

KIC 008112006

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})
008112006-01	OBS	No	0.682055	131.895777	27.7	3.674	7.8	7.7	0.79	6119	0.42	4181.27
008112006-03	OBS	No	206.234373	216.558065	599.5	5.000	9.3	6.7	0.79	6119	2.07	2.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008112006-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008112006-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

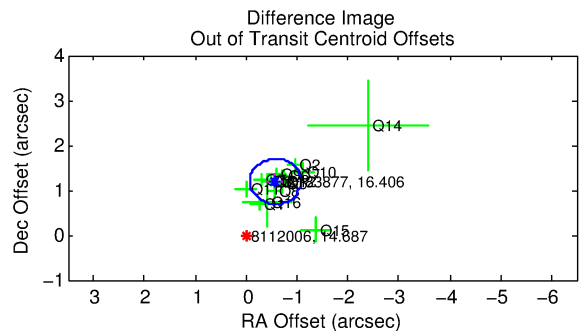
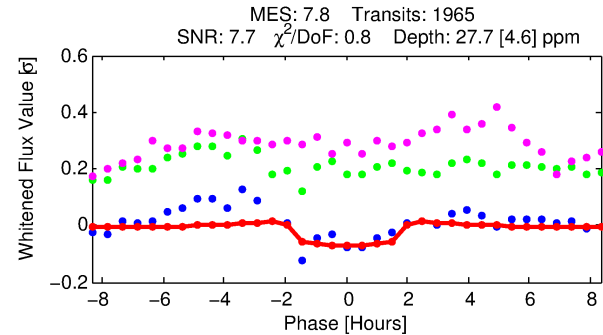
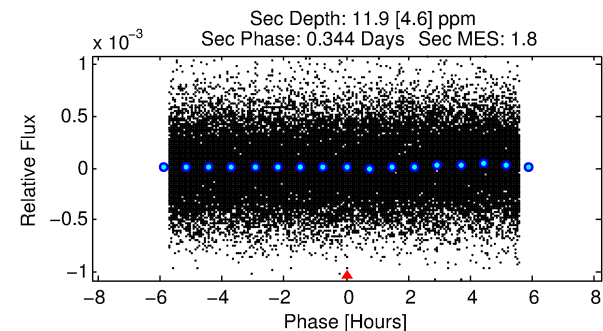
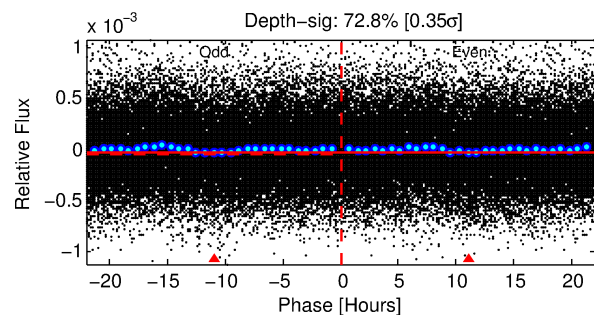
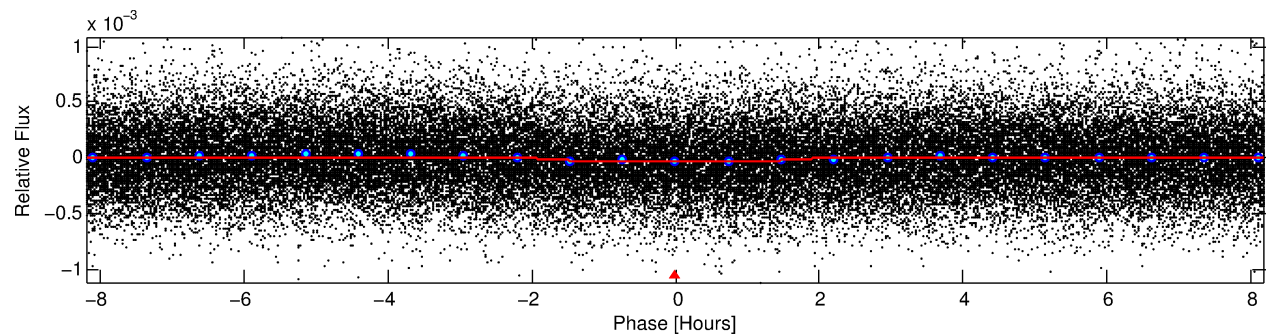
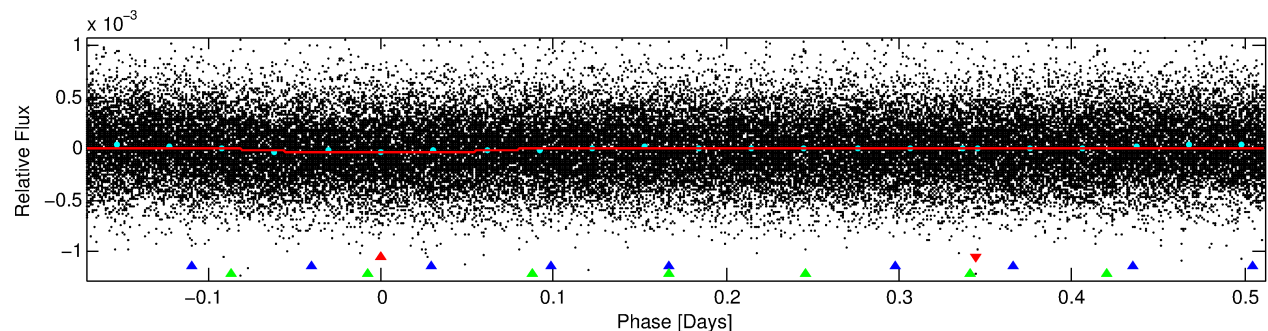
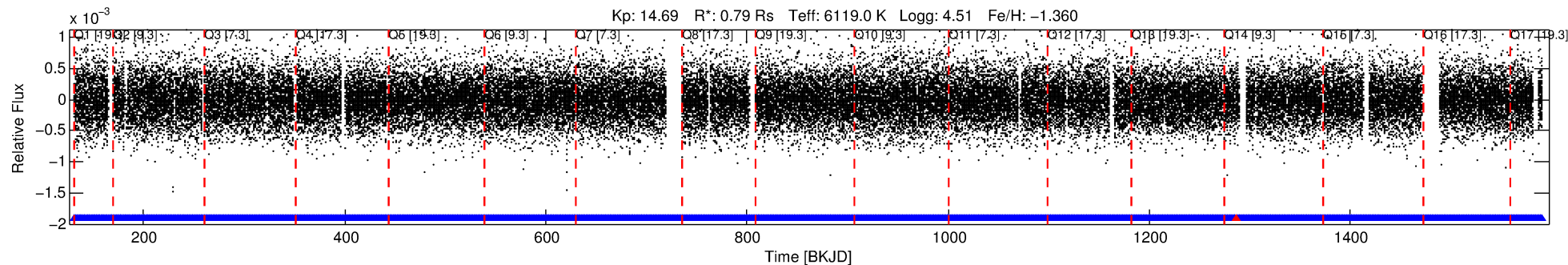
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008112006-01

No Significant Match Found

DV One-Page Summary

KIC: 8112006 Candidate: 1 of 3 Period: 0.682 d



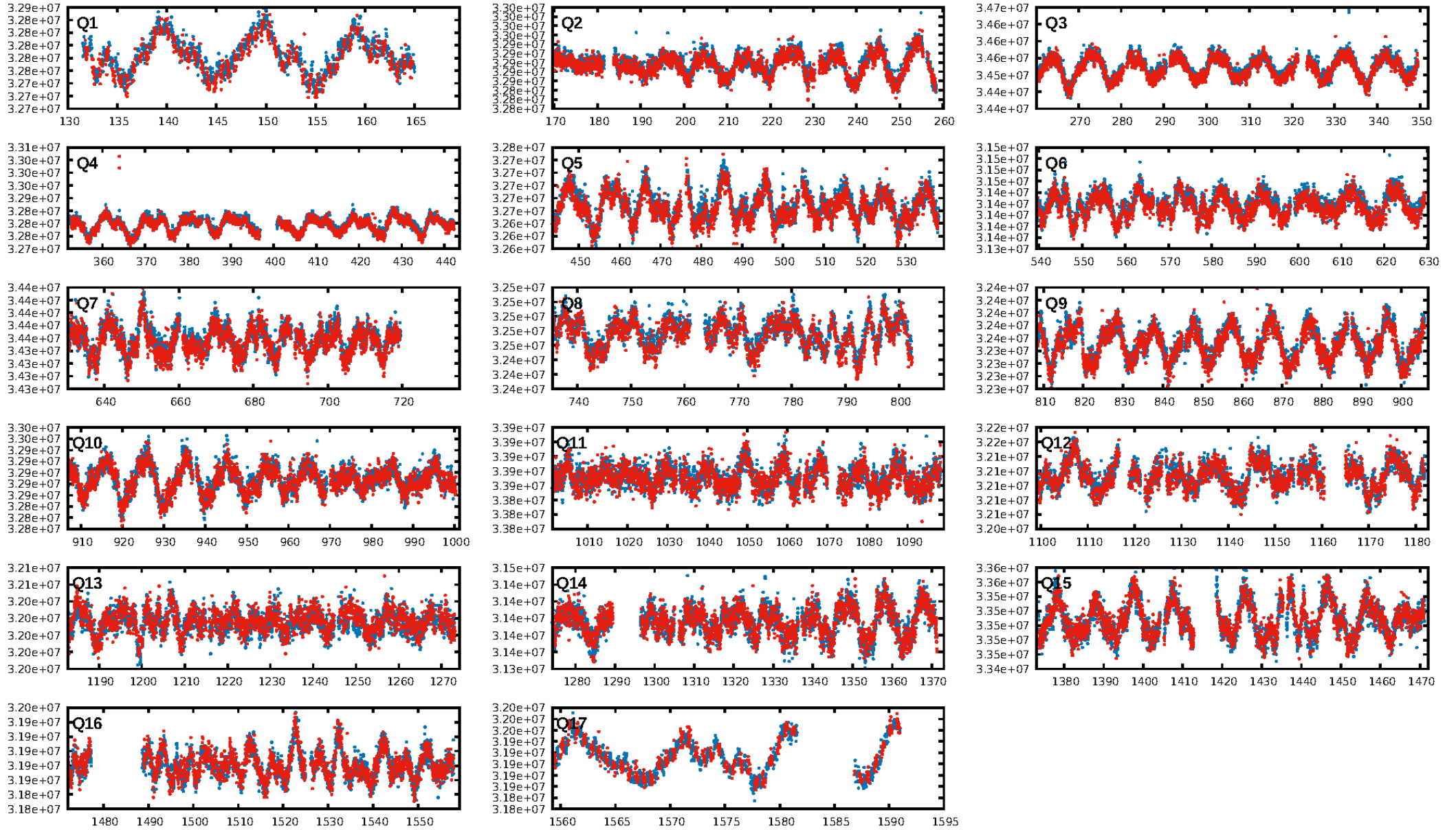
DV Fit Results:

Period = 0.68205 [0.00001] d
Epoch = 131.8958 [0.0043] BKJD
Rp/R* = 0.0049 [0.0036]
a/R* = 1.49 [3.28]
b = 0.37 [9.59]
Seff = 4181.27 [1086.80]
Teff = 2050 [133] K
Rp = 0.42 [0.32] Re
a = 0.0137 [0.0021] AU
Ag = 6.80 [10.54] [0.55 σ]
Teffp = 5119 [1968] K [1.56 σ]

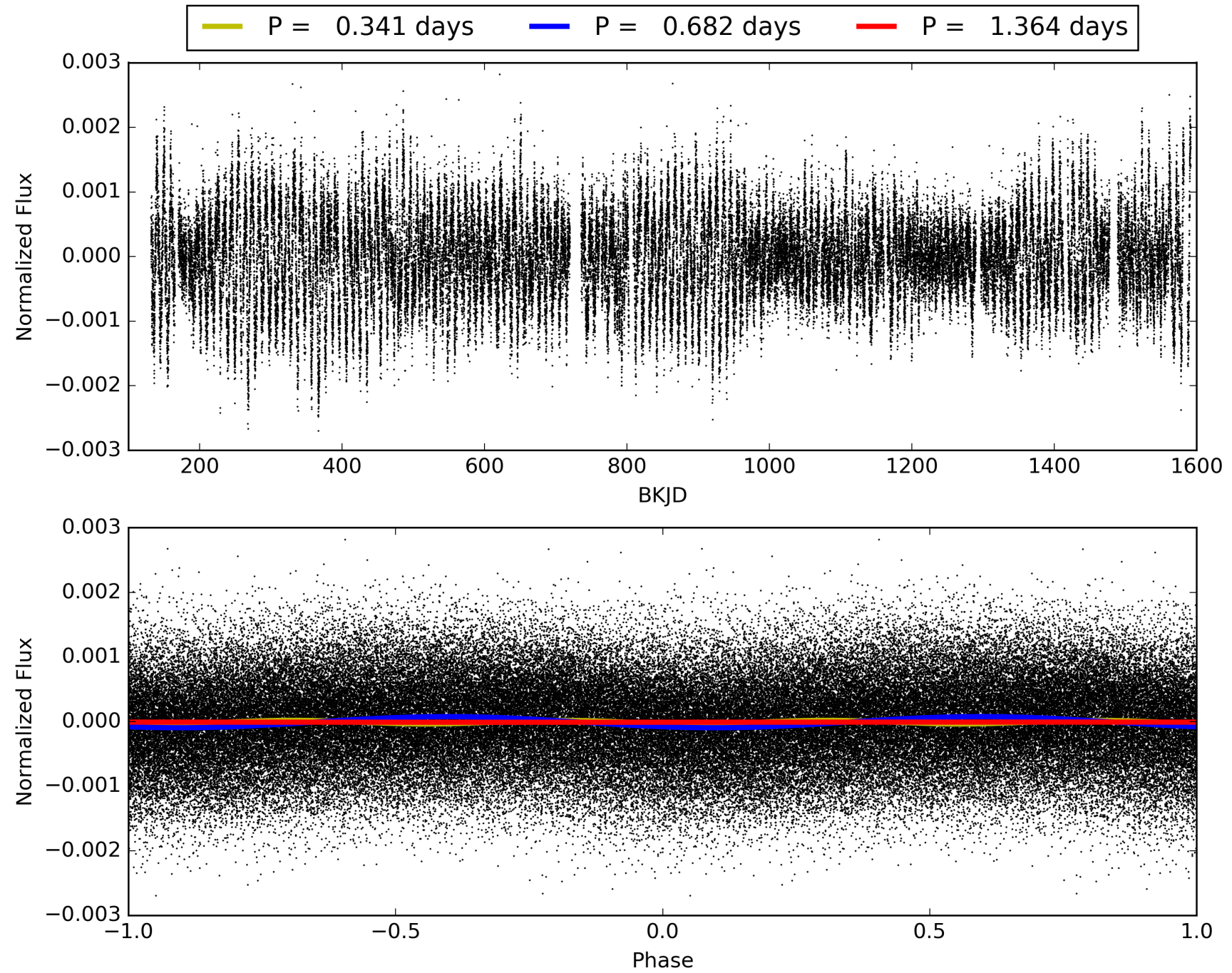
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [363.74 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.67e-11
RollingBand-fgt: 1.00 [1876/1877]
GhostDiagnostic-chr: 0.9819
Centroid-sig: 0.0%
Centroid-so: 6.941 arcsec [5.75 σ]
OotOffset-rm: 1.322 arcsec [7.85 σ]
KicOffset-rm: 1.250 arcsec [9.41 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008112006-01, PDC Light Curves

