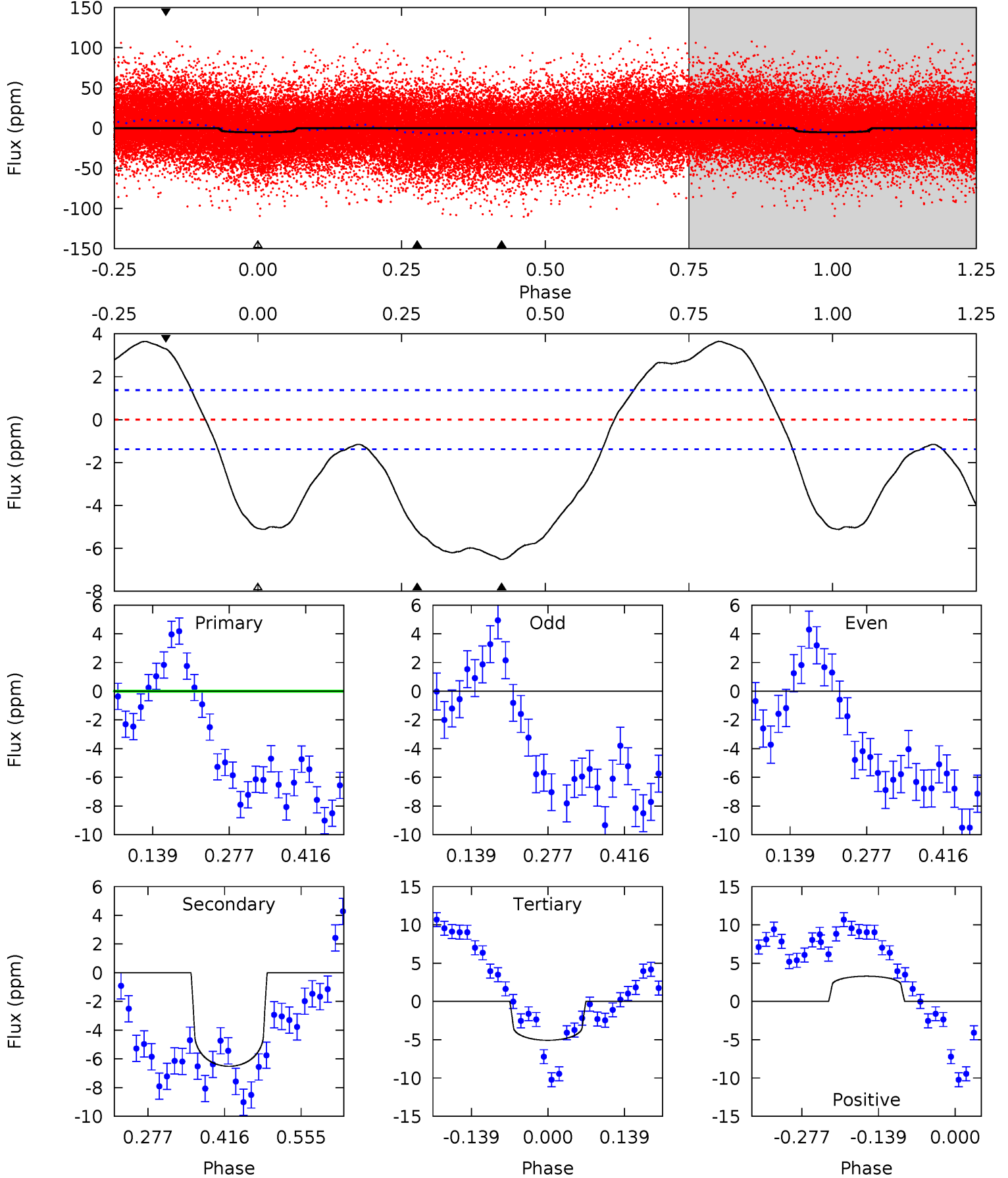
TCE 005200084-01 P= 2.903827 Days $T_0=133.914114$ (BKJD)



DV Model-Shift Uniqueness Test

005200084-01, P = 2.903843 Days, E = 130.978898 Days

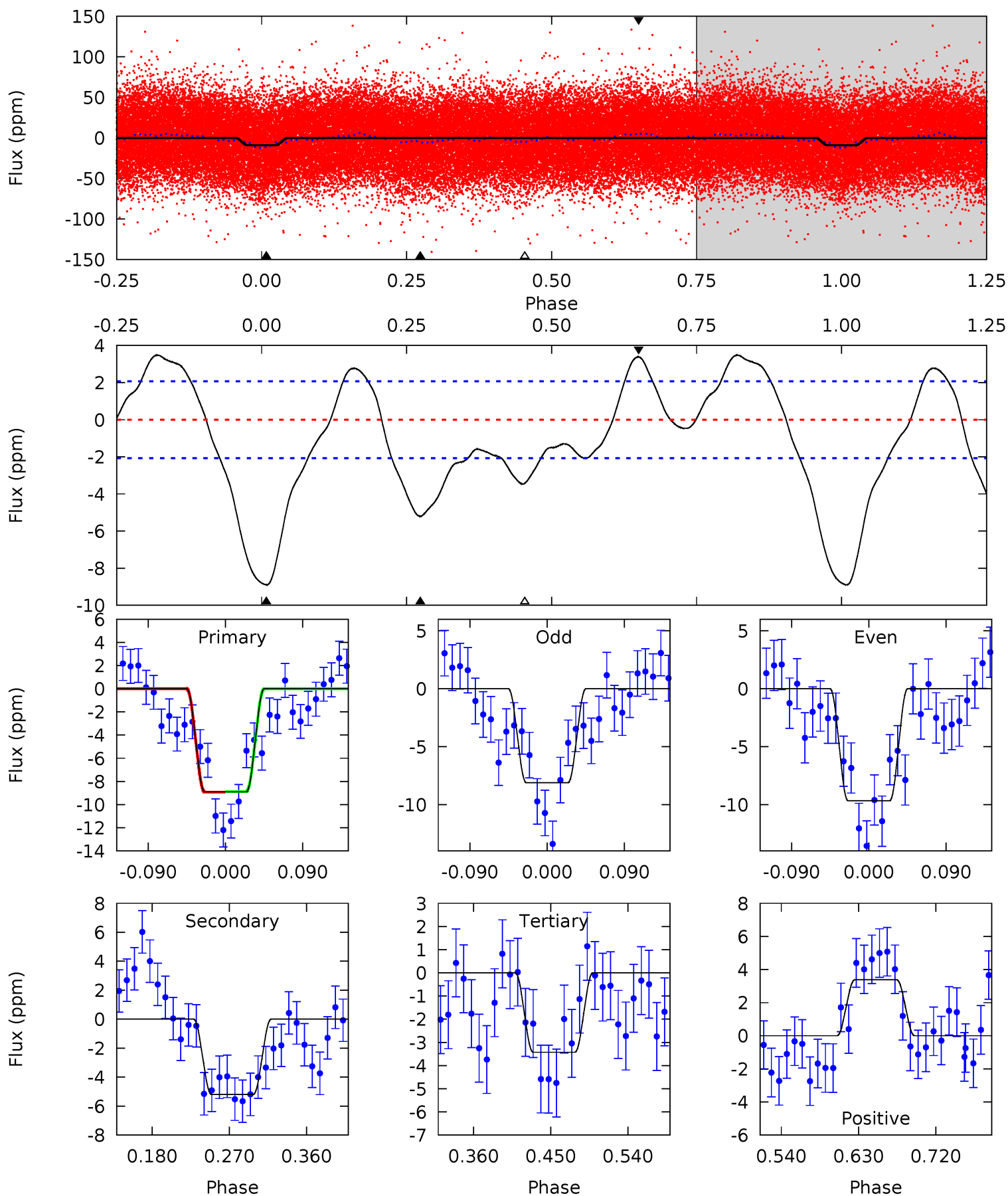
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	21.3	16.5	10.8	4.50	1.48	9.94	0.36	6.14	4.73	10.5	0.78	1.42	0.36	6.02



Alt Model-Shift Uniqueness Test

005200084-01, P = 2.903827 Days, E = 131.010287 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	11.5	7.58	7.49	4.59	1.70	4.54	12.1	12.2	3.93	4.01	1.72	0.94	0.28	0.06



Stellar Parameters For KIC 005200084

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7846^{+411}_{-822}	$3.829^{+0.264}_{-0.216}$	$0.560^{+0.050}_{-0.200}$	$3.050^{+1.051}_{-1.051}$	$2.290^{+0.287}_{-0.491}$	$0.114^{+0.228}_{-0.059}$
	+5%/-10%	+7%/-6%	+9%/-36%	+34%/-34%	+13%/-21%	+200%/-52%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005200084-01 / KOI 3159.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 0	$0.80^{+0.18}_{-0.16}$	3652^{+397}_{-430}	7948^{+882}_{-847}	15^{+8}_{-5}
Alt.	-5 ± 0	$1.11^{+0.24}_{-0.22}$	3648^{+429}_{-457}	6182^{+502}_{-543}	$6.264^{+3.104}_{-1.920}$

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

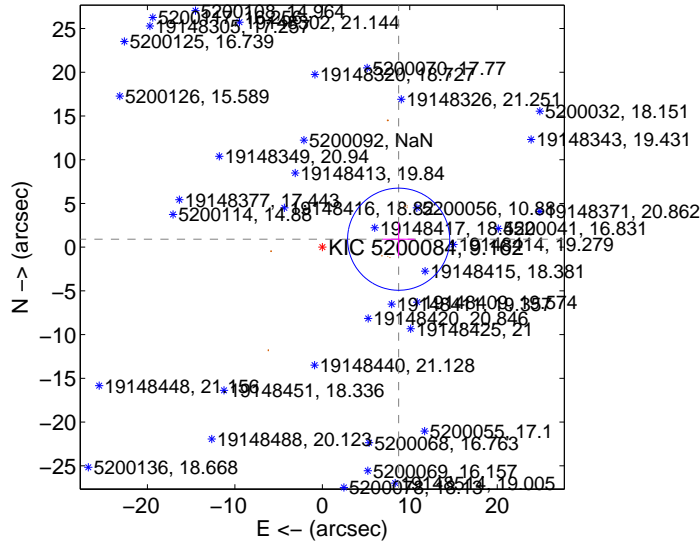
Supplemental centroid analysis for 005200084-01. **Kepler magnitude: 9.16.** Transit SNR 9.15

There are 0 quarters with good PRF difference image offsets

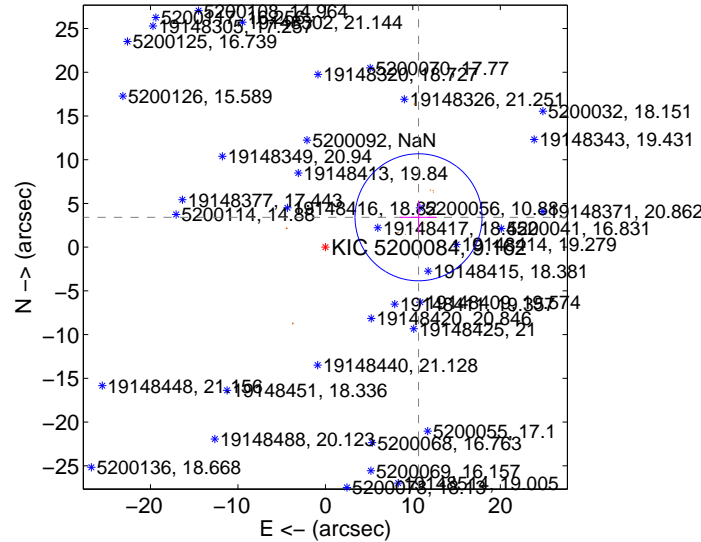
The OOT PRF centroid is offset from the target star catalog position by about 3.20 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.773 ± 1.946	4.51	-8.726 ± 1.833	0.910 ± 1.922
PRF-fit source offset from KIC position	11.183 ± 2.420	4.62	-10.649 ± 2.094	3.414 ± 1.883
photometric centroid source offset	6.79 ± 5.42	1.25	-6.17 ± 5.59	2.83 ± 4.52

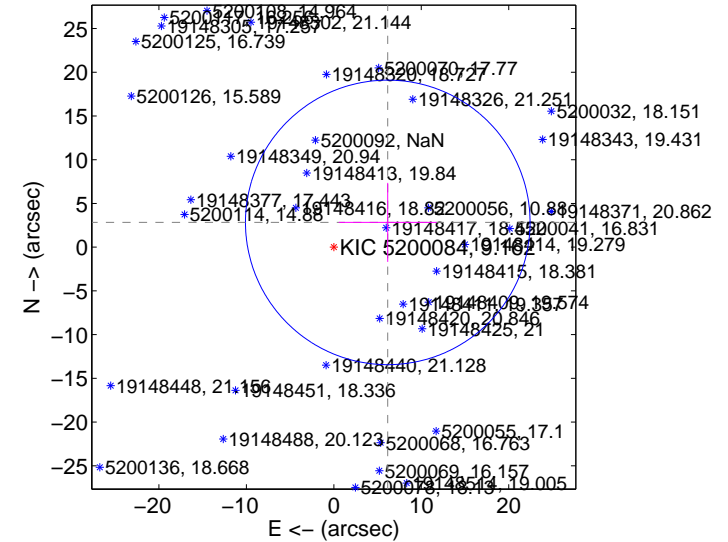
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

