

KIC 006305572

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})
006305572-01	OBS	No	1.500067	131.930709	55.0	3.224	15.3	14.6	2.09	9345	1.77	26856.44
006305572-02	OBS	No	1.499969	132.849472	11.4	6.287	12.5	3.7	2.09	9345	0.81	26858.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006305572-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006305572-02	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST

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

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

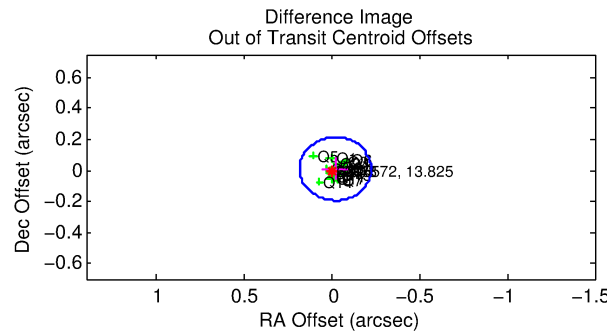
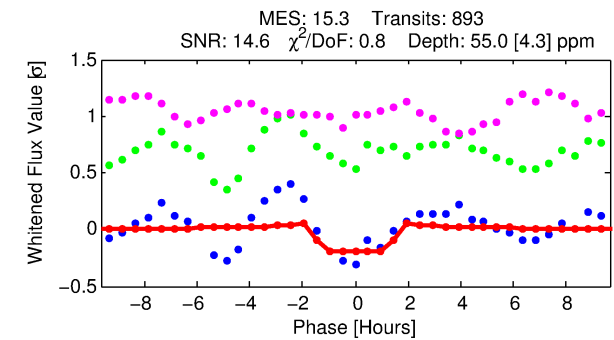
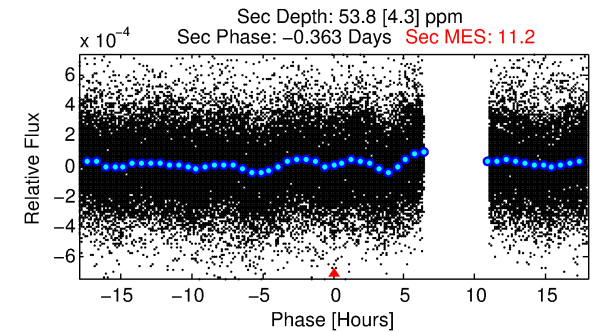
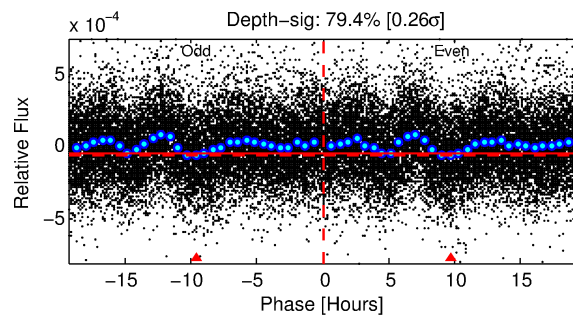
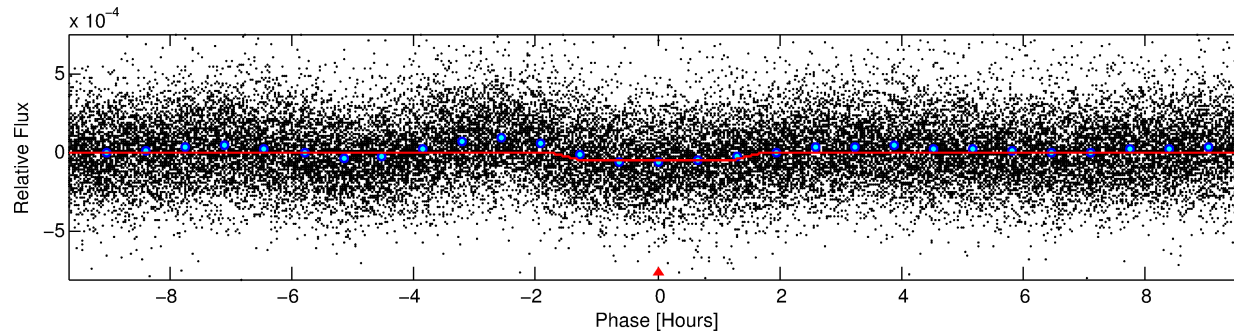
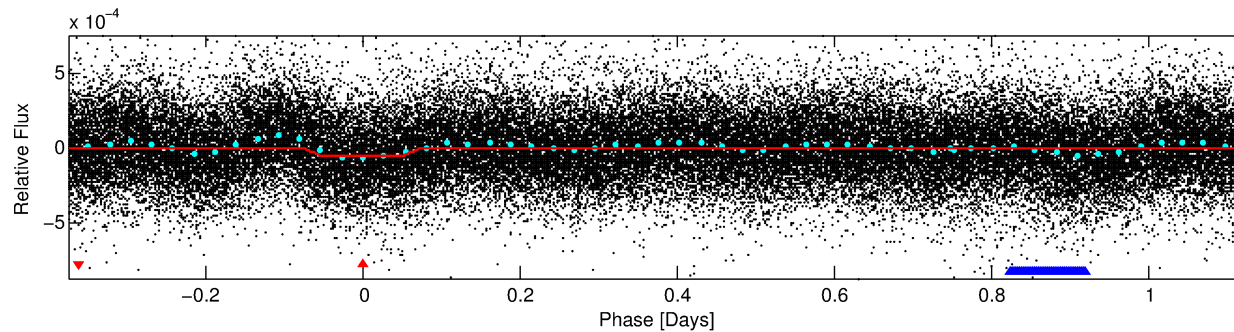
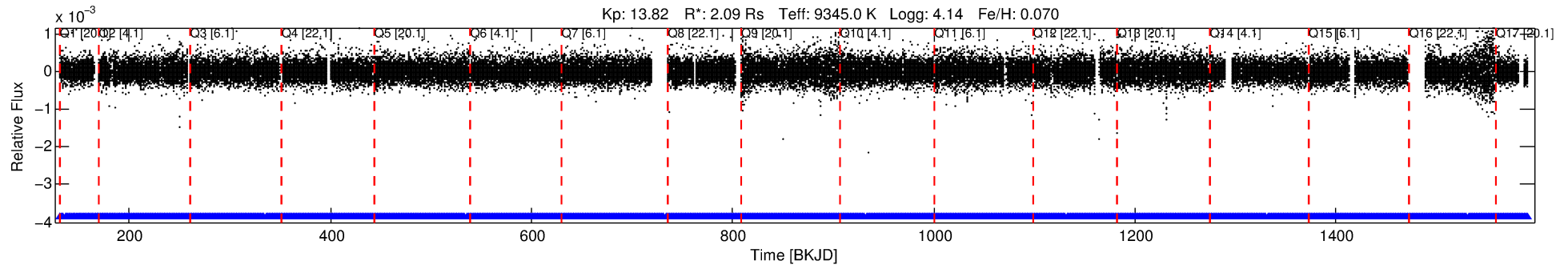
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006305572-01

No Significant Match Found

DV One-Page Summary

KIC: 6305572 Candidate: 1 of 2 Period: 1.500 d



DV Fit Results:

Period = 1.50007 [0.00001] d
Epoch = 131.9307 [0.0021] BKJD
Rp/R* = 0.0078 [0.0015]
a/R* = 1.93 [1.95]
b = 0.89 [0.33]
Seff = 26856.44 [13000.36]
Teff = 3264 [395] K
Rp = 1.77 [0.80] Re
a = 0.0334 [0.0109] AU
Ag = 10.49 [6.20] [1.53 σ]
Teffp = 9083 [966] K [5.58 σ]

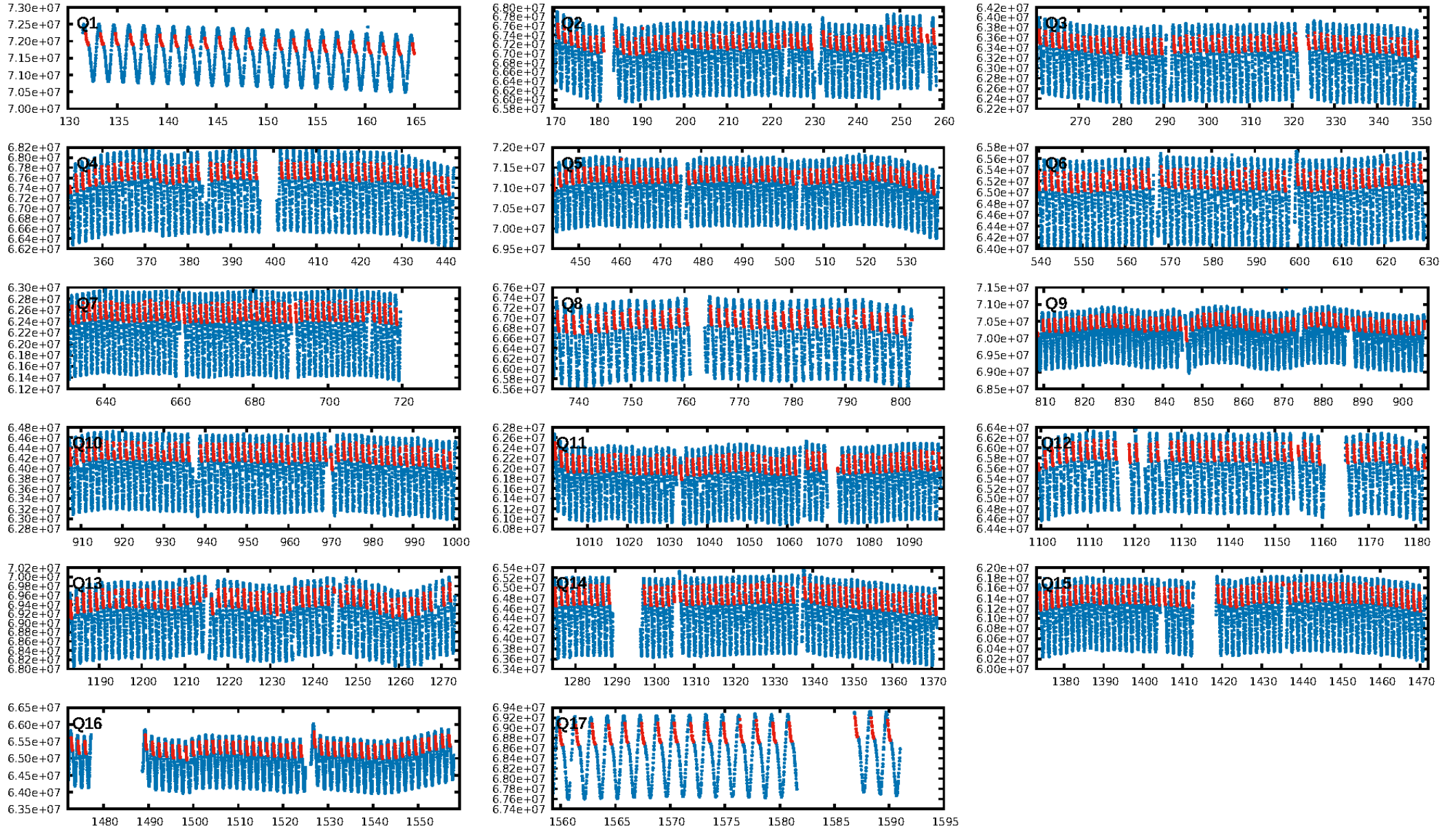
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.04e-40
RollingBand-fgt: 1.00 [852/852]
GhostDiagnostic-chr: 1.402
Centroid-sig: 0.0%
Centroid-so: 1.931 arcsec [2.53 σ]
OotOffset-rm: 0.022 arcsec [0.33 σ]
KicOffset-rm: 0.046 arcsec [0.66 σ]
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]

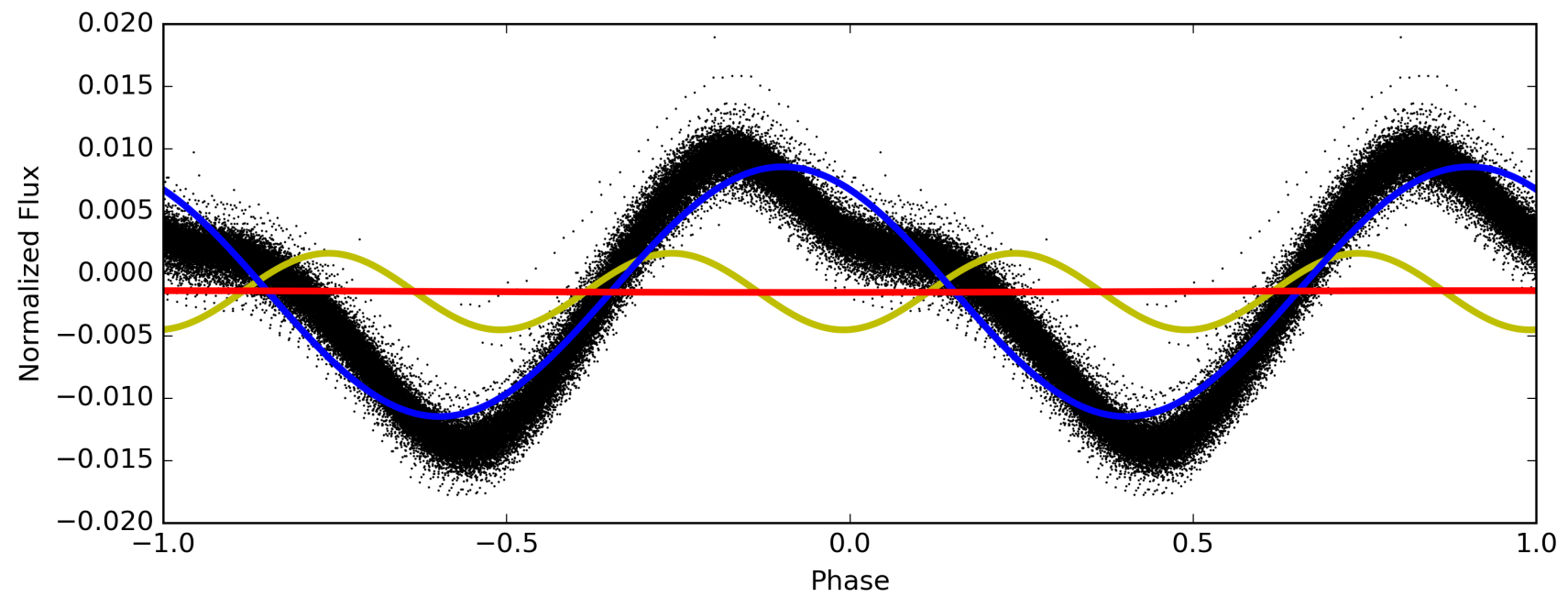
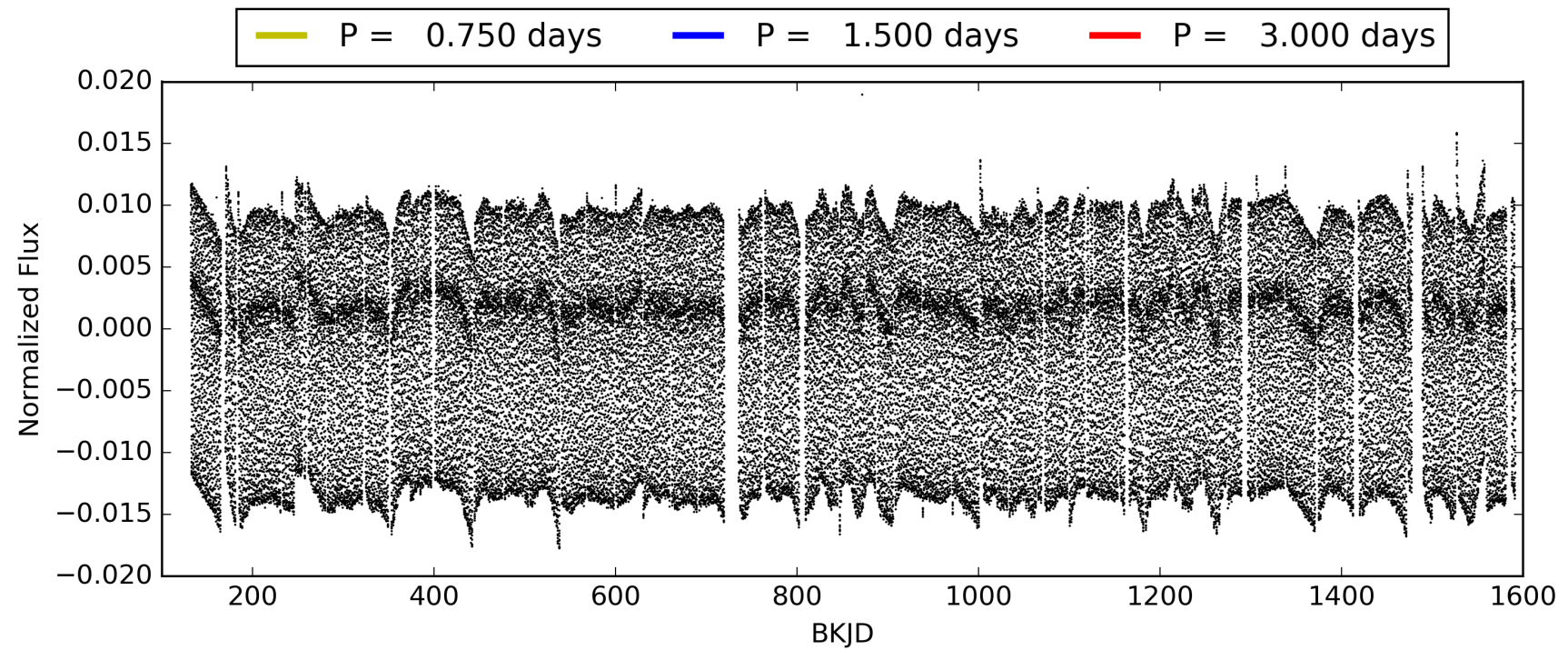
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:56:05 Z

