

KIC 007102227

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})
007102227-01	OBS	1360.01	36.770511	164.290676	1351.3	4.784	32.5	35.5	0.76	5142	3.22	8.62
007102227-02	OBS	1360.02	14.589298	141.936040	859.8	2.836	25.4	28.0	0.76	5142	2.88	29.56
007102227-03	OBS	1360.03	0.764008	132.229933	93.9	1.386	11.5	10.7	0.76	5142	0.89	1508.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007102227-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007102227-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007102227-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT

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

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

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

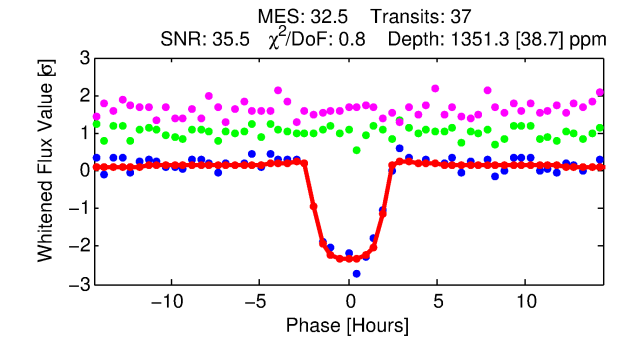
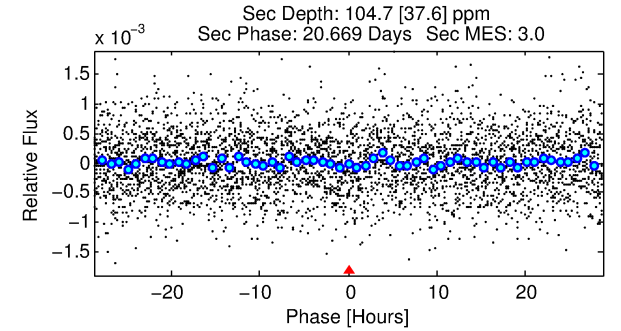
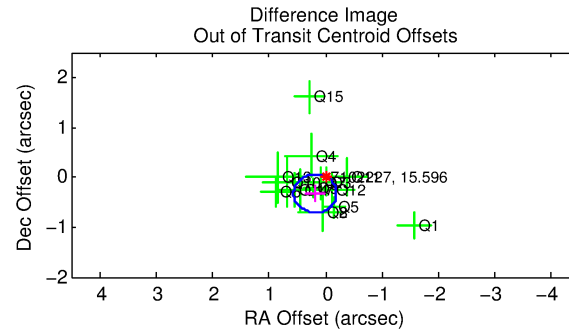
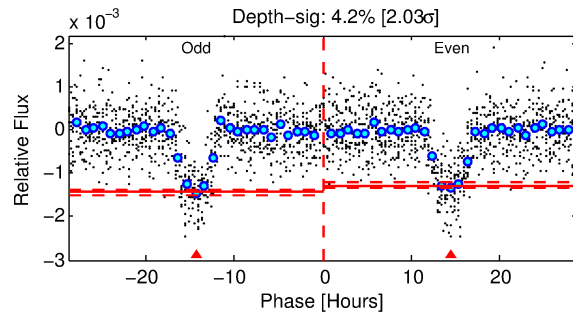
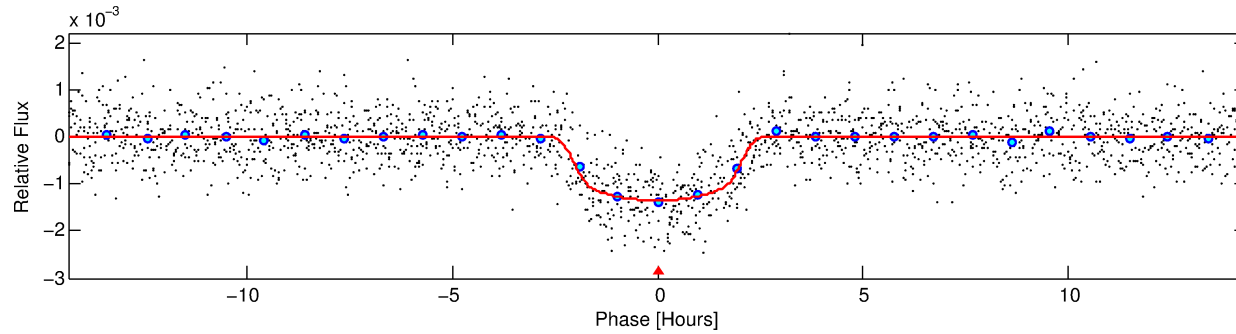
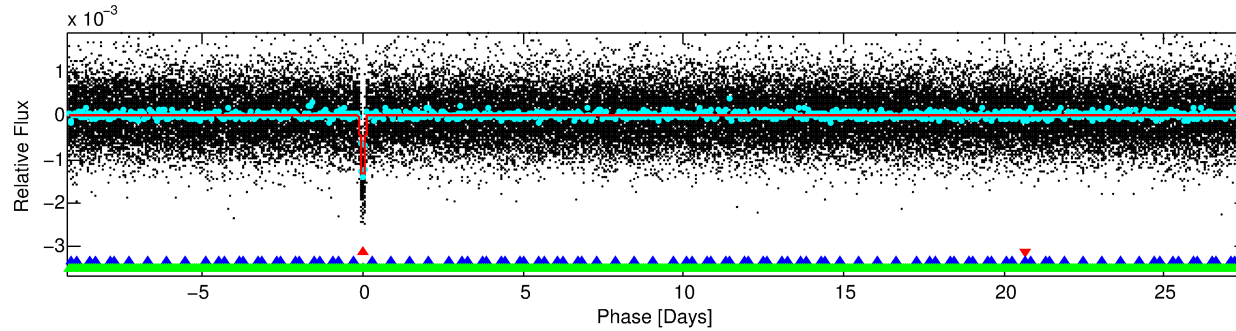
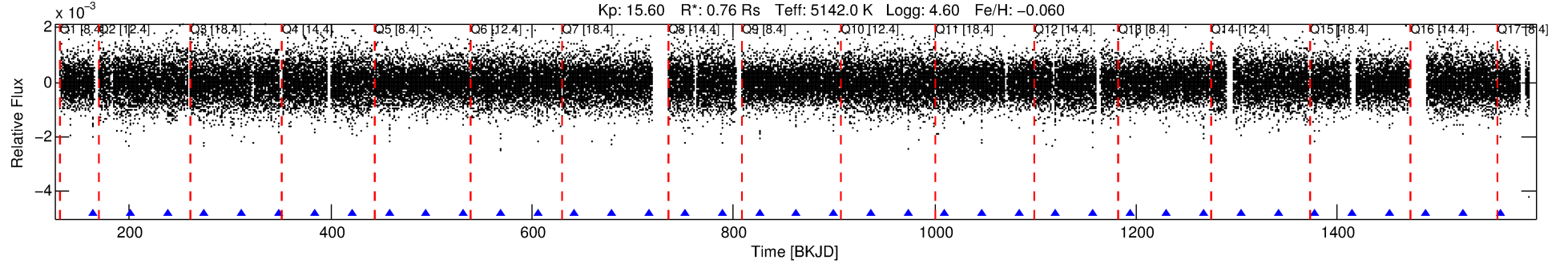
Ephemeris Match Information For 007102227-01

No Significant Match Found

DV One-Page Summary

KIC: 7102227 Candidate: 1 of 3 Period: 36.771 d
KOI: K01360.01 Name: Kepler-290c Corr: 0.994

Kp: 15.60 R*: 0.76 Rs Teff: 5142.0 K Logg: 4.60 Fe/H: -0.060



DV Fit Results:

Period = 36.77051 [0.00013] d
Epoch = 164.2907 [0.0028] BKJD
Rp/R* = 0.0391 [0.0025]
a/R* = 34.80 [7.93]
b = 0.85 [0.07]
Seff = 8.62 [1.67]
Teq = 437 [21] K
Rp = 3.22 [0.46] Re
a = 0.2035 [0.0217] AU
Ag = 230.27 [94.49] [2.43σ]
Teffp = 2631 [262] K [8.34σ]

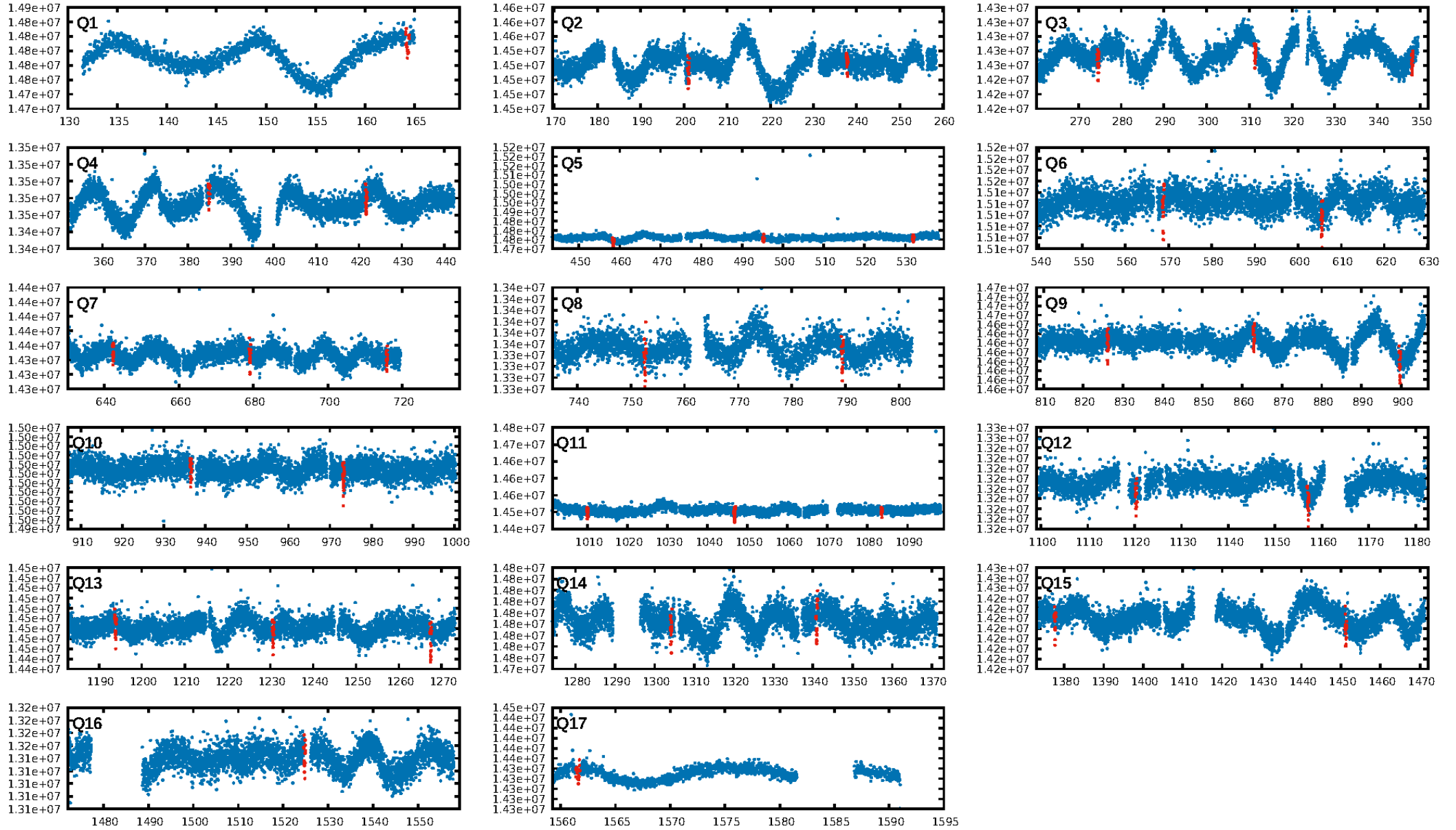
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [95.72σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 87.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.89e-217
RollingBand-fgt: 1.00 [35/35]
GhostDiagnostic-chr: 4.41
Centroid-sig: 30.0%
Centroid-so: 0.259 arcsec [0.80σ]
OotOffset-rm: 0.374 arcsec [2.92σ]
KicOffset-rm: 0.478 arcsec [3.20σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/16]

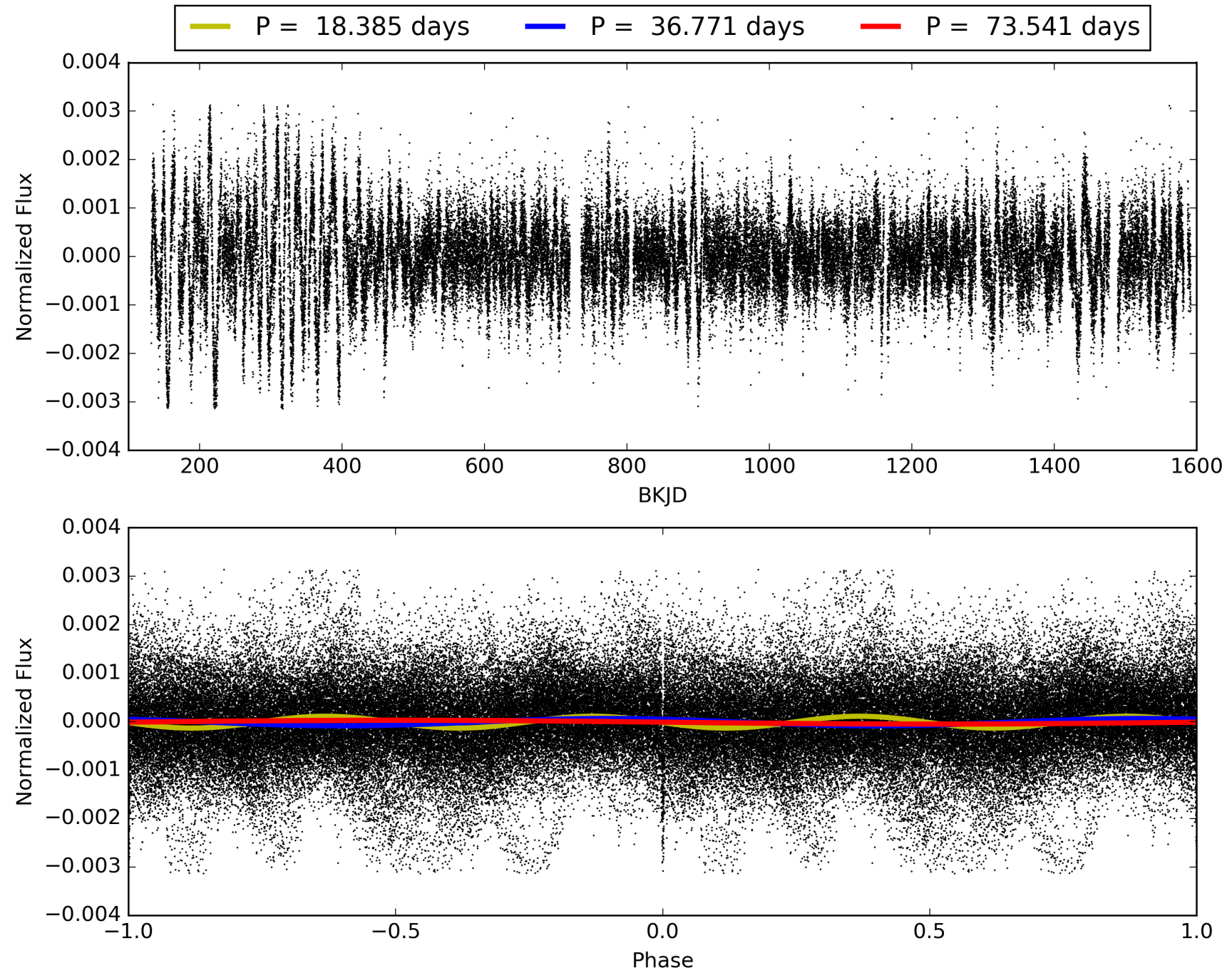
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:46:45 Z

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

TCE 007102227-01, PDC Light Curves

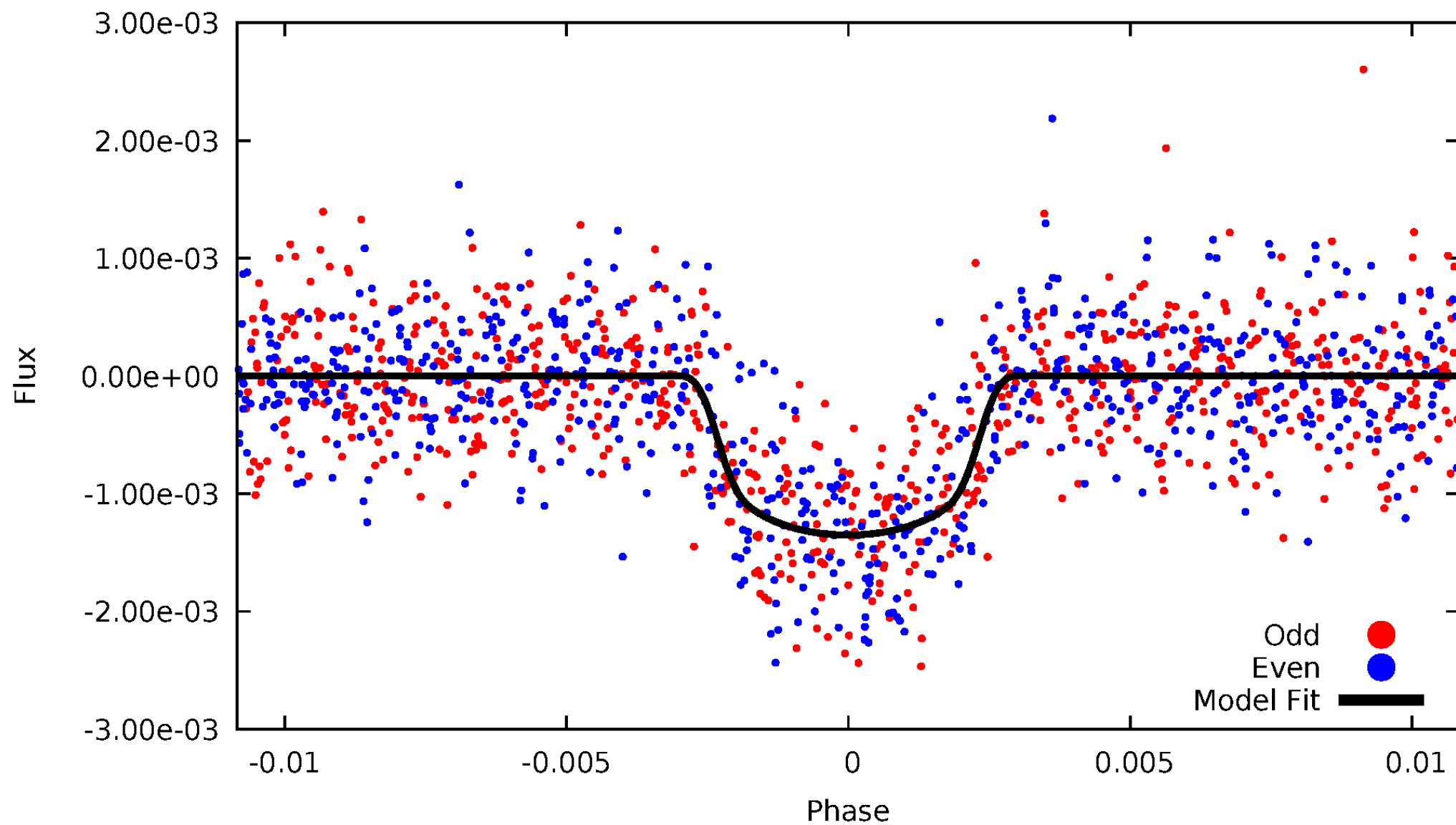


TCE 007102227-01



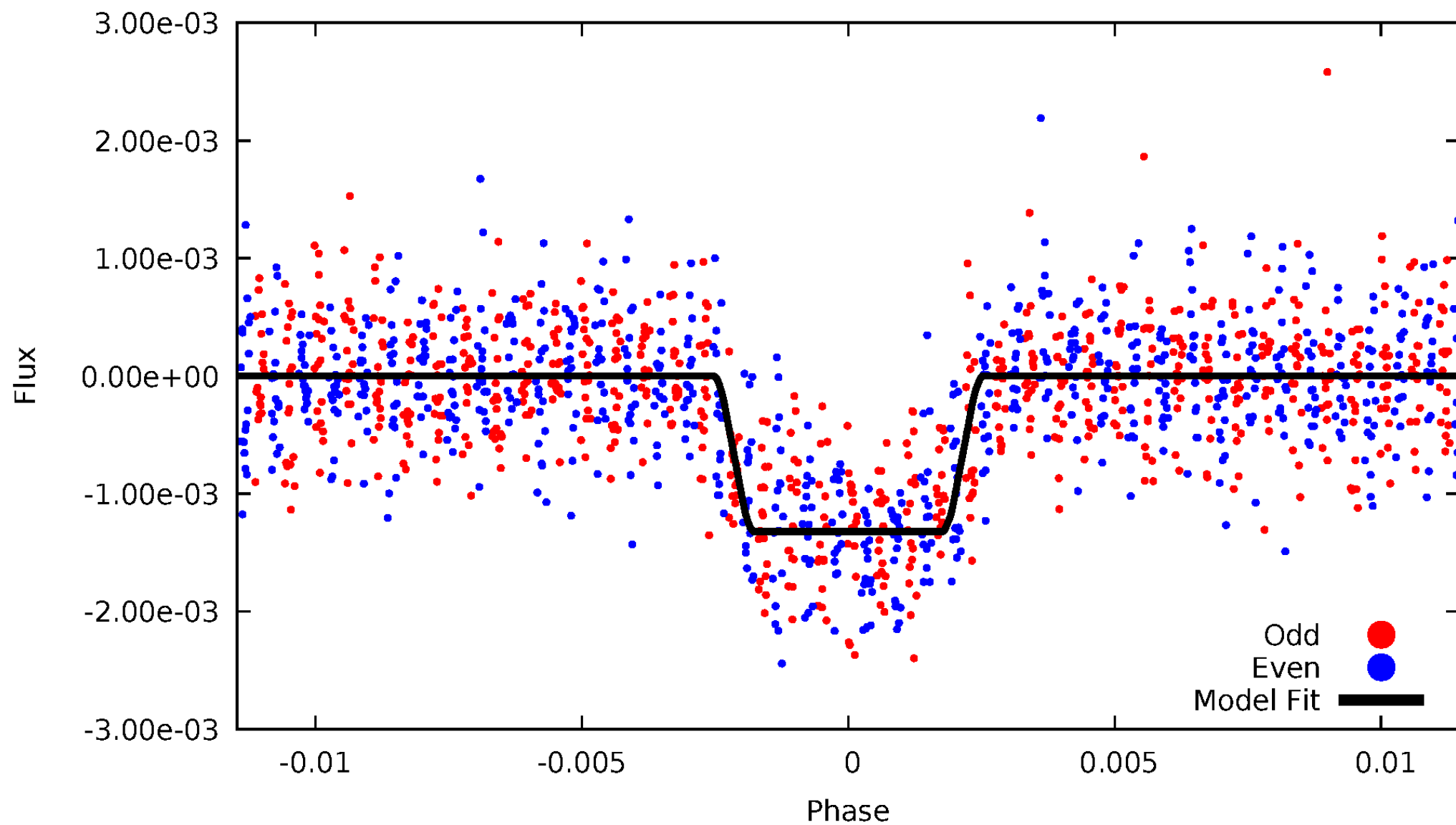
DV Odd/Even

TCE 007102227-01



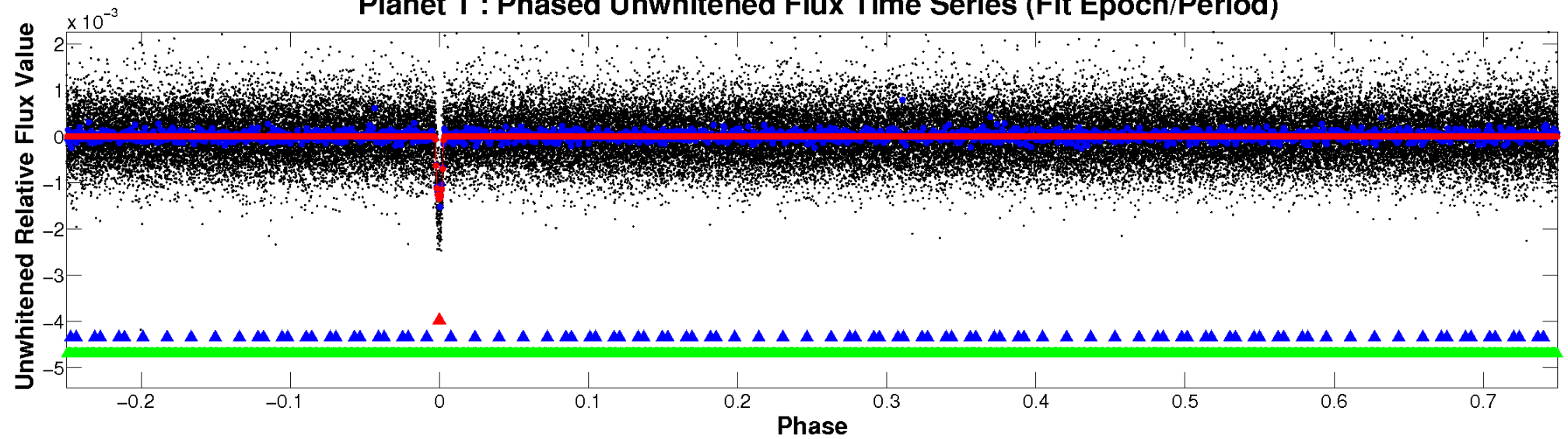
ALT Odd/Even

TCE 007102227-01

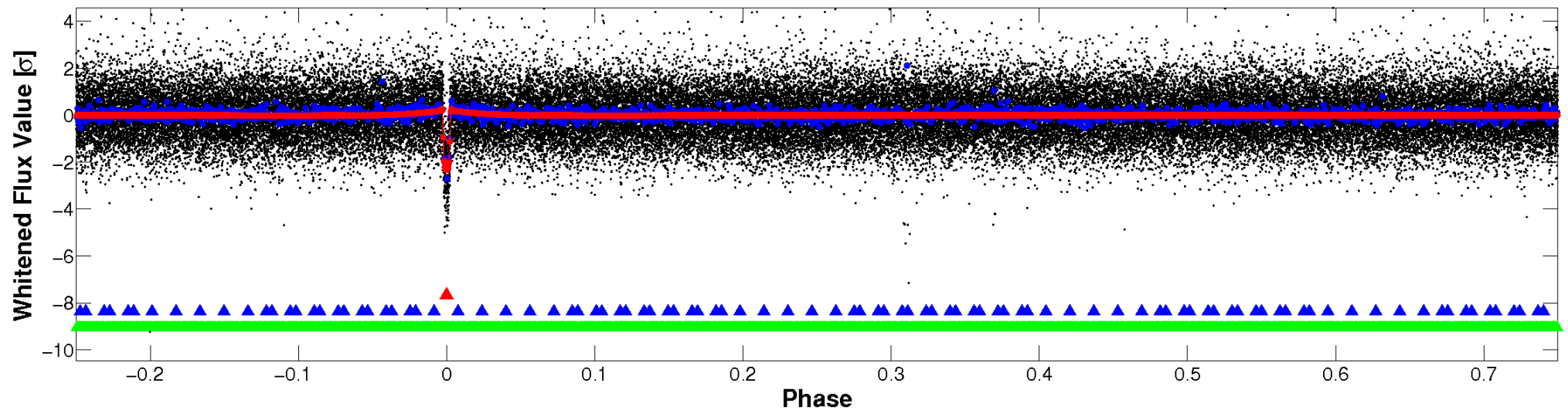


Non-Whitened Vs. Whitened Light Curve

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

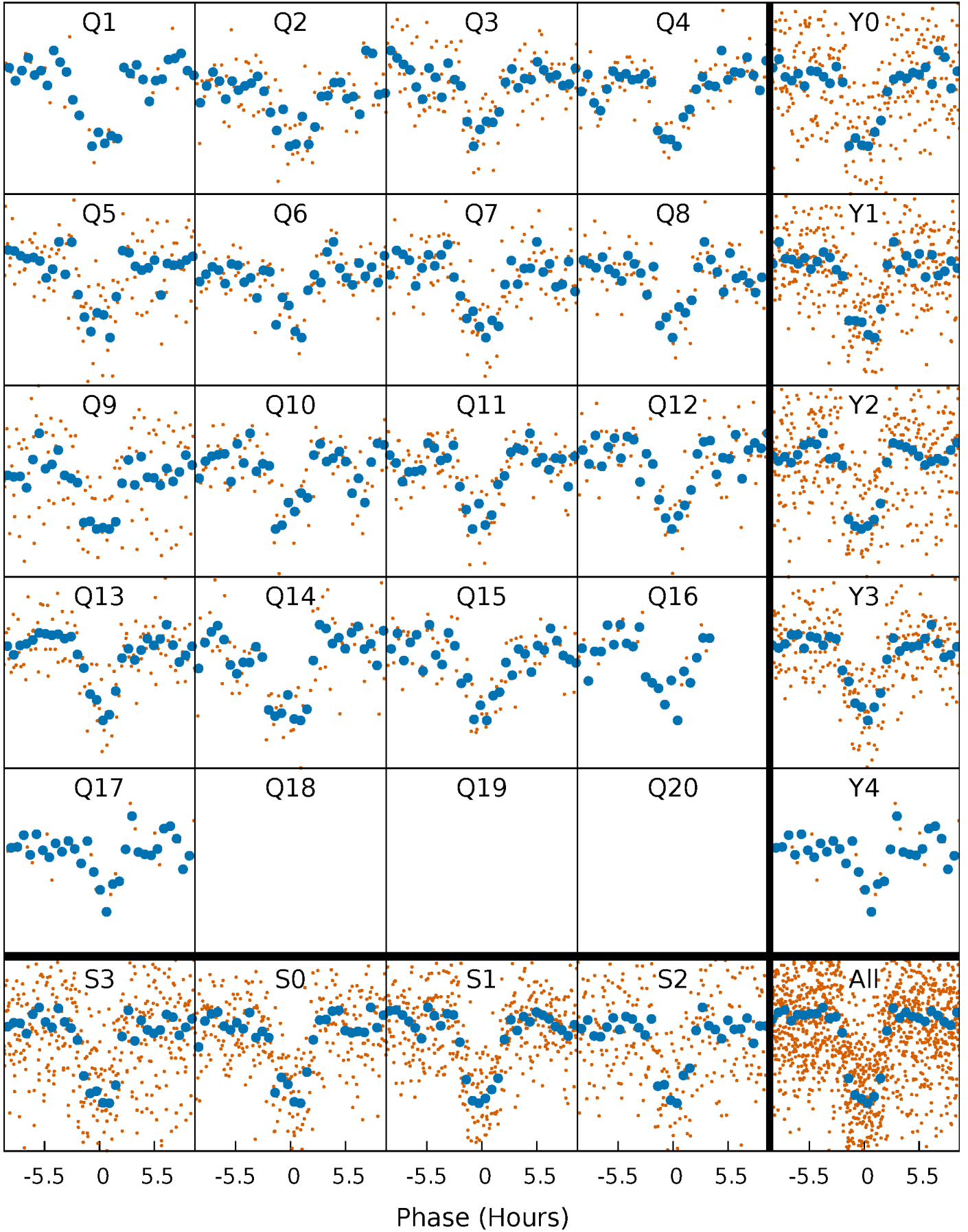


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



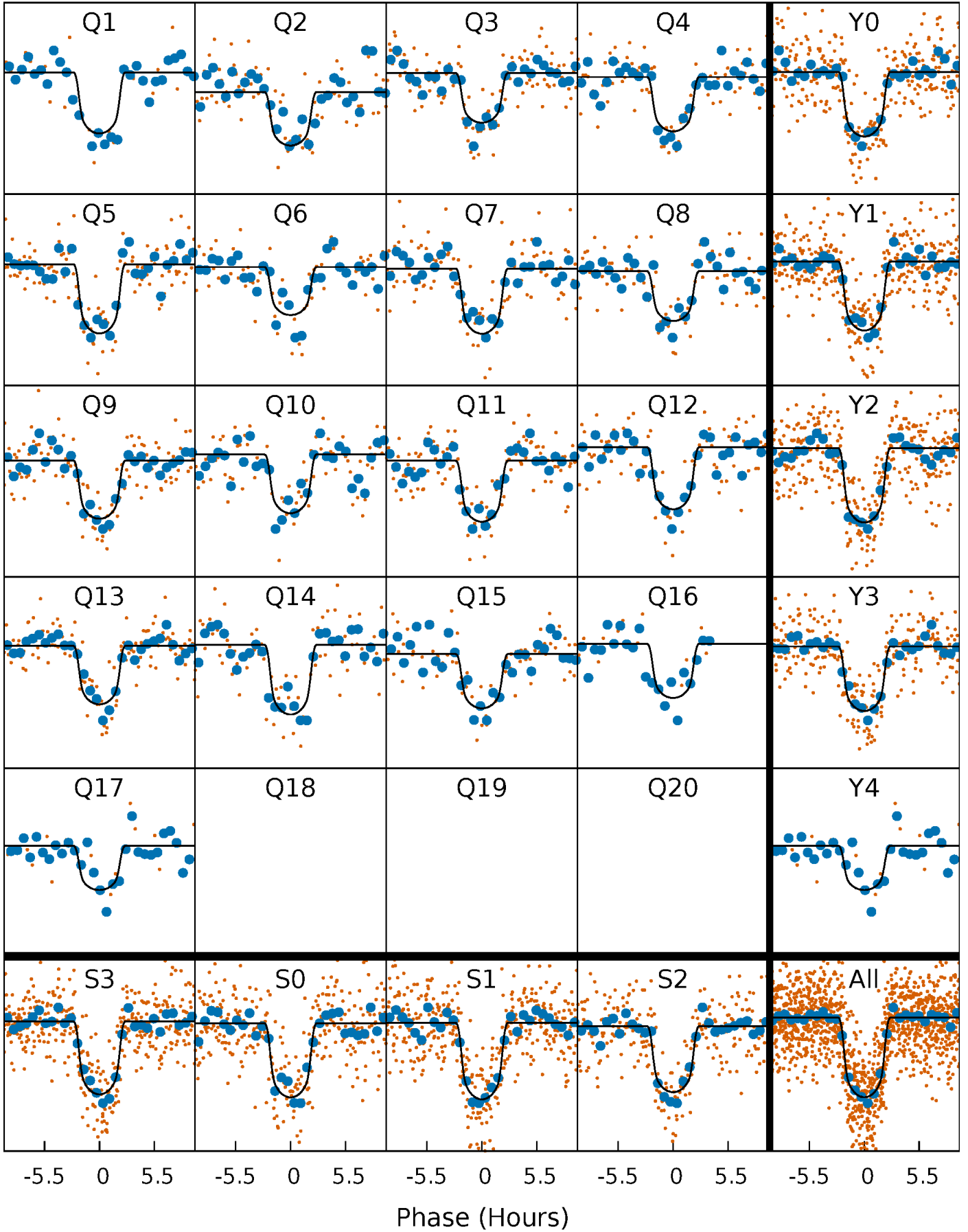
PDC Quarter-Phased Transit Curves

TCE 007102227-01 P= 36.770511 Days $T_0=164.290676$ (BKJD)



