

KIC 003749389

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})
003749389-01	OBS	No	8.643634	138.763204	122.4	25.801	9.7	9.9	1.32	6461	2.90	327.07
003749389-02	OBS	No	8.645673	133.731752	130.1	23.065	8.4	10.8	1.32	6461	2.04	326.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
003749389-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

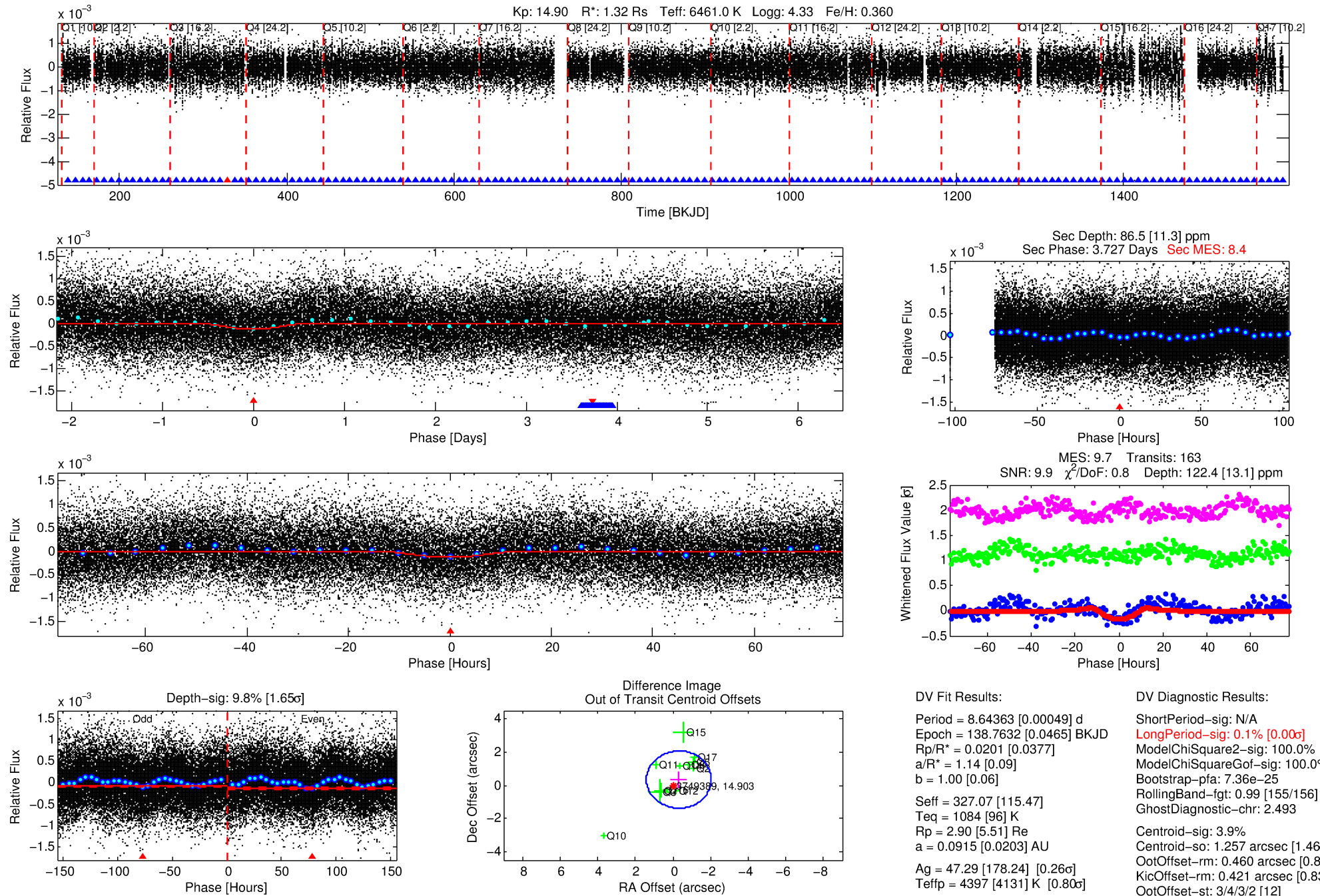
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749389-01

No Significant Match Found

DV One-Page Summary

KIC: 3749389 Candidate: 1 of 2 Period: 8.644 d



DV Fit Results:

Period = 8.64363 [0.00049] d
Epoch = 138.7632 [0.0465] BKJD
Rp/R* = 0.0201 [0.0377]
a/R* = 1.14 [0.09]
b = 1.00 [0.06]
Seff = 327.07 [115.47]
Teff = 1084 [96] K
Rp = 2.90 [5.51] Re
a = 0.0915 [0.0203] AU
Ag = 47.29 [178.24] [0.26 σ]
Teffp = 4397 [4131] K [0.80 σ]

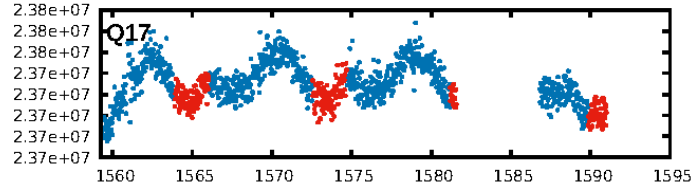
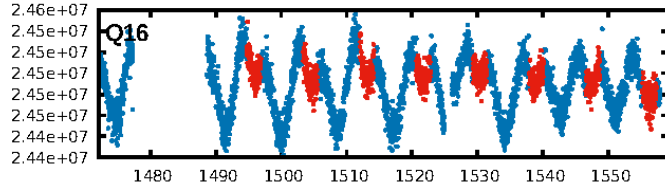
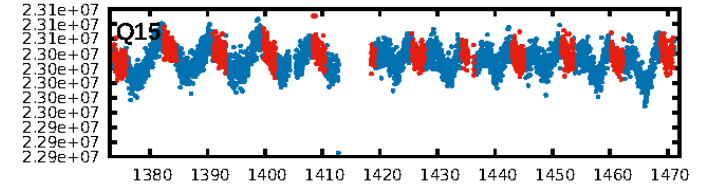
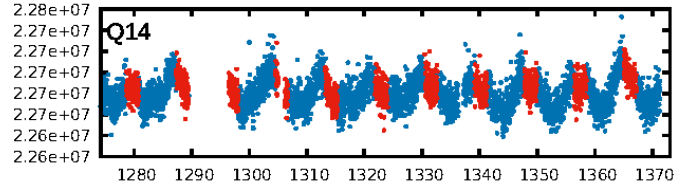
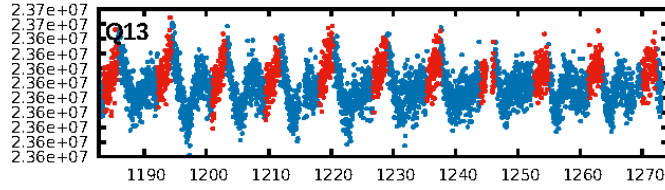
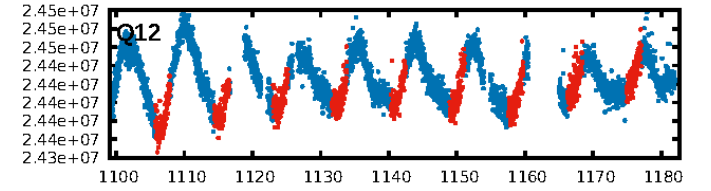
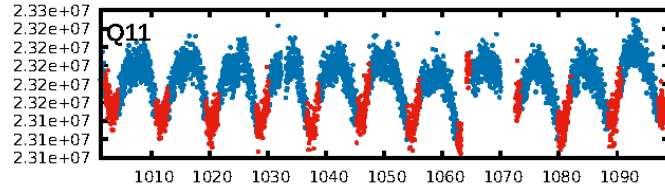
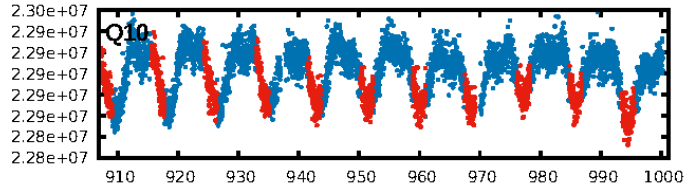
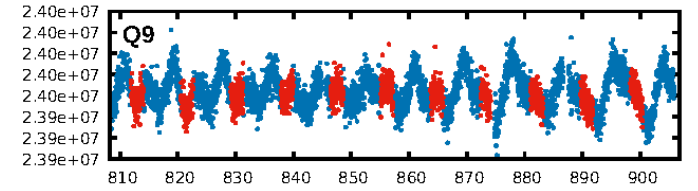
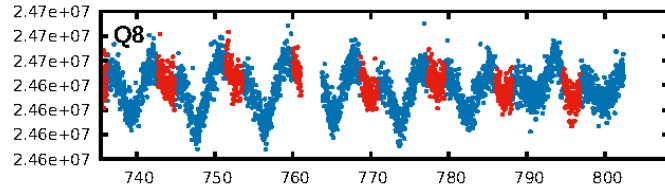
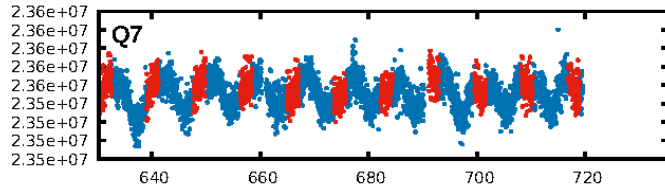
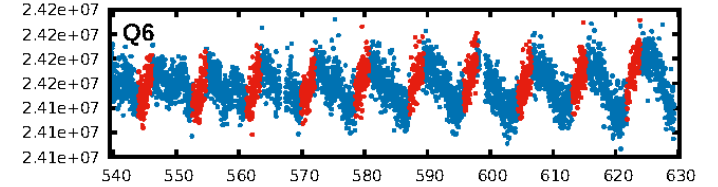
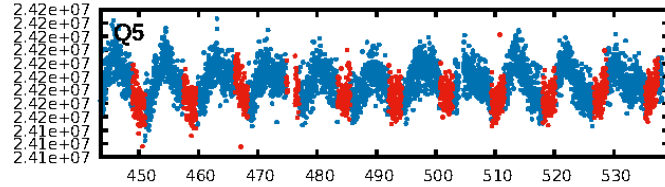
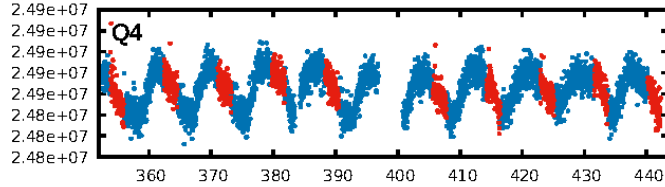
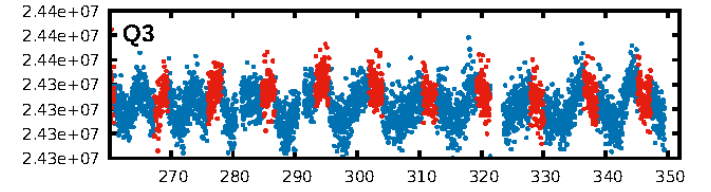
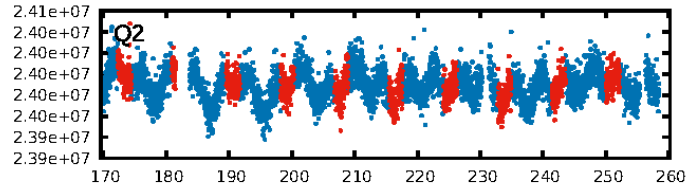
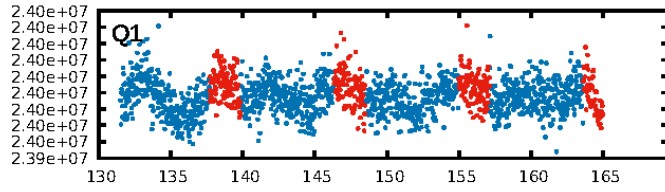
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.36e-25
RollingBand-fgt: 0.99 [155/156]
GhostDiagnostic-chr: 2.493
Centroid-sig: 3.9%
Centroid-so: 1.257 arcsec [1.46 σ]
OotOffset-rm: 0.460 arcsec [0.80 σ]
KicOffset-rm: 0.421 arcsec [0.83 σ]
OotOffset-st: 3/4/3/2 [12]
KicOffset-st: 3/4/3/2 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [17/17]

