

KIC 010550397

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})
010550397-01	OBS	No	1.265460	132.000904	20.1	2.947	9.7	5.4	1.79	7249	0.90	11430.95
010550397-02	OBS	No	1.265320	131.669496	28.6	5.066	10.5	9.9	1.79	7249	0.99	11432.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010550397-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010550397-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

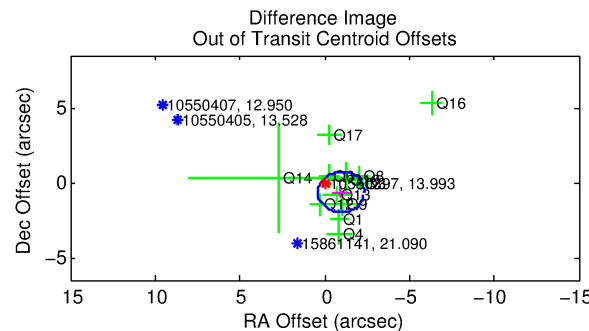
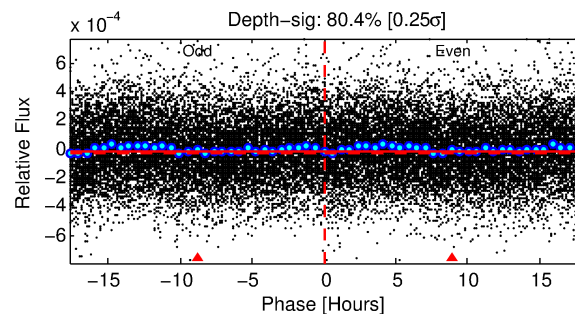
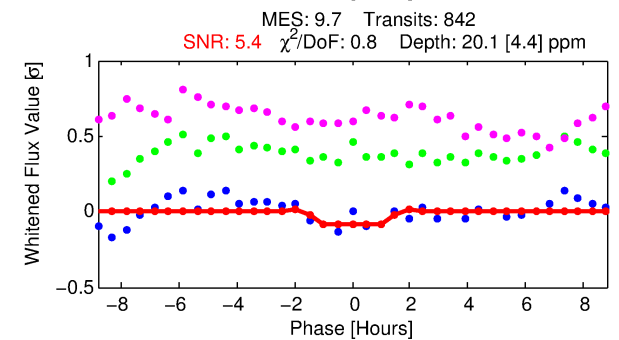
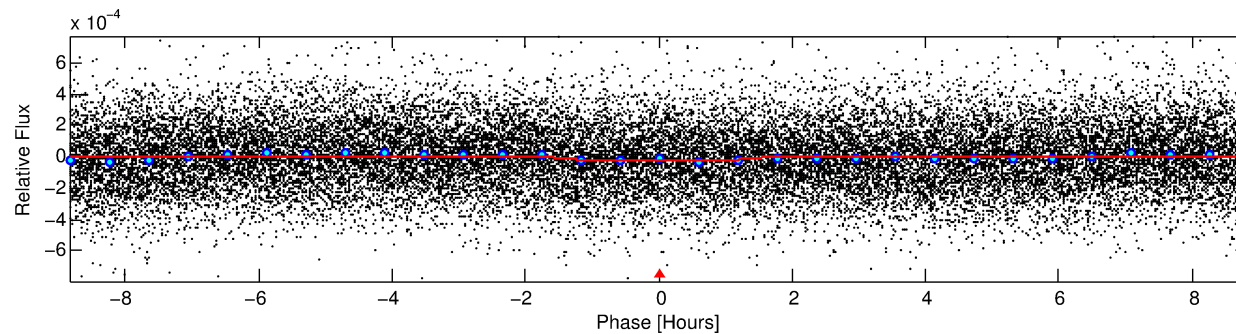
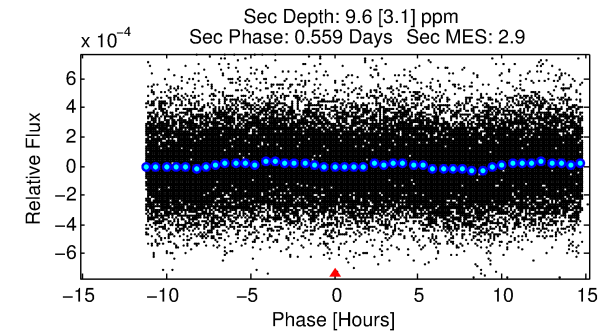
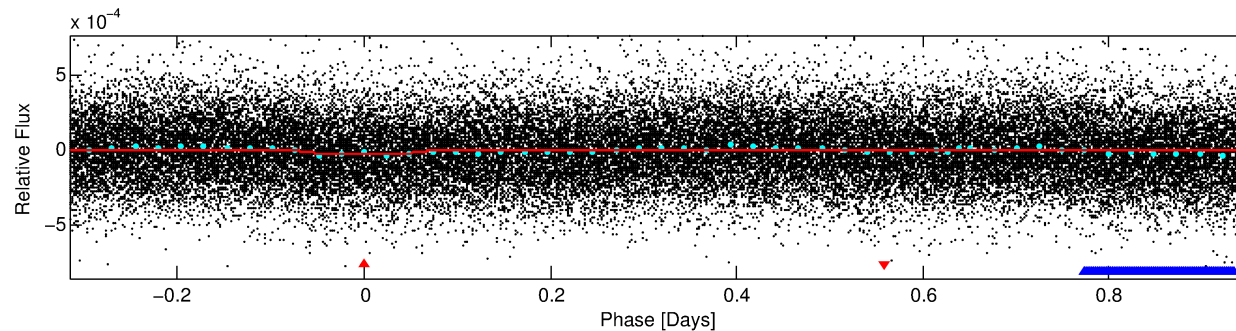
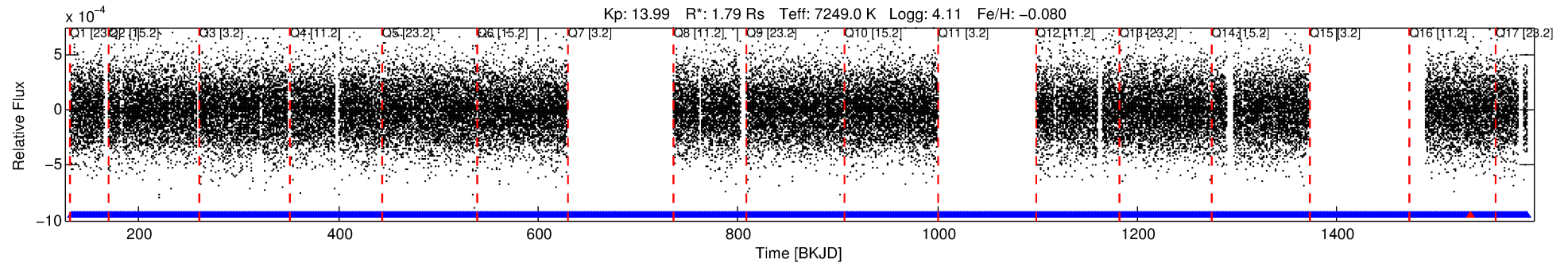
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010550397-01

No Significant Match Found

DV One-Page Summary

KIC: 10550397 Candidate: 1 of 2 Period: 1.265 d



DV Fit Results:

Period = 1.26546 [0.00002] d
Epoch = 132.0009 [0.0067] BKJD
Rp/R* = 0.0046 [0.0017]
a/R* = 2.04 [3.45]
b = 0.83 [0.82]
Seff = 11430.95 [4463.55]
Teq = 2637 [257] K
Rp = 0.90 [0.44] Re
a = 0.0263 [0.0066] AU
Ag = 4.53 [3.99] [0.88σ]
Teffp = 5947 [1231] K [2.63σ]

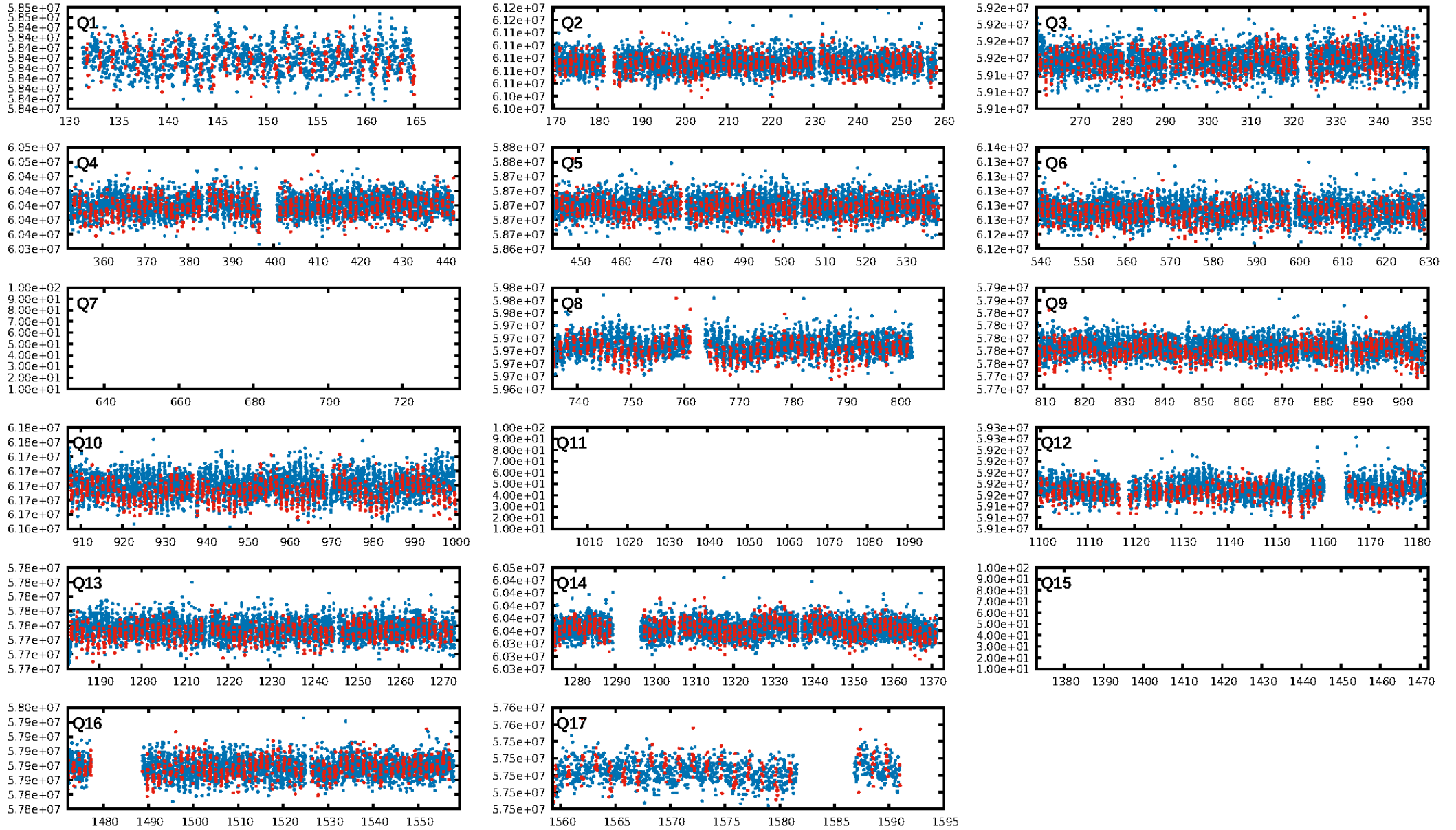
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.56e-31
RollingBand-fgt: 1.00 [793/794]
GhostDiagnostic-chr: 2.255
Centroid-sig: N/A
Centroid-so: 2.616 arcsec [1.50σ]
OotOffset-rm: 1.161 arcsec [2.56σ]
KicOffset-rm: 0.705 arcsec [1.58σ]
OotOffset-st: 3/1/4/4 [12]
KicOffset-st: 3/1/4/4 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.50 [7/14]

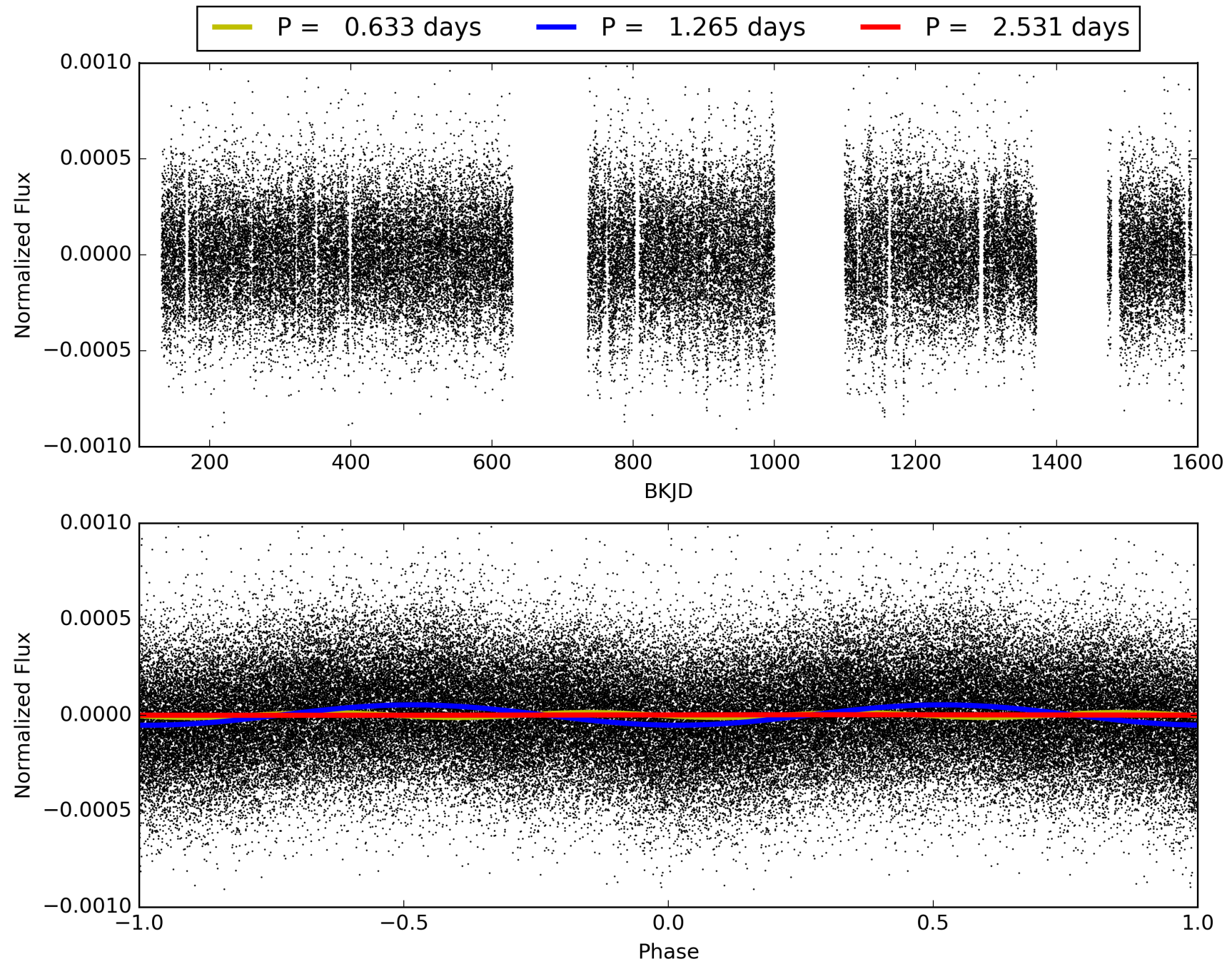
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:31:22 Z

