

KIC 005390657

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})
005390657-01	OBS	No	0.617330	131.825843	27.2	4.461	8.6	3.8	1.26	7113	0.68	15456.88
005390657-02	OBS	No	12.049965	137.192491	1162.6	1.205	10.6	12.1	1.26	7113	4.39	294.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005390657-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
005390657-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

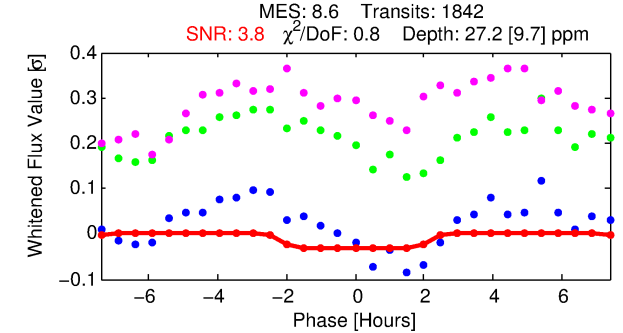
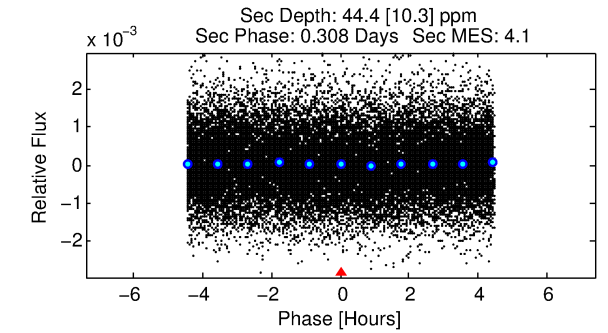
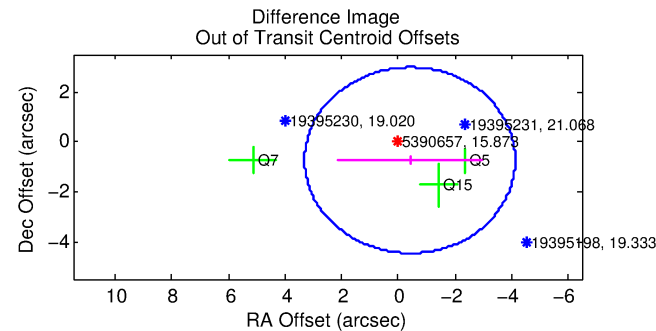
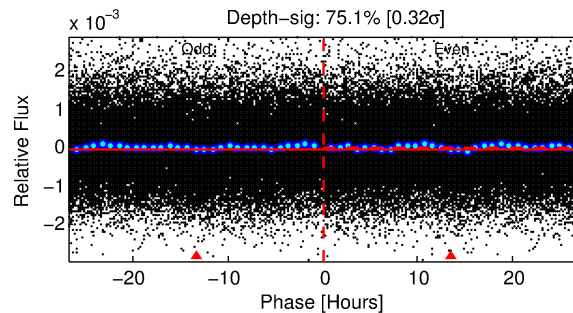
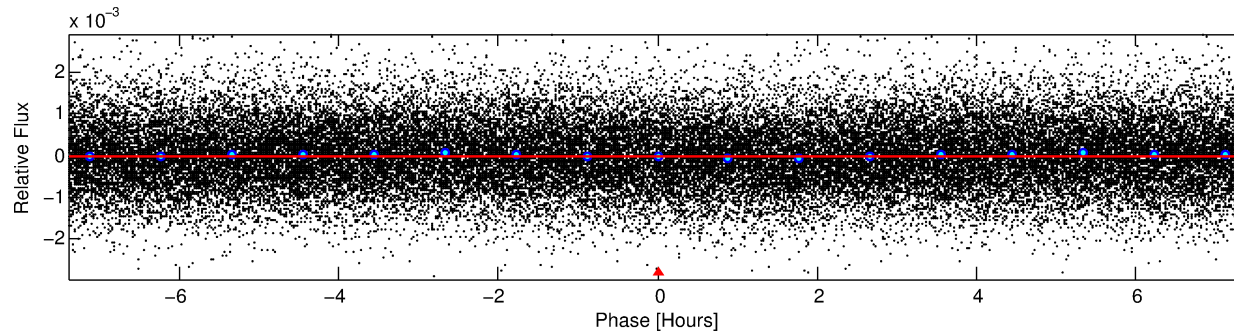
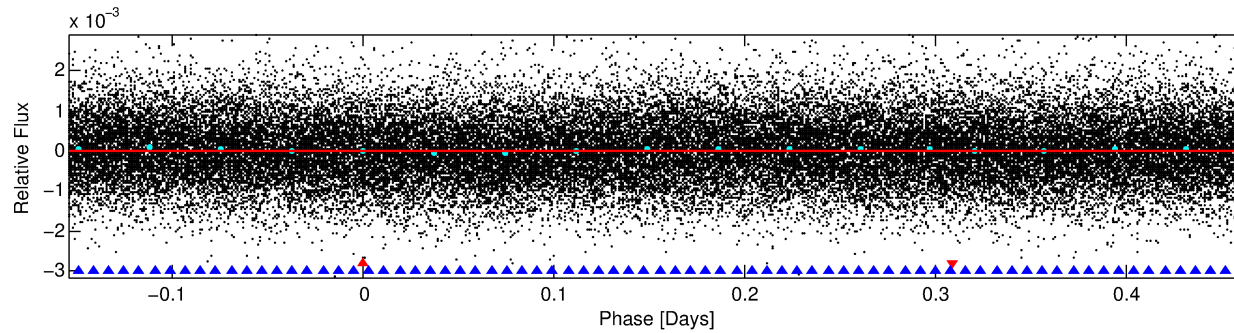
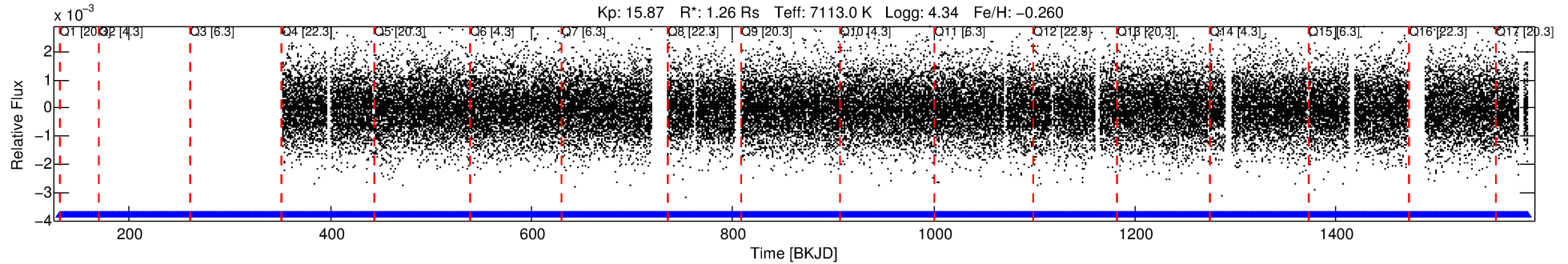
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005390657-01

No Significant Match Found

DV One-Page Summary

KIC: 5390657 Candidate: 1 of 2 Period: 0.617 d



DV Fit Results:

Period = 0.61733 [0.00003] d
Epoch = 131.8258 [0.0129] BKJD
Rp/R* = 0.0049 [0.0116]
a/R* = 1.21 [5.24]
b = 0.40 [29.84]
Seff = 15456.88 [6025.12]
Teq = 2843 [277] K
Rp = 0.68 [1.61] Re
a = 0.0154 [0.0037] AU
Ag = 12.63 [60.07] [0.19 σ]
Teffp = 8288 [9834] K [0.55 σ]

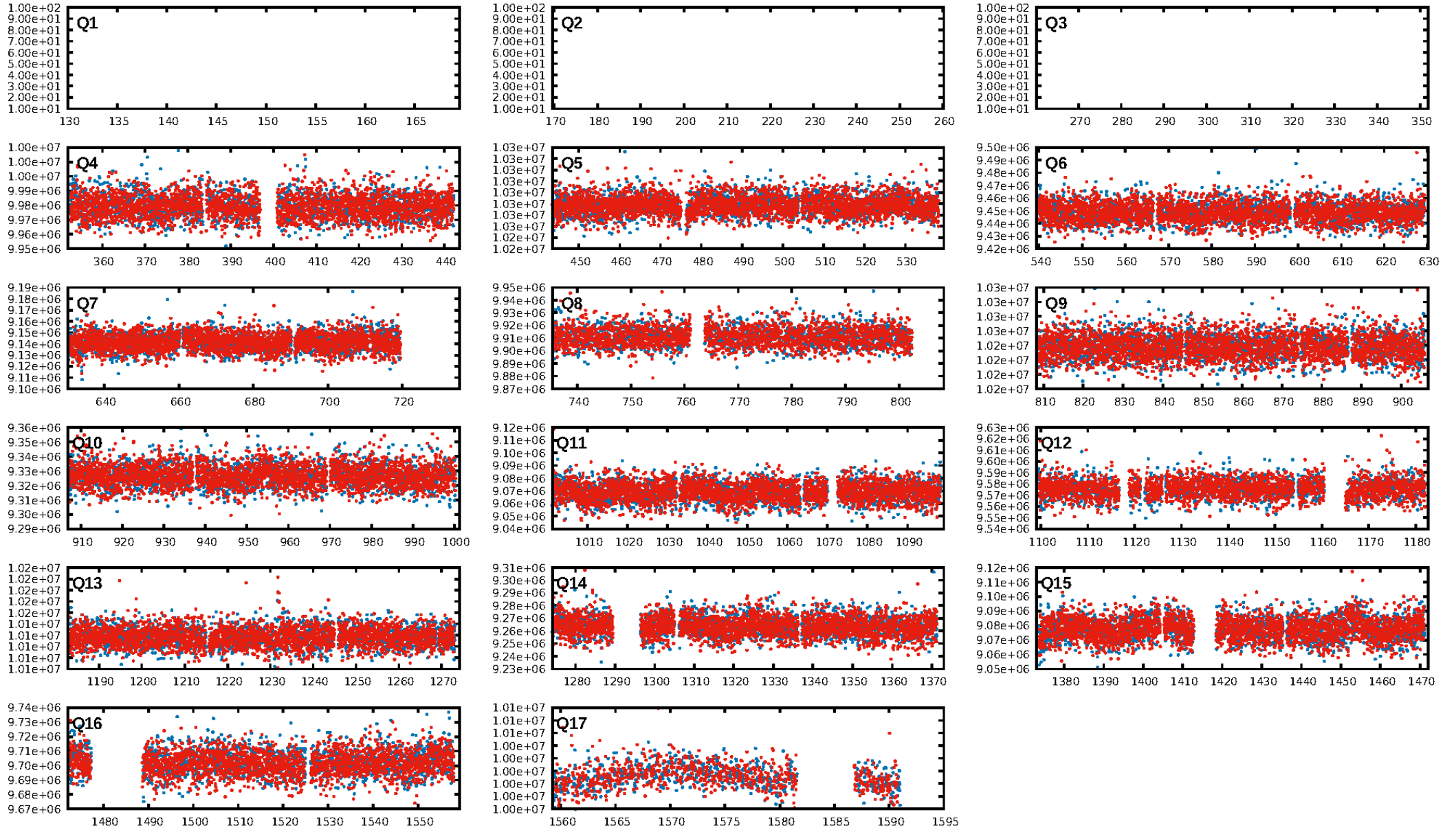
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [59.38 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.15e-13
RollingBand-fgt: 1.00 [1799/1799]
GhostDiagnostic-chr: -12.21
Centroid-sig: 30.6%
Centroid-so: 2.513 arcsec [0.64 σ]
OotOffset-rm: 0.852 arcsec [0.69 σ]
KicOffset-rm: 1.007 arcsec [0.82 σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [14/14]

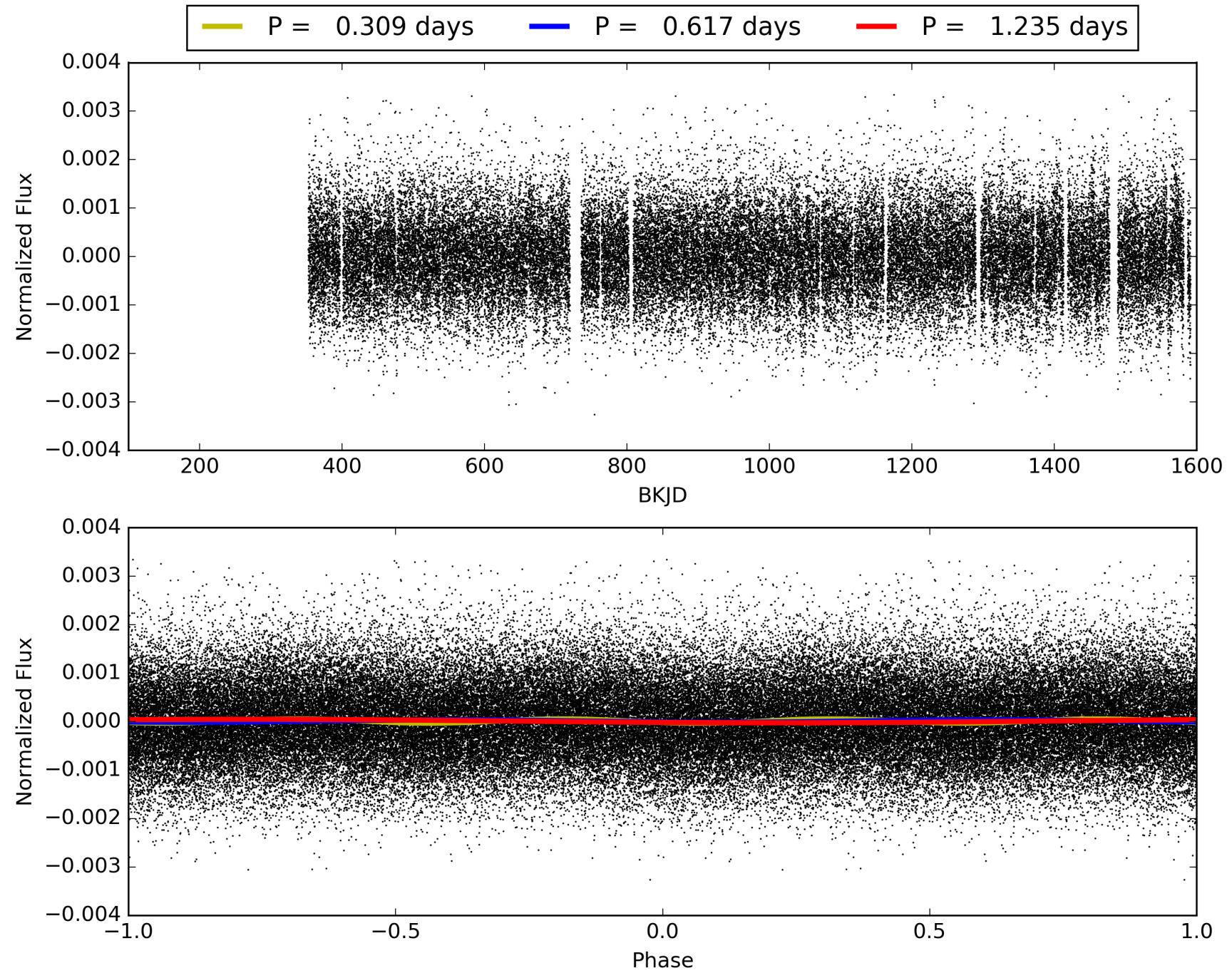
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:44:05 Z

