

KIC 008511137

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})
008511137-01	OBS	No	1.266384	133.418481	0.0	7.588	9.8	0.0	2.70	7701	0.02	28198.53
008511137-02	OBS	No	47.561851	141.928233	129.4	2.258	8.5	9.5	2.70	7701	3.50	224.20
008511137-03	OBS	No	109.651737	132.774673	145.9	2.193	8.2	9.4	2.70	7701	3.87	73.61
008511137-04	OBS	No	57.706822	156.280597	134.9	2.527	8.1	9.0	2.70	7701	3.61	173.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008511137-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008511137-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008511137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008511137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

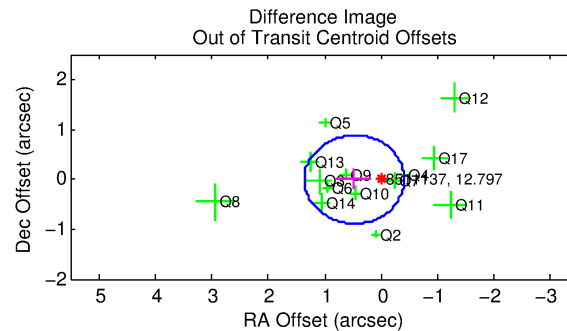
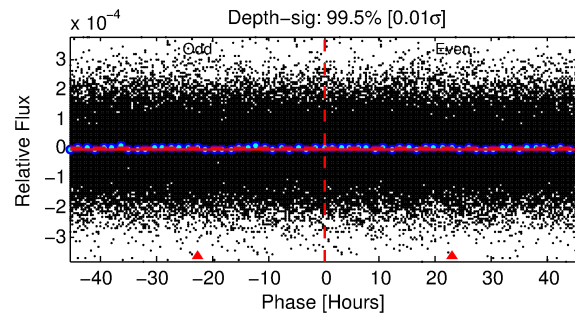
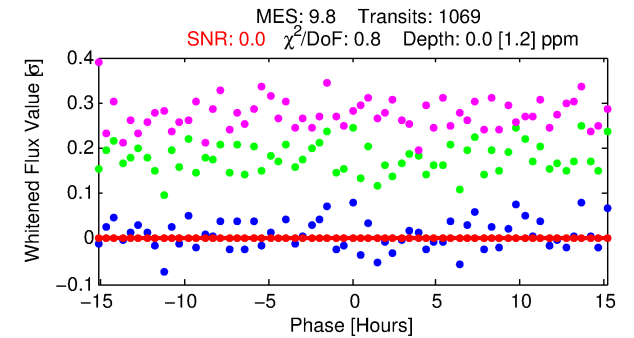
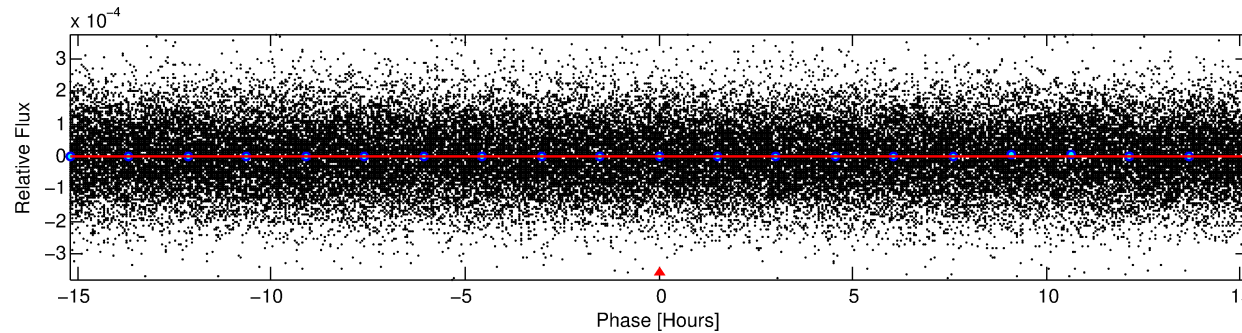
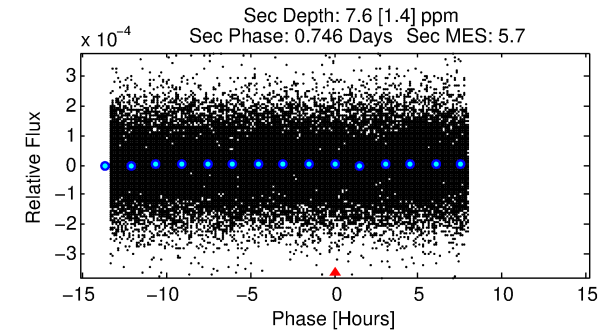
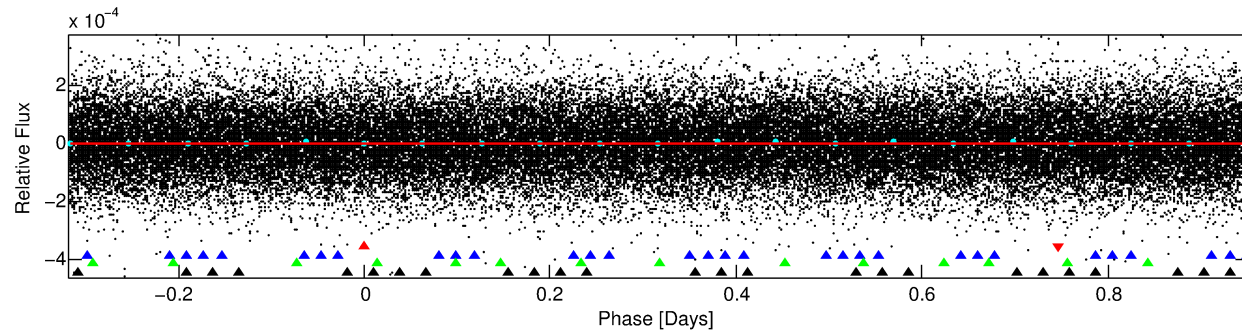
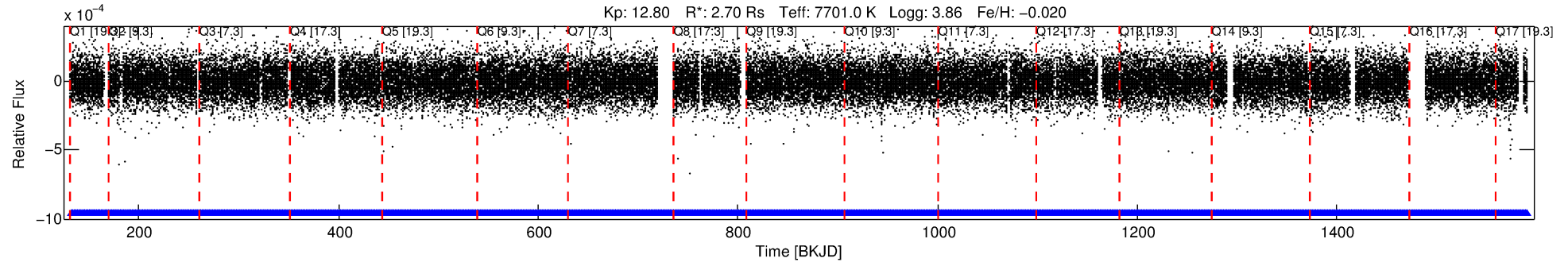
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008511137-01

No Significant Match Found

DV One-Page Summary

KIC: 8511137 Candidate: 1 of 4 Period: 1.266 d



DV Fit Results:

Period = 1.26638 [0.05210] d
Epoch = 133.4185 [17.2548] BKJD
Rp/R* = 0.0001 [0.0091]
a/R* = 1.35 [31.94]
b = 0.42 [110.45]
Seff = 28198.53 [16169.35]
Teq = 3304 [474] K
Rp = 0.02 [2.68] Re
a = 0.0286 [0.0101] AU
Ag = 11371.87 [3529059.72] [0.00σ]
Teffp = 52757 [4093296] K [0.01σ]

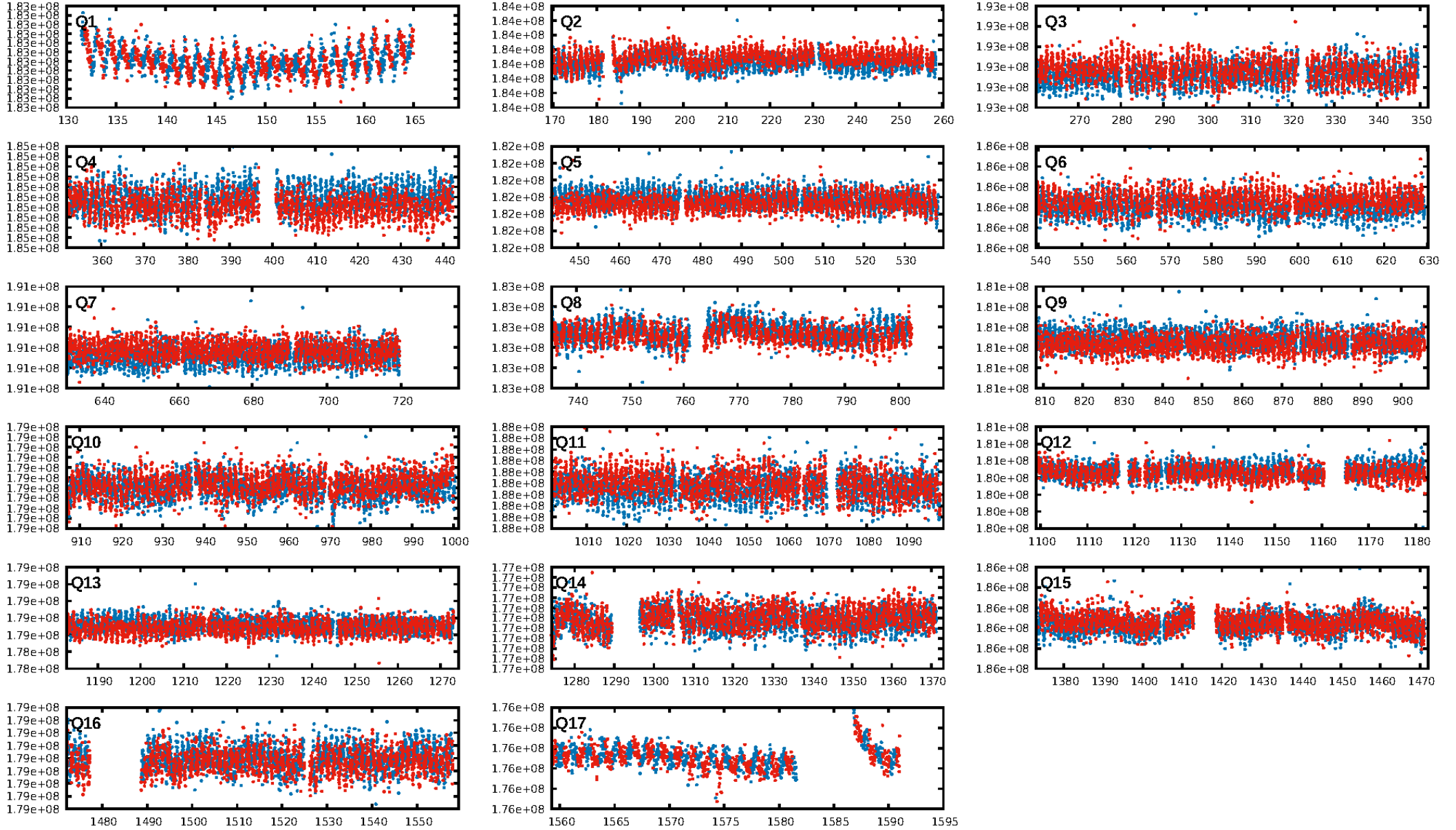
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [140.35σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.84e-15
RollingBand-fgt: 1.00 [1020/1020]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.476 arcsec [1.61σ]
KicOffset-rm: 0.443 arcsec [1.35σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 1.00 [17/17]

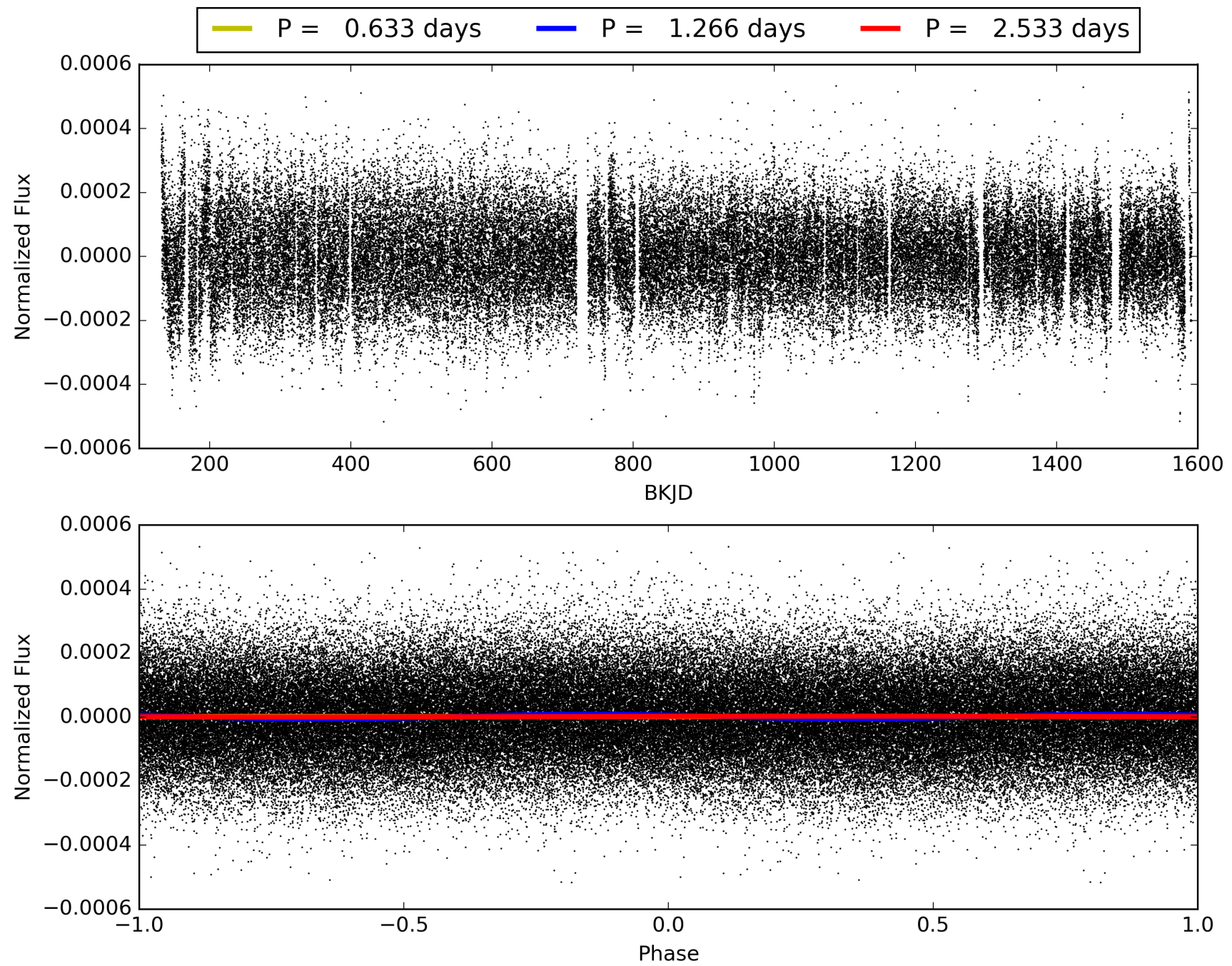
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008511137-01, PDC Light Curves

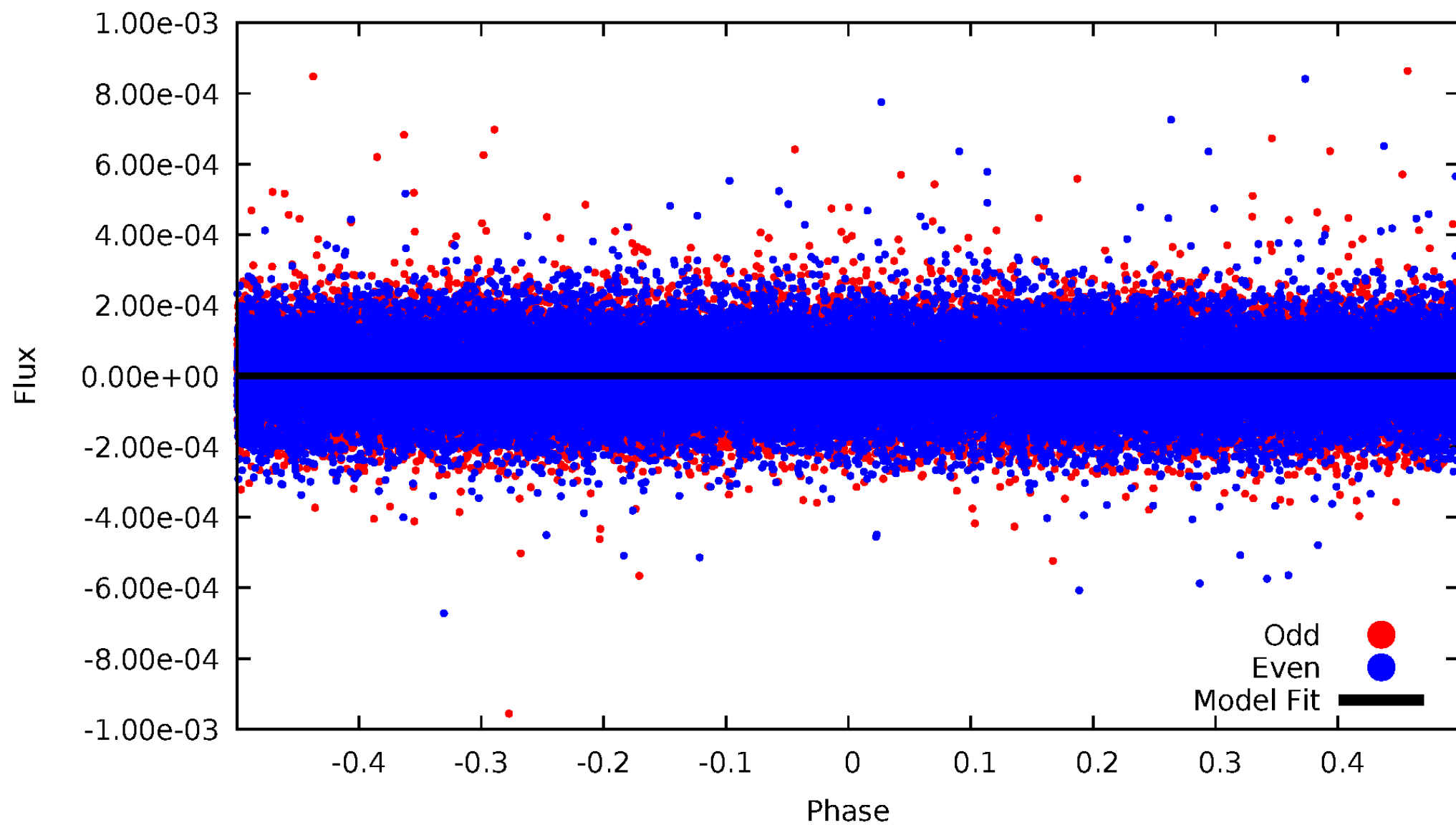


TCE 008511137-01



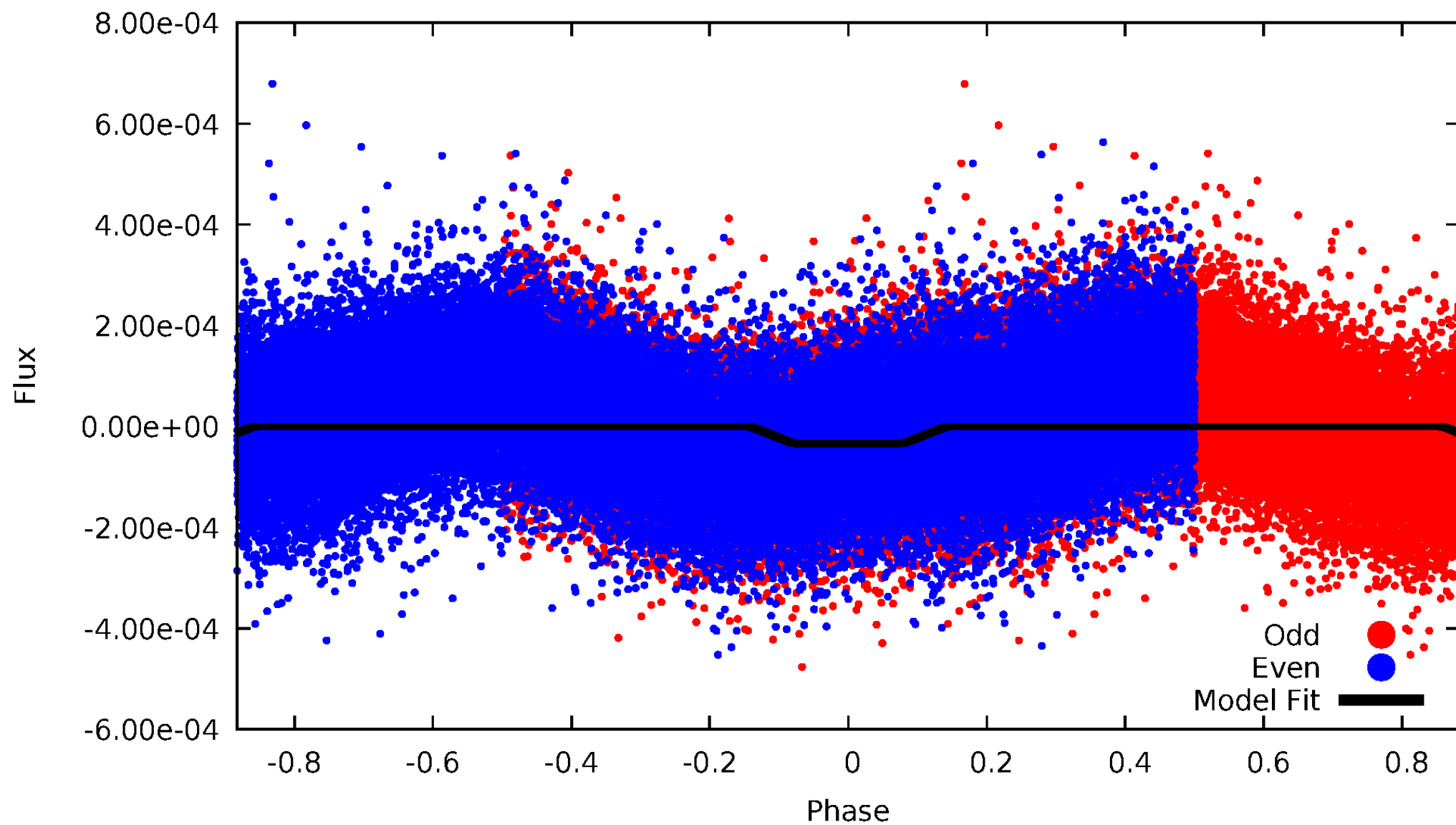
DV Odd/Even

TCE 008511137-01



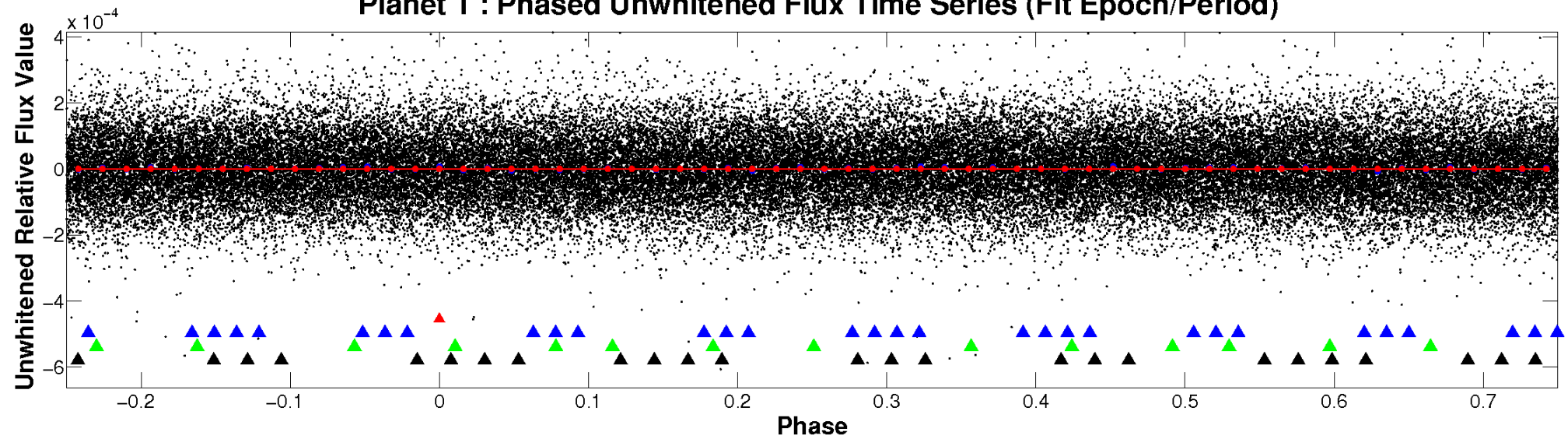
ALT Odd/Even

TCE 008511137-01

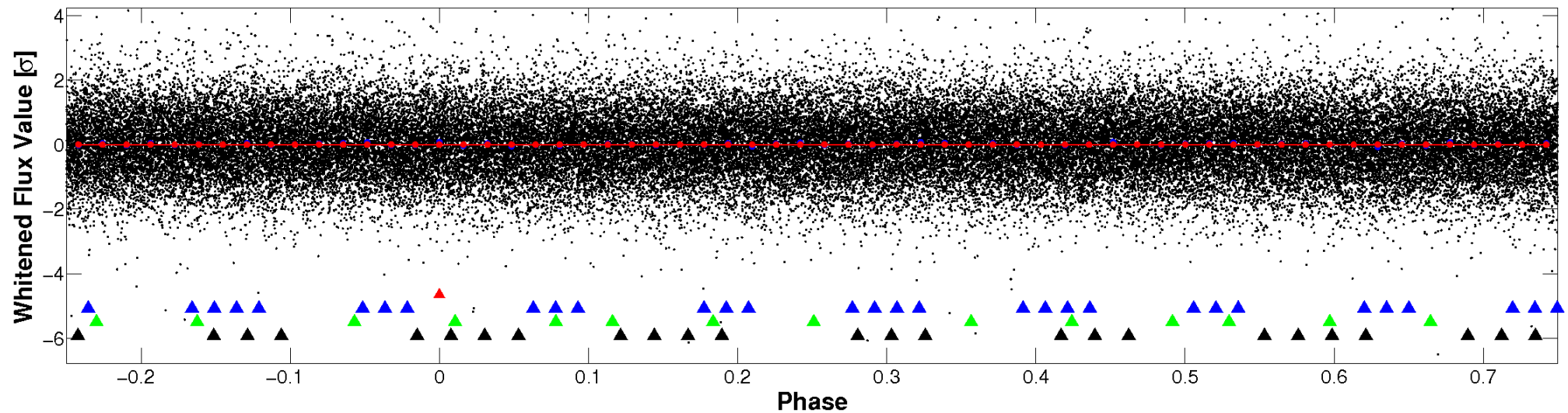


Non-Whitened Vs. Whitened Light Curve

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

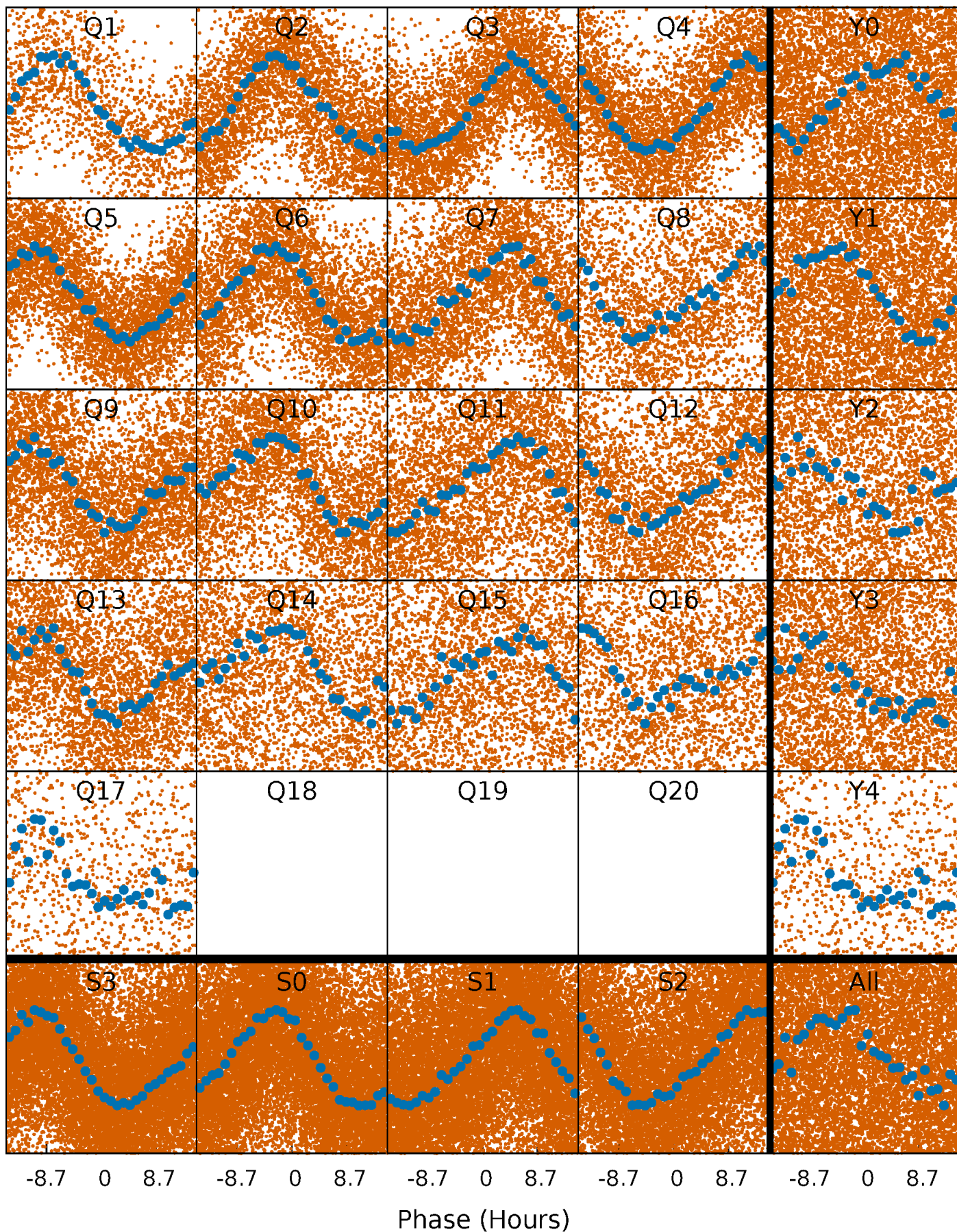


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



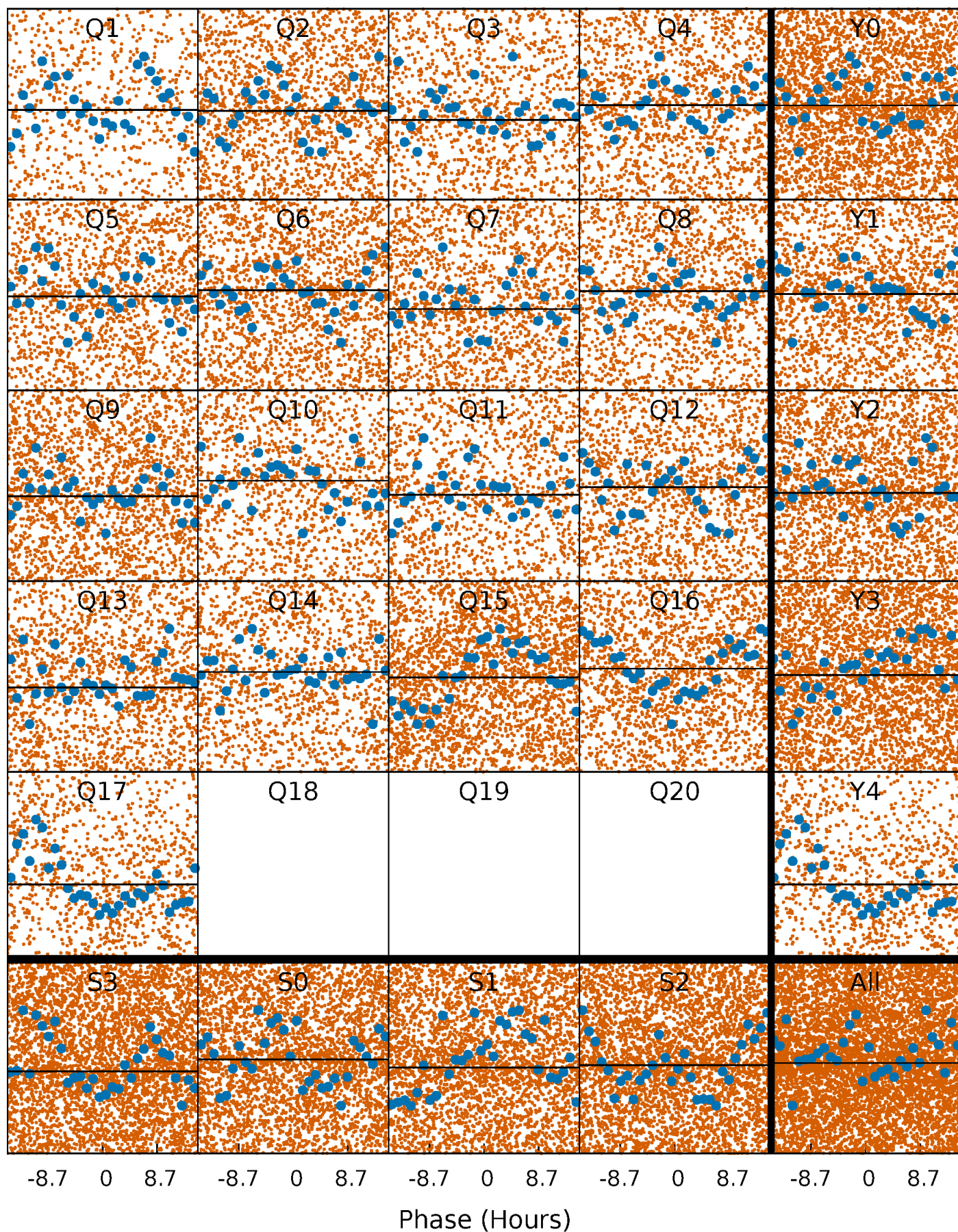
PDC Quarter-Phased Transit Curves

TCE 008511137-01 P= 1.266384 Days $T_0=133.418480$ (BKJD)



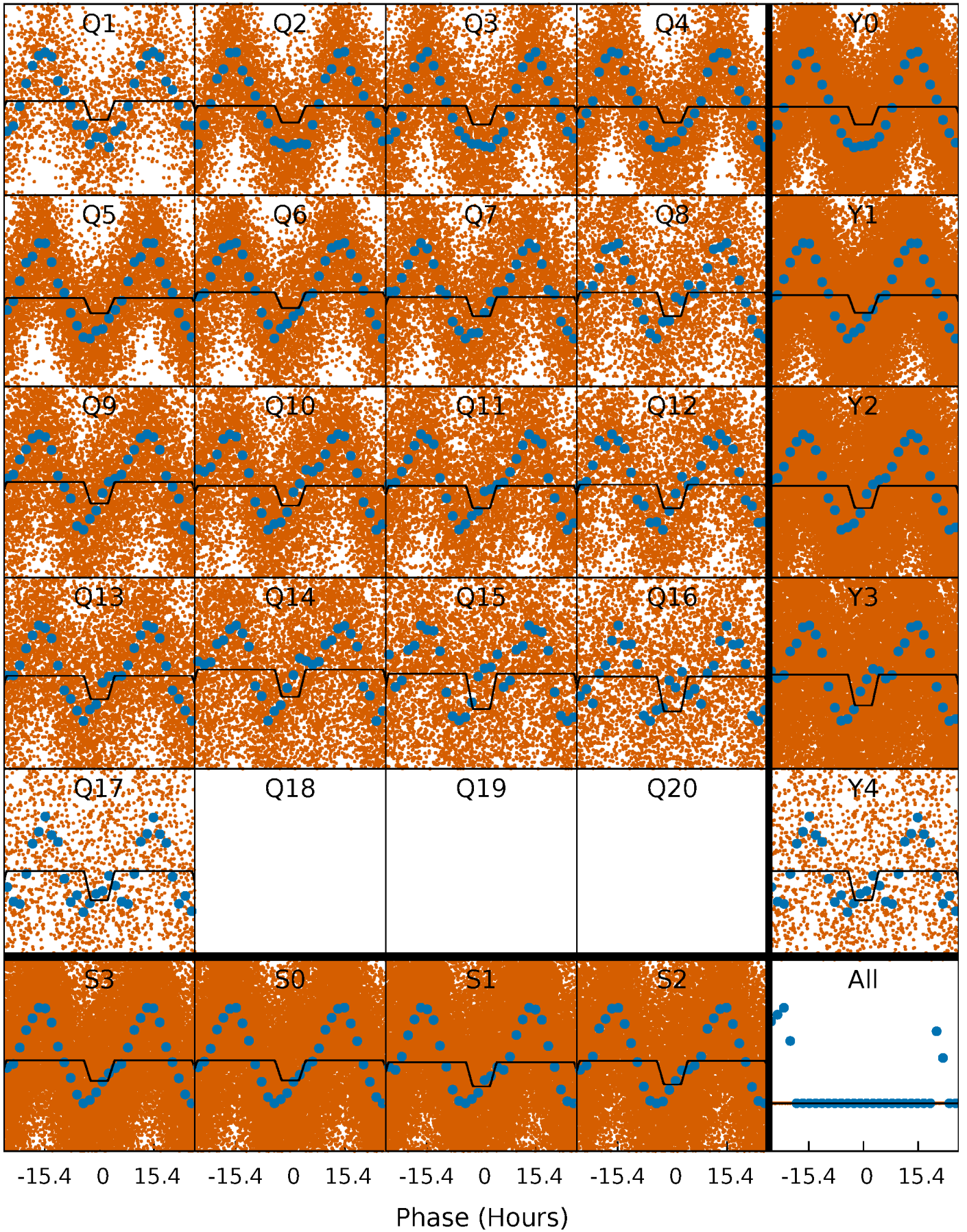
DV Quarter-Phased Transit Curves

TCE 008511137-01 P= 1.266384 Days $T_0=133.418480$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

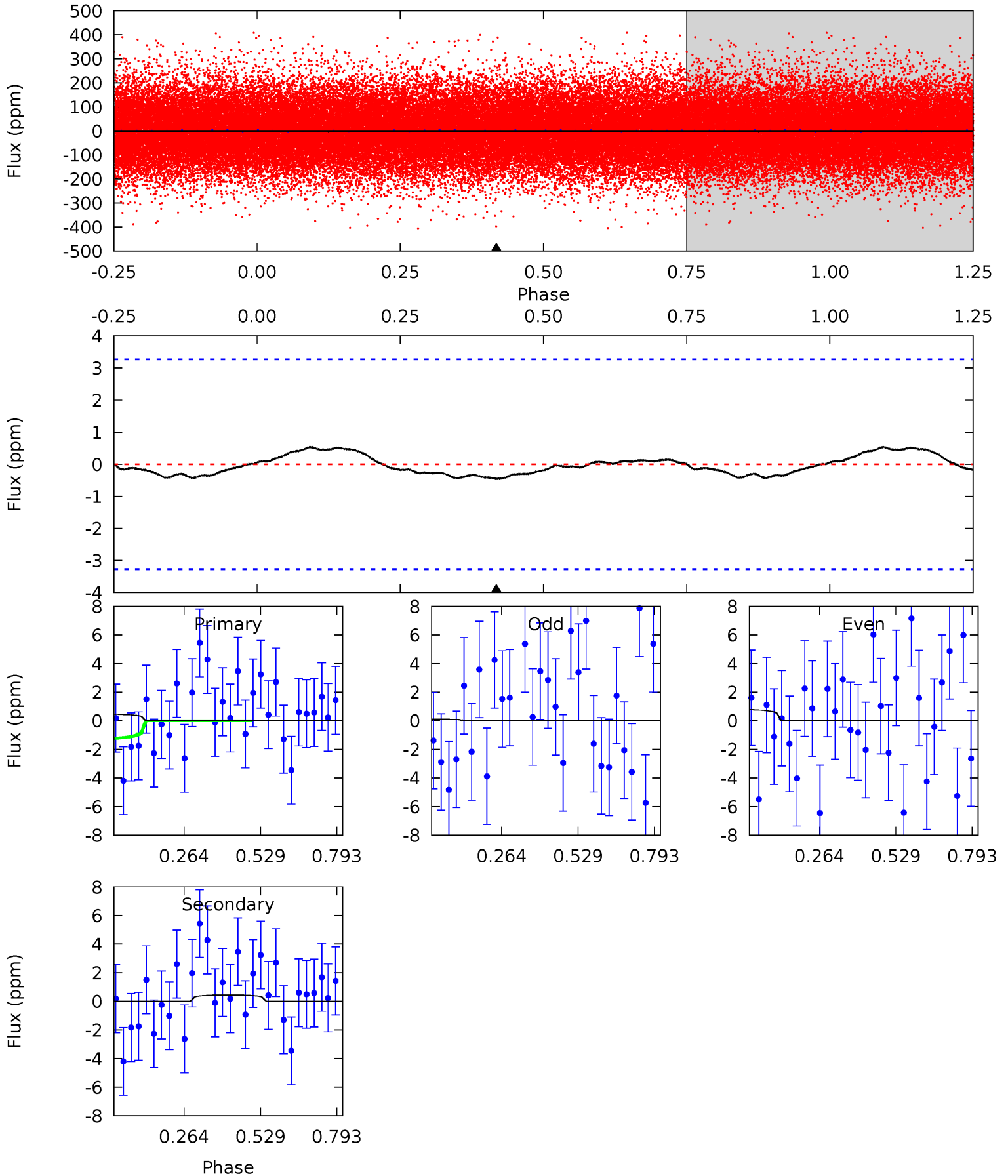
TCE 008511137-01 P= 1.270783 Days $T_0=132.436292$ (BKJD)



DV Model-Shift Uniqueness Test

008511137-01, P = 1.266384 Days, E = 130.885712 Days

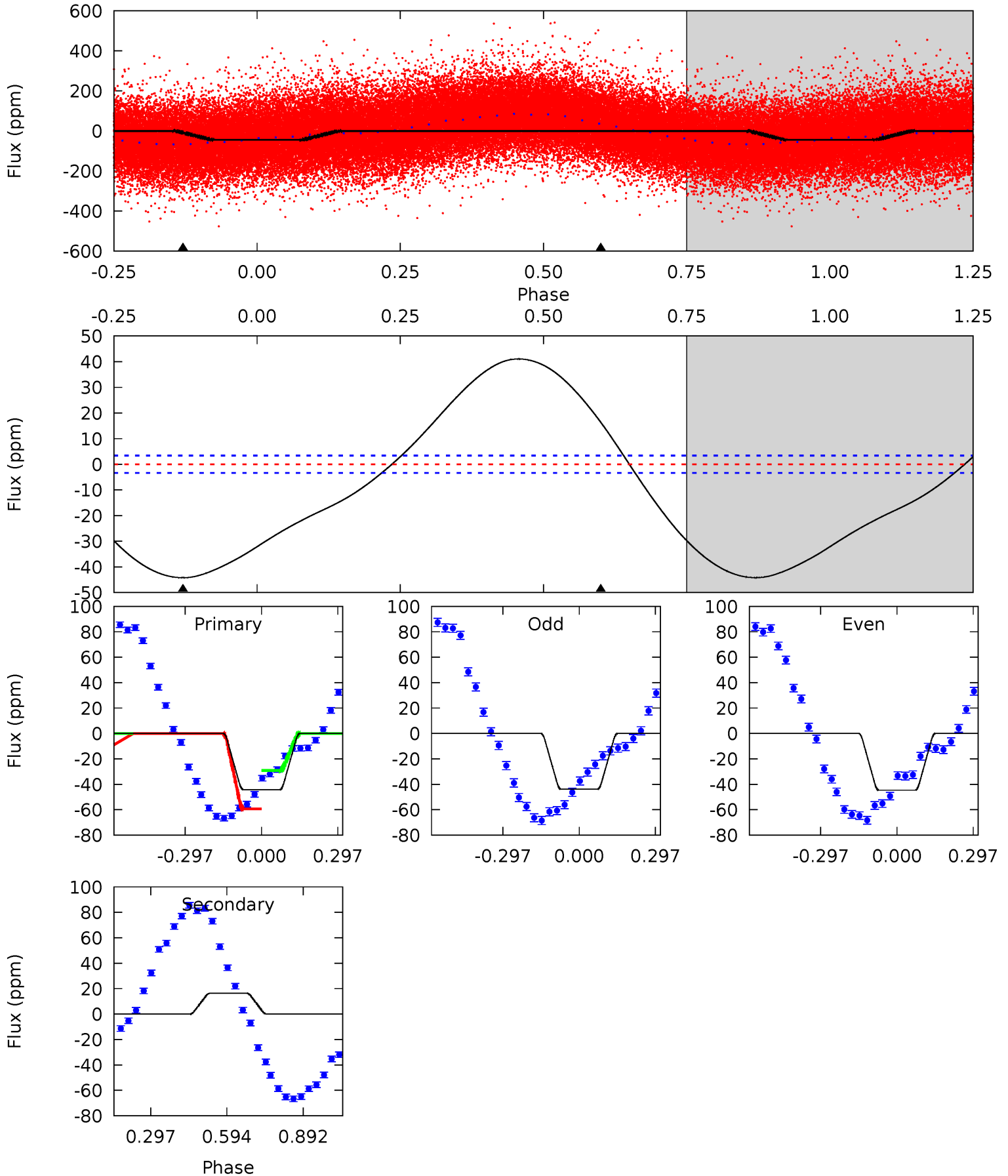
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.60	0.60	0	0	4.36	1.12	0.39	0.60	0.60	0.60	0.60	0.45	0.53	0.54	0.43



