

KIC 010226448

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})
010226448-01	OBS	No	0.660602	131.707432	8.9	4.599	8.9	3.8	0.95	5808	0.29	4499.88
010226448-02	OBS	No	80.273822	187.136195	398.8	2.669	9.2	10.4	0.95	5808	1.92	7.48
010226448-03	OBS	No	14.902803	145.901423	411.6	1.018	9.6	11.4	0.95	5808	1.98	70.59
010226448-04	OBS	No	33.297792	154.719634	281.2	2.289	9.7	9.2	0.95	5808	1.89	24.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010226448-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010226448-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
010226448-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
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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.

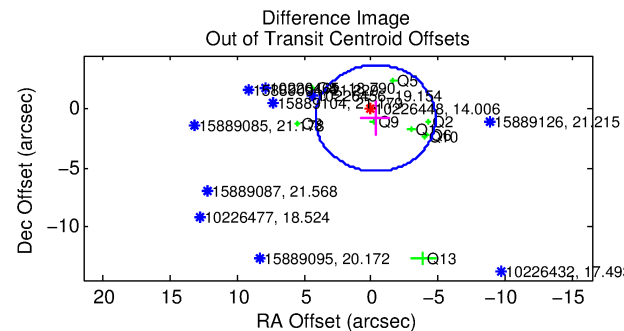
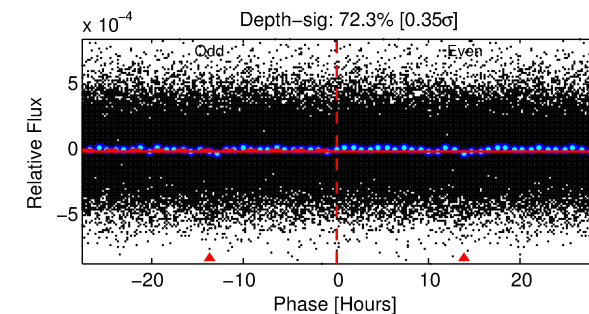
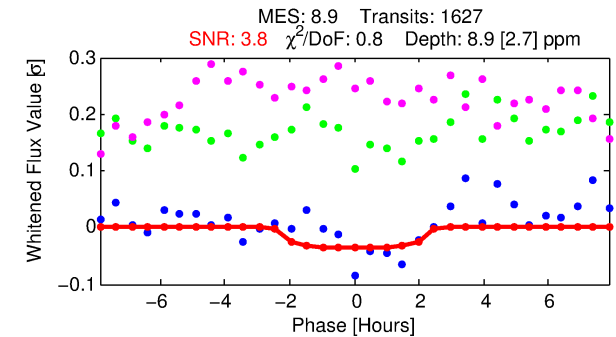
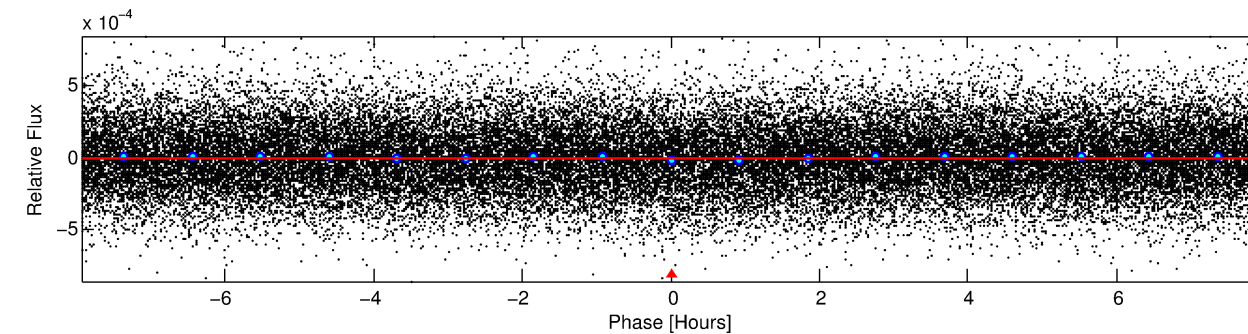
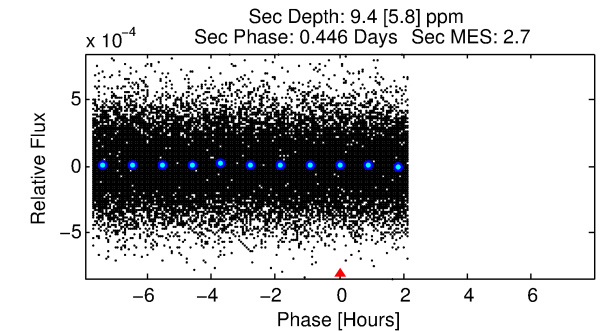
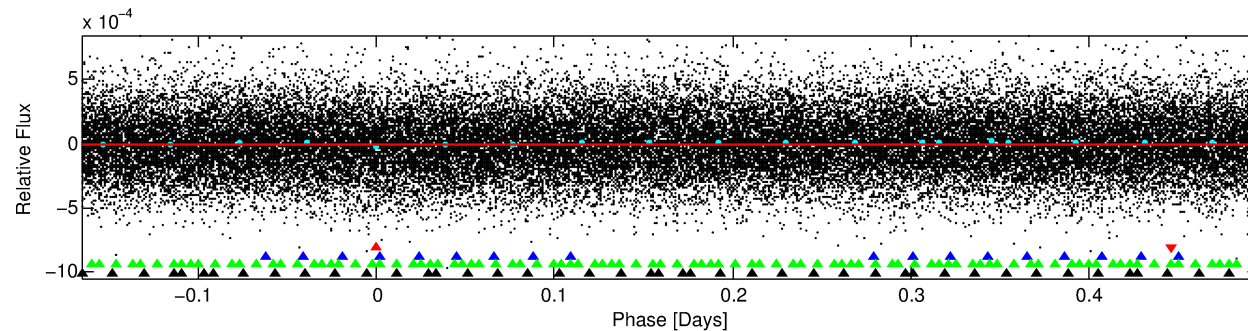
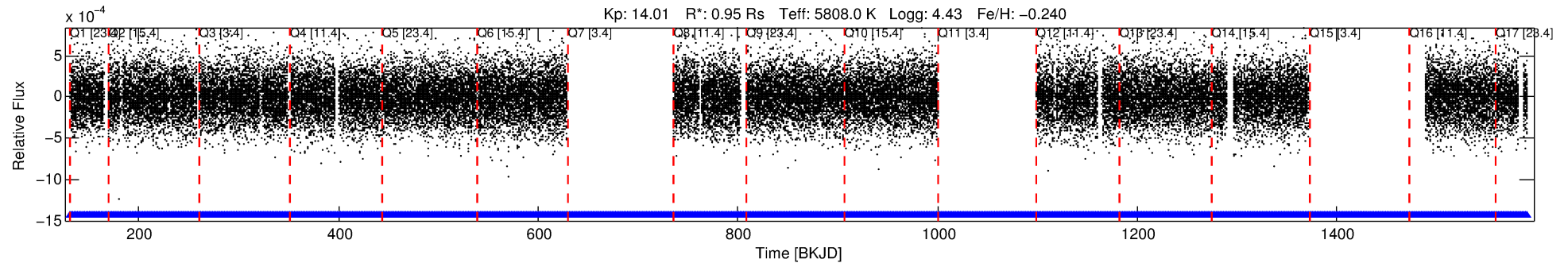
Ephemeris Match Information For 010226448-01

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
010226448-01	10226448	010226451-01	10226451	1:1	94.5	11	-21	14.95	14.01	3.89	Direct-PRF	1	4.54	1.29

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: 10226448 Candidate: 1 of 4 Period: 0.661 d



DV Fit Results:

Period = 0.66060 [0.00003] d
Epoch = 131.7074 [0.0133] BKJD
Rp/R* = 0.0028 [0.0063]
a/R* = 1.23 [4.39]
b = 0.39 [22.65]
Seff = 4499.88 [1598.80]
Teq = 2088 [186] K
Rp = 0.29 [0.66] Re
a = 0.0143 [0.0033] AU
Ag = 12.89 [59.34] [0.20σ]
Teffp = 6118 [7025] K [0.57σ]

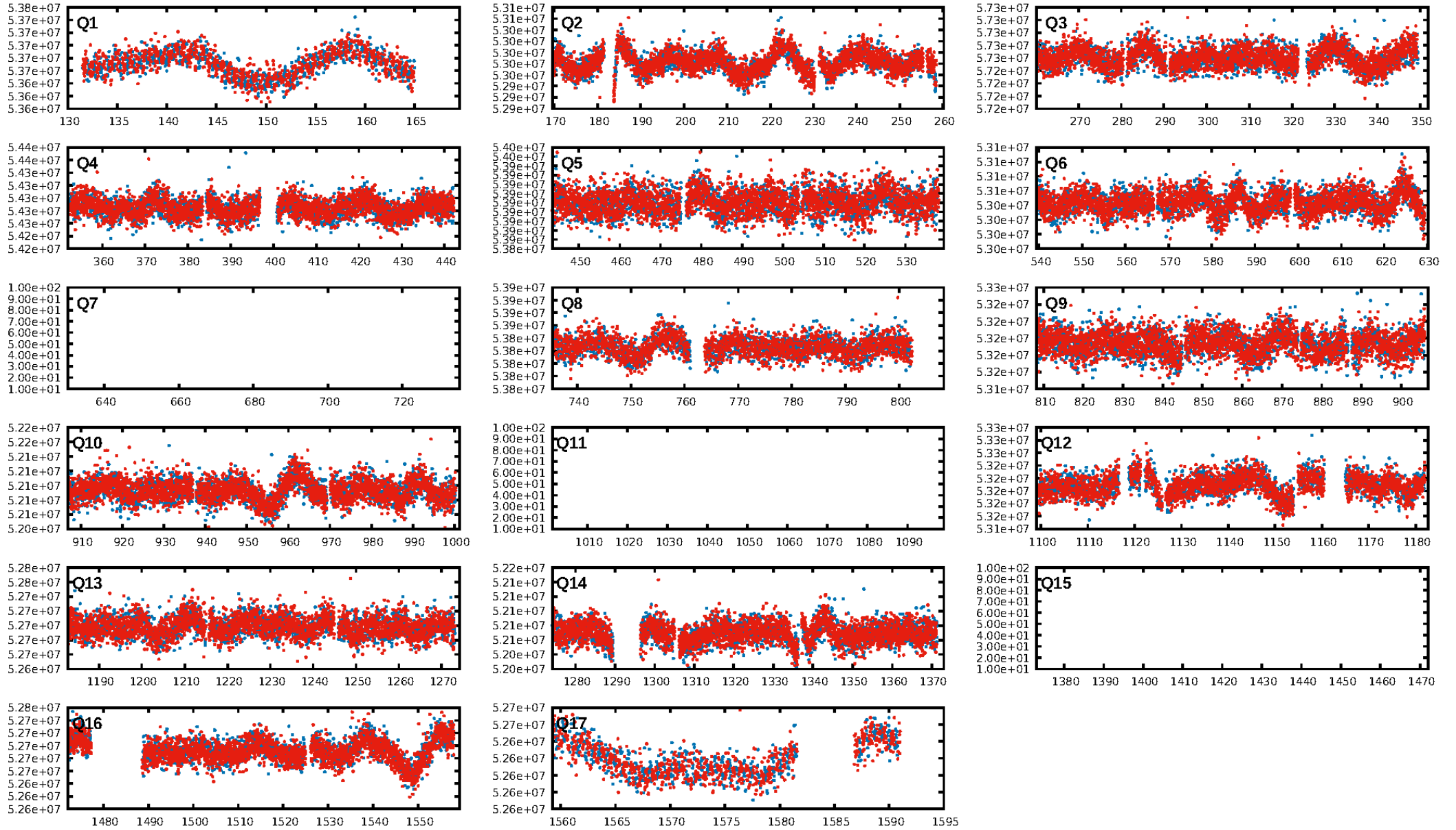
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [72.57σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.53e-09
RollingBand-fgt: 1.00 [1535/1535]
GhostDiagnostic-chr: 0.106
Centroid-sig: 56.4%
Centroid-so: 2.645 arcsec [0.77σ]
OotOffset-rm: 0.876 arcsec [0.59σ]
KicOffset-rm: 0.720 arcsec [0.47σ]
OotOffset-st: 3/1/2/4 [10]
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DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 1.00 [14/14]

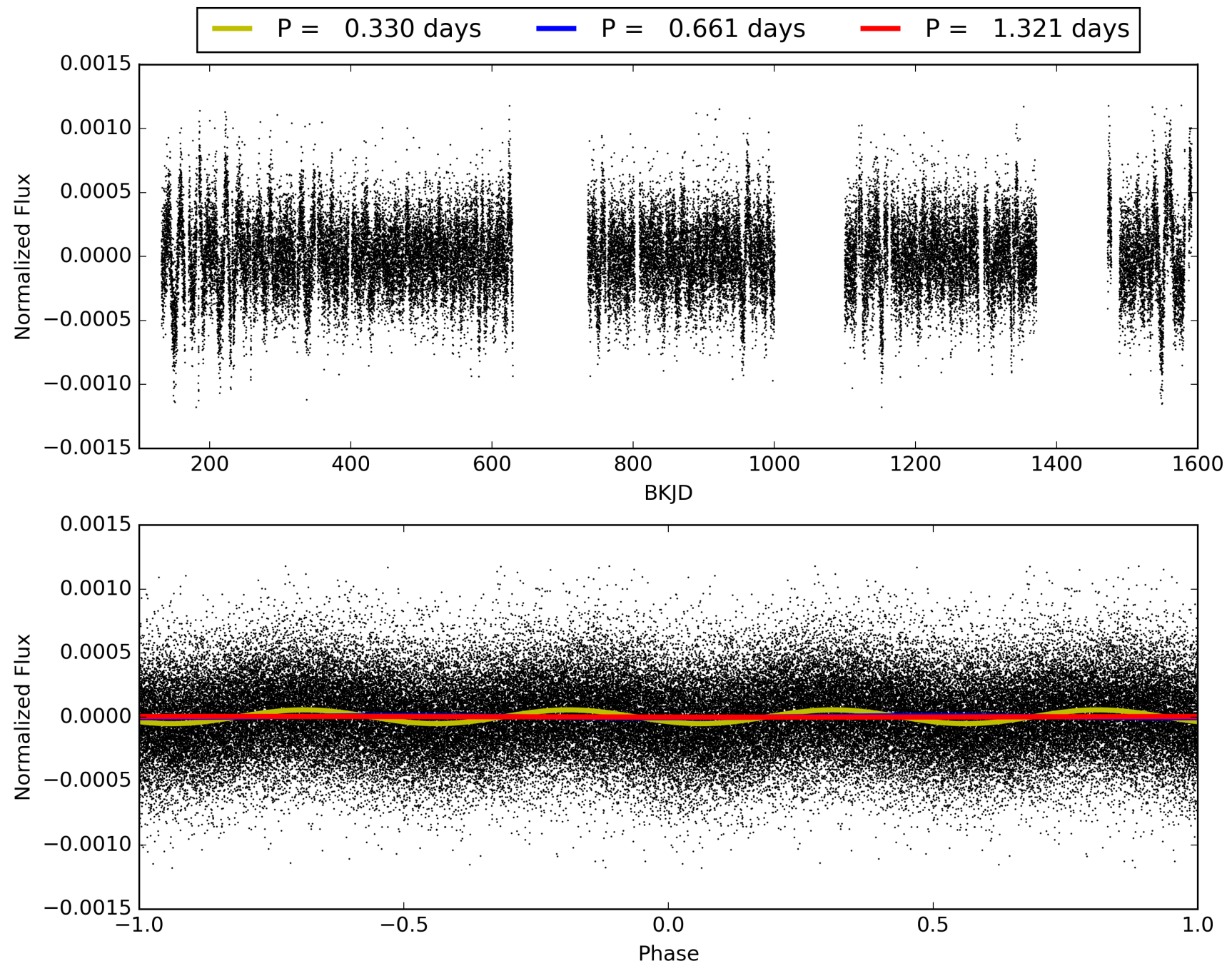
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:44 Z

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

TCE 010226448-01, PDC Light Curves

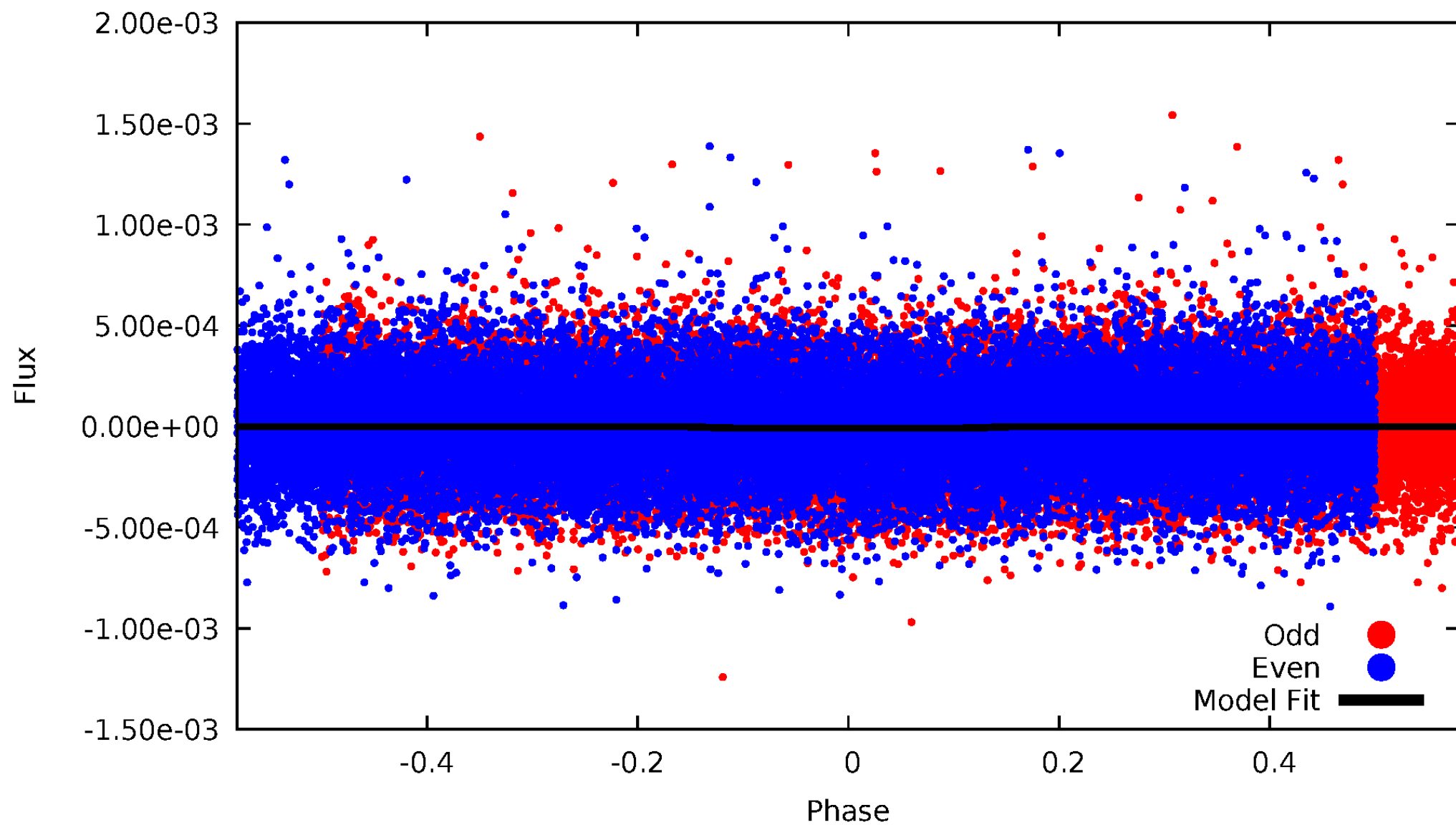


TCE 010226448-01



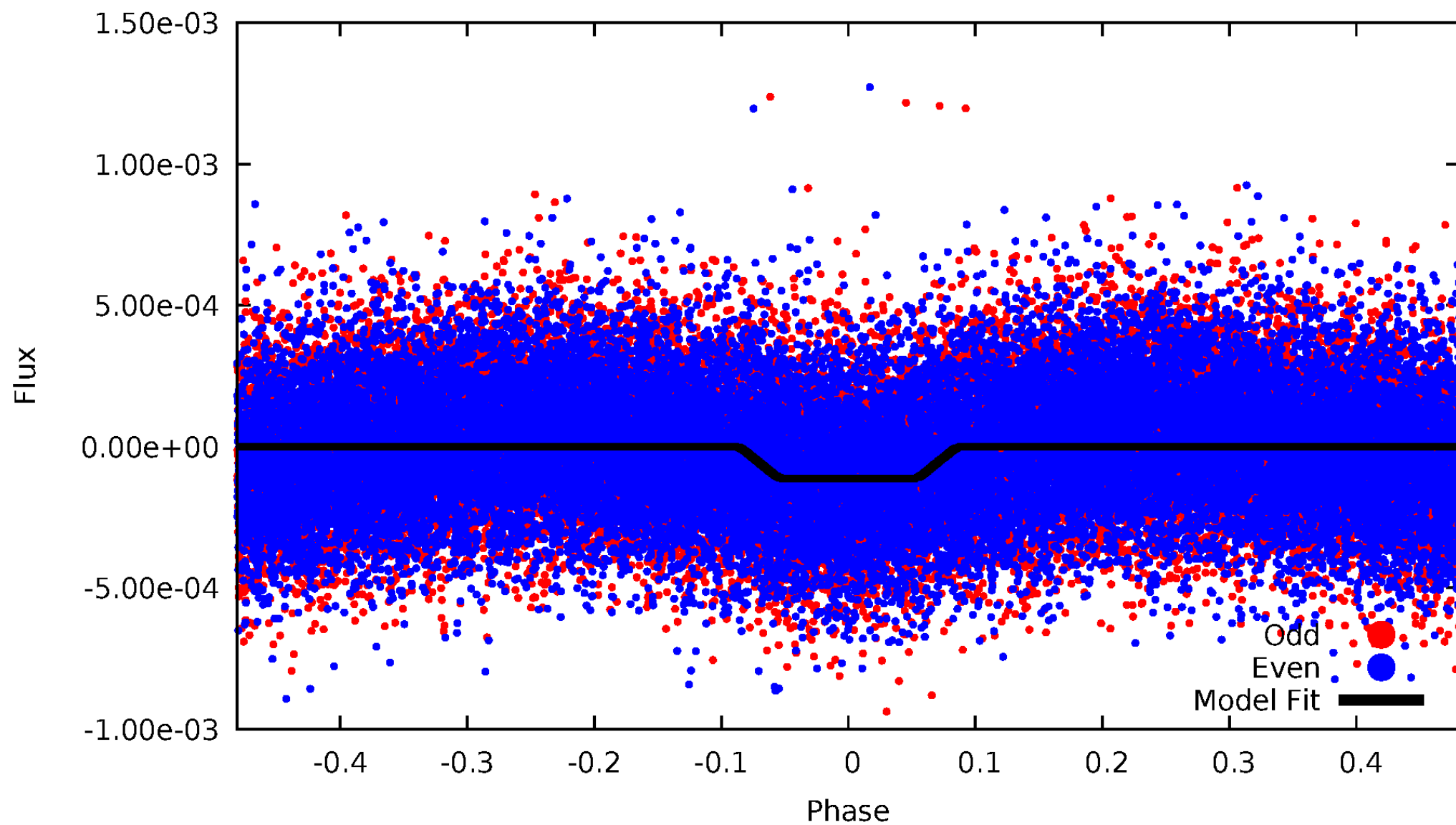
DV Odd/Even

TCE 010226448-01

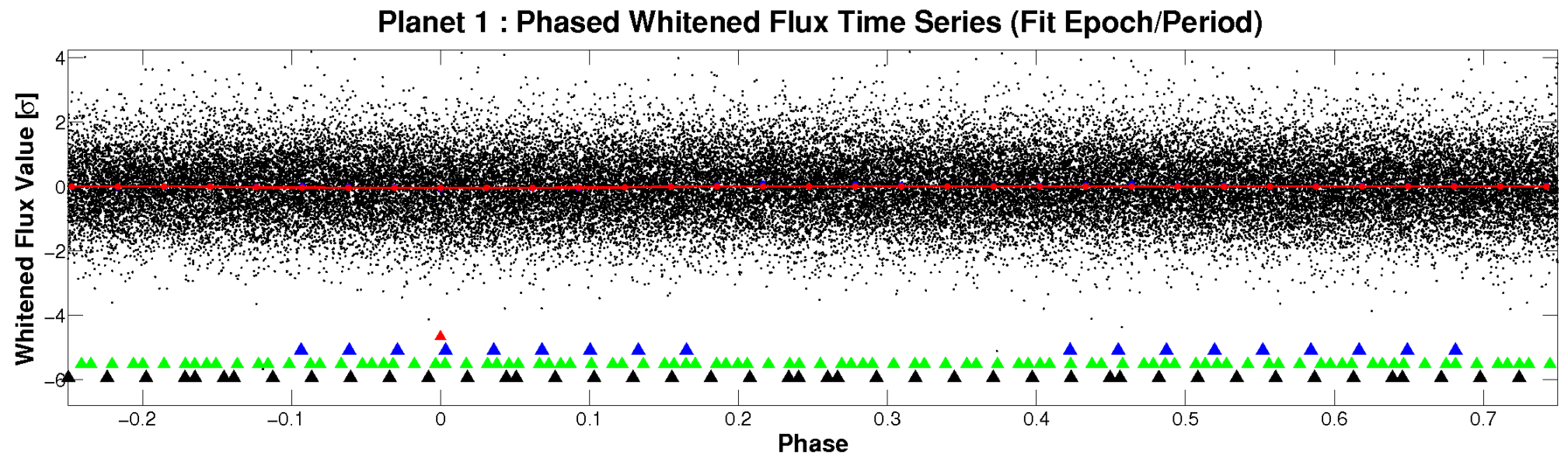
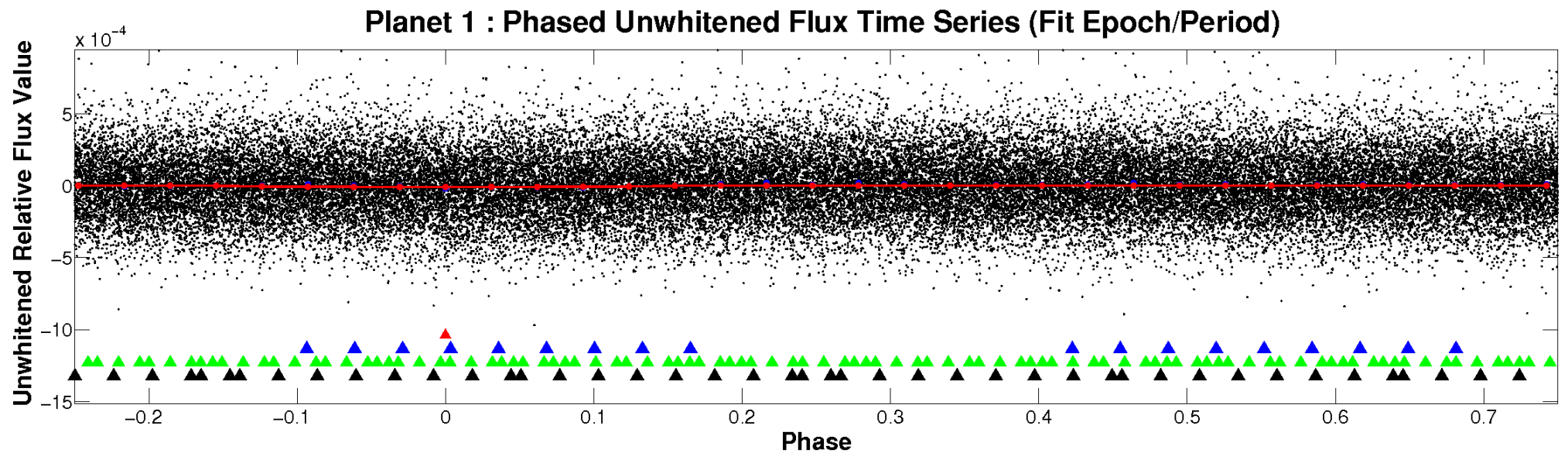


ALT Odd/Even

TCE 010226448-01

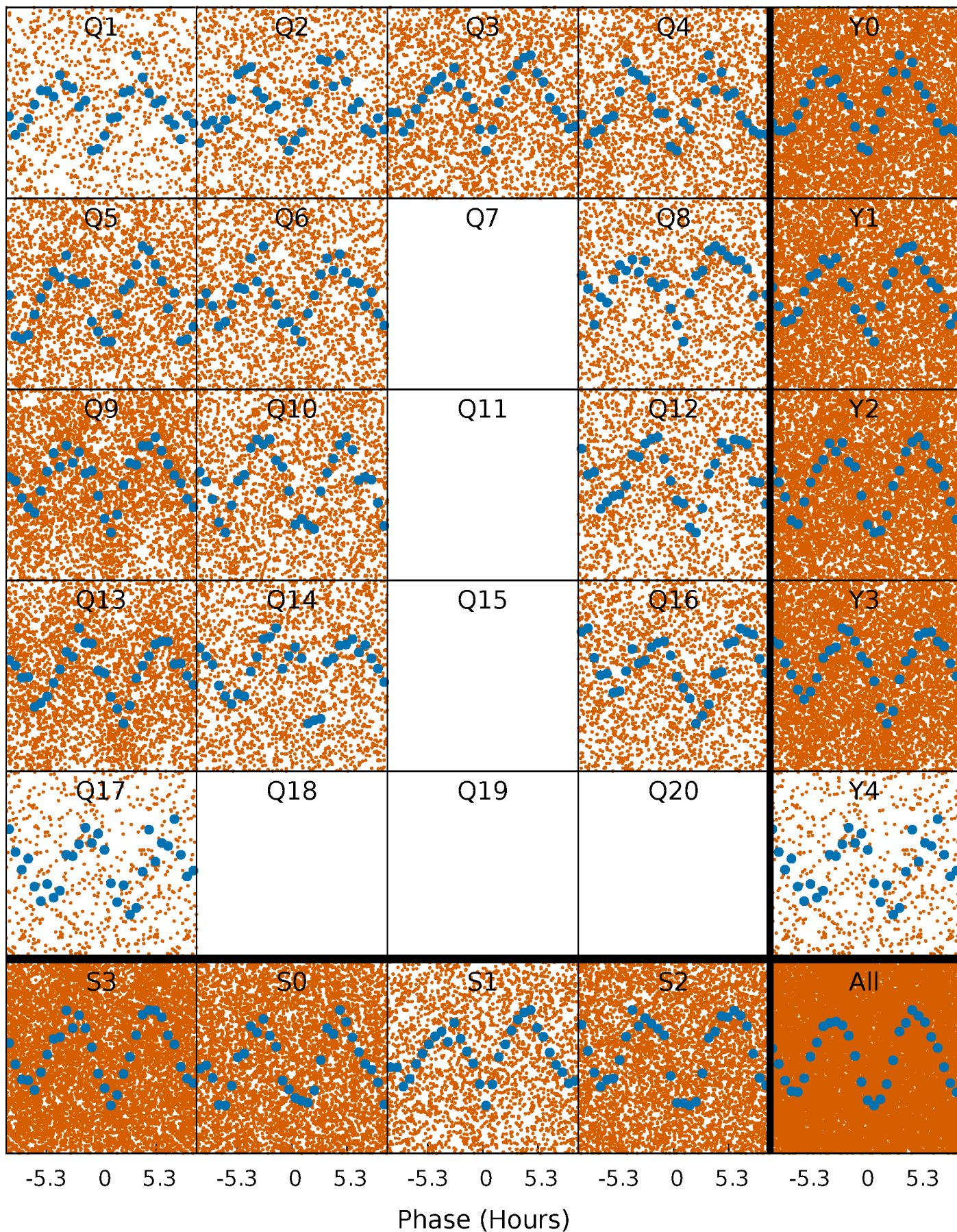


Non-Whitened Vs. Whitened Light Curve



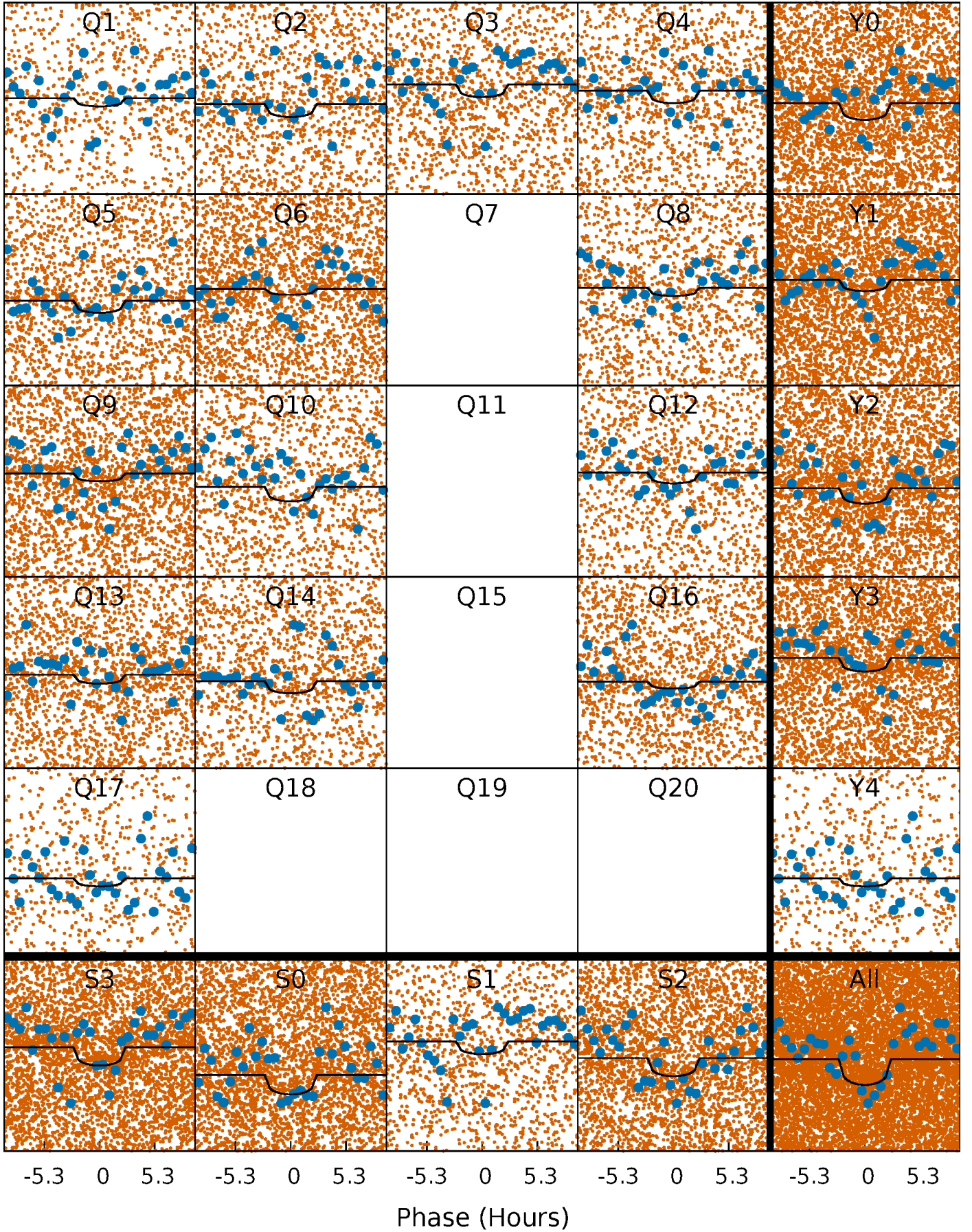
PDC Quarter-Phased Transit Curves

TCE 010226448-01 P= 0.660602 Days $T_0=131.707432$ (BKJD)



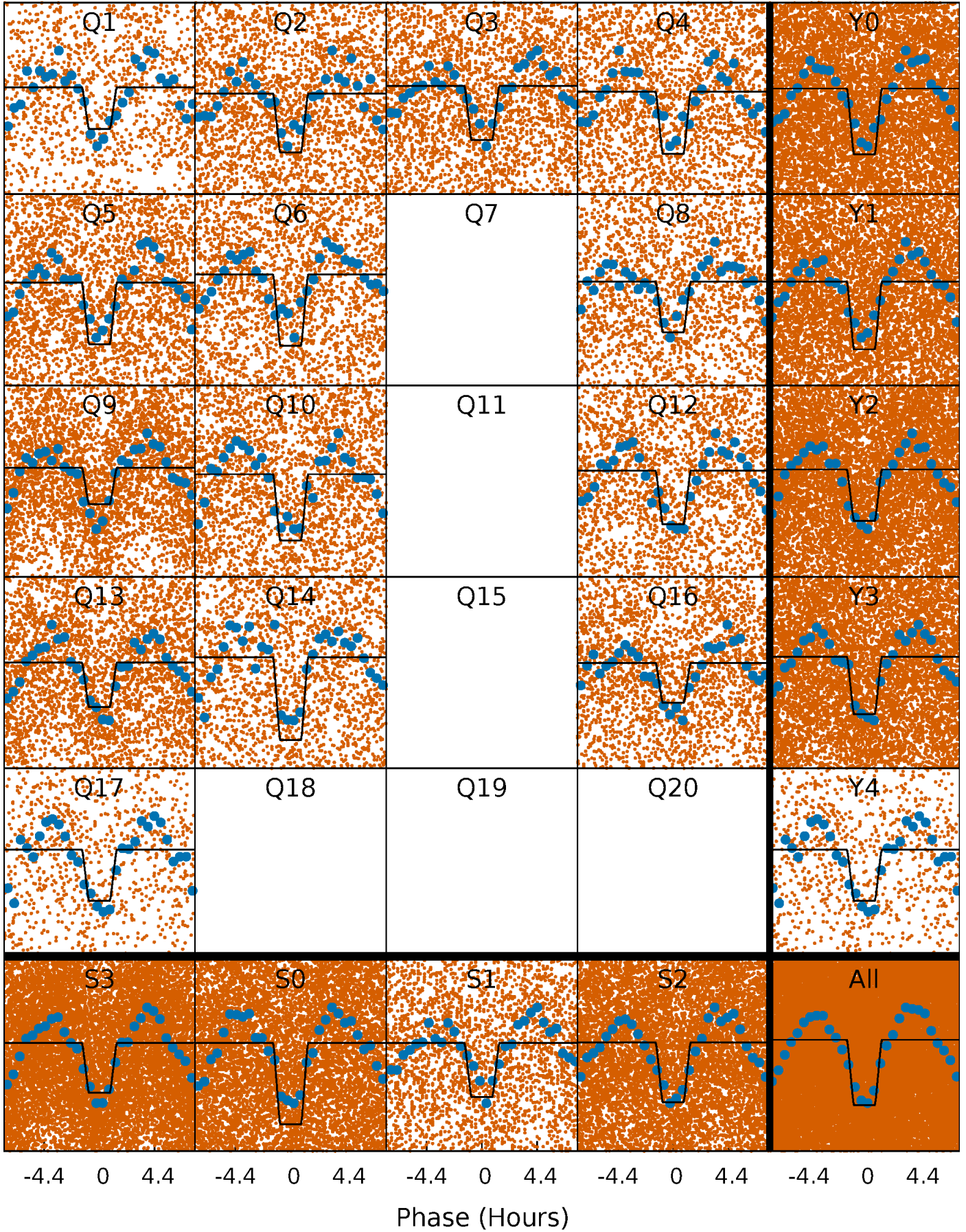
DV Quarter-Phased Transit Curves

TCE 010226448-01 P= 0.660602 Days $T_0=131.707432$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

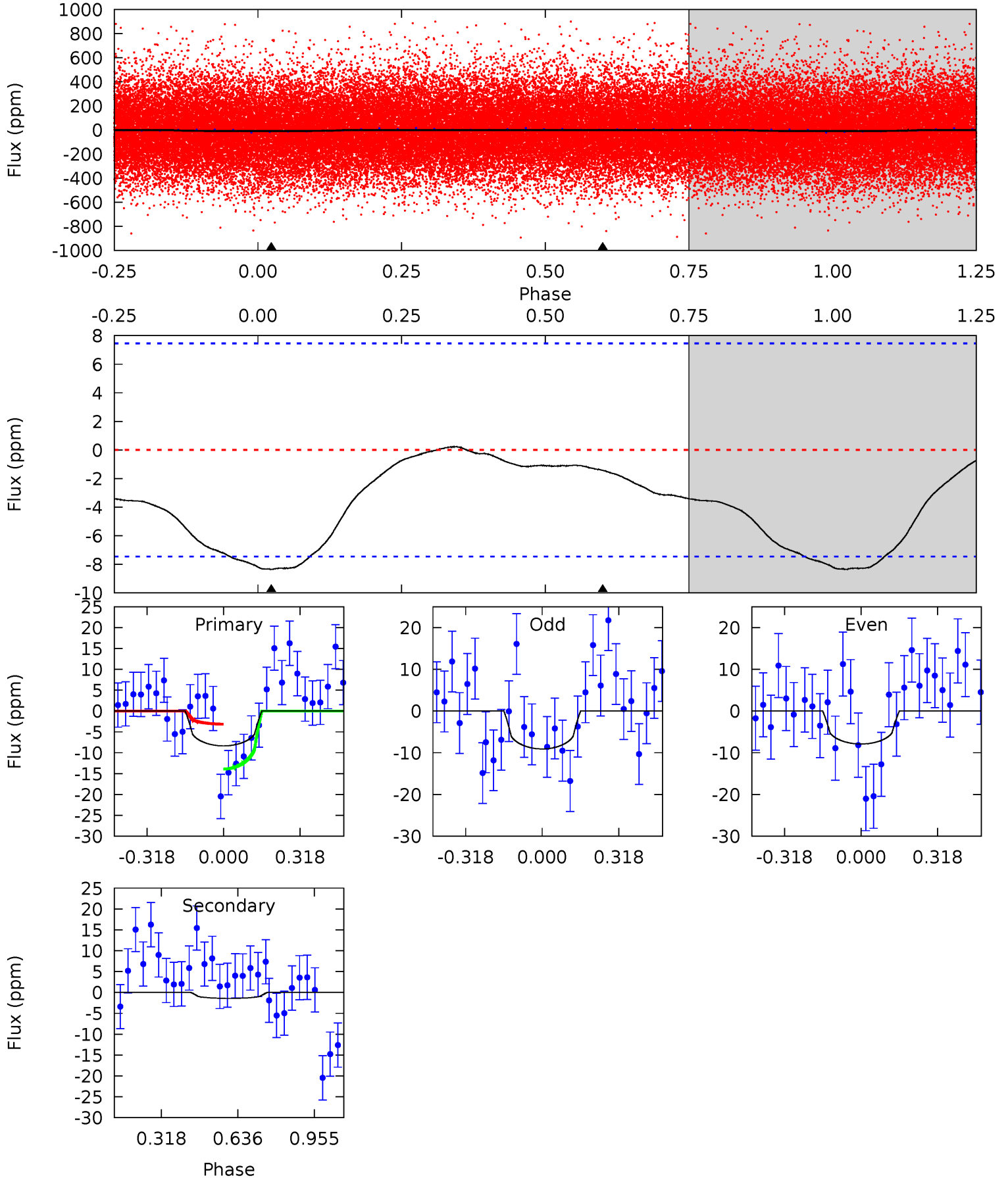
TCE 010226448-01 P= 0.660657 Days $T_0=131.690501$ (BKJD)