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

TCE 005390657-01, PDC Light Curves

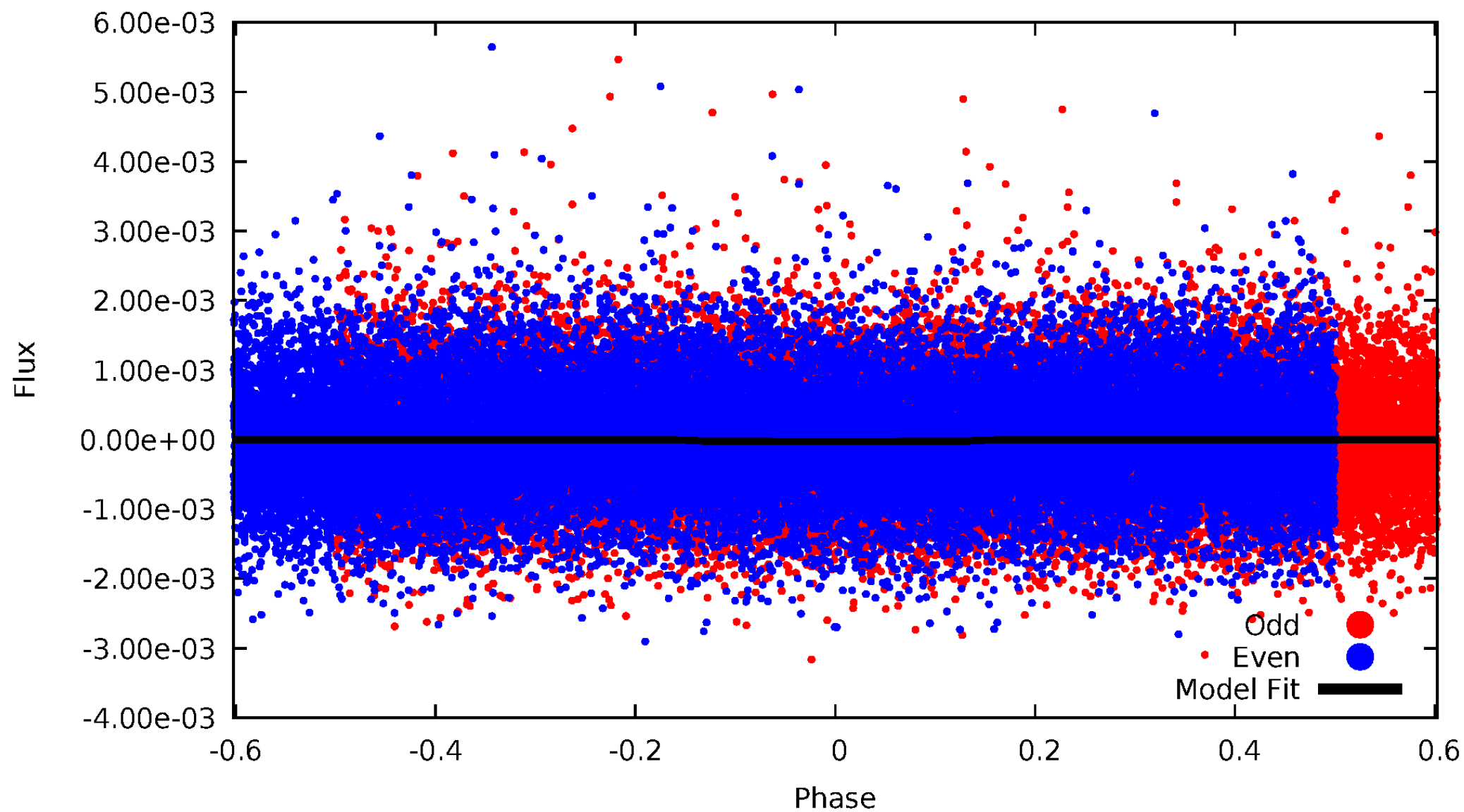


TCE 005390657-01



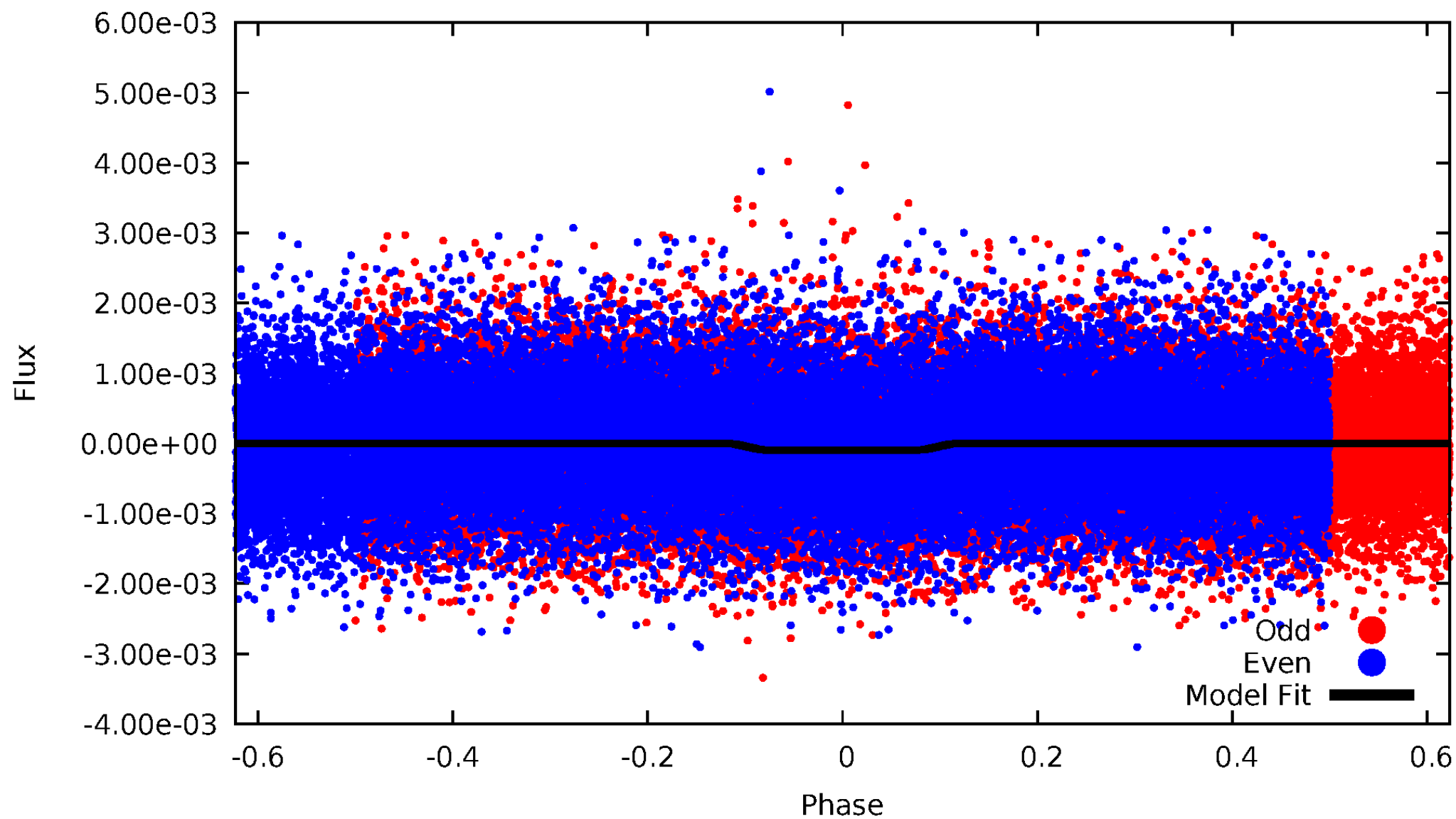
DV Odd/Even

TCE 005390657-01



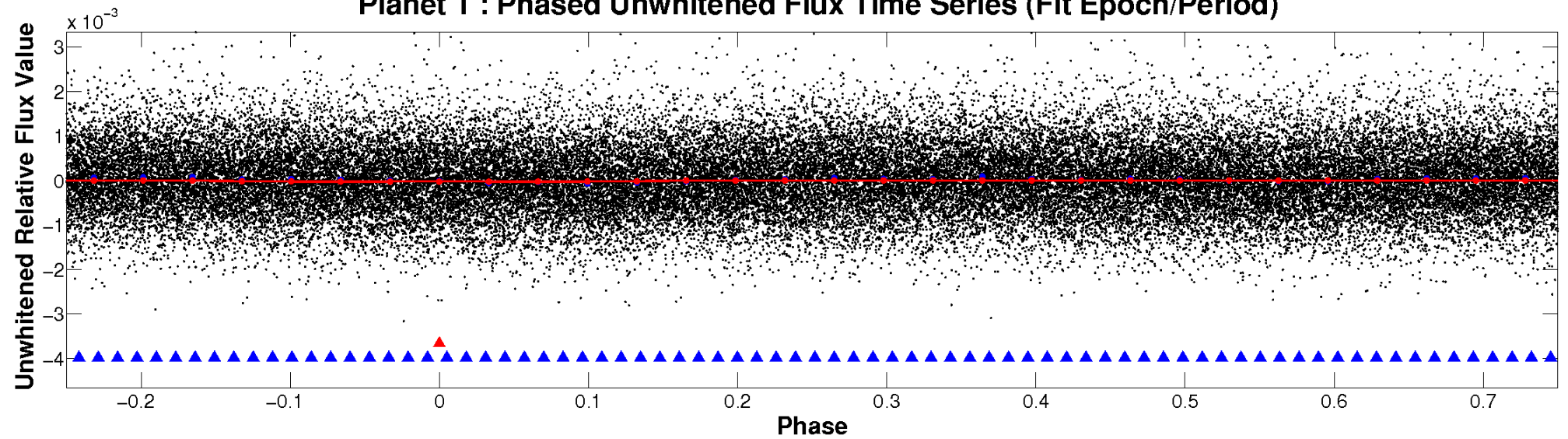
ALT Odd/Even

TCE 005390657-01

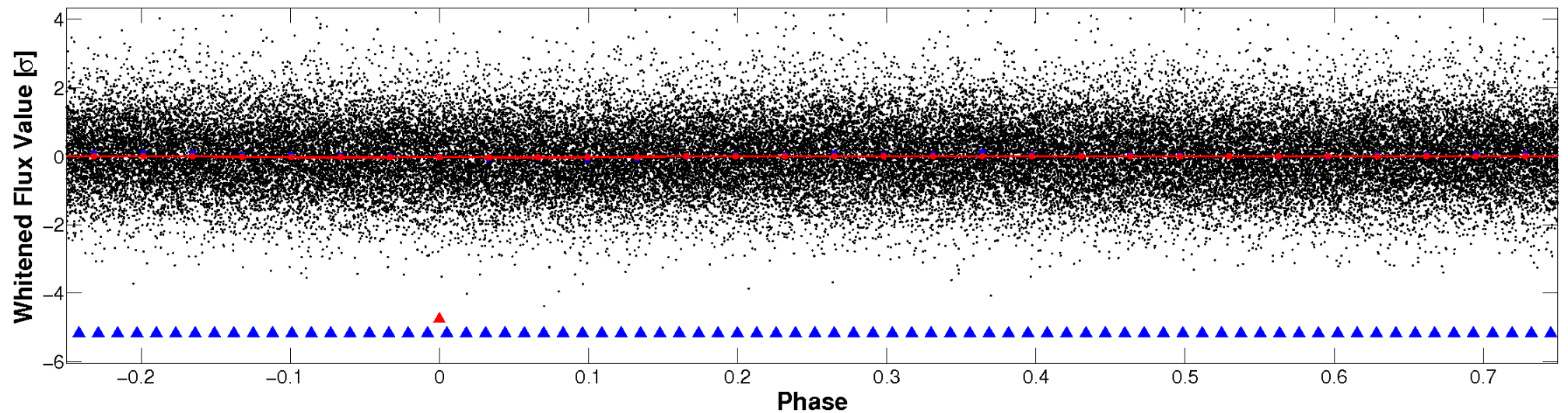


Non-Whitened Vs. Whitened Light Curve

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

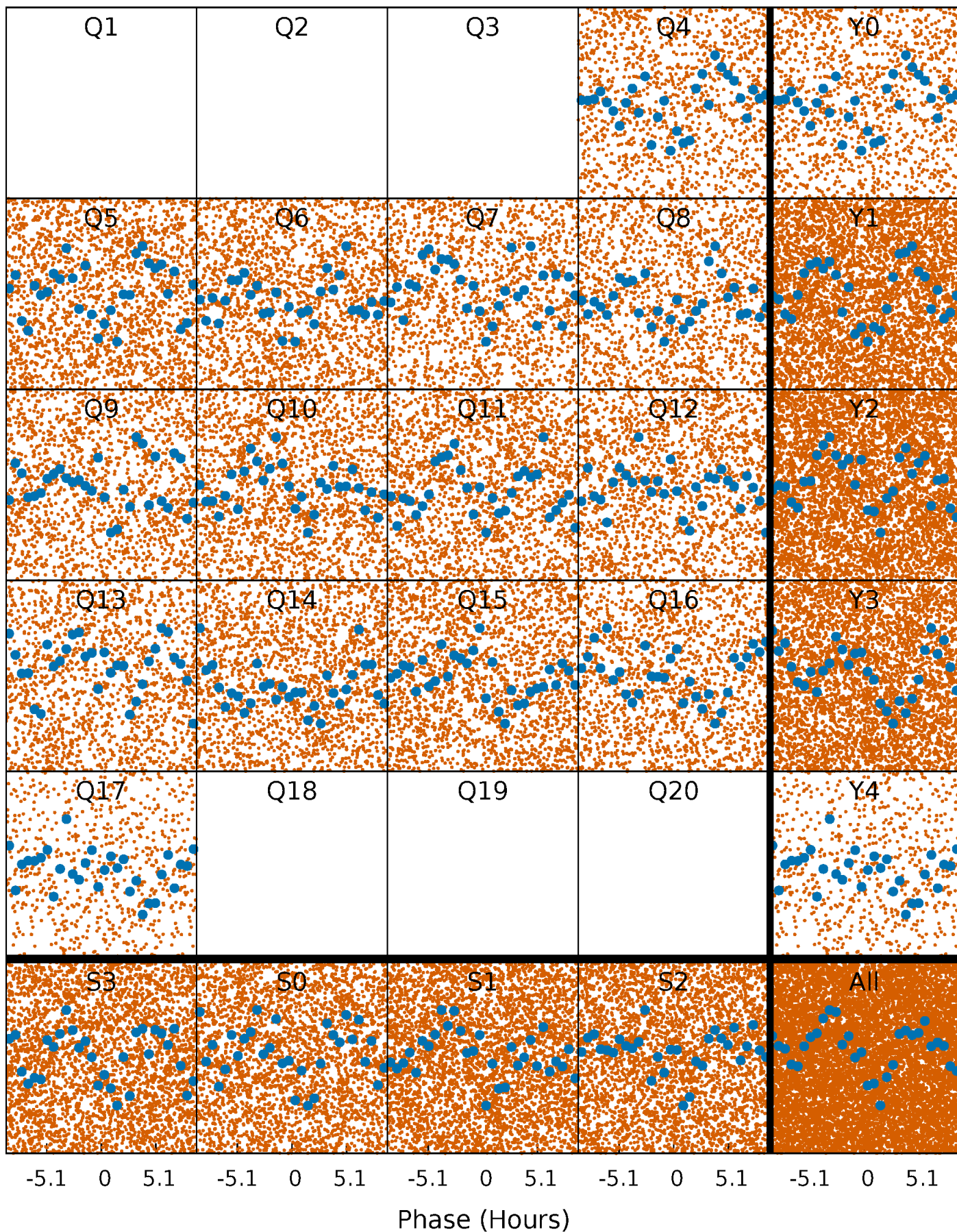


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



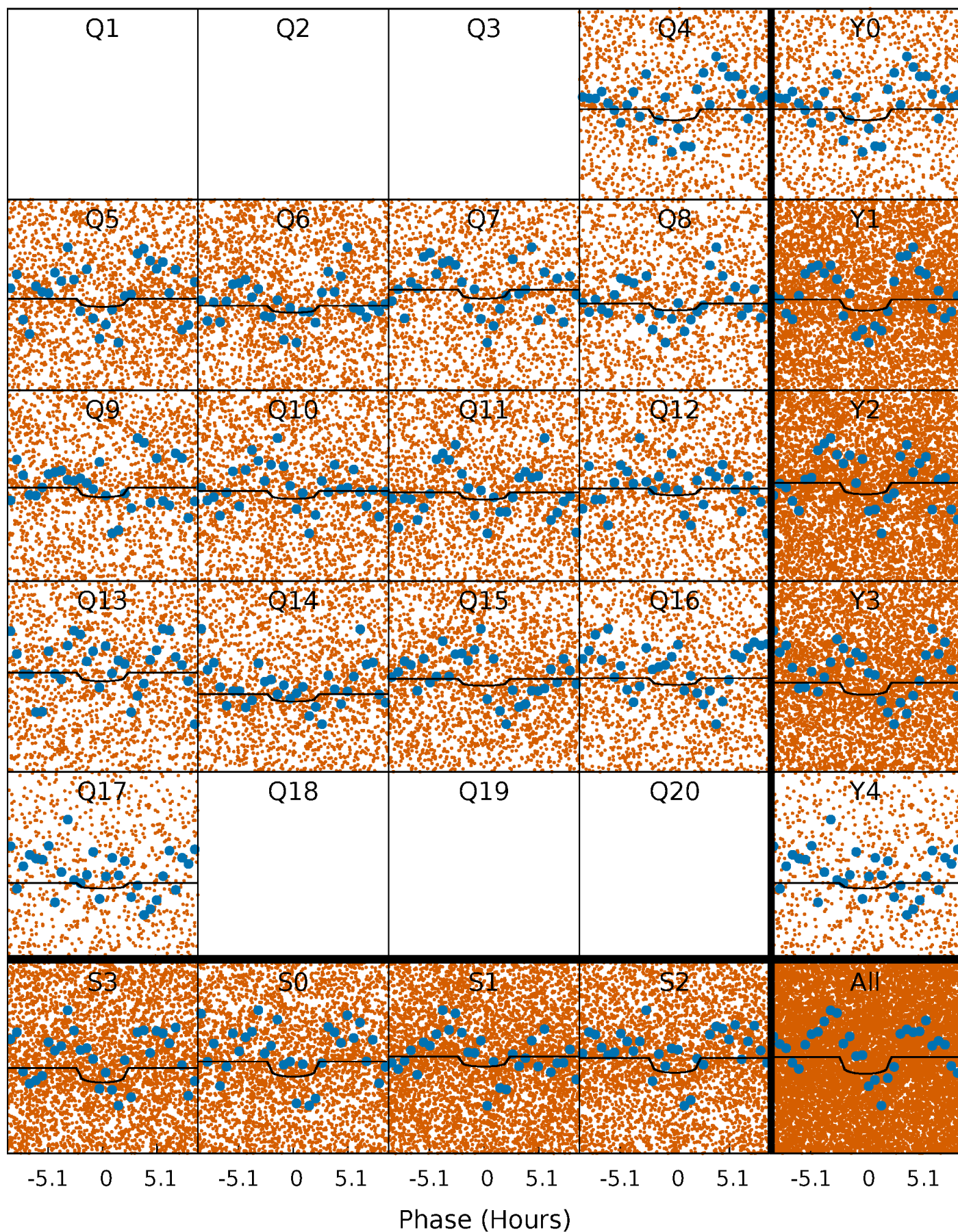
PDC Quarter-Phased Transit Curves

TCE 005390657-01 P= 0.617330 Days $T_0=131.825843$ (BKJD)



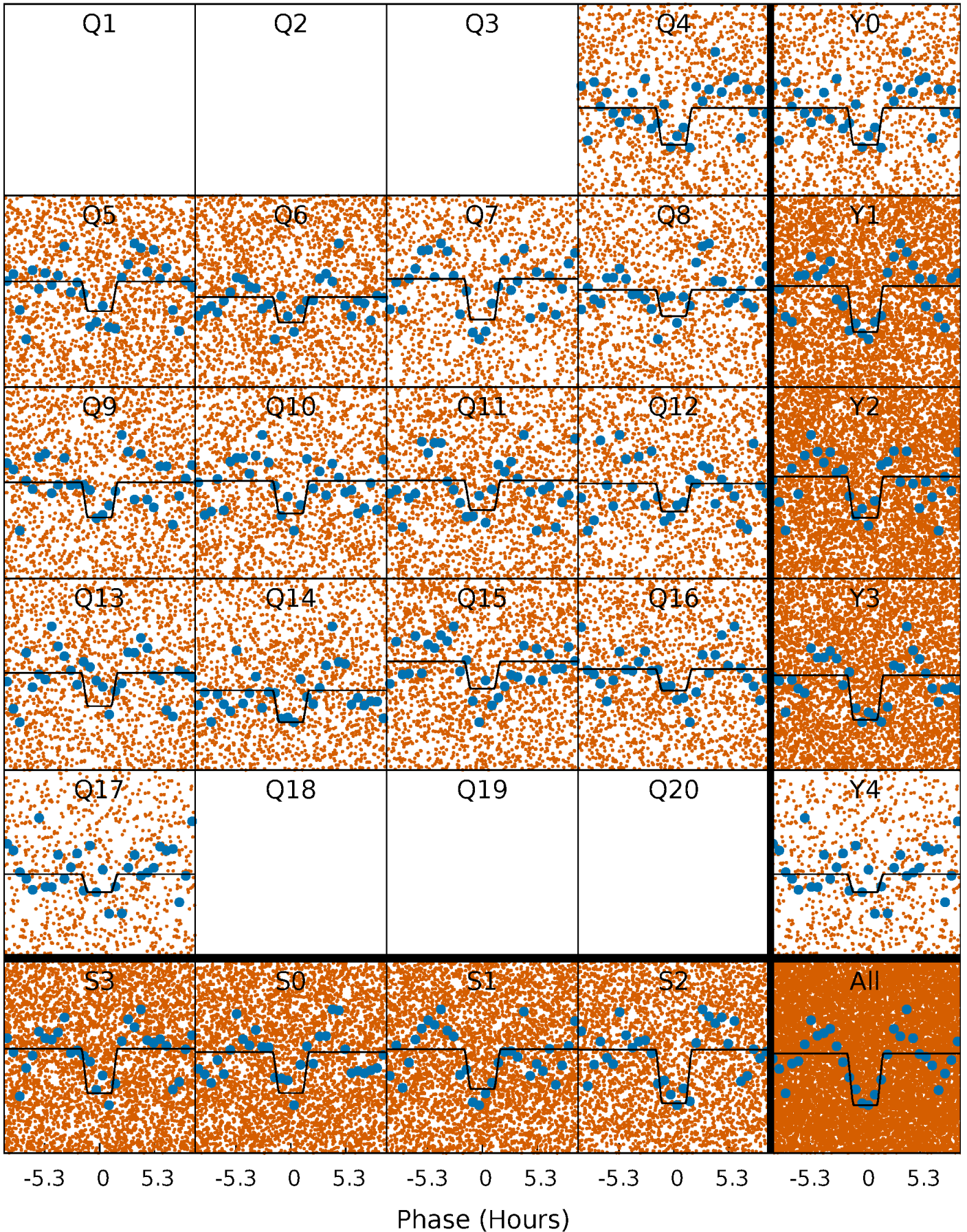
DV Quarter-Phased Transit Curves

TCE 005390657-01 P= 0.617330 Days $T_0=131.825843$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