Alt Model-Shift Uniqueness Test

008511137-01, P = 1.270783 Days, E = 131.165509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.6	-20.9	0	0	4.33	1.04	9.85	56.6	56.6	-20.9	-20.9	0.51	0.98	0.48	20.1



Stellar Parameters For KIC 008511137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7701^{+211}_{-316}	$3.862^{+0.315}_{-0.105}$	$-0.020^{+0.200}_{-0.350}$	$2.703^{+0.443}_{-1.034}$	$1.939^{+0.083}_{-0.471}$	$0.138^{+0.325}_{-0.046}$
	+3%/-4%	+8%/-3%	+1000%/-1750%	+16%/-38%	+4%/-24%	+235%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008511137-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-0 ± 1	$1.74^{+1.79}_{-1.28}$	4530^{+299}_{-416}	-3798^{+7671}_{-374}	$0.041^{+0.558}_{-0.079}$
Alt.	16 ± 1	$2.38^{+2.36}_{-1.59}$	4503^{+342}_{-452}	-5441^{+923}_{-3892}	$-1.239^{+0.916}_{-10.229}$

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

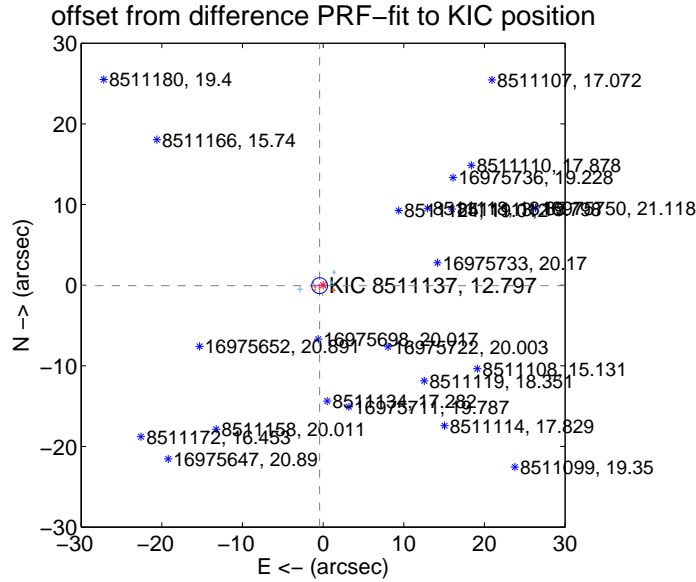
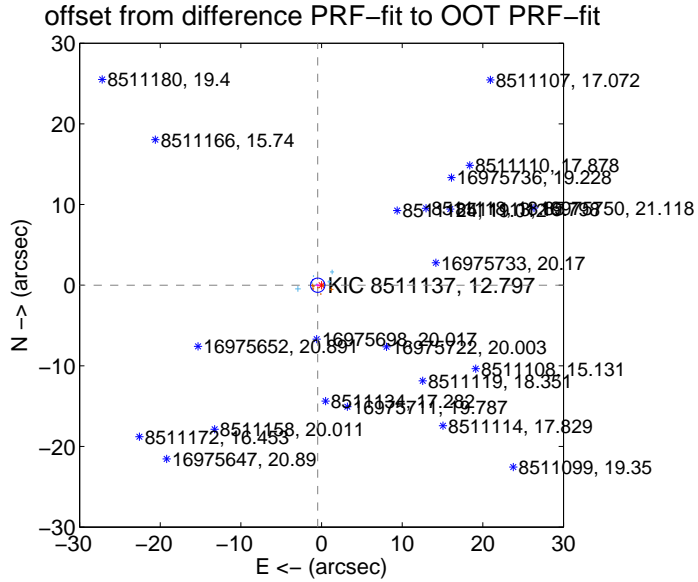
DV Centroid Data

Supplemental centroid analysis for 008511137-01. Kepler magnitude: 12.80. Transit SNR 0.00

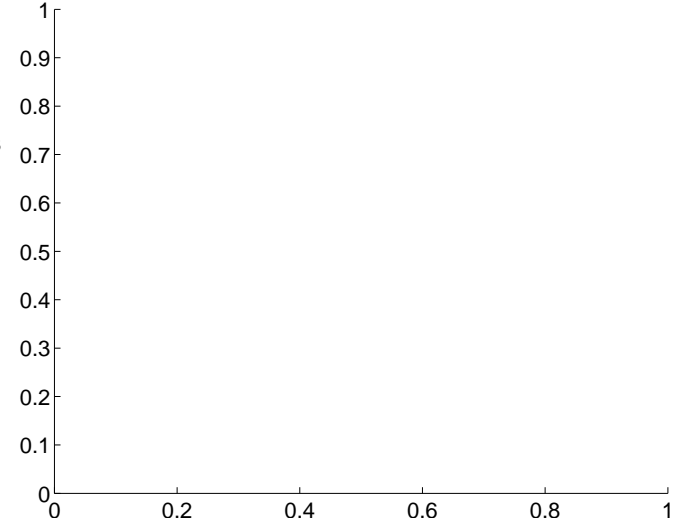
There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.476 ± 0.295	1.61	0.476 ± 0.294	-0.007 ± 0.190
PRF-fit source offset from KIC position	0.443 ± 0.327	1.35	0.438 ± 0.321	-0.061 ± 0.191
photometric centroid source offset	—	—	—	—

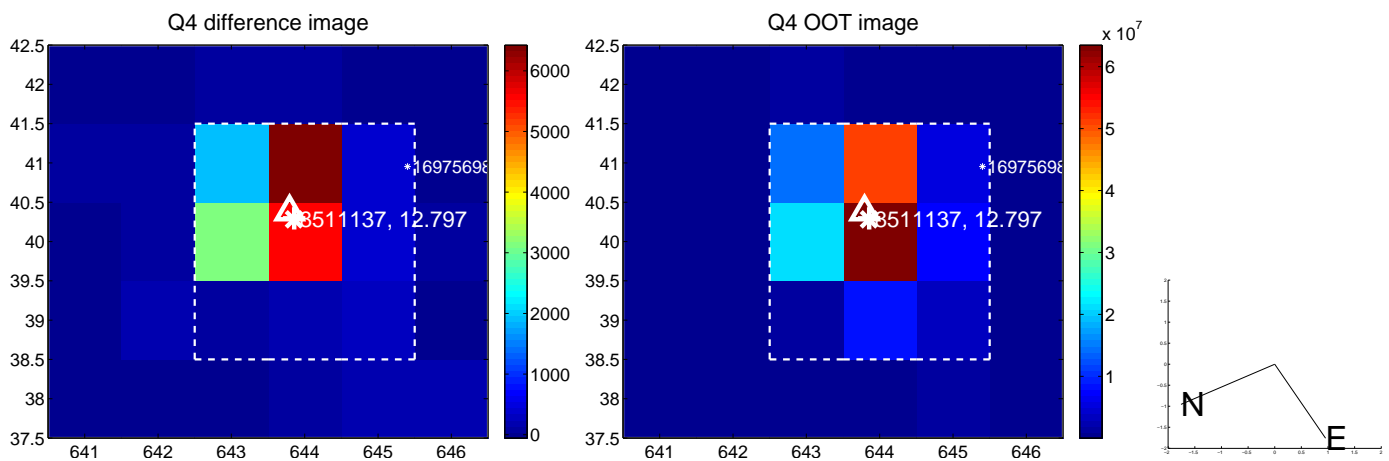
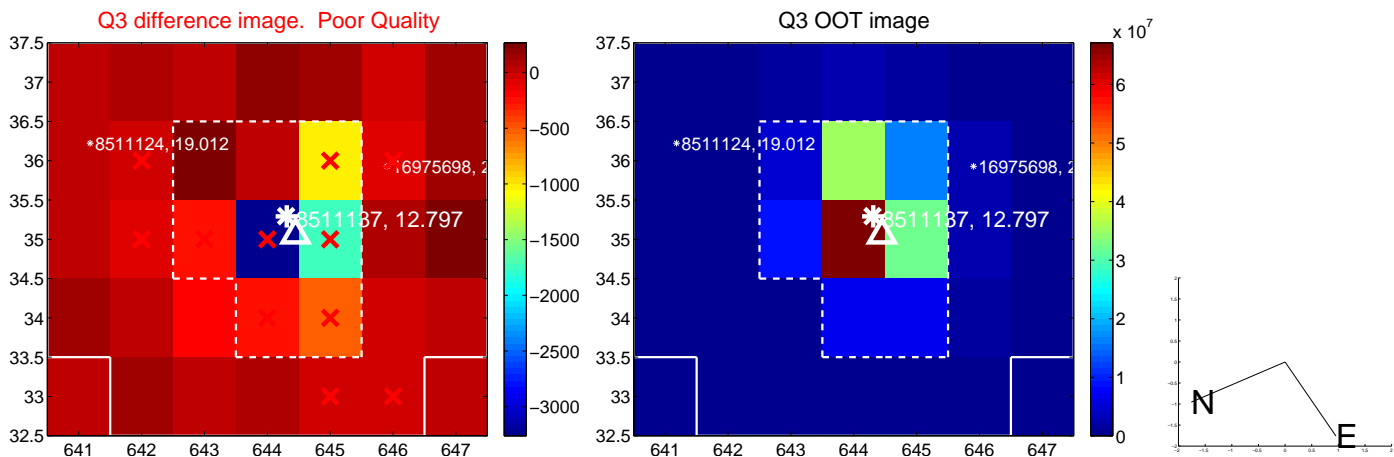
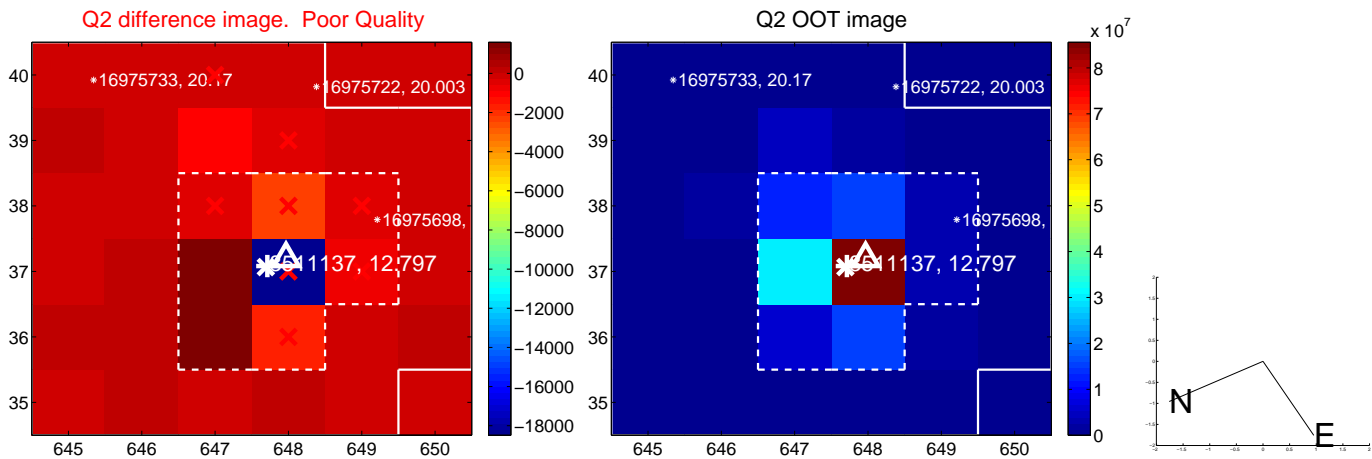
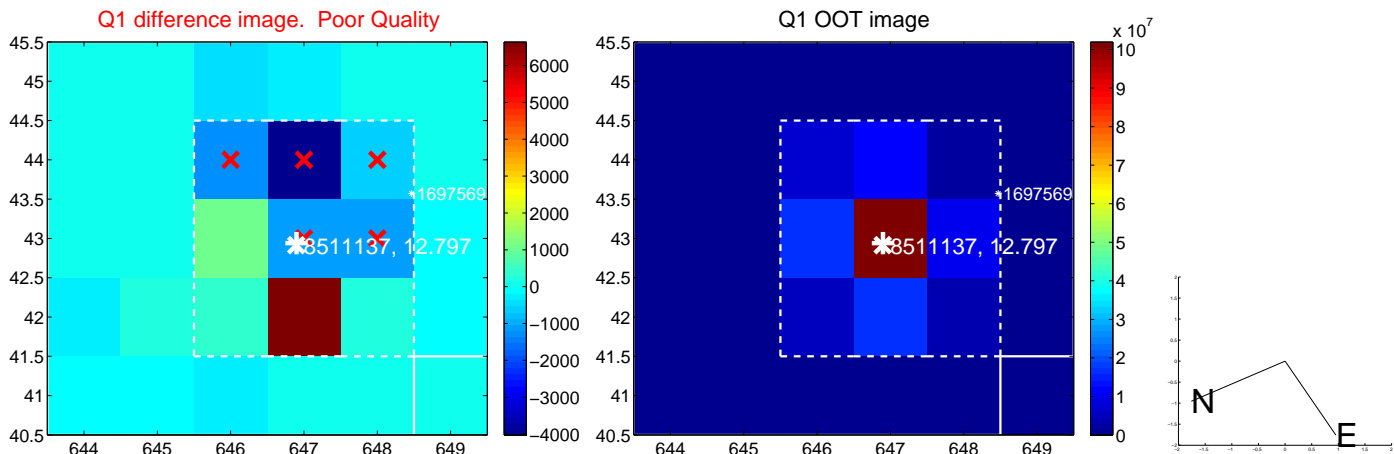


There are no photometric centroids

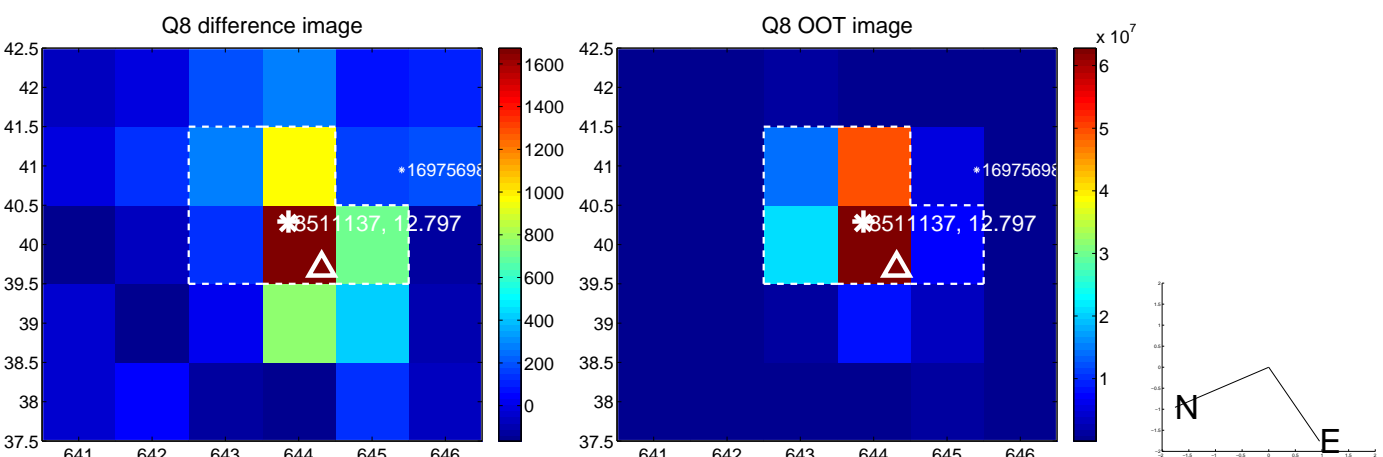
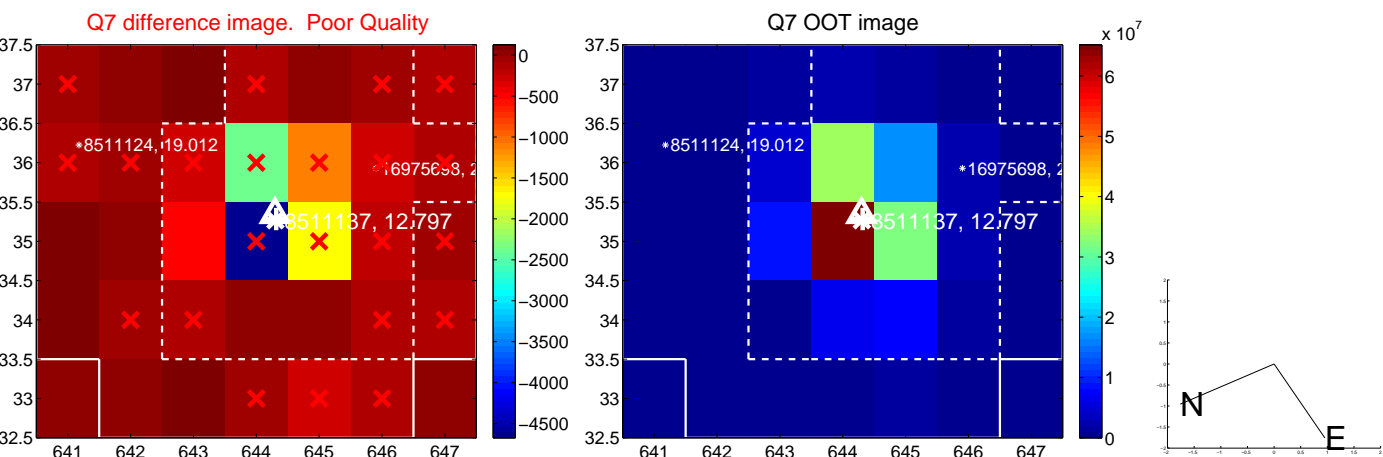
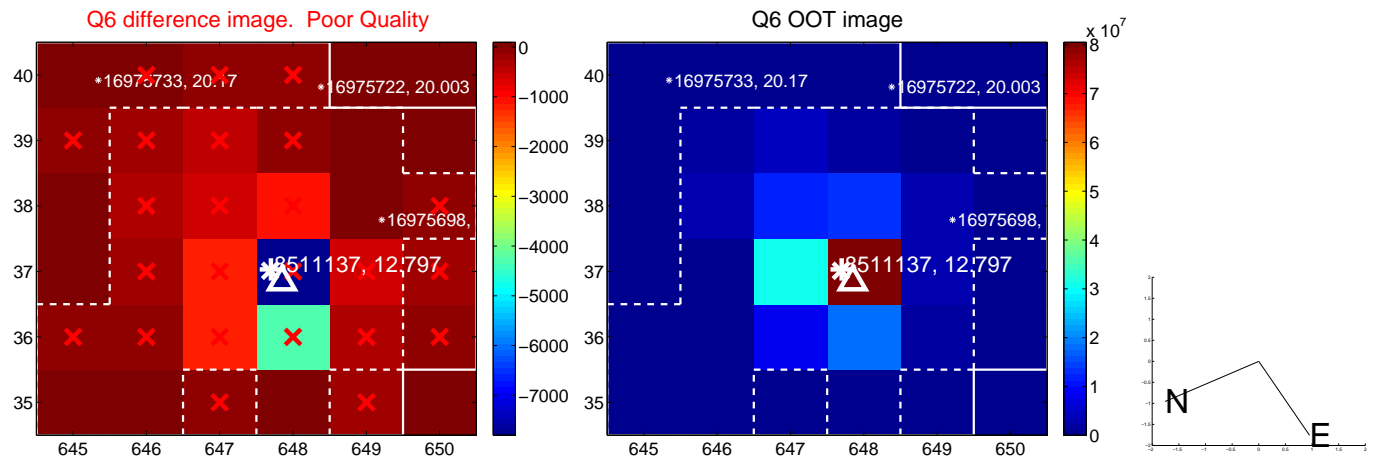
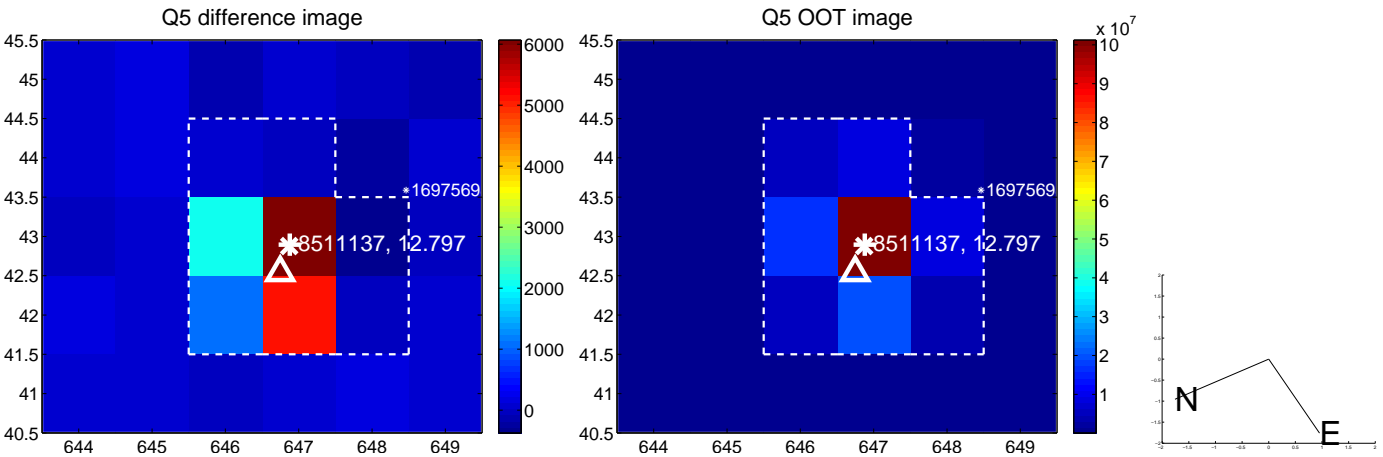


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

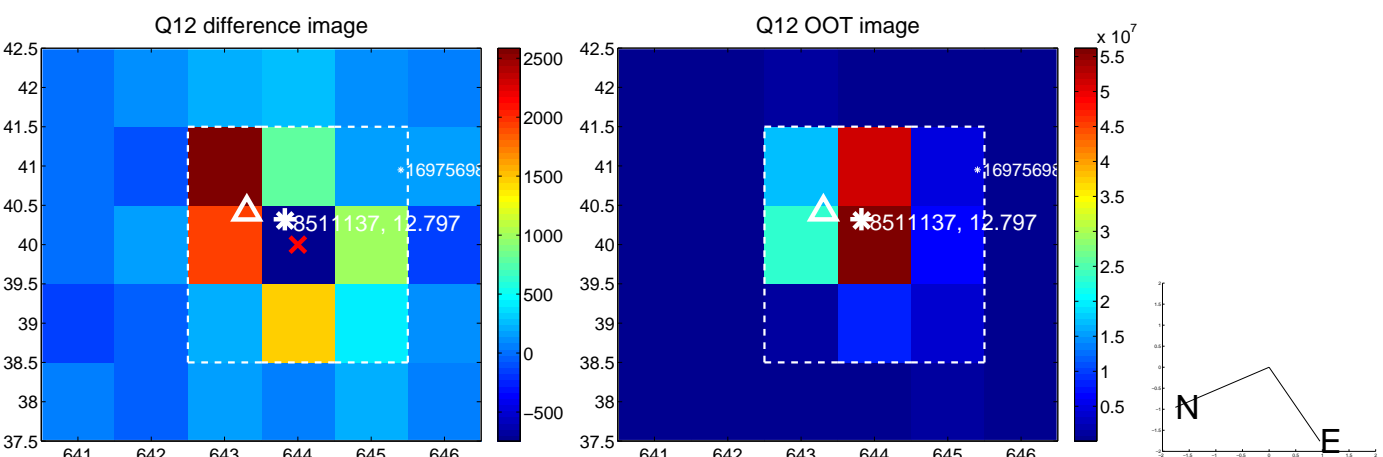
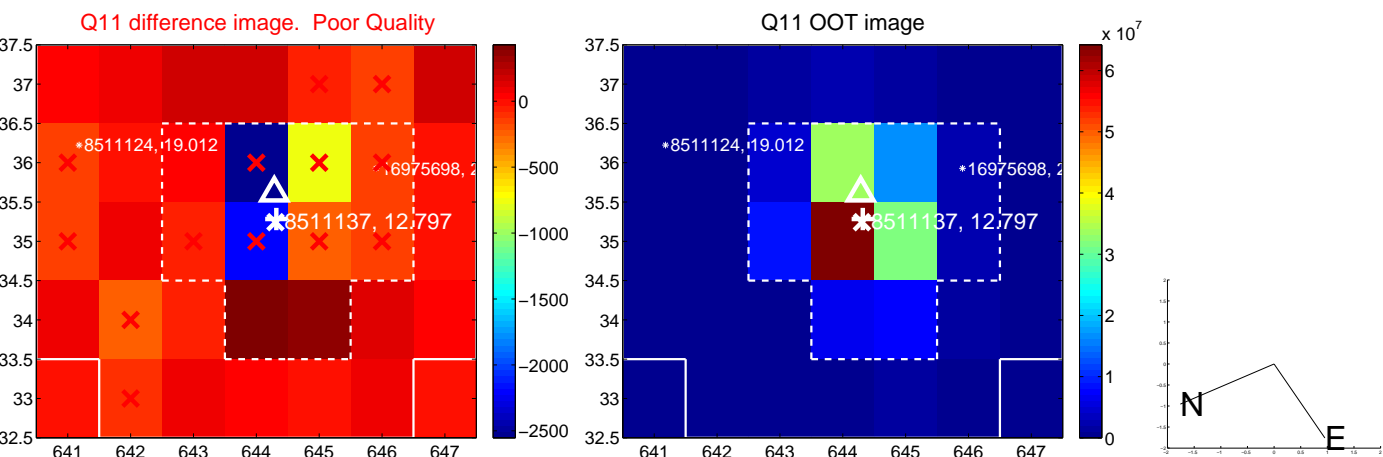
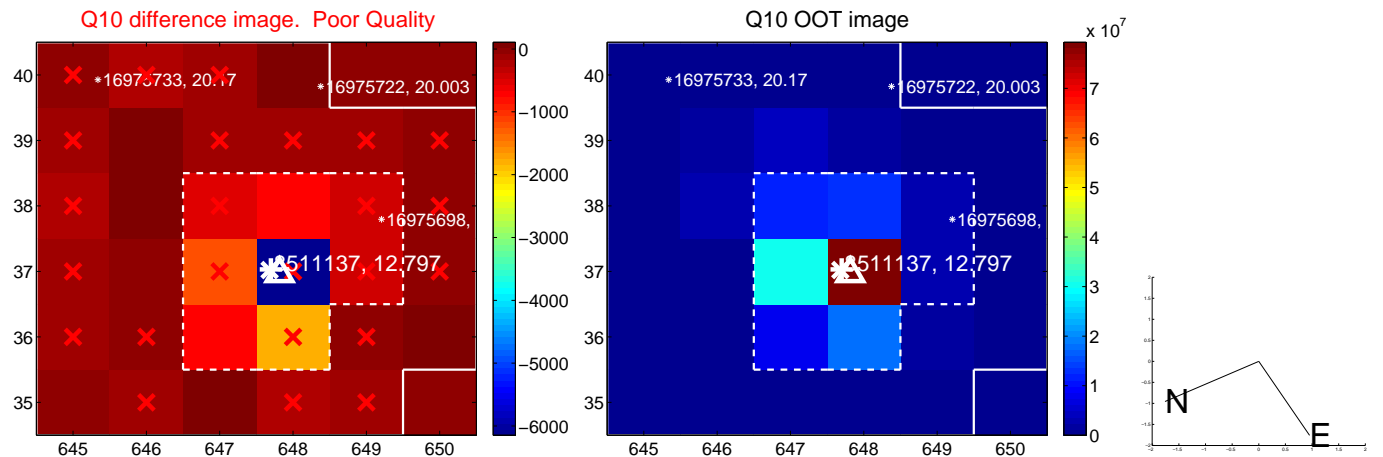
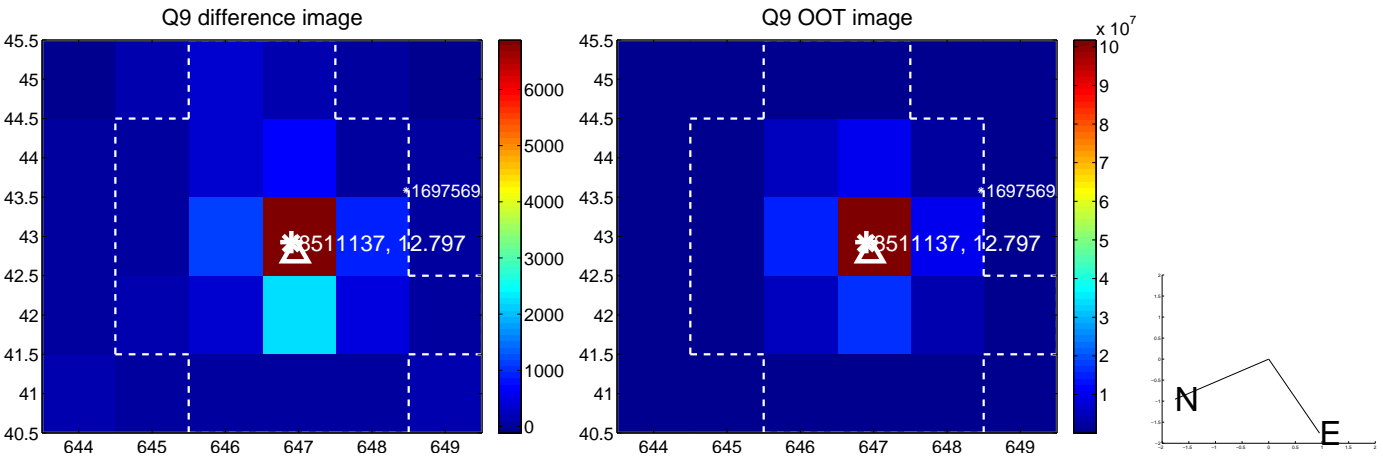
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



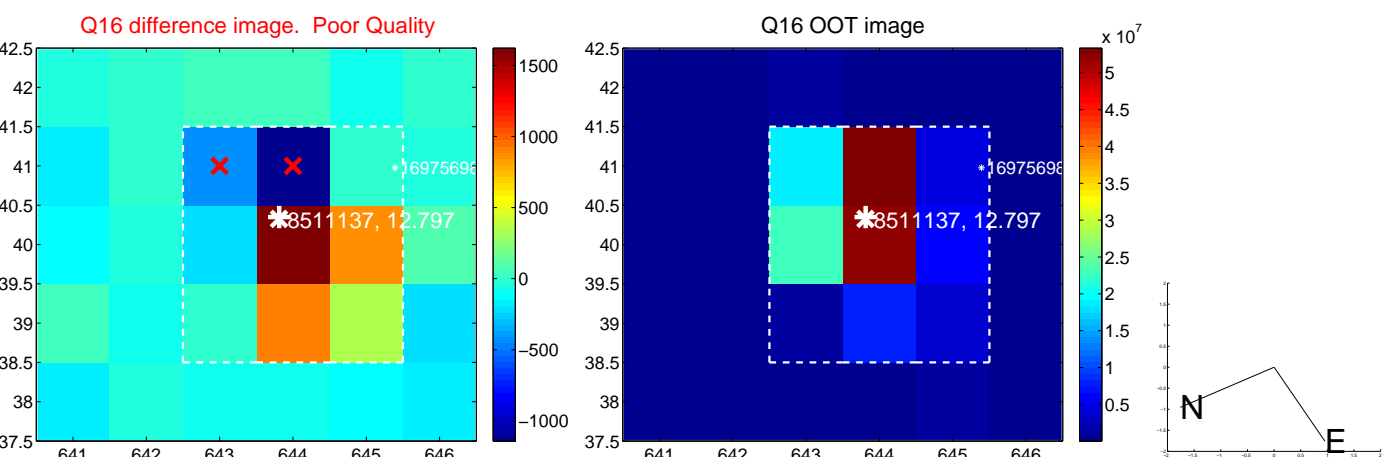
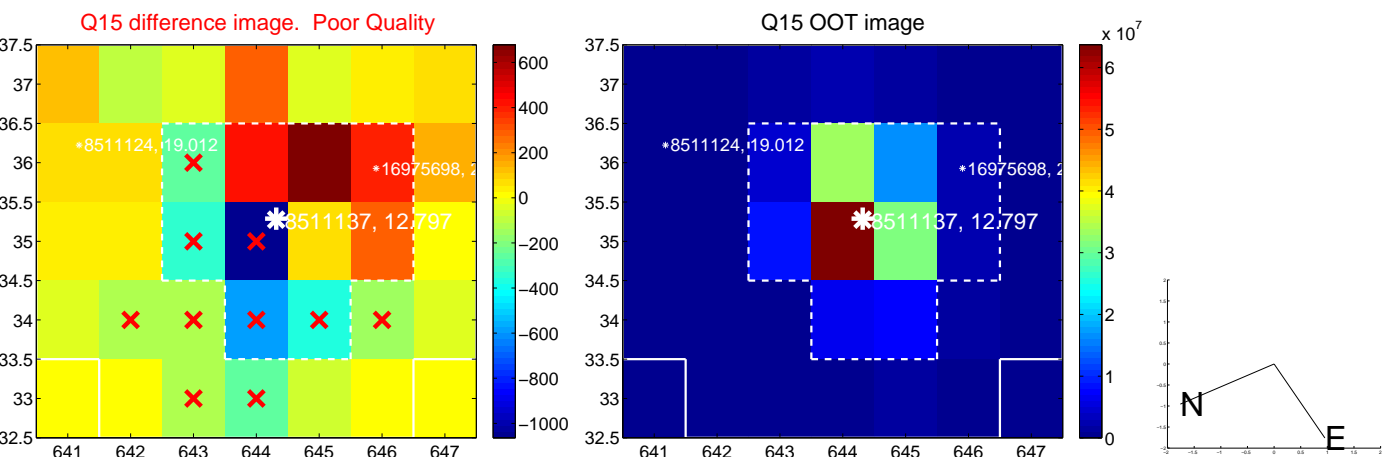
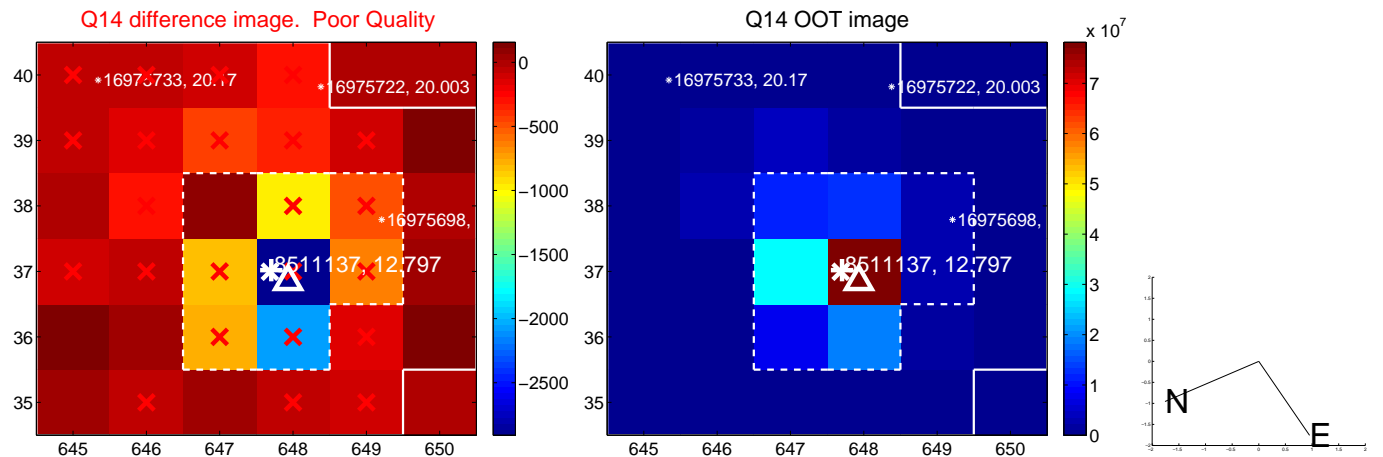
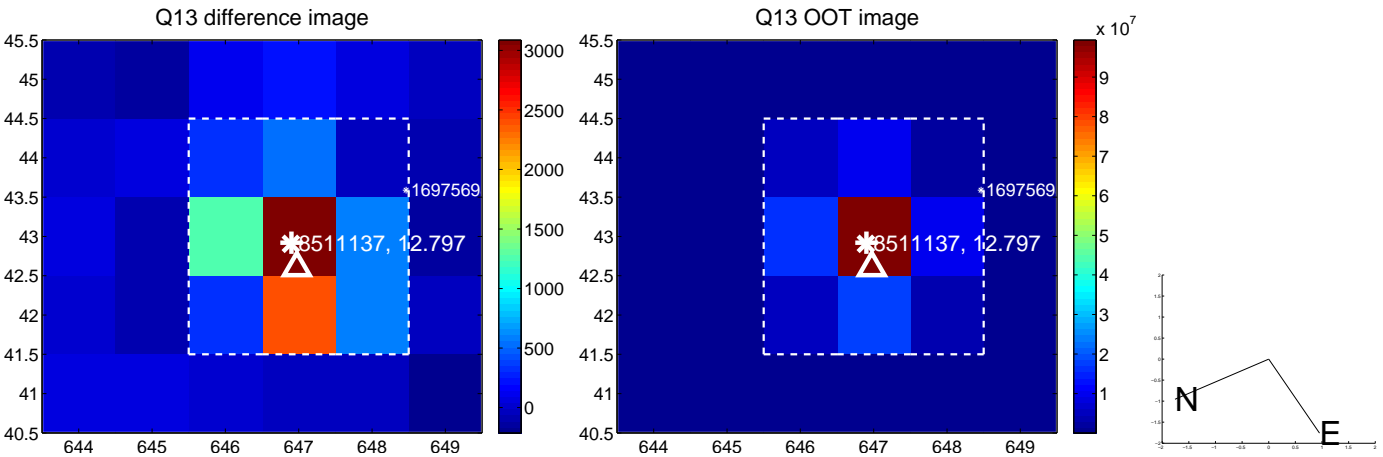
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



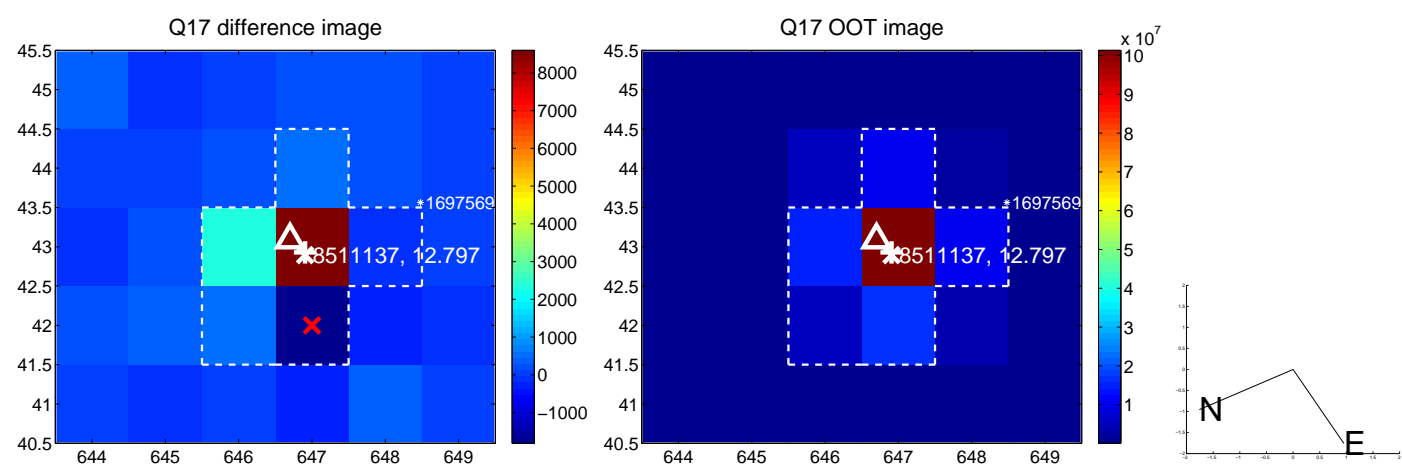
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



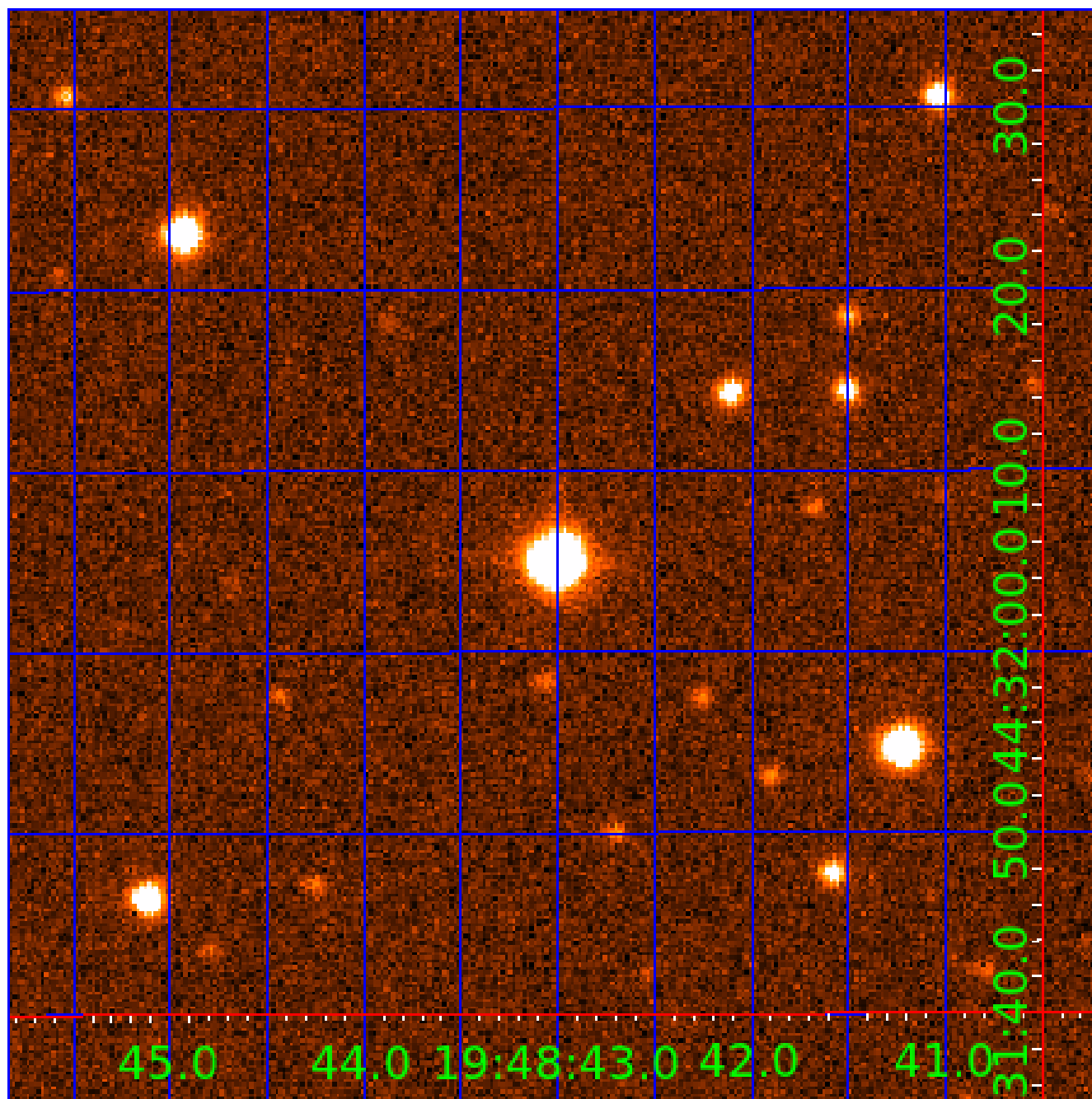
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 008511137