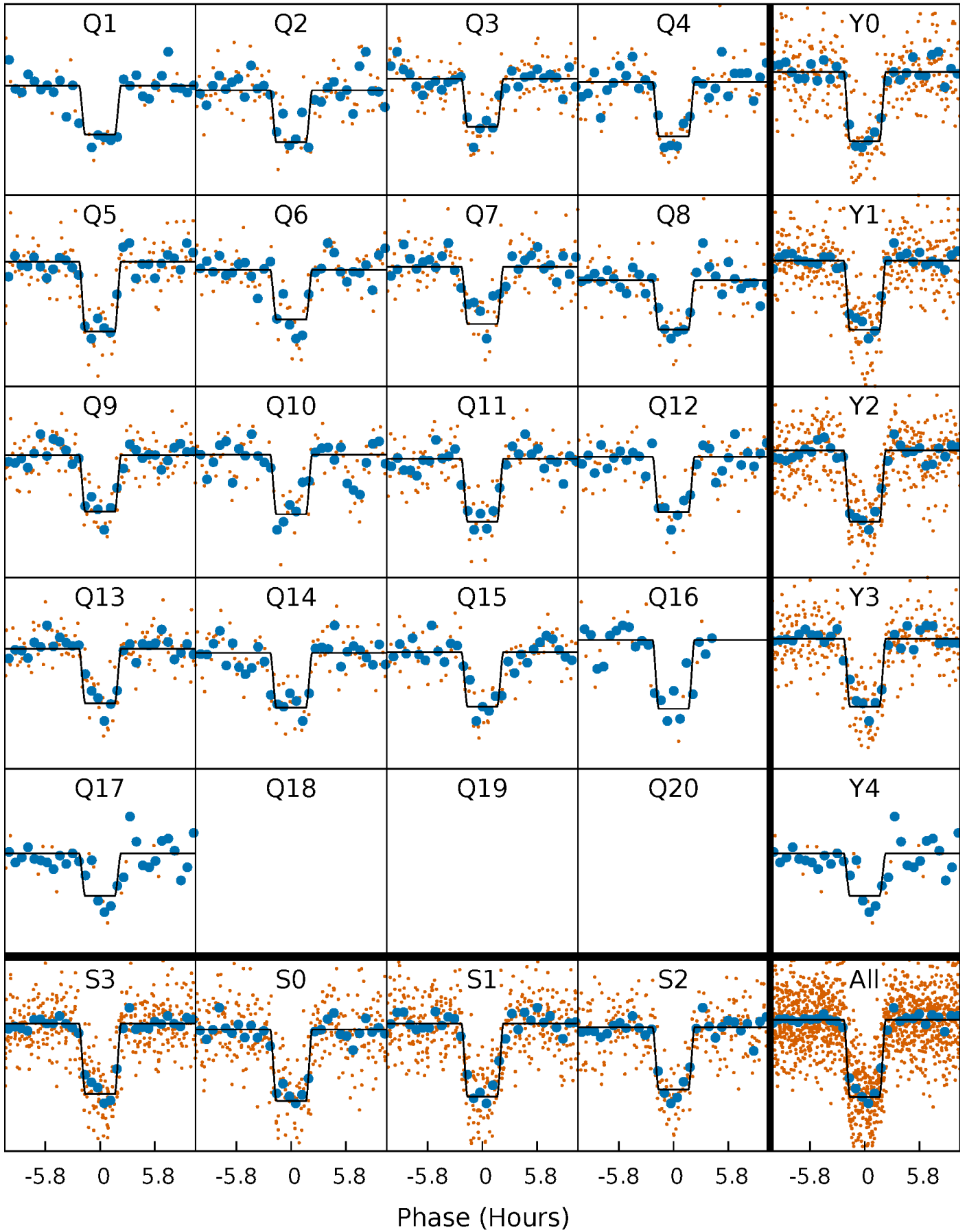
DV Quarter-Phased Transit Curves

TCE 007102227-01 P= 36.770511 Days $T_0=164.290676$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

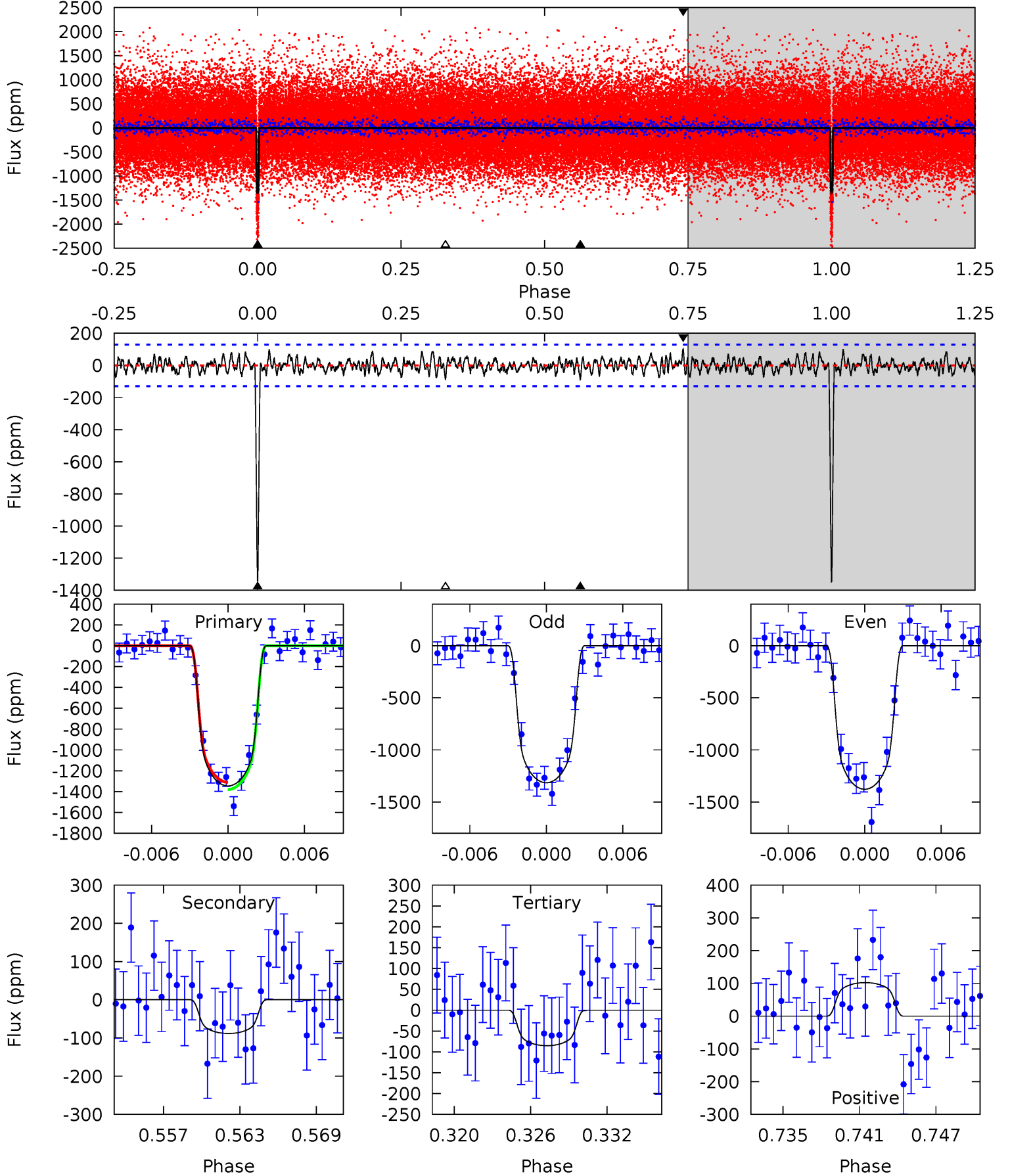
TCE 007102227-01 P= 36.770175 Days $T_0=164.296486$ (BKJD)



DV Model-Shift Uniqueness Test

007102227-01, P = 36.770511 Days, E = 127.520165 Days

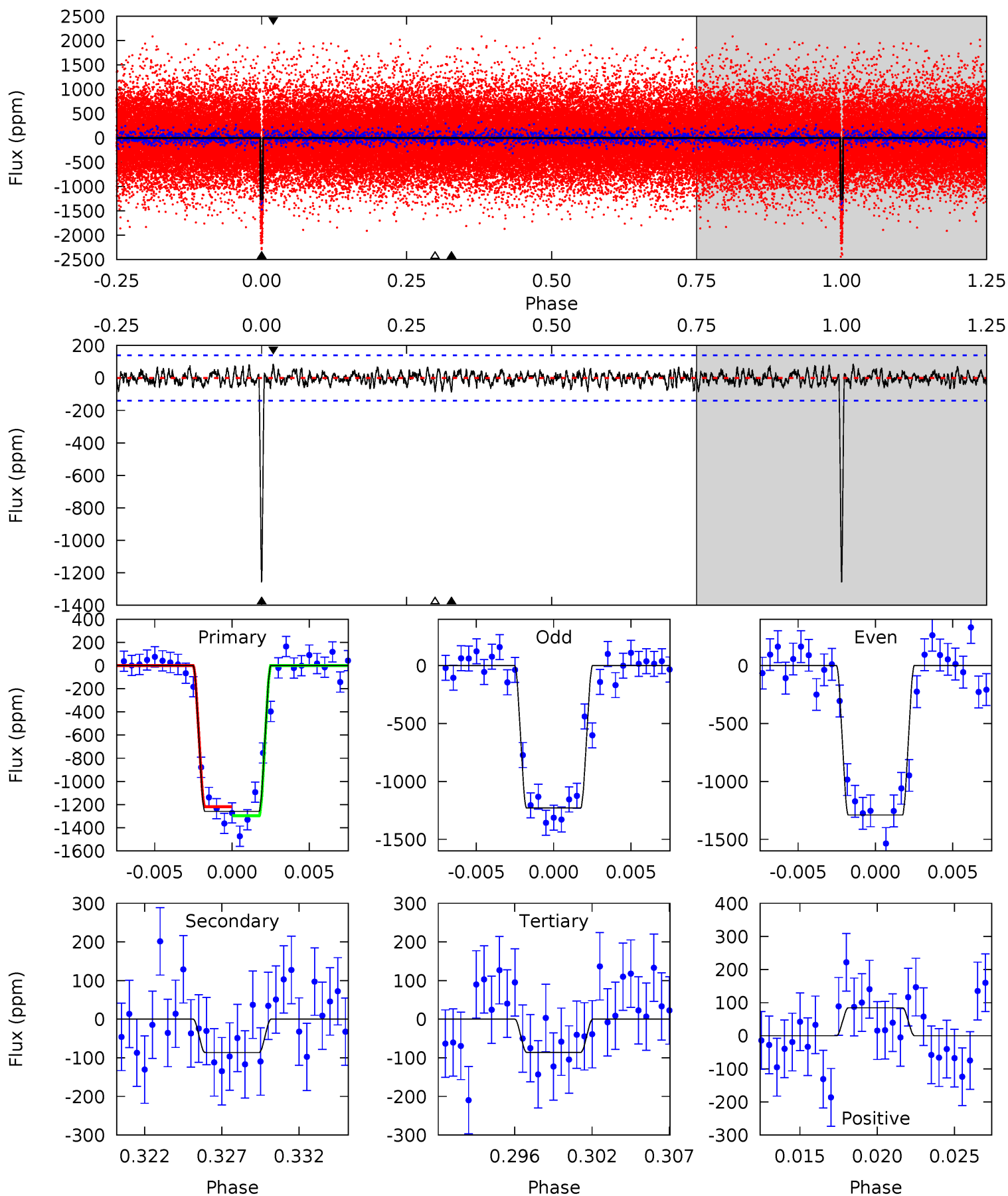
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.2	3.50	3.37	4.05	5.13	2.75	1.25	49.9	49.2	0.12	-0.56	1.24	1.00	0.07	1.39



Alt Model-Shift Uniqueness Test

007102227-01, $P = 36.770175$ Days, $E = 127.526311$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.5	3.19	3.17	3.12	5.16	2.81	1.05	43.4	43.4	0.02	0.07	1.13	0.99	0.06	1.43



Stellar Parameters For KIC 007102227

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5142^{+153}_{-153}	$4.602^{+0.033}_{-0.083}$	$-0.060^{+0.300}_{-0.300}$	$0.755^{+0.097}_{-0.065}$	$0.840^{+0.065}_{-0.090}$	$2.750^{+0.411}_{-0.764}$
	+3%/-3%	+1%/-2%	+500%/-500%	+13%/-9%	+8%/-11%	+15%/-28%
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 007102227-01 / KOI 1360.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-88 ± 25	$3.30^{+0.29}_{-0.27}$	617^{+24}_{-24}	3102^{+159}_{-148}	181^{+63}_{-51}
Alt.	-86 ± 27	$3.08^{+0.29}_{-0.29}$	618^{+25}_{-25}	3169^{+171}_{-200}	206^{+79}_{-71}

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

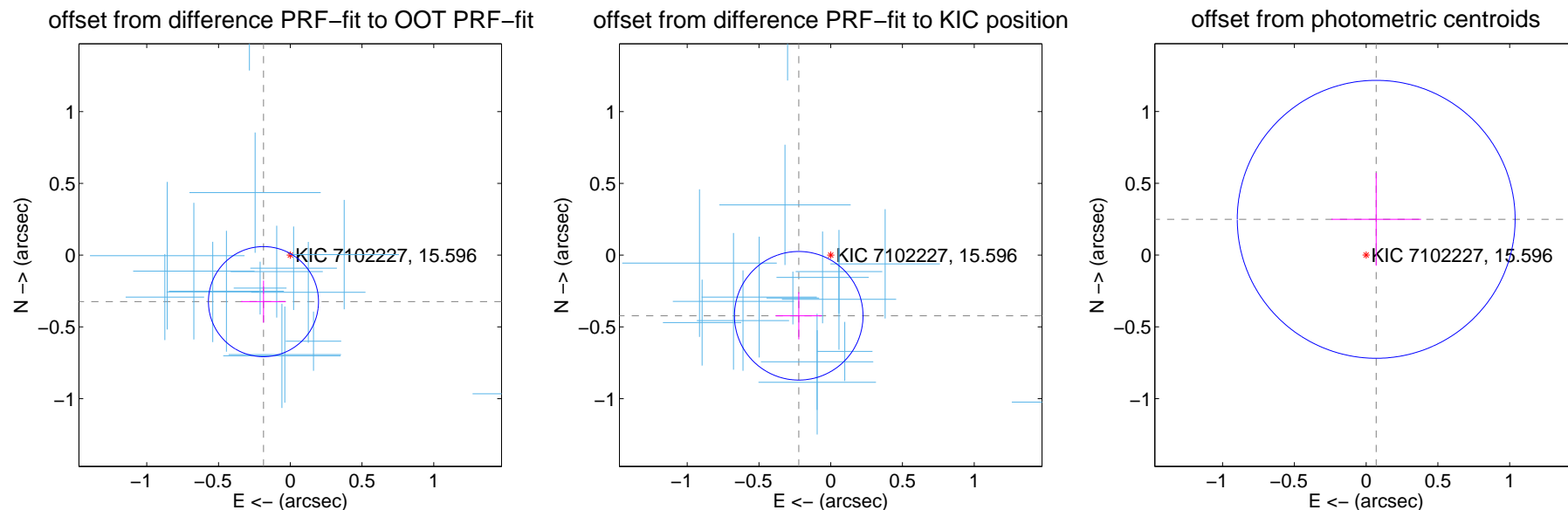
DV Centroid Data

Supplemental centroid analysis for 007102227-01. Kepler magnitude: 15.60. Transit SNR 35.48

There are 16 quarters with good PRF difference image offsets

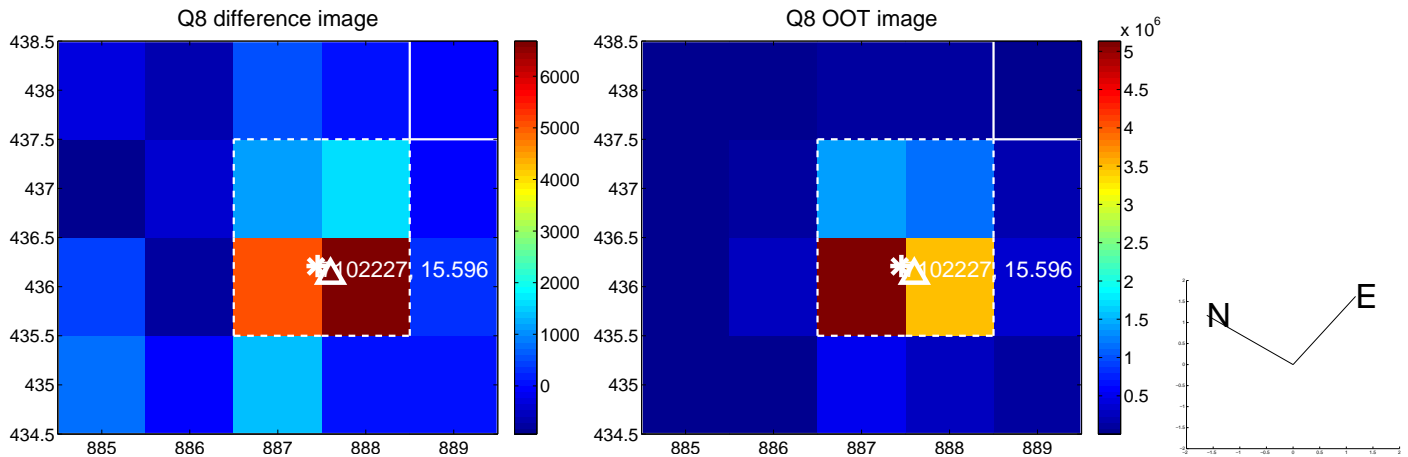
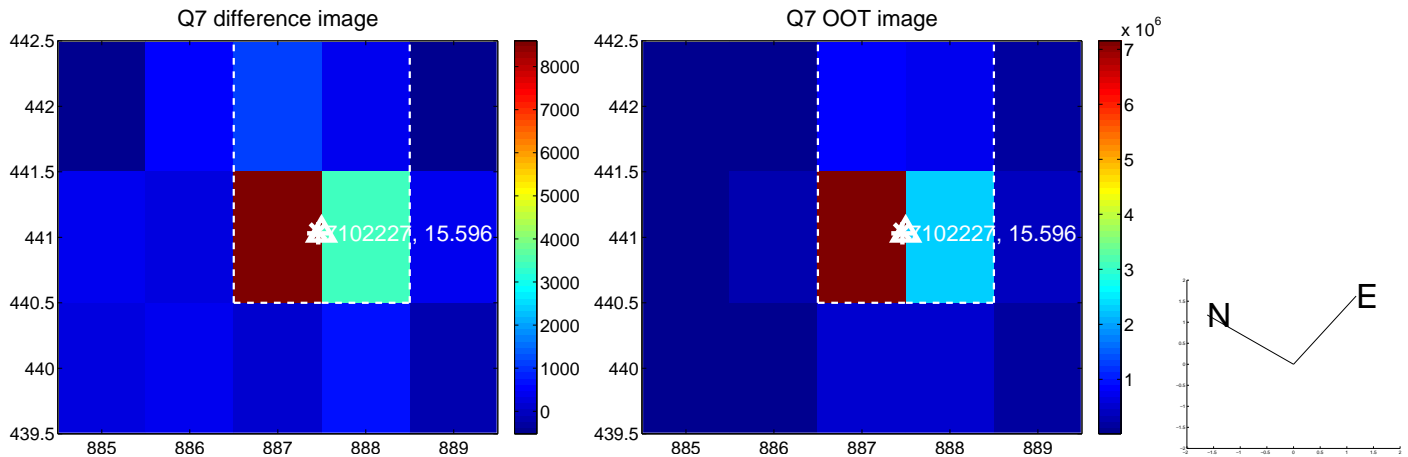
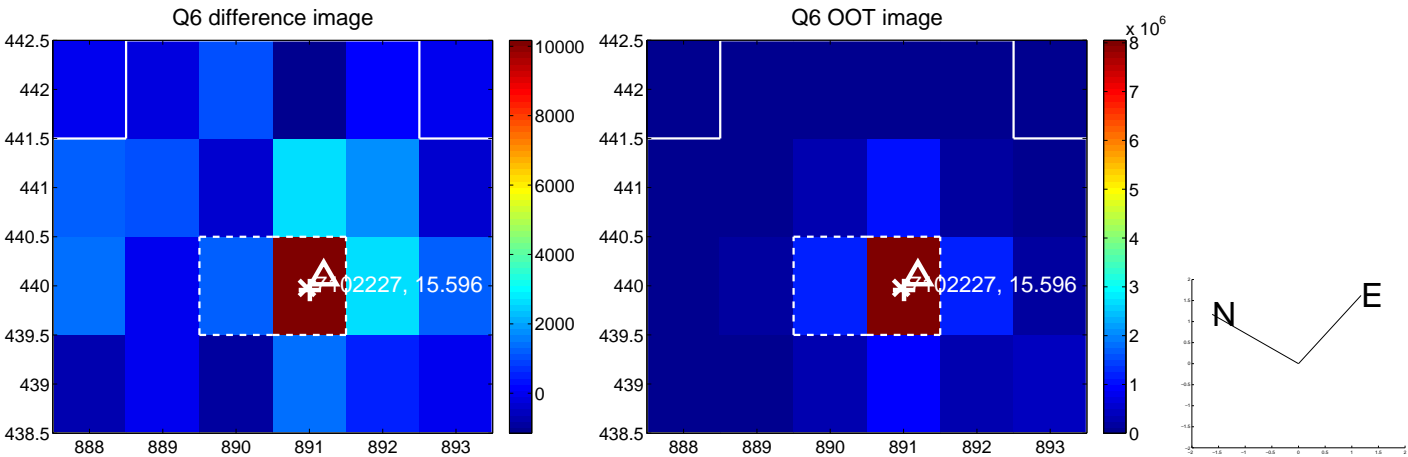
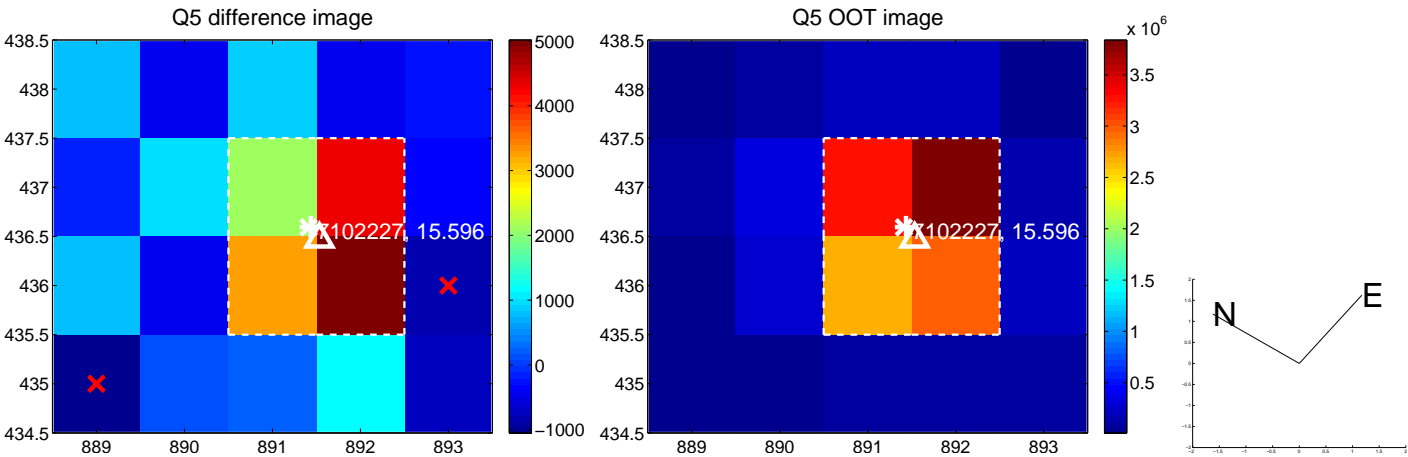
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.374 ± 0.128	2.92	0.187 ± 0.156	-0.324 ± 0.147
PRF-fit source offset from KIC position	0.478 ± 0.149	3.20	0.223 ± 0.161	-0.422 ± 0.164
photometric centroid source offset	0.26 ± 0.32	0.80	-0.07 ± 0.31	0.25 ± 0.32