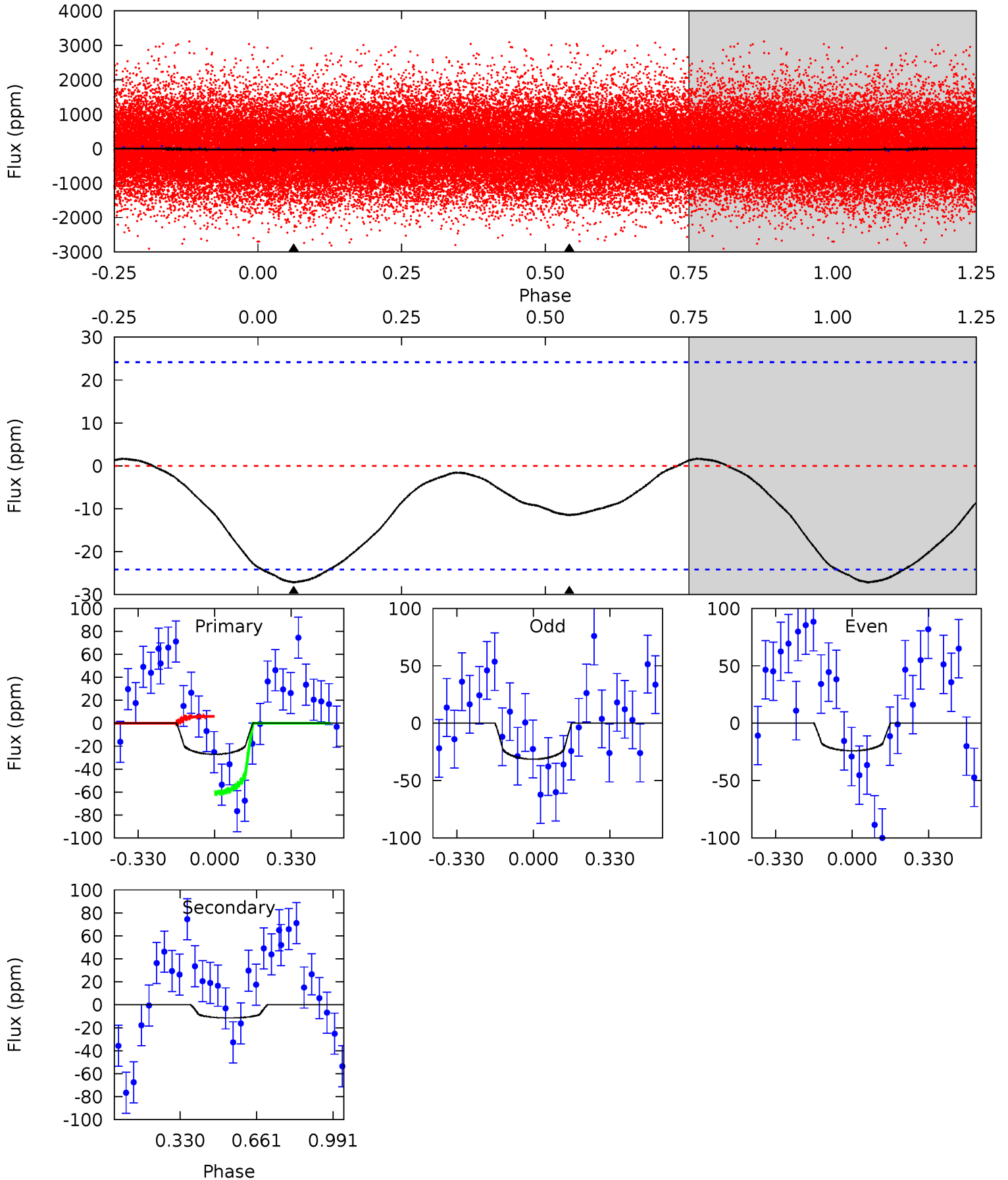
TCE 005390657-01 P= 0.617389 Days $T_0=131.802382$ (BKJD)



DV Model-Shift Uniqueness Test

005390657-01, P = 0.617330 Days, E = 131.825843 Days

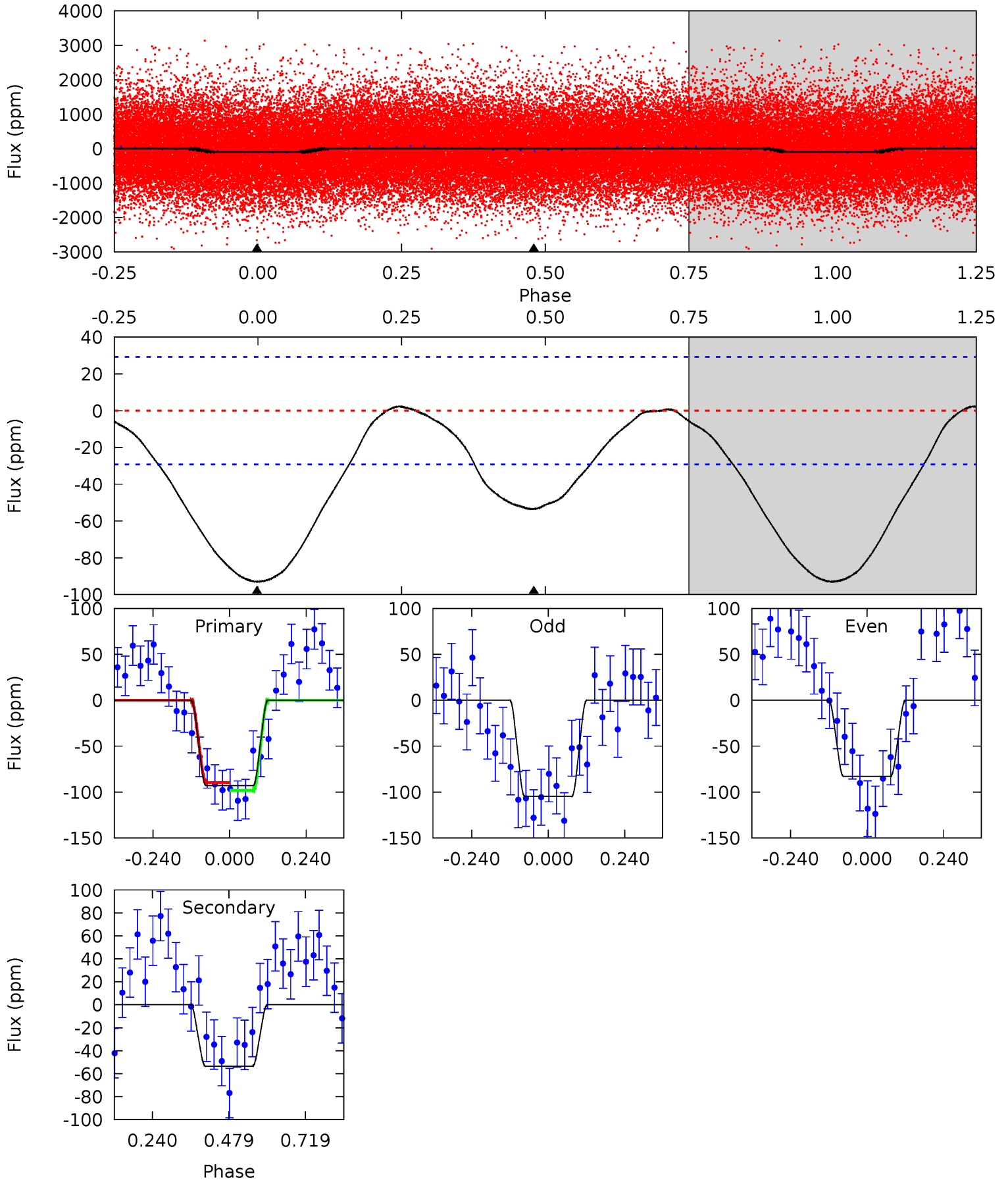
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.84	2.04	0	0	4.31	0.97	0.36	4.84	4.84	2.04	2.04	0.65	0.63	0.06	4.78



Alt Model-Shift Uniqueness Test

005390657-01, P = 0.617389 Days, E = 131.802382 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	8.01	0	0	4.38	1.18	0.59	13.9	13.9	8.01	8.01	1.65	1.00	0.02	0.65



Stellar Parameters For KIC 005390657

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7113^{+199}_{-341}	$4.340^{+0.060}_{-0.180}$	$-0.260^{+0.300}_{-0.350}$	$1.262^{+0.373}_{-0.133}$	$1.290^{+0.193}_{-0.176}$	$0.905^{+0.231}_{-0.444}$
	+3%/-5%	+1%/-4%	+115%/-135%	+30%/-11%	+15%/-14%	+25%/-49%
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 005390657-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 6	$1.44^{+1.38}_{-0.97}$	4028^{+271}_{-228}	3808^{+3516}_{-7151}	$0.686^{+6.269}_{-0.545}$
Alt.	-53 ± 7	$1.79^{+1.50}_{-1.17}$	4016^{+280}_{-234}	5150^{+4505}_{-1451}	$2.127^{+15.142}_{-1.505}$

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

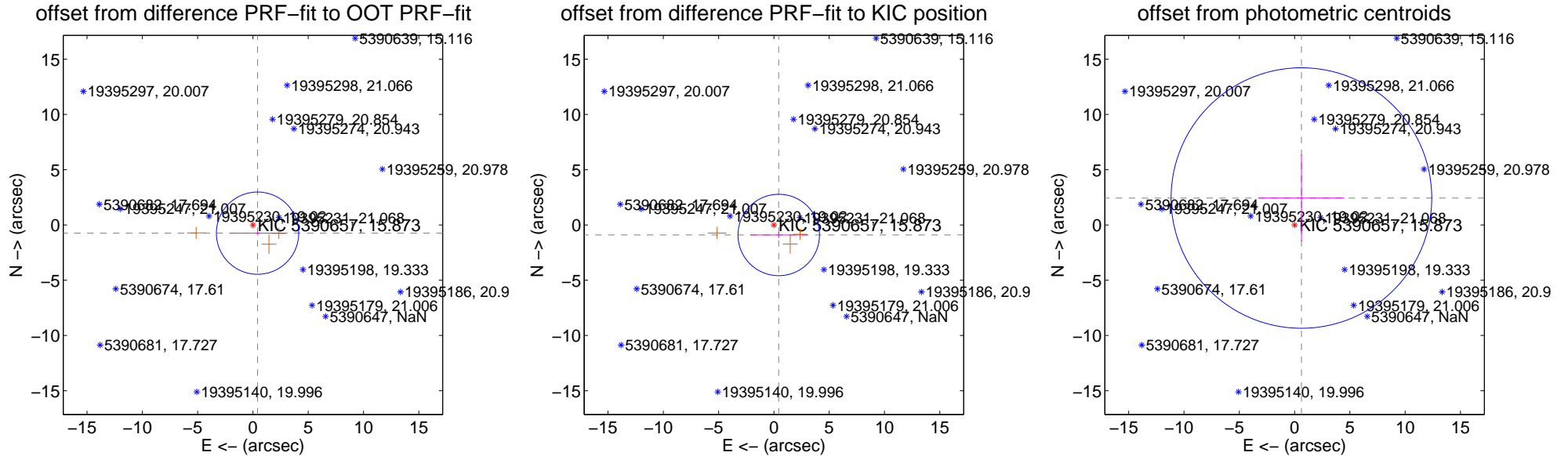
DV Centroid Data

Supplemental centroid analysis for 005390657-01. Kepler magnitude: 15.87. Transit SNR 3.77

There are 0 quarters with good PRF difference image offsets

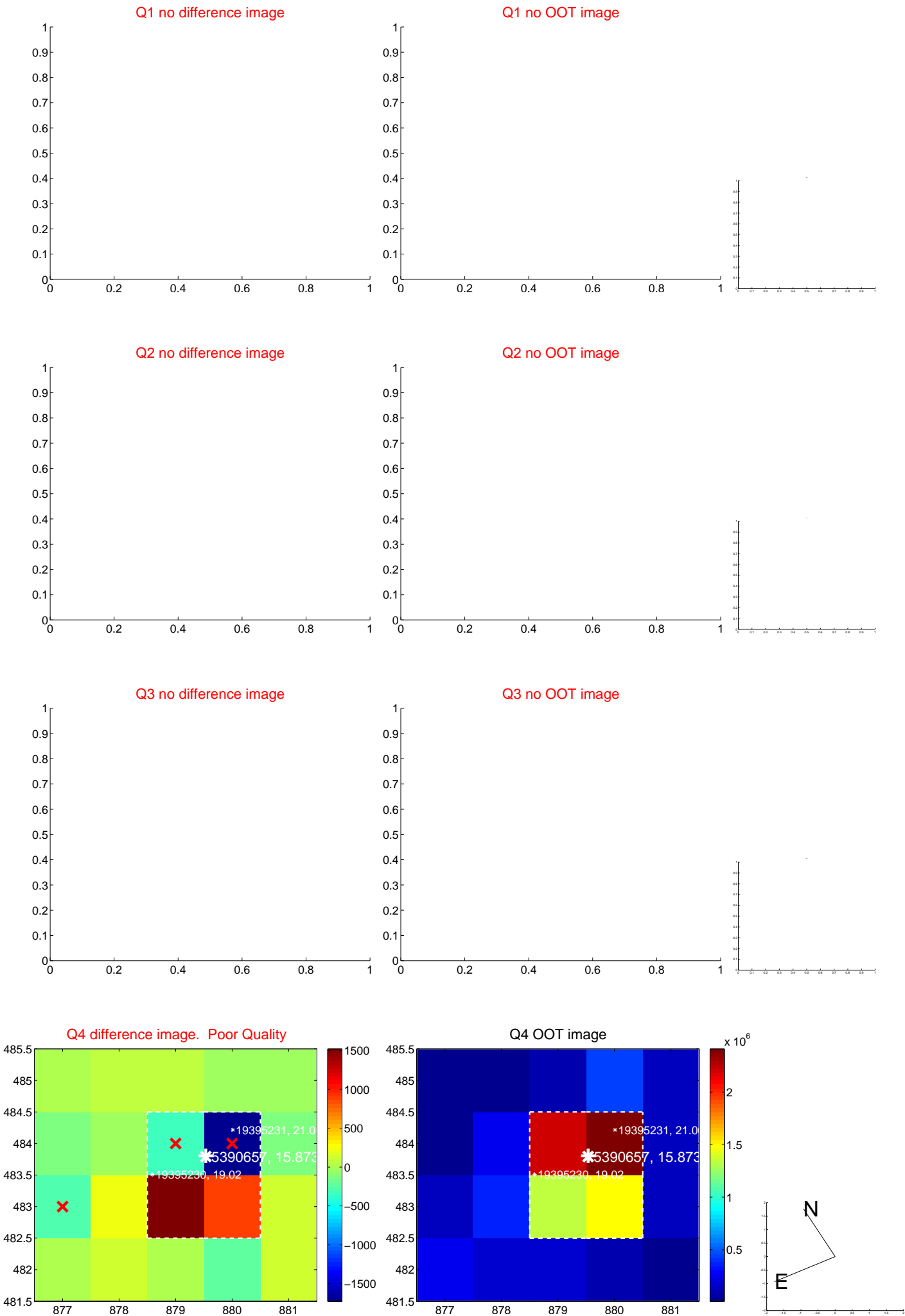
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.852 ± 1.241	0.69	-0.417 ± 2.524	-0.743 ± 0.145
PRF-fit source offset from KIC position	1.007 ± 1.228	0.82	-0.438 ± 2.566	-0.907 ± 0.282
photometric centroid source offset	2.51 ± 3.93	0.64	-0.62 ± 3.88	2.44 ± 3.93

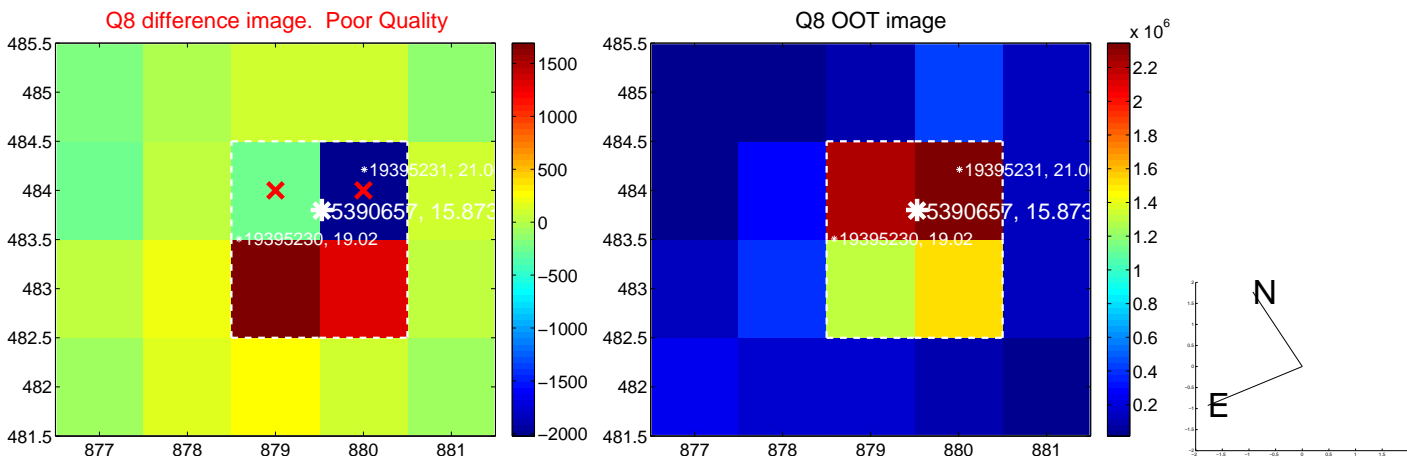
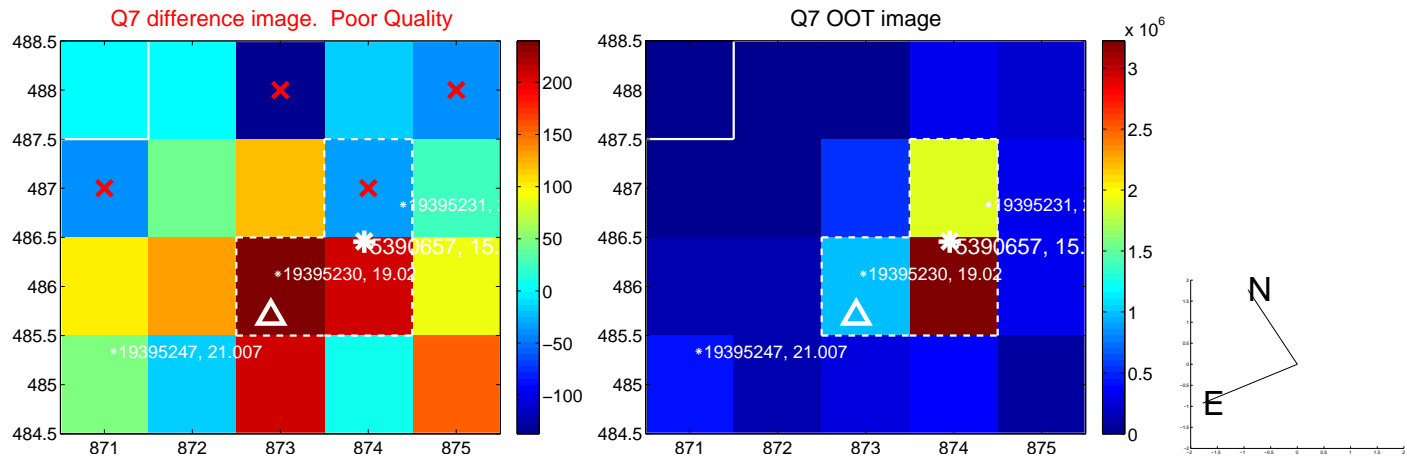
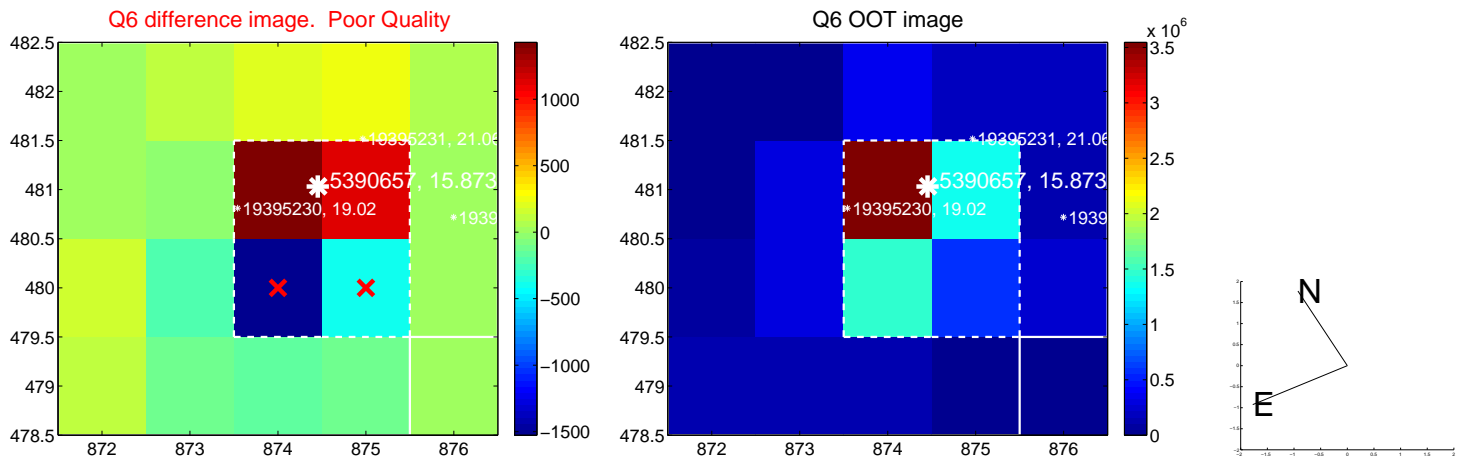
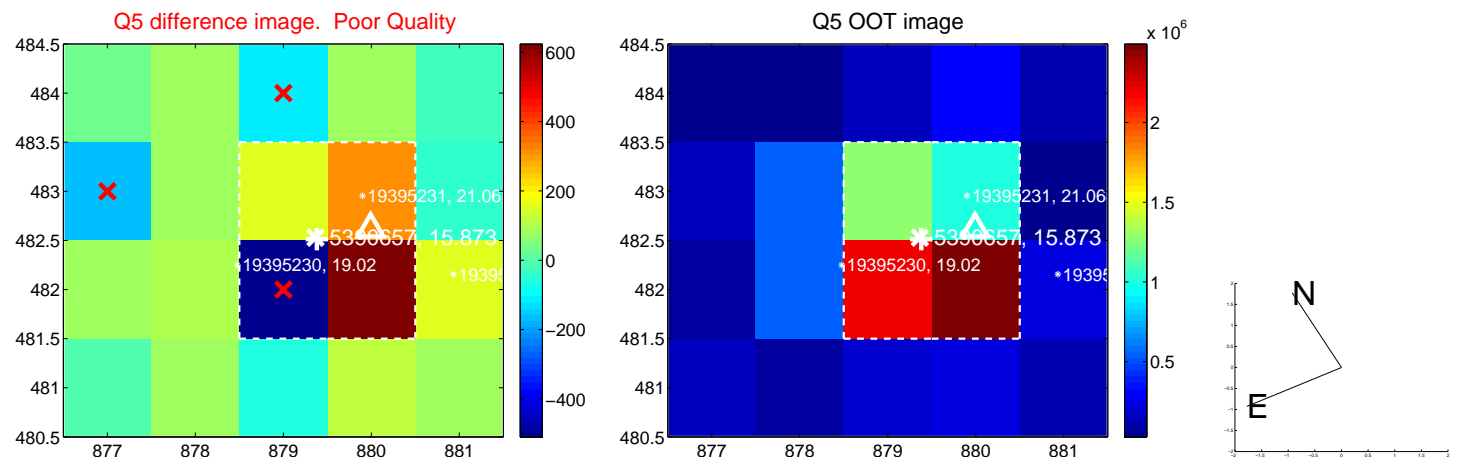


