

KIC 006850504

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})
006850504-01	OBS	0070.01	10.854096	138.607854	1035.1	3.894	203.2	193.8	0.93	5465	3.25	81.01
006850504-02	OBS	0070.02	3.696119	134.501692	377.5	2.584	108.2	114.3	0.93	5465	2.12	340.69
006850504-03	OBS	0070.03	77.611562	164.727293	834.7	7.431	75.4	79.5	0.93	5465	2.89	5.88
006850504-04	OBS	0070.04	6.098551	135.930129	72.3	2.928	16.5	17.5	0.93	5465	0.94	174.74
006850504-05	OBS	0070.05	19.577473	135.212513	93.1	3.491	12.2	13.5	0.93	5465	1.05	36.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006850504-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-03	OBS	PC	0.56	0	0	0	0	NO_COMMENT
006850504-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-05	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

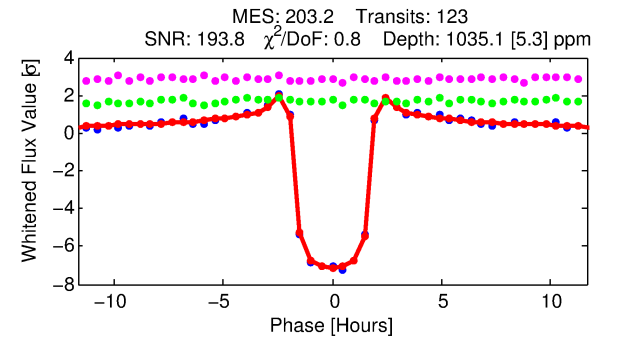
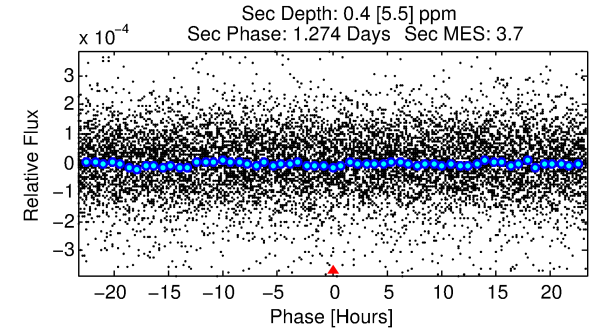
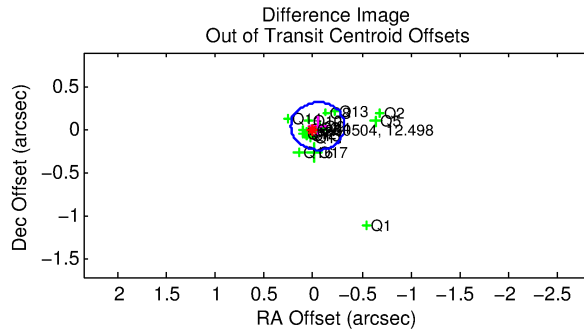
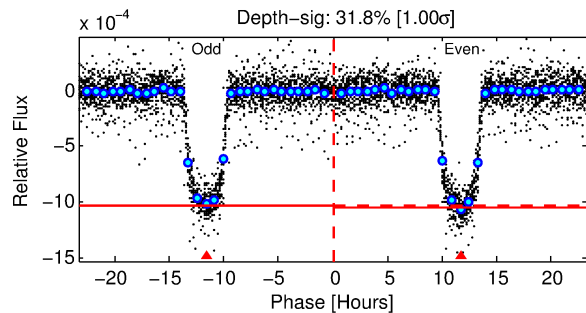
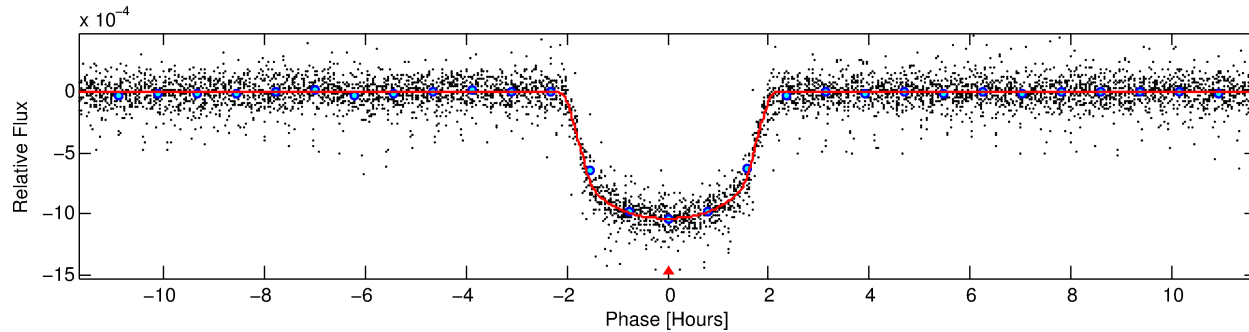
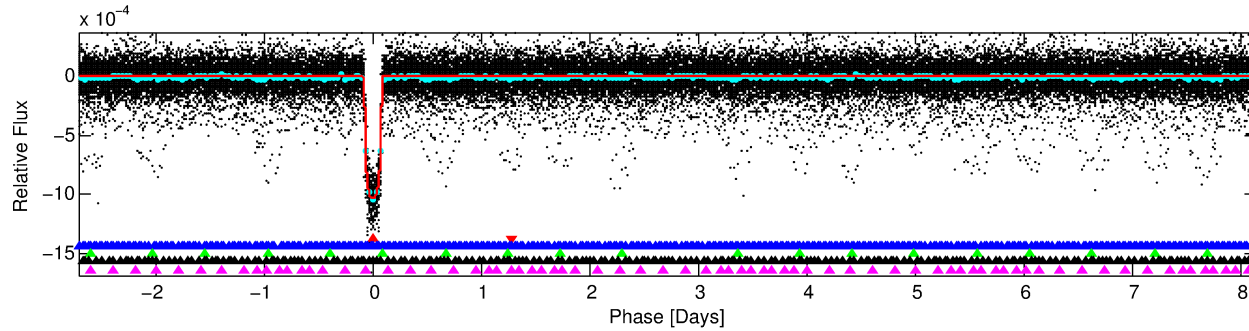
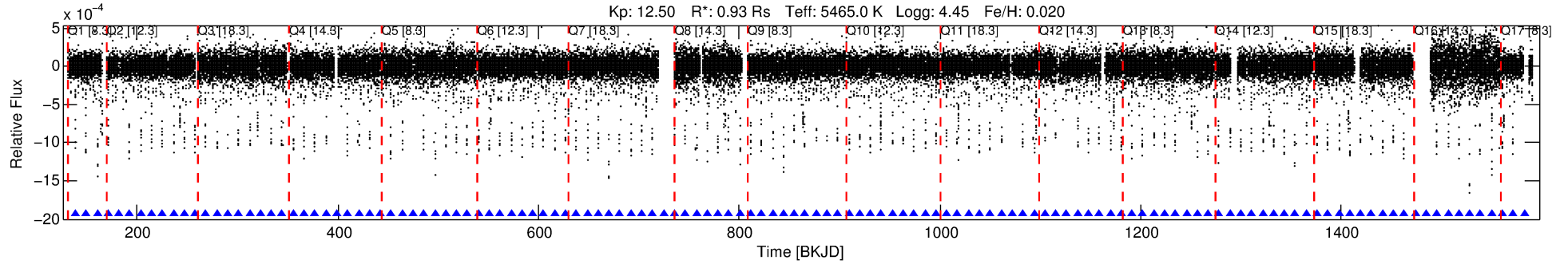
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006850504-01

No Significant Match Found

DV One-Page Summary

KIC: 6850504 Candidate: 1 of 5 Period: 10.854 d
KOI: K00070.01 Name: Kepler-20c Corr: 0.985



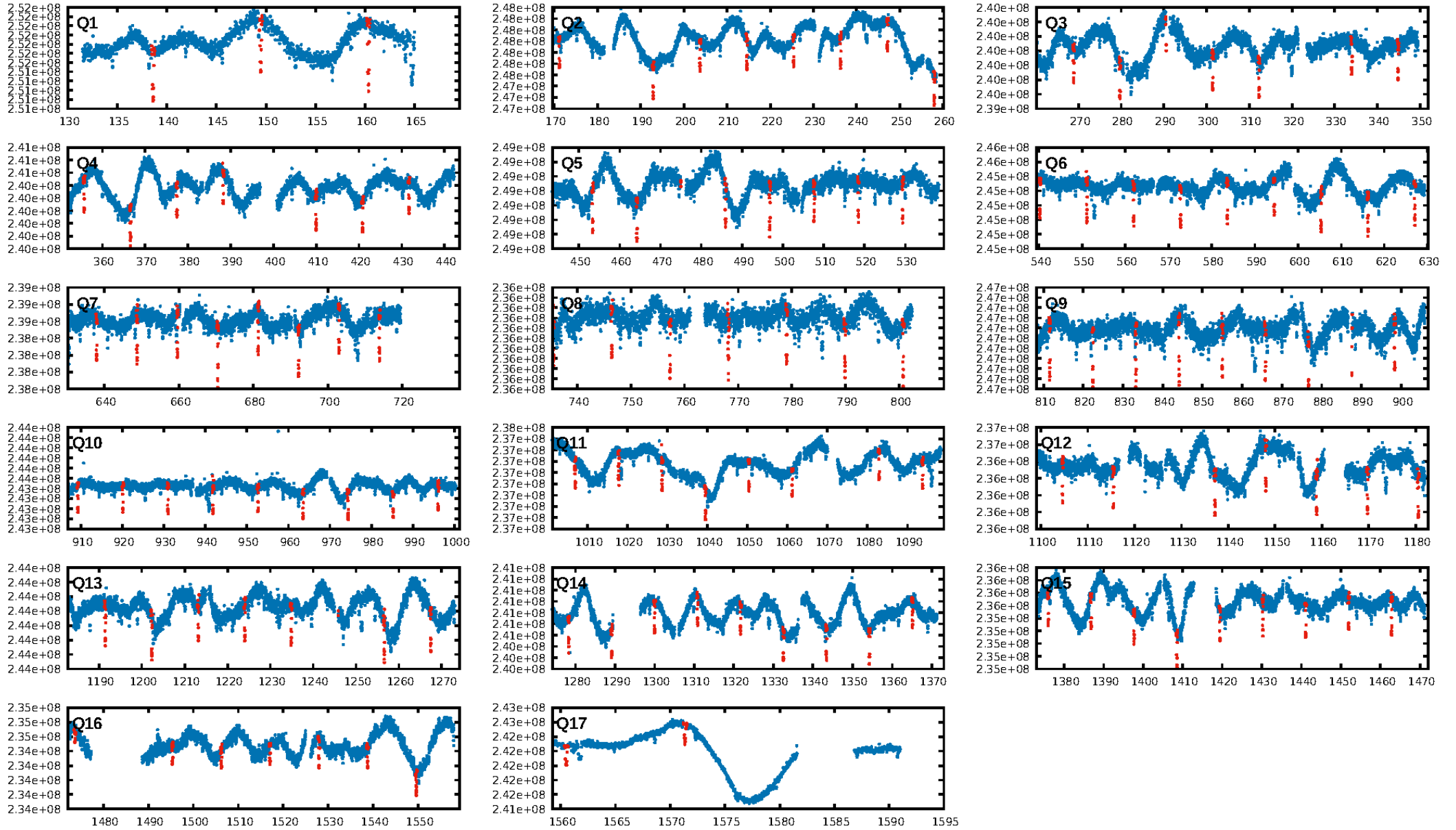
DV Fit Results:

Period = 10.85410 [0.00000] d
Epoch = 138.6079 [0.0003] BKJD
Rp/R* = 0.0322 [0.0008]
a/R* = 14.86 [1.54]
b = 0.76 [0.06]
Seff = 81.01 [13.72]
Teq = 765 [32] K
Rp = 3.25 [0.37] Re
a = 0.0919 [0.0090] AU
Ag = 0.18 [2.41] [-0.34 σ]
Teffp = 767 [2612] K [0.00 σ]

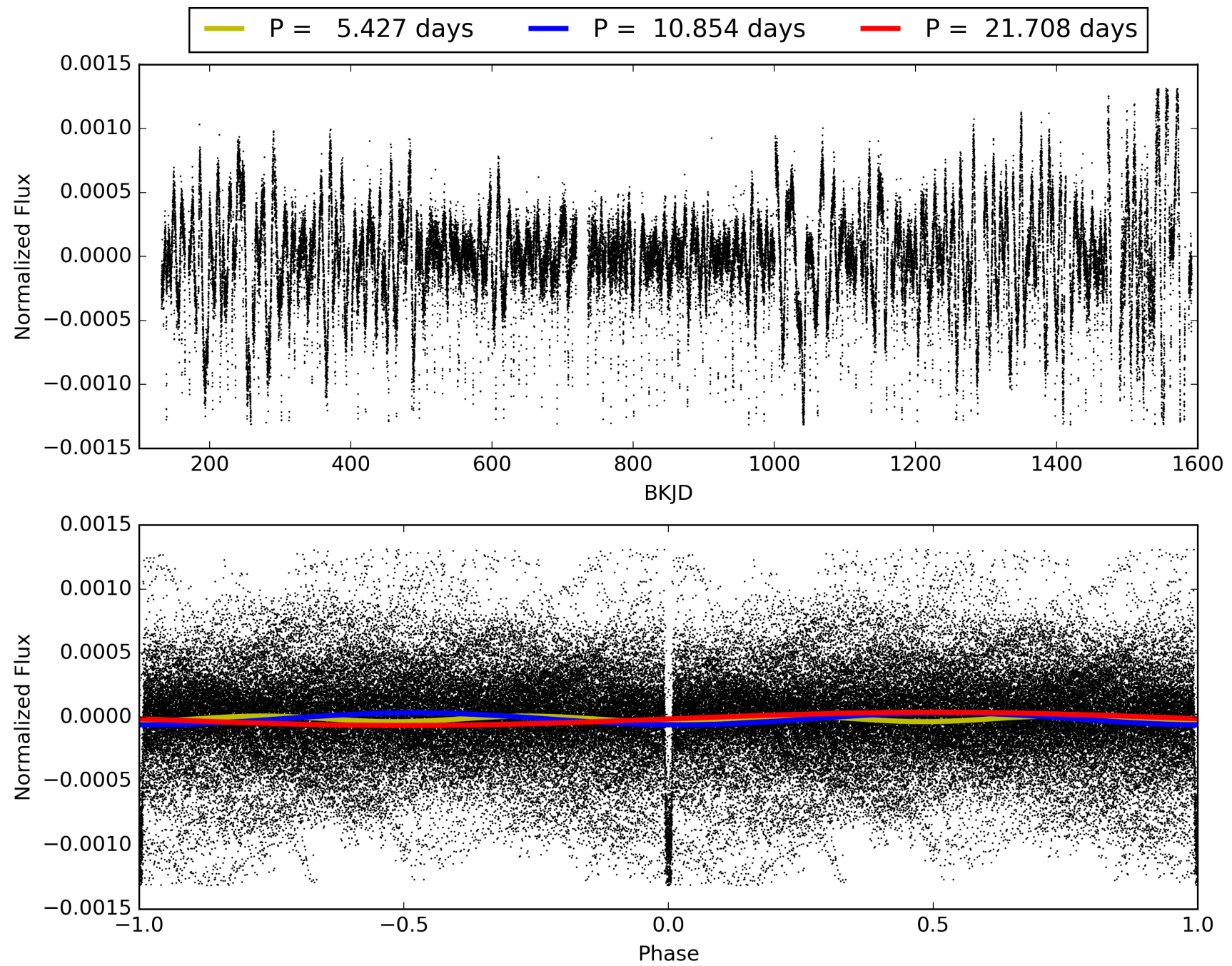
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.42 σ]
LongPeriod-sig: 100.0% [40.03 σ]
ModelChiSquare2-sig: 98.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [118/118]
GhostDiagnostic-chr: 7.678
Centroid-sig: 3.5%
Centroid-so: 0.203 arcsec [5.08 σ]
OotOffset-rm: 0.065 arcsec [0.71 σ]
KicOffset-rm: 0.247 arcsec [2.44 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.94 [16/17]

TCE 006850504-01, PDC Light Curves

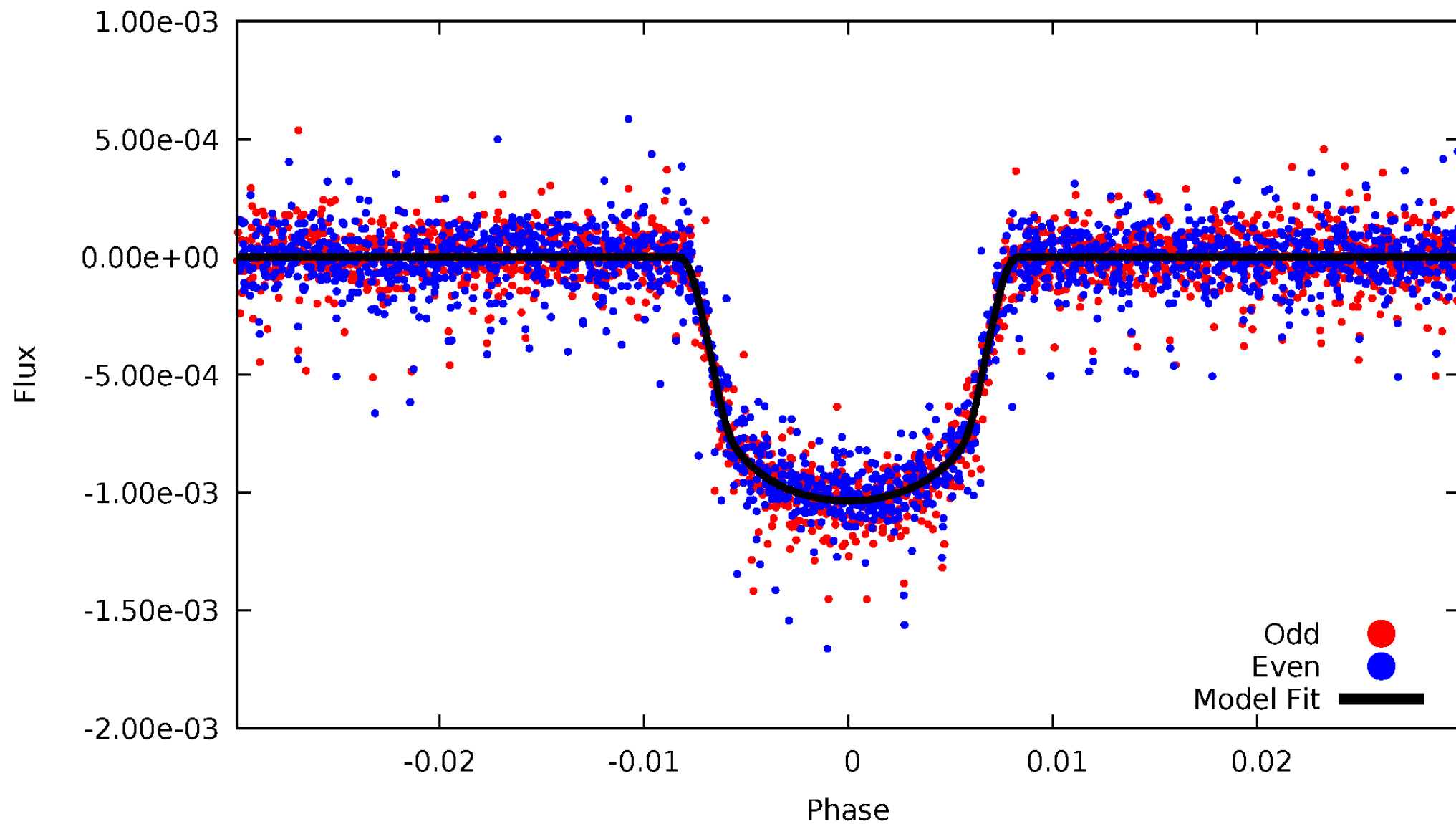


TCE 006850504-01



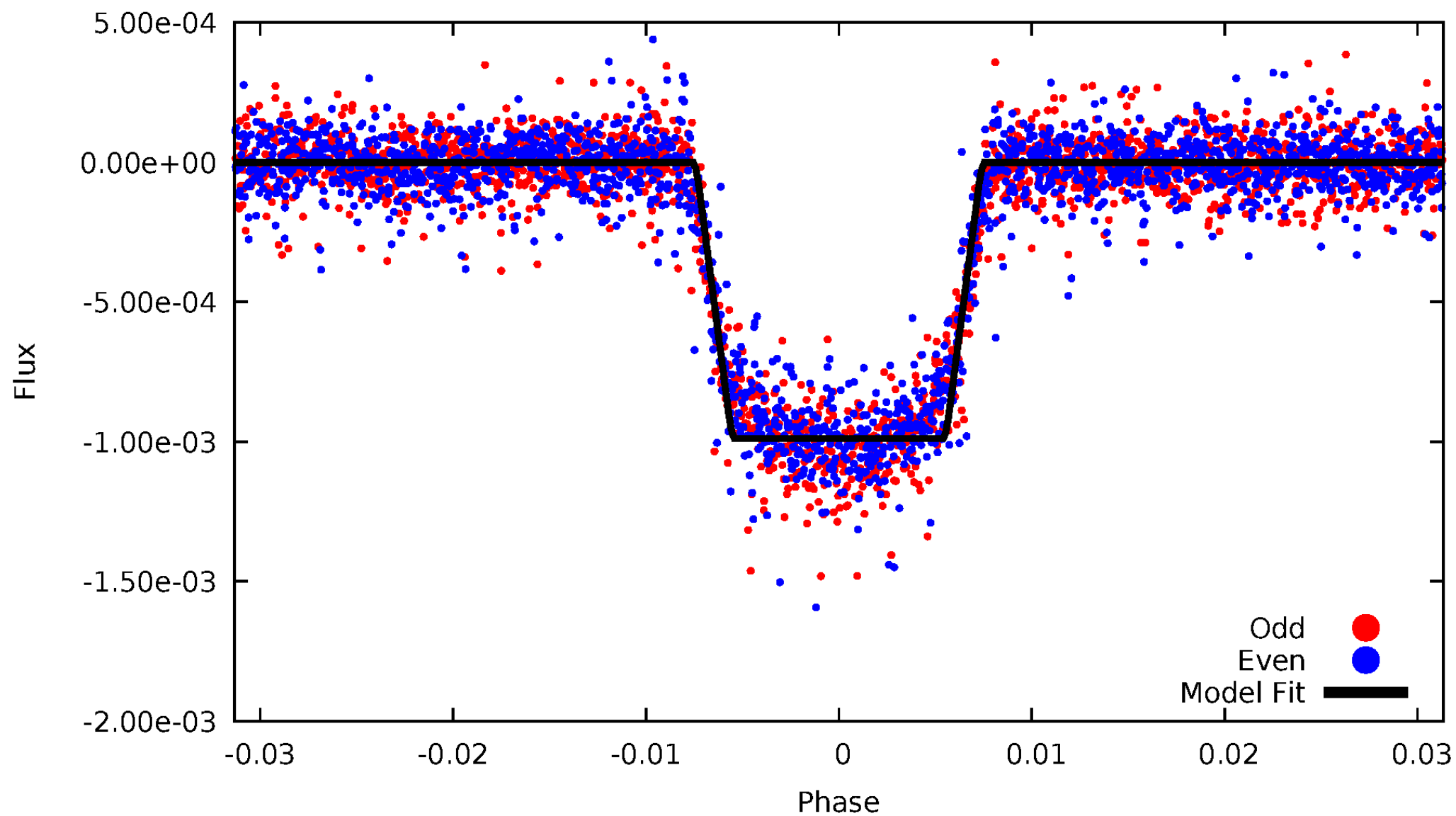
DV Odd/Even

TCE 006850504-01



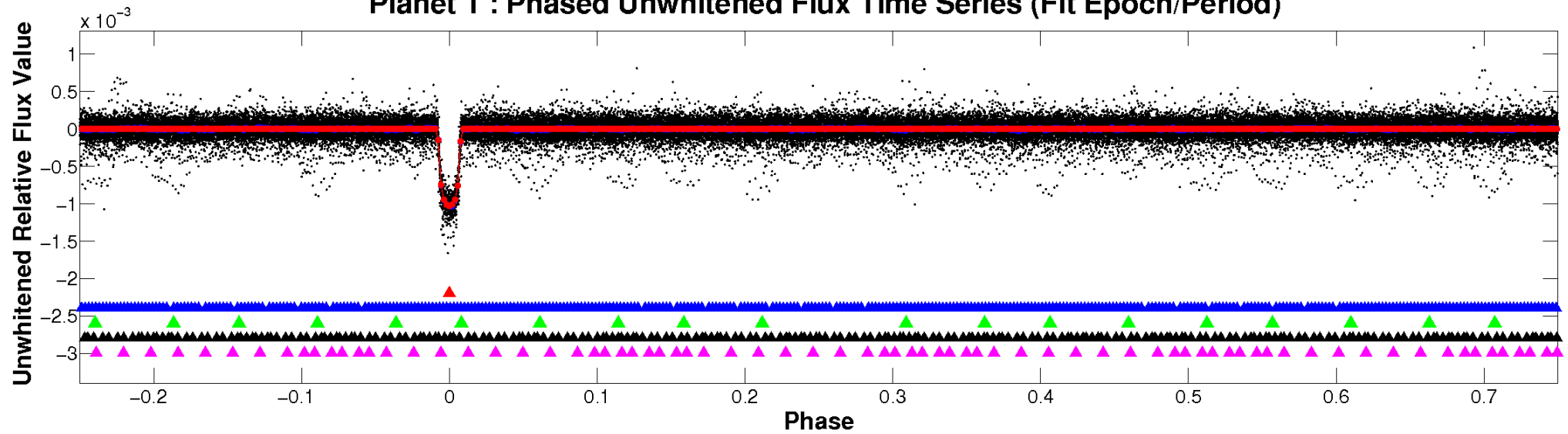
ALT Odd/Even

TCE 006850504-01

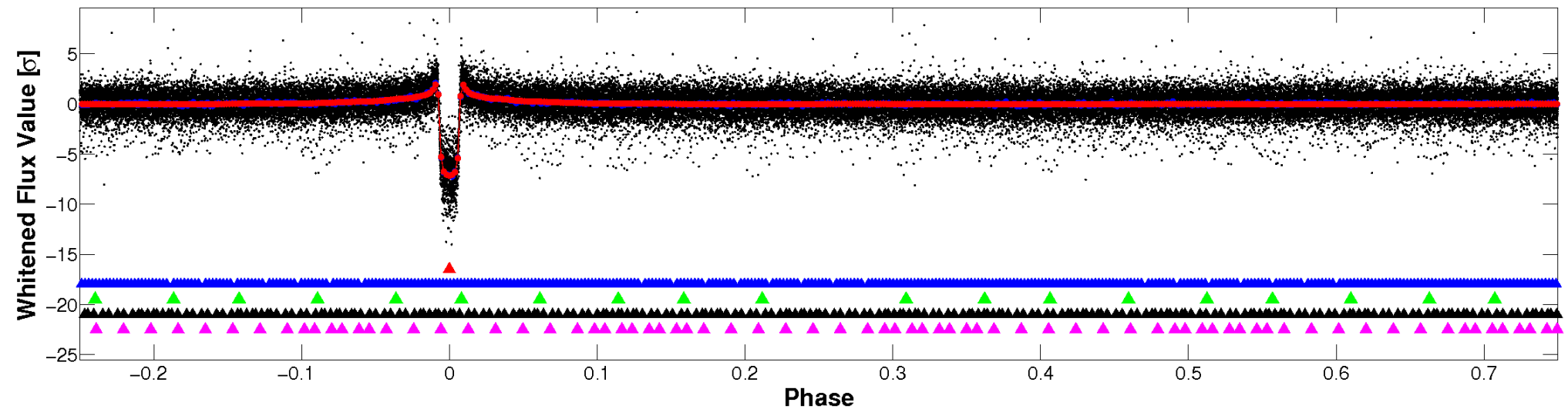


Non-Whitened Vs. Whitened Light Curve

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

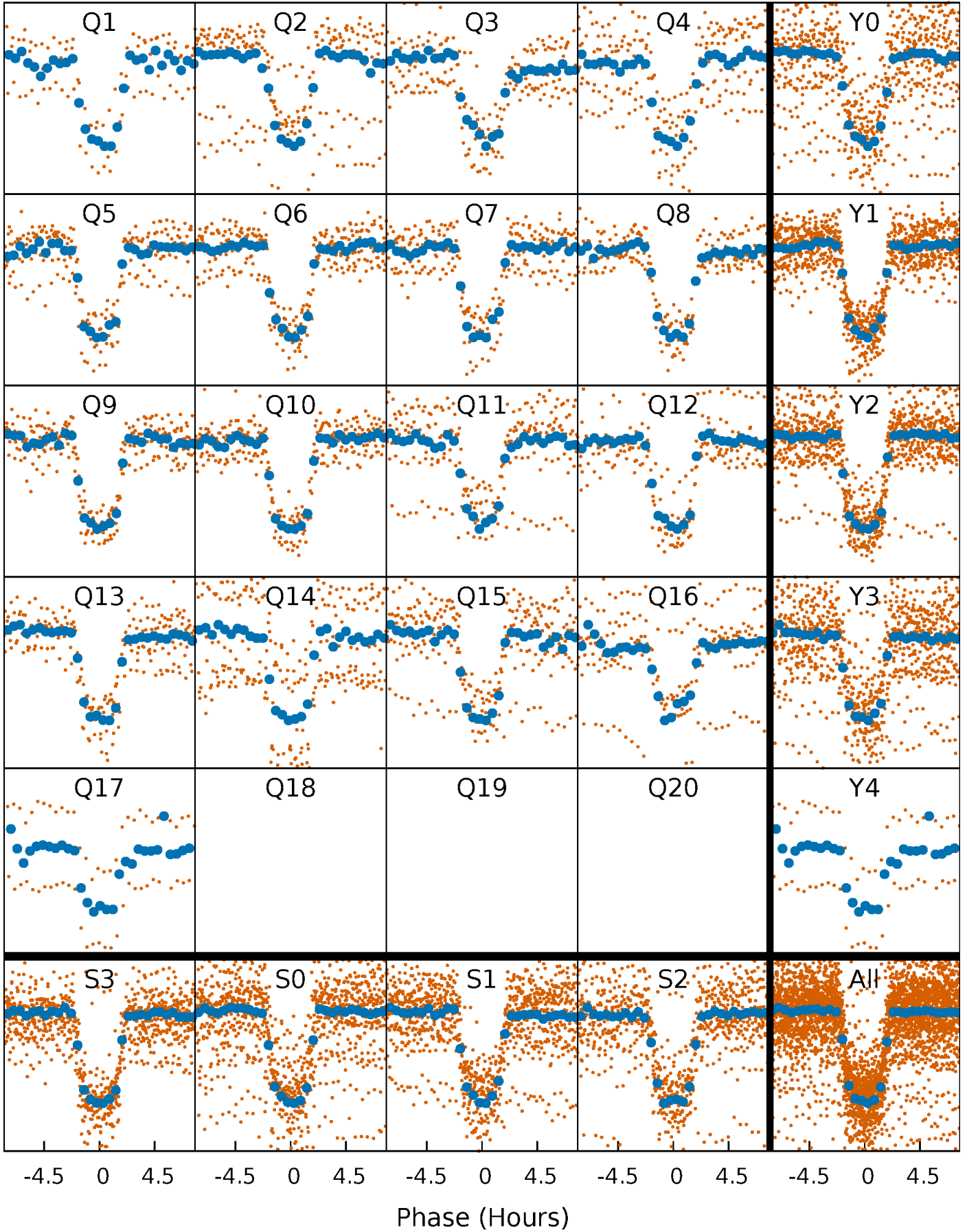


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



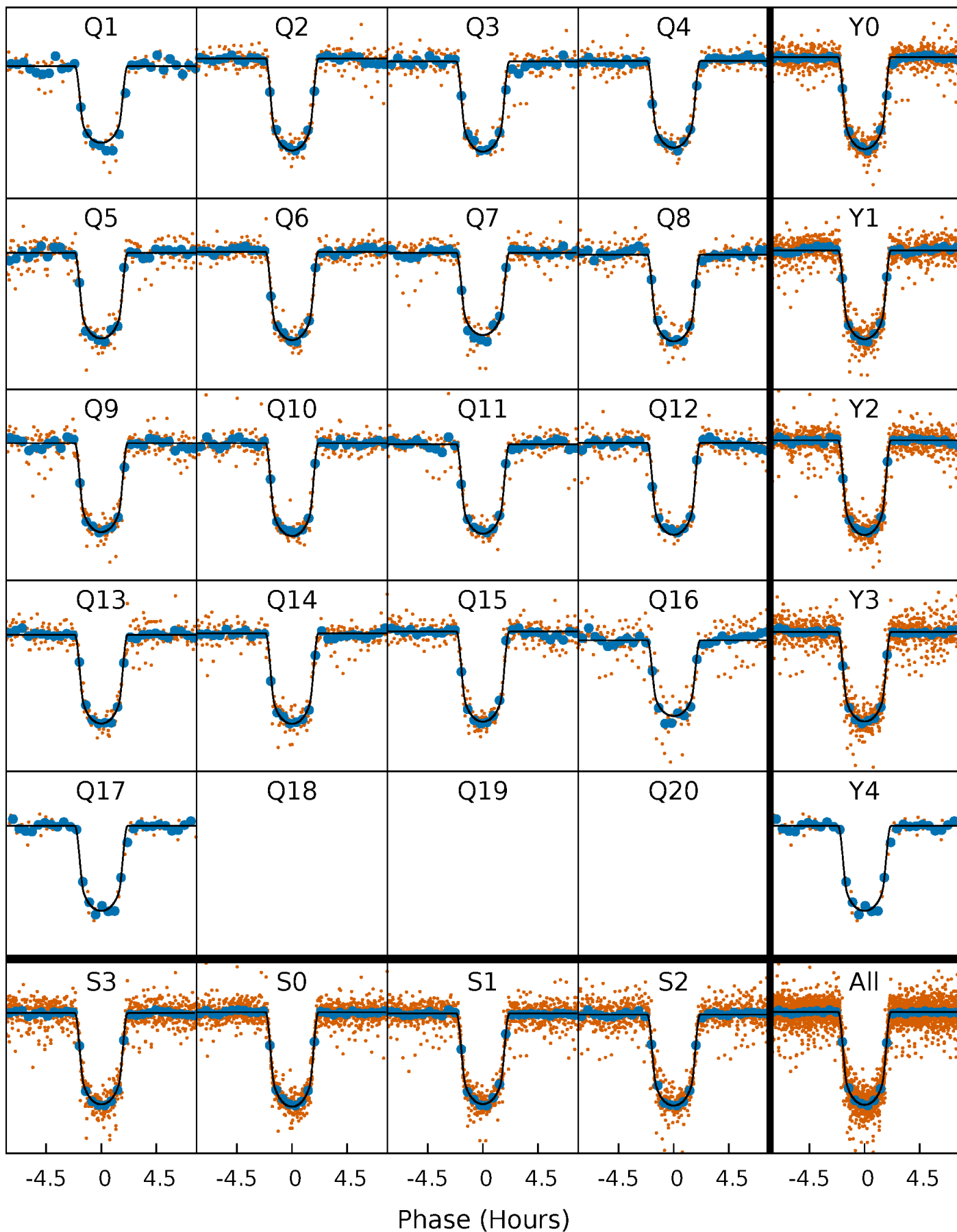
PDC Quarter-Phased Transit Curves

TCE 006850504-01 P= 10.854096 Days $T_0=138.607854$ (BKJD)



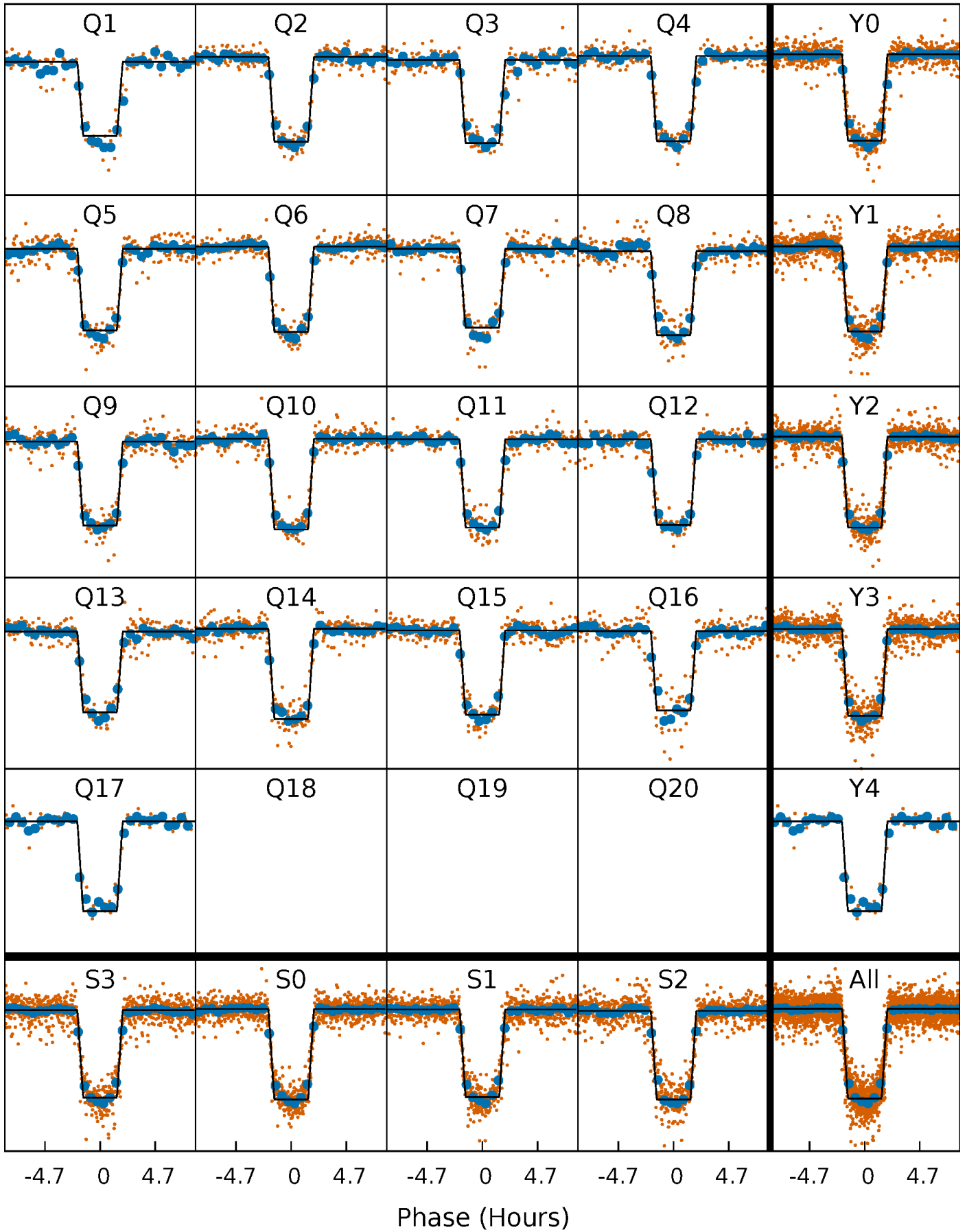
DV Quarter-Phased Transit Curves

TCE 006850504-01 P= 10.854096 Days $T_0=138.607854$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

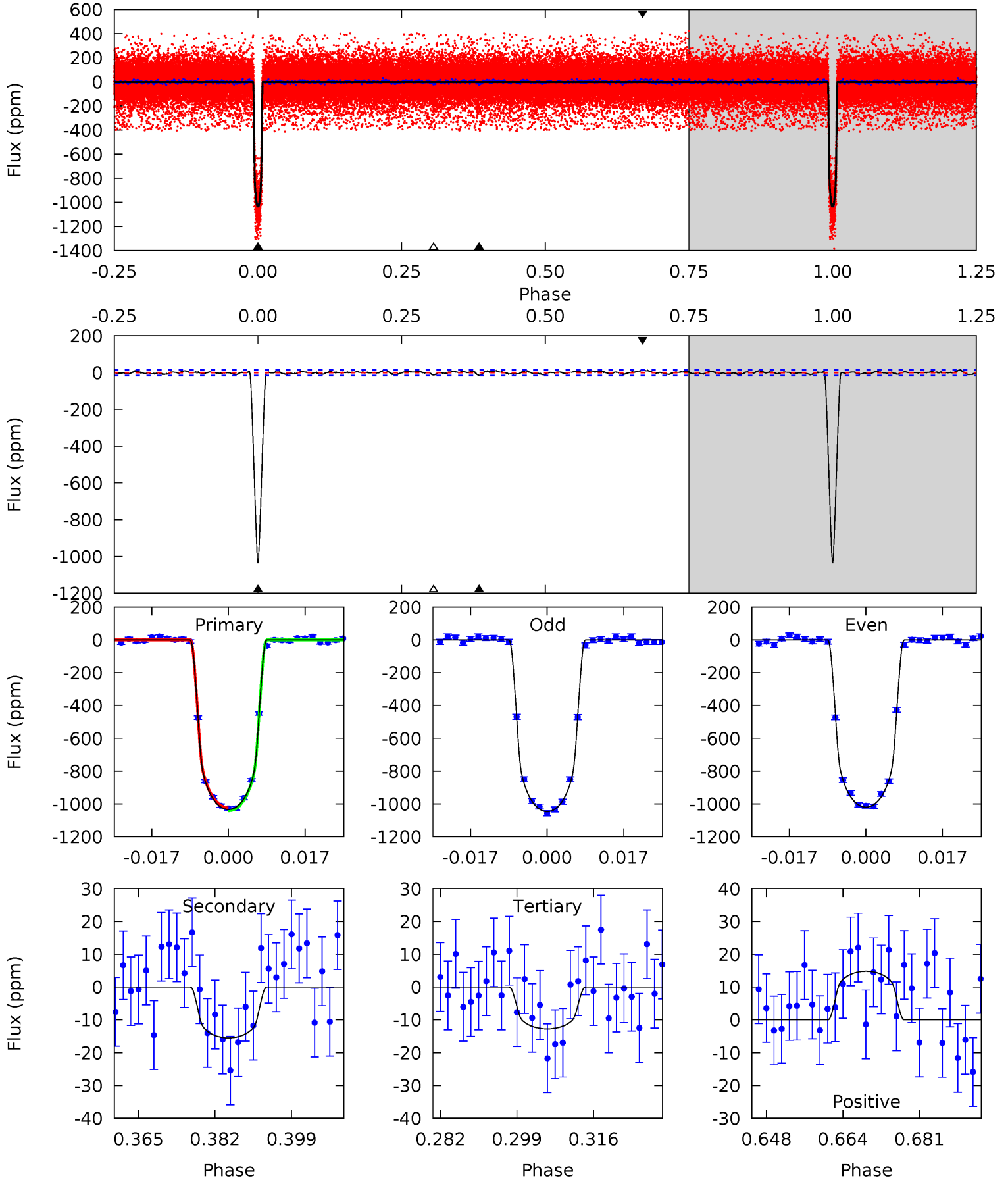
TCE 006850504-01 P= 10.854123 Days $T_0=138.606076$ (BKJD)



DV Model-Shift Uniqueness Test

006850504-01, P = 10.854096 Days, E = 127.753758 Days

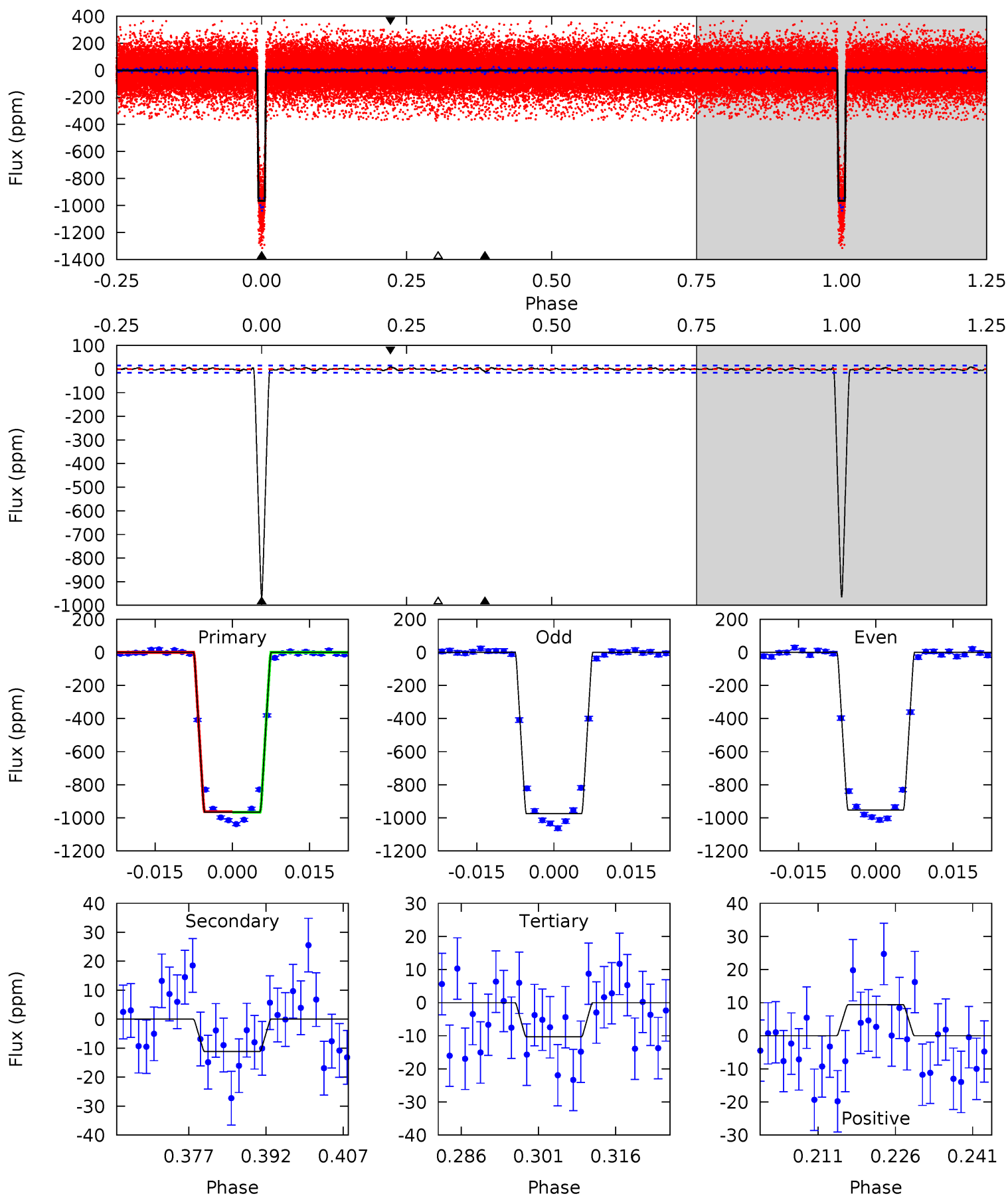
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
317.2	4.75	3.91	4.54	4.93	2.40	1.50	313.3	312.7	0.84	0.21	4.25	1.01	0.01	2.55



Alt Model-Shift Uniqueness Test

006850504-01, P = 10.854123 Days, E = 127.751953 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
316.2	3.66	3.37	3.06	4.95	2.43	0.97	312.8	313.1	0.29	0.60	3.63	1.00	0.01	0.48



Stellar Parameters For KIC 006850504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+109}_{-109}	$4.449^{+0.085}_{-0.085}$	$0.020^{+0.150}_{-0.150}$	$0.925^{+0.101}_{-0.083}$	$0.876^{+0.060}_{-0.044}$	$1.561^{+0.467}_{-0.428}$
	+2%/-2%	+2%/-2%	+750%/-750%	+11%/-9%	+7%/-5%	+30%/-27%
Source	SPE32	SPE32	SPE32	DSEP		

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

Secondary Eclipse Parameters for KIC 006850504-01 / KOI 0070.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 3	$3.25^{+0.21}_{-0.20}$	1068^{+34}_{-34}	2672^{+84}_{-91}	$6.787^{+1.831}_{-1.543}$
Alt.	-11 ± 3	$3.19^{+0.24}_{-0.21}$	1069^{+42}_{-38}	2567^{+96}_{-109}	$4.990^{+1.650}_{-1.482}$

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

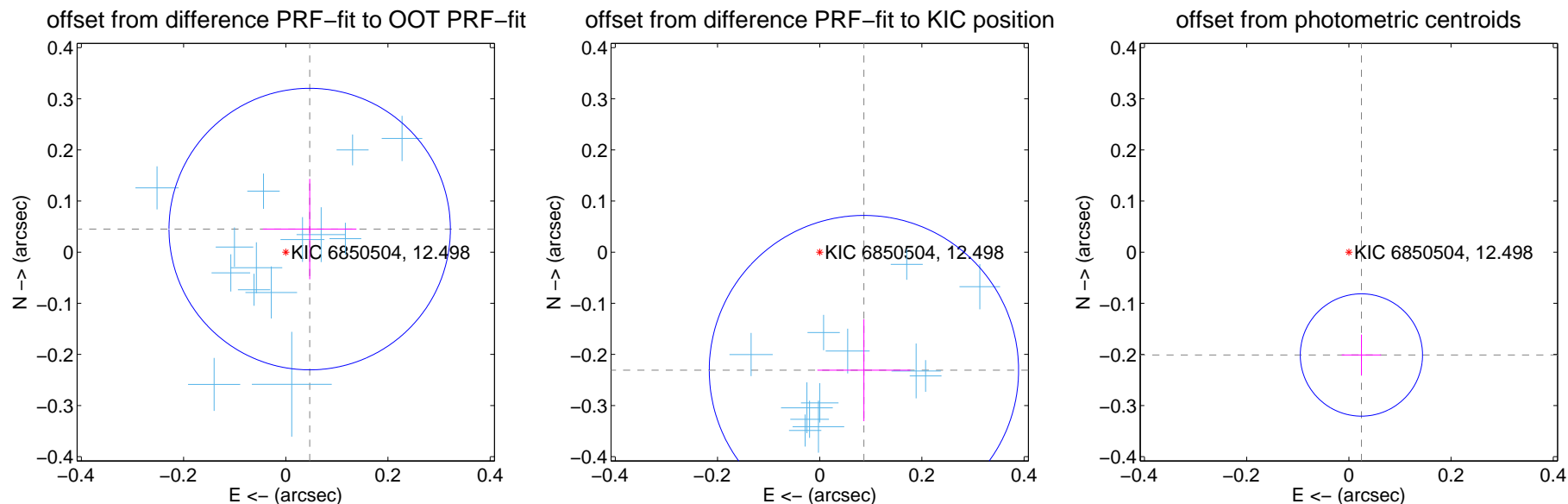
DV Centroid Data

Supplemental centroid analysis for 006850504-01. Kepler magnitude: 12.50. Transit SNR 193.76

There are 17 quarters with good PRF difference image offsets

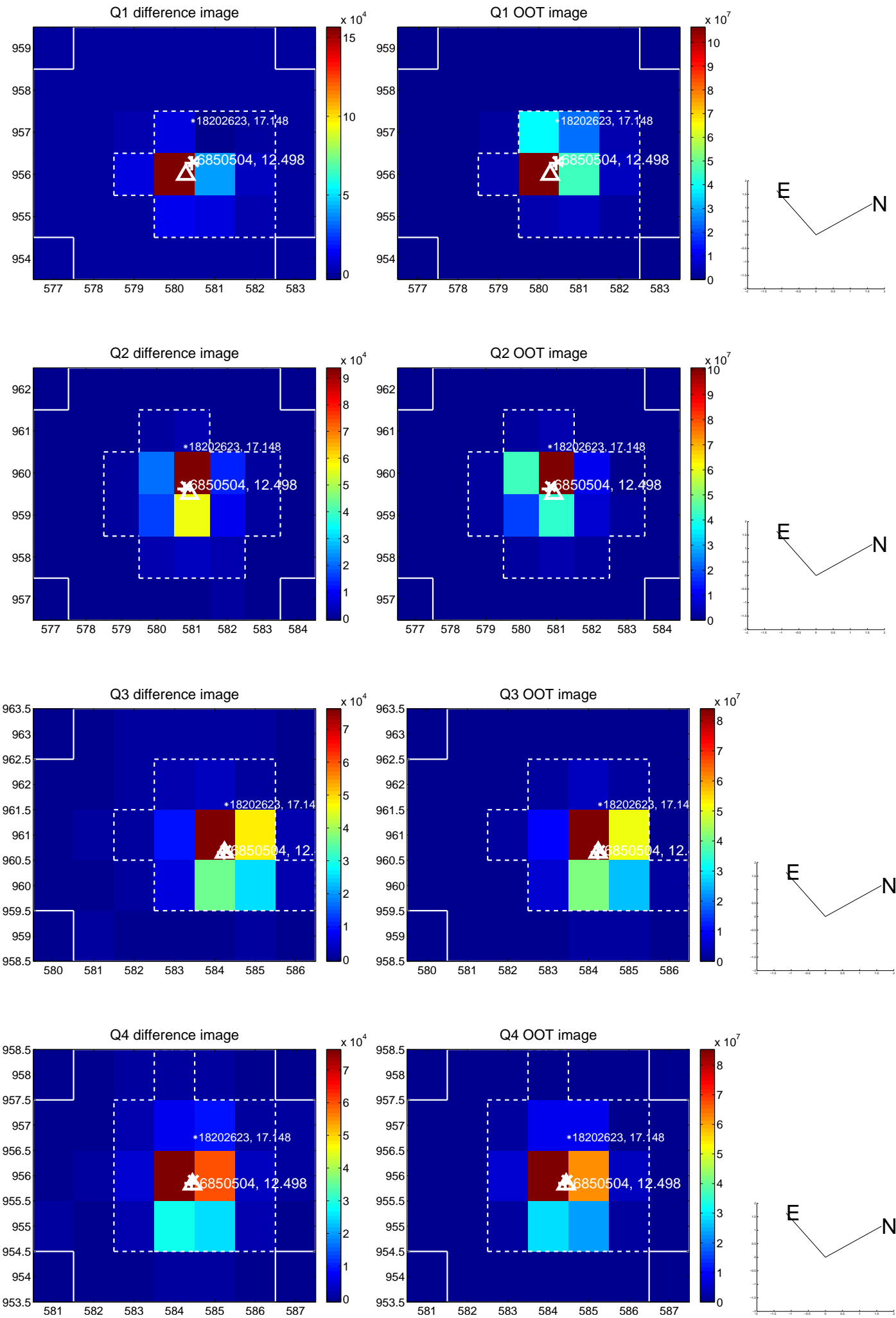
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.092	0.71	-0.047 ± 0.092	0.045 ± 0.098
PRF-fit source offset from KIC position	0.247 ± 0.101	2.44	-0.087 ± 0.091	-0.231 ± 0.100
photometric centroid source offset	0.20 ± 0.04	5.08	-0.02 ± 0.04	-0.20 ± 0.04