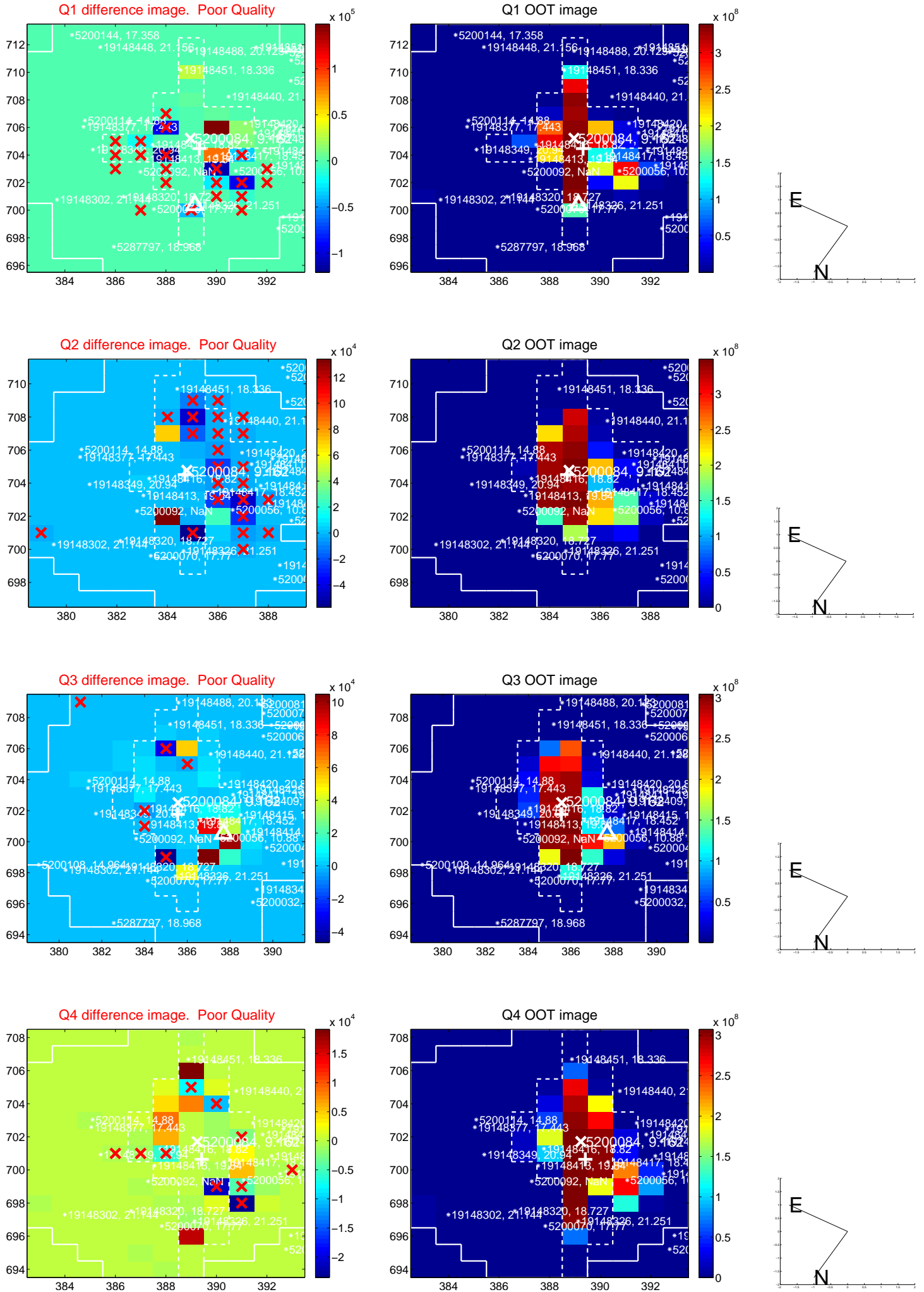


offset from photometric centroids

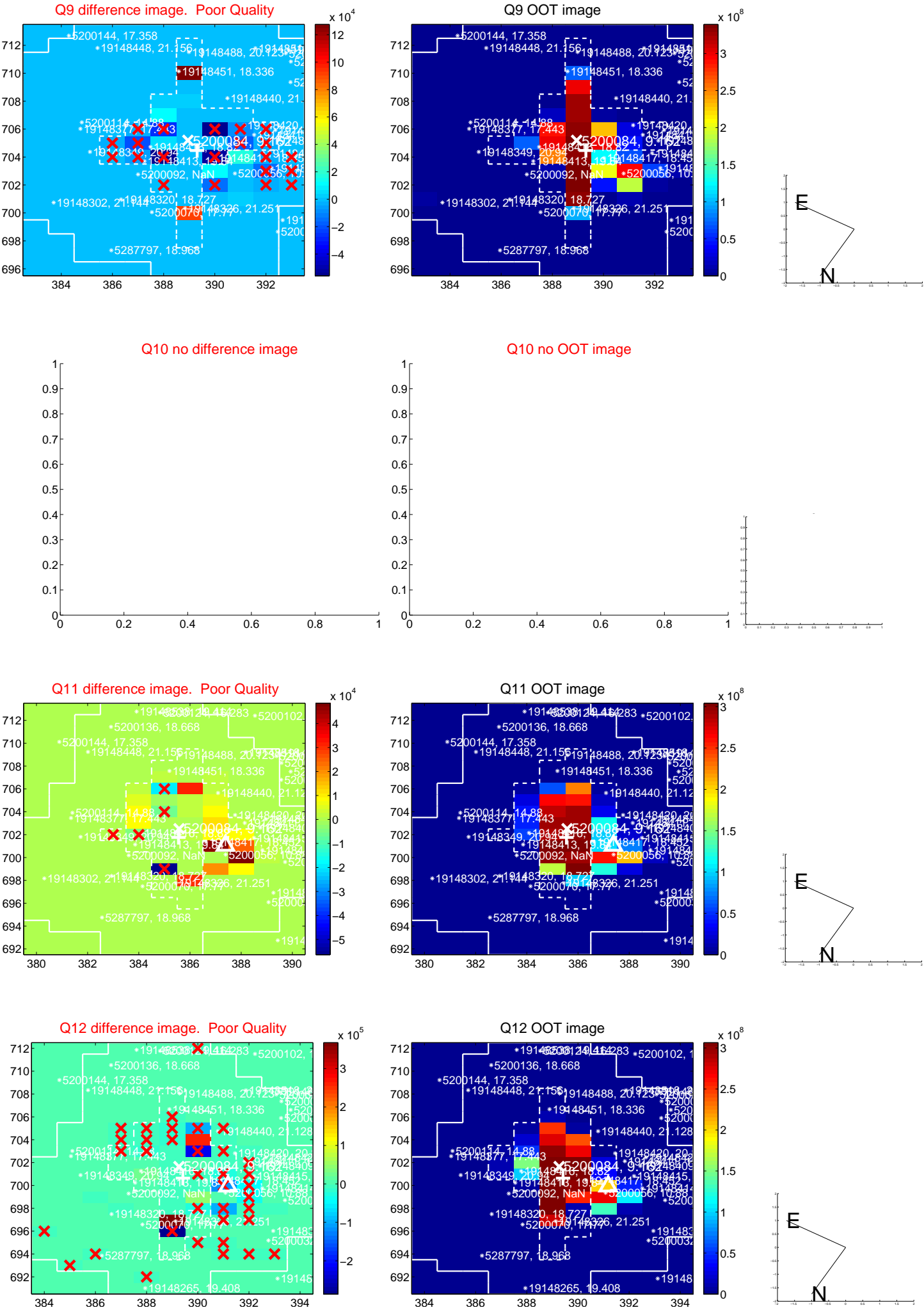


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

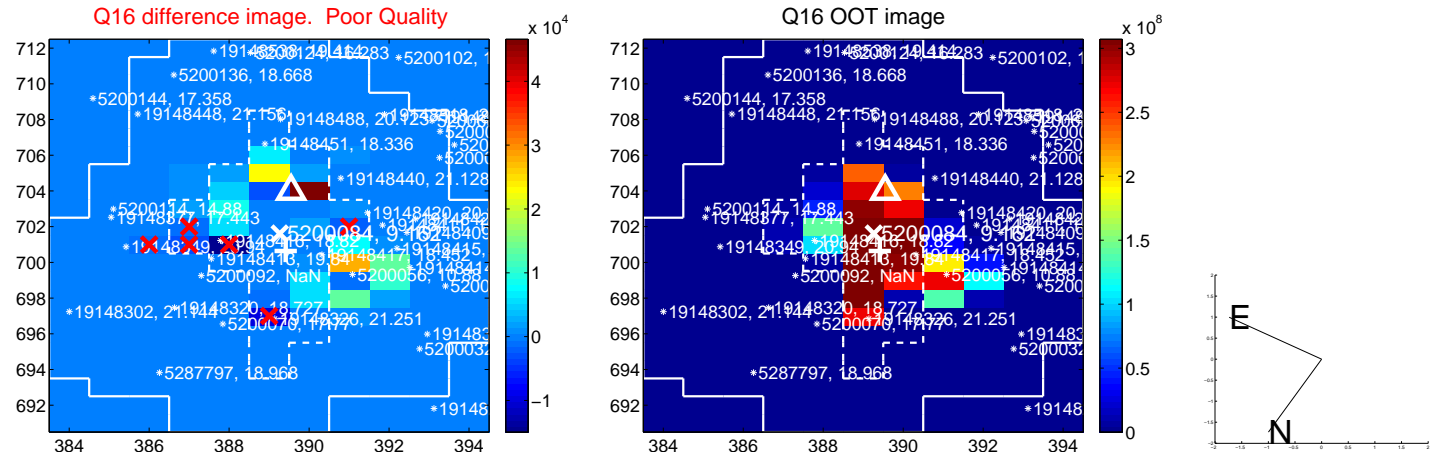
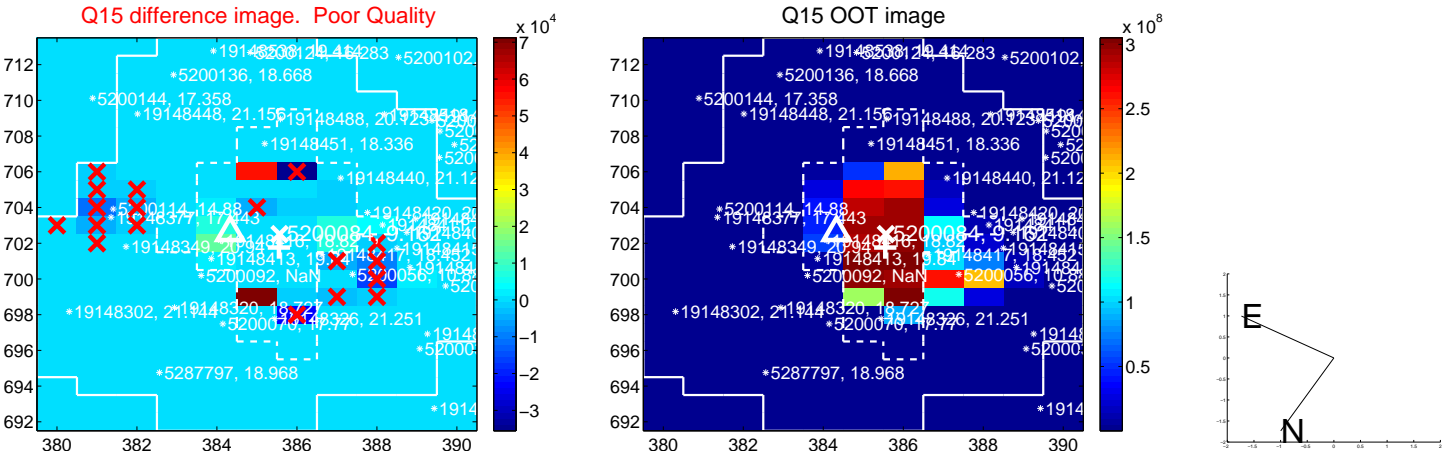
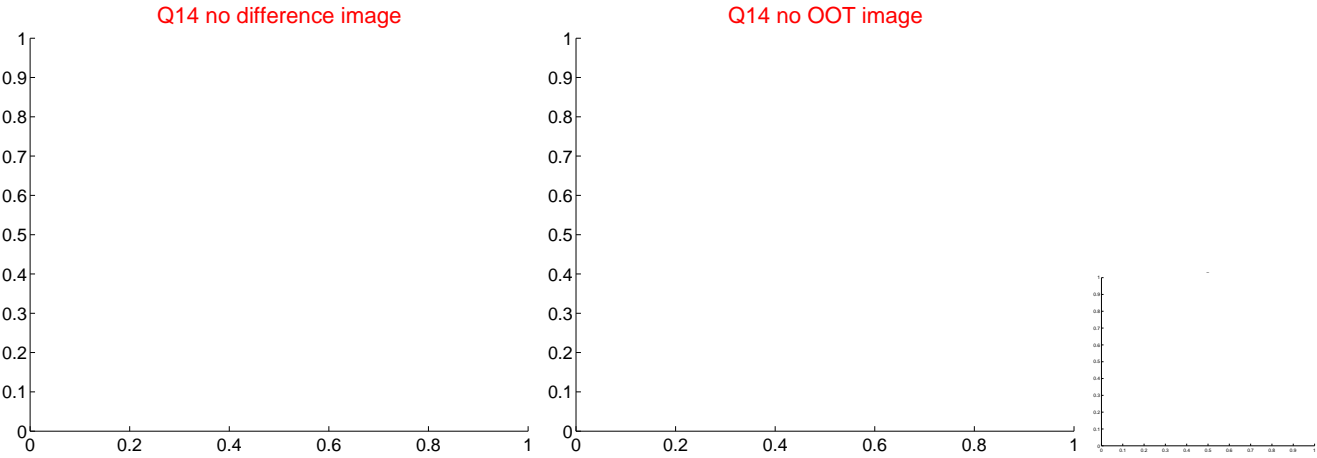
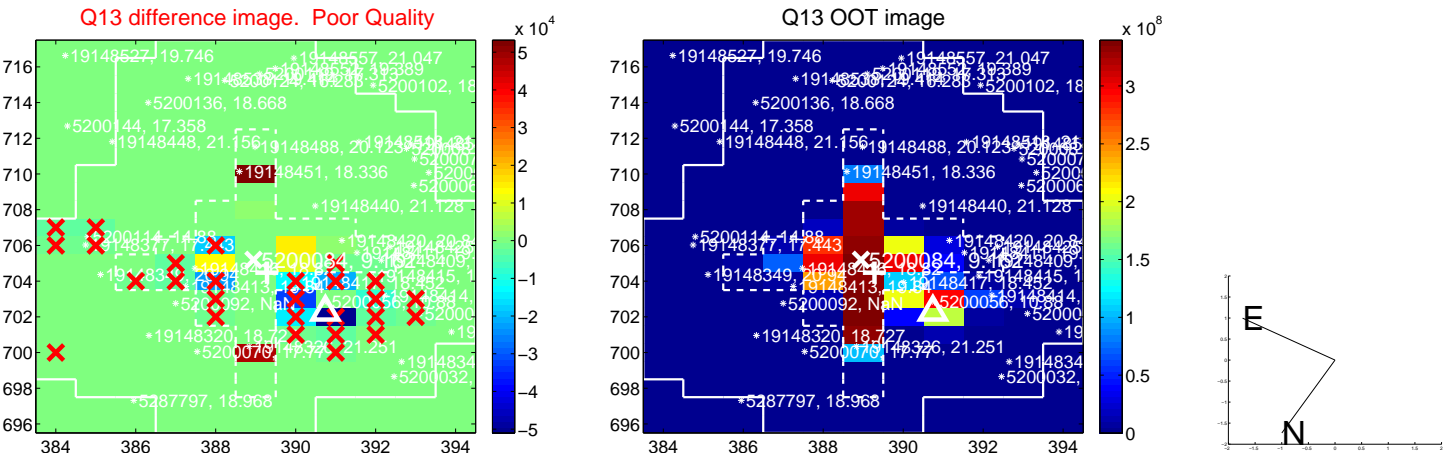
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



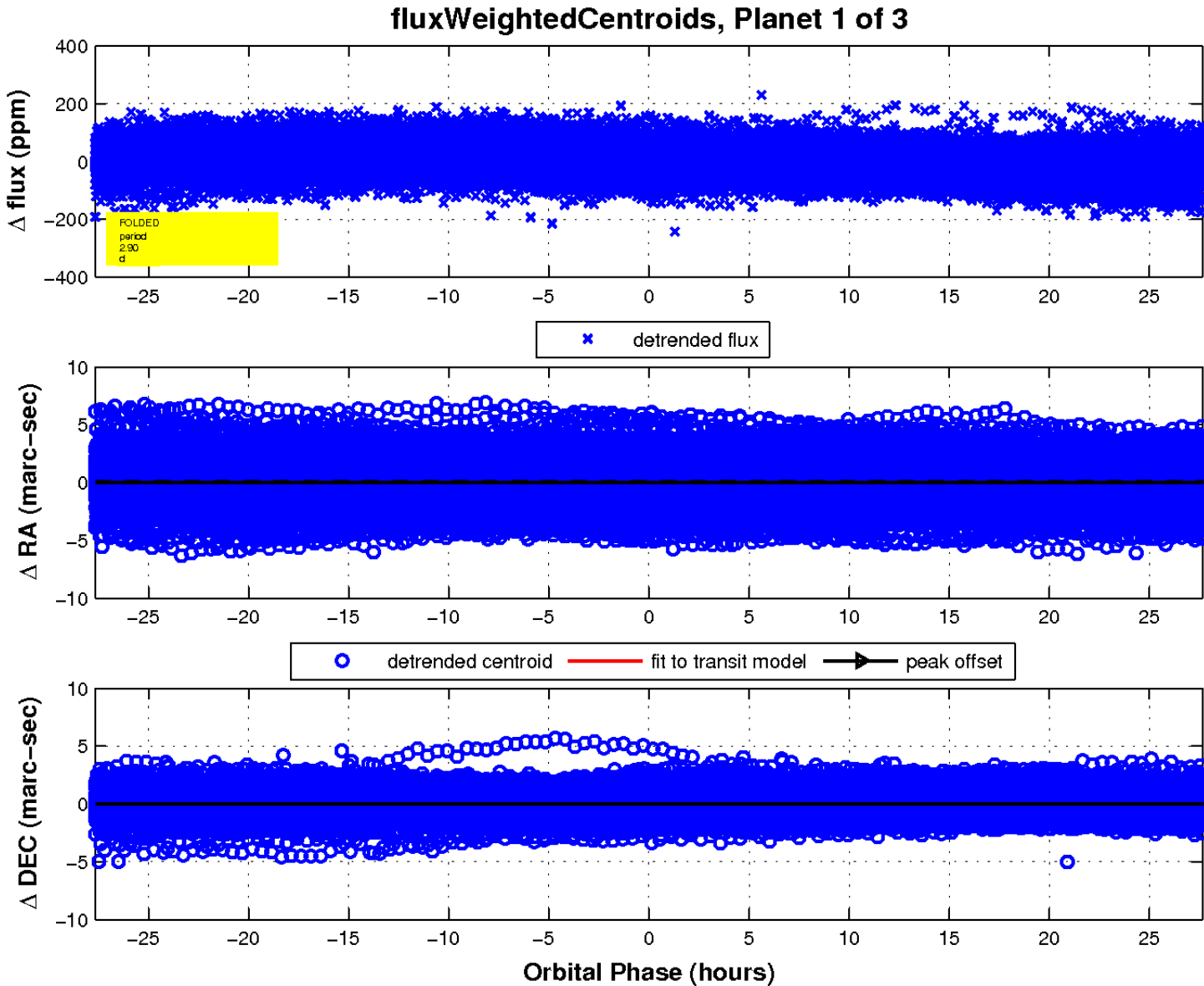
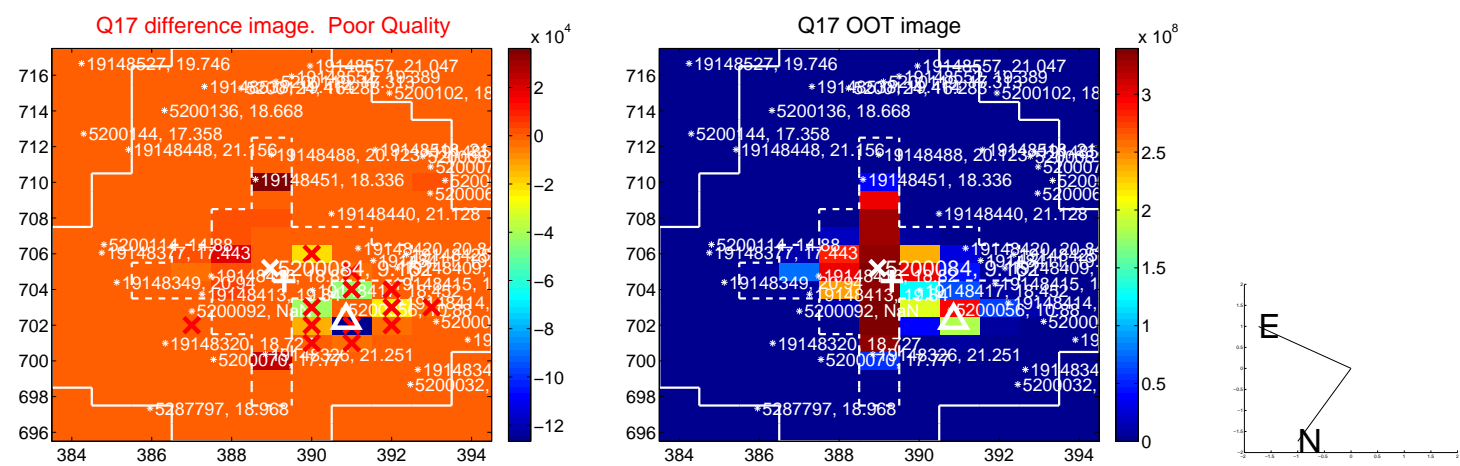
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



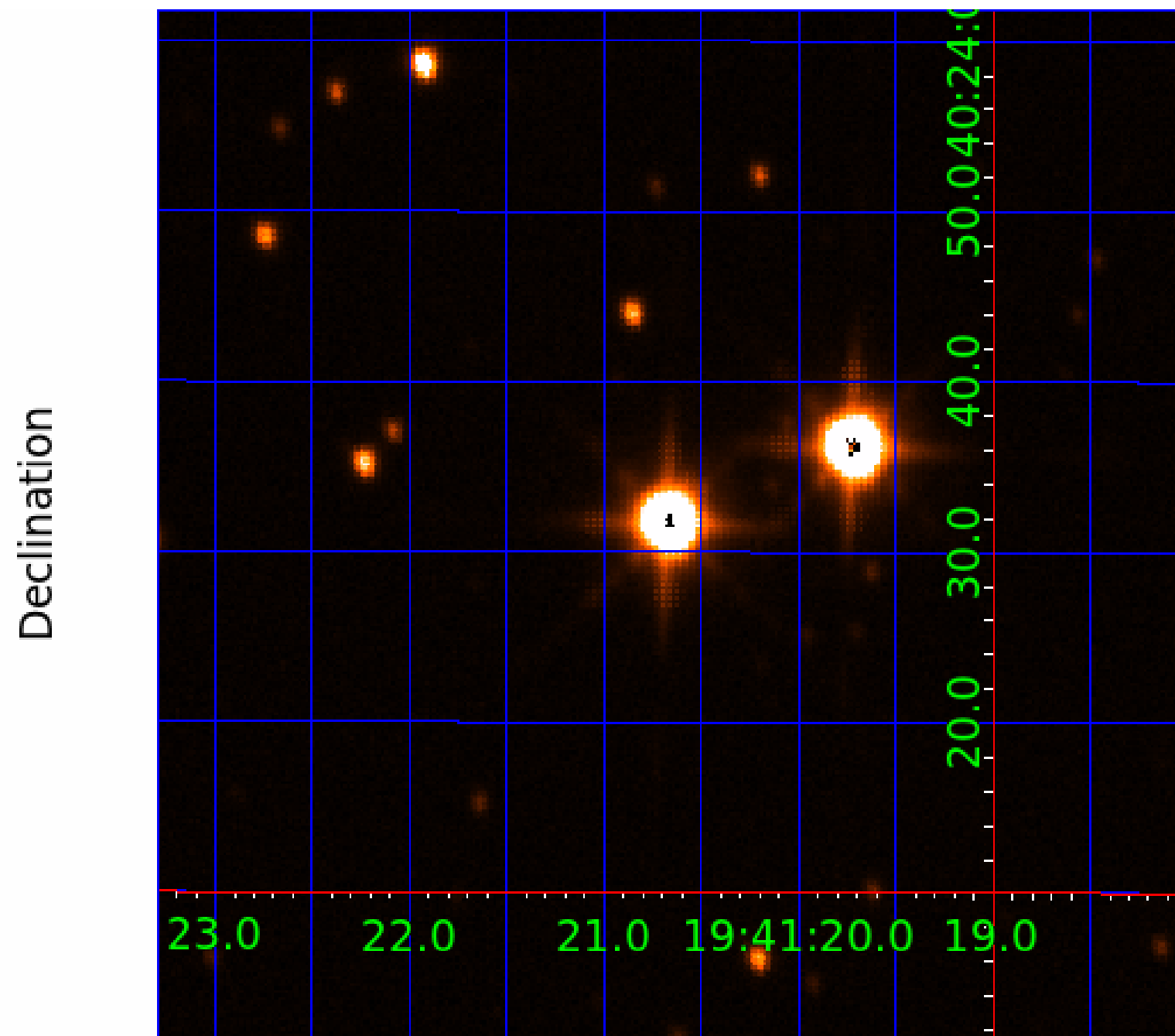
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005200084

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})
005200084-01	OBS	3159.01	2.903843	133.882741	5.3	9.226	11.9	9.1	3.05	7846	0.81	11456.62
005200084-02	OBS	No	217.793329	240.644215	17.2	2.000	20.5	3.2	3.05	7846	1.66	36.22
005200084-03	OBS	No	376.636565	140.557825	46.2	26.162	8.8	6.0	3.05	7846	2.22	17.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005200084-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005200084-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005200084-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED

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.

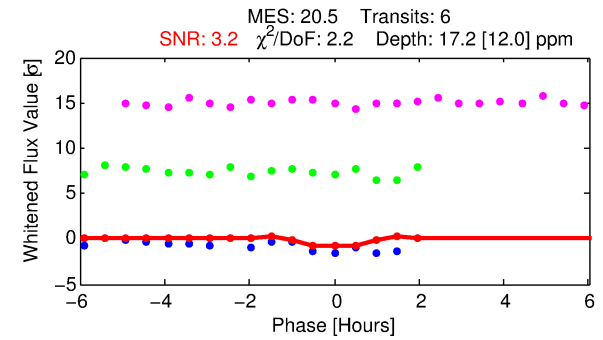
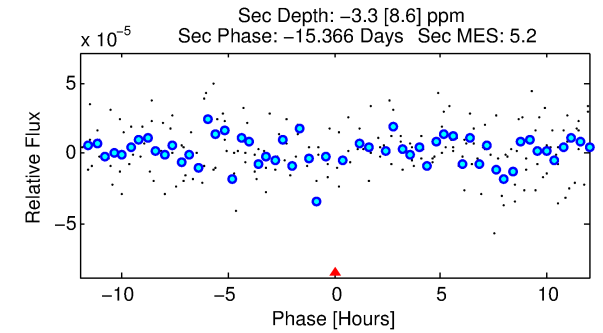
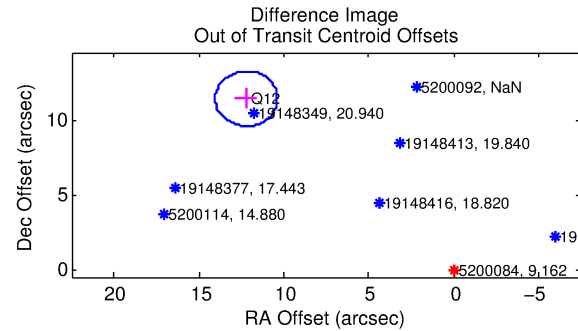
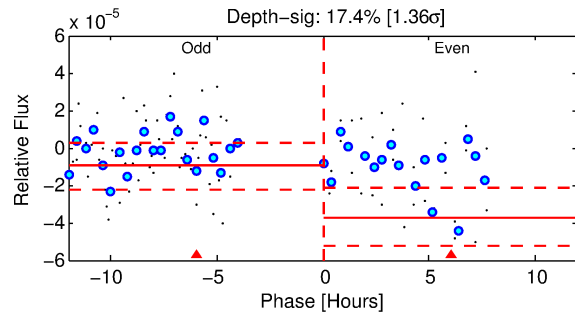
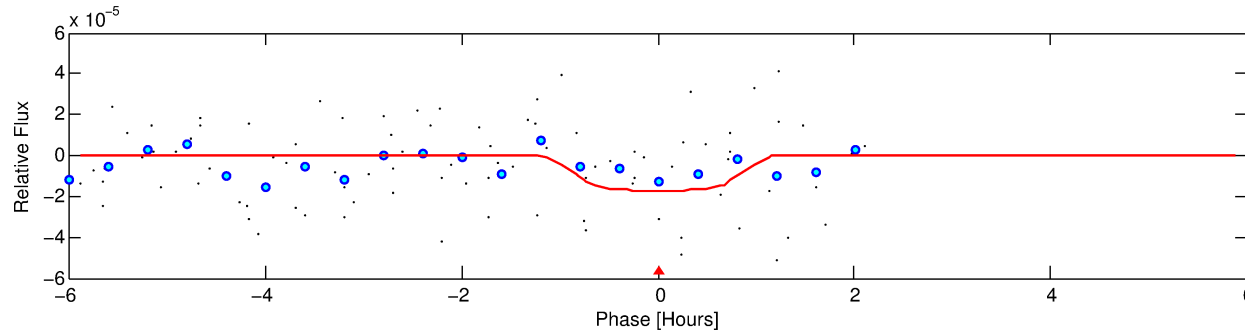
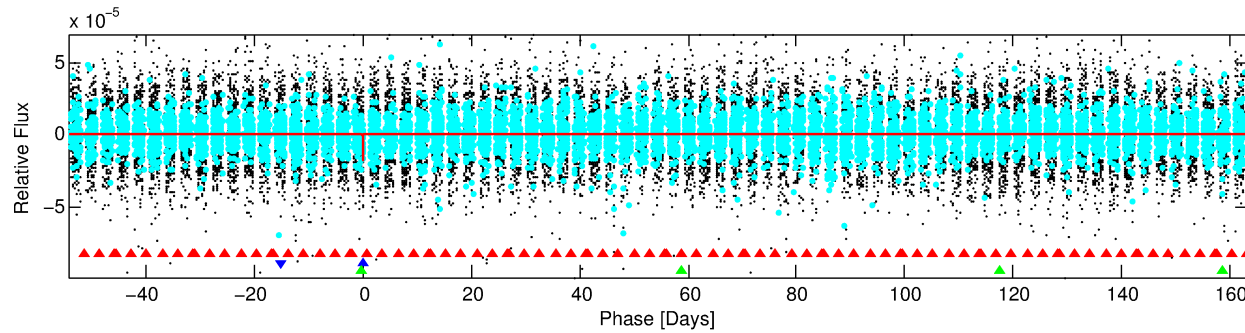
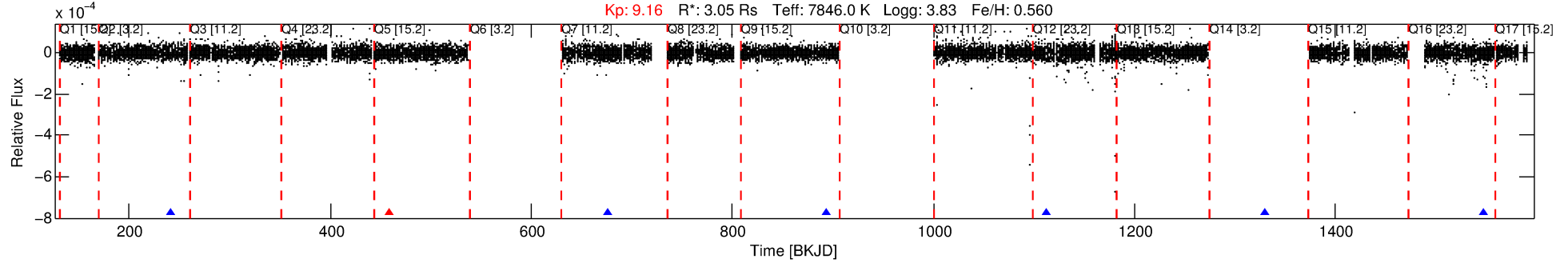
Ephemeris Match Information For 005200084-02

No Significant Match Found

DV One-Page Summary

KIC: 5200084 Candidate: 2 of 3 Period: 217.793 d
KOI: K03159 Corr: No Ephemeris Match

Kp: 9.16 R*: 3.05 Rs Teff: 7846.0 K Logg: 3.83 Fe/H: 0.560



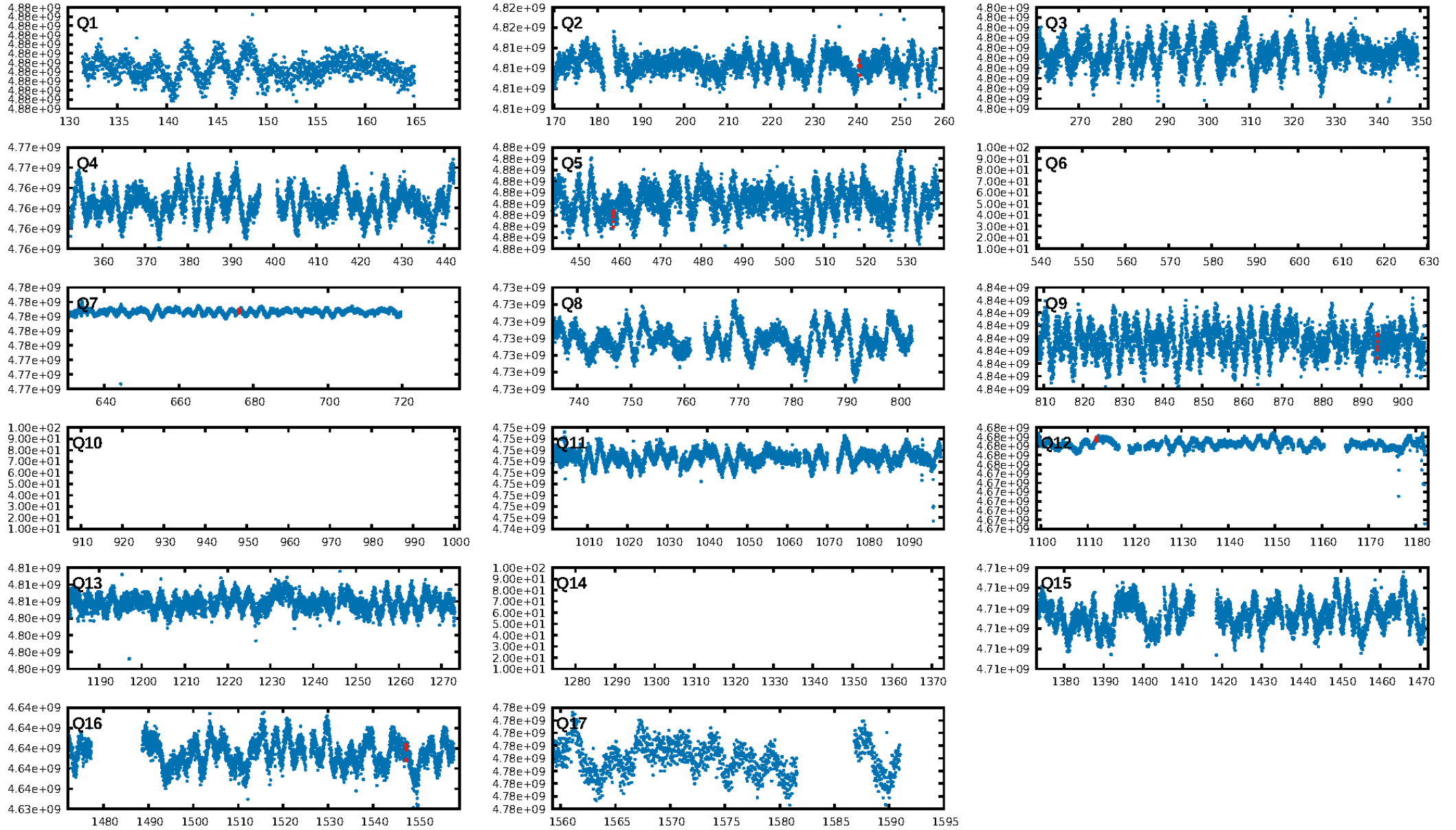
DV Fit Results:

Period = 217.79333 [0.00635] d
Epoch = 240.6442 [0.0209] BKJD
Rp/R* = 0.0050 [0.0061]
a/R* = 187.15 [1567.04]
b = 0.98 [0.35]
Seff = 36.22 [22.70]
Teq = 626 [98] K
Rp = 1.66 [2.12] Re
a = 0.9338 [0.2860] AU
Ag = N/A
Teff = N/A

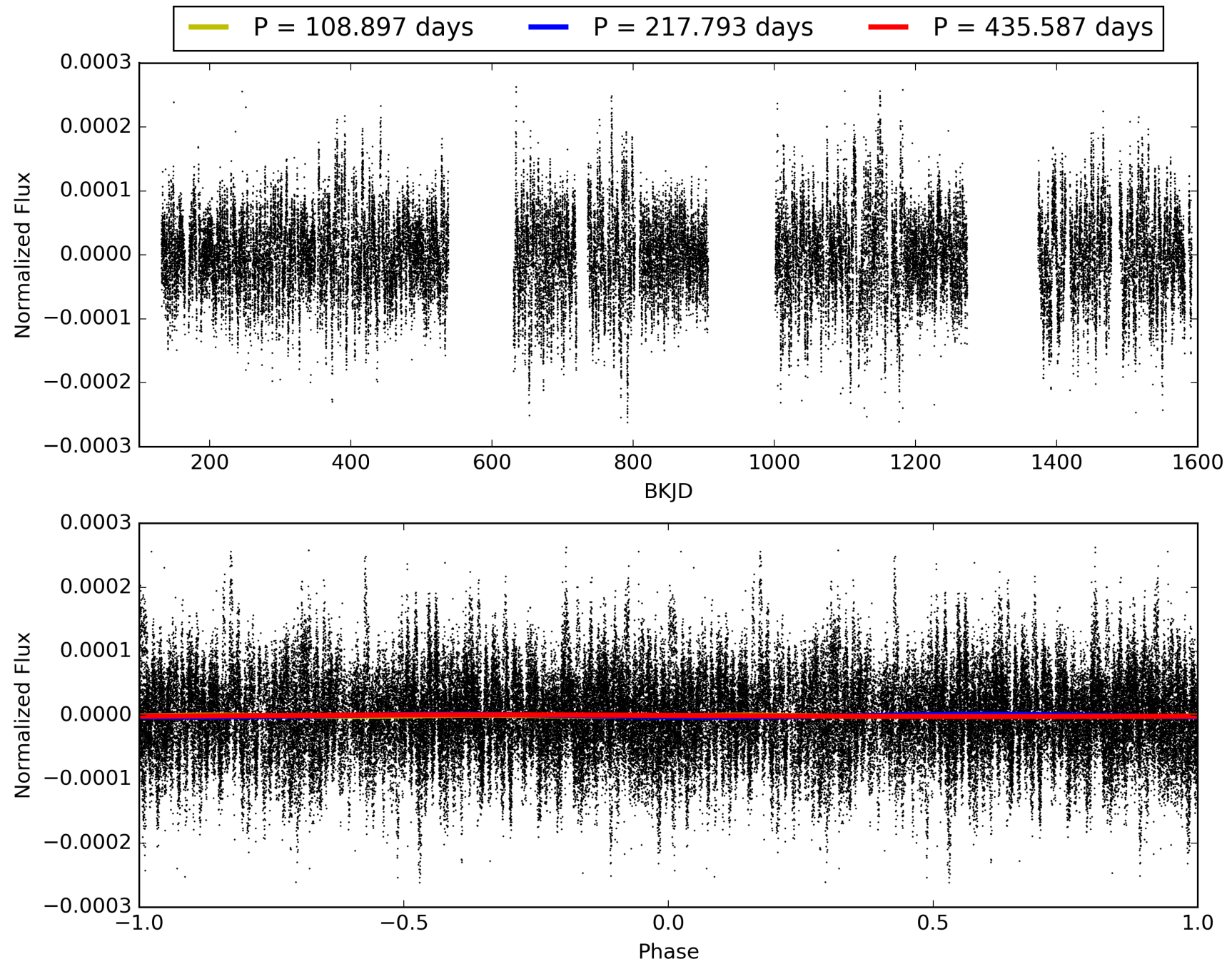
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [546.32σ]
LongPeriod-sig: 100.0% [145.29σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.4%
Bootstrap-pfa: 8.06e-24
RollingBand-fgt: 0.83 [5/6]
GhostDiagnostic-chr: N/A
Centroid-sig: 82.7%
Centroid-so: 7.018 arcsec [0.57σ]
OotOffset-rm: 16.709 arcsec [27.34σ]
KicOffset-rm: 17.625 arcsec [28.59σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.83 [5/6]

TCE 005200084-02, PDC Light Curves

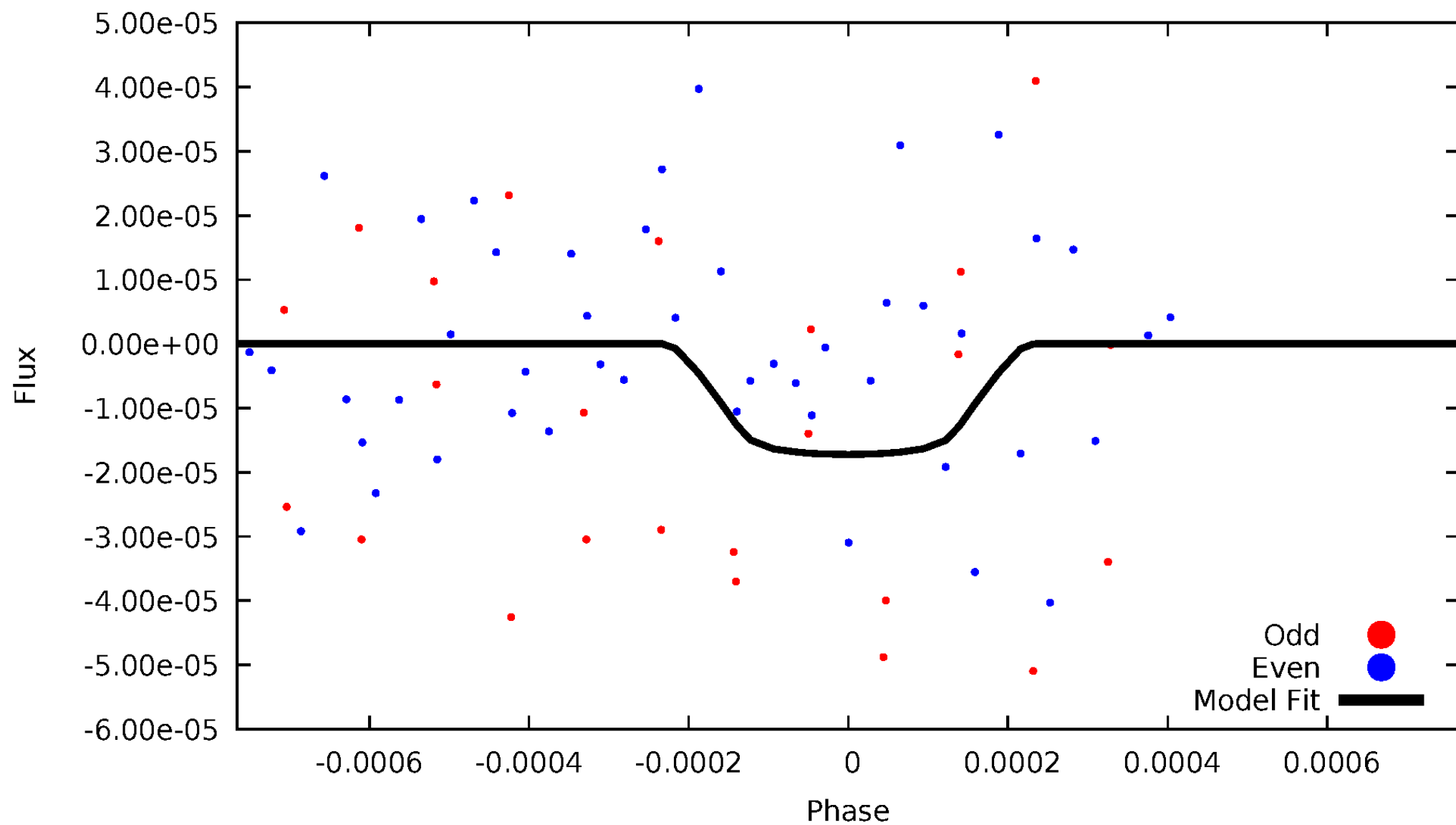


TCE 005200084-02



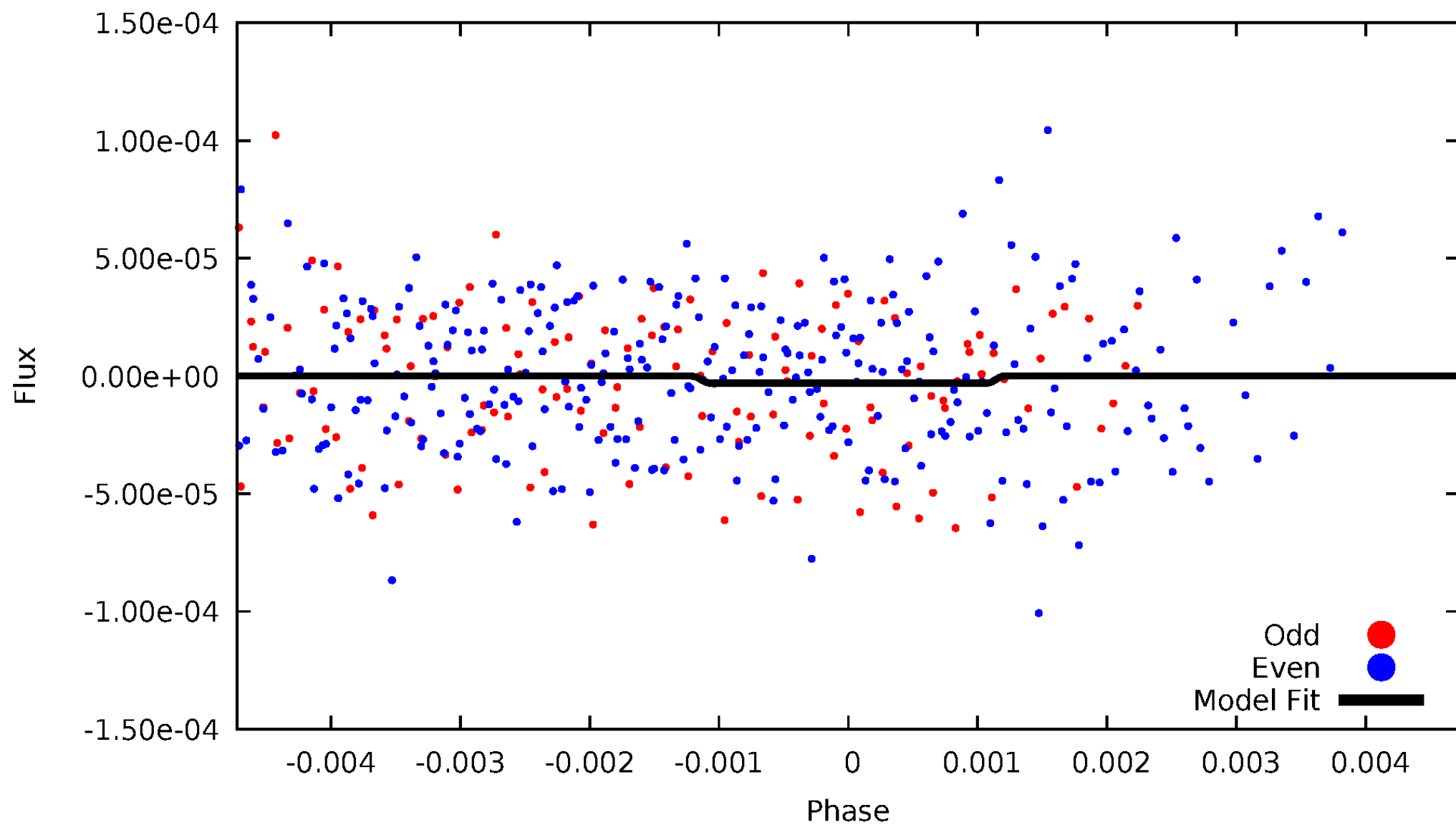
DV Odd/Even

TCE 005200084-02



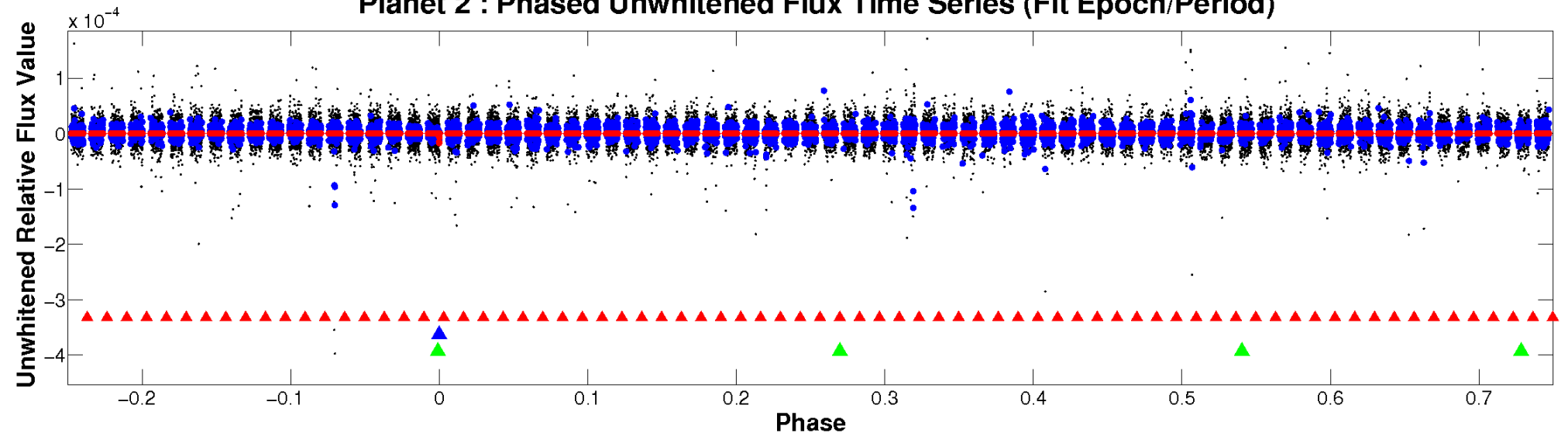
ALT Odd/Even

TCE 005200084-02

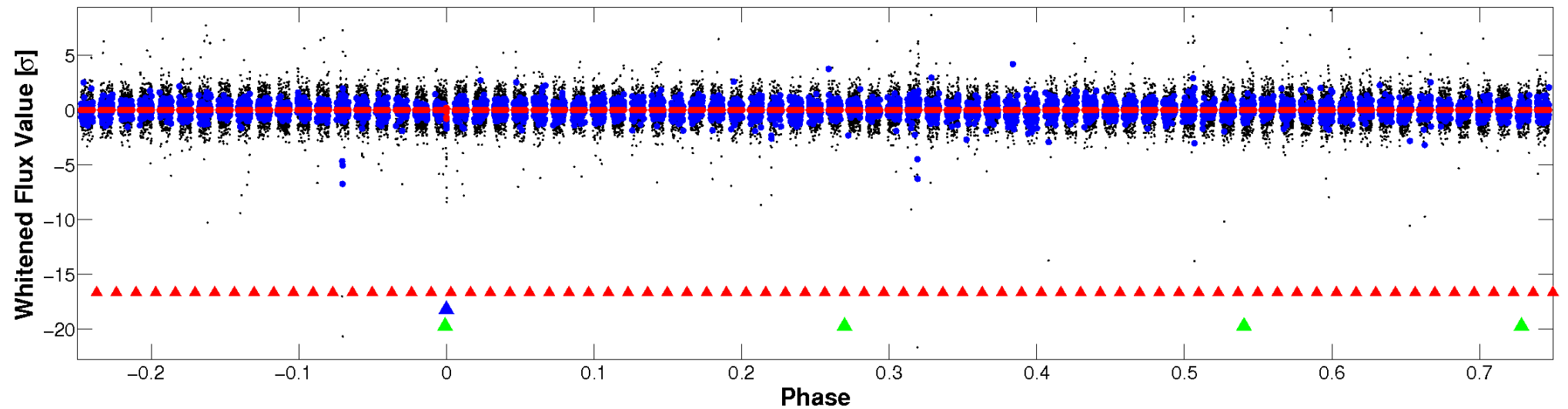


Non-Whitened Vs. Whitened Light Curve

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

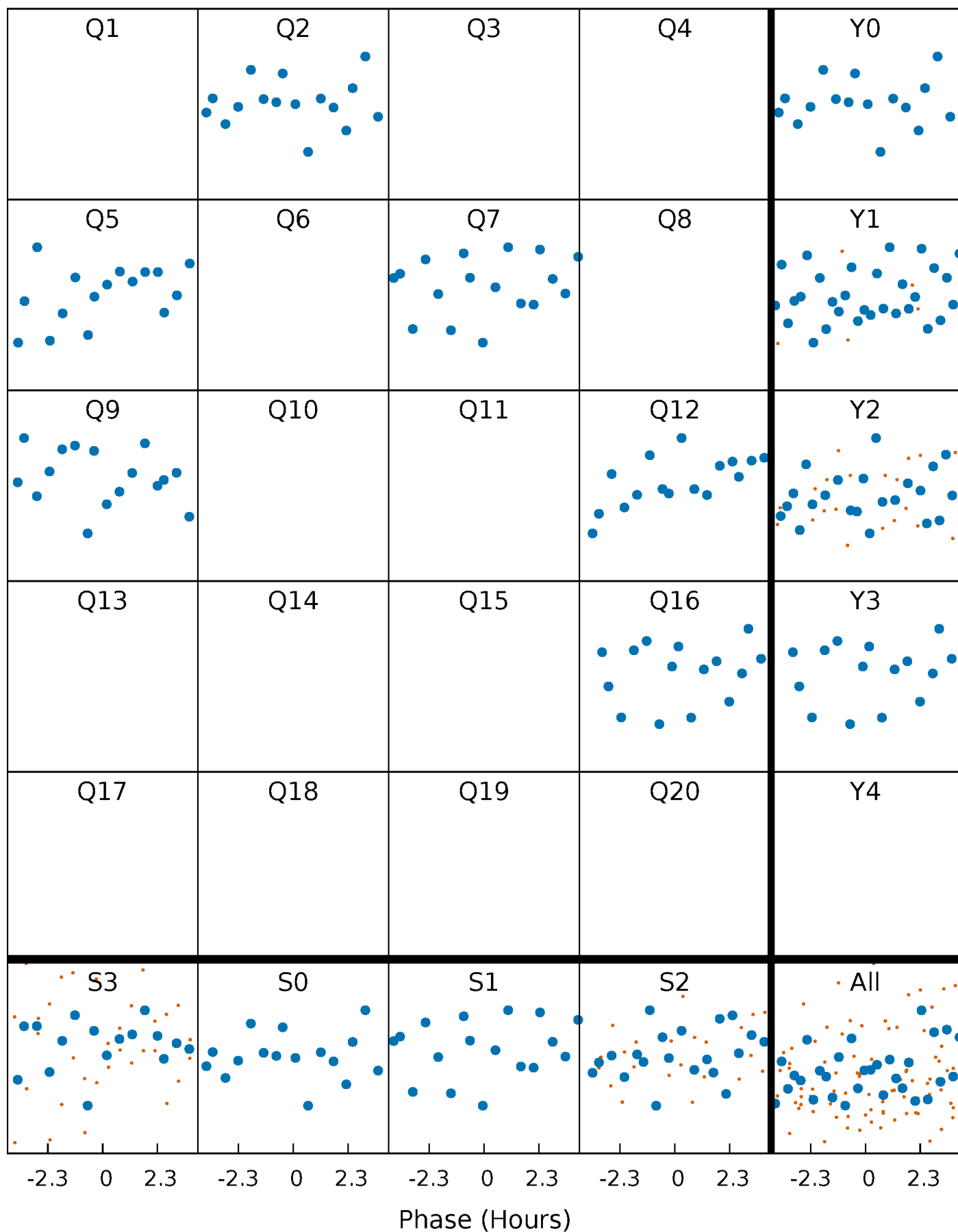


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



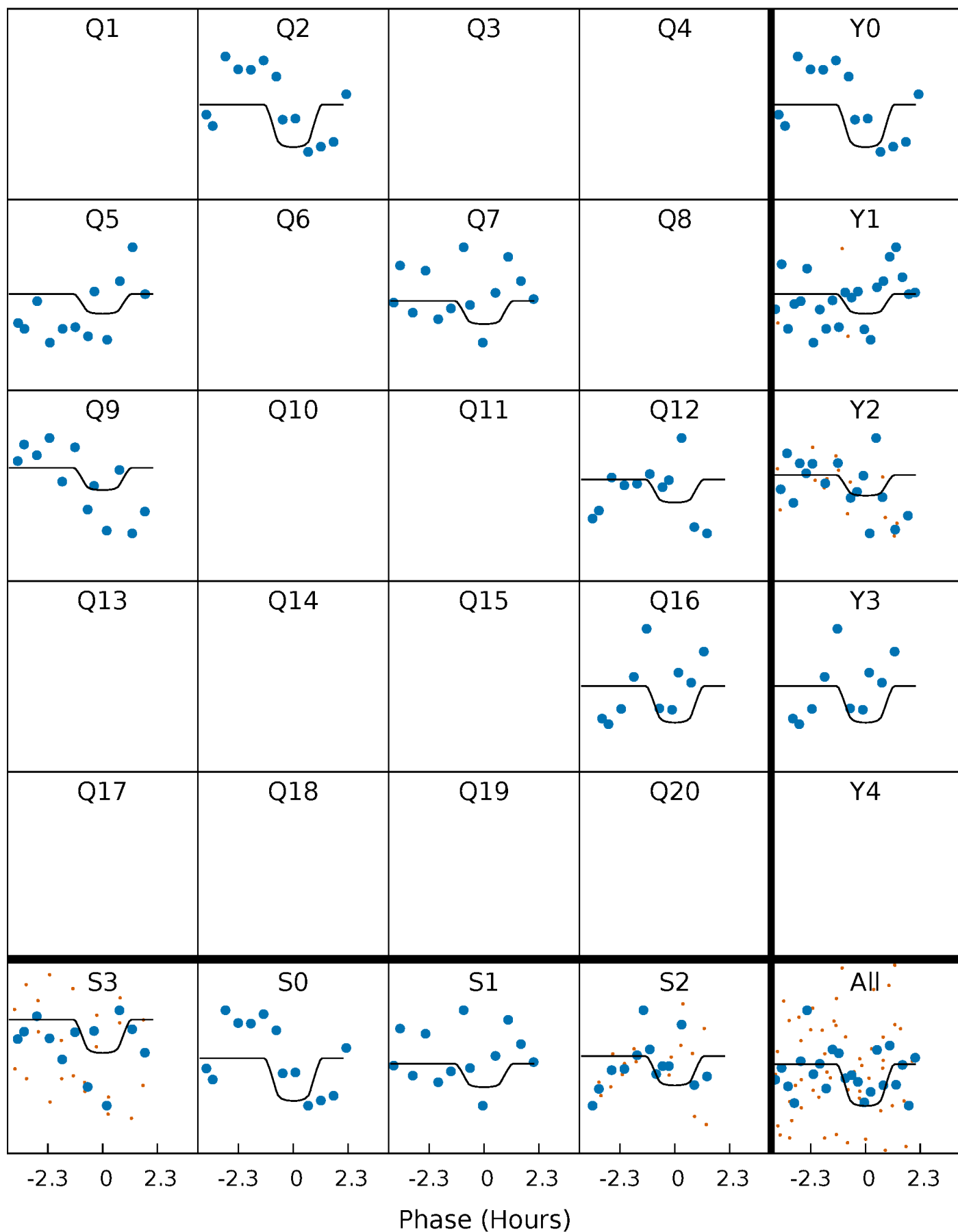
PDC Quarter-Phased Transit Curves

TCE 005200084-02 P=217.793329 Days $T_0=240.644215$ (BKJD)