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

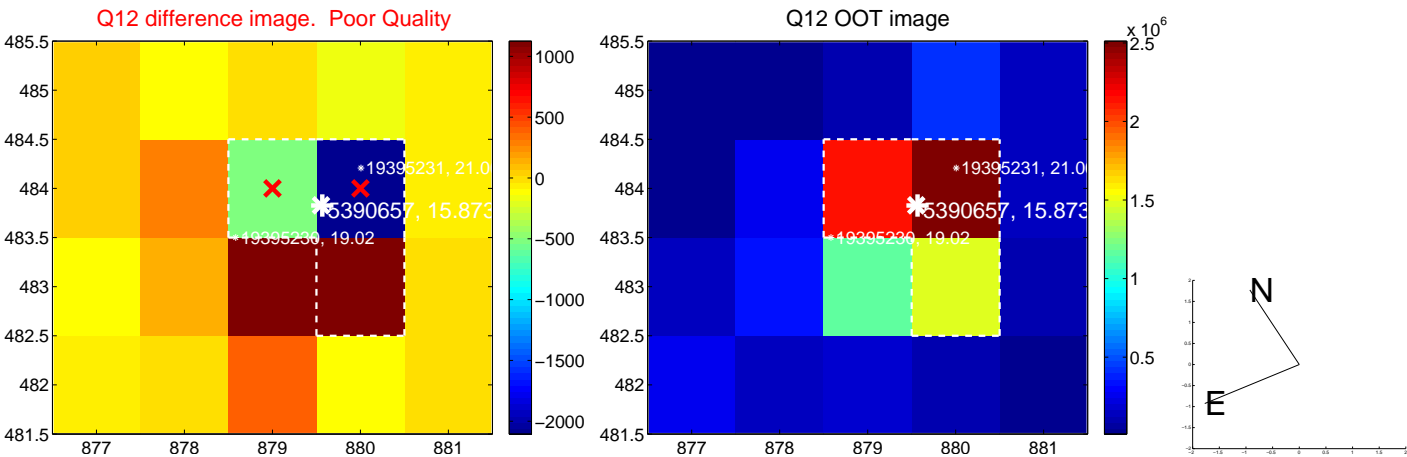
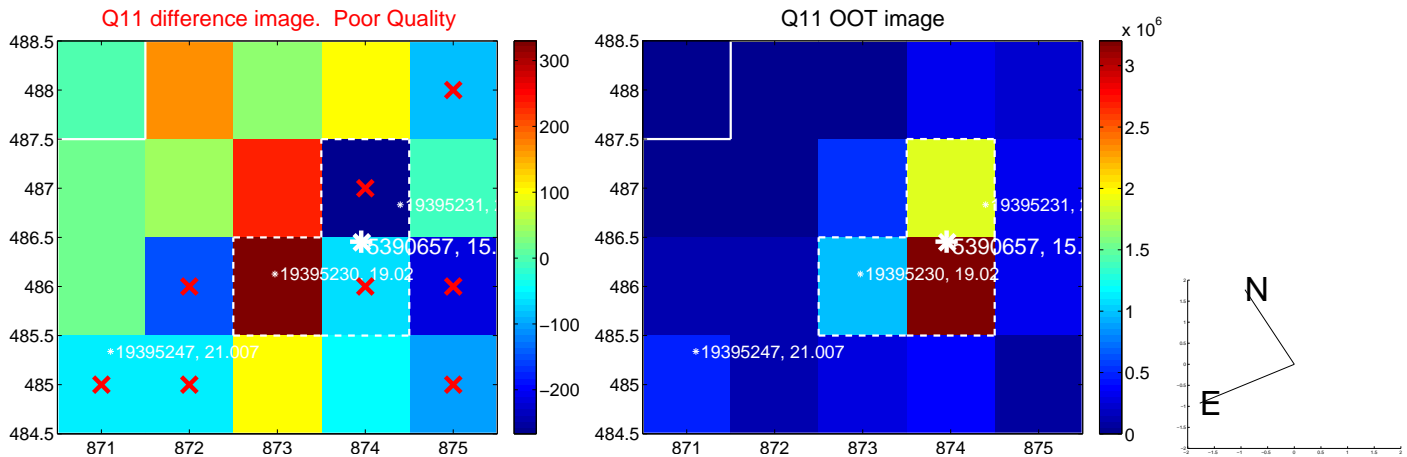
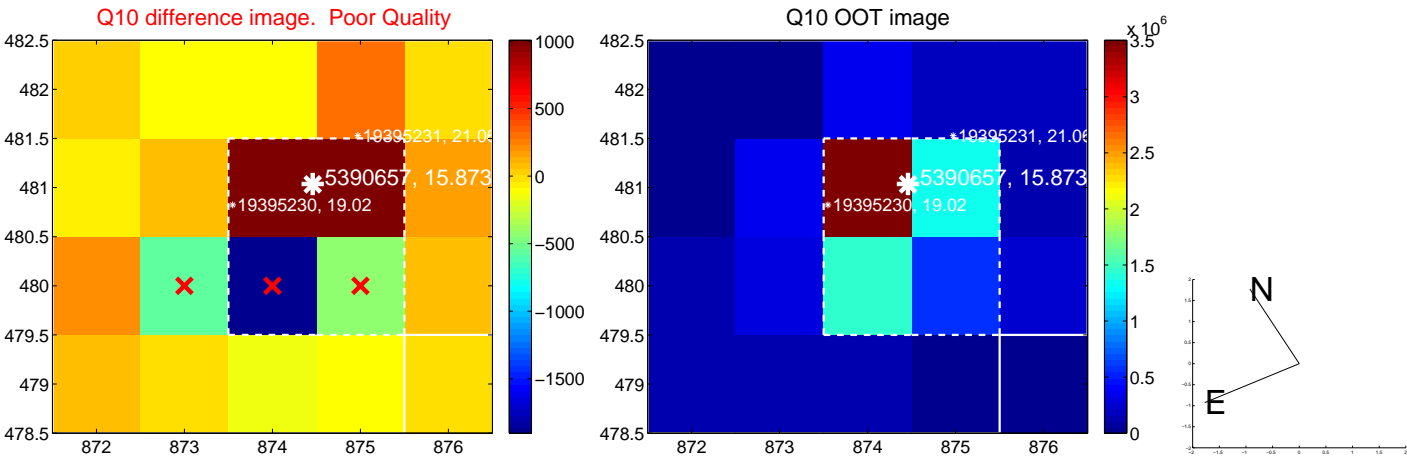
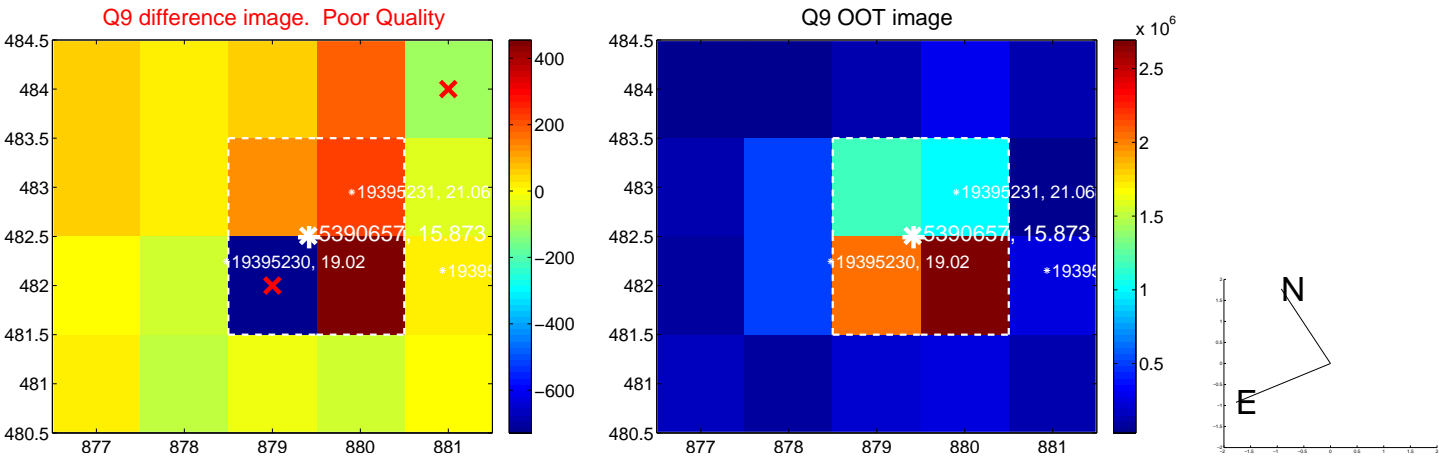
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



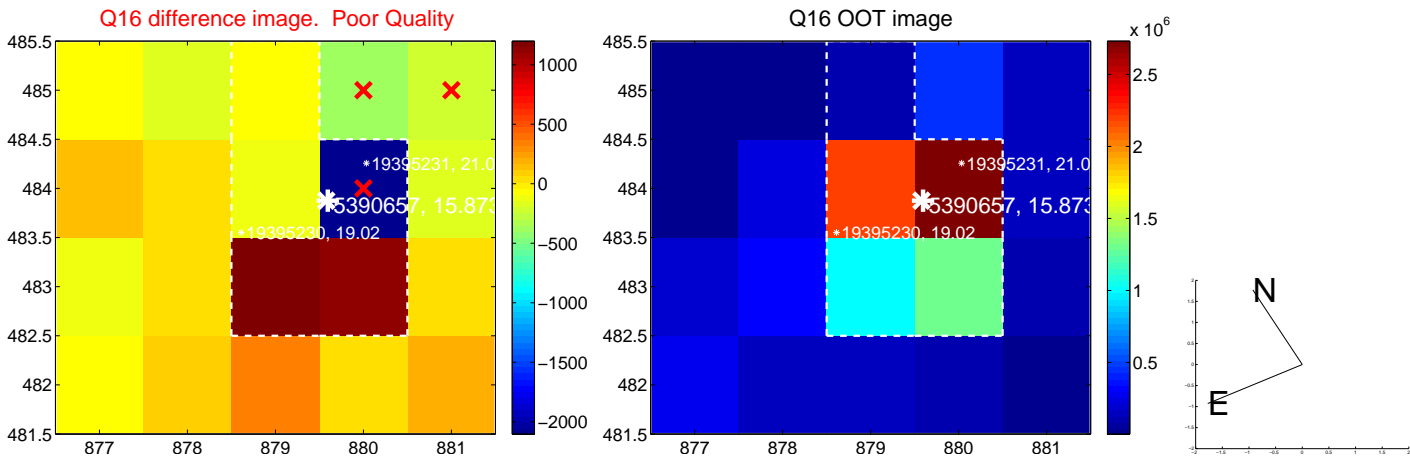
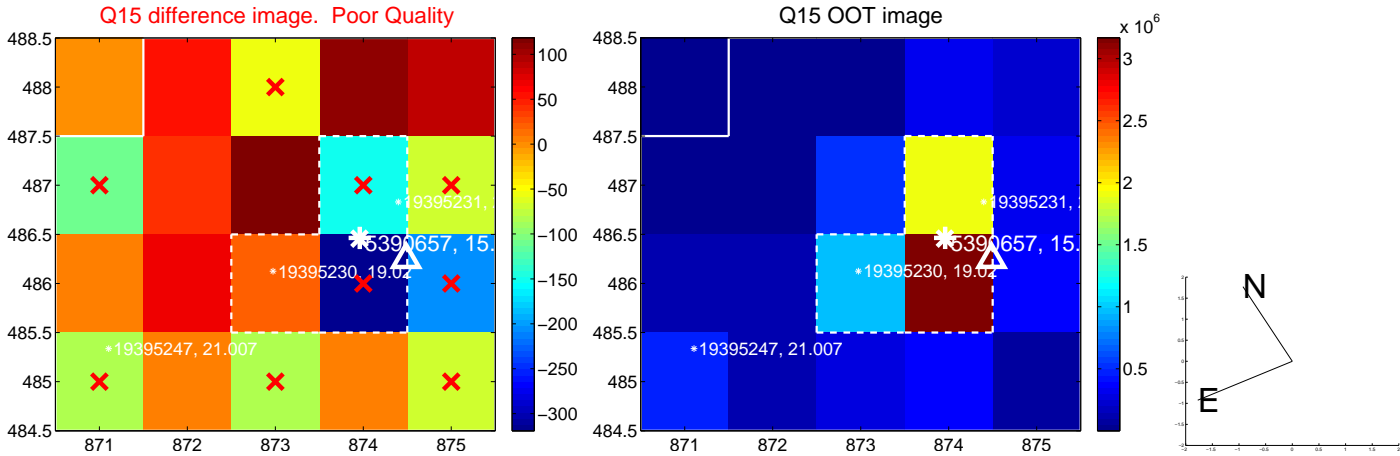
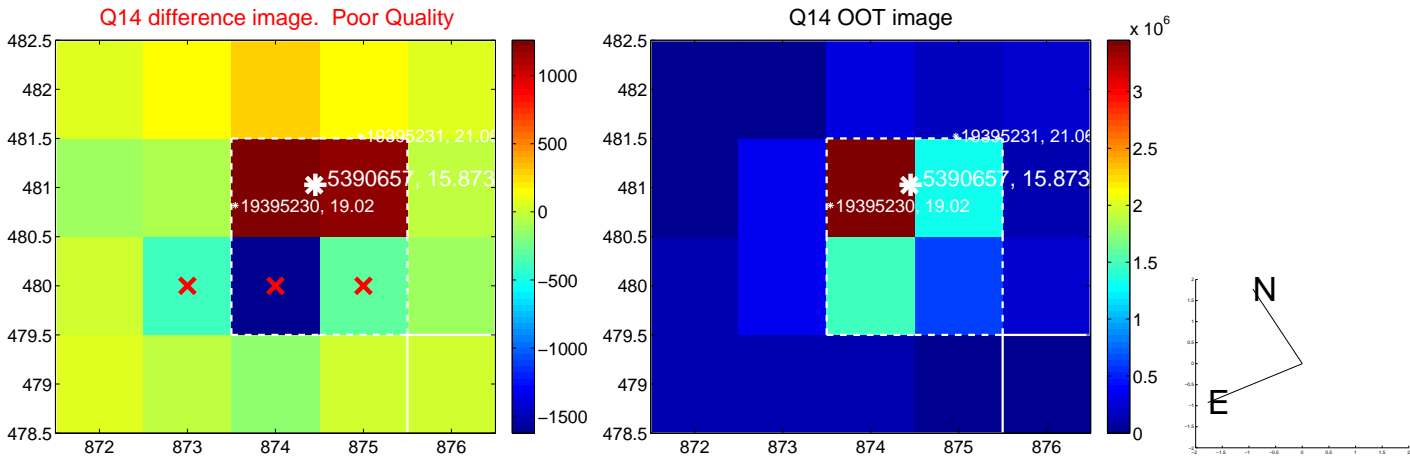
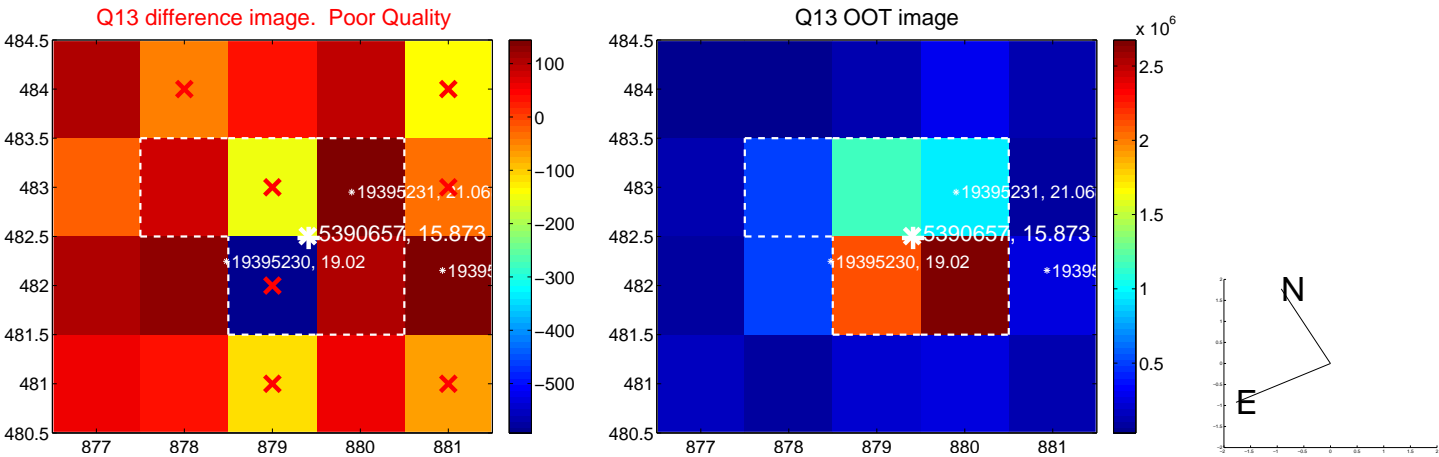
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