DV Model-Shift Uniqueness Test

010226448-01, P = 0.660602 Days, E = 131.046830 Days

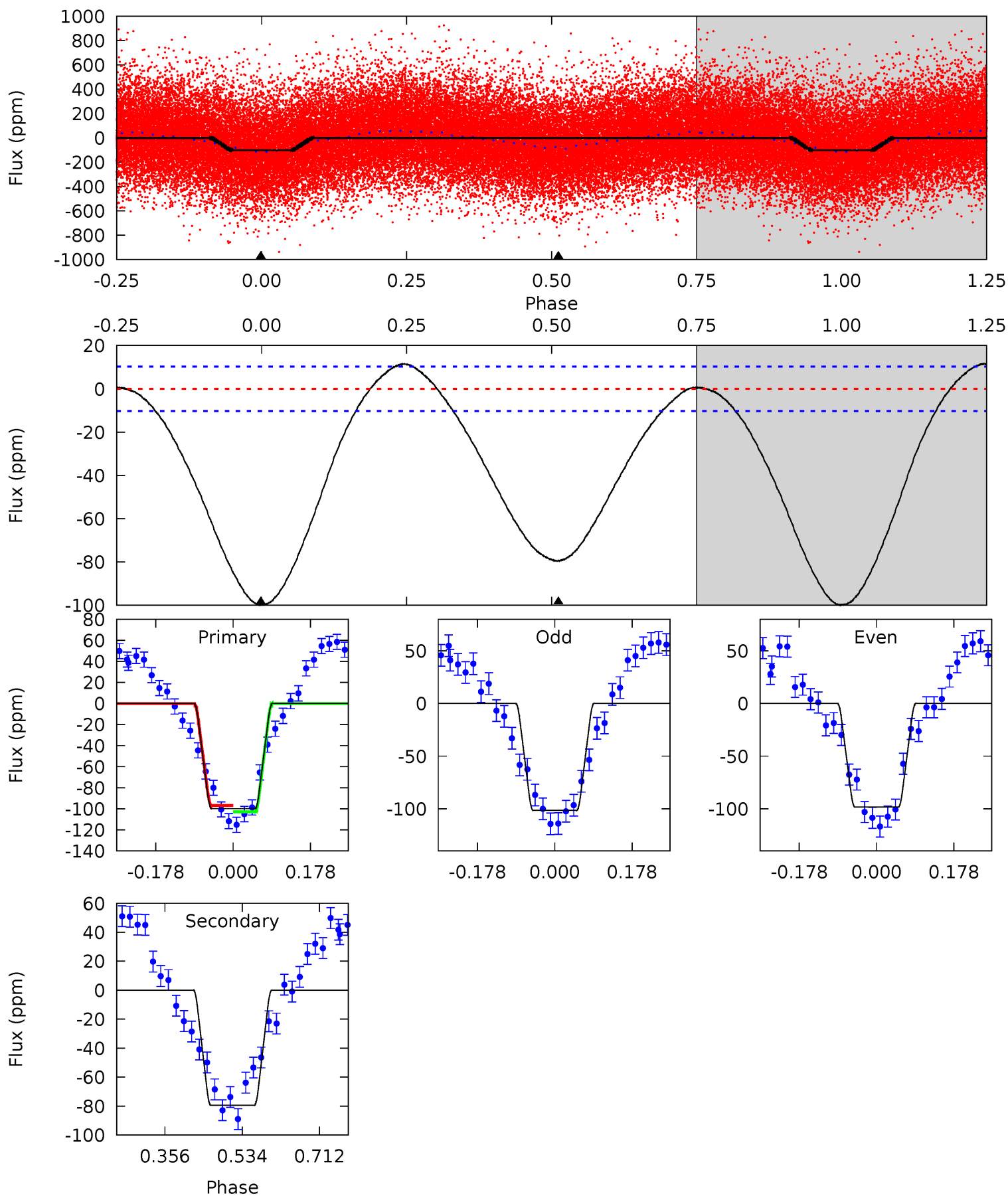
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.84	0.83	0	0	4.32	1.00	0.14	4.84	4.84	0.83	0.83	0.35	0.93	0.03	3.16



Alt Model-Shift Uniqueness Test

010226448-01, P = 0.660657 Days, E = 131.029844 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.2	34.4	0	0	4.44	1.35	2.77	43.2	43.2	34.4	34.4	0.72	1.01	0.10	1.30



Stellar Parameters For KIC 010226448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5808^{+145}_{-159}	$4.434^{+0.101}_{-0.188}$	$-0.240^{+0.300}_{-0.300}$	$0.951^{+0.251}_{-0.135}$	$0.895^{+0.111}_{-0.091}$	$1.467^{+0.665}_{-0.737}$
	+2%/-3%	+2%/-4%	+125%/-125%	+26%/-14%	+12%/-10%	+45%/-50%
Source	PHO1	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 010226448-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 2	$0.57^{+0.57}_{-0.39}$	2940^{+203}_{-154}	1468^{+2973}_{-4688}	$0.300^{+2.893}_{-0.392}$
Alt.	-80 ± 2	$1.17^{+0.63}_{-0.64}$	2953^{+212}_{-153}	5236^{+2521}_{-923}	$6.580^{+24.265}_{-3.861}$

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 $A_{obs} \gg 1.0$

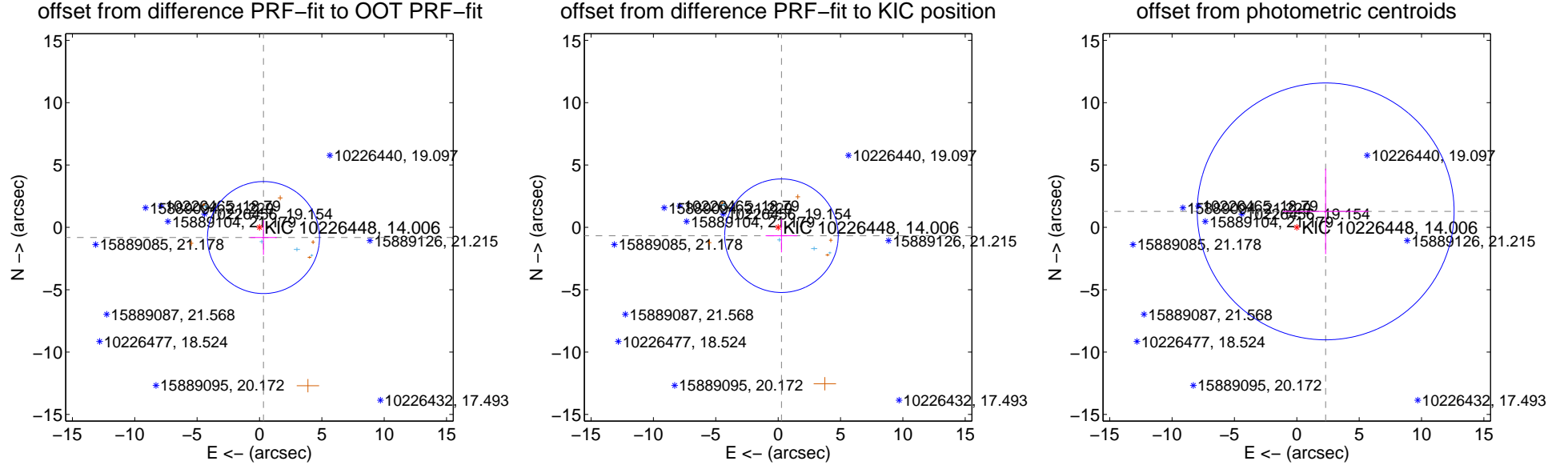
DV Centroid Data

Supplemental centroid analysis for 010226448-01. Kepler magnitude: 14.01. Transit SNR 3.85

There are 4 quarters with good PRF difference image offsets

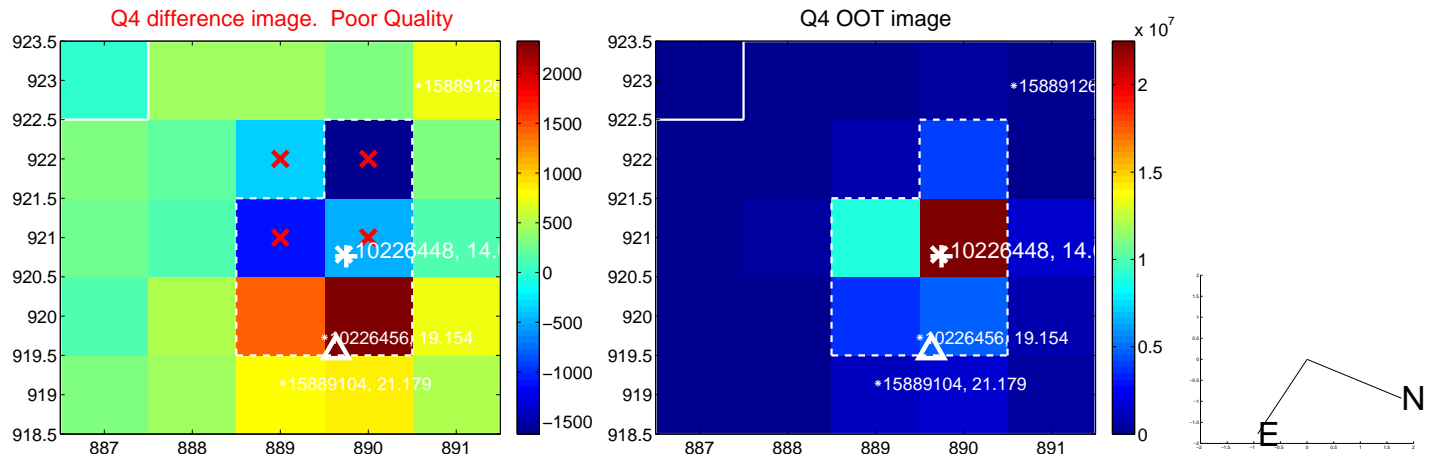
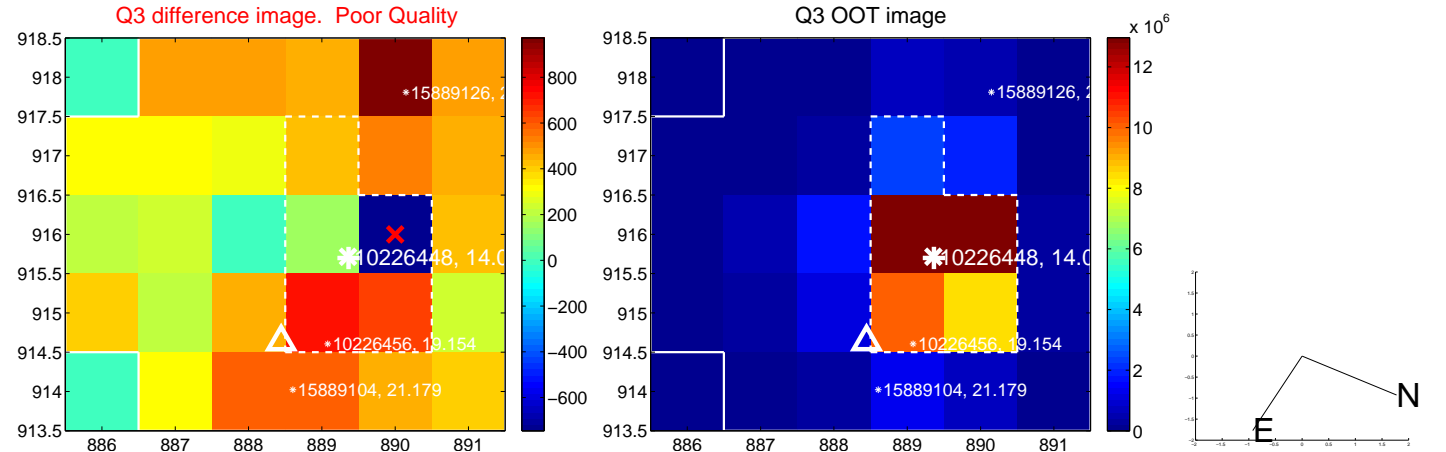
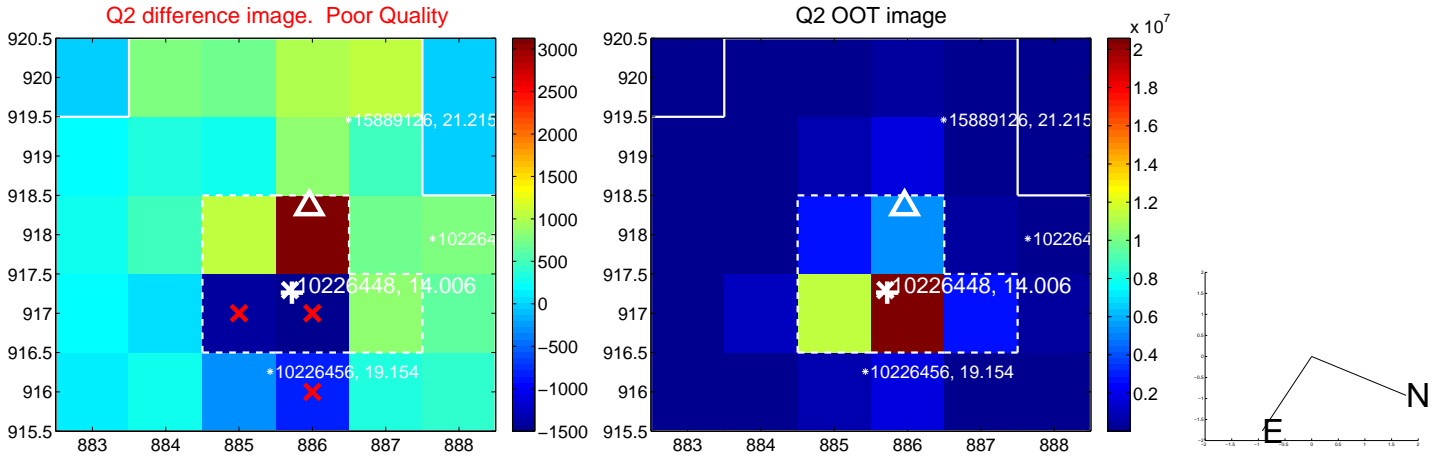
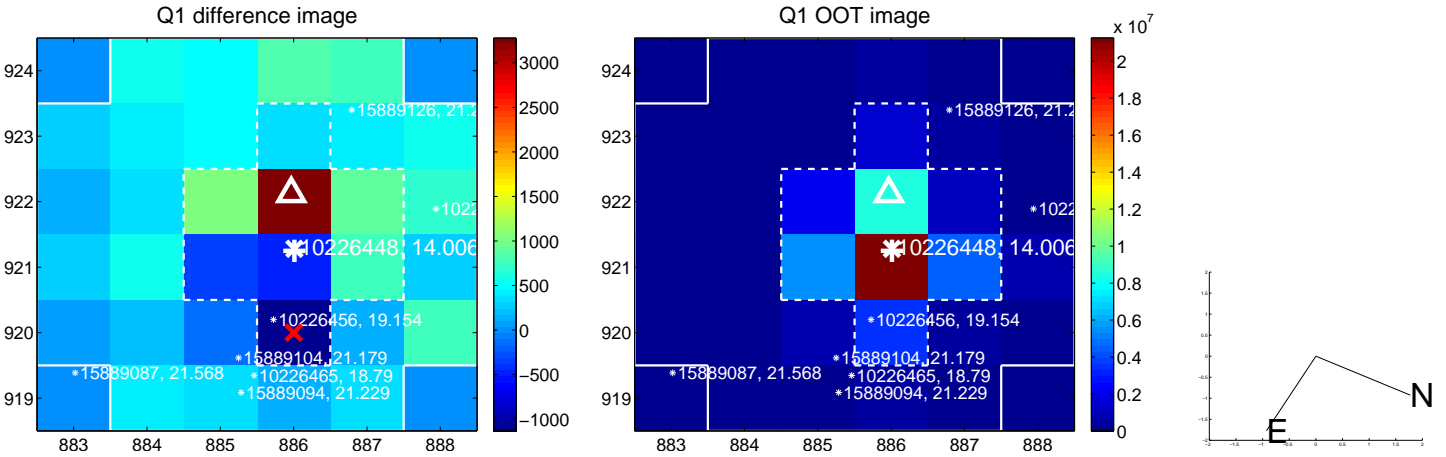
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.876 ± 1.497	0.59	-0.322 ± 1.071	-0.815 ± 1.385
PRF-fit source offset from KIC position	0.720 ± 1.517	0.47	-0.266 ± 1.267	-0.669 ± 1.332
photometric centroid source offset	2.64 ± 3.43	0.77	-2.31 ± 3.43	1.28 ± 3.43

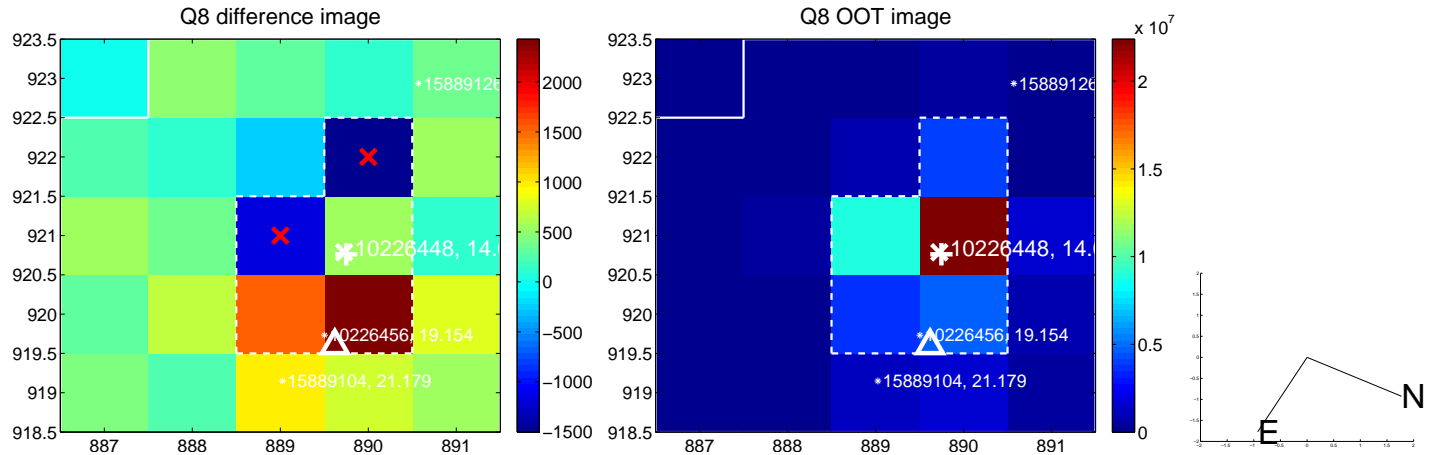
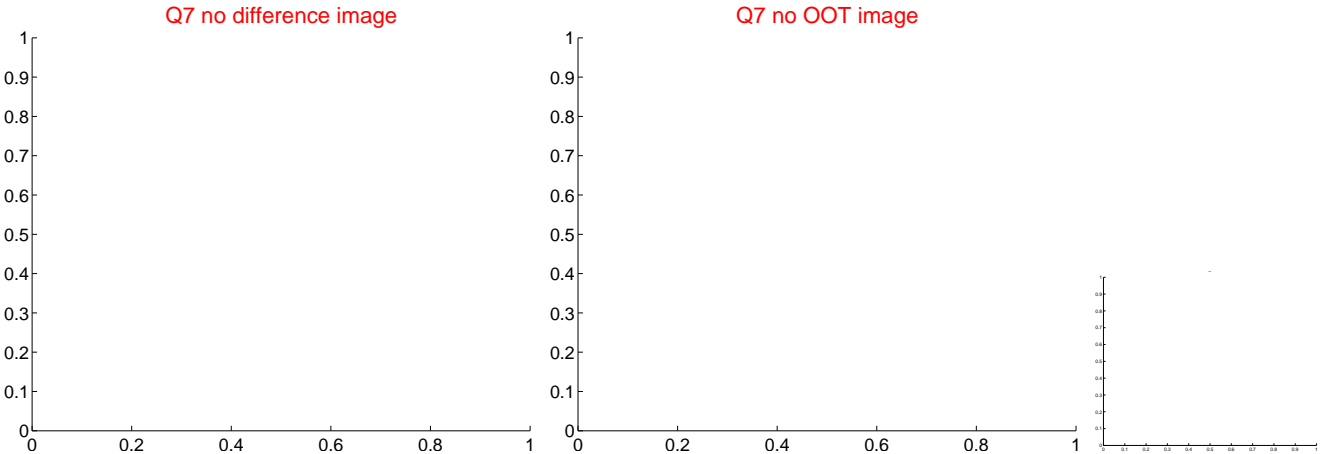
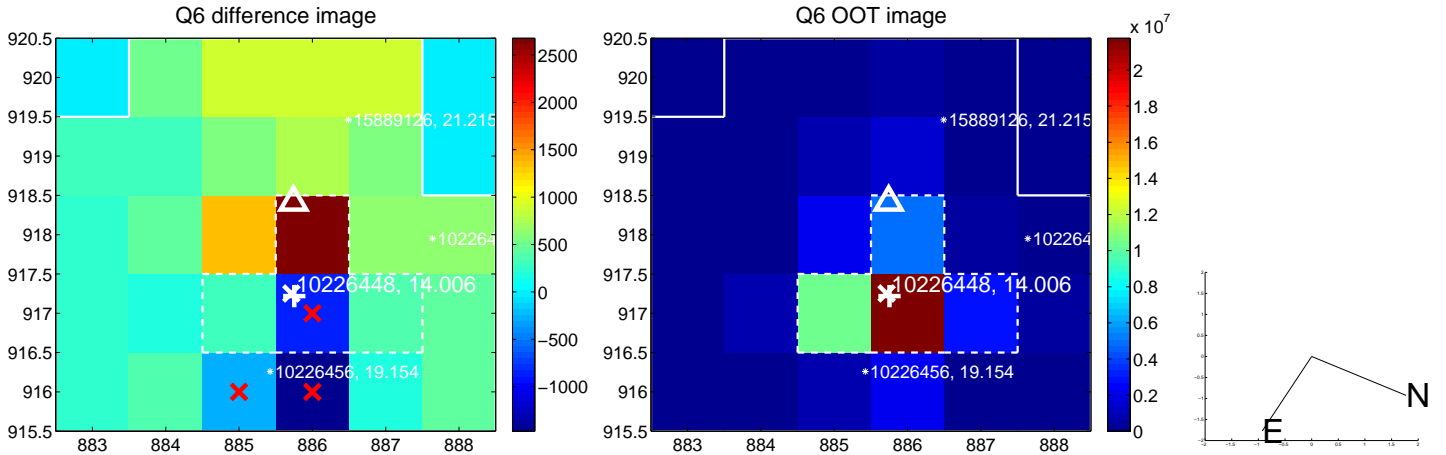
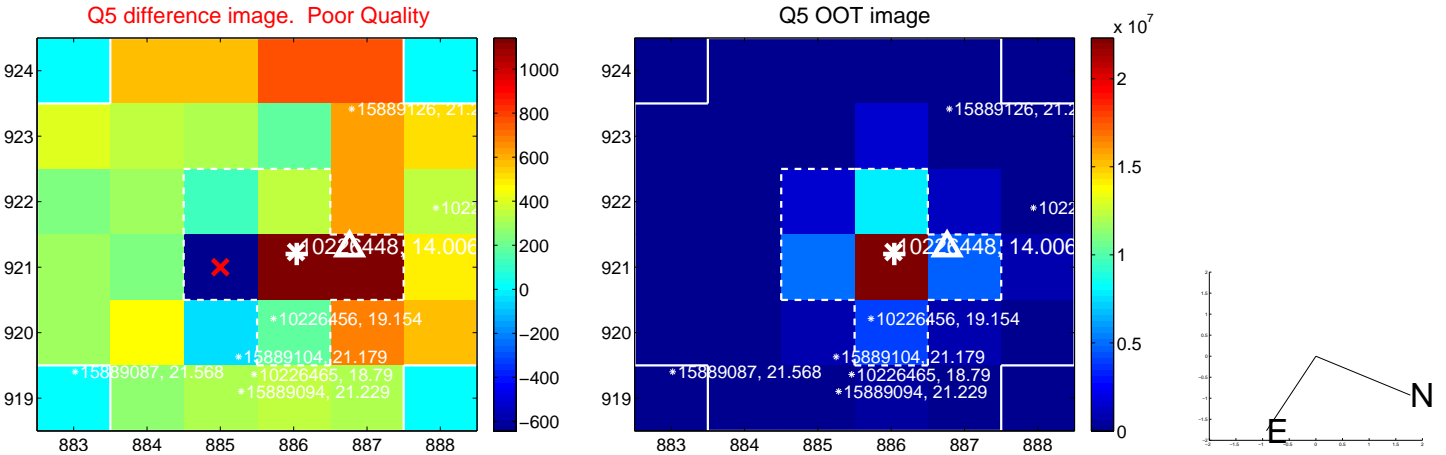


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

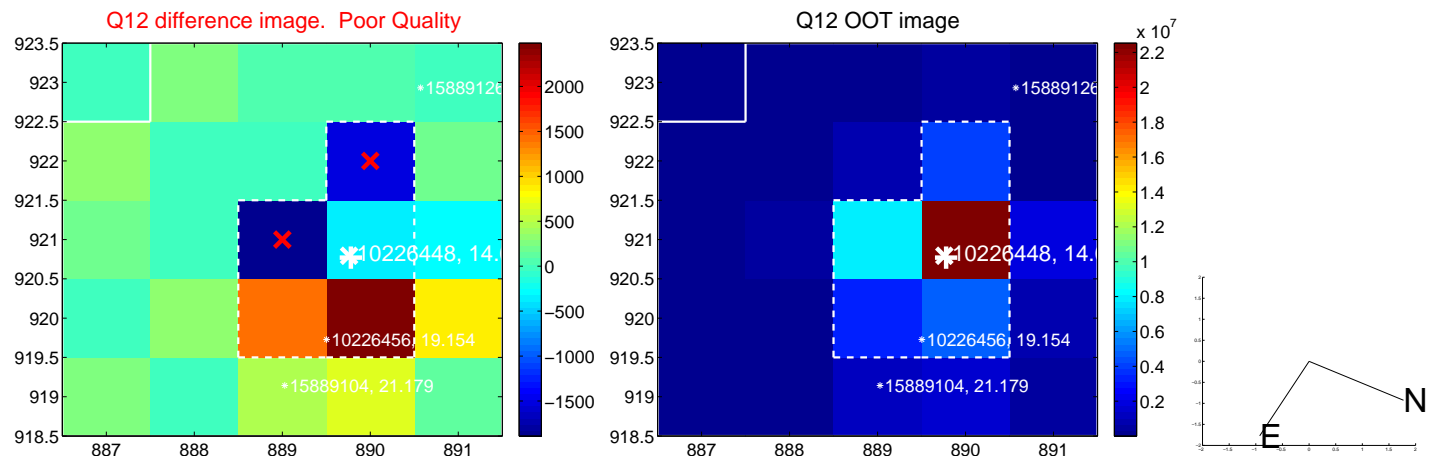
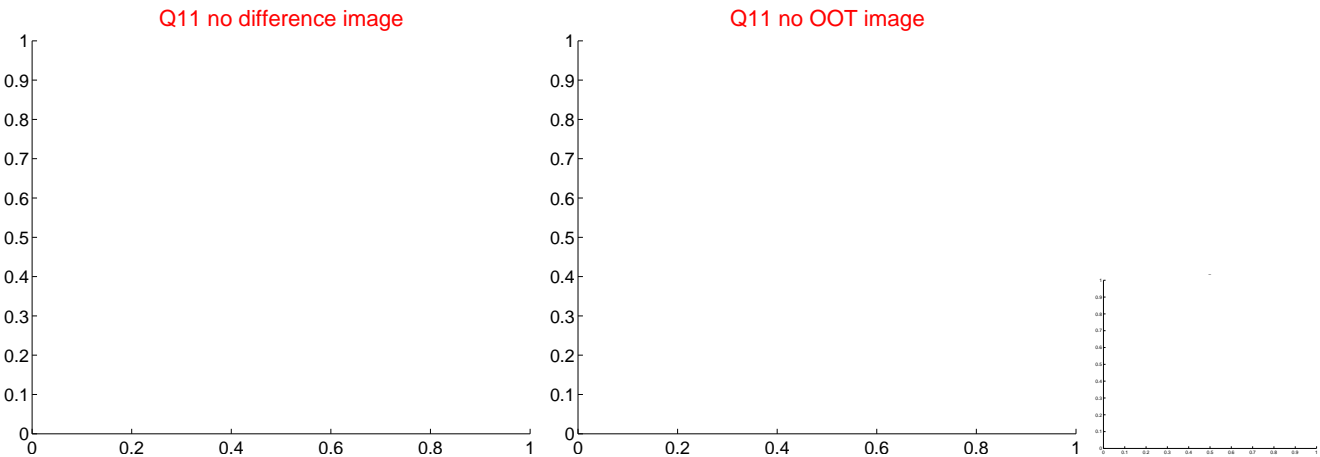
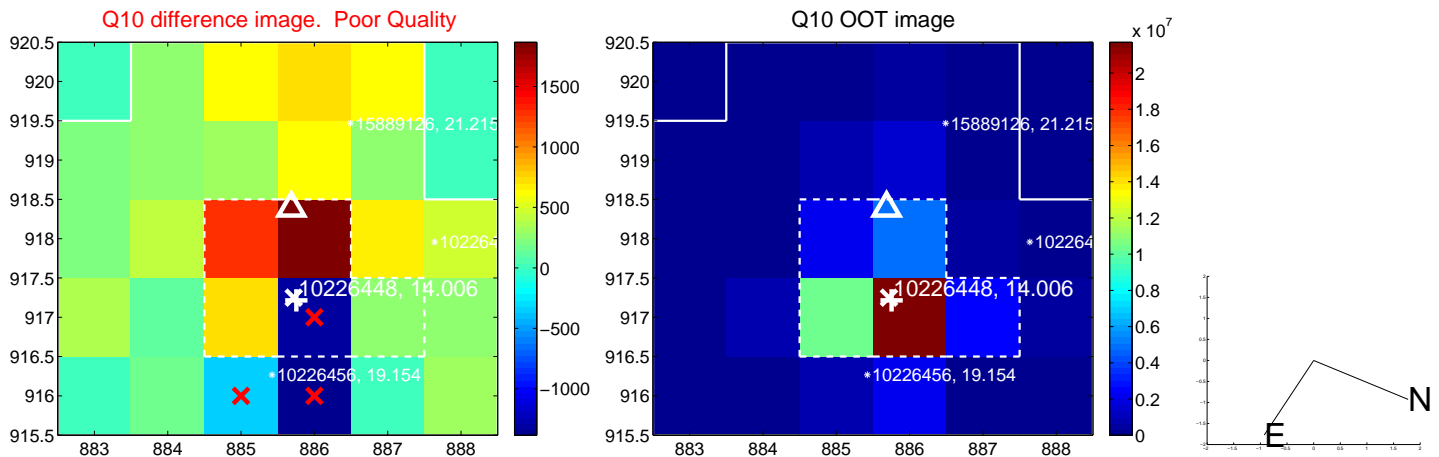
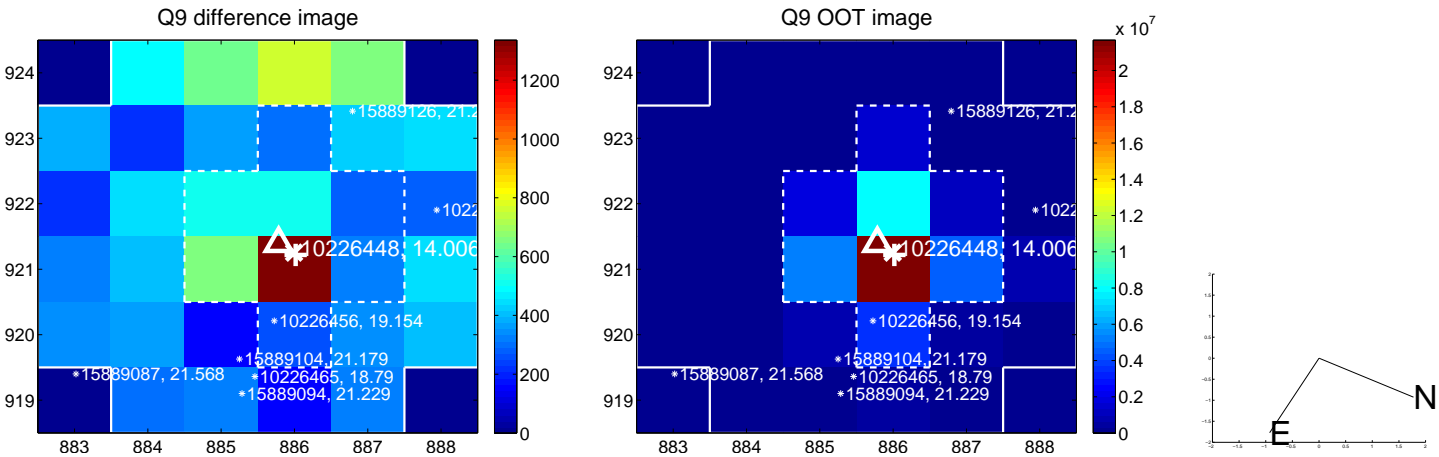
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



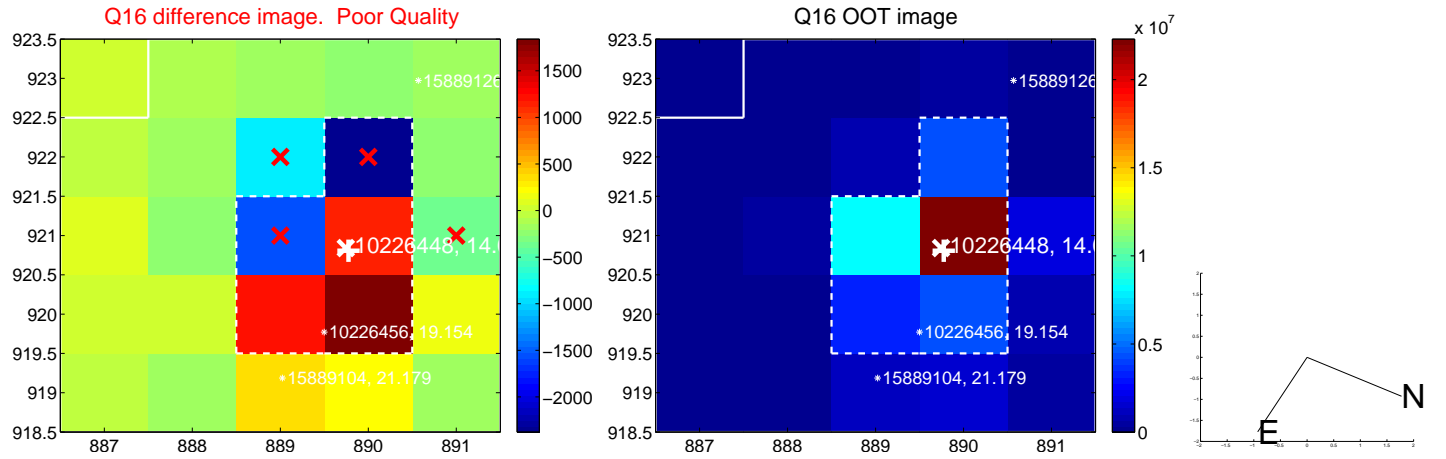
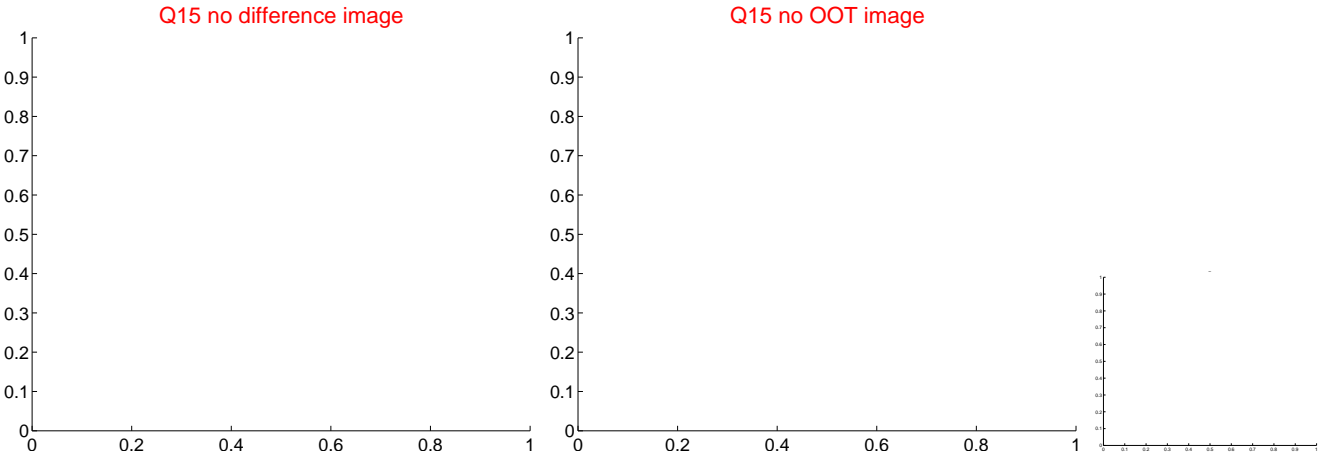
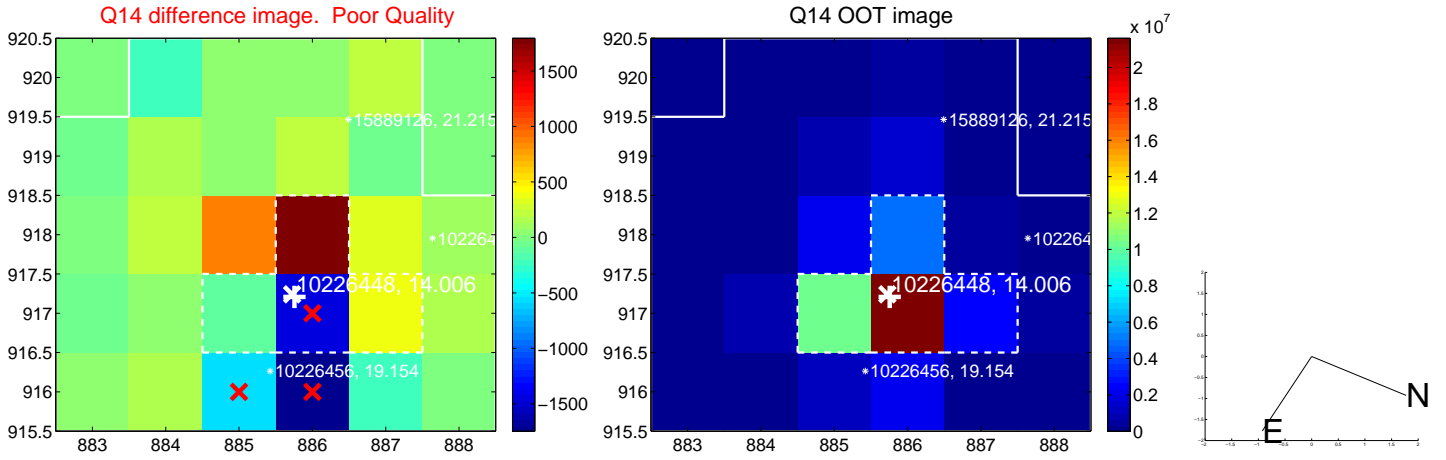
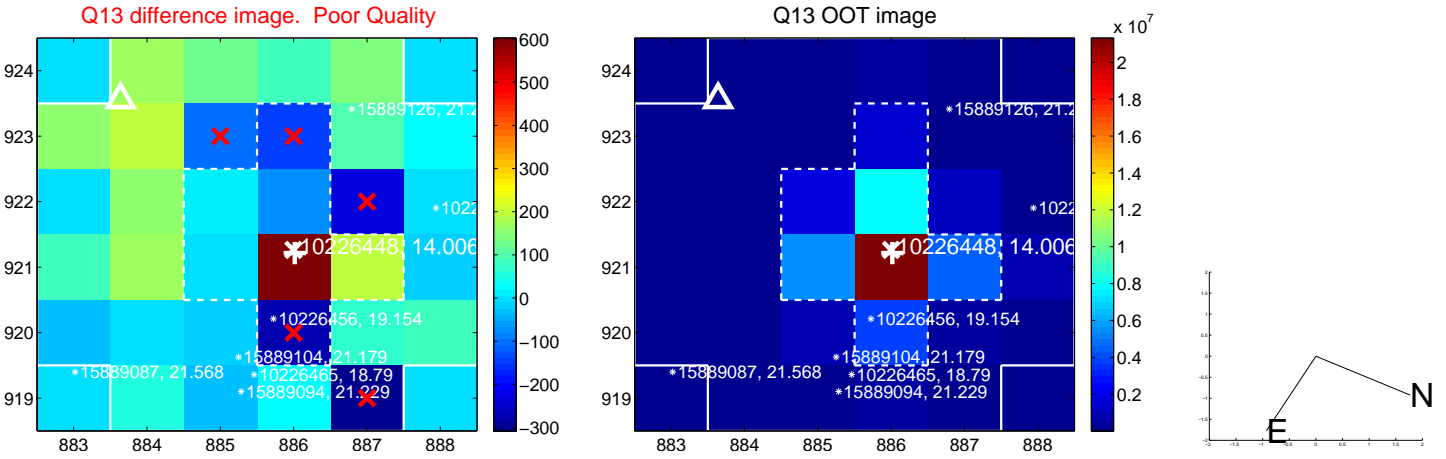
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