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

TCE 010550397-01, PDC Light Curves

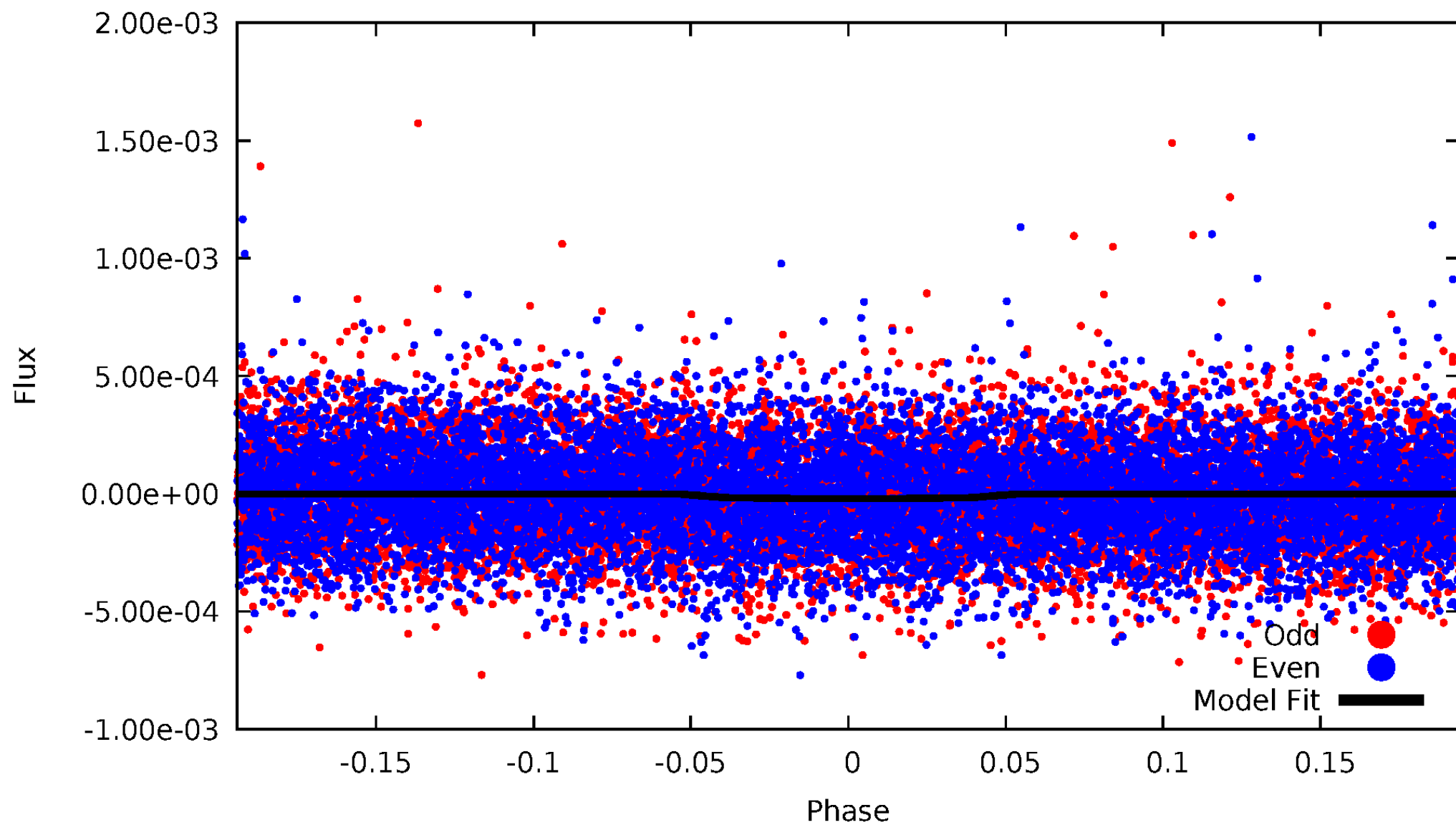


TCE 010550397-01



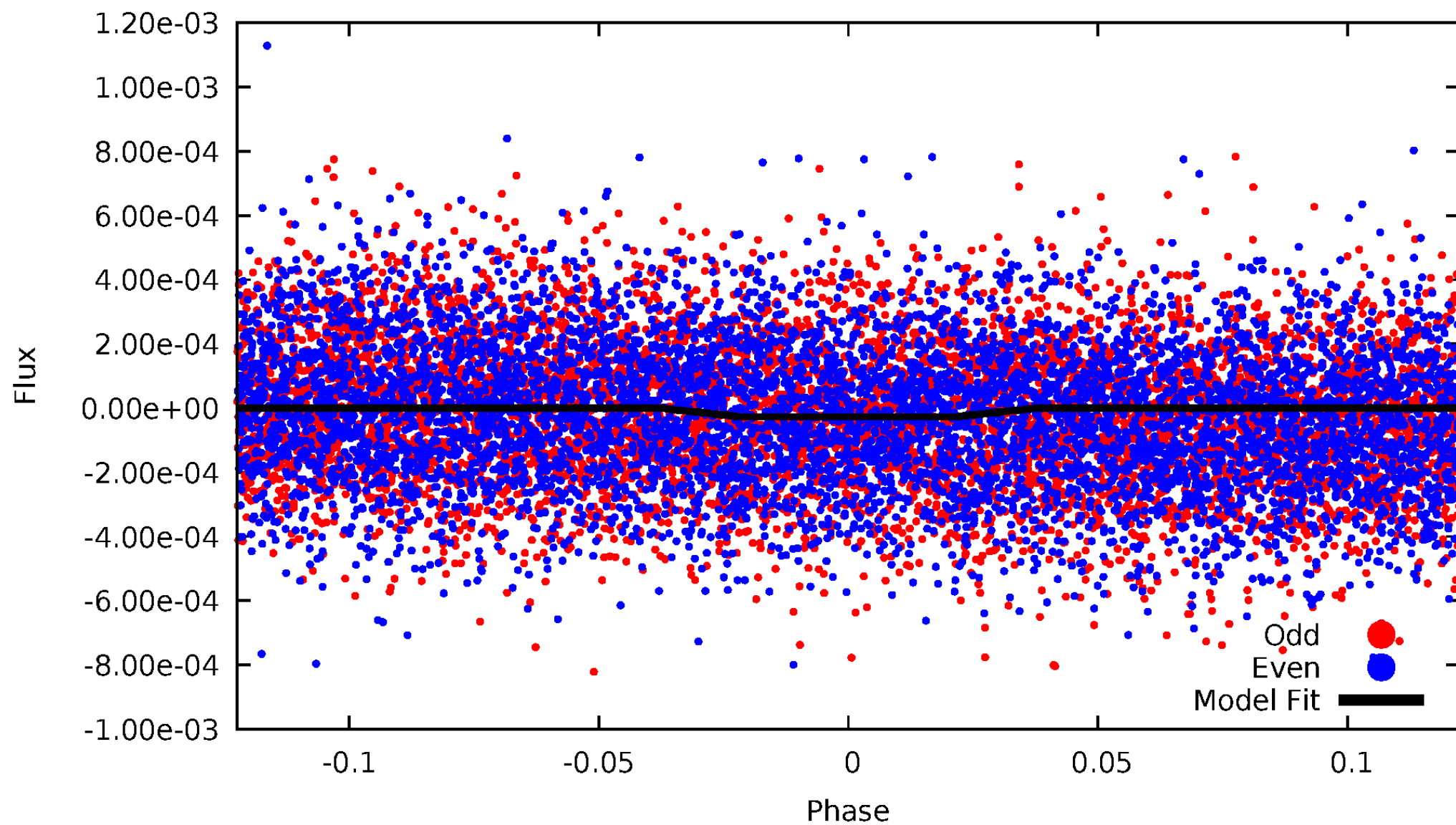
DV Odd/Even

TCE 010550397-01



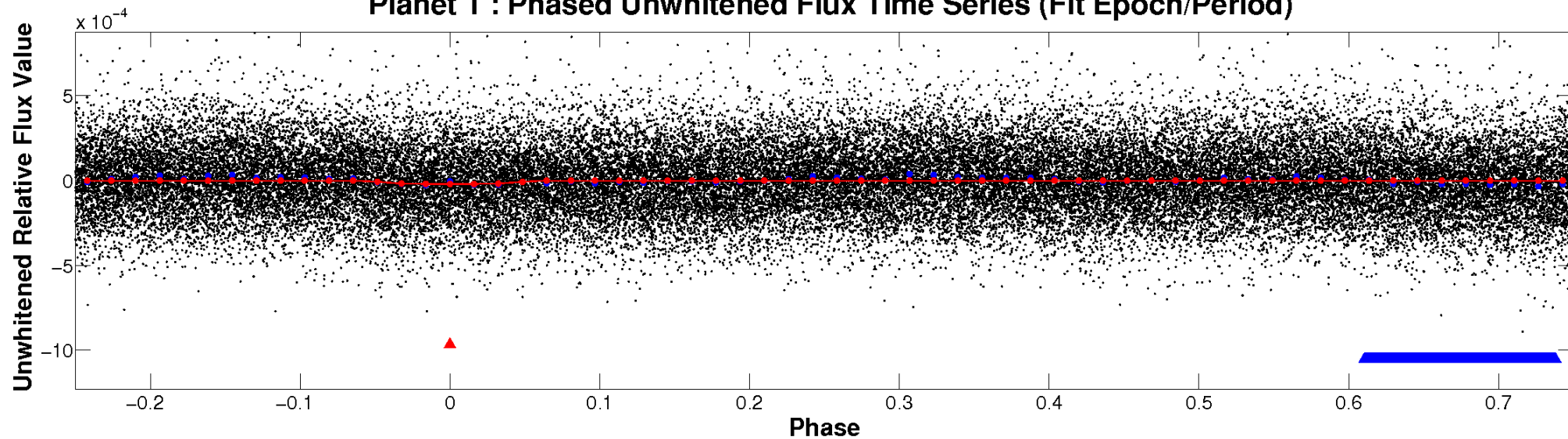
ALT Odd/Even

TCE 010550397-01

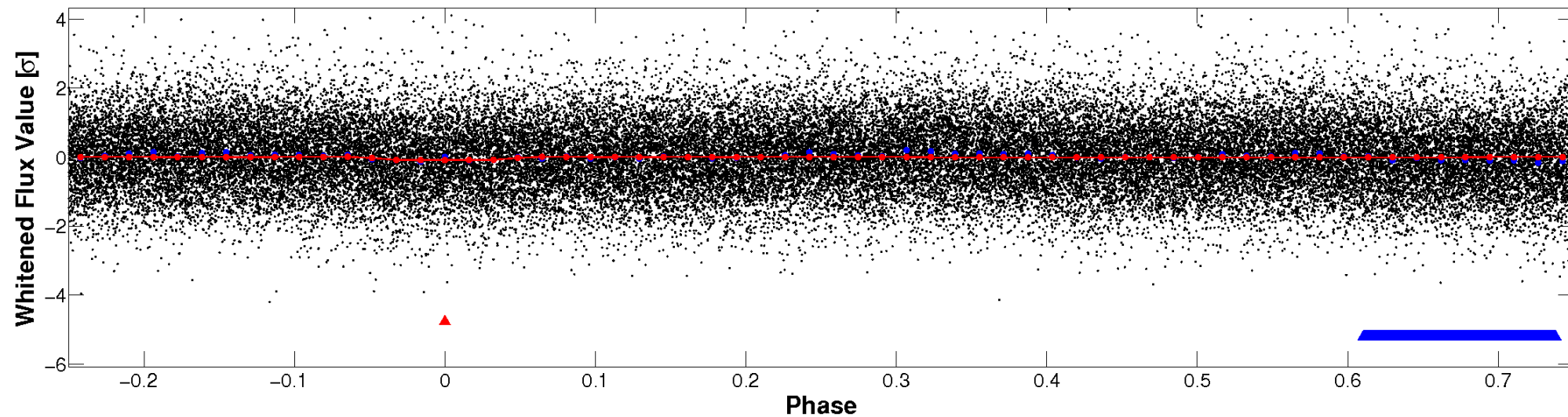


Non-Whitened Vs. Whitened Light Curve

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

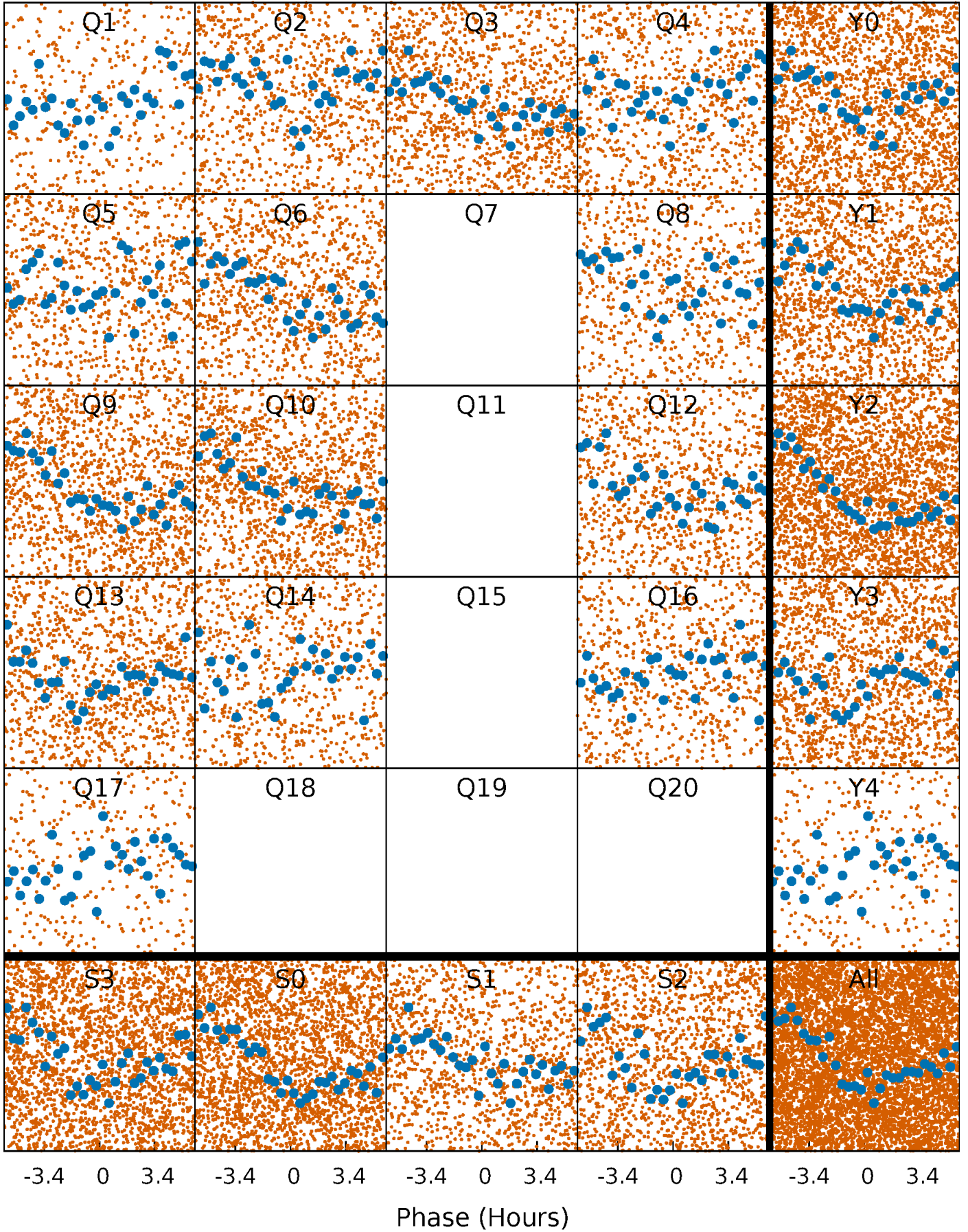


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



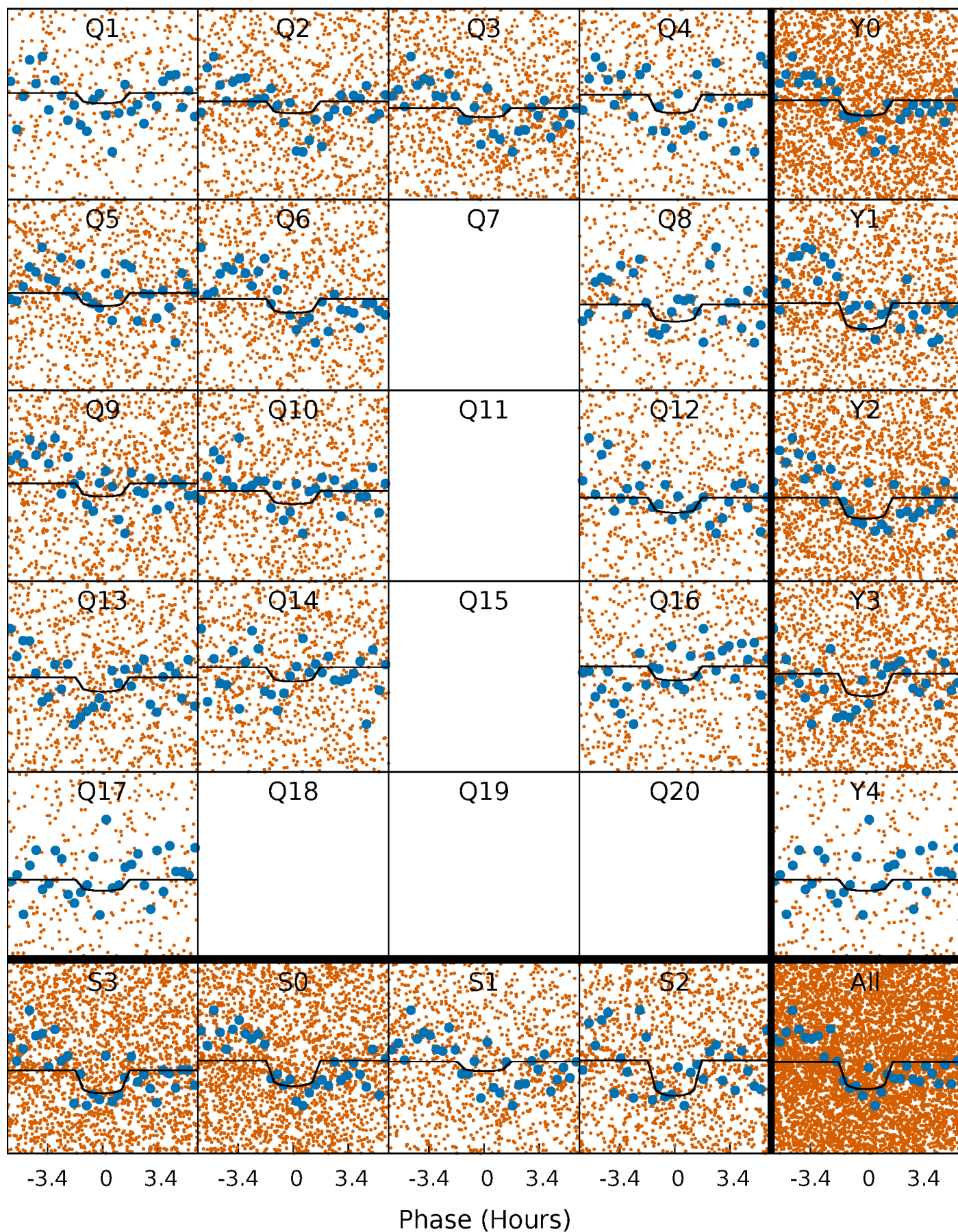
PDC Quarter-Phased Transit Curves

TCE 010550397-01 $P = 1.265460$ Days $T_0 = 132.000904$ (BKJD)



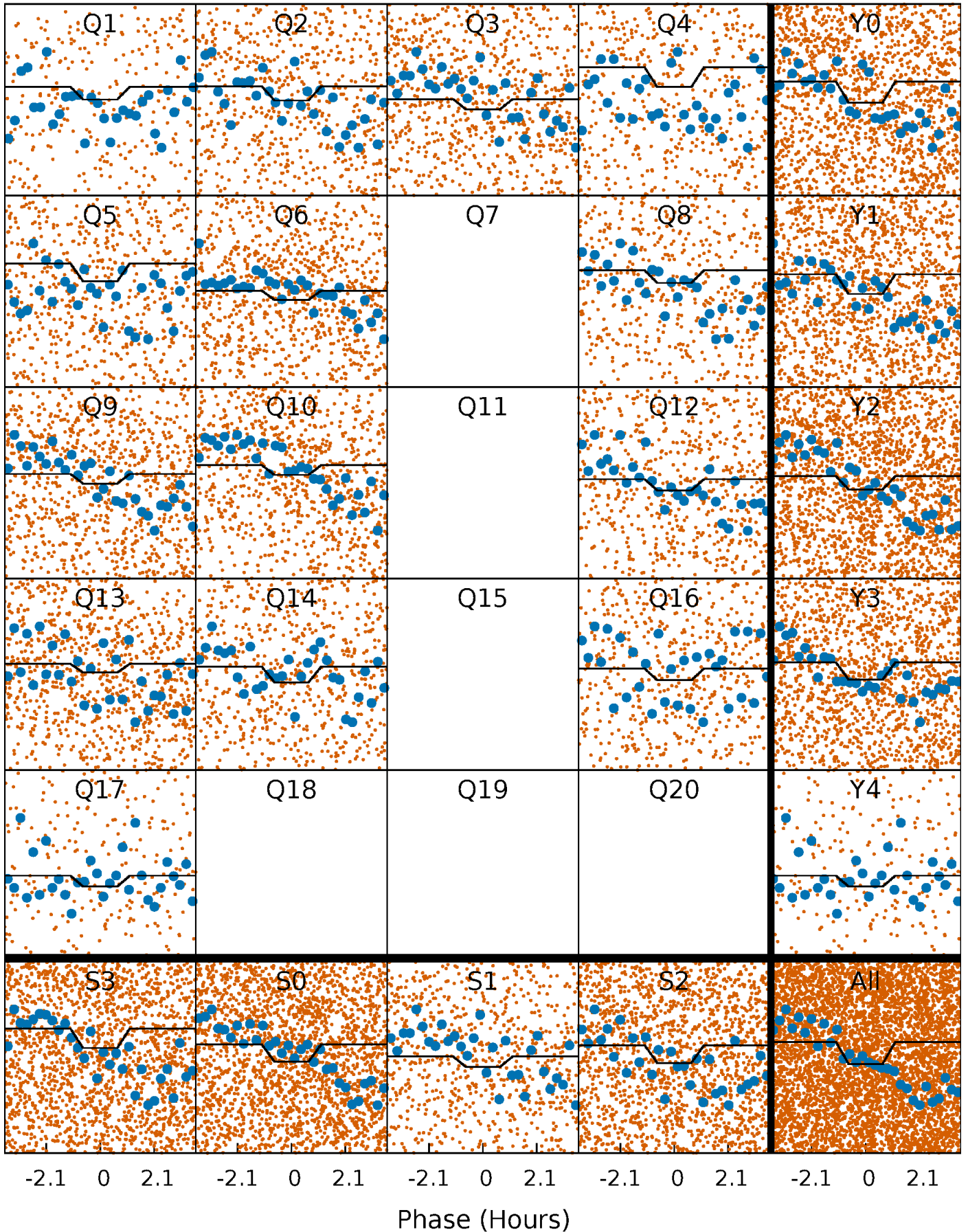
DV Quarter-Phased Transit Curves

TCE 010550397-01 P= 1.265460 Days $T_0=132.000904$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

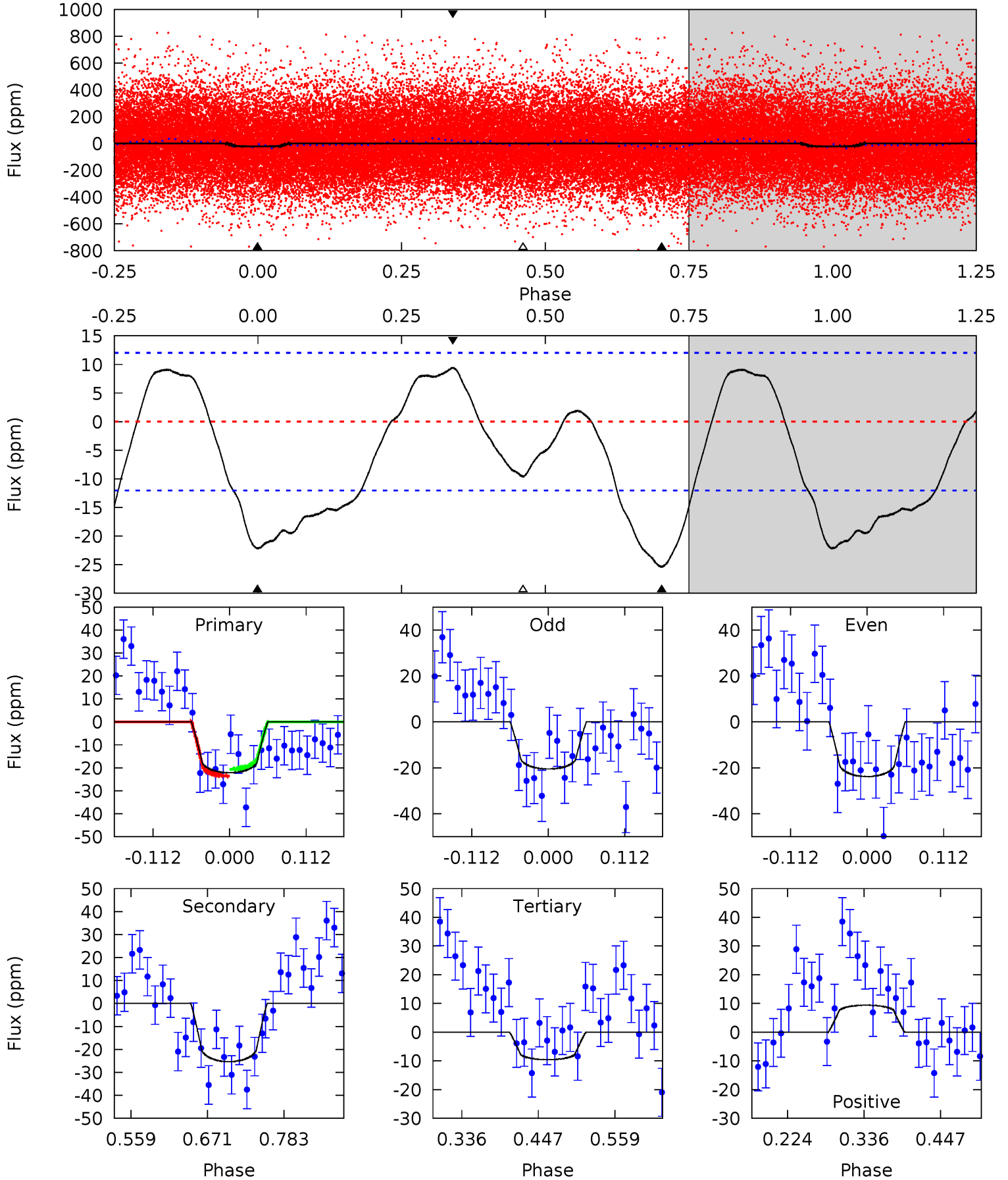
TCE 010550397-01 P= 1.265377 Days $T_0=131.935589$ (BKJD)



DV Model-Shift Uniqueness Test

010550397-01, P = 1.265460 Days, E = 130.735444 Days

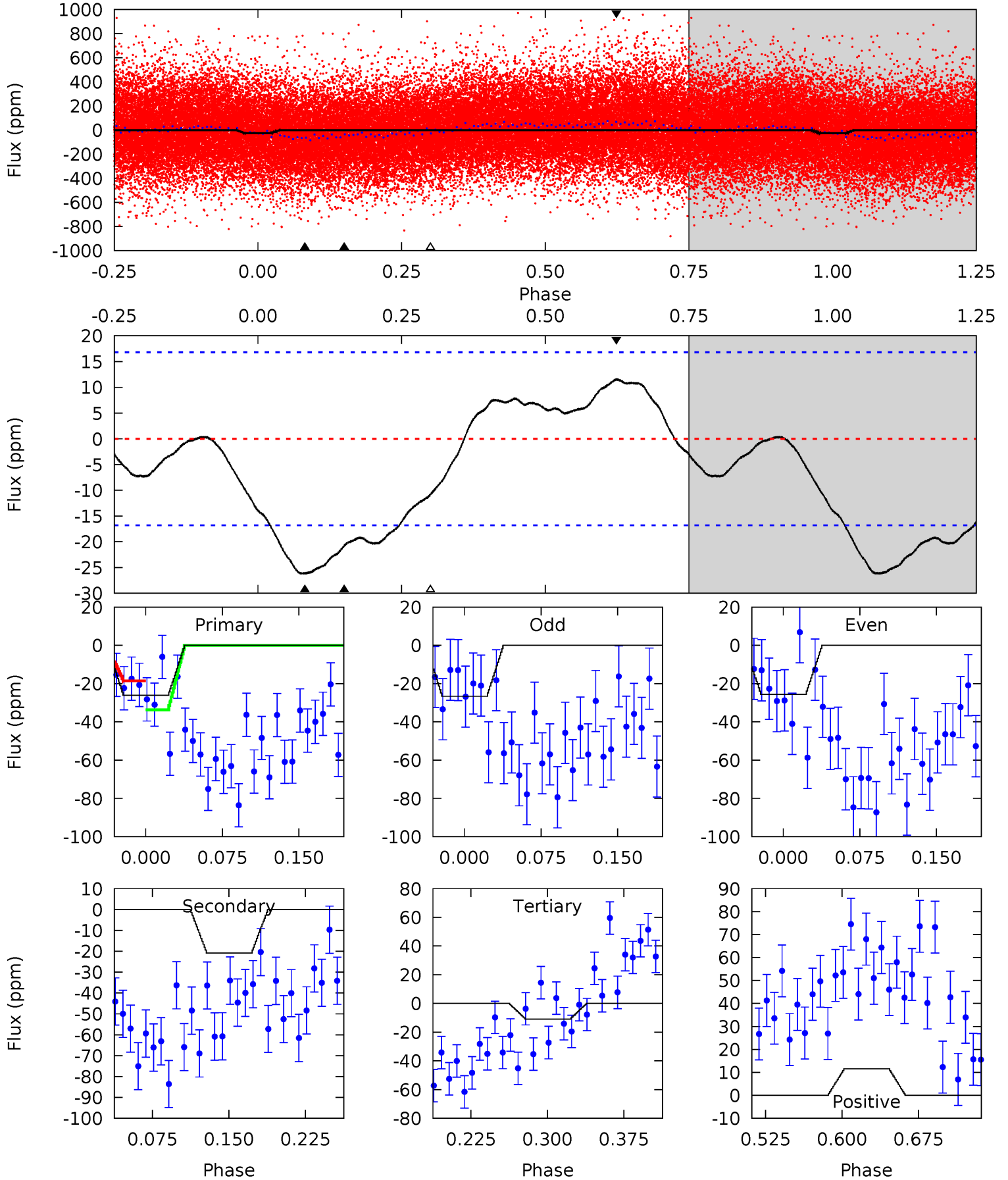
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.36	9.57	3.62	3.55	4.54	1.59	2.96	4.74	4.81	5.95	6.02	0.63	1.04	0.27	0.55