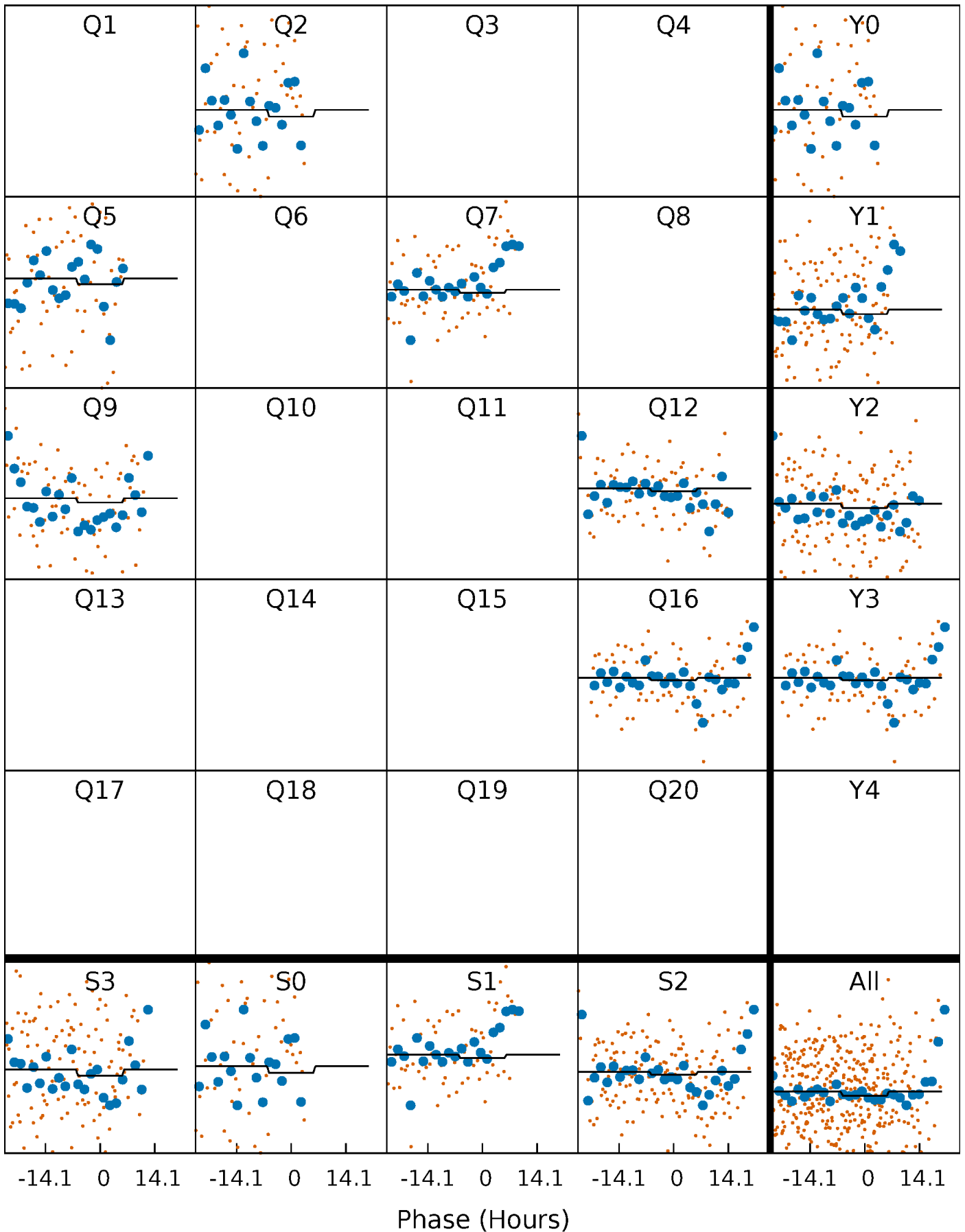
DV Quarter-Phased Transit Curves

TCE 005200084-02 P=217.793329 Days $T_0=240.644215$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

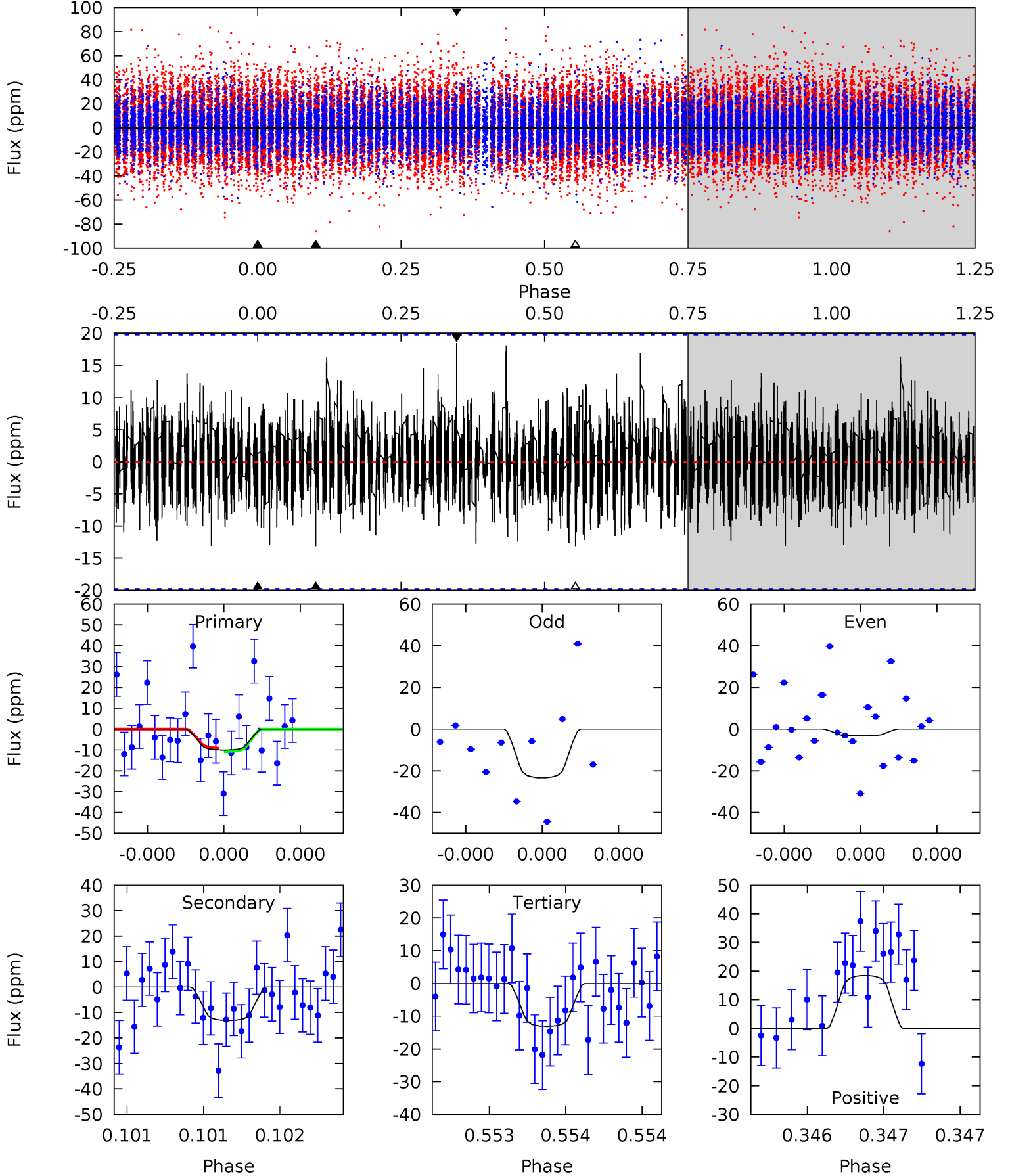
TCE 005200084-02 P=217.671904 Days $T_0=240.592519$ (BKJD)



DV Model-Shift Uniqueness Test

005200084-02, P = 217.793329 Days, E = 22.850886 Days

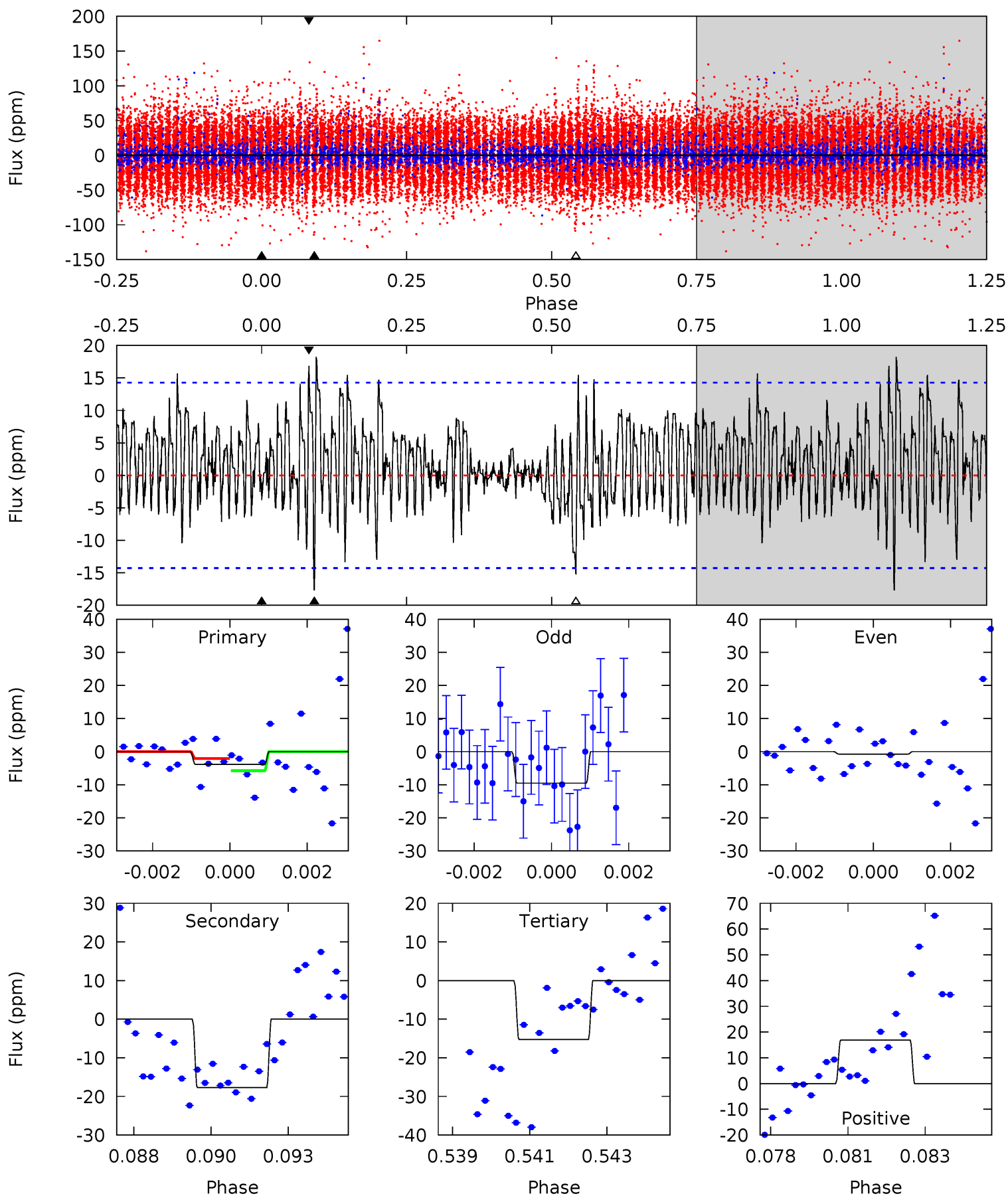
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.83	3.70	3.70	5.22	5.58	3.50	1.18	-0.87	-2.39	0.00	-1.51	2.62	1.74	0.58	0.24



Alt Model-Shift Uniqueness Test

005200084-02, P = 217.671904 Days, E = 22.920615 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.42	6.57	5.65	6.26	5.30	3.04	1.81	-4.23	-4.84	0.92	0.31	1.56	0.99	0.51	0.68



Stellar Parameters For KIC 005200084

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7846^{+411}_{-822}	$3.829^{+0.264}_{-0.216}$	$0.560^{+0.050}_{-0.200}$	$3.050^{+1.051}_{-1.051}$	$2.290^{+0.287}_{-0.491}$	$0.114^{+0.228}_{-0.059}$
	+5%/-10%	+7%/-6%	+9%/-36%	+34%/-34%	+13%/-21%	+200%/-52%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005200084-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-13 ± 4	$2.15^{+1.94}_{-1.36}$	864^{+95}_{-100}	5641^{+4336}_{-1337}	1324^{+9315}_{-970}
Alt.	-18 ± 3	$1.66^{+1.68}_{-1.14}$	855^{+108}_{-116}	6894^{+9032}_{-2062}	3079^{+27007}_{-2337}

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

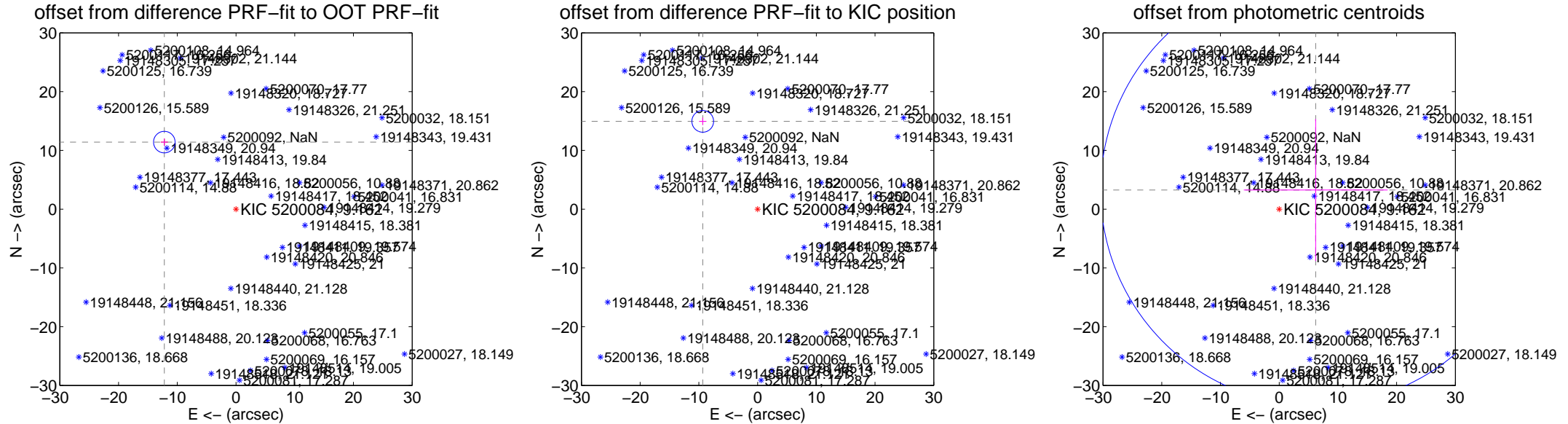
DV Centroid Data

Supplemental centroid analysis for 005200084-02. **Kepler magnitude: 9.16.** Transit SNR 3.21

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.55 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	16.709 ± 0.611	27.34	12.206 ± 0.601	11.410 ± 0.622
PRF-fit source offset from KIC position	17.625 ± 0.616	28.59	9.341 ± 0.601	14.946 ± 0.622
photometric centroid source offset	7.02 ± 12.21	0.57	-6.22 ± 12.25	3.25 ± 12.08



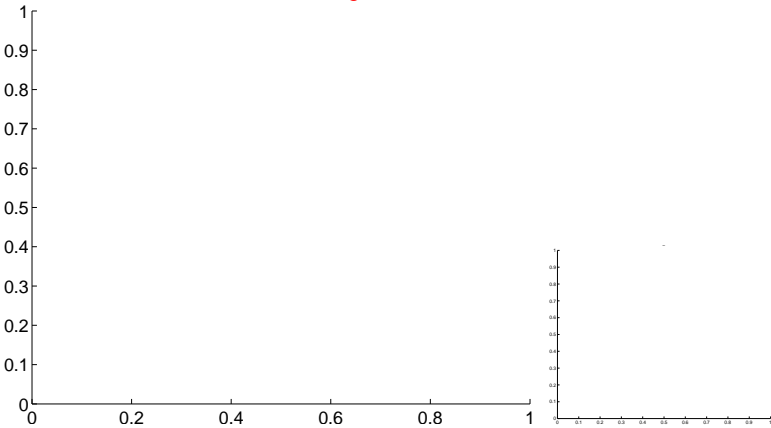
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

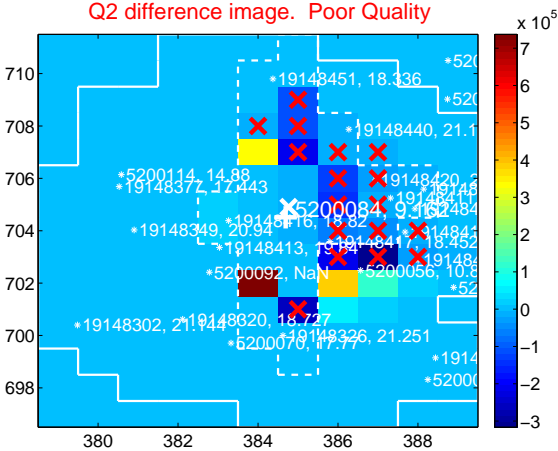
Q1 no difference image



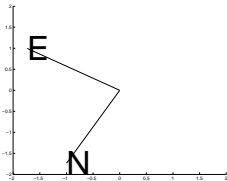
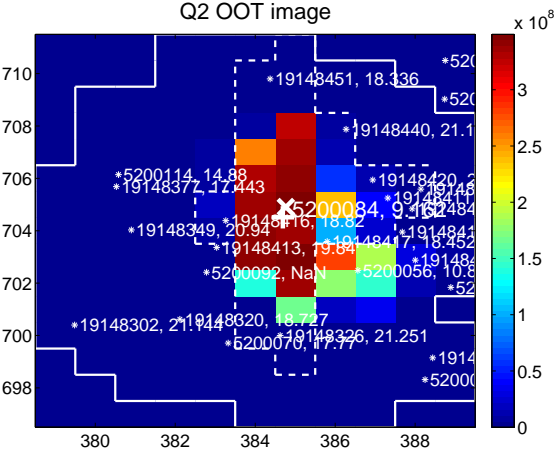
Q1 no OOT image



