

KIC 003644523

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})
003644523-01	OBS	1195.01	119.677646	176.127786	3541.2	29.072	76.1	53.1	0.97	6075	10.31	4.91
003644523-02	OBS	No	359.044416	274.208269	5692.7	15.655	53.4	33.8	0.97	6075	8.59	1.14
003644523-03	OBS	No	119.676966	154.564562	2616.2	15.603	30.0	33.7	0.97	6075	6.23	4.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003644523-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—INCONSISTENT_TRANS—HALO_GHOST—EPHEM_MATCH
003644523-02	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
003644523-03	OBS	FP	0.00	1	0	1	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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.

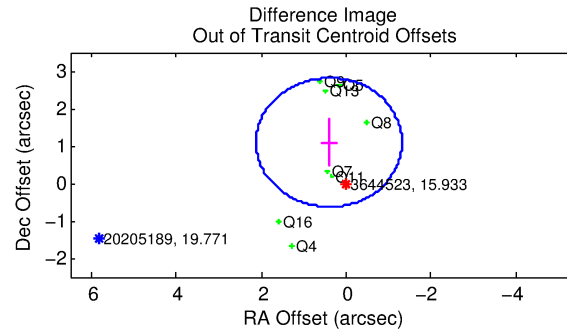
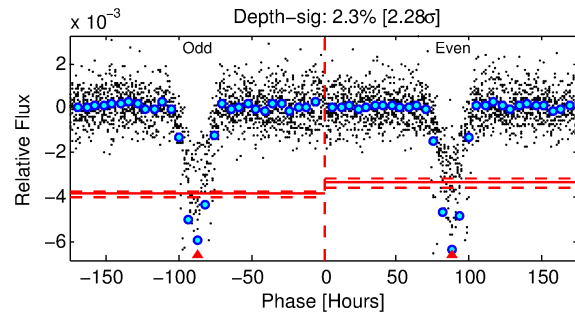
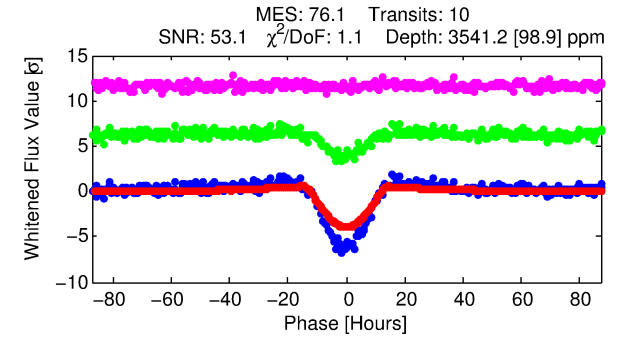
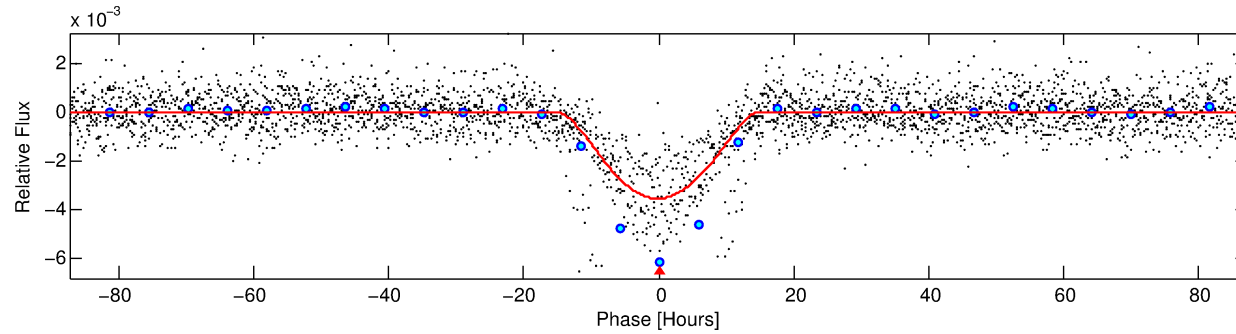
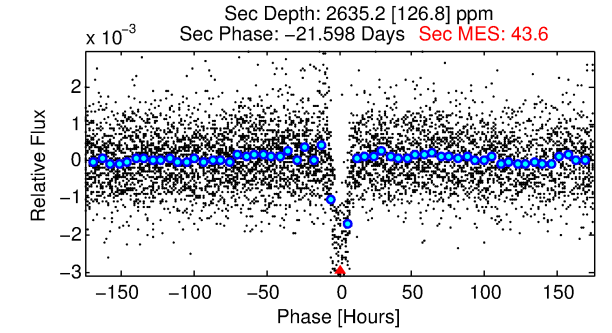
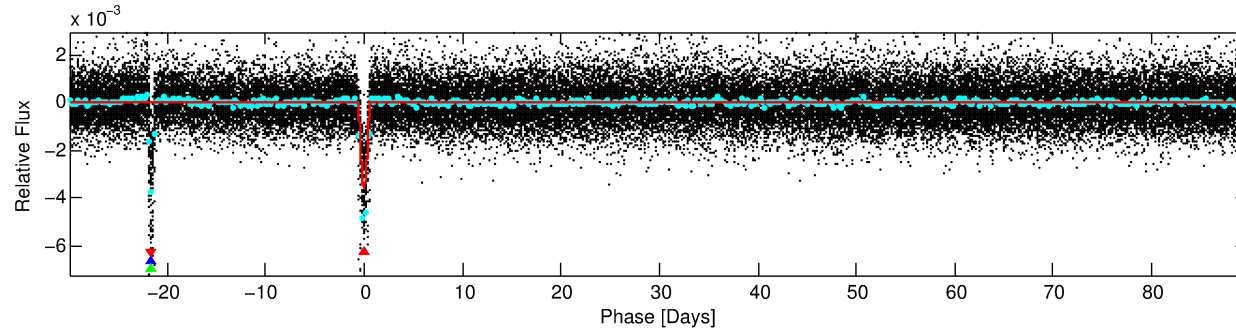
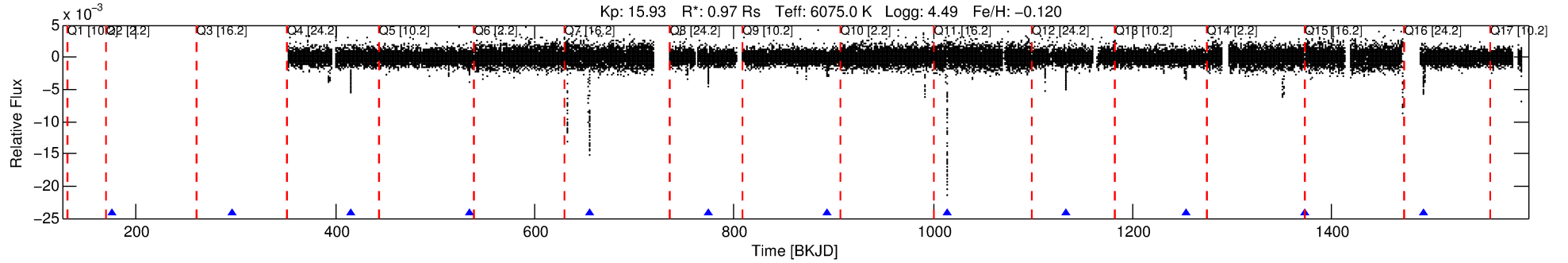
Ephemeris Match Information For 003644523-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
003644523-01	3644523	3511.01	3644542	1:1	55.0	-13	-5	8.35	15.93	84.44	Direct-PRF	0	0.26	0.27

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3644523 Candidate: 1 of 3 Period: 119.678 d
KOI: K01195 Corr: No Ephemeris Match



DV Fit Results:

Period = 119.67765 [0.00217] d
Epoch = 176.1278 [0.0149] BKJD
Rp/R* = 0.0975 [0.0632]
a/R* = 14.56 [1.95]
b = 1.00 [0.09]
Seff = 4.91 [1.97]
Teq = 380 [38] K
Rp = 10.31 [7.41] Re
a = 0.4830 [0.1242] AU
Ag = 3182.27 [4293.01] [0.74 σ]
Teffp = 4408 [1440] K [2.80 σ]

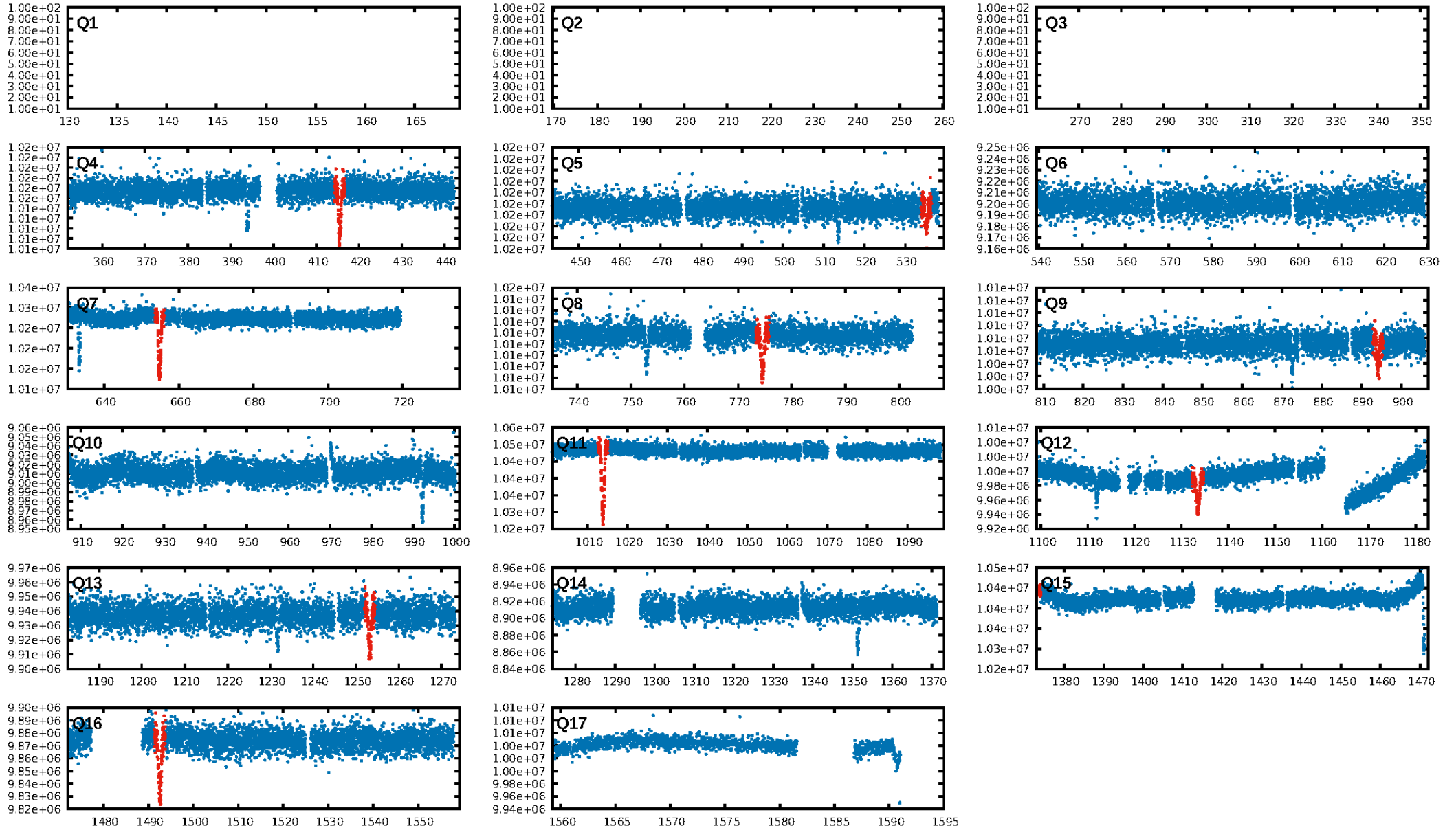
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [173.98 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 0.03677
Centroid-sig: 47.4%
Centroid-so: 0.434 arcsec [2.20 σ]
OotOffset-rm: 1.164 arcsec [2.03 σ]
KicOffset-rm: 0.976 arcsec [1.93 σ]
OotOffset-st: 0/2/3/3 [8]
KicOffset-st: 0/2/3/3 [8]
DiffImageQuality-fgm: 0.00 [0/8]
DiffImageOverlap-fno: 1.00 [8/8]

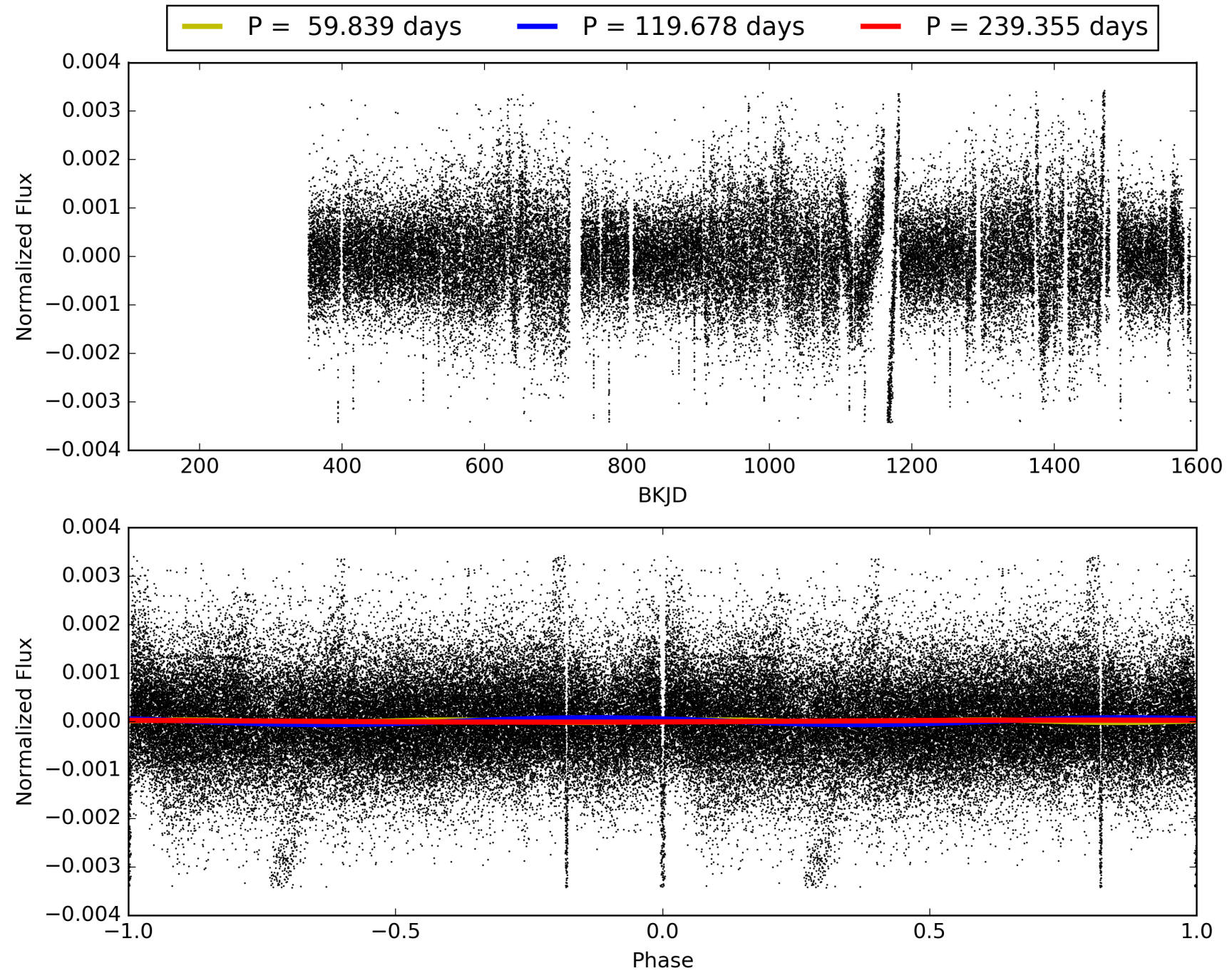
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003644523-01, PDC Light Curves

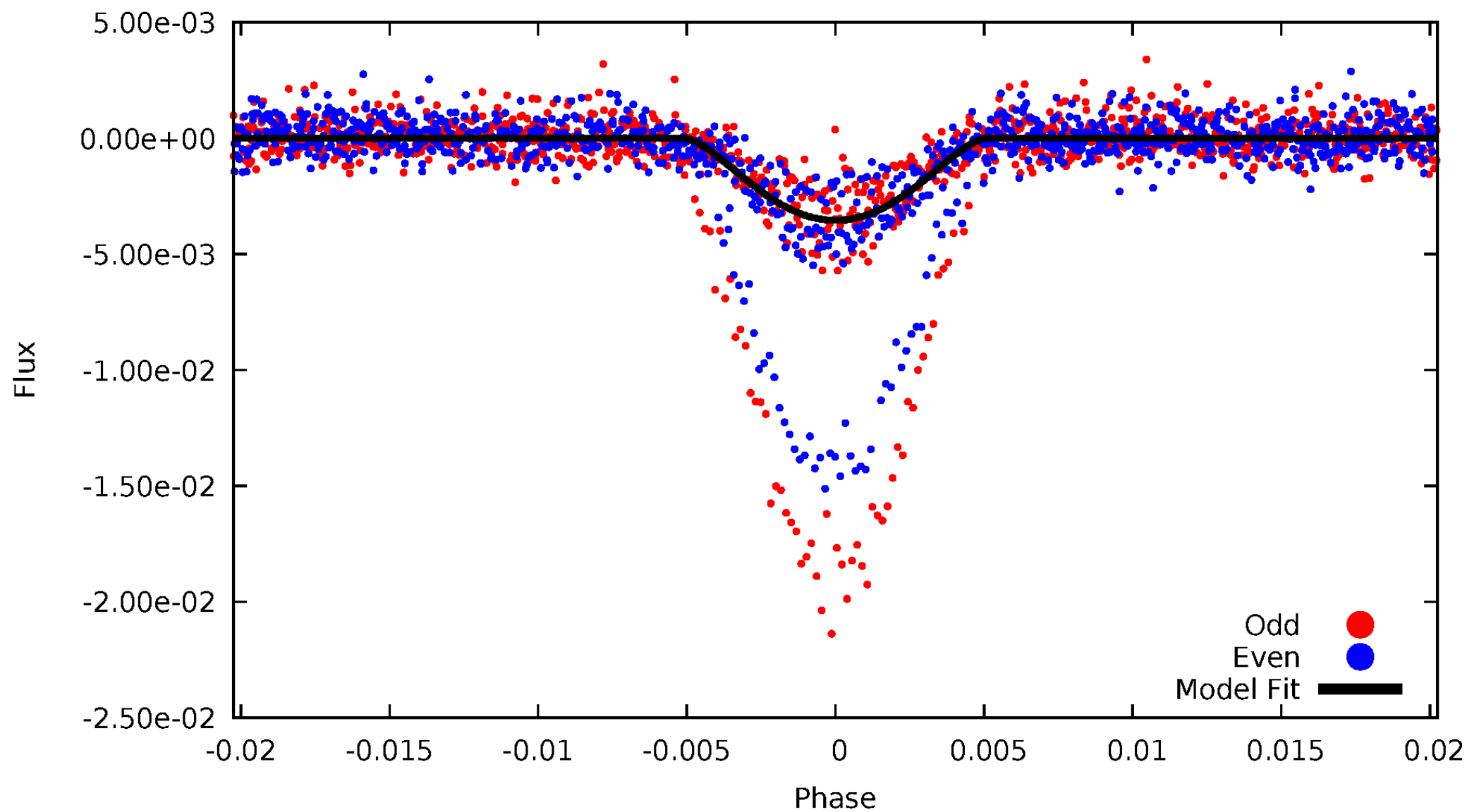


TCE 003644523-01



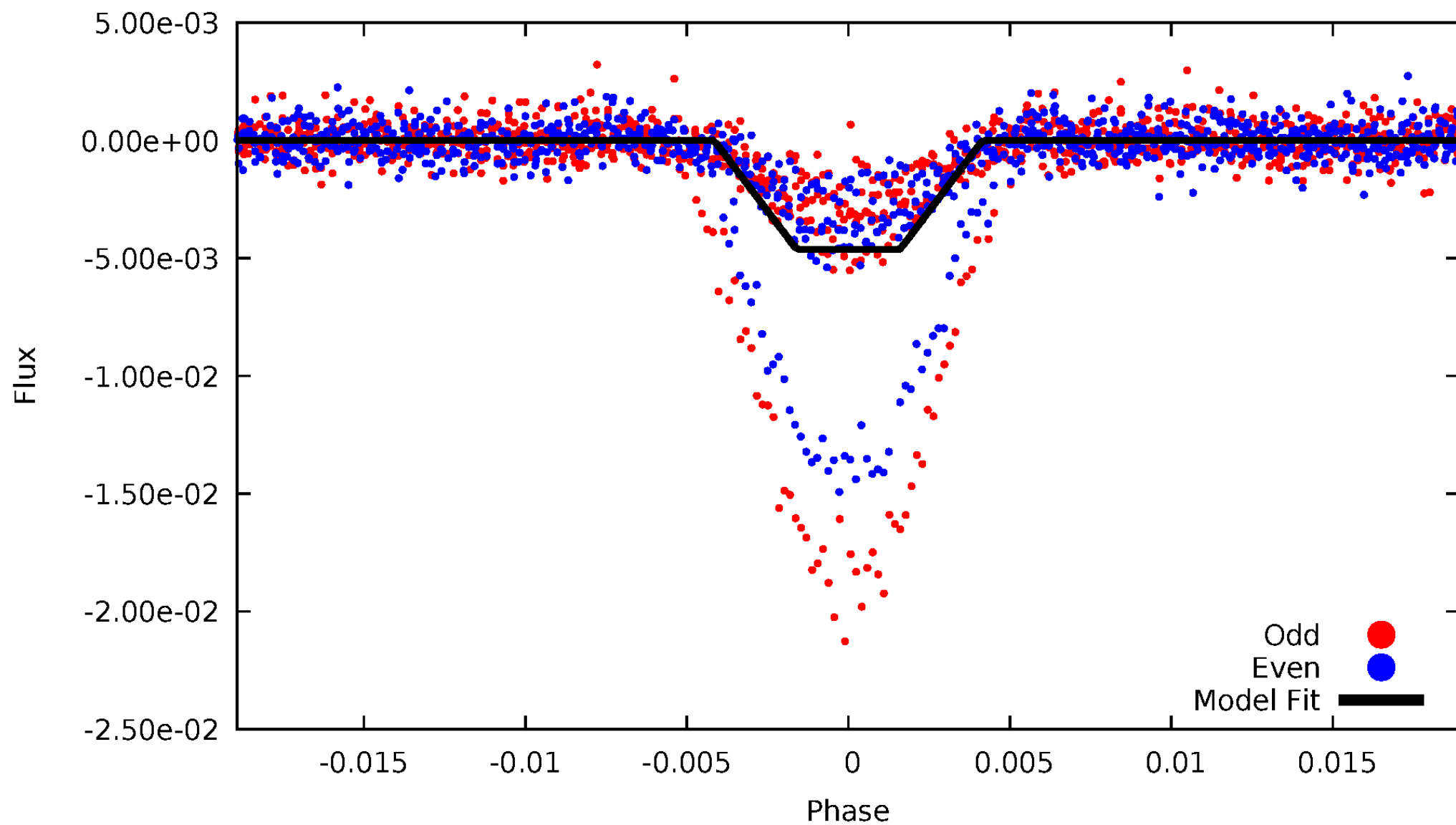
DV Odd/Even

TCE 003644523-01



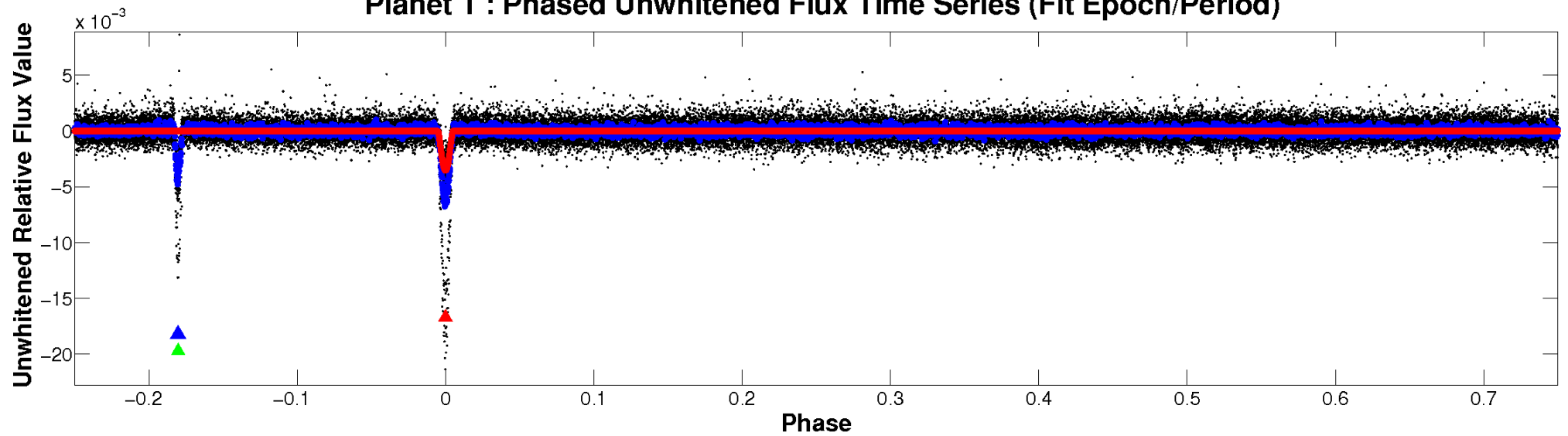
ALT Odd/Even

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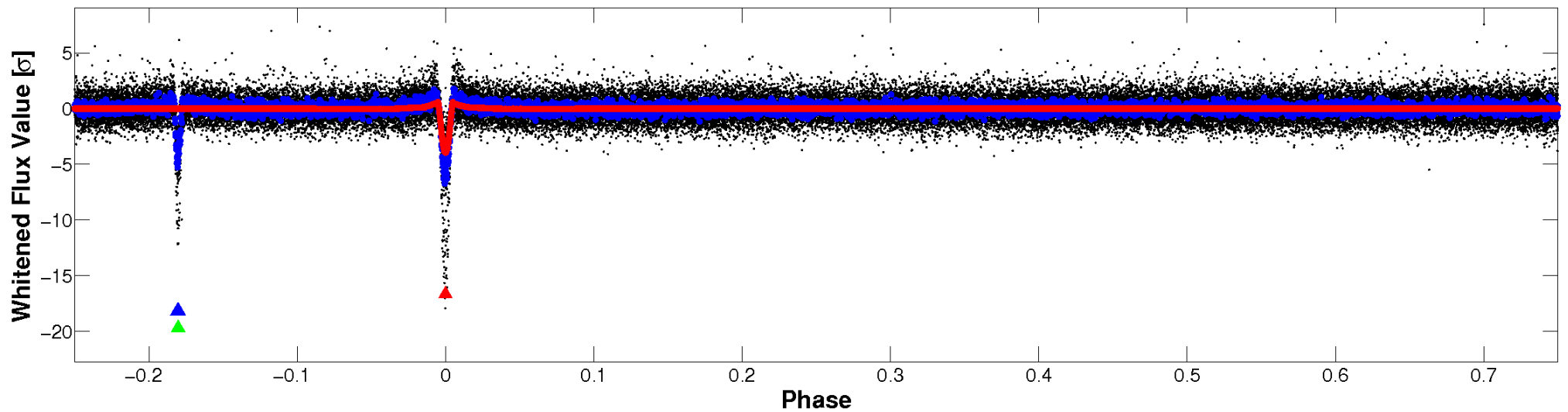


