

KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
006616211-02	OBS	No	2.312286	133.442771	30.4	7.895	9.2	8.8	3.31	6489	2.38	11059.92
006616211-03	OBS	No	407.121359	169.422334	345.4	15.030	9.4	8.5	3.31	6489	9.15	11.21
006616211-04	OBS	No	85.443251	174.838350	158.5	7.758	8.1	8.2	3.31	6489	4.66	89.86
006616211-05	OBS	No	51.877465	154.766586	148.6	6.839	7.9	8.7	3.31	6489	5.31	174.78
006616211-06	OBS	No	67.377912	198.627054	149.8	10.943	7.9	7.4	3.31	6489	4.51	123.34
006616211-07	OBS	No	379.148675	222.934695	207.1	4.904	7.7	6.2	3.31	6489	5.43	12.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

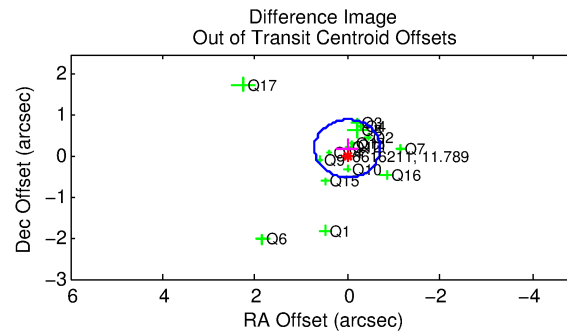
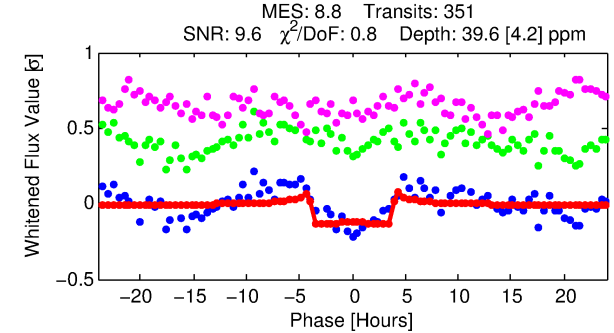
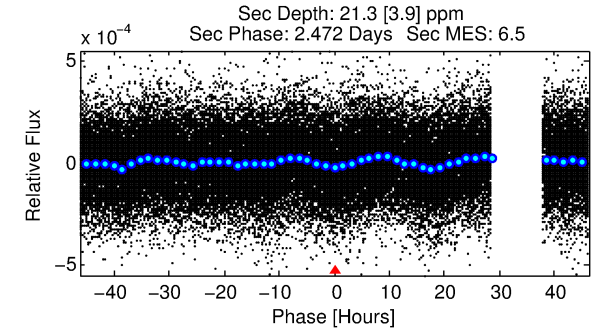
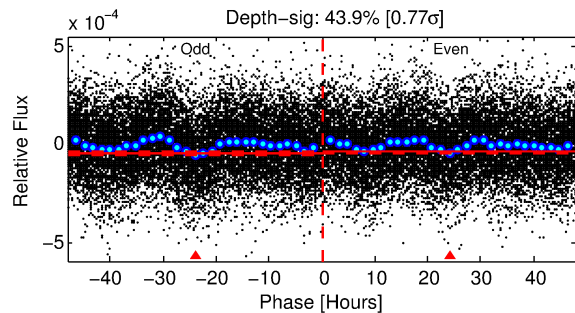
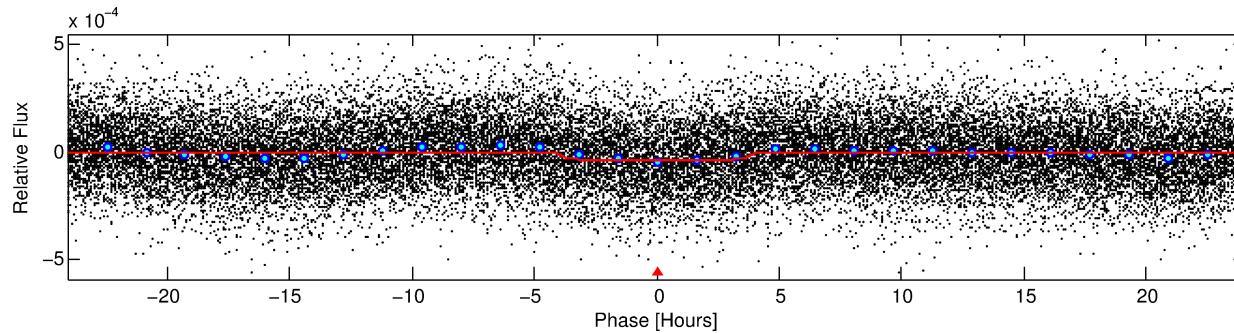
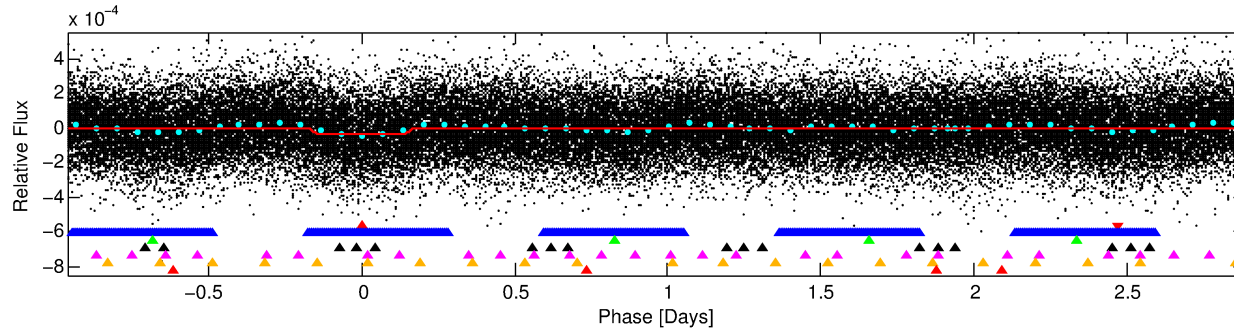
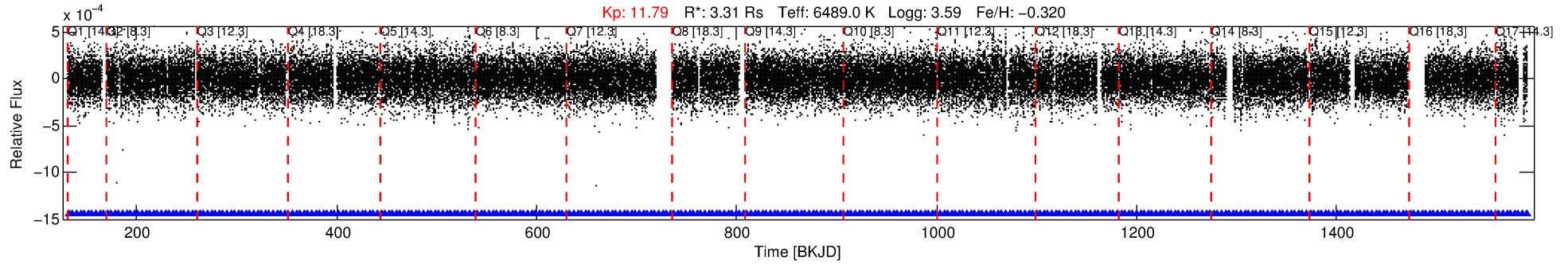
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-01

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 1 of 7 Period: 3.855 d



DV Fit Results:

Period = 3.85503 [0.00003] d
Epoch = 132.3902 [0.0044] BKJD
Rp/R* = 0.0068 [0.0009]
a/R* = 1.86 [0.96]
b = 0.91 [0.14]
Seff = 5594.62 [3493.52]
Teq = 2205 [344] K
Rp = 2.44 [1.04] Re
a = 0.0557 [0.0215] AU
Ag = 6.11 [4.26] [1.20 σ]
Teffp = 5361 [464] K [5.46 σ]

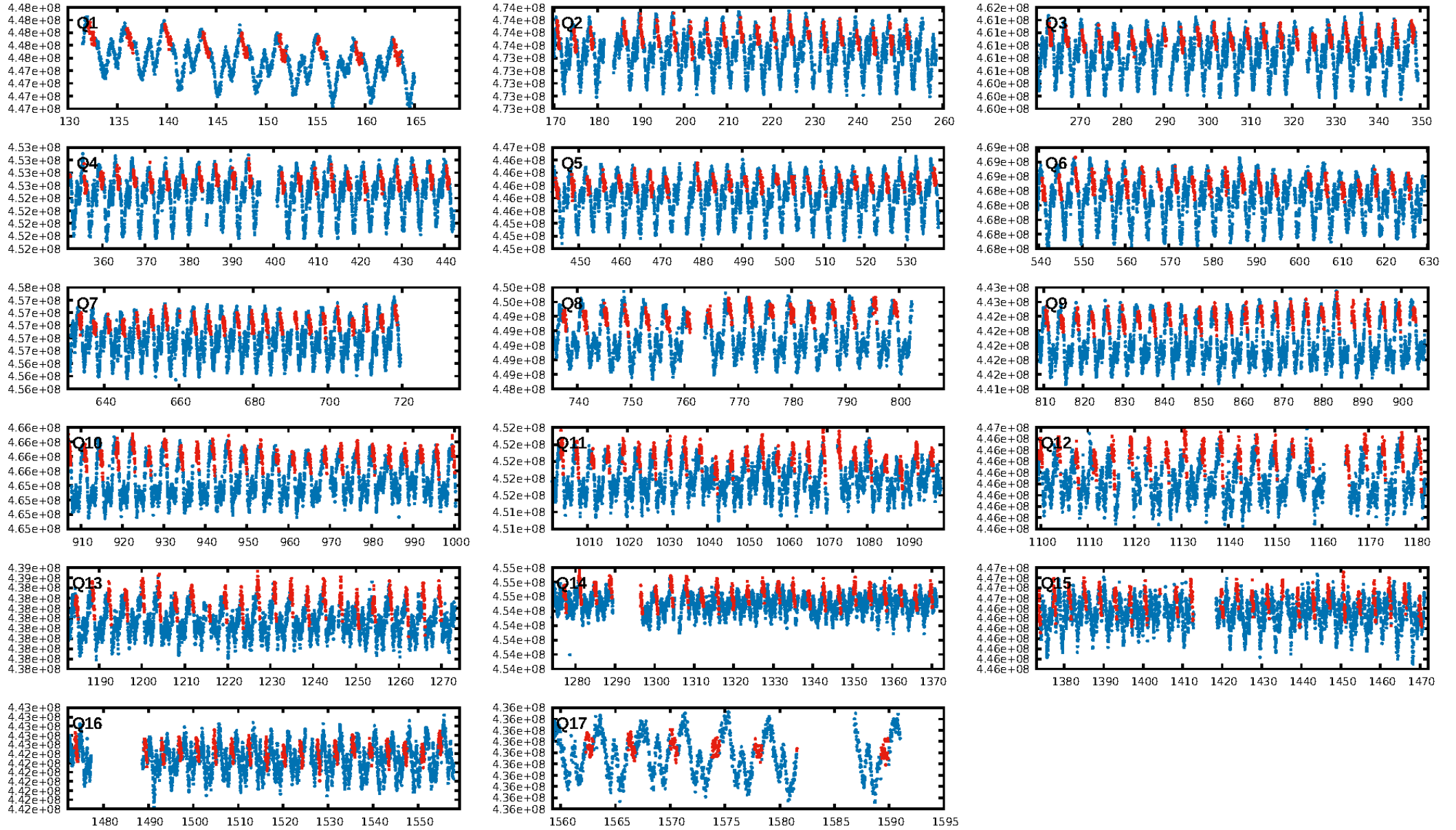
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.29 σ]
LongPeriod-sig: 100.0% [109.36 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.76e-10
RollingBand-fgt: 1.00 [336/336]
GhostDiagnostic-chr: -2.209
Centroid-sig: 0.0%
Centroid-so: 0.792 arcsec [2.51 σ]
OotOffset-rm: 0.195 arcsec [0.83 σ]
KicOffset-rm: 0.232 arcsec [0.93 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.25 [4/16]
DiffImageOverlap-fno: 0.94 [16/17]

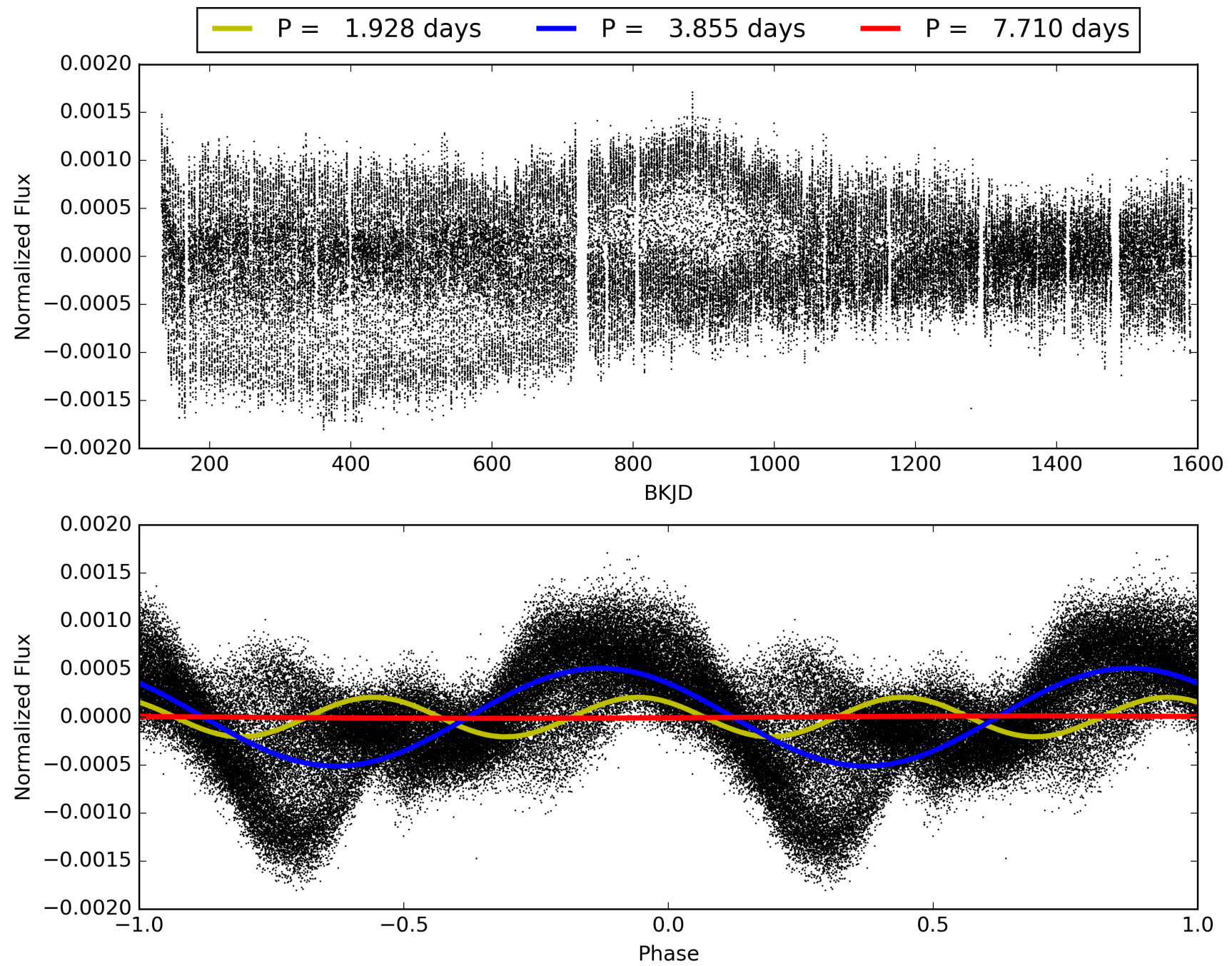
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006616211-01, PDC Light Curves

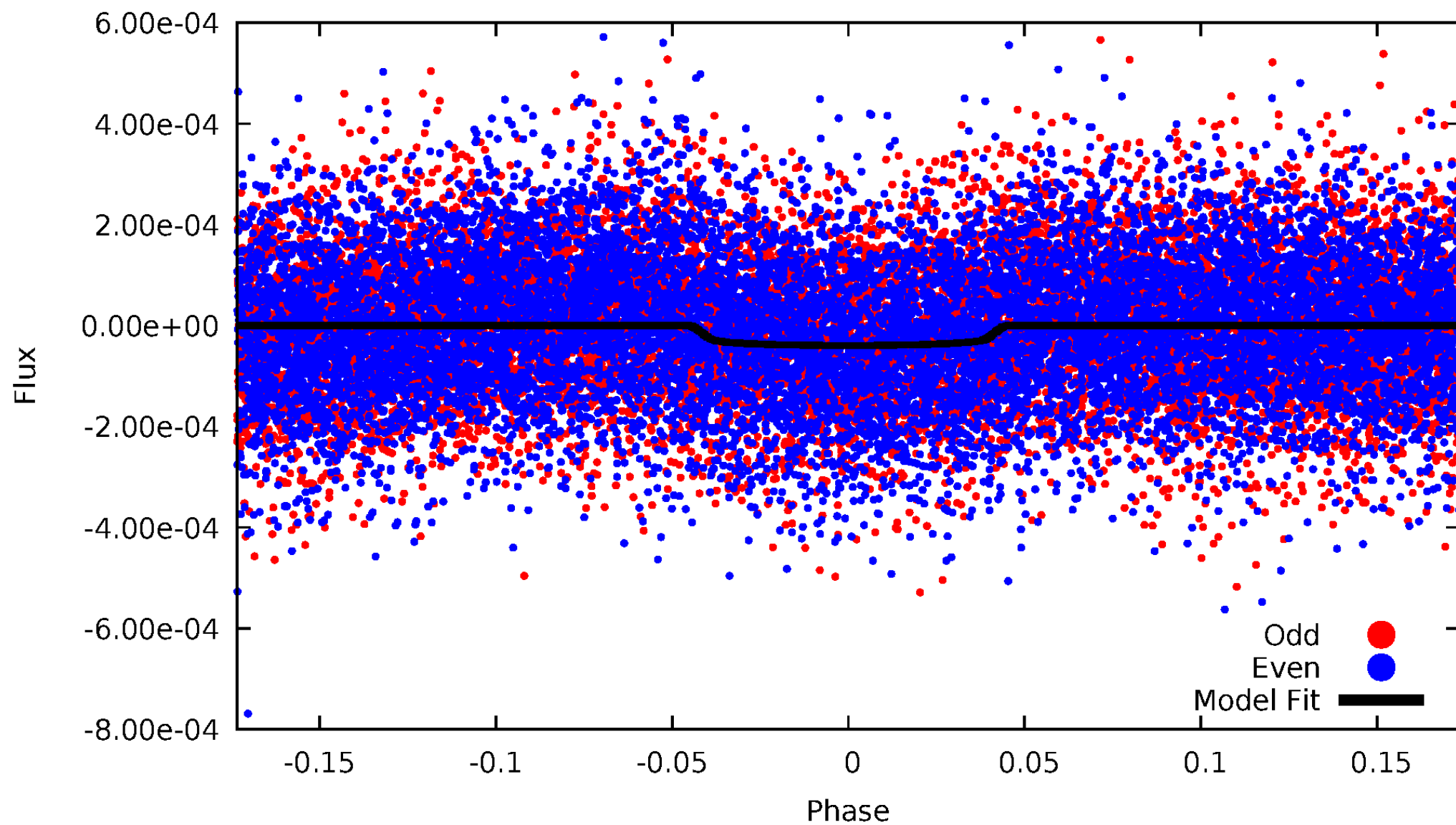


TCE 006616211-01



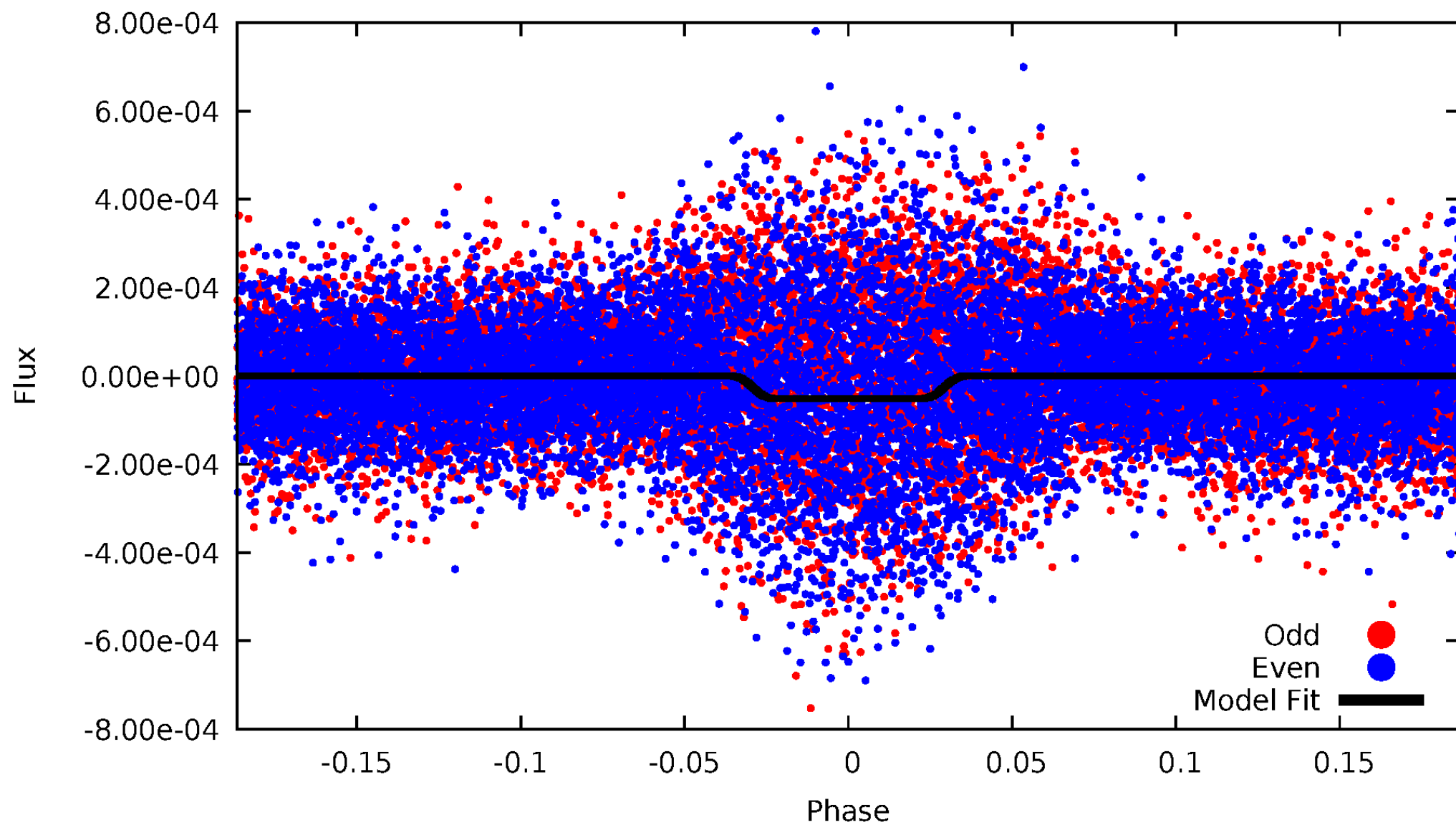
DV Odd/Even

TCE 006616211-01



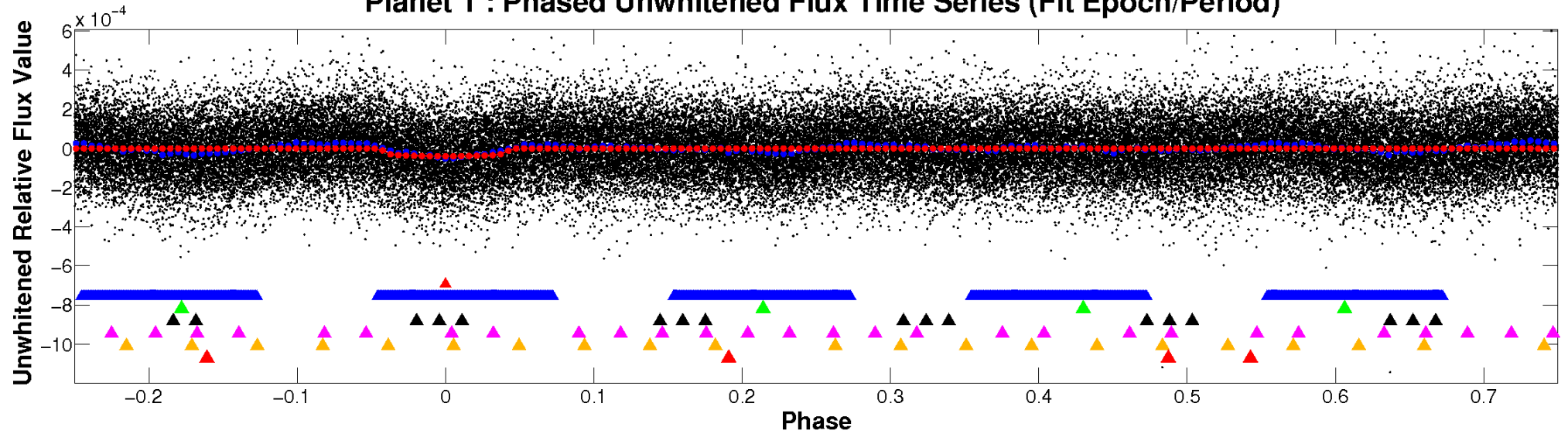
ALT Odd/Even

TCE 006616211-01

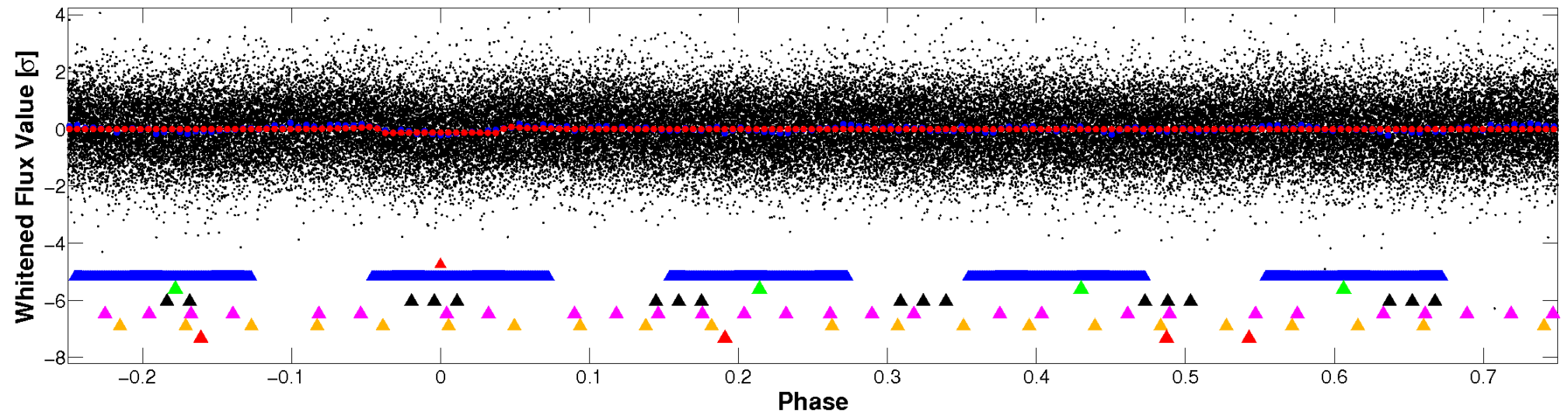


Non-Whitened Vs. Whitened Light Curve

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

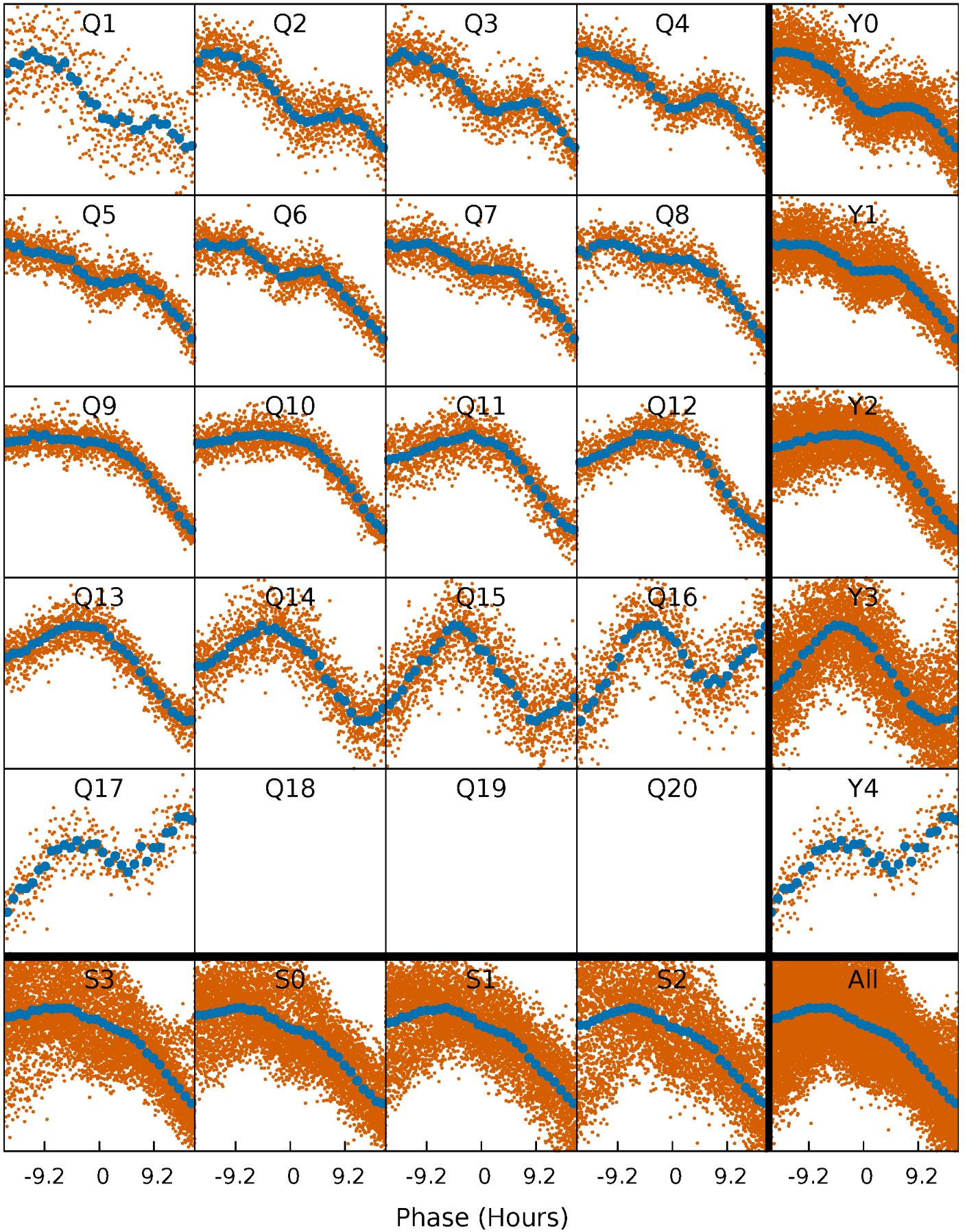


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



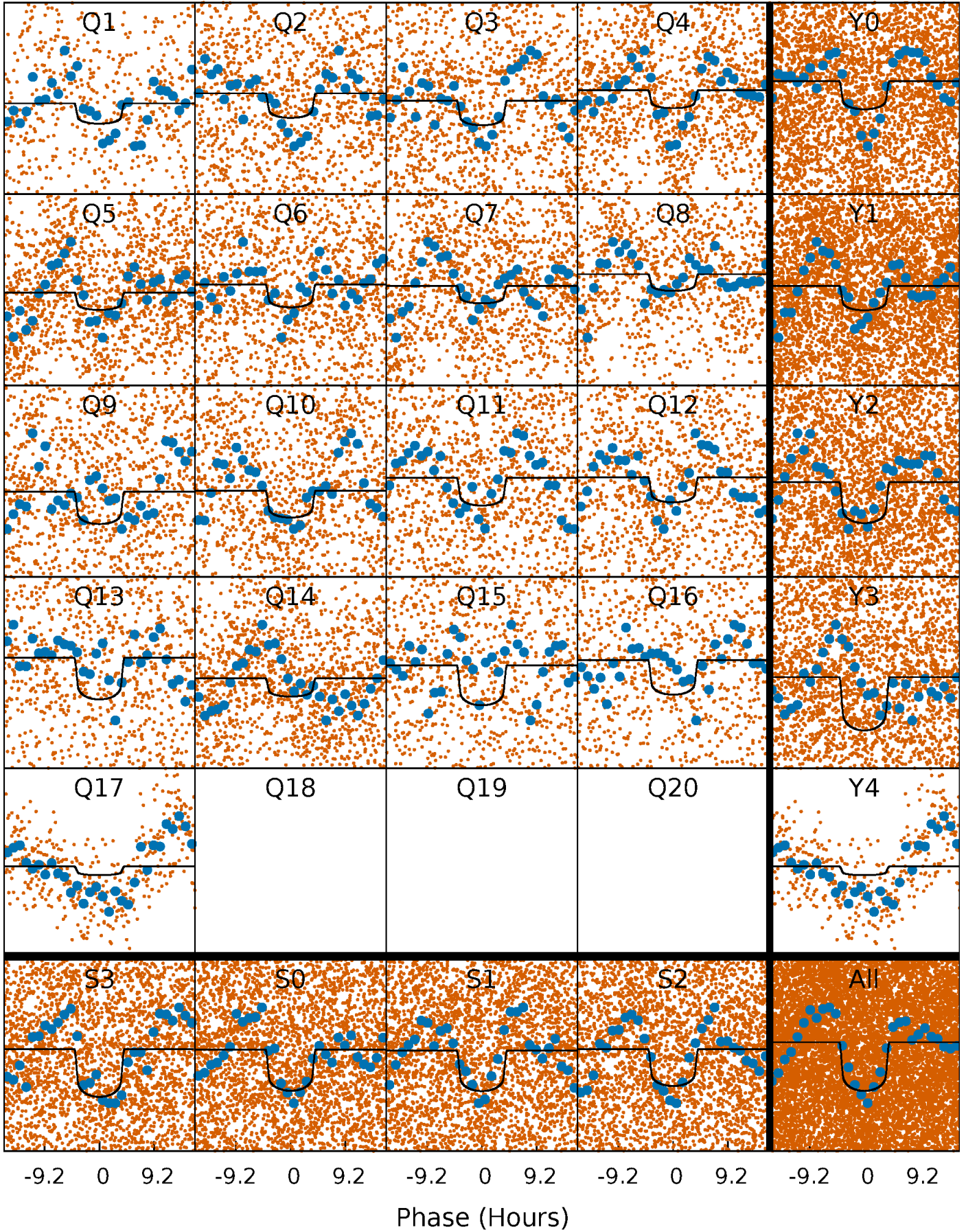
PDC Quarter-Phased Transit Curves

TCE 006616211-01 P= 3.855026 Days $T_0=132.390182$ (BKJD)



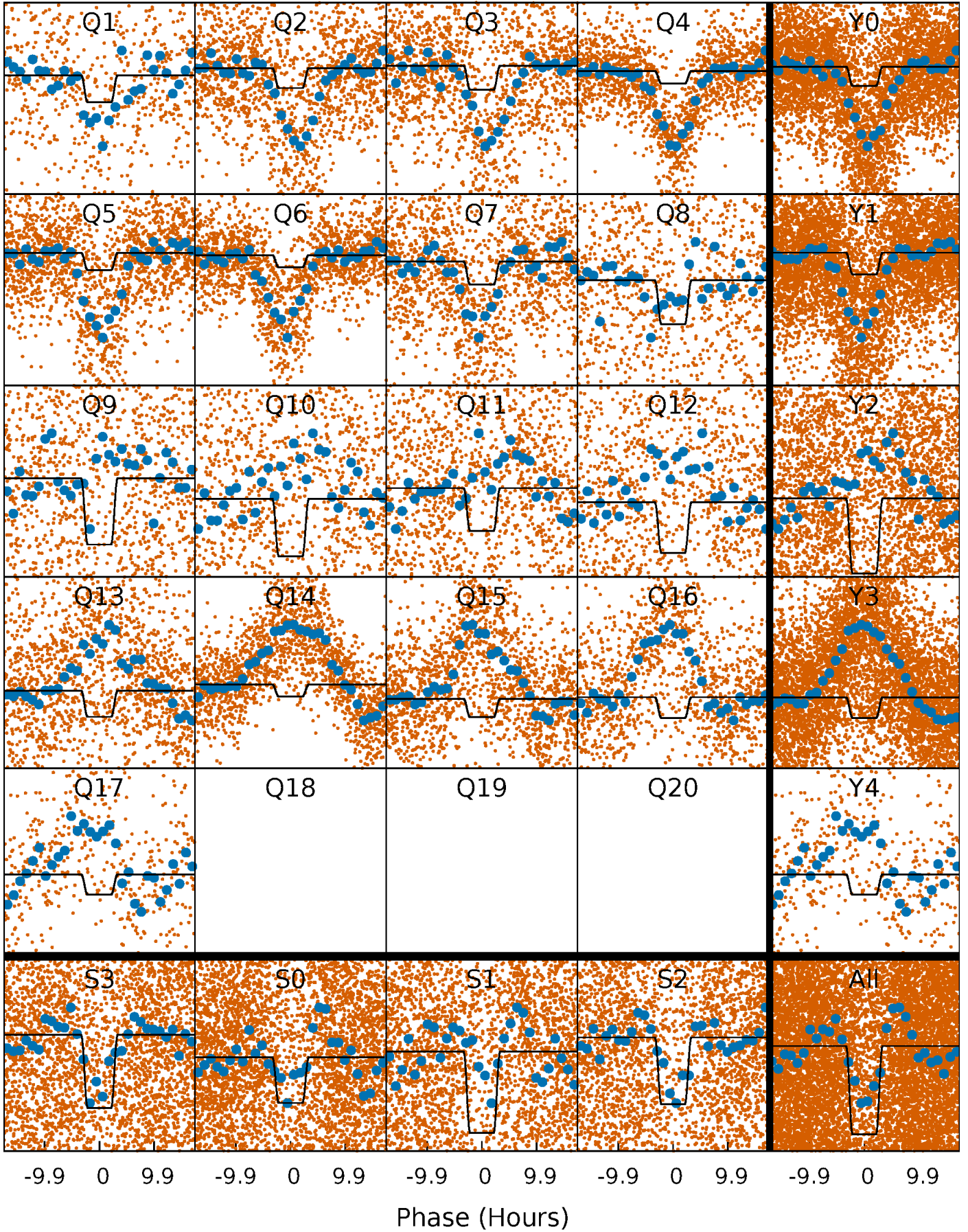
DV Quarter-Phased Transit Curves

TCE 006616211-01 P= 3.855026 Days $T_0=132.390182$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

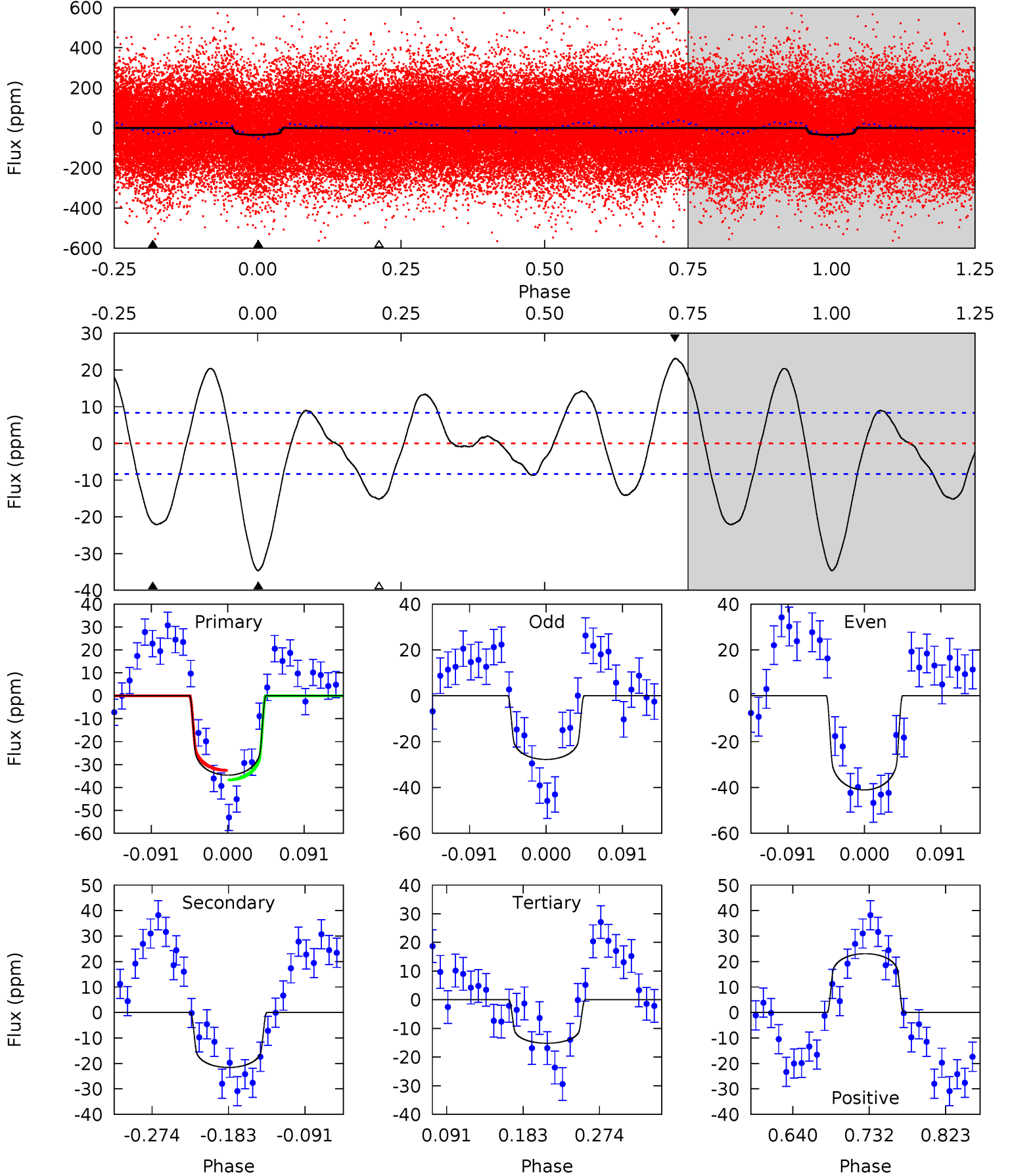
TCE 006616211-01 P= 3.854737 Days $T_0=132.402767$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-01, P = 3.855026 Days, E = 128.535156 Days

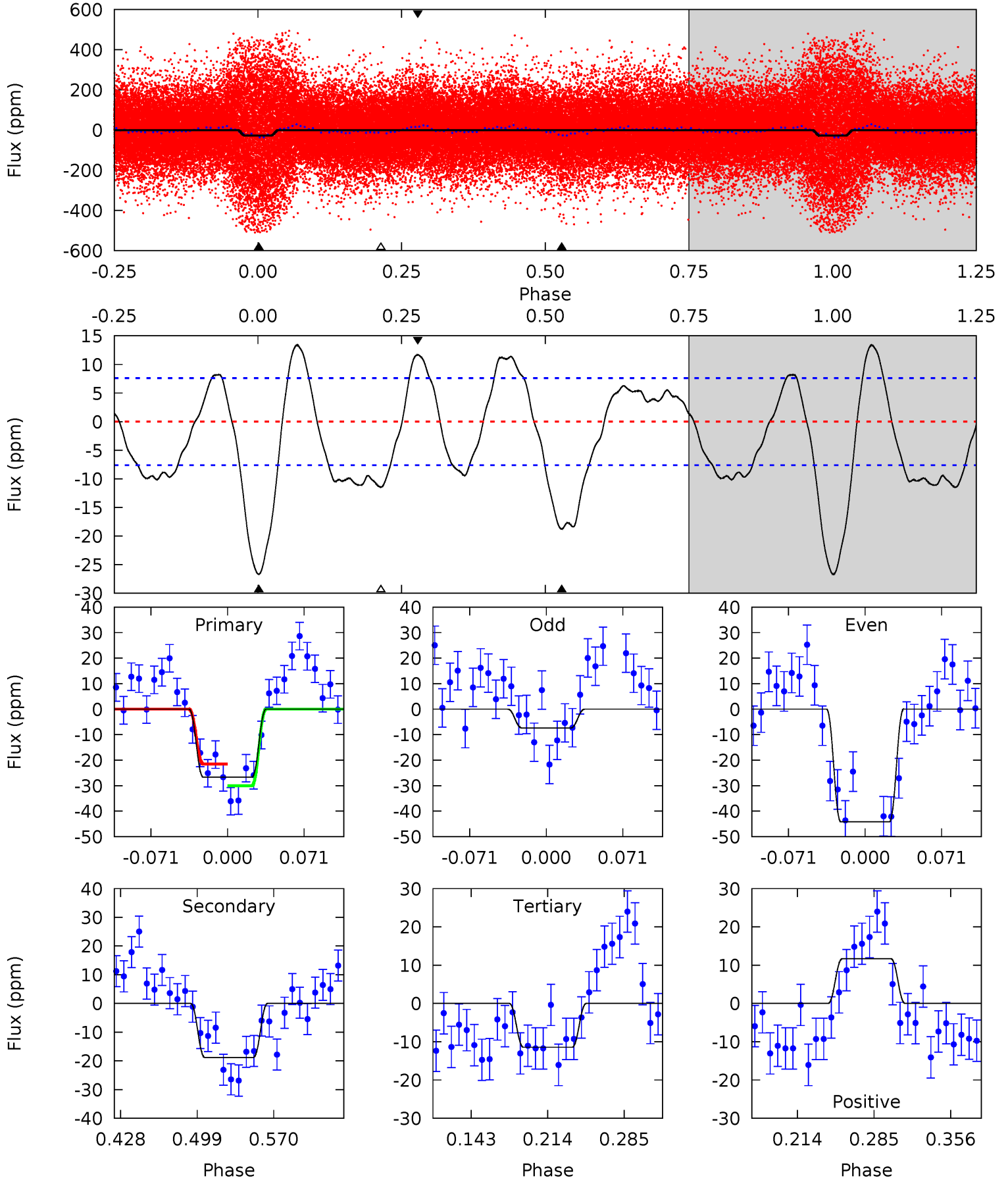
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	11.9	8.35	12.7	4.58	1.69	5.29	10.7	6.36	3.52	-0.83	3.65	0.92	0.40	1.14



Alt Model-Shift Uniqueness Test

006616211-01, P = 3.854737 Days, E = 128.548030 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	11.4	6.97	7.11	4.64	1.80	4.49	9.27	9.13	4.47	4.33	10.4	0.85	0.33	2.59



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-22 ± 2	$2.33^{+0.49}_{-0.57}$	3045^{+171}_{-316}	5363^{+424}_{-348}	$6.876^{+4.606}_{-2.188}$
Alt.	-19 ± 2	$2.47^{+0.49}_{-0.54}$	3053^{+160}_{-280}	5059^{+383}_{-300}	$5.312^{+2.921}_{-1.603}$

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

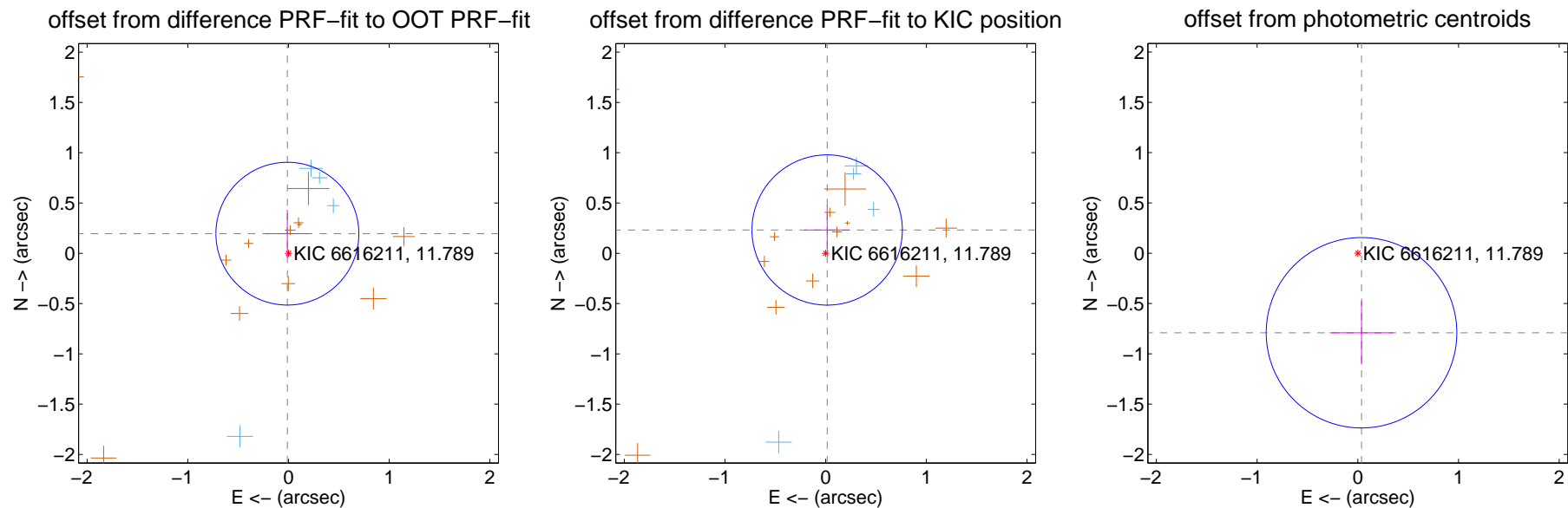
DV Centroid Data

Supplemental centroid analysis for 006616211-01. **Kepler magnitude: 11.79.** Transit SNR 9.60

There are 4 quarters with good PRF difference image offsets

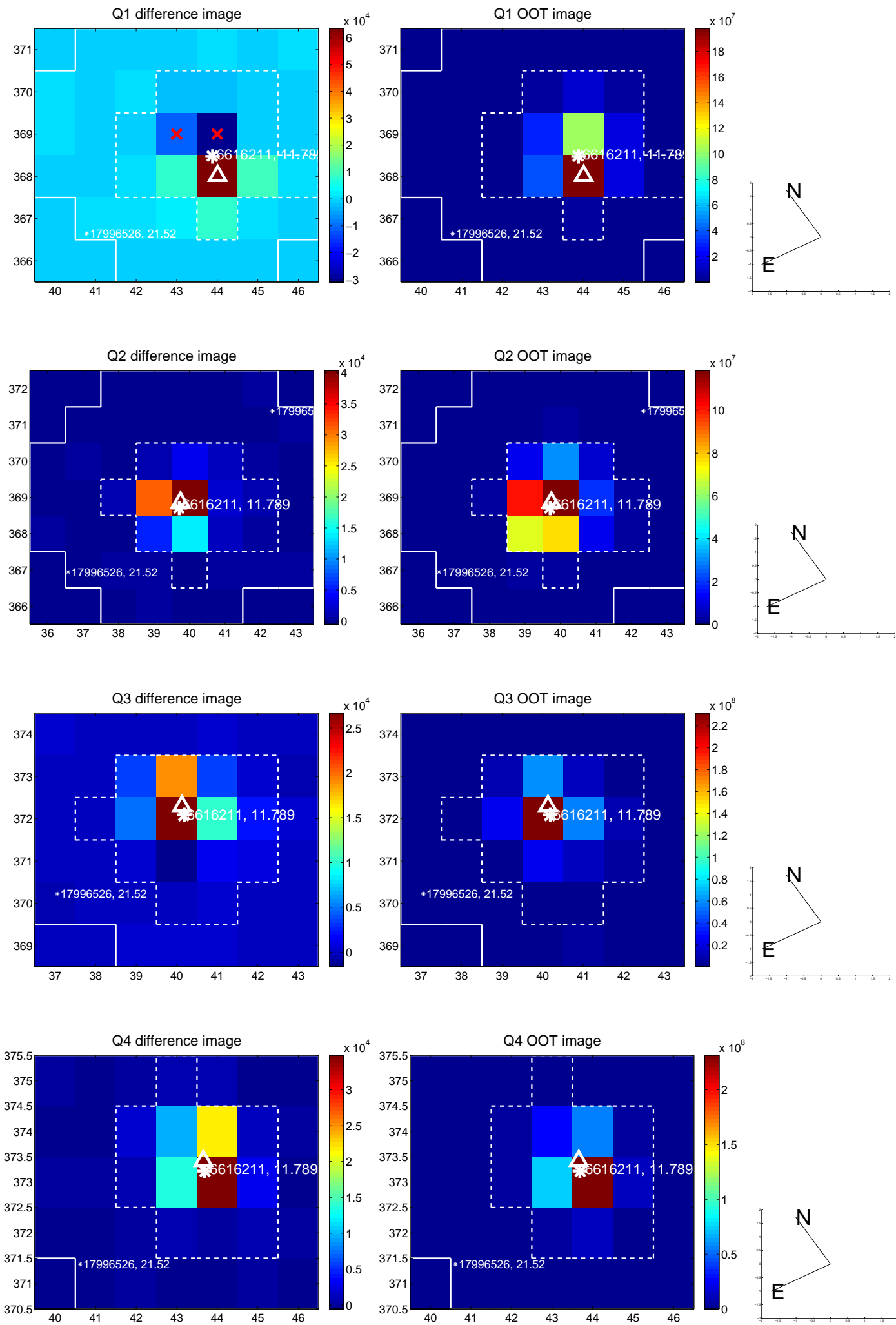
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.195 ± 0.237	0.83	0.011 ± 0.220	0.195 ± 0.237
PRF-fit source offset from KIC position	0.232 ± 0.249	0.93	-0.015 ± 0.227	0.232 ± 0.246
photometric centroid source offset	0.79 ± 0.32	2.51	-0.04 ± 0.32	-0.79 ± 0.32

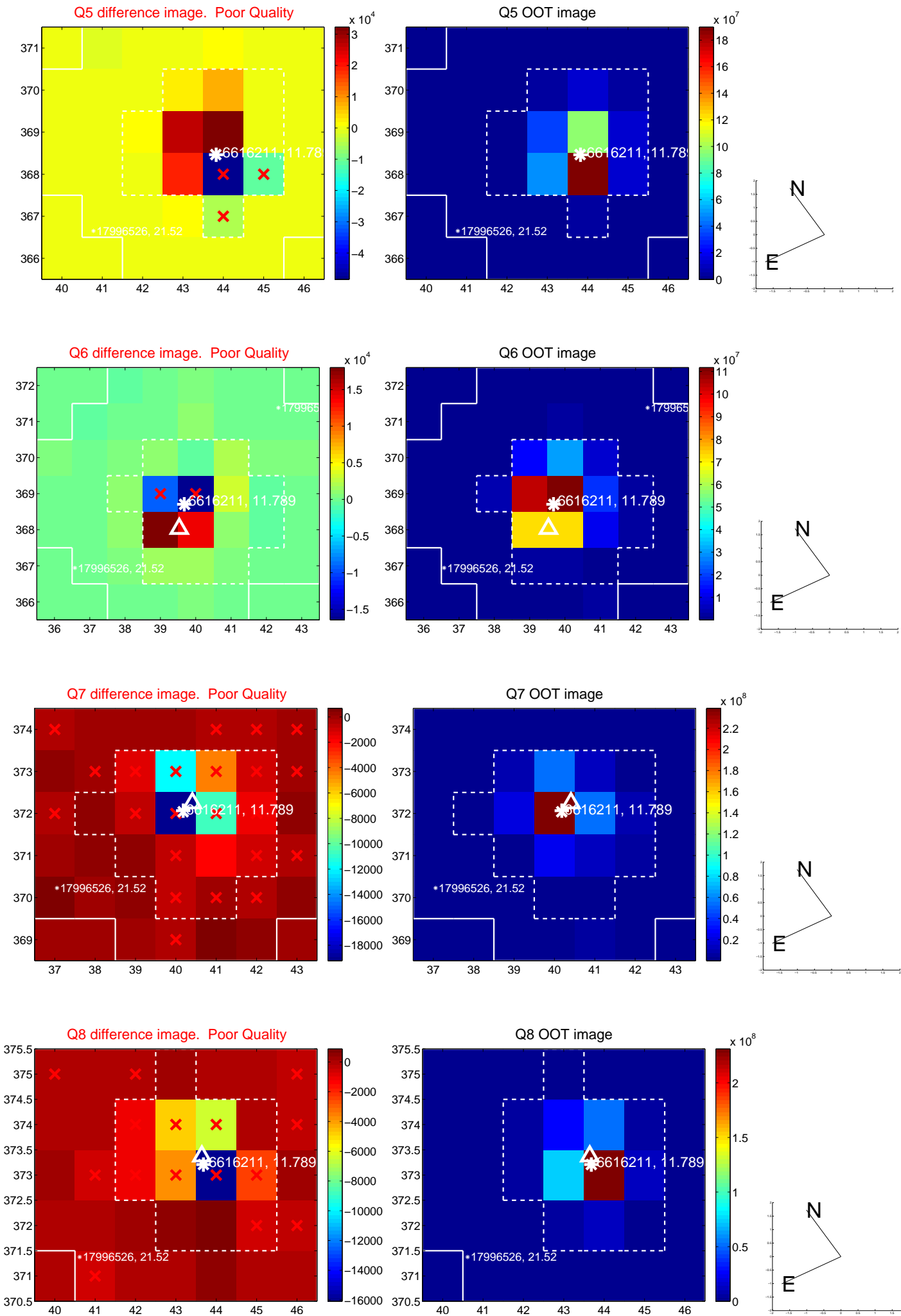


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

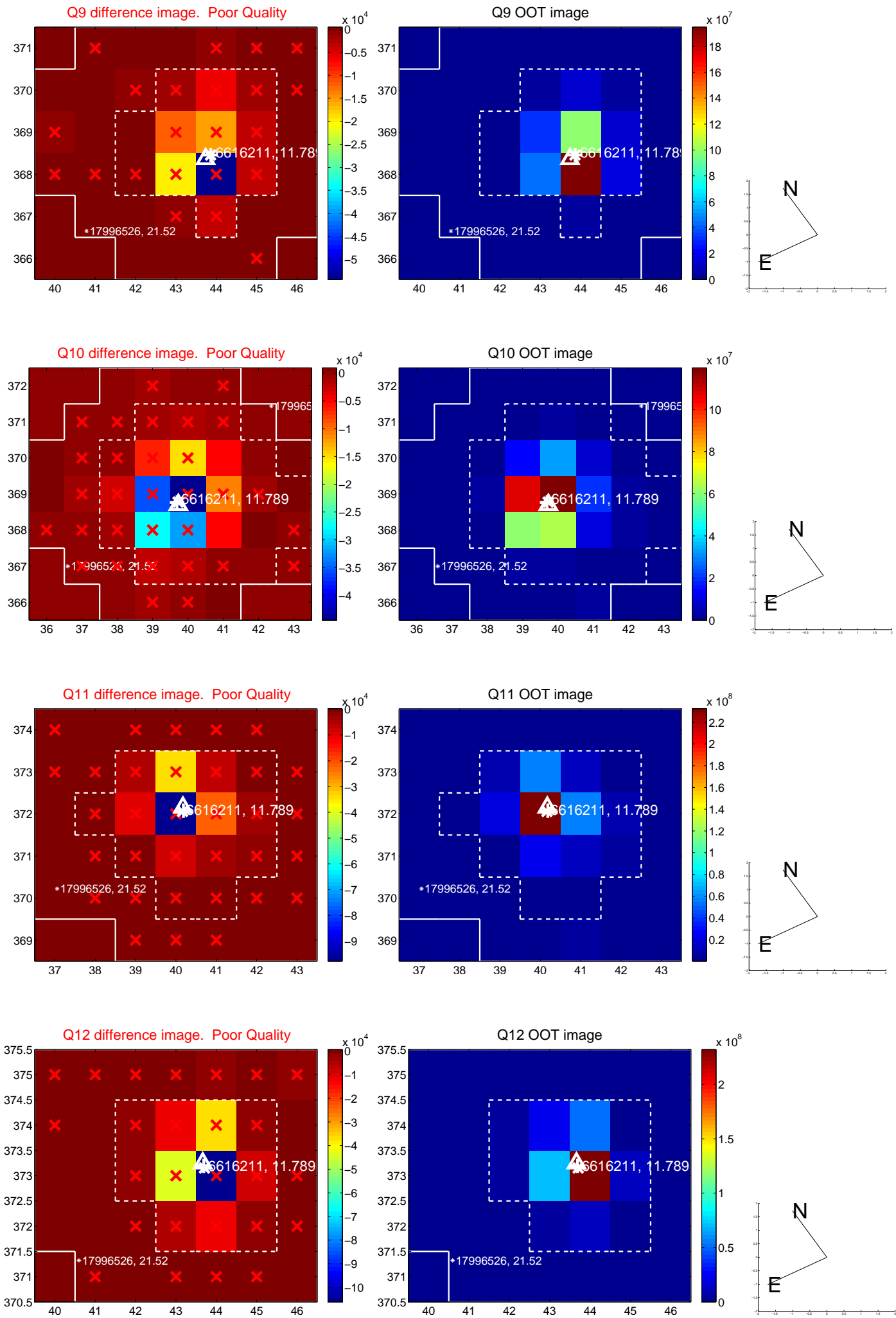
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



