

KIC 003854437

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})
003854437-01	OBS	No	0.915060	132.333675	20.3	3.599	7.6	6.0	0.96	5868	0.51	2917.25
003854437-02	OBS	No	178.799912	221.424435	441.7	4.301	13.0	6.6	0.96	5868	2.17	2.57
003854437-03	OBS	No	209.280456	277.600191	455.6	14.899	11.0	7.0	0.96	5868	2.79	2.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003854437-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
003854437-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003854437-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

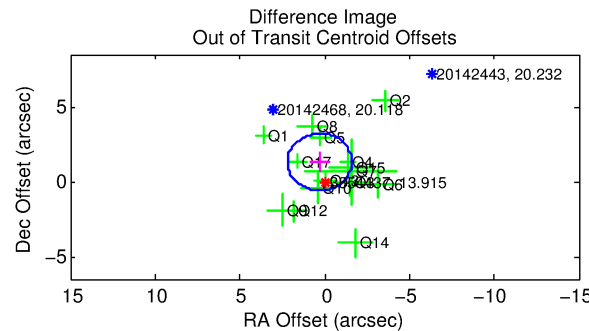
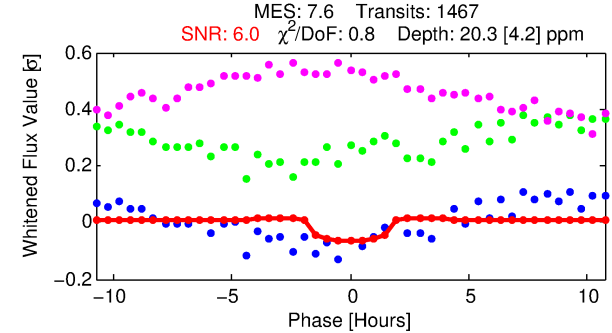
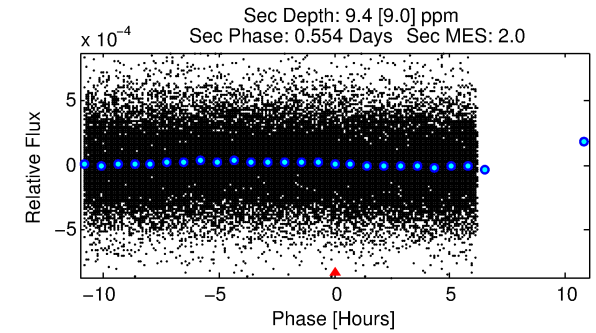
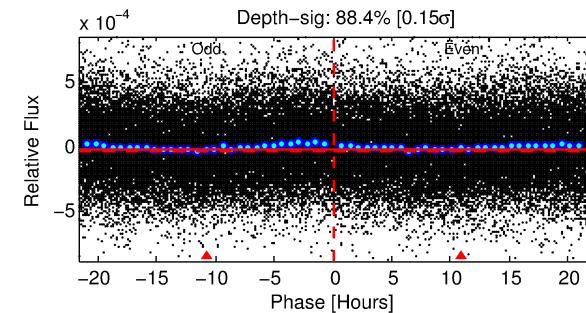
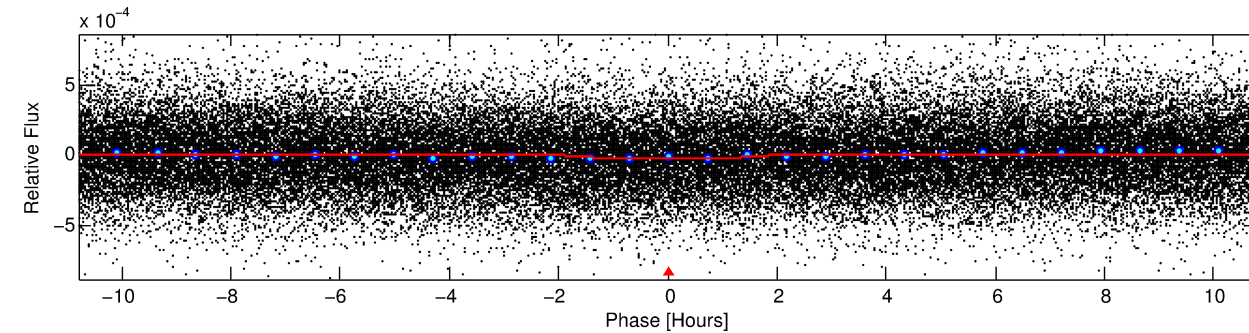
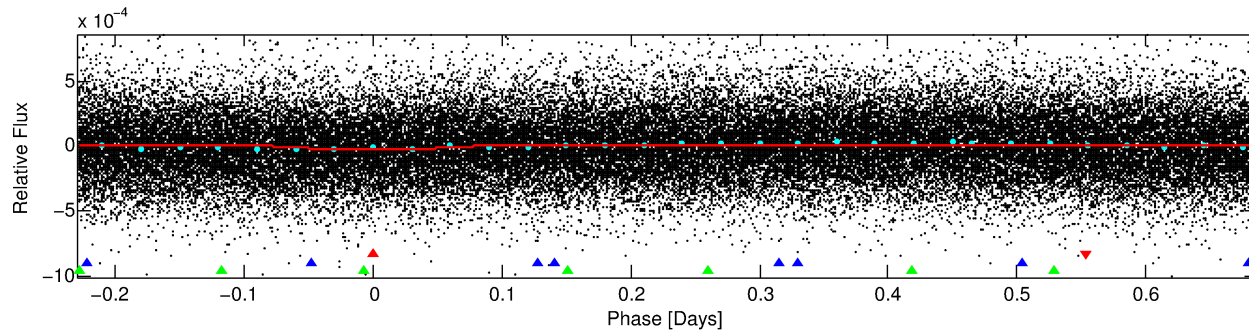
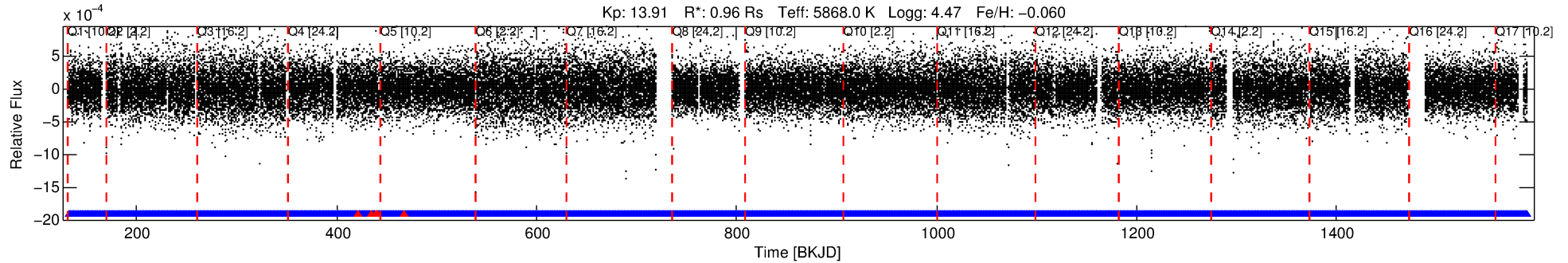
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003854437-01

No Significant Match Found

DV One-Page Summary

KIC: 3854437 Candidate: 1 of 3 Period: 0.915 d



DV Fit Results:

Period = 0.91506 [0.00002] d
Epoch = 132.3337 [0.0058] BKJD
Rp/R* = 0.0049 [0.0036]
a/R* = 1.28 [1.84]
b = 0.90 [0.80]
Seff = 2917.25 [1140.08]
Teq = 1874 [183] K
Rp = 0.51 [0.41] Re
a = 0.0184 [0.0047] AU
Ag = 6.64 [11.85] [0.48 σ]
Teffp = 4650 [2035] K [1.36 σ]

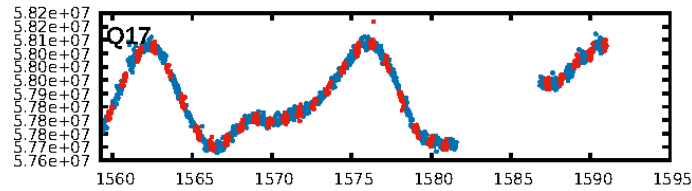
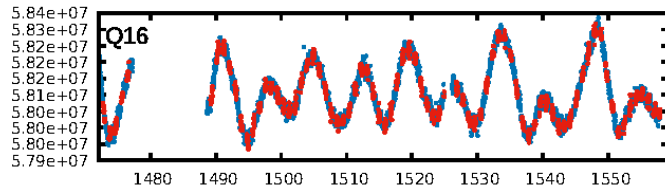
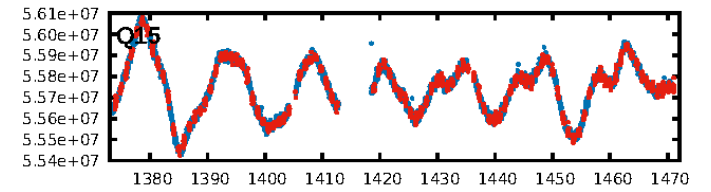
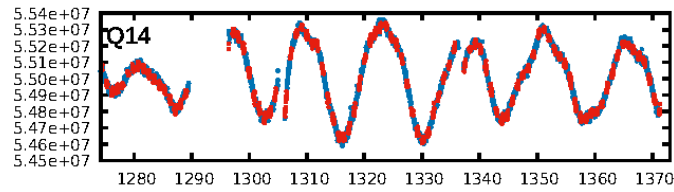
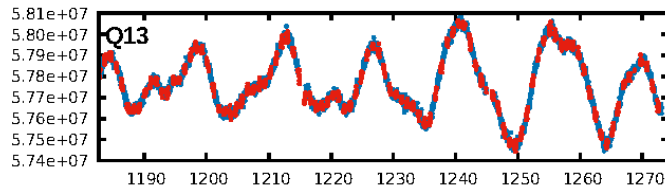
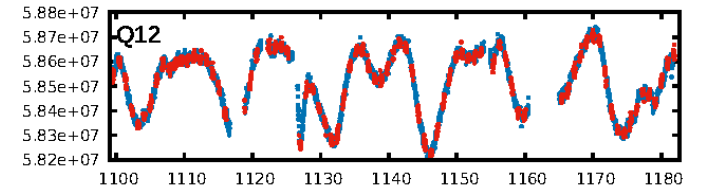
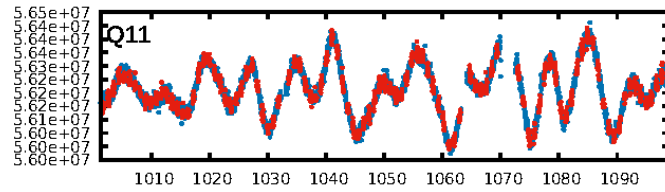
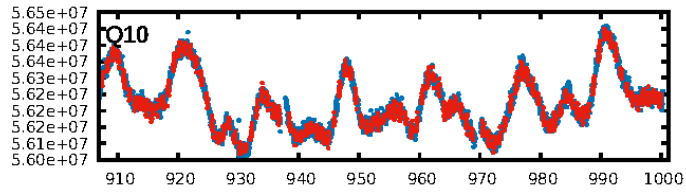
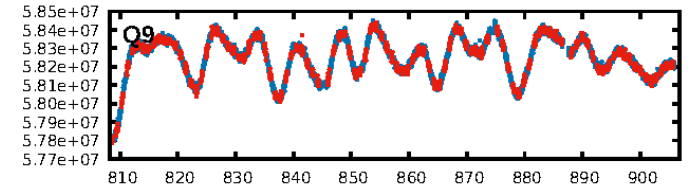
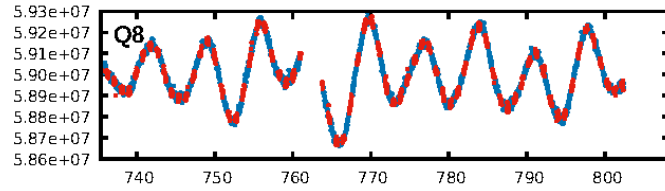
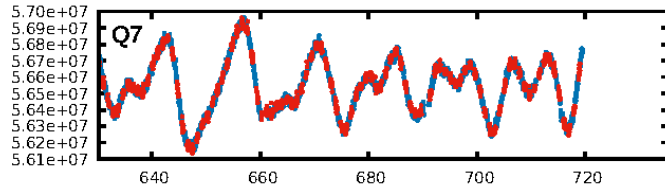
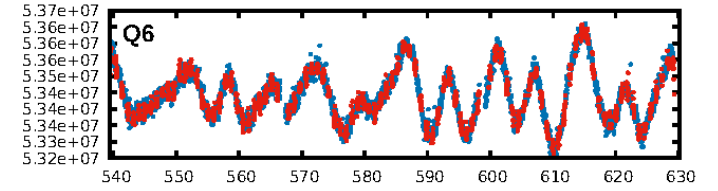
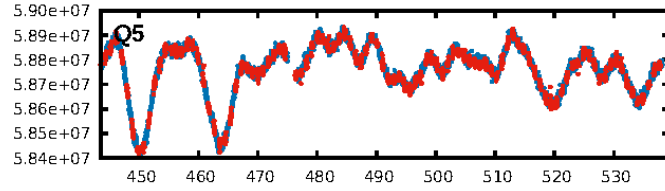
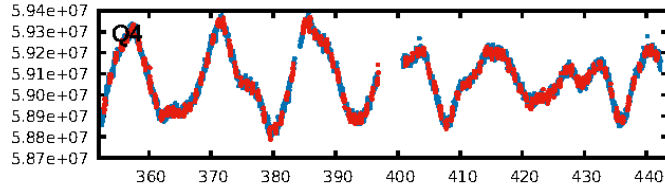
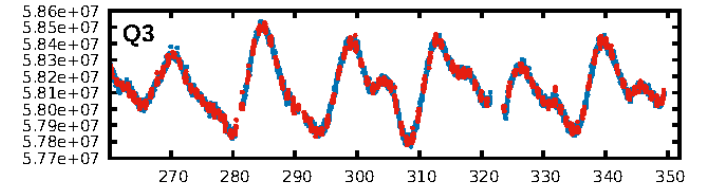
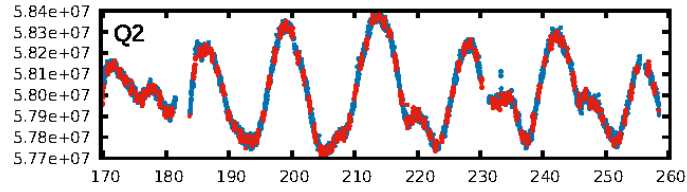
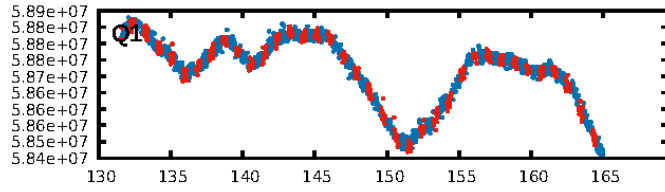
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [761.26 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.80e-14
RollingBand-fgt: 1.00 [1396/1402]
GhostDiagnostic-chr: 0.2425
Centroid-sig: 14.4%
Centroid-so: 1.972 arcsec [1.11 σ]
OotOffset-rm: 1.341 arcsec [2.12 σ]
KicOffset-rm: 1.455 arcsec [2.27 σ]
OotOffset-st: 4/3/3/5 [15]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 1.00 [17/17]

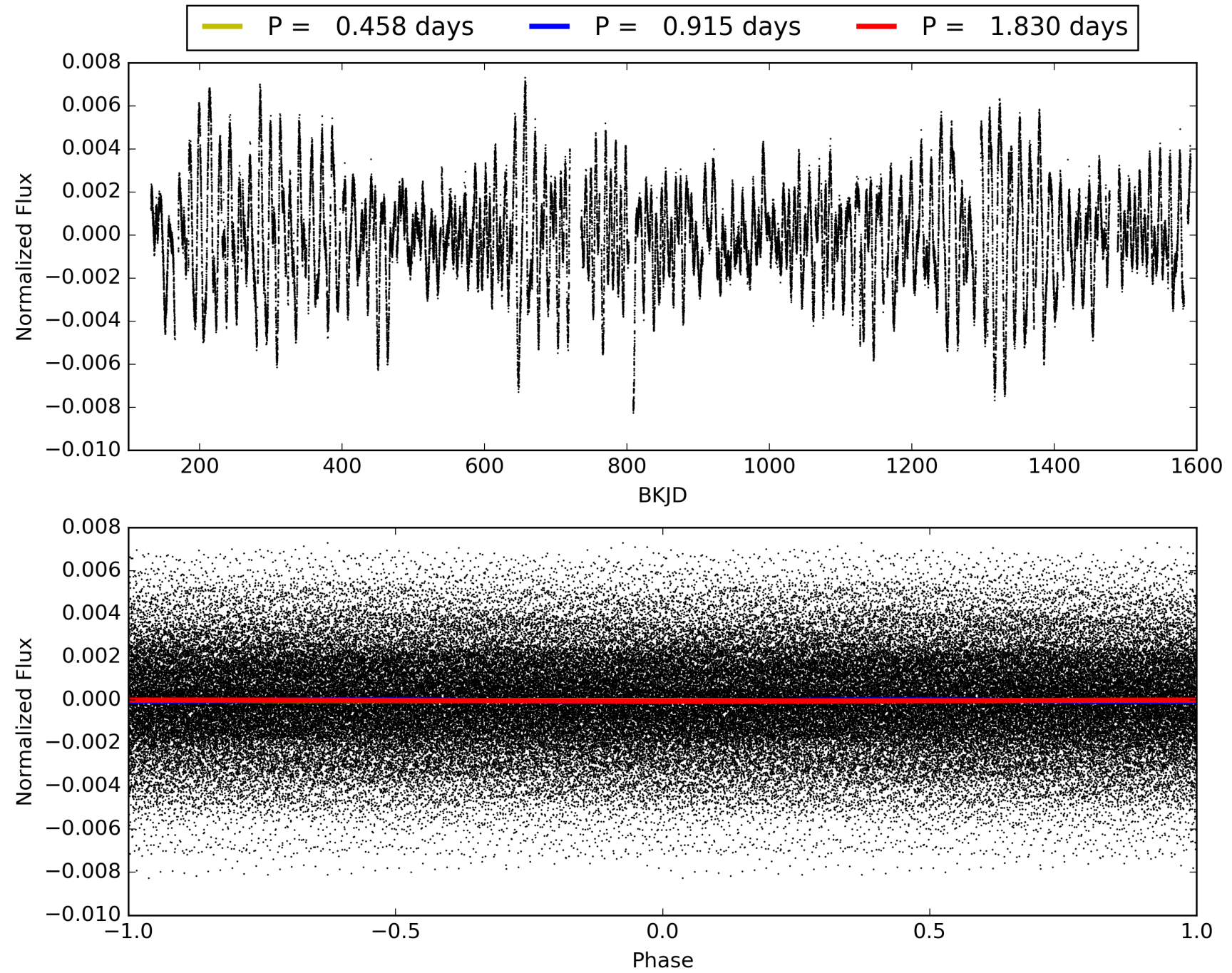
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:11:26 Z

