

KIC 005273473

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})
005273473-01	OBS	No	0.939427	131.827559	27.5	1.653	8.6	6.8	1.75	5541	1.09	8086.96
005273473-02	OBS	No	0.939472	132.281228	34.0	1.403	8.3	7.9	1.75	5541	1.22	8086.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005273473-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
005273473-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

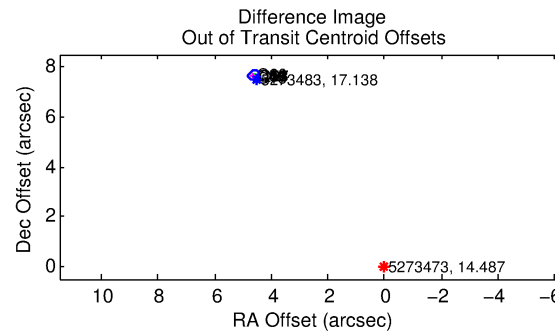
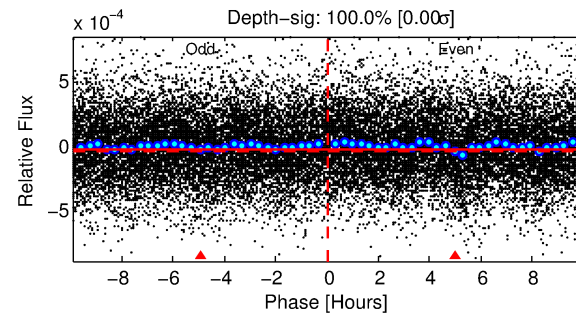
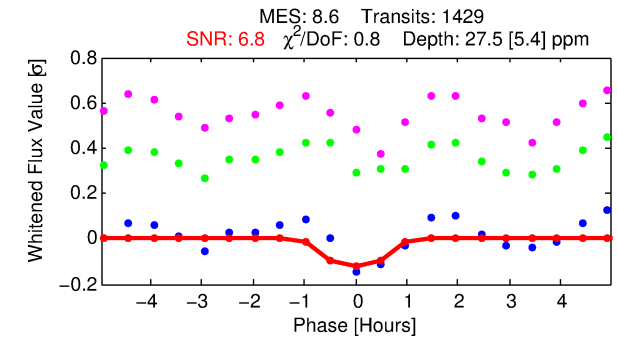
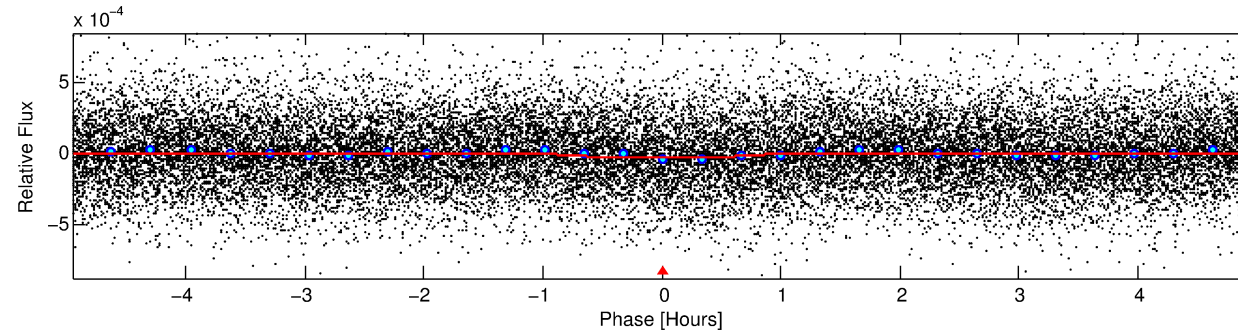
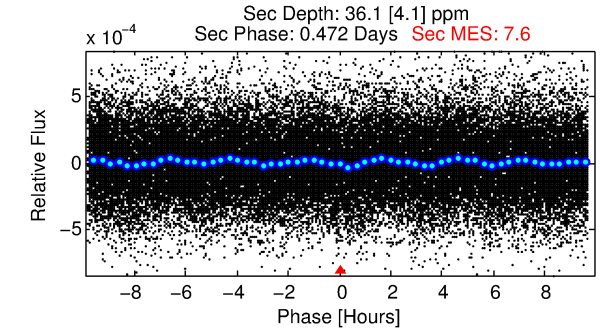
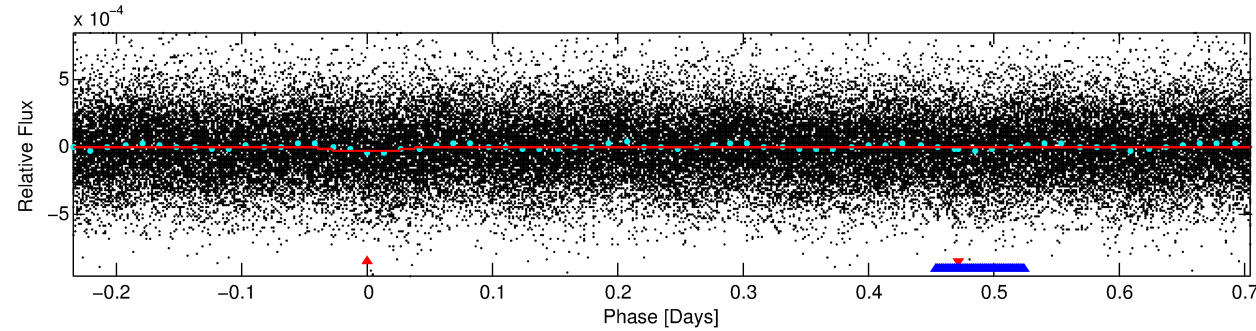
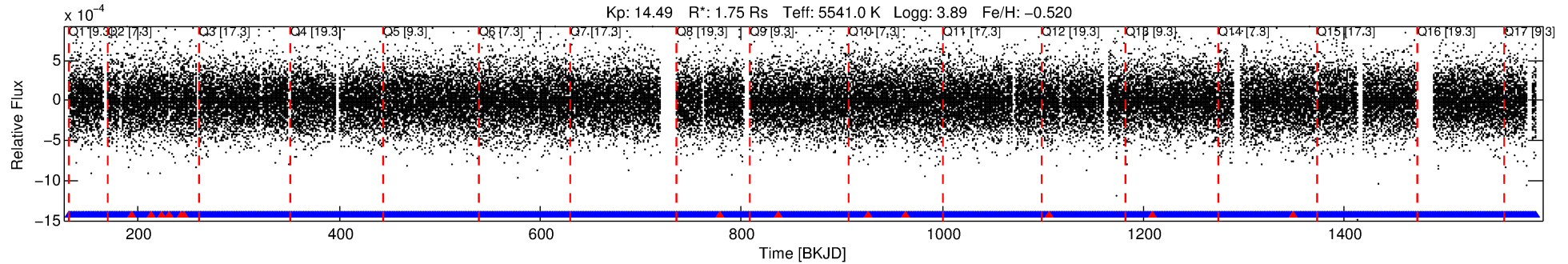
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005273473-01

No Significant Match Found

DV One-Page Summary

KIC: 5273473 Candidate: 1 of 2 Period: 0.939 d



DV Fit Results:

Period = 0.93943 [0.00001] d
Epoch = 131.8276 [0.0036] BKJD
Rp/R* = 0.0057 [0.0036]
a/R* = 2.16 [5.13]
b = 0.90 [0.65]
Seff = 8086.96 [2221.73]
Teq = 2418 [166] K
Rp = 1.09 [0.73] Re
a = 0.0179 [0.0035] AU
Ag = 5.34 [6.83] [0.64σ]
Teff = 5682 [1779] K [1.83σ]

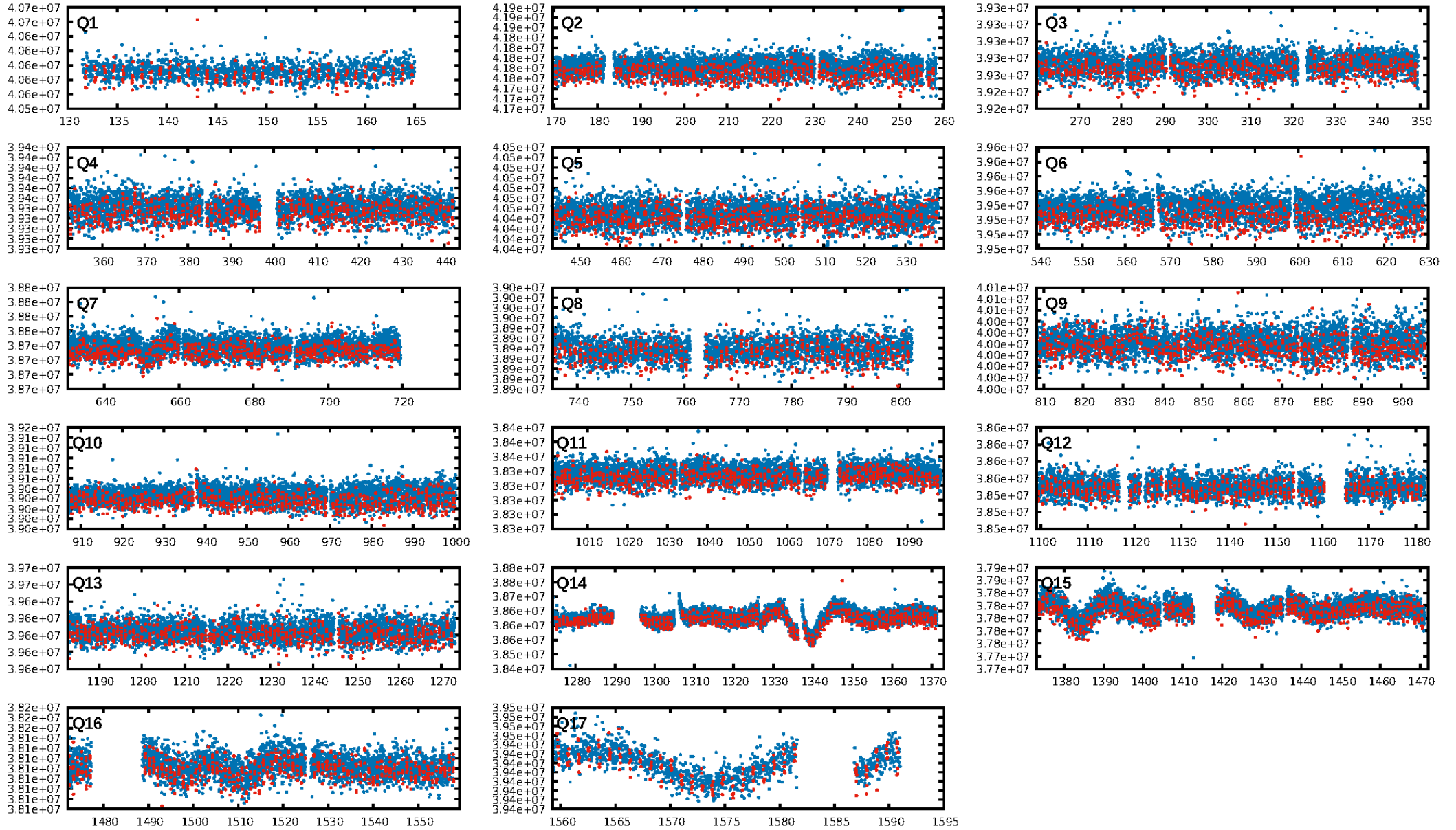
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 8.95e-20
RollingBand-fgt: 0.99 [1350/1364]
GhostDiagnostic-chr: -0.9113
Centroid-sig: 0.4%
Centroid-so: 5.695 arcsec [1.83σ]
OotOffset-rm: 8.936 arcsec [132.82σ]
KicOffset-rm: 8.866 arcsec [129.39σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

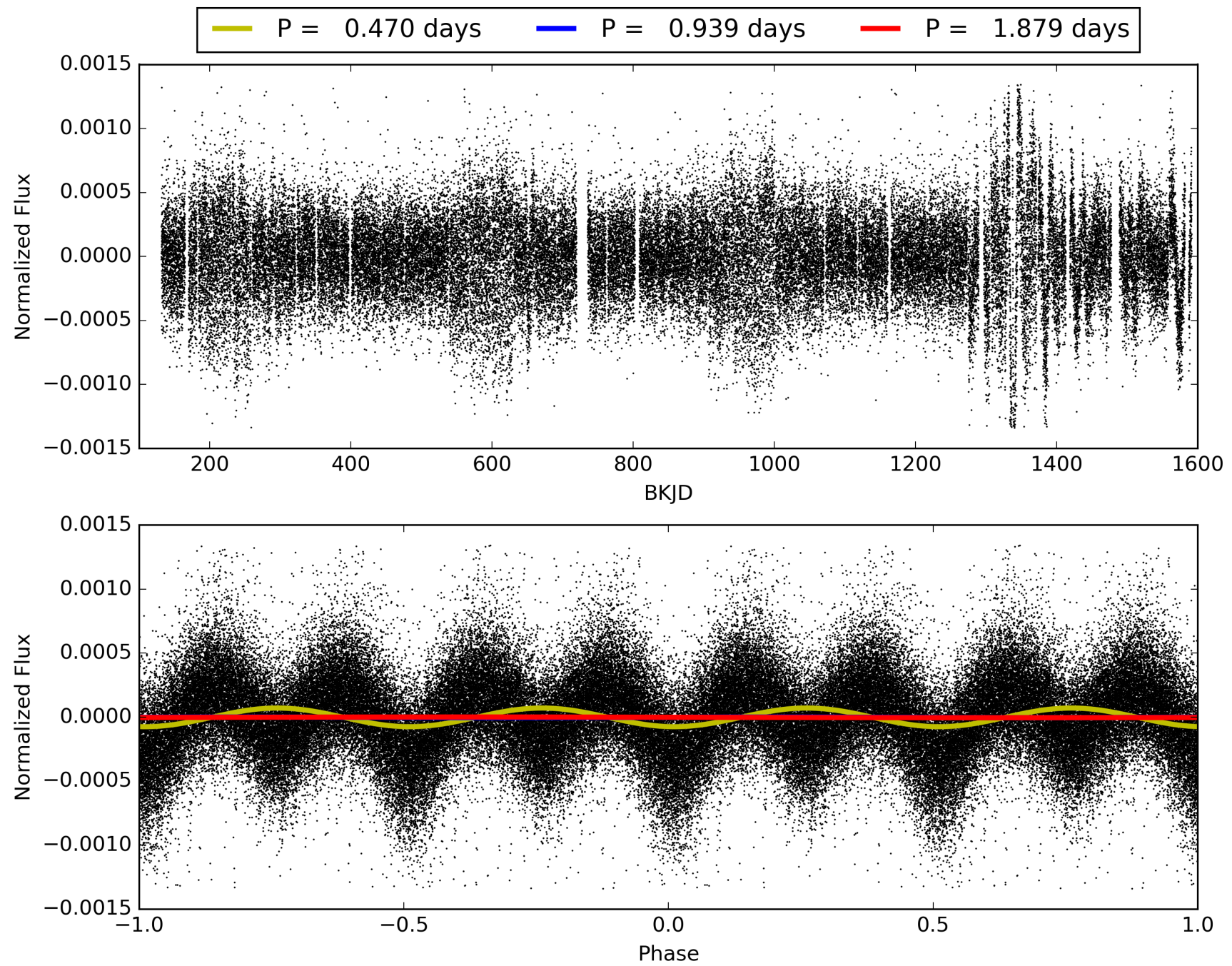
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:40:02 Z