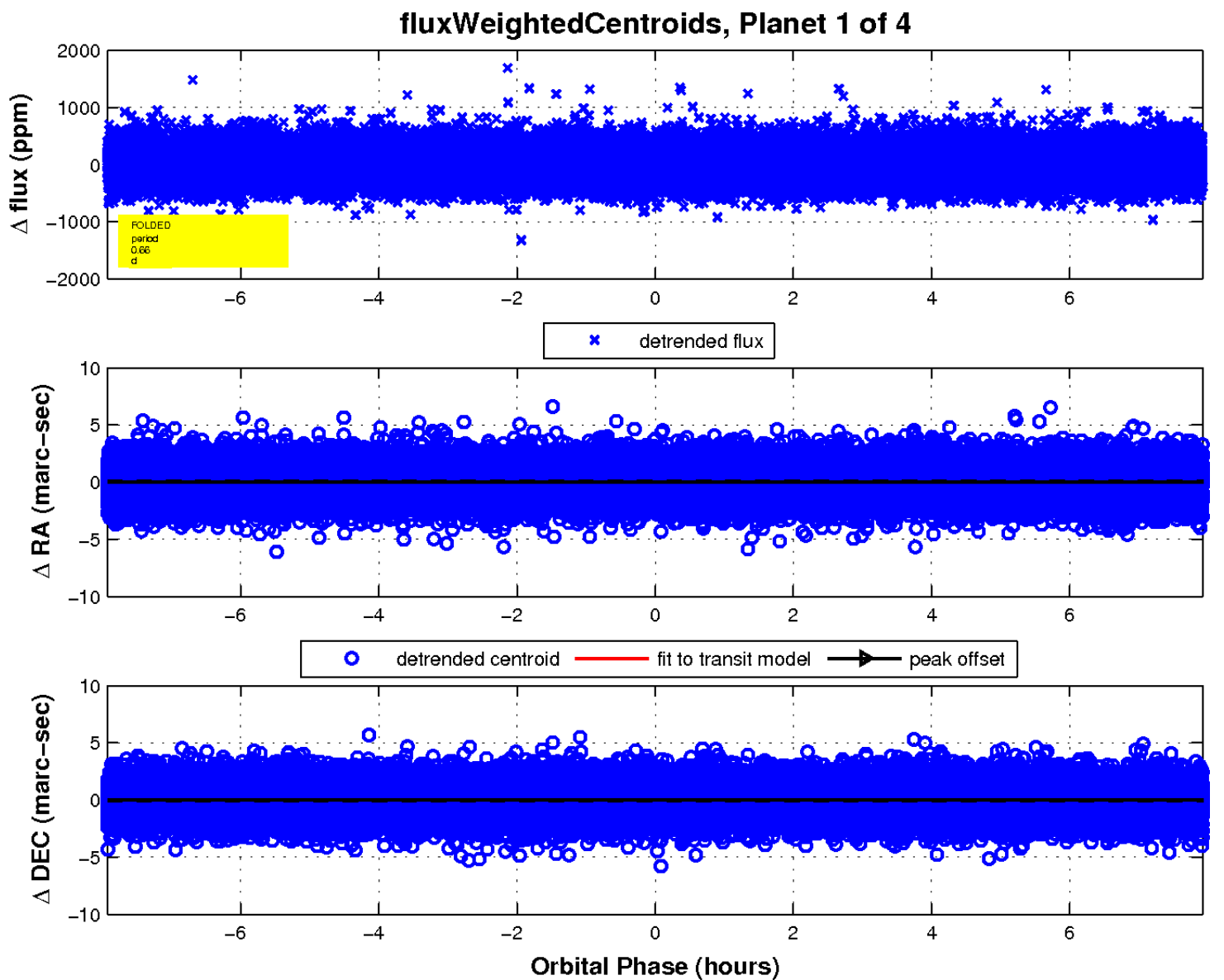
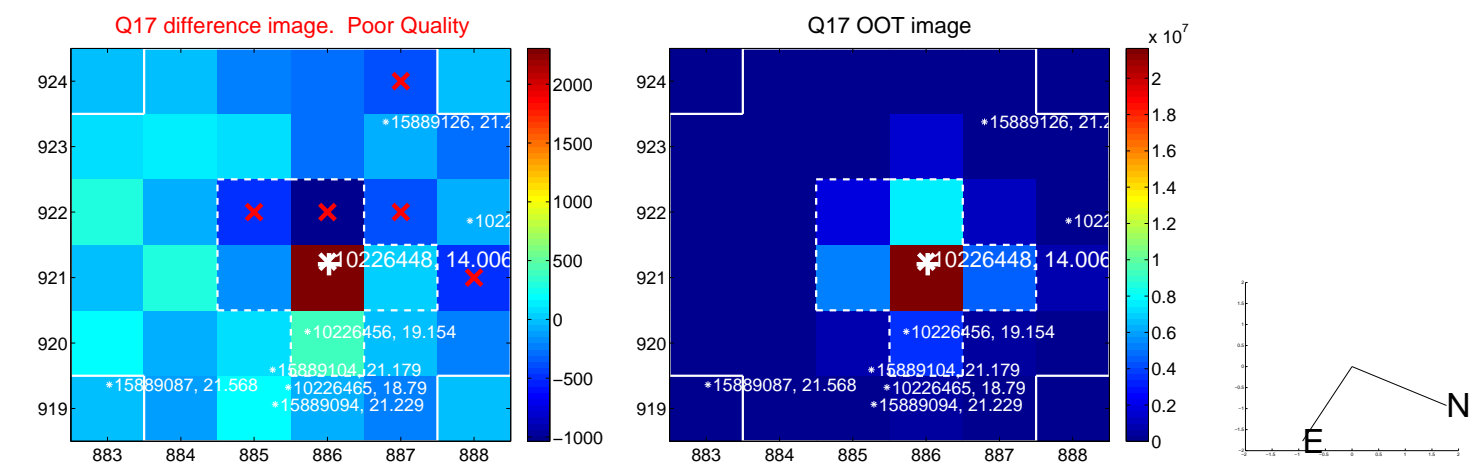
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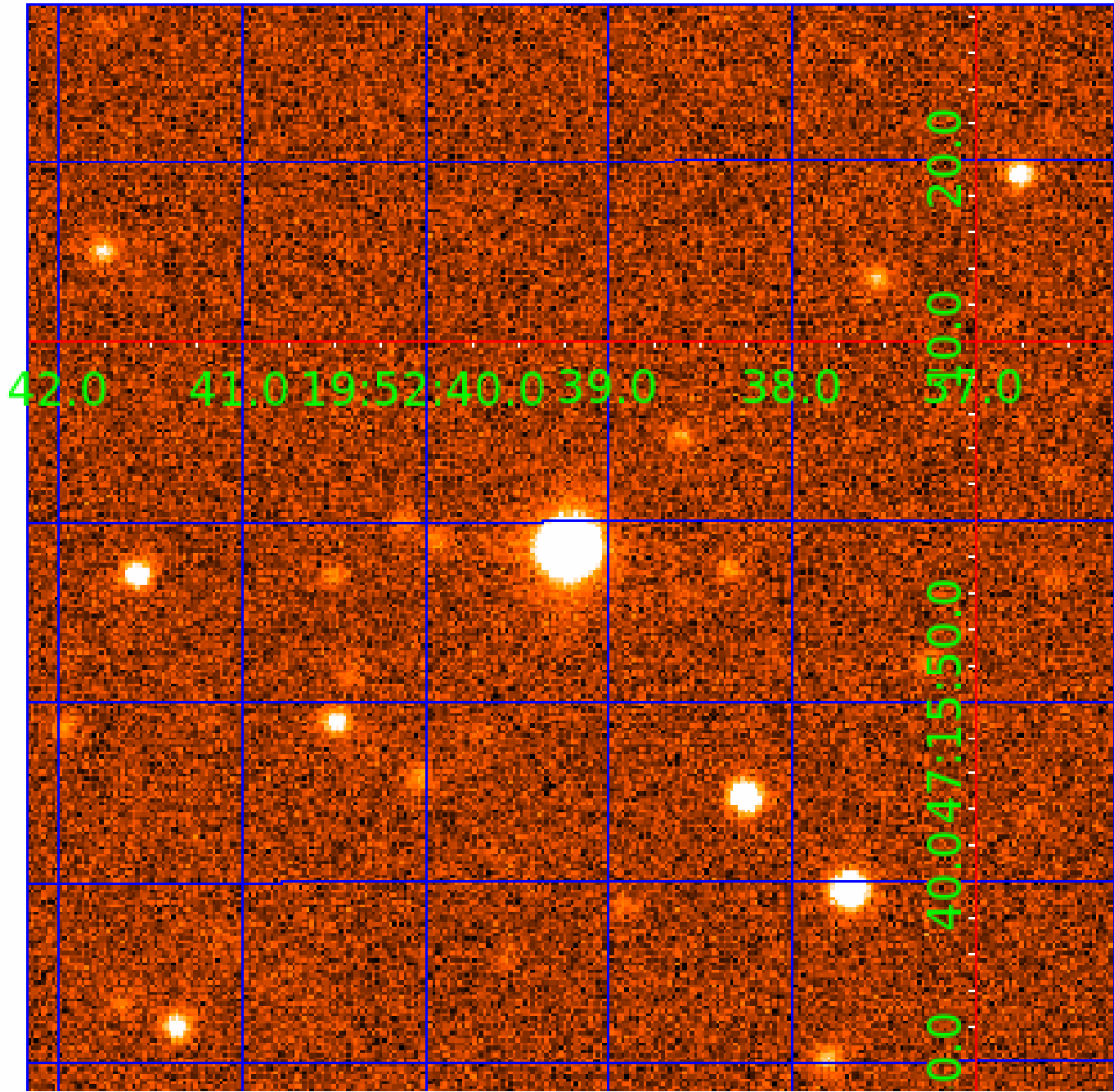


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010226448

Q1-17 DR25 TCE Parameters

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Robovetter Results

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010226448-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010226448-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

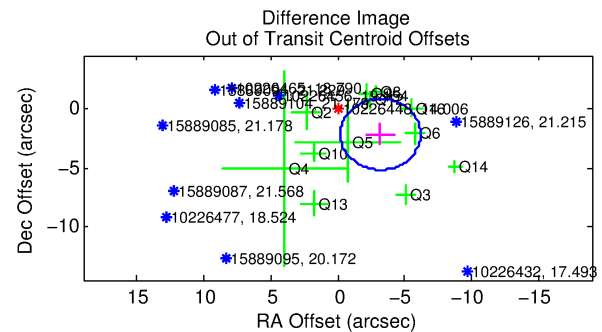
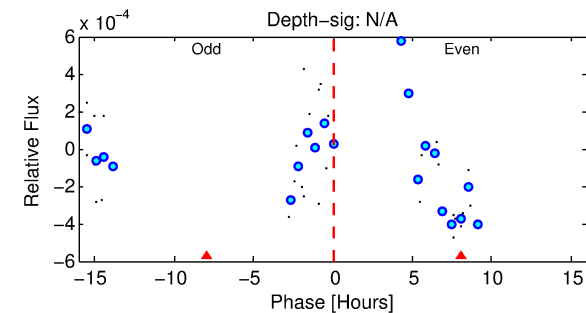
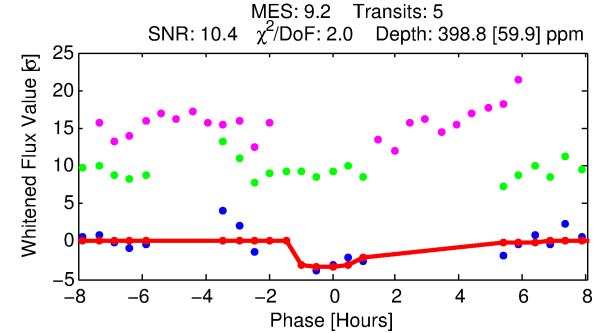
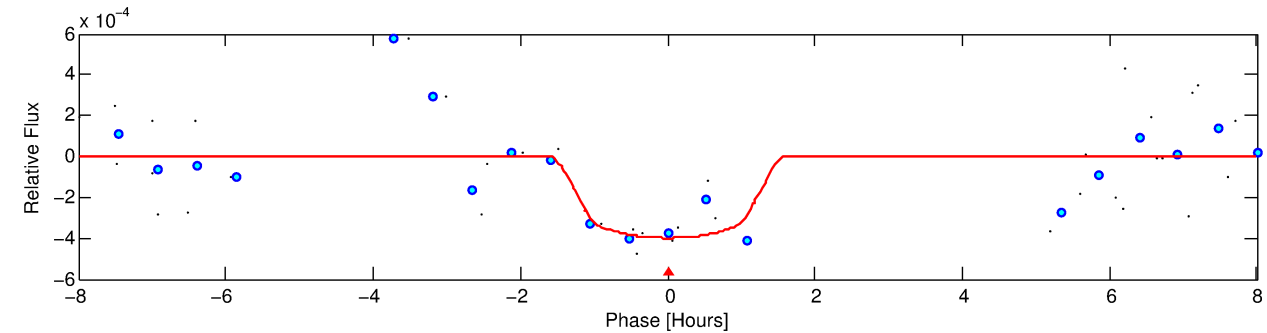
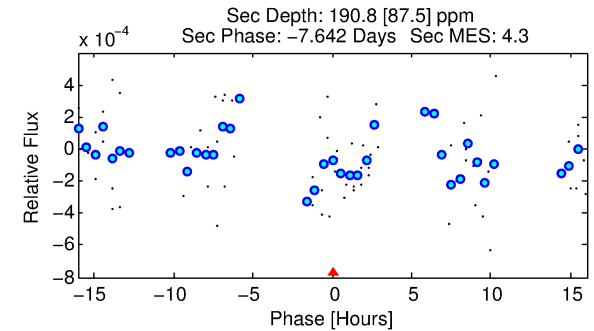
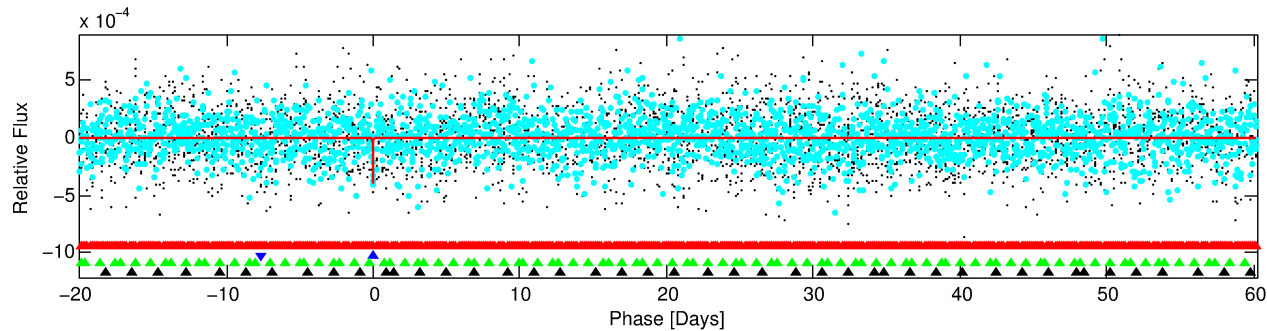
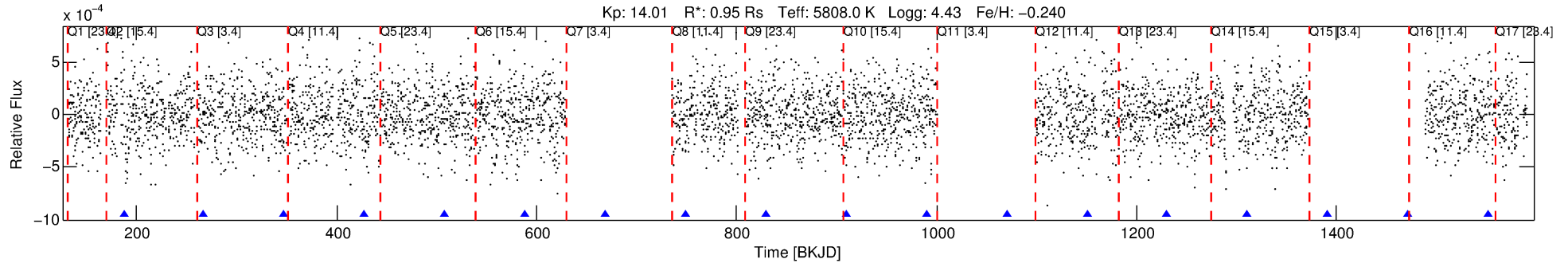
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010226448-02

No Significant Match Found

DV One-Page Summary

KIC: 10226448 Candidate: 2 of 4 Period: 80.274 d



DV Fit Results:

Period = 80.27382 [0.00454] d
Epoch = 187.1362 [0.0250] BKJD
Rp/R* = 0.0185 [0.1498]
a/R* = 215.27 [7933.08]
b = 0.40 [78.63]
Seff = 7.48 [2.66]
Teq = 422 [37] K
Rp = 1.92 [15.55] Re
a = 0.3512 [0.0799] AU
Ag = 3499.82 [56614.87] [0.06σ]
Teffp = 5014 [20274] K [0.23σ]

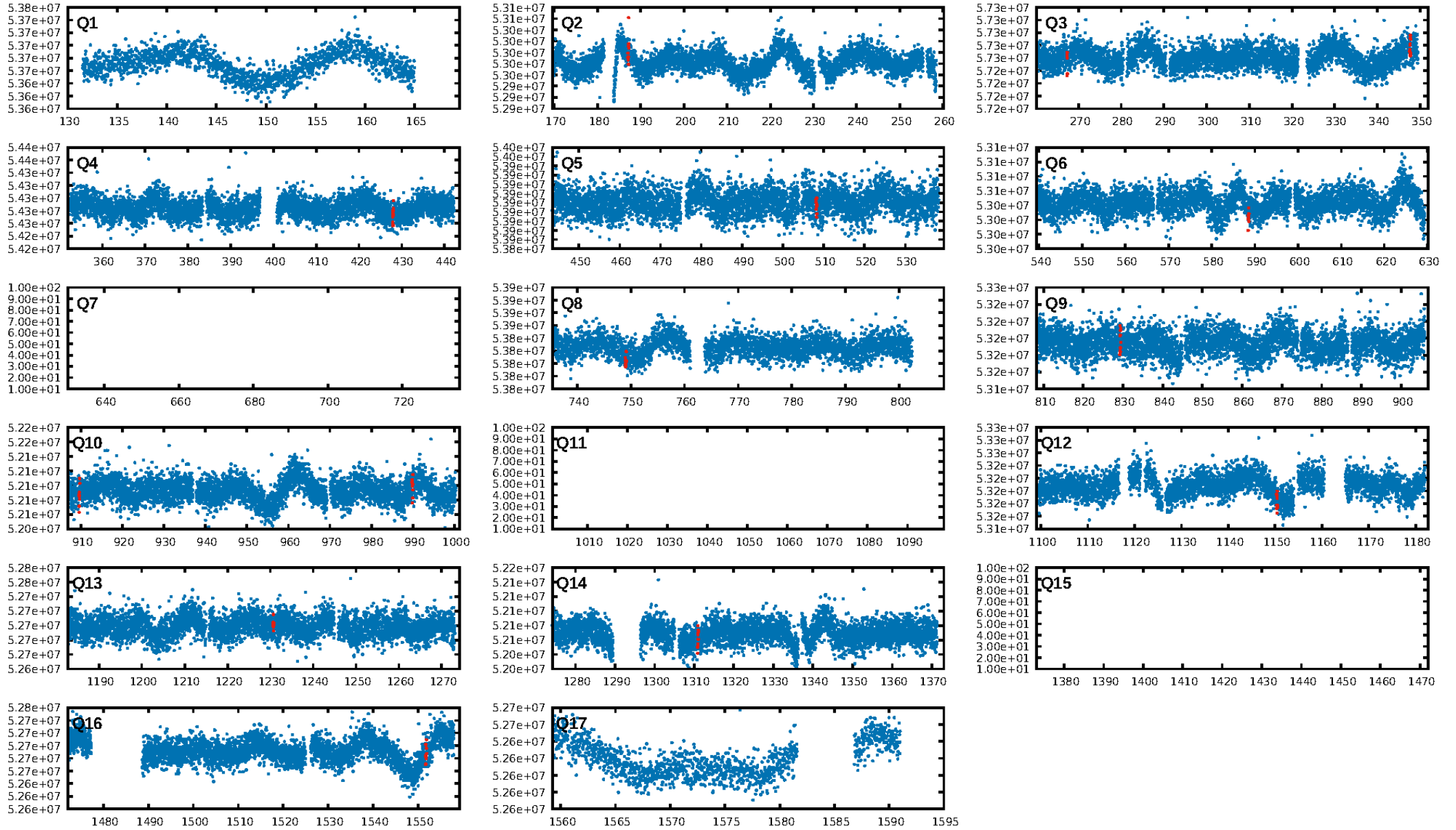
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [320.59σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 87.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.11e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.227
Centroid-sig: 16.5%
Centroid-so: 1.649 arcsec [1.45σ]
OotOffset-rm: 3.868 arcsec [3.87σ]
KicOffset-rm: 3.737 arcsec [3.75σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 0.00 [0/12]
DiffImageOverlap-fno: 0.00 [0/12]

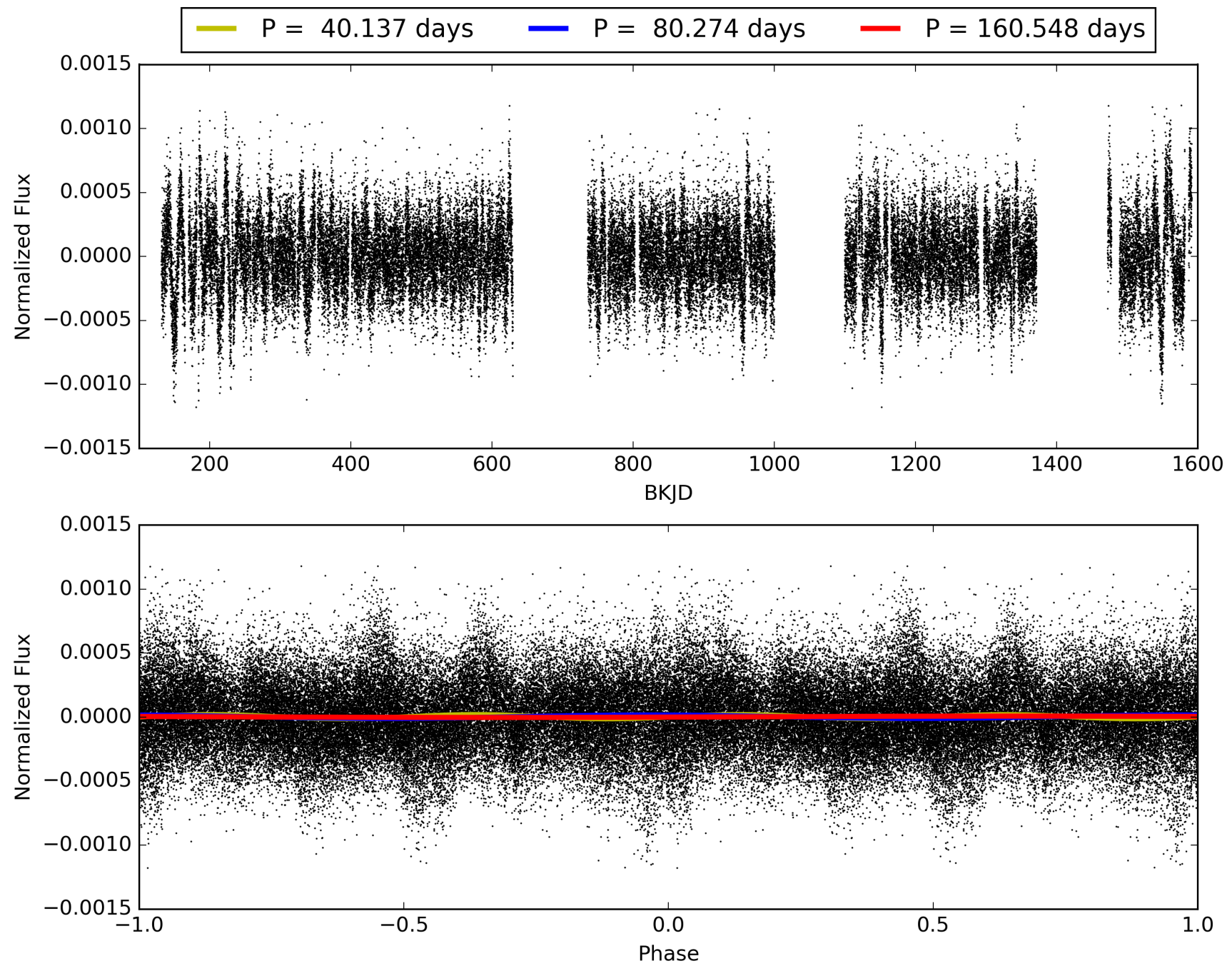
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:54 Z

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

TCE 010226448-02, PDC Light Curves

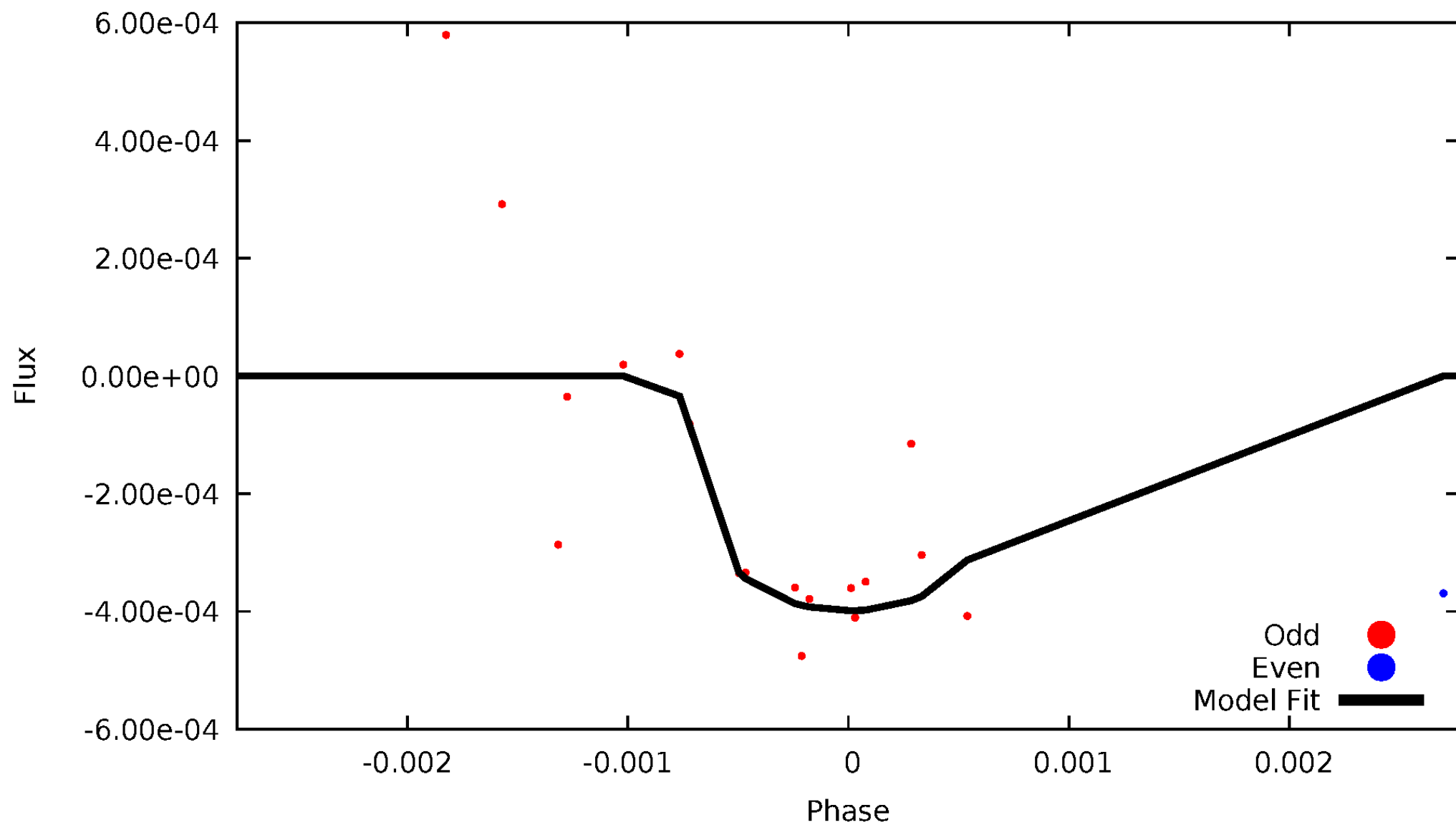


TCE 010226448-02



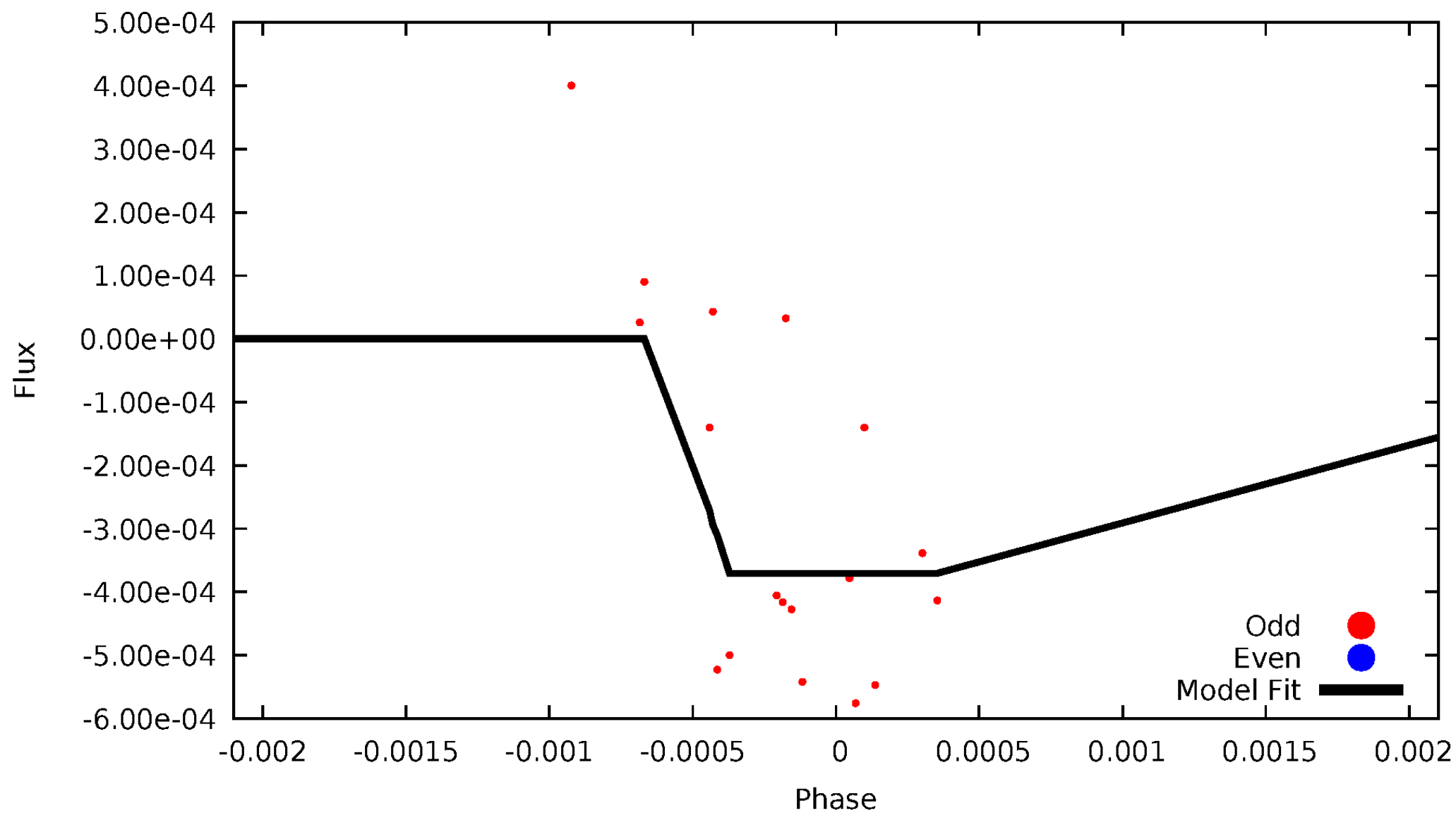
DV Odd/Even

TCE 010226448-02



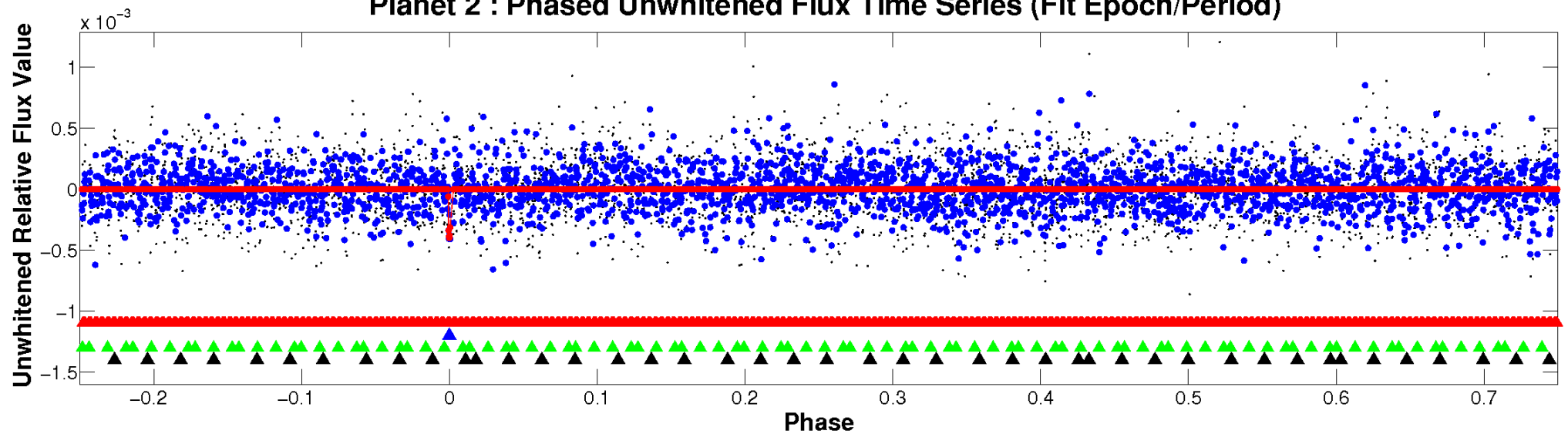
ALT Odd/Even

TCE 010226448-02

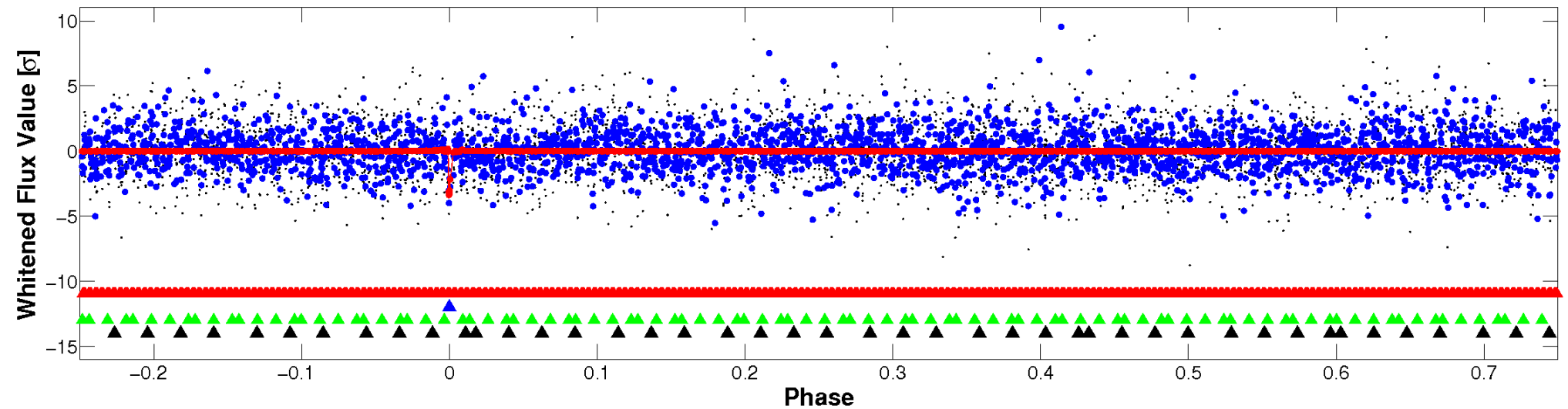


Non-Whitened Vs. Whitened Light Curve

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

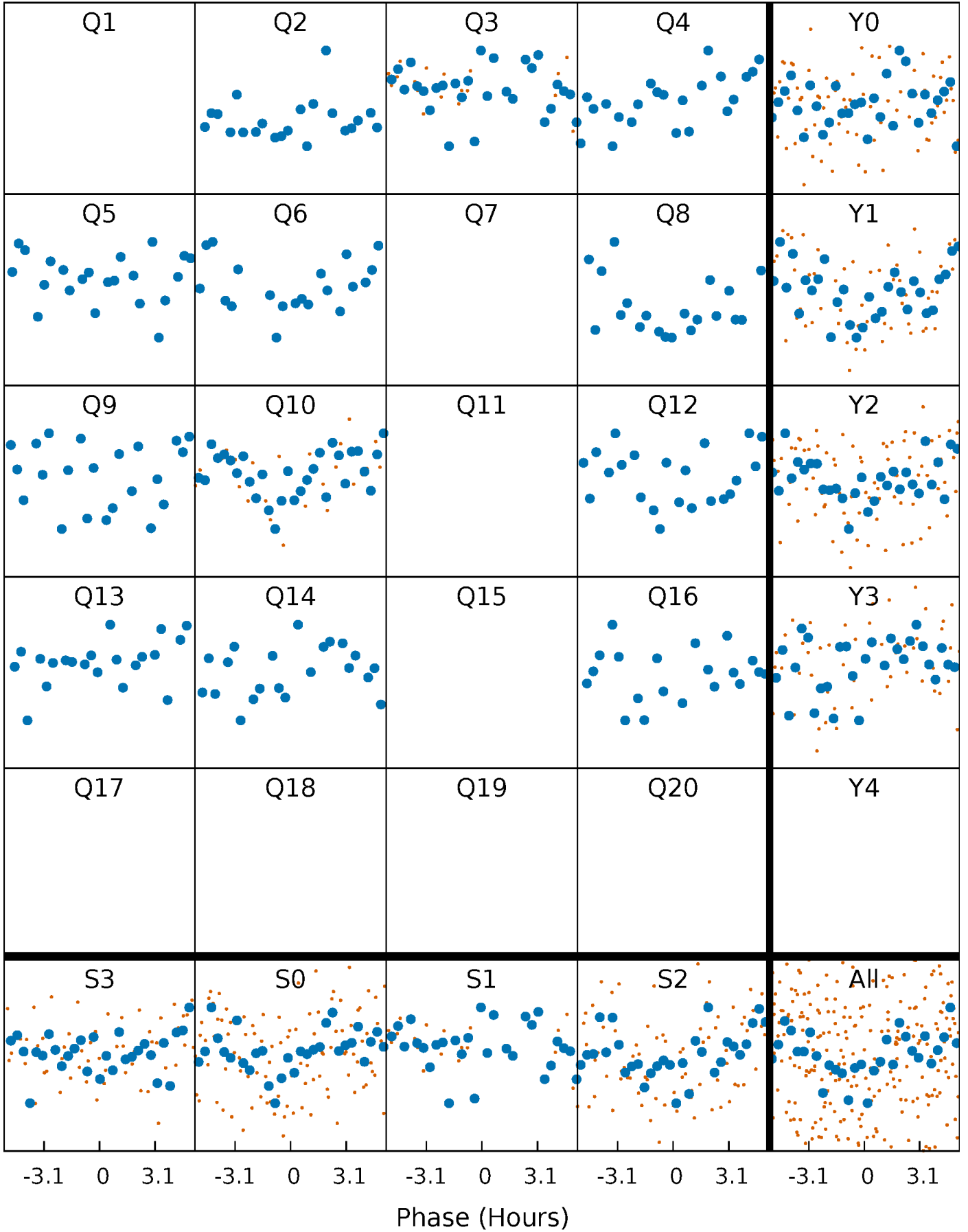


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



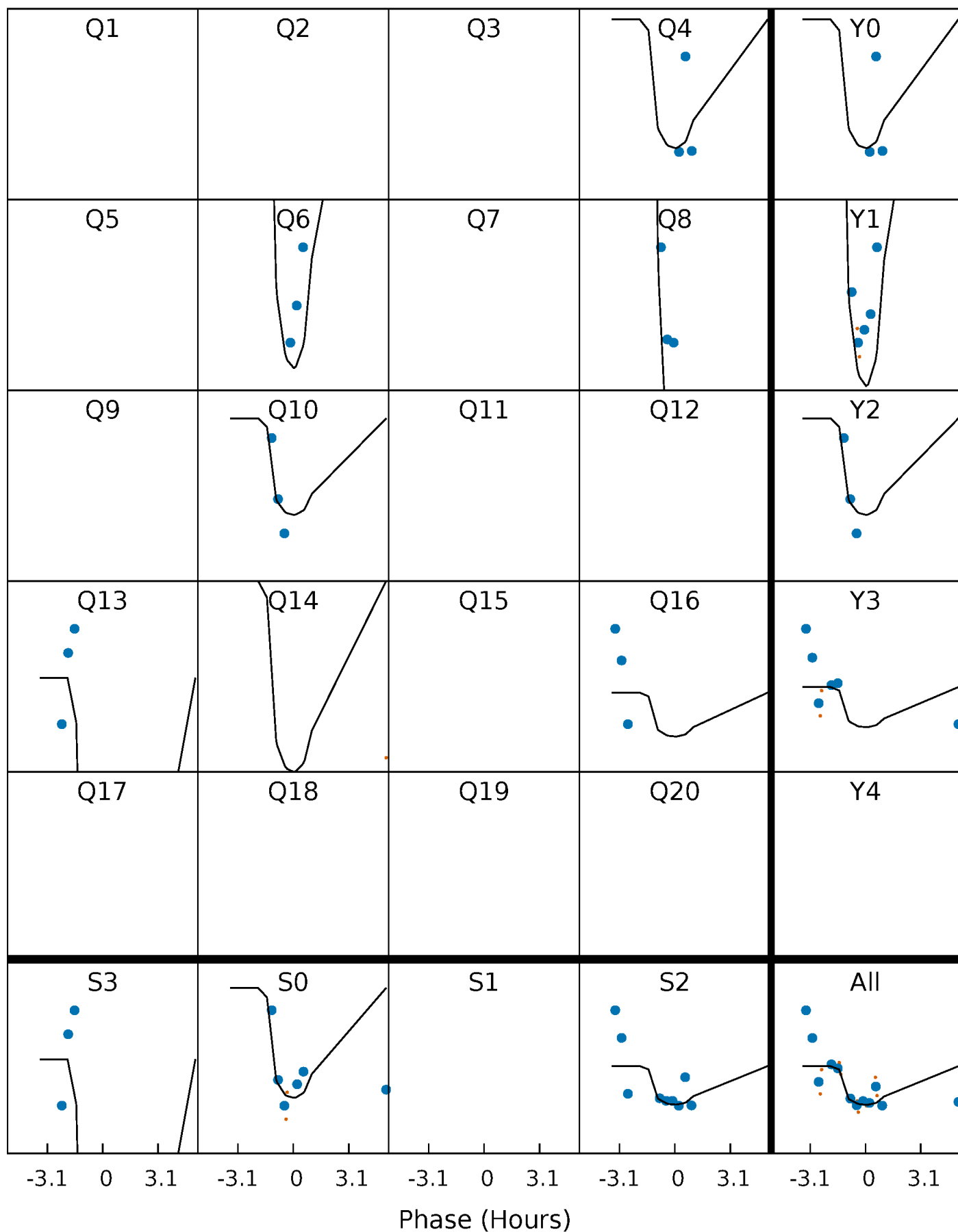
PDC Quarter-Phased Transit Curves

TCE 010226448-02 P= 80.273822 Days $T_0=187.136195$ (BKJD)



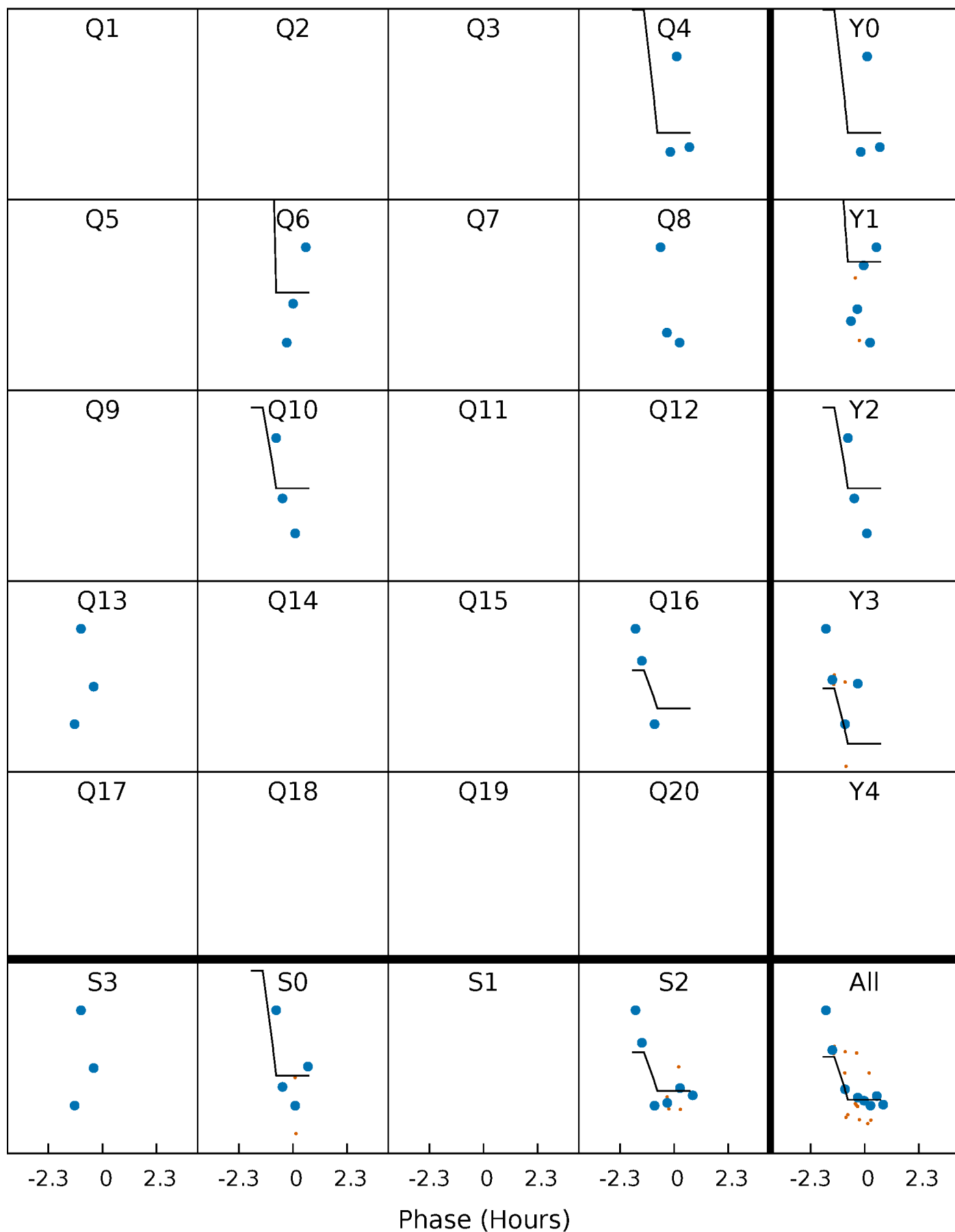
DV Quarter-Phased Transit Curves

TCE 010226448-02 P= 80.273822 Days $T_0=187.136195$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