Alt Model-Shift Uniqueness Test

010550397-01, P = 1.265377 Days, E = 130.670212 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.20	5.74	2.98	3.18	4.62	1.78	2.19	4.22	4.02	2.76	2.56	0.13	1.08	0.31	2.09



Stellar Parameters For KIC 010550397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7249^{+230}_{-316}	$4.114^{+0.149}_{-0.182}$	$-0.080^{+0.200}_{-0.350}$	$1.789^{+0.563}_{-0.375}$	$1.515^{+0.212}_{-0.259}$	$0.373^{+0.295}_{-0.191}$
	+3%/-4%	+4%/-4%	+250%/-438%	+31%/-21%	+14%/-17%	+79%/-51%
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 010550397-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 3	$0.92^{+0.34}_{-0.35}$	3694^{+287}_{-263}	7449^{+2812}_{-1183}	11^{+17}_{-5}
Alt.	-21 ± 4	$1.00^{+0.34}_{-0.35}$	3664^{+308}_{-252}	6658^{+1893}_{-961}	$7.936^{+10.144}_{-3.690}$

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

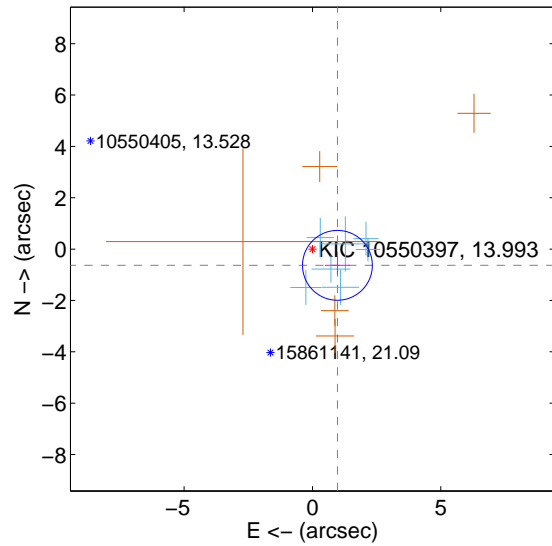
Supplemental centroid analysis for 010550397-01. Kepler magnitude: 13.99. Transit SNR 5.37

There are 7 quarters with good PRF difference image offsets

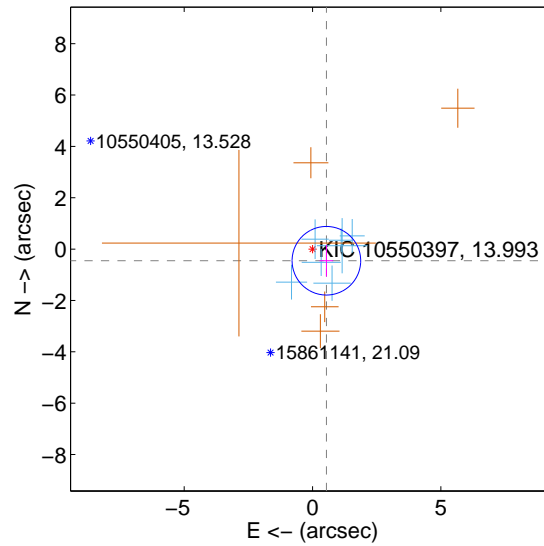
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.161 ± 0.453	2.56	-0.973 ± 0.486	-0.632 ± 0.365
PRF-fit source offset from KIC position	0.705 ± 0.445	1.58	-0.540 ± 0.266	-0.453 ± 0.615
photometric centroid source offset	2.62 ± 1.75	1.50	-1.95 ± 1.89	-1.75 ± 1.54

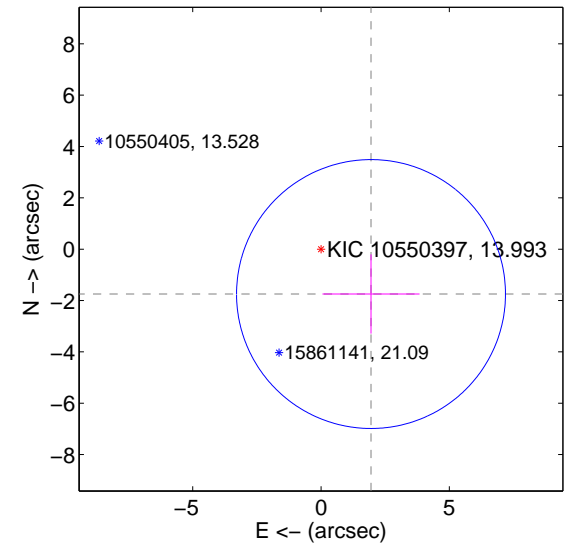
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

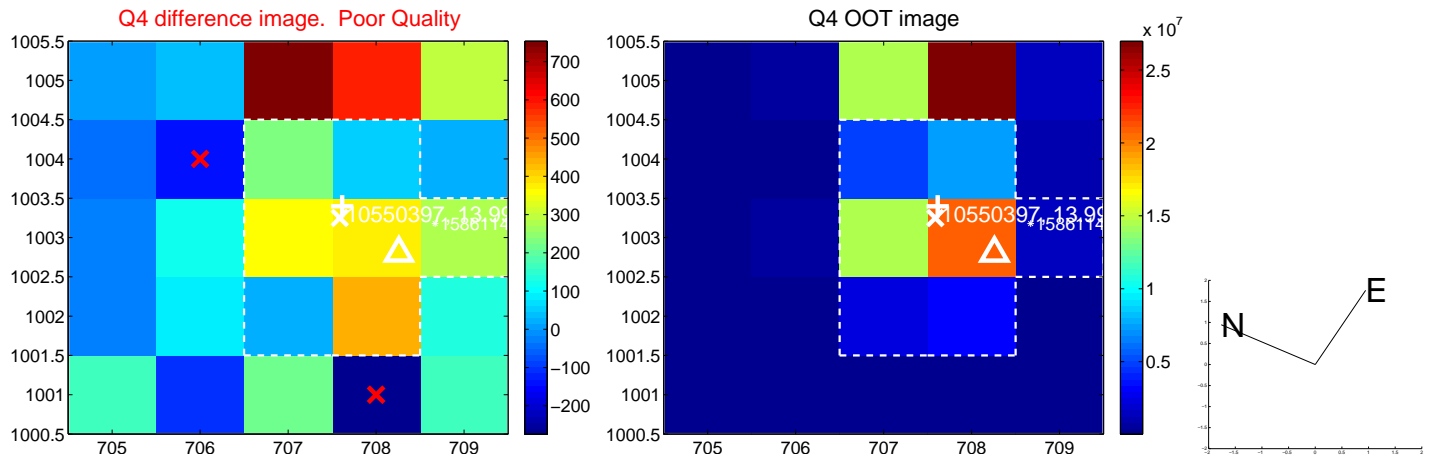
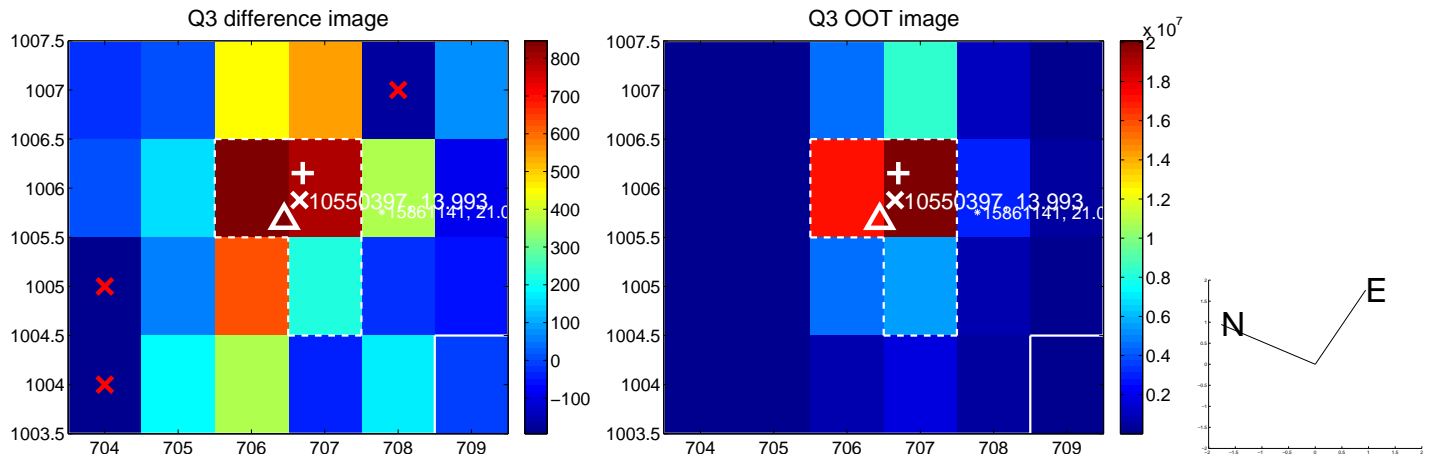
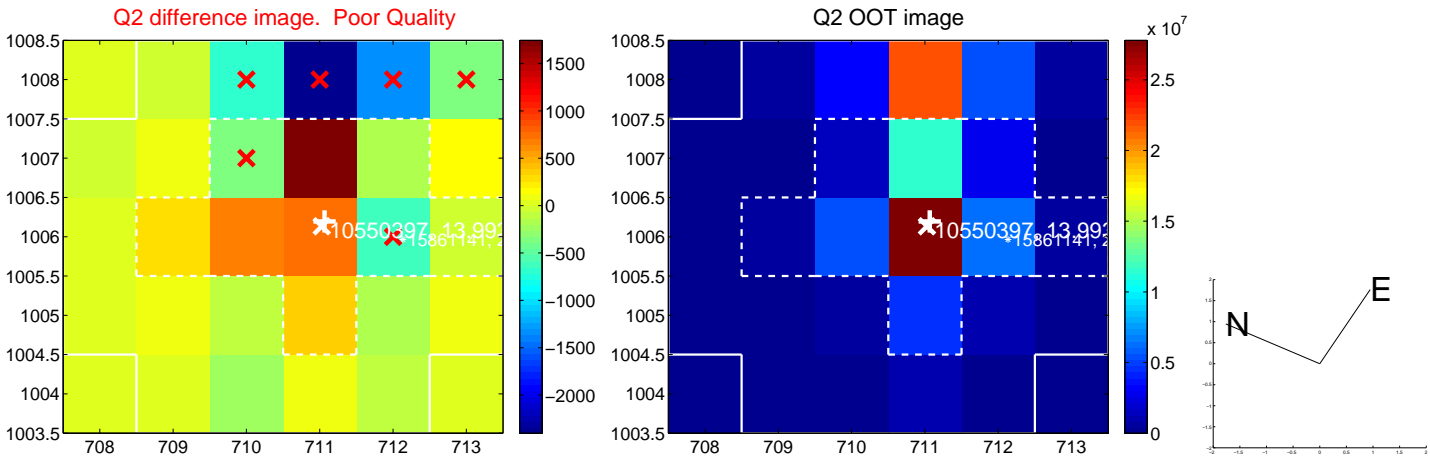
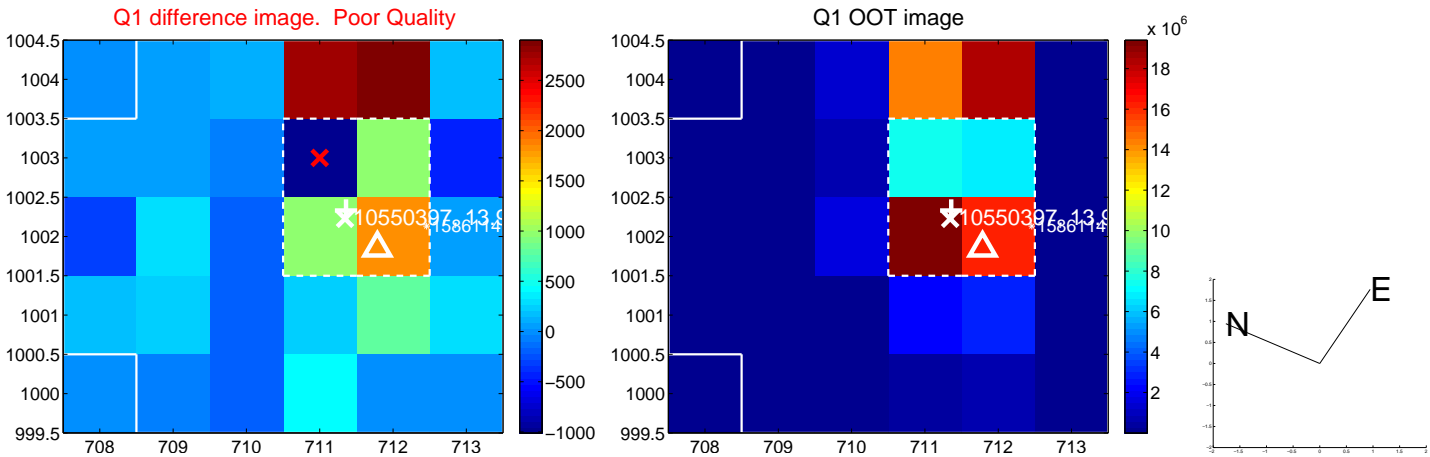


offset from photometric centroids

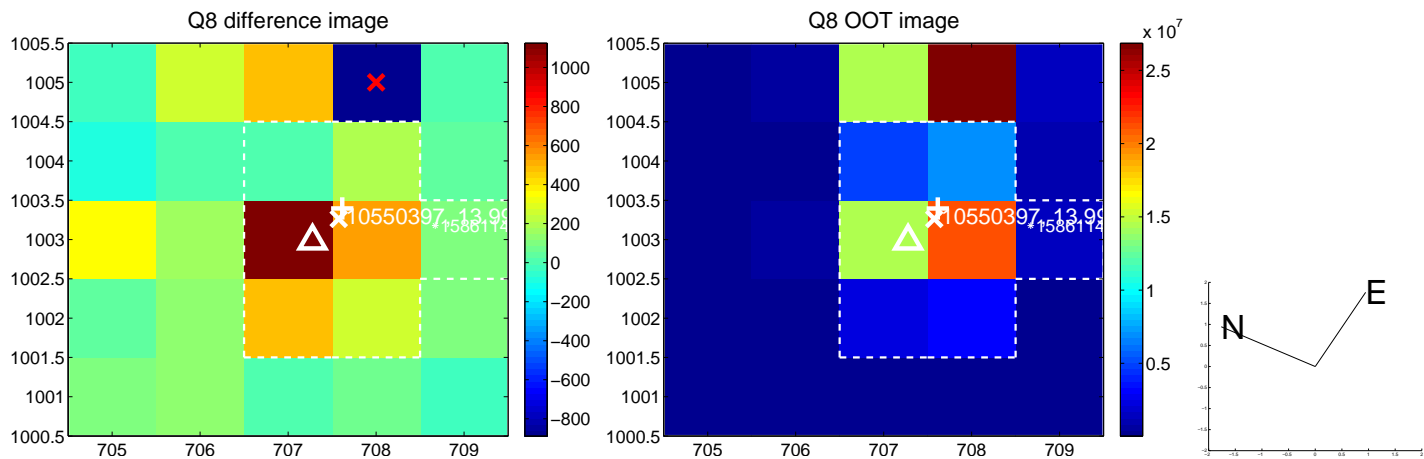
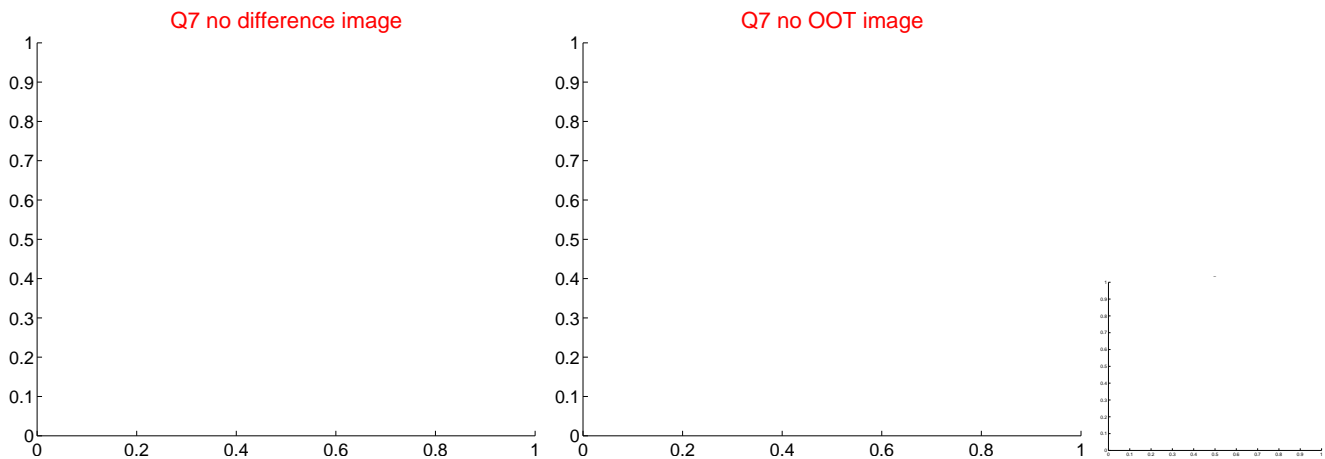
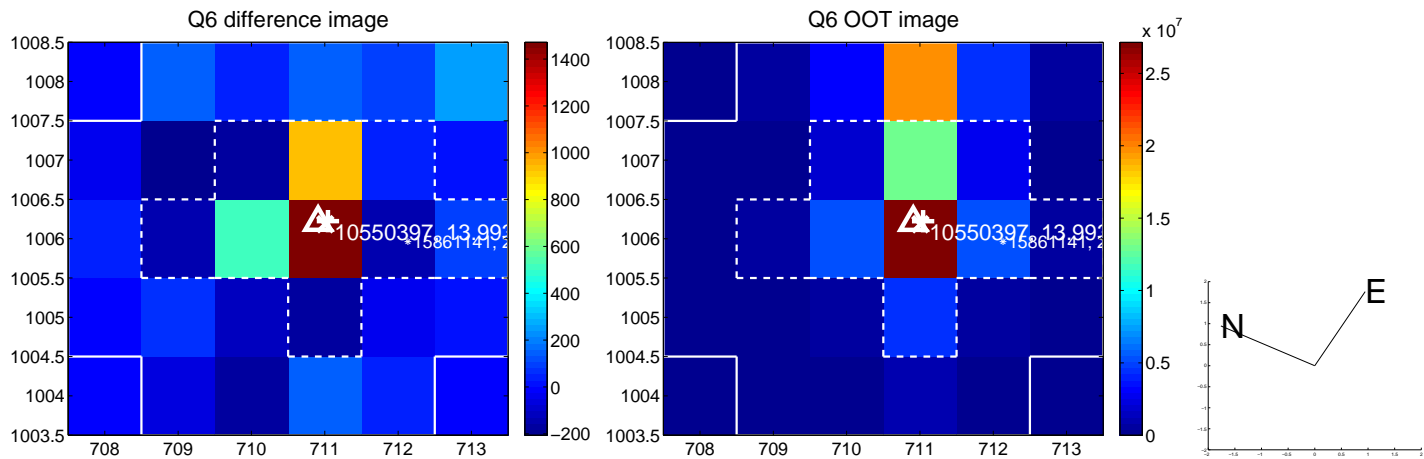
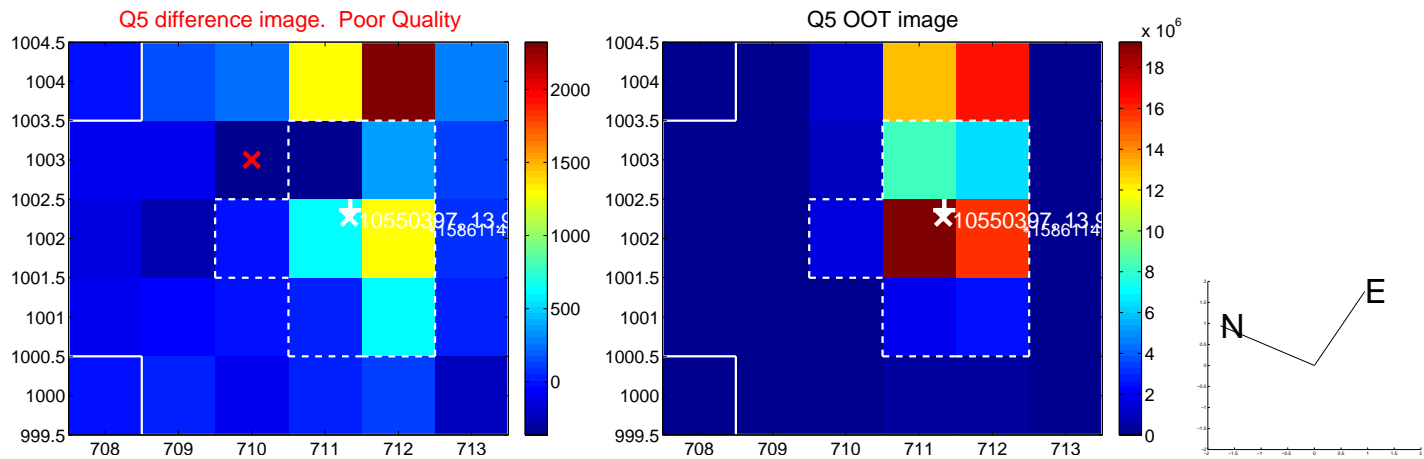