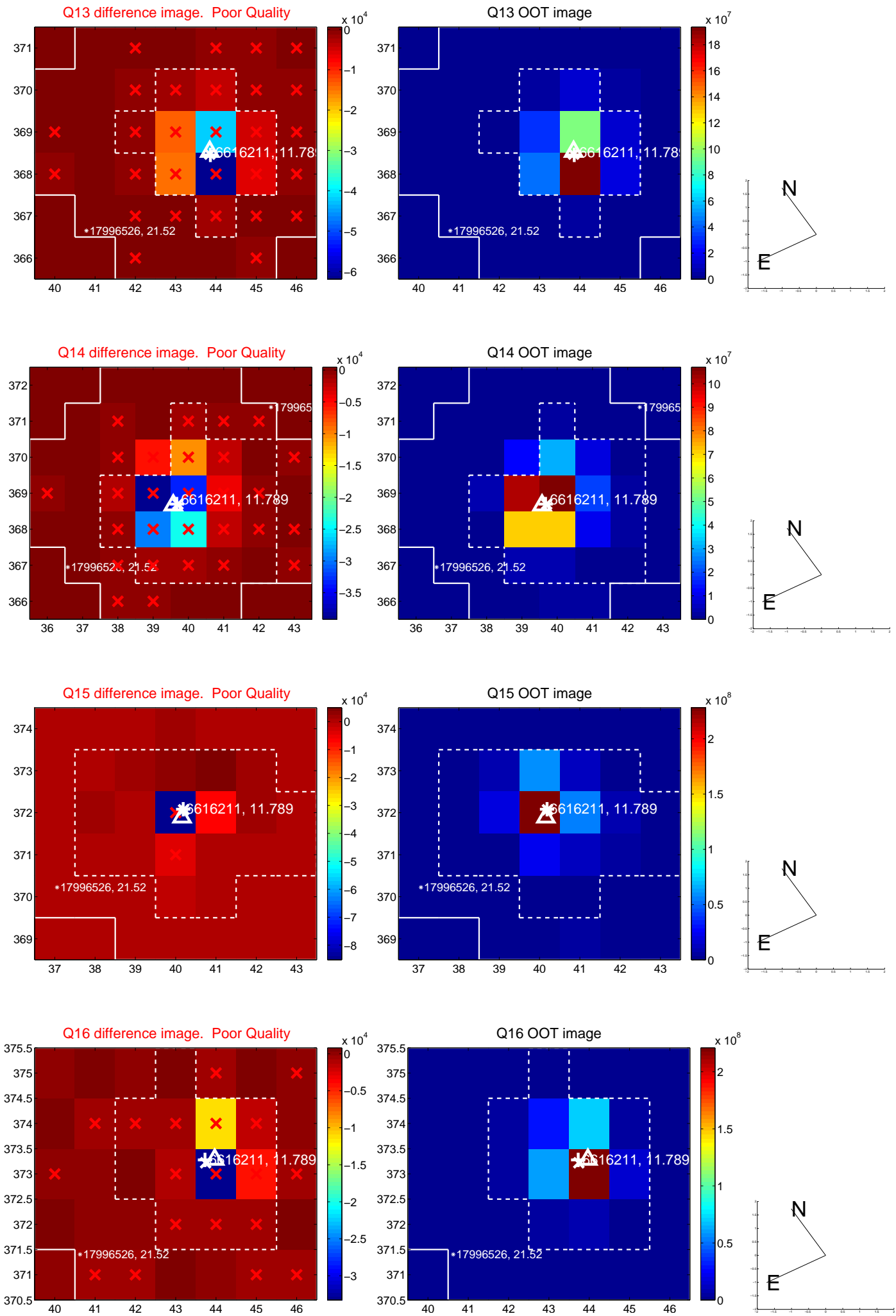
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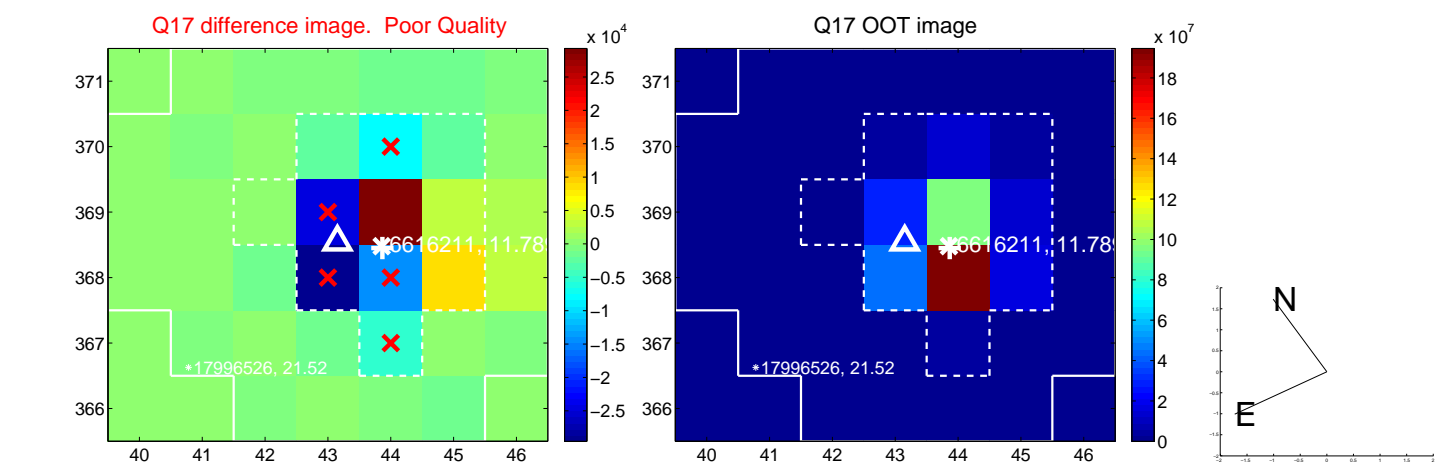
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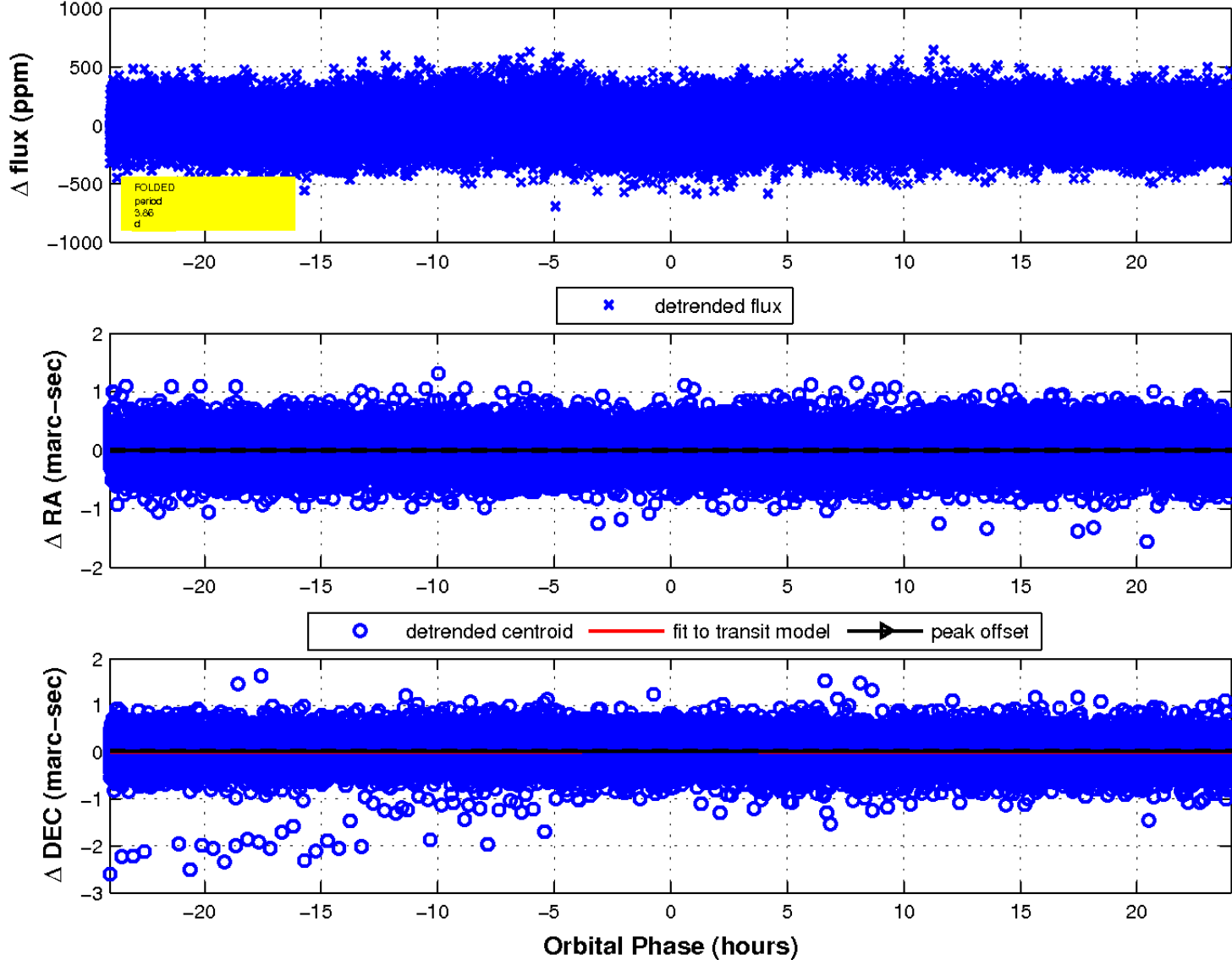
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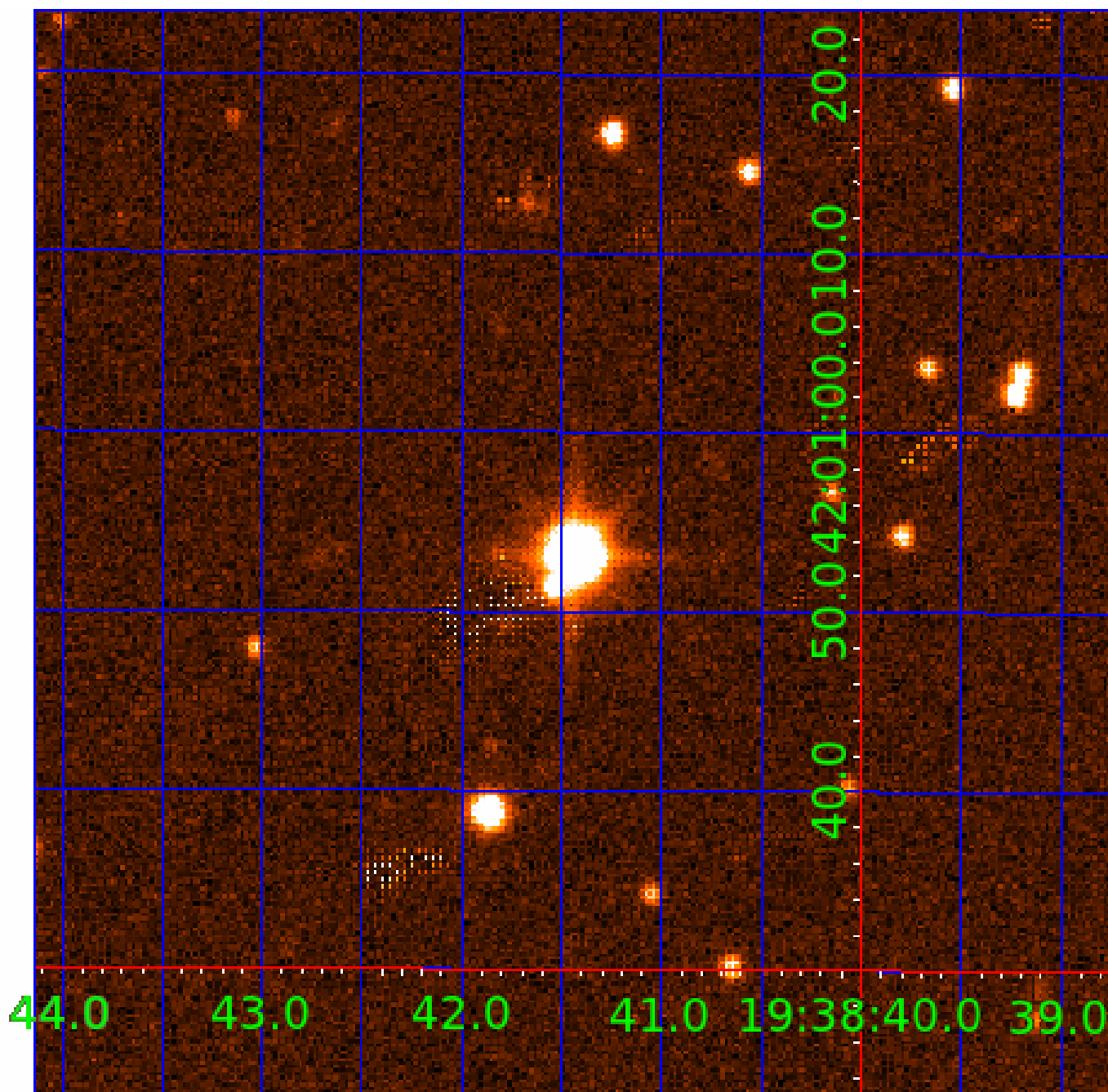


fluxWeightedCentroids, Planet 1 of 7



UKIRT Image

Declination



KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

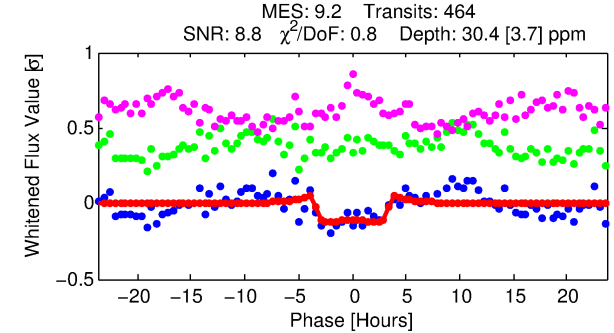
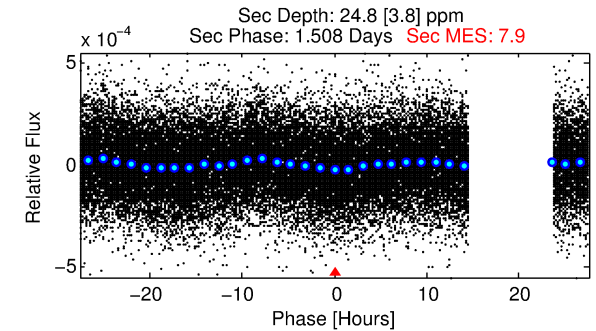
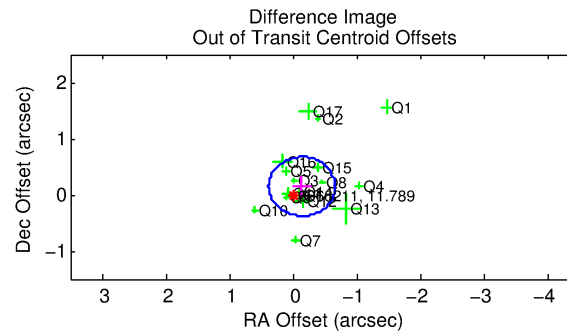
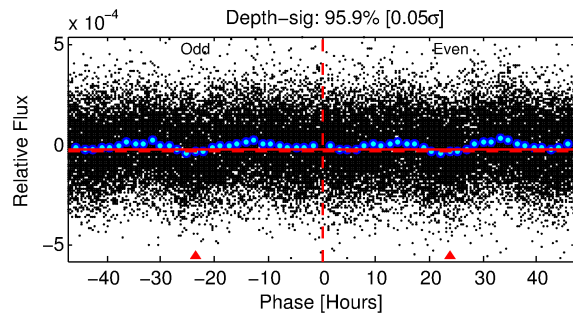
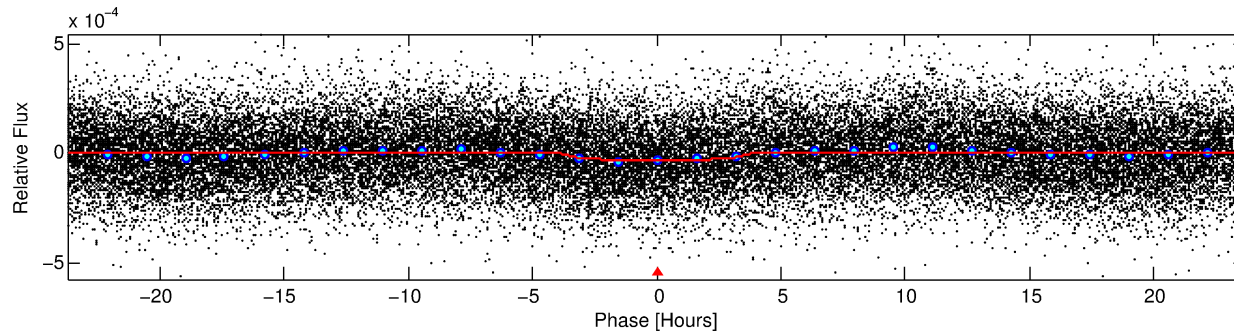
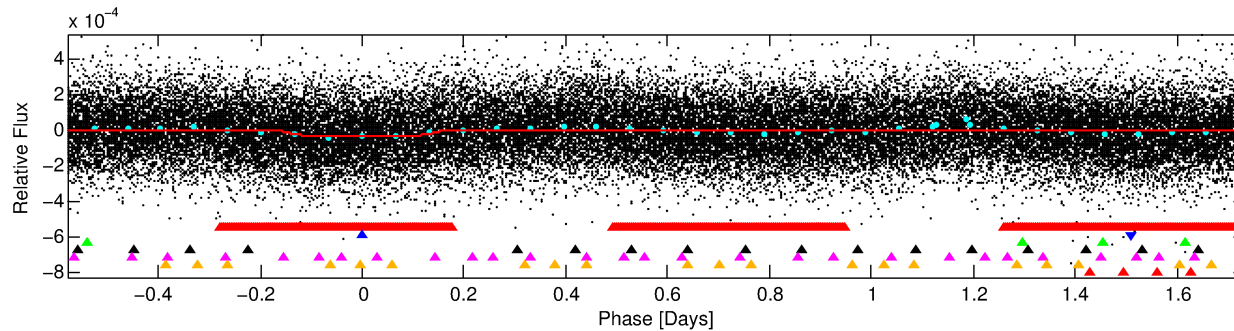
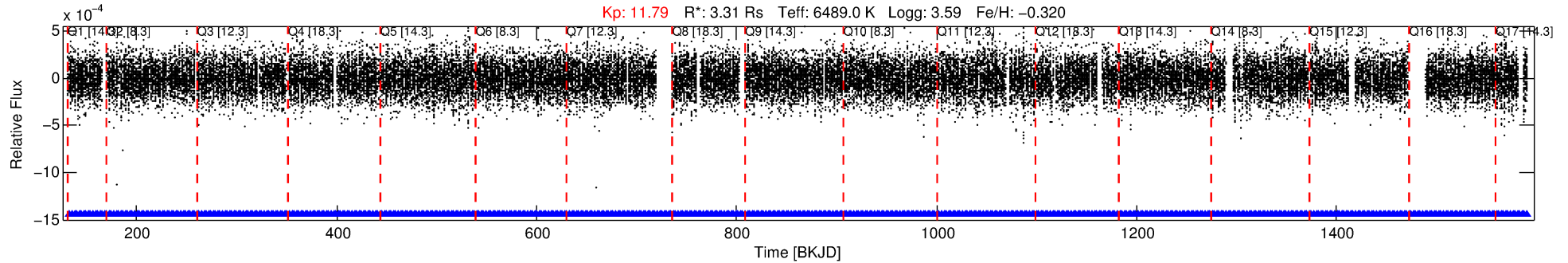
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-02

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 2 of 7 Period: 2.312 d



DV Fit Results:

Period = 2.31229 [0.00003] d
Epoch = 133.4428 [0.0072] BKJD
 R_p/R^* = 0.0066 [0.0005]
 a/R^* = 1.13 [0.07]
 b = 0.98 [0.01]
 Seff = 11059.92 [6906.29]
 T_{eq} = 2615 [408] K
 R_p = 2.38 [0.98] R_e
 a = 0.0396 [0.0153] AU
 A_g = 3.78 [2.46] [1.13 σ]
 T_{eff} = 5638 [343] K [5.67 σ]

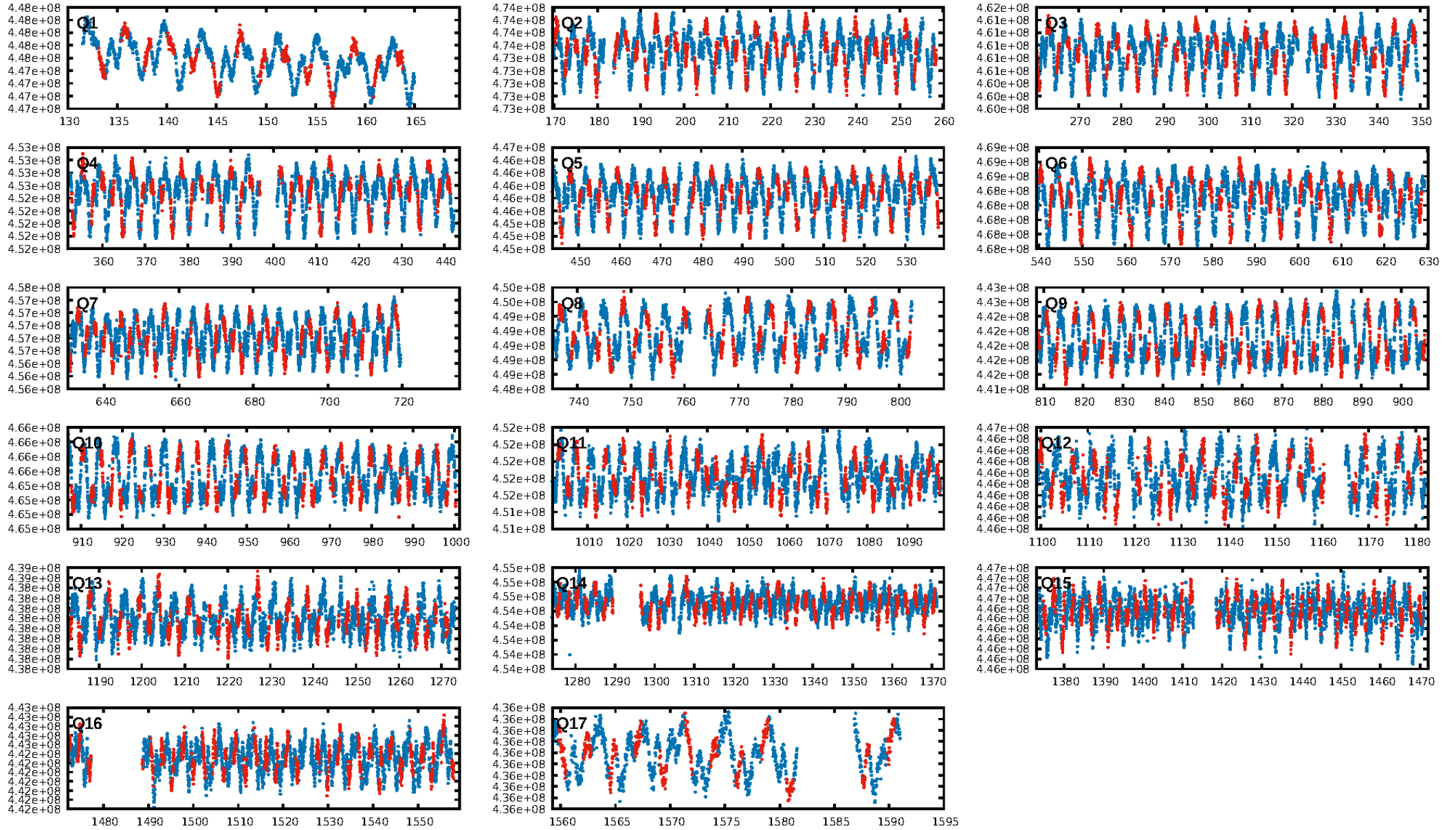
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.9% [3.29 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.03e-10
RollingBand-fgt: 1.00 [443/443]
GhostDiagnostic-chr: -1.871
Centroid-sig: 55.9%
Centroid-so: 0.301 arcsec [0.93 σ]
OotOffset-rm: 0.204 arcsec [1.17 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.233 arcsec [1.38 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

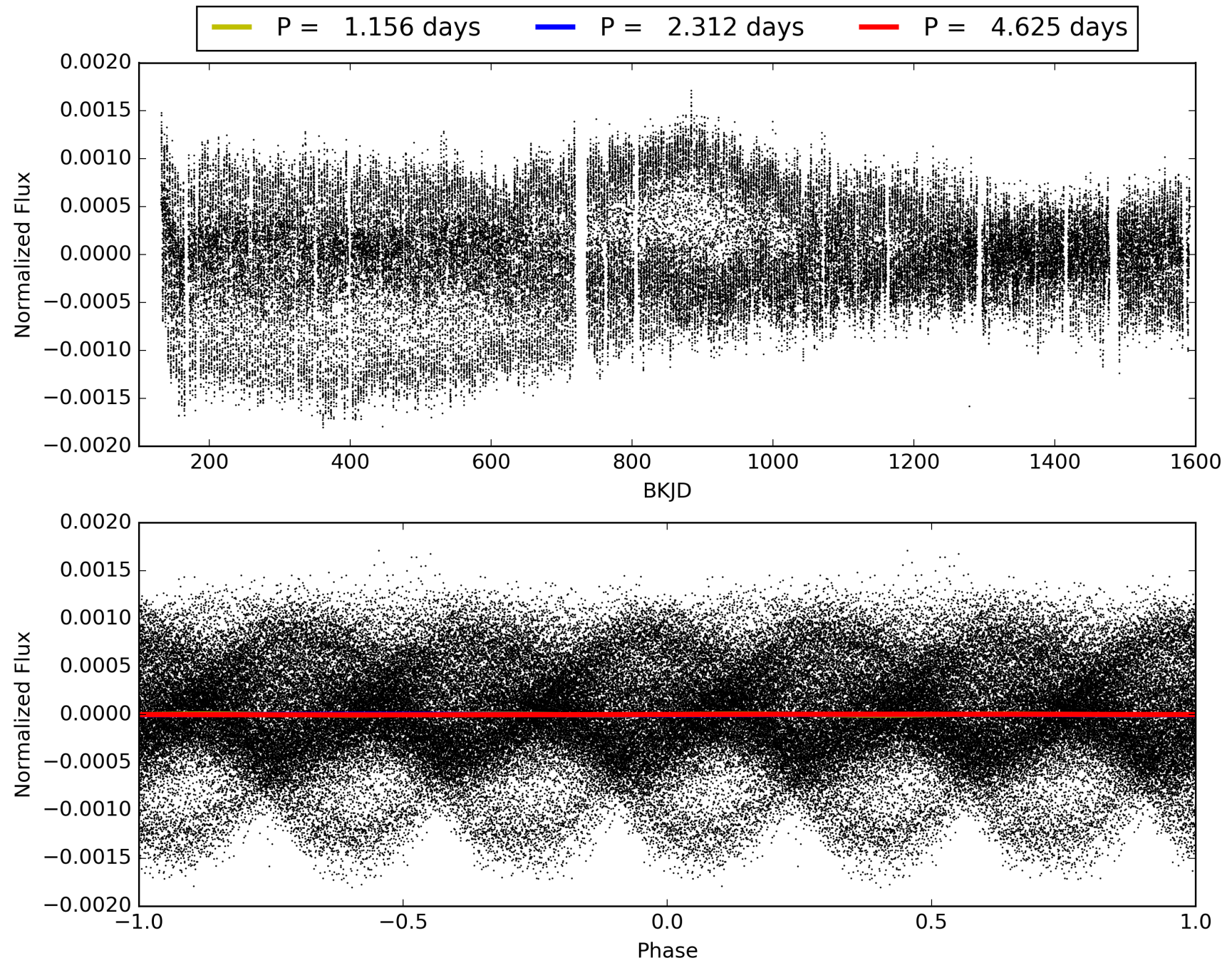
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:42:12 Z

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

TCE 006616211-02, PDC Light Curves

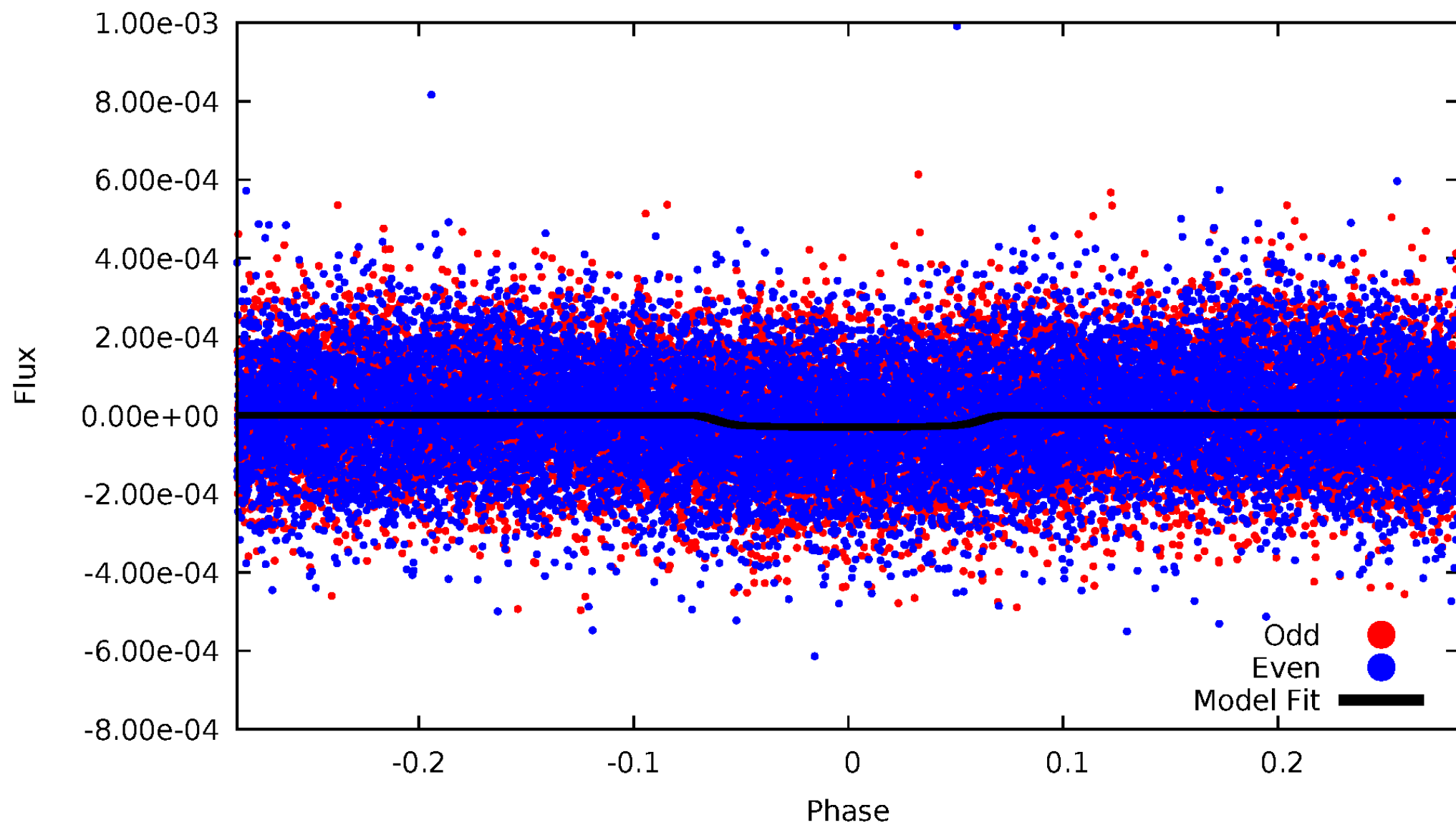


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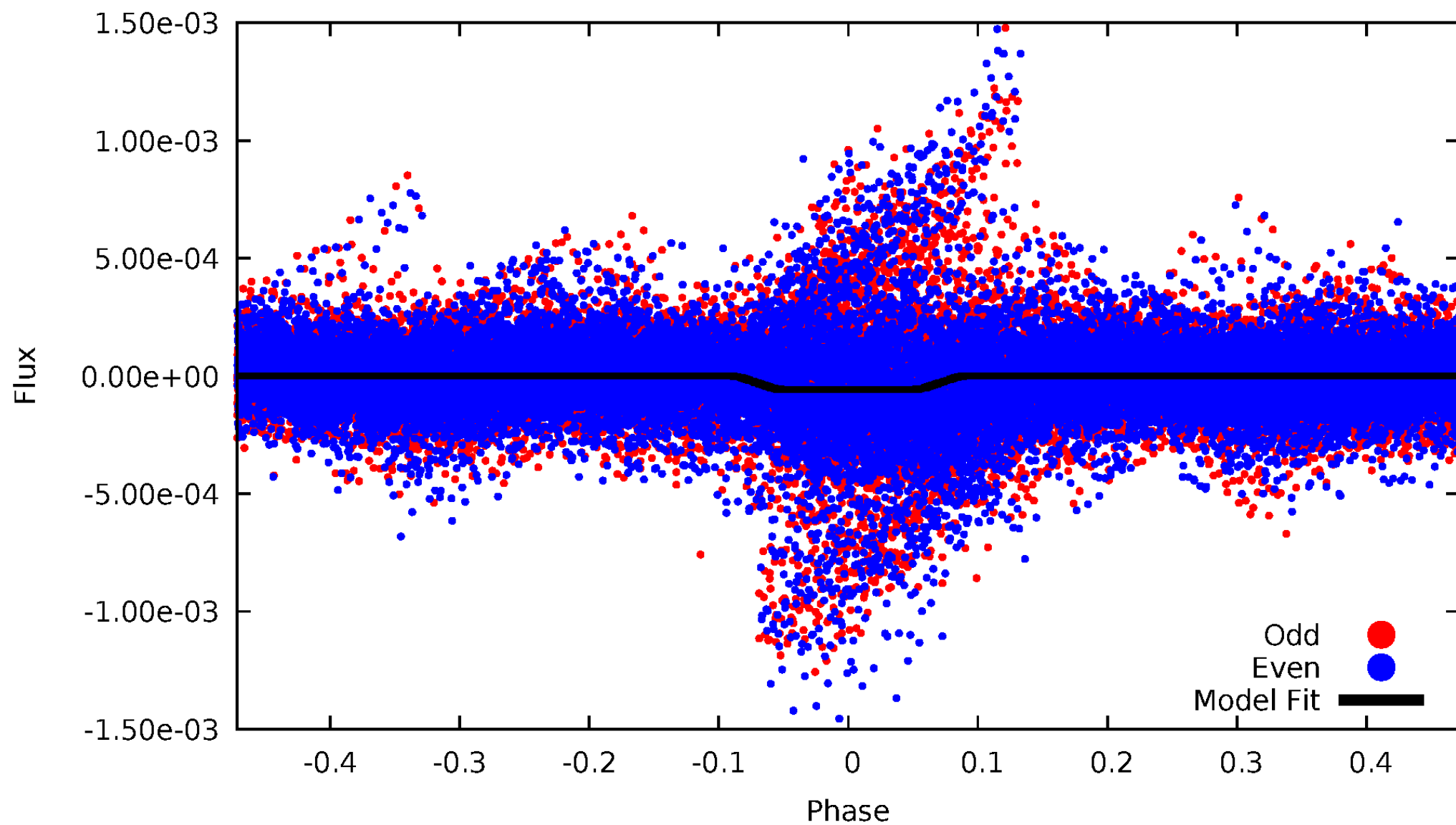
DV Odd/Even

TCE 006616211-02



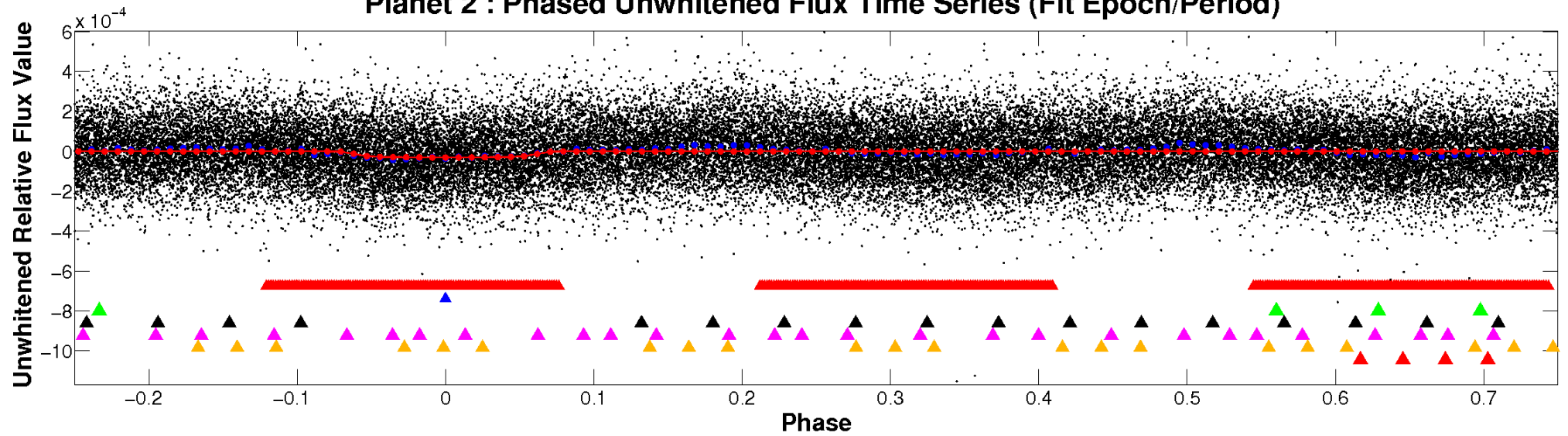
ALT Odd/Even

TCE 006616211-02

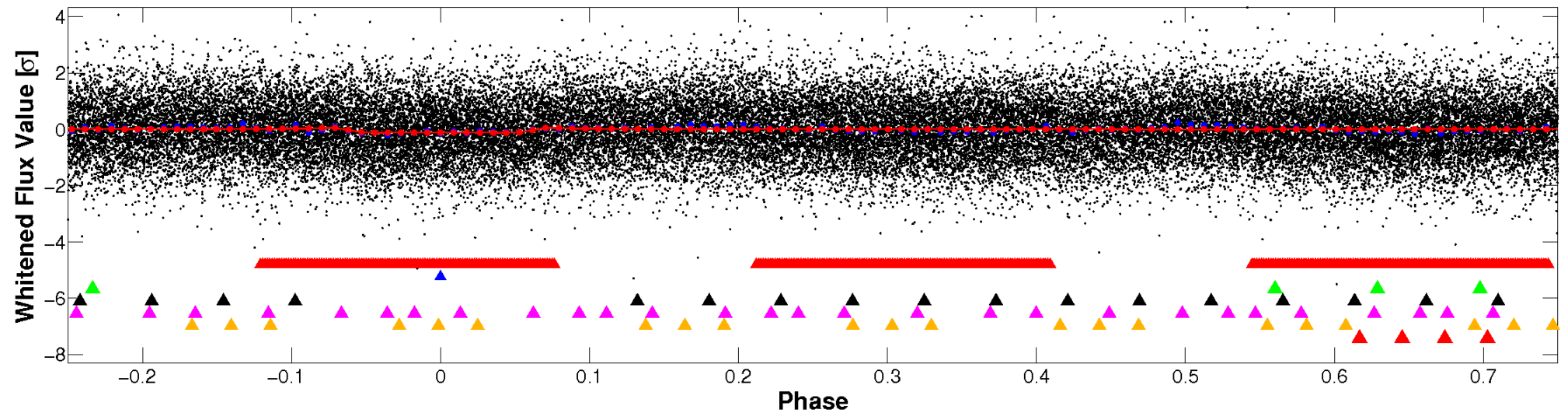


Non-Whitened Vs. Whitened Light Curve

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

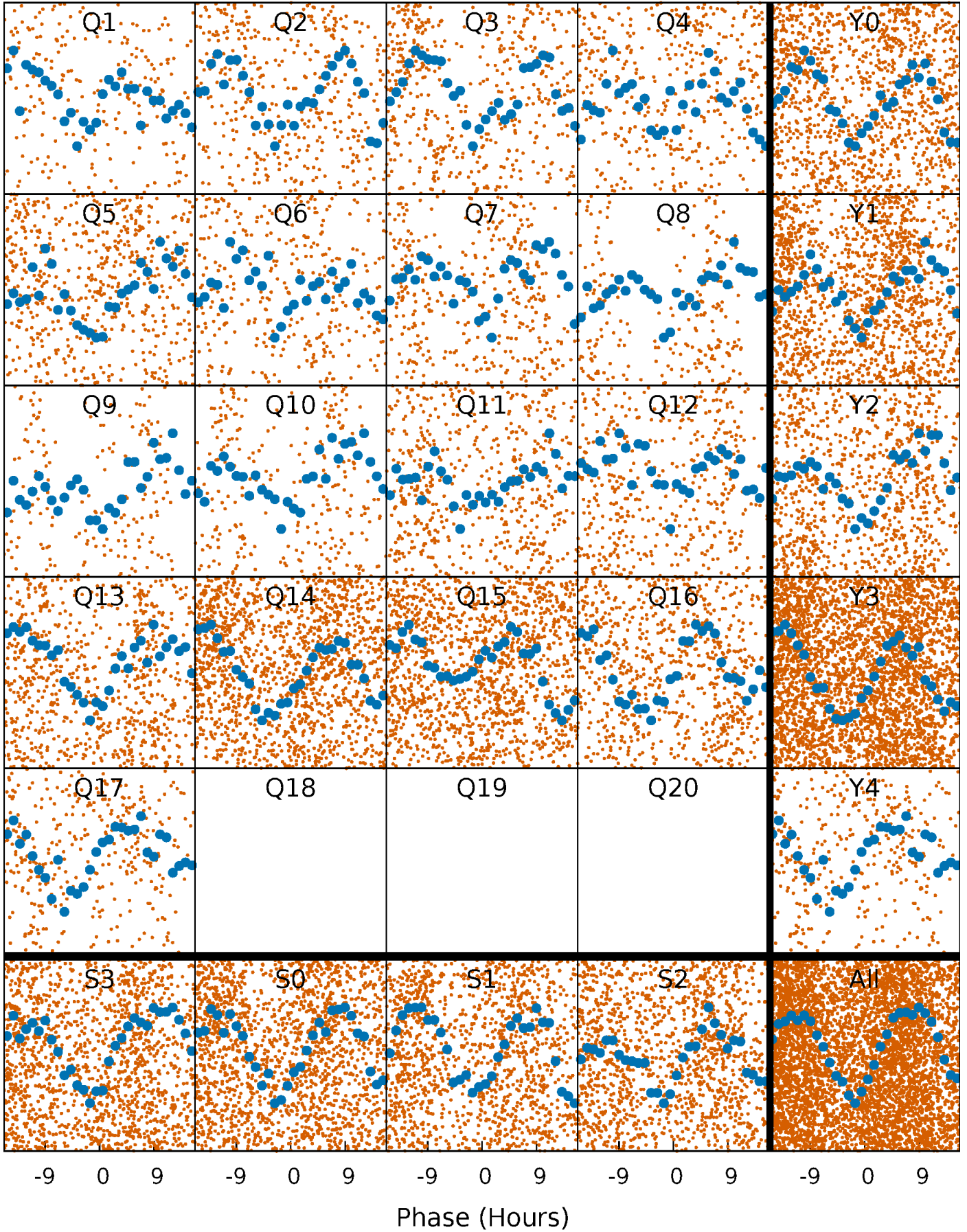


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



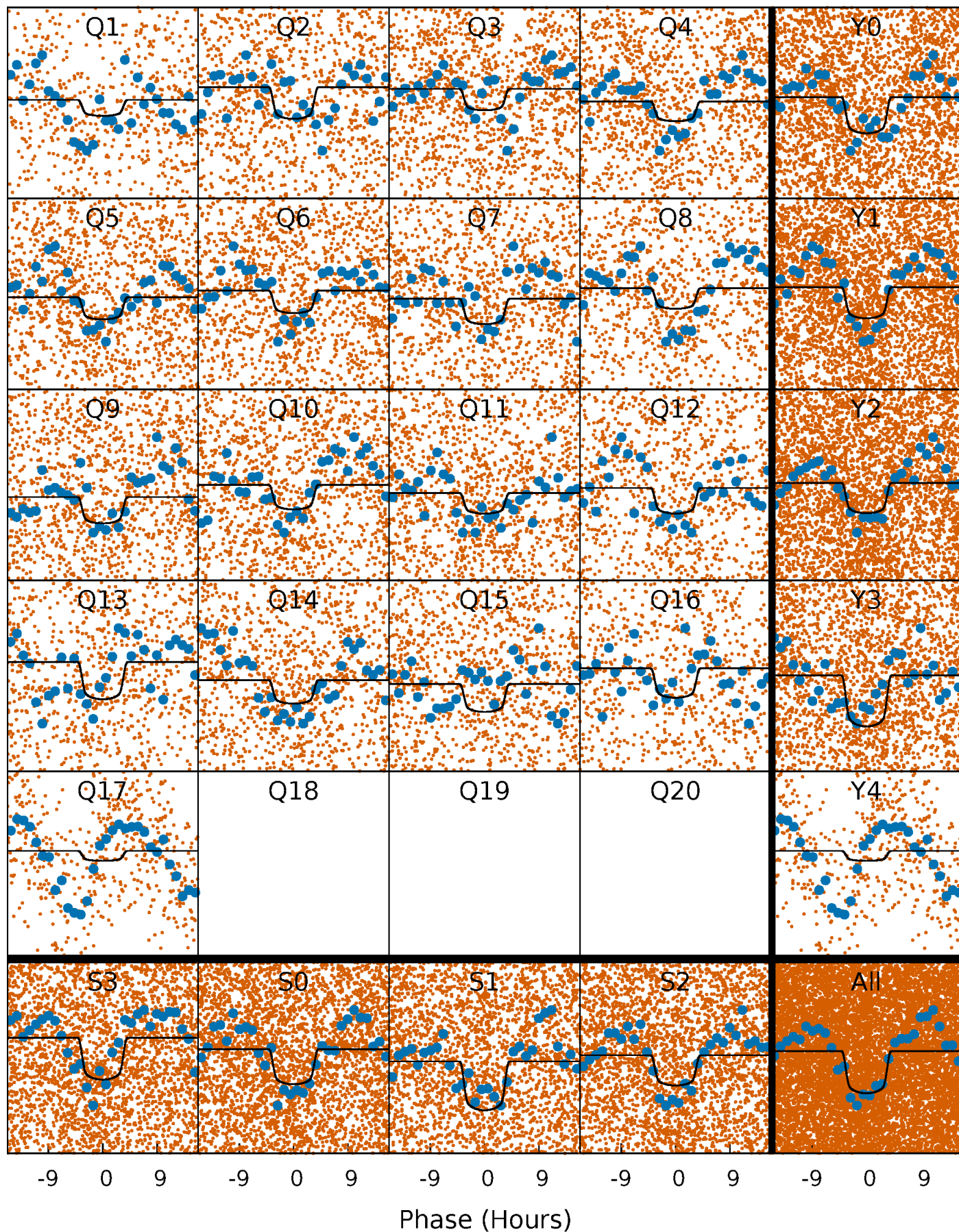
PDC Quarter-Phased Transit Curves

TCE 006616211-02 P= 2.312286 Days $T_0=133.442771$ (BKJD)



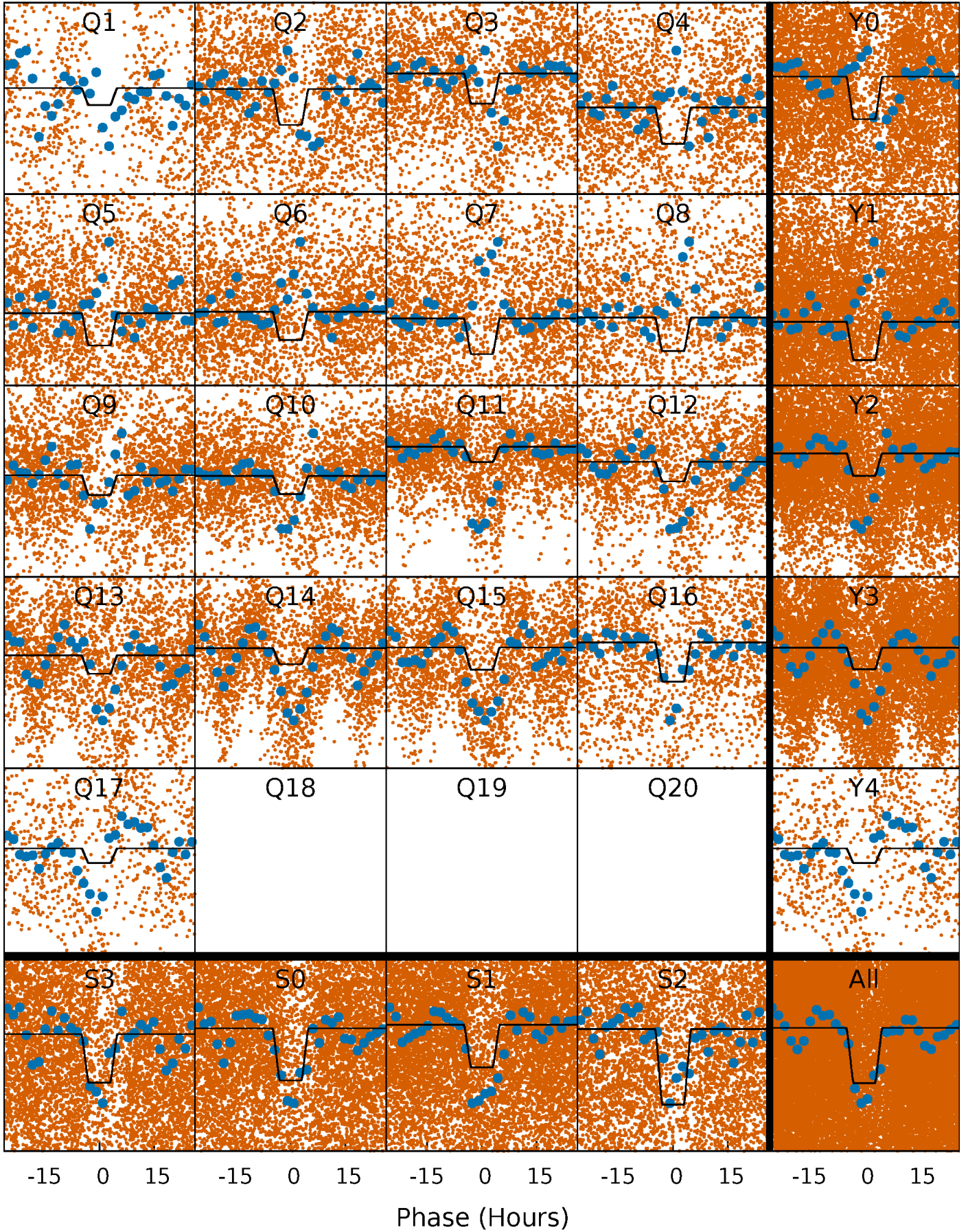
DV Quarter-Phased Transit Curves

TCE 006616211-02 P= 2.312286 Days $T_0=133.442771$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

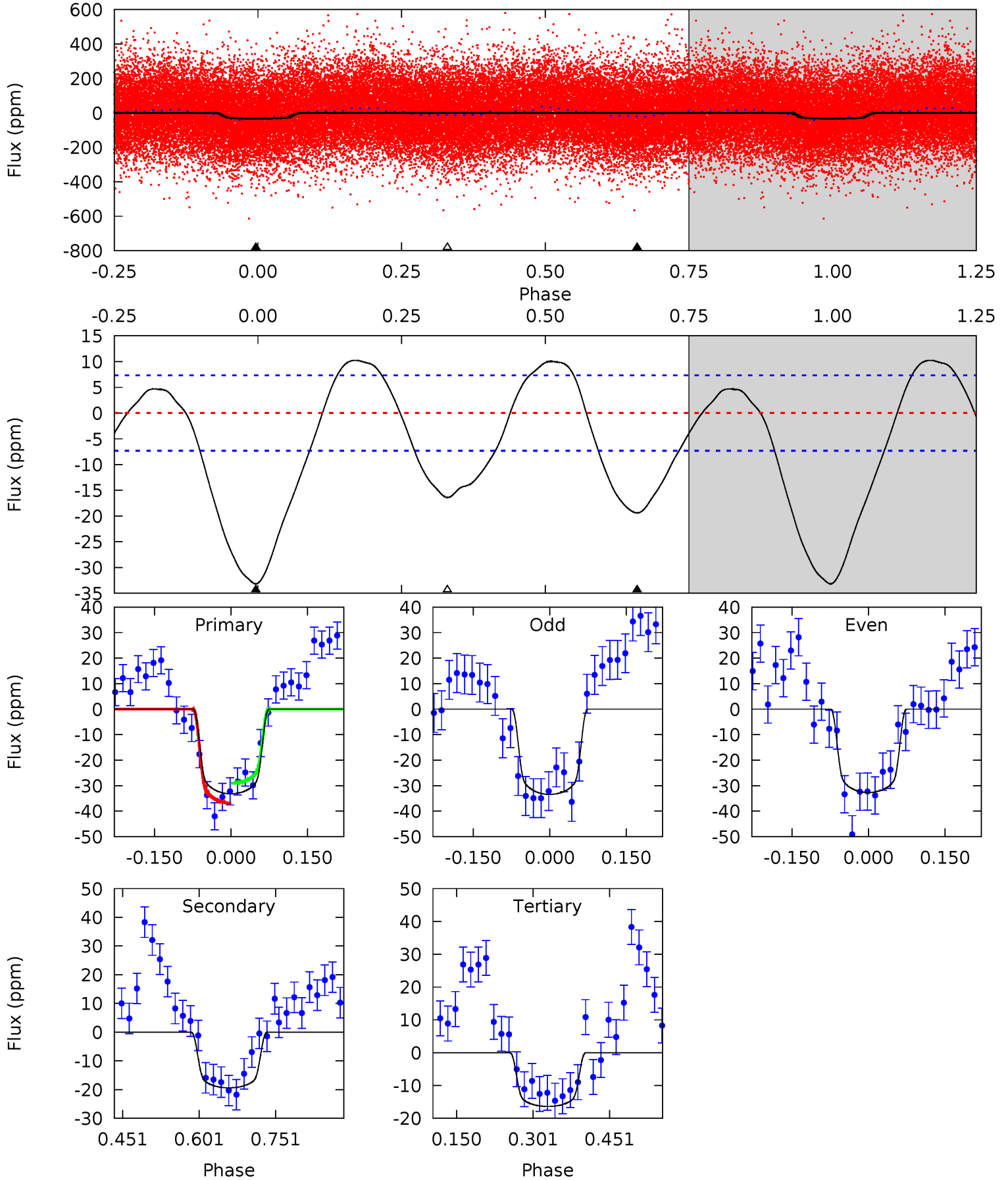
TCE 006616211-02 P= 2.312094 Days $T_0=133.419311$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-02, P = 2.312286 Days, E = 131.130485 Days

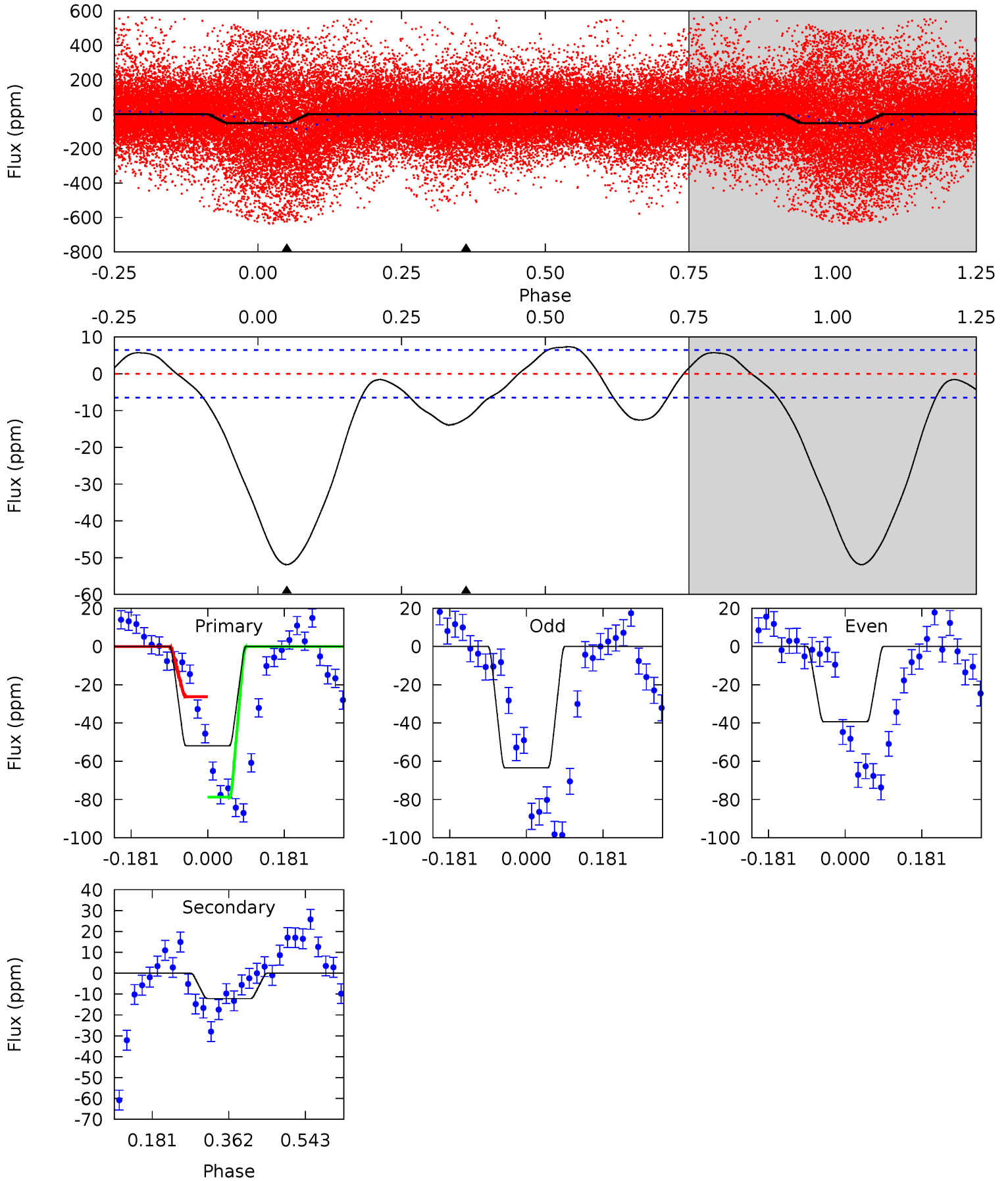
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	11.8	10.0	0	4.48	1.44	5.83	10.2	20.2	1.83	11.8	0.22	0.95	0.24	2.40



Alt Model-Shift Uniqueness Test

006616211-02, P = 2.312094 Days, E = 131.107217 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.6	8.34	0	0	4.44	1.34	4.59	35.6	35.6	8.34	8.34	8.27	1.06	0.12	17.9



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-19 ± 2	$2.34^{+0.32}_{-0.49}$	3604^{+218}_{-358}	5203^{+277}_{-249}	$3.137^{+1.510}_{-0.779}$
Alt.	-12 ± 1	$2.64^{+0.41}_{-0.59}$	3595^{+217}_{-352}	4386^{+235}_{-218}	$1.531^{+0.858}_{-0.386}$

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

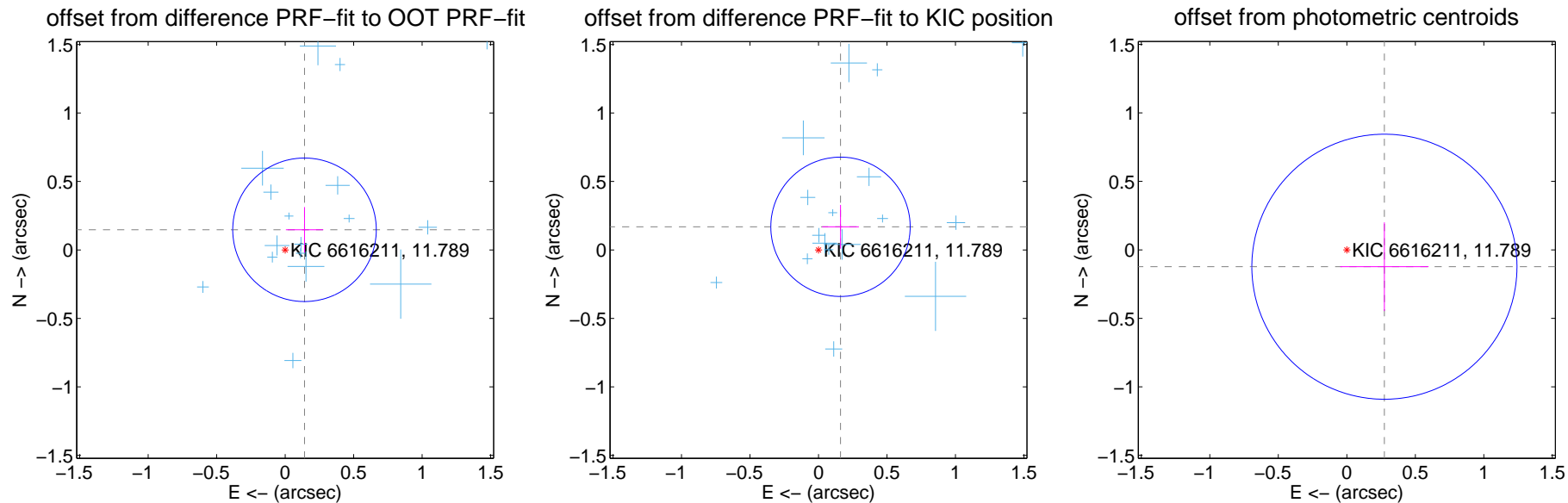
DV Centroid Data

Supplemental centroid analysis for 006616211-02. **Kepler magnitude: 11.79.** Transit SNR 8.77

There are 17 quarters with good PRF difference image offsets

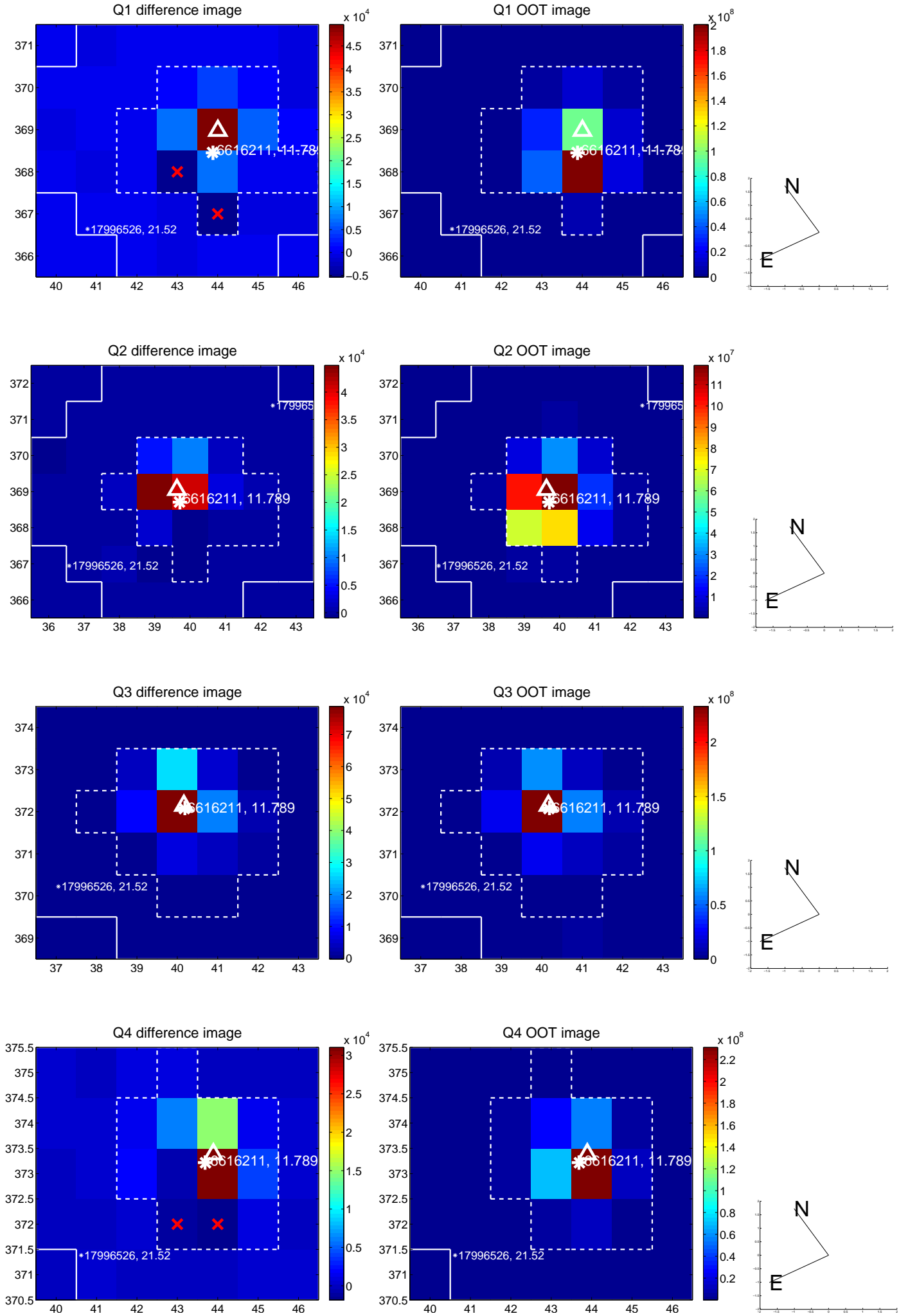
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.204 ± 0.175	1.17	-0.141 ± 0.136	0.147 ± 0.166
PRF-fit source offset from KIC position	0.233 ± 0.170	1.38	-0.161 ± 0.134	0.169 ± 0.160
photometric centroid source offset	0.30 ± 0.32	0.93	-0.27 ± 0.32	-0.12 ± 0.32