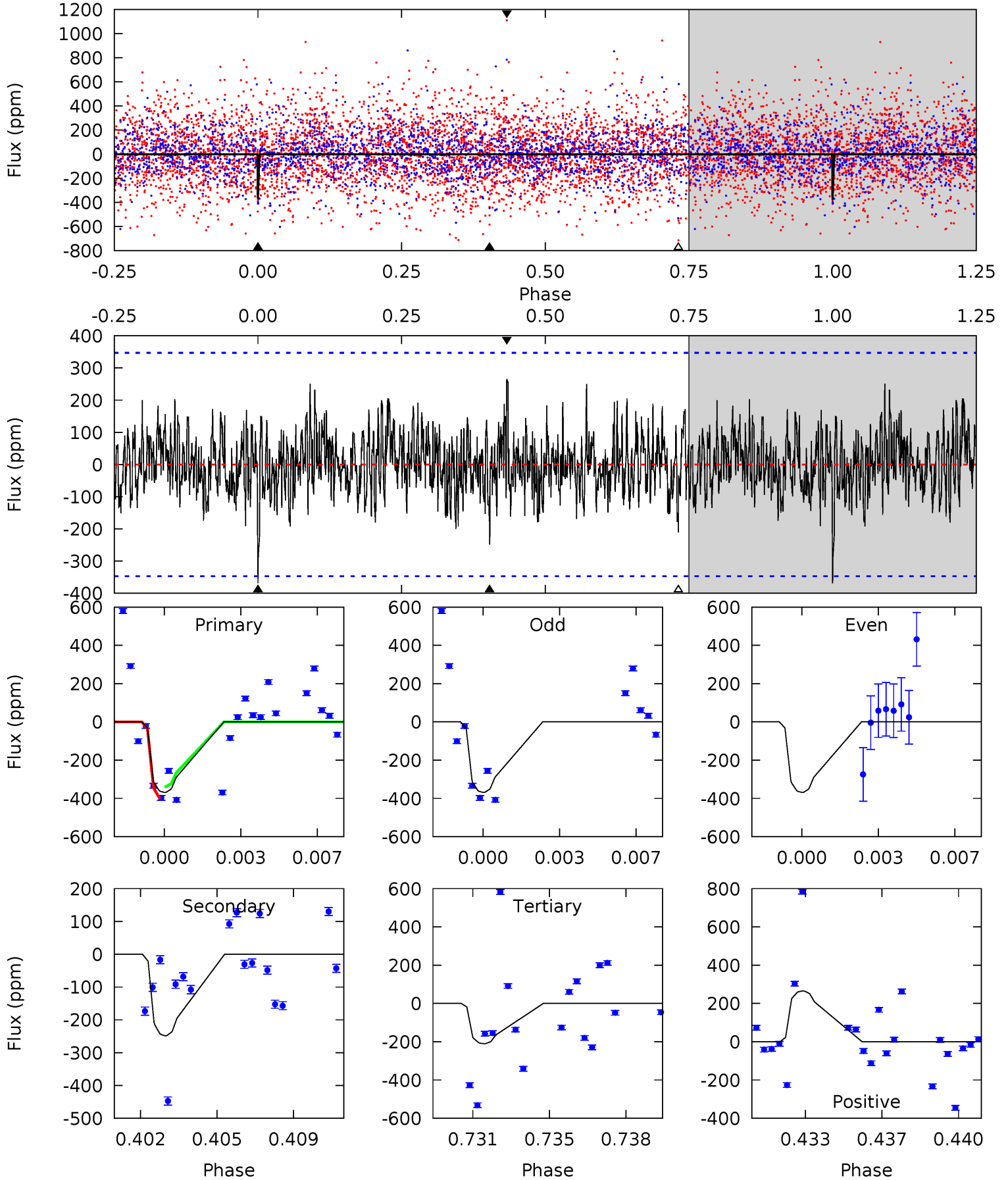
TCE 010226448-02 P= 80.267589 Days $T_0=187.169829$ (BKJD)



DV Model-Shift Uniqueness Test

010226448-02, P = 80.273822 Days, E = 106.862373 Days

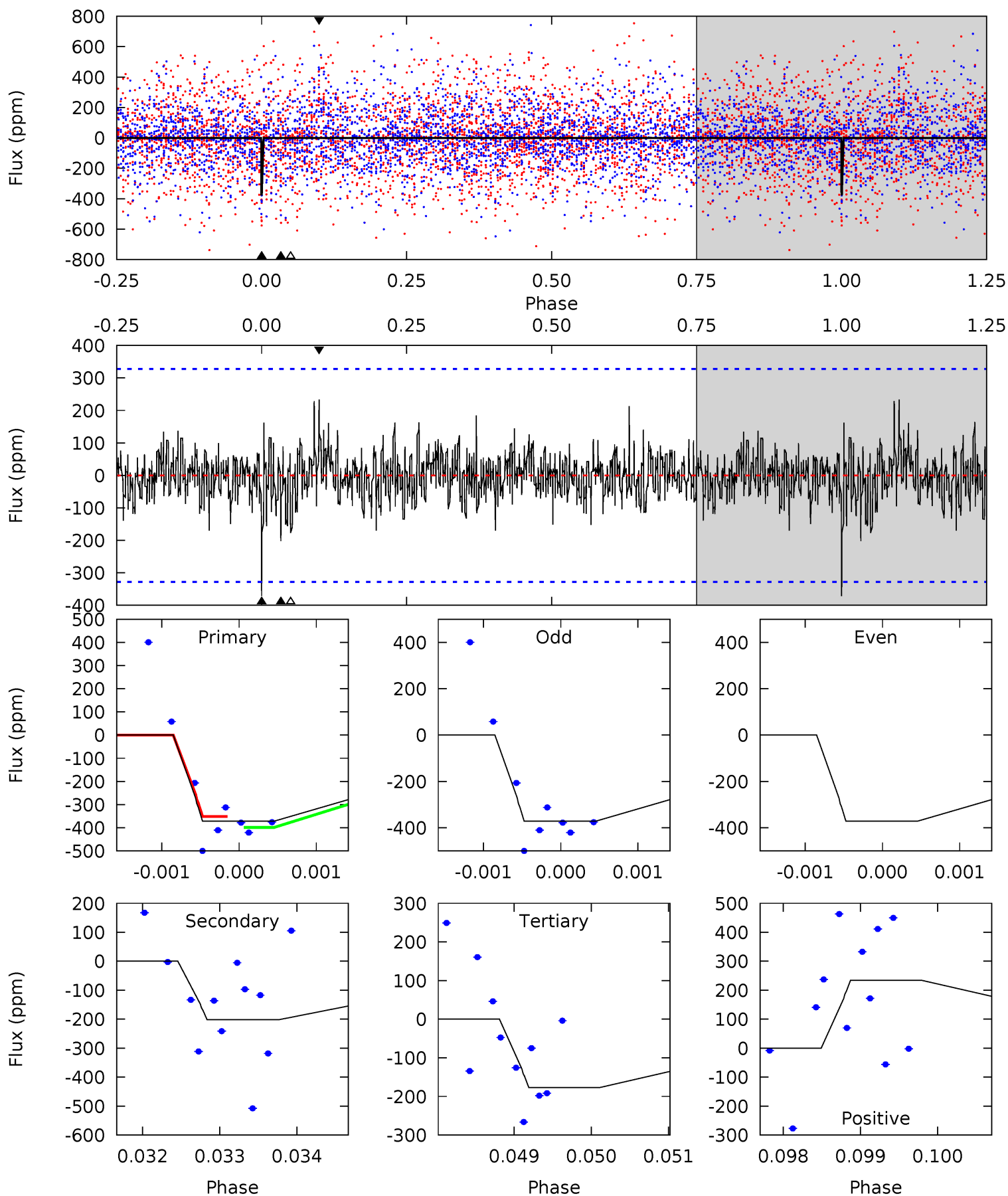
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.56	3.75	3.17	4.00	5.23	2.92	1.15	2.39	1.56	0.58	-0.25	0	1.03	0.42	0.45



Alt Model-Shift Uniqueness Test

010226448-02, P = 80.267589 Days, E = 106.902240 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.23	3.39	2.96	3.92	5.49	3.36	0.93	3.27	2.31	0.43	-0.53	0	0.87	0.39	0.39



Stellar Parameters For KIC 010226448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5808^{+145}_{-159}	$4.434^{+0.101}_{-0.188}$	$-0.240^{+0.300}_{-0.300}$	$0.951^{+0.251}_{-0.135}$	$0.895^{+0.111}_{-0.091}$	$1.467^{+0.665}_{-0.737}$
	+2%/-3%	+2%/-4%	+125%/-125%	+26%/-14%	+12%/-10%	+45%/-50%
Source	PHO1	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 010226448-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-249 ± 66	$11.64^{+13.00}_{-8.13}$	594^{+42}_{-30}	2879^{+1337}_{-491}	117^{+1242}_{-91}
Alt.	-202 ± 60	$11.83^{+12.48}_{-8.34}$	594^{+43}_{-33}	2818^{+1274}_{-474}	99^{+1025}_{-77}

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

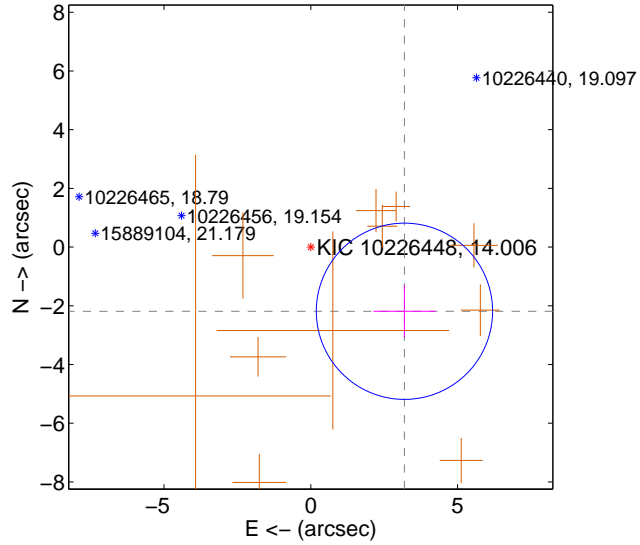
Supplemental centroid analysis for 010226448-02. Kepler magnitude: 14.01. Transit SNR 10.38

There are 0 quarters with good PRF difference image offsets

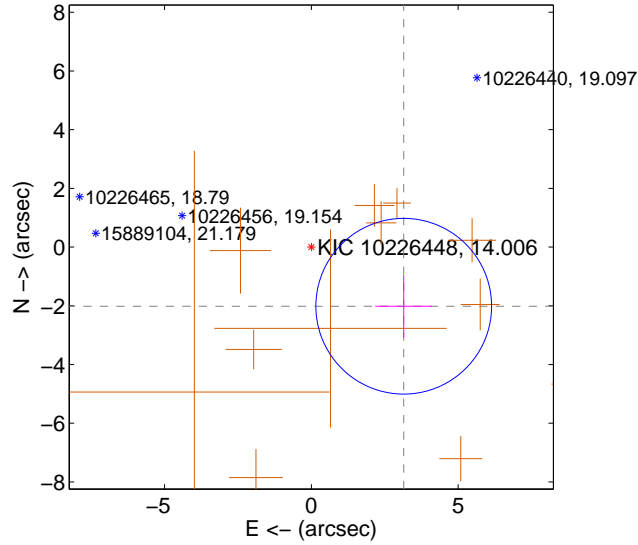
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.868 ± 1.001	3.87	-3.191 ± 1.056	-2.186 ± 0.893
PRF-fit source offset from KIC position	3.737 ± 0.998	3.75	-3.147 ± 0.969	-2.015 ± 1.064
photometric centroid source offset	1.65 ± 1.14	1.45	1.35 ± 1.14	0.95 ± 1.13

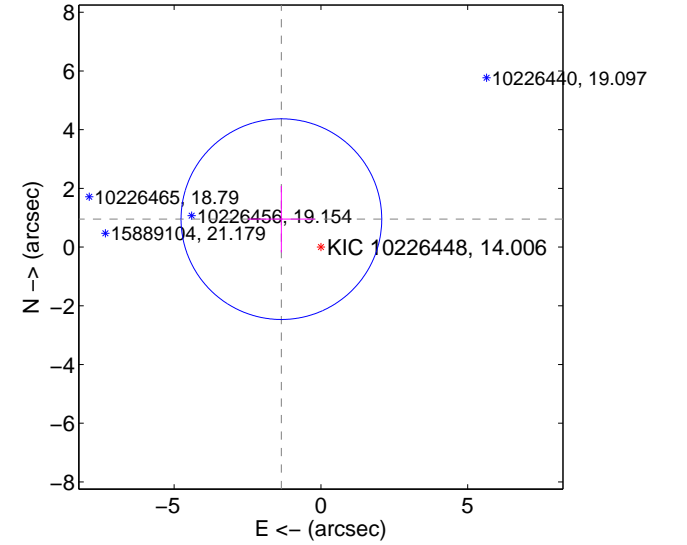
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

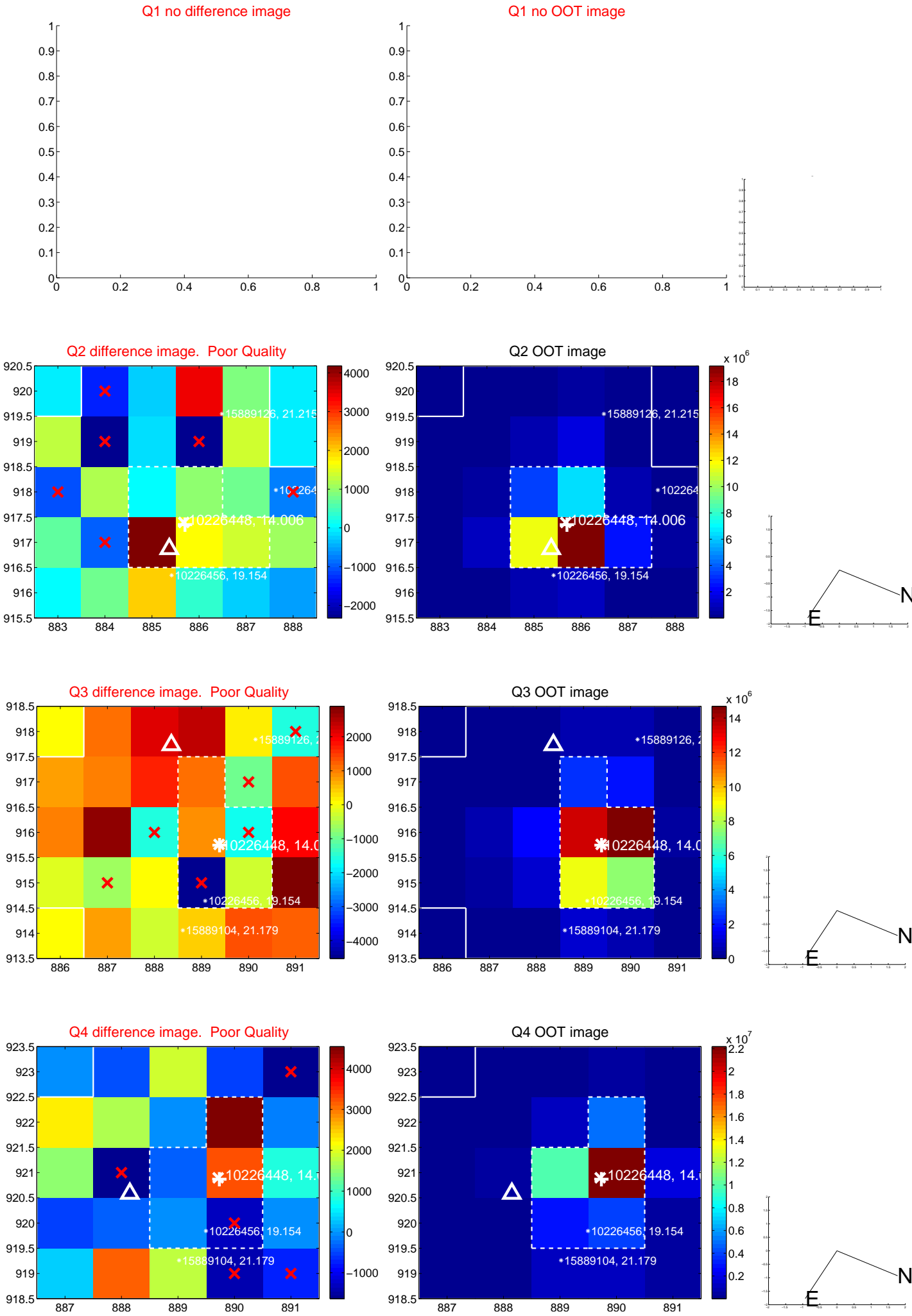


offset from photometric centroids

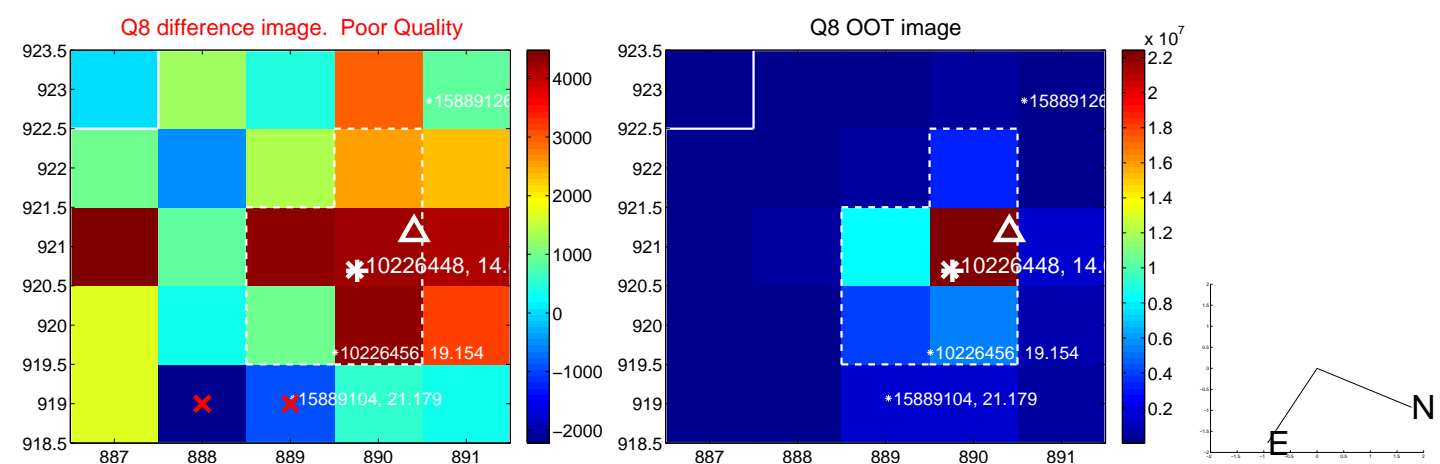
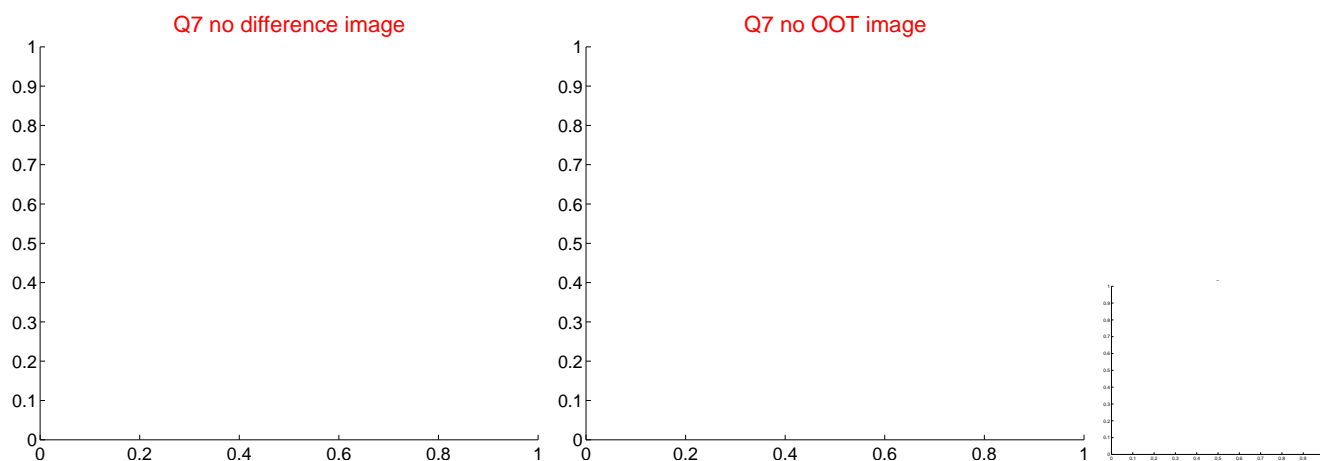
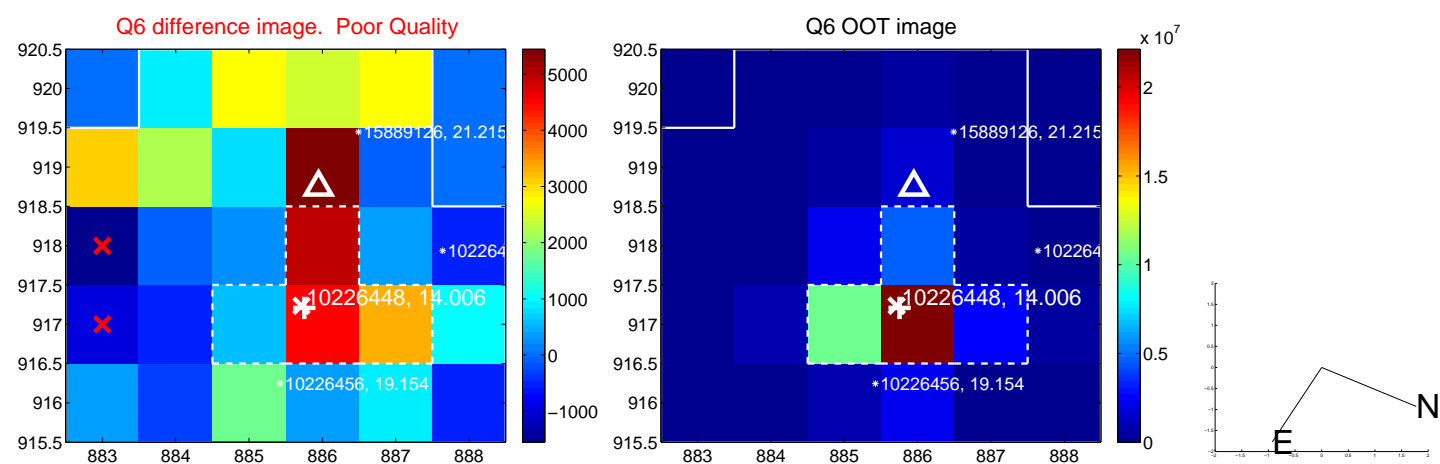
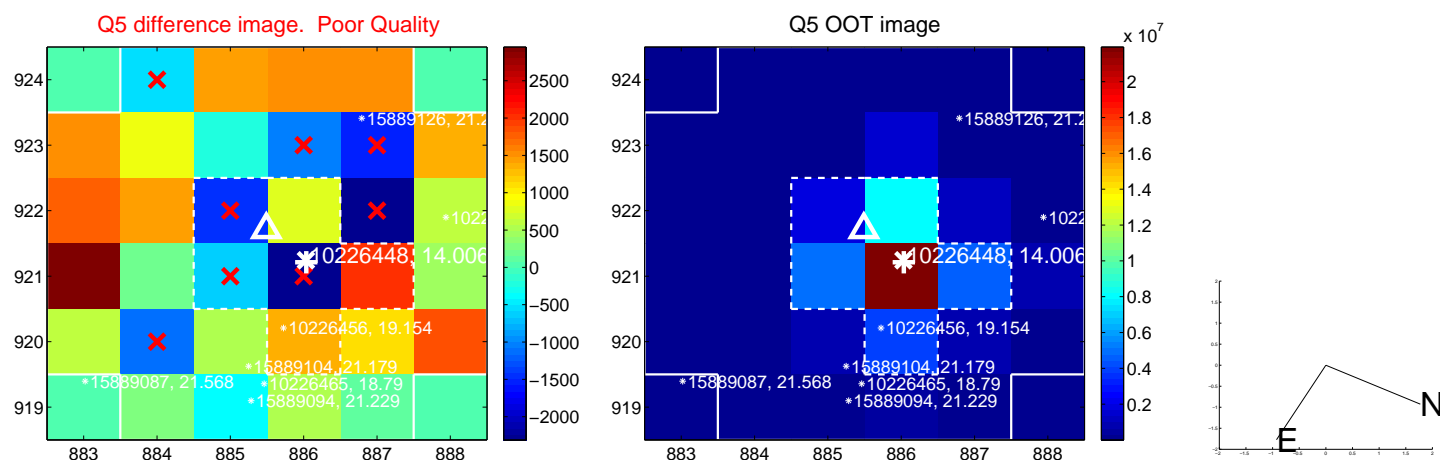


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

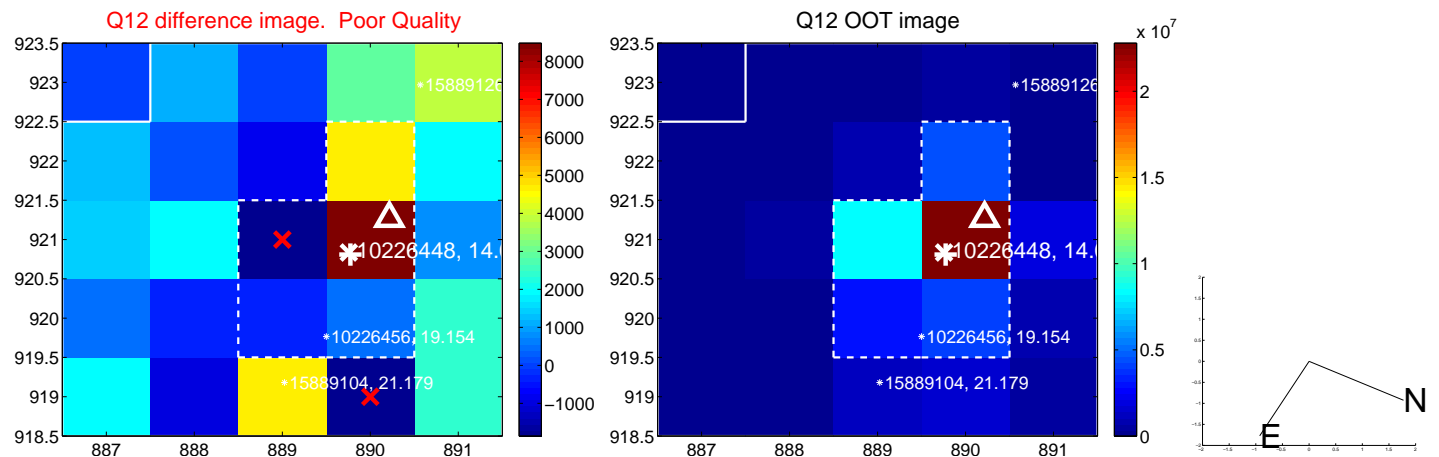
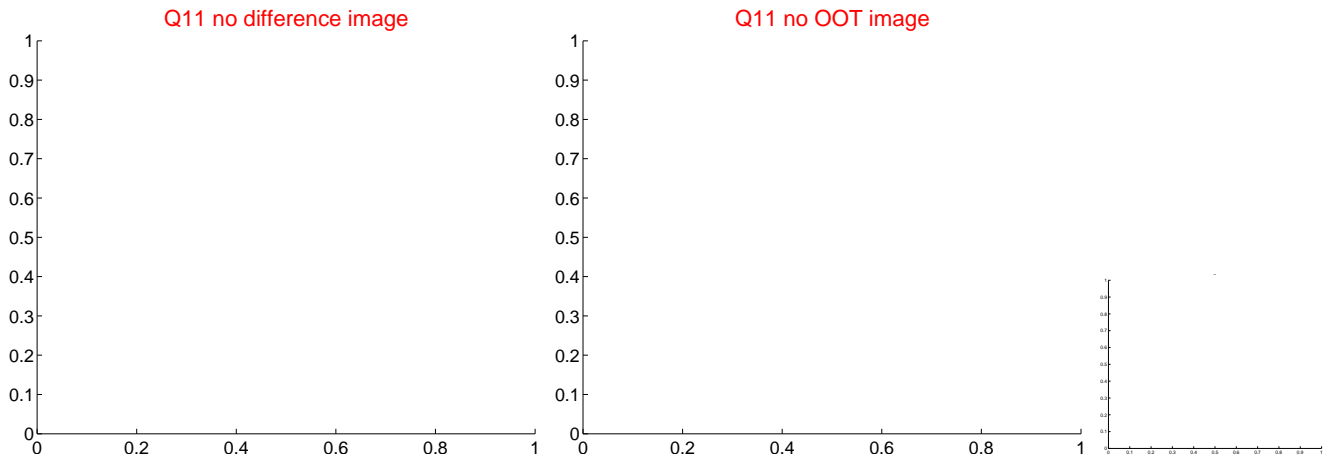
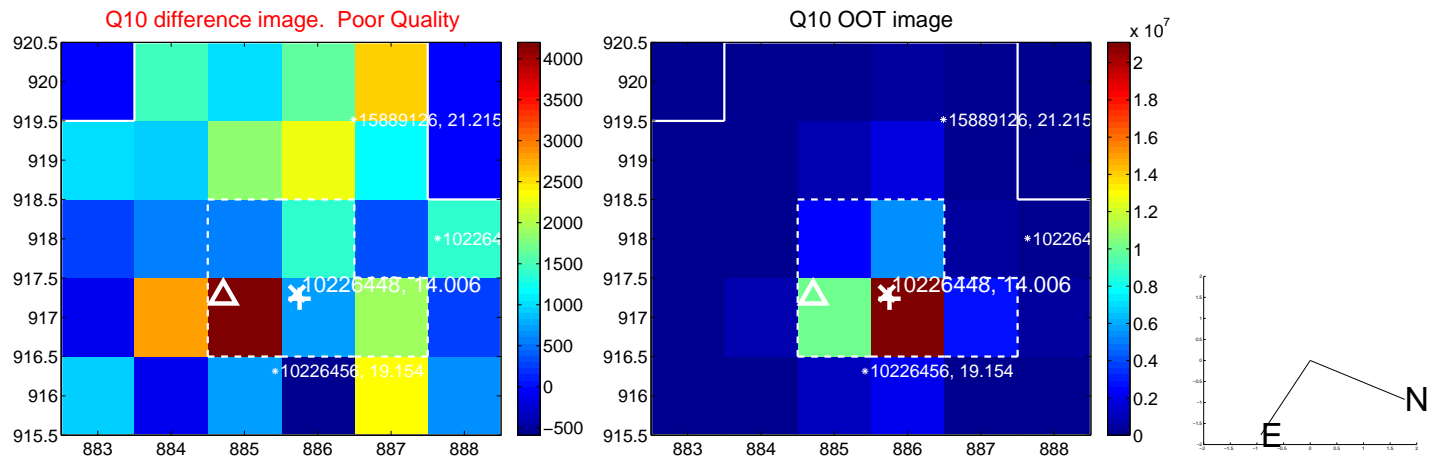
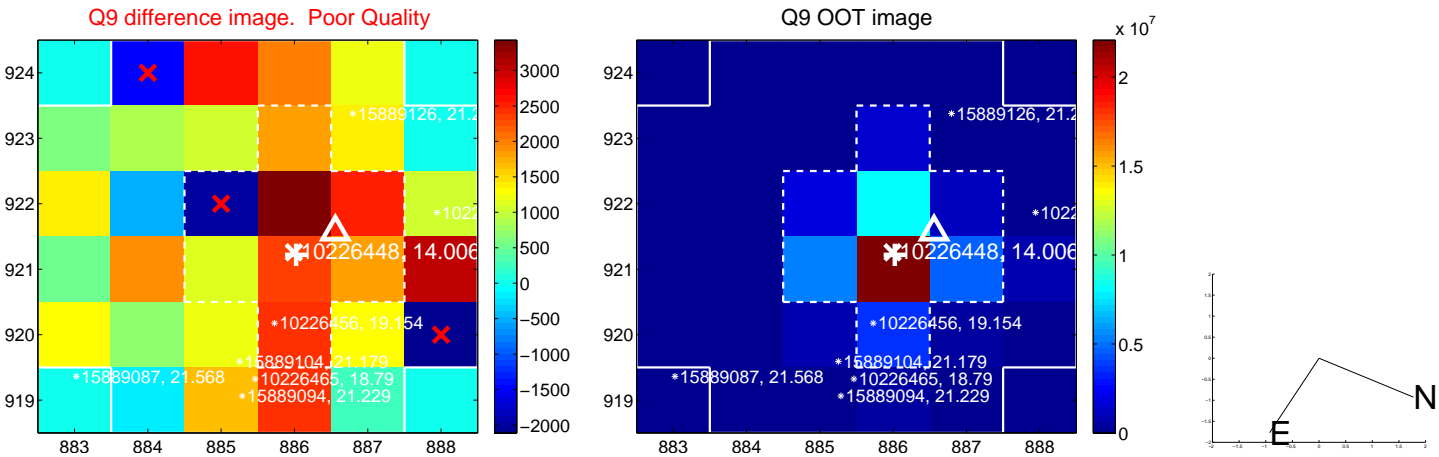
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



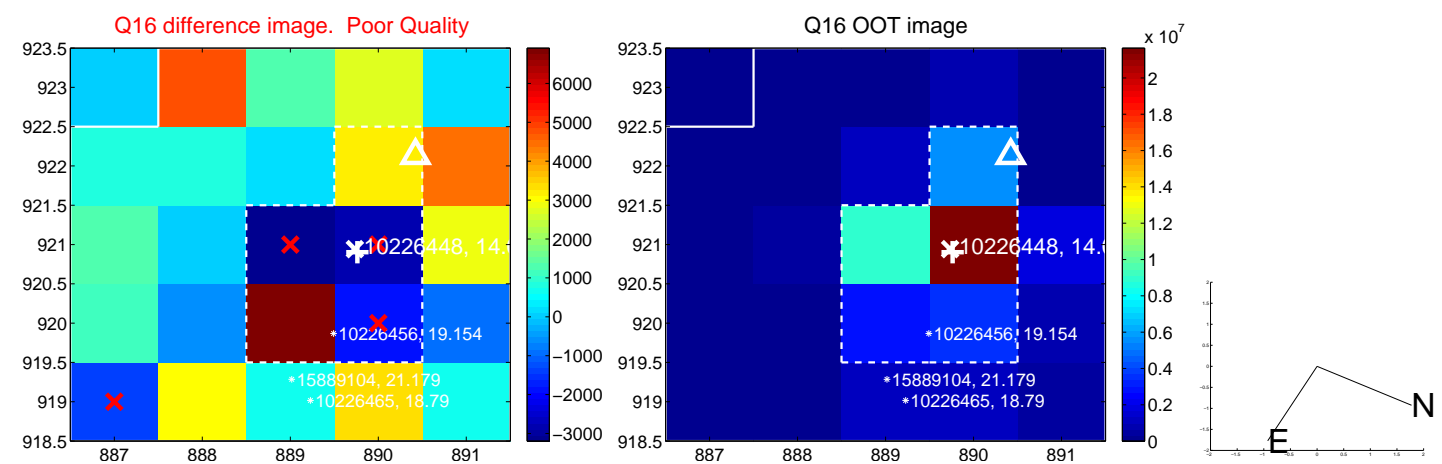
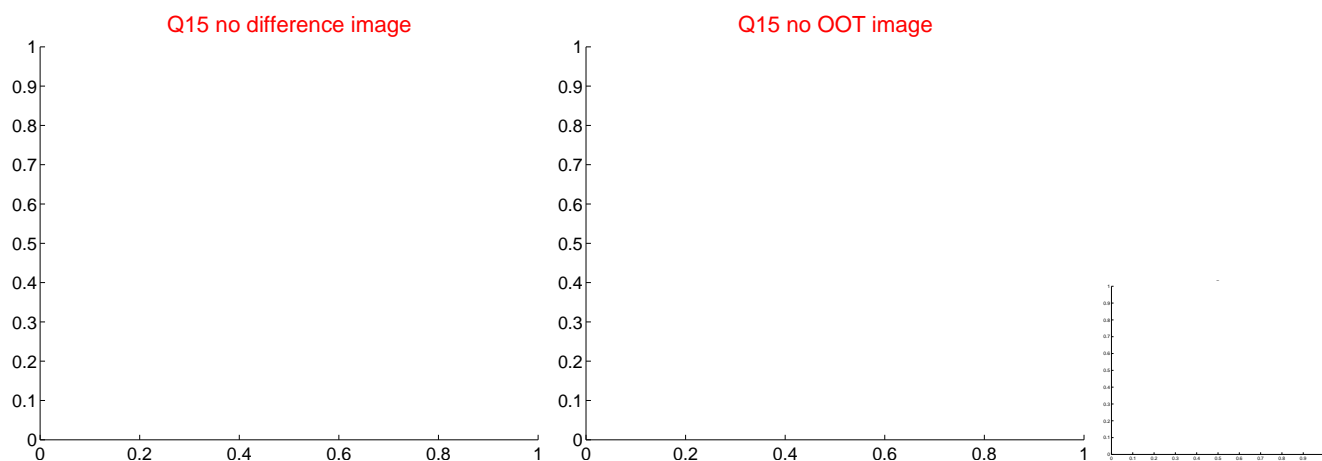
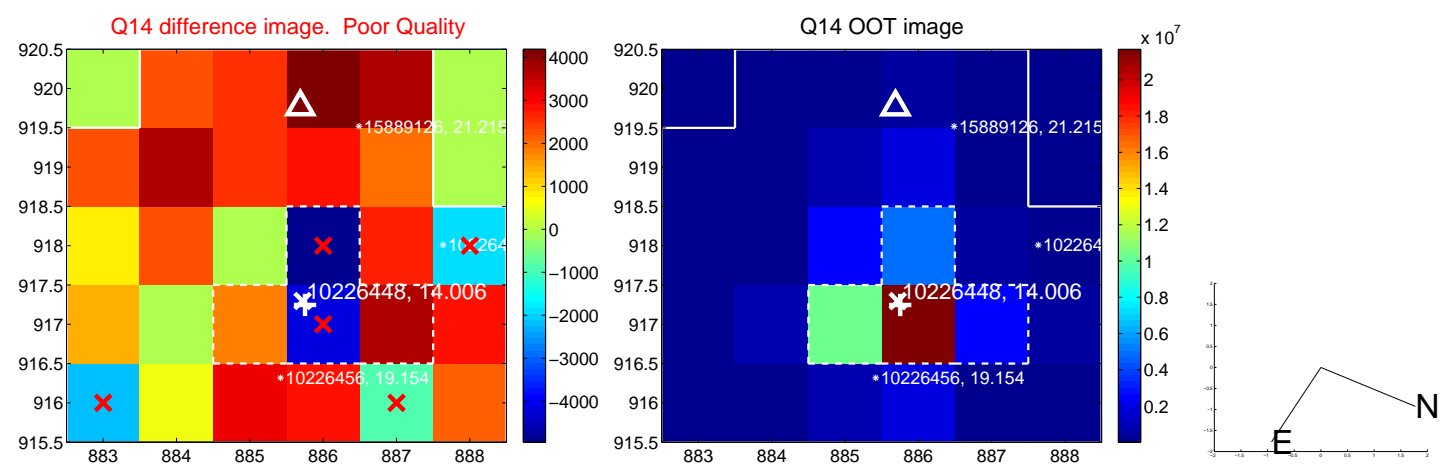
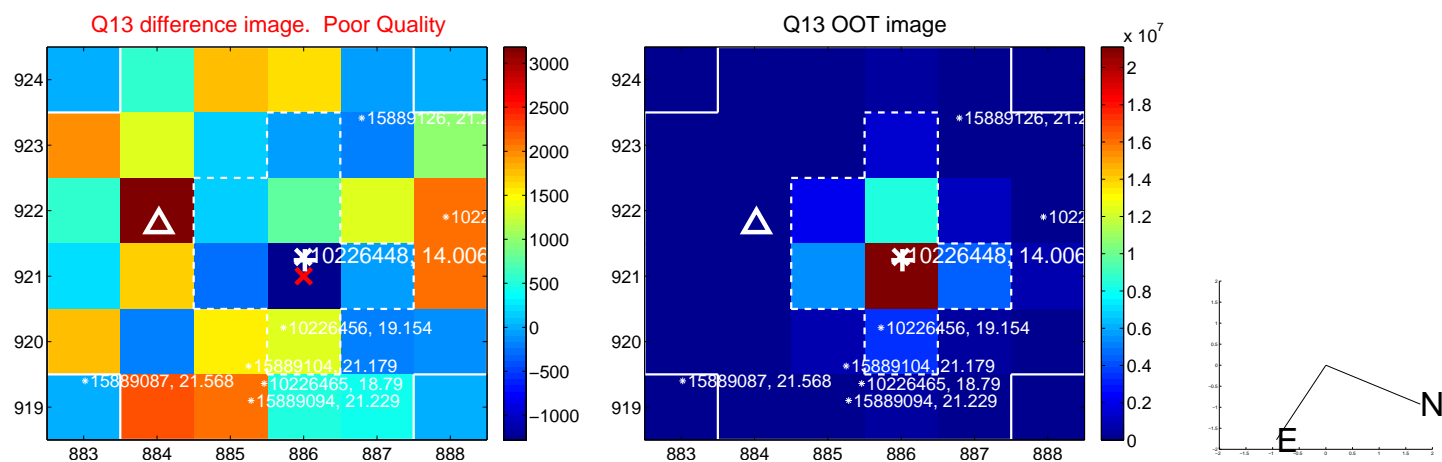
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