Non-Whitened Vs. Whitened Light Curve

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

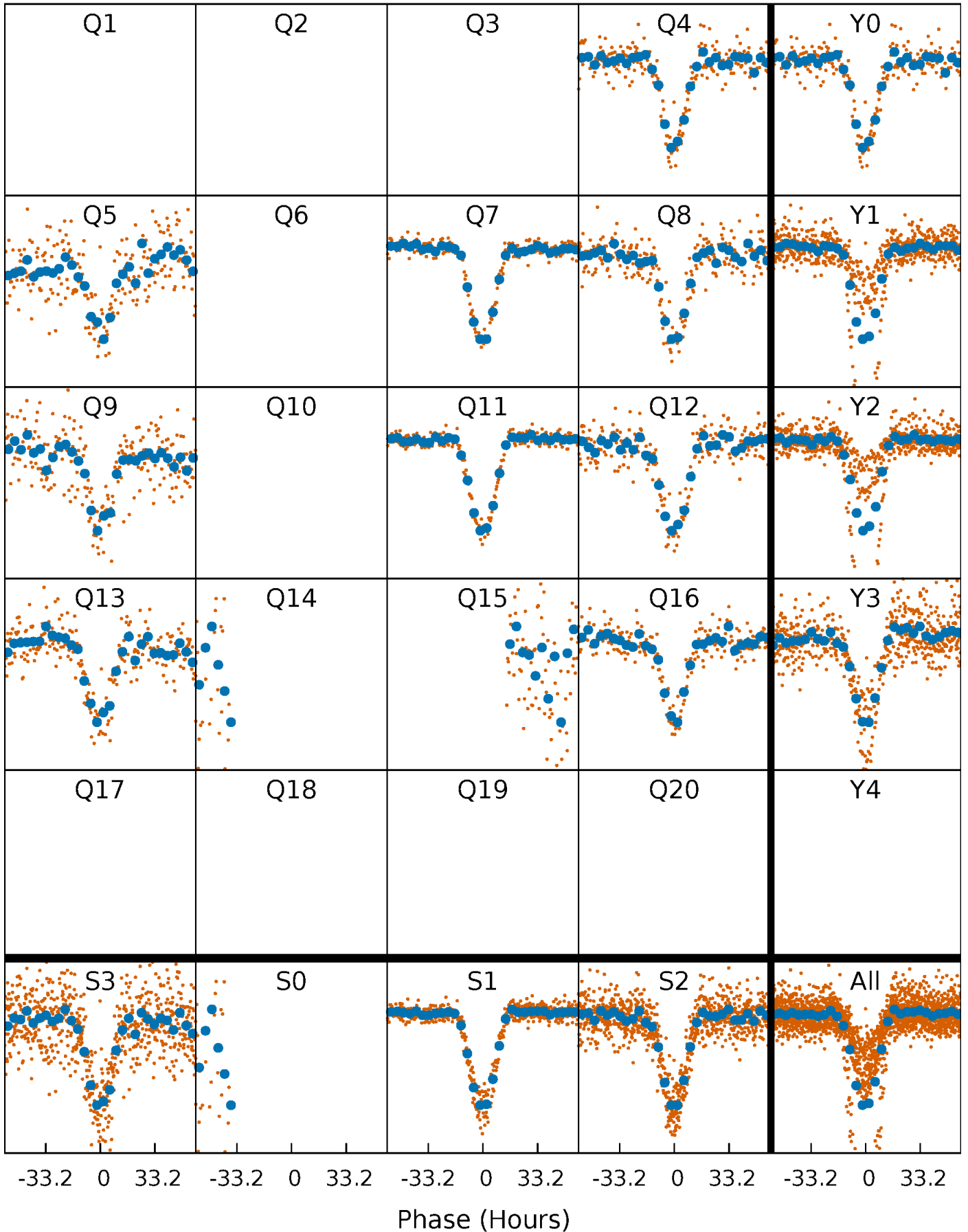


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



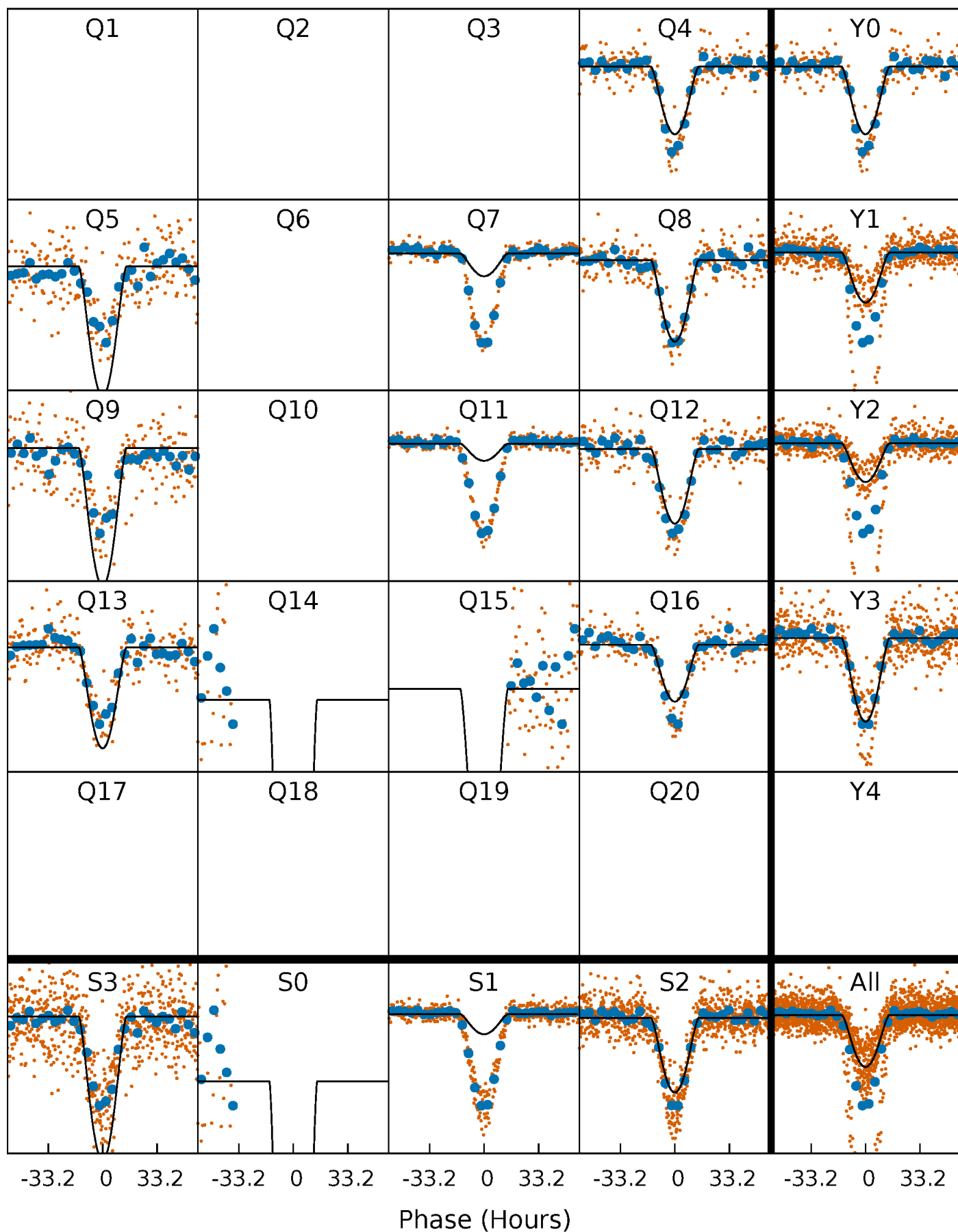
PDC Quarter-Phased Transit Curves

TCE 003644523-01 P=119.677646 Days $T_0=176.127786$ (BKJD)



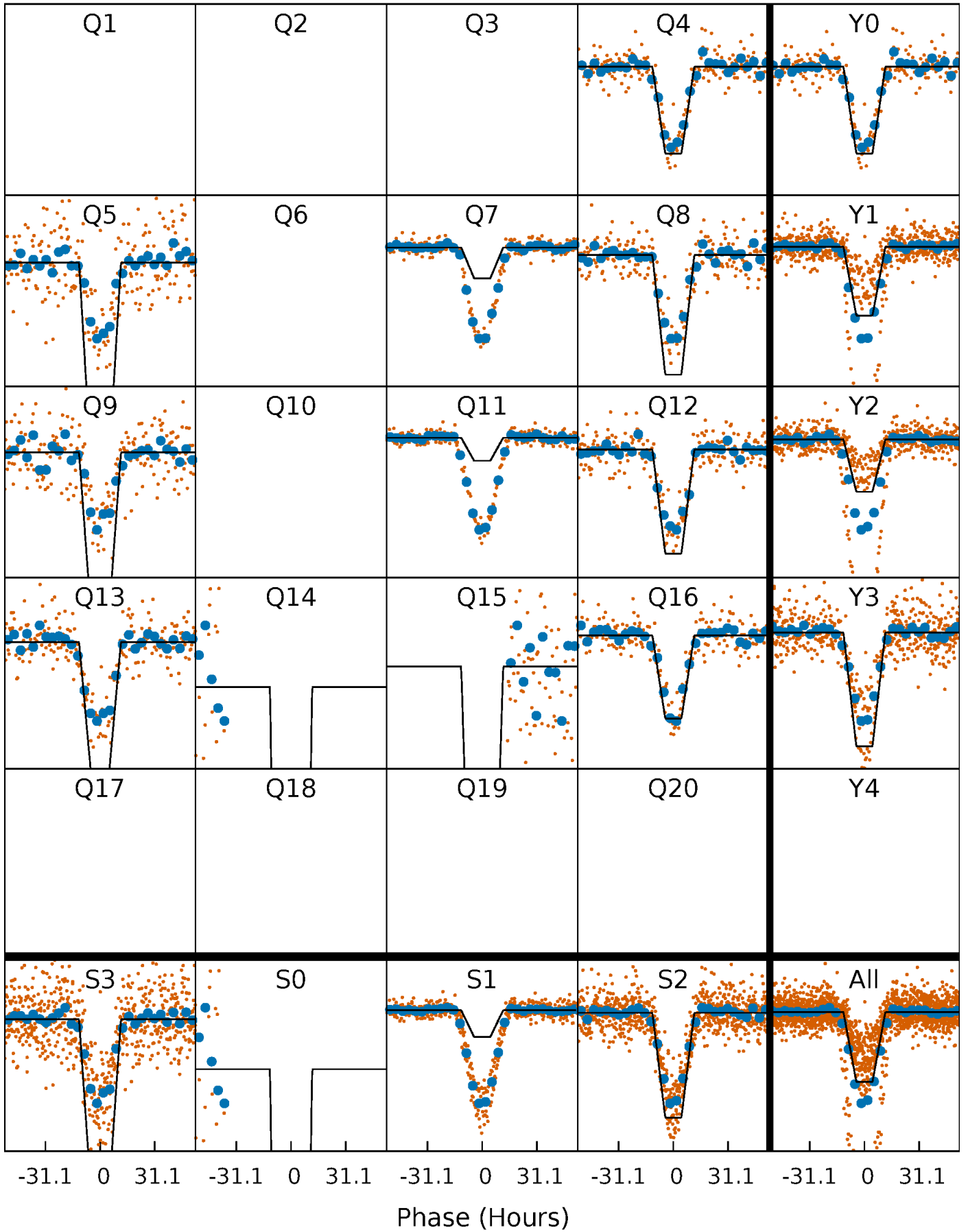
DV Quarter-Phased Transit Curves

TCE 003644523-01 P=119.677646 Days $T_0=176.127786$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

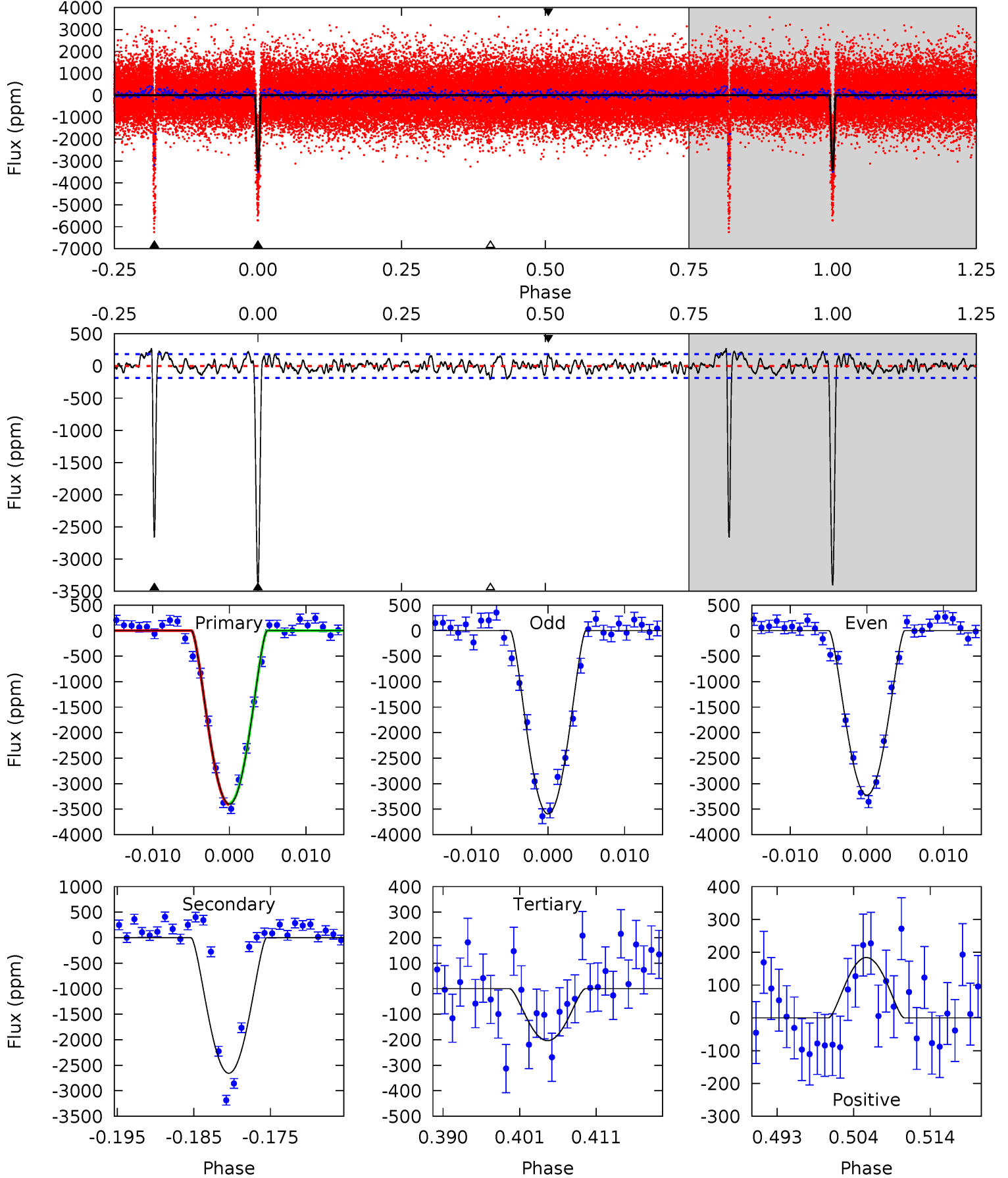
TCE 003644523-01 P=119.679361 Days $T_0=176.112793$ (BKJD)



DV Model-Shift Uniqueness Test

003644523-01, P = 119.677646 Days, E = 176.127786 Days

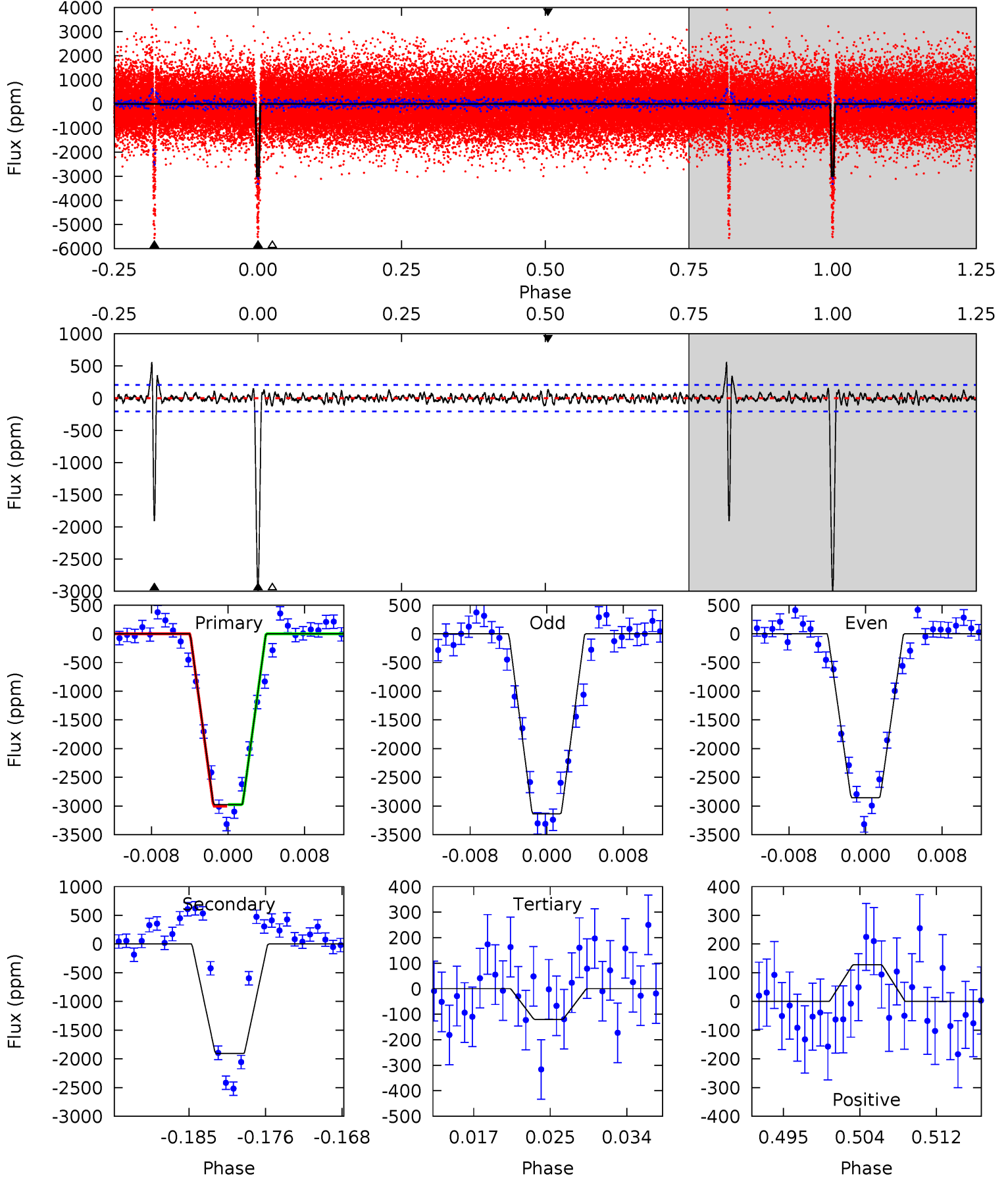
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
92.3	72.1	5.53	5.00	5.02	2.57	1.97	86.8	87.4	66.6	67.2	4.96	1.50	0.07	0



Alt Model-Shift Uniqueness Test

003644523-01, P = 119.679361 Days, E = 176.112793 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.2	46.9	2.95	3.14	5.06	2.64	1.03	70.2	70.0	43.9	43.7	3.44	1.65	0.16	0.32



Stellar Parameters For KIC 003644523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6075^{+189}_{-232}	$4.486^{+0.050}_{-0.200}$	$-0.120^{+0.250}_{-0.350}$	$0.969^{+0.300}_{-0.100}$	$1.048^{+0.139}_{-0.153}$	$1.622^{+0.434}_{-0.827}$
	+3%/-4%	+1%/-4%	+208%/-292%	+31%/-10%	+13%/-15%	+27%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003644523-01 / KOI 1195.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2657 ± 37	$10.99^{+7.09}_{-5.82}$	543^{+43}_{-28}	4556^{+1833}_{-755}	2785^{+9812}_{-1739}
Alt.	-1907 ± 41	$9.01^{+6.56}_{-5.32}$	541^{+36}_{-26}	4614^{+2327}_{-812}	2911^{+14374}_{-1897}

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

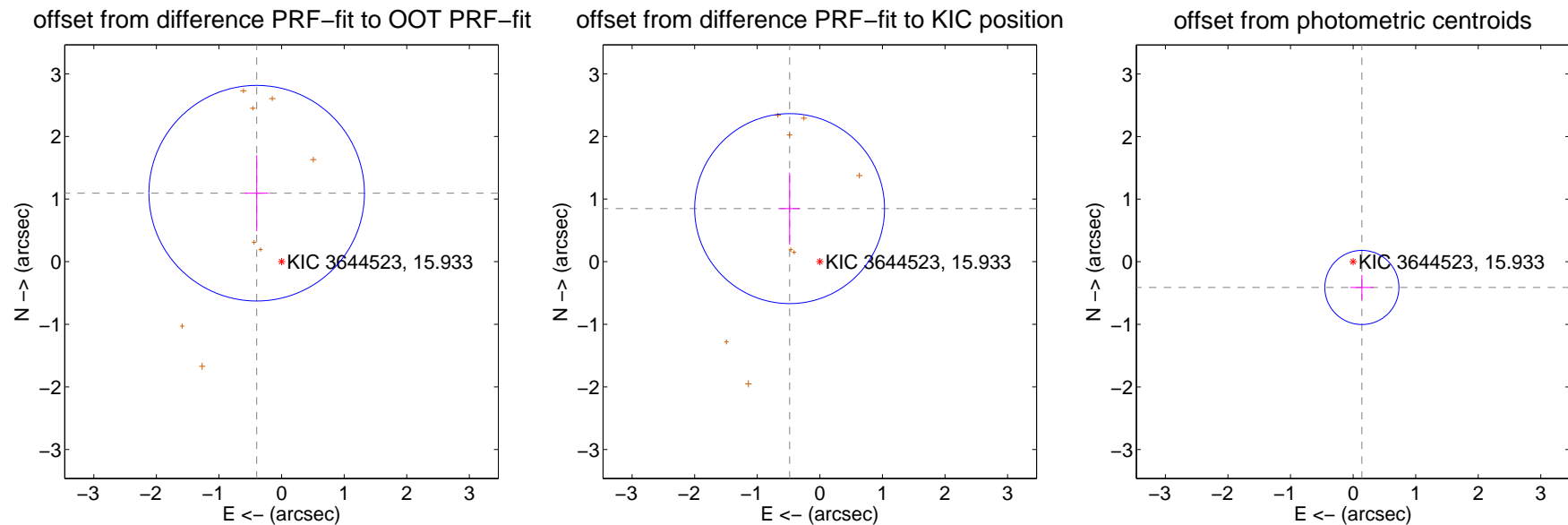
DV Centroid Data

Supplemental centroid analysis for 003644523-01. Kepler magnitude: 15.93. Transit SNR 53.05

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.164 ± 0.574	2.03	0.398 ± 0.189	1.094 ± 0.607
PRF-fit source offset from KIC position	0.976 ± 0.506	1.93	0.483 ± 0.160	0.848 ± 0.575
photometric centroid source offset	0.43 ± 0.20	2.20	-0.14 ± 0.19	-0.41 ± 0.20



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 no difference image



Q2 no OOT image



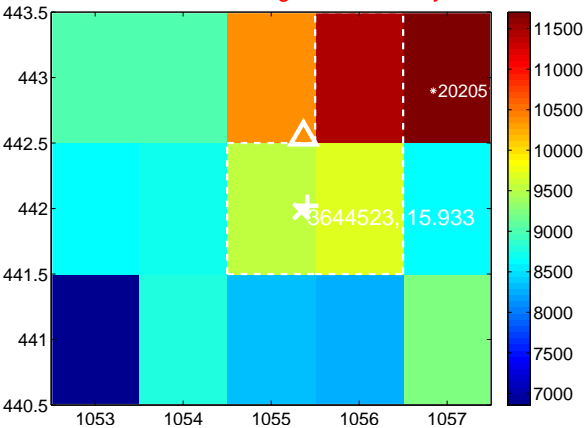
Q3 no difference image



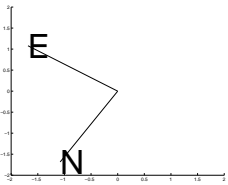
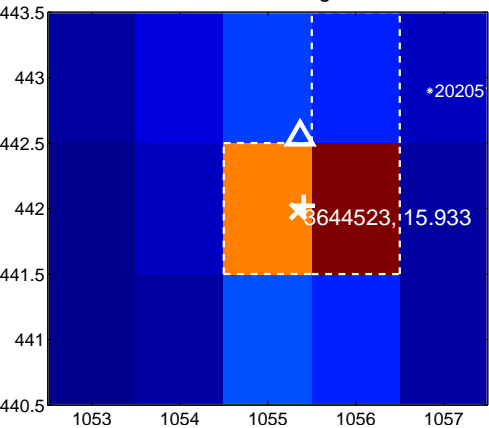
Q3 no OOT image



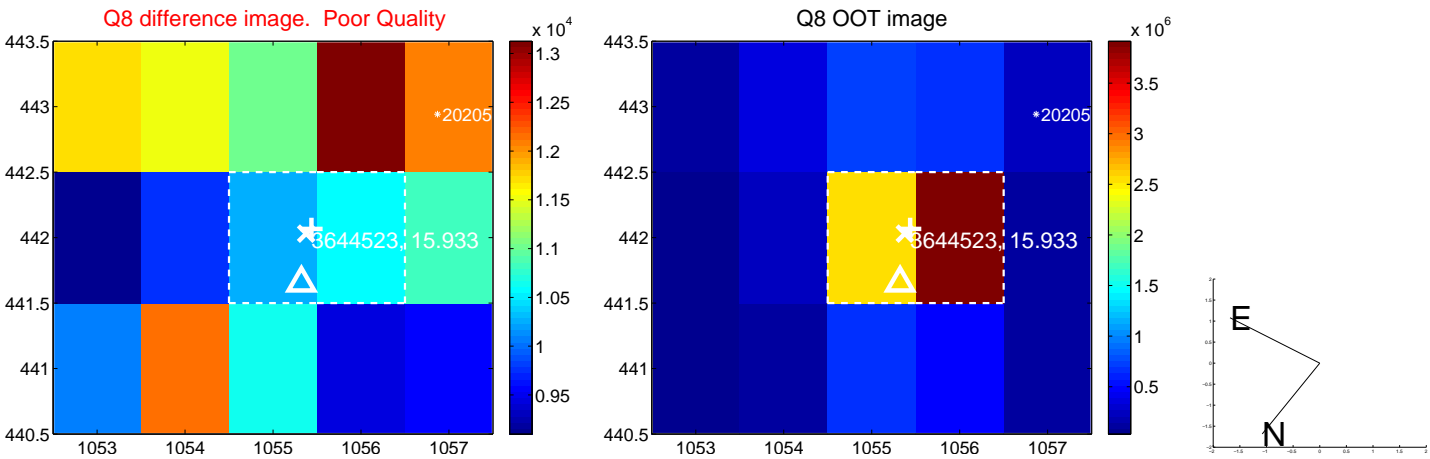
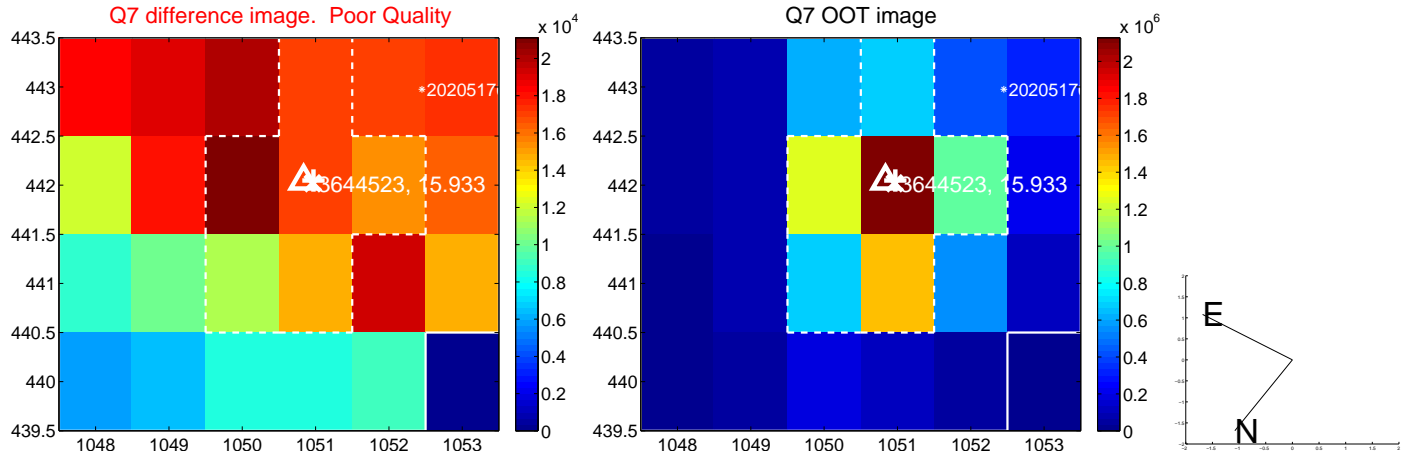
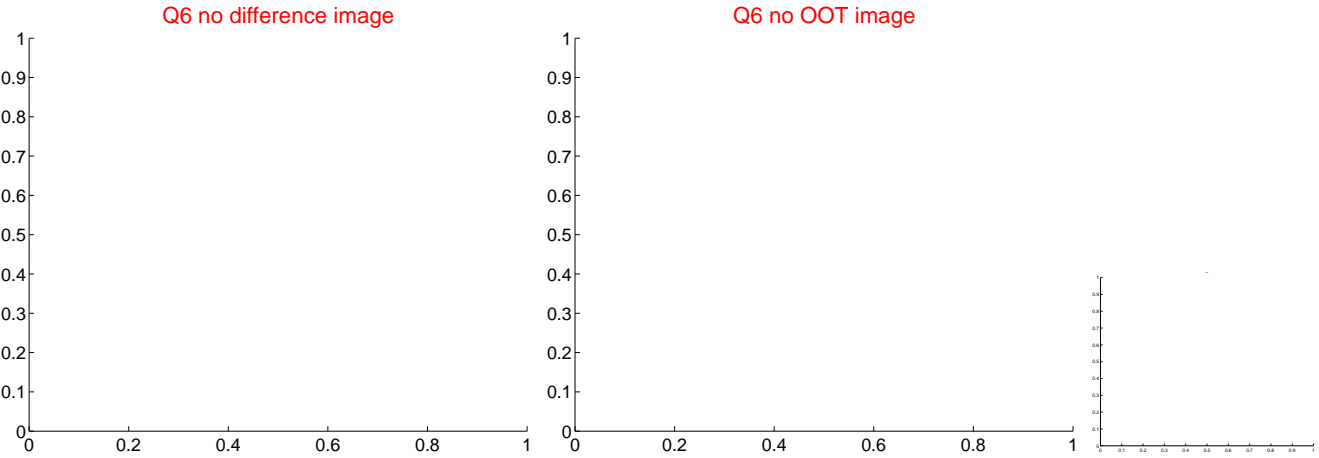
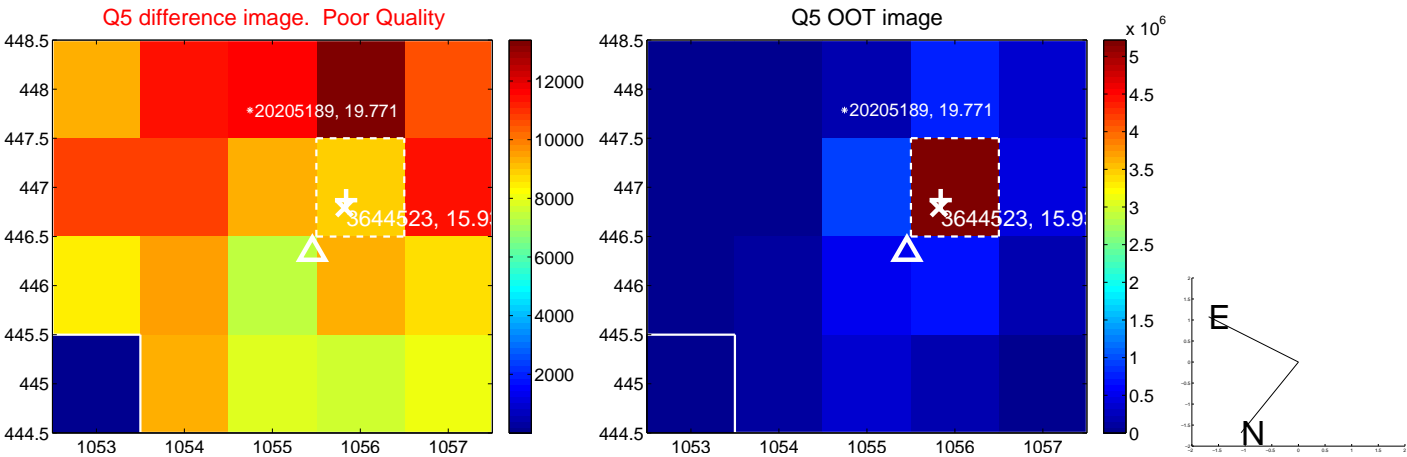
Q4 difference image. Poor Quality