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

TCE 005273473-01, PDC Light Curves

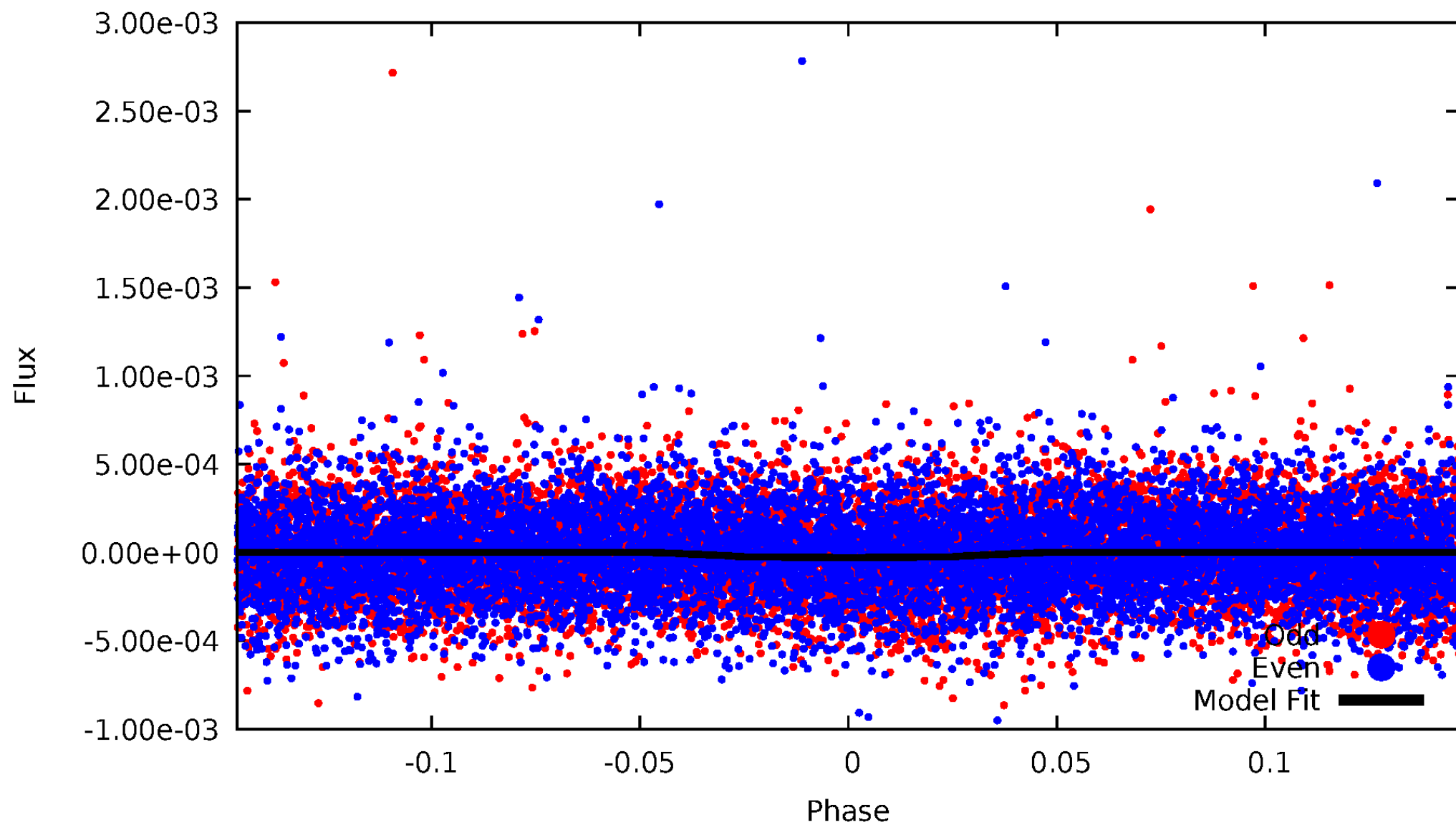


TCE 005273473-01



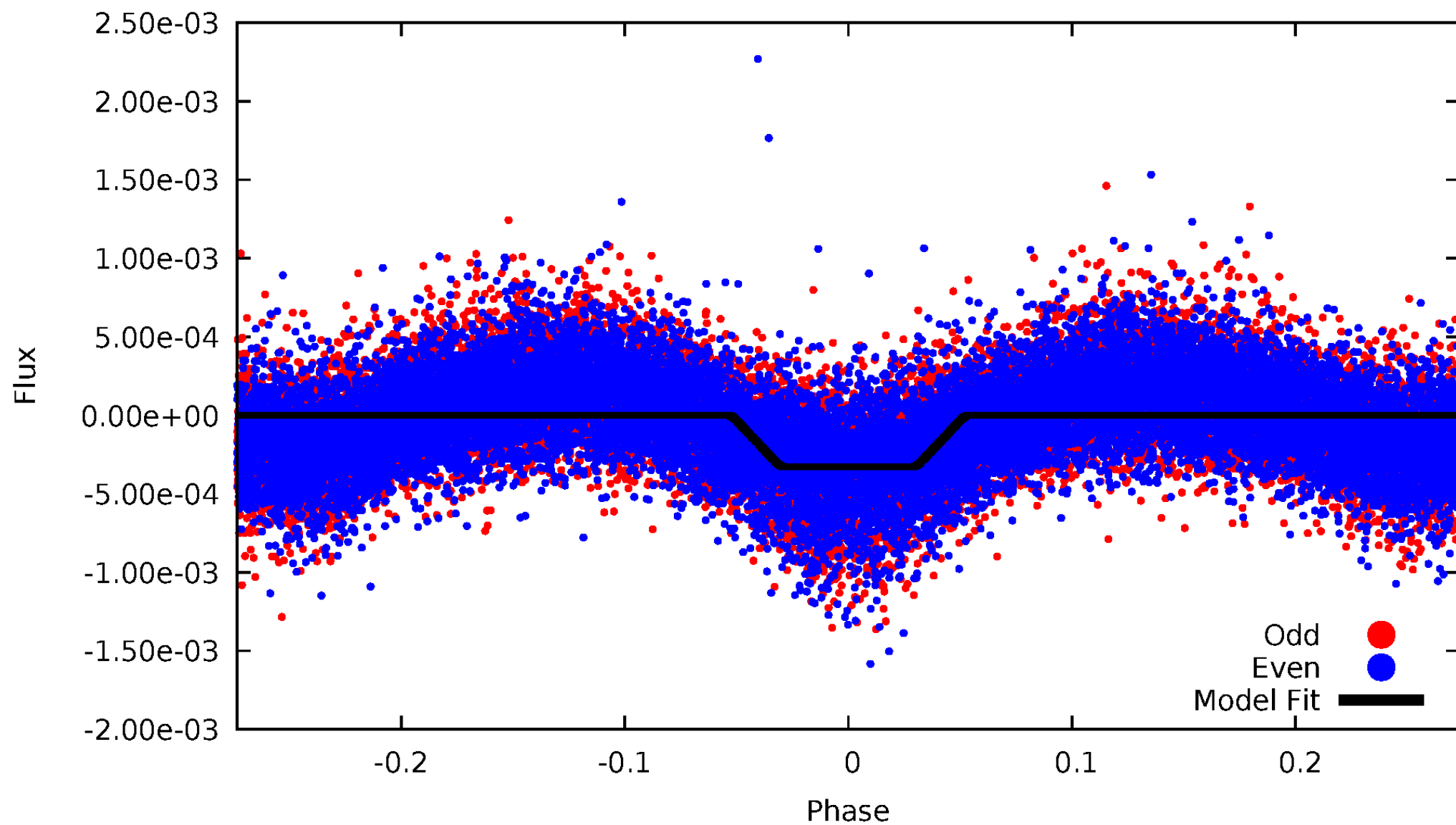
DV Odd/Even

TCE 005273473-01



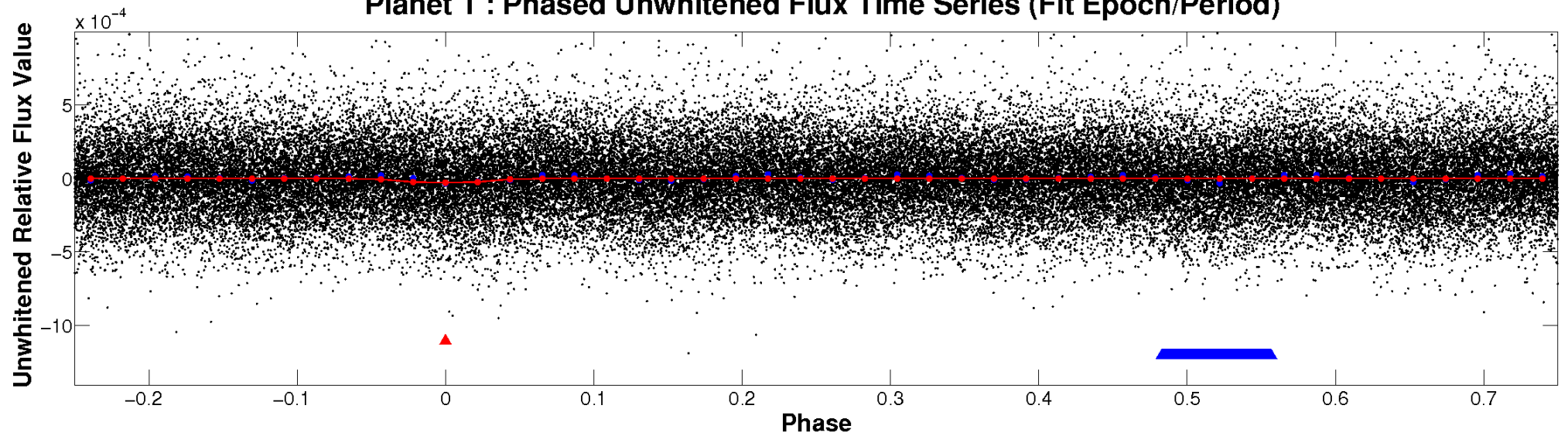
ALT Odd/Even

TCE 005273473-01

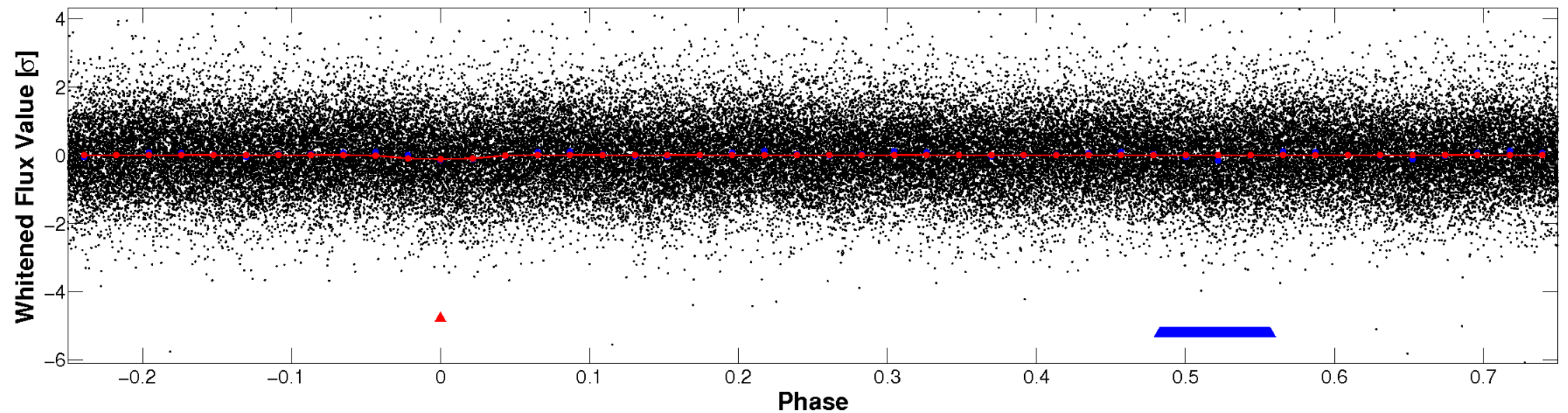


Non-Whitened Vs. Whitened Light Curve

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

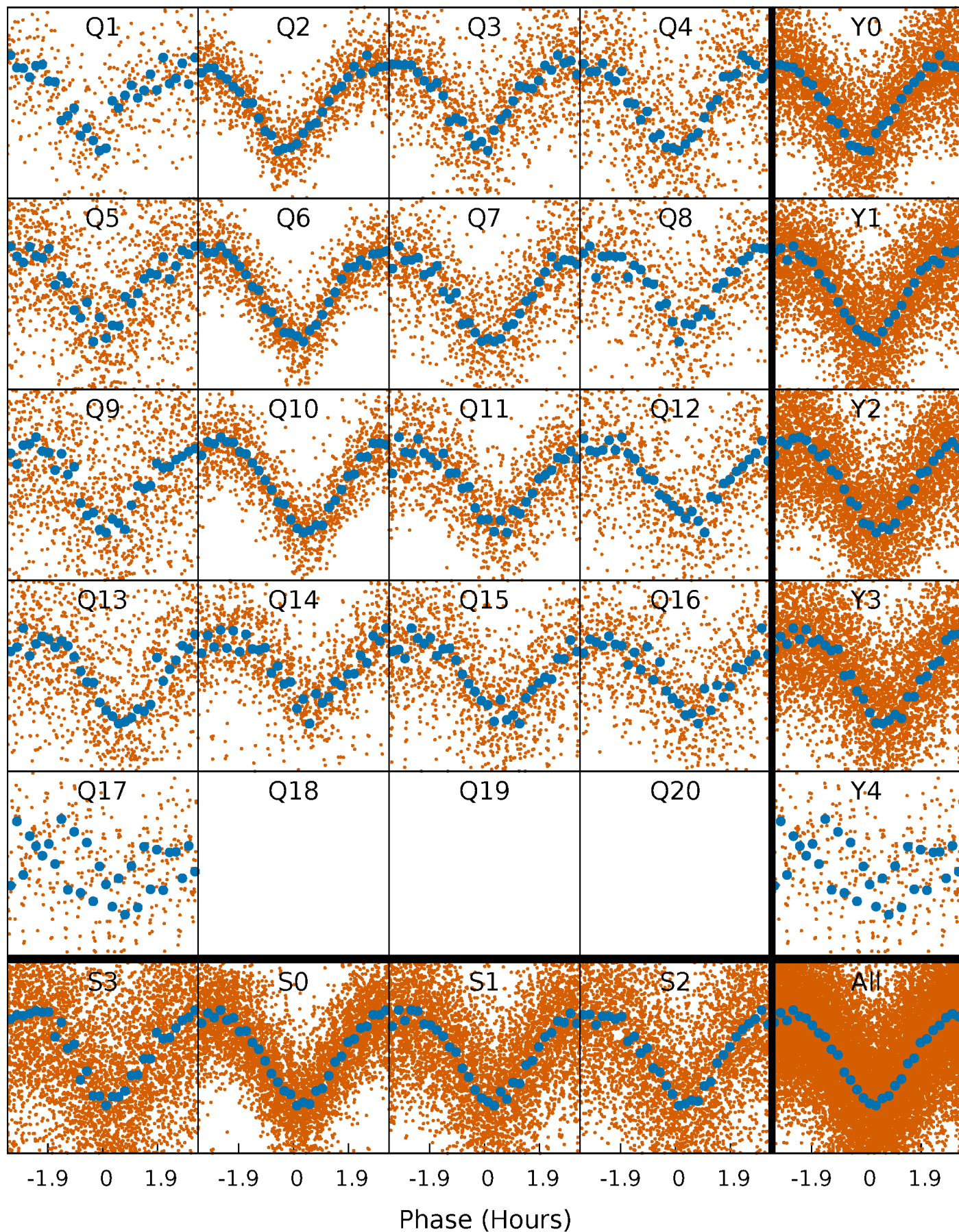


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



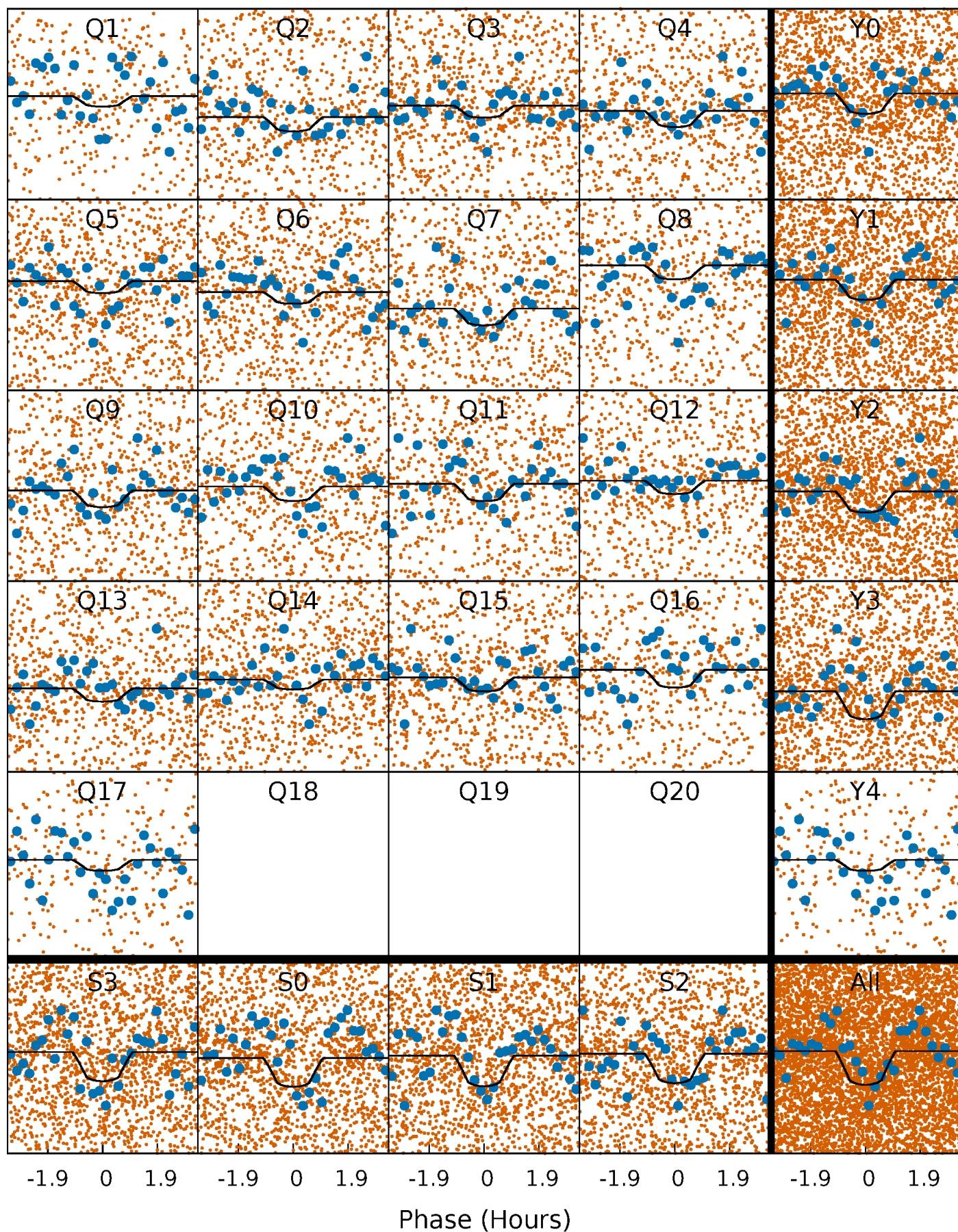
PDC Quarter-Phased Transit Curves

TCE 005273473-01 P= 0.939427 Days $T_0=131.827559$ (BKJD)



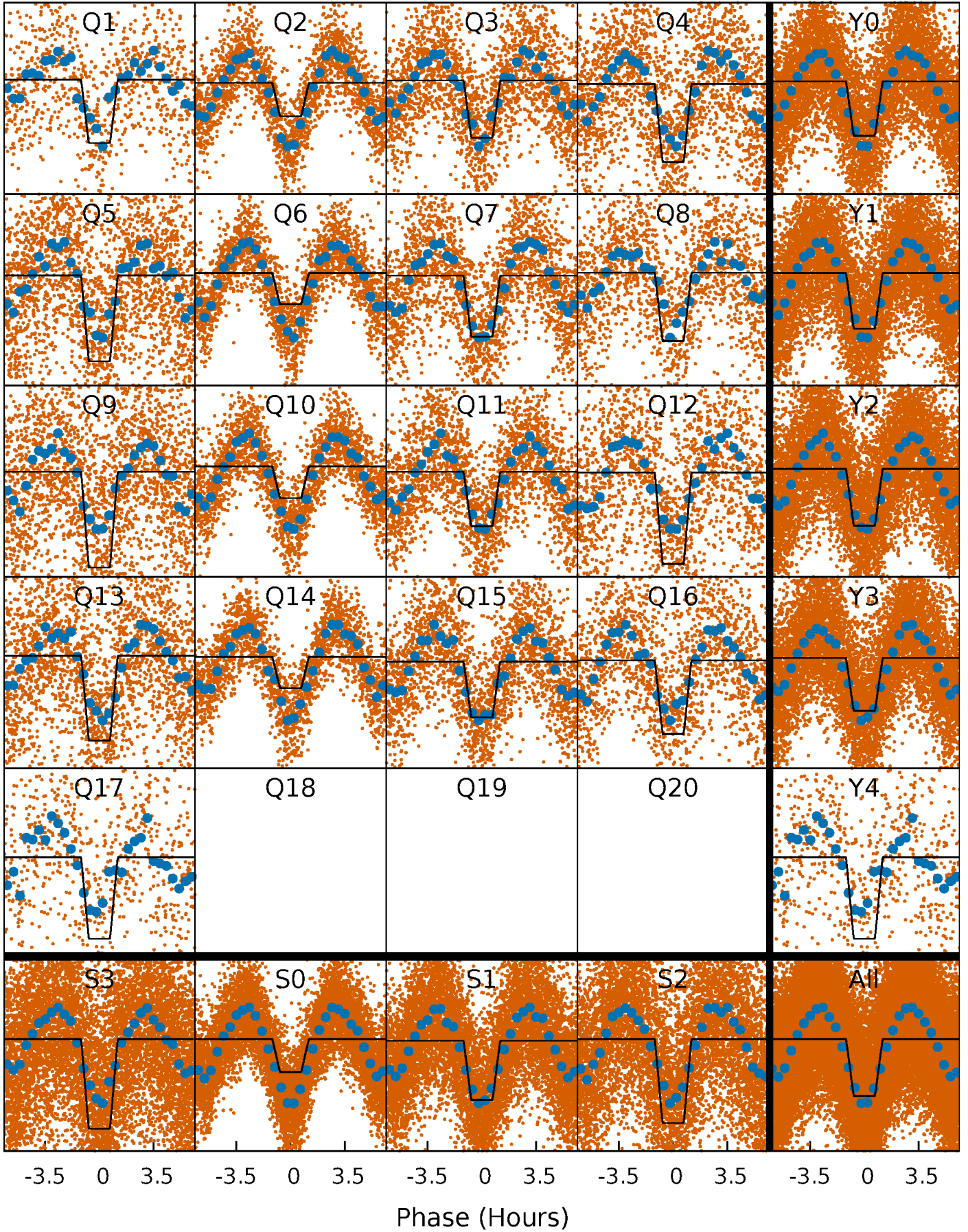
DV Quarter-Phased Transit Curves

TCE 005273473-01 P= 0.939427 Days $T_0=131.827559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

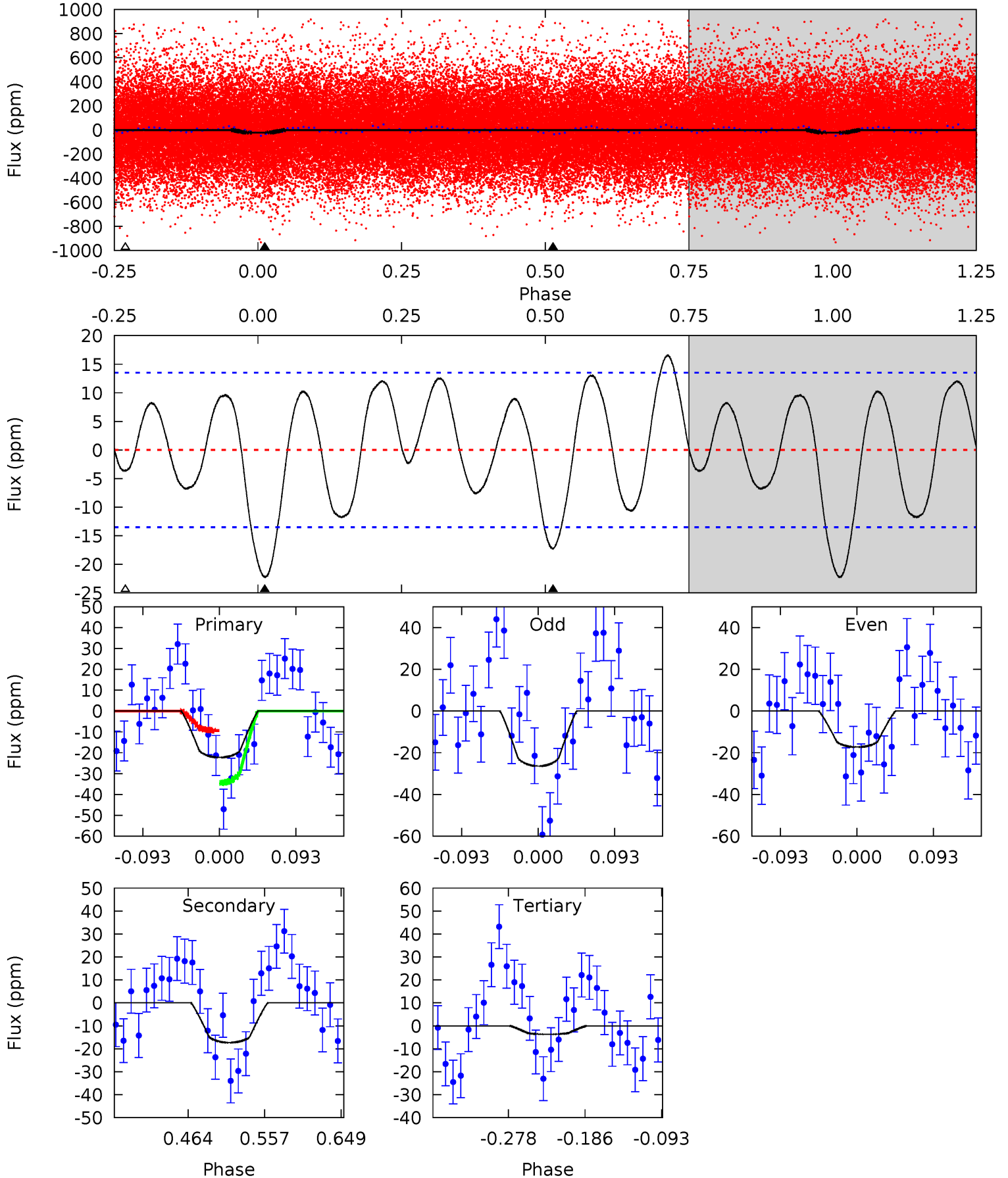
TCE 005273473-01 P= 0.939456 Days $T_0=131.817911$ (BKJD)



DV Model-Shift Uniqueness Test

005273473-01, P = 0.939427 Days, E = 130.888132 Days

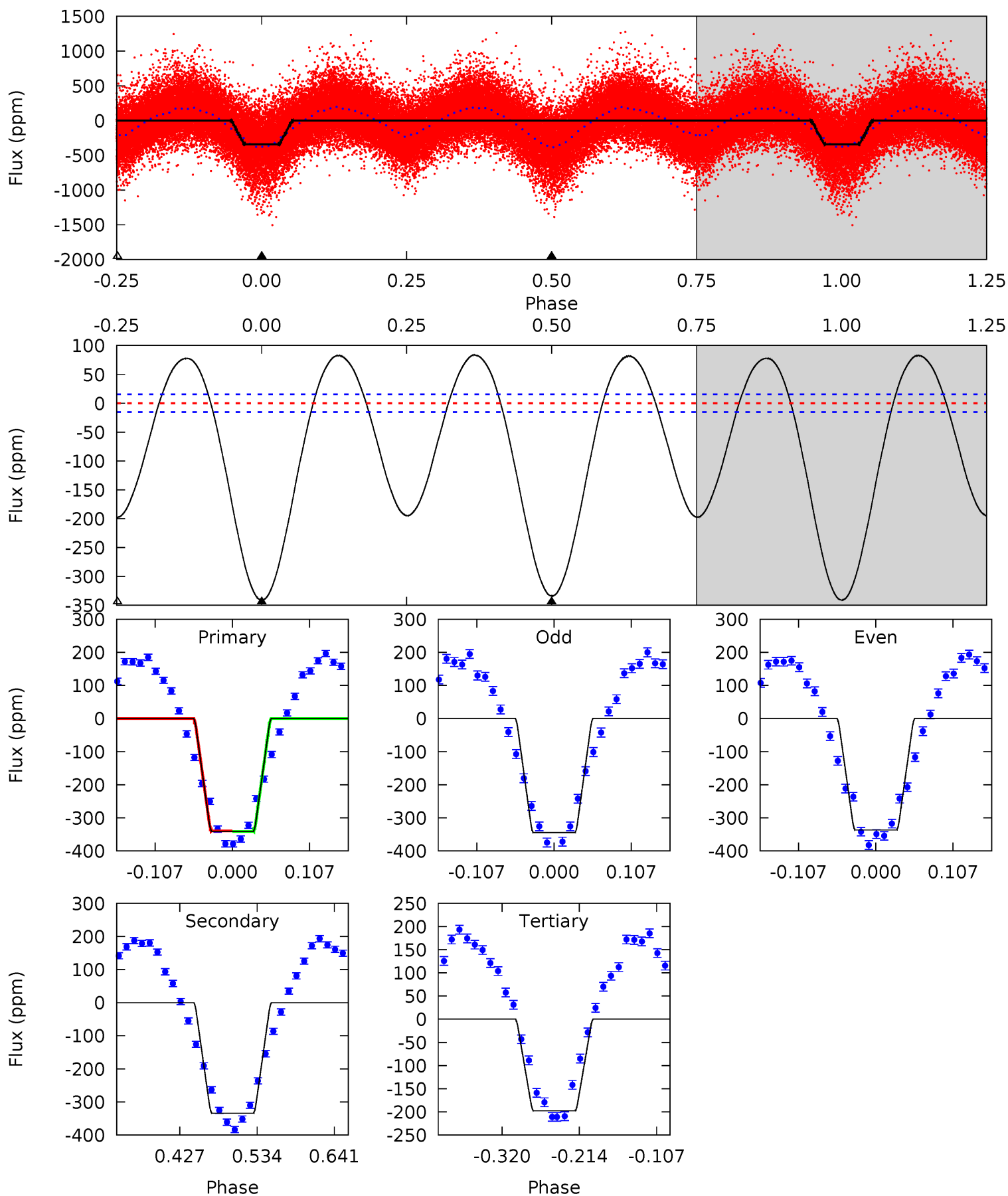
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.55	5.87	1.25	0	4.58	1.68	2.55	6.30	7.55	4.62	5.87	1.55	0.71	0.43	4.26