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})
008511137-01	OBS	No	1.266384	133.418481	0.0	7.588	9.8	0.0	2.70	7701	0.02	28198.53
008511137-02	OBS	No	47.561851	141.928233	129.4	2.258	8.5	9.5	2.70	7701	3.50	224.20
008511137-03	OBS	No	109.651737	132.774673	145.9	2.193	8.2	9.4	2.70	7701	3.87	73.61
008511137-04	OBS	No	57.706822	156.280597	134.9	2.527	8.1	9.0	2.70	7701	3.61	173.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008511137-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008511137-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008511137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008511137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

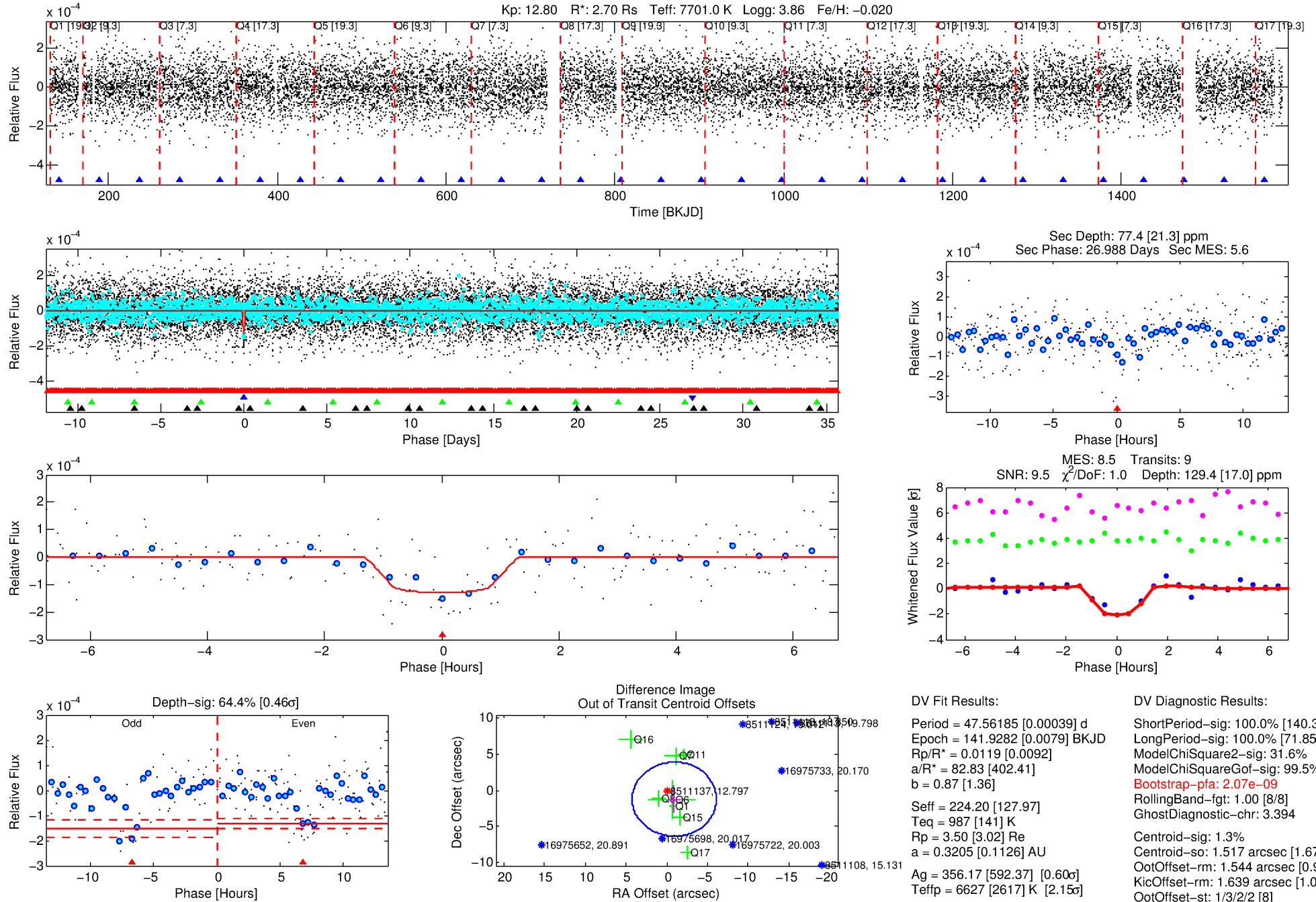
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008511137-02

No Significant Match Found

DV One-Page Summary

KIC: 8511137 Candidate: 2 of 4 Period: 47.562 d



DV Fit Results:

Period = 47.56185 [0.00039] d
Epoch = 141.9282 [0.0079] BKJD
Rp/R* = 0.0119 [0.0092]
a/R* = 82.83 [402.41]
b = 0.87 [1.36]
Seff = 224.20 [127.97]
Teq = 987 [141] K
Rp = 3.50 [3.02] Re
a = 0.3205 [0.1126] AU
Ag = 356.17 [592.37] [0.60 σ]
Teffp = 6627 [2617] K [2.15 σ]

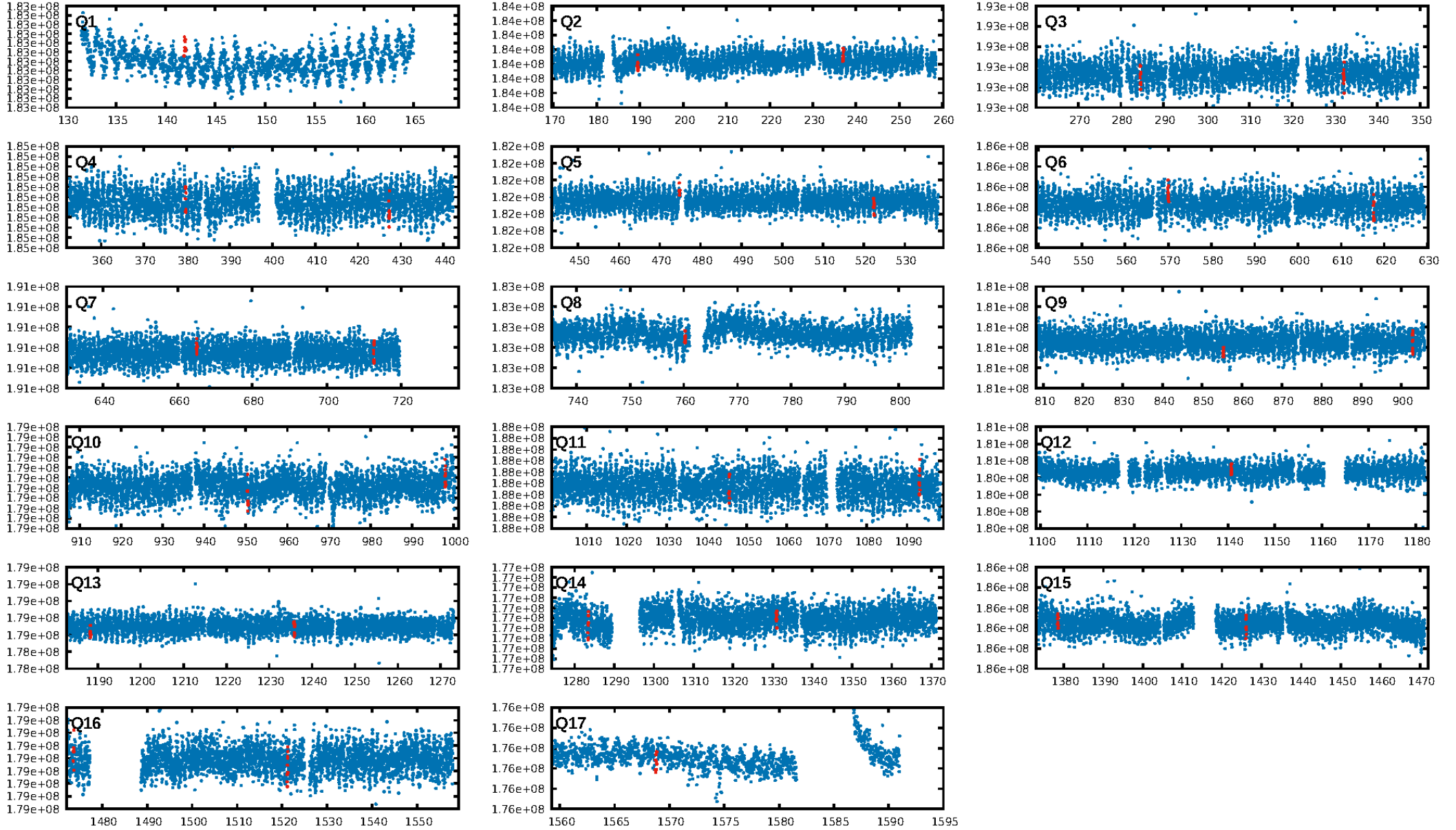
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [140.35 σ]
LongPeriod-sig: 100.0% [71.85 σ]
ModelChiSquare2-sig: 31.6%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 2.07e-09
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 3.394
Centroid-sig: 1.3%
Centroid-so: 1.517 arcsec [1.67 σ]
OotOffset-rm: 1.544 arcsec [0.90 σ]
OotOffset-st: 1/3/2/2 [8]
KicOffset-rm: 1.639 arcsec [1.04 σ]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.47 [8/17]

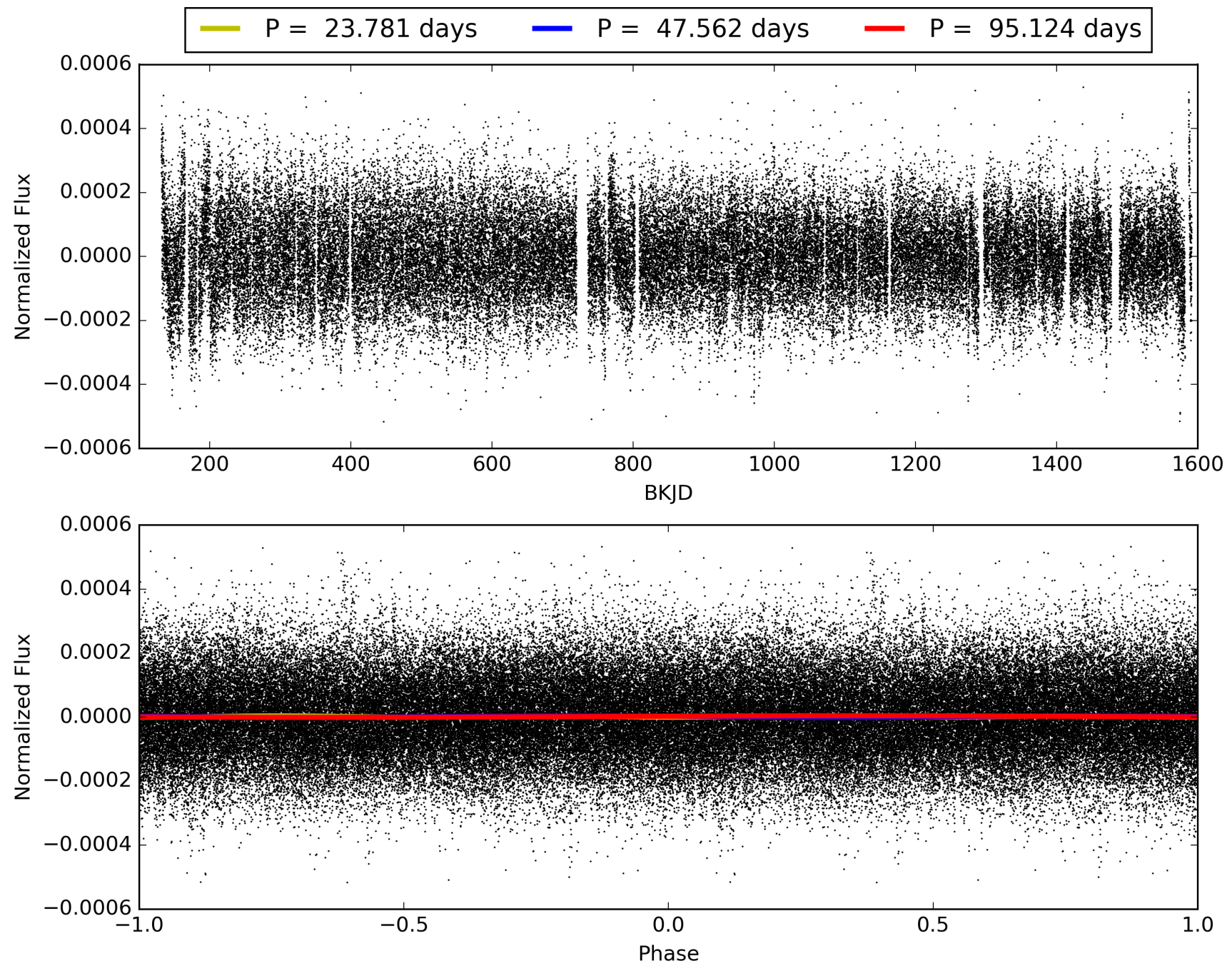
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:58:21 Z

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

TCE 008511137-02, PDC Light Curves

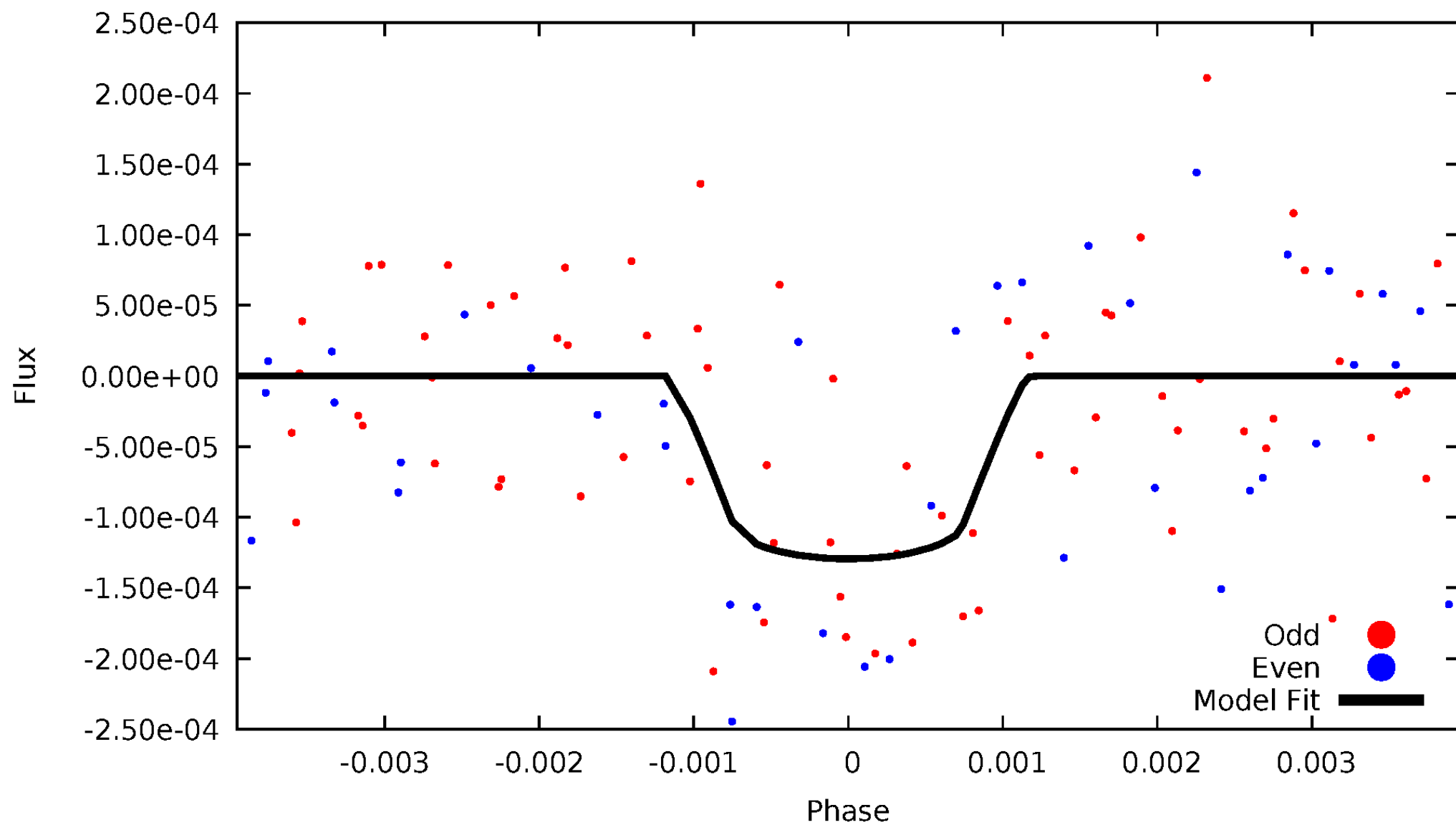


TCE 008511137-02



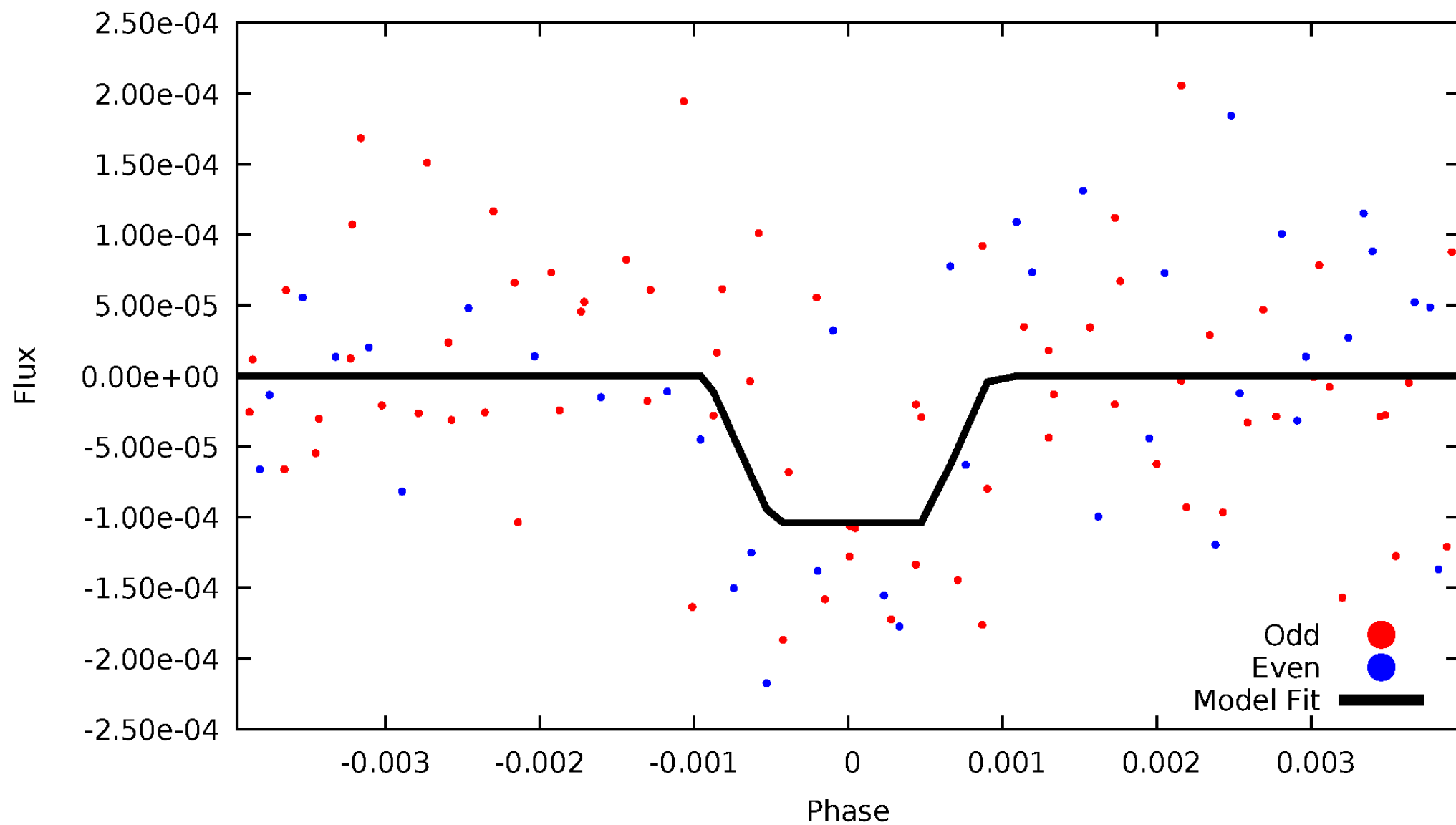
DV Odd/Even

TCE 008511137-02



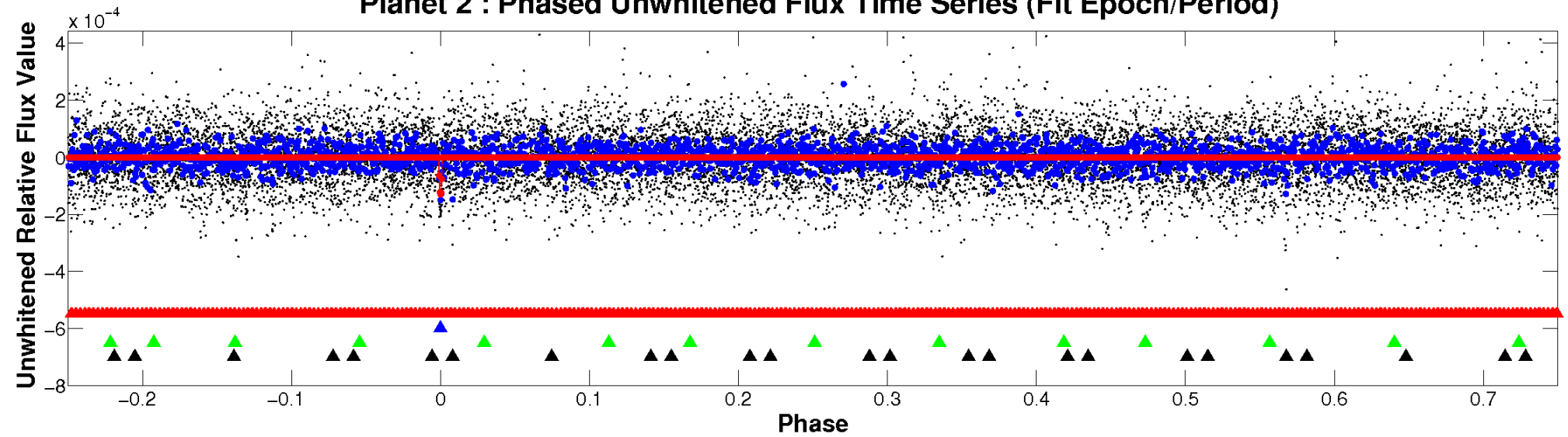
ALT Odd/Even

TCE 008511137-02

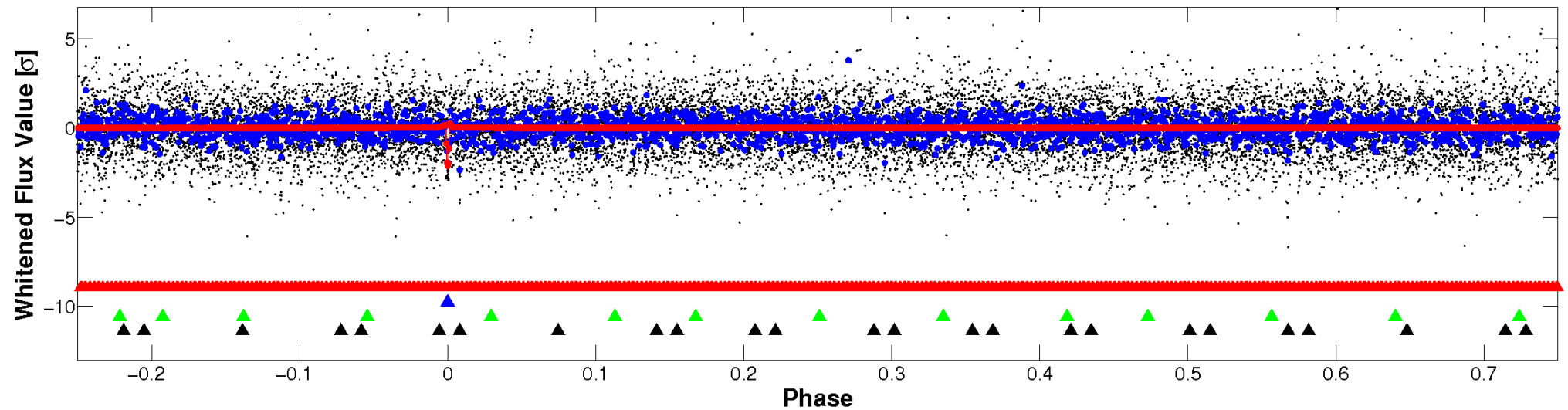


Non-Whitened Vs. Whitened Light Curve

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

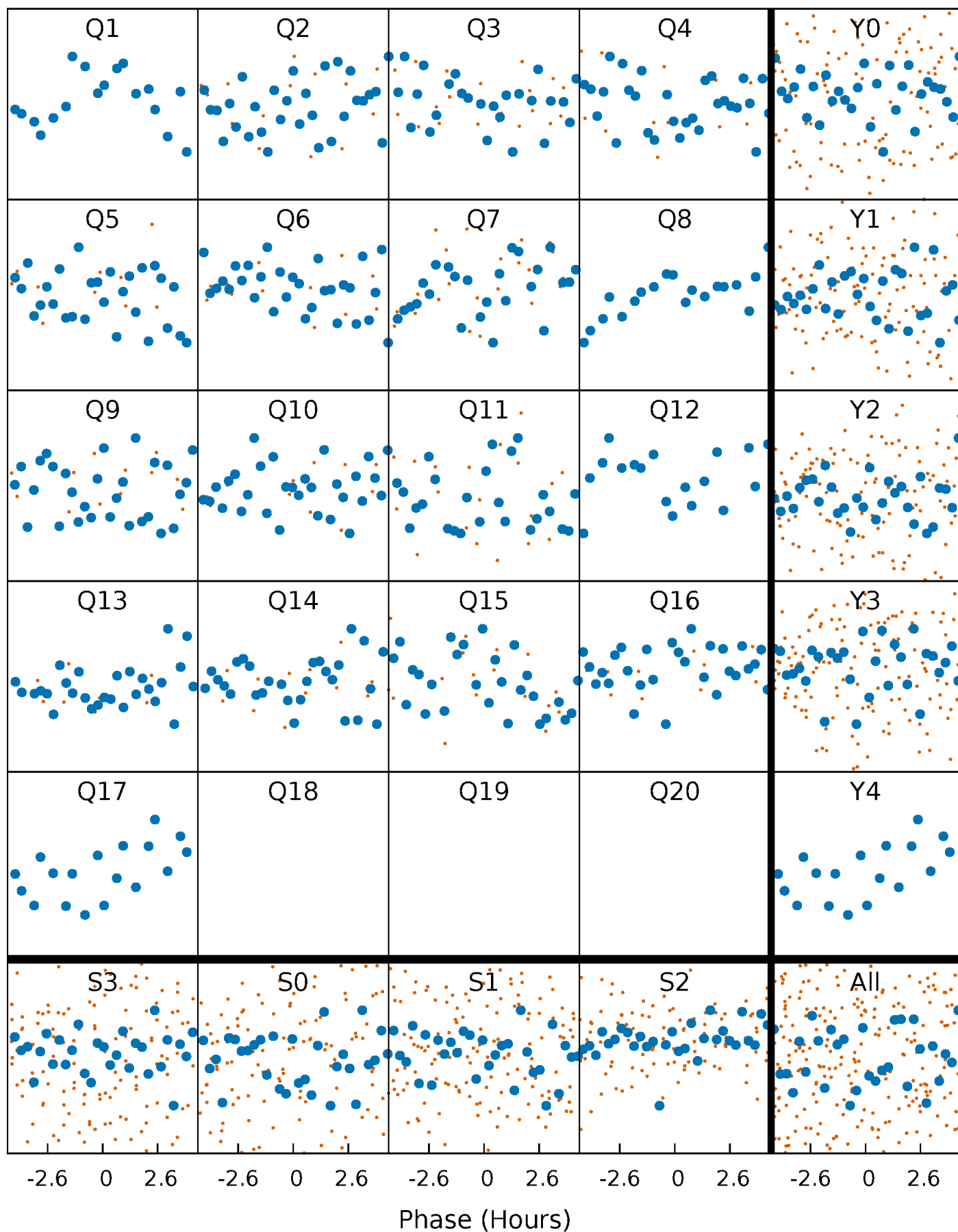


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



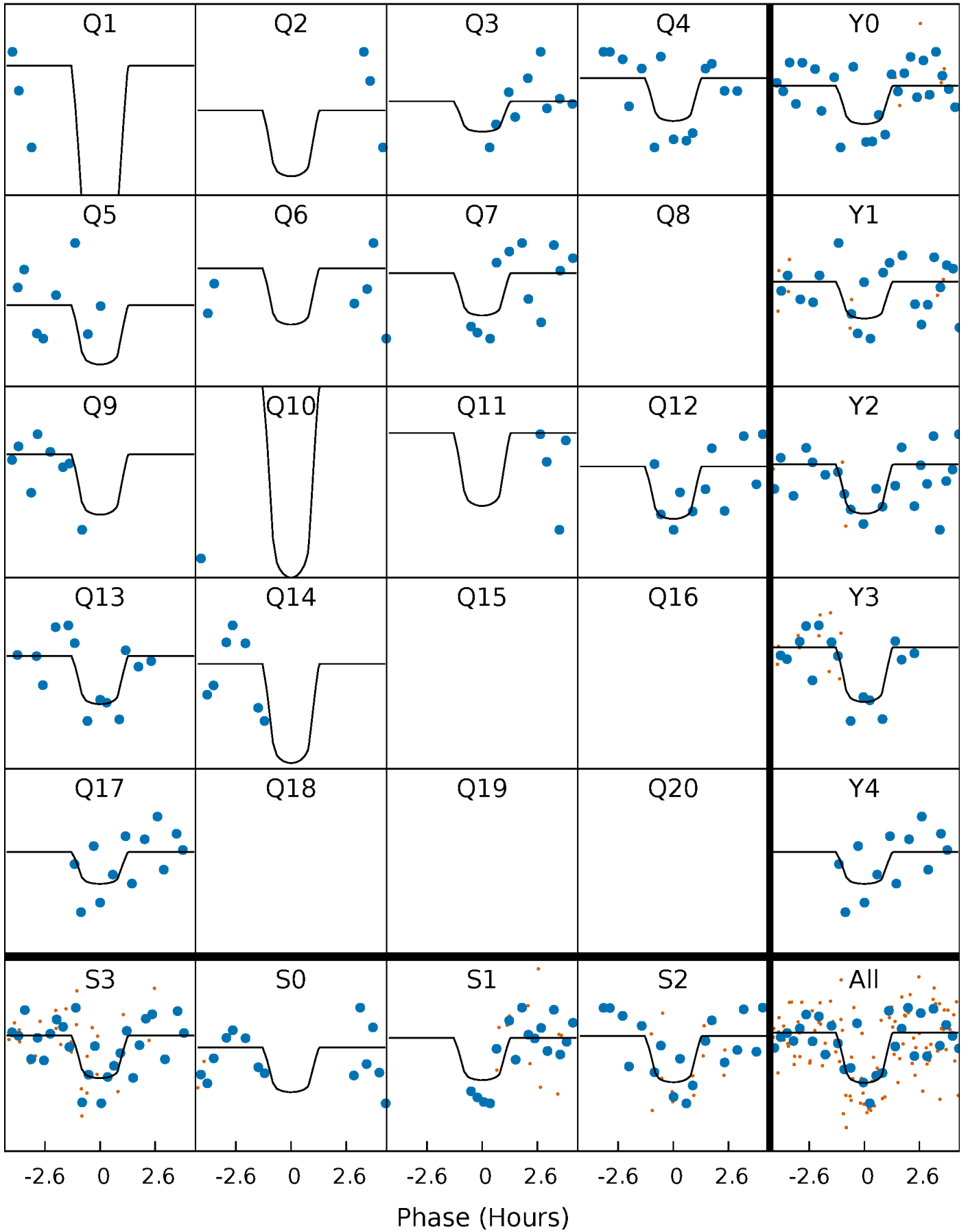
PDC Quarter-Phased Transit Curves

TCE 008511137-02 P= 47.561851 Days $T_0=141.928233$ (BKJD)



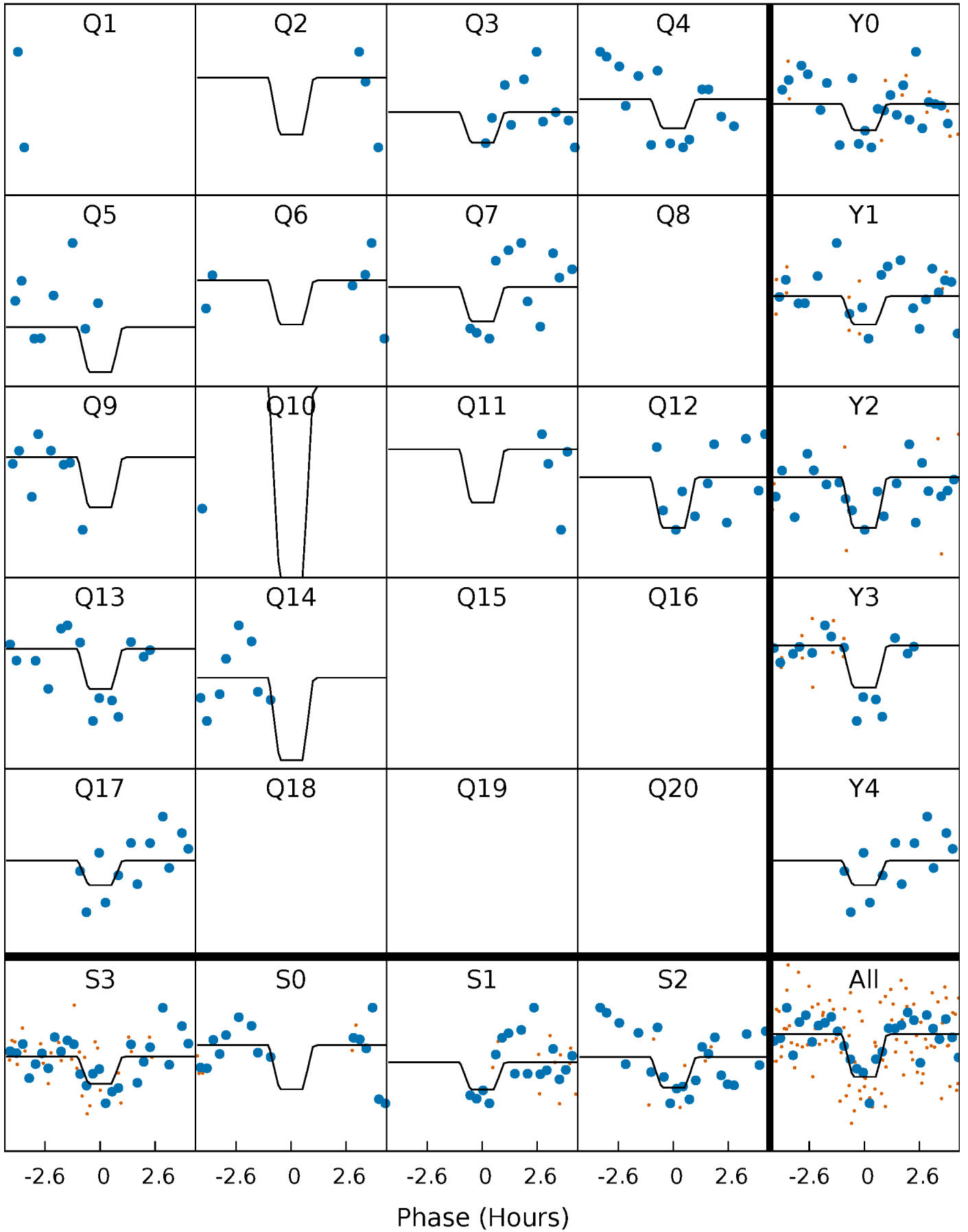
DV Quarter-Phased Transit Curves

TCE 008511137-02 P= 47.561851 Days $T_0=141.928233$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

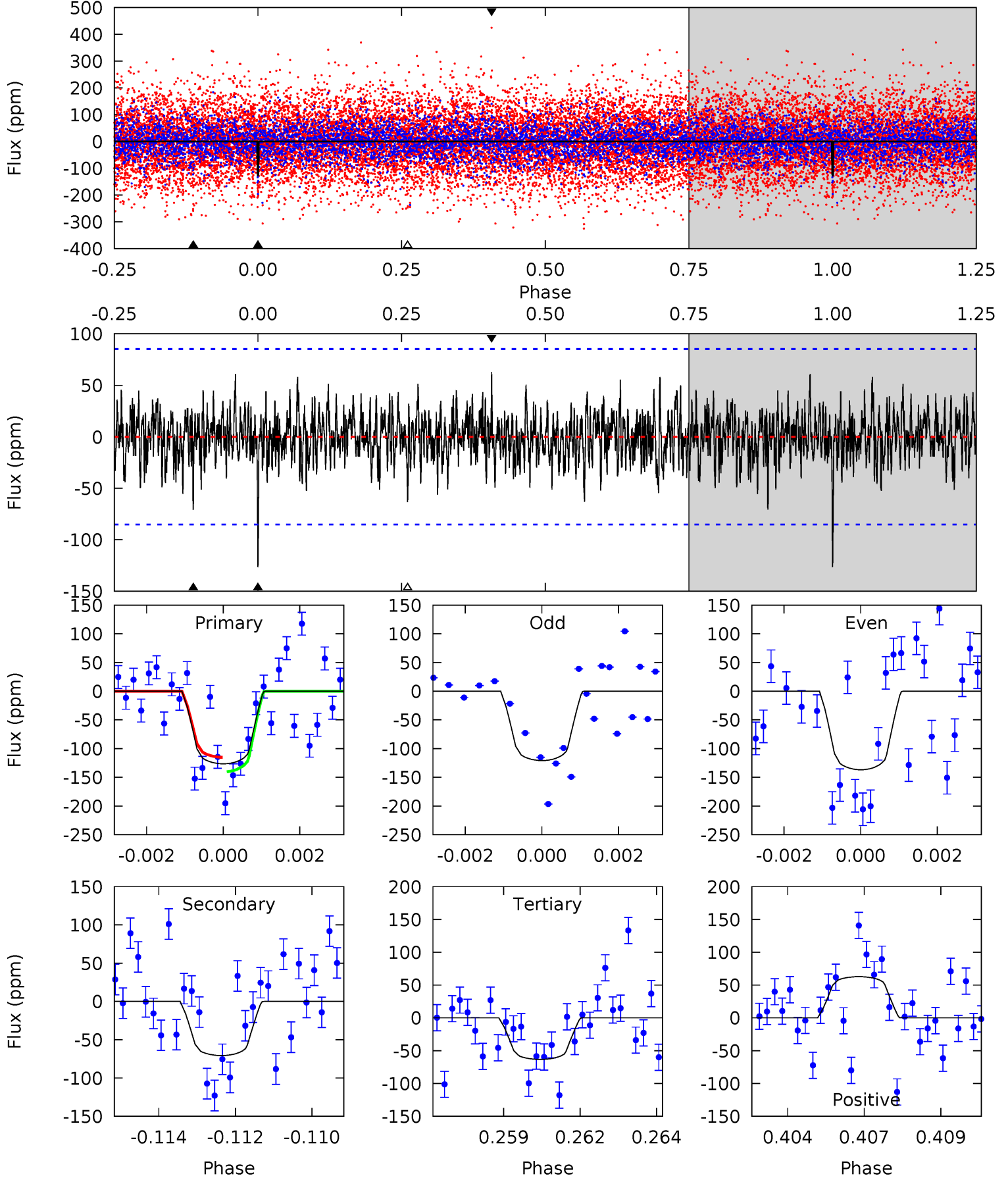
TCE 008511137-02 P= 47.561164 Days $T_0=141.938151$ (BKJD)



DV Model-Shift Uniqueness Test

008511137-02, P = 47.561851 Days, E = 94.366382 Days

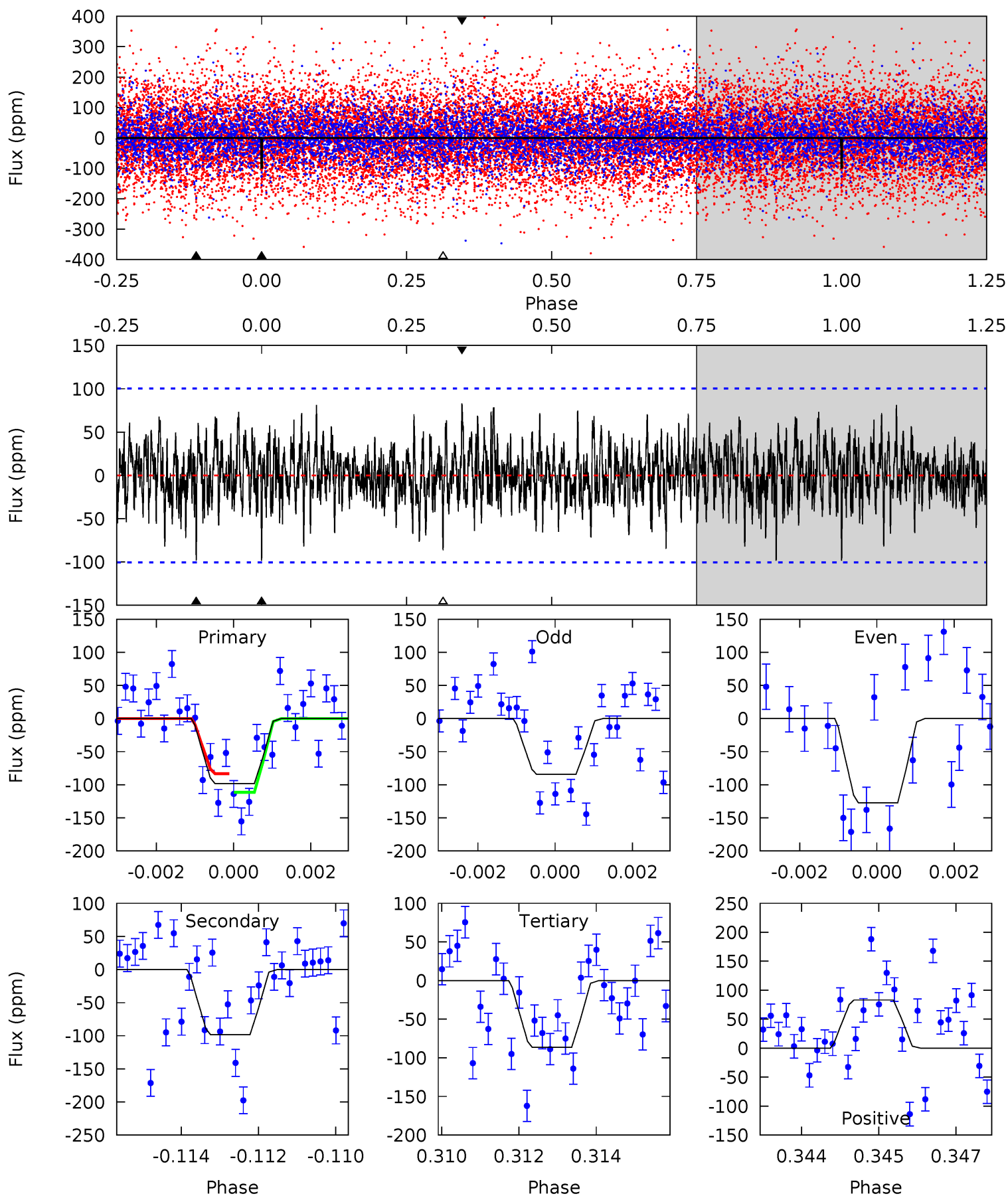
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.88	4.40	3.94	3.91	5.31	3.06	1.21	3.94	3.97	0.46	0.49	0.48	0.85	0.33	0.78



Alt Model-Shift Uniqueness Test

008511137-02, P = 47.561164 Days, E = 94.376987 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.24	5.24	4.61	4.43	5.35	3.13	1.41	0.63	0.81	0.64	0.82	1.09	0.75	0.46	0.75