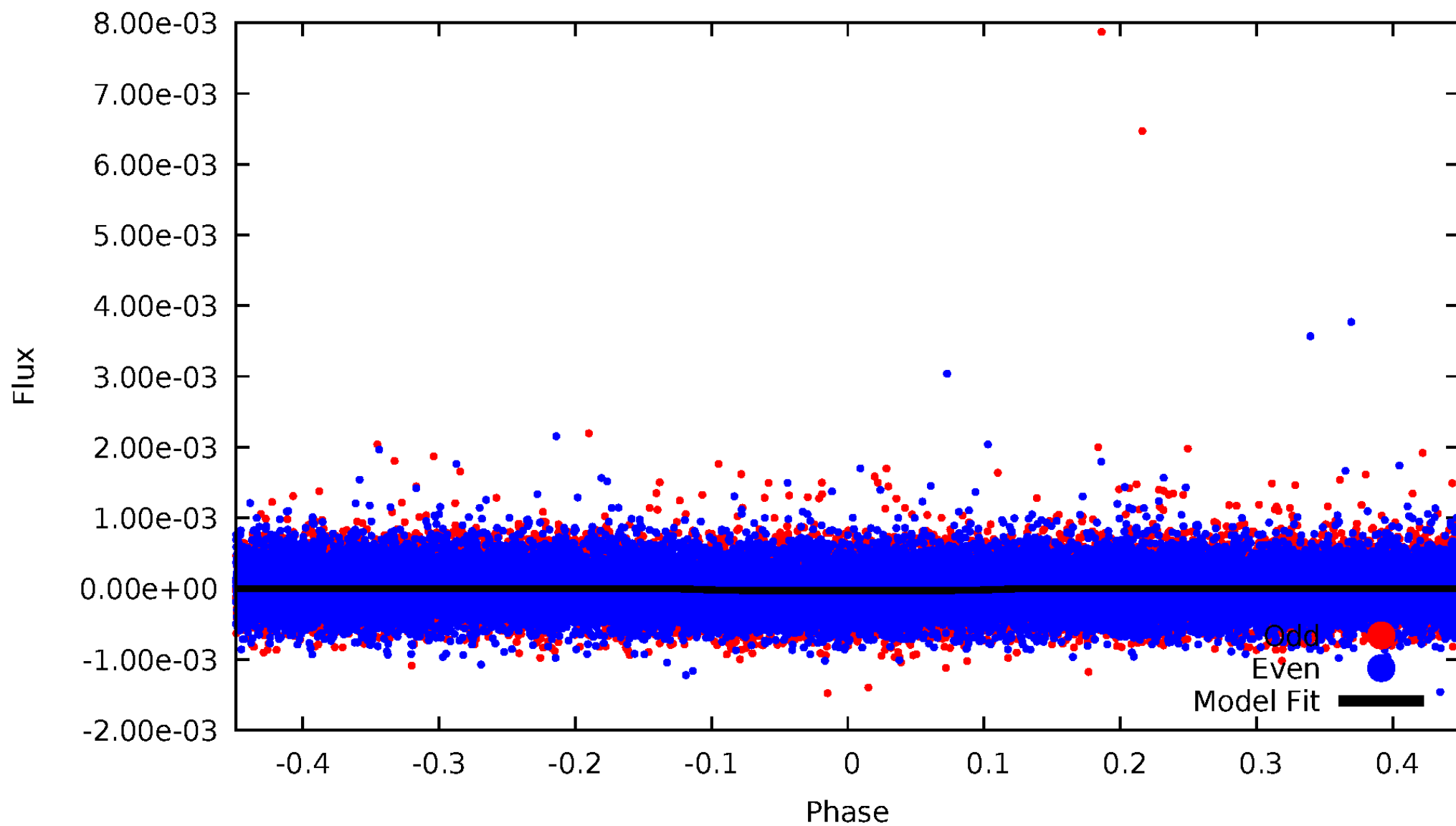


TCE 008112006-01



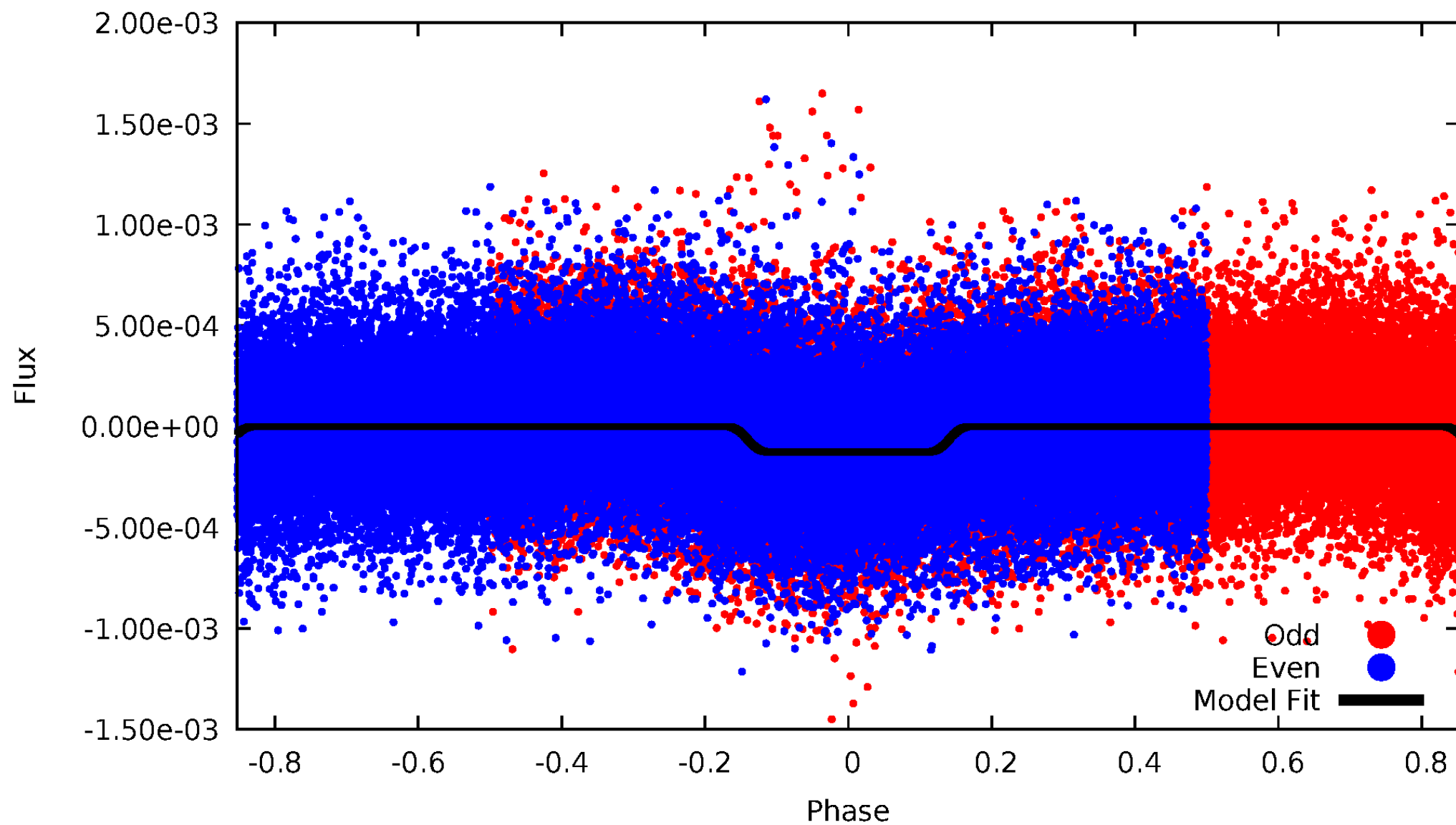
DV Odd/Even

TCE 008112006-01

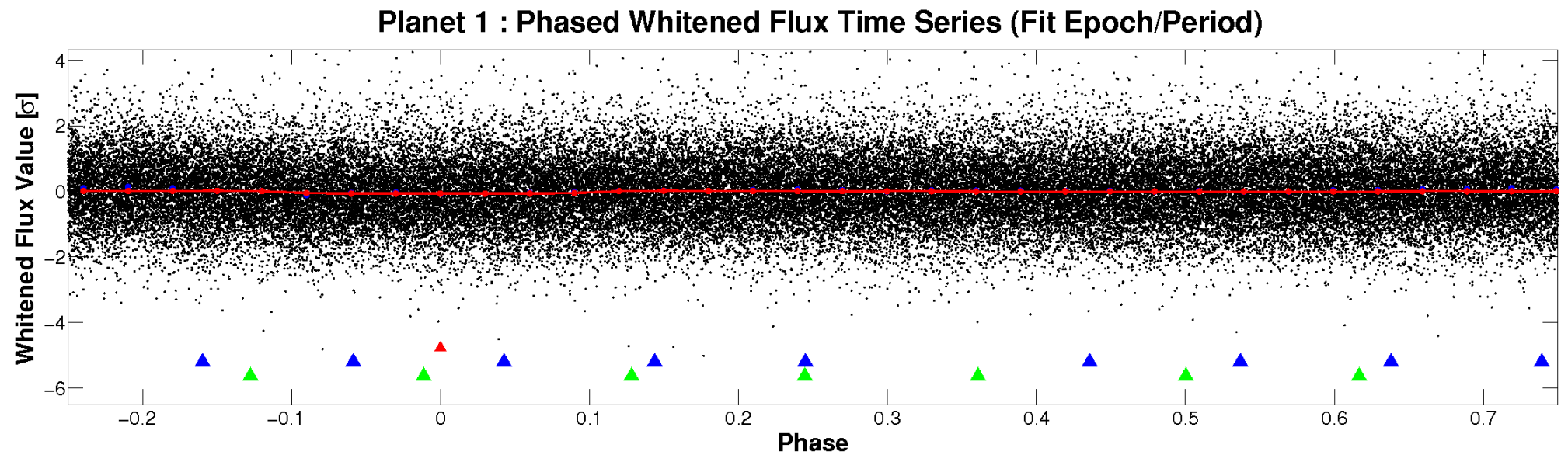
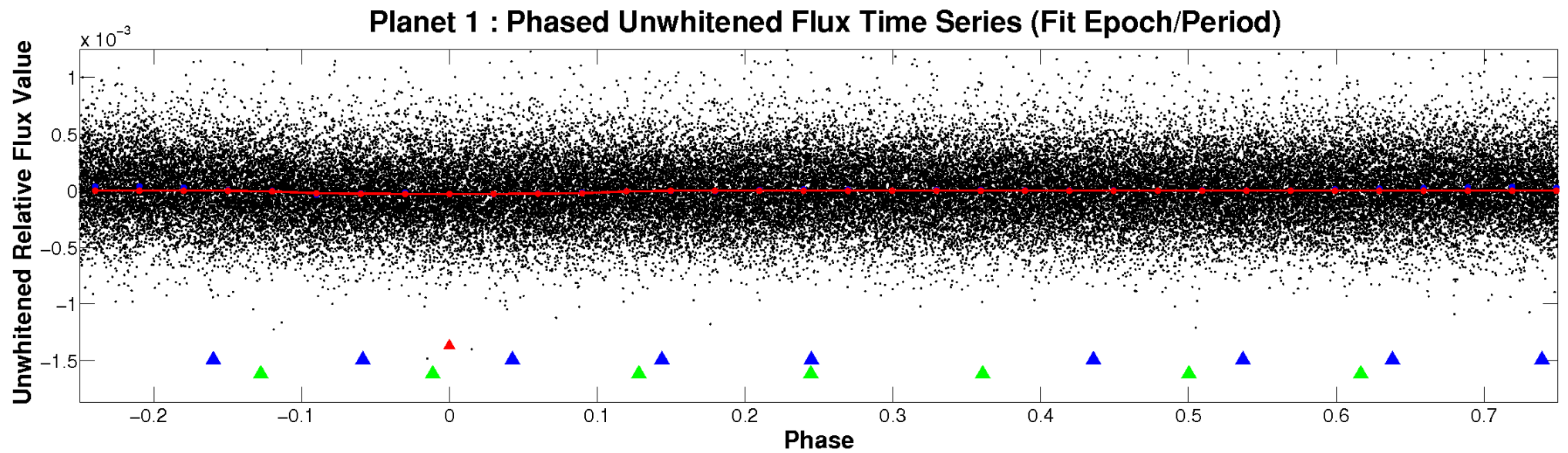


ALT Odd/Even

TCE 008112006-01

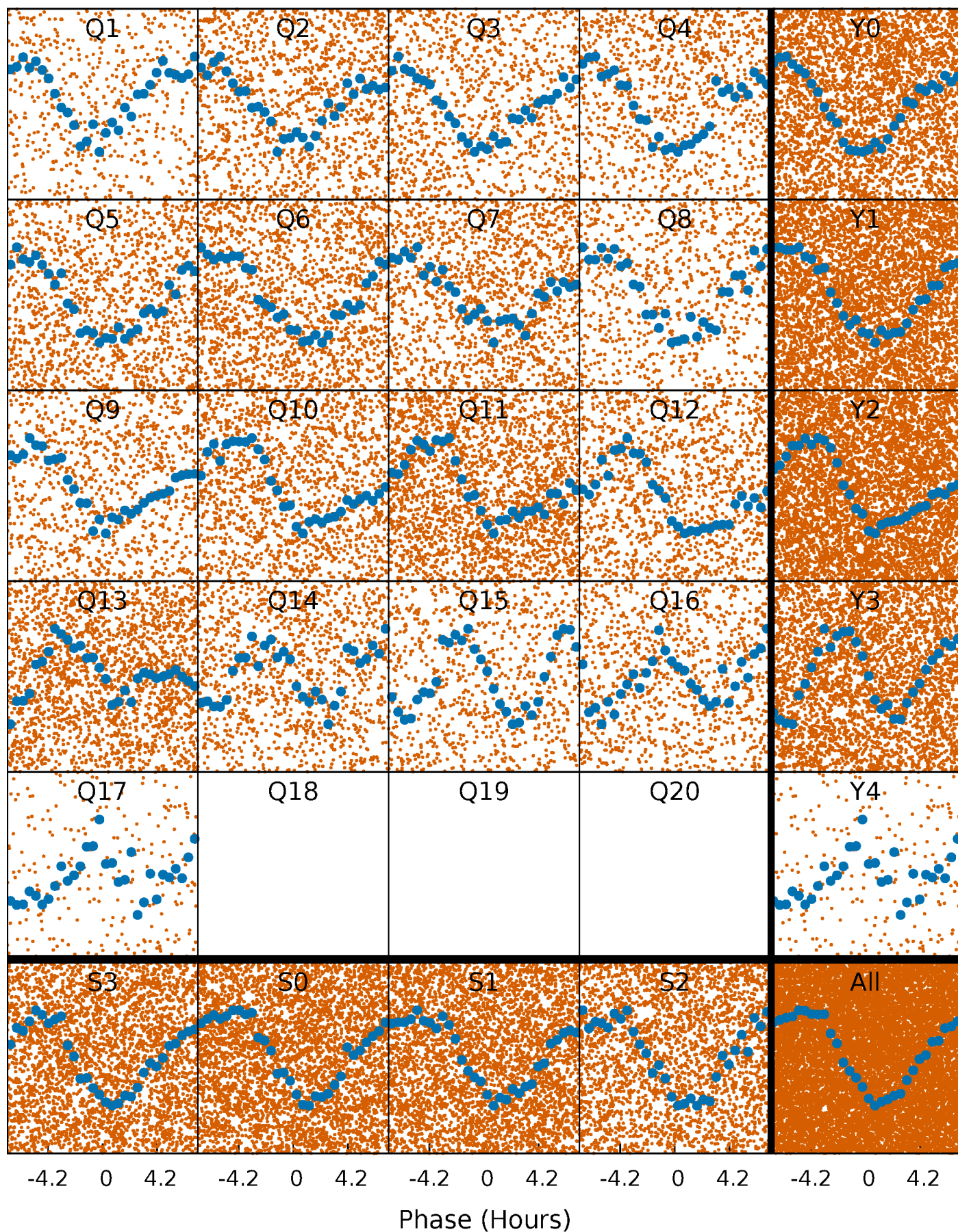


Non-Whitened Vs. Whitened Light Curve



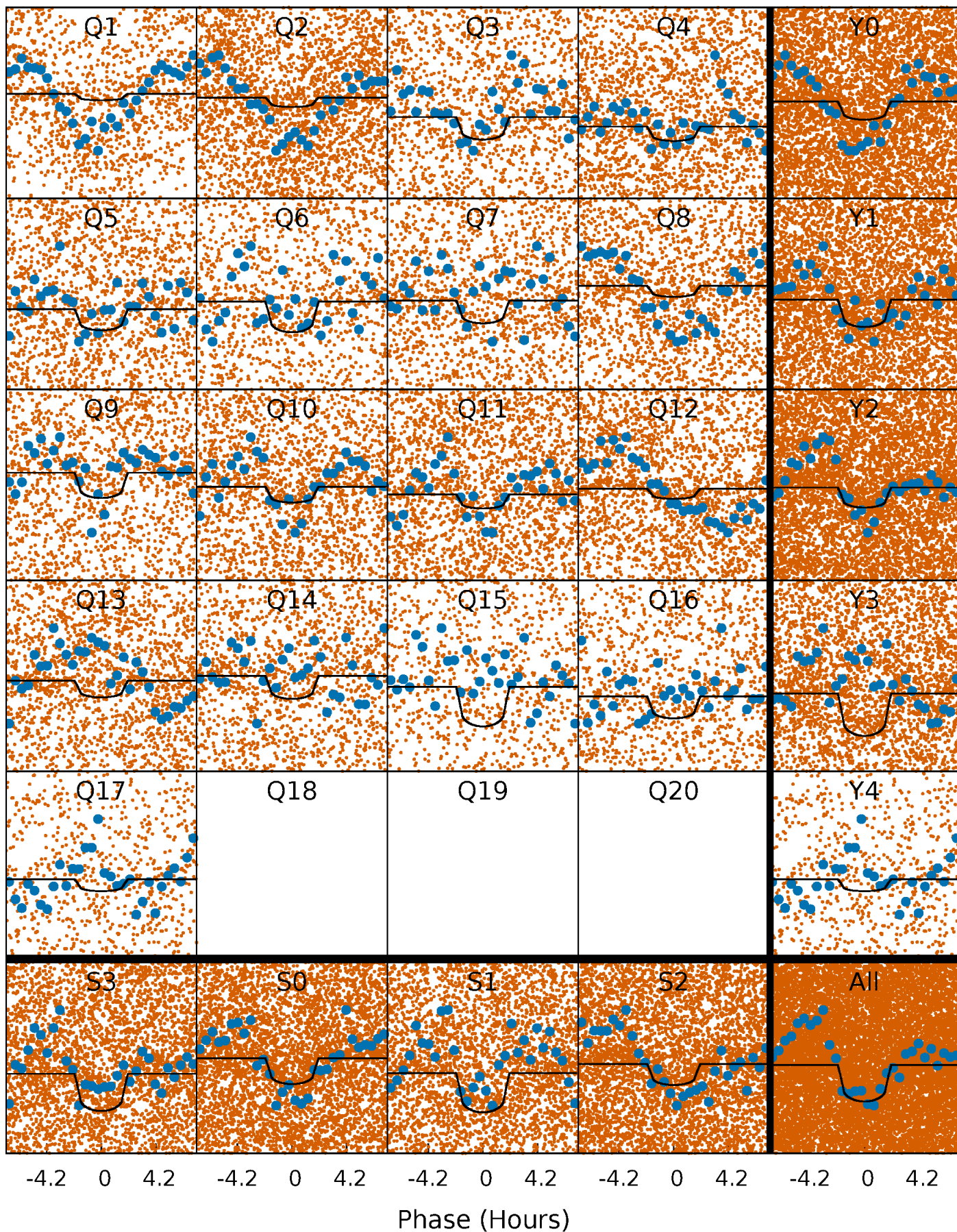
PDC Quarter-Phased Transit Curves

TCE 008112006-01 P= 0.682055 Days $T_0=131.895777$ (BKJD)



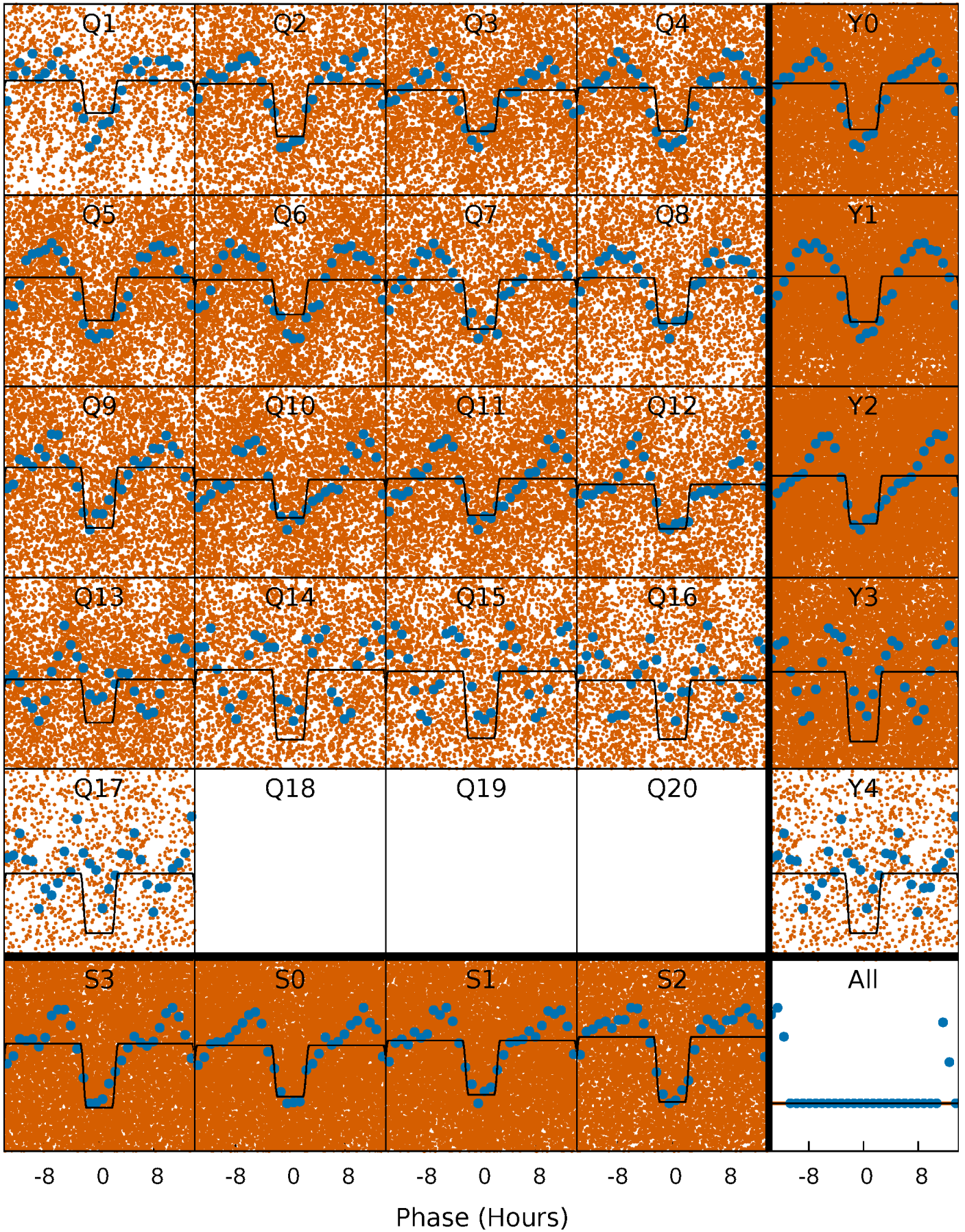
DV Quarter-Phased Transit Curves

TCE 008112006-01 P= 0.682055 Days $T_0=131.895777$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

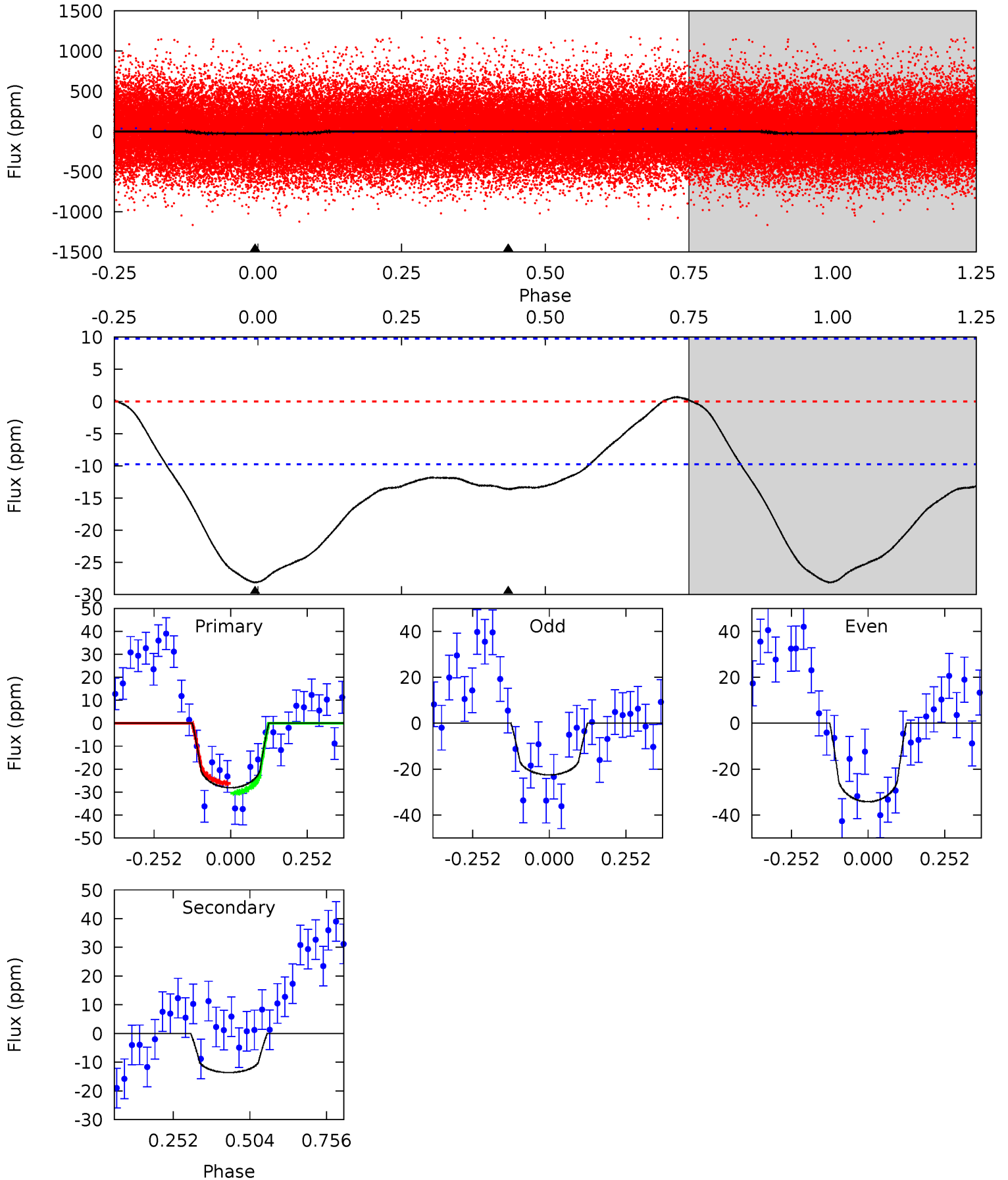
TCE 008112006-01 P= 0.682104 Days $T_0=131.894567$ (BKJD)