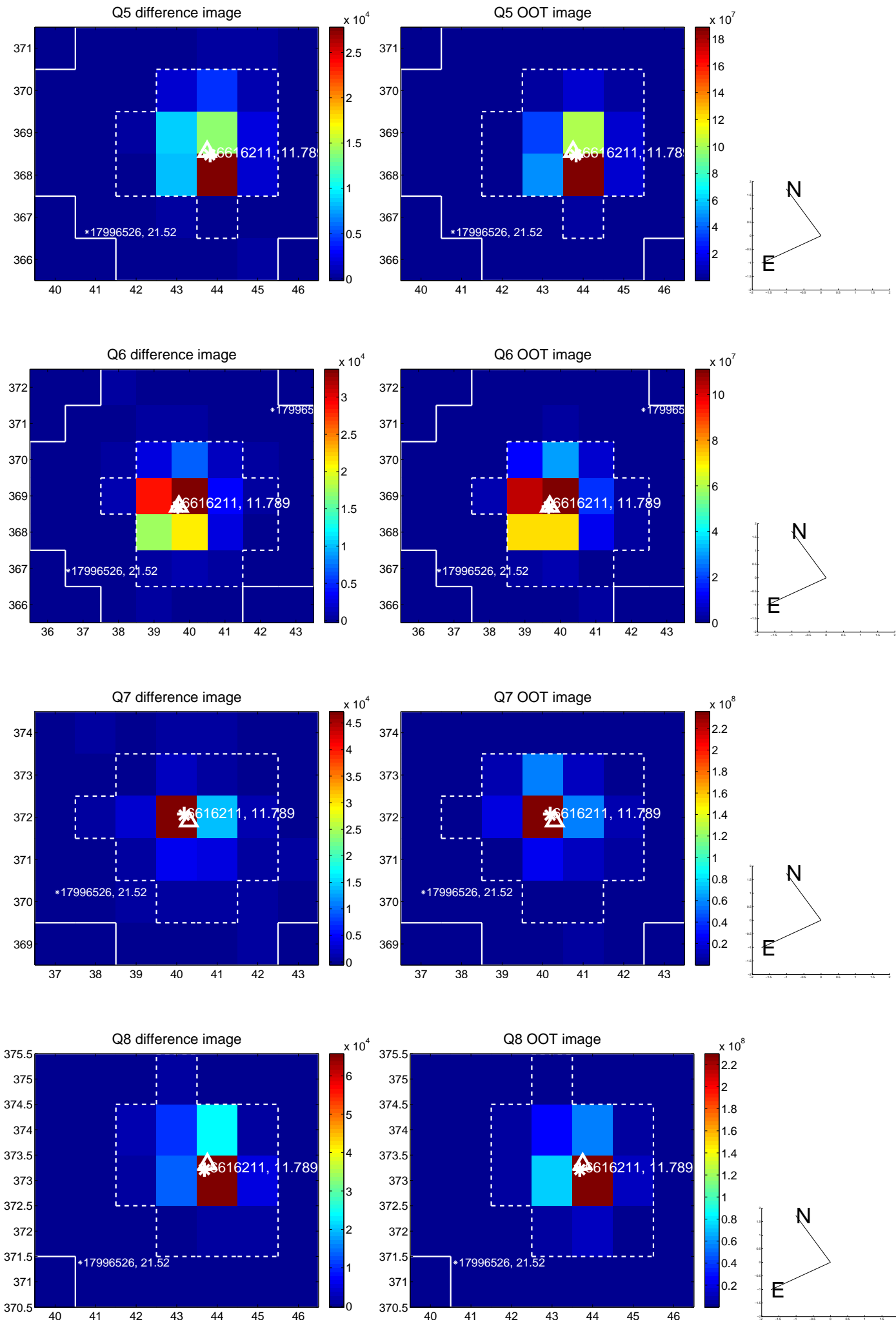


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

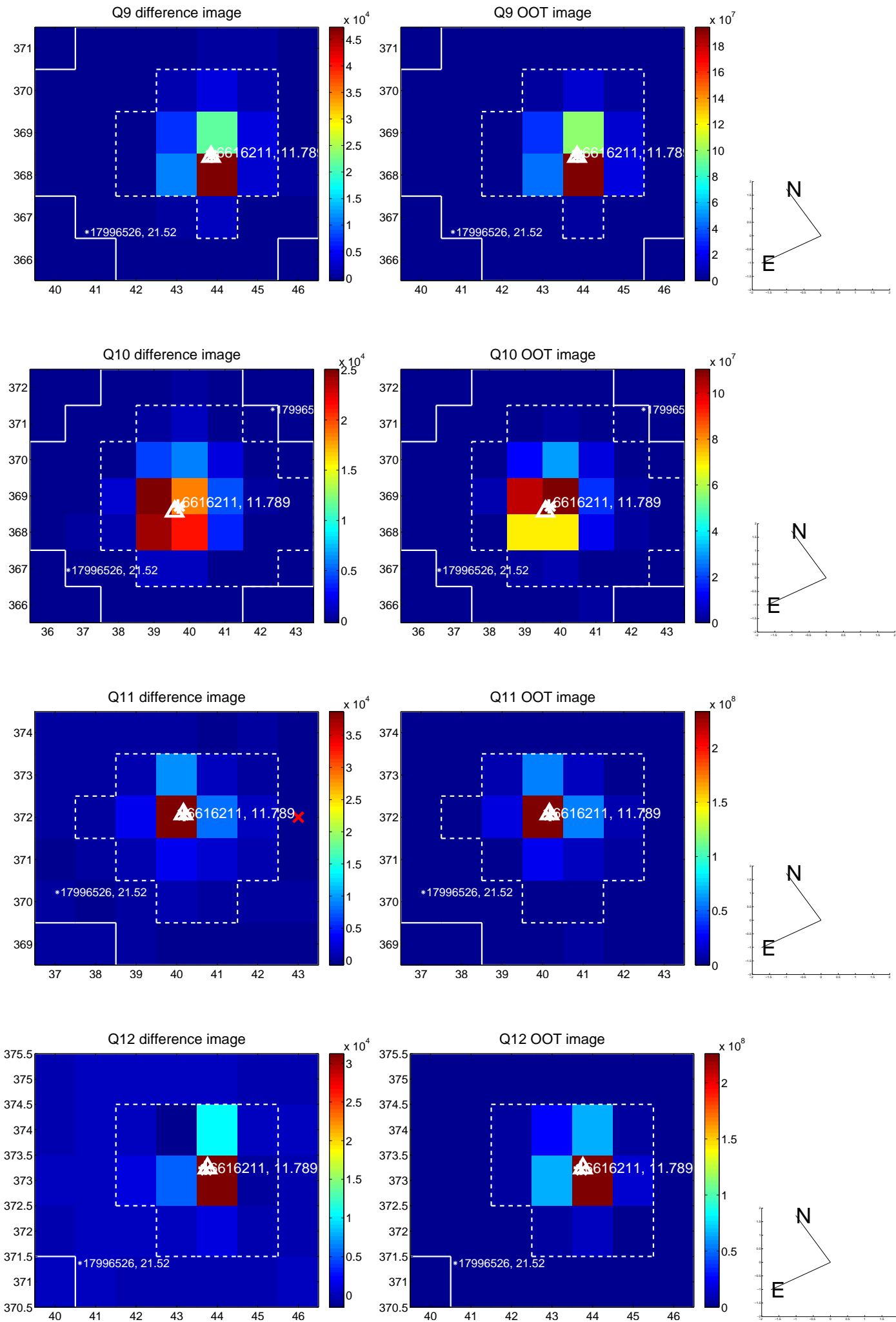
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



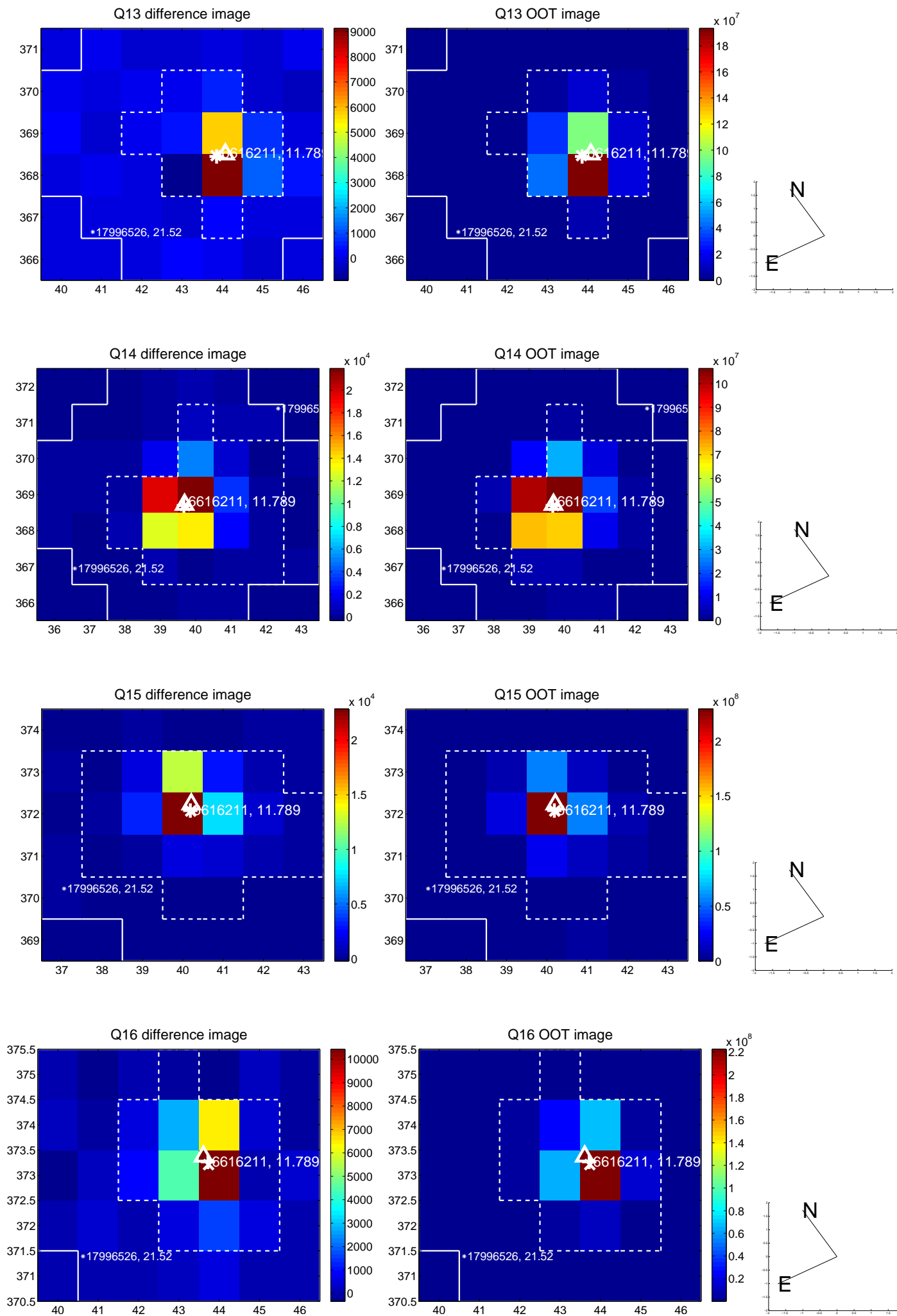
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



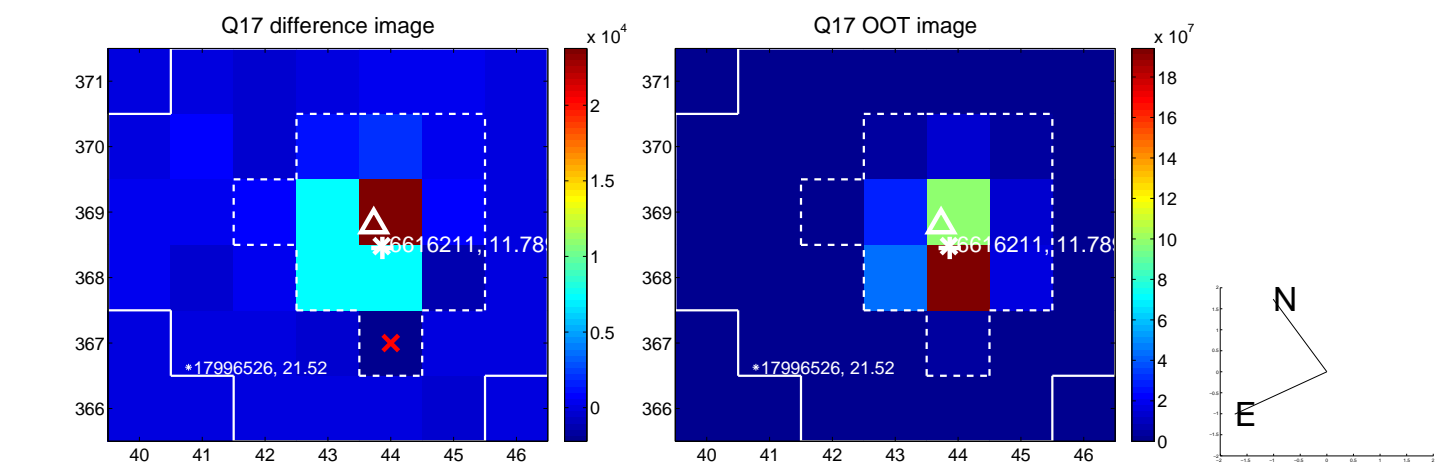
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



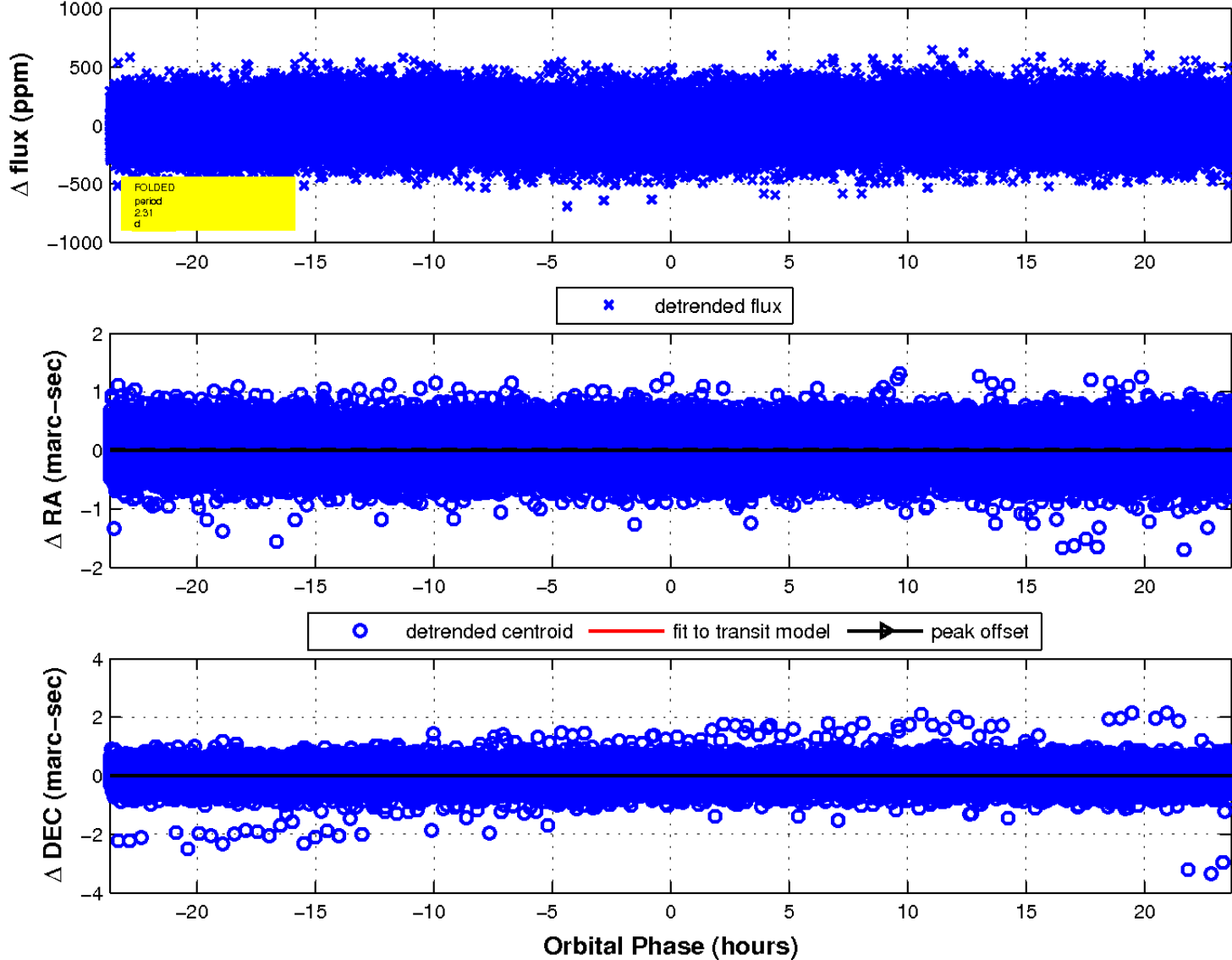
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

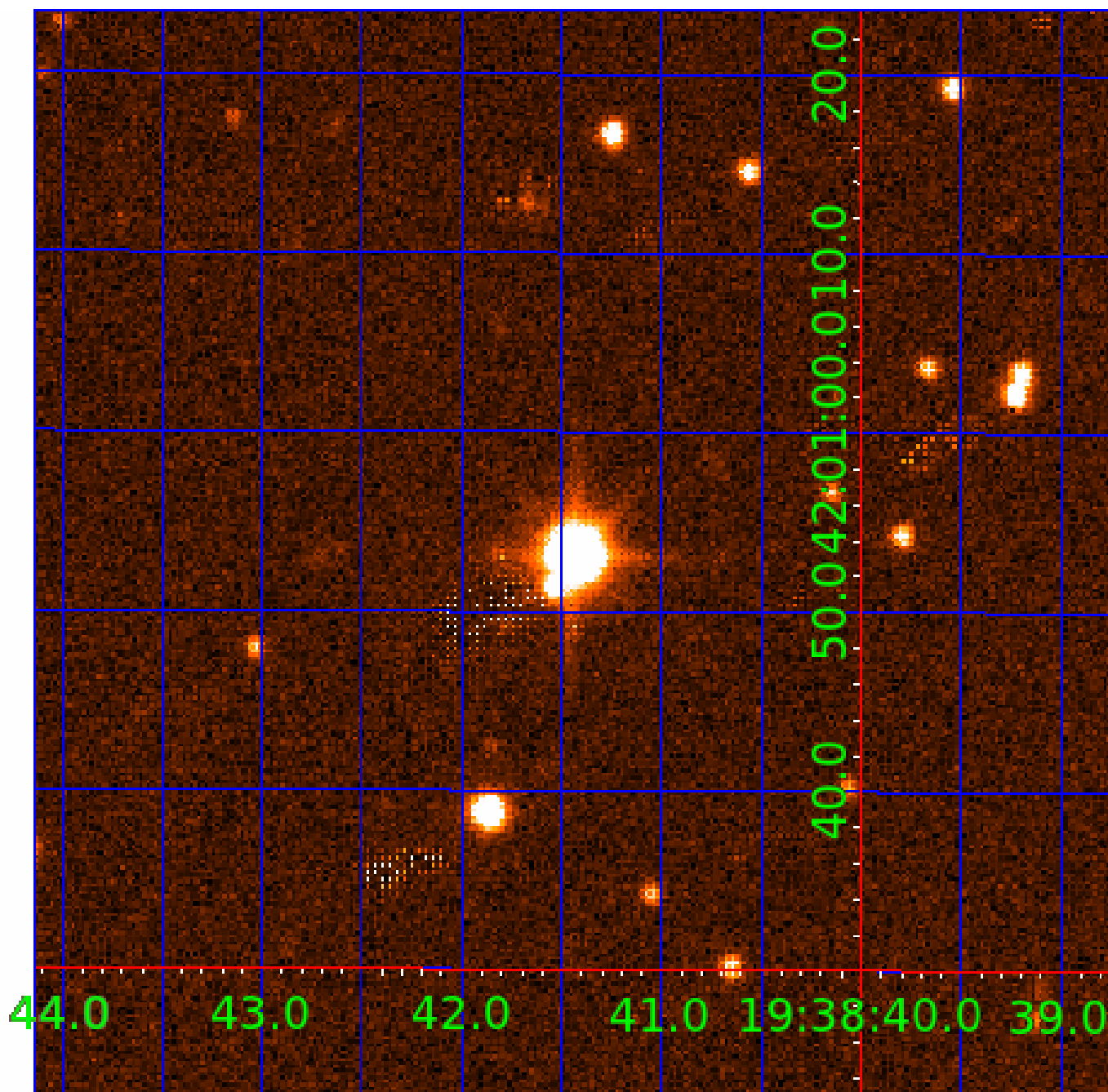


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination



KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
006616211-02	OBS	No	2.312286	133.442771	30.4	7.895	9.2	8.8	3.31	6489	2.38	11059.92
006616211-03	OBS	No	407.121359	169.422334	345.4	15.030	9.4	8.5	3.31	6489	9.15	11.21
006616211-04	OBS	No	85.443251	174.838350	158.5	7.758	8.1	8.2	3.31	6489	4.66	89.86
006616211-05	OBS	No	51.877465	154.766586	148.6	6.839	7.9	8.7	3.31	6489	5.31	174.78
006616211-06	OBS	No	67.377912	198.627054	149.8	10.943	7.9	7.4	3.31	6489	4.51	123.34
006616211-07	OBS	No	379.148675	222.934695	207.1	4.904	7.7	6.2	3.31	6489	5.43	12.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

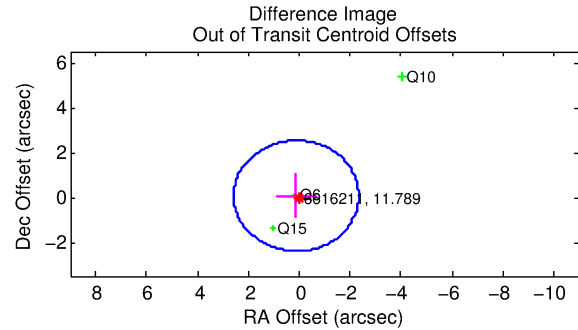
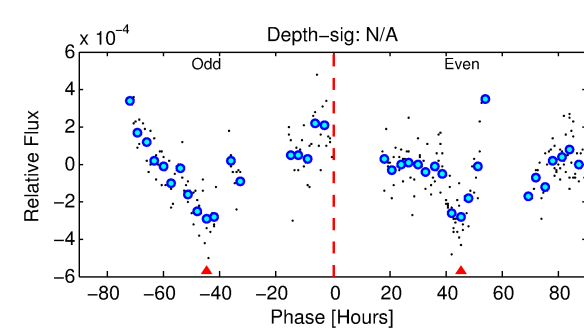
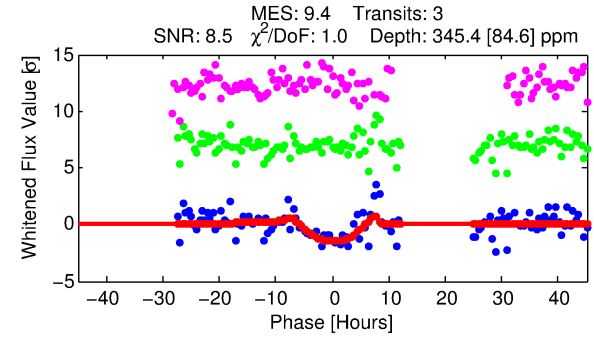
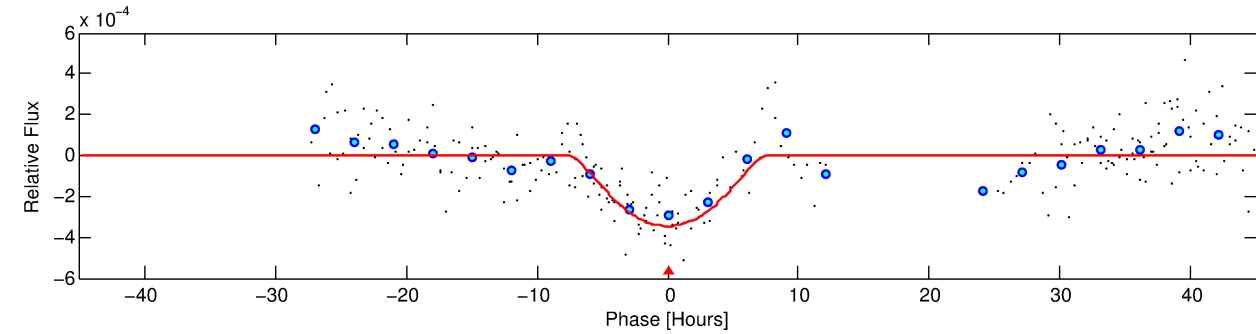
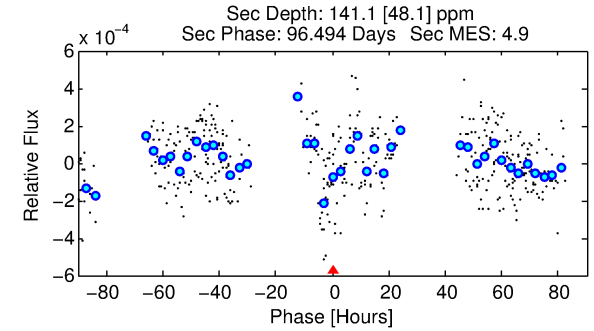
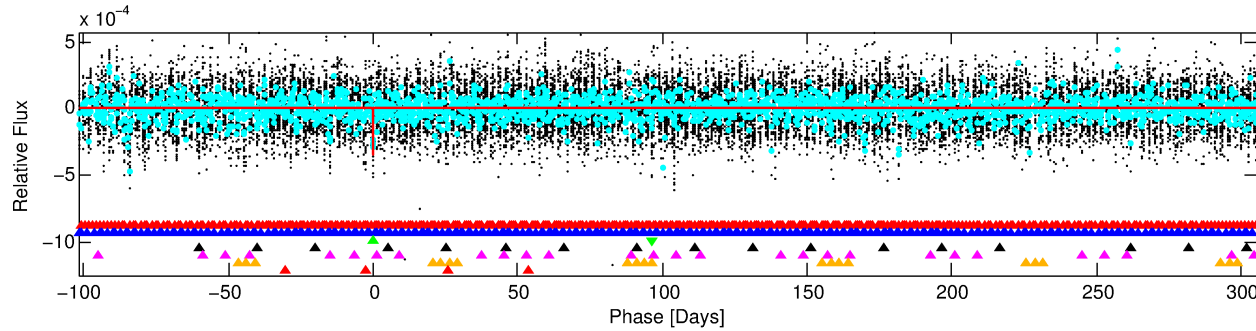
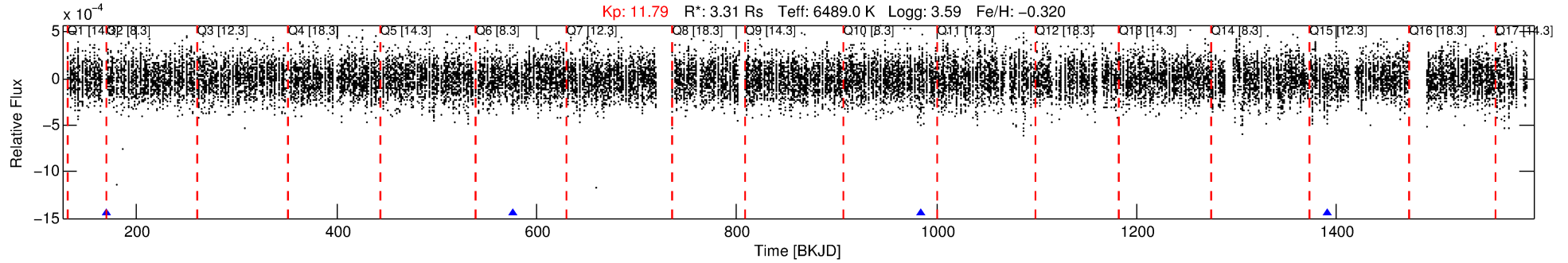
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-03

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 3 of 7 Period: 407.121 d



DV Fit Results:

Period = 407.12136 [0.02633] d
Epoch = 169.4223 [0.0444] BKJD
Rp/R* = 0.0254 [0.0176]
a/R* = 57.83 [18.91]
b = 0.99 [0.04]
Seff = 11.21 [7.00]
Teq = 467 [73] K
Rp = 9.15 [7.33] Re
a = 1.2447 [0.4800] AU
Ag = 1435.14 [2227.24] [0.64σ]
Teffp = 4440 [1586] K [2.50σ]

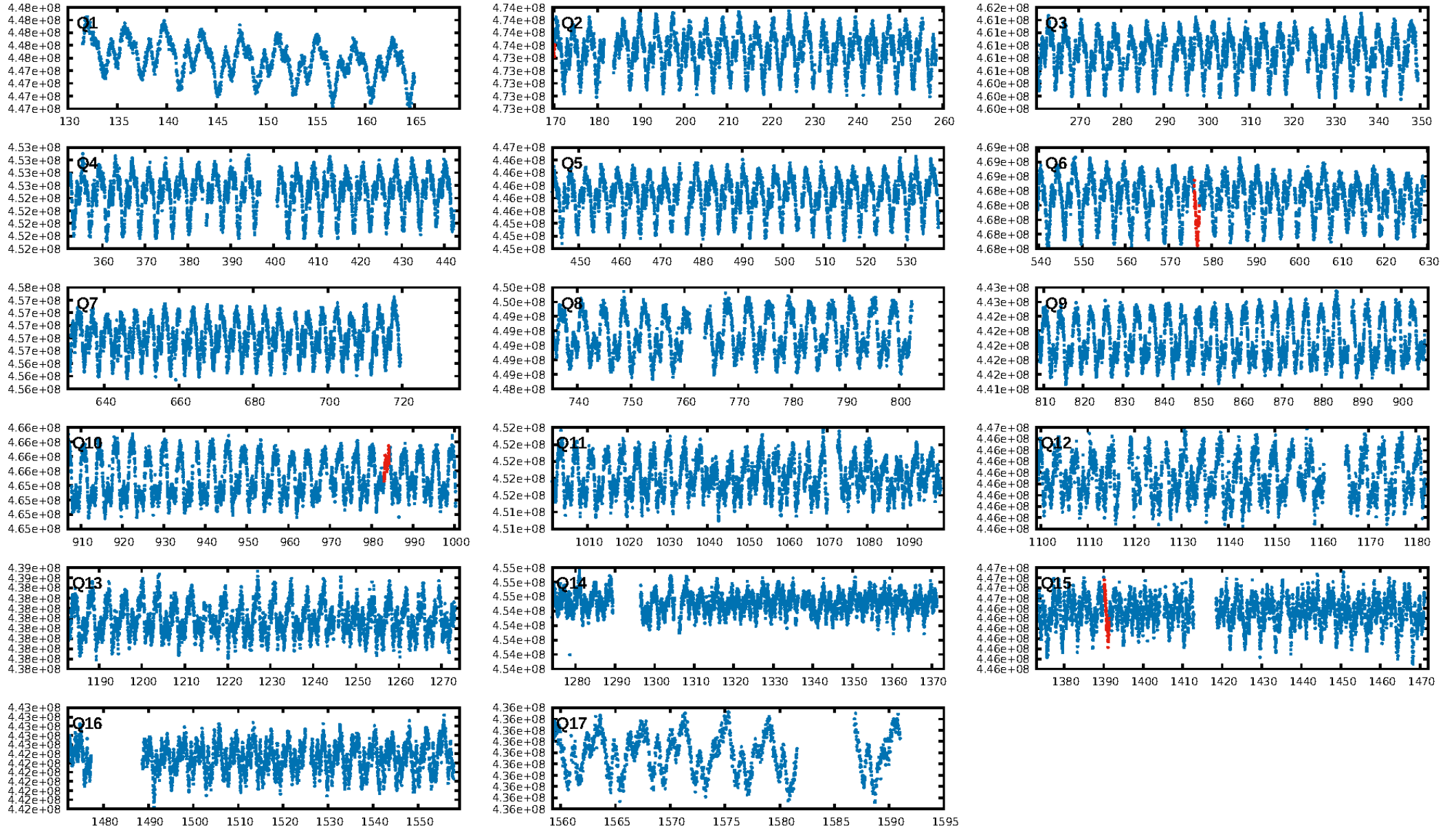
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 42.1%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.38e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.807
Centroid-sig: 3.5%
Centroid-so: 0.876 arcsec [1.78σ]
OotOffset-rm: 0.137 arcsec [0.17σ]
KicOffset-rm: 0.178 arcsec [0.22σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

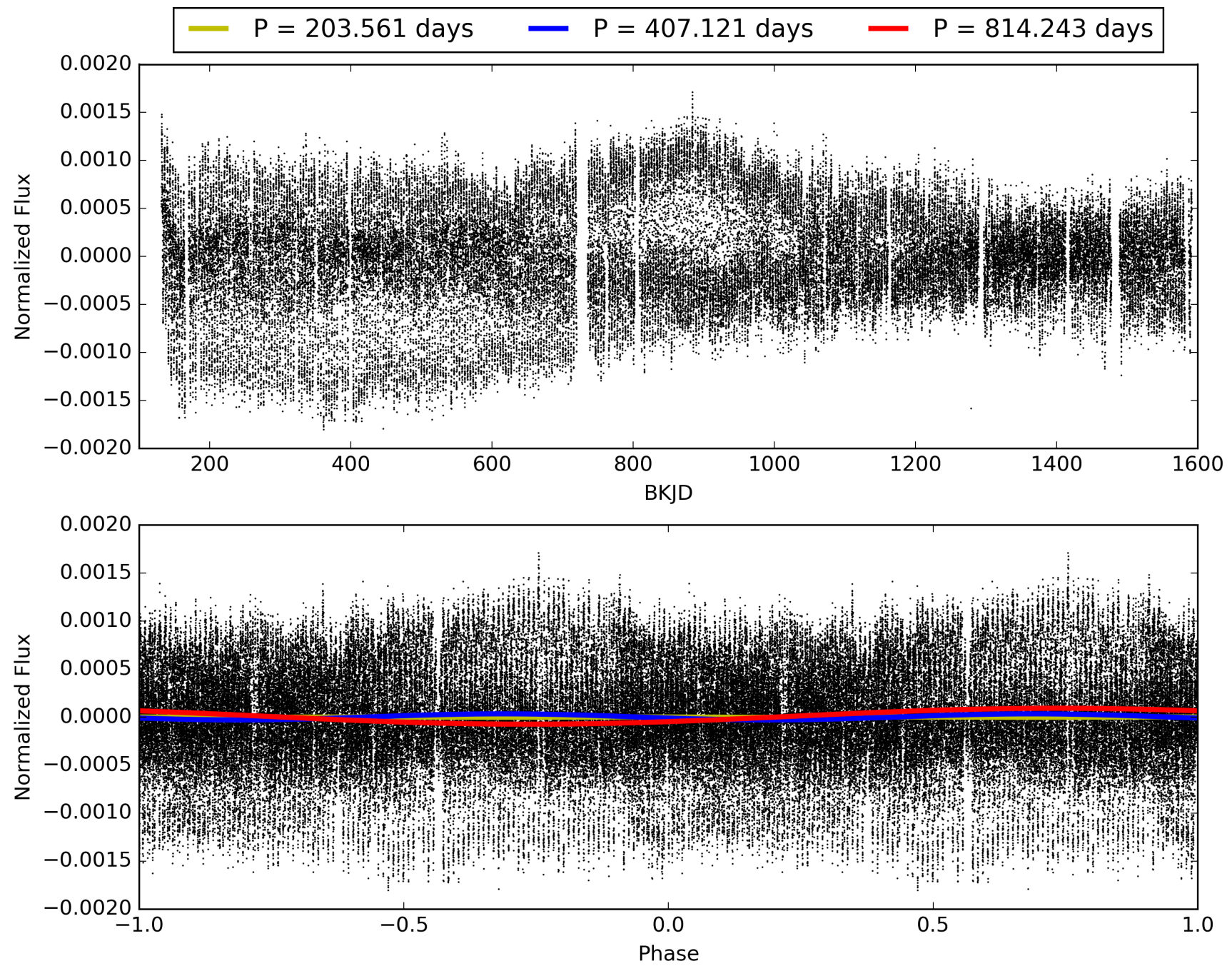
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:42:22 Z

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

TCE 006616211-03, PDC Light Curves

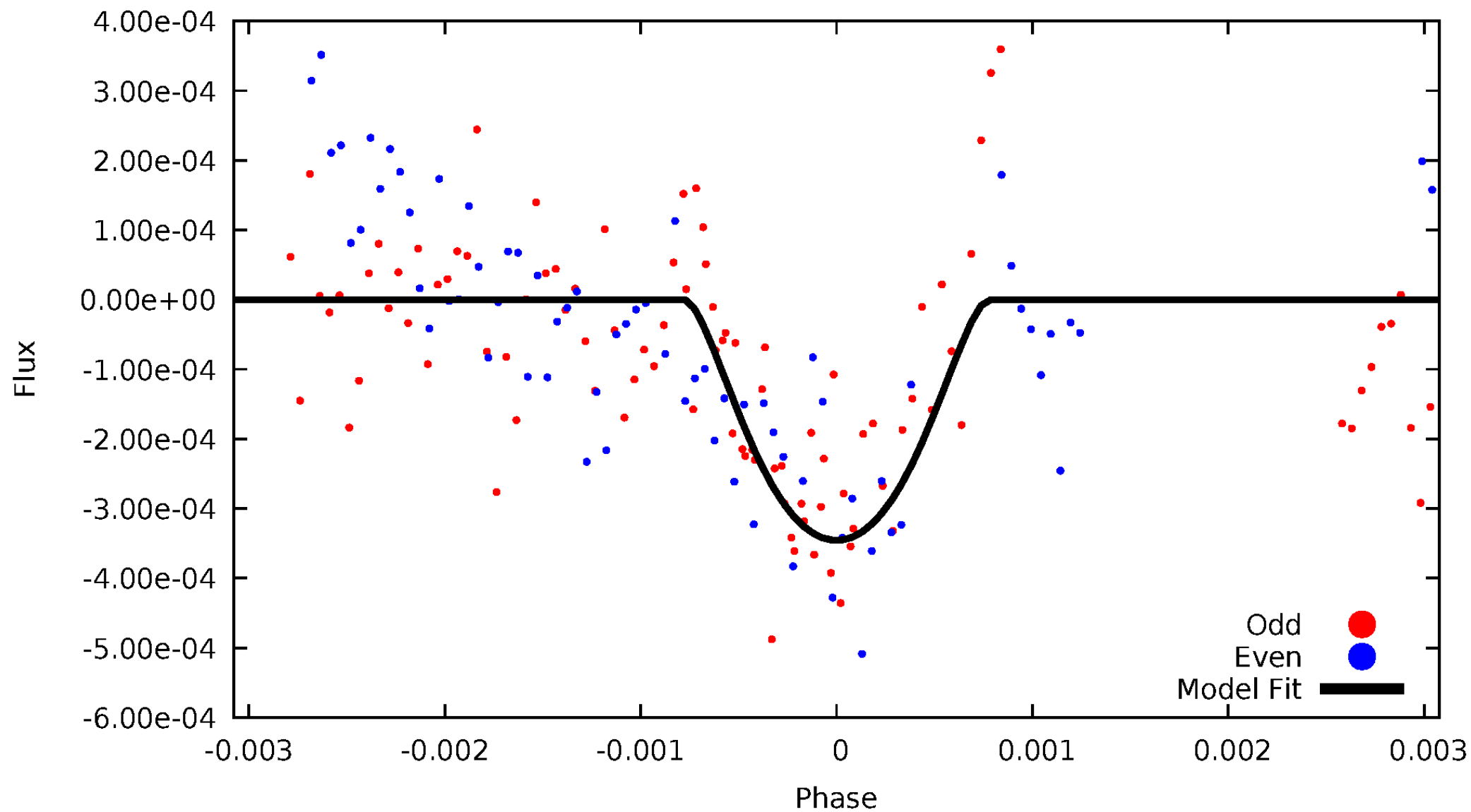


TCE 006616211-03



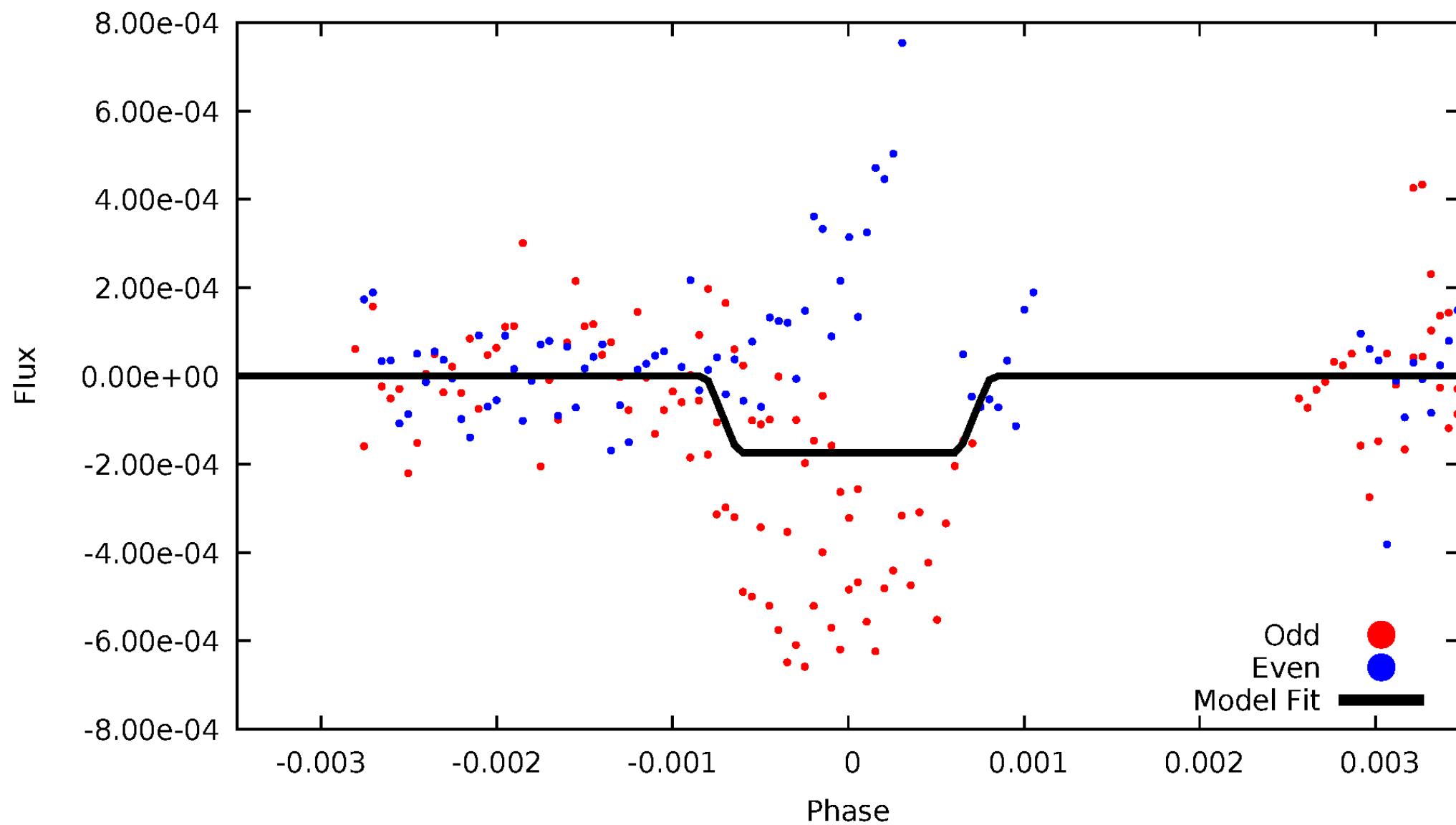
DV Odd/Even

TCE 006616211-03



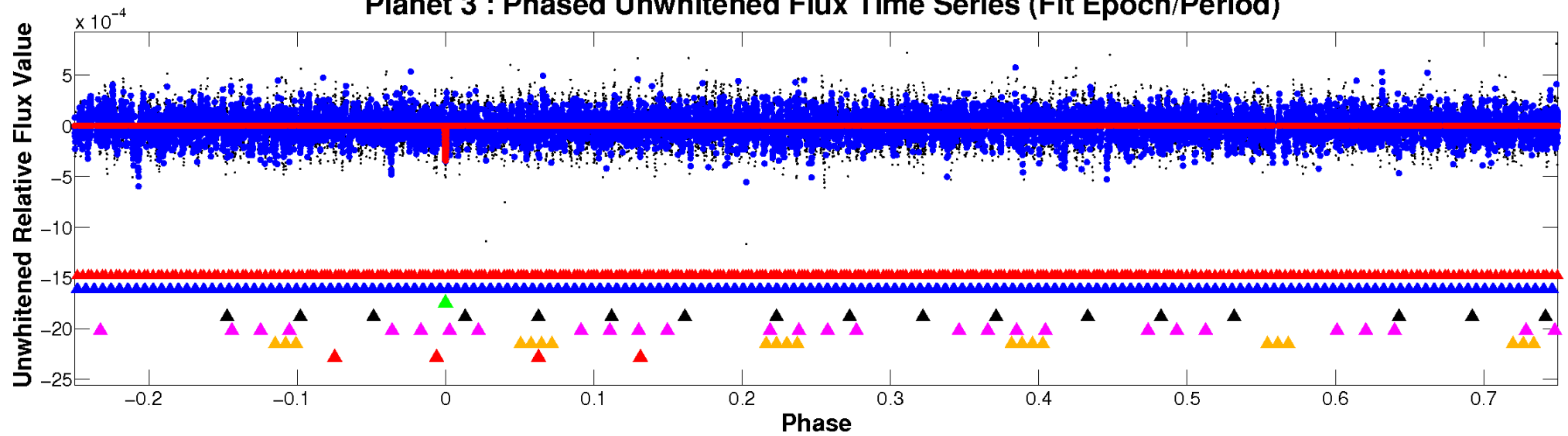
ALT Odd/Even

TCE 006616211-03

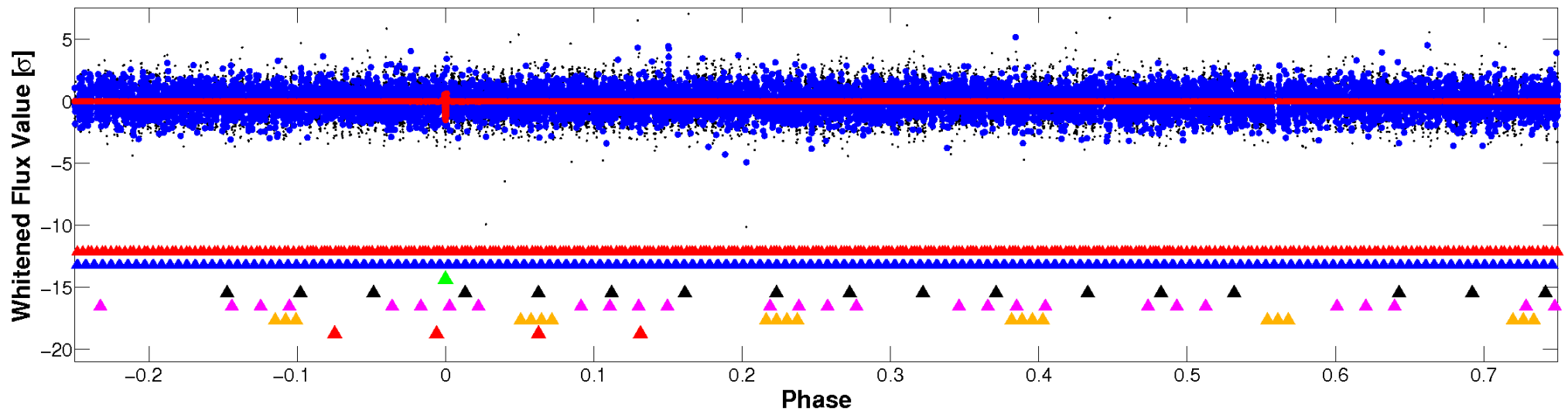


Non-Whitened Vs. Whitened Light Curve

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

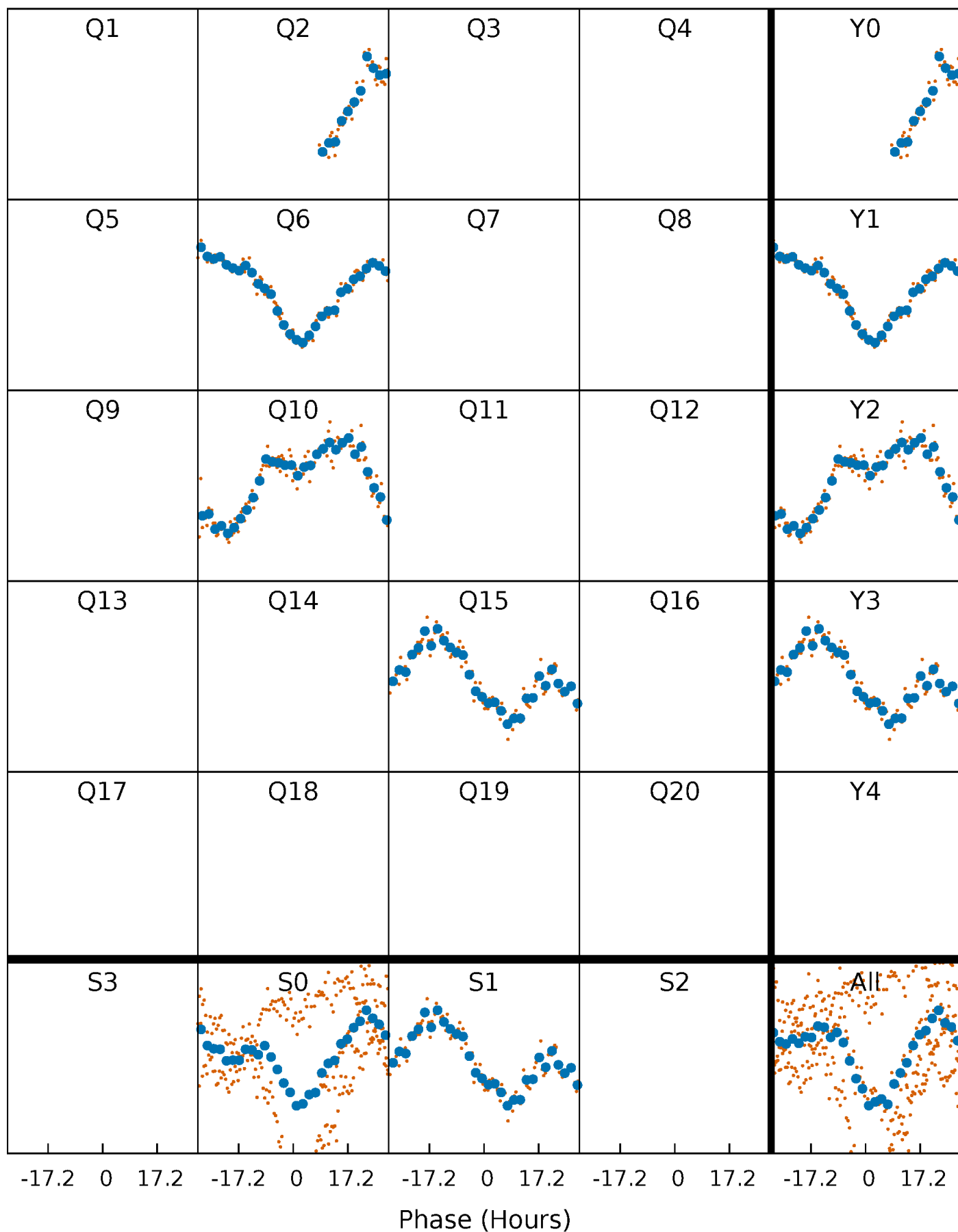


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



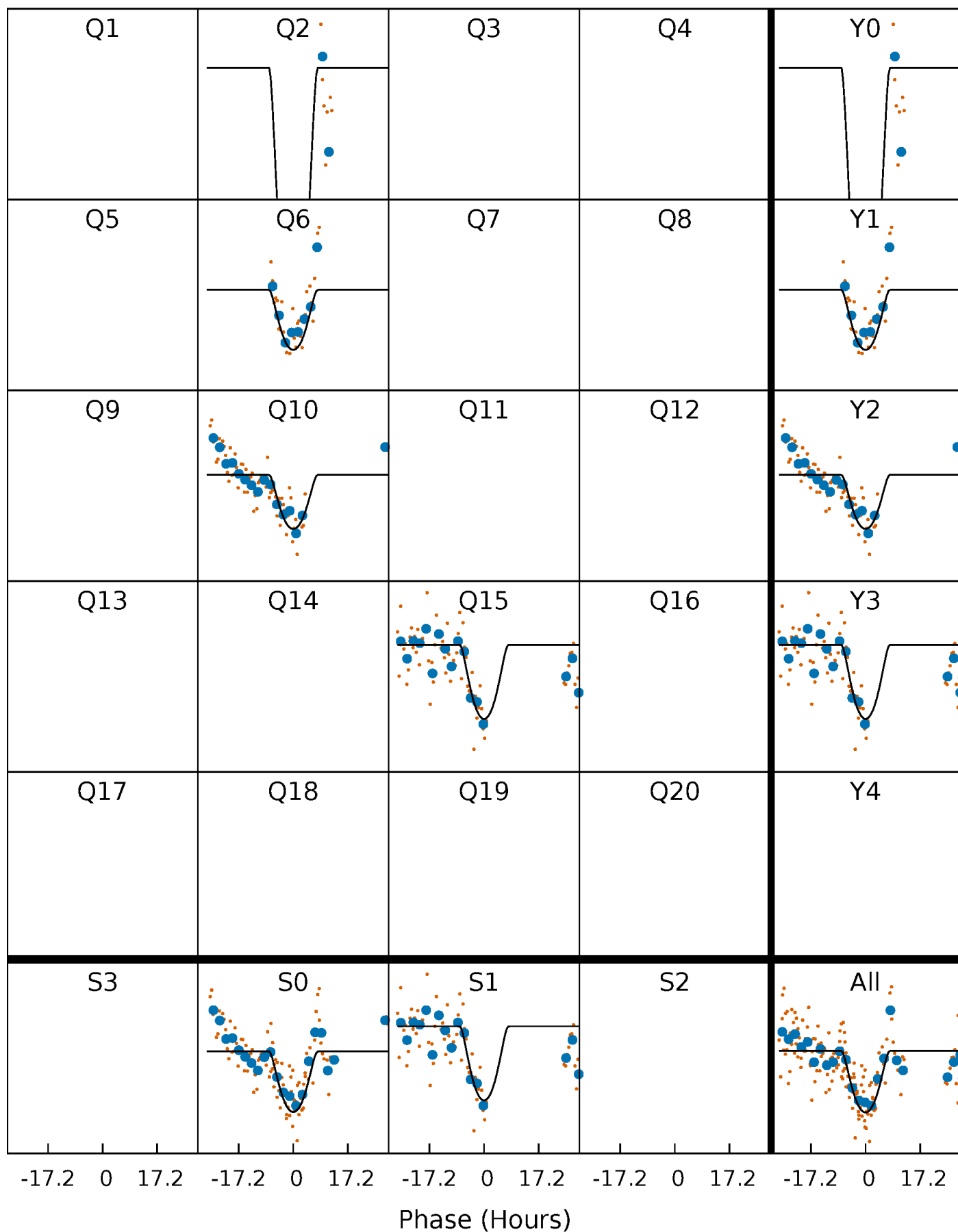
PDC Quarter-Phased Transit Curves

TCE 006616211-03 P=407.121359 Days $T_0=169.422334$ (BKJD)



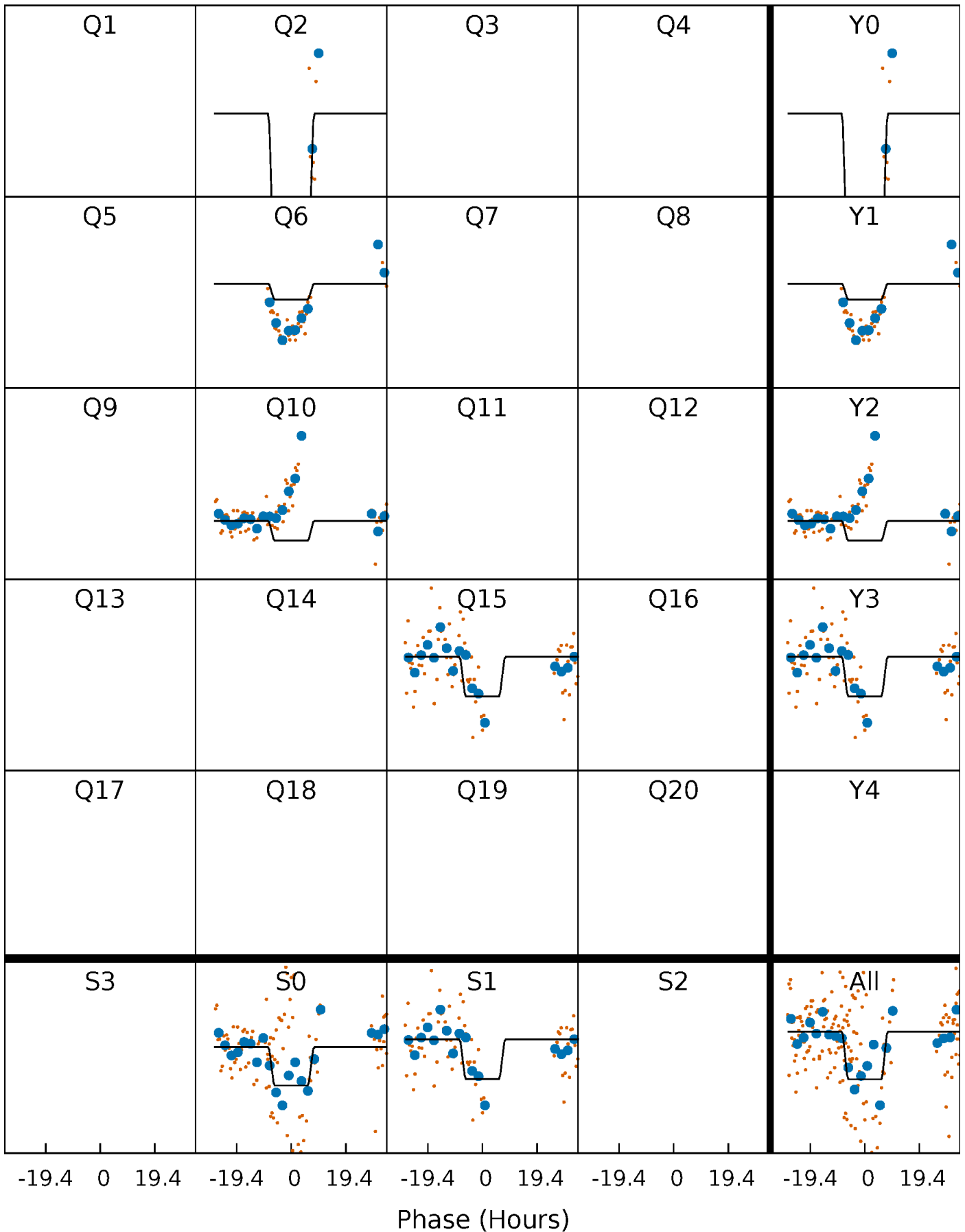
DV Quarter-Phased Transit Curves

TCE 006616211-03 P=407.121359 Days $T_0=169.422334$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

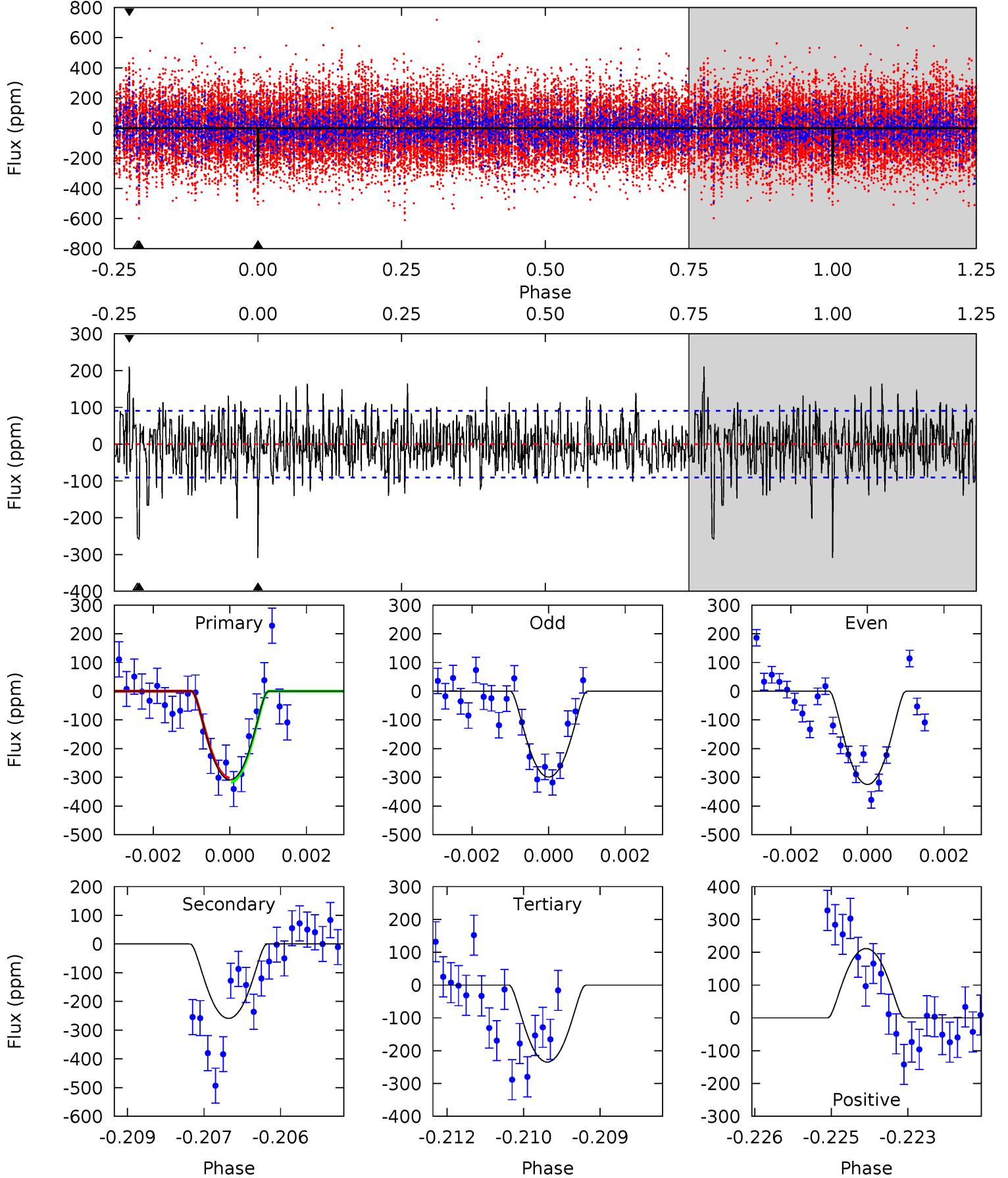
TCE 006616211-03 P=407.097816 Days $T_0=169.499952$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-03, P = 407.121359 Days, E = 169.422334 Days

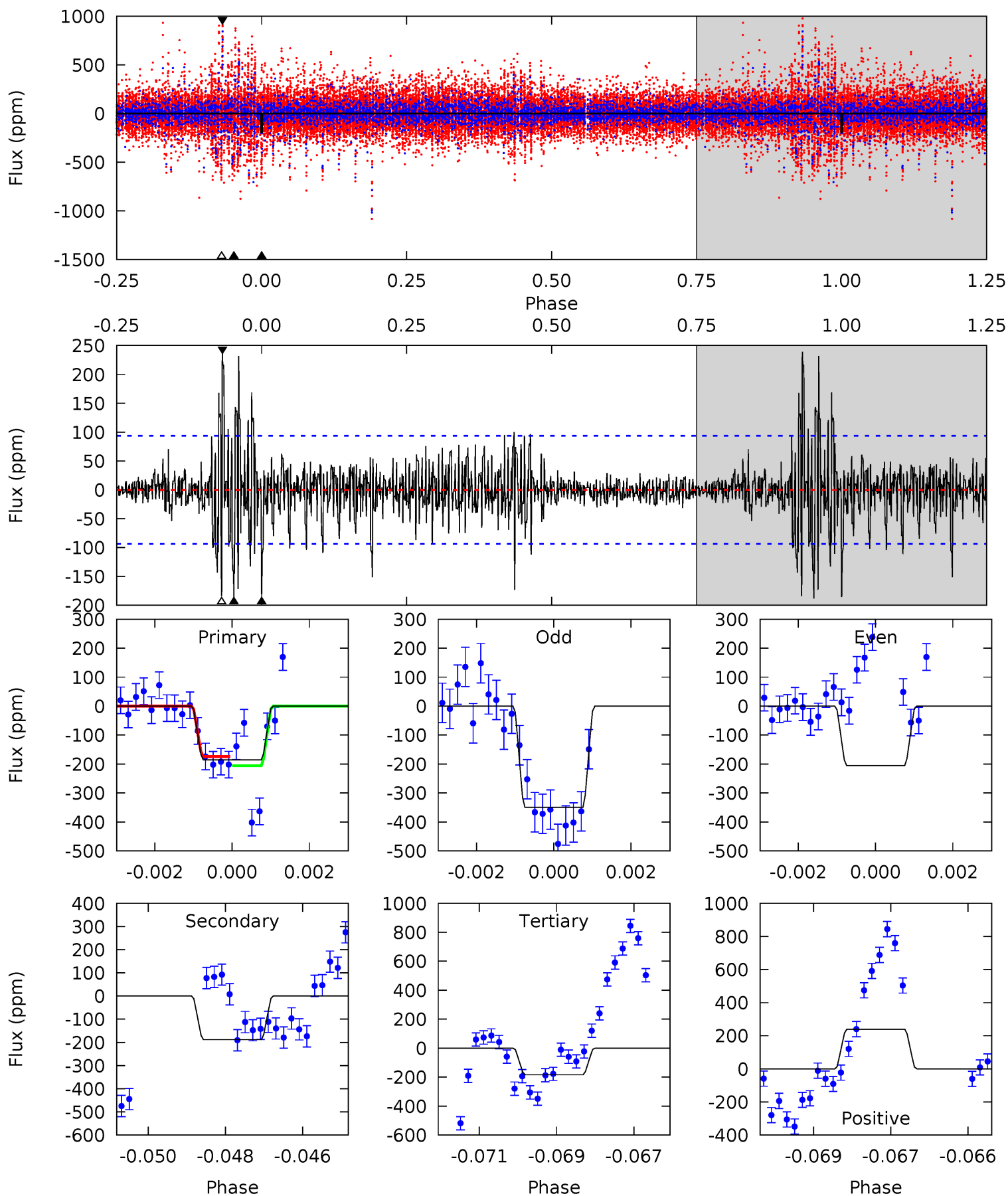
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	15.3	13.9	12.5	5.37	3.16	3.04	4.38	5.77	1.44	2.83	0.72	0.97	0.41	0.41



Alt Model-Shift Uniqueness Test

006616211-03, P = 407.097816 Days, E = 169.499952 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	10.8	10.5	13.7	5.37	3.16	2.03	0.10	-3.07	0.25	-2.92	3.93	1.42	0.56	0.88



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-259 ± 17	$9.44^{+5.49}_{-5.75}$	644^{+37}_{-61}	5036^{+2864}_{-811}	2526^{+13140}_{-1525}
Alt.	-188 ± 17	$5.83^{+5.60}_{-3.65}$	643^{+37}_{-67}	5680^{+4747}_{-1326}	4646^{+30897}_{-3410}

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

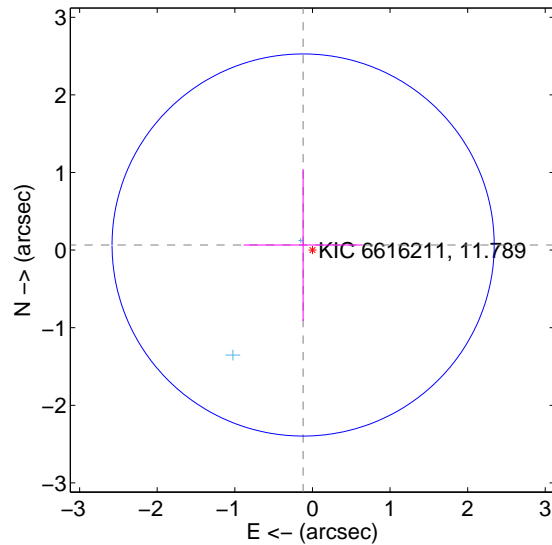
Supplemental centroid analysis for 006616211-03. **Kepler magnitude: 11.79.** Transit SNR 8.46

There are 2 quarters with good PRF difference image offsets

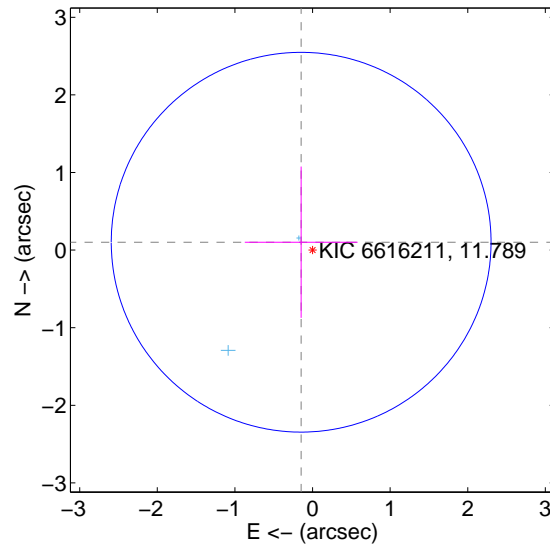
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.137 ± 0.821	0.17	0.120 ± 0.767	0.066 ± 0.979
PRF-fit source offset from KIC position	0.178 ± 0.816	0.22	0.147 ± 0.727	0.101 ± 0.975
photometric centroid source offset	0.88 ± 0.49	1.78	0.54 ± 0.47	-0.69 ± 0.50

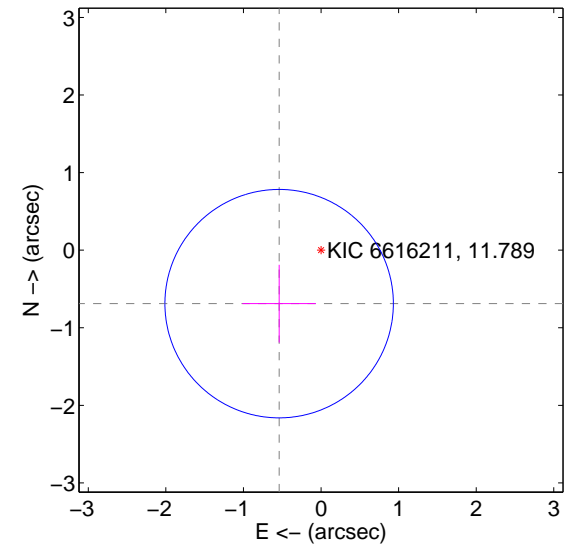
offset from difference PRF-fit to OOT PRF-fit



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.