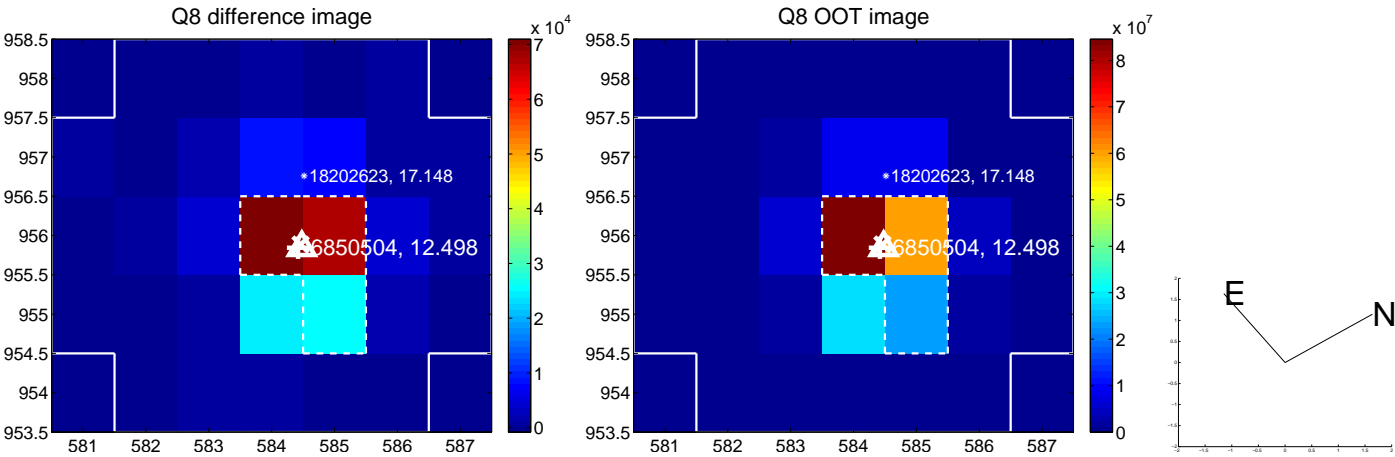
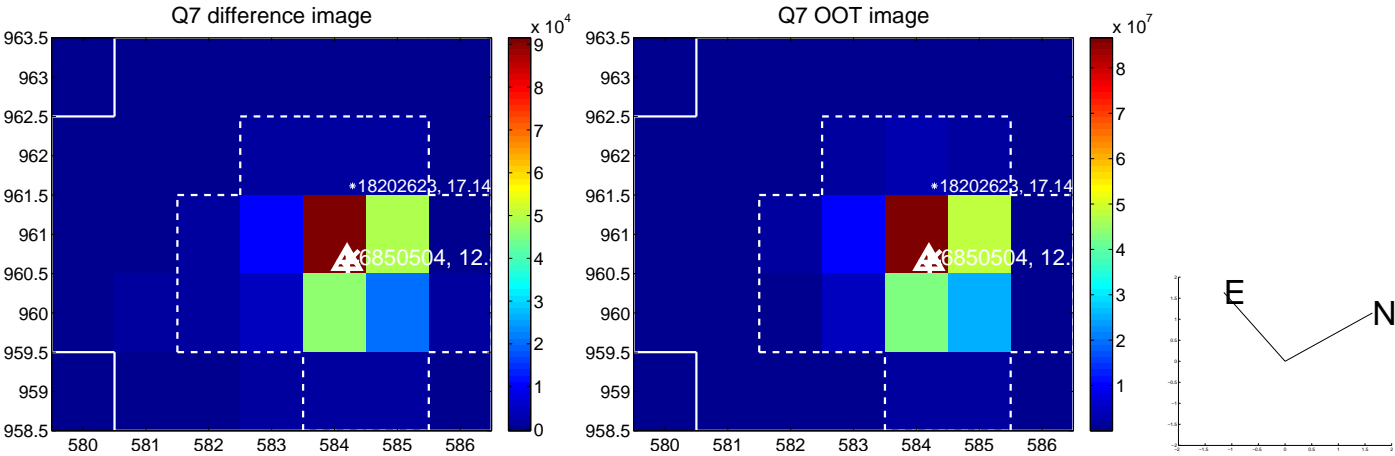
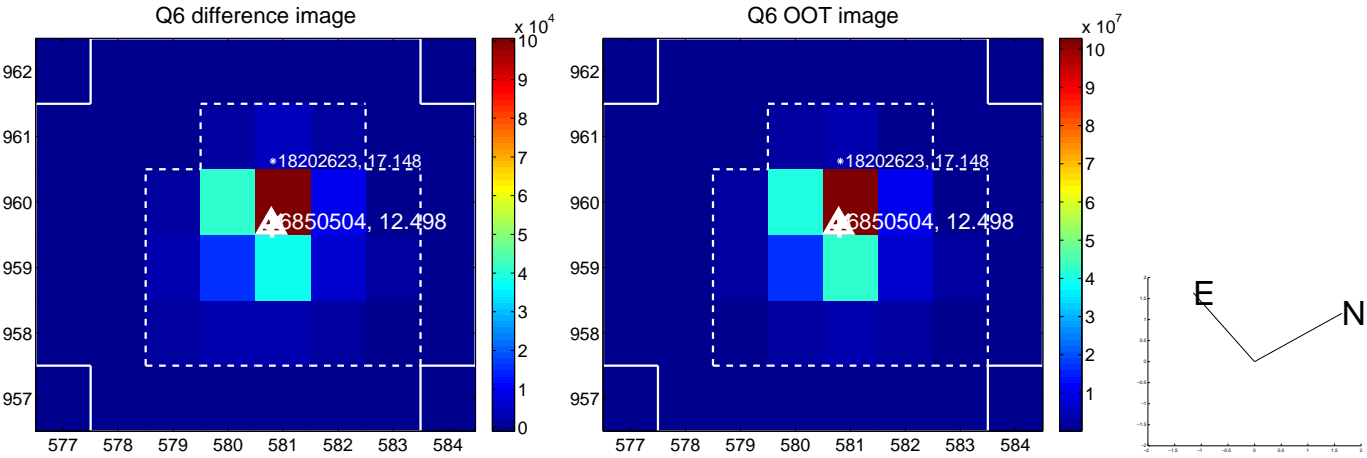
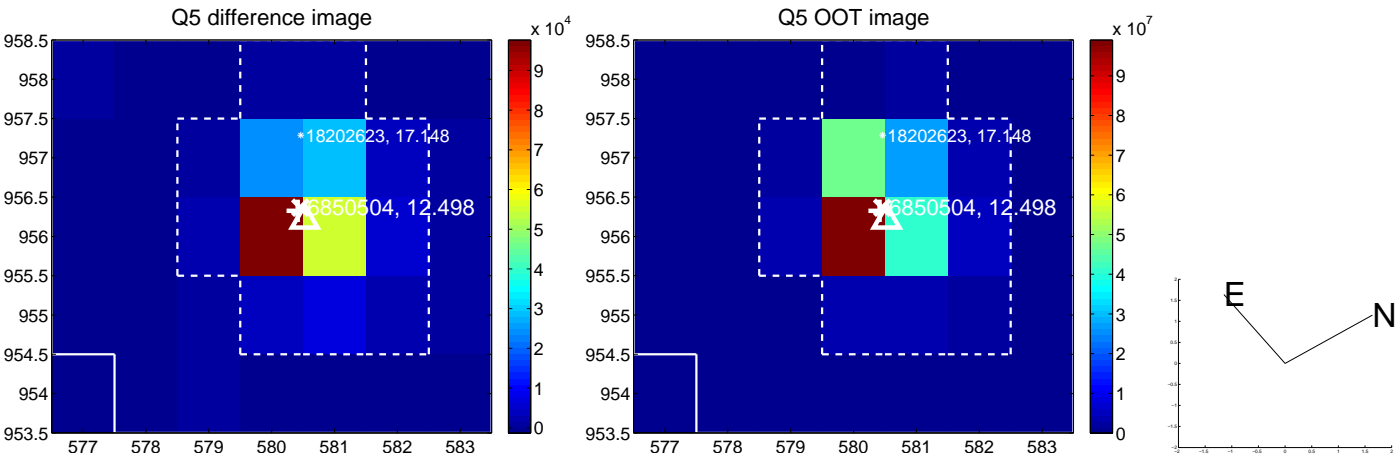


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

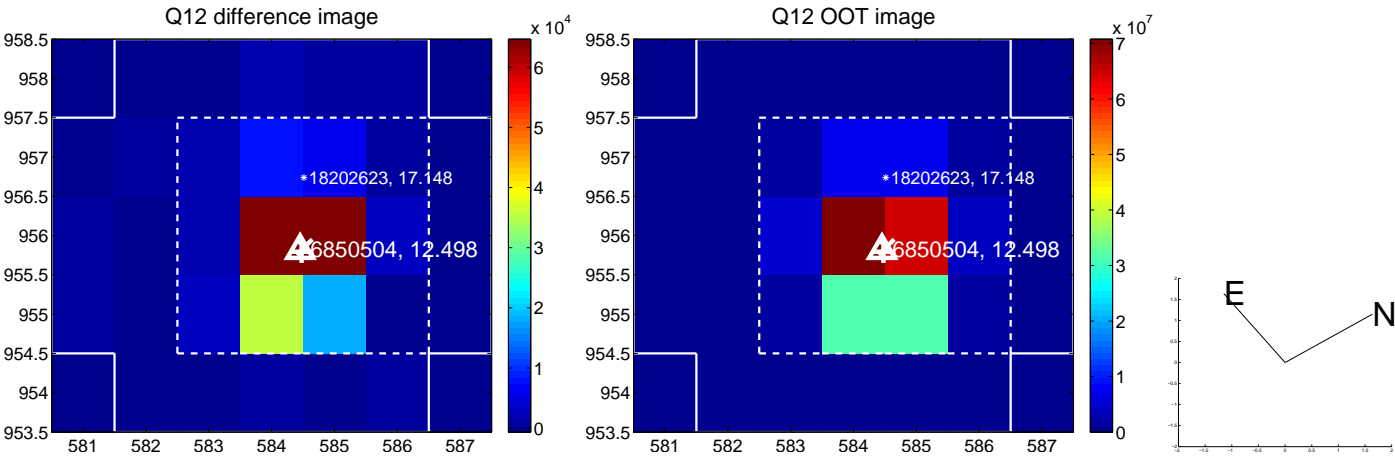
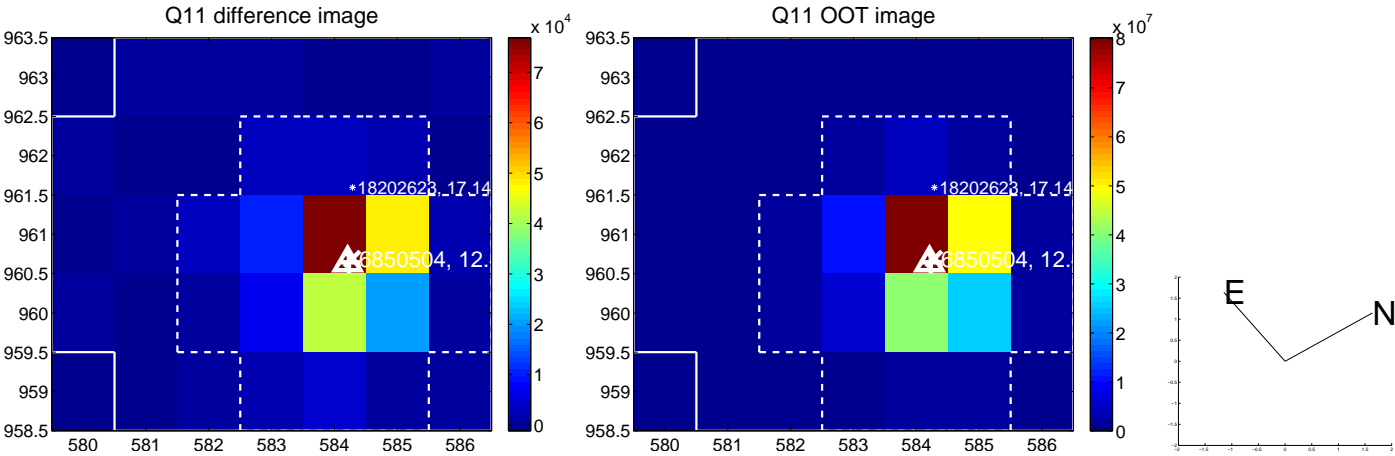
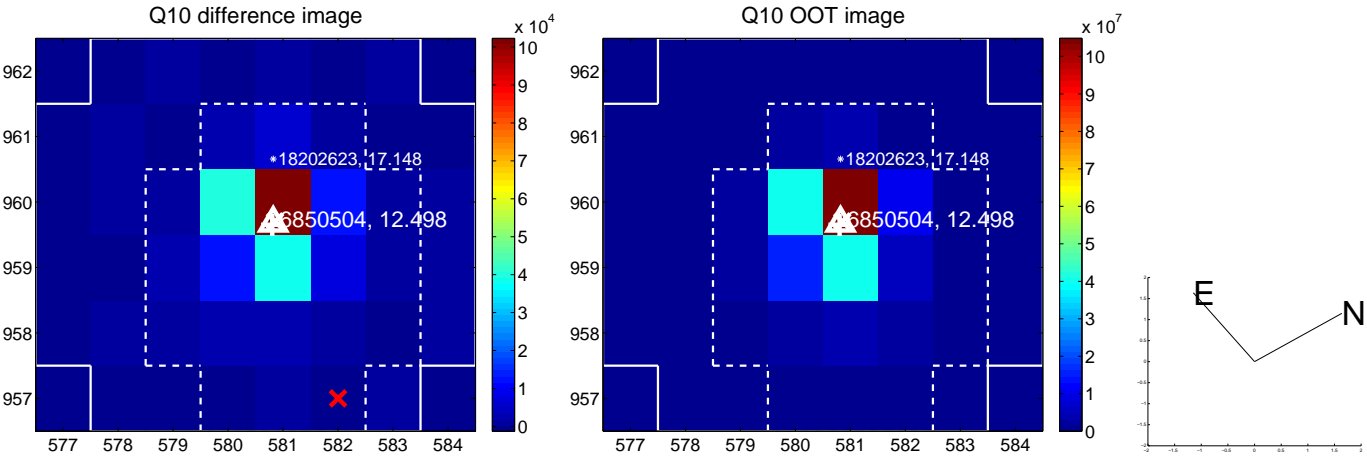
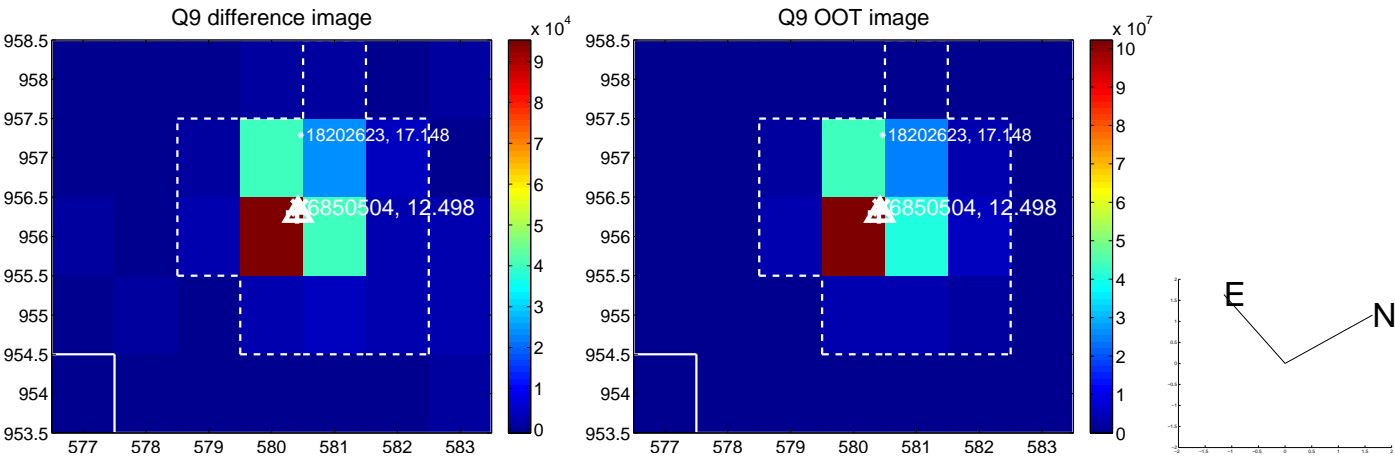
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



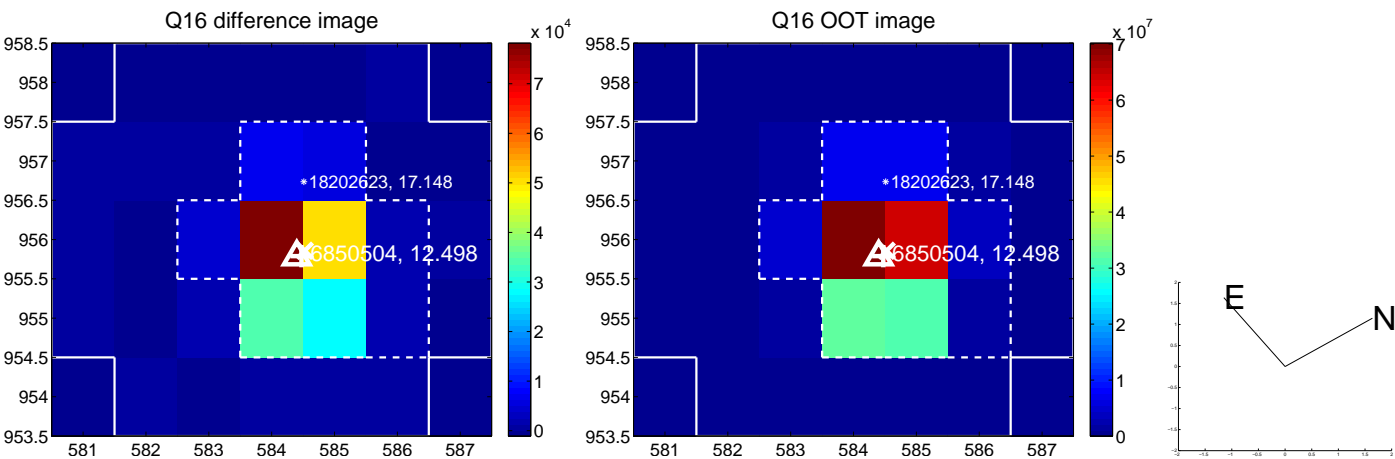
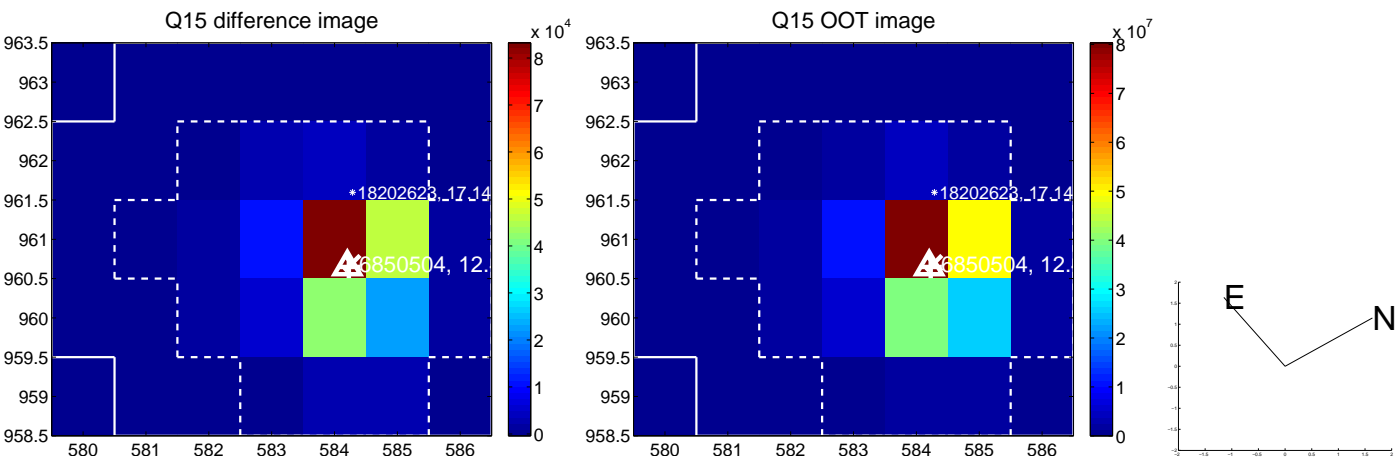
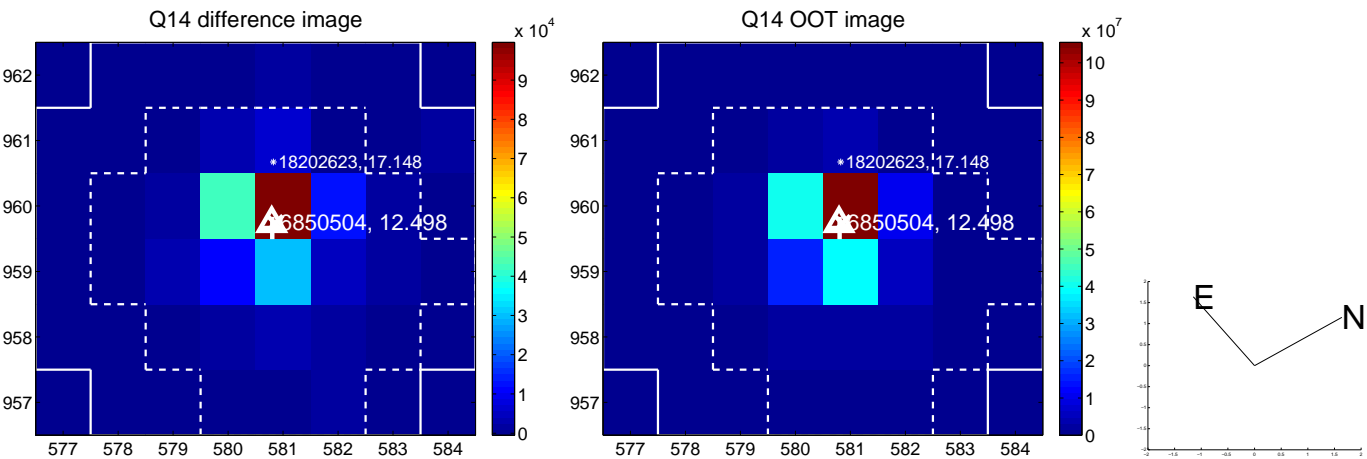
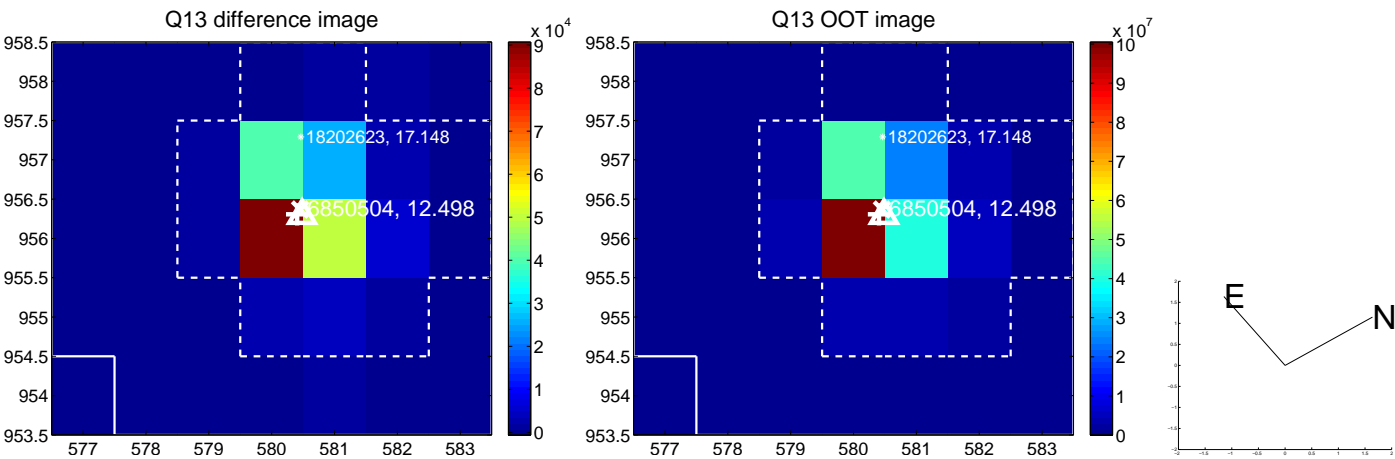
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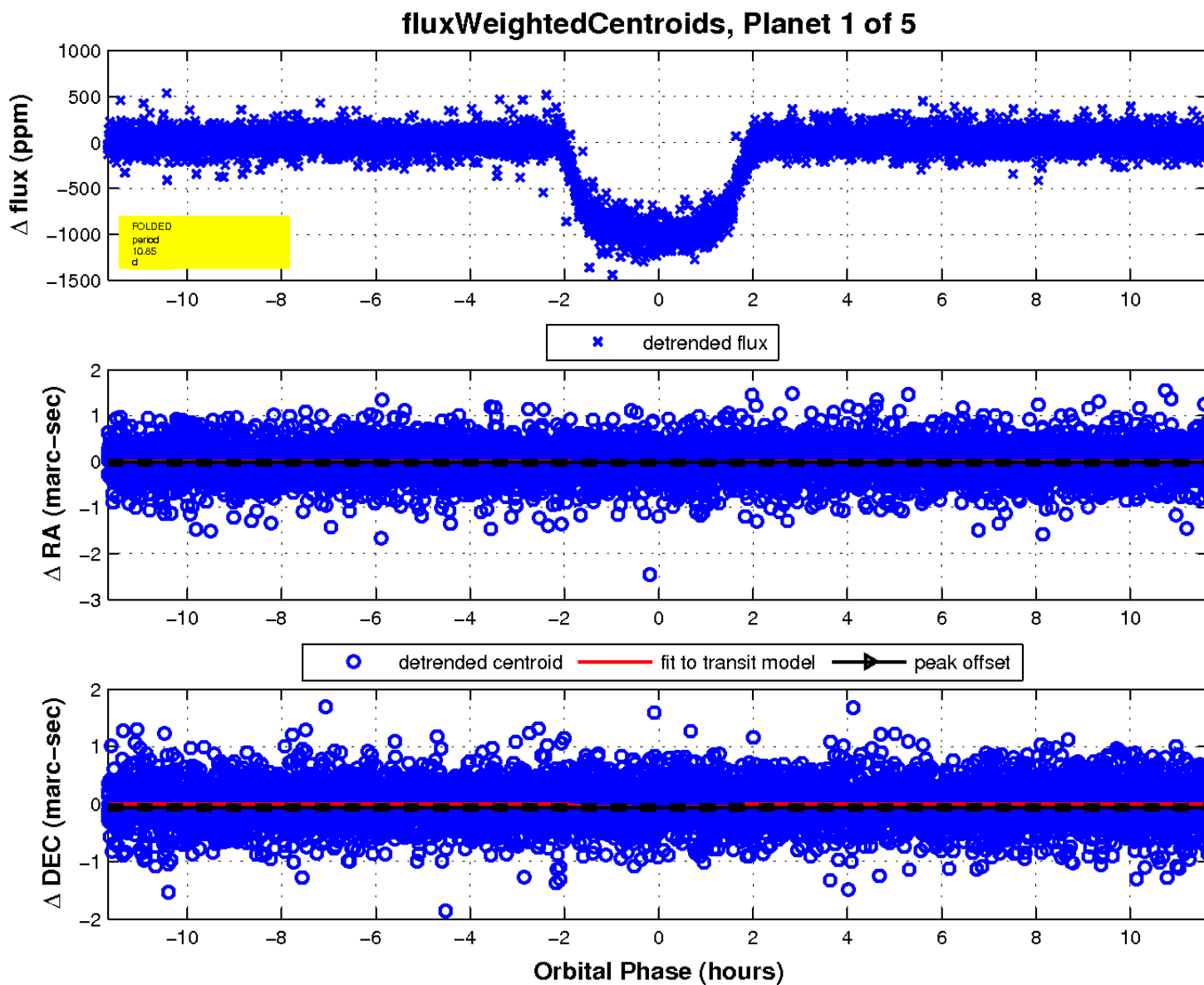
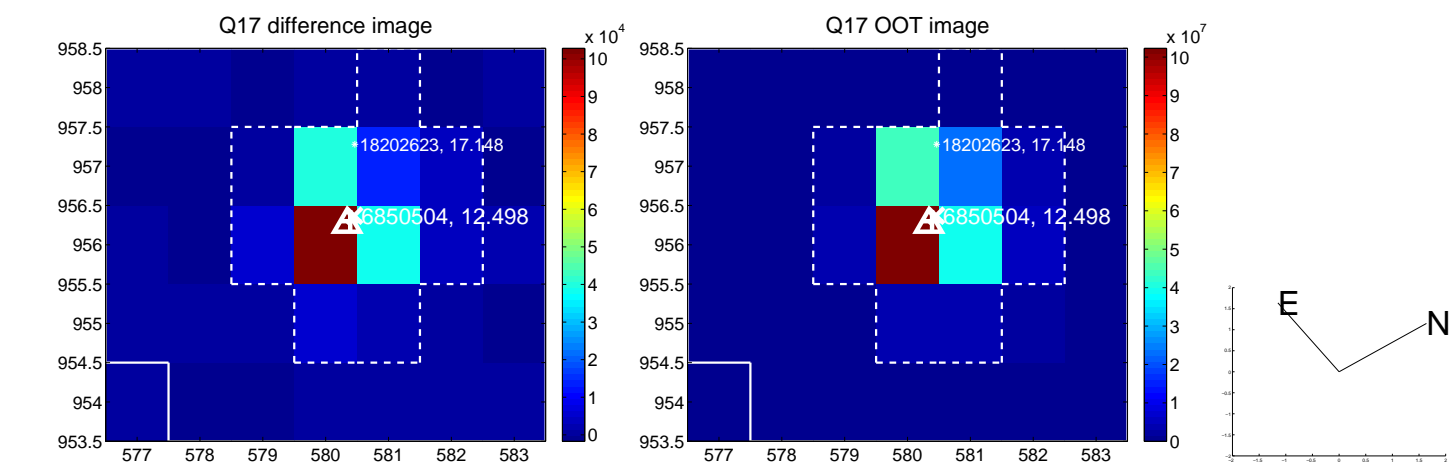
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



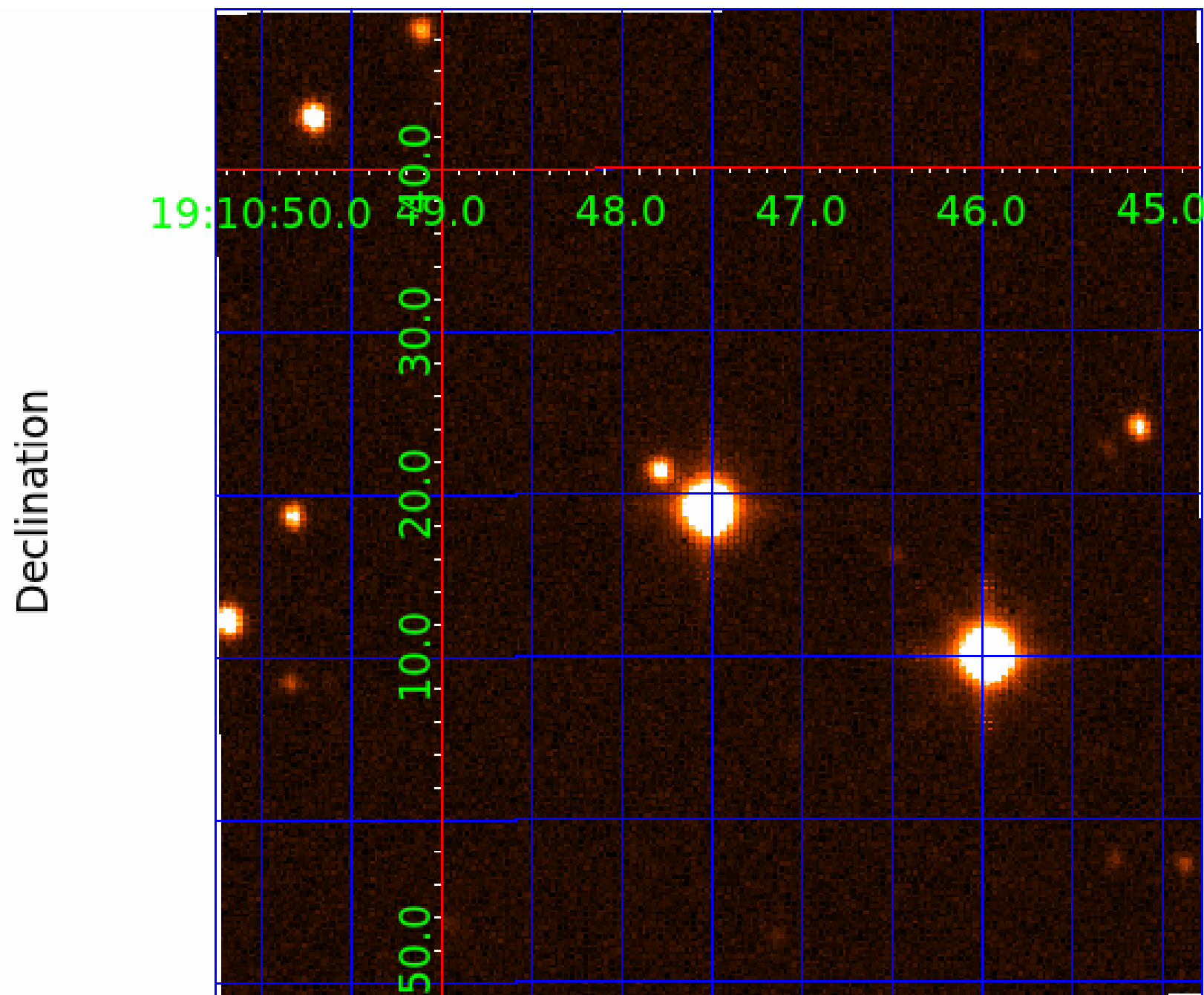
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image



KIC 006850504

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})
006850504-01	OBS	0070.01	10.854096	138.607854	1035.1	3.894	203.2	193.8	0.93	5465	3.25	81.01
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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006850504-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-03	OBS	PC	0.56	0	0	0	0	NO_COMMENT
006850504-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-05	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

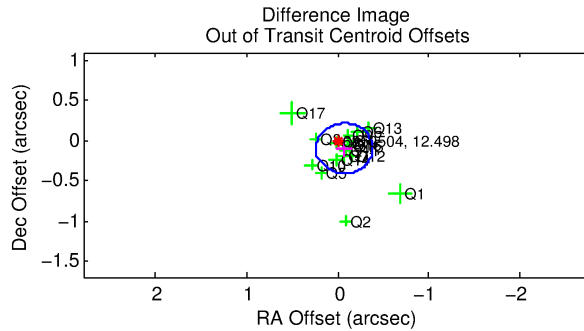
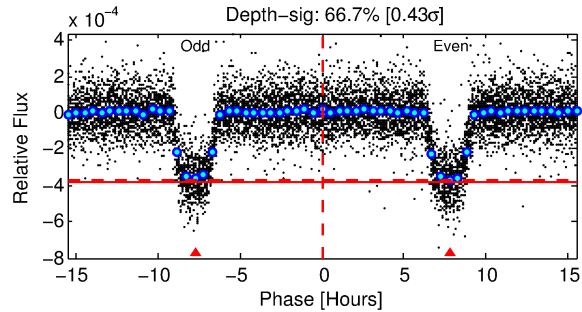
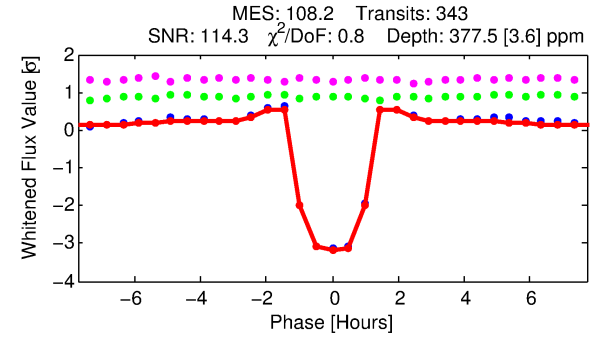
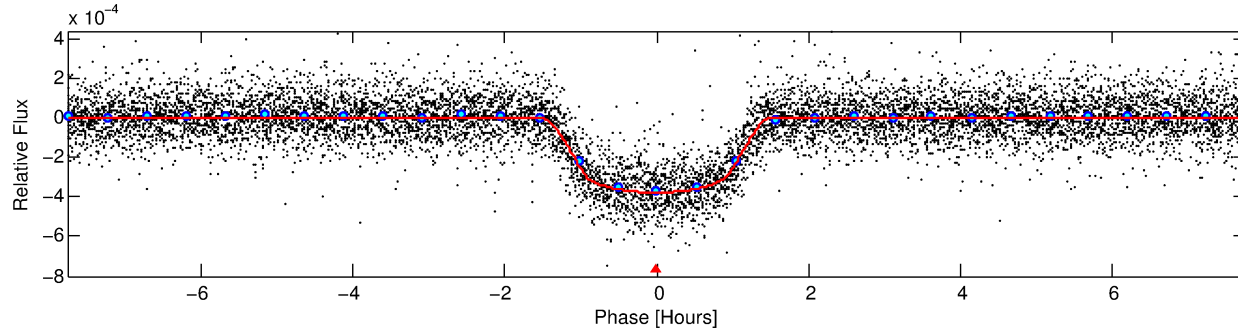
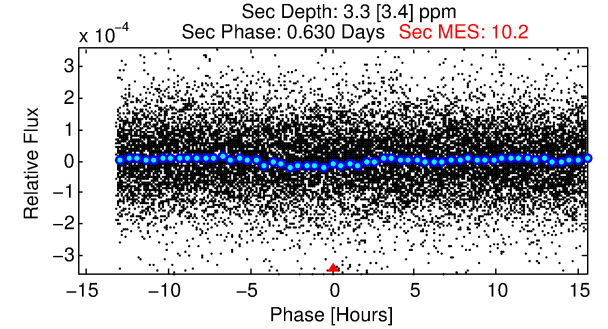
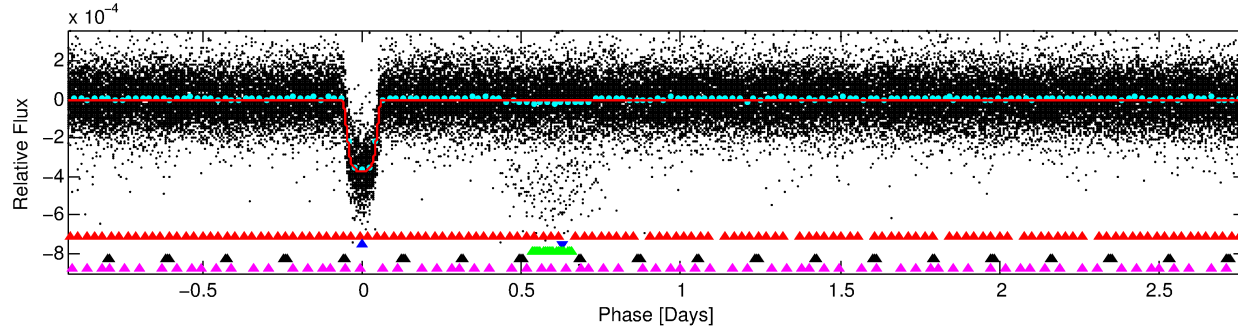
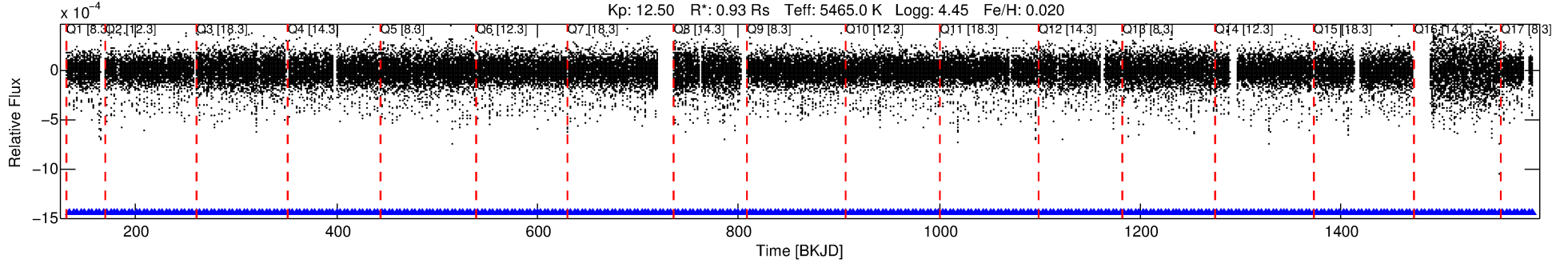
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006850504-02

No Significant Match Found

DV One-Page Summary

KIC: 6850504 Candidate: 2 of 5 Period: 3.696 d
KOI: K00070.02 Name: Kepler-20b Corr: 0.993



DV Fit Results:

Period = 3.69612 [0.00000] d
Epoch = 134.5017 [0.0003] BKJD
Rp/R* = 0.0210 [0.0010]
a/R* = 5.75 [1.09]
b = 0.88 [0.05]
Seff = 340.69 [57.70]
Teff = 1096 [46] K
Rp = 2.12 [0.25] Re
a = 0.0448 [0.0044] AU
Ag = 0.82 [0.86] [-0.21σ]
Teffp = 1610 [420] K [1.22σ]

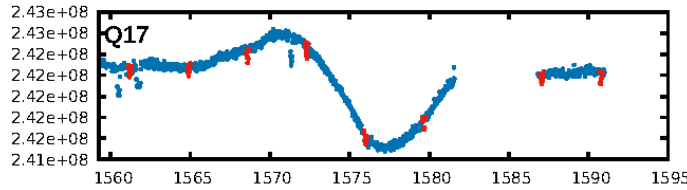
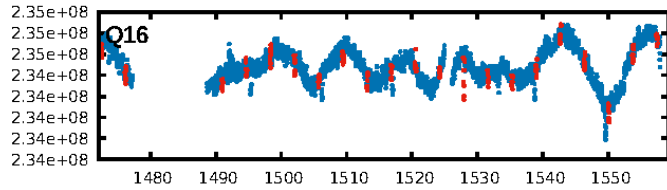
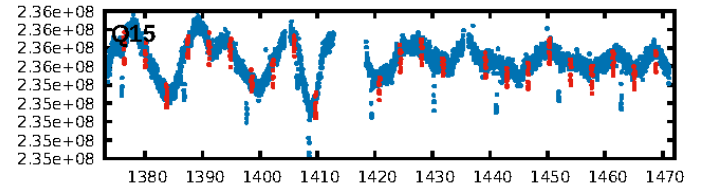
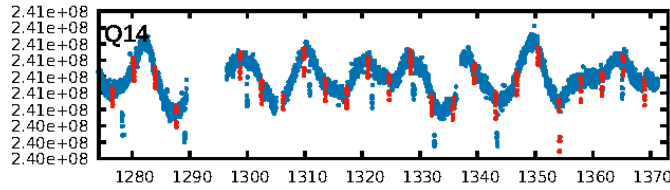
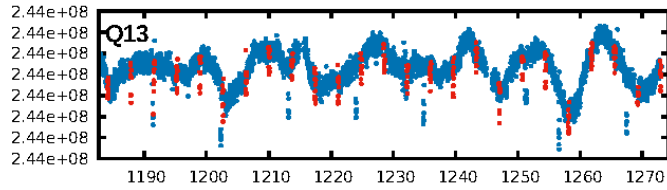
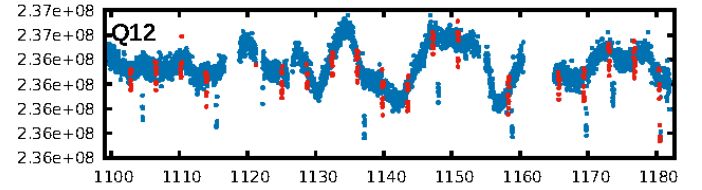
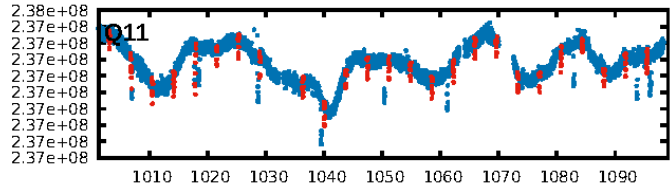
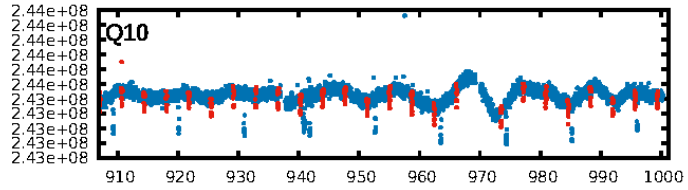
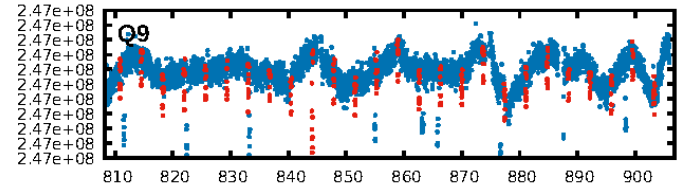
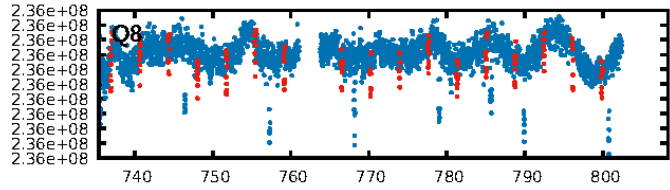
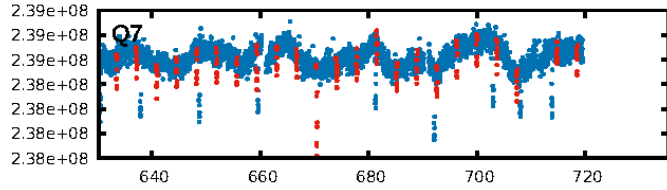
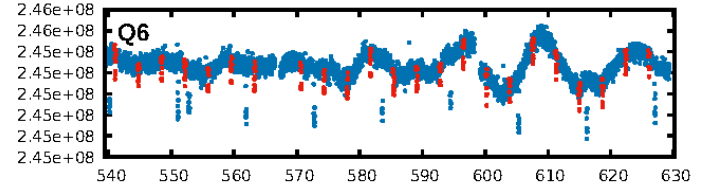
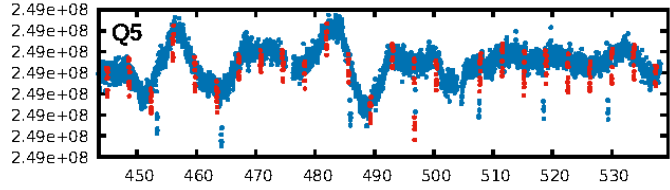
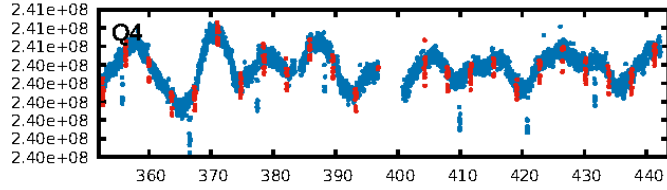
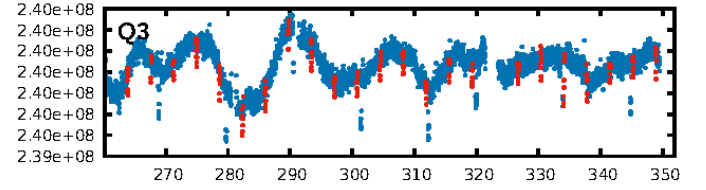
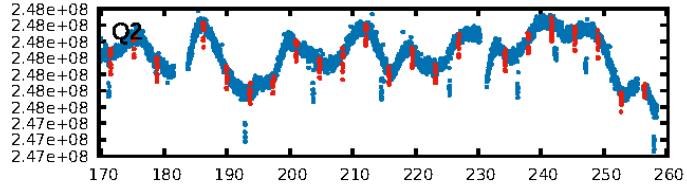
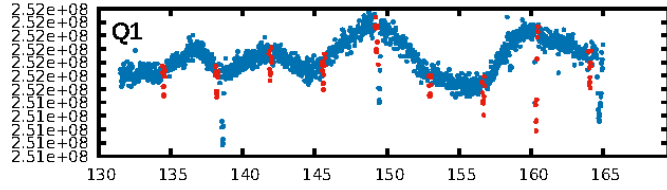
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [14.76σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [328/328]
GhostDiagnostic-chr: 7.785
Centroid-sig: 8.8%
Centroid-so: 0.351 arcsec [4.60σ]
OotOffset-rm: 0.122 arcsec [1.17σ]
KicOffset-rm: 0.399 arcsec [3.90σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

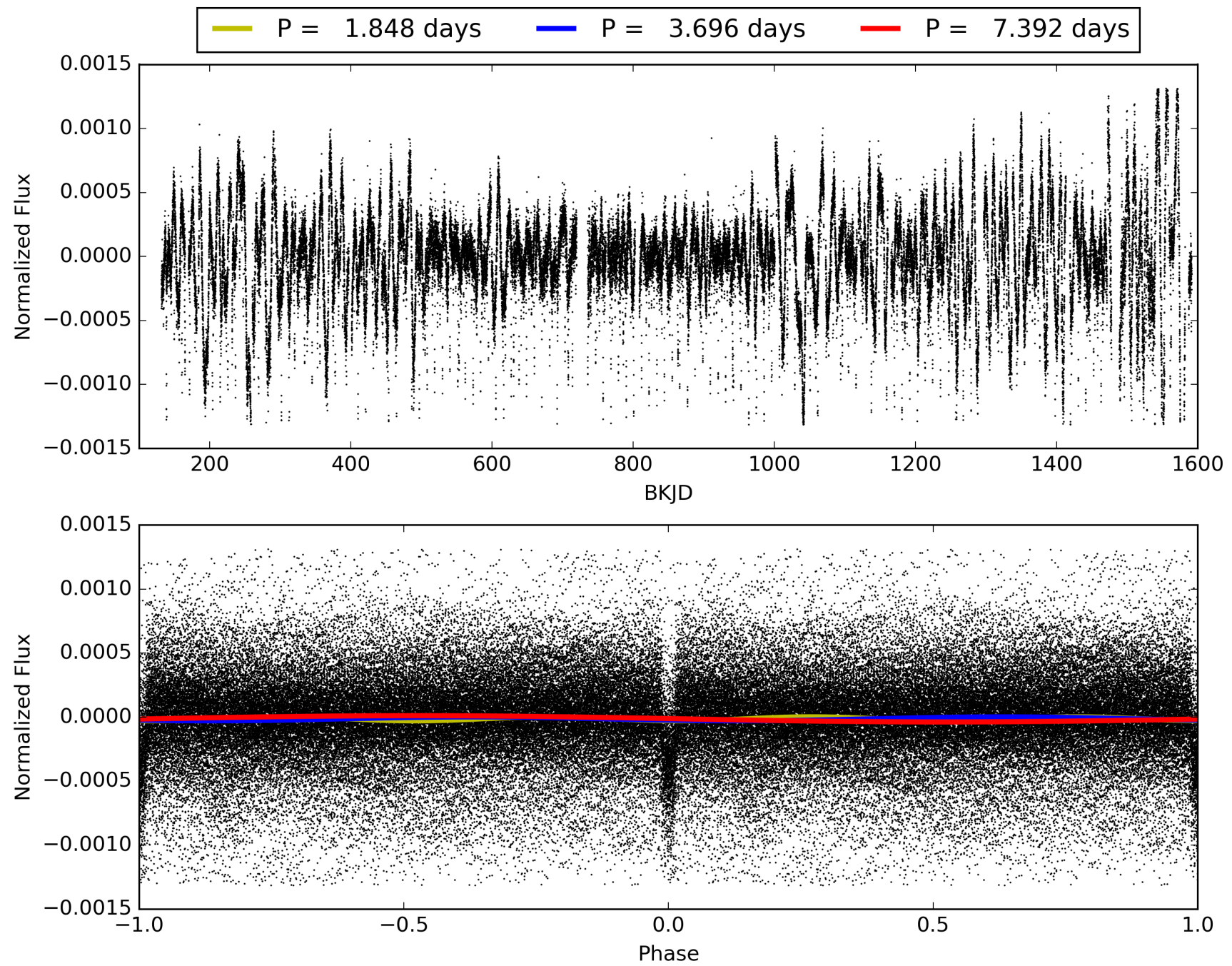
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:09:24 Z