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

TCE 006305572-01, PDC Light Curves

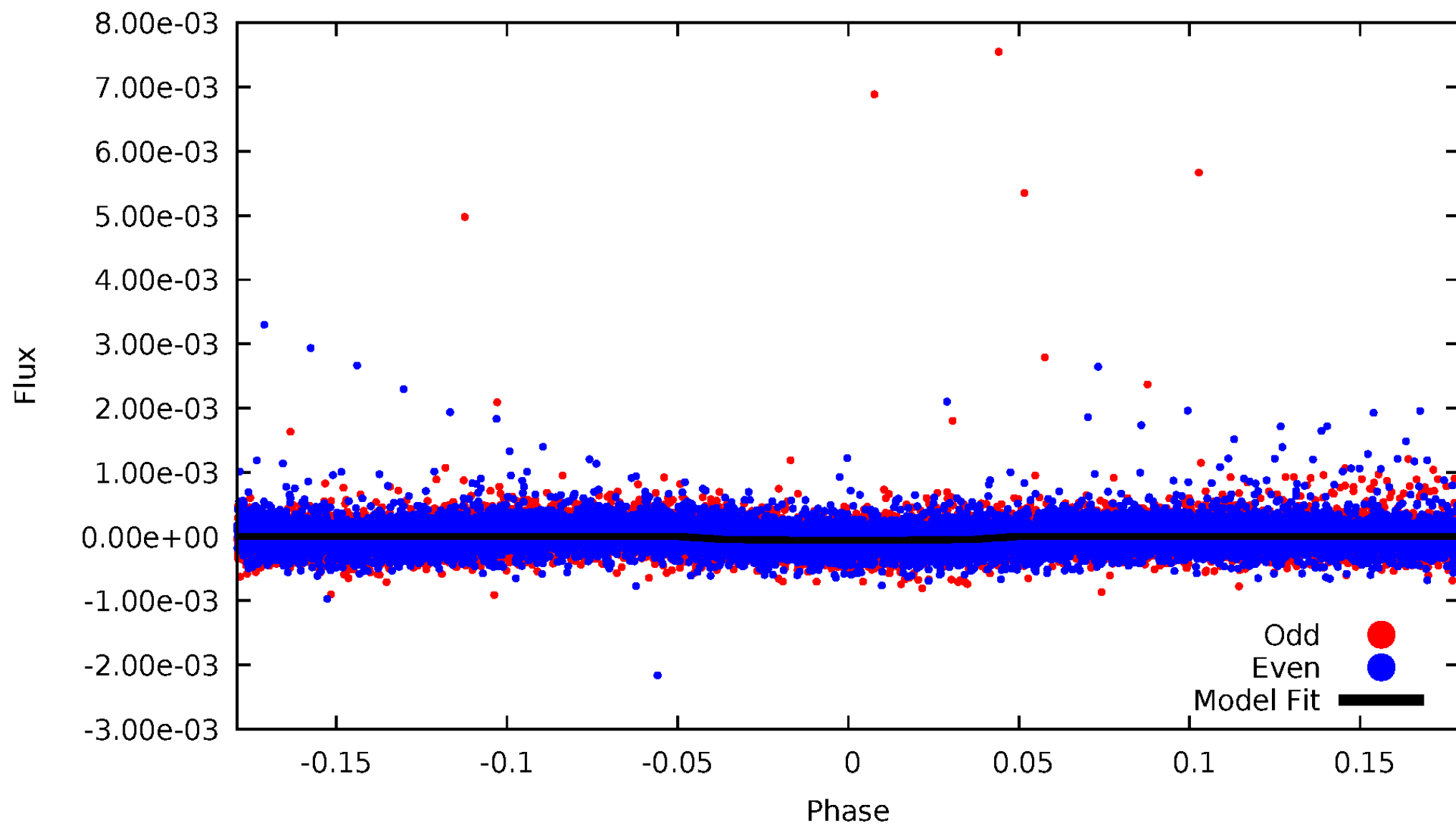


TCE 006305572-01



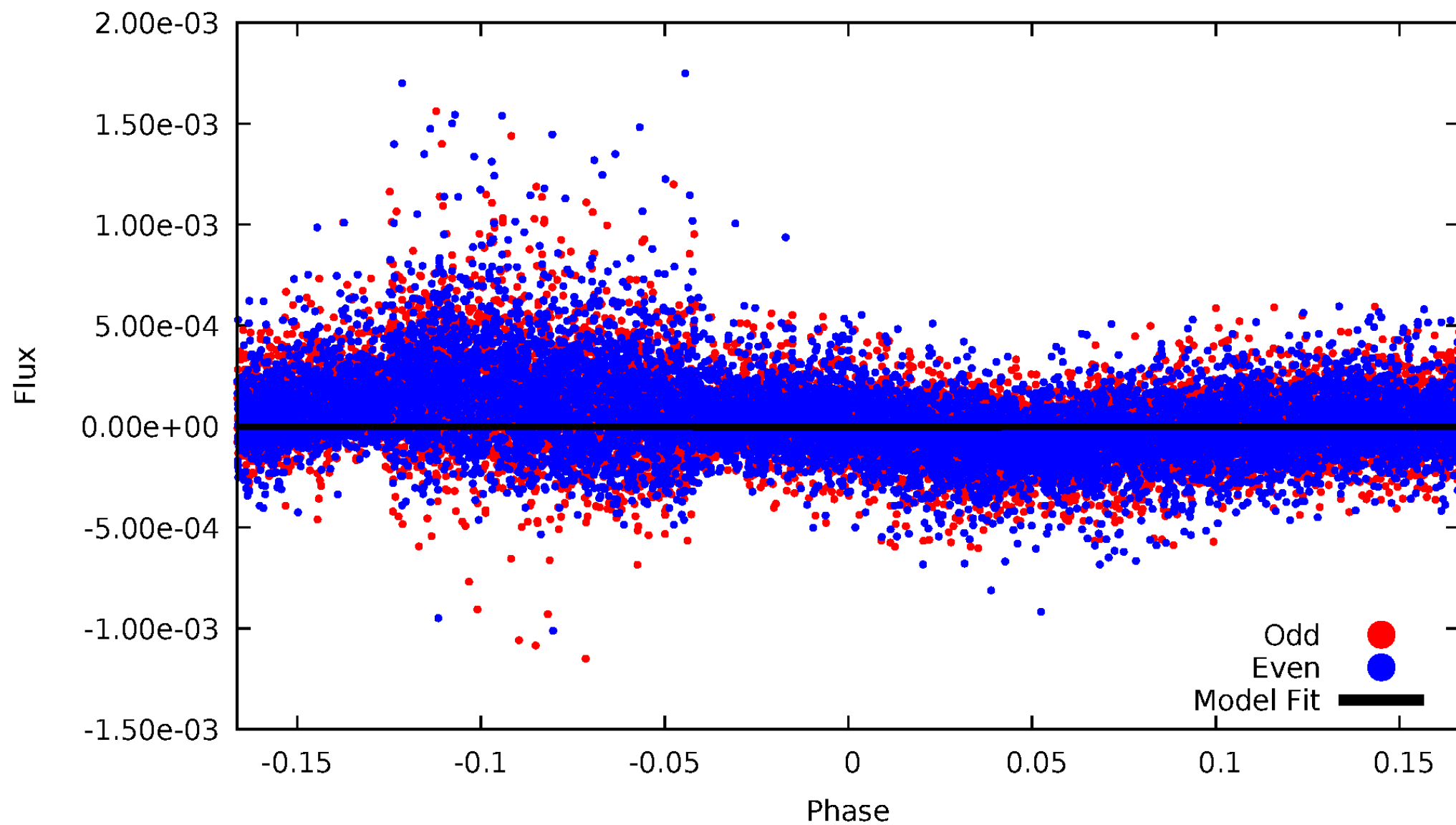
DV Odd/Even

TCE 006305572-01



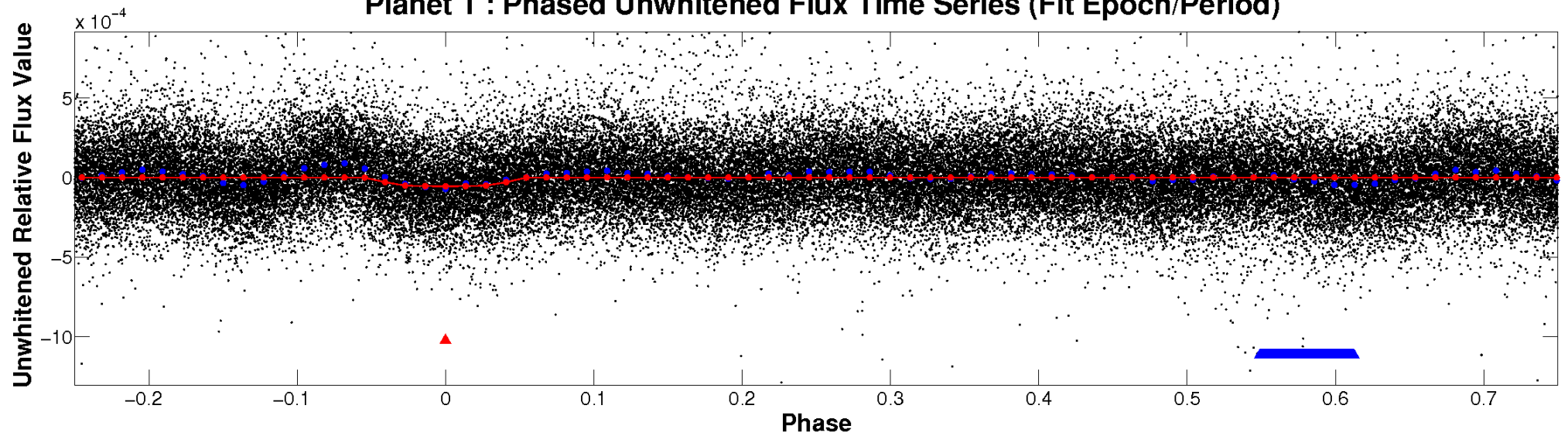
ALT Odd/Even

TCE 006305572-01

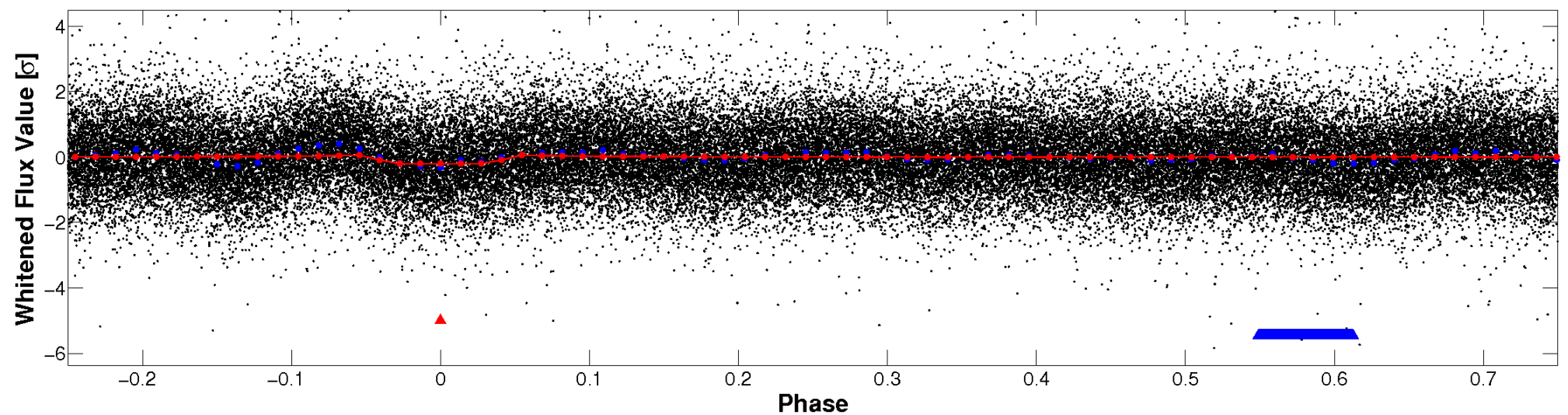


Non-Whitened Vs. Whitened Light Curve

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

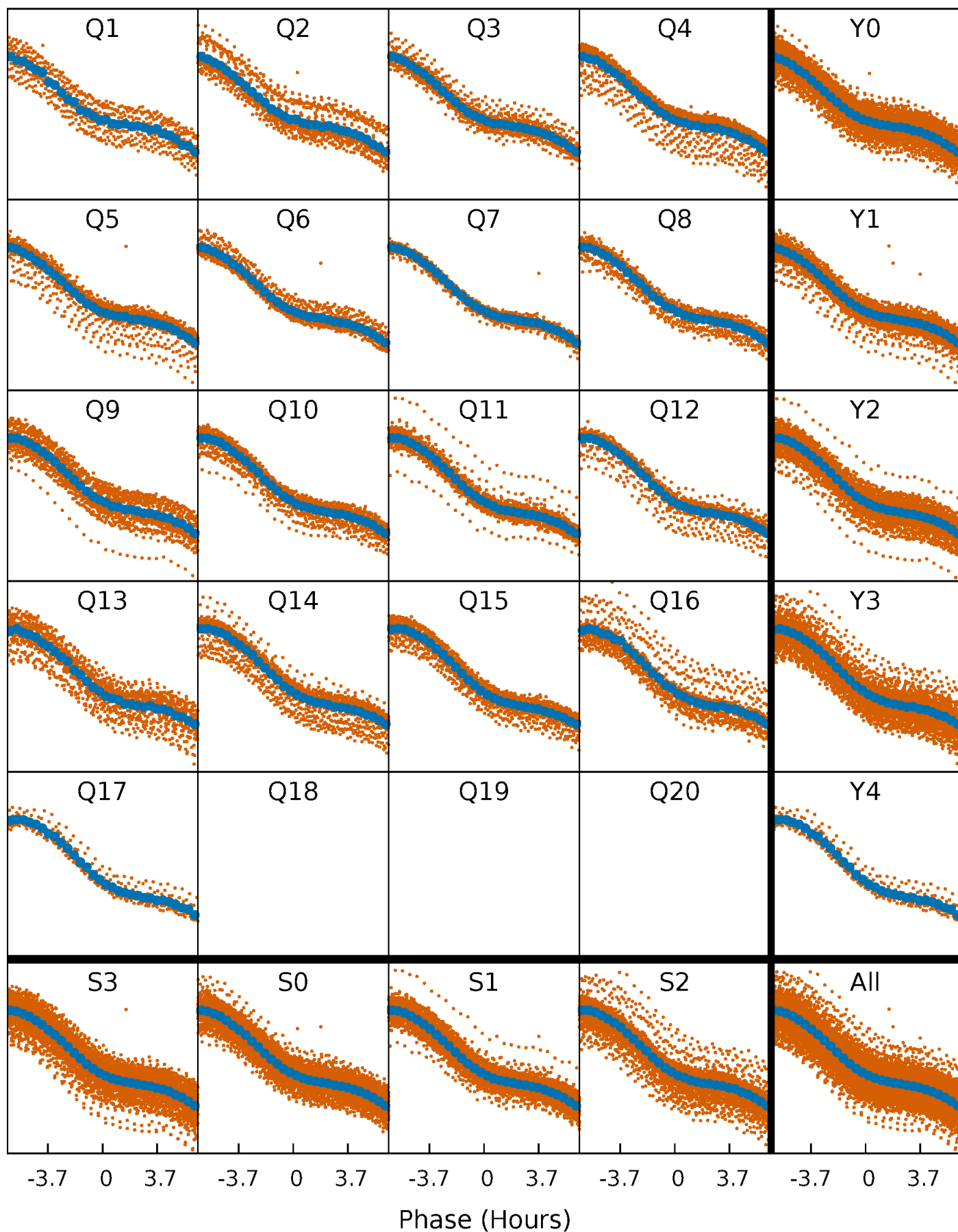


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



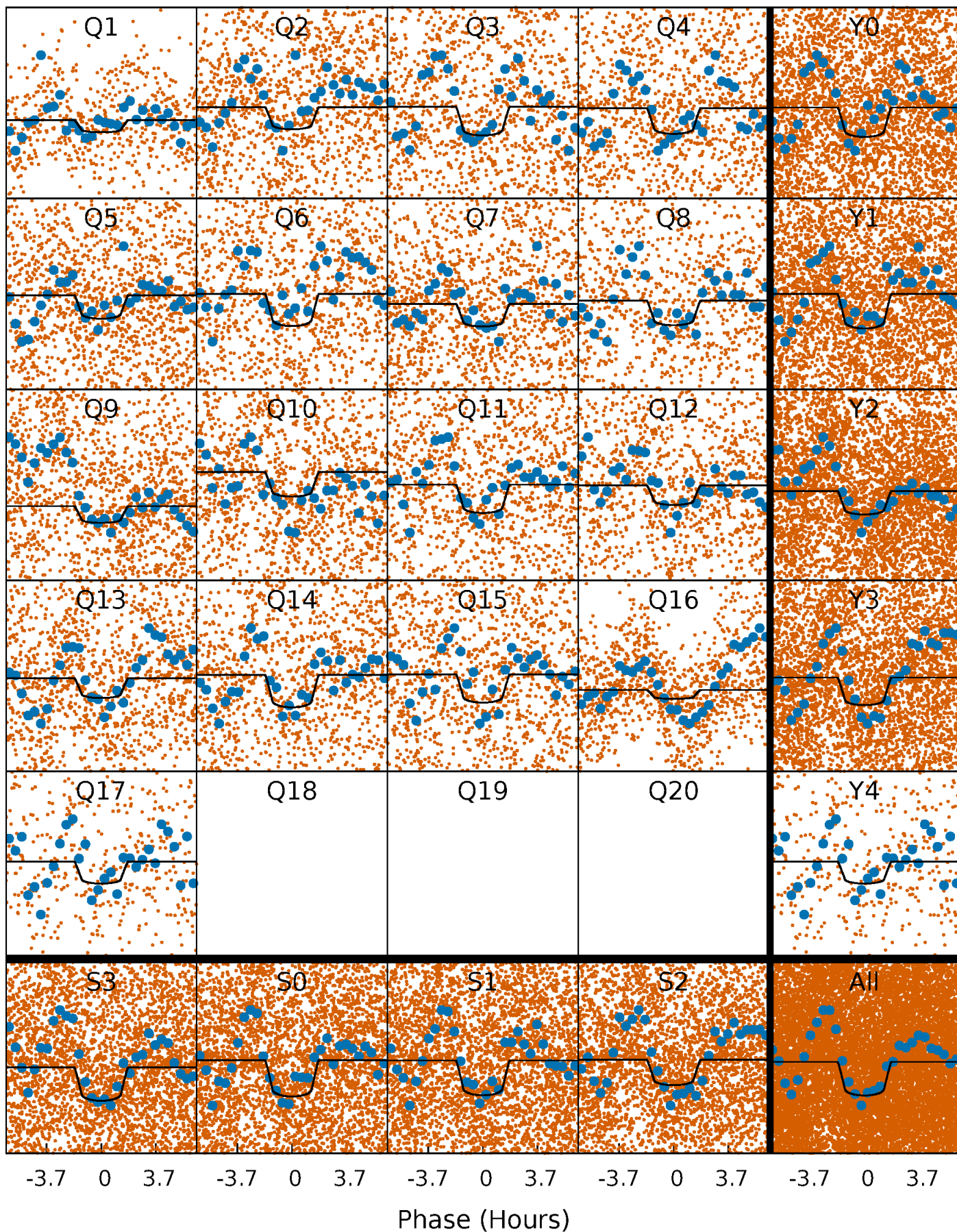
PDC Quarter-Phased Transit Curves

TCE 006305572-01 P= 1.500067 Days $T_0=131.930709$ (BKJD)



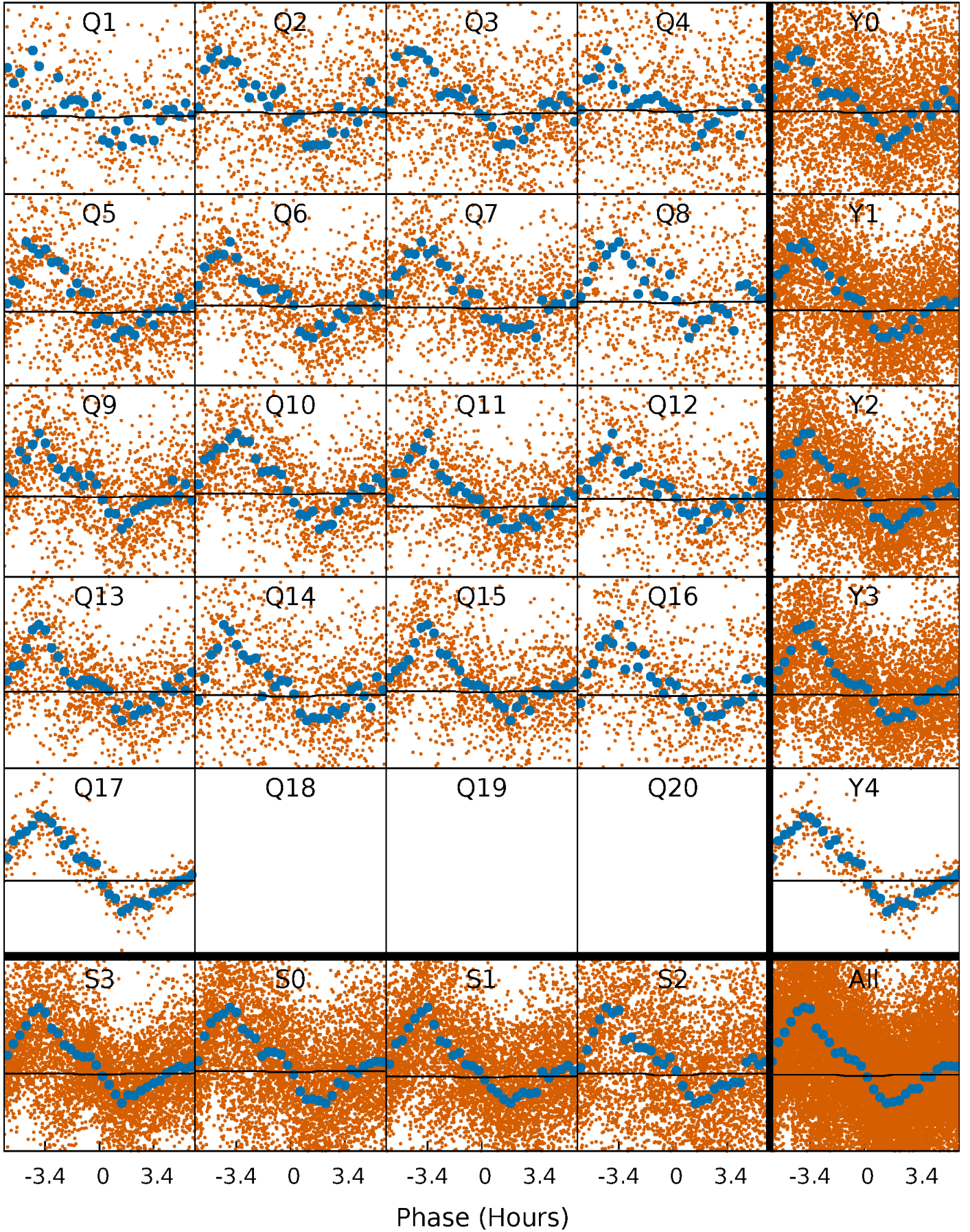
DV Quarter-Phased Transit Curves

TCE 006305572-01 P= 1.500067 Days $T_0=131.930709$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

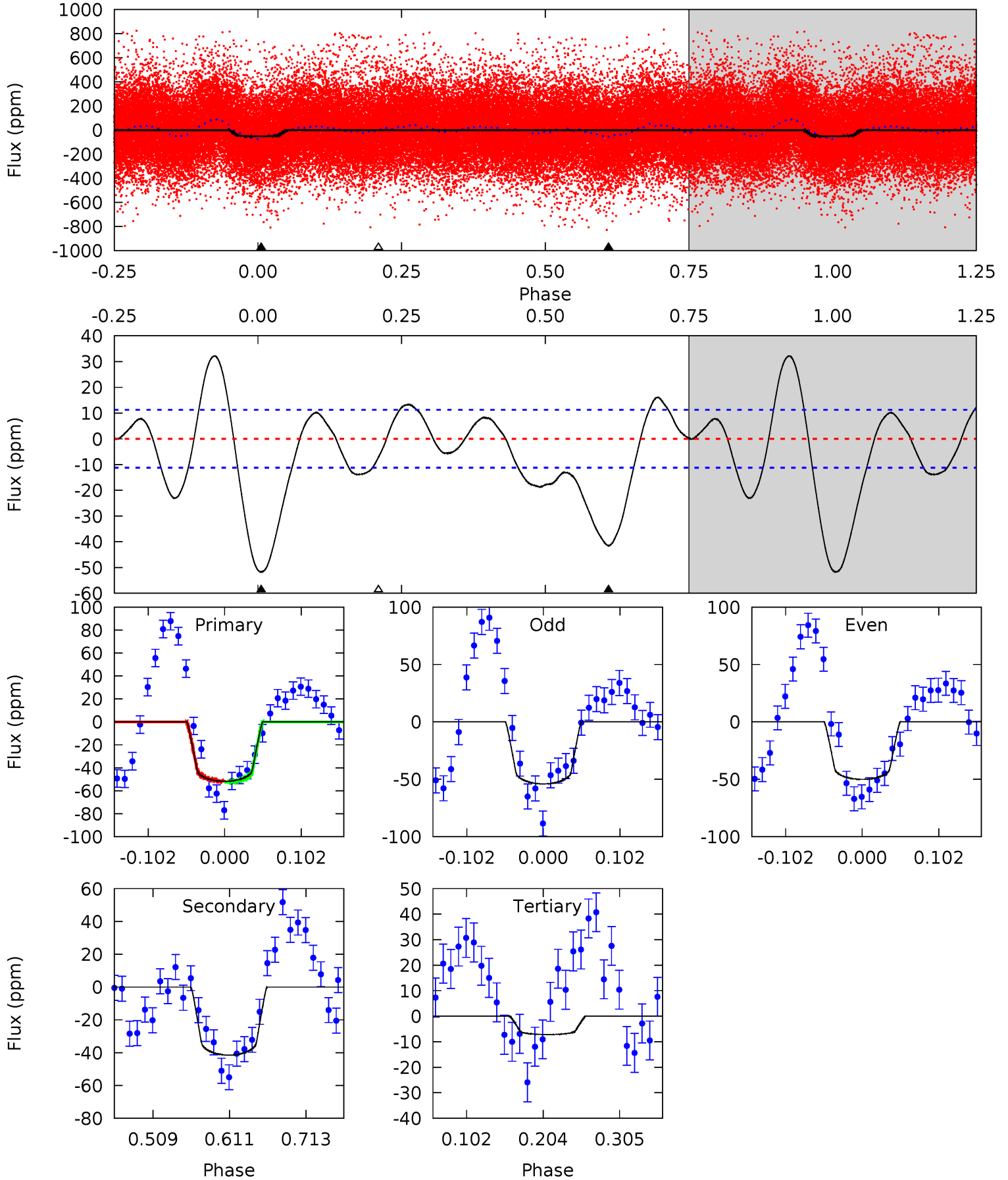
TCE 006305572-01 P= 1.500101 Days $T_0=131.820956$ (BKJD)