DV Model-Shift Uniqueness Test

008112006-01, P = 0.682055 Days, E = 131.213722 Days

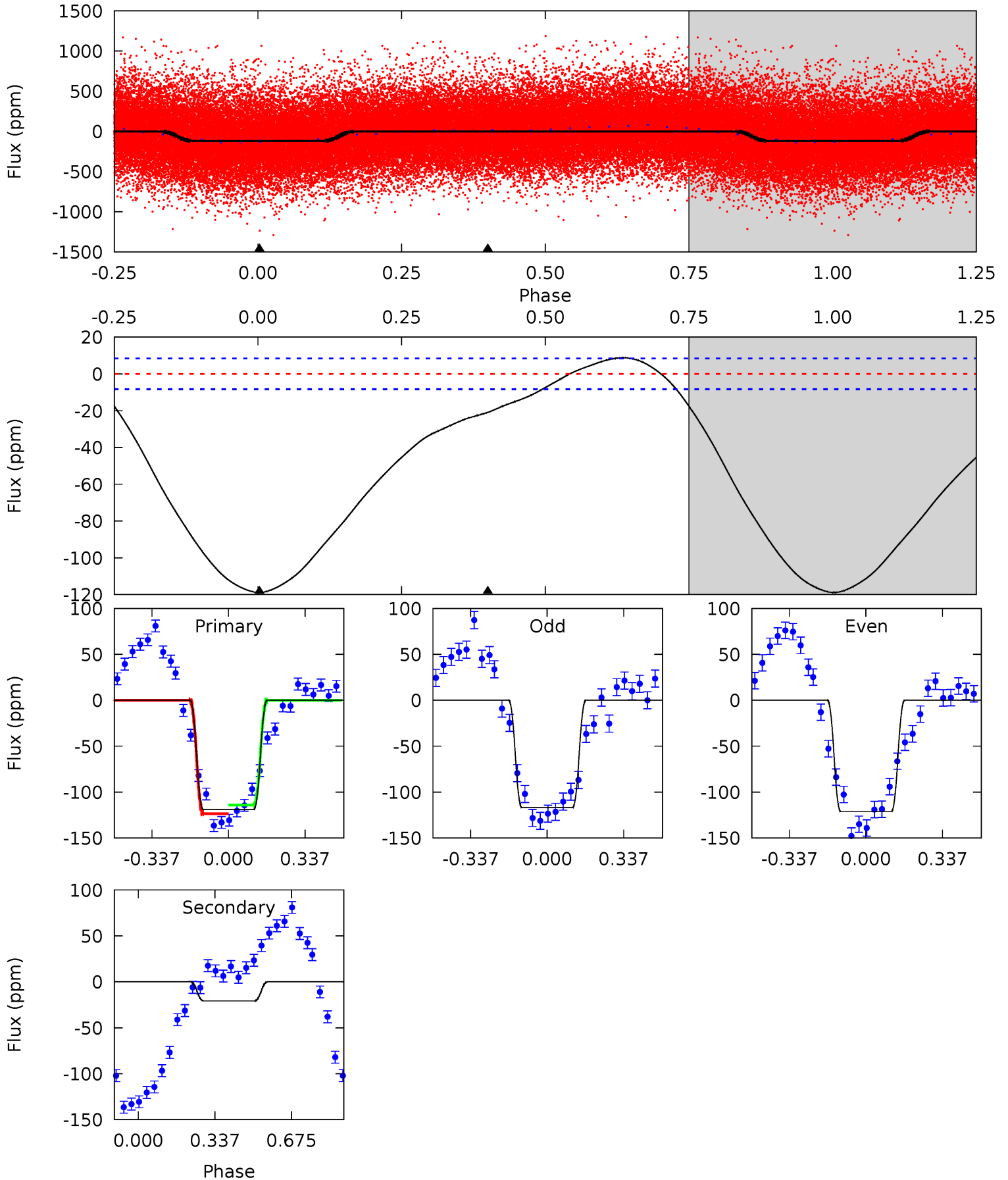
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	6.09	0	0	4.37	1.15	0.47	12.6	12.6	6.09	6.09	2.62	0.87	0.02	0.97



Alt Model-Shift Uniqueness Test

008112006-01, P = 0.682104 Days, E = 131.212463 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.0	10.7	0	0	4.30	0.96	4.11	61.0	61.0	10.7	10.7	1.10	0.97	0.07	2.43



Stellar Parameters For KIC 008112006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6119^{+183}_{-183}	$4.510^{+0.096}_{-0.132}$	$-1.360^{+0.350}_{-0.250}$	$0.791^{+0.131}_{-0.090}$	$0.739^{+0.063}_{-0.032}$	$2.101^{+0.890}_{-0.737}$
	+3%/-3%	+2%/-3%	+26%/-18%	+17%/-11%	+9%/-4%	+42%/-35%
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 008112006-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 2	$0.46^{+0.33}_{-0.27}$	2880^{+158}_{-135}	5059^{+3194}_{-1036}	$6.273^{+32.078}_{-4.113}$
Alt.	-21 ± 2	$0.97^{+0.33}_{-0.32}$	2874^{+151}_{-126}	4090^{+742}_{-454}	$2.323^{+2.732}_{-1.049}$

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 $A_{obs} \gg 1.0$

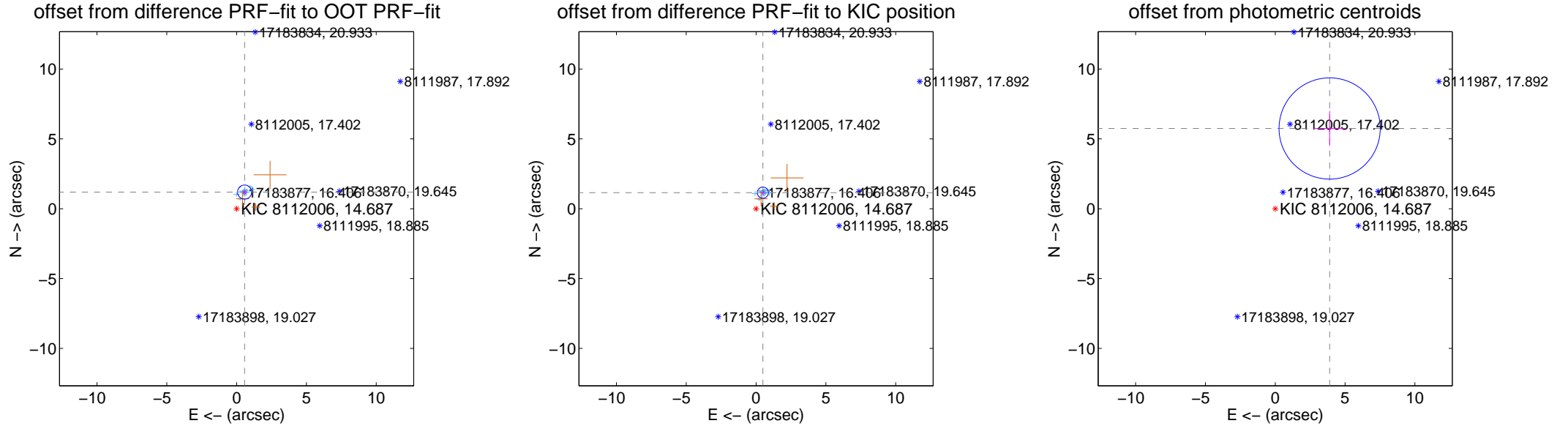
DV Centroid Data

Supplemental centroid analysis for 008112006-01. Kepler magnitude: 14.69. Transit SNR 7.70

There are 12 quarters with good PRF difference image offsets

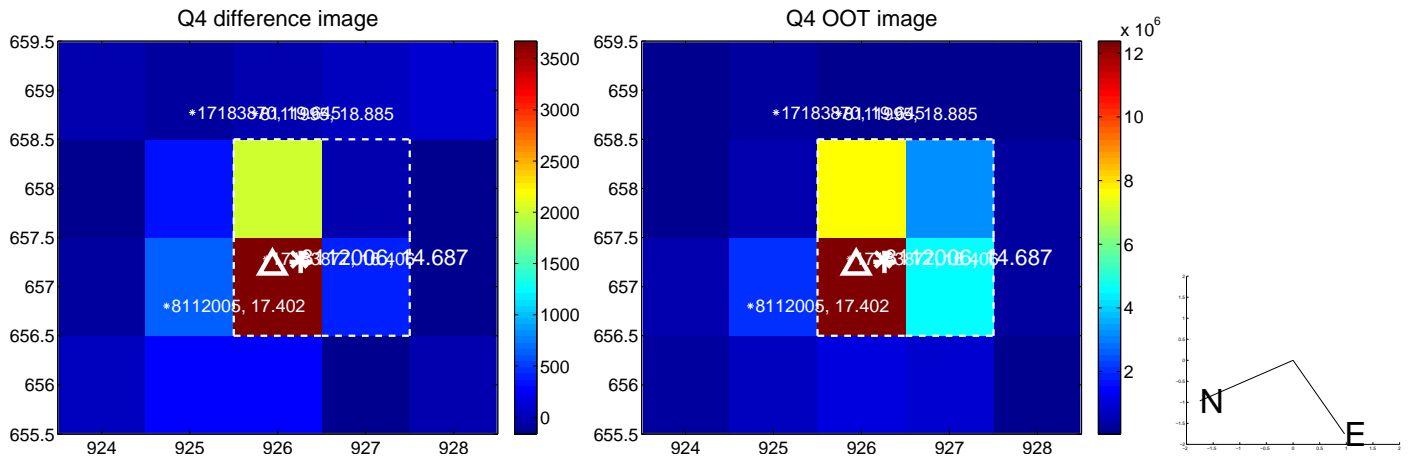
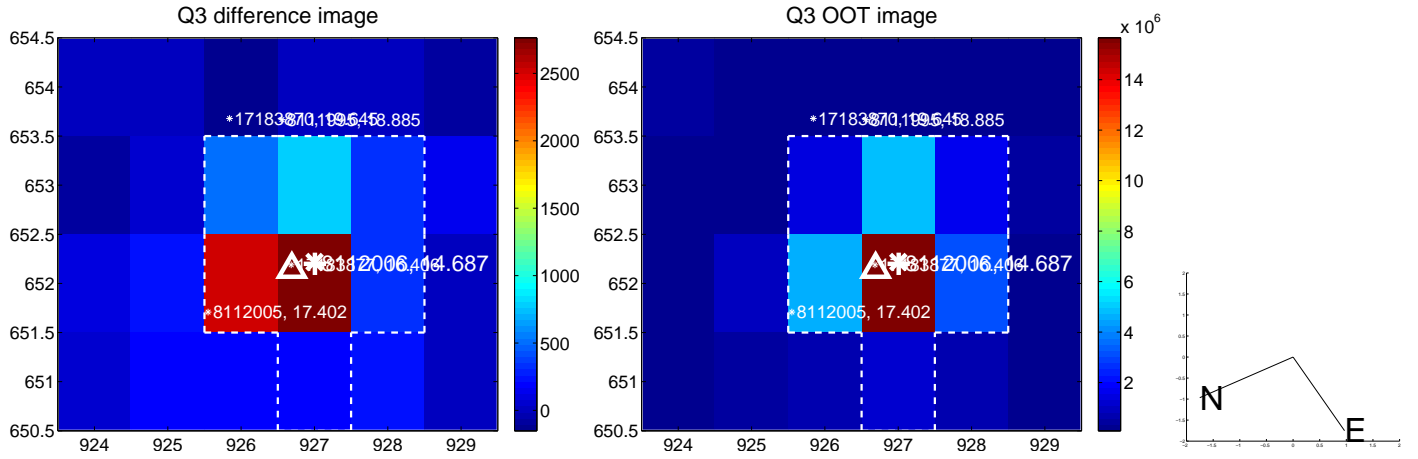
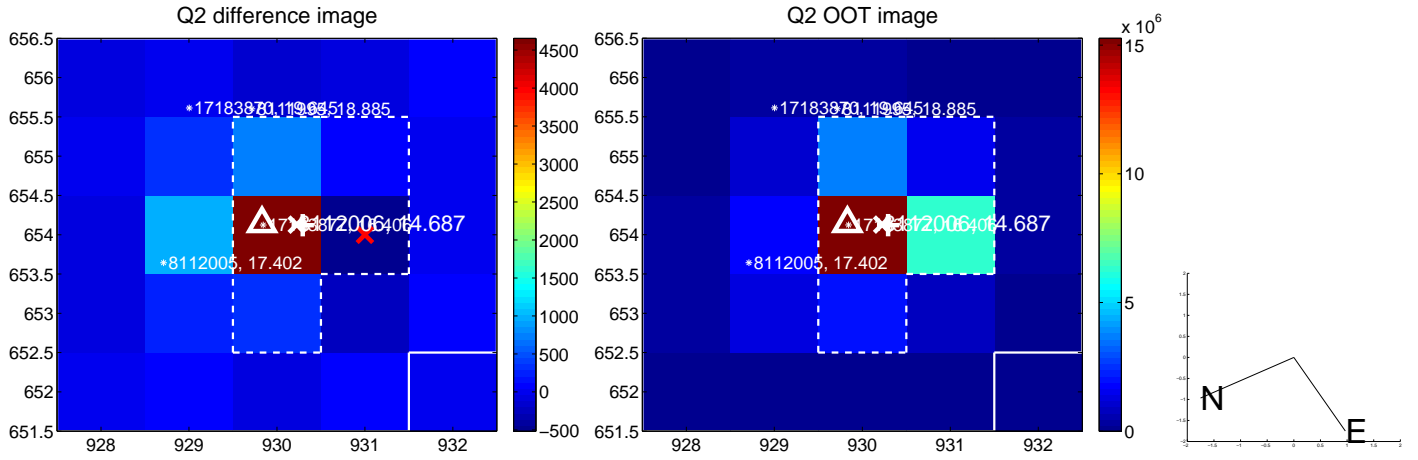
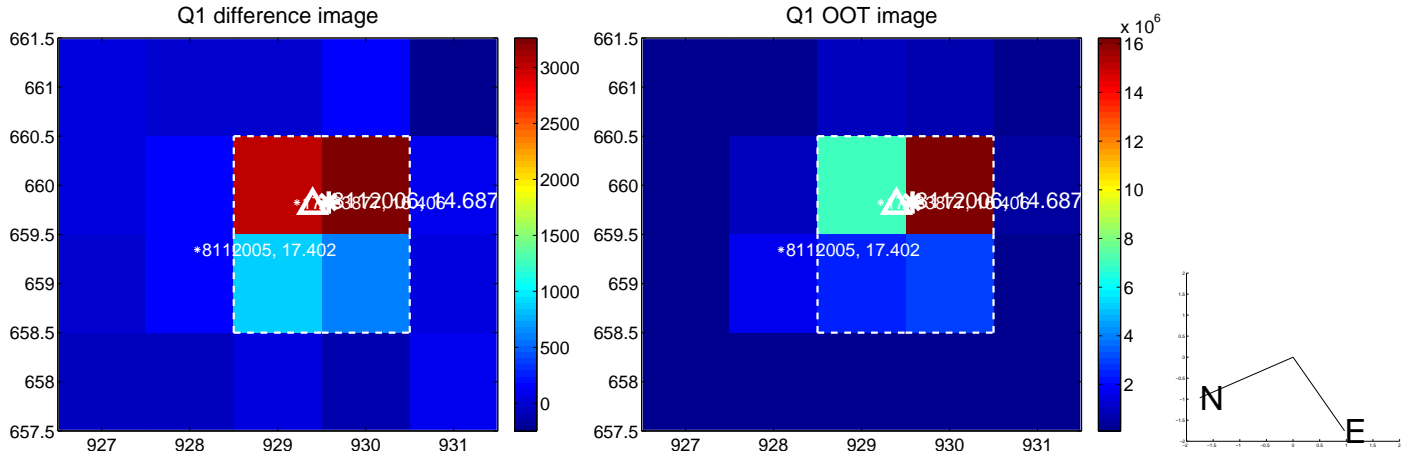
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.322 ± 0.168	7.85	-0.572 ± 0.152	1.191 ± 0.144
PRF-fit source offset from KIC position	1.250 ± 0.133	9.41	-0.487 ± 0.146	1.151 ± 0.113
photometric centroid source offset	6.94 ± 1.21	5.75	-3.90 ± 1.11	5.74 ± 1.25