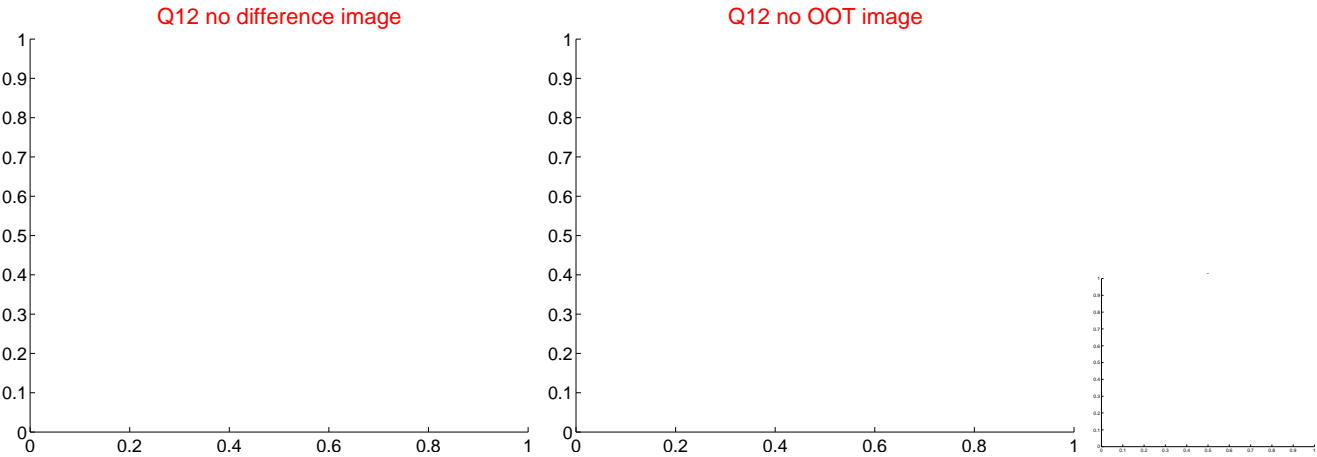
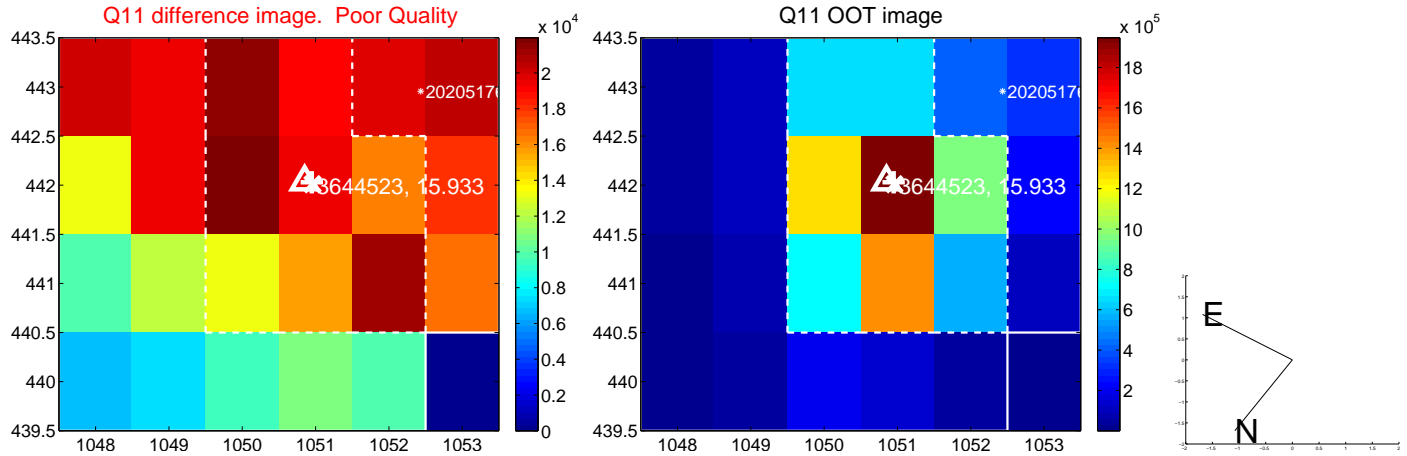
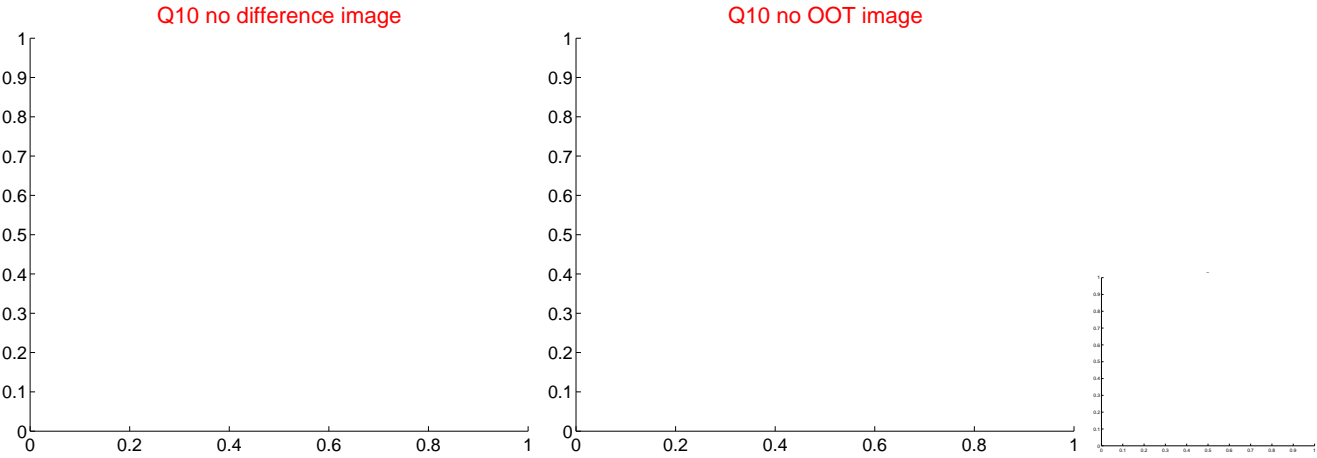
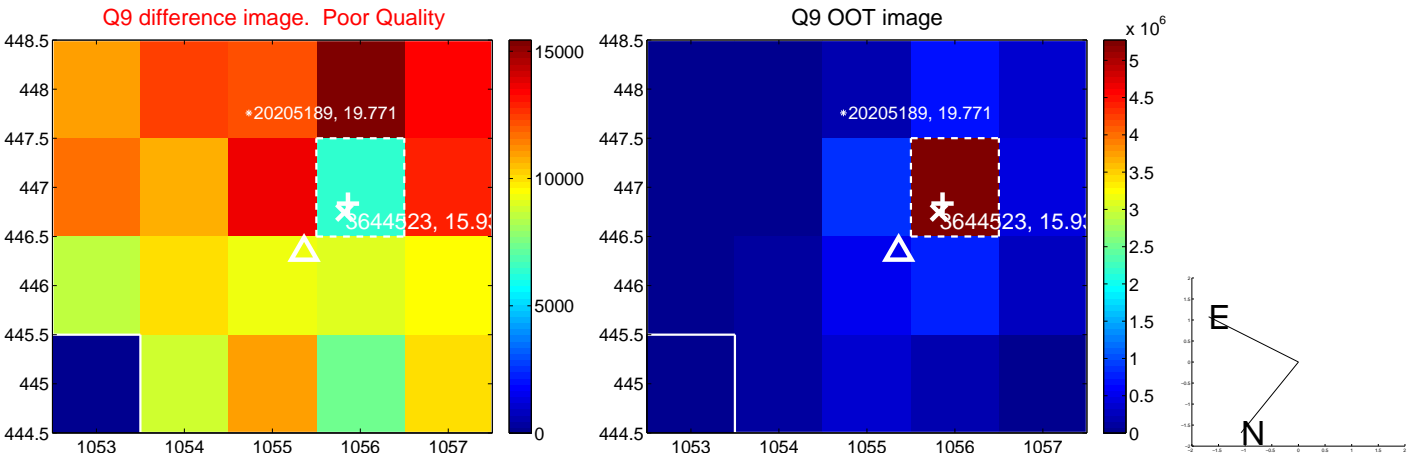
Q4 OOT image



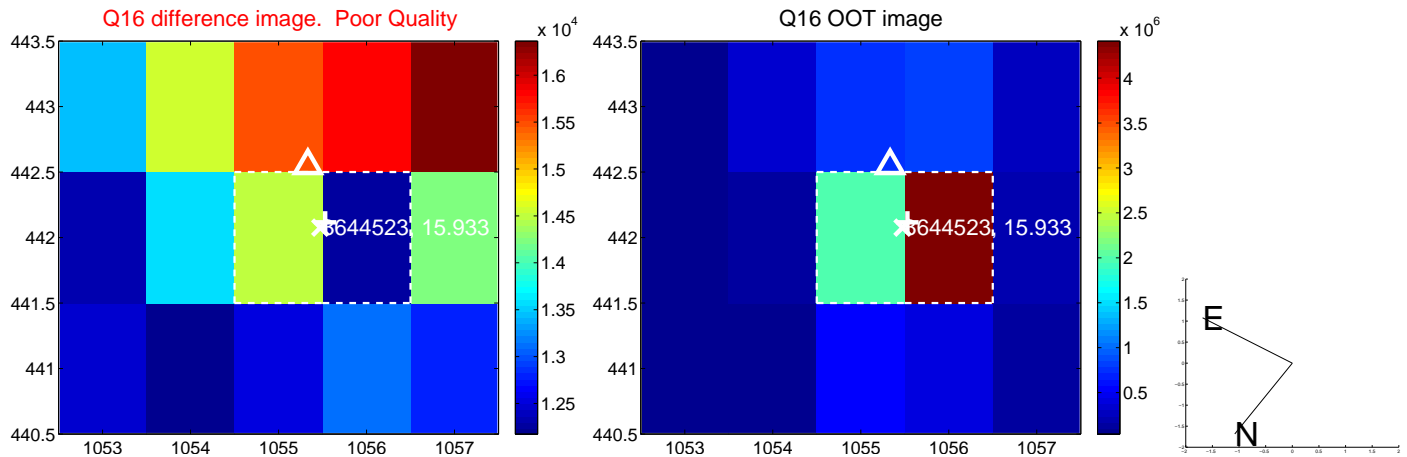
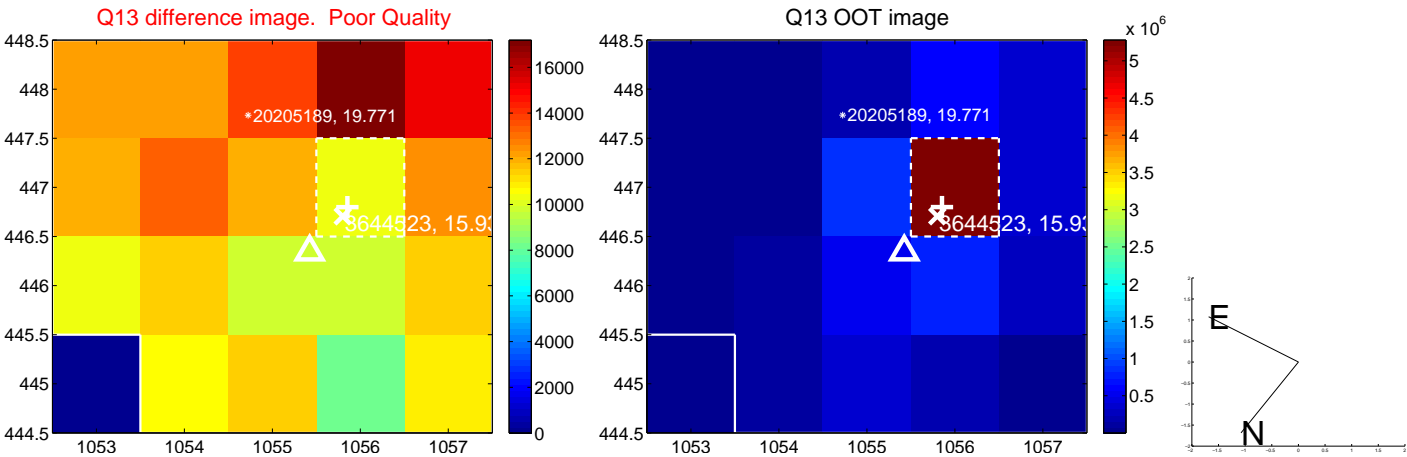
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



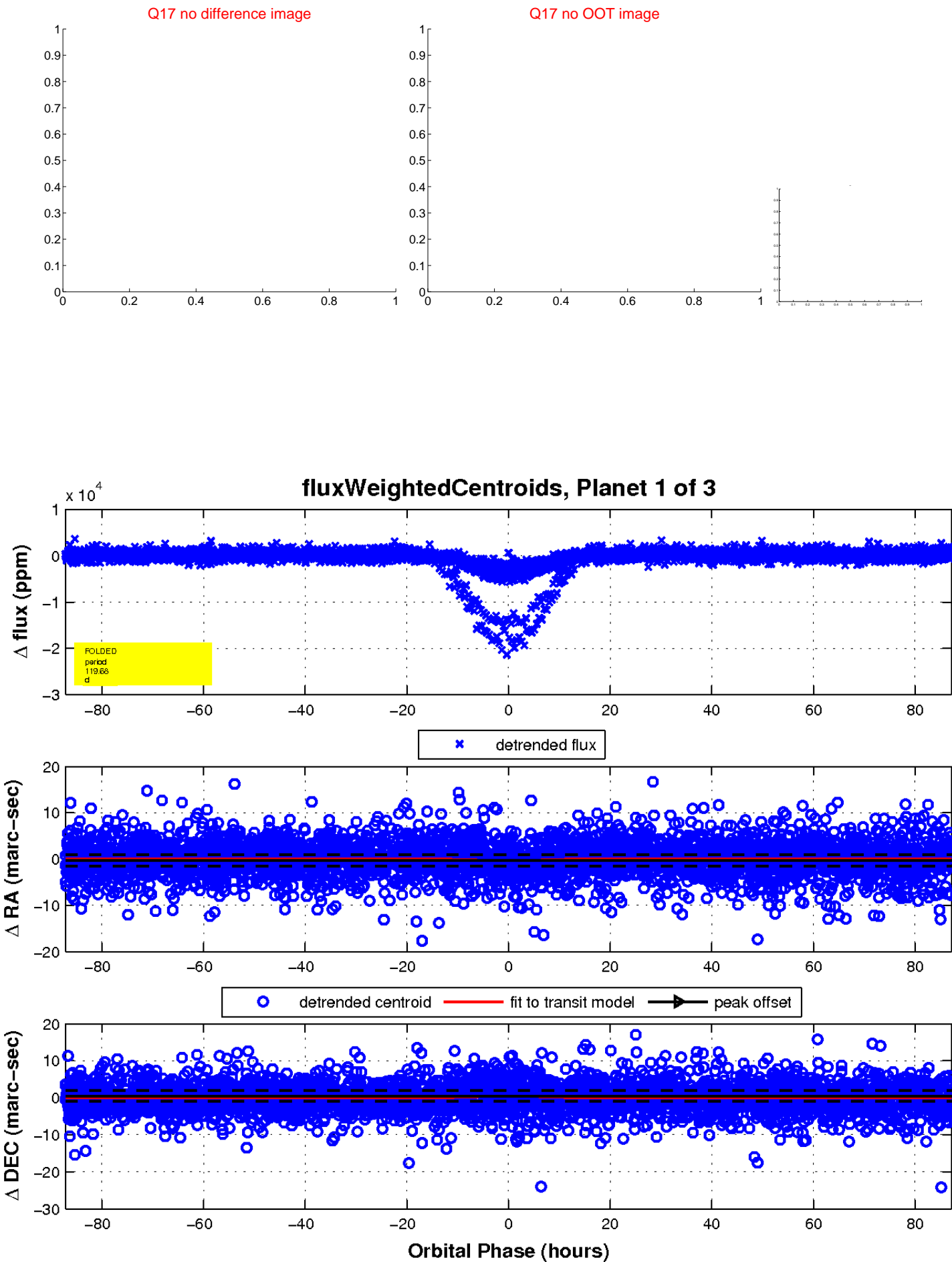
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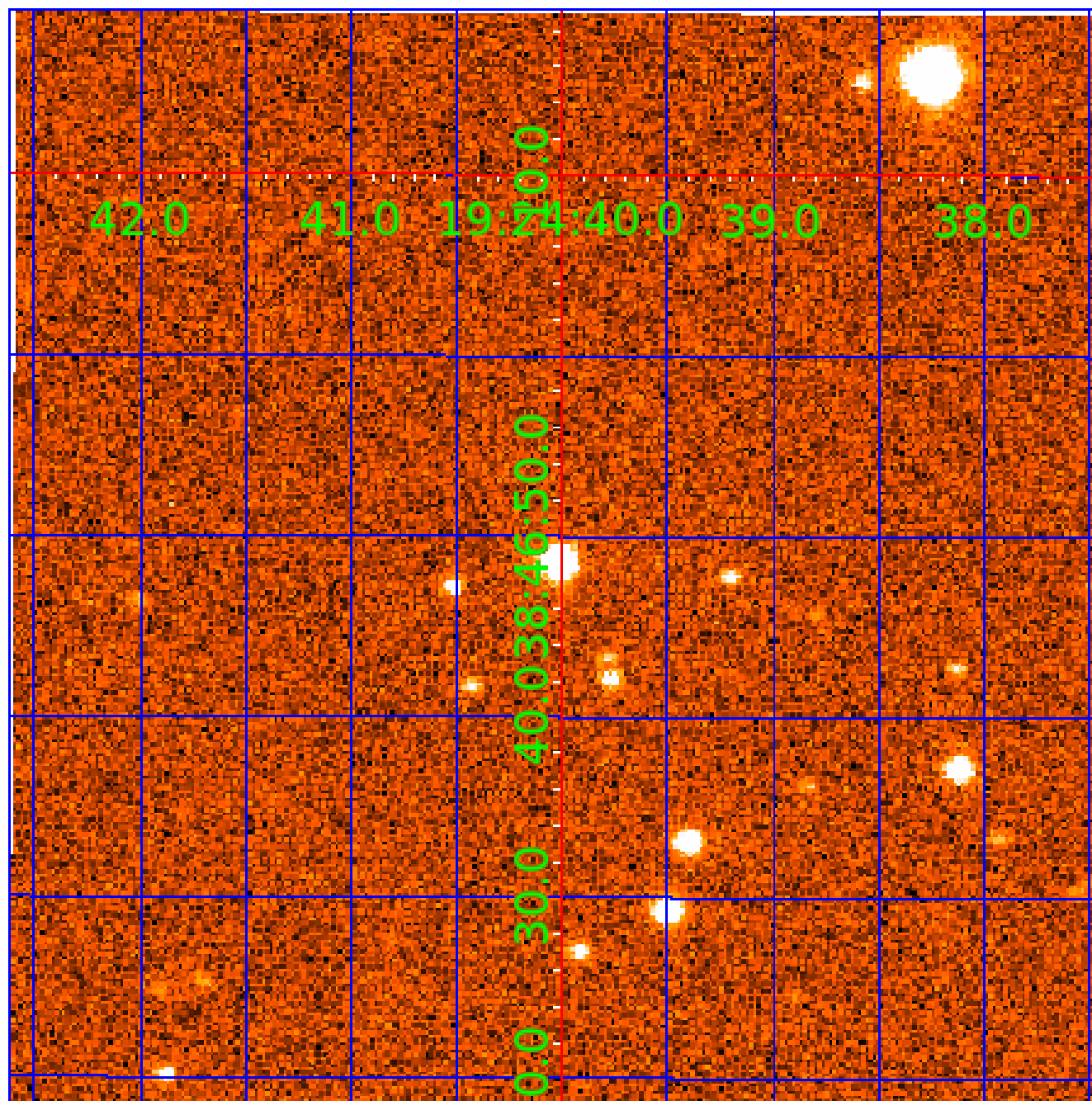


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003644523

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})
003644523-01	OBS	1195.01	119.677646	176.127786	3541.2	29.072	76.1	53.1	0.97	6075	10.31	4.91
003644523-02	OBS	No	359.044416	274.208269	5692.7	15.655	53.4	33.8	0.97	6075	8.59	1.14
003644523-03	OBS	No	119.676966	154.564562	2616.2	15.603	30.0	33.7	0.97	6075	6.23	4.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003644523-02	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
003644523-03	OBS	FP	0.00	1	0	1	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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.

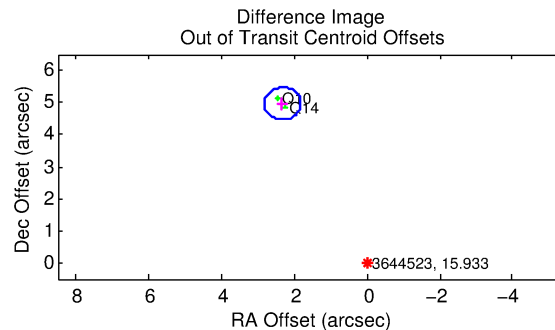
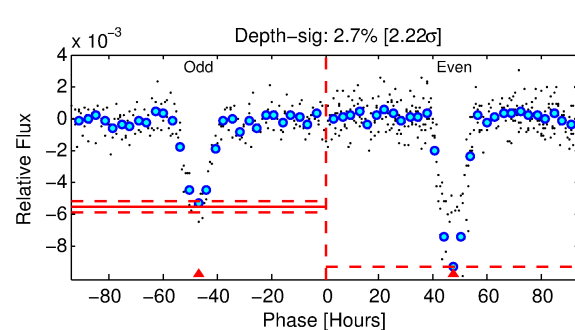
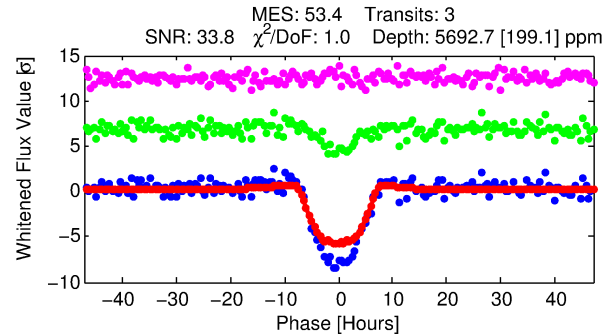
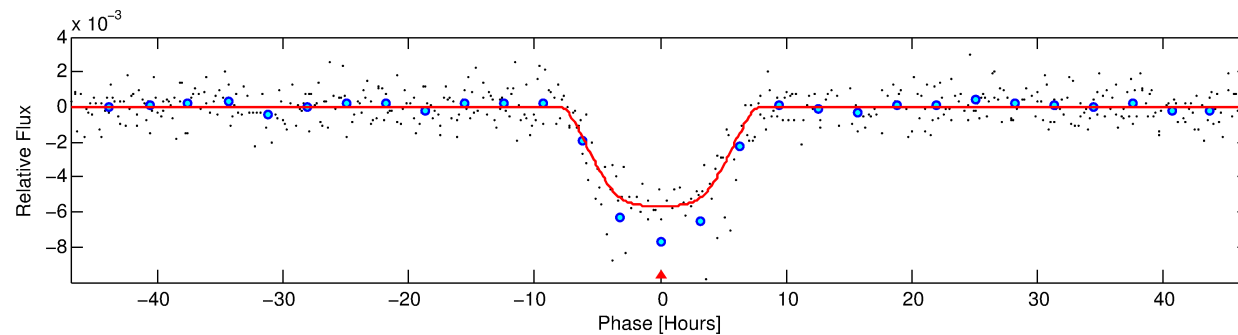
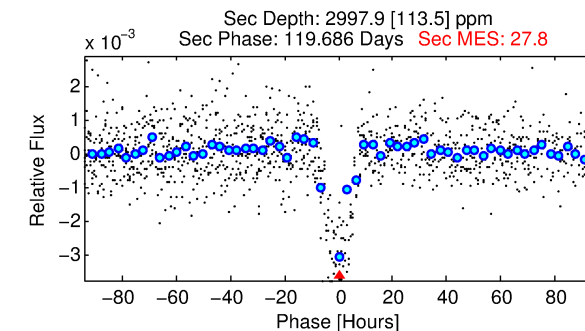
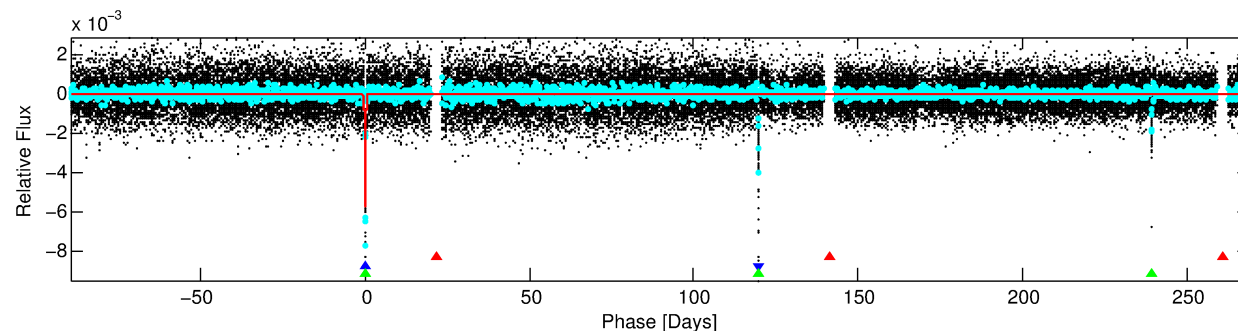
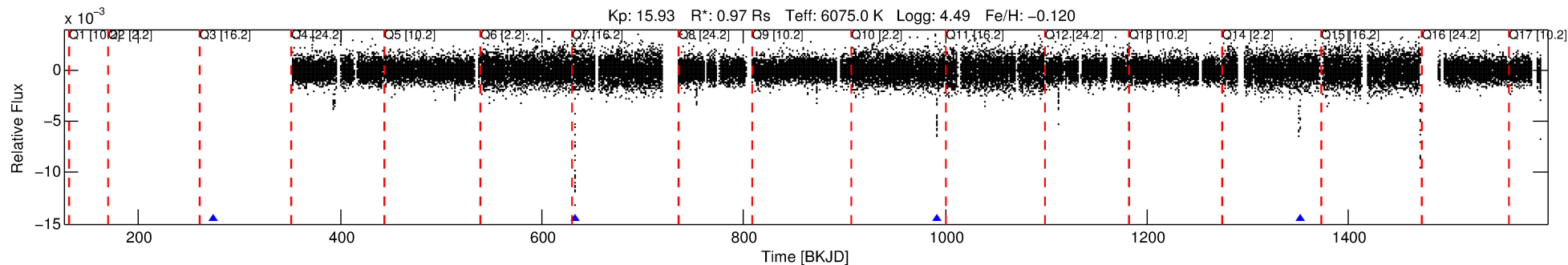
Ephemeris Match Information For 003644523-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003644523-02	3644523	003644542-sec	3644542	3:1	55.0	-13	-5	8.35	15.93	45.14	Direct-PRF	0	0.64	0.14