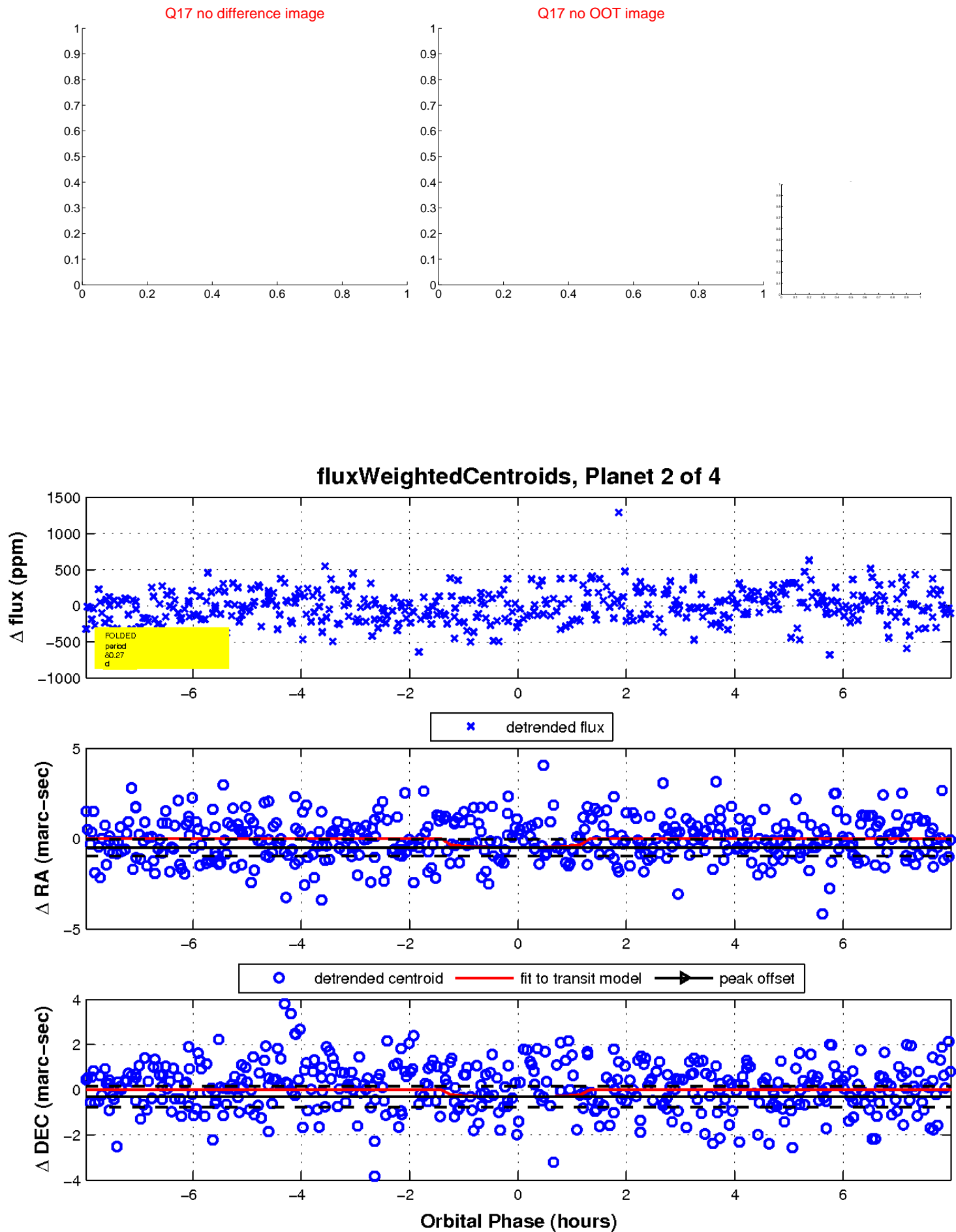
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

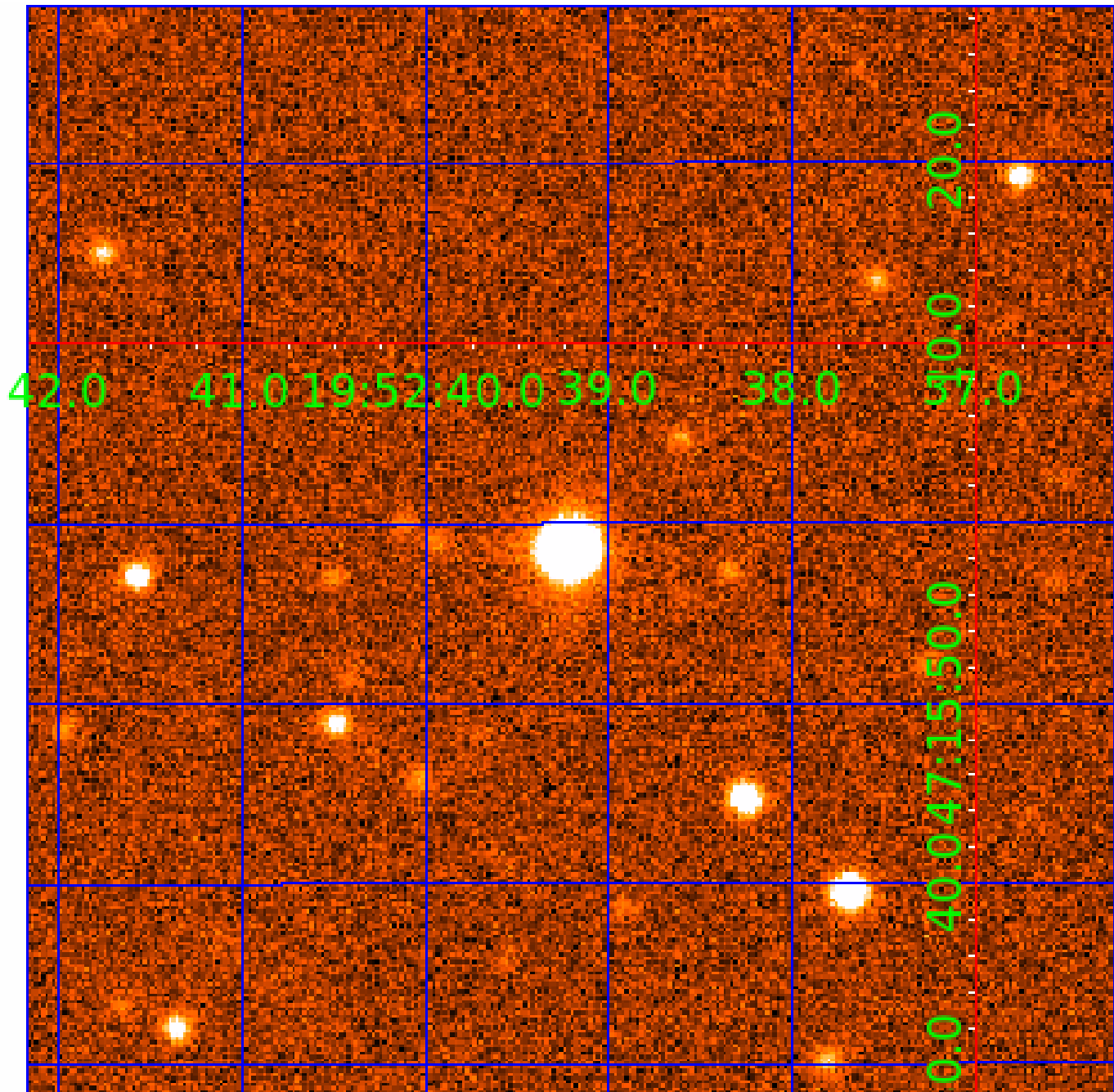


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010226448

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})
010226448-01	OBS	No	0.660602	131.707432	8.9	4.599	8.9	3.8	0.95	5808	0.29	4499.88
010226448-02	OBS	No	80.273822	187.136195	398.8	2.669	9.2	10.4	0.95	5808	1.92	7.48
010226448-03	OBS	No	14.902803	145.901423	411.6	1.018	9.6	11.4	0.95	5808	1.98	70.59
010226448-04	OBS	No	33.297792	154.719634	281.2	2.289	9.7	9.2	0.95	5808	1.89	24.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010226448-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010226448-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
010226448-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010226448-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

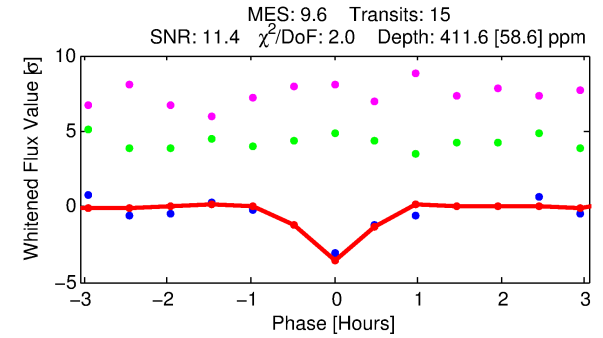
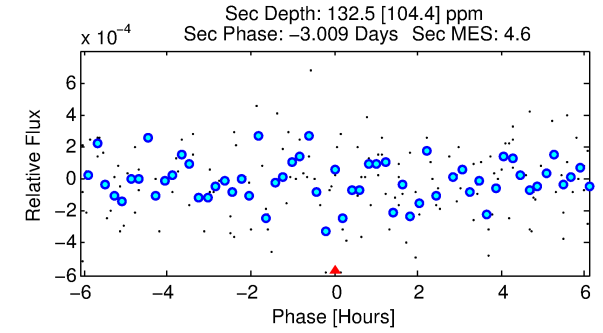
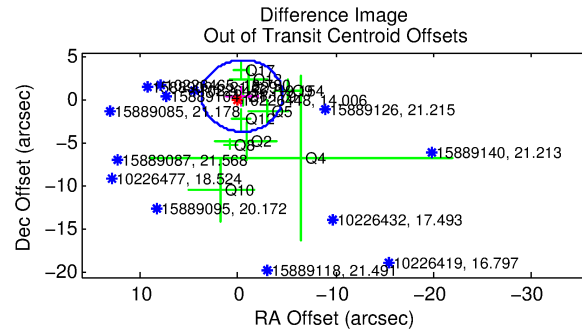
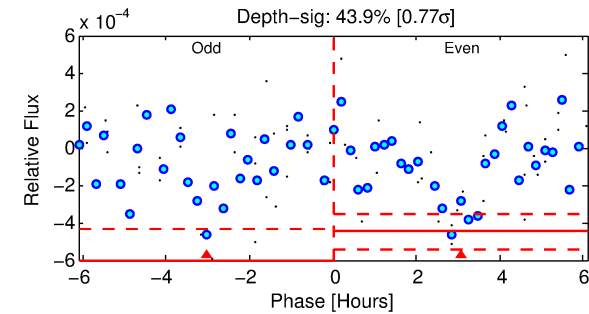
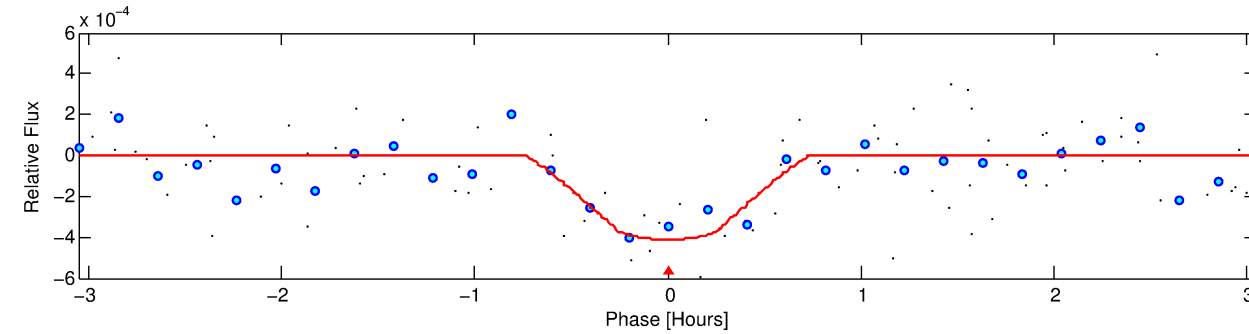
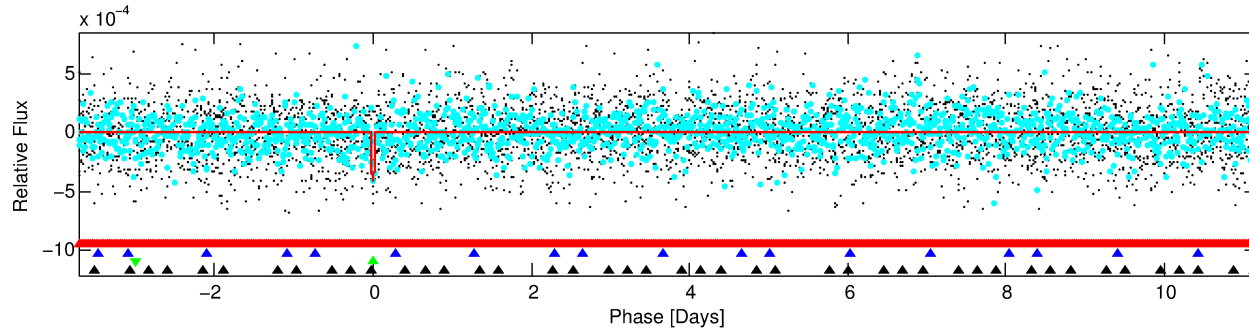
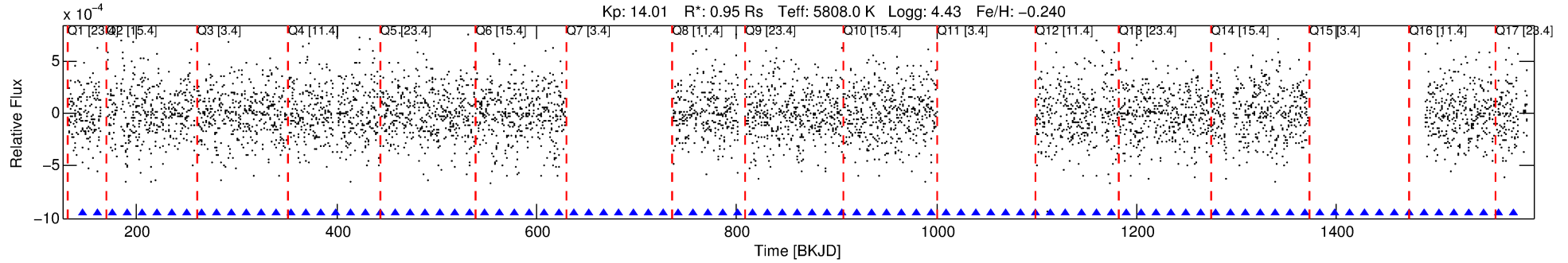
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010226448-03

No Significant Match Found

DV One-Page Summary

KIC: 10226448 Candidate: 3 of 4 Period: 14.903 d



DV Fit Results:

Period = 14.90280 [0.00008] d
Epoch = 145.9014 [0.0041] BKJD
Rp/R* = 0.0190 [0.0185]
a/R* = 103.20 [461.84]
b = 0.43 [8.46]
Seff = 70.59 [25.08]
Teff = 739 [66] K
Rp = 1.98 [1.99] Re
a = 0.1143 [0.0260] AU
Ag = 243.59 [517.06] [0.47σ]
Teffp = 4515 [2368] K [1.59σ]

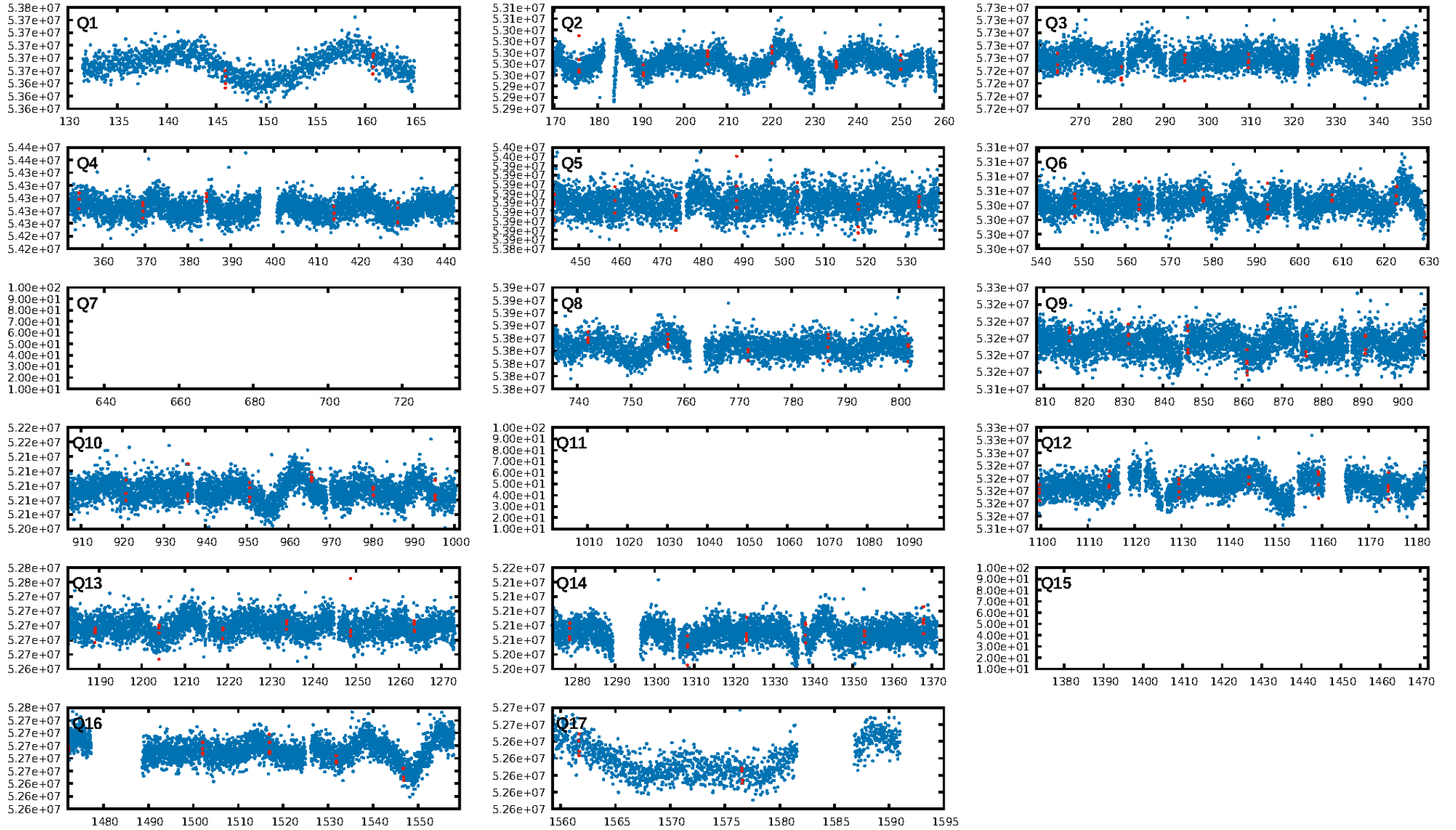
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [72.57σ]
LongPeriod-sig: 100.0% [176.19σ]
ModelChiSquare2-sig: 11.4%
ModelChiSquareGof-sig: 98.0%
Bootstrap-pfa: 3.30e-08
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 2.698
Centroid-sig: 9.1%
Centroid-so: 1.027 arcsec [1.40σ]
OotOffset-rm: 0.641 arcsec [0.46σ]
KicOffset-rm: 0.706 arcsec [0.54σ]
OotOffset-st: 2/0/3/5 [10]
KicOffset-st: 2/0/3/5 [10]
DiffImageQuality-fgm: 0.10 [1/10]
DiffImageOverlap-fno: 0.14 [2/14]

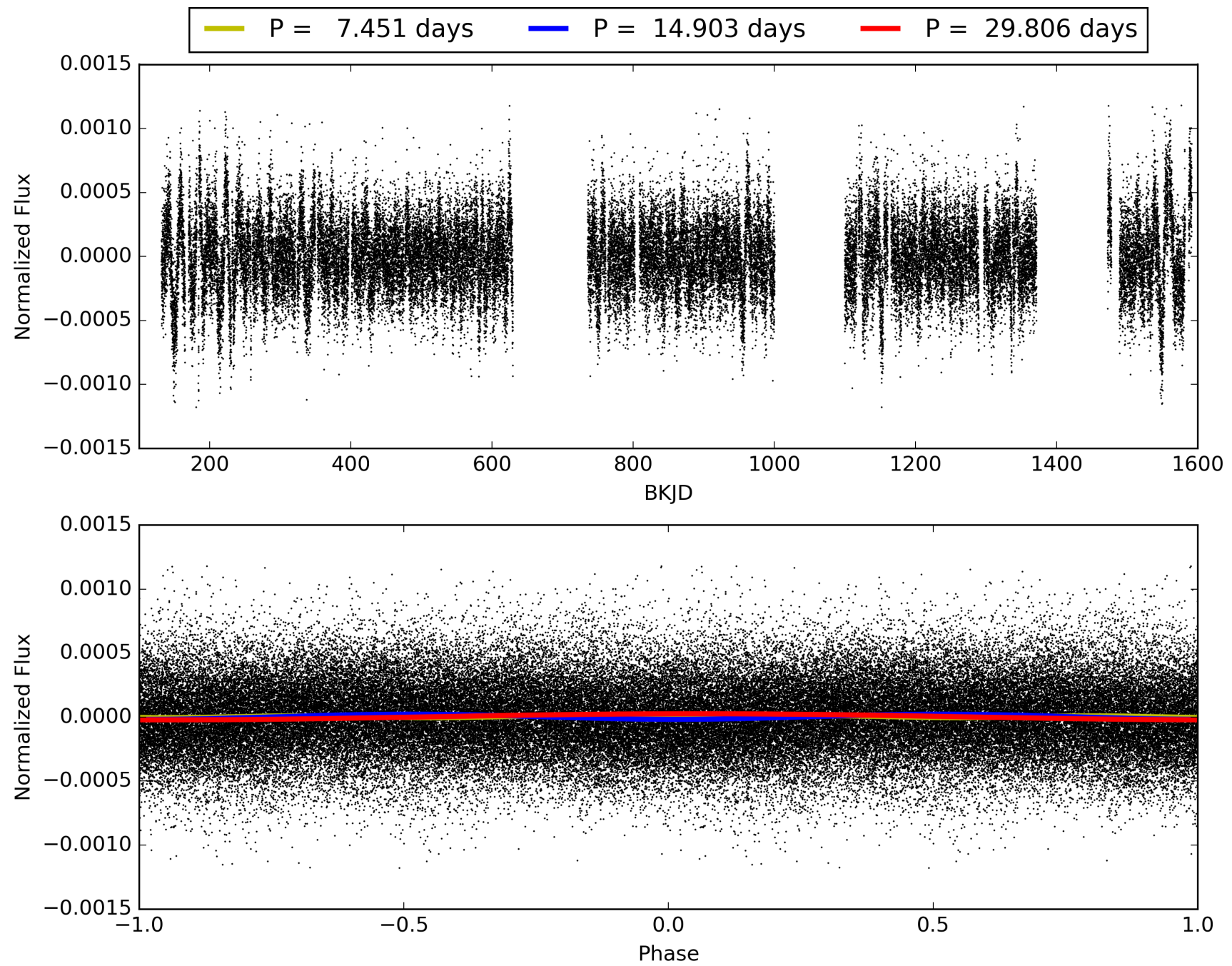
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:03:57 Z

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TCE 010226448-03, PDC Light Curves

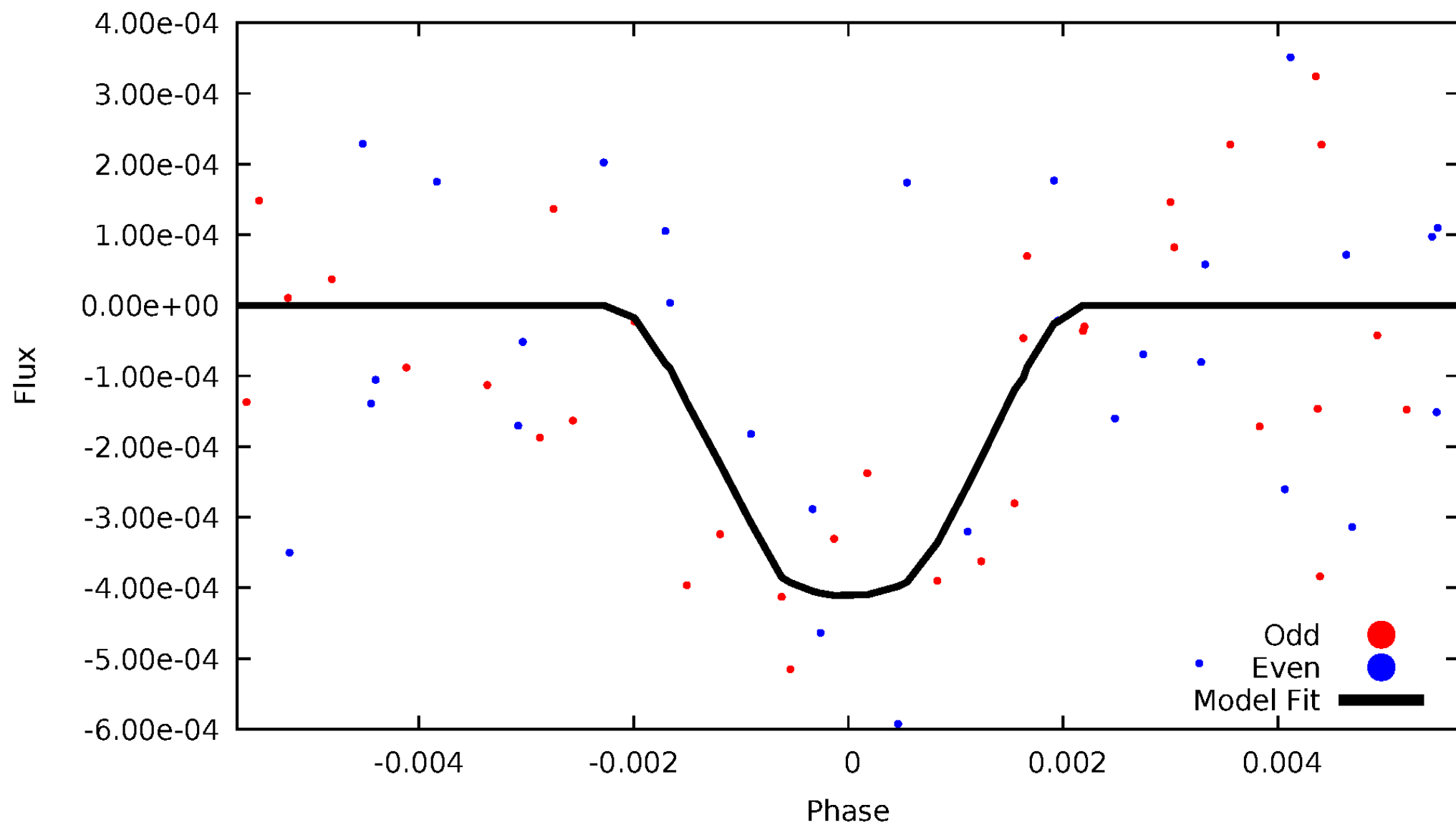


TCE 010226448-03



DV Odd/Even

TCE 010226448-03

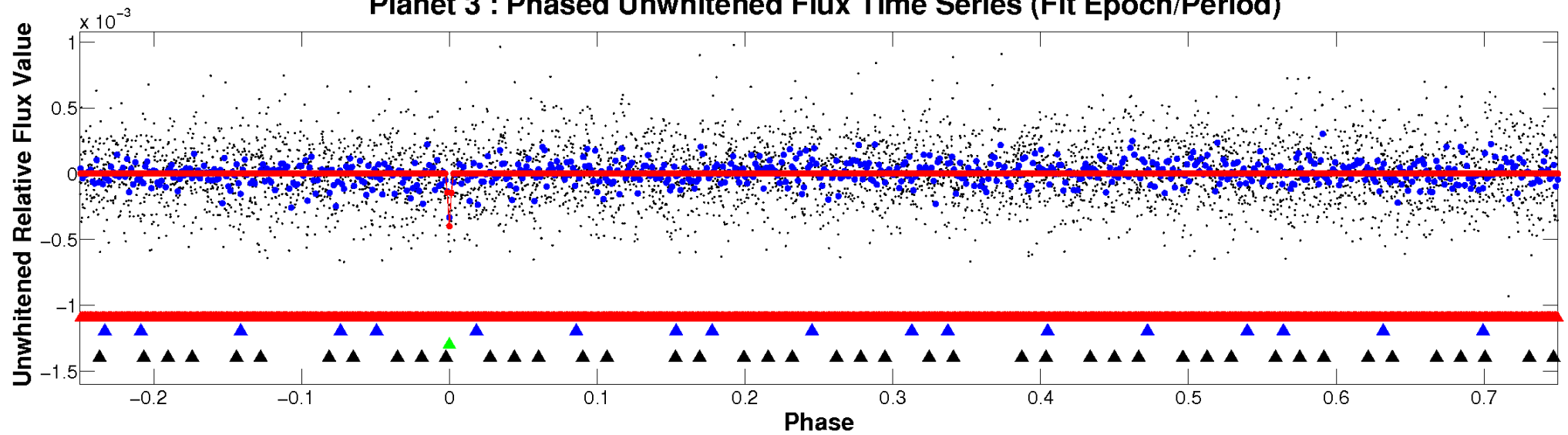


ALT Odd/Even

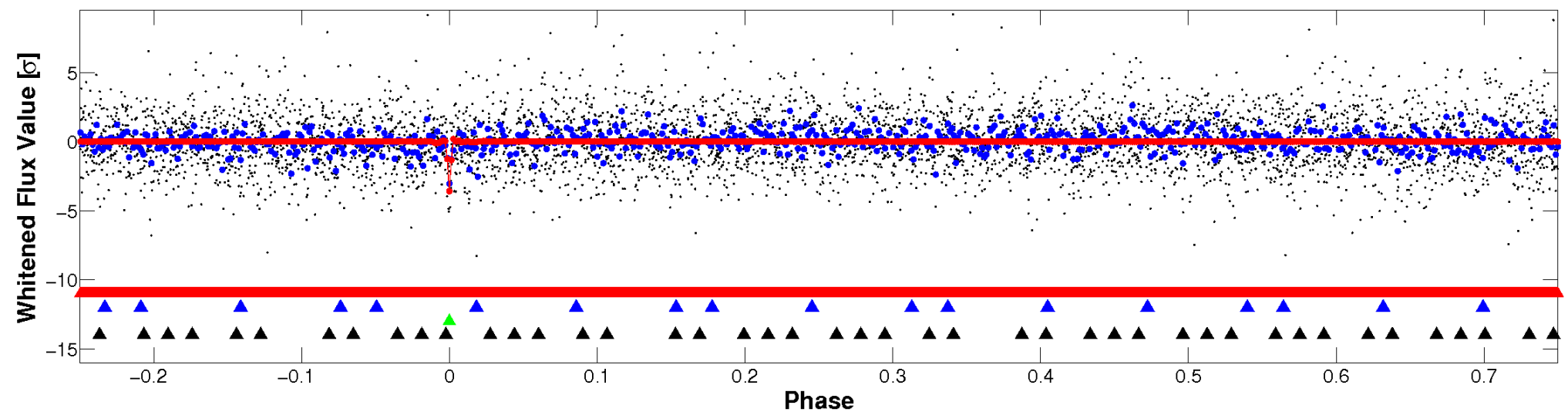
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

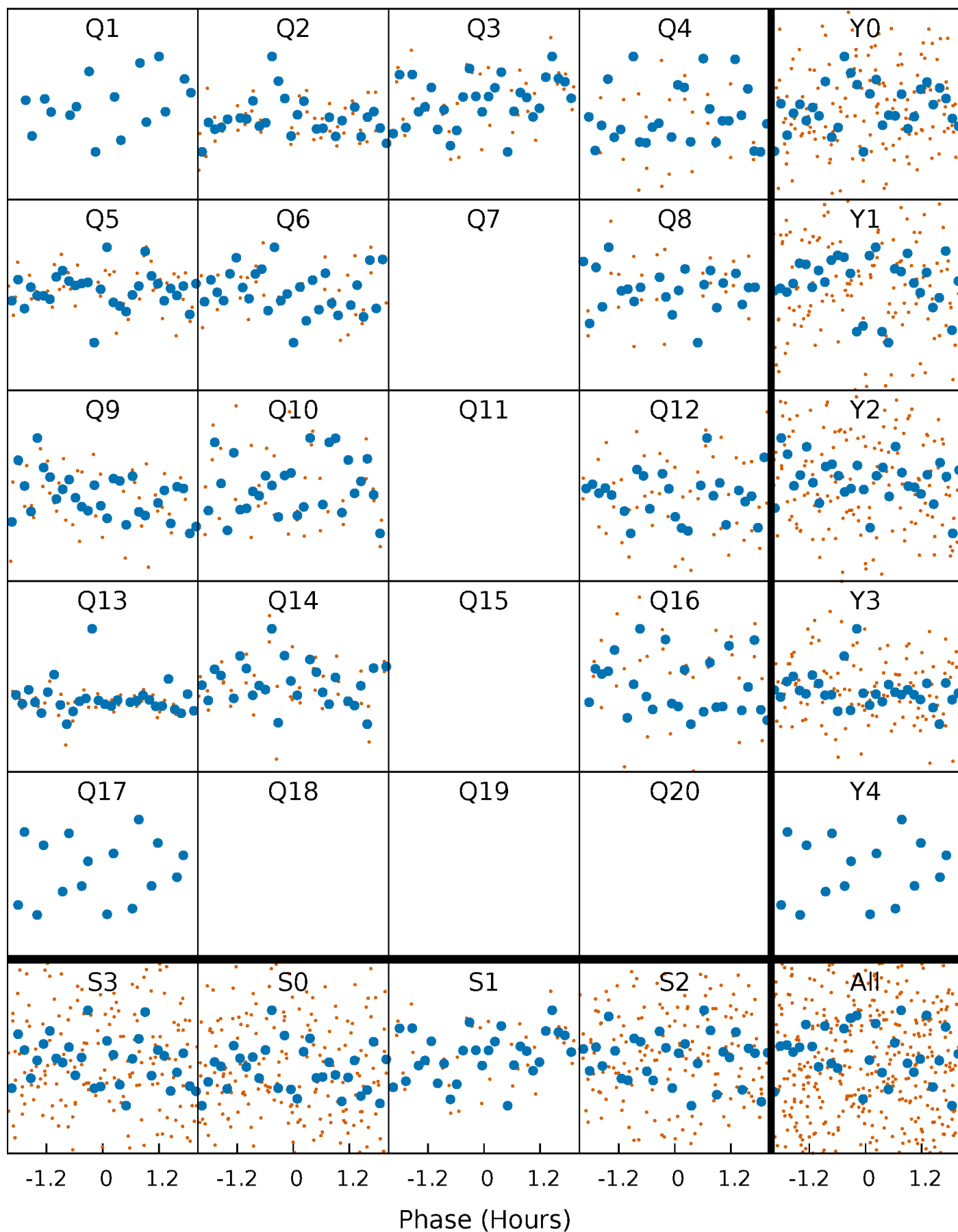


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



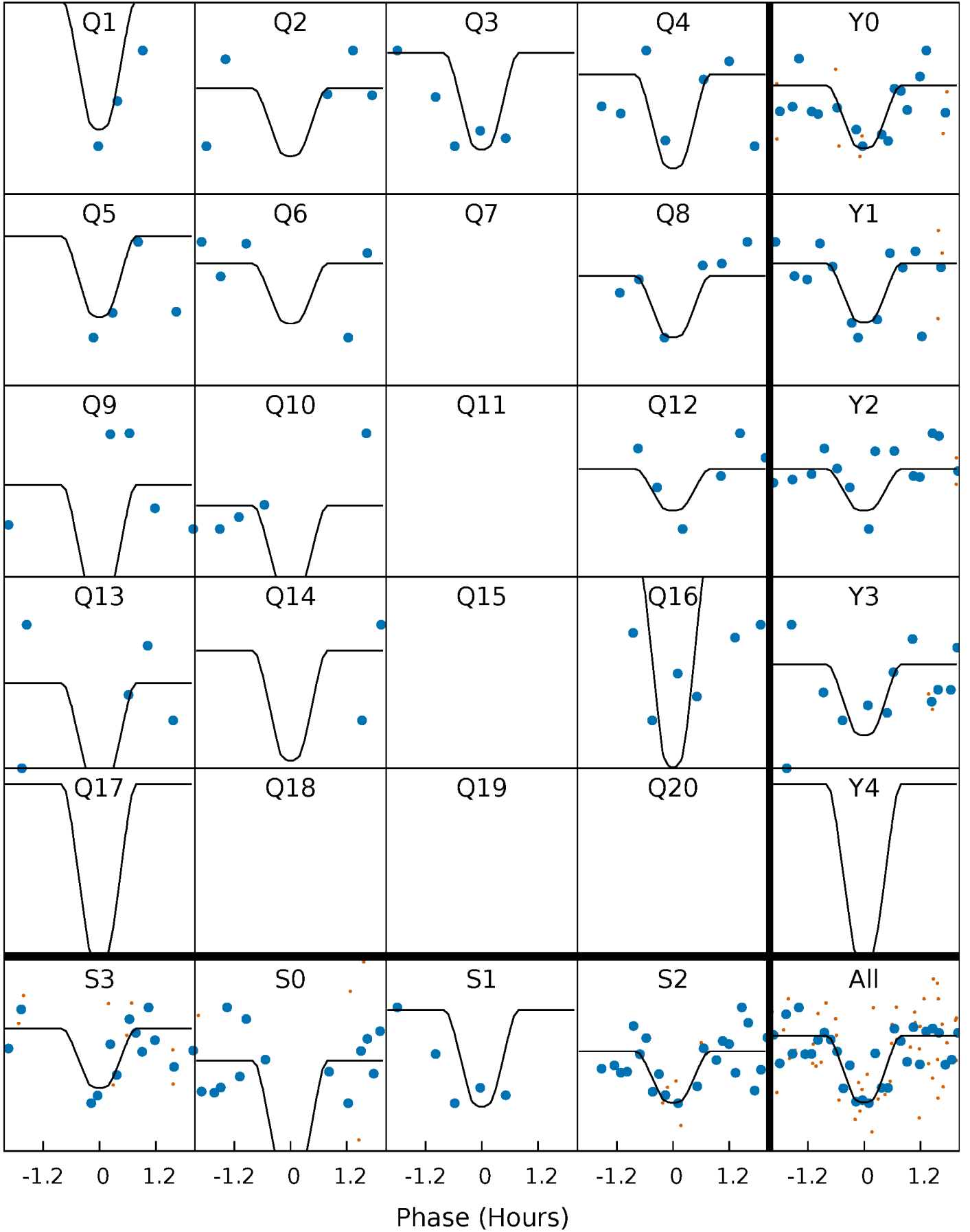
PDC Quarter-Phased Transit Curves

TCE 010226448-03 P= 14.902803 Days $T_0=145.901423$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010226448-03 P= 14.902803 Days $T_0=145.901423$ (BKJD)

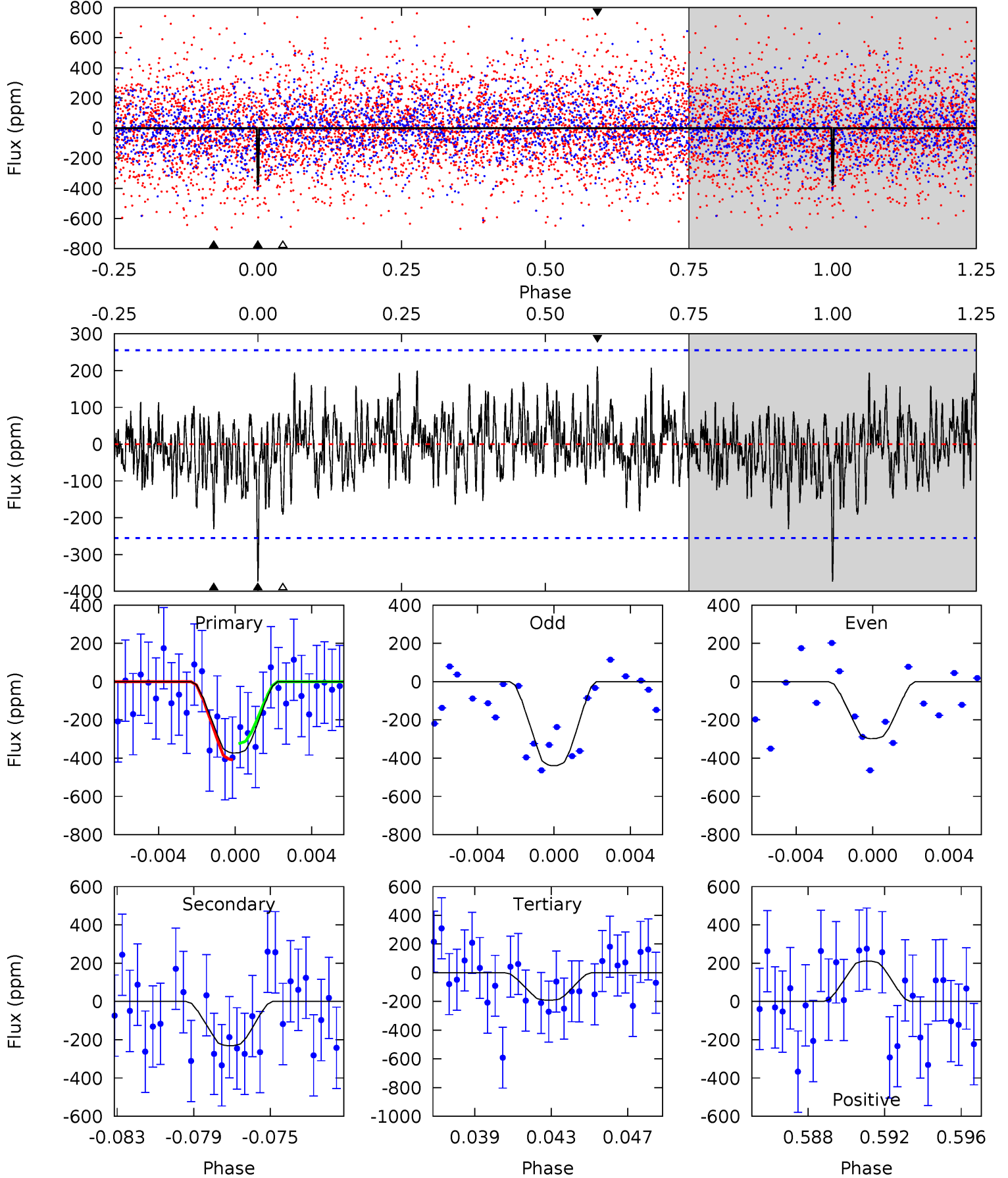


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

010226448-03, P = 14.902803 Days, E = 130.998620 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.60	4.71	3.90	4.30	5.20	2.88	1.36	3.70	3.30	0.81	0.40	1.47	0.77	0.36	0.87



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 010226448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5808^{+145}_{-159}	$4.434^{+0.101}_{-0.188}$	$-0.240^{+0.300}_{-0.300}$	$0.951^{+0.251}_{-0.135}$	$0.895^{+0.111}_{-0.091}$	$1.467^{+0.665}_{-0.737}$
	+2%/-3%	+2%/-4%	+125%/-125%	+26%/-14%	+12%/-10%	+45%/-50%
Source	PHO1	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 010226448-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-231 ± 49	$2.35^{+2.07}_{-1.51}$	1041^{+71}_{-54}	4908^{+3194}_{-1039}	304^{+1950}_{-224}
Alt.	N/A	N/A	N/A	N/A	N/A

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

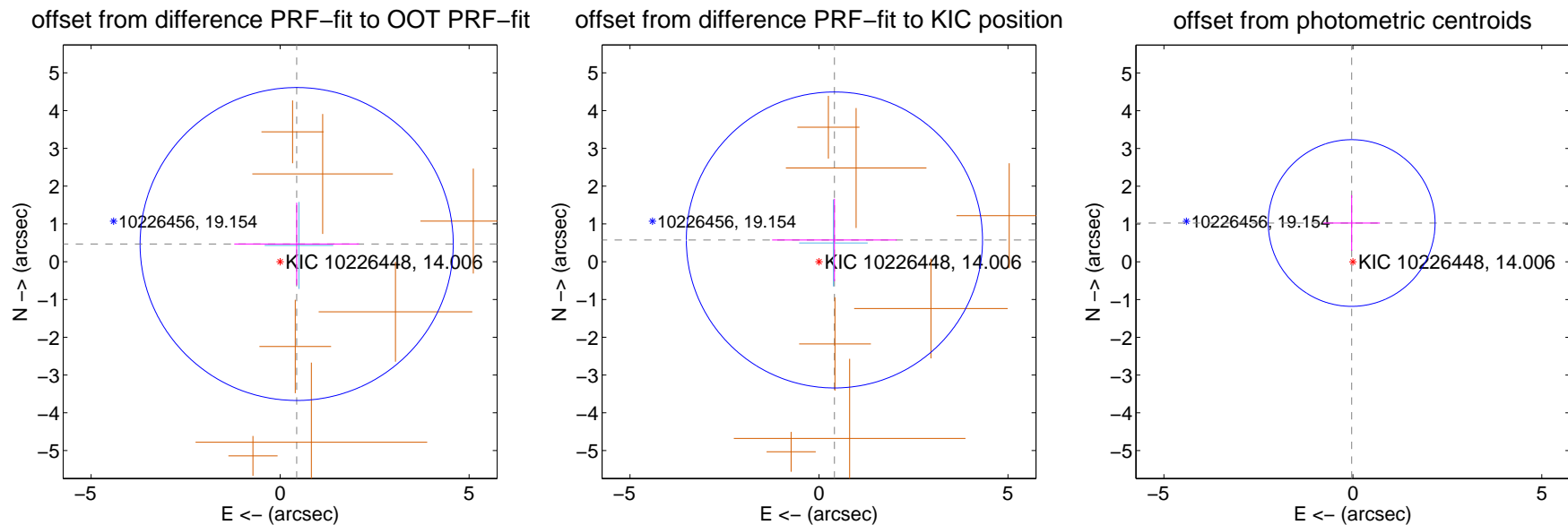
DV Centroid Data

Supplemental centroid analysis for 010226448-03. Kepler magnitude: 14.01. Transit SNR 11.44