DV Model-Shift Uniqueness Test

006305572-01, P = 1.500067 Days, E = 130.430642 Days

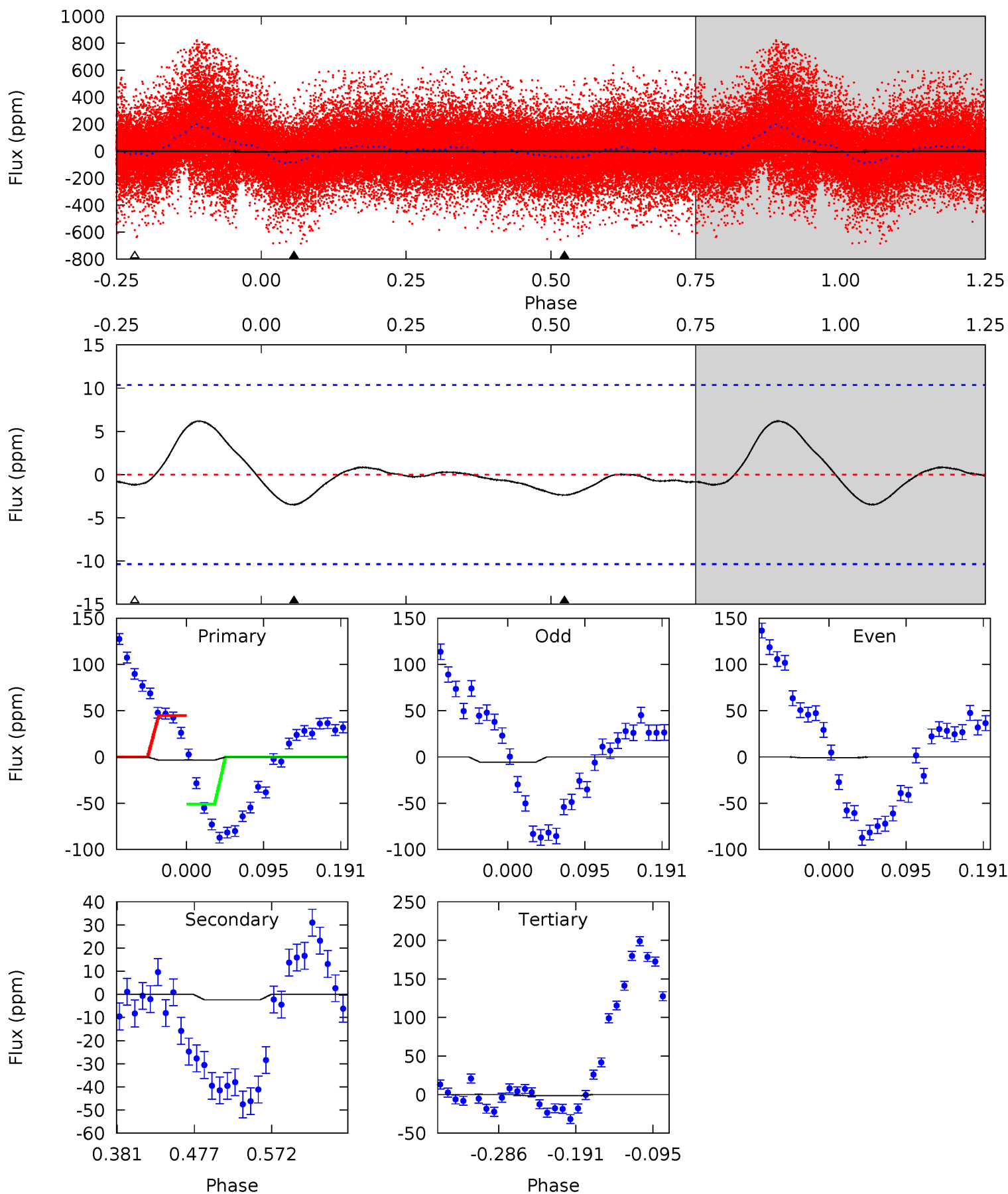
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	16.9	2.93	0	4.56	1.64	4.04	18.1	21.0	13.9	16.9	0.81	0.98	0.38	0.24



Alt Model-Shift Uniqueness Test

006305572-01, P = 1.500101 Days, E = 130.320855 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.54	1.04	0.52	0	4.57	1.67	0.91	1.02	1.54	0.53	1.04	1.03	0.60	0.64	1.57



Stellar Parameters For KIC 006305572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9345^{+294}_{-425}	$4.140^{+0.099}_{-0.231}$	$0.070^{+0.200}_{-0.650}$	$2.094^{+0.863}_{-0.465}$	$2.208^{+0.419}_{-0.559}$	$0.339^{+0.201}_{-0.196}$
	+3%/-5%	+2%/-6%	+286%/-929%	+41%/-22%	+19%/-25%	+59%/-58%
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 006305572-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-41 ± 2	$1.82^{+0.49}_{-0.41}$	4643^{+412}_{-318}	8094^{+1270}_{-884}	$7.309^{+4.891}_{-2.533}$
Alt.	-2 ± 2	$0.47^{+0.38}_{-0.27}$	4668^{+410}_{-343}	7261^{+7246}_{-10682}	$4.694^{+26.900}_{-4.492}$

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

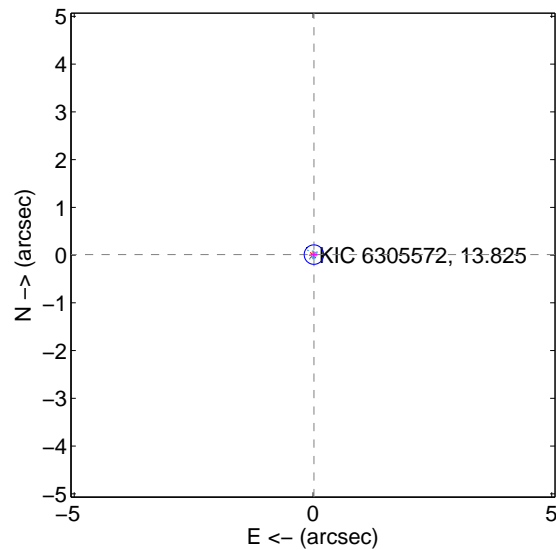
Supplemental centroid analysis for 006305572-01. Kepler magnitude: 13.82. Transit SNR 14.62

There are 17 quarters with good PRF difference image offsets

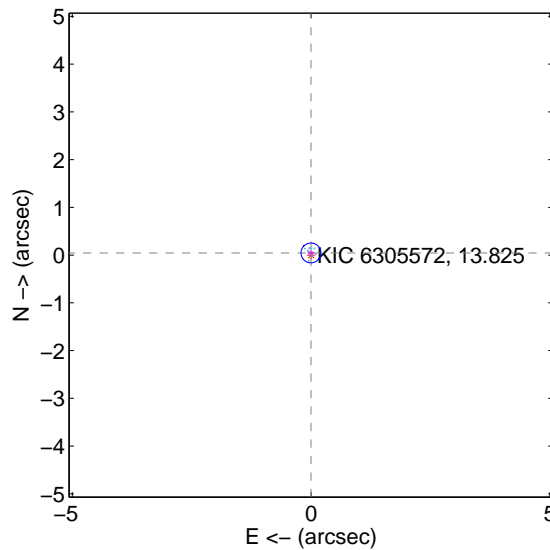
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.068	0.33	-0.020 ± 0.068	0.010 ± 0.068
PRF-fit source offset from KIC position	0.046 ± 0.069	0.66	0.002 ± 0.068	0.046 ± 0.069
photometric centroid source offset	1.93 ± 0.76	2.53	-1.90 ± 0.77	0.34 ± 0.69

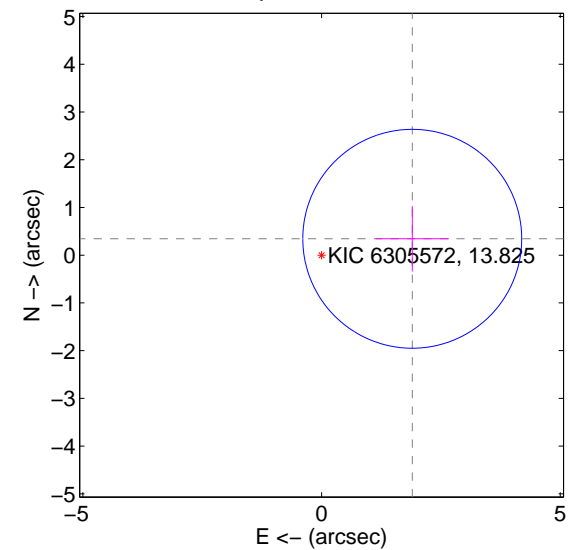
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

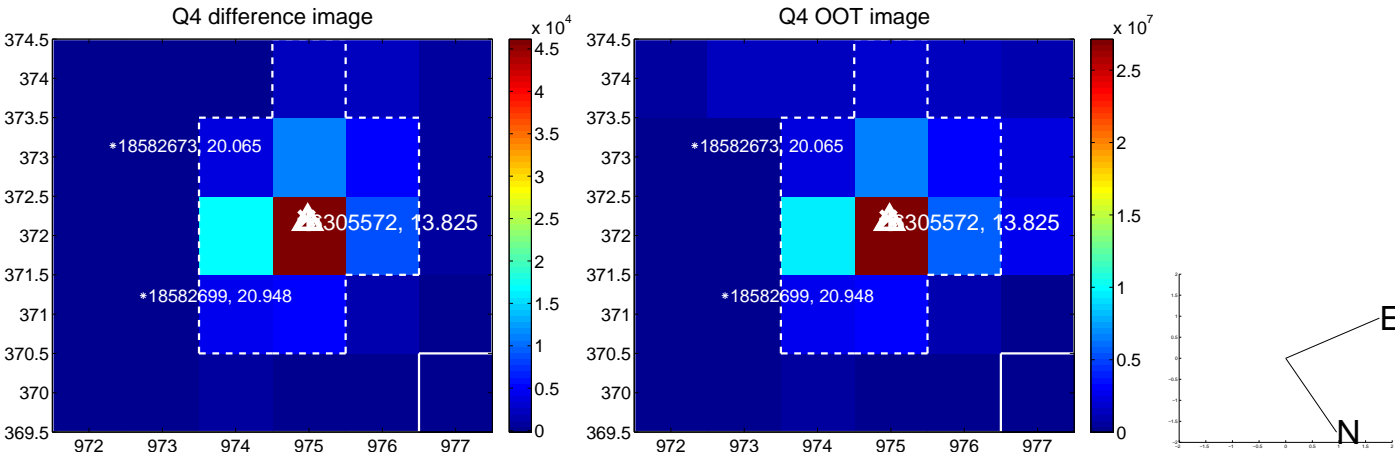
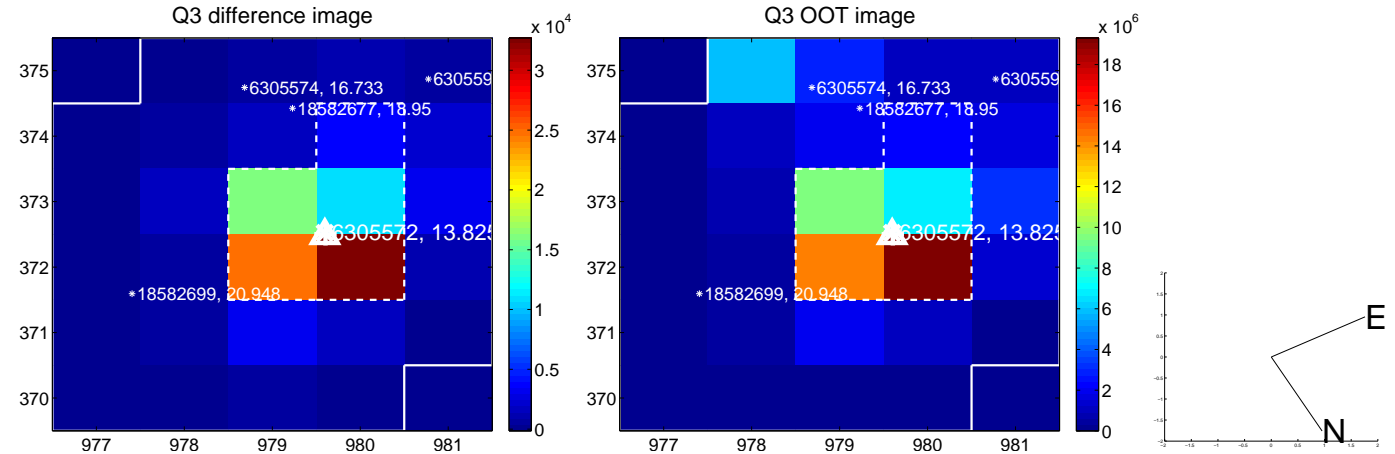
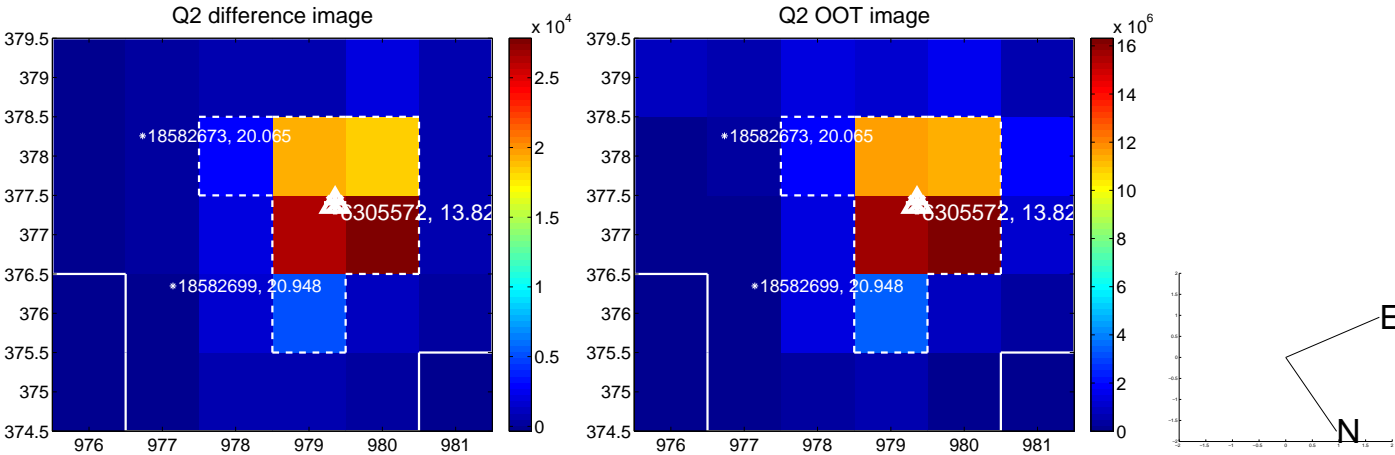
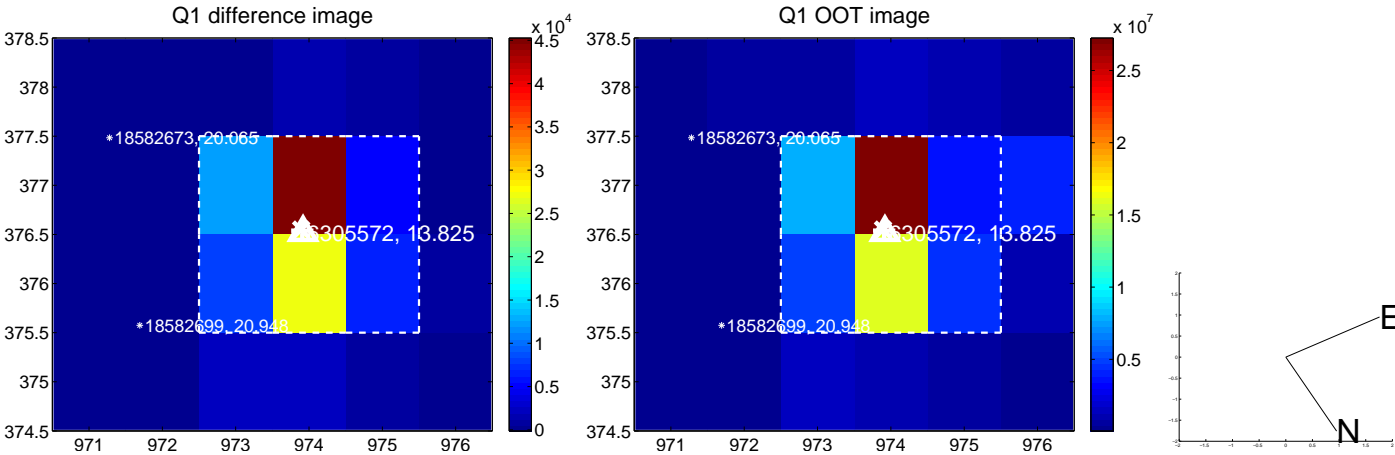


offset from photometric centroids

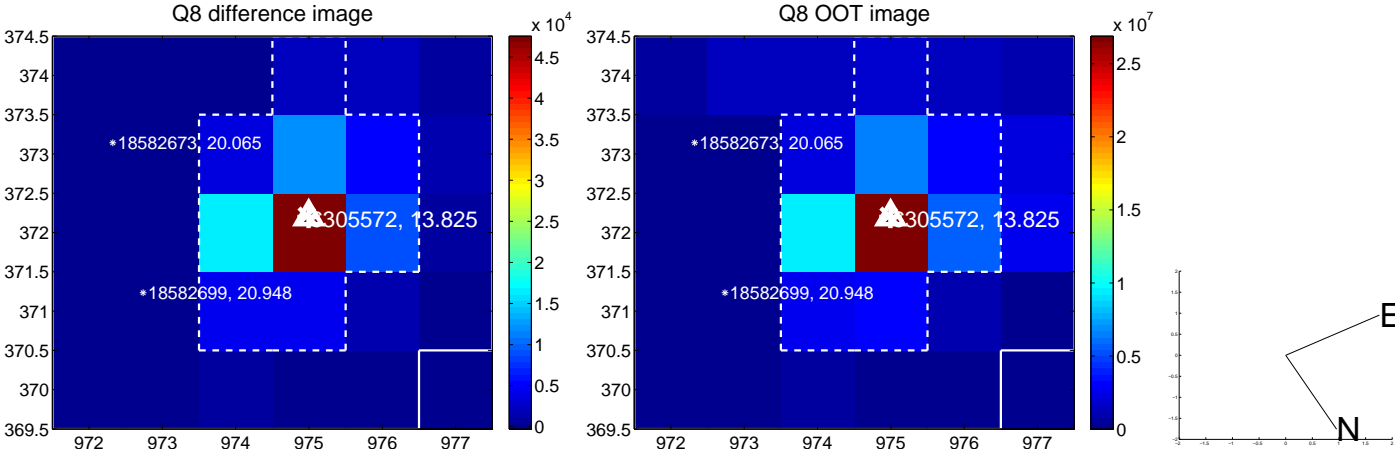
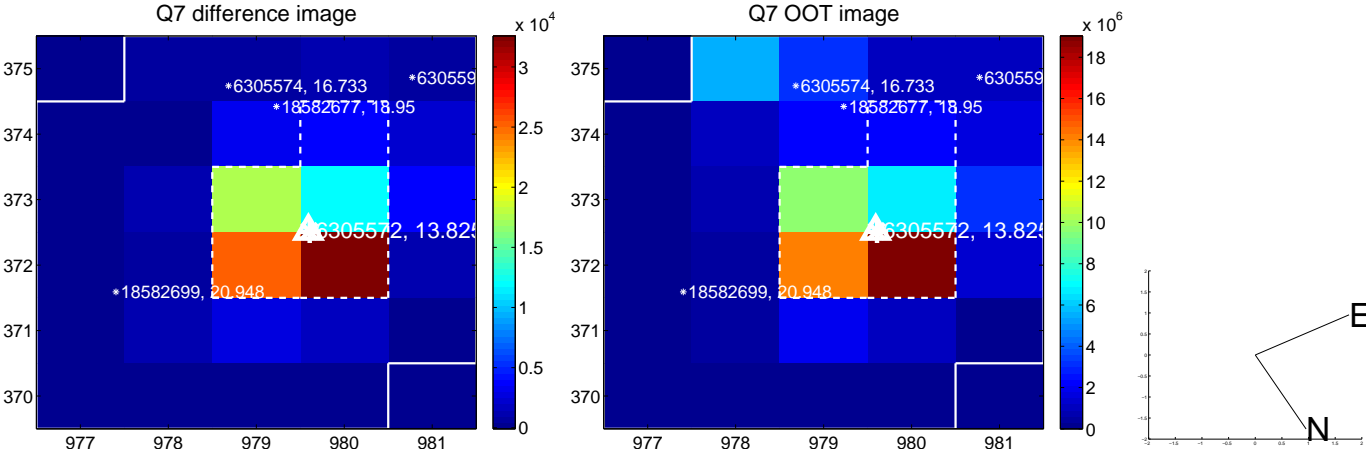
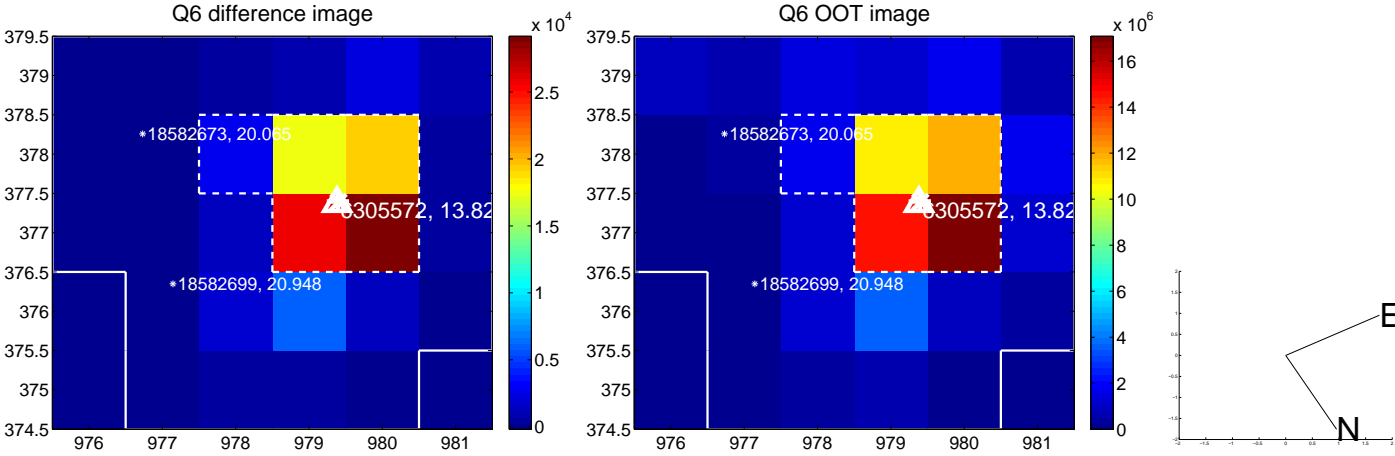
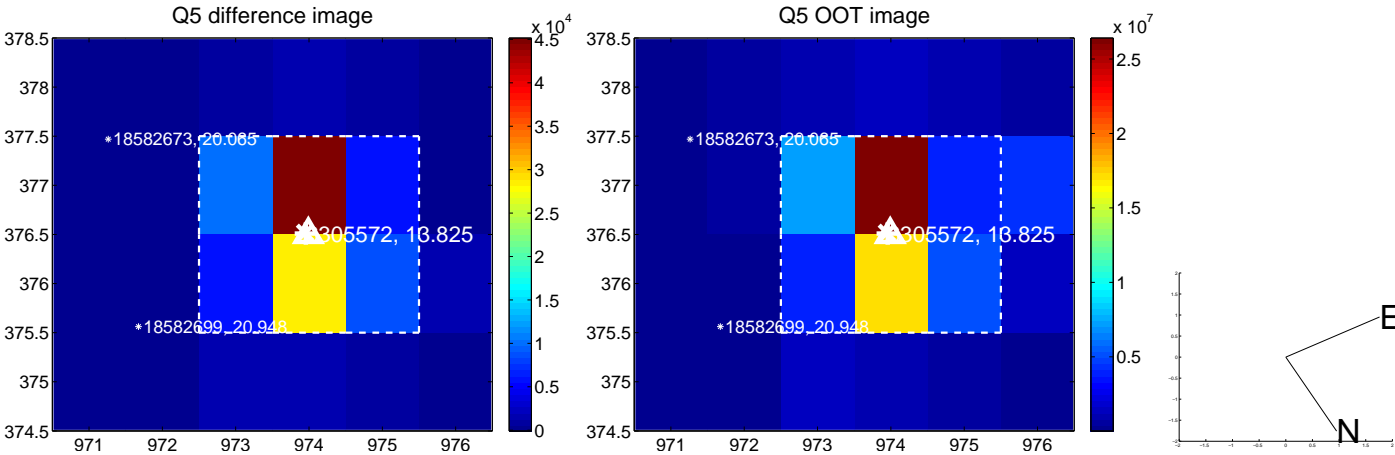