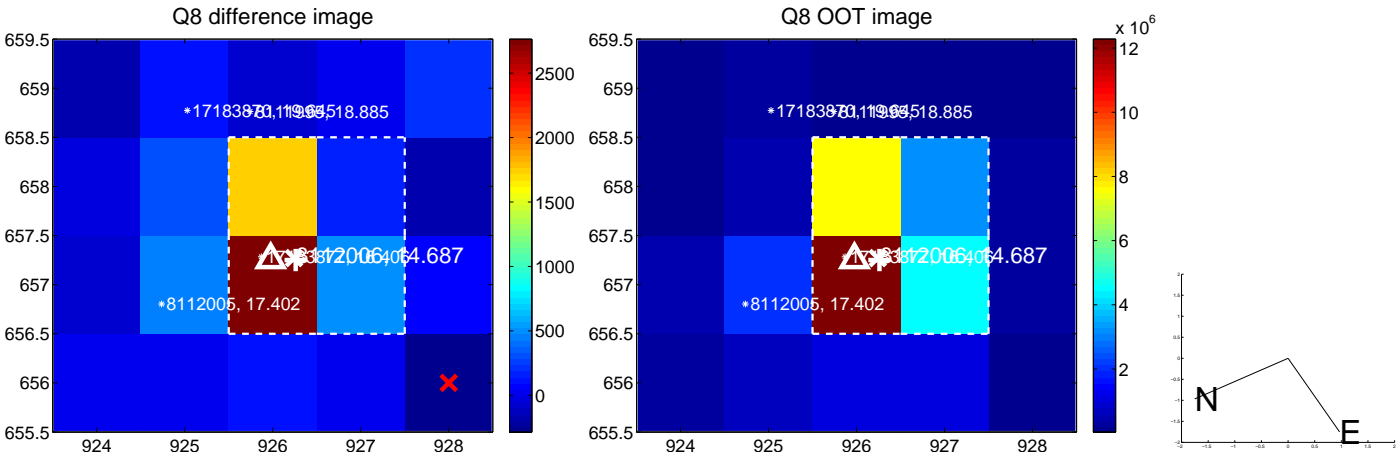
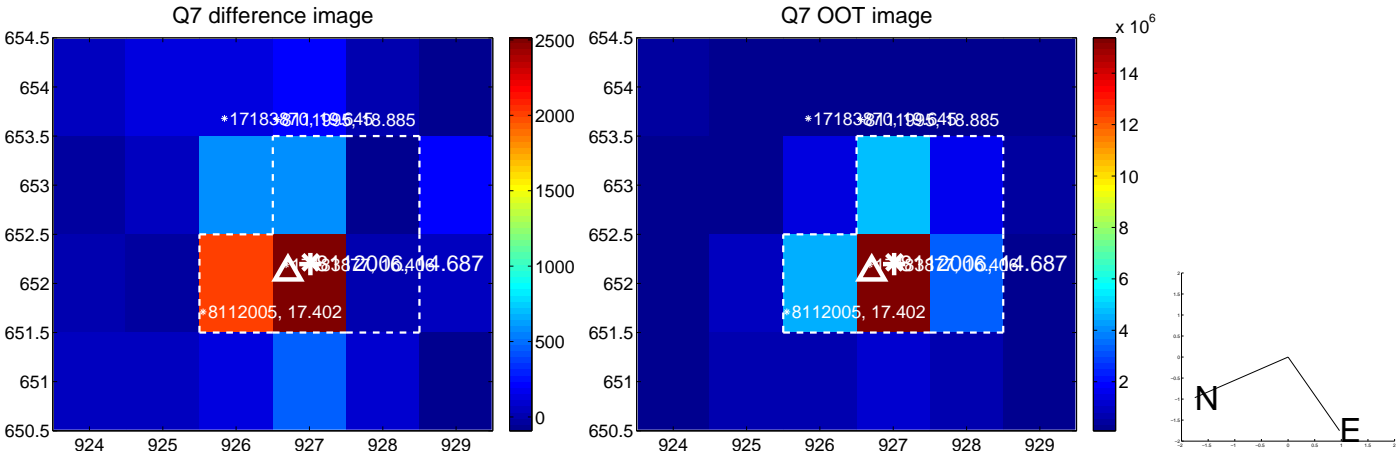
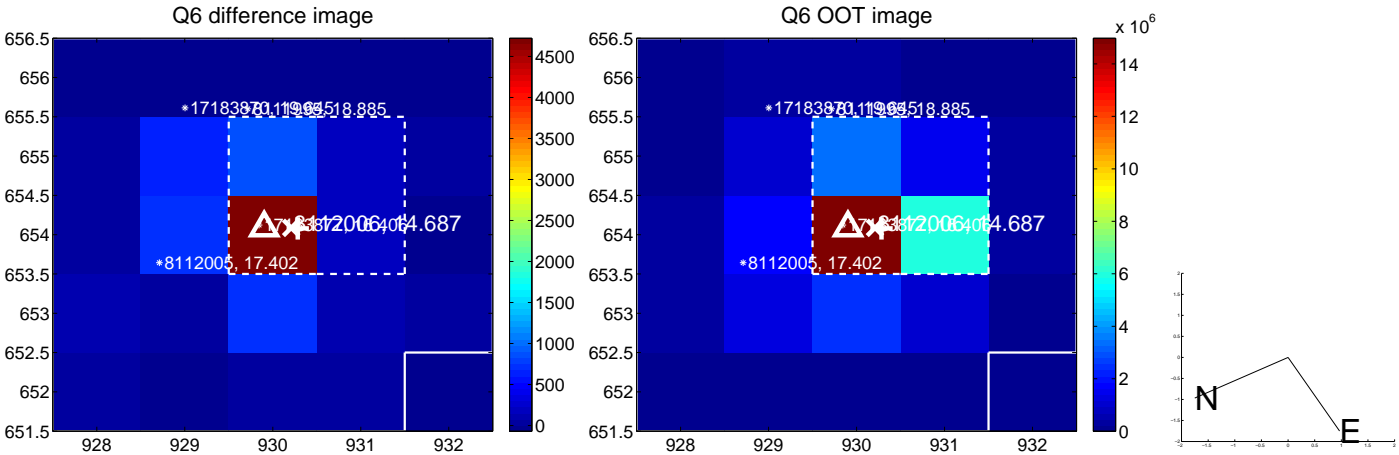
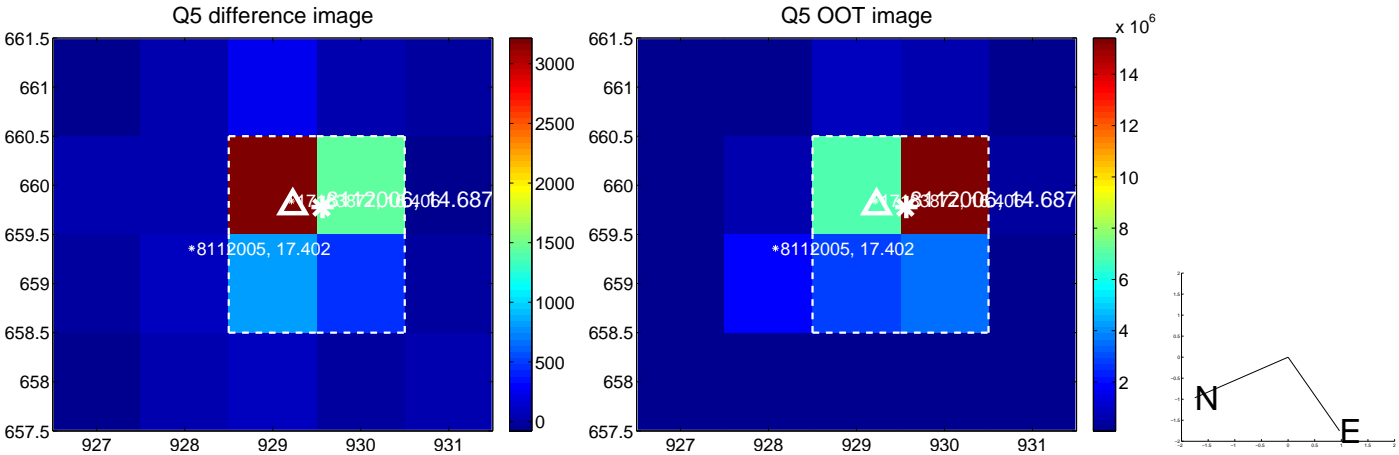


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

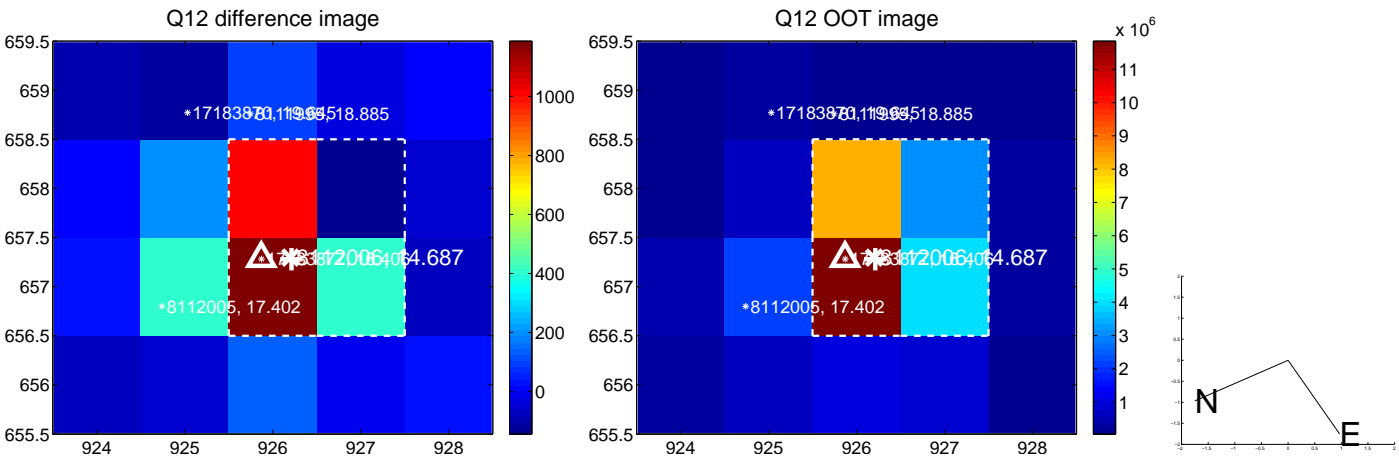
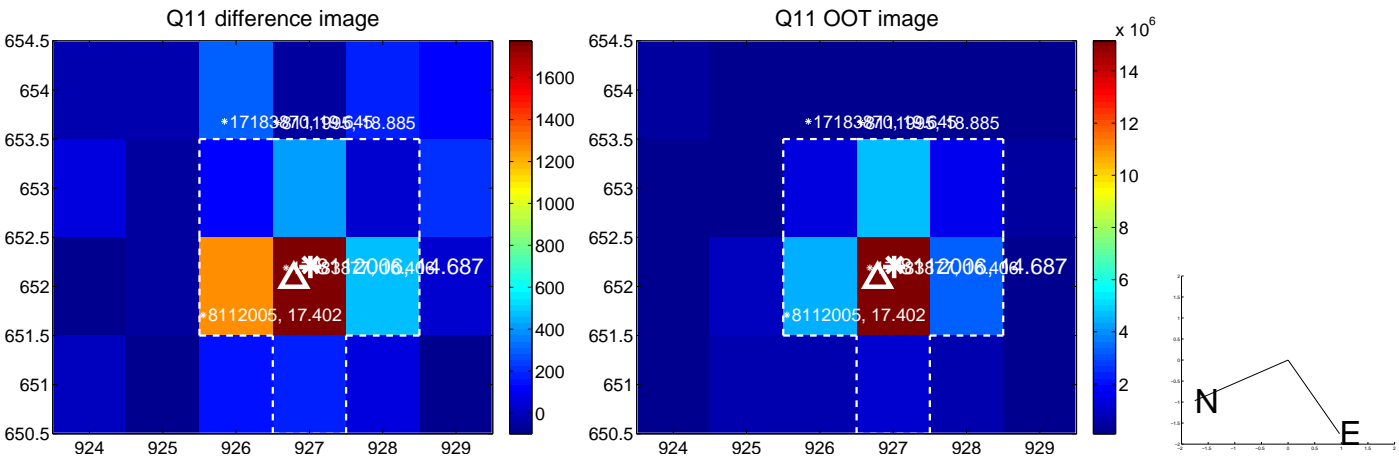
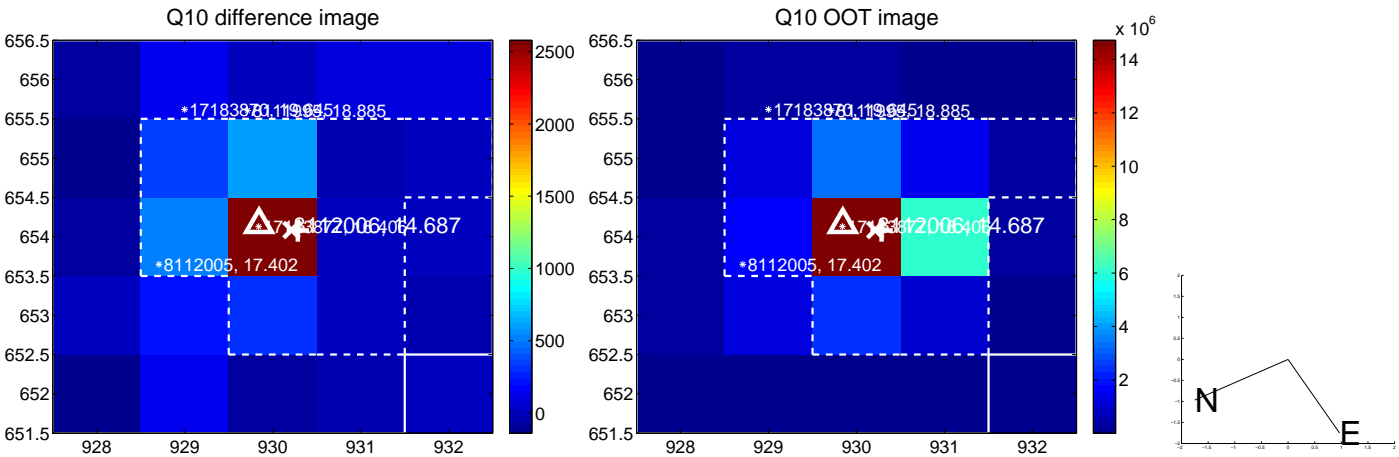
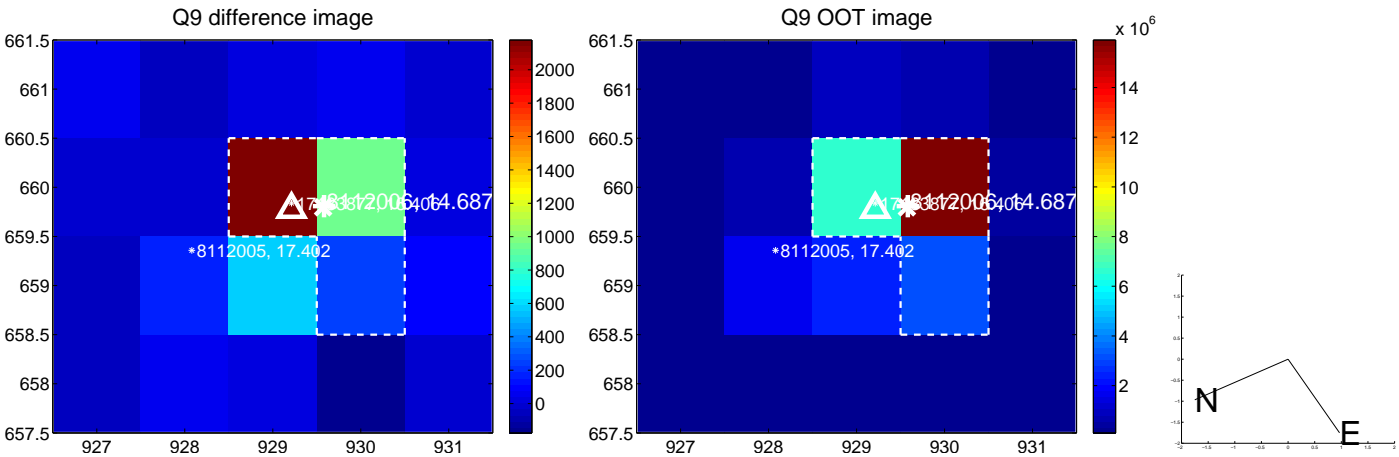
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



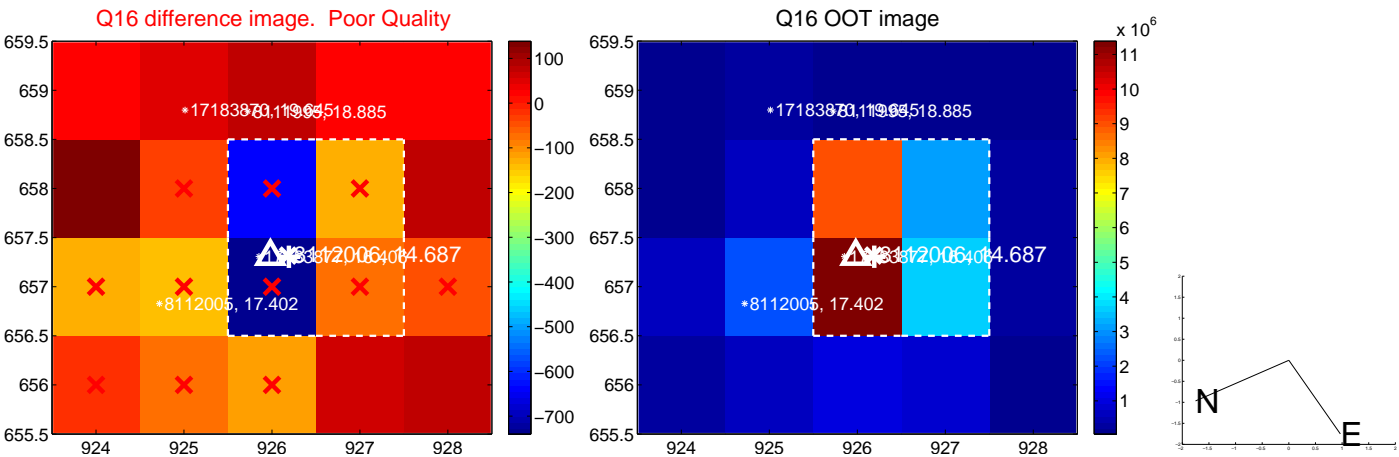
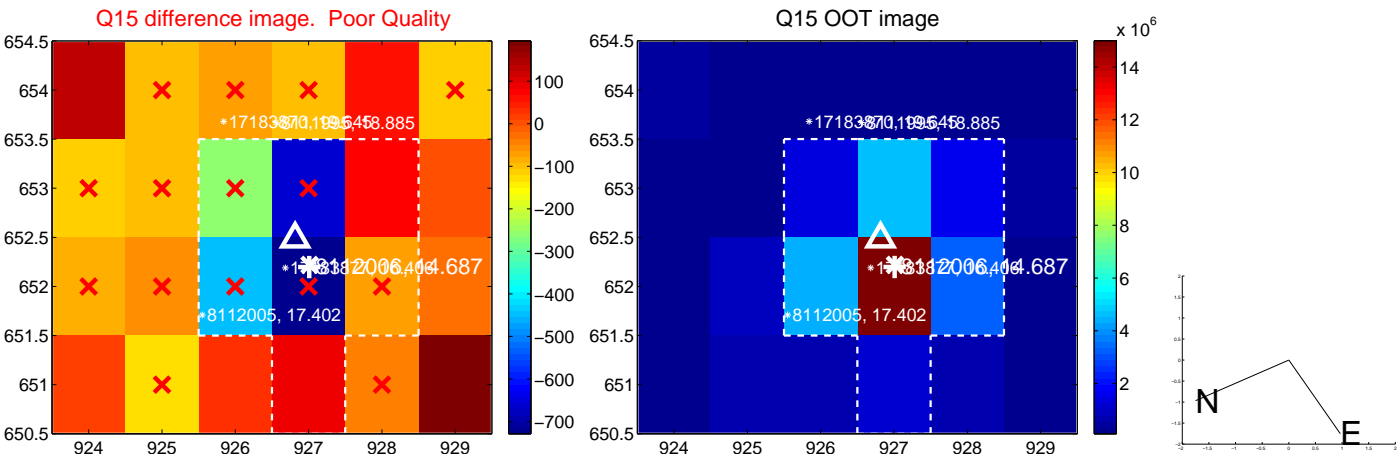
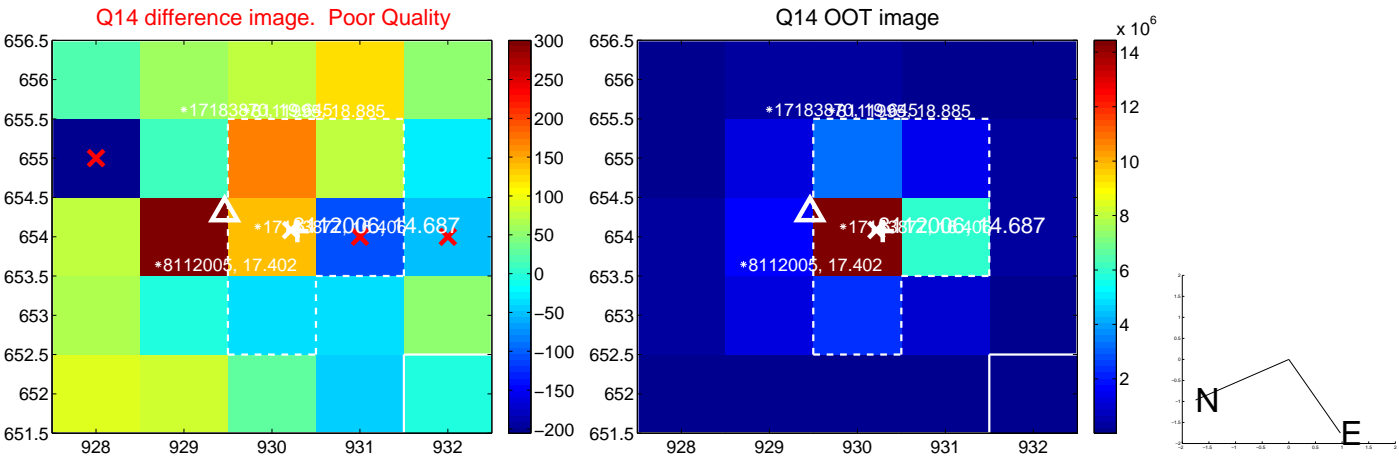
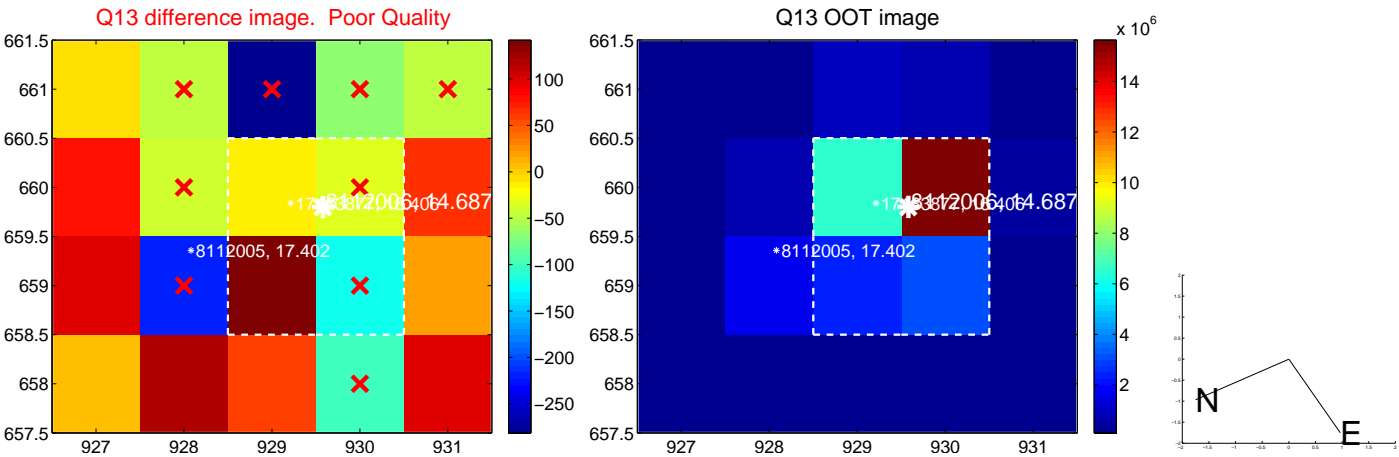
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