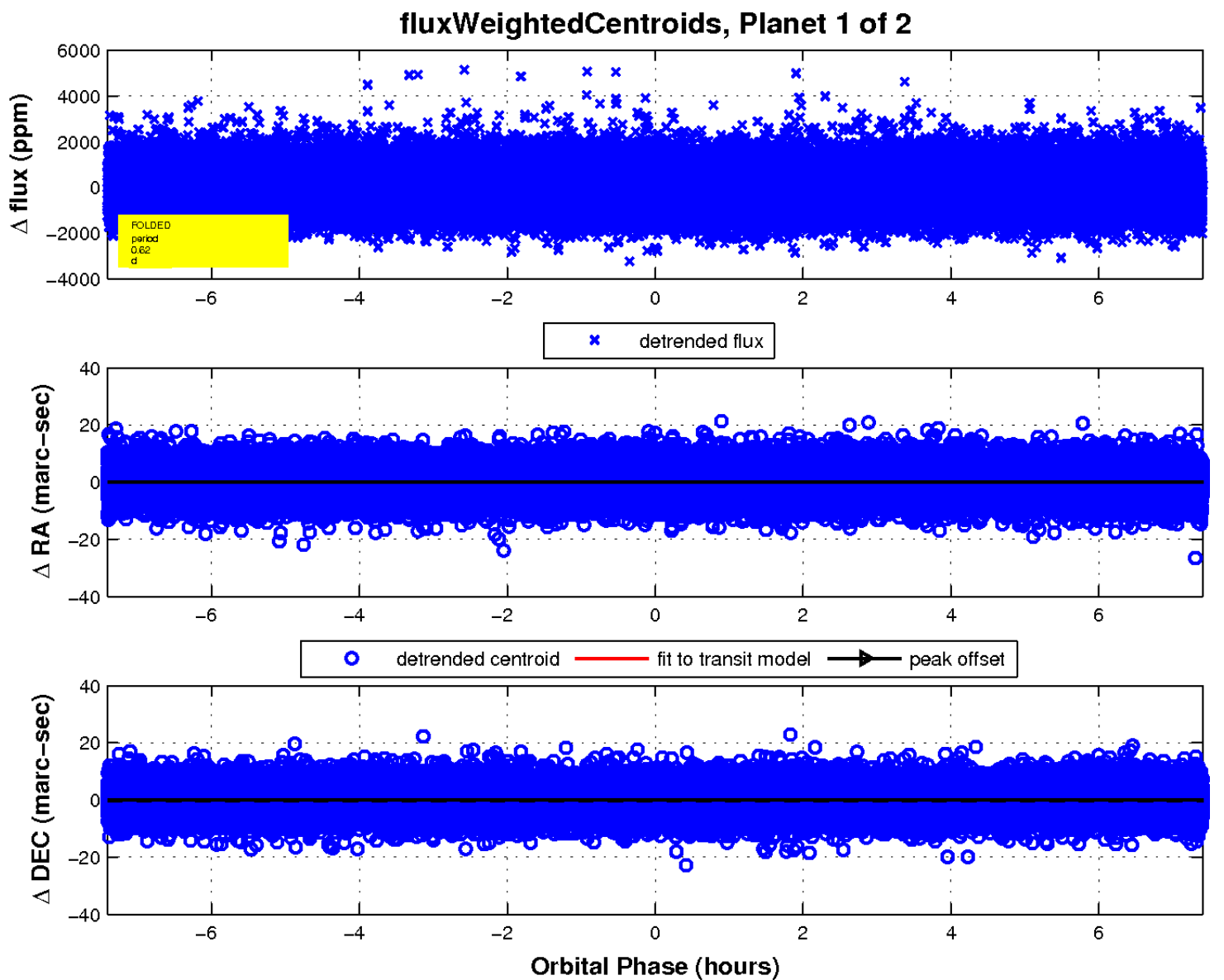
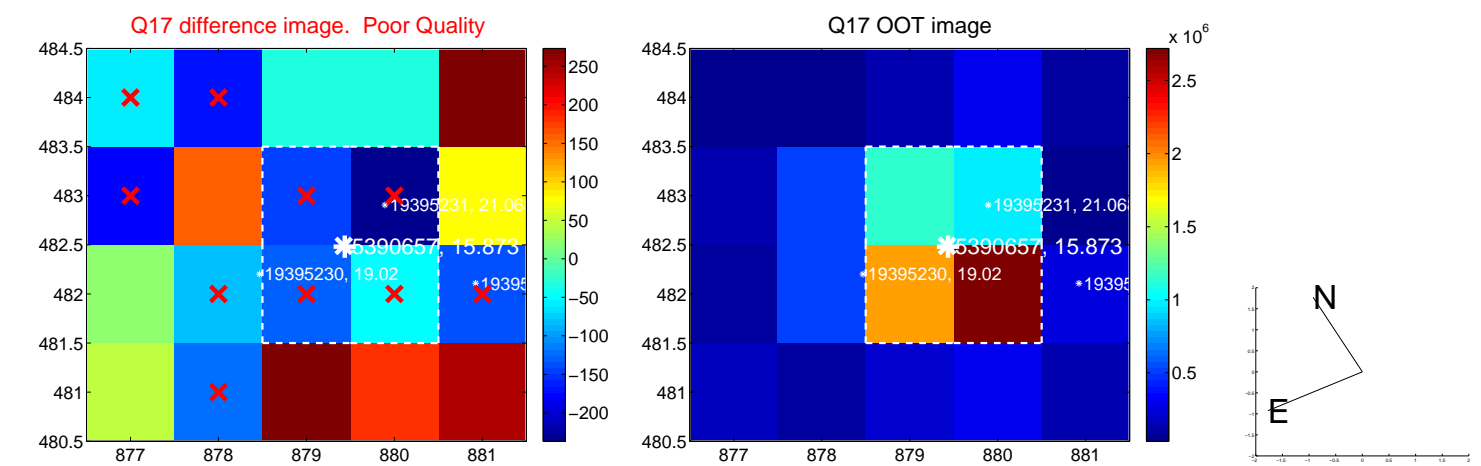
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

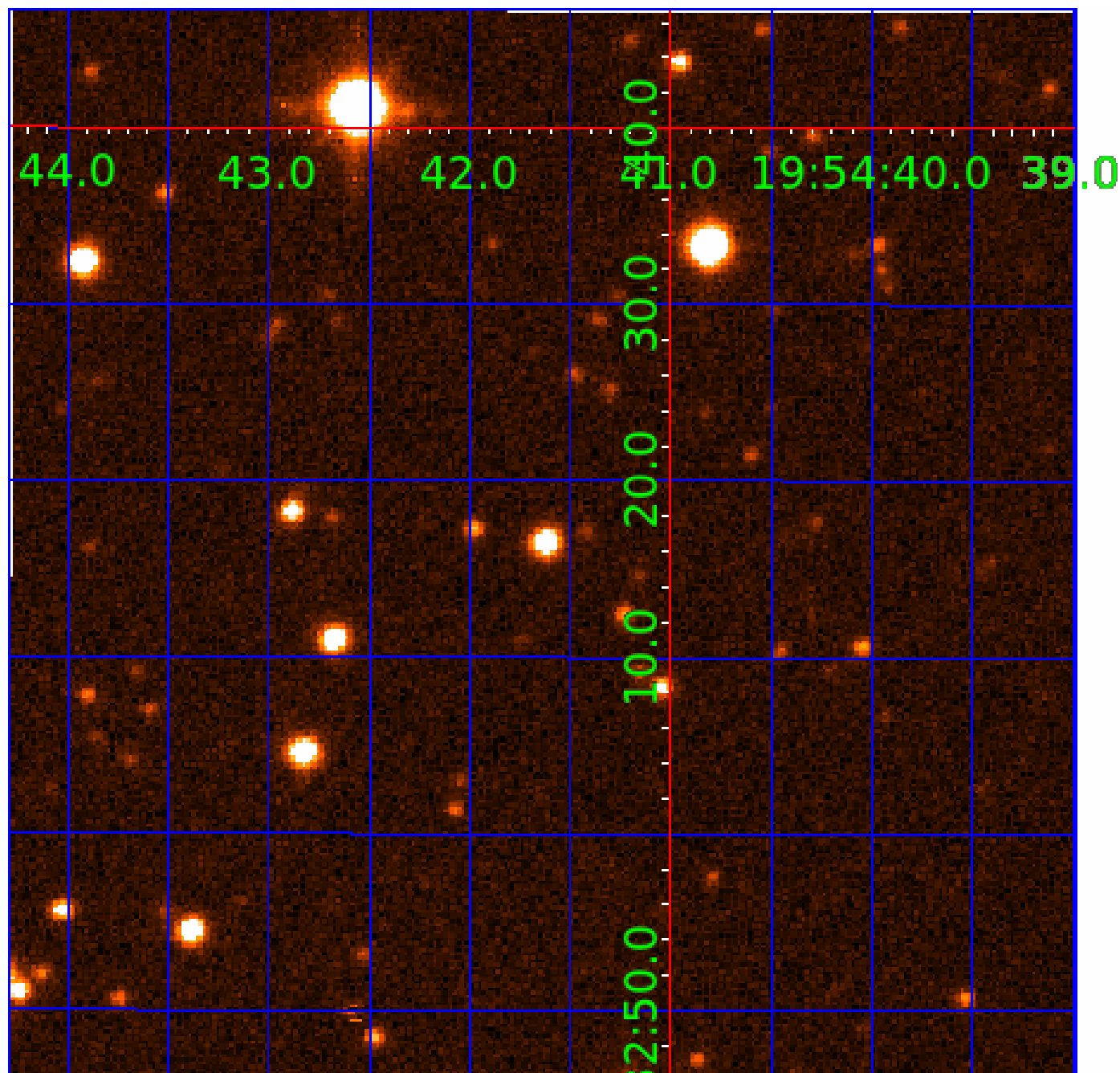


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005390657

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})
005390657-01	OBS	No	0.617330	131.825843	27.2	4.461	8.6	3.8	1.26	7113	0.68	15456.88
005390657-02	OBS	No	12.049965	137.192491	1162.6	1.205	10.6	12.1	1.26	7113	4.39	294.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005390657-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS
005390657-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

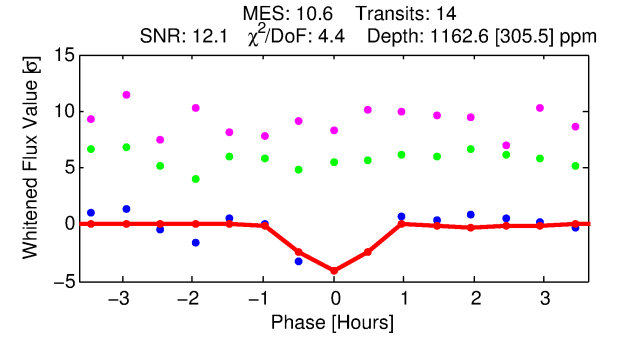
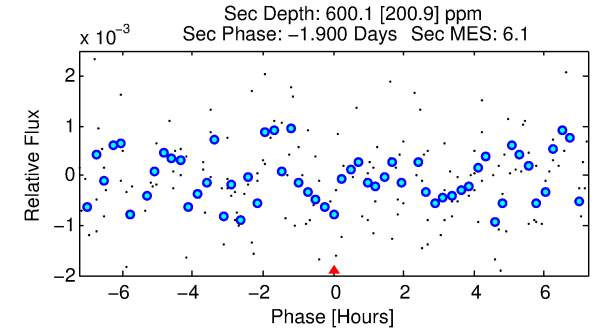
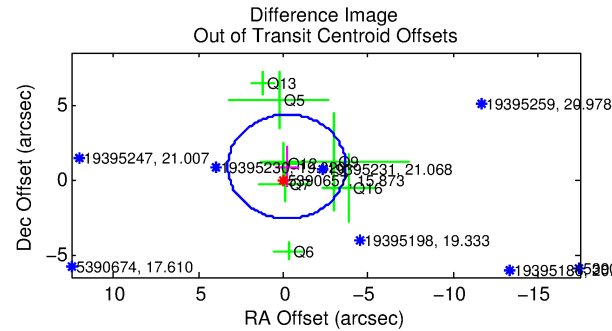
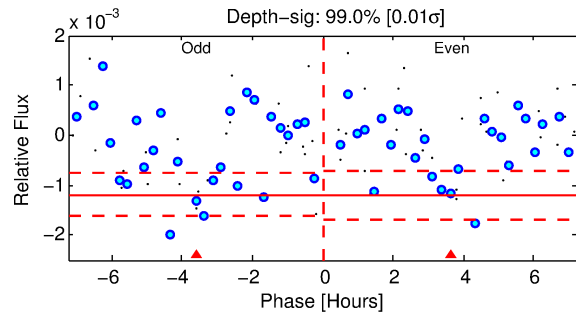
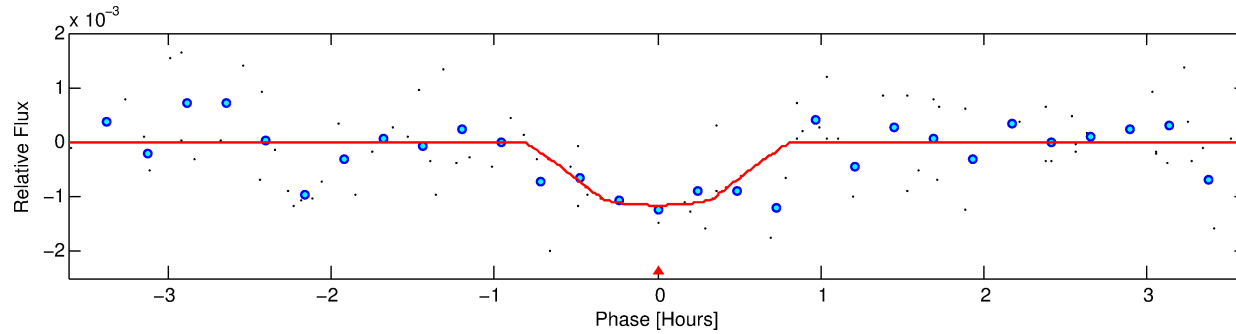
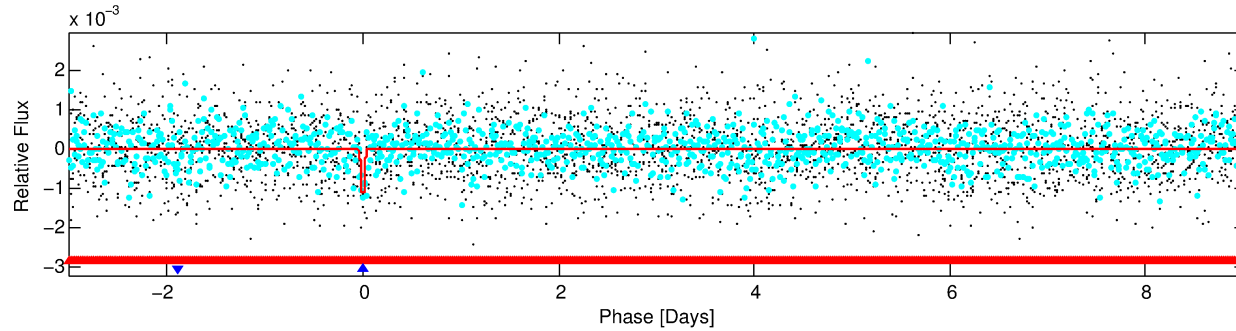
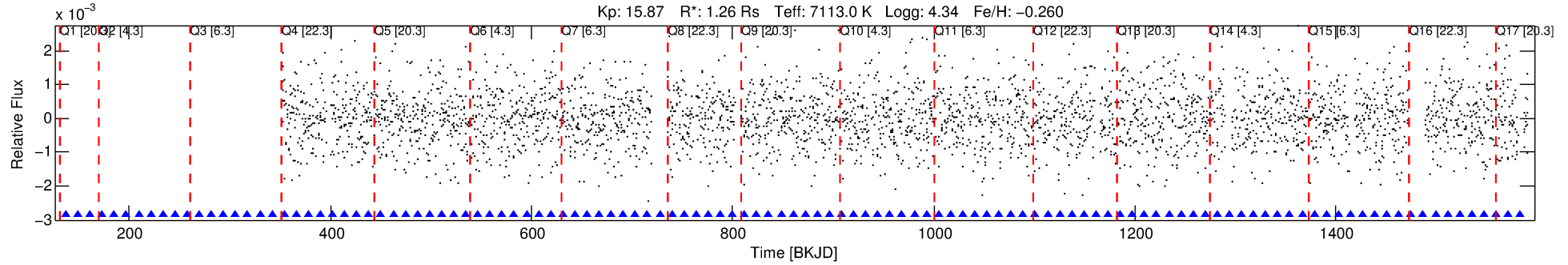
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005390657-02

No Significant Match Found

DV One-Page Summary

KIC: 5390657 Candidate: 2 of 2 Period: 12.050 d



DV Fit Results:

Period = 12.04996 [0.00013] d
Epoch = 137.1925 [0.0103] BKJD
Rp/R* = 0.0319 [0.0622]
a/R* = 77.19 [872.67]
b = 0.21 [51.82]
Seff = 294.10 [114.64]
Teq = 1056 [103] K
Rp = 4.39 [8.66] Re
a = 0.1114 [0.0268] AU
Ag = 212.44 [834.37] [0.25 σ]
Teffp = 6233 [6105] K [0.85 σ]

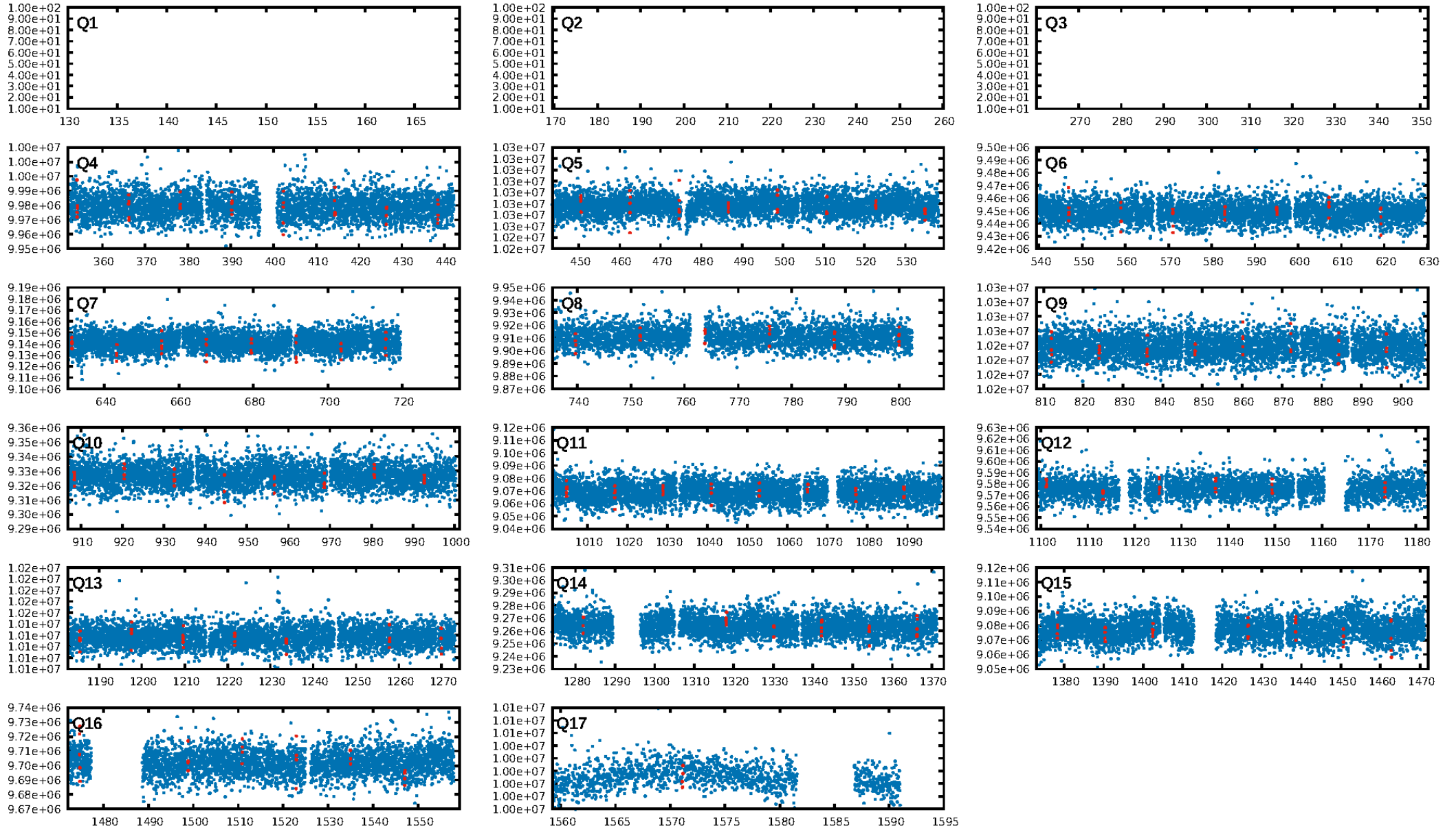
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [59.38 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 99.5%
Bootstrap-pfa: 2.11e-11
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 4.646
Centroid-sig: 9.6%
Centroid-so: 1.587 arcsec [2.00 σ]
OotOffset-rm: 0.897 arcsec [0.77 σ]
KicOffset-rm: 0.885 arcsec [0.69 σ]
OotOffset-st: 1/1/2/3 [7]
KicOffset-st: 1/1/2/3 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/14]