Stellar Parameters For KIC 008511137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7701^{+211}_{-316}	$3.862^{+0.315}_{-0.105}$	$-0.020^{+0.200}_{-0.350}$	$2.703^{+0.443}_{-1.034}$	$1.939^{+0.083}_{-0.471}$	$0.138^{+0.325}_{-0.046}$
	+3%/-4%	+8%/-3%	+1000%/-1750%	+16%/-38%	+4%/-24%	+235%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008511137-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-71 ± 16	$3.46^{+2.69}_{-2.08}$	1351^{+86}_{-128}	6035^{+4934}_{-1300}	327^{+1712}_{-230}
Alt.	-98 ± 19	$3.05^{+2.50}_{-1.80}$	1347^{+90}_{-129}	6883^{+6281}_{-1650}	535^{+2845}_{-369}

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 $A_{obs} \gg 1.0$

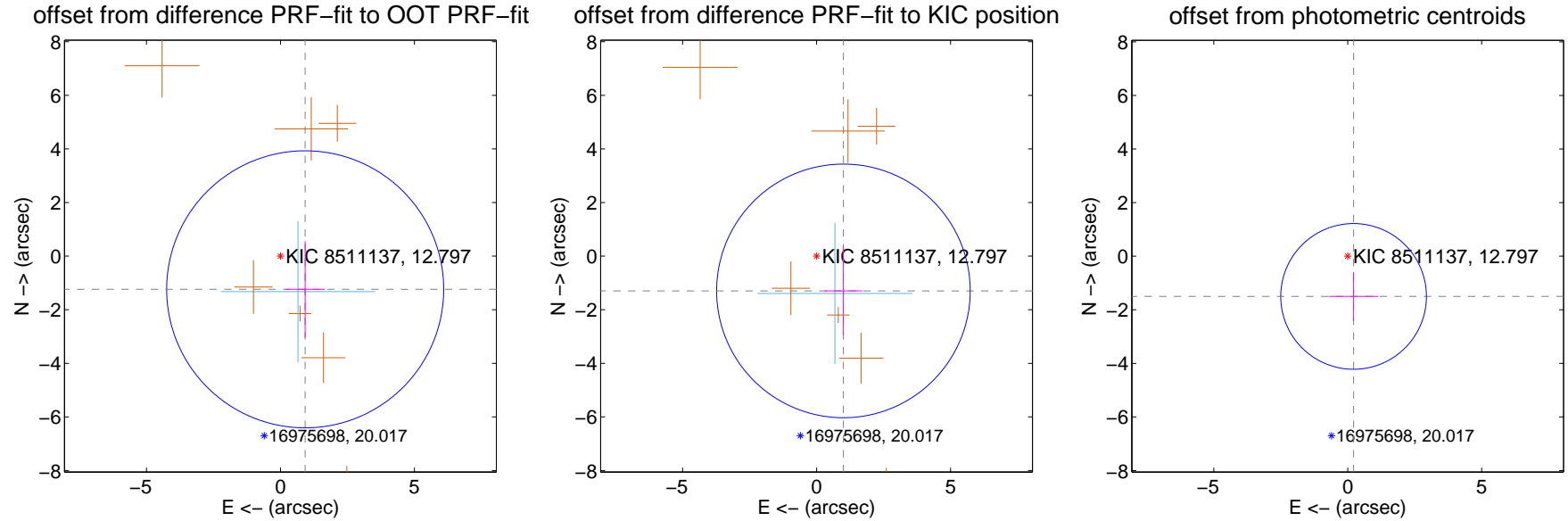
DV Centroid Data

Supplemental centroid analysis for 008511137-02. Kepler magnitude: 12.80. Transit SNR 9.46

There are 1 quarters with good PRF difference image offsets

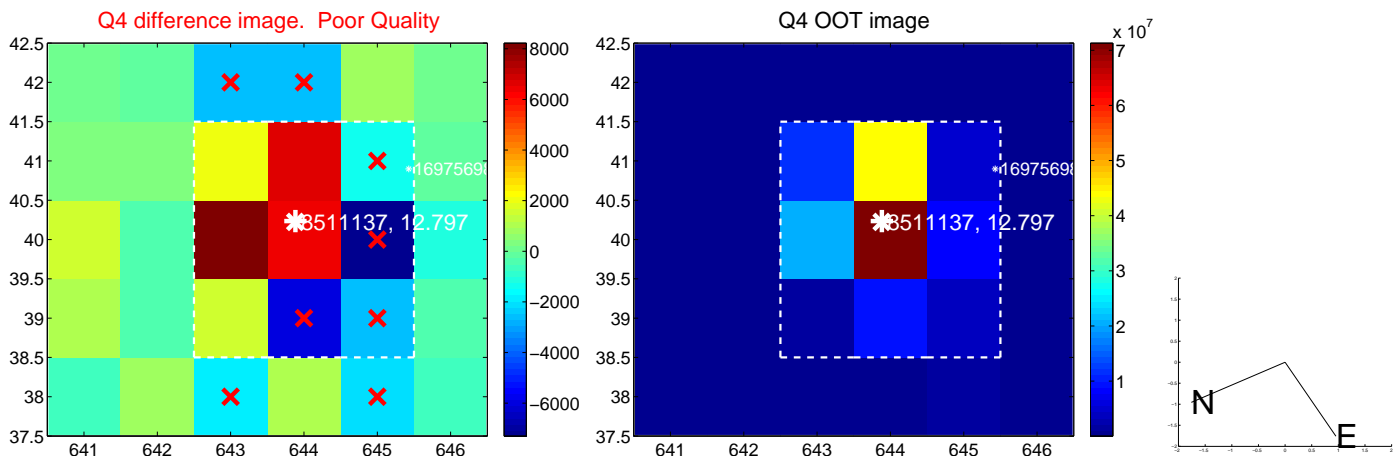
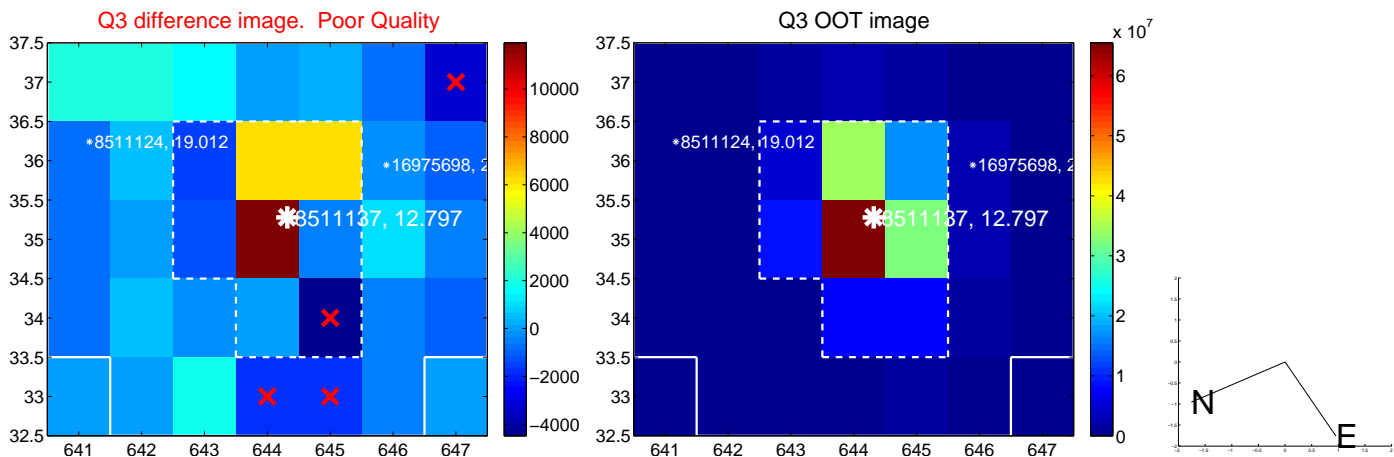
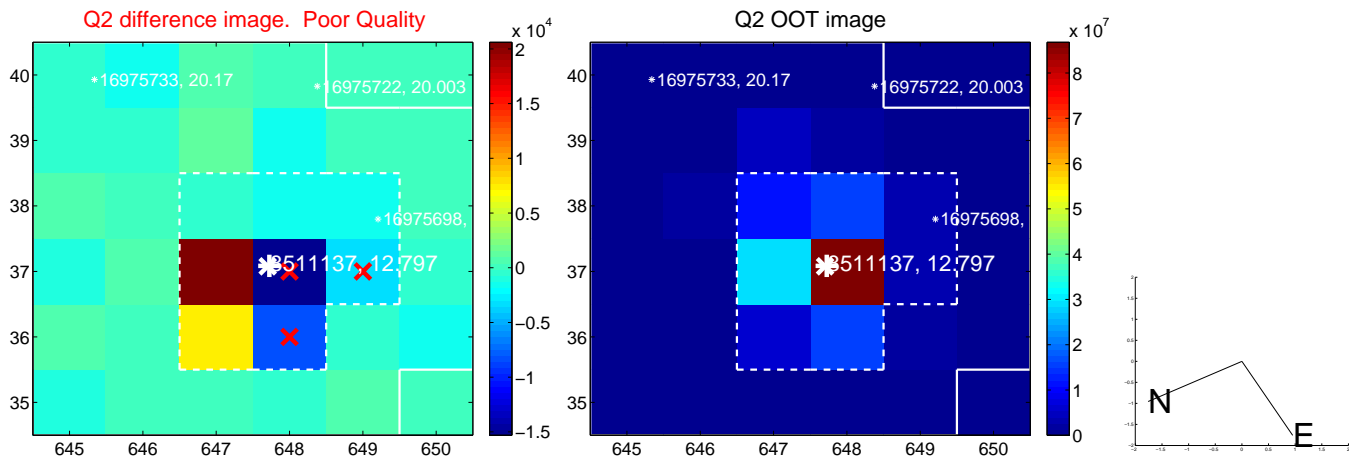
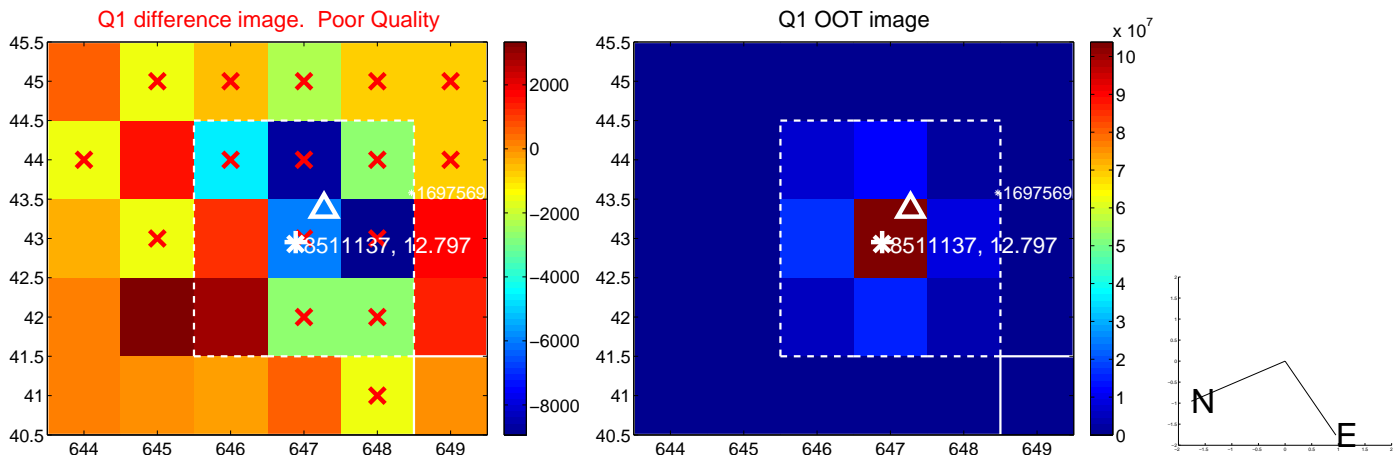
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.544 ± 1.723	0.90	-0.923 ± 0.738	-1.239 ± 1.800
PRF-fit source offset from KIC position	1.639 ± 1.577	1.04	-1.002 ± 0.704	-1.297 ± 1.655
photometric centroid source offset	1.52 ± 0.91	1.67	-0.22 ± 0.92	-1.50 ± 0.91

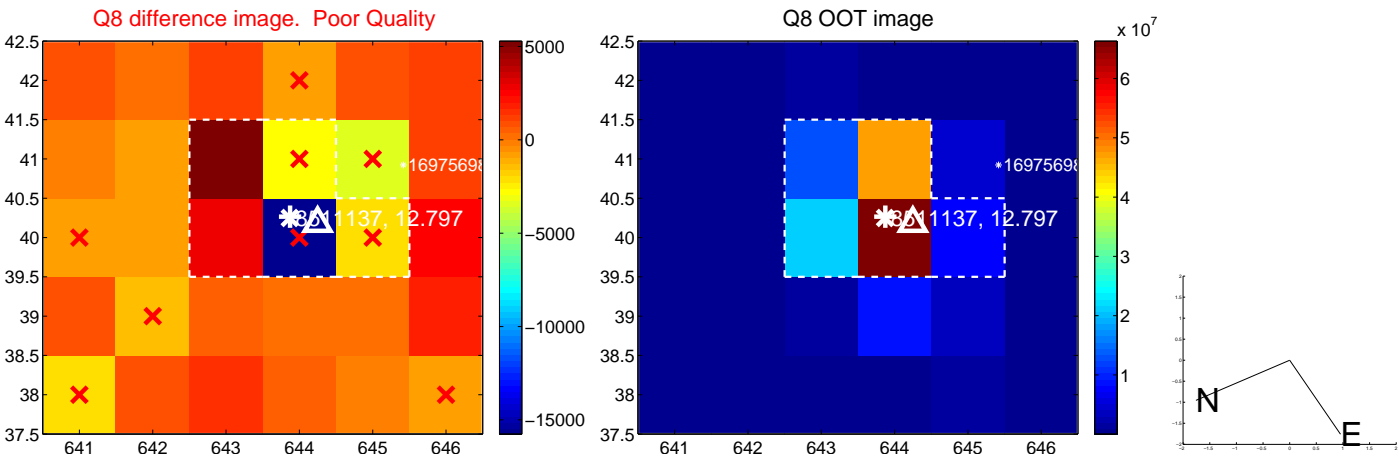
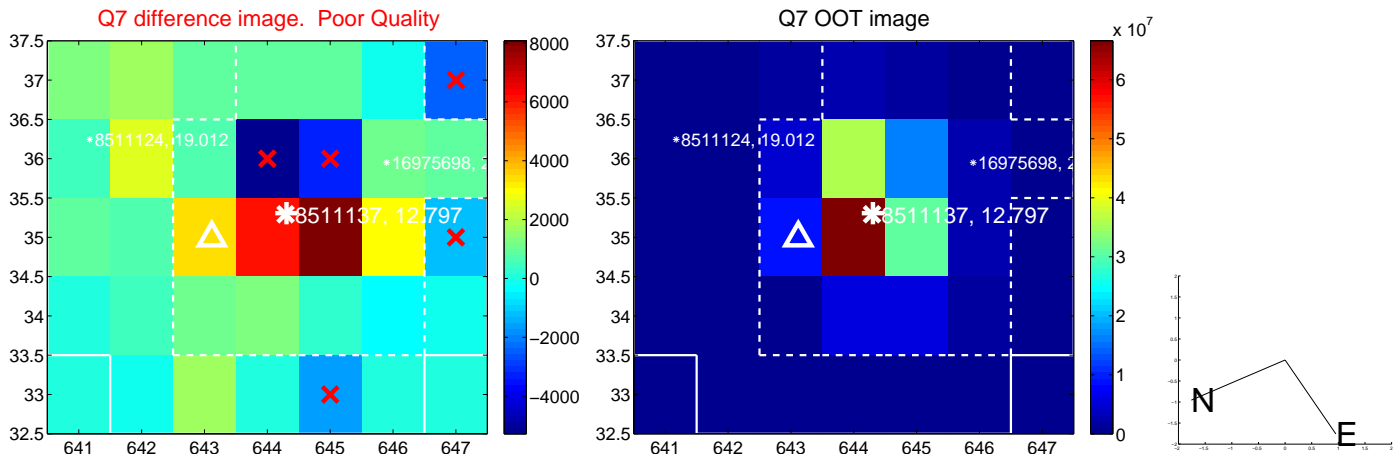
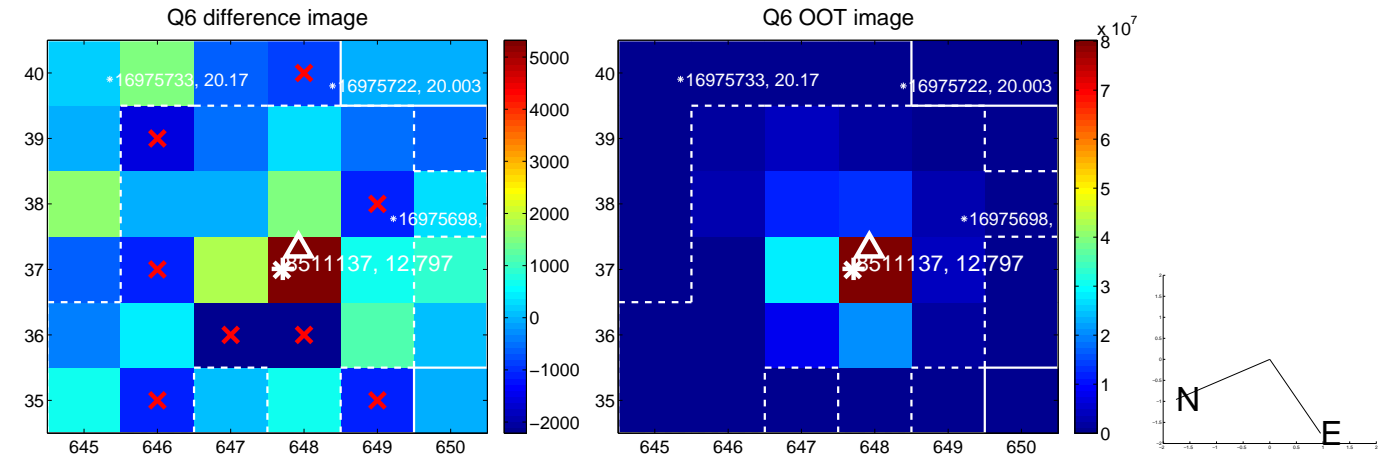
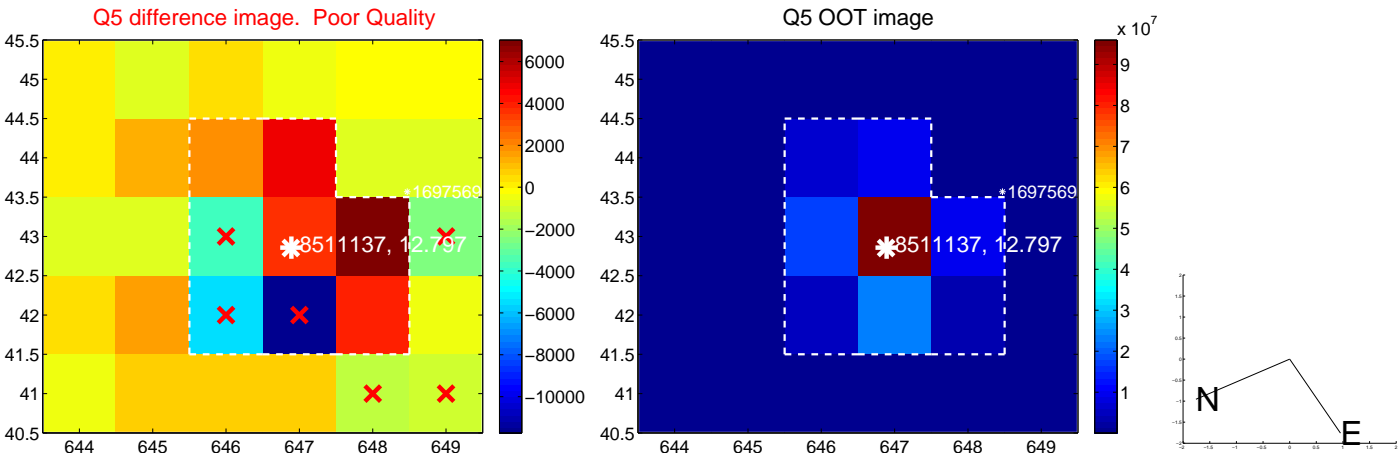


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

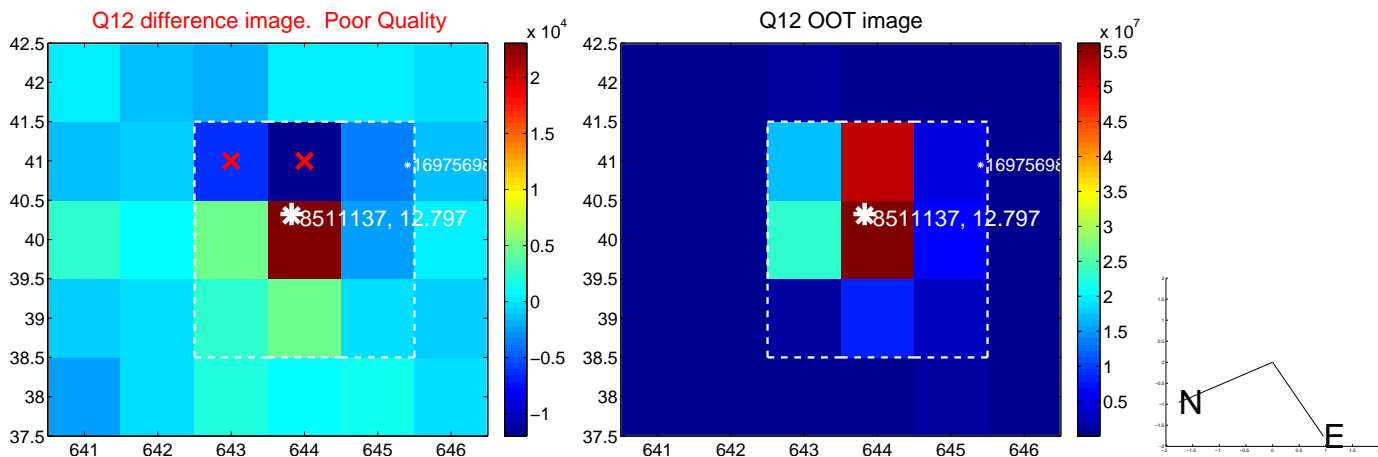
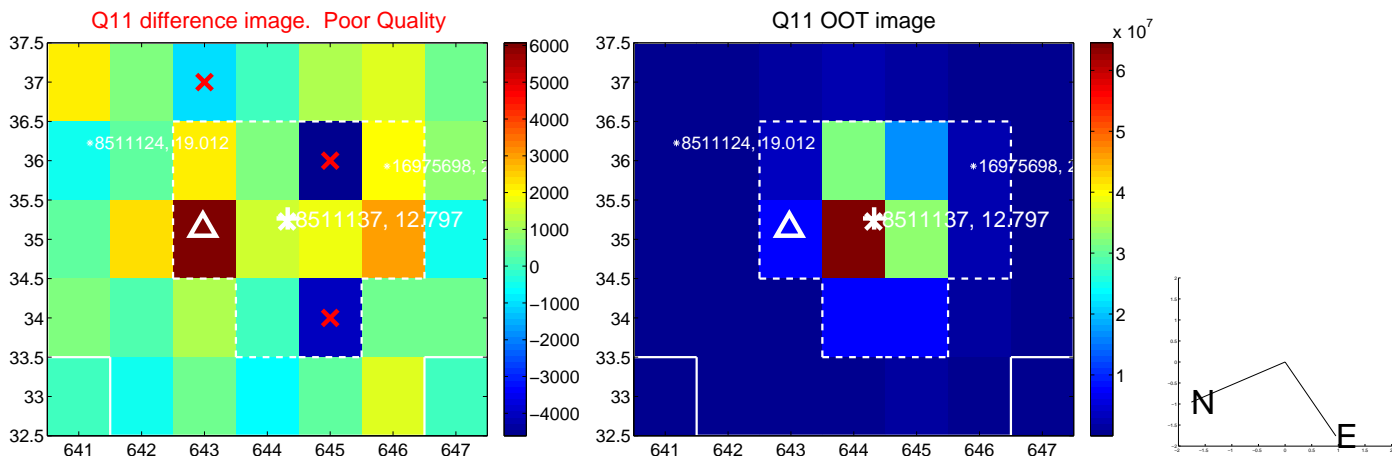
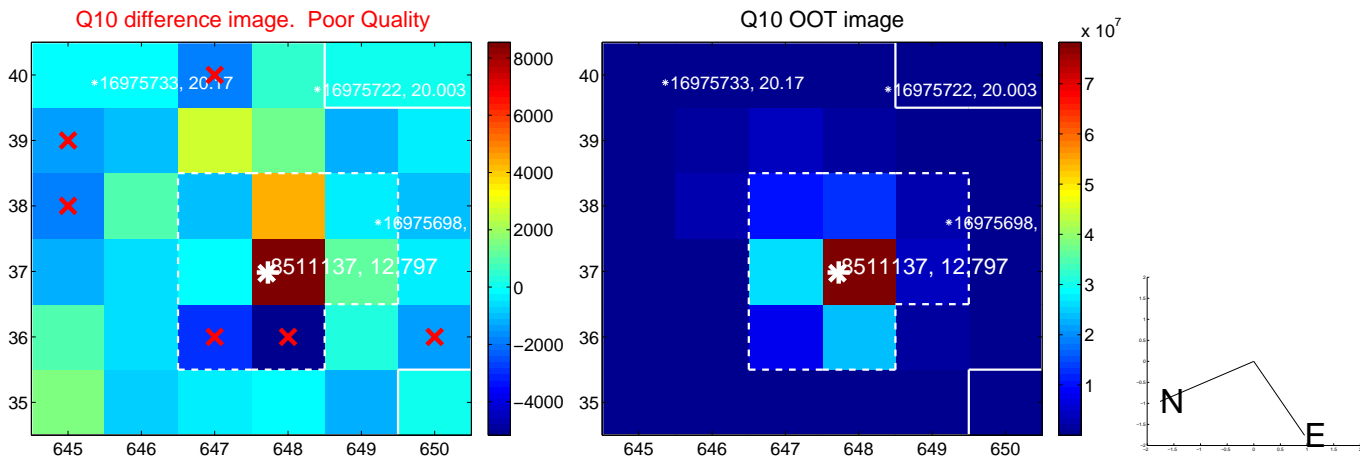
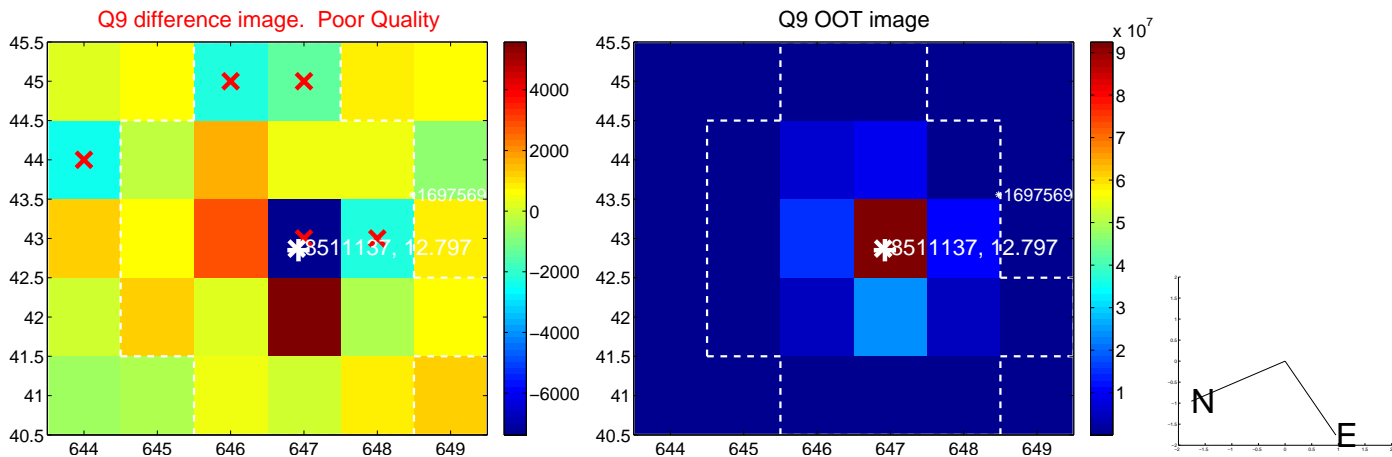
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



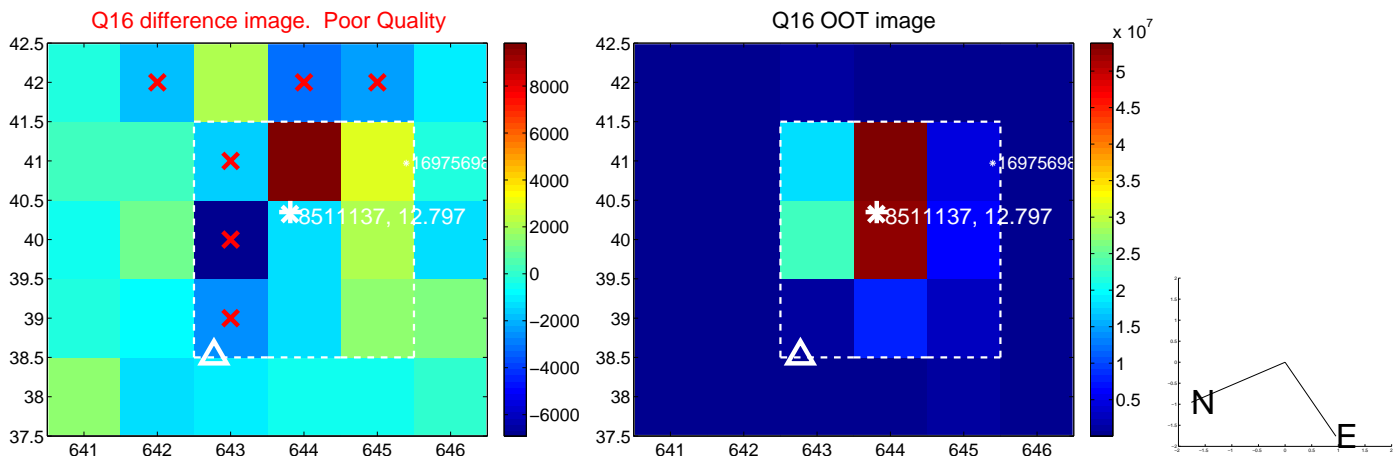
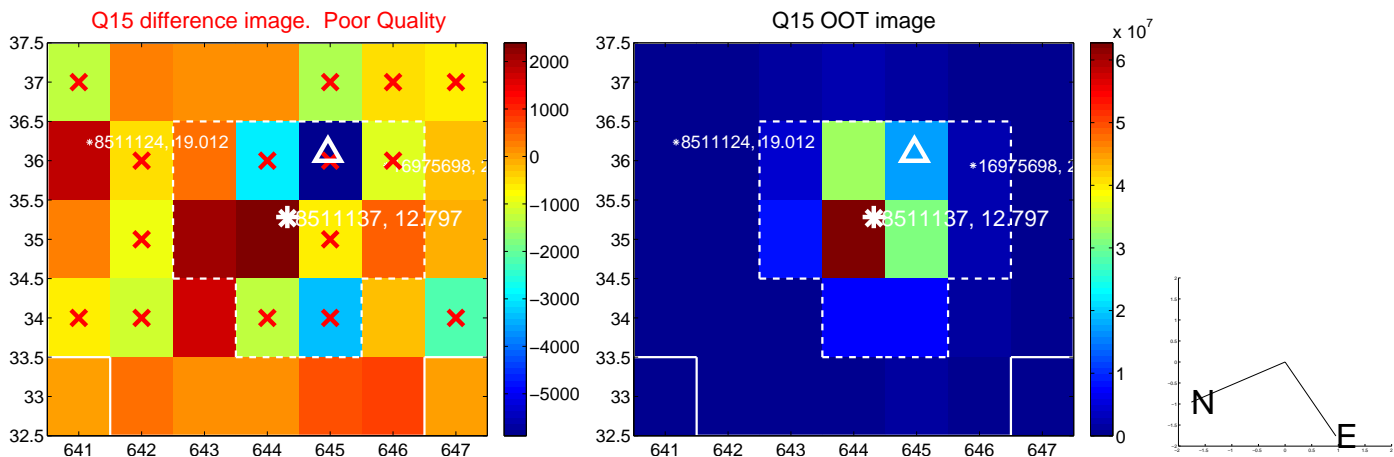
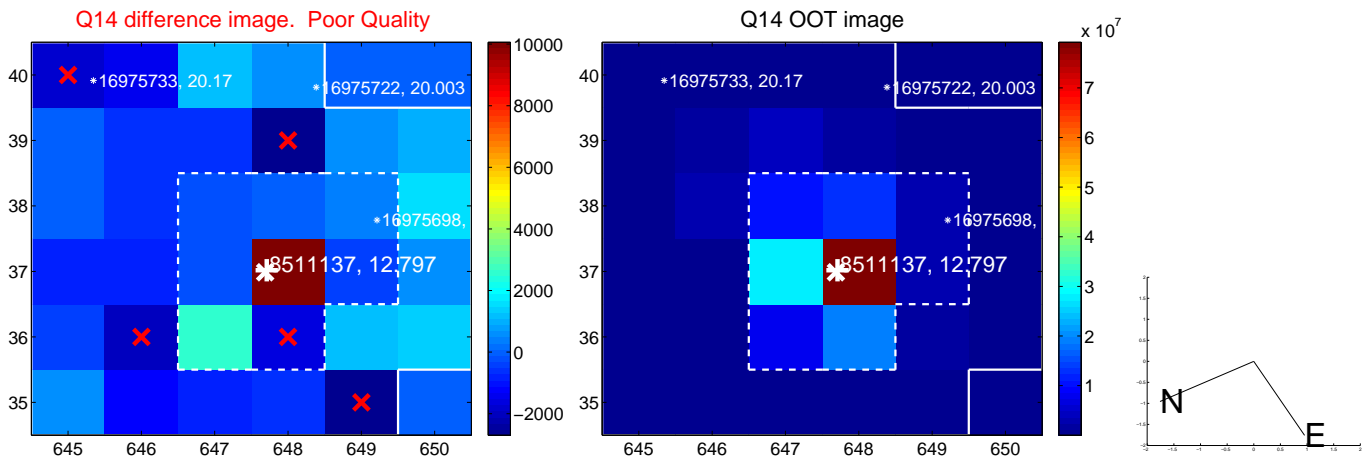
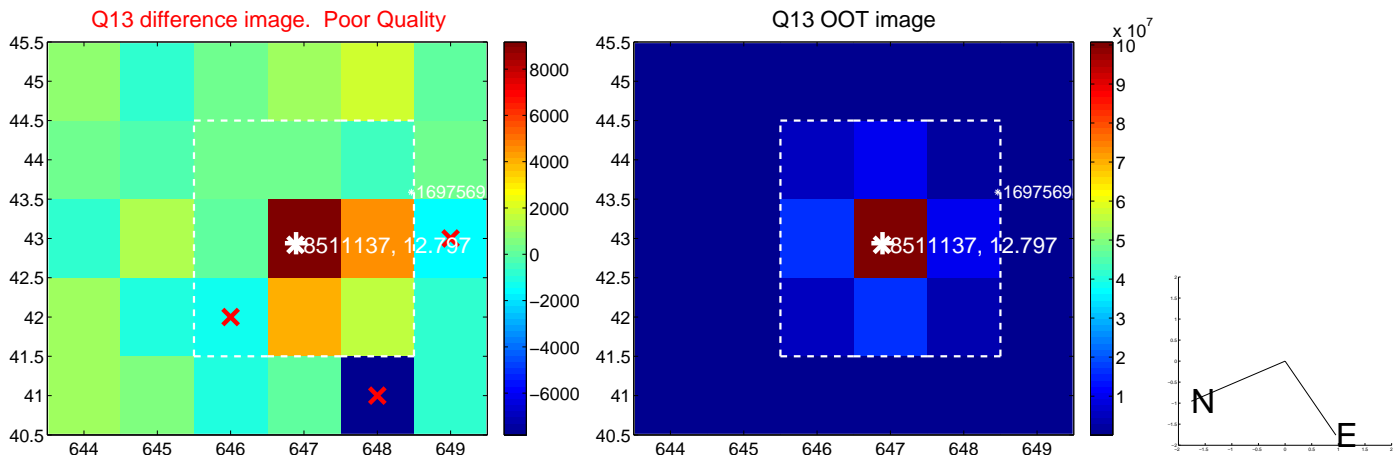
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



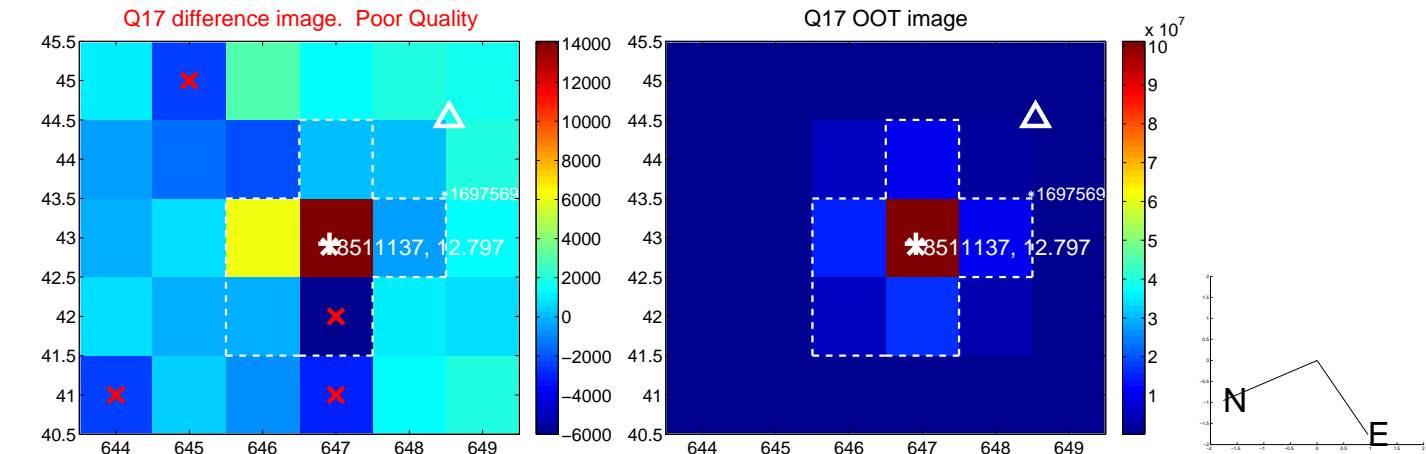
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



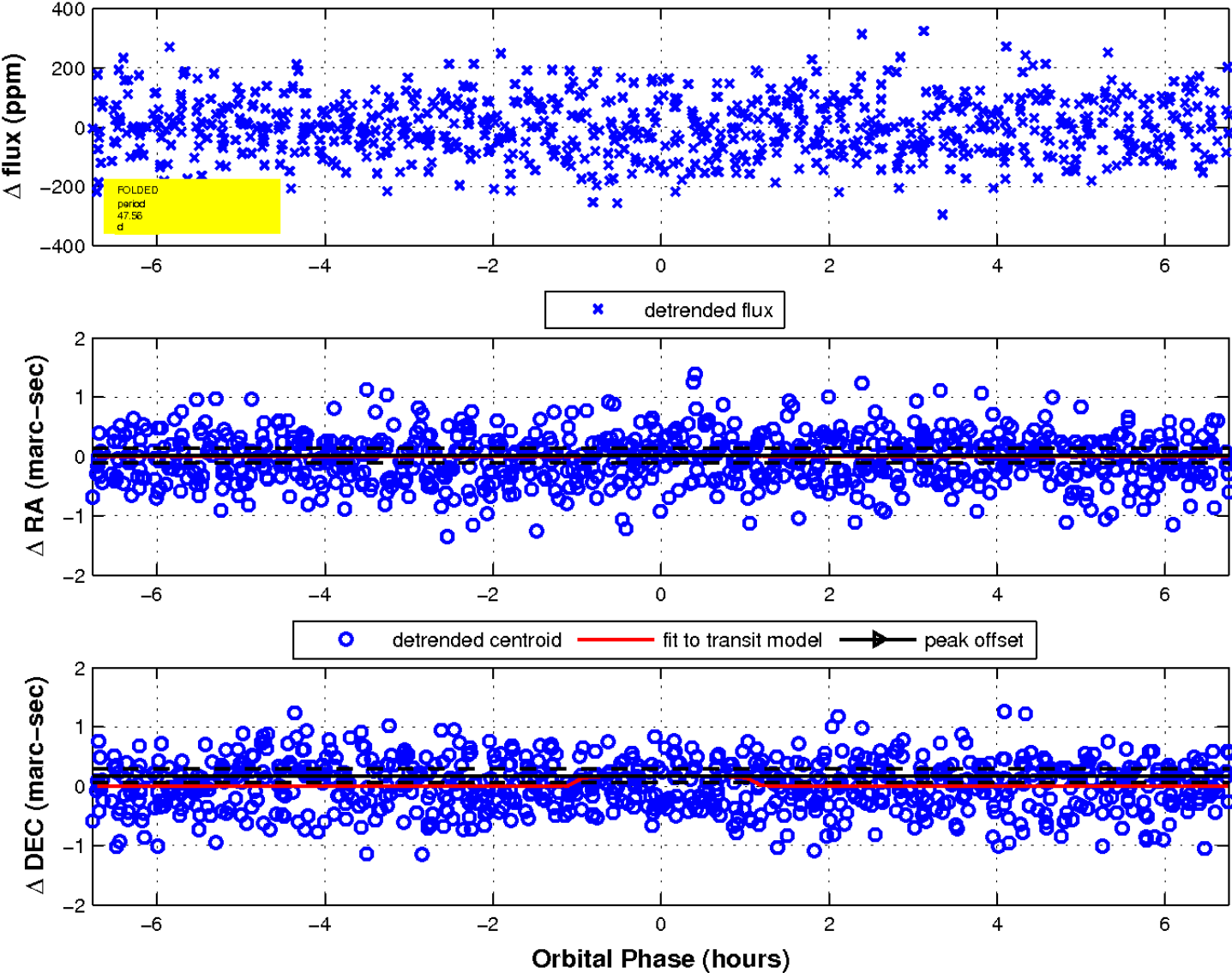
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

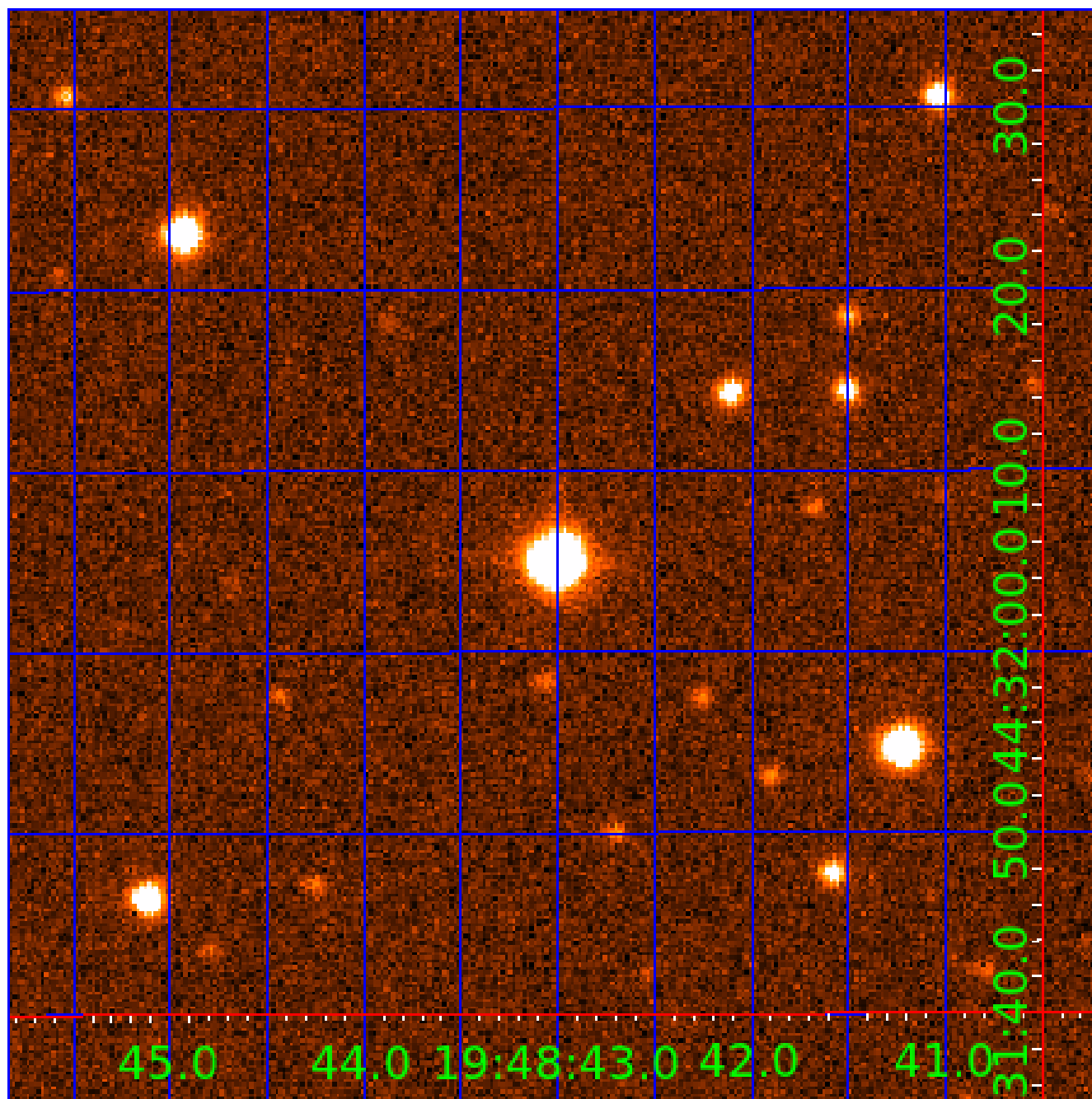


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 008511137

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})
008511137-01	OBS	No	1.266384	133.418481	0.0	7.588	9.8	0.0	2.70	7701	0.02	28198.53
008511137-02	OBS	No	47.561851	141.928233	129.4	2.258	8.5	9.5	2.70	7701	3.50	224.20
008511137-03	OBS	No	109.651737	132.774673	145.9	2.193	8.2	9.4	2.70	7701	3.87	73.61
008511137-04	OBS	No	57.706822	156.280597	134.9	2.527	8.1	9.0	2.70	7701	3.61	173.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008511137-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008511137-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008511137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008511137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