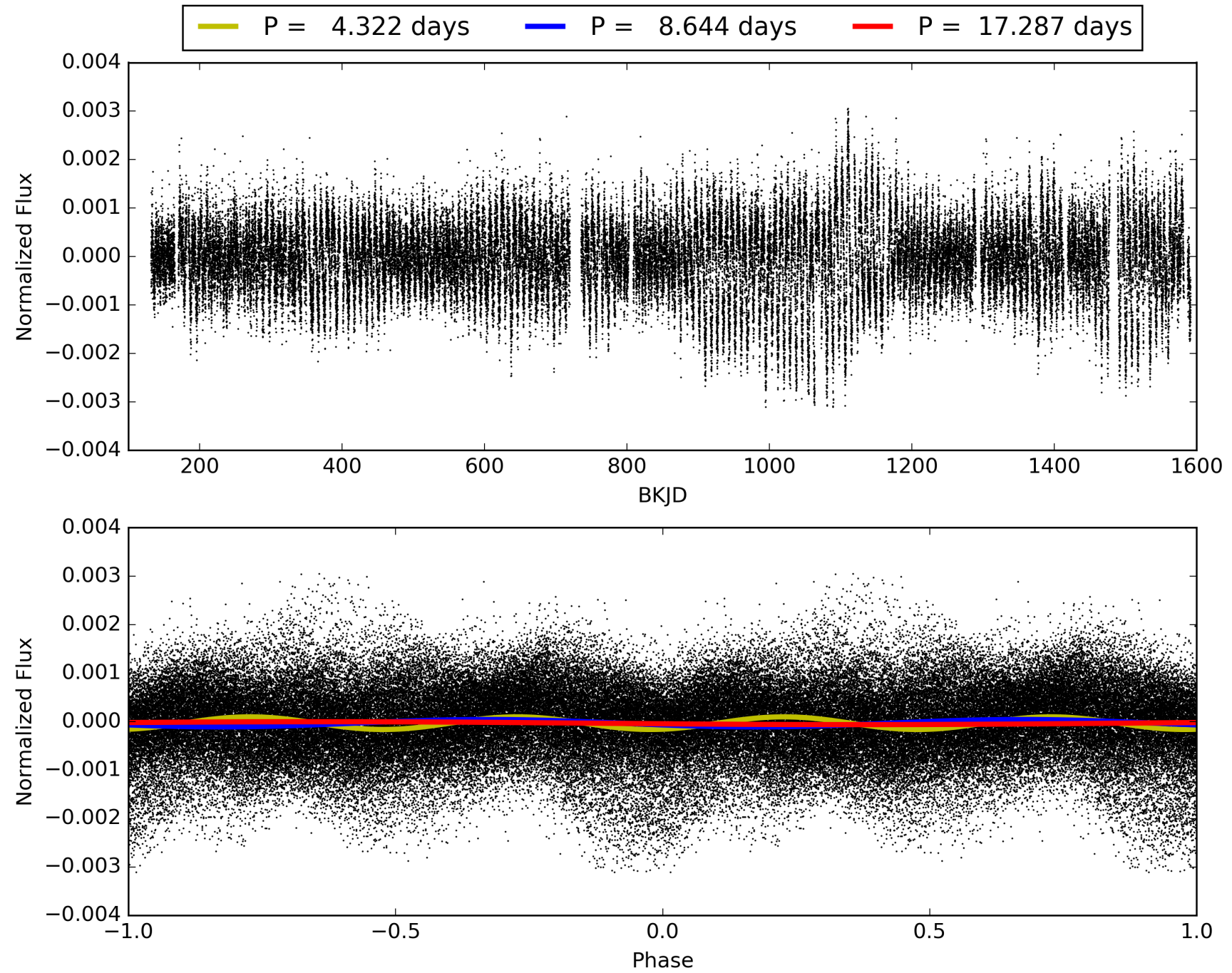
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:28:31 Z