Alt Model-Shift Uniqueness Test

005273473-01, P = 0.939456 Days, E = 130.878455 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
101.5	99.5	58.9	0	4.55	1.61	30.0	42.7	101.5	40.6	99.5	1.22	1.09	0.20	0.26



Stellar Parameters For KIC 005273473

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5541^{+77}_{-77}	$3.889^{+0.084}_{-0.137}$	$-0.520^{+0.150}_{-0.150}$	$1.752^{+0.441}_{-0.147}$	$0.867^{+0.136}_{-0.034}$	$0.227^{+0.076}_{-0.095}$
	+1%/-1%	+2%/-4%	+29%/-29%	+25%/-8%	+16%/-4%	+33%/-42%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005273473-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-17 ± 3	$1.20^{+0.73}_{-0.62}$	3382^{+192}_{-112}	4552^{+2045}_{-913}	$2.103^{+7.337}_{-1.263}$
Alt.	-334 ± 3	$3.56^{+0.80}_{-0.73}$	3386^{+182}_{-114}	5465^{+686}_{-470}	$4.736^{+2.900}_{-1.547}$

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

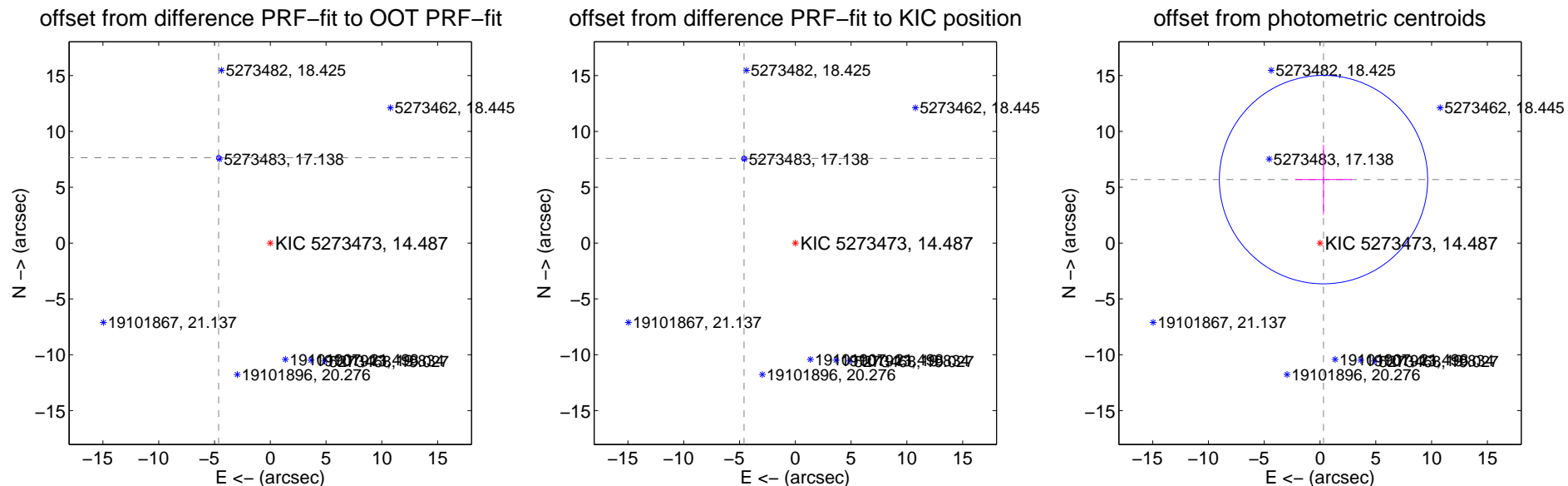
DV Centroid Data

Supplemental centroid analysis for 005273473-01. Kepler magnitude: 14.49. Transit SNR 6.84

There are 17 quarters with good PRF difference image offsets

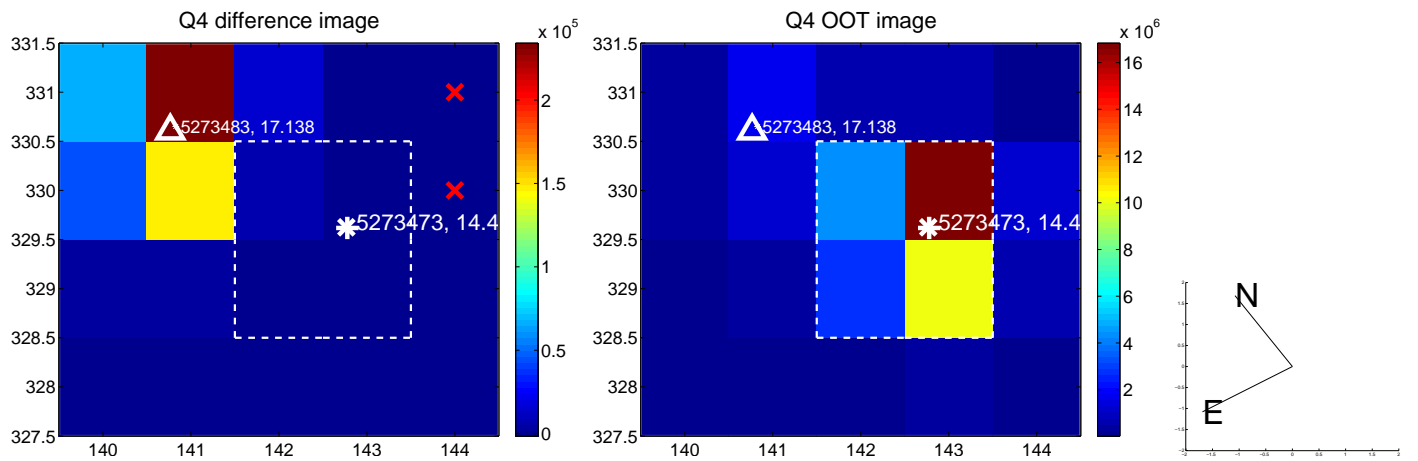
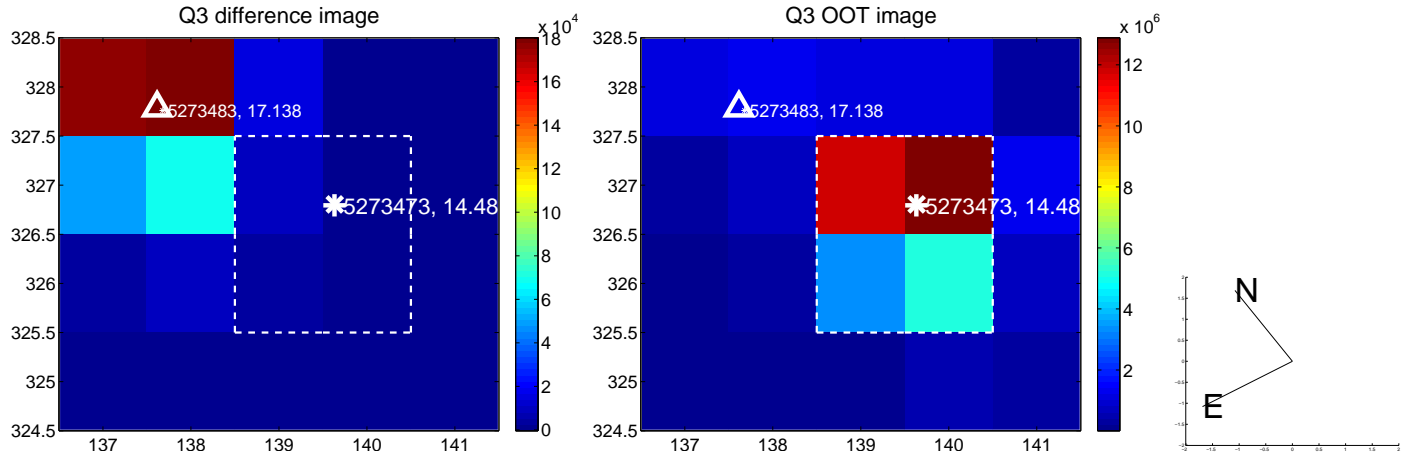
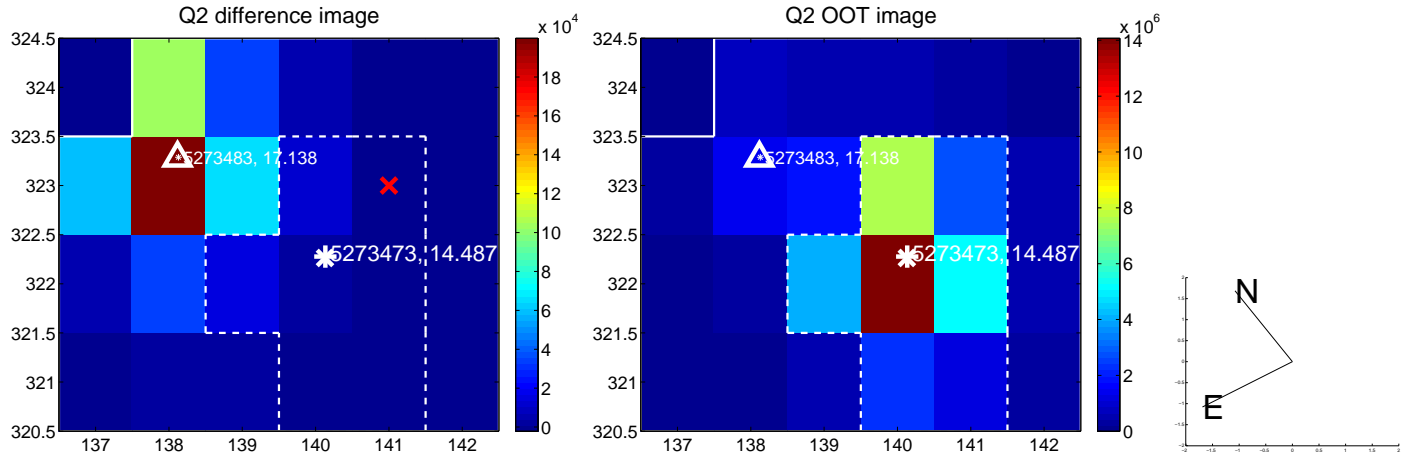
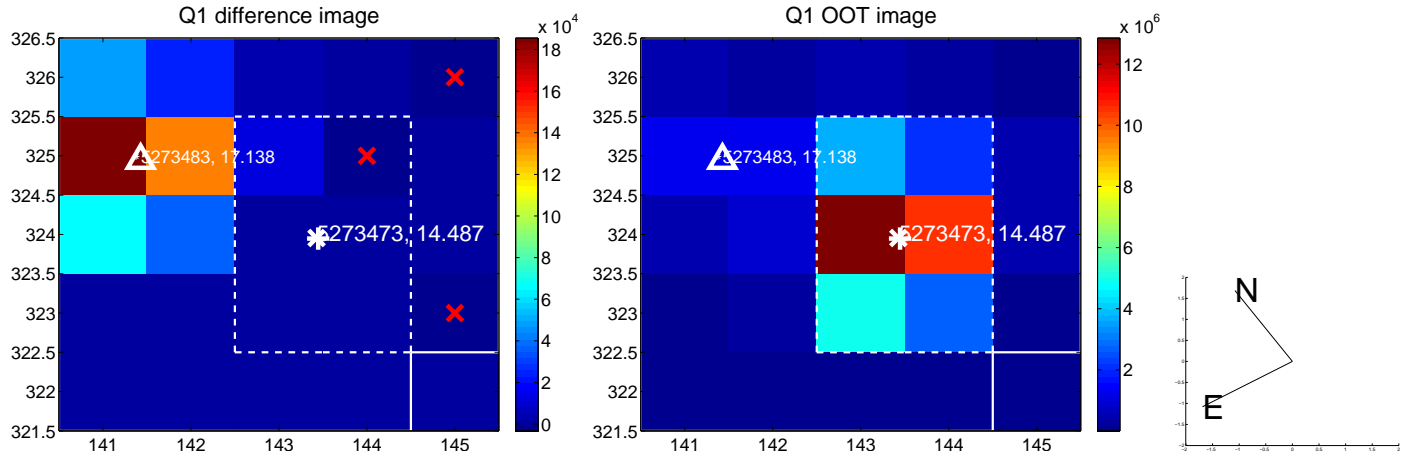
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.936 \pm 0.067	132.82	4.627 \pm 0.067	7.645 \pm 0.067
PRF-fit source offset from KIC position	8.866 \pm 0.069	129.39	4.598 \pm 0.068	7.580 \pm 0.069
photometric centroid source offset	5.69 \pm 3.11	1.83	-0.31 \pm 2.52	5.69 \pm 3.11

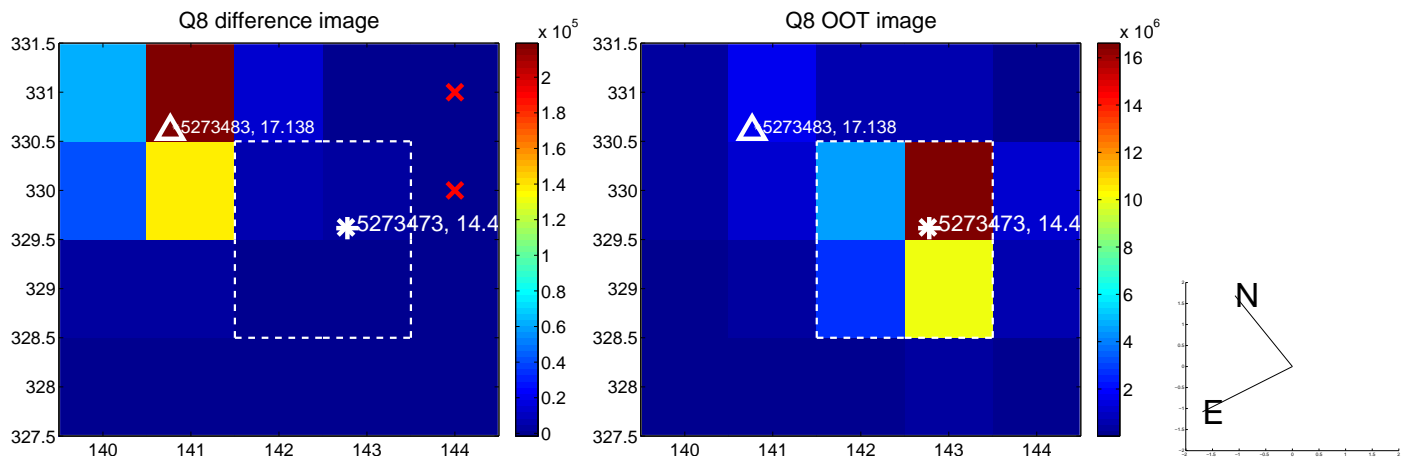
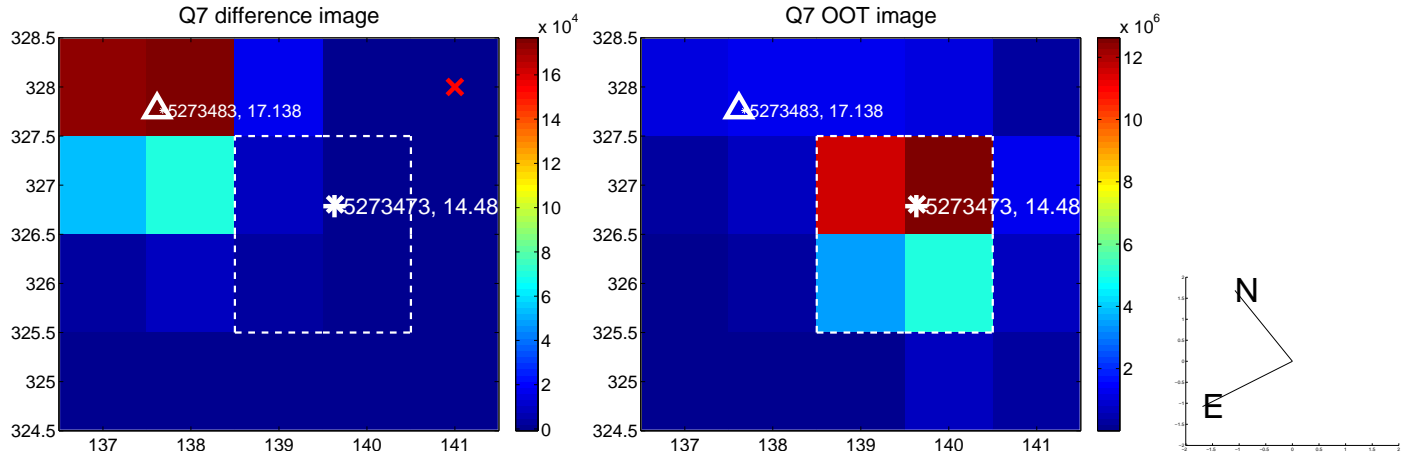
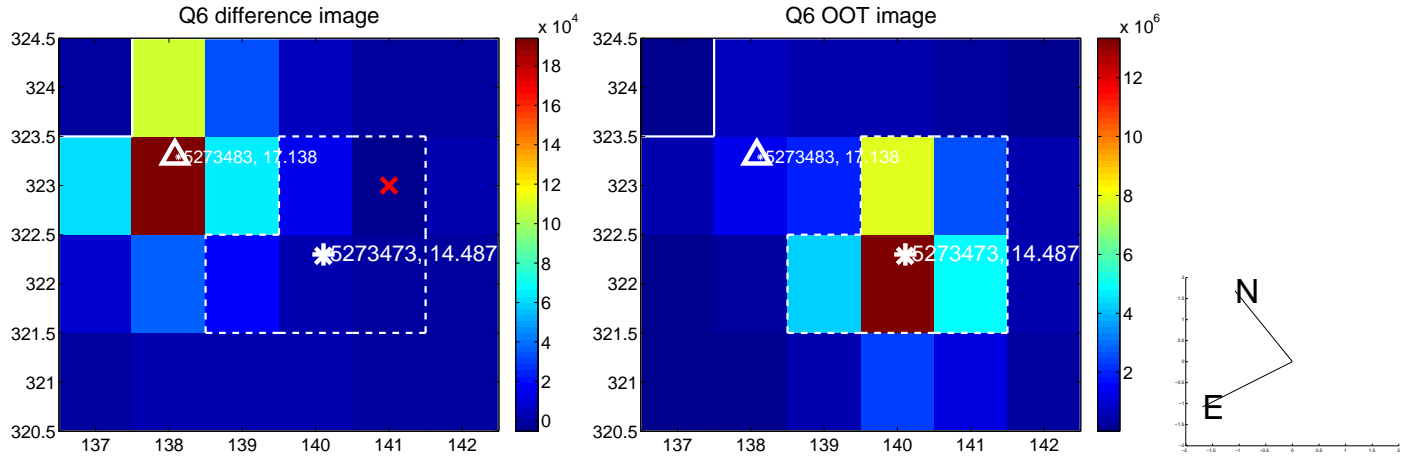
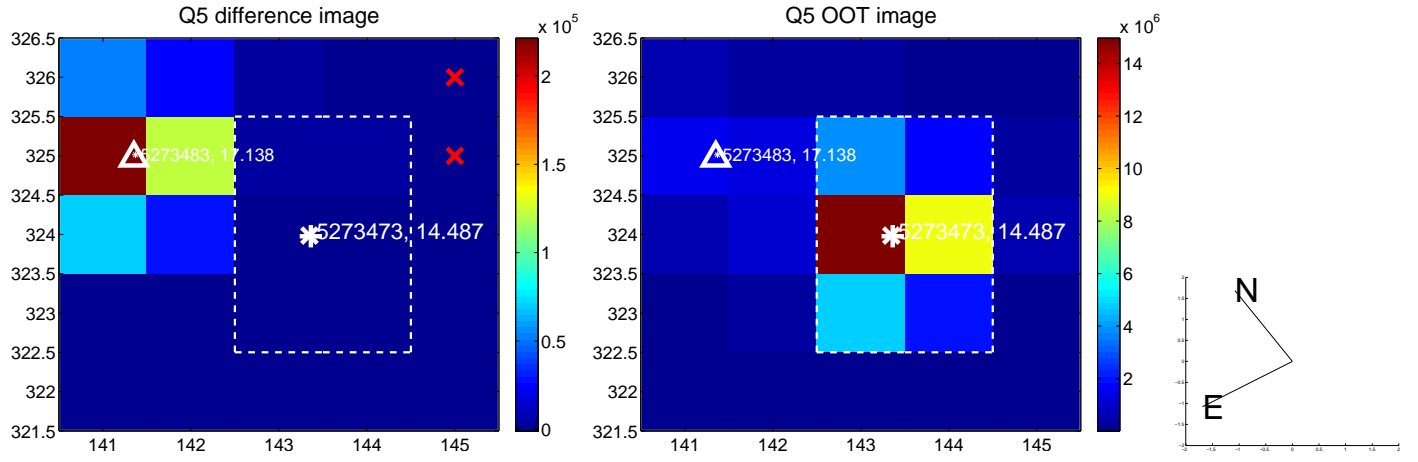