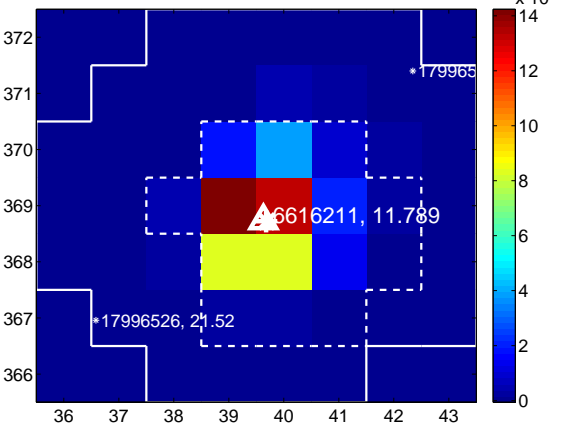
Q5 no difference image



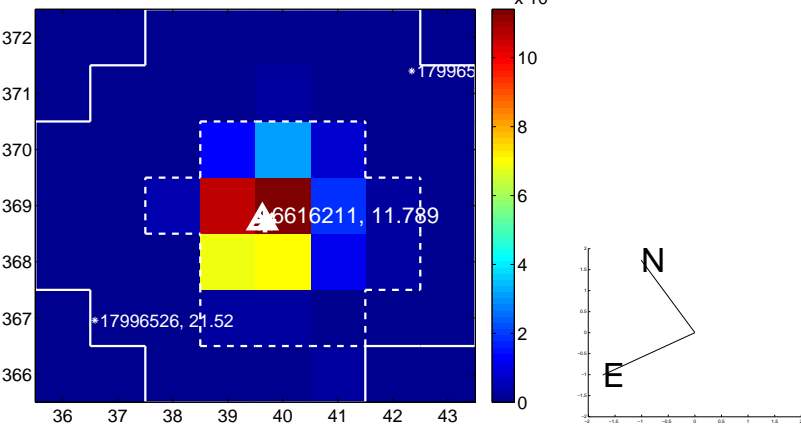
Q5 no OOT image



Q6 difference image



Q6 OOT image



Q7 no difference image



Q7 no OOT image



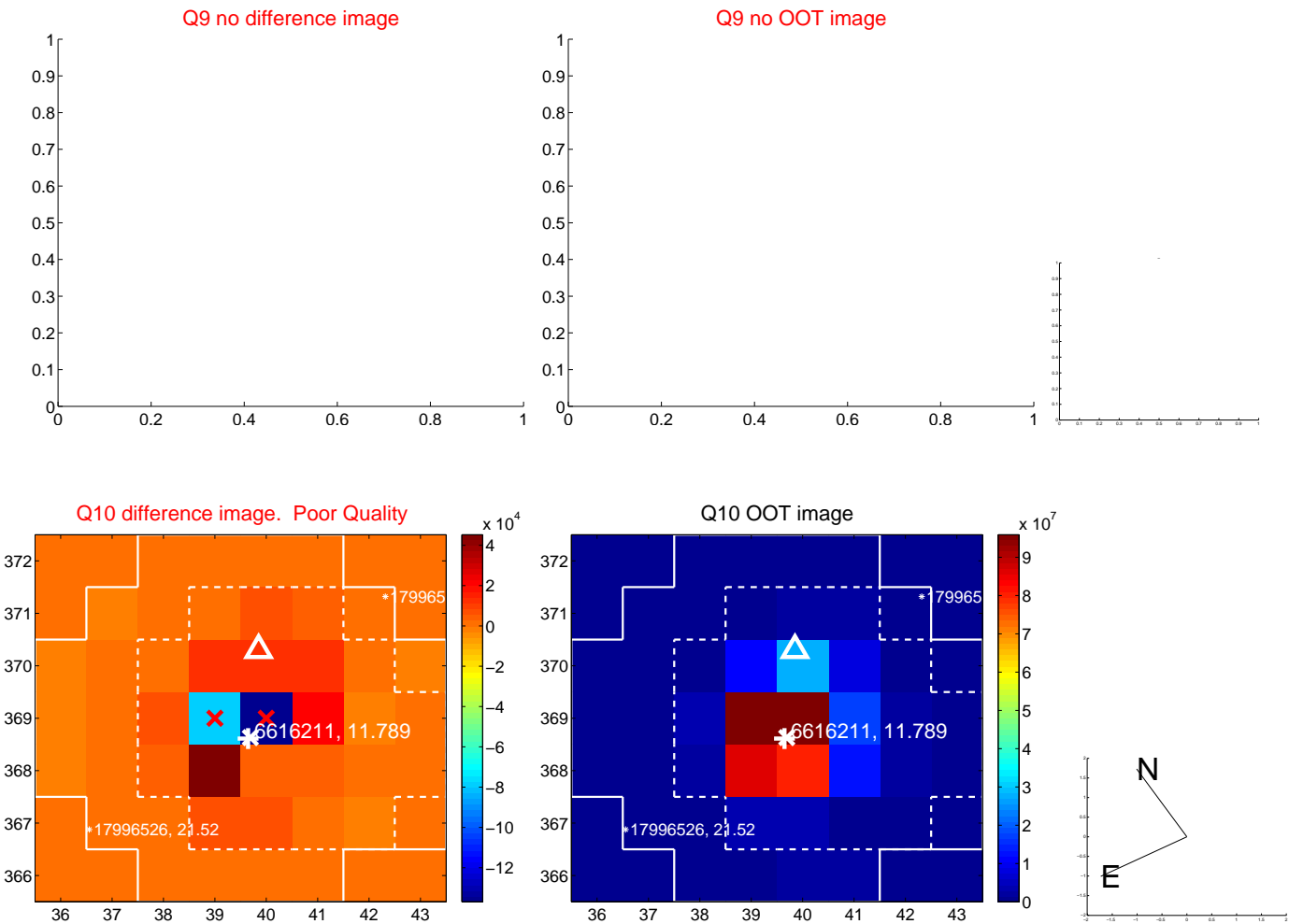
Q8 no difference image



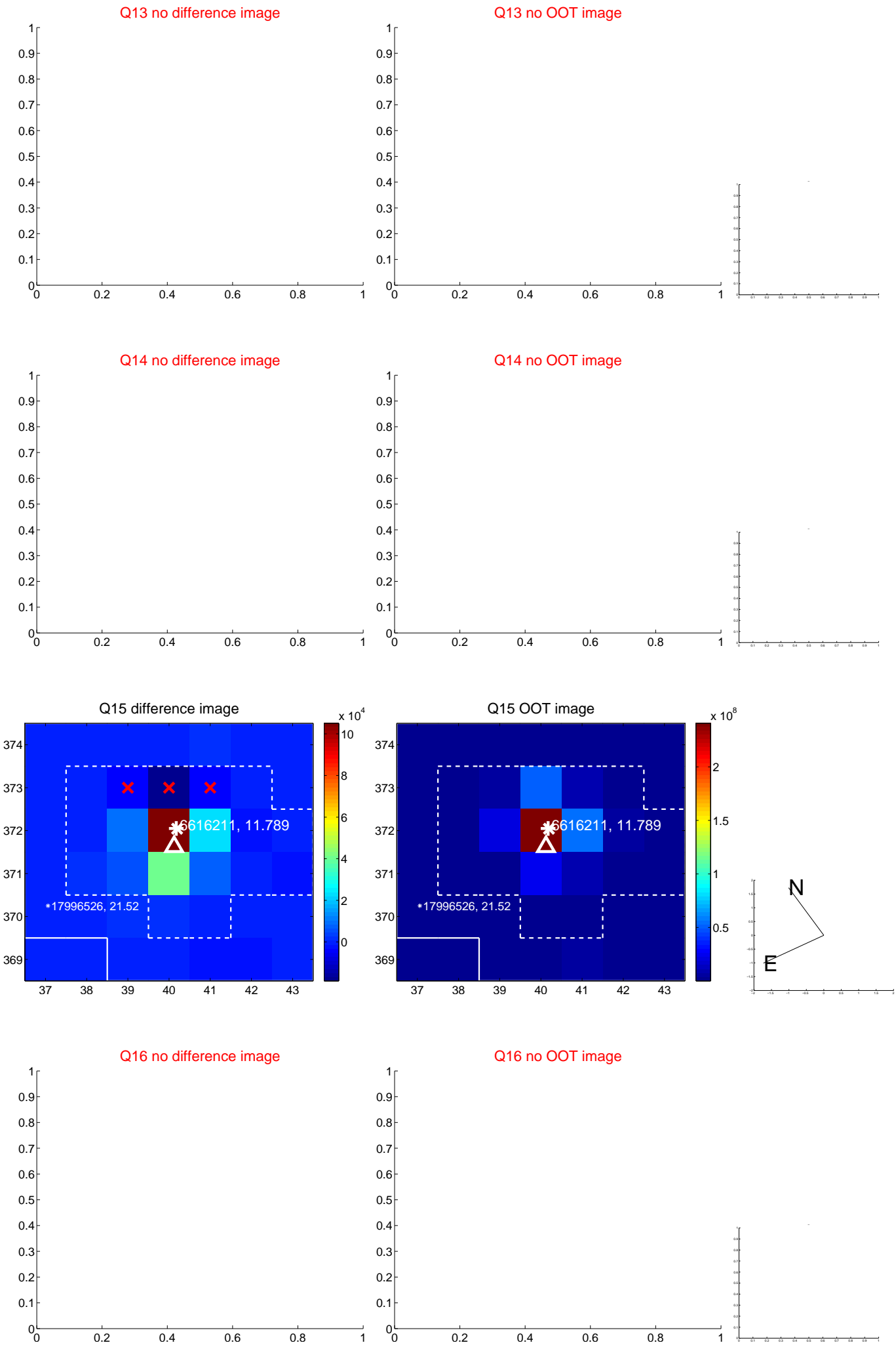
Q8 no OOT image



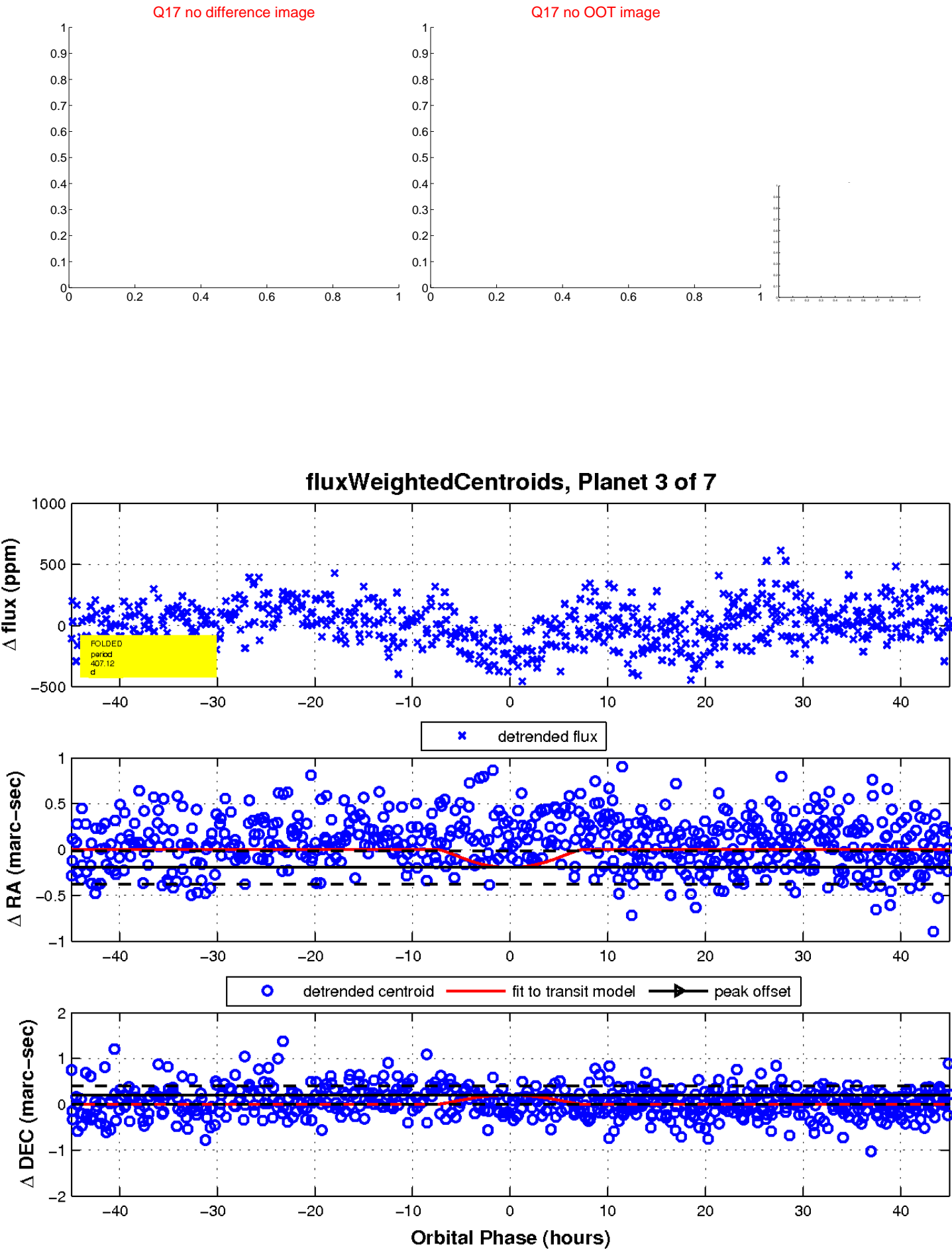
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

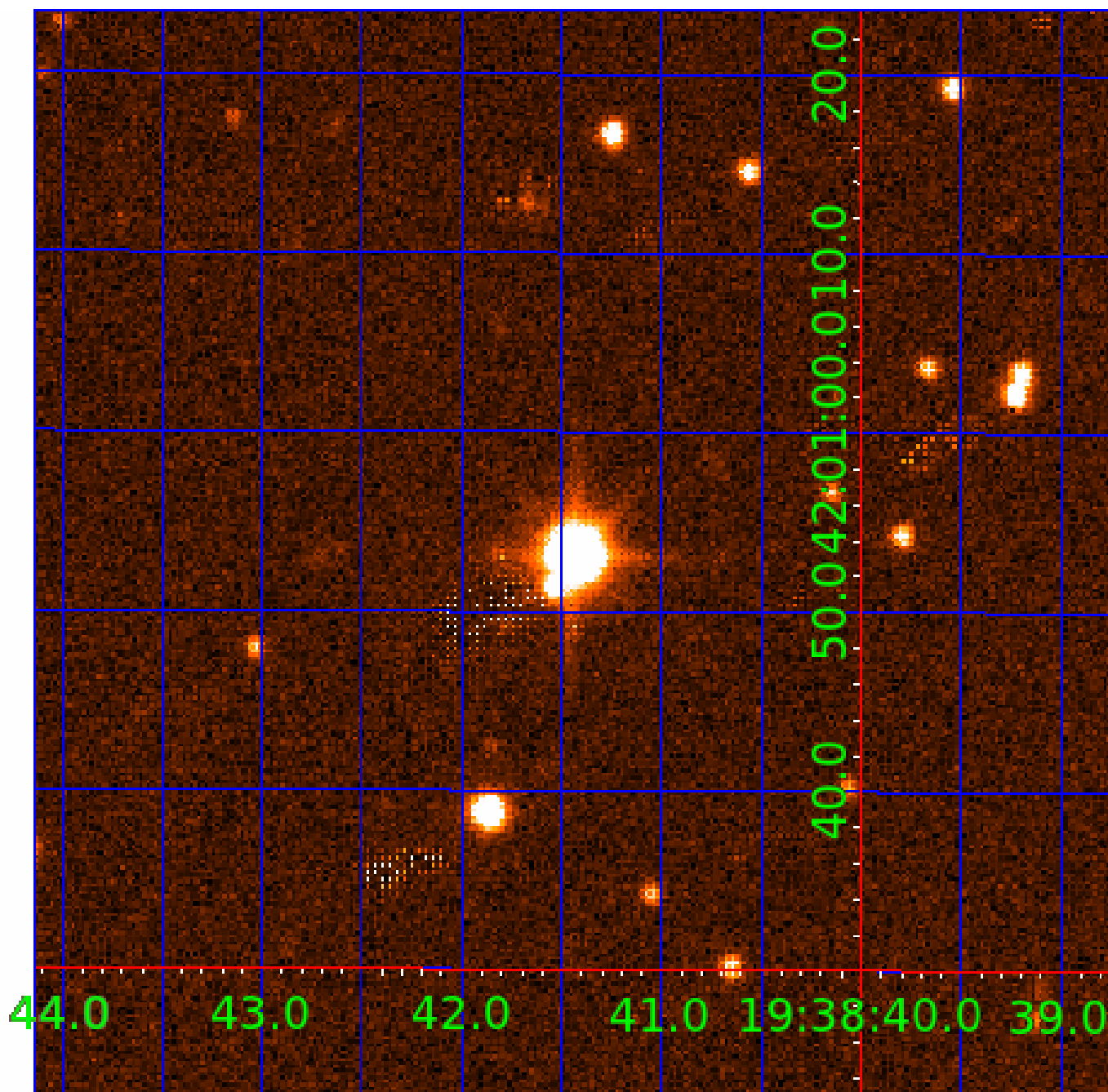


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
006616211-02	OBS	No	2.312286	133.442771	30.4	7.895	9.2	8.8	3.31	6489	2.38	11059.92
006616211-03	OBS	No	407.121359	169.422334	345.4	15.030	9.4	8.5	3.31	6489	9.15	11.21
006616211-04	OBS	No	85.443251	174.838350	158.5	7.758	8.1	8.2	3.31	6489	4.66	89.86
006616211-05	OBS	No	51.877465	154.766586	148.6	6.839	7.9	8.7	3.31	6489	5.31	174.78
006616211-06	OBS	No	67.377912	198.627054	149.8	10.943	7.9	7.4	3.31	6489	4.51	123.34
006616211-07	OBS	No	379.148675	222.934695	207.1	4.904	7.7	6.2	3.31	6489	5.43	12.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

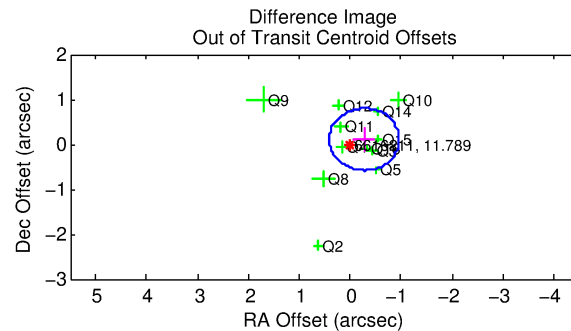
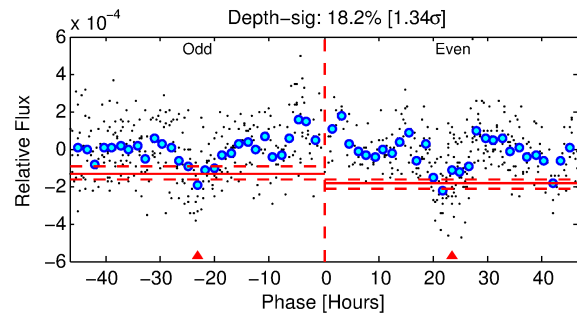
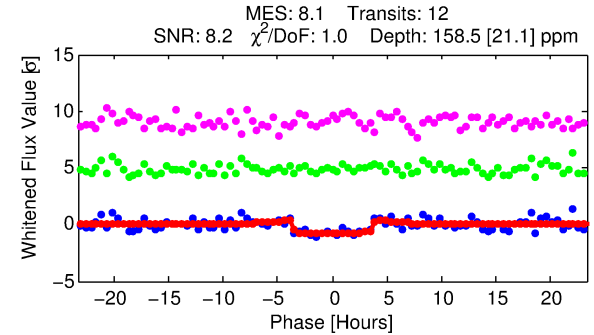
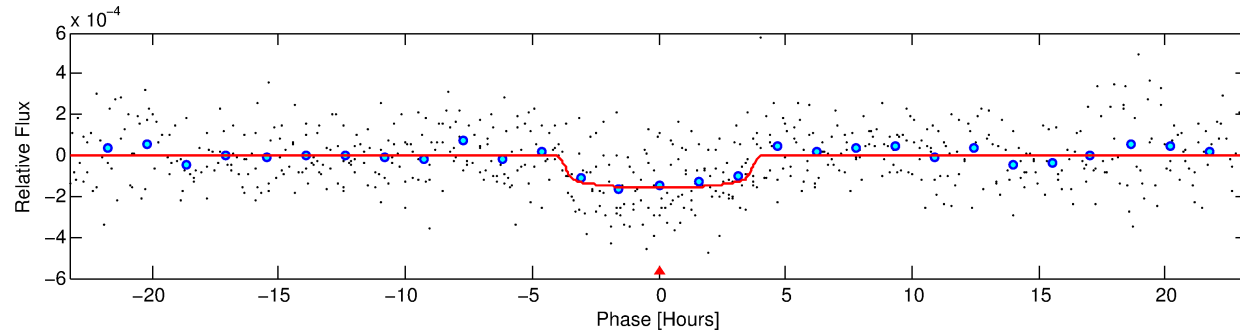
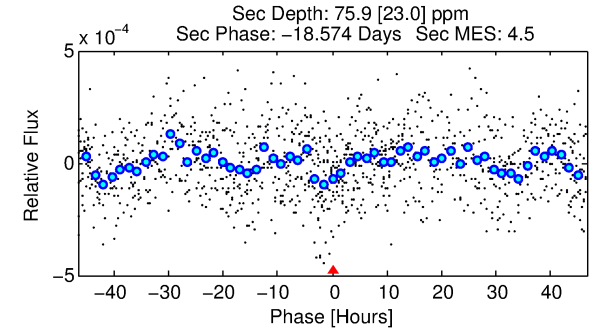
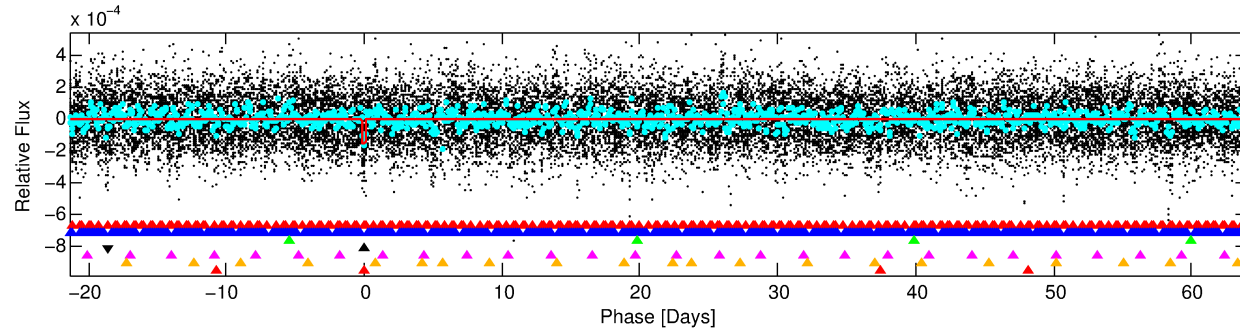
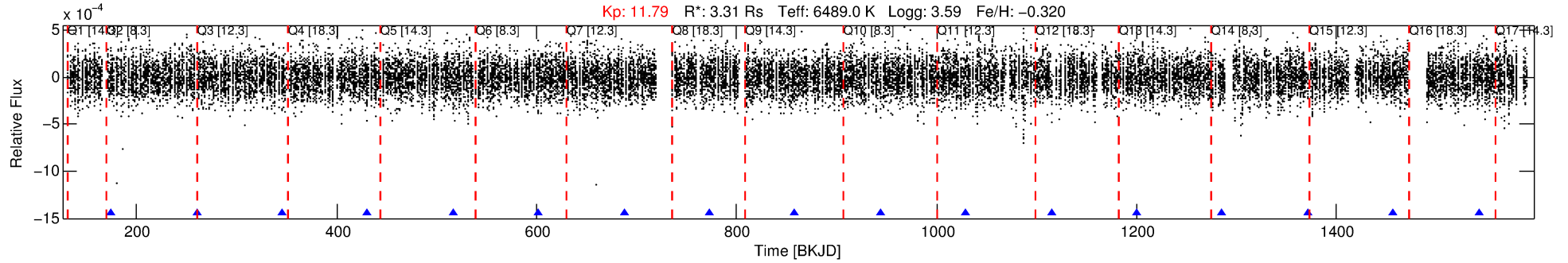
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-04

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 4 of 7 Period: 85.443 d



DV Fit Results:

Period = 85.44325 [0.00169] d
Epoch = 174.8384 [0.0150] BKJD
Rp/R* = 0.0129 [0.0037]
a/R* = 48.55 [75.06]
b = 0.83 [0.58]
Seff = 89.86 [56.11]
Teq = 785 [123] K
Rp = 4.66 [2.30] Re
a = 0.4396 [0.1695] AU
Ag = 371.58 [331.04] [1.12σ]
Teffp = 5329 [872] K [5.16σ]

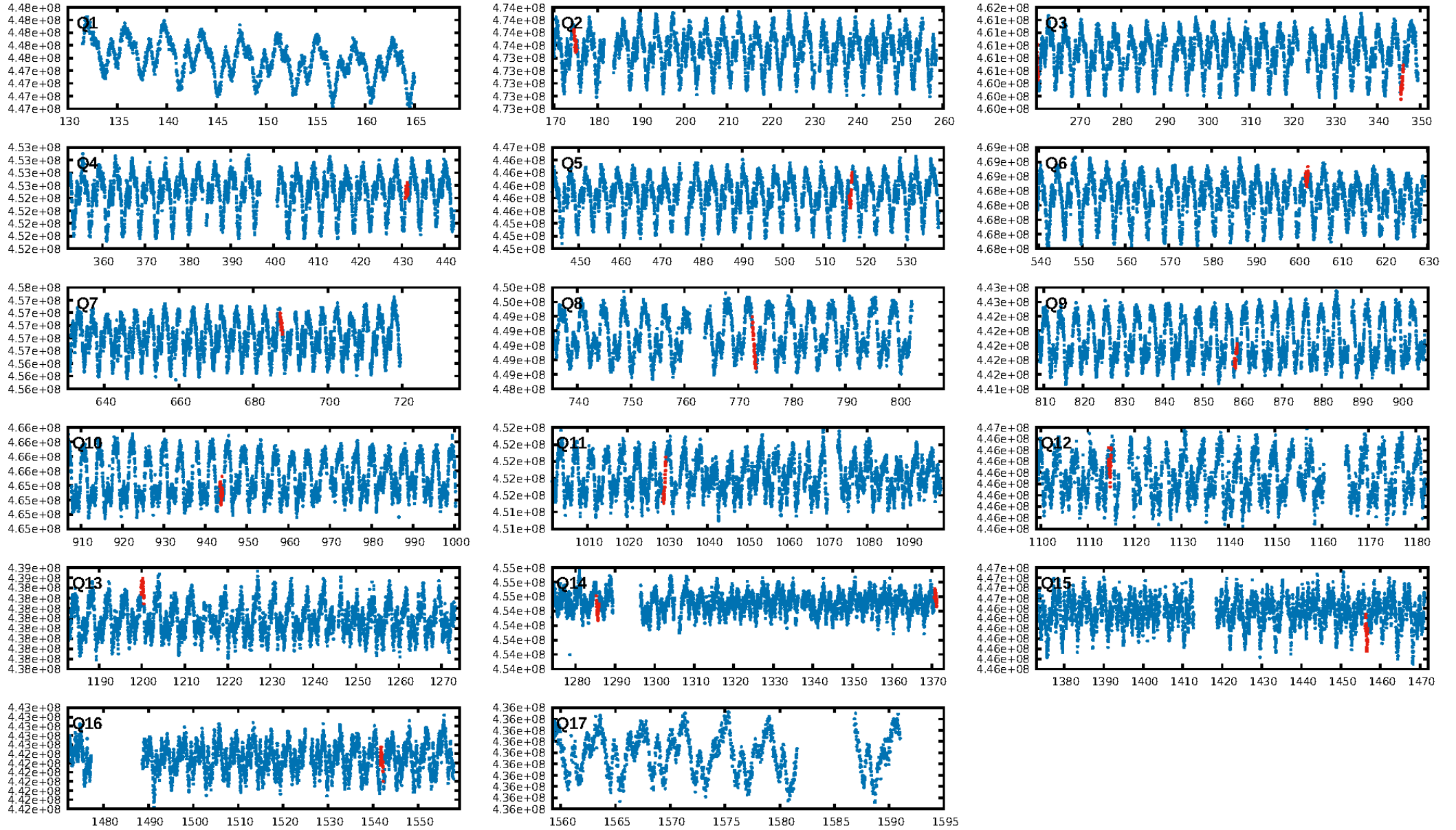
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [32.32σ]
LongPeriod-sig: 100.0% [768.05σ]
ModelChiSquare2-sig: 6.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.34e-08
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 0.7998
Centroid-sig: 5.5%
Centroid-so: 0.542 arcsec [1.46σ]
OotOffset-rm: 0.298 arcsec [1.29σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-rm: 0.343 arcsec [1.52σ]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.83 [10/12]
DiffImageOverlap-fno: 0.21 [3/14]

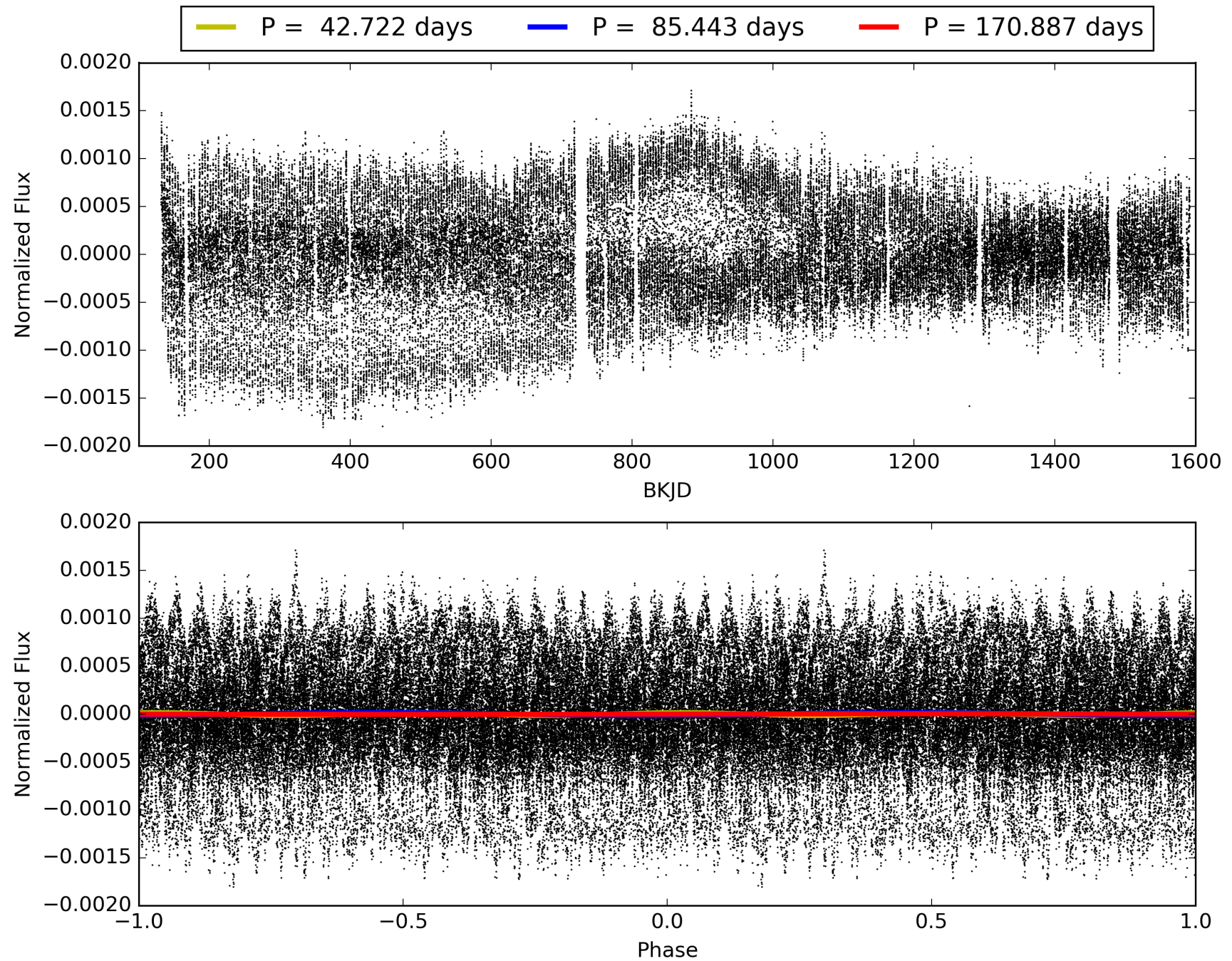
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:42:27 Z

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

TCE 006616211-04, PDC Light Curves

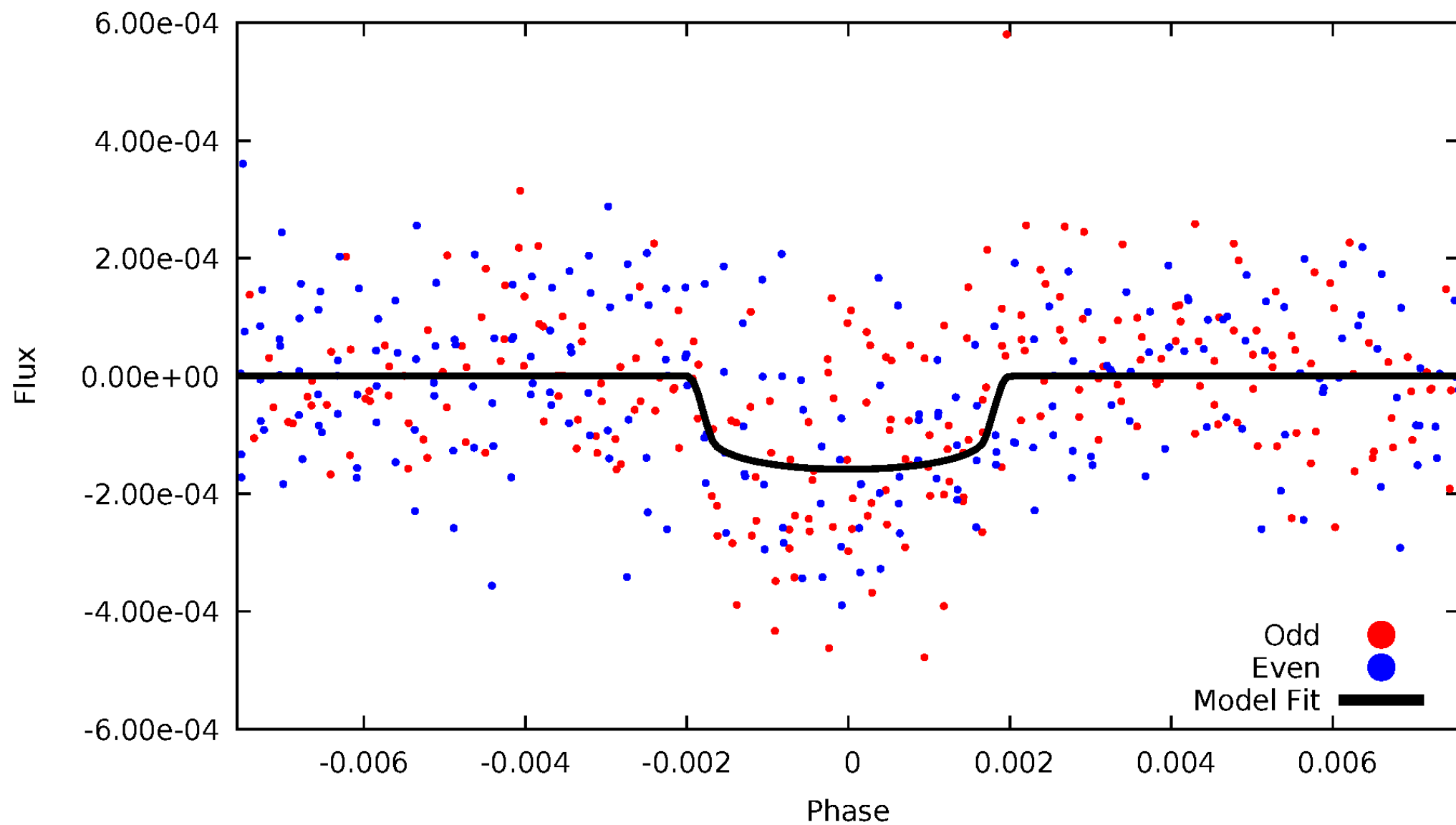


TCE 006616211-04



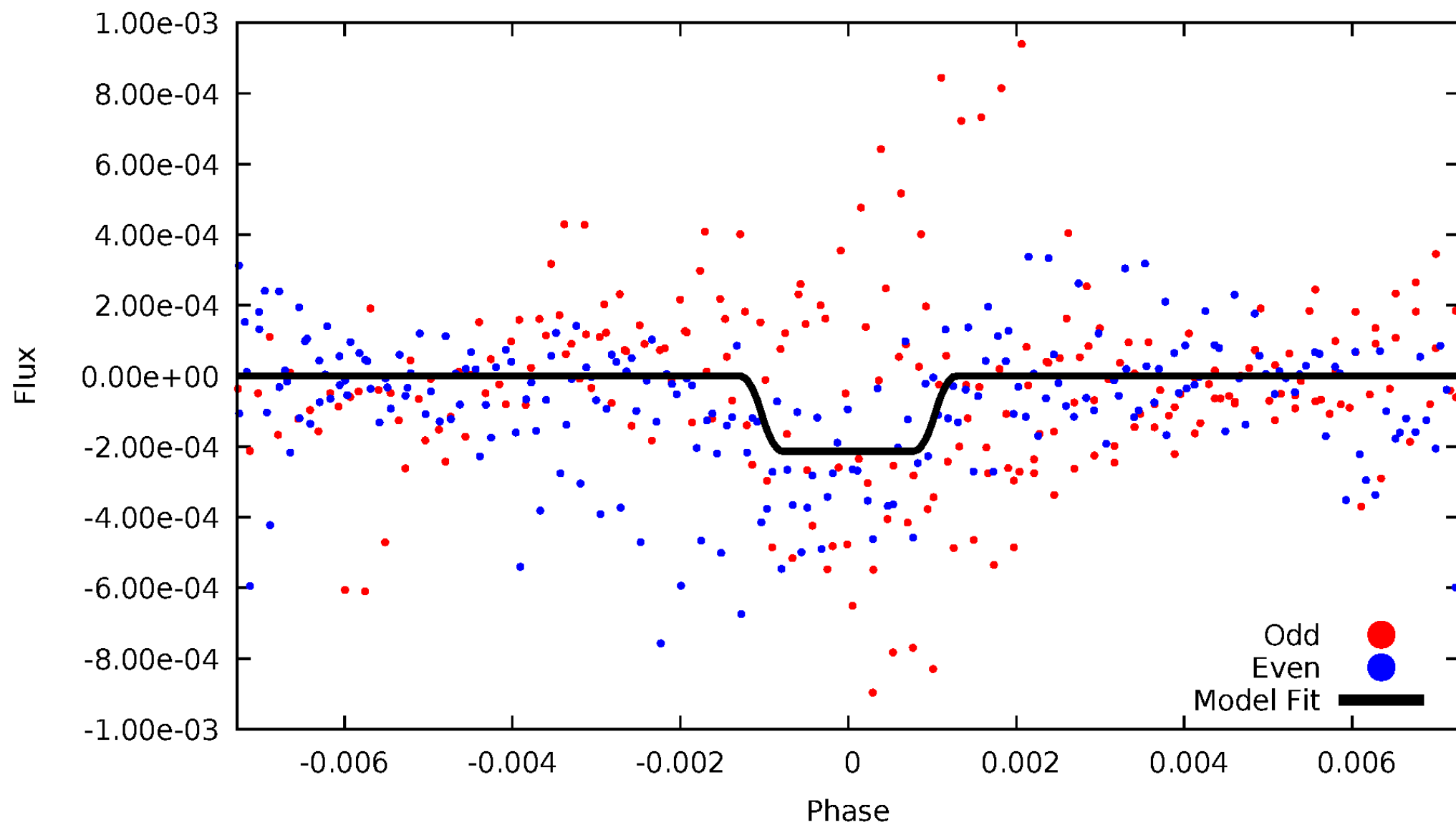
DV Odd/Even

TCE 006616211-04



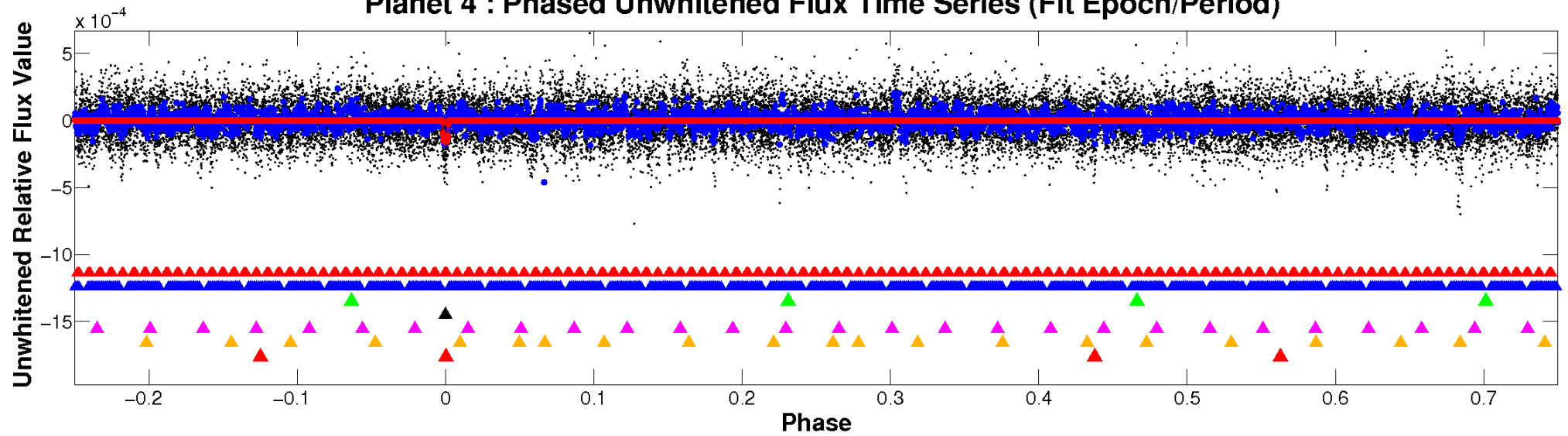
ALT Odd/Even

TCE 006616211-04

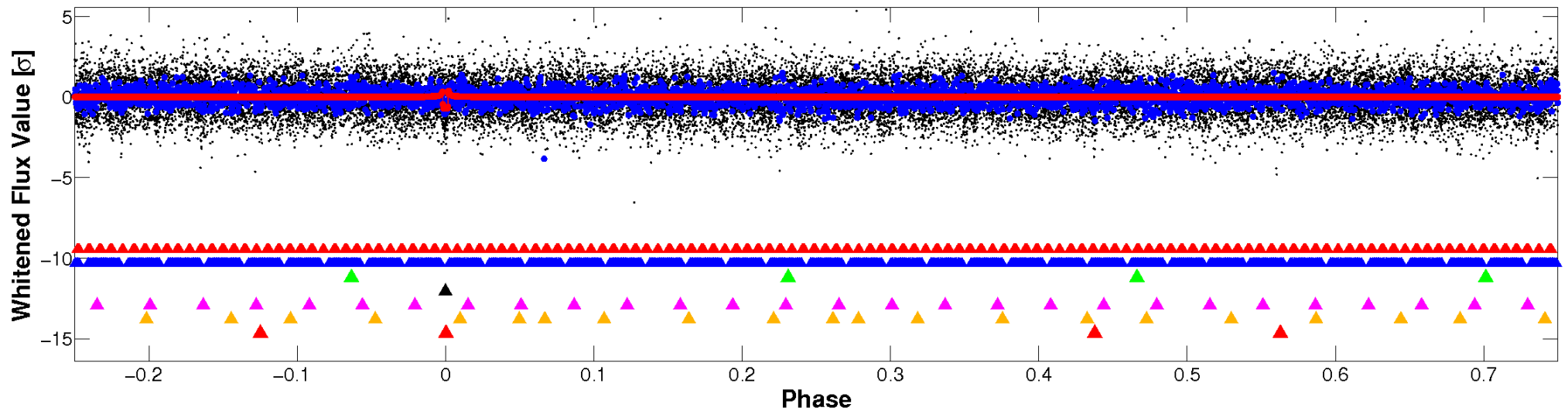


Non-Whitened Vs. Whitened Light Curve

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

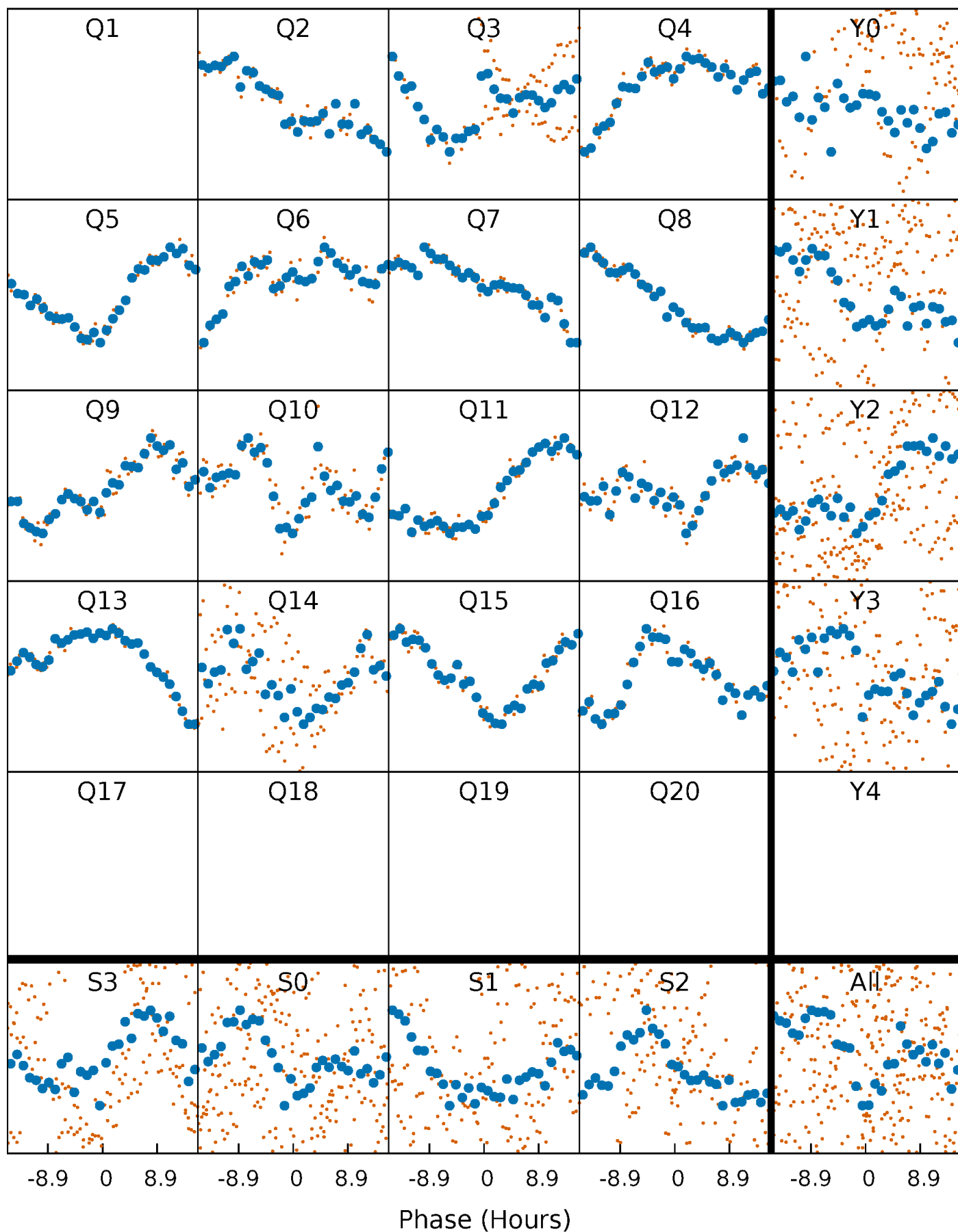


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



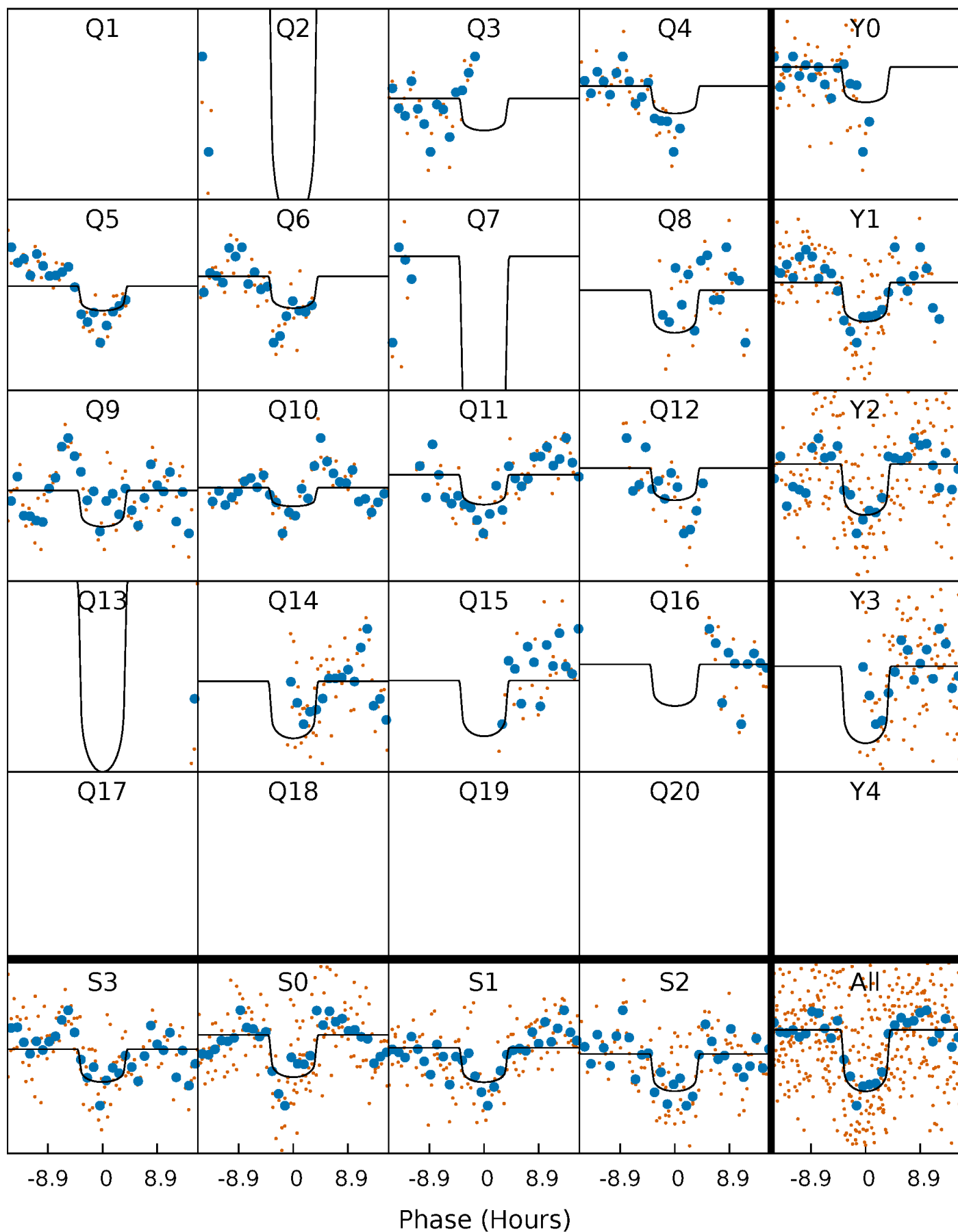
PDC Quarter-Phased Transit Curves

TCE 006616211-04 P= 85.443251 Days $T_0=174.838350$ (BKJD)



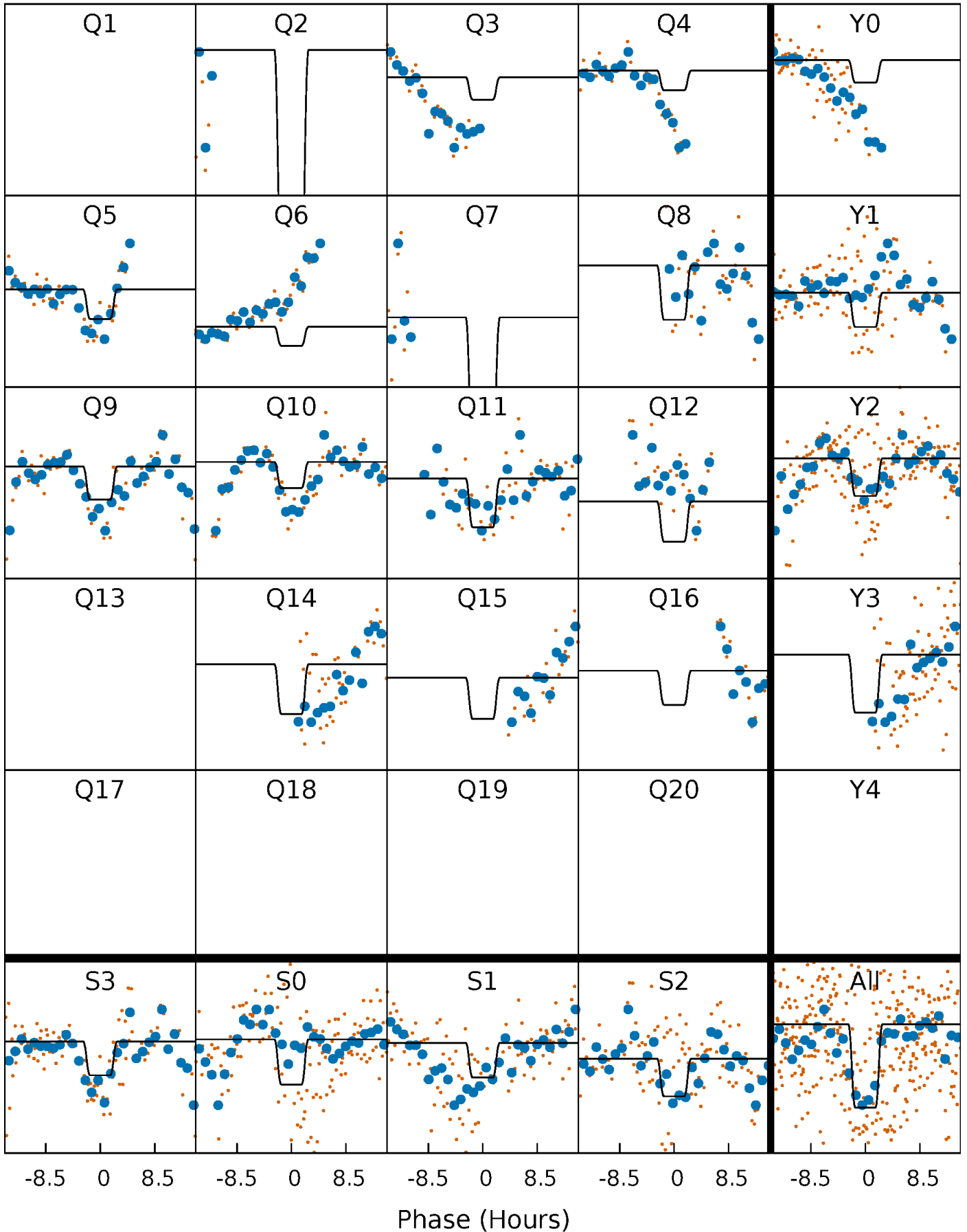
DV Quarter-Phased Transit Curves

TCE 006616211-04 P= 85.443251 Days $T_0=174.838350$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