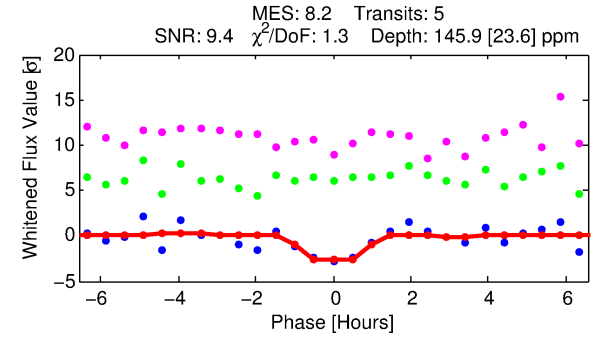
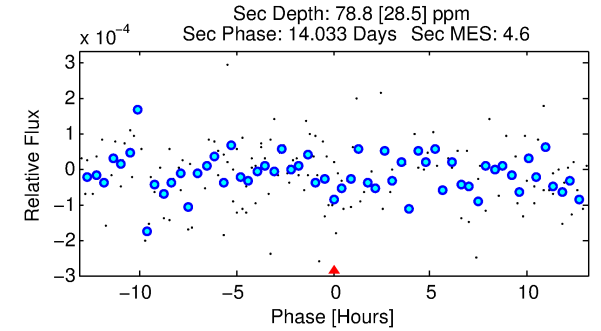
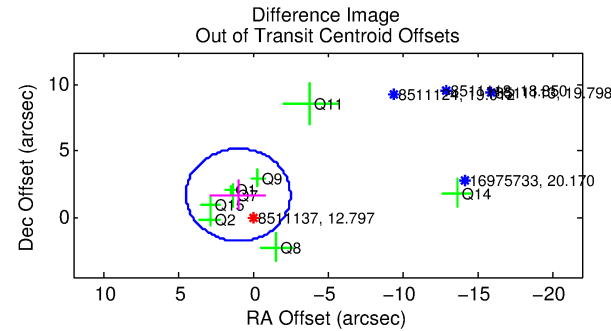
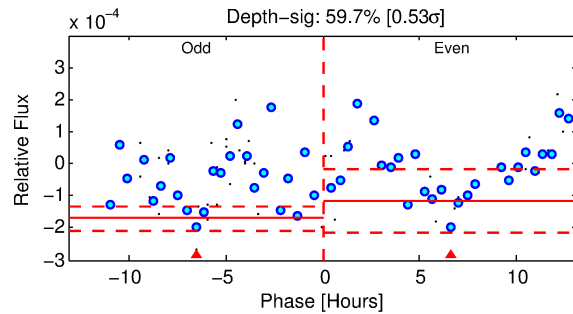
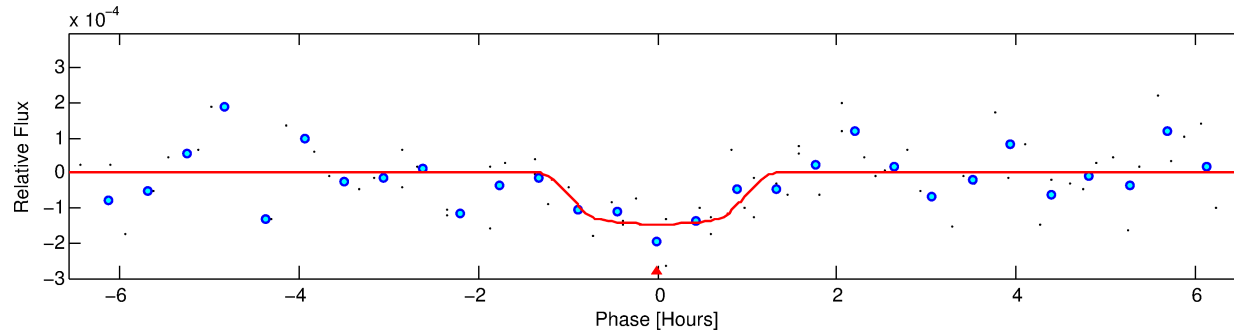
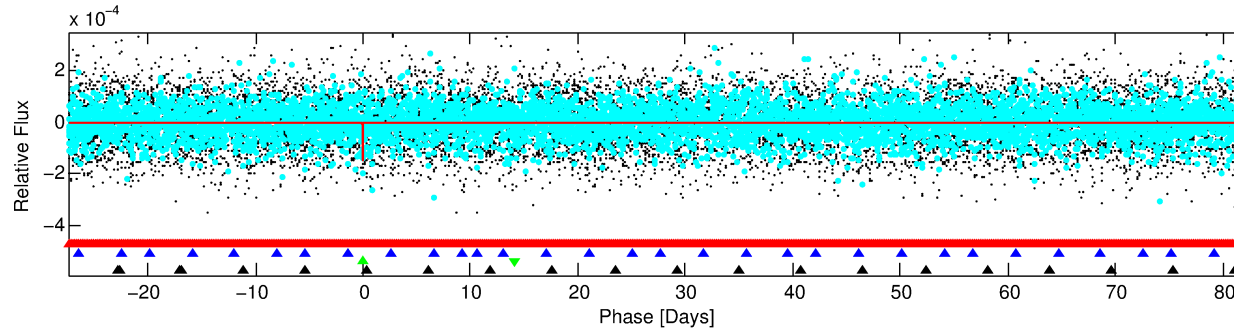
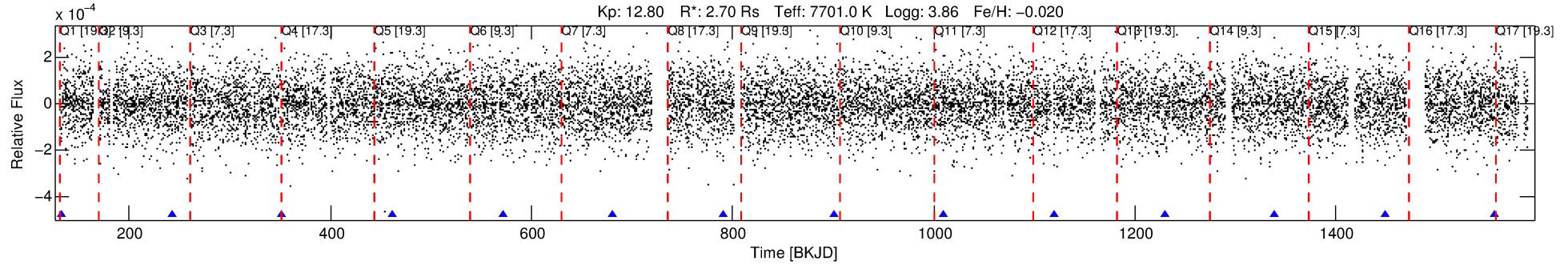
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008511137-03

No Significant Match Found

DV One-Page Summary

KIC: 8511137 Candidate: 3 of 4 Period: 109.652 d



DV Fit Results:

Period = 109.65174 [0.00093] d
Epoch = 132.7747 [0.0057] BKJD
Rp/R* = 0.0131 [0.0101]
a/R* = 157.70 [787.54]
b = 0.93 [0.79]
Seff = 73.61 [42.02]
Teq = 747 [107] K
Rp = 3.87 [3.34] Re
a = 0.5592 [0.1965] AU
Ag = 904.80 [1518.57] [0.60 σ]
Teffp = 6334 [2526] K [2.21 σ]

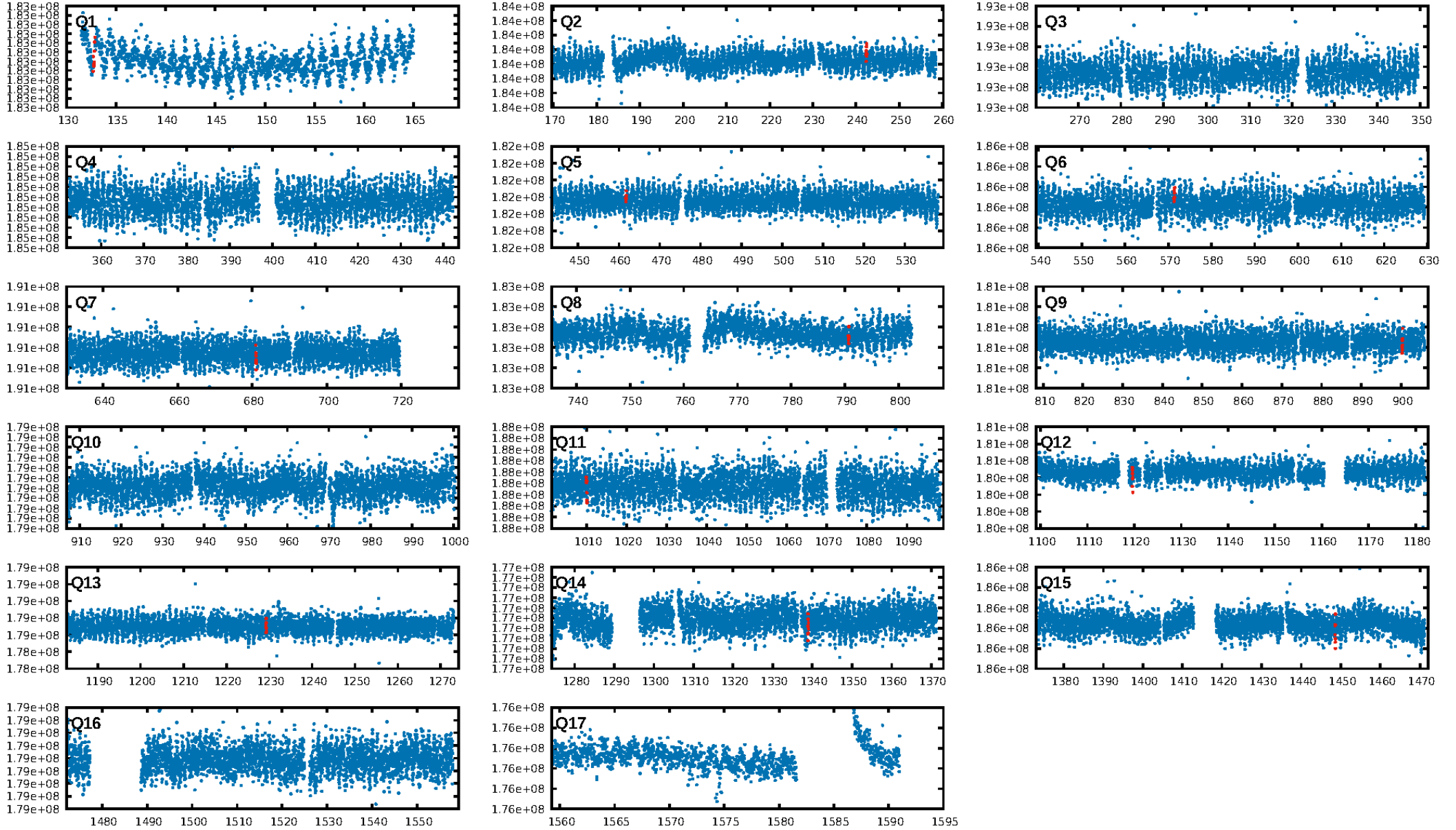
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [372.56 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.1%
ModelChiSquareGof-sig: 98.2%
Bootstrap-pfa: 7.98e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 4.535
Centroid-sig: 1.4%
Centroid-so: 2.435 arcsec [1.86 σ]
OotOffset-rm: 1.964 arcsec [1.69 σ]
KicOffset-rm: 1.893 arcsec [1.90 σ]
OotOffset-st: 2/3/1/2 [8]
KicOffset-st: 2/3/1/2 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.42 [5/12]

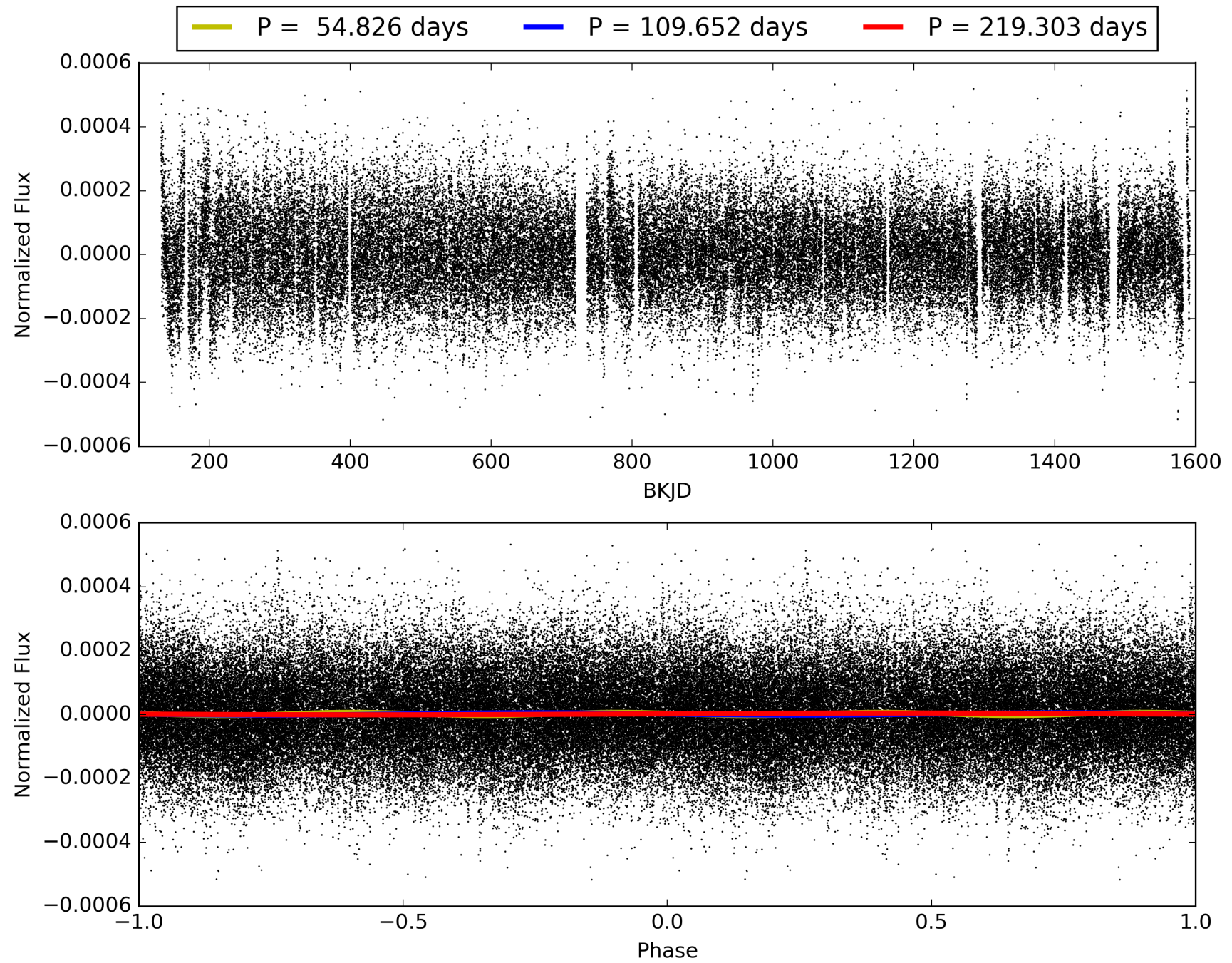
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:58:28 Z

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

TCE 008511137-03, PDC Light Curves

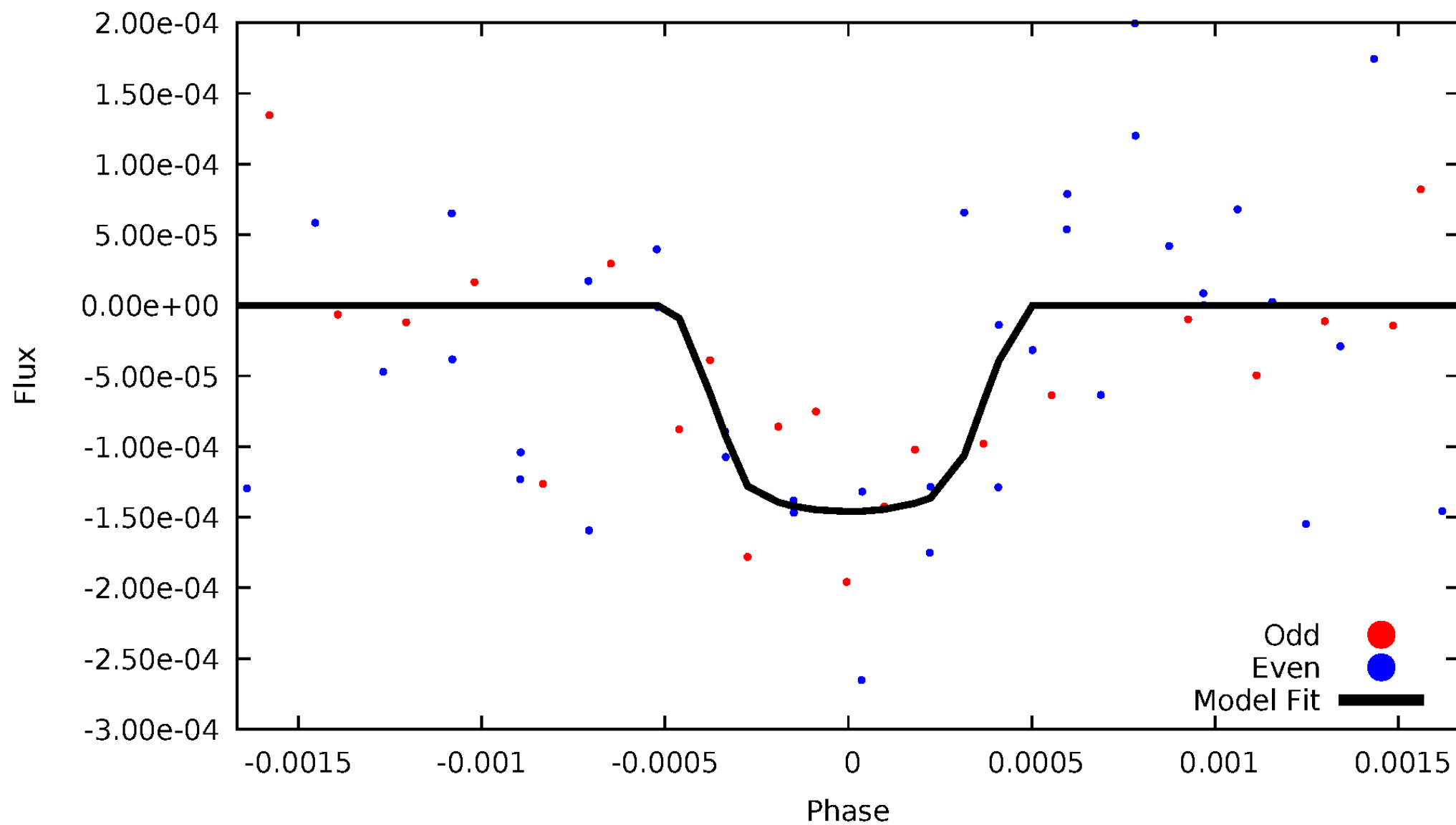


TCE 008511137-03



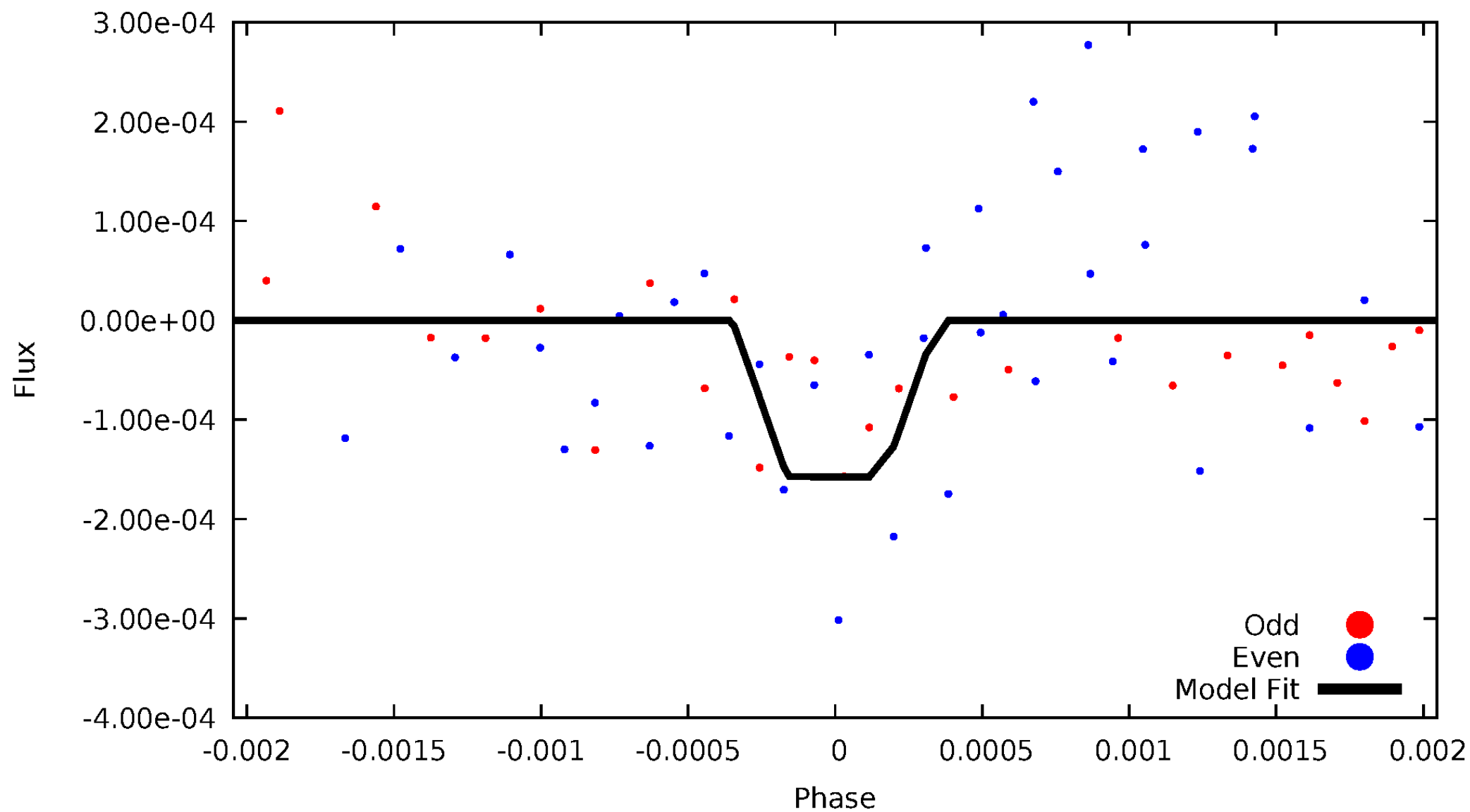
DV Odd/Even

TCE 008511137-03



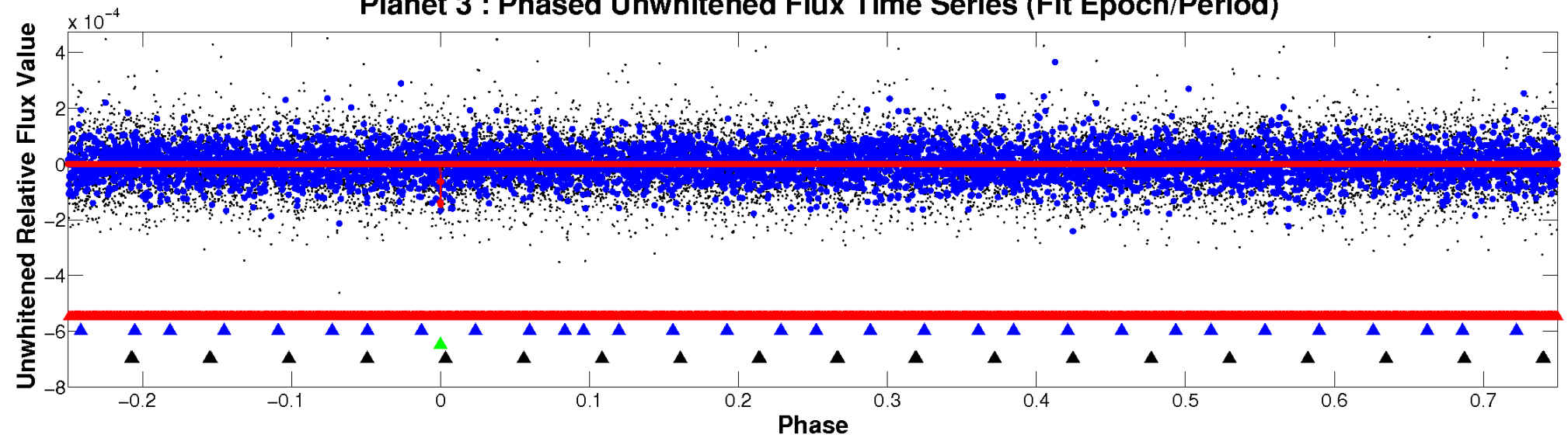
ALT Odd/Even

TCE 008511137-03

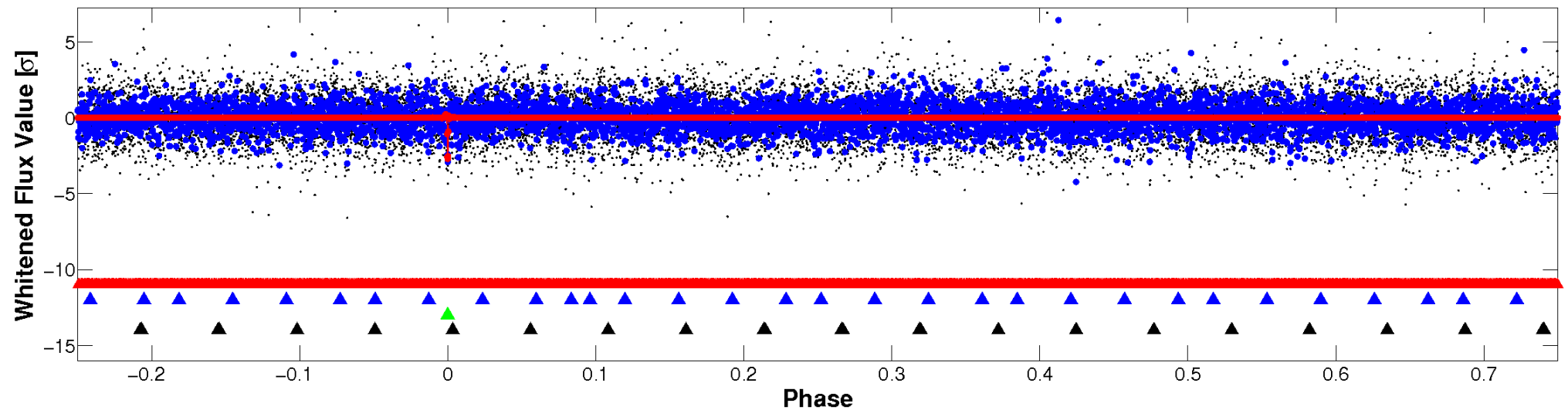


Non-Whitened Vs. Whitened Light Curve

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

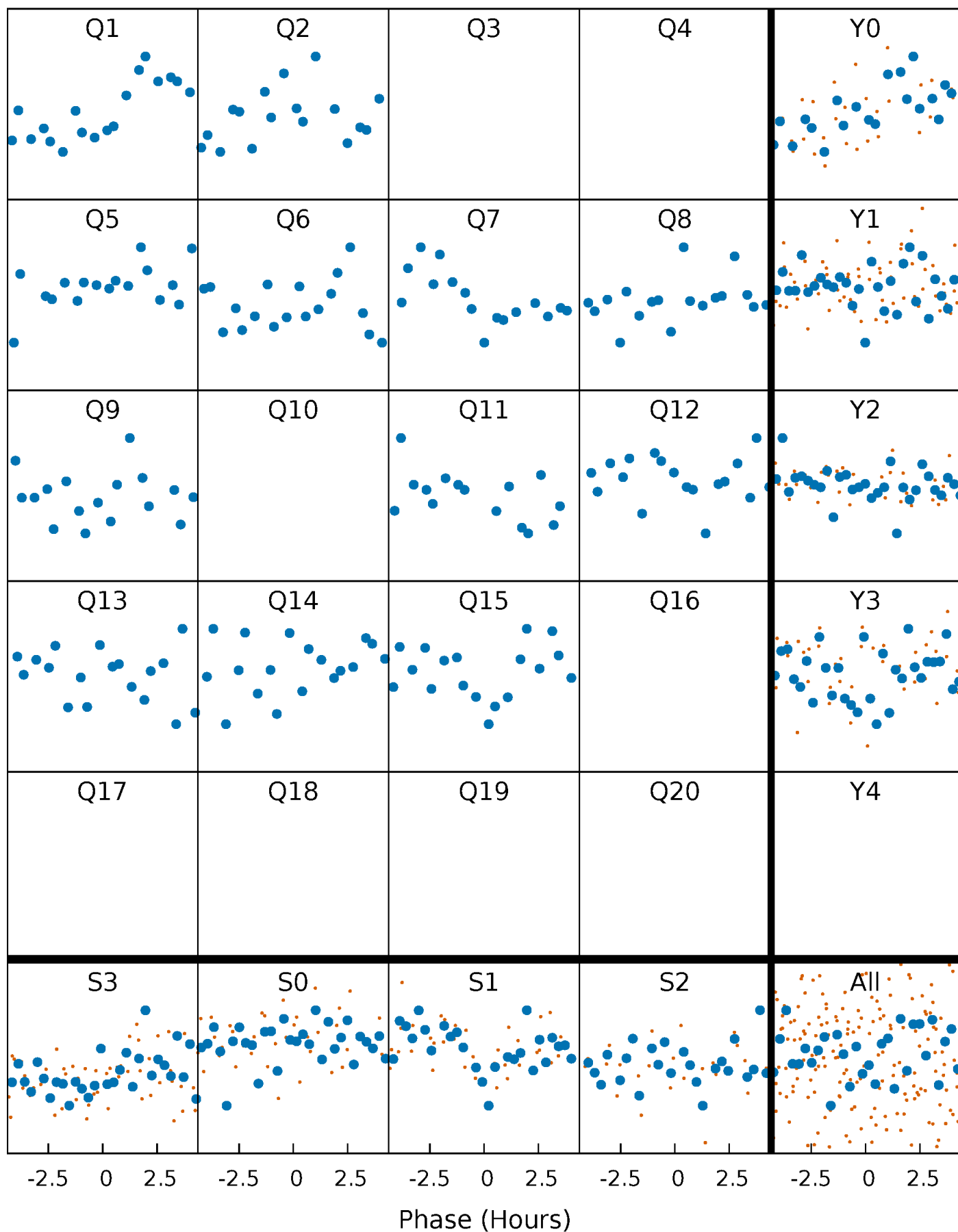


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



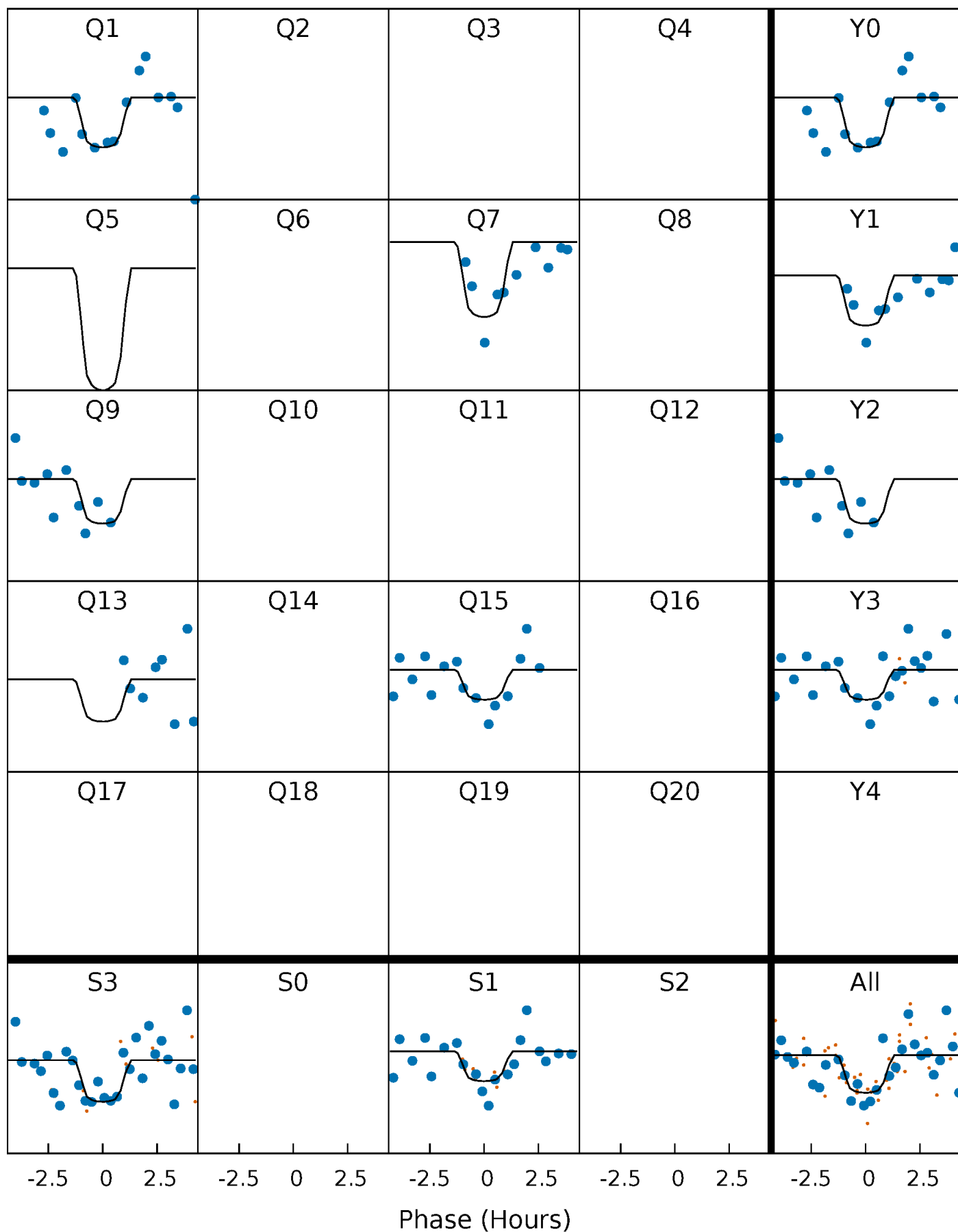
PDC Quarter-Phased Transit Curves

TCE 008511137-03 P=109.651737 Days $T_0=132.774673$ (BKJD)



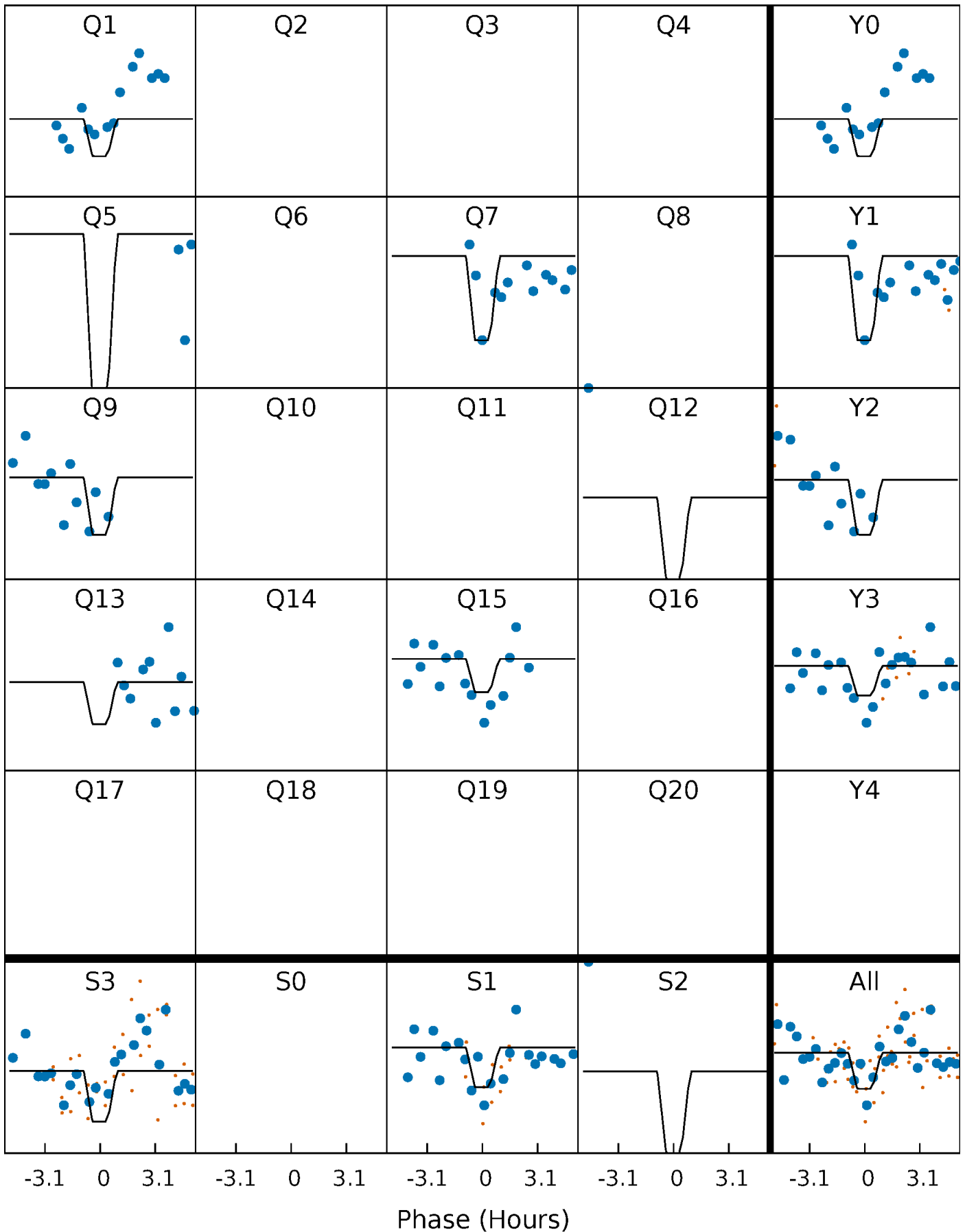
DV Quarter-Phased Transit Curves

TCE 008511137-03 P=109.651737 Days $T_0=132.774673$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

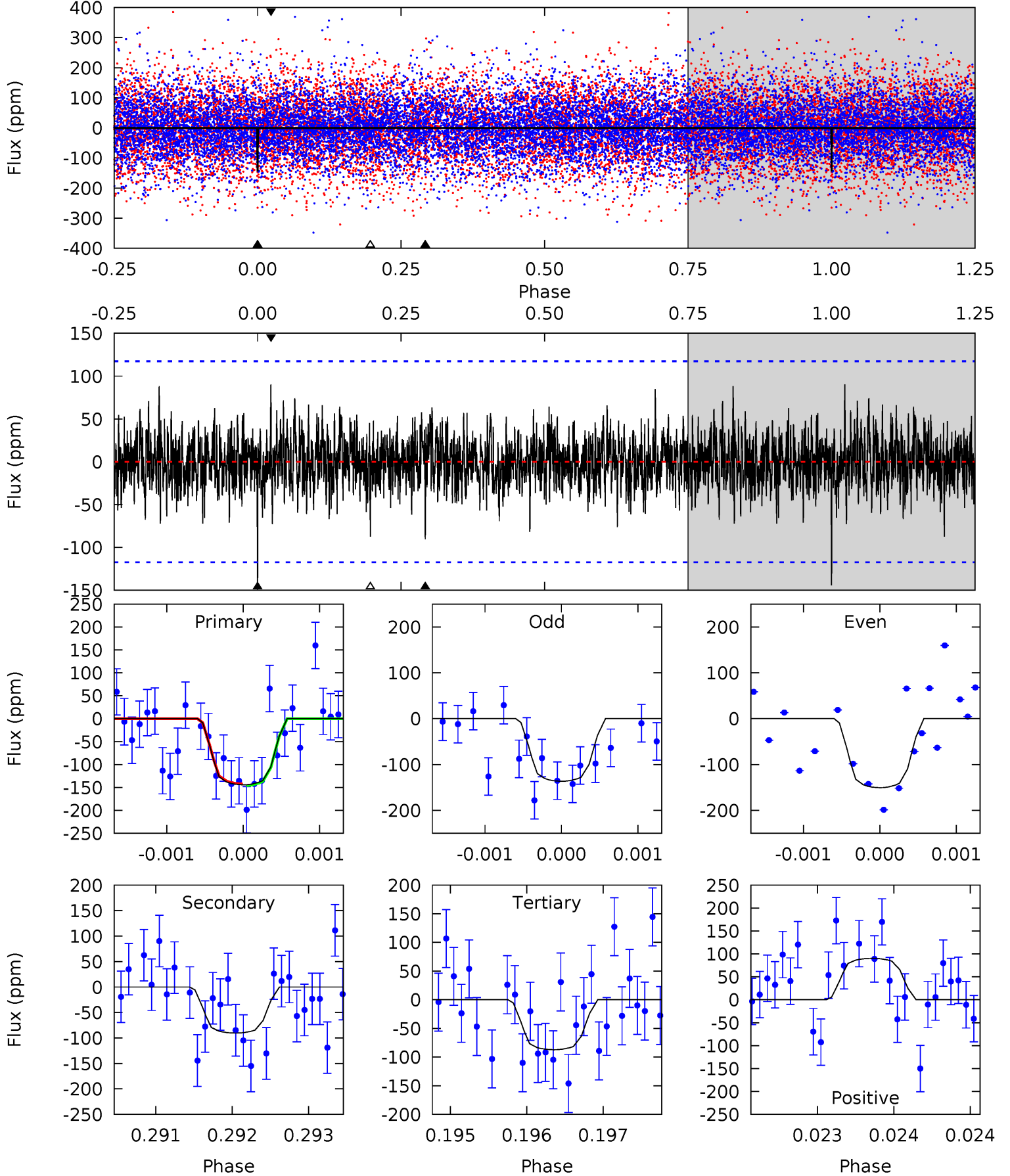
TCE 008511137-03 P=109.652663 Days $T_0=132.766227$ (BKJD)