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

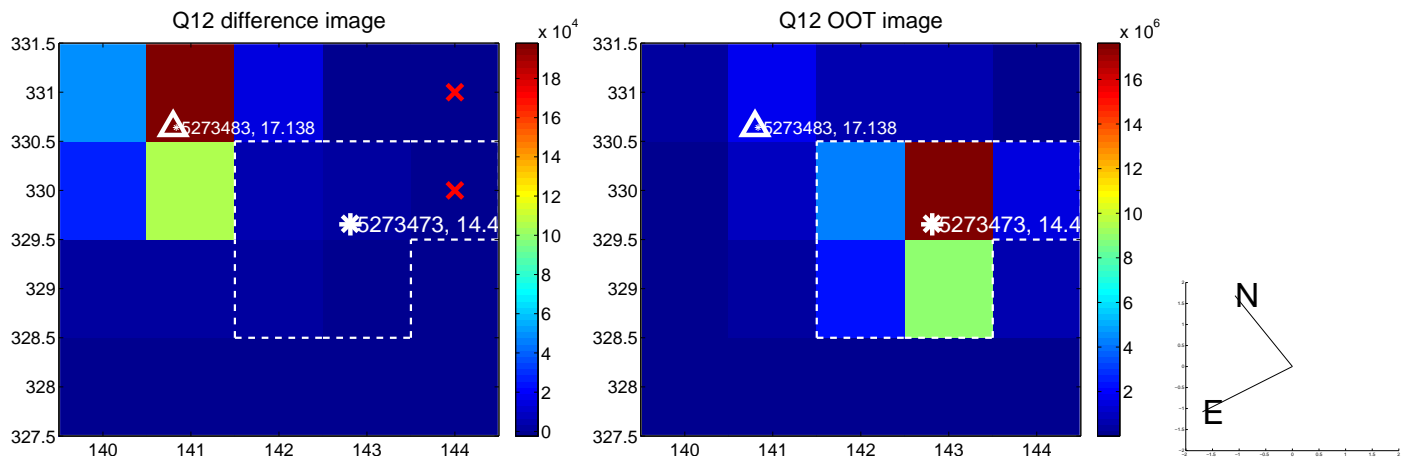
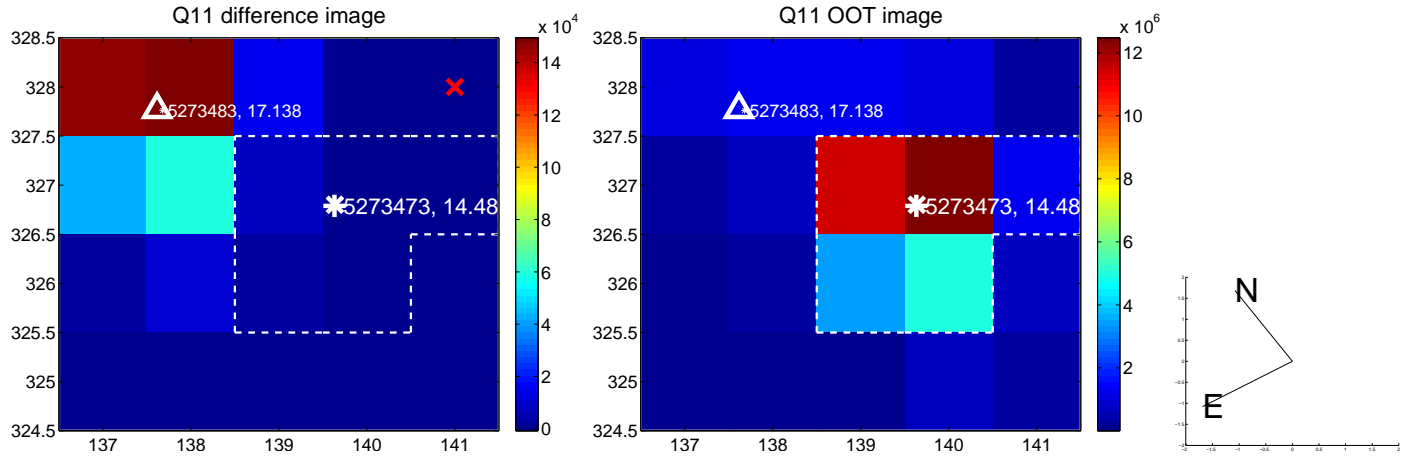
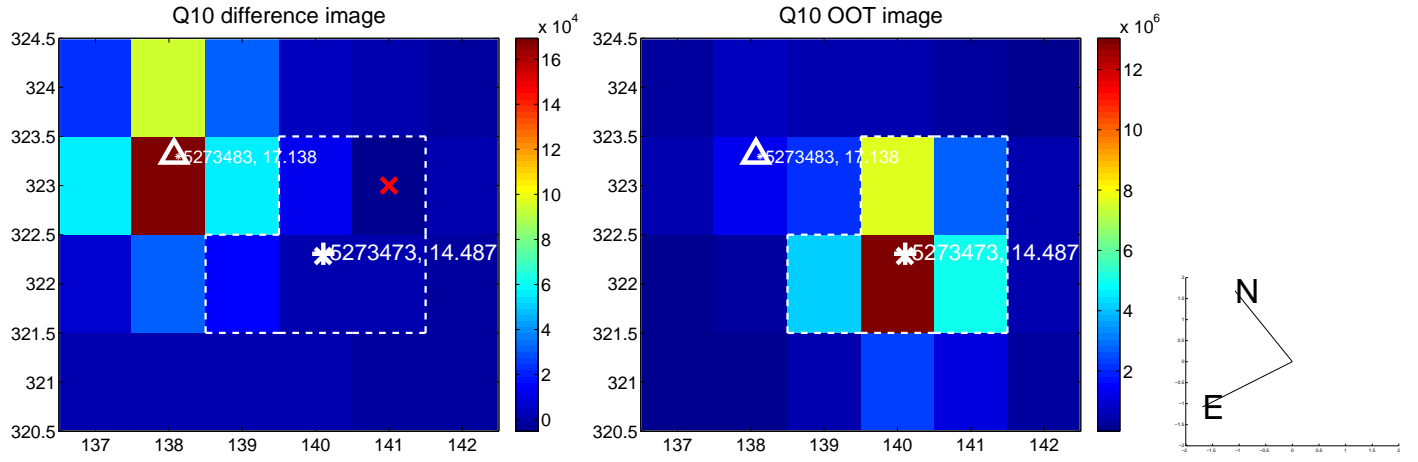
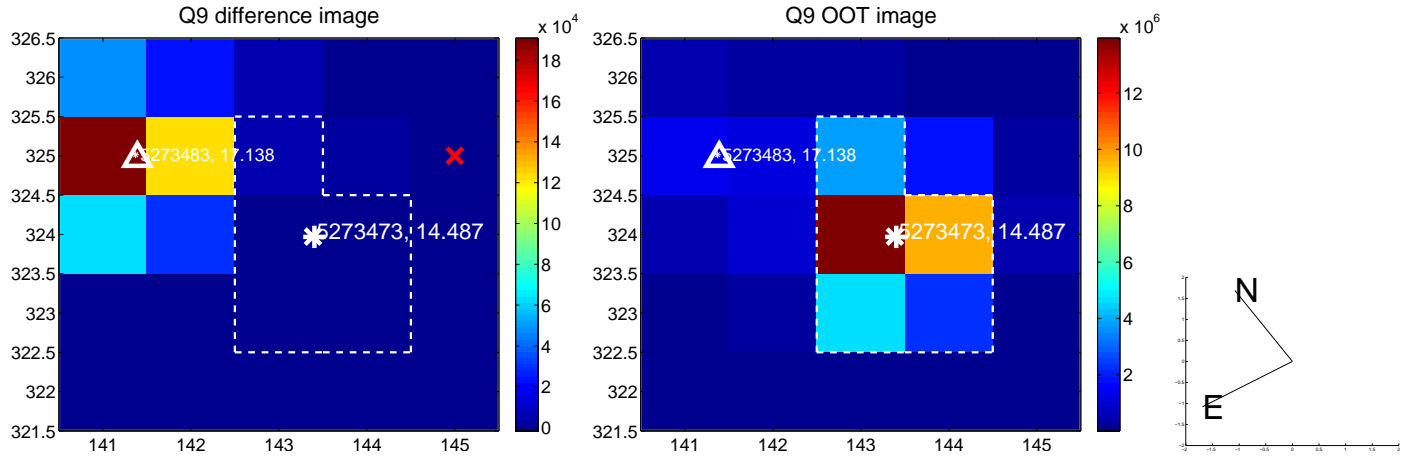
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



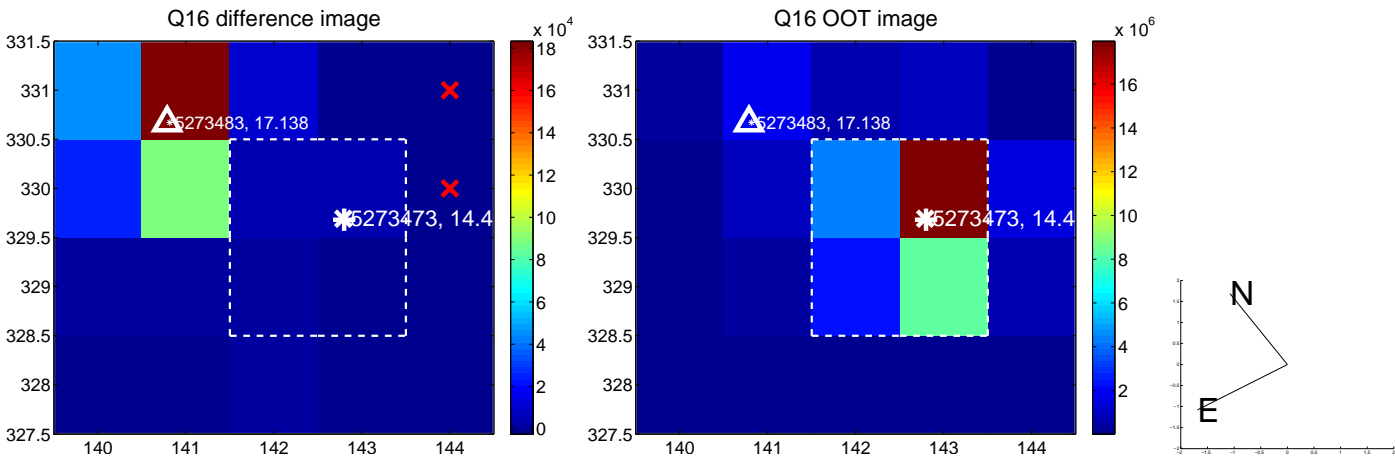
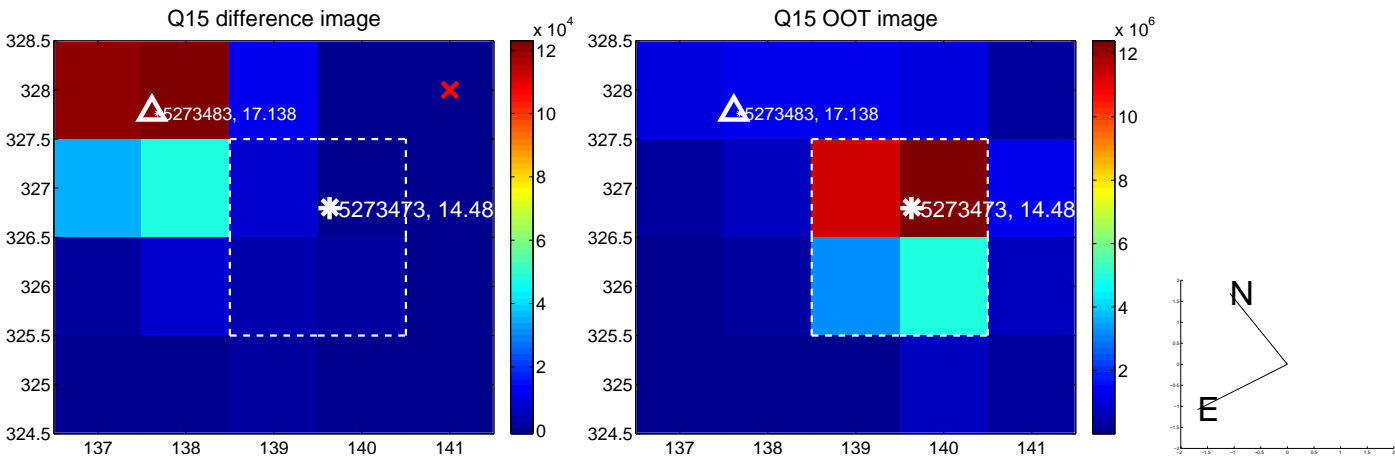
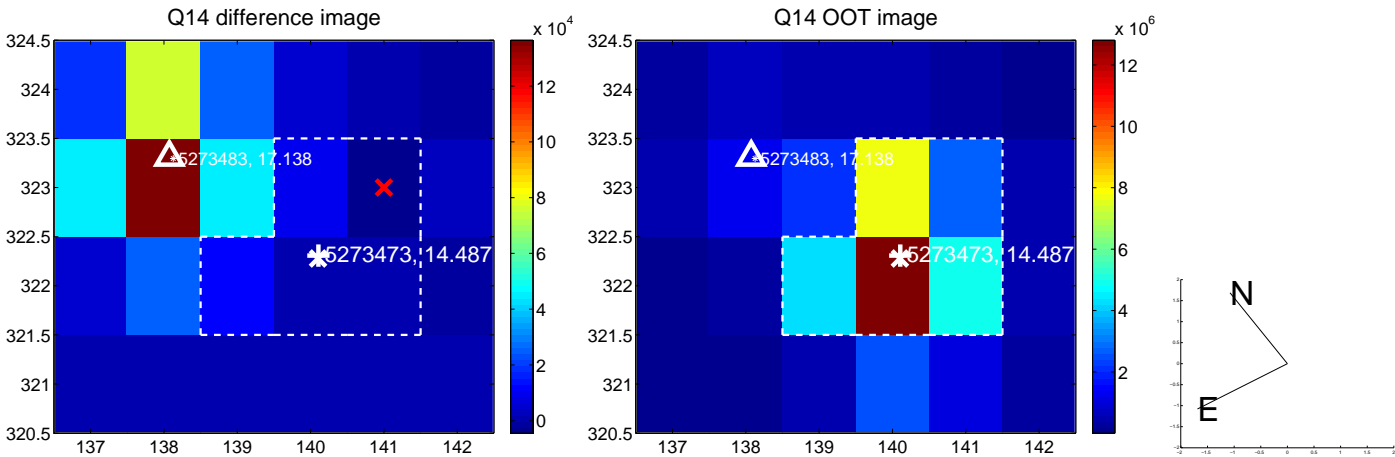
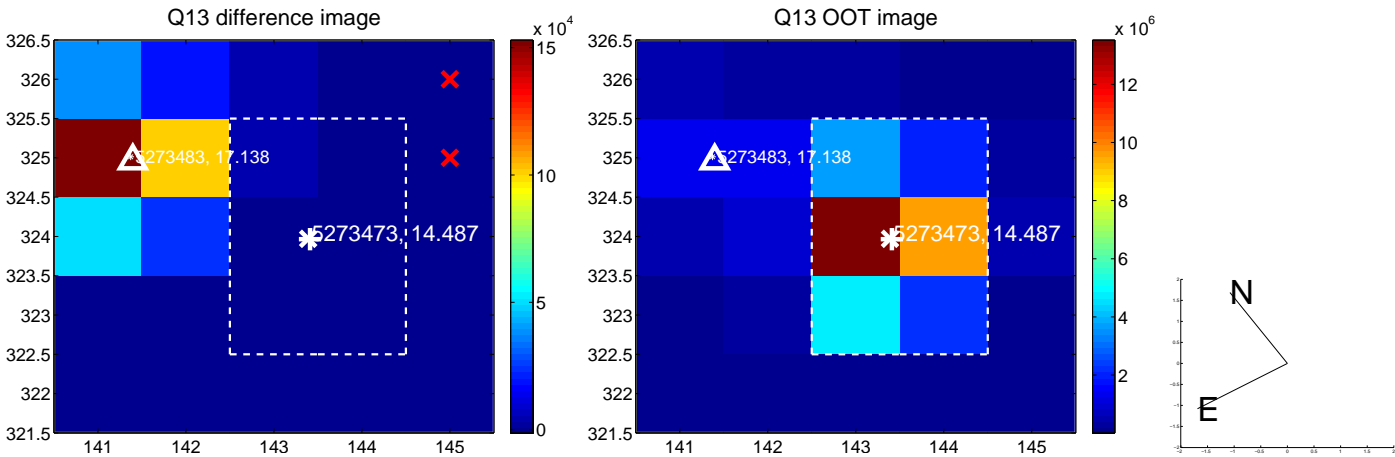
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



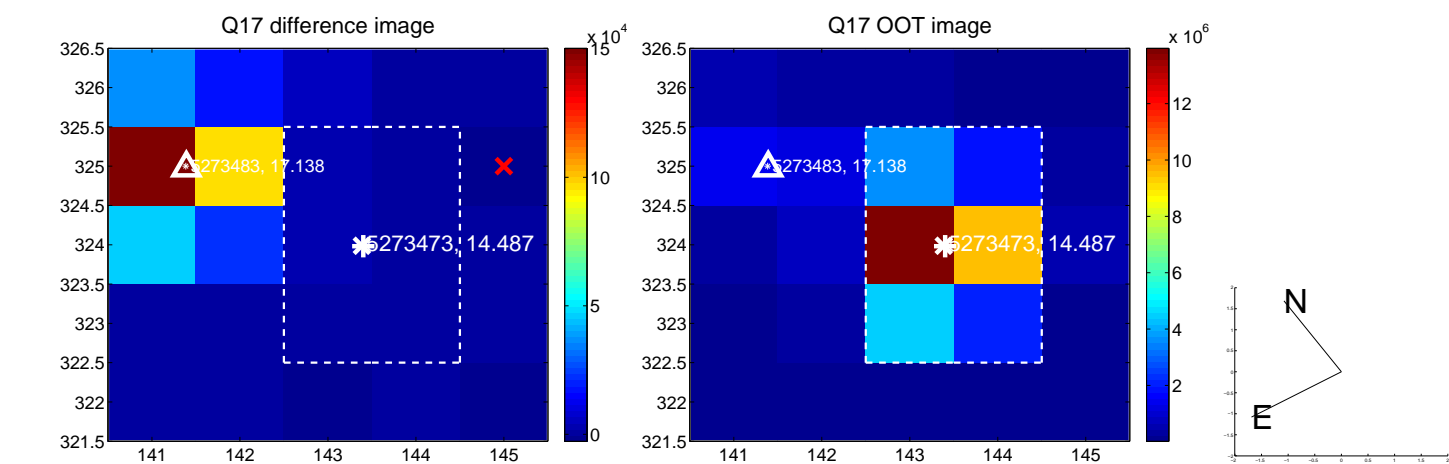
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



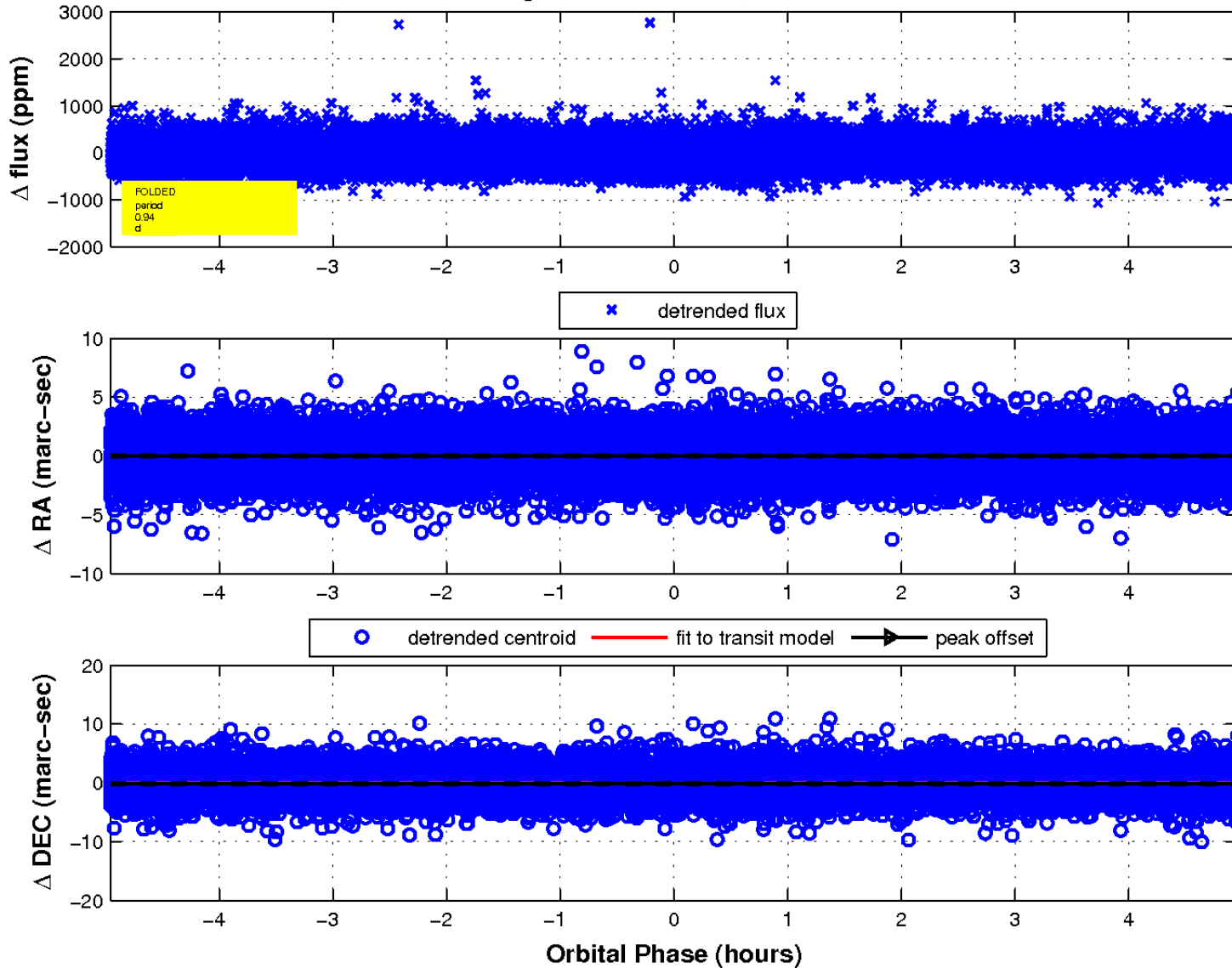
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

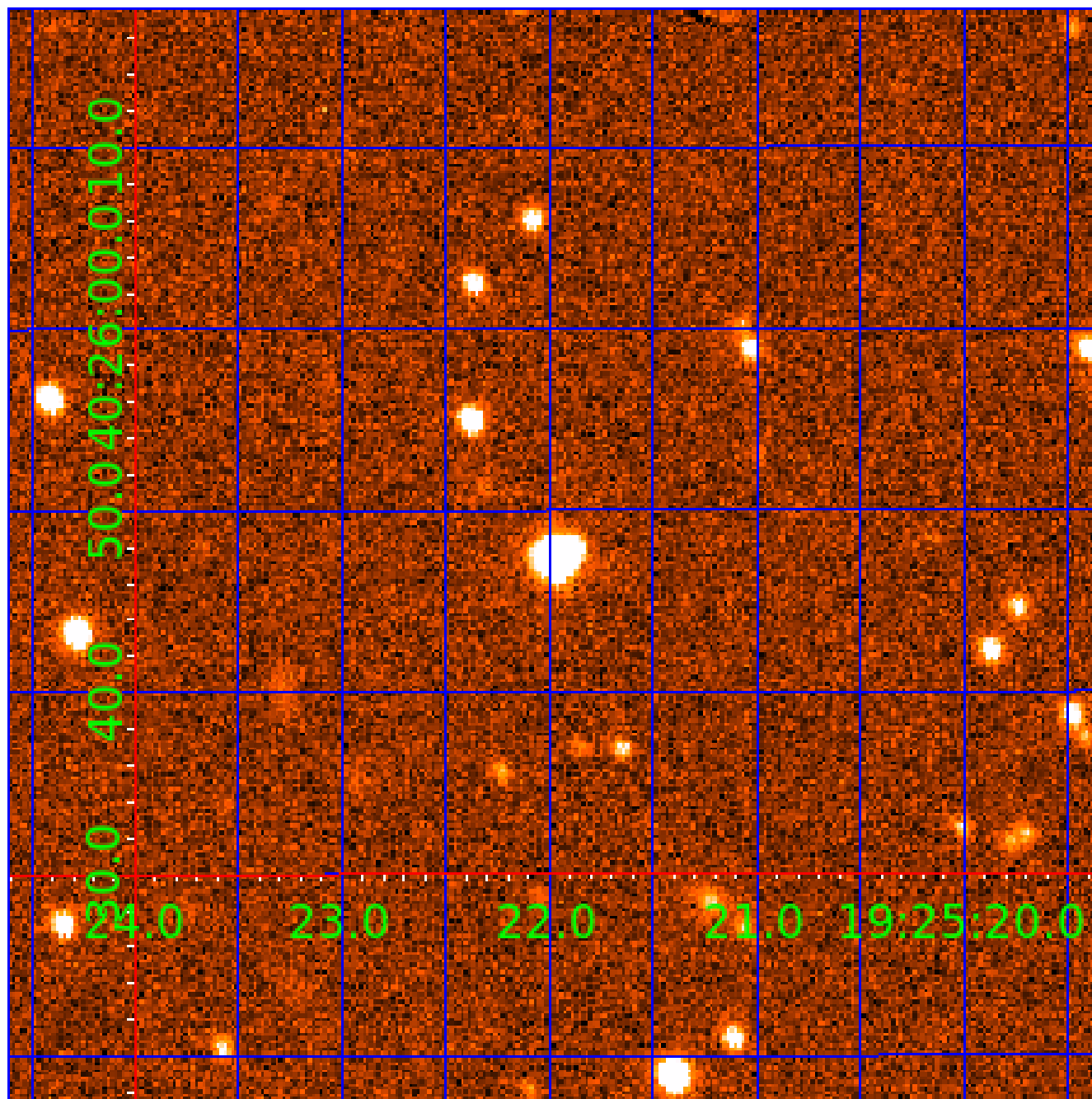


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005273473

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})
005273473-01	OBS	No	0.939427	131.827559	27.5	1.653	8.6	6.8	1.75	5541	1.09	8086.96
005273473-02	OBS	No	0.939472	132.281228	34.0	1.403	8.3	7.9	1.75	5541	1.22	8086.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005273473-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET
005273473-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