There are 1 quarters with good PRF difference image offsets

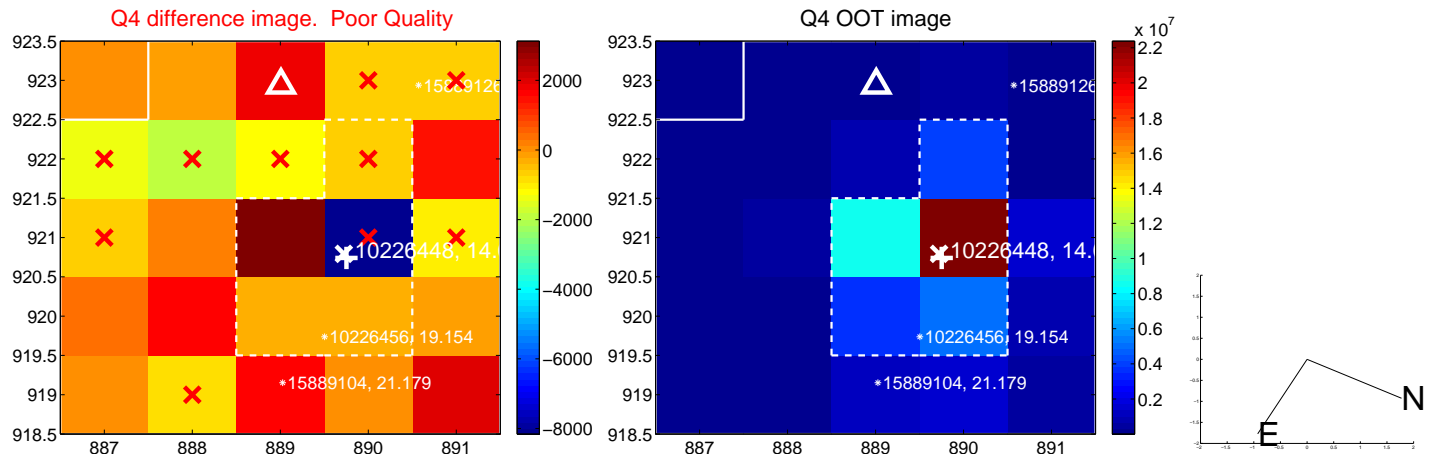
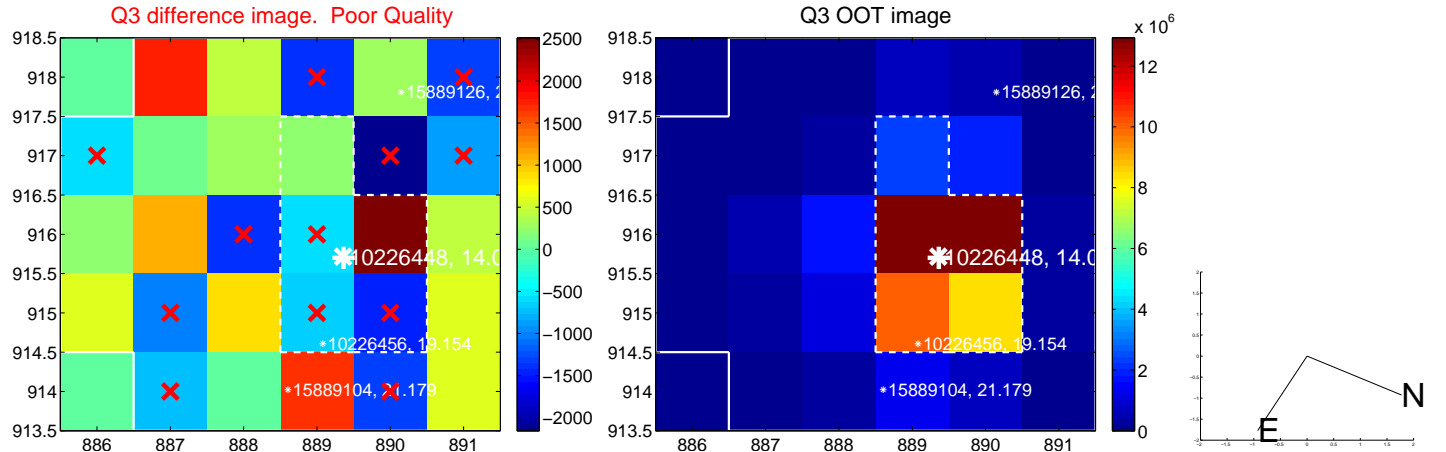
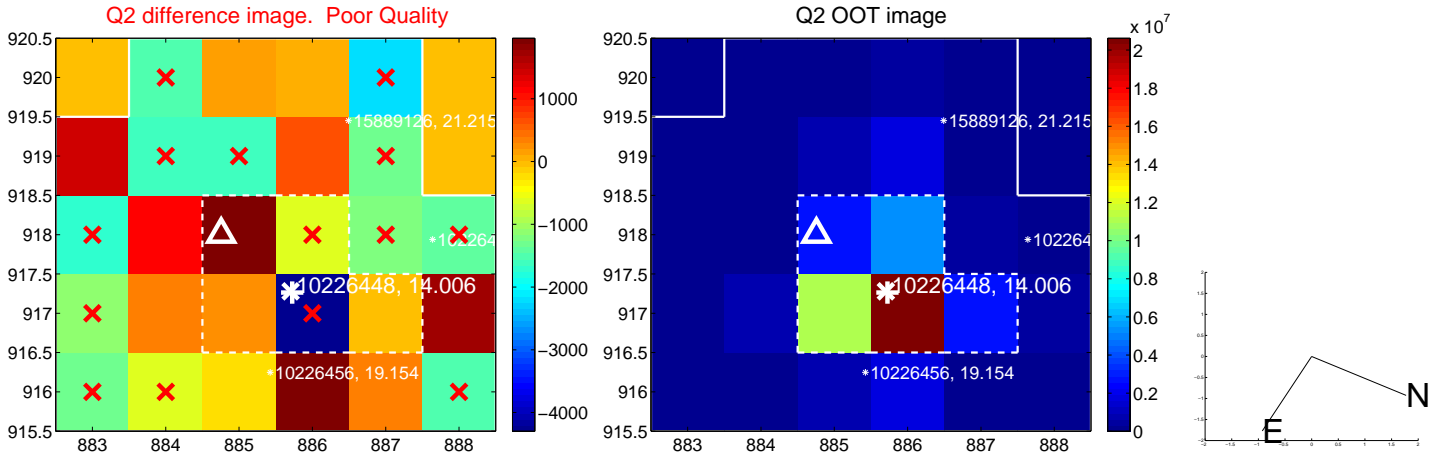
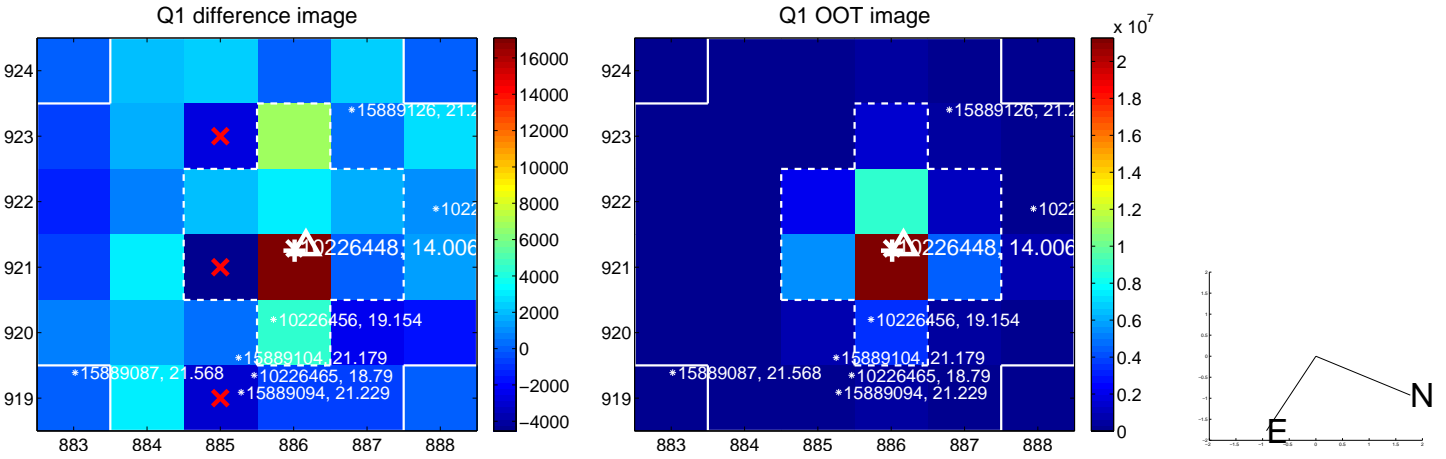
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.641 ± 1.381	0.46	-0.438 ± 1.650	0.468 ± 1.092
PRF-fit source offset from KIC position	0.706 ± 1.306	0.54	-0.409 ± 1.650	0.575 ± 1.092
photometric centroid source offset	1.03 ± 0.74	1.40	0.03 ± 0.75	1.03 ± 0.74

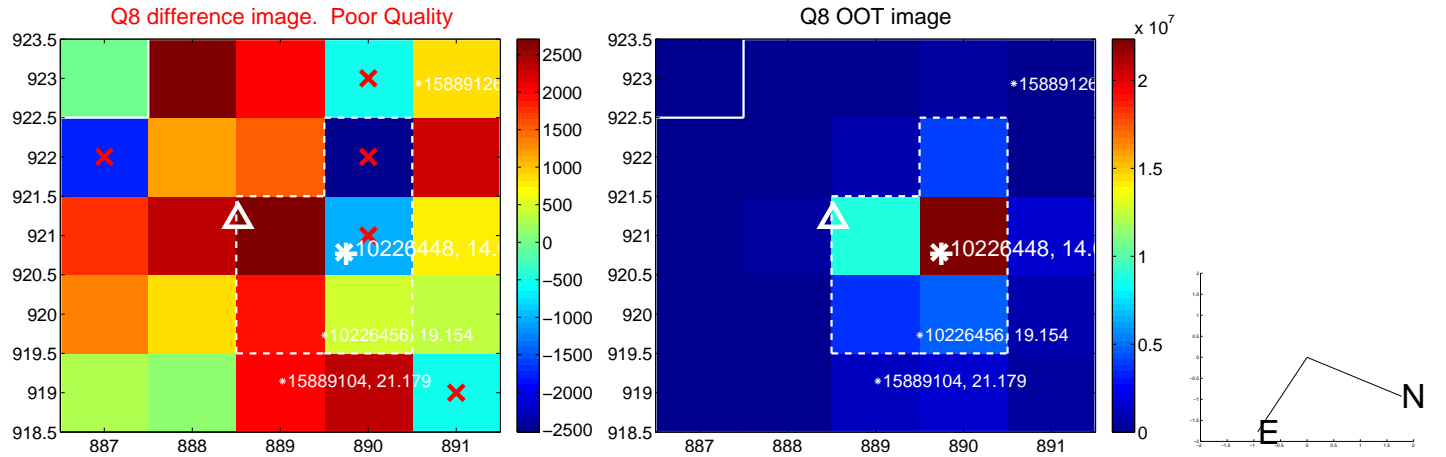
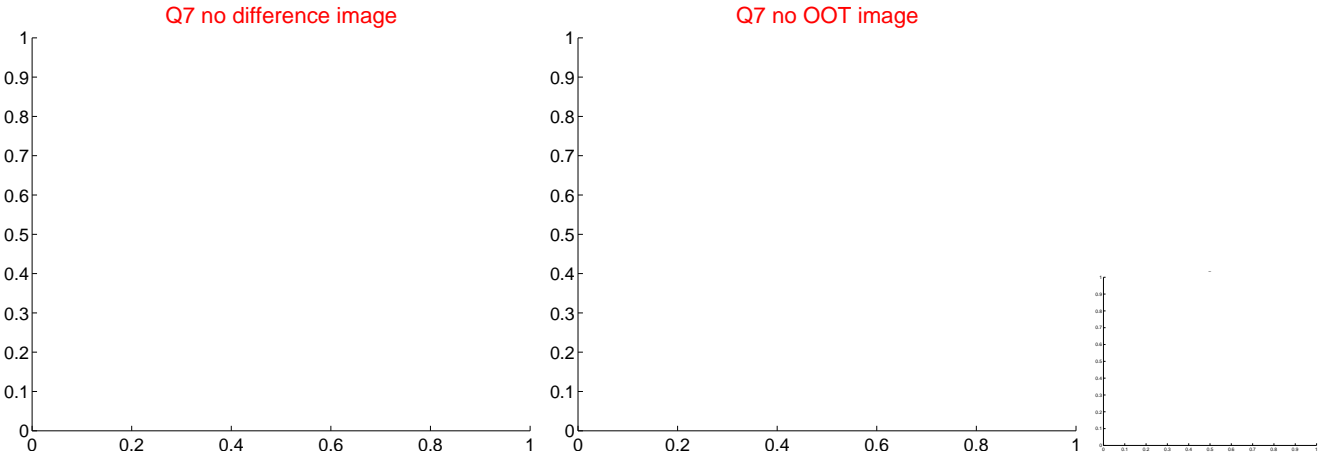
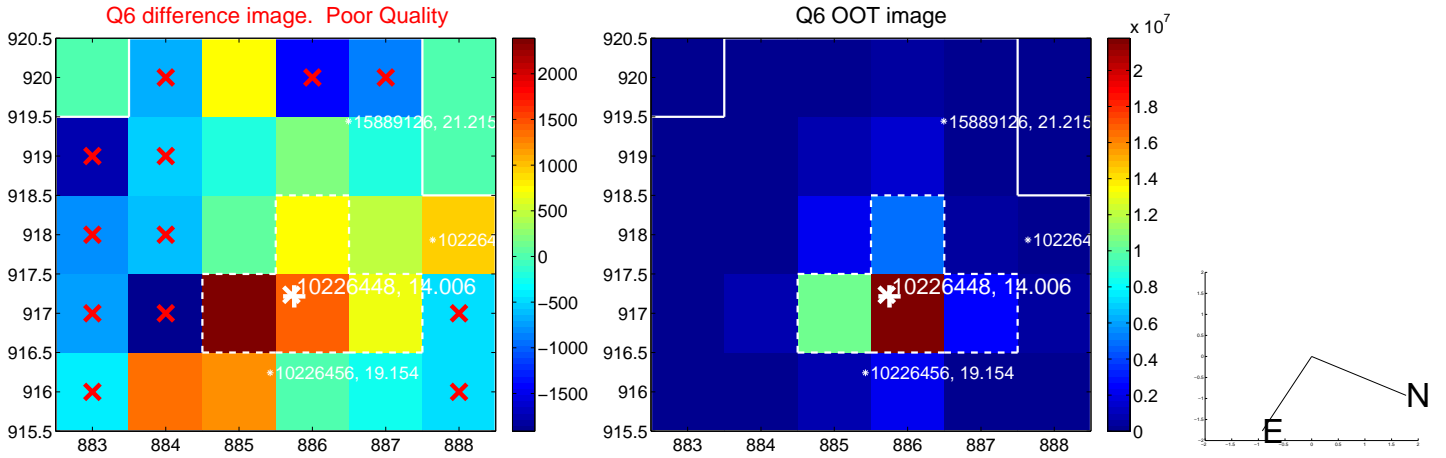
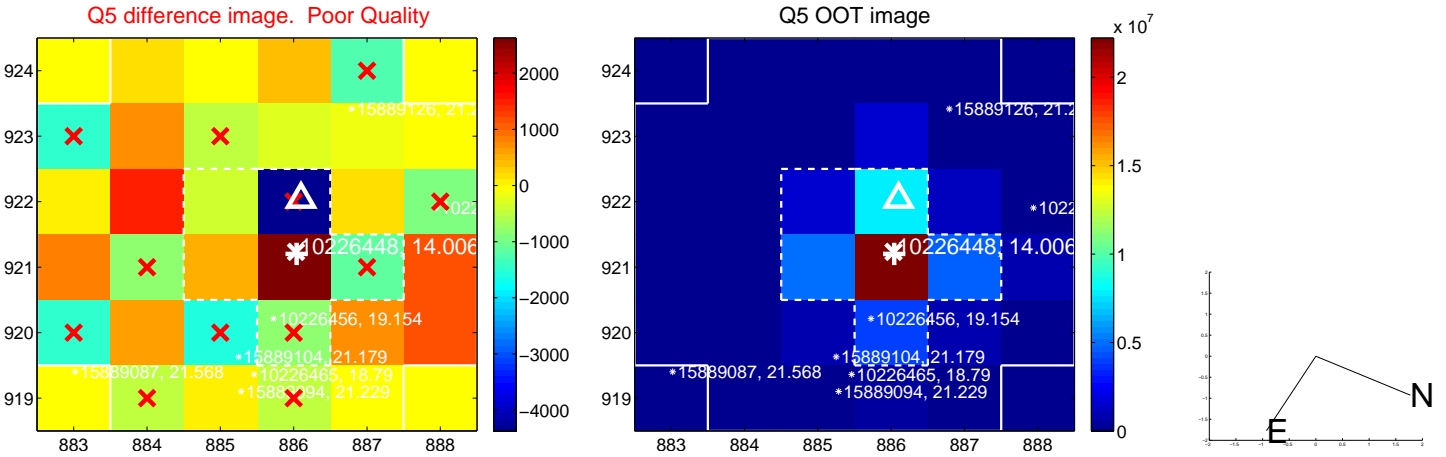


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

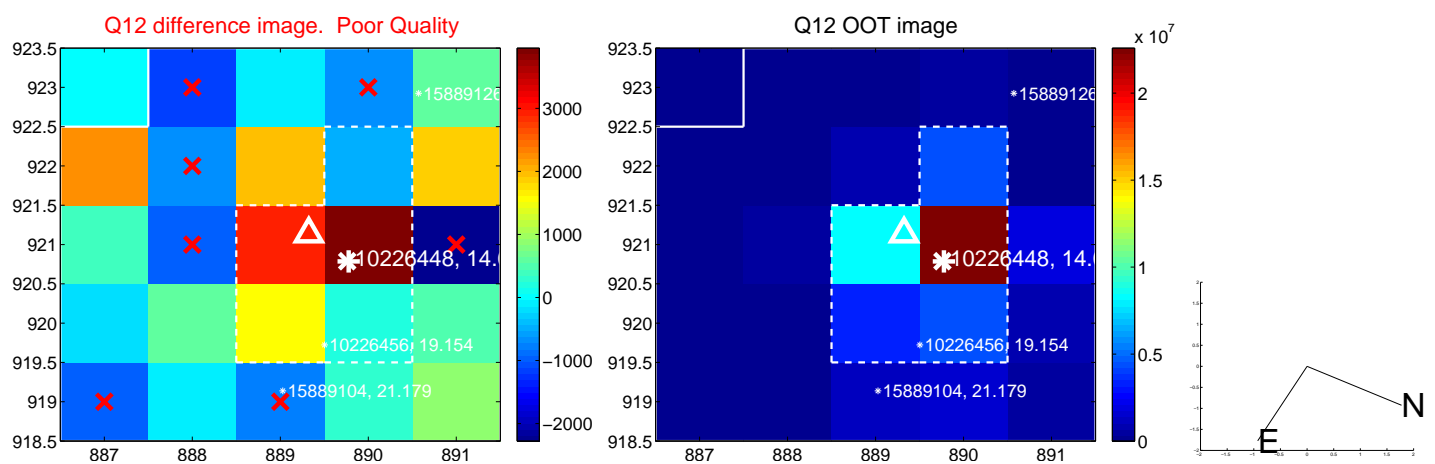
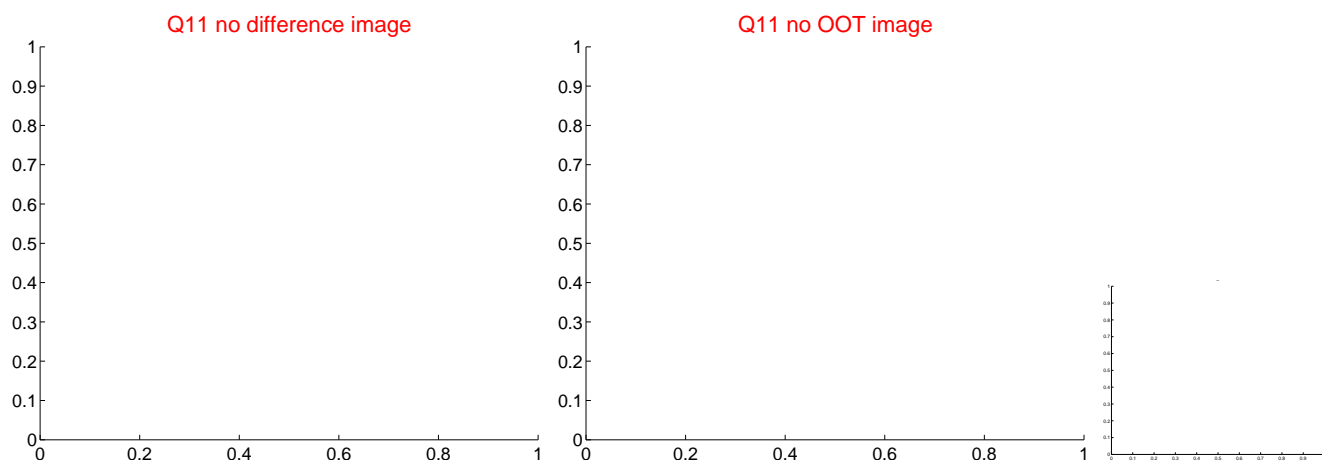
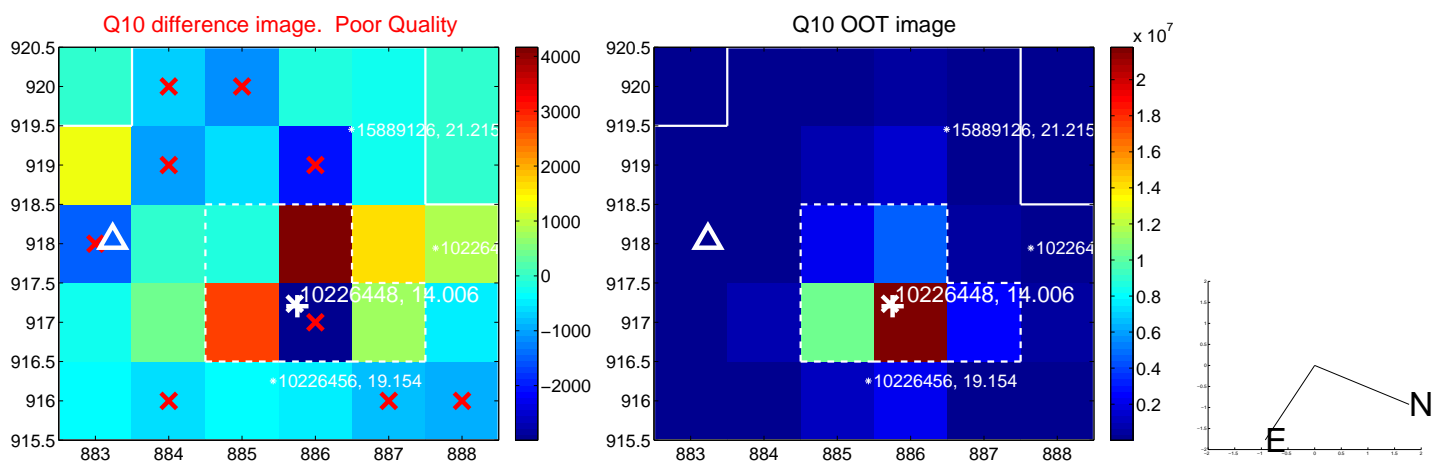
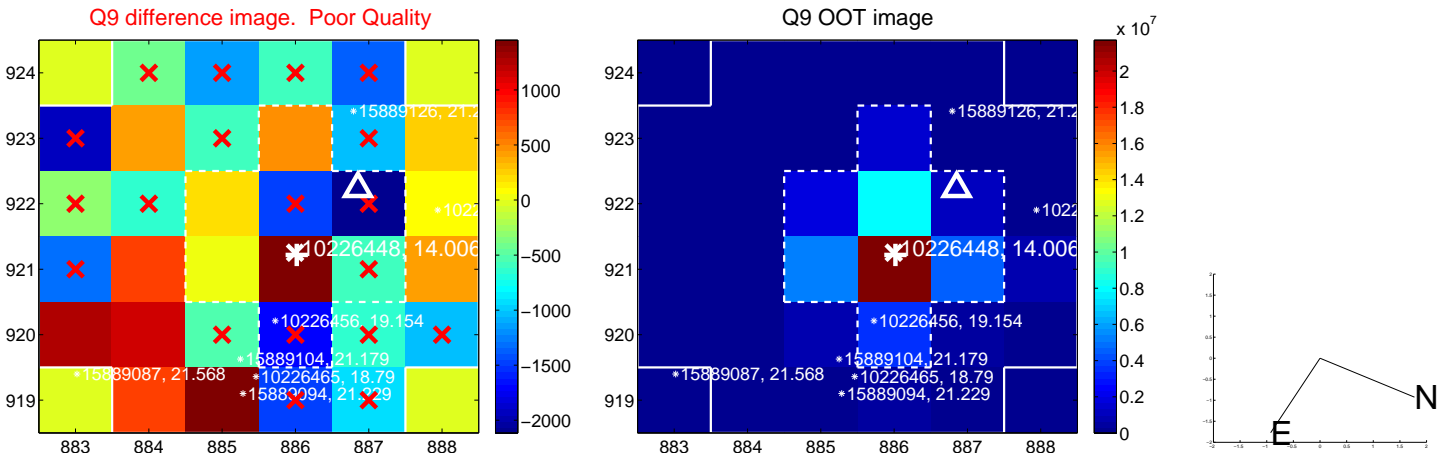
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



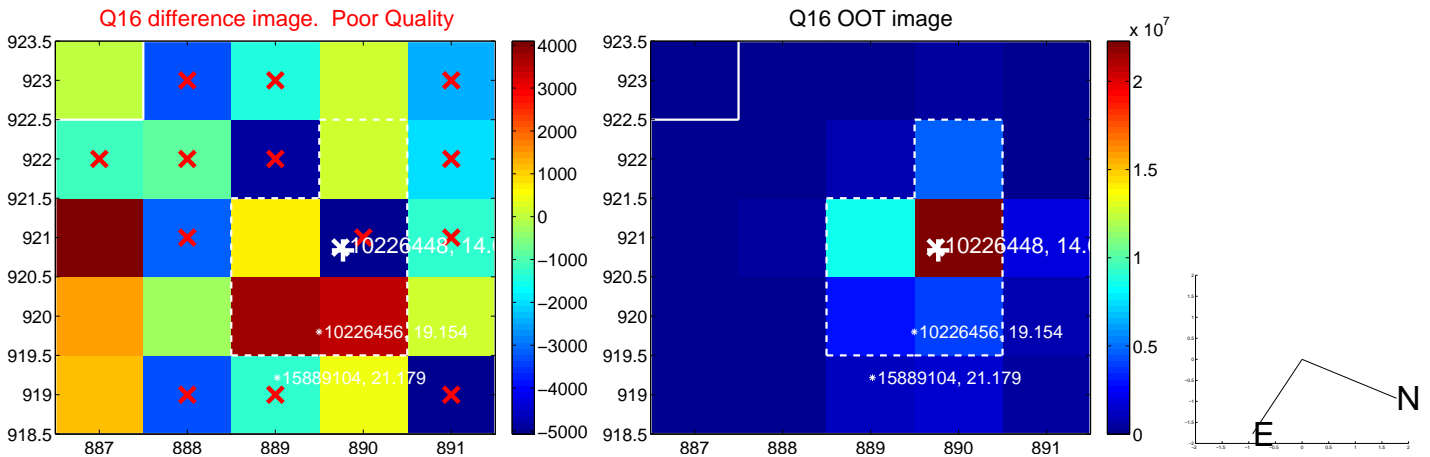
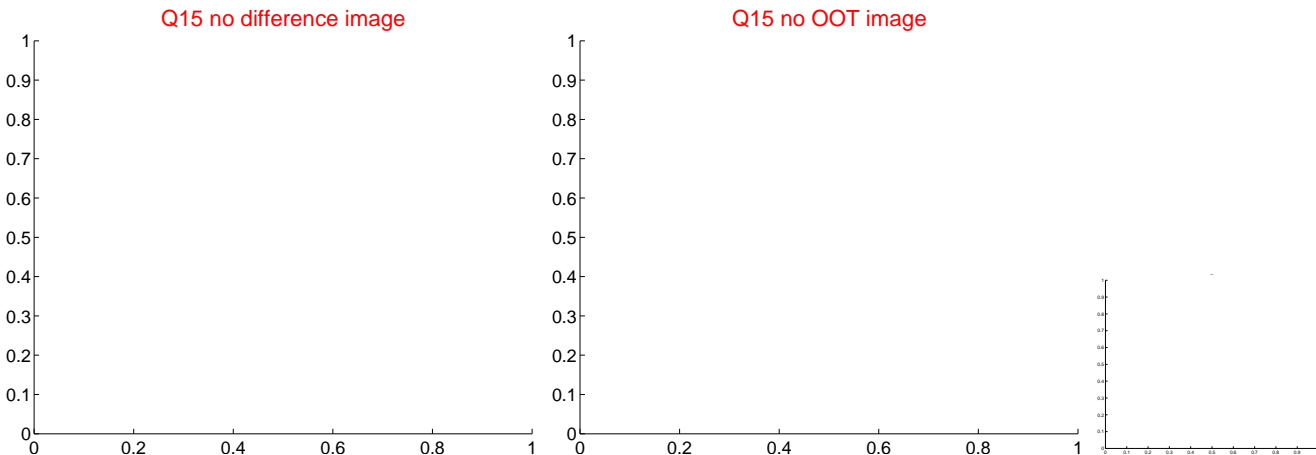
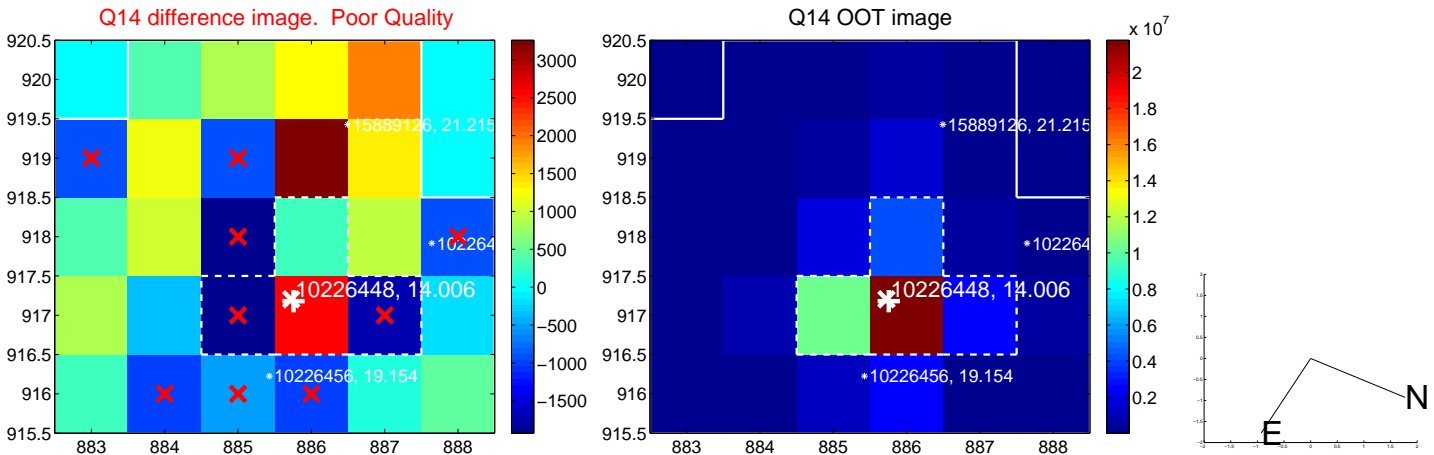
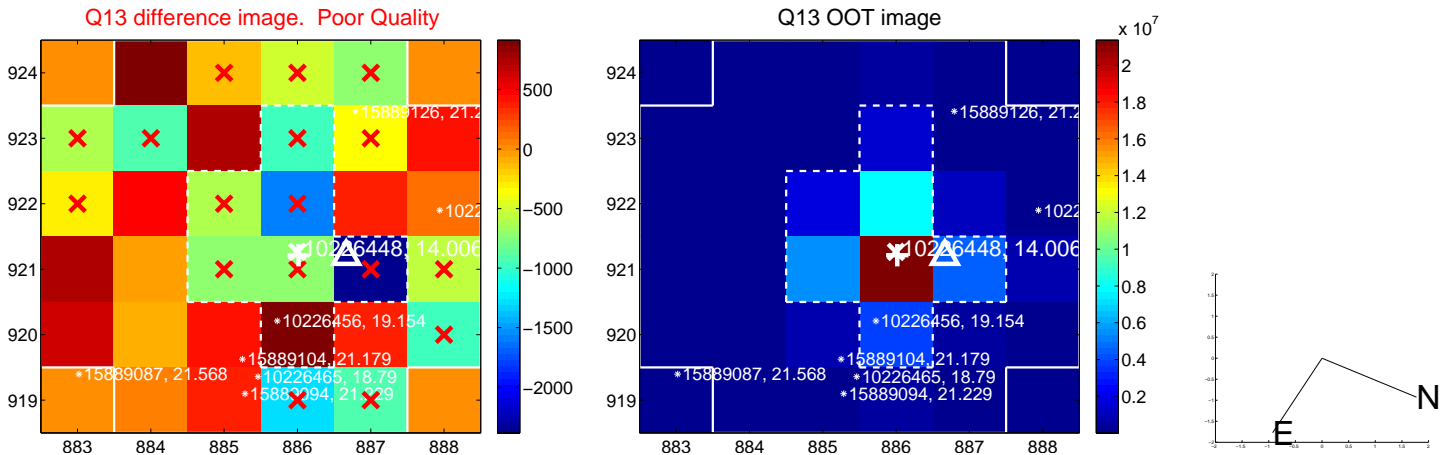
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



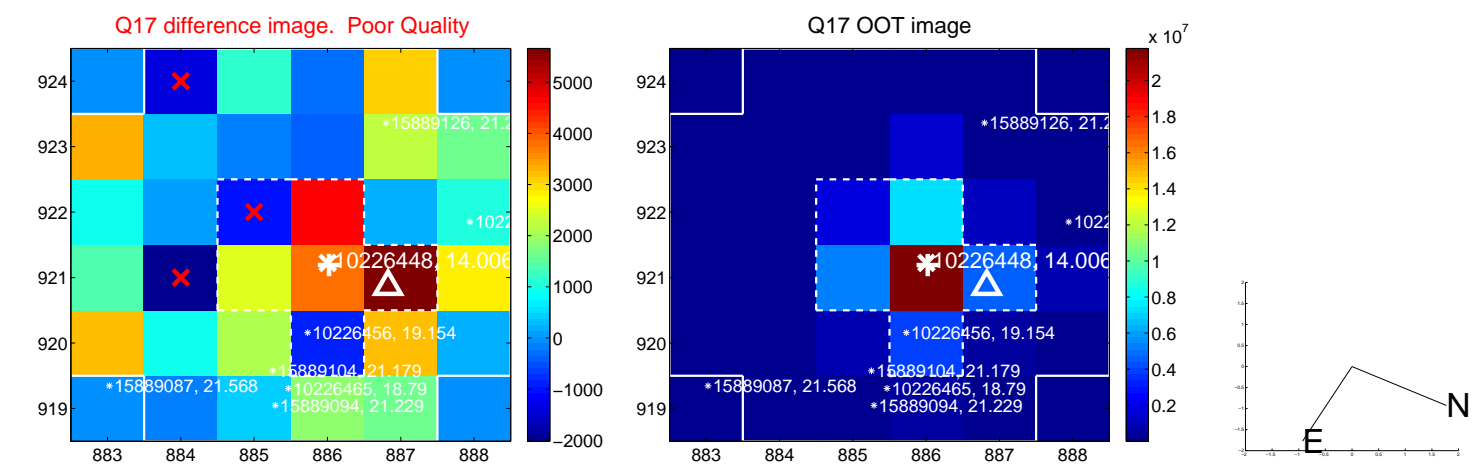
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



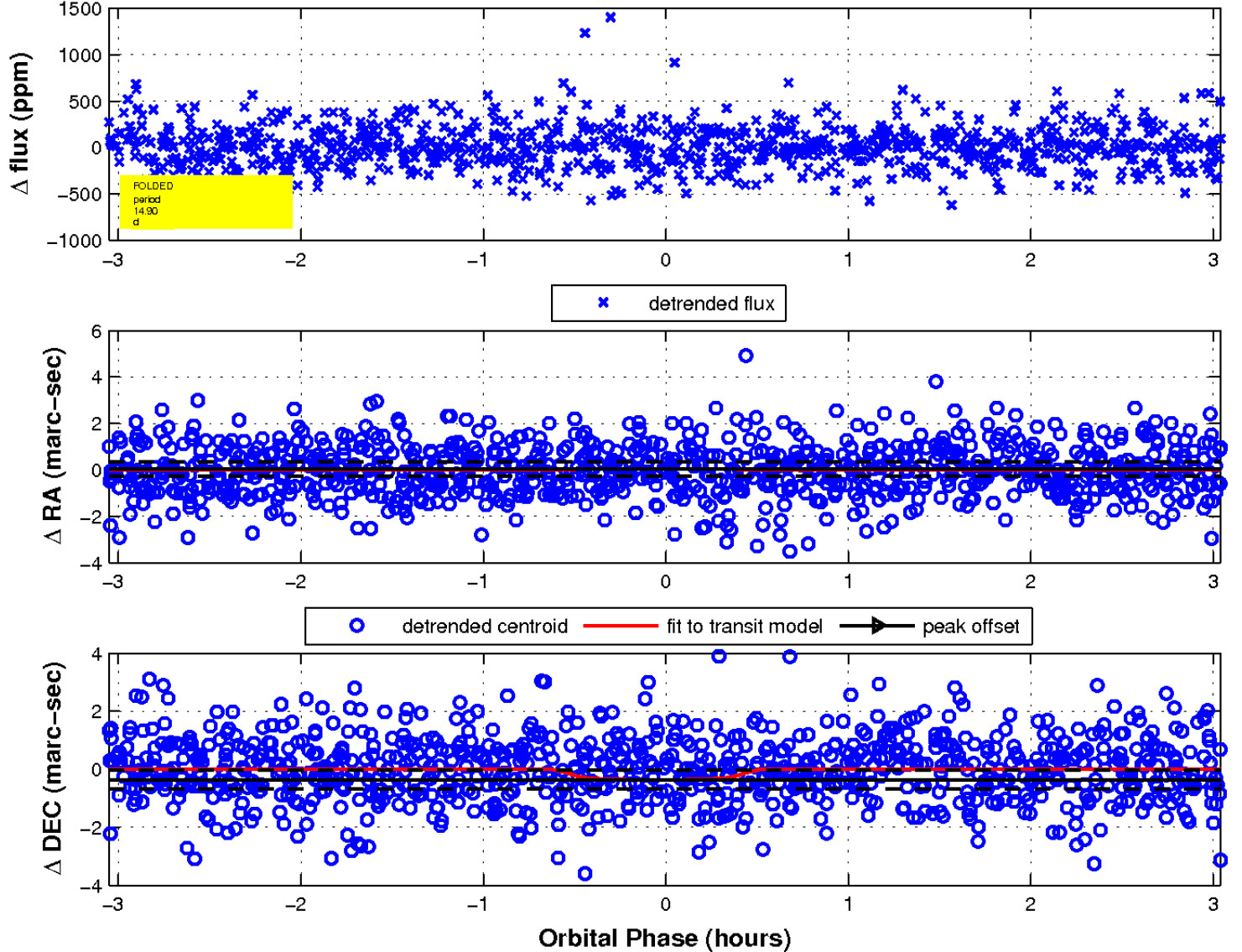
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

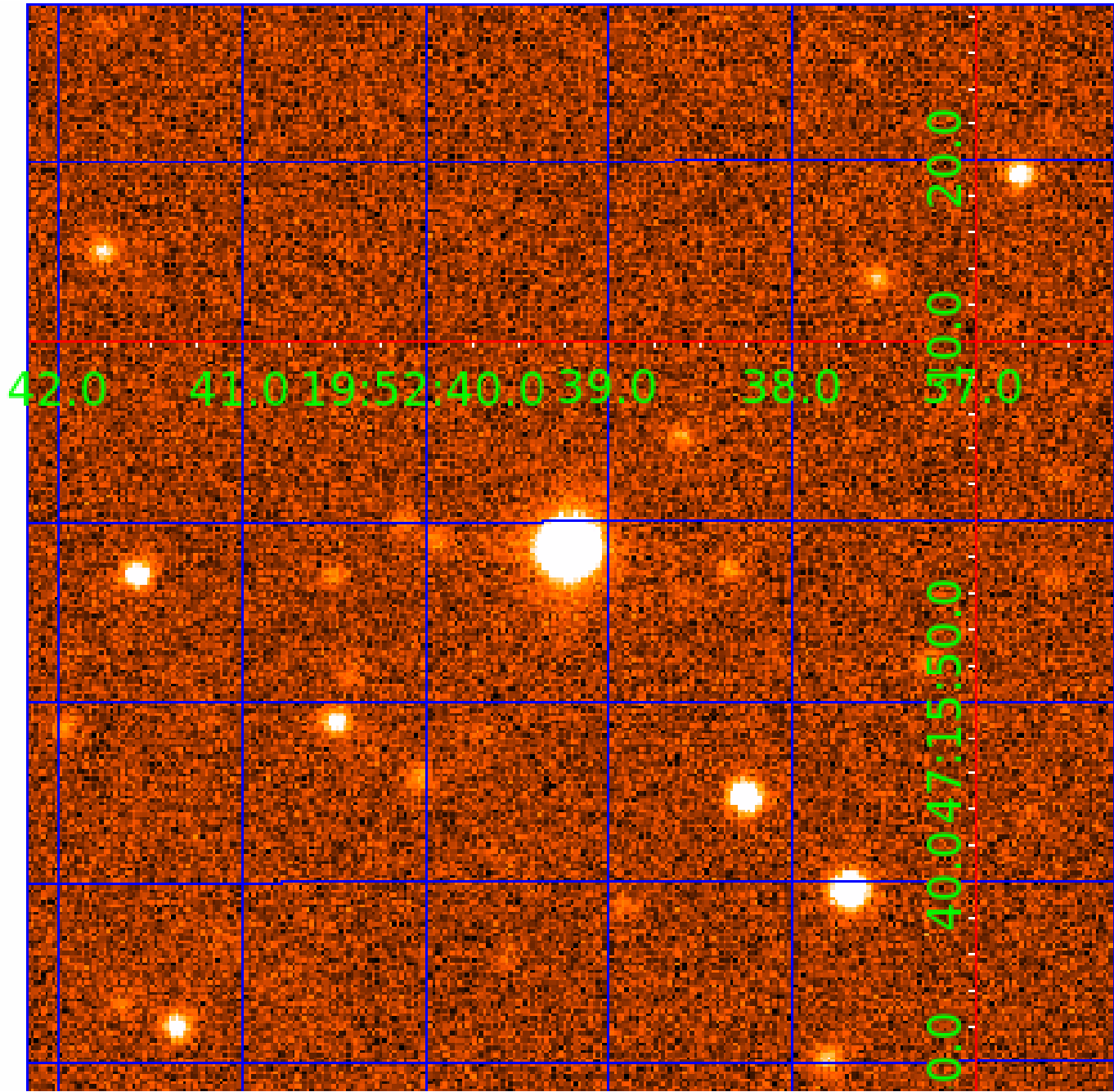


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 010226448

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})
010226448-01	OBS	No	0.660602	131.707432	8.9	4.599	8.9	3.8	0.95	5808	0.29	4499.88
010226448-02	OBS	No	80.273822	187.136195	398.8	2.669	9.2	10.4	0.95	5808	1.92	7.48
010226448-03	OBS	No	14.902803	145.901423	411.6	1.018	9.6	11.4	0.95	5808	1.98	70.59
010226448-04	OBS	No	33.297792	154.719634	281.2	2.289	9.7	9.2	0.95	5808	1.89	24.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010226448-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—CENT_FEW_DIFFS—HALO_GHOST—EPHEM_MATCH
010226448-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
010226448-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
010226448-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