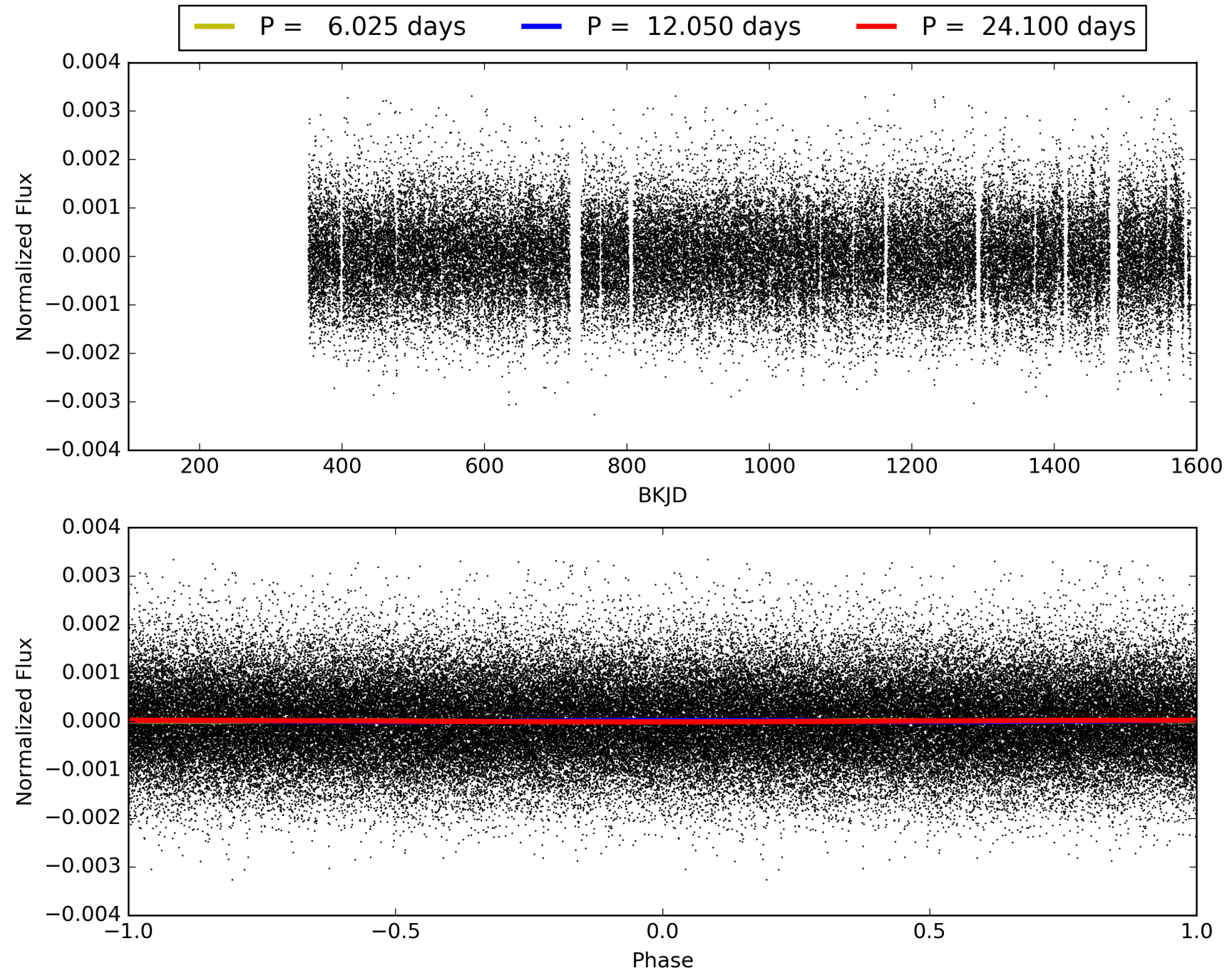
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:44:17 Z