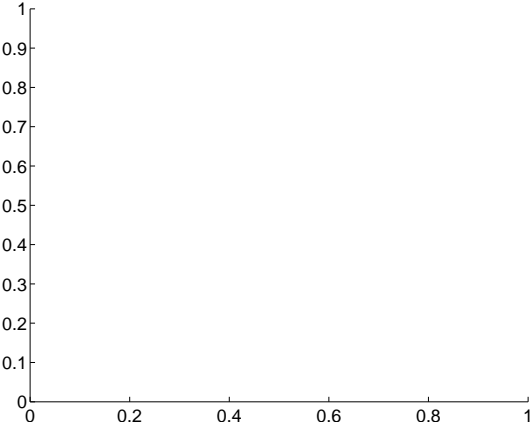
Q2 difference image. Poor Quality



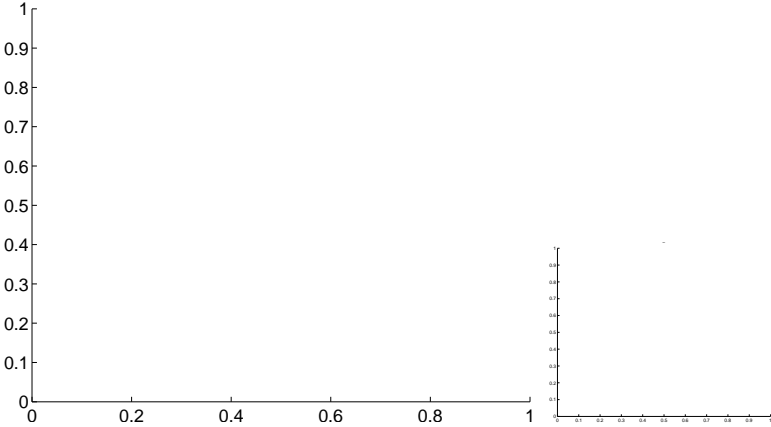
Q2 OOT image



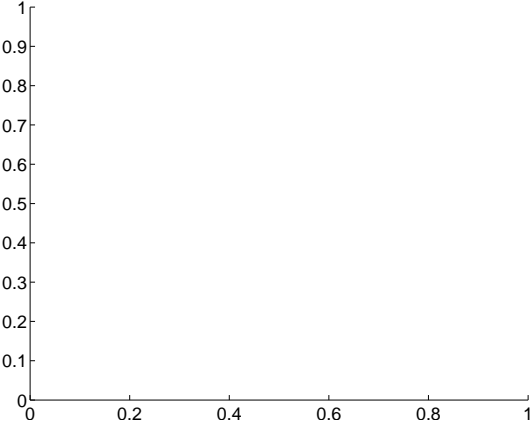
Q3 no difference image



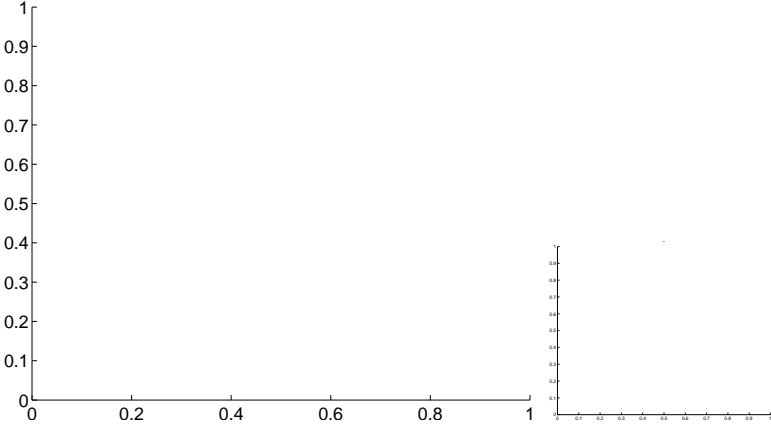
Q3 no OOT image



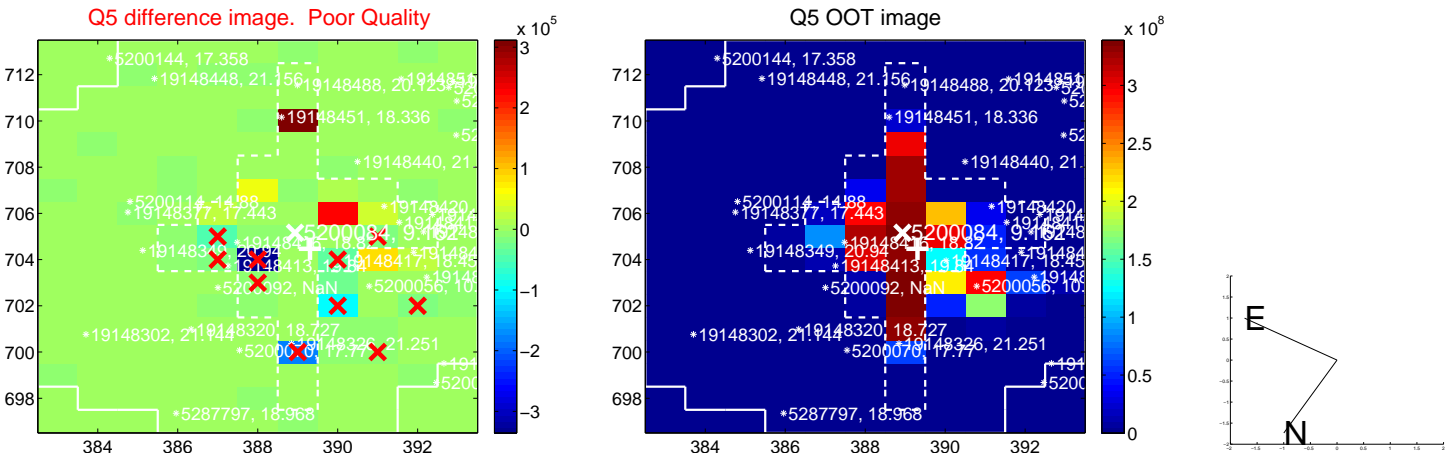
Q4 no difference image



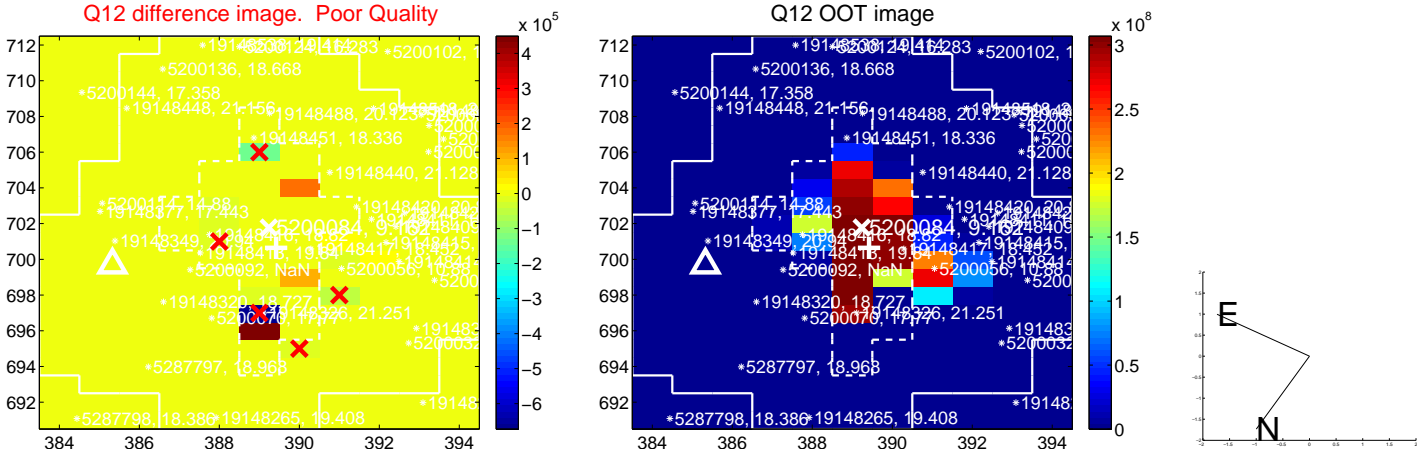
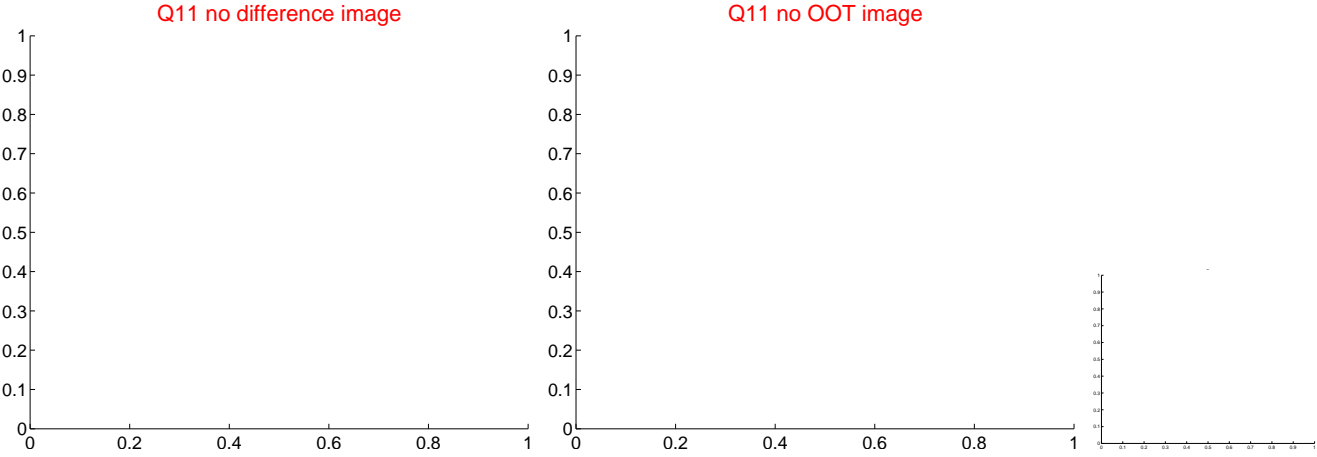
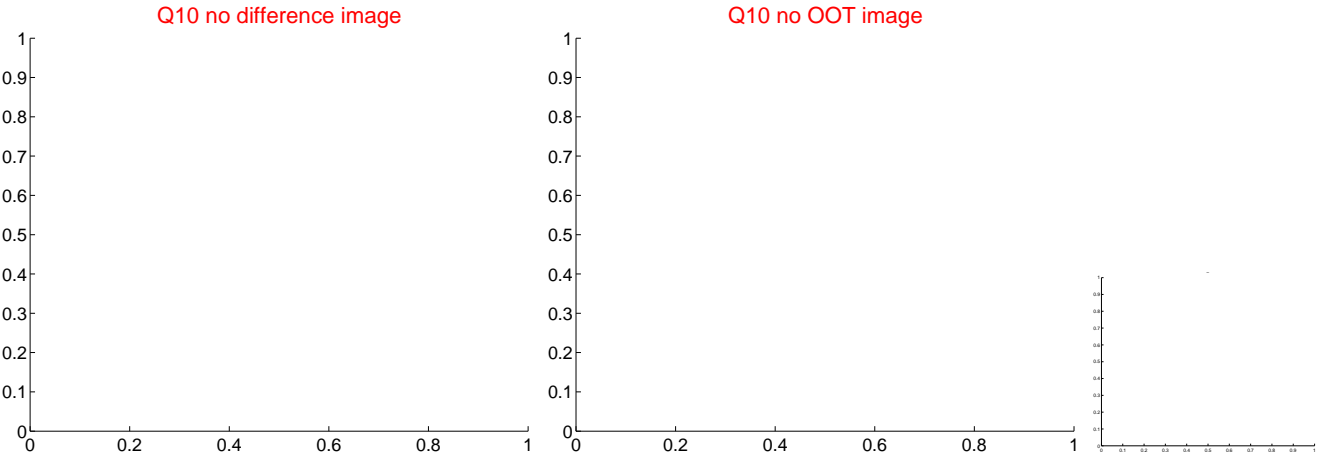
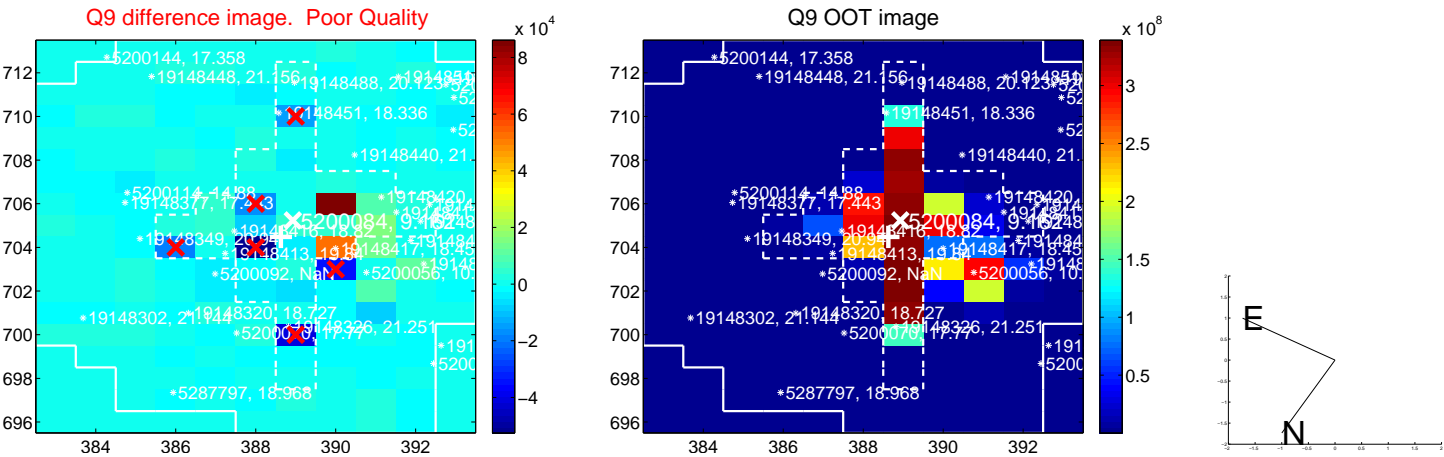
Q4 no OOT image



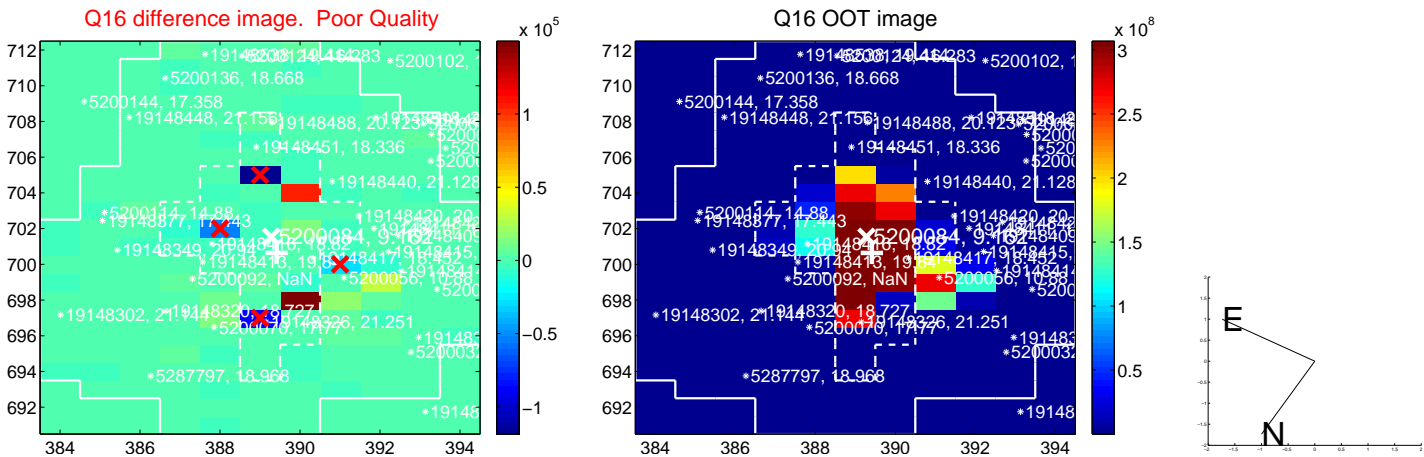
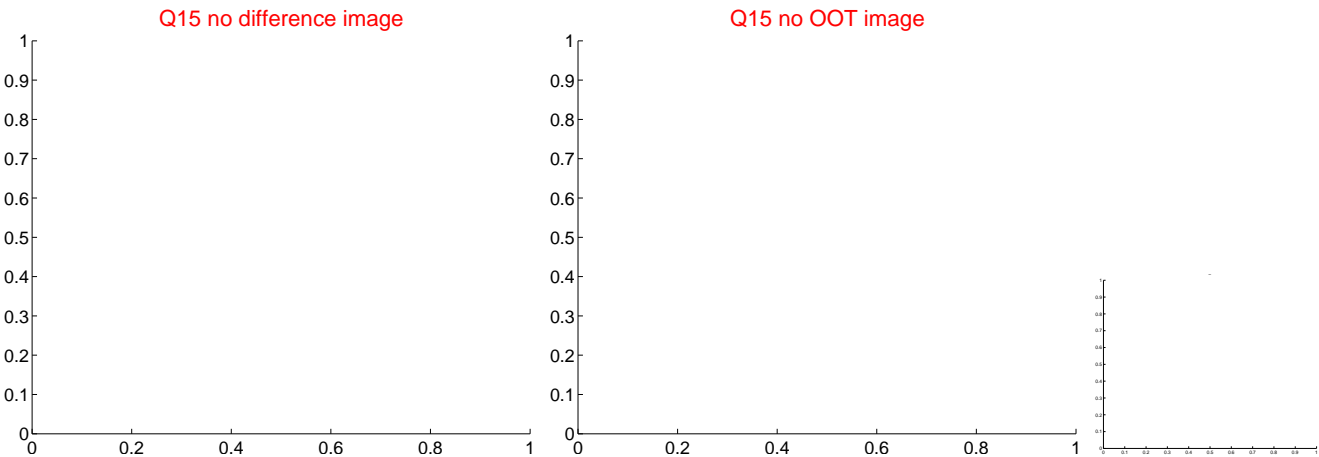
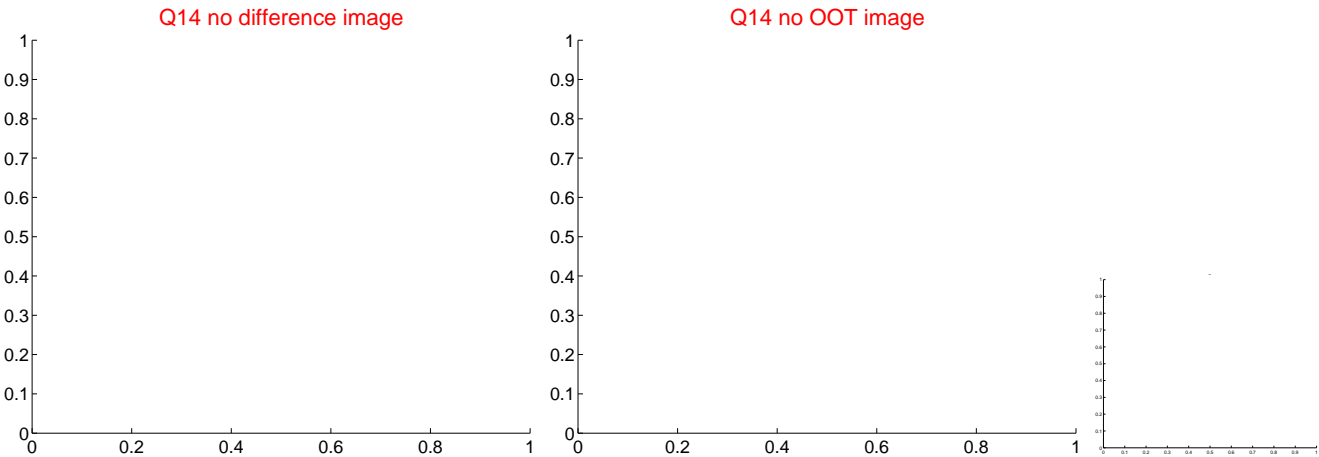
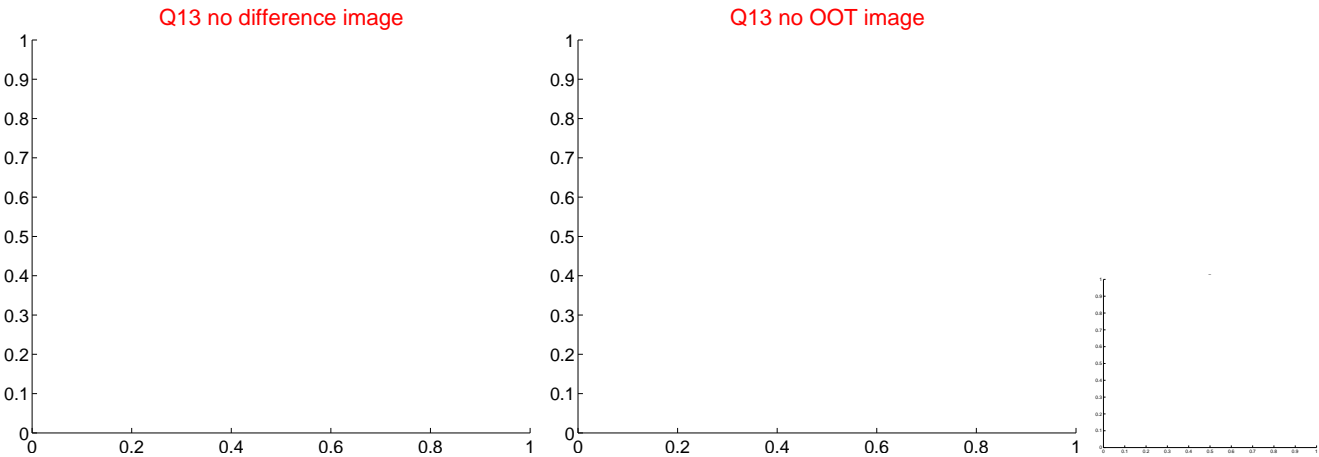
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



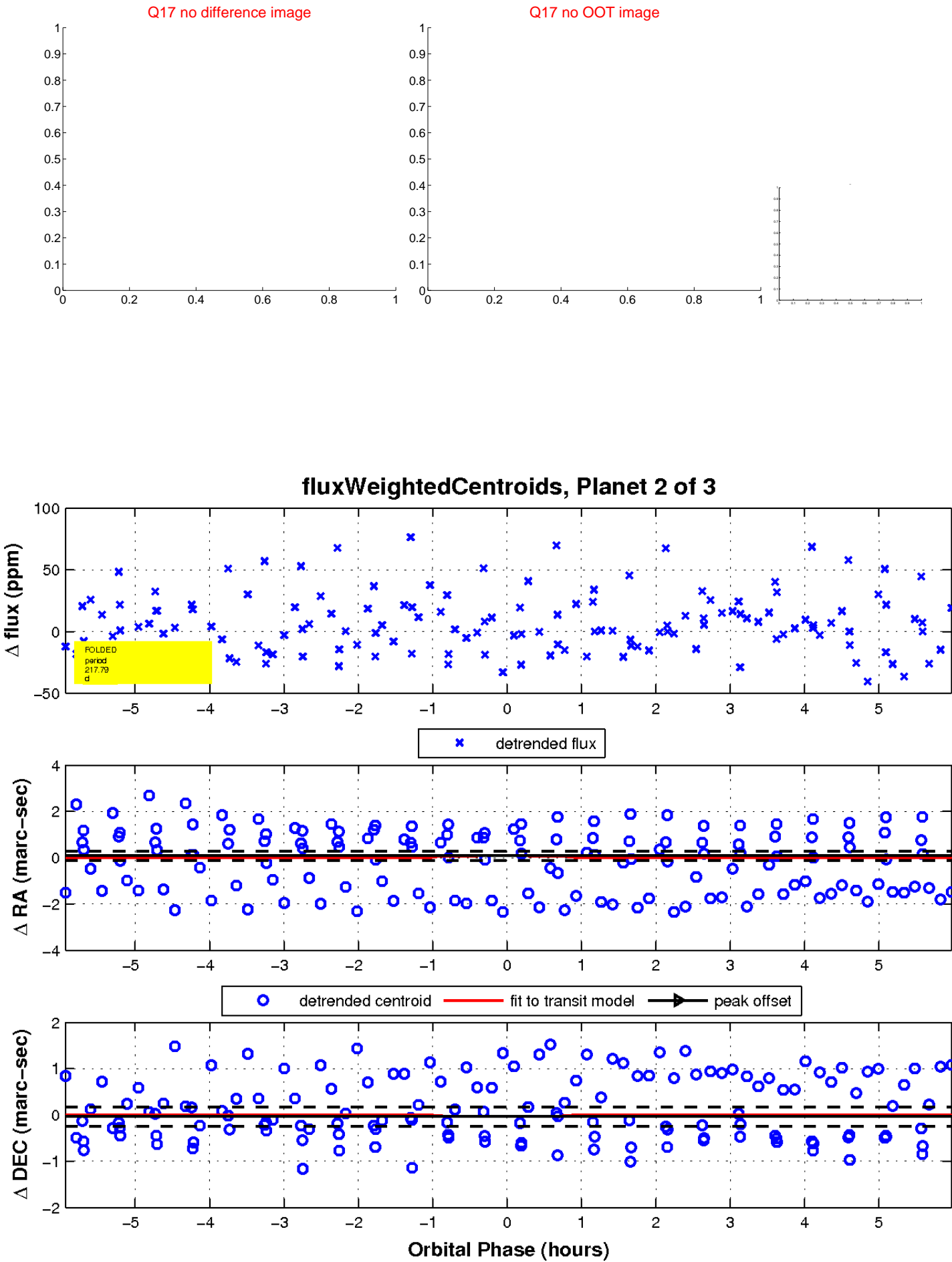
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



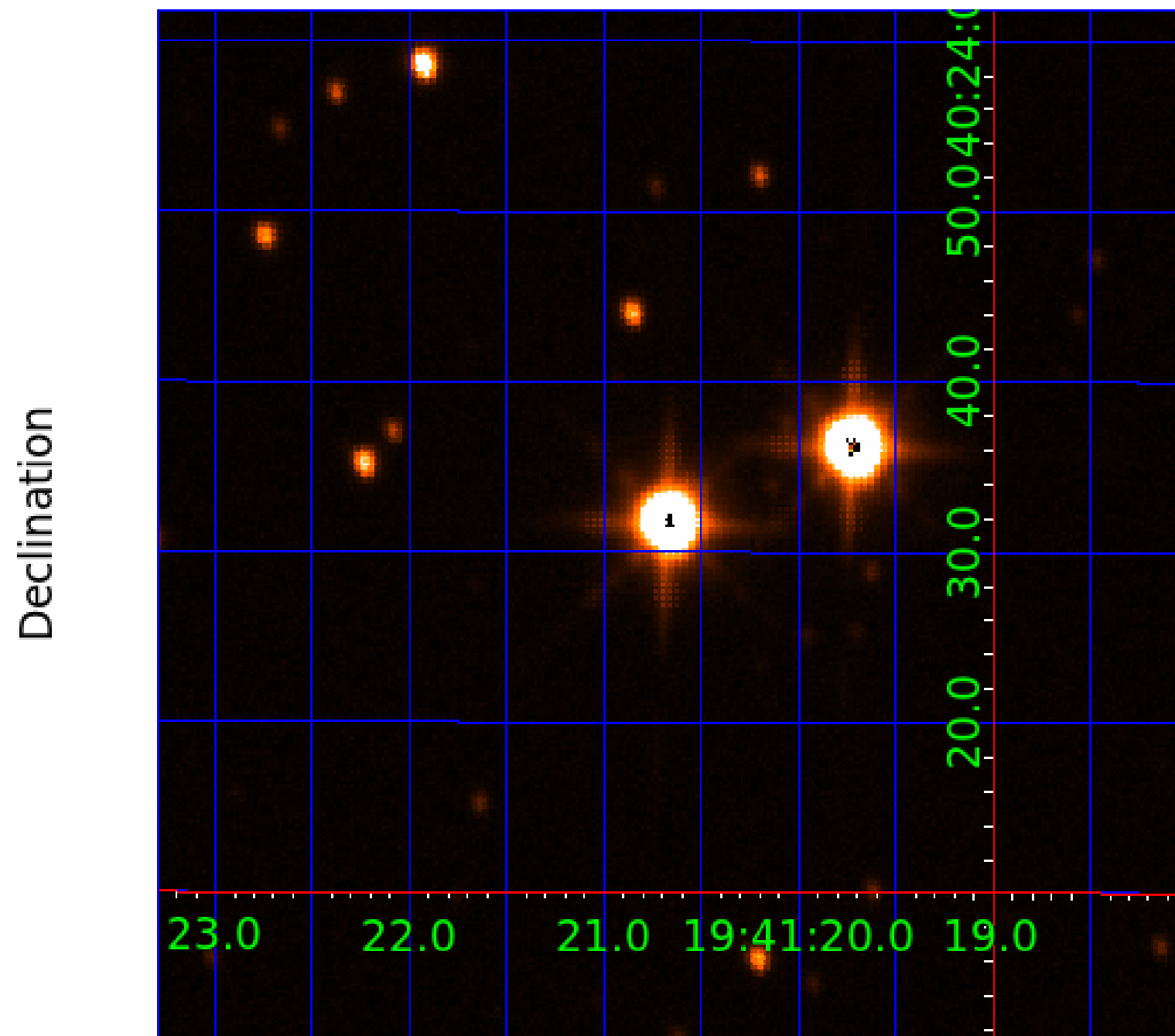
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image



KIC 005200084

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})
005200084-01	OBS	3159.01	2.903843	133.882741	5.3	9.226	11.9	9.1	3.05	7846	0.81	11456.62
005200084-02	OBS	No	217.793329	240.644215	17.2	2.000	20.5	3.2	3.05	7846	1.66	36.22
005200084-03	OBS	No	376.636565	140.557825	46.2	26.162	8.8	6.0	3.05	7846	2.22	17.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005200084-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
005200084-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
005200084-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED

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.