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

TCE 003749389-01, PDC Light Curves

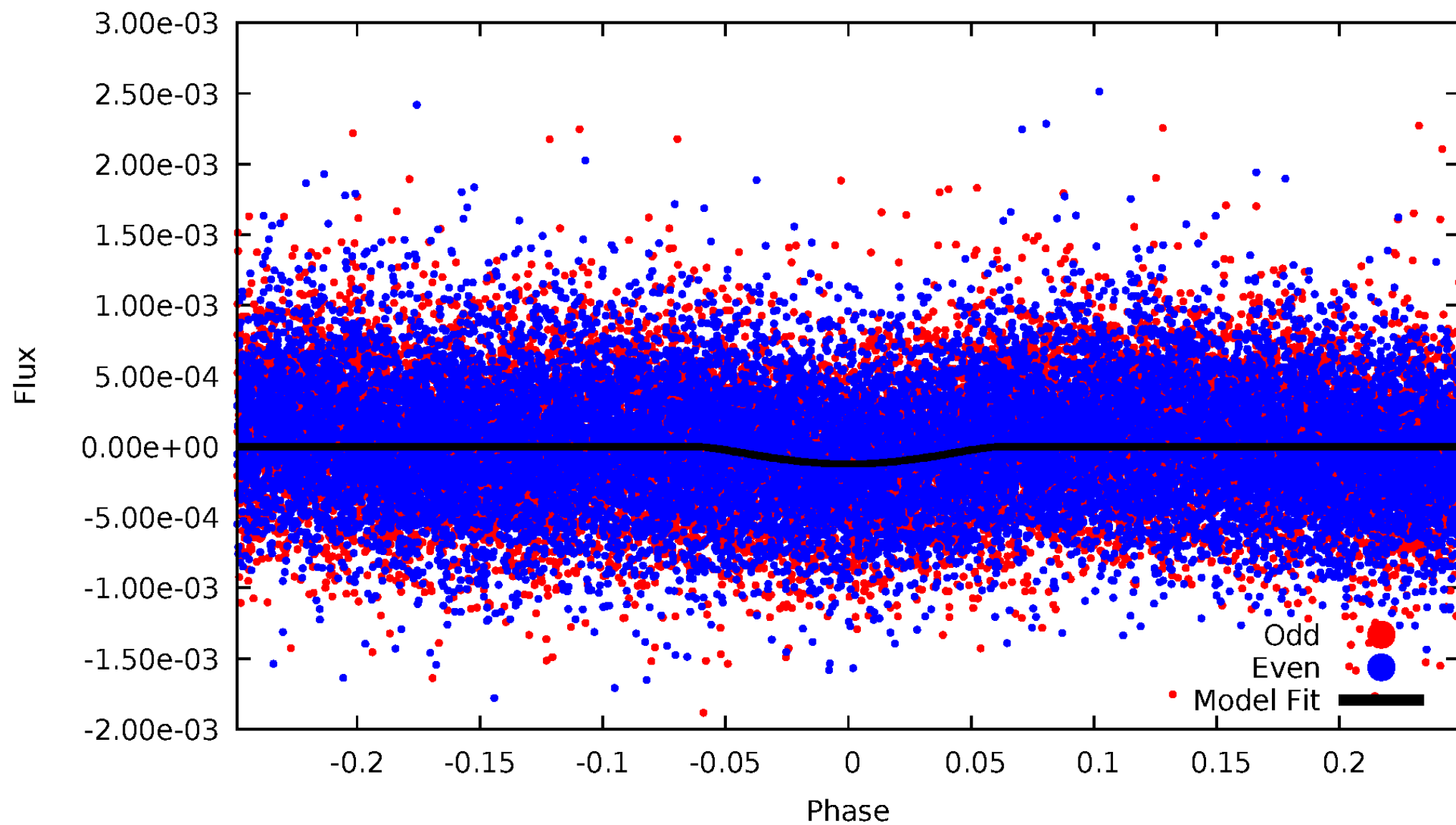


TCE 003749389-01



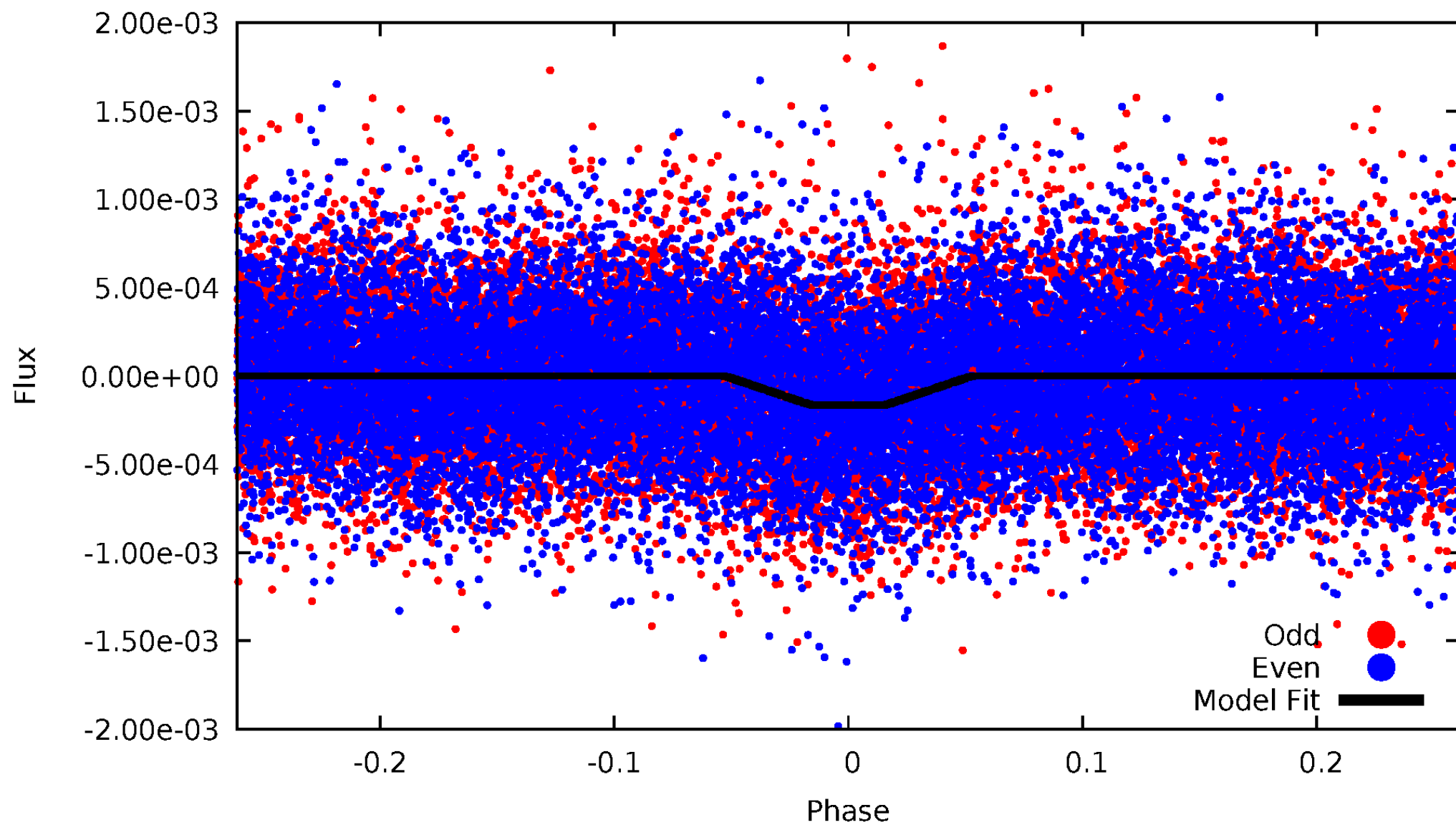
DV Odd/Even

TCE 003749389-01

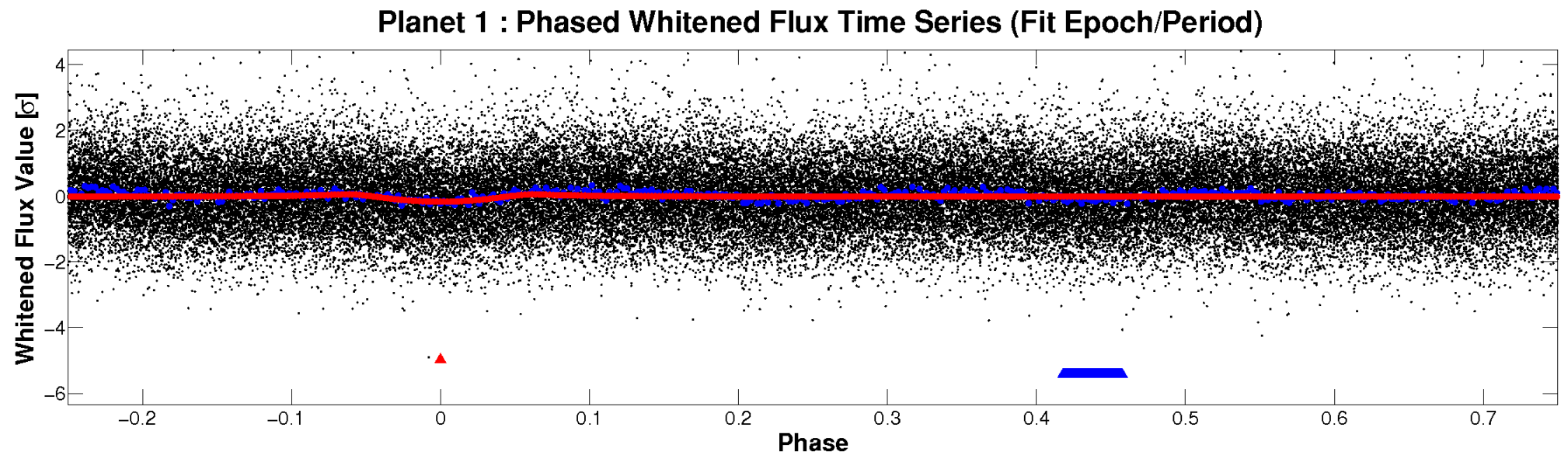
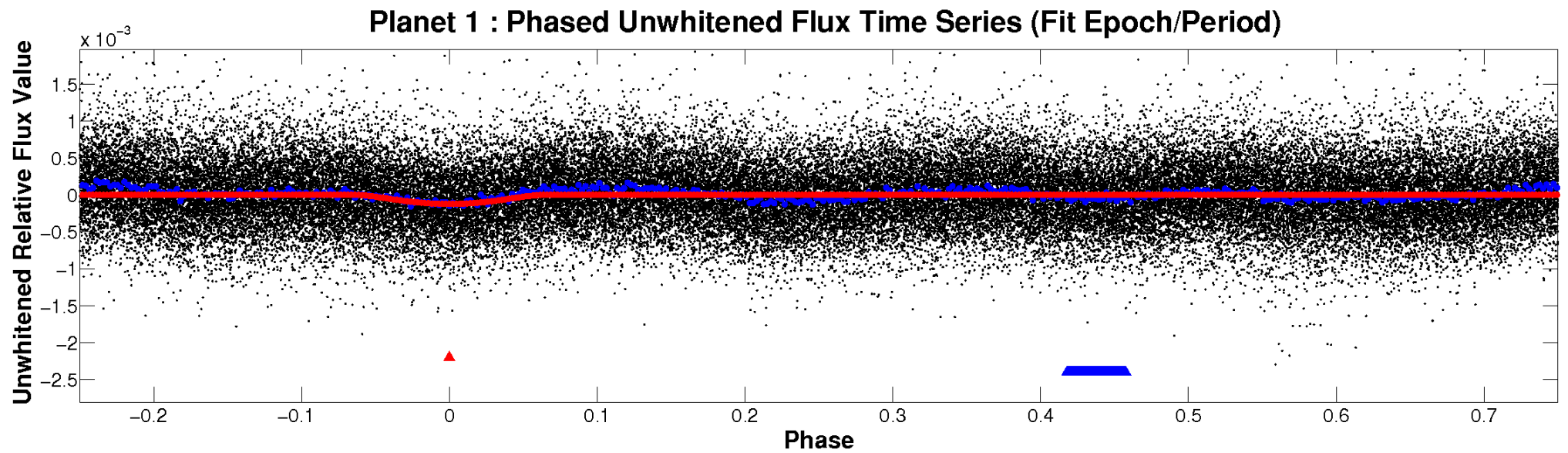


ALT Odd/Even

TCE 003749389-01

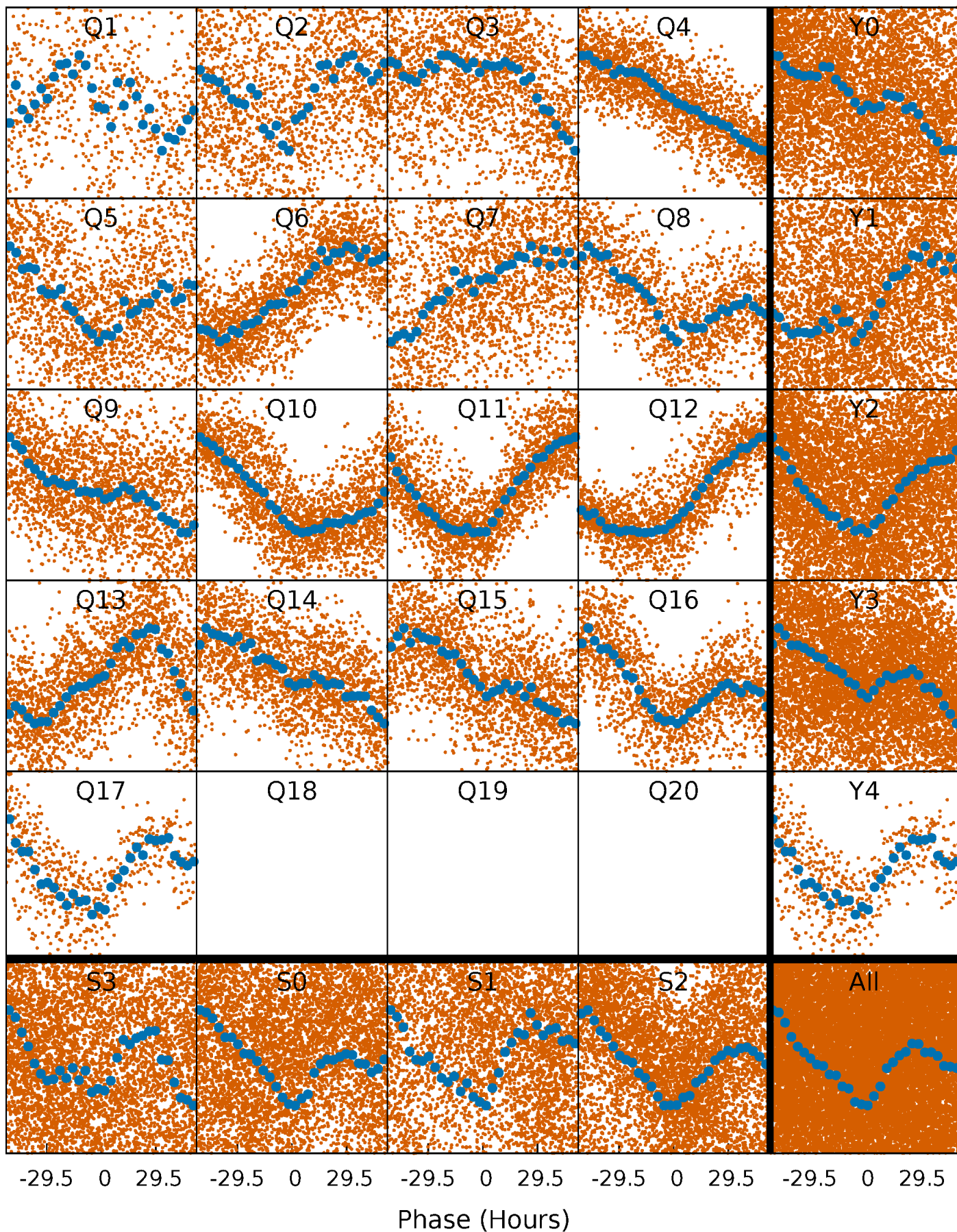


Non-Whitened Vs. Whitened Light Curve



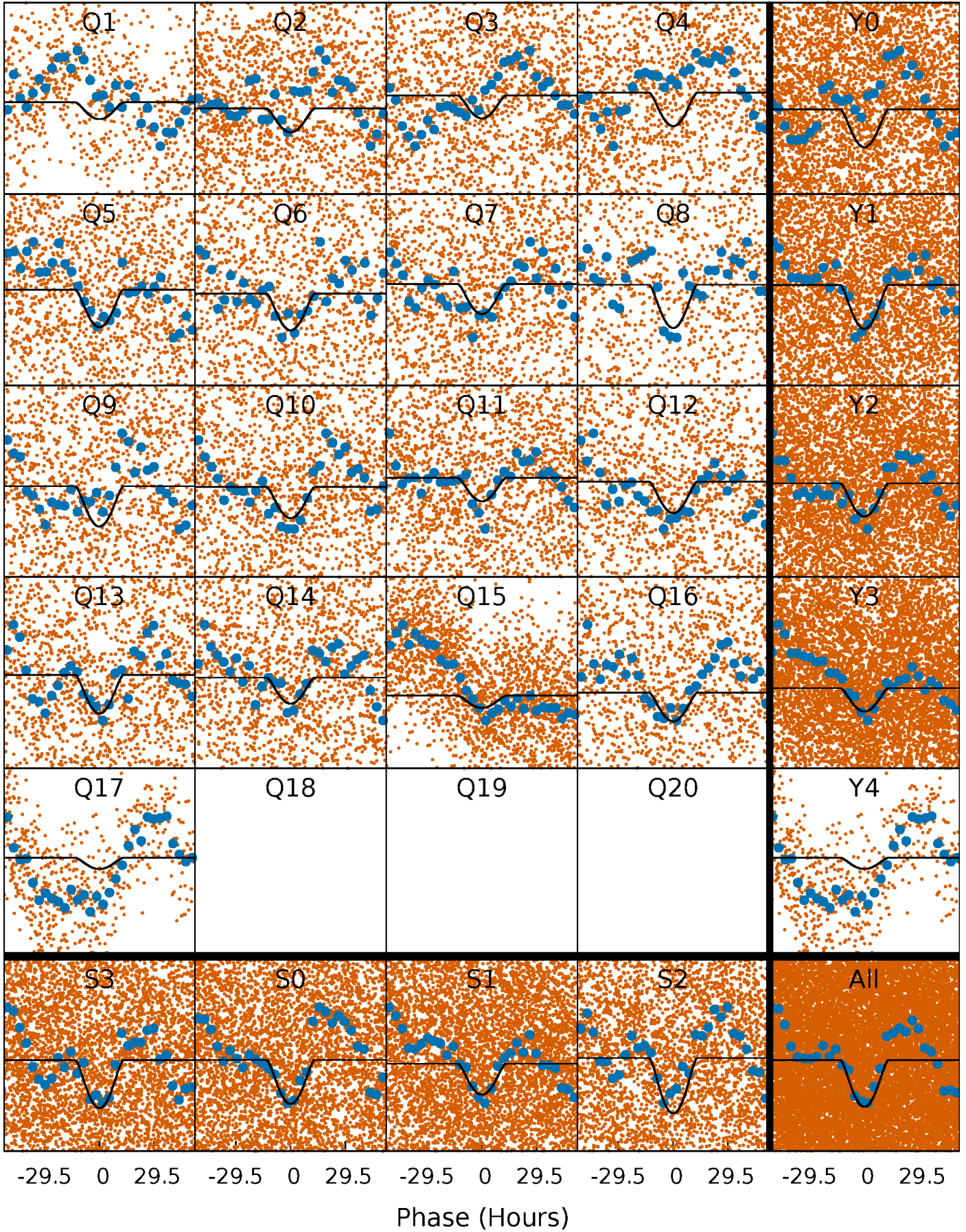
PDC Quarter-Phased Transit Curves

TCE 003749389-01 P= 8.643634 Days $T_0=138.763204$ (BKJD)