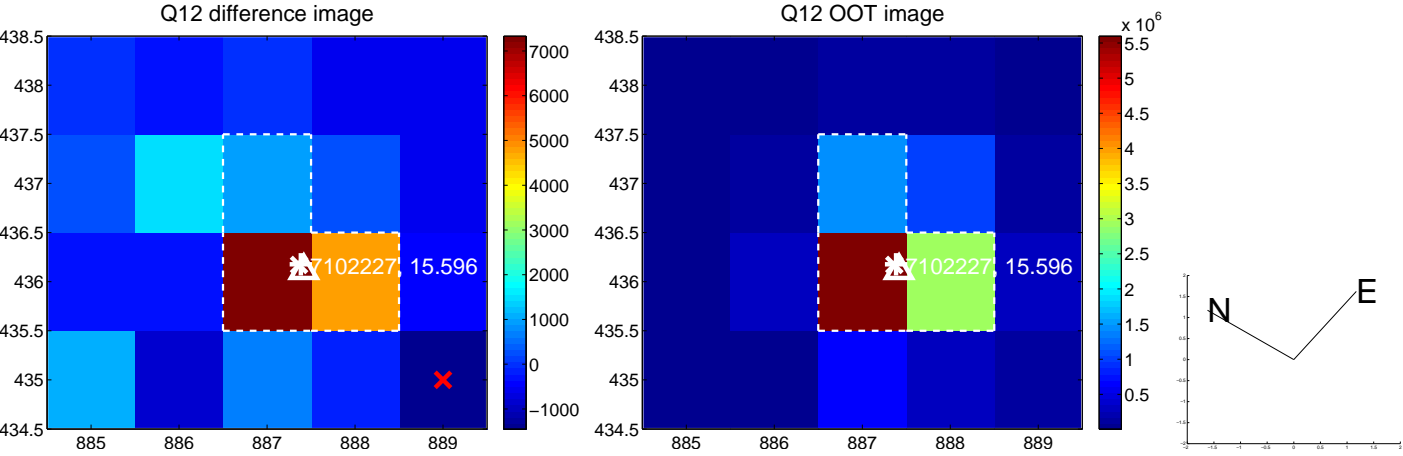
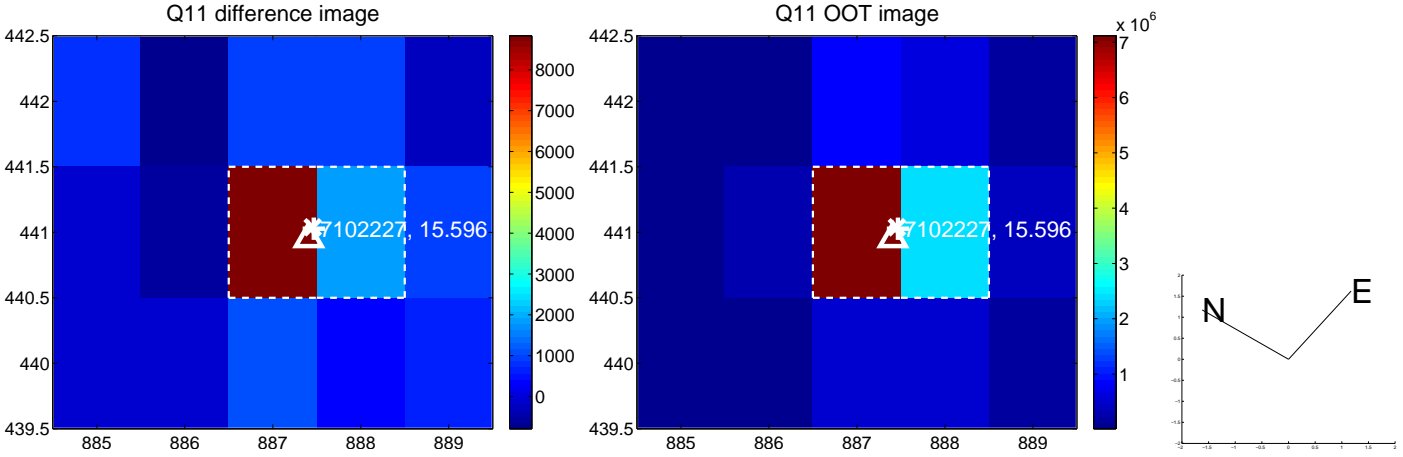
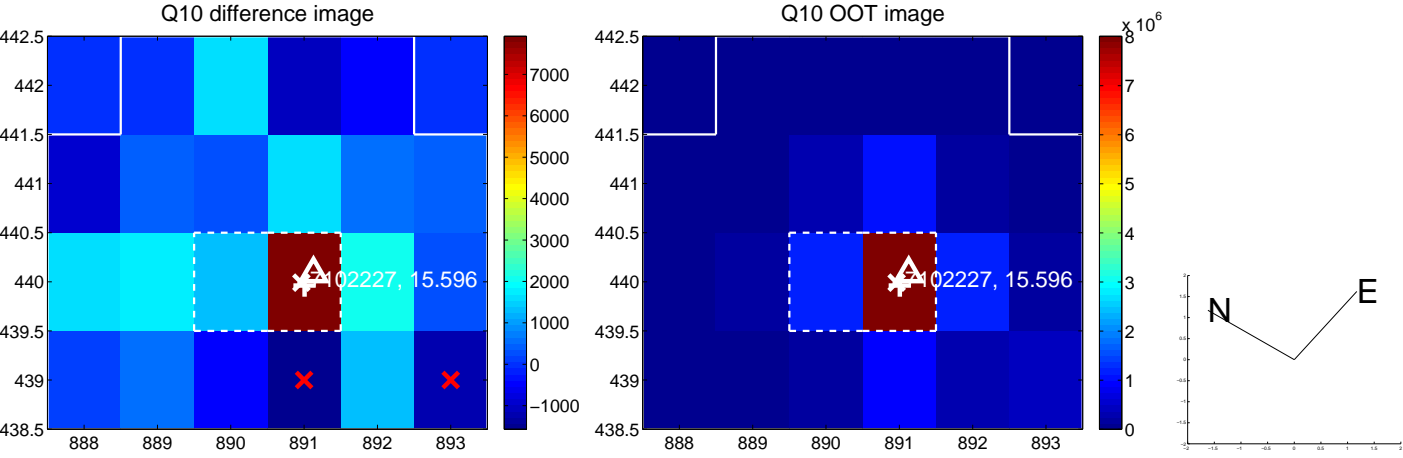
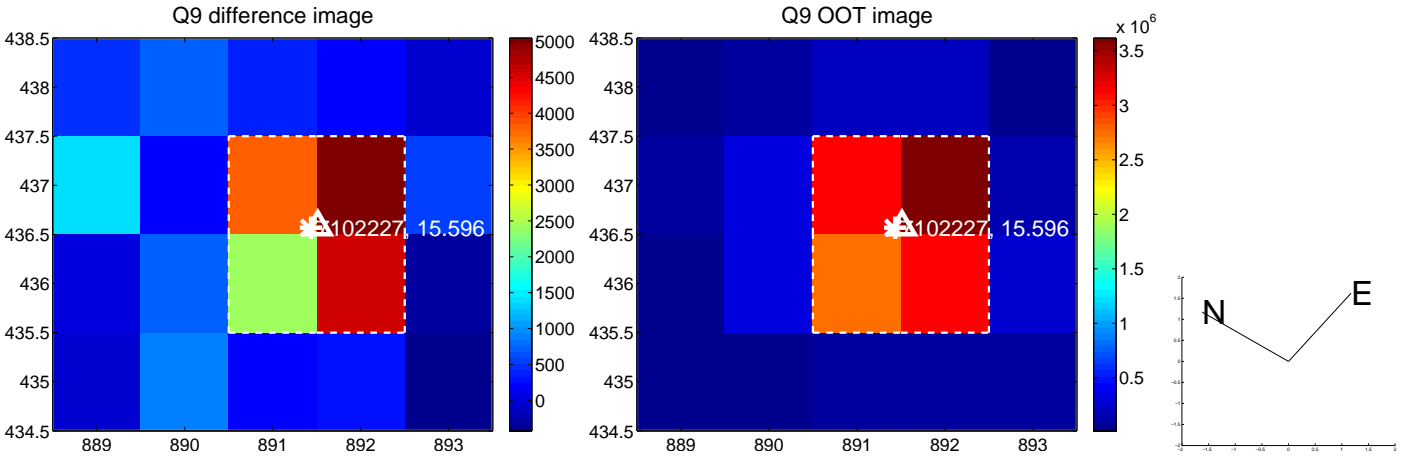


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

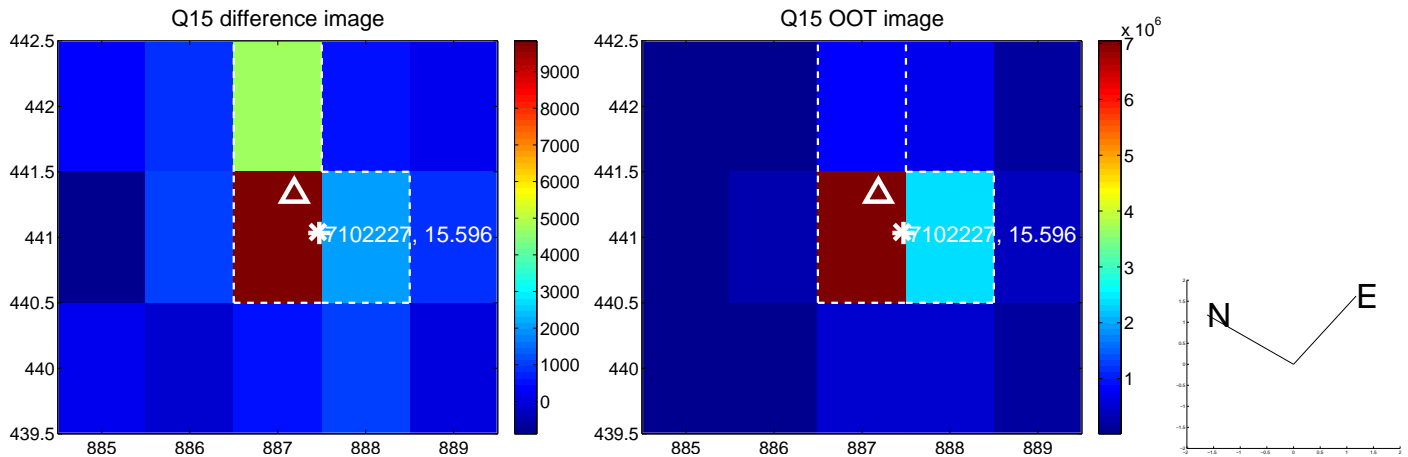
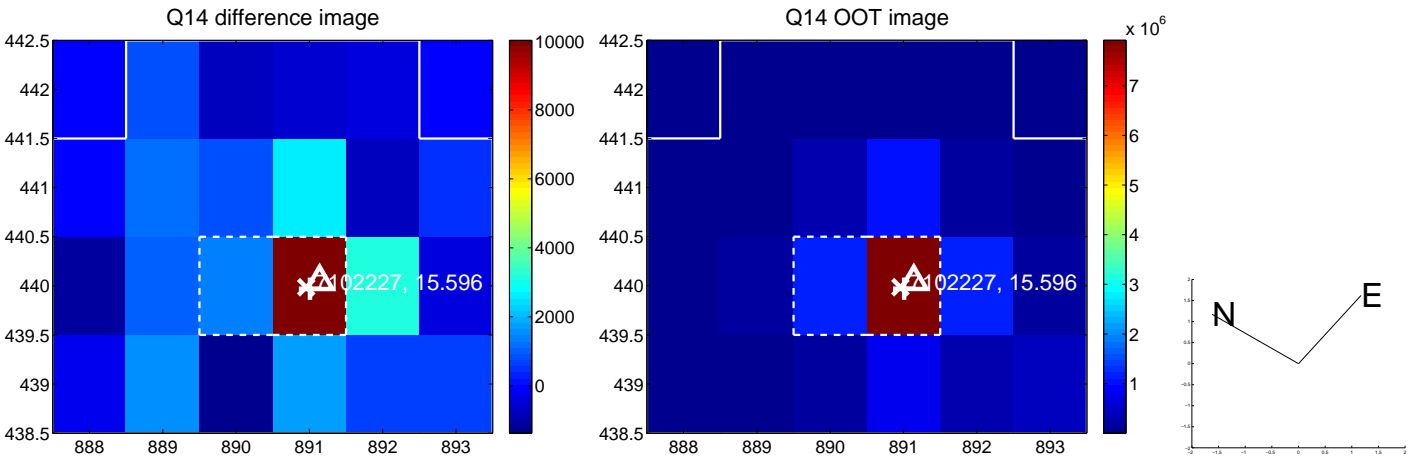
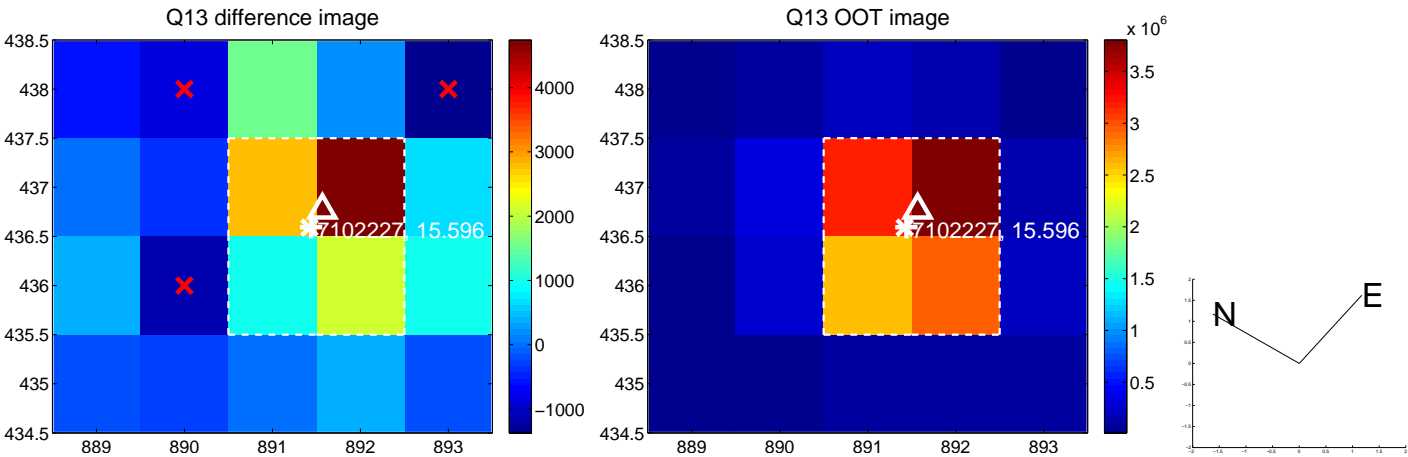
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



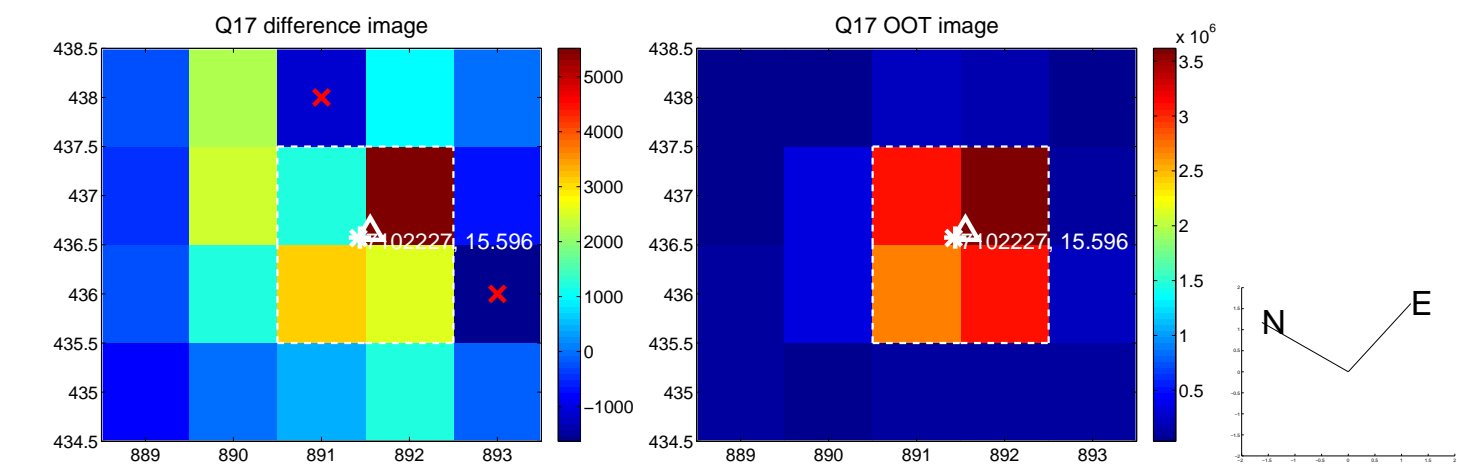
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



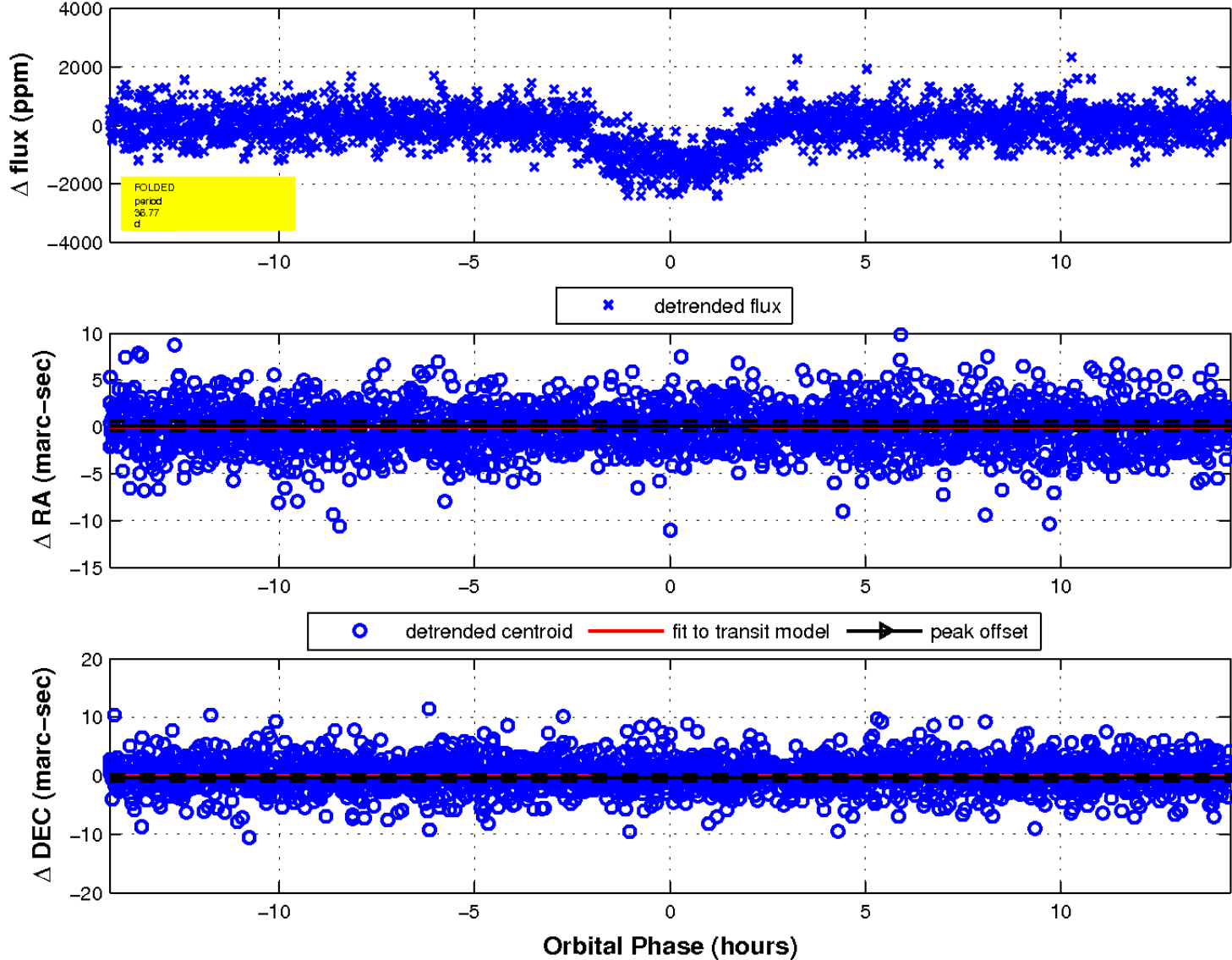
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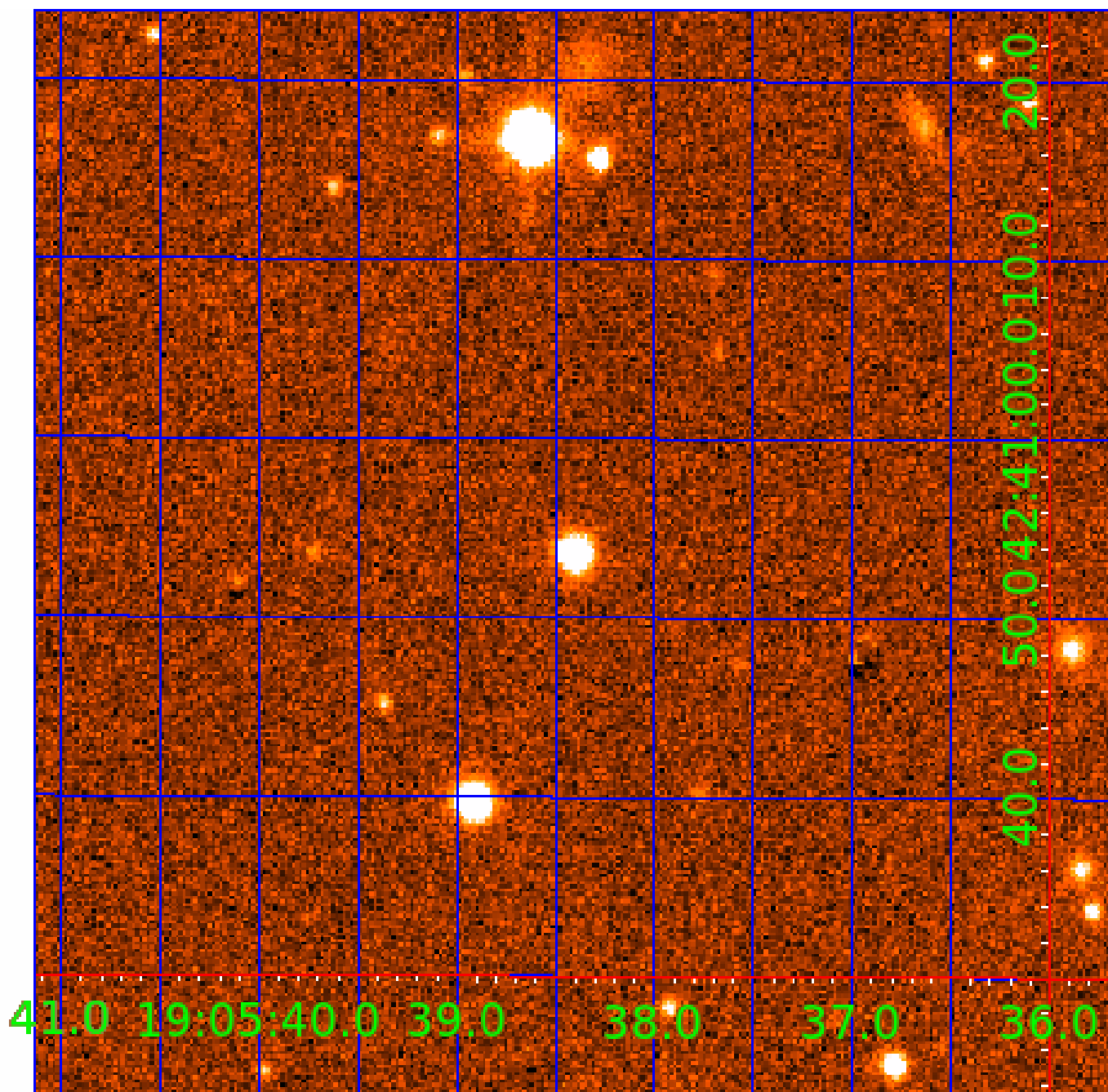


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 007102227

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})
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007102227-03	OBS	1360.03	0.764008	132.229933	93.9	1.386	11.5	10.7	0.76	5142	0.89	1508.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007102227-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007102227-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007102227-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT

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

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

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

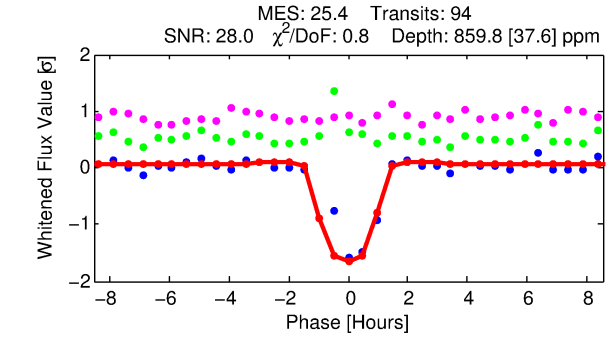
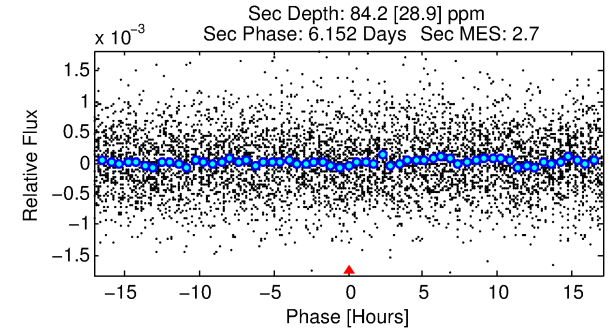
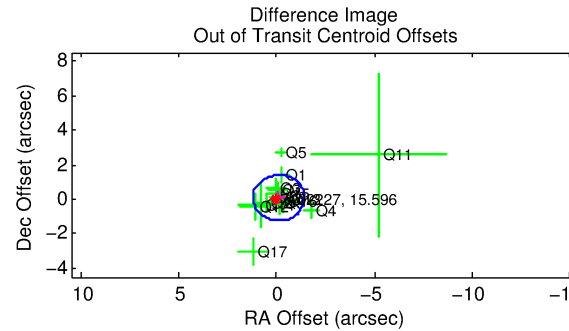
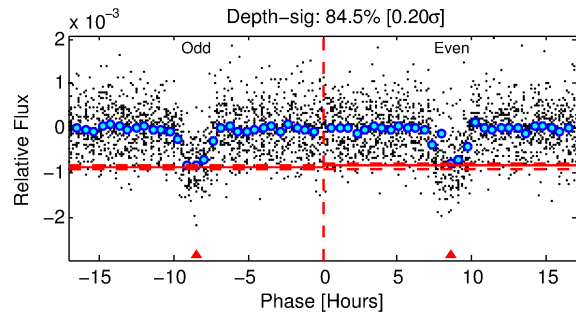
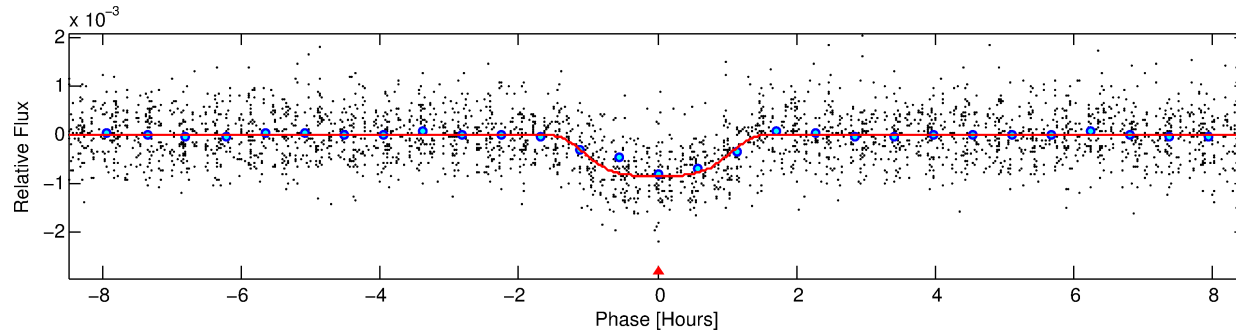
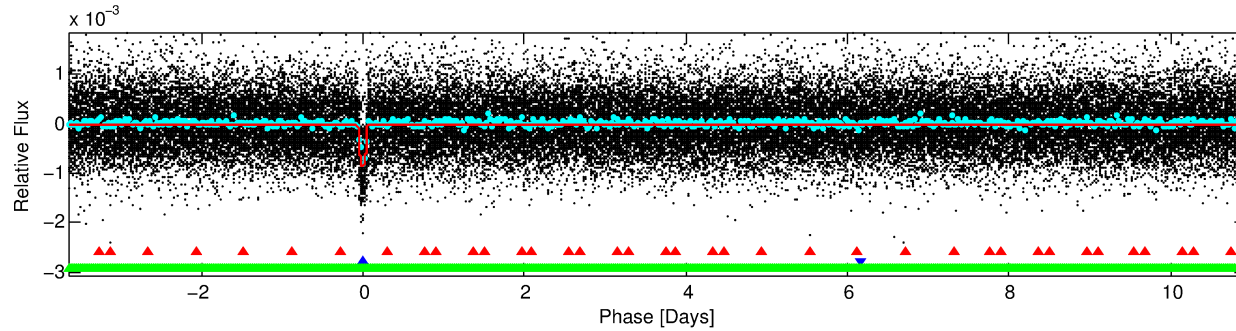
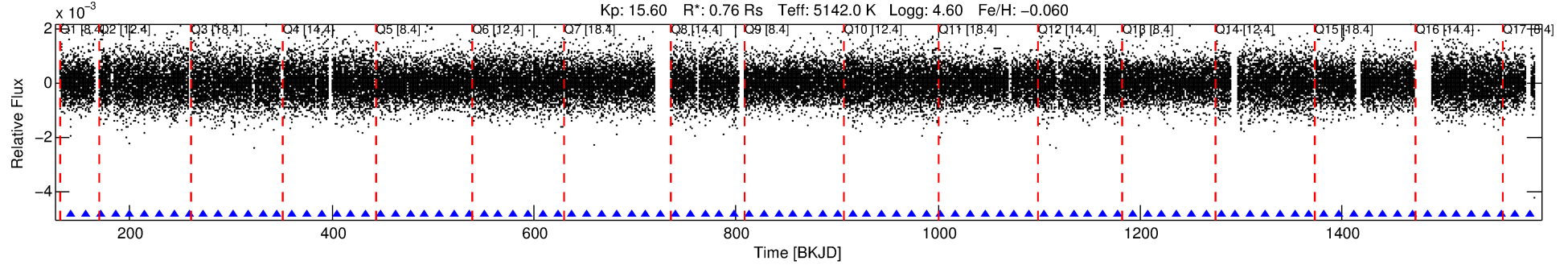
Ephemeris Match Information For 007102227-02

No Significant Match Found

DV One-Page Summary

KIC: 7102227 Candidate: 2 of 3 Period: 14.589 d
KOI: K01360.02 Name: Kepler-290b Corr: 0.916

Kp: 15.60 R*: 0.76 Rs Teff: 5142.0 K Logg: 4.60 Fe/H: -0.060



DV Fit Results:

Period = 14.58930 [0.00004] d
Epoch = 141.9360 [0.0024] BKJD
Rp/R* = 0.0349 [0.0017]
a/R* = 16.58 [2.49]
b = 0.95 [0.02]
Seff = 29.56 [5.74]
Teq = 595 [29] K
Rp = 2.88 [0.40] Re
a = 0.1099 [0.0117] AU
Ag = 67.57 [26.25] [2.54σ]
Teffp = 2636 [248] K [8.18σ]