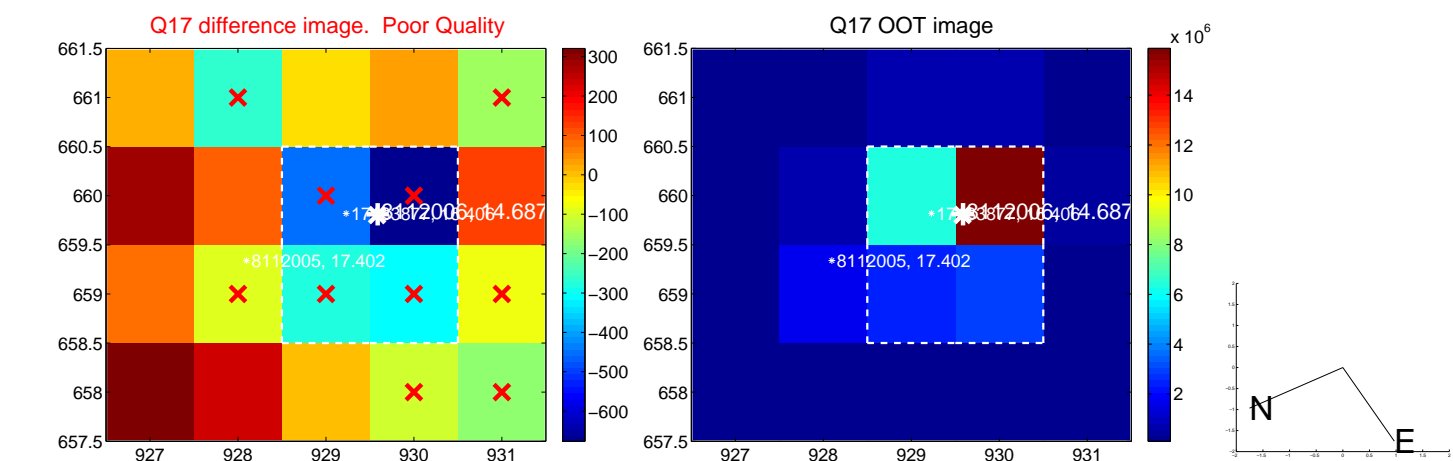
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



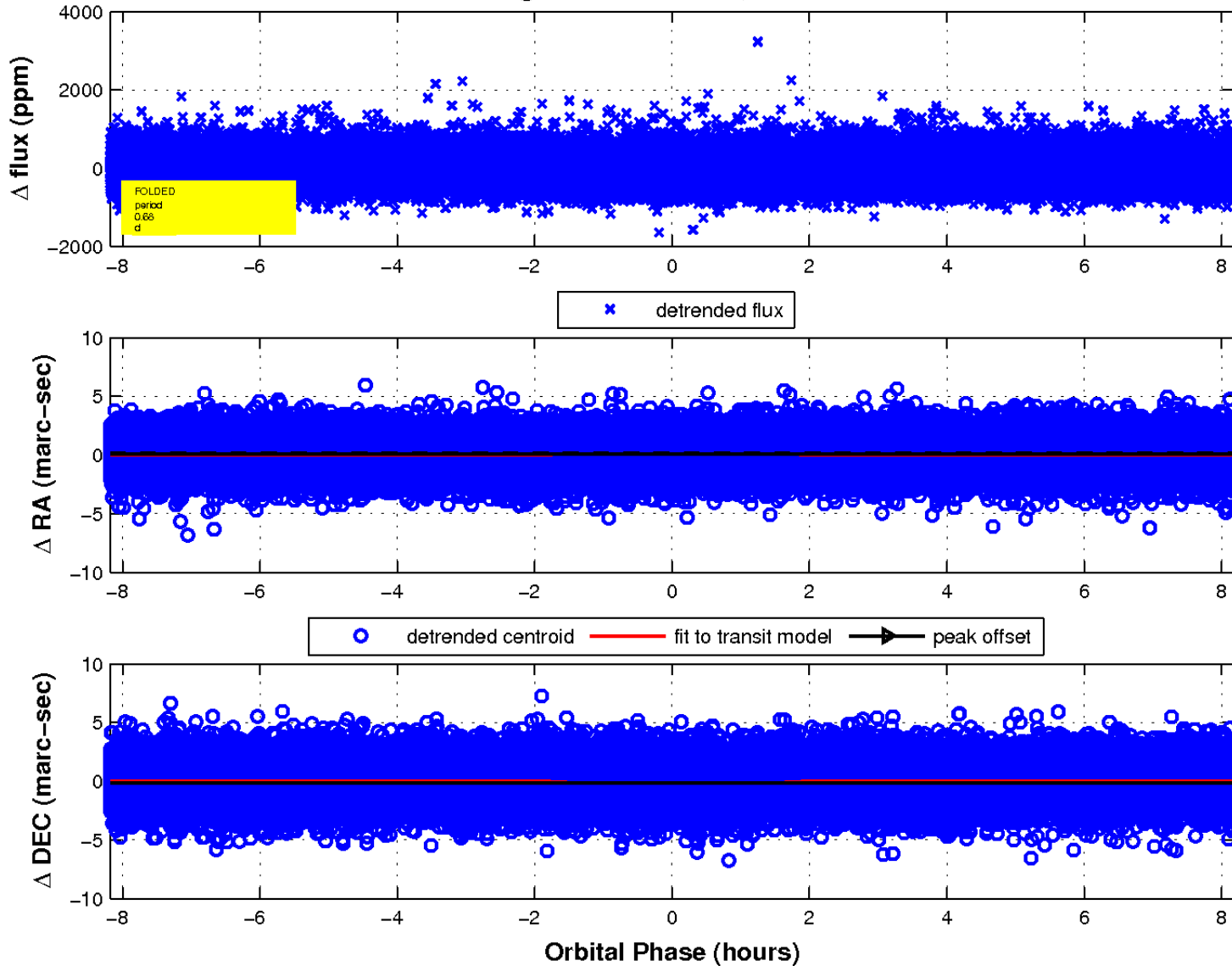
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

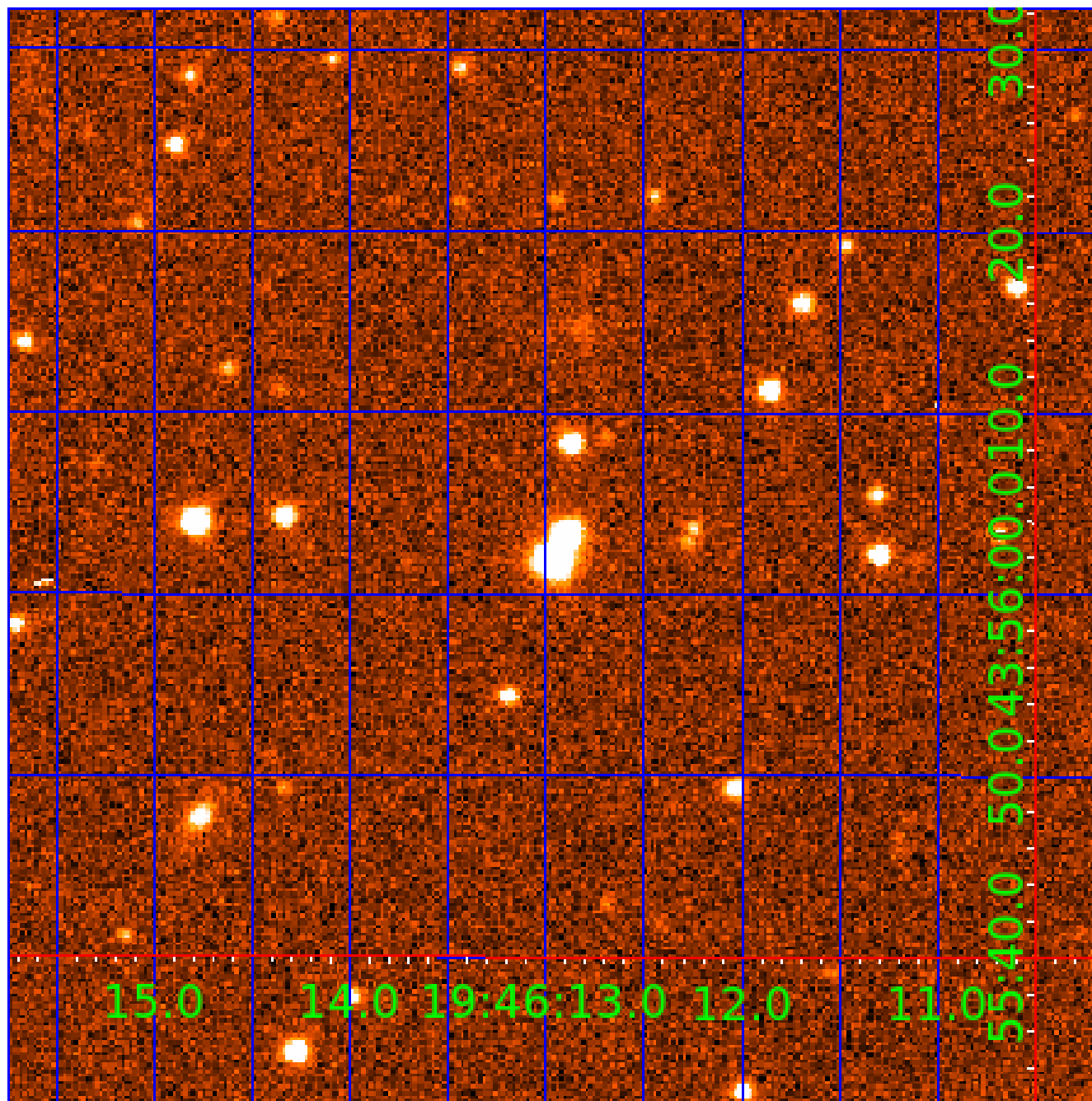


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 008112006

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})
008112006-01	OBS	No	0.682055	131.895777	27.7	3.674	7.8	7.7	0.79	6119	0.42	4181.27
008112006-03	OBS	No	206.234373	216.558065	599.5	5.000	9.3	6.7	0.79	6119	2.07	2.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008112006-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008112006-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

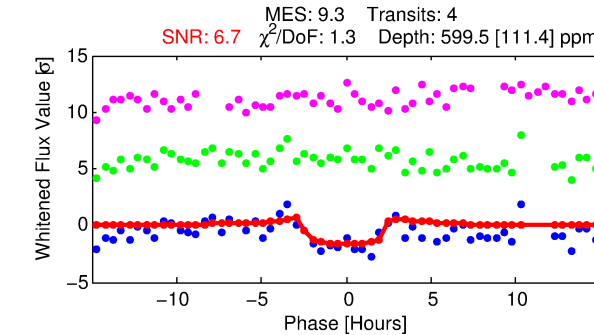
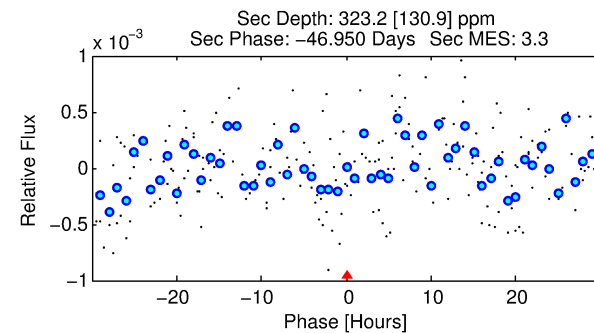
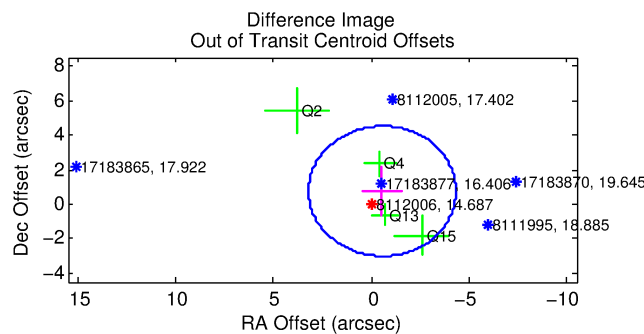
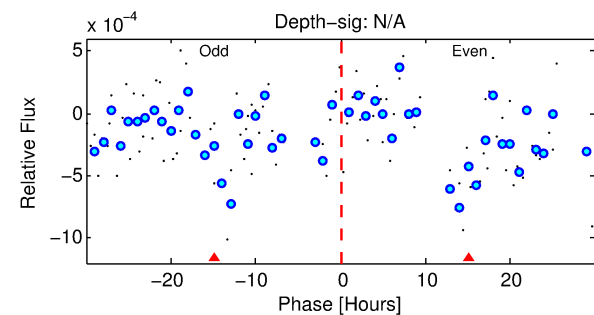
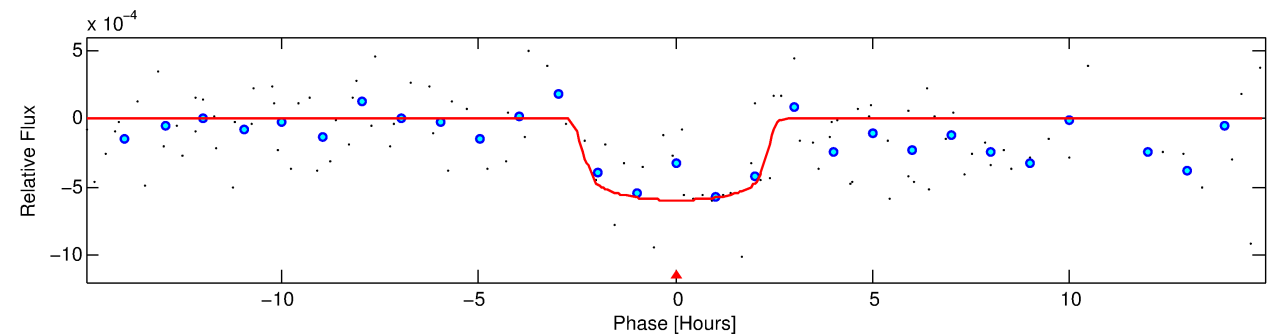
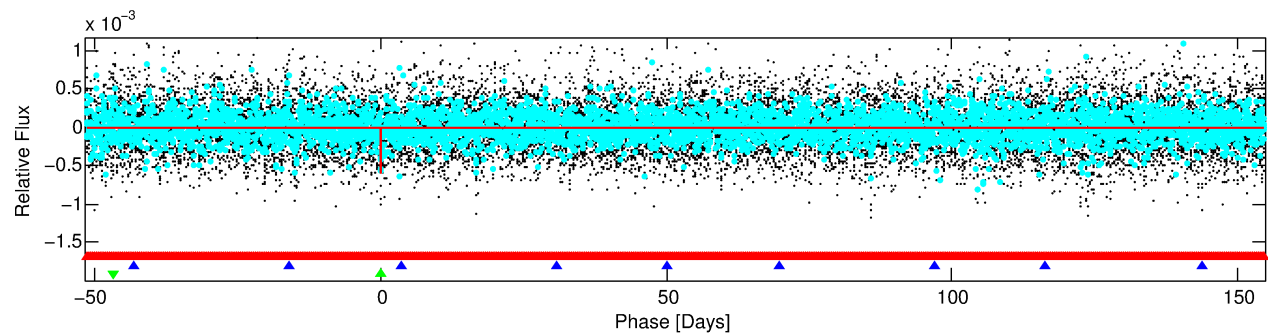
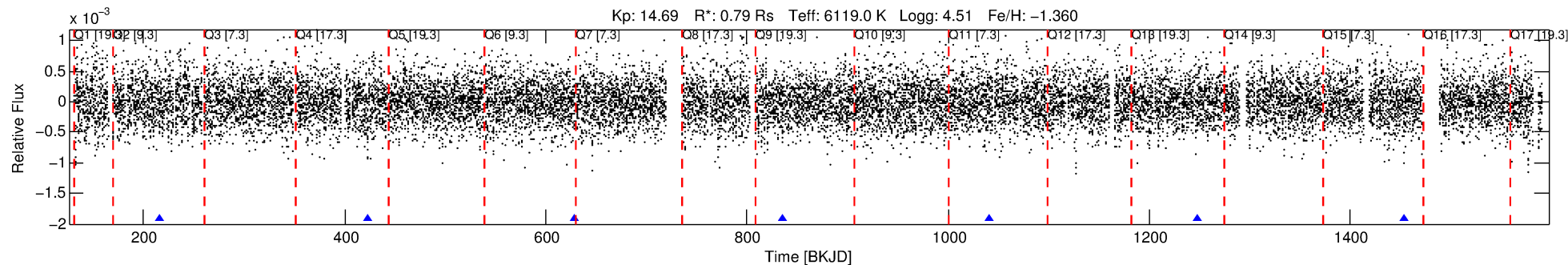
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008112006-03

No Significant Match Found

DV One-Page Summary

KIC: 8112006 Candidate: 3 of 3 Period: 206.234 d



DV Fit Results:

Period = 206.23437 [0.00419] d
Epoch = 216.5581 [0.0166] BKJD
Rp/R* = 0.0240 [0.0311]
a/R* = 235.17 [1700.65]
b = 0.70 [5.26]
Seff = 2.06 [0.54]
Teq = 305 [20] K
Rp = 2.07 [2.70] Re
a = 0.6176 [0.0925] AU
Ag = 15767.74 [41439.04] [0.38 σ]
Teffp = 5293 [3468] K [1.44 σ]

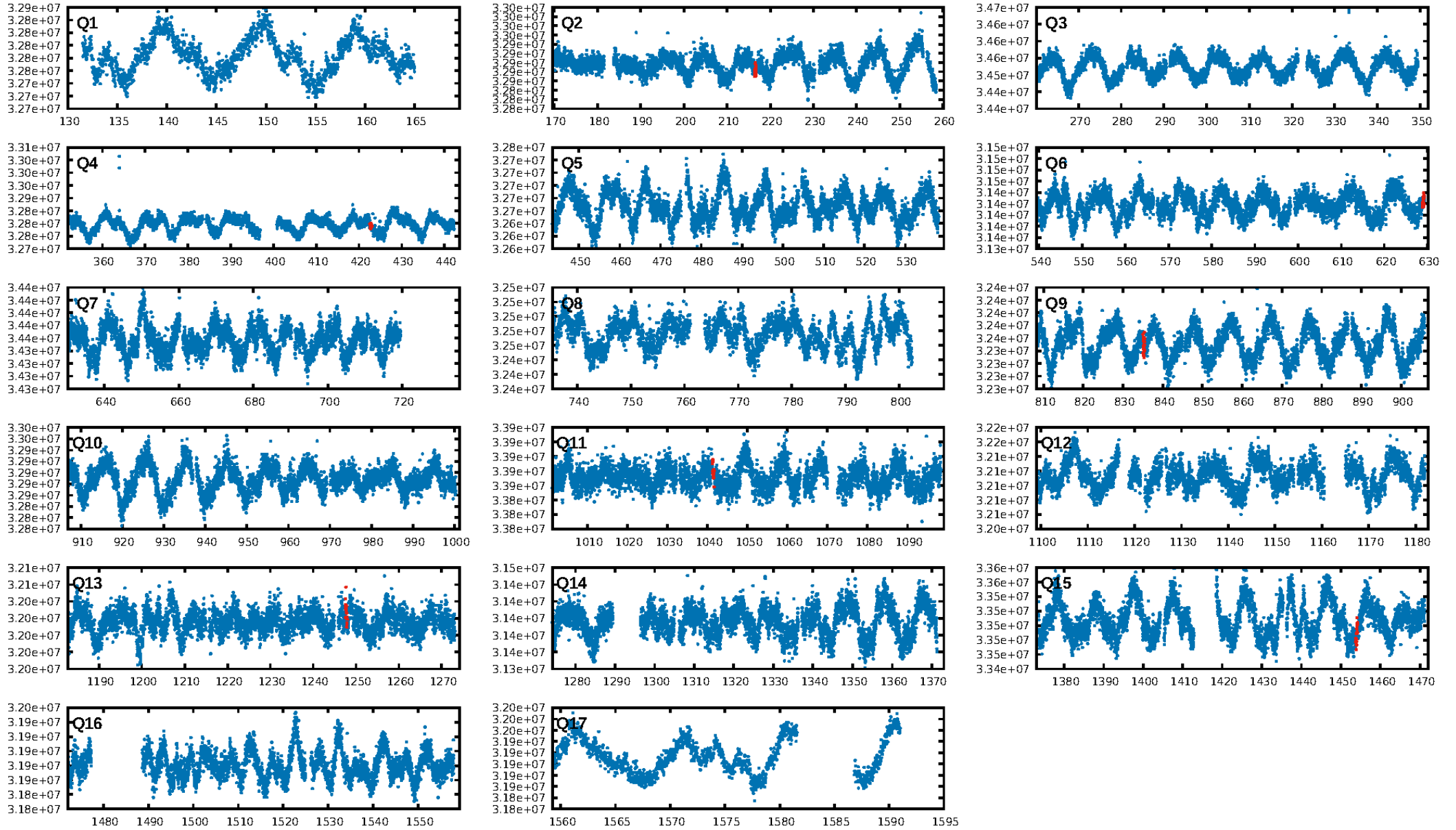
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [101.75 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.27e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.661
Centroid-sig: 25.8%
Centroid-so: 1.062 arcsec [1.32 σ]
OotOffset-rm: 0.937 arcsec [0.75 σ]
KicOffset-rm: 0.902 arcsec [0.72 σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/5]