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

TCE 006850504-02, PDC Light Curves

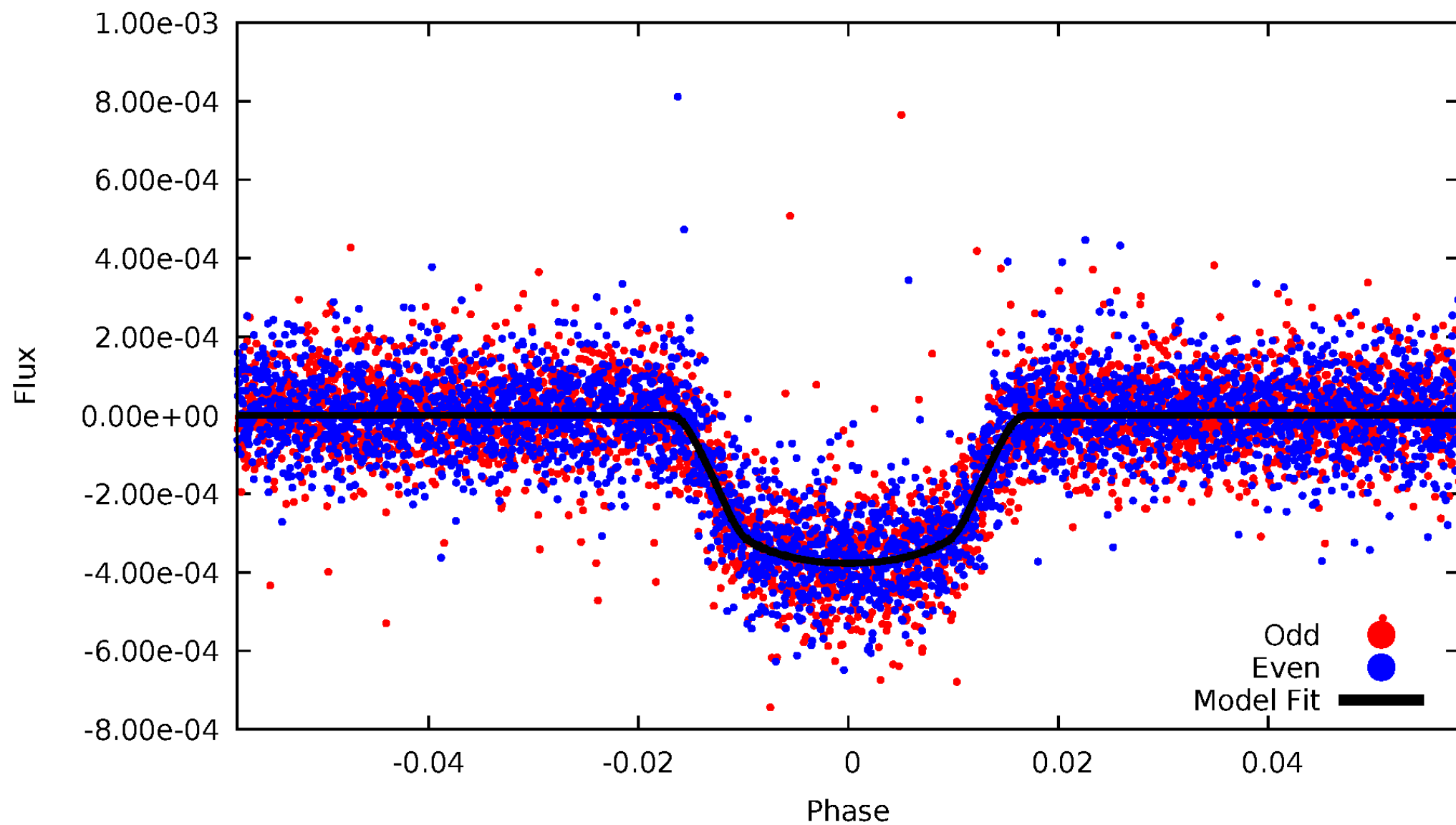


TCE 006850504-02



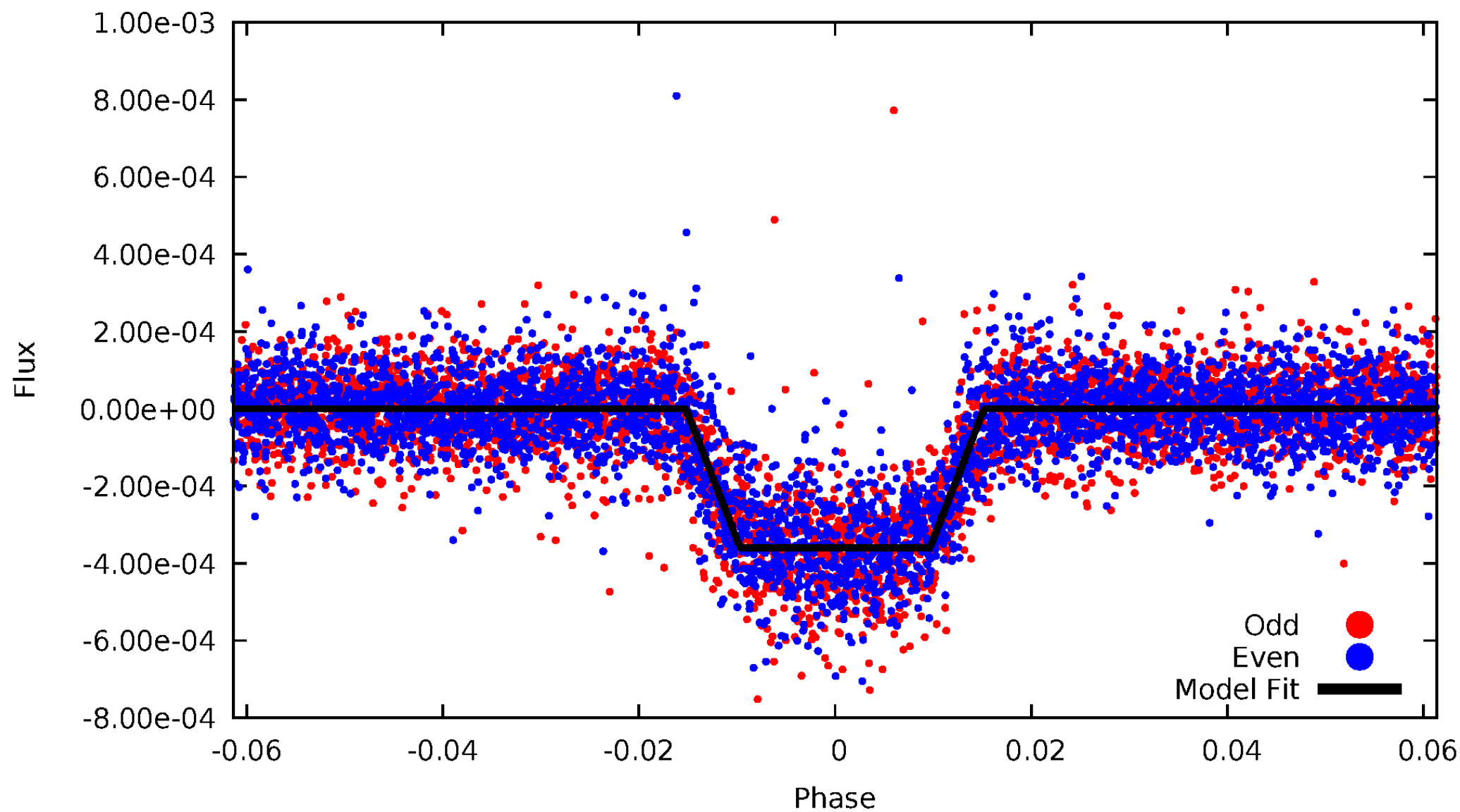
DV Odd/Even

TCE 006850504-02



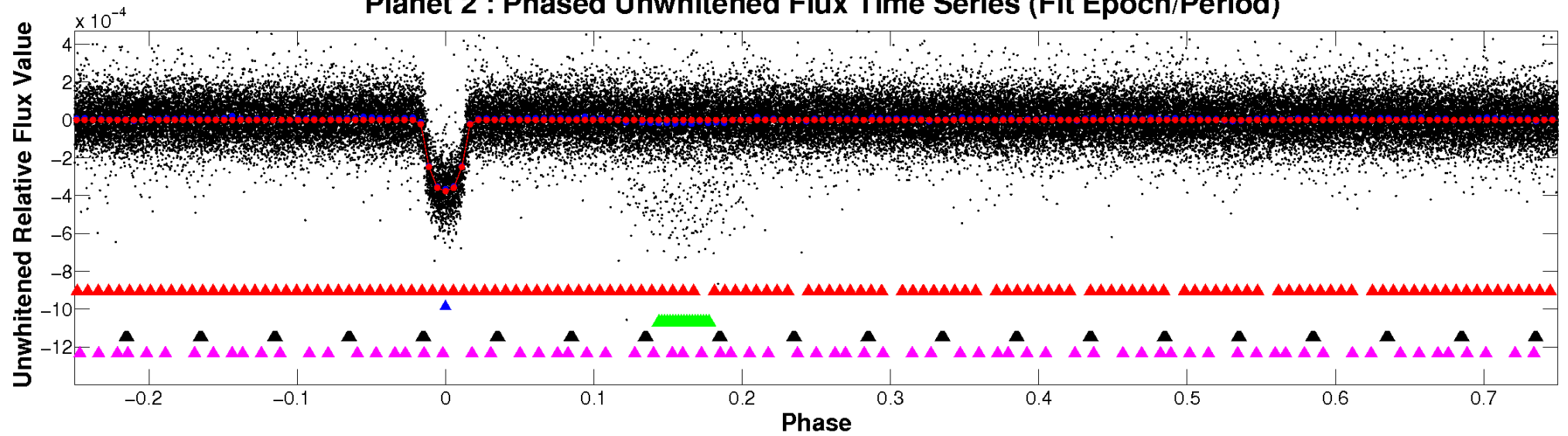
ALT Odd/Even

TCE 006850504-02

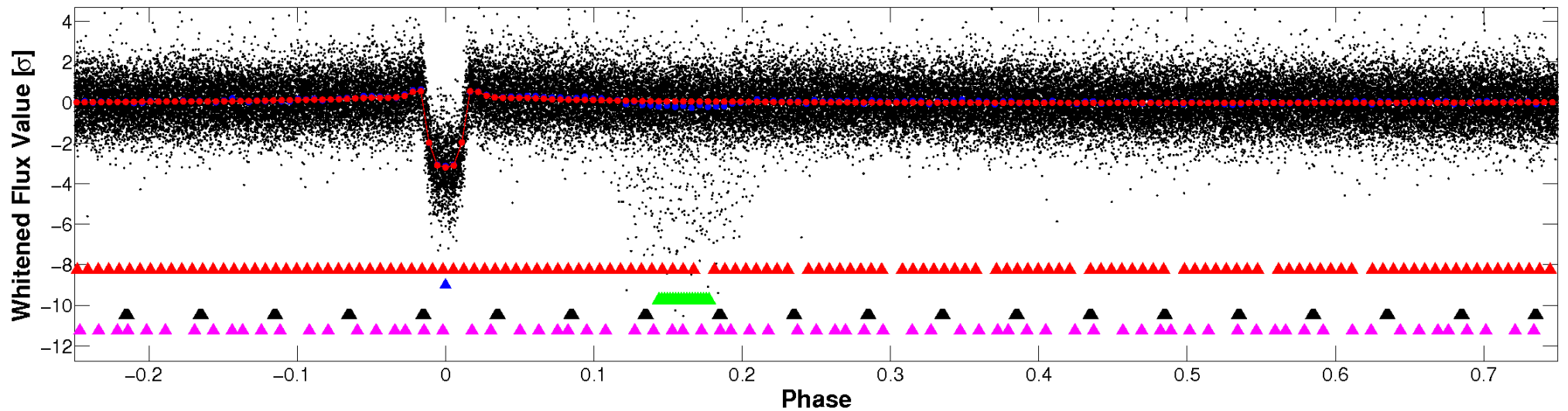


Non-Whitened Vs. Whitened Light Curve

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

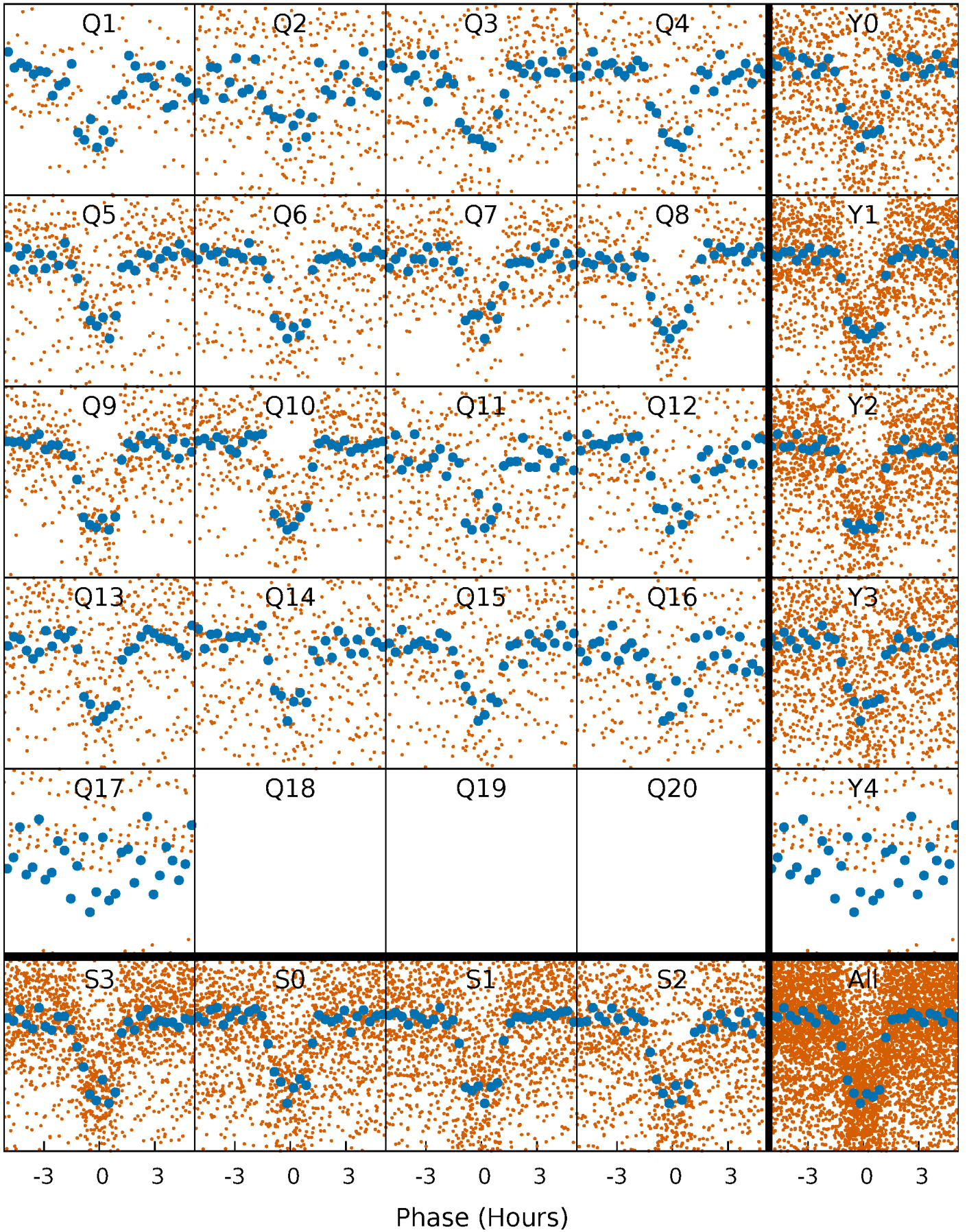


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



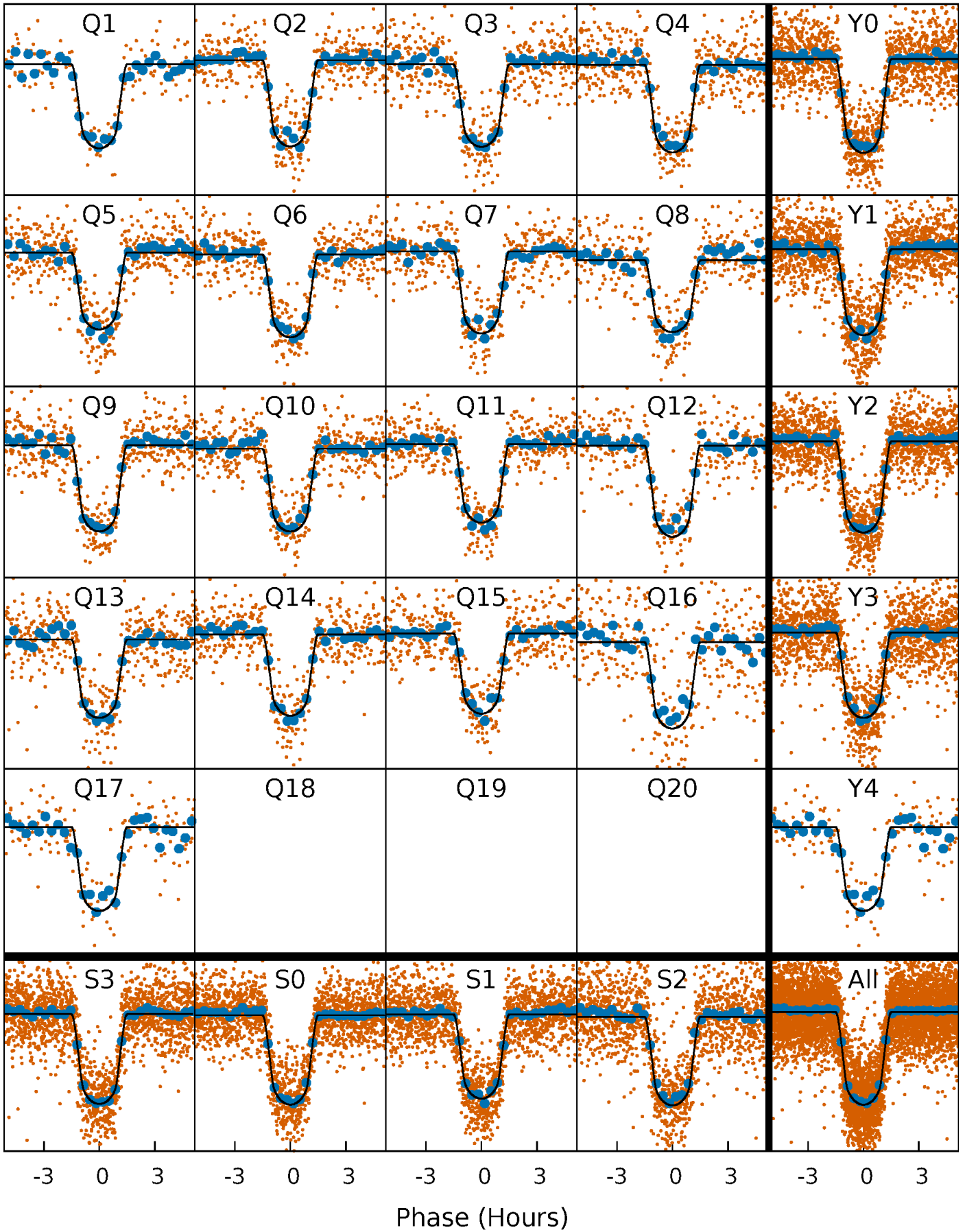
PDC Quarter-Phased Transit Curves

TCE 006850504-02 P= 3.696119 Days $T_0=134.501692$ (BKJD)



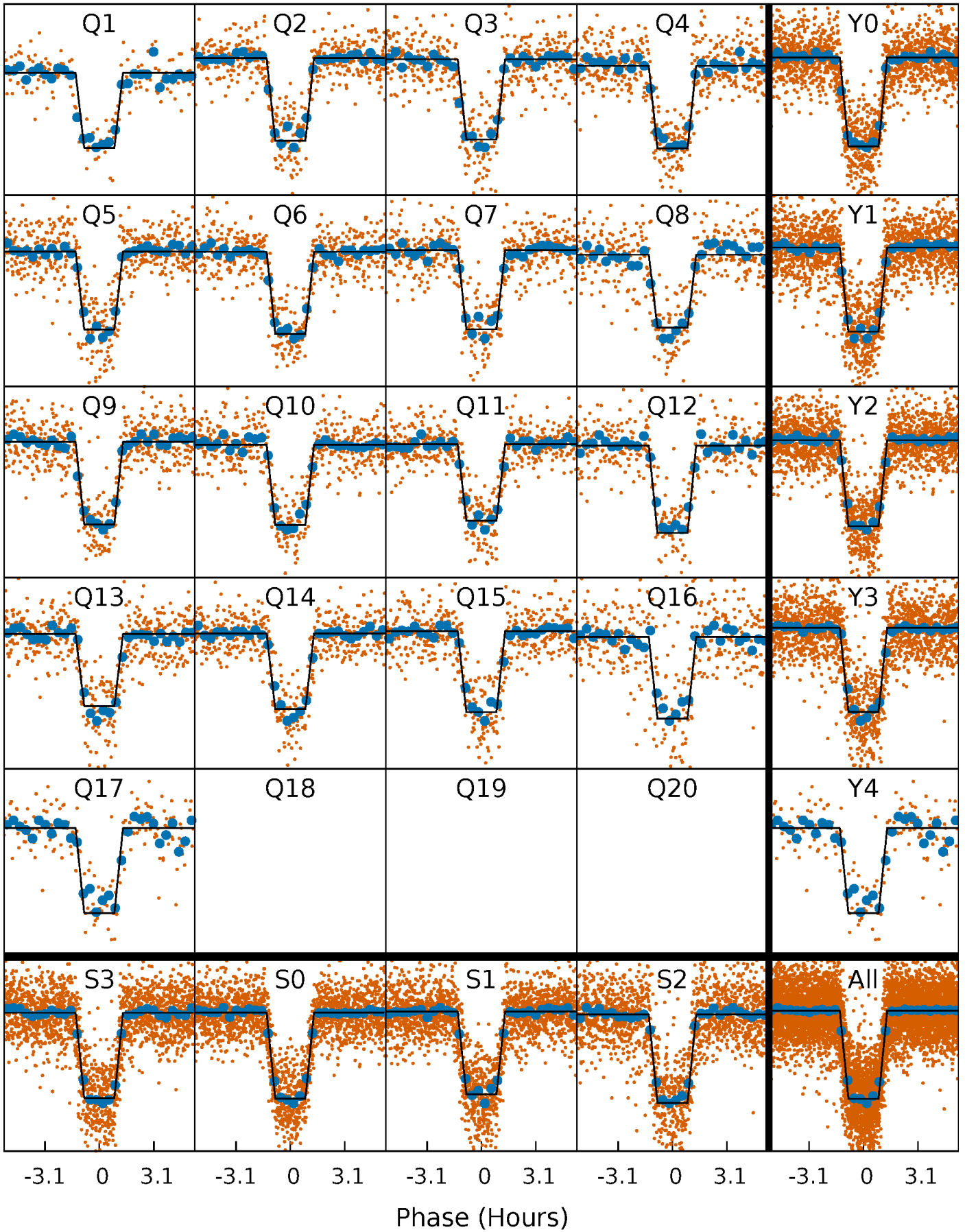
DV Quarter-Phased Transit Curves

TCE 006850504-02 P= 3.696119 Days $T_0=134.501692$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

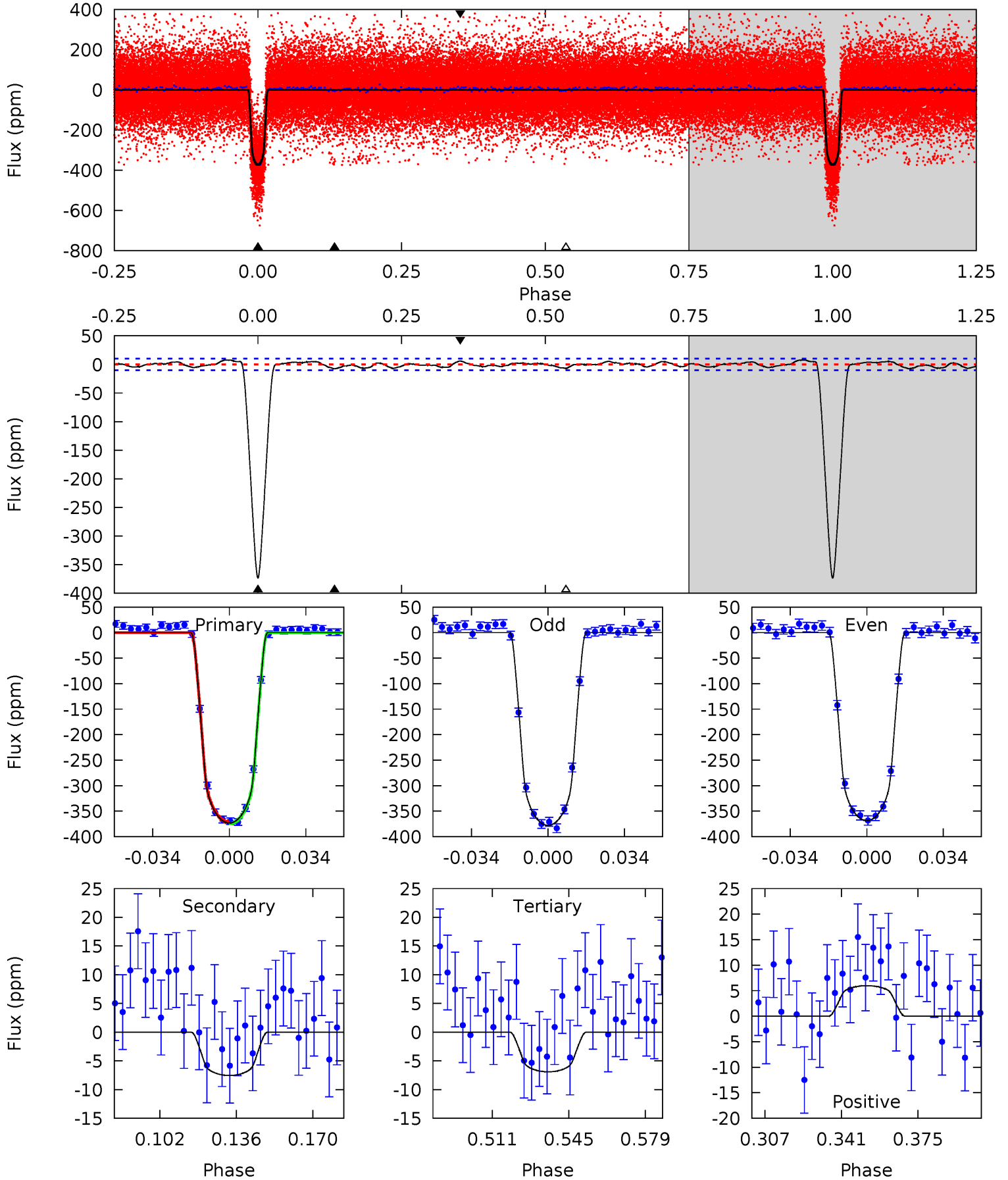
TCE 006850504-02 P= 3.696100 Days $T_0=134.505305$ (BKJD)



DV Model-Shift Uniqueness Test

006850504-02, P = 3.696119 Days, E = 130.805573 Days

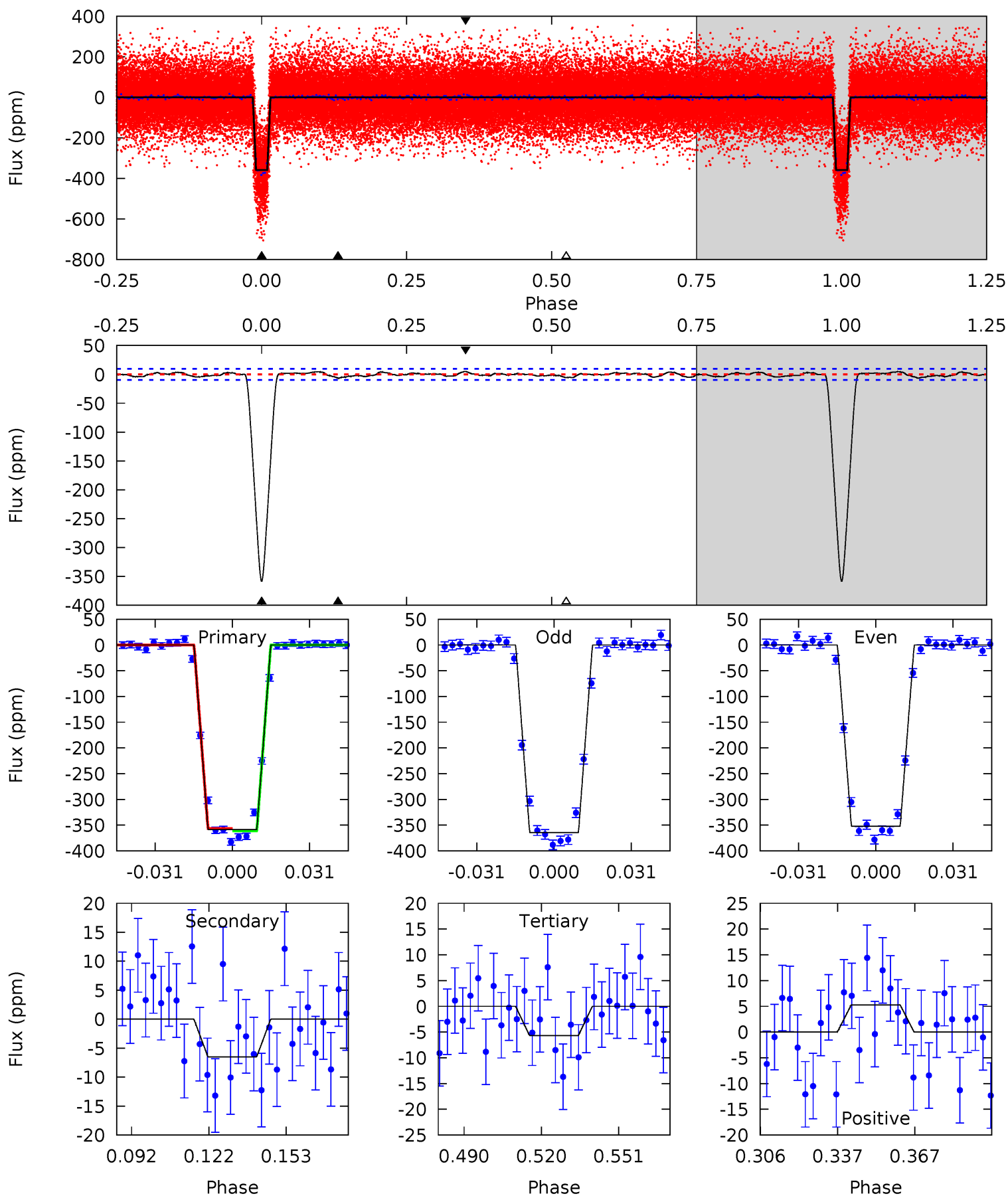
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
176.7	3.57	3.27	2.83	4.79	2.12	1.52	173.4	173.8	0.30	0.74	2.20	1.00	0.02	0.70



Alt Model-Shift Uniqueness Test

006850504-02, P = 3.696100 Days, E = 130.809205 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
177.0	3.20	2.80	2.61	4.81	2.16	1.17	174.2	174.4	0.40	0.60	2.99	1.00	0.01	1.09



Stellar Parameters For KIC 006850504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+109}_{-109}	$4.449^{+0.085}_{-0.085}$	$0.020^{+0.150}_{-0.150}$	$0.925^{+0.101}_{-0.083}$	$0.876^{+0.060}_{-0.044}$	$1.561^{+0.467}_{-0.428}$
	+2%/-2%	+2%/-2%	+750%/-750%	+11%/-9%	+7%/-5%	+30%/-27%
Source	SPE32	SPE32	SPE32	DSEP		

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

Secondary Eclipse Parameters for KIC 006850504-02 / KOI 0070.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-8 ± 2	$2.11^{+0.16}_{-0.15}$	1528^{+55}_{-50}	2679^{+110}_{-151}	$1.868^{+0.633}_{-0.579}$
Alt.	-6 ± 2	$1.92^{+0.15}_{-0.15}$	1534^{+57}_{-52}	2694^{+132}_{-157}	$1.927^{+0.715}_{-0.634}$

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

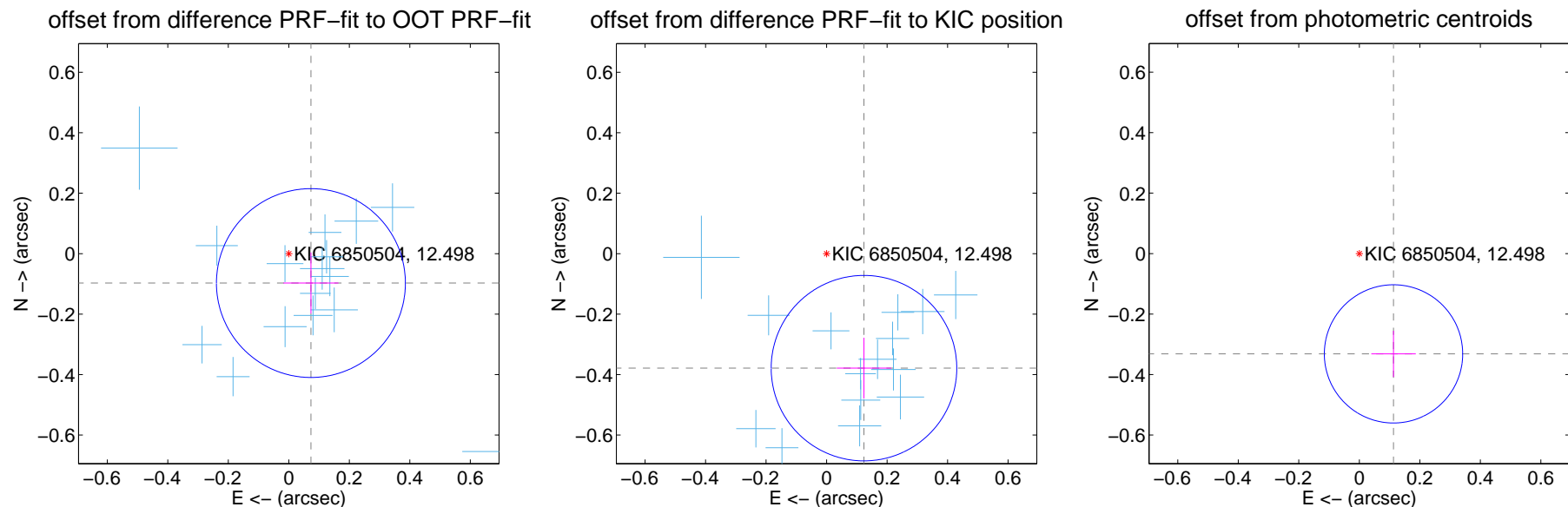
DV Centroid Data

Supplemental centroid analysis for 006850504-02. Kepler magnitude: 12.50. Transit SNR 114.28

There are 17 quarters with good PRF difference image offsets

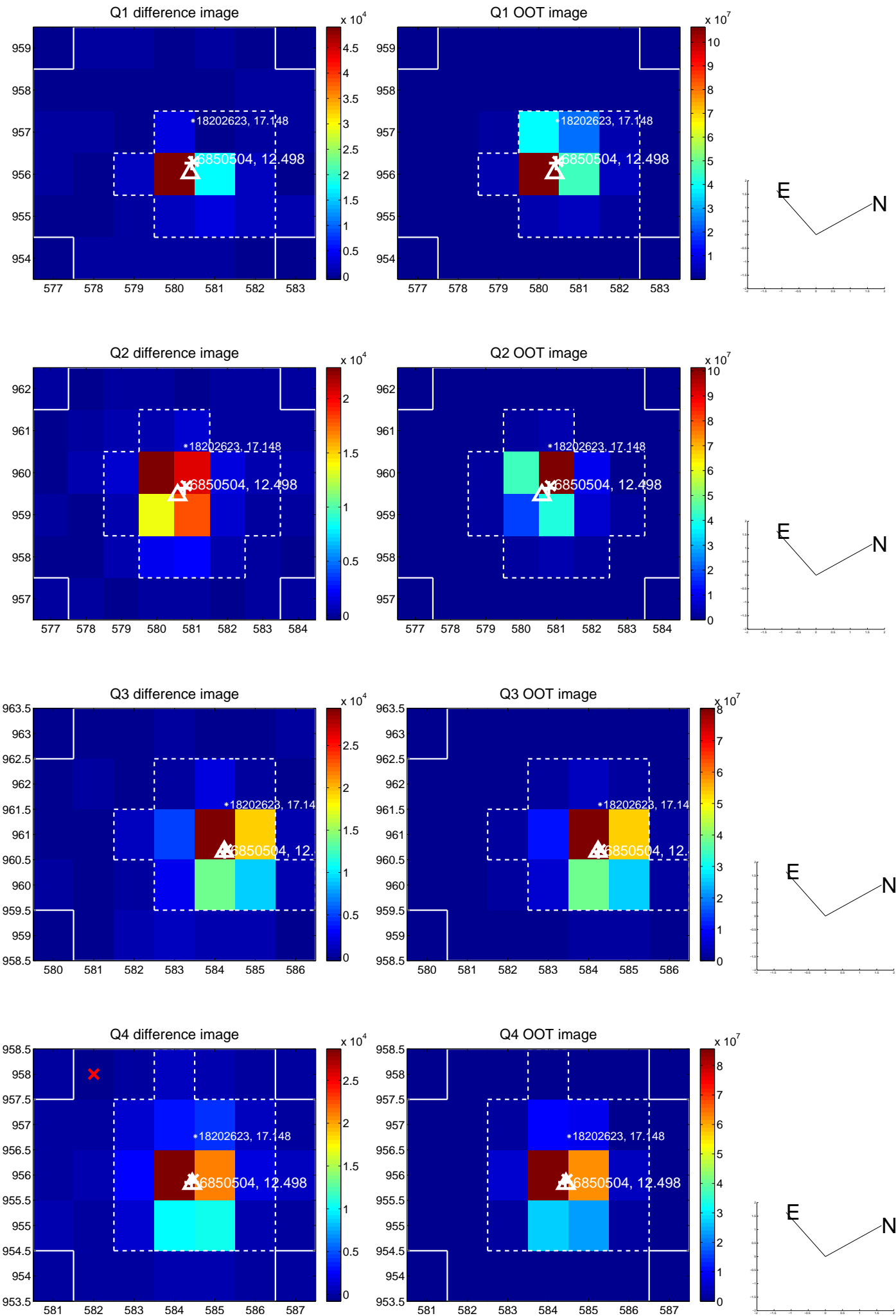
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.122 ± 0.104	1.17	-0.073 ± 0.091	-0.097 ± 0.101
PRF-fit source offset from KIC position	0.399 ± 0.102	3.90	-0.124 ± 0.090	-0.379 ± 0.101
photometric centroid source offset	0.35 ± 0.08	4.60	-0.11 ± 0.07	-0.33 ± 0.08

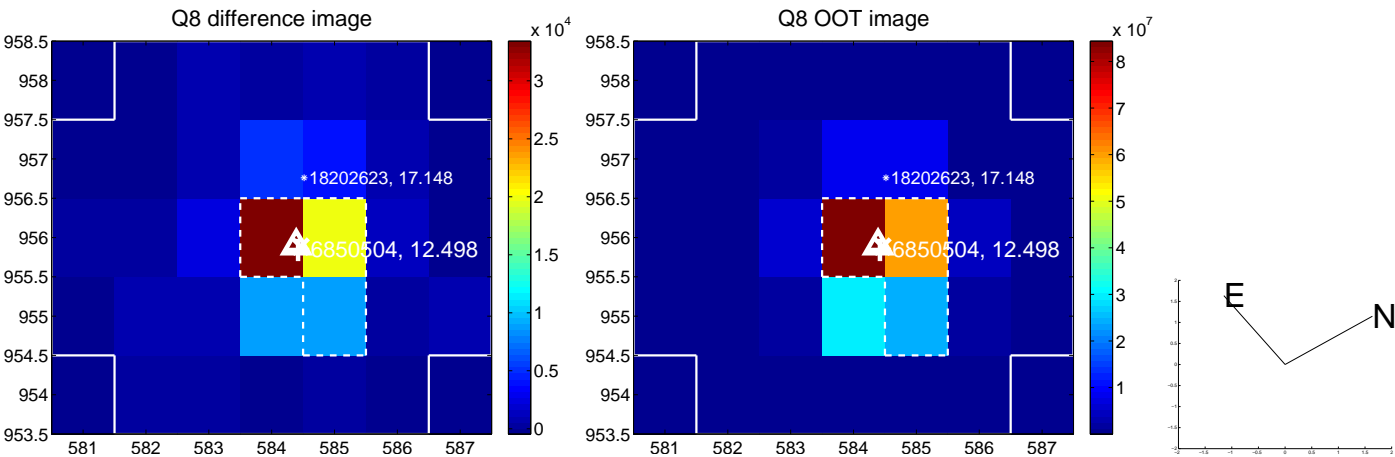
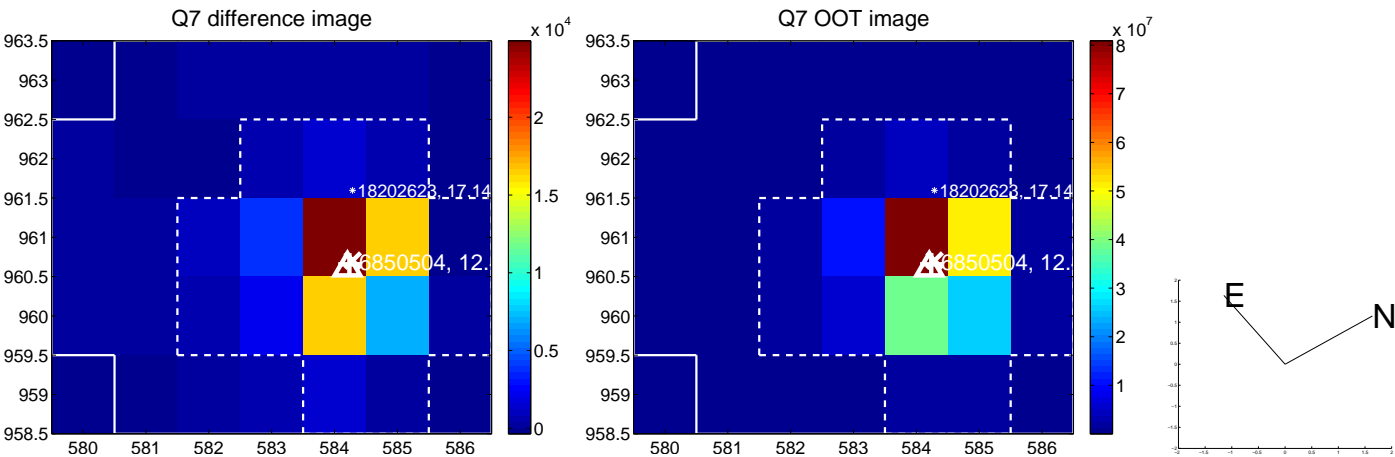
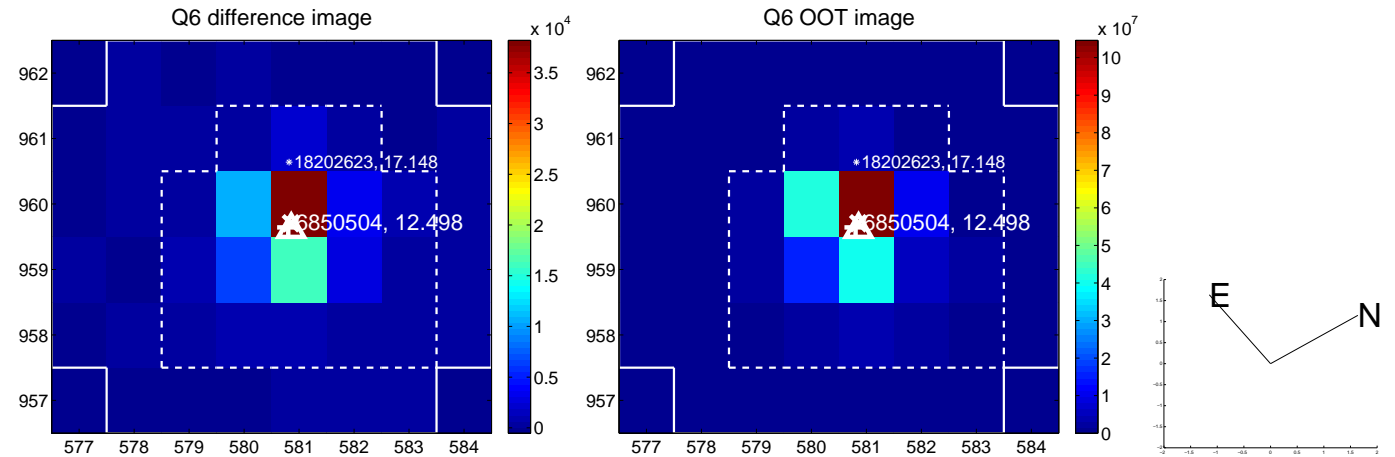
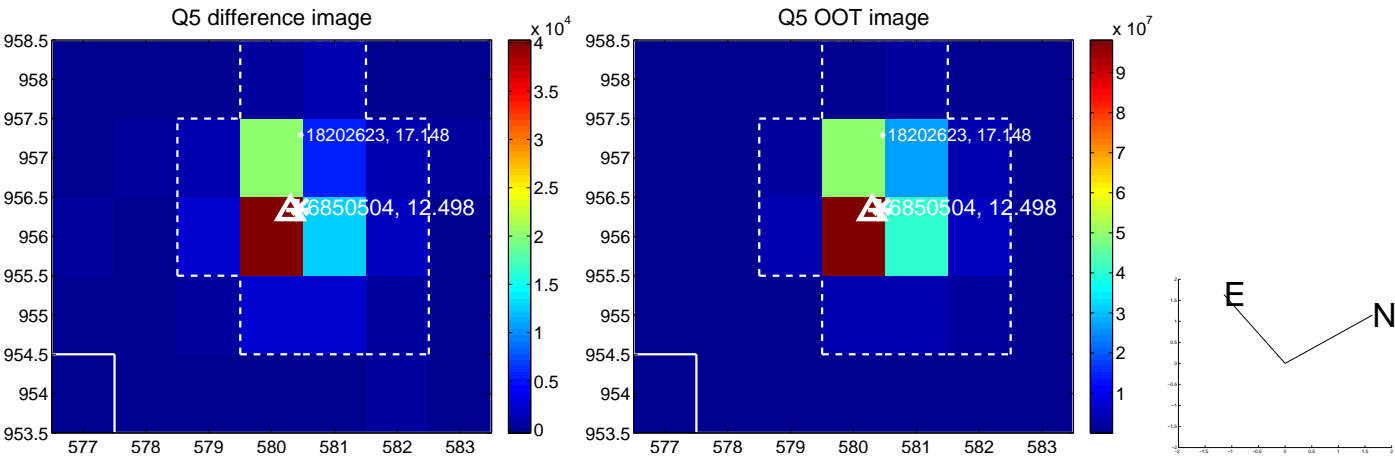


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

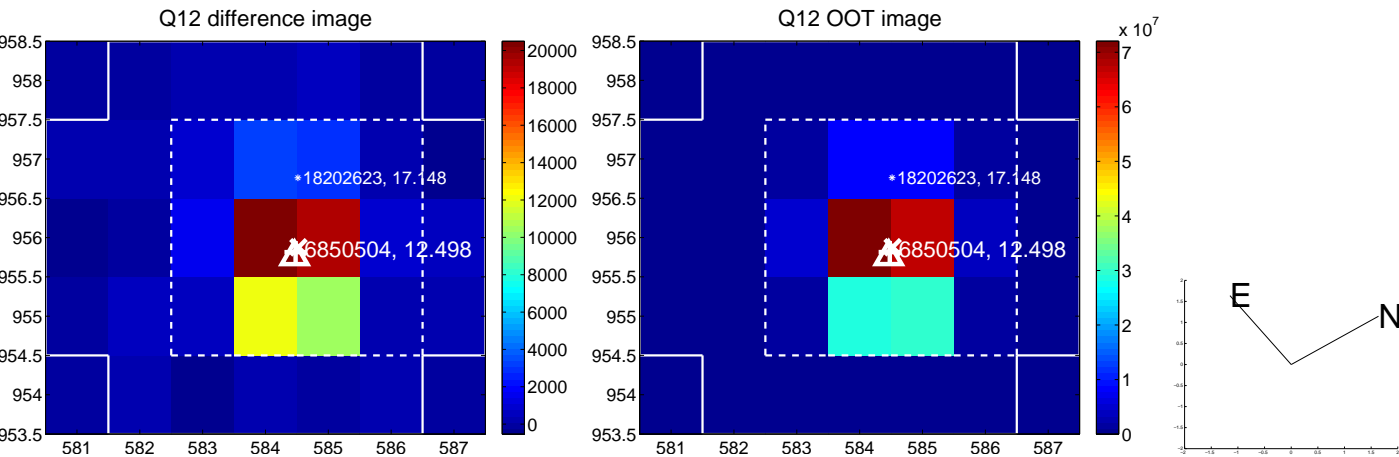
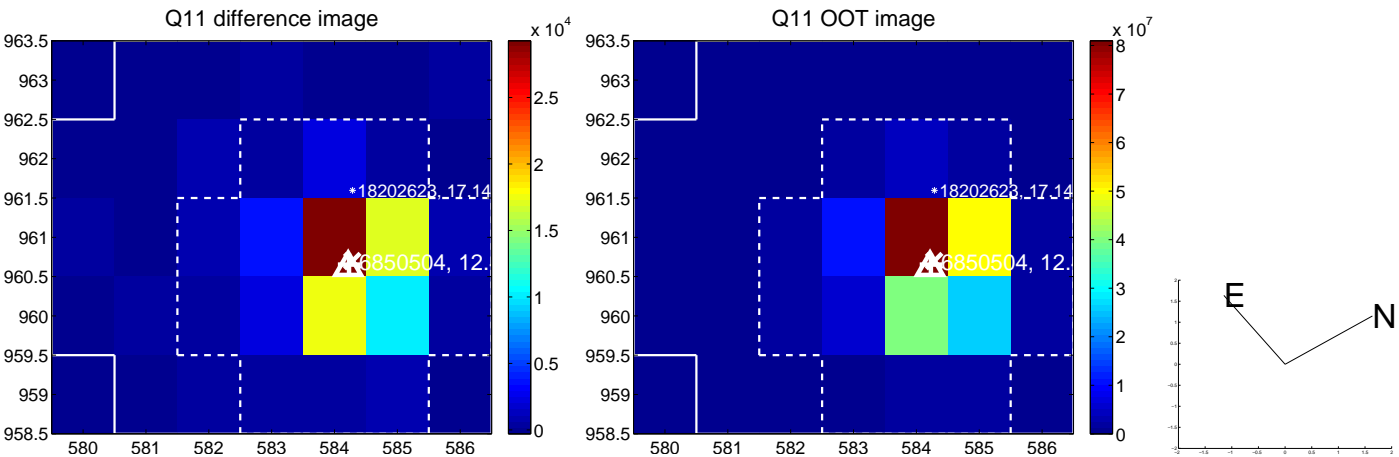
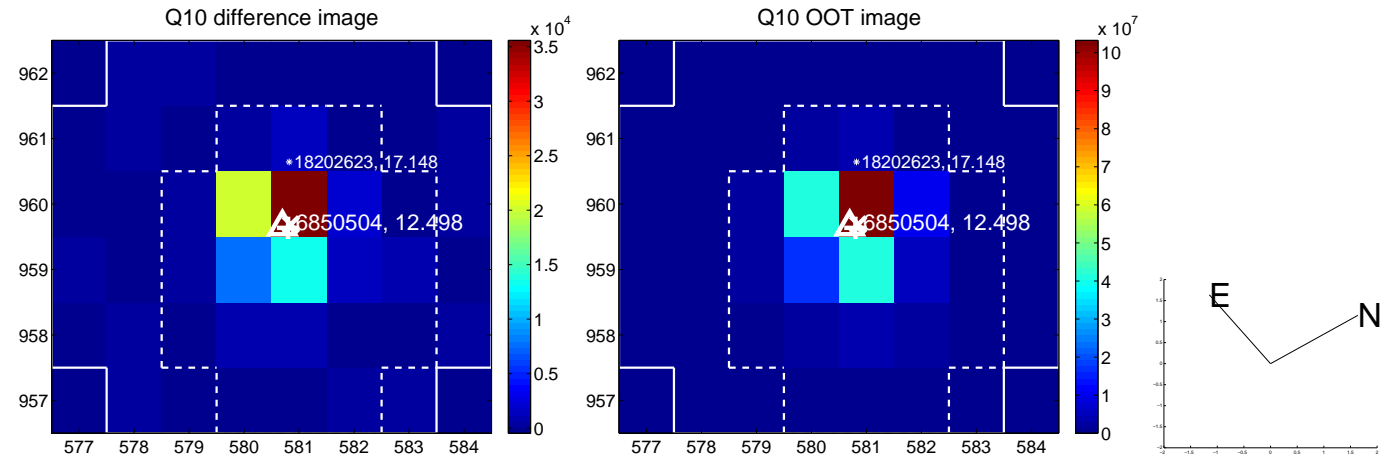
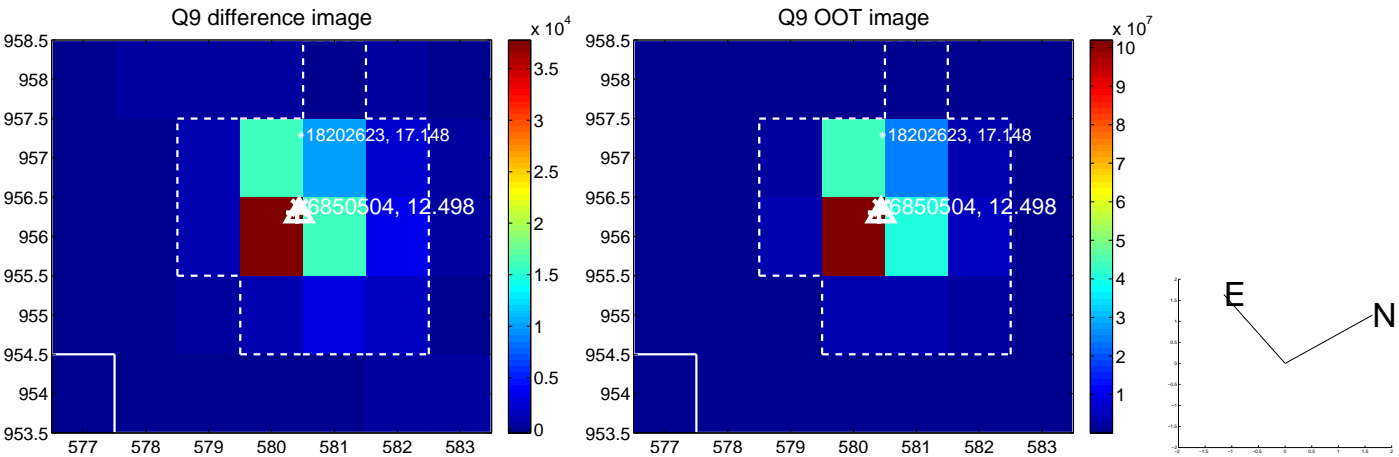
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