DV Model-Shift Uniqueness Test

008511137-03, P = 109.651737 Days, E = 23.122936 Days

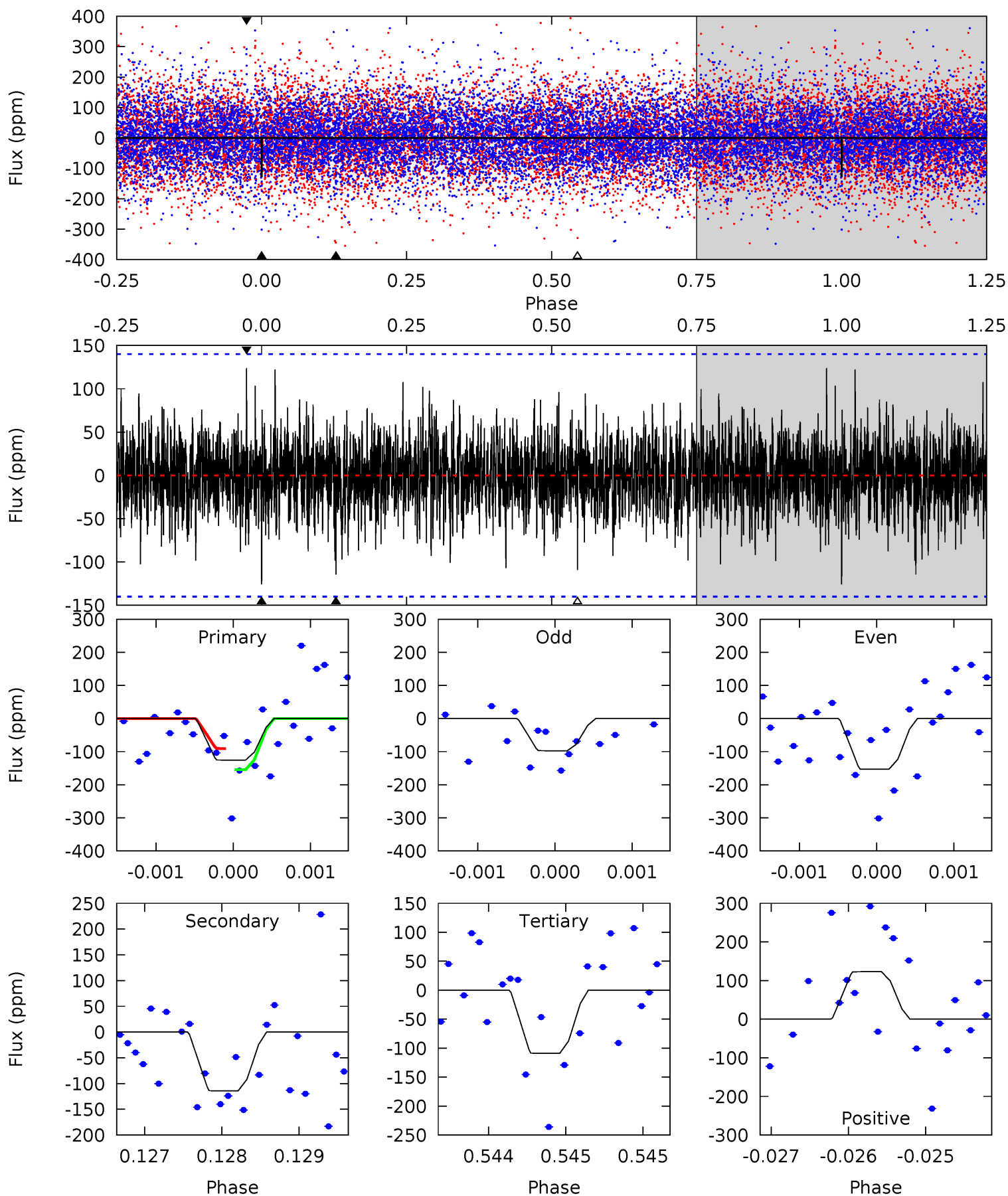
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.74	4.22	4.07	4.21	5.48	3.33	1.12	2.67	2.52	0.15	0.01	0.33	1.10	0.38	0.08



Alt Model-Shift Uniqueness Test

008511137-03, P = 109.652663 Days, E = 23.113564 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.95	4.50	4.29	4.84	5.51	3.38	1.24	0.66	0.11	0.21	-0.34	1.09	1.29	0.49	1.25



Stellar Parameters For KIC 008511137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7701^{+211}_{-316}	$3.862^{+0.315}_{-0.105}$	$-0.020^{+0.200}_{-0.350}$	$2.703^{+0.443}_{-1.034}$	$1.939^{+0.083}_{-0.471}$	$0.138^{+0.325}_{-0.046}$
	+3%/-4%	+8%/-3%	+1000%/-1750%	+16%/-38%	+4%/-24%	+235%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008511137-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-90 ± 21	$3.78^{+2.97}_{-2.13}$	1017^{+66}_{-101}	6109^{+3881}_{-1367}	1051^{+4059}_{-739}
Alt.	-114 ± 25	$3.91^{+2.58}_{-2.31}$	1025^{+73}_{-100}	6595^{+5052}_{-1505}	1308^{+5944}_{-880}

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 $A_{obs} \gg 1.0$

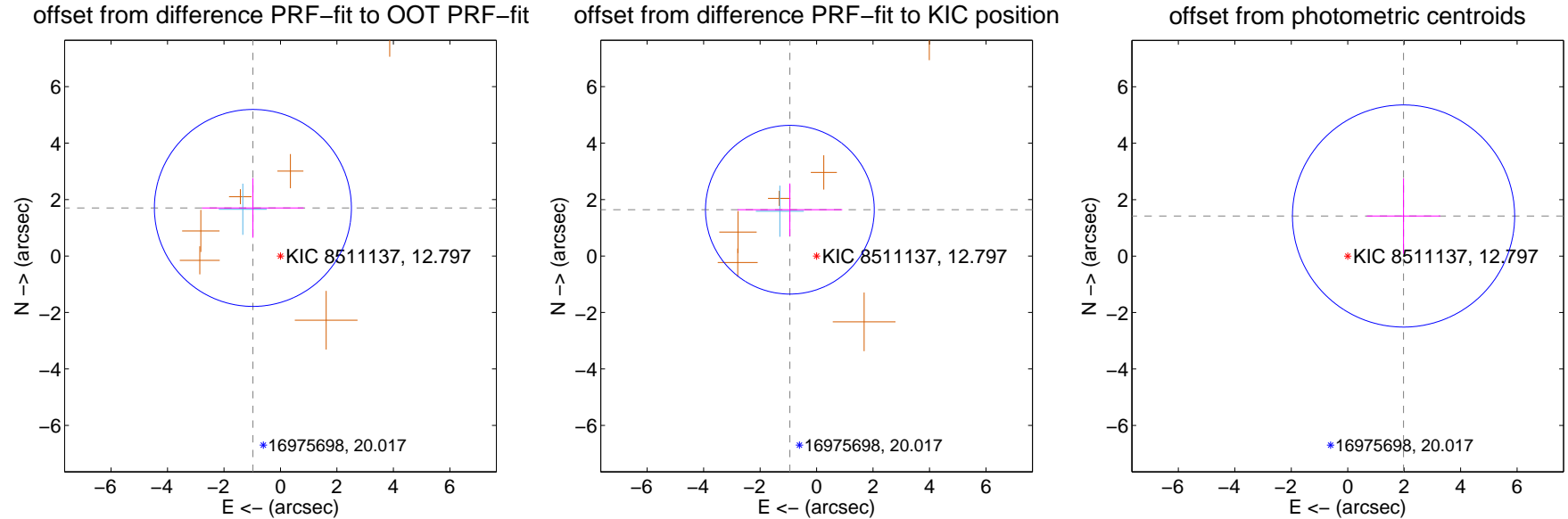
DV Centroid Data

Supplemental centroid analysis for 008511137-03. Kepler magnitude: 12.80. Transit SNR 9.38

There are 1 quarters with good PRF difference image offsets

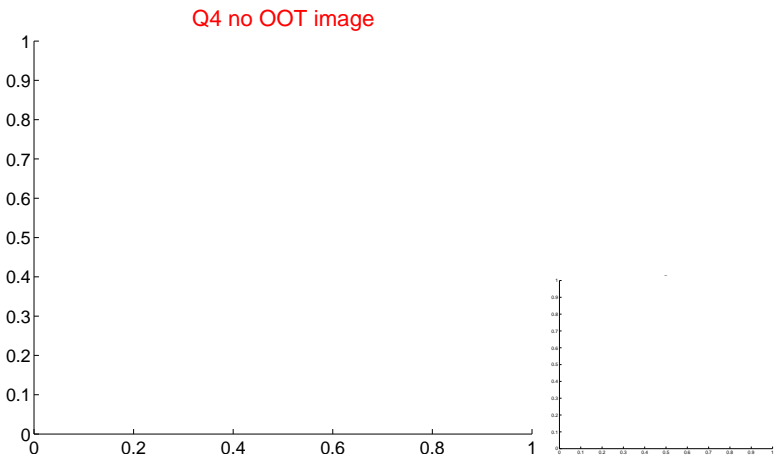
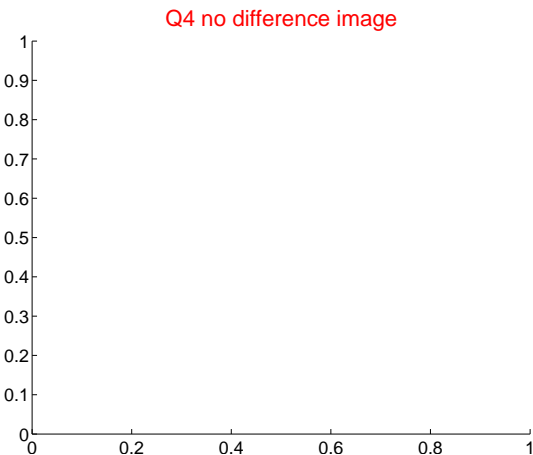
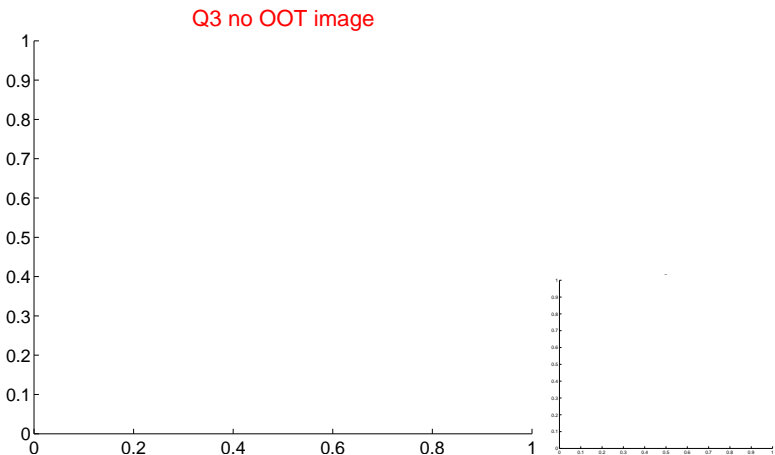
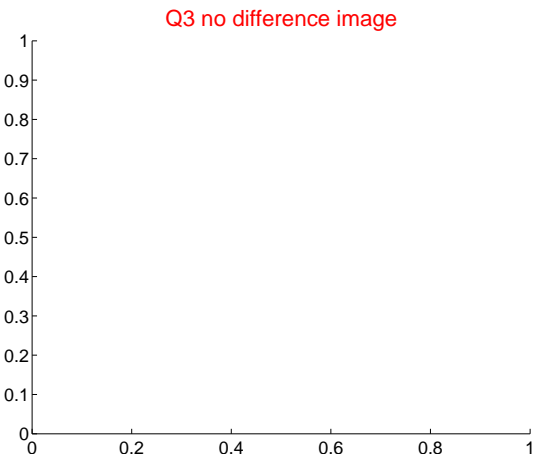
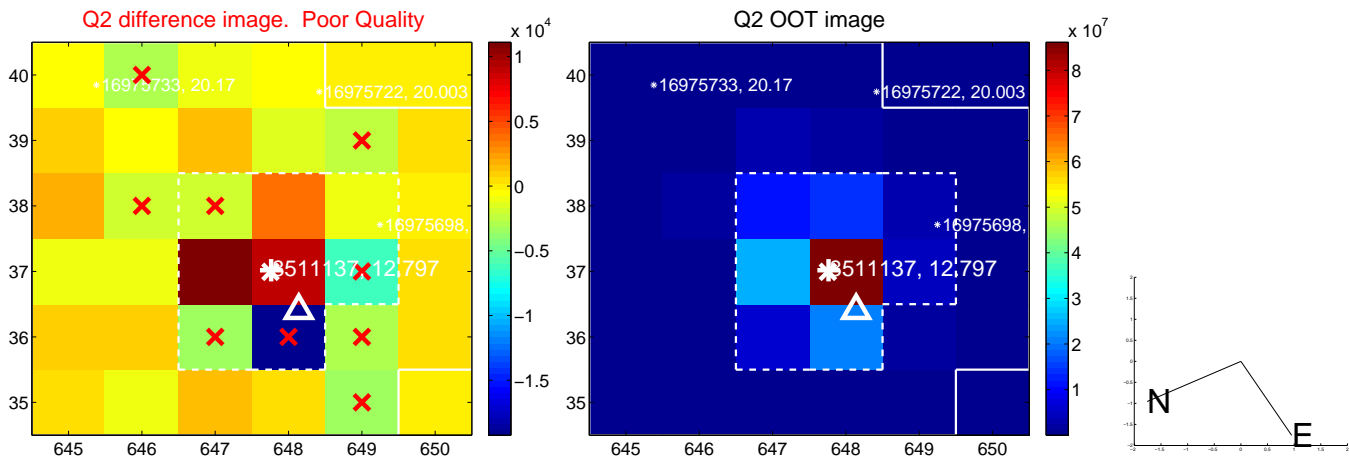
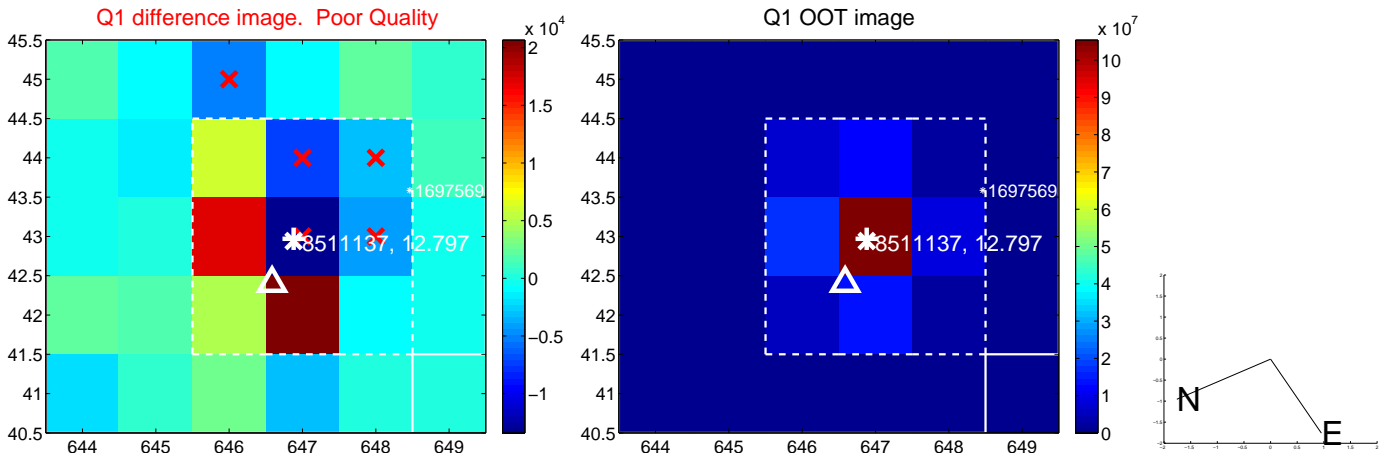
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.964 ± 1.163	1.69	0.976 ± 1.801	1.704 ± 1.054
PRF-fit source offset from KIC position	1.893 ± 0.996	1.90	0.946 ± 1.854	1.640 ± 0.932
photometric centroid source offset	2.44 ± 1.31	1.86	-1.98 ± 1.30	1.42 ± 1.33

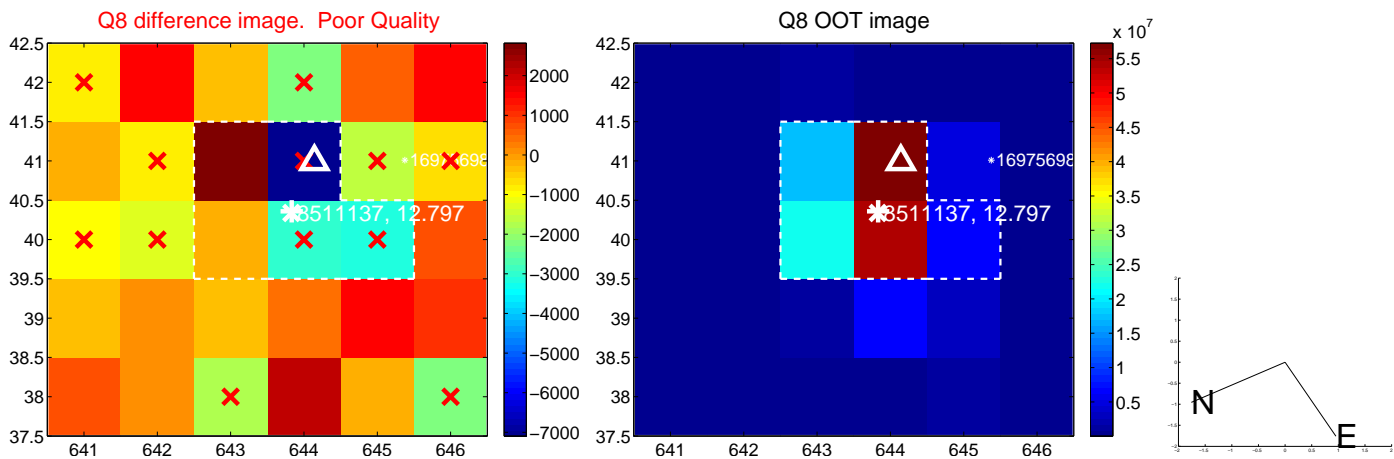
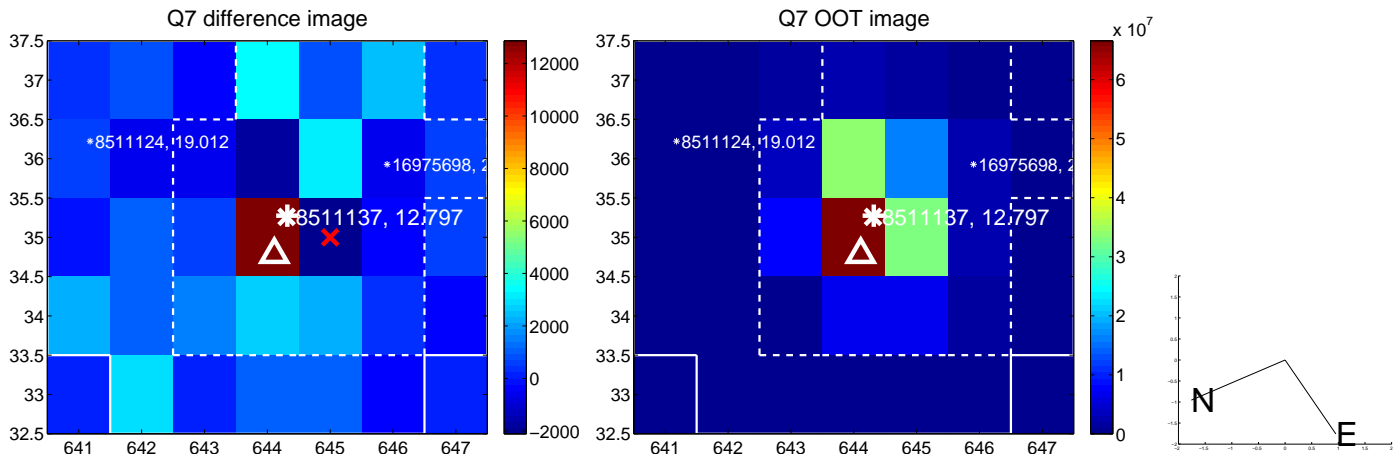
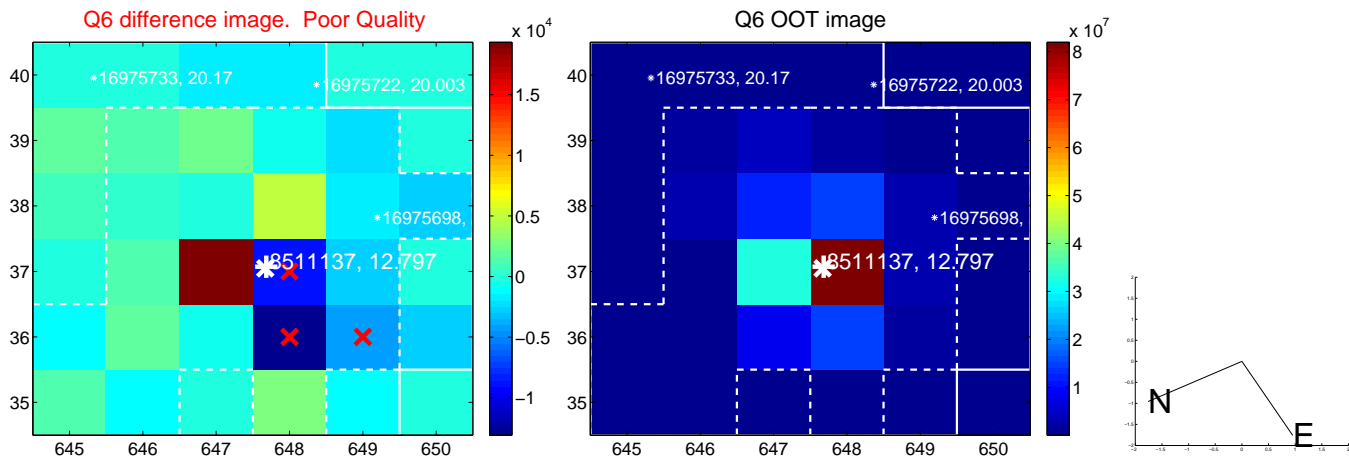
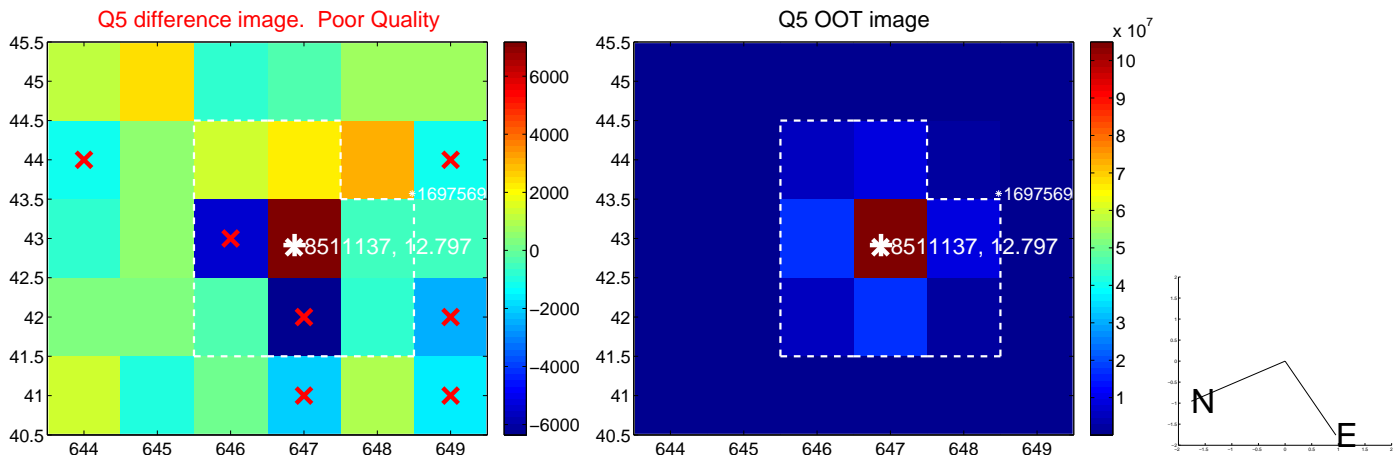


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

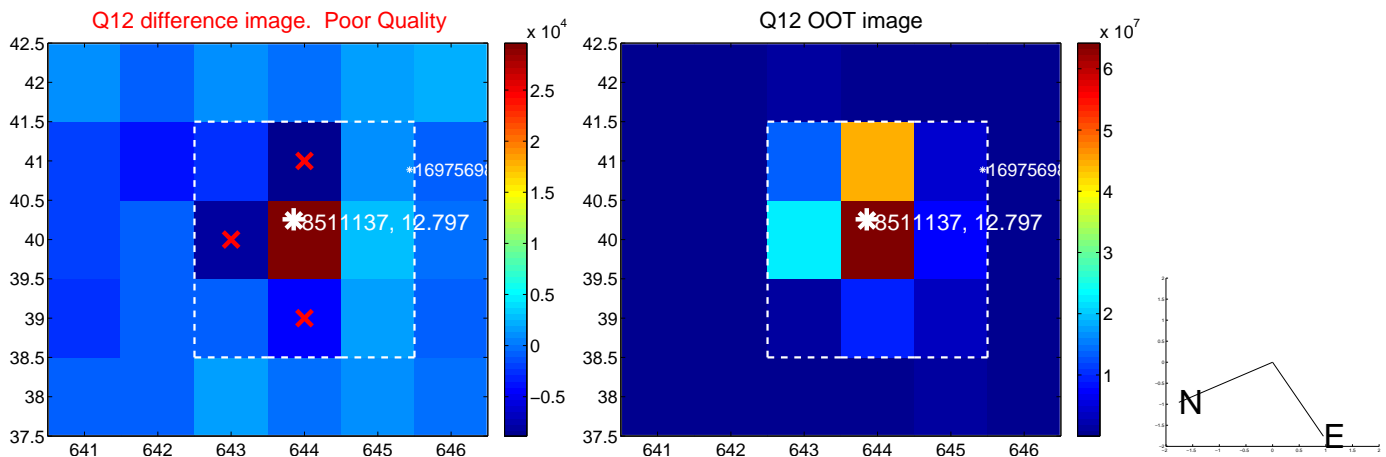
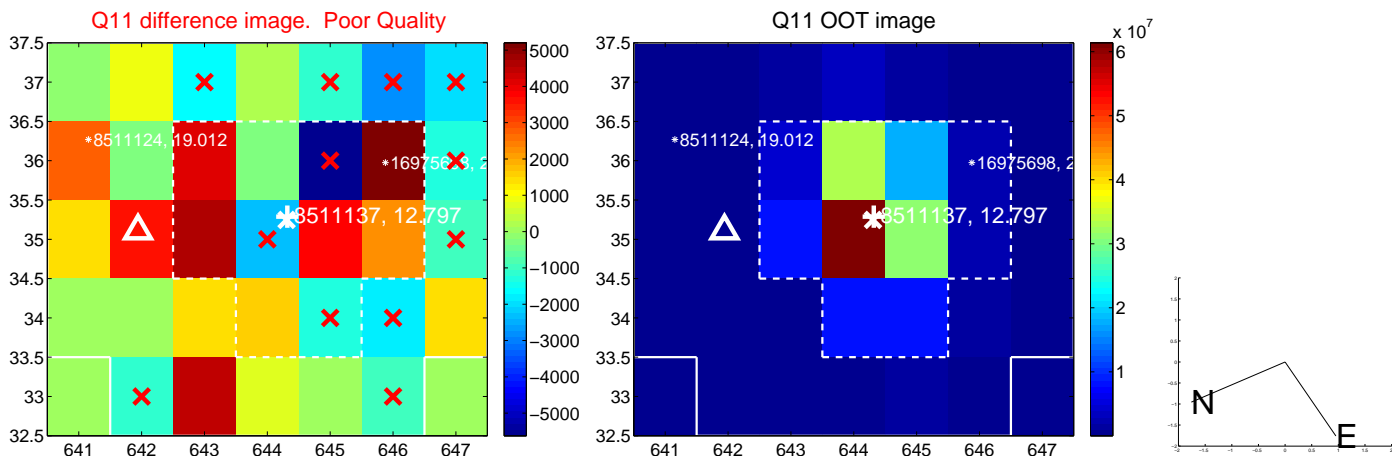
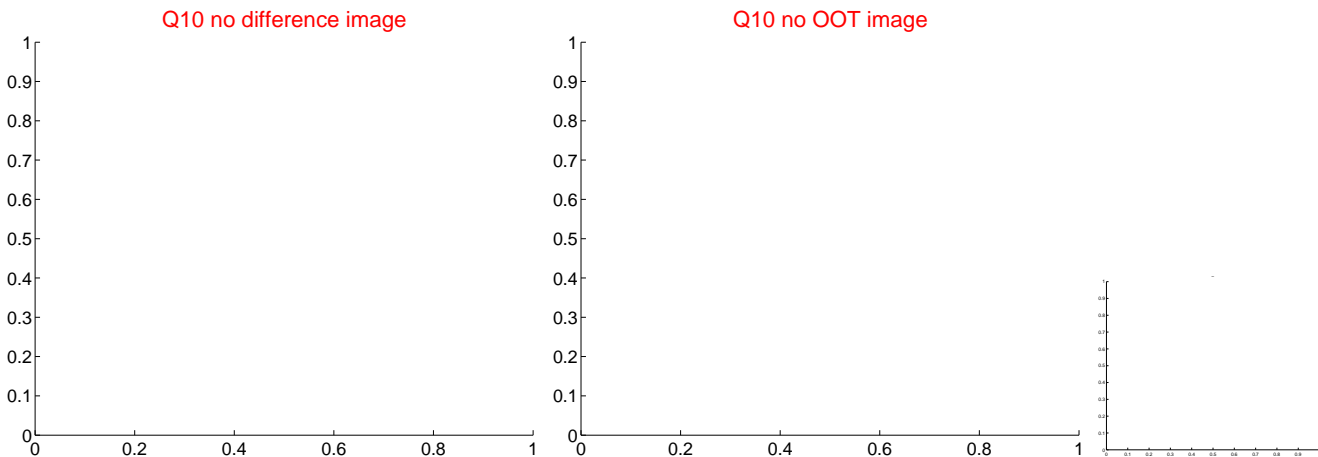
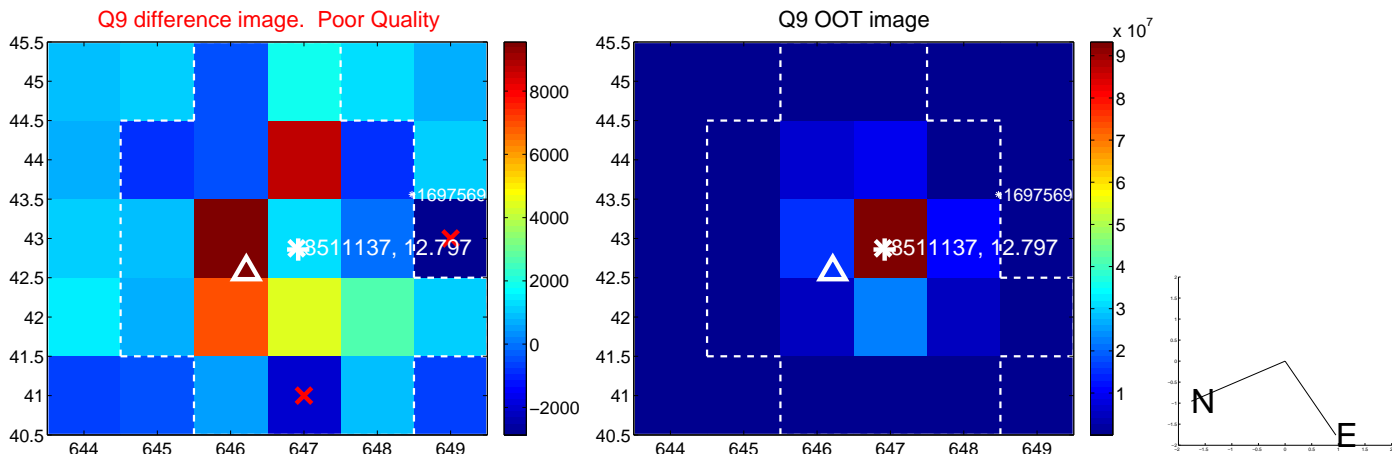
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



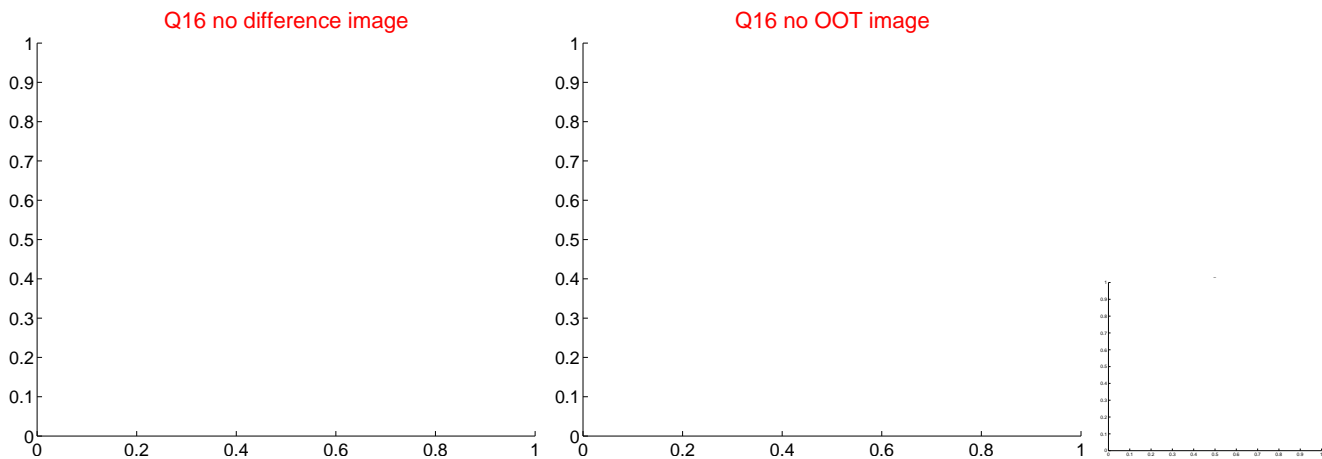
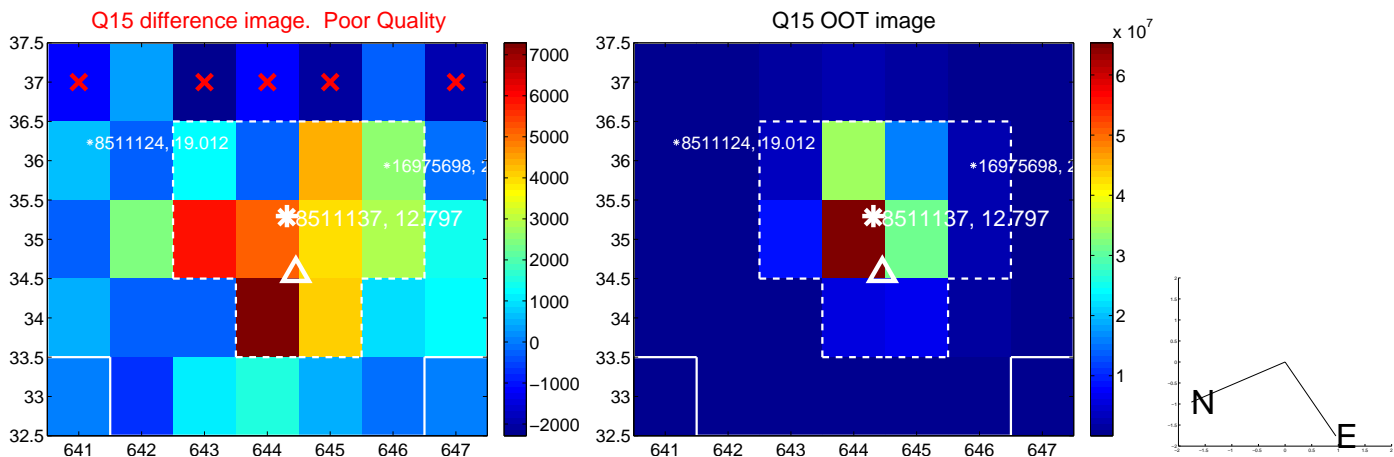
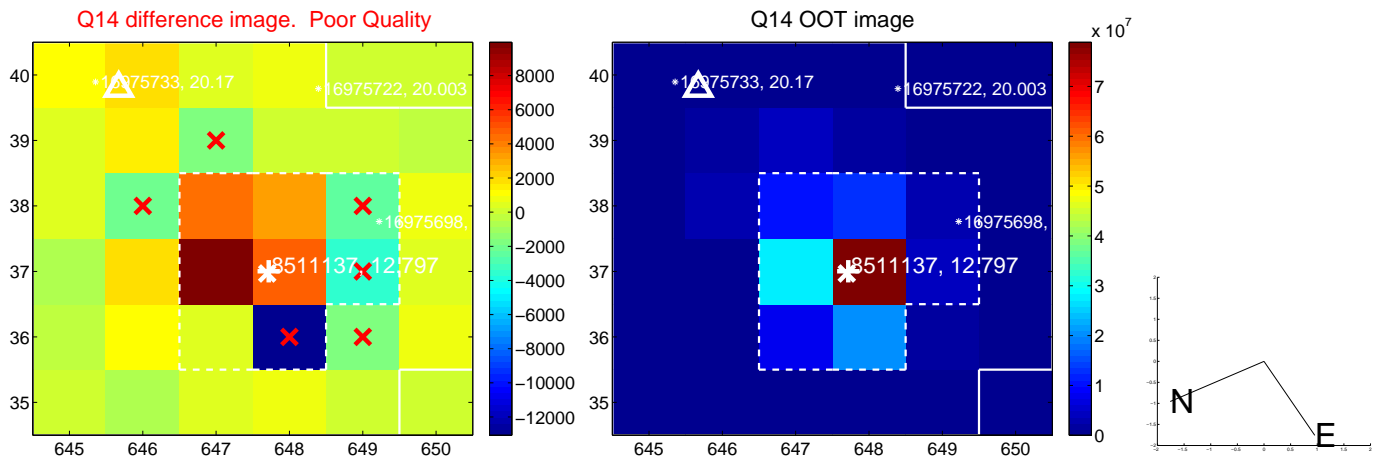
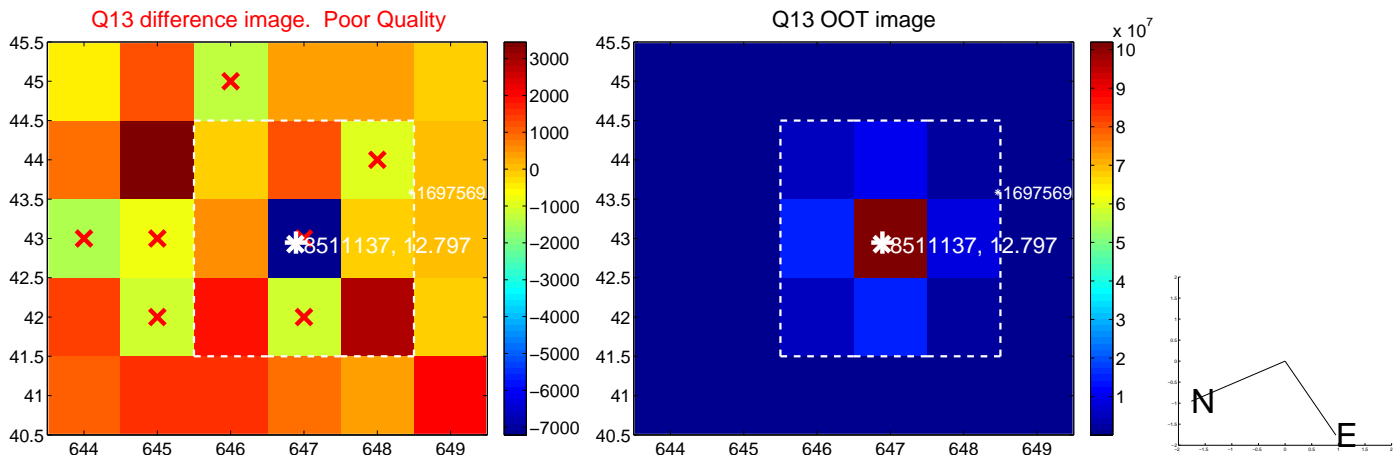
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



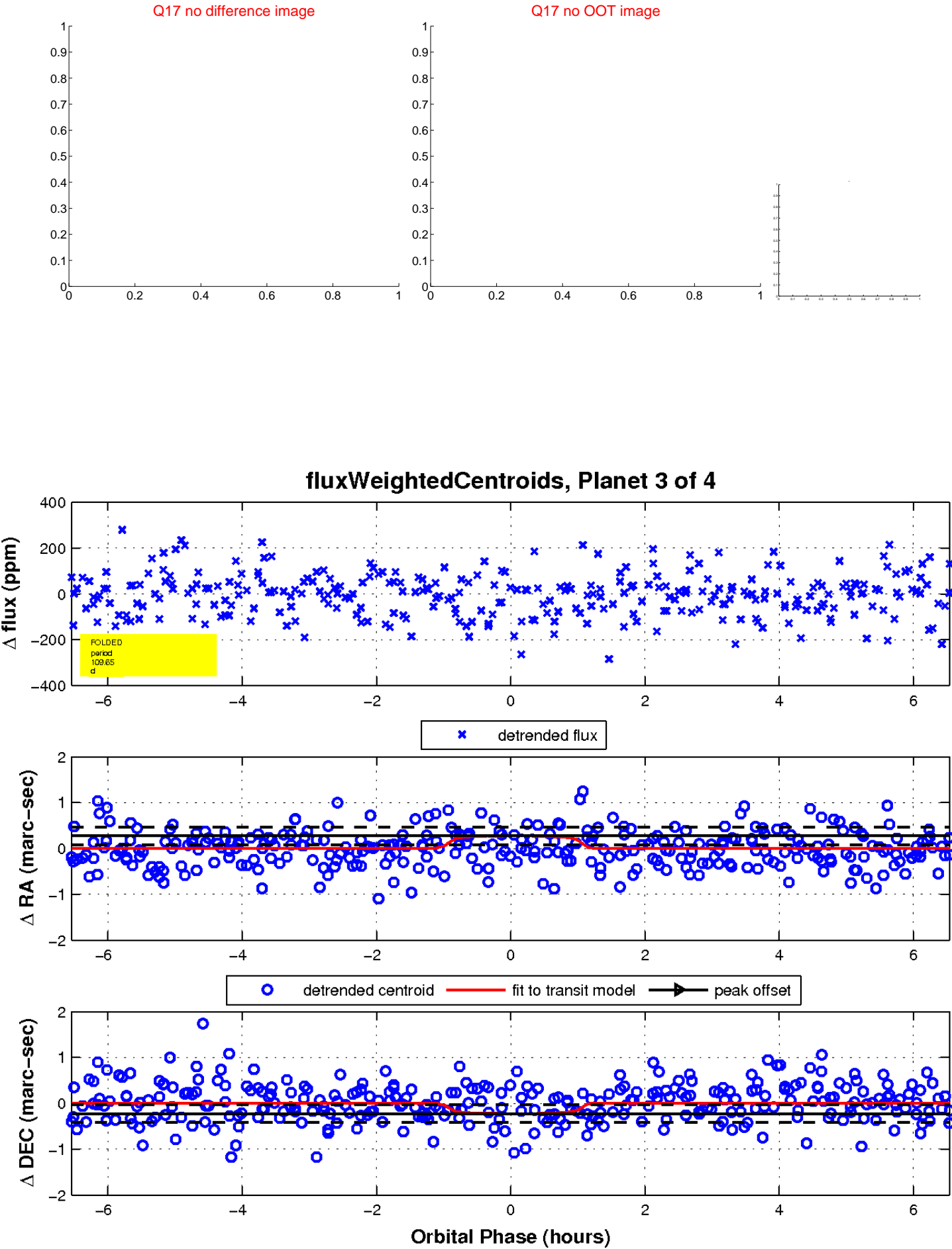
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