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

TCE 005390657-02, PDC Light Curves

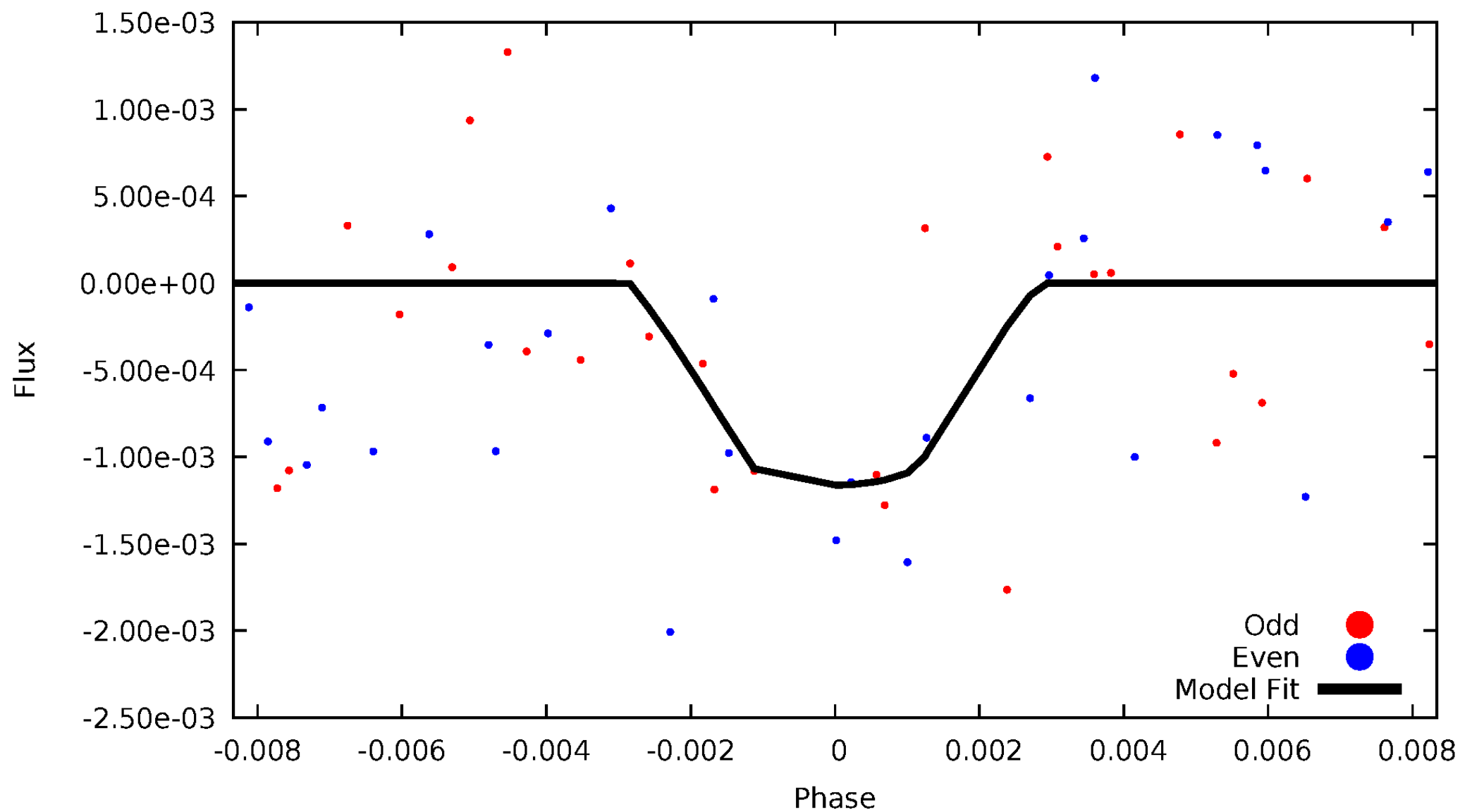


TCE 005390657-02



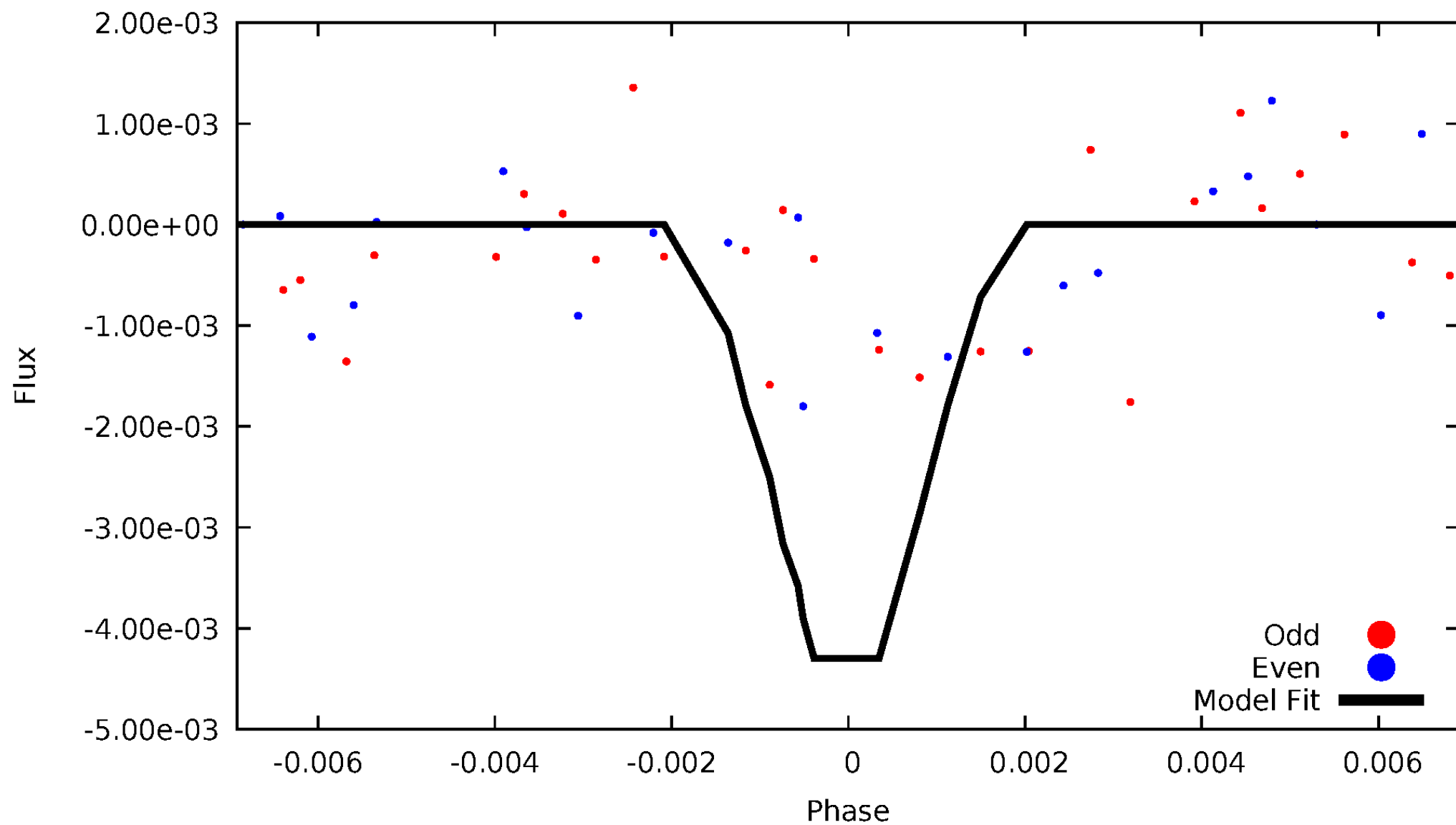
DV Odd/Even

TCE 005390657-02



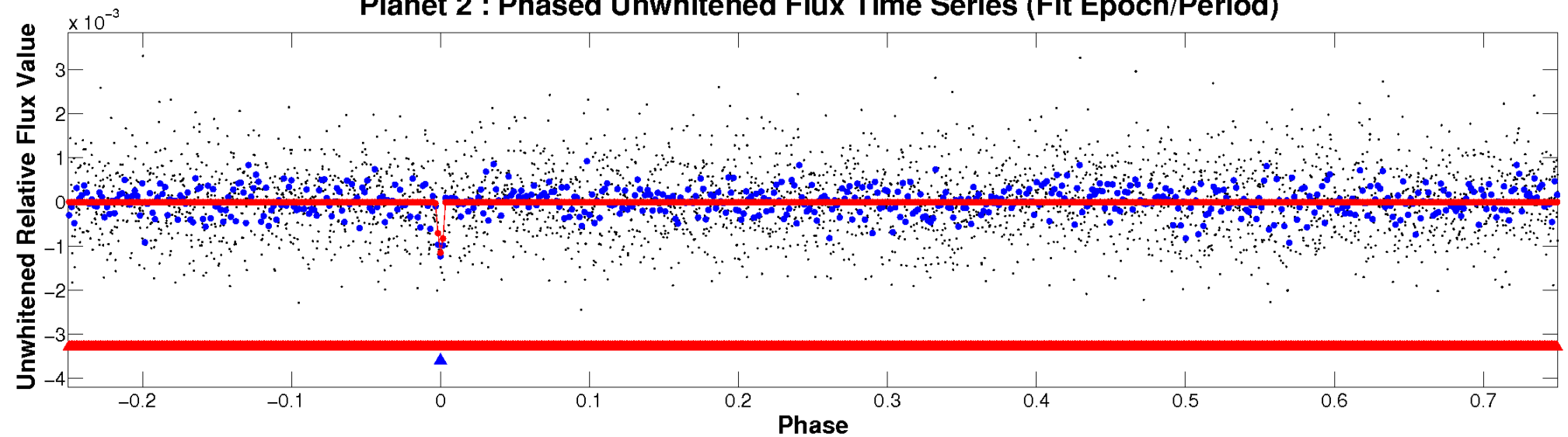
ALT Odd/Even

TCE 005390657-02

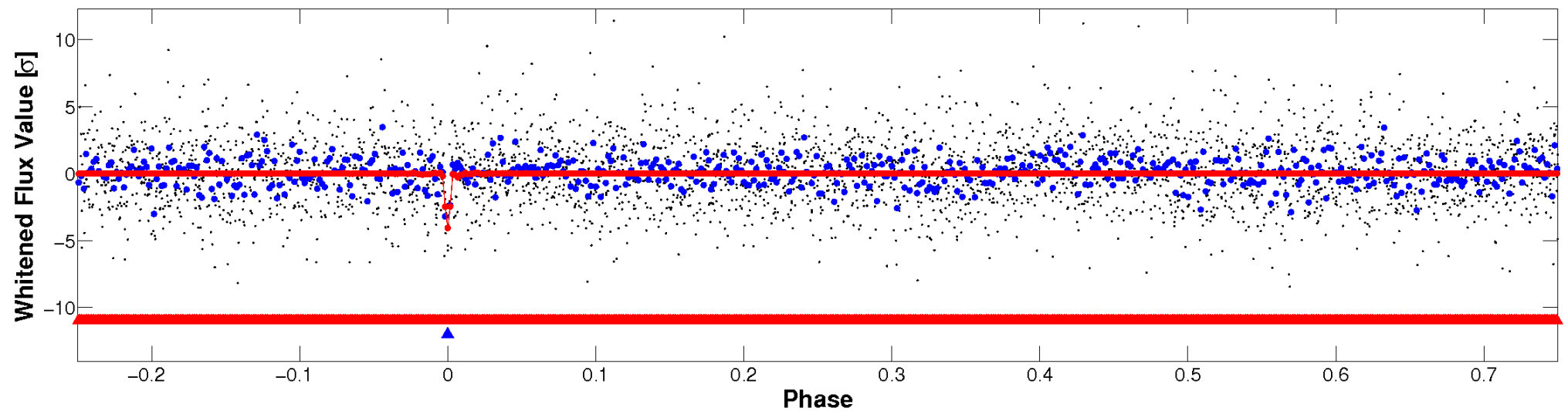


Non-Whitened Vs. Whitened Light Curve

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

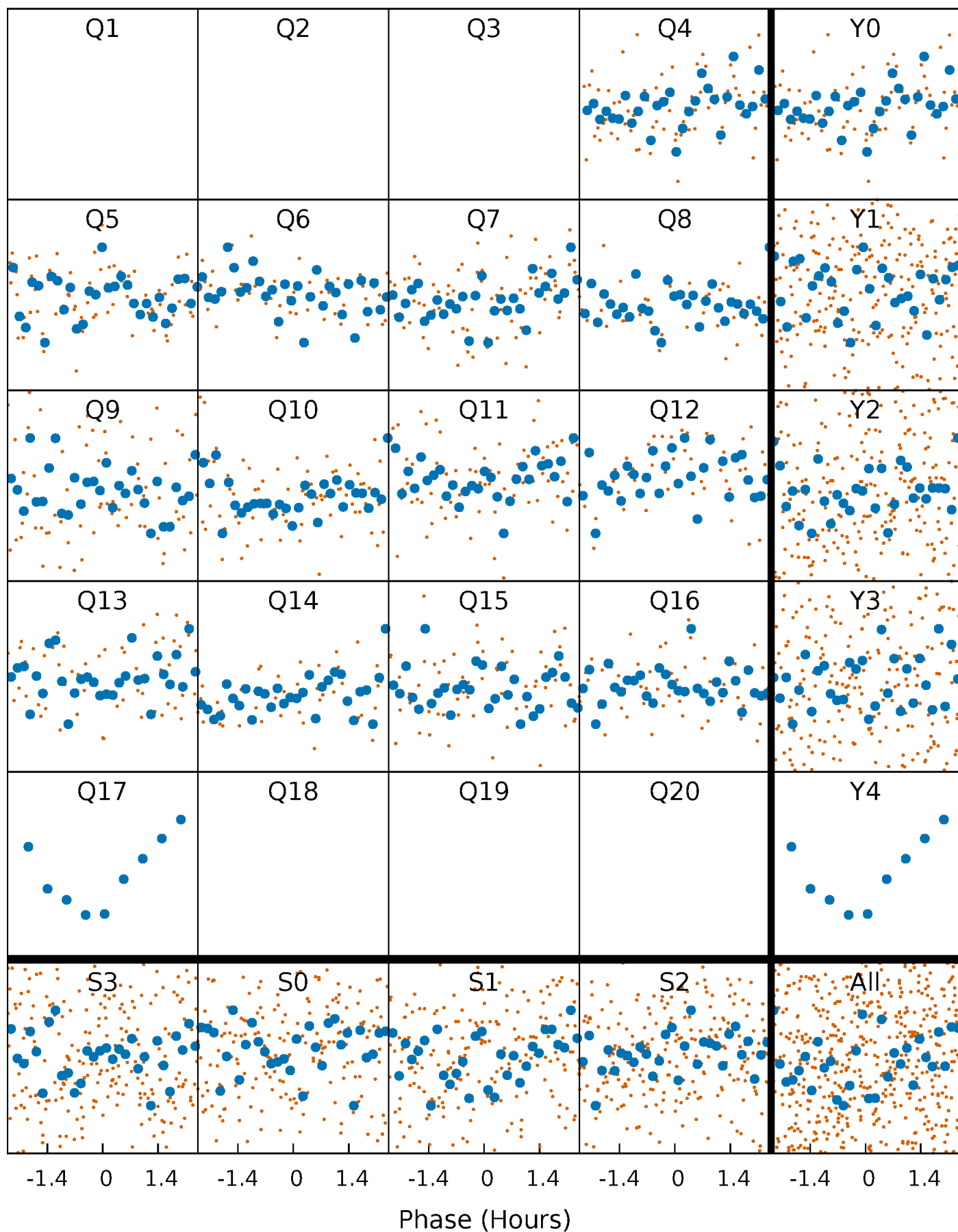


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



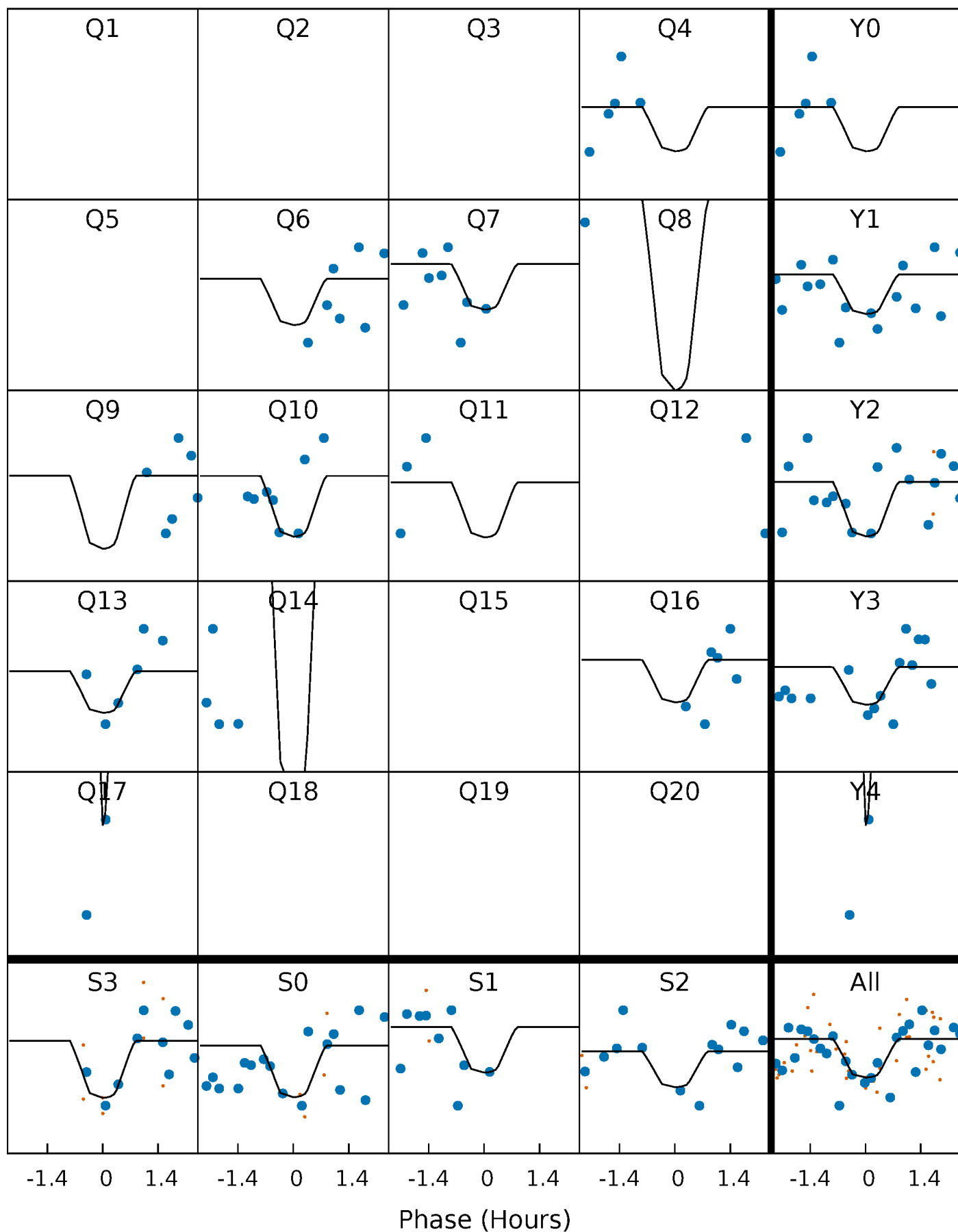
PDC Quarter-Phased Transit Curves

TCE 005390657-02 P= 12.049965 Days $T_0=137.192491$ (BKJD)



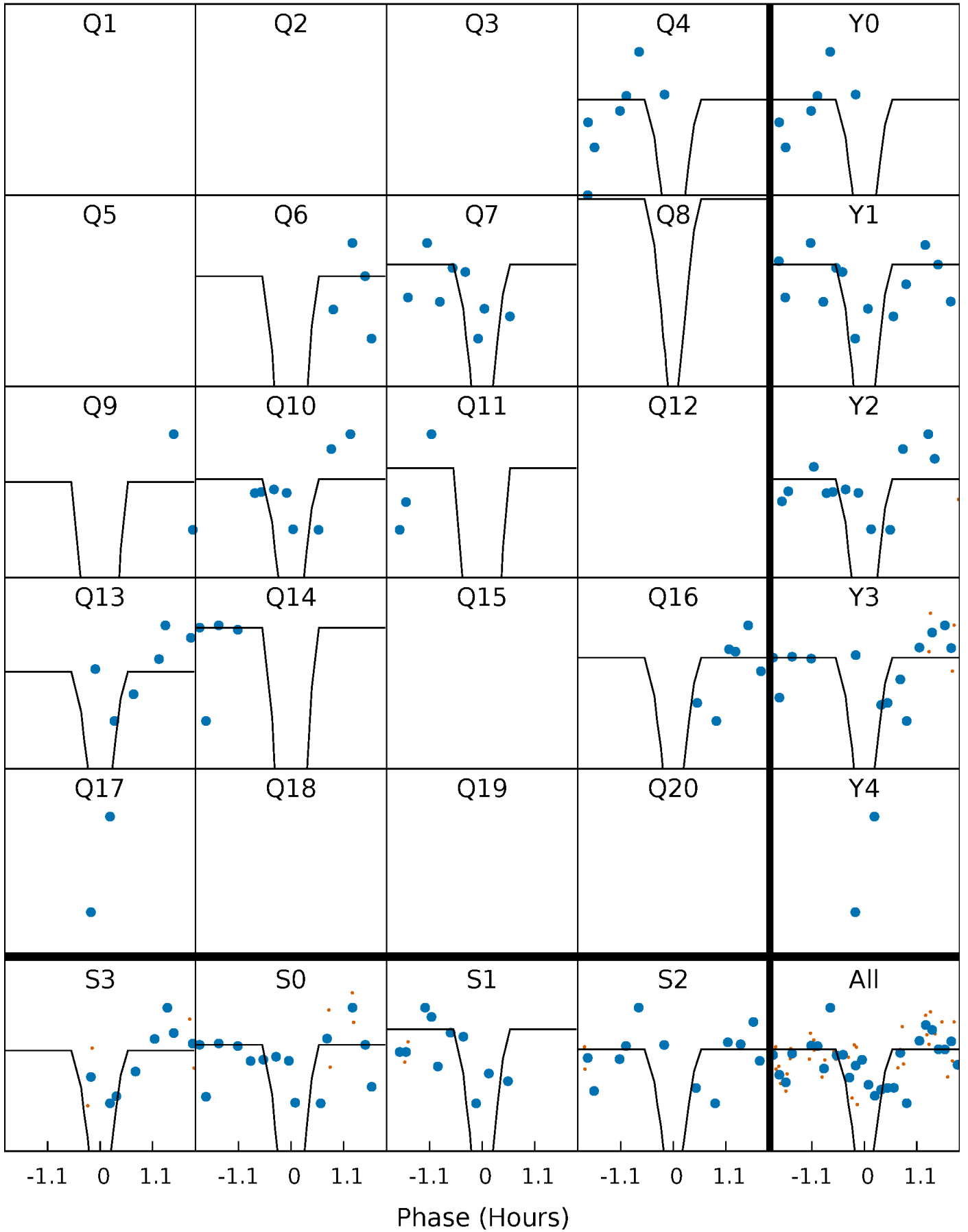
DV Quarter-Phased Transit Curves

TCE 005390657-02 P= 12.049965 Days $T_0=137.192491$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

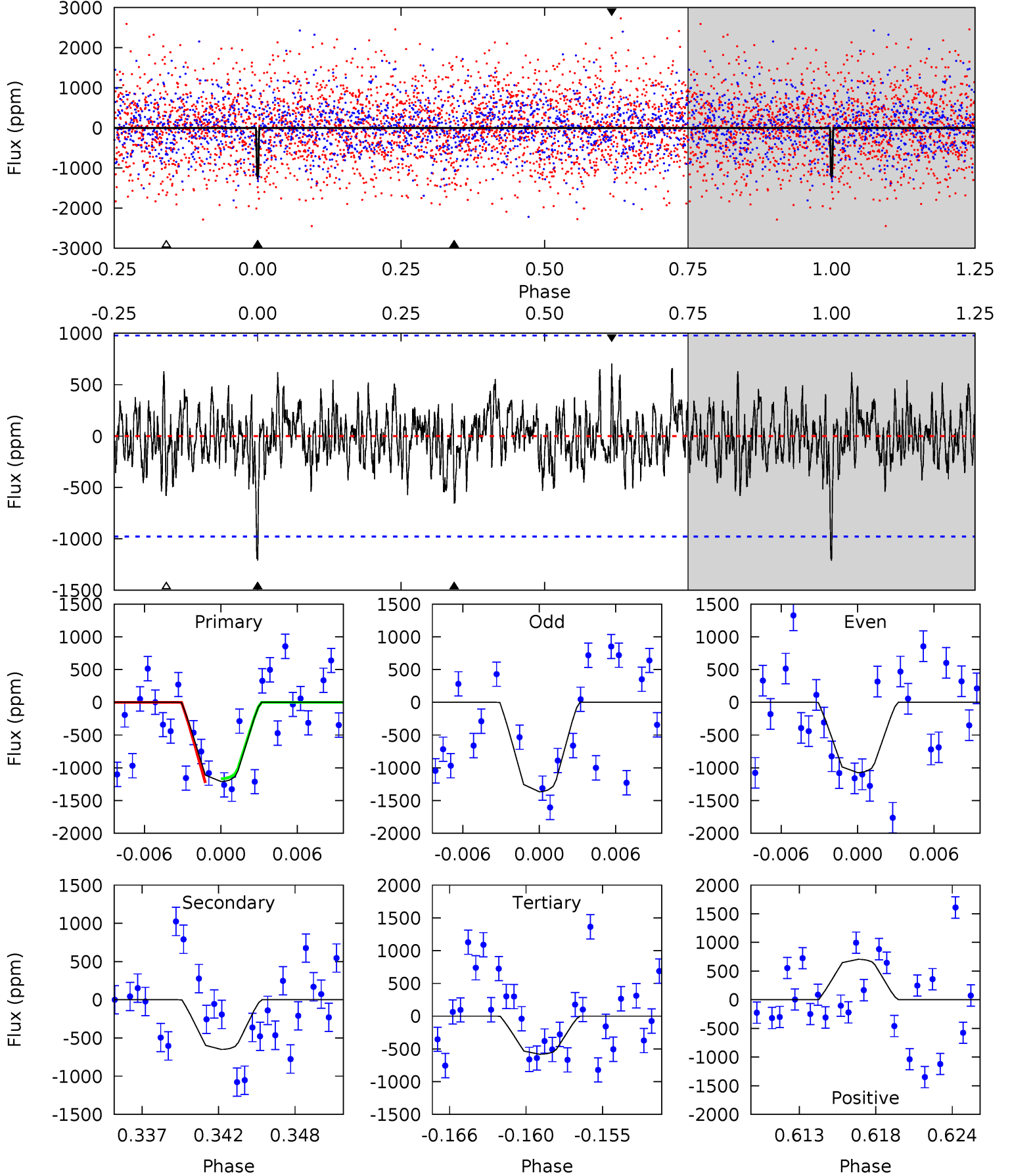
TCE 005390657-02 P= 12.050123 Days $T_0=137.164169$ (BKJD)



DV Model-Shift Uniqueness Test

005390657-02, P = 12.049965 Days, E = 137.192491 Days

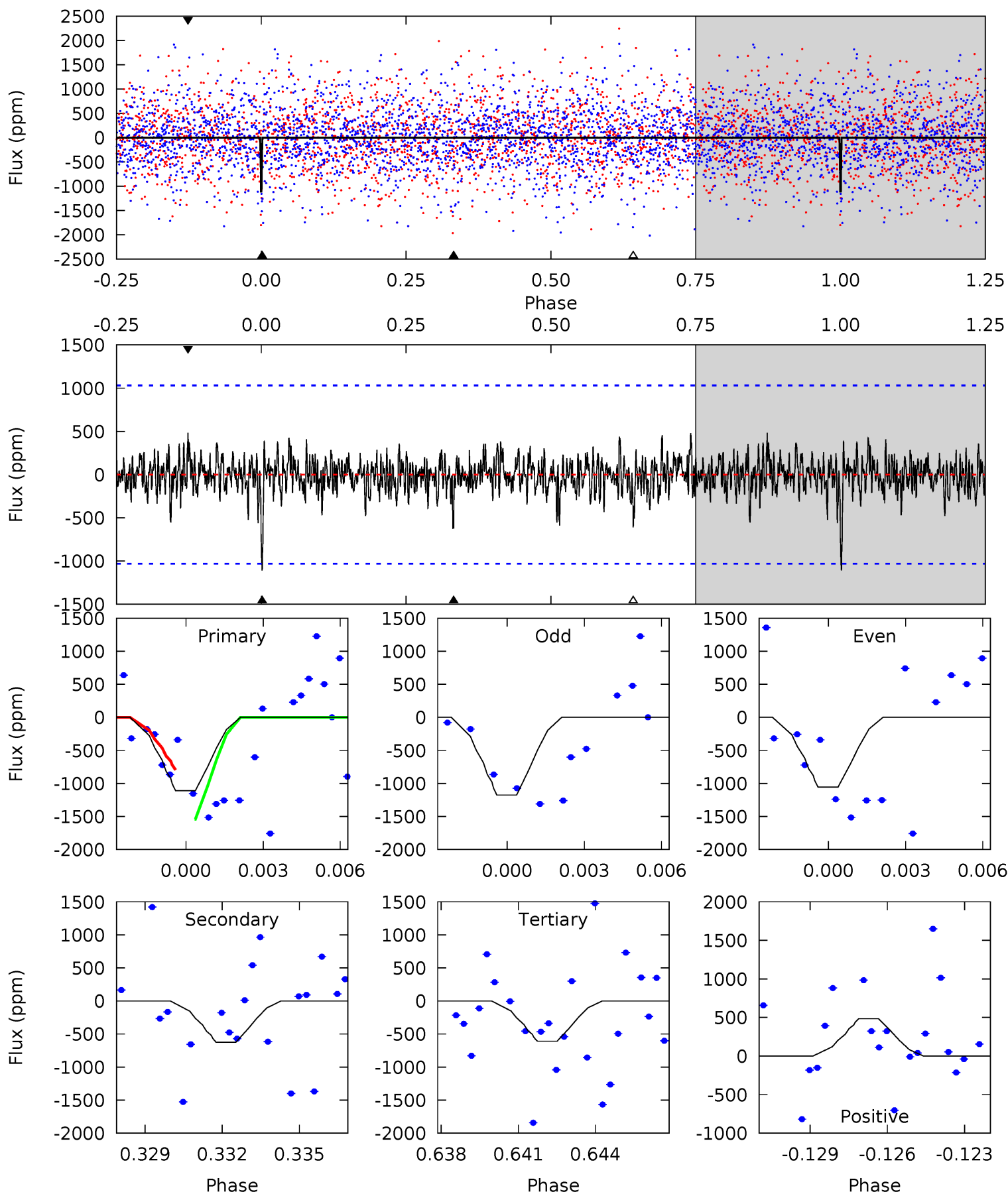
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.37	3.42	3.06	3.71	5.14	2.78	1.13	3.32	2.66	0.36	-0.29	0.77	1.06	0.37	0.15



Alt Model-Shift Uniqueness Test

005390657-02, P = 12.050123 Days, E = 137.164169 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.66	3.18	3.11	2.47	5.26	2.98	0.83	2.55	3.19	0.08	0.72	0.30	1.00	0.30	1.89



Stellar Parameters For KIC 005390657

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7113^{+199}_{-341}	$4.340^{+0.060}_{-0.180}$	$-0.260^{+0.300}_{-0.350}$	$1.262^{+0.373}_{-0.133}$	$1.290^{+0.193}_{-0.176}$	$0.905^{+0.231}_{-0.444}$
	+3%/-5%	+1%/-4%	+115%/-135%	+30%/-11%	+15%/-14%	+25%/-49%
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 005390657-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-650 ± 190	$8.17^{+7.96}_{-5.28}$	1499^{+101}_{-89}	4815^{+3198}_{-1142}	62^{+433}_{-47}
Alt.	-624 ± 196	$12.25^{+8.20}_{-7.78}$	1492^{+104}_{-83}	4072^{+2132}_{-690}	28^{+166}_{-18}

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 $A_{obs} \gg 1.0$

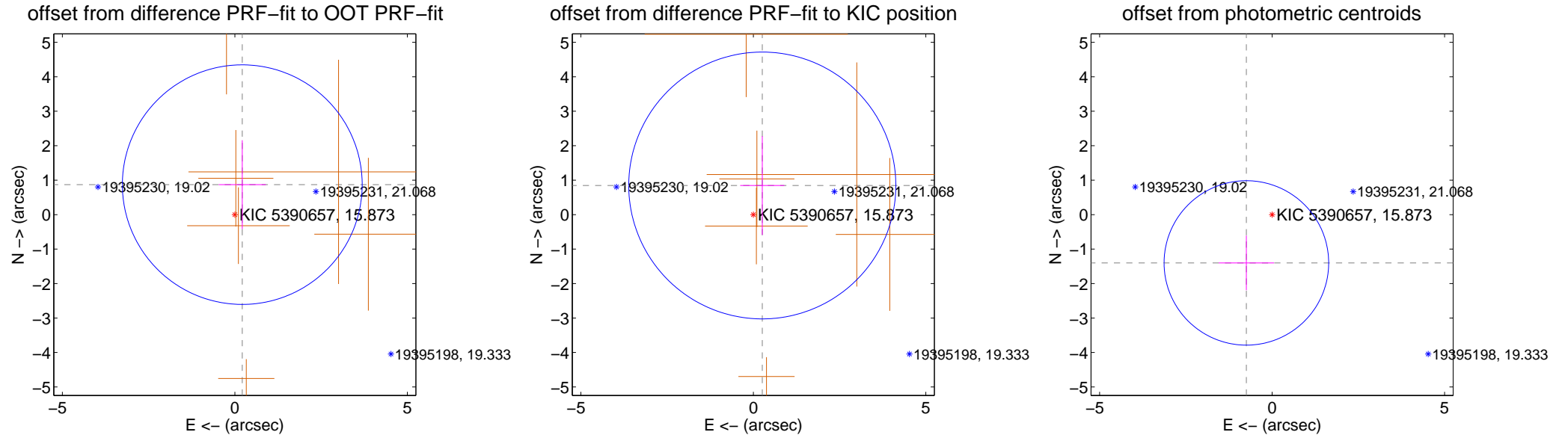
DV Centroid Data

Supplemental centroid analysis for 005390657-02. Kepler magnitude: 15.87. Transit SNR 12.07