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

TCE 003854437-01, PDC Light Curves

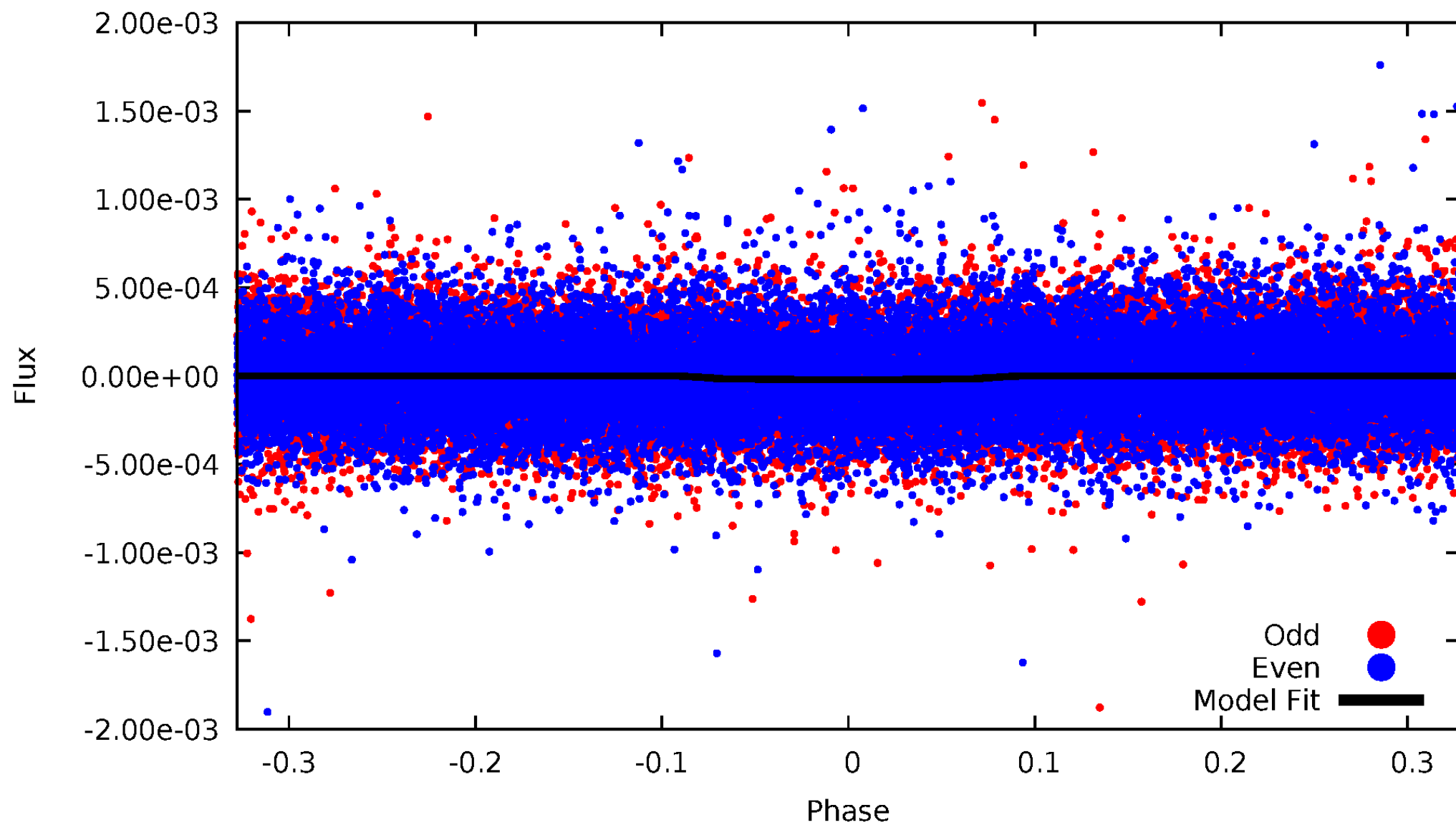


TCE 003854437-01



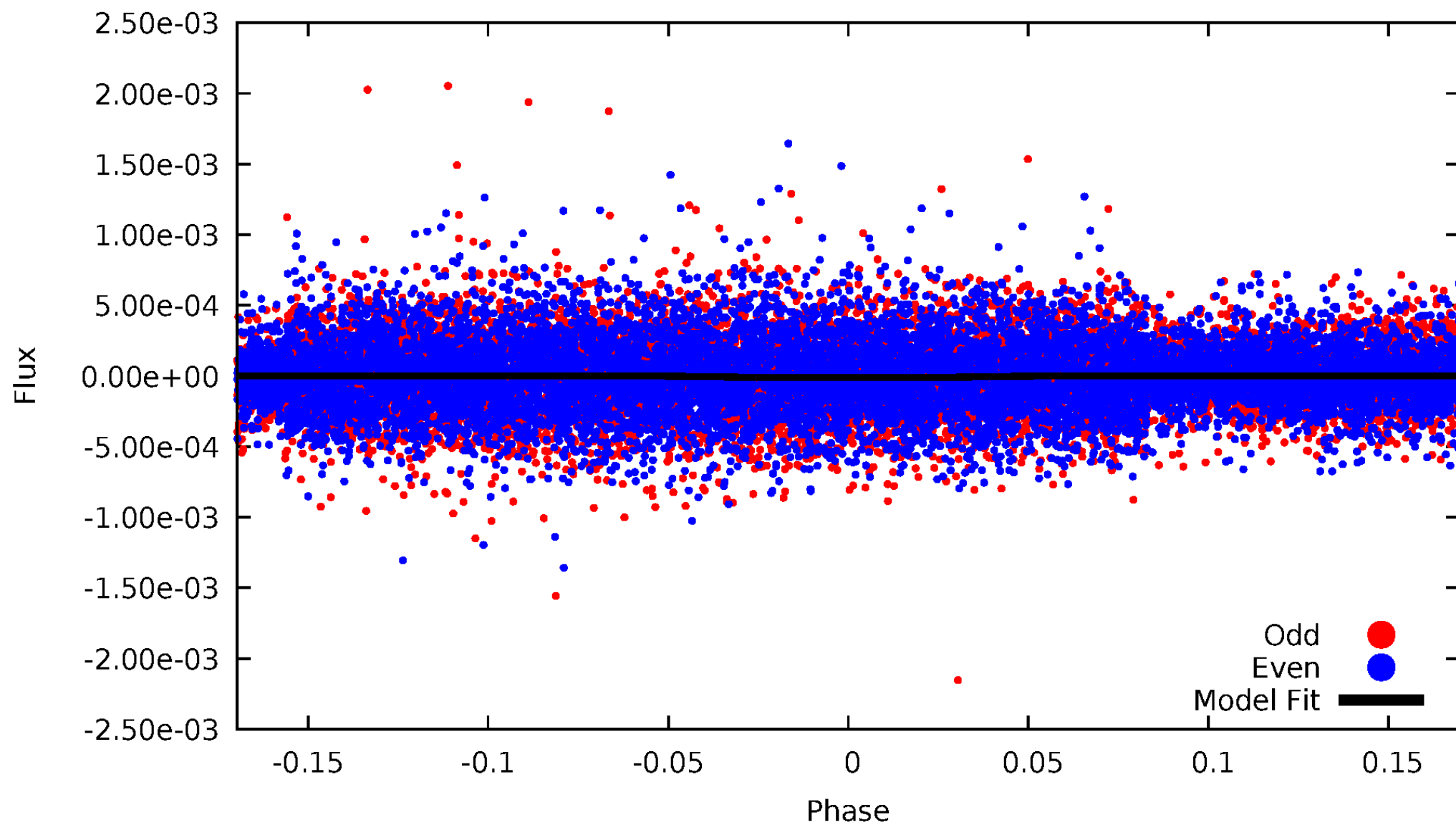
DV Odd/Even

TCE 003854437-01



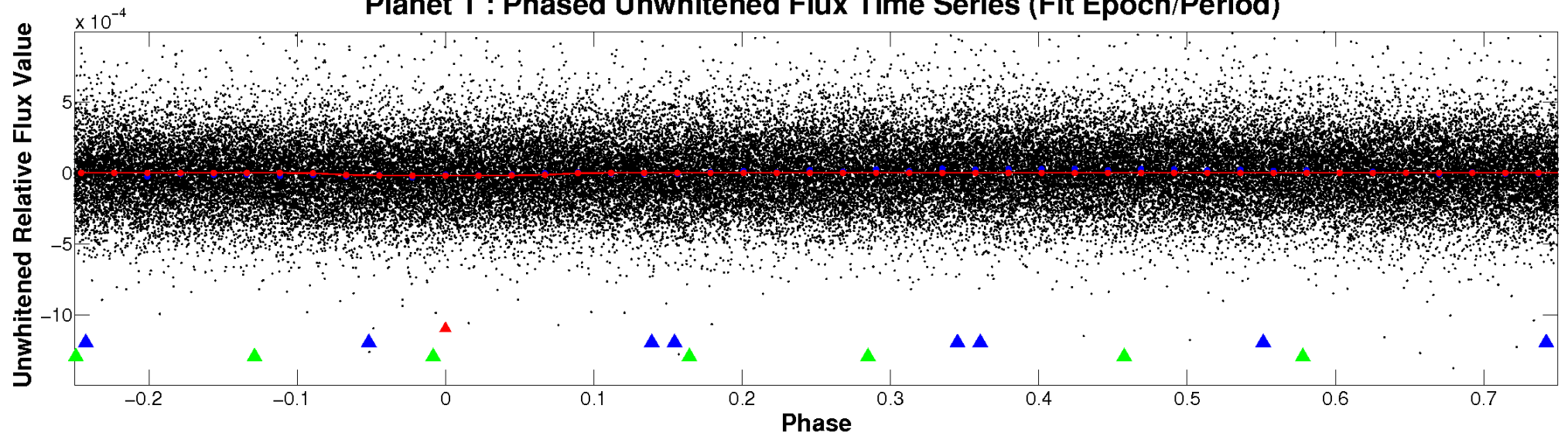
ALT Odd/Even

TCE 003854437-01

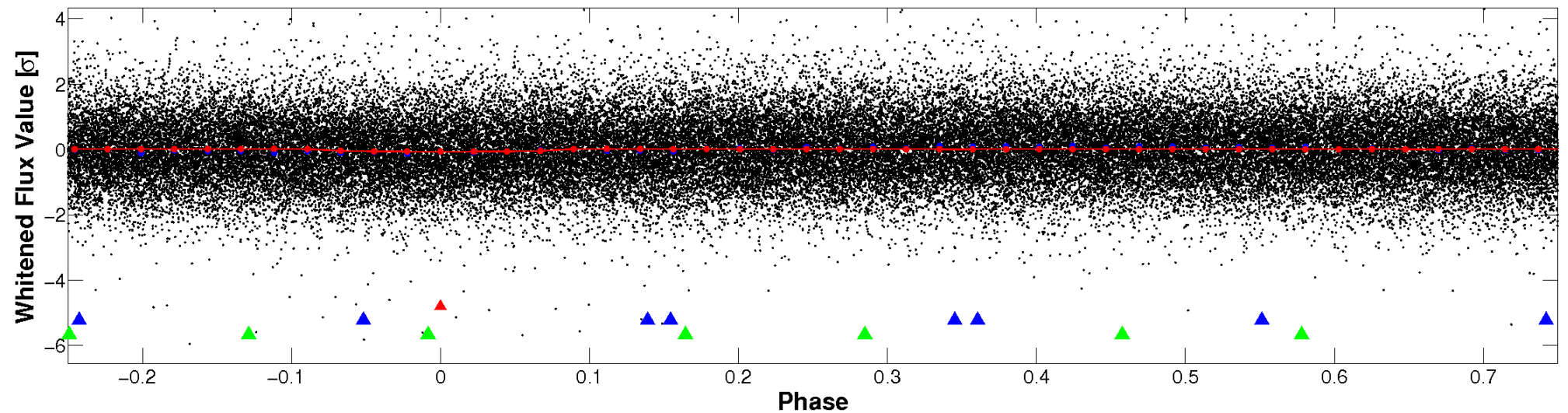


Non-Whitened Vs. Whitened Light Curve

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

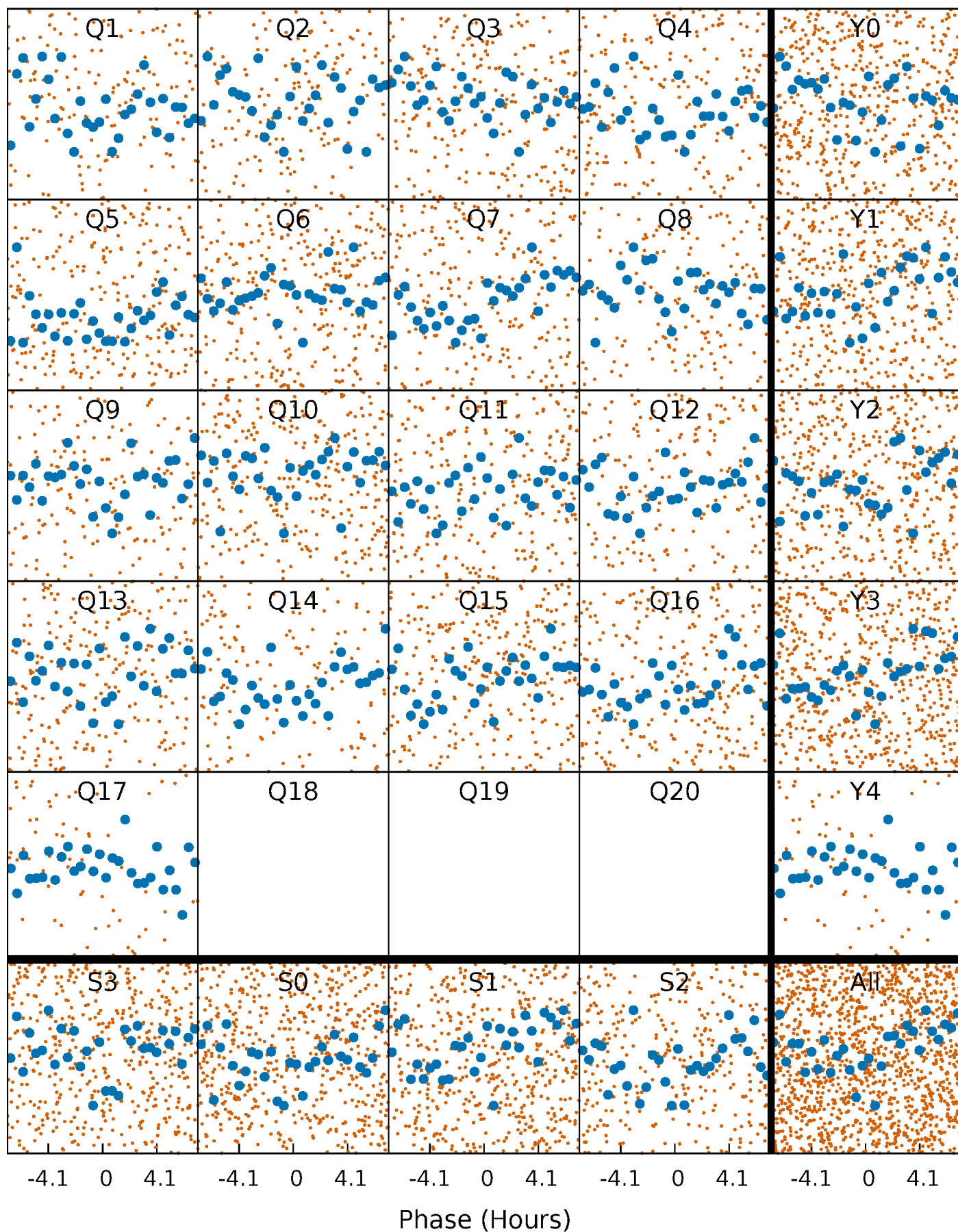


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



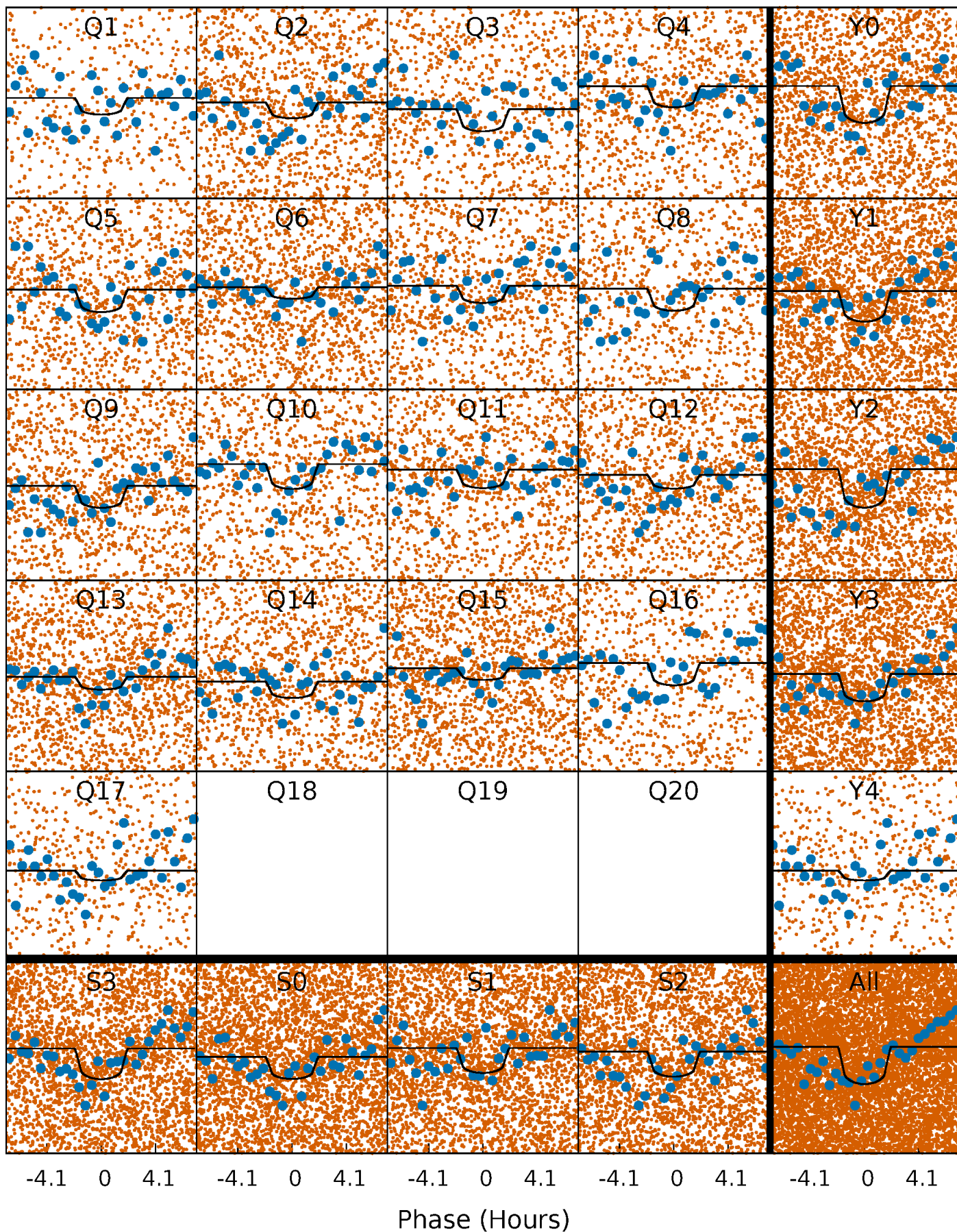
PDC Quarter-Phased Transit Curves

TCE 003854437-01 P= 0.915060 Days $T_0=132.333675$ (BKJD)



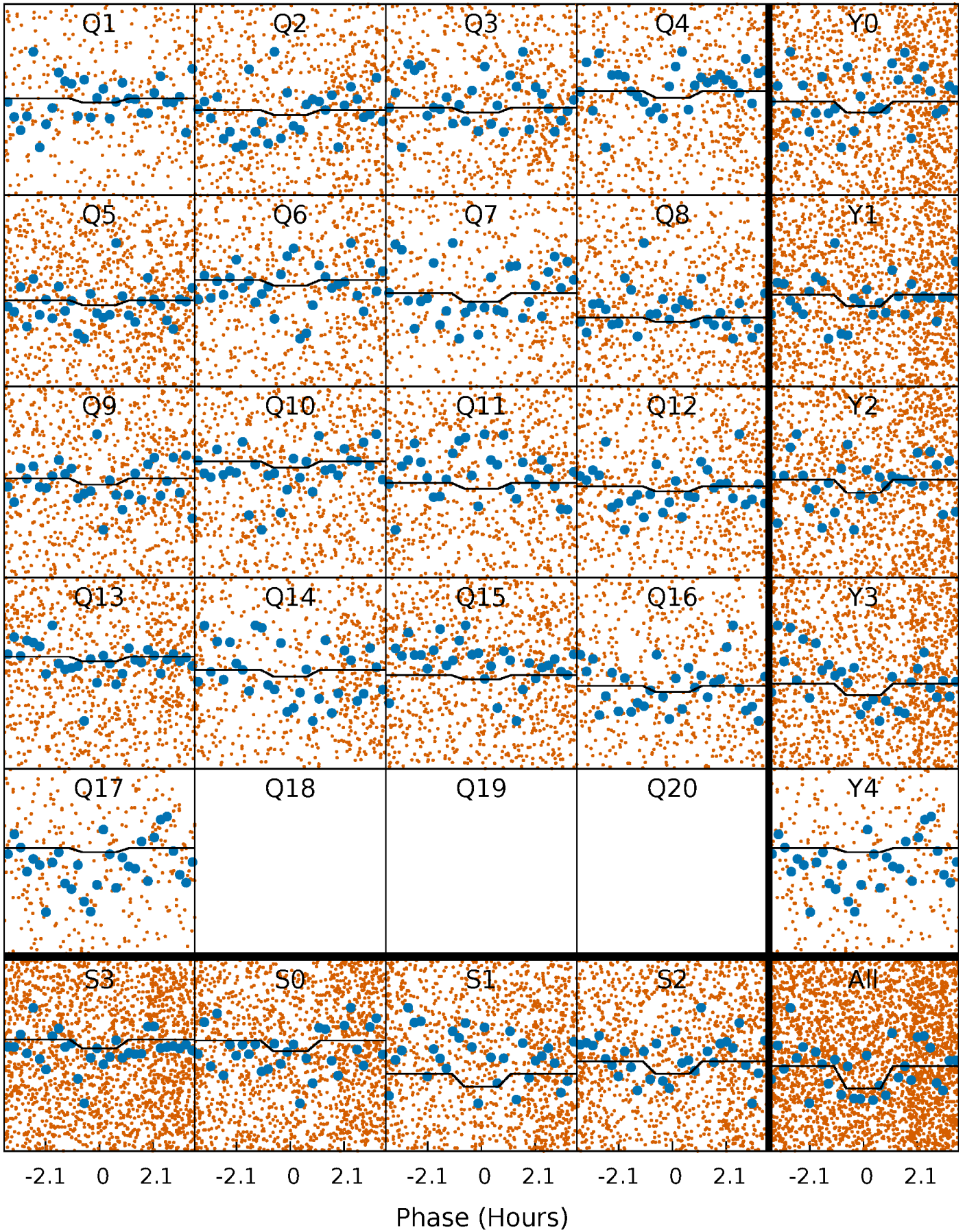
DV Quarter-Phased Transit Curves

TCE 003854437-01 P= 0.915060 Days $T_0=132.333675$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

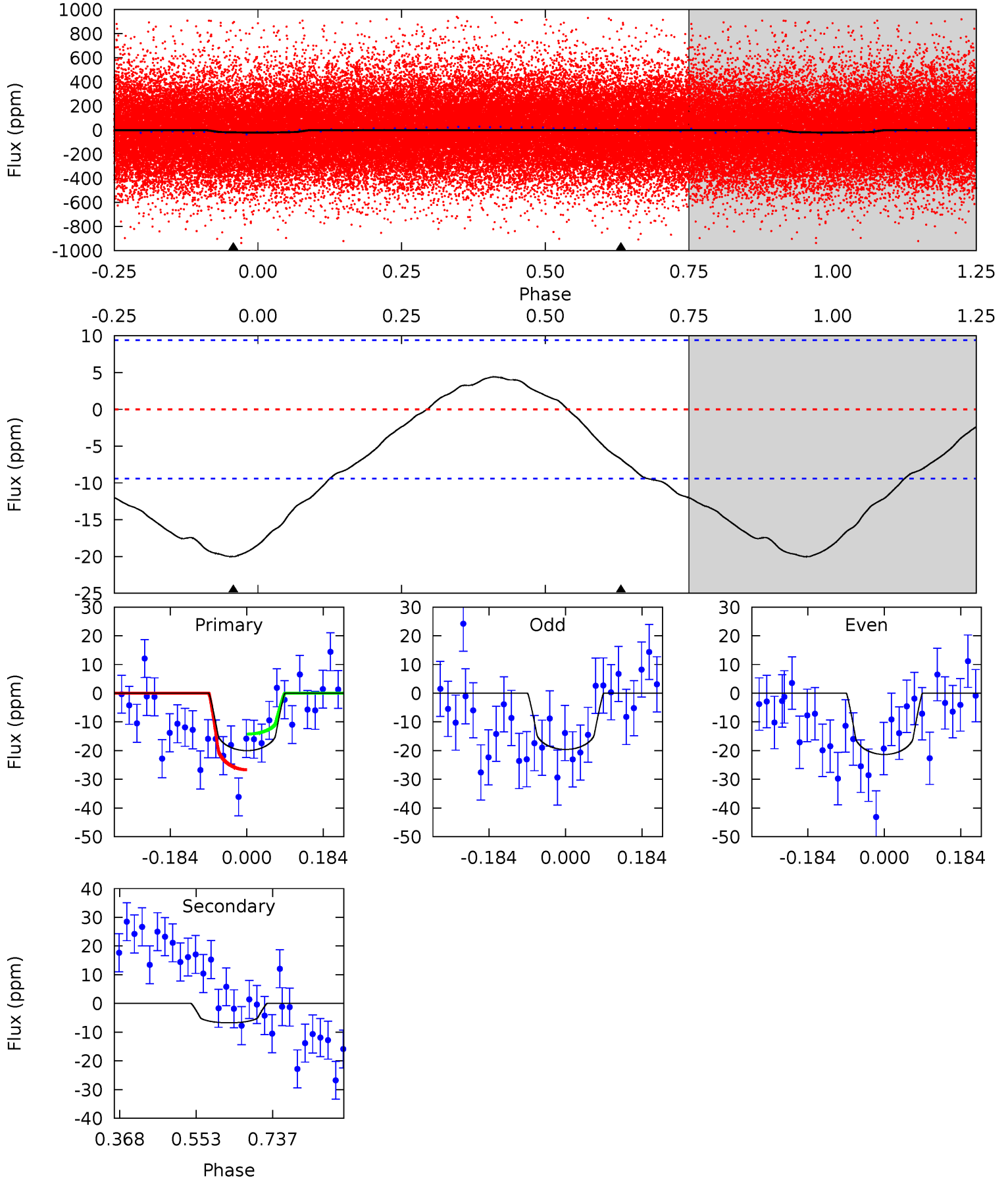
TCE 003854437-01 P= 0.915016 Days $T_0=132.363245$ (BKJD)



DV Model-Shift Uniqueness Test

003854437-01, P = 0.915060 Days, E = 131.418615 Days

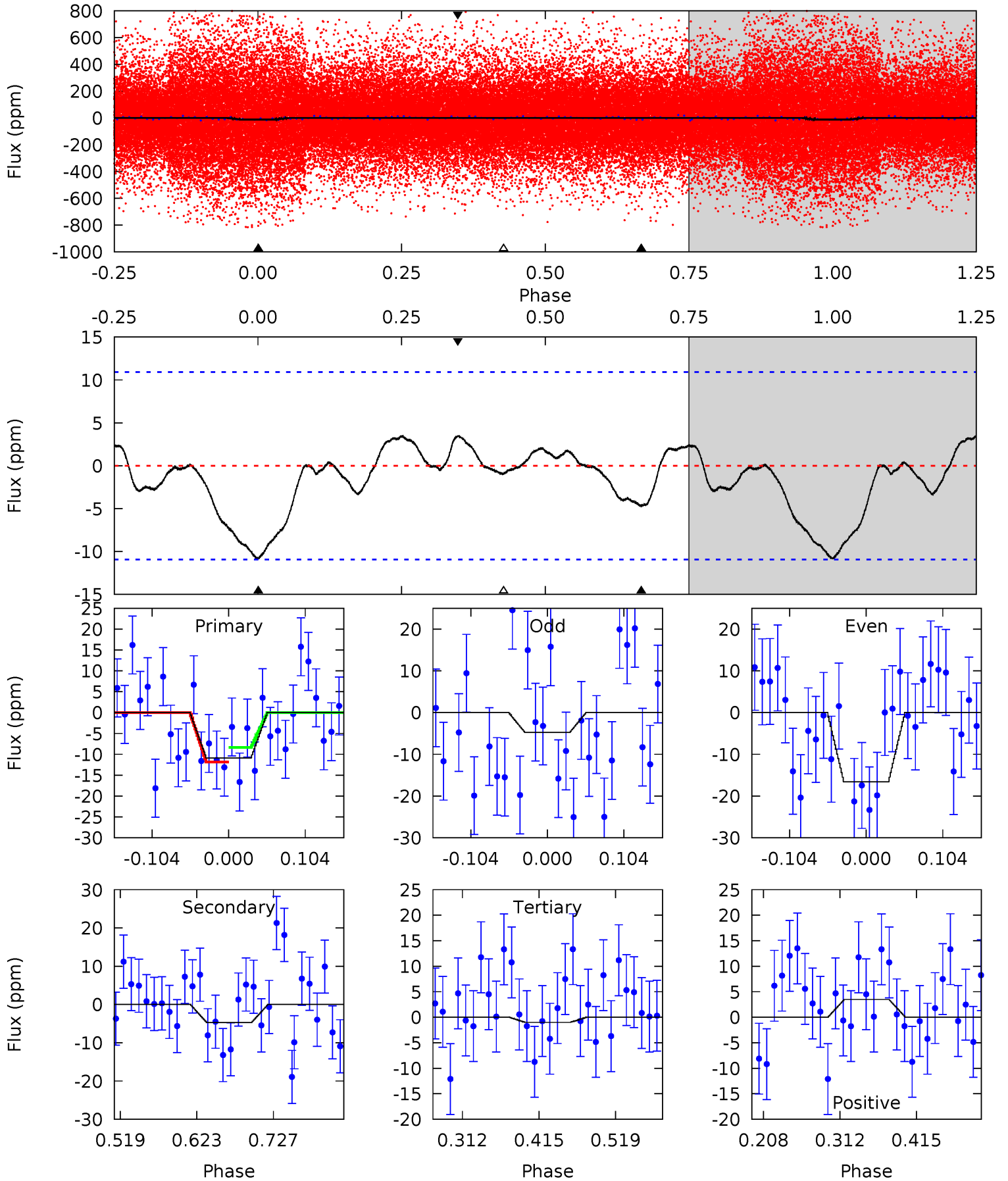
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.44	3.18	0	0	4.43	1.33	2.02	9.44	9.44	3.18	3.18	0.42	0.94	0.18	2.95



Alt Model-Shift Uniqueness Test

003854437-01, P = 0.915016 Days, E = 131.448229 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.53	1.97	0.42	1.45	4.56	1.63	0.72	4.11	3.08	1.56	0.52	2.43	0.71	0.25	0.73



Stellar Parameters For KIC 003854437

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5868^{+146}_{-176}	$4.466^{+0.067}_{-0.202}$	$-0.060^{+0.300}_{-0.300}$	$0.964^{+0.297}_{-0.099}$	$0.990^{+0.128}_{-0.117}$	$1.559^{+0.442}_{-0.824}$
	+2%/-3%	+2%/-5%	+500%/-500%	+31%/-10%	+13%/-12%	+28%/-53%
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 003854437-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 2	$0.58^{+0.40}_{-0.36}$	2655^{+196}_{-113}	4249^{+2138}_{-827}	$3.598^{+18.578}_{-2.362}$
Alt.	-5 ± 2	$0.40^{+0.36}_{-0.26}$	2666^{+174}_{-125}	4496^{+2735}_{-1134}	$4.688^{+29.222}_{-3.592}$

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

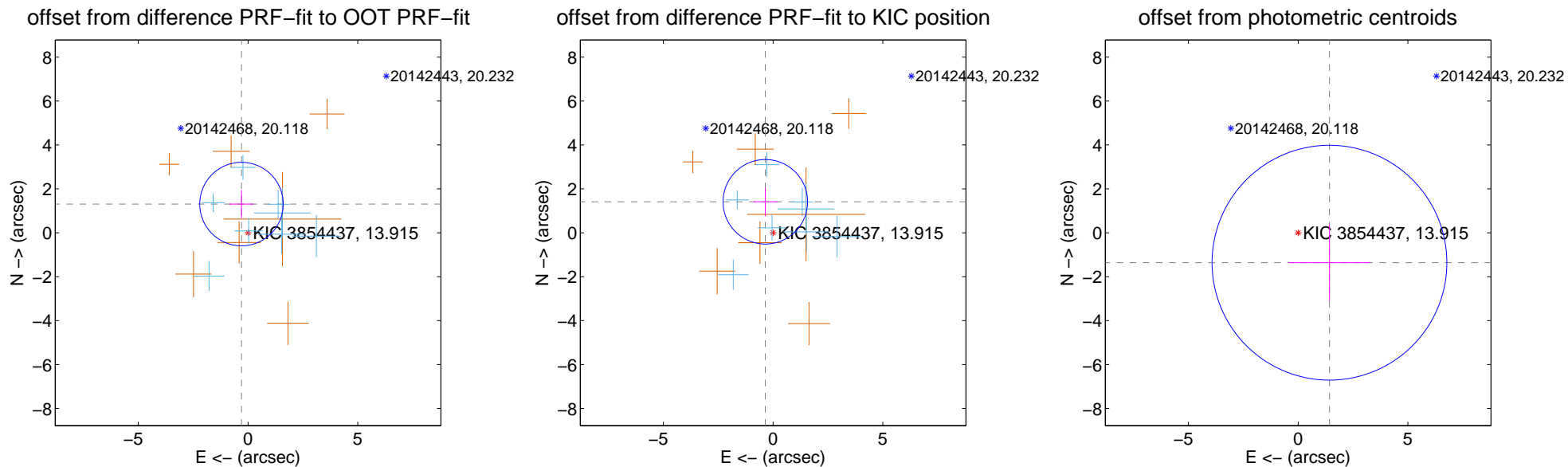
DV Centroid Data

Supplemental centroid analysis for 003854437-01. Kepler magnitude: 13.91. Transit SNR 6.00

There are 8 quarters with good PRF difference image offsets

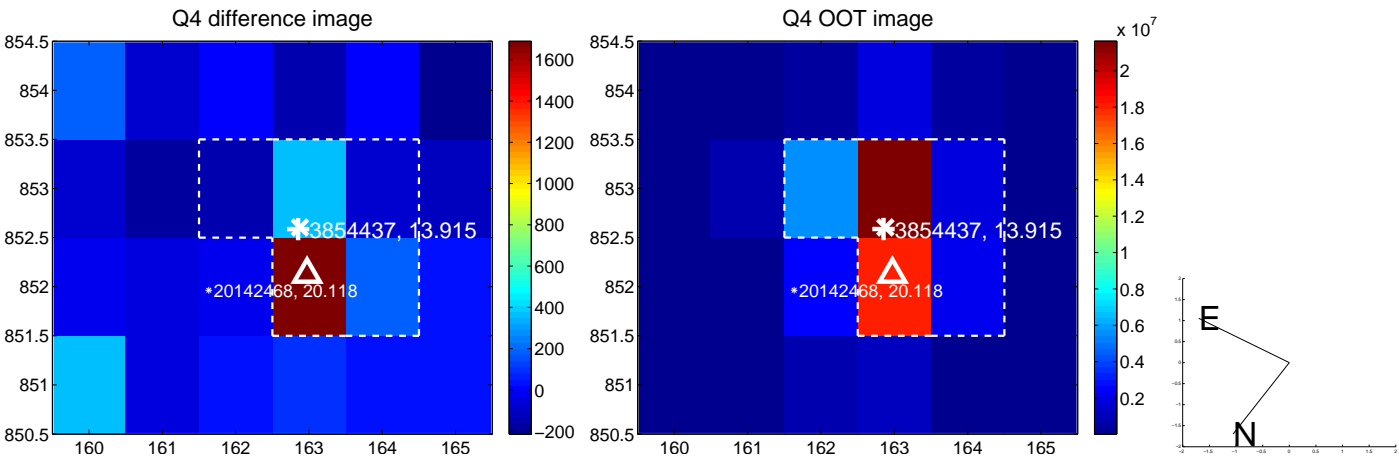
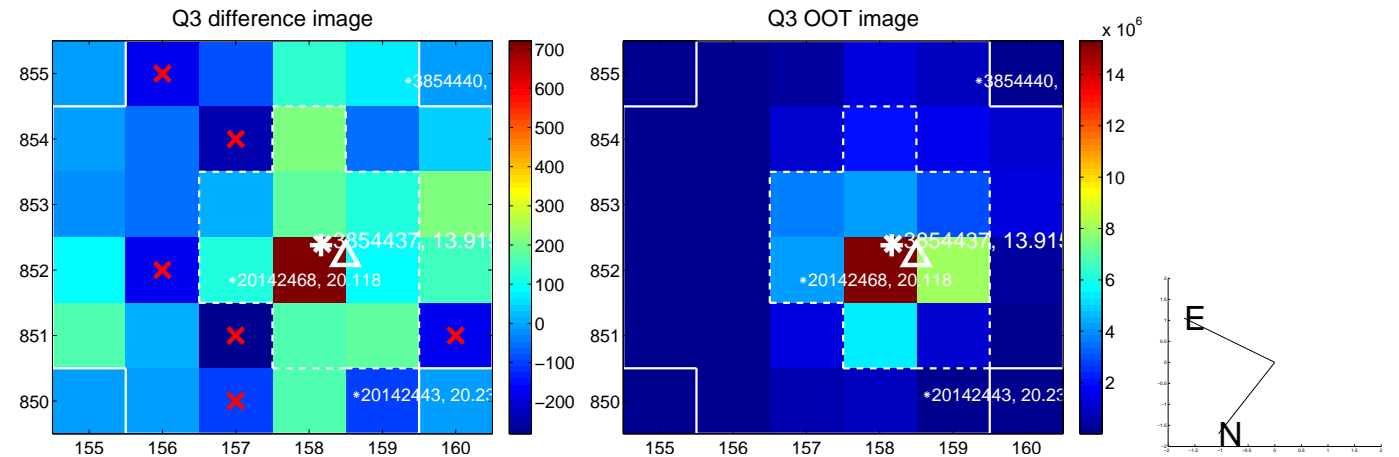
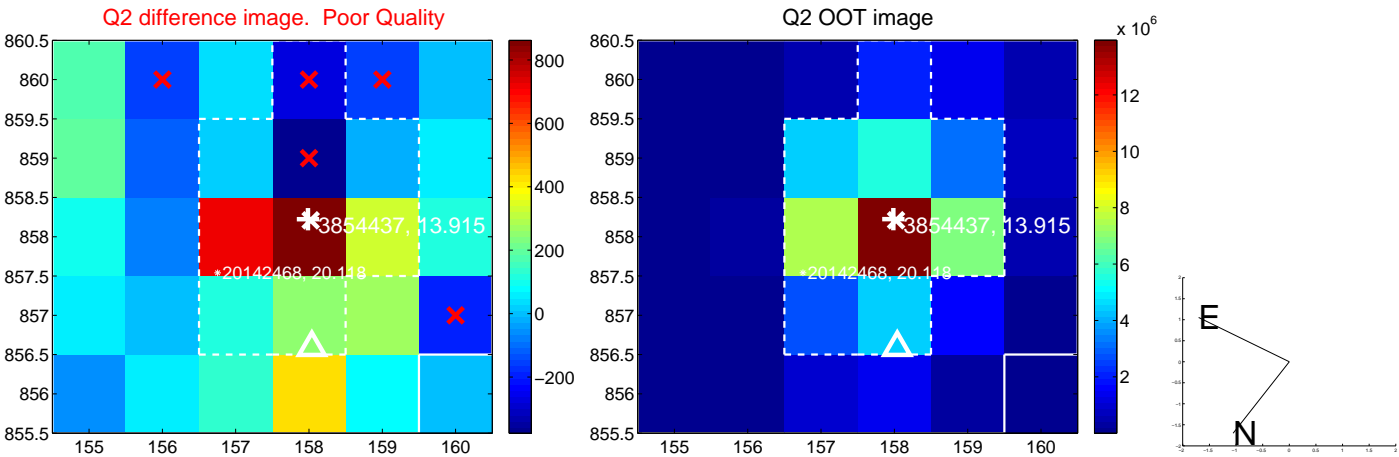
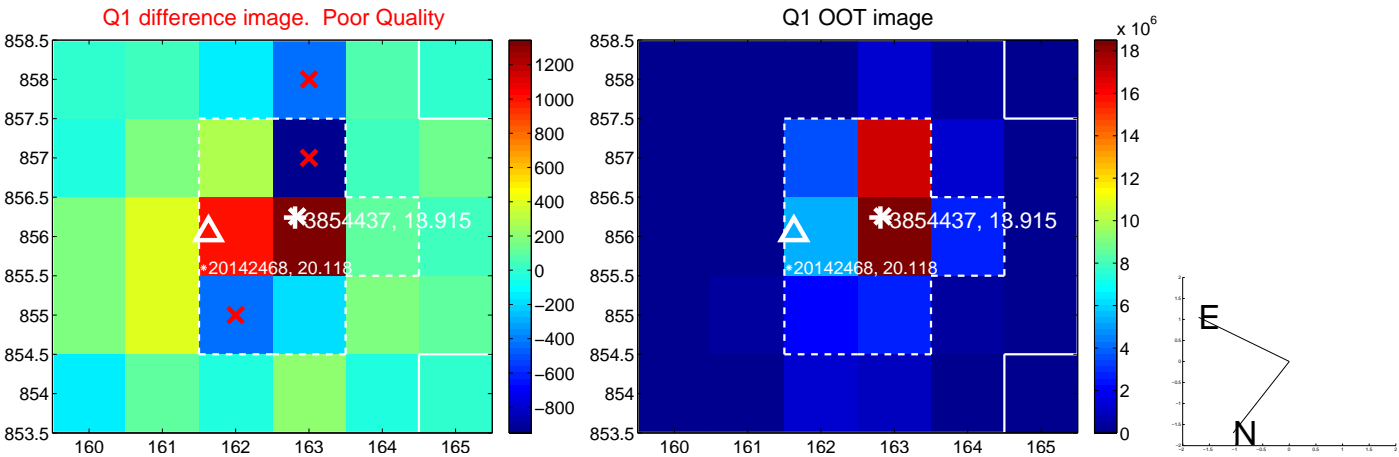
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.341 ± 0.634	2.12	0.298 ± 0.553	1.307 ± 0.638
PRF-fit source offset from KIC position	1.455 ± 0.642	2.27	0.354 ± 0.545	1.412 ± 0.647
photometric centroid source offset	1.97 ± 1.78	1.11	-1.43 ± 1.83	-1.36 ± 1.73