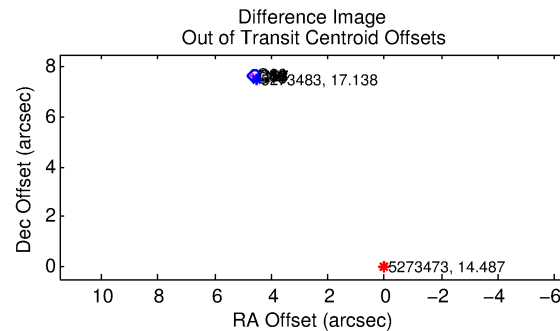
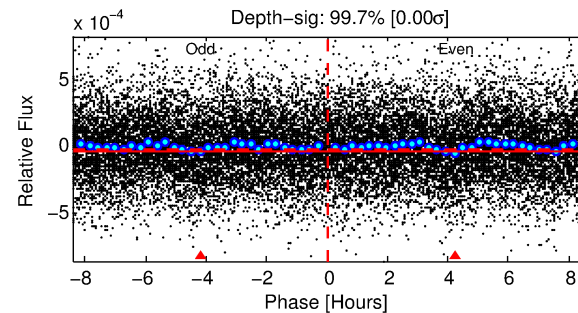
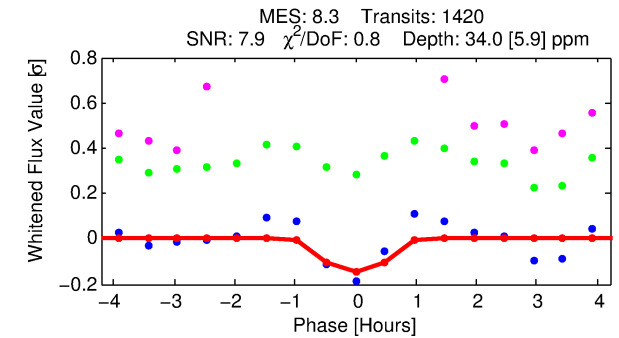
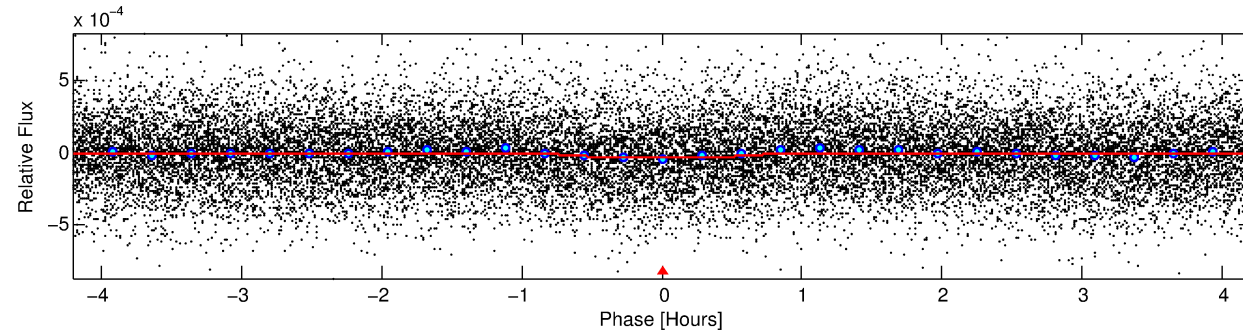
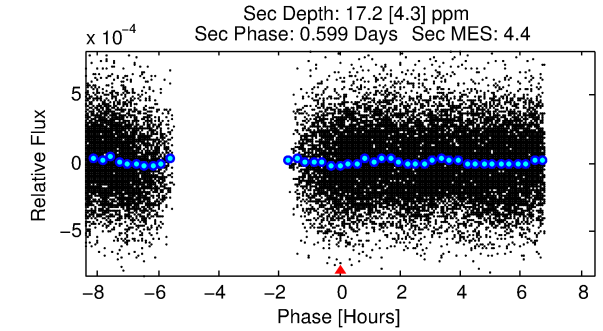
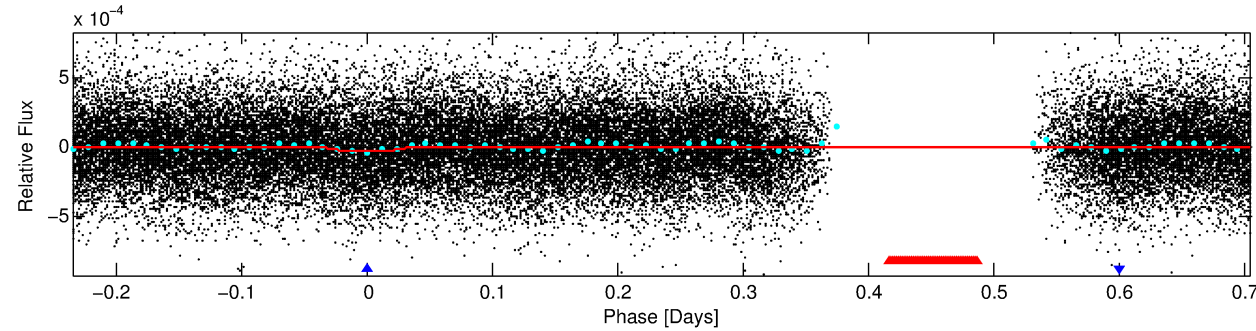
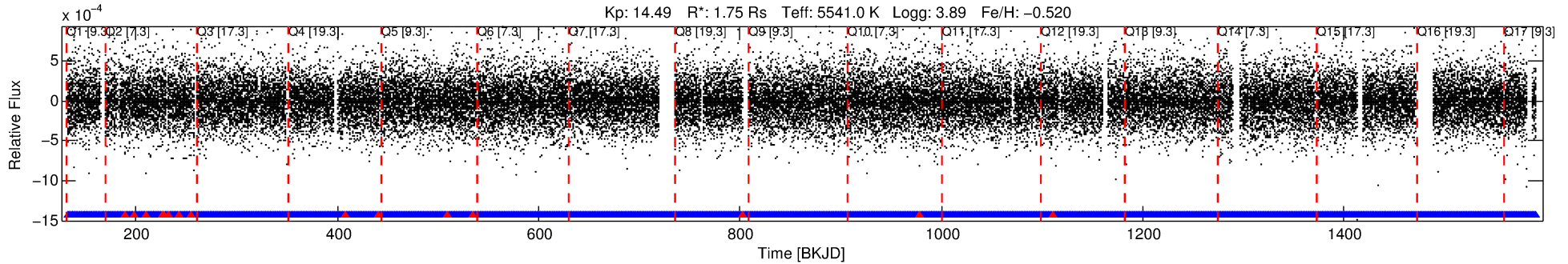
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005273473-02

No Significant Match Found

DV One-Page Summary

KIC: 5273473 Candidate: 2 of 2 Period: 0.939 d



DV Fit Results:

Period = 0.93947 [0.00001] d
Epoch = 132.2812 [0.0028] BKJD
Rp/R* = 0.0064 [0.0032]
a/R* = 2.48 [4.97]
b = 0.90 [0.51]
Seff = 8086.45 [2221.59]
Teq = 2418 [166] K
Rp = 1.22 [0.68] Re
a = 0.0179 [0.0035] AU
Ag = 2.05 [2.16] [0.48σ]
Teff = 4471 [1145] K [1.77σ]

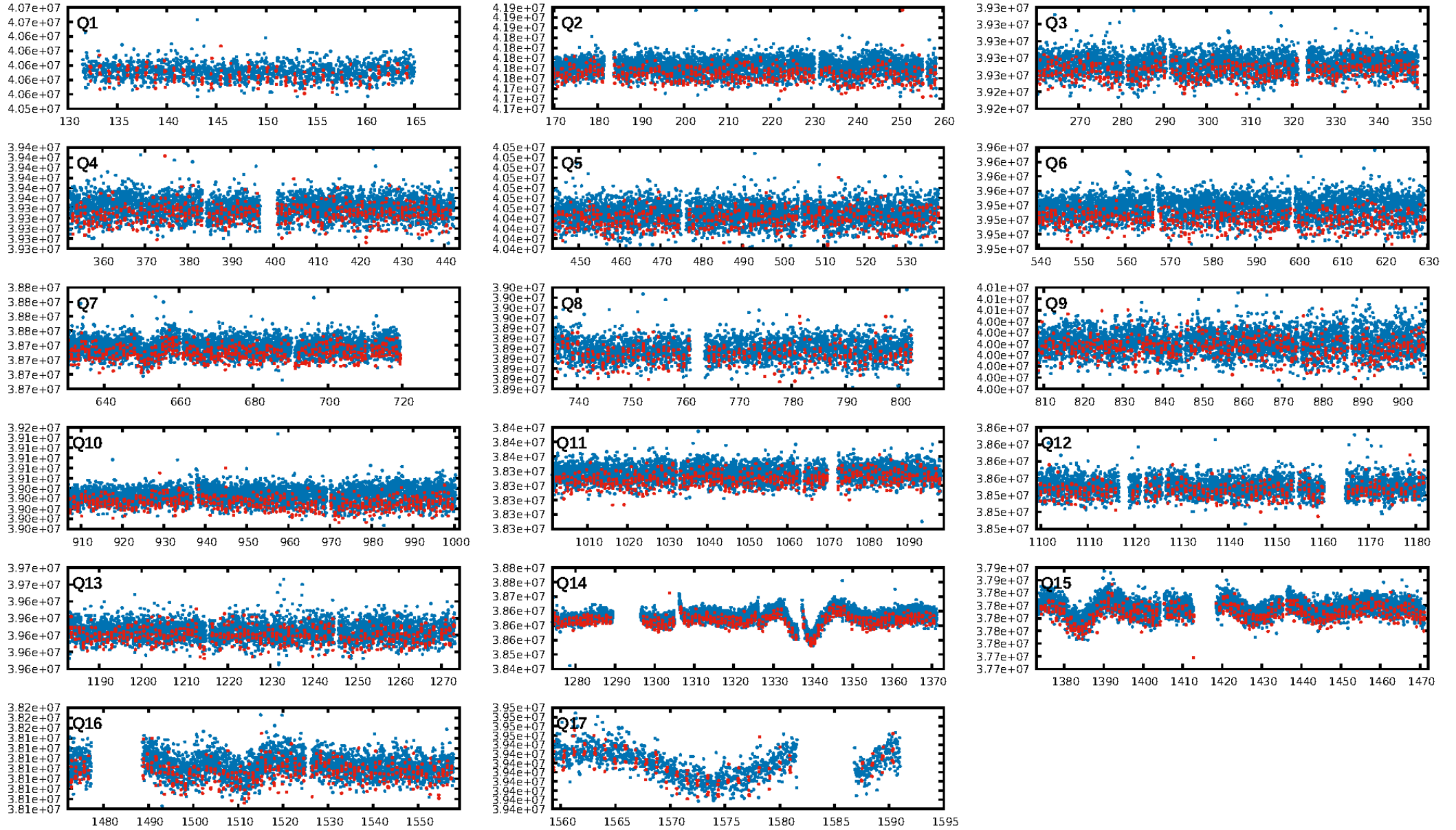
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 7.19e-19
RollingBand-fgt: 0.99 [1342/1357]
GhostDiagnostic-chr: -0.05265
Centroid-sig: 10.0%
Centroid-so: 3.090 arcsec [1.36σ]
OotOffset-rm: 8.936 arcsec [132.84σ]
KicOffset-rm: 8.865 arcsec [129.53σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

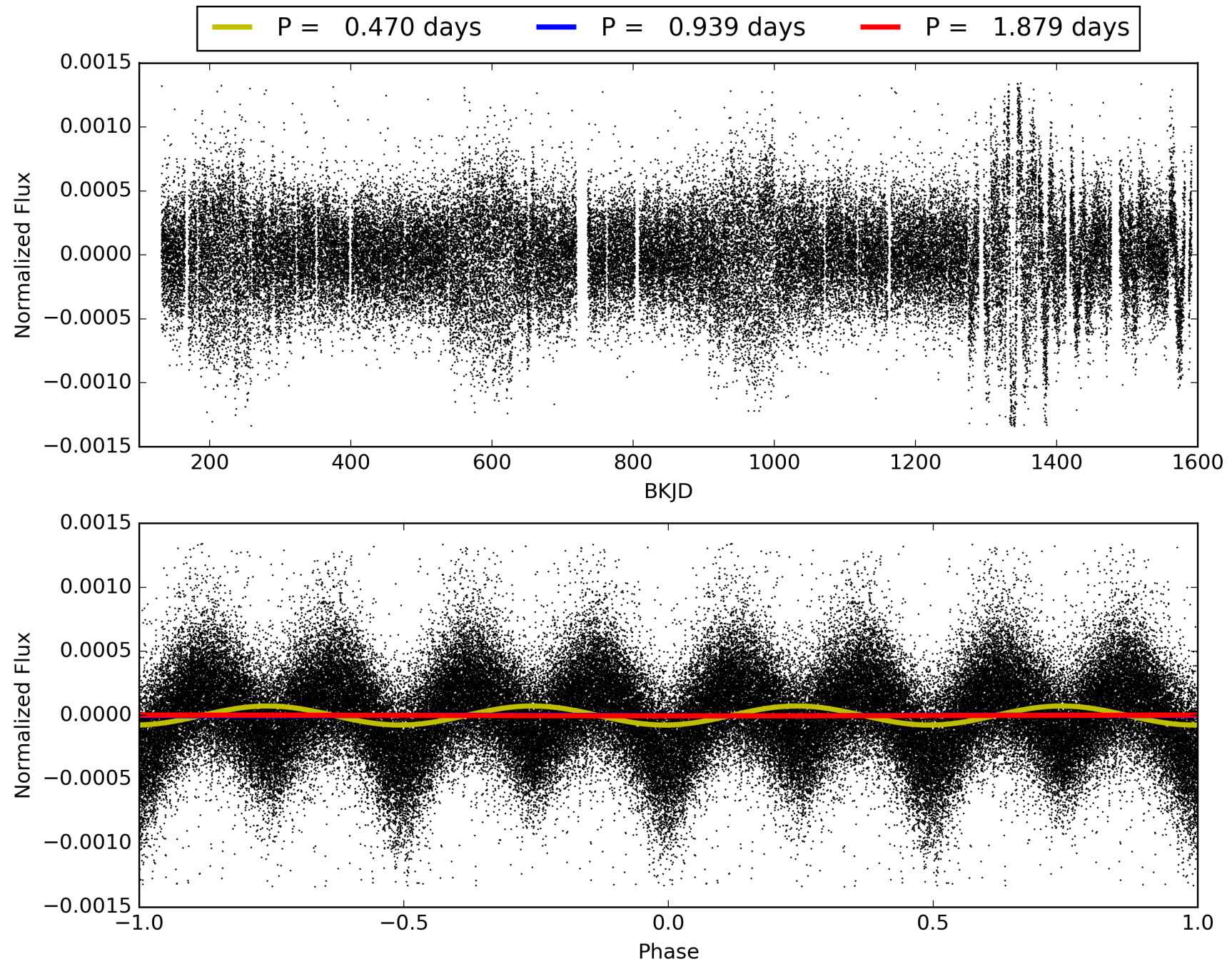
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:40:11 Z