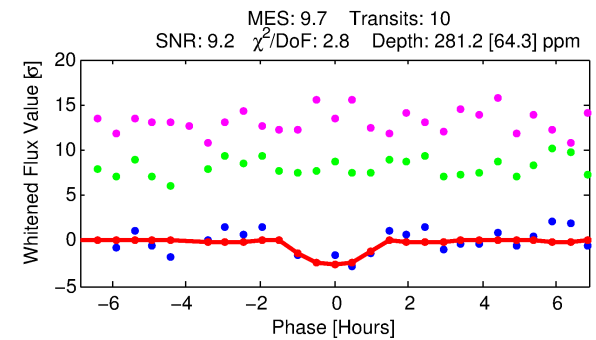
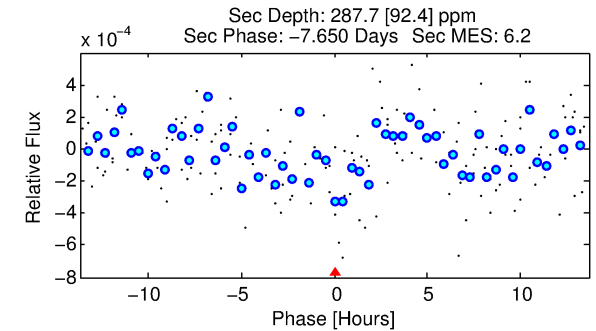
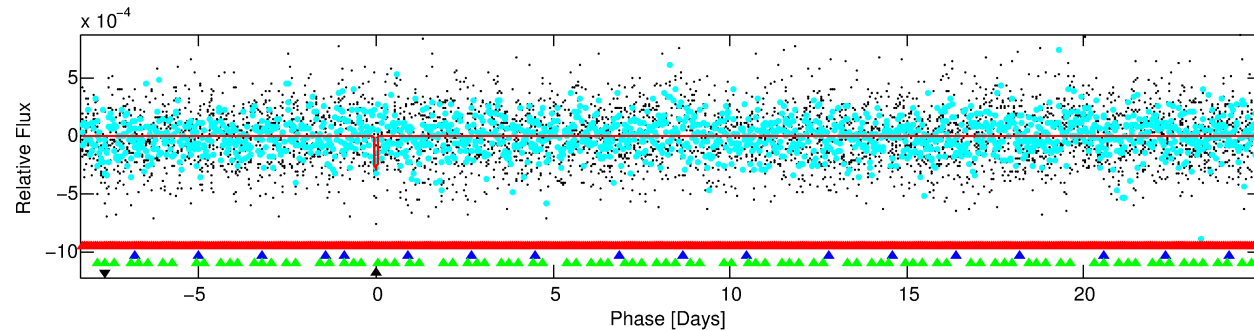
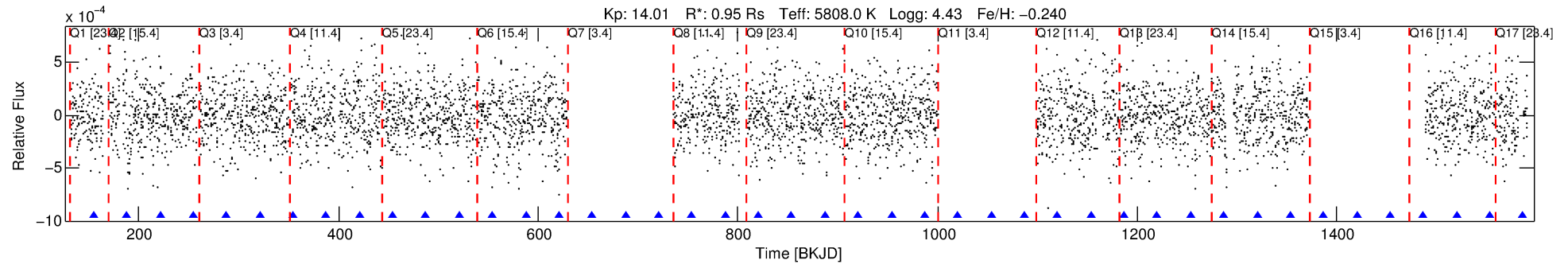
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010226448-04

No Significant Match Found

DV One-Page Summary

KIC: 10226448 Candidate: 4 of 4 Period: 33.298 d

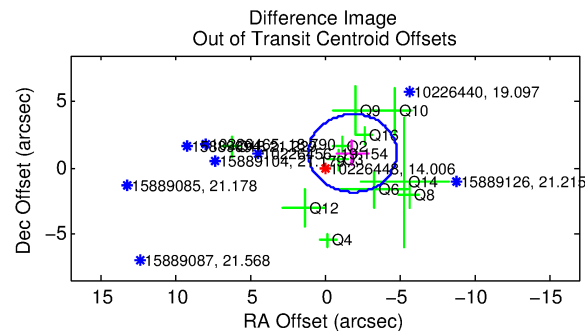
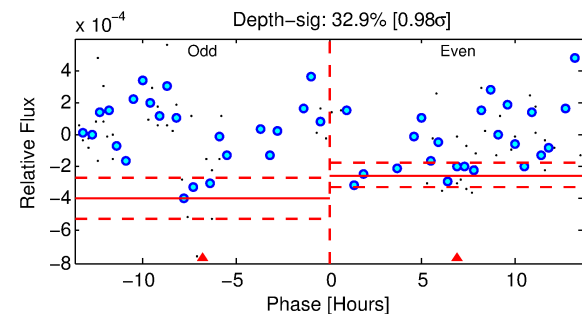
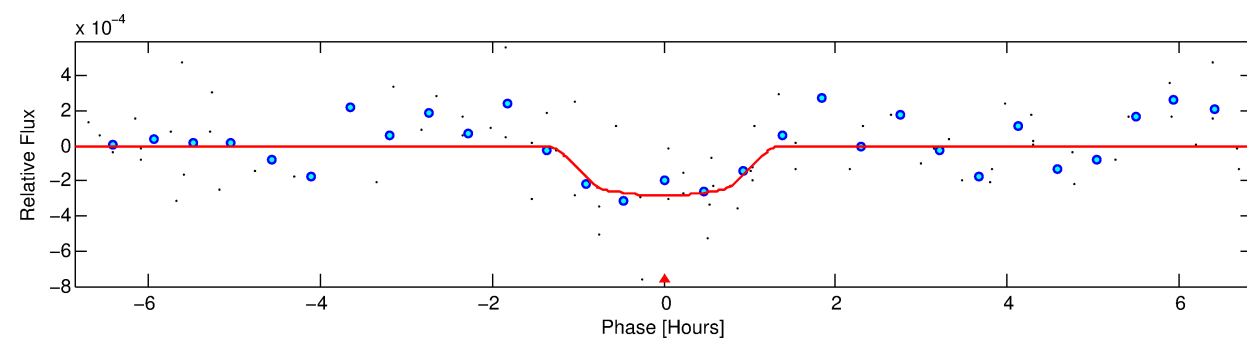


DV Fit Results:

Period = 33.29779 [0.00049] d
Epoch = 154.7196 [0.0126] BKJD
Rp/R* = 0.0182 [0.0234]
a/R* = 52.92 [332.86]
b = 0.90 [1.35]
Seff = 24.17 [8.59]
Teq = 565 [50] K
Rp = 1.89 [2.48] Re
a = 0.1953 [0.0444] AU
Ag = 1689.76 [4419.09] [0.38σ]
Teffp = 5604 [3637] K [1.39σ]

DV Diagnostic Results:

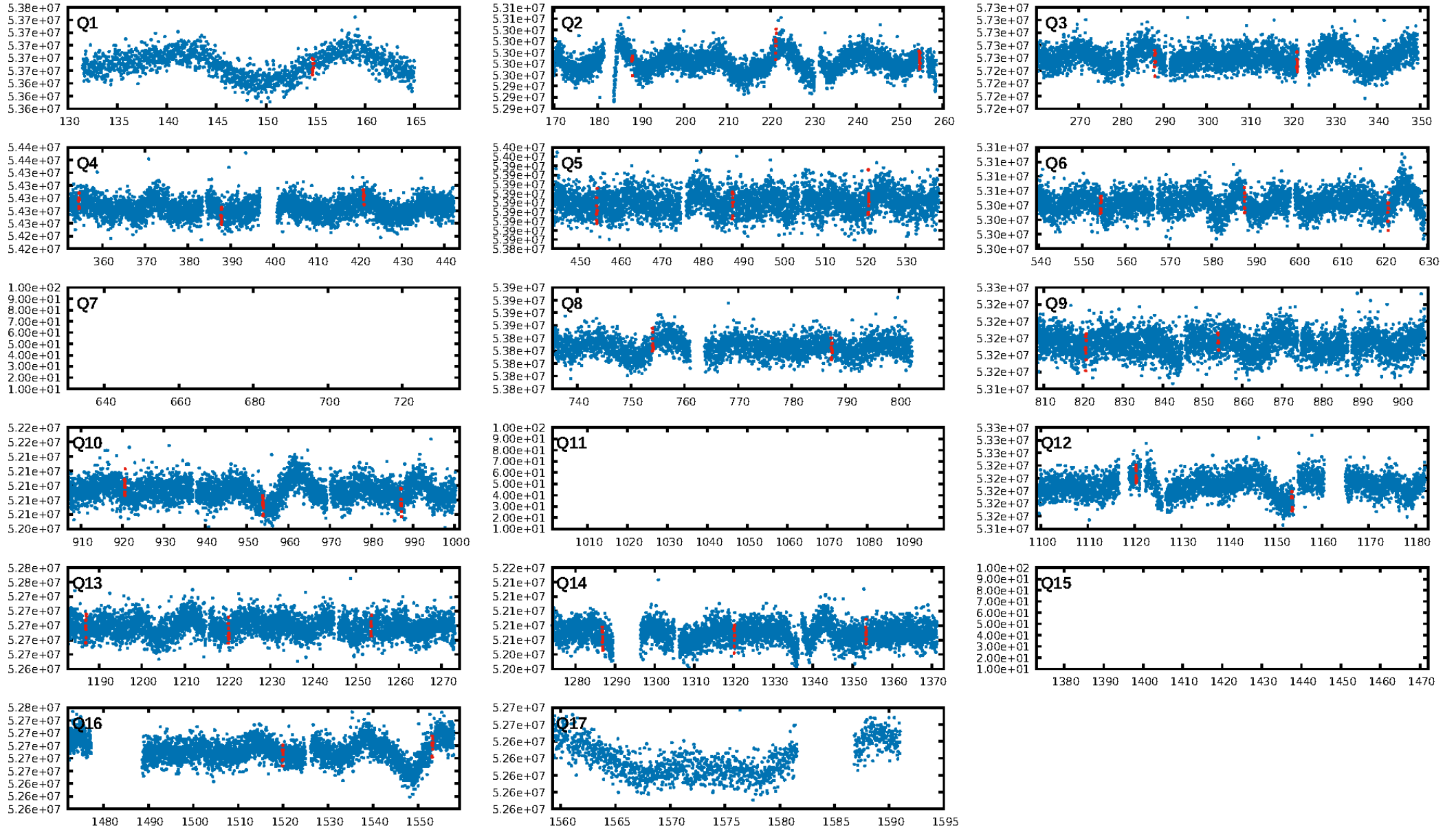
ShortPeriod-sig: 100.0% [176.19σ]
LongPeriod-sig: 100.0% [320.59σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 70.8%
Bootstrap-pfa: 1.44e-09
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -5.993
Centroid-sig: 60.7%
Centroid-so: 0.649 arcsec [0.57σ]
OotOffset-rm: 2.163 arcsec [2.20σ]
KicOffset-rm: 2.169 arcsec [2.06σ]
OotOffset-st: 4/1/4/2 [11]
KicOffset-st: 4/1/4/2 [11]
DiffImageQuality-fgm: 0.00 [0/11]
DiffImageOverlap-fno: 0.00 [0/13]



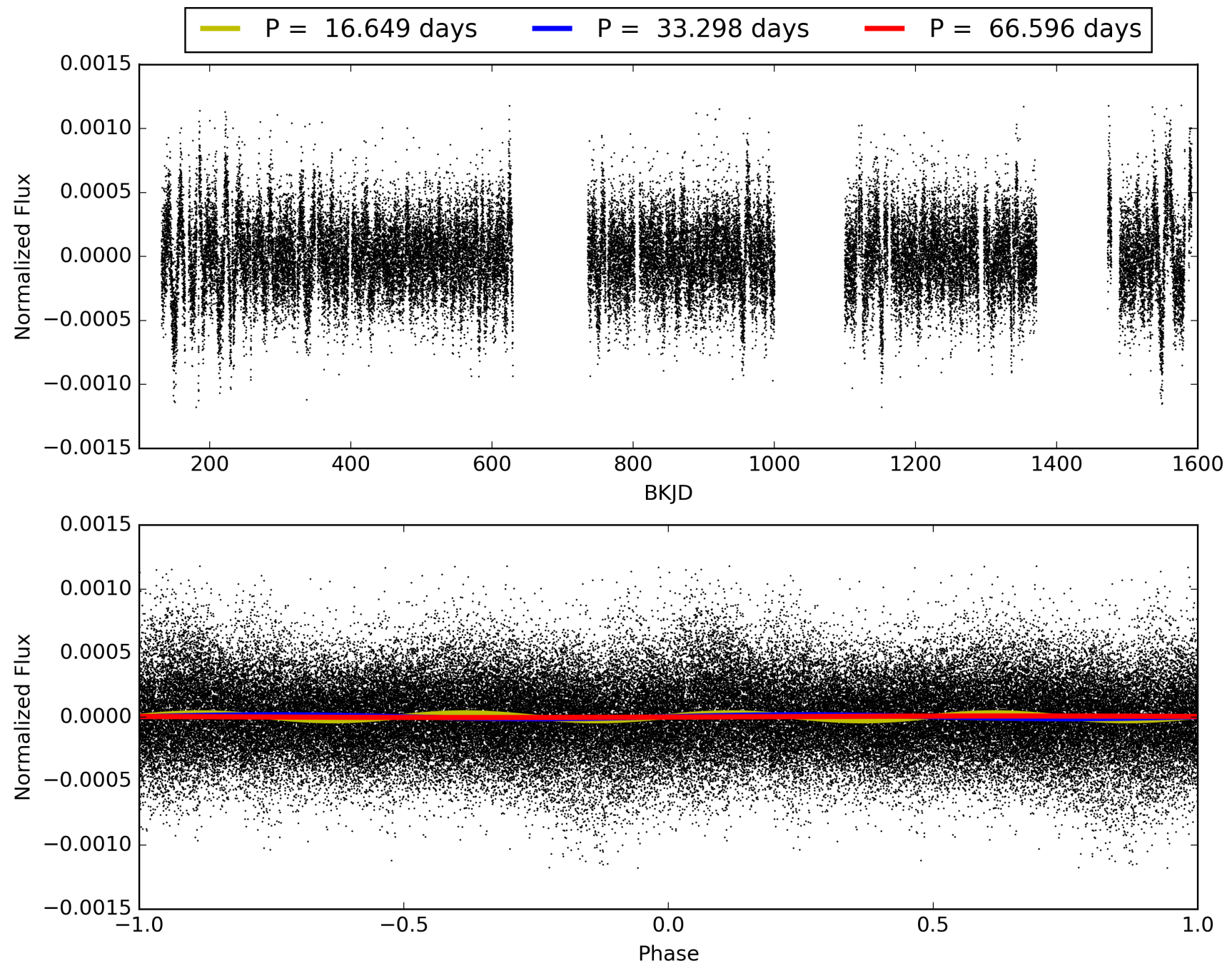
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:04:00 Z

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

TCE 010226448-04, PDC Light Curves

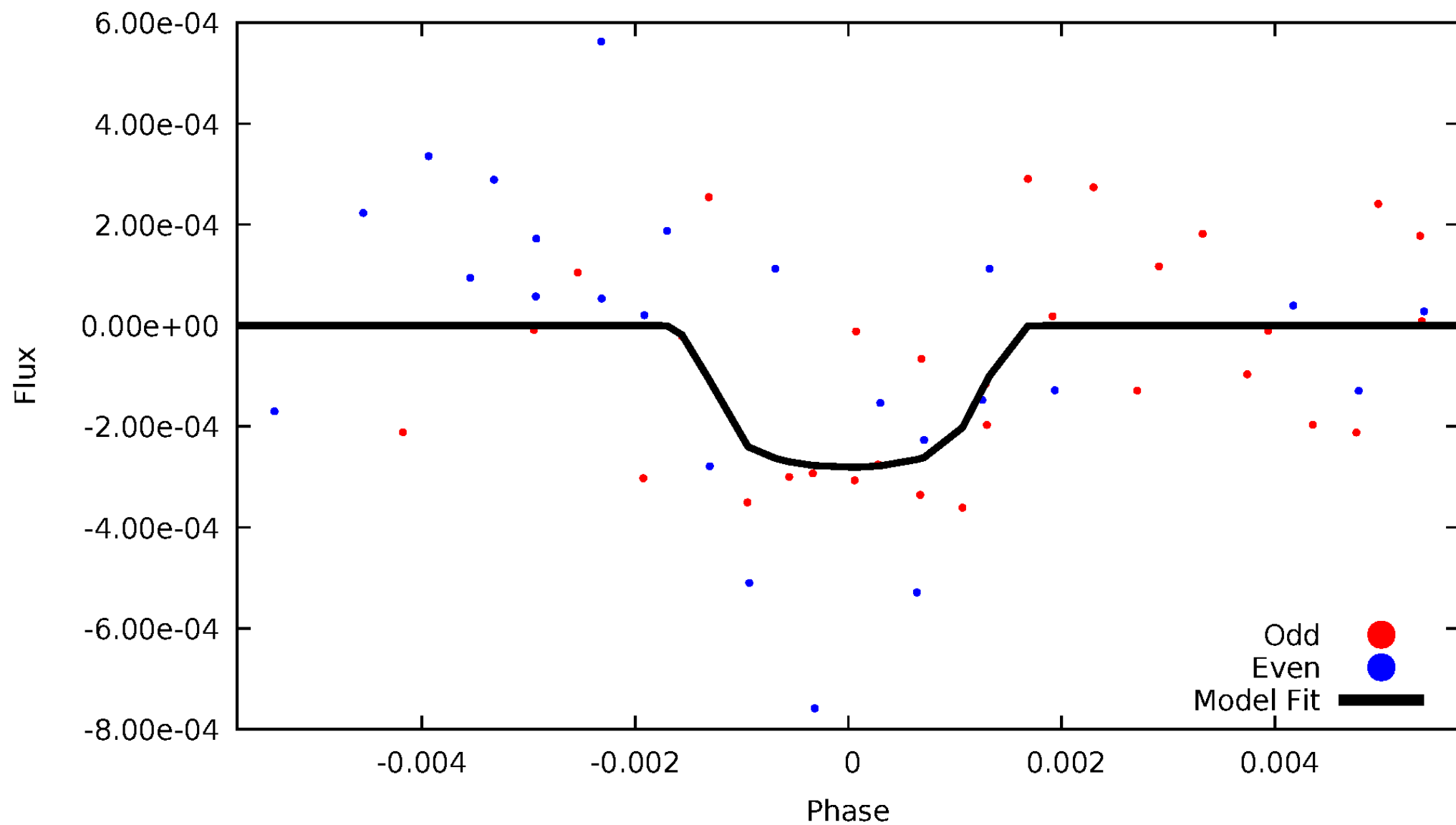


TCE 010226448-04



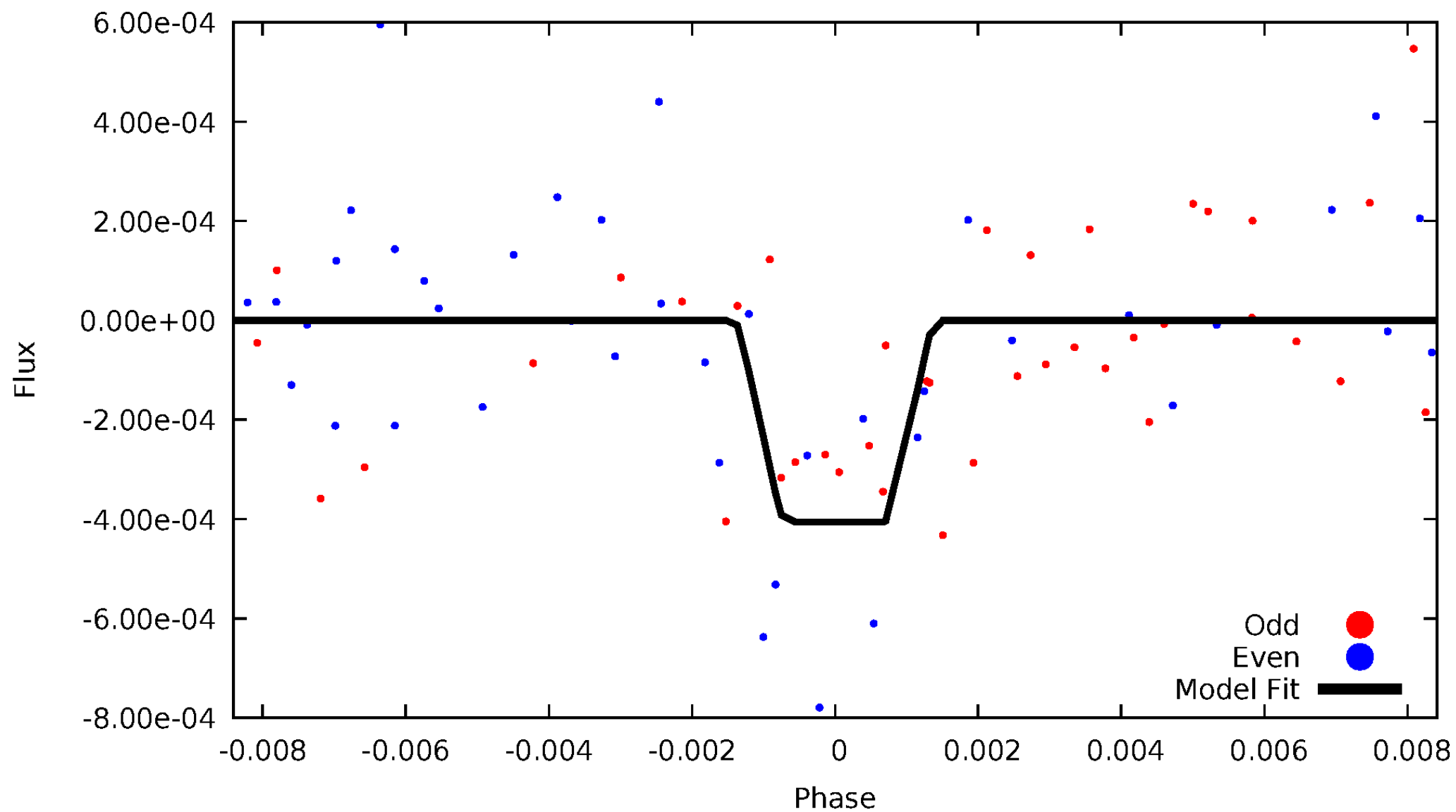
DV Odd/Even

TCE 010226448-04



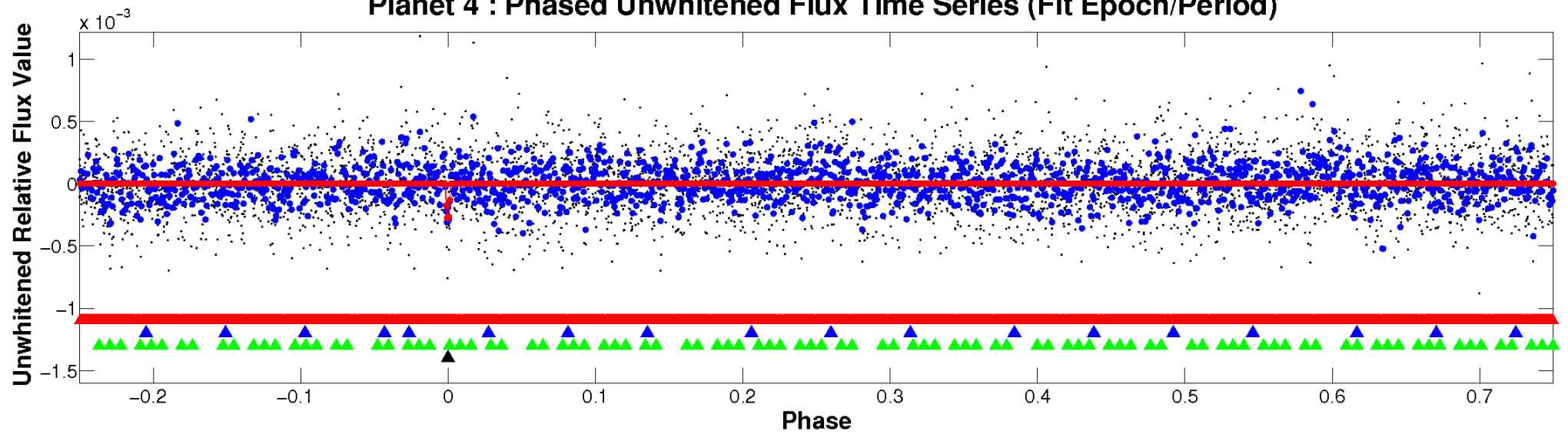
ALT Odd/Even

TCE 010226448-04

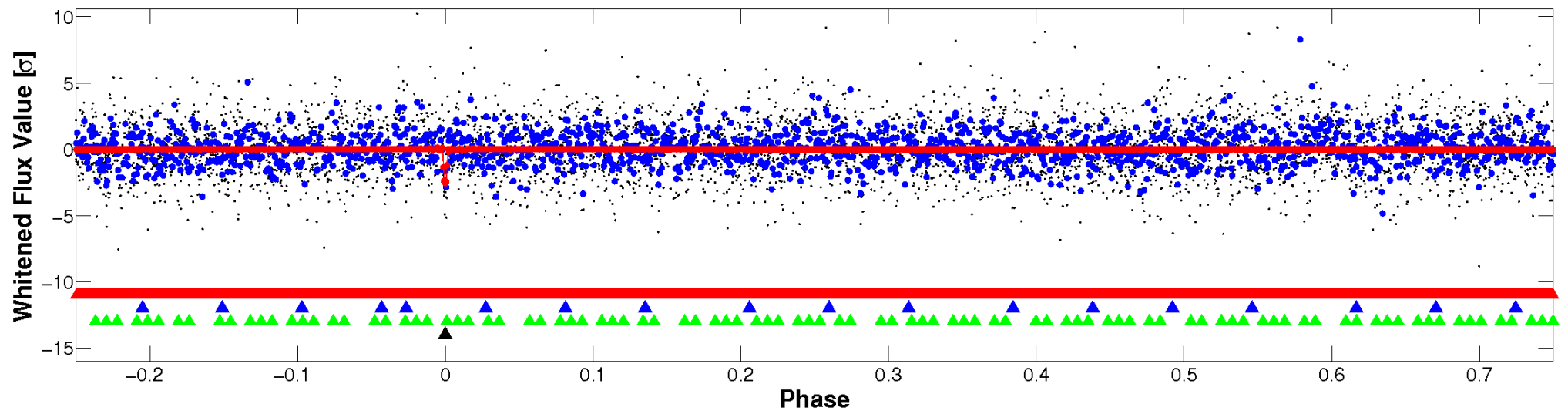


Non-Whitened Vs. Whitened Light Curve

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

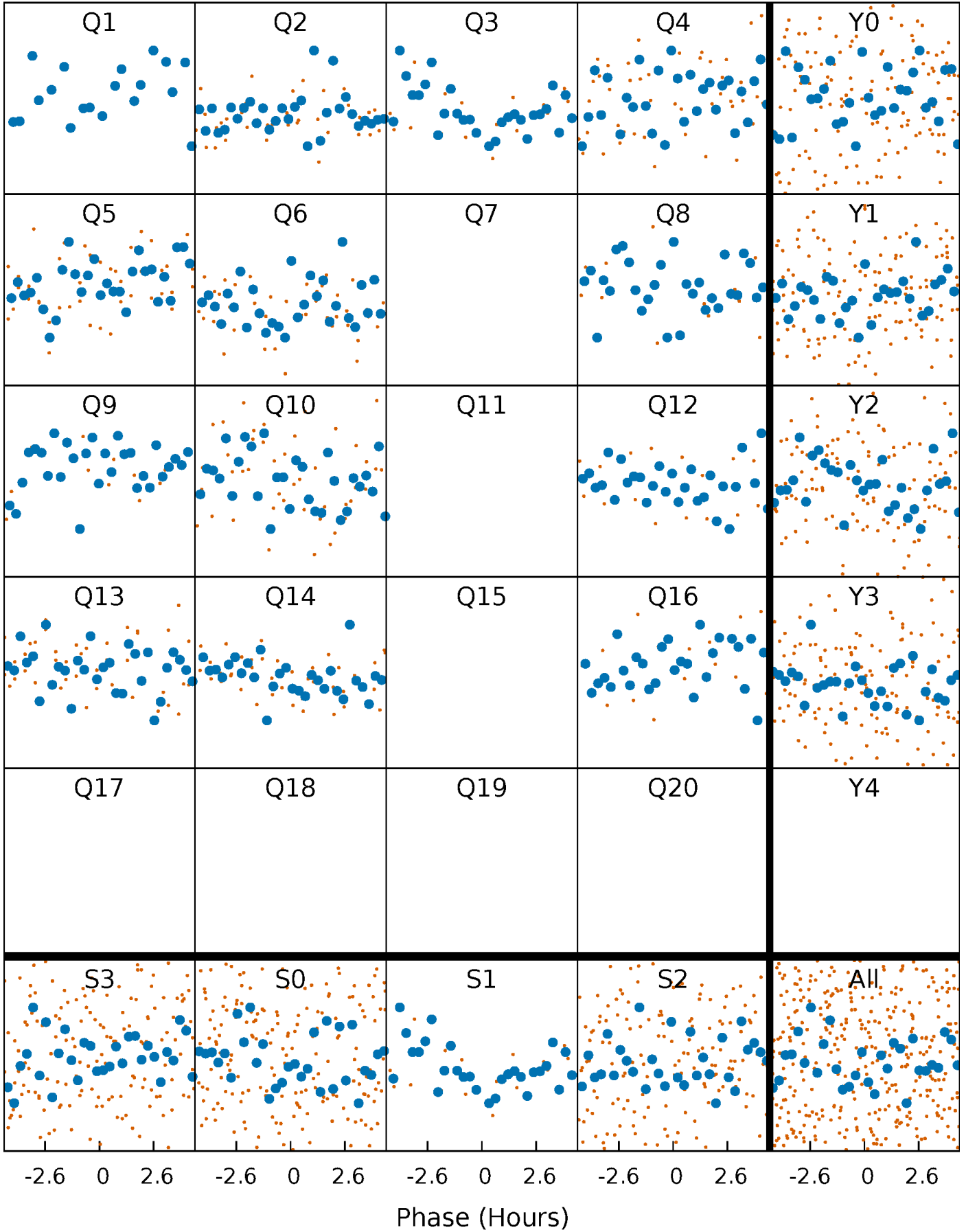


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



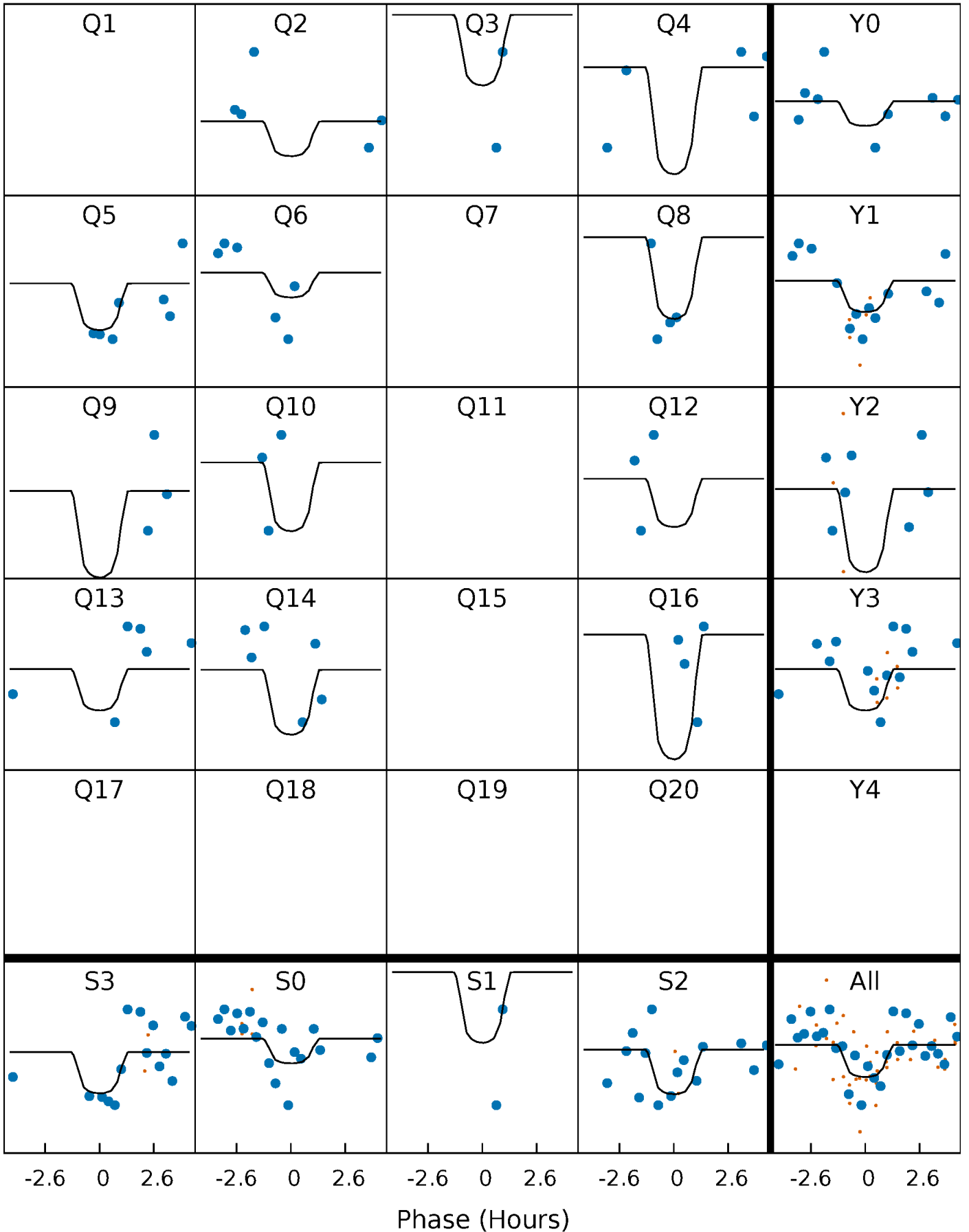
PDC Quarter-Phased Transit Curves

TCE 010226448-04 P= 33.297792 Days $T_0=154.719634$ (BKJD)



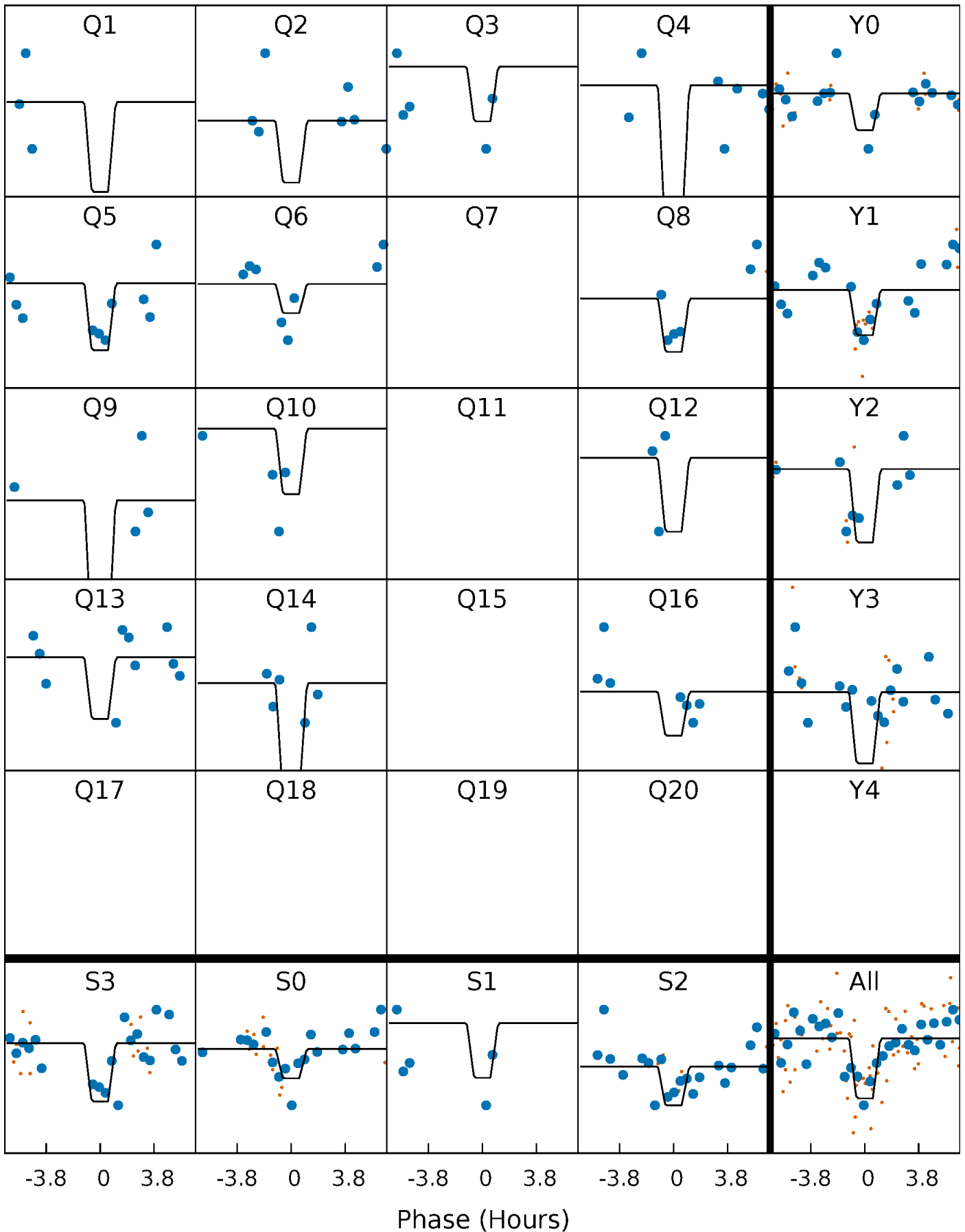
DV Quarter-Phased Transit Curves

TCE 010226448-04 P= 33.297792 Days $T_0=154.719634$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

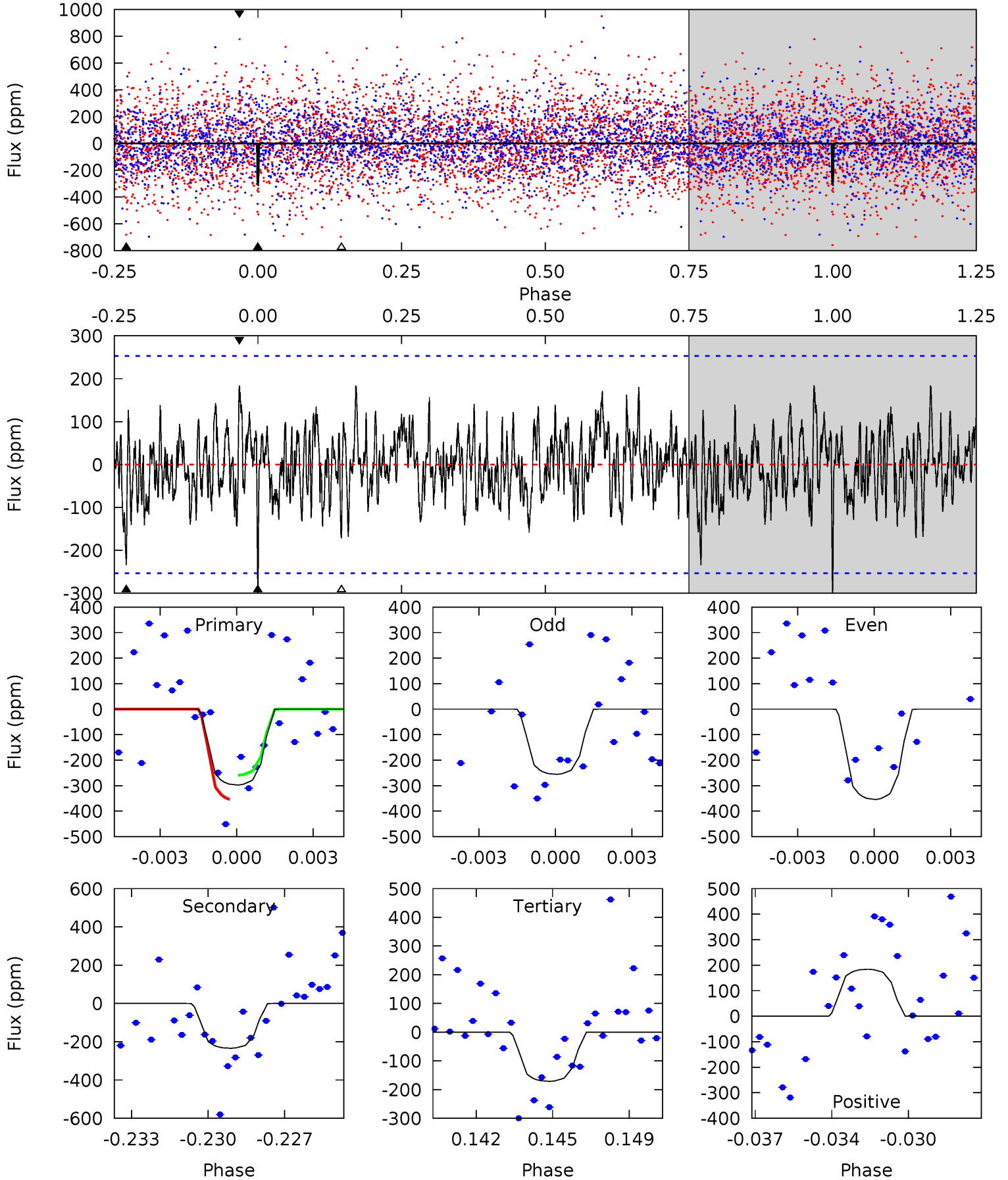
TCE 010226448-04 P= 33.297127 Days $T_0=154.725820$ (BKJD)