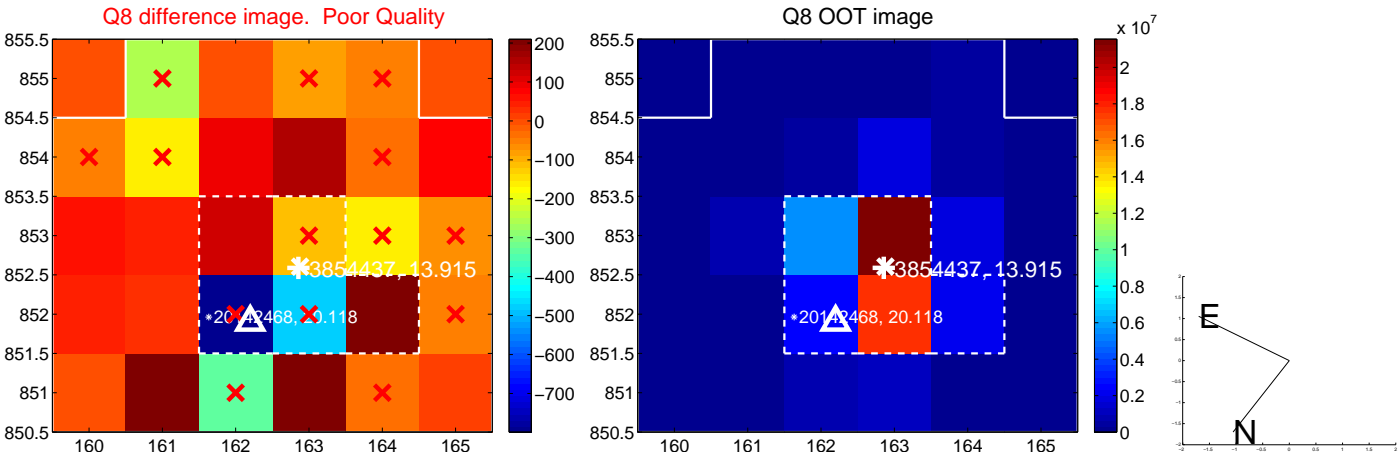
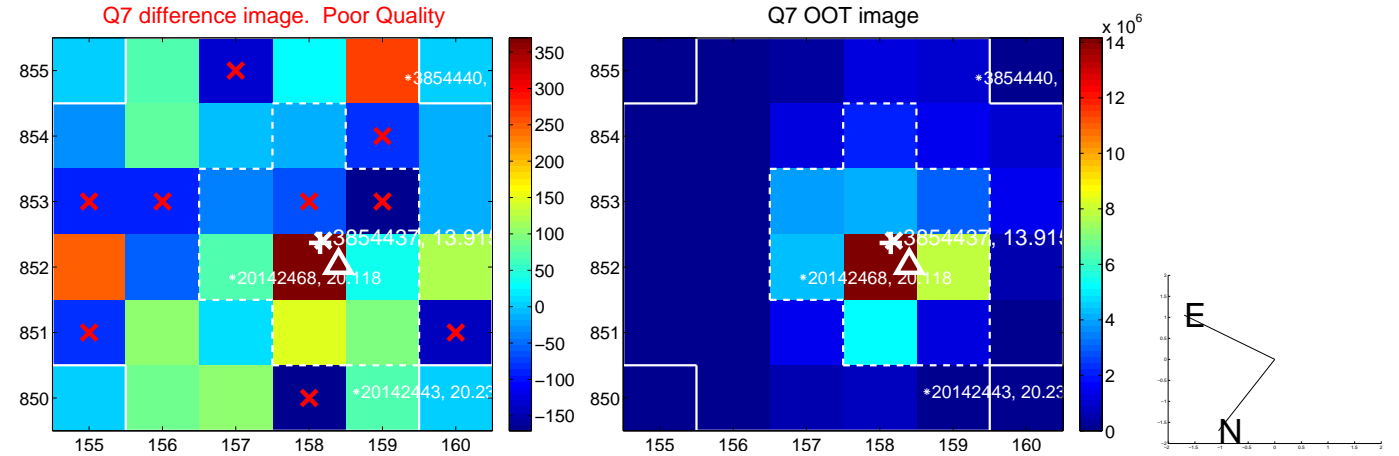
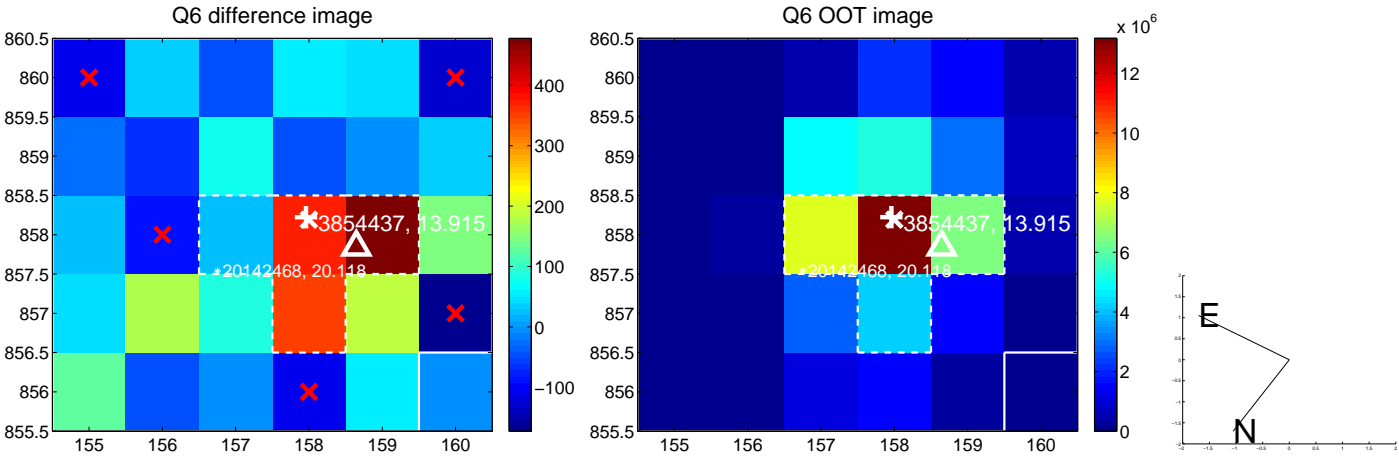
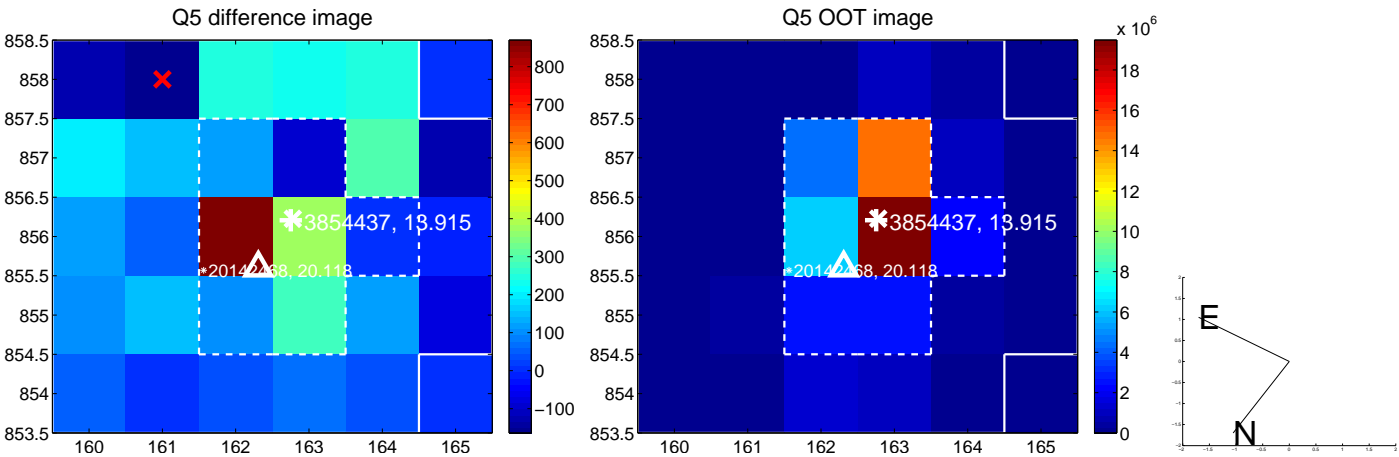


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

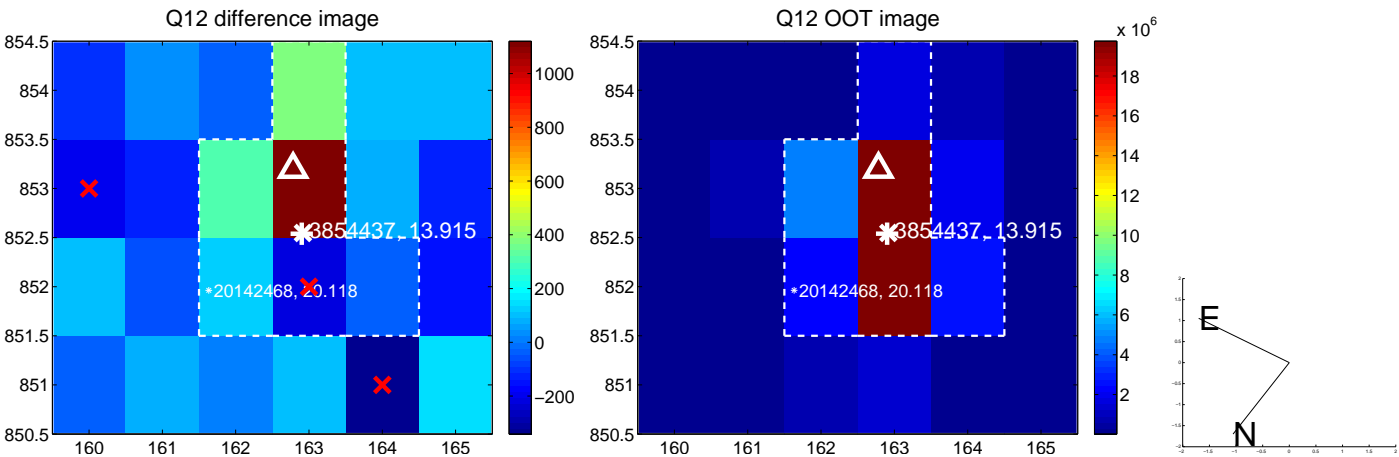
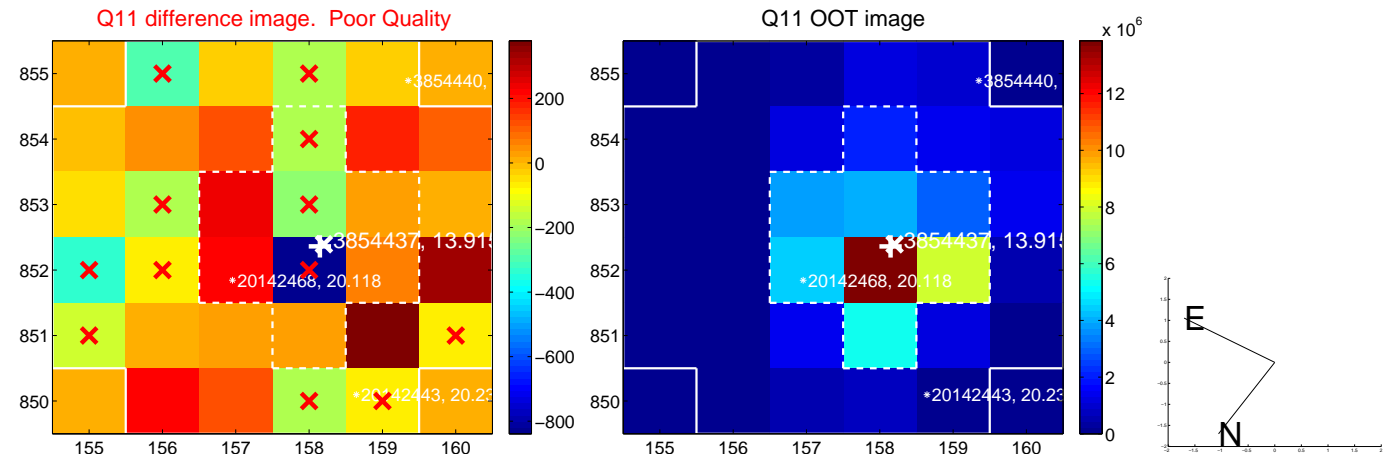
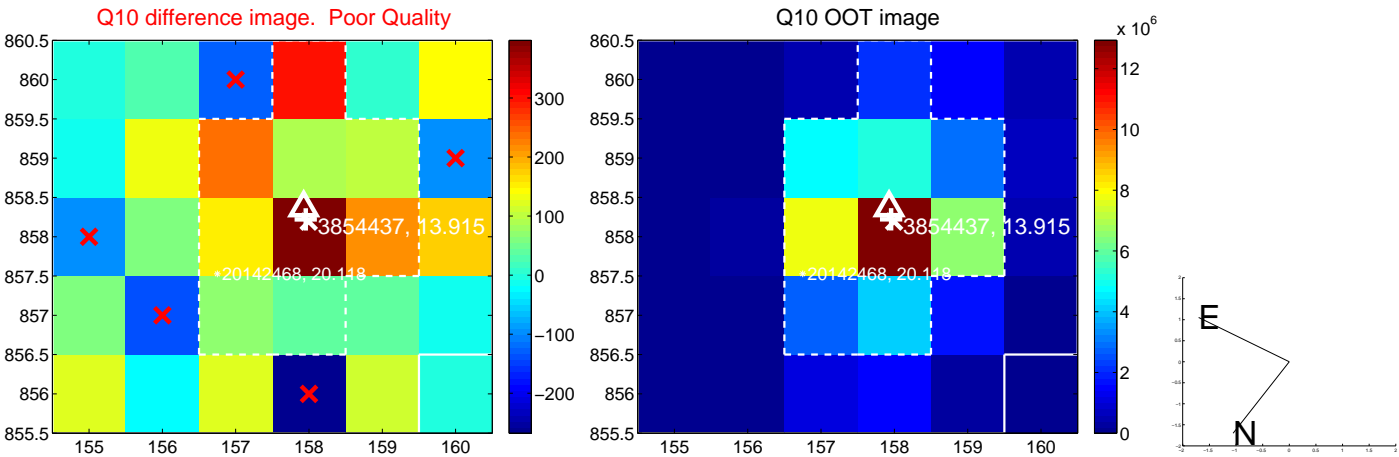
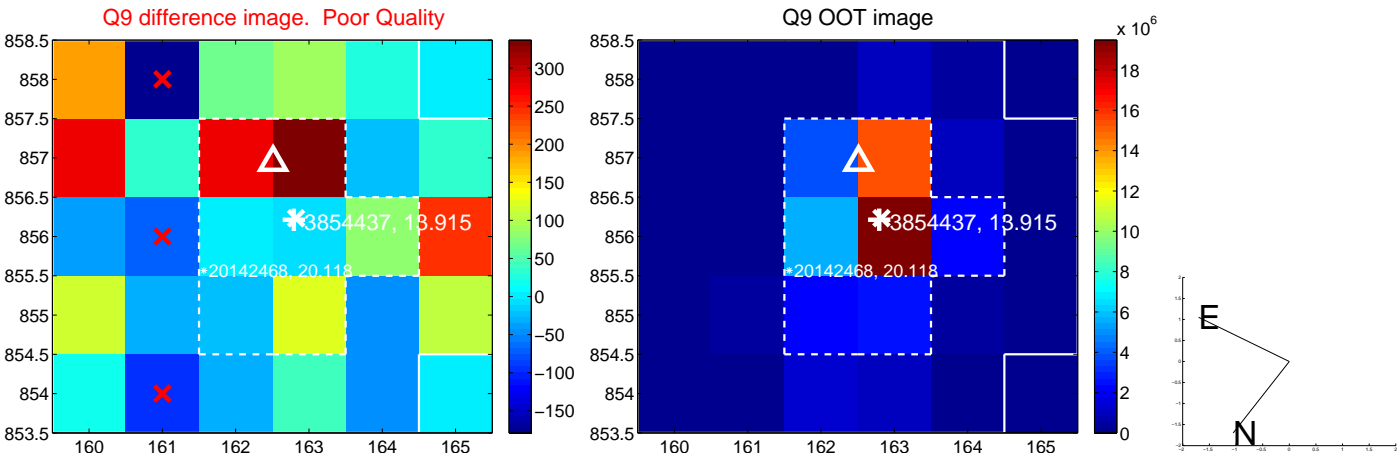
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



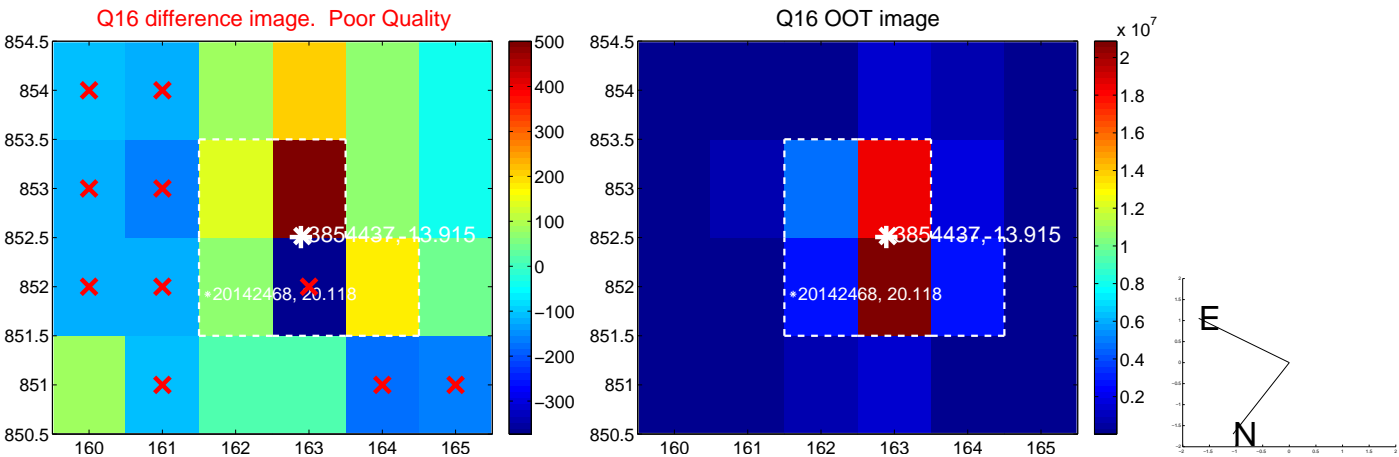
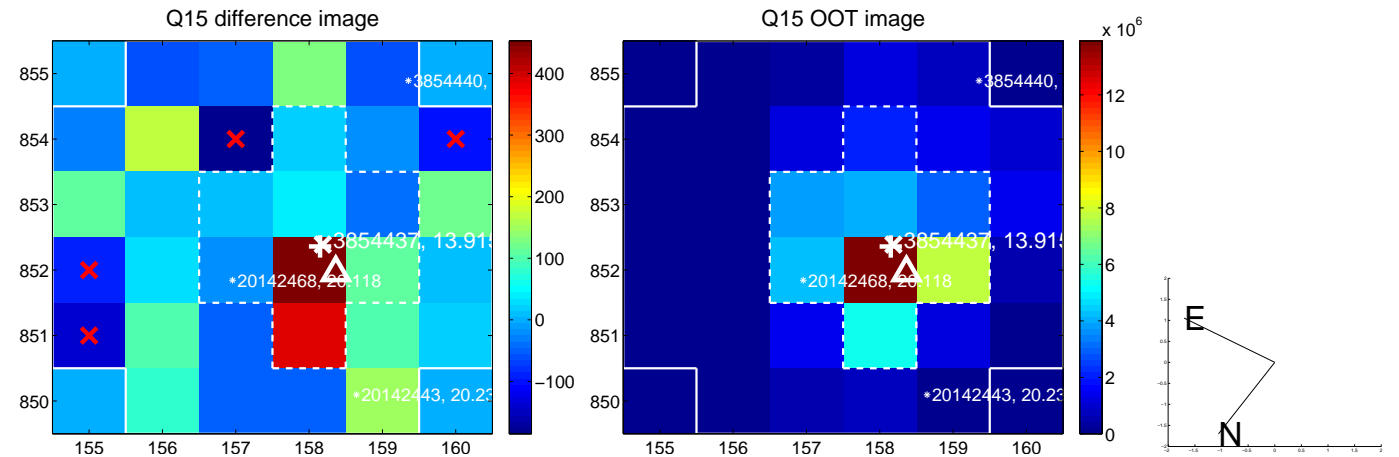
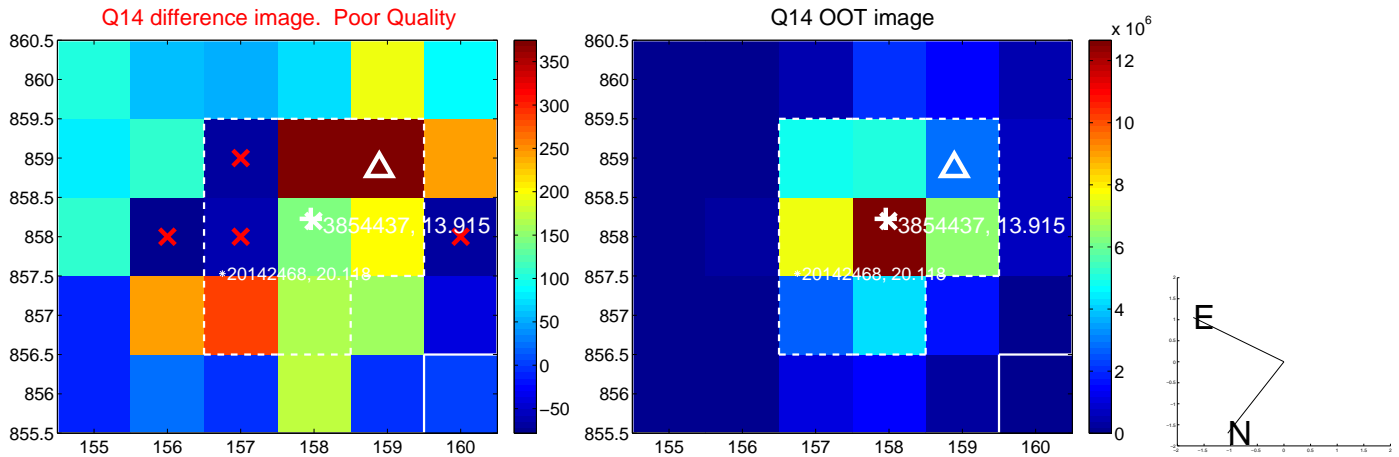
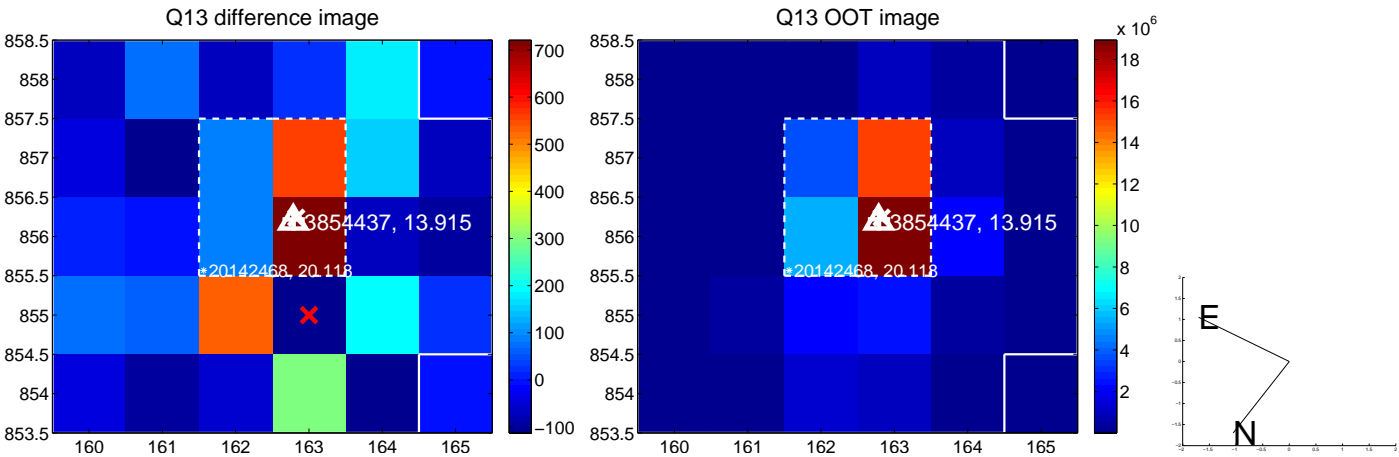
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



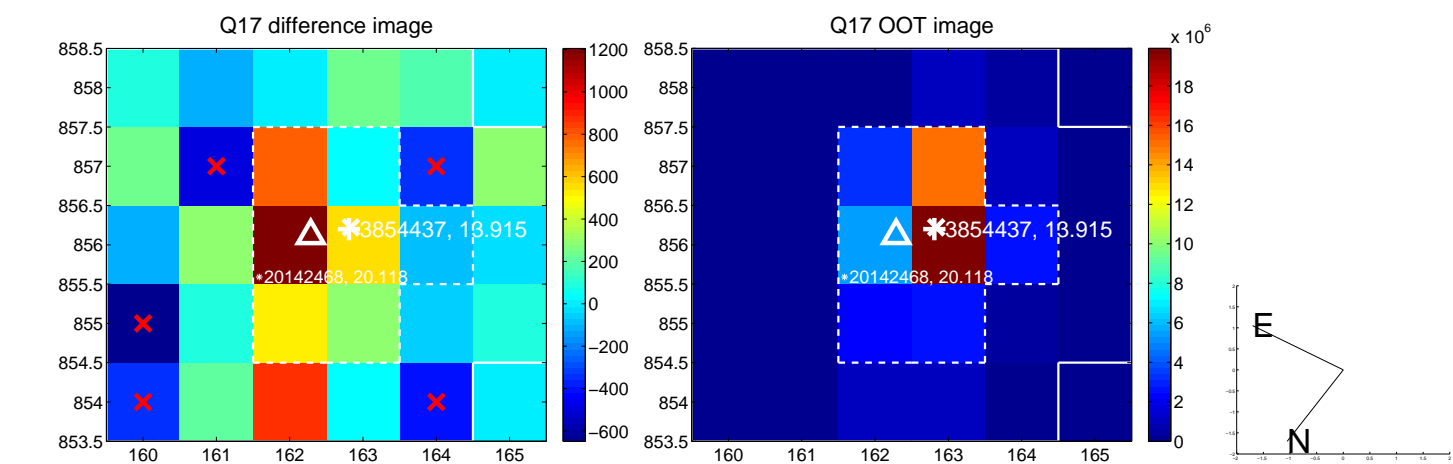
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



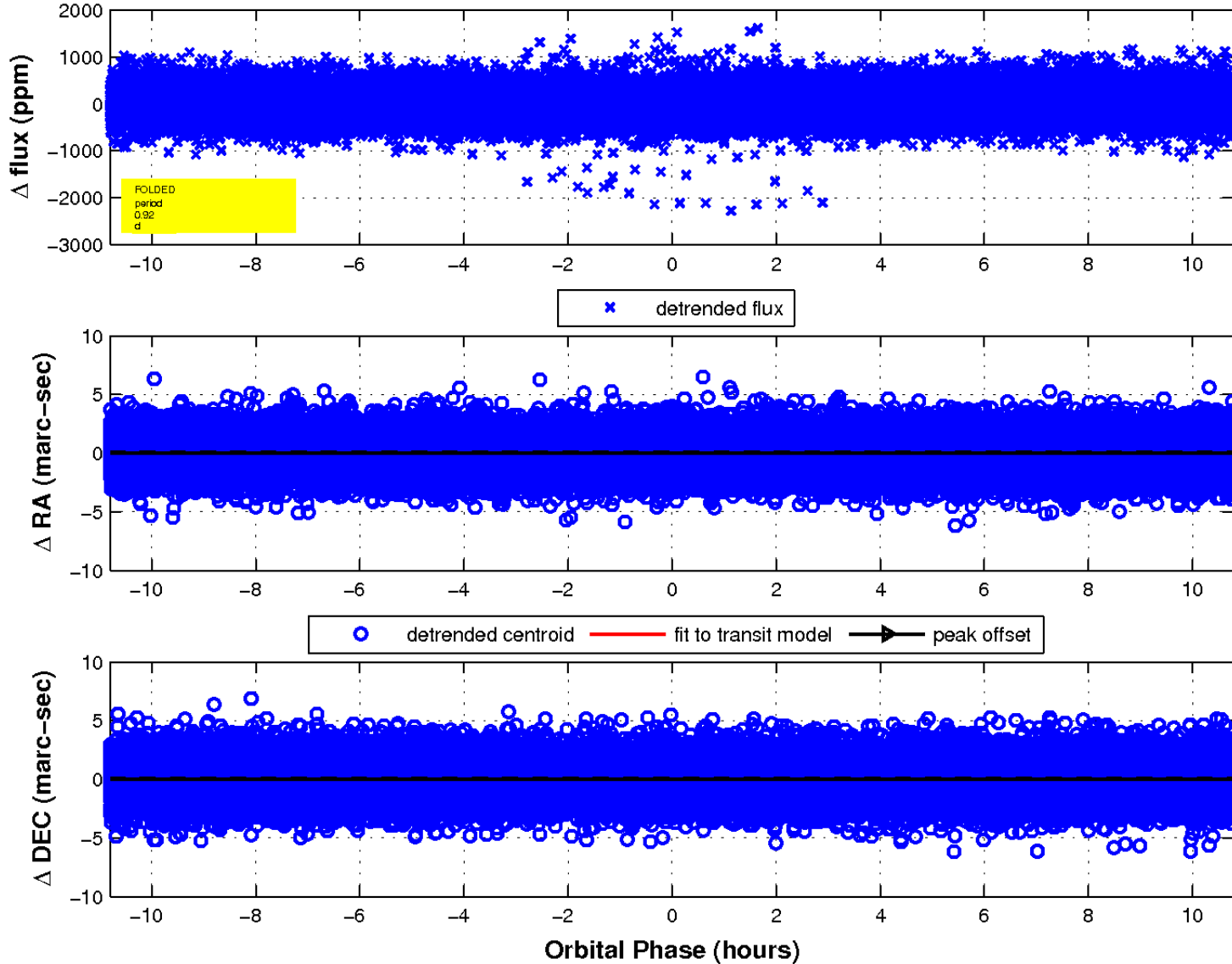
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

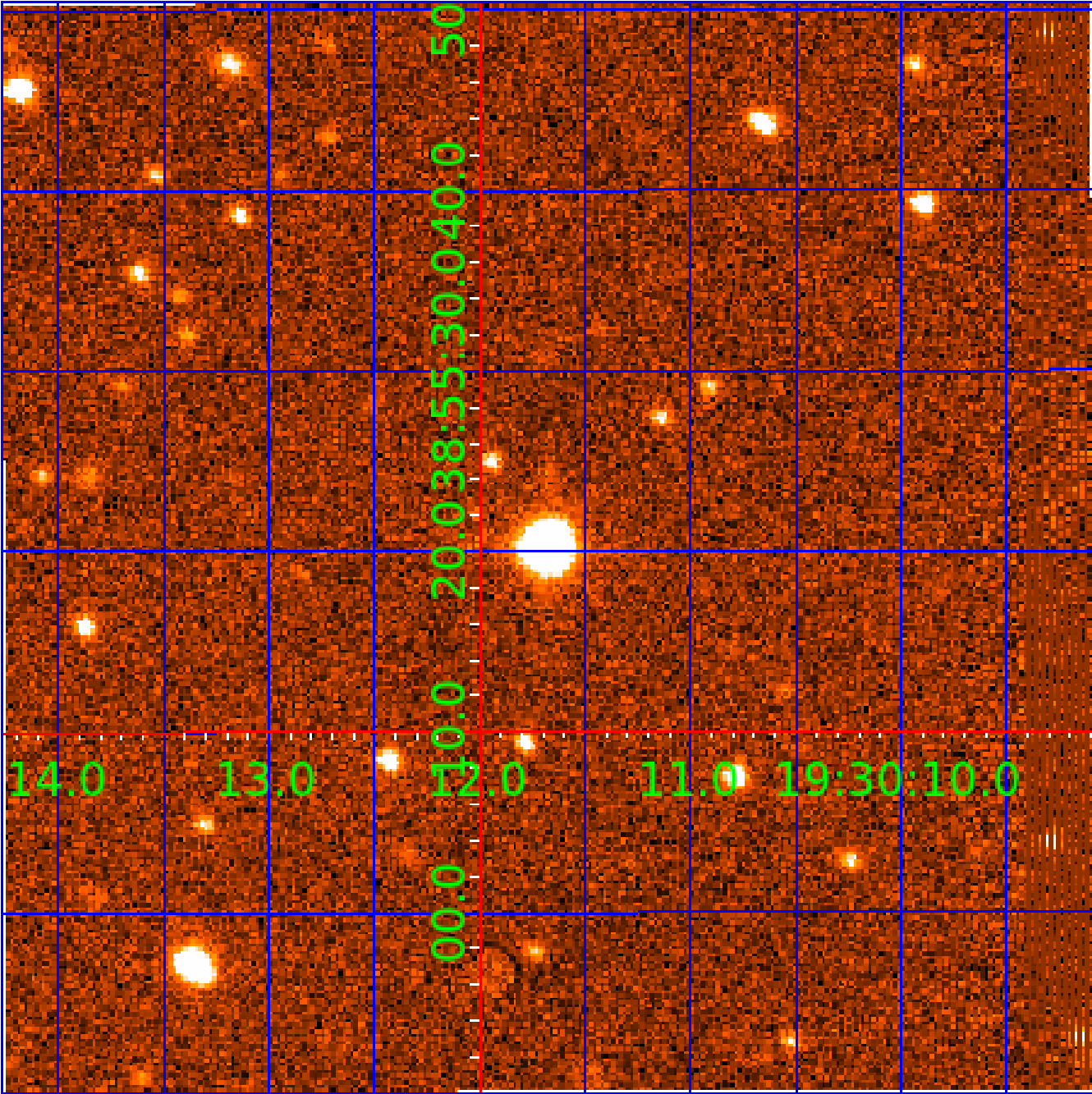


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 003854437

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})
003854437-01	OBS	No	0.915060	132.333675	20.3	3.599	7.6	6.0	0.96	5868	0.51	2917.25
003854437-02	OBS	No	178.799912	221.424435	441.7	4.301	13.0	6.6	0.96	5868	2.17	2.57
003854437-03	OBS	No	209.280456	277.600191	455.6	14.899	11.0	7.0	0.96	5868	2.79	2.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003854437-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
003854437-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003854437-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