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

TCE 005273473-02, PDC Light Curves

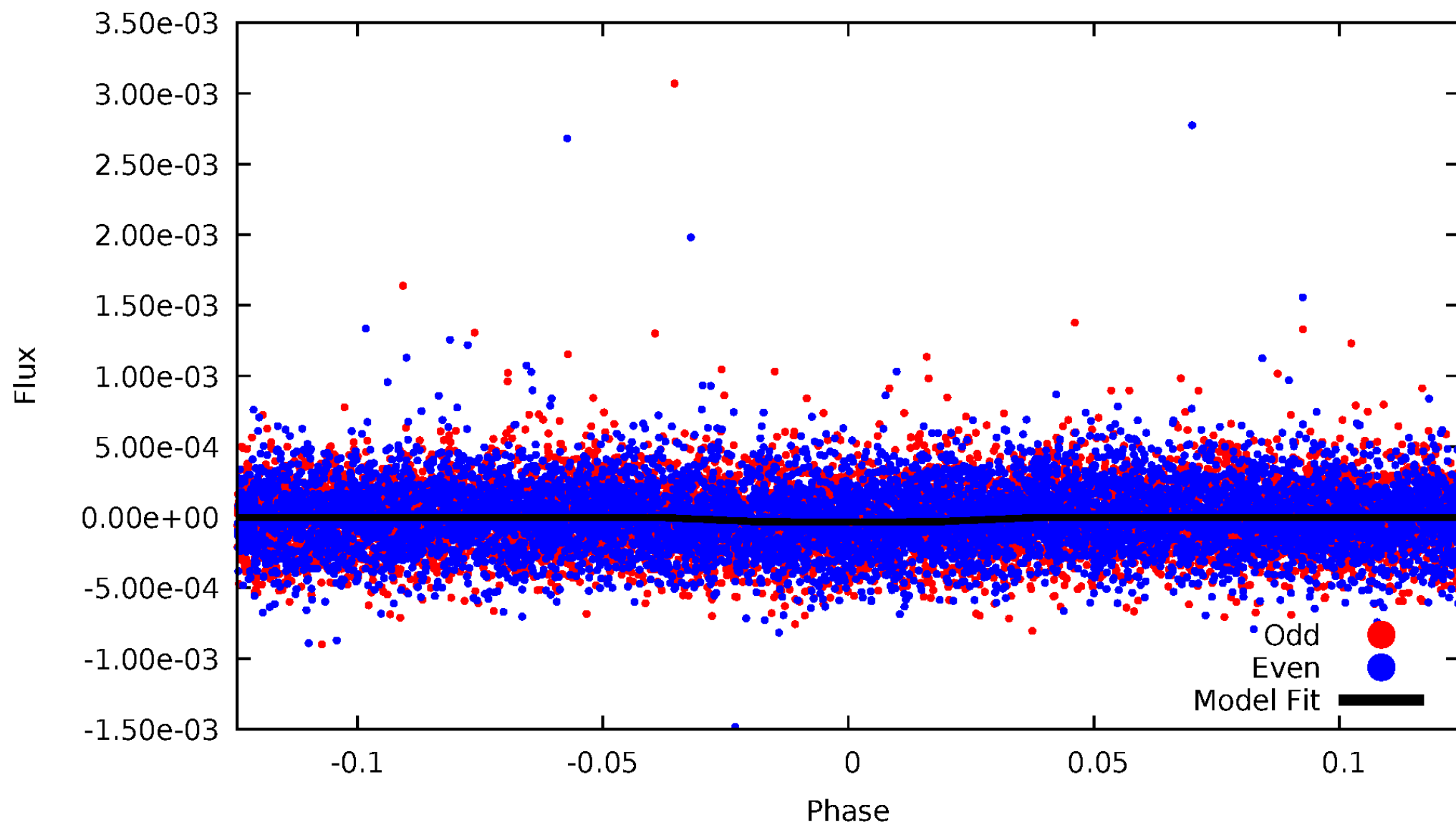


TCE 005273473-02



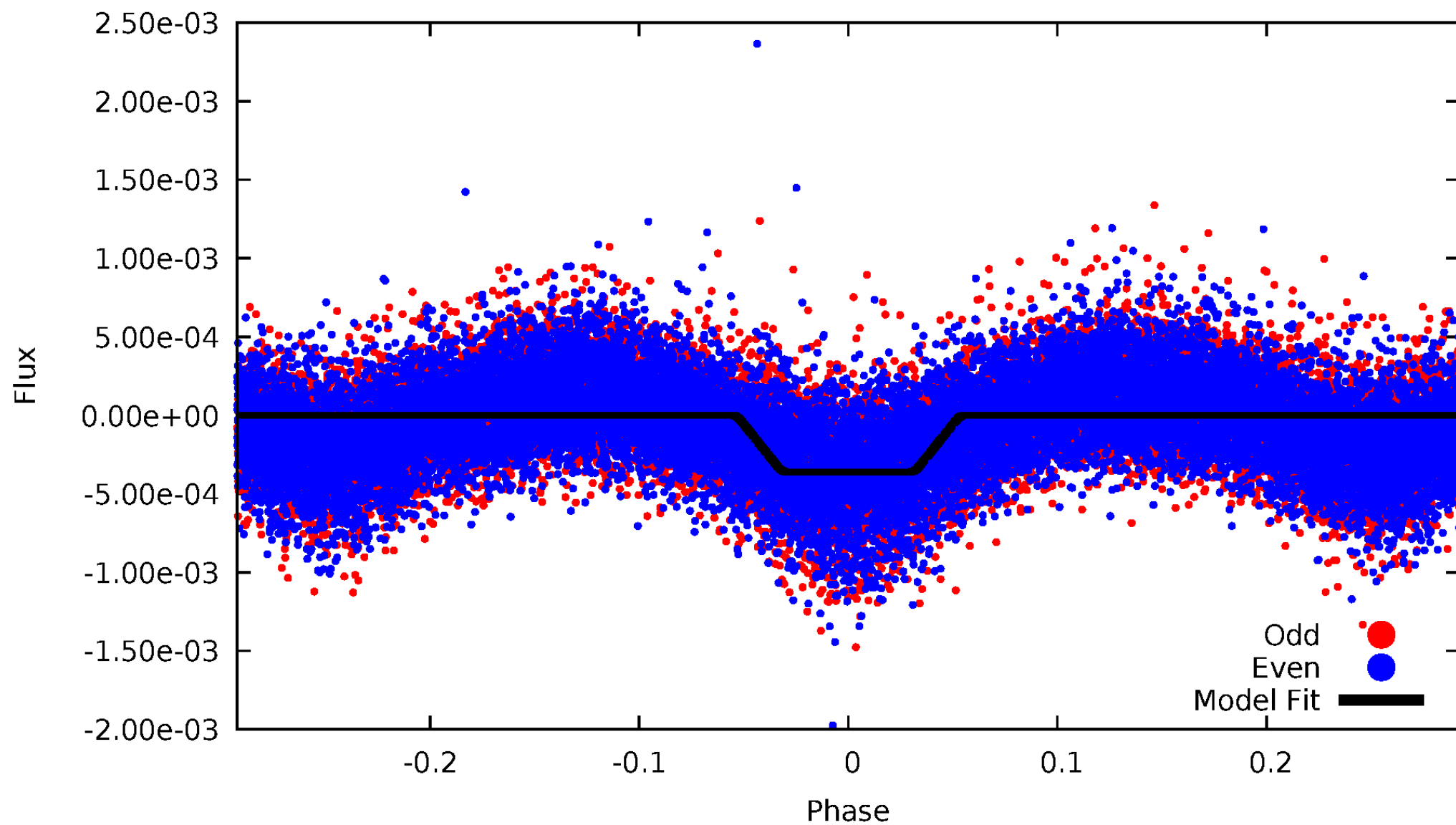
DV Odd/Even

TCE 005273473-02



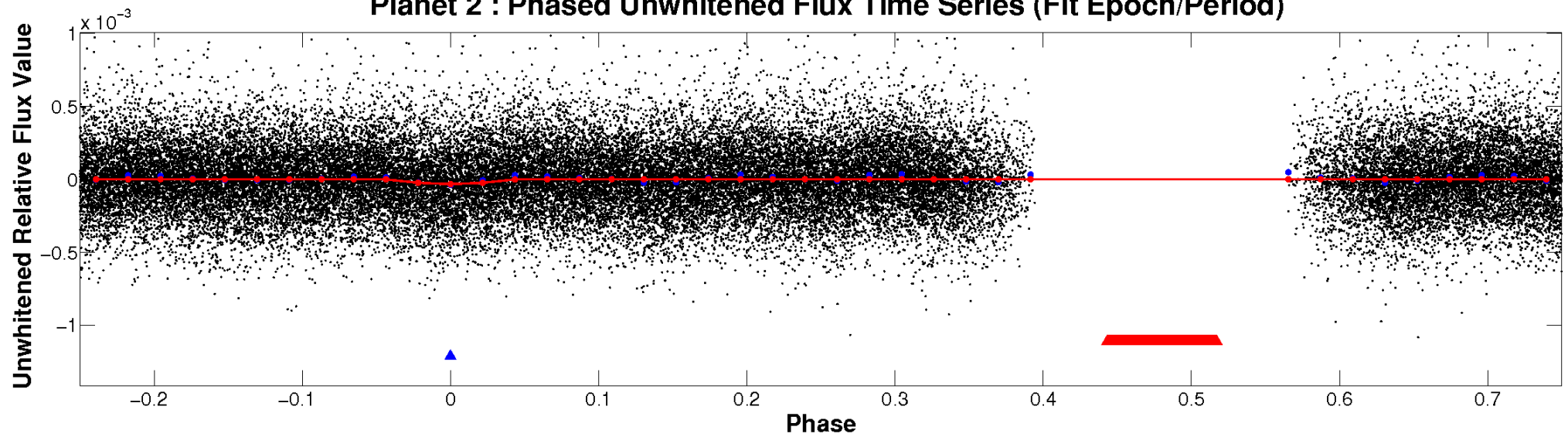
ALT Odd/Even

TCE 005273473-02

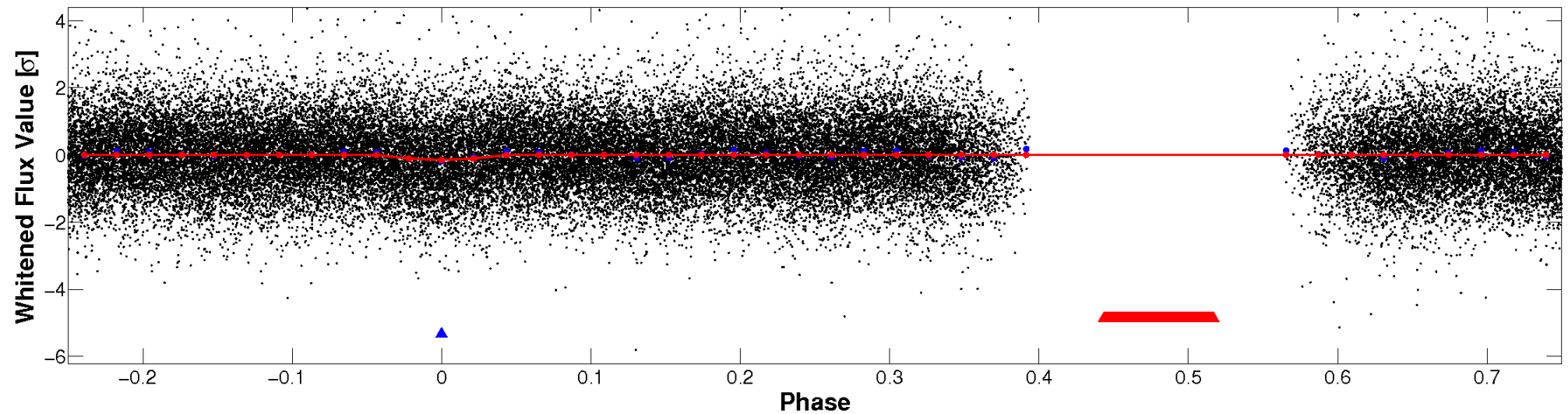


Non-Whitened Vs. Whitened Light Curve

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

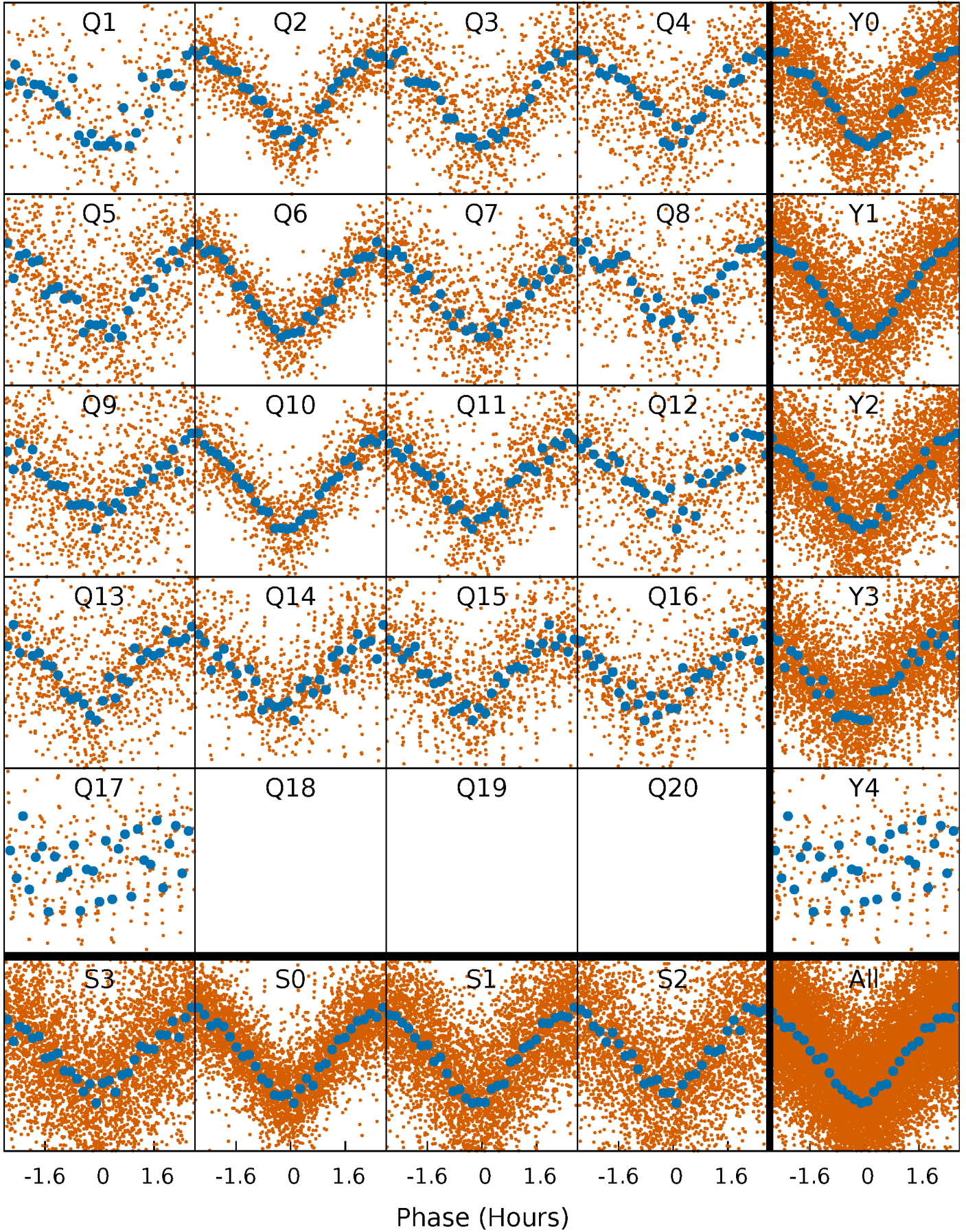


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



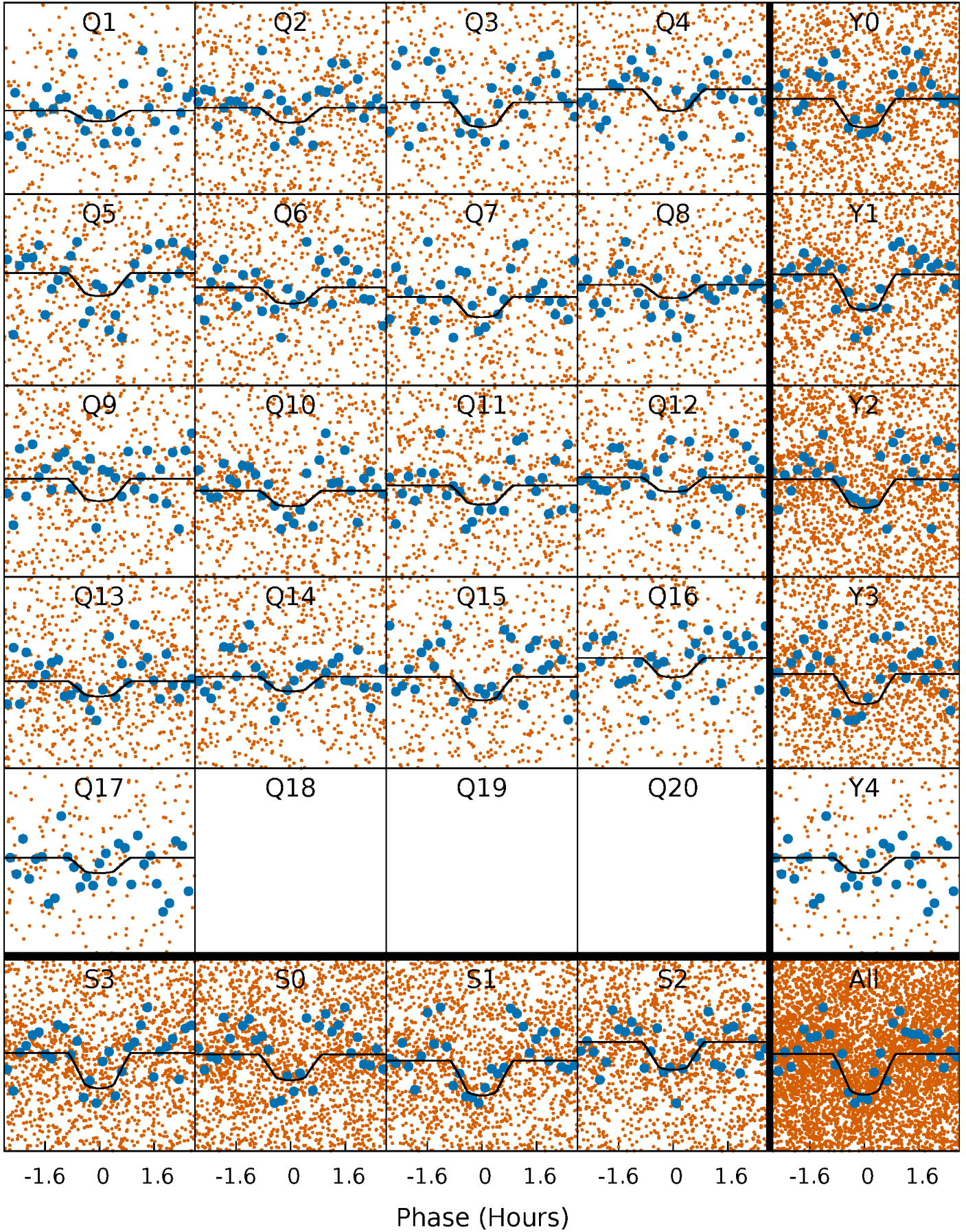
PDC Quarter-Phased Transit Curves

TCE 005273473-02 P= 0.939472 Days $T_0=132.281227$ (BKJD)



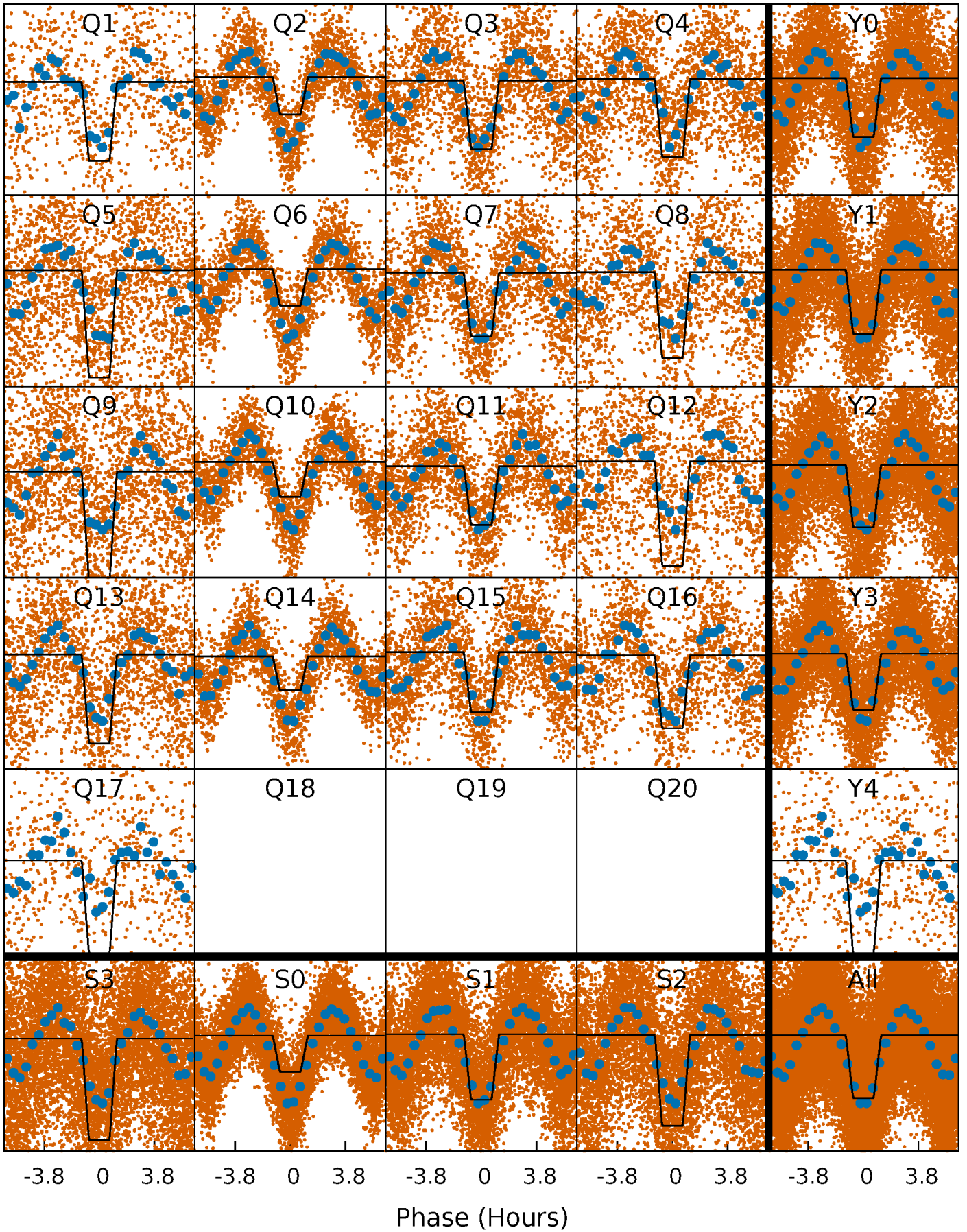
DV Quarter-Phased Transit Curves

TCE 005273473-02 P= 0.939472 Days $T_0=132.281227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

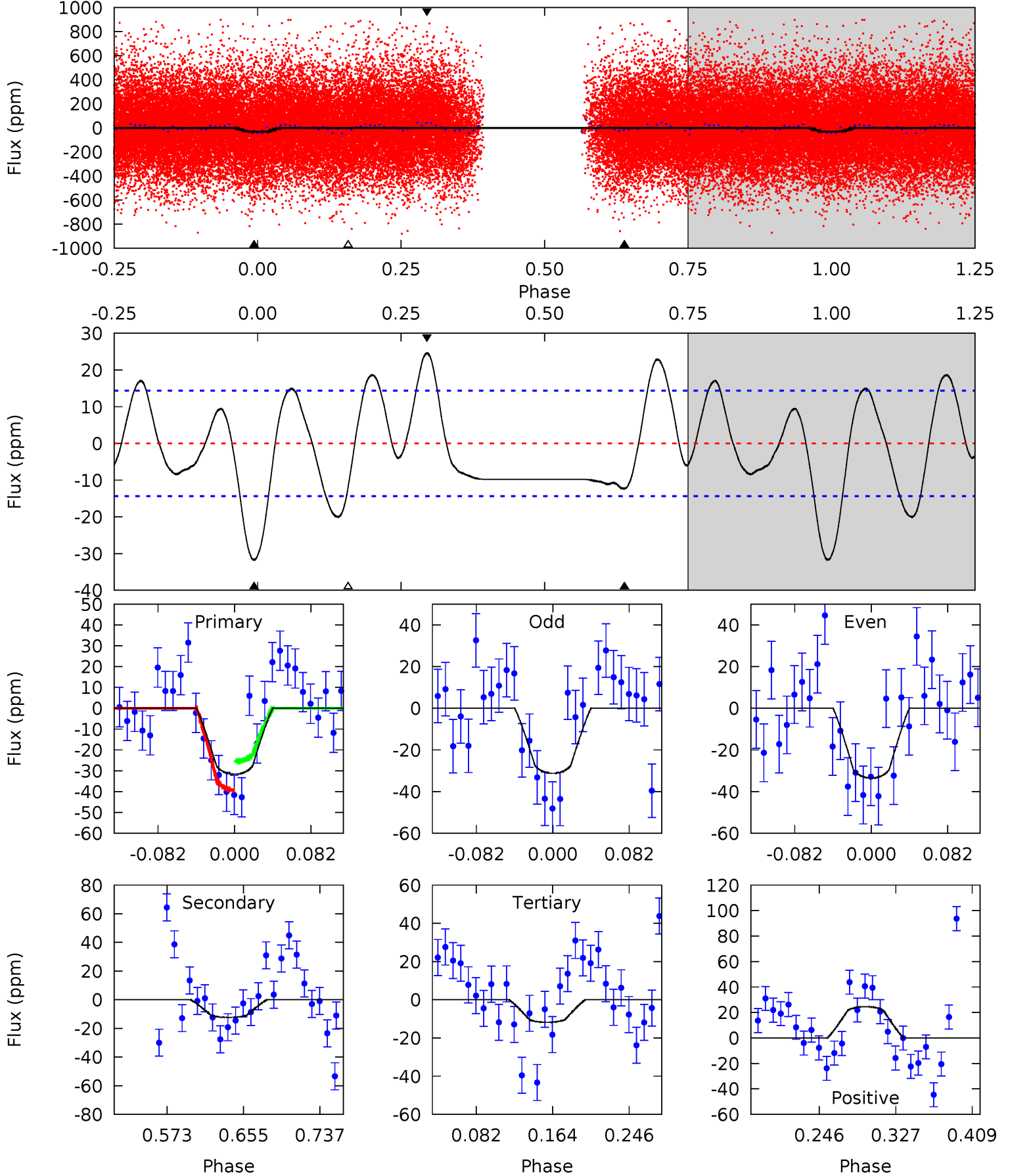
TCE 005273473-02 P= 0.939456 Days $T_0=132.288176$ (BKJD)



DV Model-Shift Uniqueness Test

005273473-02, P = 0.939472 Days, E = 131.341755 Days

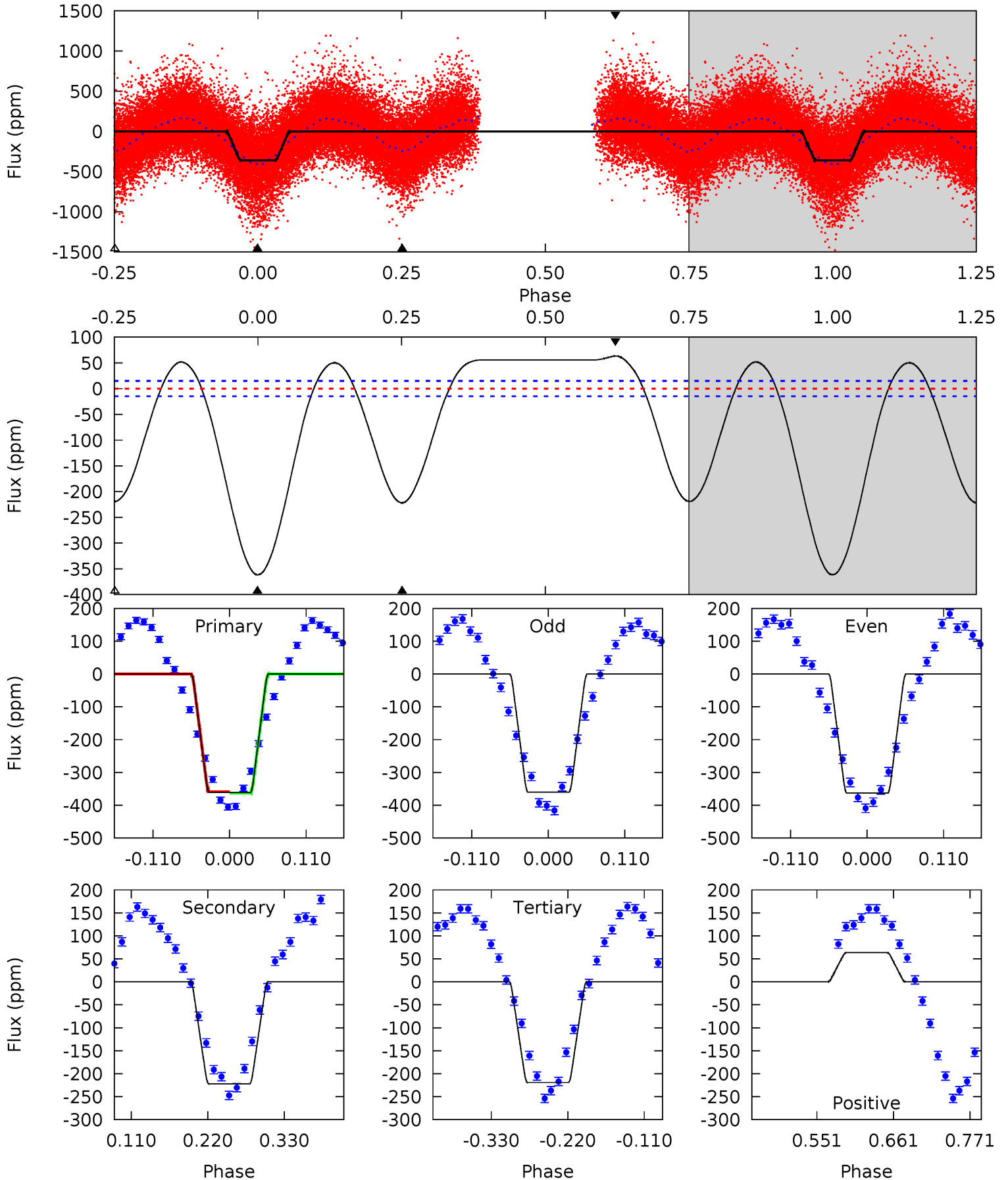
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	3.95	3.79	7.88	4.61	1.74	3.55	6.36	2.27	0.16	-3.93	0.36	0.83	0.44	2.21