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3644523 Candidate: 2 of 3 Period: 359.044 d
KOI: K01195 Corr: No Ephemeris Match



DV Fit Results:

Period = 359.04442 [0.00577] d
Epoch = 274.2083 [0.0128] BKJD
Rp/R* = 0.0812 [0.0023]
a/R* = 107.54 [7.00]
b = 0.89 [0.02]
Seff = 1.14 [0.45]
Teq = 263 [26] K
Rp = 8.59 [2.67] Re
a = 1.0046 [0.2584] AU
Ag = 22568.19 [8490.23] [2.66σ]
Teff = 4988 [209] K [22.46σ]

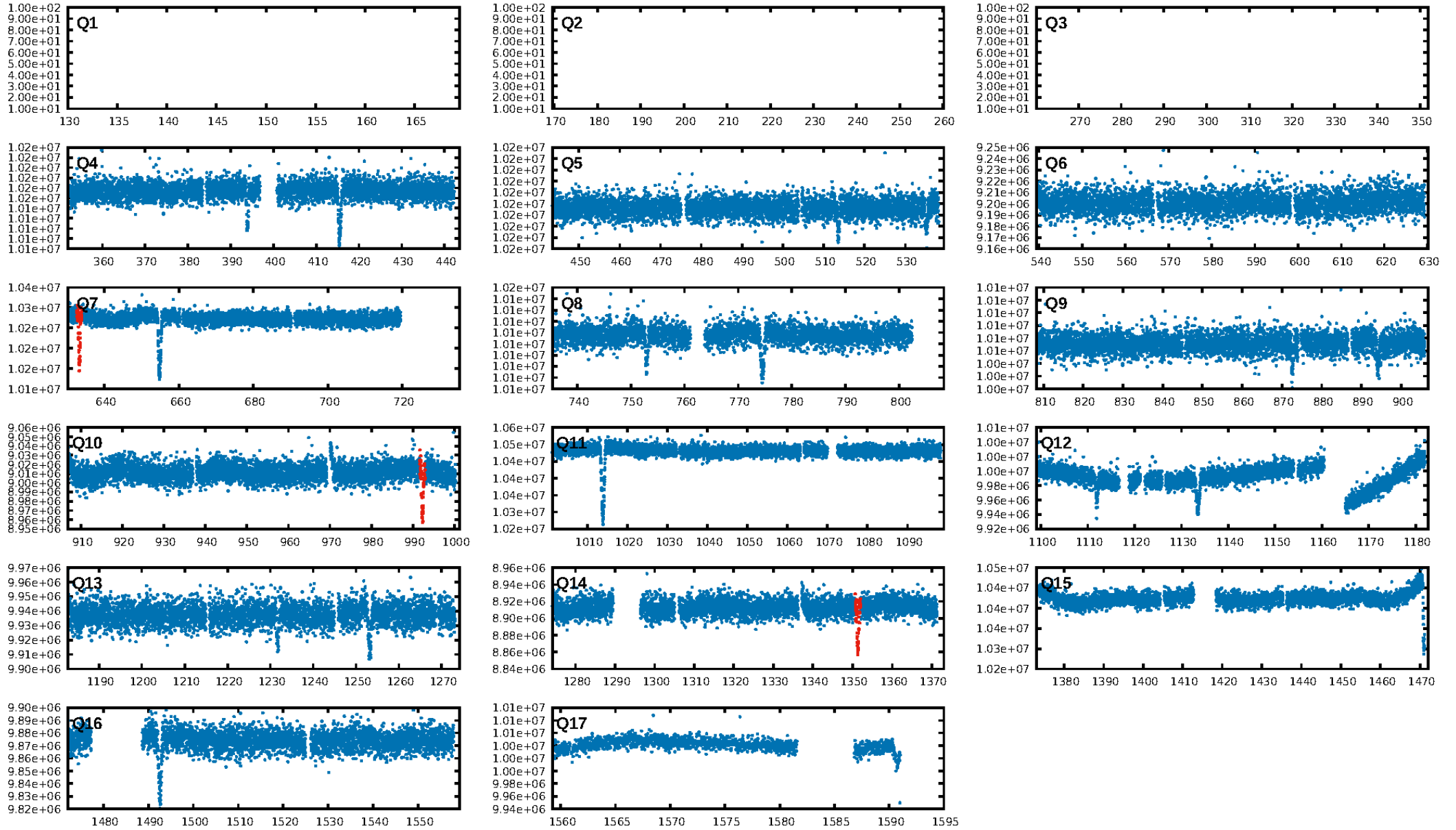
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [173.98σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.06469
Centroid-sig: 0.0%
Centroid-so: 4.595 arcsec [13.69σ]
OotOffset-rm: 5.487 arcsec [32.79σ]
KicOffset-rm: 5.036 arcsec [30.71σ]
OotOffset-st: 2/0/0/0 [2]
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DiffImageOverlap-fno: 0.00 [0/2]

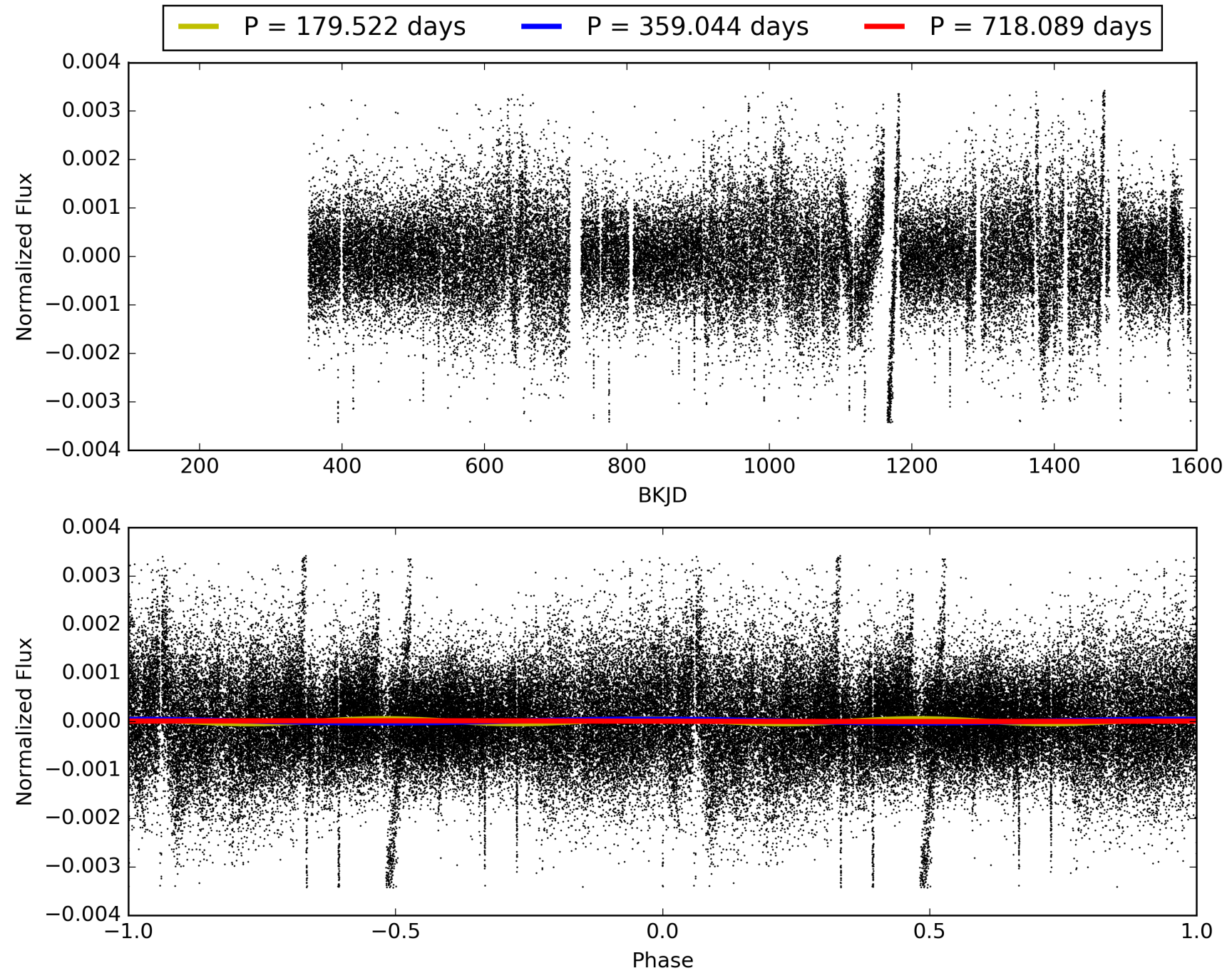
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003644523-02, PDC Light Curves

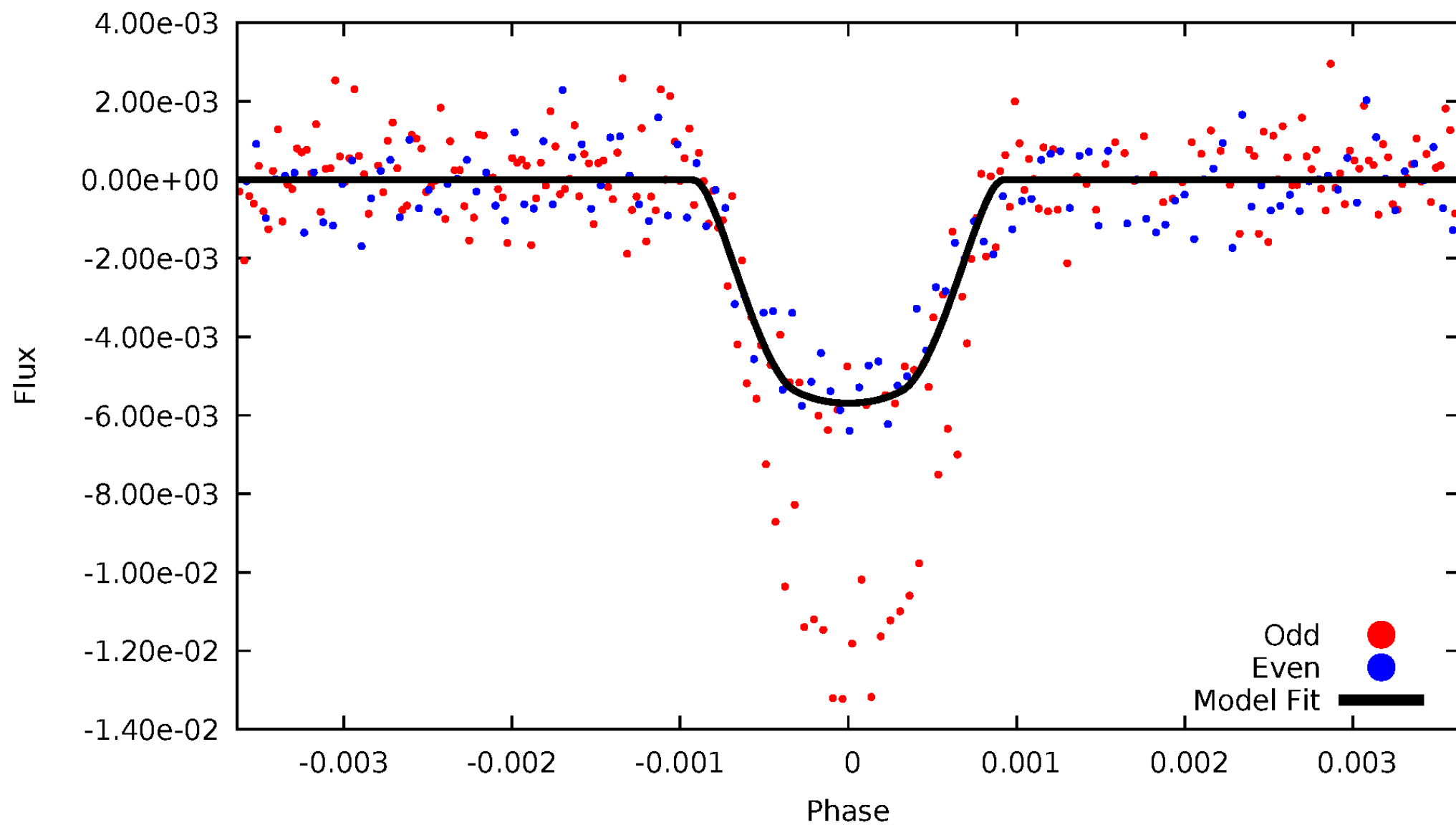


TCE 003644523-02



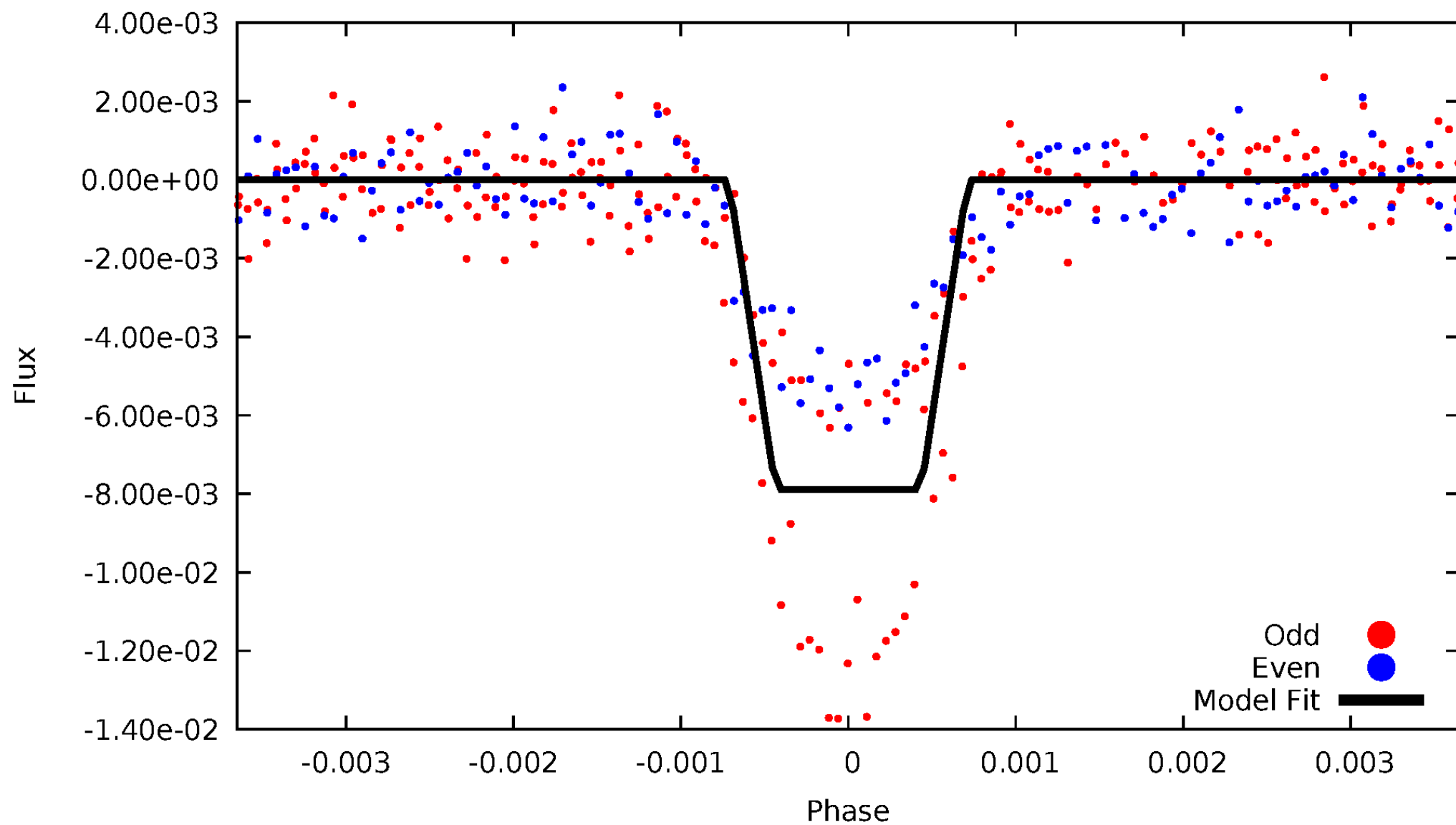
DV Odd/Even

TCE 003644523-02



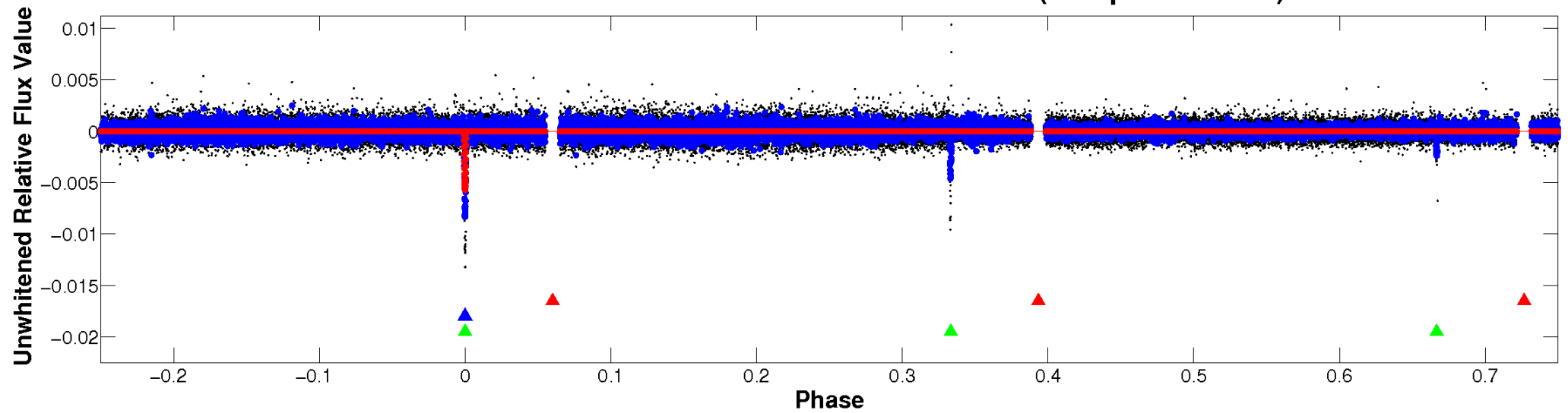
ALT Odd/Even

TCE 003644523-02

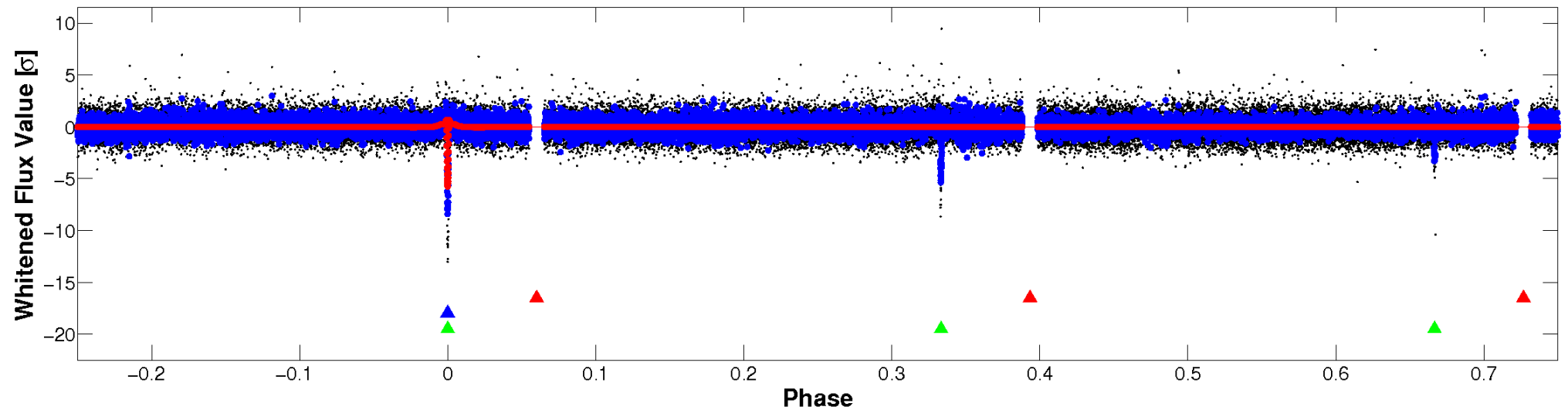


Non-Whitened Vs. Whitened Light Curve

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

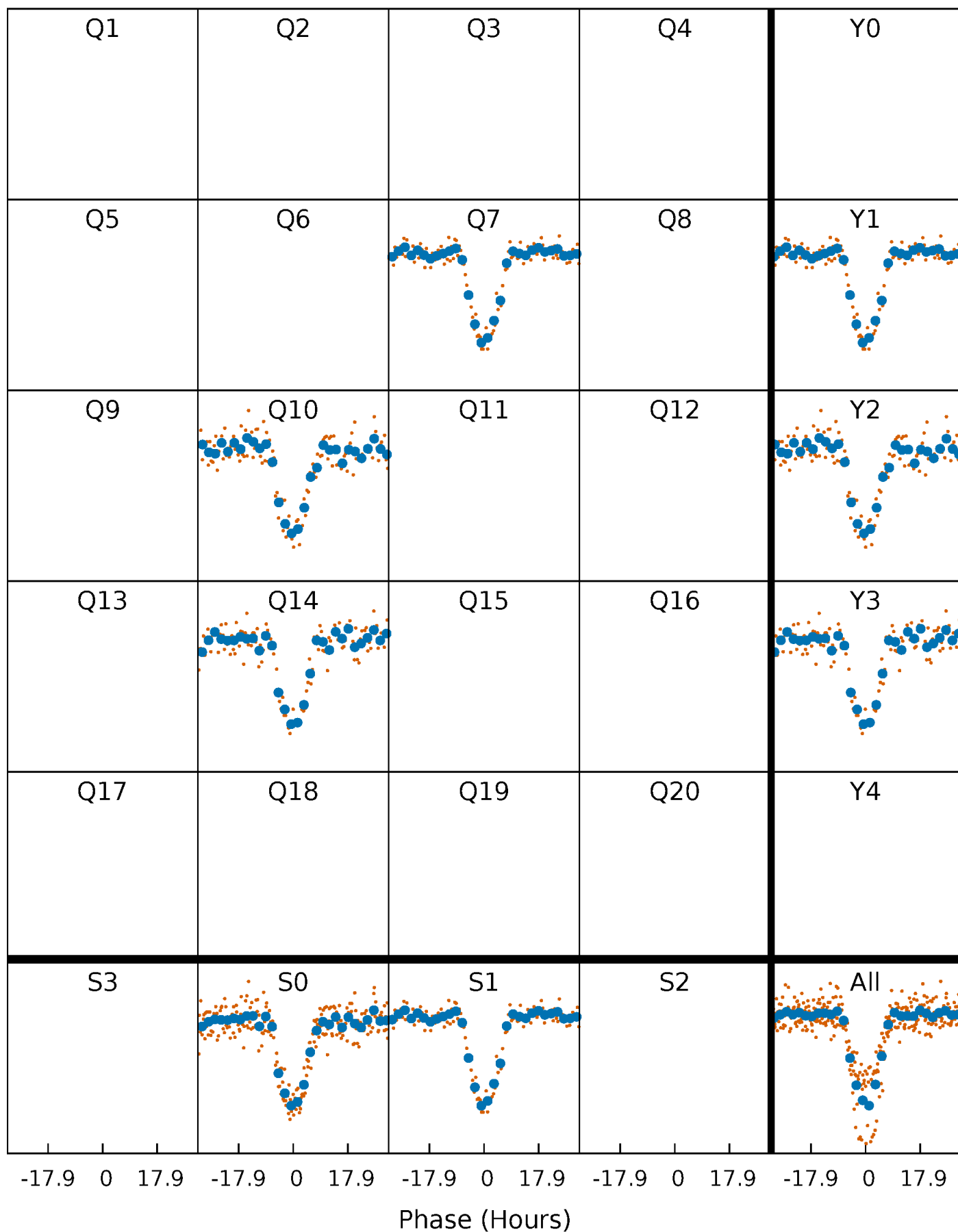


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



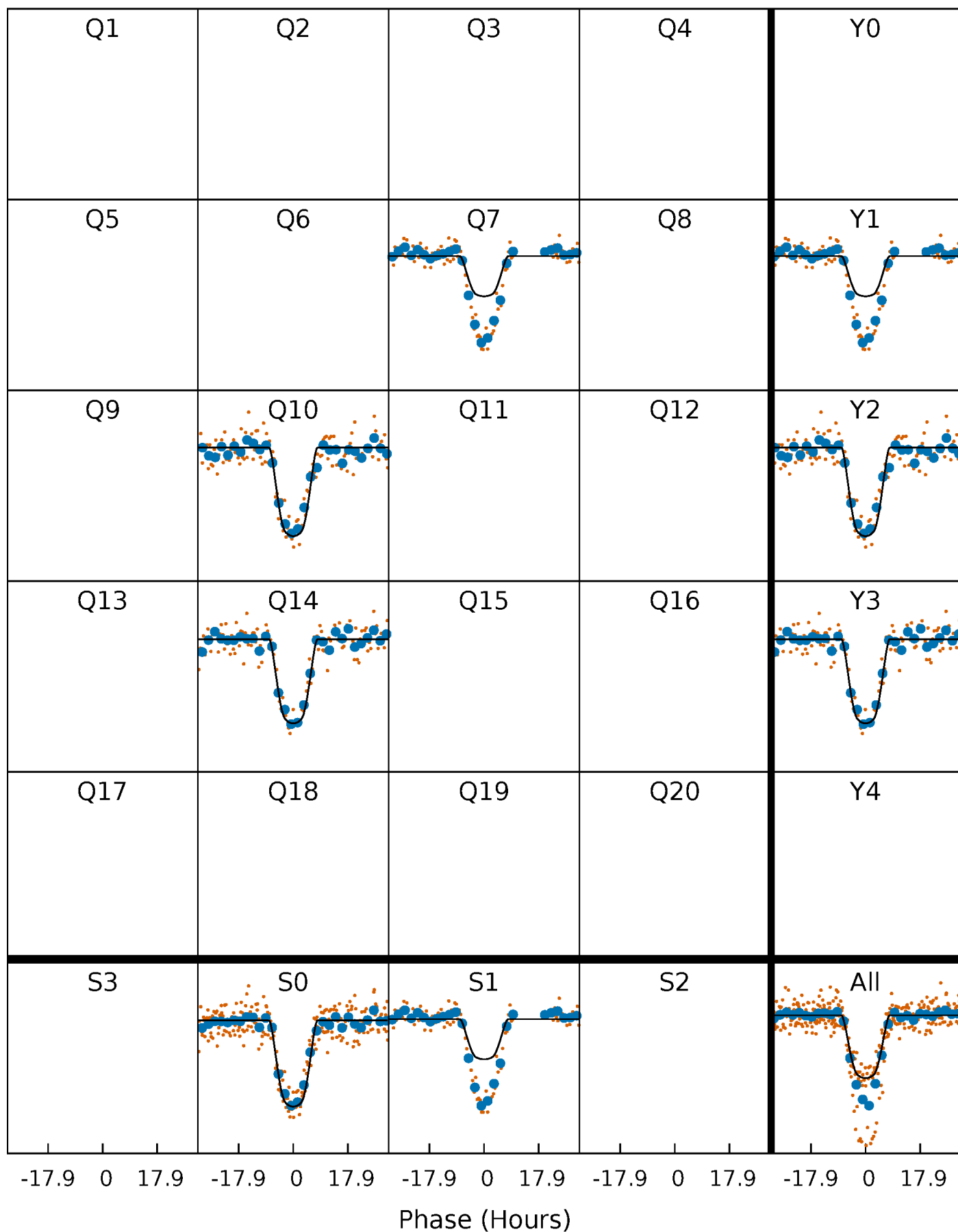
PDC Quarter-Phased Transit Curves

TCE 003644523-02 P=359.044417 Days $T_0=274.208269$ (BKJD)