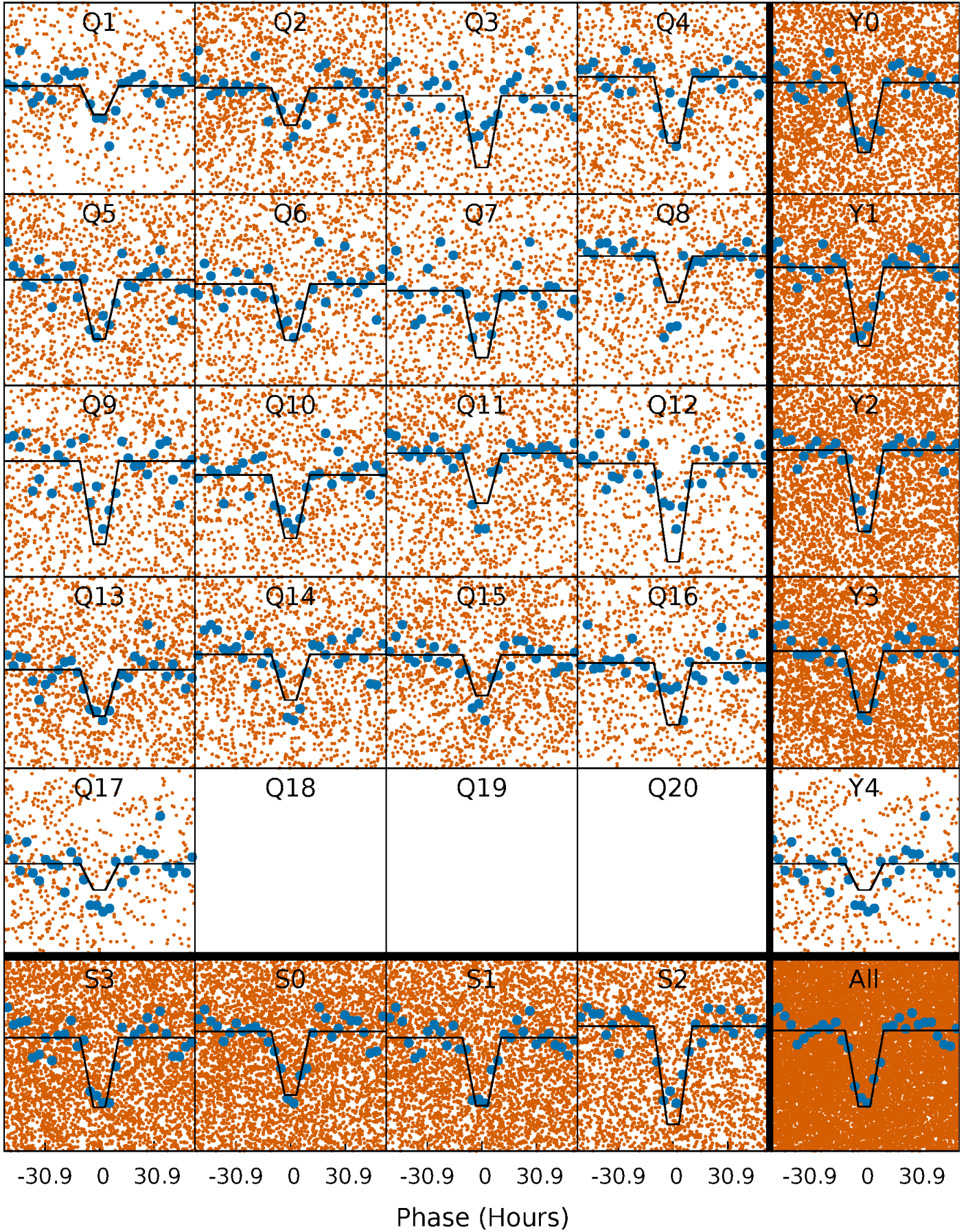
DV Quarter-Phased Transit Curves

TCE 003749389-01 P= 8.643634 Days $T_0=138.763204$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

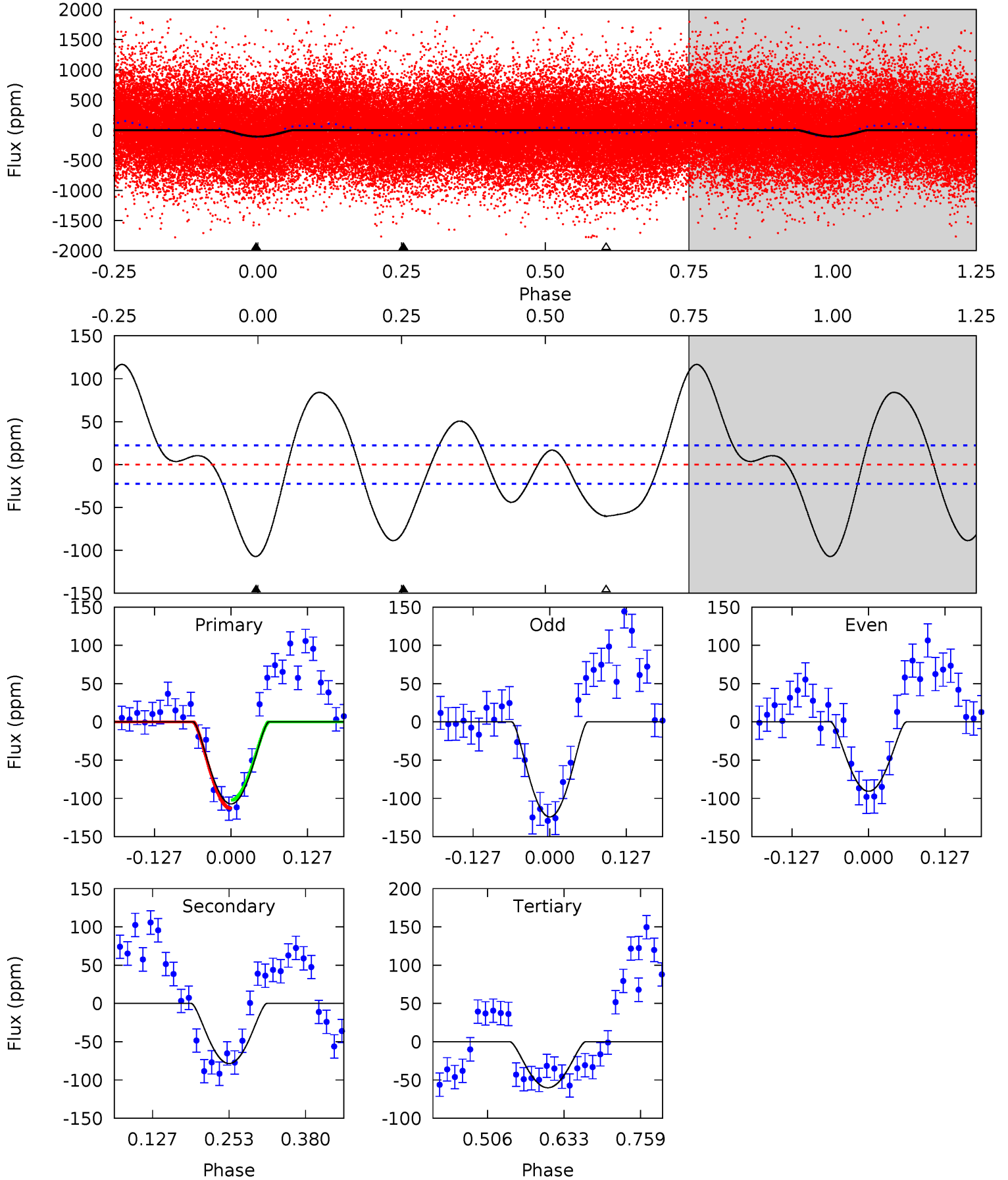
TCE 003749389-01 P= 8.644372 Days $T_0=138.705026$ (BKJD)



DV Model-Shift Uniqueness Test

003749389-01, P = 8.643634 Days, E = 130.119570 Days

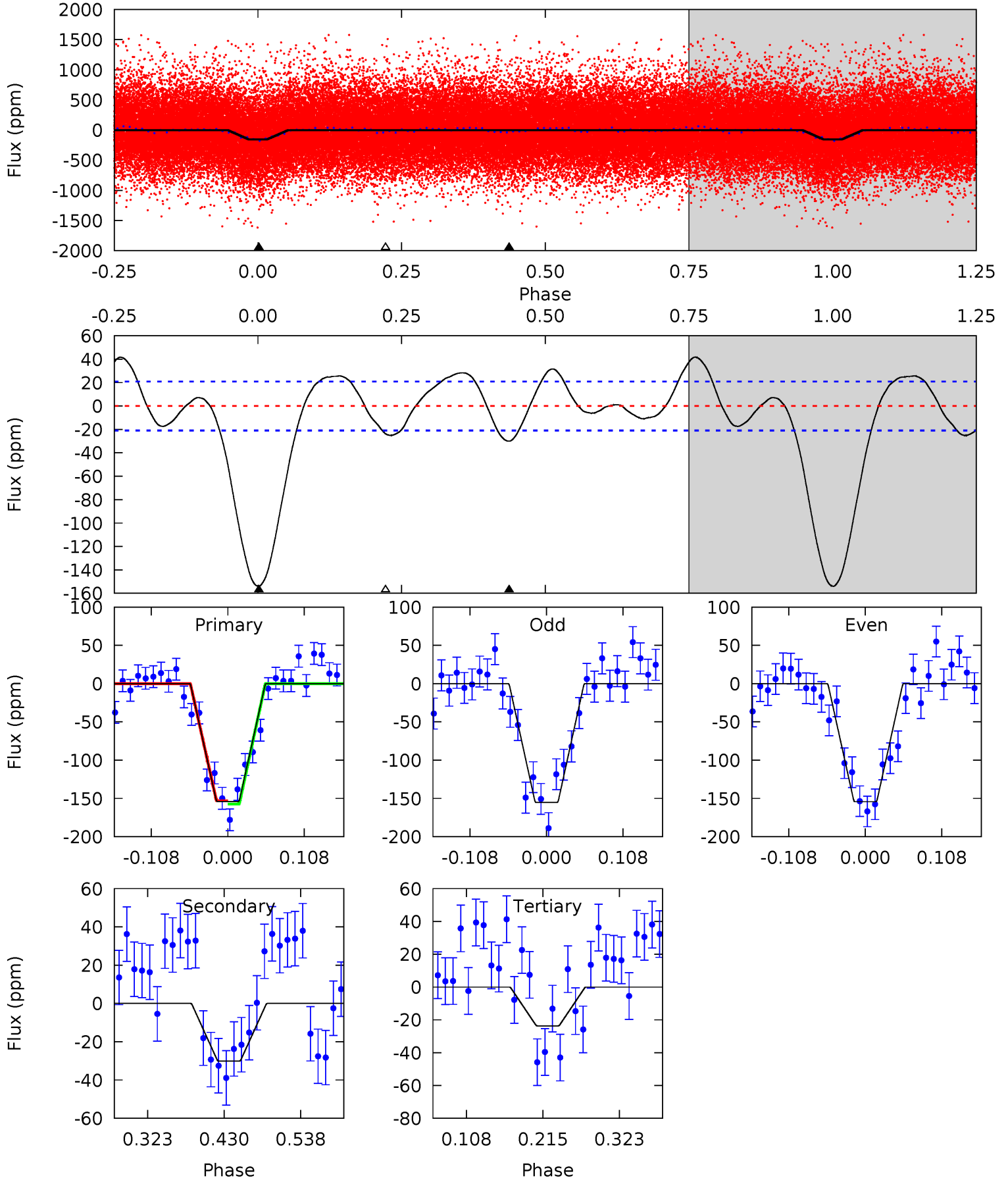
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	15.9	12.2	0	4.52	1.53	10.4	9.54	21.7	3.71	15.9	3.39	0.70	0.52	1.11