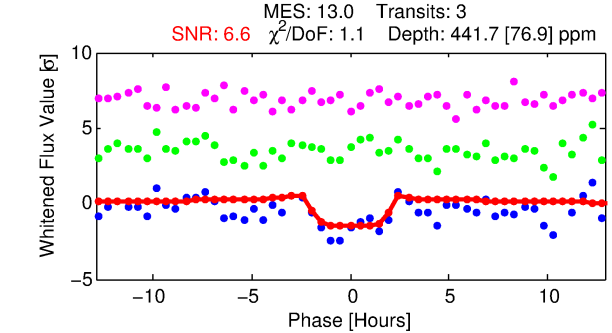
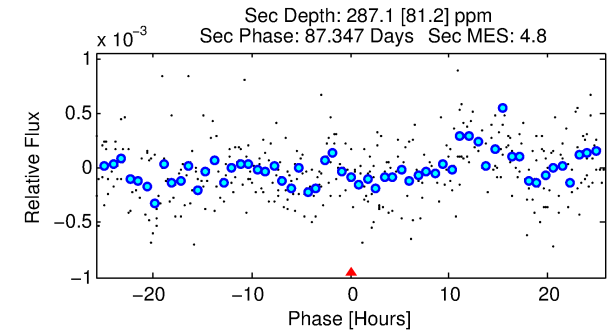
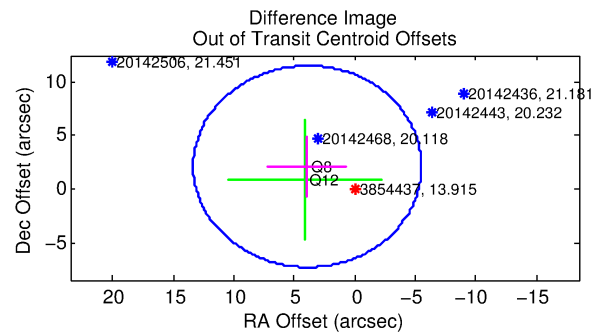
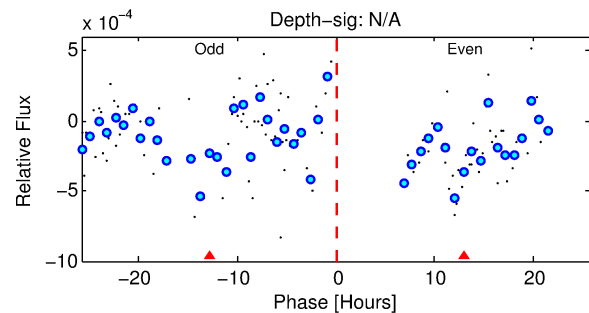
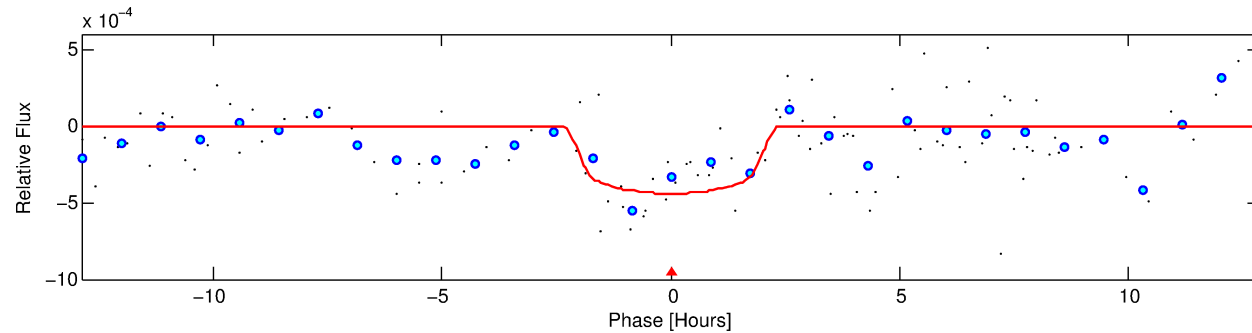
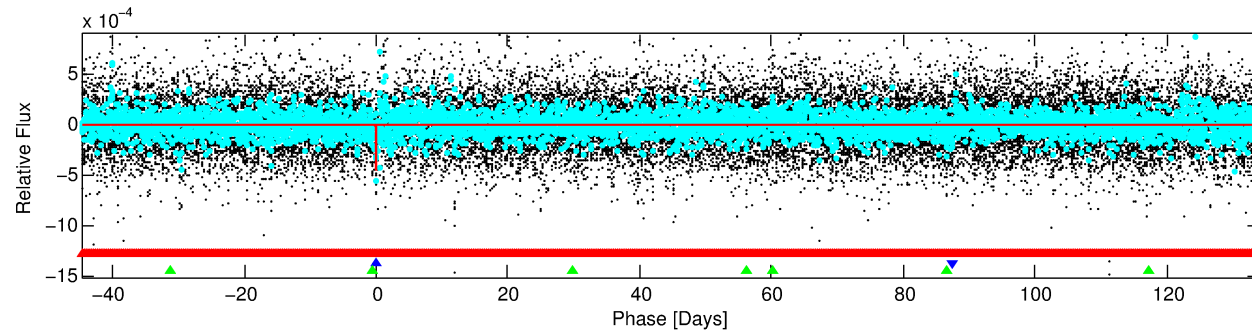
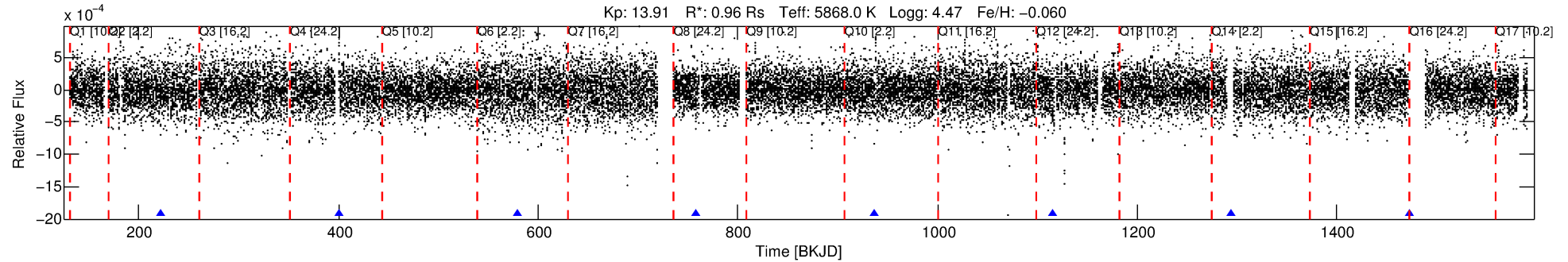
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003854437-02

No Significant Match Found

DV One-Page Summary

KIC: 3854437 Candidate: 2 of 3 Period: 178.800 d



DV Fit Results:

Period = 178.79991 [0.00305] d
Epoch = 221.4244 [0.0103] BKJD
Rp/R* = 0.0206 [0.0412]
a/R* = 235.62 [2155.96]
b = 0.70 [6.72]
Seff = 2.57 [1.01]
Teq = 323 [32] K
Rp = 2.17 [4.39] Re
a = 0.6194 [0.1594] AU
Ag = 12929.78 [52168.90] [0.25σ]
Teffp = 5324 [5350] K [0.93σ]

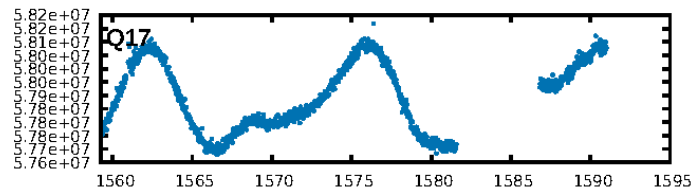
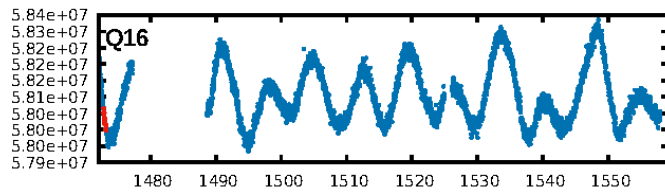
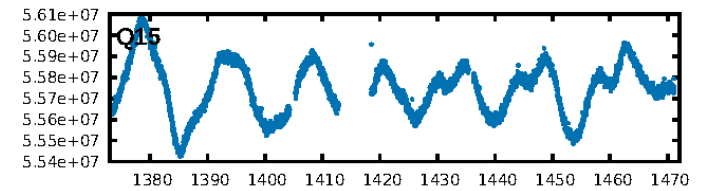
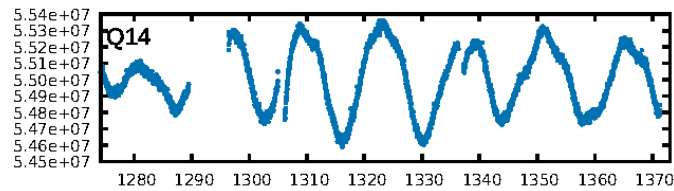
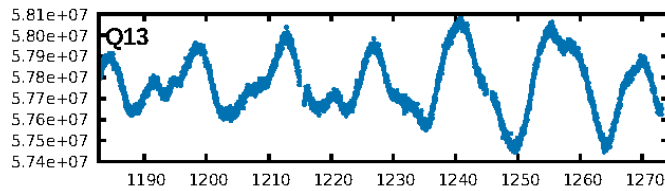
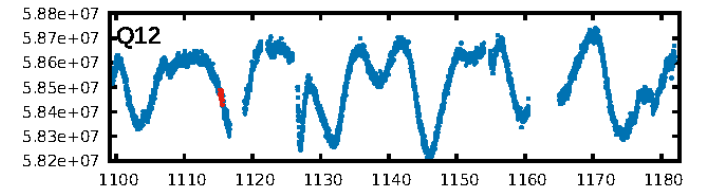
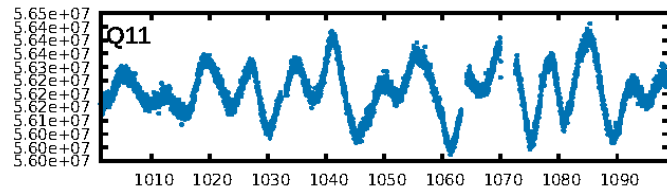
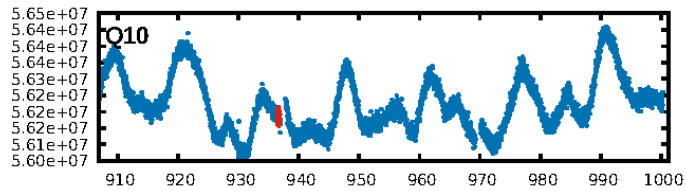
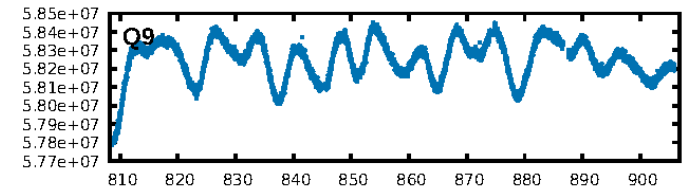
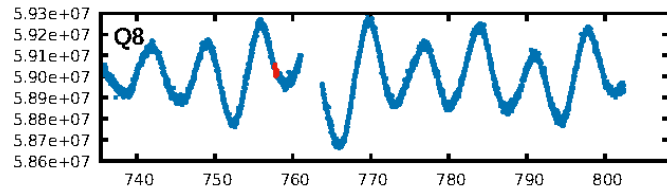
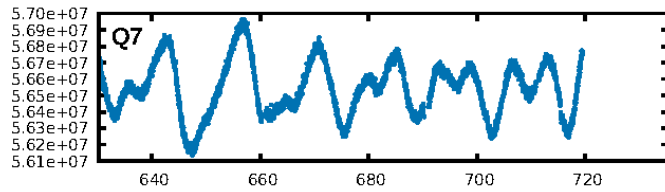
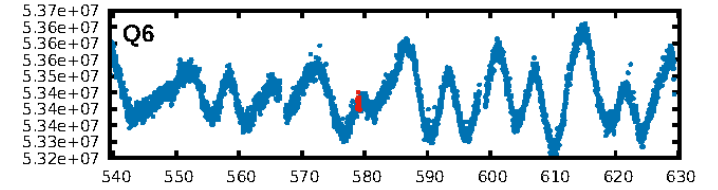
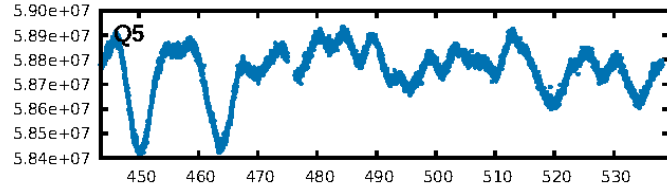
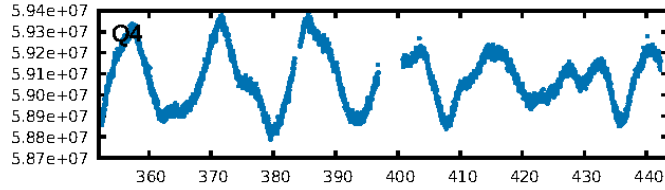
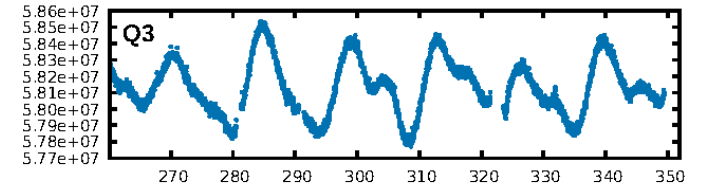
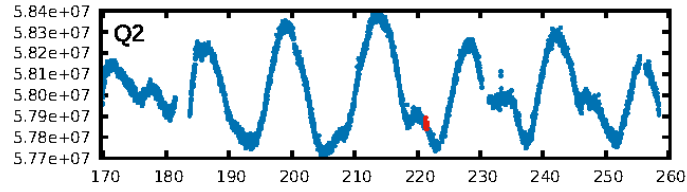
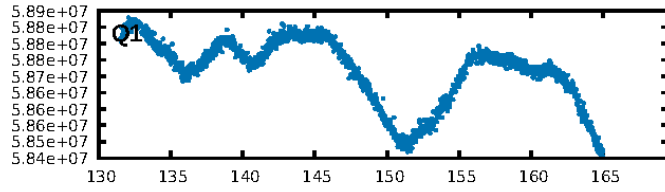
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [761.26σ]
LongPeriod-sig: 100.0% [47.17σ]
ModelChiSquare2-sig: 8.4%
ModelChiSquareGof-sig: 98.2%
Bootstrap-pfa: 1.53e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4197
Centroid-sig: 43.8%
Centroid-so: 1.277 arcsec [1.03σ]
OotOffset-rm: 4.452 arcsec [1.42σ]
KicOffset-rm: 4.534 arcsec [1.45σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/5]

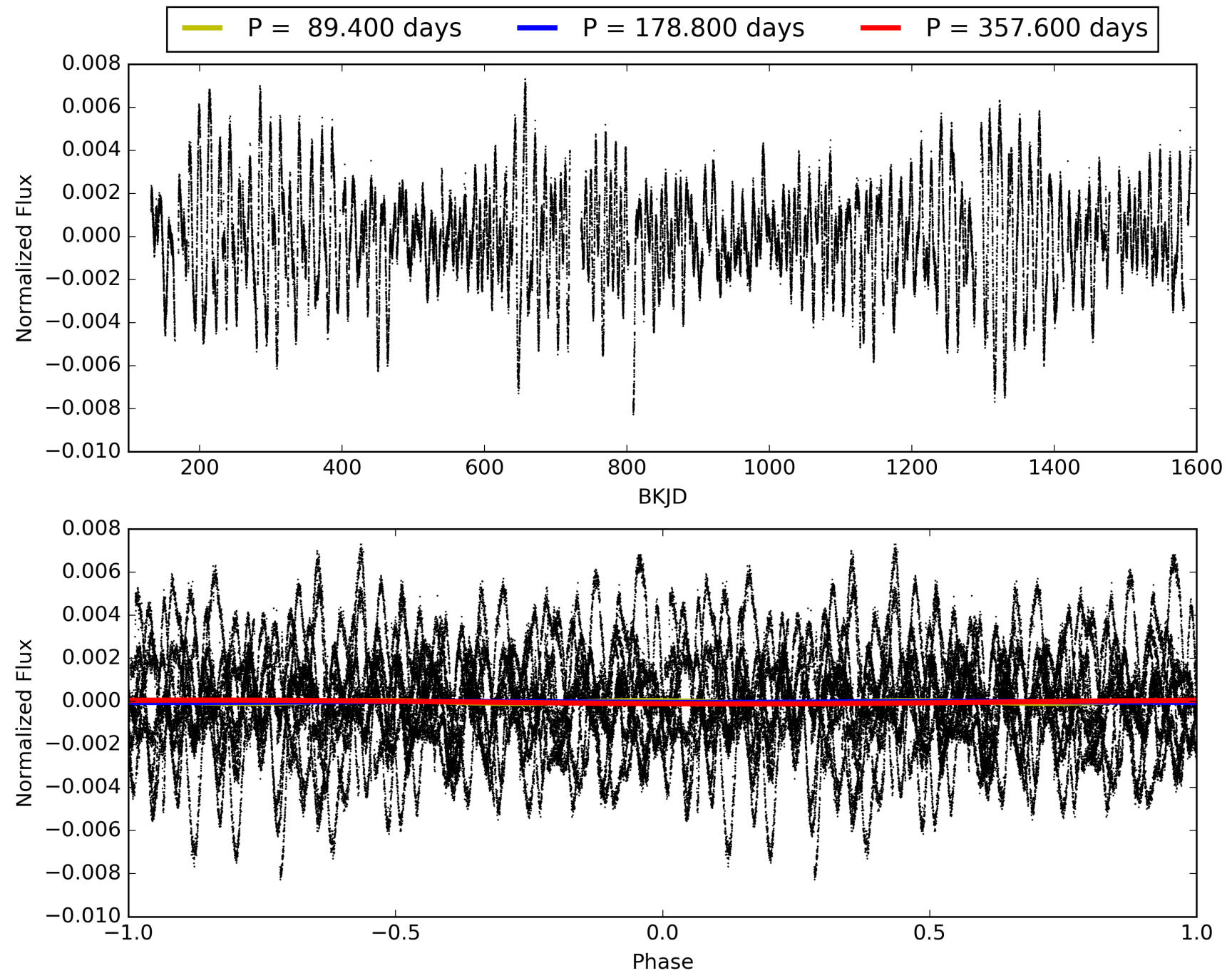
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:11:38 Z