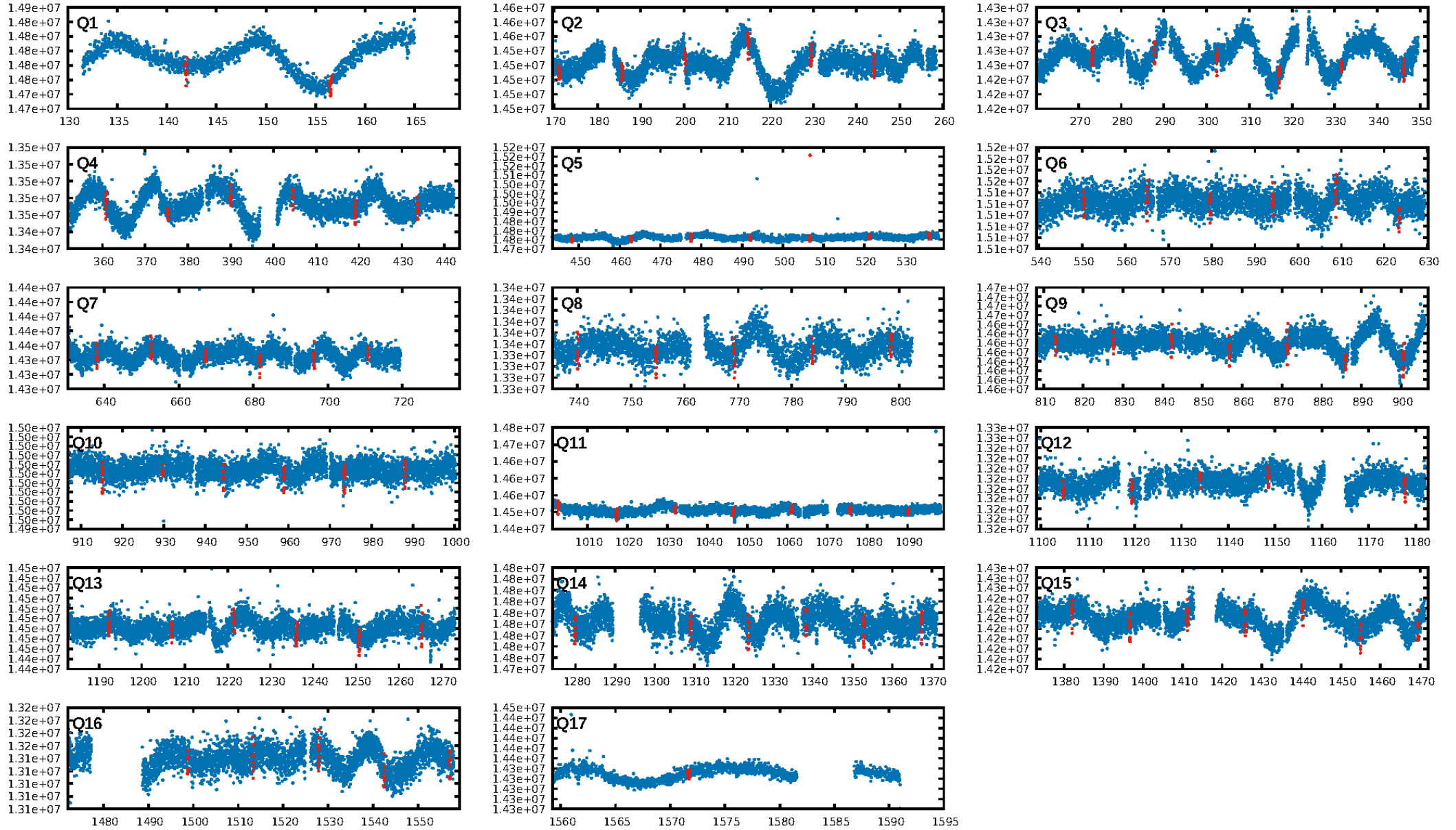
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [105.12σ]
LongPeriod-sig: 100.0% [95.72σ]
ModelChiSquare2-sig: 97.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.76e-130
RollingBand-fgt: 1.00 [91/91]
GhostDiagnostic-chr: 6.009
Centroid-sig: 47.8%
Centroid-so: 0.321 arcsec [0.72σ]
OotOffset-rm: 0.133 arcsec [0.30σ]
KicOffset-rm: 0.100 arcsec [0.24σ]
OotOffset-st: 2/4/4/5 [15]
KicOffset-st: 2/4/4/5 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 0.35 [6/17]

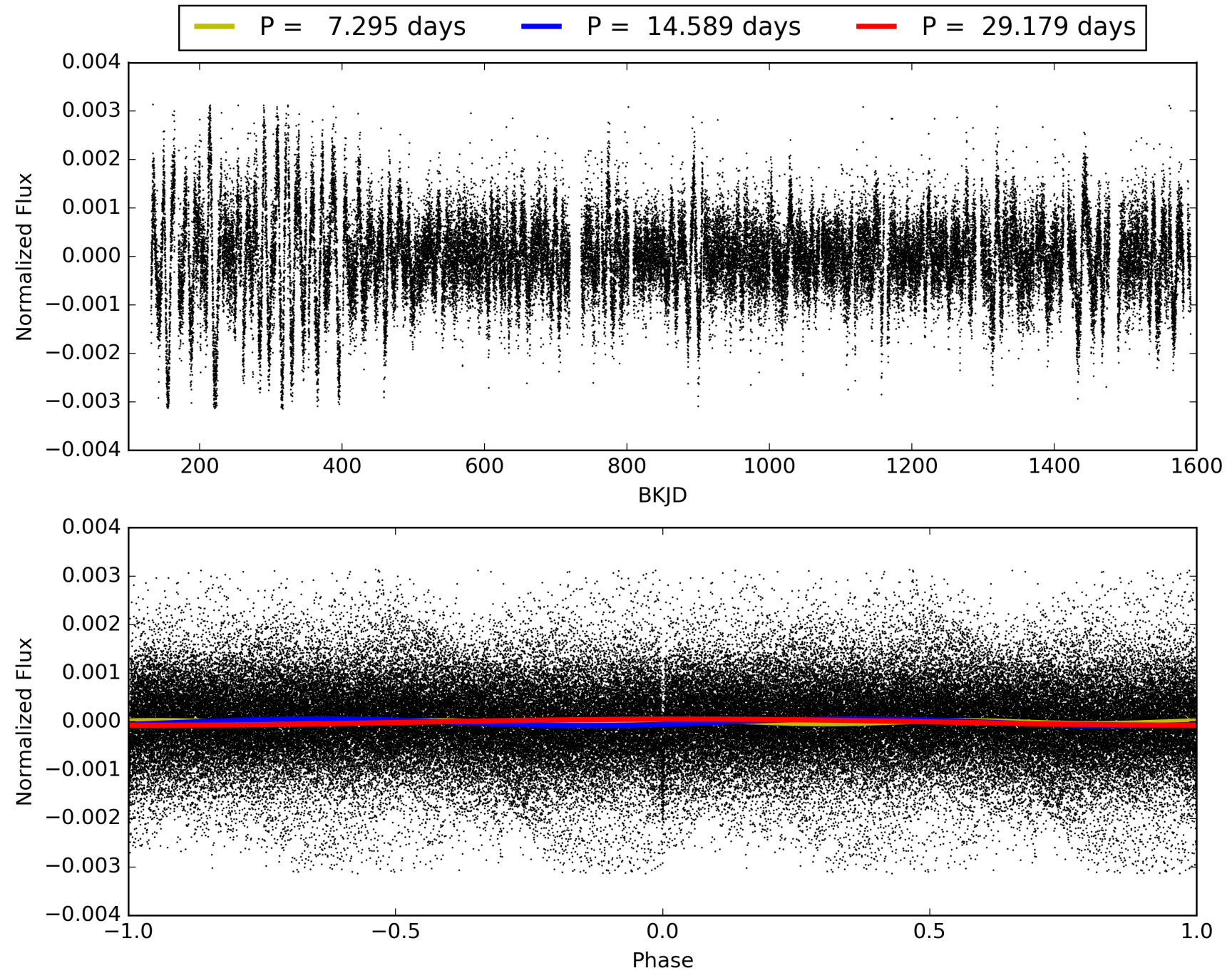
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:46:52 Z

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

TCE 007102227-02, PDC Light Curves

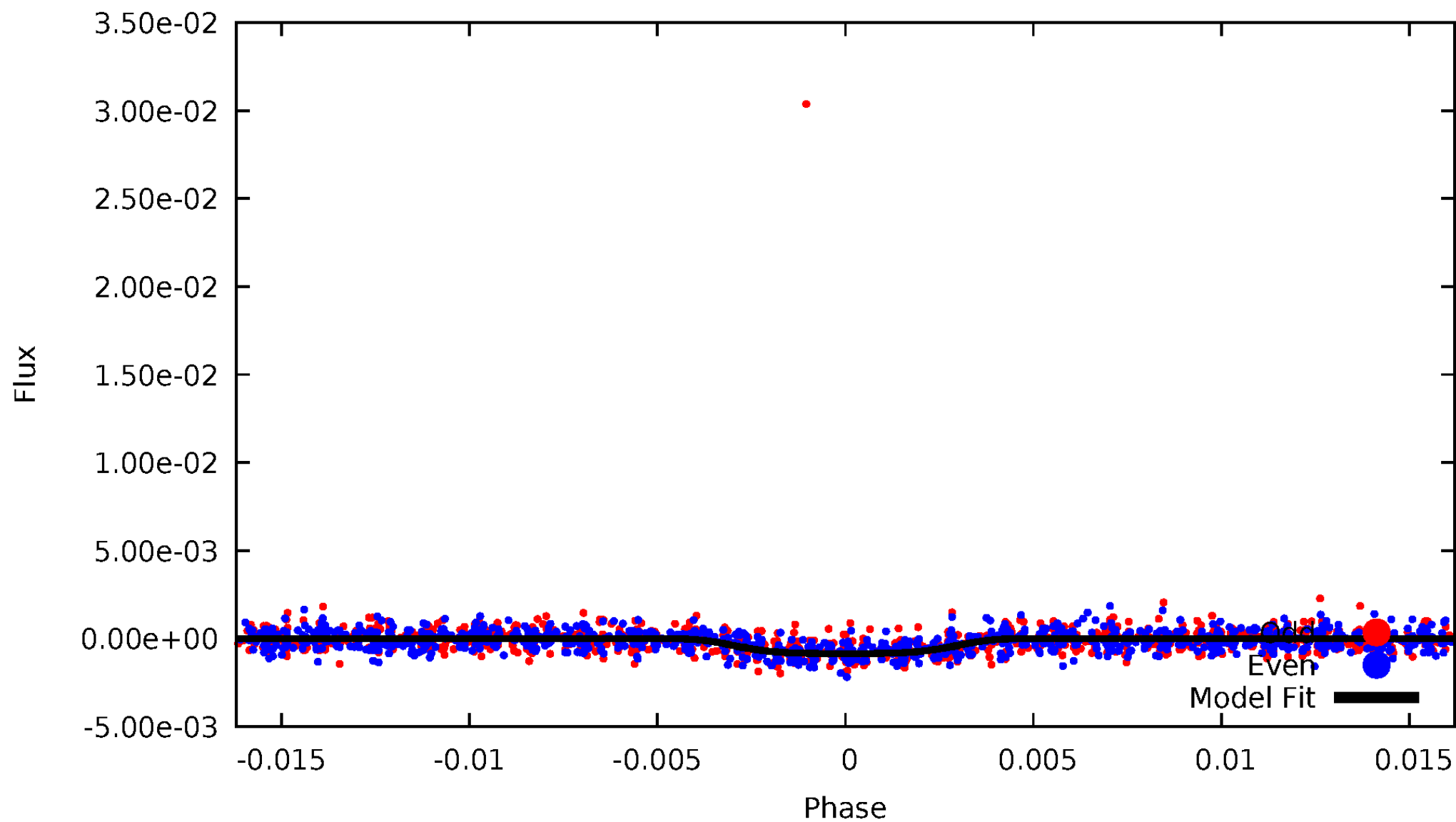


TCE 007102227-02



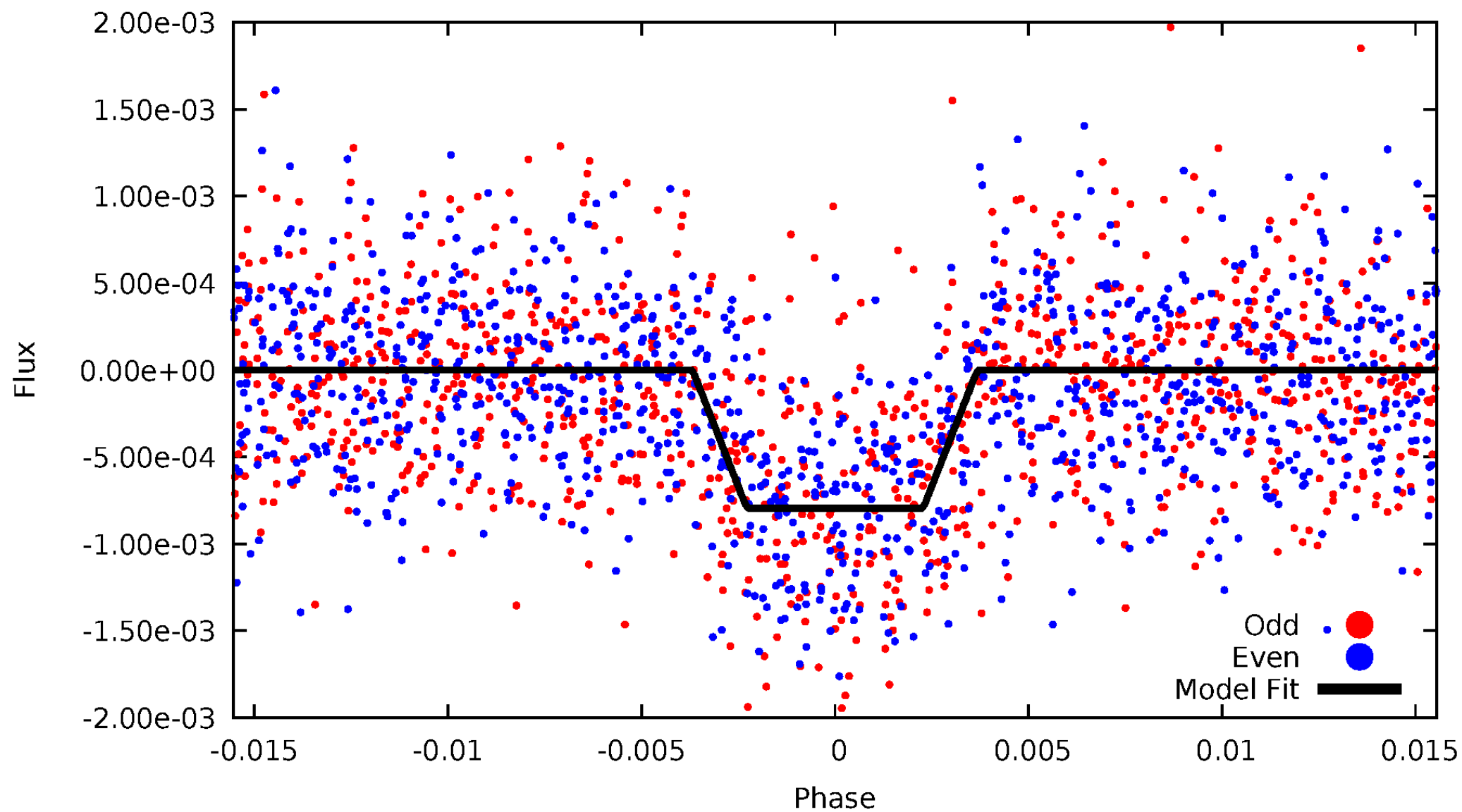
DV Odd/Even

TCE 007102227-02



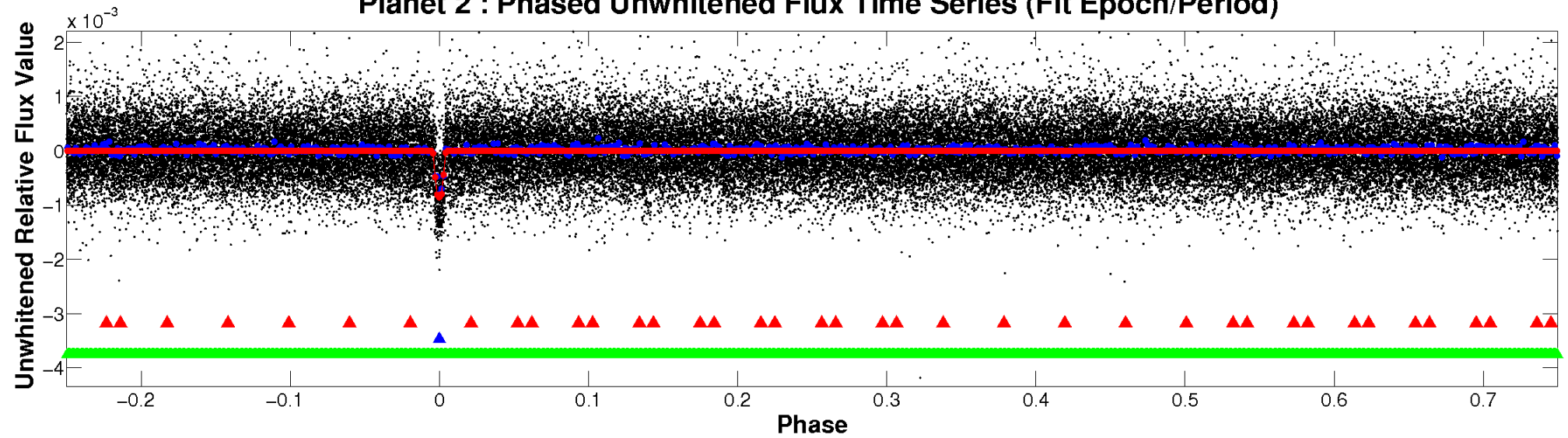
ALT Odd/Even

TCE 007102227-02

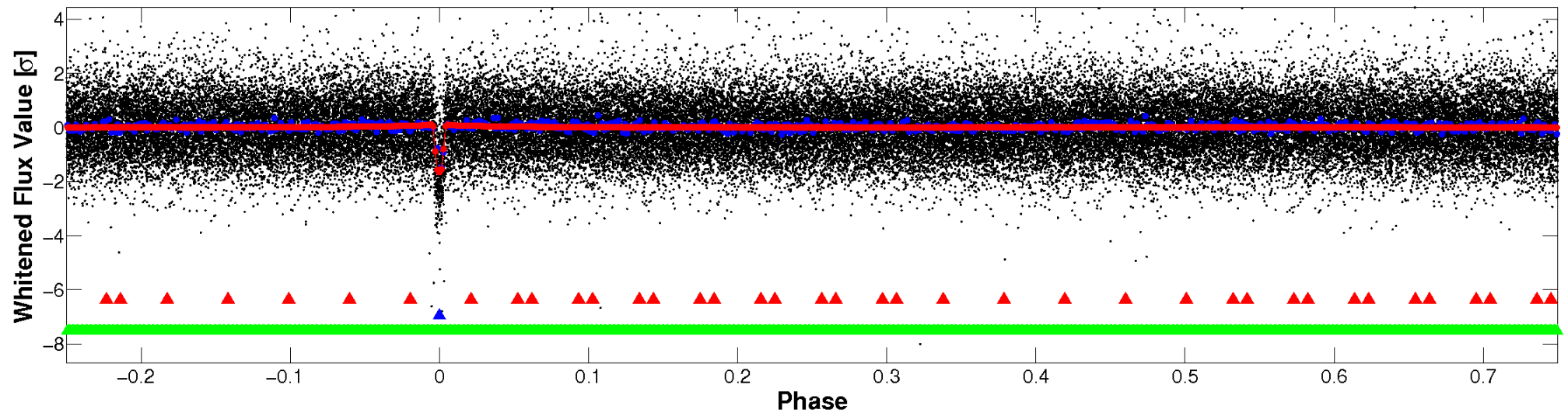


Non-Whitened Vs. Whitened Light Curve

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

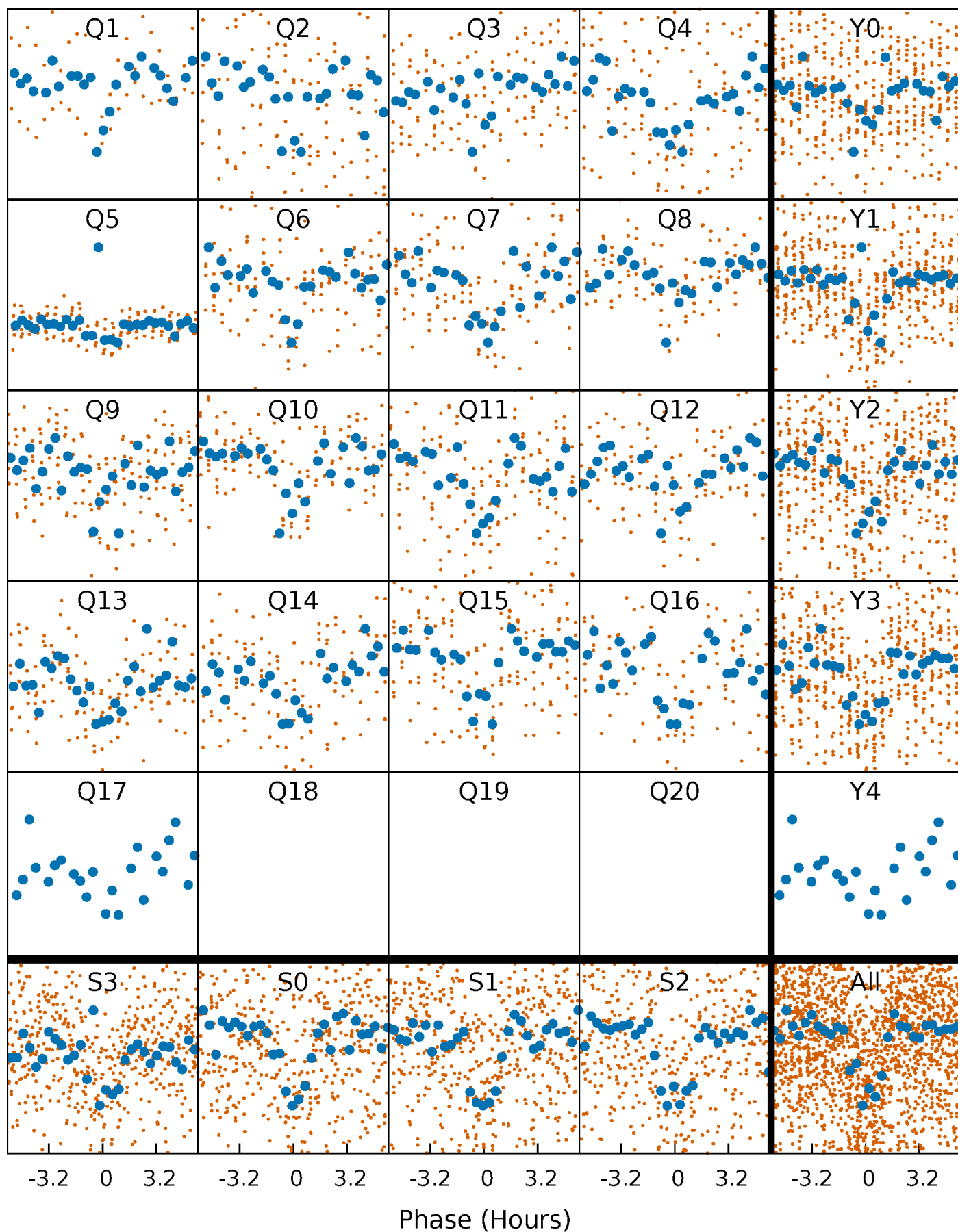


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



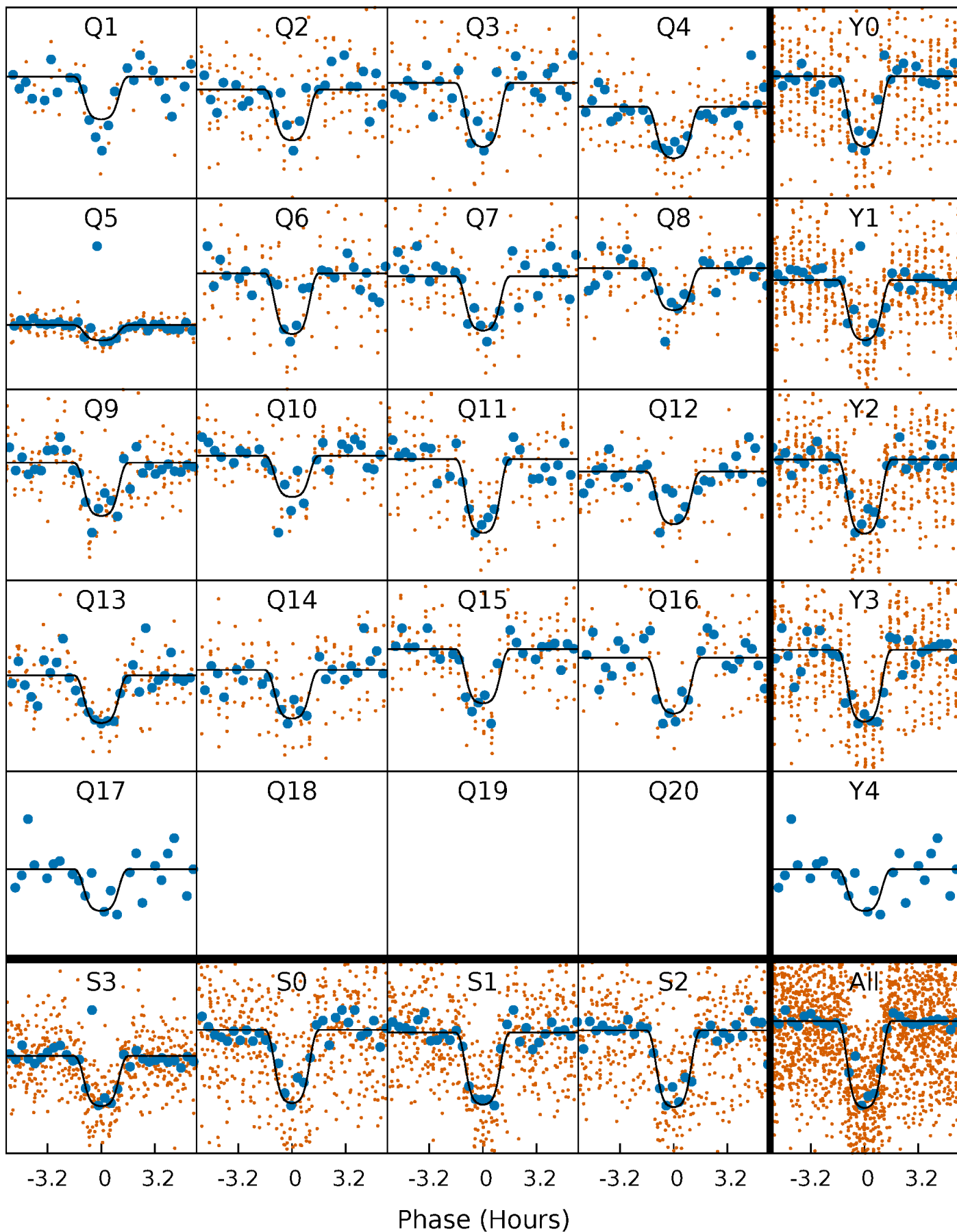
PDC Quarter-Phased Transit Curves

TCE 007102227-02 P= 14.589298 Days $T_0=141.936040$ (BKJD)



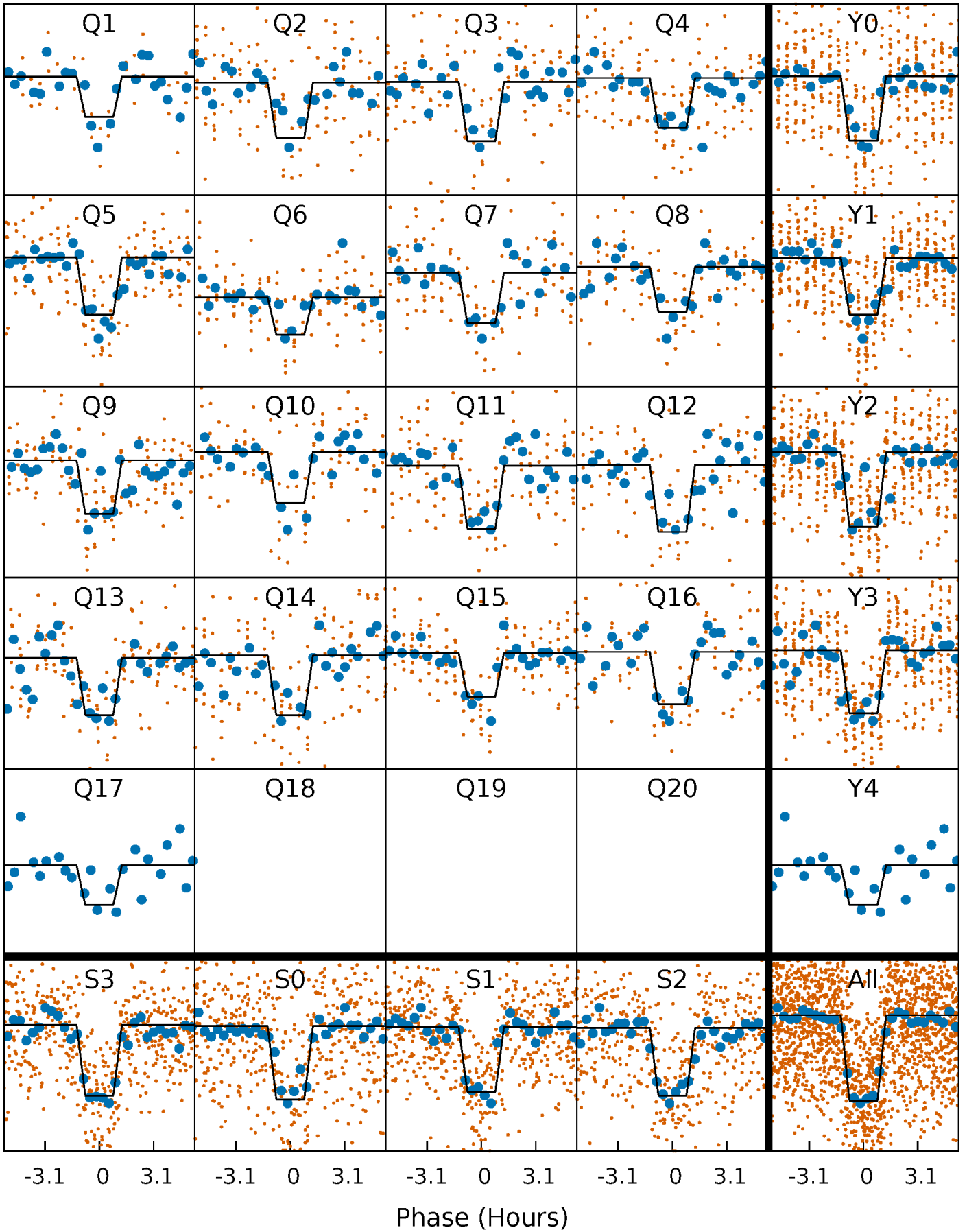
DV Quarter-Phased Transit Curves

TCE 007102227-02 P= 14.589298 Days $T_0=141.936040$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