Alt Model-Shift Uniqueness Test

003749389-01, P = 8.644372 Days, E = 130.060654 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.4	6.53	5.14	0	4.55	1.61	3.63	28.3	33.4	1.39	6.53	0.13	0.73	0.21	0.46



Stellar Parameters For KIC 003749389

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6461^{+156}_{-246}	$4.330^{+0.057}_{-0.172}$	$0.360^{+0.100}_{-0.350}$	$1.325^{+0.354}_{-0.177}$	$1.369^{+0.134}_{-0.184}$	$0.829^{+0.259}_{-0.391}$
	+2%/-4%	+1%/-4%	+28%/-97%	+27%/-13%	+10%/-13%	+31%/-47%
Source	PHO1	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 003749389-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-78 ± 5	$5.08^{+4.88}_{-3.32}$	1538^{+101}_{-76}	3692^{+1911}_{-697}	13^{+99}_{-10}
Alt.	-30 ± 5	$4.85^{+4.34}_{-3.35}$	1538^{+99}_{-73}	3210^{+1725}_{-593}	$5.663^{+56.217}_{-4.121}$

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

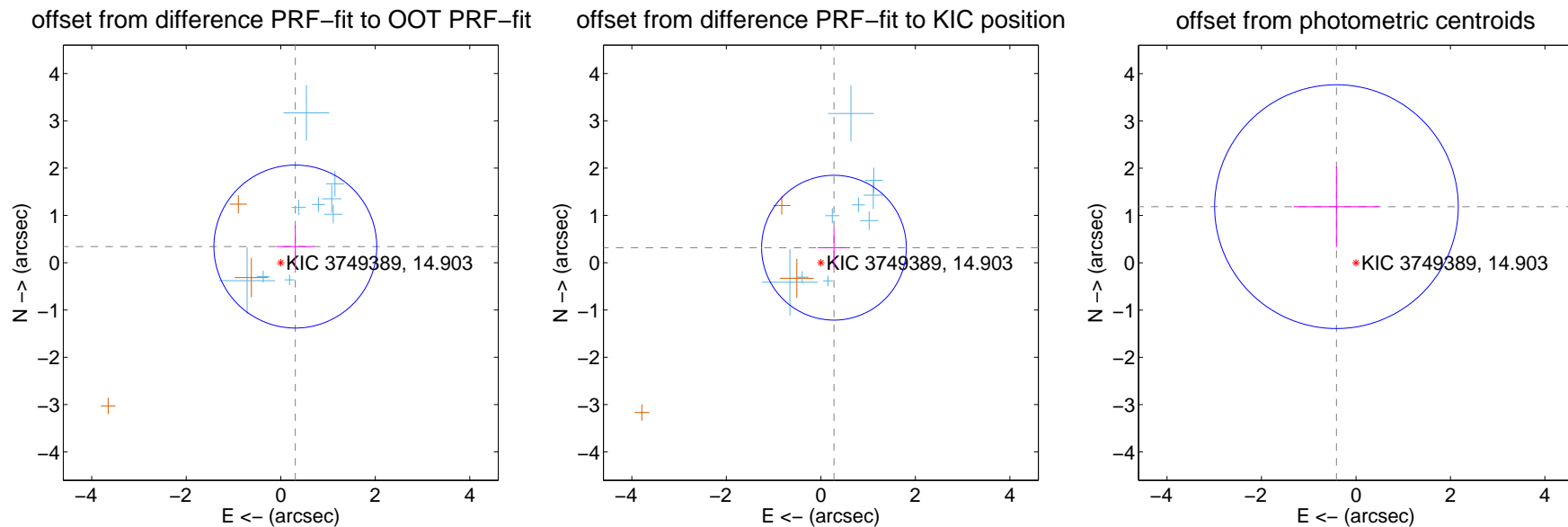
DV Centroid Data

Supplemental centroid analysis for 003749389-01. Kepler magnitude: 14.90. Transit SNR 9.85

There are 9 quarters with good PRF difference image offsets

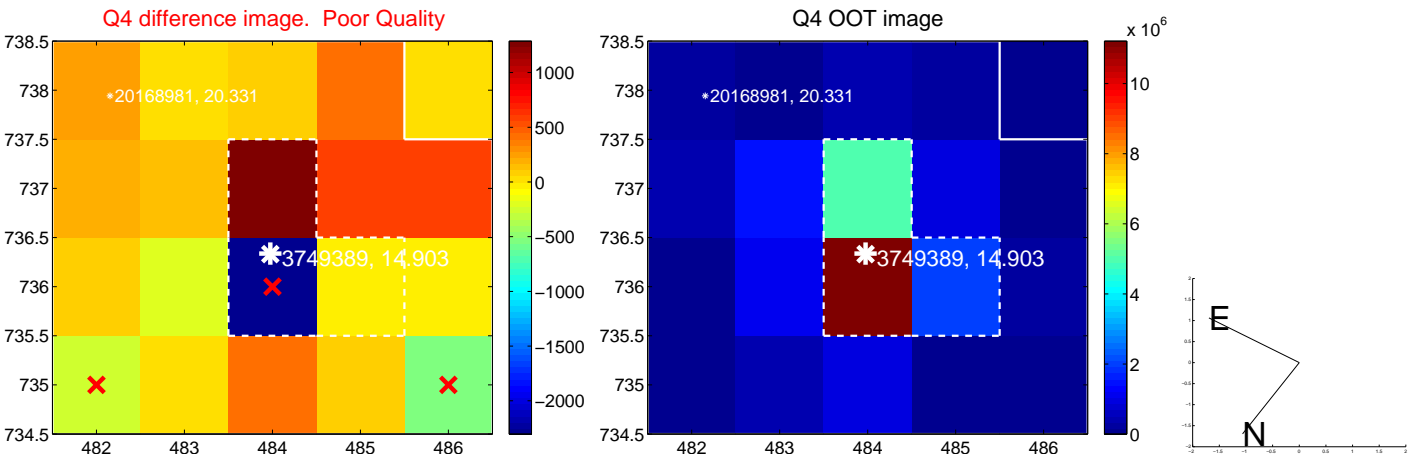
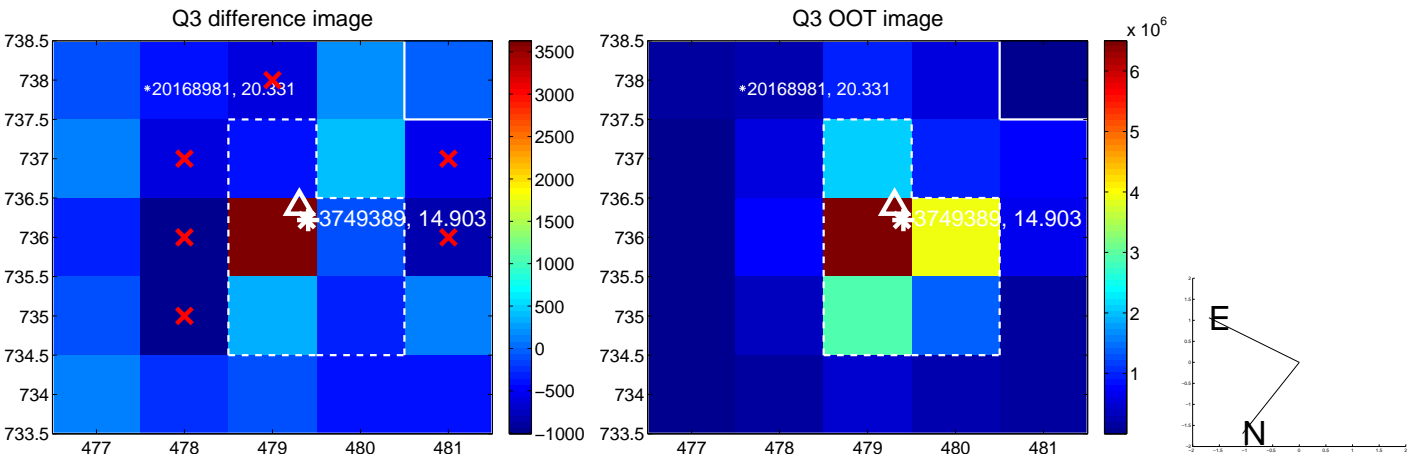
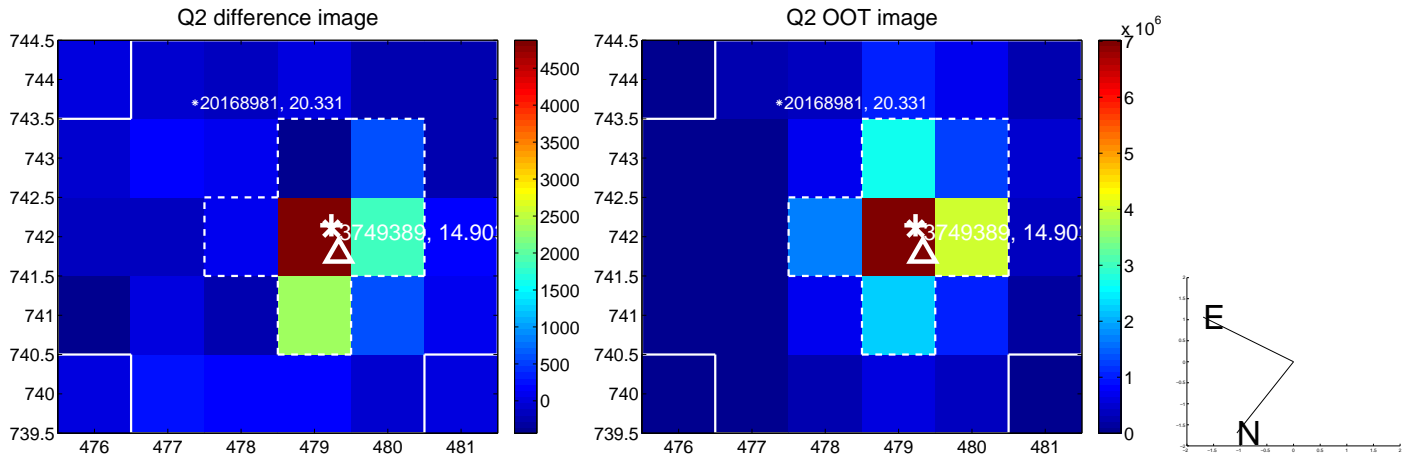
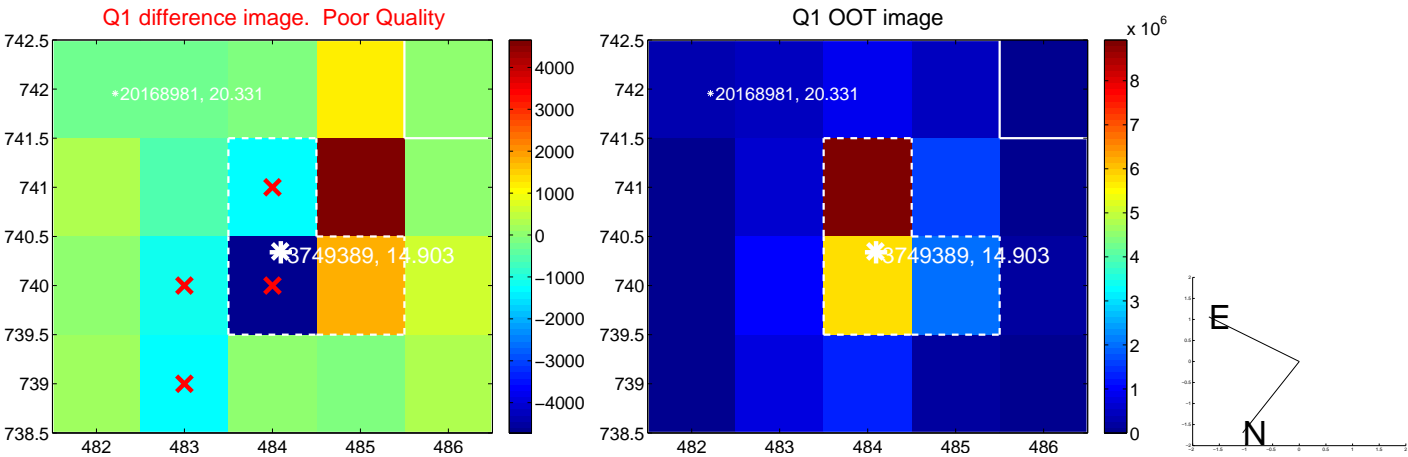
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.460 ± 0.574	0.80	-0.309 ± 0.401	0.341 ± 0.447
PRF-fit source offset from KIC position	0.421 ± 0.510	0.83	-0.278 ± 0.343	0.317 ± 0.413
photometric centroid source offset	1.26 ± 0.86	1.46	0.41 ± 0.90	1.19 ± 0.85