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

TCE 003854437-02, PDC Light Curves

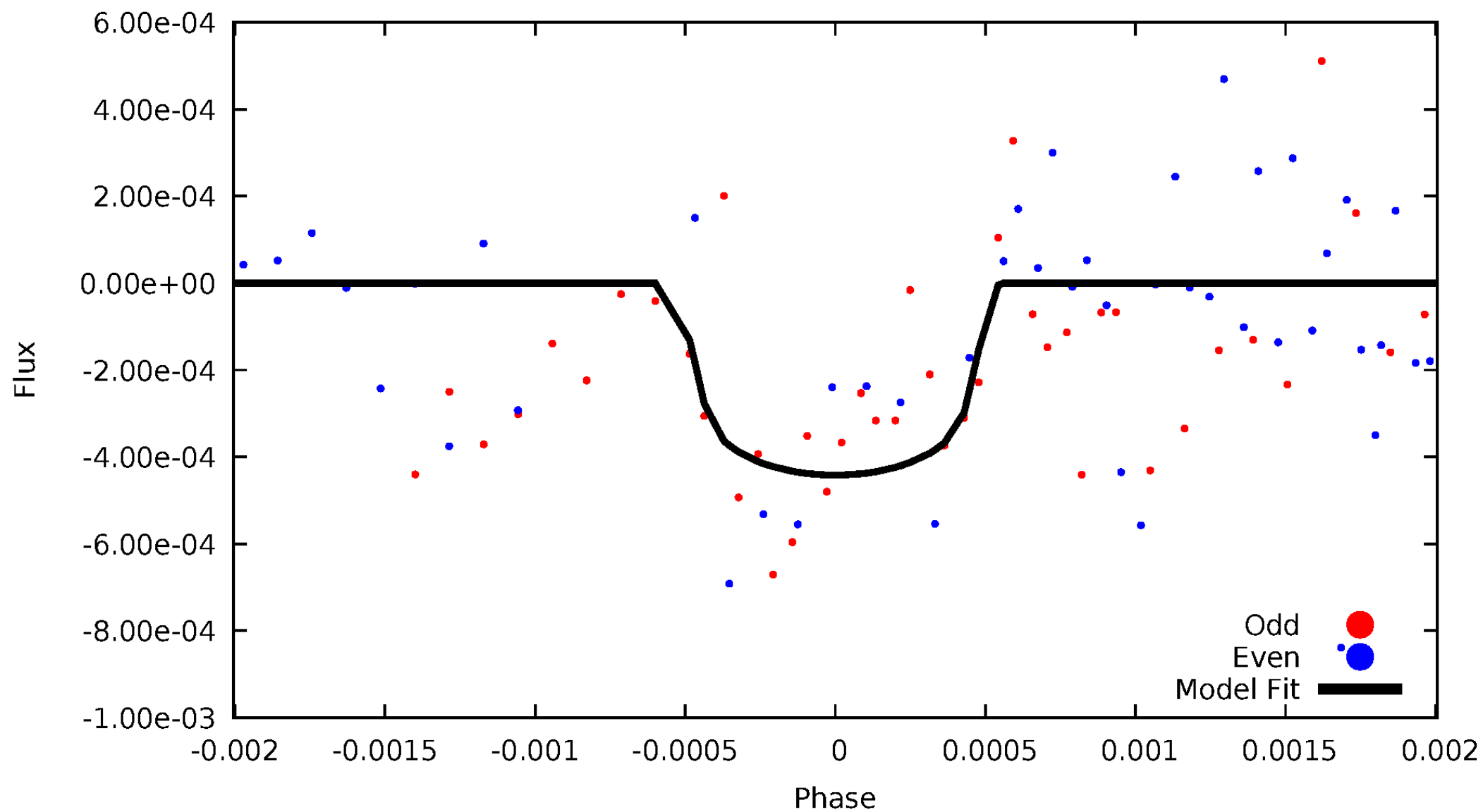


TCE 003854437-02



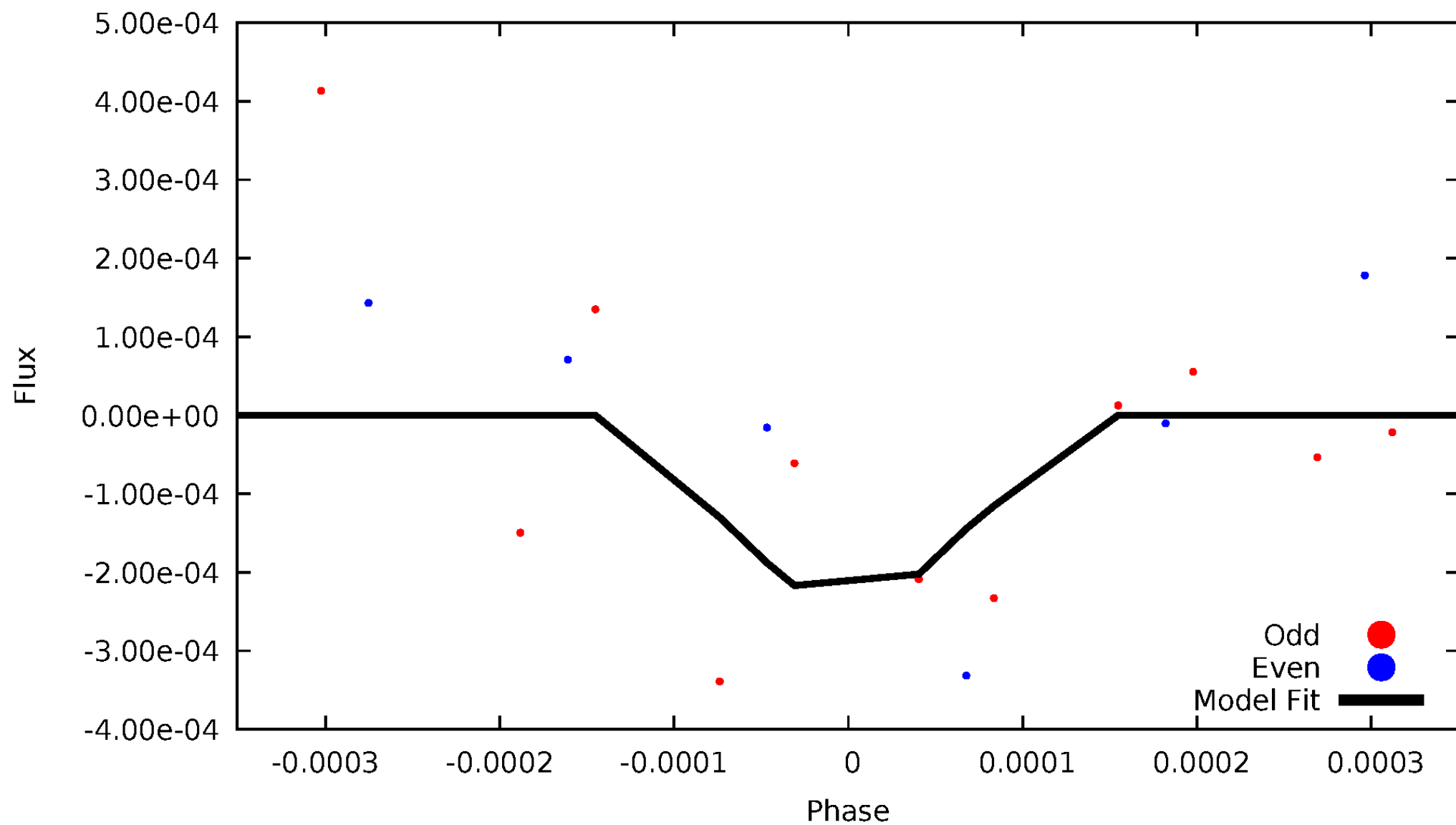
DV Odd/Even

TCE 003854437-02



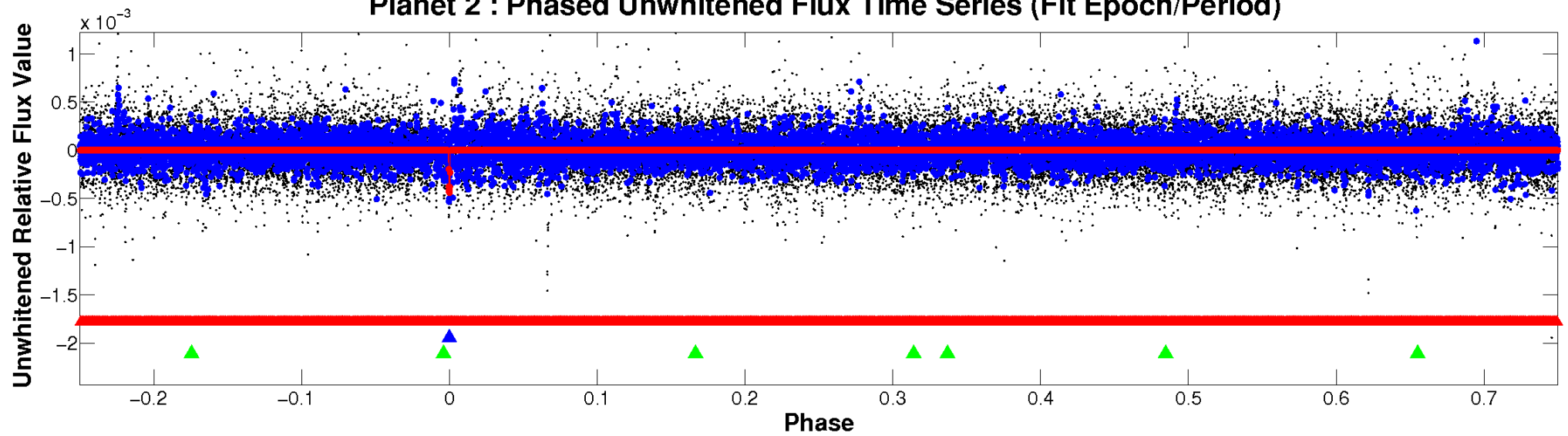
ALT Odd/Even

TCE 003854437-02

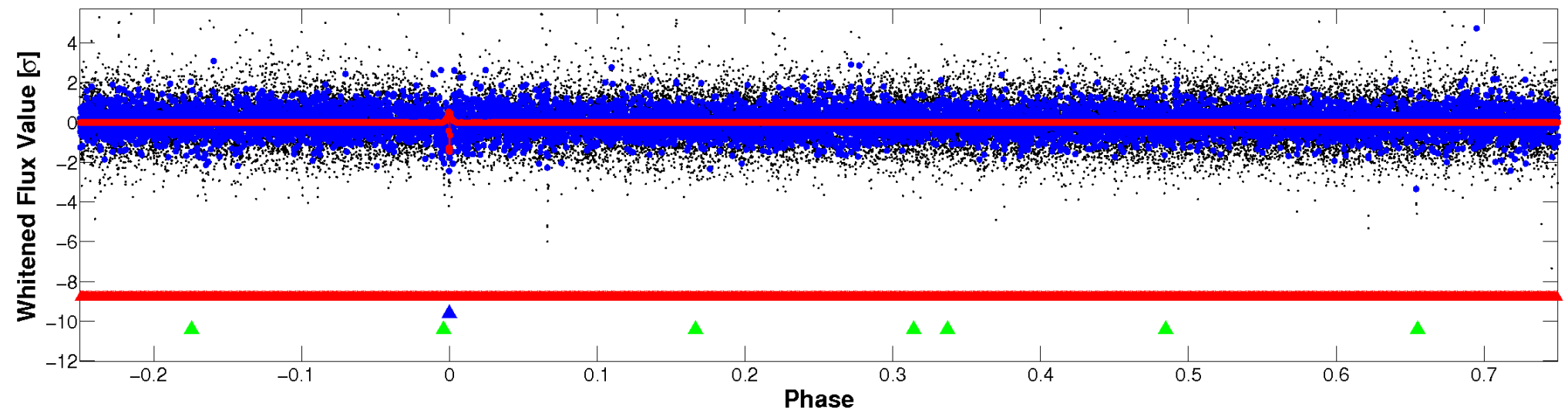


Non-Whitened Vs. Whitened Light Curve

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

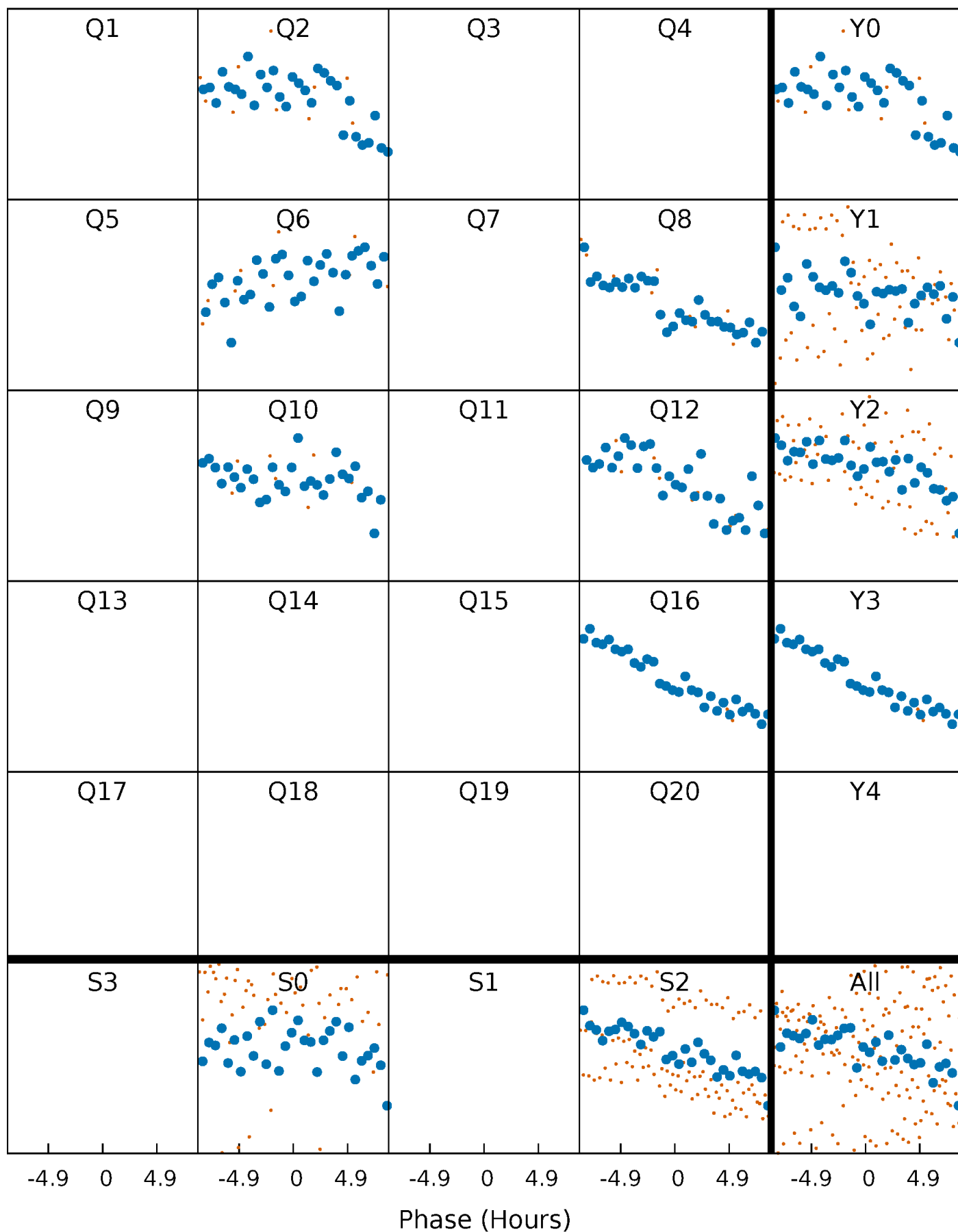


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



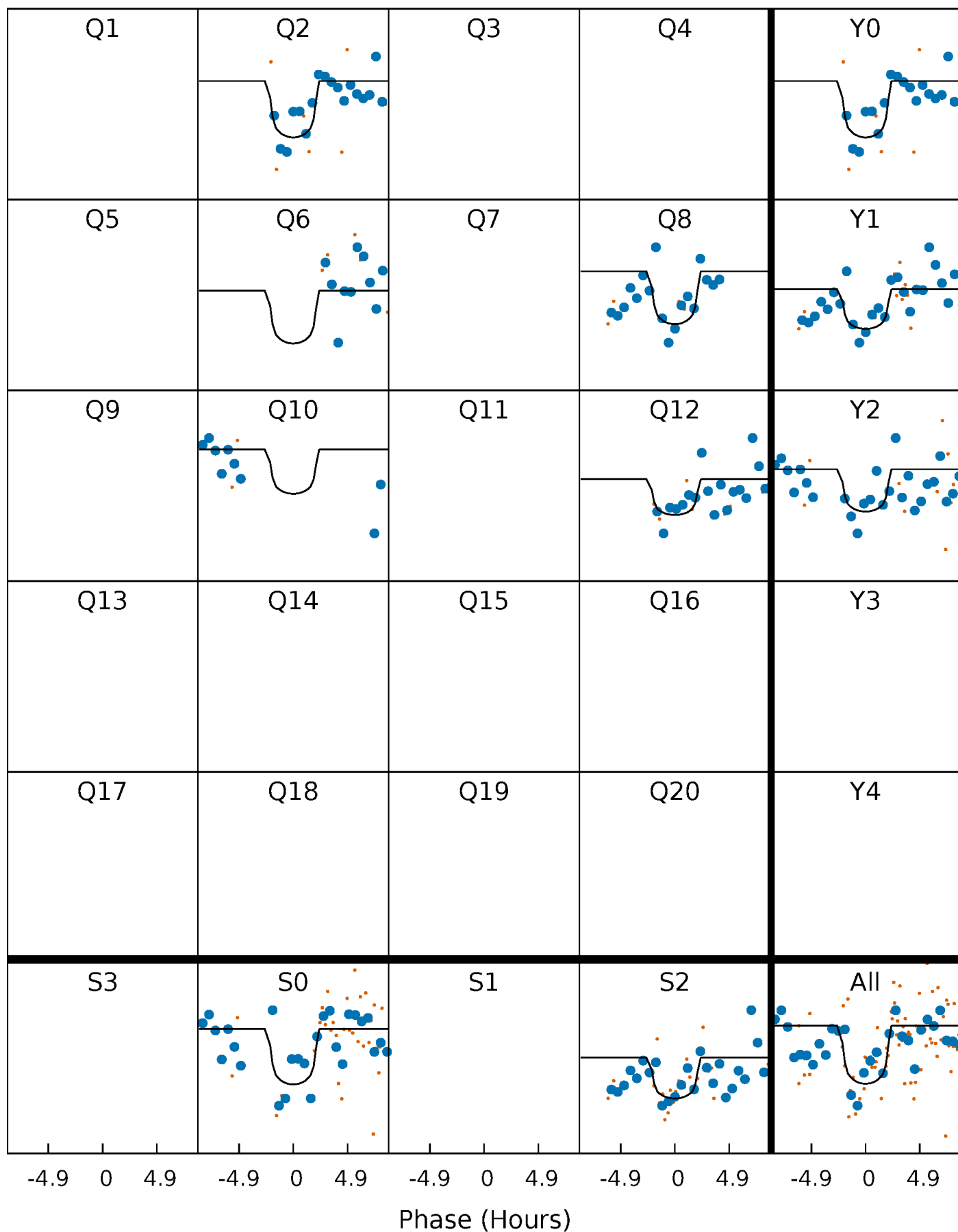
PDC Quarter-Phased Transit Curves

TCE 003854437-02 P=178.799912 Days $T_0=221.424435$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003854437-02 P=178.799912 Days $T_0=221.424435$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

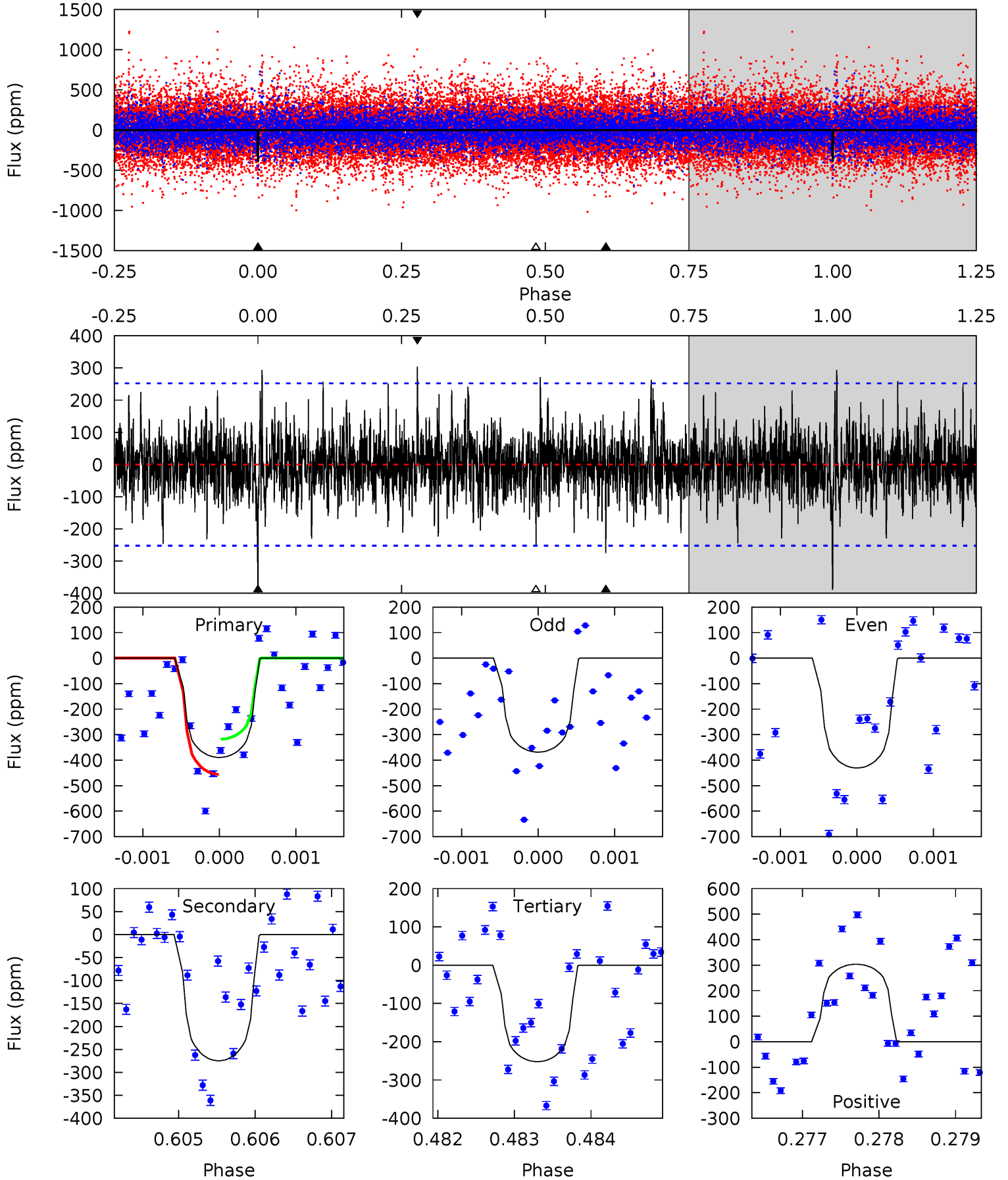
TCE 003854437-02 P=178.780028 Days $T_0=221.471774$ (BKJD)



DV Model-Shift Uniqueness Test

003854437-02, P = 178.799912 Days, E = 42.624523 Days

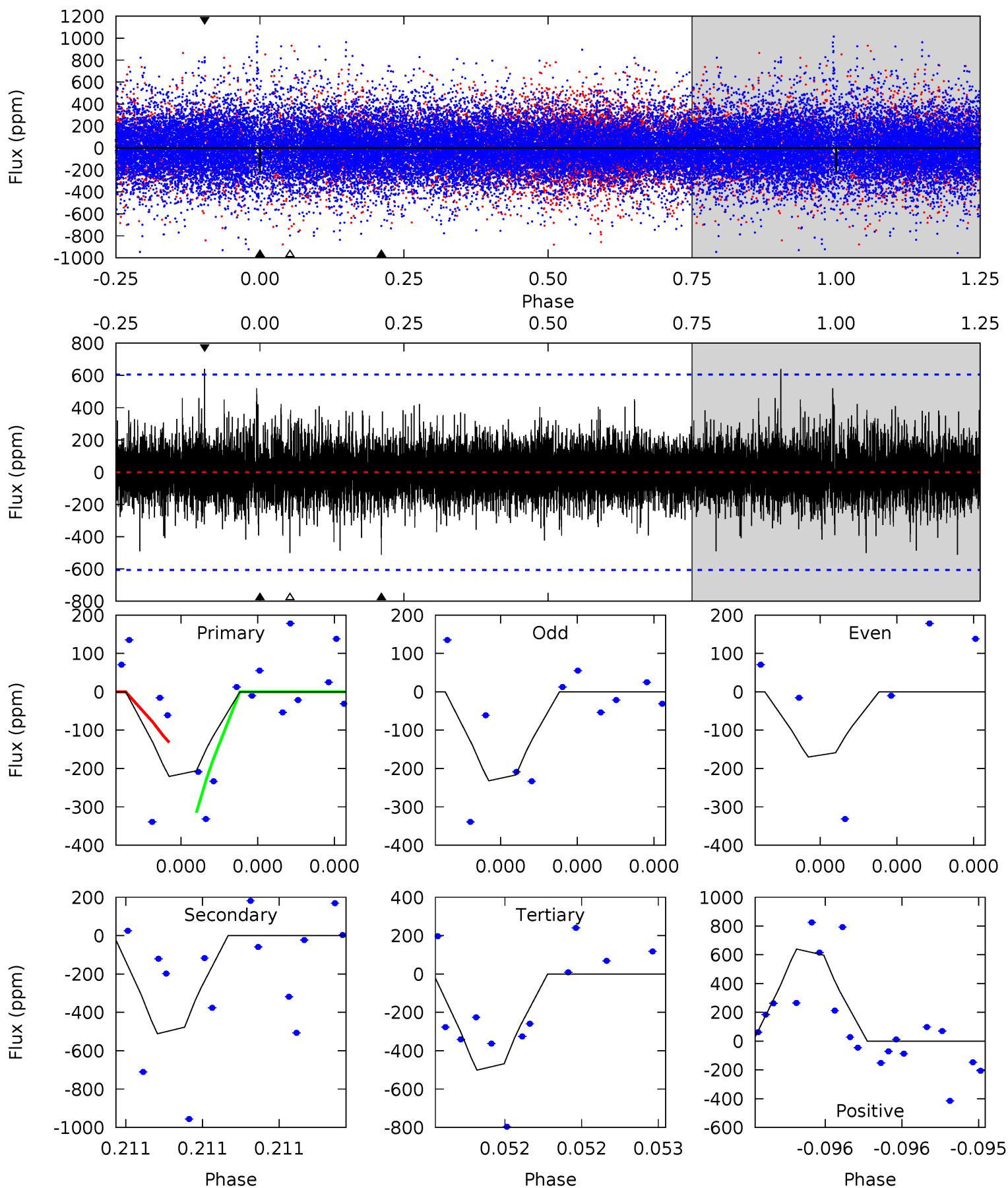
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.40	5.93	5.44	6.56	5.45	3.28	1.49	2.96	1.85	0.49	-0.63	0.61	0.97	0.44	1.48



Alt Model-Shift Uniqueness Test

003854437-02, P = 178.780028 Days, E = 42.691746 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.09	4.84	4.74	6.06	5.73	3.72	1.04	-2.65	-3.97	0.10	-1.22	0.32	1.13	0.56	0.75



Stellar Parameters For KIC 003854437

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5868^{+146}_{-176}	$4.466^{+0.067}_{-0.202}$	$-0.060^{+0.300}_{-0.300}$	$0.964^{+0.297}_{-0.099}$	$0.990^{+0.128}_{-0.117}$	$1.559^{+0.442}_{-0.824}$
	+2%/-3%	+2%/-5%	+500%/-500%	+31%/-10%	+13%/-12%	+28%/-53%
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 003854437-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-275 ± 46	$4.00^{+3.91}_{-2.79}$	460^{+29}_{-22}	4245^{+3026}_{-909}	3595^{+39033}_{-2692}
Alt.	-511 ± 106	$3.79^{+3.69}_{-2.44}$	458^{+35}_{-22}	4805^{+3197}_{-1021}	7251^{+47641}_{-5302}

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 $A_{obs} \gg 1.0$

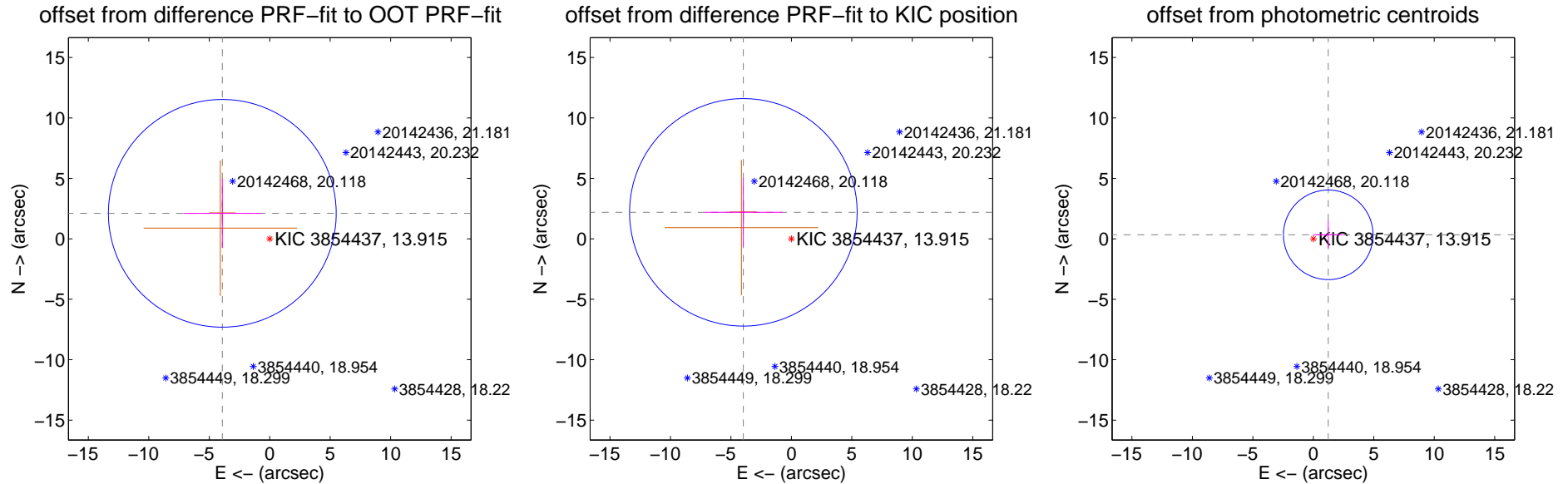
DV Centroid Data

Supplemental centroid analysis for 003854437-02. Kepler magnitude: 13.91. Transit SNR 6.60

There are 0 quarters with good PRF difference image offsets

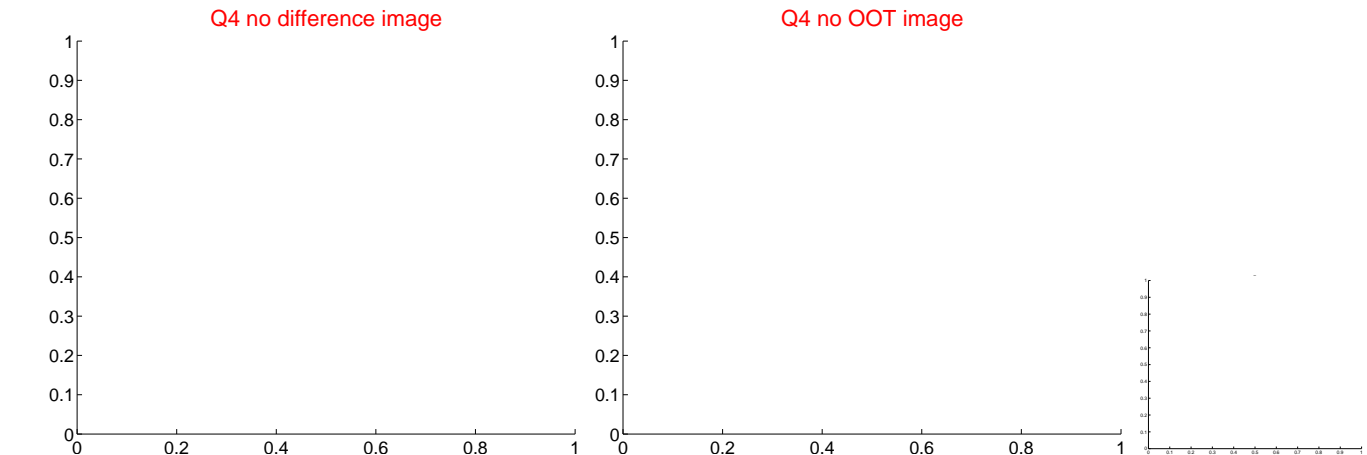
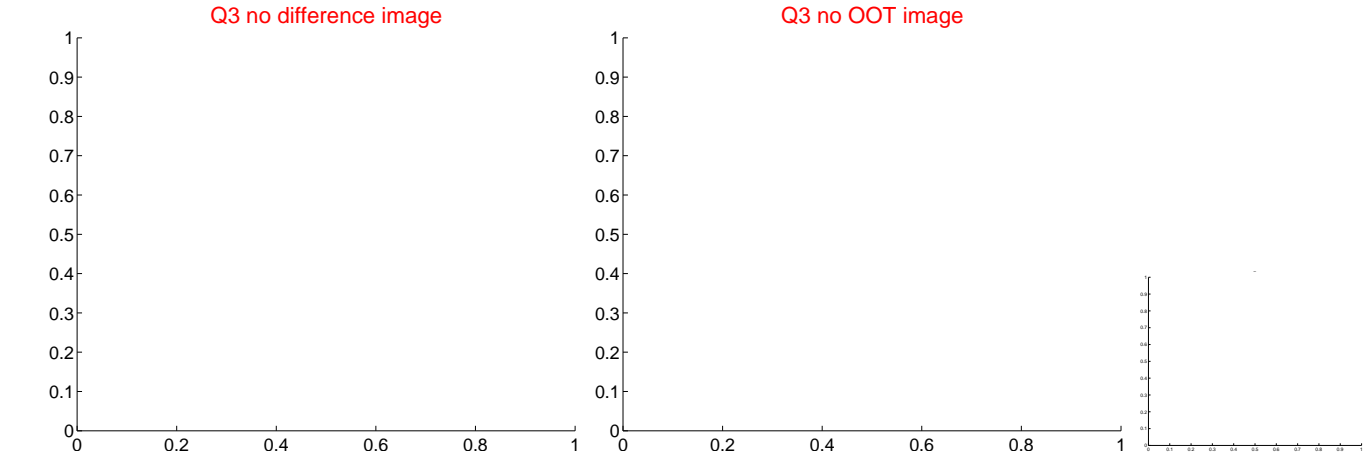
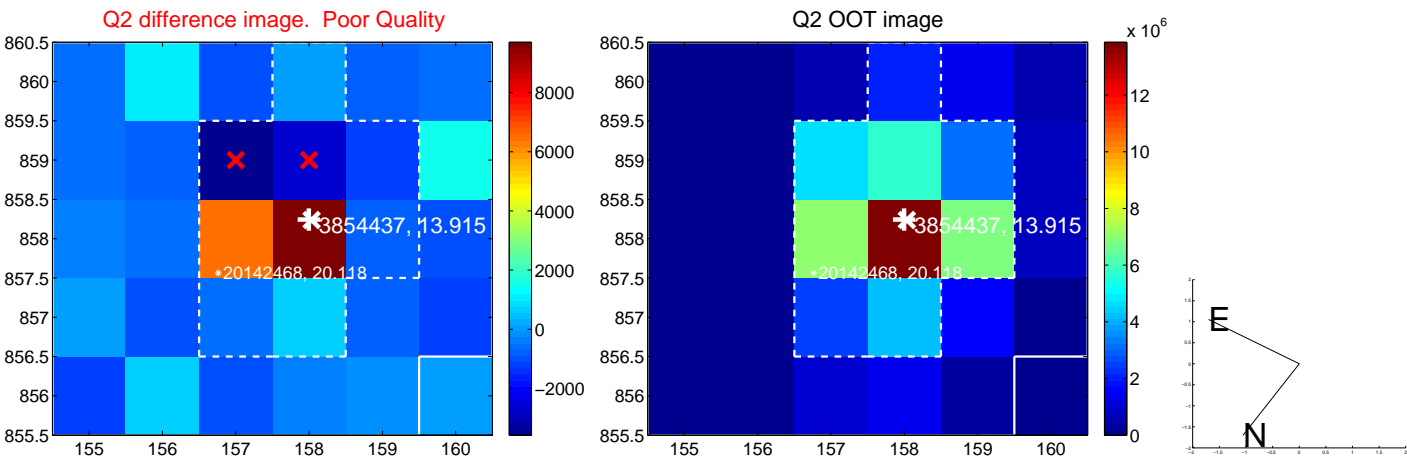
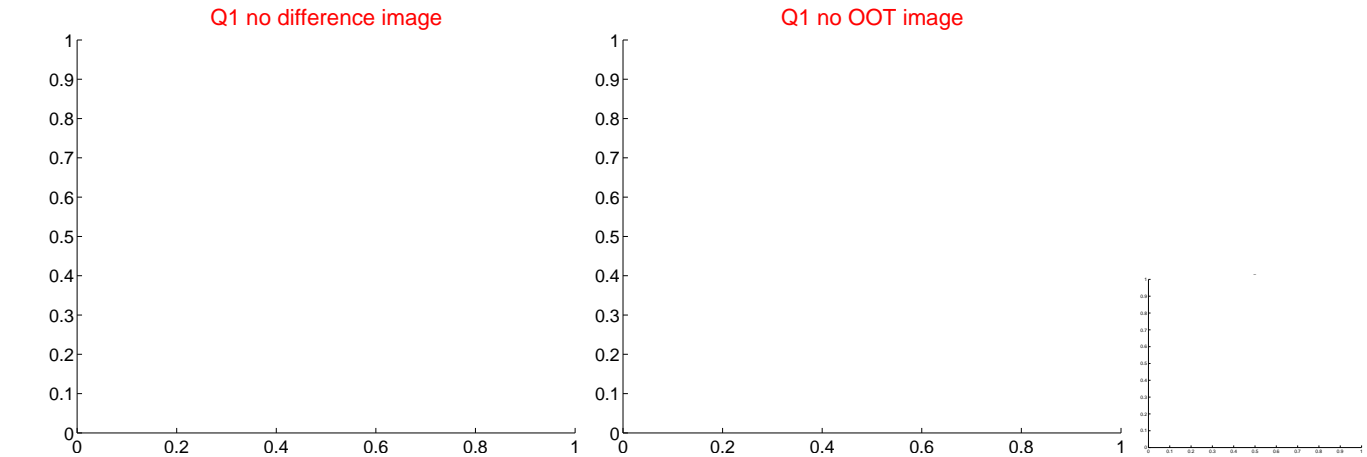
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.452 ± 3.139	1.42	3.921 ± 3.221	2.109 ± 2.839
PRF-fit source offset from KIC position	4.534 ± 3.136	1.45	3.970 ± 3.221	2.190 ± 2.839
photometric centroid source offset	1.28 ± 1.23	1.03	-1.23 ± 1.24	0.33 ± 1.19