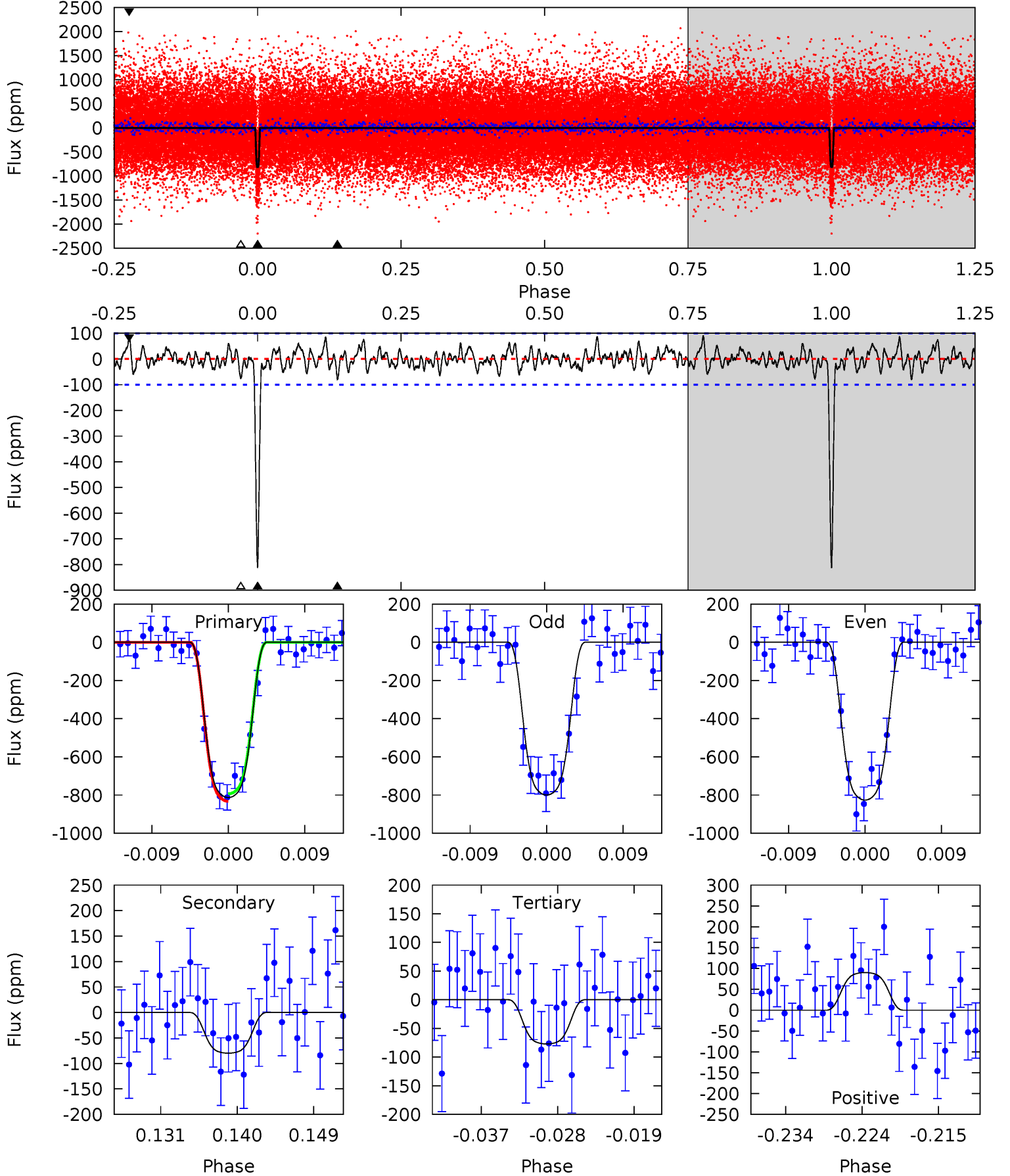
TCE 007102227-02 P= 14.589367 Days $T_0=141.932629$ (BKJD)



DV Model-Shift Uniqueness Test

007102227-02, P = 14.589298 Days, E = 127.346742 Days

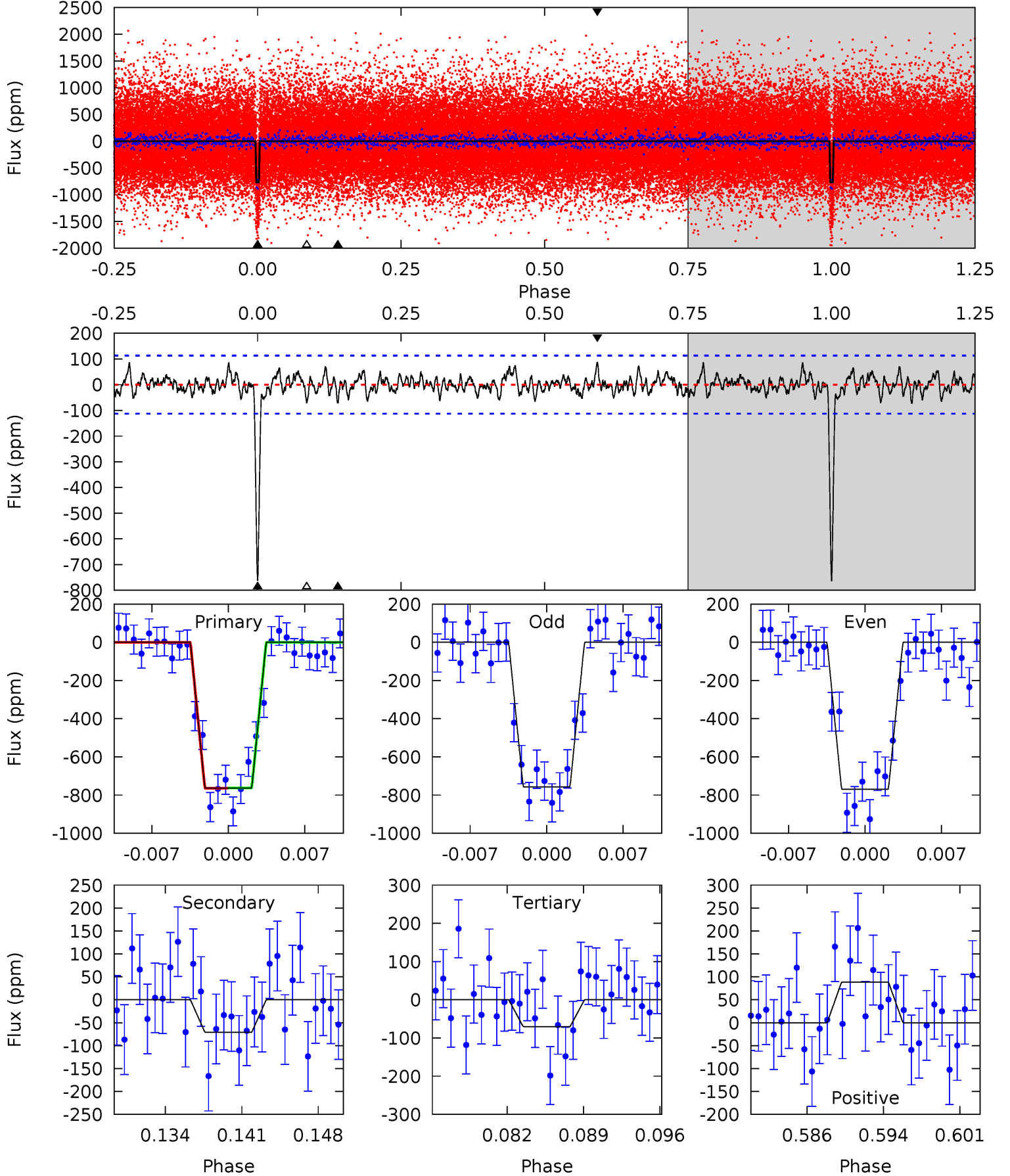
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.0	4.03	3.89	4.55	5.04	2.60	1.39	37.1	36.5	0.14	-0.52	0.67	0.87	0.10	1.00



Alt Model-Shift Uniqueness Test

007102227-02, P = 14.589367 Days, E = 127.343262 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.2	3.18	3.15	3.97	5.08	2.68	1.20	31.1	30.3	0.03	-0.79	0.28	0.98	0.10	0.03



Stellar Parameters For KIC 007102227

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5142^{+153}_{-153}	$4.602^{+0.033}_{-0.083}$	$-0.060^{+0.300}_{-0.300}$	$0.755^{+0.097}_{-0.065}$	$0.840^{+0.065}_{-0.090}$	$2.750^{+0.411}_{-0.764}$
	+3%/-3%	+1%/-2%	+500%/-500%	+13%/-9%	+8%/-11%	+15%/-28%
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 007102227-02 / KOI 1360.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-80 ± 20	$2.91^{+0.24}_{-0.20}$	838^{+34}_{-30}	3176^{+137}_{-152}	62^{+18}_{-16}
Alt.	-71 ± 22	$2.37^{+0.22}_{-0.19}$	841^{+32}_{-30}	3315^{+182}_{-195}	82^{+33}_{-26}

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

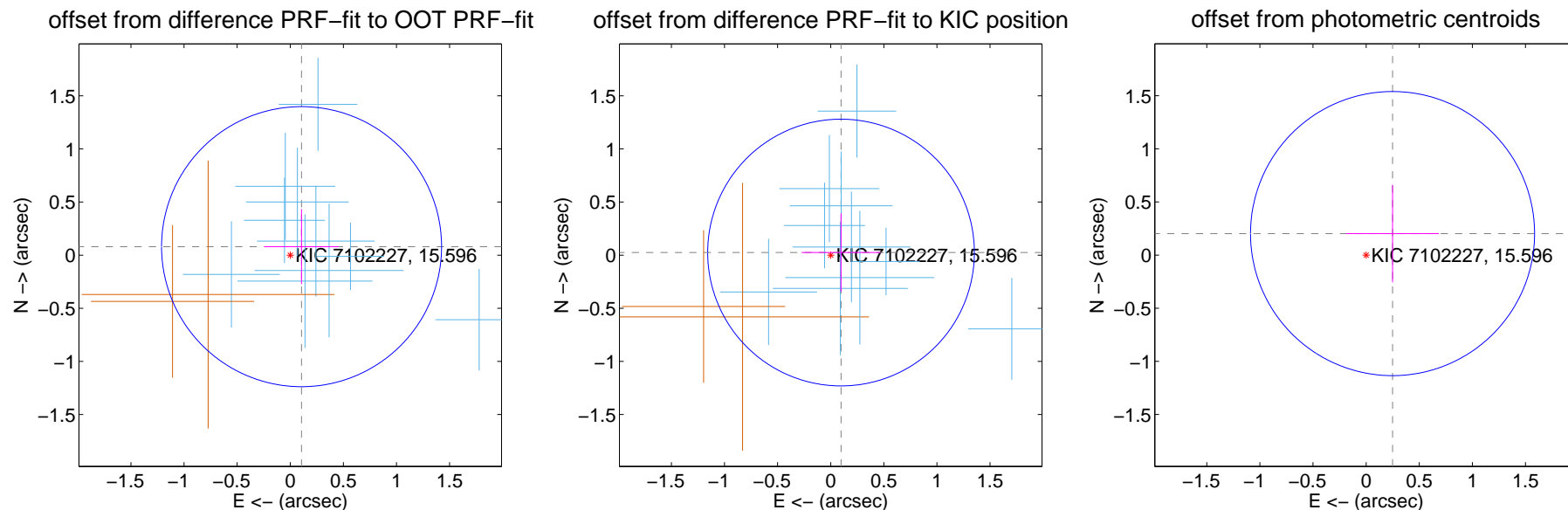
DV Centroid Data

Supplemental centroid analysis for 007102227-02. Kepler magnitude: 15.60. Transit SNR 28.04

There are 11 quarters with good PRF difference image offsets

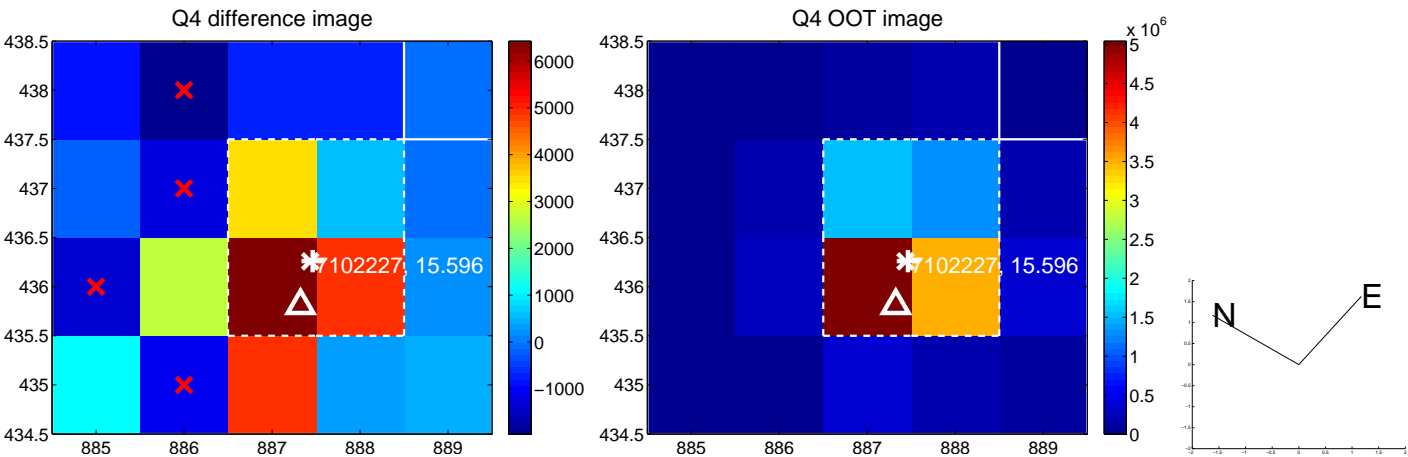
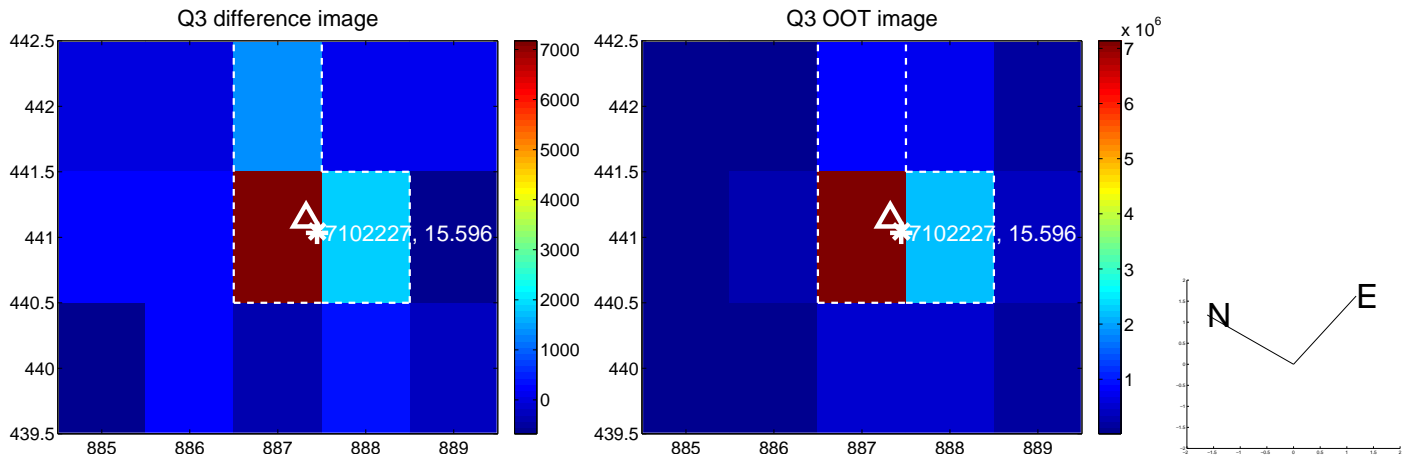
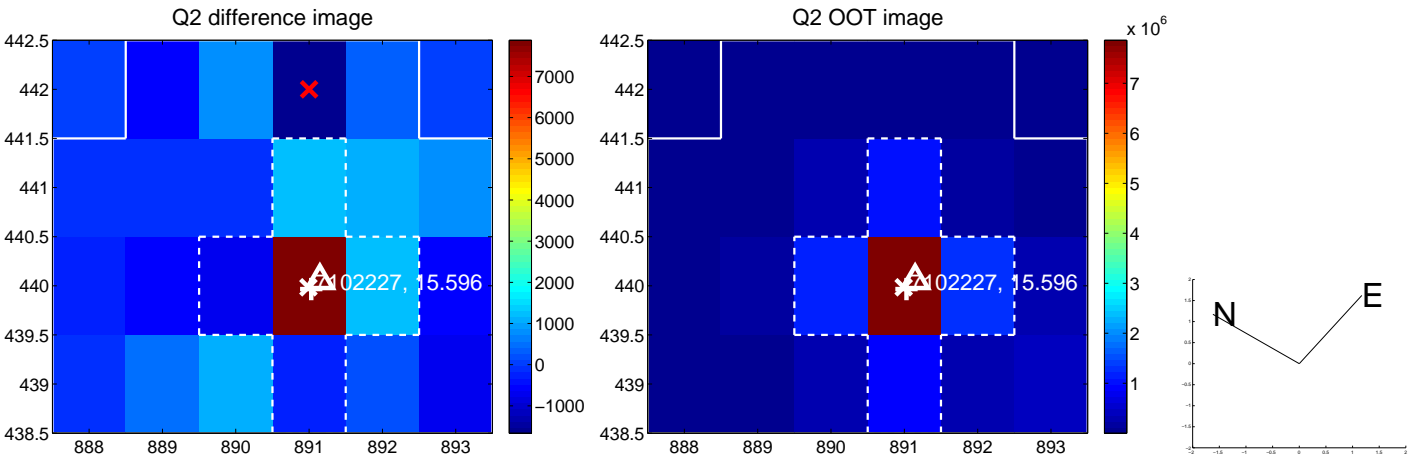
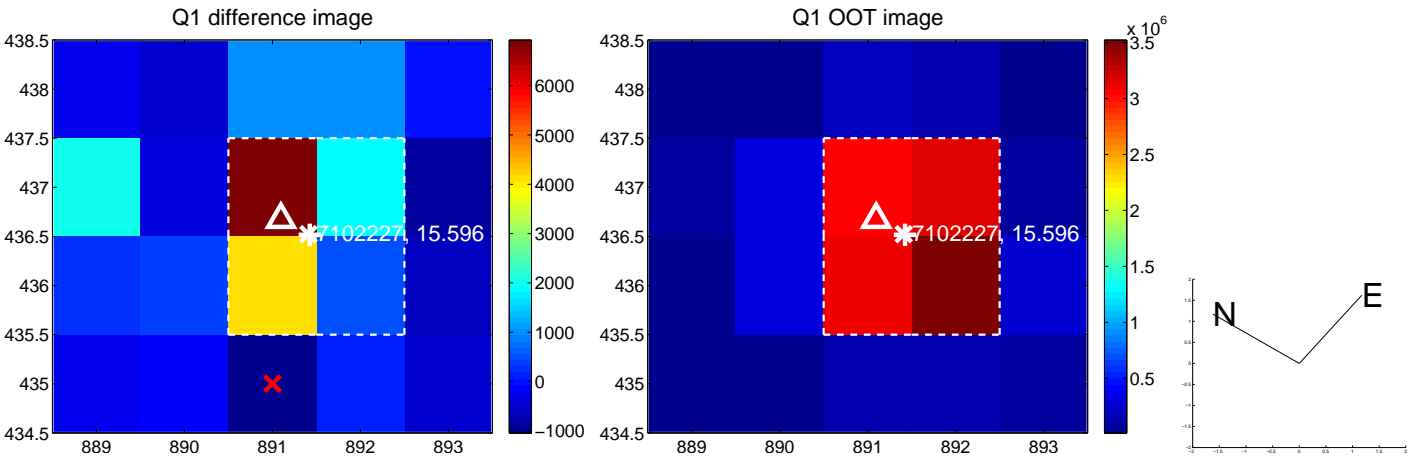
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.133 ± 0.439	0.30	-0.106 ± 0.350	0.080 ± 0.354
PRF-fit source offset from KIC position	0.100 ± 0.419	0.24	-0.097 ± 0.371	0.025 ± 0.368
photometric centroid source offset	0.32 ± 0.45	0.72	-0.25 ± 0.44	0.20 ± 0.46

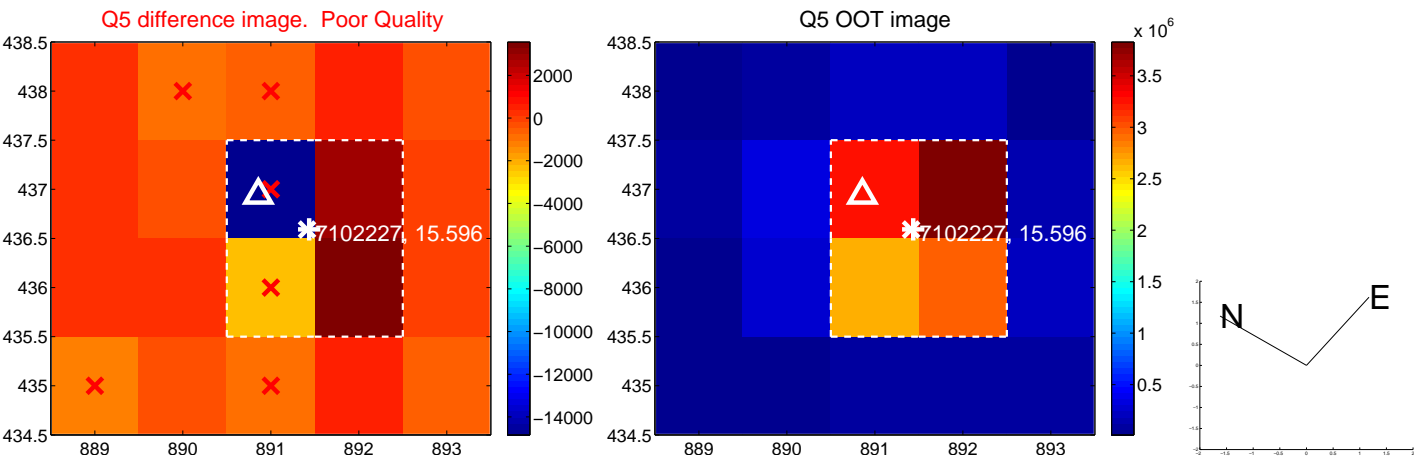


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

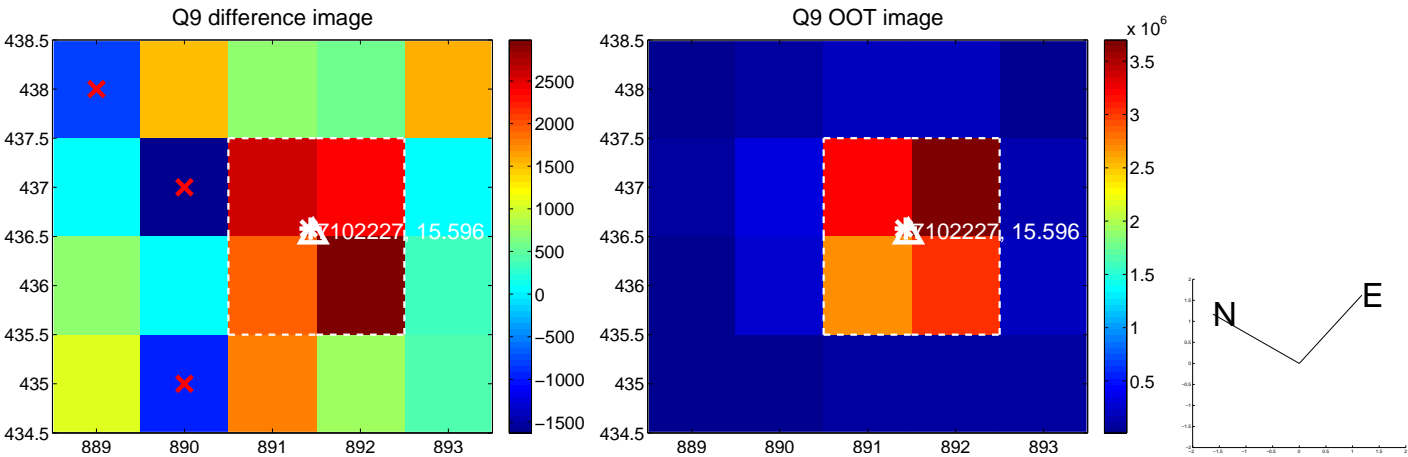
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



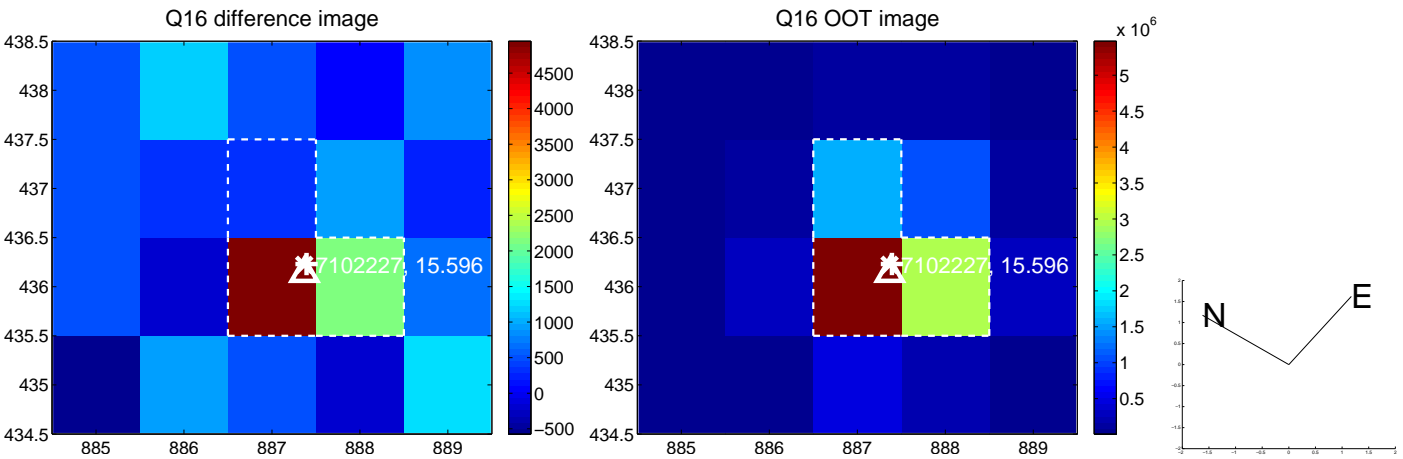
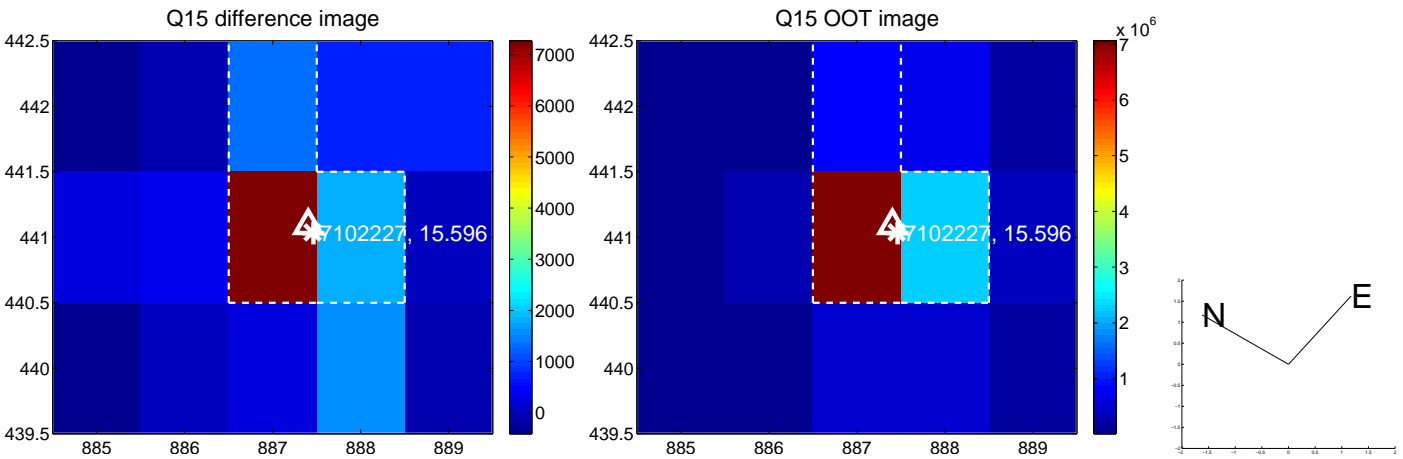
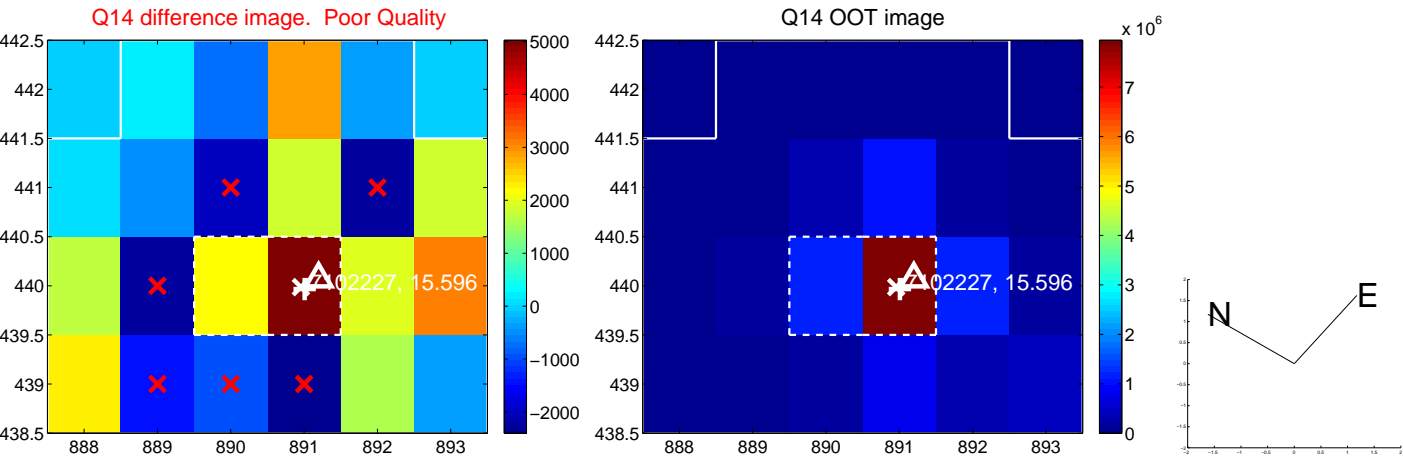
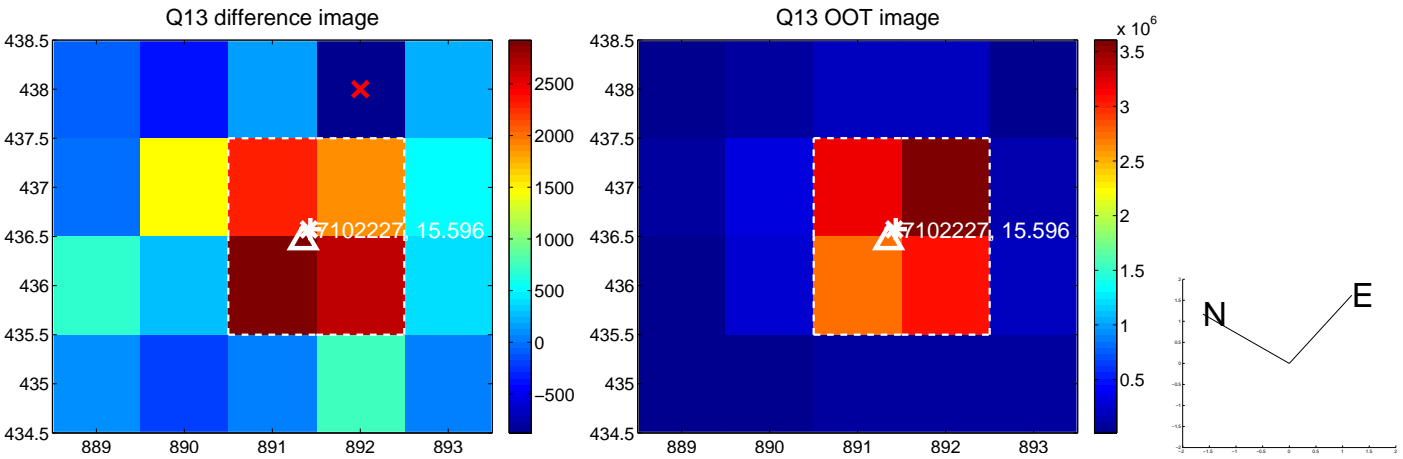
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