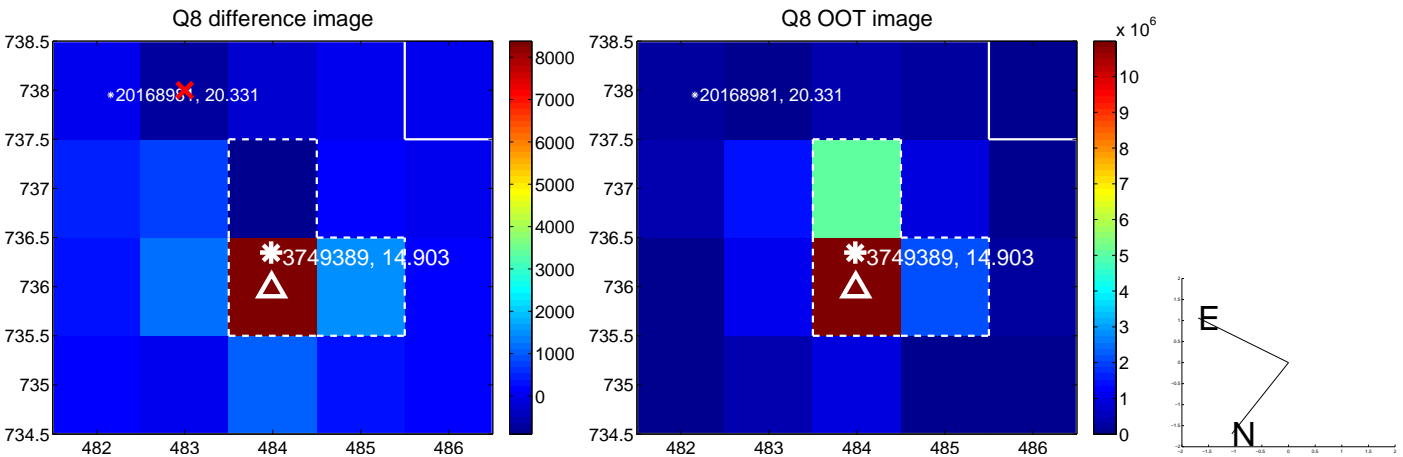
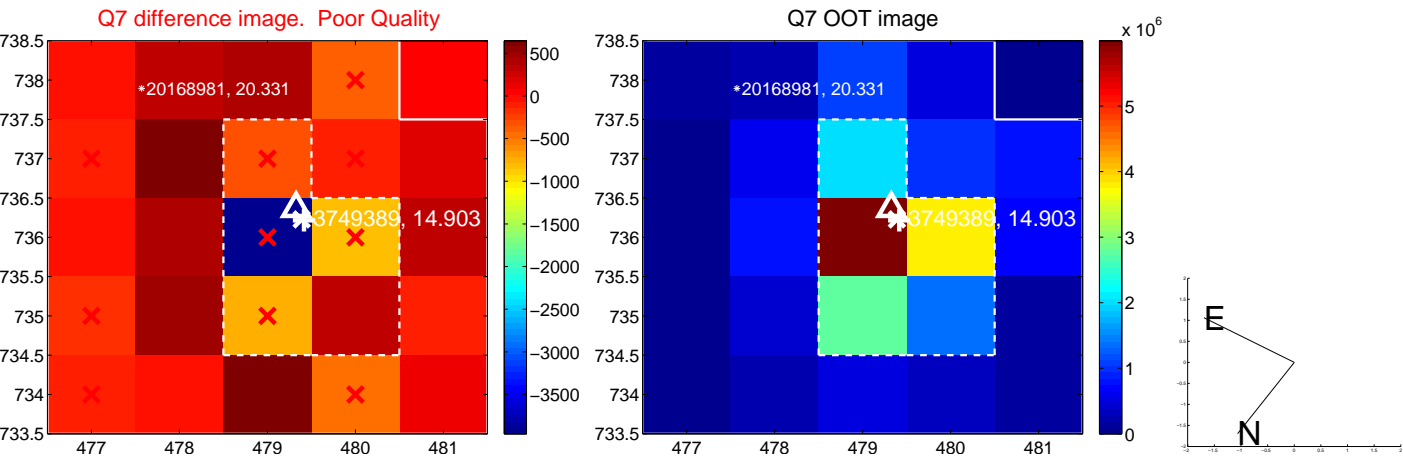
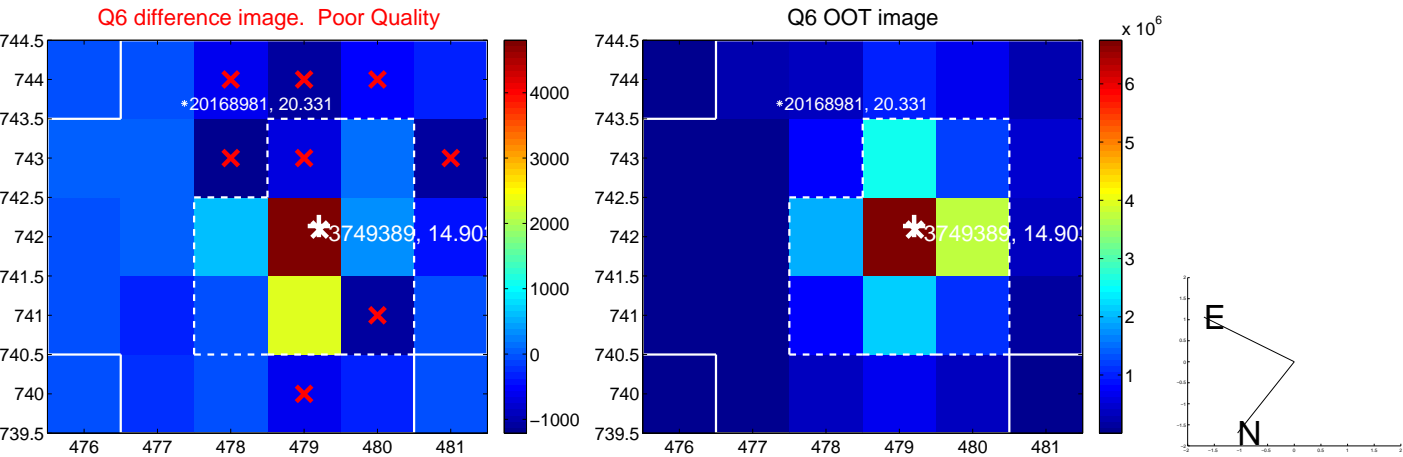
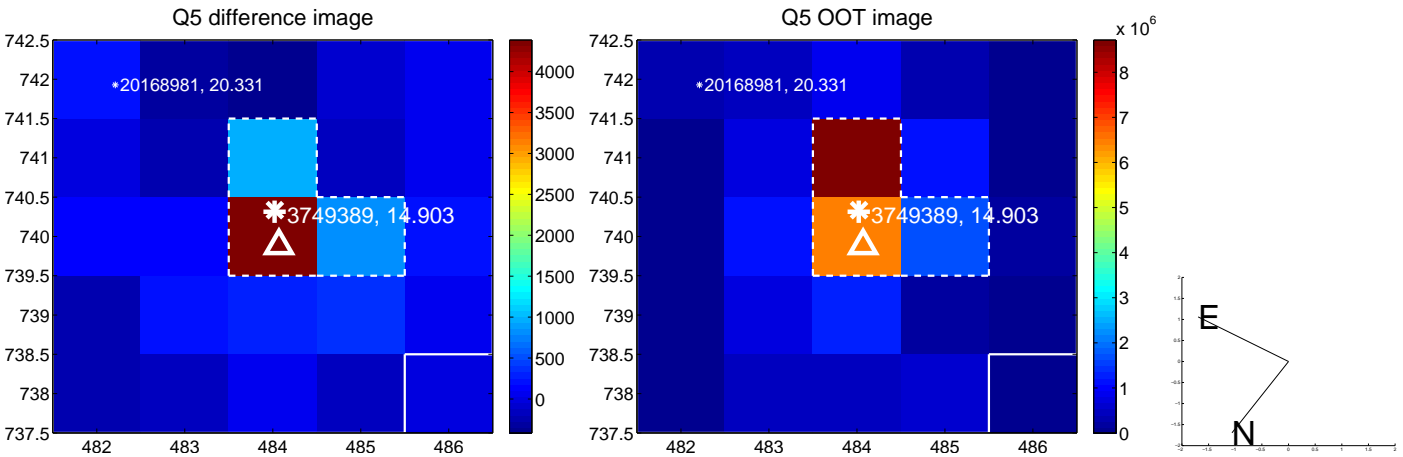