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

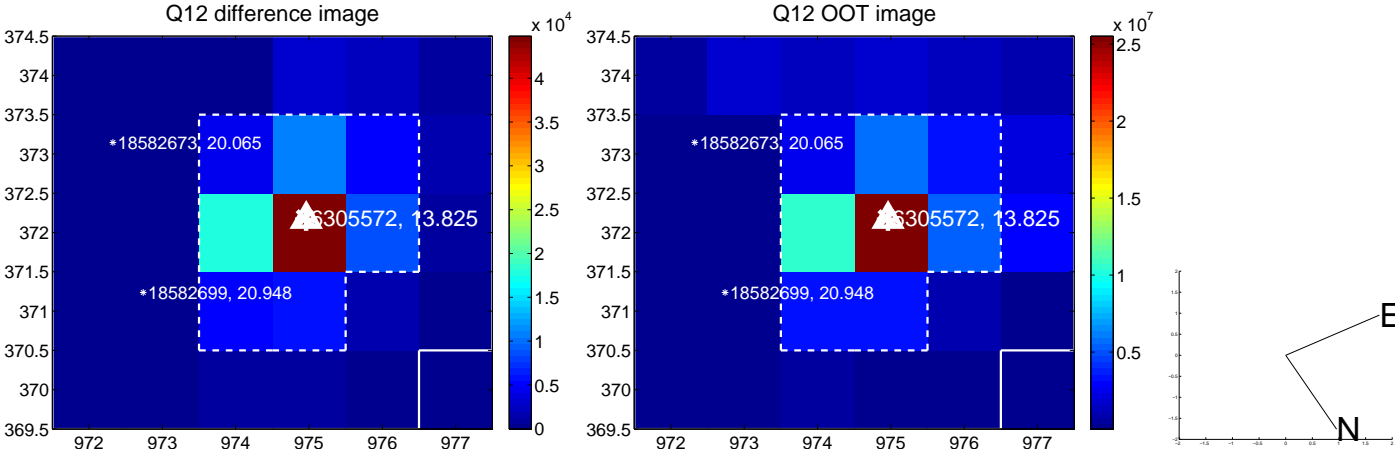
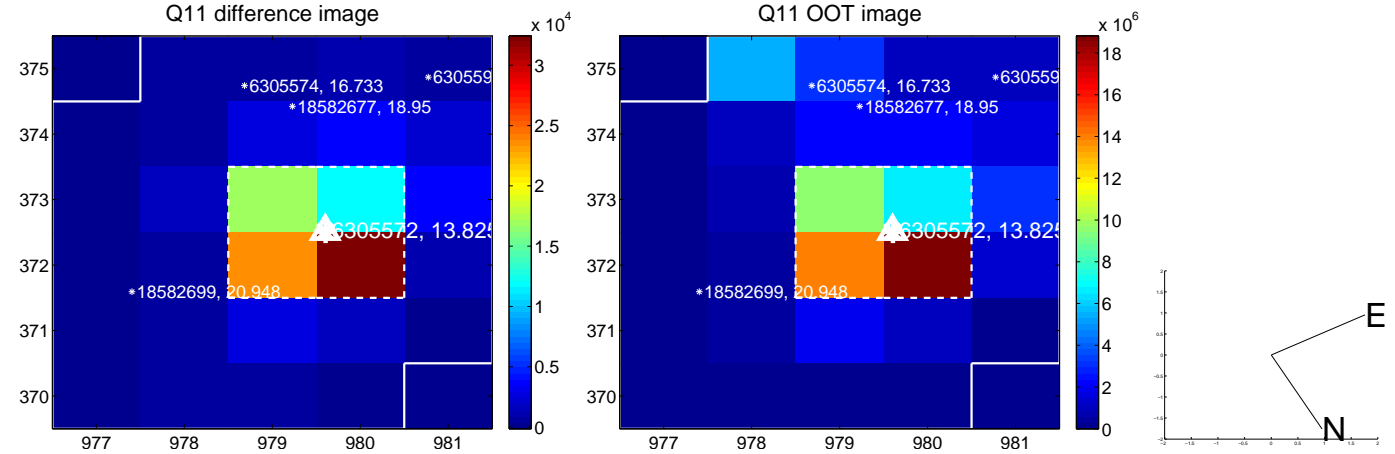
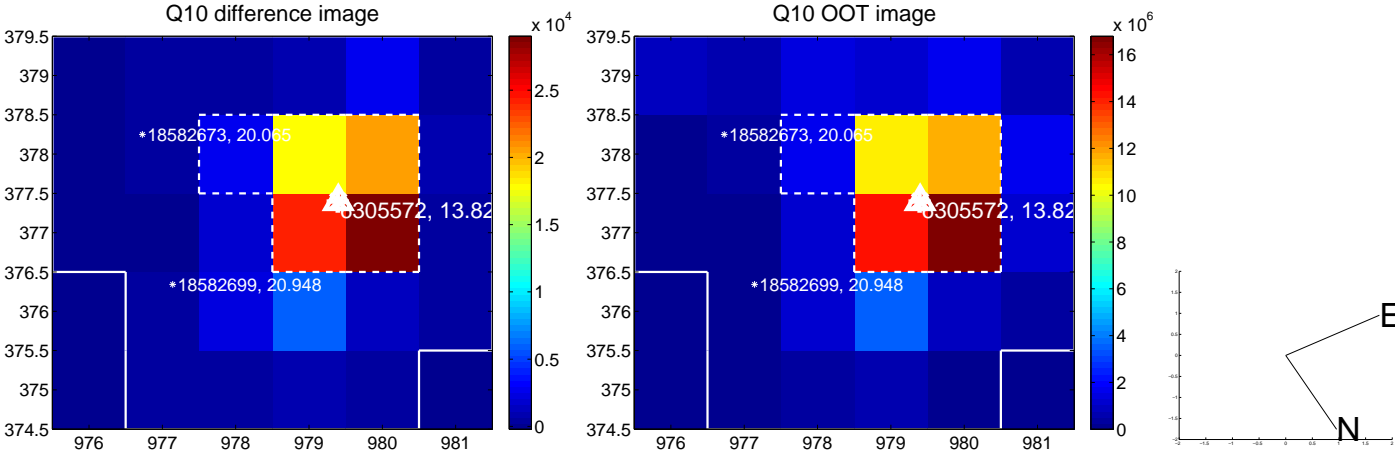
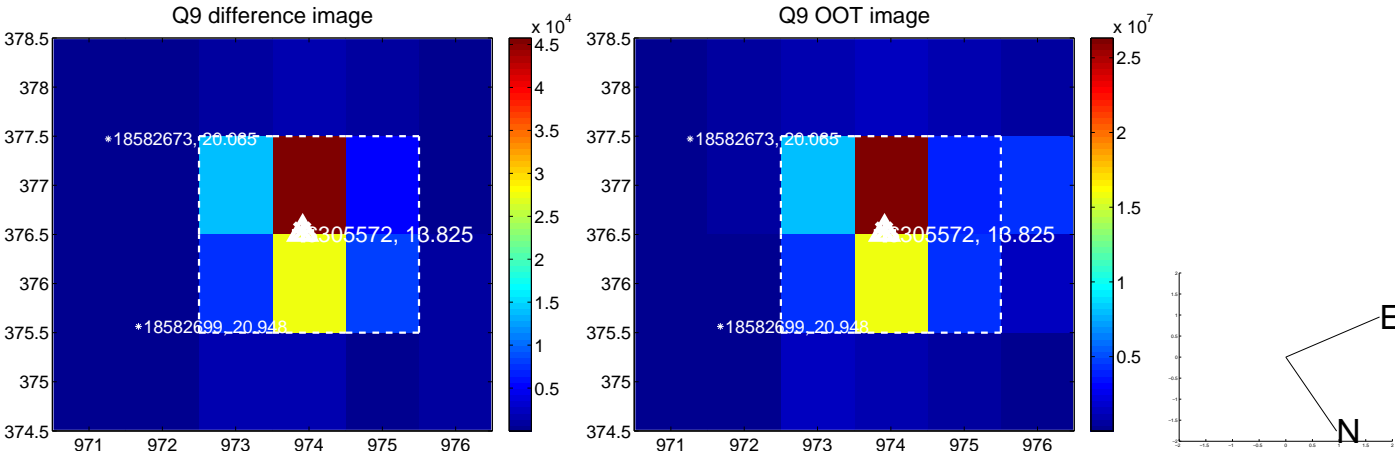
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



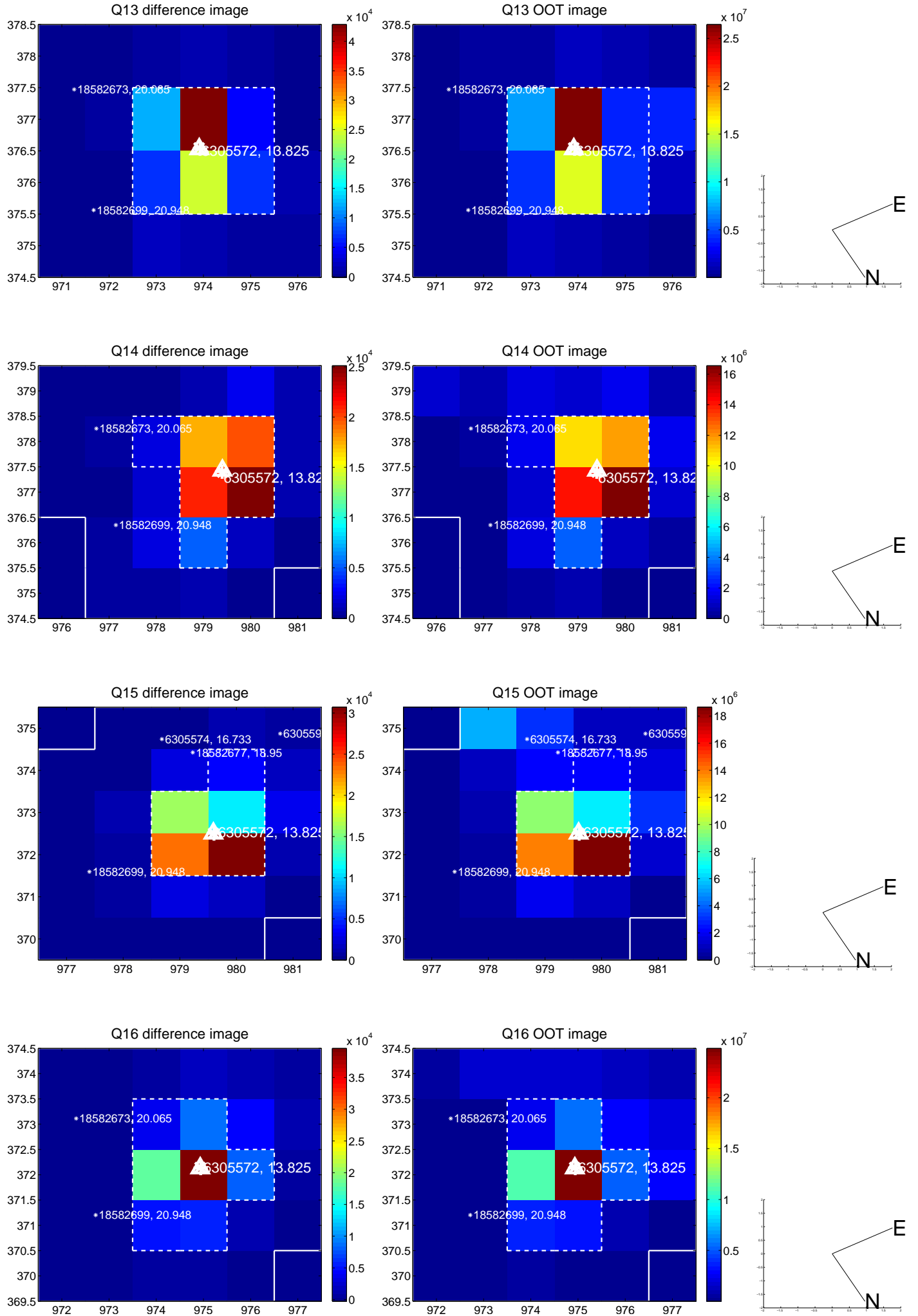
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



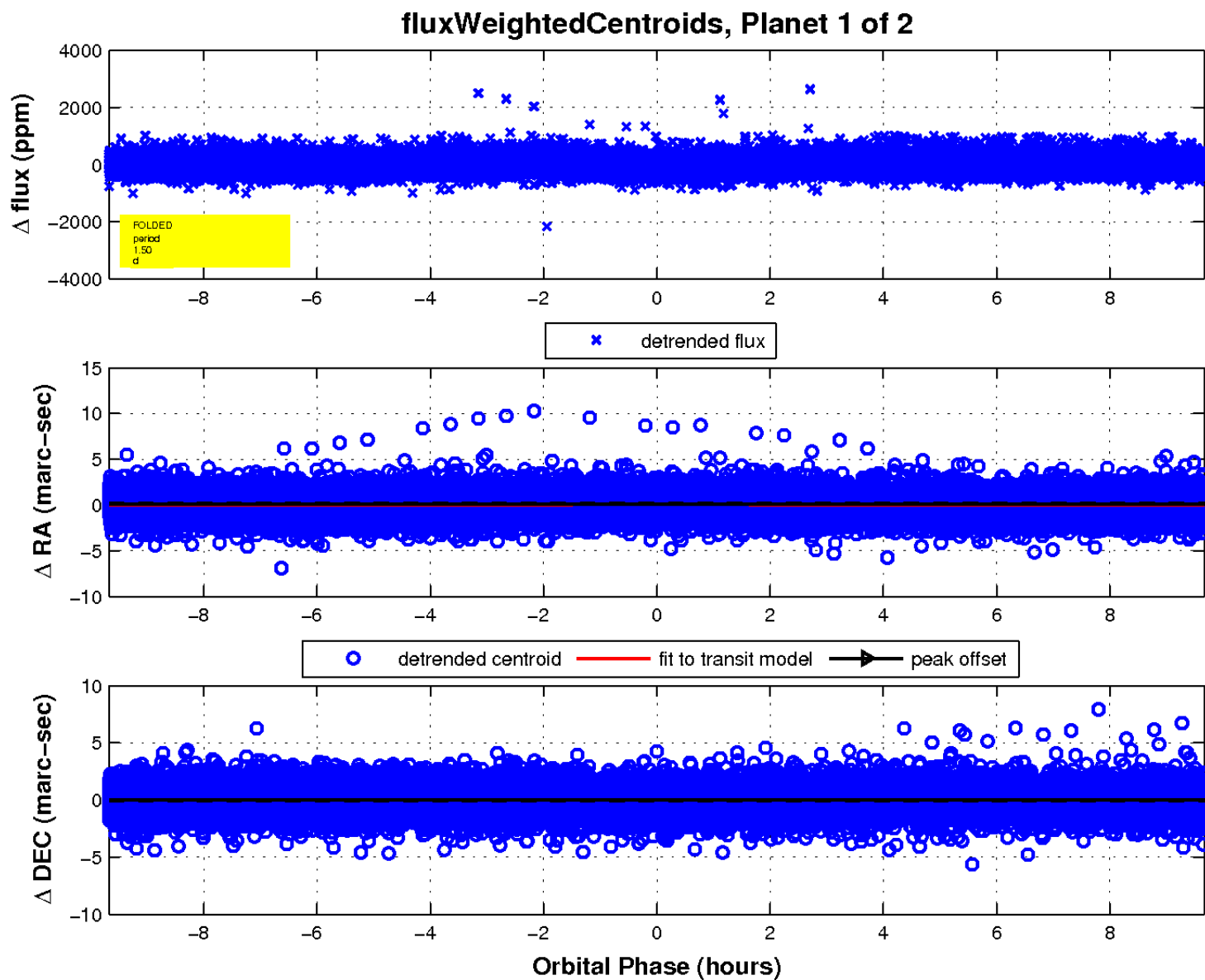
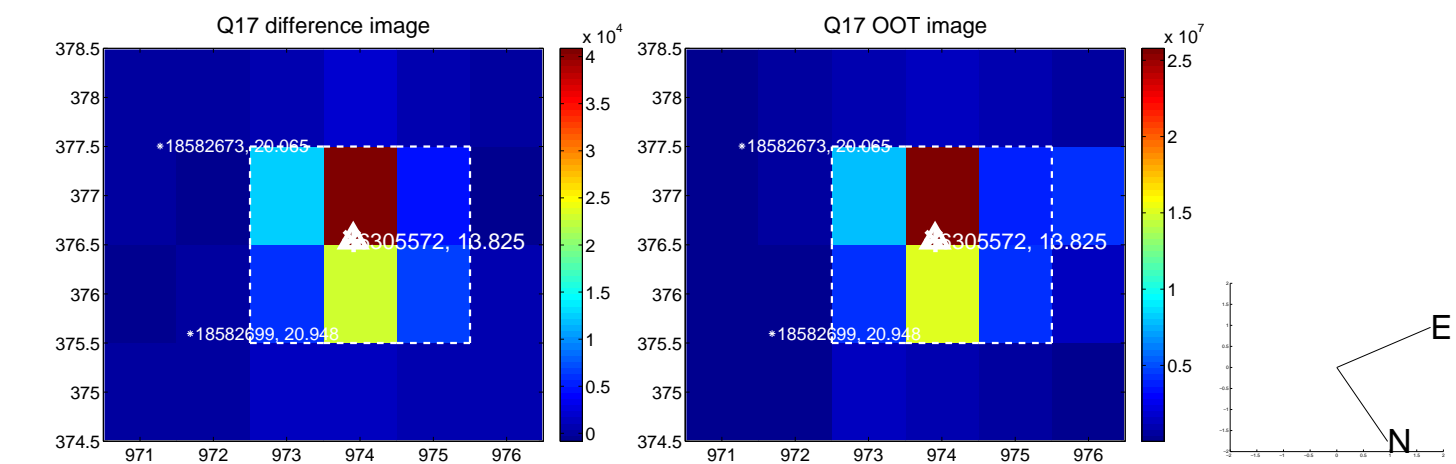
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