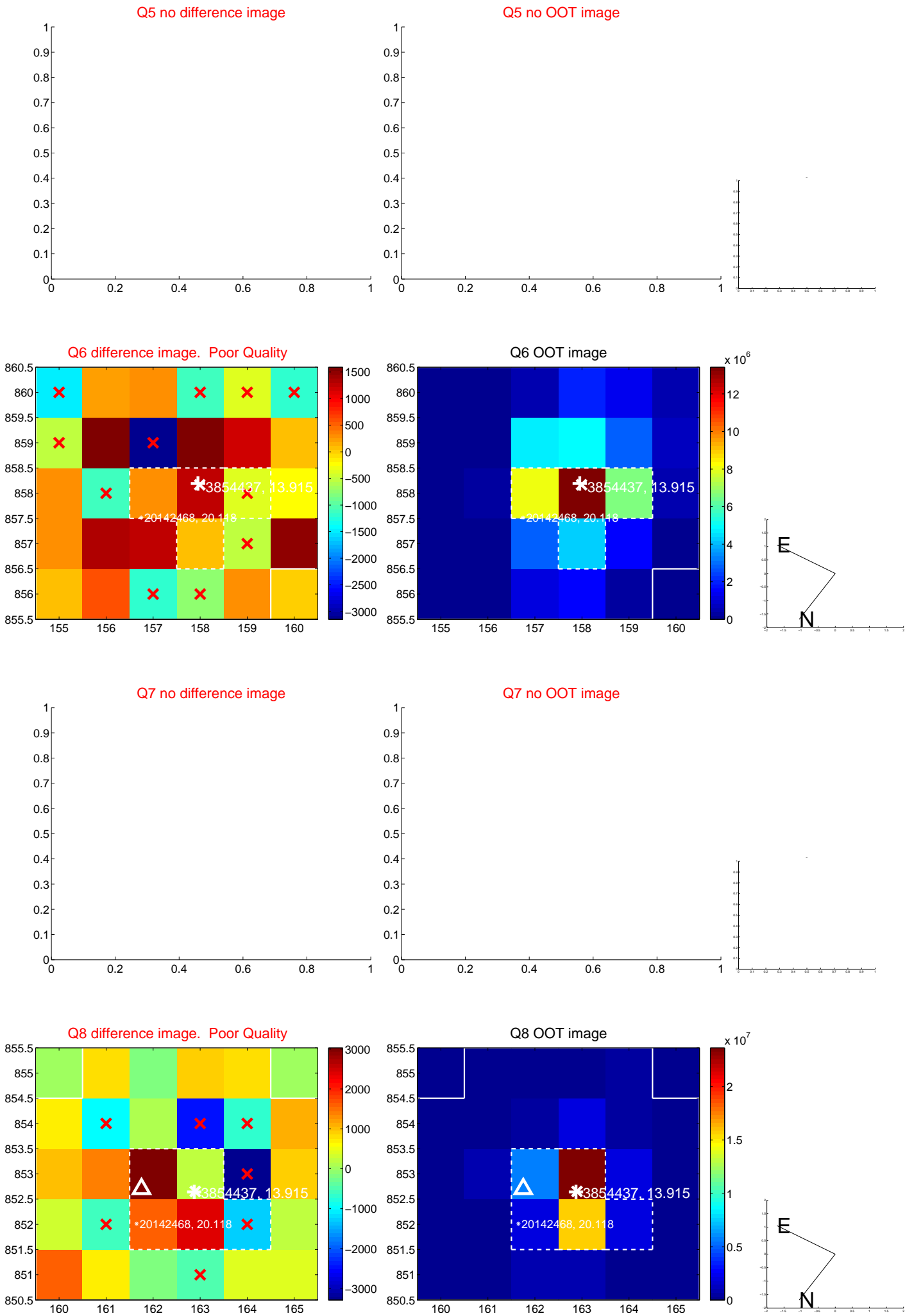


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

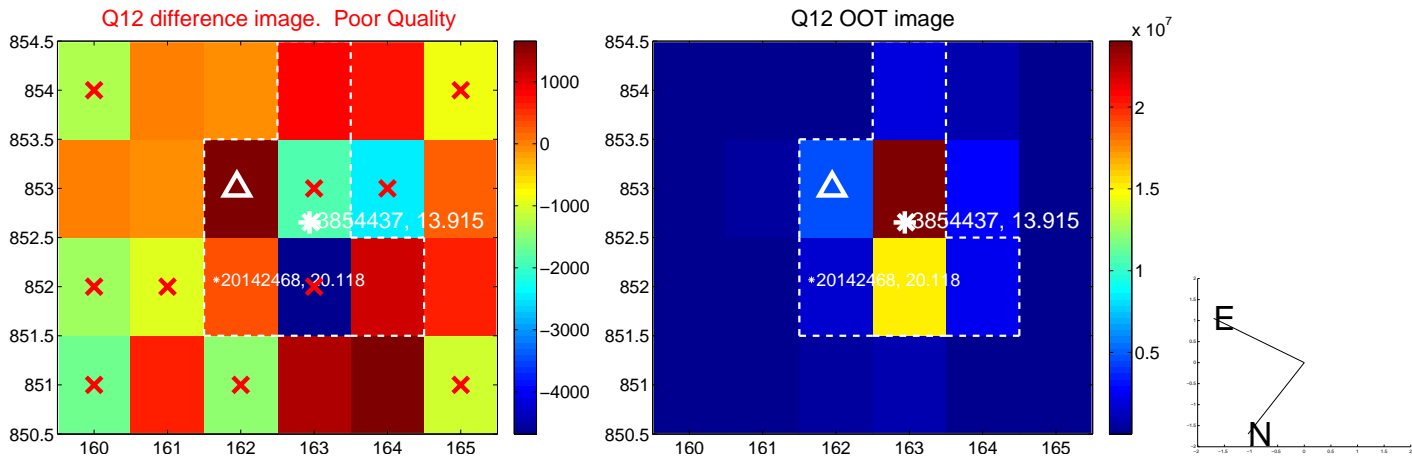
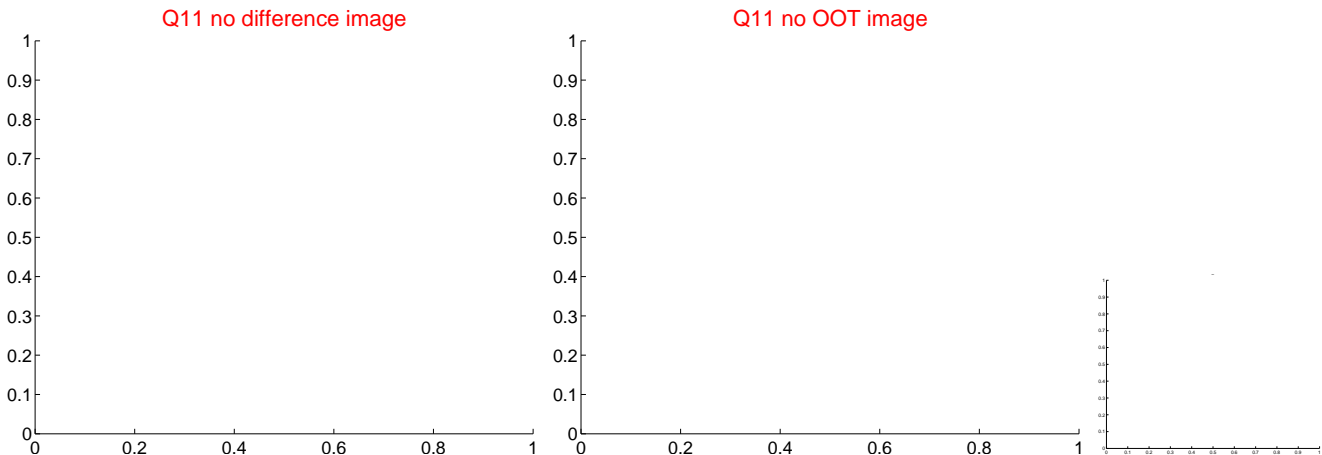
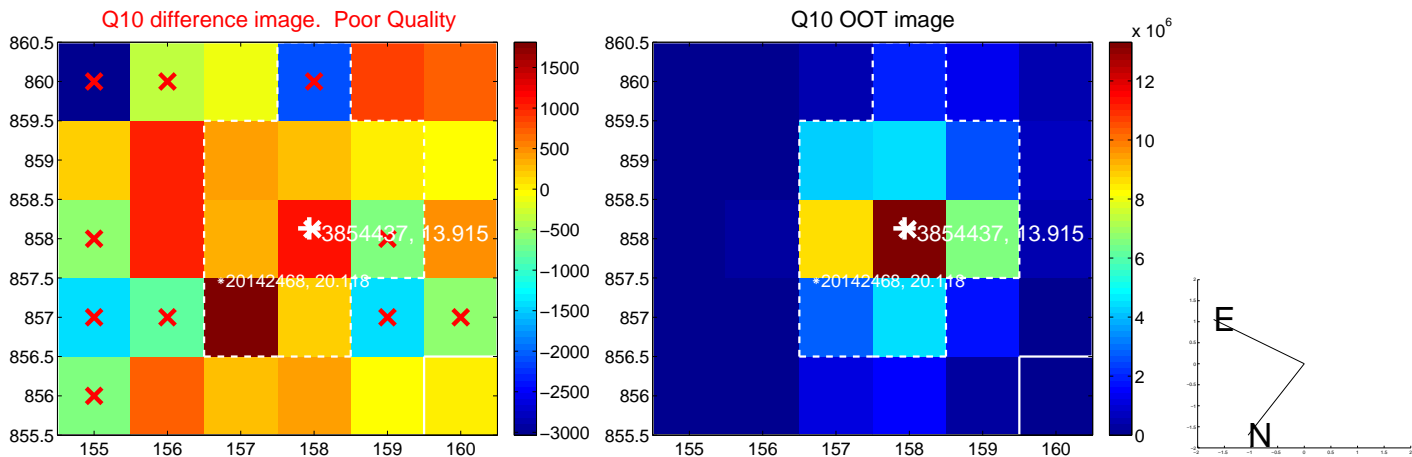
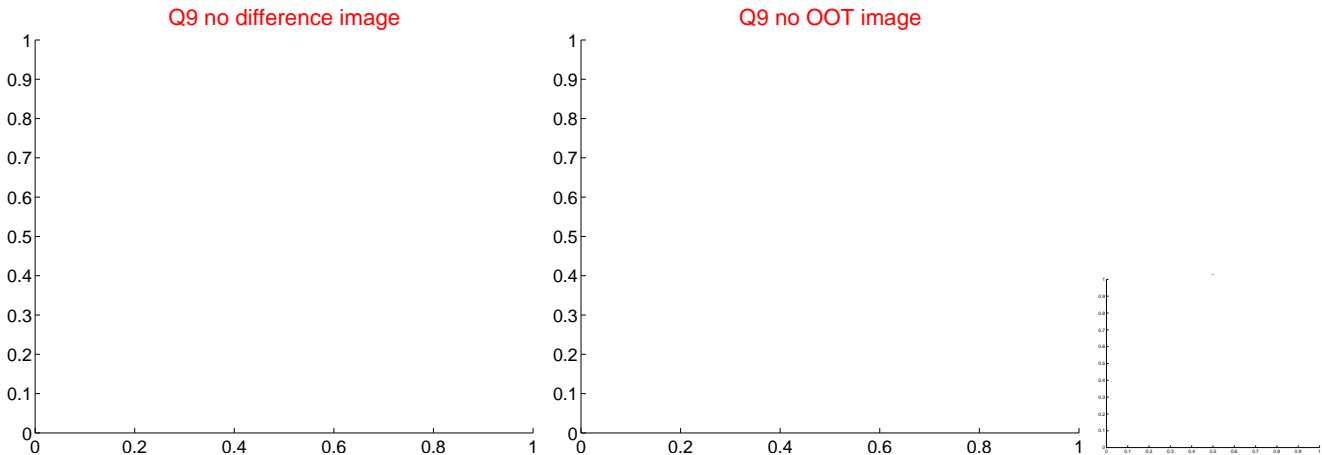
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



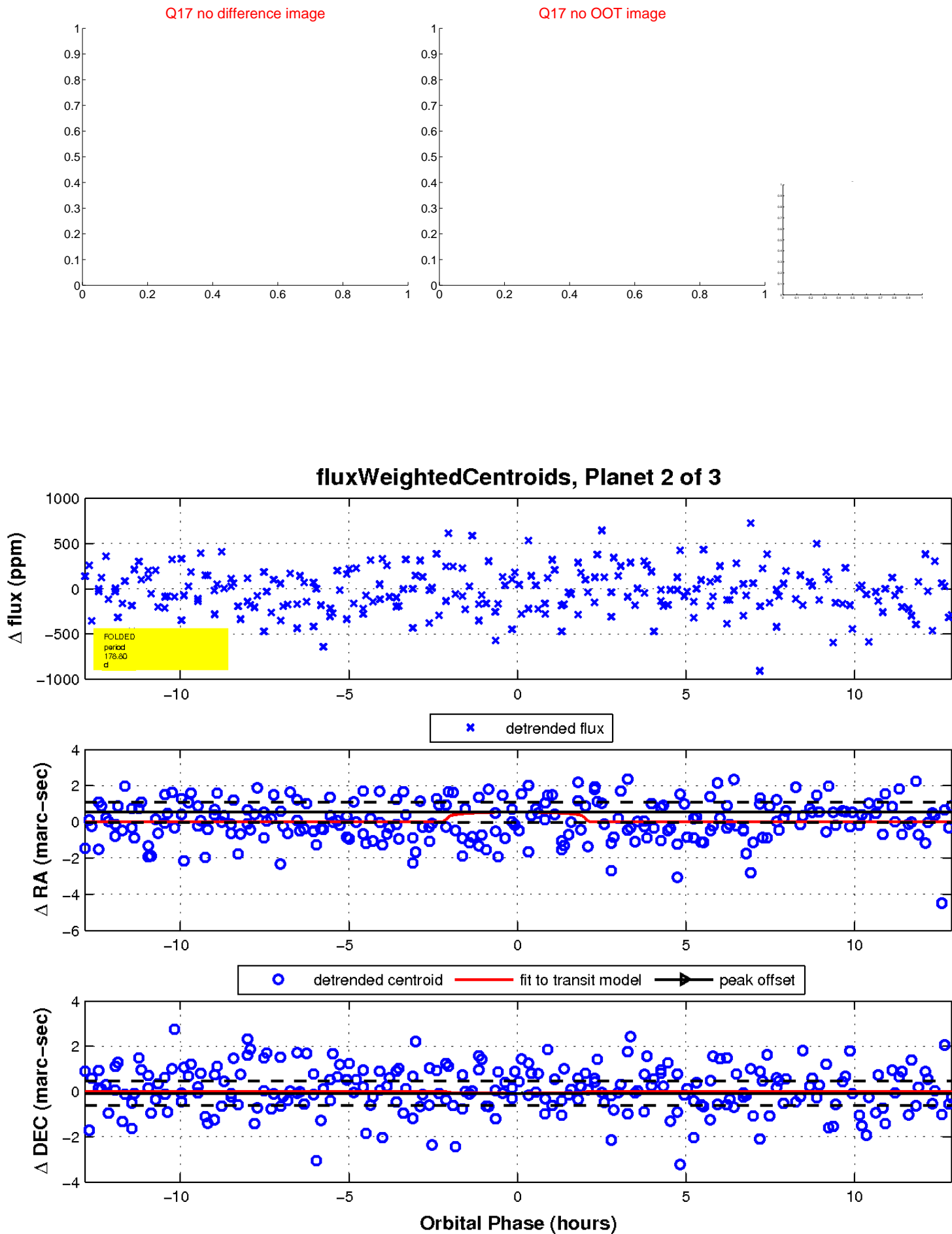
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

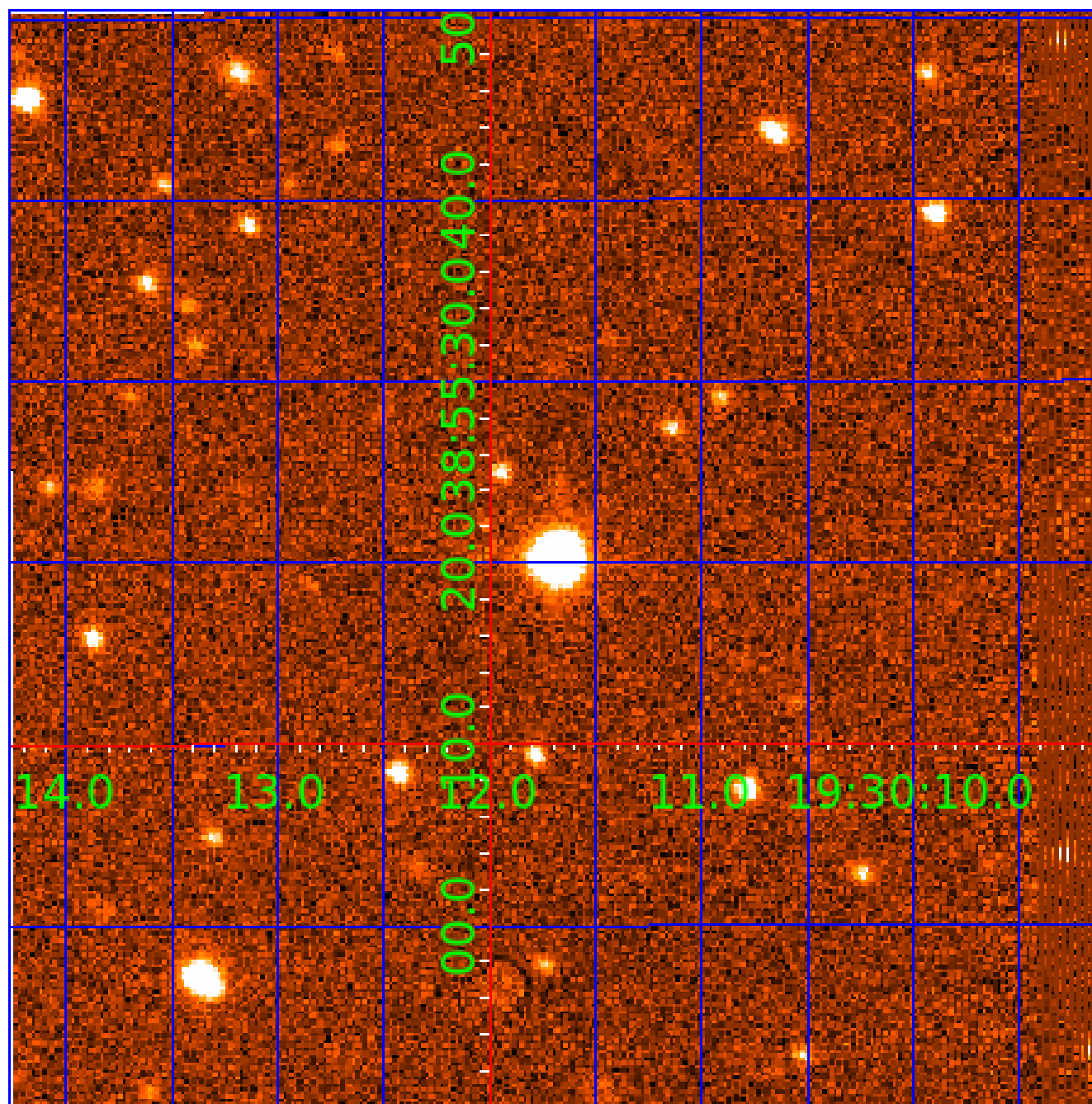


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003854437

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})
003854437-01	OBS	No	0.915060	132.333675	20.3	3.599	7.6	6.0	0.96	5868	0.51	2917.25
003854437-02	OBS	No	178.799912	221.424435	441.7	4.301	13.0	6.6	0.96	5868	2.17	2.57
003854437-03	OBS	No	209.280456	277.600191	455.6	14.899	11.0	7.0	0.96	5868	2.79	2.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003854437-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST
003854437-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003854437-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

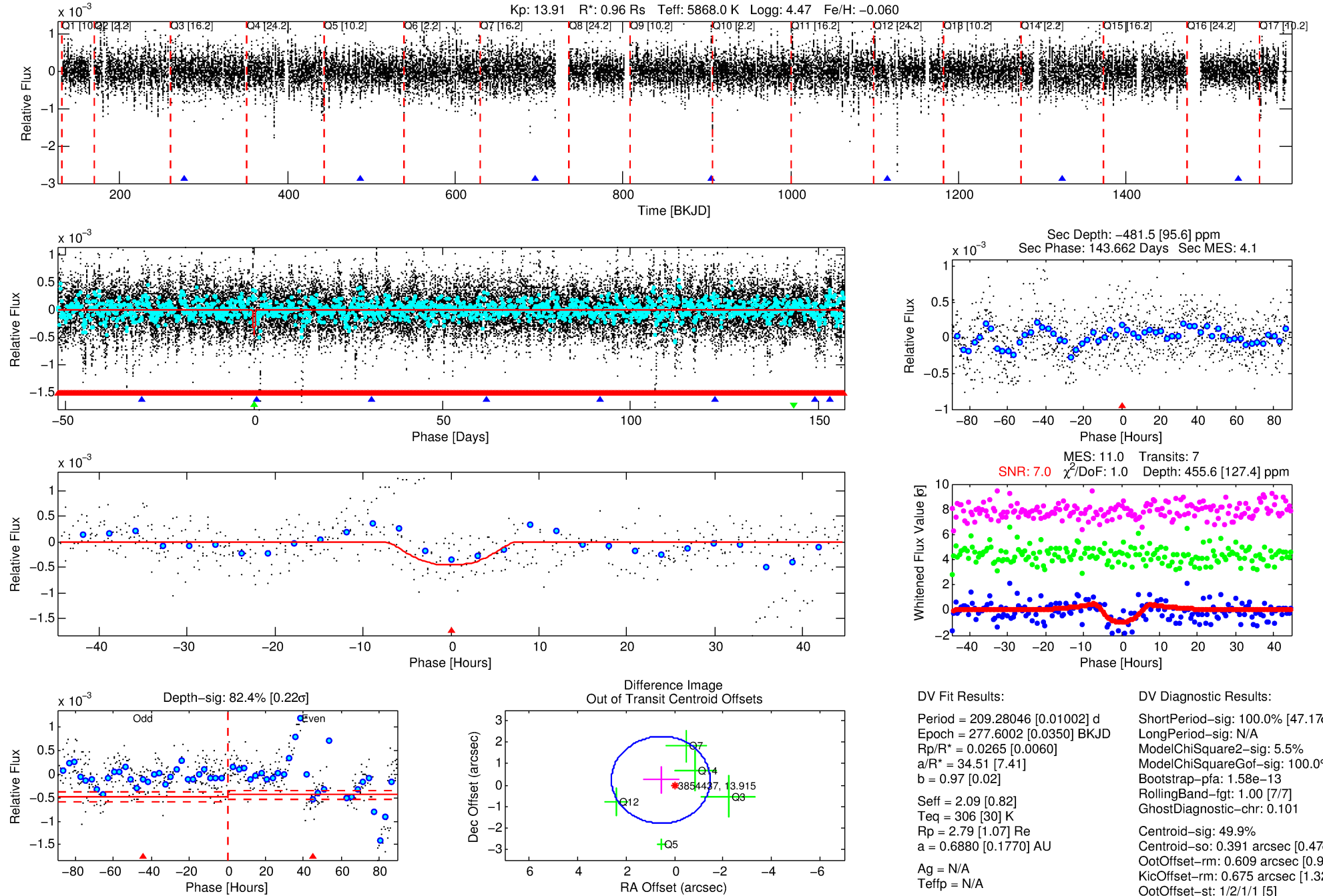
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003854437-03

No Significant Match Found

DV One-Page Summary

KIC: 3854437 Candidate: 3 of 3 Period: 209.280 d



DV Fit Results:

Period = 209.28046 [0.01002] d
Epoch = 277.6002 [0.0350] BKJD
Rp/R* = 0.0265 [0.0060]
a/R* = 34.51 [7.41]
b = 0.97 [0.02]
Seff = 2.09 [0.82]
Teff = 306 [30] K
Rp = 2.79 [1.07] Re
a = 0.6880 [0.1770] AU
Ag = N/A
Teffp = N/A

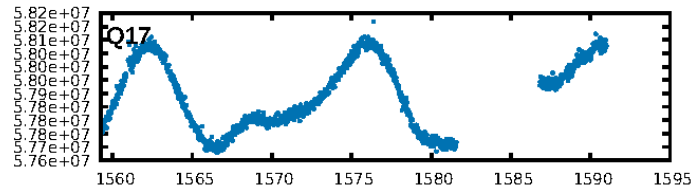
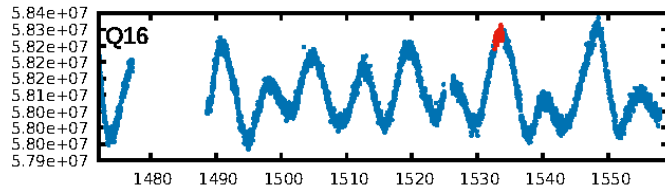
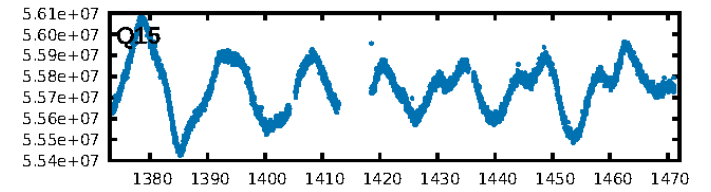
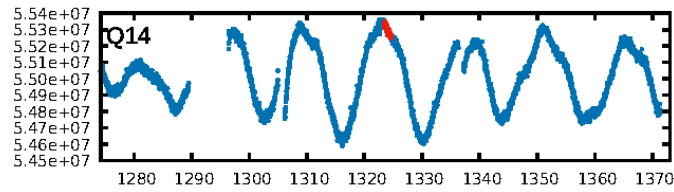
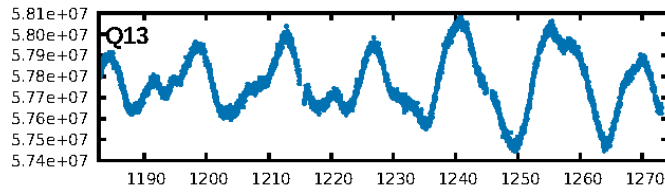
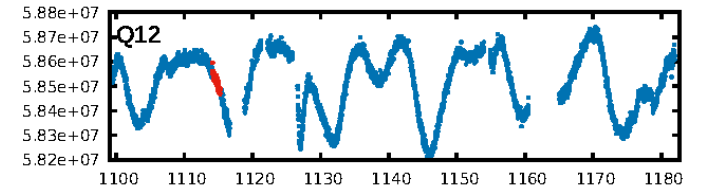
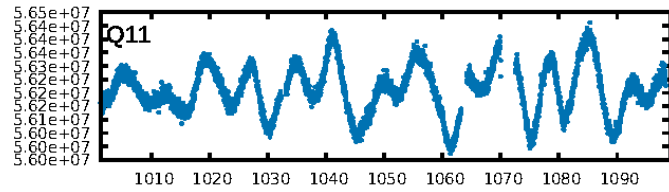
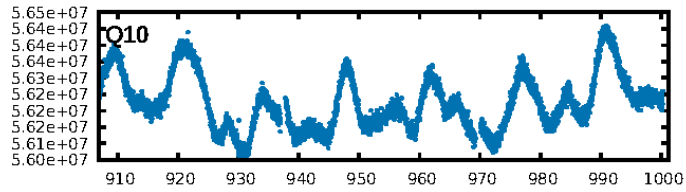
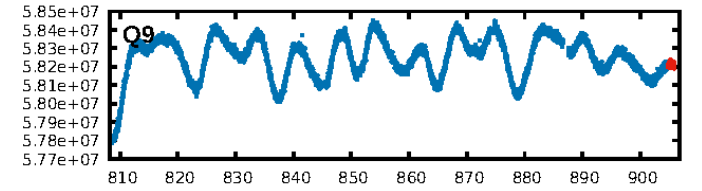
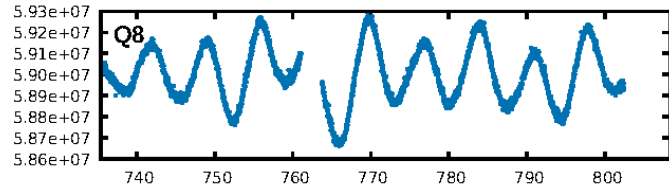
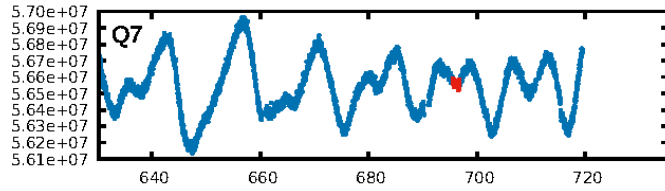
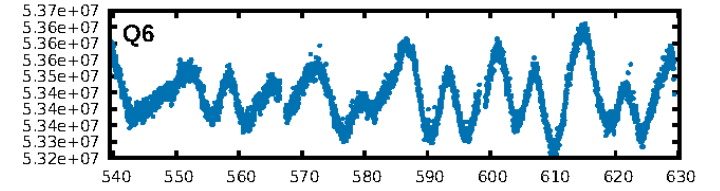
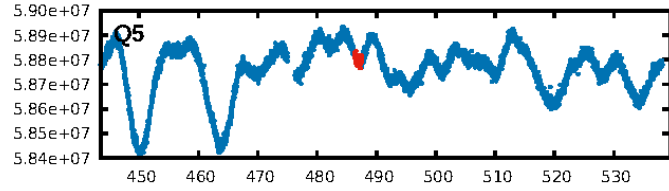
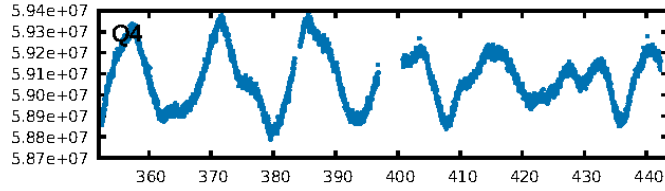
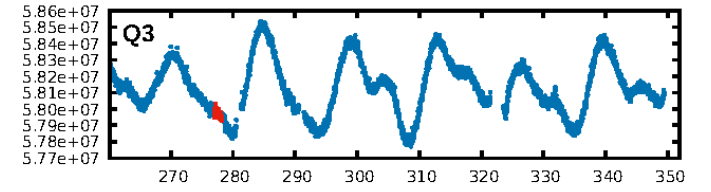
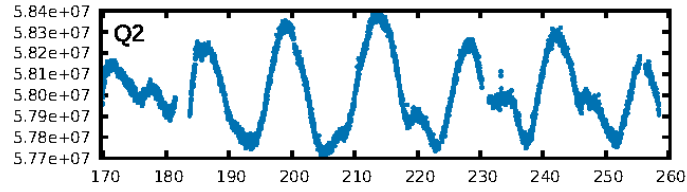
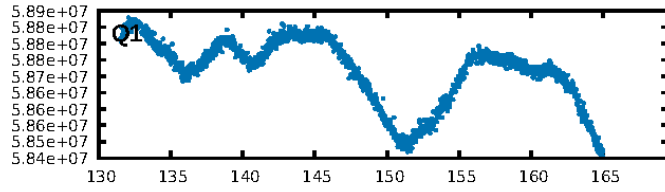
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.17 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.58e-13
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.101
Centroid-sig: 49.9%
Centroid-so: 0.391 arcsec [0.47 σ]
OotOffset-rm: 0.609 arcsec [0.90 σ]
KicOffset-rm: 0.675 arcsec [1.32 σ]
OotOffset-st: 1/2/1/1 [5]
KicOffset-st: 1/2/1/1 [5]
DiffImageQuality-fgm: 0.20 [1/5]
DiffImageOverlap-fno: 0.00 [0/5]

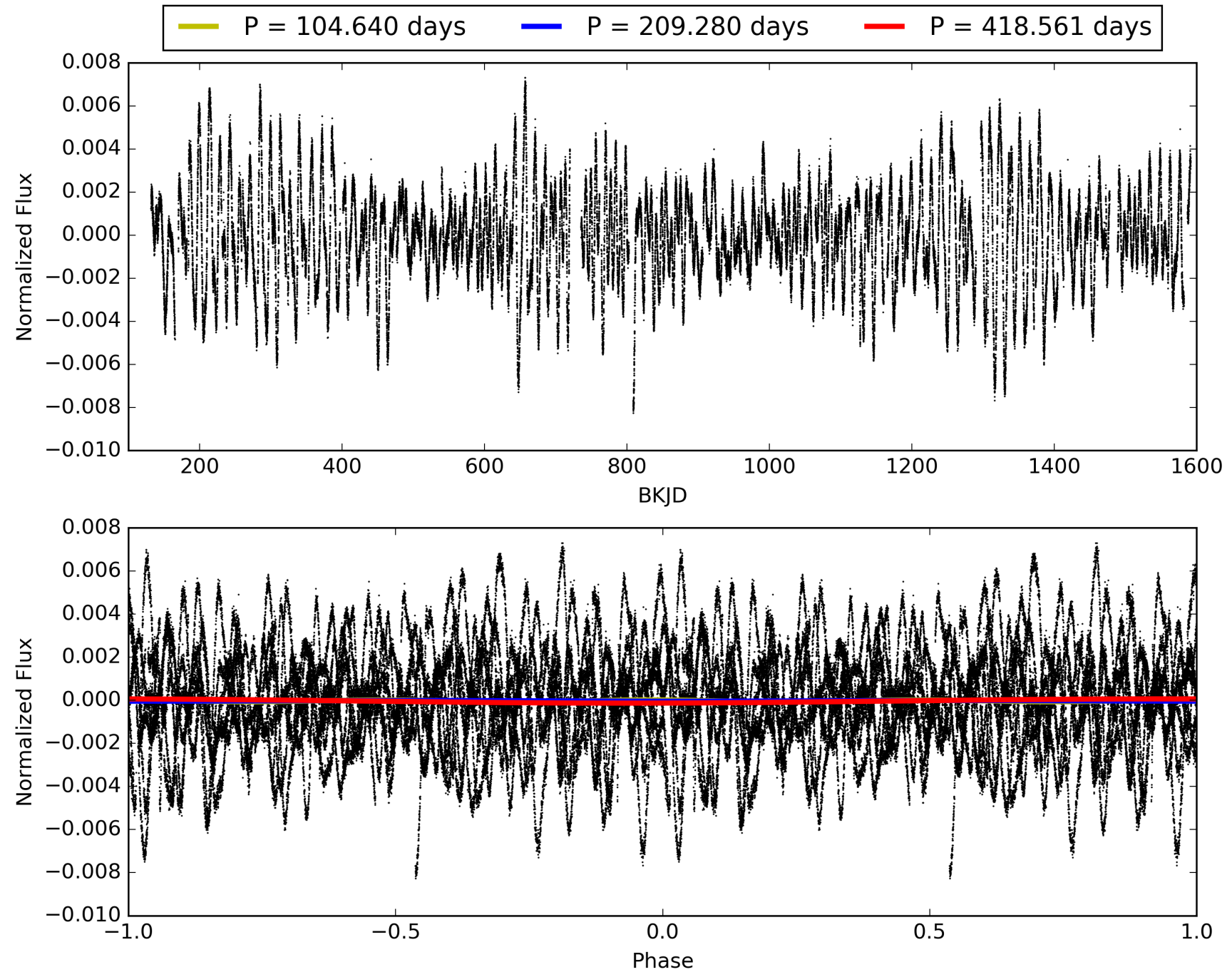
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:11:44 Z