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

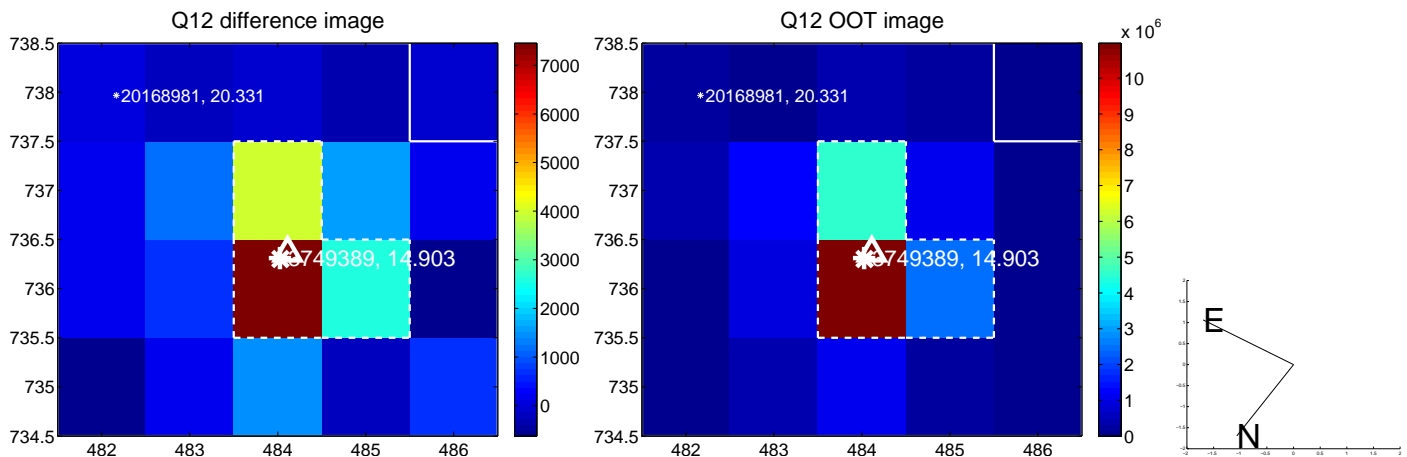
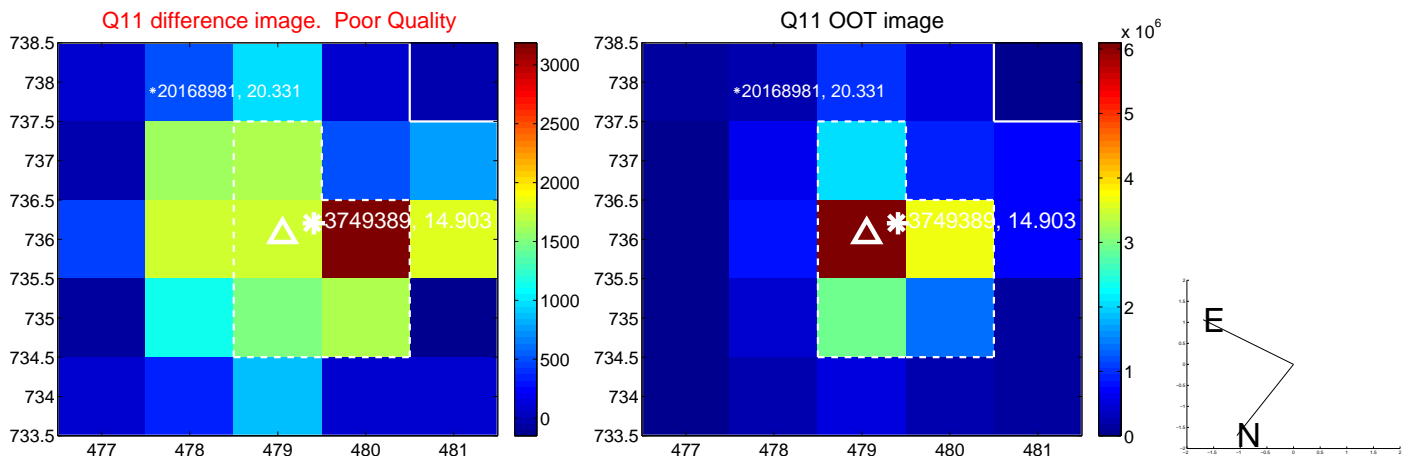
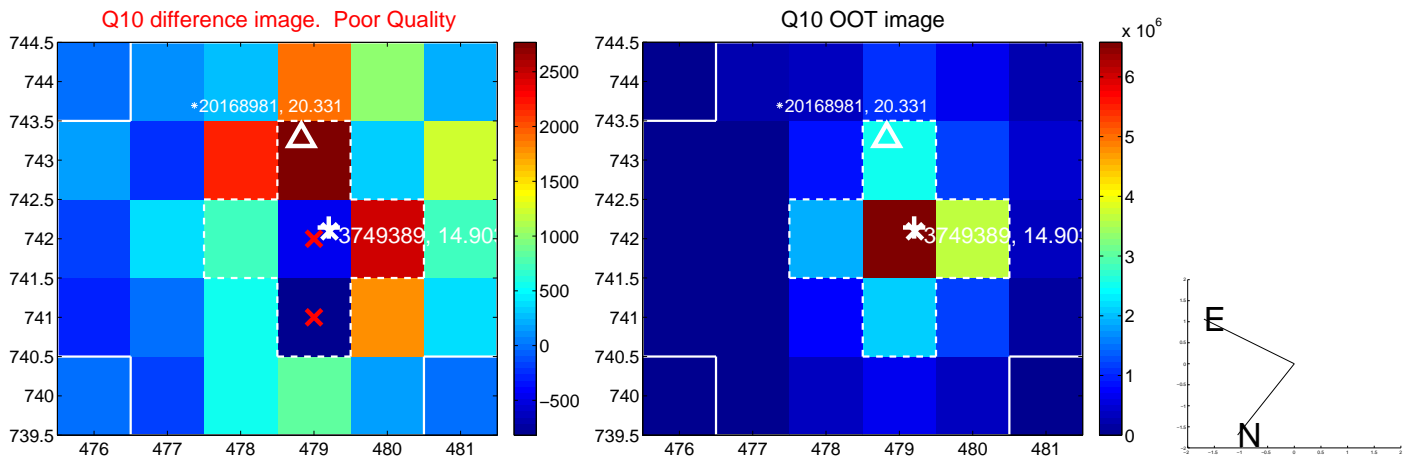
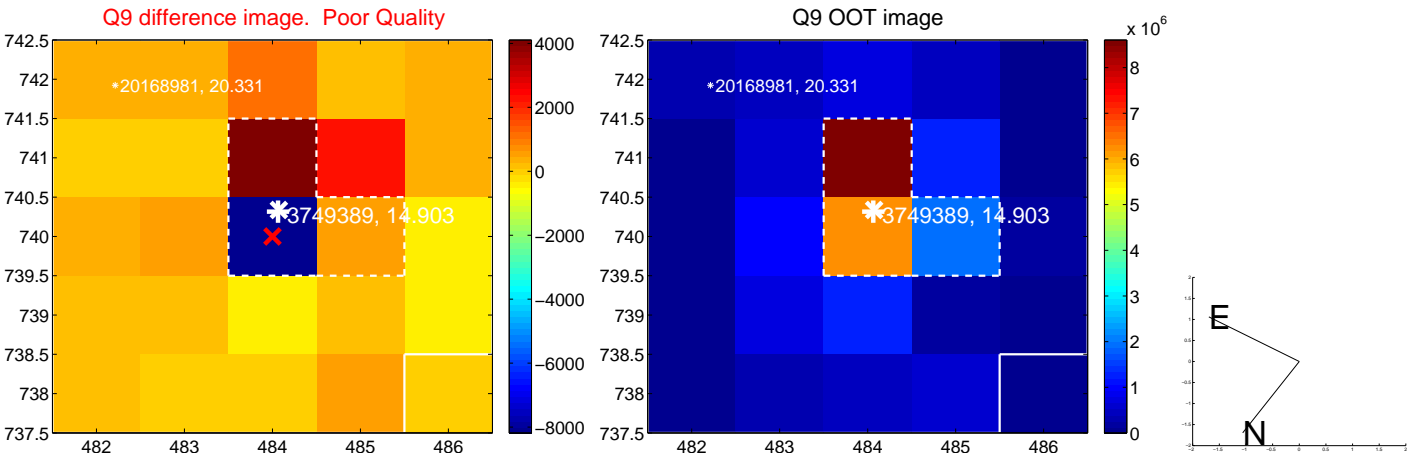
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



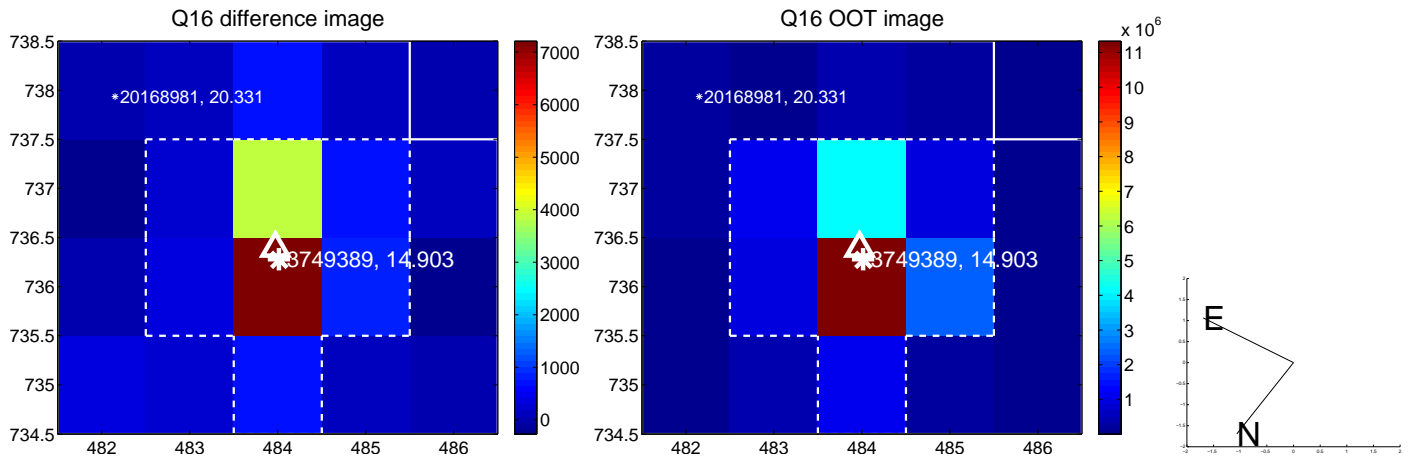
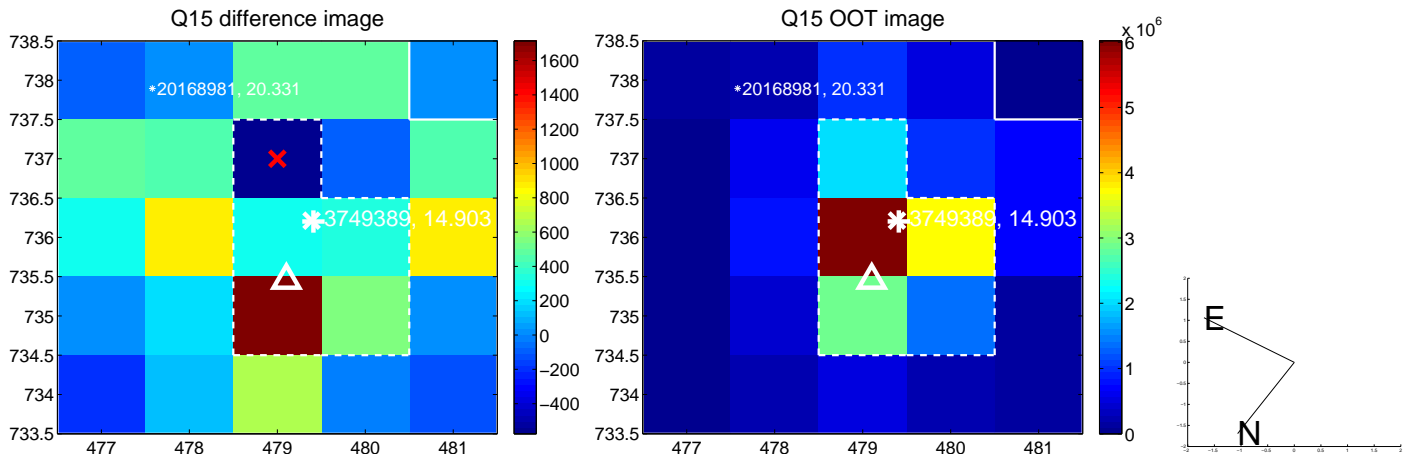
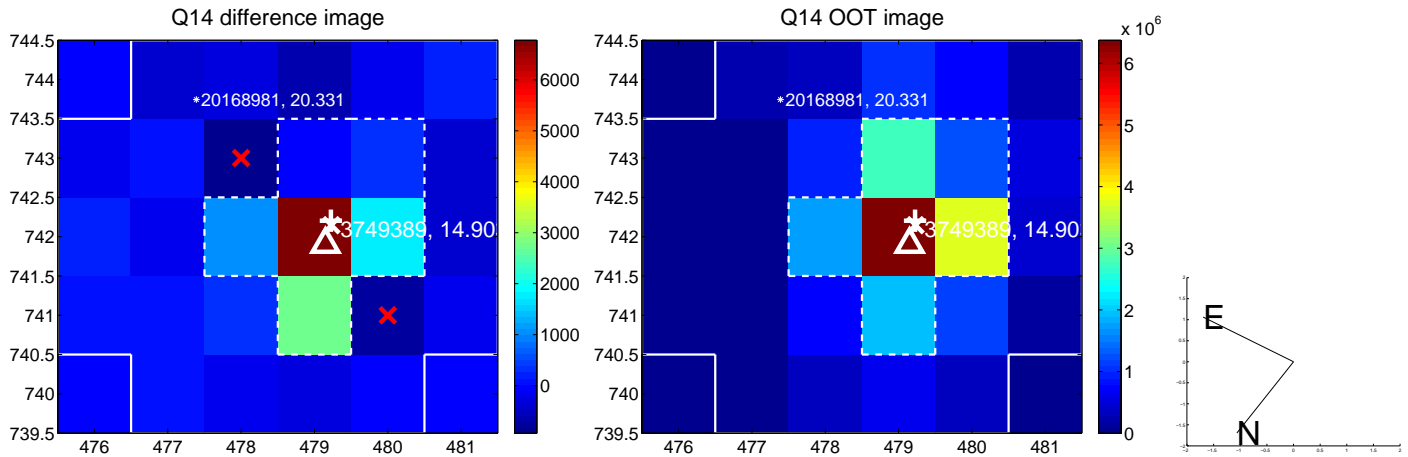
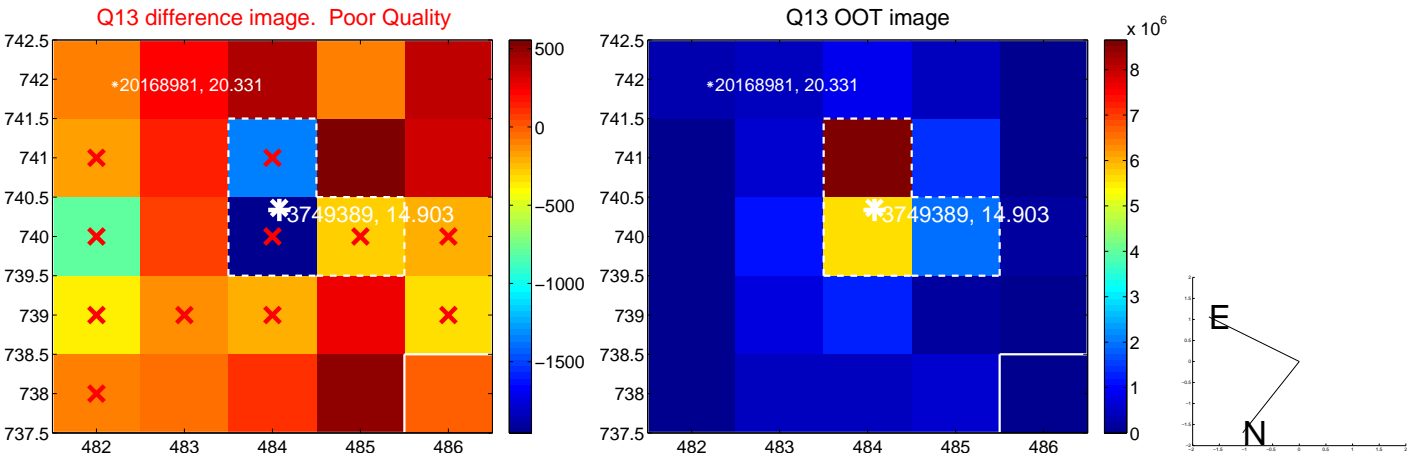
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