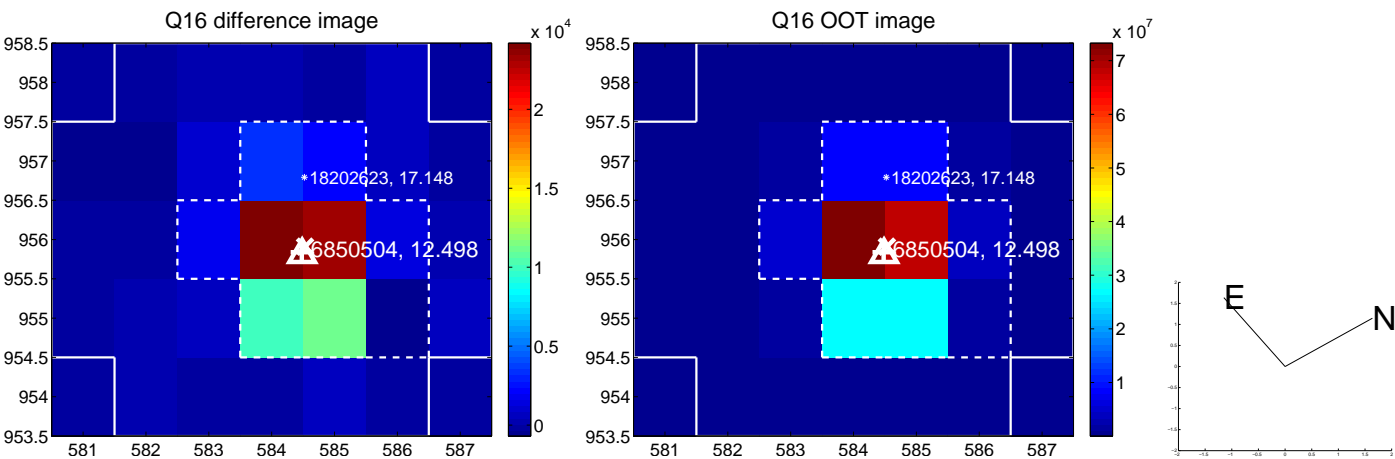
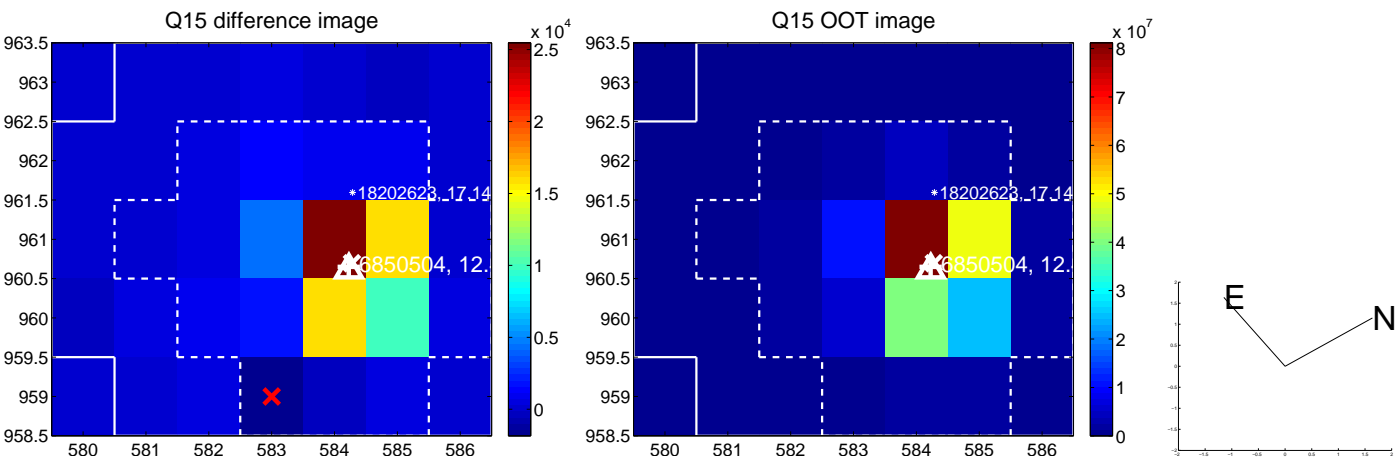
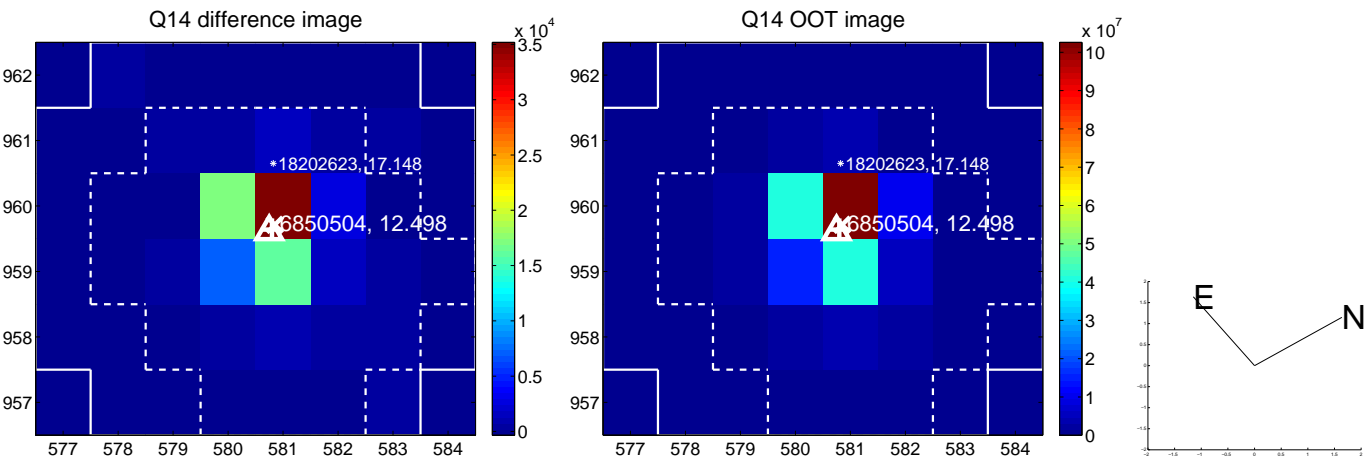
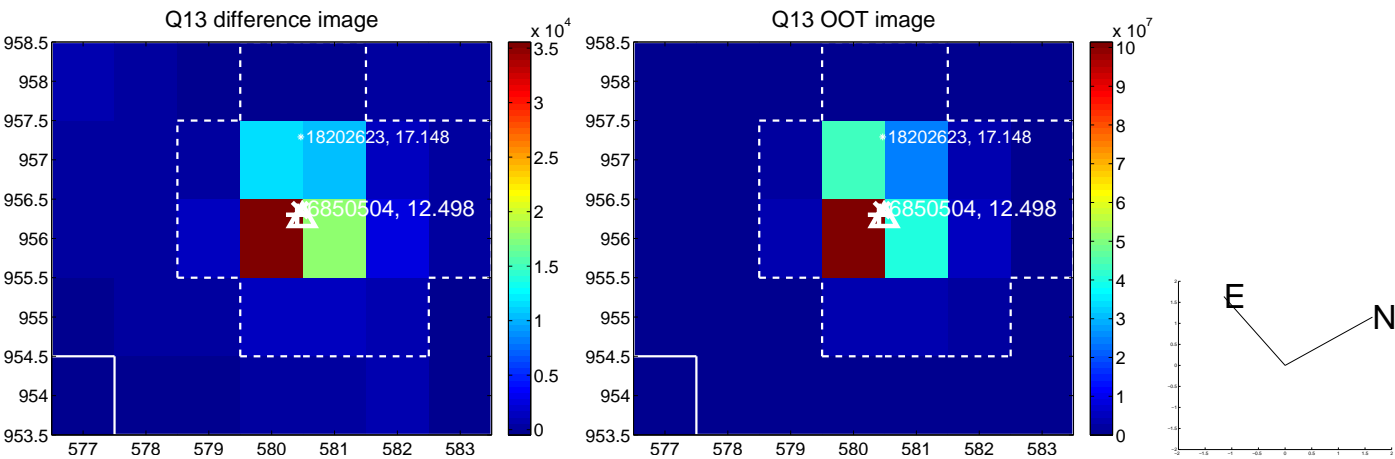
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



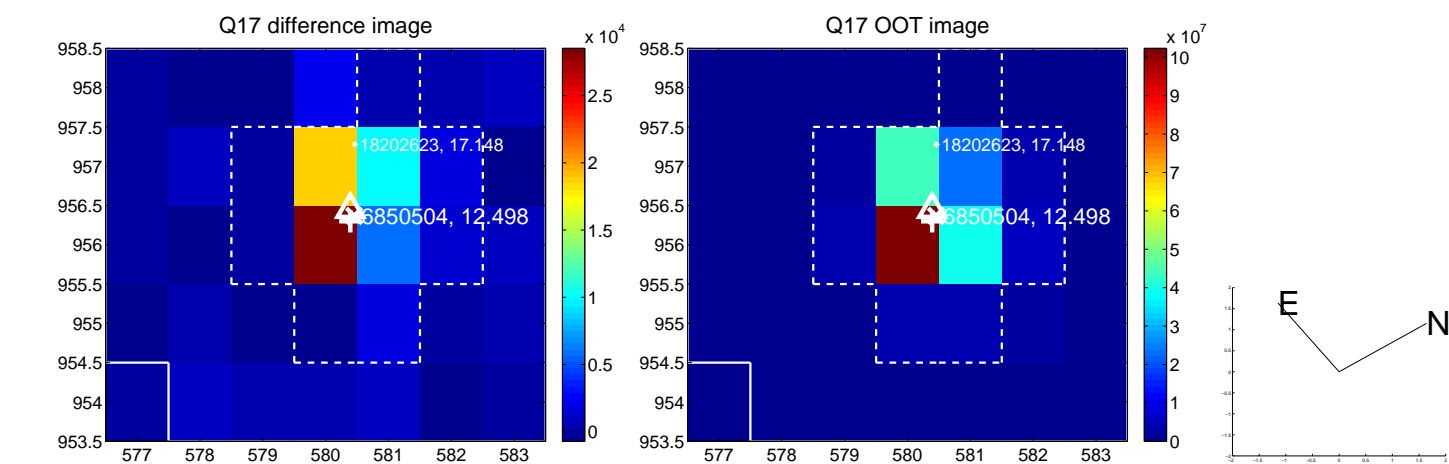
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



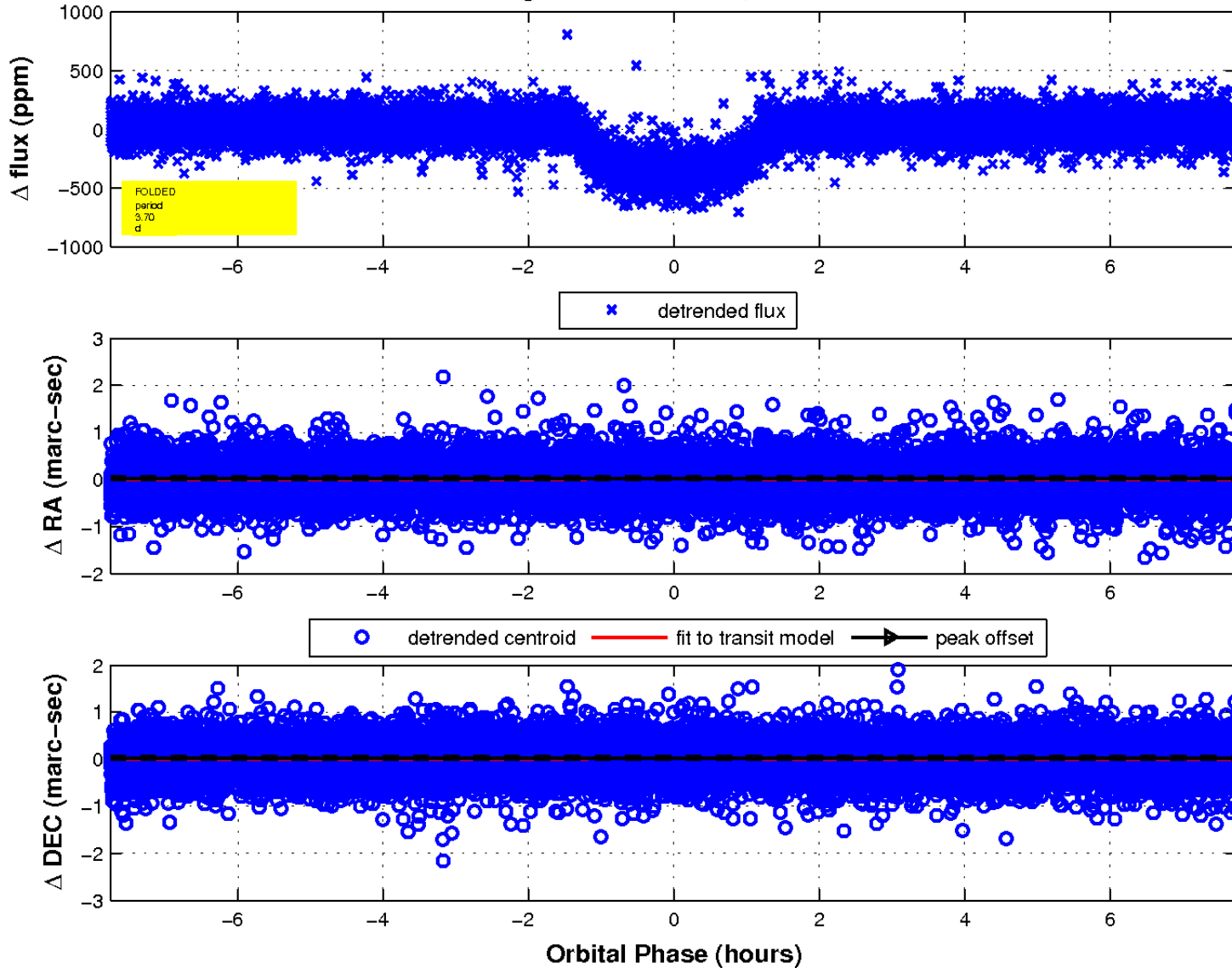
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



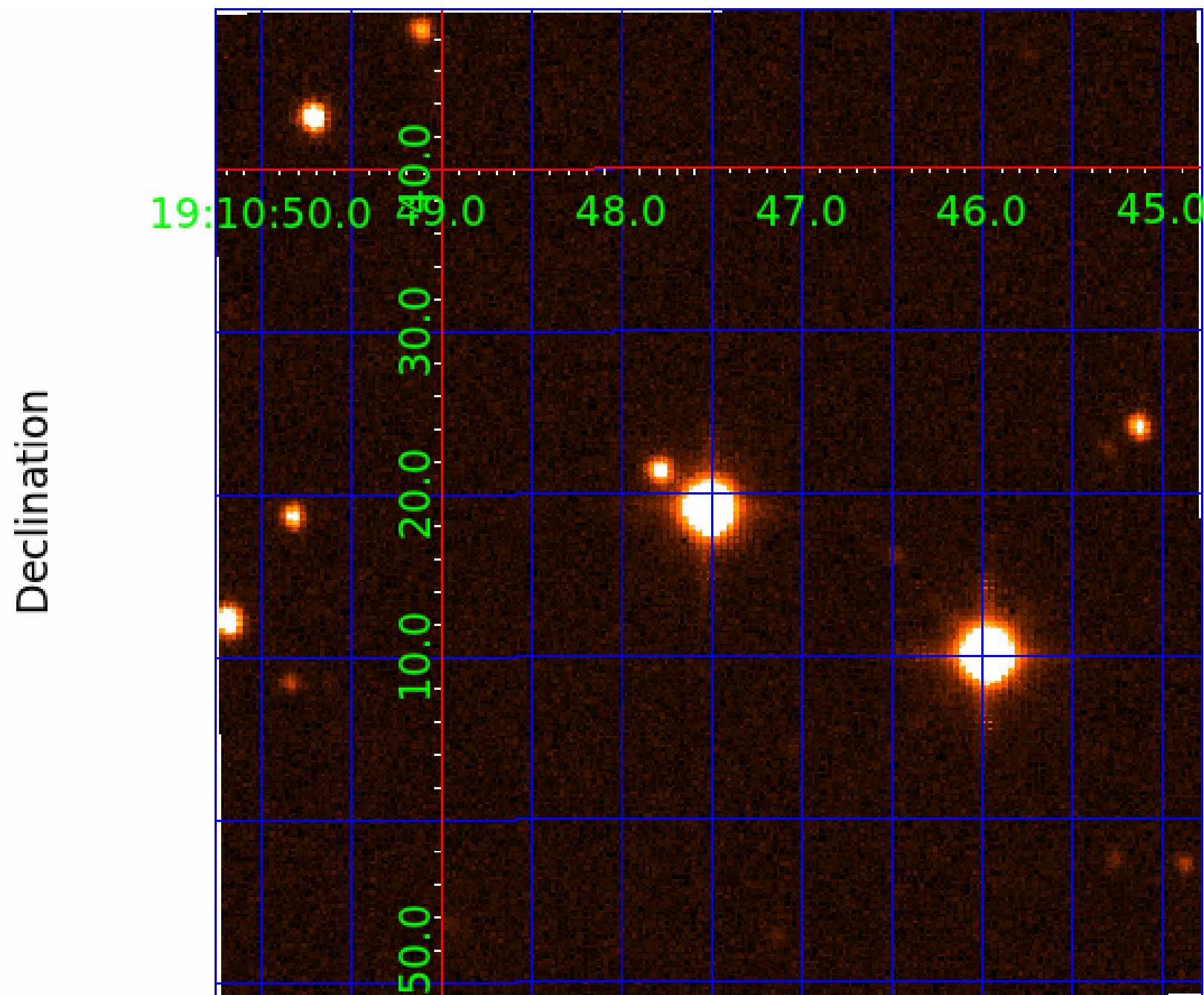
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 5



UKIRT Image



KIC 006850504

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})
006850504-01	OBS	0070.01	10.854096	138.607854	1035.1	3.894	203.2	193.8	0.93	5465	3.25	81.01
006850504-02	OBS	0070.02	3.696119	134.501692	377.5	2.584	108.2	114.3	0.93	5465	2.12	340.69
006850504-03	OBS	0070.03	77.611562	164.727293	834.7	7.431	75.4	79.5	0.93	5465	2.89	5.88
006850504-04	OBS	0070.04	6.098551	135.930129	72.3	2.928	16.5	17.5	0.93	5465	0.94	174.74
006850504-05	OBS	0070.05	19.577473	135.212513	93.1	3.491	12.2	13.5	0.93	5465	1.05	36.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006850504-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-03	OBS	PC	0.56	0	0	0	0	NO_COMMENT
006850504-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-05	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

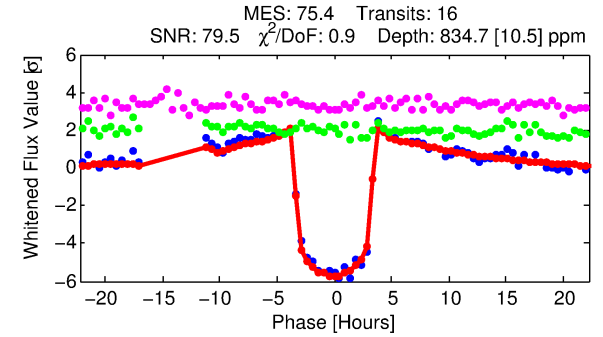
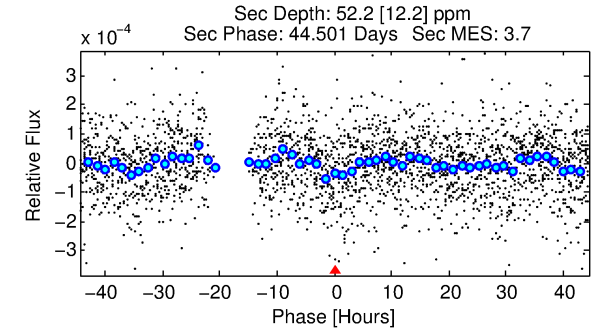
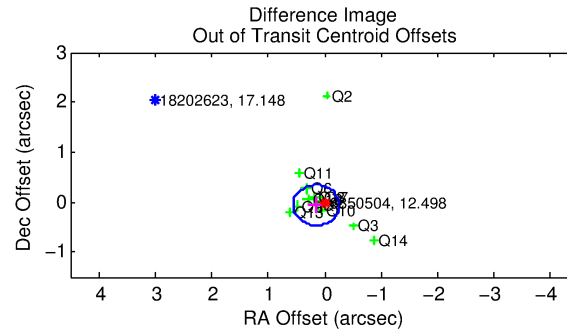
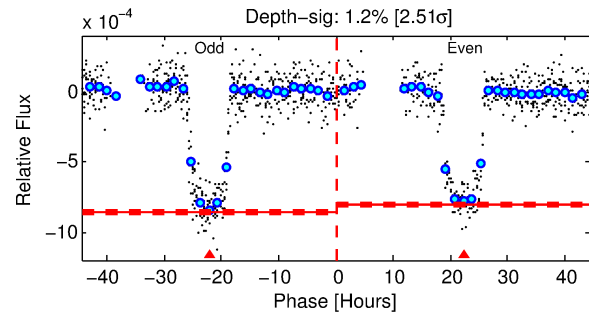
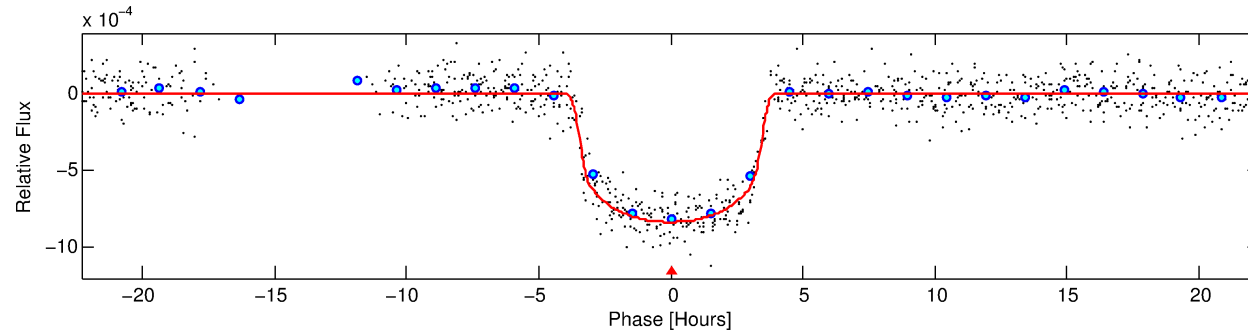
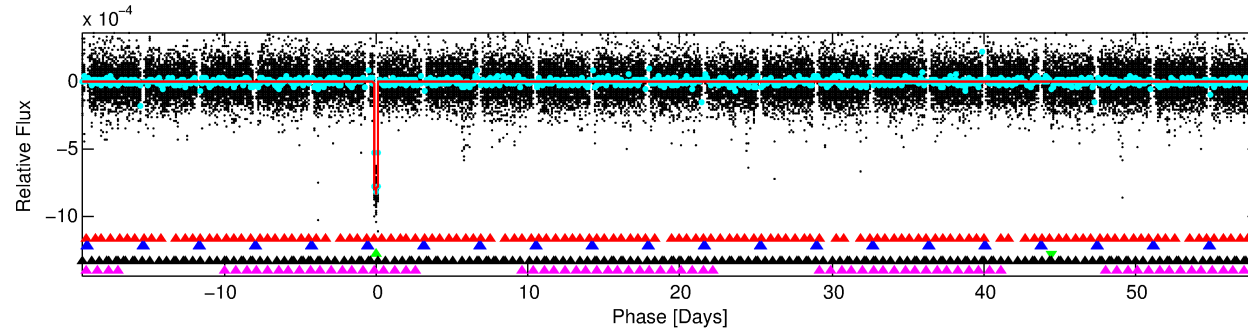
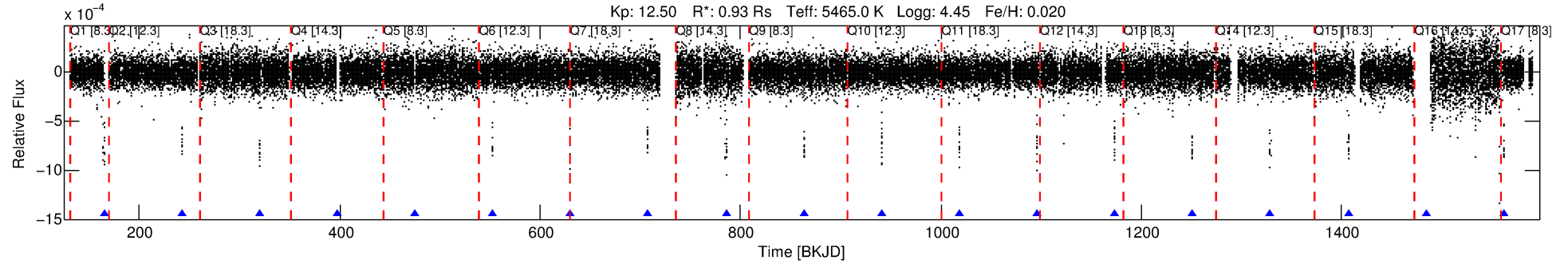
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006850504-03

No Significant Match Found

DV One-Page Summary

KIC: 6850504 Candidate: 3 of 5 Period: 77.612 d
KOI: K00070.03 Name: Kepler-20d Corr: 0.989



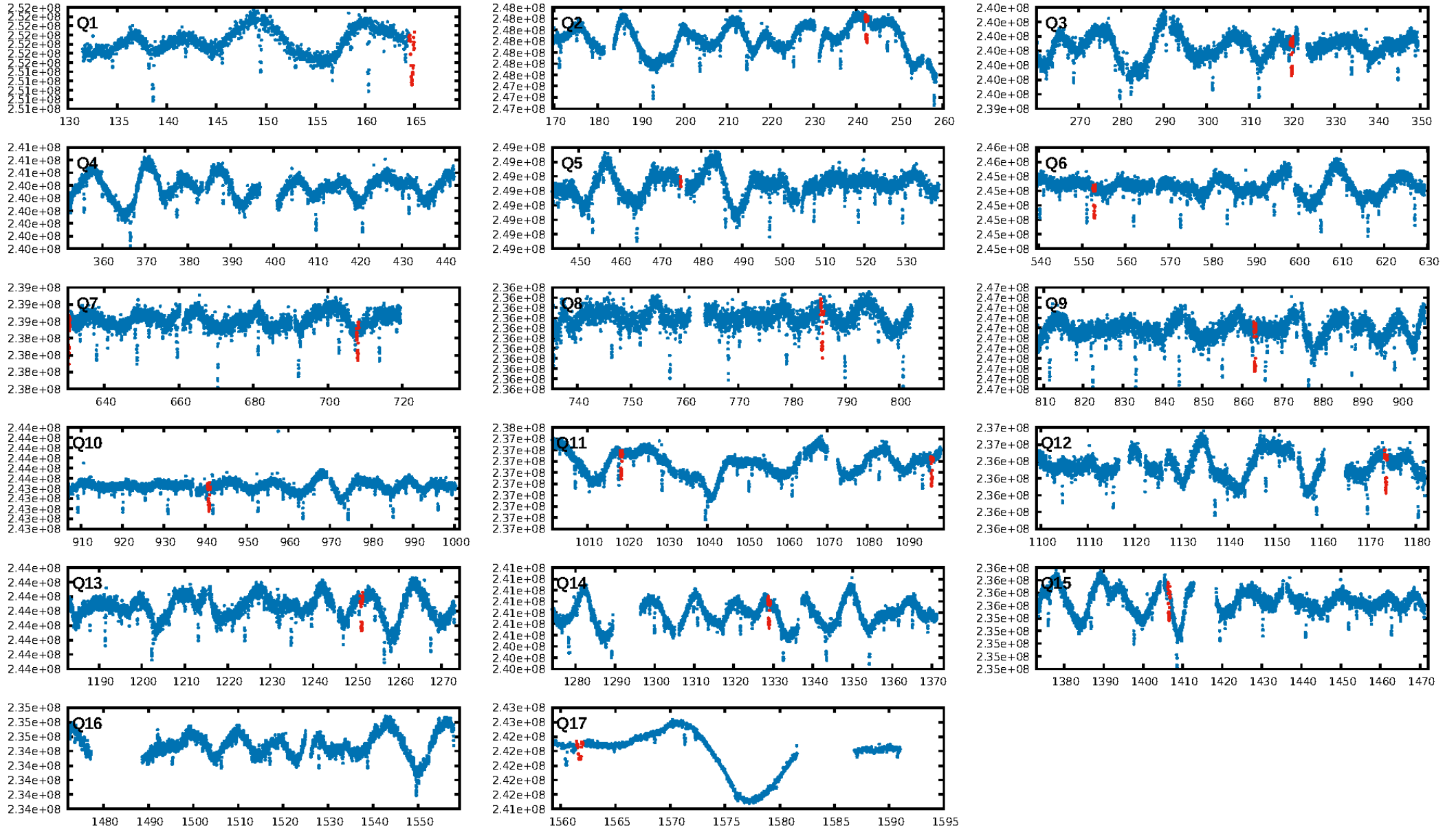
DV Fit Results:

Period = 77.61156 [0.00013] d
Epoch = 164.7273 [0.0015] BKJD
Rp/R* = 0.0287 [0.0013]
a/R* = 57.07 [9.84]
b = 0.74 [0.11]
Seff = 5.88 [1.00]
Teq = 397 [17] K
Rp = 2.89 [0.34] Re
a = 0.3410 [0.0333] AU
Ag = 398.66 [115.84] [3.43 σ]
Teffp = 2743 [179] K [13.02 σ]

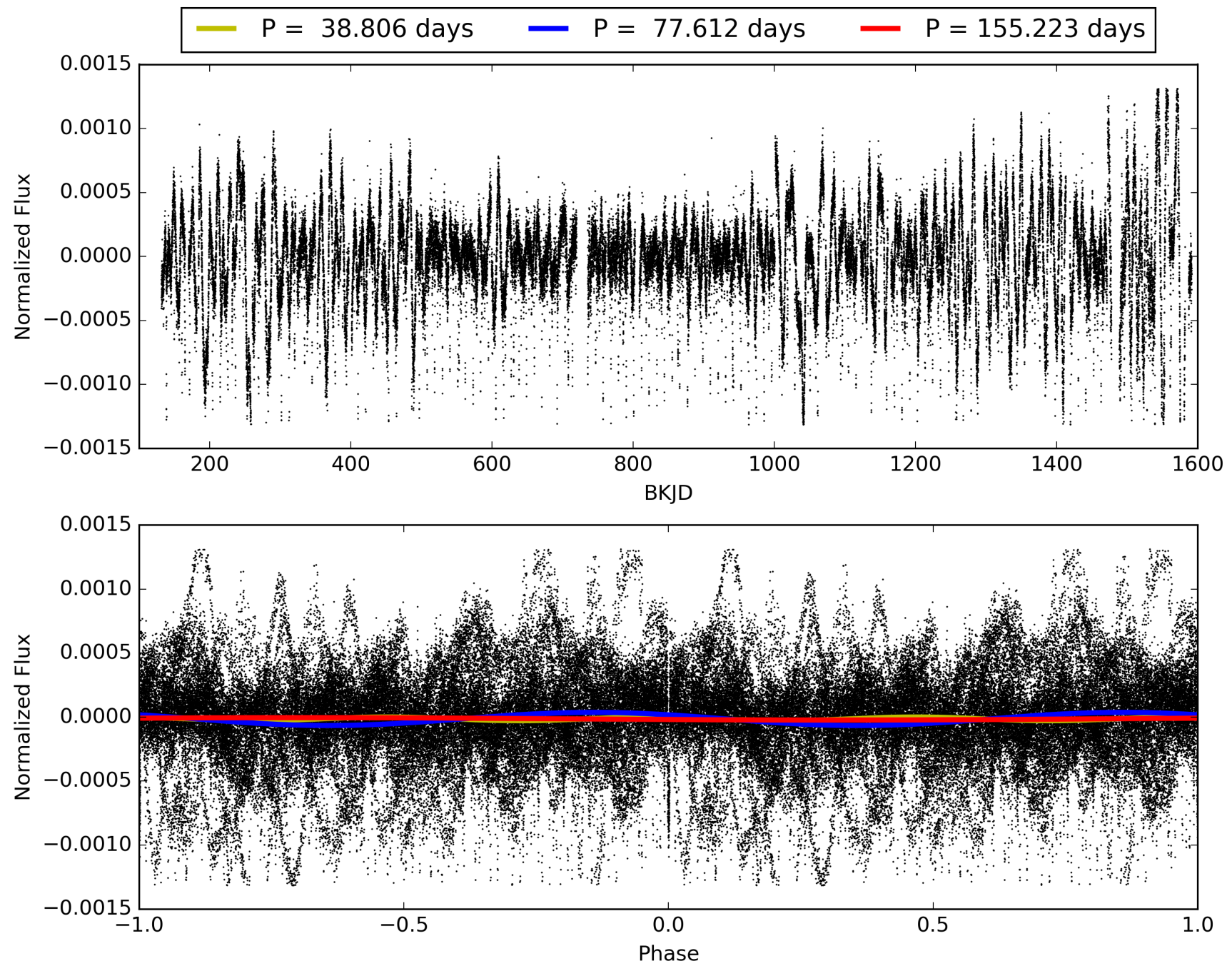
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [169.65 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 4.189
Centroid-sig: 4.7%
Centroid-so: 0.390 arcsec [3.86 σ]
OotOffset-rm: 0.164 arcsec [1.21 σ]
KicOffset-rm: 0.369 arcsec [1.92 σ]
OotOffset-st: 4/3/2/3 [12]
KicOffset-st: 4/3/2/3 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 0.08 [1/12]

TCE 006850504-03, PDC Light Curves

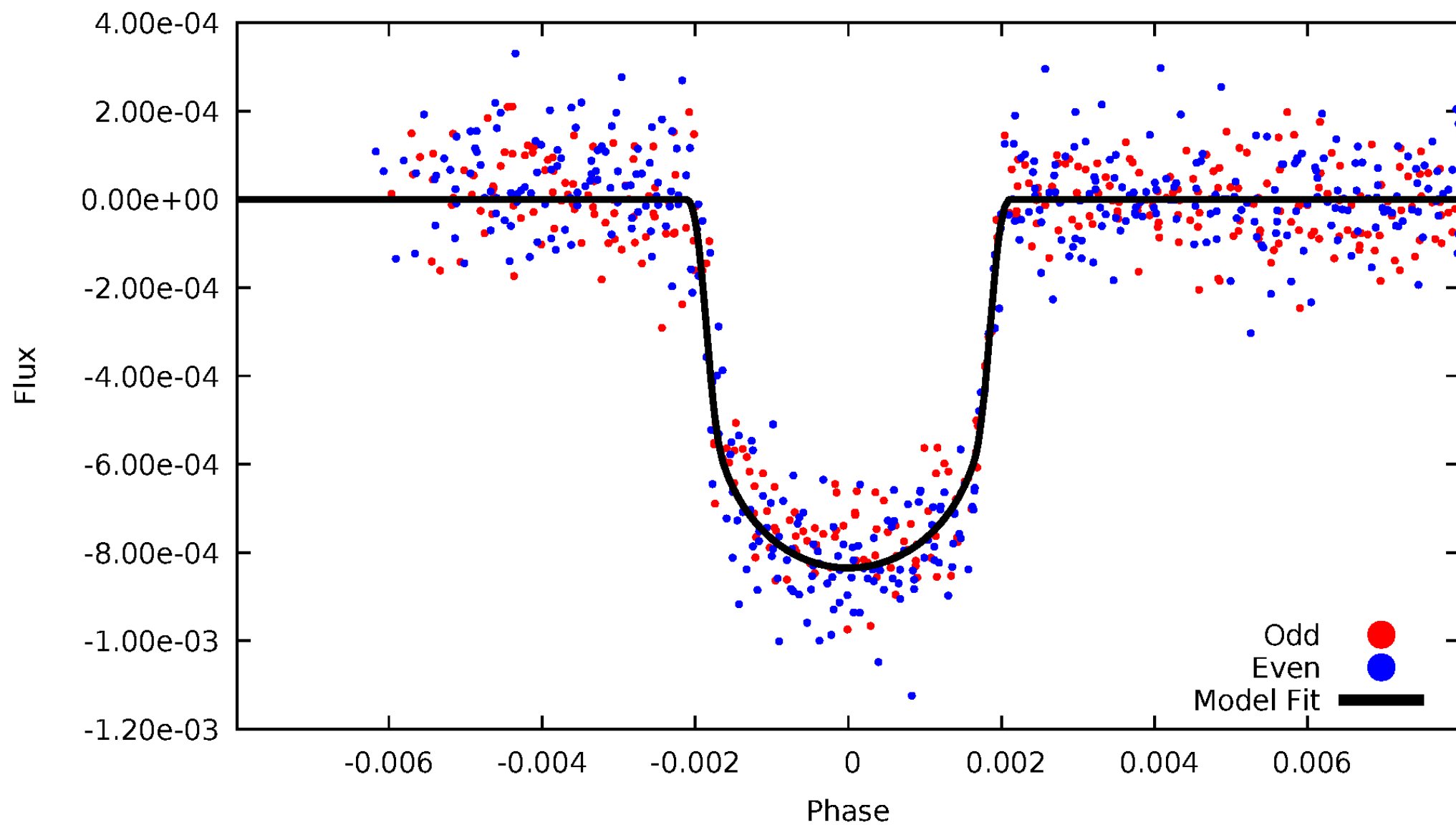


TCE 006850504-03



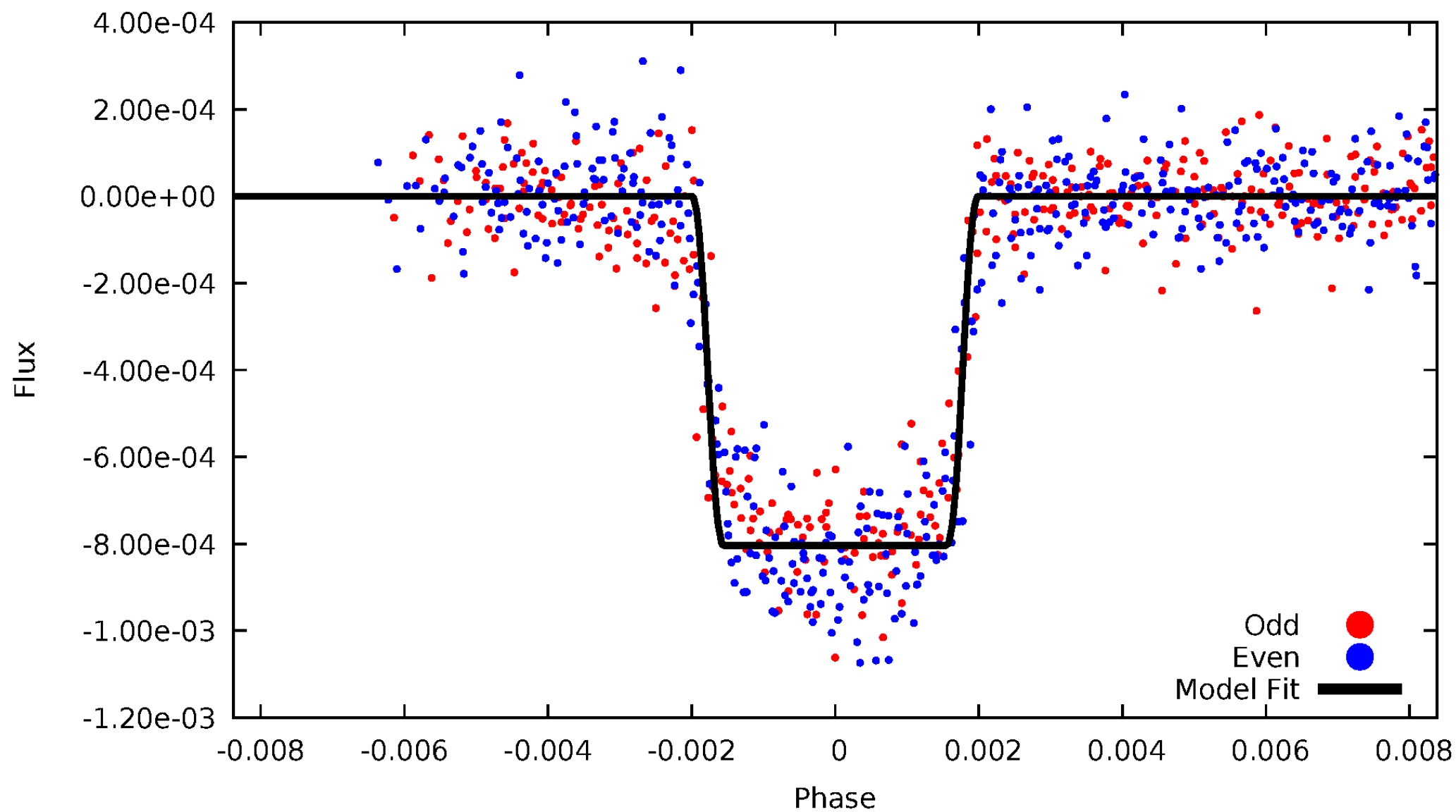
DV Odd/Even

TCE 006850504-03



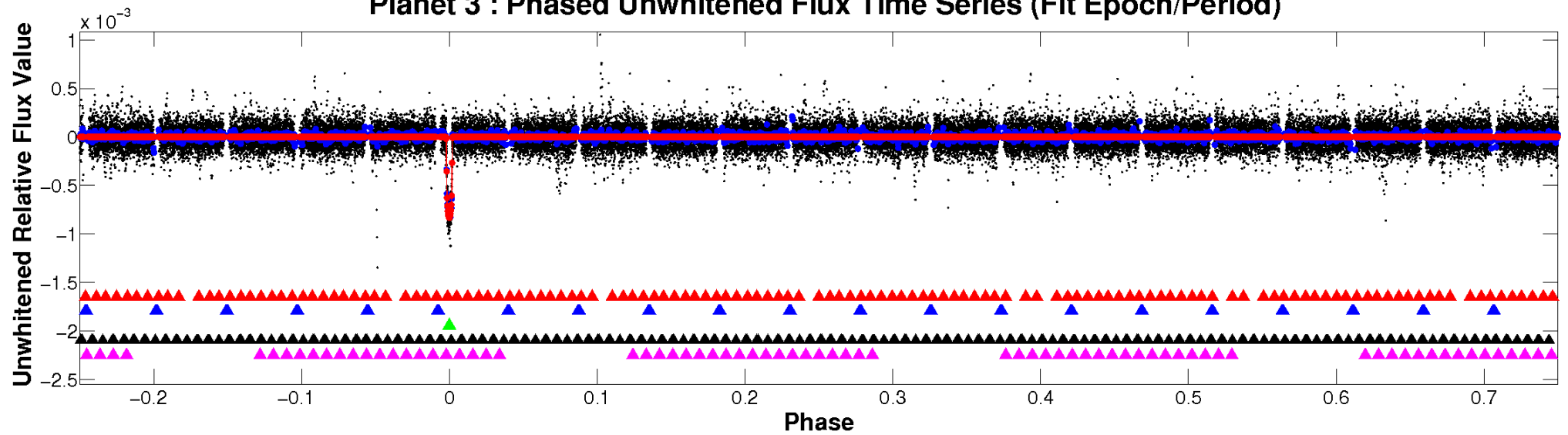
ALT Odd/Even

TCE 006850504-03

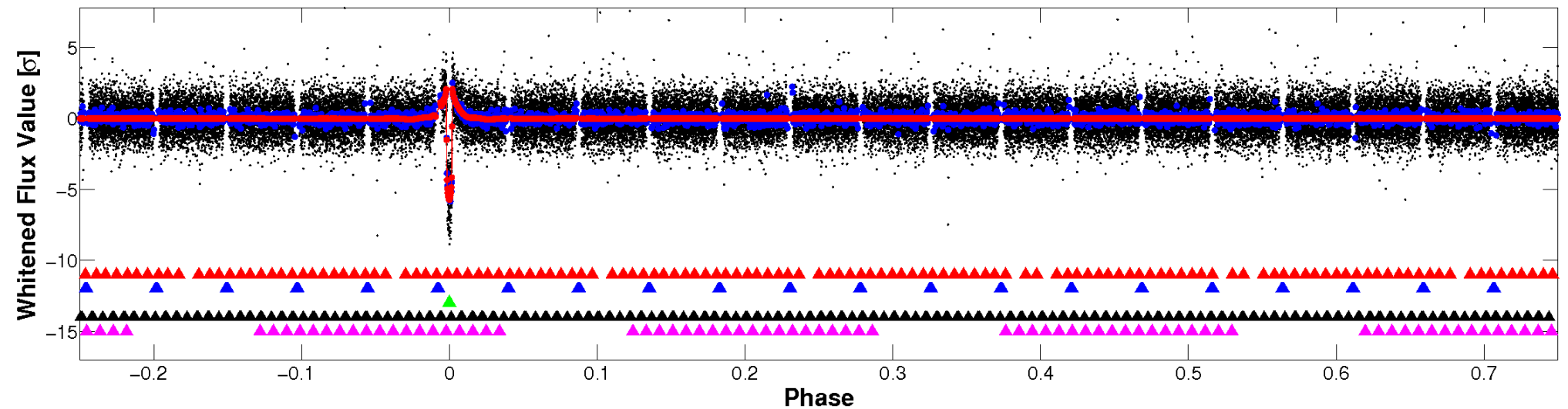


Non-Whitened Vs. Whitened Light Curve

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

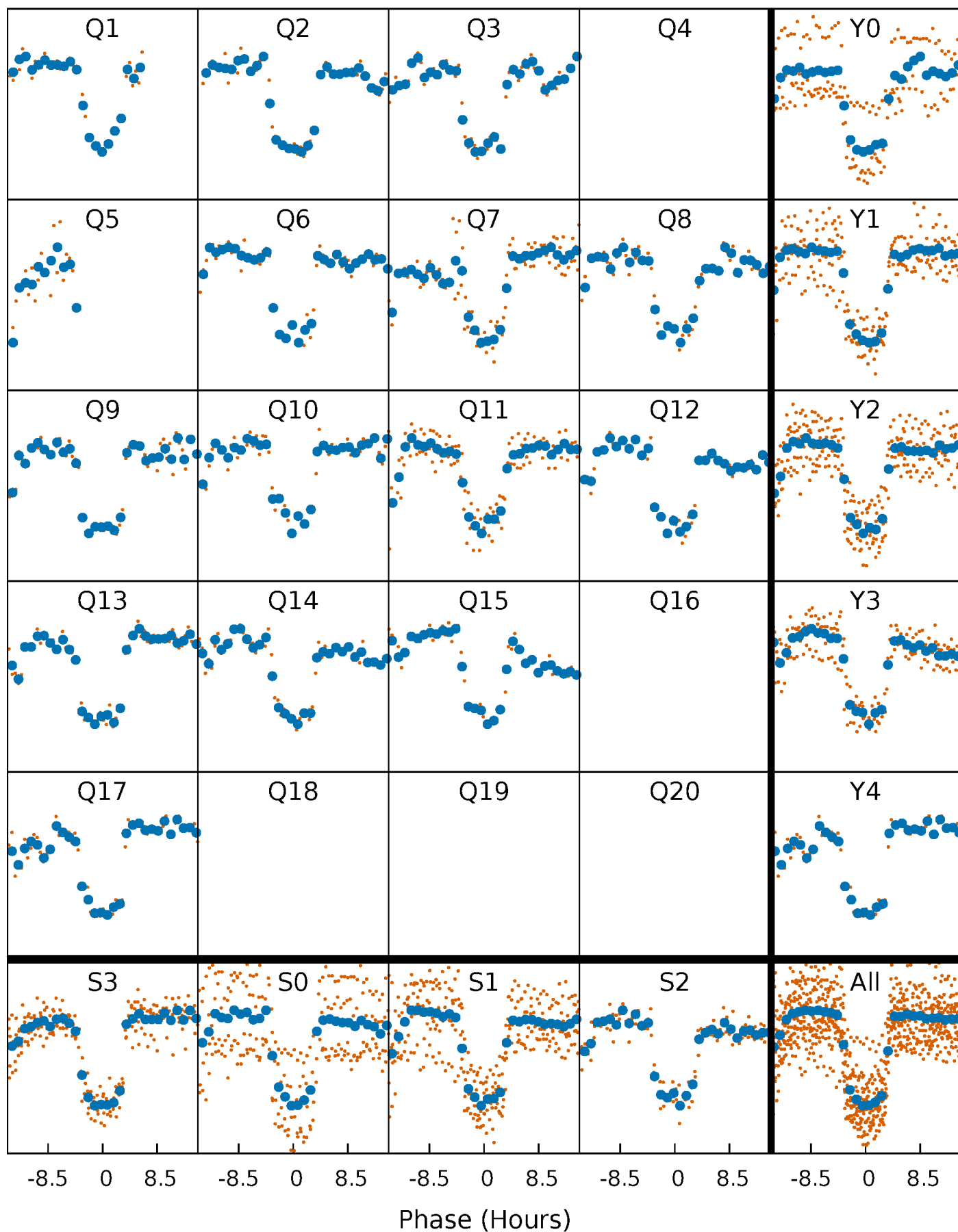


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



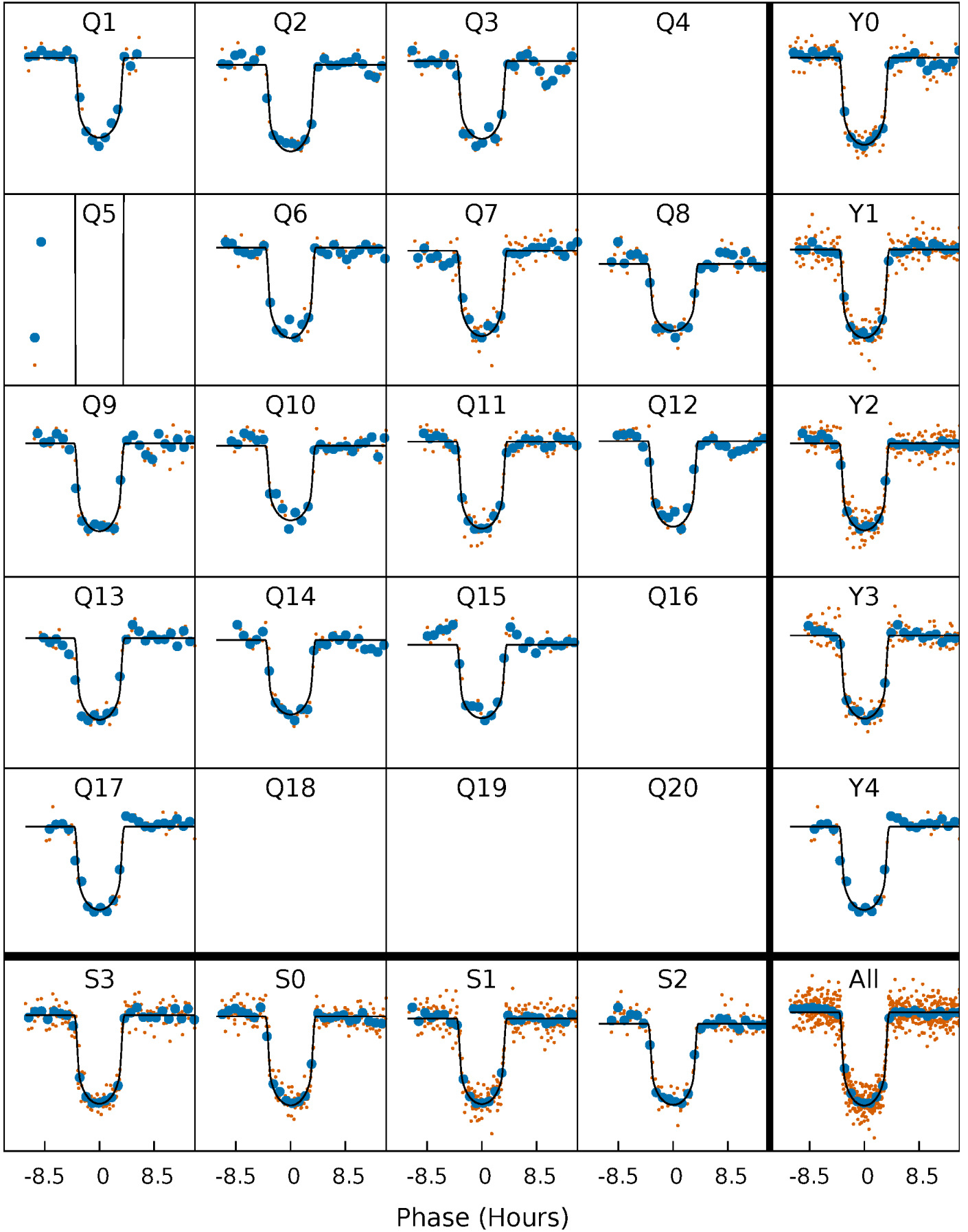
PDC Quarter-Phased Transit Curves

TCE 006850504-03 P= 77.611562 Days $T_0=164.727293$ (BKJD)