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

TCE 003854437-03, PDC Light Curves

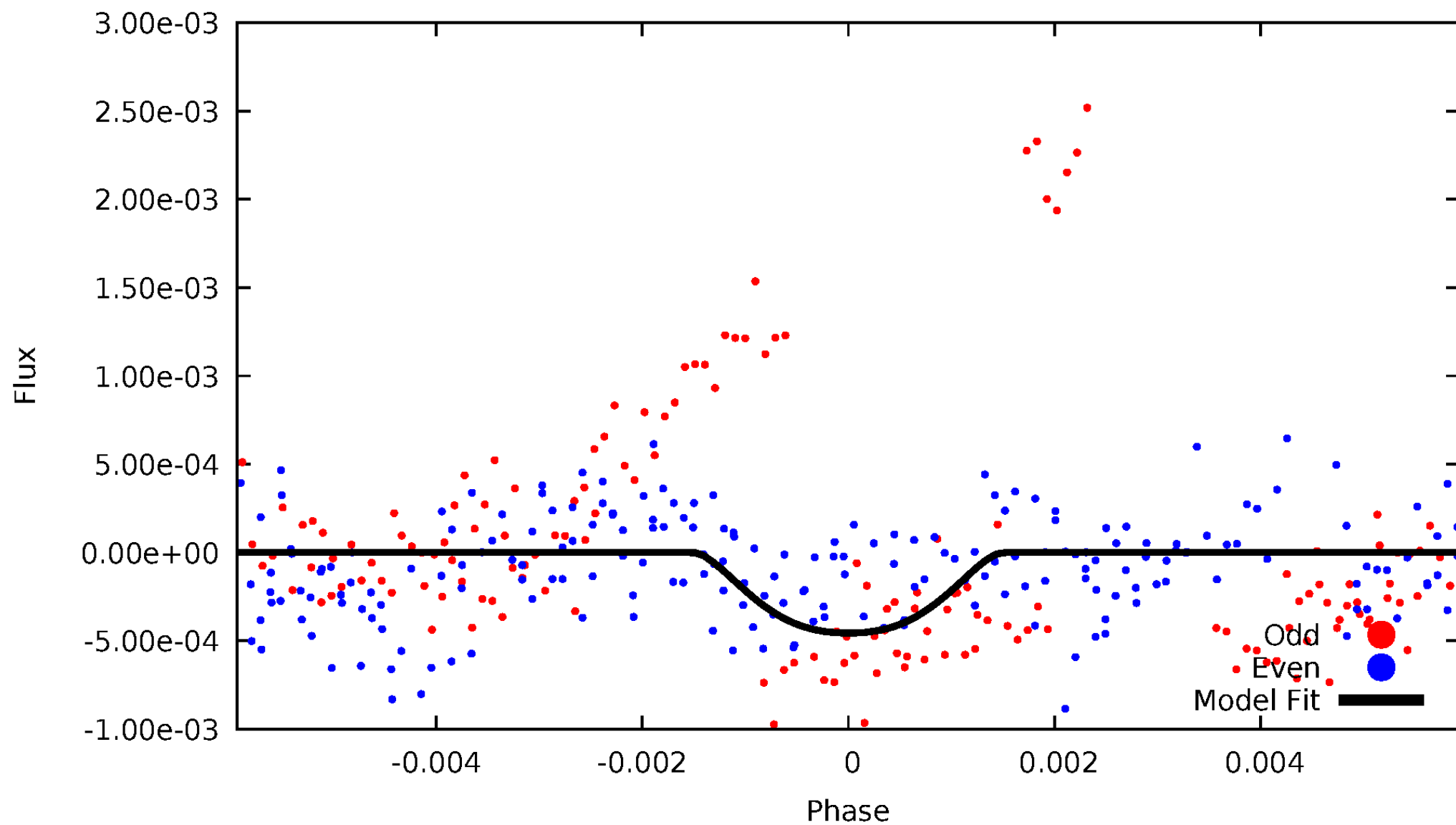


TCE 003854437-03



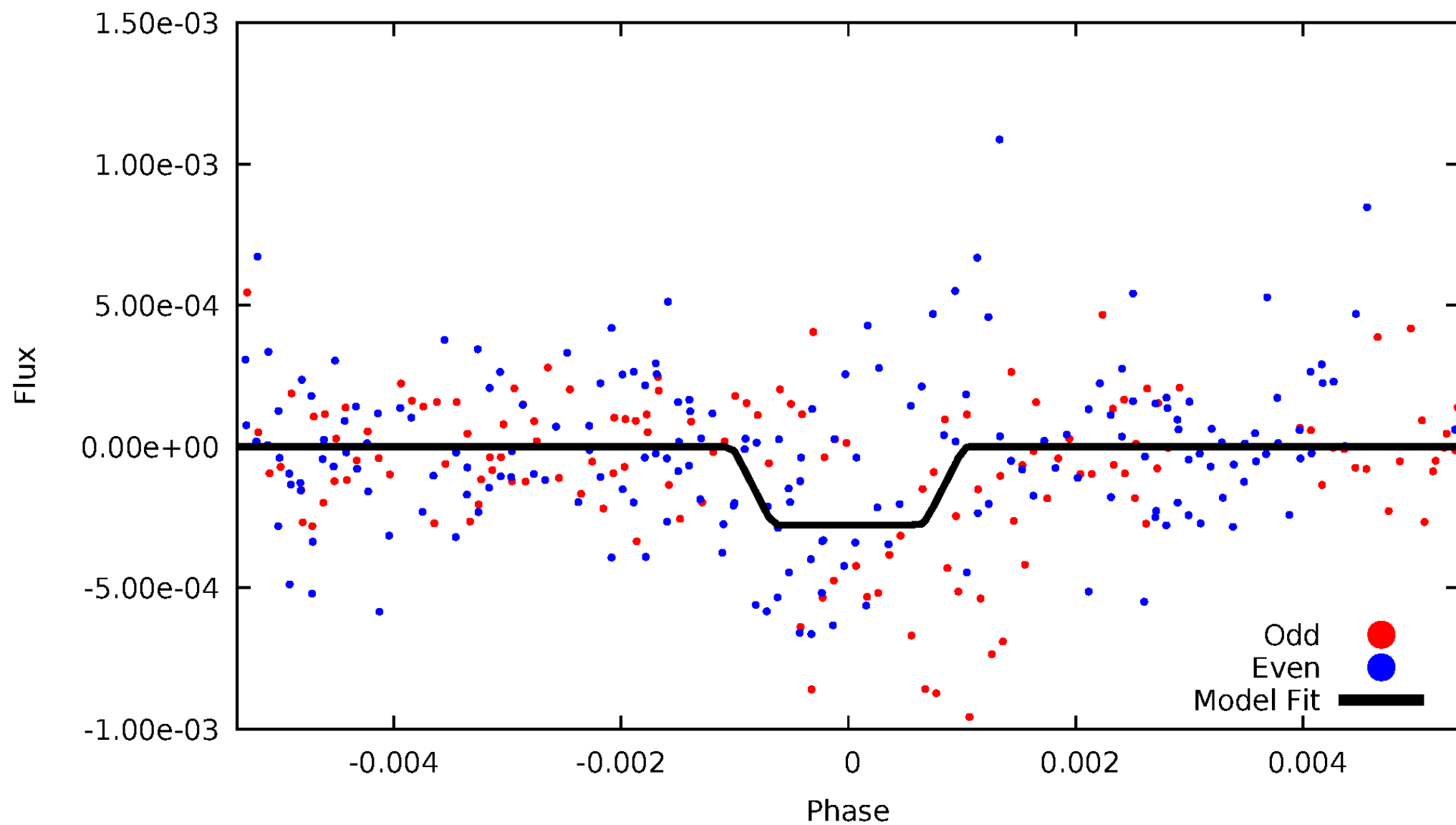
DV Odd/Even

TCE 003854437-03



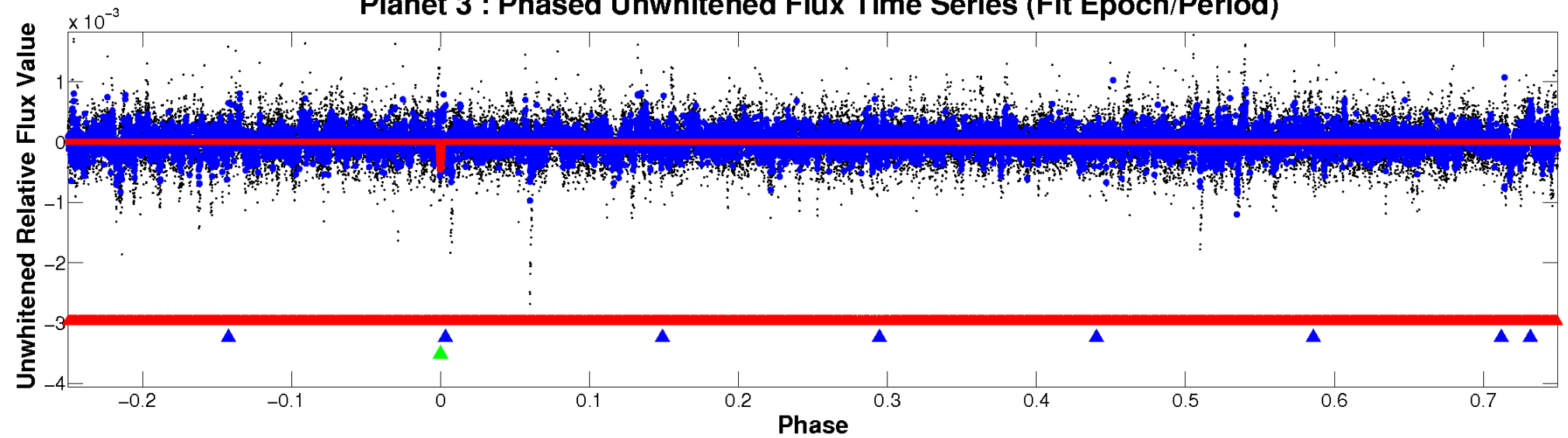
ALT Odd/Even

TCE 003854437-03

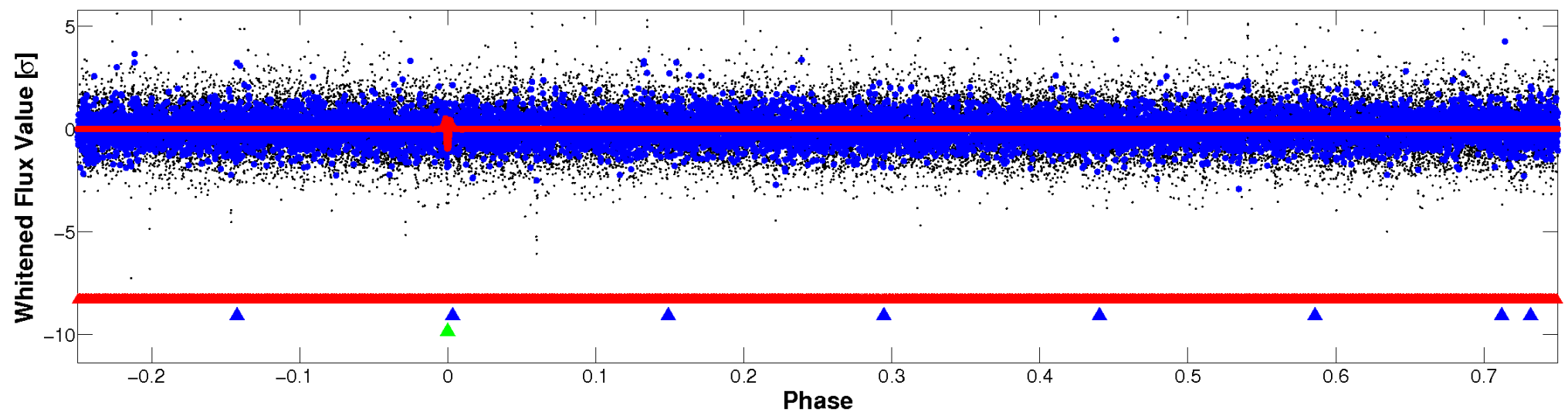


Non-Whitened Vs. Whitened Light Curve

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

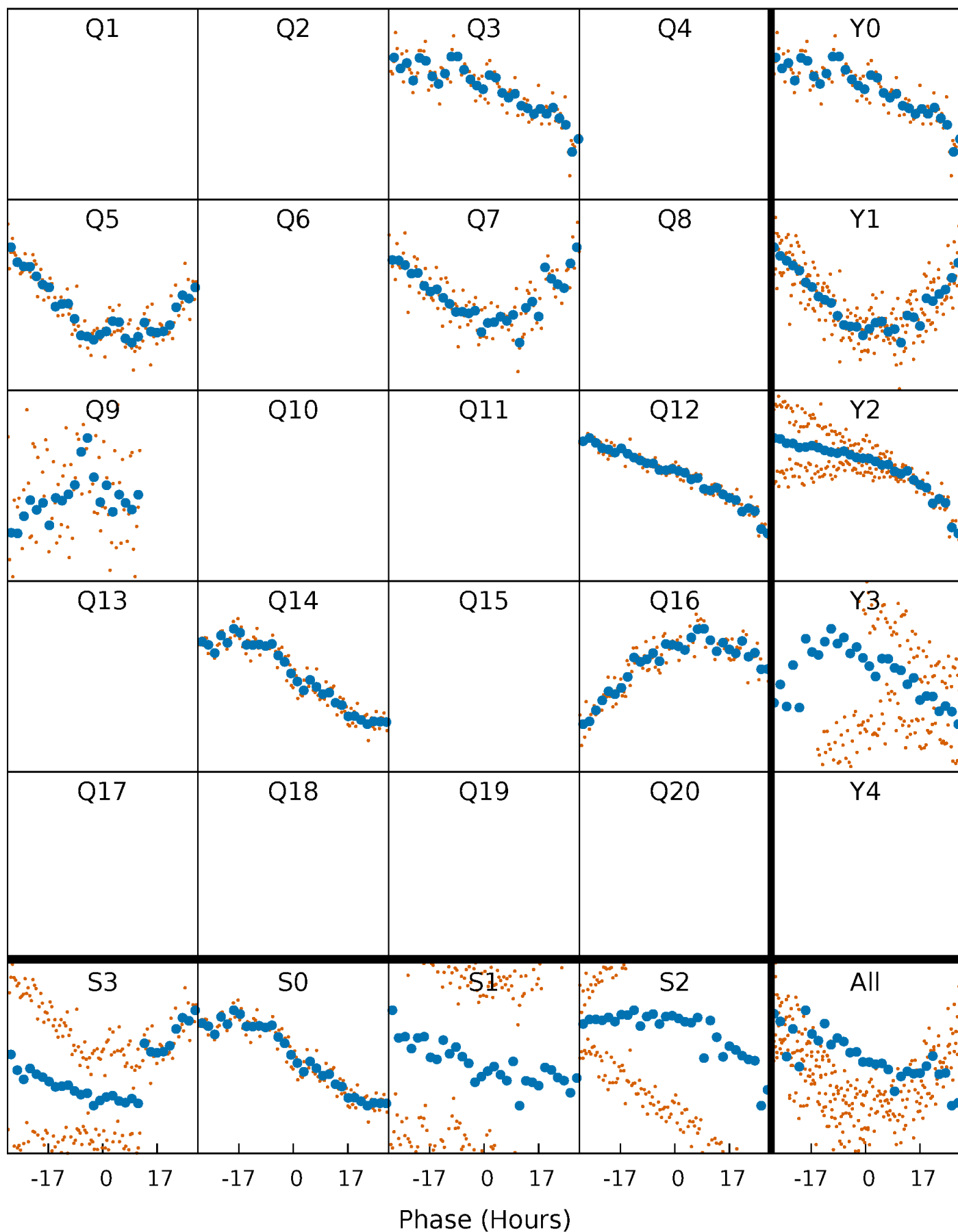


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



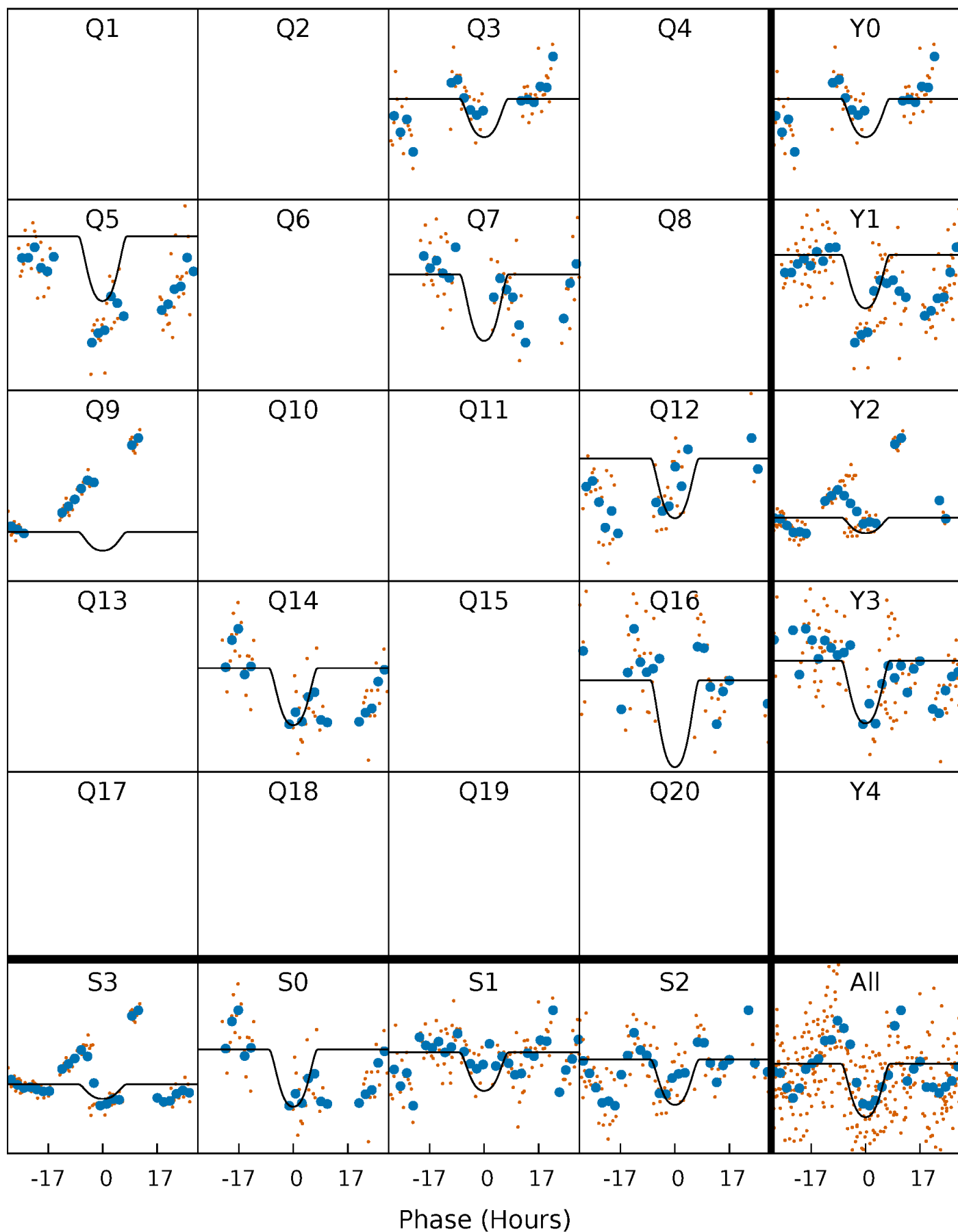
PDC Quarter-Phased Transit Curves

TCE 003854437-03 $P=209.280456$ Days $T_0=277.600191$ (BKJD)



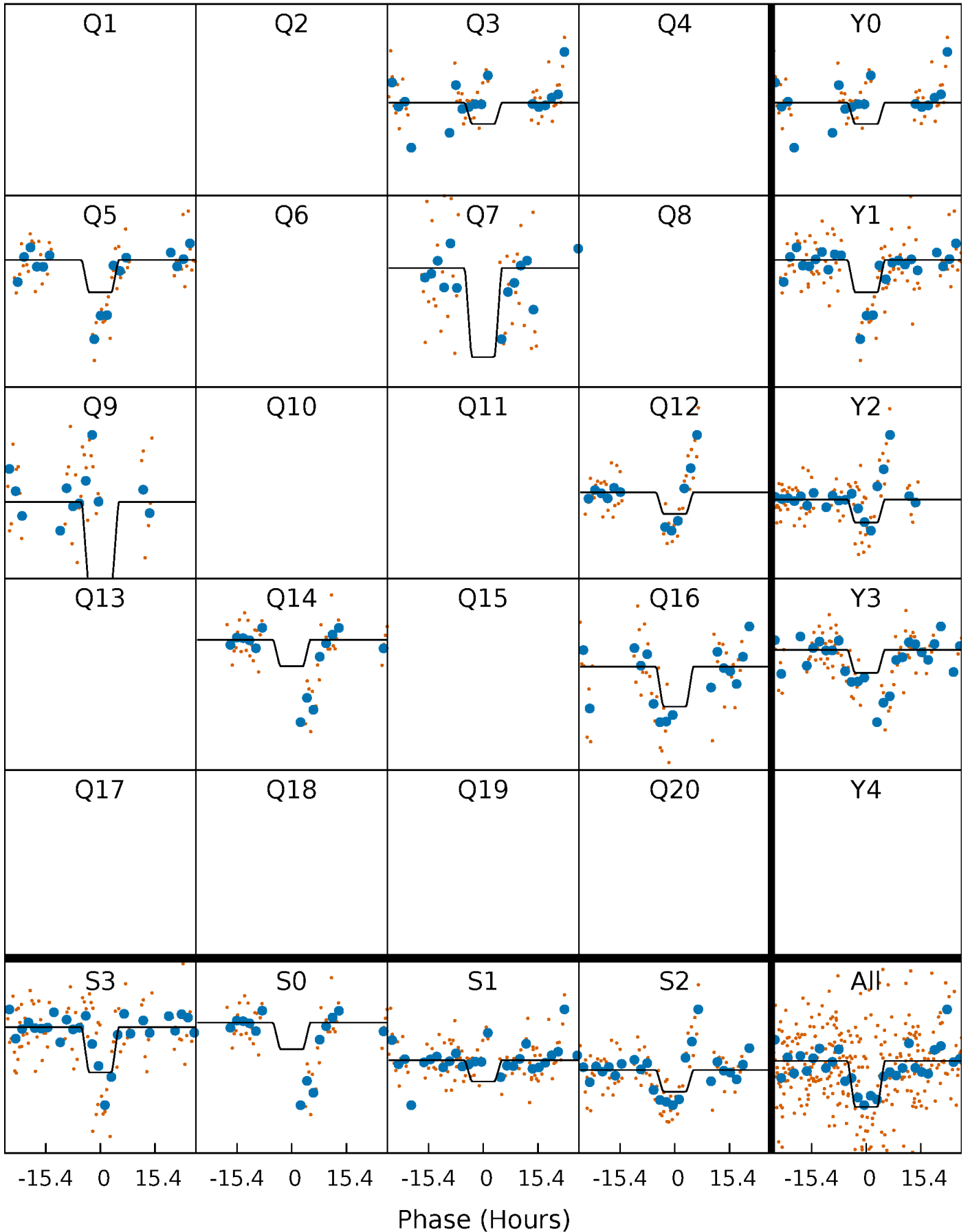
DV Quarter-Phased Transit Curves

TCE 003854437-03 $P=209.280456$ Days $T_0=277.600191$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

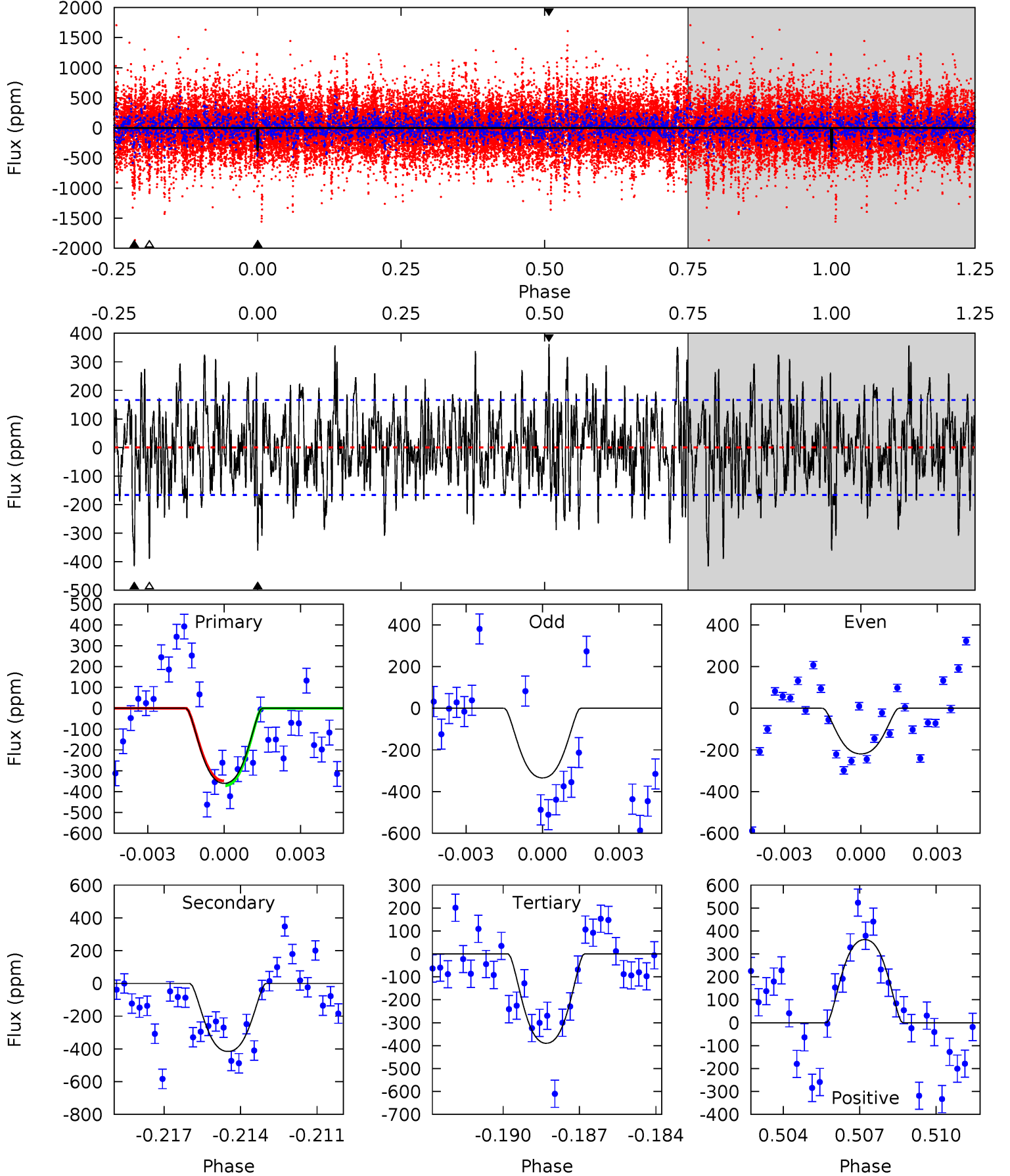
TCE 003854437-03 $P=209.260088$ Days $T_0=277.536928$ (BKJD)



DV Model-Shift Uniqueness Test

003854437-03, P = 209.280456 Days, E = 68.319735 Days

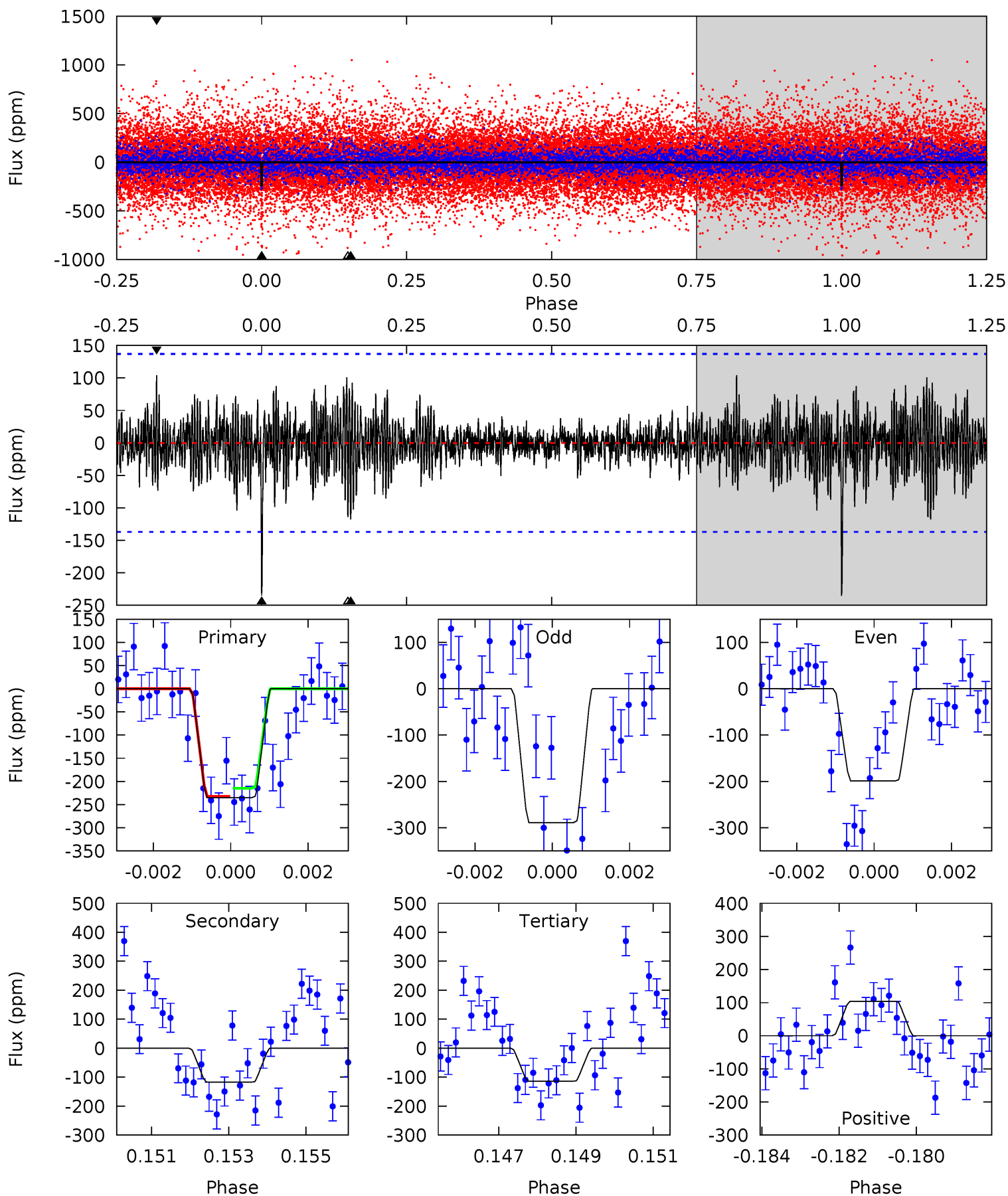
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	13.1	12.3	11.5	5.25	2.97	3.62	-0.93	-0.07	0.82	1.68	1.83	-0.34	0.47	0.37



Alt Model-Shift Uniqueness Test

003854437-03, $P = 209.260088$ Days, $E = 68.276840$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.14	4.57	4.44	4.04	5.32	3.08	1.07	4.70	5.10	0.13	0.53	1.73	1.09	0.31	0.34