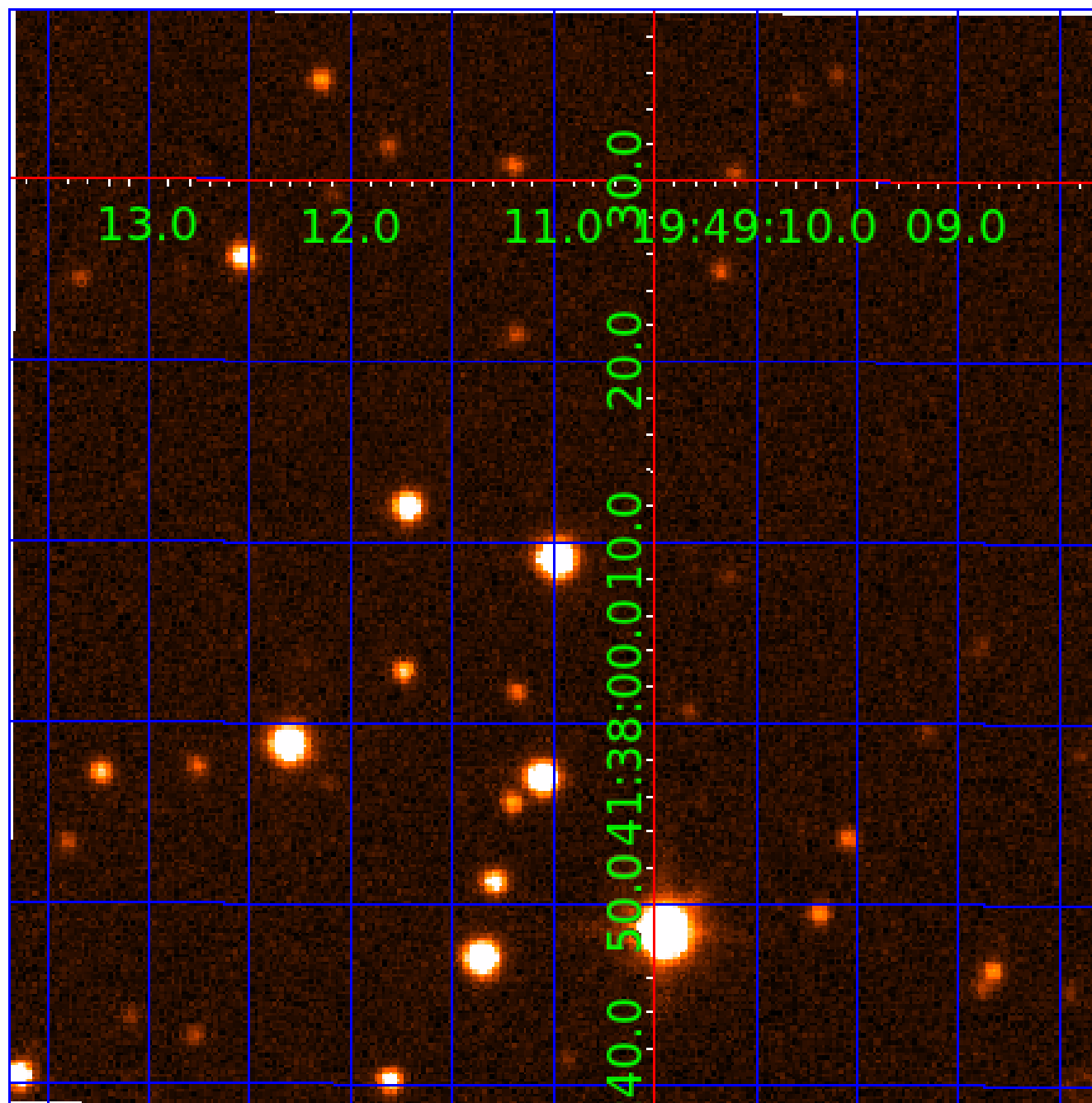


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006305572

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})
006305572-01	OBS	No	1.500067	131.930709	55.0	3.224	15.3	14.6	2.09	9345	1.77	26856.44
006305572-02	OBS	No	1.499969	132.849472	11.4	6.287	12.5	3.7	2.09	9345	0.81	26858.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006305572-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
006305572-02	OBS	FP	0.00	1	0	1	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST

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

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

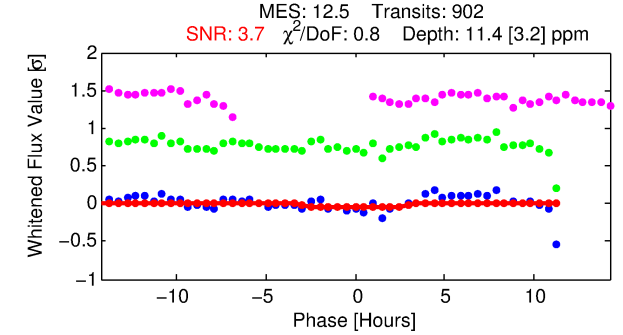
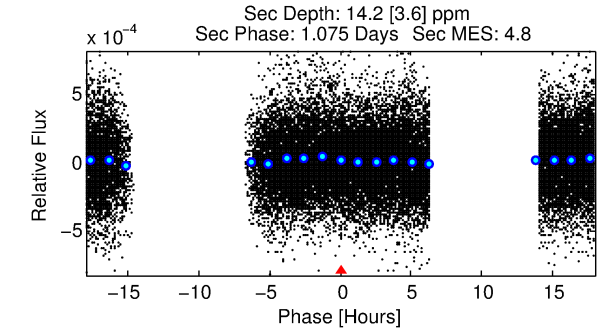
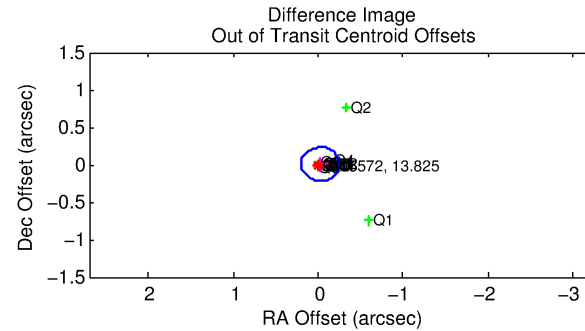
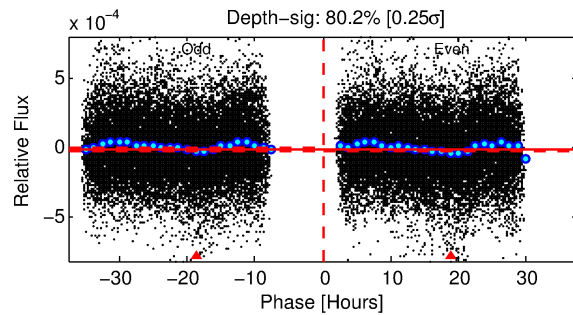
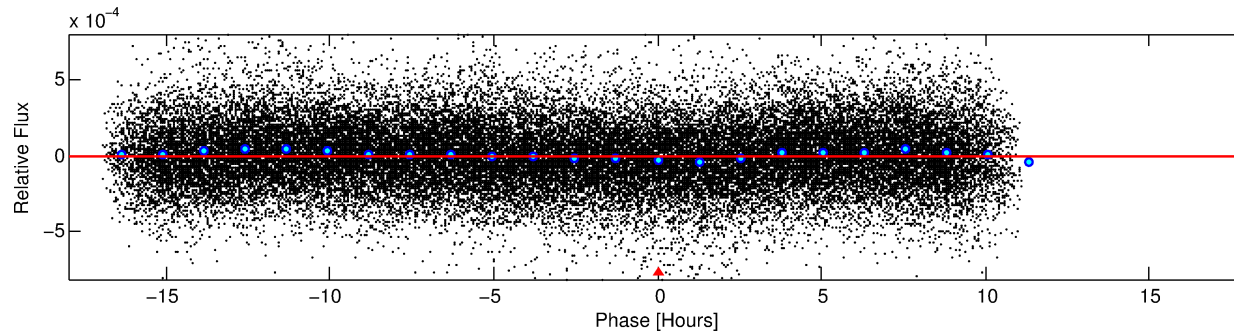
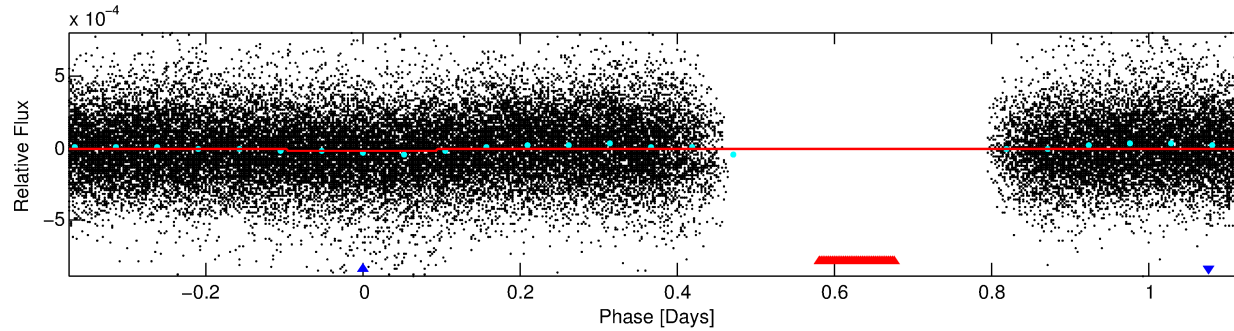
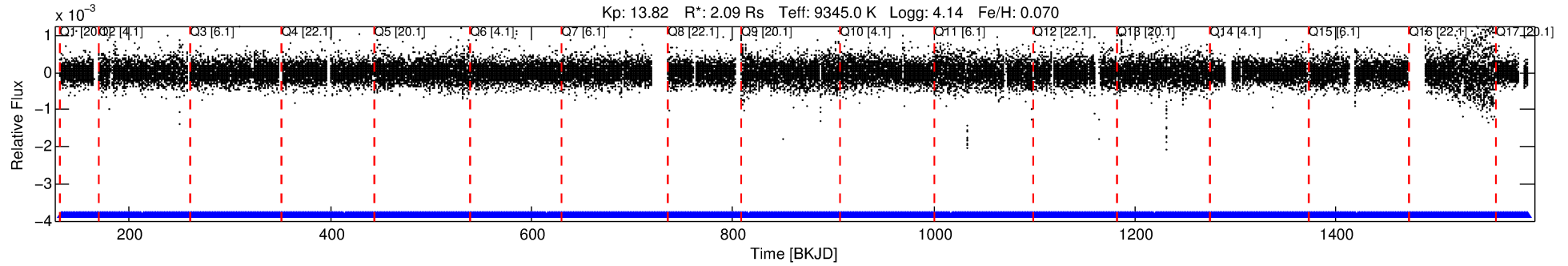
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006305572-02

No Significant Match Found

DV One-Page Summary

KIC: 6305572 Candidate: 2 of 2 Period: 1.500 d



DV Fit Results:

Period = 1.49997 [0.00004] d
Epoch = 132.8495 [0.0113] BKJD
Rp/R* = 0.0036 [0.0014]
a/R* = 1.24 [1.21]
b = 0.90 [0.60]
Seff = 26858.77 [13001.49]
Teq = 3264 [395] K
Rp = 0.81 [0.46] Re
a = 0.0334 [0.0109] AU
Ag = 13.16 [12.36] [0.98 σ]
Teffp = 9613 [2031] K [3.07 σ]

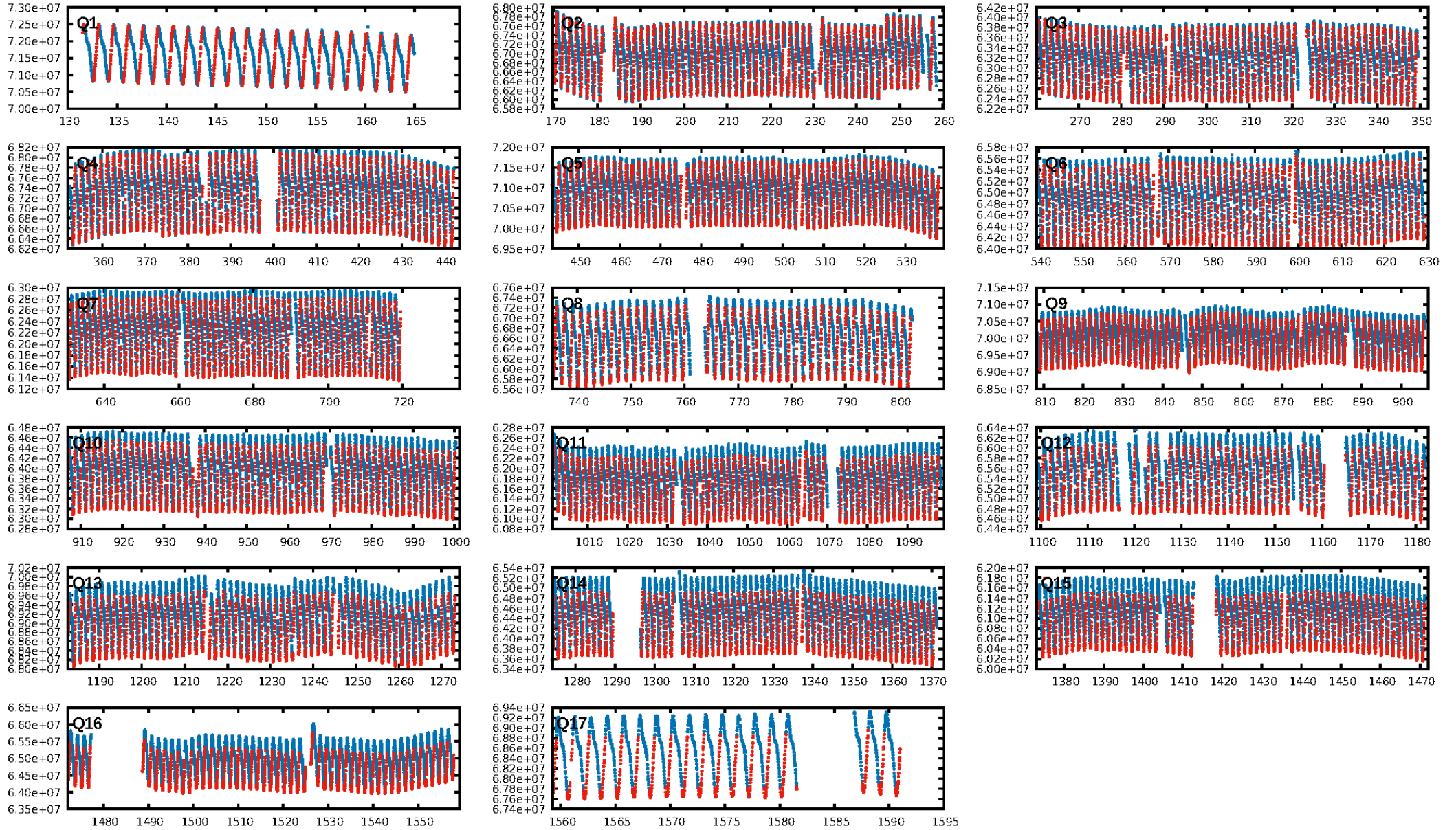
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.71e-31
RollingBand-fgt: 1.00 [862/862]
GhostDiagnostic-chr: 0.1117
Centroid-sig: 0.0%
Centroid-so: 7.503 arcsec [2.75 σ]
OotOffset-rm: 0.027 arcsec [0.36 σ]
KicOffset-rm: 0.041 arcsec [0.49 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.94 [16/17]

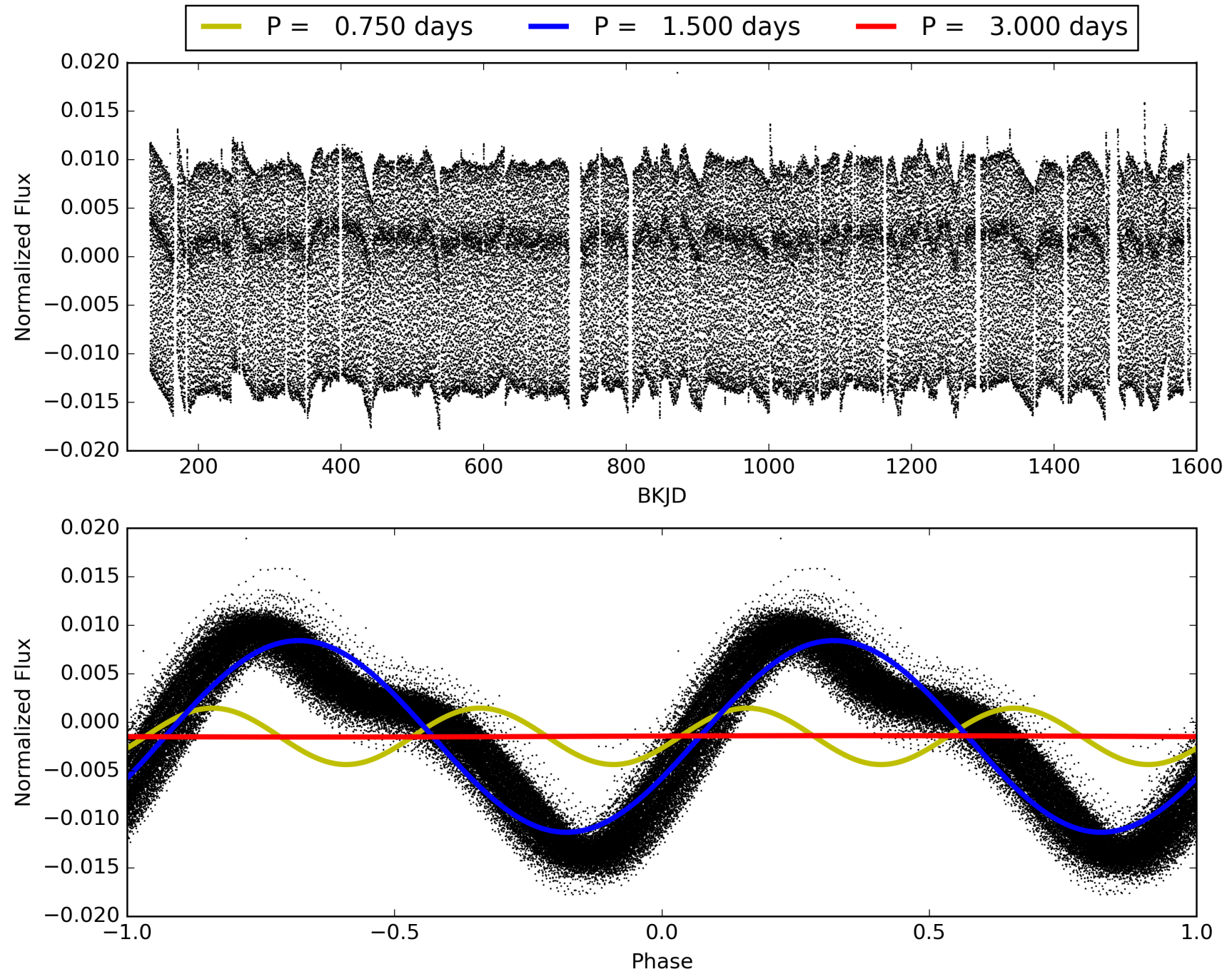
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:56:16 Z