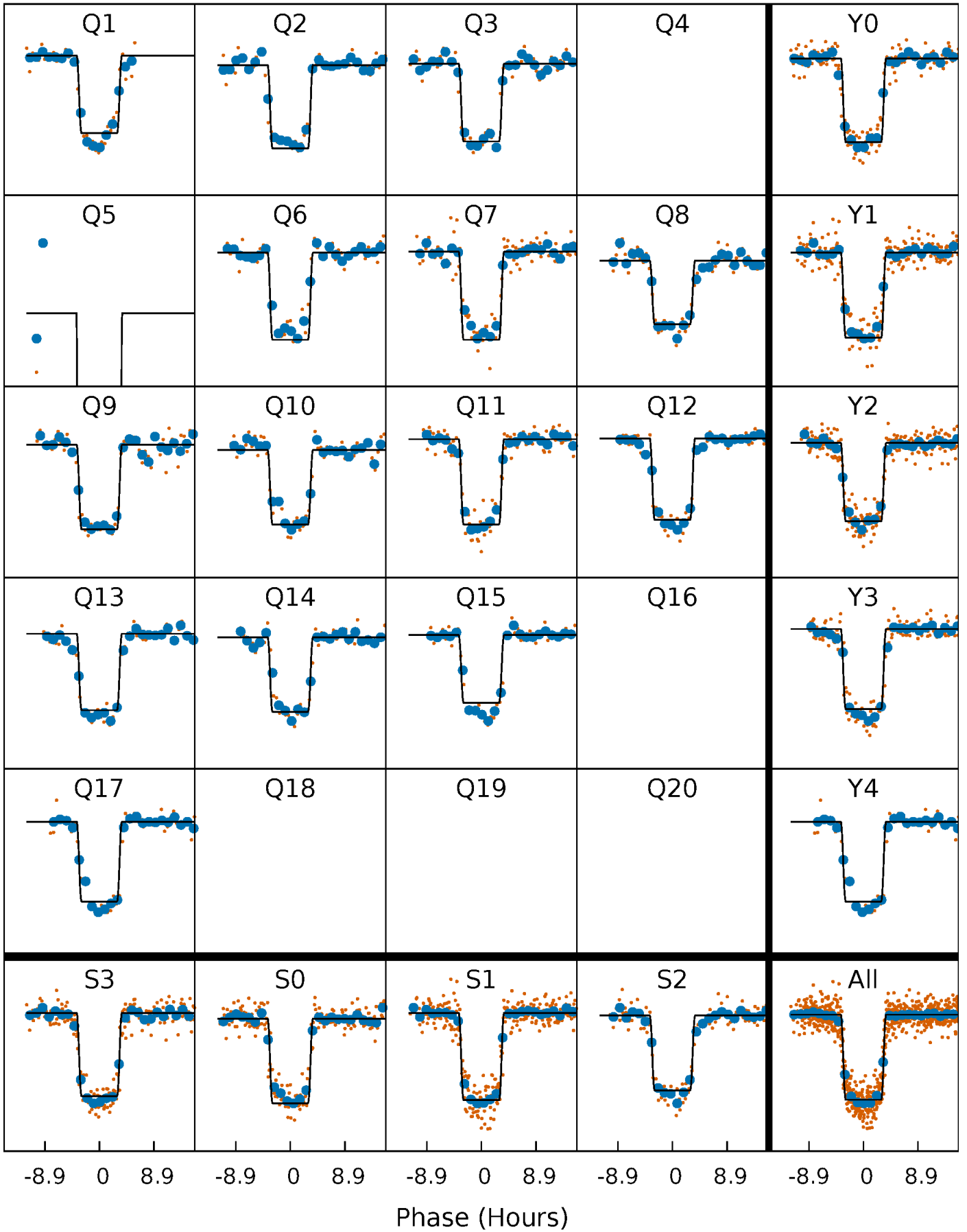
DV Quarter-Phased Transit Curves

TCE 006850504-03 P= 77.611562 Days $T_0=164.727293$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

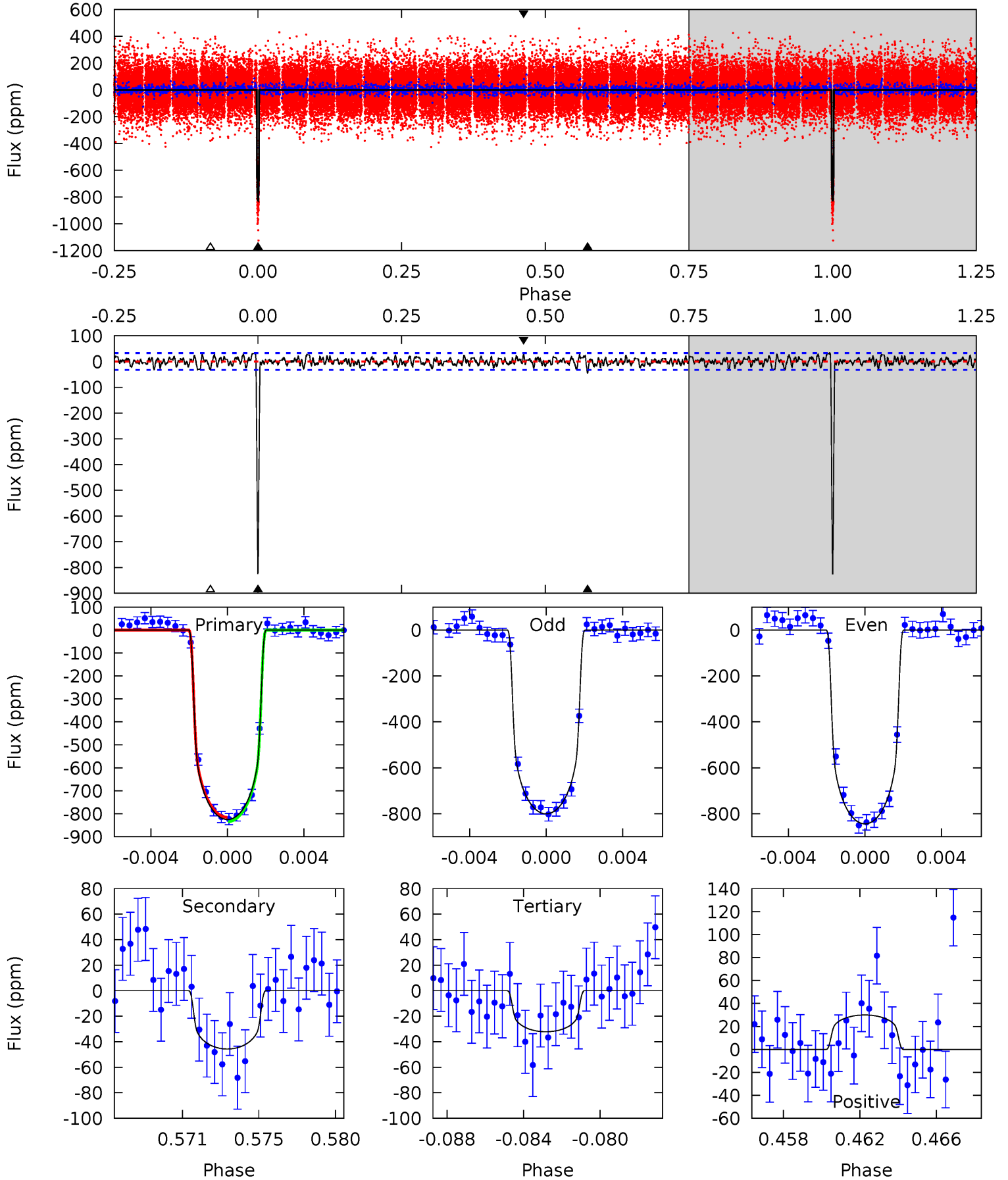
TCE 006850504-03 P= 77.610104 Days $T_0=164.742588$ (BKJD)



DV Model-Shift Uniqueness Test

006850504-03, P = 77.611562 Days, E = 87.115731 Days

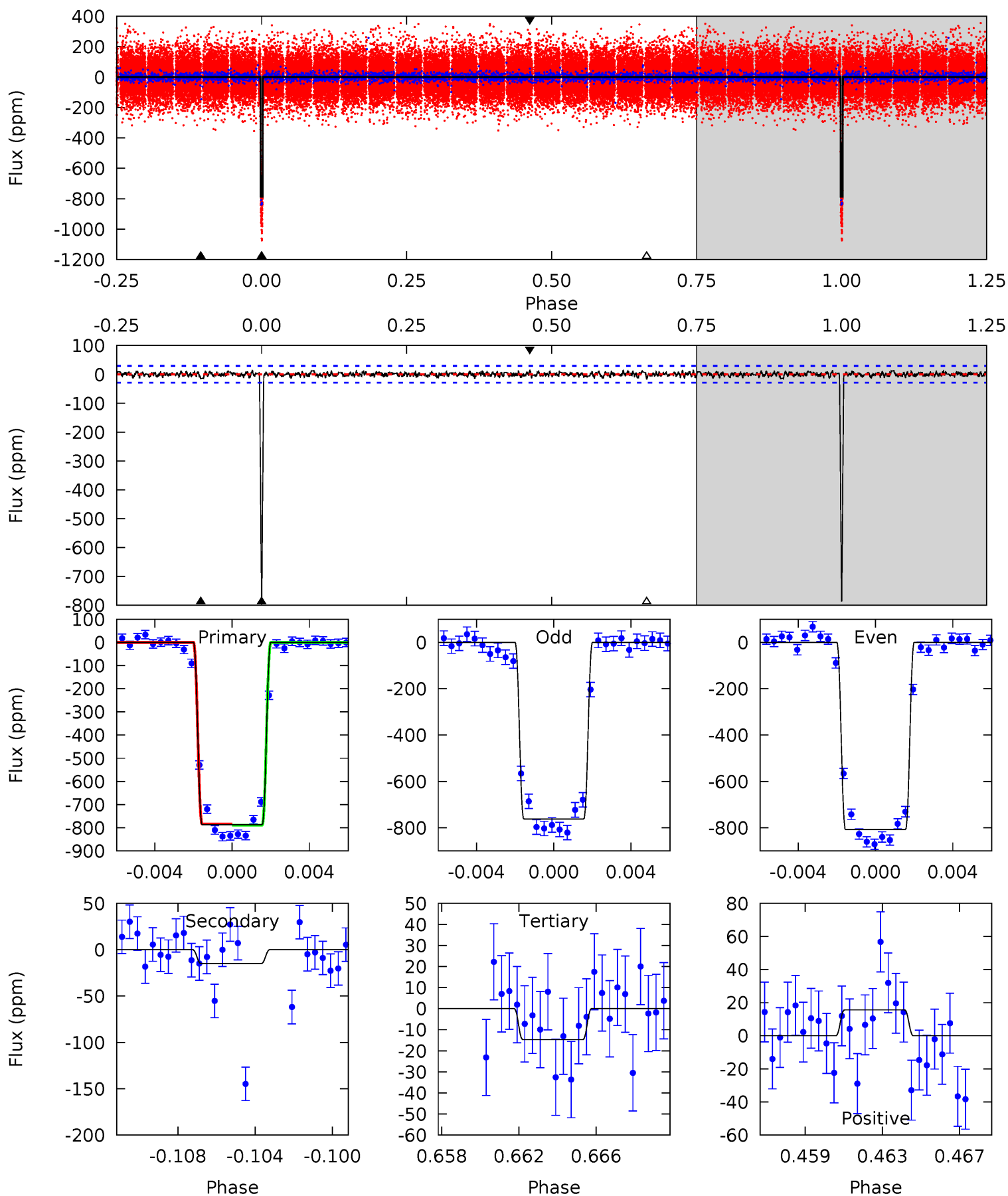
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
130.8	7.24	5.10	4.75	5.19	2.86	1.69	125.7	126.1	2.14	2.50	3.45	1.00	0.04	1.55



Alt Model-Shift Uniqueness Test

006850504-03, P = 77.610104 Days, E = 87.132484 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
141.5	2.71	2.64	2.81	5.20	2.88	0.84	138.8	138.7	0.07	-0.09	4.10	1.00	0.02	0.47



Stellar Parameters For KIC 006850504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5465^{+109}_{-109}	$4.449^{+0.085}_{-0.085}$	$0.020^{+0.150}_{-0.150}$	$0.925^{+0.101}_{-0.083}$	$0.876^{+0.060}_{-0.044}$	$1.561^{+0.467}_{-0.428}$
	+2%/-2%	+2%/-2%	+750%/-750%	+11%/-9%	+7%/-5%	+30%/-27%
Source	SPE32	SPE32	SPE32	DSEP		

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

Secondary Eclipse Parameters for KIC 006850504-03 / KOI 0070.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-46 ± 6	$2.89^{+0.23}_{-0.20}$	555^{+19}_{-19}	3224^{+87}_{-88}	348^{+72}_{-63}
Alt.	-15 ± 6	$2.87^{+0.23}_{-0.21}$	555^{+20}_{-20}	2769^{+132}_{-157}	118^{+51}_{-45}

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

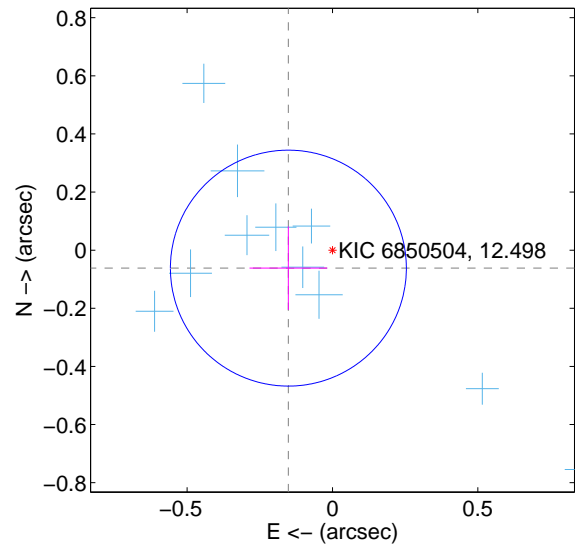
Supplemental centroid analysis for 006850504-03. Kepler magnitude: 12.50. Transit SNR 79.46

There are 12 quarters with good PRF difference image offsets

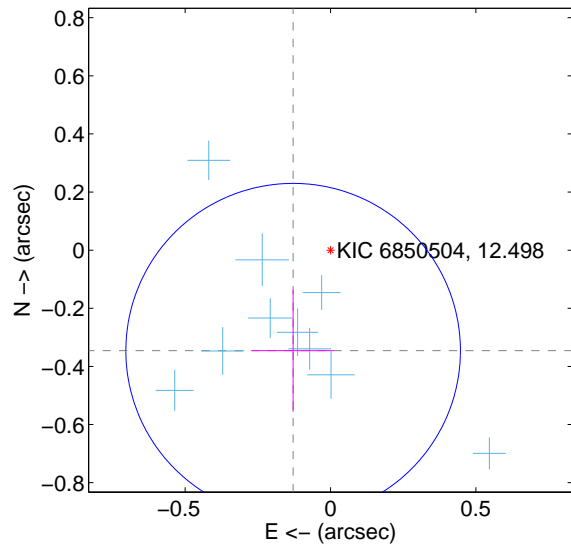
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.164 ± 0.135	1.21	0.152 ± 0.134	-0.062 ± 0.144
PRF-fit source offset from KIC position	0.369 ± 0.192	1.92	0.129 ± 0.141	-0.346 ± 0.211
photometric centroid source offset	0.39 ± 0.10	3.86	-0.10 ± 0.10	-0.38 ± 0.10

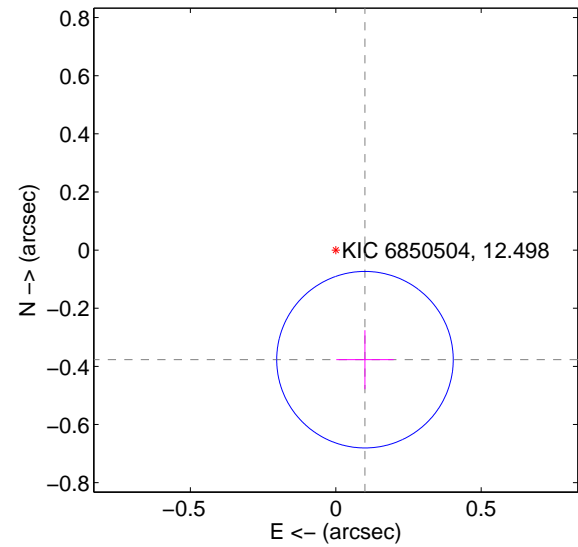
offset from difference PRF-fit to OOT PRF-fit



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.

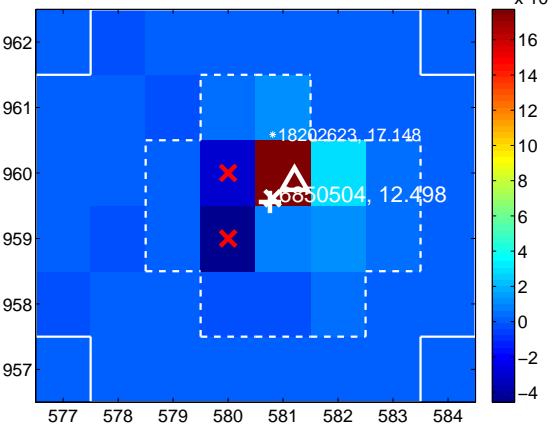
Q1 no difference image



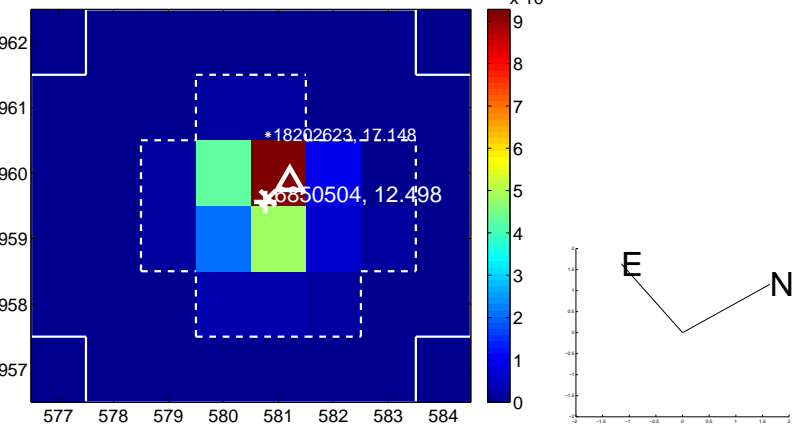
Q1 no OOT image



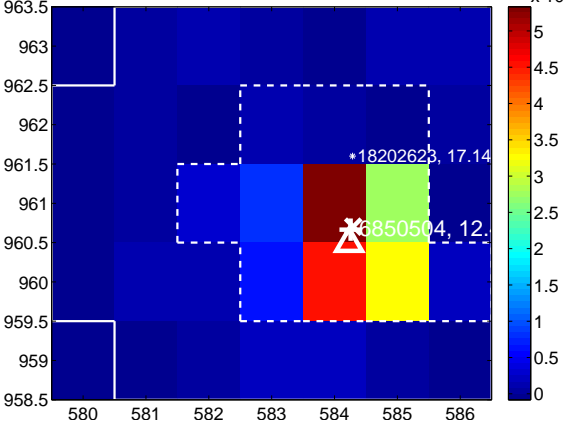
Q2 difference image



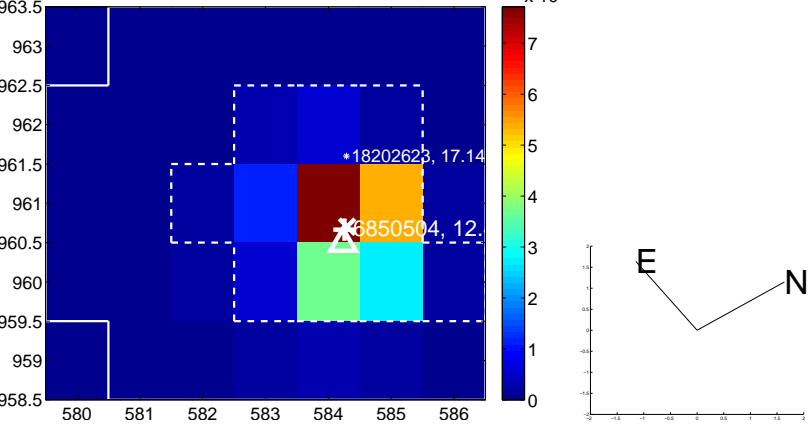
Q2 OOT image



Q3 difference image



Q3 OOT image



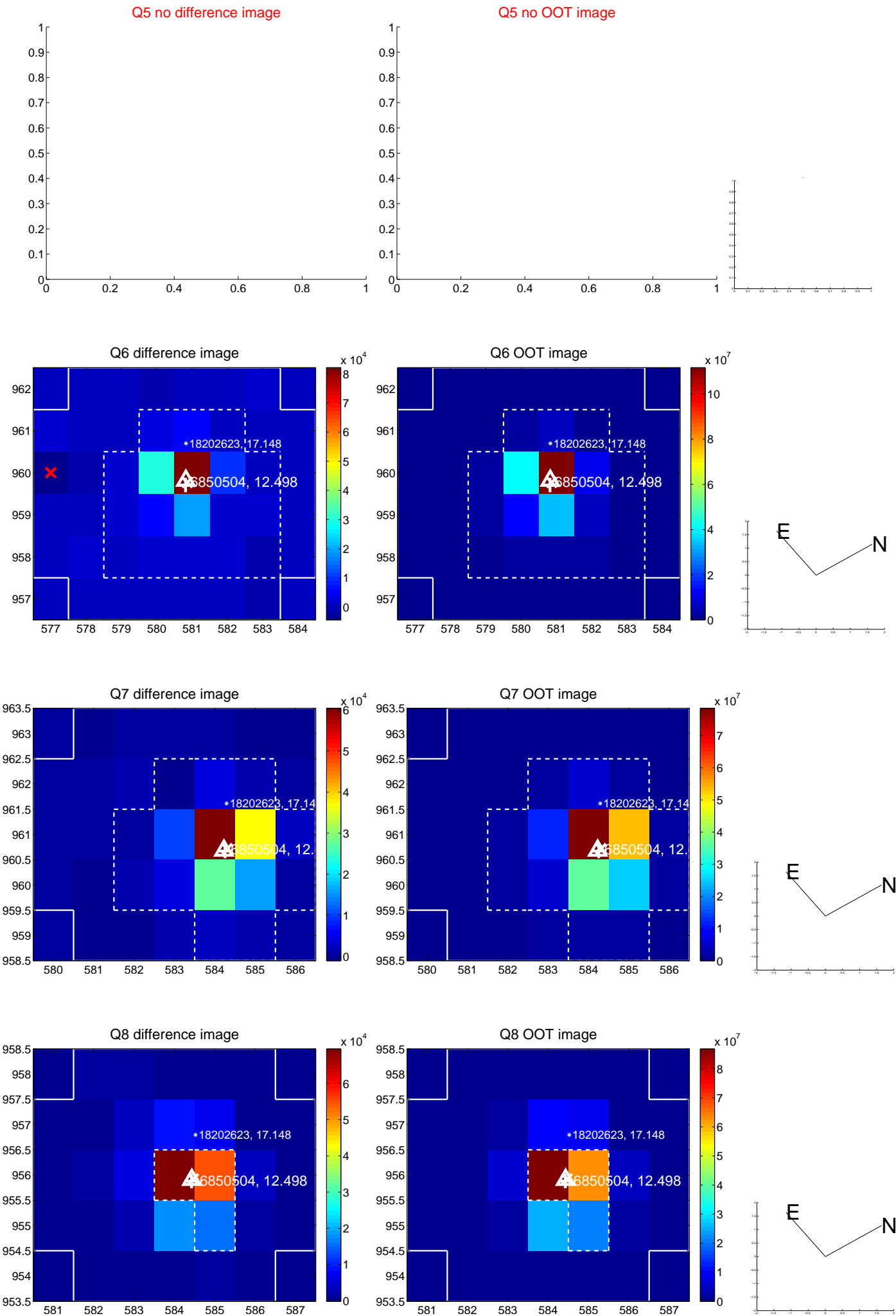
Q4 no difference image



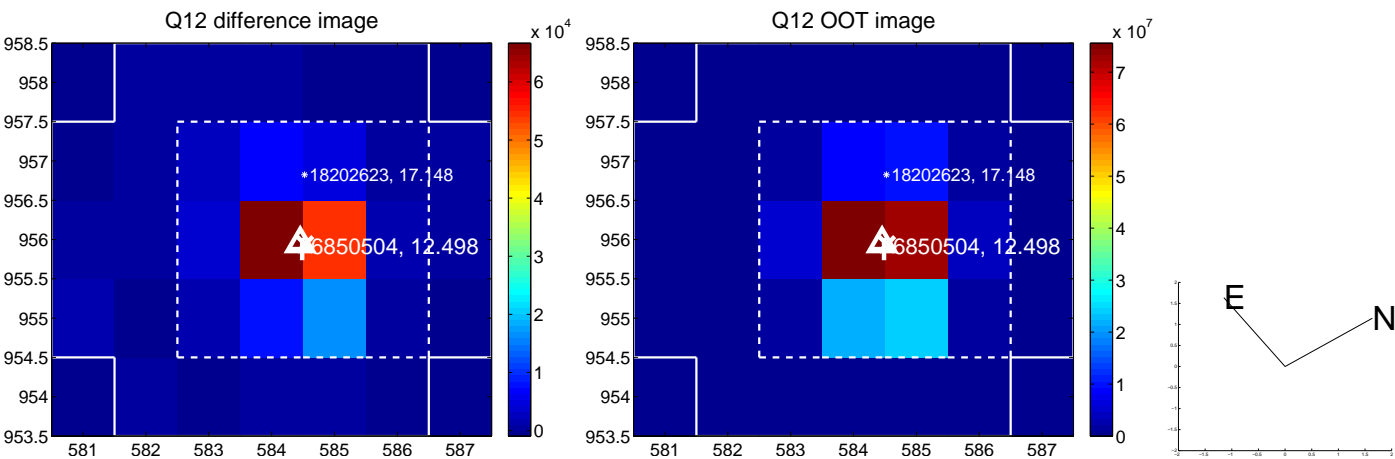
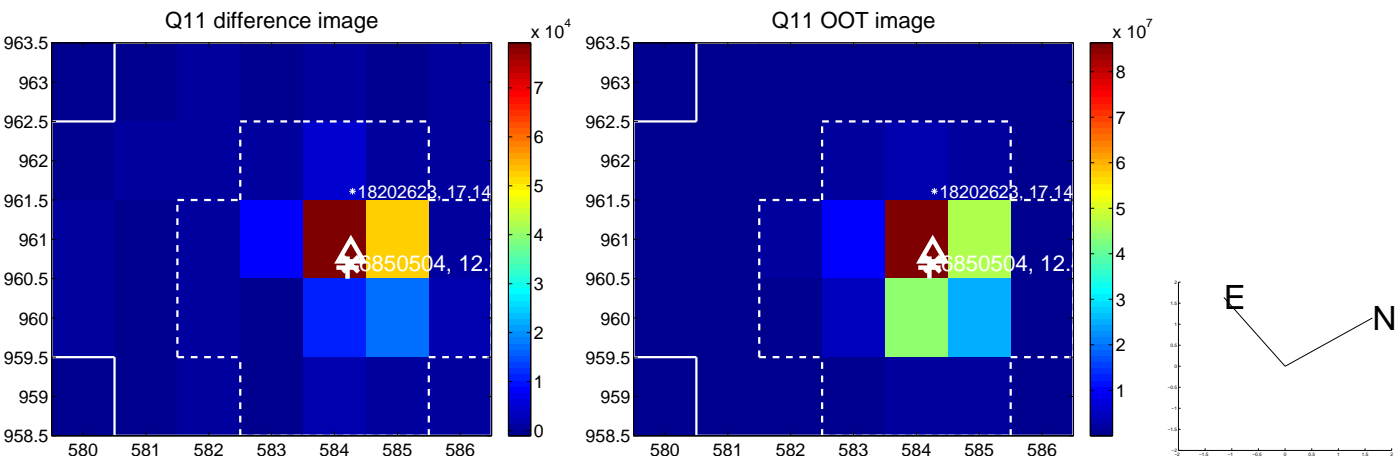
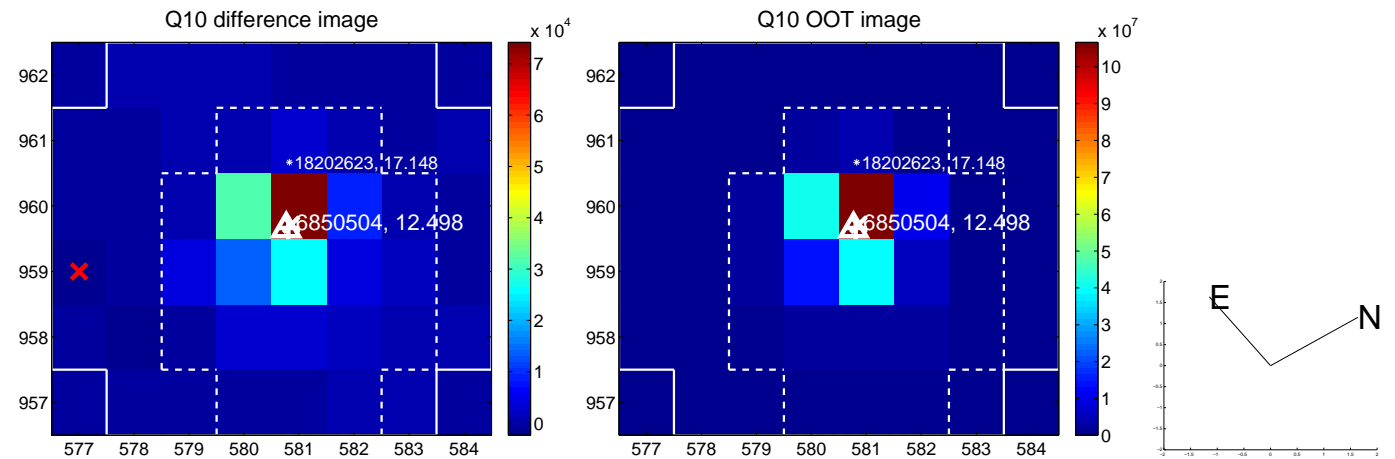
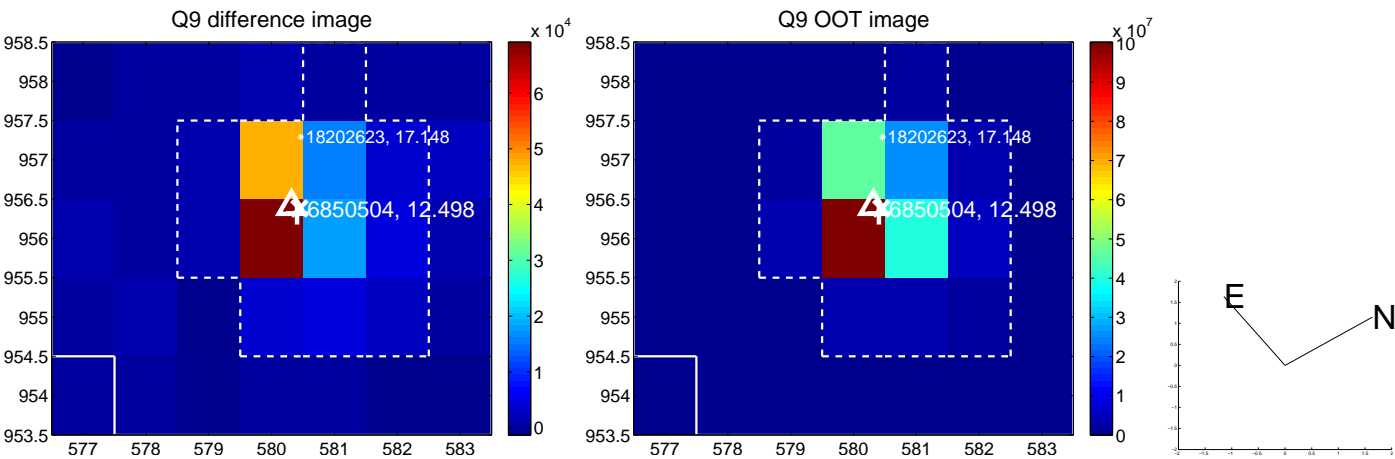
Q4 no OOT image



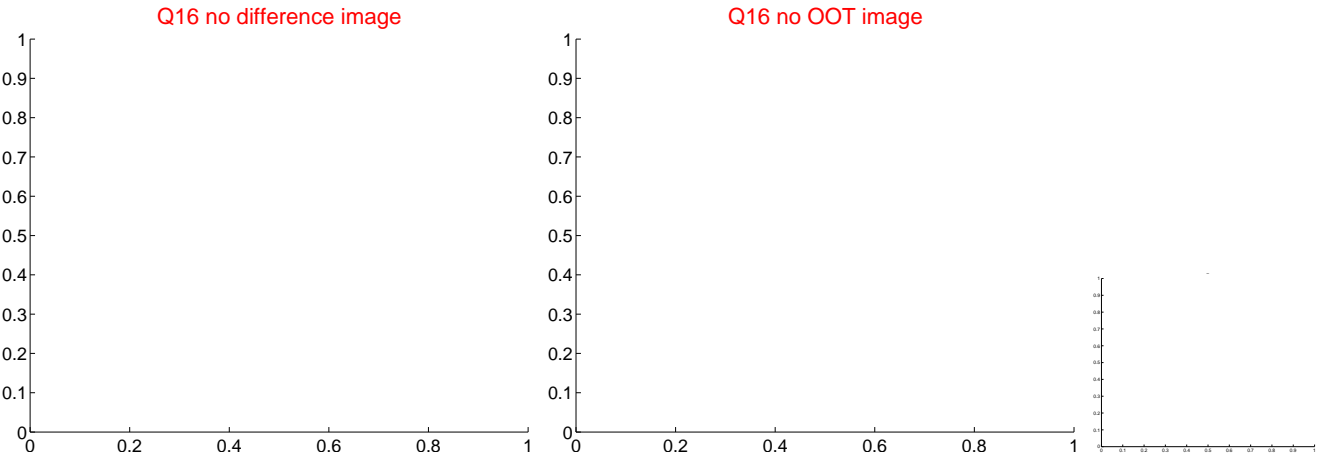
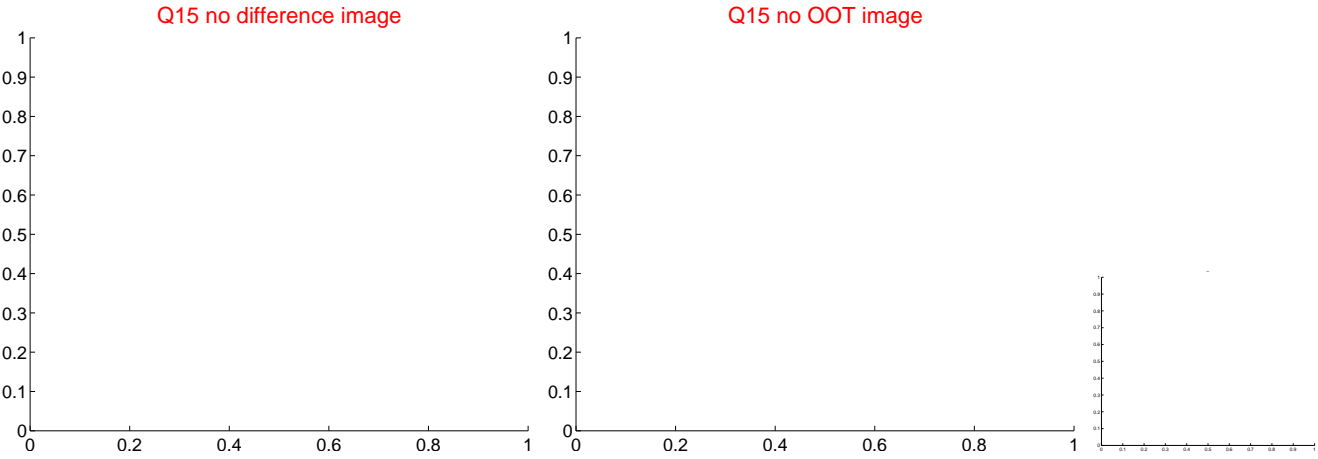
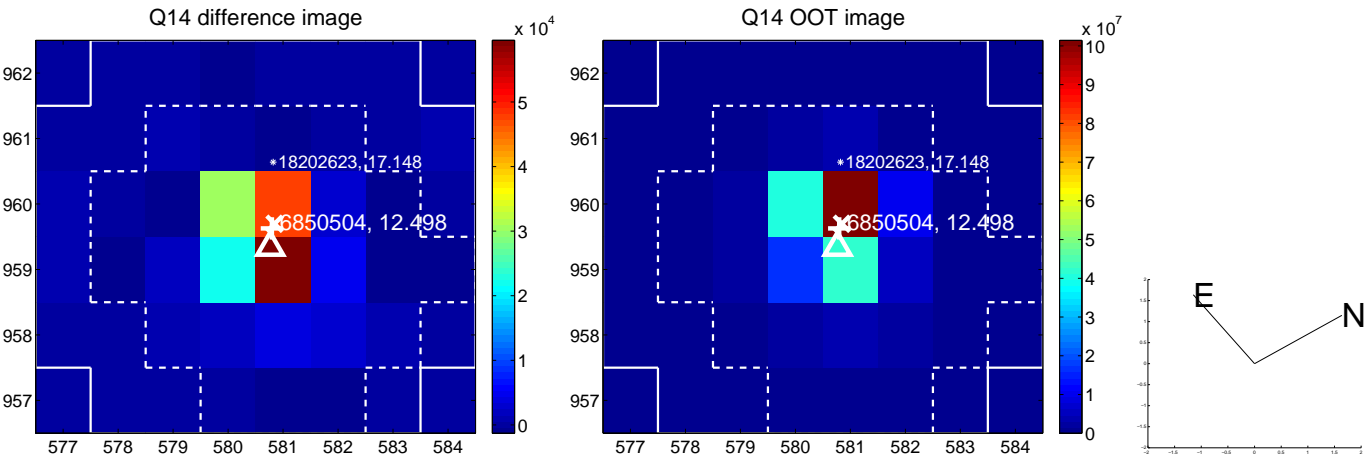
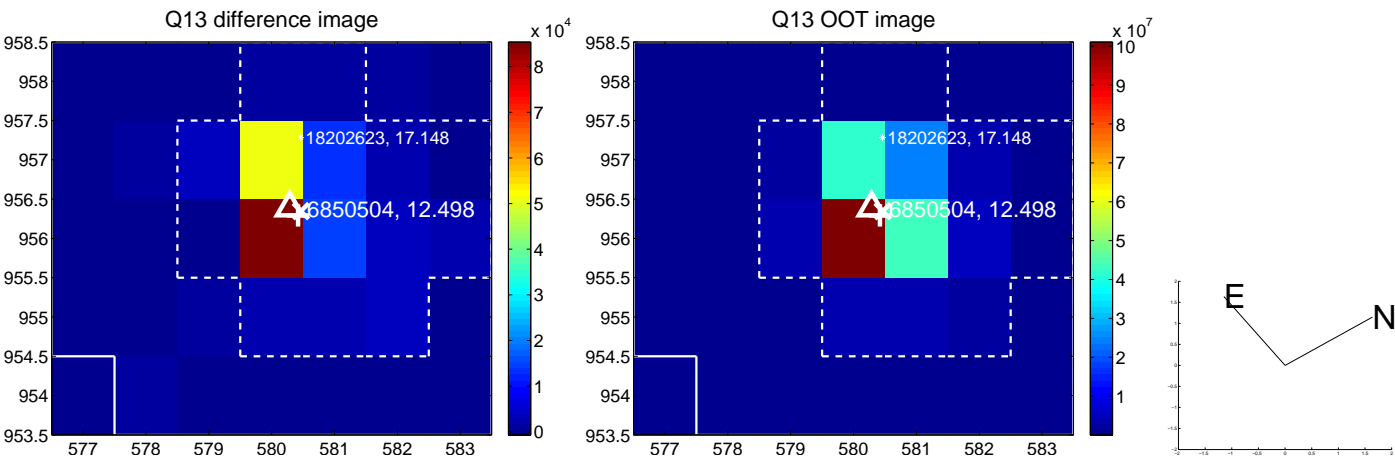
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



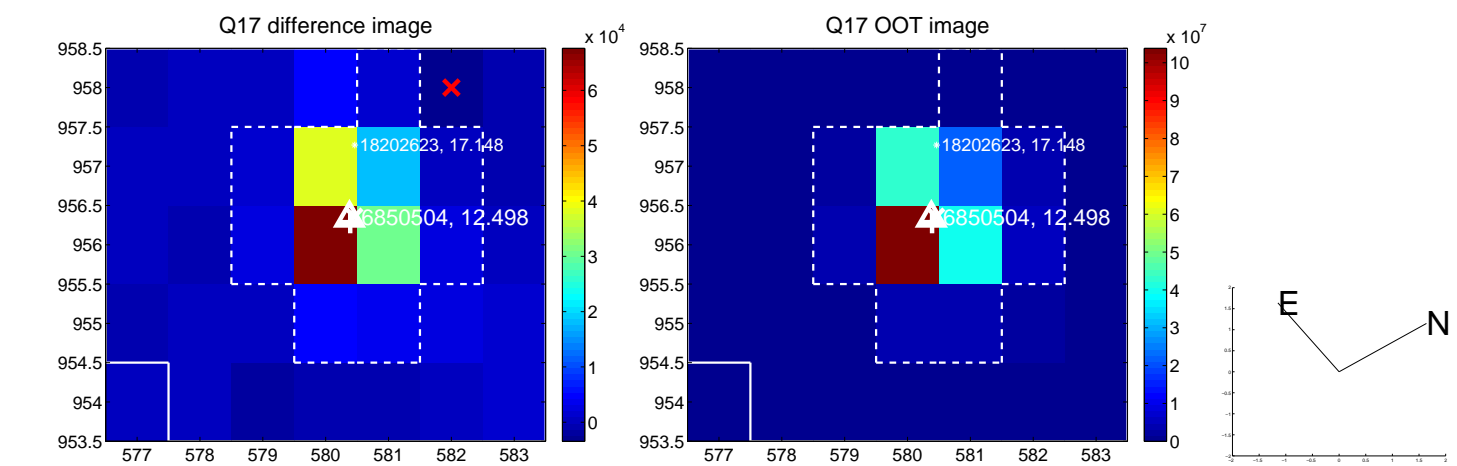
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



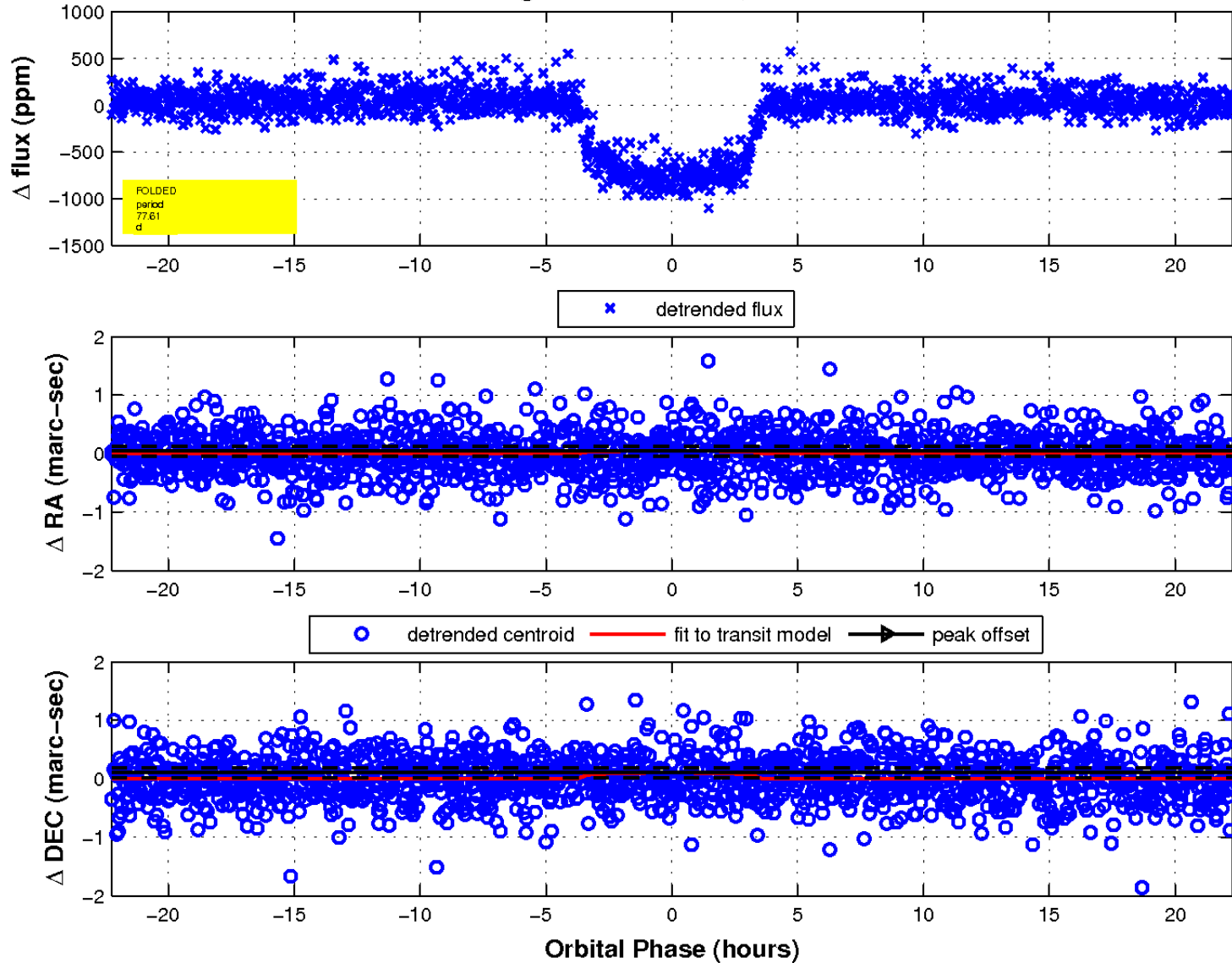
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



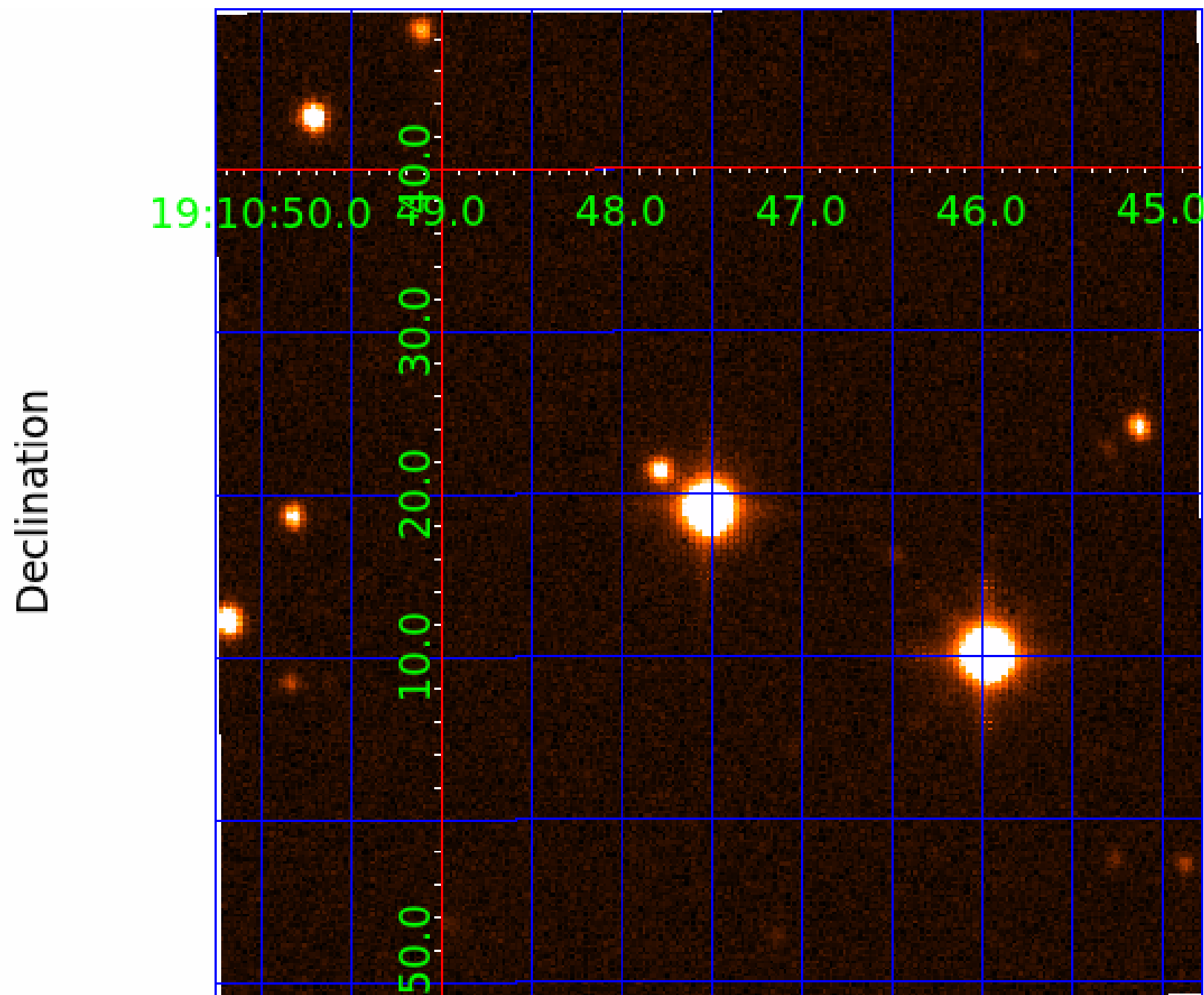
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 3 of 5



UKIRT Image



KIC 006850504

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})
006850504-01	OBS	0070.01	10.854096	138.607854	1035.1	3.894	203.2	193.8	0.93	5465	3.25	81.01
006850504-02	OBS	0070.02	3.696119	134.501692	377.5	2.584	108.2	114.3	0.93	5465	2.12	340.69
006850504-03	OBS	0070.03	77.611562	164.727293	834.7	7.431	75.4	79.5	0.93	5465	2.89	5.88
006850504-04	OBS	0070.04	6.098551	135.930129	72.3	2.928	16.5	17.5	0.93	5465	0.94	174.74
006850504-05	OBS	0070.05	19.577473	135.212513	93.1	3.491	12.2	13.5	0.93	5465	1.05	36.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006850504-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-03	OBS	PC	0.56	0	0	0	0	NO_COMMENT
006850504-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-05	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

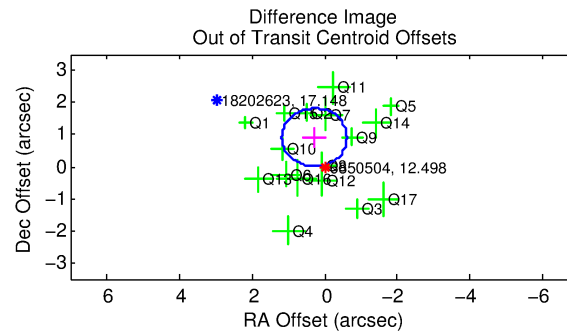
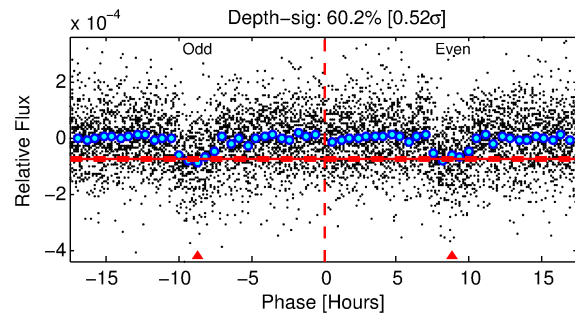
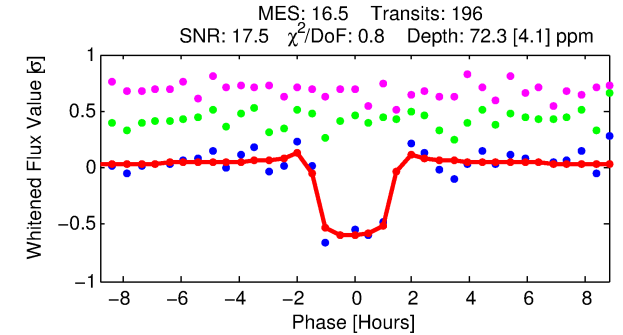
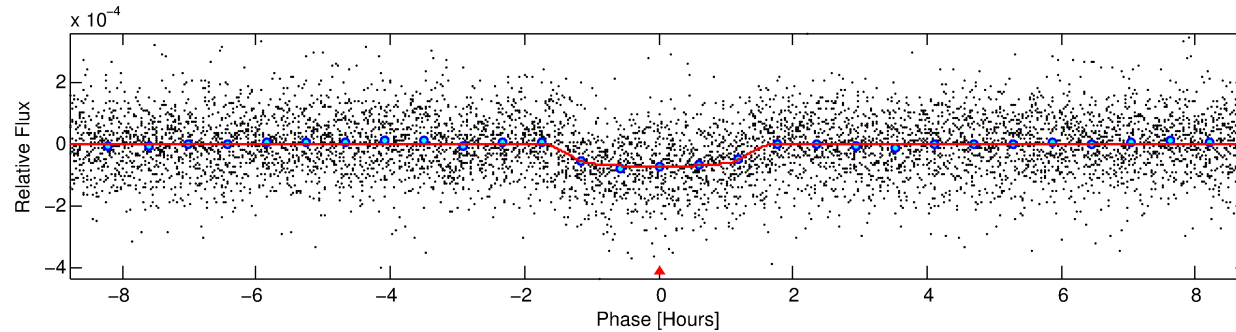
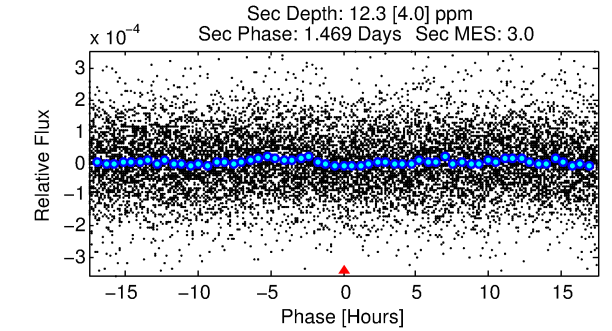
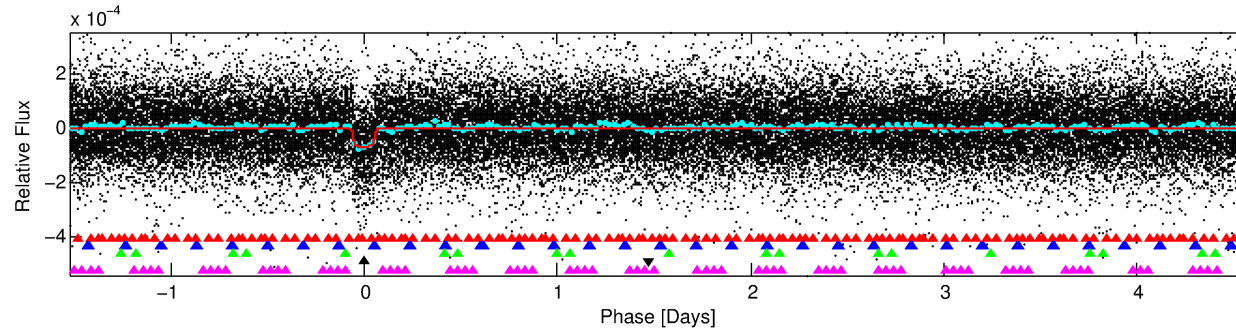
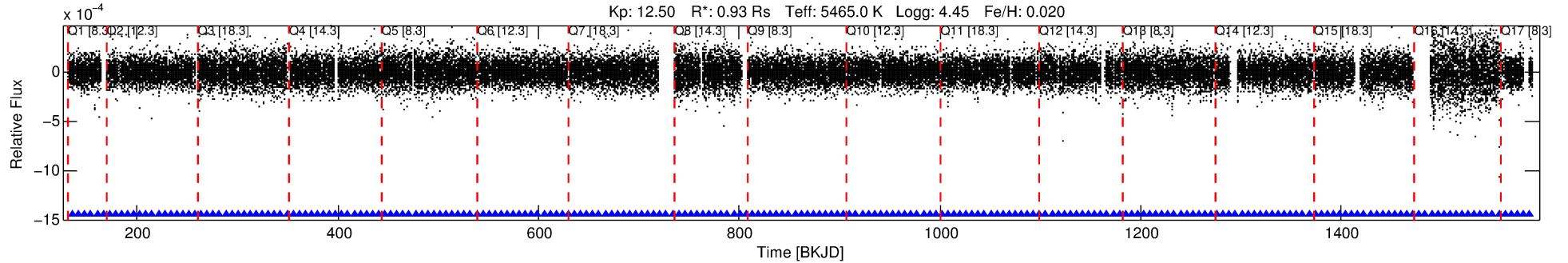
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006850504-04