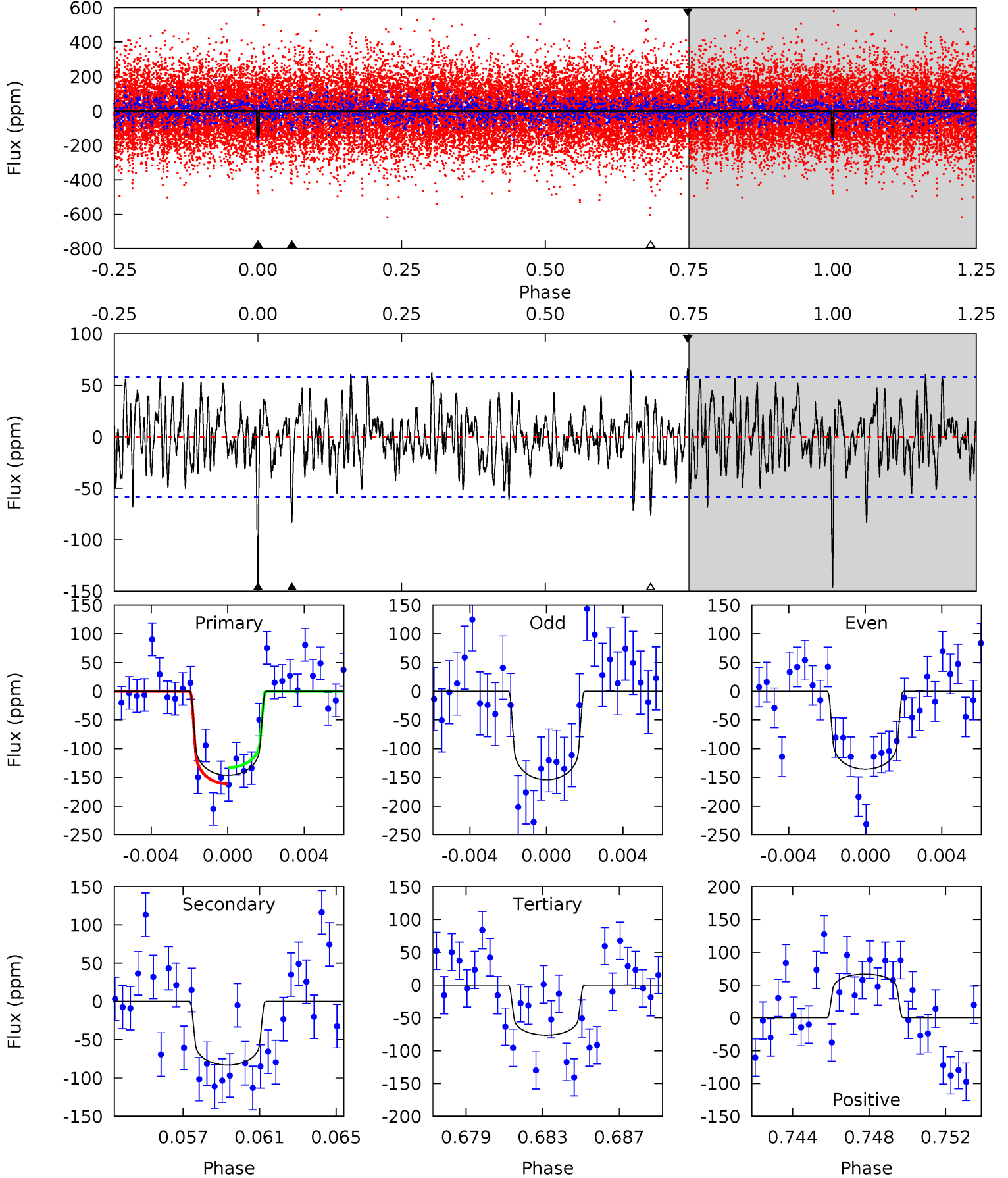
TCE 006616211-04 $P = 85.441429$ Days $T_0 = 174.798613$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-04, P = 85.443251 Days, E = 89.395099 Days

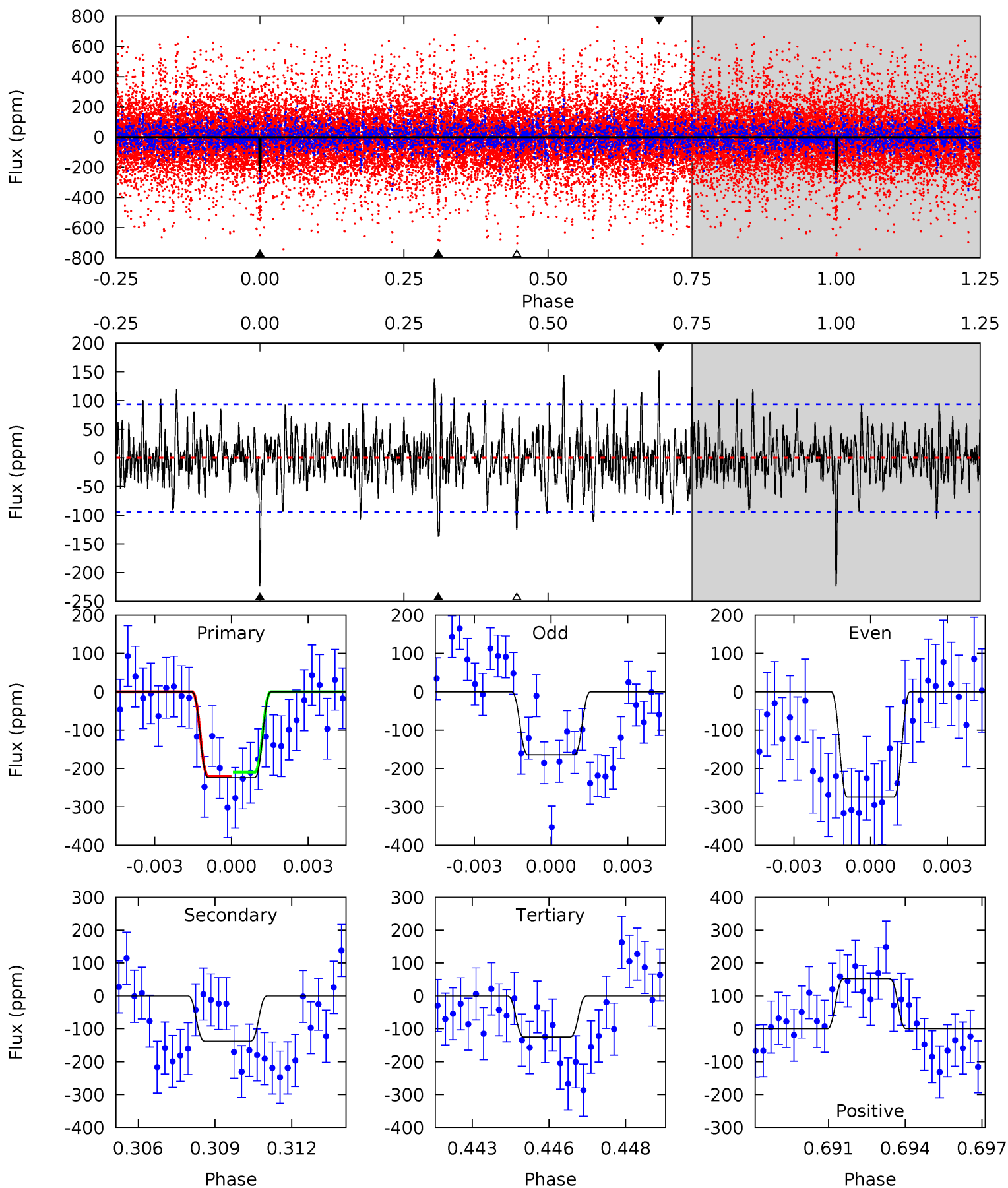
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	7.42	6.83	5.96	5.20	2.87	2.02	6.27	7.15	0.59	1.47	0.81	0.82	0.31	1.27



Alt Model-Shift Uniqueness Test

006616211-04, P = 85.441429 Days, E = 89.357184 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	7.75	7.06	8.60	5.28	3.02	2.07	5.58	4.05	0.69	-0.85	3.04	0.69	0.40	0.32



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-83 ± 11	$4.38^{+1.66}_{-1.32}$	1083^{+62}_{-108}	5424^{+908}_{-570}	443^{+498}_{-197}
Alt.	-137 ± 18	$4.89^{+1.65}_{-1.45}$	1086^{+61}_{-105}	5846^{+1046}_{-624}	606^{+618}_{-260}

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 $A_{obs} \gg 1.0$

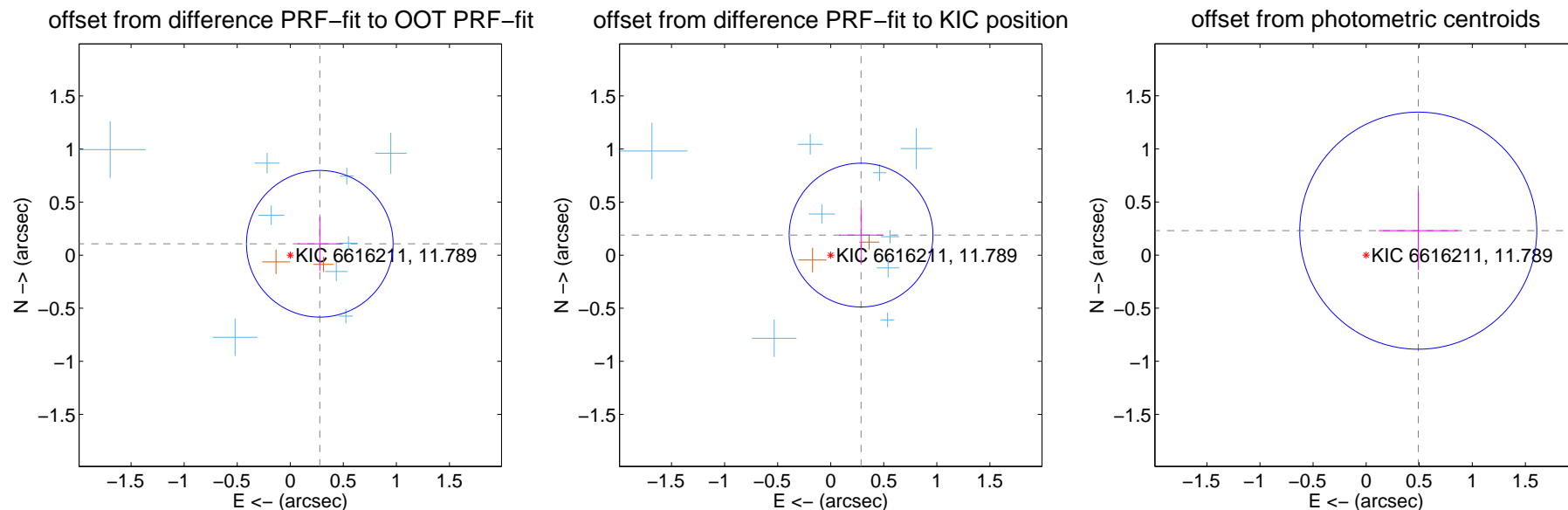
DV Centroid Data

Supplemental centroid analysis for 006616211-04. **Kepler magnitude: 11.79.** Transit SNR 8.25

There are 10 quarters with good PRF difference image offsets

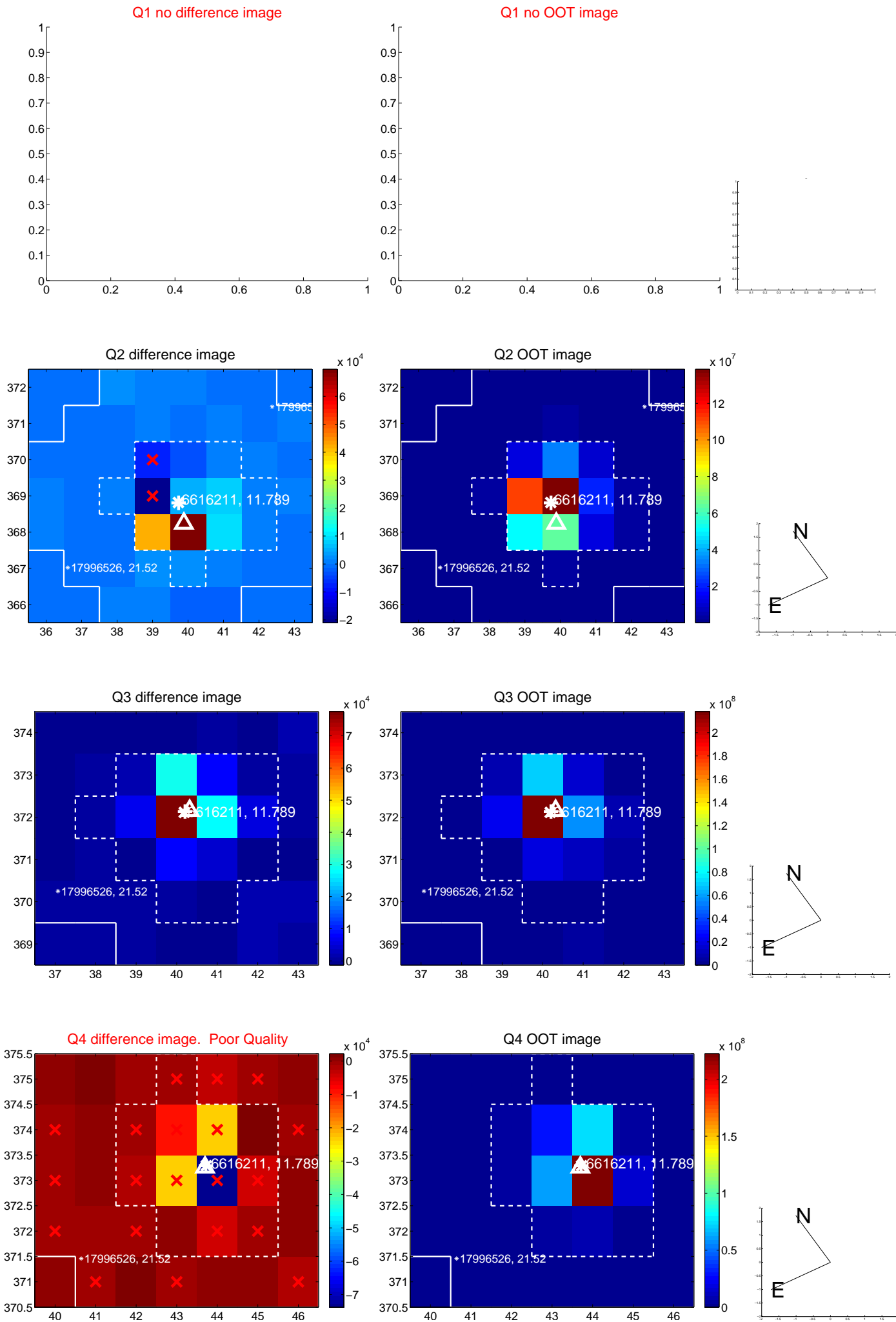
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.298 ± 0.230	1.29	-0.278 ± 0.210	0.107 ± 0.255
PRF-fit source offset from KIC position	0.343 ± 0.226	1.52	-0.286 ± 0.206	0.189 ± 0.262
photometric centroid source offset	0.54 ± 0.37	1.46	-0.49 ± 0.37	0.23 ± 0.37

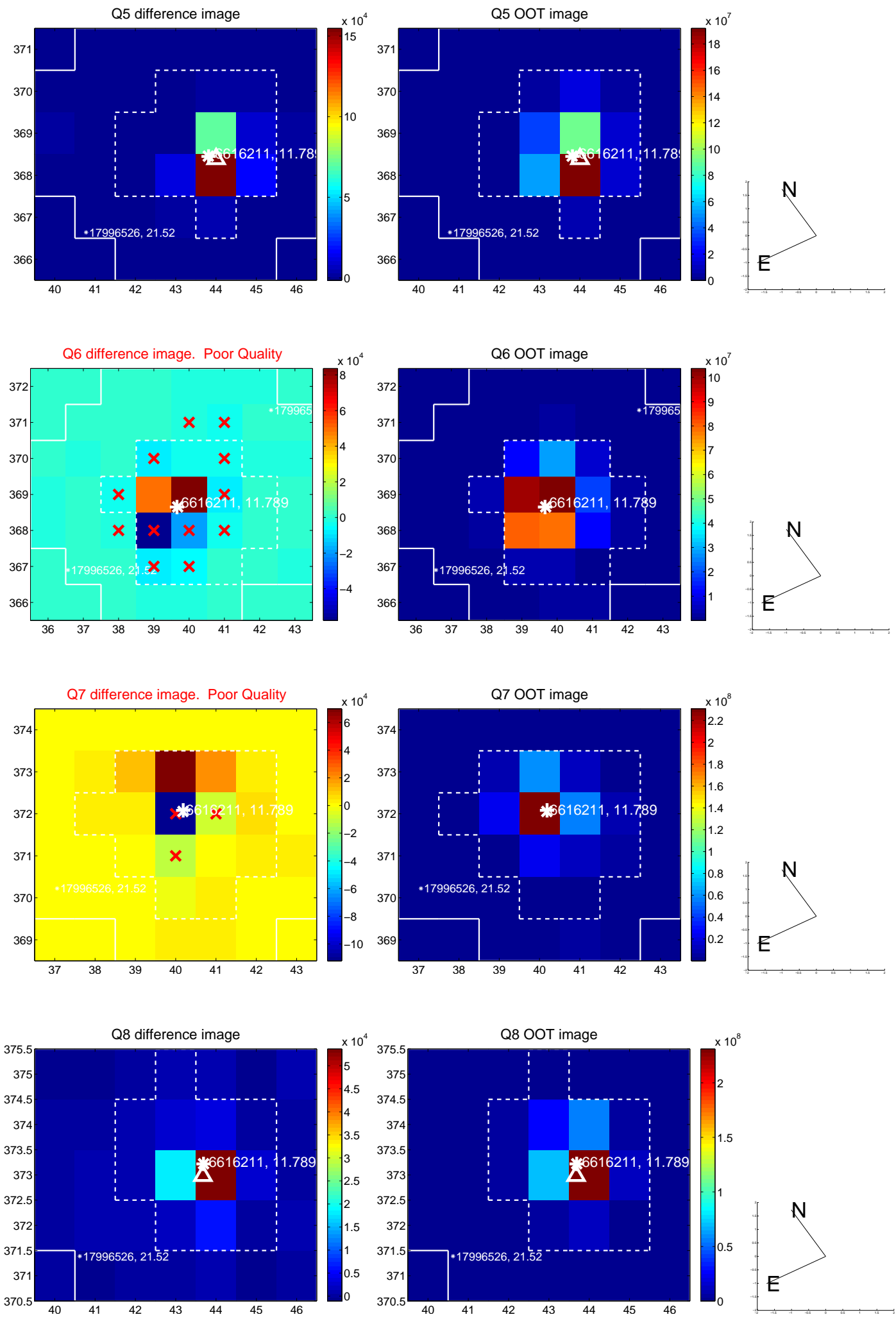


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

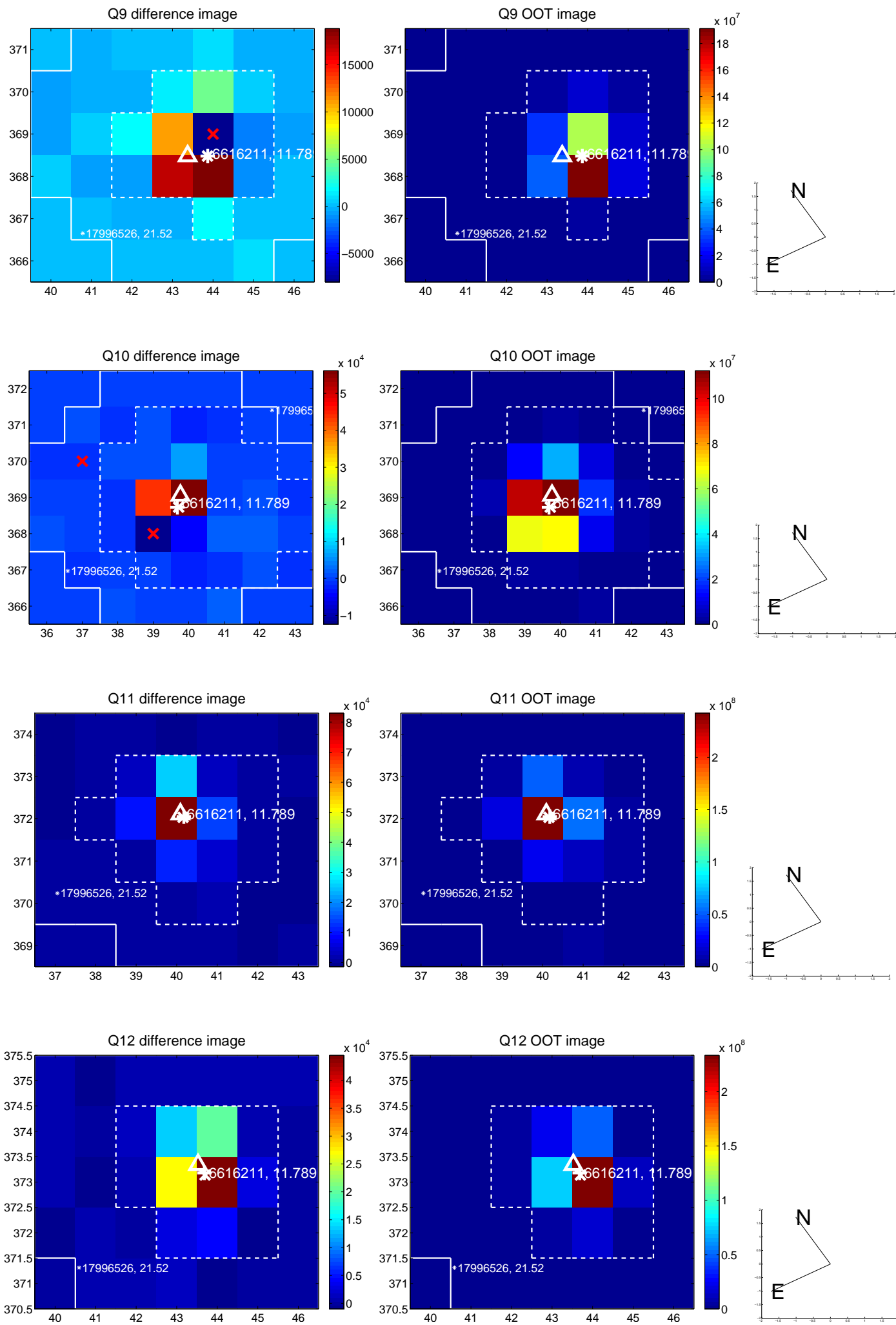
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



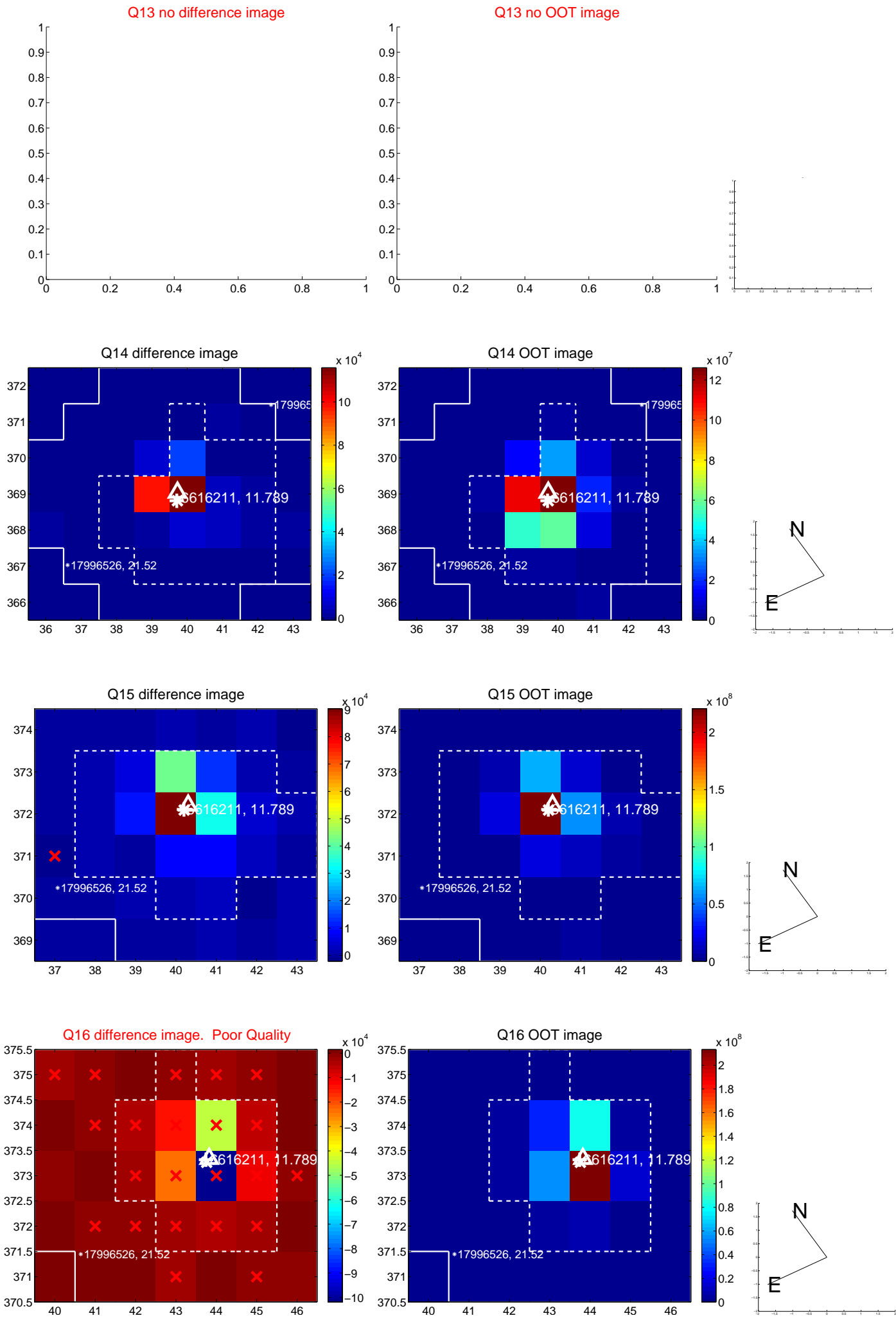
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



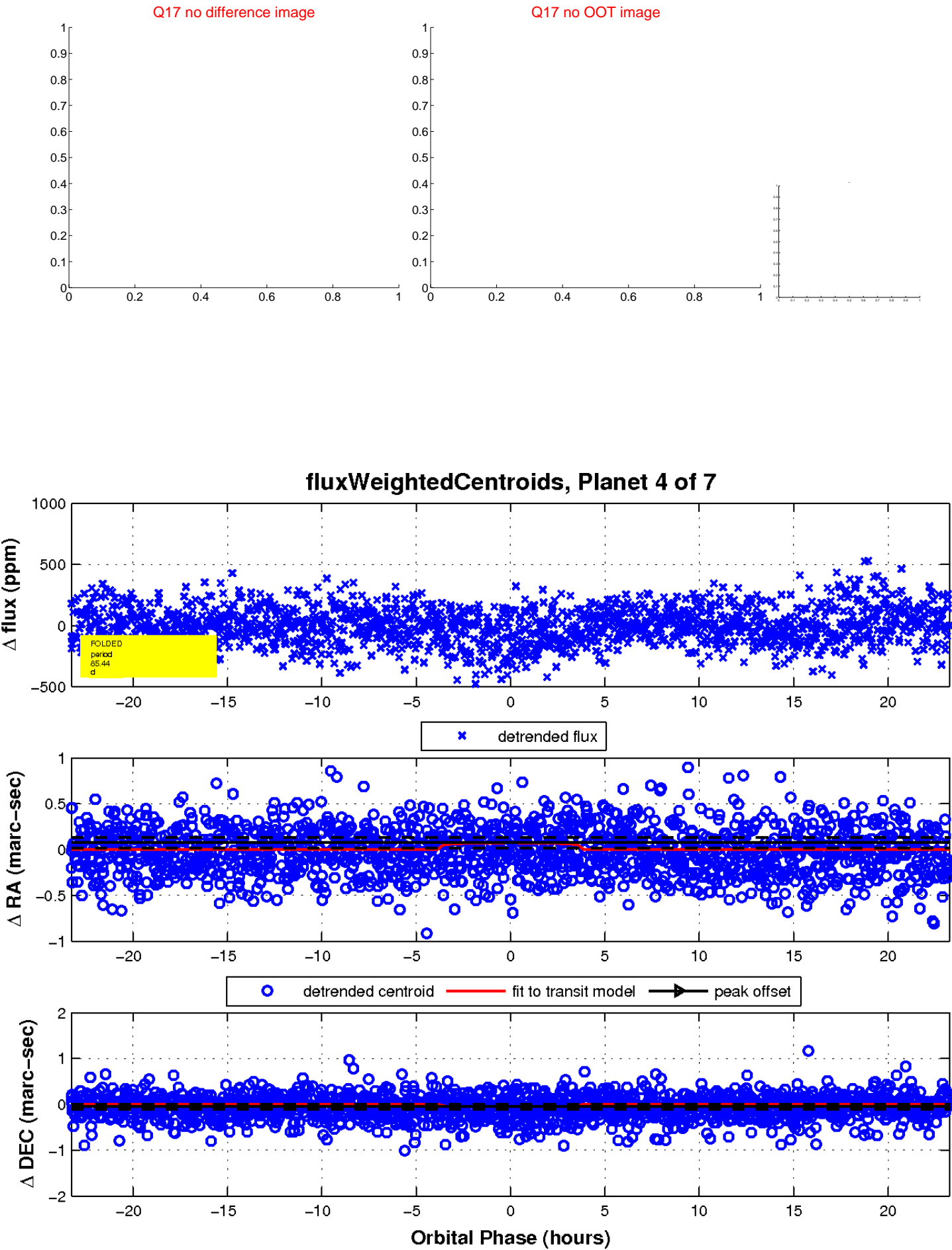
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

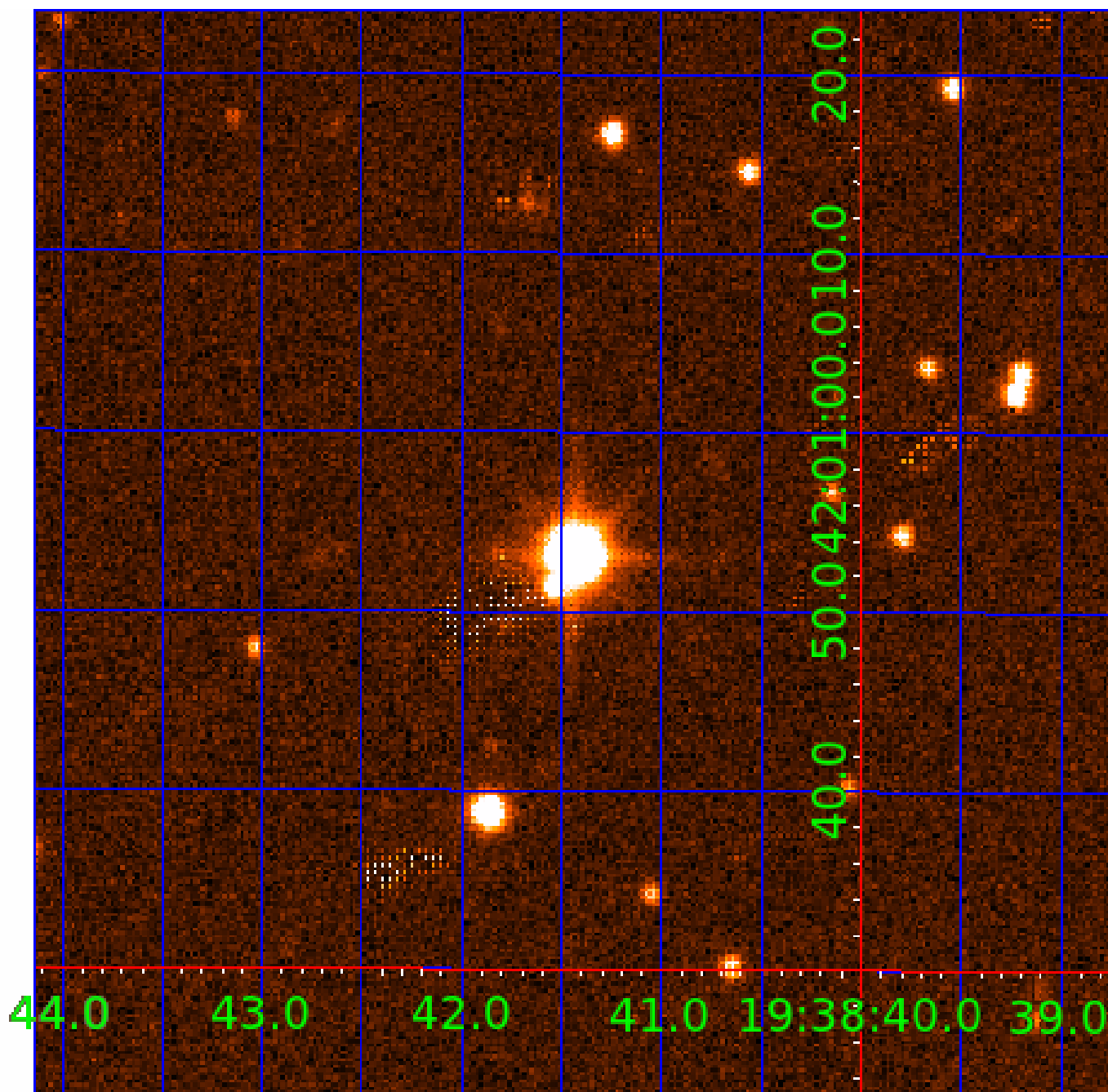


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
006616211-02	OBS	No	2.312286	133.442771	30.4	7.895	9.2	8.8	3.31	6489	2.38	11059.92
006616211-03	OBS	No	407.121359	169.422334	345.4	15.030	9.4	8.5	3.31	6489	9.15	11.21
006616211-04	OBS	No	85.443251	174.838350	158.5	7.758	8.1	8.2	3.31	6489	4.66	89.86
006616211-05	OBS	No	51.877465	154.766586	148.6	6.839	7.9	8.7	3.31	6489	5.31	174.78
006616211-06	OBS	No	67.377912	198.627054	149.8	10.943	7.9	7.4	3.31	6489	4.51	123.34
006616211-07	OBS	No	379.148675	222.934695	207.1	4.904	7.7	6.2	3.31	6489	5.43	12.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

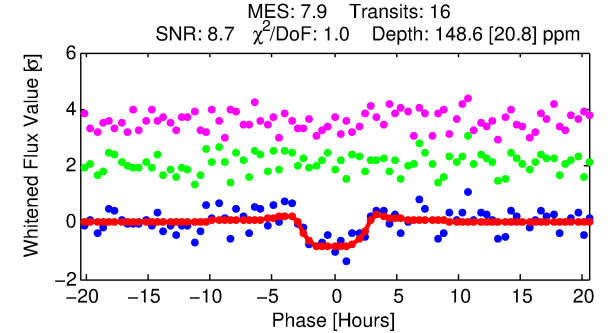
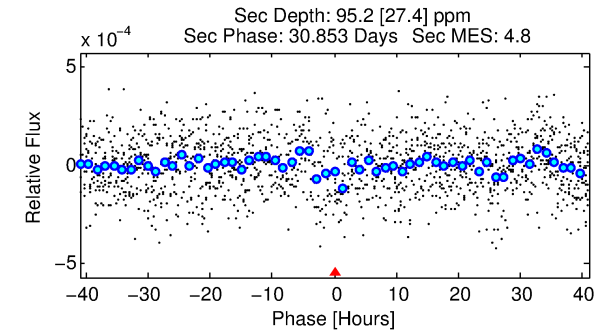
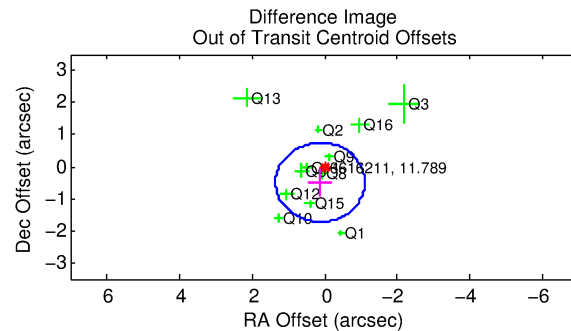
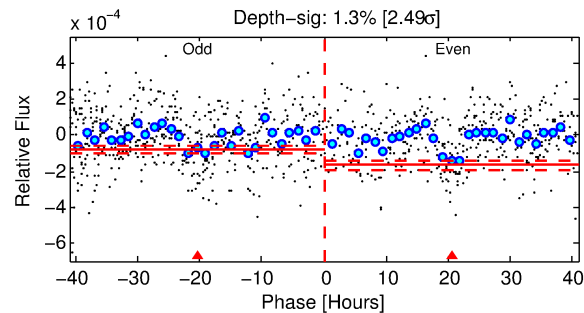
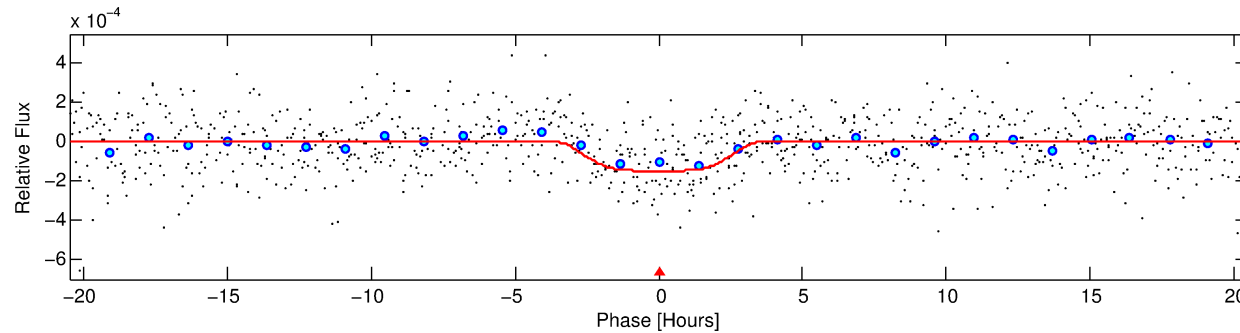
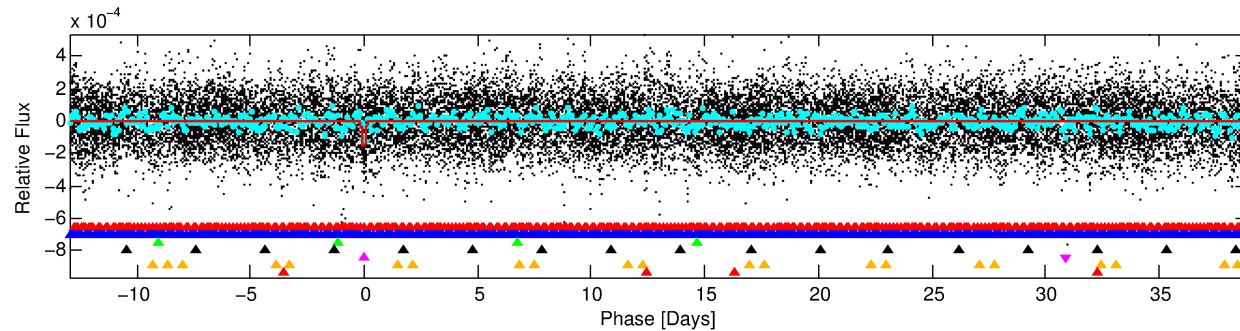
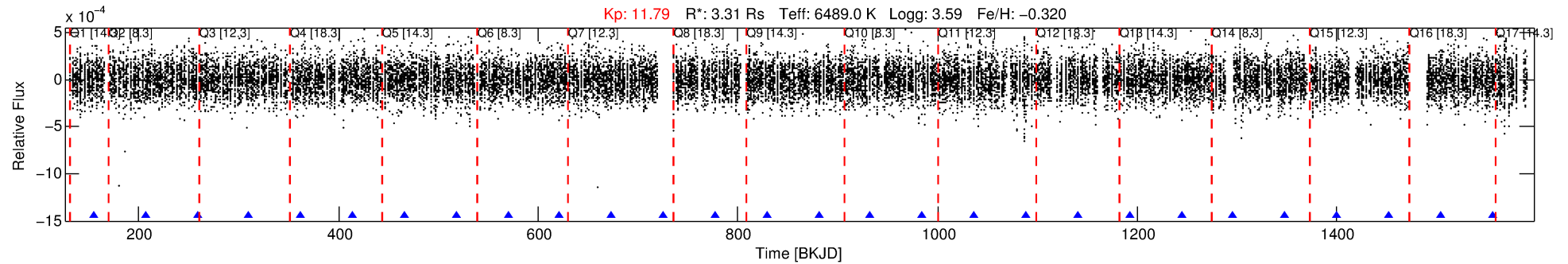
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-05

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 5 of 7 Period: 51.877 d



DV Fit Results:

Period = 51.87747 [0.00101] d
Epoch = 154.7666 [0.0161] BKJD
 R_p/R^* = 0.0147 [0.0013]
 a/R^* = 15.57 [3.41]
 b = 0.98 [0.01]
 S_{eff} = 174.78 [109.14]
 T_{eq} = 927 [145] K
 R_p = 5.31 [2.19] R_e
 a = 0.3152 [0.1215] AU
 A_g = 184.66 [129.47] [1.42 σ]
 T_{eff} = 5284 [469] K [8.88 σ]

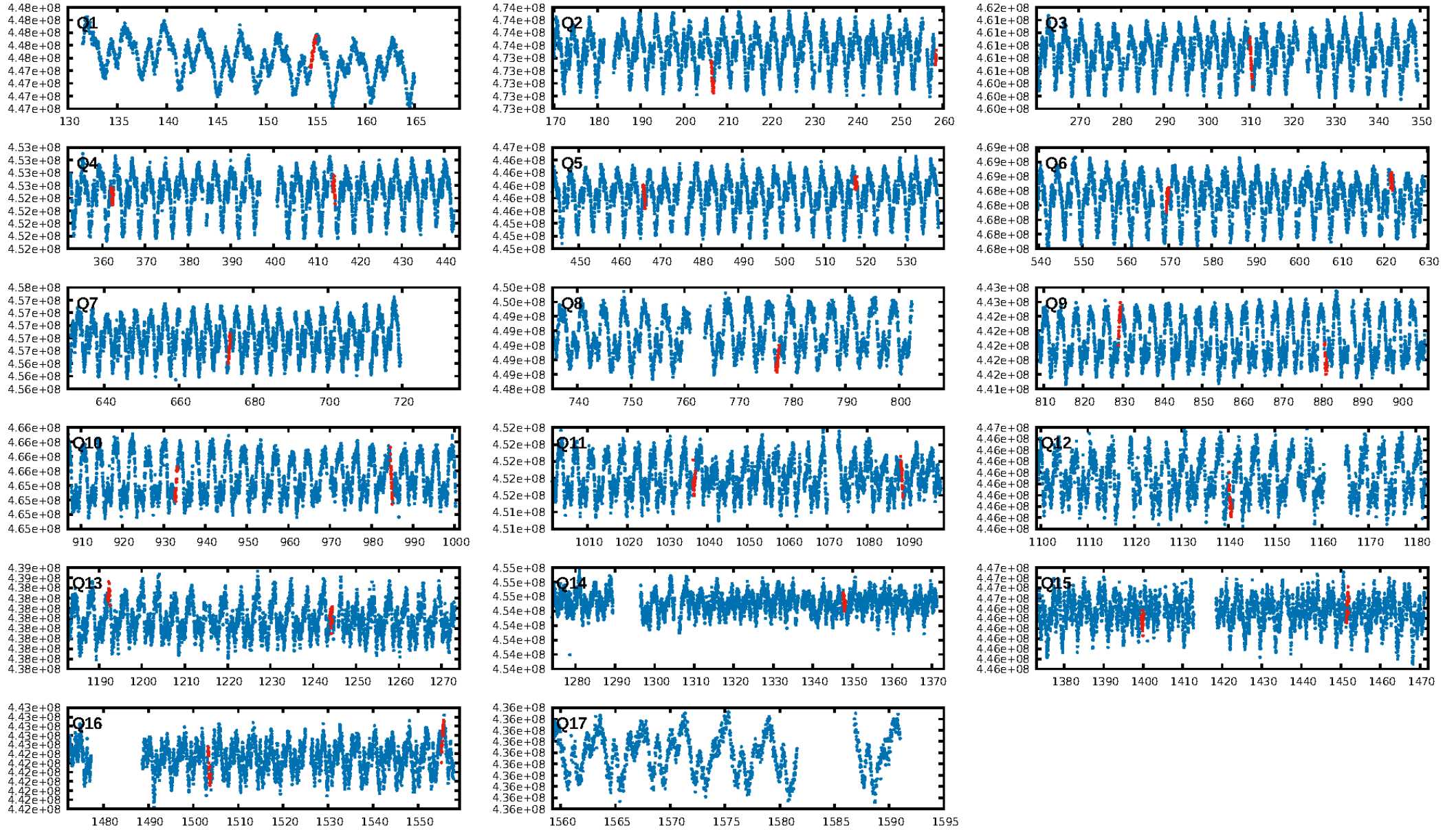
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [109.36 σ]
LongPeriod-sig: 100.0% [28.83 σ]
ModelChiSquare2-sig: 23.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.55e-08
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: -2.524
Centroid-sig: 14.8%
Centroid-so: 0.538 arcsec [1.48 σ]
OotOffset-rm: 0.503 arcsec [1.23 σ]
KicOffset-rm: 0.430 arcsec [1.02 σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 0.56 [9/16]

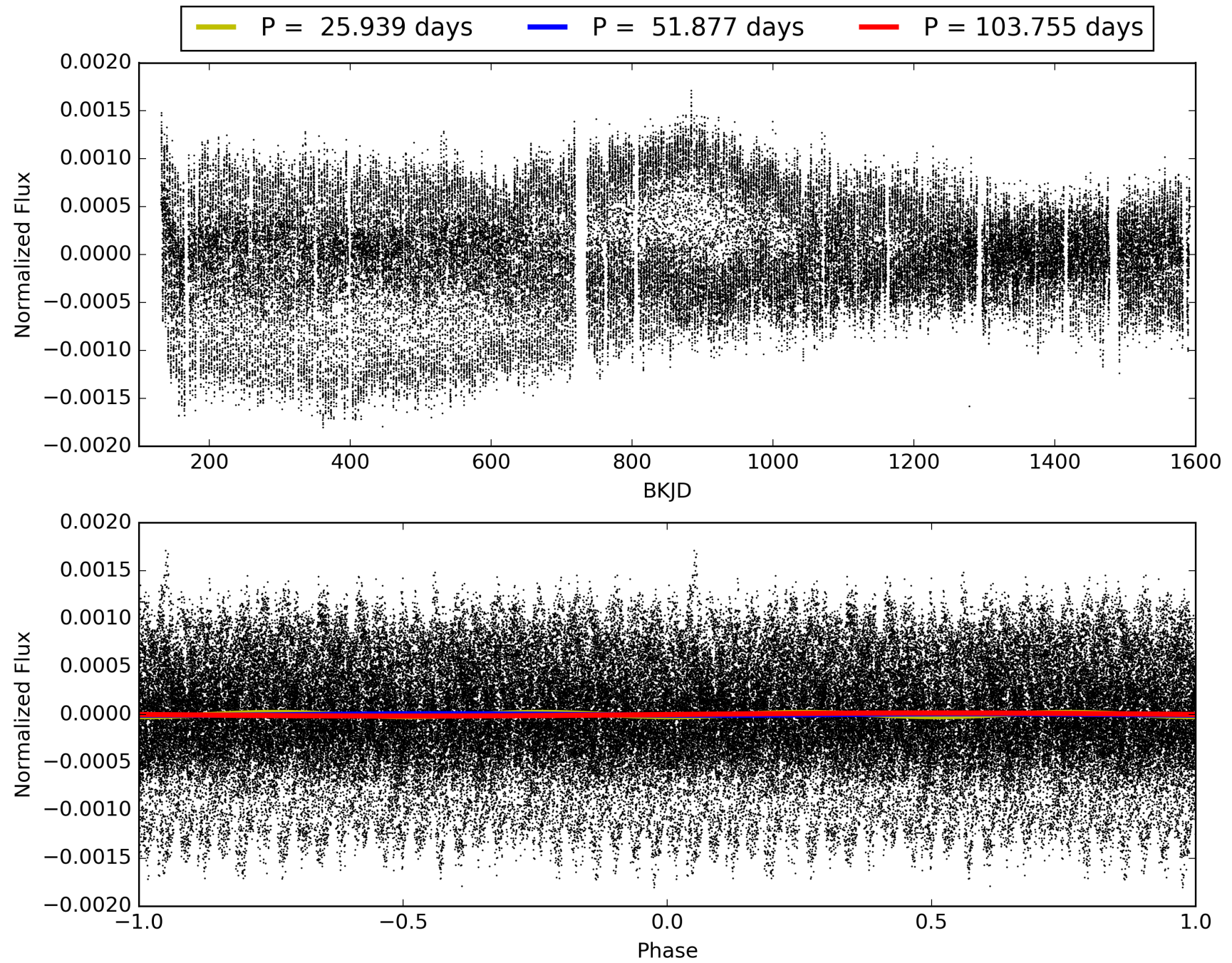
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:42:32 Z

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

TCE 006616211-05, PDC Light Curves

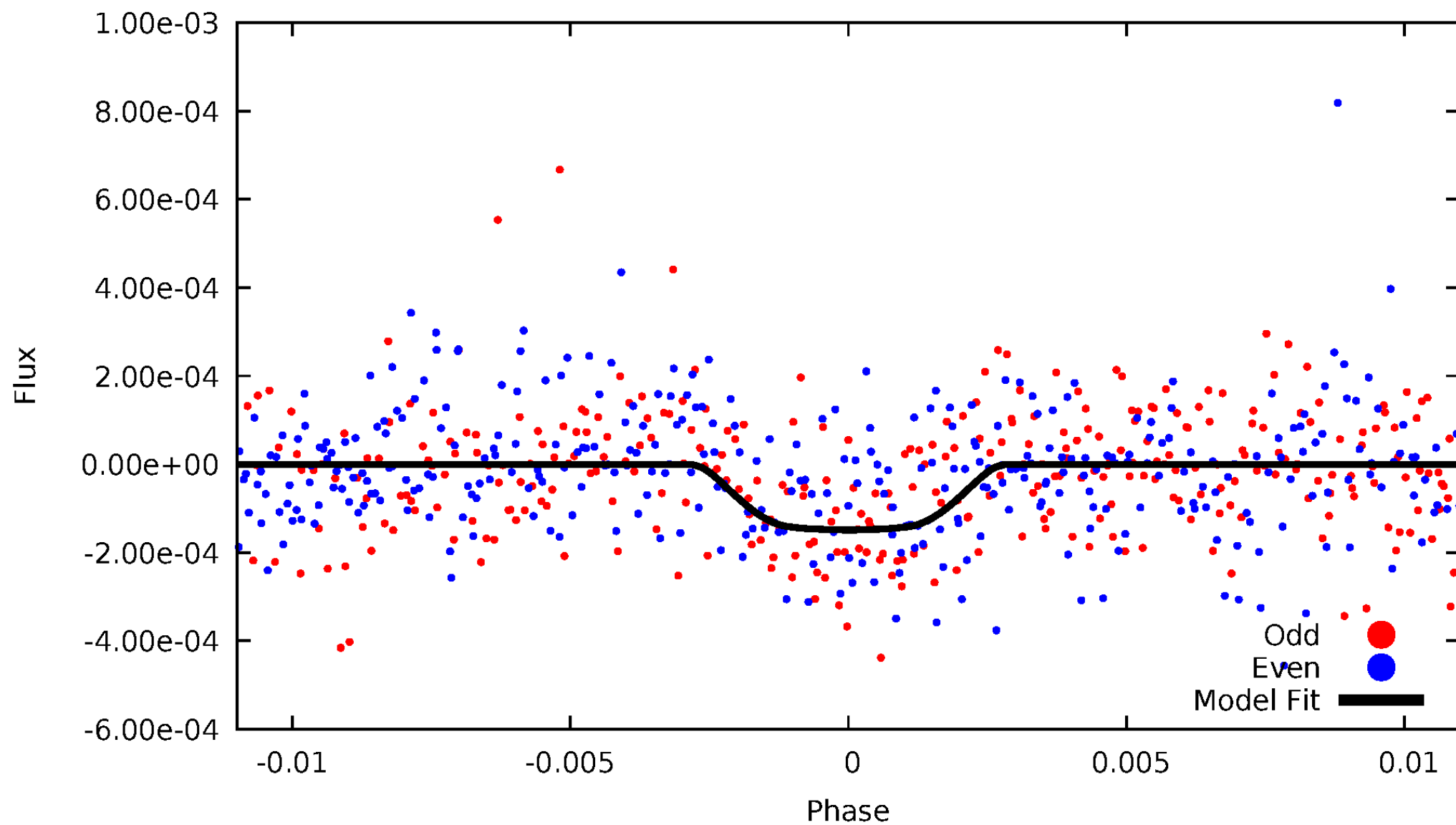


TCE 006616211-05



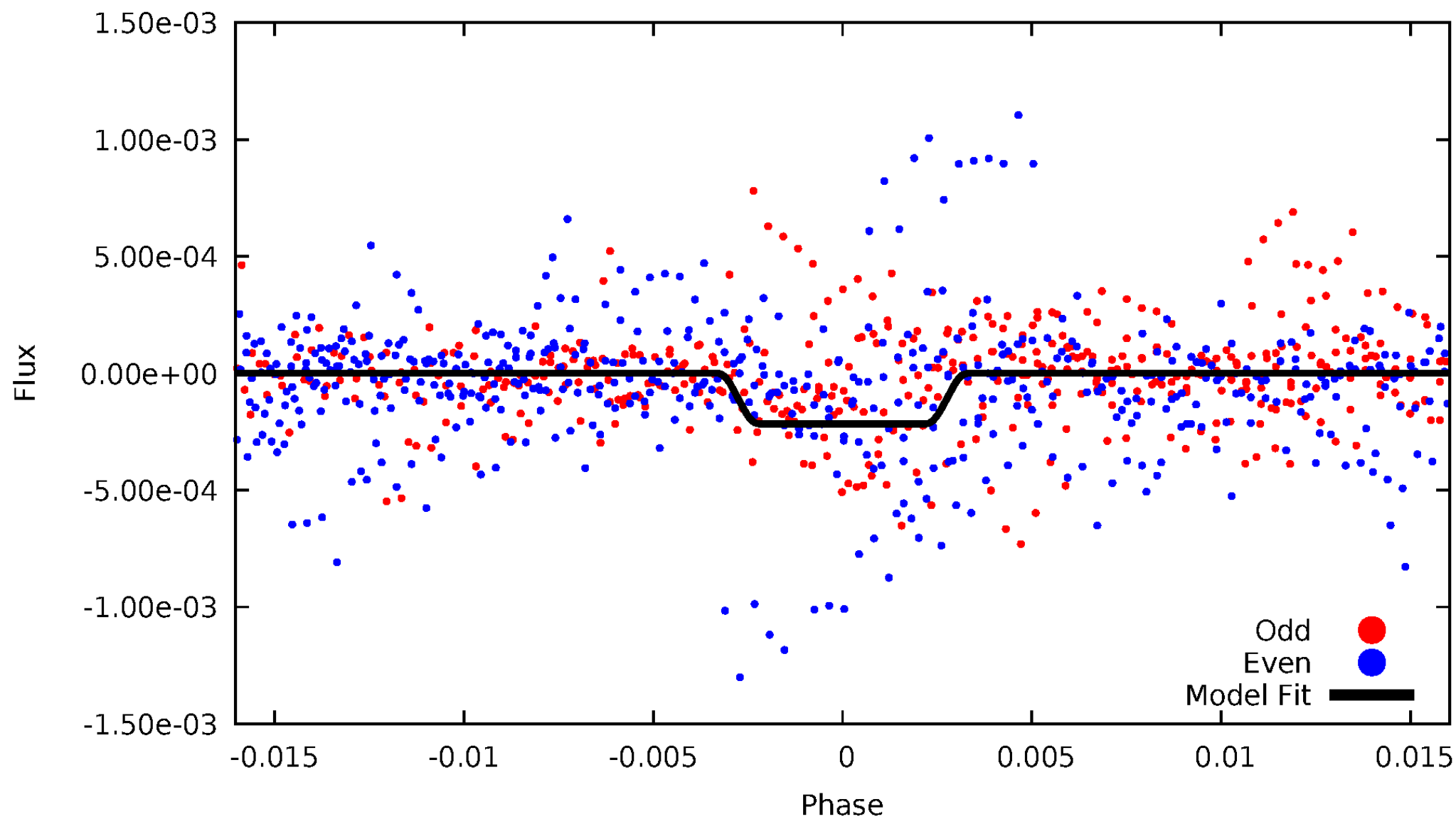
DV Odd/Even

TCE 006616211-05

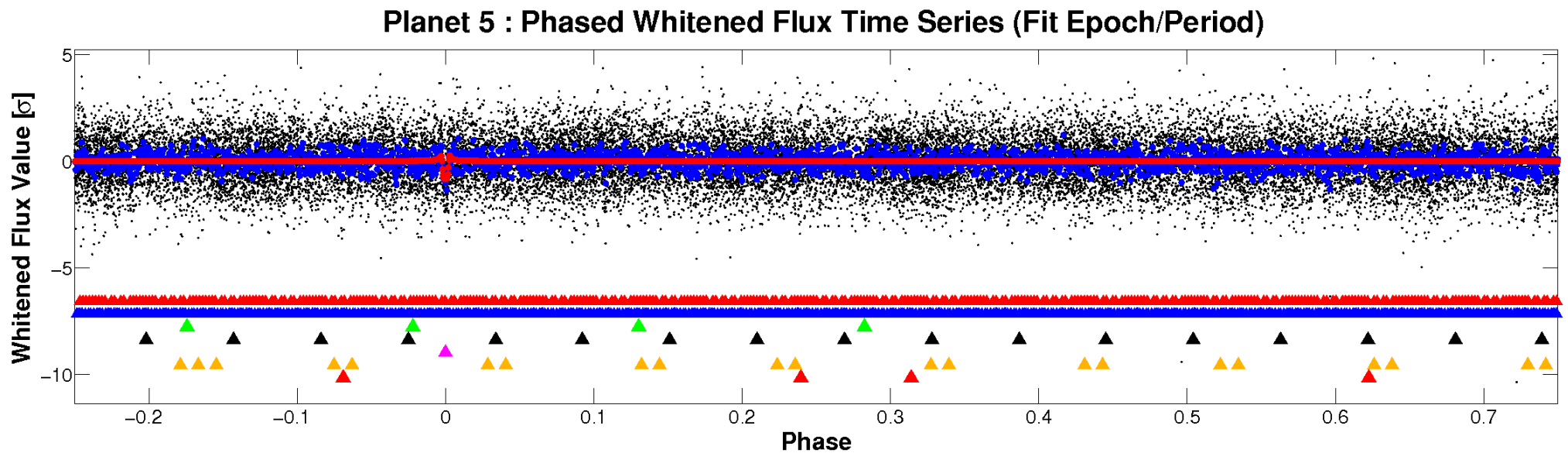
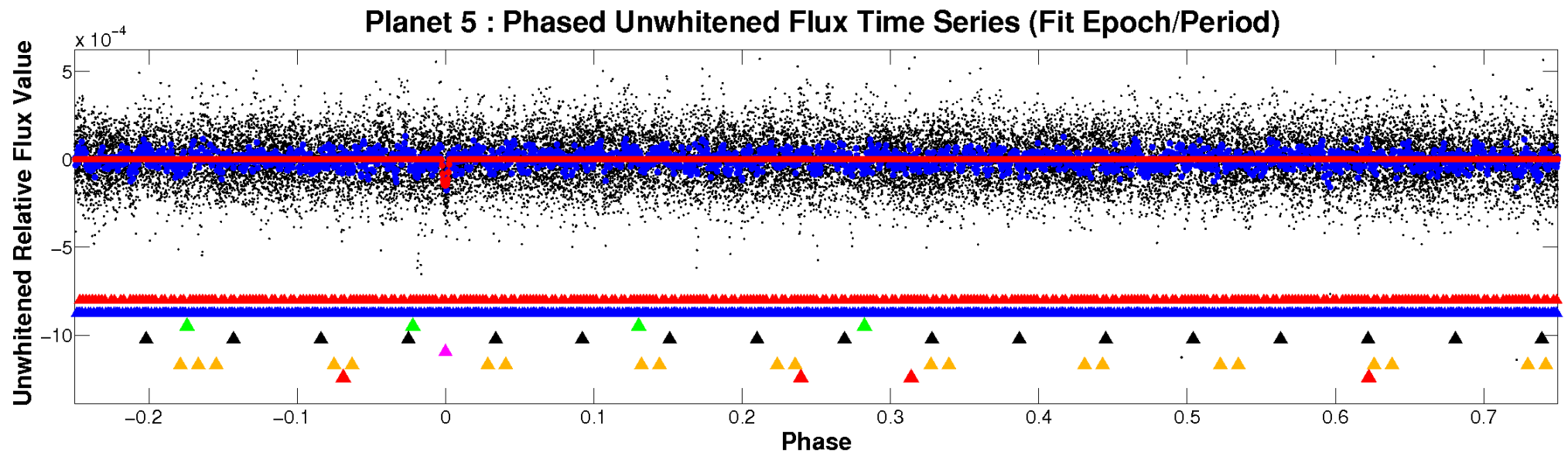