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

TCE 006305572-02, PDC Light Curves

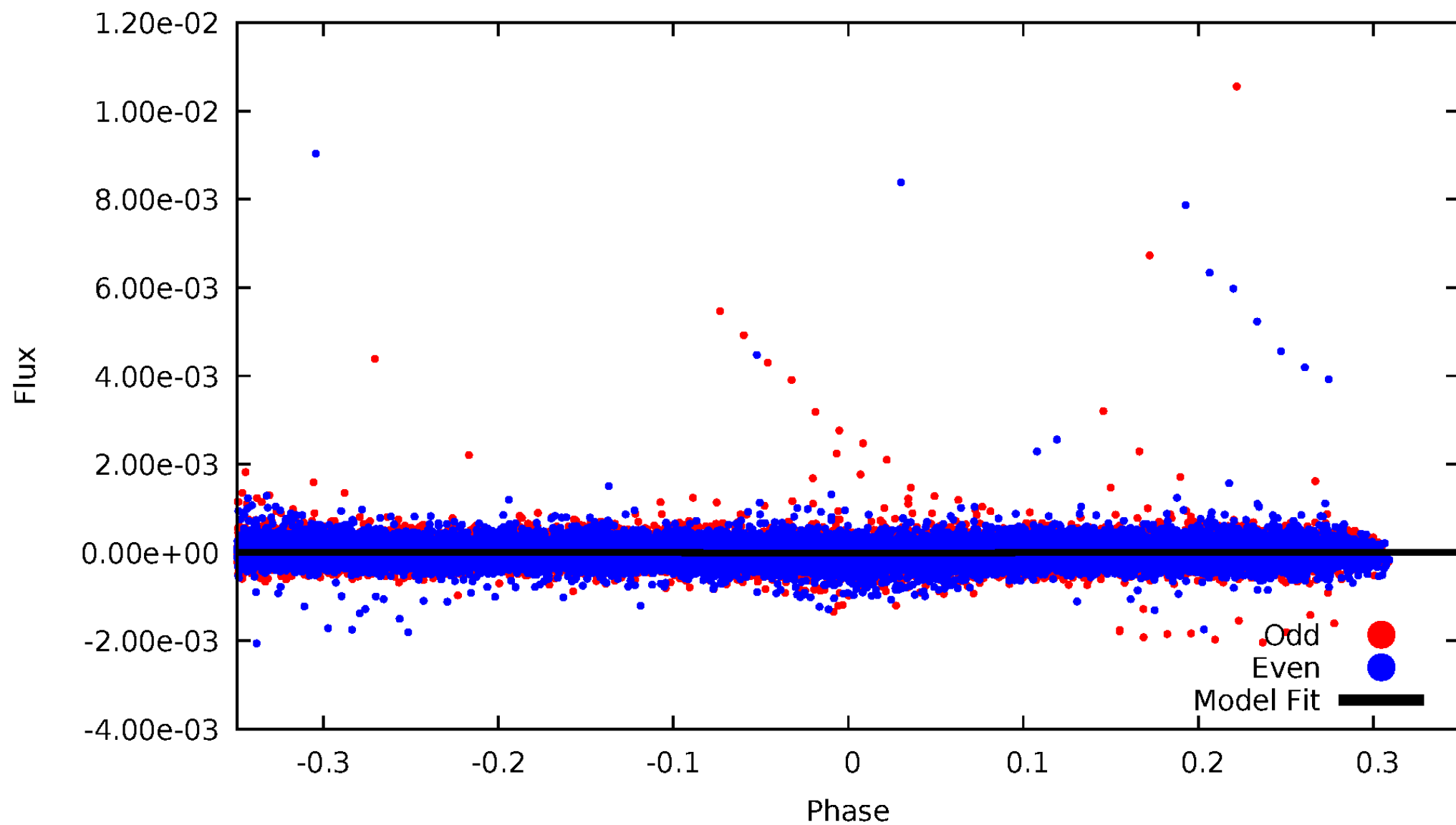


TCE 006305572-02



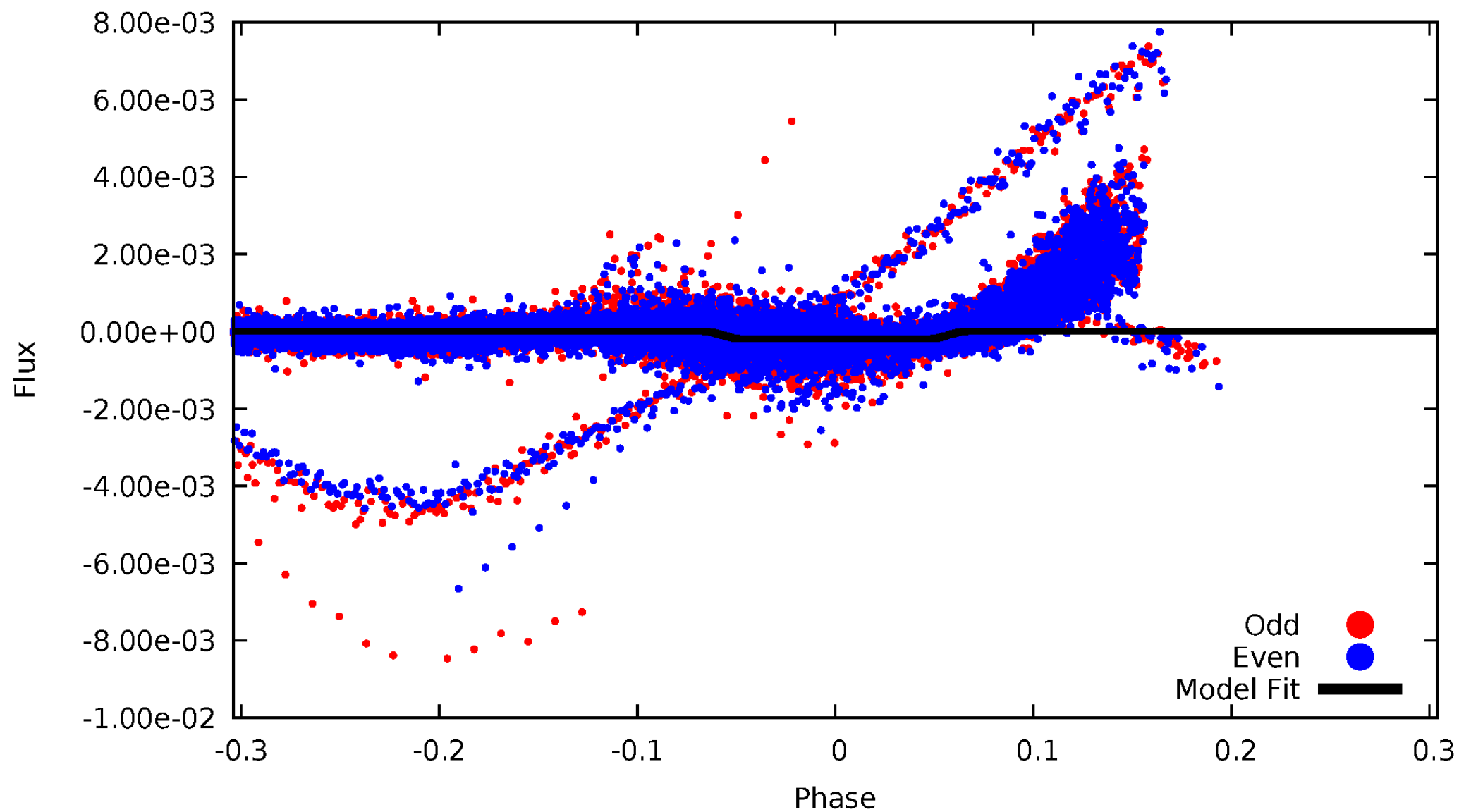
DV Odd/Even

TCE 006305572-02



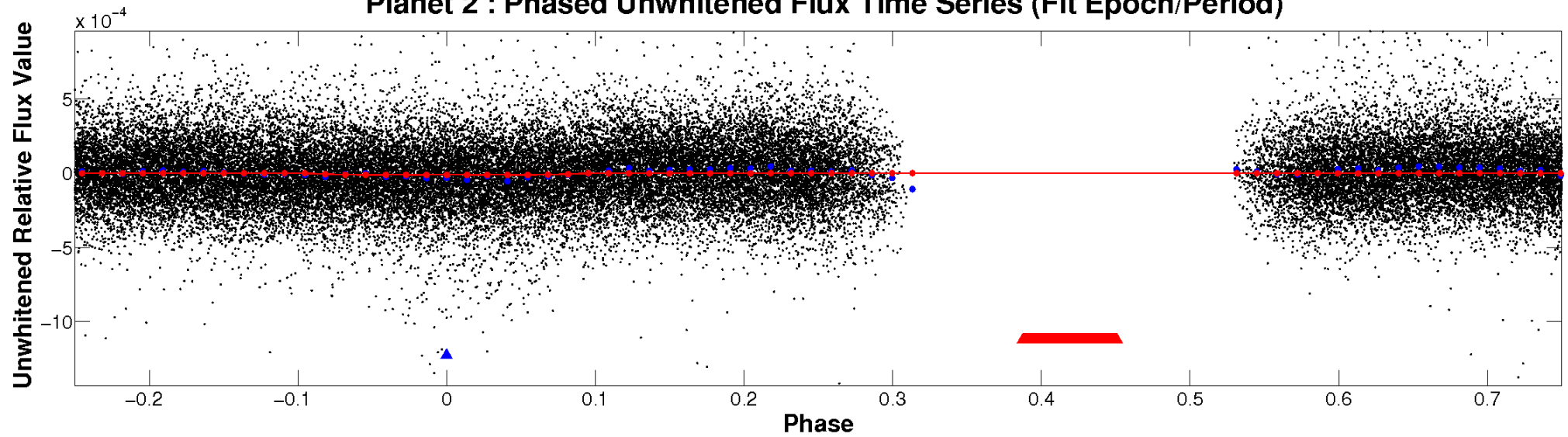
ALT Odd/Even

TCE 006305572-02

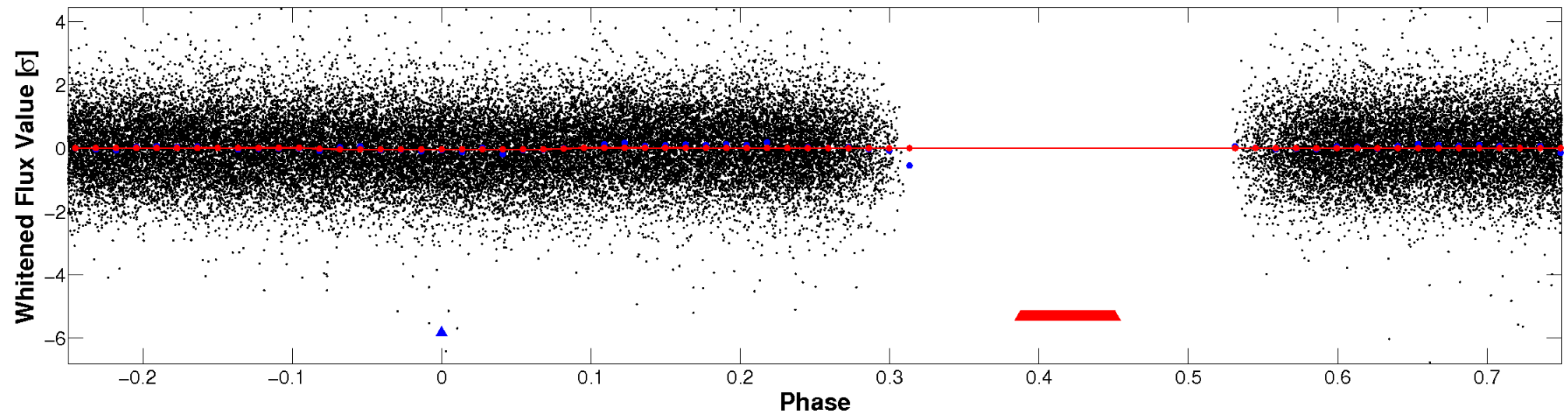


Non-Whitened Vs. Whitened Light Curve

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

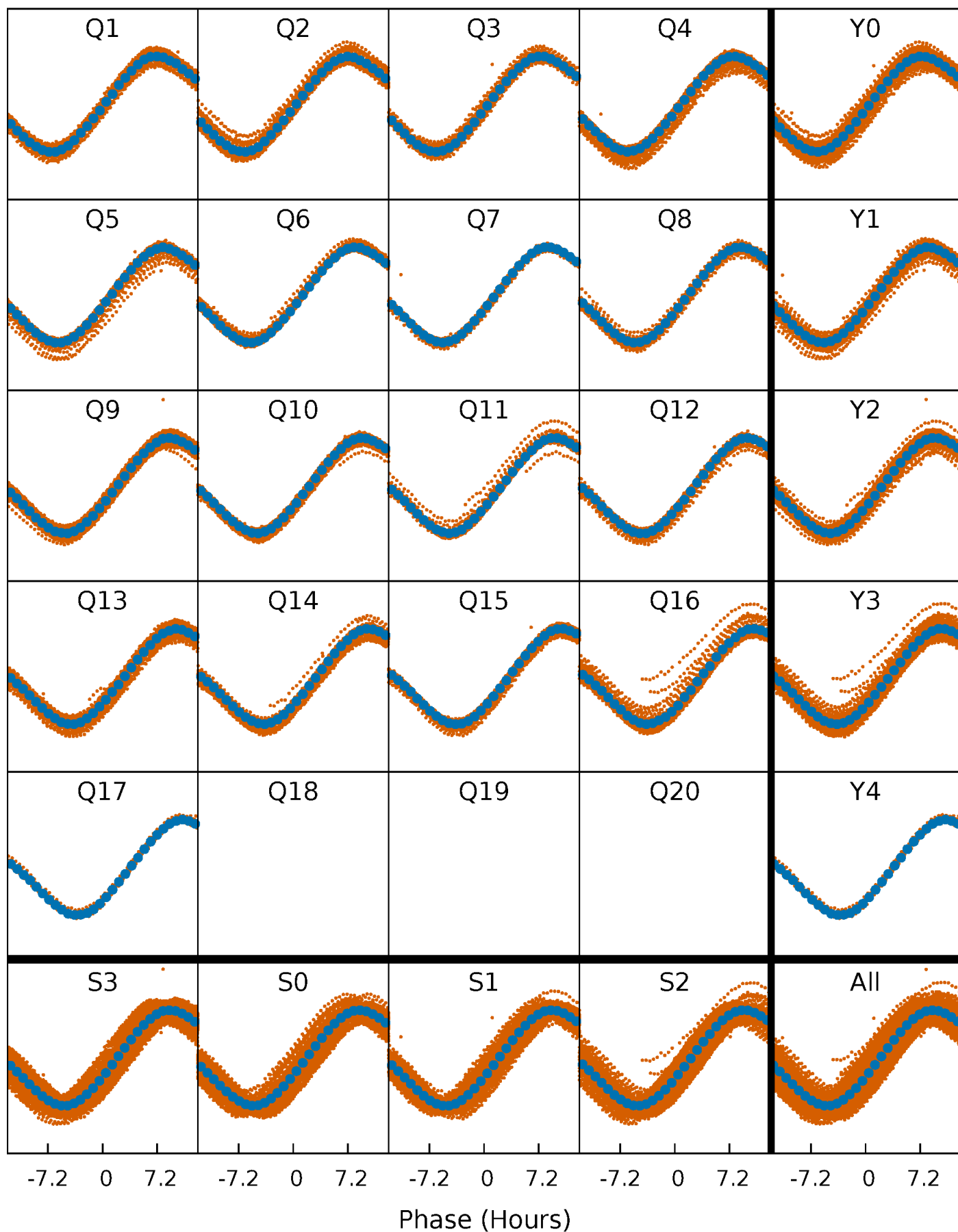


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



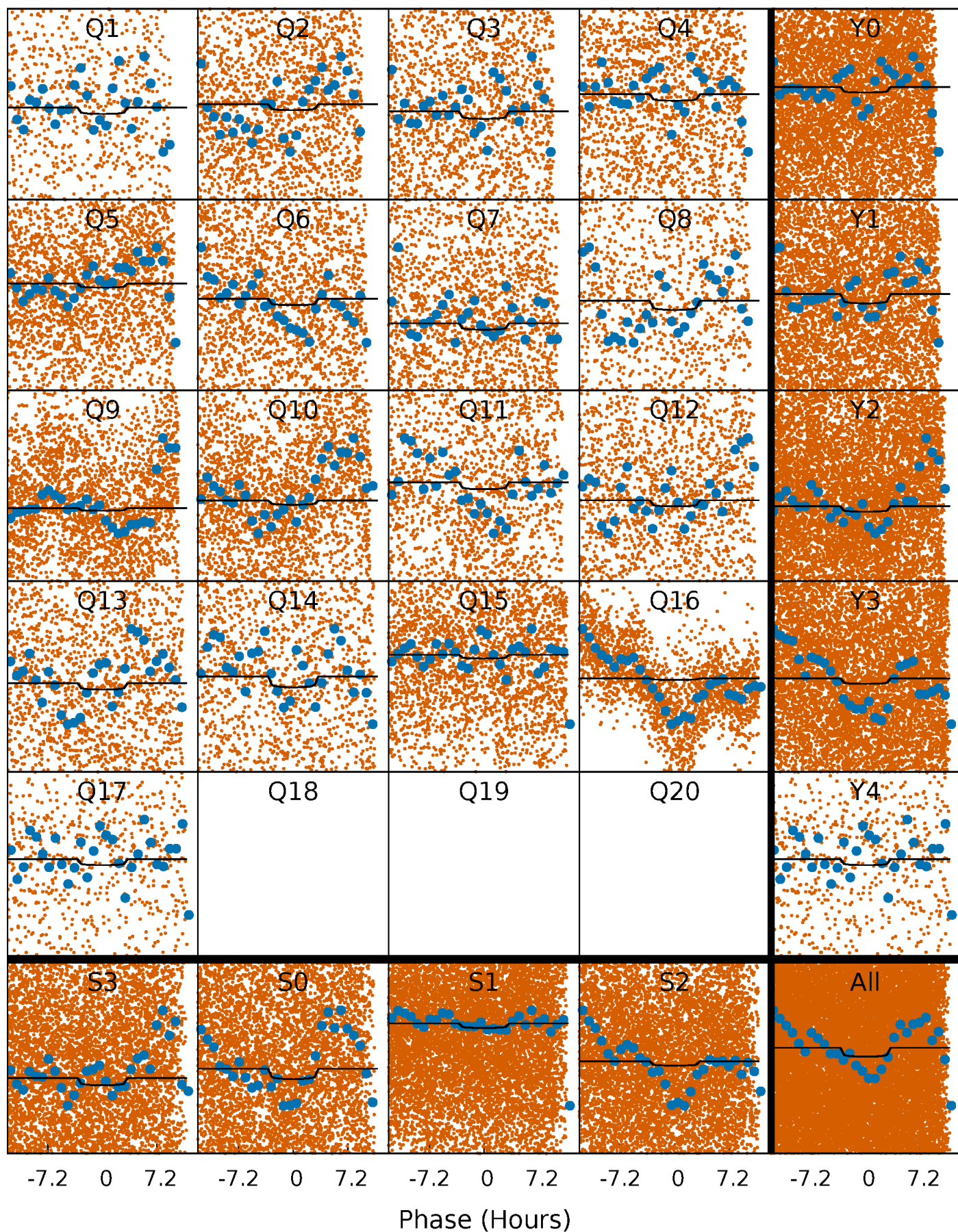
PDC Quarter-Phased Transit Curves

TCE 006305572-02 P= 1.499969 Days $T_0=132.849472$ (BKJD)



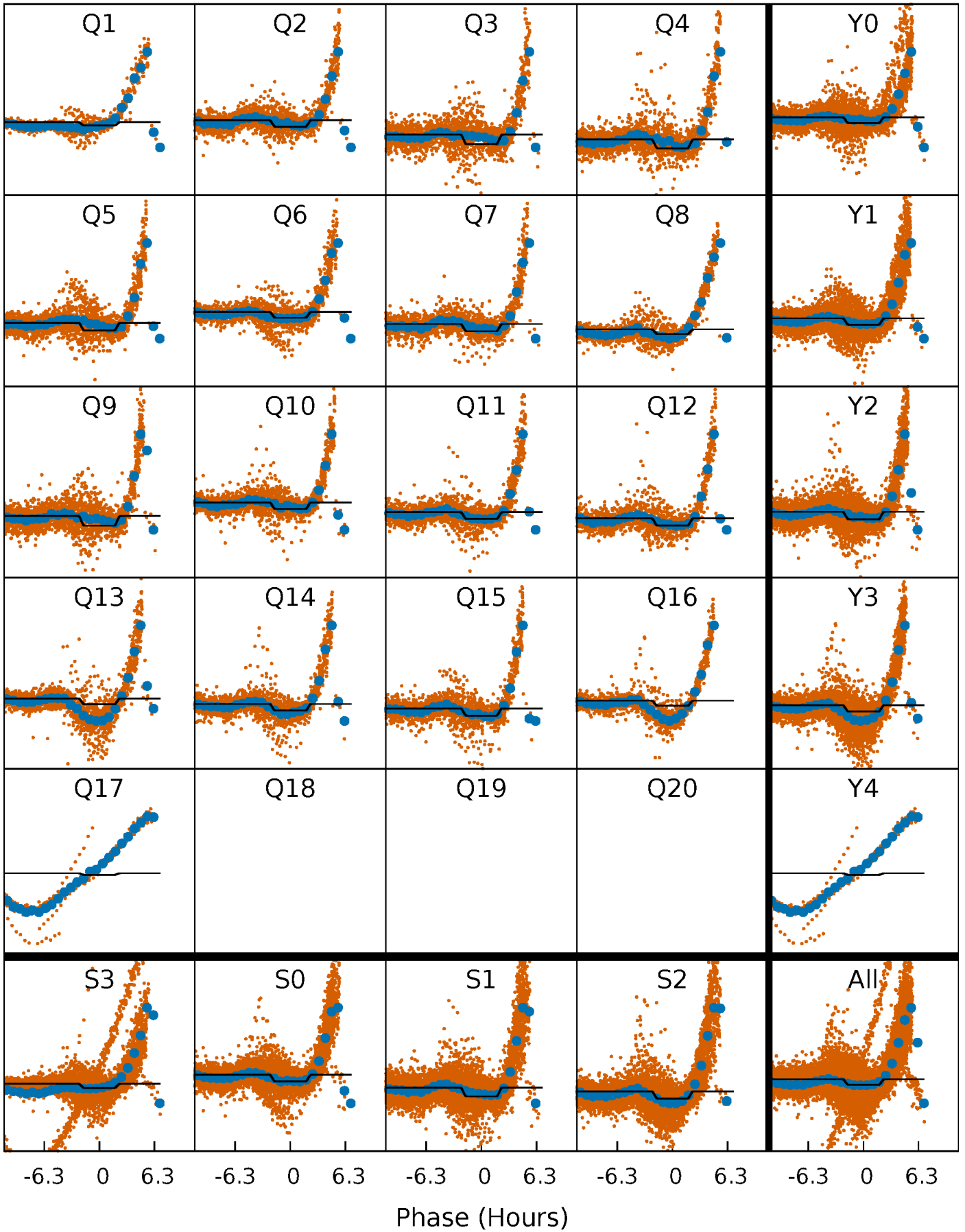
DV Quarter-Phased Transit Curves

TCE 006305572-02 P= 1.499969 Days $T_0=132.849472$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

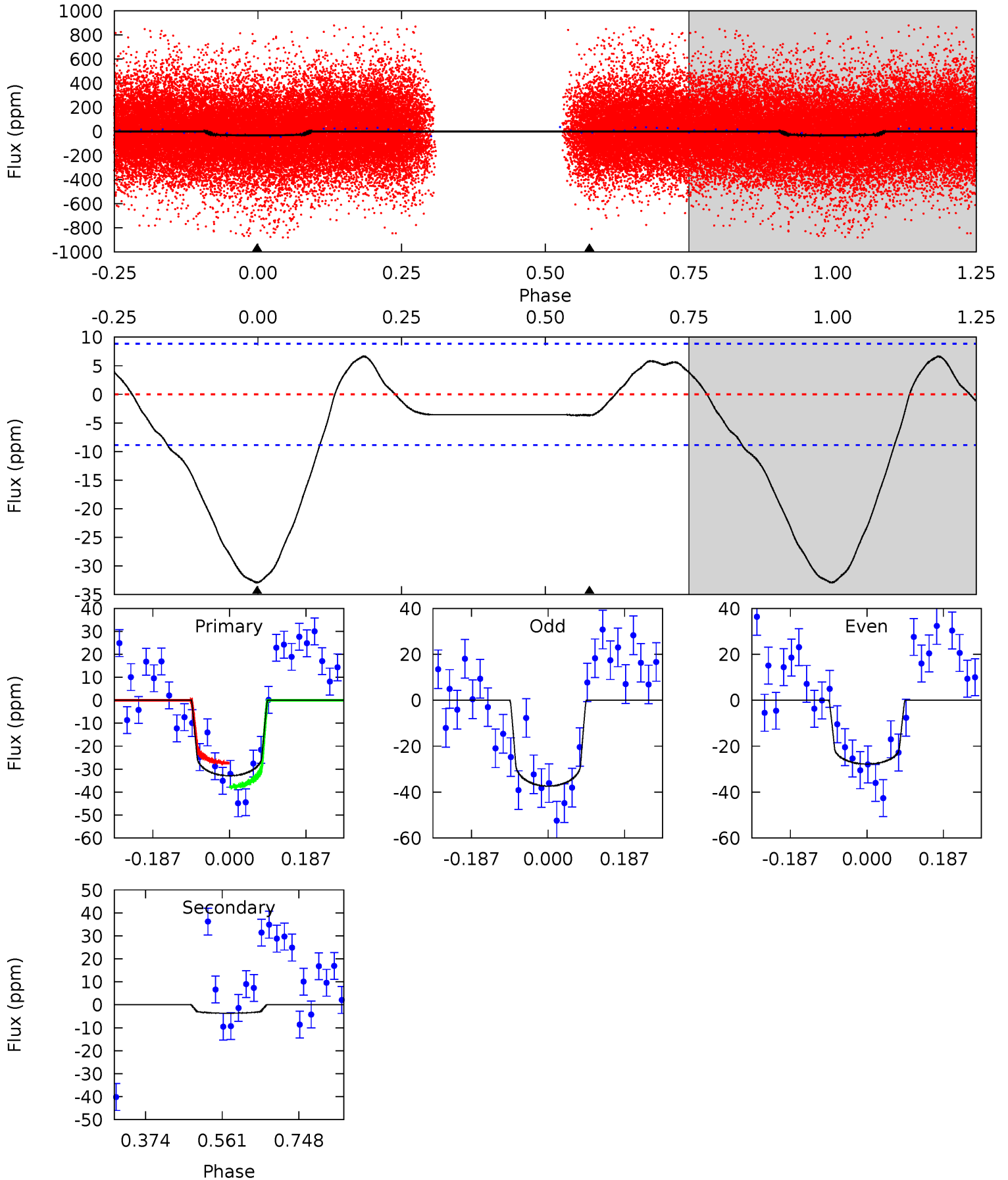
TCE 006305572-02 P= 1.500112 Days $T_0=132.925219$ (BKJD)