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

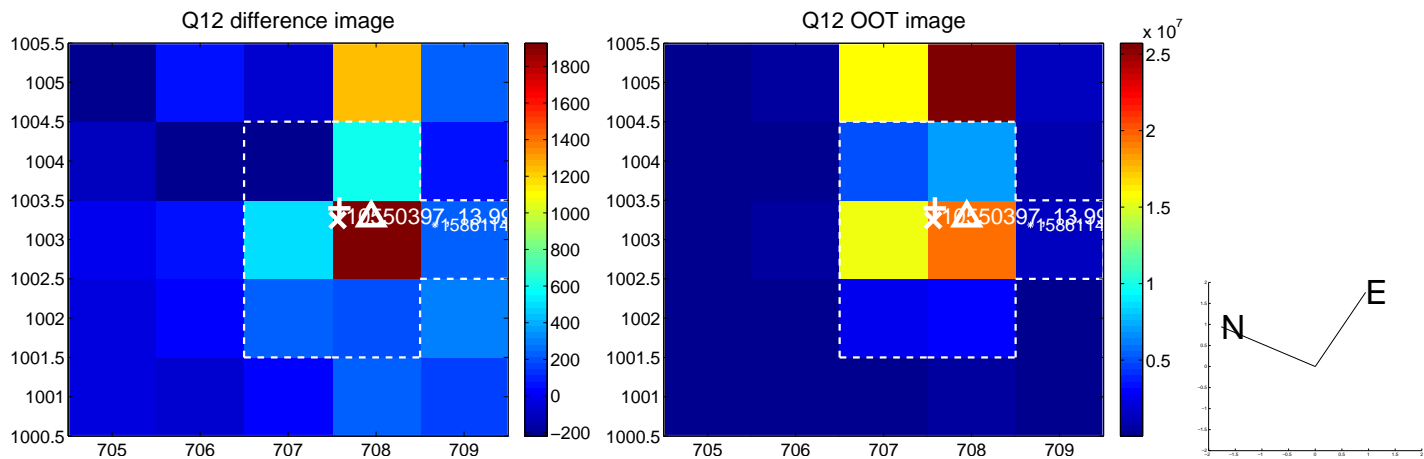
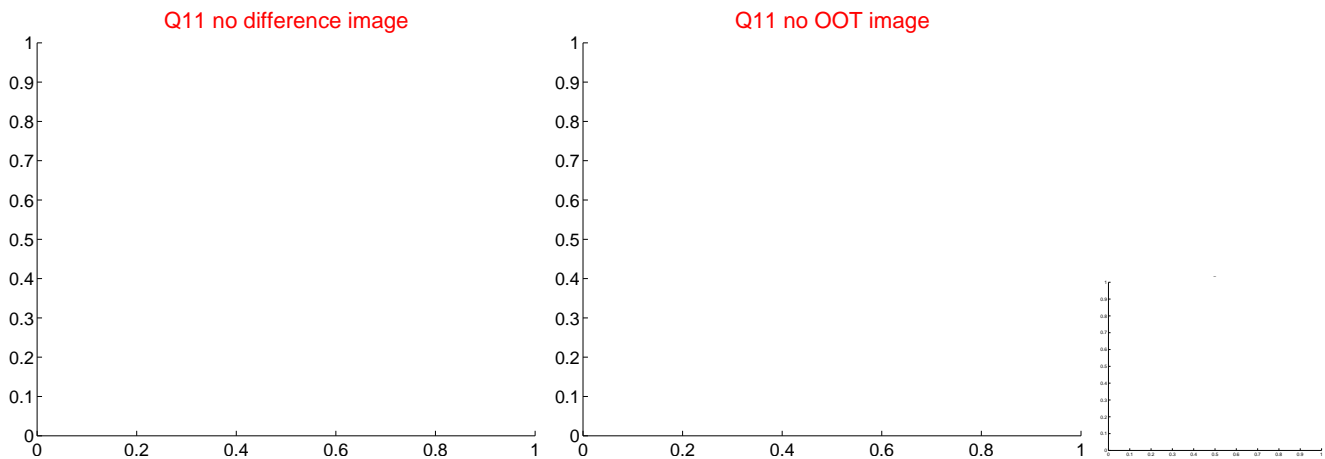
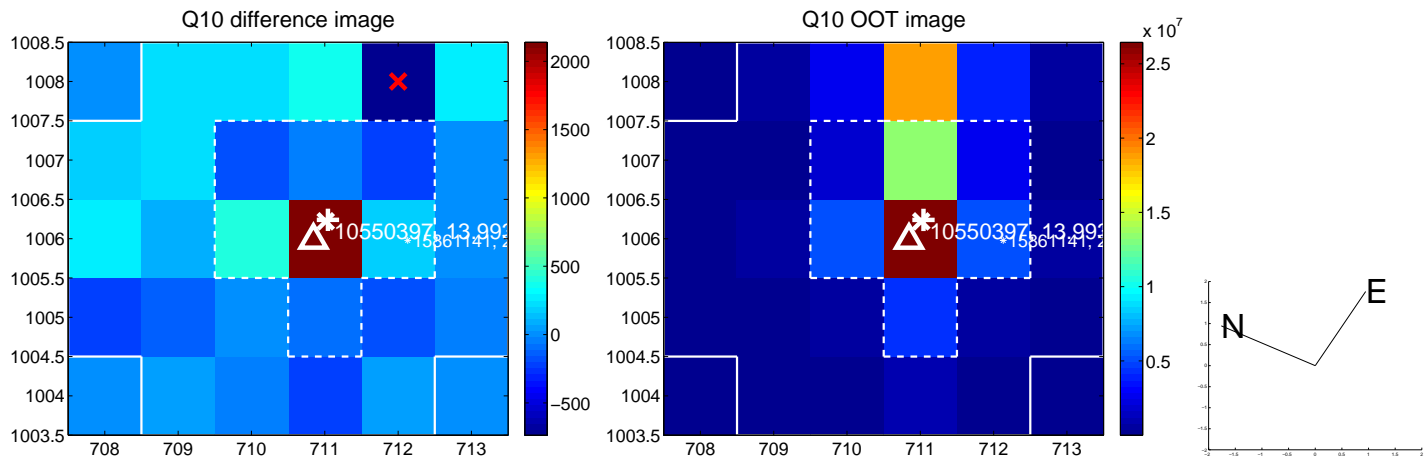
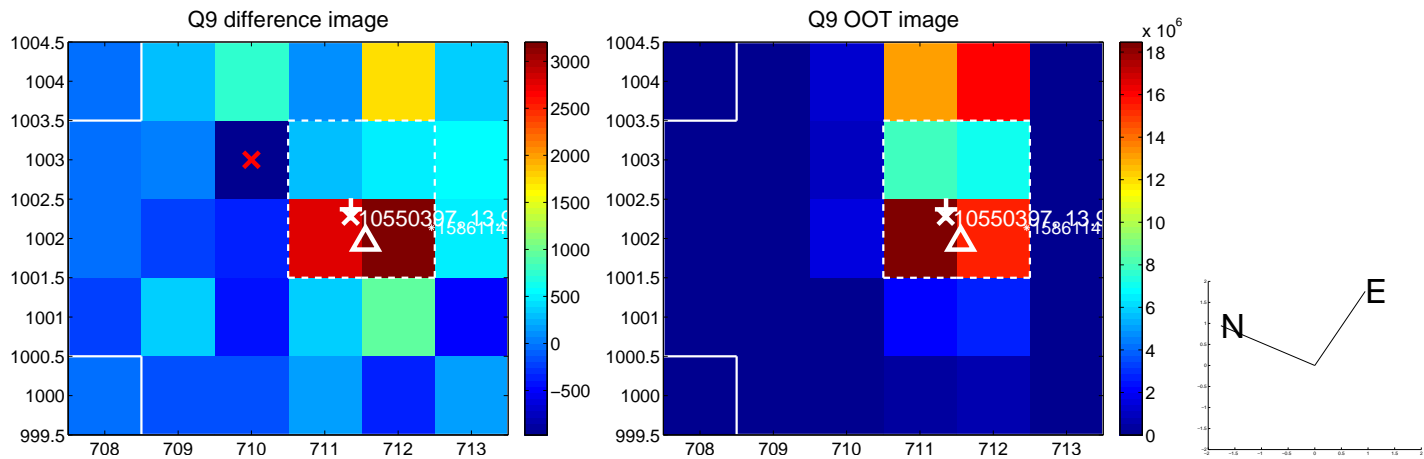
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



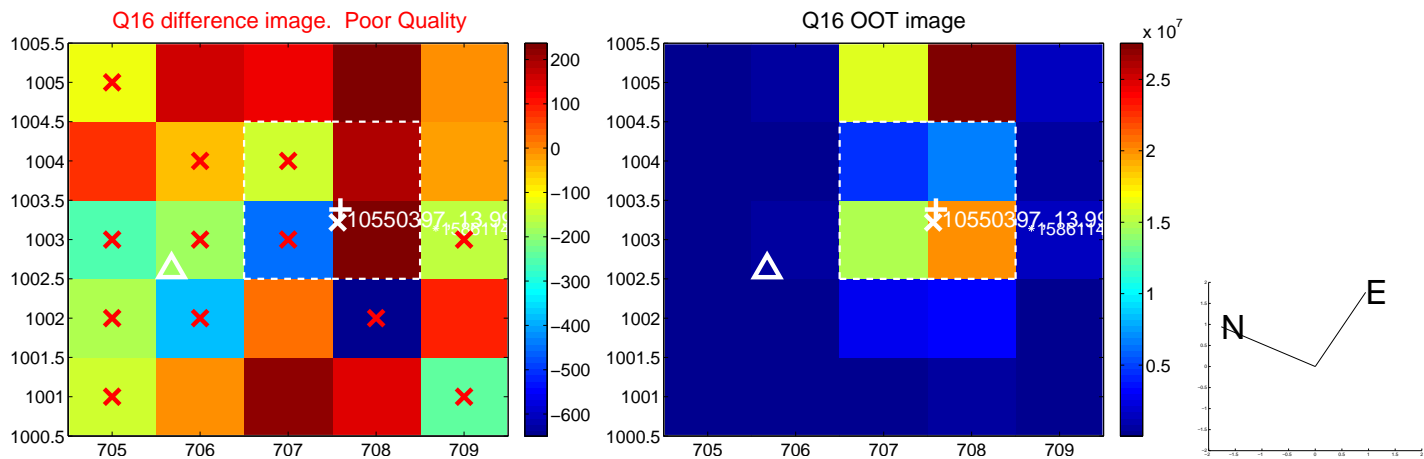
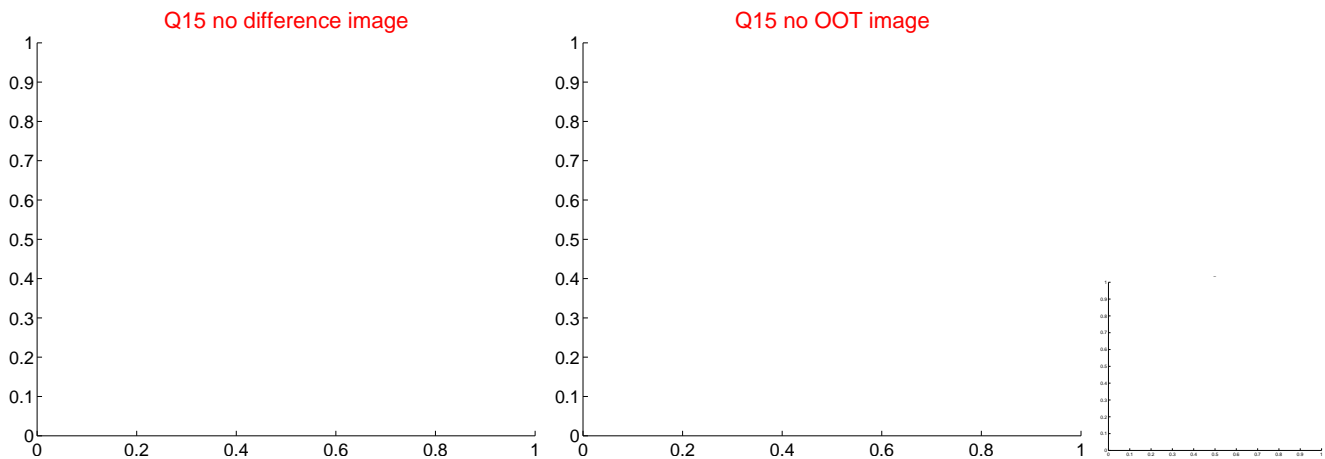
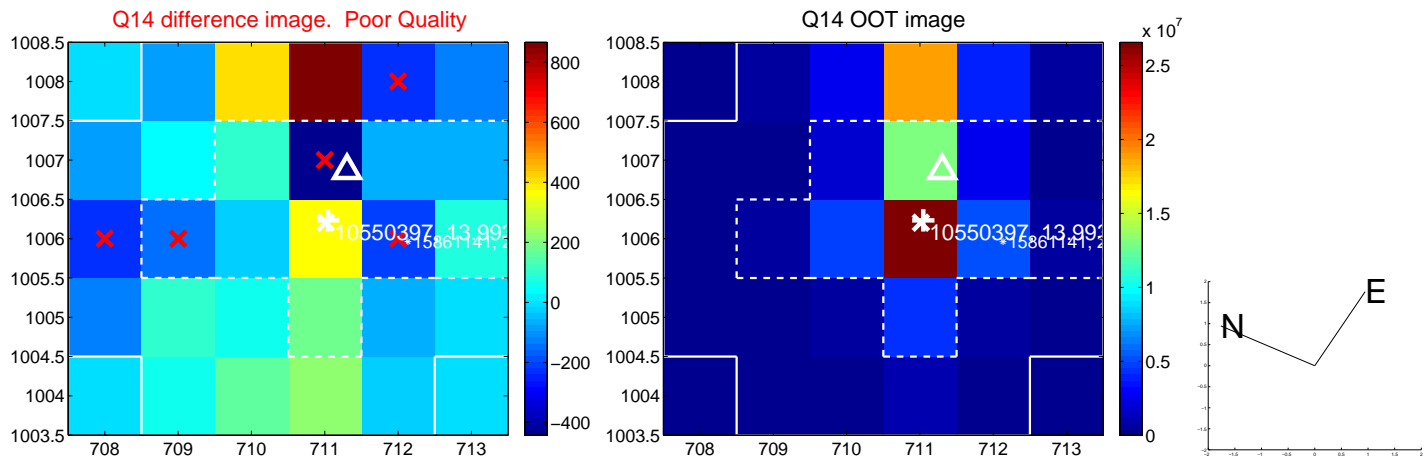
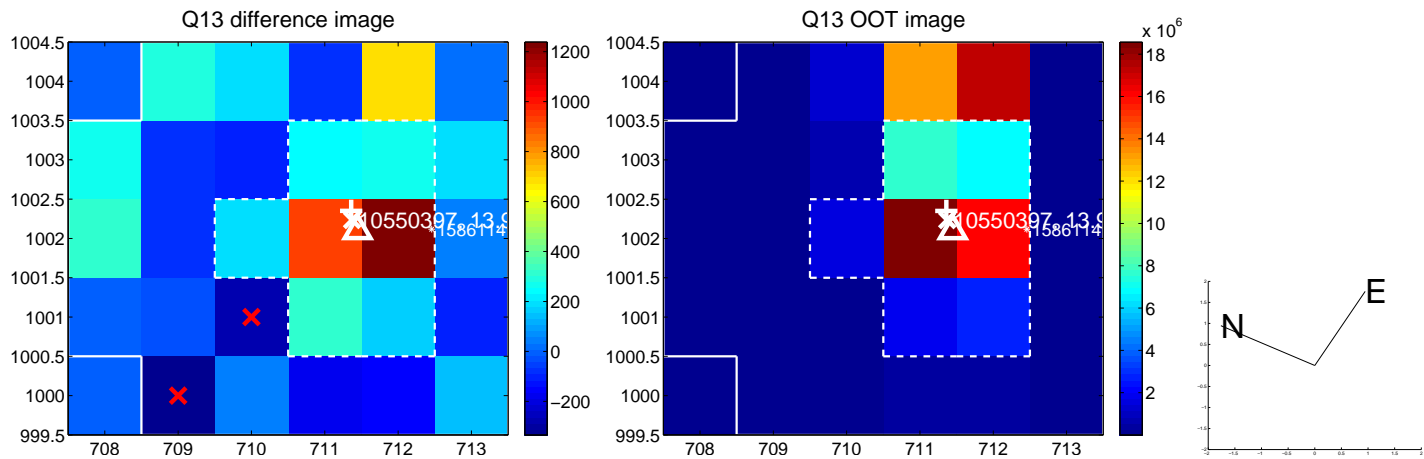
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



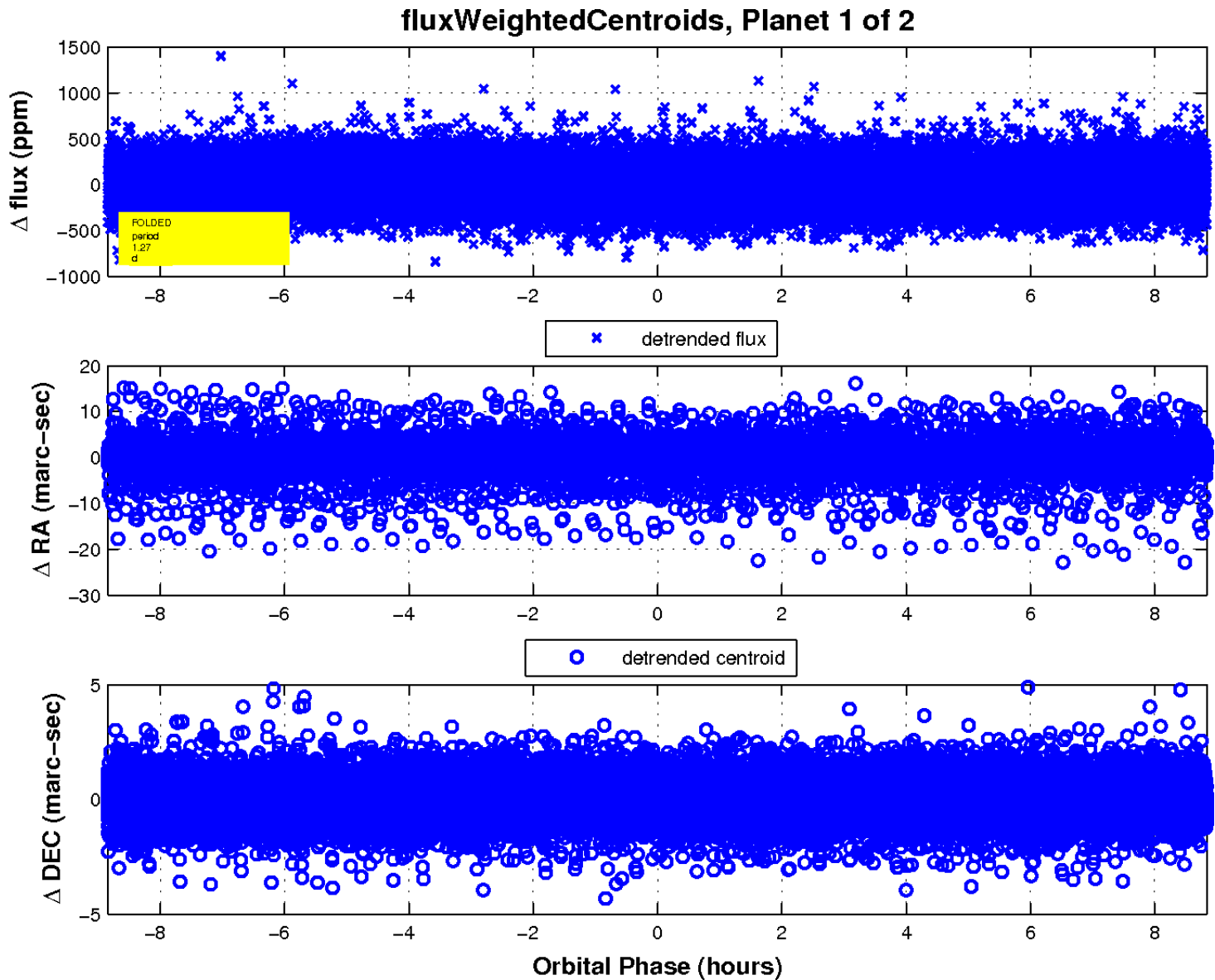
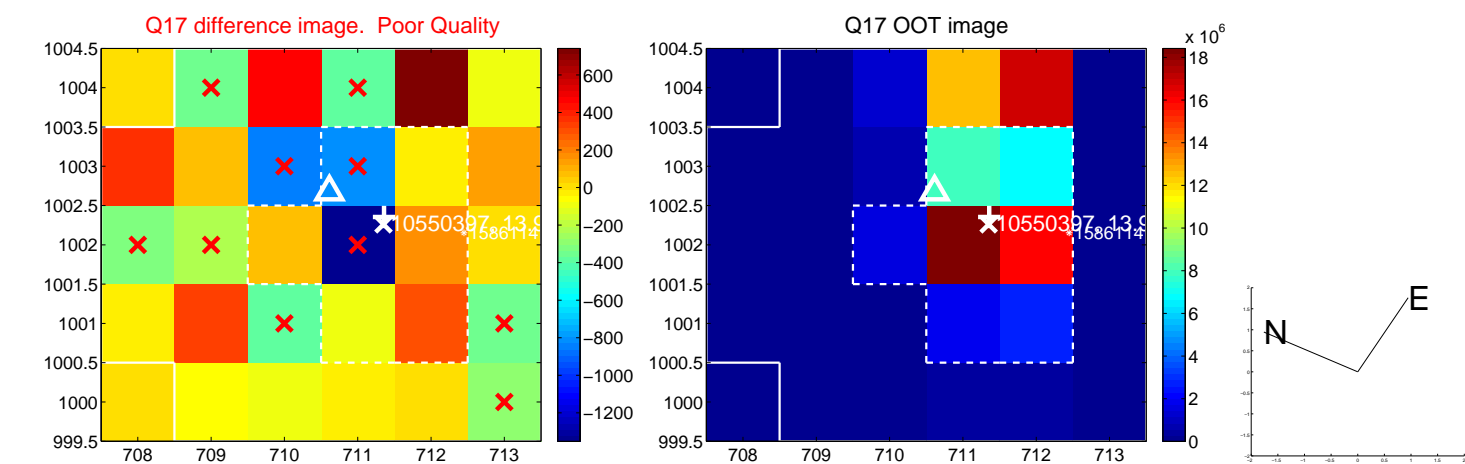
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