Alt Model-Shift Uniqueness Test

005273473-02, P = 0.939456 Days, E = 131.348720 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
110.3	67.7	66.9	19.3	4.54	1.60	30.6	43.4	90.9	0.83	48.3	0.36	1.10	0.15	0.64



Stellar Parameters For KIC 005273473

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5541^{+77}_{-77}	$3.889^{+0.084}_{-0.137}$	$-0.520^{+0.150}_{-0.150}$	$1.752^{+0.441}_{-0.147}$	$0.867^{+0.136}_{-0.034}$	$0.227^{+0.076}_{-0.095}$
	+1%/-1%	+2%/-4%	+29%/-29%	+25%/-8%	+16%/-4%	+33%/-42%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005273473-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 3	$1.28^{+0.62}_{-0.61}$	3388^{+175}_{-125}	4059^{+1424}_{-783}	$1.292^{+3.667}_{-0.712}$
Alt.	-222 ± 3	$3.71^{+0.74}_{-0.69}$	3382^{+185}_{-116}	4873^{+465}_{-366}	$2.887^{+1.463}_{-0.863}$

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

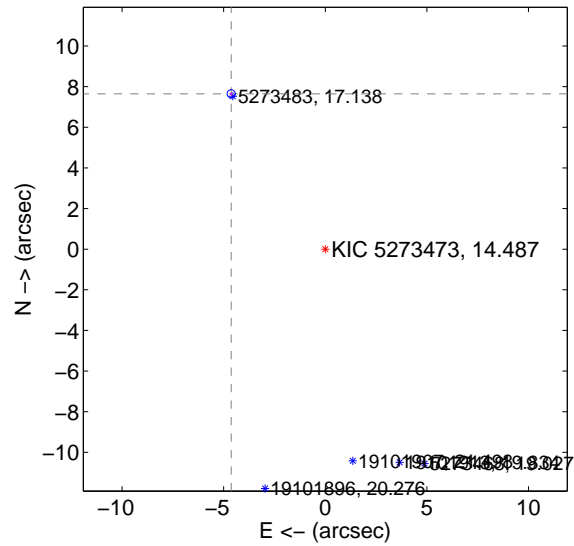
Supplemental centroid analysis for 005273473-02. Kepler magnitude: 14.49. Transit SNR 7.87

There are 17 quarters with good PRF difference image offsets

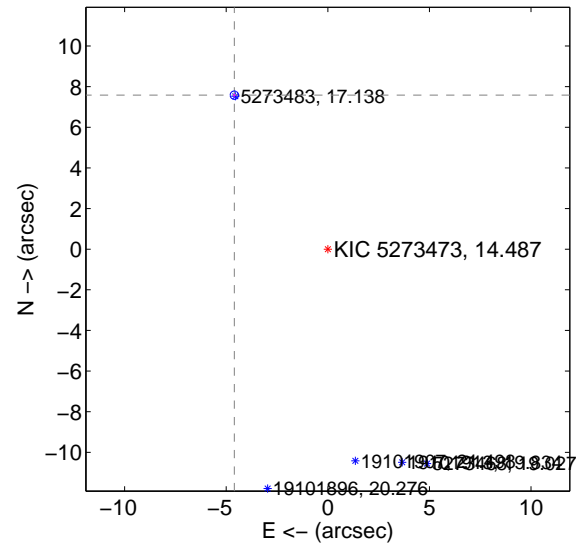
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.936 \pm 0.067	132.84	4.629 \pm 0.067	7.644 \pm 0.067
PRF-fit source offset from KIC position	8.865 \pm 0.068	129.53	4.601 \pm 0.068	7.578 \pm 0.069
photometric centroid source offset	3.09 \pm 2.28	1.36	-2.93 \pm 2.22	0.98 \pm 2.73

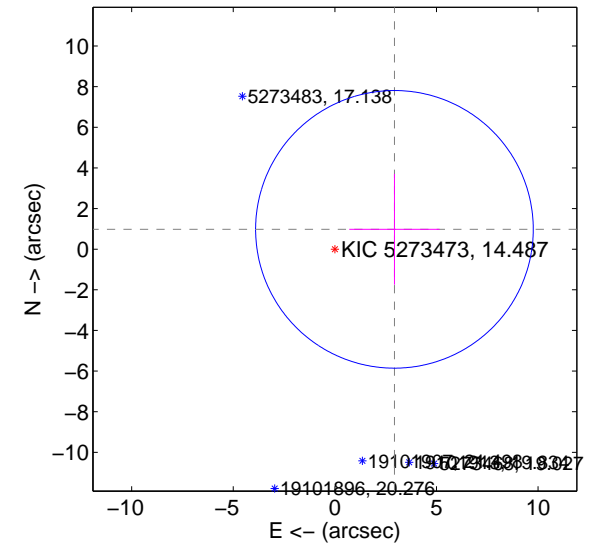
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

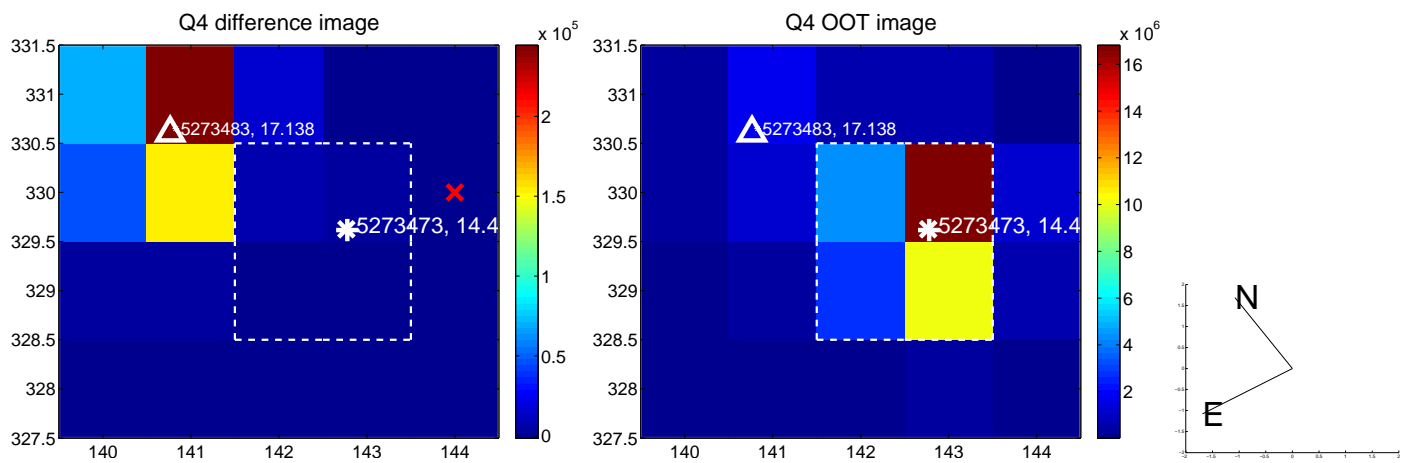
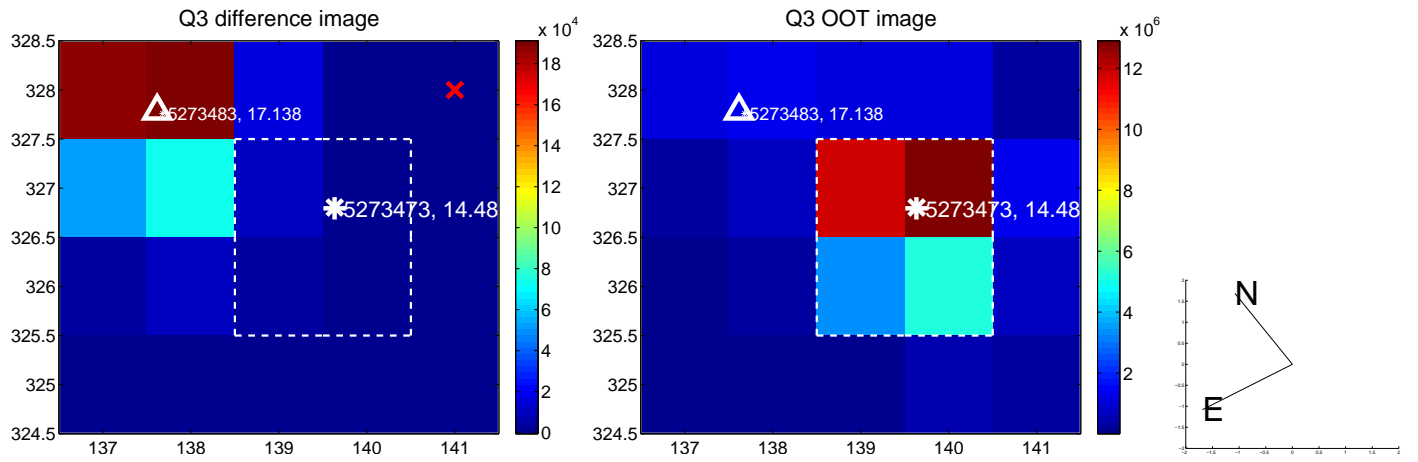
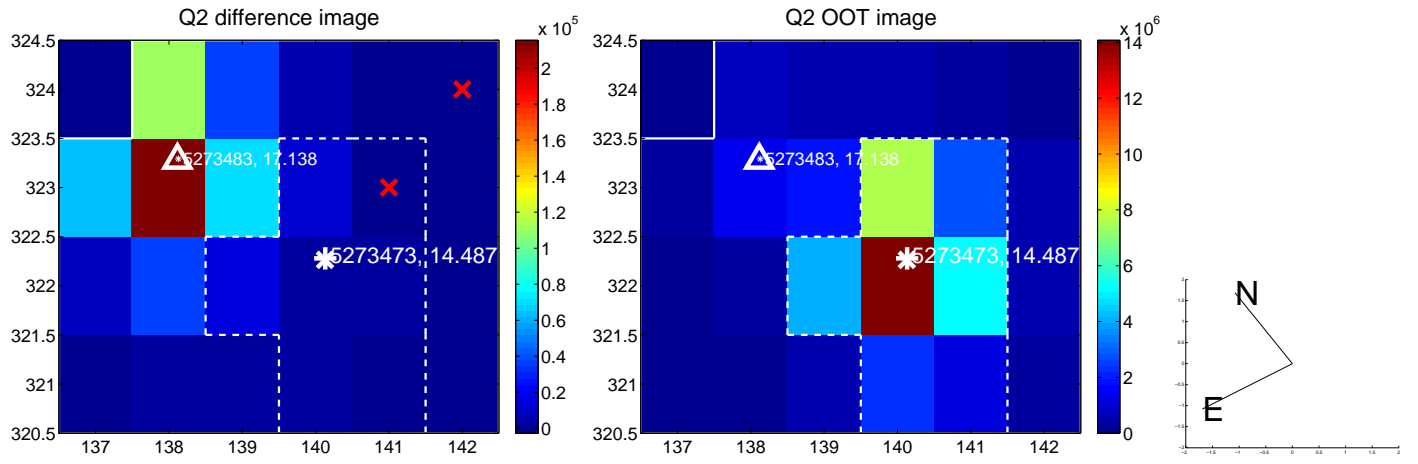
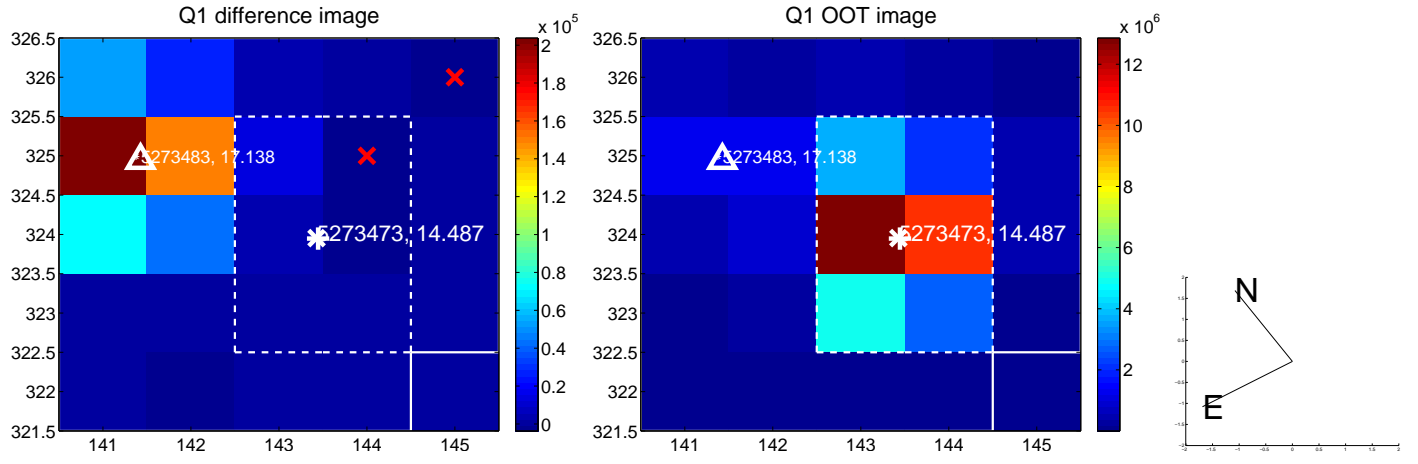


offset from photometric centroids

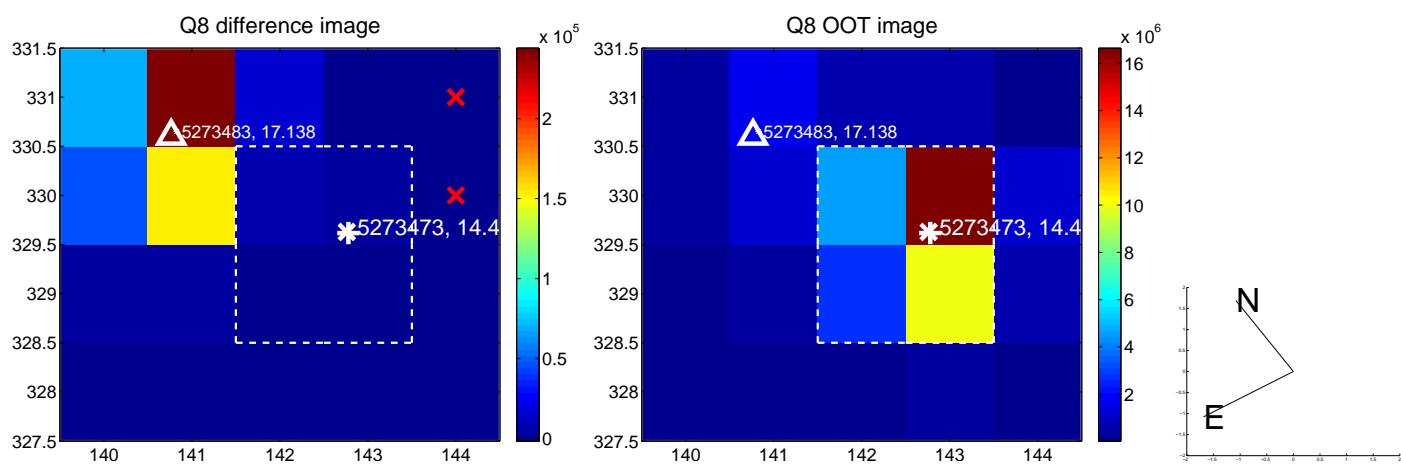
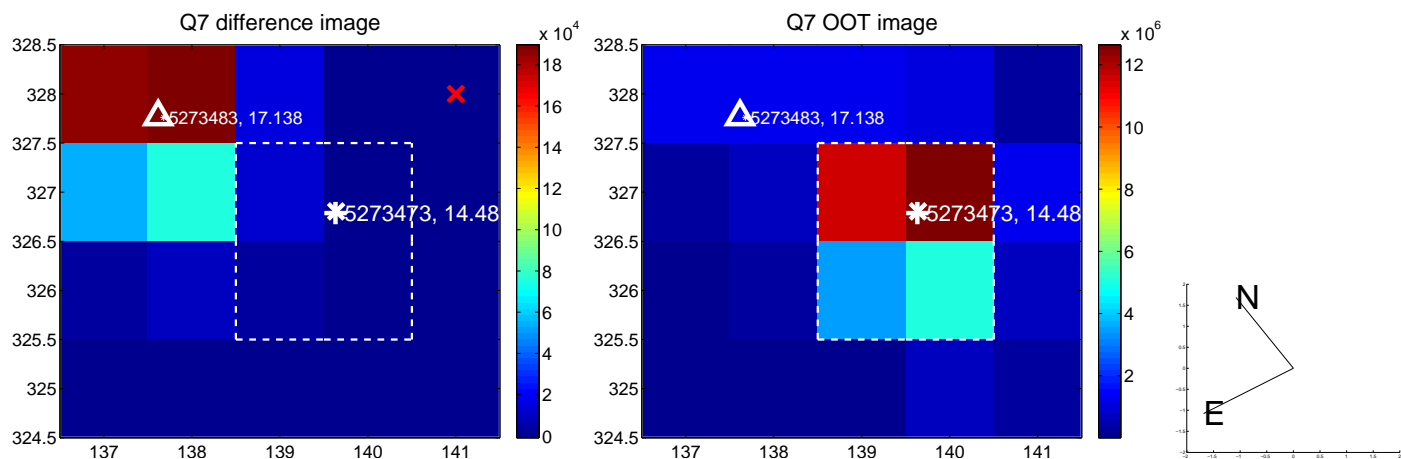
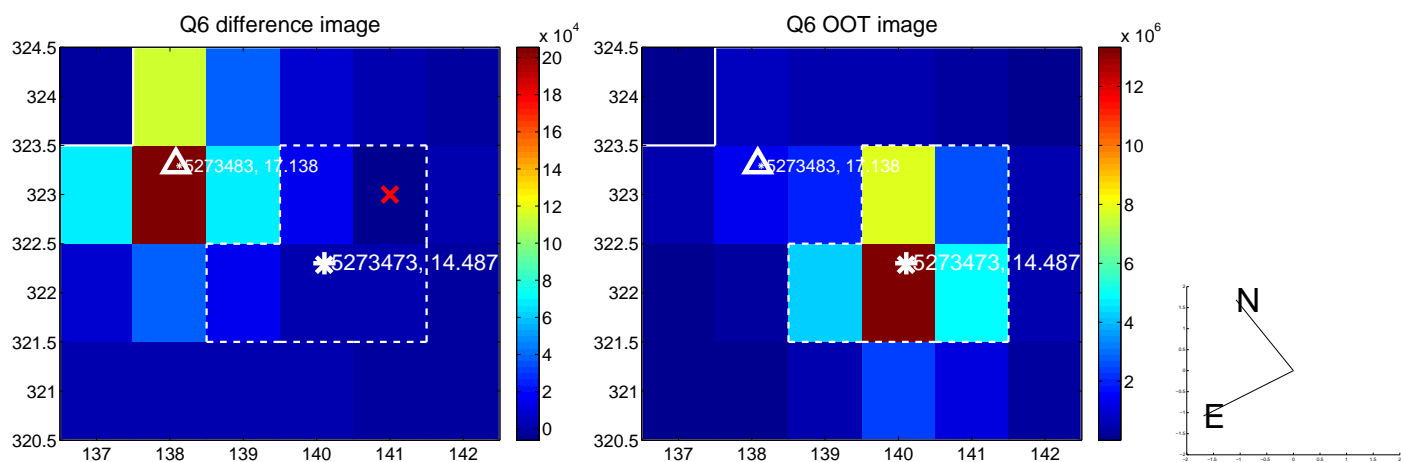
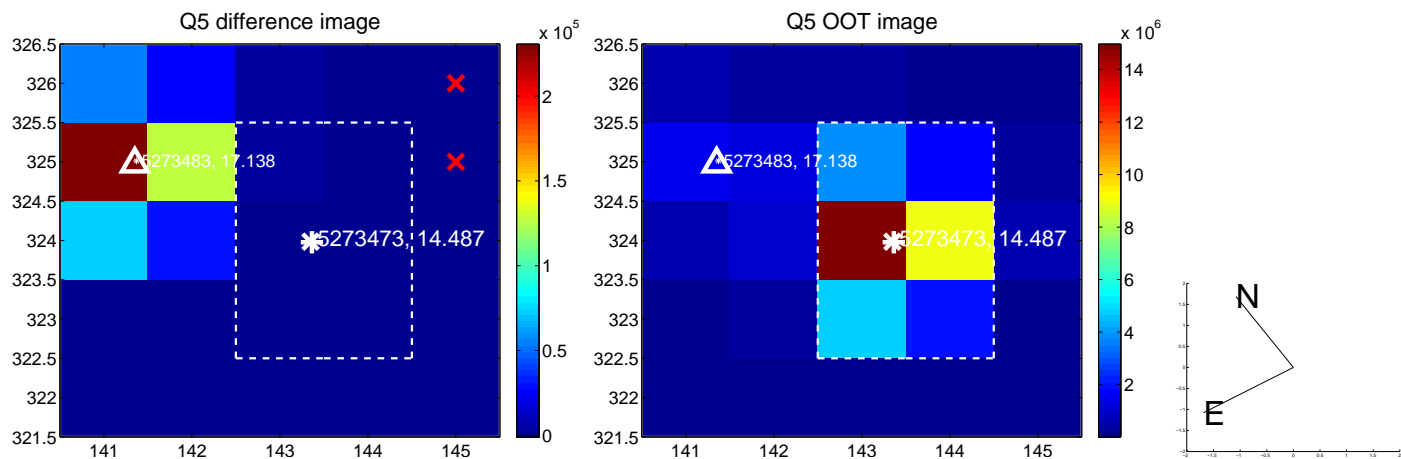