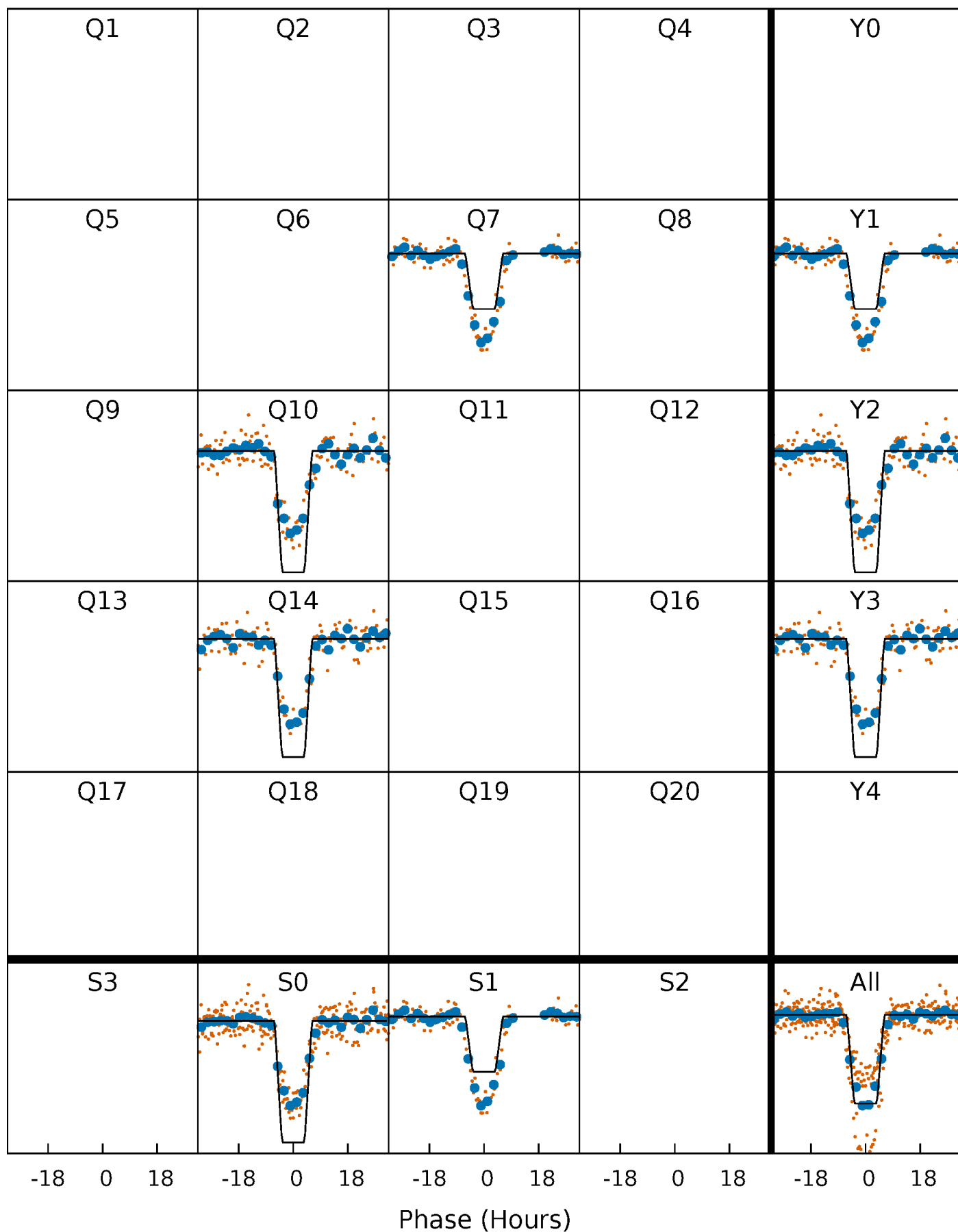
DV Quarter-Phased Transit Curves

TCE 003644523-02 P=359.044417 Days $T_0=274.208269$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

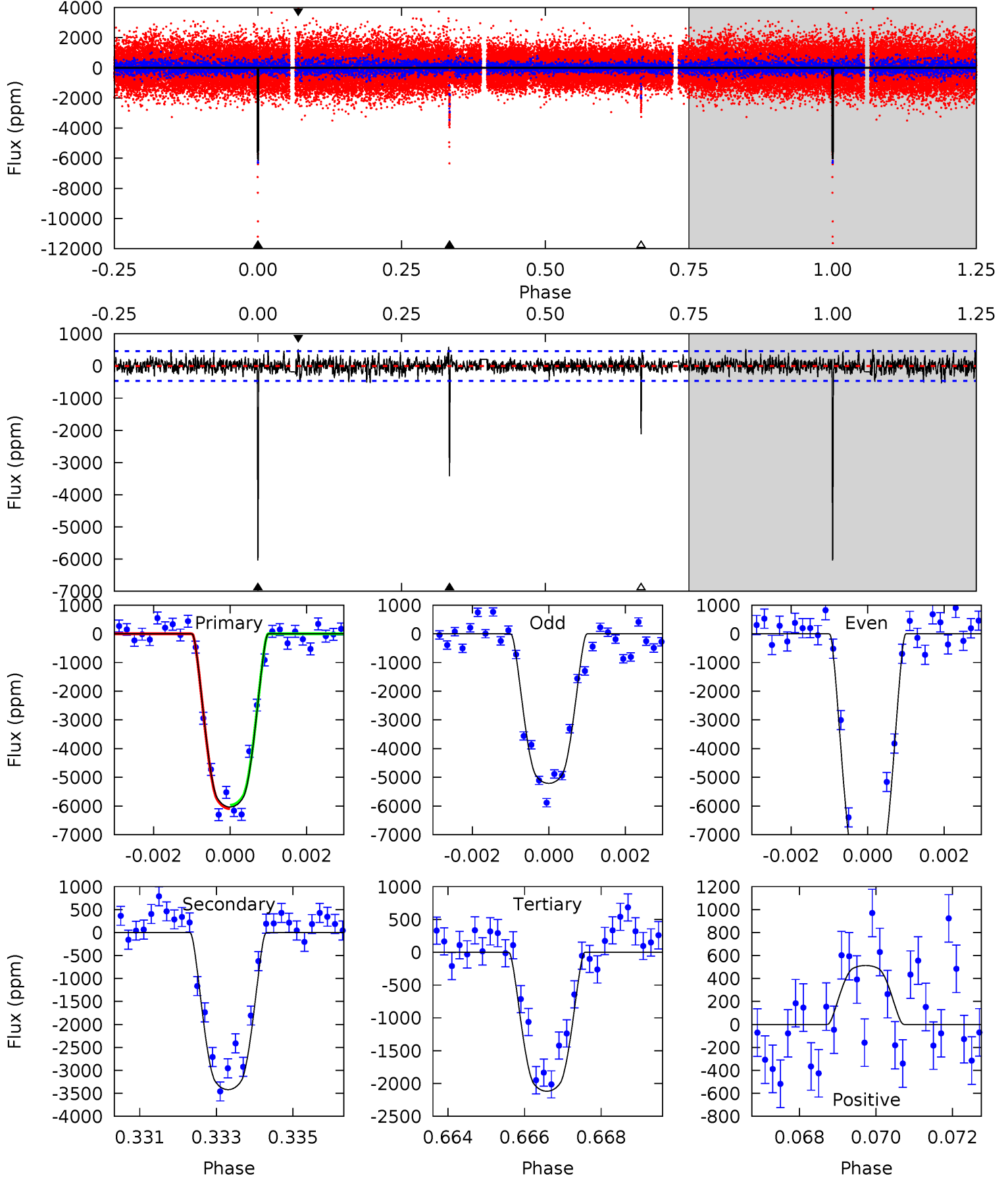
TCE 003644523-02 P=359.038083 Days $T_0=274.223853$ (BKJD)



DV Model-Shift Uniqueness Test

003644523-02, P = 359.044417 Days, E = 274.208269 Days

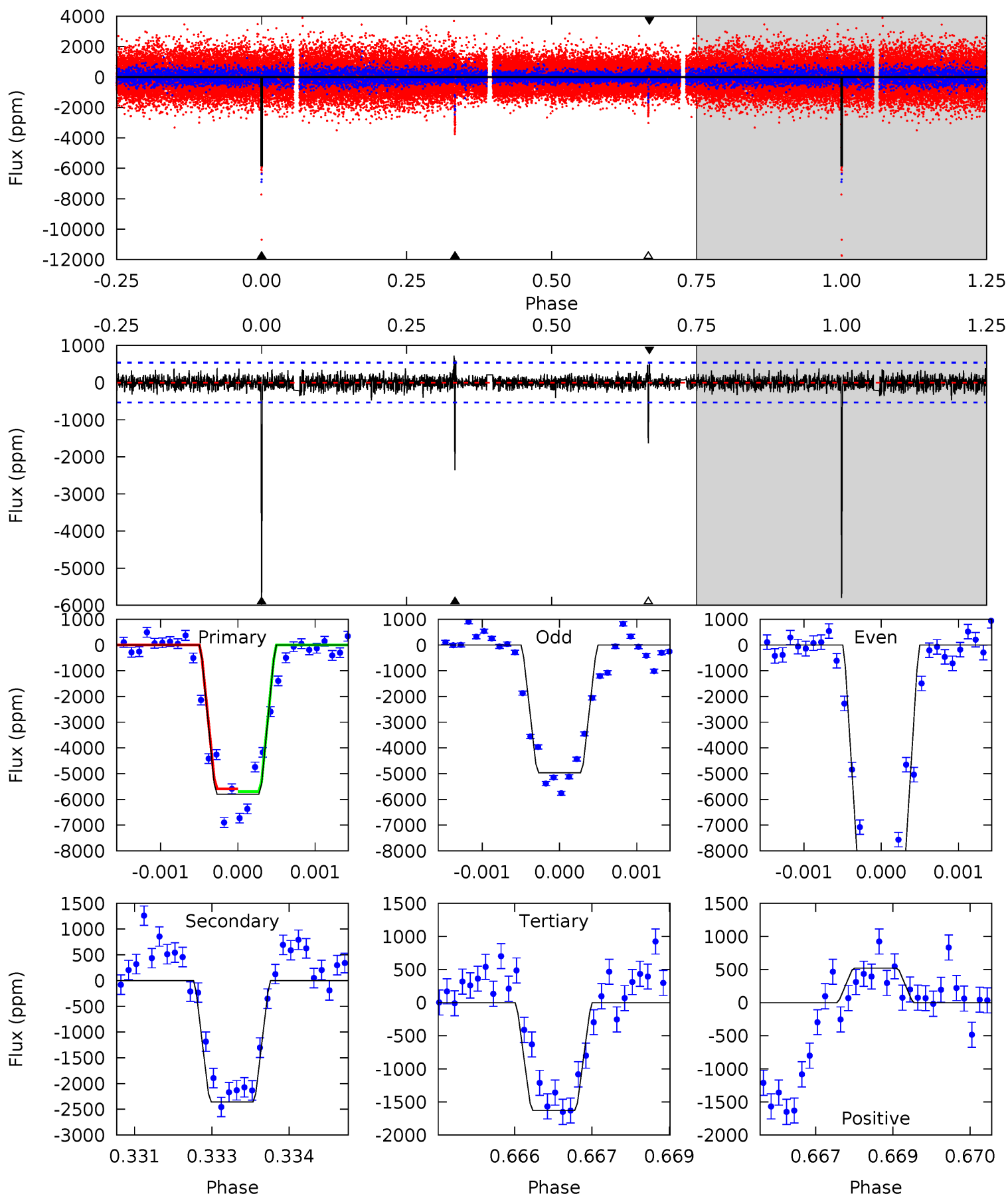
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.8	39.5	24.5	5.93	5.34	3.11	1.66	45.3	63.8	15.0	33.6	21.4	1.34	0.09	0.68



Alt Model-Shift Uniqueness Test

003644523-02, P = 359.038083 Days, E = 274.223853 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.2	23.6	16.4	5.23	5.38	3.18	1.20	41.8	53.0	7.28	18.4	21.9	1.37	0.11	0.52



Stellar Parameters For KIC 003644523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6075^{+189}_{-232}	$4.486^{+0.050}_{-0.200}$	$-0.120^{+0.250}_{-0.350}$	$0.969^{+0.300}_{-0.100}$	$1.048^{+0.139}_{-0.153}$	$1.622^{+0.434}_{-0.827}$
	+3%/-4%	+1%/-4%	+208%/-292%	+31%/-10%	+13%/-15%	+27%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003644523-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3420 ± 87	$8.86^{+1.35}_{-0.79}$	376^{+27}_{-19}	5210^{+177}_{-184}	23771^{+3992}_{-5374}
Alt.	-2356 ± 100	$9.65^{+1.54}_{-0.89}$	374^{+27}_{-19}	4639^{+143}_{-152}	13812^{+2399}_{-3204}

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 $A_{obs} \gg 1.0$

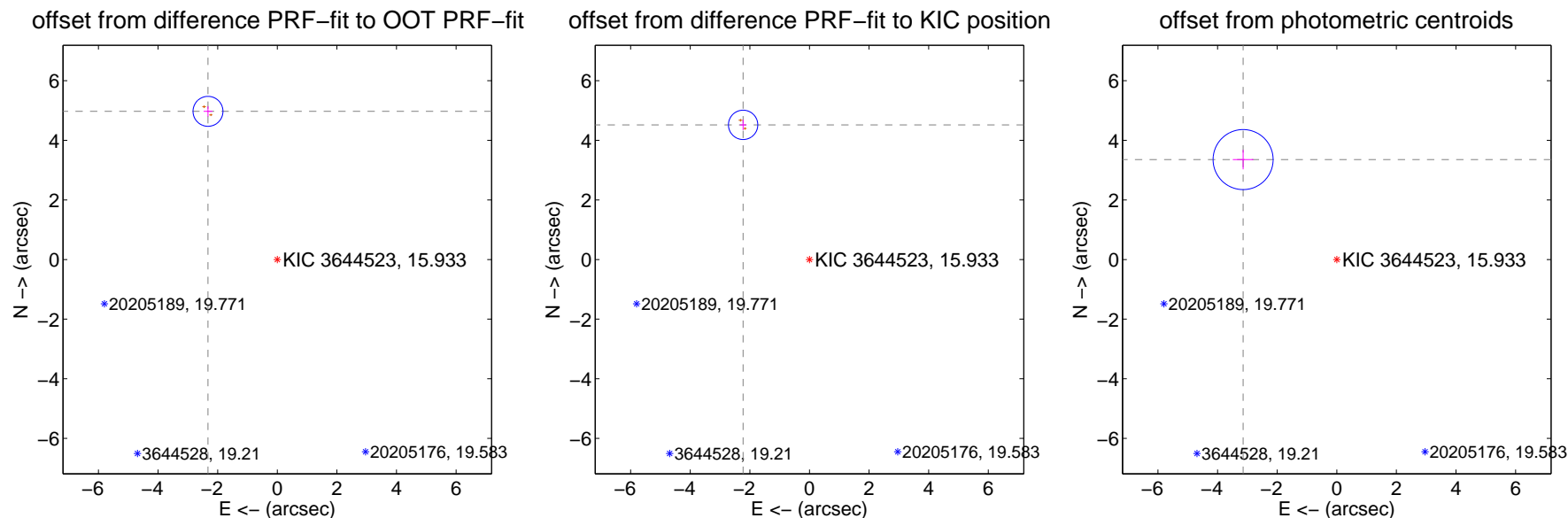
DV Centroid Data

Supplemental centroid analysis for 003644523-02. Kepler magnitude: 15.93. Transit SNR 33.79

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.487 ± 0.167	32.79	2.324 ± 0.148	4.971 ± 0.171
PRF-fit source offset from KIC position	5.036 ± 0.164	30.71	2.226 ± 0.111	4.517 ± 0.174
photometric centroid source offset	4.60 ± 0.34	13.69	3.14 ± 0.34	3.35 ± 0.33



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

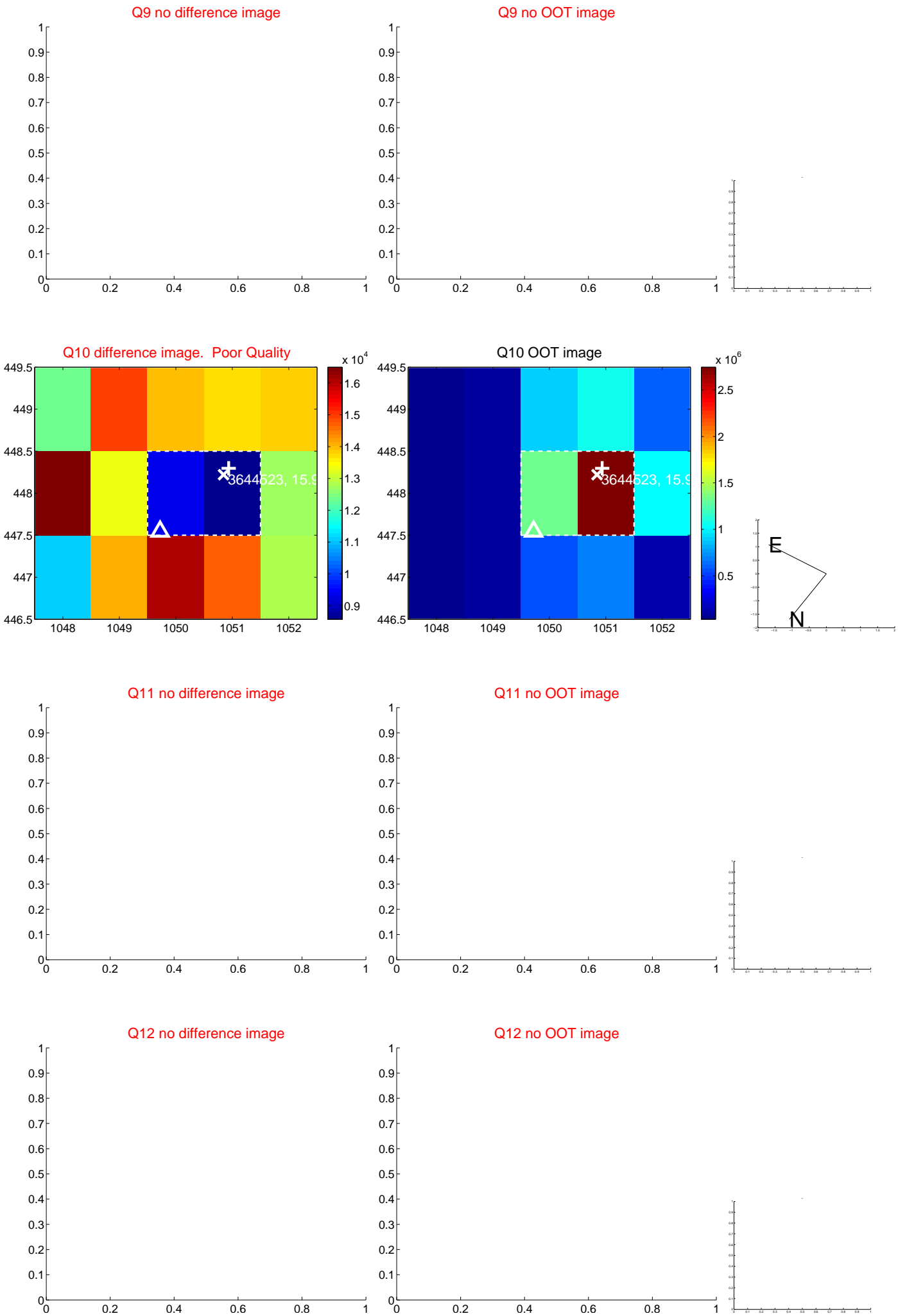
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



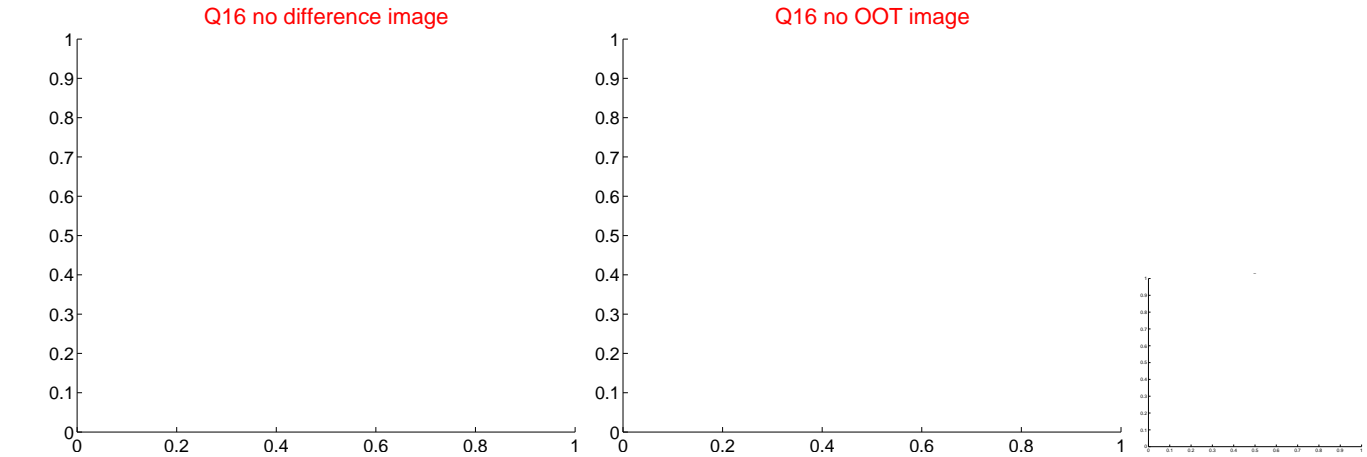
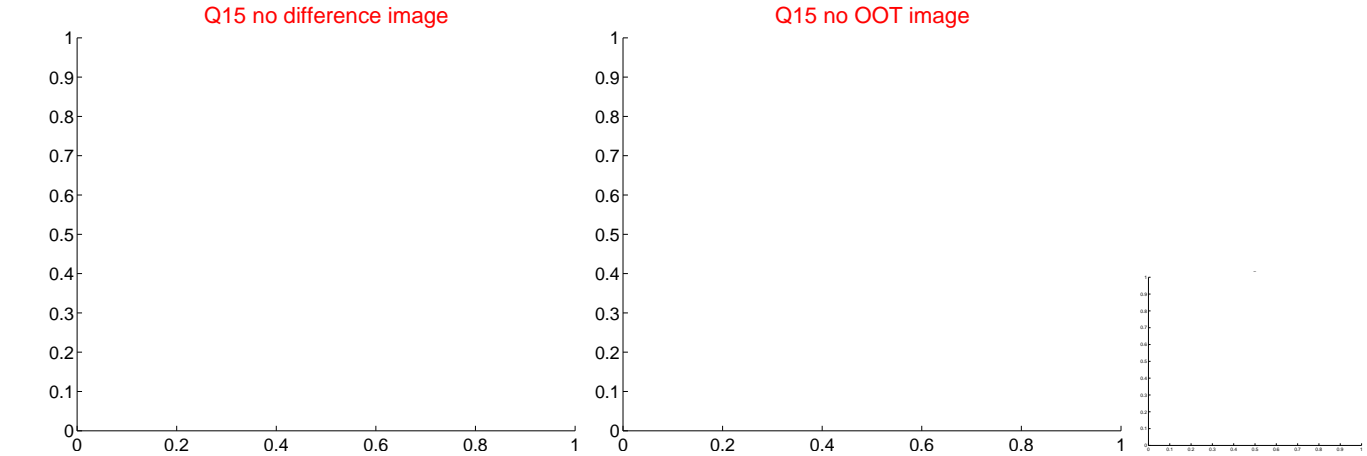
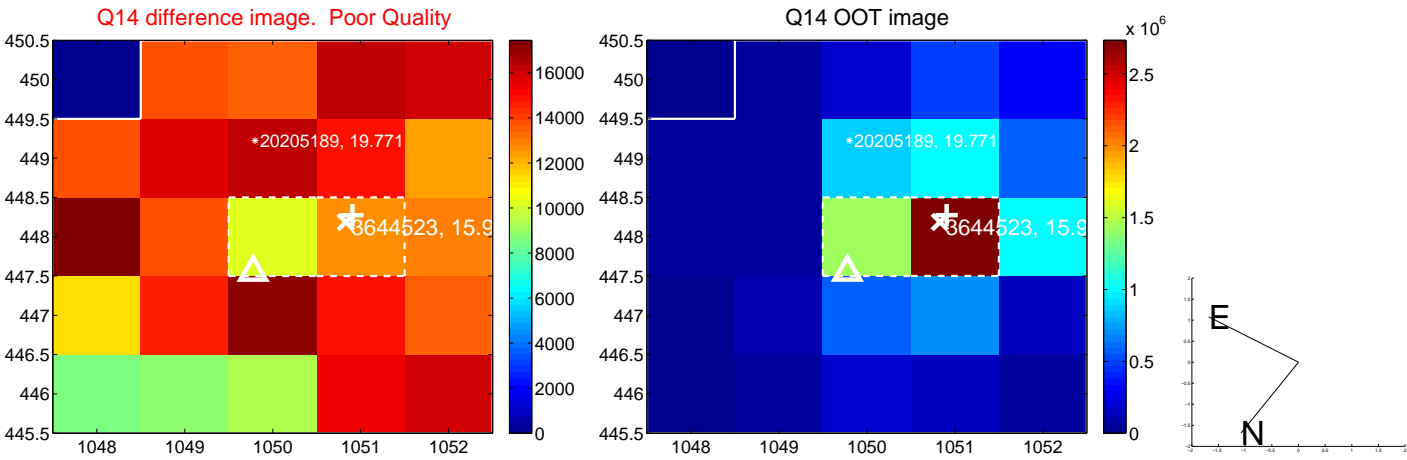
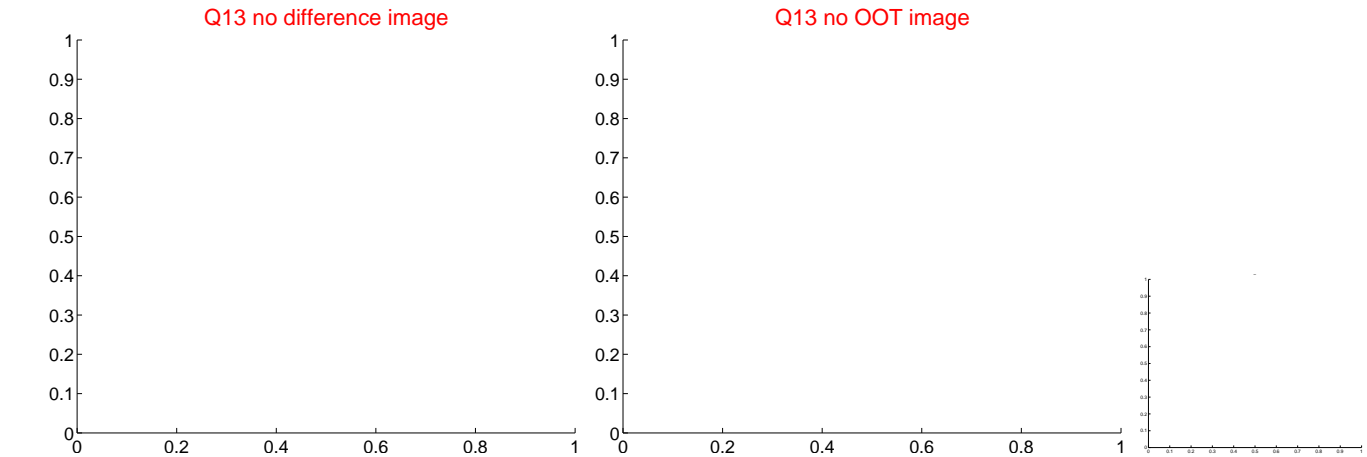
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



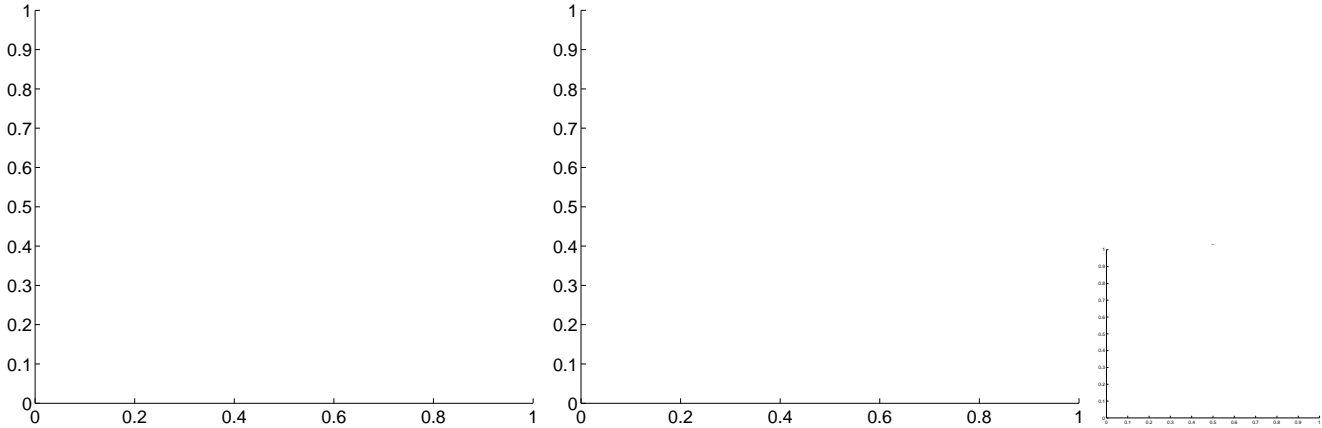
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