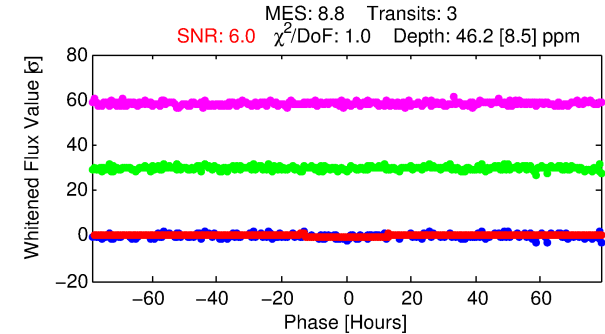
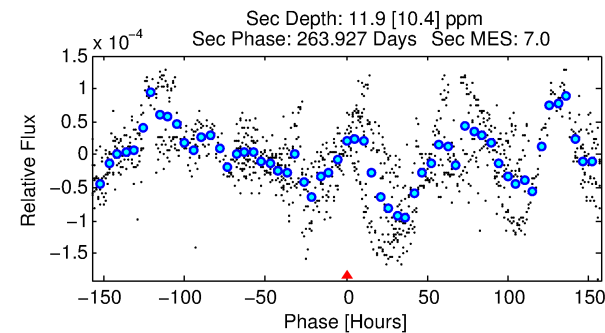
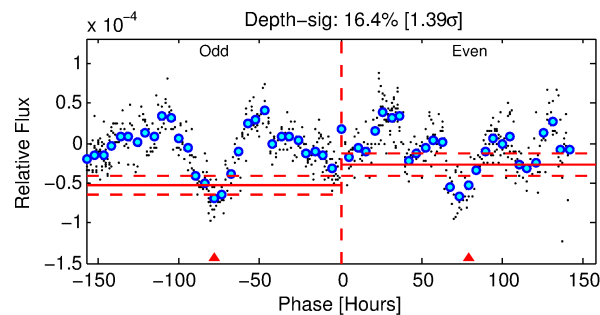
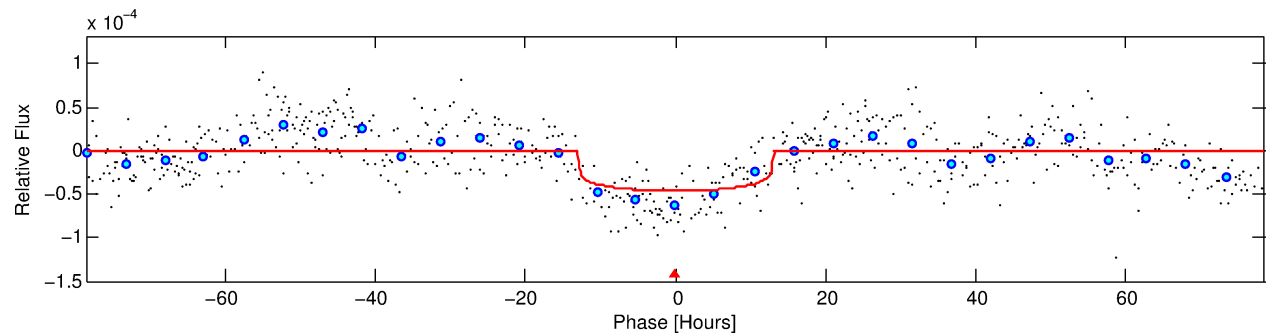
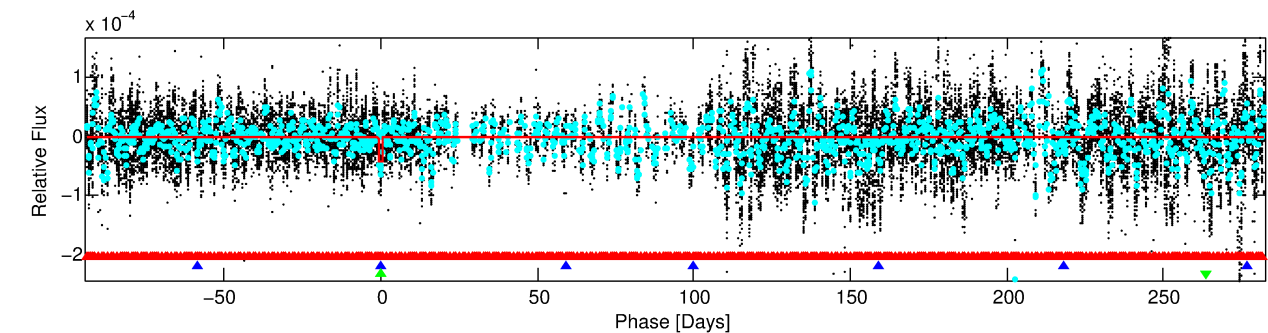
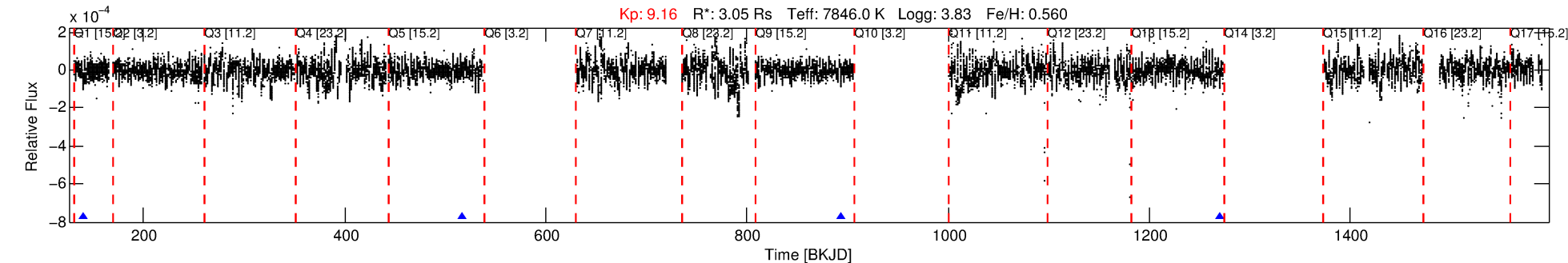
Ephemeris Match Information For 005200084-03

No Significant Match Found

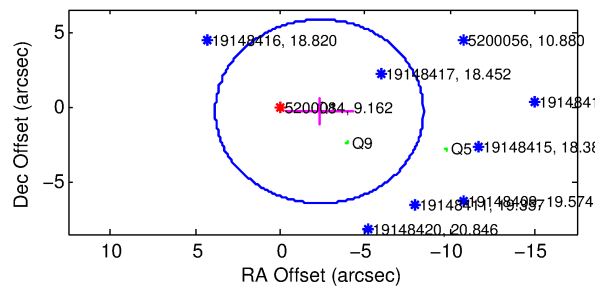
DV One-Page Summary

KIC: 5200084 Candidate: 3 of 3 Period: 376.637 d
KOI: K03159 Corr: No Ephemeris Match

Kp: 9.16 R*: 3.05 Rs Teff: 7846.0 K Logg: 3.83 Fe/H: 0.560



Difference Image
Out of Transit Centroid Offsets



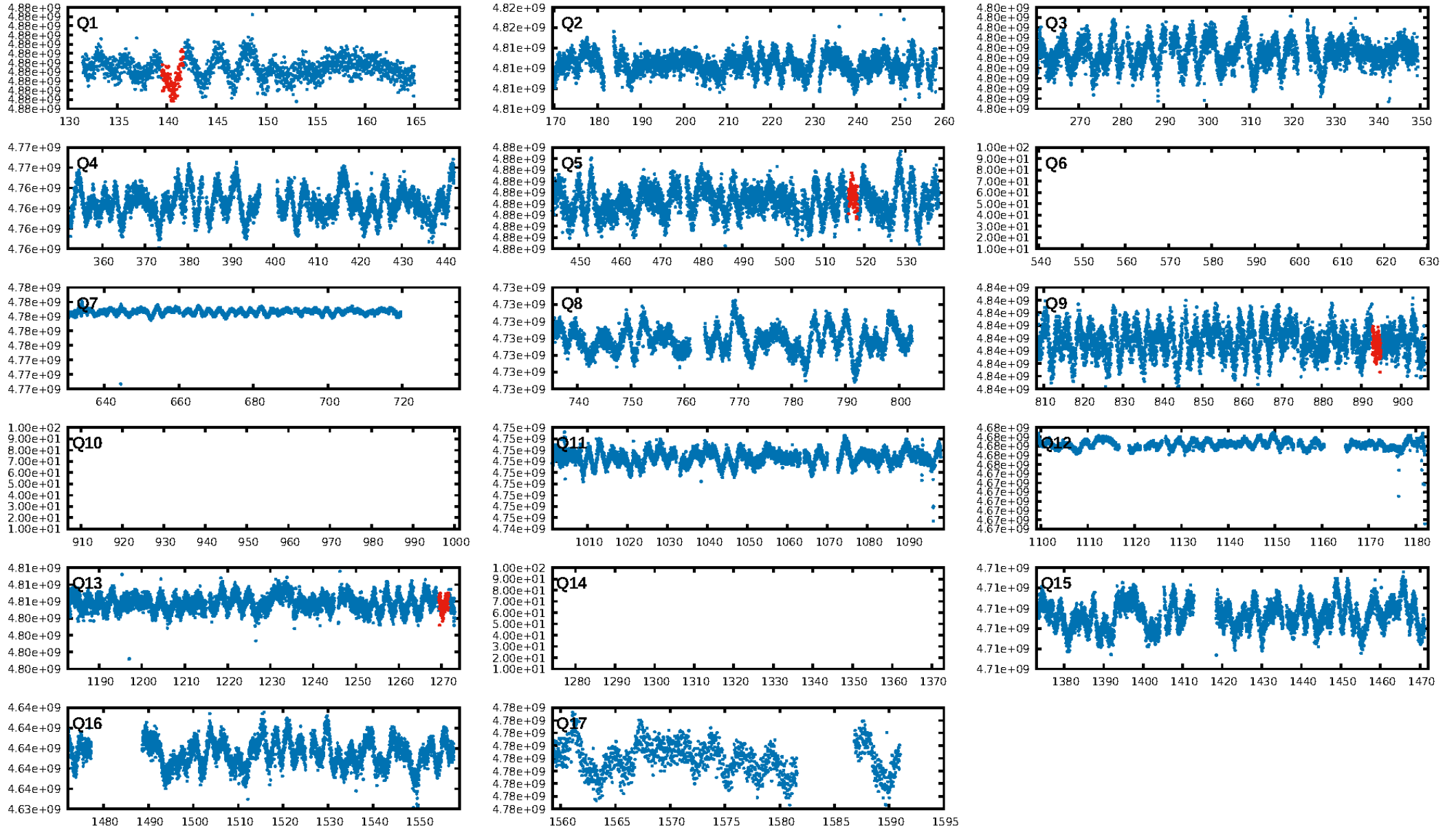
DV Fit Results:

Period = 376.63657 [0.00823] d
Epoch = 140.5578 [0.0162] BKJD
Rp/R* = 0.0067 [0.0011]
a/R* = 78.69 [56.75]
b = 0.71 [0.51]
Seff = 17.45 [10.93]
Teq = 521 [82] K
Rp = 2.22 [0.85] Re
a = 1.3454 [0.4121] AU
Ag = 2386.60 [2497.56] [0.96σ]
Teff = 5632 [1445] K [3.53σ]

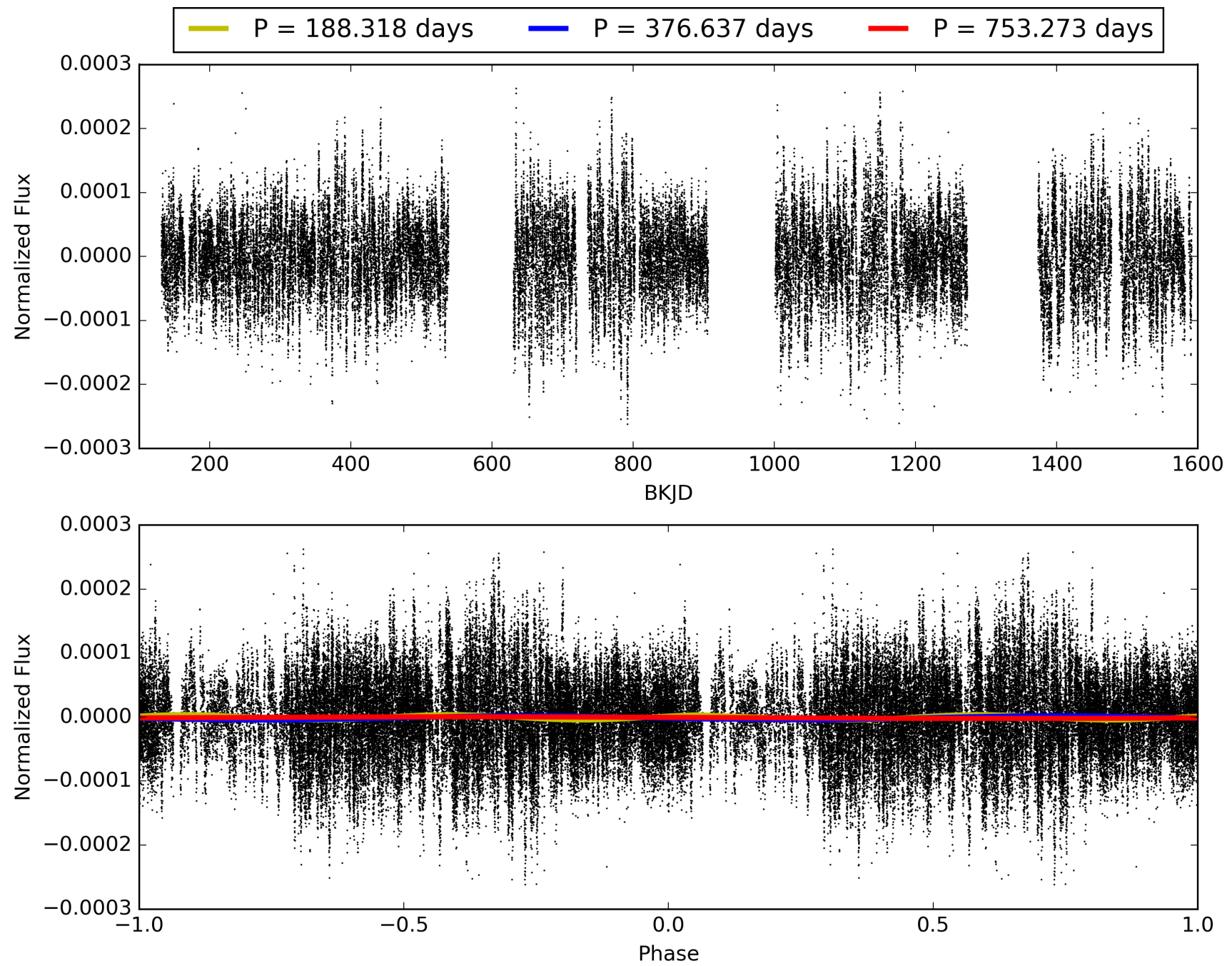
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [145.29σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 47.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.93e-07
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: N/A
Centroid-sig: 17.3%
Centroid-so: 3.345 arcsec [0.63σ]
OotOffset-rm: 2.347 arcsec [1.15σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-rm: 5.009 arcsec [2.95σ]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/3]