ALT Odd/Even

TCE 006616211-05

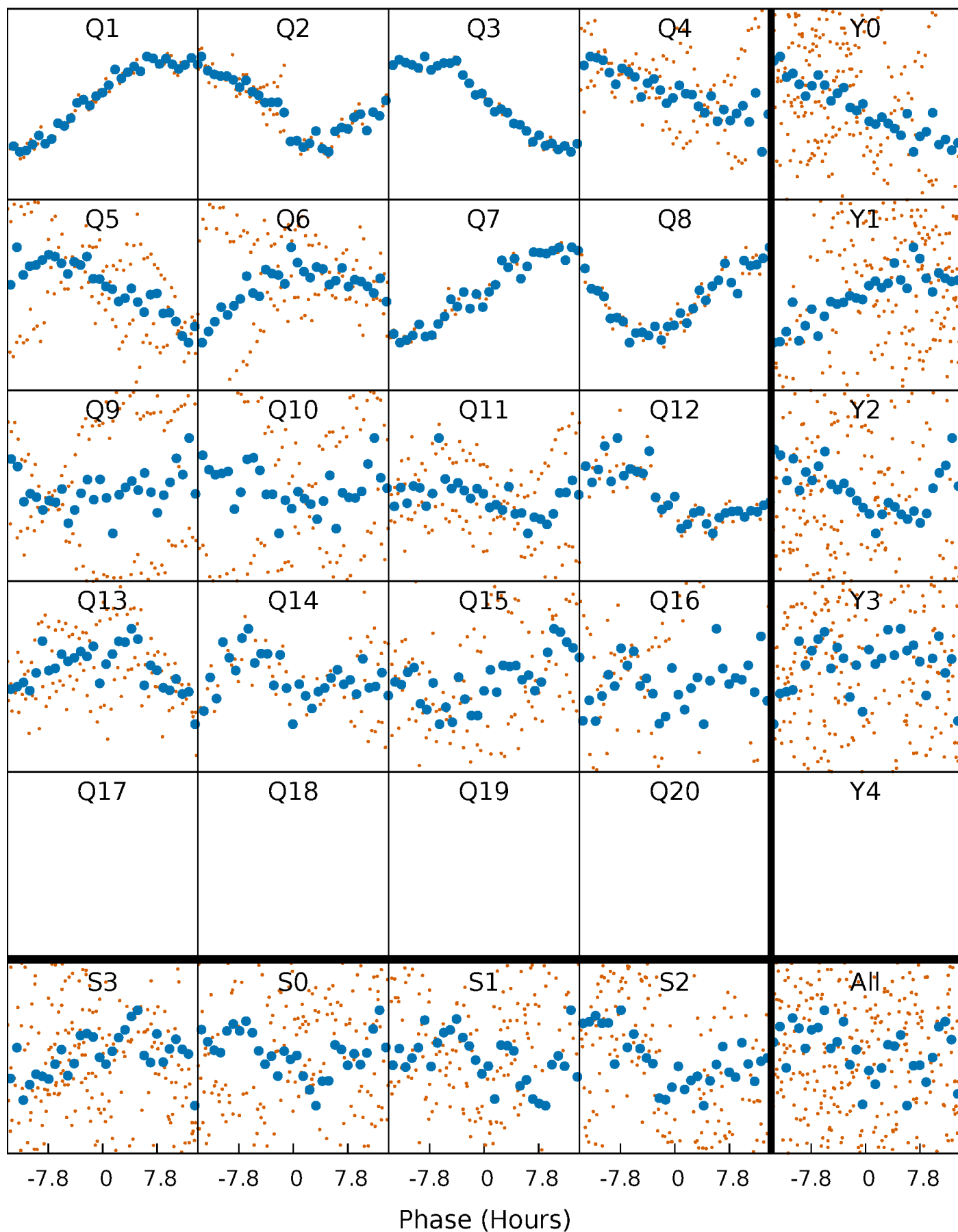


Non-Whitened Vs. Whitened Light Curve



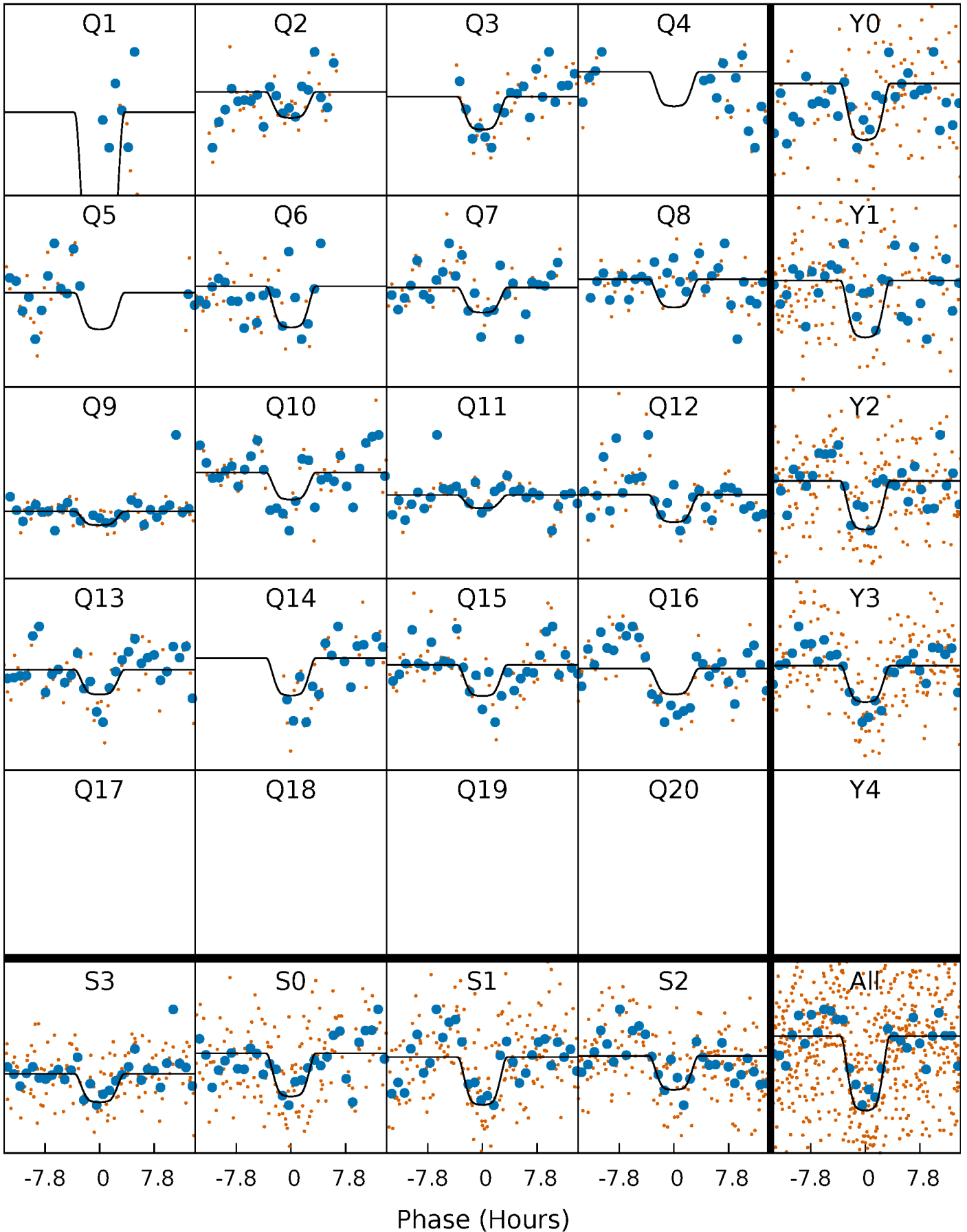
PDC Quarter-Phased Transit Curves

TCE 006616211-05 P= 51.877465 Days $T_0=154.766586$ (BKJD)



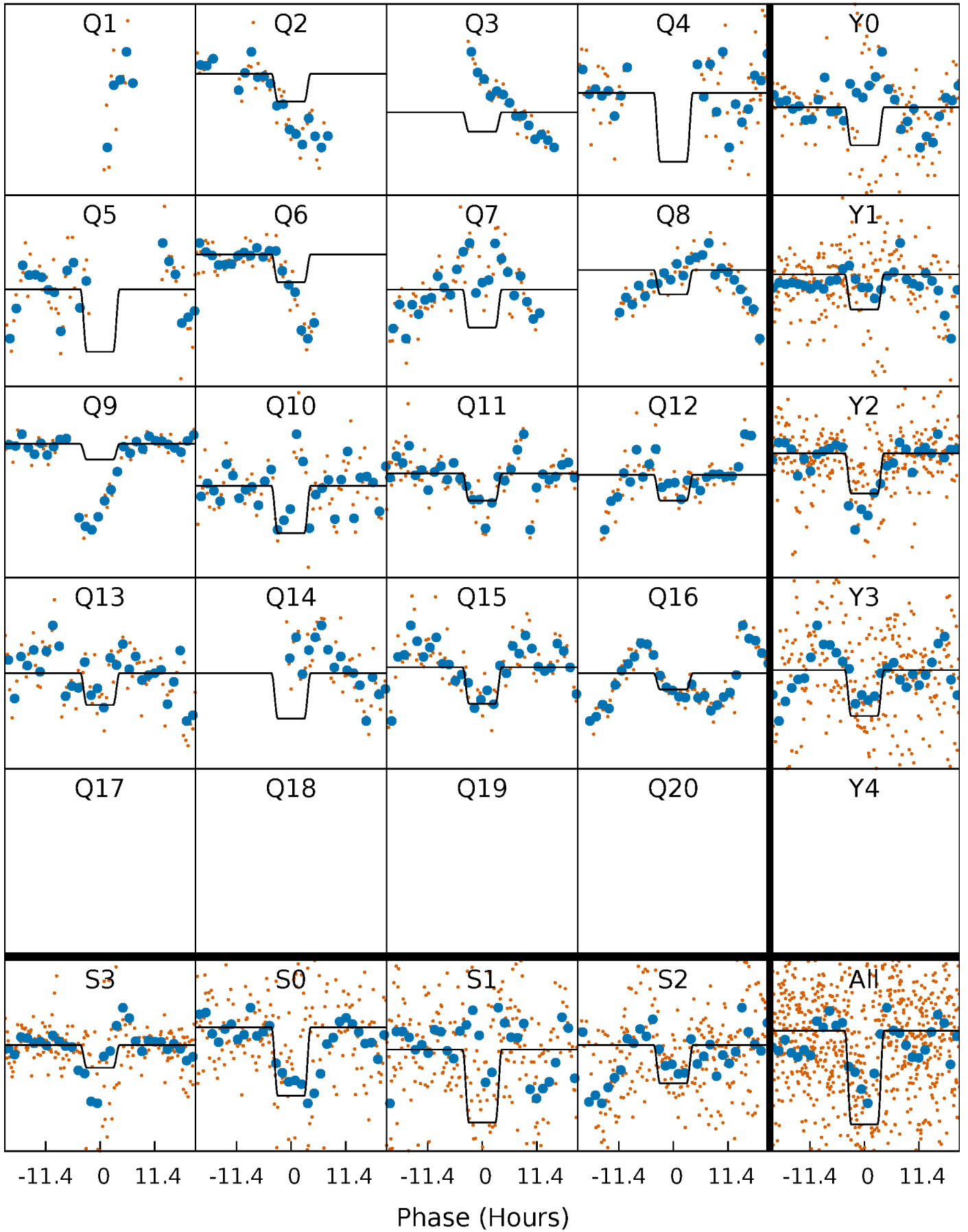
DV Quarter-Phased Transit Curves

TCE 006616211-05 P= 51.877465 Days $T_0=154.766586$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

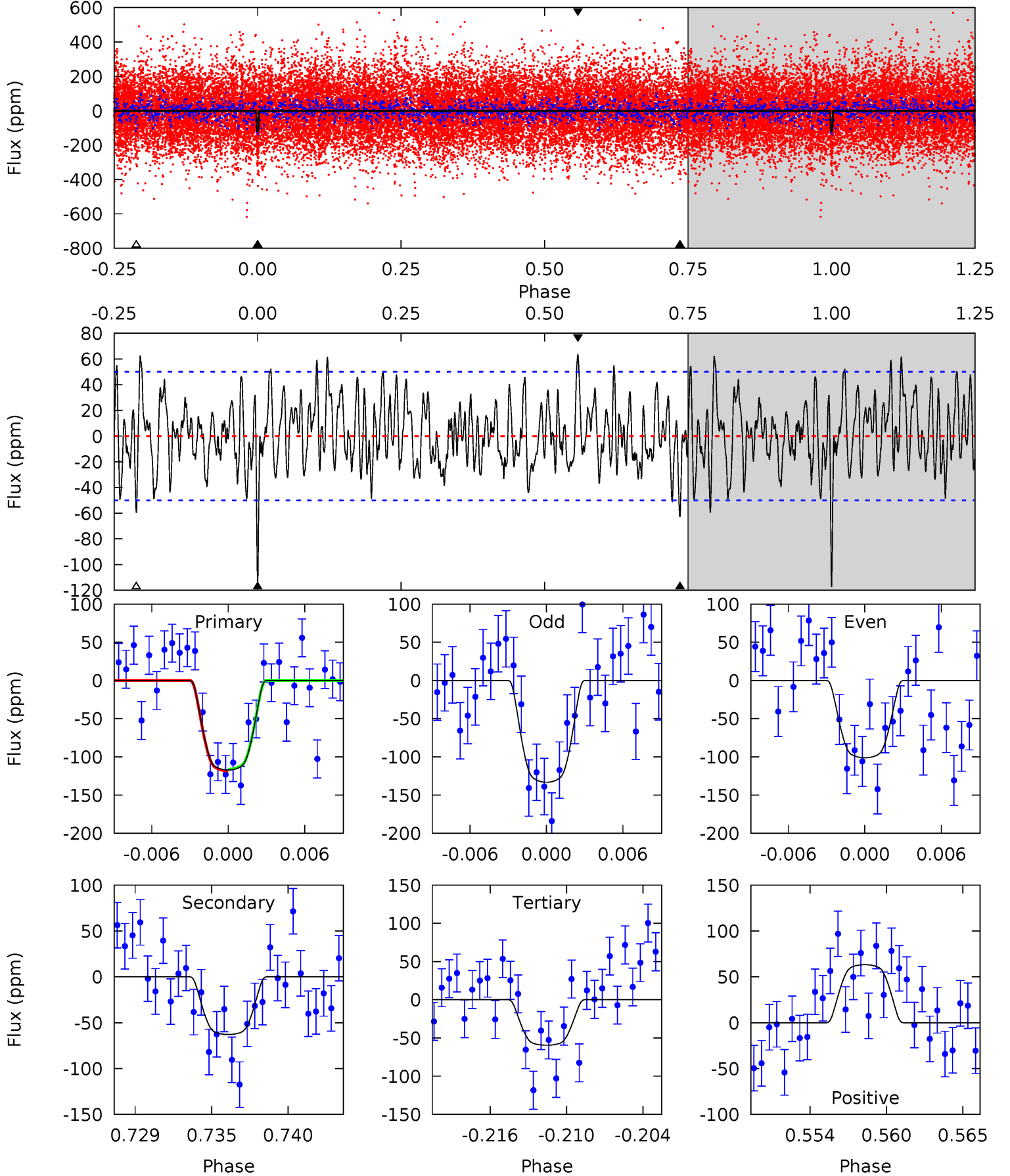
TCE 006616211-05 P= 51.878946 Days $T_0=154.729895$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-05, P = 51.877465 Days, E = 102.889121 Days

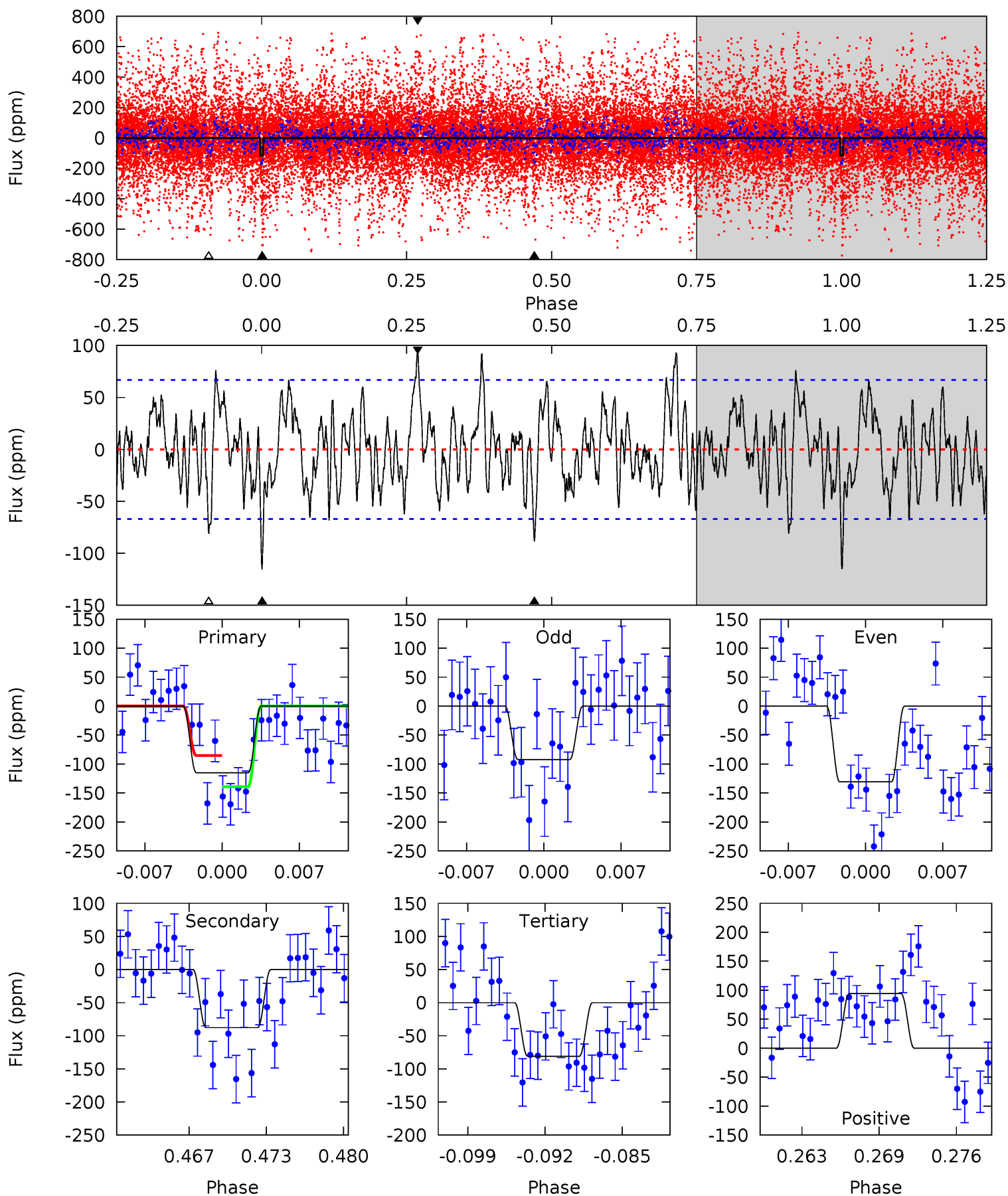
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	6.45	6.10	6.48	5.13	2.76	2.28	5.91	5.53	0.35	-0.03	1.64	0.82	0.35	0.11



Alt Model-Shift Uniqueness Test

006616211-05, P = 51.878946 Days, E = 102.850949 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.78	6.69	6.18	7.18	5.11	2.72	2.29	2.60	1.60	0.52	-0.49	1.47	1.20	0.45	2.07



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-63 ± 10	$5.14^{+0.85}_{-1.12}$	1277^{+73}_{-134}	4857^{+262}_{-255}	131^{+81}_{-37}
Alt.	-88 ± 13	$5.19^{+0.80}_{-1.18}$	1280^{+77}_{-131}	5224^{+323}_{-262}	184^{+114}_{-53}

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 $A_{obs} \gg 1.0$

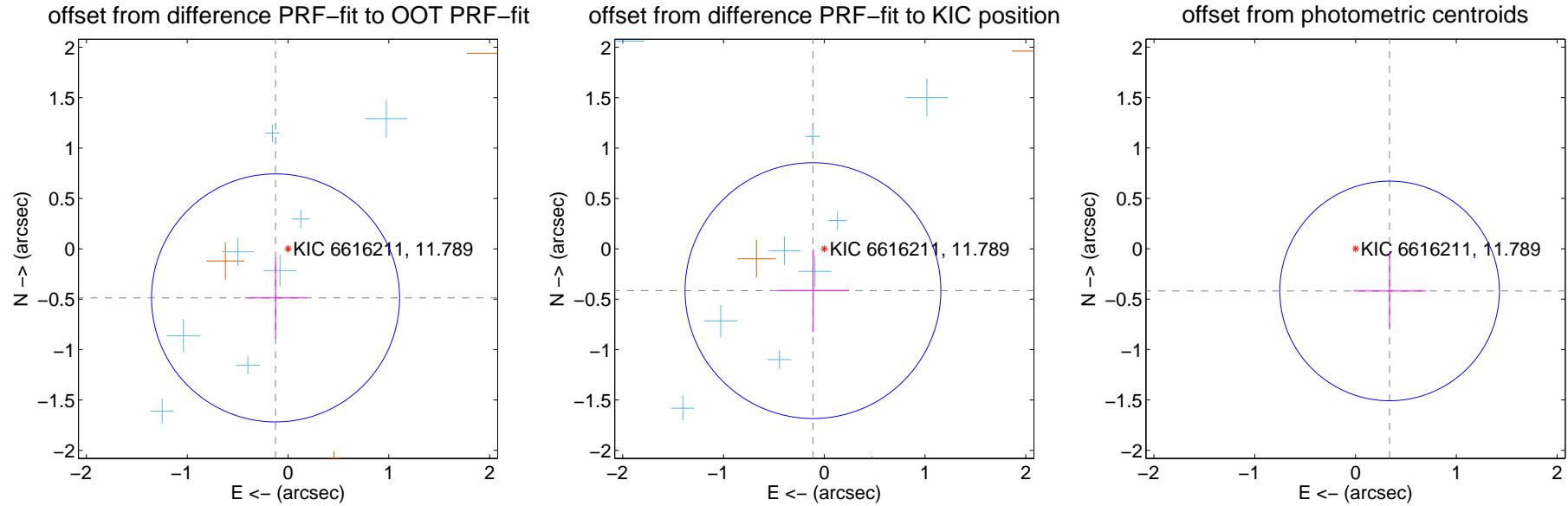
DV Centroid Data

Supplemental centroid analysis for 006616211-05. **Kepler magnitude: 11.79.** Transit SNR 8.70

There are 9 quarters with good PRF difference image offsets

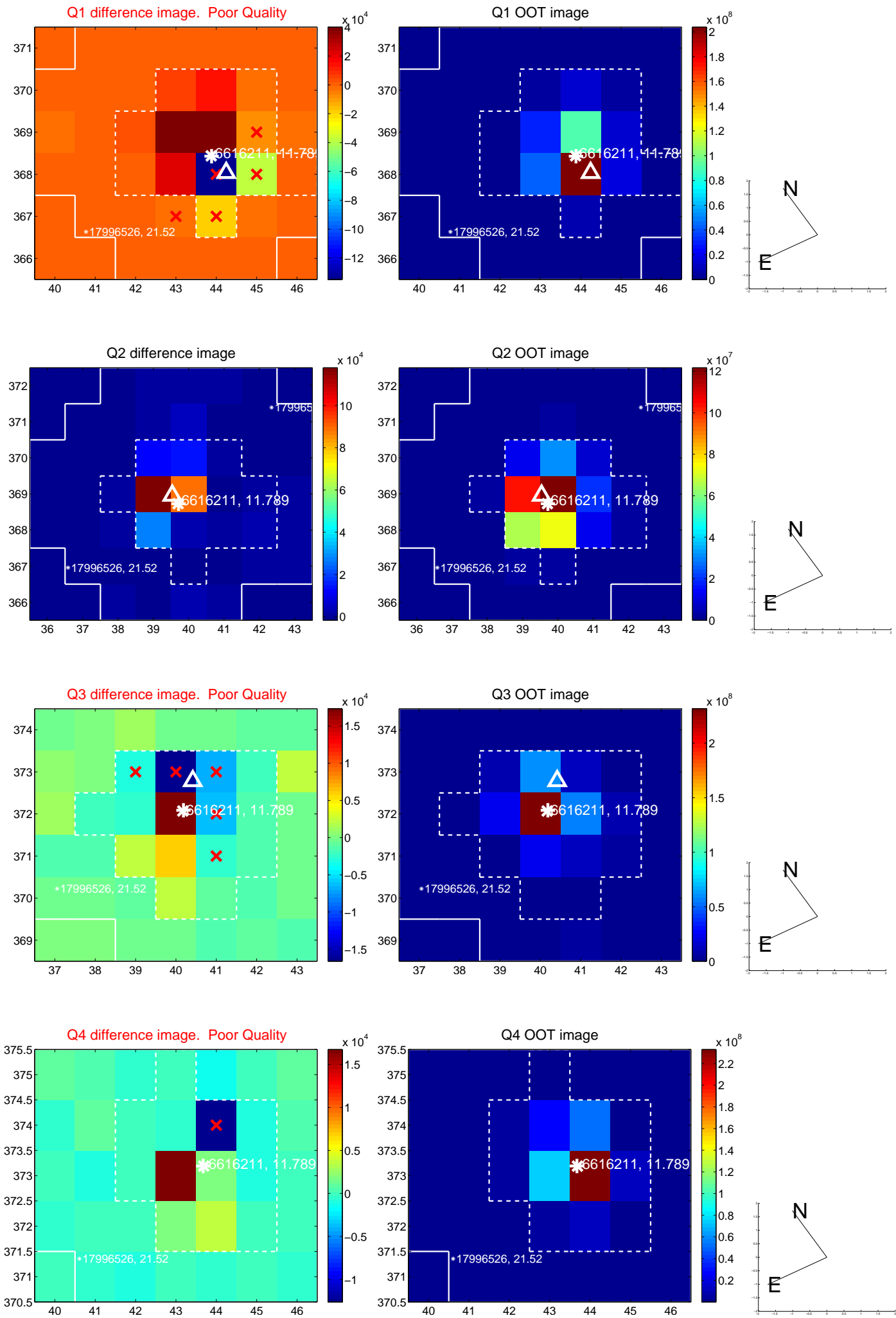
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.503 ± 0.410	1.23	0.124 ± 0.305	-0.487 ± 0.400
PRF-fit source offset from KIC position	0.430 ± 0.423	1.02	0.112 ± 0.357	-0.415 ± 0.412
photometric centroid source offset	0.54 ± 0.36	1.48	-0.34 ± 0.36	-0.42 ± 0.36

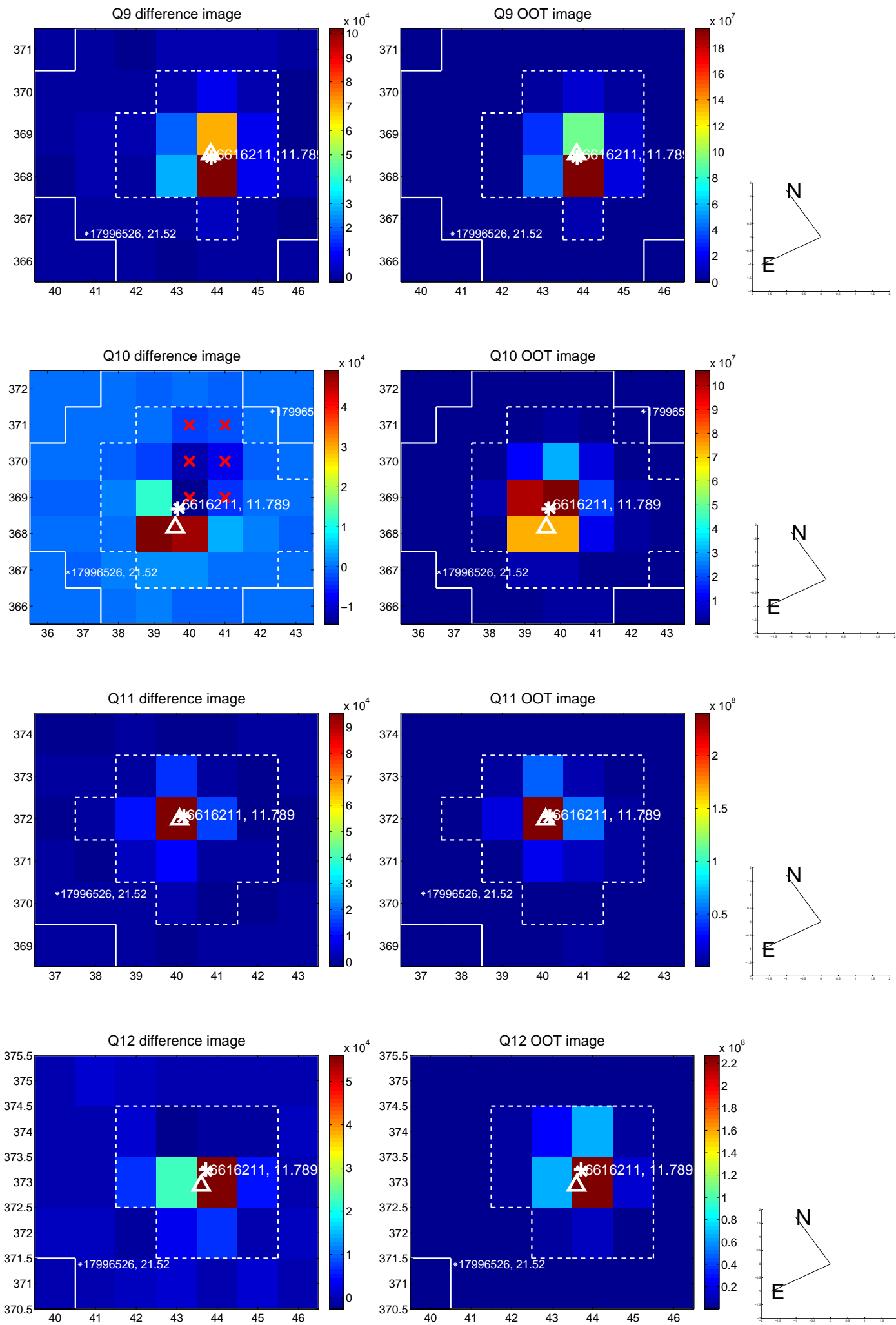


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

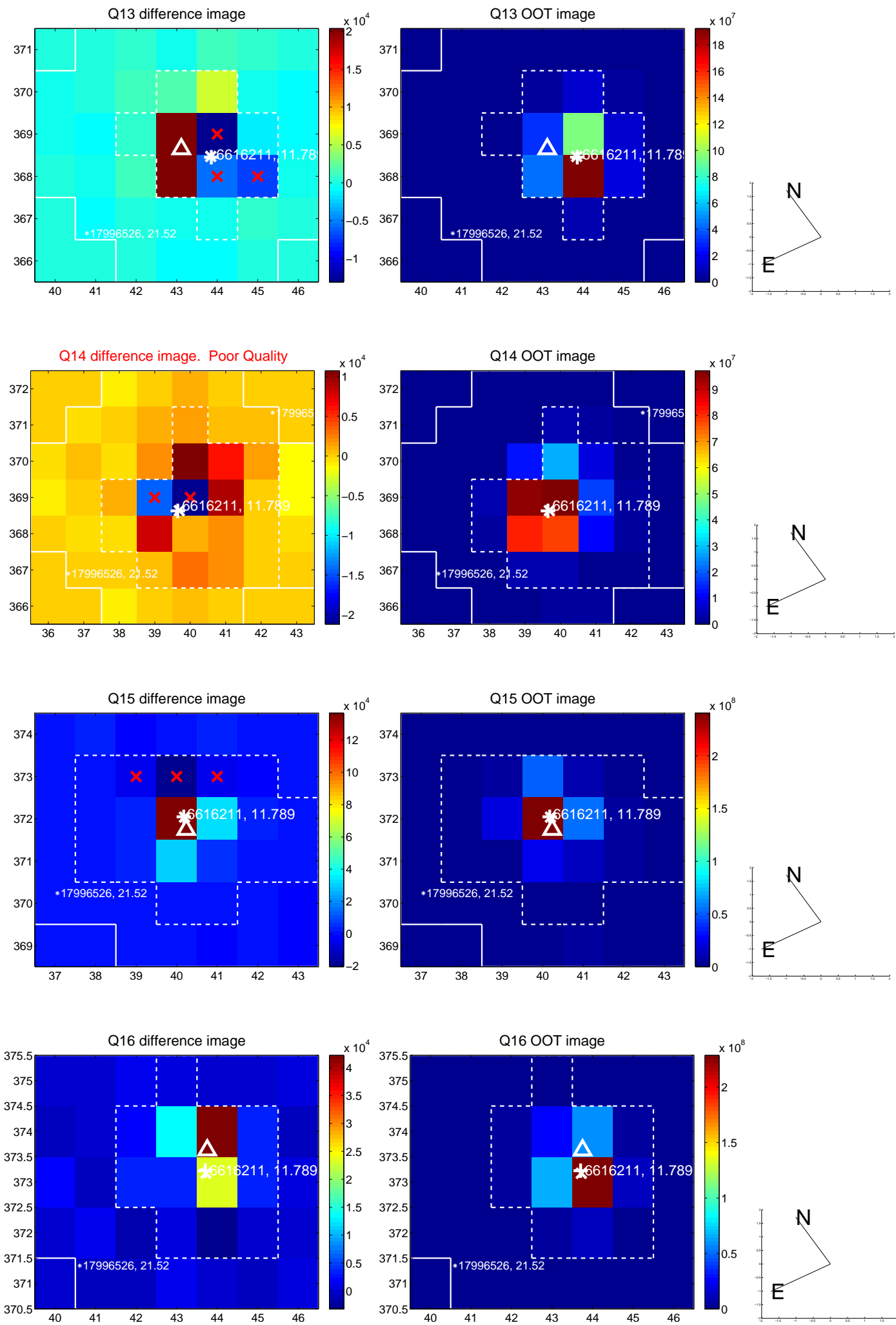
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



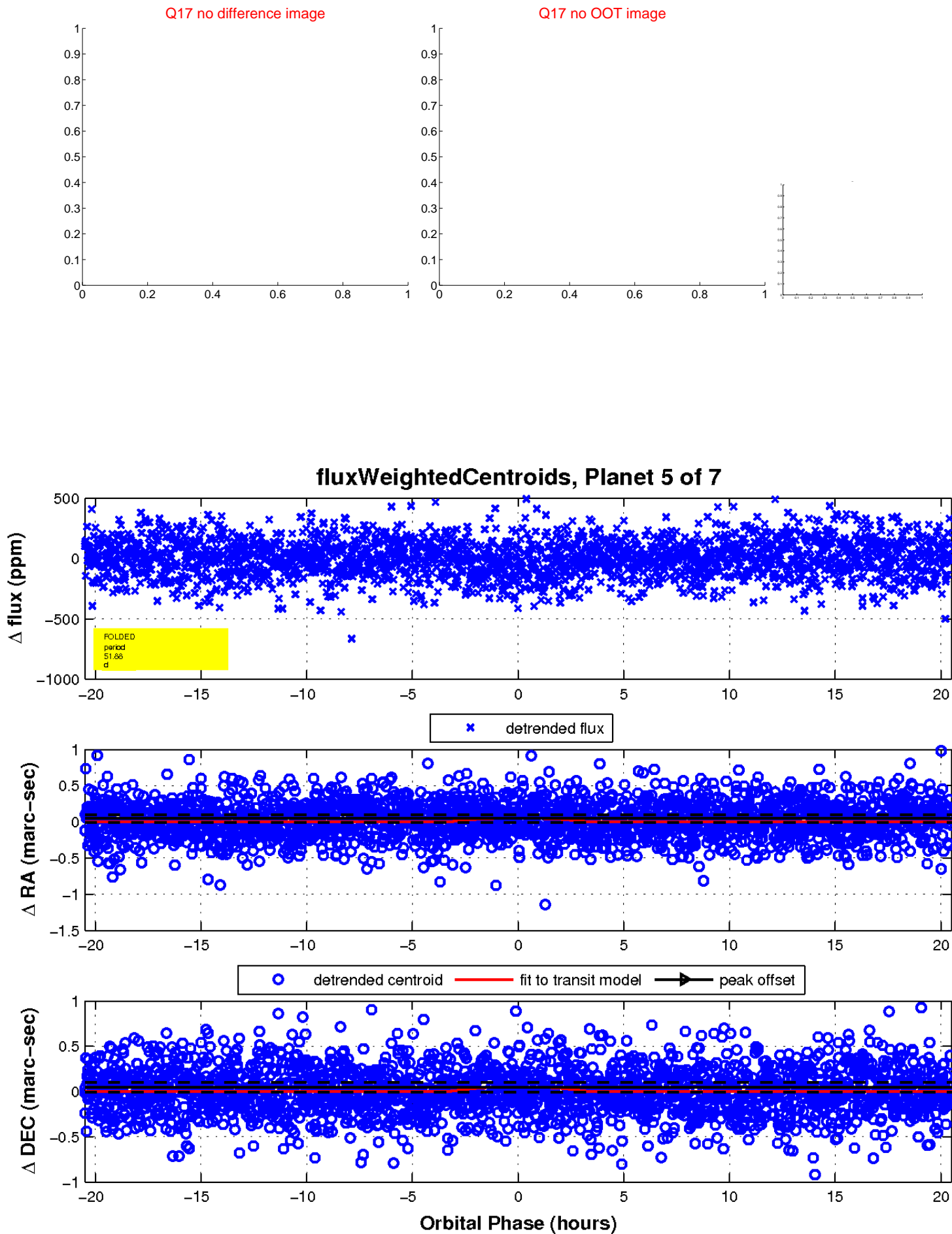
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

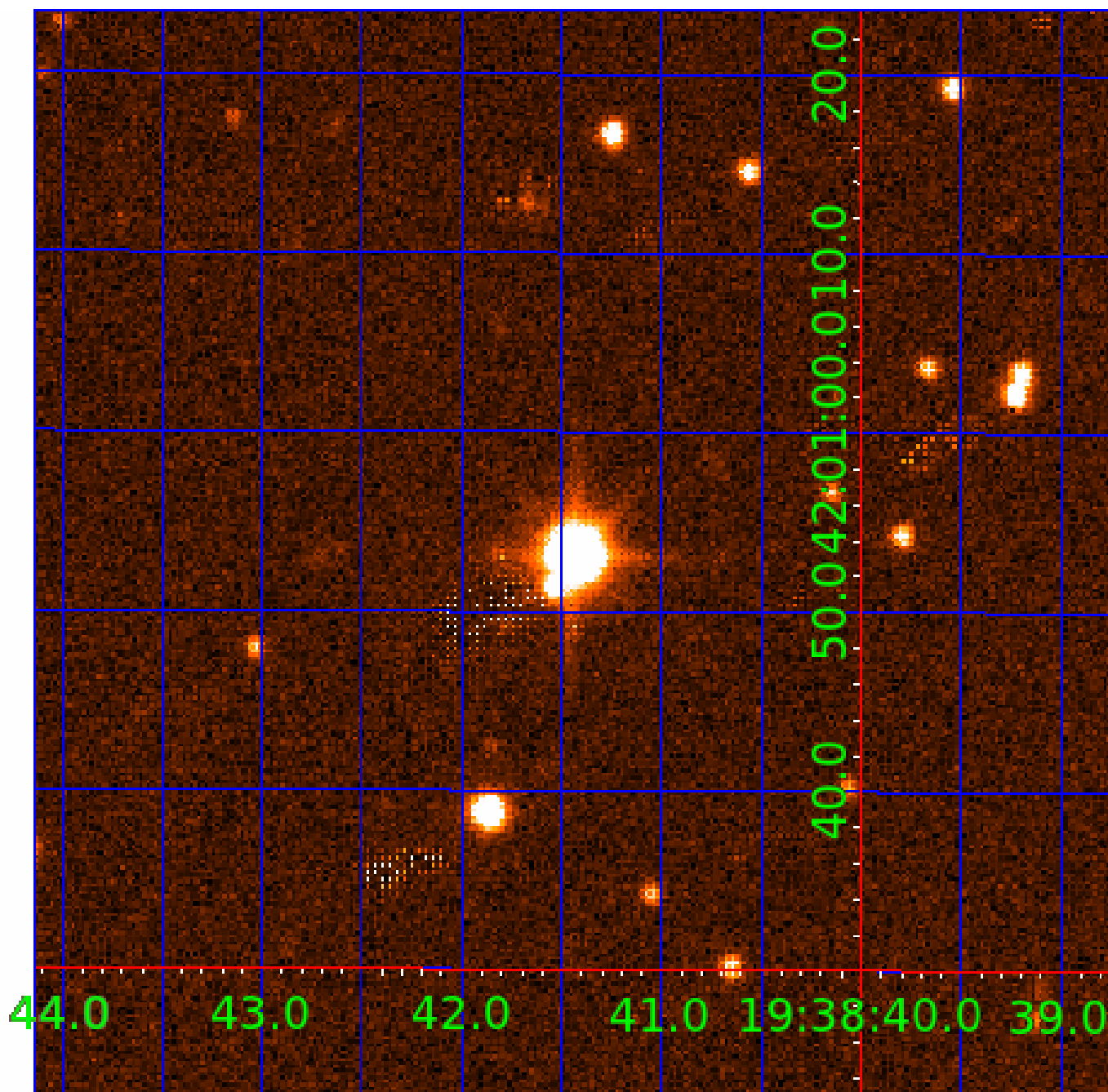


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
006616211-02	OBS	No	2.312286	133.442771	30.4	7.895	9.2	8.8	3.31	6489	2.38	11059.92
006616211-03	OBS	No	407.121359	169.422334	345.4	15.030	9.4	8.5	3.31	6489	9.15	11.21
006616211-04	OBS	No	85.443251	174.838350	158.5	7.758	8.1	8.2	3.31	6489	4.66	89.86
006616211-05	OBS	No	51.877465	154.766586	148.6	6.839	7.9	8.7	3.31	6489	5.31	174.78
006616211-06	OBS	No	67.377912	198.627054	149.8	10.943	7.9	7.4	3.31	6489	4.51	123.34
006616211-07	OBS	No	379.148675	222.934695	207.1	4.904	7.7	6.2	3.31	6489	5.43	12.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

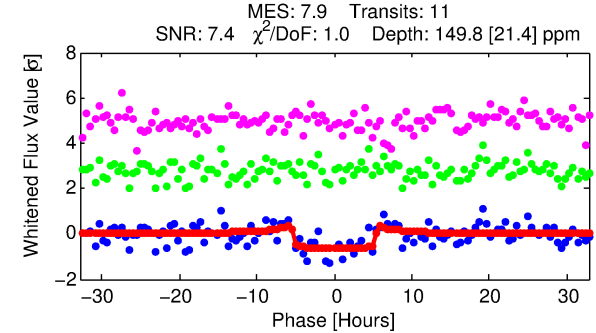
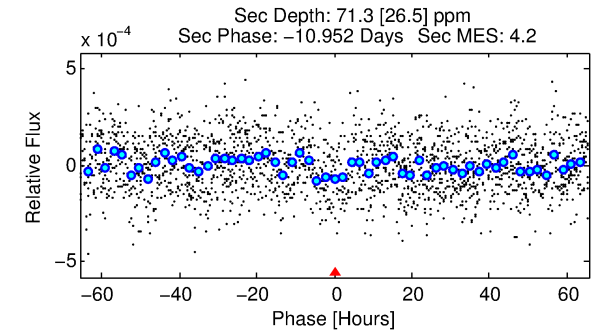
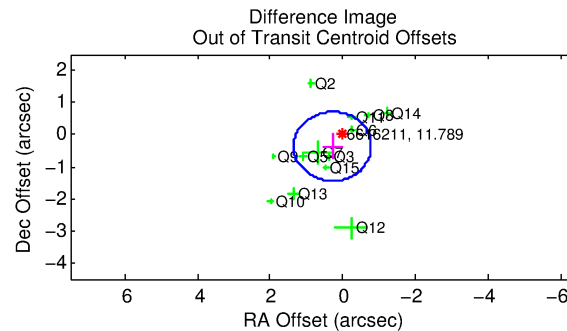
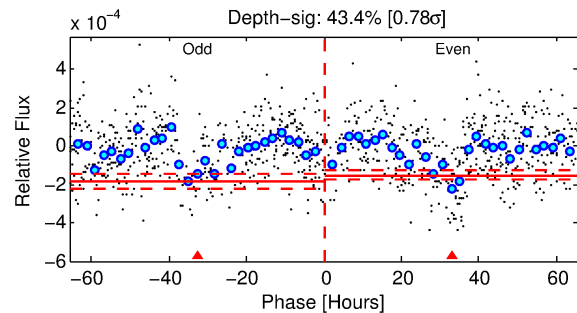
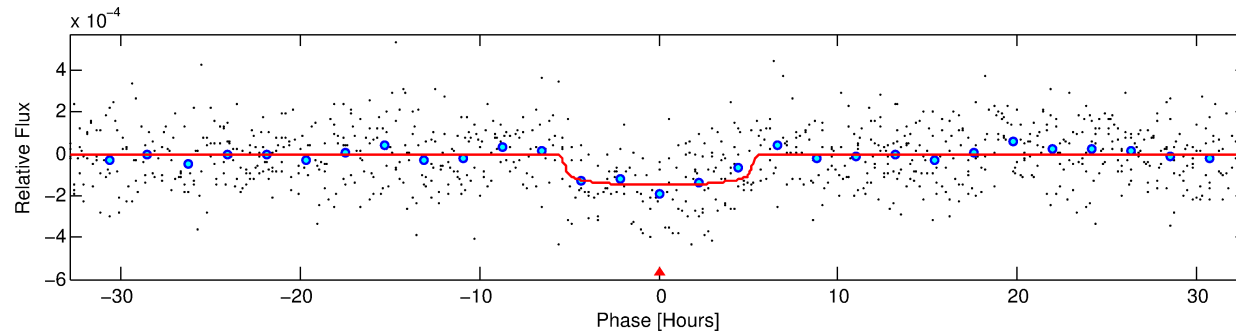
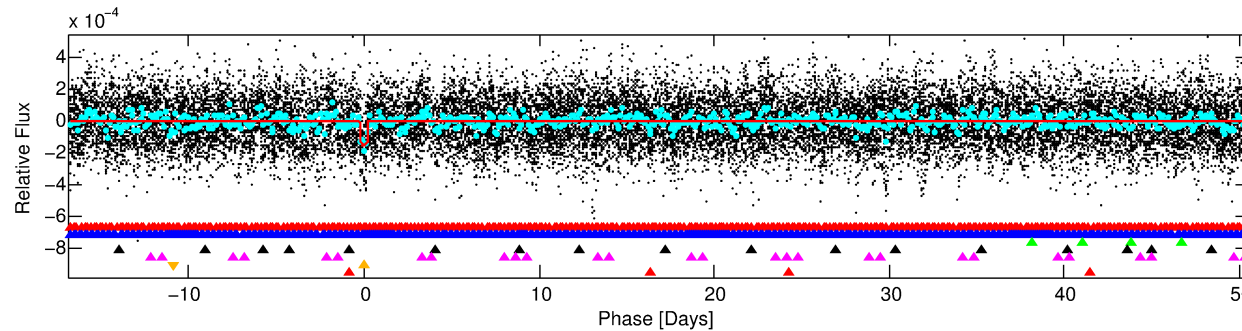
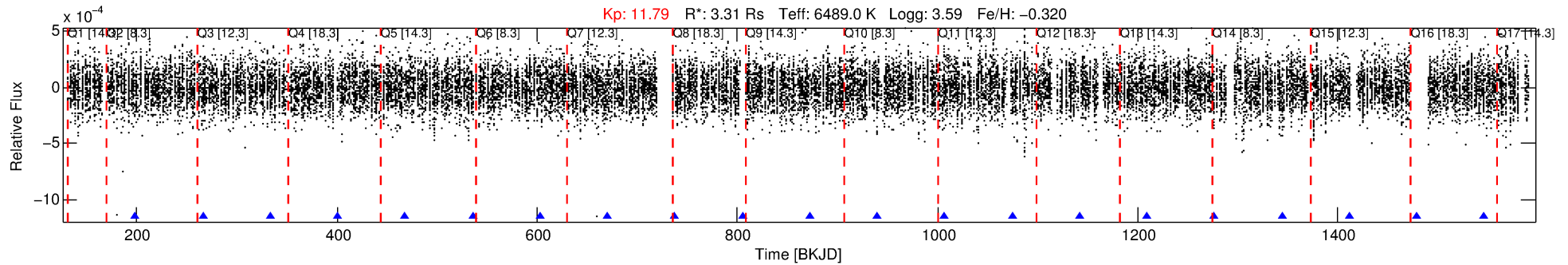
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-06

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 6 of 7 Period: 67.378 d



DV Fit Results:

Period = 67.37791 [0.00124] d
Epoch = 198.6271 [0.0145] BKJD
Rp/R* = 0.0125 [0.0033]
a/R* = 27.92 [39.28]
b = 0.82 [0.56]
Seff = 123.34 [77.02]
Teq = 850 [133] K
Rp = 4.51 [2.17] Re
a = 0.3752 [0.1447] AU
Ag = 271.94 [242.41] [1.12 σ]
Teffp = 5335 [874] K [5.08 σ]

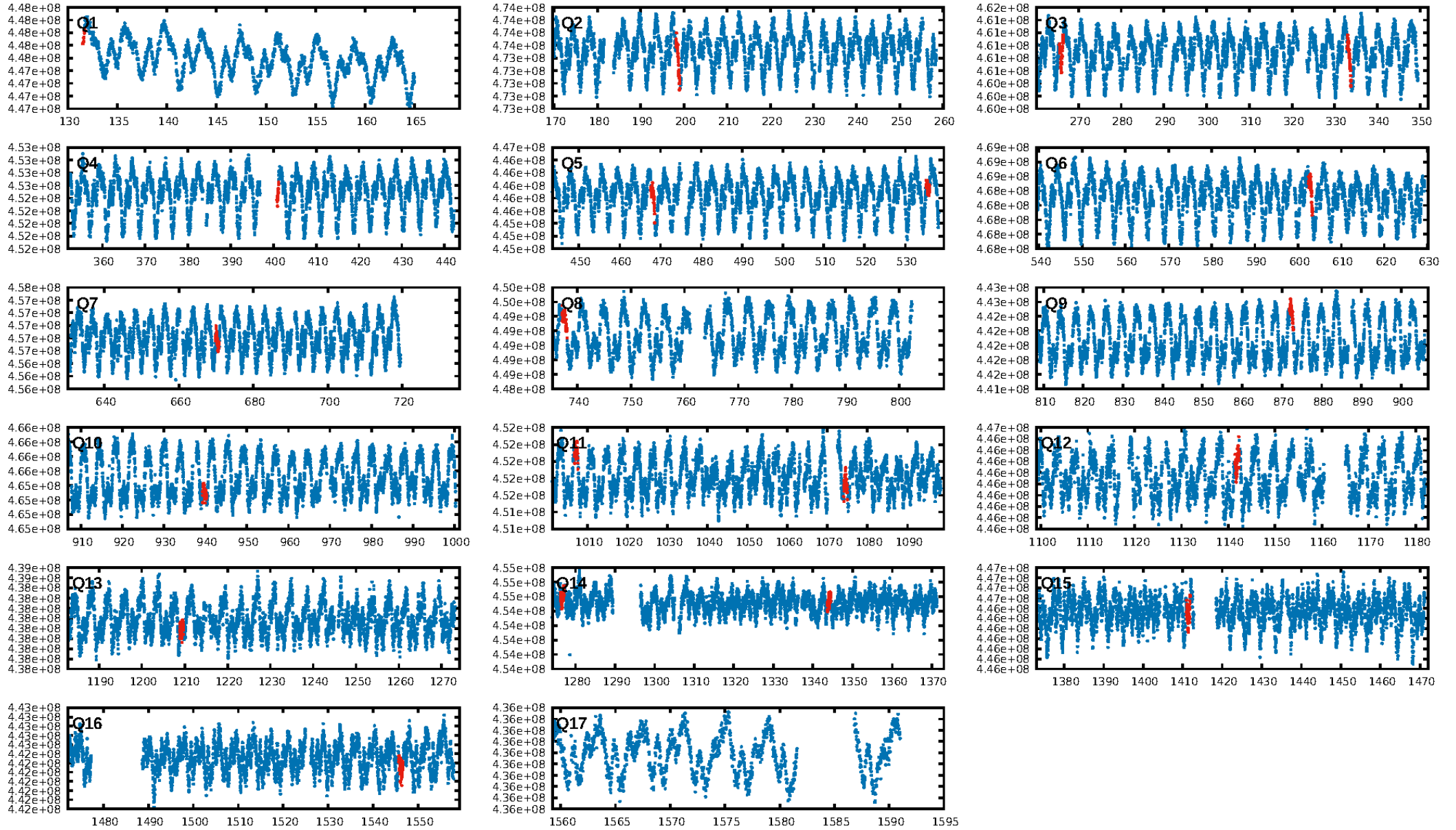
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.83 σ]
LongPeriod-sig: 100.0% [32.32 σ]
ModelChiSquare2-sig: 65.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.98e-08
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -7.331
Centroid-sig: 54.9%
Centroid-so: 0.129 arcsec [0.37 σ]
OotOffset-rm: 0.467 arcsec [1.31 σ]
OotOffset-st: 4/4/2/3 [13]
KicOffset-rm: 0.450 arcsec [1.22 σ]
KicOffset-st: 4/4/2/3 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 0.08 [1/13]

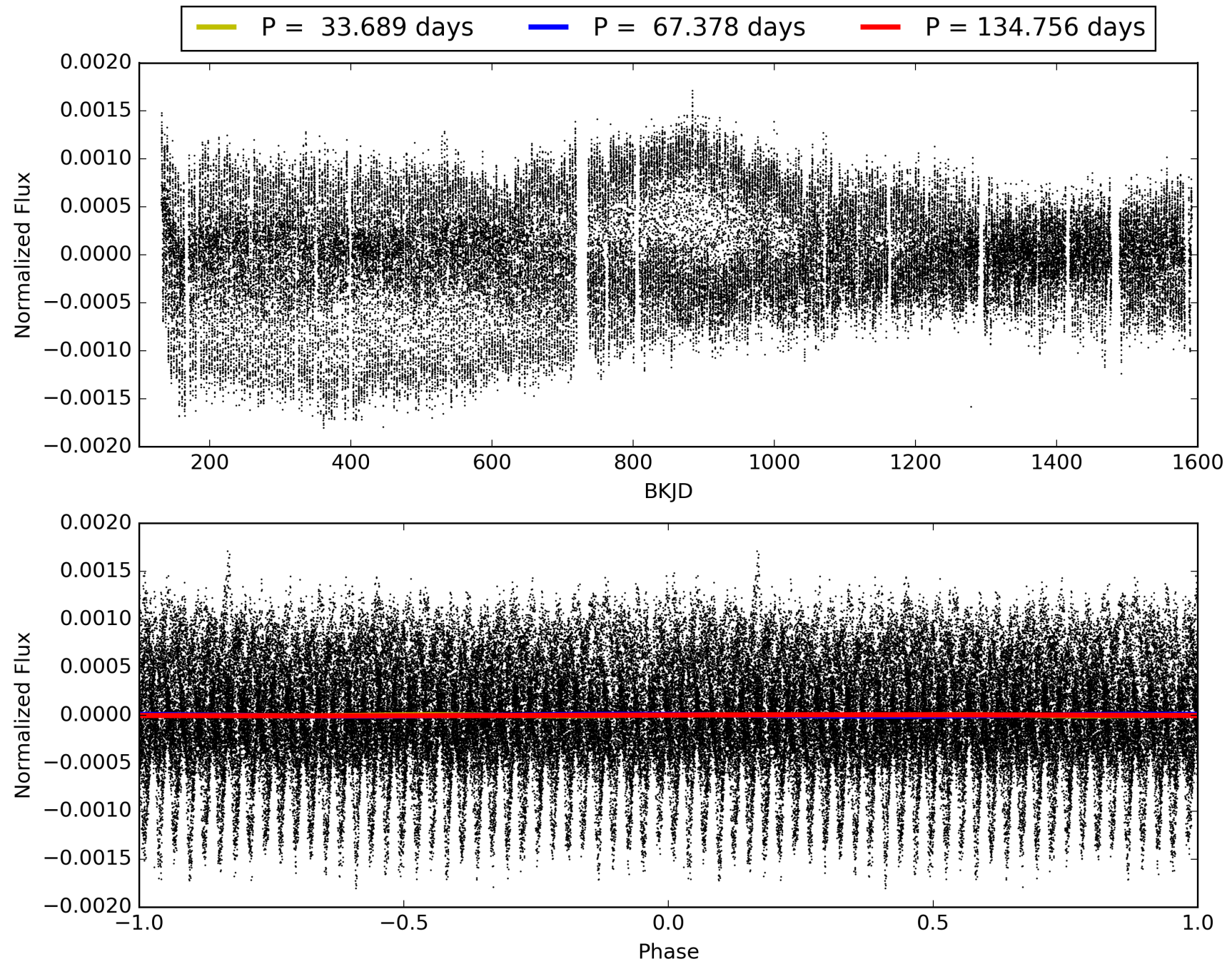
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:42:37 Z

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

TCE 006616211-06, PDC Light Curves

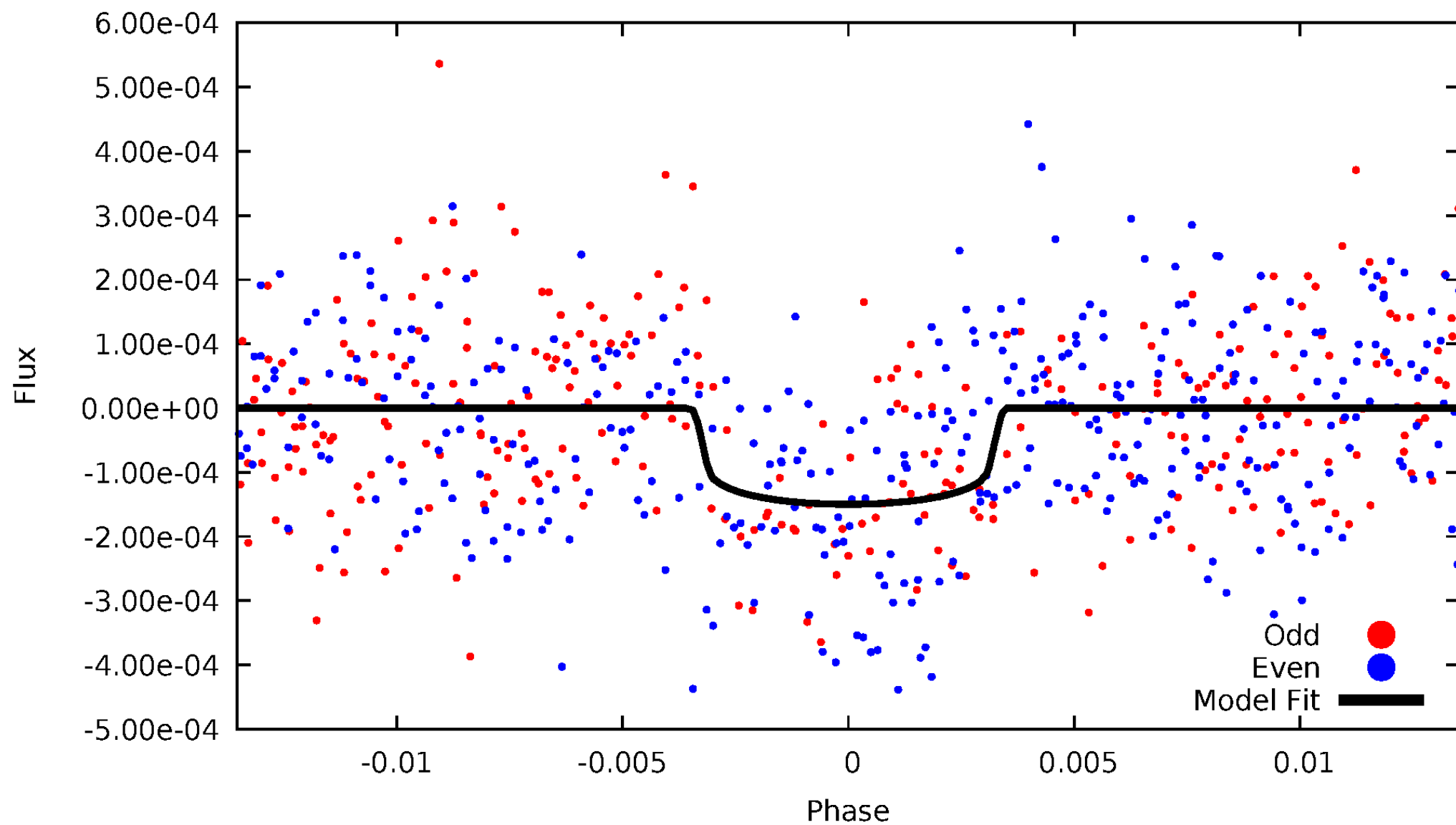


TCE 006616211-06



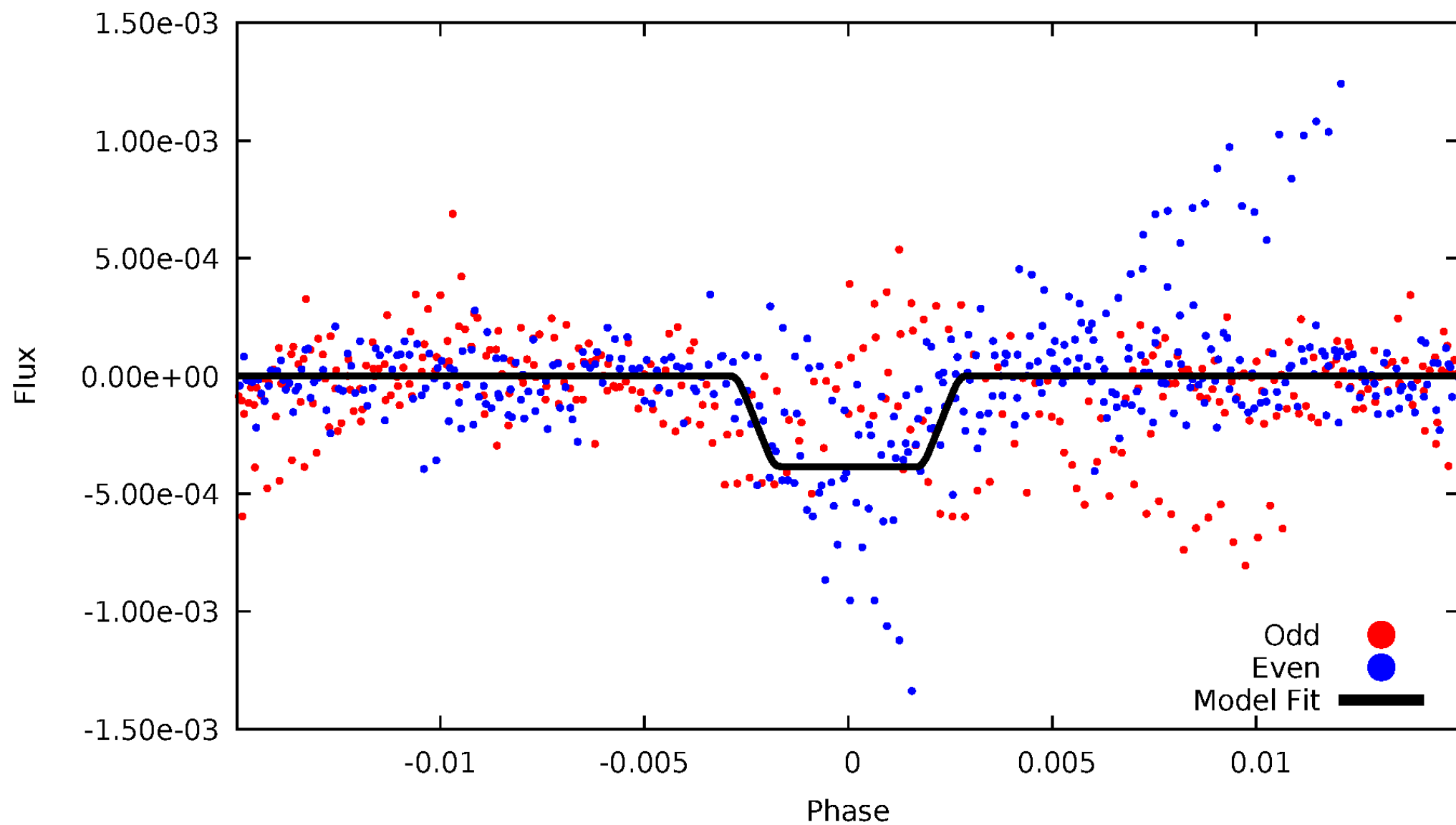
DV Odd/Even

TCE 006616211-06



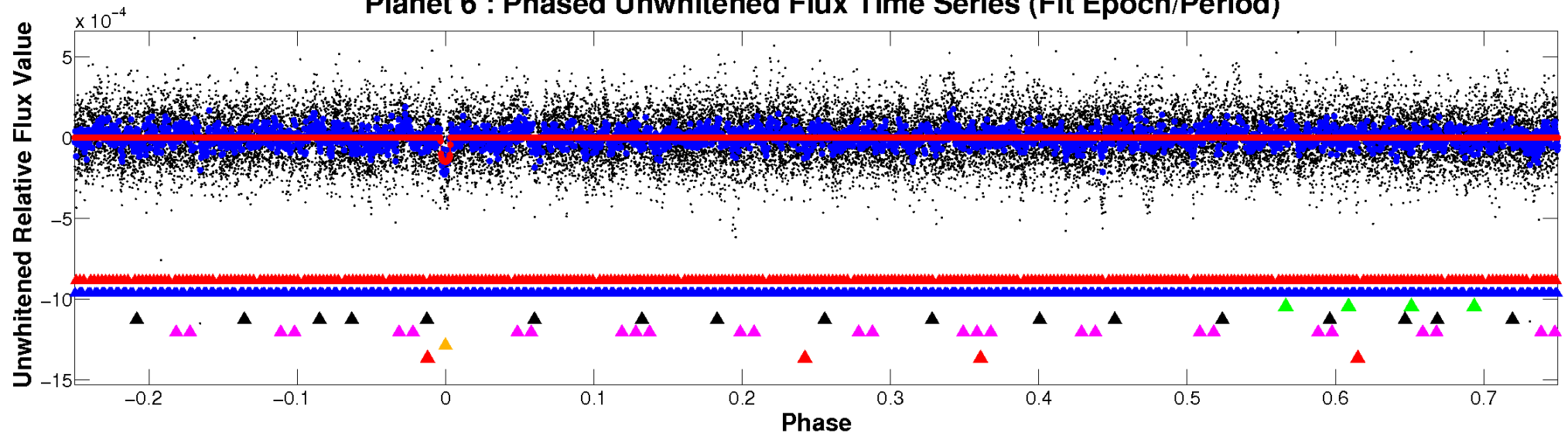
ALT Odd/Even

TCE 006616211-06

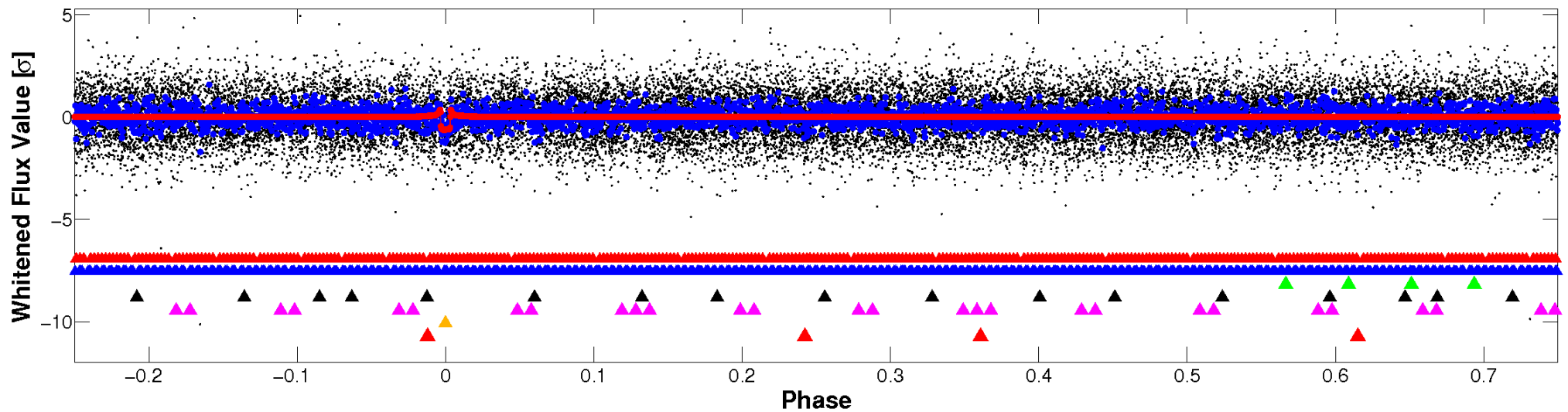


Non-Whitened Vs. Whitened Light Curve

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

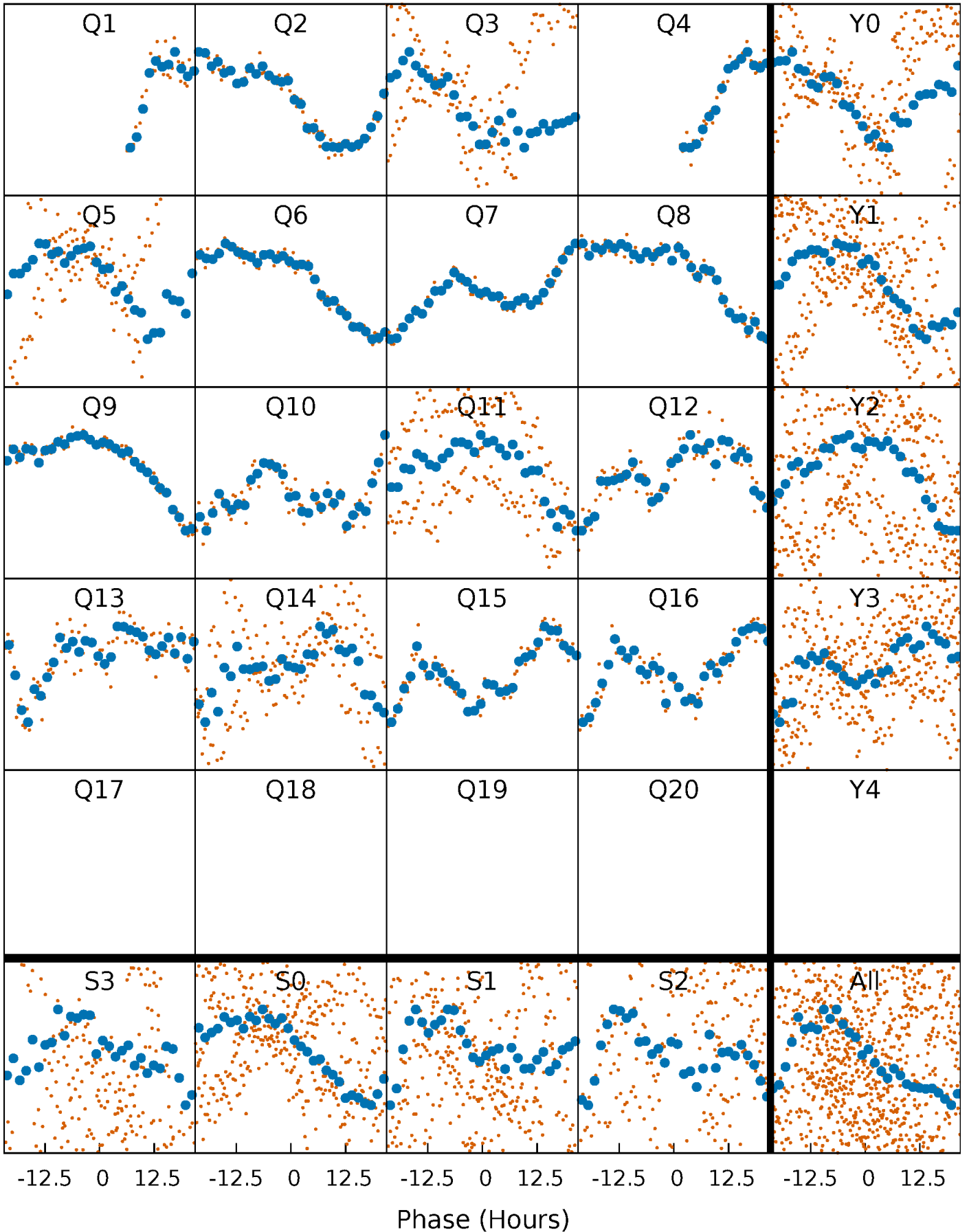


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



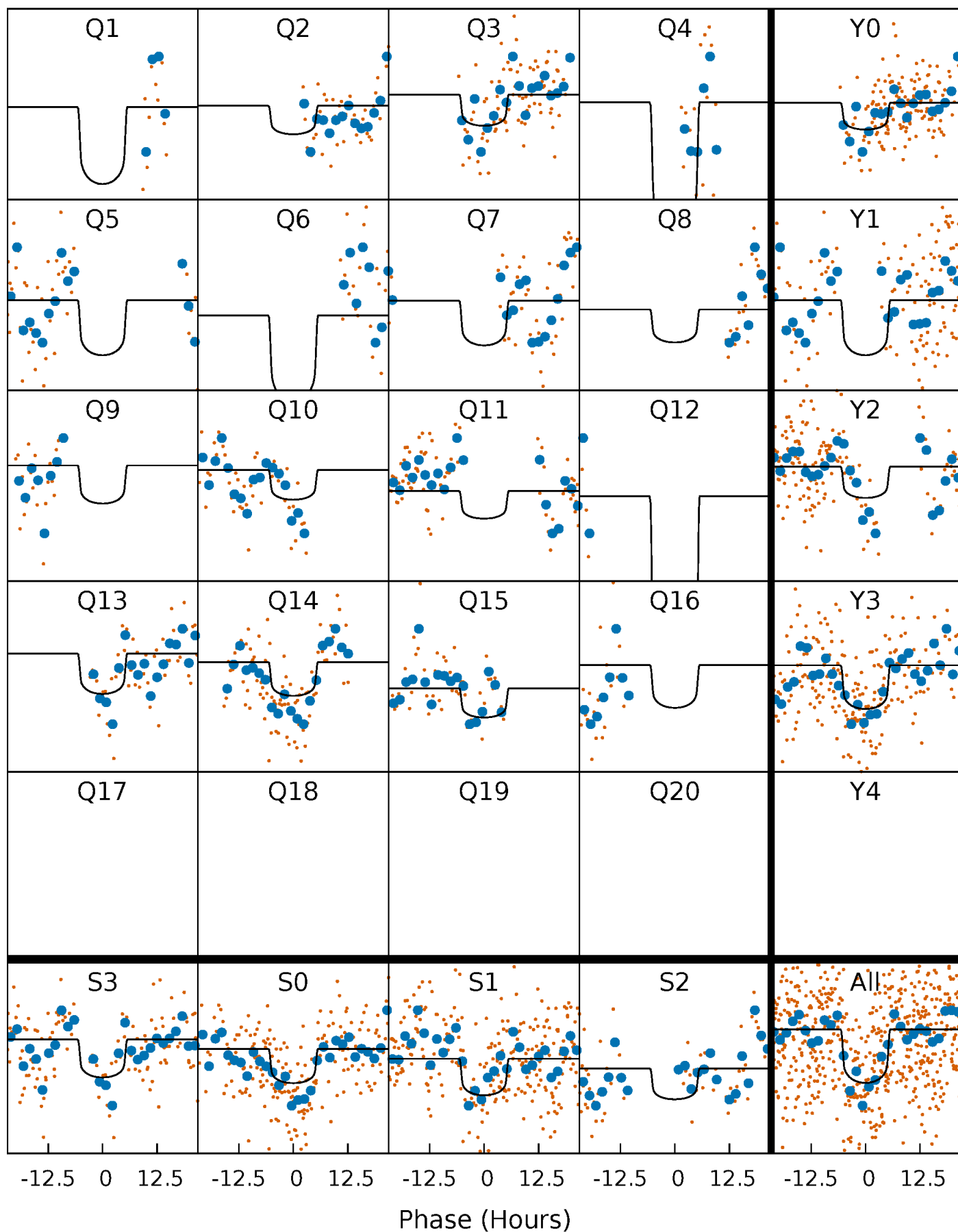
PDC Quarter-Phased Transit Curves

TCE 006616211-06 P= 67.377912 Days $T_0=198.627054$ (BKJD)