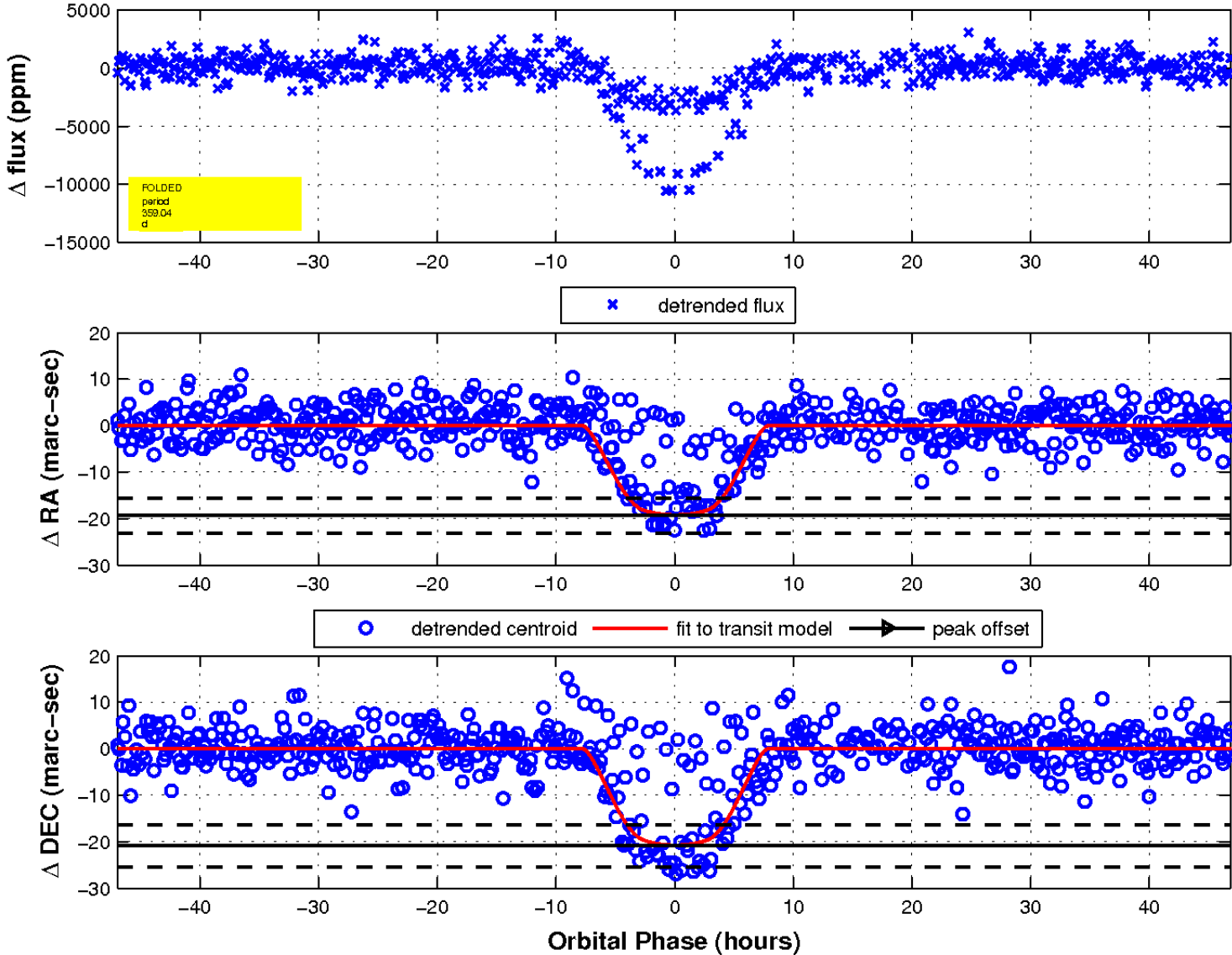
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

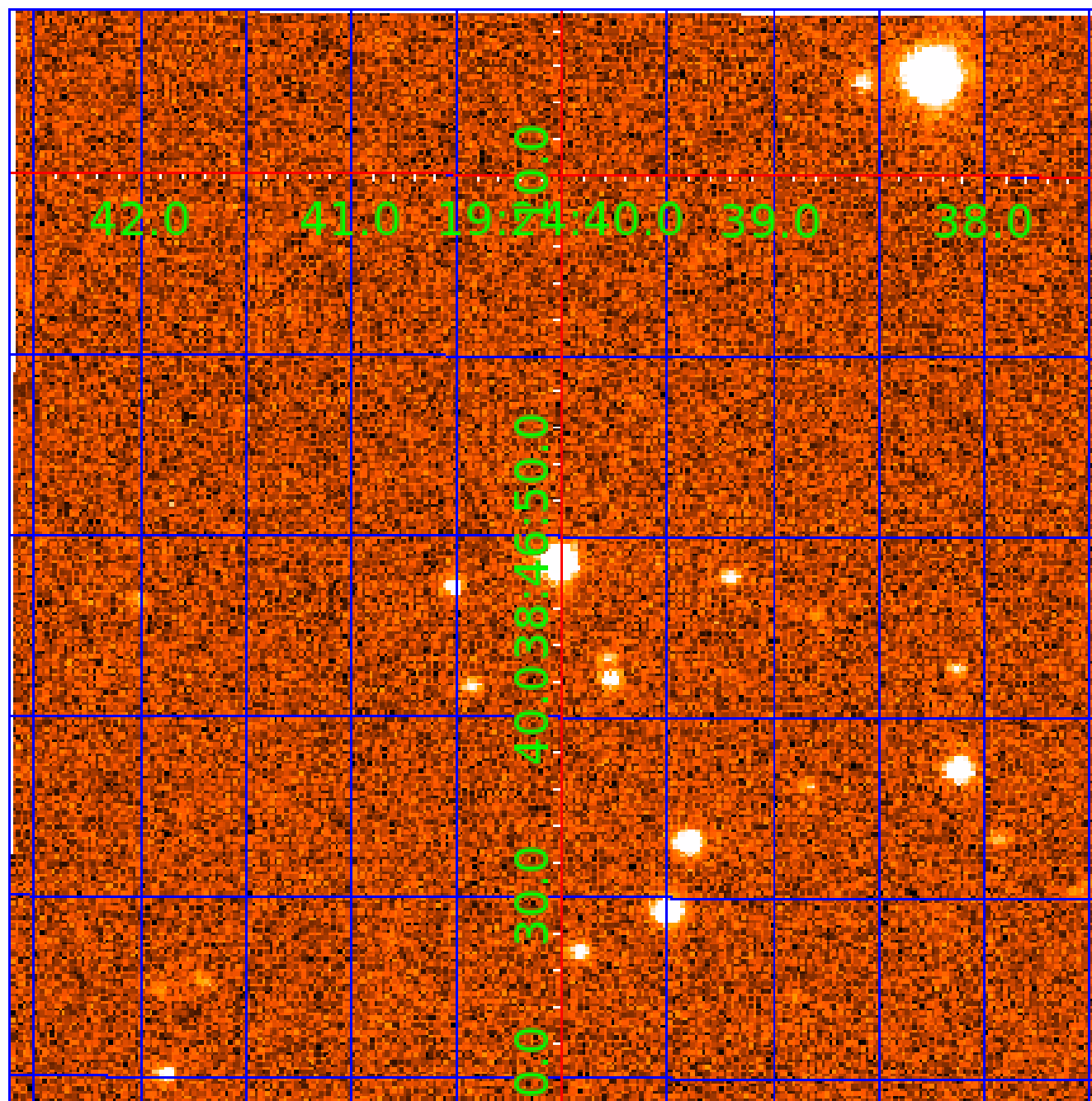


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 003644523

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})
003644523-01	OBS	1195.01	119.677646	176.127786	3541.2	29.072	76.1	53.1	0.97	6075	10.31	4.91
003644523-02	OBS	No	359.044416	274.208269	5692.7	15.655	53.4	33.8	0.97	6075	8.59	1.14
003644523-03	OBS	No	119.676966	154.564562	2616.2	15.603	30.0	33.7	0.97	6075	6.23	4.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003644523-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—INCONSISTENT_TRANS—HALO_GHOST—EPHEM_MATCH
003644523-02	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
003644523-03	OBS	FP	0.00	1	0	1	1	SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH

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.

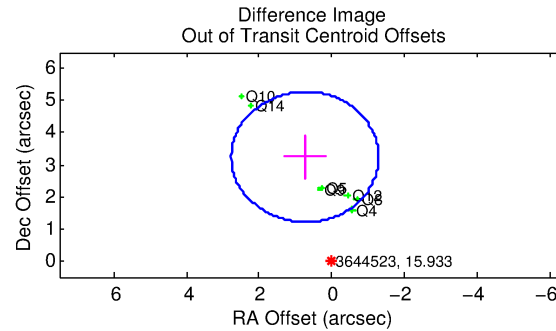
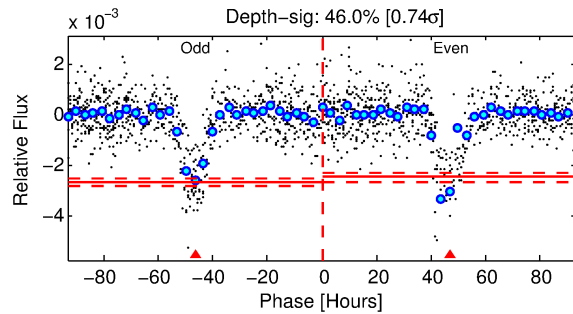
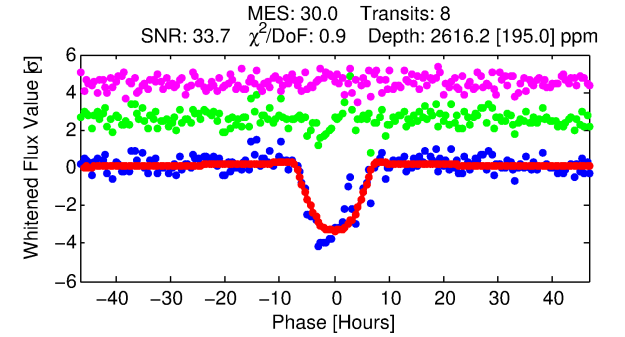
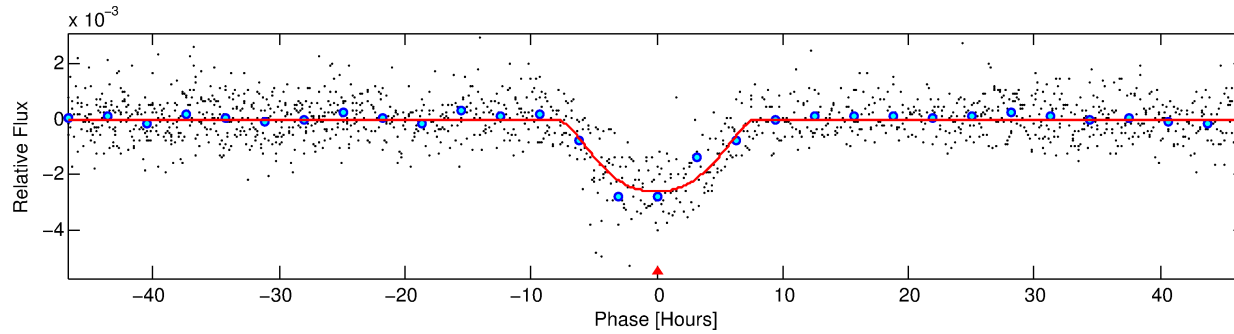
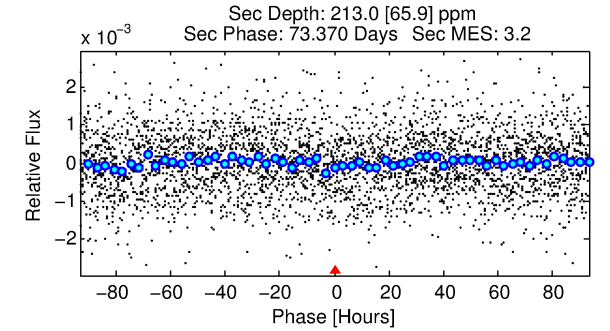
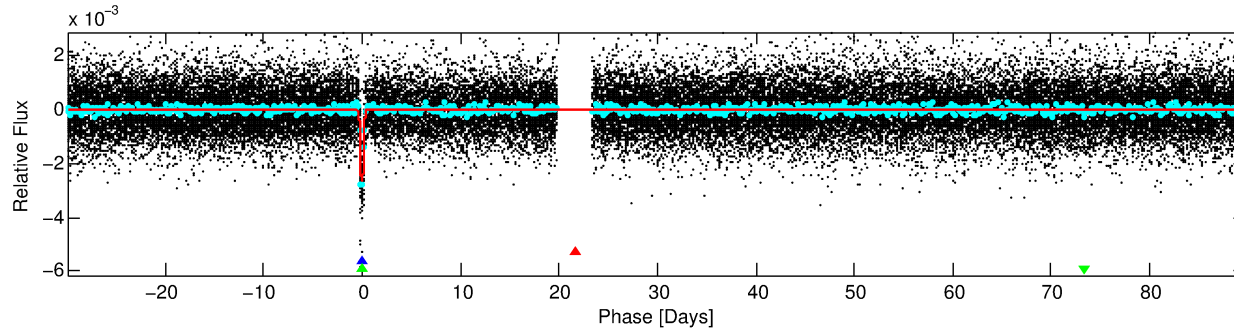
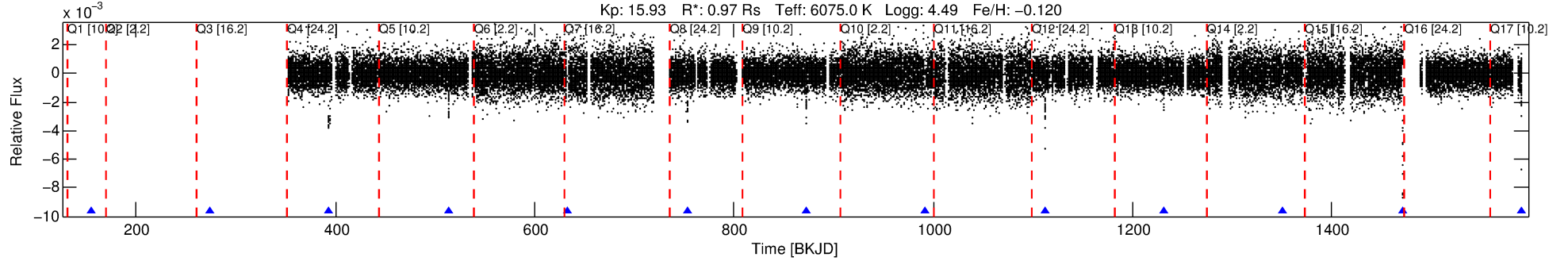
Ephemeris Match Information For 003644523-03

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
003644523-03	3644523	003644542-sec	3644542	1:1	55.0	-13	-5	8.35	15.93	98.24	Direct-PRF	0	0.36	0.29

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3644523 Candidate: 3 of 3 Period: 119.677 d
KOI: K01195 Corr: No Ephemeris Match



DV Fit Results:

Period = 119.67697 [0.00157] d
Epoch = 154.5646 [0.0116] BKJD
Rp/R* = 0.0589 [0.0045]
a/R* = 28.13 [2.07]
b = 0.94 [0.02]
Seff = 4.91 [1.97]
Teq = 380 [38] K
Rp = 6.23 [1.99] Re
a = 0.4830 [0.1242] AU
Ag = 703.85 [355.81] [1.98σ]
Teffp = 3023 [285] K [9.20σ]

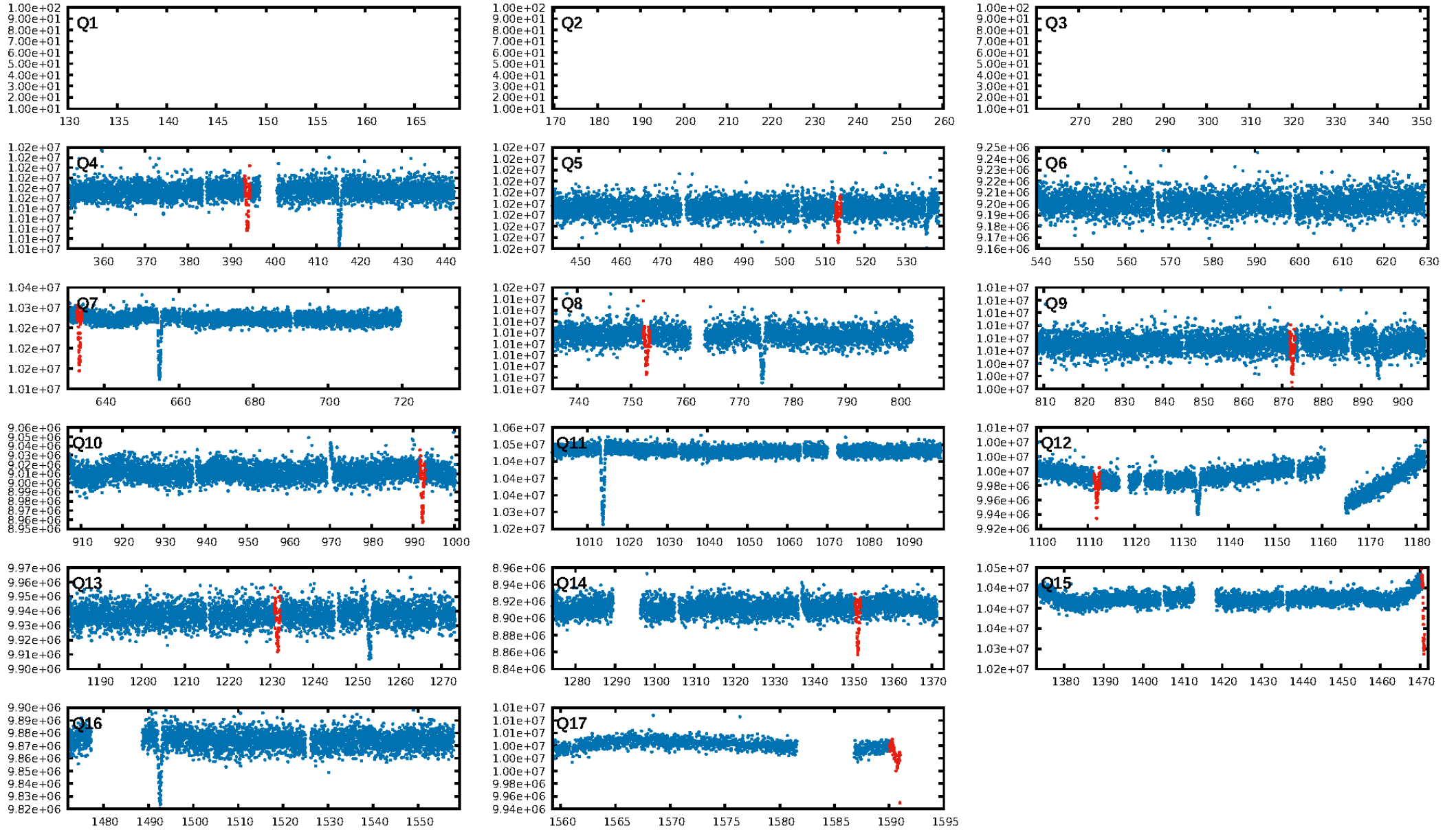
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.39e-161
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.01418
Centroid-sig: 6.1%
Centroid-so: 0.807 arcsec [2.42σ]
OotOffset-rm: 3.322 arcsec [4.91σ]
KicOffset-rm: 2.959 arcsec [4.65σ]
OotOffset-st: 2/0/3/2 [7]
KicOffset-st: 2/0/3/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.71 [5/7]

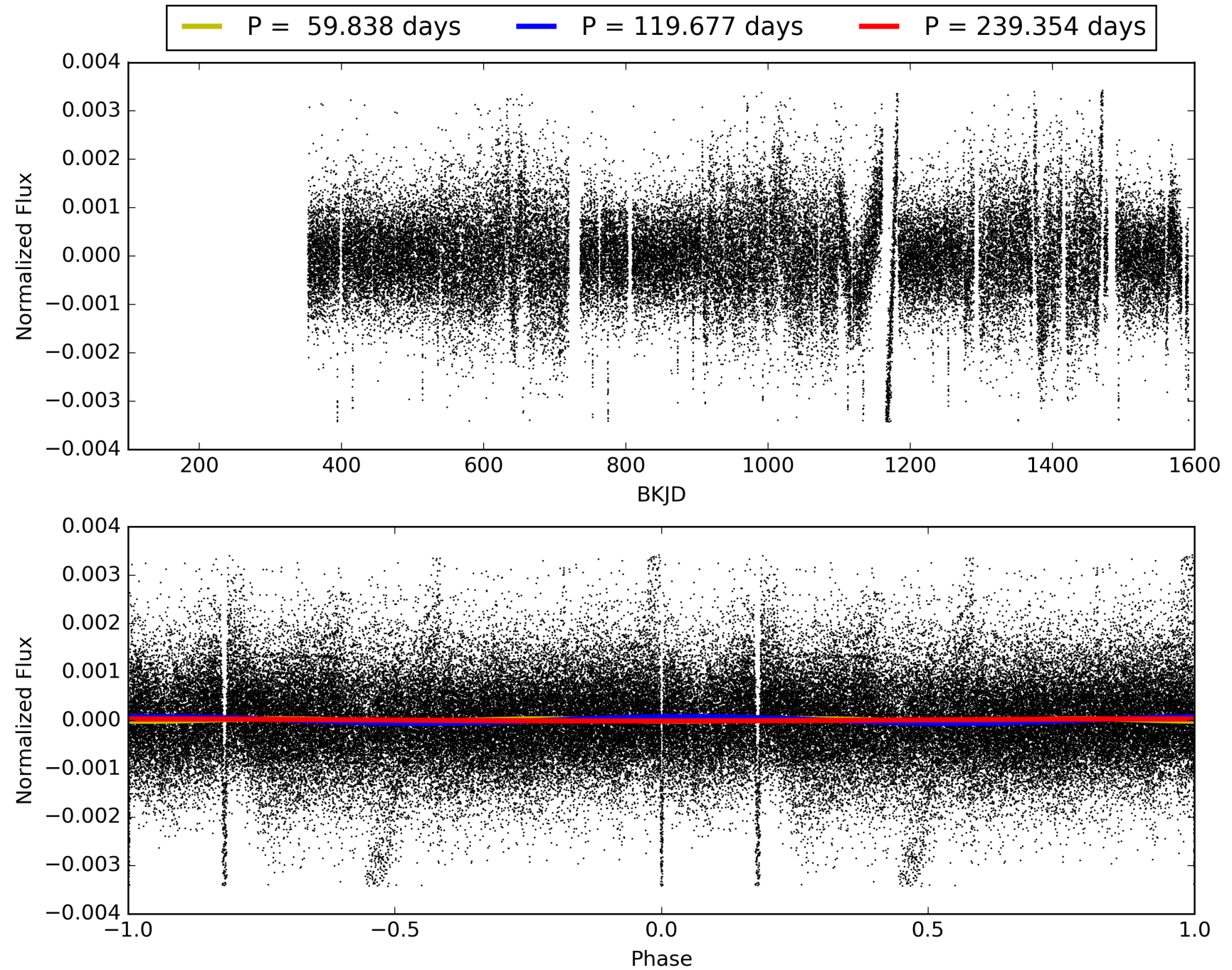
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:59:03 Z