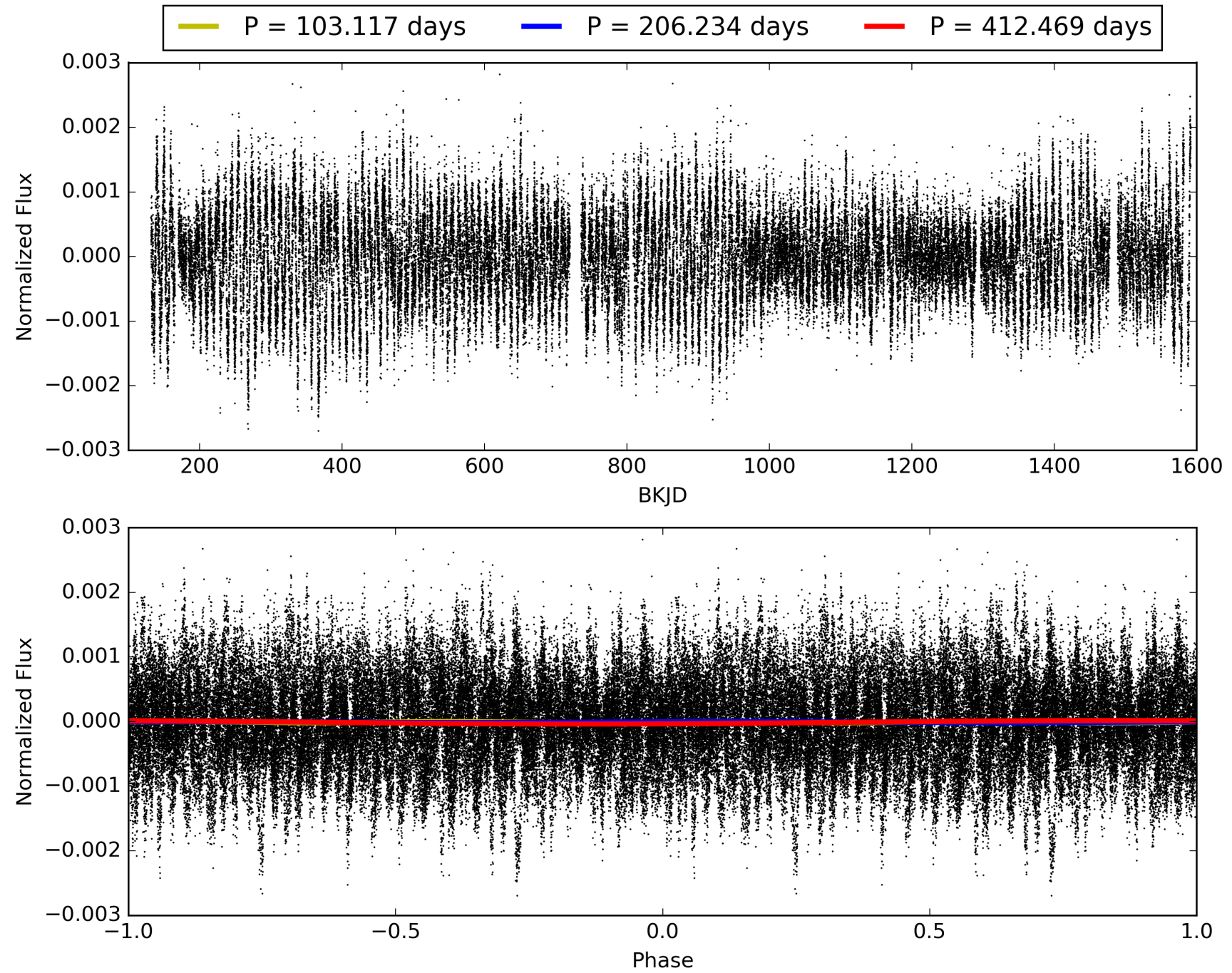
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:42:10 Z