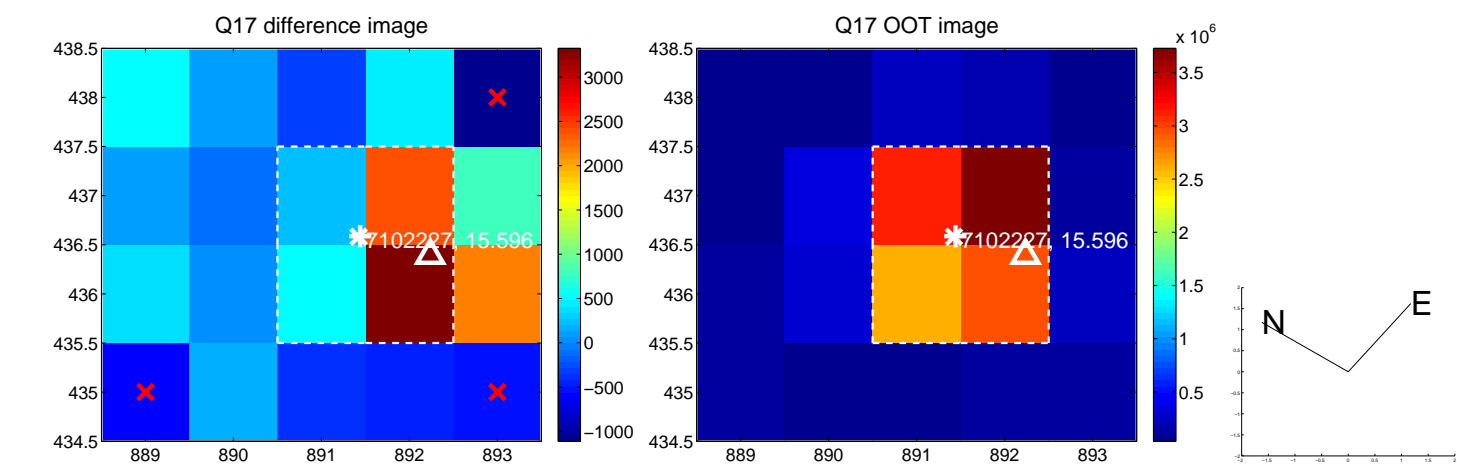
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



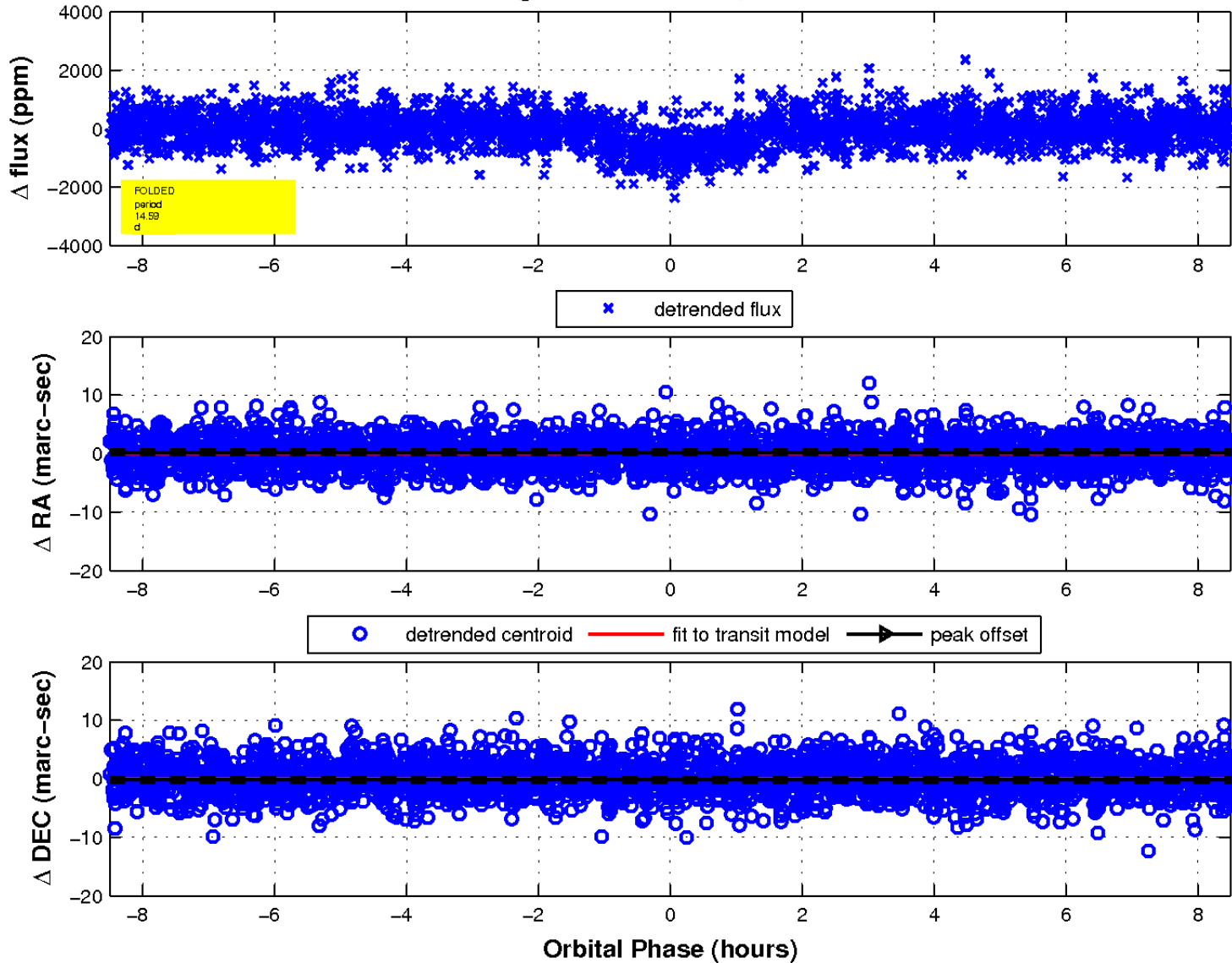
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

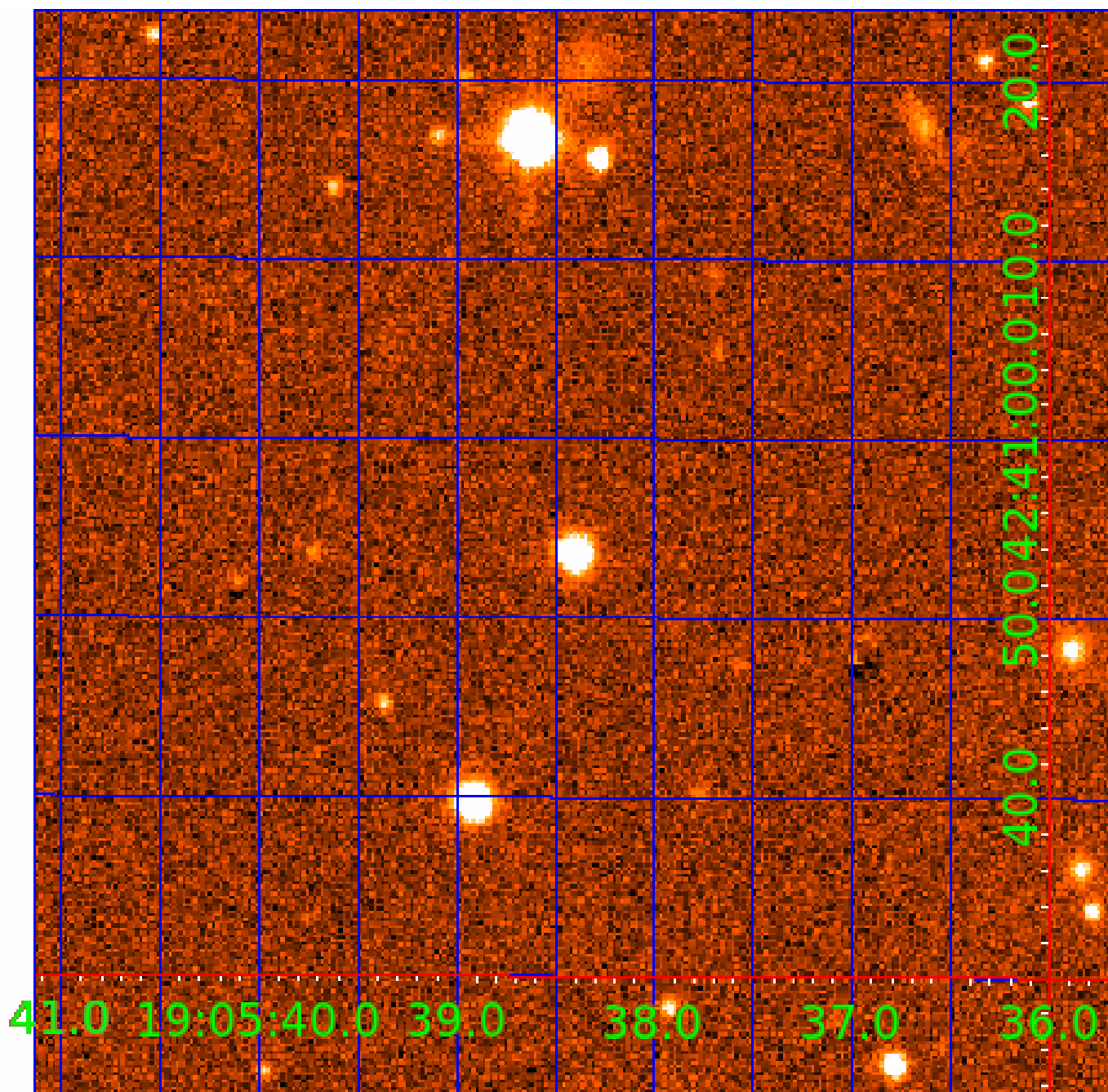


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 007102227

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})
007102227-01	OBS	1360.01	36.770511	164.290676	1351.3	4.784	32.5	35.5	0.76	5142	3.22	8.62
007102227-02	OBS	1360.02	14.589298	141.936040	859.8	2.836	25.4	28.0	0.76	5142	2.88	29.56
007102227-03	OBS	1360.03	0.764008	132.229933	93.9	1.386	11.5	10.7	0.76	5142	0.89	1508.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007102227-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007102227-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
007102227-03	OBS	PC	0.92	0	0	0	0	NO_COMMENT

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

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

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

Ephemeris Match Information For 007102227-03

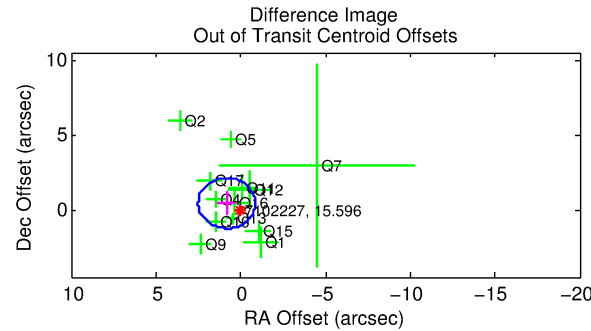
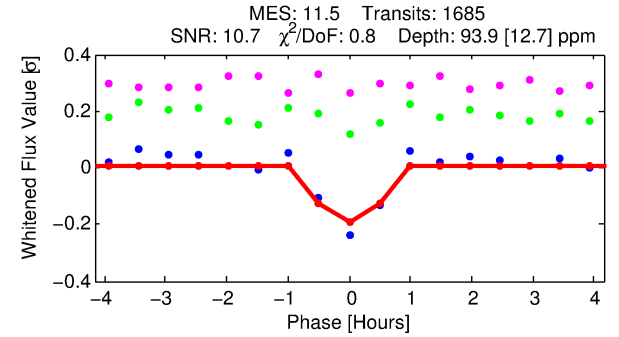
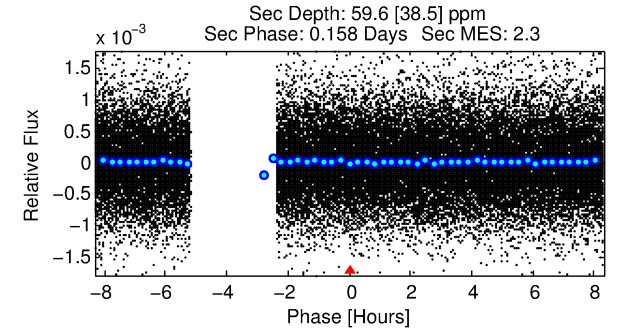
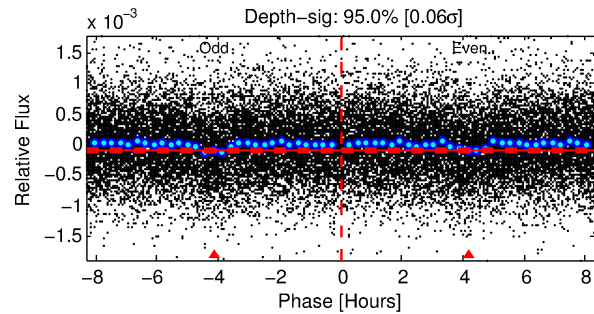
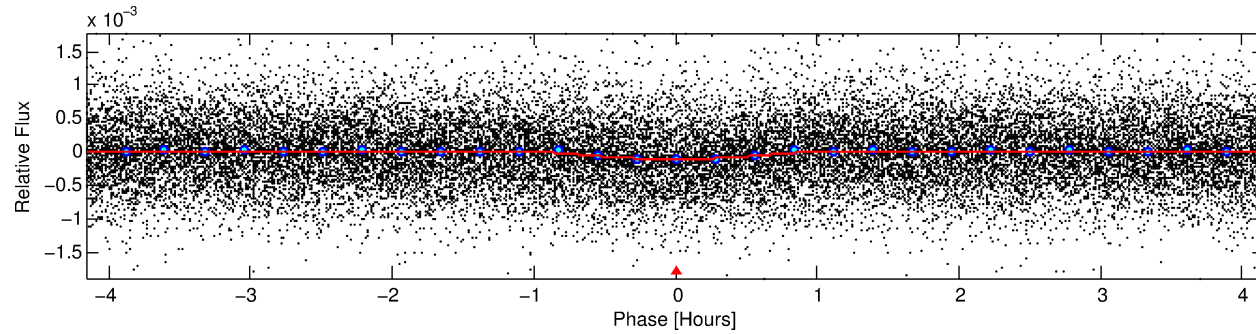
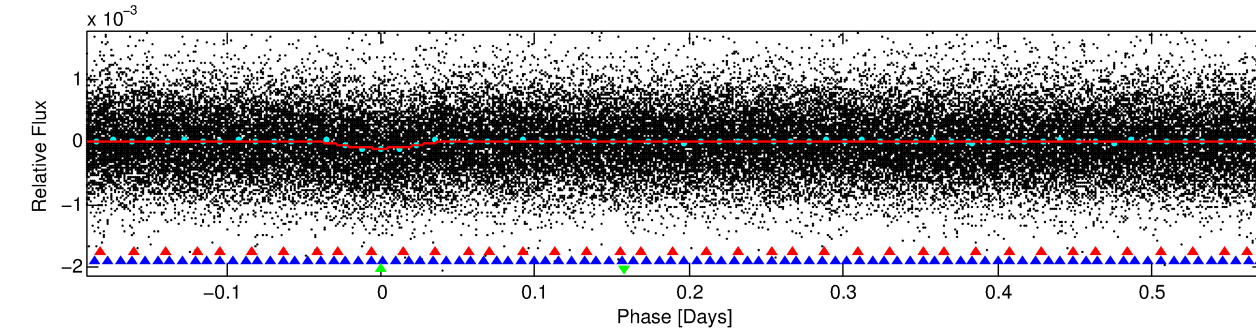
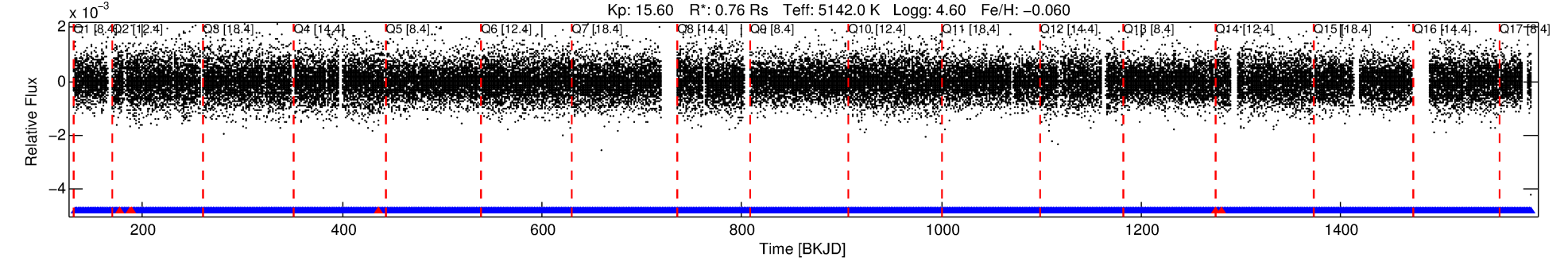
No Significant Match Found

DV One-Page Summary

KIC: 7102227 Candidate: 3 of 3 Period: 0.764 d

KOI: K01360.03 Corr: 0.868

Kp: 15.60 R*: 0.76 Rs Teff: 5142.0 K Logg: 4.60 Fe/H: -0.060



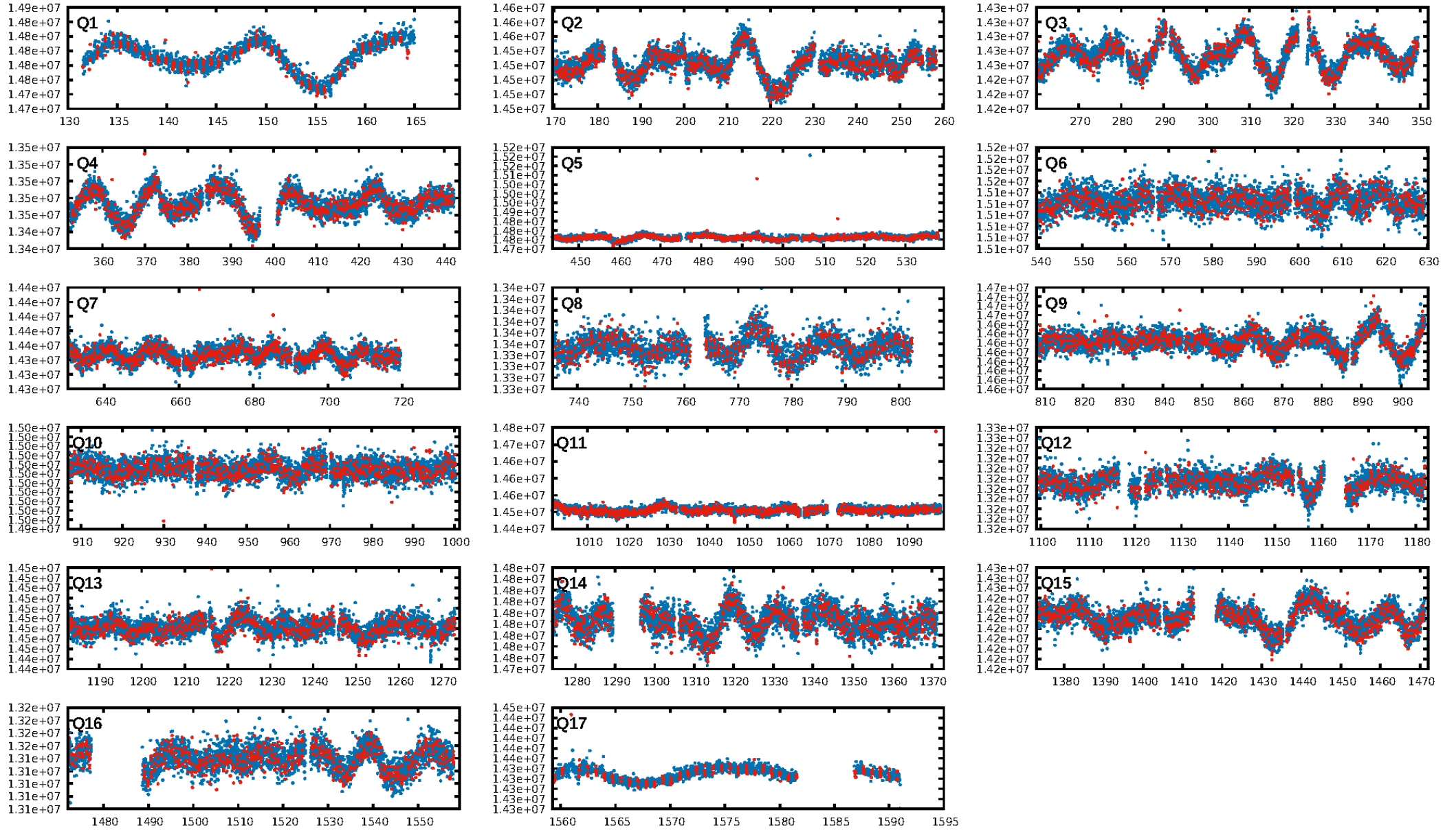
DV Fit Results:

Period = 0.76401 [0.00001] d
Epoch = 132.2299 [0.0020] BKJD
Rp/R* = 0.0108 [0.0095]
a/R* = 2.16 [6.11]
b = 0.90 [0.79]
Seff = 1508.66 [293.06]
Teff = 1589 [77] K
Rp = 0.89 [0.79] Re
a = 0.0154 [0.0016] AU
Ag = 9.79 [18.33] [0.48σ]
Teffp = 4346 [2031] K [1.36σ]

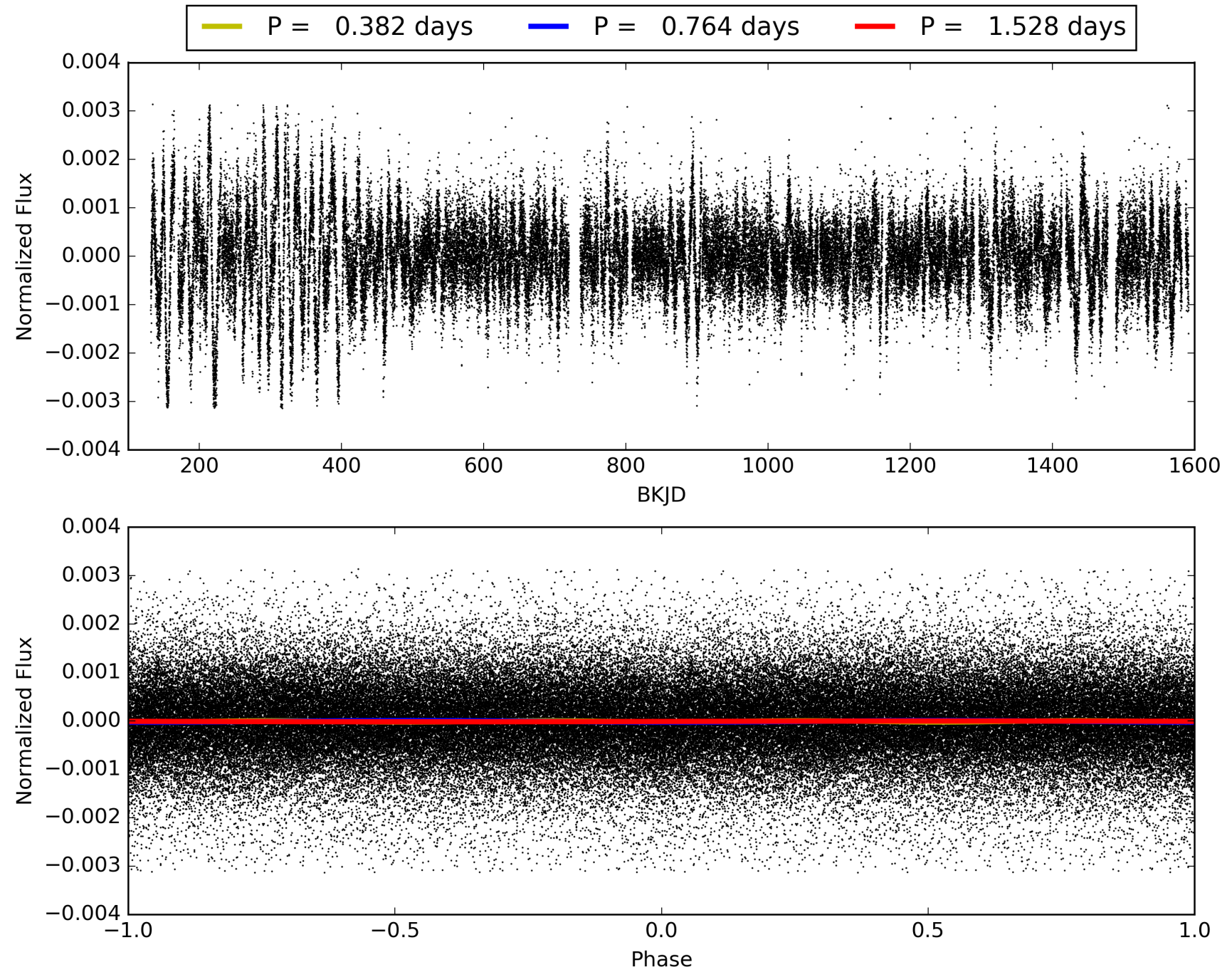
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [105.12σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.99e-30
RollingBand-fgt: 1.00 [1604/1610]
GhostDiagnostic-chr: 8.831
Centroid-sig: 38.3%
Centroid-so: 1.099 arcsec [0.89σ]
OotOffset-rm: 0.925 arcsec [1.65σ]
KicOffset-rm: 0.945 arcsec [1.58σ]
OotOffset-st: 2/3/3/5 [13]
KicOffset-st: 2/3/3/5 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007102227-03, PDC Light Curves