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

TCE 003644523-03, PDC Light Curves

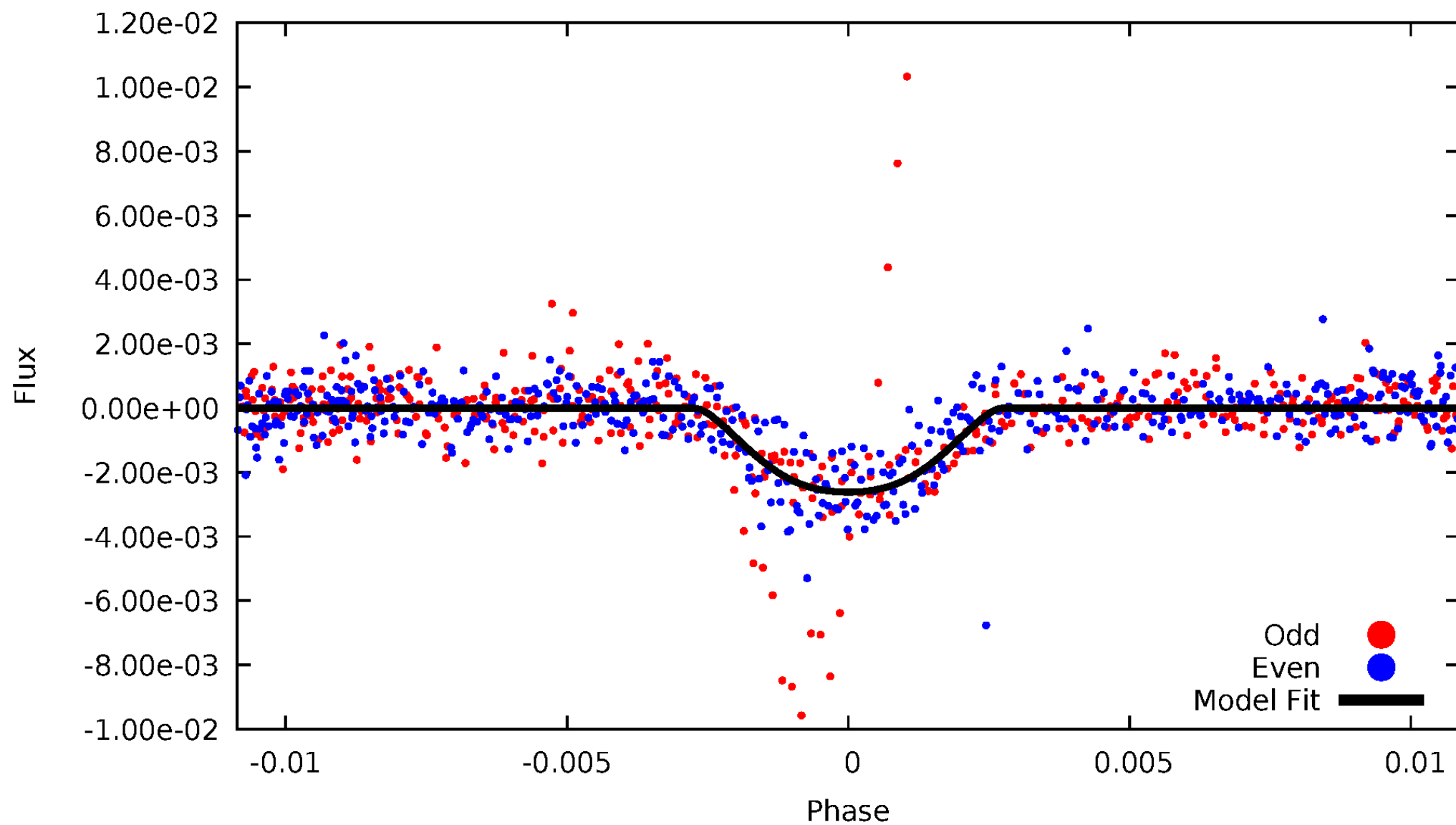


TCE 003644523-03



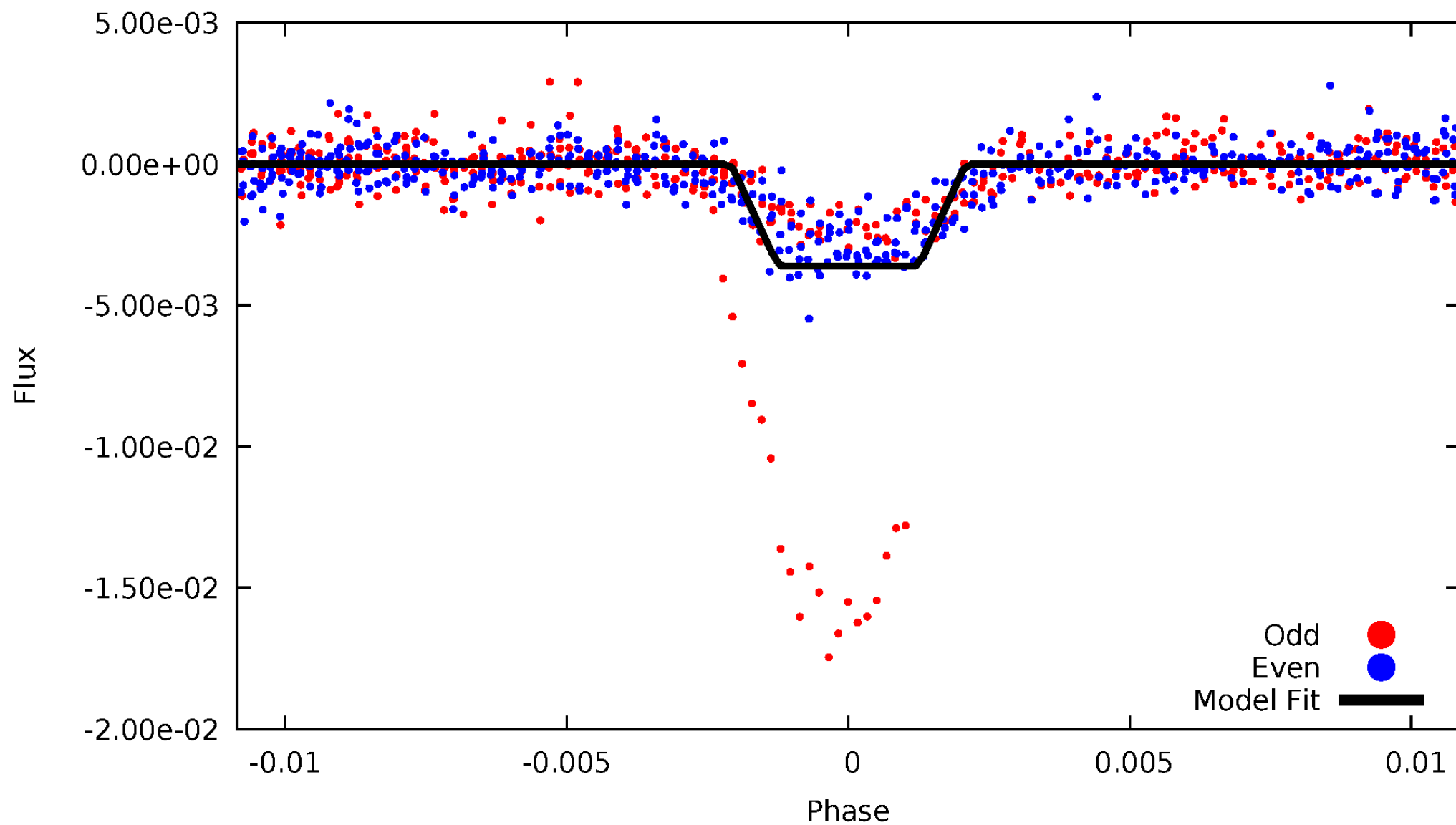
DV Odd/Even

TCE 003644523-03



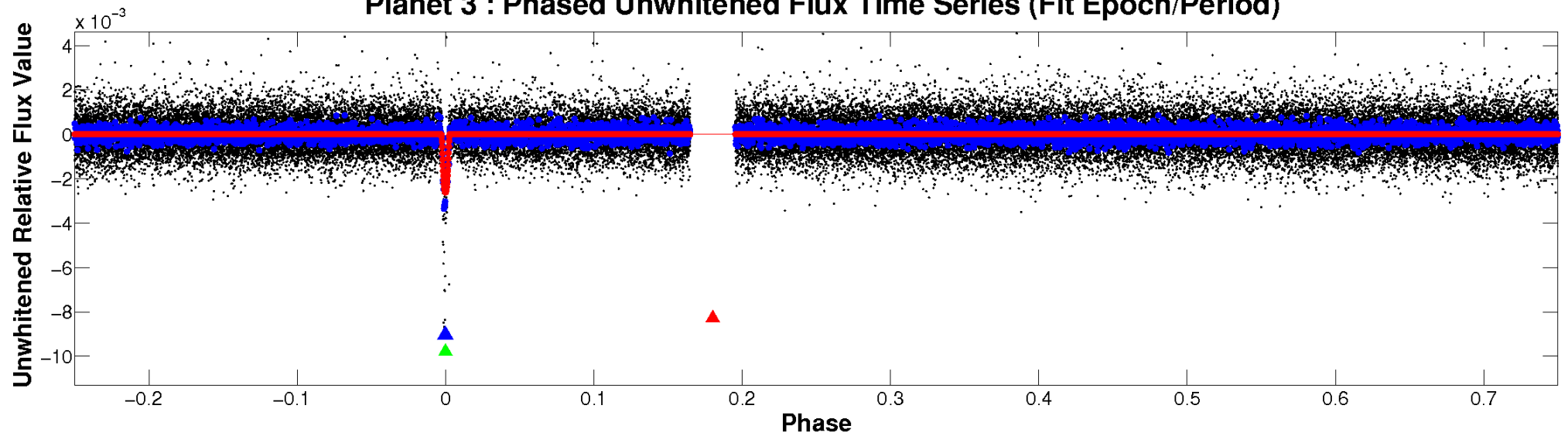
ALT Odd/Even

TCE 003644523-03

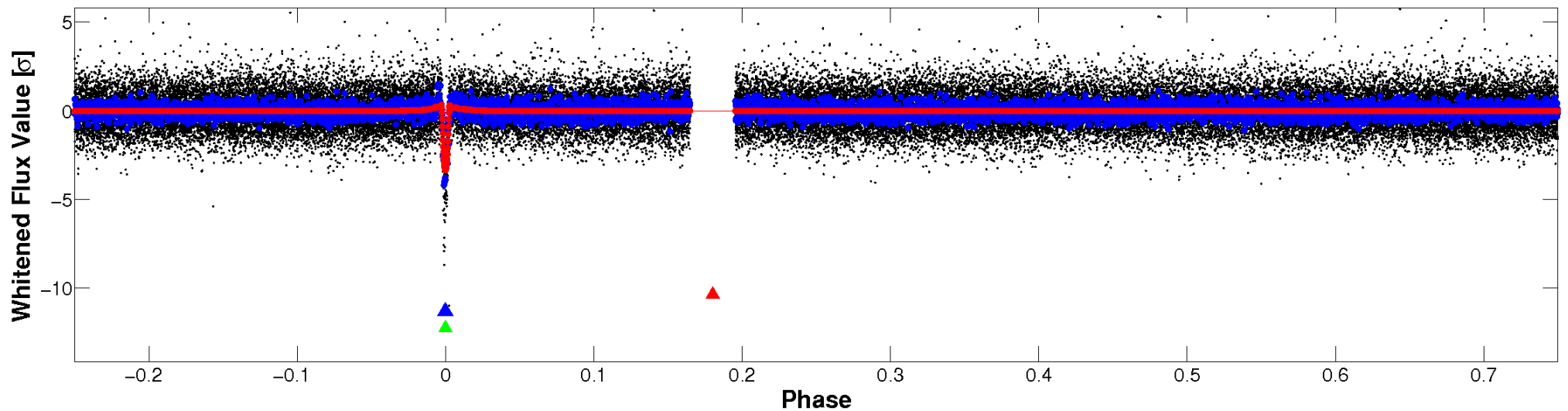


Non-Whitened Vs. Whitened Light Curve

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

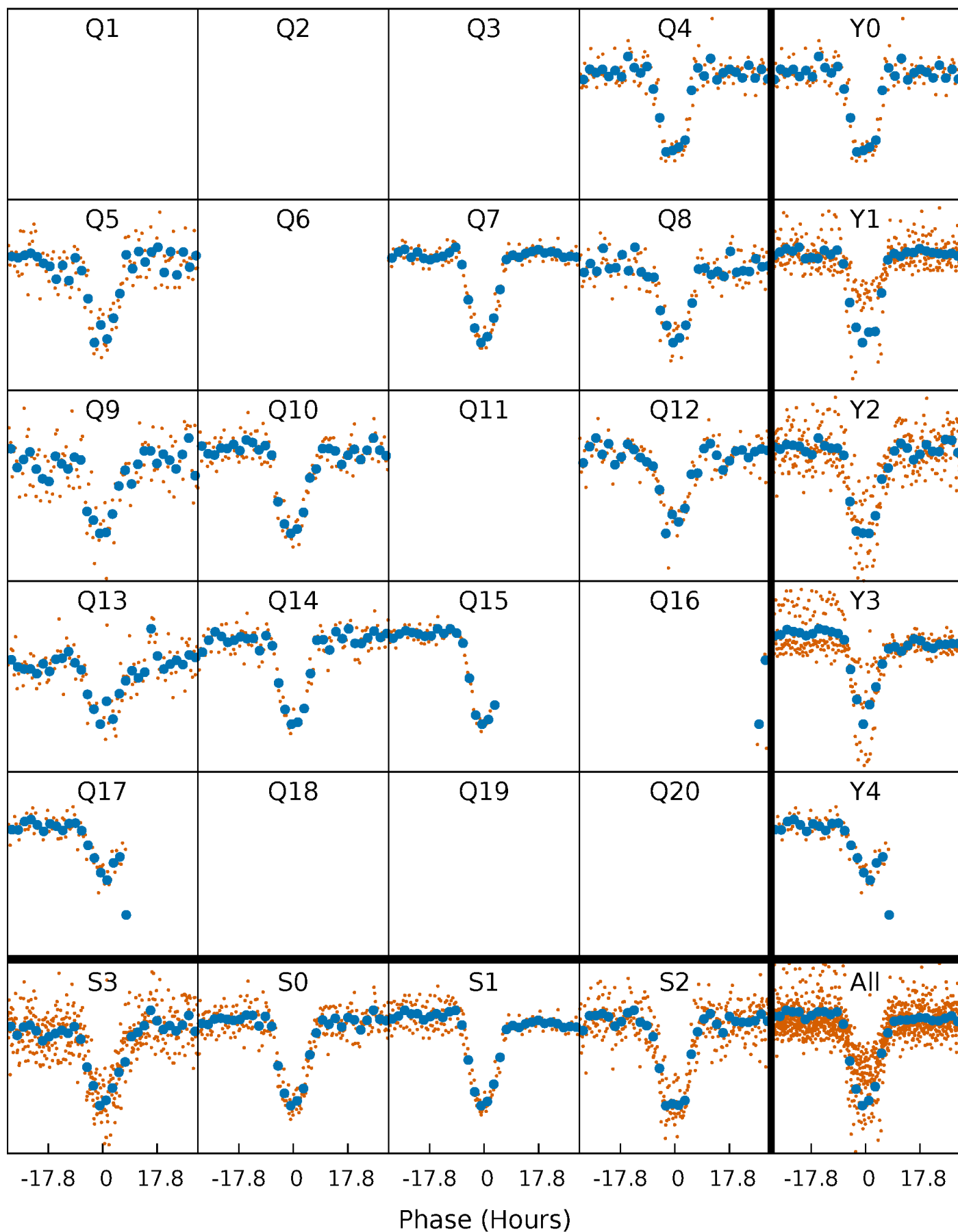


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



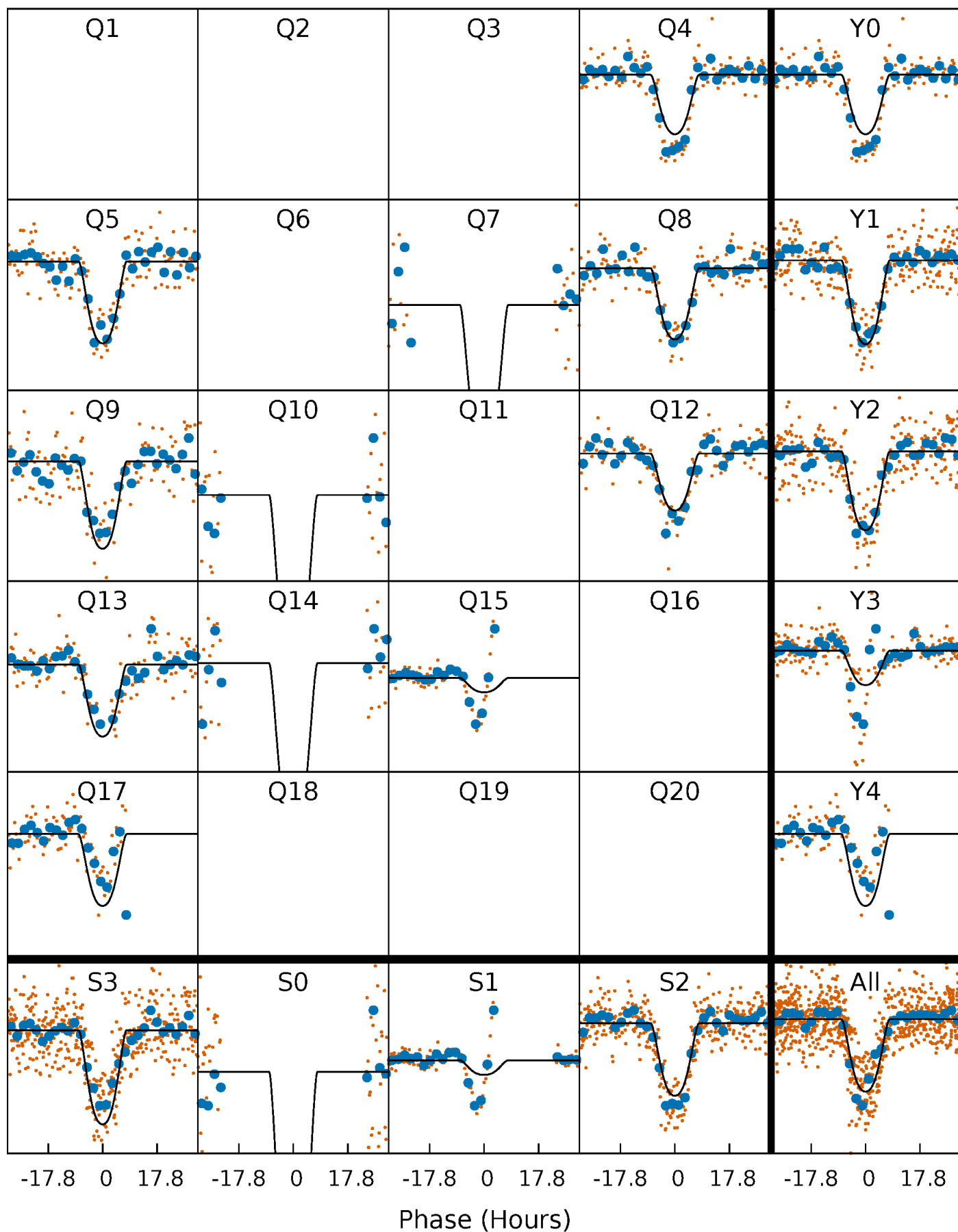
PDC Quarter-Phased Transit Curves

TCE 003644523-03 P=119.676966 Days $T_0=154.564562$ (BKJD)



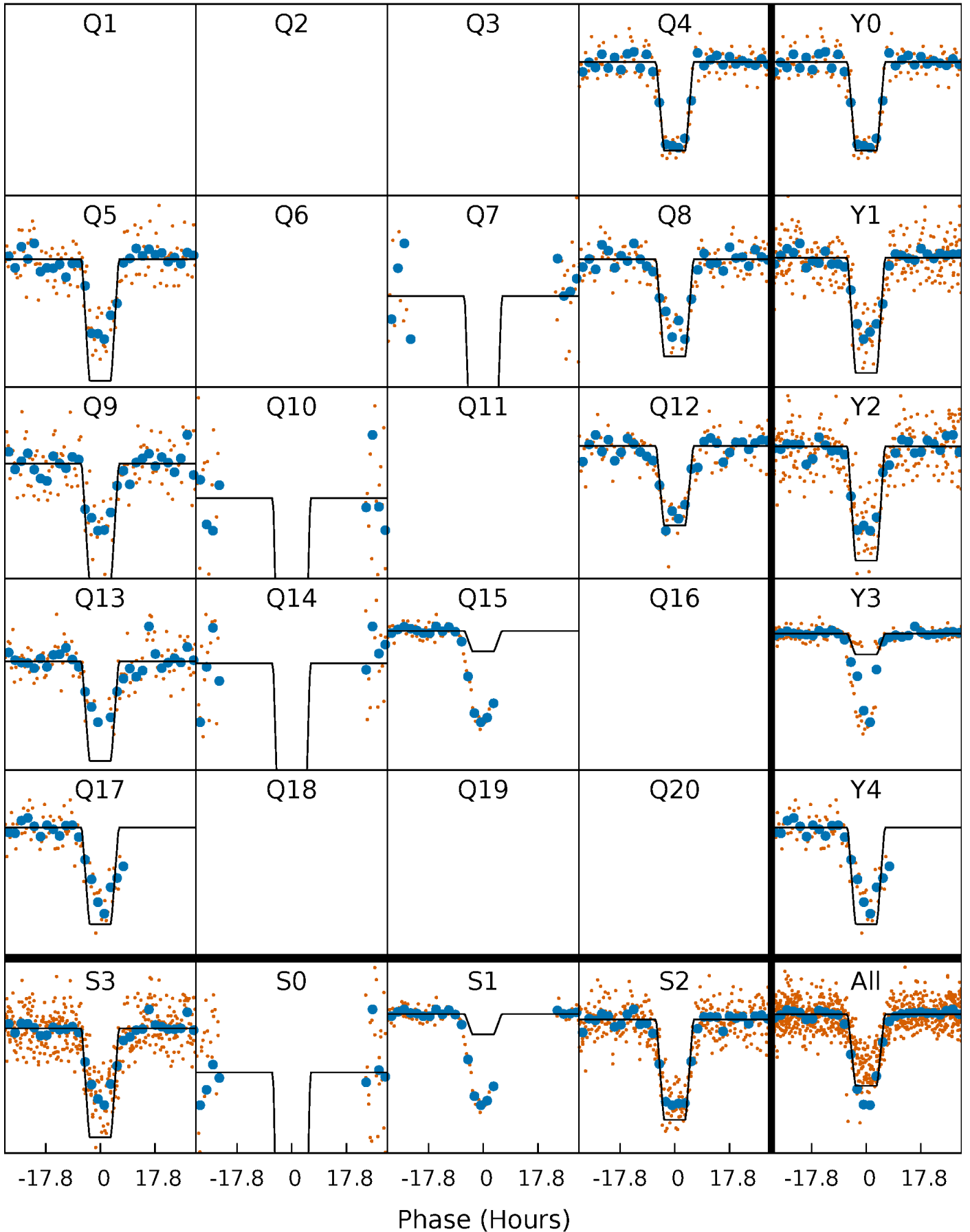
DV Quarter-Phased Transit Curves

TCE 003644523-03 P=119.676966 Days $T_0=154.564562$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

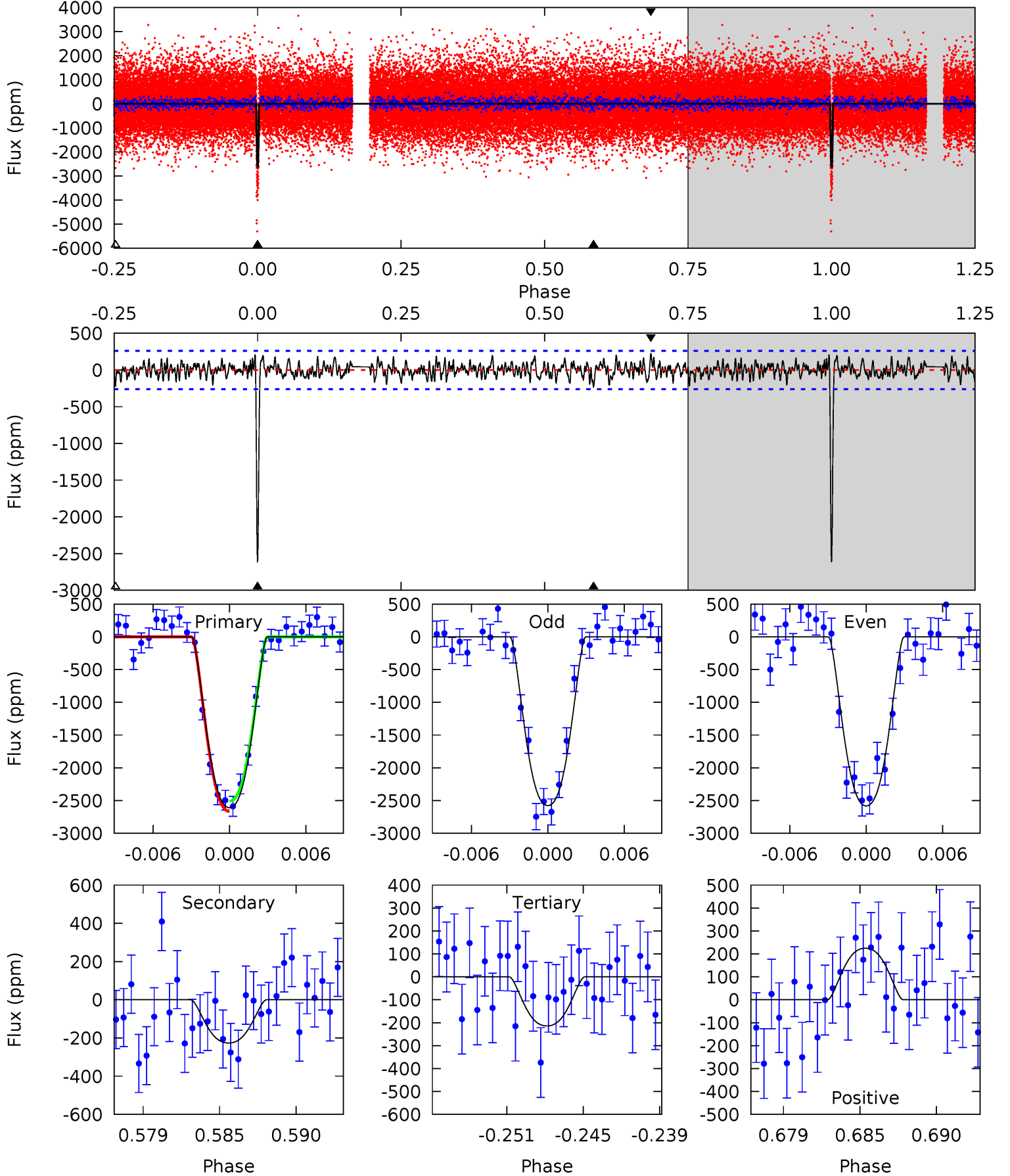
TCE 003644523-03 P=119.679361 Days $T_0=154.541493$ (BKJD)



DV Model-Shift Uniqueness Test

003644523-03, P = 119.676966 Days, E = 154.564562 Days

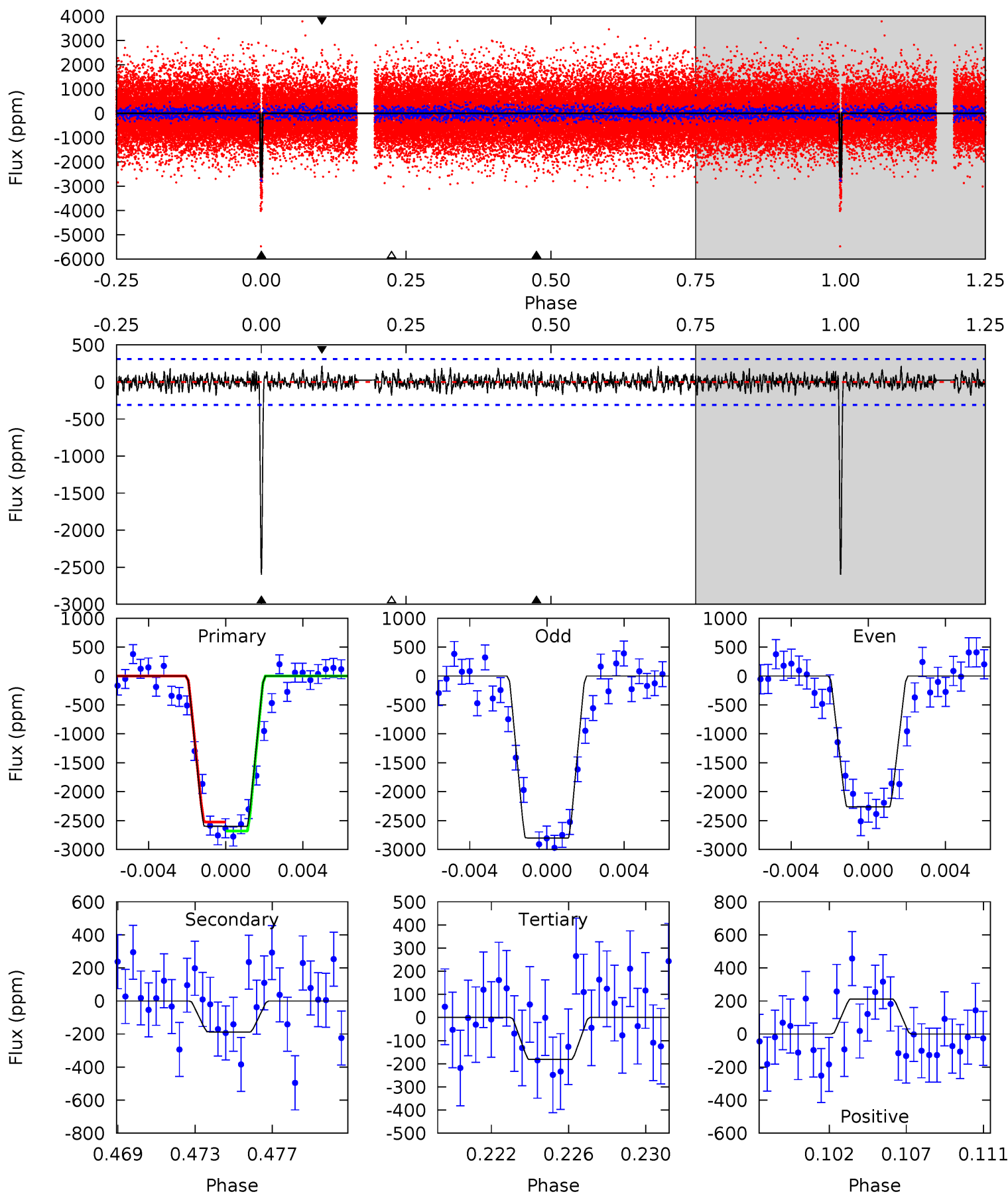
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.1	4.43	4.19	4.40	5.14	2.77	1.44	46.9	46.7	0.24	0.03	0.05	1.04	0.08	1.54



Alt Model-Shift Uniqueness Test

003644523-03, P = 119.679361 Days, E = 154.541493 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.6	3.14	3.04	3.54	5.19	2.86	1.03	40.5	40.0	0.10	-0.40	4.45	1.59	0.08	0



Stellar Parameters For KIC 003644523

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6075^{+189}_{-232}	$4.486^{+0.050}_{-0.200}$	$-0.120^{+0.250}_{-0.350}$	$0.969^{+0.300}_{-0.100}$	$1.048^{+0.139}_{-0.153}$	$1.622^{+0.434}_{-0.827}$
	+3%/-4%	+1%/-4%	+208%/-292%	+31%/-10%	+13%/-15%	+27%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003644523-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-226 ± 51	$6.47^{+1.02}_{-0.81}$	543^{+37}_{-29}	3532^{+180}_{-180}	665^{+267}_{-209}
Alt.	-187 ± 60	$6.53^{+1.04}_{-0.72}$	541^{+41}_{-27}	3421^{+196}_{-221}	539^{+245}_{-213}

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

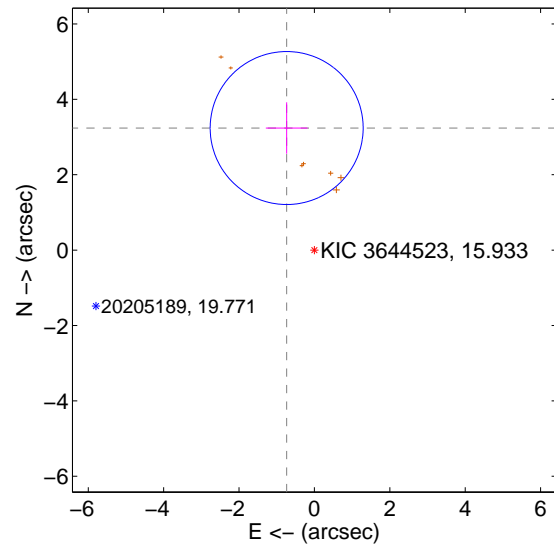
Supplemental centroid analysis for 003644523-03. Kepler magnitude: 15.93. Transit SNR 33.72

There are 0 quarters with good PRF difference image offsets

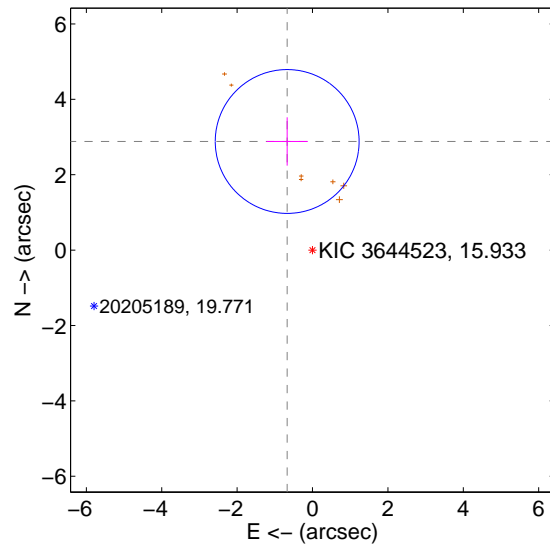
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.322 ± 0.676	4.91	0.737 ± 0.554	3.239 ± 0.682
PRF-fit source offset from KIC position	2.959 ± 0.636	4.65	0.672 ± 0.547	2.882 ± 0.641
photometric centroid source offset	0.81 ± 0.33	2.42	-0.37 ± 0.33	-0.72 ± 0.33

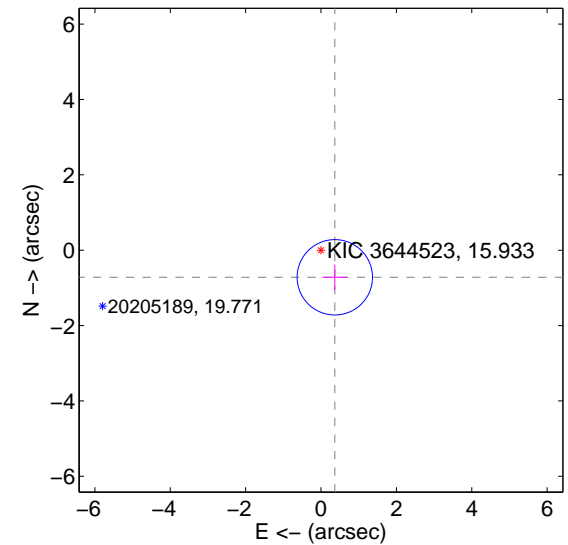
offset from difference PRF-fit to OOT PRF-fit



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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