No Significant Match Found

DV One-Page Summary

KIC: 6850504 Candidate: 4 of 5 Period: 6.099 d
KOI: K00070.04 Name: Kepler-20e Corr: 0.985



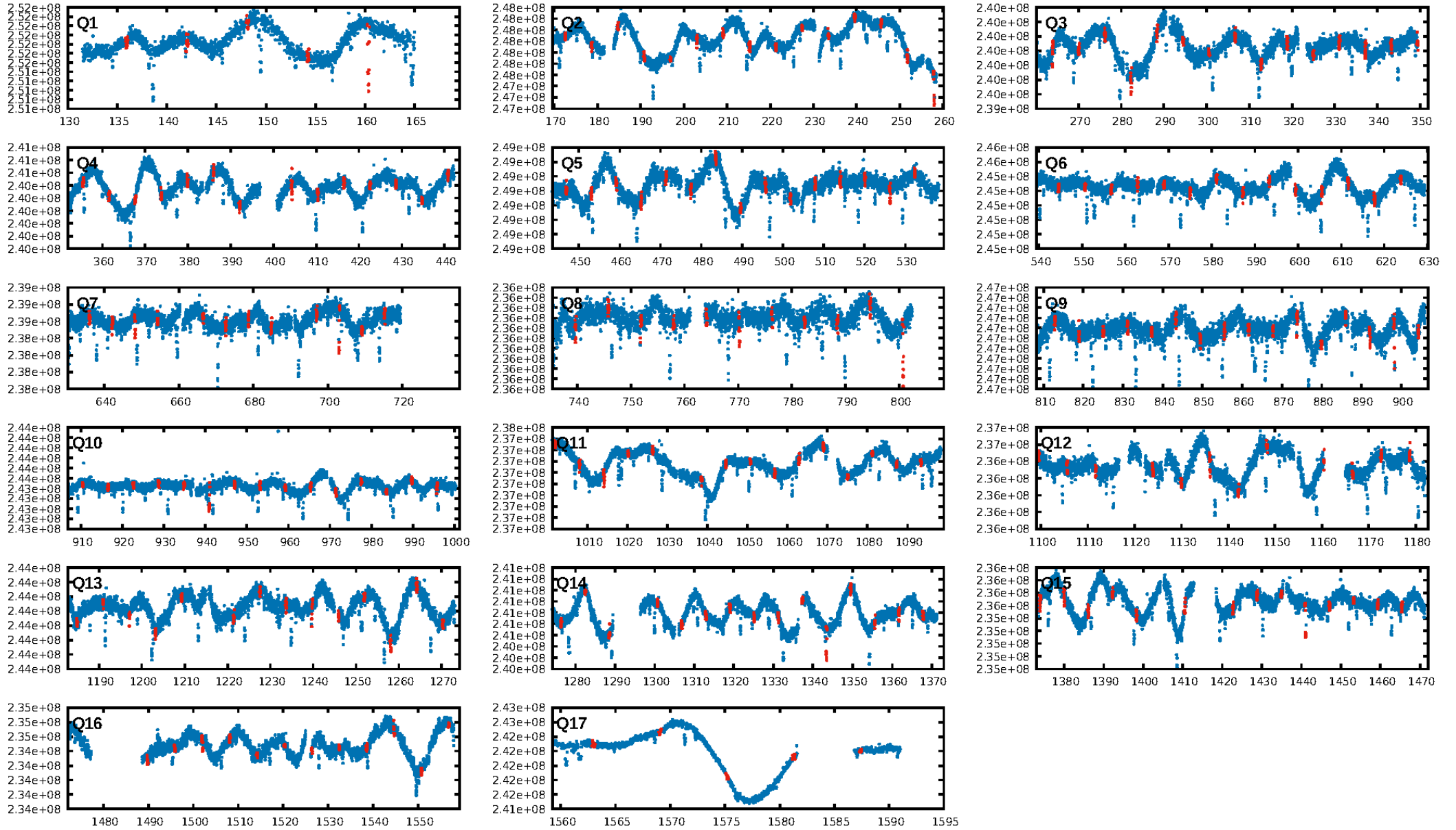
DV Fit Results:

Period = 6.09855 [0.00002] d
Epoch = 135.9301 [0.0025] BKJD
Rp/R* = 0.0093 [0.0027]
a/R* = 7.37 [9.27]
b = 0.90 [0.28]
Seff = 174.74 [29.60]
Teq = 927 [39] K
Rp = 0.94 [0.29] Re
a = 0.0626 [0.0061] AU
Ag = 29.75 [20.21] [1.42σ]
Teffp = 3348 [559] K [4.32σ]

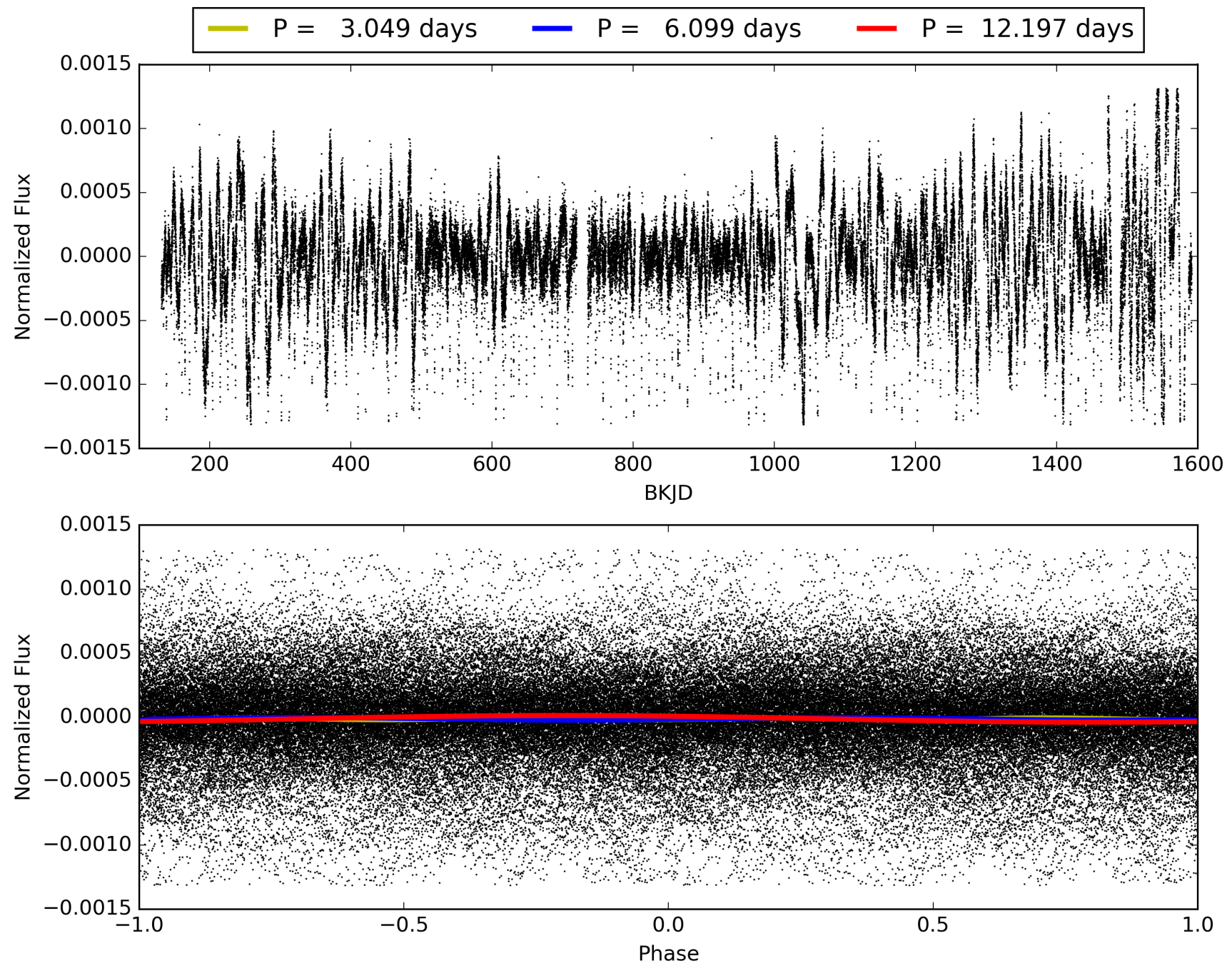
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.76σ]
LongPeriod-sig: 100.0% [23.42σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.57e-55
RollingBand-fgt: 1.00 [187/187]
GhostDiagnostic-chr: 8.425
Centroid-sig: 37.6%
Centroid-so: 0.602 arcsec [1.27σ]
OotOffset-rm: 0.956 arcsec [3.18σ]
KicOffset-rm: 0.684 arcsec [2.28σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006850504-04, PDC Light Curves

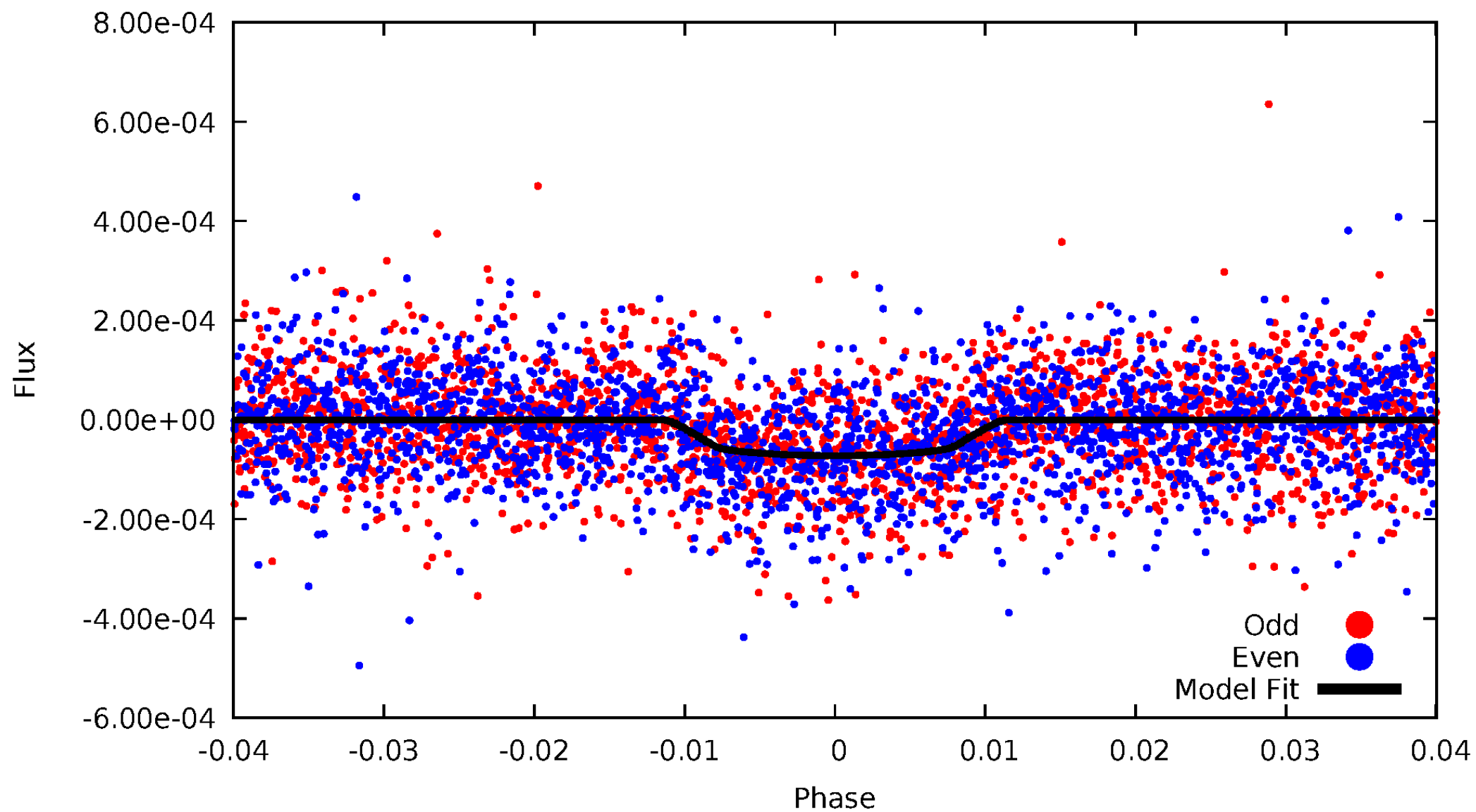


TCE 006850504-04



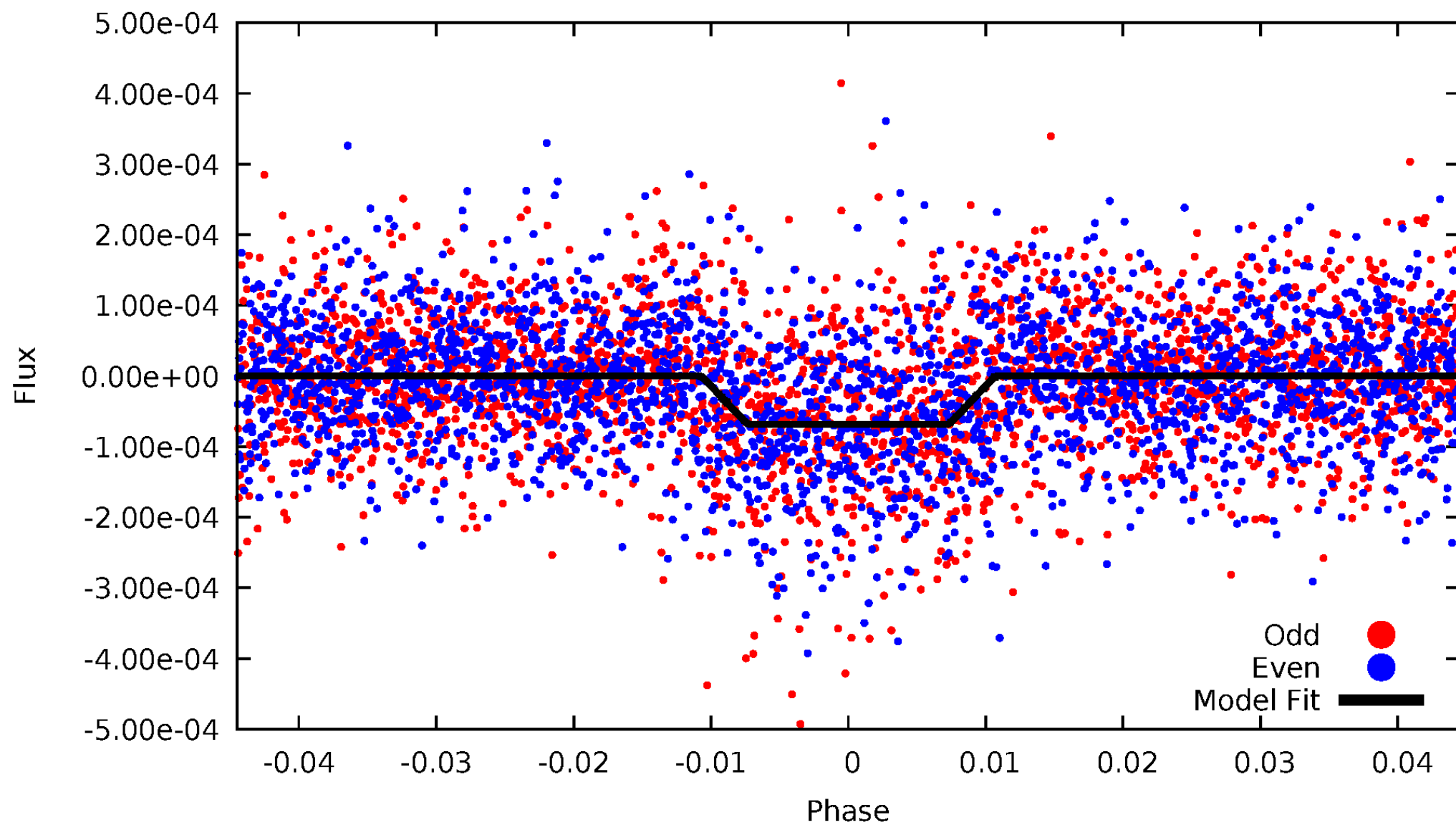
DV Odd/Even

TCE 006850504-04



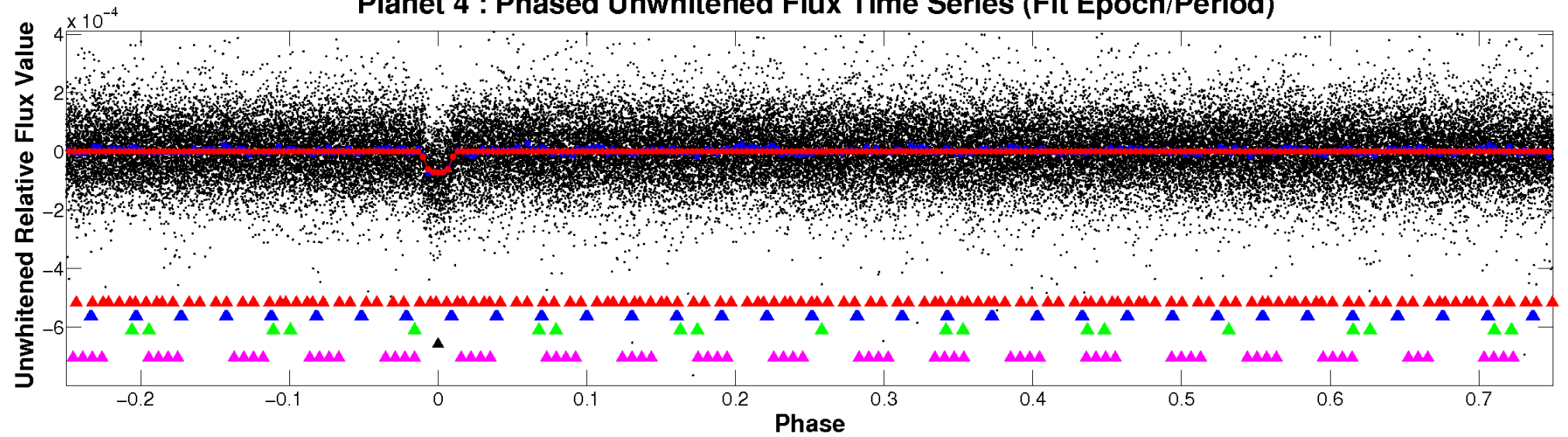
ALT Odd/Even

TCE 006850504-04

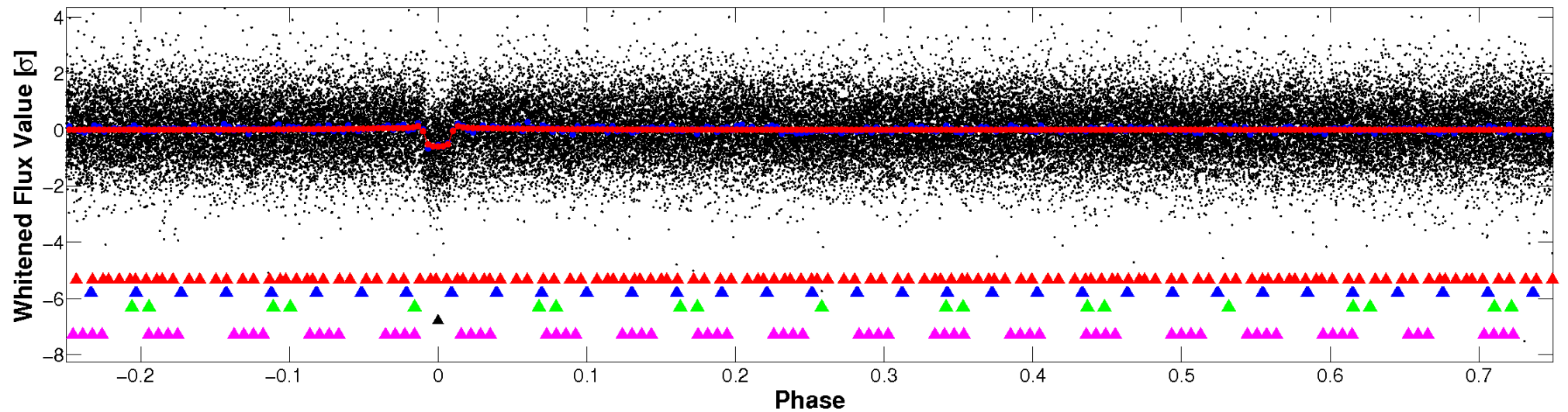


Non-Whitened Vs. Whitened Light Curve

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

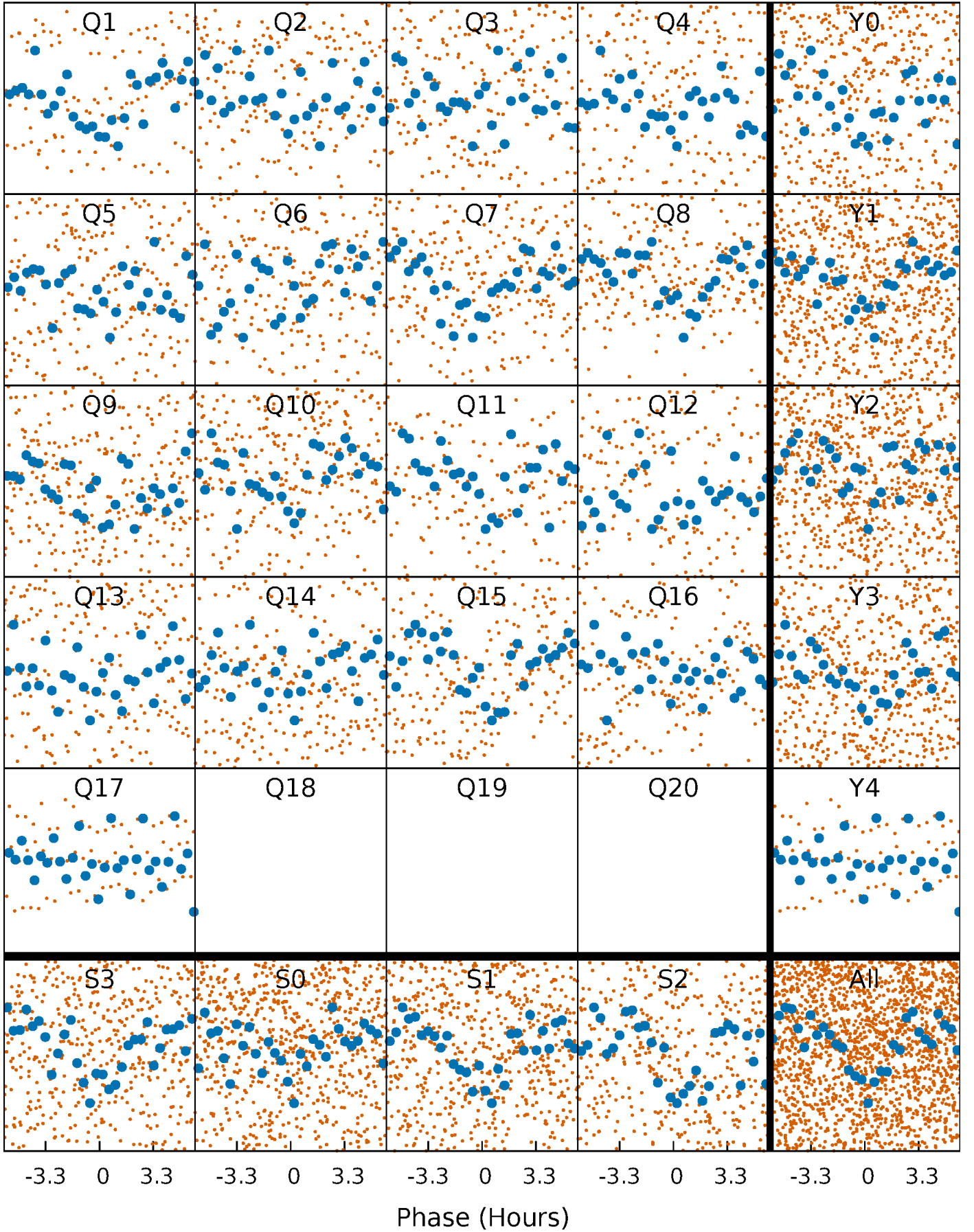


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



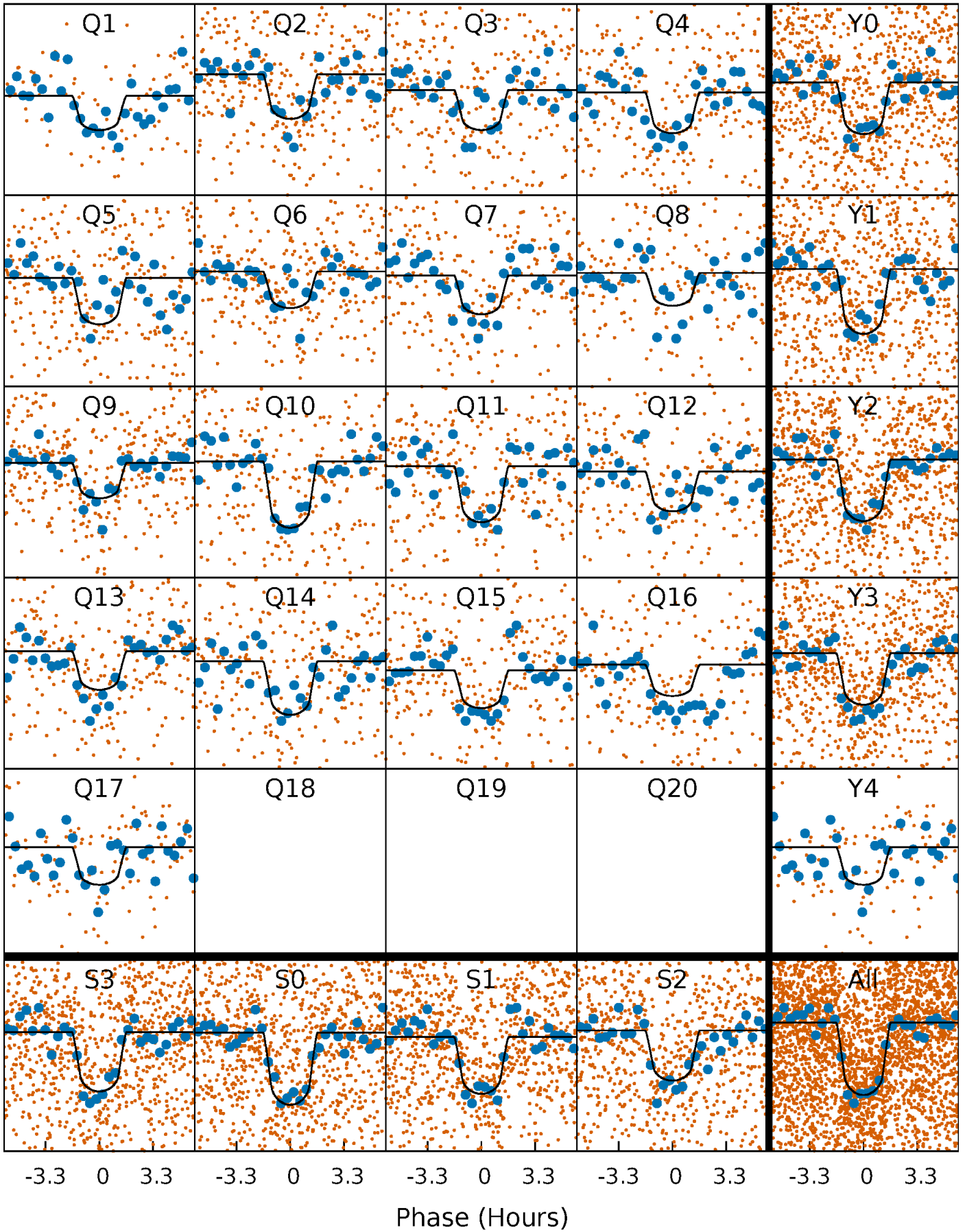
PDC Quarter-Phased Transit Curves

TCE 006850504-04 $P = 6.098551$ Days $T_0 = 135.930129$ (BKJD)



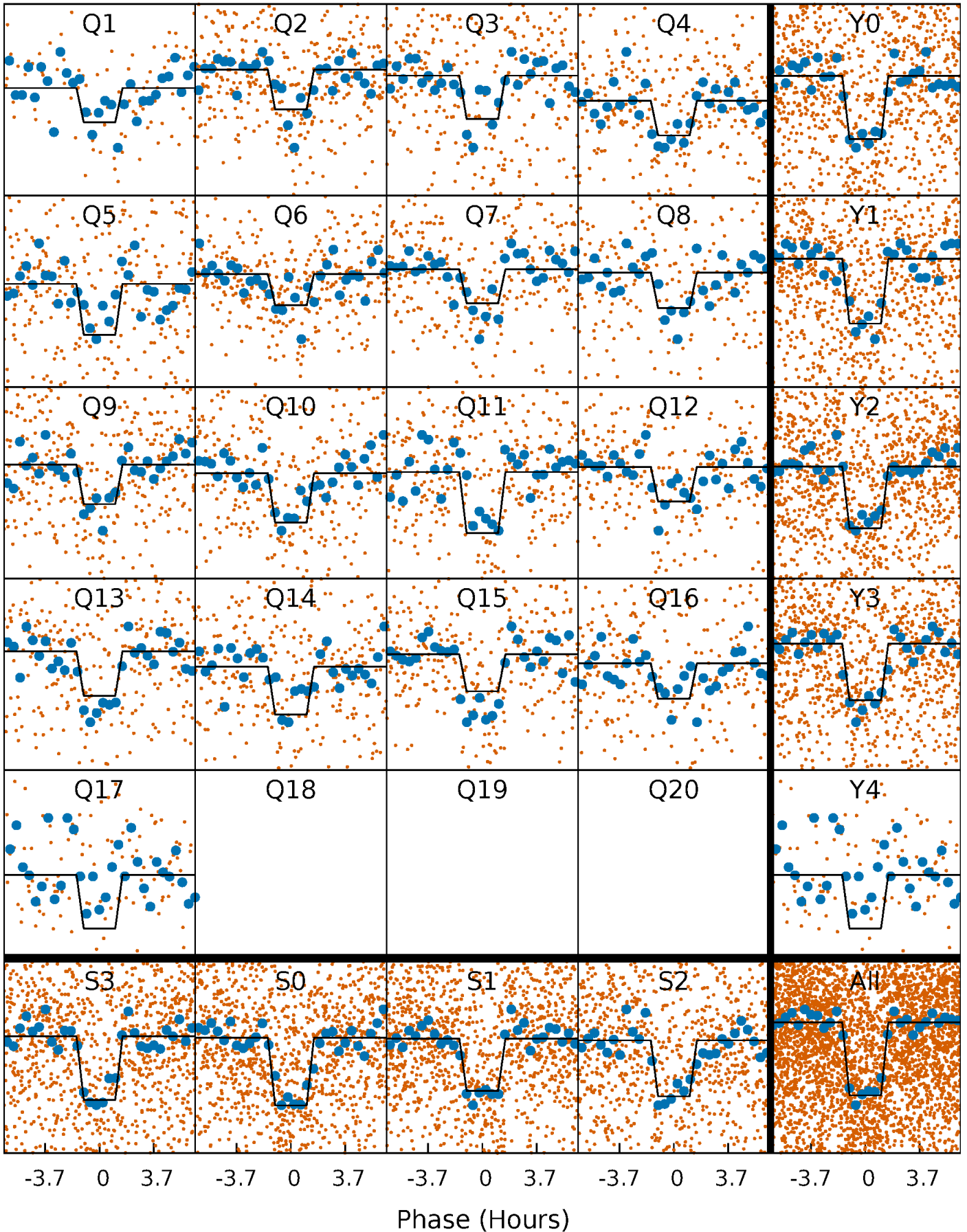
DV Quarter-Phased Transit Curves

TCE 006850504-04 P= 6.098551 Days $T_0=135.930129$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

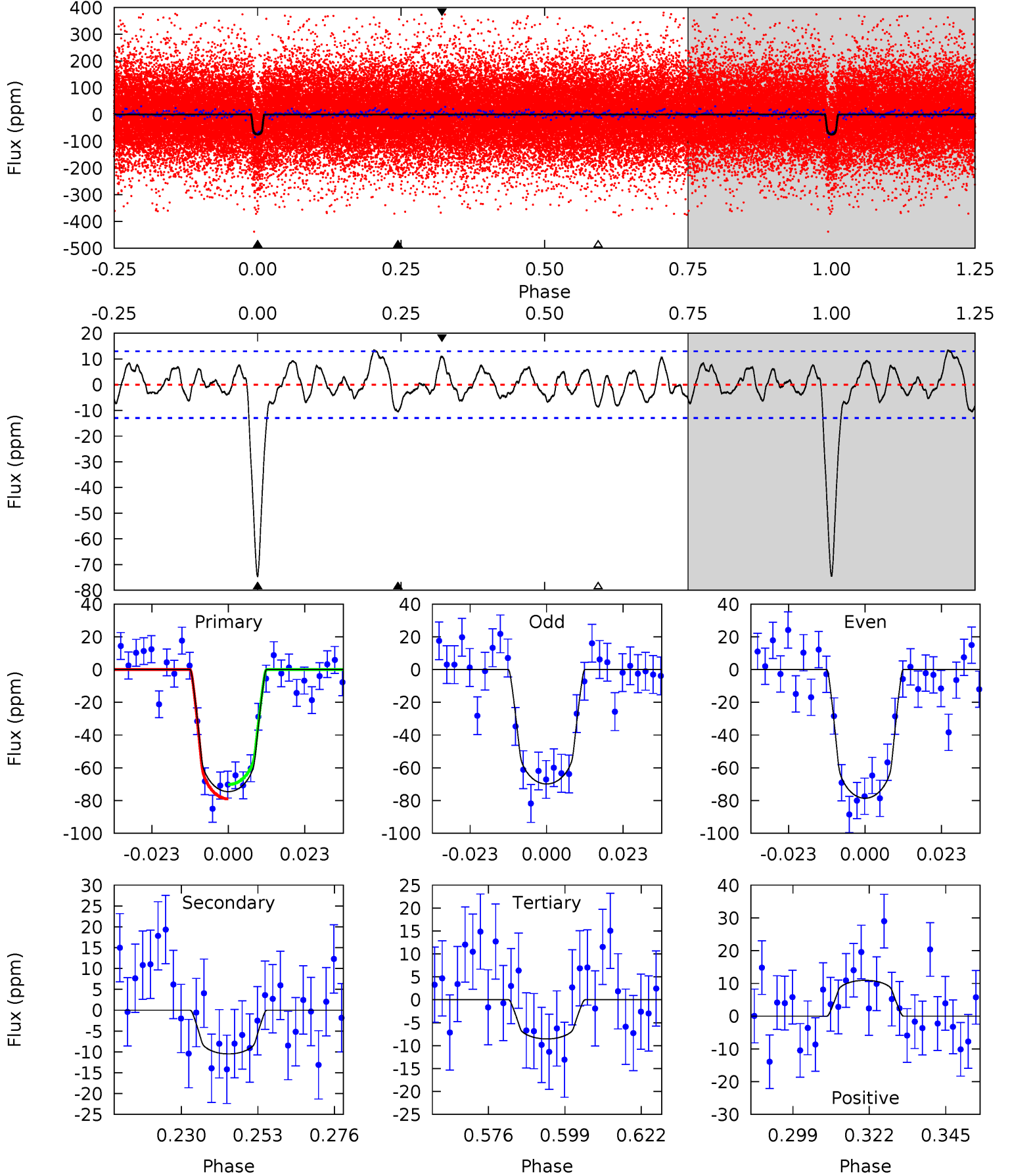
TCE 006850504-04 $P = 6.098585$ Days $T_0 = 135.925691$ (BKJD)



DV Model-Shift Uniqueness Test

006850504-04, P = 6.098551 Days, E = 129.831578 Days

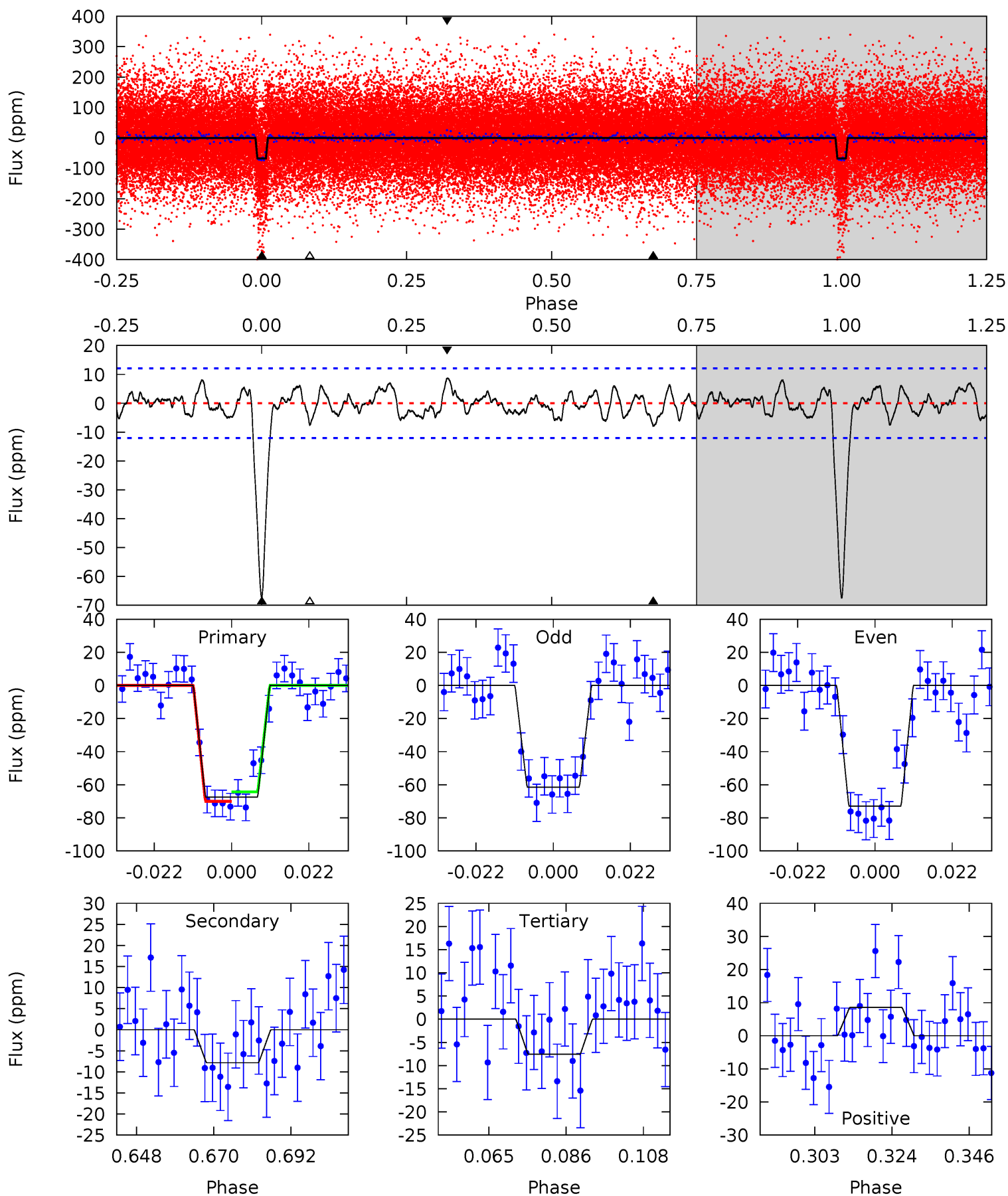
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.0	3.93	3.20	4.10	4.86	2.27	1.74	24.8	23.9	0.73	-0.17	1.64	1.02	0.15	1.64



Alt Model-Shift Uniqueness Test

006850504-04, P = 6.098585 Days, E = 129.827106 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.3	3.16	3.06	3.46	4.88	2.30	1.31	24.2	23.8	0.11	-0.30	2.32	0.99	0.11	1.15



Stellar Parameters For KIC 006850504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	5465^{+109}_{-109}	$4.449^{+0.085}_{-0.085}$	$0.020^{+0.150}_{-0.150}$	$0.925^{+0.101}_{-0.083}$	$0.876^{+0.060}_{-0.044}$	$1.561^{+0.467}_{-0.428}$
	+2%/-2%	+2%/-2%	+750%/-750%	+11%/-9%	+7%/-5%	+30%/-27%
Source	SPE32	SPE32	SPE32	DSEP		

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

Secondary Eclipse Parameters for KIC 006850504-04 / KOI 0070.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 3	$0.92^{+0.28}_{-0.26}$	1294^{+44}_{-44}	3649^{+491}_{-330}	27^{+26}_{-12}
Alt.	-8 ± 2	$0.84^{+0.28}_{-0.27}$	1296^{+44}_{-43}	3595^{+494}_{-375}	23^{+29}_{-11}

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

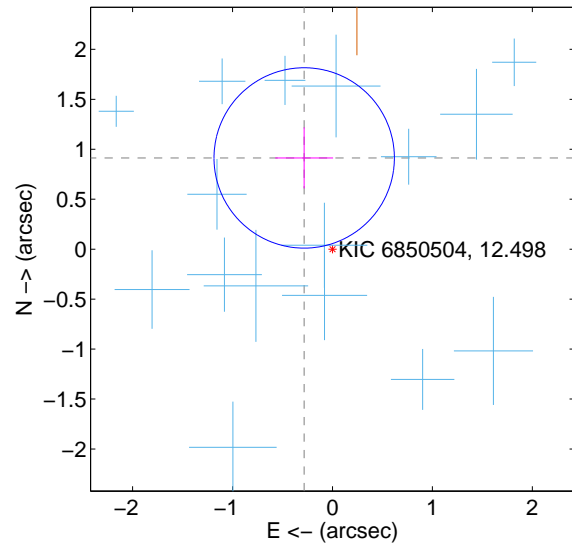
Supplemental centroid analysis for 006850504-04. Kepler magnitude: 12.50. Transit SNR 17.53

There are 16 quarters with good PRF difference image offsets

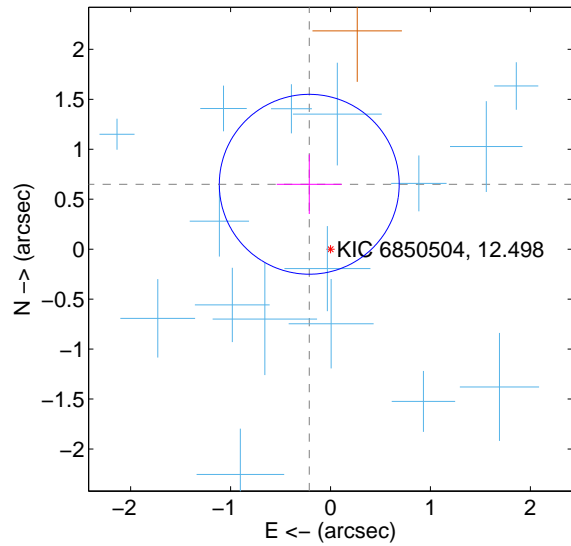
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.956 \pm 0.301	3.18	0.283 \pm 0.289	0.913 \pm 0.306
PRF-fit source offset from KIC position	0.684 \pm 0.300	2.28	0.213 \pm 0.325	0.650 \pm 0.297
photometric centroid source offset	0.60 \pm 0.47	1.27	0.08 \pm 0.45	-0.60 \pm 0.47

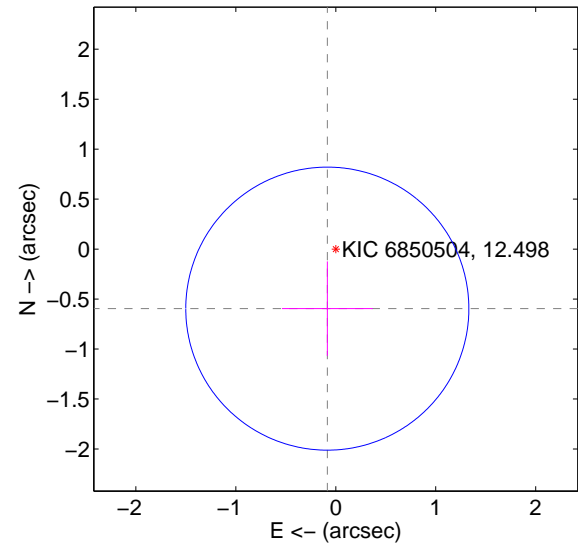
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

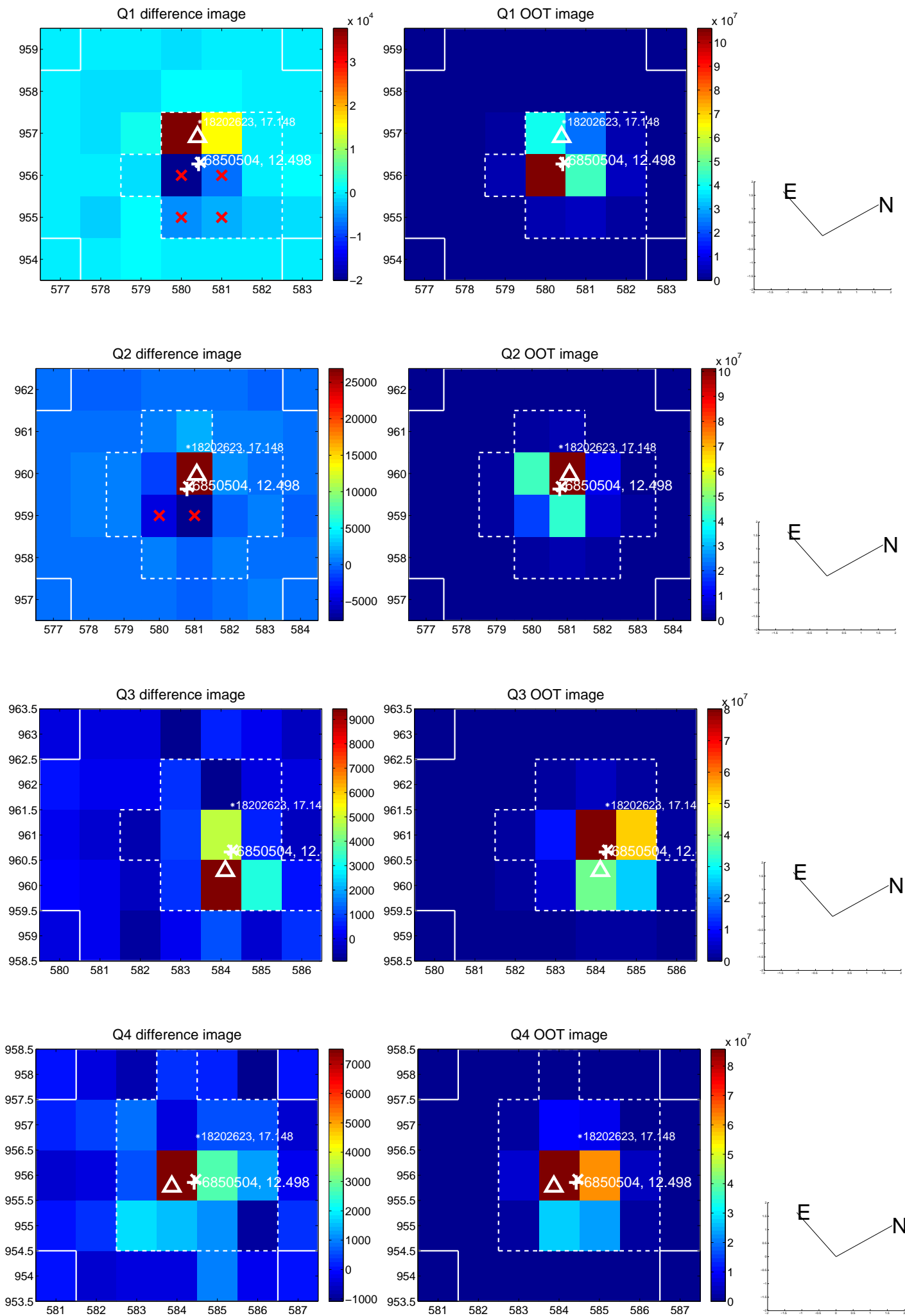


offset from photometric centroids

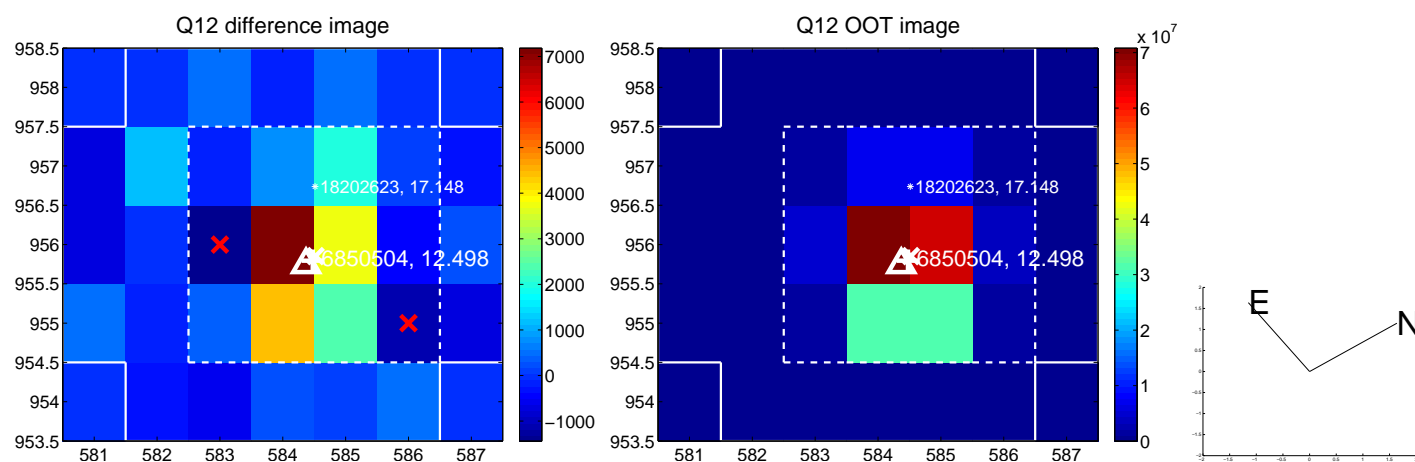
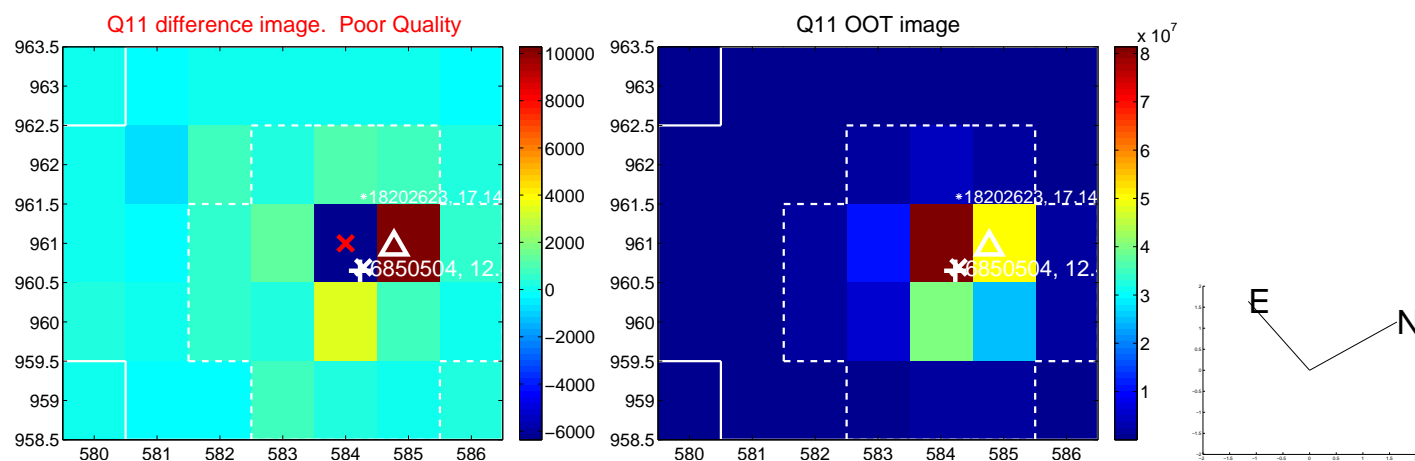
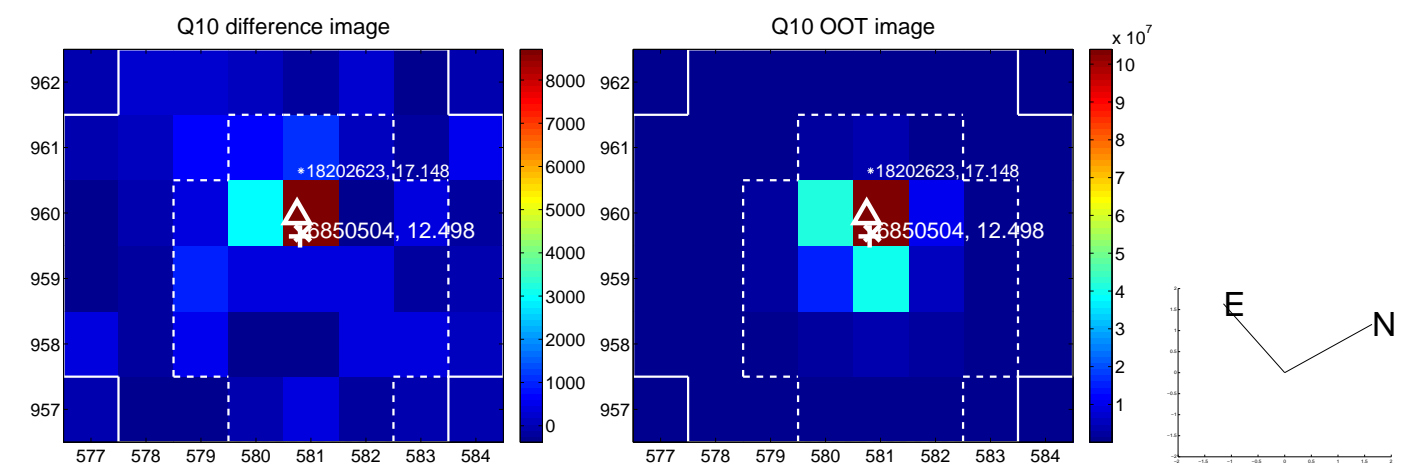
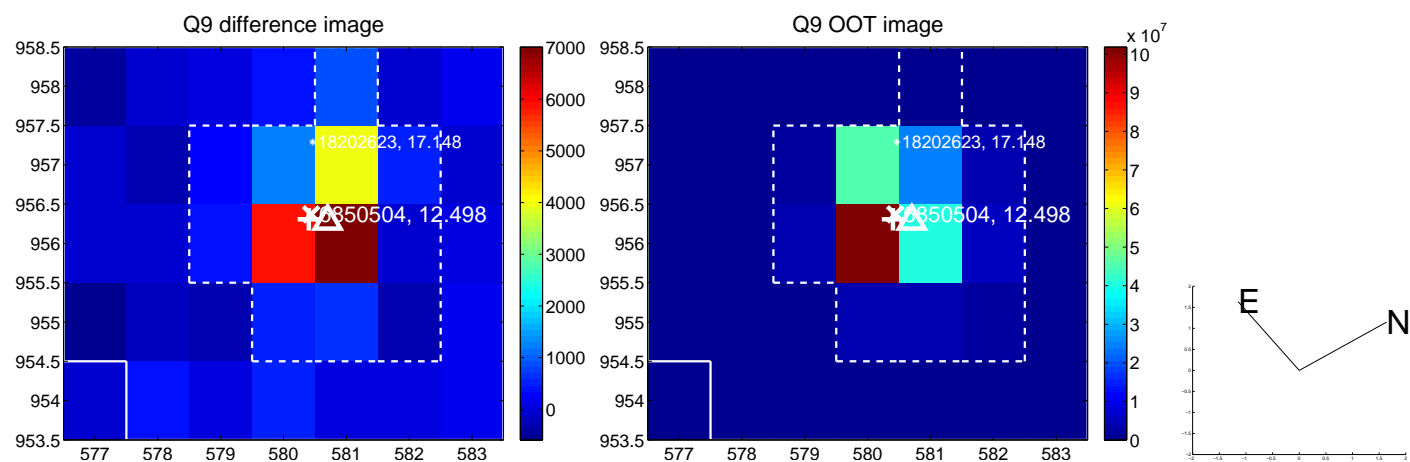