There are 0 quarters with good PRF difference image offsets

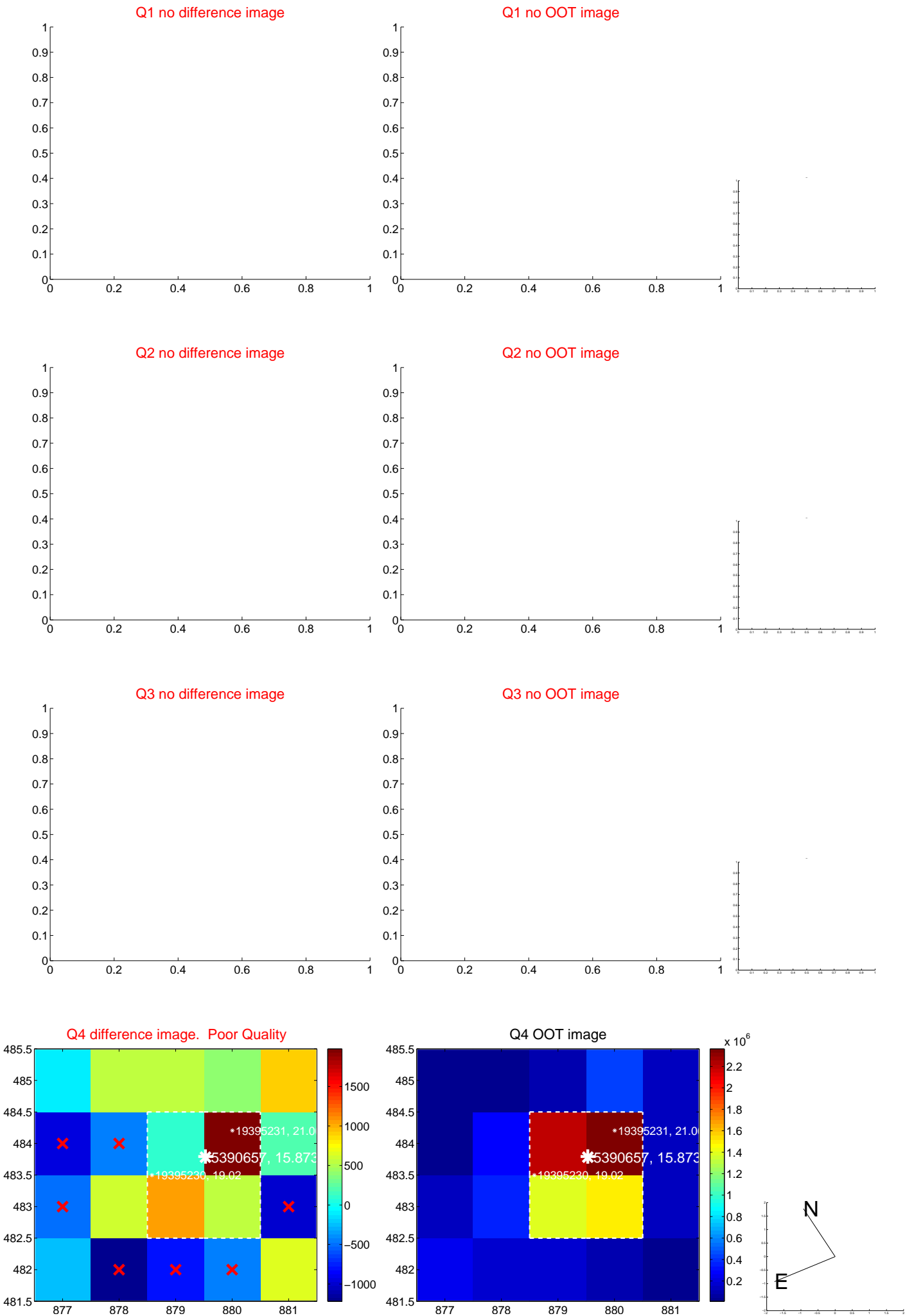
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.897 ± 1.158	0.77	-0.215 ± 0.683	0.871 ± 1.289
PRF-fit source offset from KIC position	0.885 ± 1.290	0.69	-0.259 ± 0.640	0.846 ± 1.433
photometric centroid source offset	1.59 ± 0.80	2.00	0.75 ± 0.80	-1.40 ± 0.79

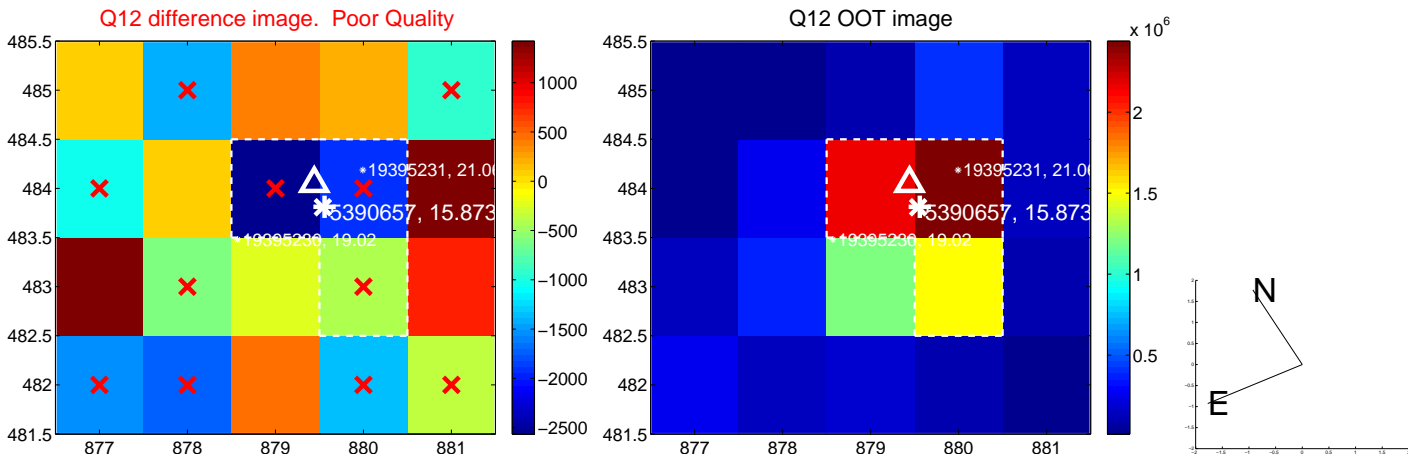
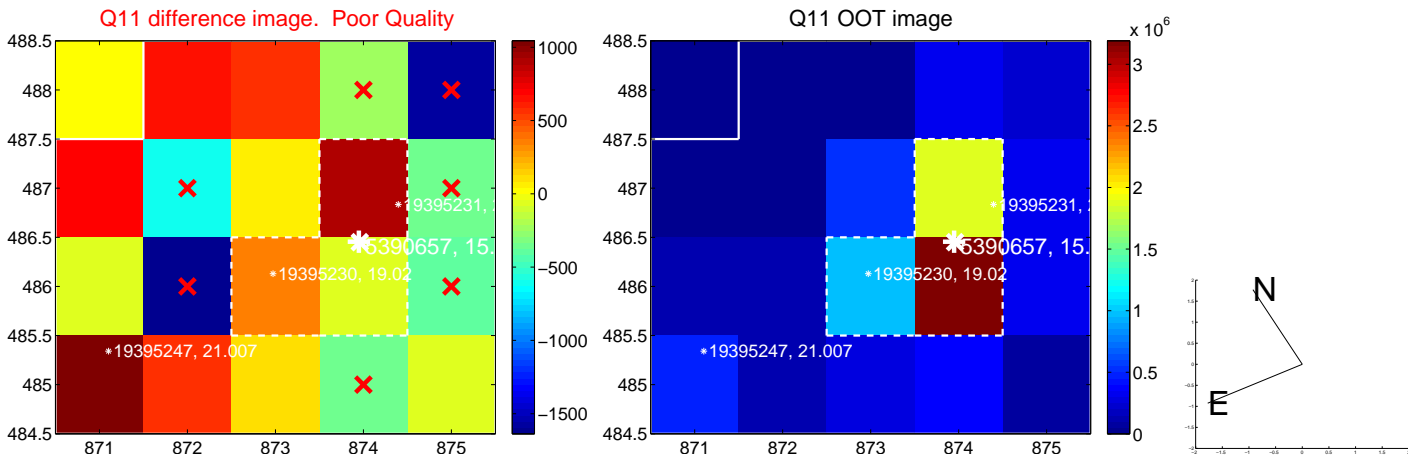
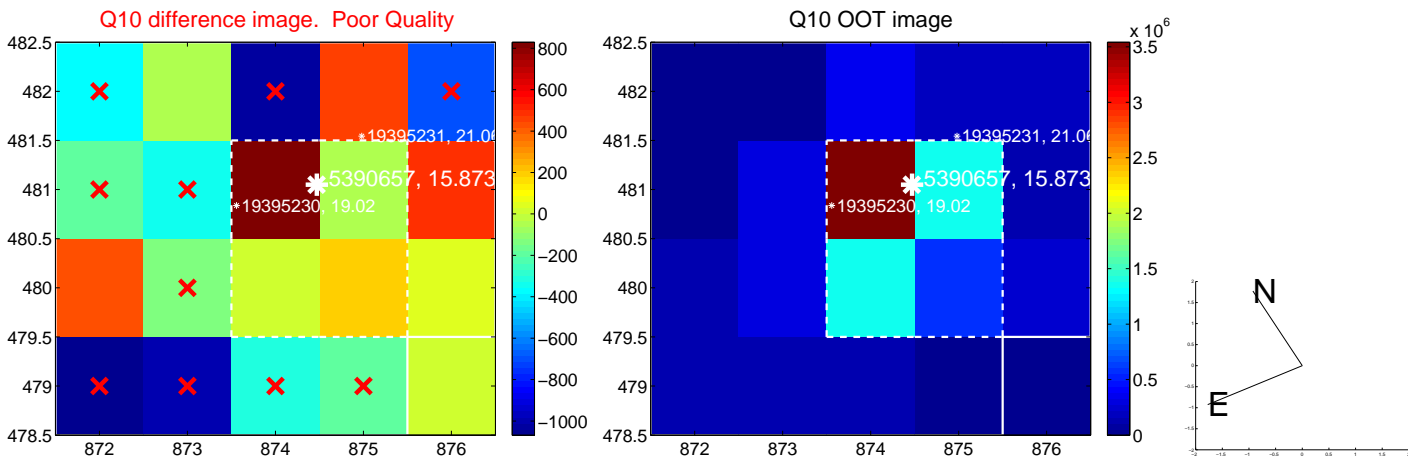
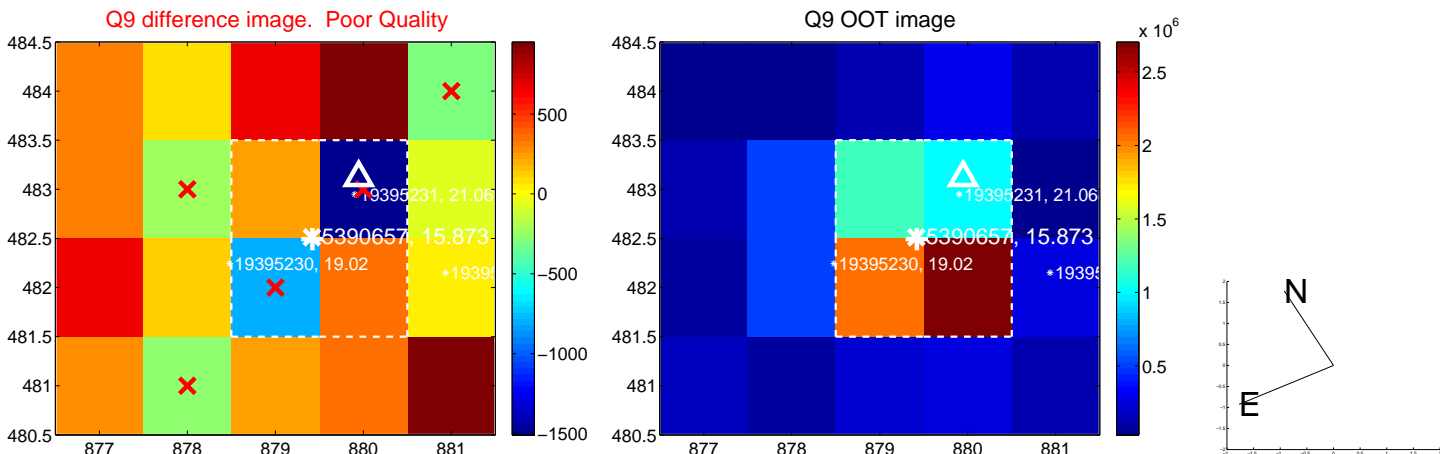


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

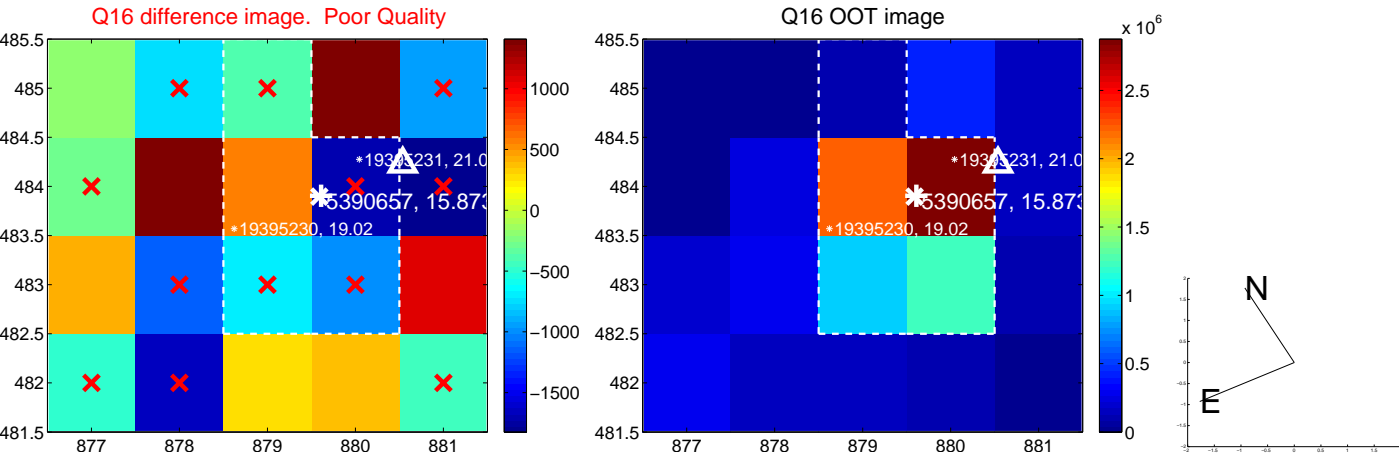
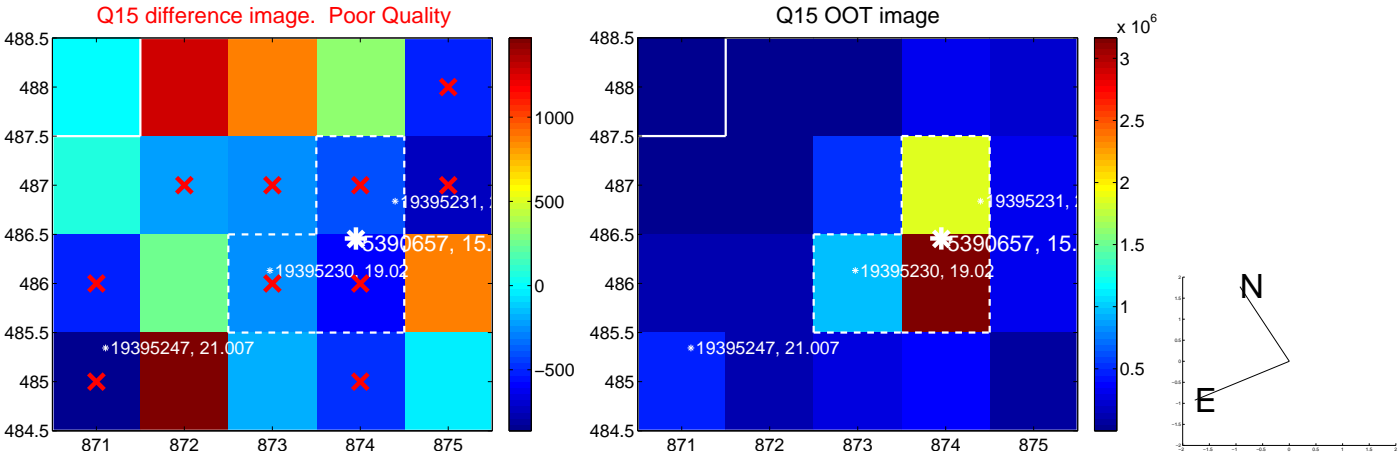
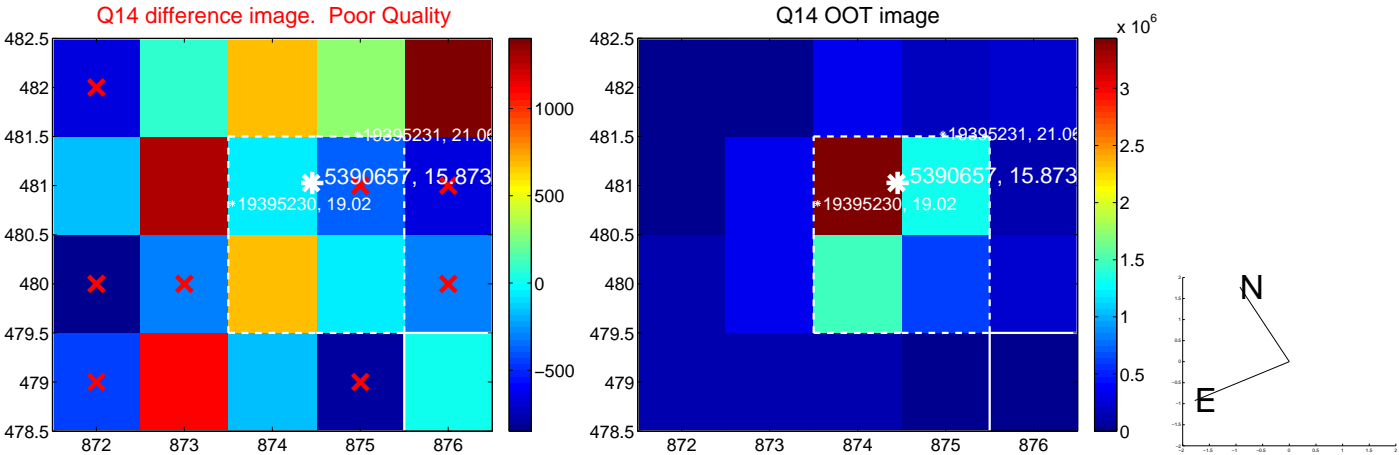
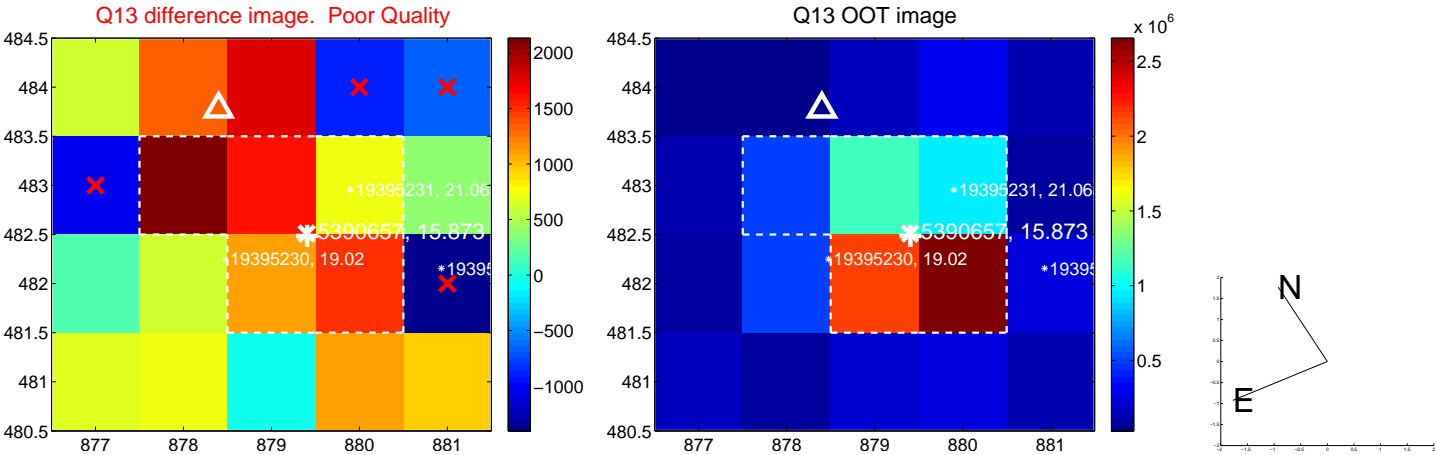
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