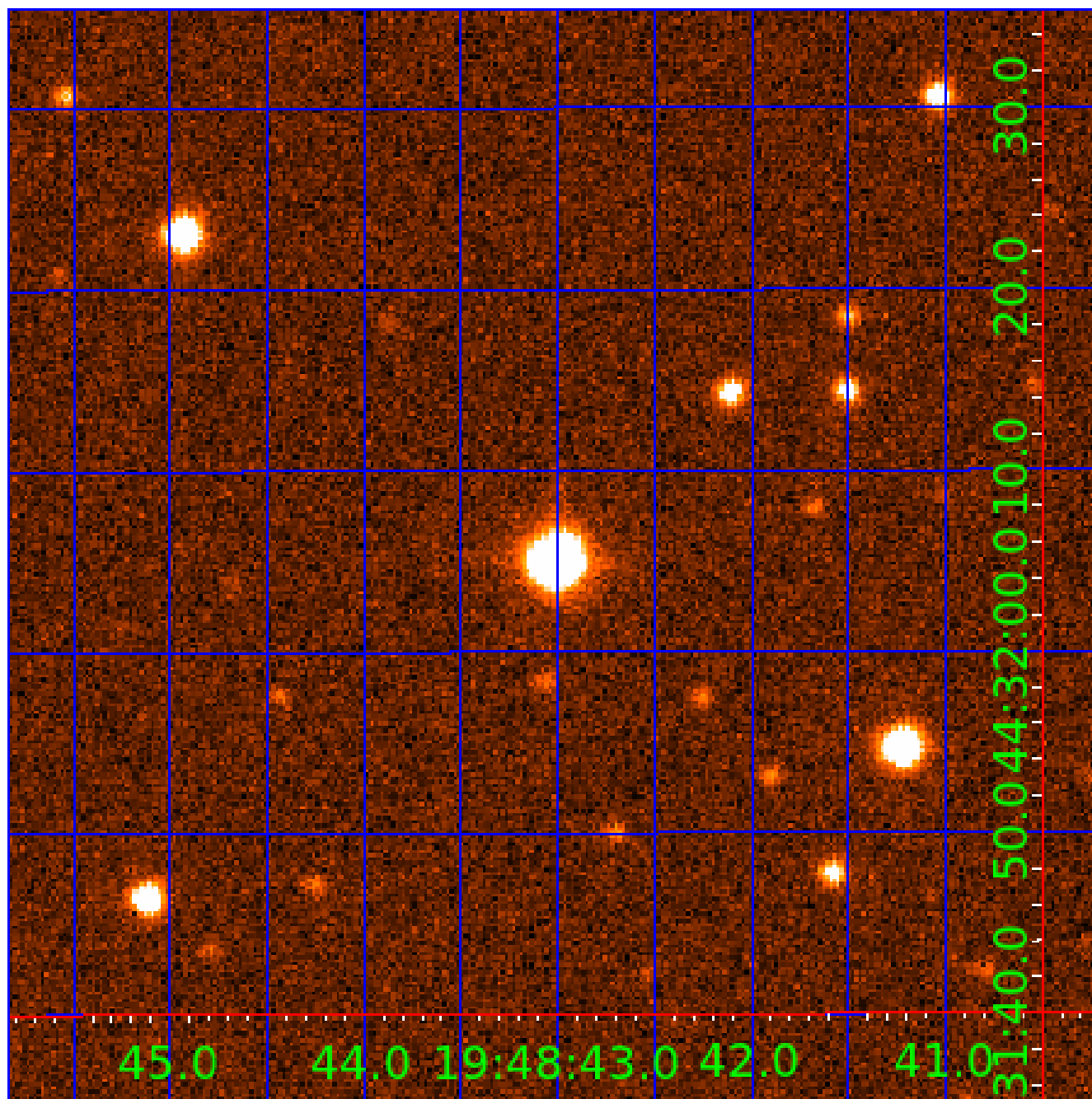


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008511137

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})
008511137-01	OBS	No	1.266384	133.418481	0.0	7.588	9.8	0.0	2.70	7701	0.02	28198.53
008511137-02	OBS	No	47.561851	141.928233	129.4	2.258	8.5	9.5	2.70	7701	3.50	224.20
008511137-03	OBS	No	109.651737	132.774673	145.9	2.193	8.2	9.4	2.70	7701	3.87	73.61
008511137-04	OBS	No	57.706822	156.280597	134.9	2.527	8.1	9.0	2.70	7701	3.61	173.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008511137-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008511137-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008511137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008511137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS

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

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

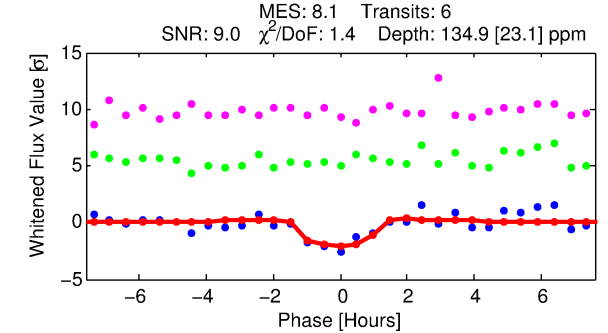
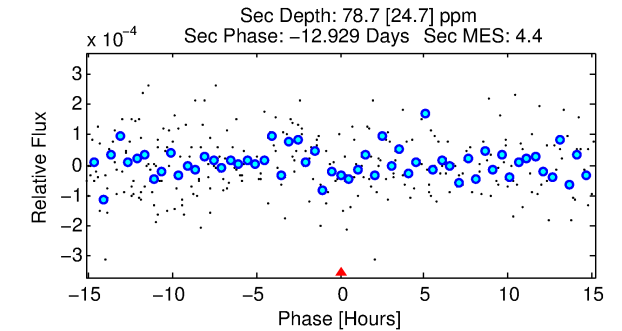
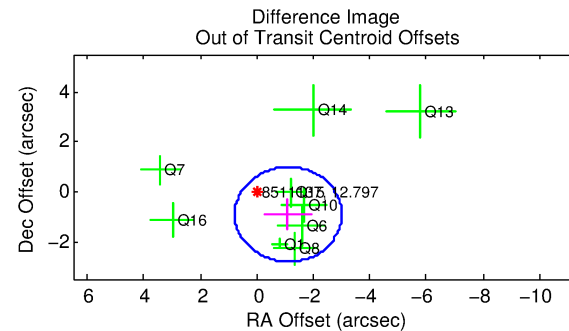
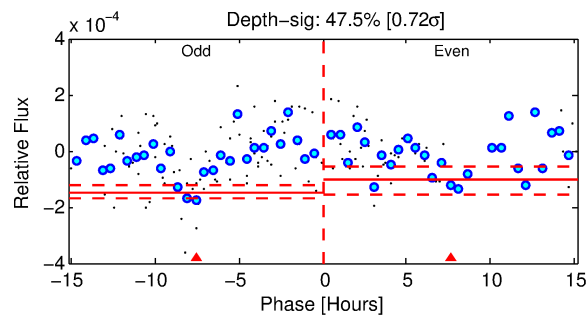
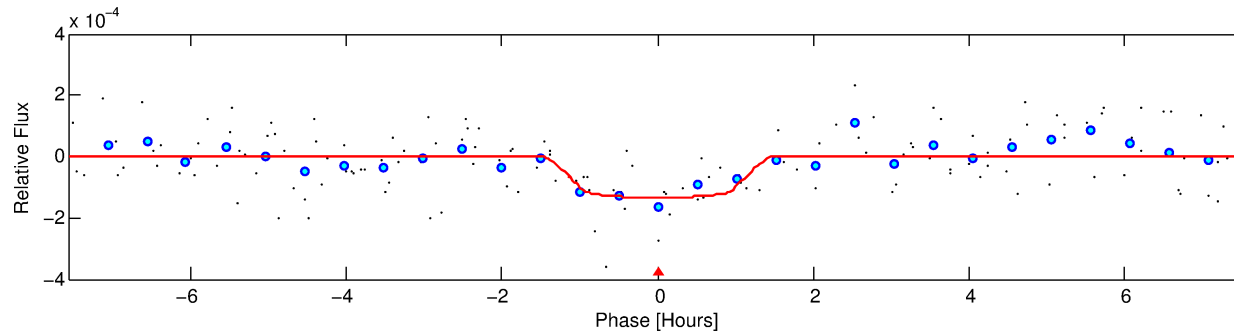
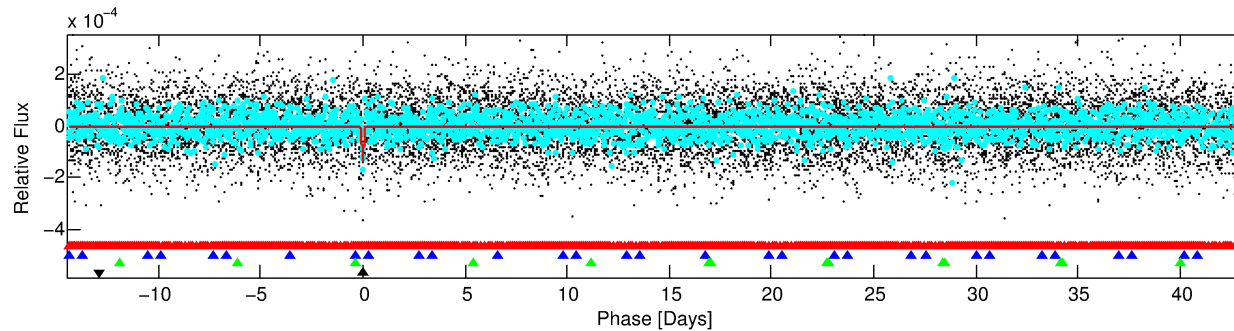
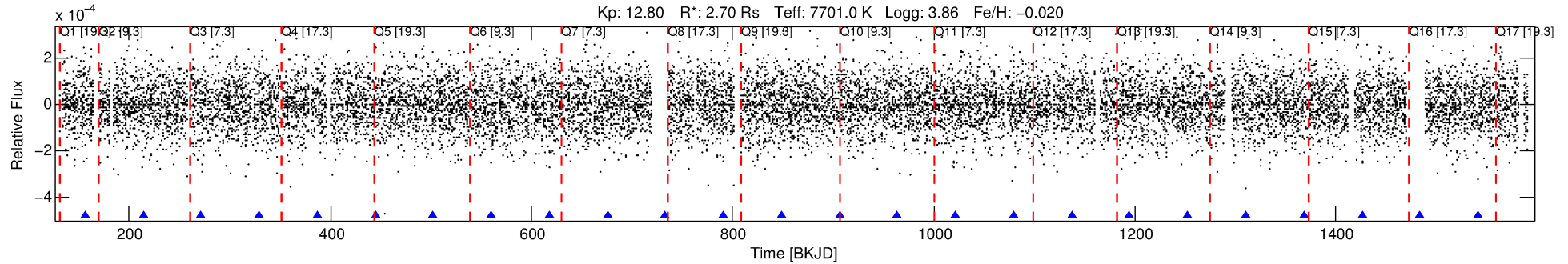
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008511137-04

No Significant Match Found

DV One-Page Summary

KIC: 8511137 Candidate: 4 of 4 Period: 57.707 d



DV Fit Results:

Period = 57.70682 [0.00069] d
Epoch = 156.2806 [0.0097] BKJD
Rp/R* = 0.0123 [0.0136]
a/R* = 84.71 [589.20]
b = 0.89 [1.68]
Seff = 173.25 [98.89]
Teq = 925 [132] K
Rp = 3.61 [4.24] Re
a = 0.3645 [0.1281] AU
Ag = 440.82 [1017.16] [0.43σ]
Teffp = 6554 [3683] K [1.53σ]

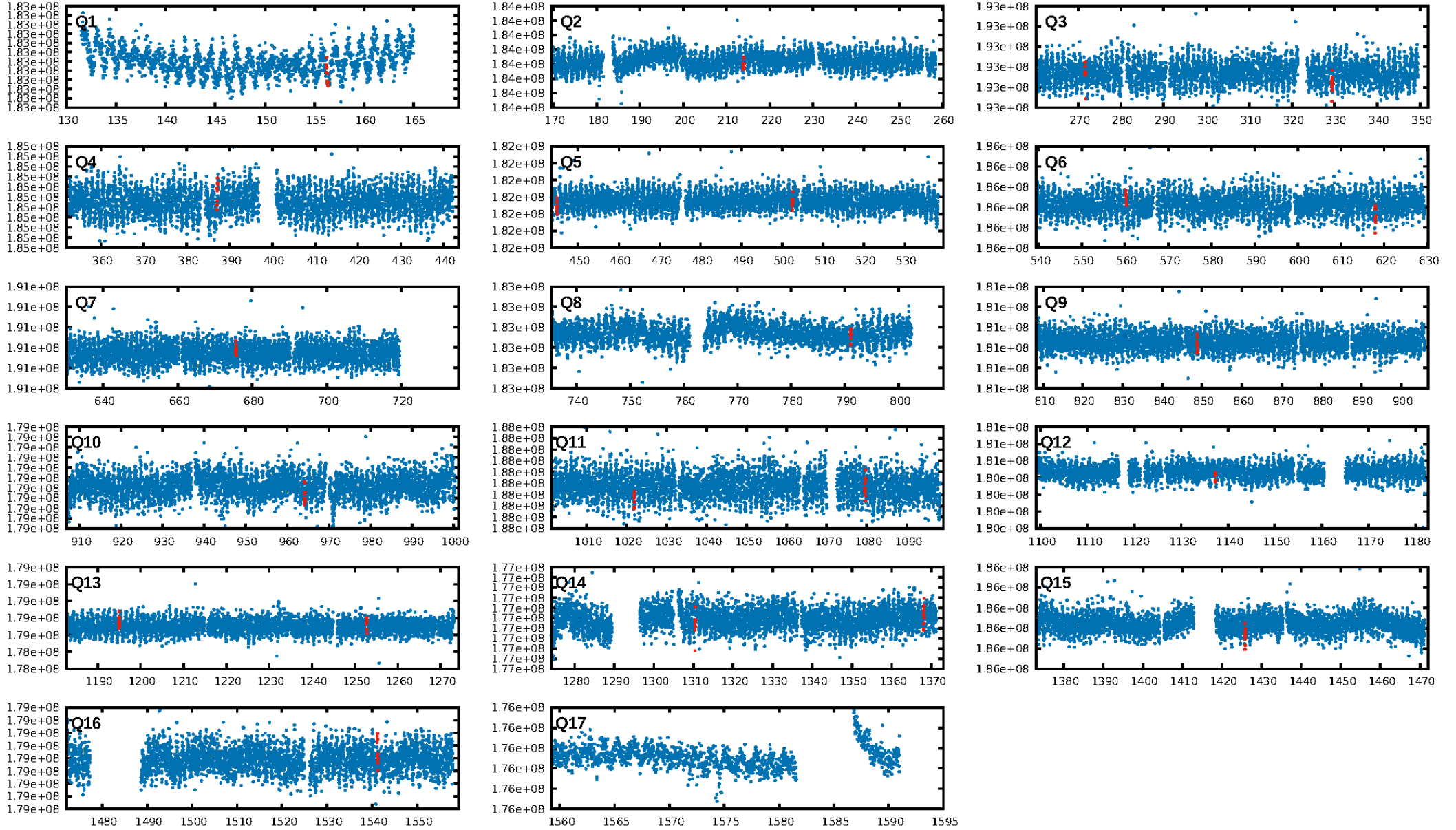
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [71.85σ]
LongPeriod-sig: 100.0% [372.56σ]
ModelChiSquare2-sig: 79.1%
ModelChiSquareGof-sig: 95.4%
Bootstrap-pfa: 9.83e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -6.277
Centroid-sig: 90.7%
Centroid-so: 0.275 arcsec [0.29σ]
OotOffset-rm: 1.437 arcsec [2.27σ]
KicOffset-rm: 1.518 arcsec [2.56σ]
OotOffset-st: 3/2/2/2 [9]
KicOffset-st: 3/2/2/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.31 [5/16]

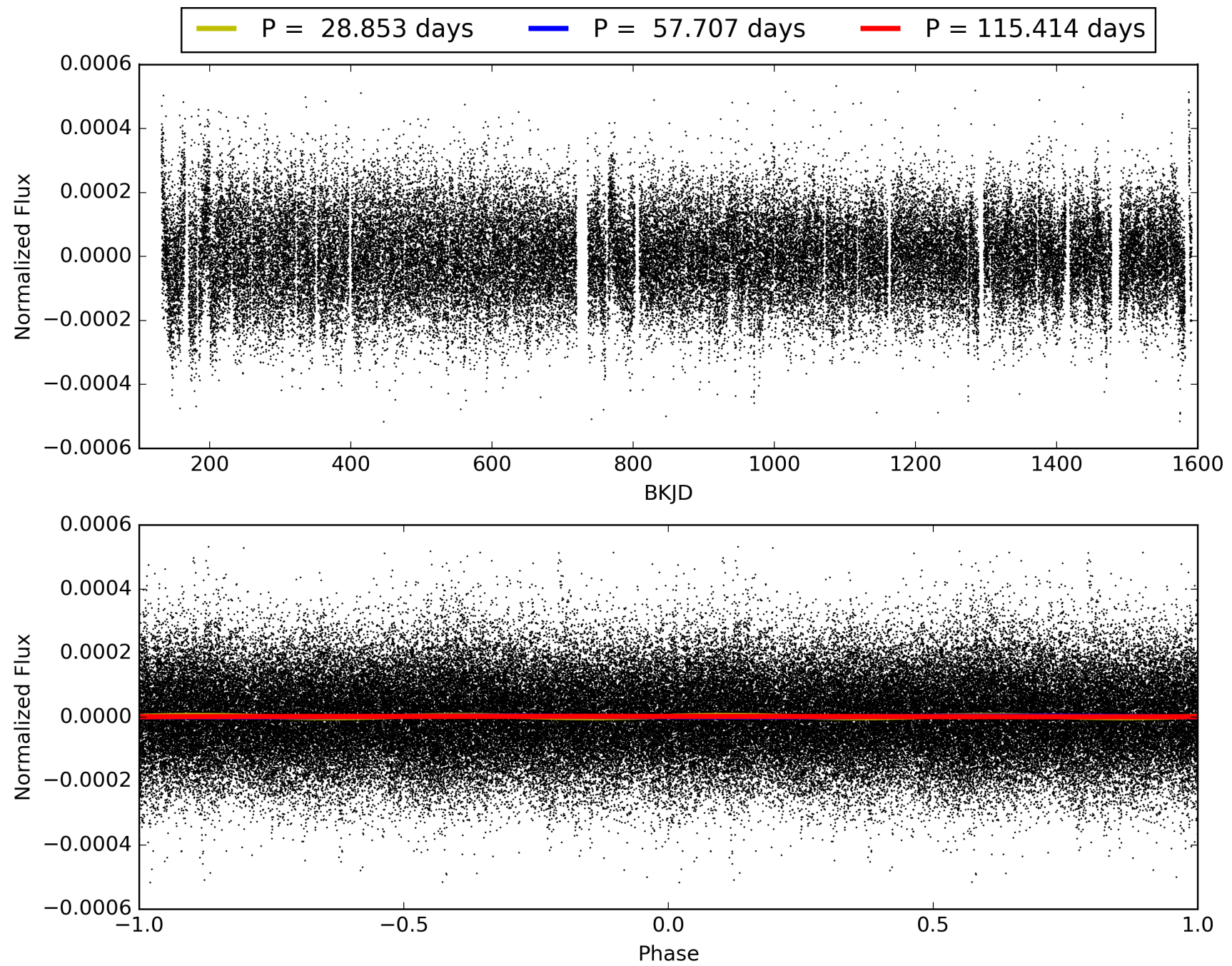
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:58:32 Z

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

TCE 008511137-04, PDC Light Curves

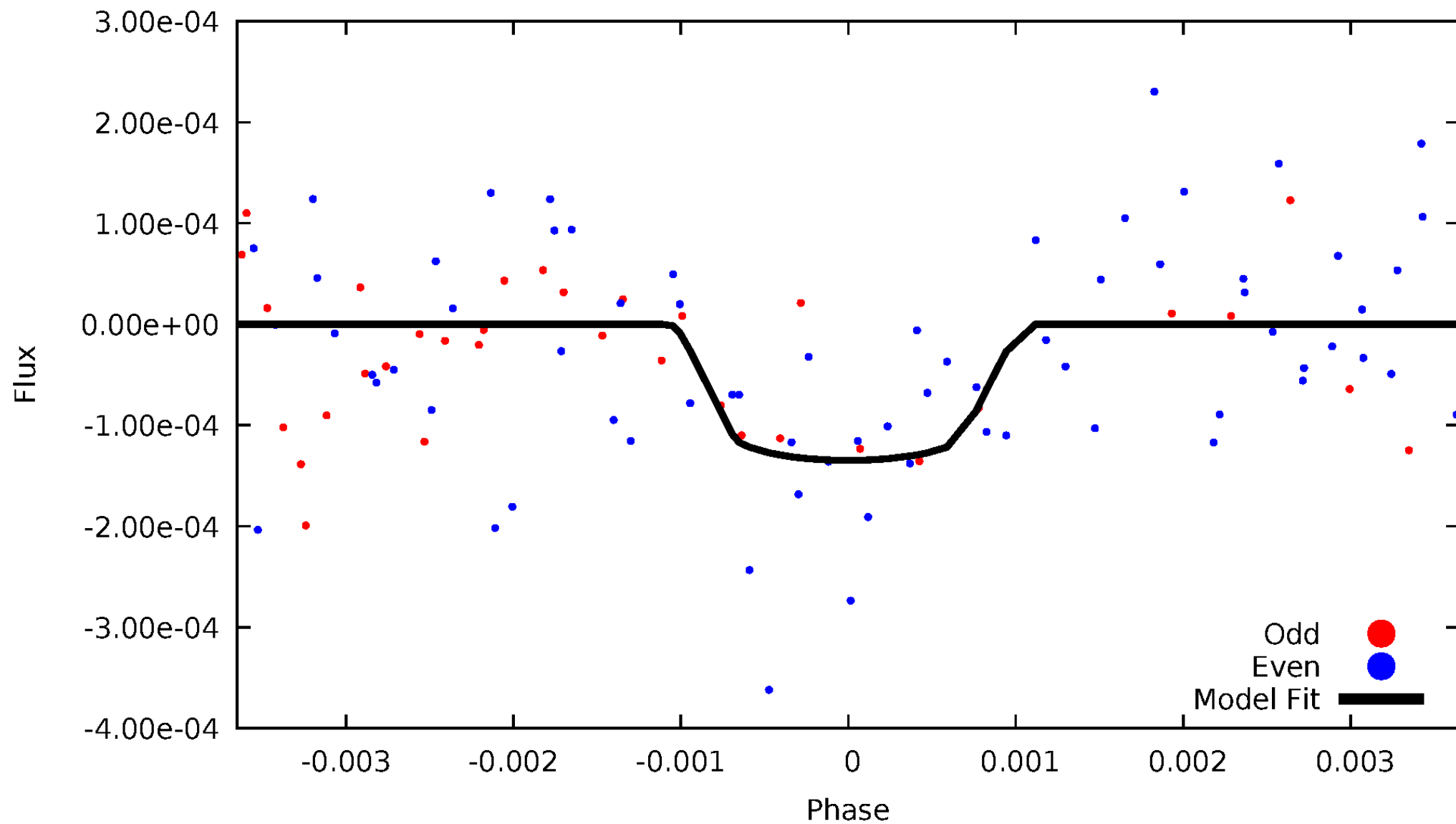


TCE 008511137-04



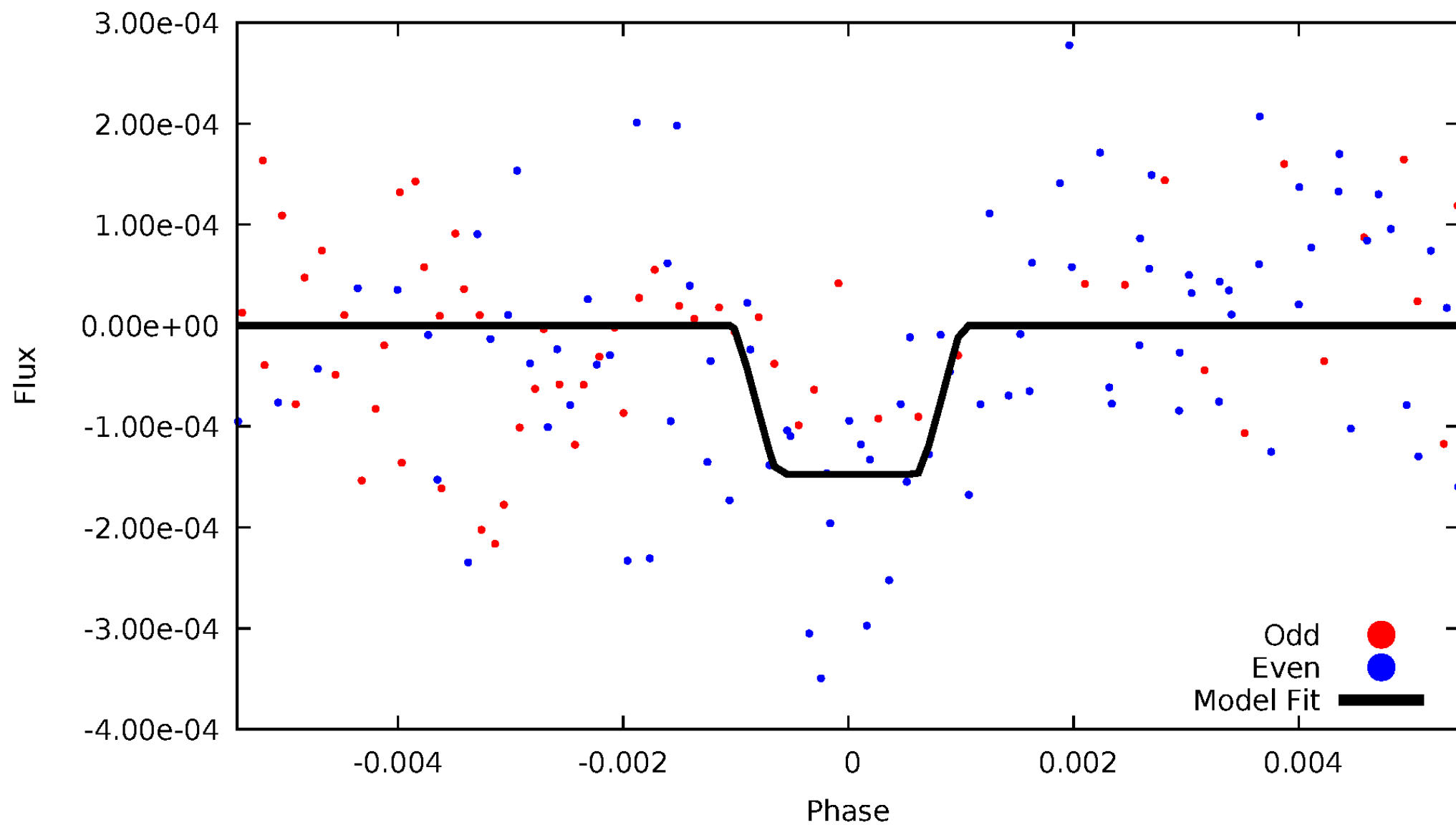
DV Odd/Even

TCE 008511137-04



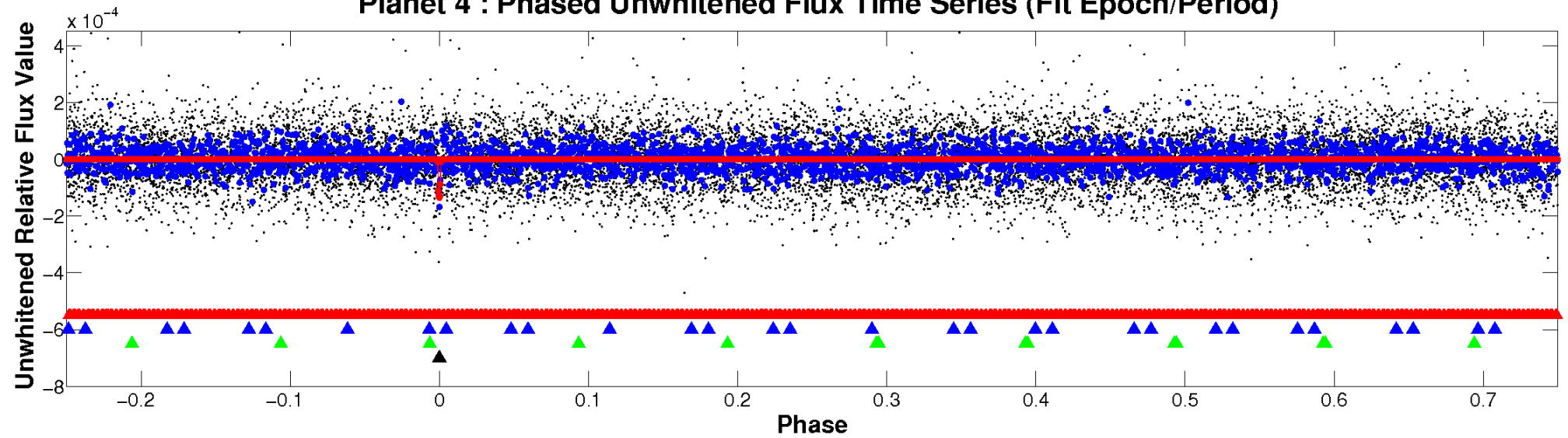
ALT Odd/Even

TCE 008511137-04

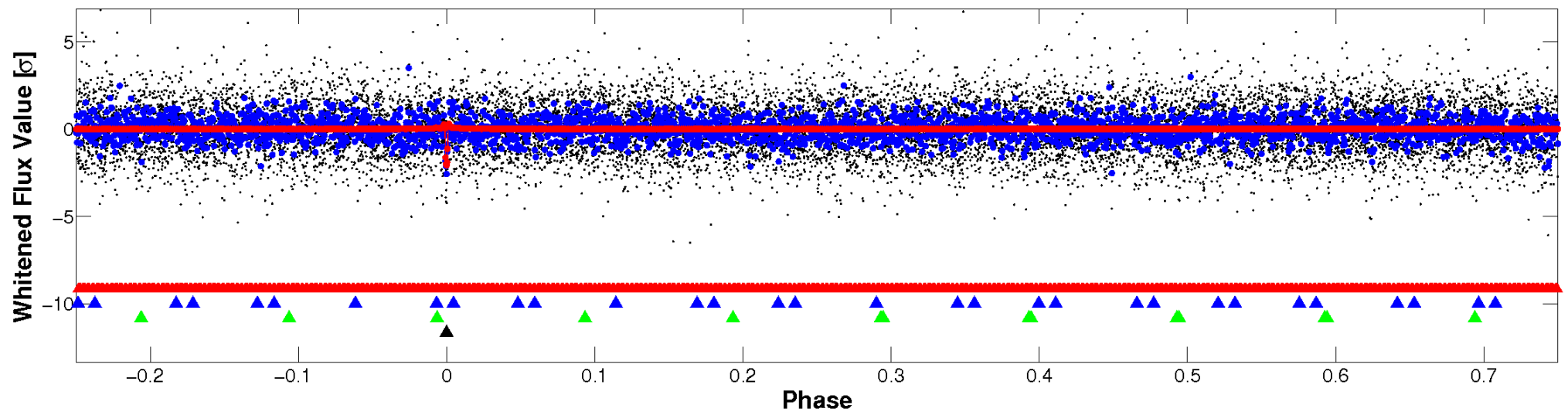


Non-Whitened Vs. Whitened Light Curve

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

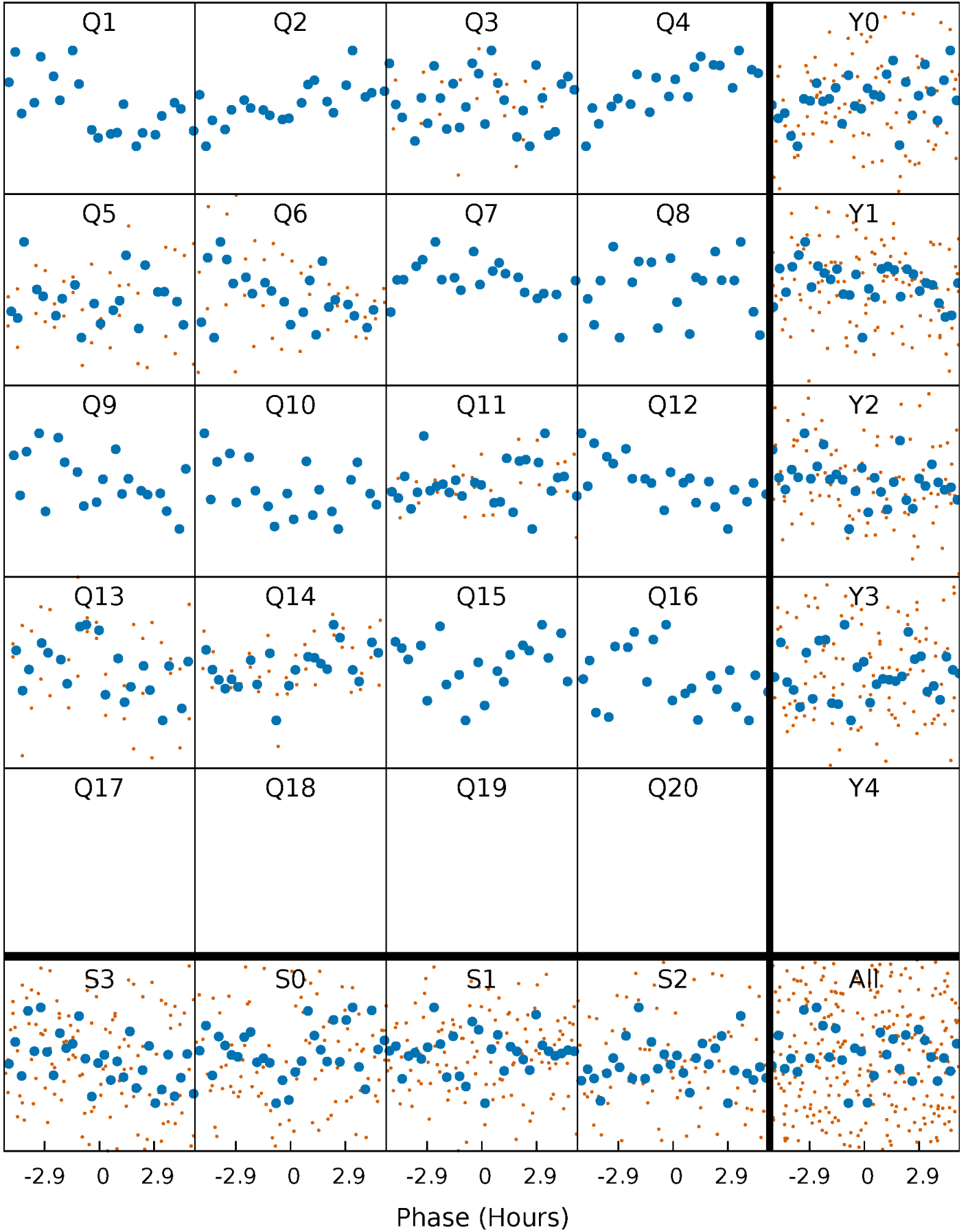


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



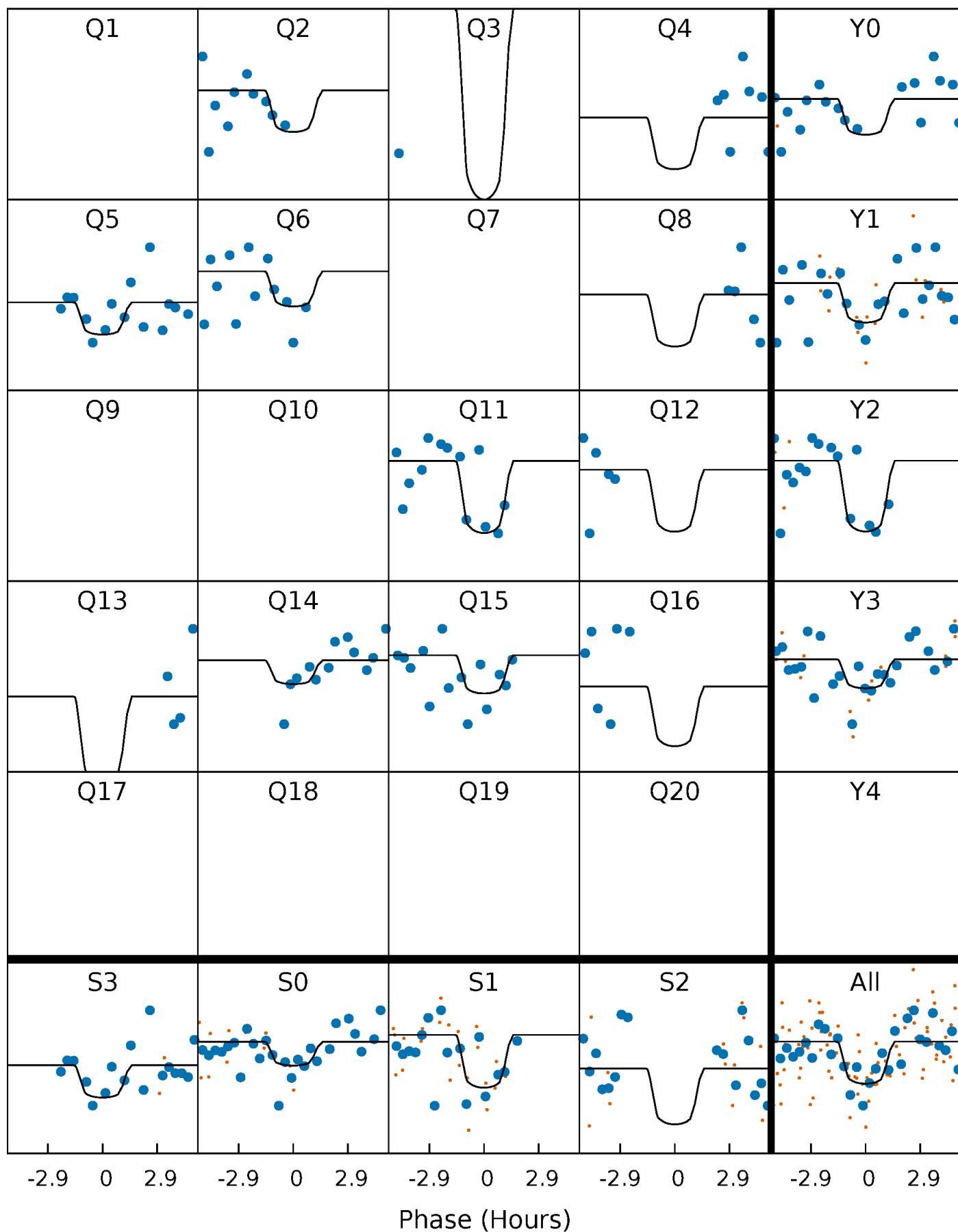
PDC Quarter-Phased Transit Curves

TCE 008511137-04 P= 57.706822 Days $T_0=156.280597$ (BKJD)



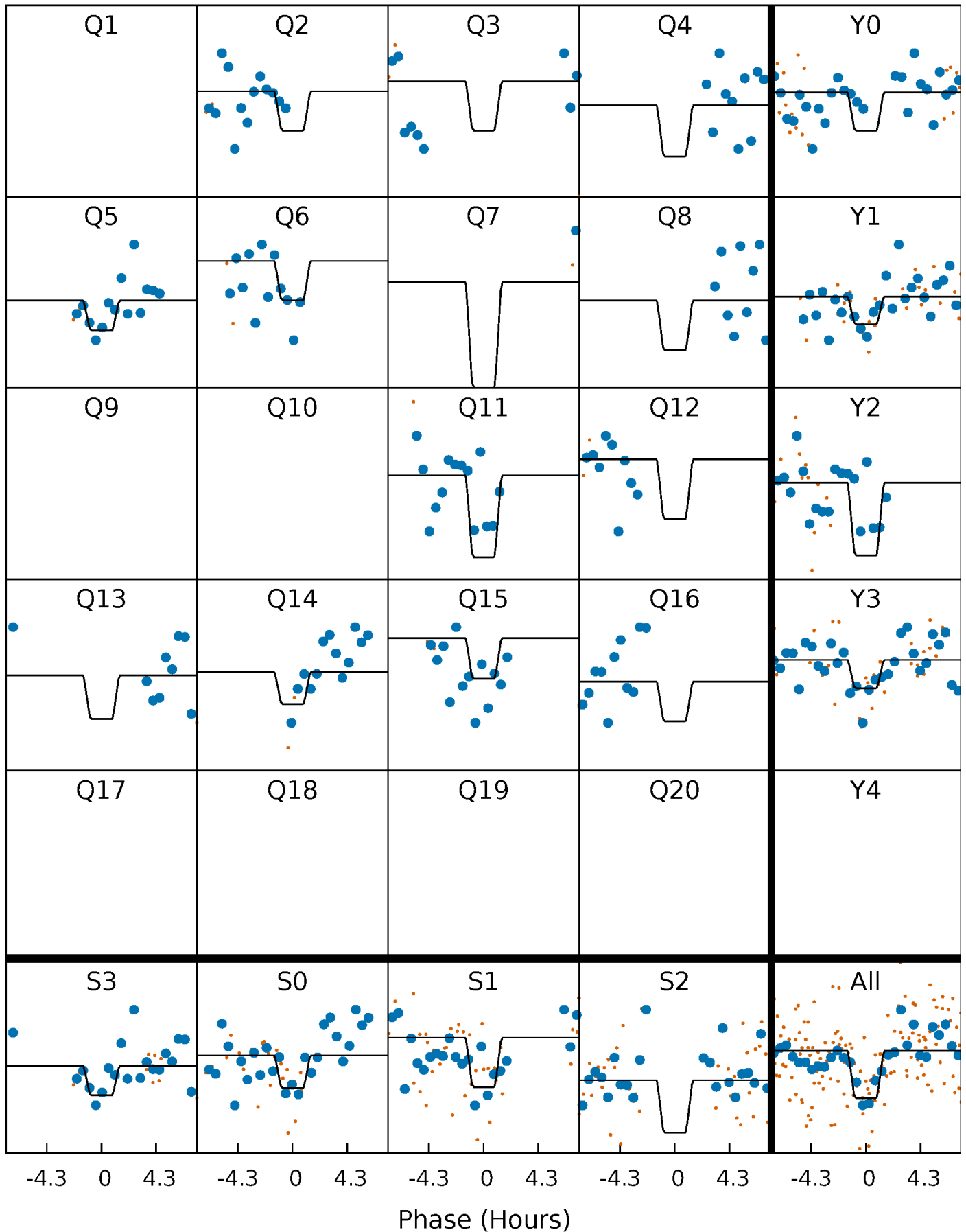
DV Quarter-Phased Transit Curves

TCE 008511137-04 P= 57.706822 Days $T_0=156.280597$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

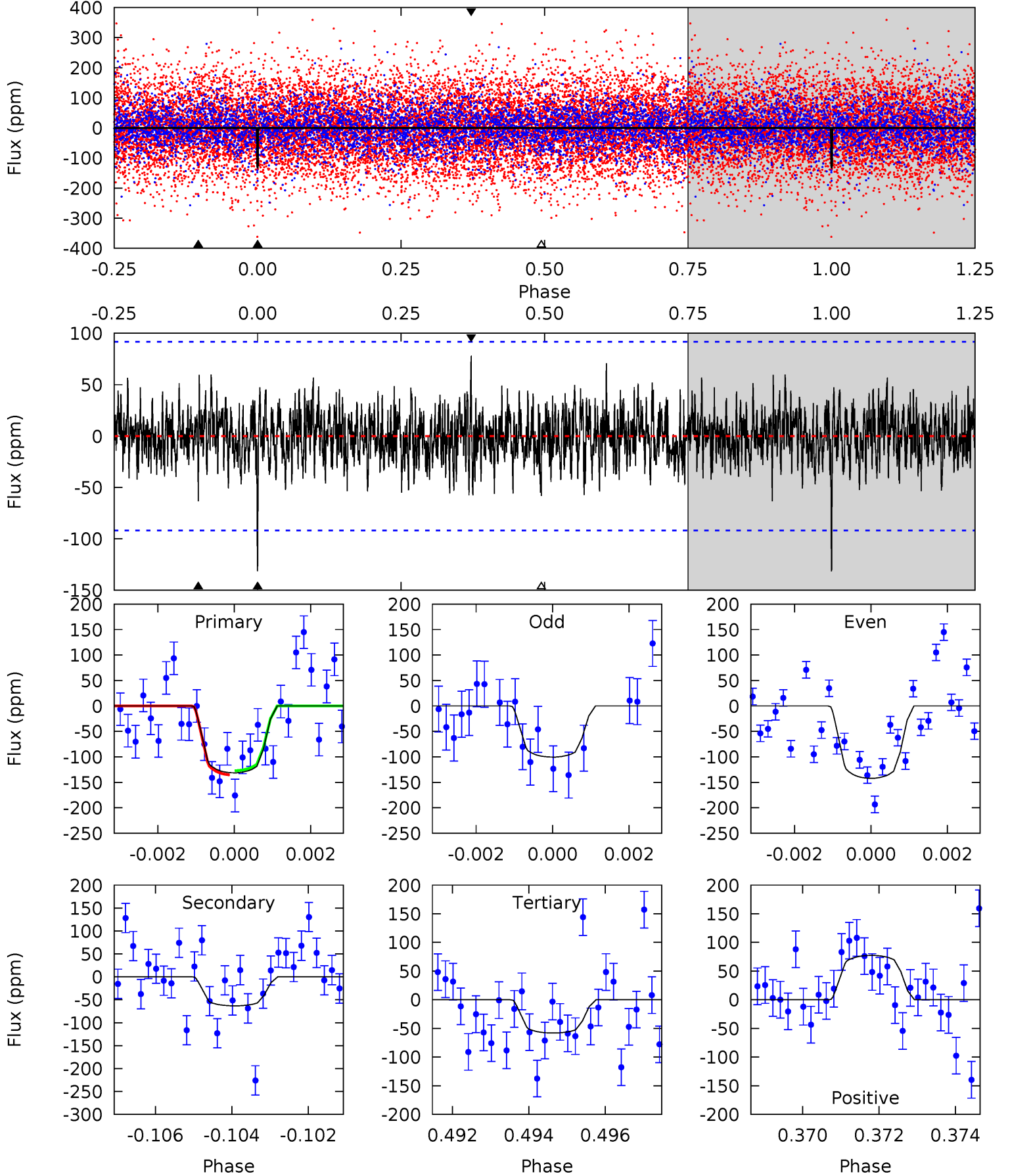
TCE 008511137-04 P= 57.706437 Days $T_0=156.275017$ (BKJD)