DV Model-Shift Uniqueness Test

006305572-02, P = 1.499969 Days, E = 131.349503 Days

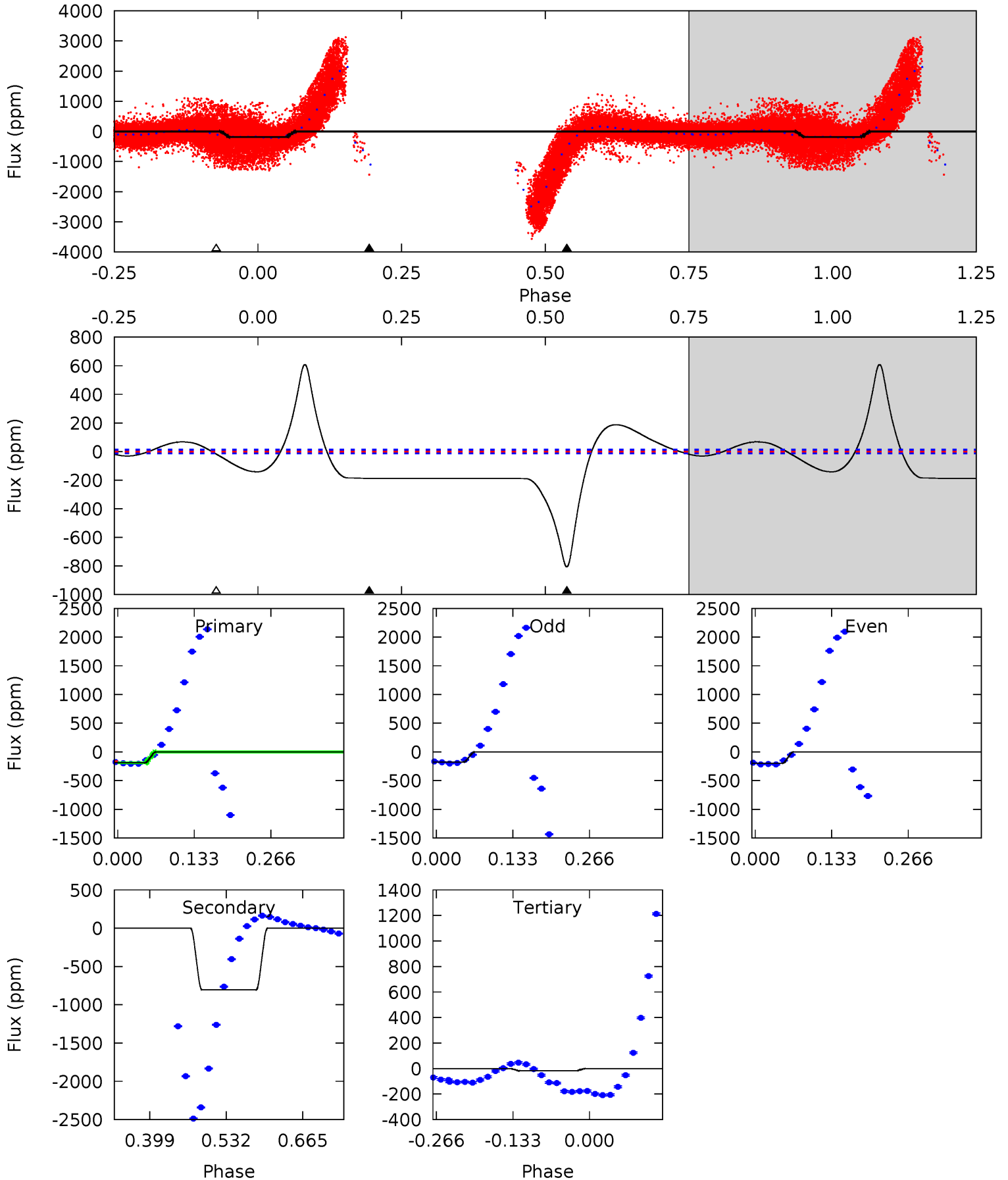
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	1.83	0	0	4.43	1.32	1.54	16.5	16.5	1.83	1.83	2.45	1.66	0.17	2.68



Alt Model-Shift Uniqueness Test

006305572-02, P = 1.500112 Days, E = 131.425107 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
66.6	286.2	6.36	0	4.50	1.50	25.8	60.2	66.6	279.8	286.2	3.92	1.22	0.43	2.75



Stellar Parameters For KIC 006305572

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9345^{+294}_{-425}	$4.140^{+0.099}_{-0.231}$	$0.070^{+0.200}_{-0.650}$	$2.094^{+0.863}_{-0.465}$	$2.208^{+0.419}_{-0.559}$	$0.339^{+0.201}_{-0.196}$
	+3%/-5%	+2%/-6%	+286%/-929%	+41%/-22%	+19%/-25%	+59%/-58%
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 006305572-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 2	$0.84^{+0.36}_{-0.36}$	4645^{+386}_{-313}	6166^{+2585}_{-1543}	$3.004^{+6.318}_{-2.019}$
Alt.	-806 ± 3	$3.28^{+0.80}_{-0.57}$	4645^{+453}_{-325}	17028^{+2374}_{-1826}	46^{+16}_{-15}

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 $A_{obs} \gg 1.0$

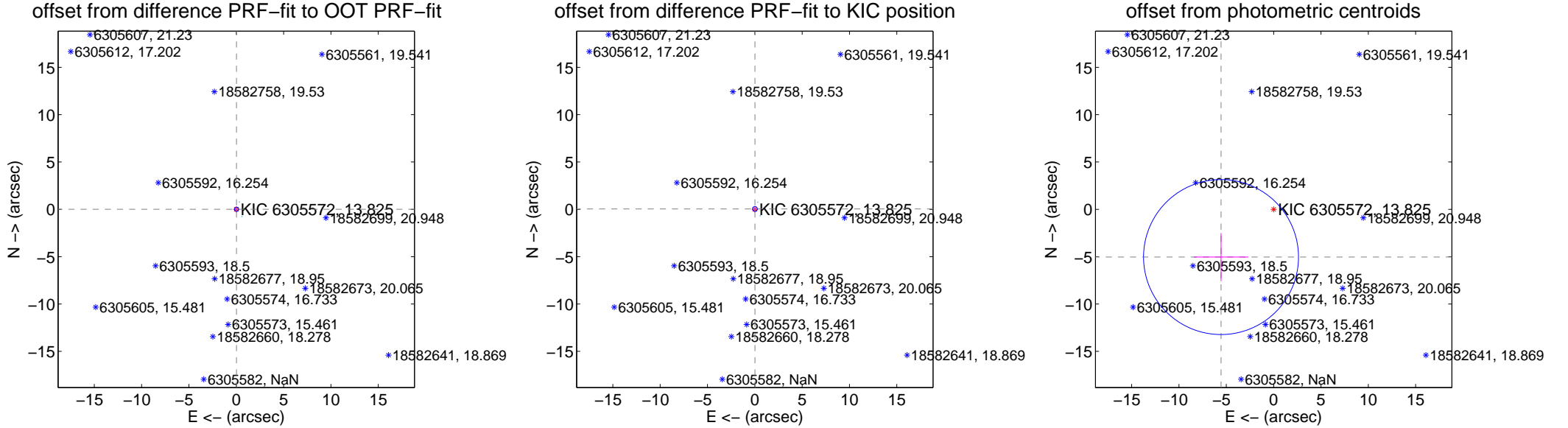
DV Centroid Data

Supplemental centroid analysis for 006305572-02. Kepler magnitude: 13.82. Transit SNR 3.72

There are 17 quarters with good PRF difference image offsets

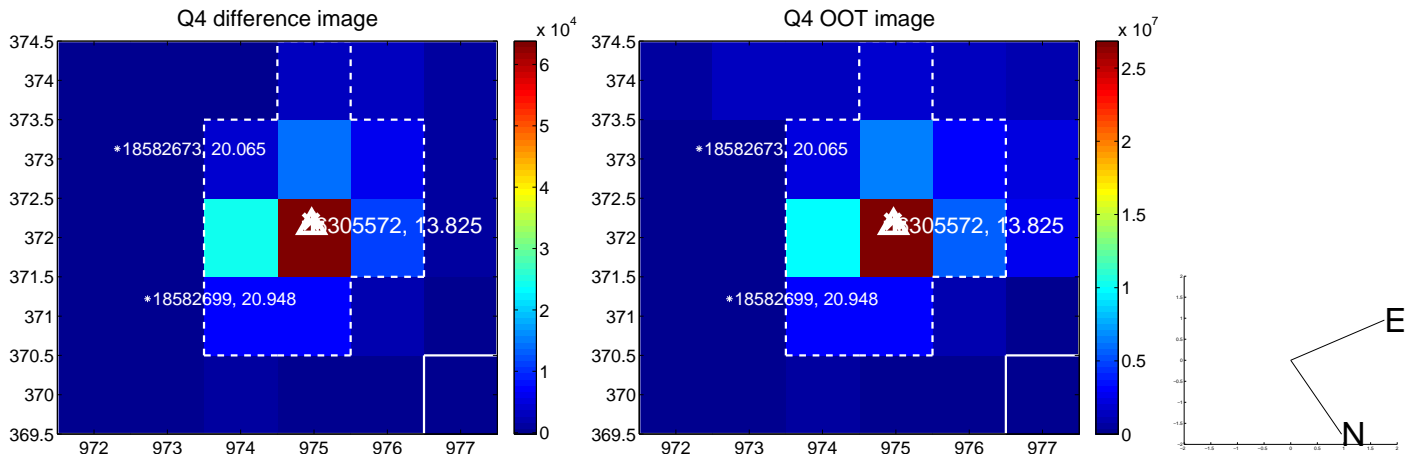
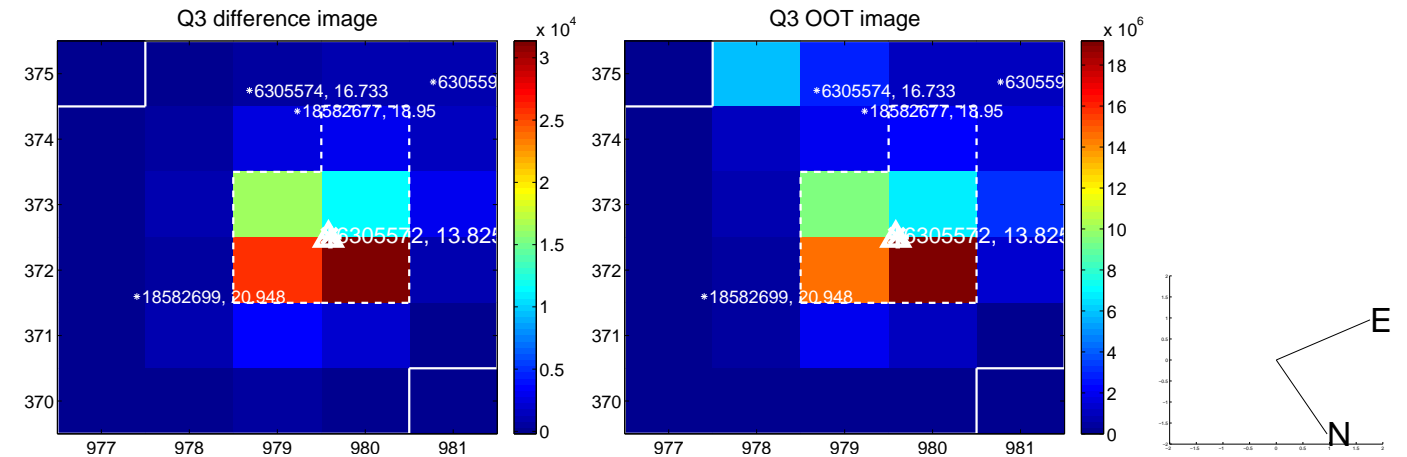
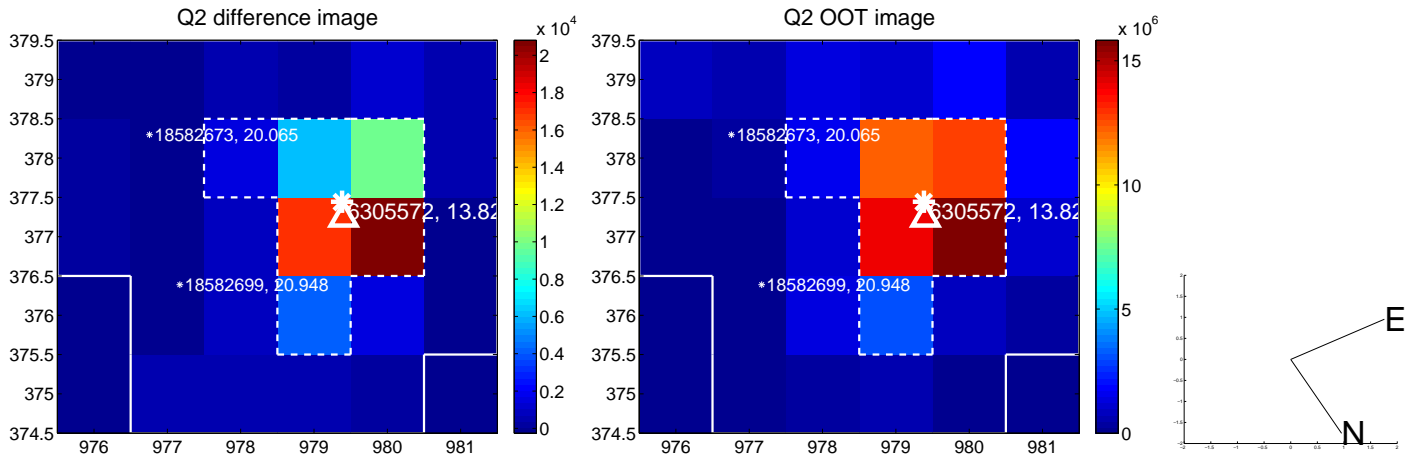
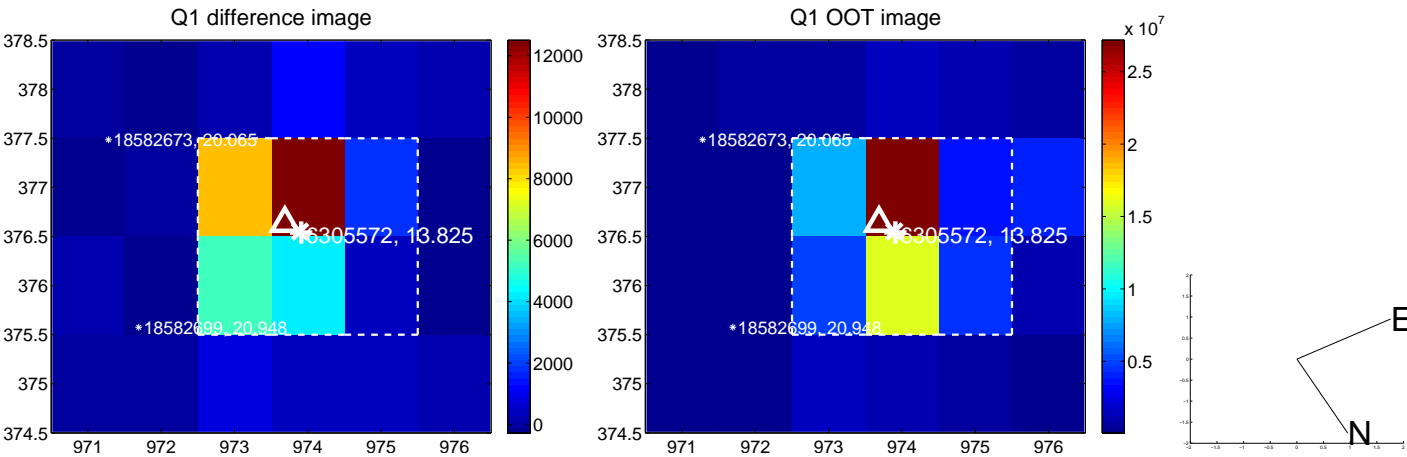
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.027 ± 0.075	0.36	-0.026 ± 0.076	0.006 ± 0.092
PRF-fit source offset from KIC position	0.041 ± 0.085	0.49	-0.011 ± 0.075	0.040 ± 0.087
photometric centroid source offset	7.50 ± 2.73	2.75	5.56 ± 2.88	-5.04 ± 2.53