TCE 005200084-03, PDC Light Curves

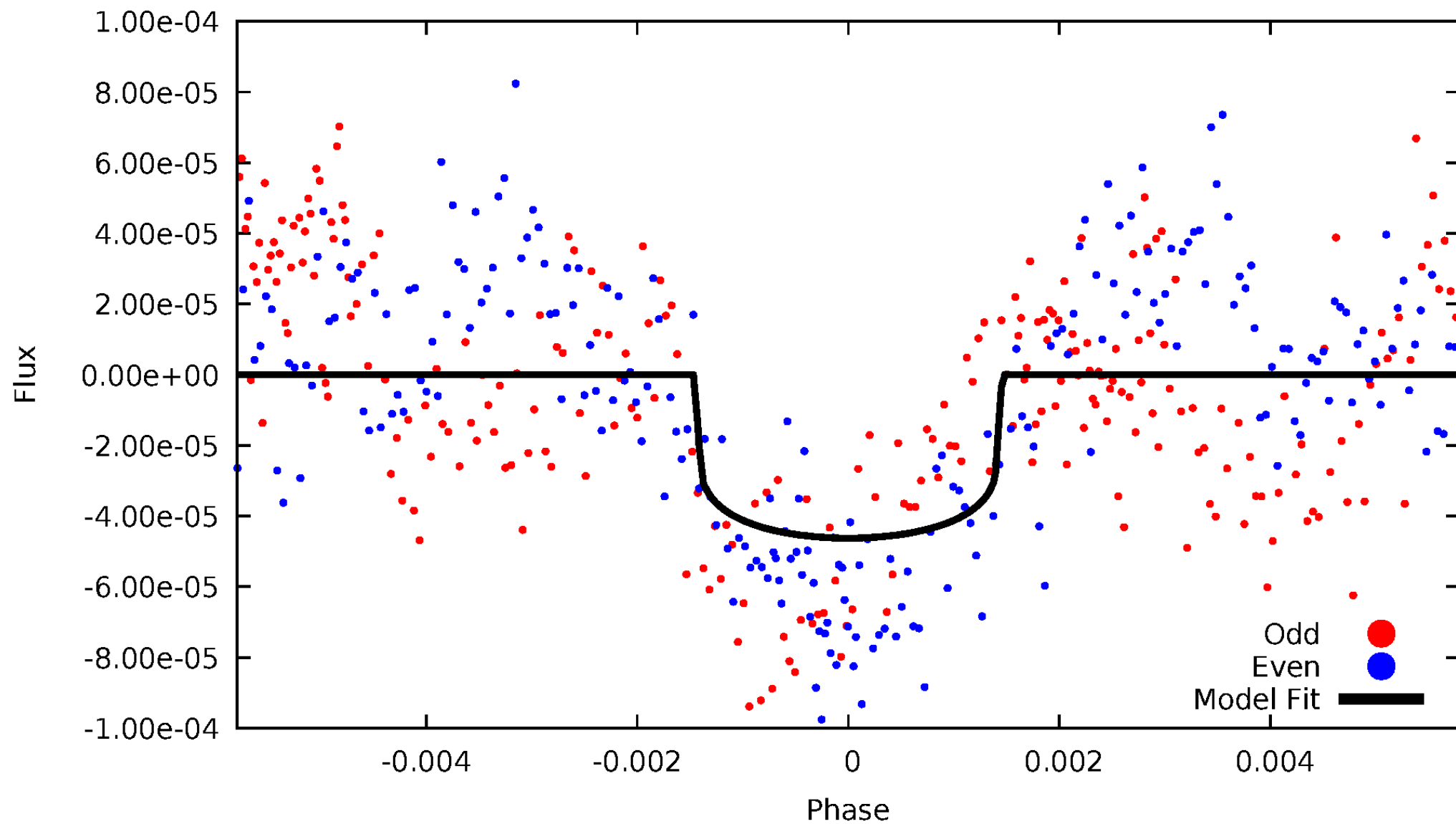


TCE 005200084-03



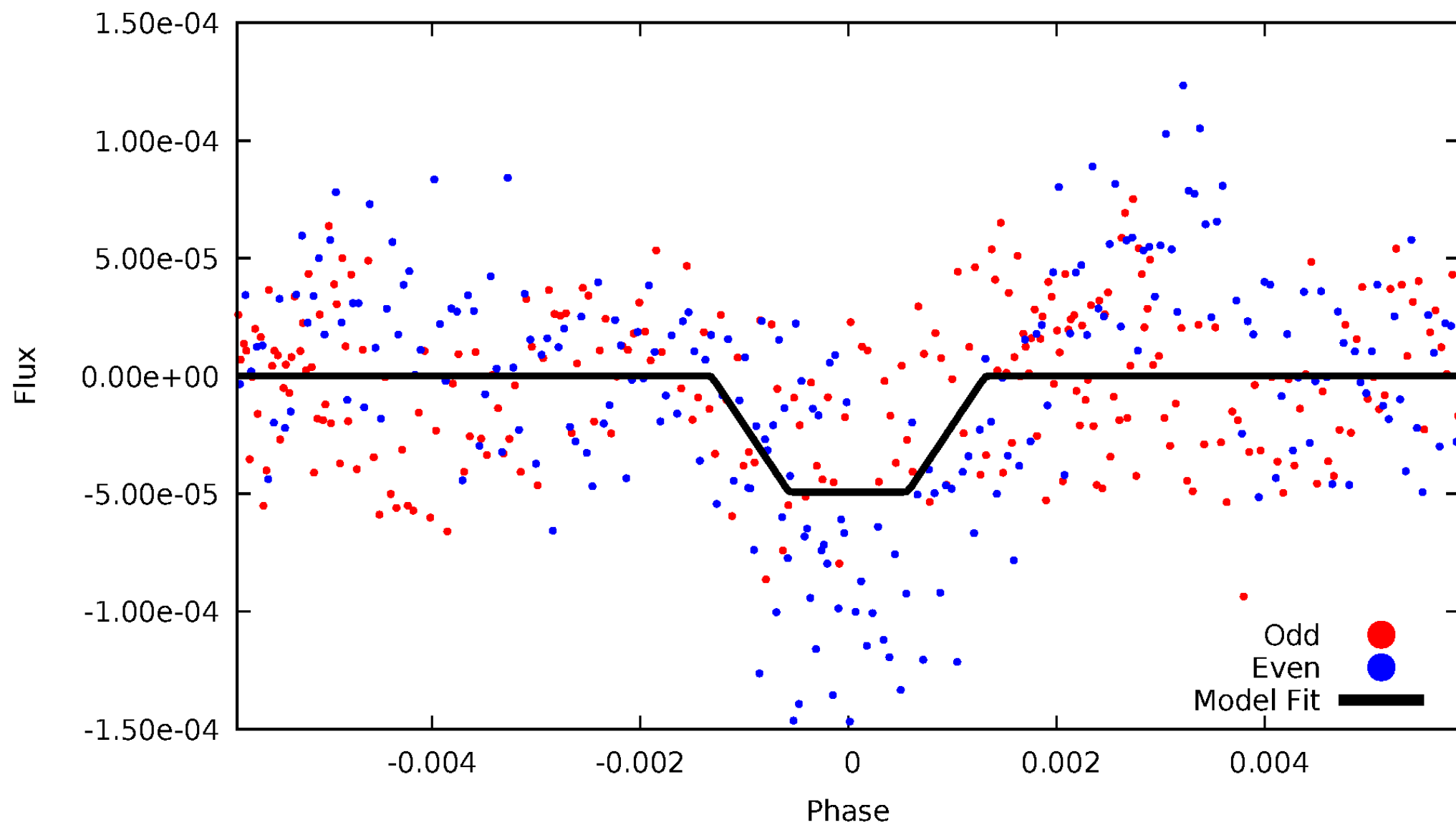
DV Odd/Even

TCE 005200084-03



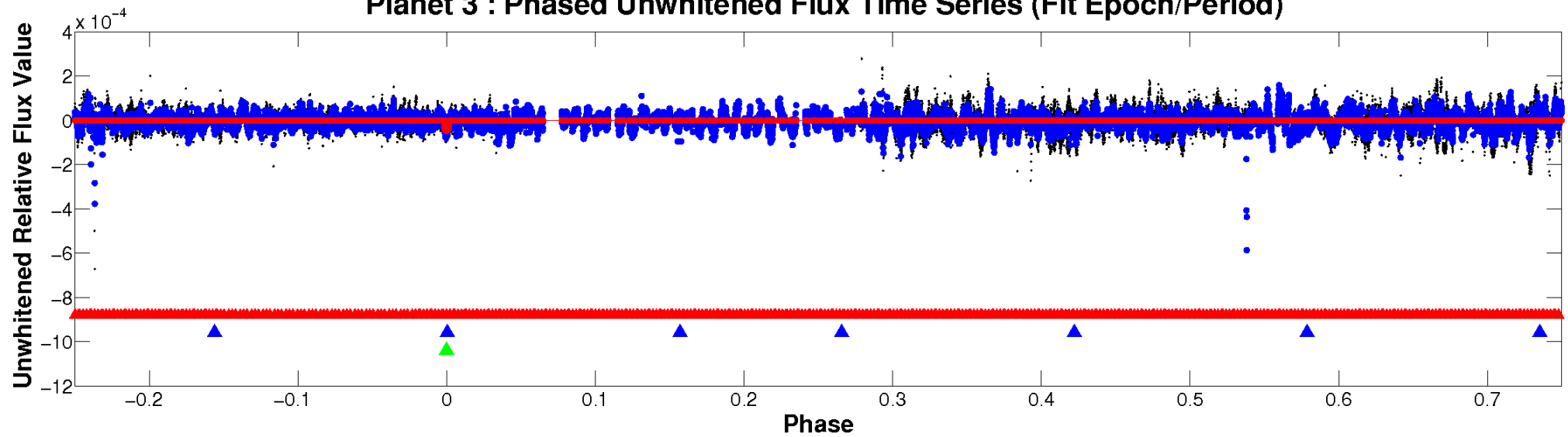
ALT Odd/Even

TCE 005200084-03

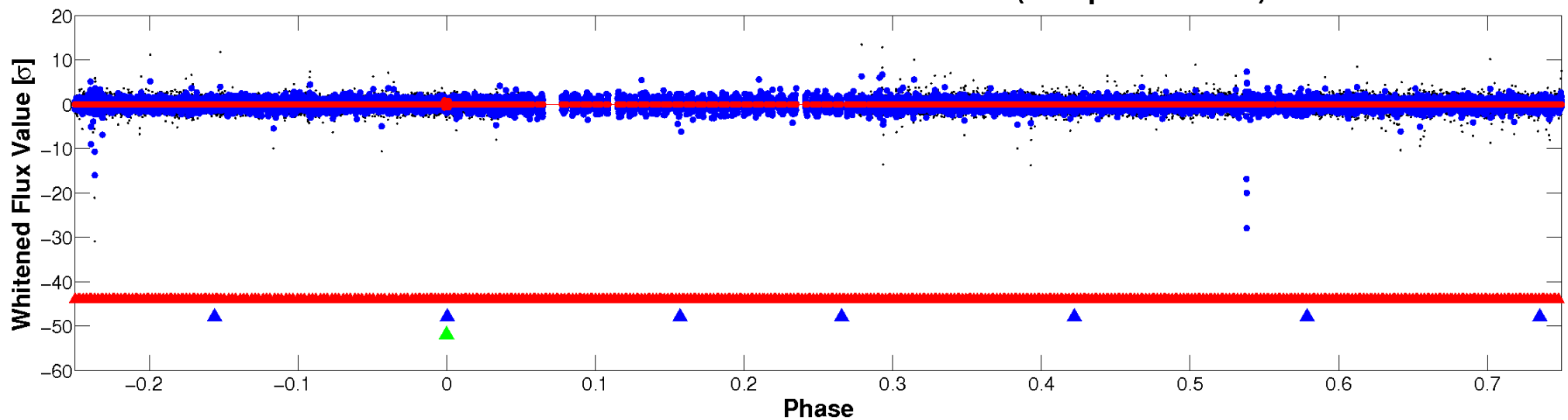


Non-Whitened Vs. Whitened Light Curve

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

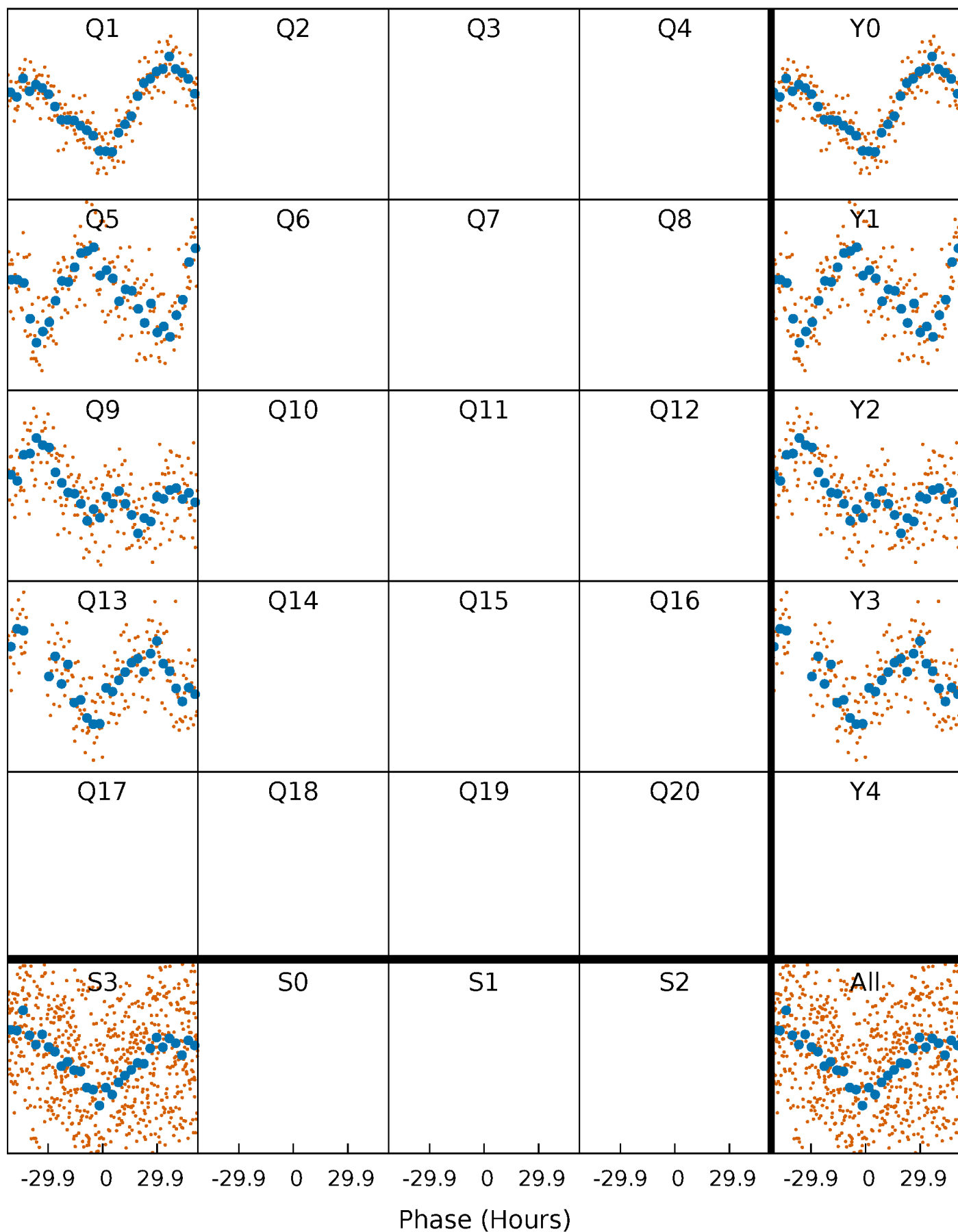


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



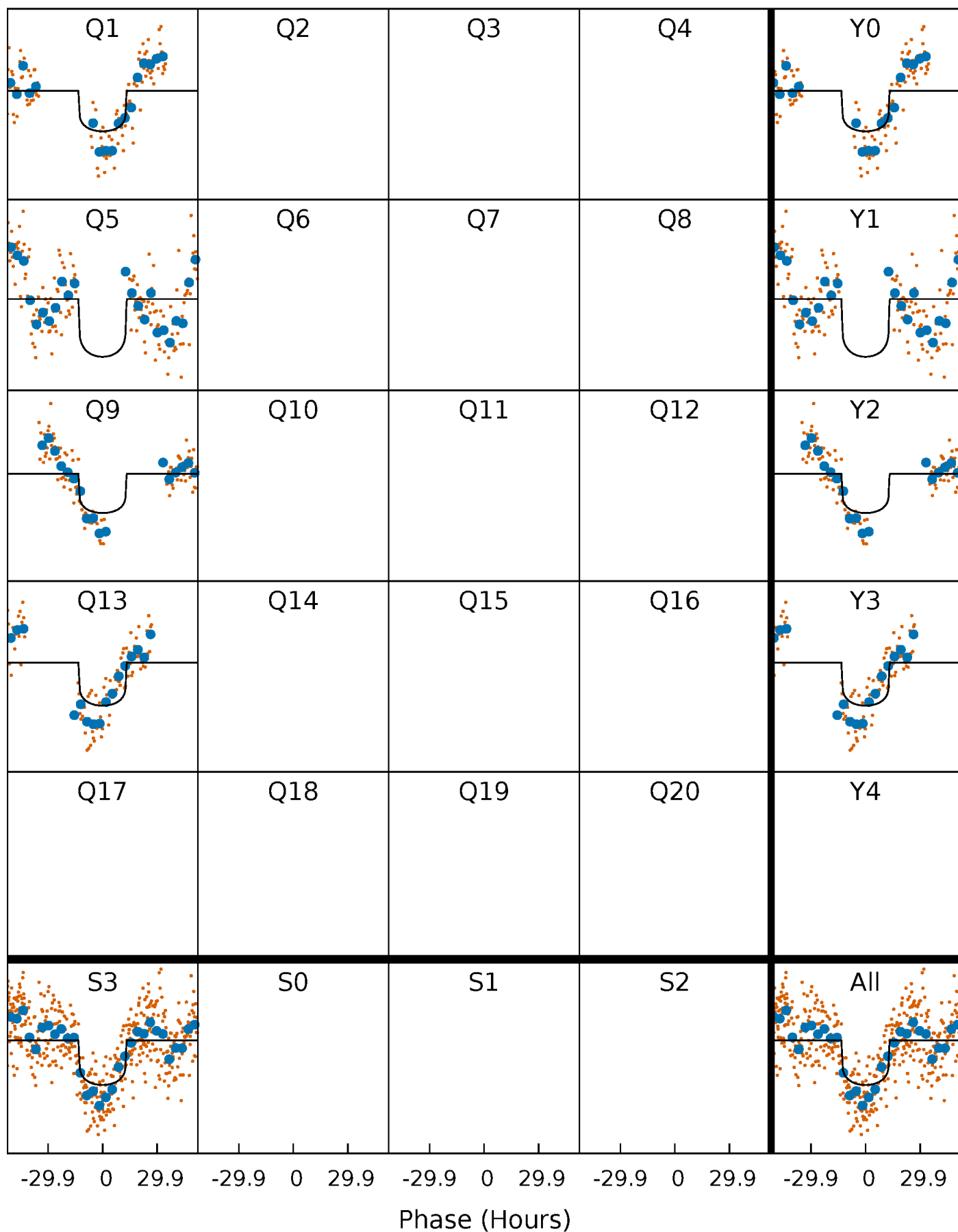
PDC Quarter-Phased Transit Curves

TCE 005200084-03 $P=376.636565$ Days $T_0=140.557825$ (BKJD)



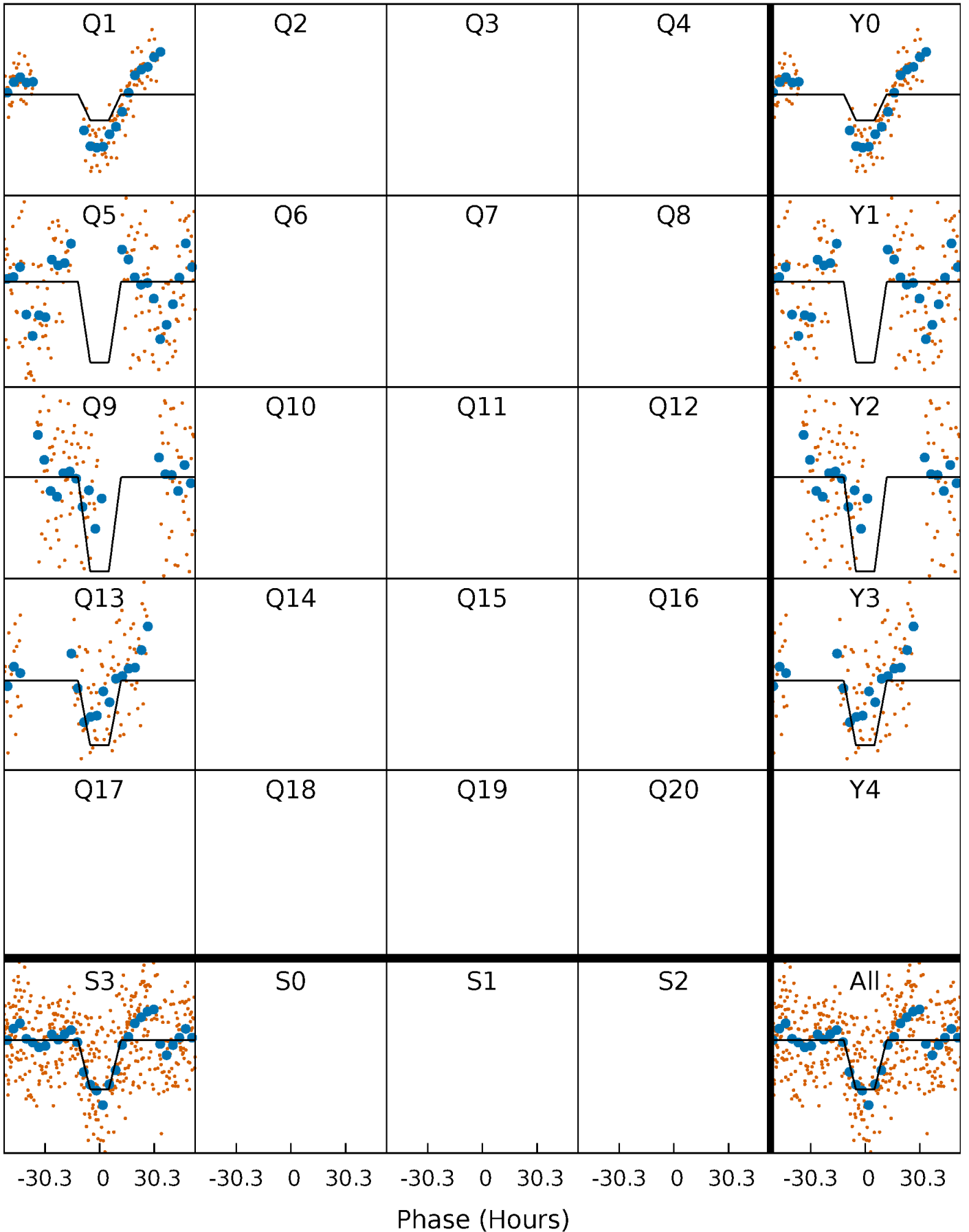
DV Quarter-Phased Transit Curves

TCE 005200084-03 $P=376.636565$ Days $T_0=140.557825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

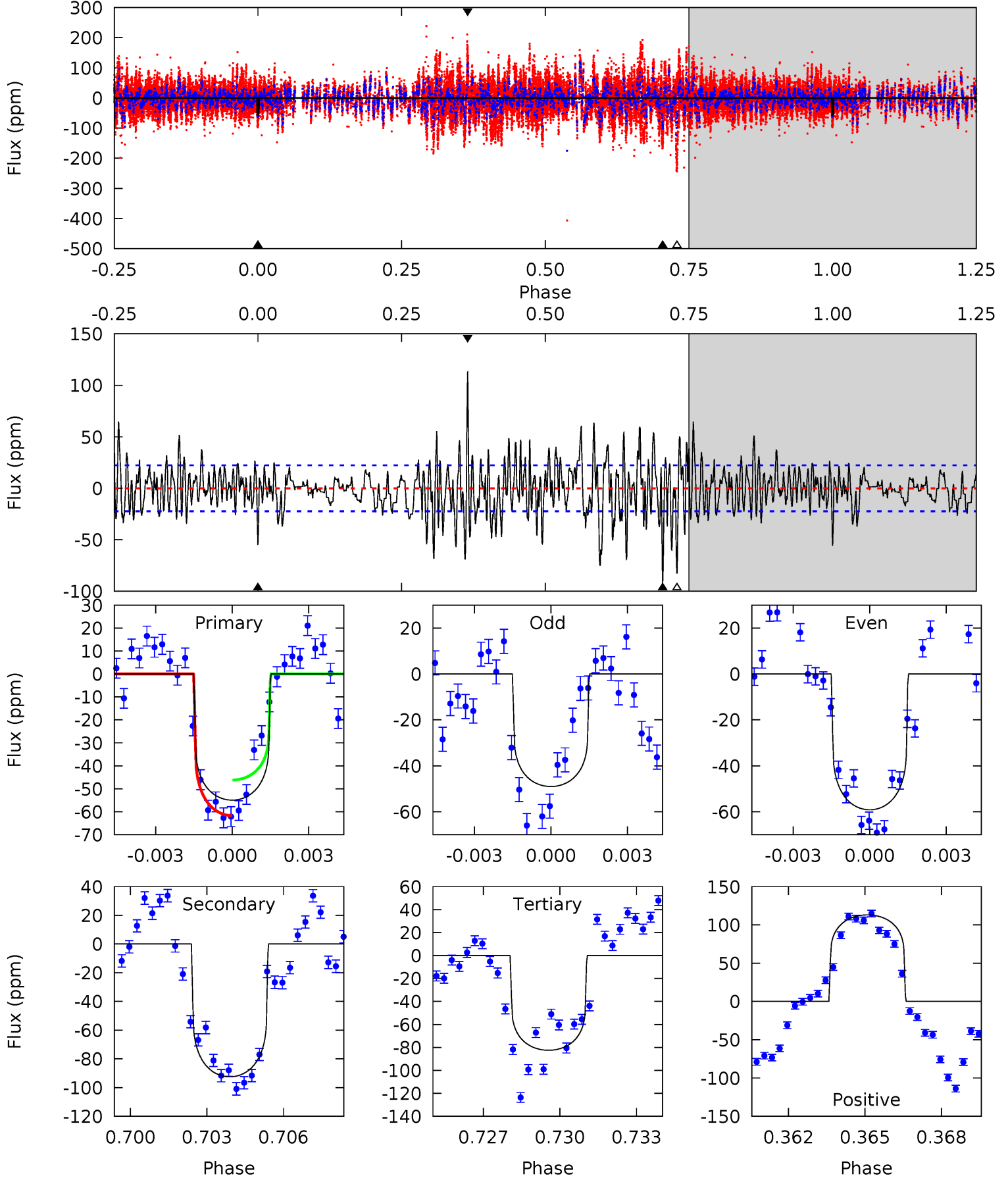
TCE 005200084-03 $P=376.617755$ Days $T_0=140.640999$ (BKJD)



DV Model-Shift Uniqueness Test

005200084-03, P = 376.636565 Days, E = 140.557825 Days

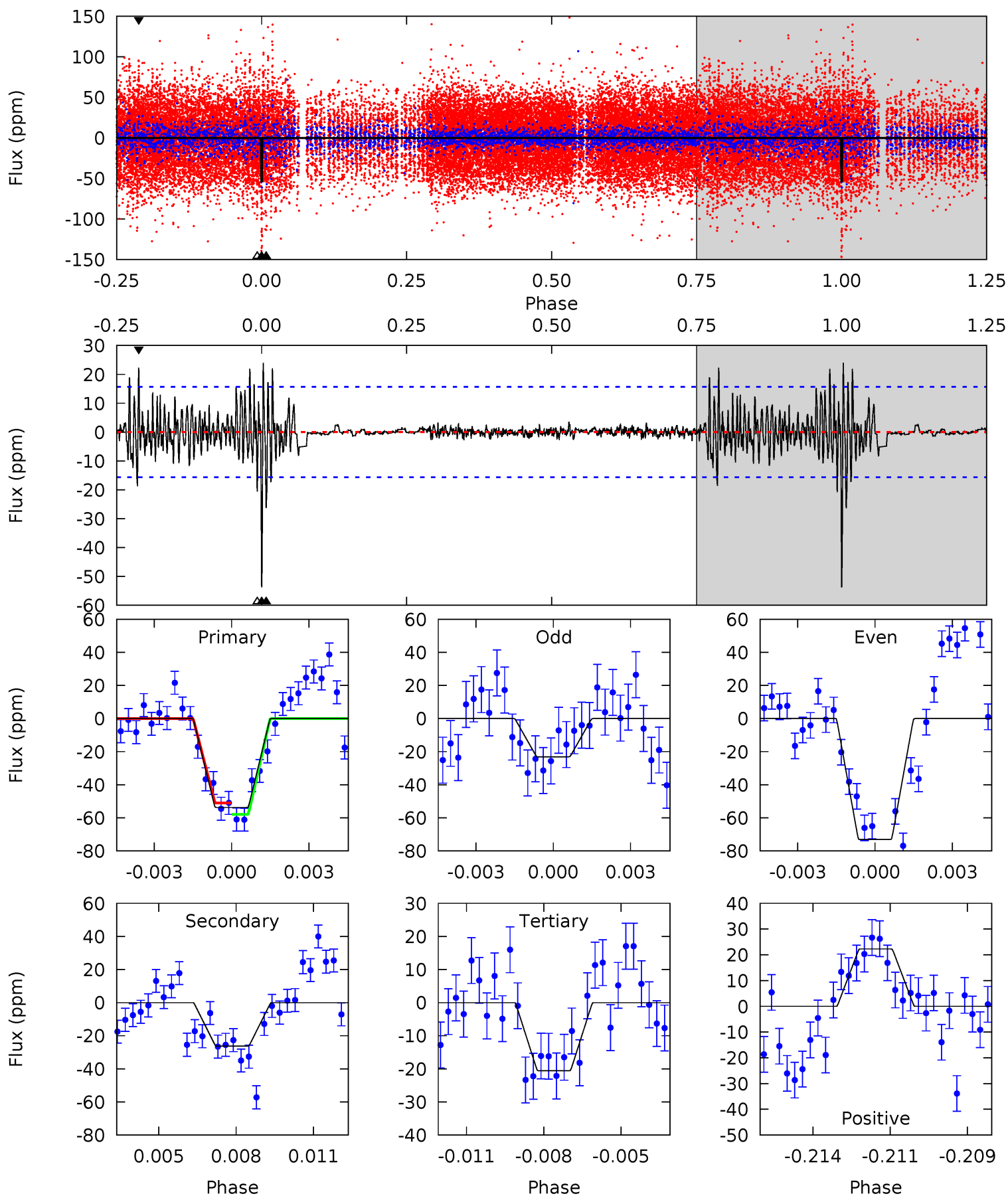
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	21.8	19.4	26.6	5.26	2.98	5.55	-6.48	-13.7	2.35	-4.84	1.19	0.95	0.55	1.80



Alt Model-Shift Uniqueness Test

005200084-03, P = 376.617755 Days, E = 140.640999 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	8.87	6.93	7.50	5.28	3.01	1.37	11.2	10.6	1.94	1.36	8.32	2.08	0.31	1.16



Stellar Parameters For KIC 005200084

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7846^{+411}_{-822}	$3.829^{+0.264}_{-0.216}$	$0.560^{+0.050}_{-0.200}$	$3.050^{+1.051}_{-1.051}$	$2.290^{+0.287}_{-0.491}$	$0.114^{+0.228}_{-0.059}$
	+5%/-10%	+7%/-6%	+9%/-36%	+34%/-34%	+13%/-21%	+200%/-52%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005200084-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-92 ± 4	$2.22^{+0.56}_{-0.52}$	718^{+85}_{-89}	9879^{+1541}_{-1424}	18665^{+11742}_{-6750}
Alt.	-26 ± 3	$2.30^{+0.61}_{-0.54}$	711^{+85}_{-90}	6478^{+748}_{-705}	4910^{+3454}_{-1856}