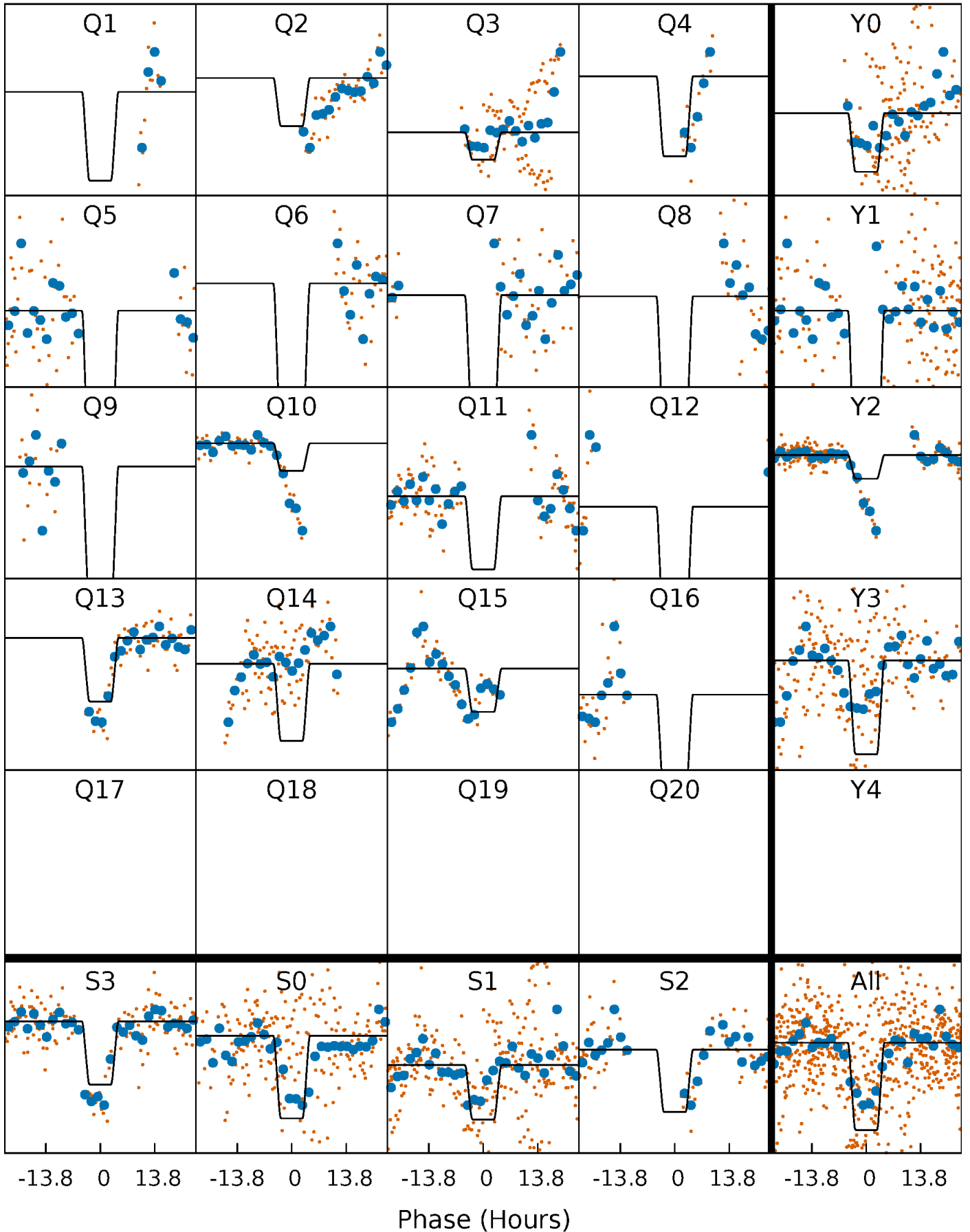
DV Quarter-Phased Transit Curves

TCE 006616211-06 P= 67.377912 Days $T_0=198.627054$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

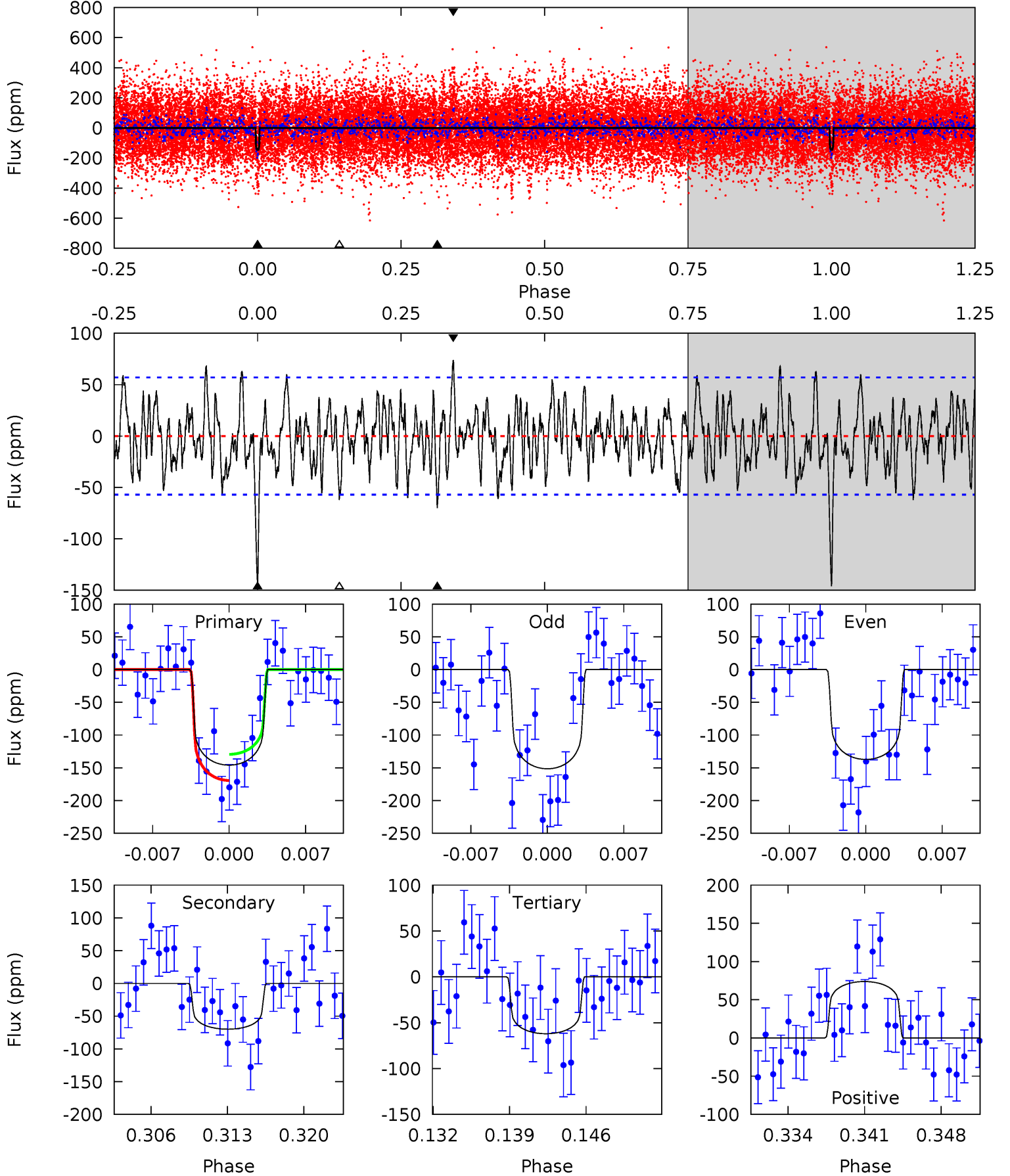
TCE 006616211-06 P= 67.381295 Days $T_0=198.609399$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-06, P = 67.377912 Days, E = 131.249142 Days

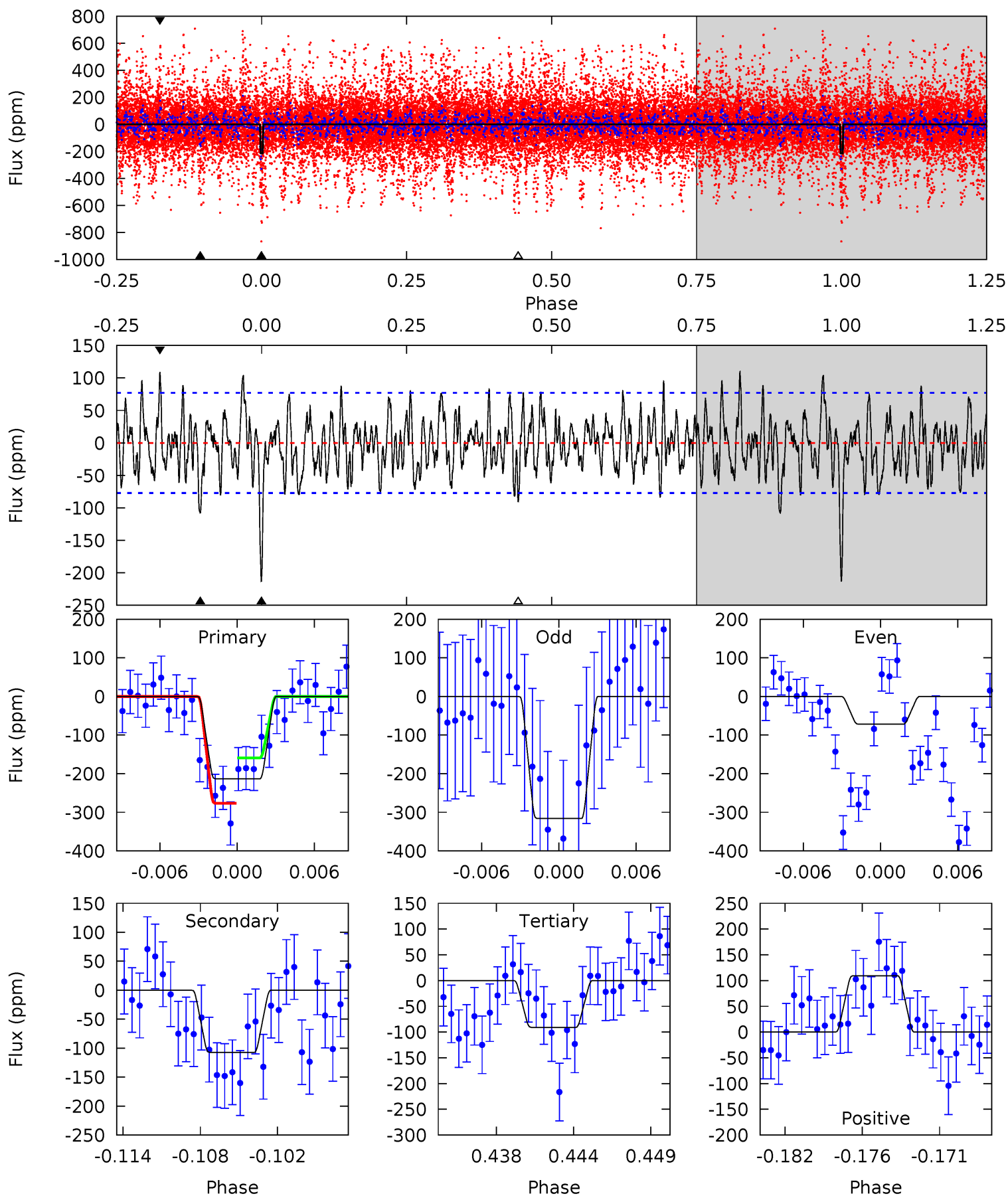
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	6.25	5.54	6.60	5.10	2.70	2.16	7.49	6.44	0.70	-0.35	0.63	0.64	0.34	1.76



Alt Model-Shift Uniqueness Test

006616211-06, P = 67.381295 Days, E = 131.228104 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	7.15	6.05	7.29	5.13	2.77	2.36	8.17	6.93	1.09	-0.14	7.93	0.71	0.34	3.98



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-70 ± 11	$4.22^{+1.41}_{-1.31}$	1172^{+70}_{-117}	5352^{+770}_{-590}	303^{+301}_{-138}
Alt.	-107 ± 15	$6.75^{+1.55}_{-1.74}$	1171^{+70}_{-119}	4851^{+390}_{-368}	185^{+135}_{-64}

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 $A_{obs} \gg 1.0$

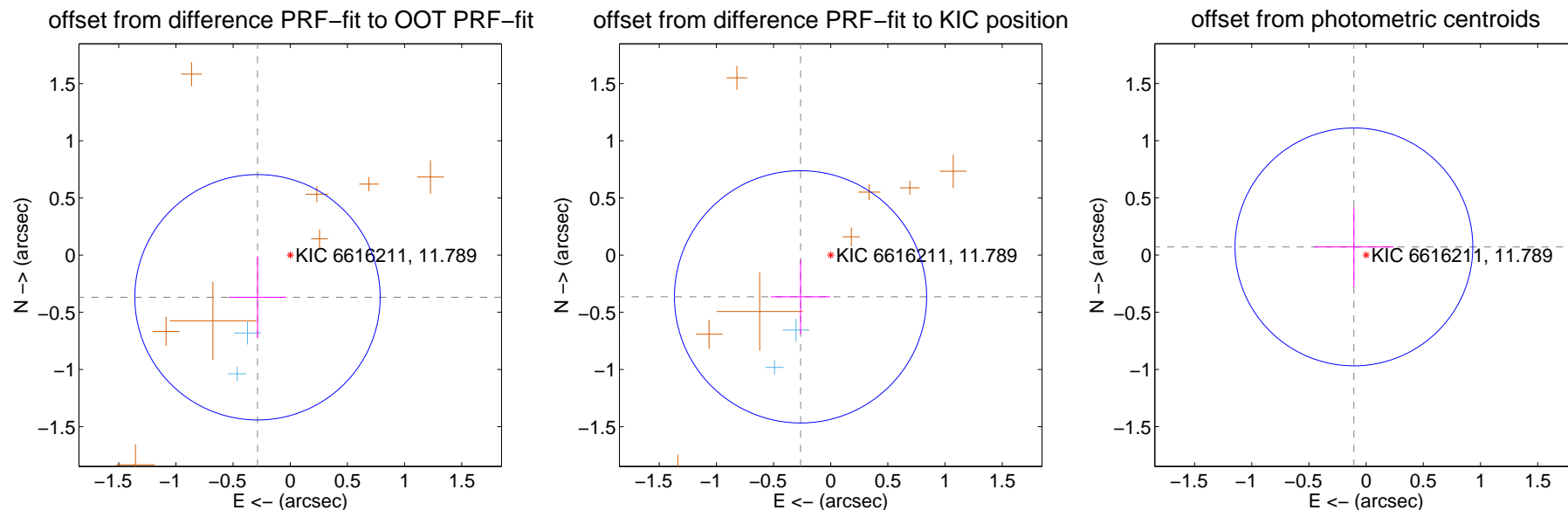
DV Centroid Data

Supplemental centroid analysis for 006616211-06. **Kepler magnitude: 11.79.** Transit SNR 7.41

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.467 ± 0.358	1.31	0.287 ± 0.250	-0.368 ± 0.360
PRF-fit source offset from KIC position	0.450 ± 0.368	1.22	0.264 ± 0.260	-0.364 ± 0.325
photometric centroid source offset	0.13 ± 0.35	0.37	0.11 ± 0.35	0.07 ± 0.35



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.

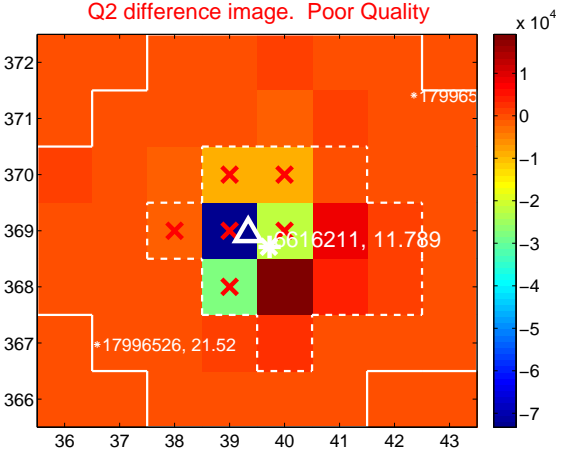
Q1 no difference image



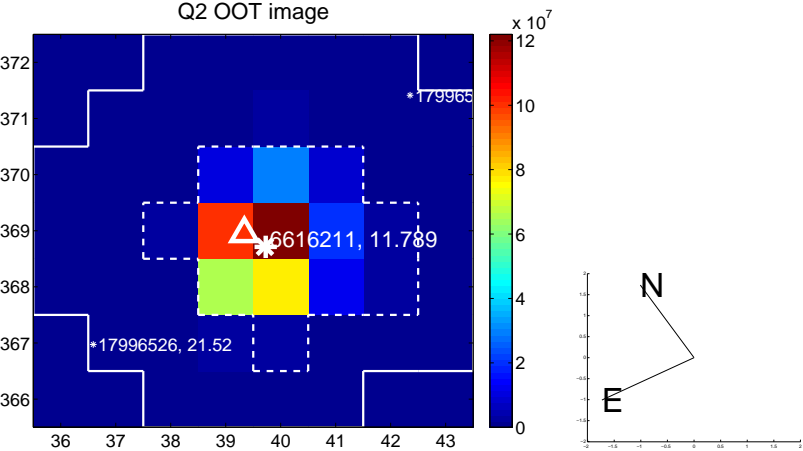
Q1 no OOT image



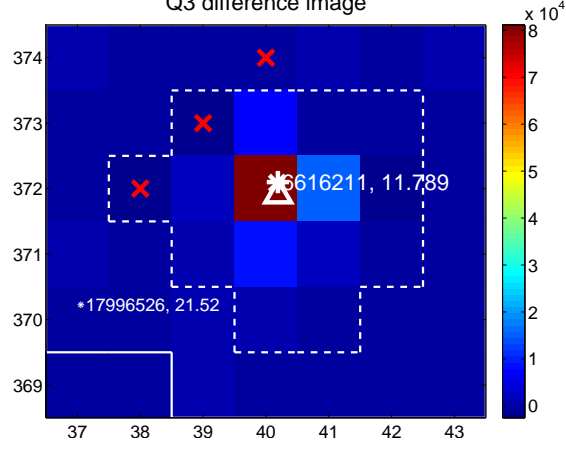
Q2 difference image. Poor Quality



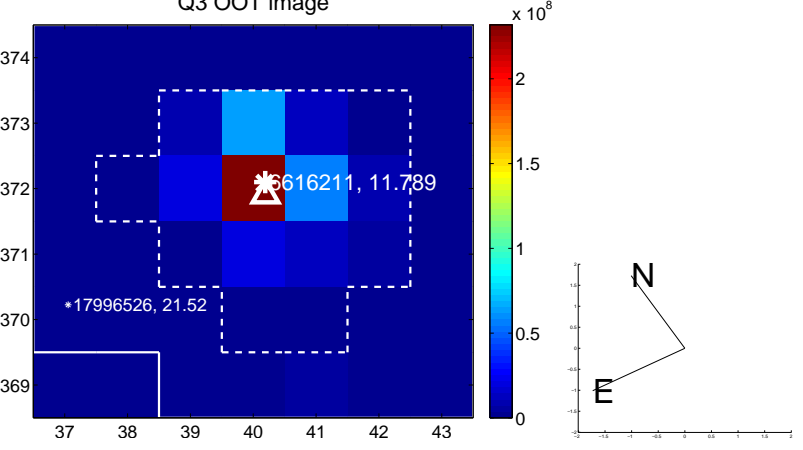
Q2 OOT image



Q3 difference image



Q3 OOT image



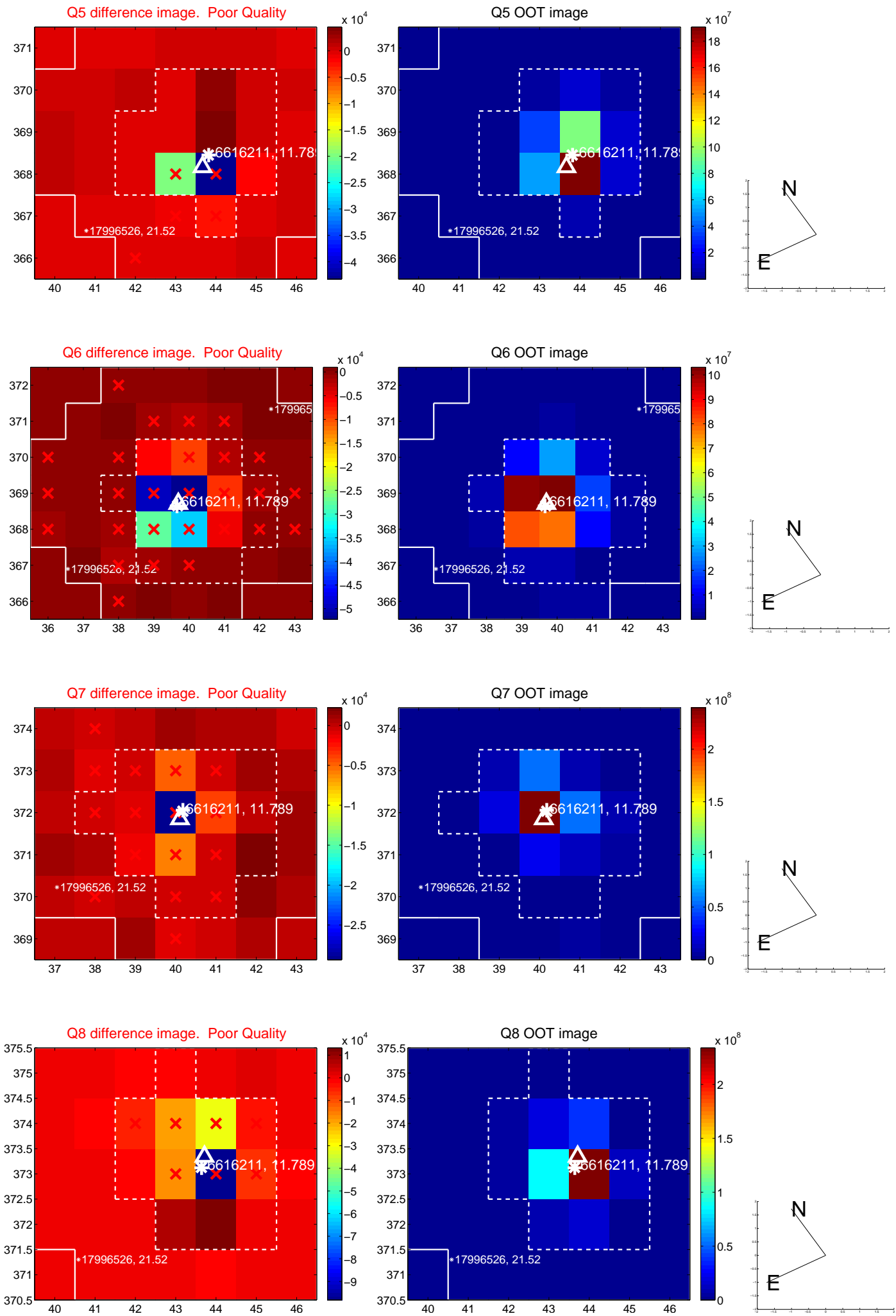
Q4 no difference image



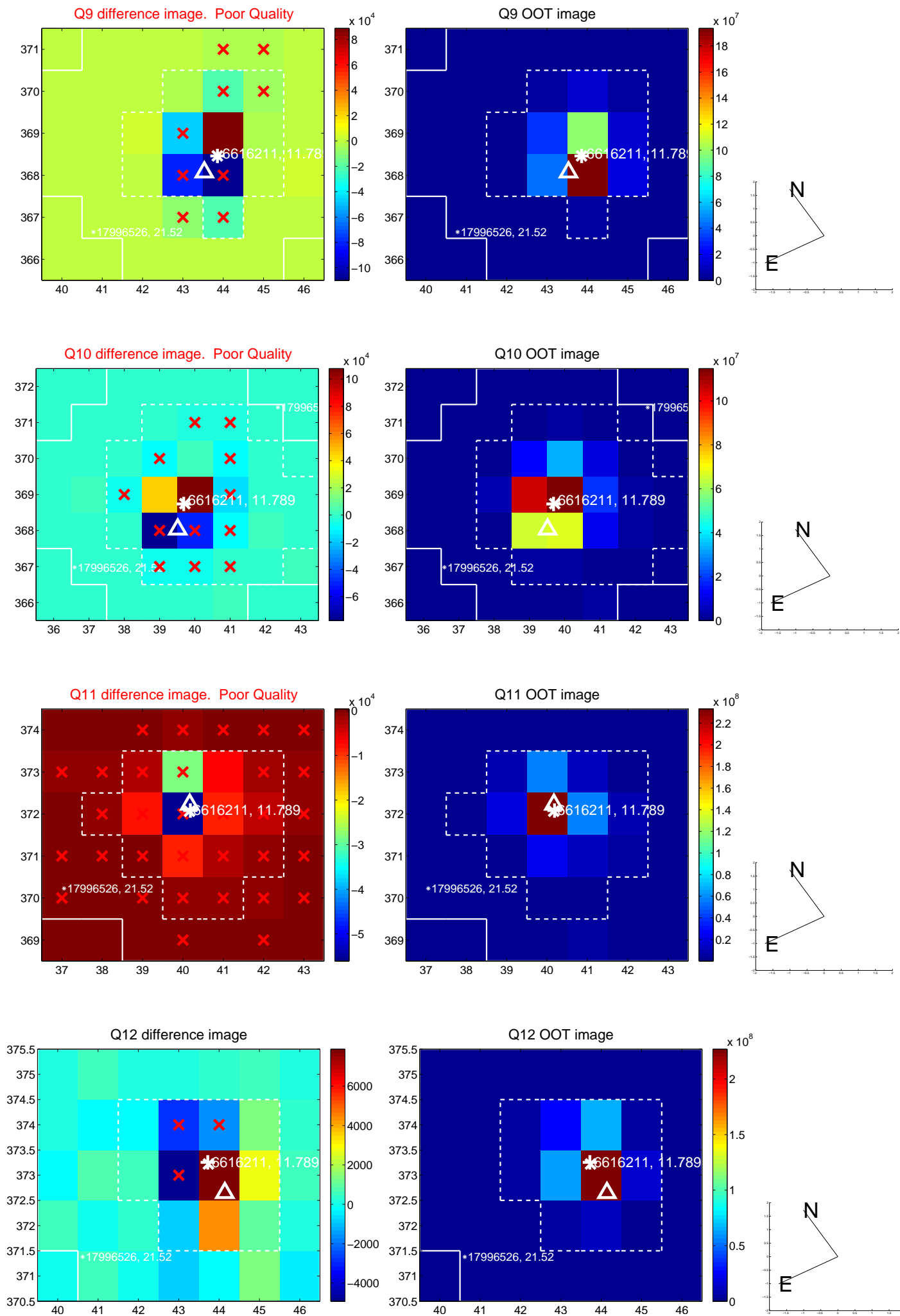
Q4 no OOT image



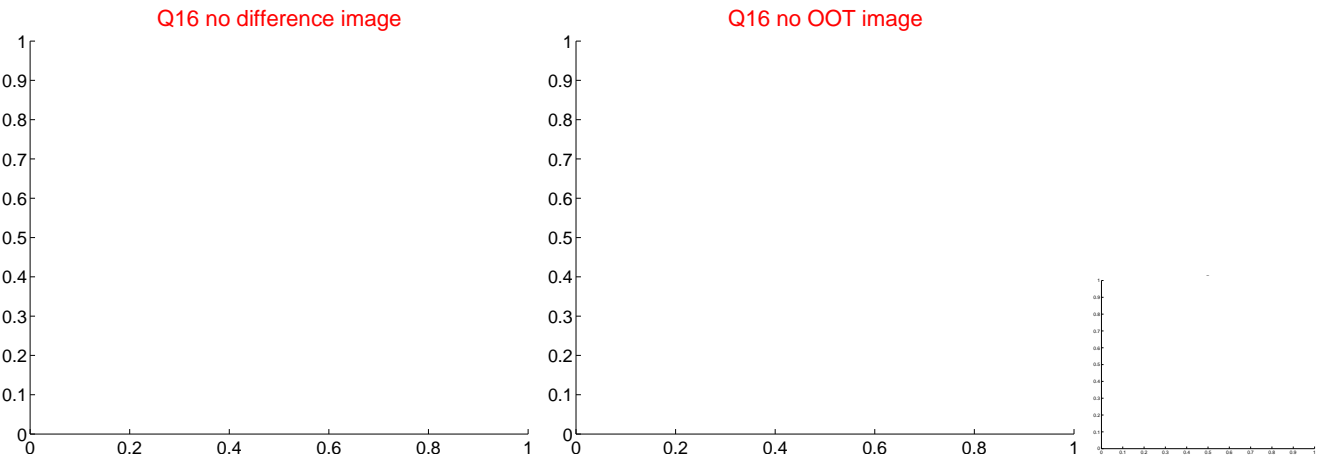
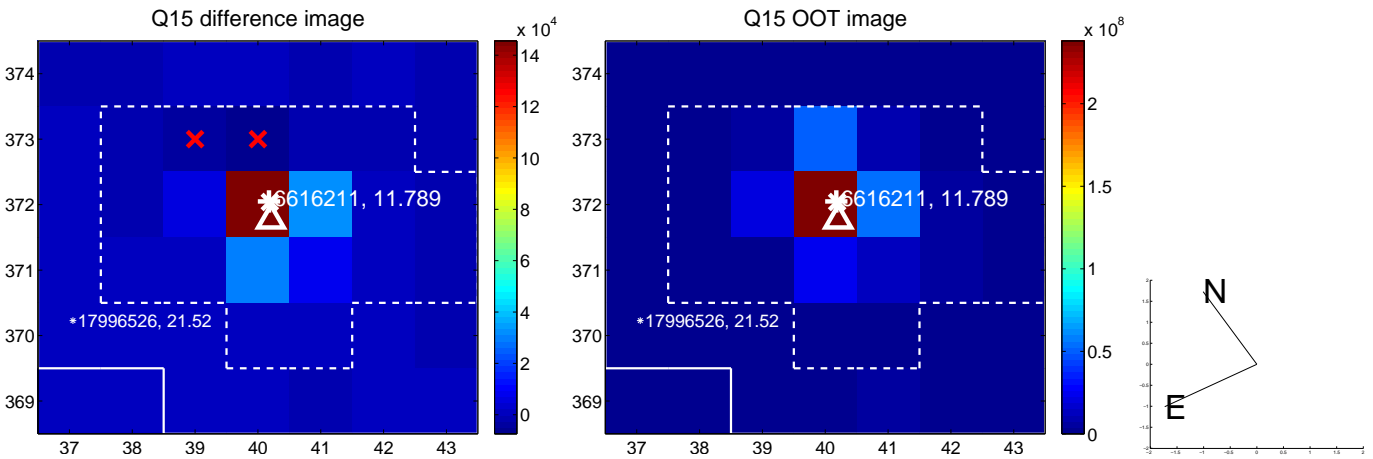
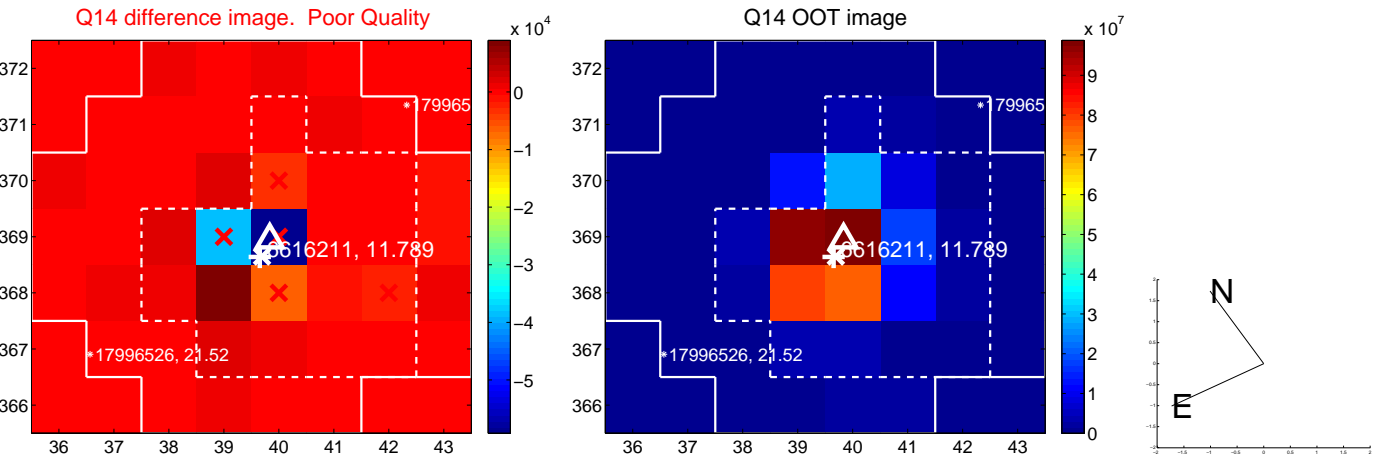
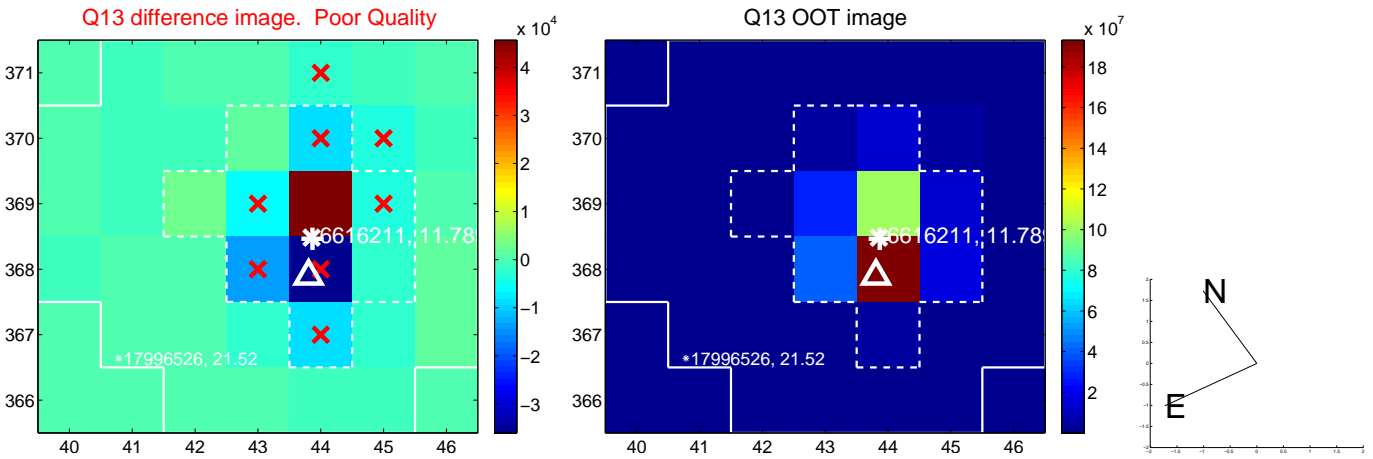
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



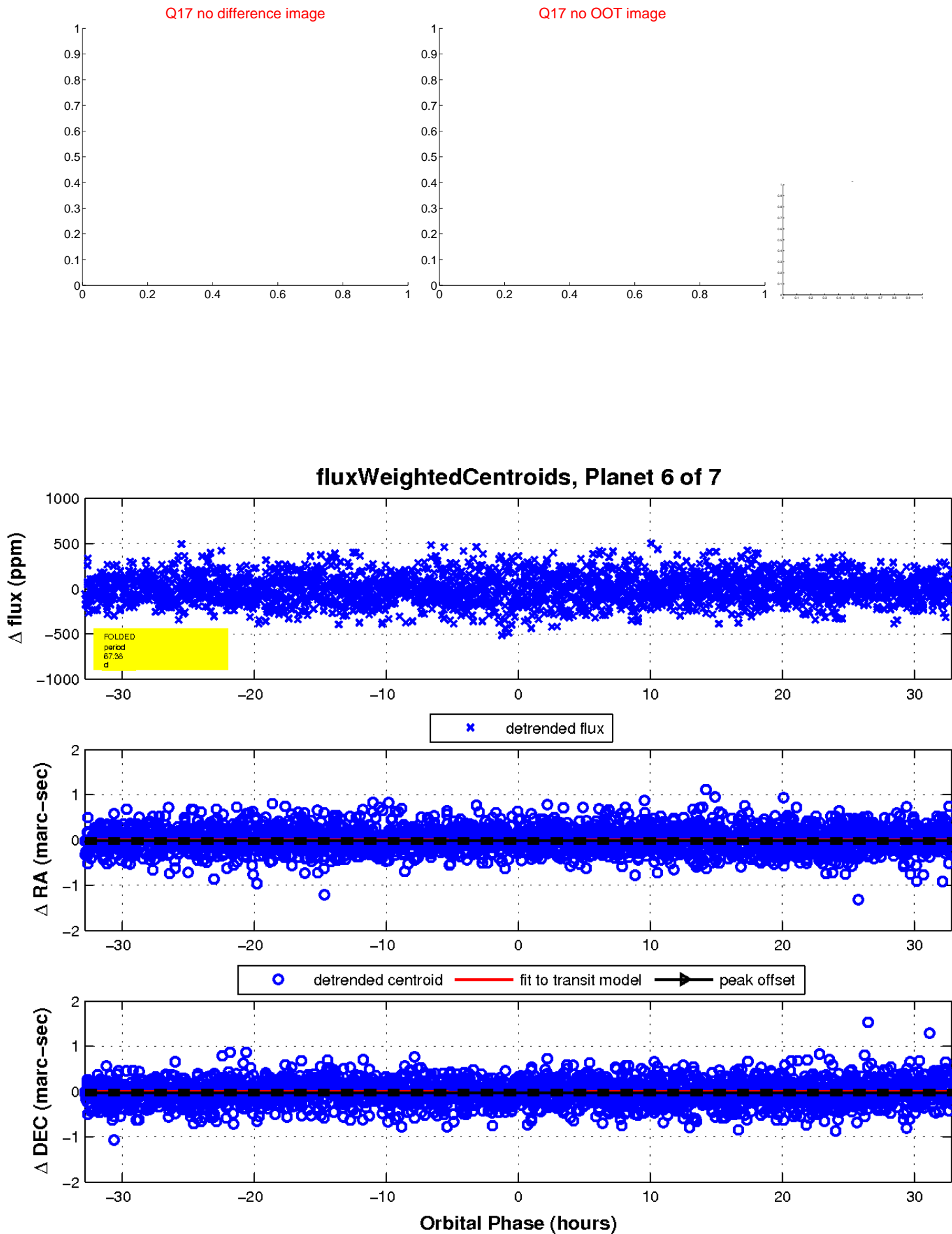
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

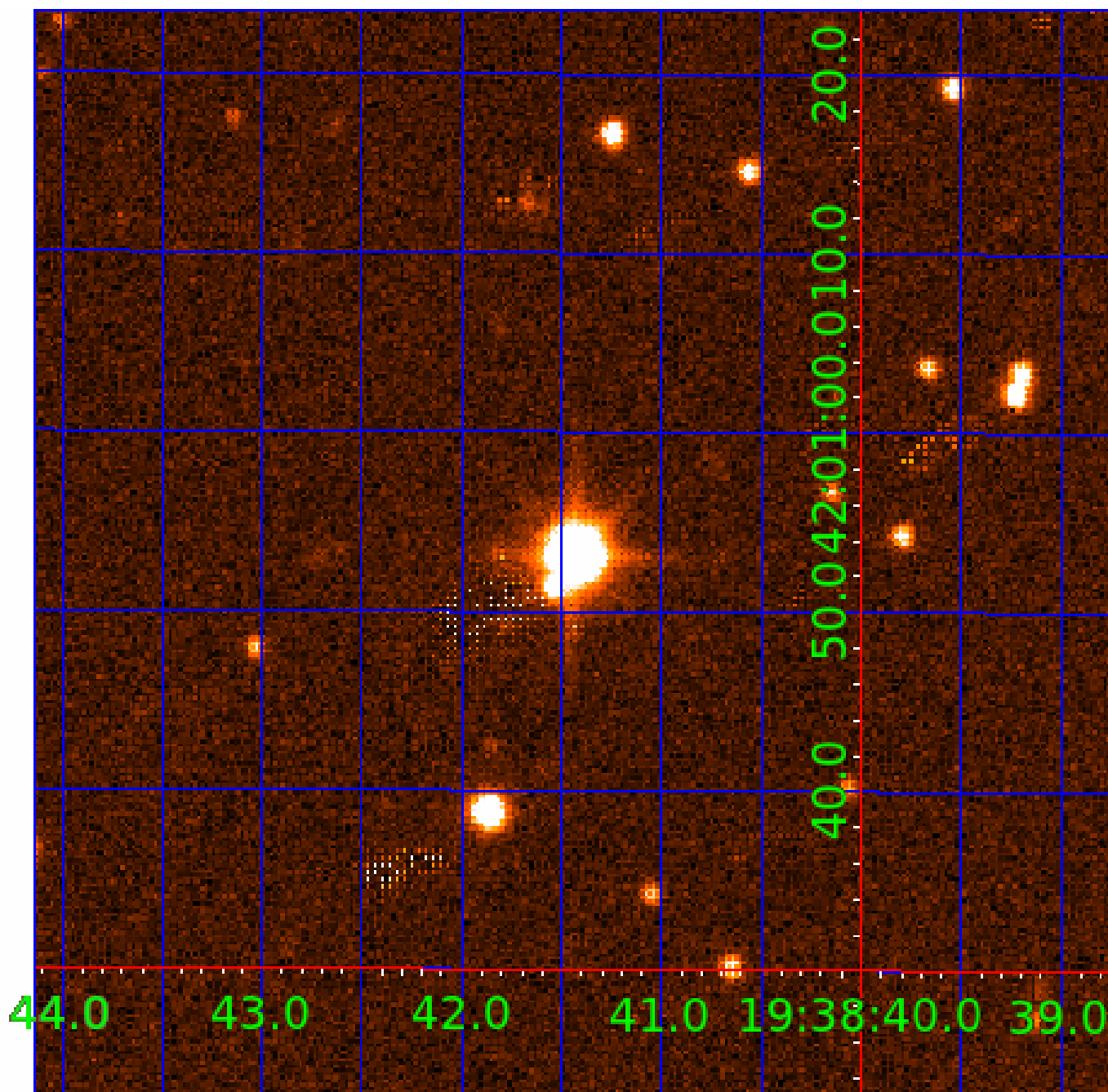


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006616211

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})
006616211-01	OBS	No	3.855026	132.390182	39.6	8.019	8.8	9.6	3.31	6489	2.44	5594.62
006616211-02	OBS	No	2.312286	133.442771	30.4	7.895	9.2	8.8	3.31	6489	2.38	11059.92
006616211-03	OBS	No	407.121359	169.422334	345.4	15.030	9.4	8.5	3.31	6489	9.15	11.21
006616211-04	OBS	No	85.443251	174.838350	158.5	7.758	8.1	8.2	3.31	6489	4.66	89.86
006616211-05	OBS	No	51.877465	154.766586	148.6	6.839	7.9	8.7	3.31	6489	5.31	174.78
006616211-06	OBS	No	67.377912	198.627054	149.8	10.943	7.9	7.4	3.31	6489	4.51	123.34
006616211-07	OBS	No	379.148675	222.934695	207.1	4.904	7.7	6.2	3.31	6489	5.43	12.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006616211-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006616211-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006616211-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
006616211-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—MOD_NONUNIQ_ALT
006616211-05	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
006616211-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
006616211-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS

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

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

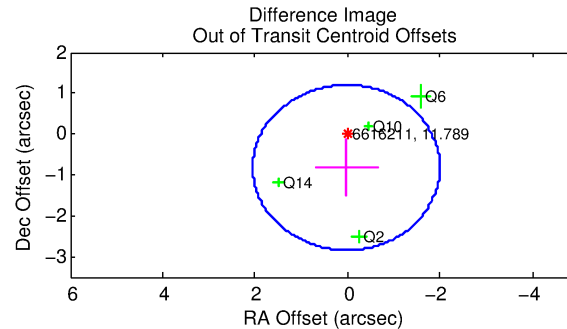
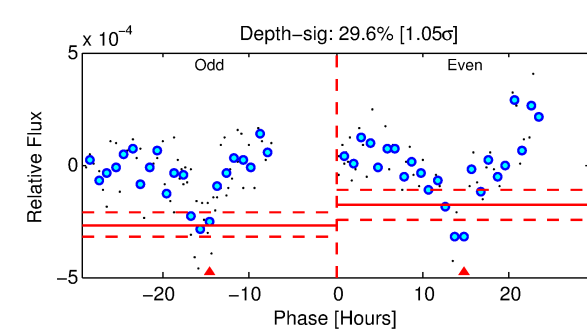
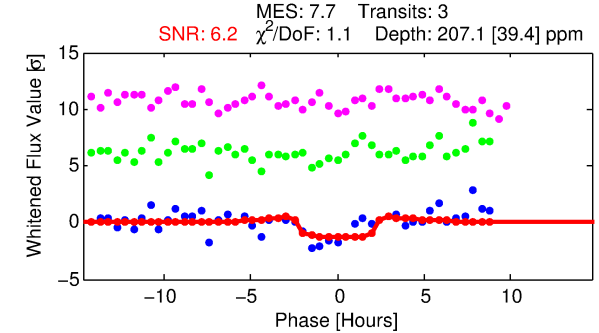
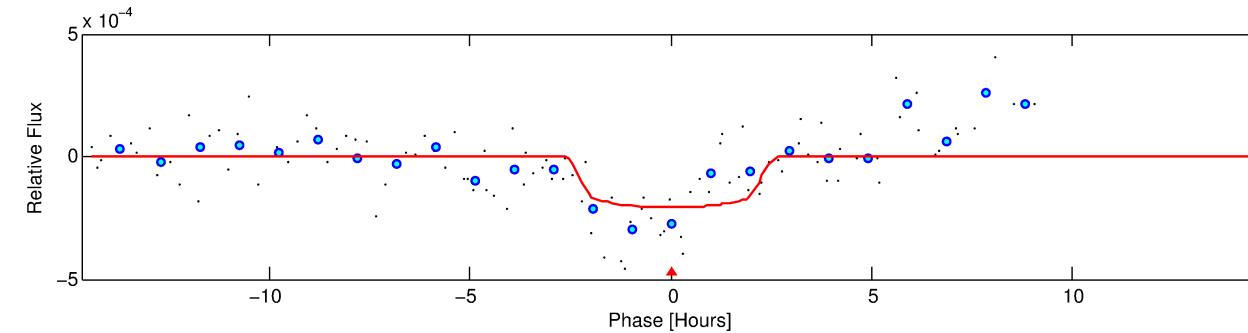
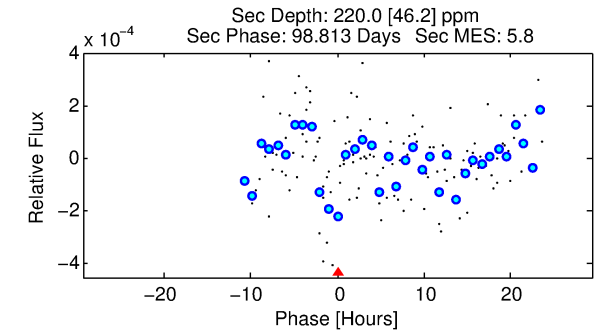
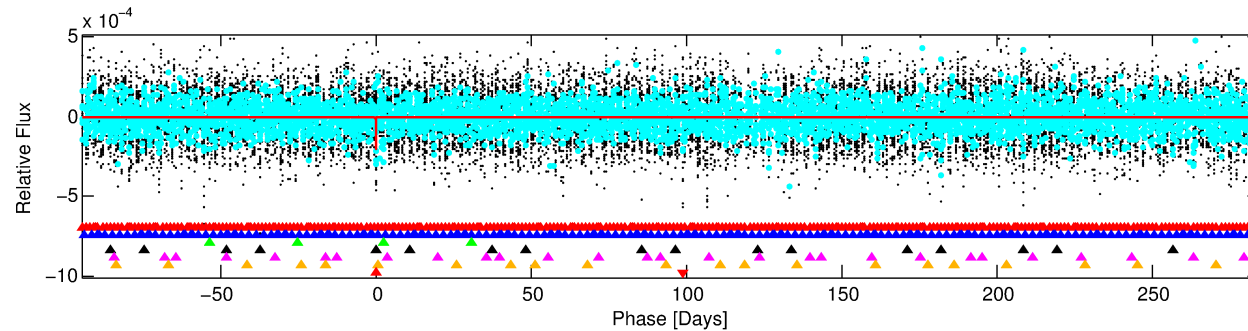
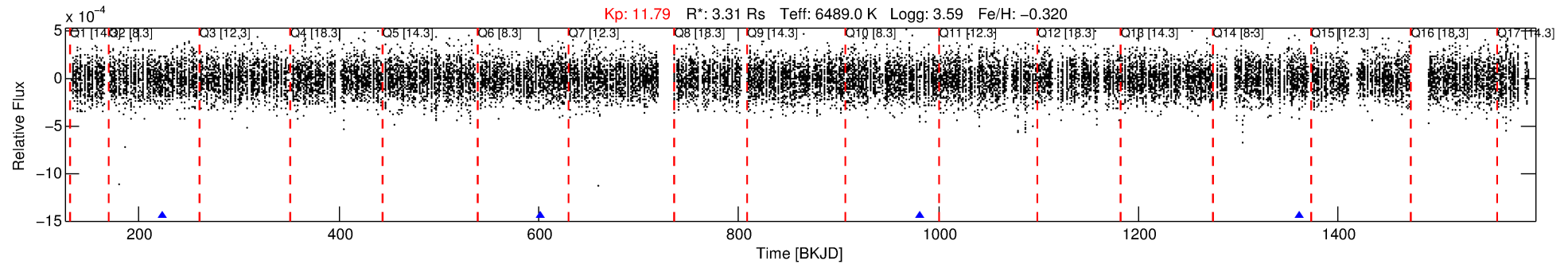
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006616211-07

No Significant Match Found

DV One-Page Summary

KIC: 6616211 Candidate: 7 of 7 Period: 379.149 d



DV Fit Results:

Period = 379.14867 [0.00494] d
Epoch = 222.9347 [0.0112] BKJD
Rp/R* = 0.0151 [0.0106]
a/R* = 309.60 [1216.84]
b = 0.87 [1.12]
Seff = 12.32 [7.70]
Teq = 478 [75] K
Rp = 5.43 [4.42] Re
a = 1.1870 [0.4577] AU
Ag = 5772.54 [8962.29] [0.64σ]
Teffp = 6439 [2302] K [2.59σ]

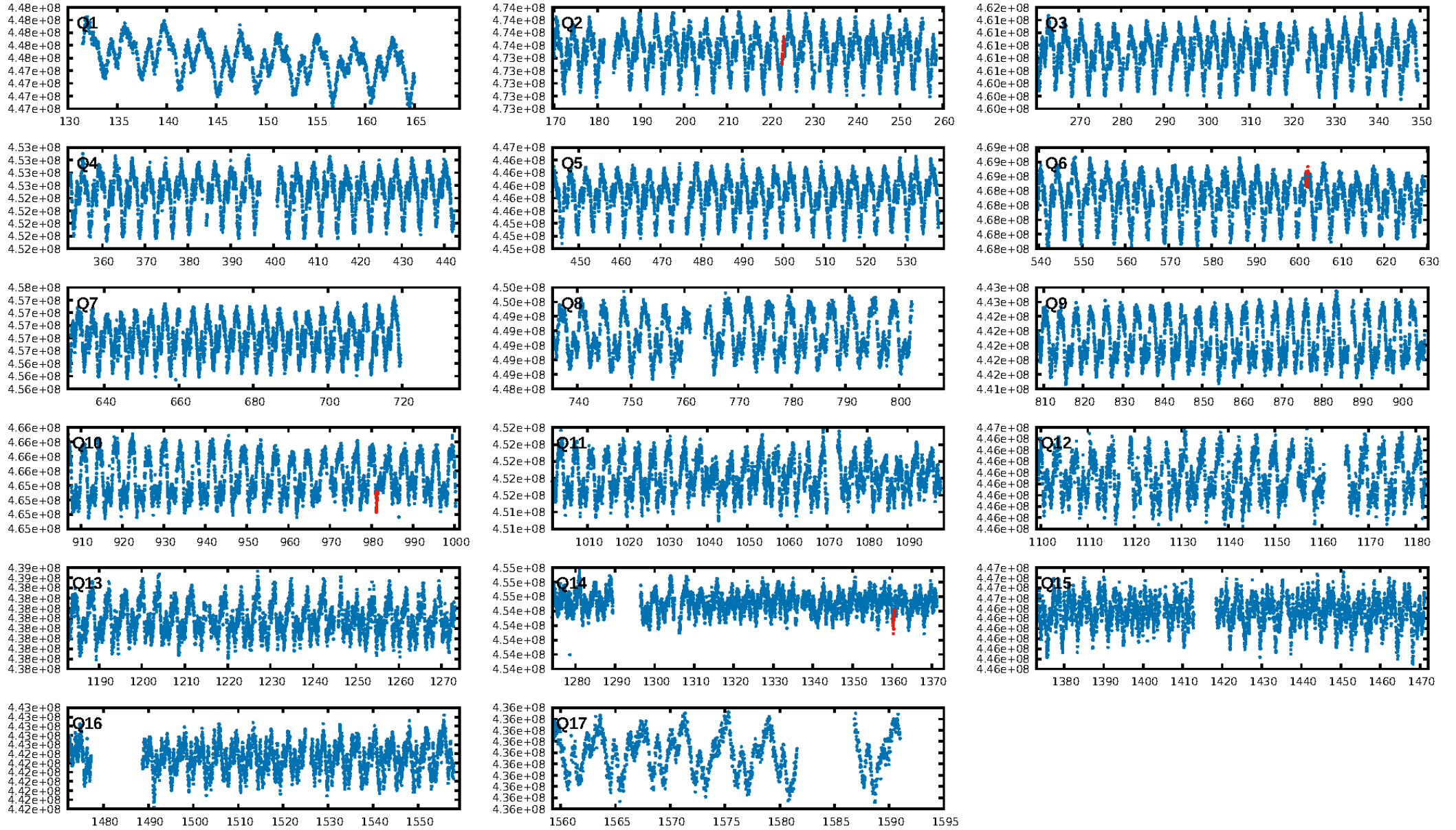
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [768.05σ]
LongPeriod-sig: 100.0% [42.46σ]
ModelChiSquare2-sig: 68.2%
ModelChiSquareGof-sig: 82.2%
Bootstrap-pfa: 1.38e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.014
Centroid-sig: 14.8%
Centroid-so: 1.127 arcsec [1.48σ]
OotOffset-rm: 0.821 arcsec [1.22σ]
KicOffset-rm: 0.810 arcsec [1.19σ]
OotOffset-st: 4/0/0/0 [4]
KicOffset-st: 4/0/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.75 [3/4]