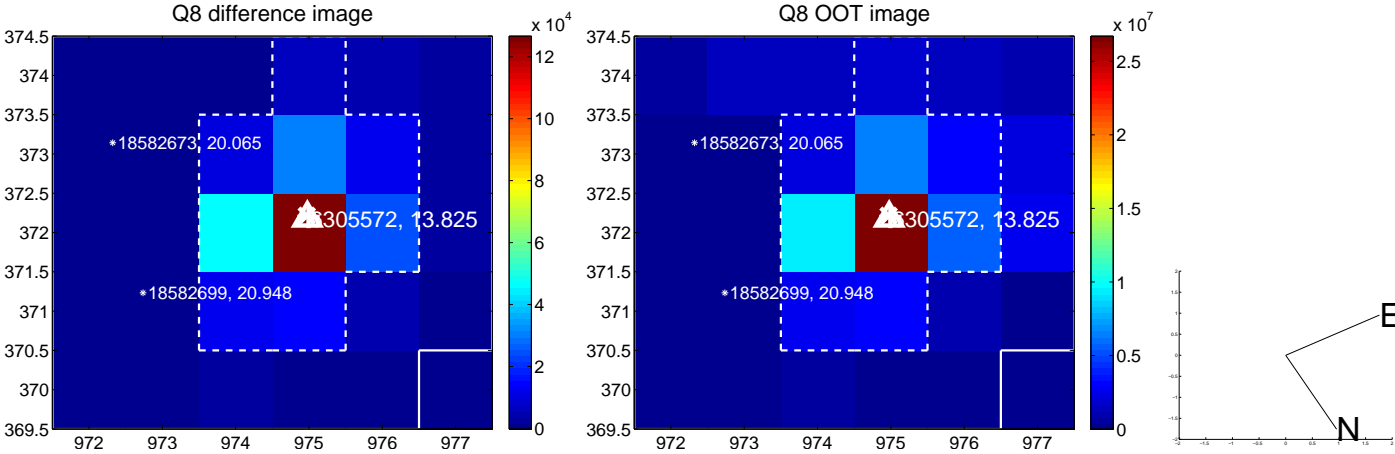
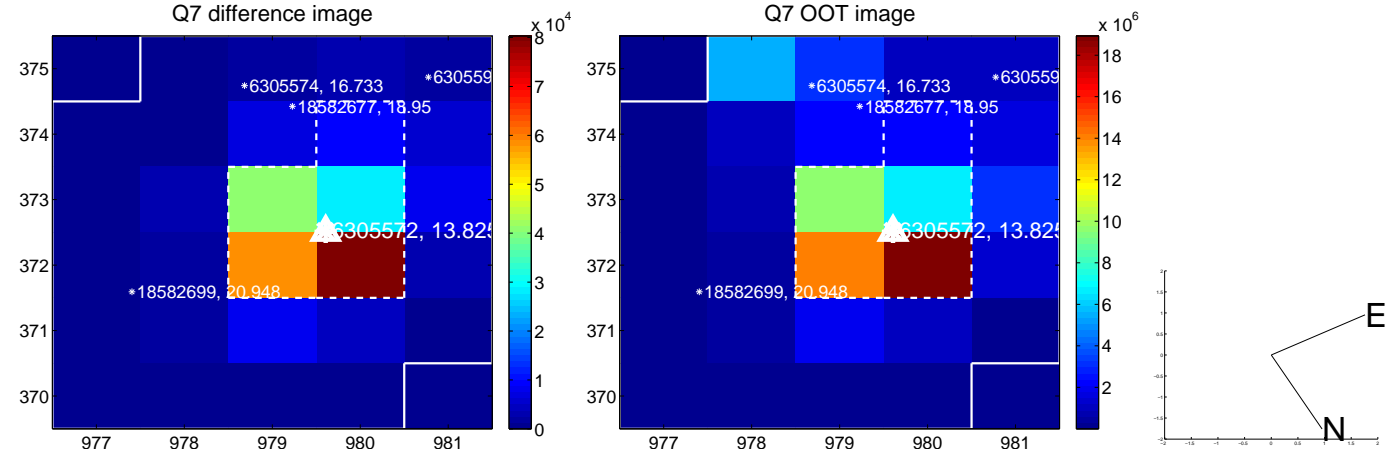
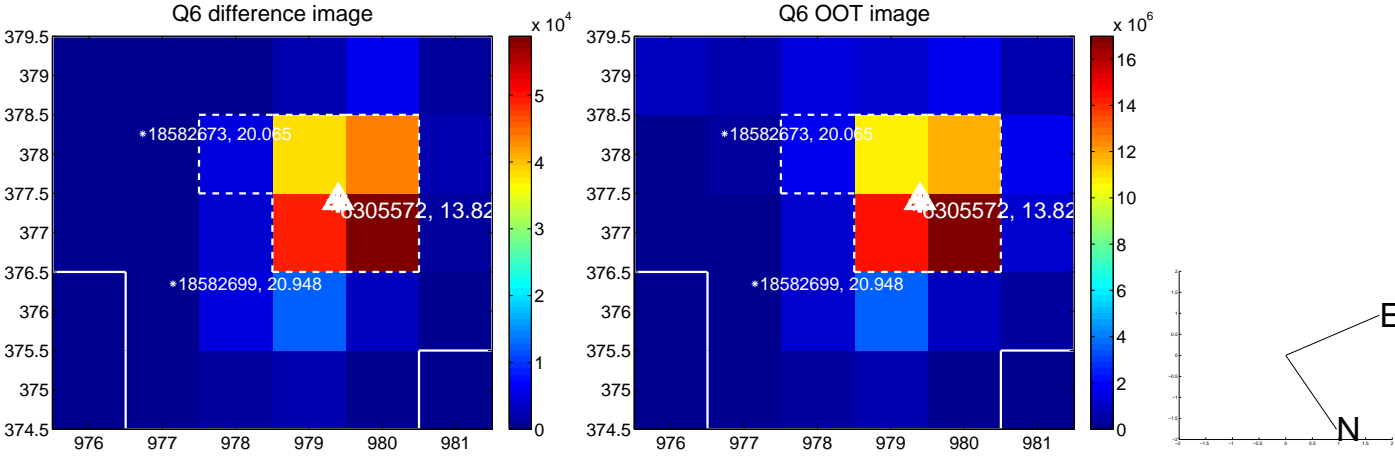
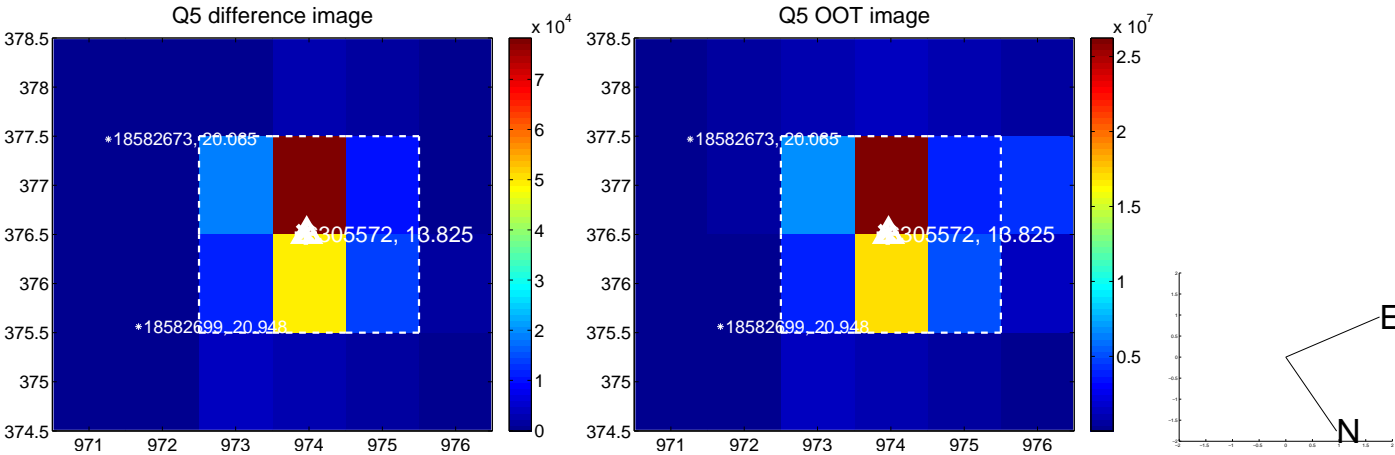


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

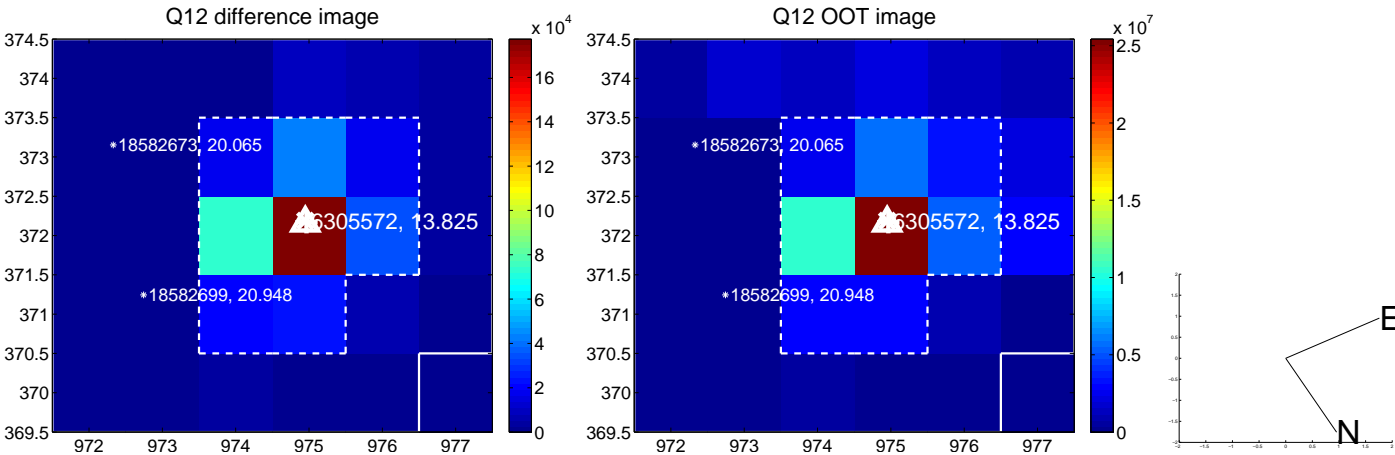
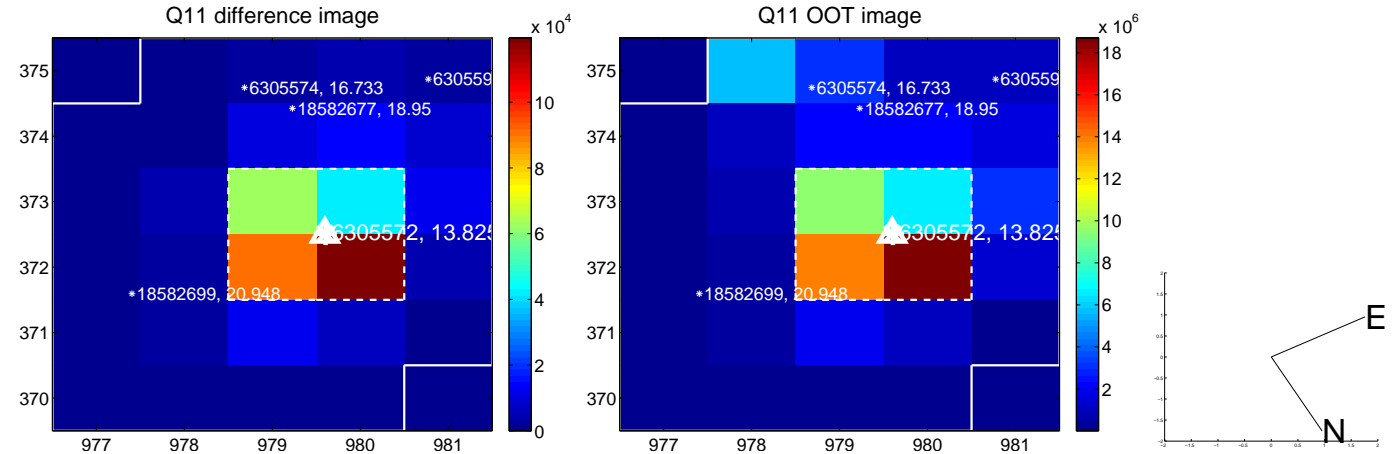
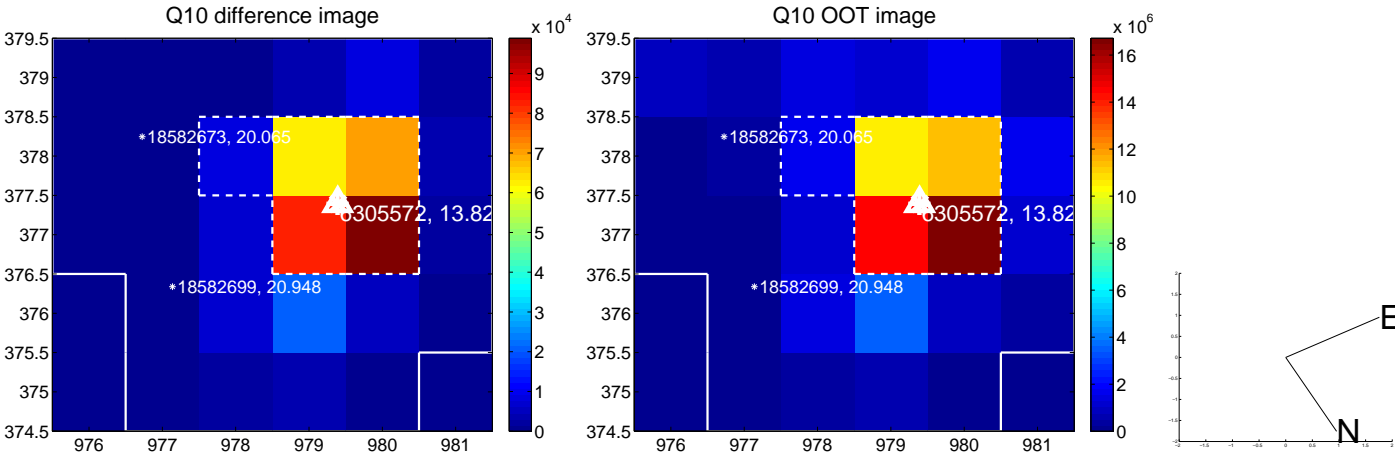
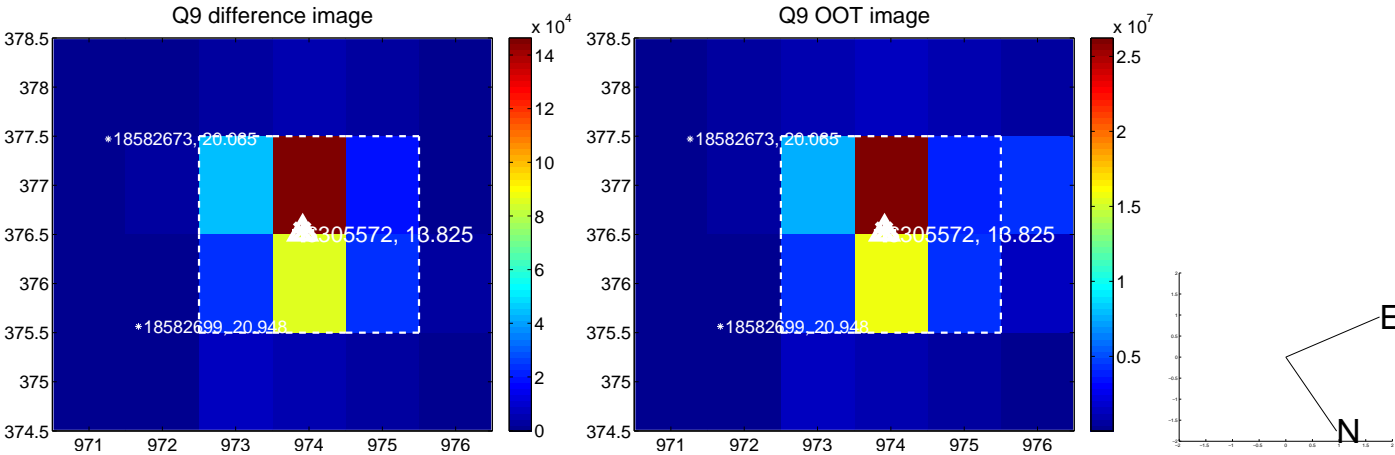
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



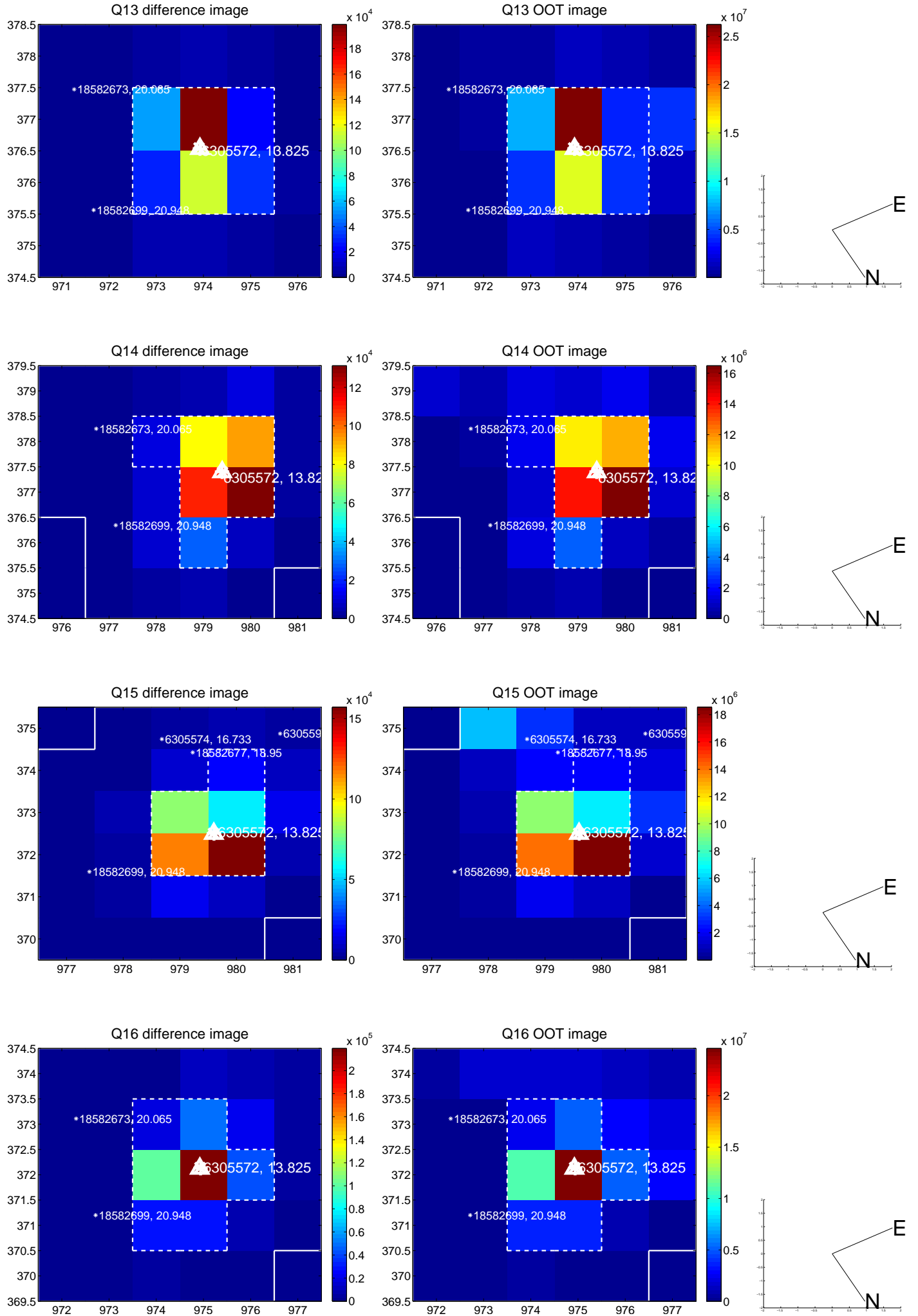
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



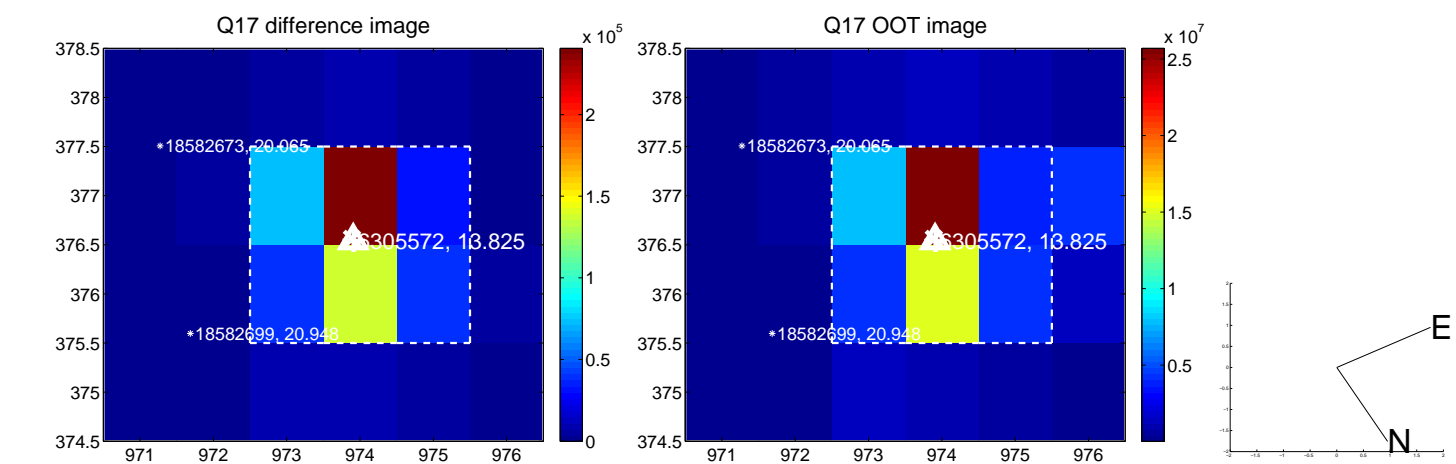
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



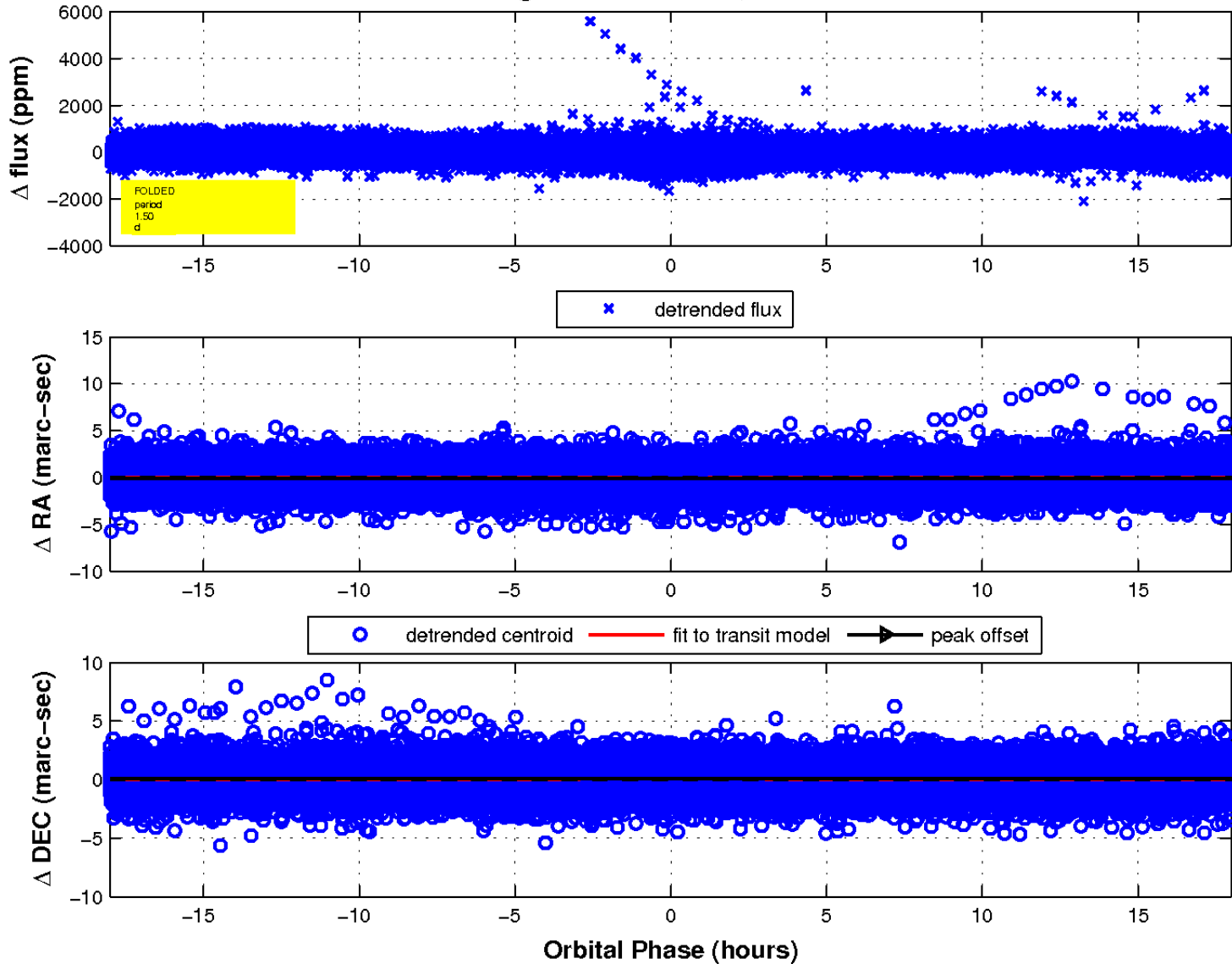
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