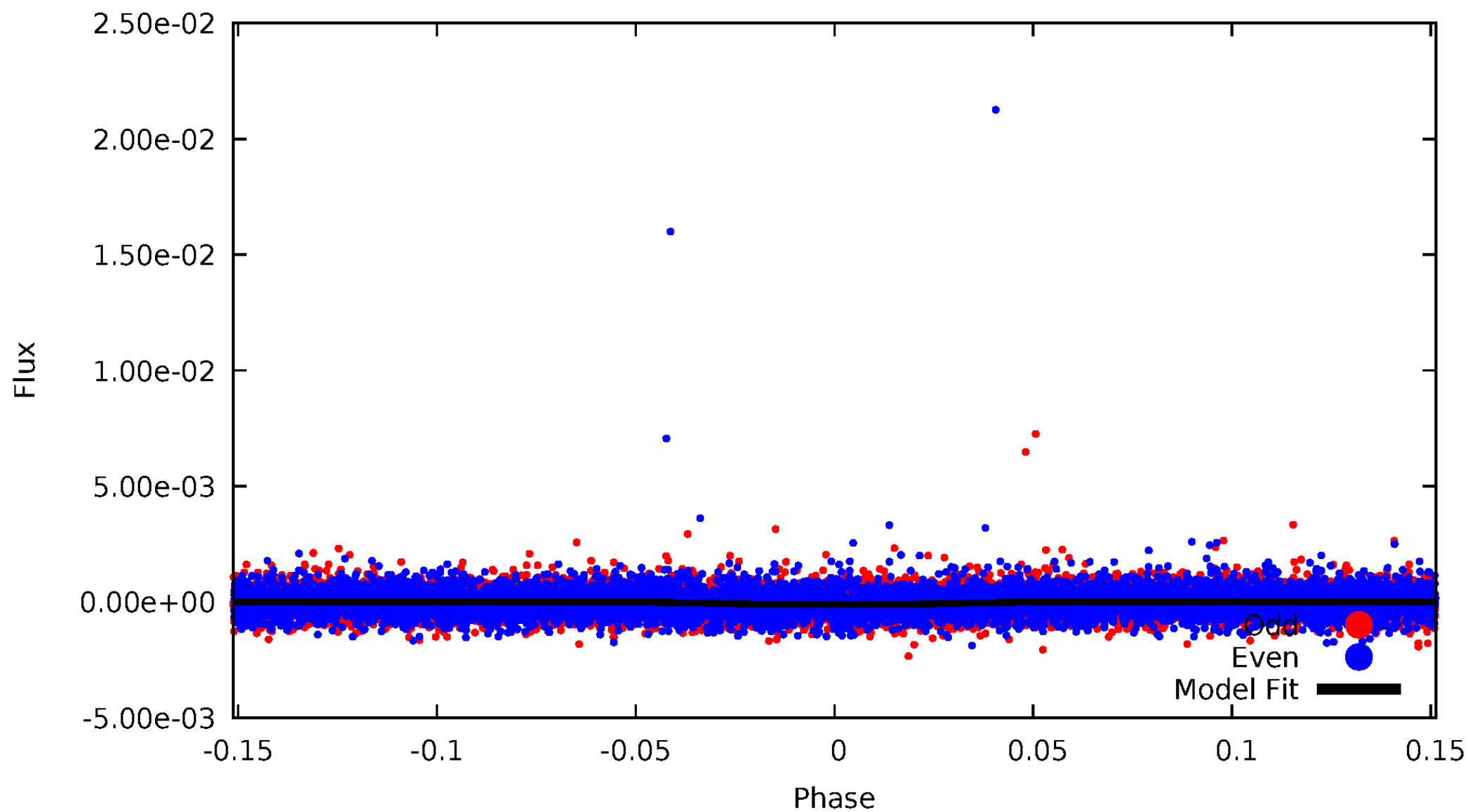


TCE 007102227-03



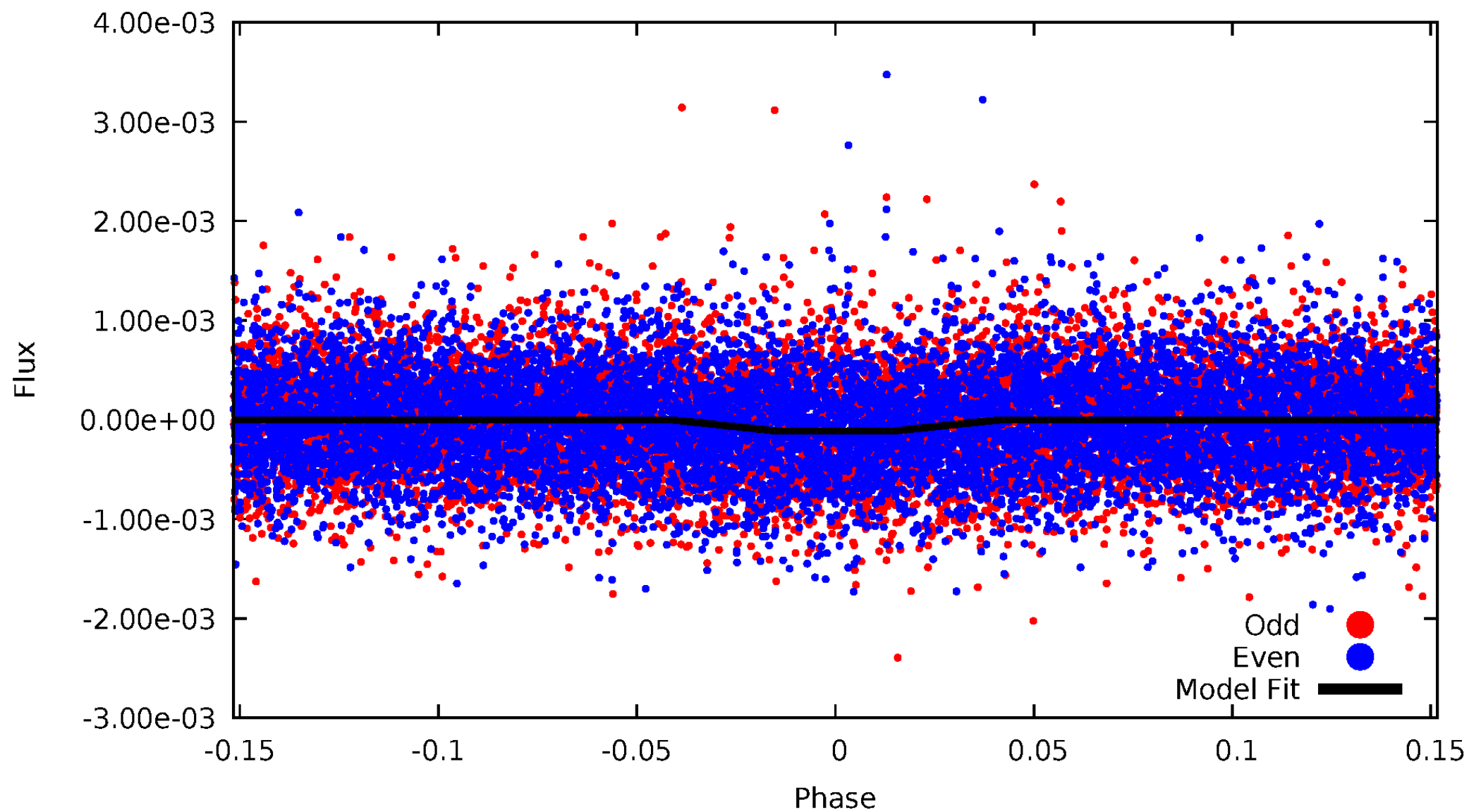
DV Odd/Even

TCE 007102227-03



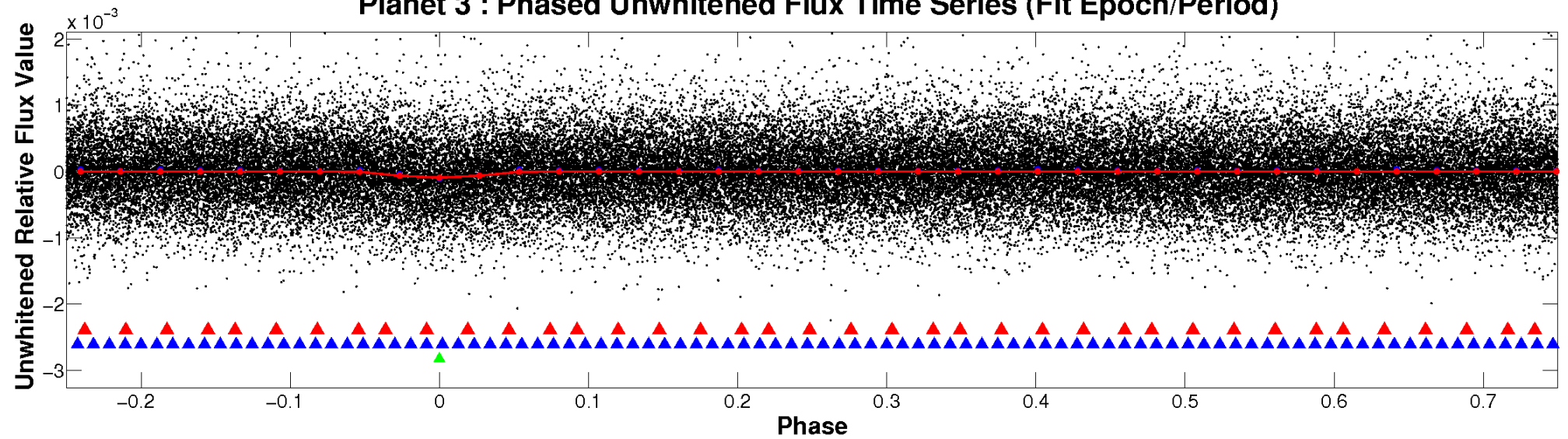
ALT Odd/Even

TCE 007102227-03

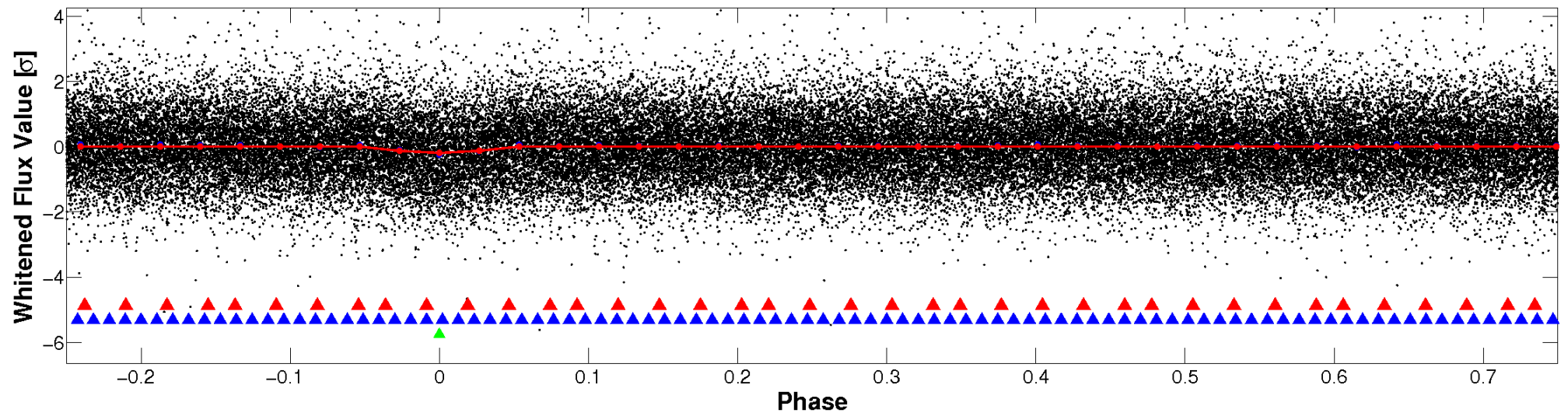


Non-Whitened Vs. Whitened Light Curve

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

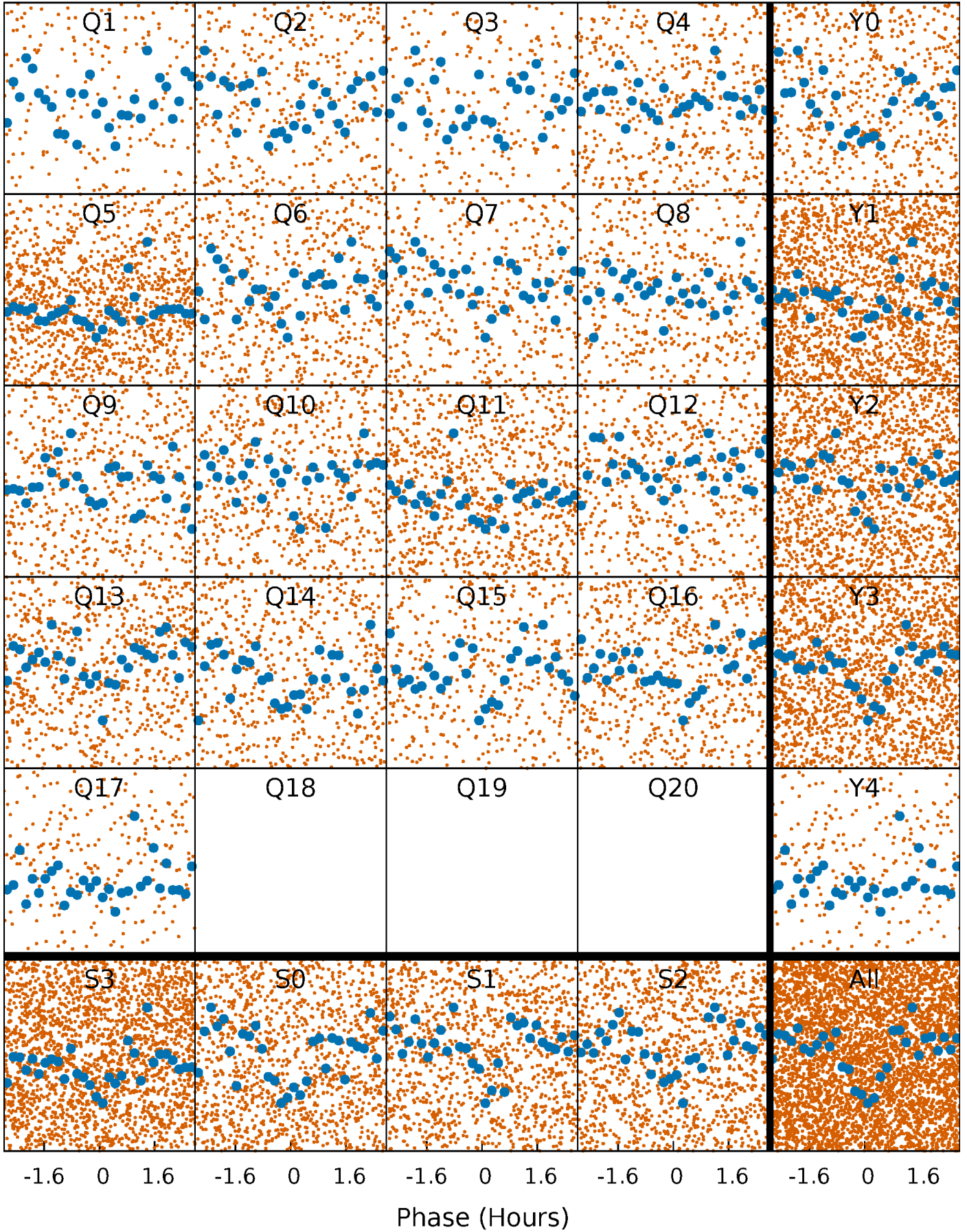


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



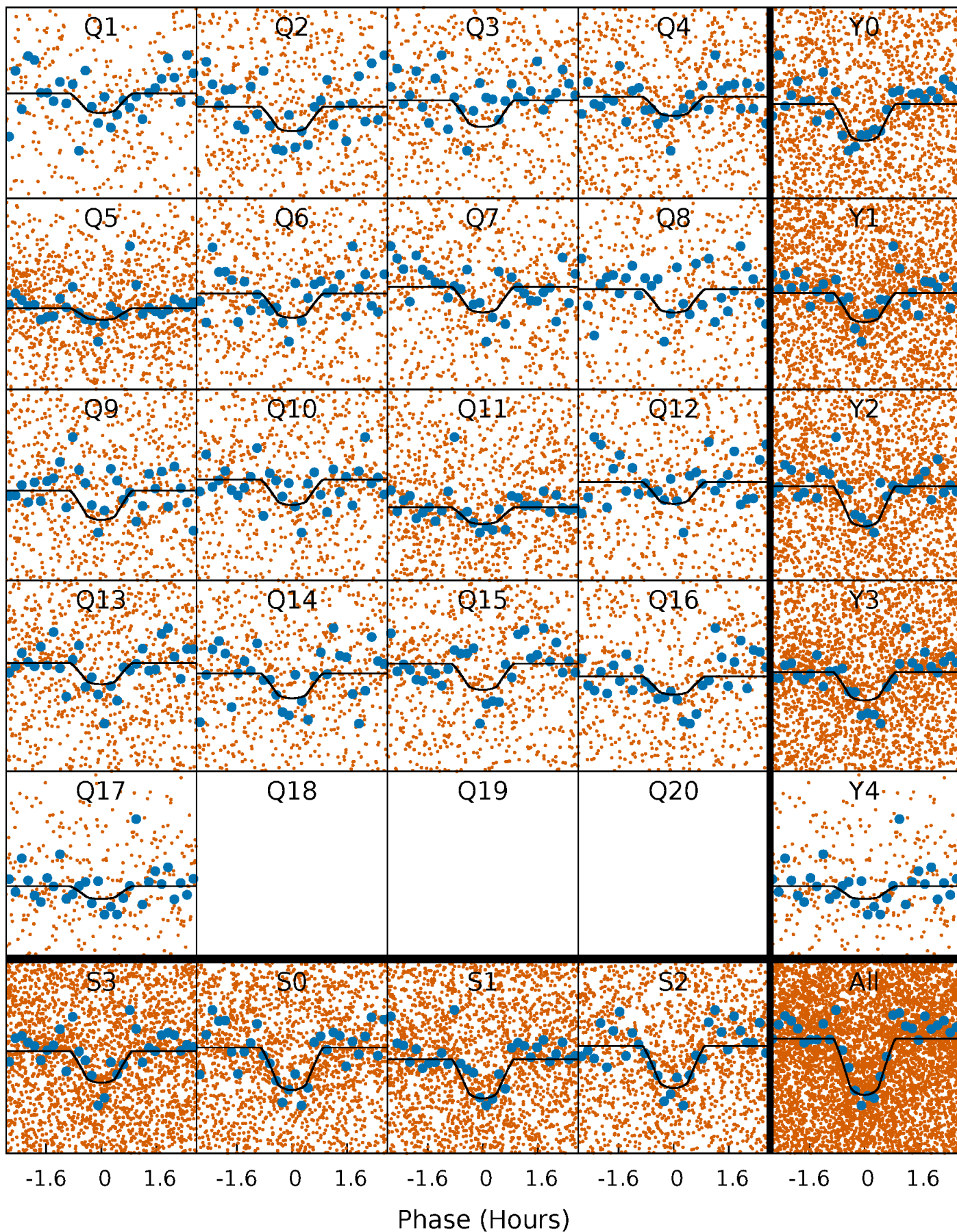
PDC Quarter-Phased Transit Curves

TCE 007102227-03 P= 0.764008 Days $T_0=132.229933$ (BKJD)



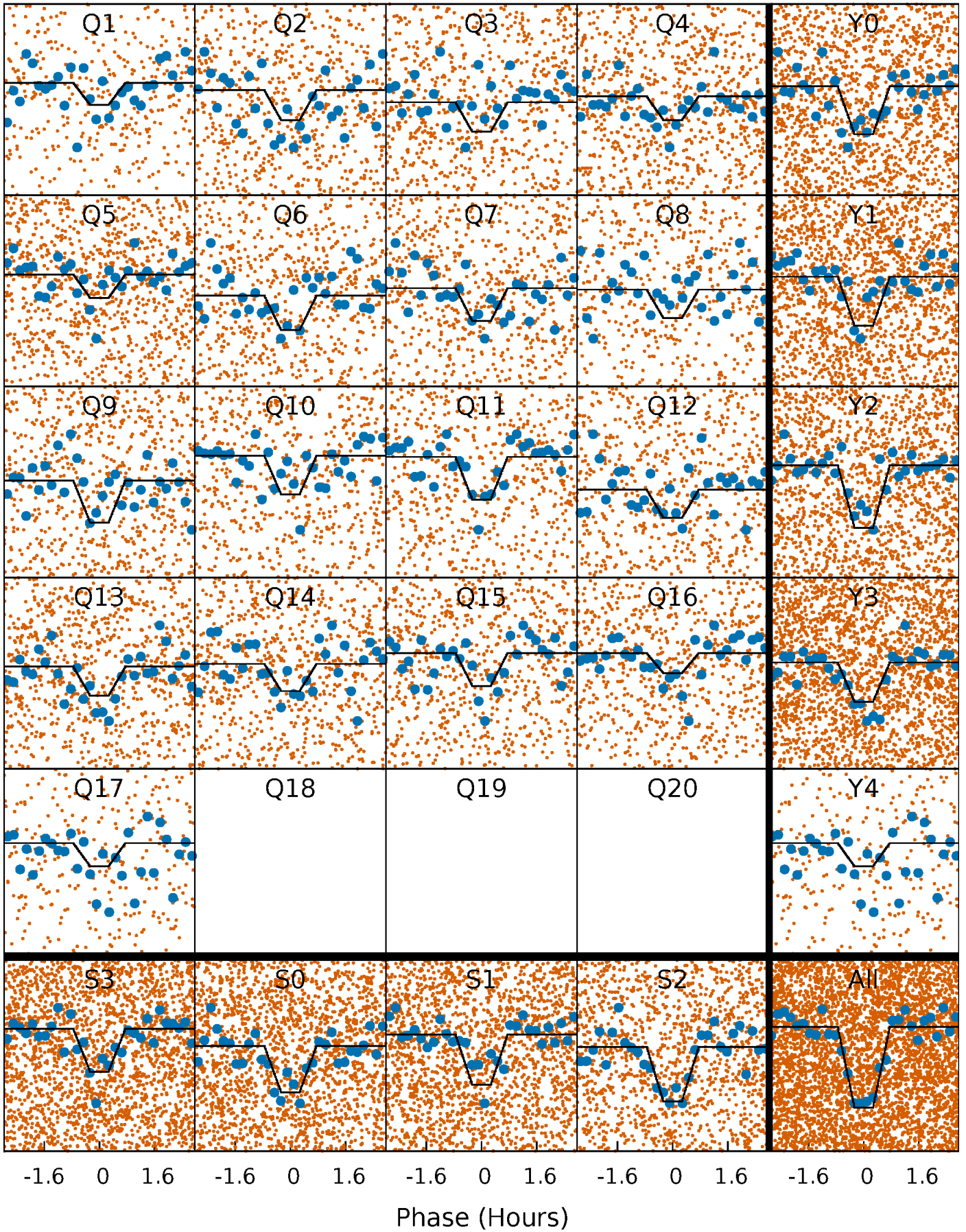
DV Quarter-Phased Transit Curves

TCE 007102227-03 P= 0.764008 Days $T_0=132.229933$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

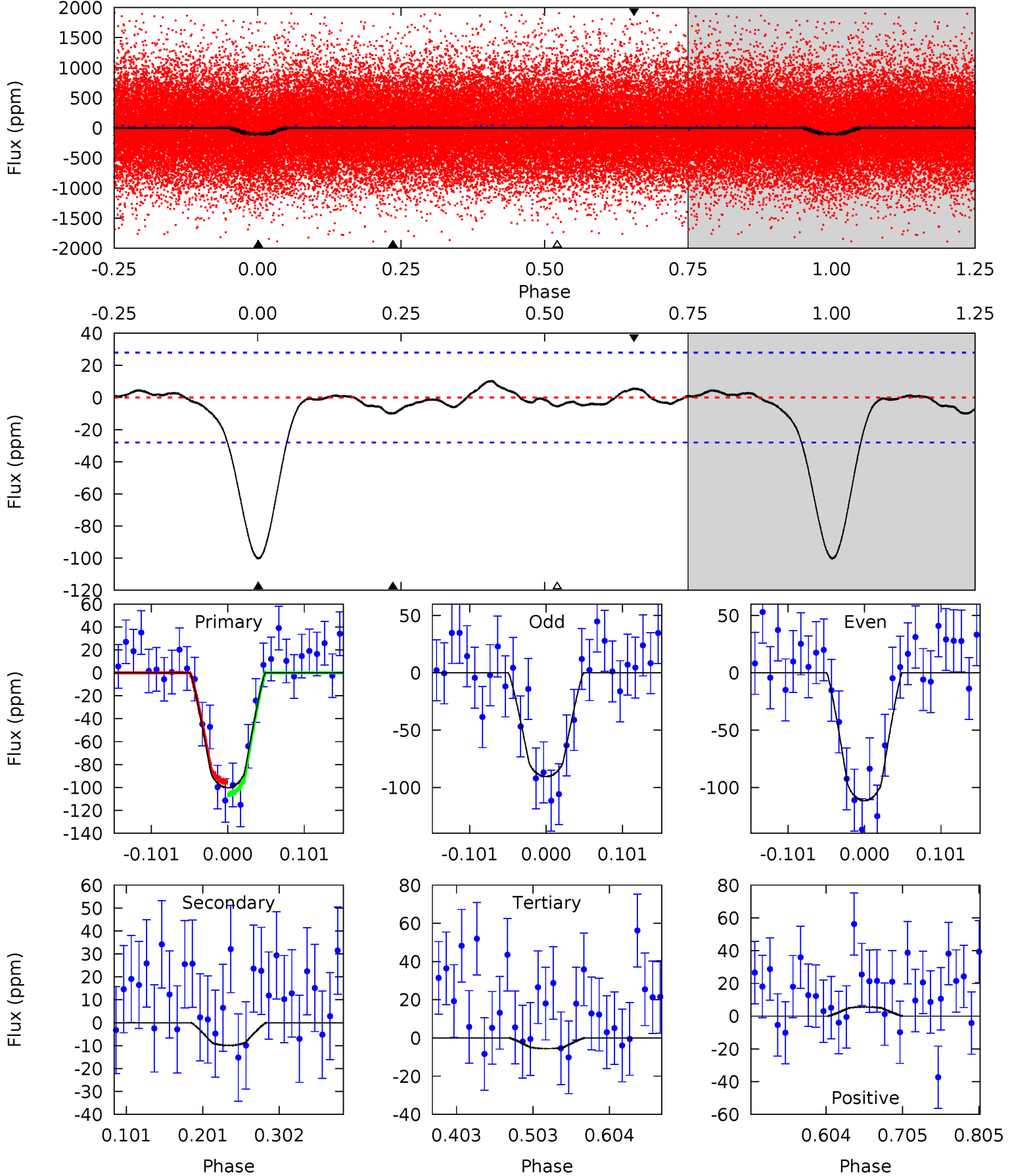
TCE 007102227-03 P= 0.764009 Days $T_0=132.230045$ (BKJD)



DV Model-Shift Uniqueness Test

007102227-03, P = 0.764008 Days, E = 131.465925 Days

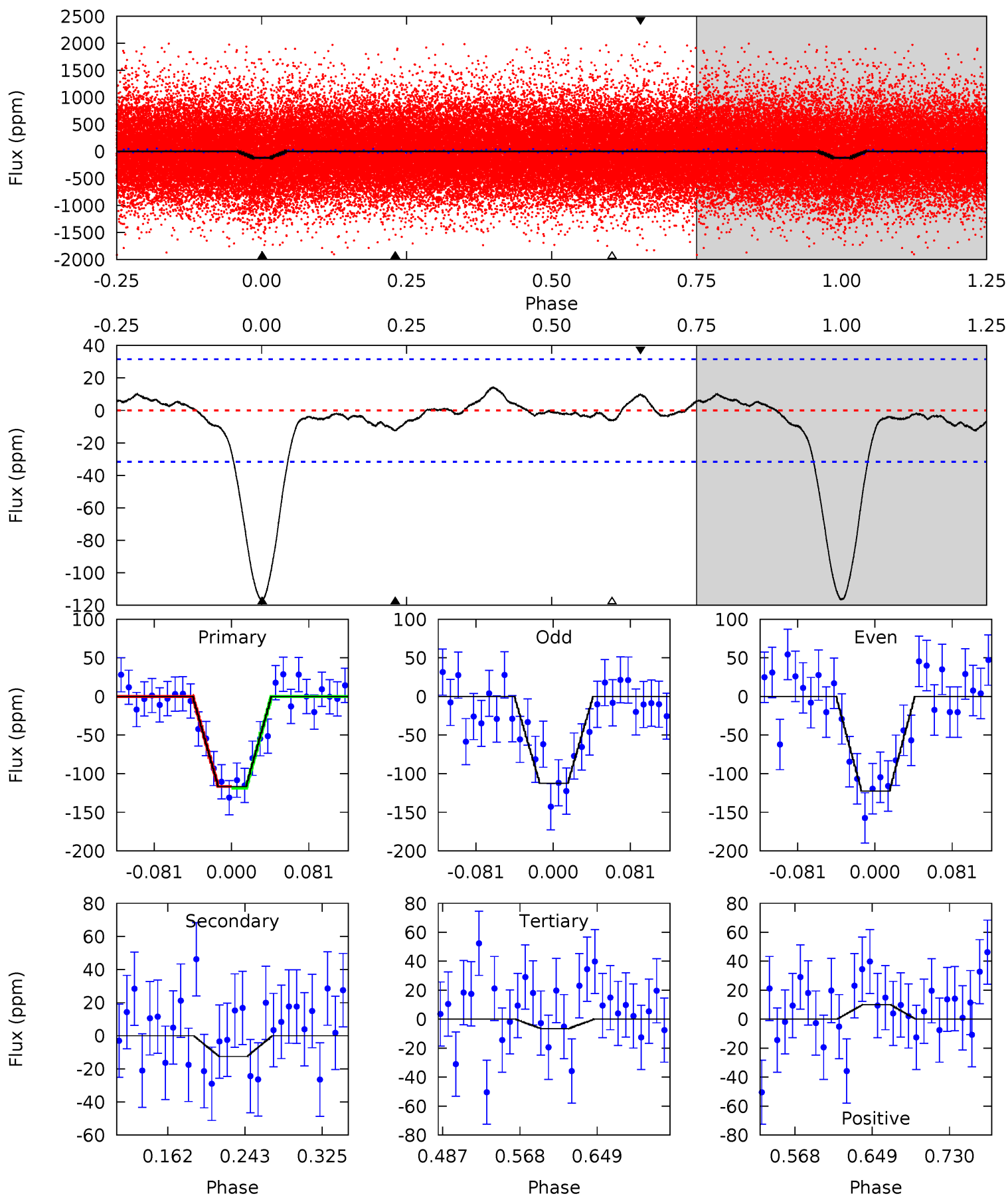
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.3	1.62	0.91	0.91	4.56	1.64	0.62	15.4	15.4	0.71	0.71	1.71	0.94	0.09	0.88



Alt Model-Shift Uniqueness Test

007102227-03, P = 0.764009 Days, E = 131.466036 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	1.83	0.95	1.46	4.61	1.74	0.73	16.1	15.6	0.88	0.37	0.73	0.96	0.11	0.17



Stellar Parameters For KIC 007102227

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5142^{+153}_{-153}	$4.602^{+0.033}_{-0.083}$	$-0.060^{+0.300}_{-0.300}$	$0.755^{+0.097}_{-0.065}$	$0.840^{+0.065}_{-0.090}$	$2.750^{+0.411}_{-0.764}$
	+3%/-3%	+1%/-2%	+500%/-500%	+13%/-9%	+8%/-11%	+15%/-28%
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 007102227-03 / KOI 1360.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 6	$1.03^{+0.74}_{-0.60}$	2247^{+90}_{-86}	2964^{+1188}_{-5190}	$1.056^{+5.868}_{-0.826}$
Alt.	-13 ± 7	$1.02^{+0.84}_{-0.61}$	2244^{+88}_{-91}	3125^{+1295}_{-958}	$1.378^{+7.982}_{-1.021}$

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

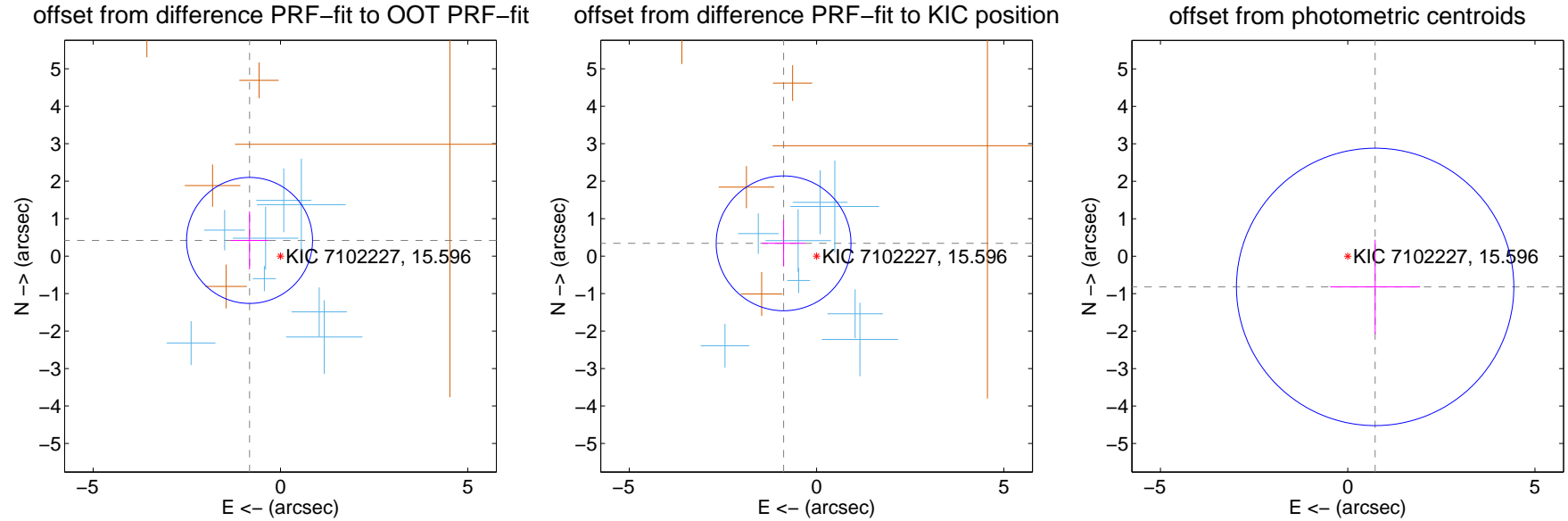
DV Centroid Data

Supplemental centroid analysis for 007102227-03. Kepler magnitude: 15.60. Transit SNR 10.68