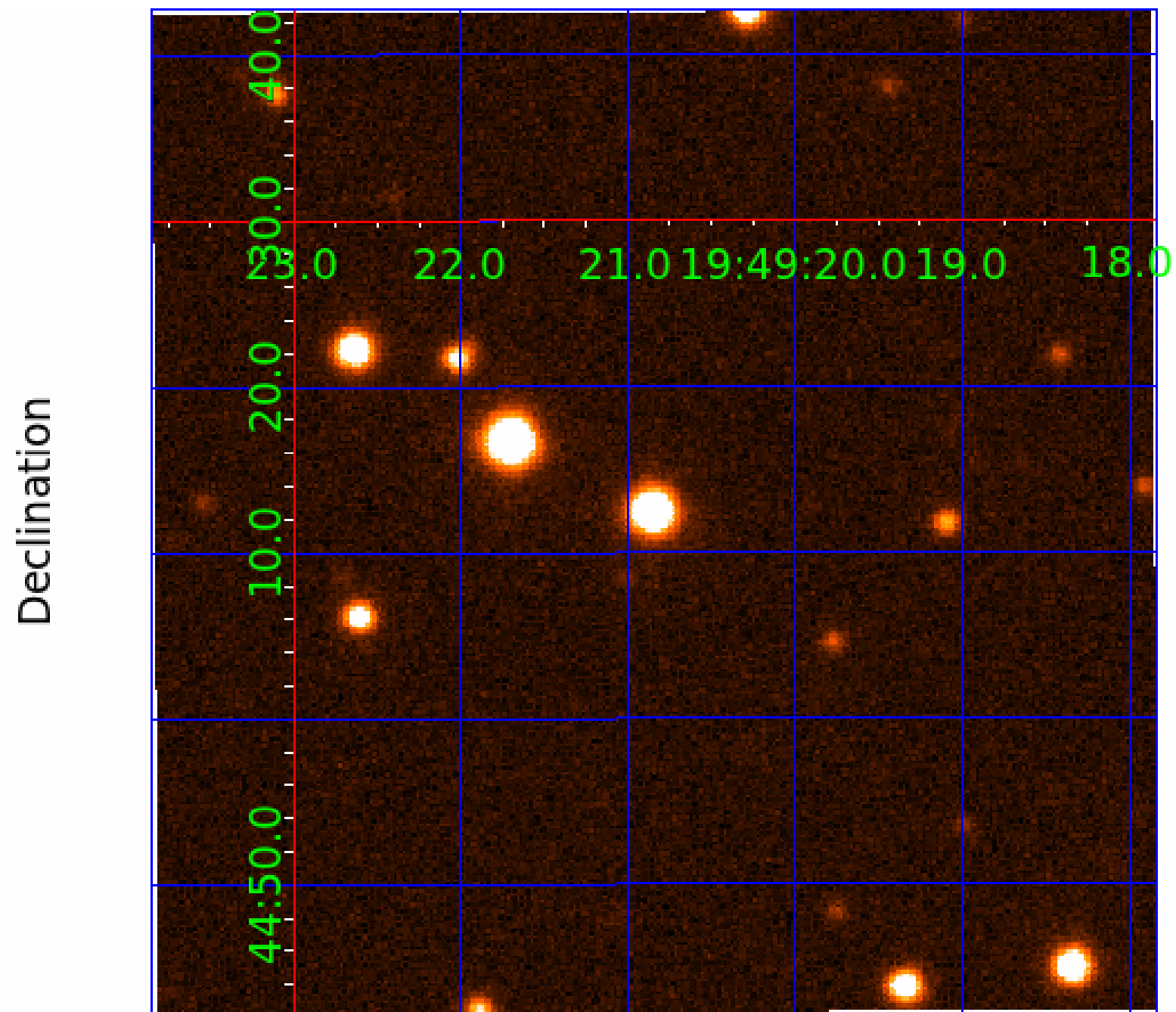
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010550397

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})
010550397-01	OBS	No	1.265460	132.000904	20.1	2.947	9.7	5.4	1.79	7249	0.90	11430.95
010550397-02	OBS	No	1.265320	131.669496	28.6	5.066	10.5	9.9	1.79	7249	0.99	11432.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010550397-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
010550397-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

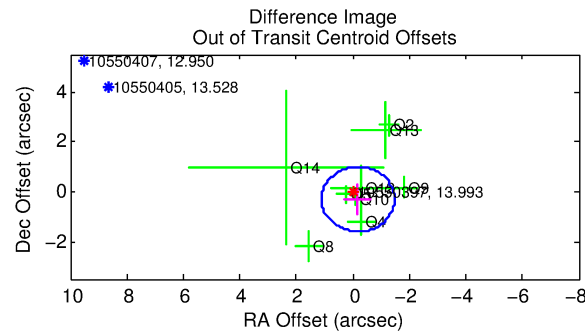
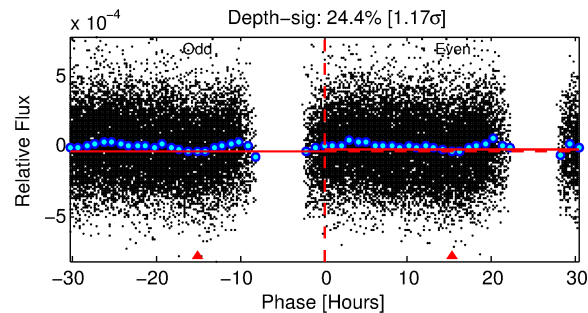
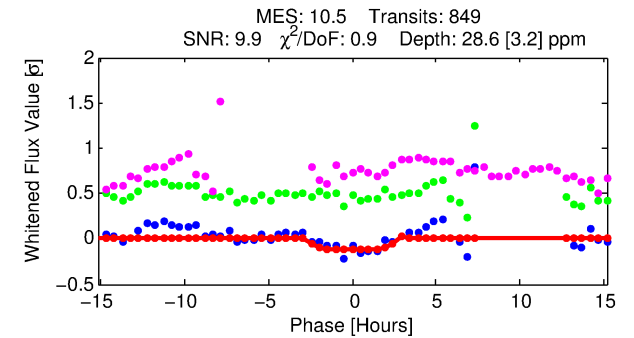
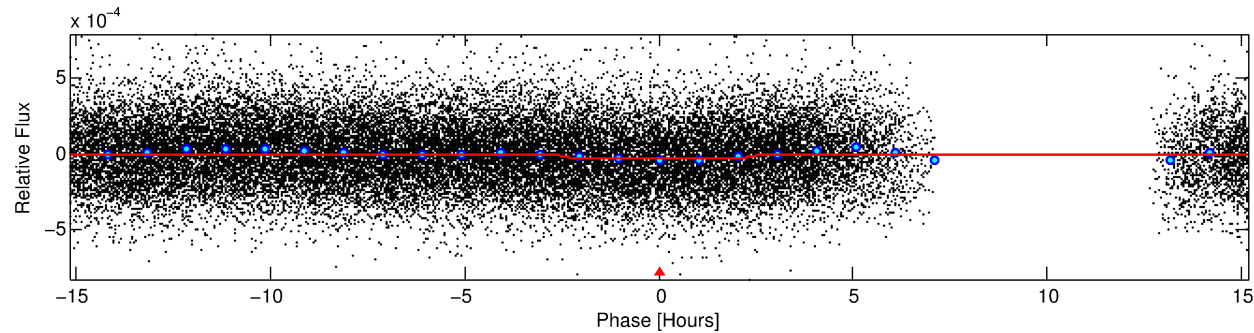
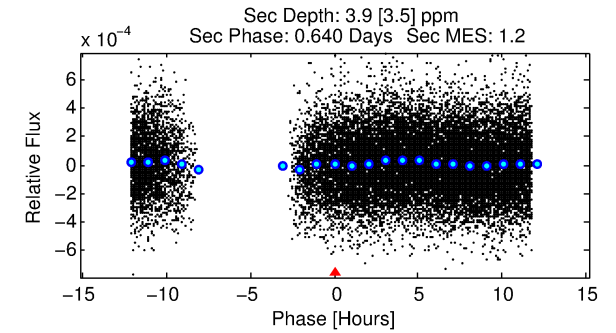
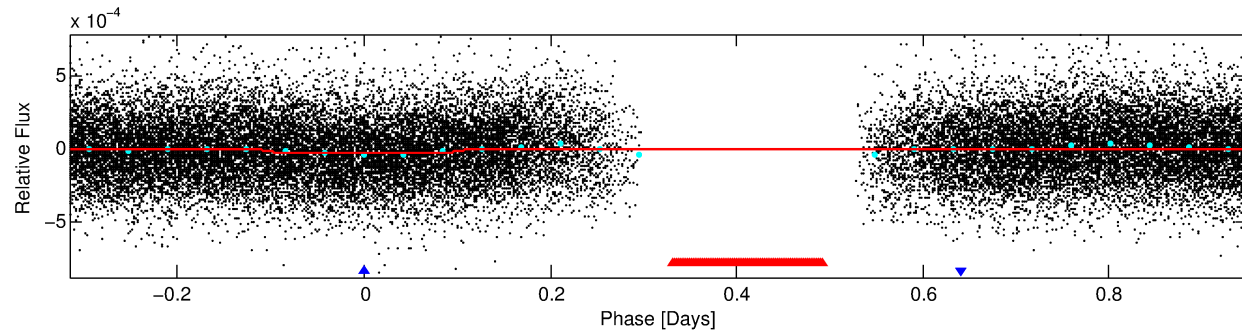
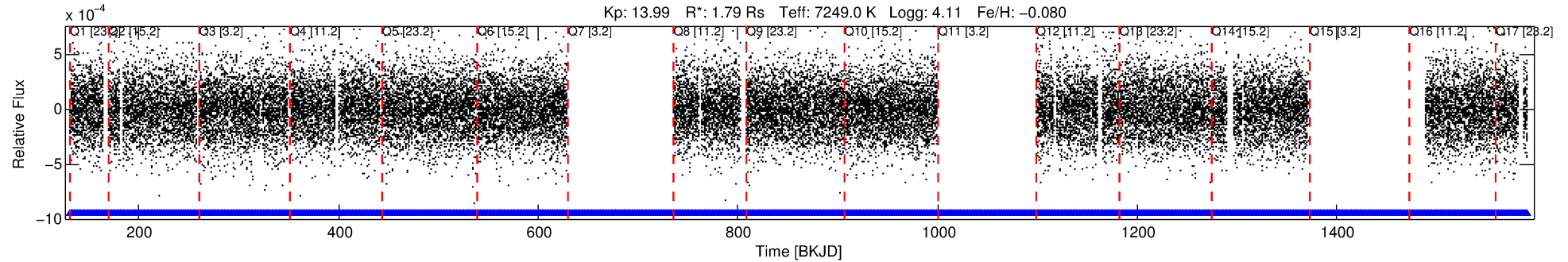
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010550397-02

No Significant Match Found

DV One-Page Summary

KIC: 10550397 Candidate: 2 of 2 Period: 1.265 d



DV Fit Results:

Period = 1.26532 [0.00002] d
Epoch = 131.6695 [0.0052] BKJD
Rp/R* = 0.0051 [0.0018]
a/R* = 1.81 [2.63]
b = 0.51 [3.11]
Seff = 11432.64 [4464.21]
Teq = 2637 [257] K
Rp = 0.99 [0.47] Re
a = 0.0263 [0.0066] AU
Ag = 1.49 [1.80] [0.27σ]
Teffp = 4502 [1315] K [1.39σ]

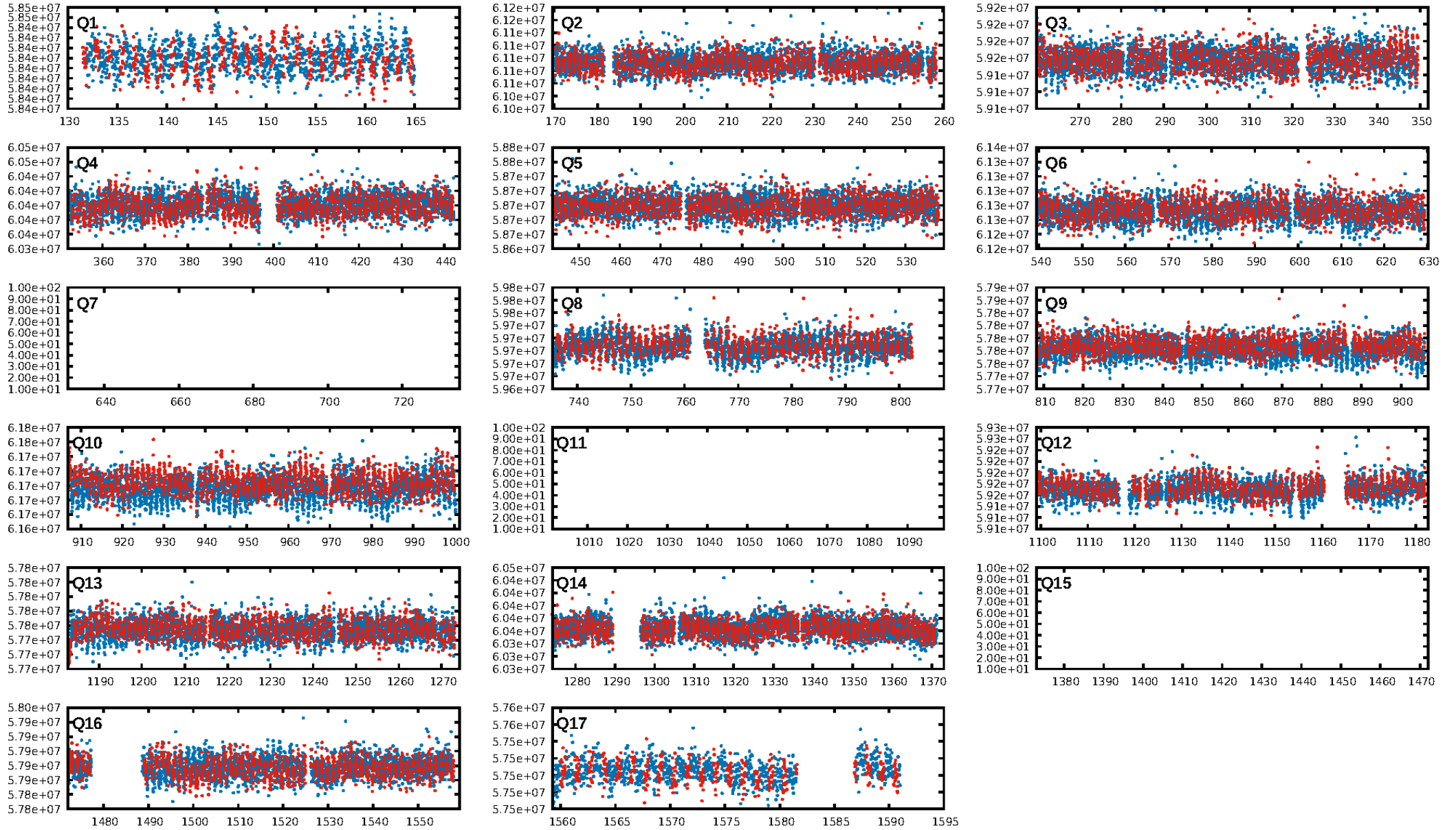
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.71e-35
RollingBand-fgt: 1.00 [801/801]
GhostDiagnostic-chr: 38.25
Centroid-sig: N/A
Centroid-so: 1.217 arcsec [1.20σ]
OotOffset-rm: 0.353 arcsec [0.82σ]
KicOffset-rm: 0.233 arcsec [0.45σ]
OotOffset-st: 3/0/3/3 [9]
KicOffset-st: 3/0/3/3 [9]
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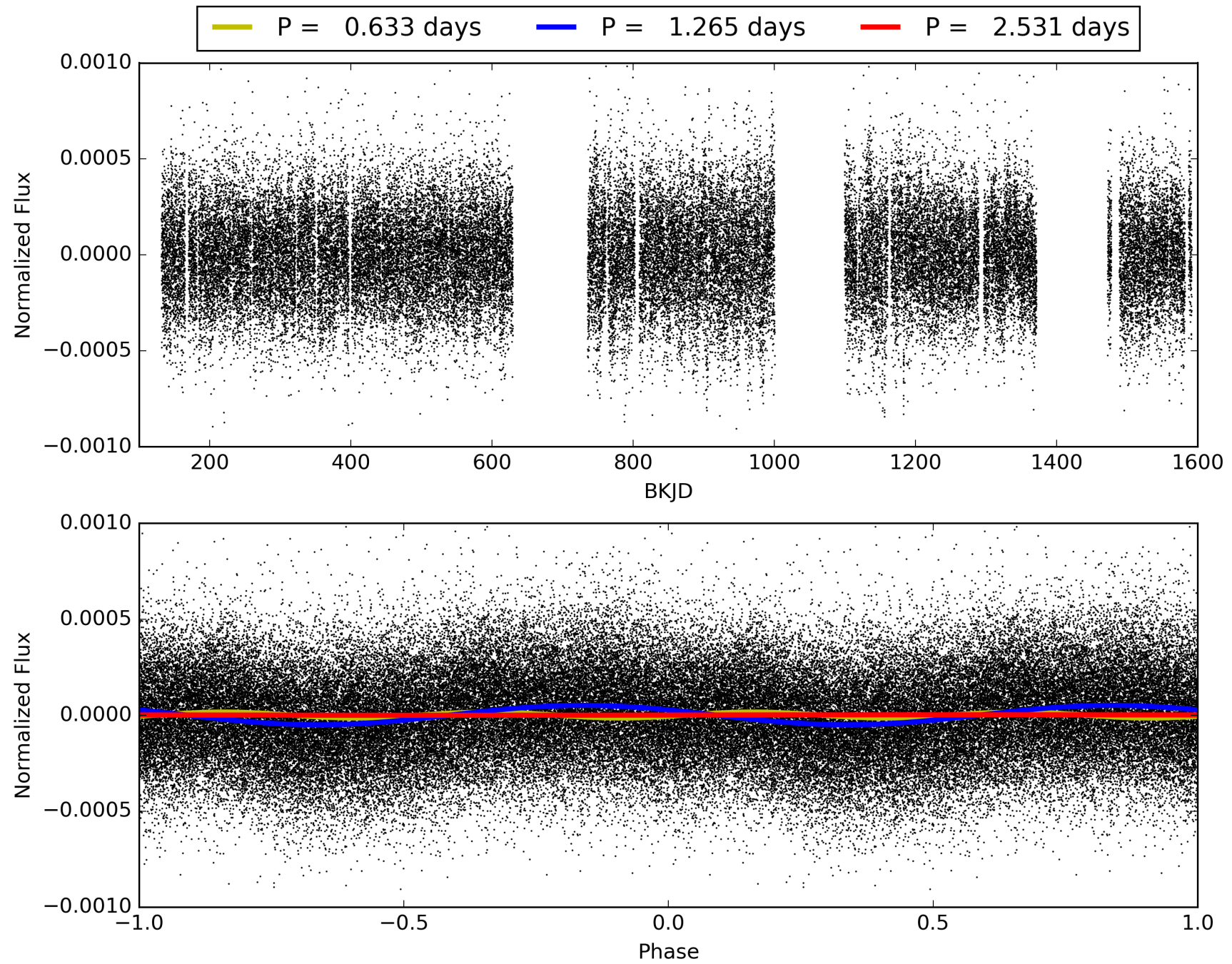
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:31:33 Z