DV Model-Shift Uniqueness Test

008511137-04, P = 57.706822 Days, E = 98.573775 Days

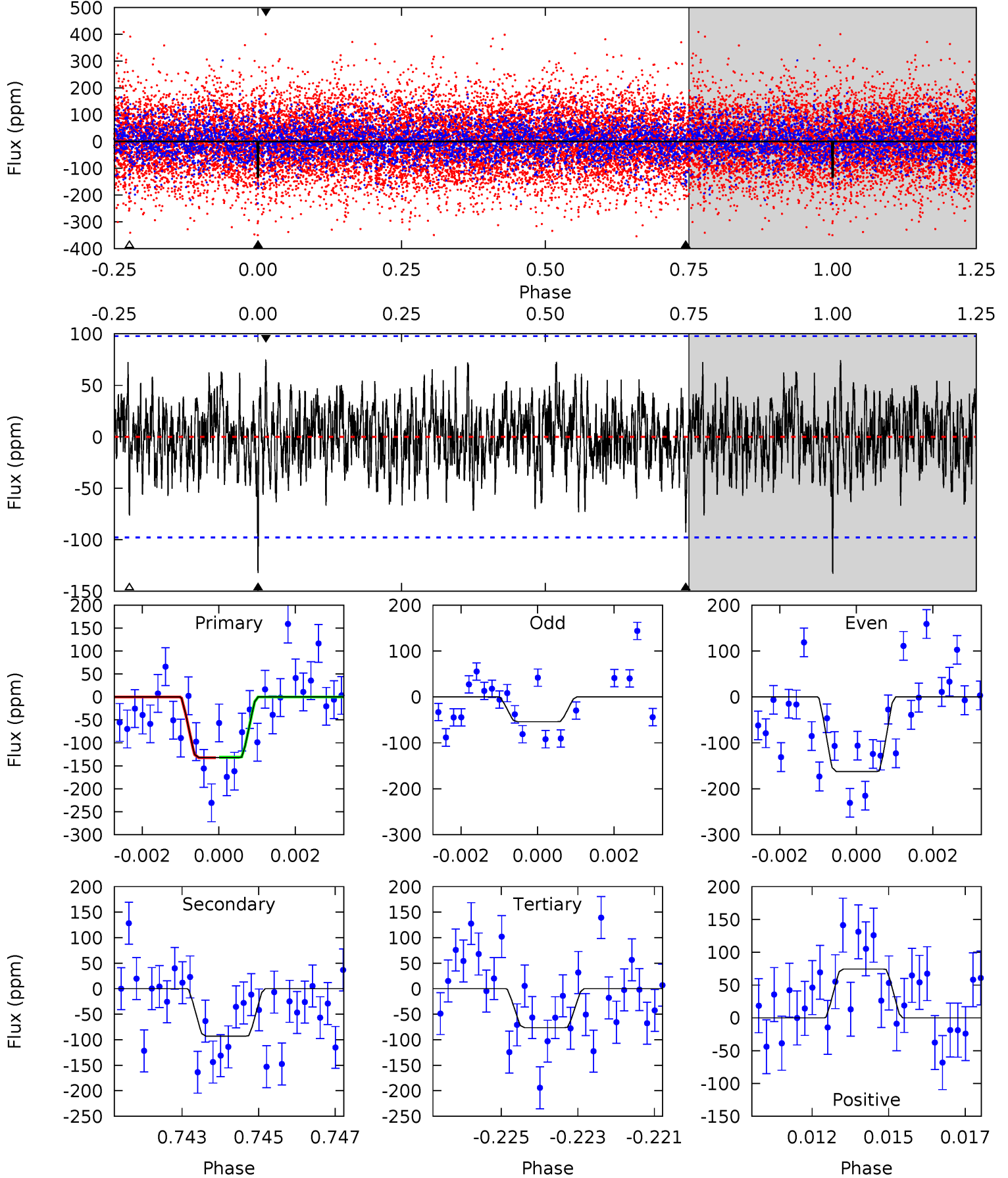
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.63	3.67	3.37	4.49	5.33	3.09	1.16	4.26	3.14	0.30	-0.82	1.10	0.99	0.37	0.24



Alt Model-Shift Uniqueness Test

008511137-04, P = 57.706437 Days, E = 98.568580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.18	5.05	4.15	4.05	5.32	3.08	1.36	3.03	3.14	0.90	1.01	2.69	0.90	0.36	0.03



Stellar Parameters For KIC 008511137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7701^{+211}_{-316}	$3.862^{+0.315}_{-0.105}$	$-0.020^{+0.200}_{-0.350}$	$2.703^{+0.443}_{-1.034}$	$1.939^{+0.083}_{-0.471}$	$0.138^{+0.325}_{-0.046}$
	+3%/-4%	+8%/-3%	+1000%/-1750%	+16%/-38%	+4%/-24%	+235%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008511137-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-63 ± 17	$4.01^{+3.49}_{-2.61}$	1262^{+87}_{-122}	5520^{+4765}_{-1268}	274^{+1897}_{-198}
Alt.	-93 ± 18	$4.28^{+3.43}_{-2.70}$	1262^{+85}_{-122}	5817^{+4897}_{-1268}	367^{+2388}_{-262}

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 $A_{obs} \gg 1.0$

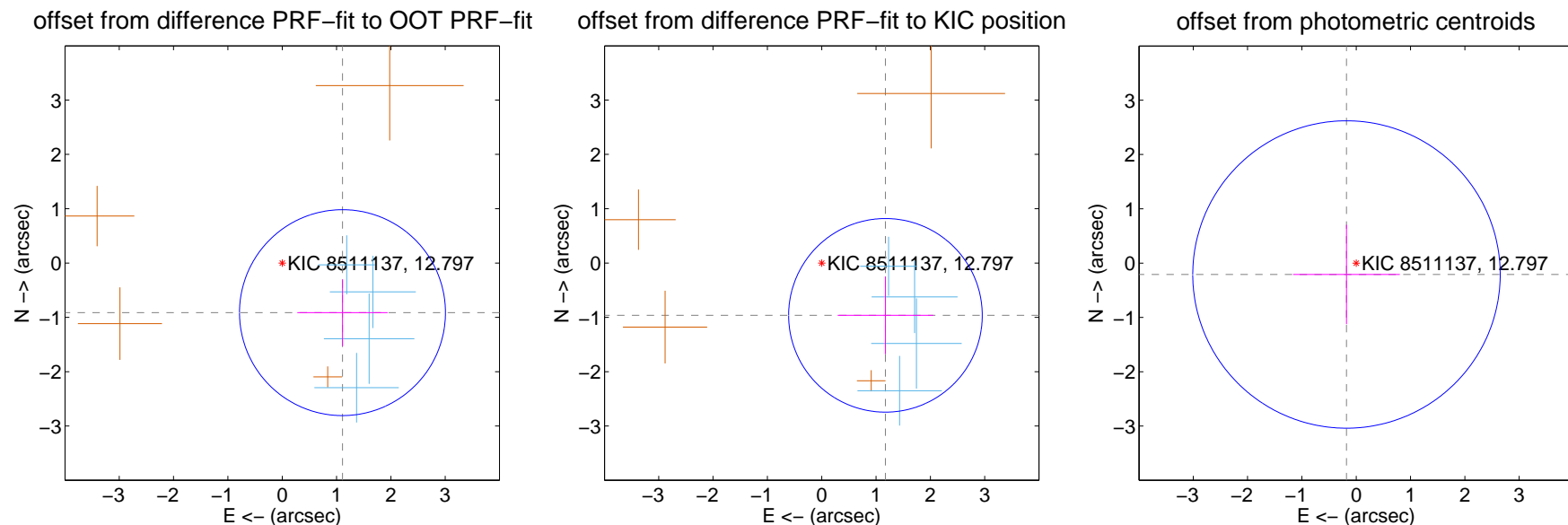
DV Centroid Data

Supplemental centroid analysis for 008511137-04. Kepler magnitude: 12.80. Transit SNR 8.96

There are 4 quarters with good PRF difference image offsets

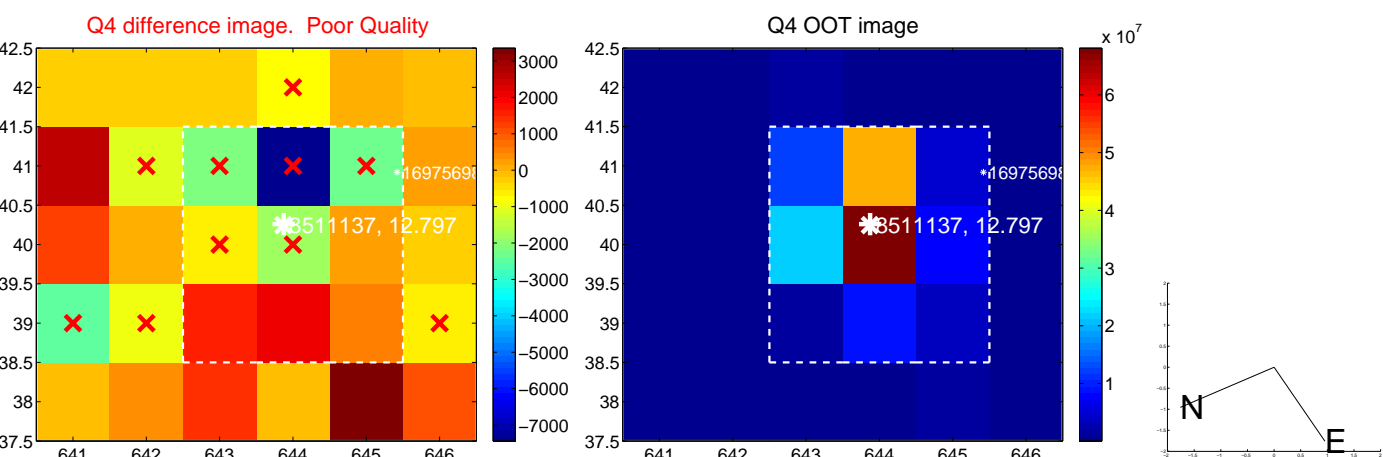
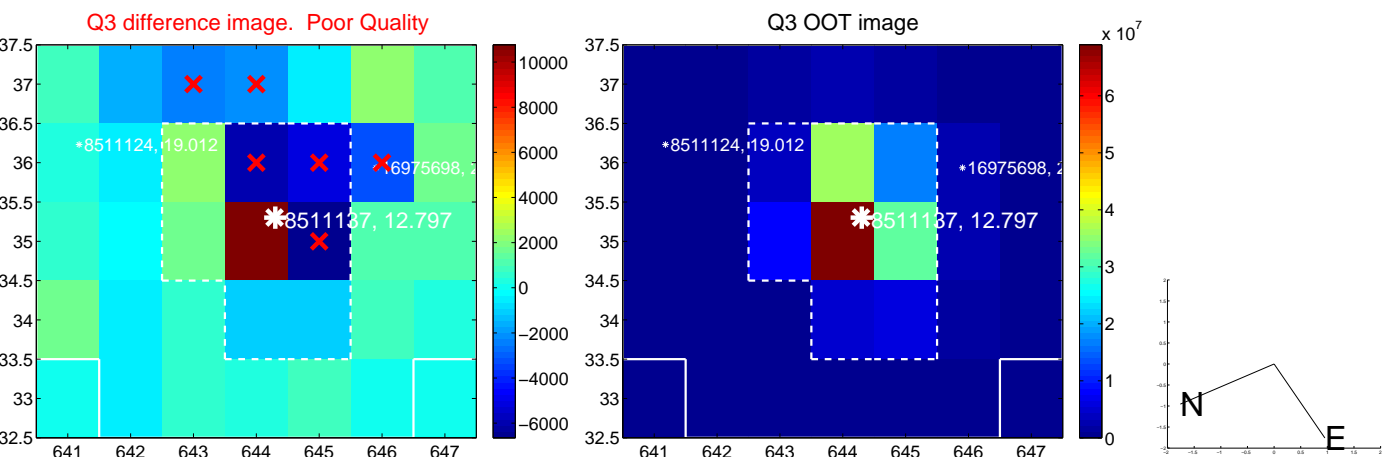
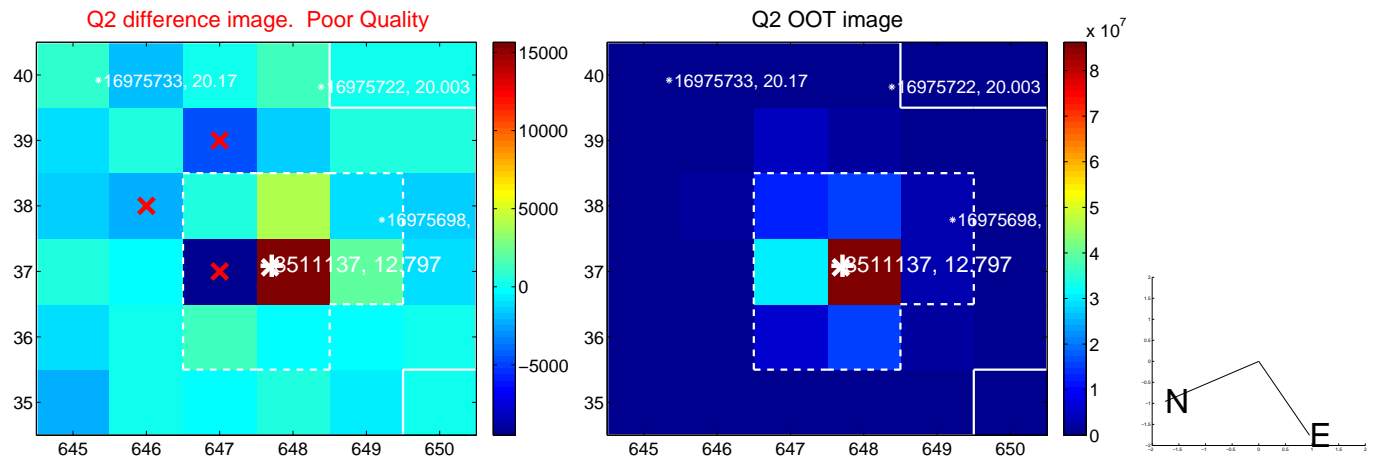
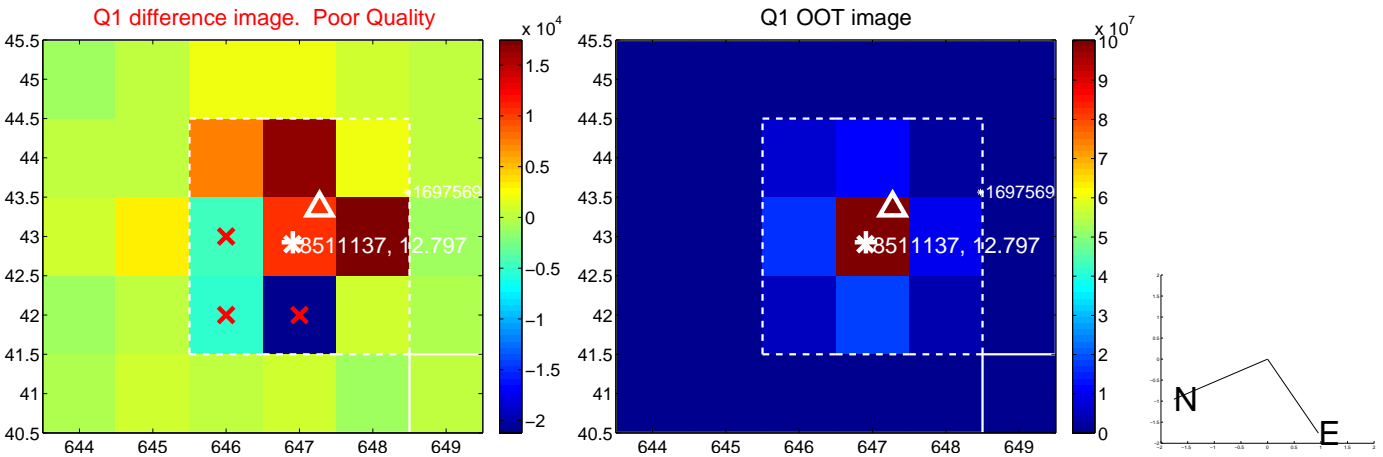
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.437 ± 0.632	2.27	-1.109 ± 0.832	-0.913 ± 0.616
PRF-fit source offset from KIC position	1.518 ± 0.594	2.56	-1.173 ± 0.881	-0.963 ± 0.716
photometric centroid source offset	0.28 ± 0.94	0.29	0.18 ± 0.98	-0.21 ± 0.91

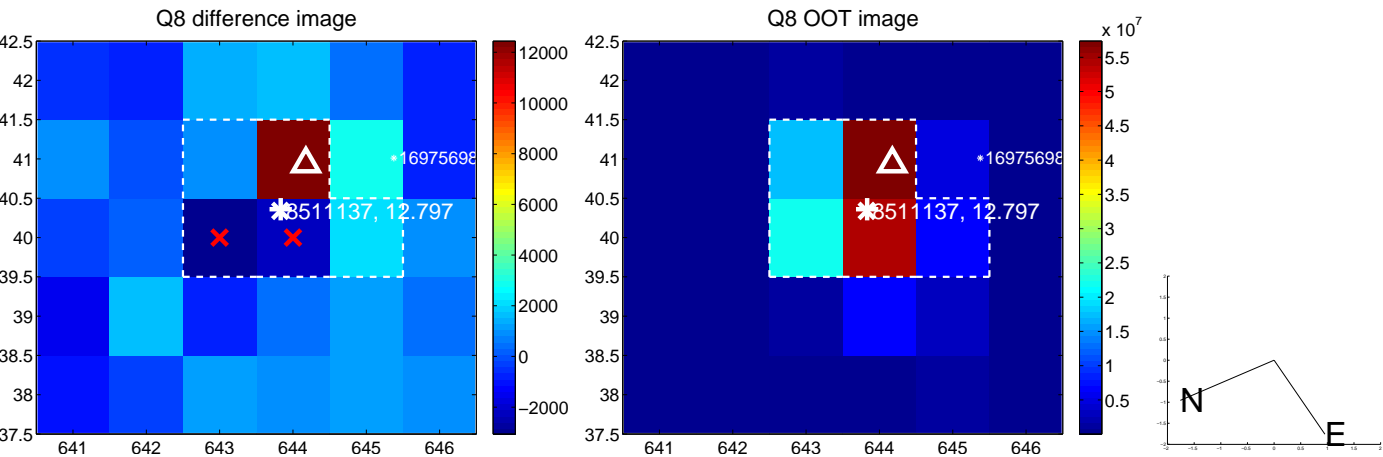
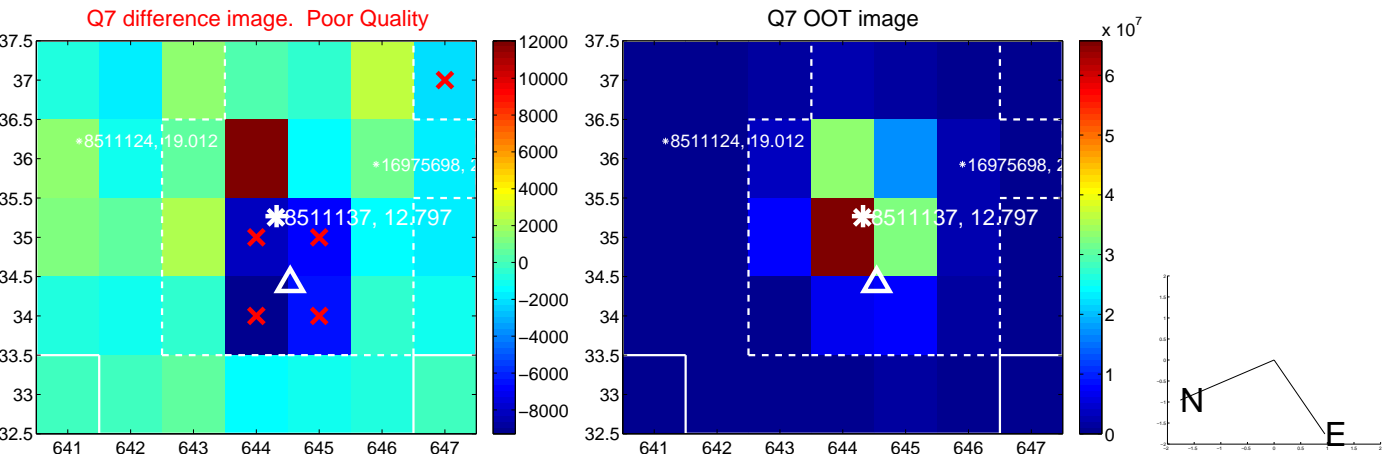
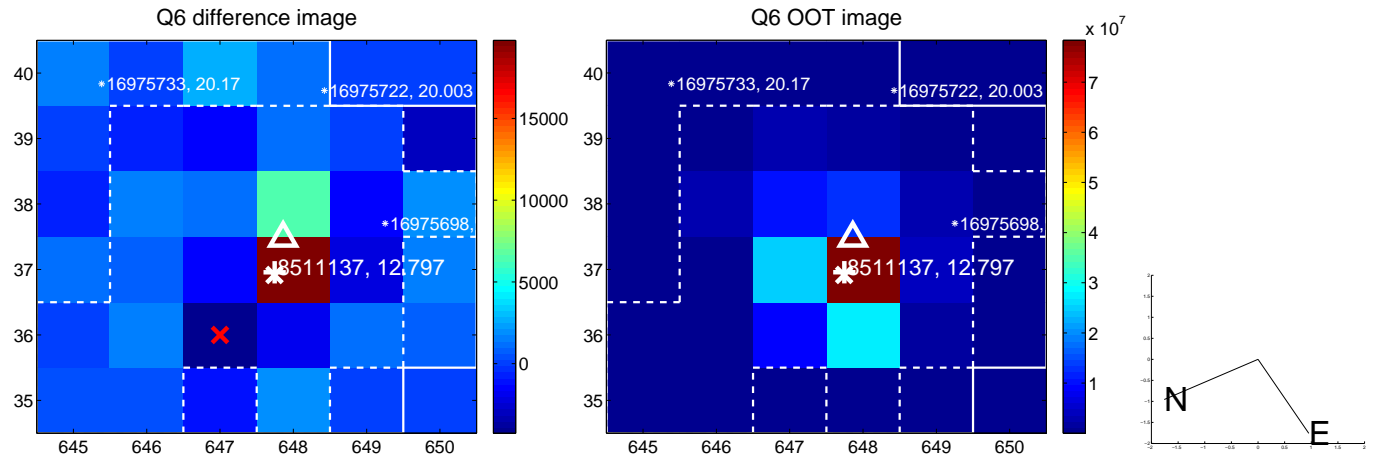
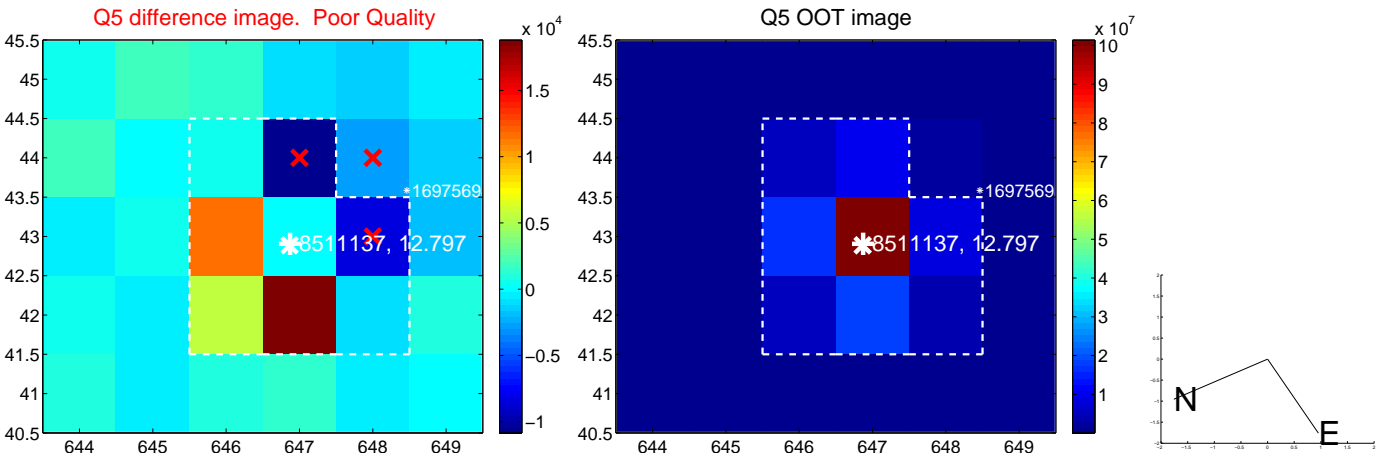


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

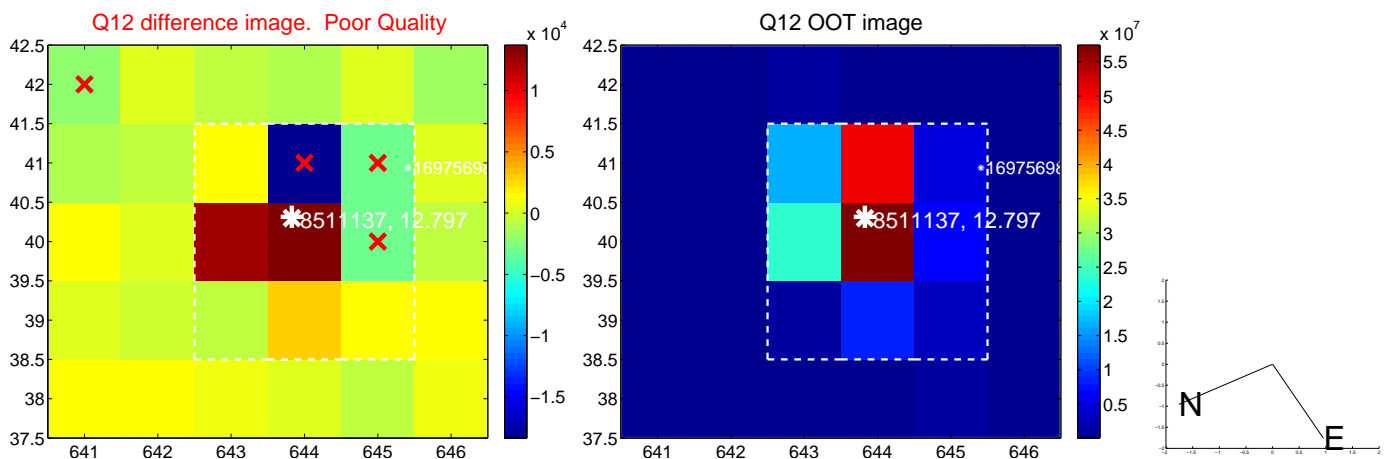
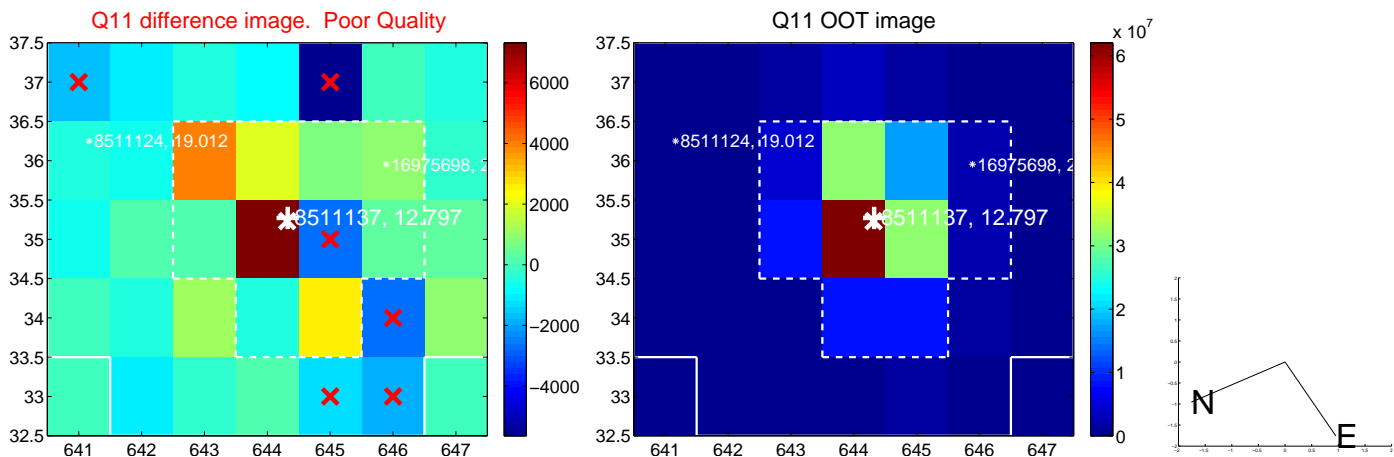
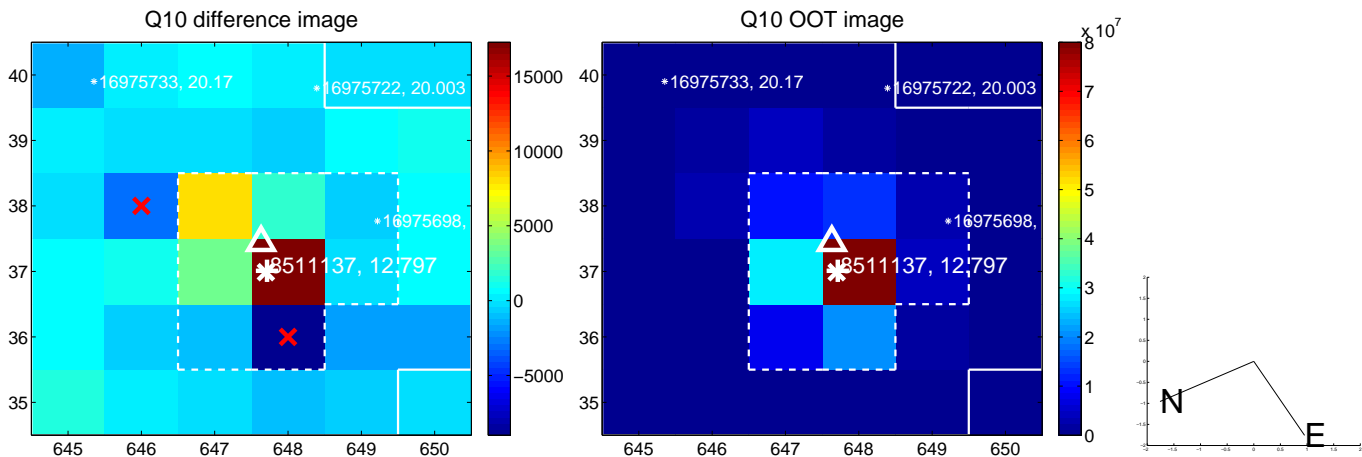
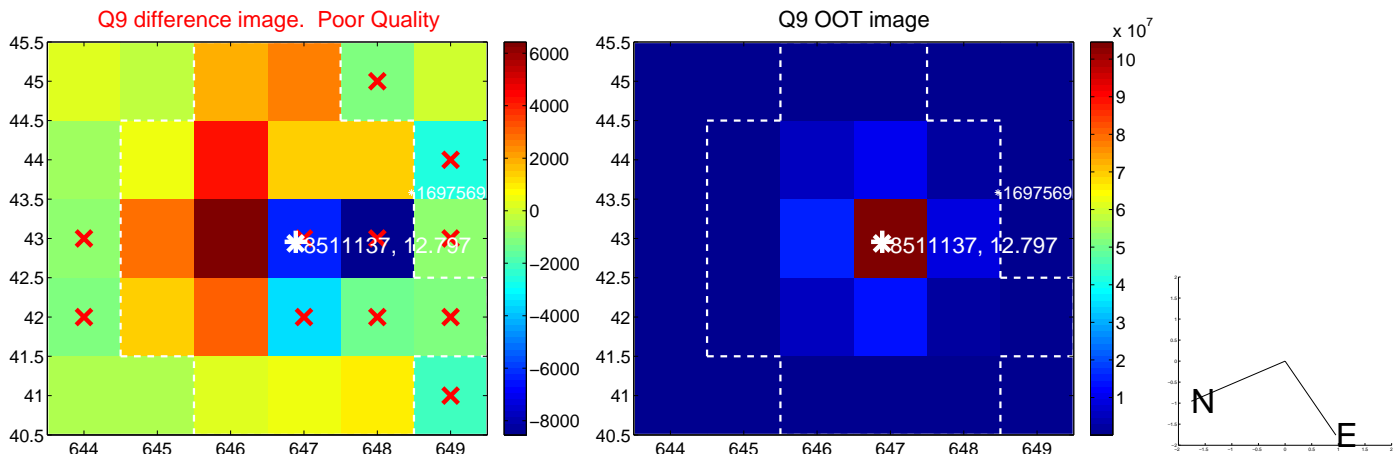
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



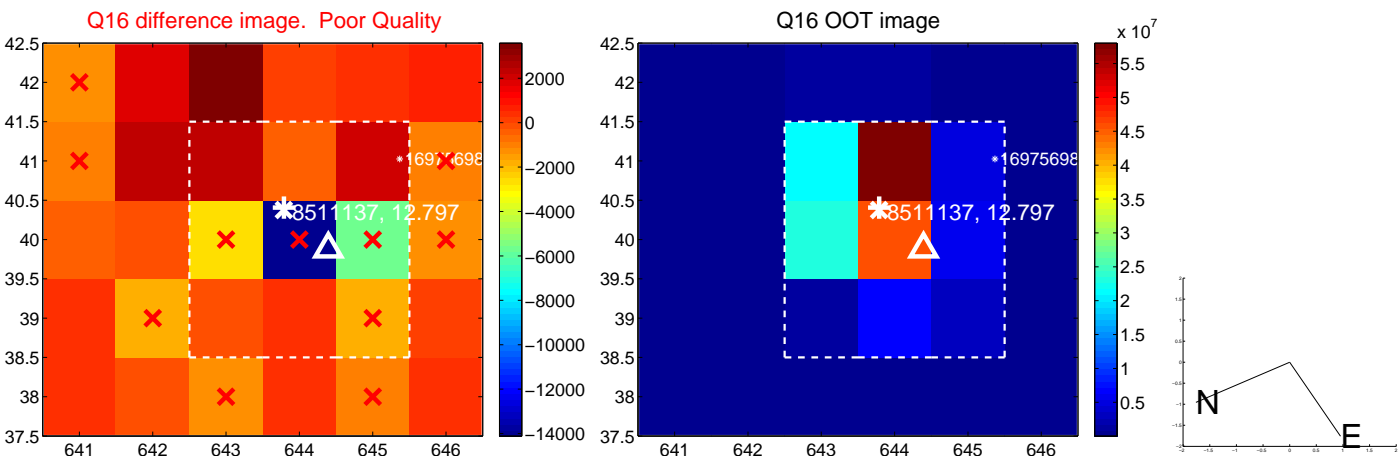
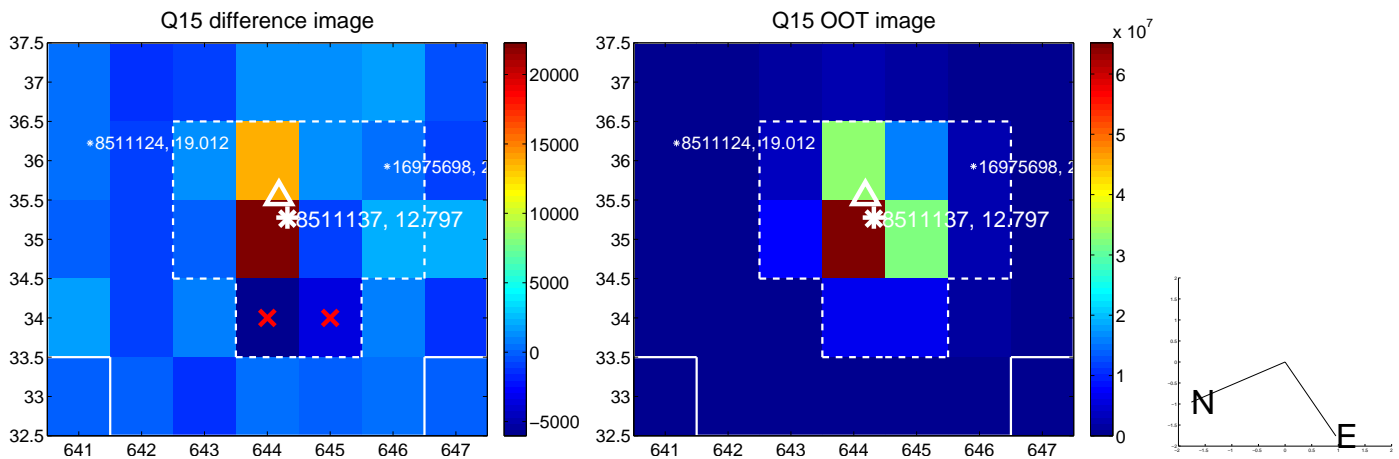
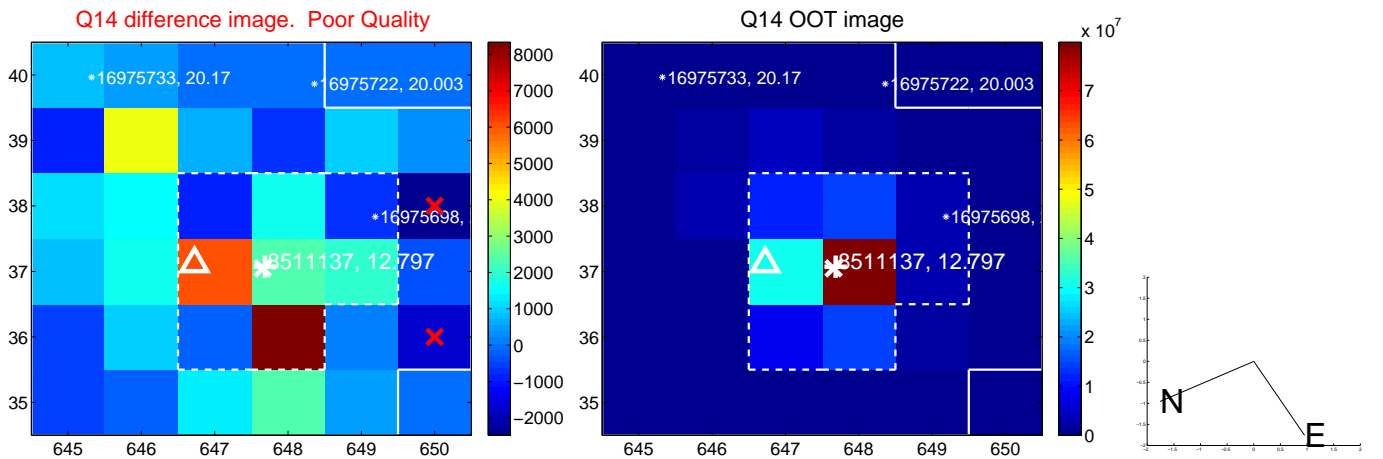
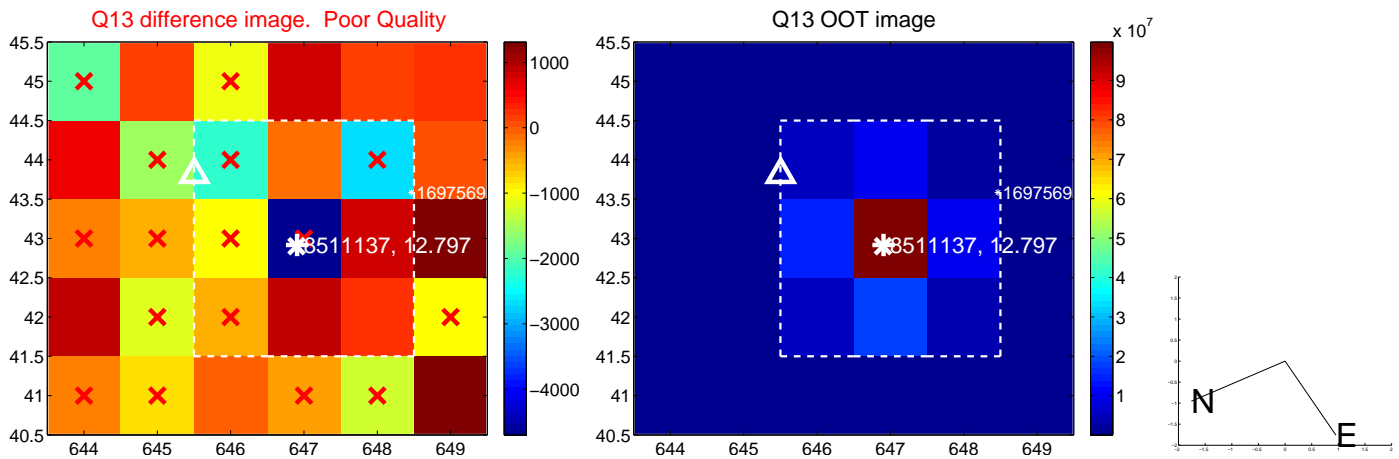
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



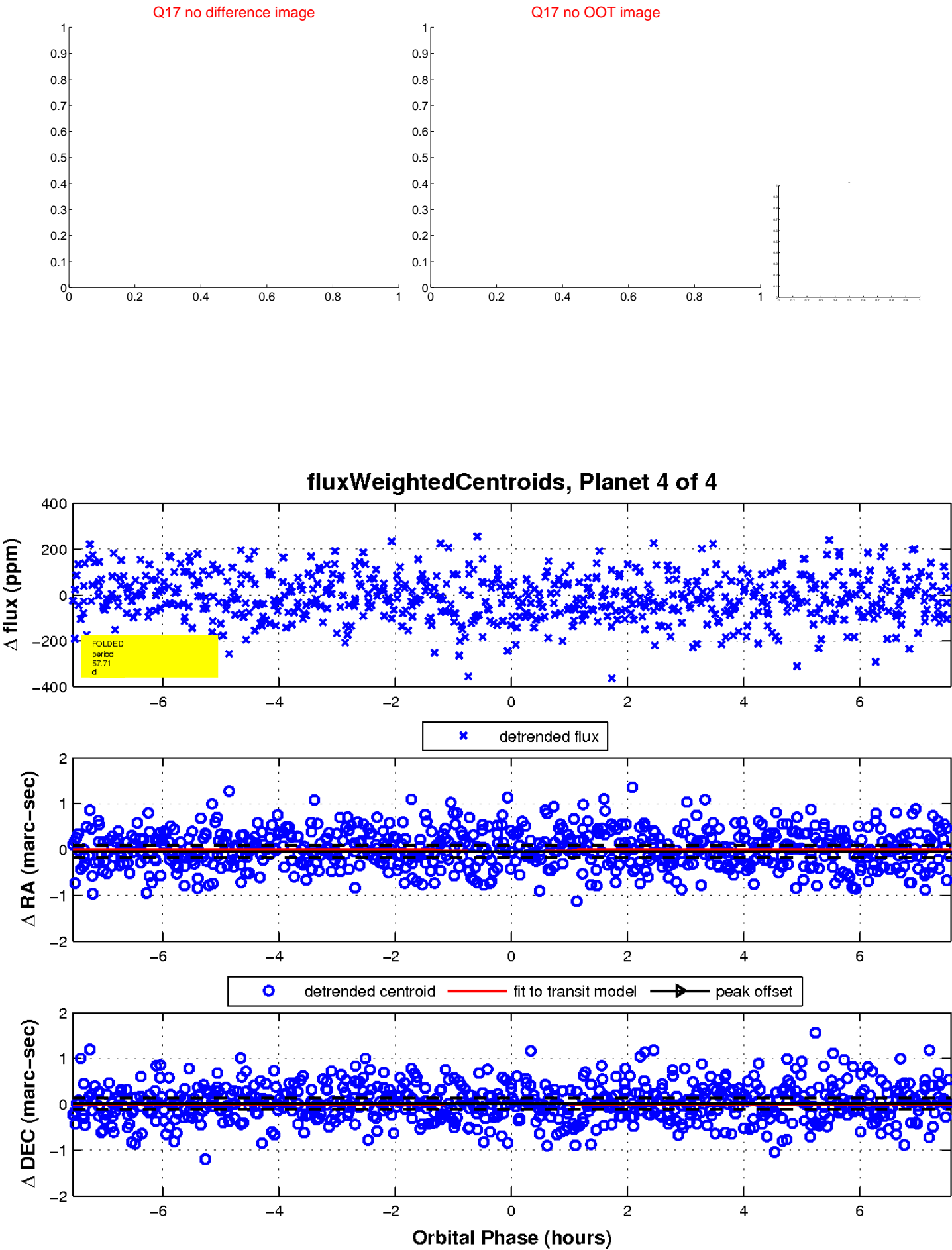
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