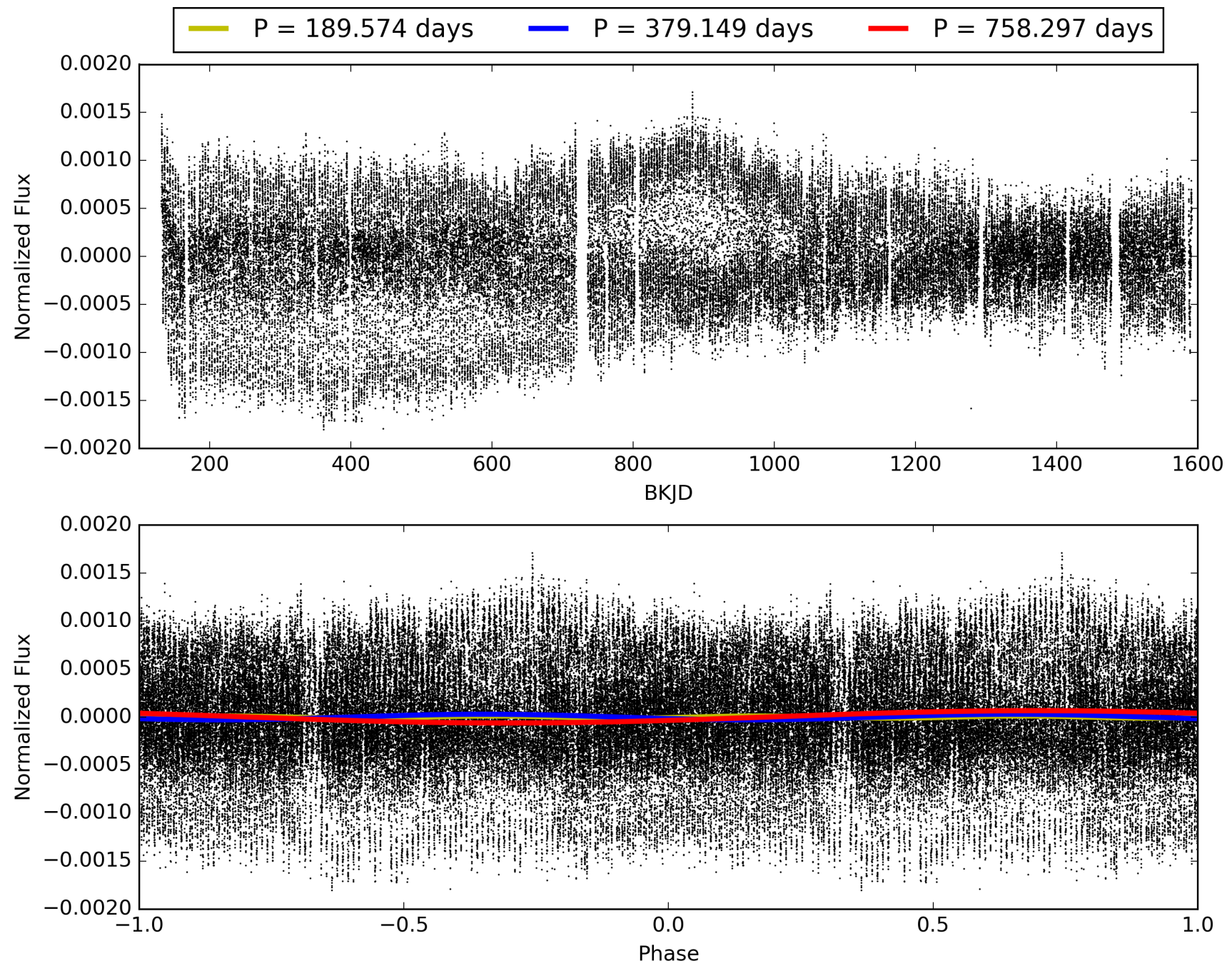
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 02:42:44 Z

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

TCE 006616211-07, PDC Light Curves

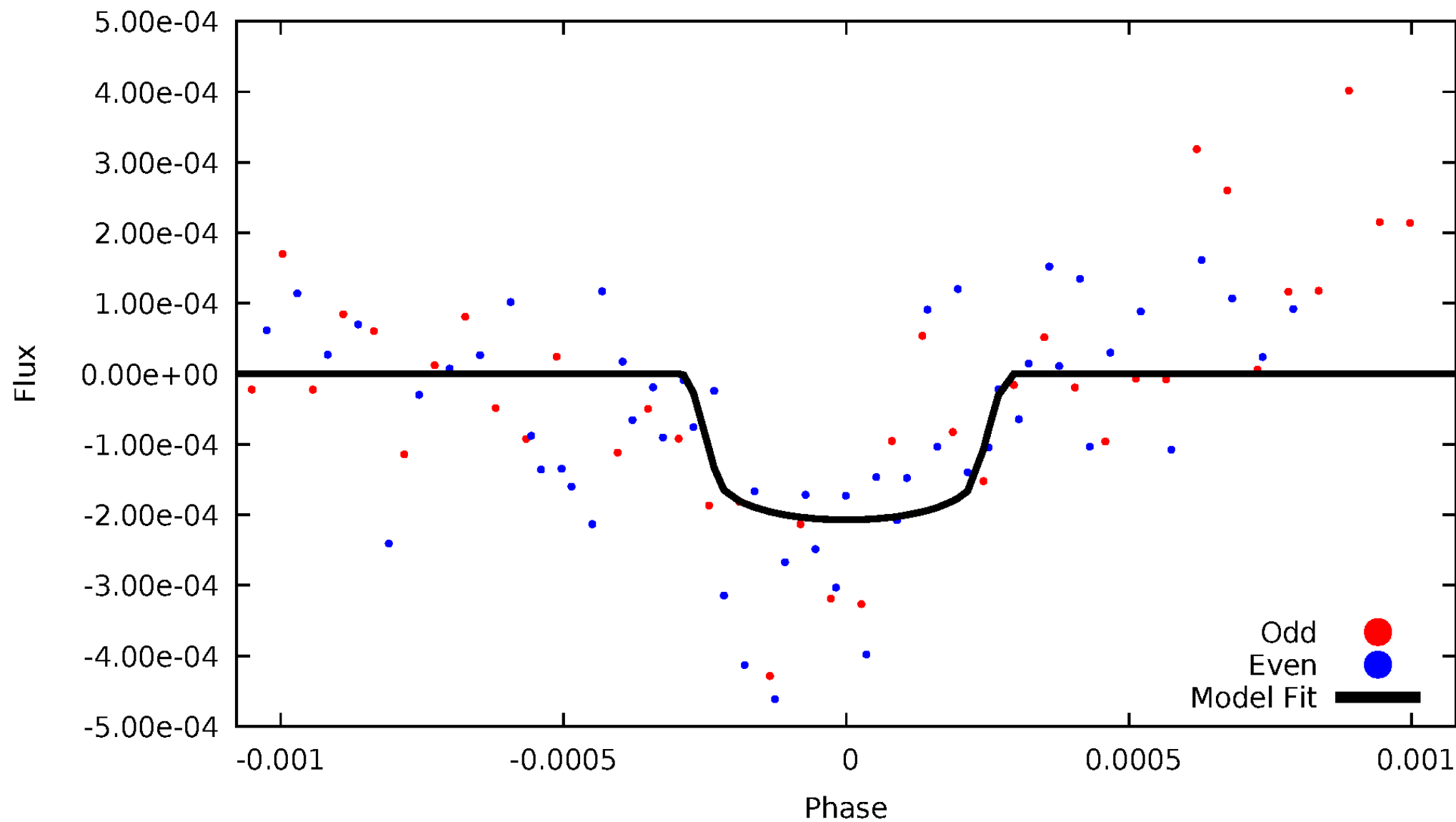


TCE 006616211-07



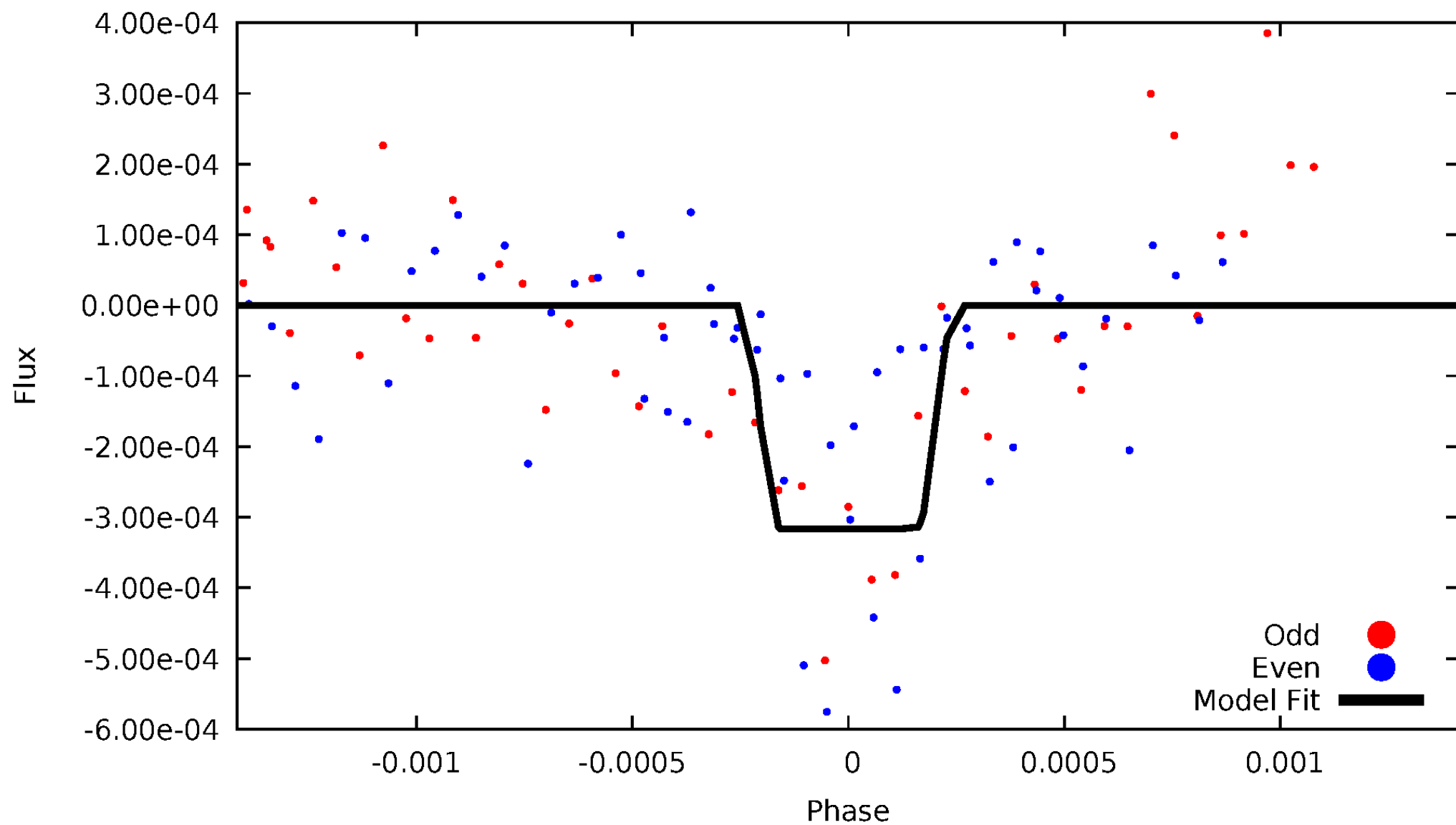
DV Odd/Even

TCE 006616211-07

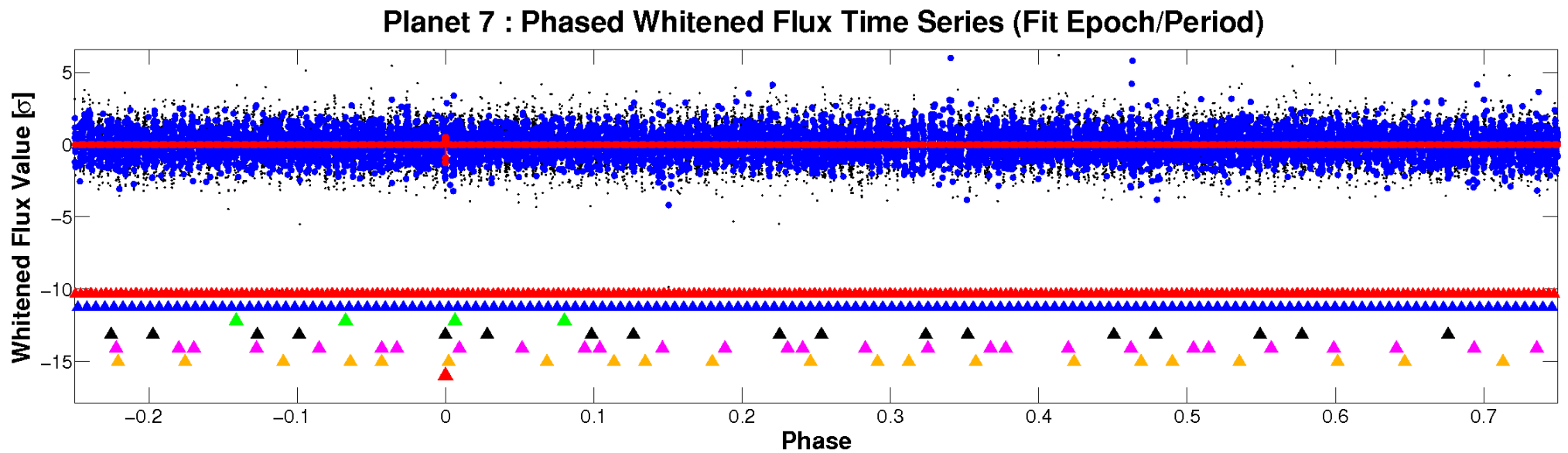
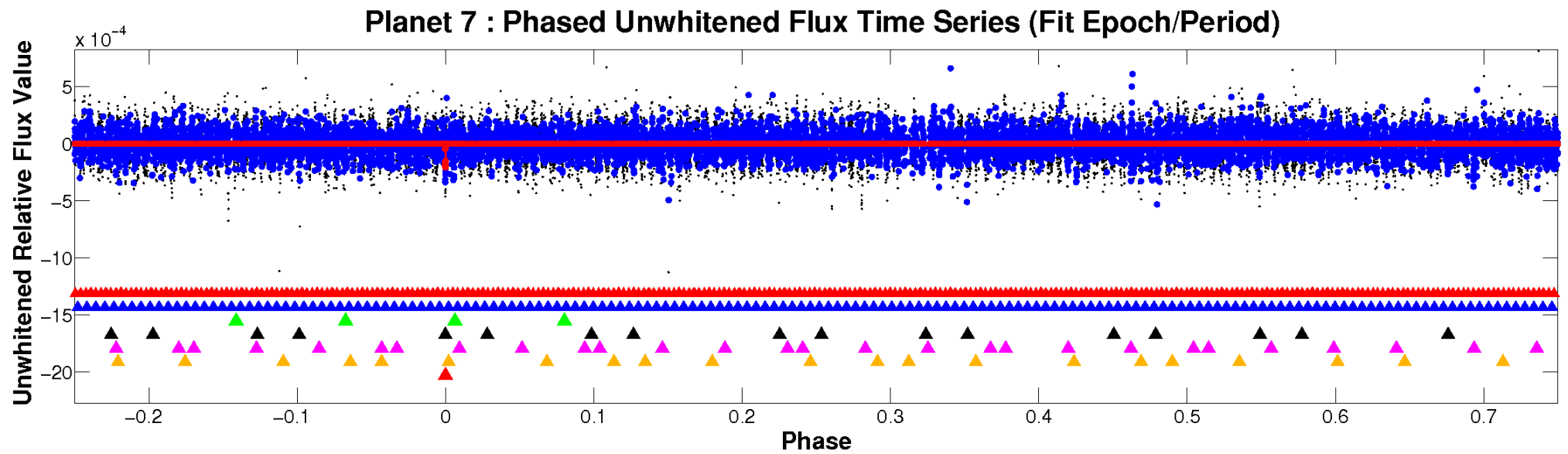


ALT Odd/Even

TCE 006616211-07

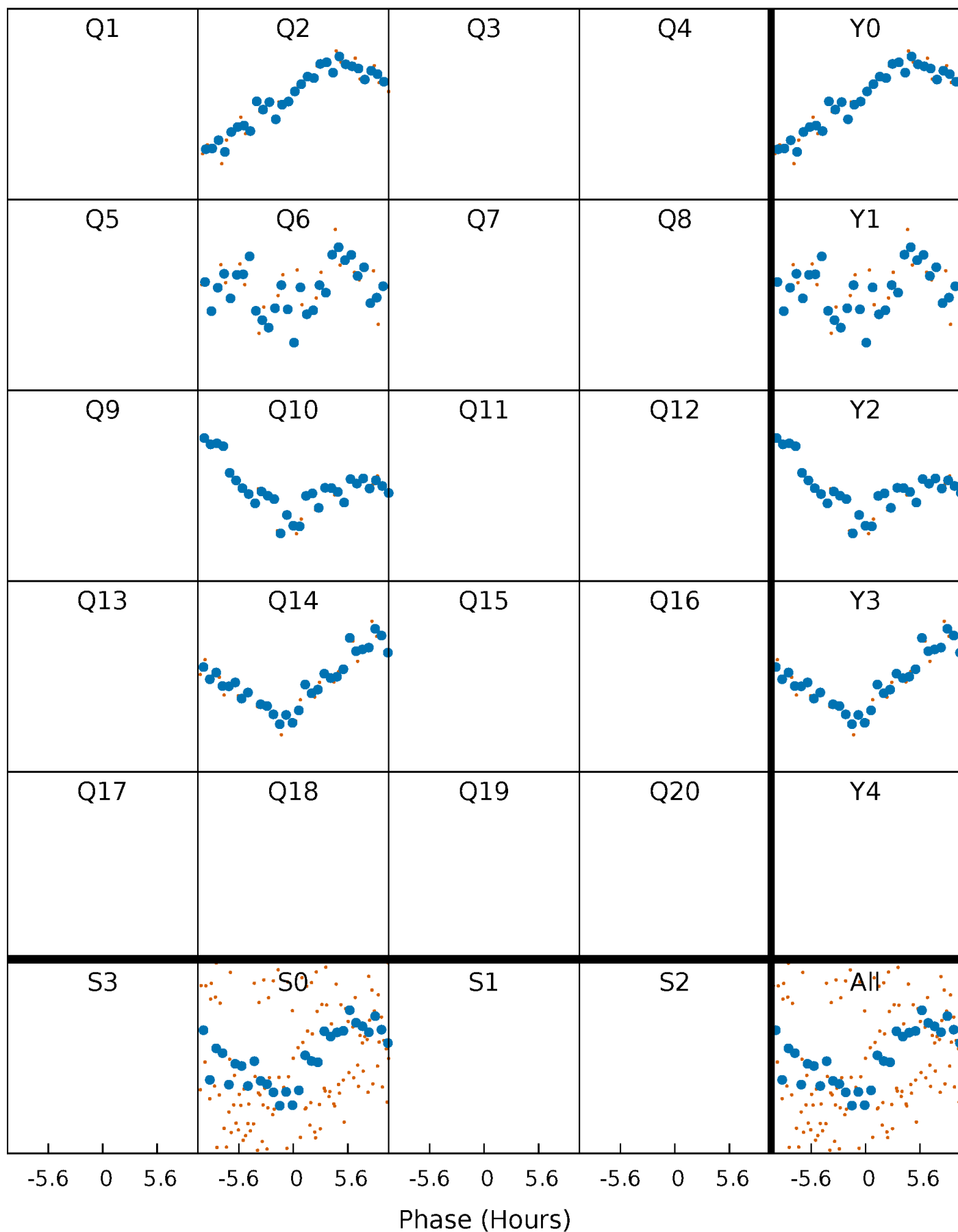


Non-Whitened Vs. Whitened Light Curve



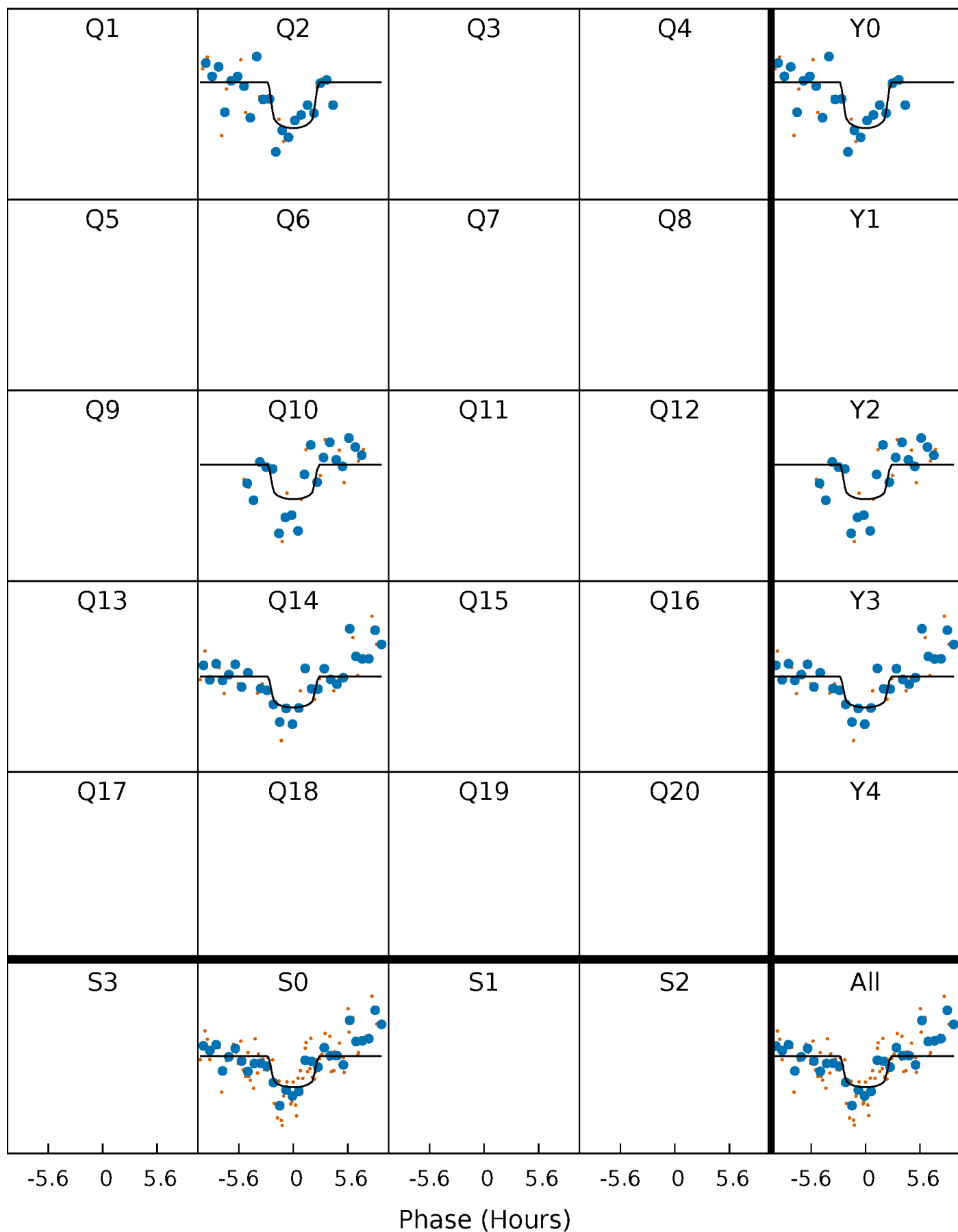
PDC Quarter-Phased Transit Curves

TCE 006616211-07 $P=379.148675$ Days $T_0=222.934695$ (BKJD)



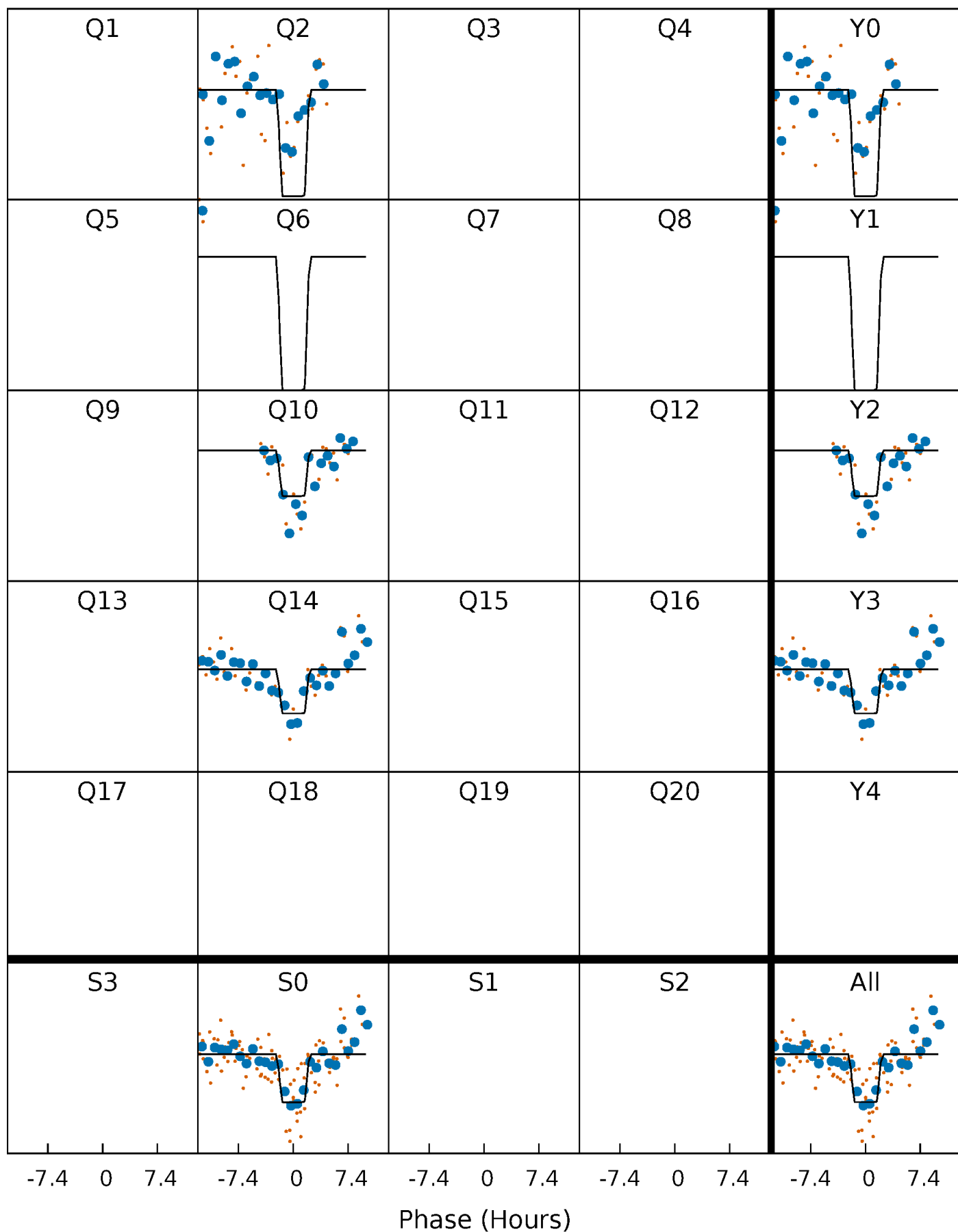
DV Quarter-Phased Transit Curves

TCE 006616211-07 P=379.148675 Days $T_0=222.934695$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

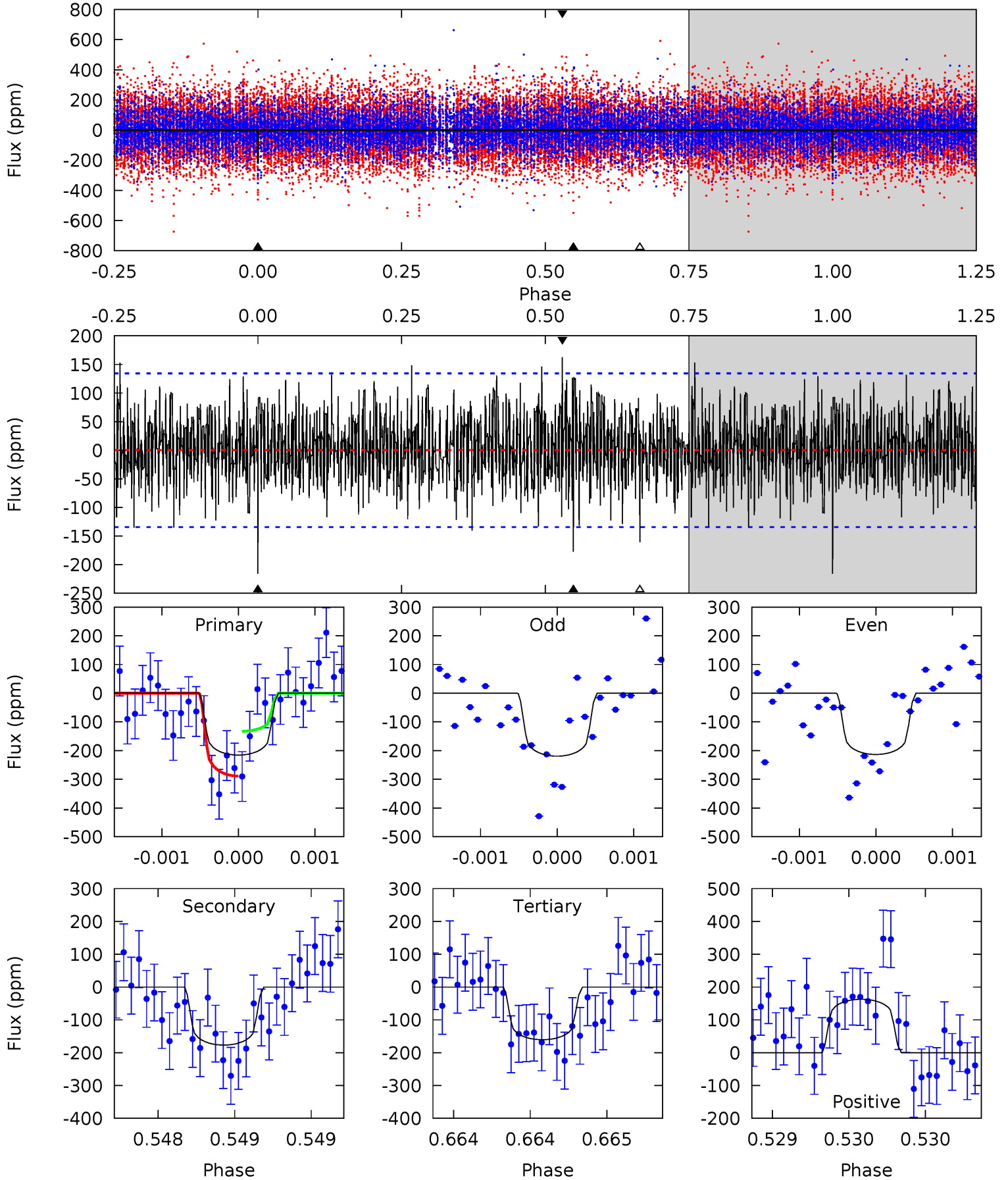
TCE 006616211-07 P=379.146940 Days $T_0=222.909186$ (BKJD)



DV Model-Shift Uniqueness Test

006616211-07, P = 379.148675 Days, E = 222.934695 Days

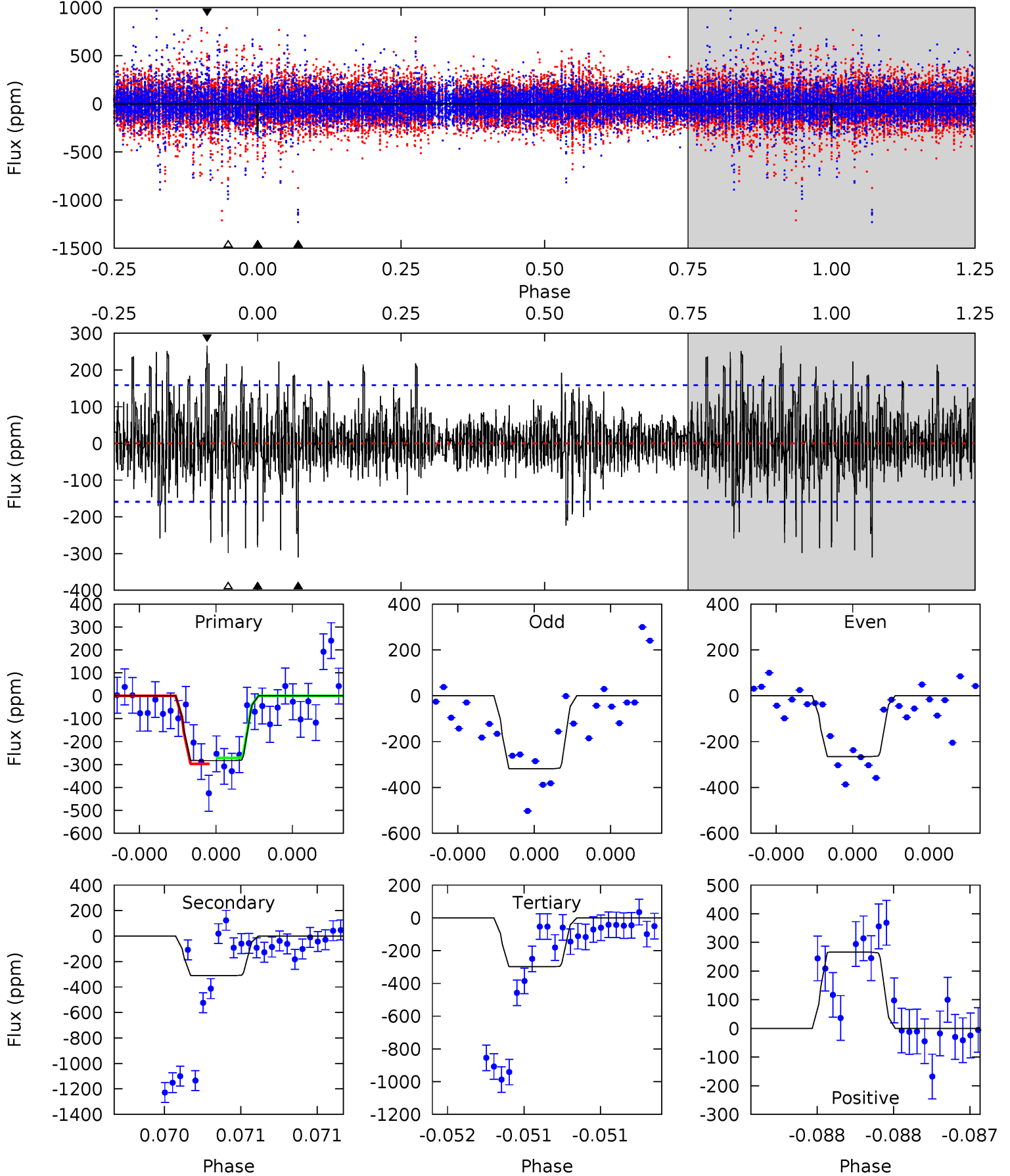
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.92	7.31	6.63	6.73	5.55	3.45	1.85	2.28	2.19	0.68	0.59	0.11	0.98	0.43	3.22



Alt Model-Shift Uniqueness Test

006616211-07, P = 379.146940 Days, E = 222.909186 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.94	10.9	10.5	9.34	5.58	3.49	1.89	-0.55	0.60	0.41	1.56	0.88	0.89	0.46	0.45



Stellar Parameters For KIC 006616211

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6489^{+163}_{-179}	$3.590^{+0.360}_{-0.112}$	$-0.320^{+0.350}_{-0.300}$	$3.306^{+0.445}_{-1.334}$	$1.550^{+0.211}_{-0.361}$	$0.060^{+0.161}_{-0.017}$
	+3%/-3%	+10%/-3%	+109%/-94%	+13%/-40%	+14%/-23%	+267%/-28%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006616211-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-177 ± 24	$5.43^{+3.85}_{-3.09}$	657^{+41}_{-60}	5830^{+3665}_{-1137}	4461^{+20128}_{-2903}
Alt.	-310 ± 28	$6.00^{+3.99}_{-3.04}$	656^{+41}_{-67}	6380^{+3517}_{-1224}	6640^{+20758}_{-4181}

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

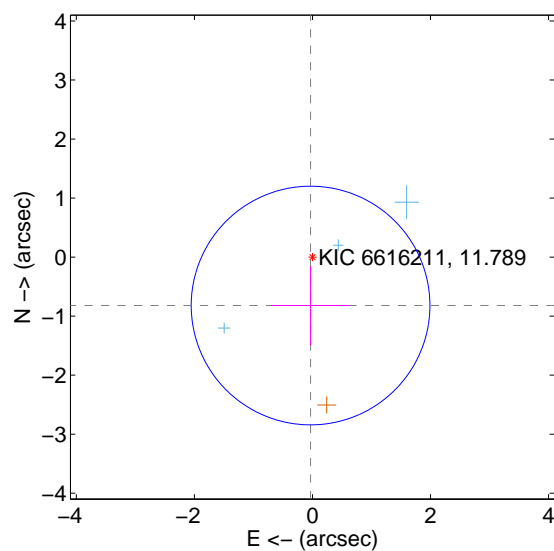
Supplemental centroid analysis for 006616211-07. **Kepler magnitude: 11.79.** Transit SNR 6.23

There are 3 quarters with good PRF difference image offsets

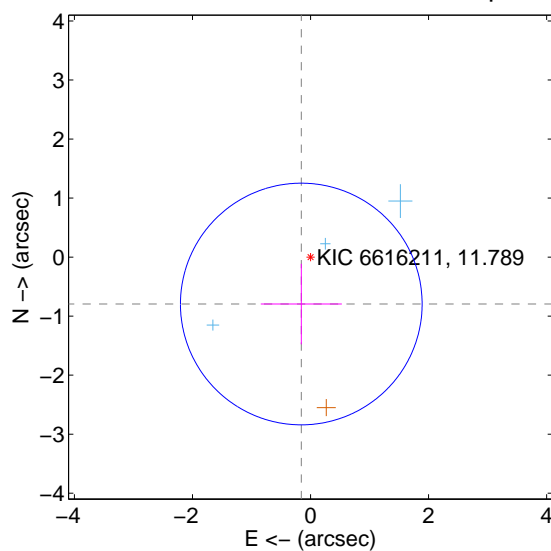
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.821 ± 0.674	1.22	0.032 ± 0.667	-0.821 ± 0.674
PRF-fit source offset from KIC position	0.810 ± 0.682	1.19	0.156 ± 0.687	-0.795 ± 0.682
photometric centroid source offset	1.13 ± 0.76	1.48	-1.10 ± 0.77	-0.27 ± 0.72

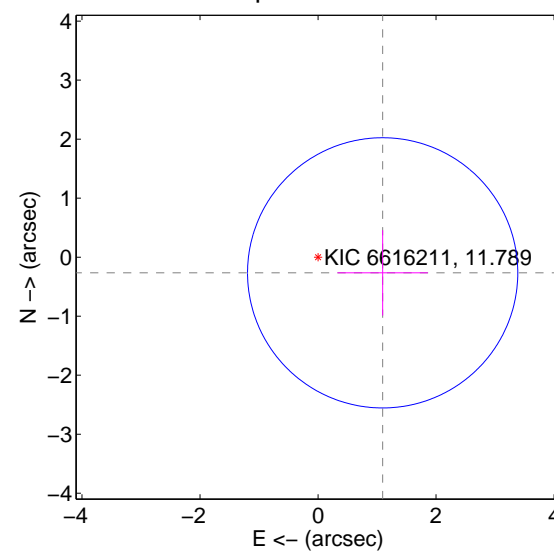
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

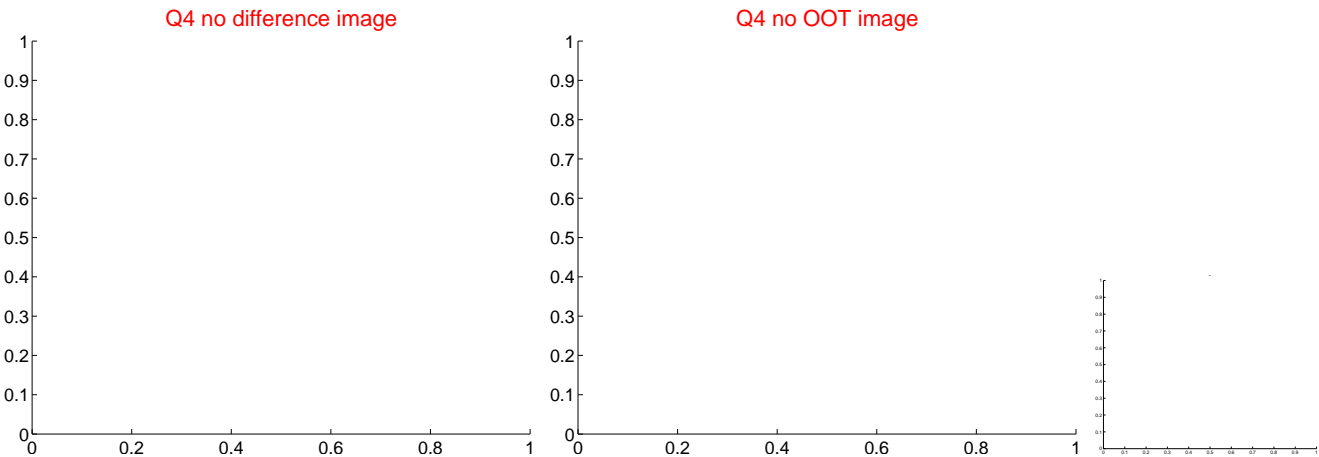
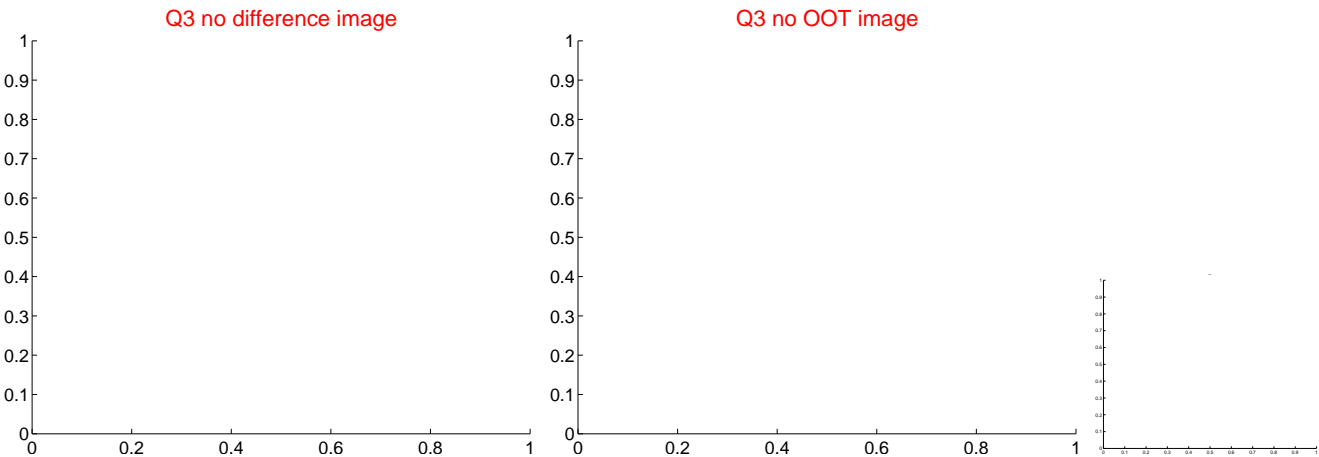
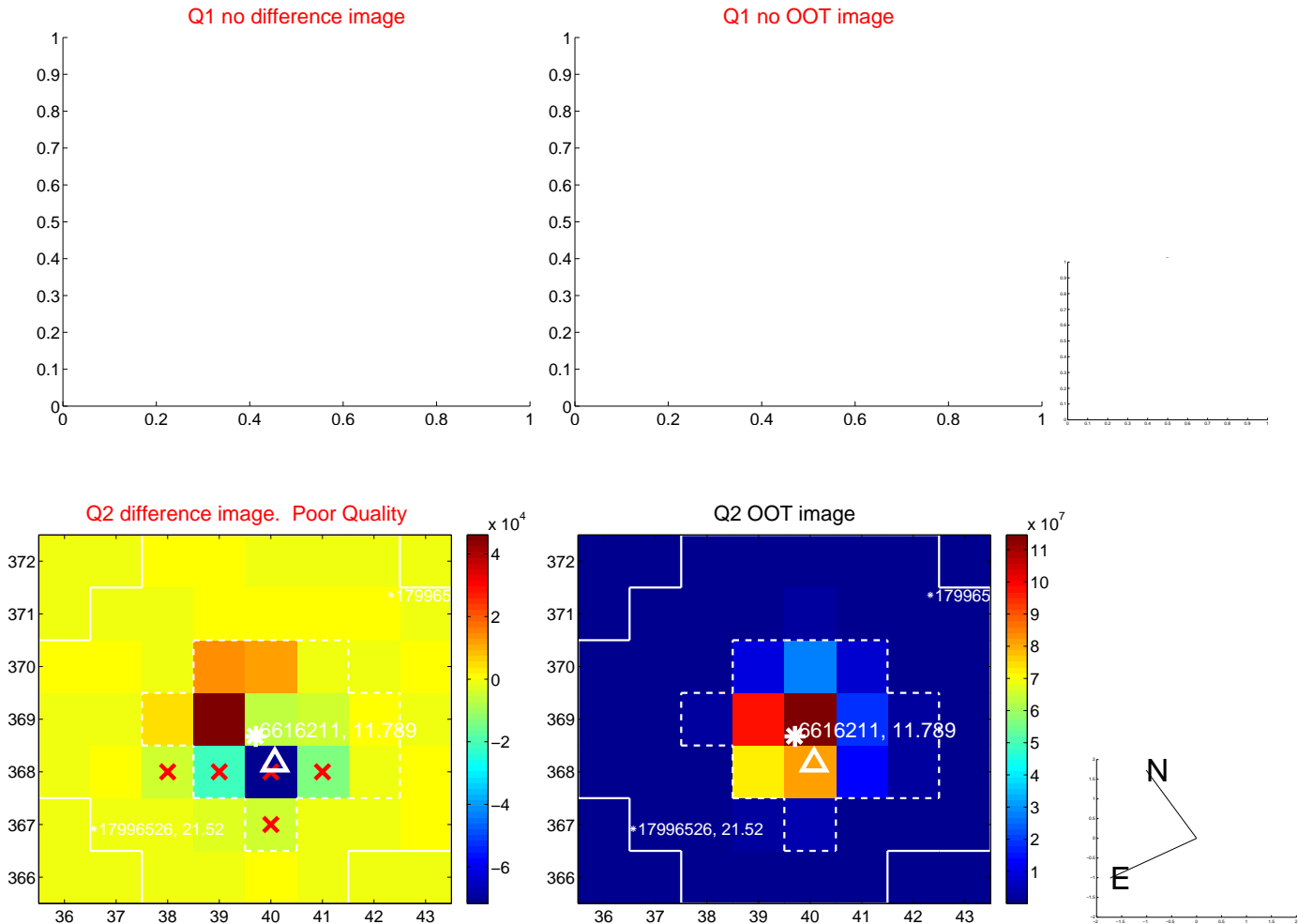


offset from photometric centroids

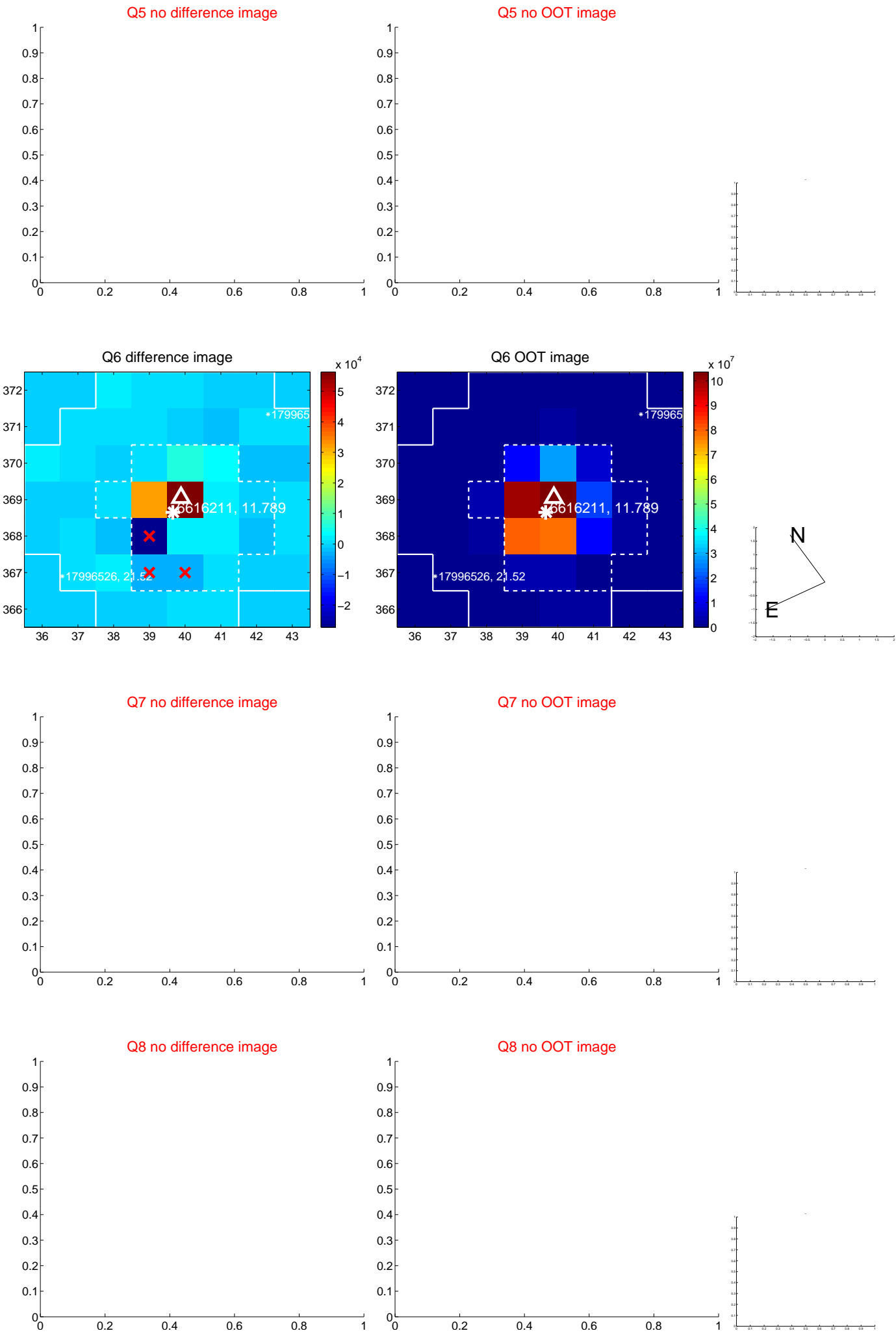


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

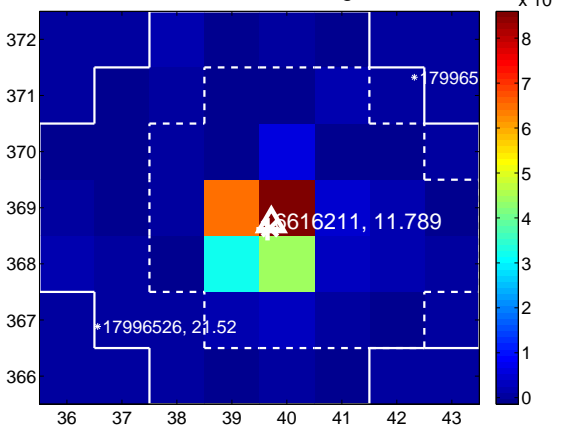
Q9 no difference image



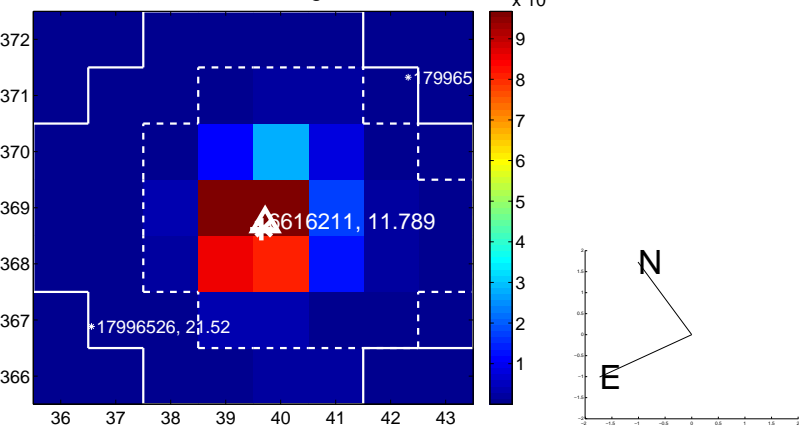
Q9 no OOT image



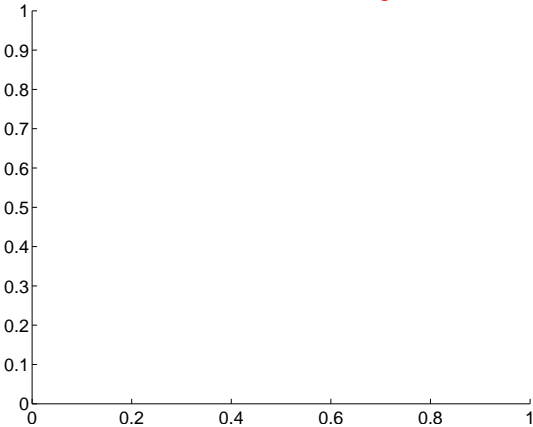
Q10 difference image



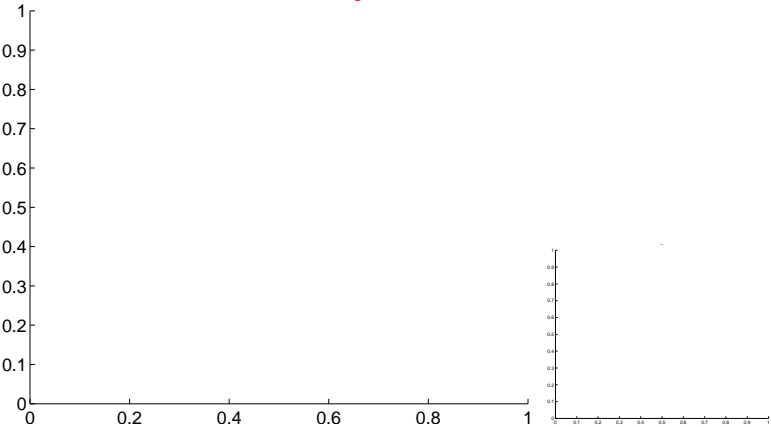
Q10 OOT image



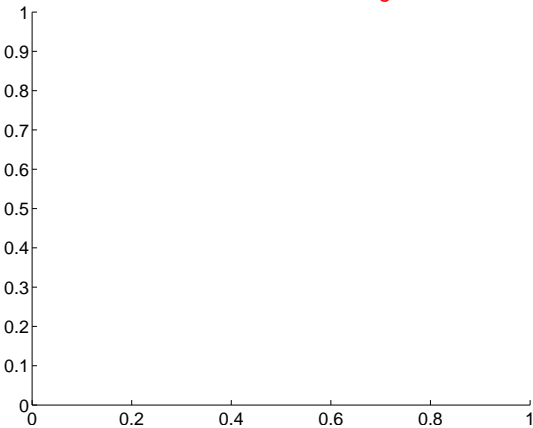
Q11 no difference image



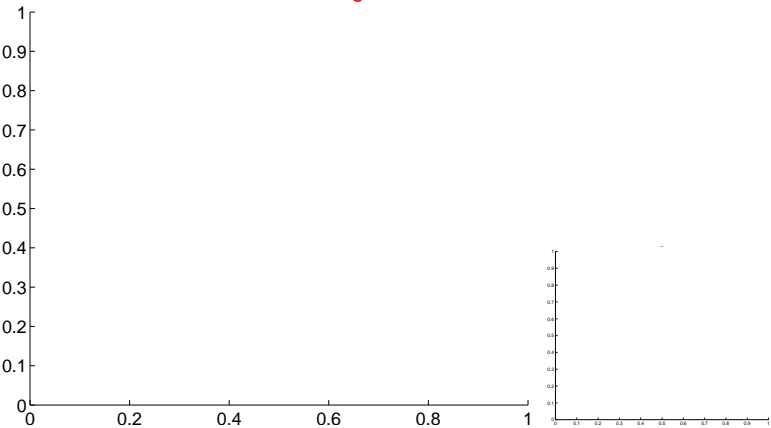
Q11 no OOT image



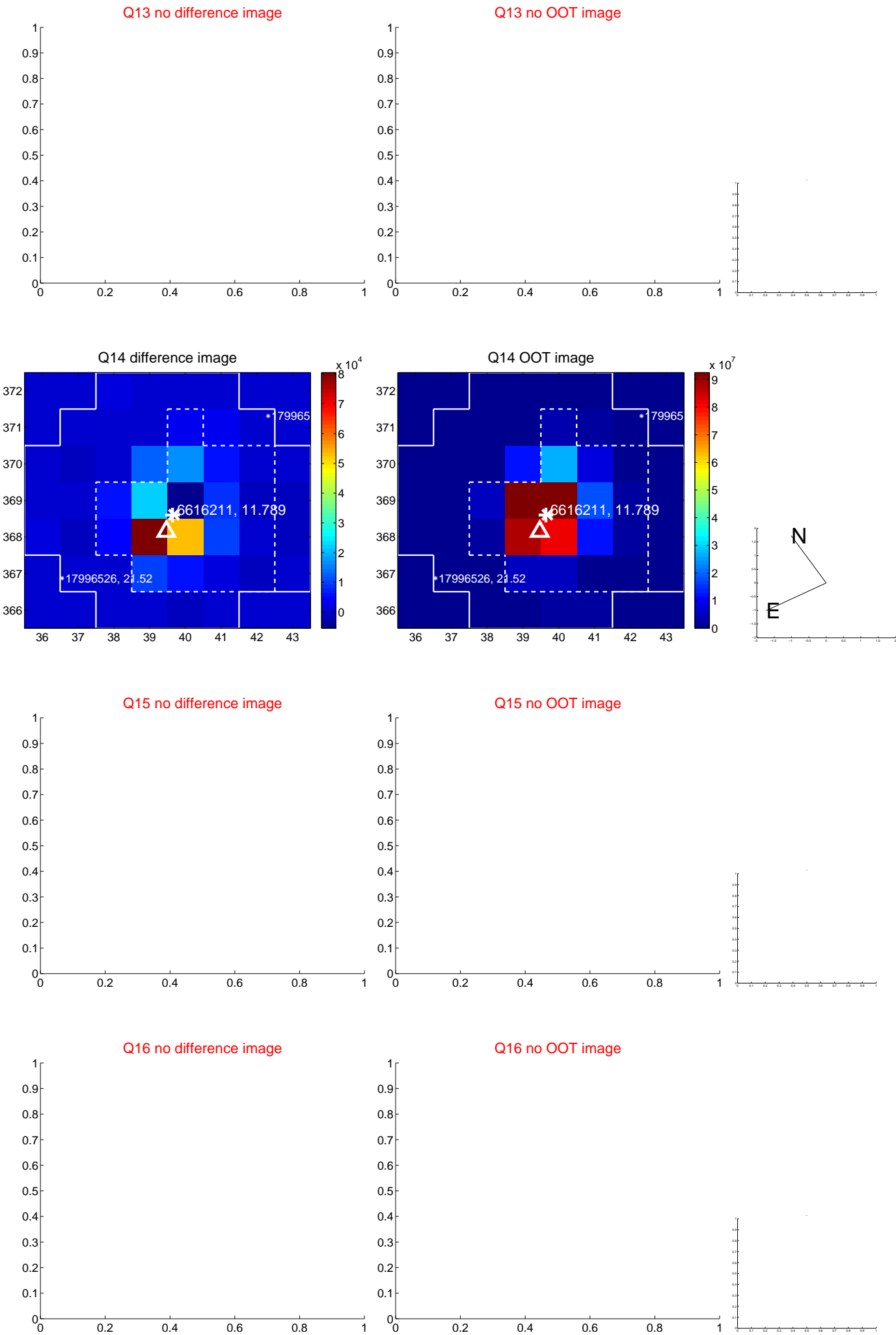
Q12 no difference image



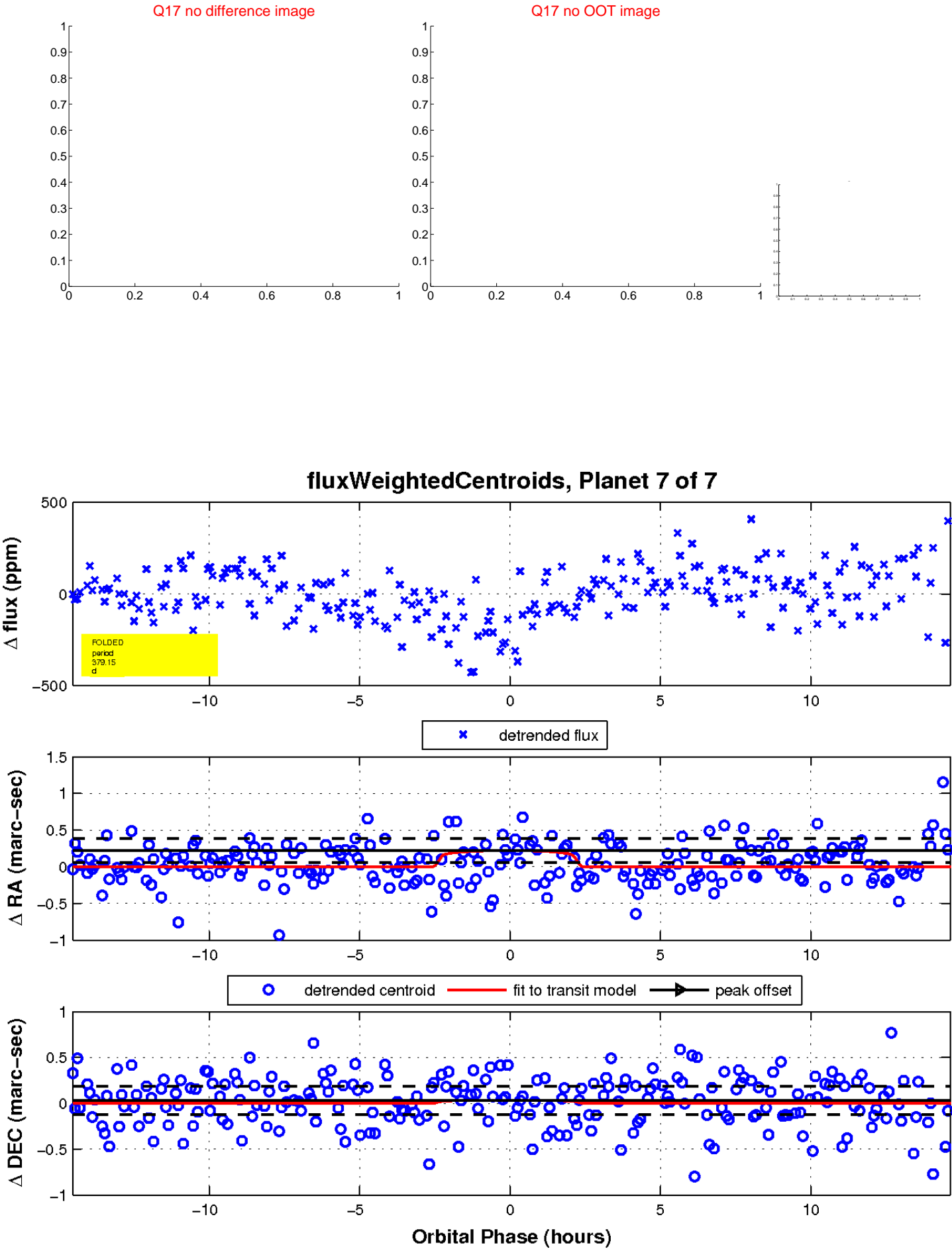
Q12 no OOT image



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



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



UKIRT Image

Declination