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

TCE 010550397-02, PDC Light Curves

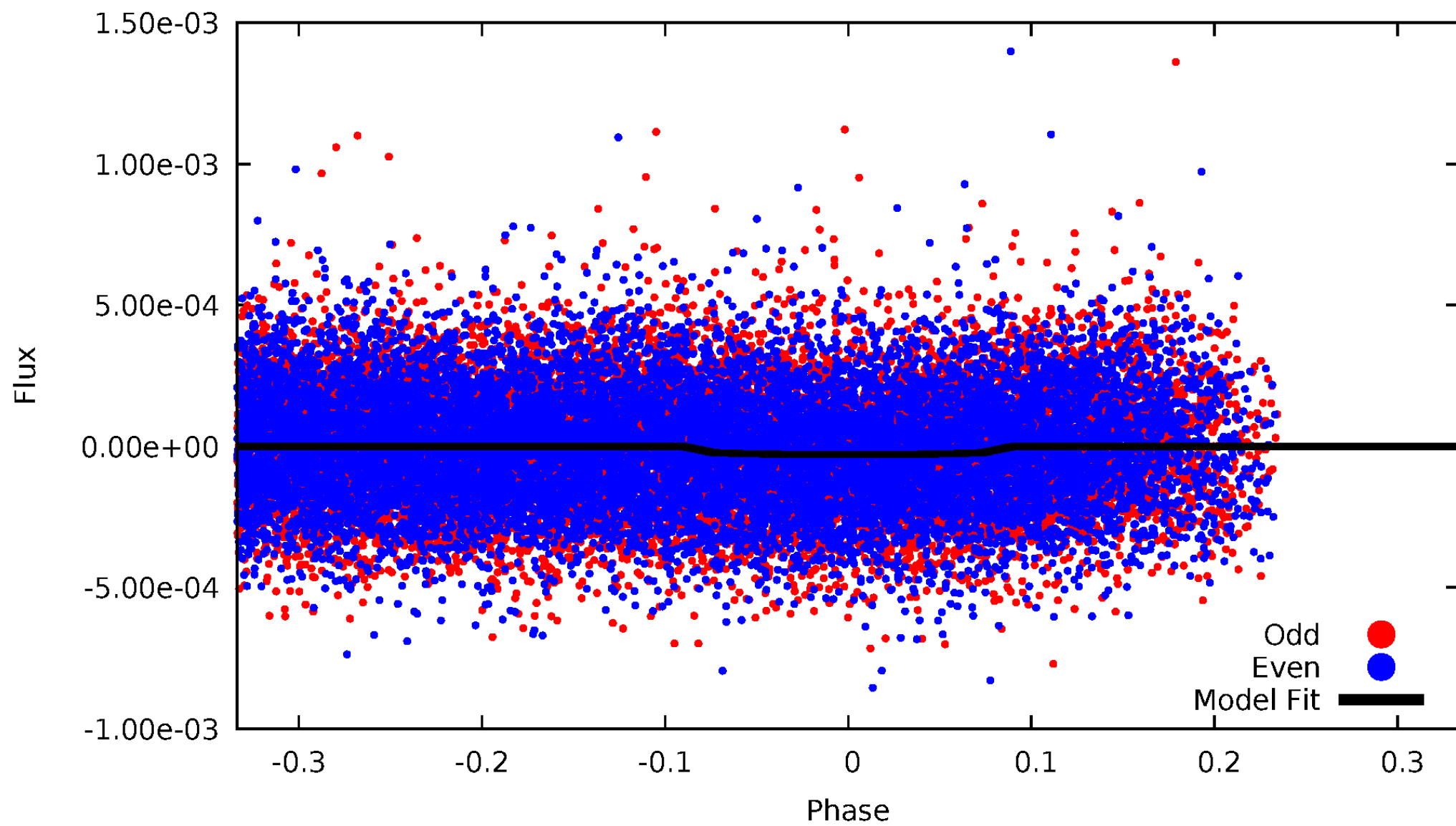


TCE 010550397-02



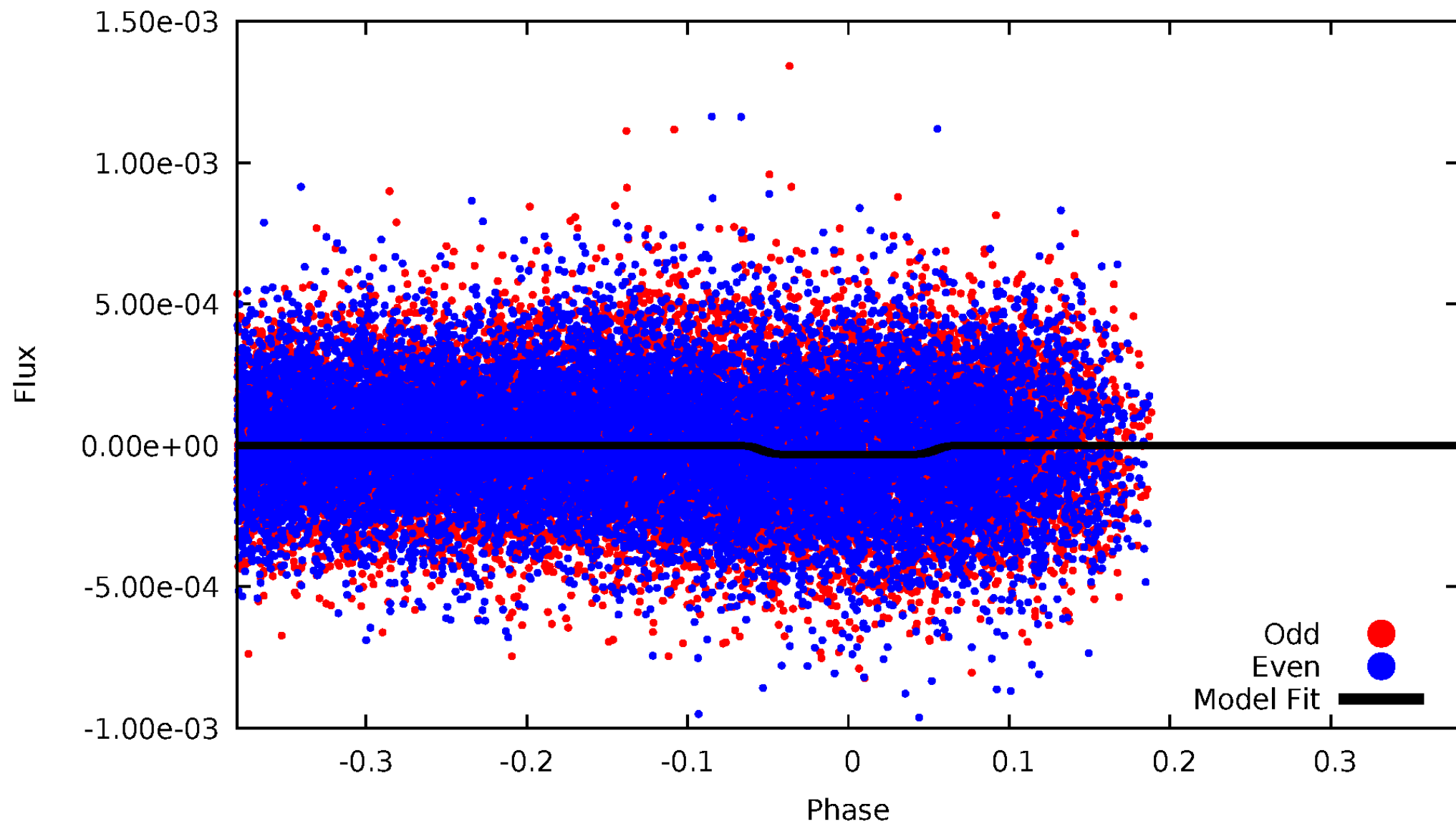
DV Odd/Even

TCE 010550397-02



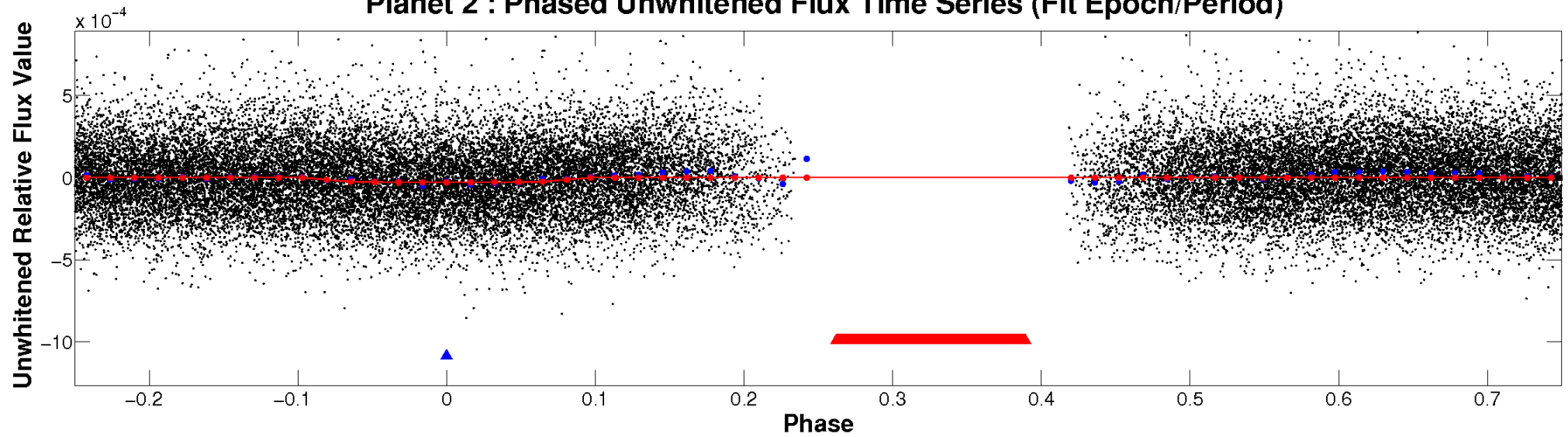
ALT Odd/Even

TCE 010550397-02

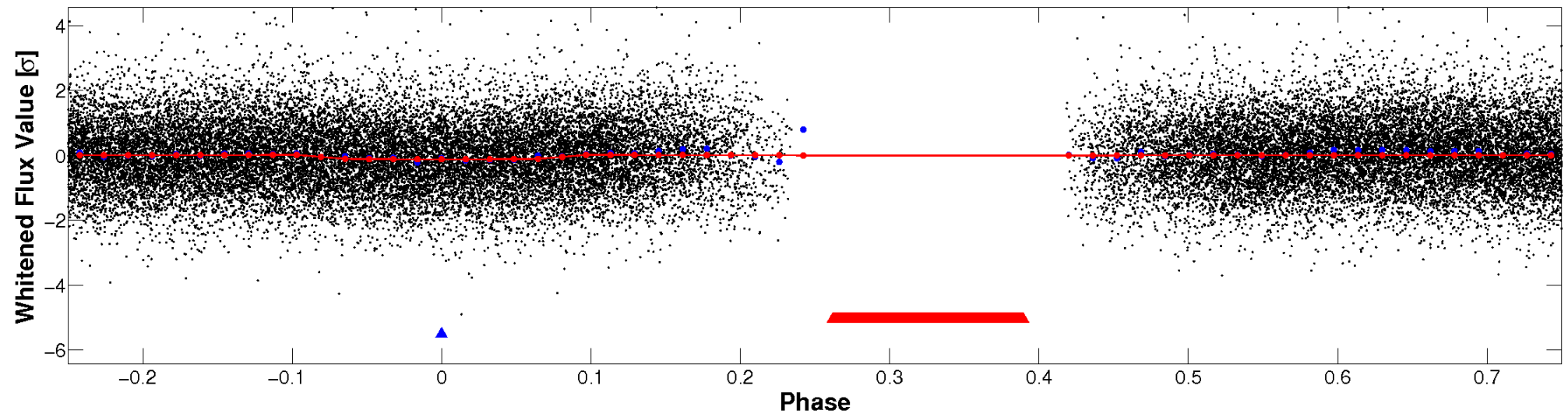


Non-Whitened Vs. Whitened Light Curve

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

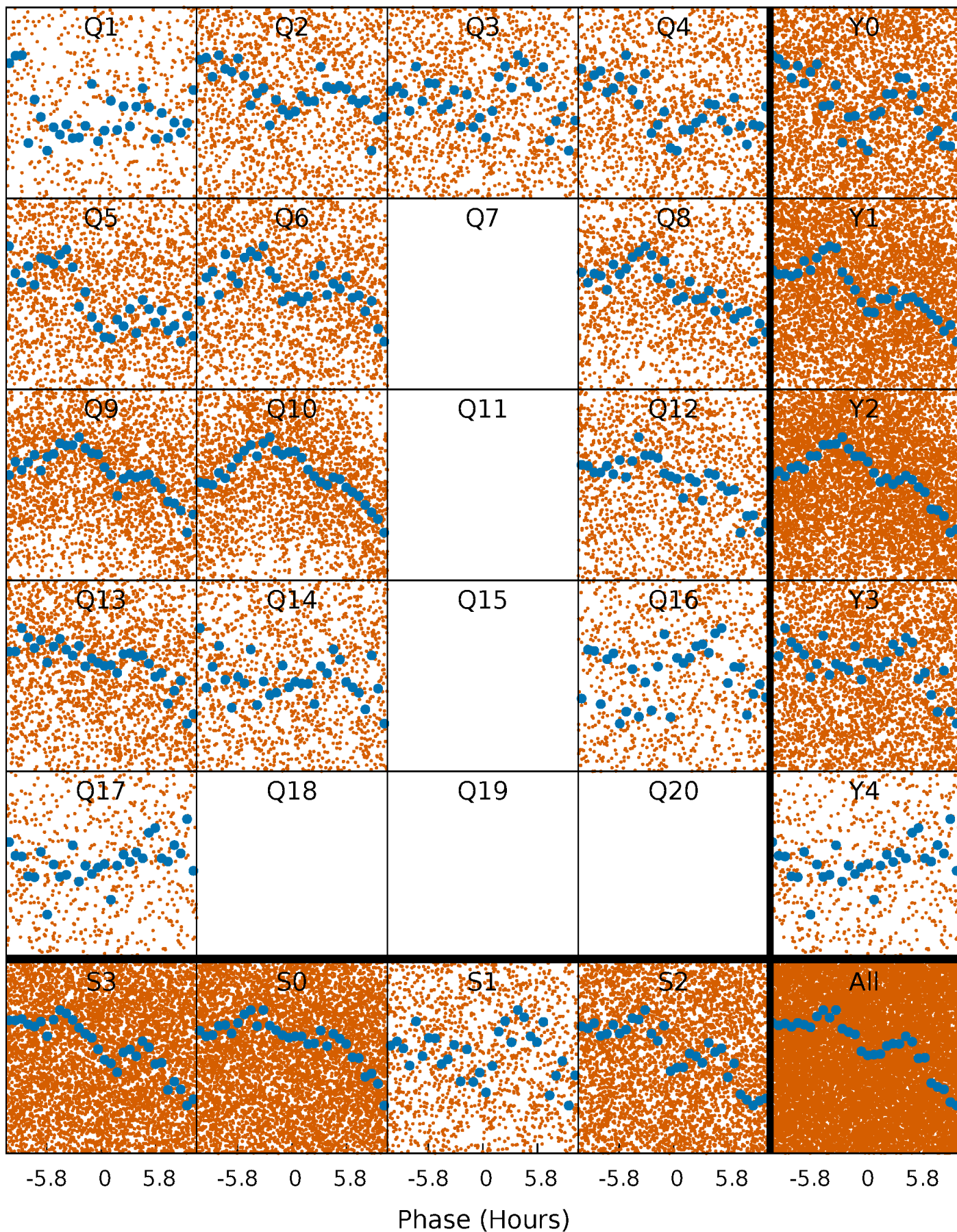


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



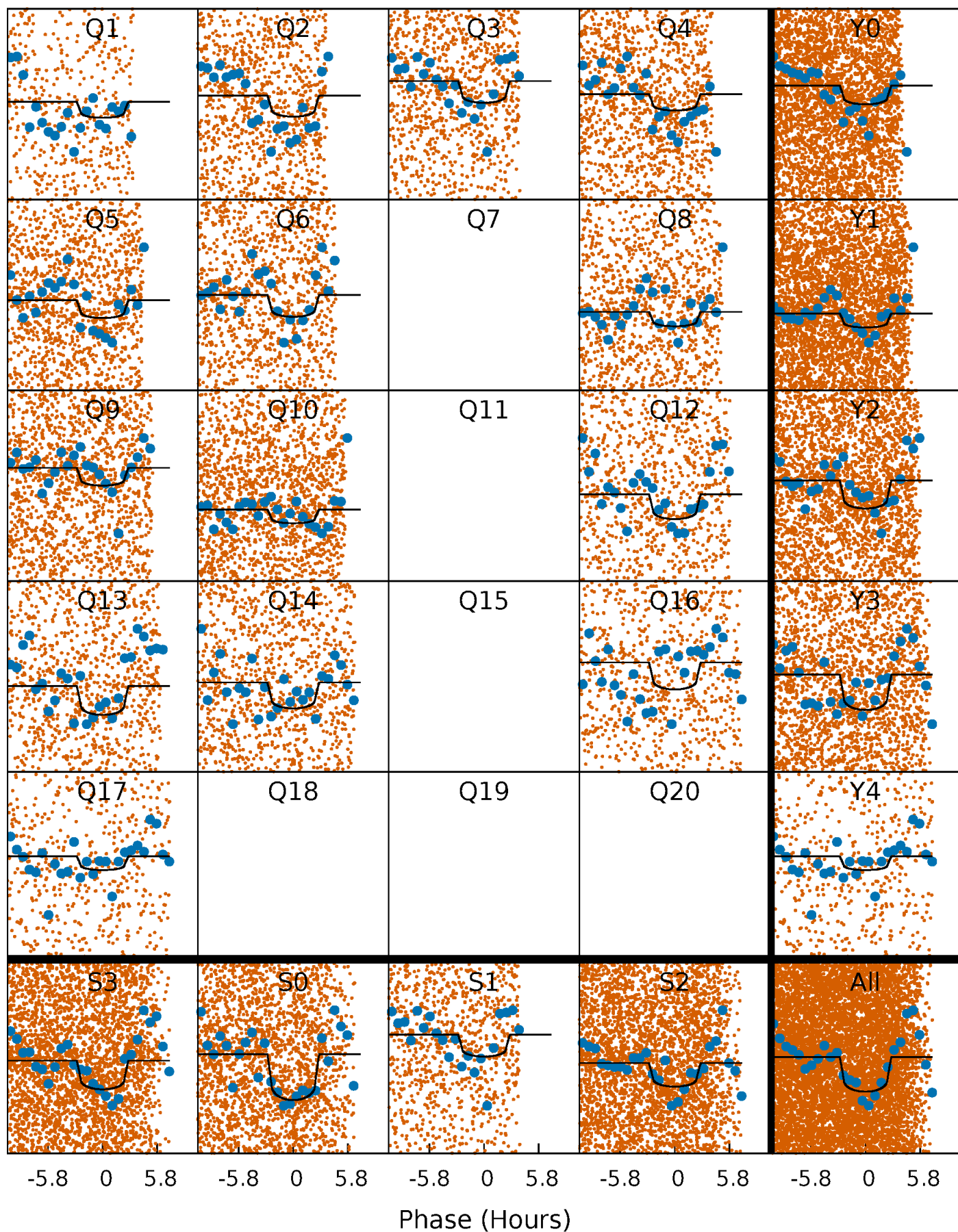
PDC Quarter-Phased Transit Curves

TCE 010550397-02 P= 1.265320 Days $T_0=131.669496$ (BKJD)



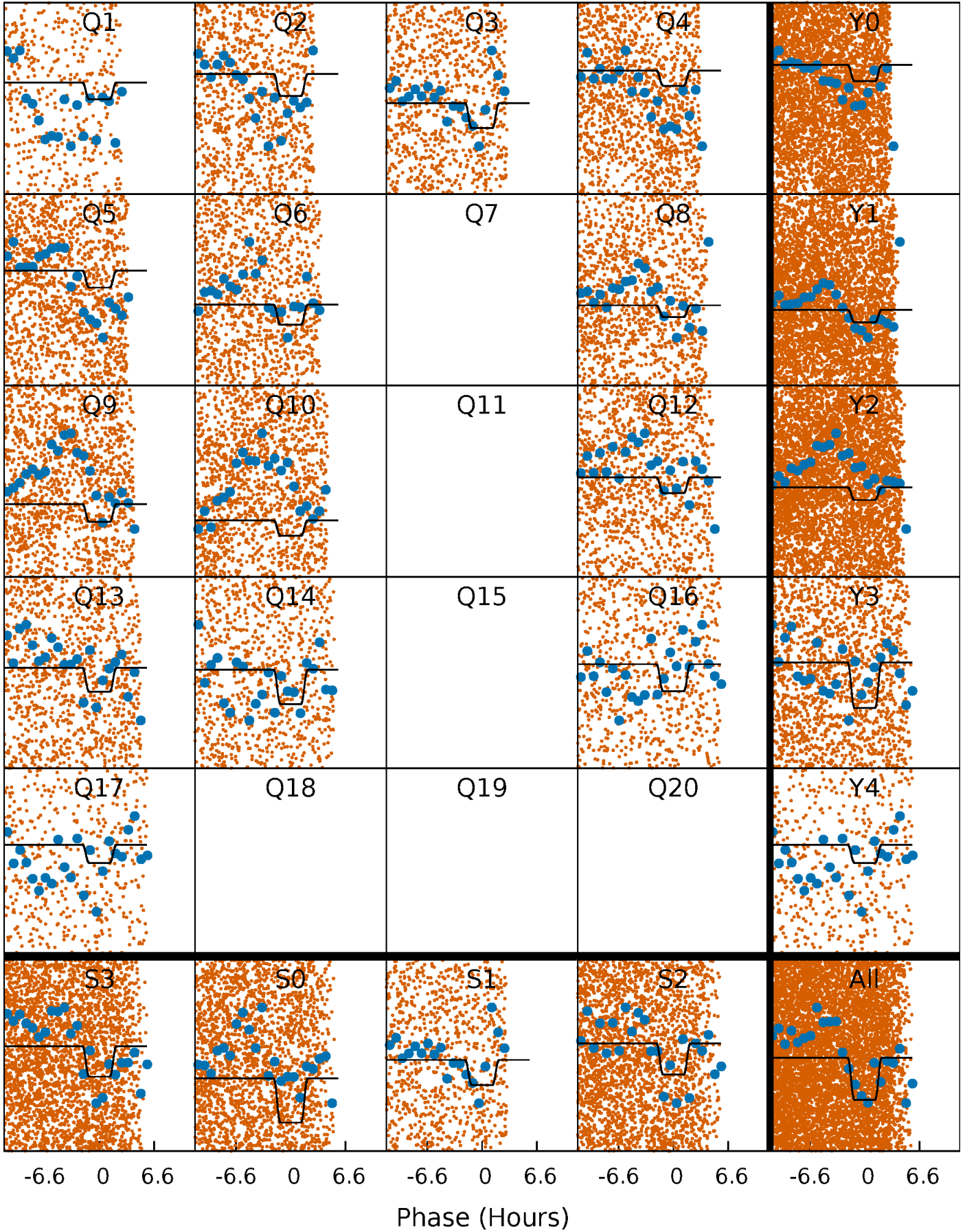
DV Quarter-Phased Transit Curves

TCE 010550397-02 P= 1.265320 Days $T_0=131.669496$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

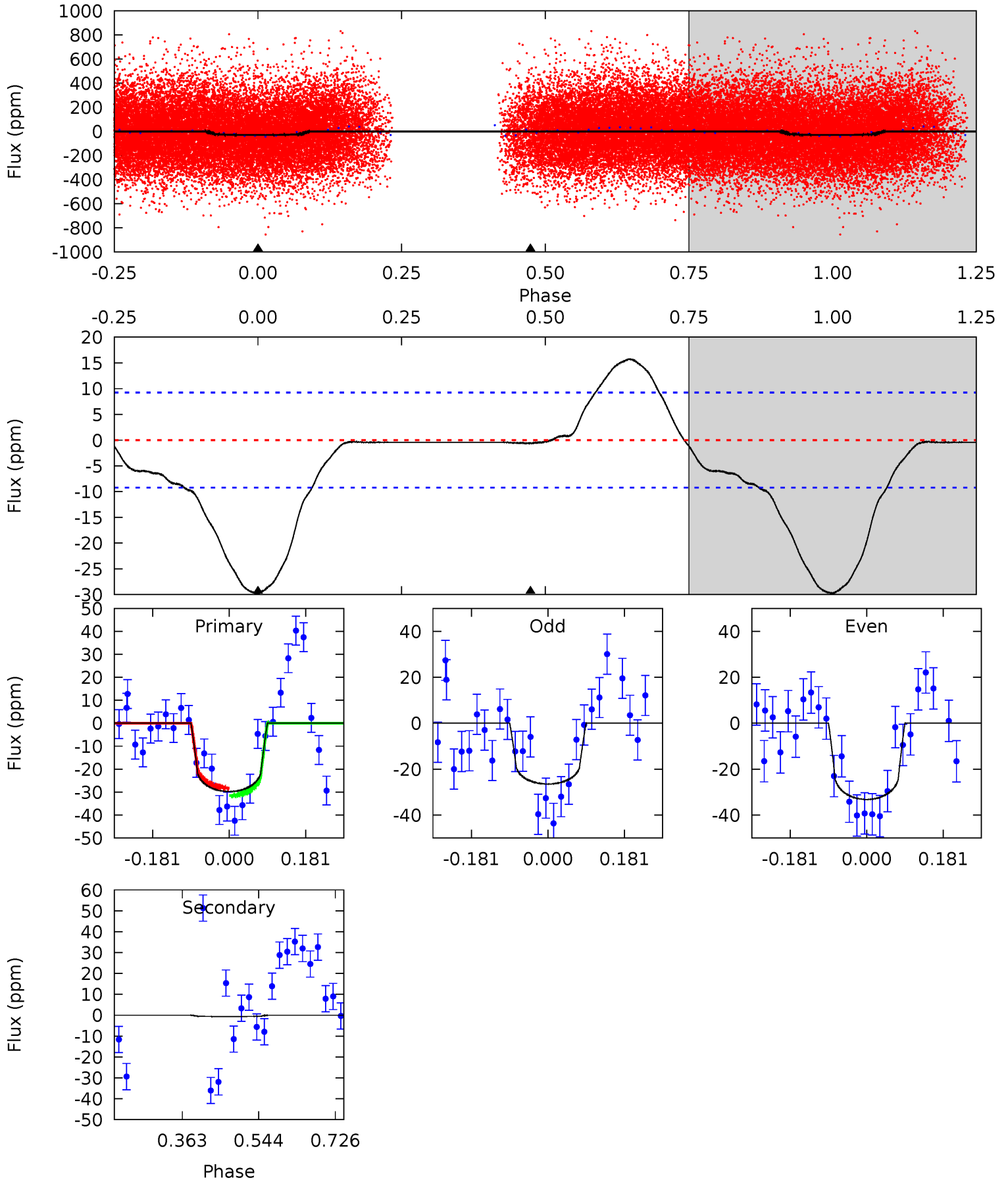
TCE 010550397-02 P= 1.265345 Days $T_0=131.698746$ (BKJD)