There are 8 quarters with good PRF difference image offsets

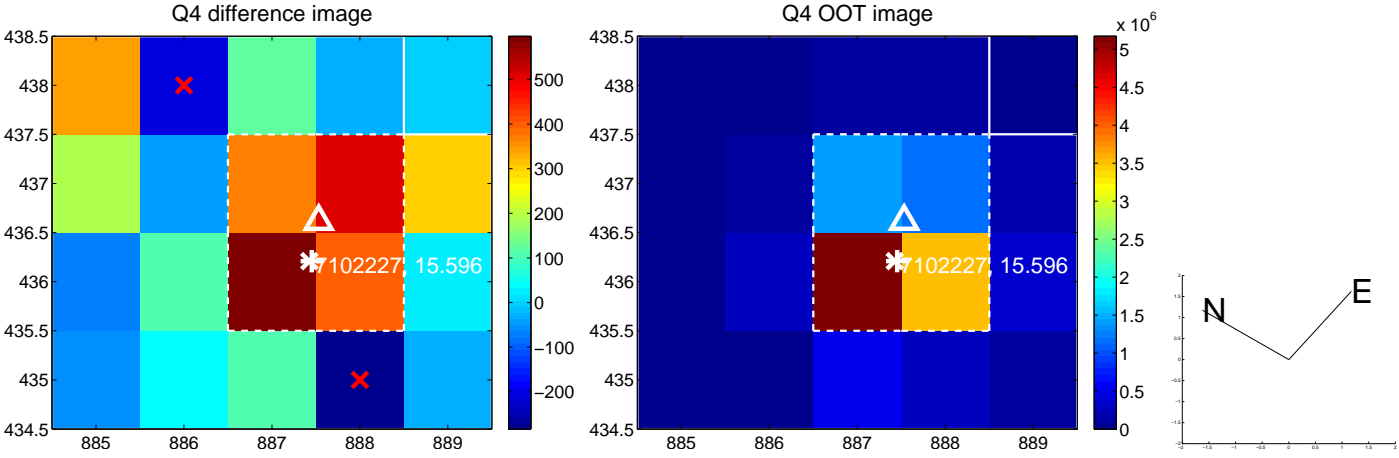
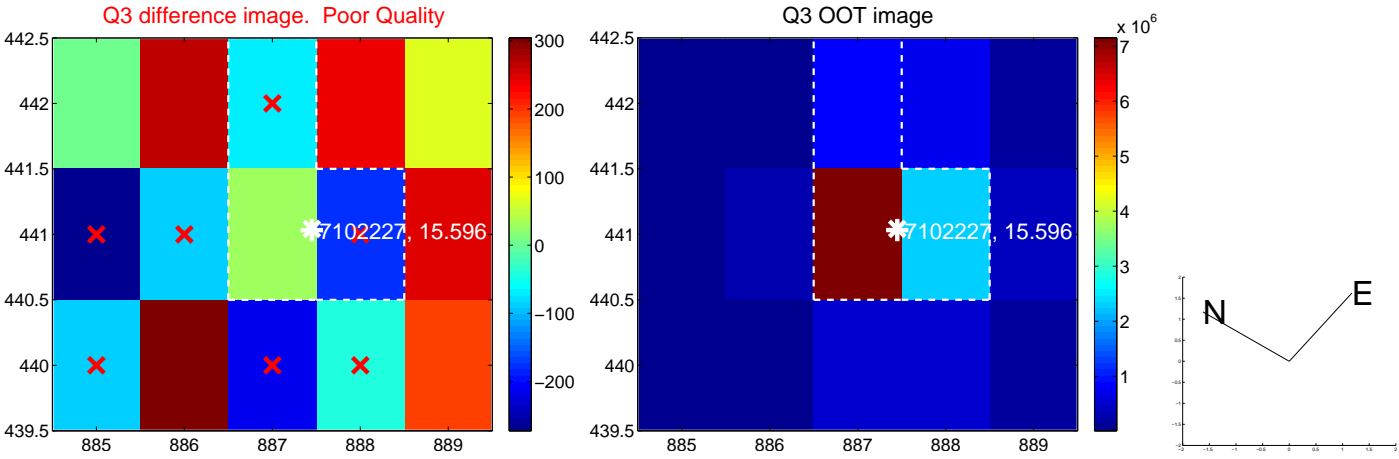
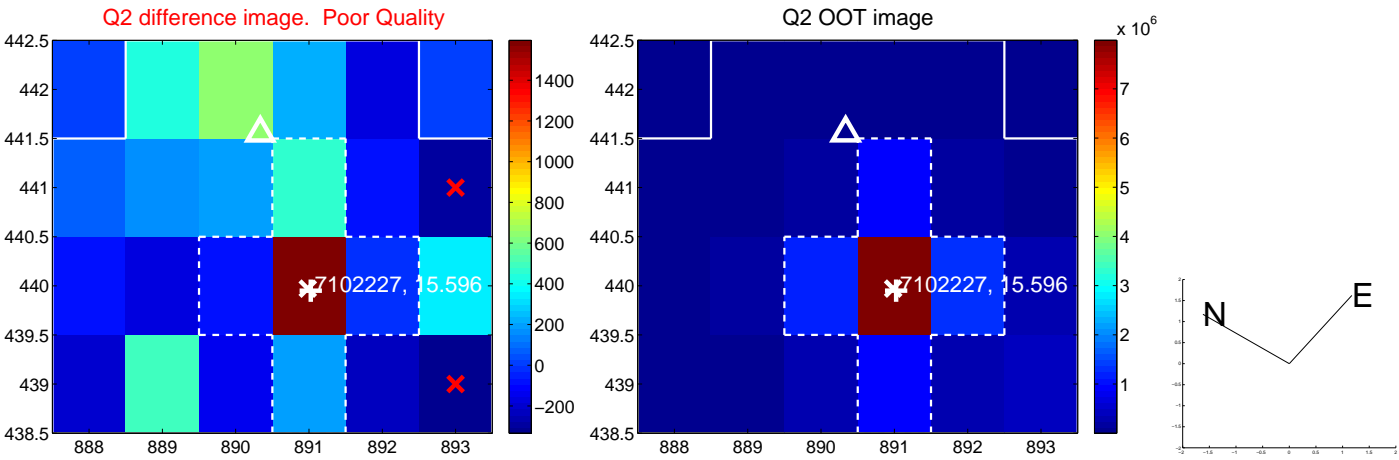
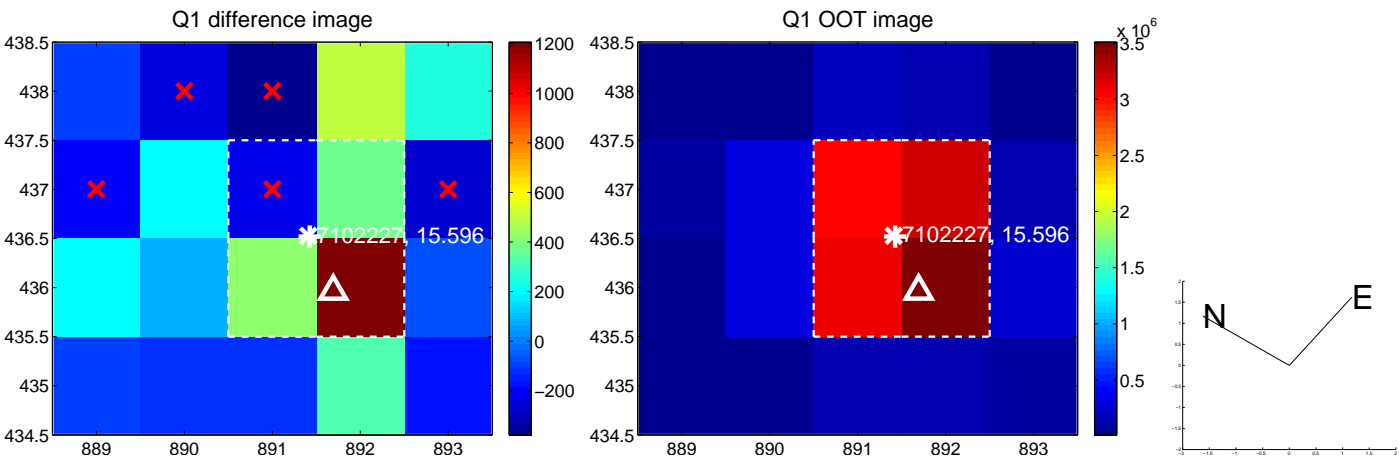
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.925 ± 0.560	1.65	0.825 ± 0.501	0.419 ± 0.773
PRF-fit source offset from KIC position	0.945 ± 0.600	1.58	0.881 ± 0.569	0.342 ± 0.614
photometric centroid source offset	1.10 ± 1.23	0.89	-0.73 ± 1.20	-0.82 ± 1.26

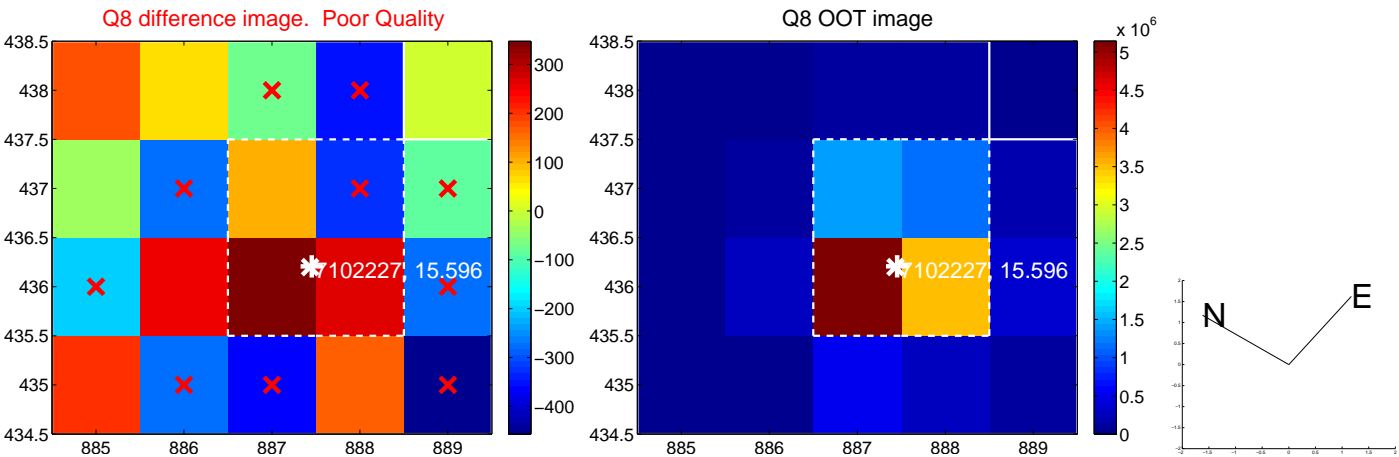
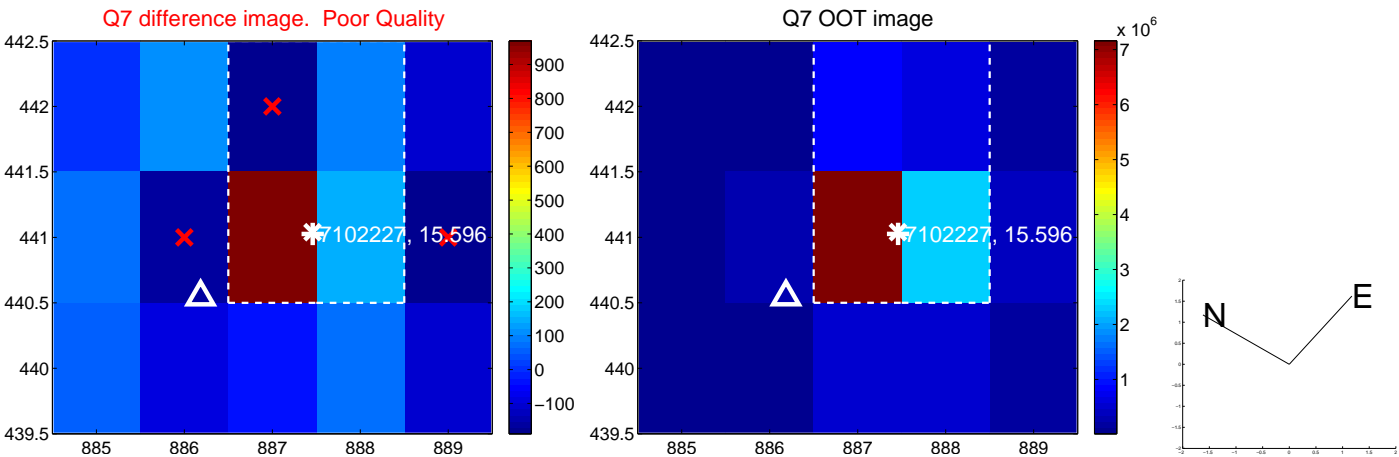
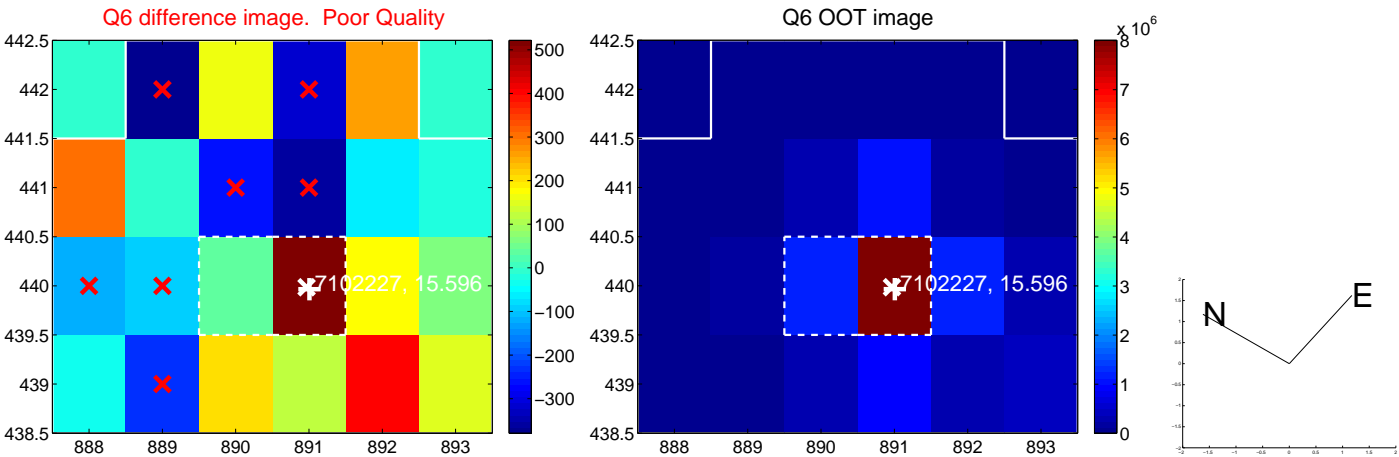
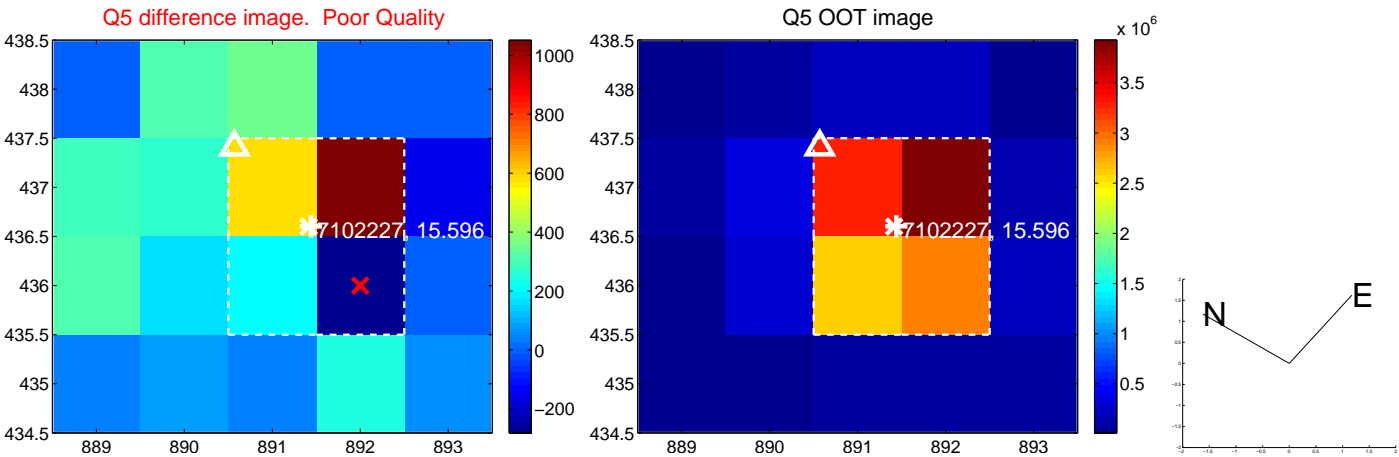


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

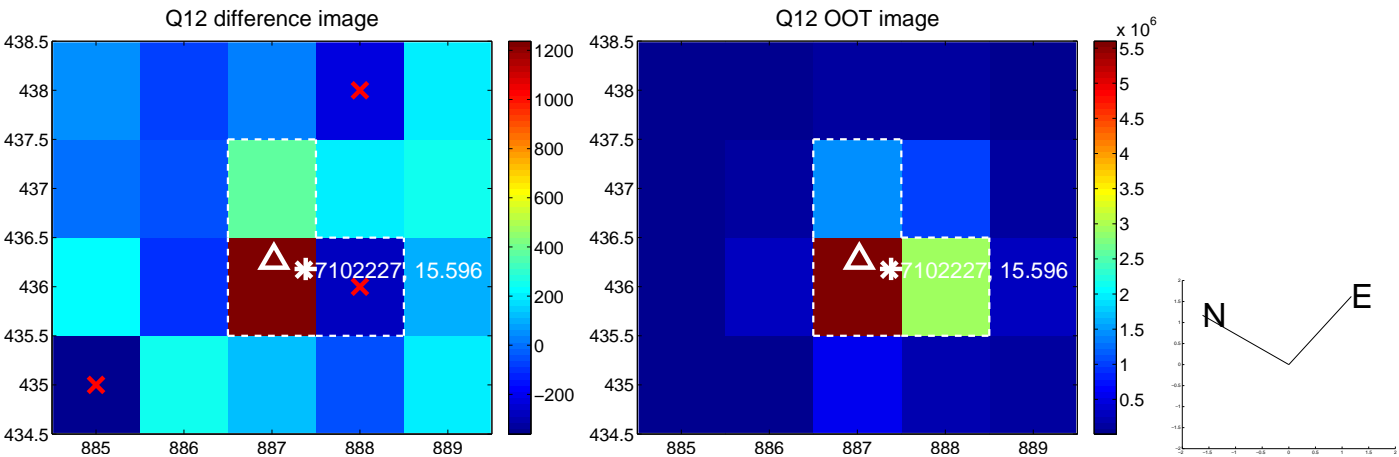
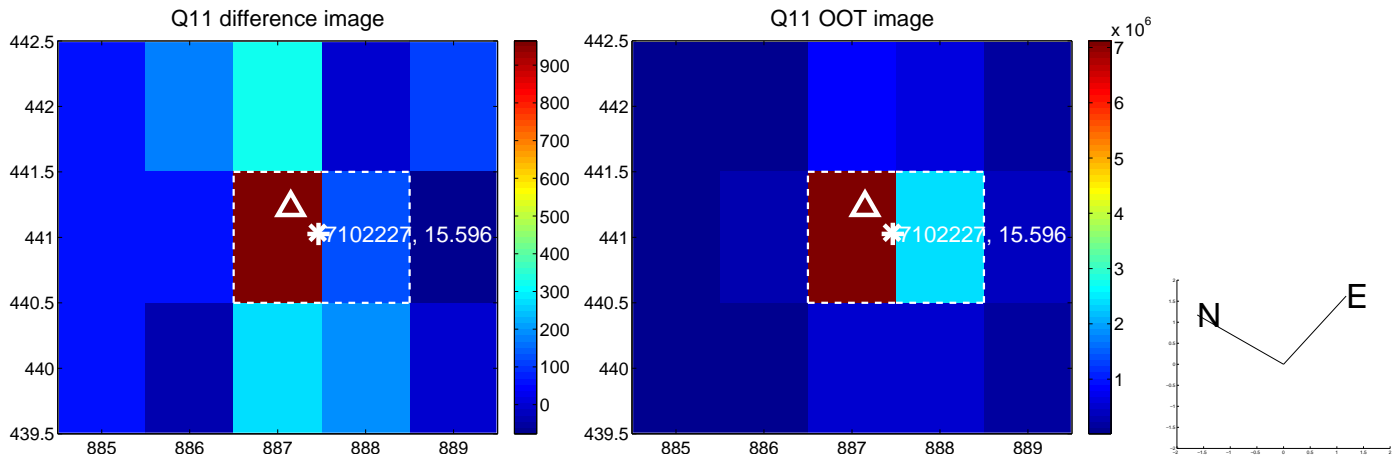
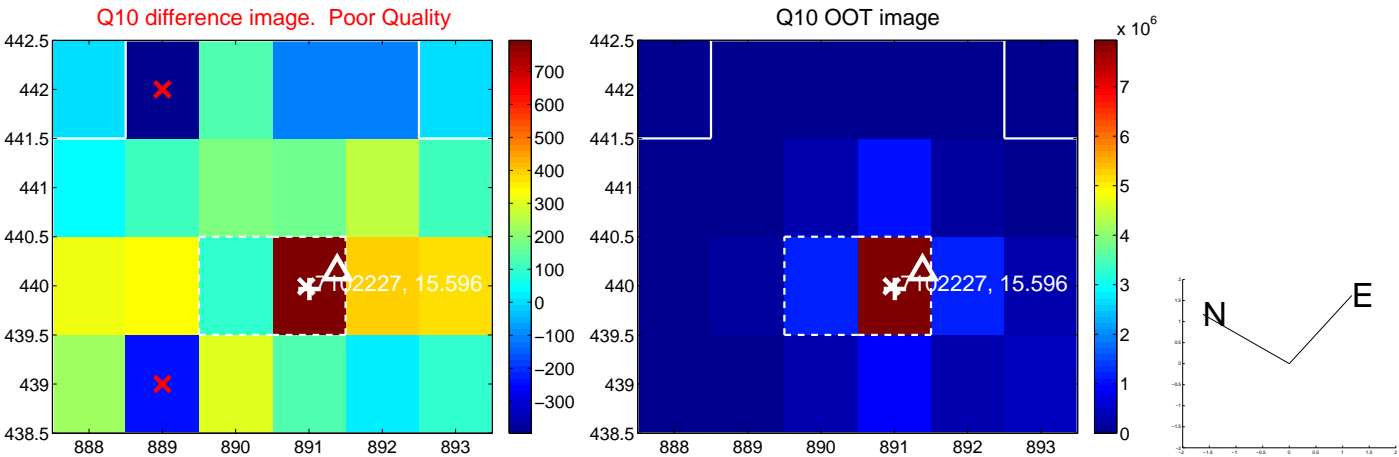
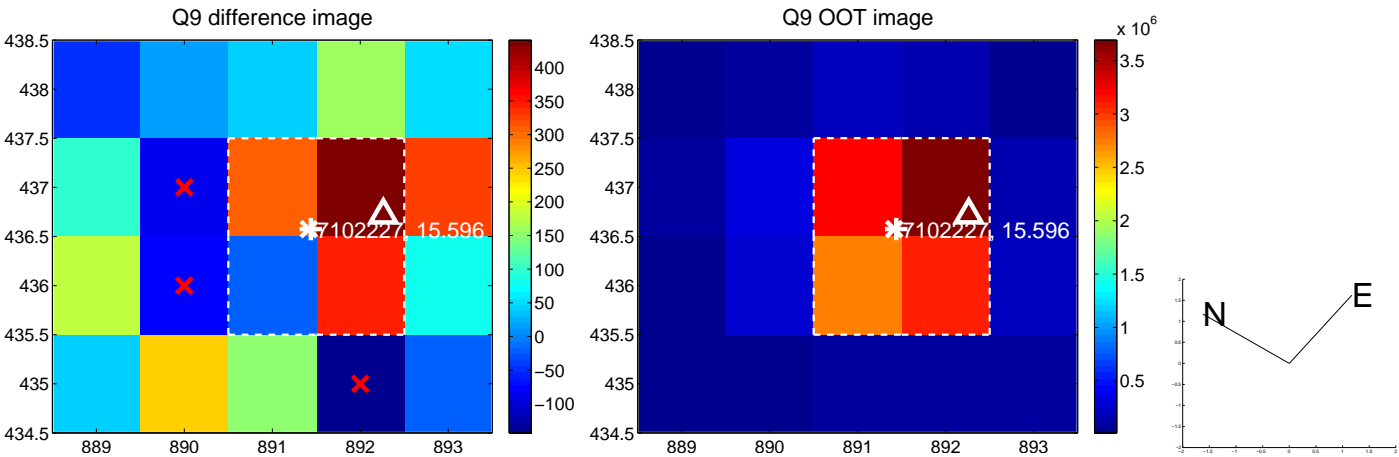
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



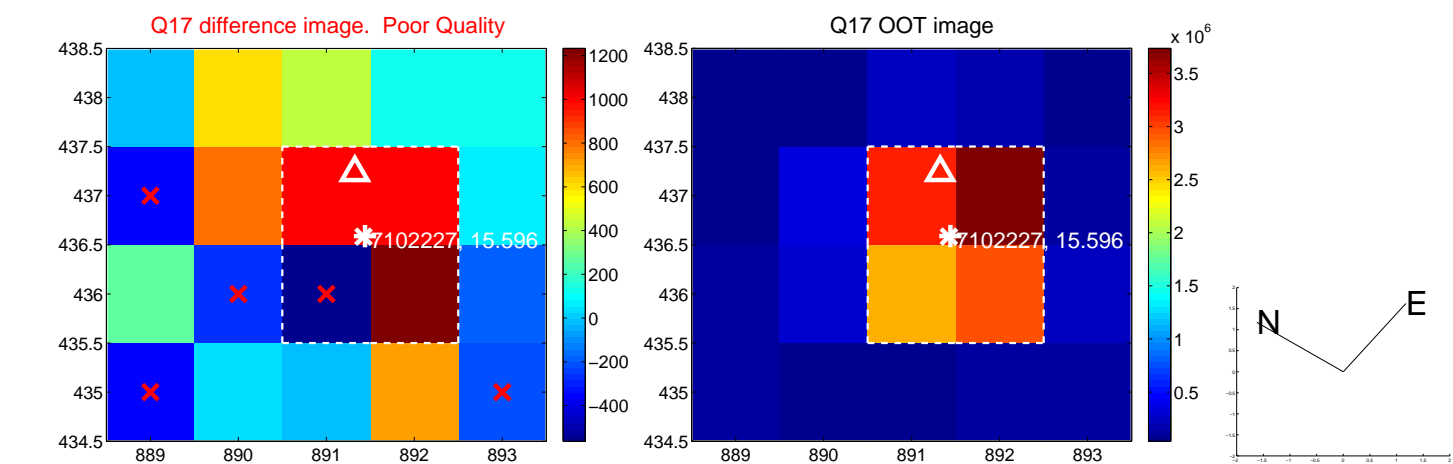
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



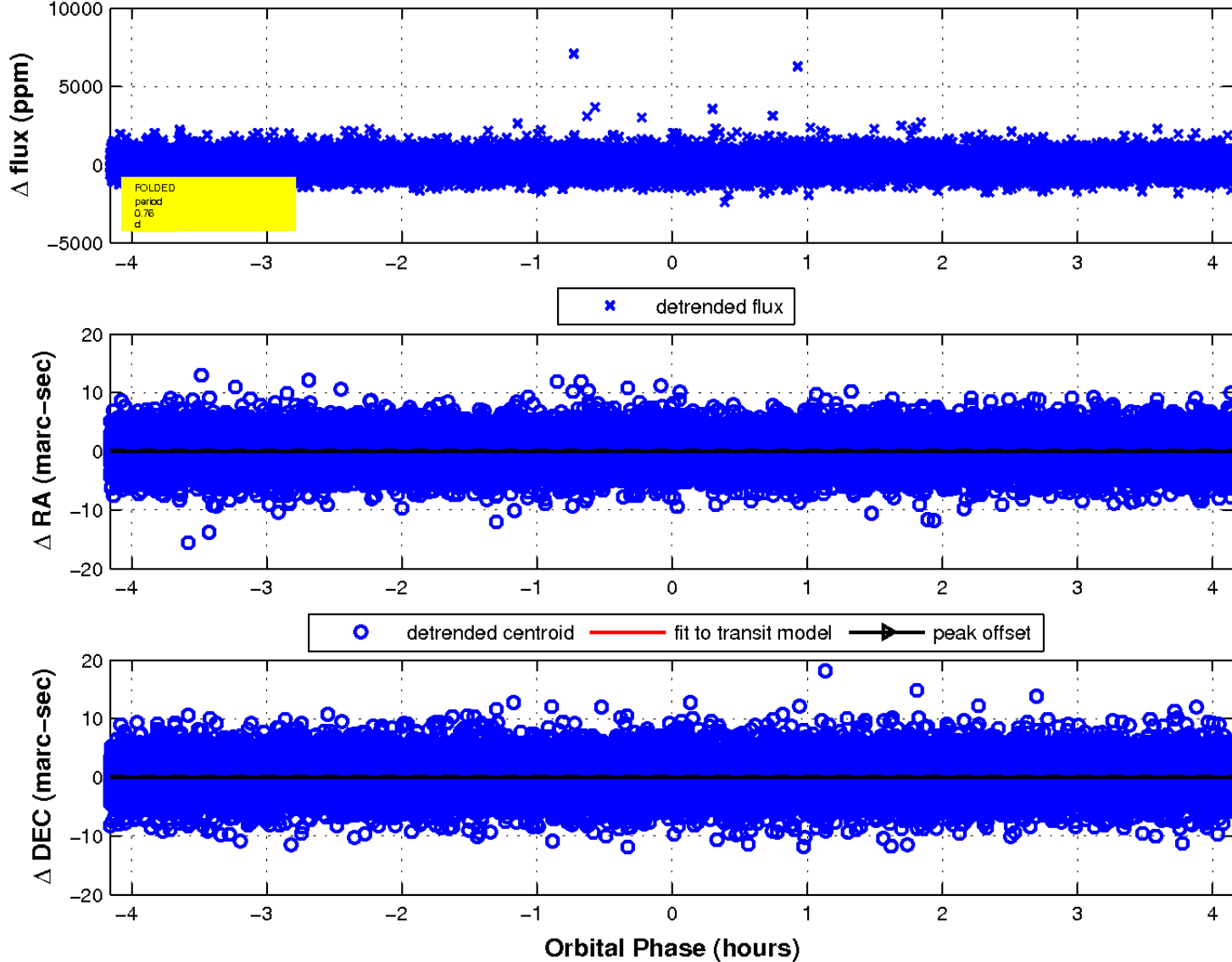
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