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

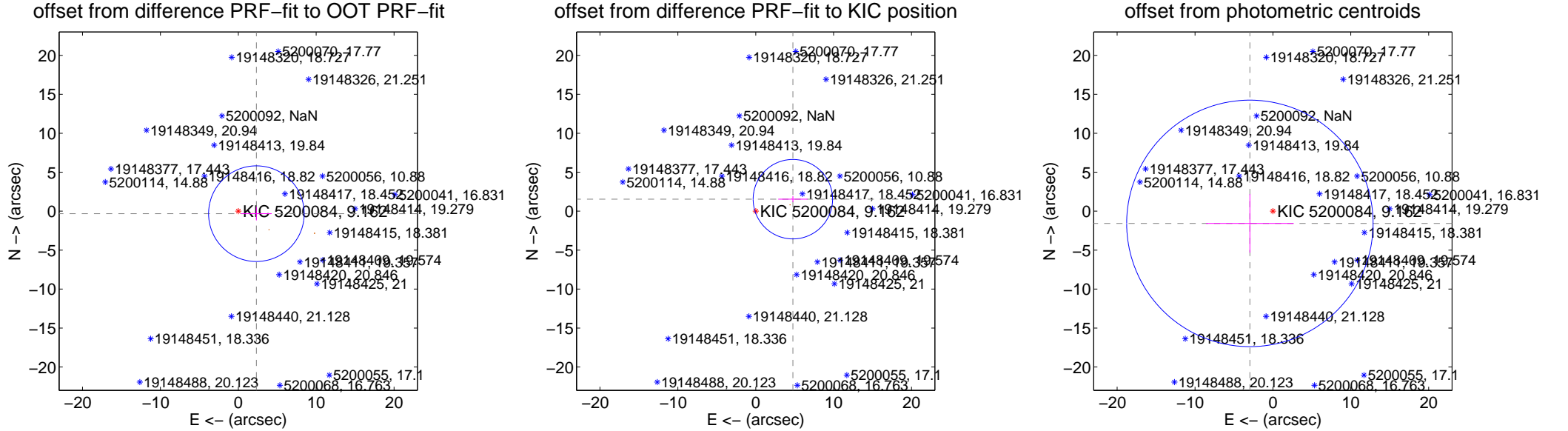
DV Centroid Data

Supplemental centroid analysis for 005200084-03. **Kepler magnitude: 9.16.** Transit SNR 5.99

There are 0 quarters with good PRF difference image offsets

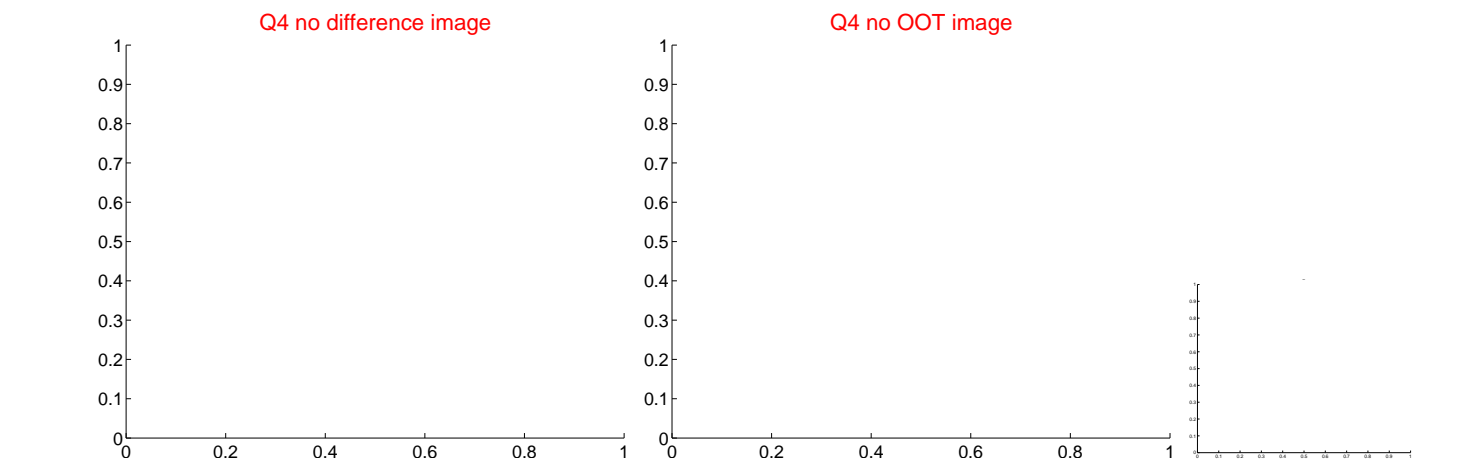
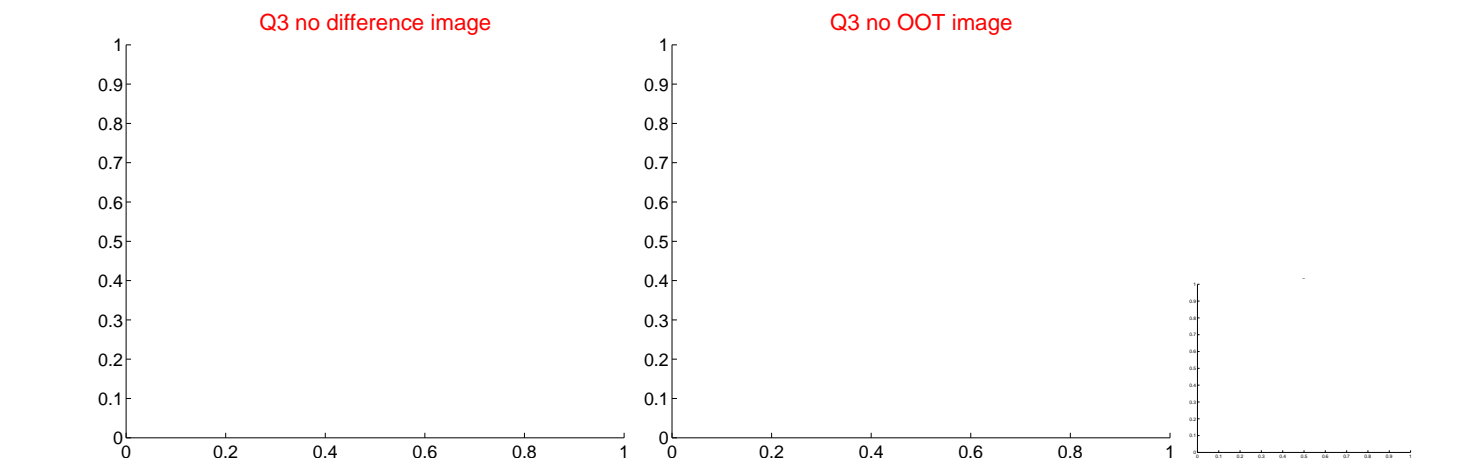
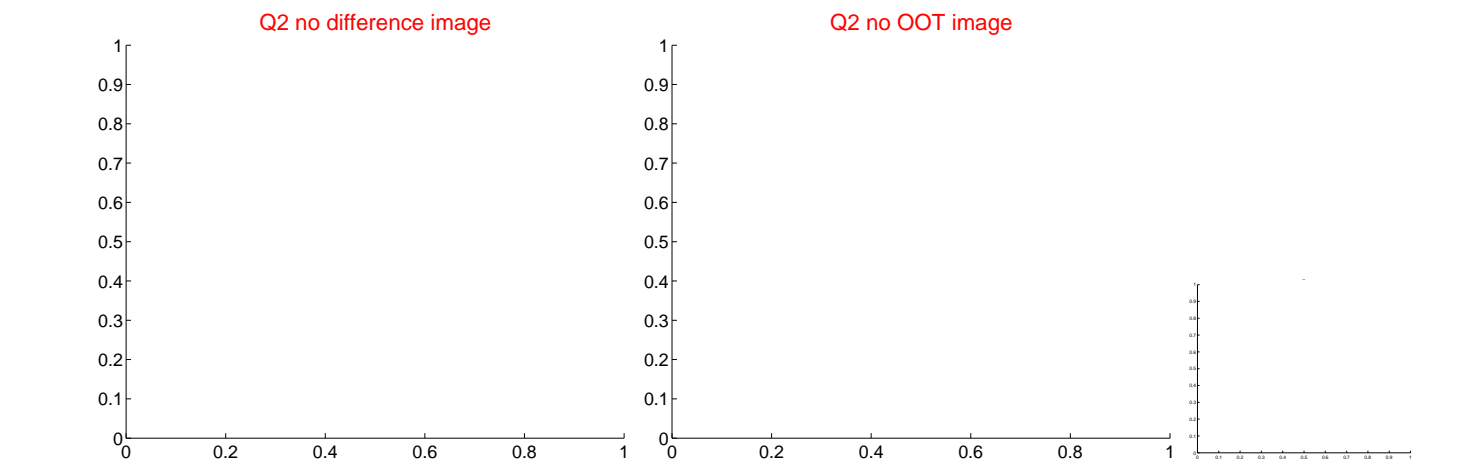
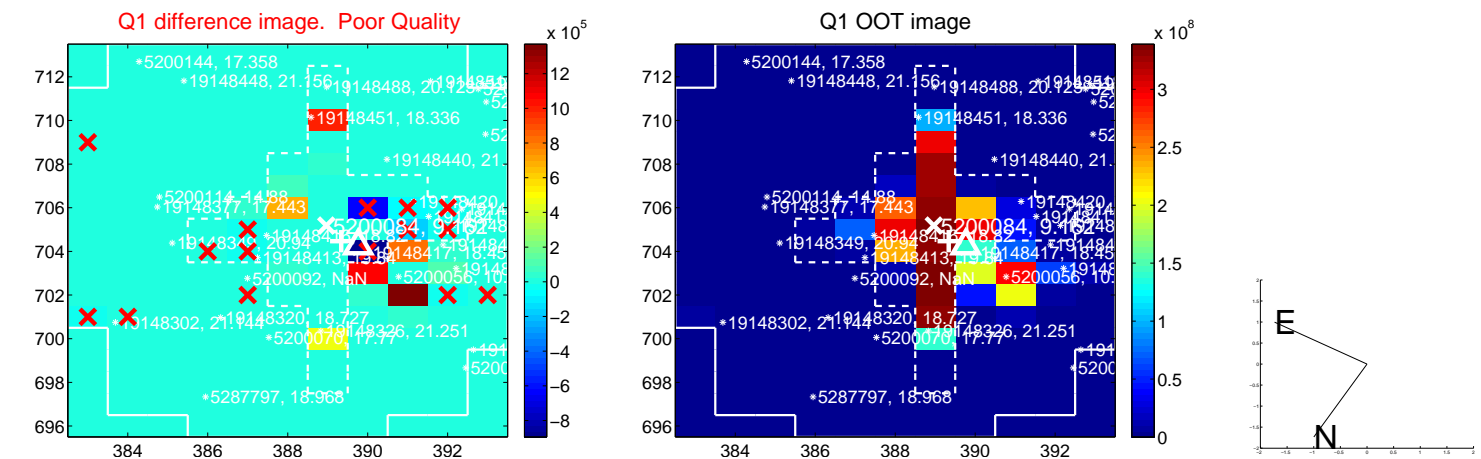
The OOT PRF centroid is offset from the target star catalog position by about 3.23 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.347 ± 2.046	1.15	-2.325 ± 1.968	-0.319 ± 0.861
PRF-fit source offset from KIC position	5.009 ± 1.699	2.95	-4.767 ± 1.878	1.539 ± 0.379
photometric centroid source offset	3.35 ± 5.27	0.63	2.96 ± 5.63	-1.57 ± 3.75

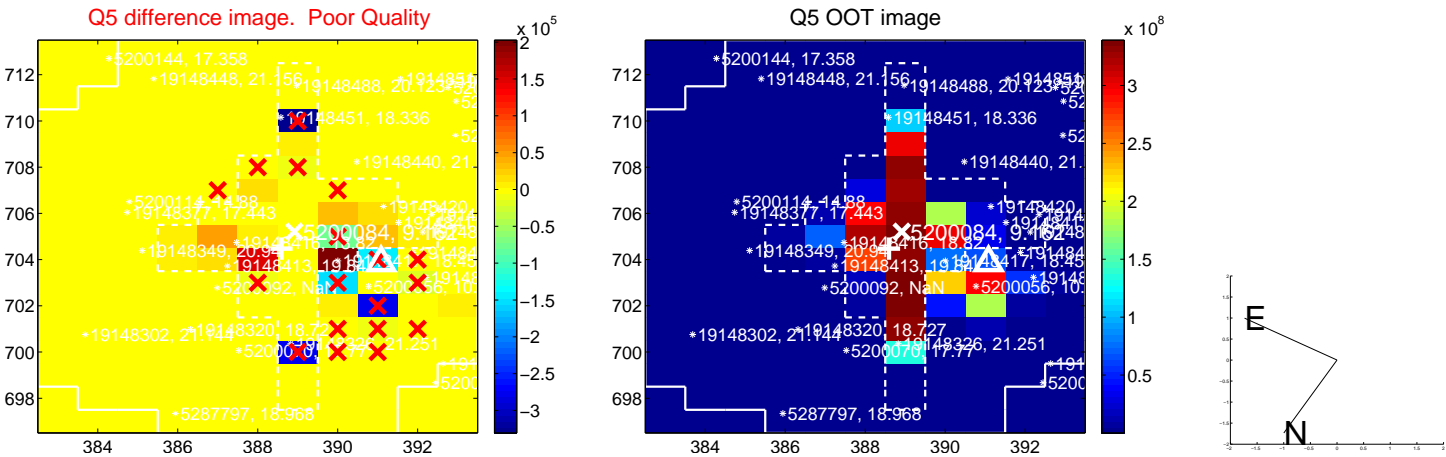


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

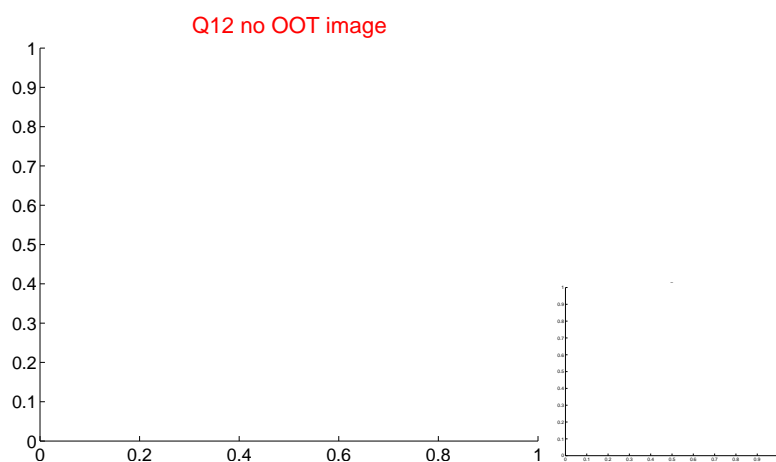
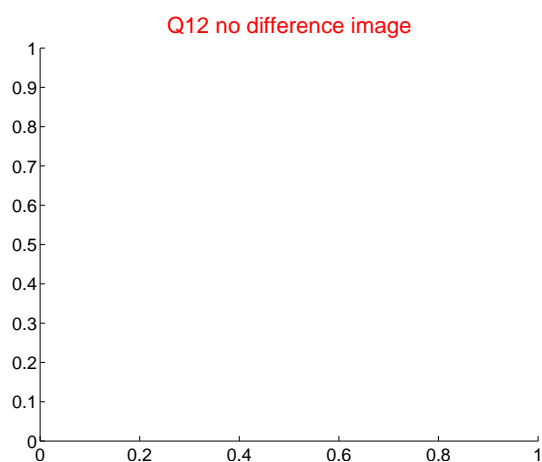
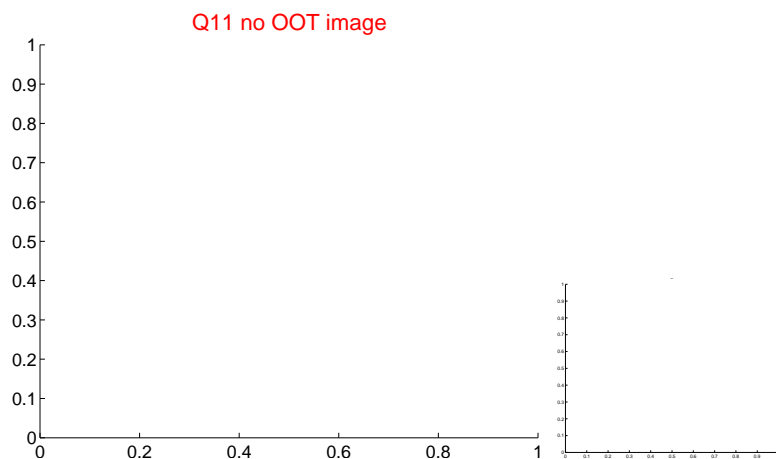
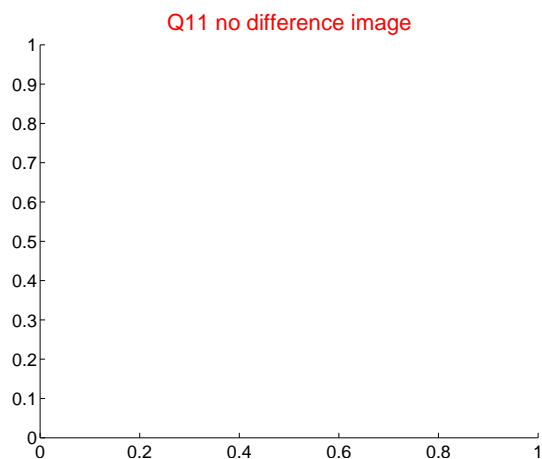
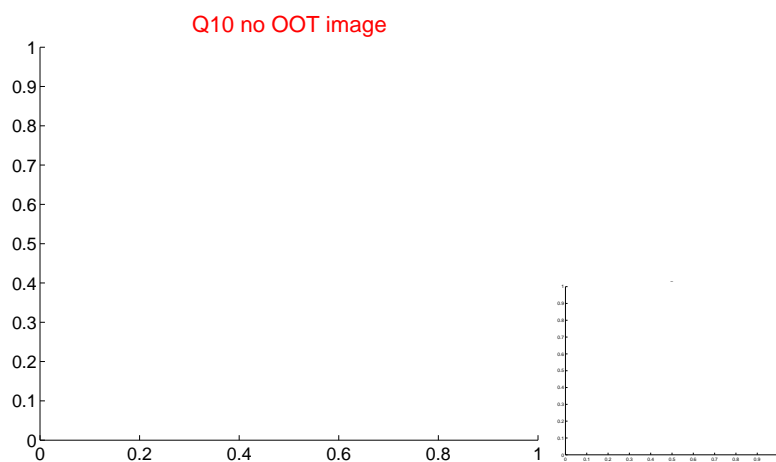
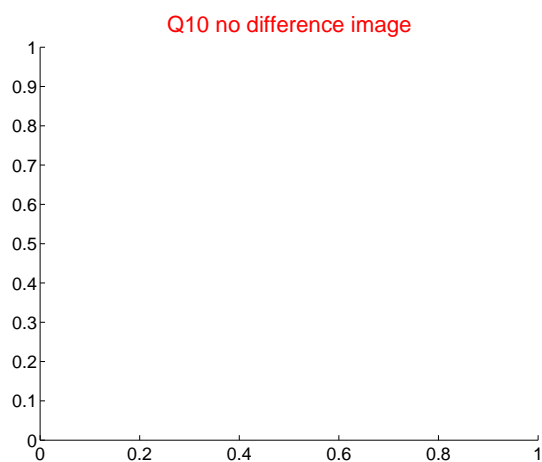
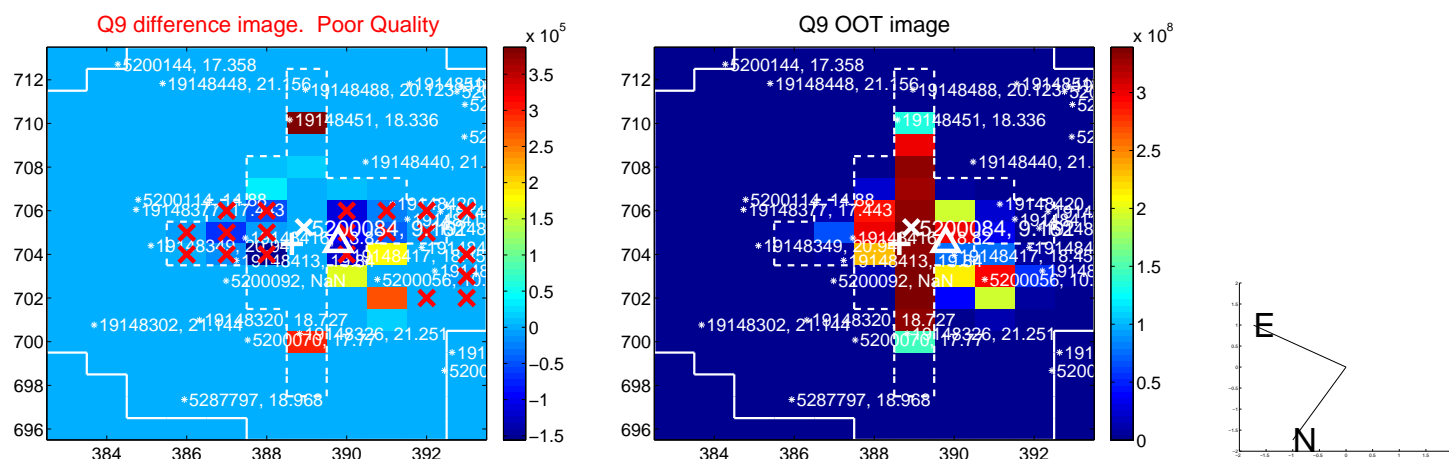
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



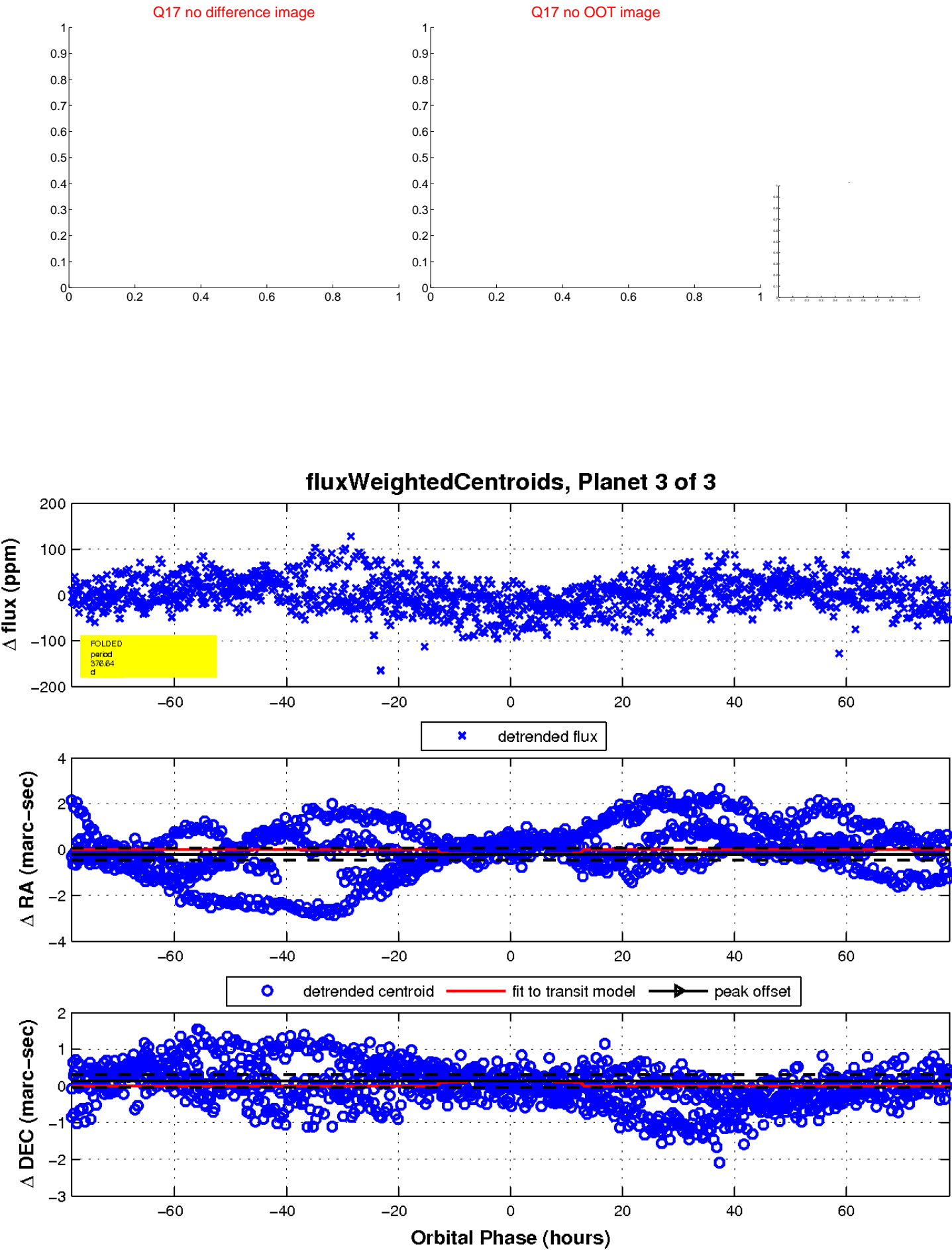
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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