DV Model-Shift Uniqueness Test

010226448-04, P = 33.297792 Days, E = 121.421842 Days

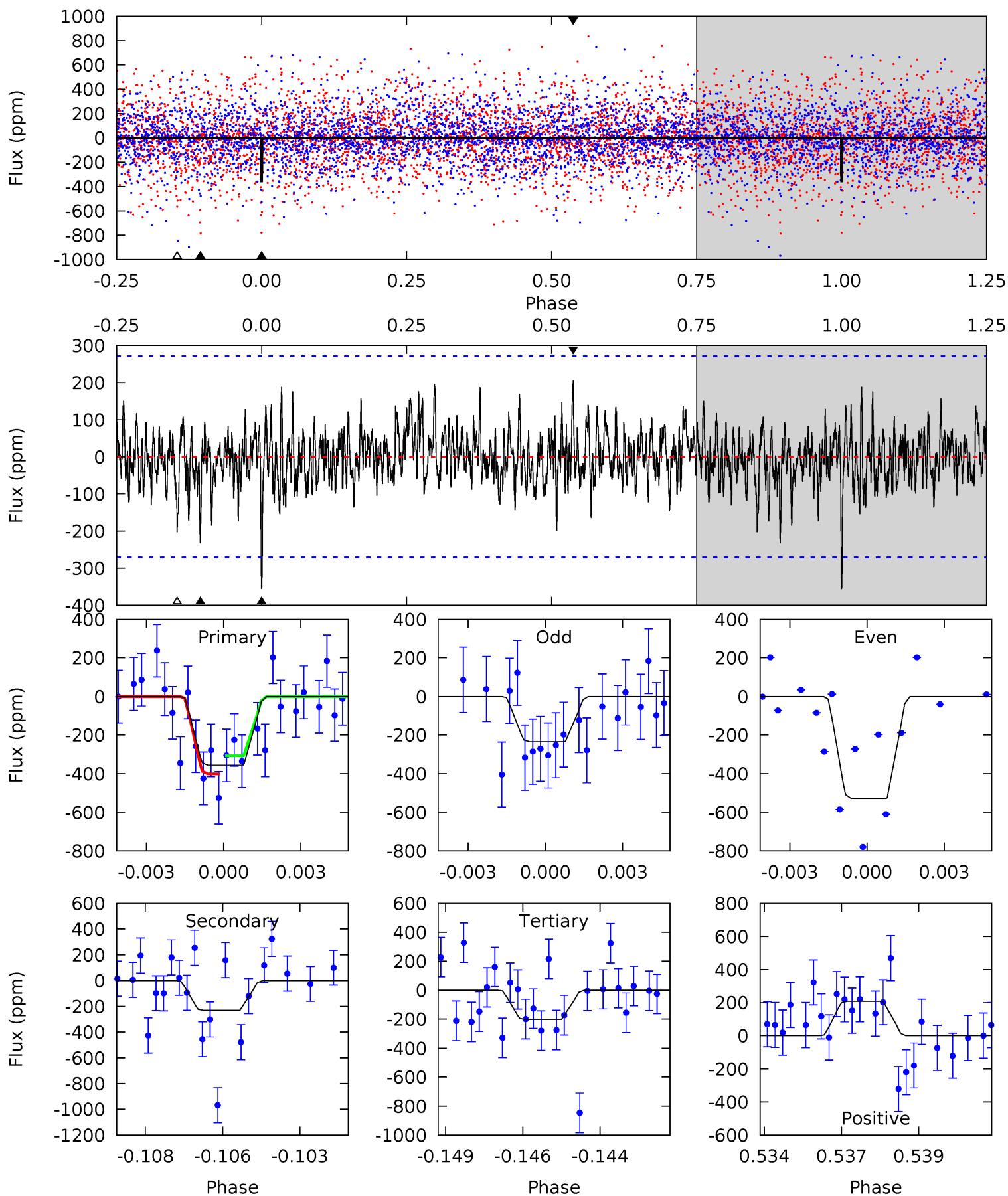
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.15	4.84	3.54	3.81	5.23	2.93	1.32	2.61	2.35	1.30	1.03	1.00	0.93	0.38	0.96



Alt Model-Shift Uniqueness Test

010226448-04, P = 33.297127 Days, E = 121.428693 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.91	4.51	3.94	4.03	5.27	3.00	1.19	2.98	2.89	0.58	0.49	2.90	0.96	0.37	0.92



Stellar Parameters For KIC 010226448

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5808^{+145}_{-159}	$4.434^{+0.101}_{-0.188}$	$-0.240^{+0.300}_{-0.300}$	$0.951^{+0.251}_{-0.135}$	$0.895^{+0.111}_{-0.091}$	$1.467^{+0.665}_{-0.737}$
	+2%/-3%	+2%/-4%	+125%/-125%	+26%/-14%	+12%/-10%	+45%/-50%
Source	PHO1	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 010226448-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-234 ± 48	$2.59^{+2.29}_{-1.65}$	797^{+56}_{-37}	4739^{+3164}_{-1011}	725^{+4667}_{-521}
Alt.	-232 ± 51	$2.89^{+2.22}_{-1.95}$	799^{+52}_{-43}	4532^{+3124}_{-821}	586^{+4539}_{-402}

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 $A_{obs} \gg 1.0$

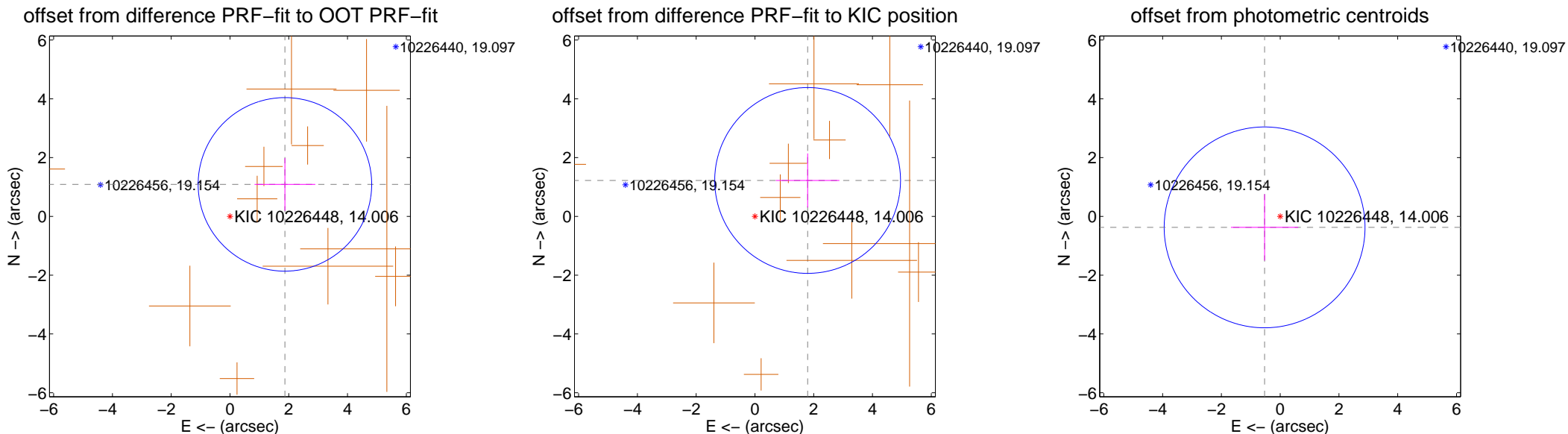
DV Centroid Data

Supplemental centroid analysis for 010226448-04. Kepler magnitude: 14.01. Transit SNR 9.17

There are 0 quarters with good PRF difference image offsets

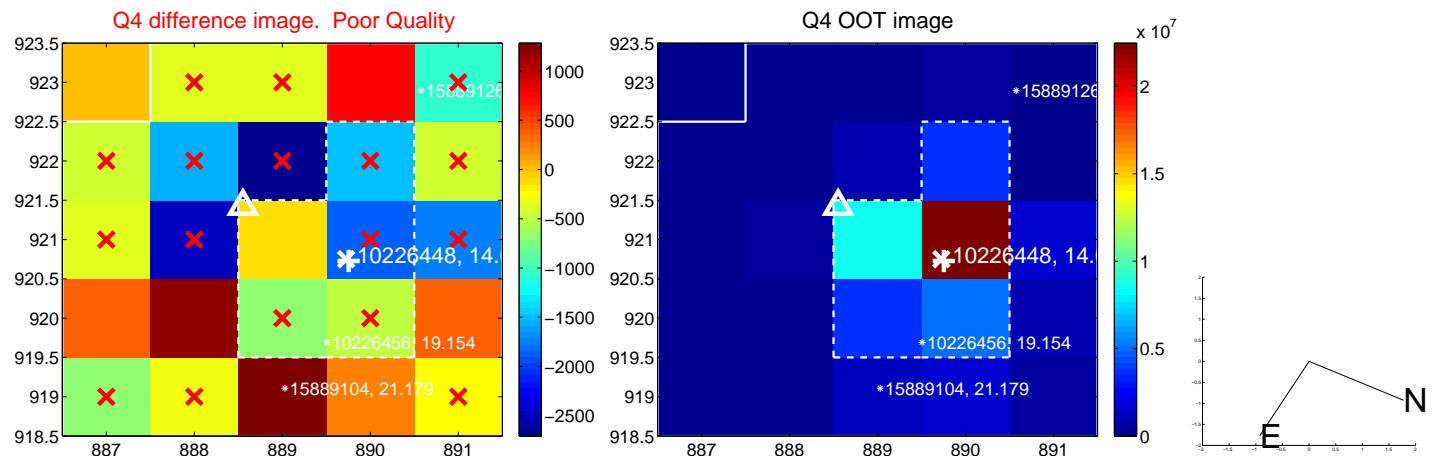
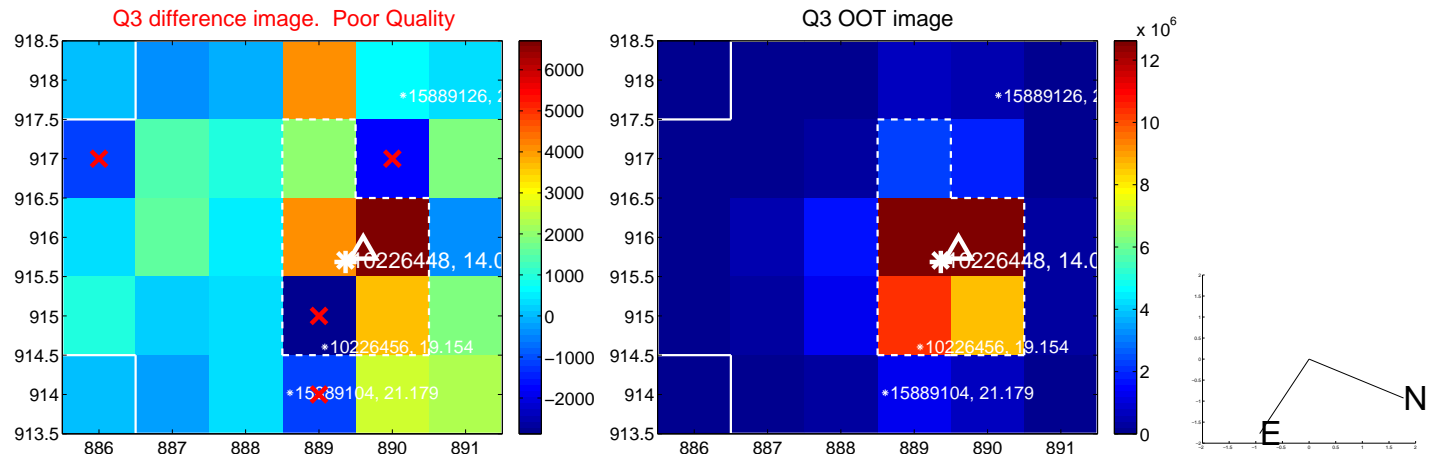
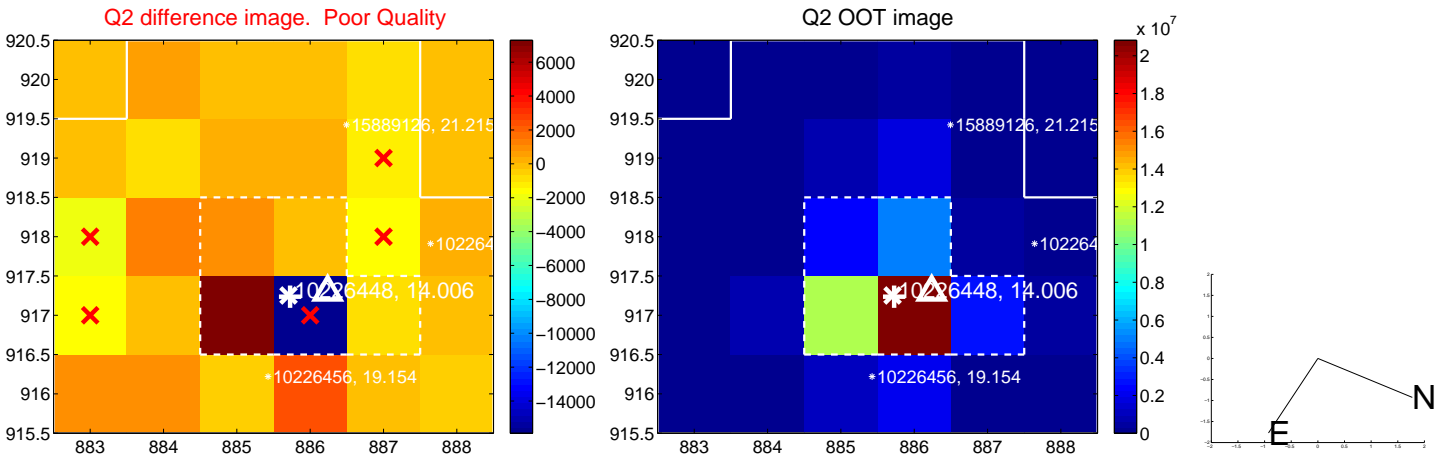
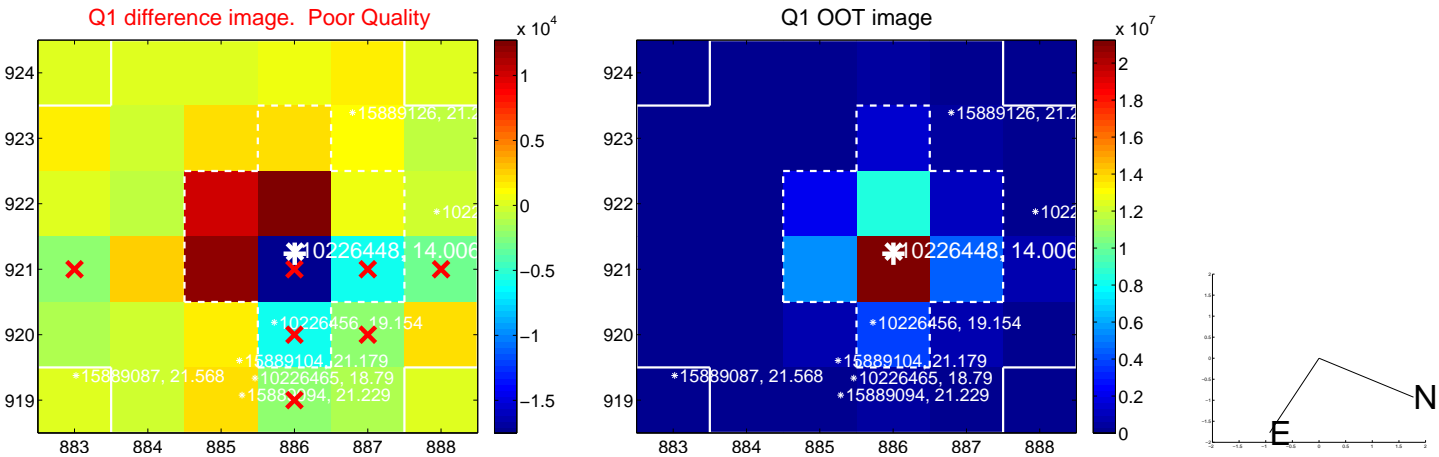
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.163 ± 0.984	2.20	-1.869 ± 1.033	1.089 ± 0.895
PRF-fit source offset from KIC position	2.169 ± 1.054	2.06	-1.793 ± 1.082	1.222 ± 0.920
photometric centroid source offset	0.65 ± 1.14	0.57	0.53 ± 1.14	-0.37 ± 1.13

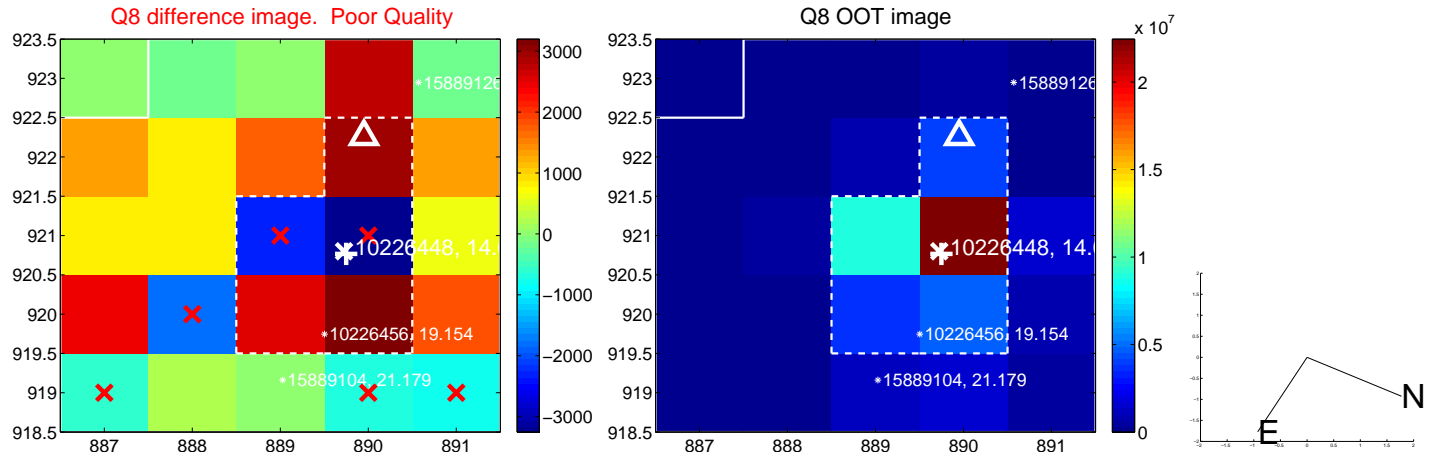
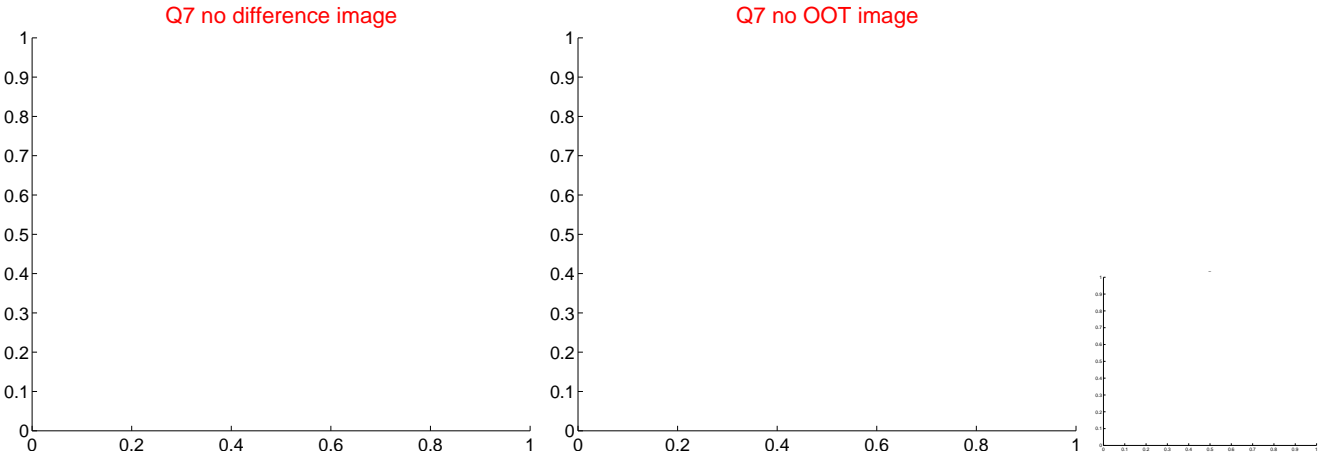
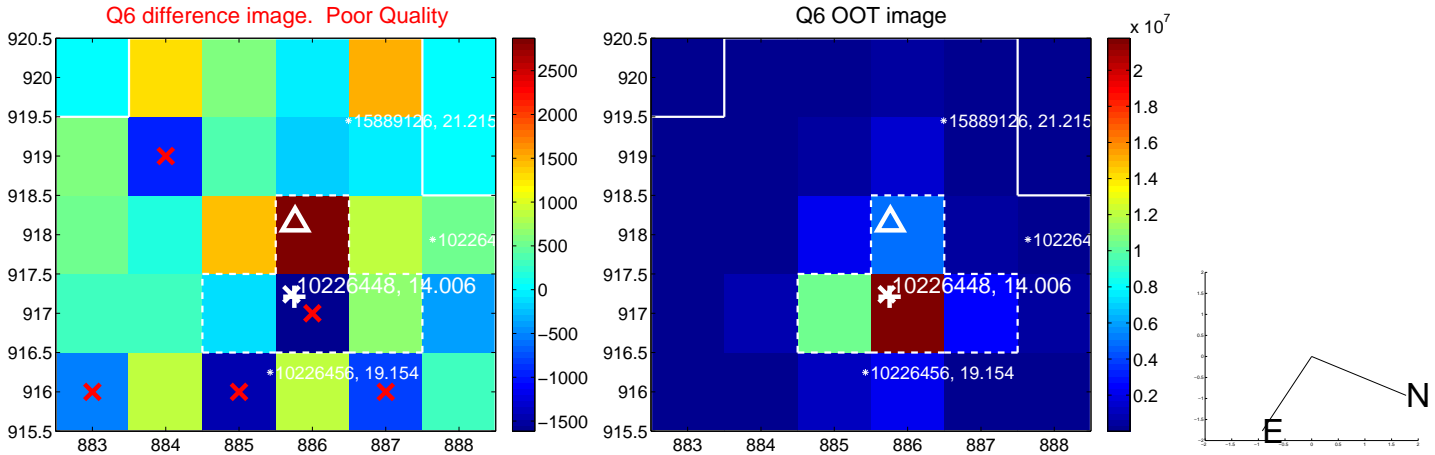
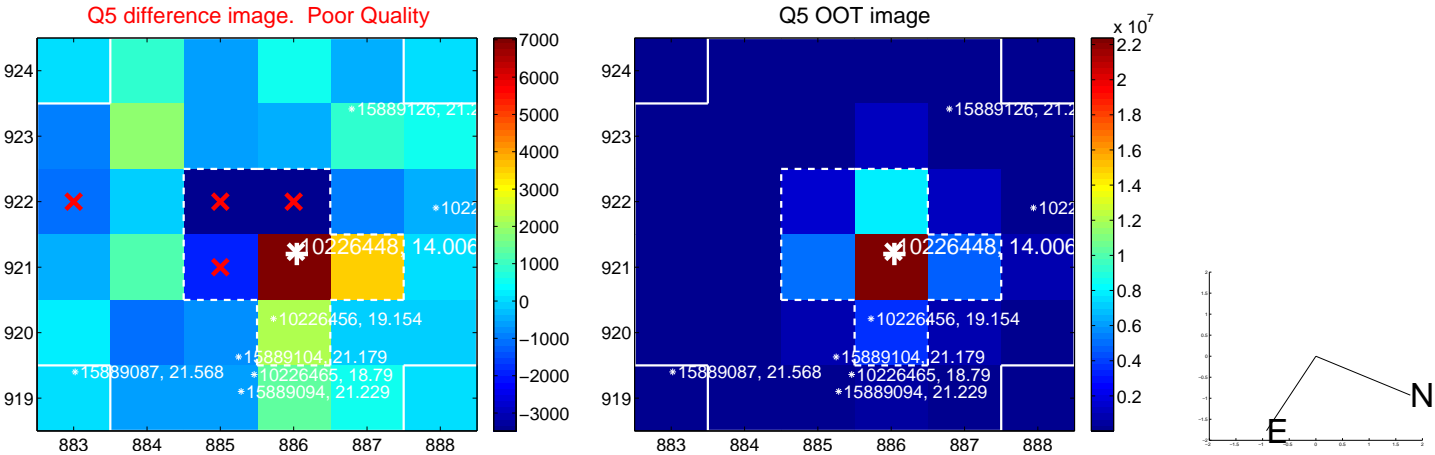


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

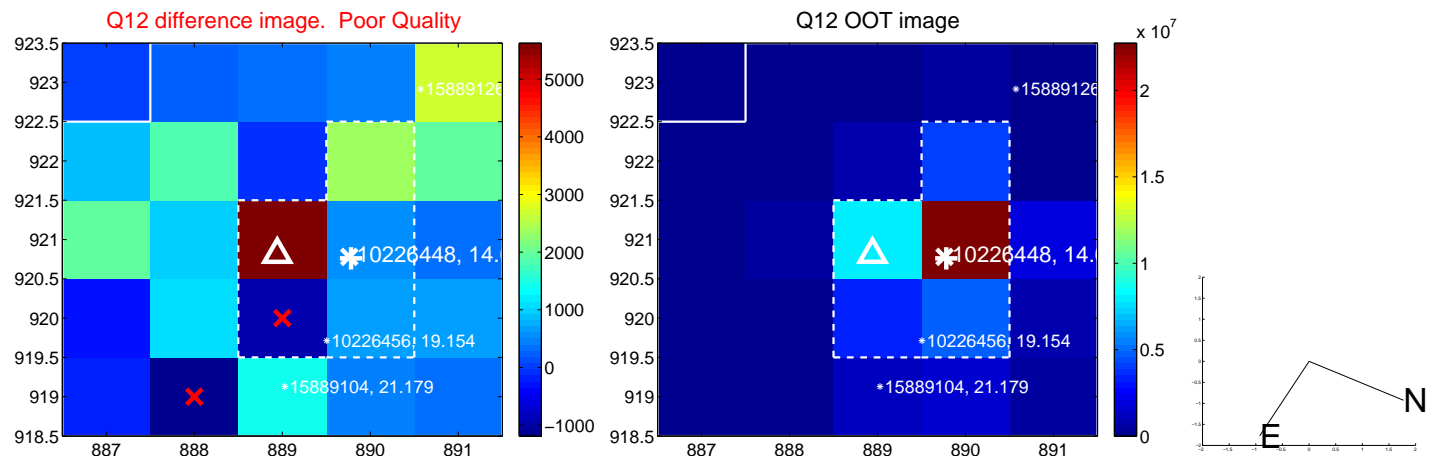
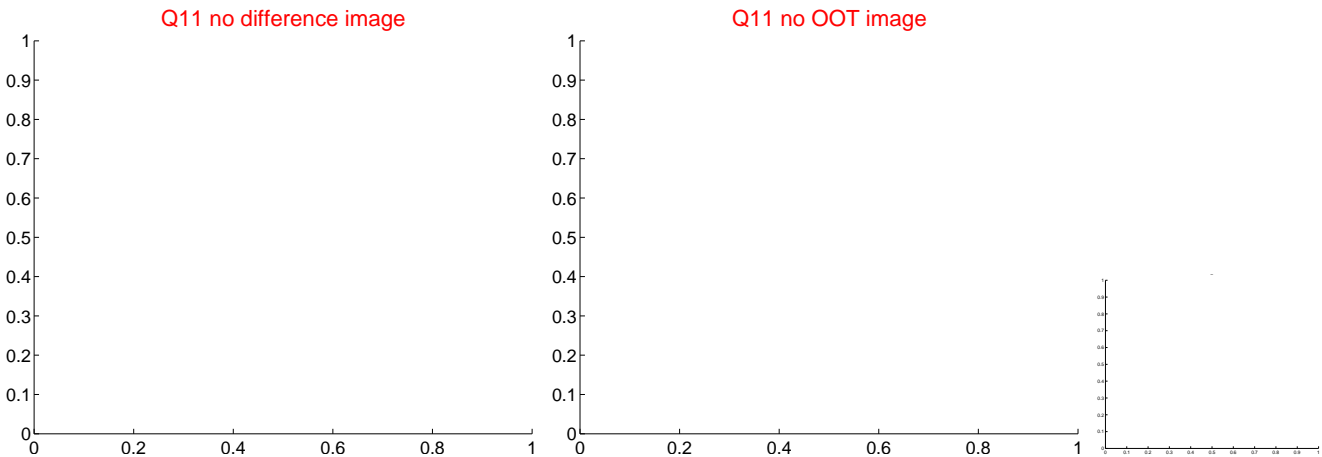
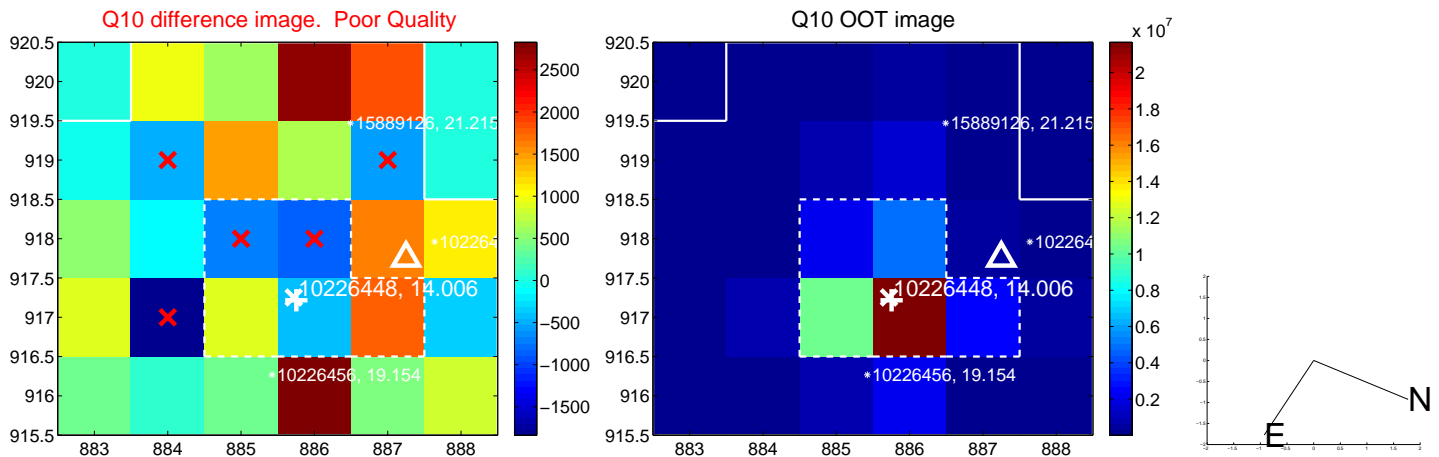
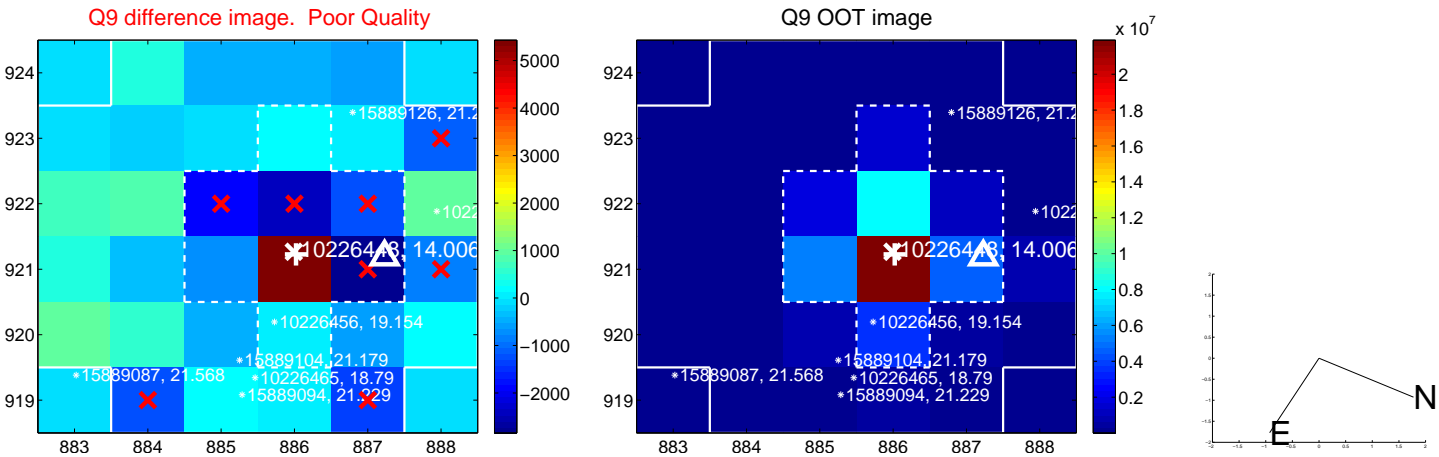
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



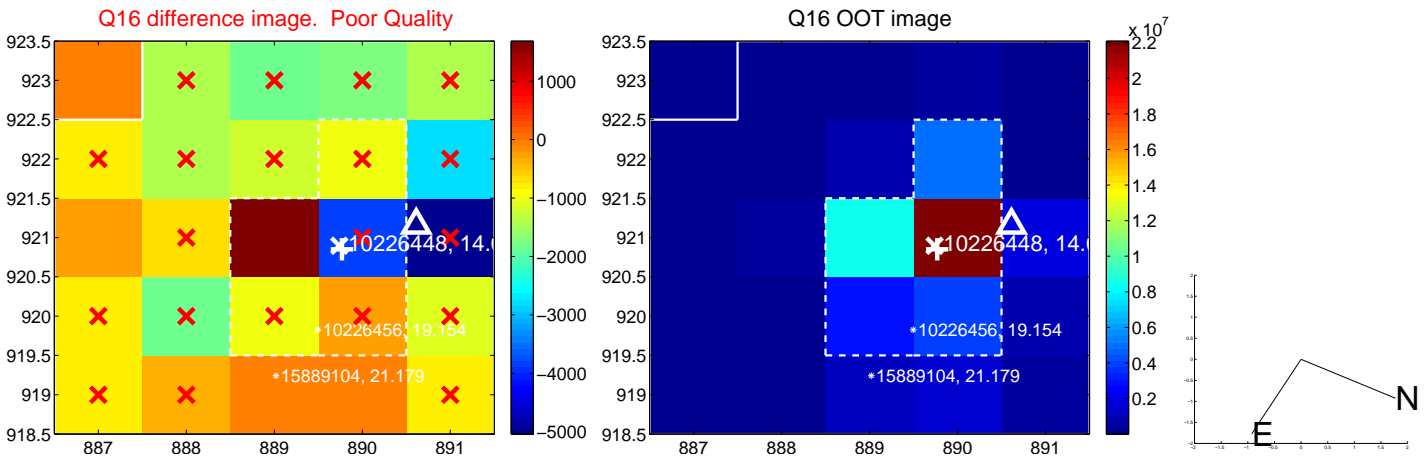
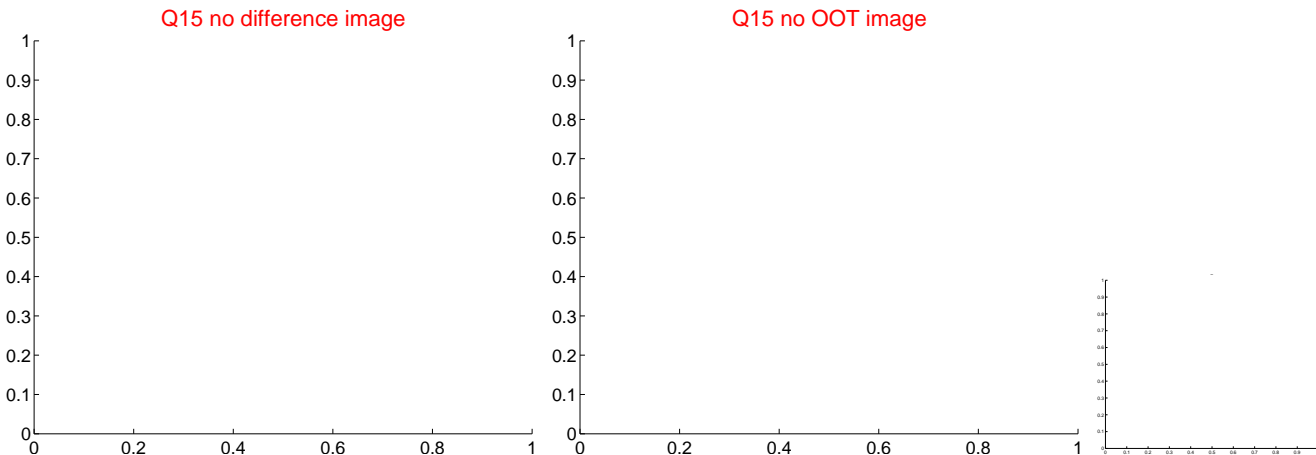
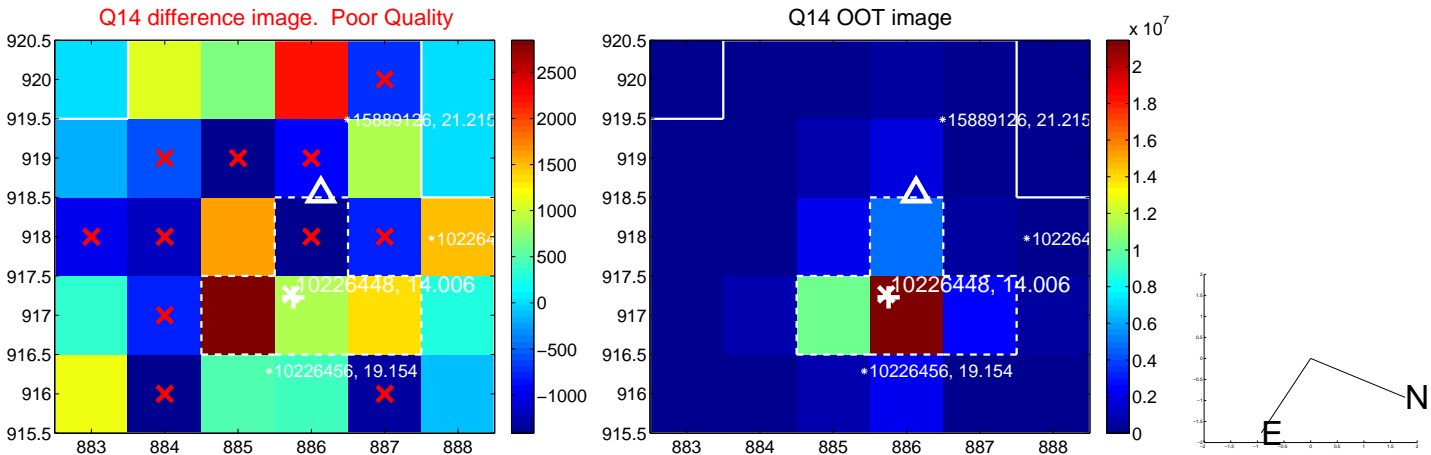
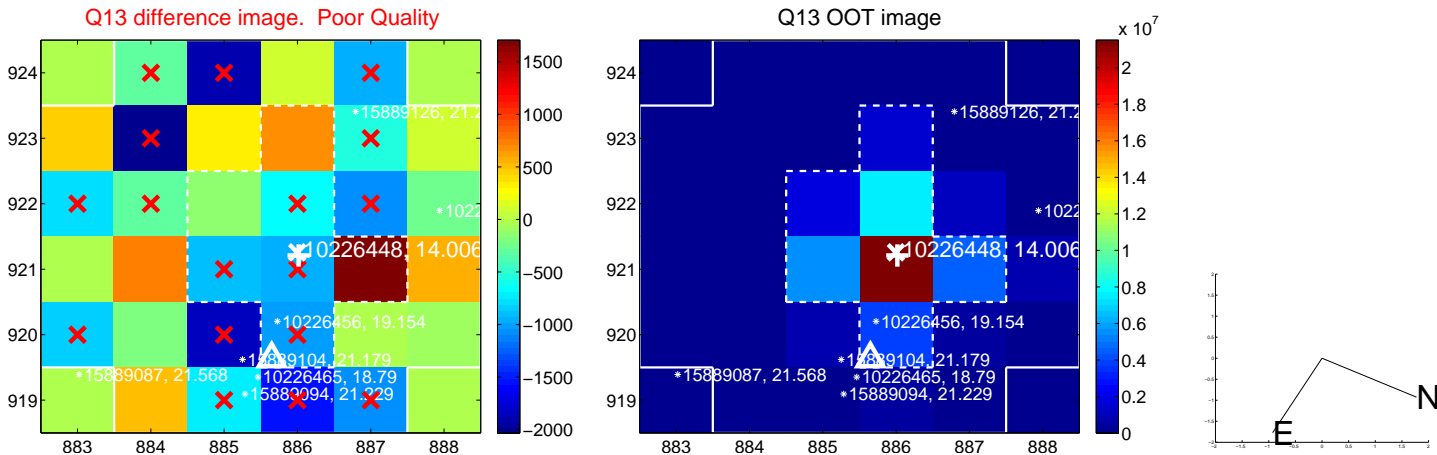
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



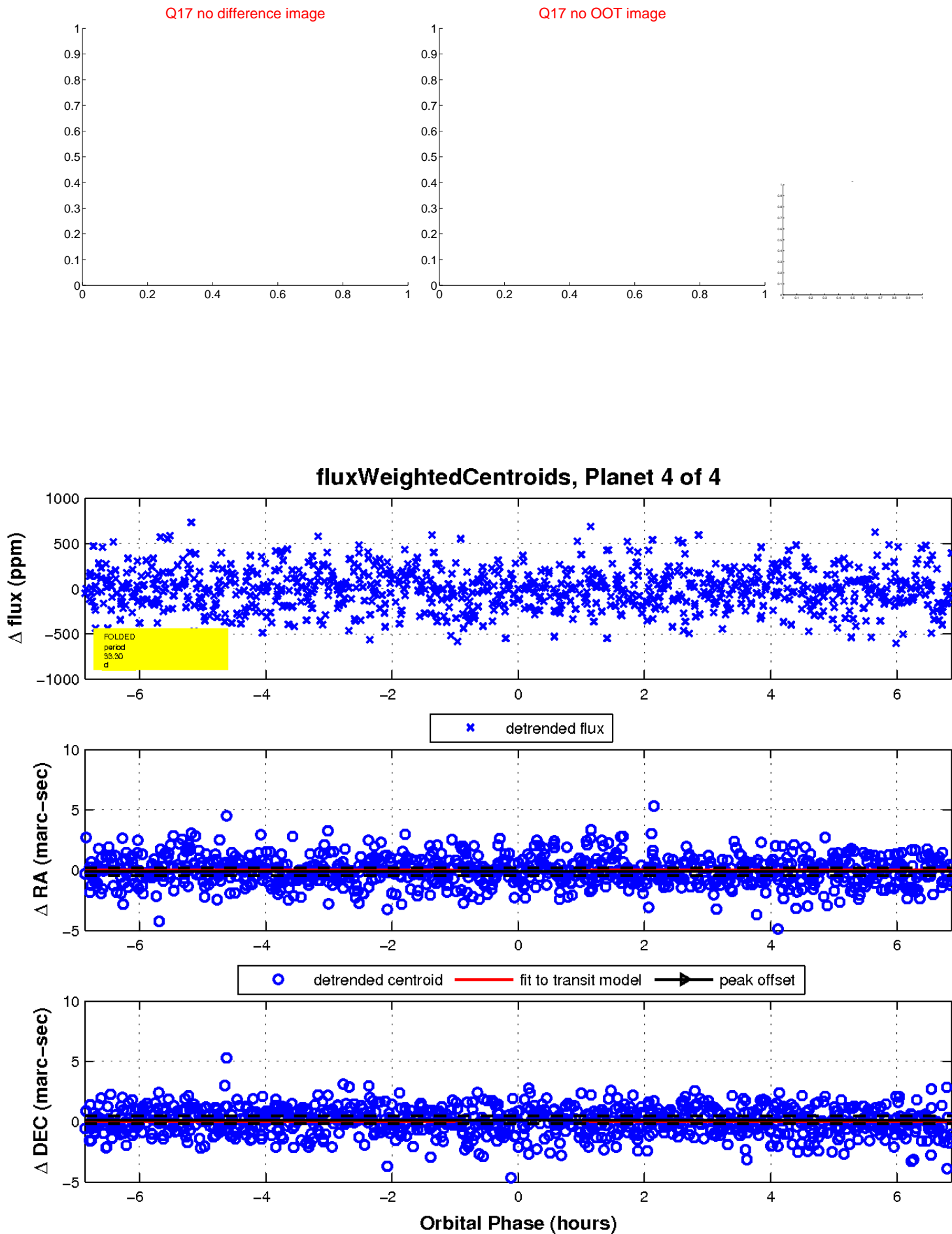
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