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

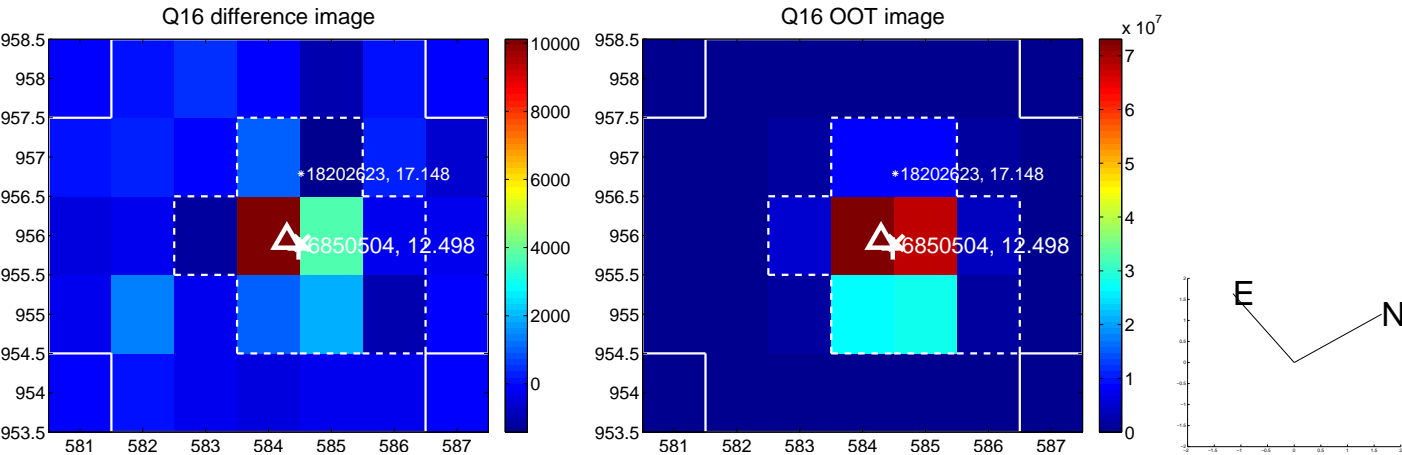
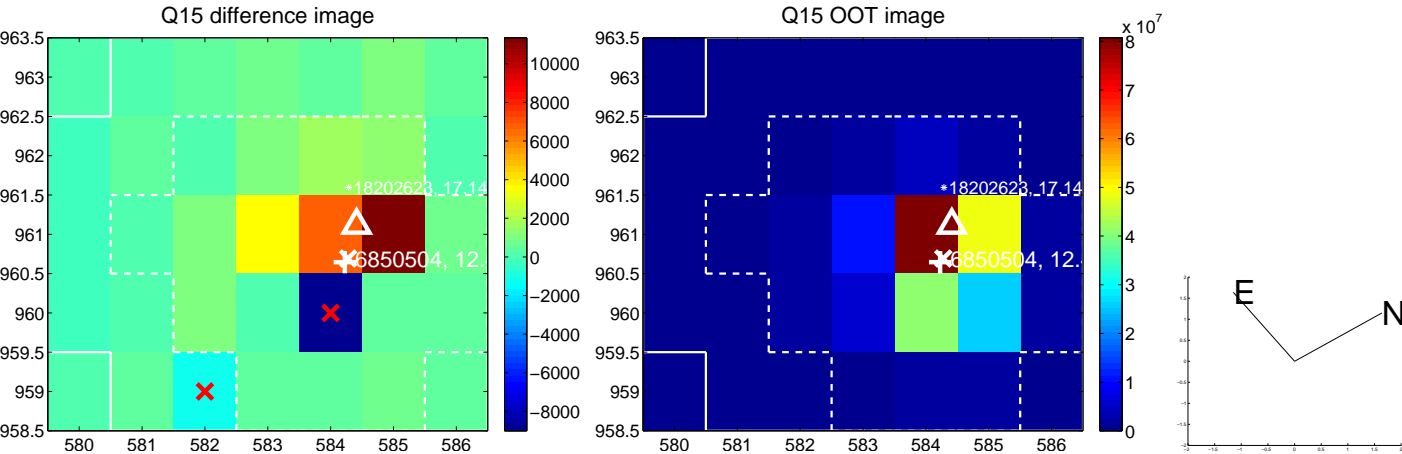
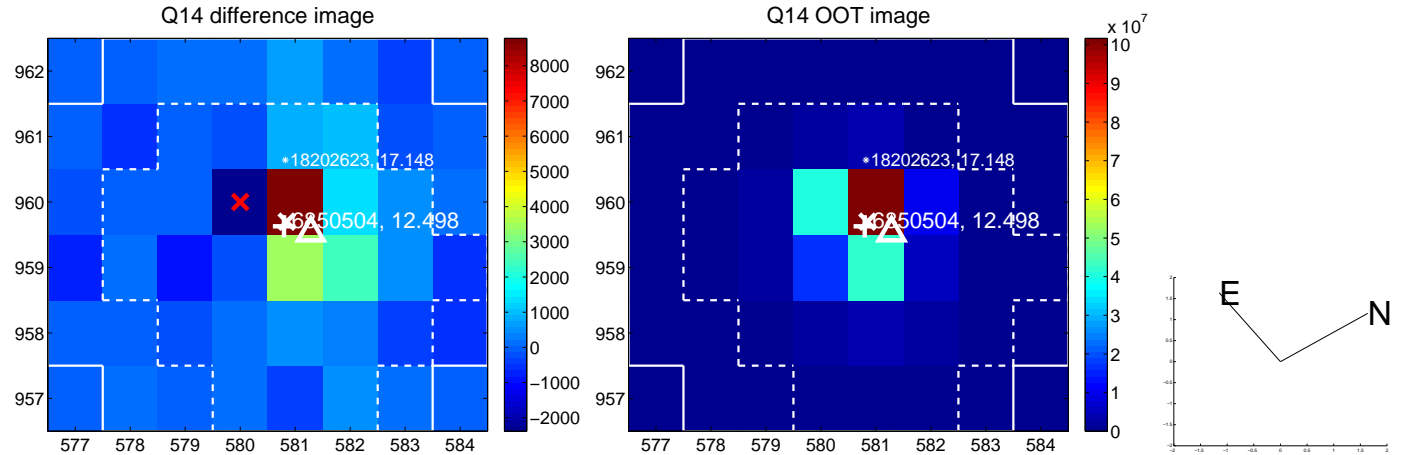
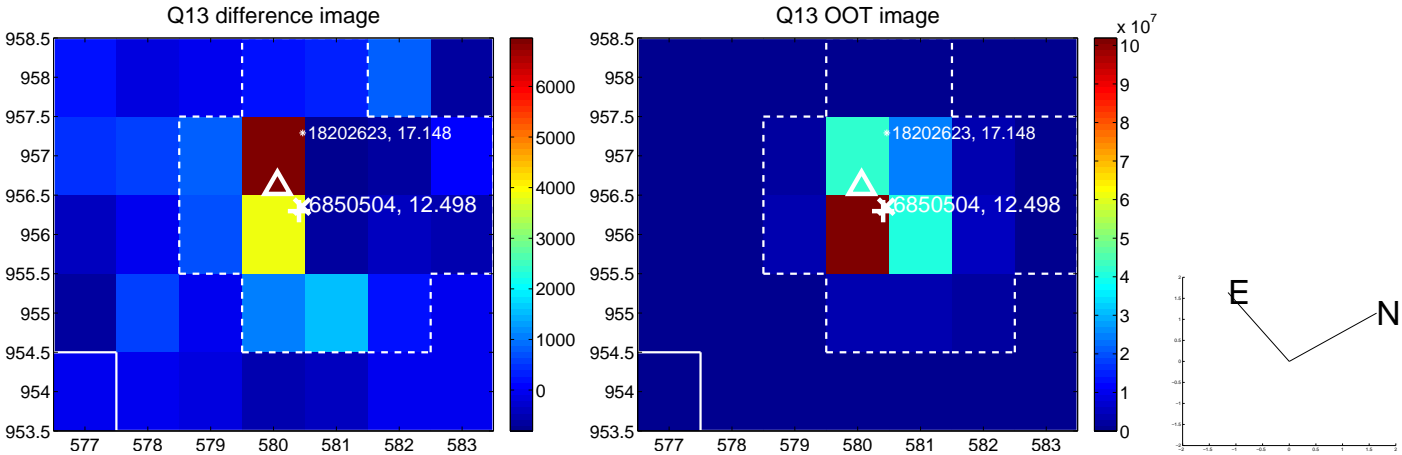
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



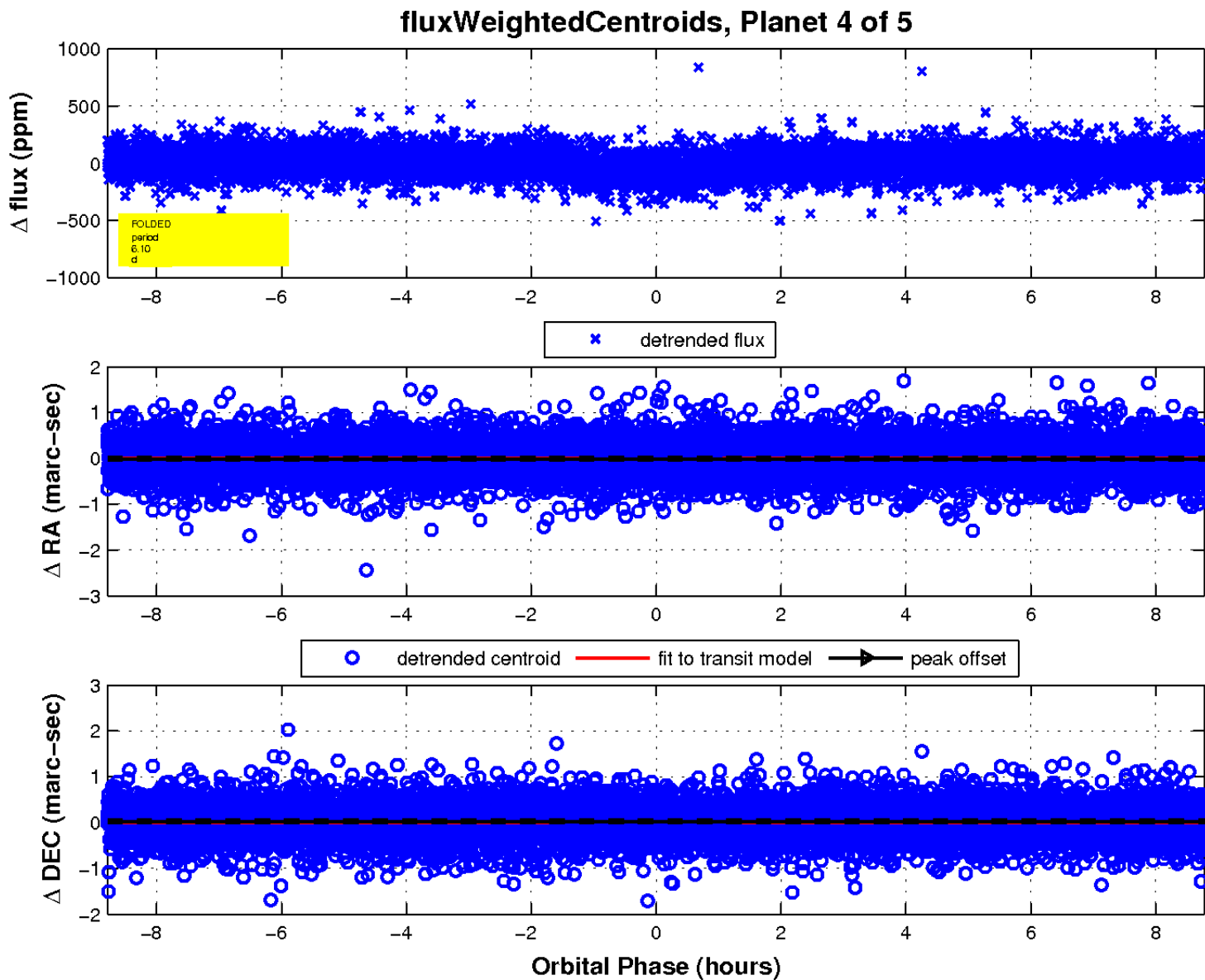
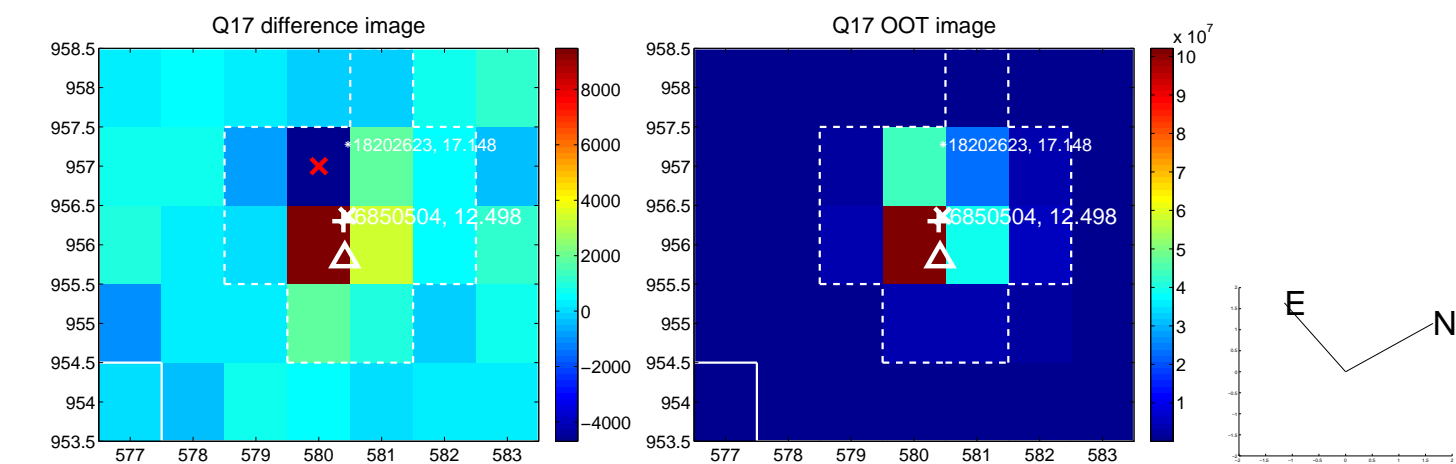
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



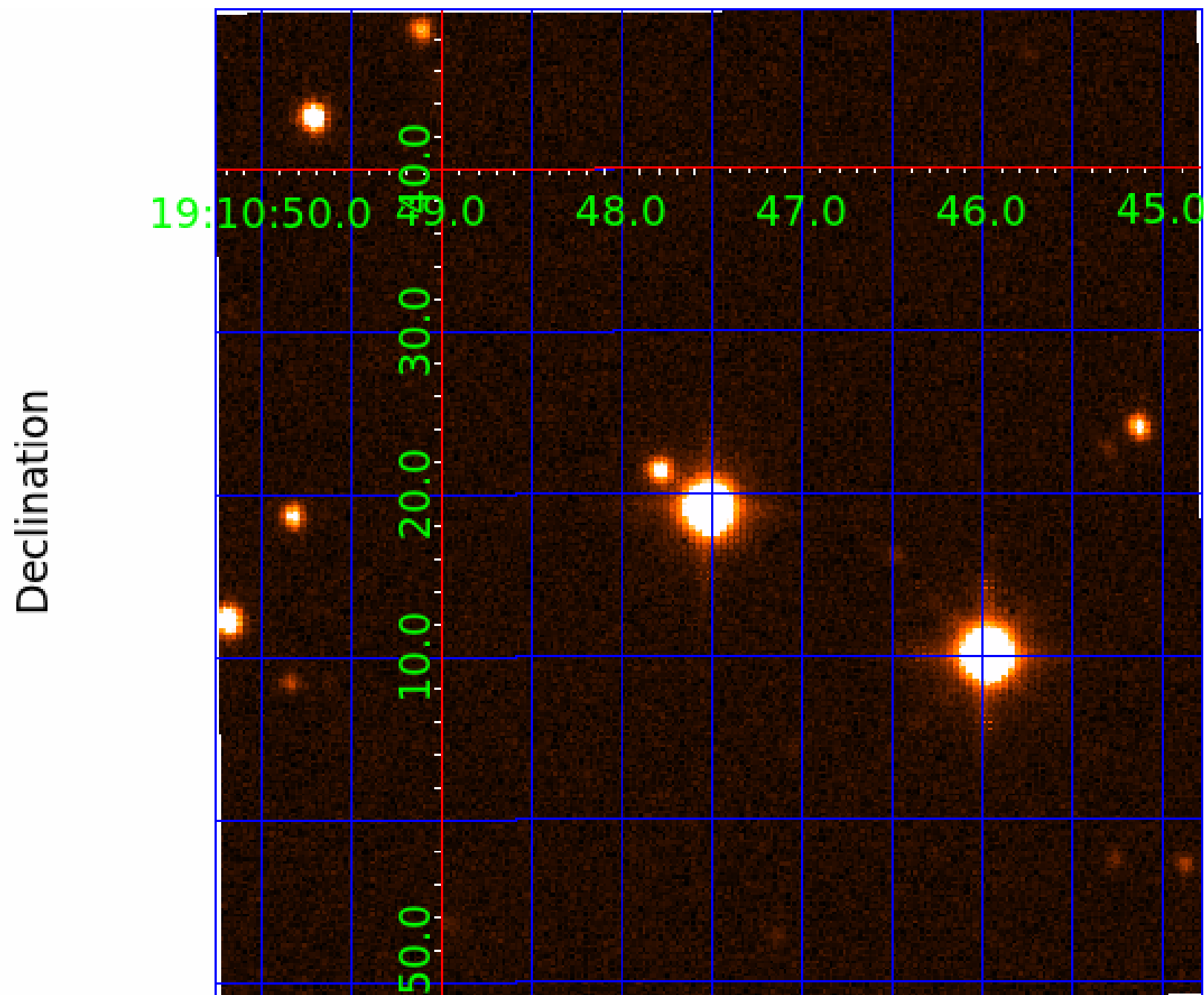
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 006850504

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})
006850504-01	OBS	0070.01	10.854096	138.607854	1035.1	3.894	203.2	193.8	0.93	5465	3.25	81.01
006850504-02	OBS	0070.02	3.696119	134.501692	377.5	2.584	108.2	114.3	0.93	5465	2.12	340.69
006850504-03	OBS	0070.03	77.611562	164.727293	834.7	7.431	75.4	79.5	0.93	5465	2.89	5.88
006850504-04	OBS	0070.04	6.098551	135.930129	72.3	2.928	16.5	17.5	0.93	5465	0.94	174.74
006850504-05	OBS	0070.05	19.577473	135.212513	93.1	3.491	12.2	13.5	0.93	5465	1.05	36.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006850504-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-03	OBS	PC	0.56	0	0	0	0	NO_COMMENT
006850504-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006850504-05	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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.

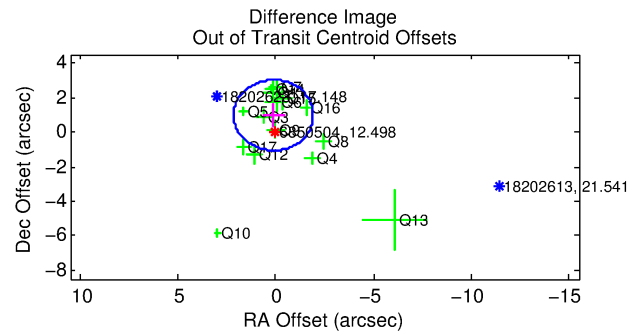
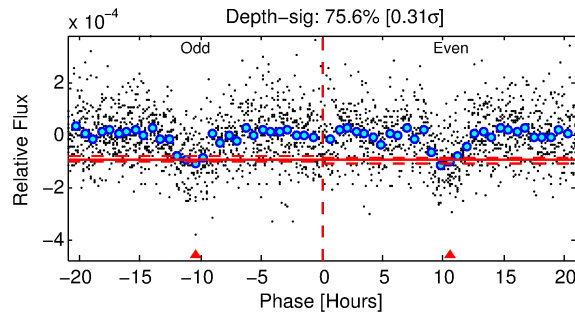
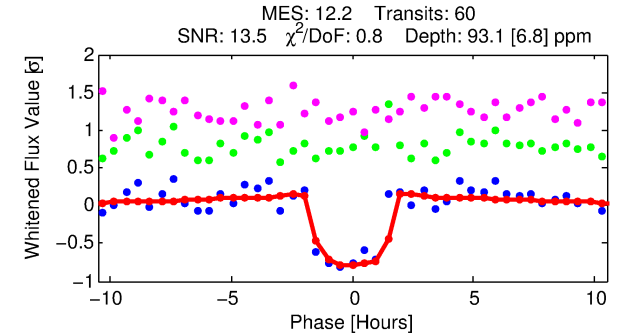
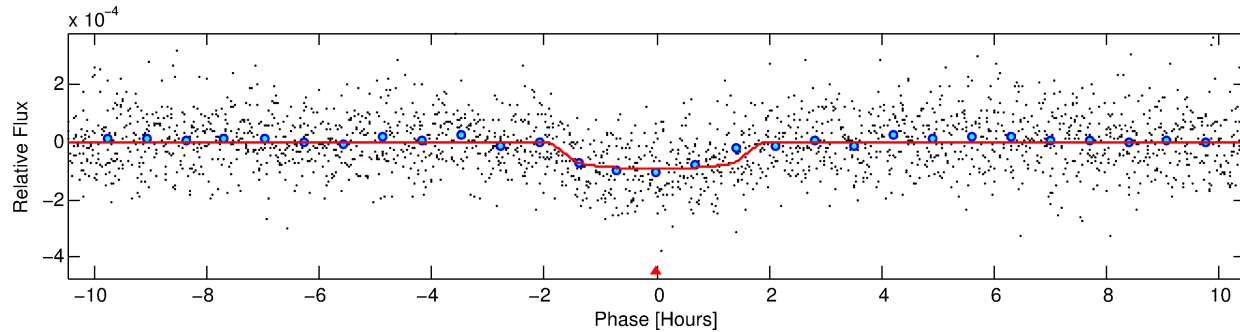
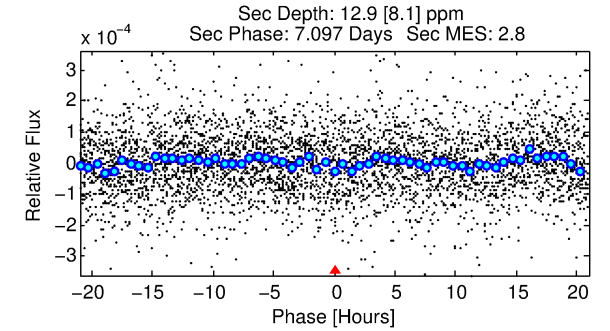
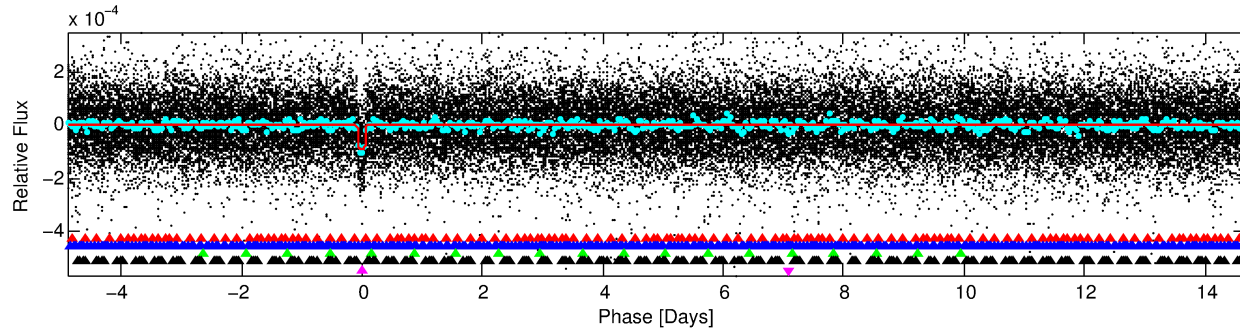
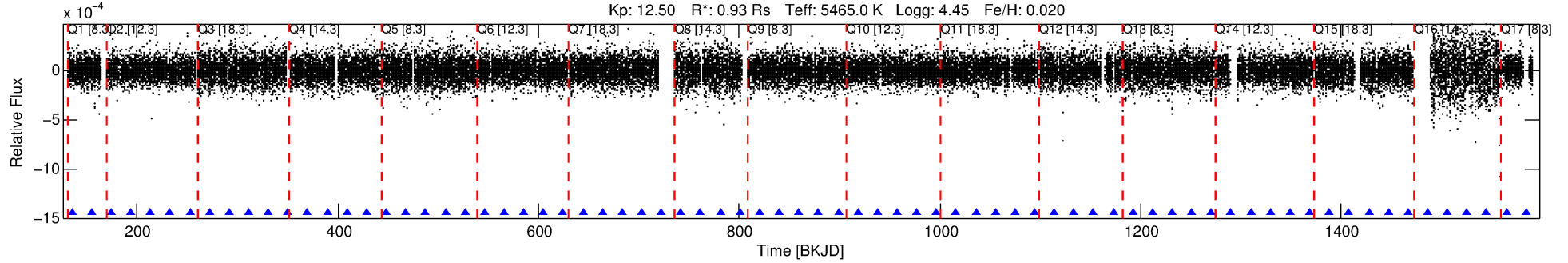
Ephemeris Match Information For 006850504-05

No Significant Match Found

DV One-Page Summary

KIC: 6850504 Candidate: 5 of 5 Period: 19.577 d
KOI: K00070.05 Name: Kepler-20f Corr: 0.966

Kp: 12.50 R*: 0.93 Rs Teff: 5465.0 K Logg: 4.45 Fe/H: 0.020



DV Fit Results:

Period = 19.57747 [0.00012] d
Epoch = 135.2125 [0.0050] BKJD
Rp/R* = 0.0104 [0.0046]
a/R* = 20.98 [40.86]
b = 0.88 [0.49]
Seff = 36.90 [6.25]
Teq = 628 [27] K
Rp = 1.05 [0.48] Re
a = 0.1361 [0.0133] AU
Ag = 118.00 [129.66] [0.90σ]
Teffp = 3202 [874] K [2.94σ]

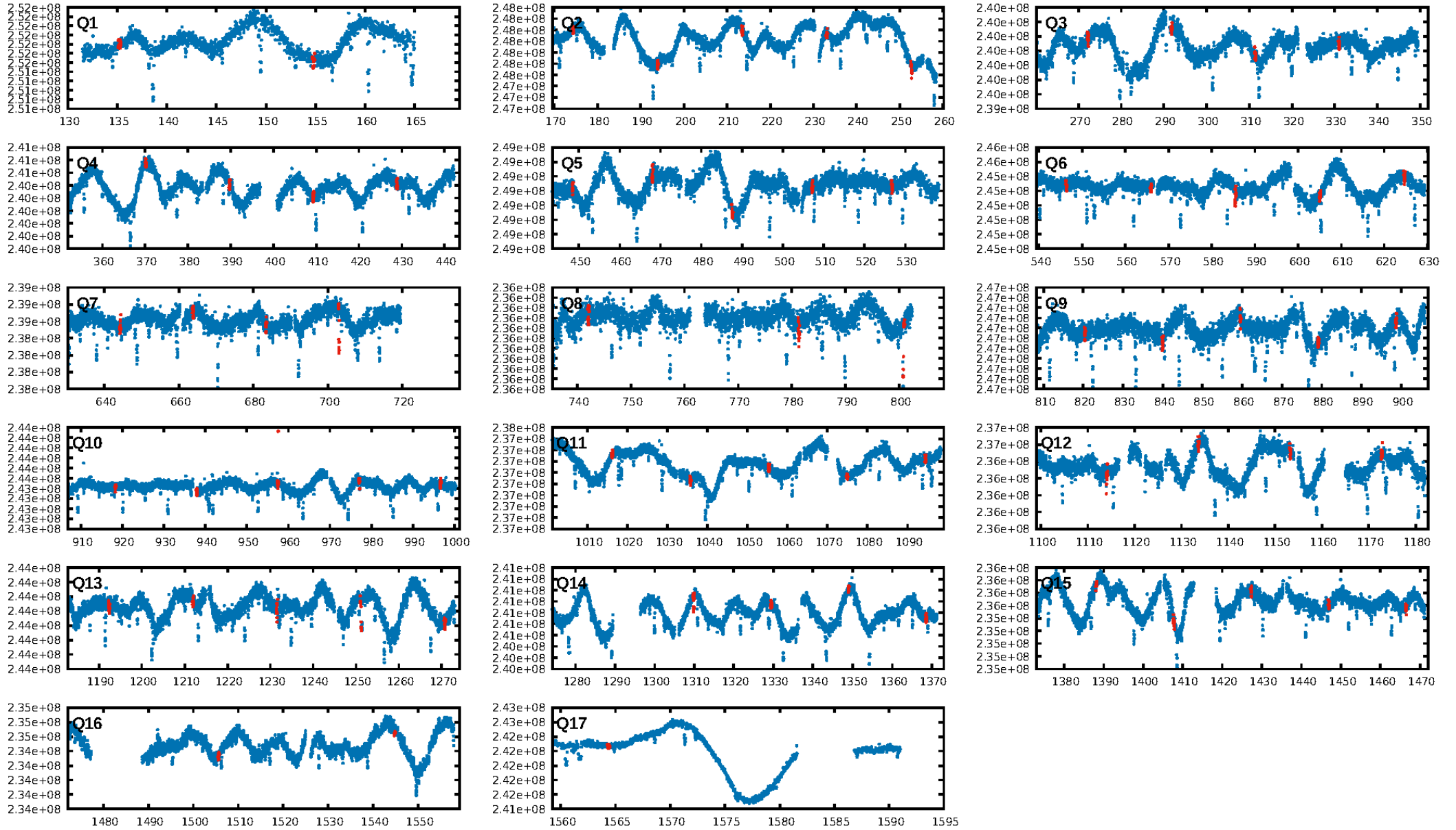
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.03σ]
LongPeriod-sig: 100.0% [169.65σ]
ModelChiSquare2-sig: 99.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.80e-31
RollingBand-fgt: 1.00 [57/57]
GhostDiagnostic-chr: 3.586
Centroid-sig: 27.6%
Centroid-so: 0.438 arcsec [0.73σ]
OotOffset-rm: 0.981 arcsec [1.44σ]
KicOffset-rm: 0.709 arcsec [1.10σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 0.94 [16/17]

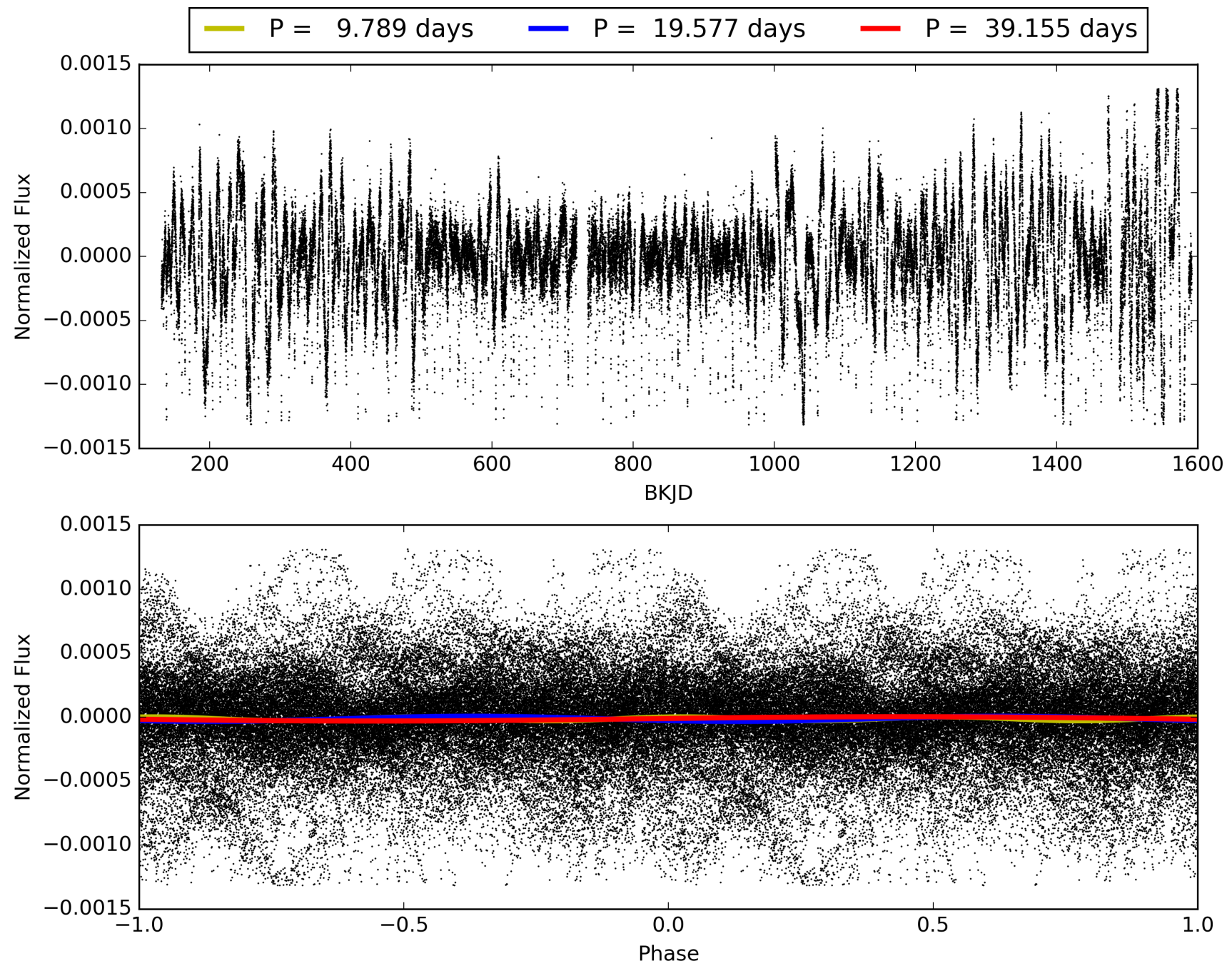
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:09:44 Z

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

TCE 006850504-05, PDC Light Curves

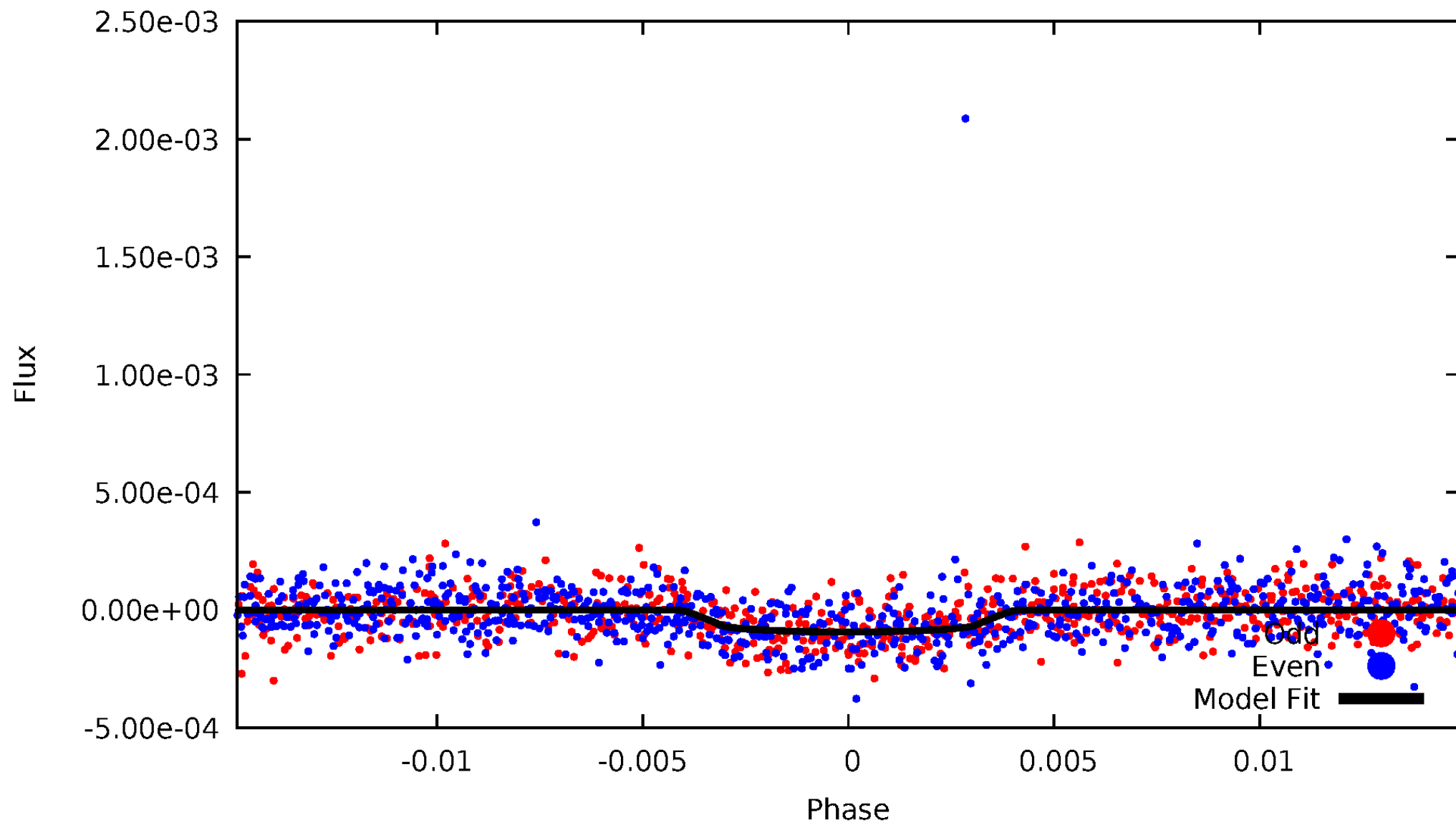


TCE 006850504-05



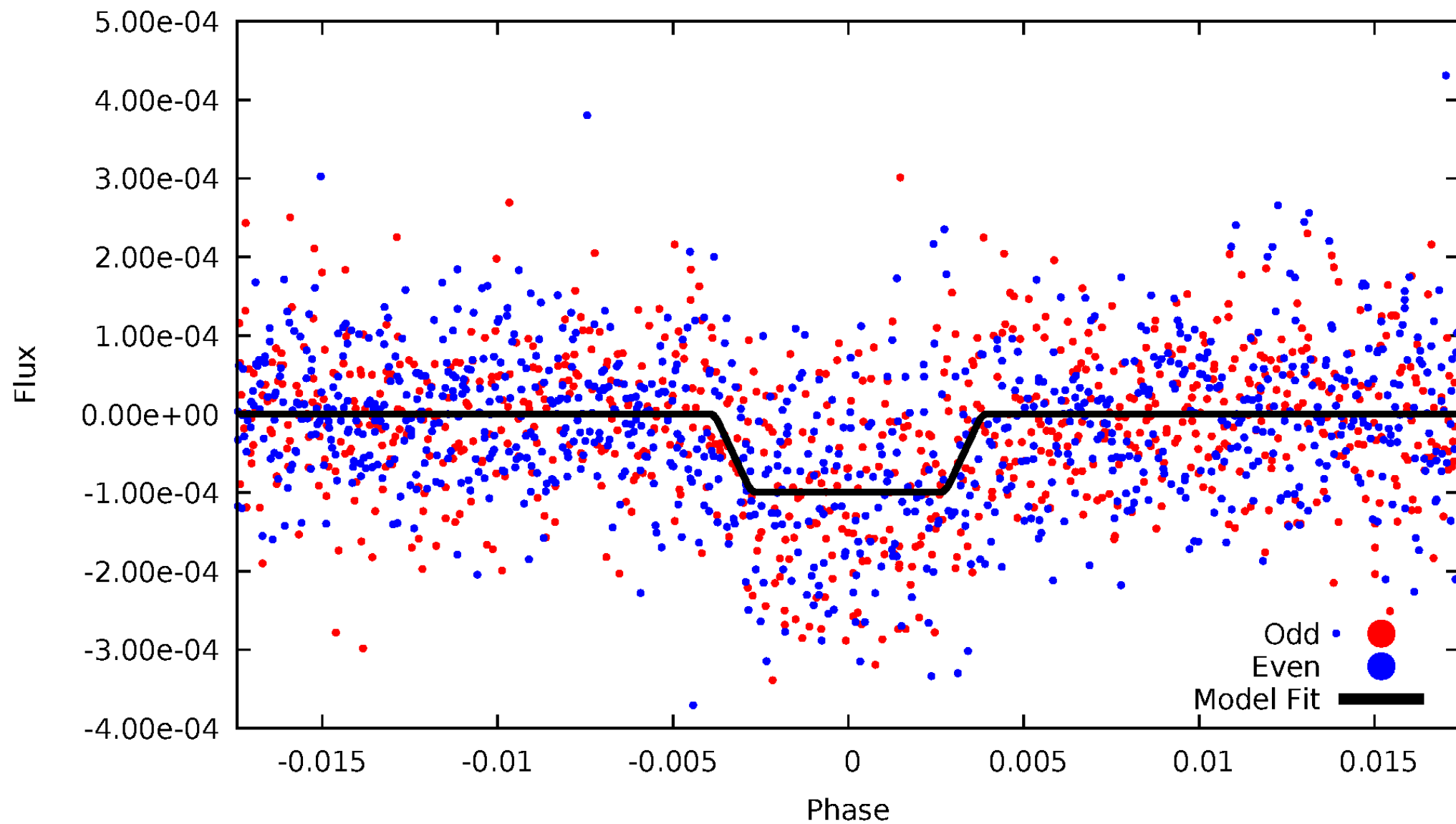
DV Odd/Even

TCE 006850504-05



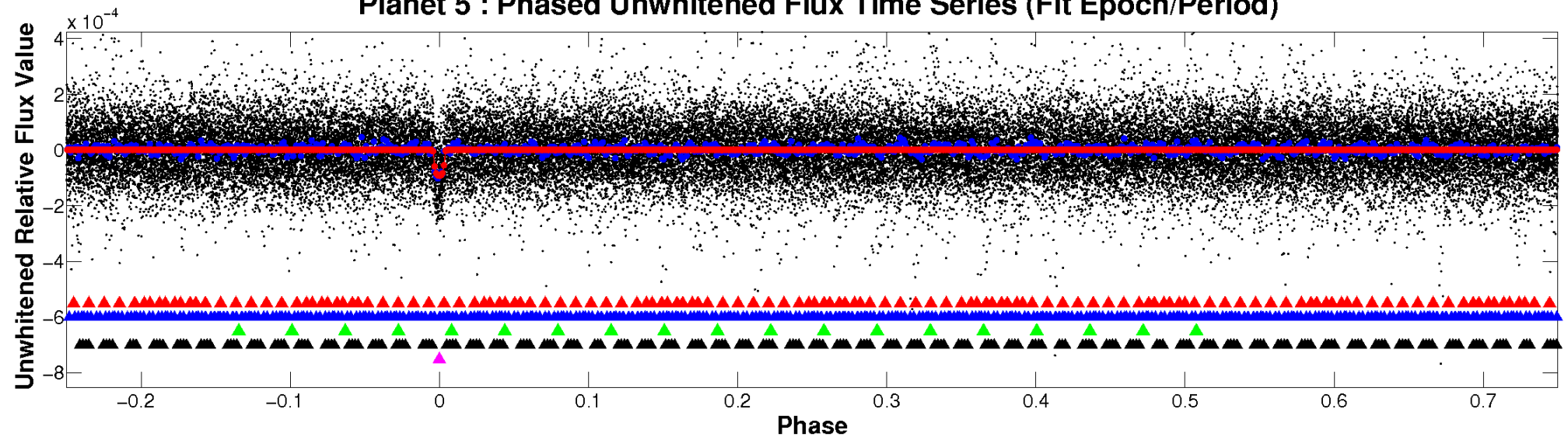
ALT Odd/Even

TCE 006850504-05

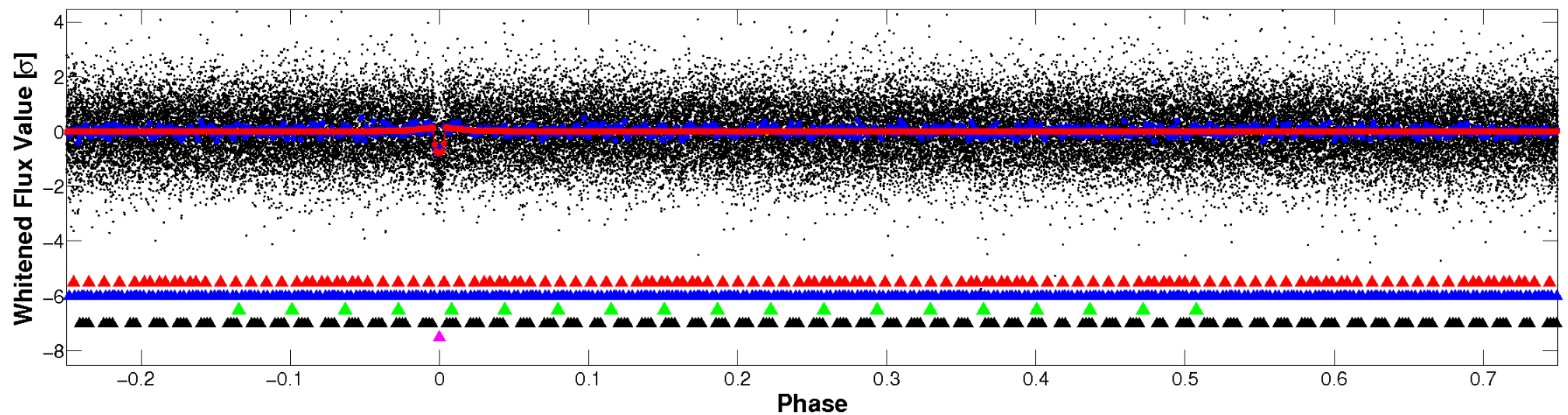


Non-Whitened Vs. Whitened Light Curve

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

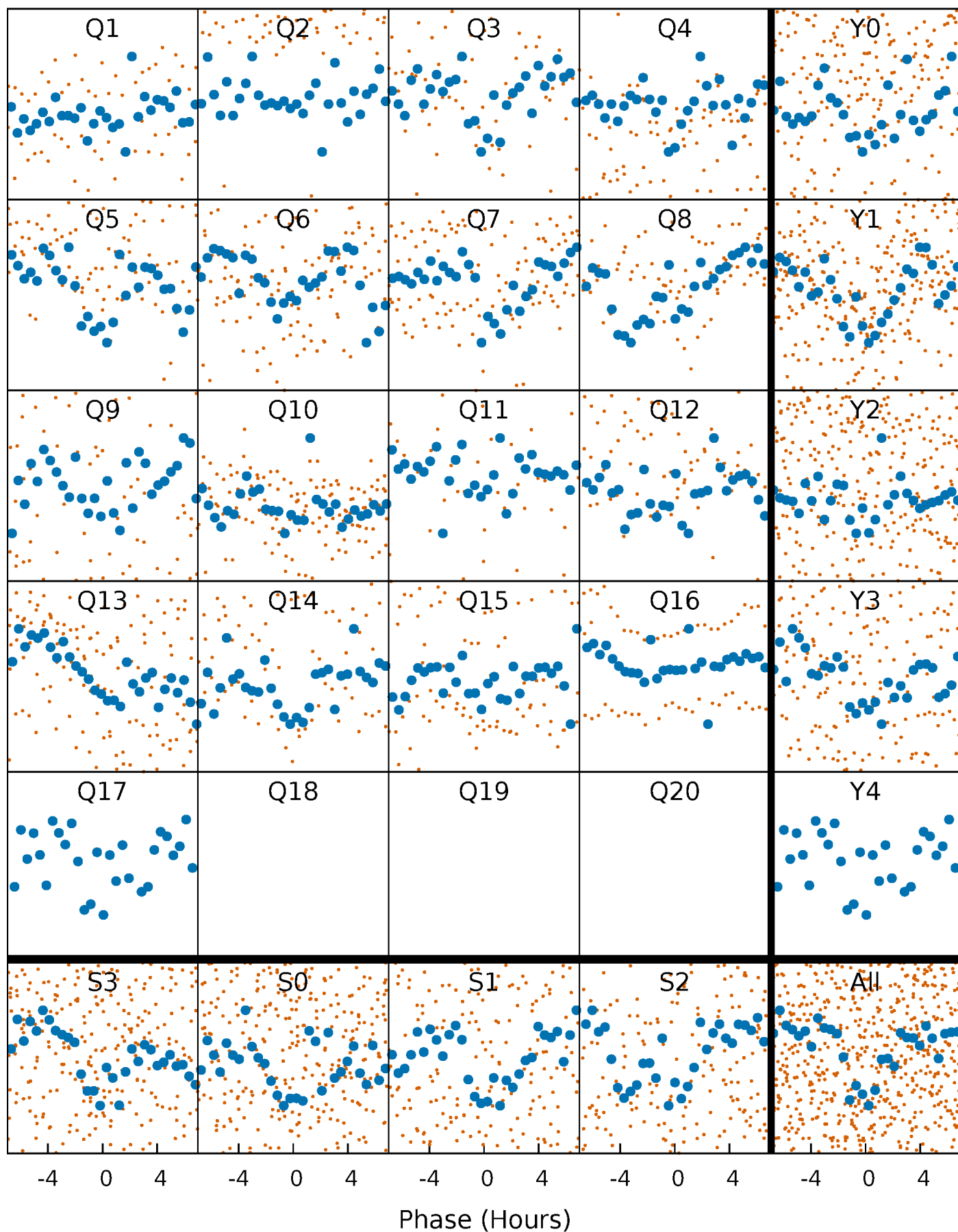


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



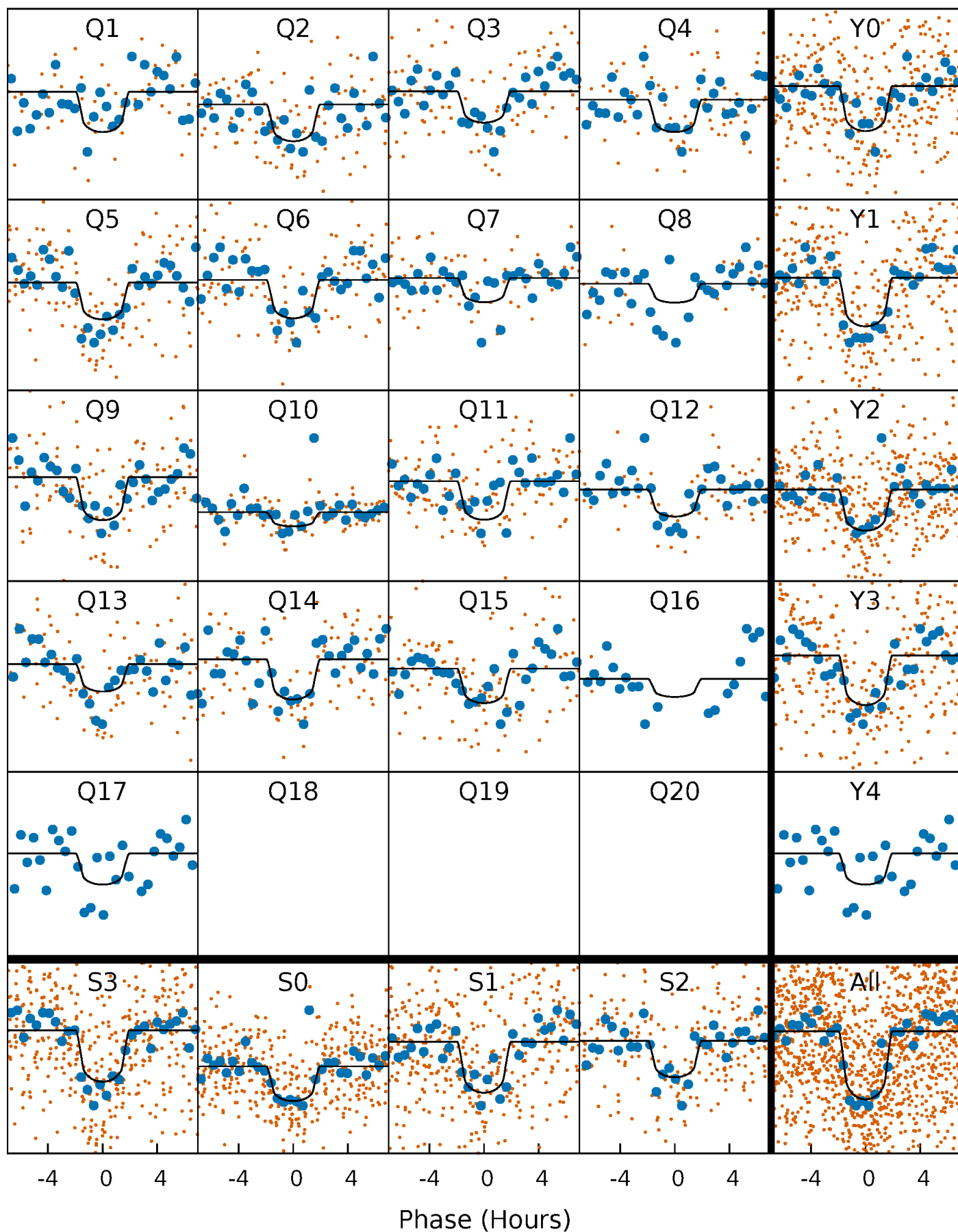
PDC Quarter-Phased Transit Curves

TCE 006850504-05 P= 19.577473 Days $T_0=135.212513$ (BKJD)