DV Model-Shift Uniqueness Test

010550397-02, P = 1.265320 Days, E = 130.404176 Days

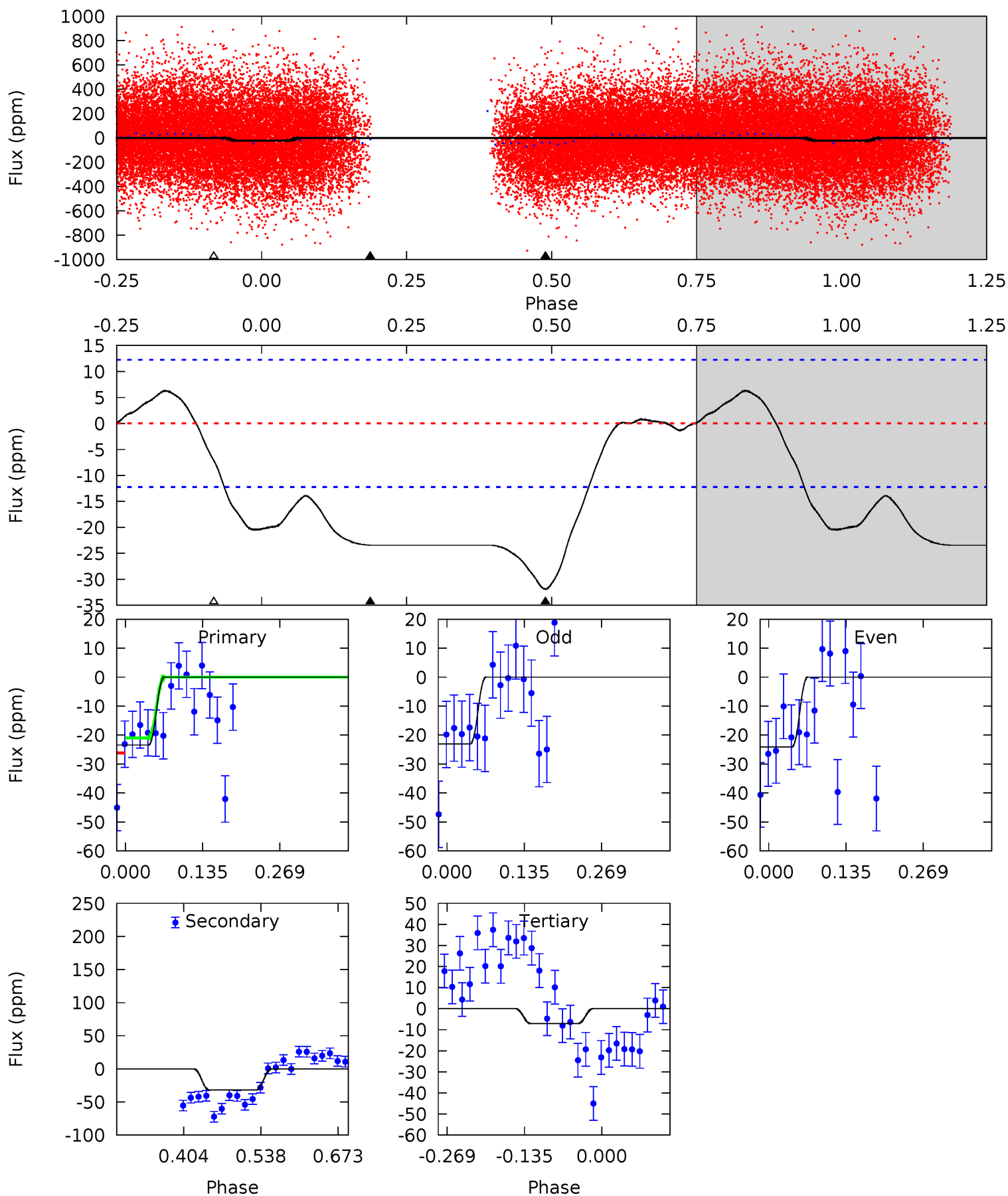
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	0.31	0	0	4.44	1.34	3.57	14.3	14.3	0.31	0.31	1.61	0.91	0.35	0.77



Alt Model-Shift Uniqueness Test

010550397-02, P = 1.265345 Days, E = 130.433401 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.62	11.7	2.62	0	4.50	1.50	3.37	6.00	8.62	9.10	11.7	0.19	0.74	0.16	0.93



Stellar Parameters For KIC 010550397

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7249^{+230}_{-316}	$4.114^{+0.149}_{-0.182}$	$-0.080^{+0.200}_{-0.350}$	$1.789^{+0.563}_{-0.375}$	$1.515^{+0.212}_{-0.259}$	$0.373^{+0.295}_{-0.191}$
	+3%/-4%	+4%/-4%	+250%/-438%	+31%/-21%	+14%/-17%	+79%/-51%
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 010550397-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 2	$1.00^{+0.40}_{-0.37}$	3689^{+306}_{-250}	-3007^{+7329}_{-1226}	$0.189^{+1.122}_{-0.744}$
Alt.	-32 ± 3	$1.09^{+0.42}_{-0.37}$	3683^{+282}_{-245}	7117^{+2198}_{-1032}	$9.986^{+13.056}_{-4.764}$

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 $A_{obs} \gg 1.0$

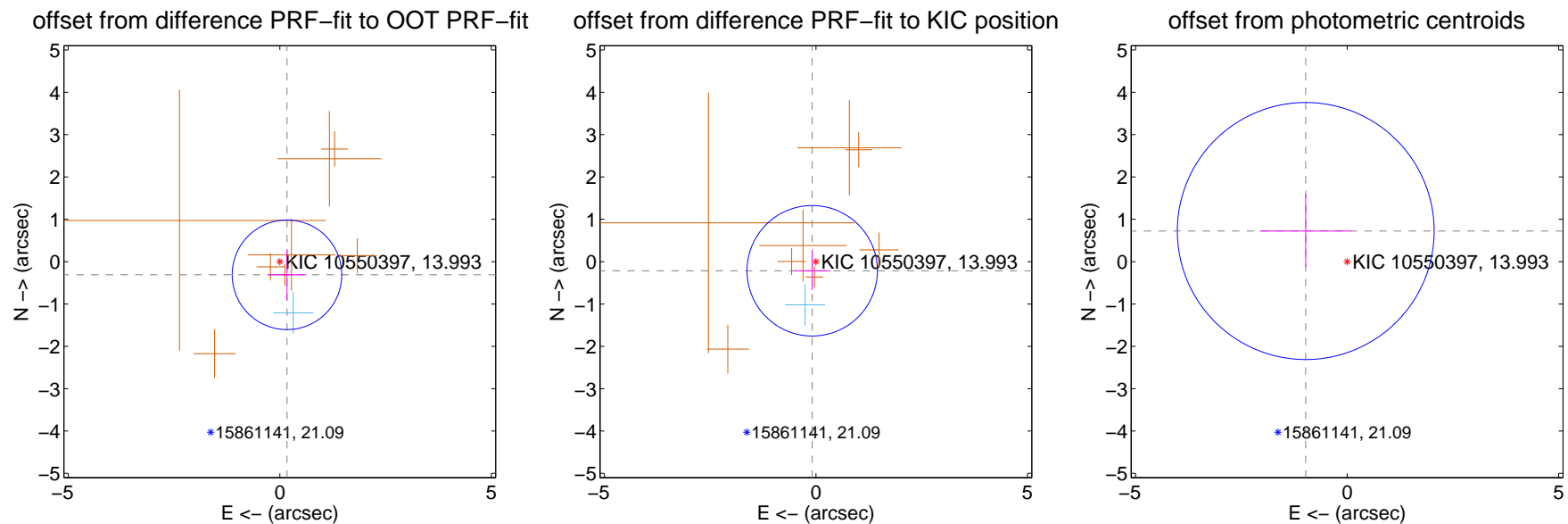
DV Centroid Data

Supplemental centroid analysis for 010550397-02. Kepler magnitude: 13.99. Transit SNR 9.89

There are 1 quarters with good PRF difference image offsets

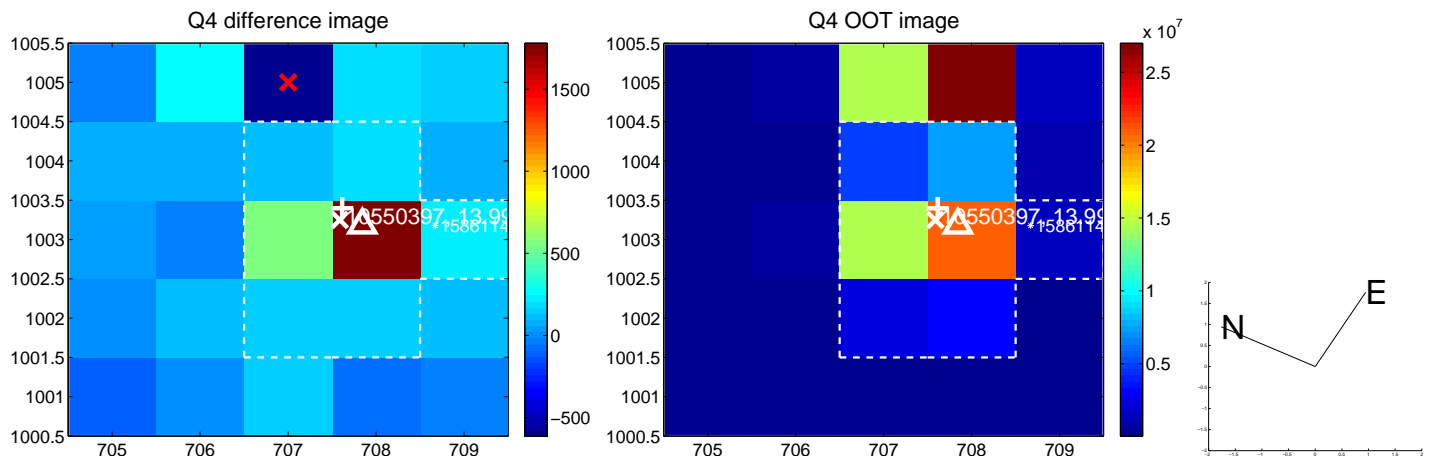
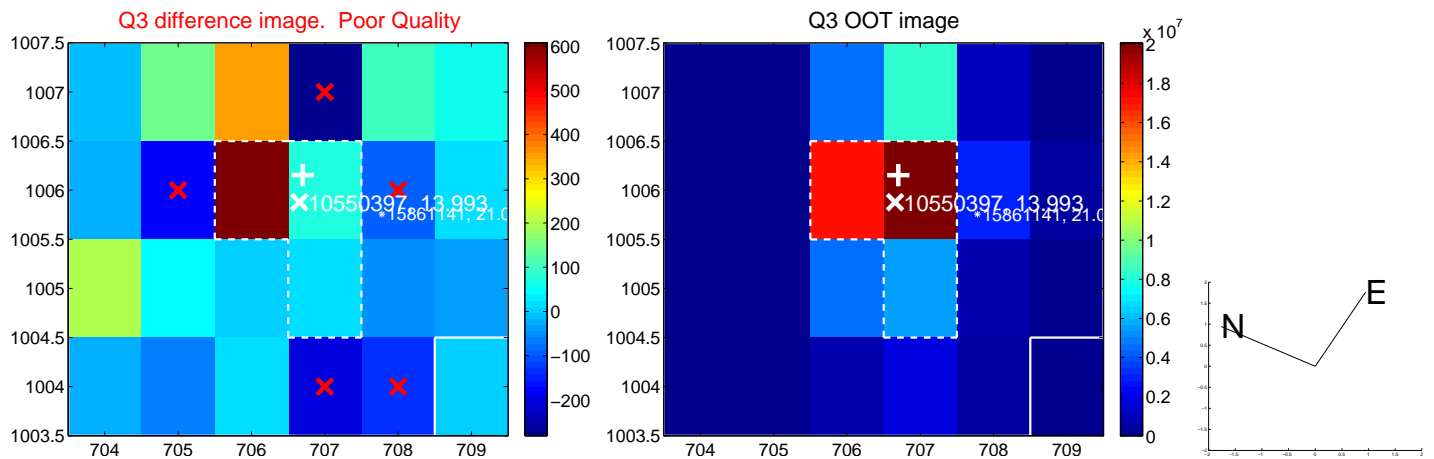
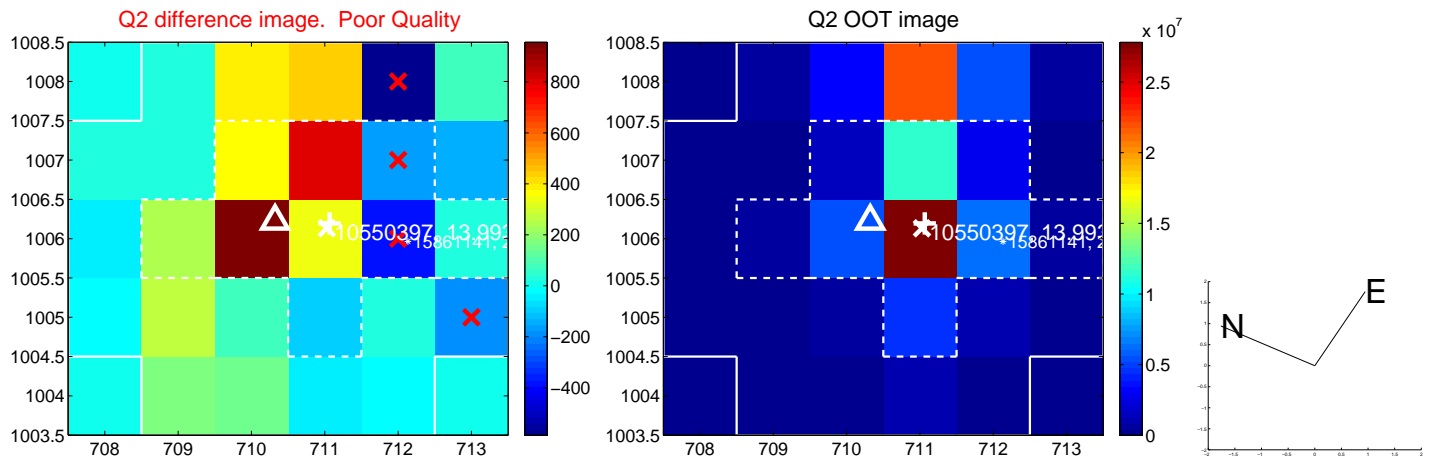
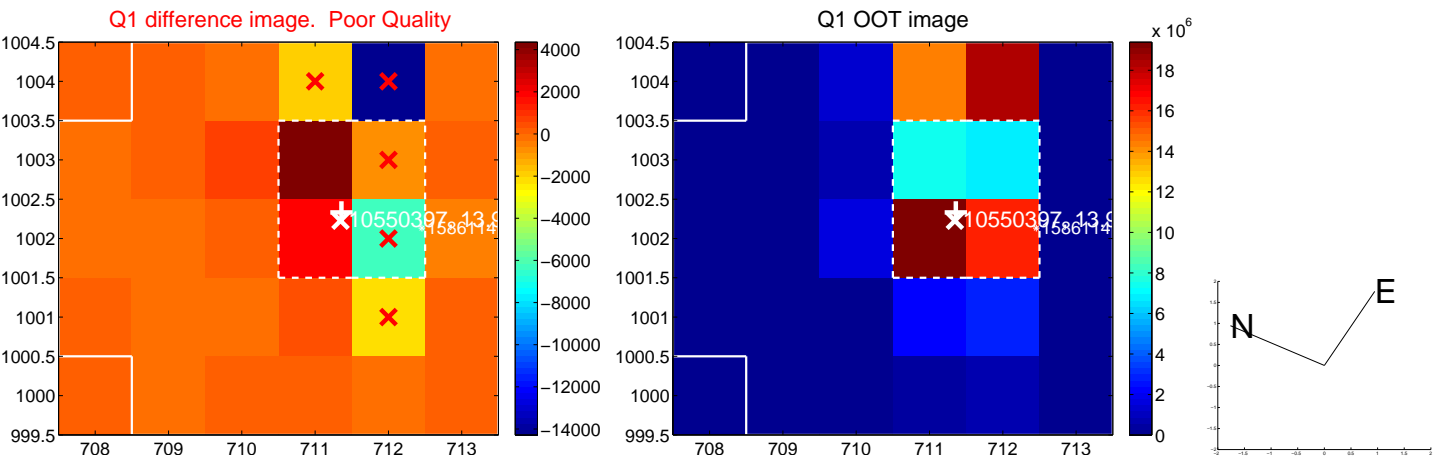
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.353 ± 0.432	0.82	-0.169 ± 0.455	-0.310 ± 0.600
PRF-fit source offset from KIC position	0.233 ± 0.514	0.45	0.088 ± 0.428	-0.215 ± 0.457
photometric centroid source offset	1.22 ± 1.01	1.20	0.98 ± 1.08	0.72 ± 0.86

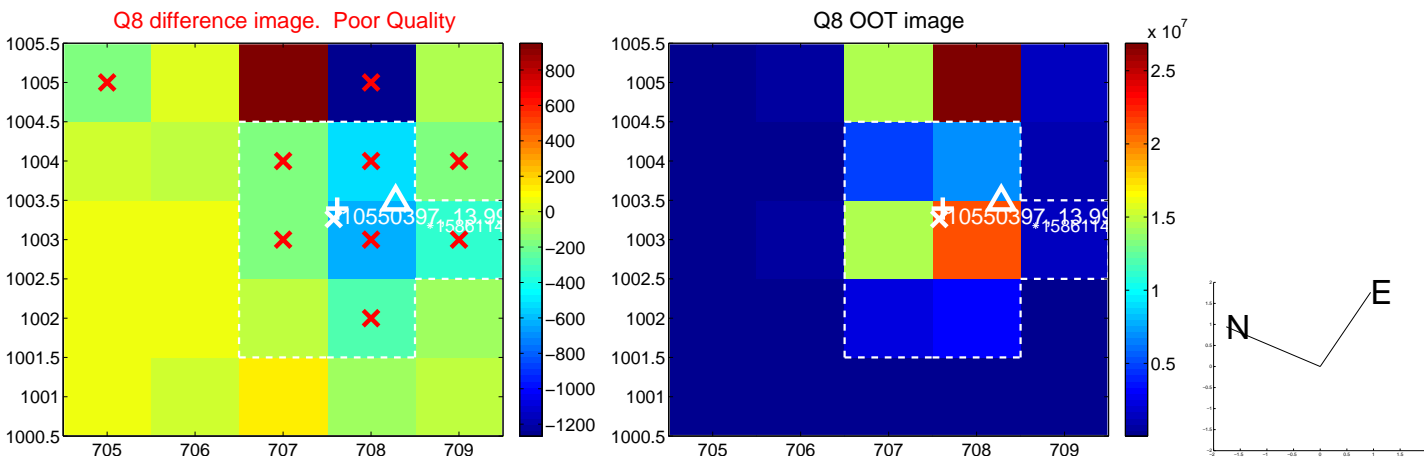
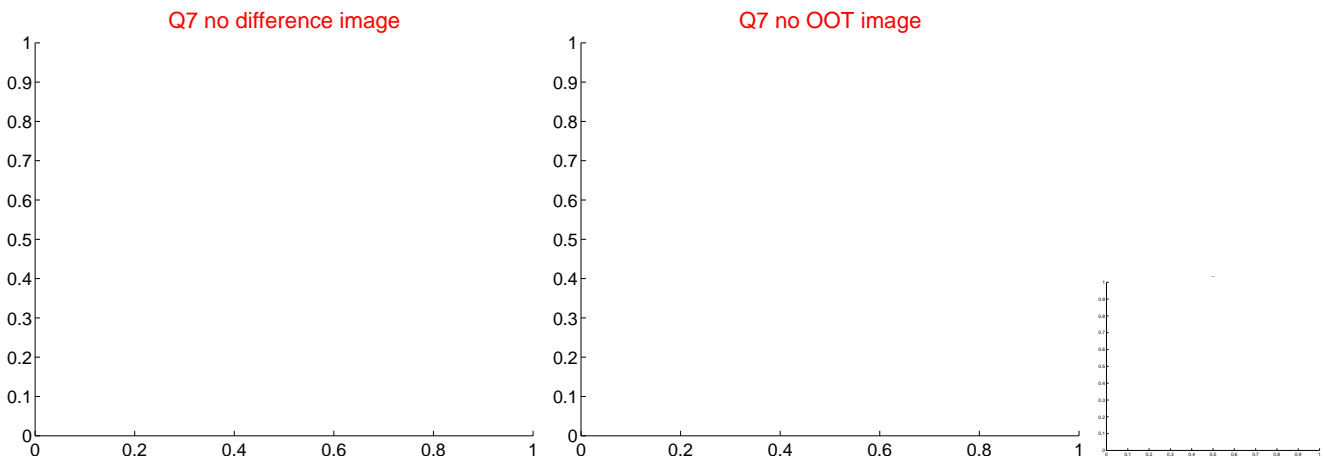
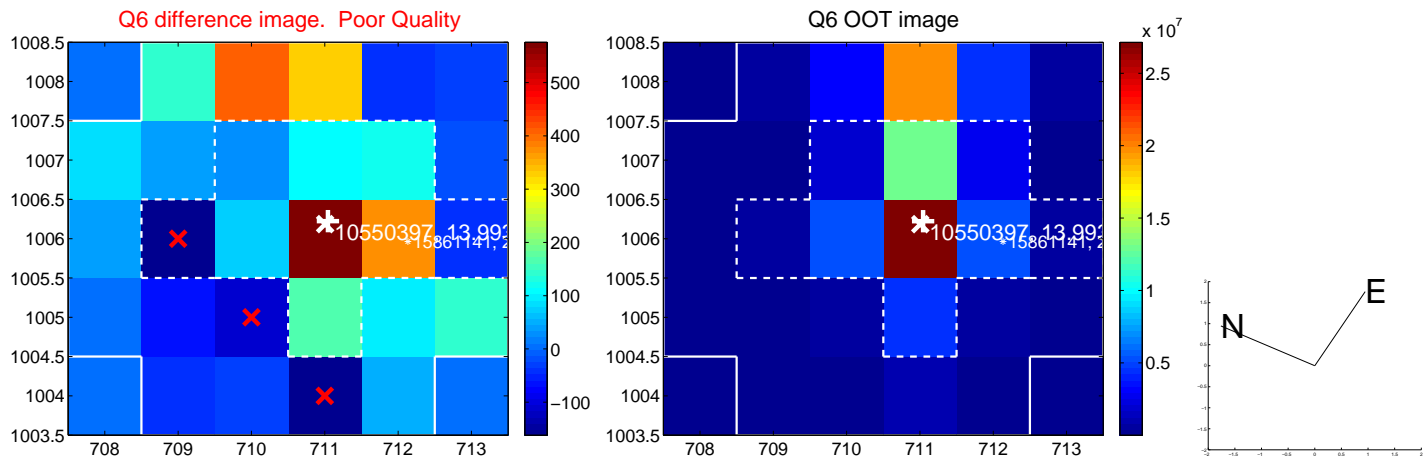
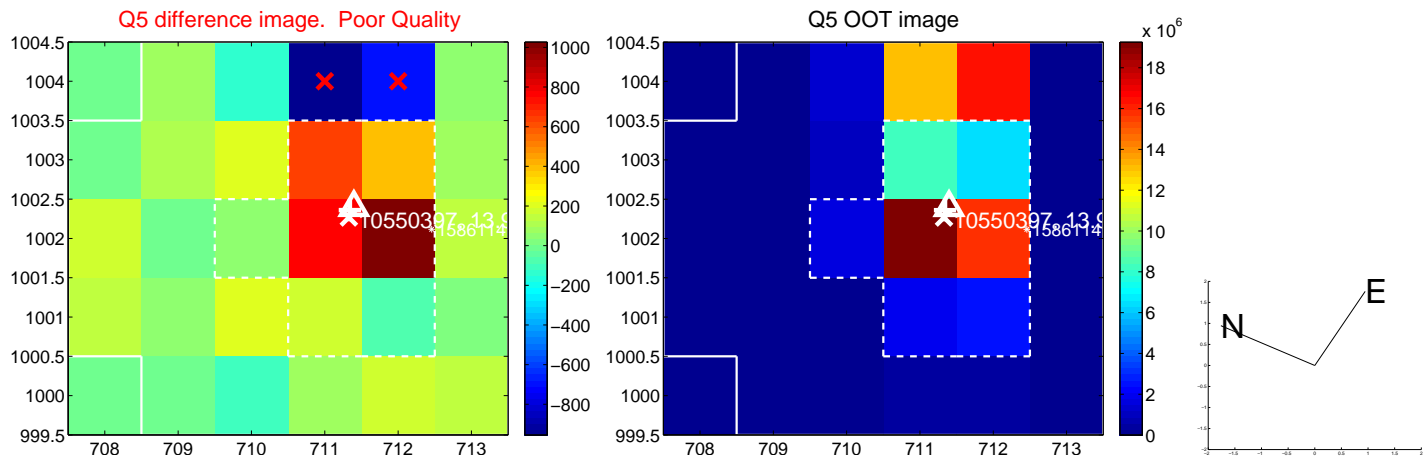