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

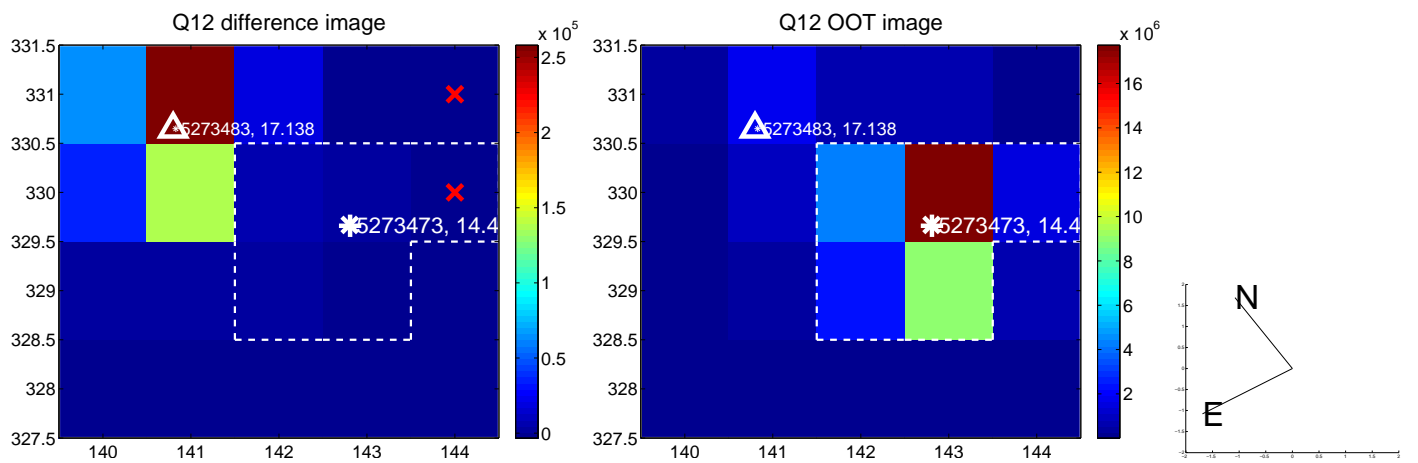
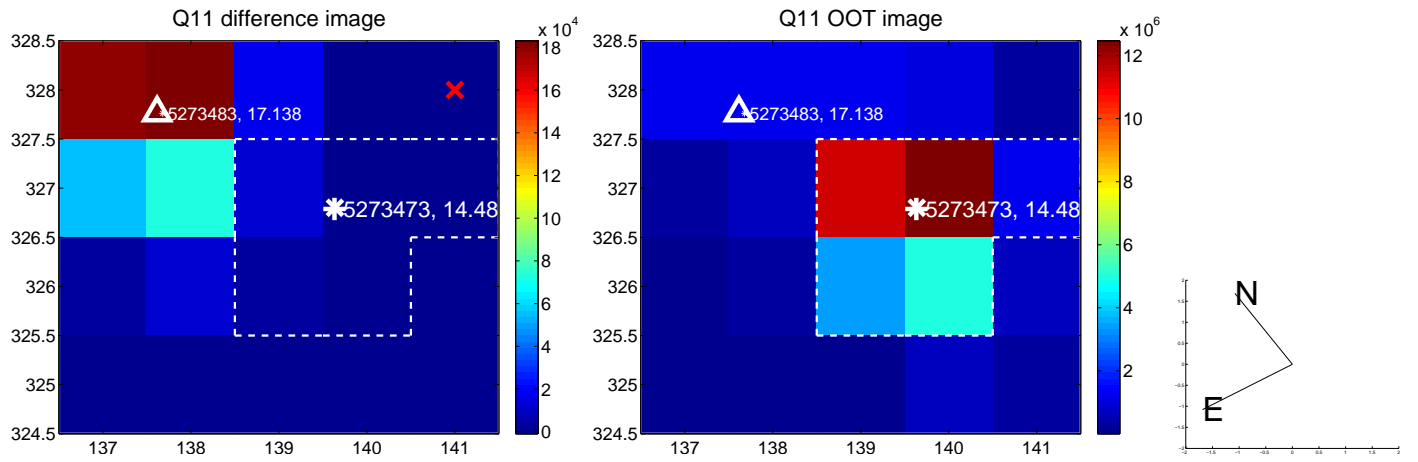
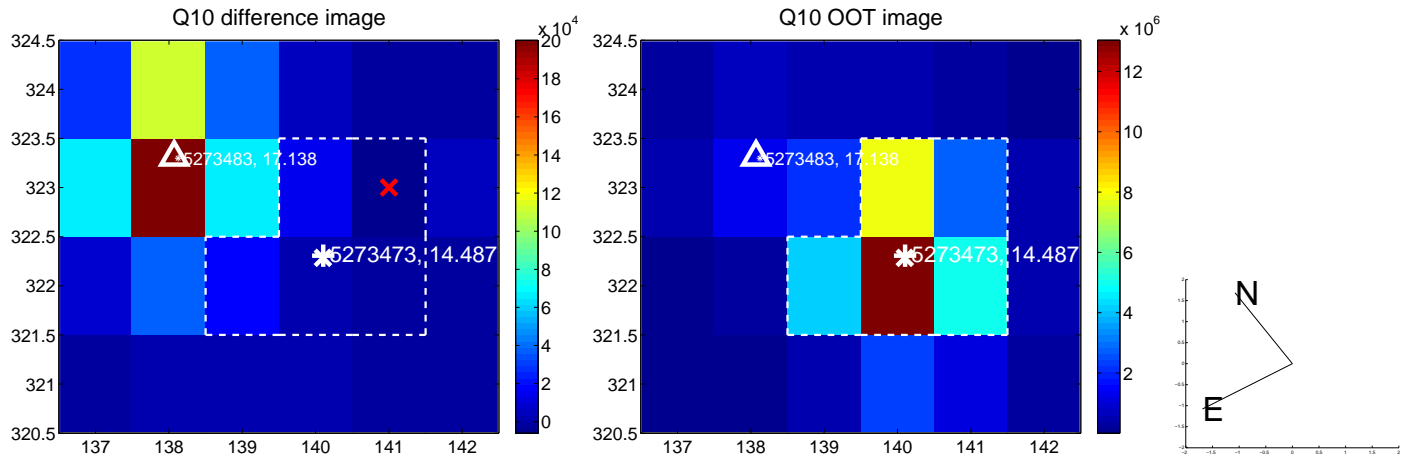
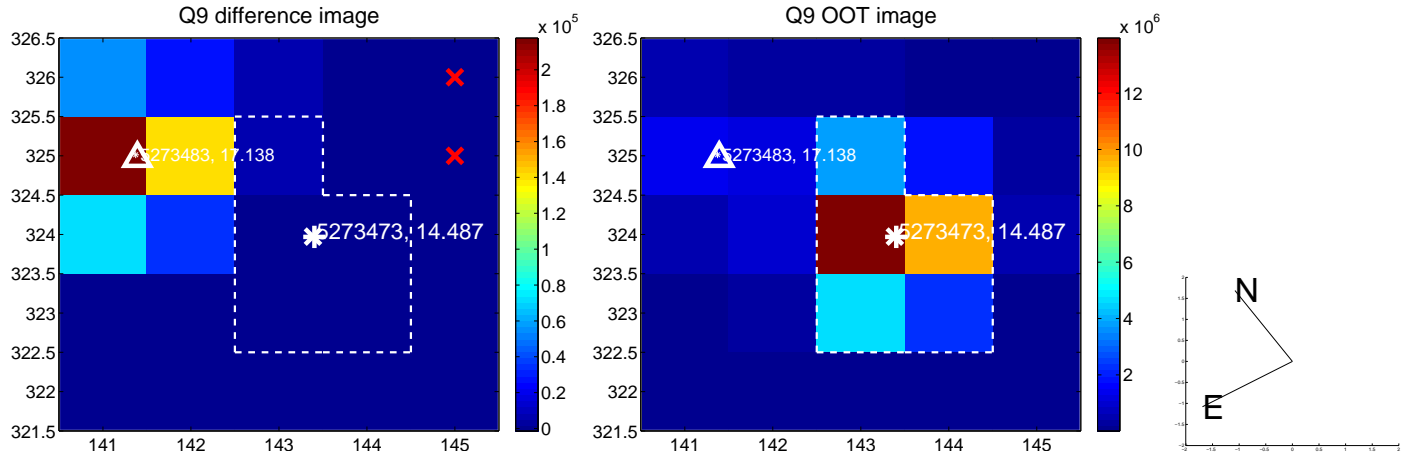
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



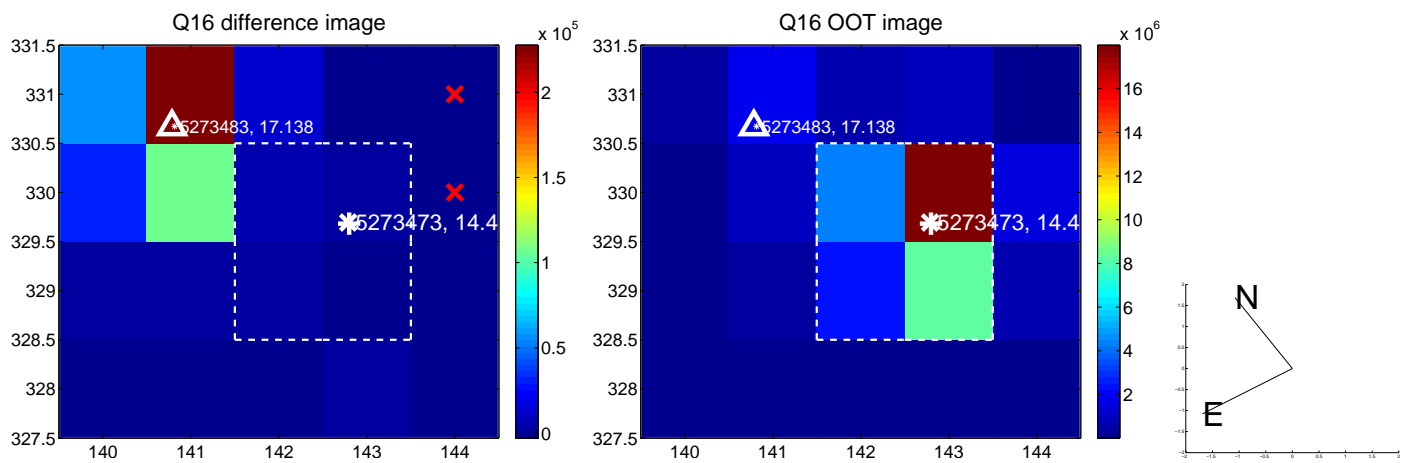
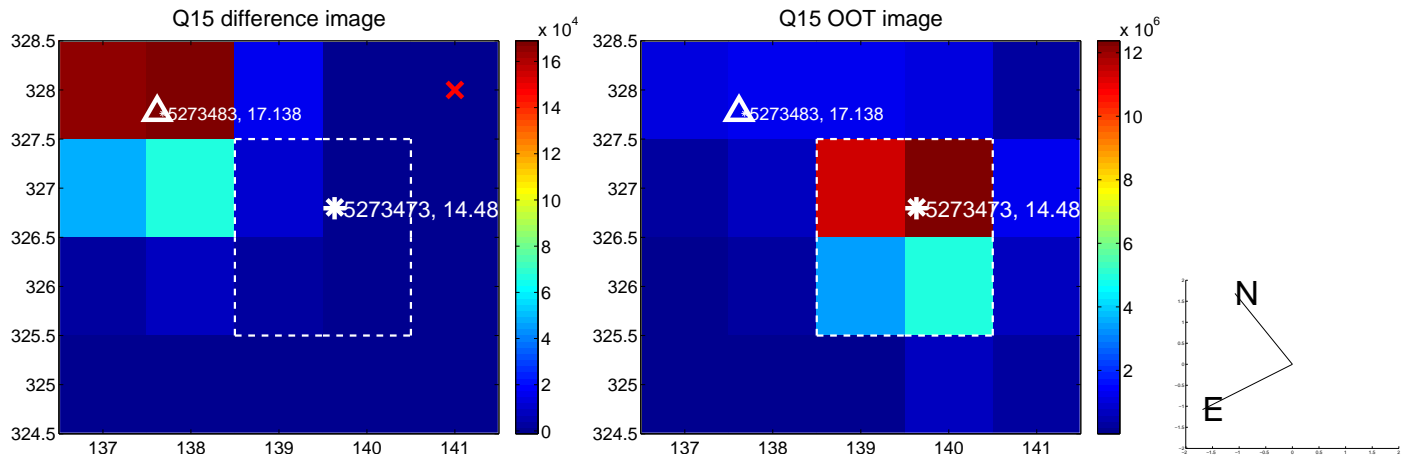
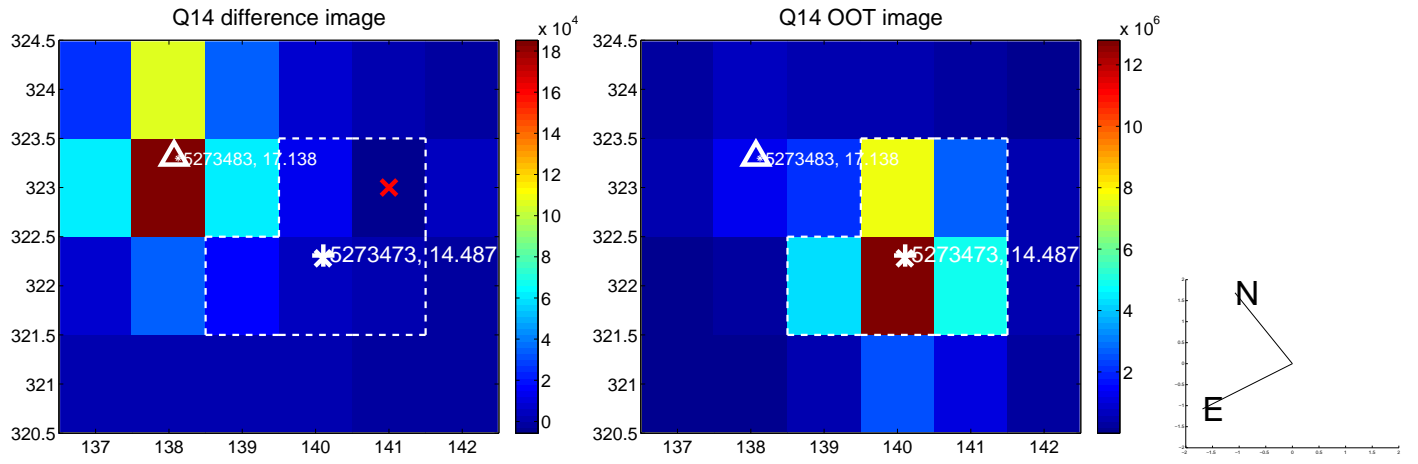
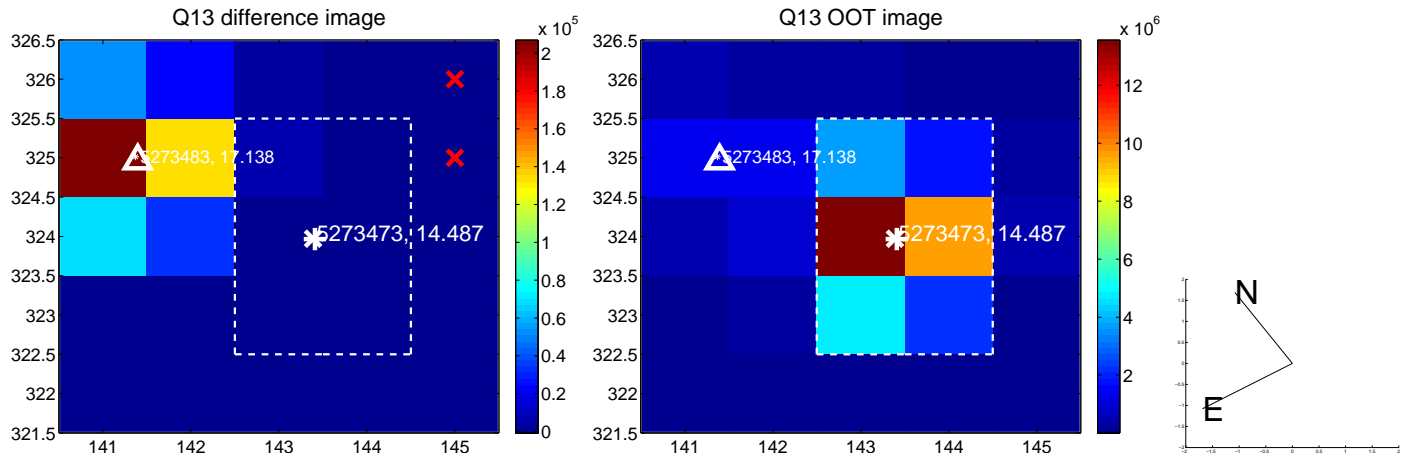
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



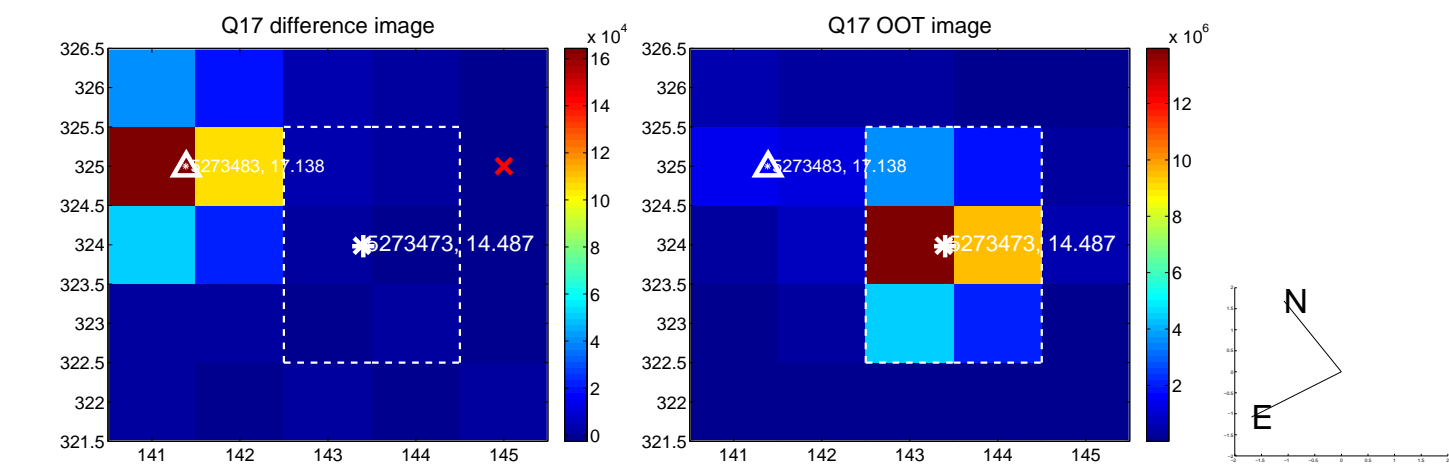
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



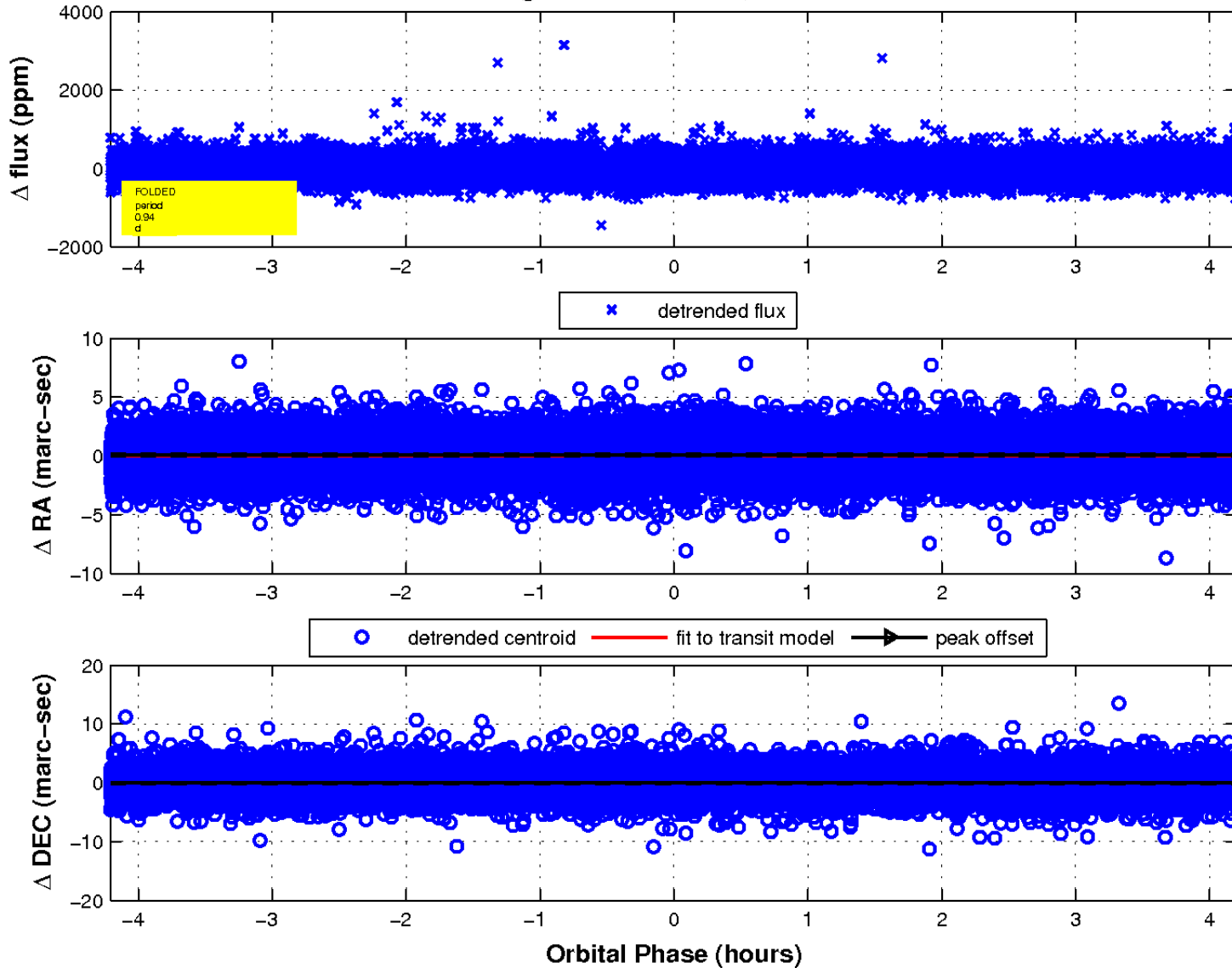
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