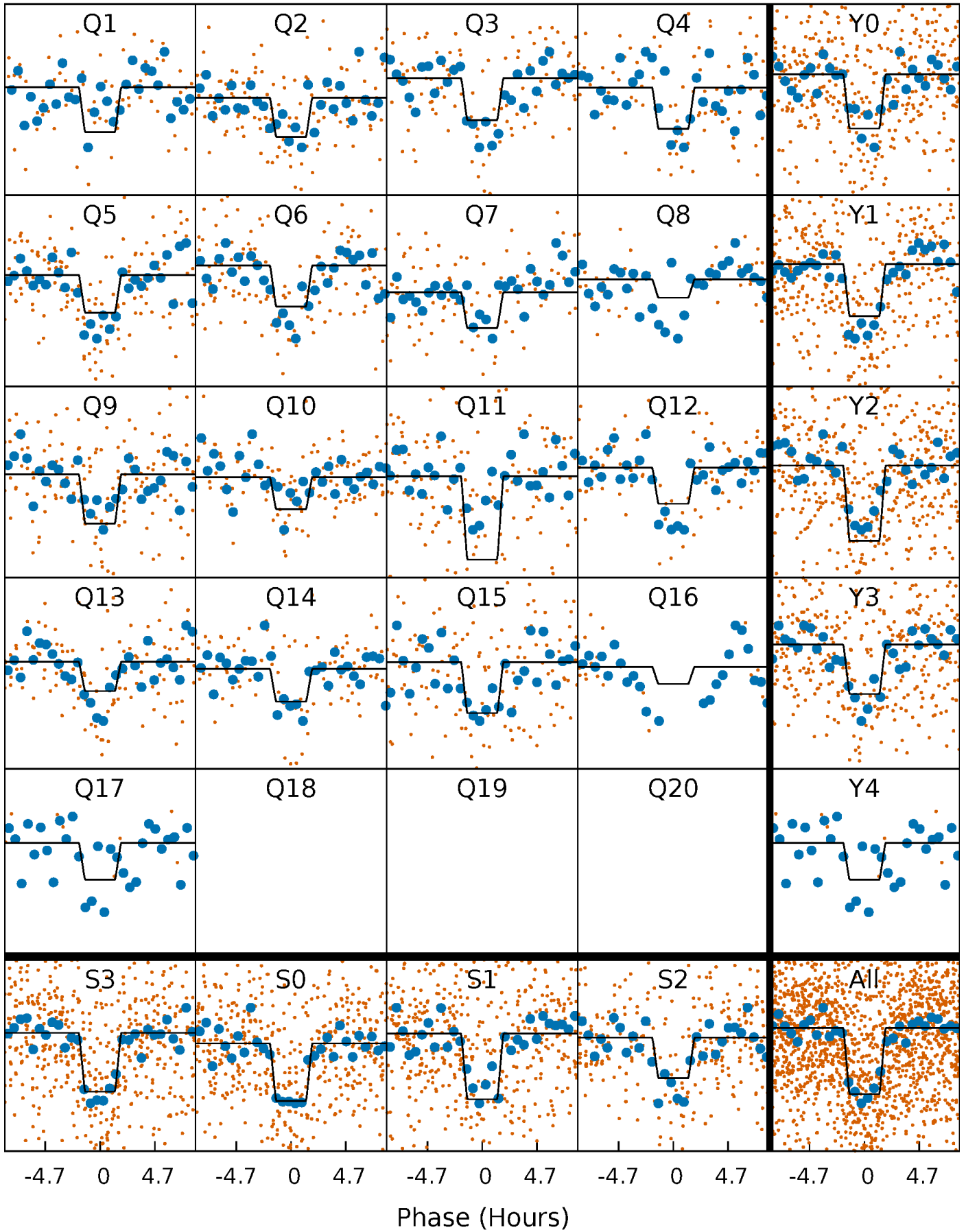
DV Quarter-Phased Transit Curves

TCE 006850504-05 P= 19.577473 Days $T_0=135.212513$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

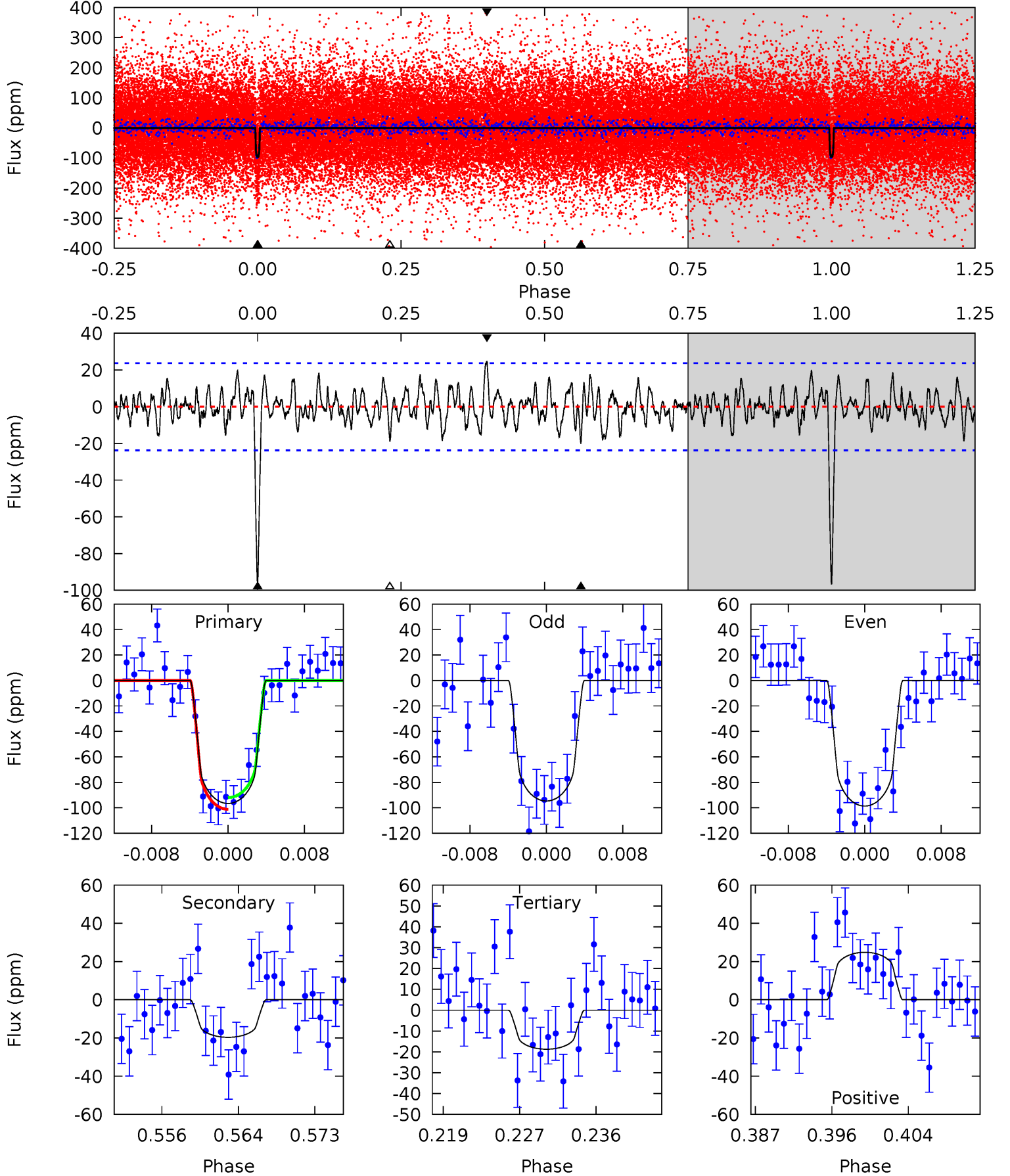
TCE 006850504-05 $P = 19.577468$ Days $T_0 = 135.209935$ (BKJD)



DV Model-Shift Uniqueness Test

006850504-05, $P = 19.577473$ Days, $E = 115.635040$ Days

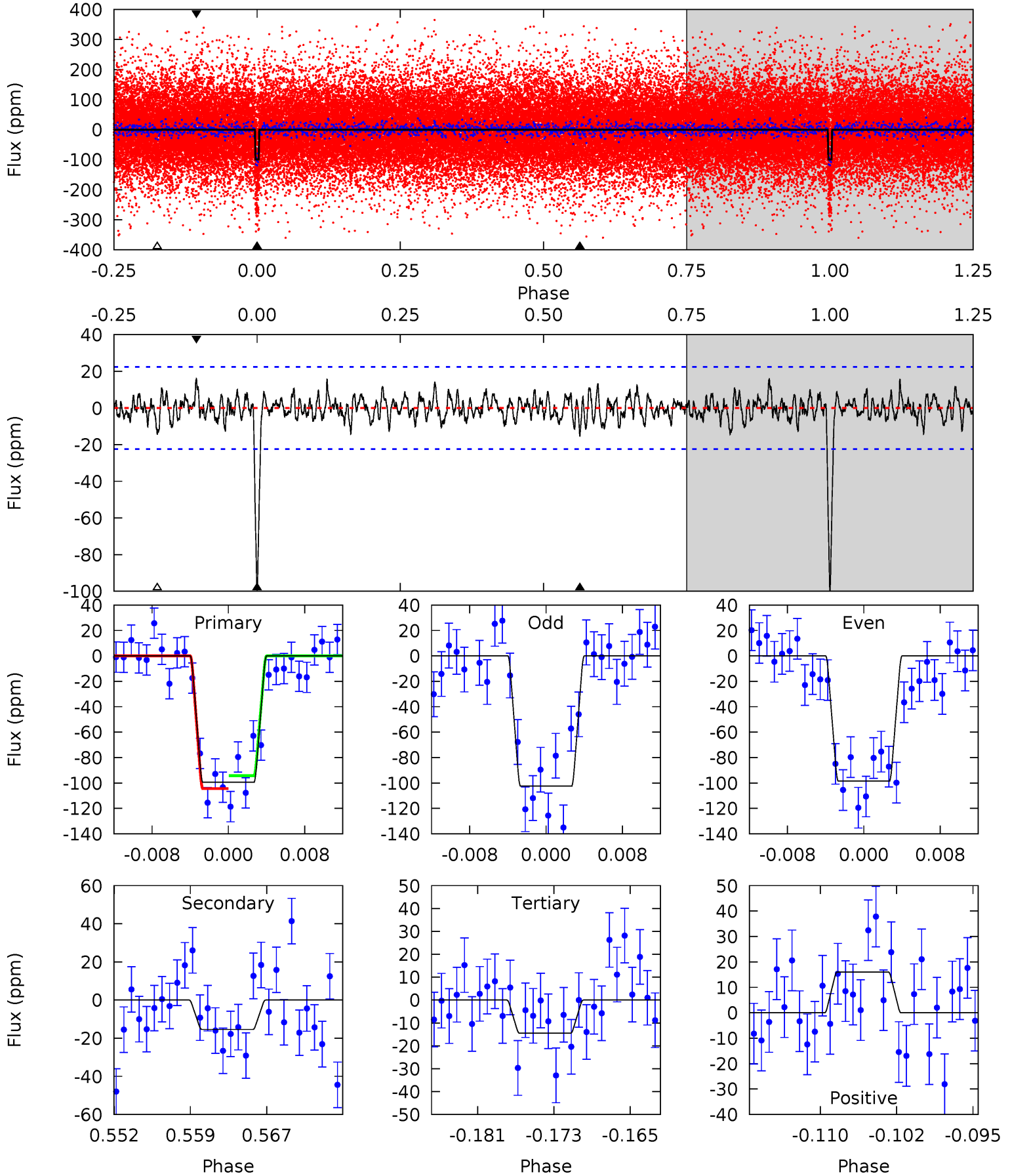
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	4.19	3.99	5.29	5.06	2.63	1.54	16.6	15.3	0.20	-1.10	0.42	0.94	0.20	0.99



Alt Model-Shift Uniqueness Test

006850504-05, $P = 19.577468$ Days, $E = 115.632467$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	3.49	3.29	3.63	5.07	2.66	1.15	19.2	18.9	0.20	-0.14	0.44	1.01	0.14	1.15



Stellar Parameters For KIC 006850504

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5465^{+109}_{-109}	$4.449^{+0.085}_{-0.085}$	$0.020^{+0.150}_{-0.150}$	$0.925^{+0.101}_{-0.083}$	$0.876^{+0.060}_{-0.044}$	$1.561^{+0.467}_{-0.428}$
	+2%/-2%	+2%/-2%	+750%/-750%	+11%/-9%	+7%/-5%	+30%/-27%
Source	SPE32	SPE32	SPE32	DSEP		

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

Secondary Eclipse Parameters for KIC 006850504-05 / KOI 0070.05

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-20 ± 5	$1.05^{+0.47}_{-0.46}$	879^{+32}_{-30}	3874^{+1019}_{-451}	173^{+408}_{-92}
Alt.	-15 ± 4	$1.08^{+0.47}_{-0.48}$	878^{+33}_{-29}	3719^{+935}_{-448}	142^{+323}_{-81}

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

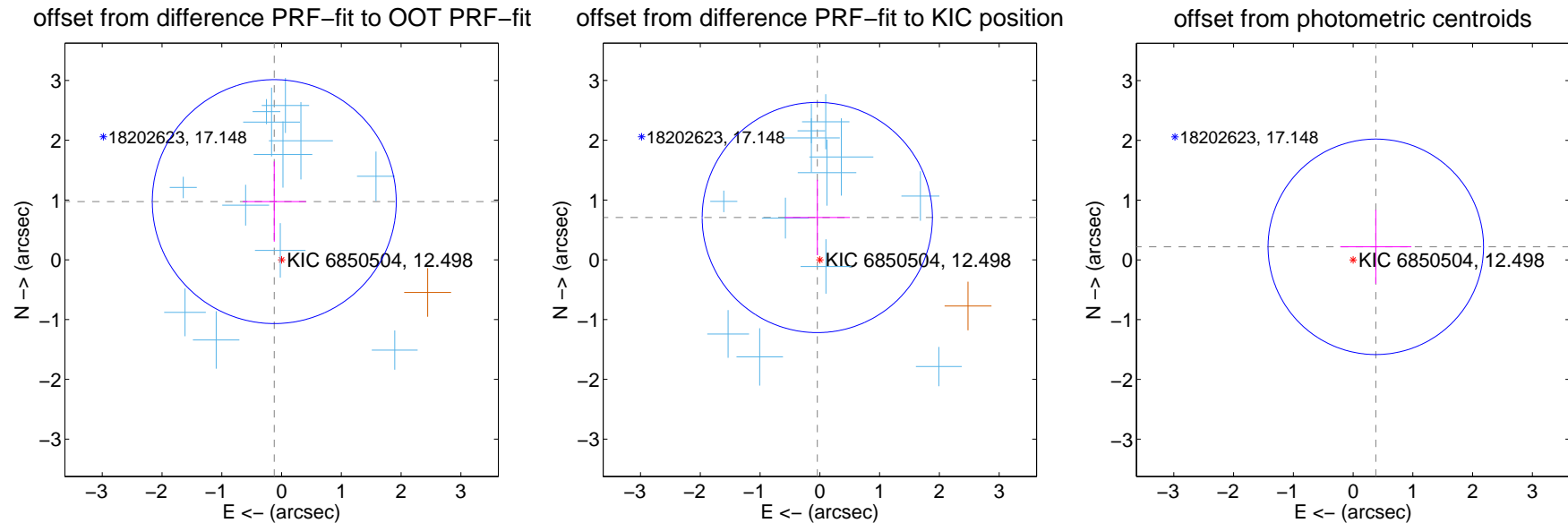
DV Centroid Data

Supplemental centroid analysis for 006850504-05. Kepler magnitude: 12.50. Transit SNR 13.49

There are 12 quarters with good PRF difference image offsets

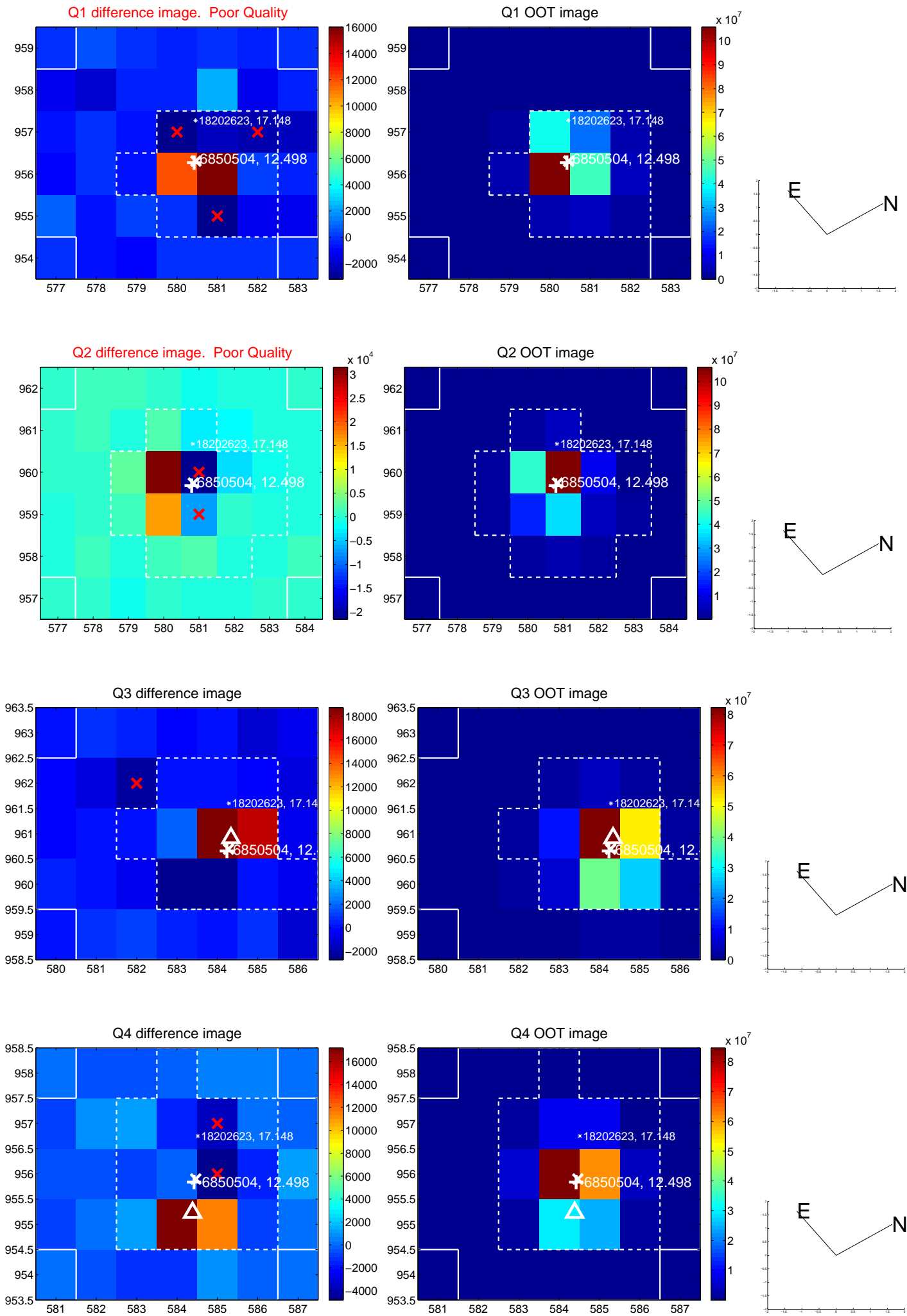
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.981 ± 0.680	1.44	0.122 ± 0.530	0.974 ± 0.671
PRF-fit source offset from KIC position	0.709 ± 0.642	1.10	0.043 ± 0.546	0.708 ± 0.631
photometric centroid source offset	0.44 ± 0.60	0.73	-0.38 ± 0.60	0.22 ± 0.62

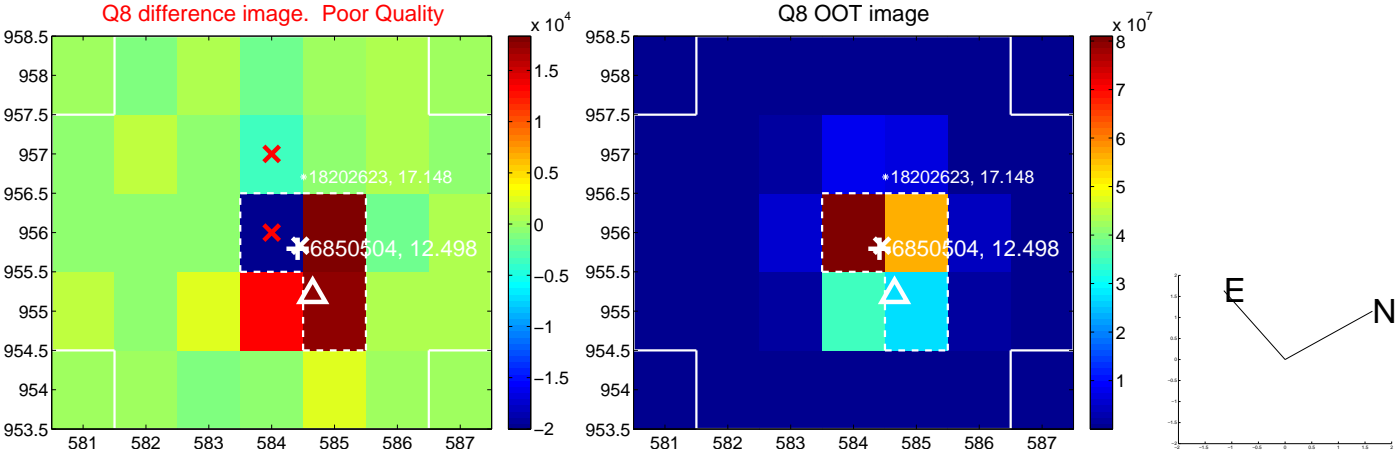
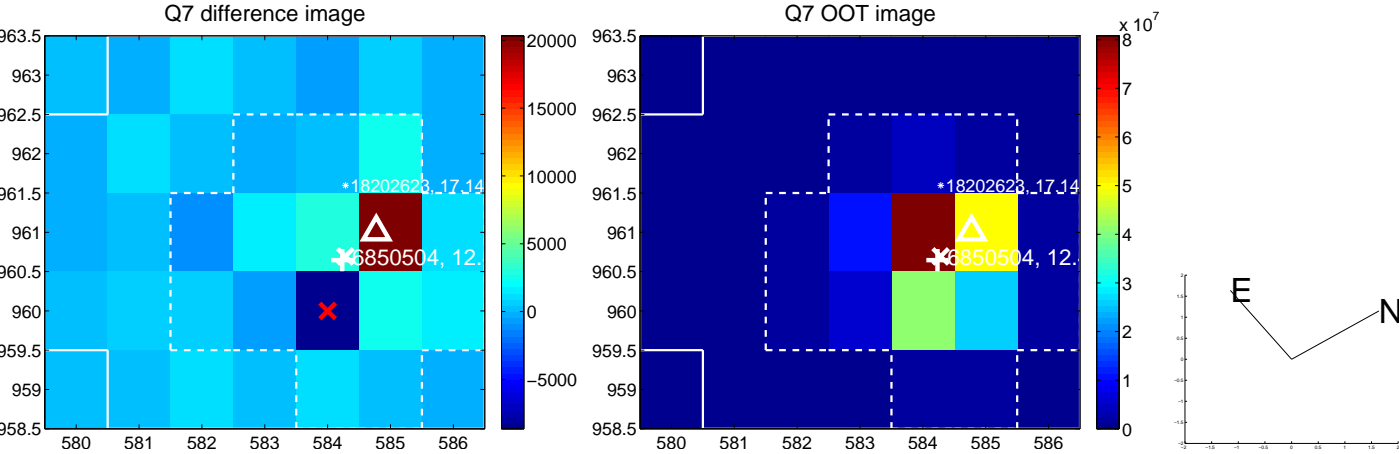
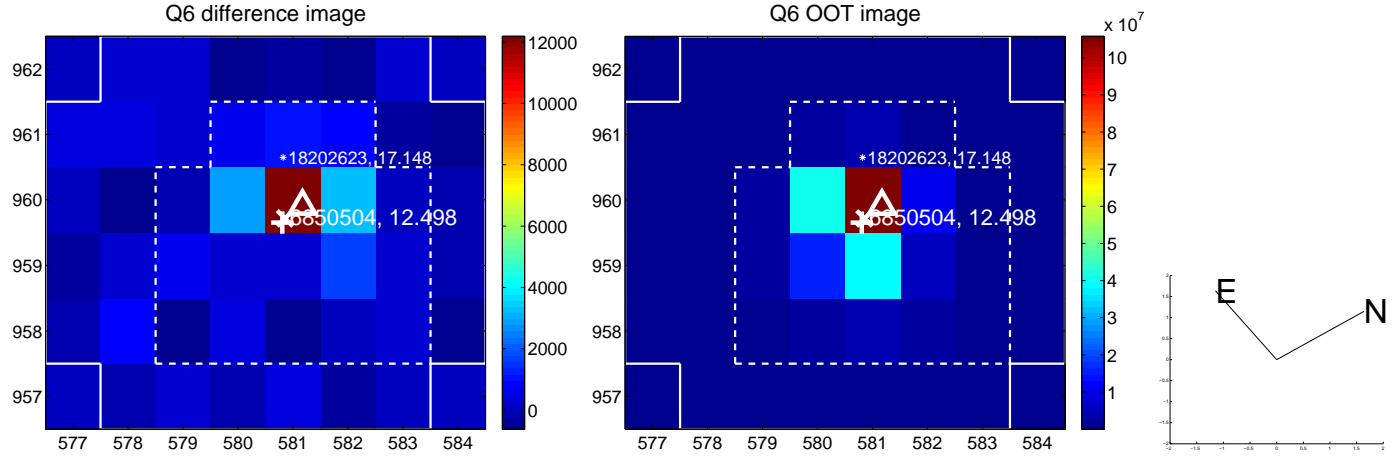
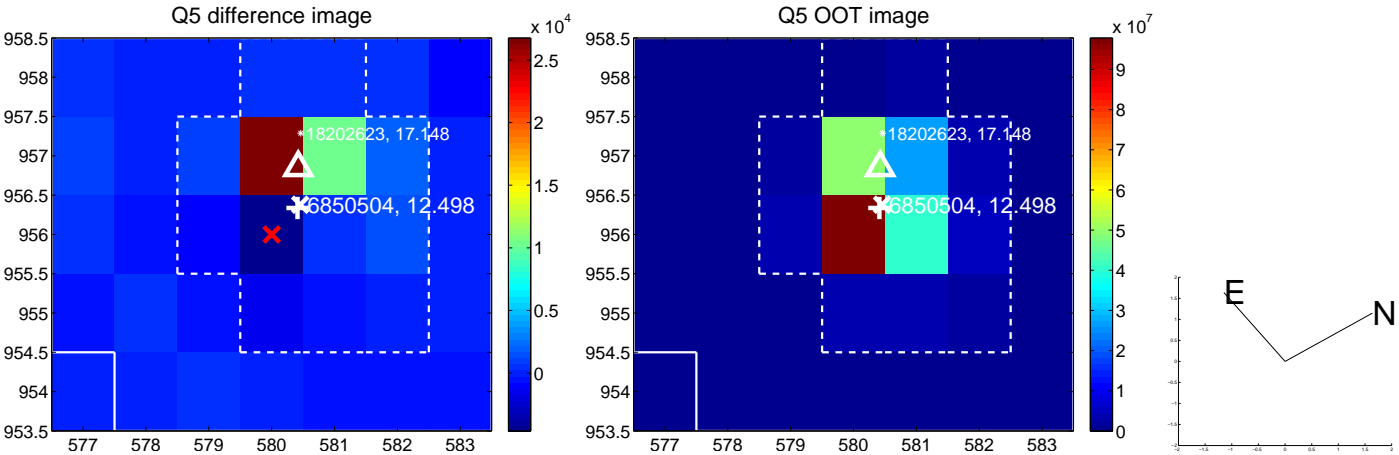


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

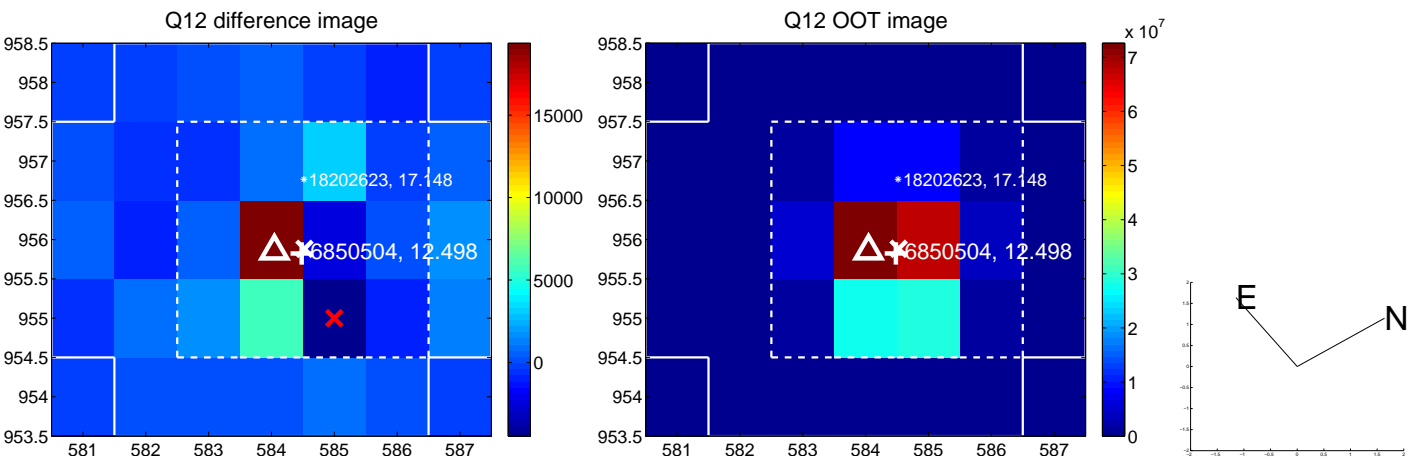
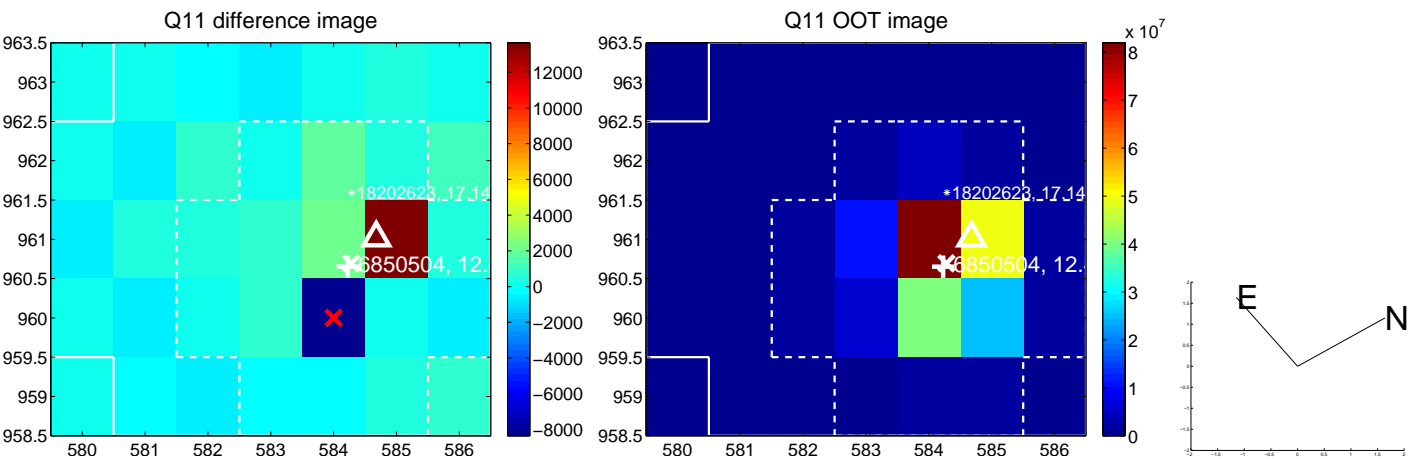
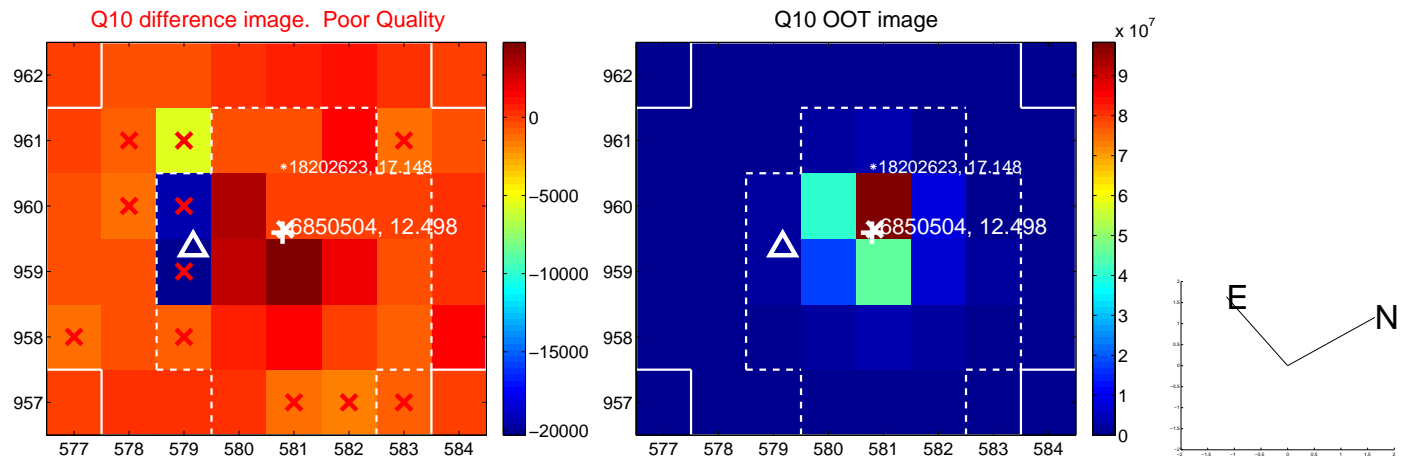
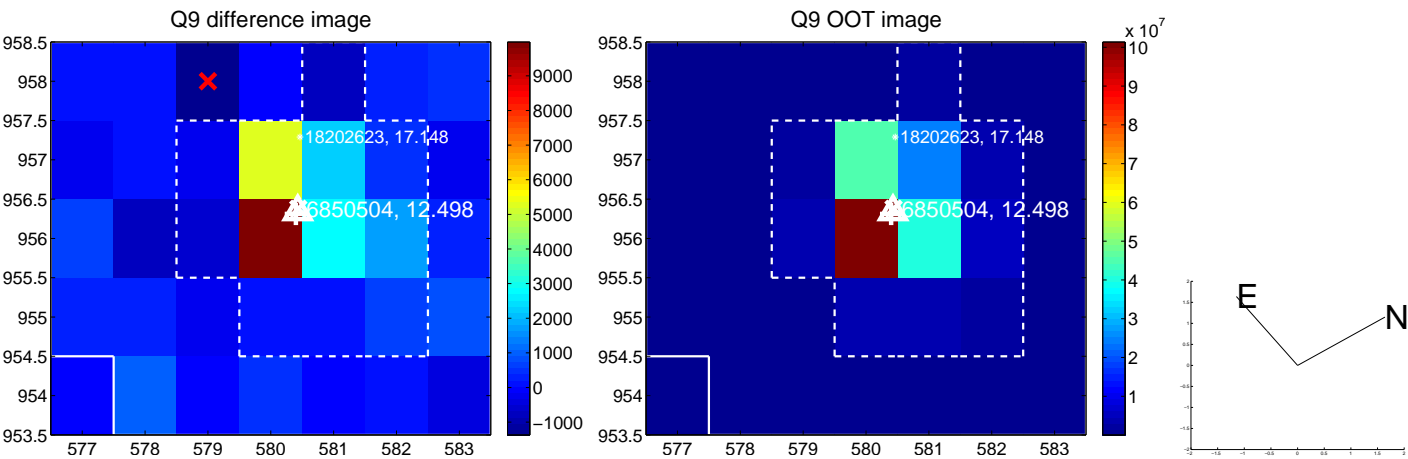
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



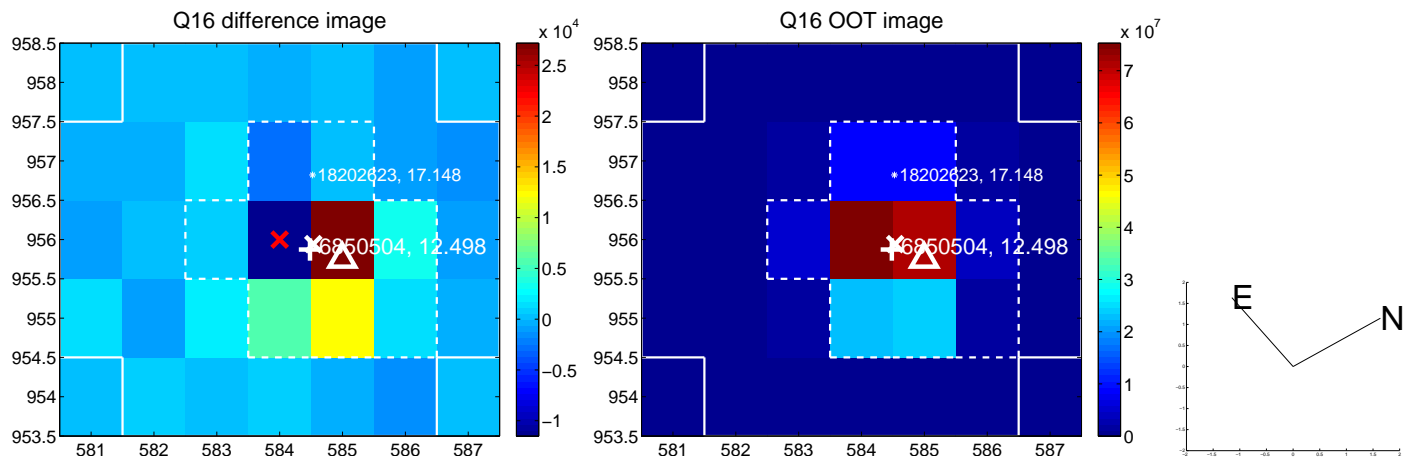
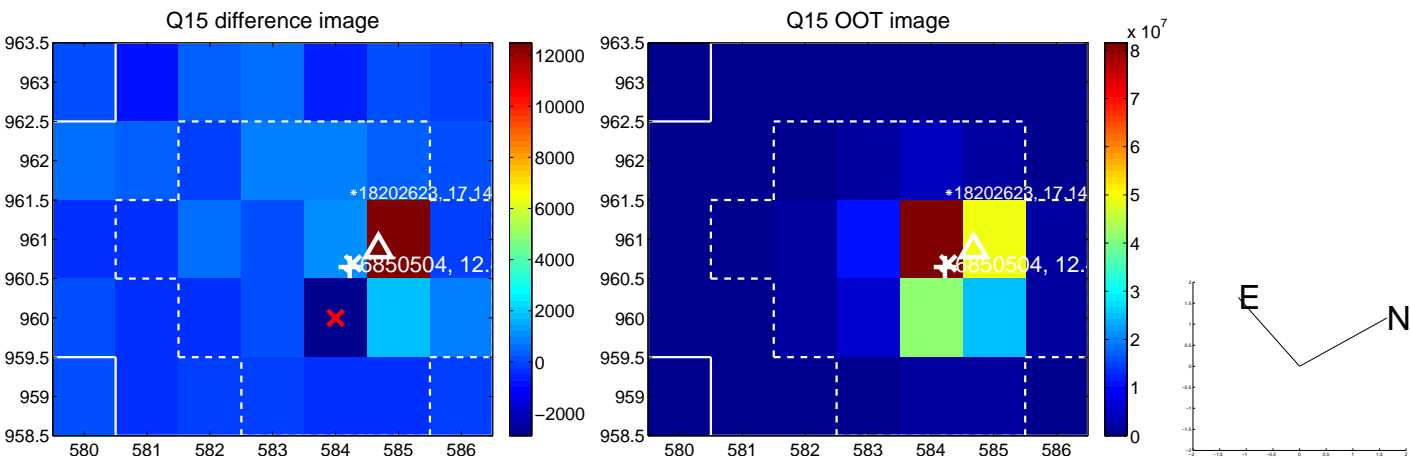
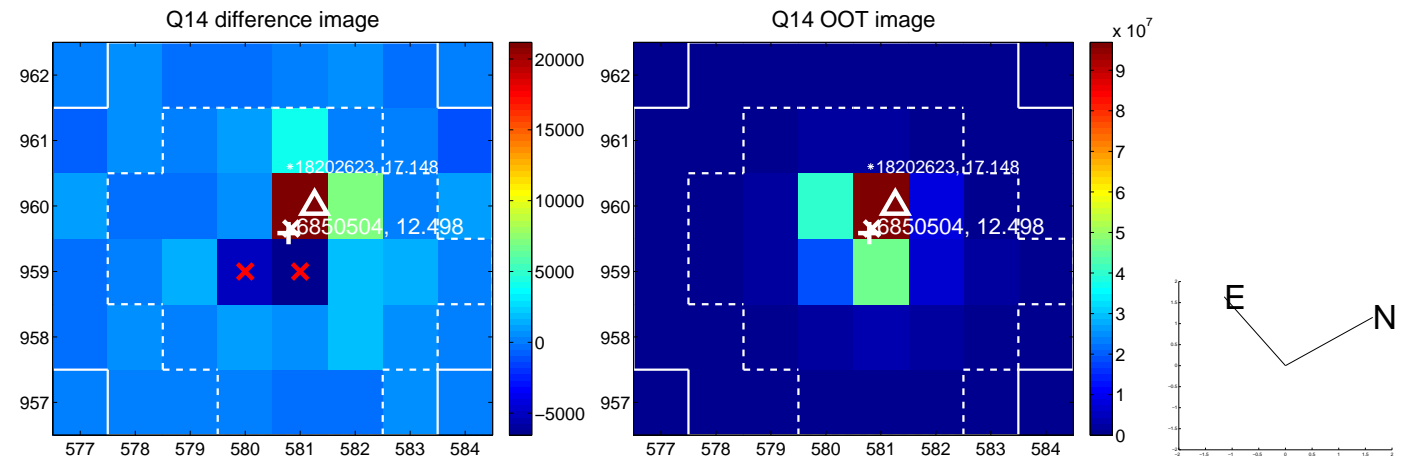
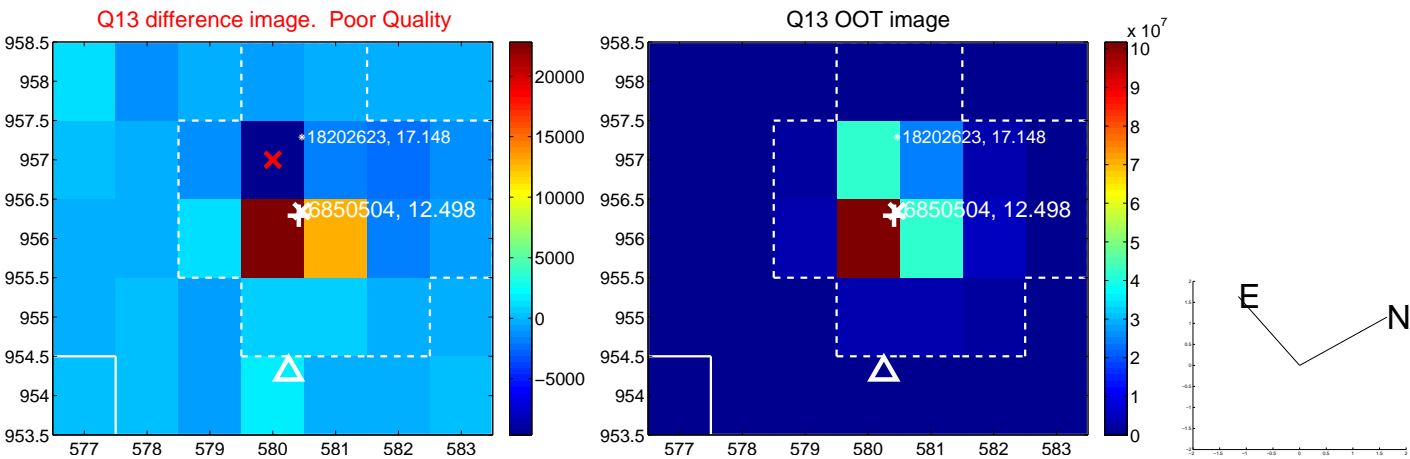
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



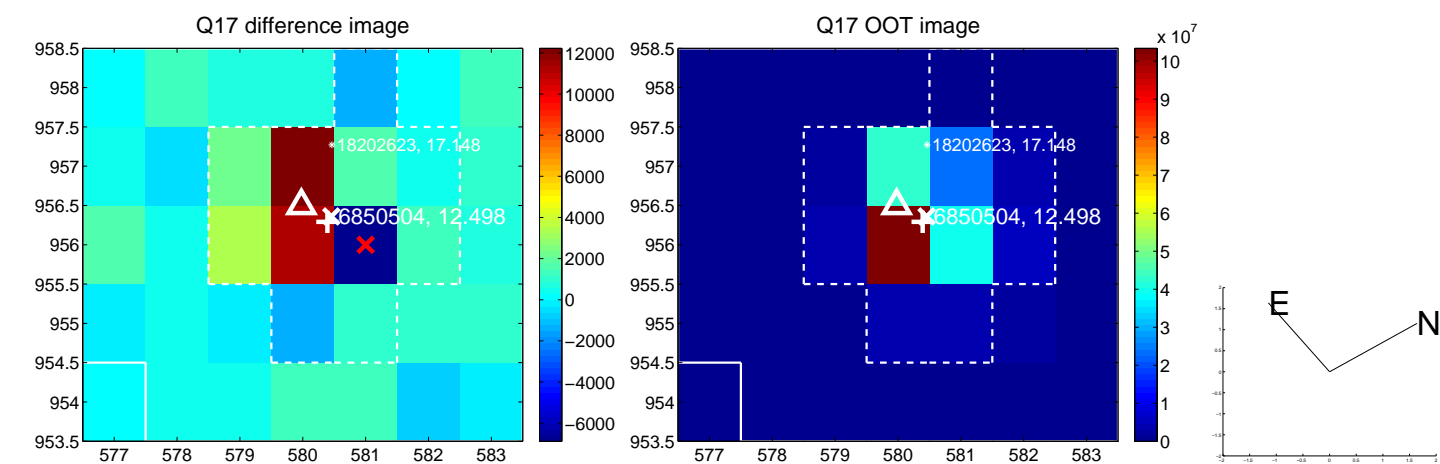
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



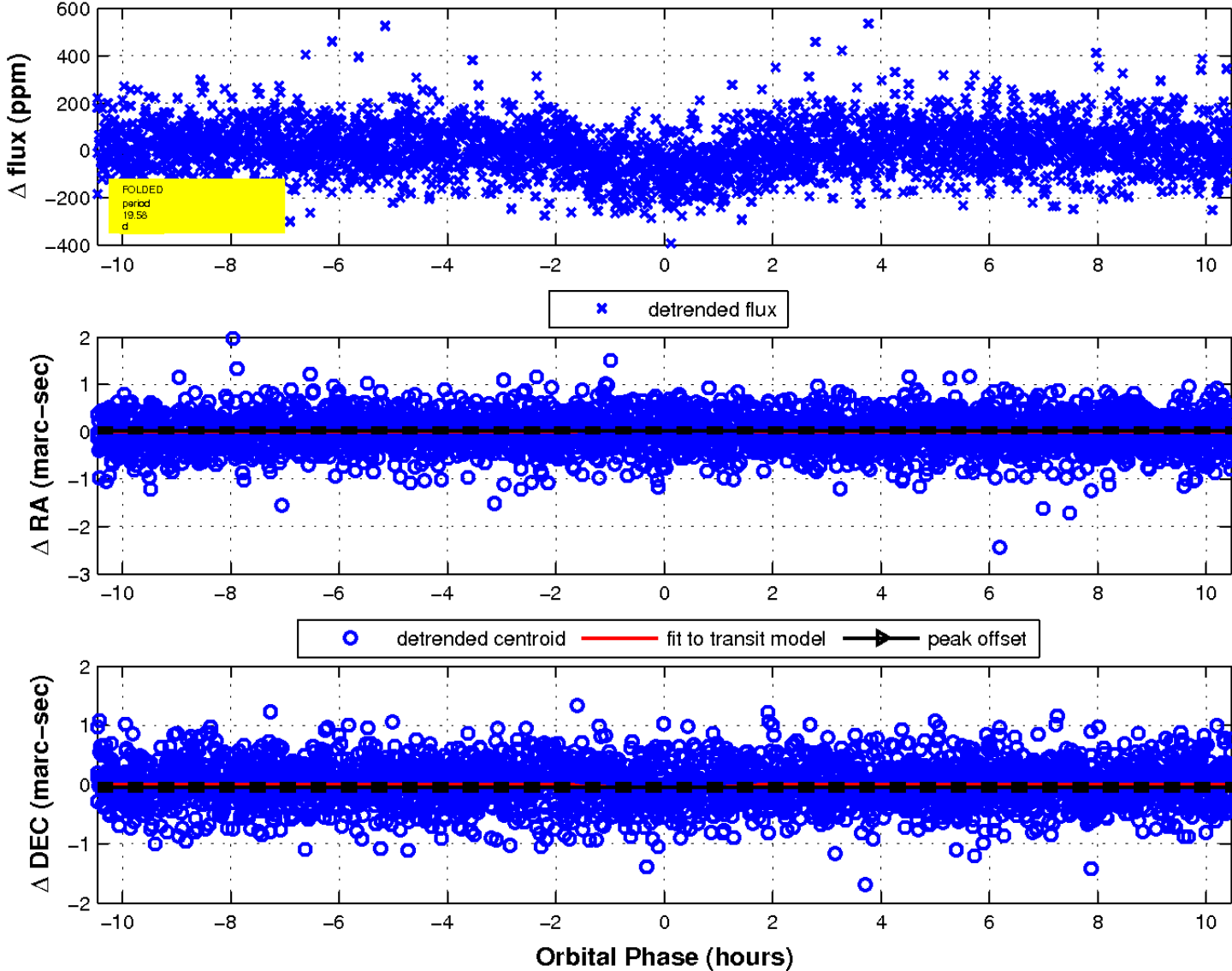
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