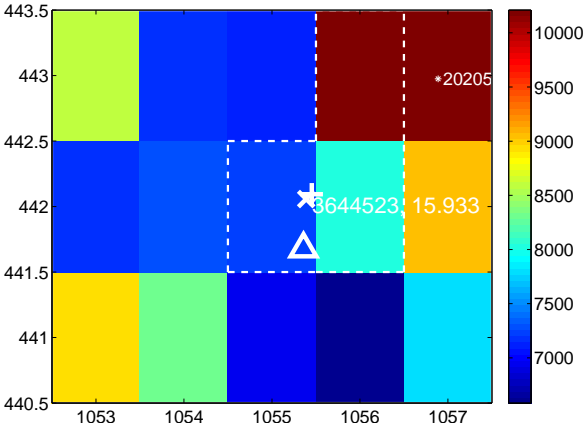
Q3 no difference image



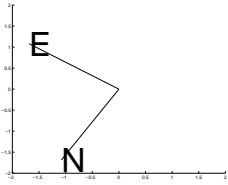
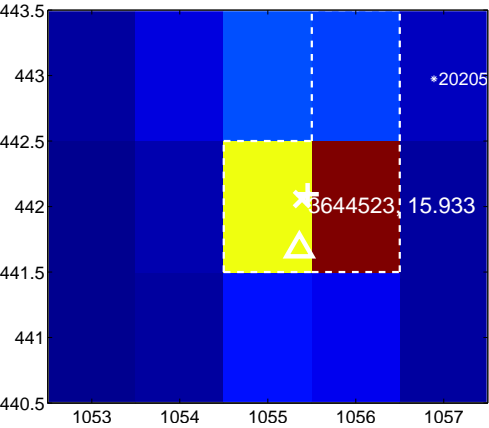
Q3 no OOT image



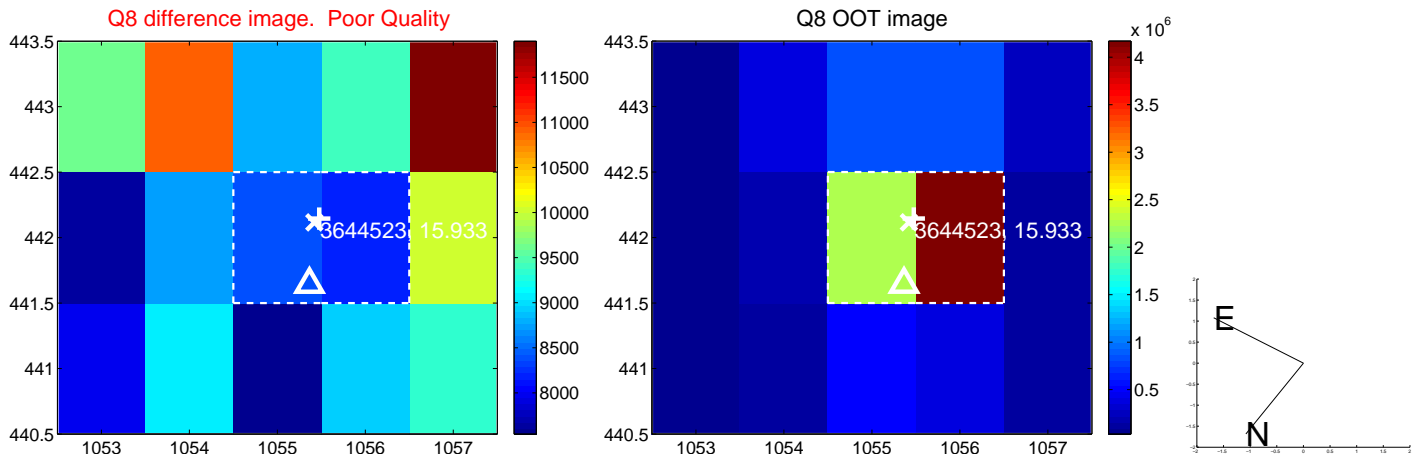
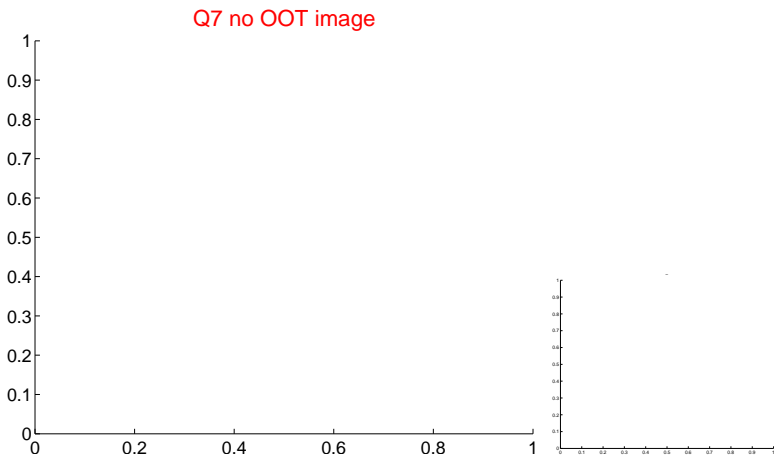
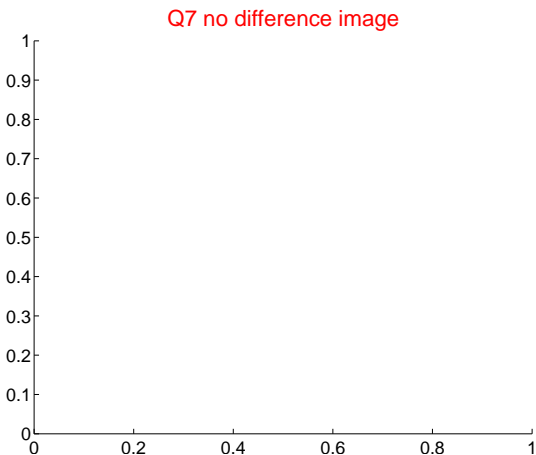
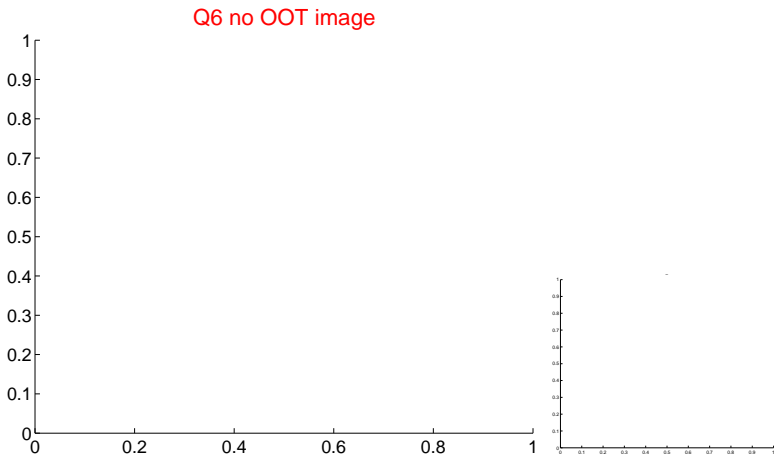
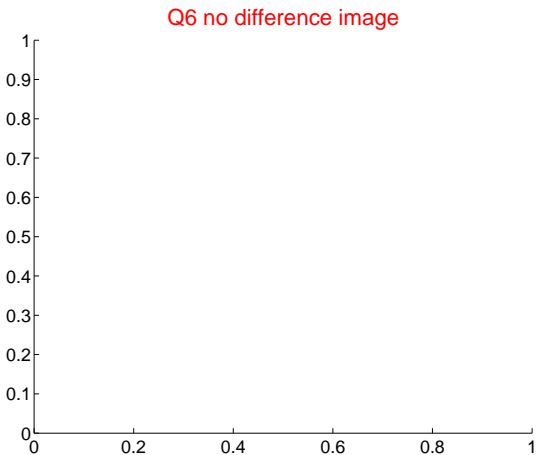
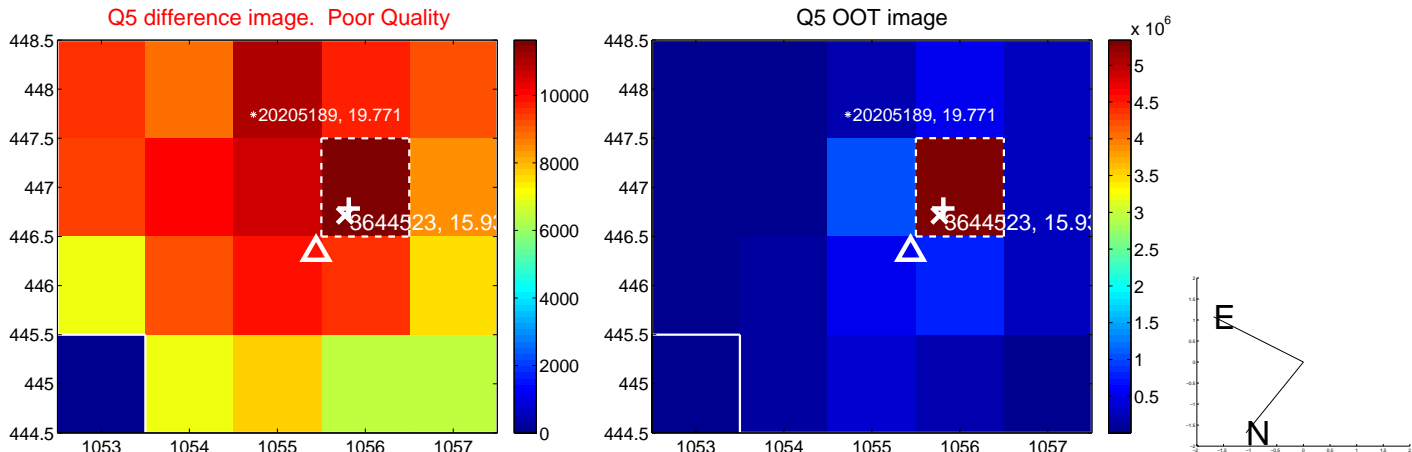
Q4 difference image. Poor Quality



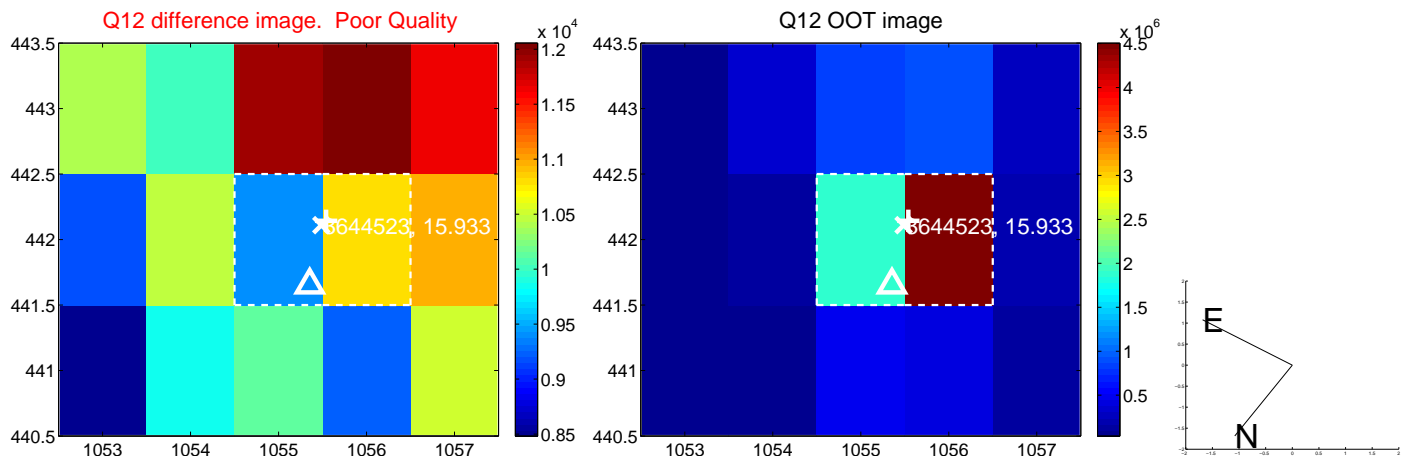
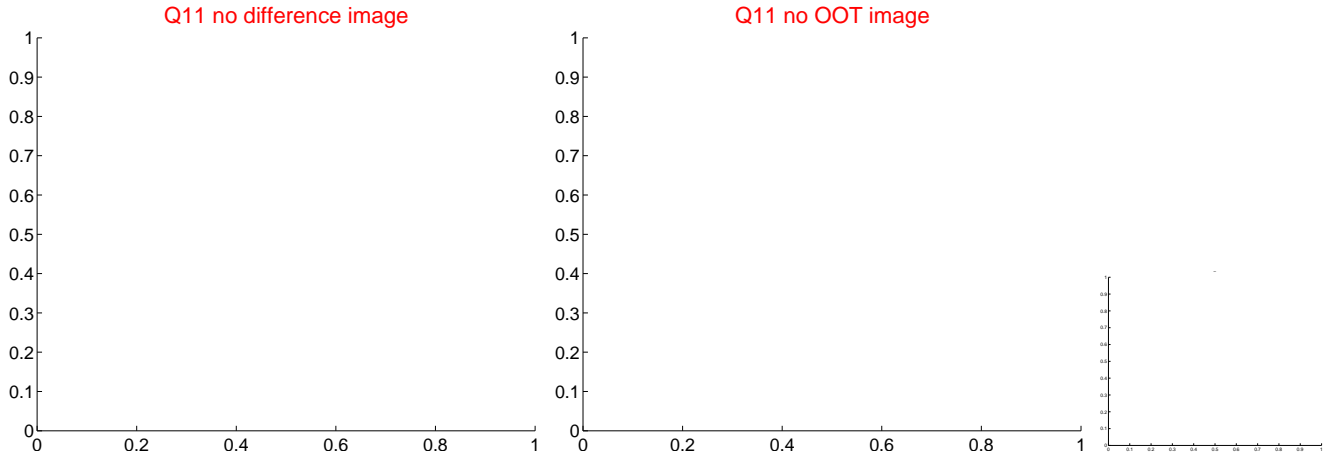
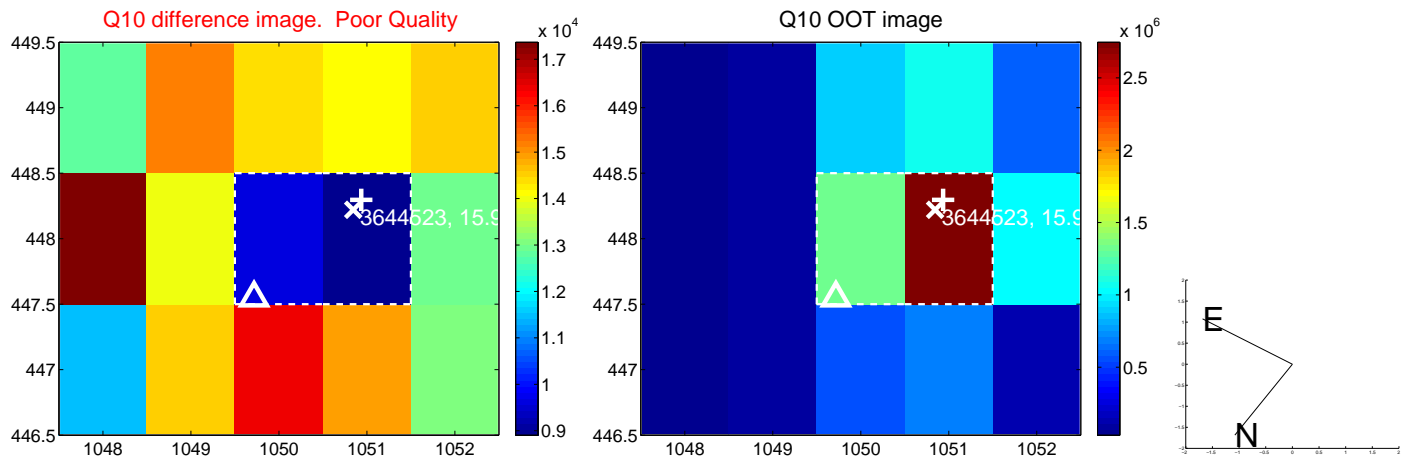
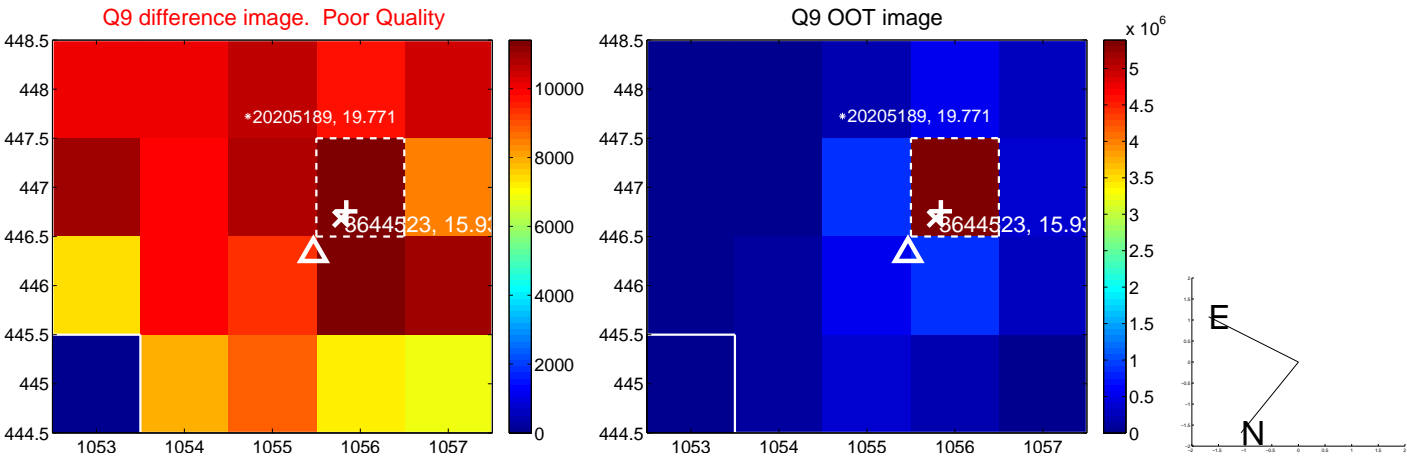
Q4 OOT image



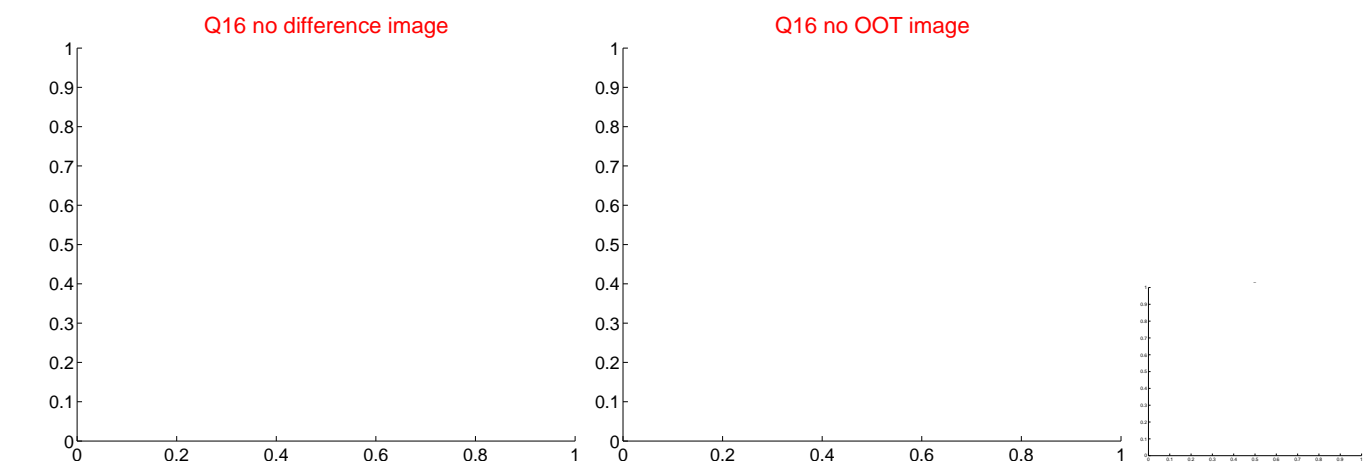
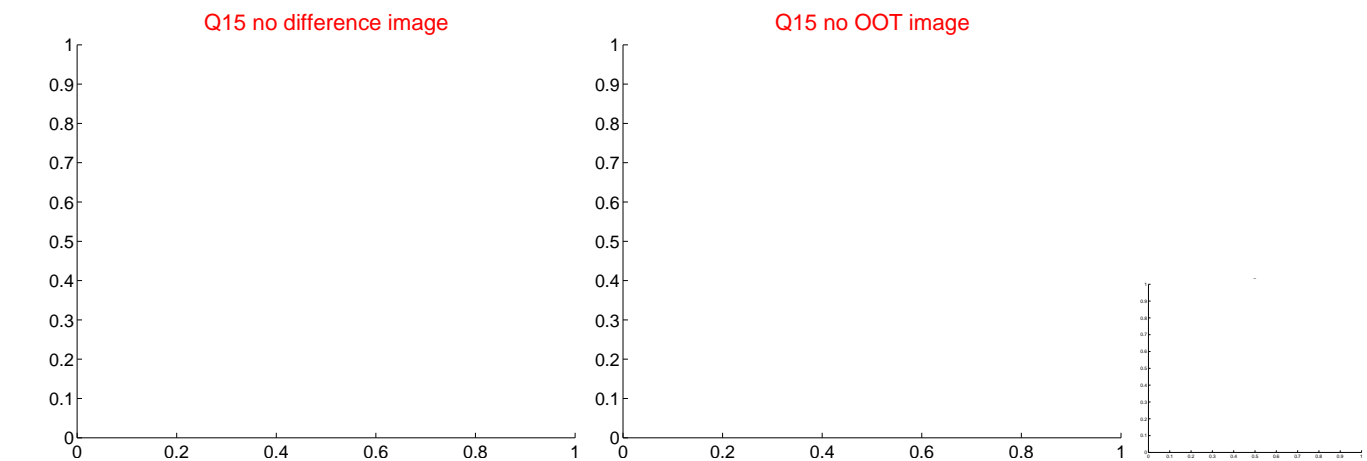
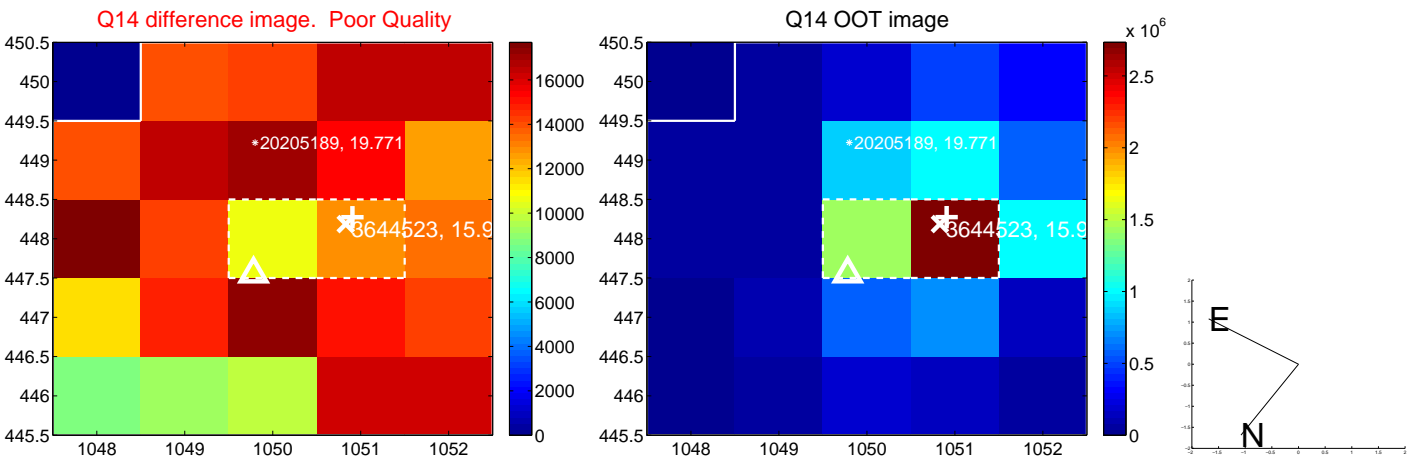
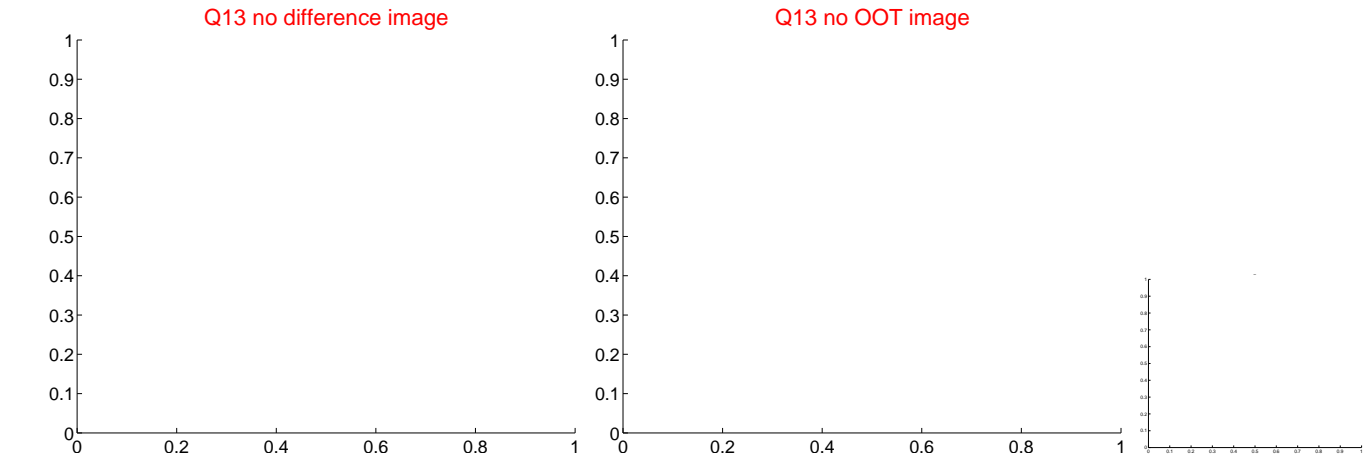
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



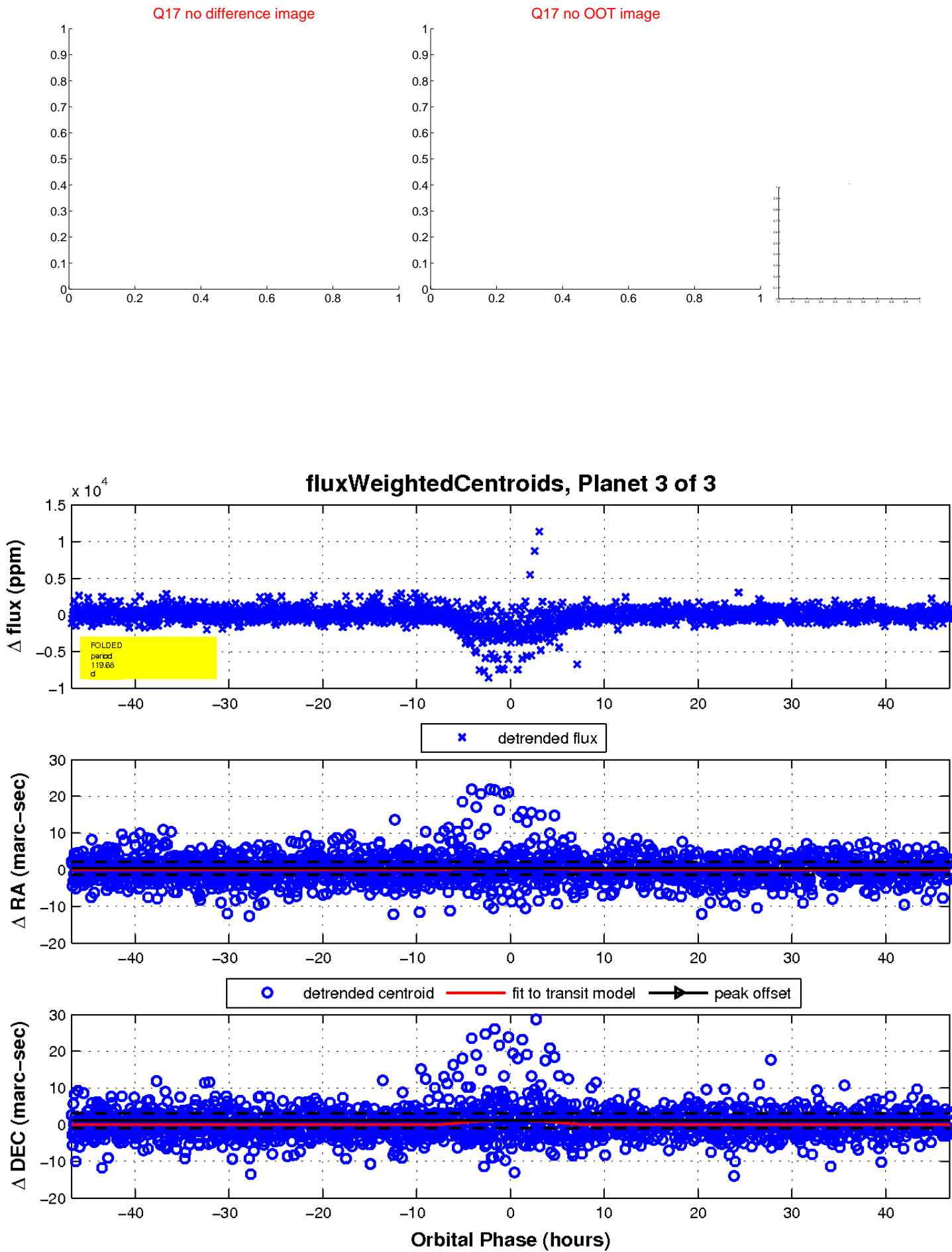
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