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

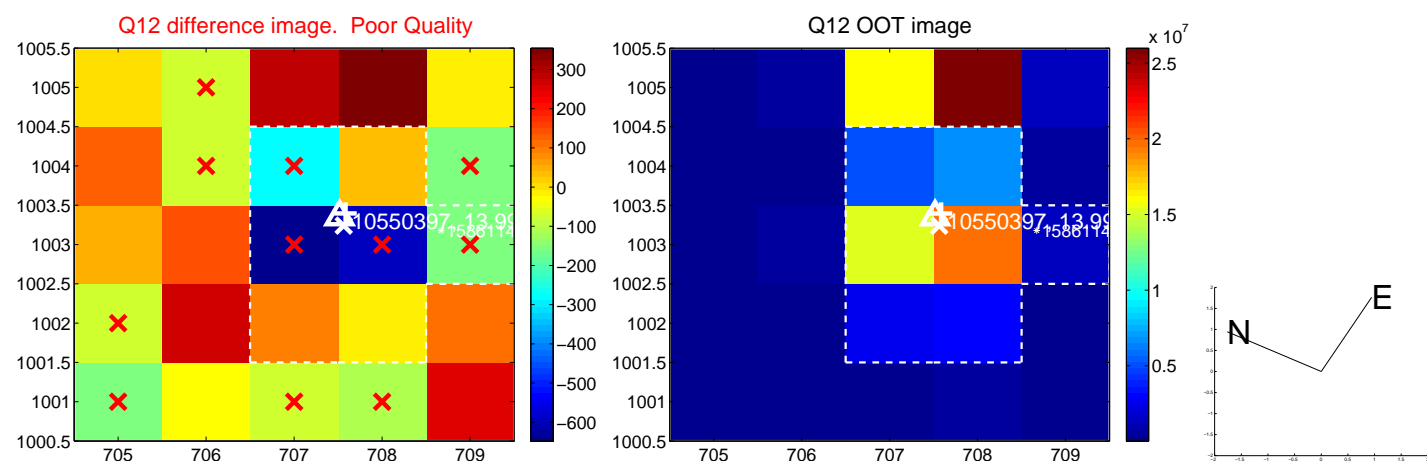
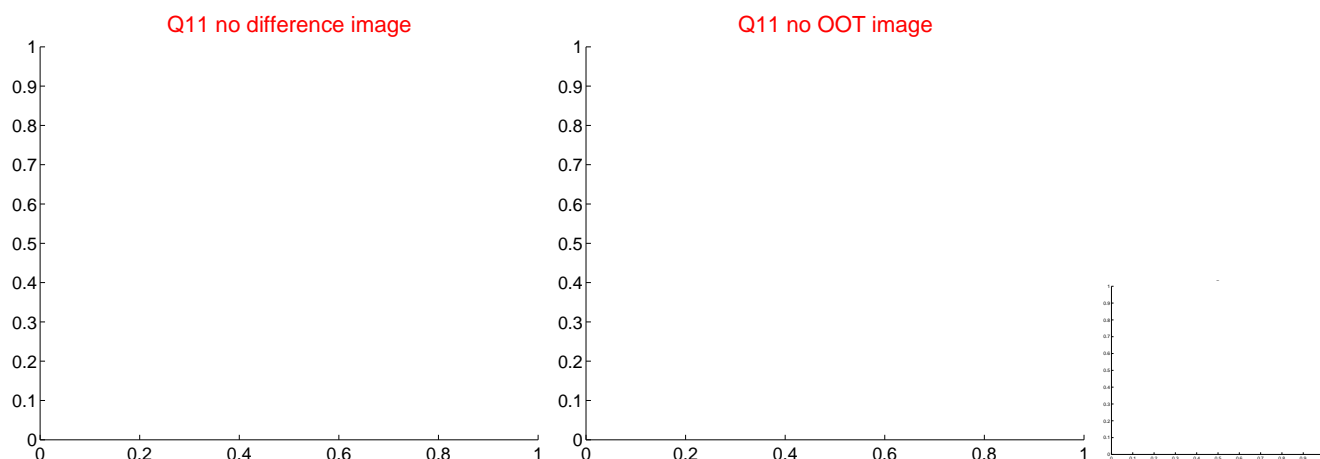
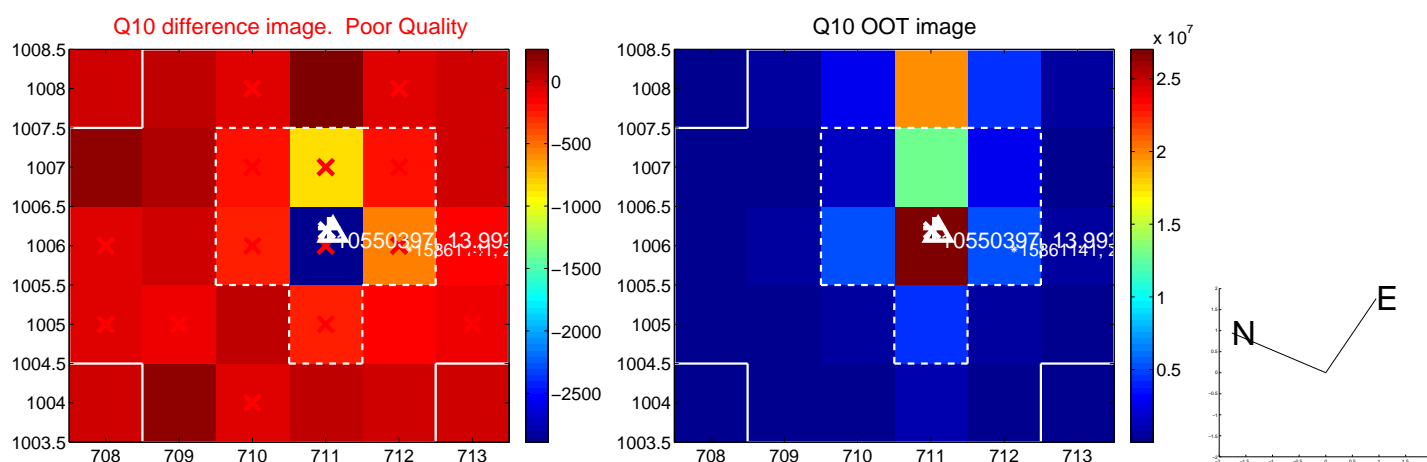
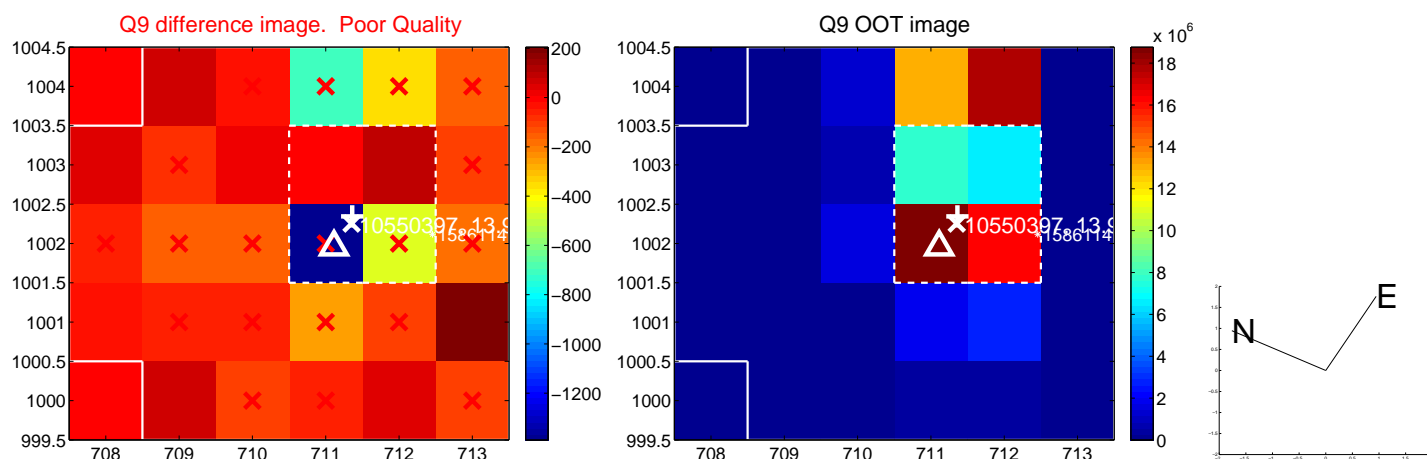
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



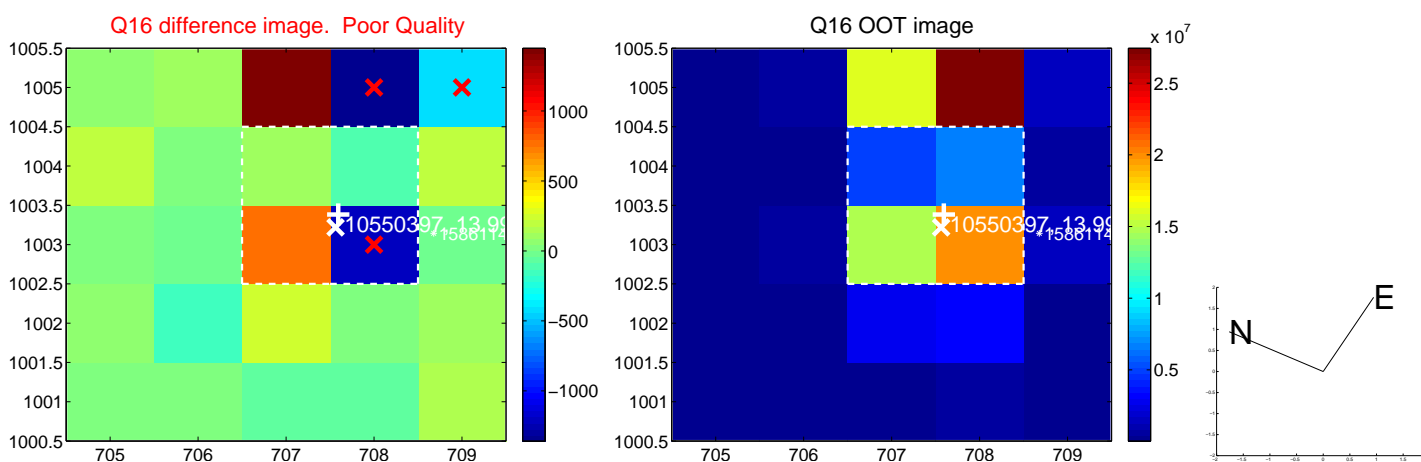
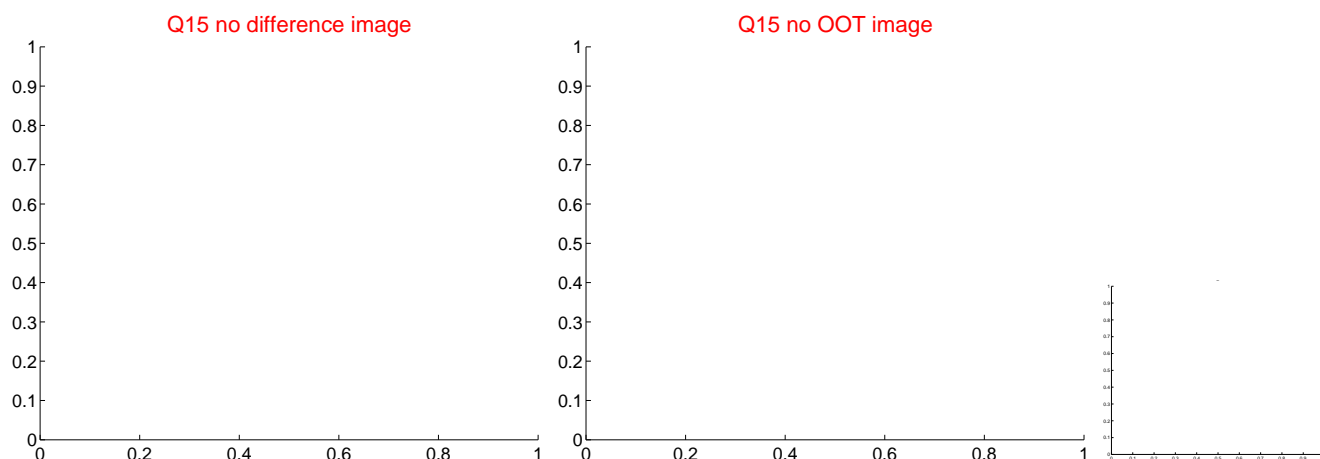
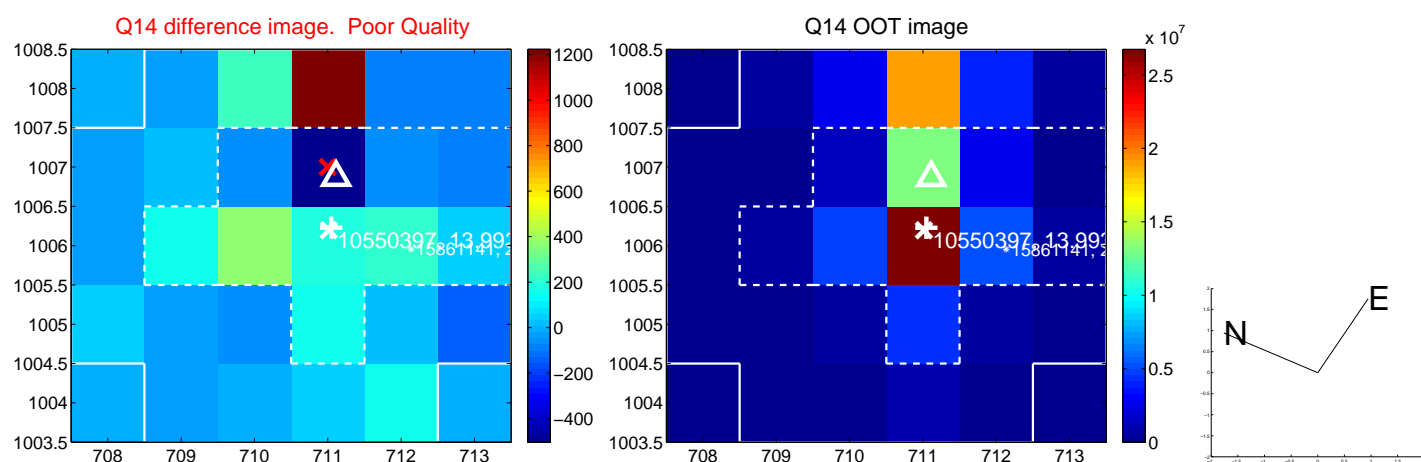
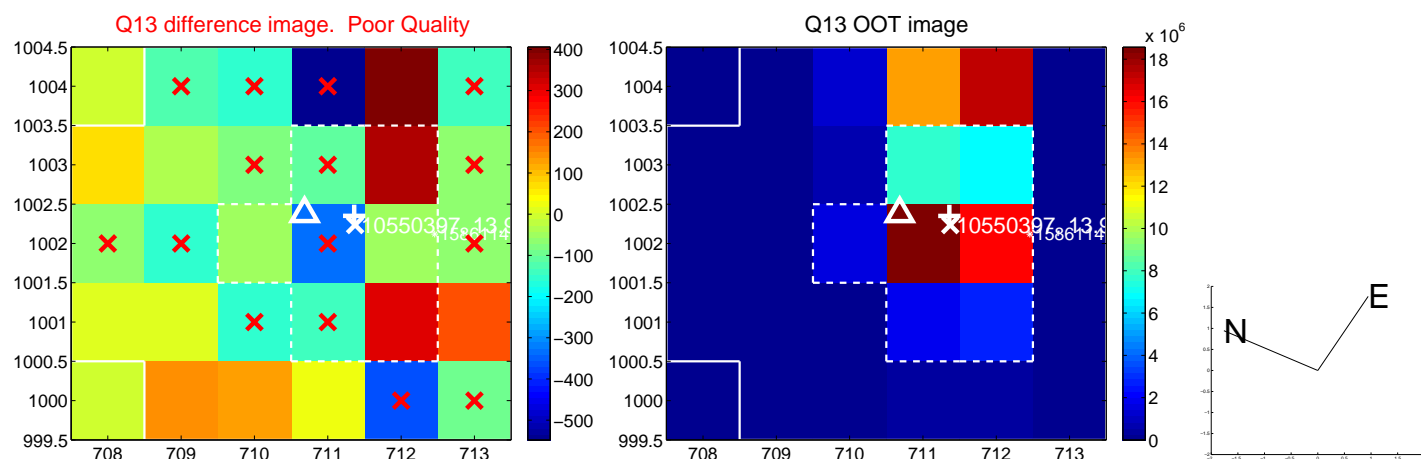
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



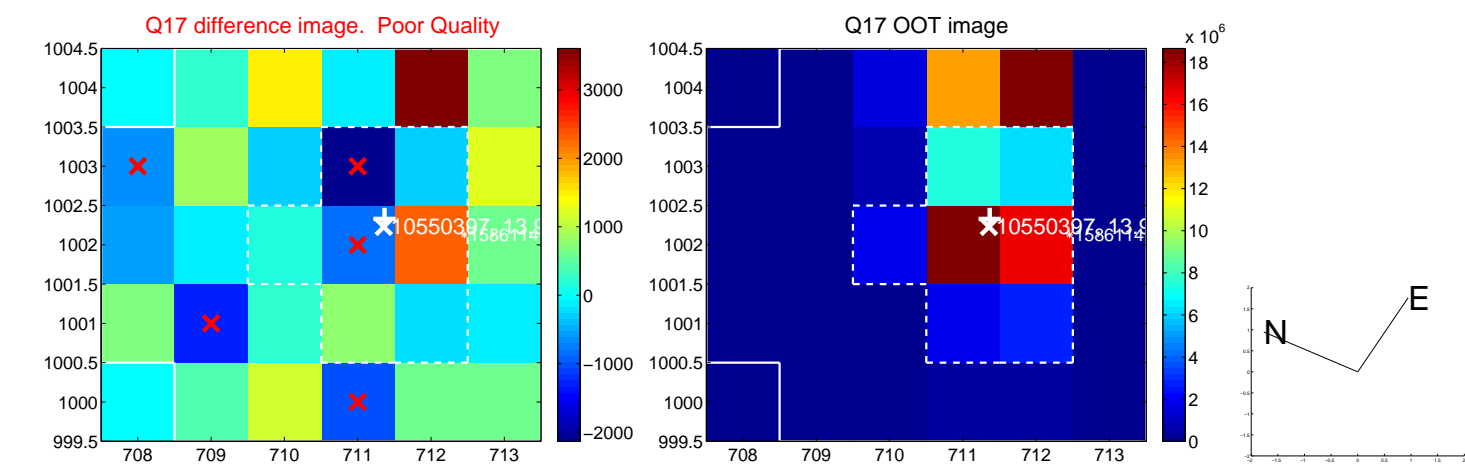
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



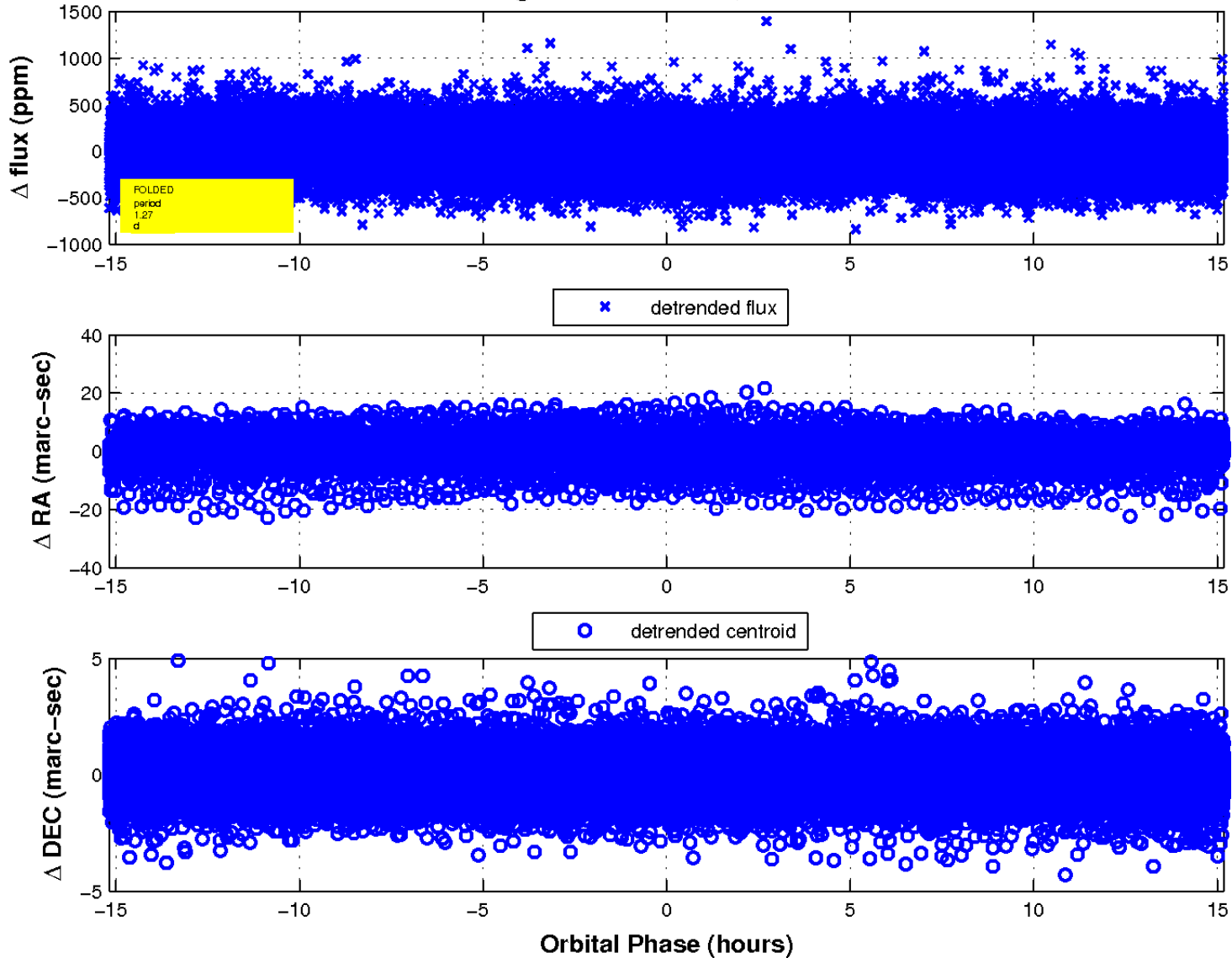
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