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

TCE 008112006-03, PDC Light Curves

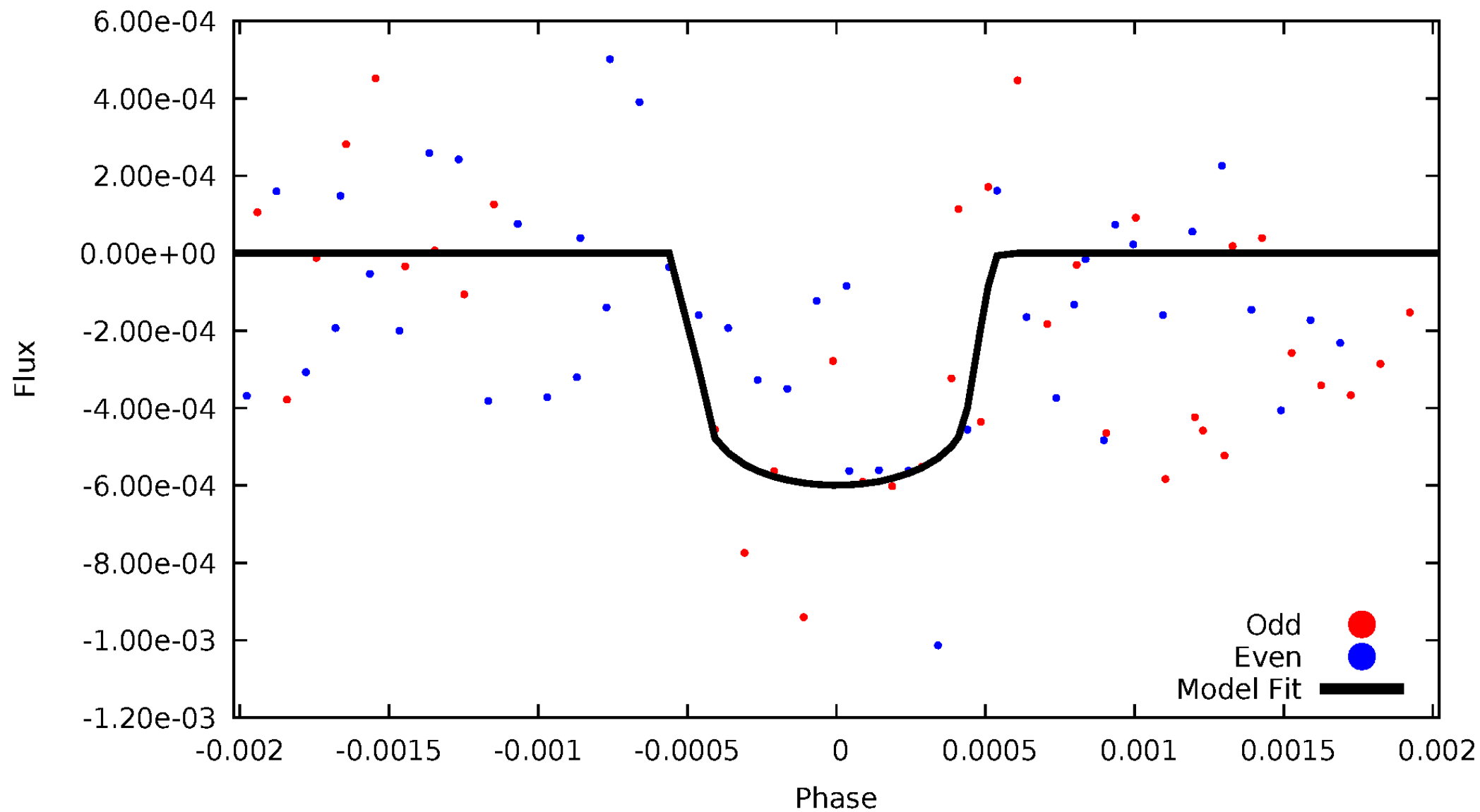


TCE 008112006-03



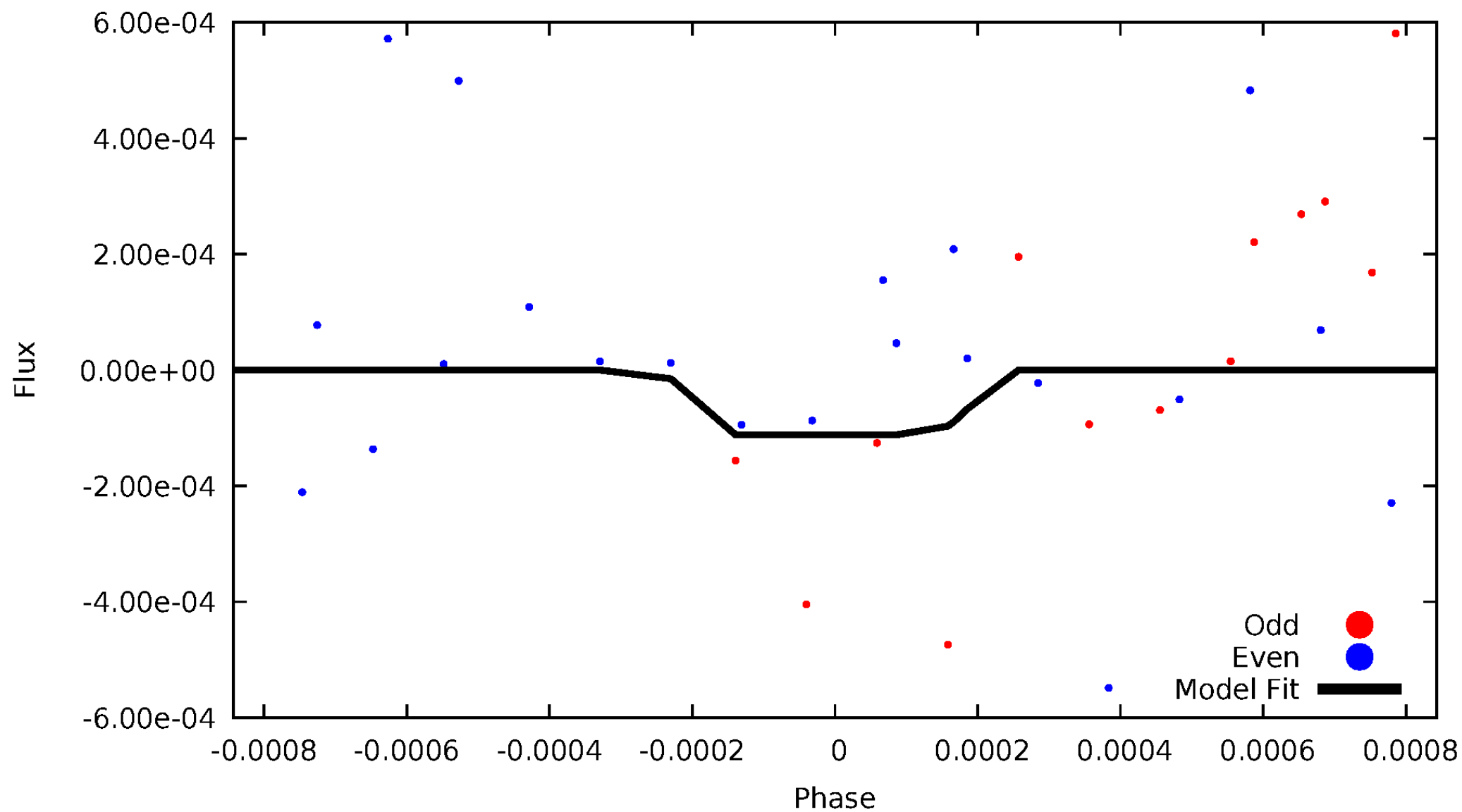
DV Odd/Even

TCE 008112006-03



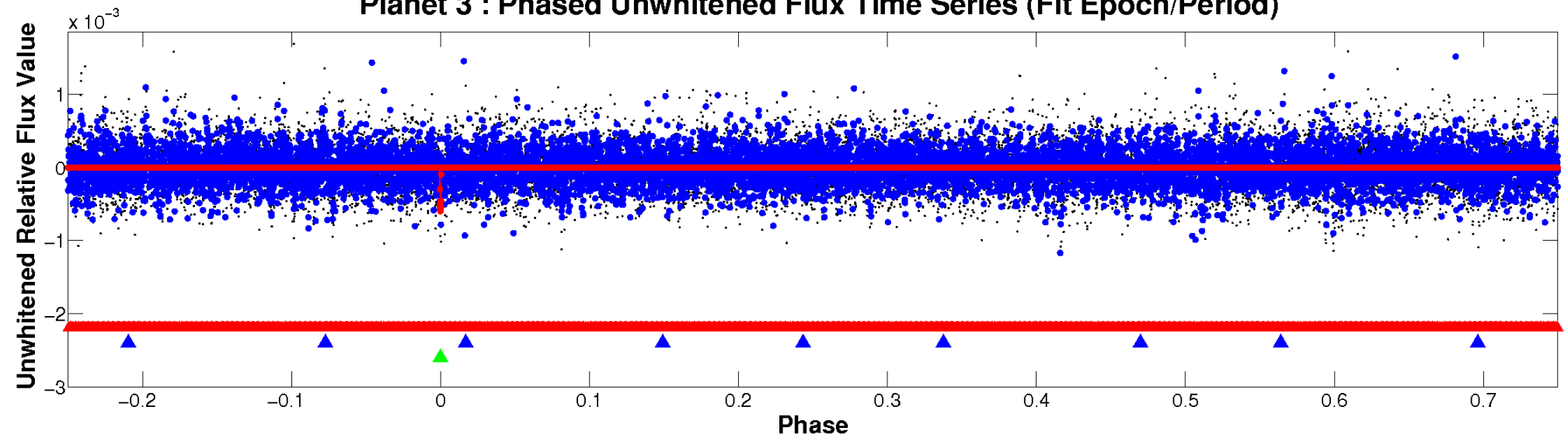
ALT Odd/Even

TCE 008112006-03

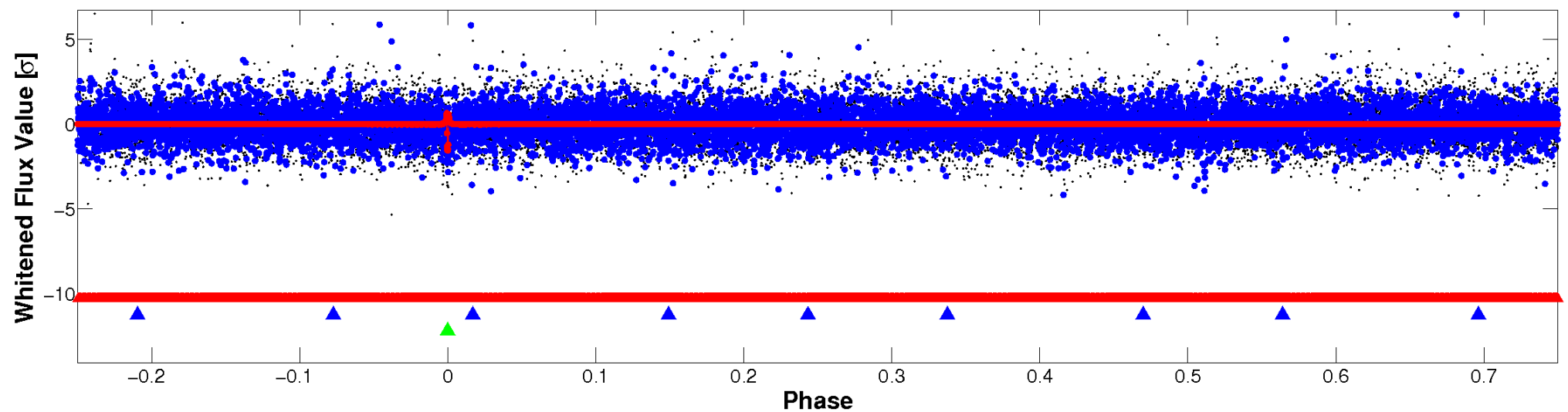


Non-Whitened Vs. Whitened Light Curve

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

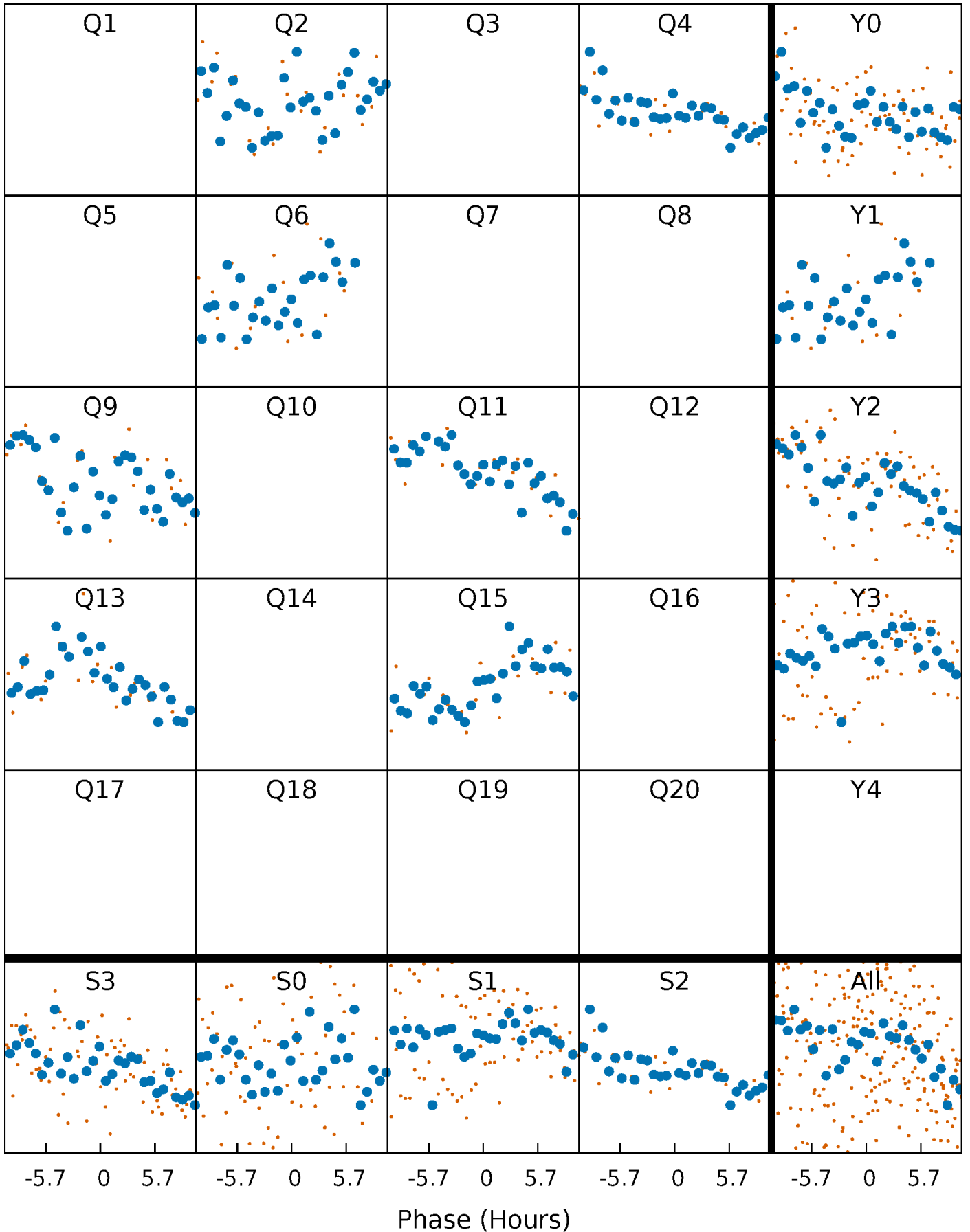


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



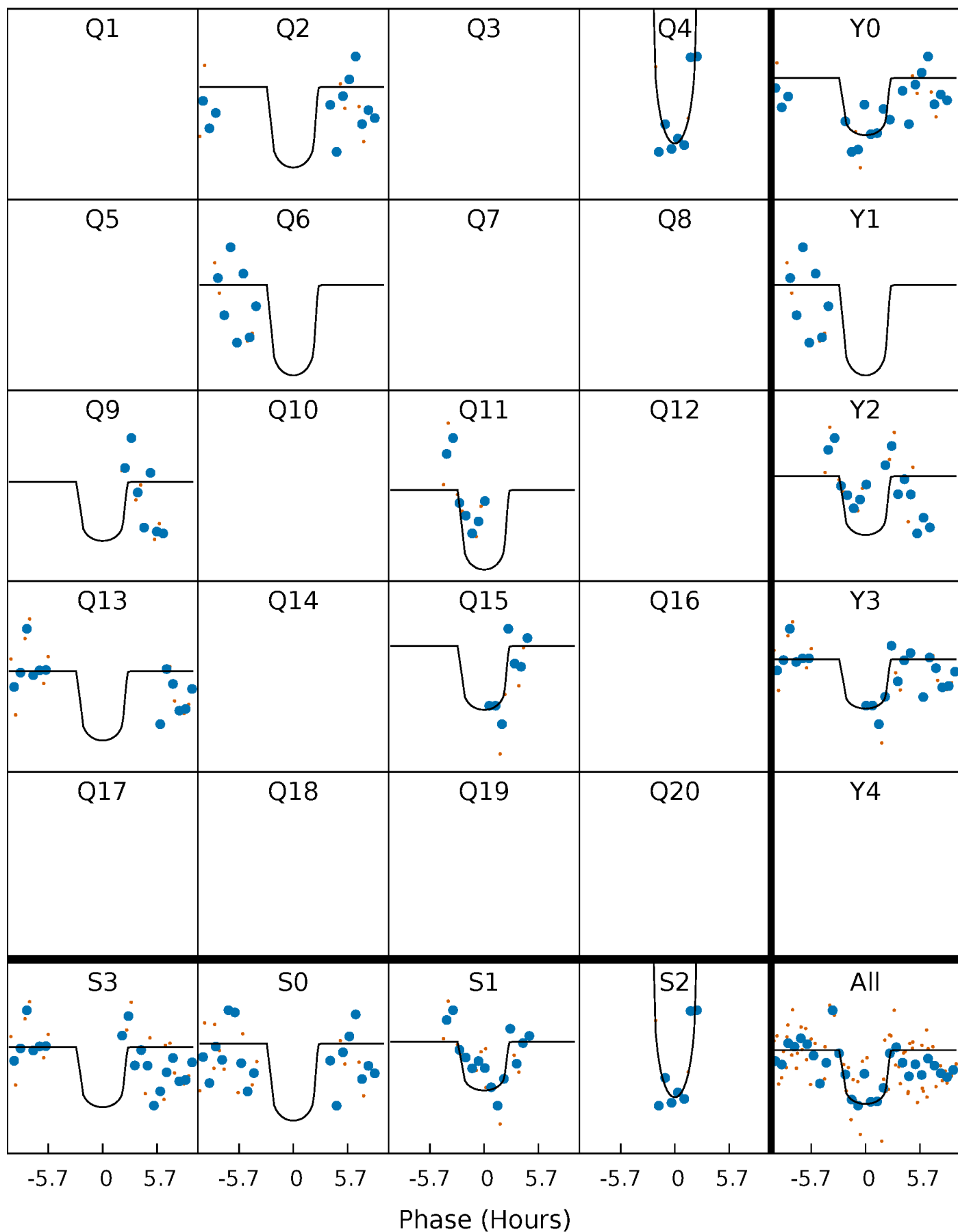
PDC Quarter-Phased Transit Curves

TCE 008112006-03 P=206.234373 Days $T_0=216.558065$ (BKJD)



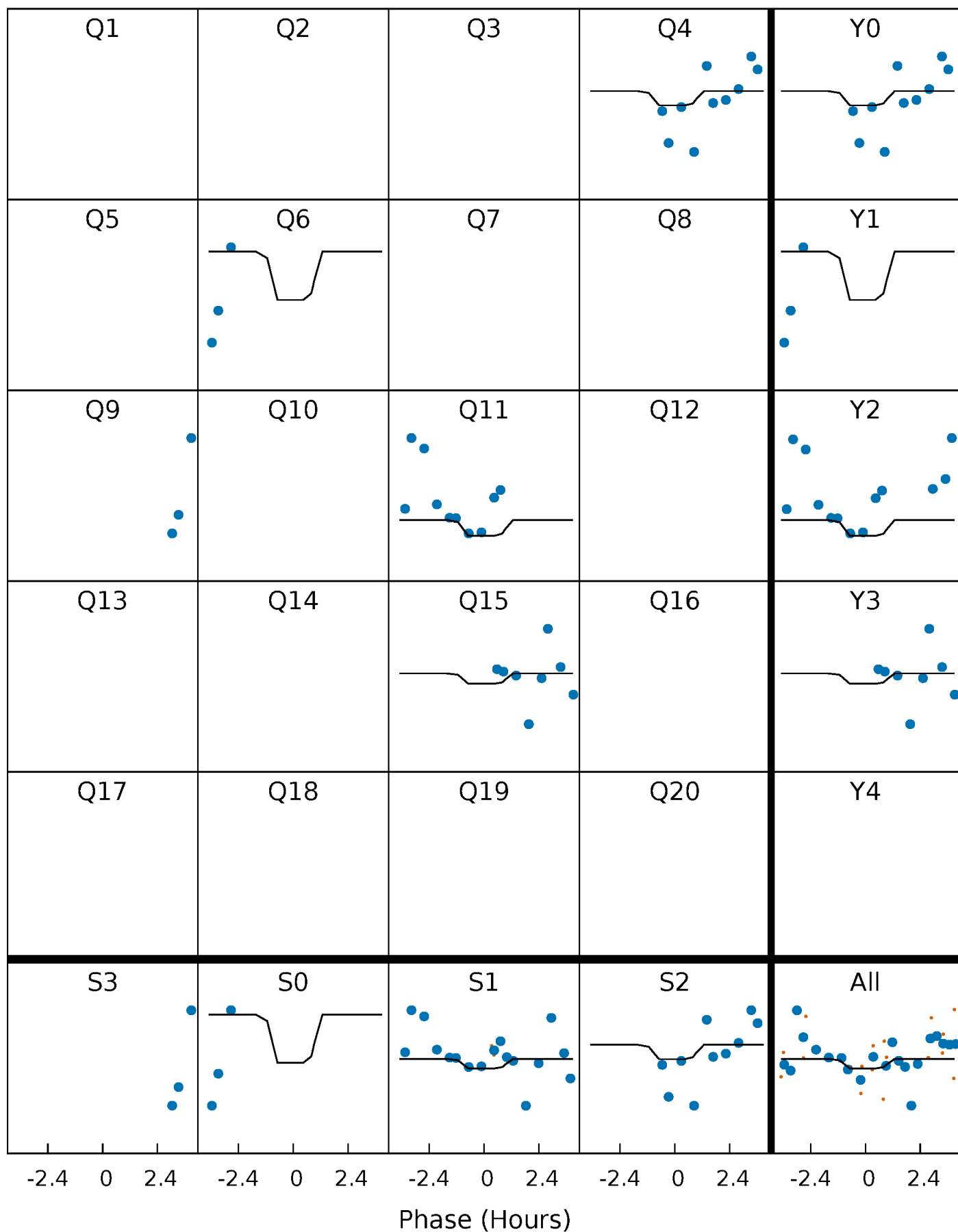
DV Quarter-Phased Transit Curves

TCE 008112006-03 P=206.234373 Days $T_0=216.558065$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

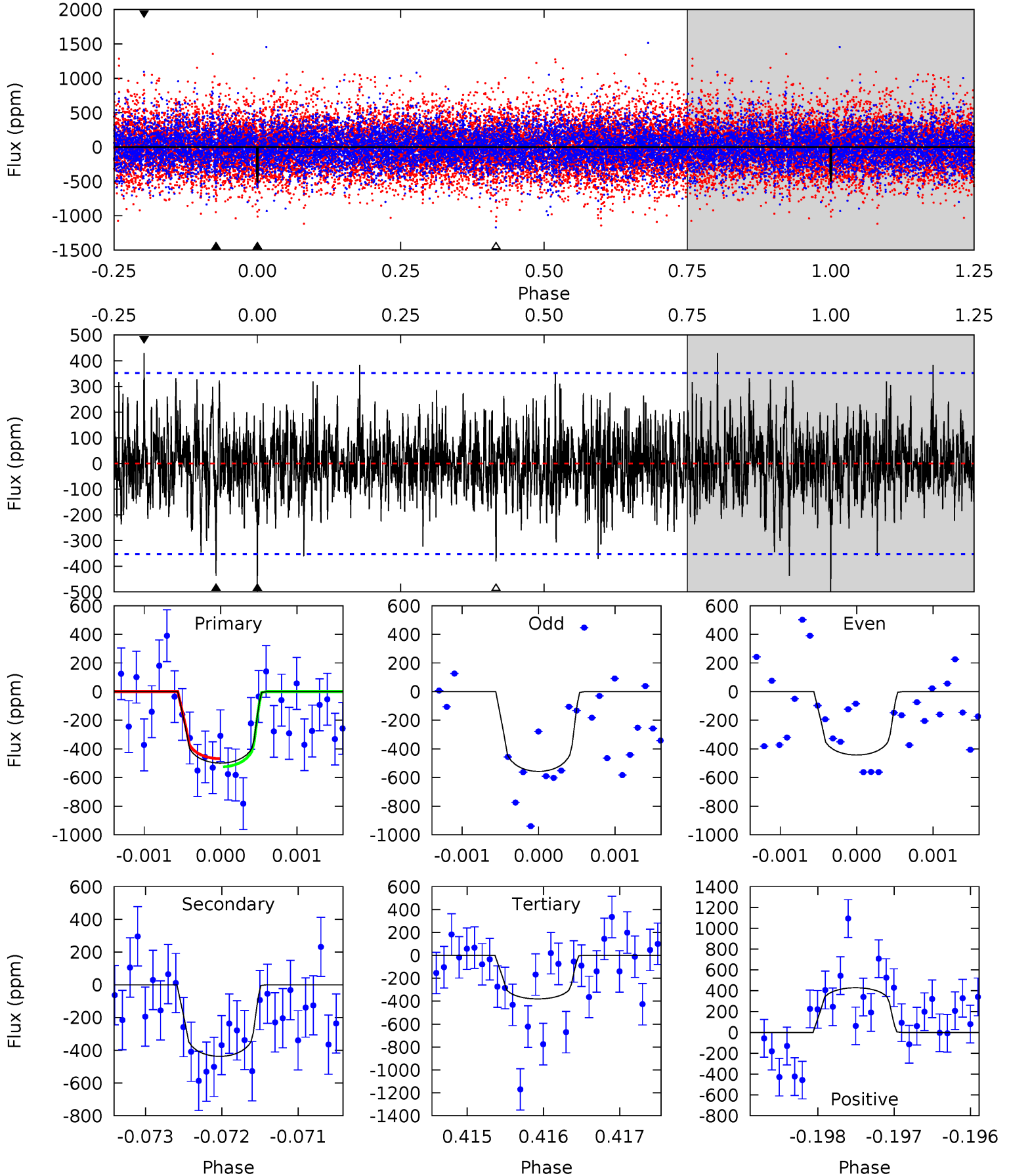
TCE 008112006-03 P=206.243654 Days $T_0=216.493531$ (BKJD)



DV Model-Shift Uniqueness Test

008112006-03, P = 206.234373 Days, E = 10.323692 Days

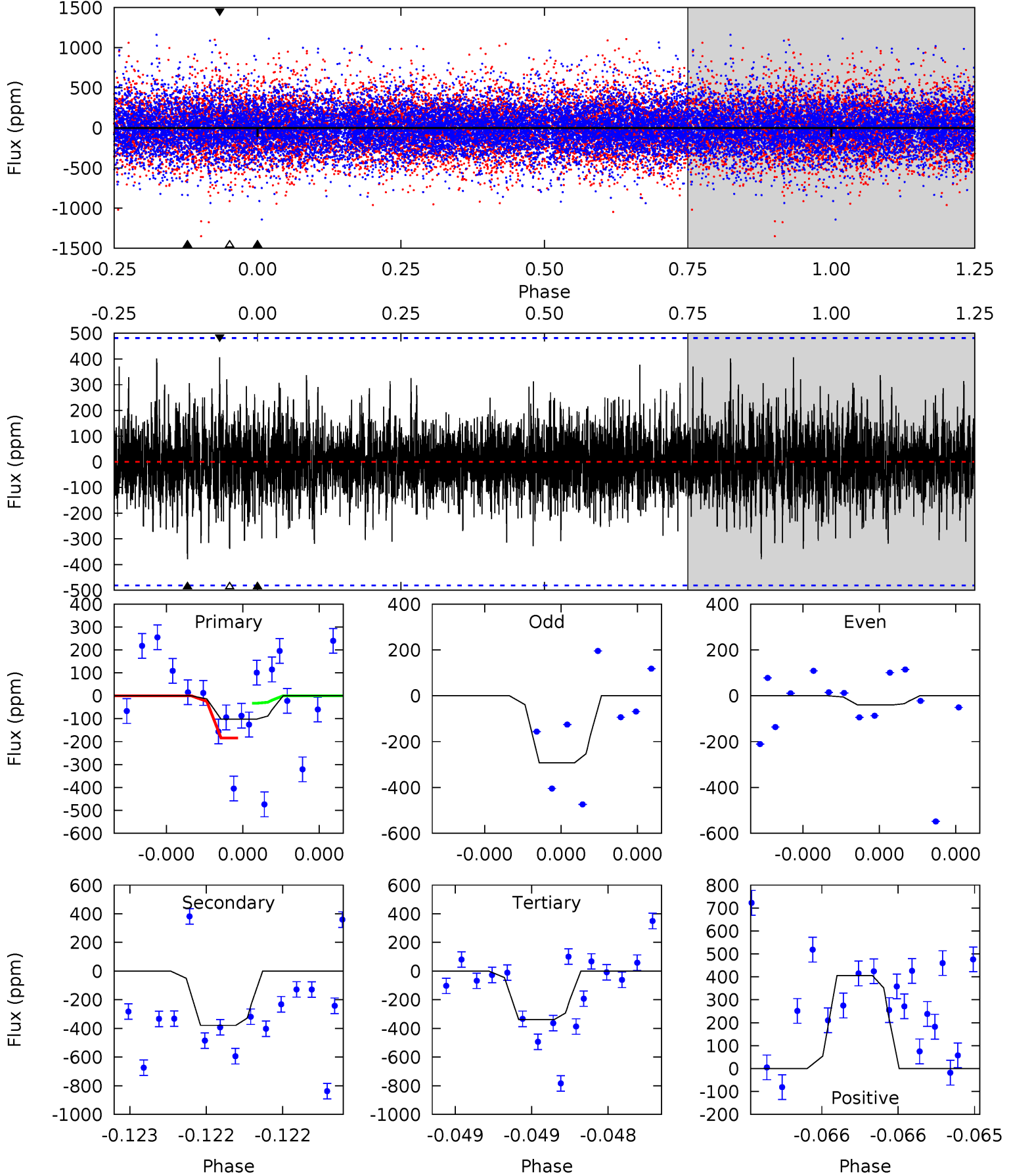
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.73	6.77	5.89	6.64	5.45	3.29	1.60	1.84	1.09	0.88	0.13	0.88	0.81	0.46	0.43



Alt Model-Shift Uniqueness Test

008112006-03, P = 206.243654 Days, E = 10.249877 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.18	4.39	3.92	4.70	5.58	3.49	1.06	-2.74	-3.52	0.47	-0.31	1.45	-1.80	0.52	0.86



Stellar Parameters For KIC 008112006

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6119^{+183}_{-183}	$4.510^{+0.096}_{-0.132}$	$-1.360^{+0.350}_{-0.250}$	$0.791^{+0.131}_{-0.090}$	$0.739^{+0.063}_{-0.032}$	$2.101^{+0.890}_{-0.737}$
	+3%/-3%	+2%/-3%	+26%/-18%	+17%/-11%	+9%/-4%	+42%/-35%
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 008112006-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-437 ± 65	$2.88^{+2.47}_{-1.94}$	430^{+20}_{-20}	4996^{+4547}_{-1082}	$11287^{+103543}_{-8064}$
Alt.	-379 ± 86	$2.19^{+2.19}_{-1.48}$	429^{+23}_{-21}	5388^{+5299}_{-1280}	$15979^{+145833}_{-11822}$

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

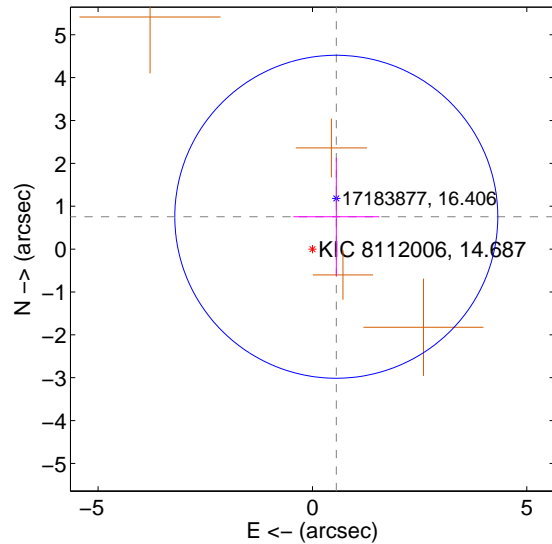
Supplemental centroid analysis for 008112006-03. Kepler magnitude: 14.69. Transit SNR 6.70

There are 0 quarters with good PRF difference image offsets

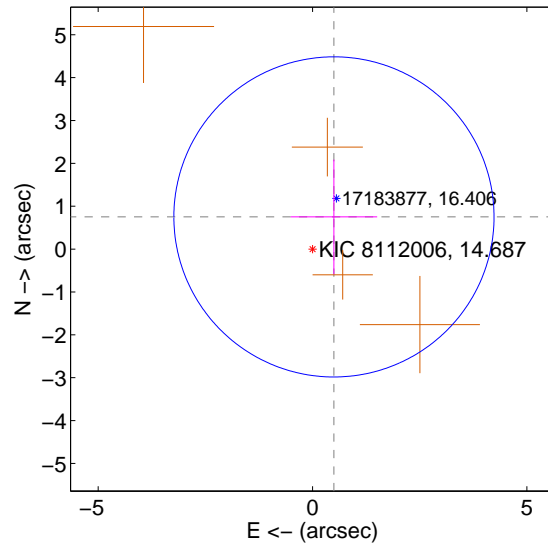
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.937 ± 1.256	0.75	-0.556 ± 1.002	0.754 ± 1.374
PRF-fit source offset from KIC position	0.902 ± 1.245	0.72	-0.500 ± 1.008	0.751 ± 1.336
photometric centroid source offset	1.06 ± 0.81	1.32	-0.90 ± 0.78	0.57 ± 0.87

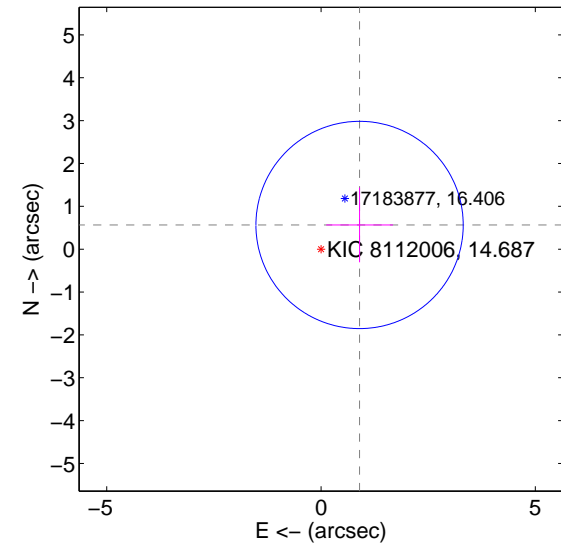
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