Stellar Parameters For KIC 003854437

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5868^{+146}_{-176}	$4.466^{+0.067}_{-0.202}$	$-0.060^{+0.300}_{-0.300}$	$0.964^{+0.297}_{-0.099}$	$0.990^{+0.128}_{-0.117}$	$1.559^{+0.442}_{-0.824}$
	+2%/-3%	+2%/-5%	+500%/-500%	+31%/-10%	+13%/-12%	+28%/-53%
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 003854437-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-416 ± 32	$2.97^{+0.75}_{-0.81}$	435^{+31}_{-22}	5178^{+677}_{-457}	12250^{+9850}_{-4584}
Alt.	-118 ± 26	$1.79^{+0.71}_{-0.61}$	434^{+33}_{-20}	4838^{+1023}_{-579}	9387^{+12652}_{-4869}

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

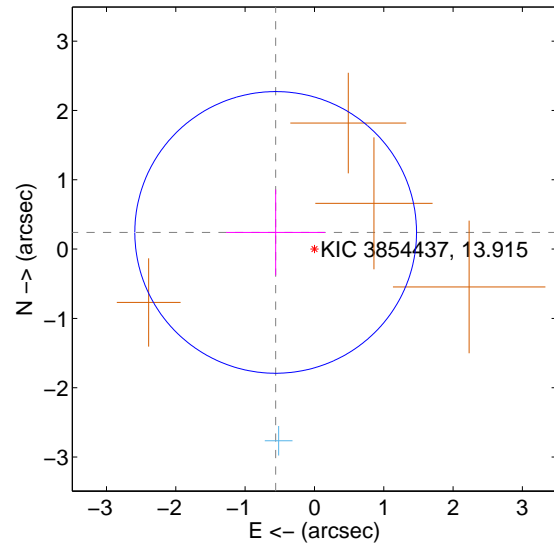
Supplemental centroid analysis for 003854437-03. Kepler magnitude: 13.91. Transit SNR 6.97

There are 1 quarters with good PRF difference image offsets

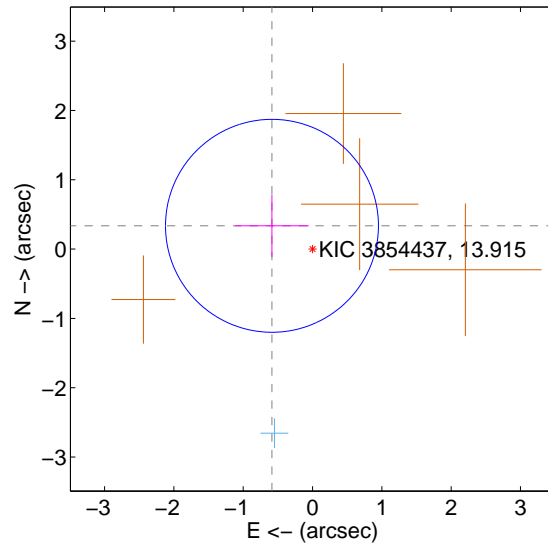
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.609 ± 0.677	0.90	0.559 ± 0.714	0.240 ± 0.619
PRF-fit source offset from KIC position	0.675 ± 0.512	1.32	0.585 ± 0.531	0.336 ± 0.447
photometric centroid source offset	0.39 ± 0.84	0.47	-0.21 ± 0.83	-0.33 ± 0.84

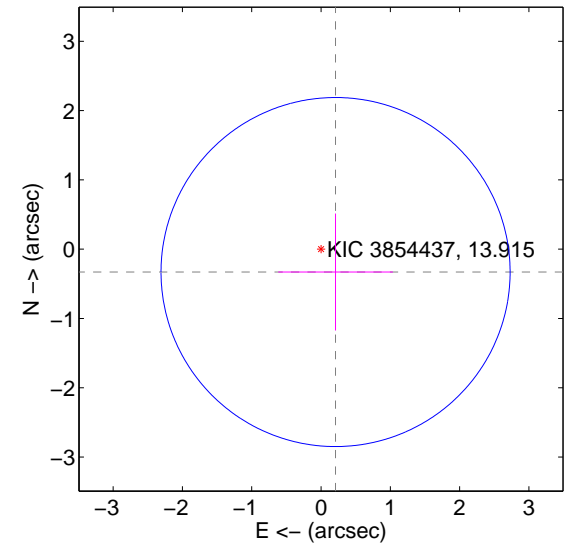
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

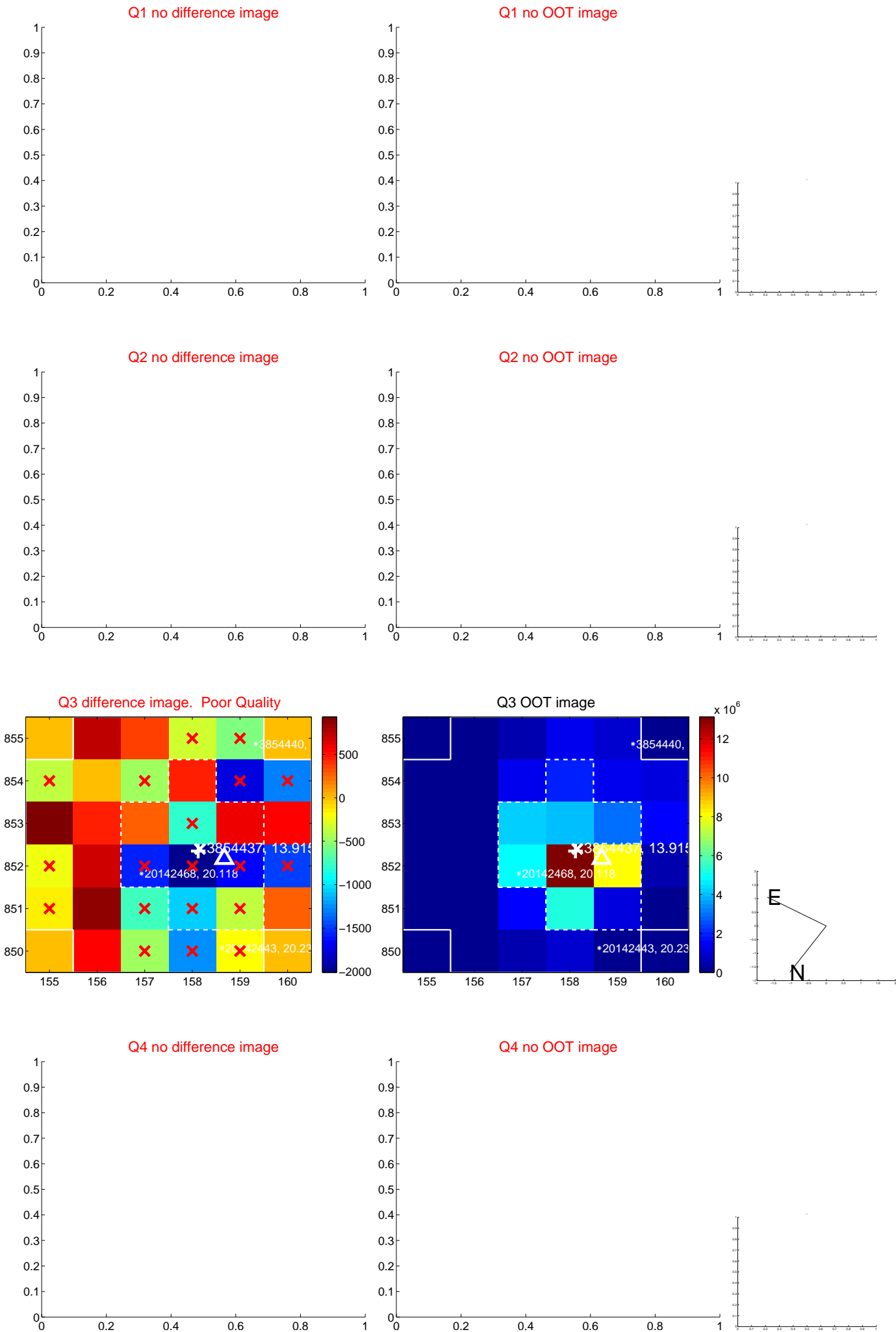


offset from photometric centroids

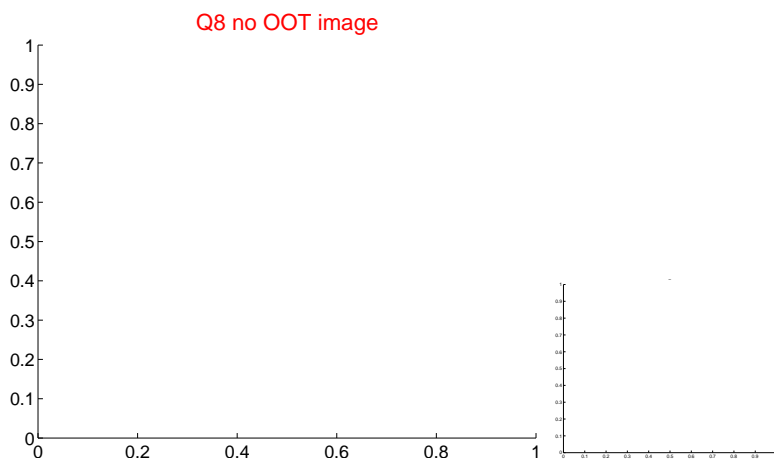
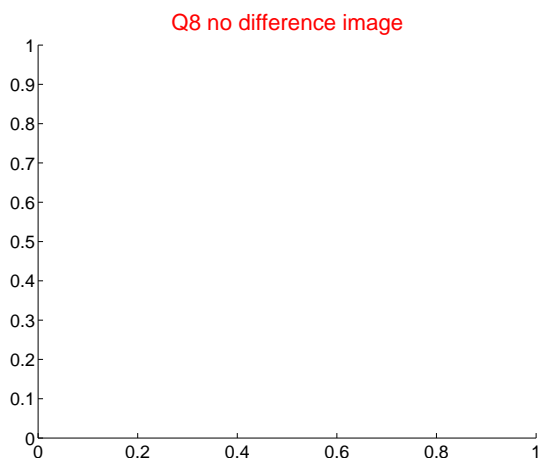
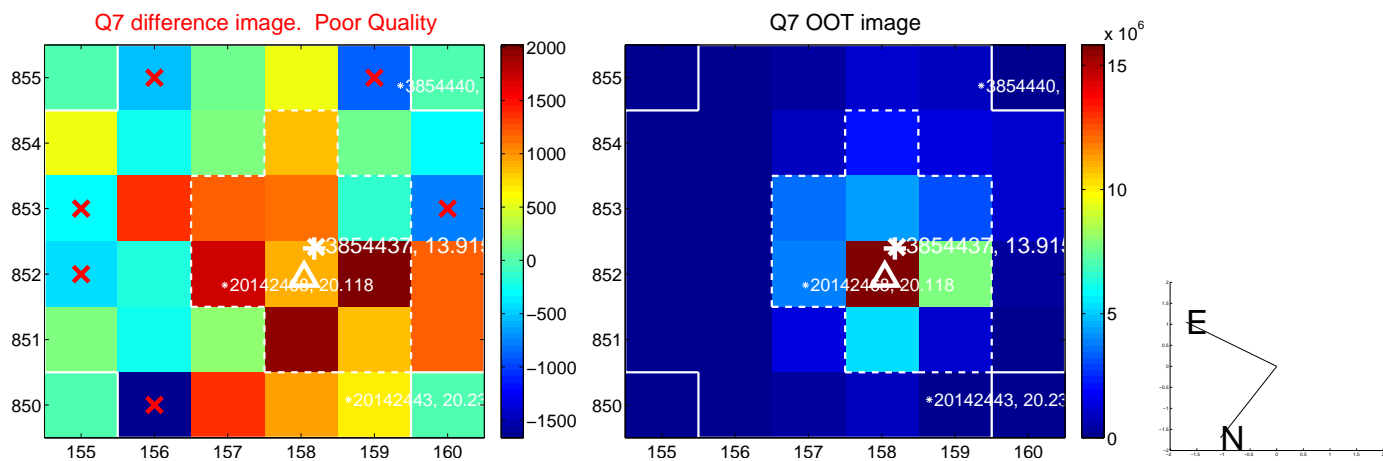
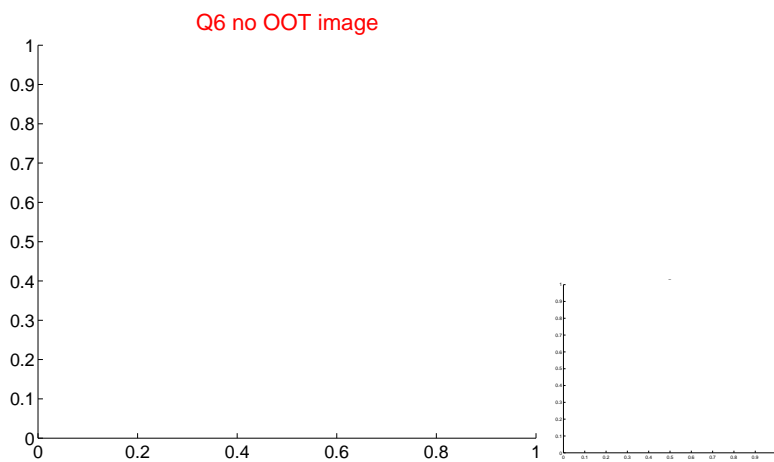
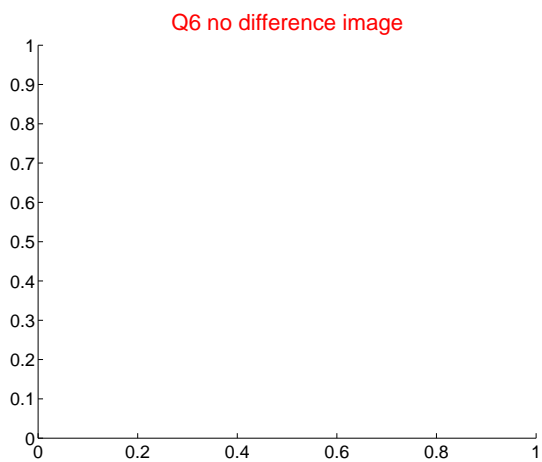
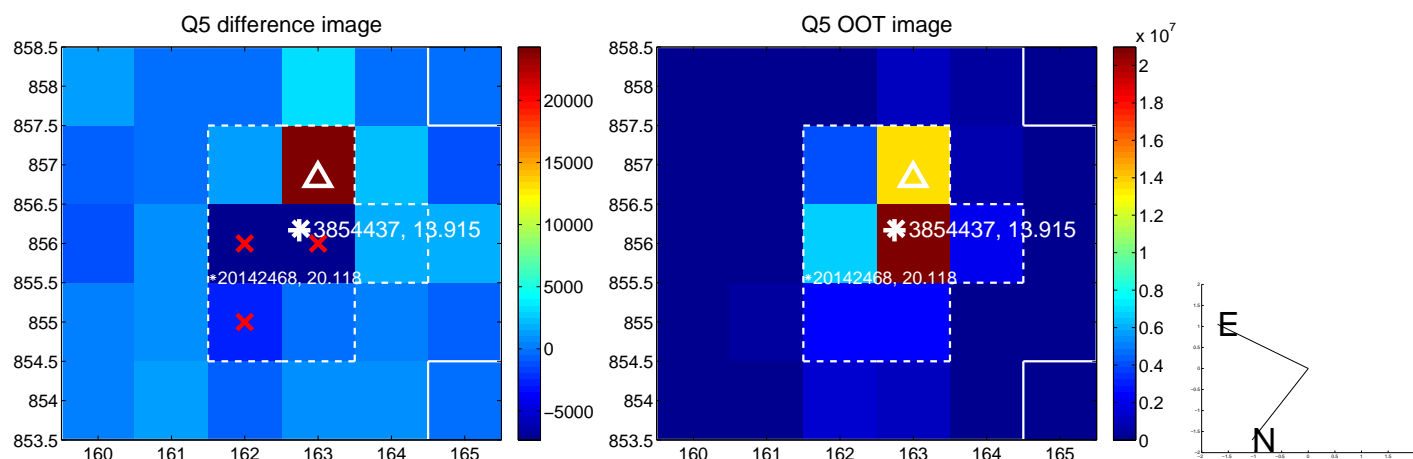


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

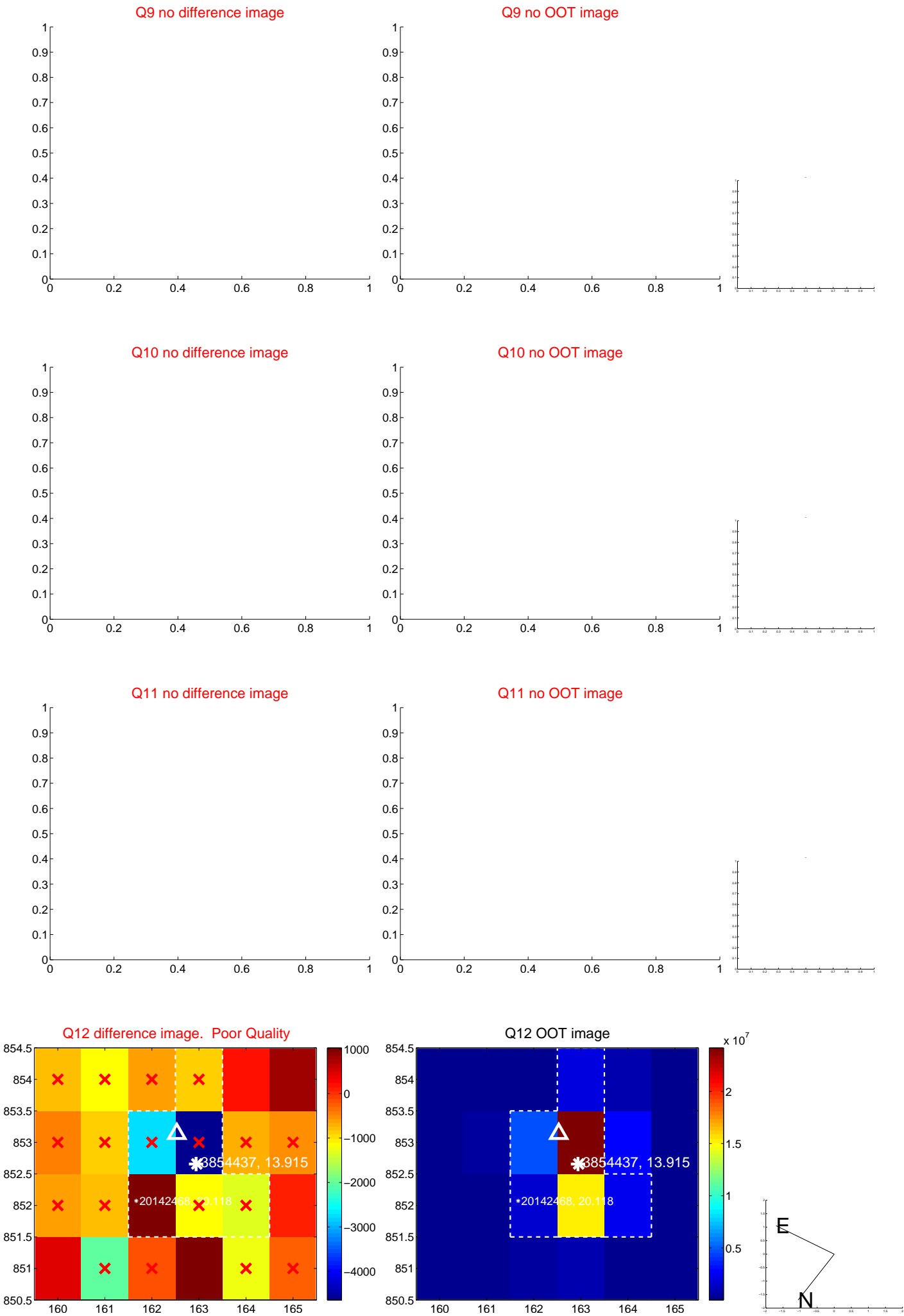
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



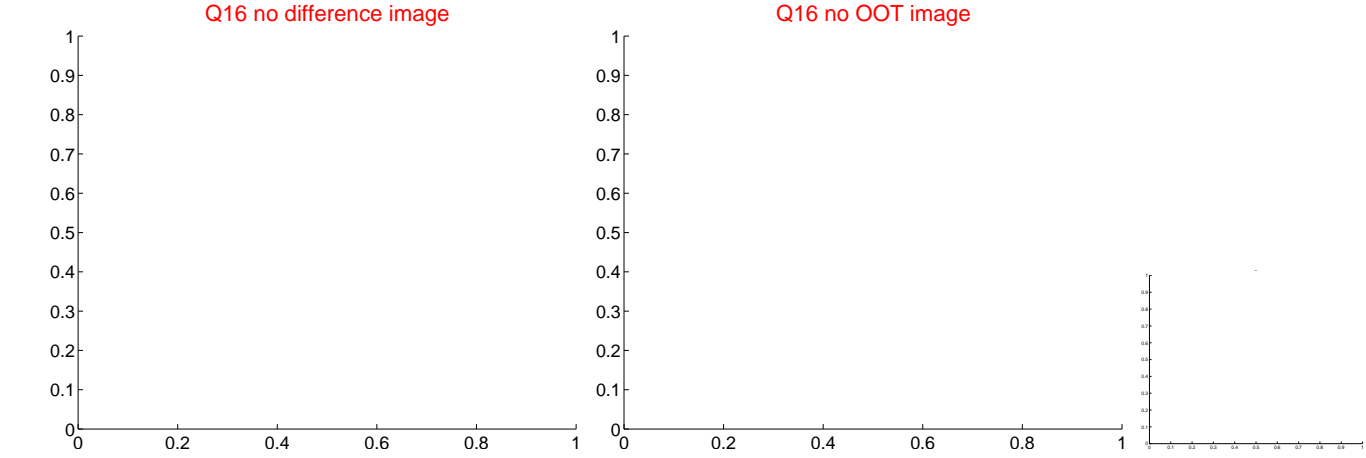
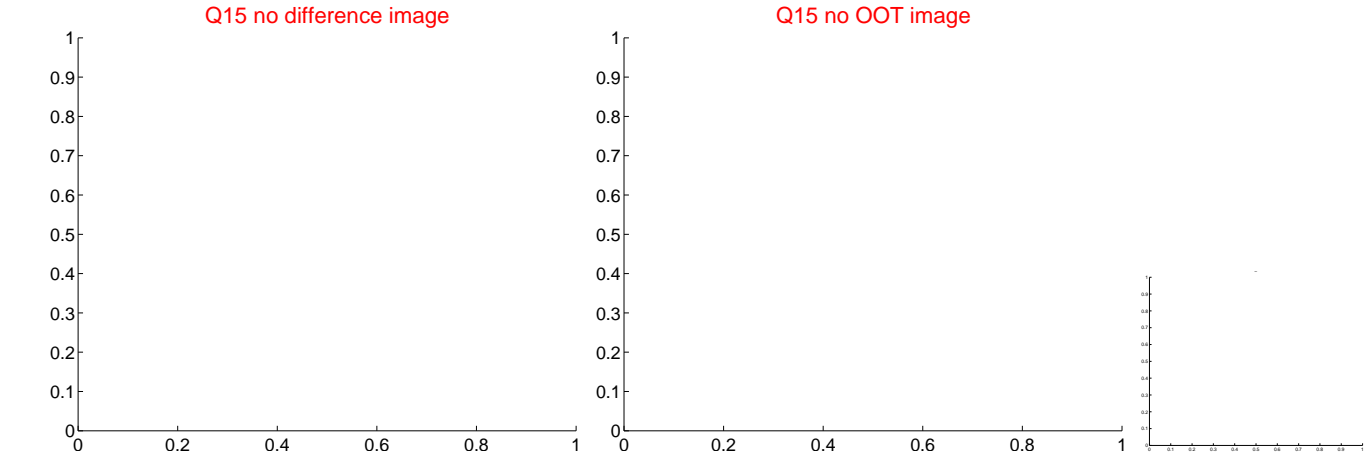
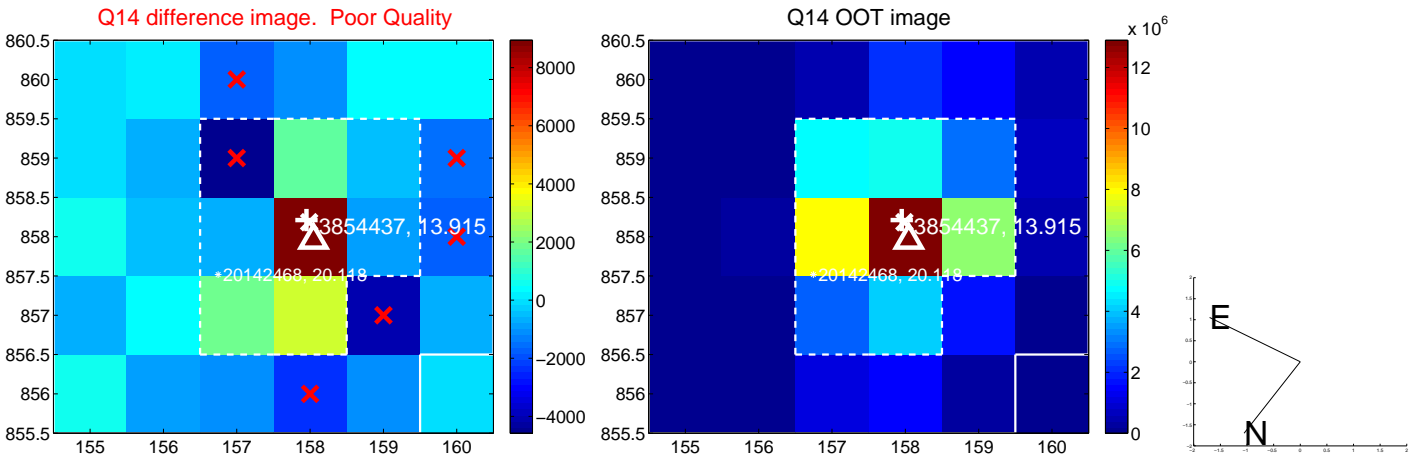
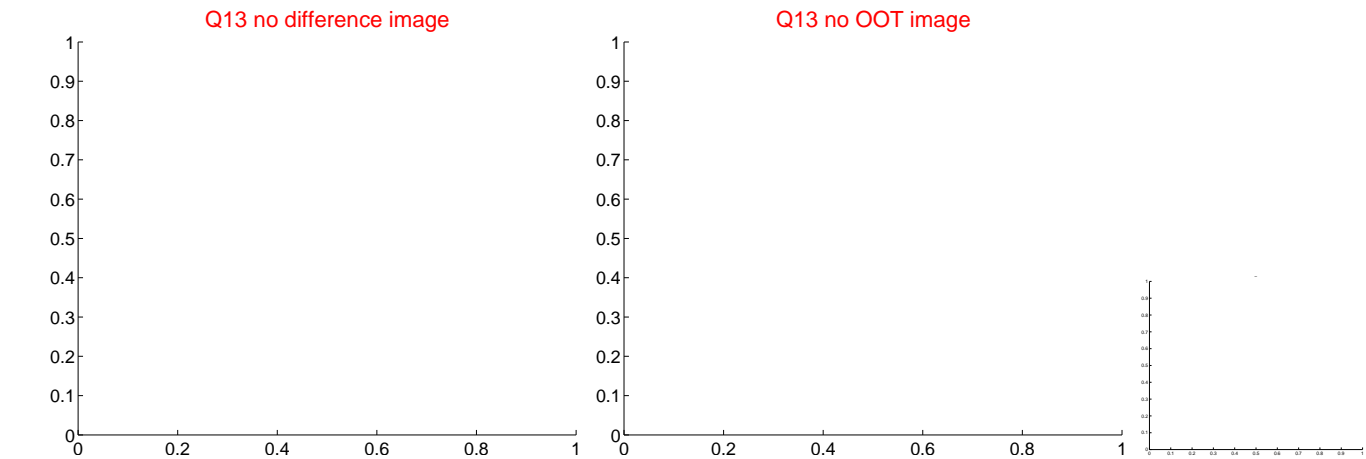
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



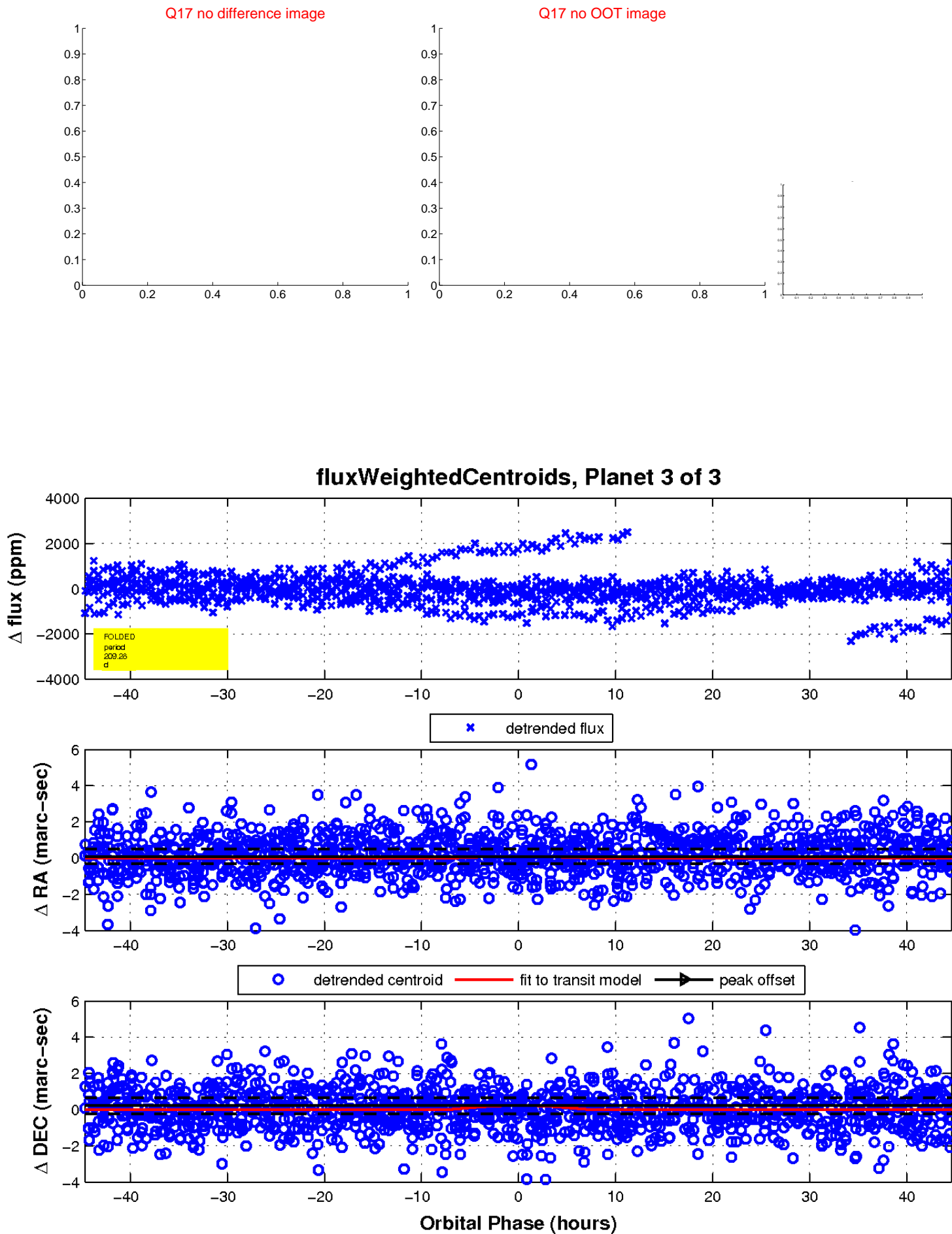
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