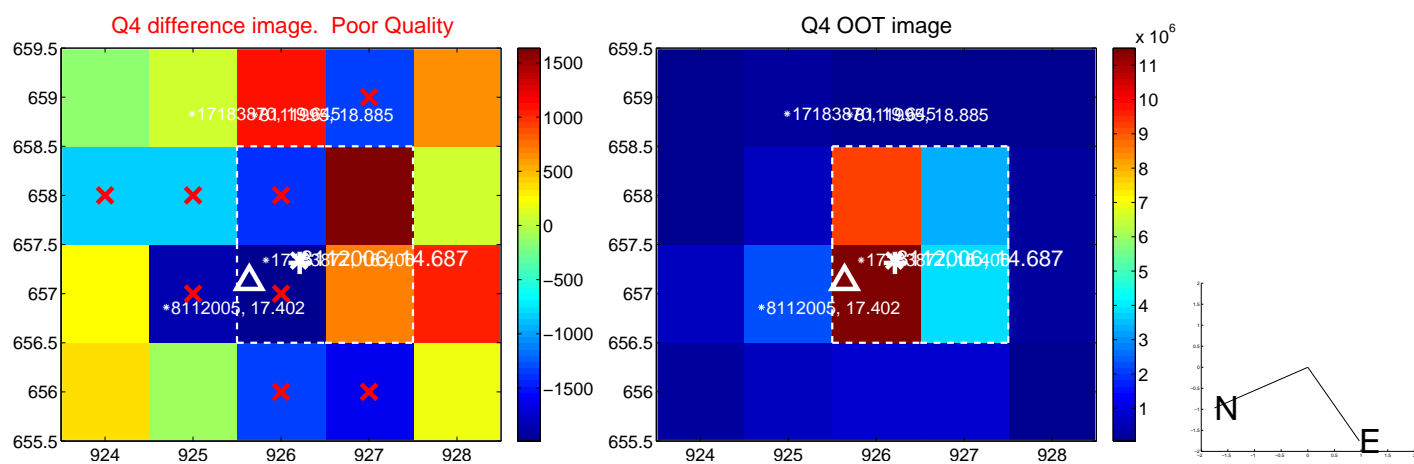
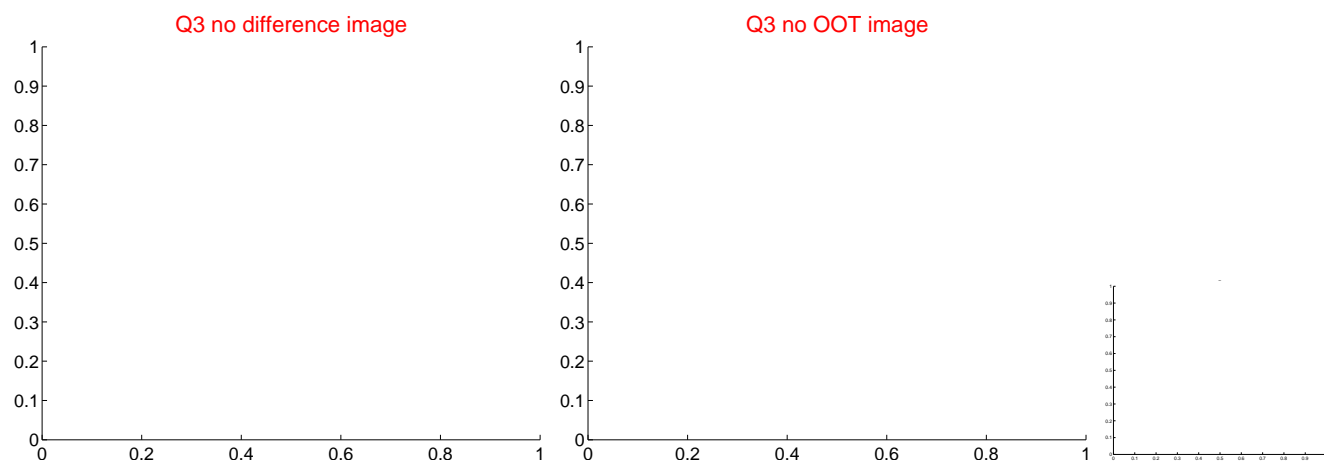
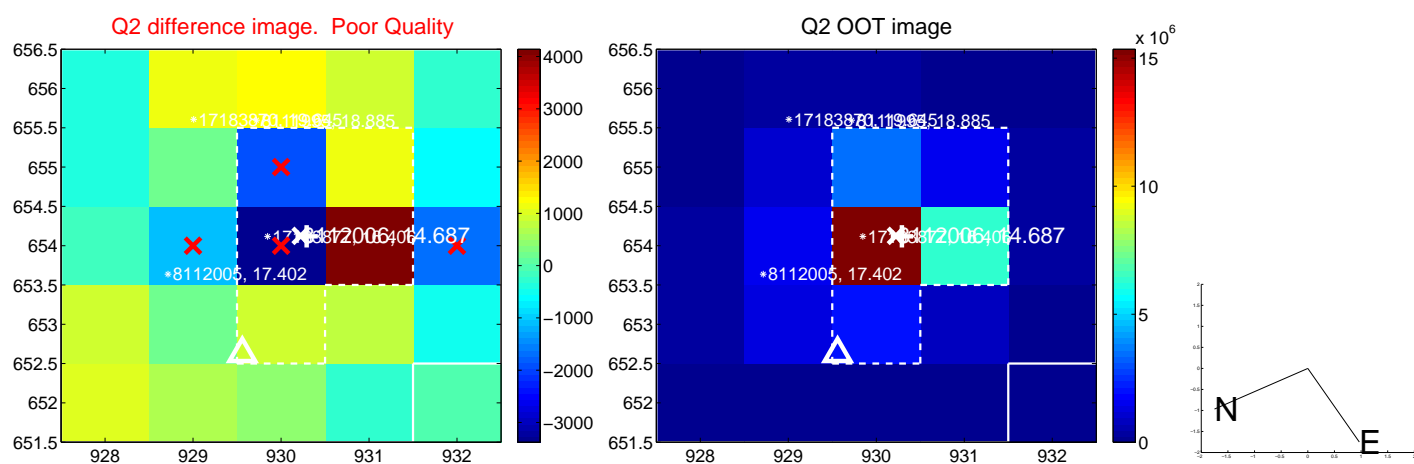
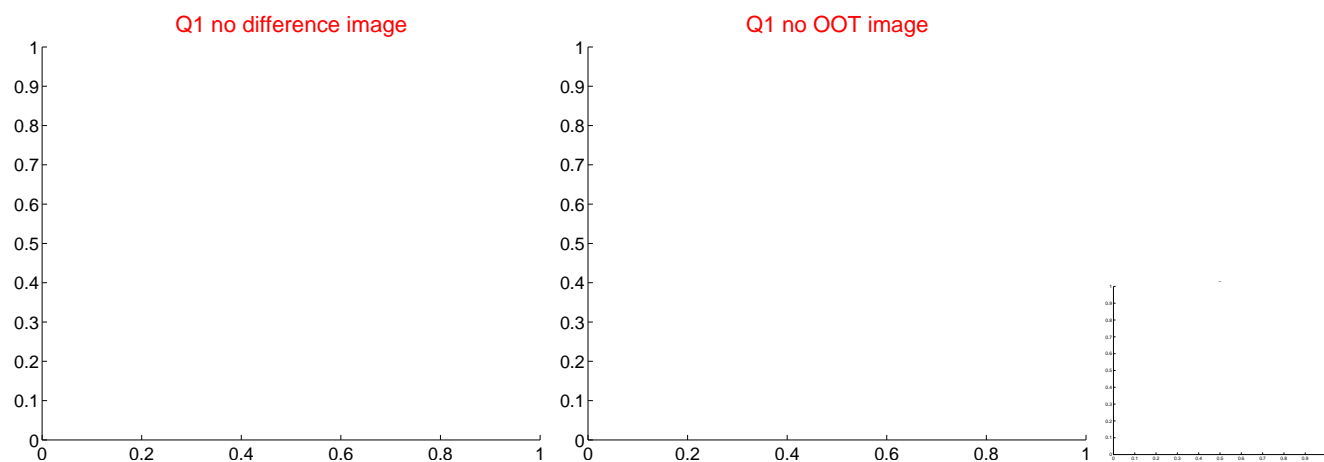


offset from photometric centroids



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.

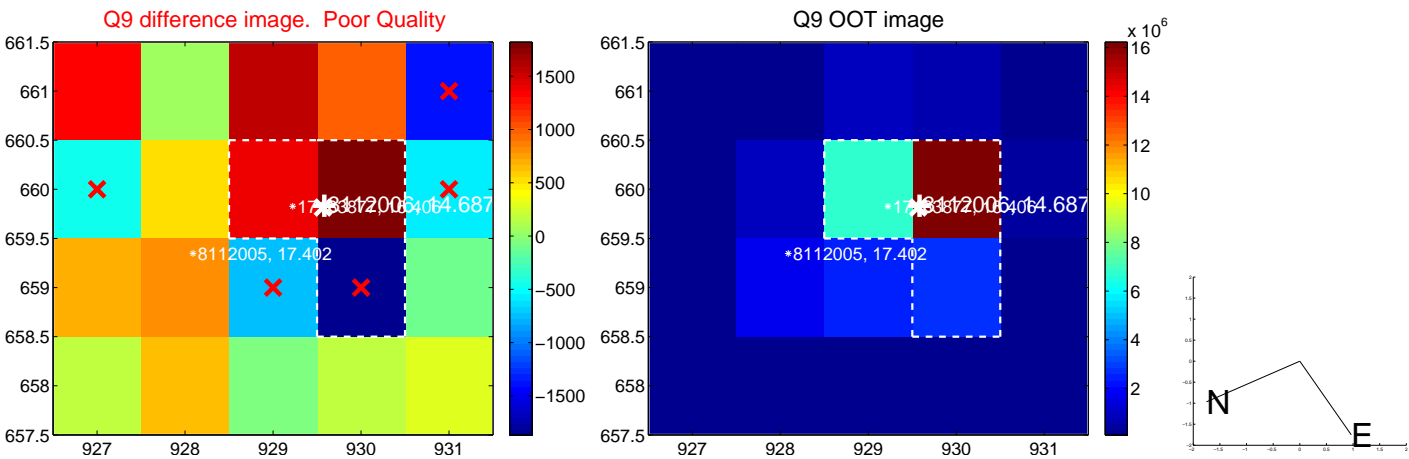
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



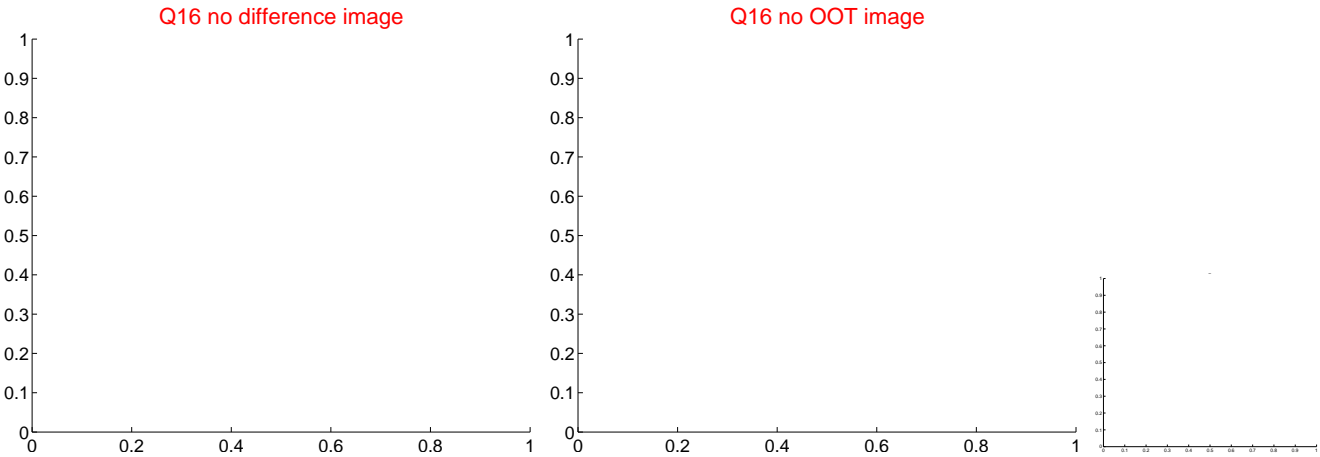
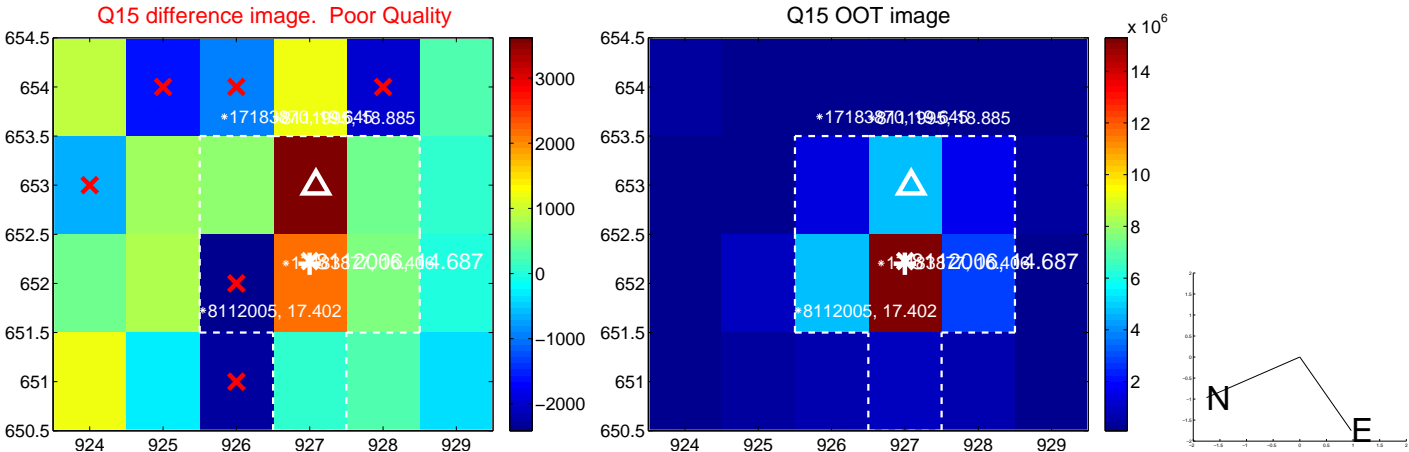
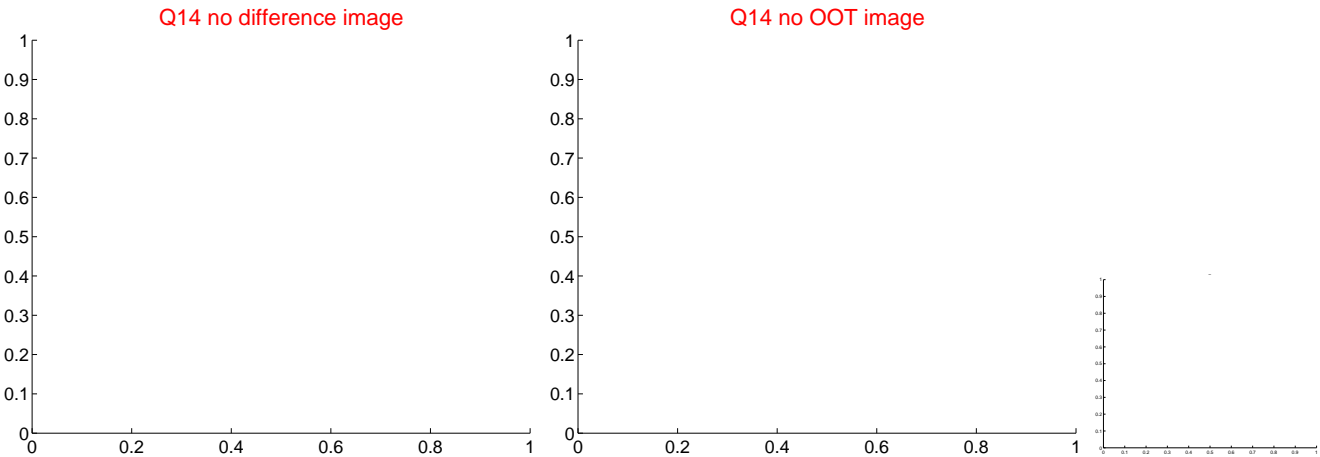
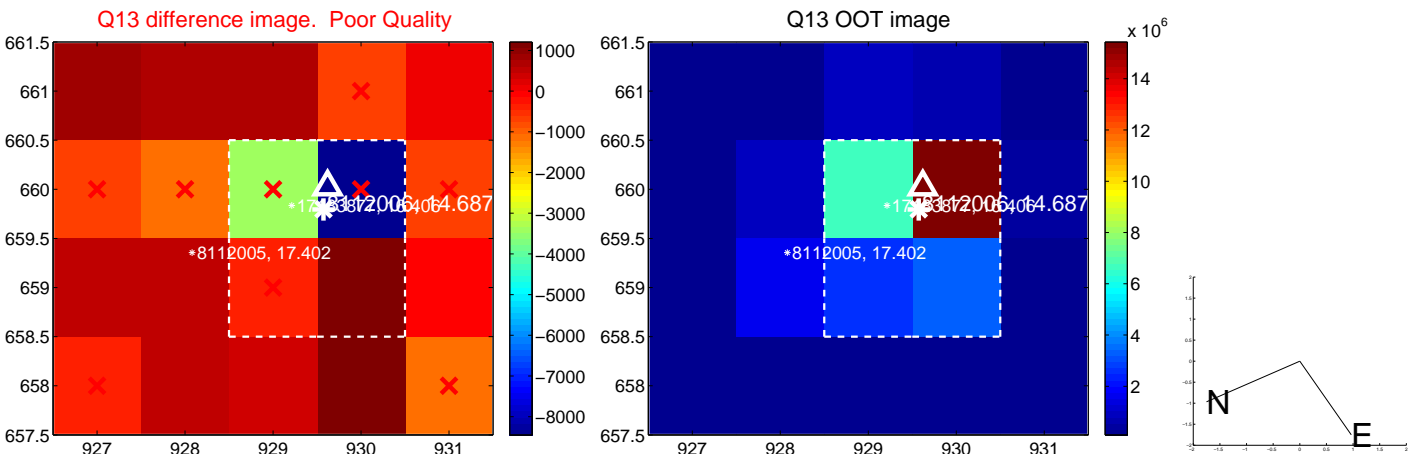
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



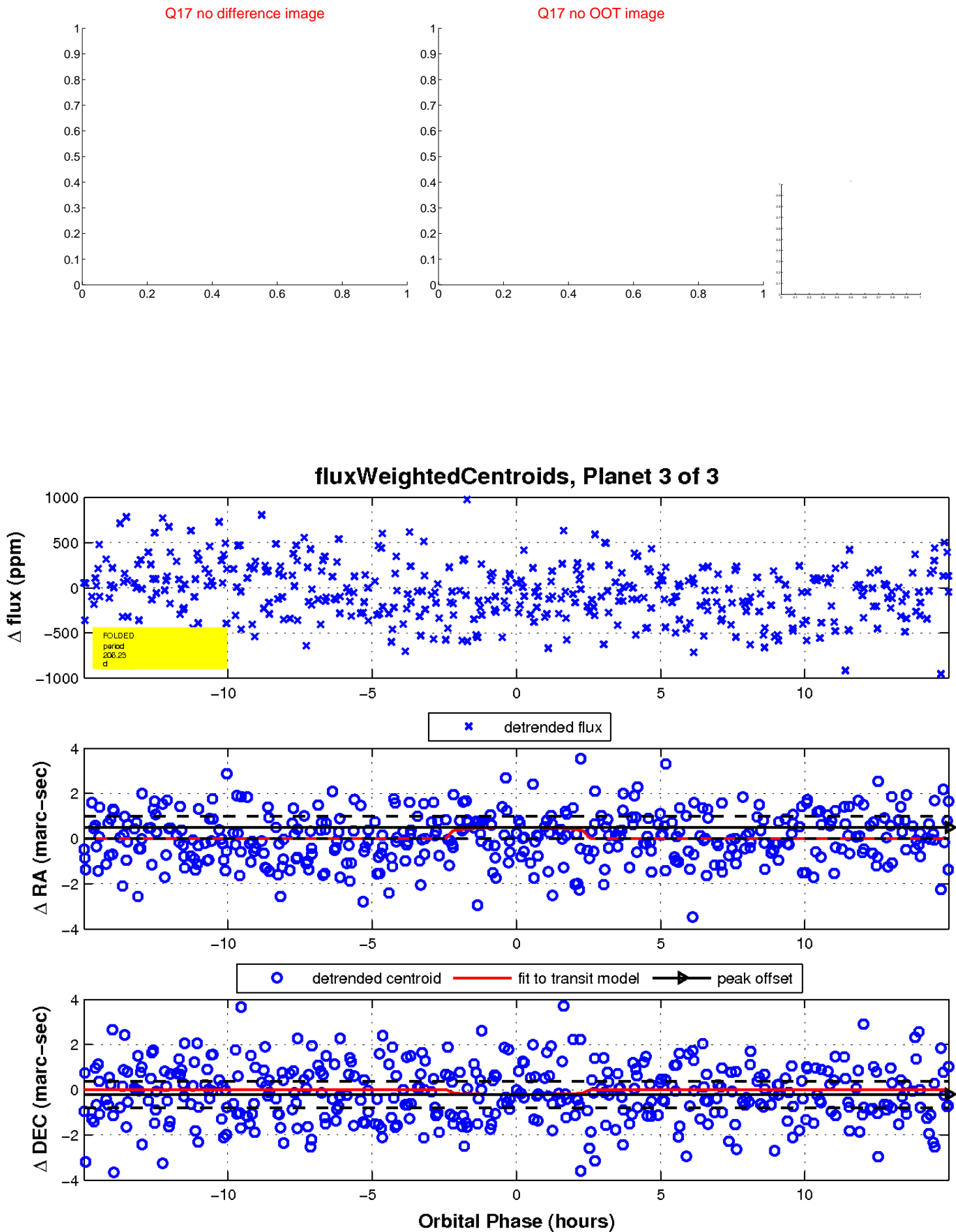
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