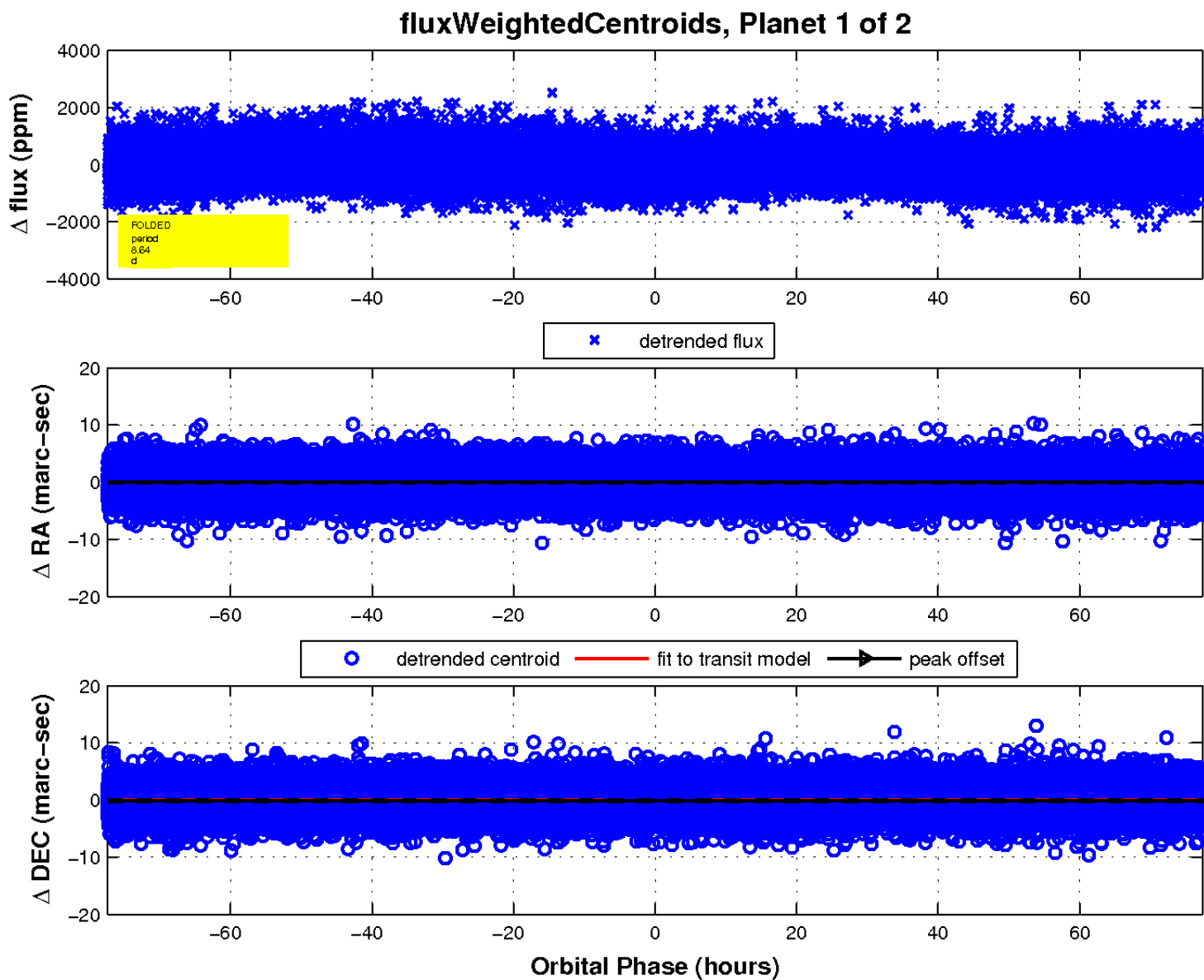
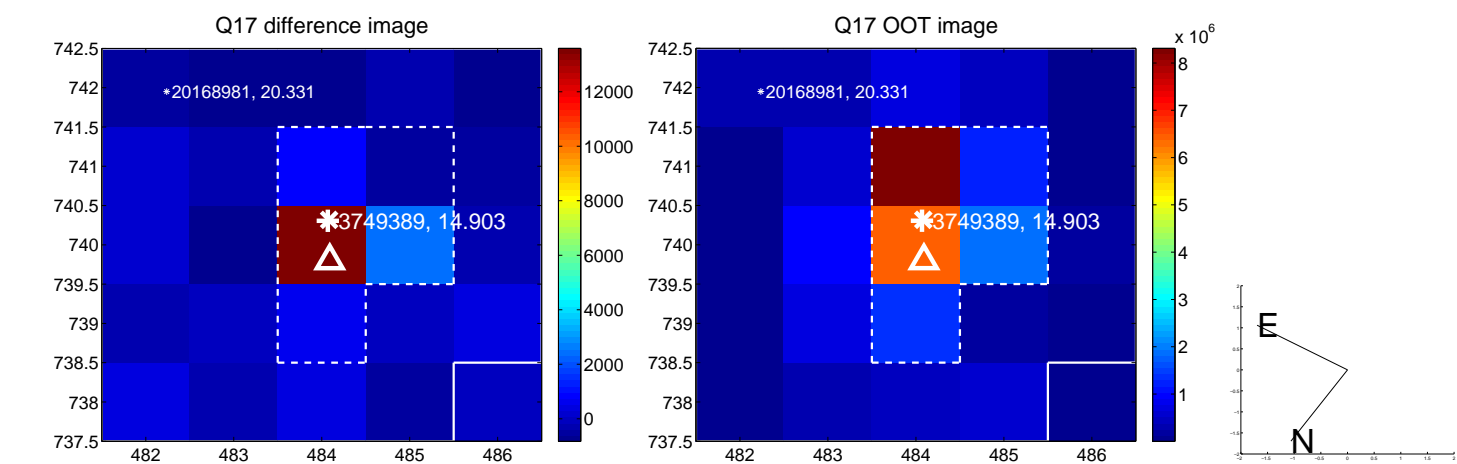
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

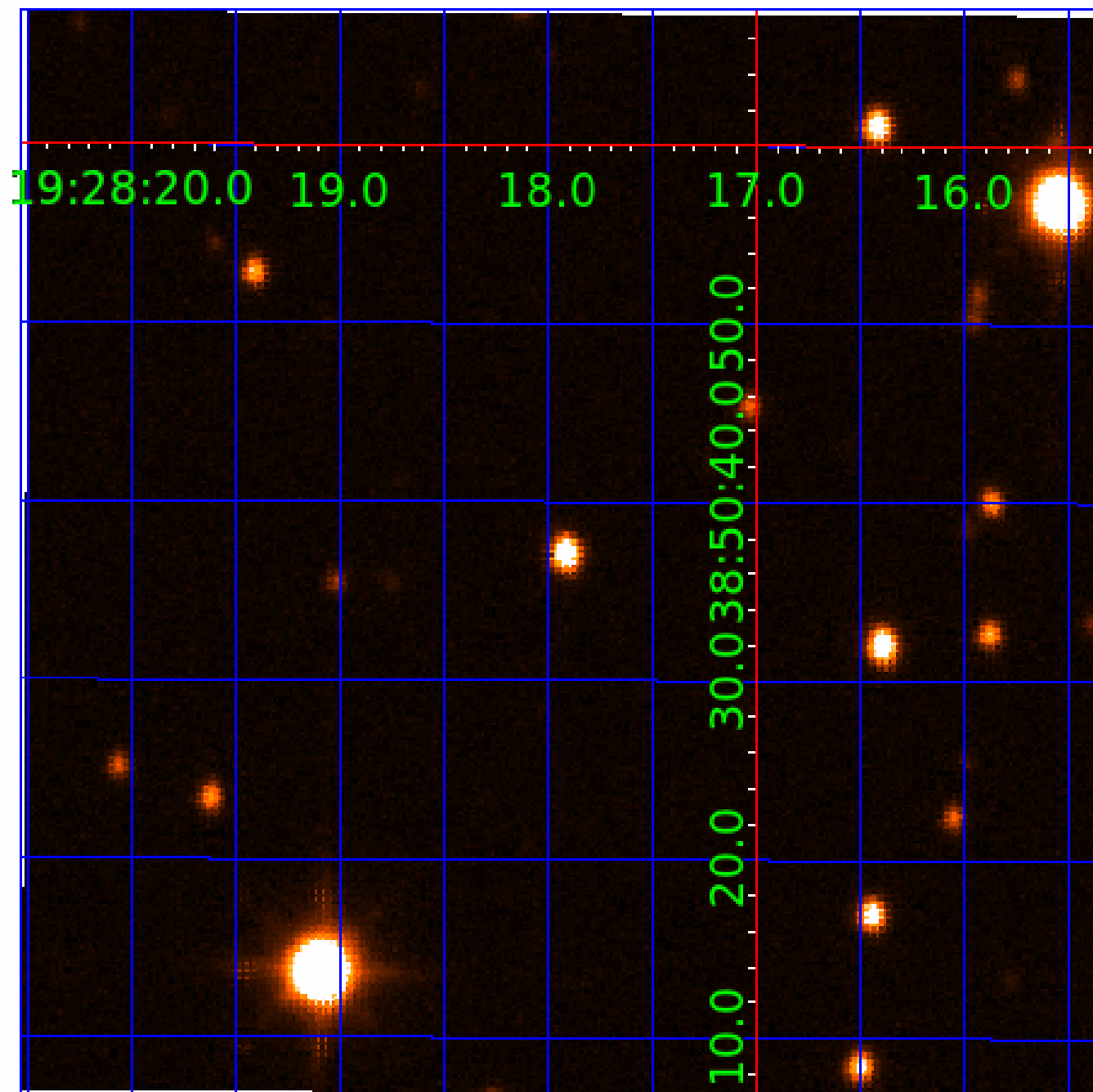


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination



KIC 003749389

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})
003749389-01	OBS	No	8.643634	138.763204	122.4	25.801	9.7	9.9	1.32	6461	2.90	327.07
003749389-02	OBS	No	8.645673	133.731752	130.1	23.065	8.4	10.8	1.32	6461	2.04	326.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003749389-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
003749389-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—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.

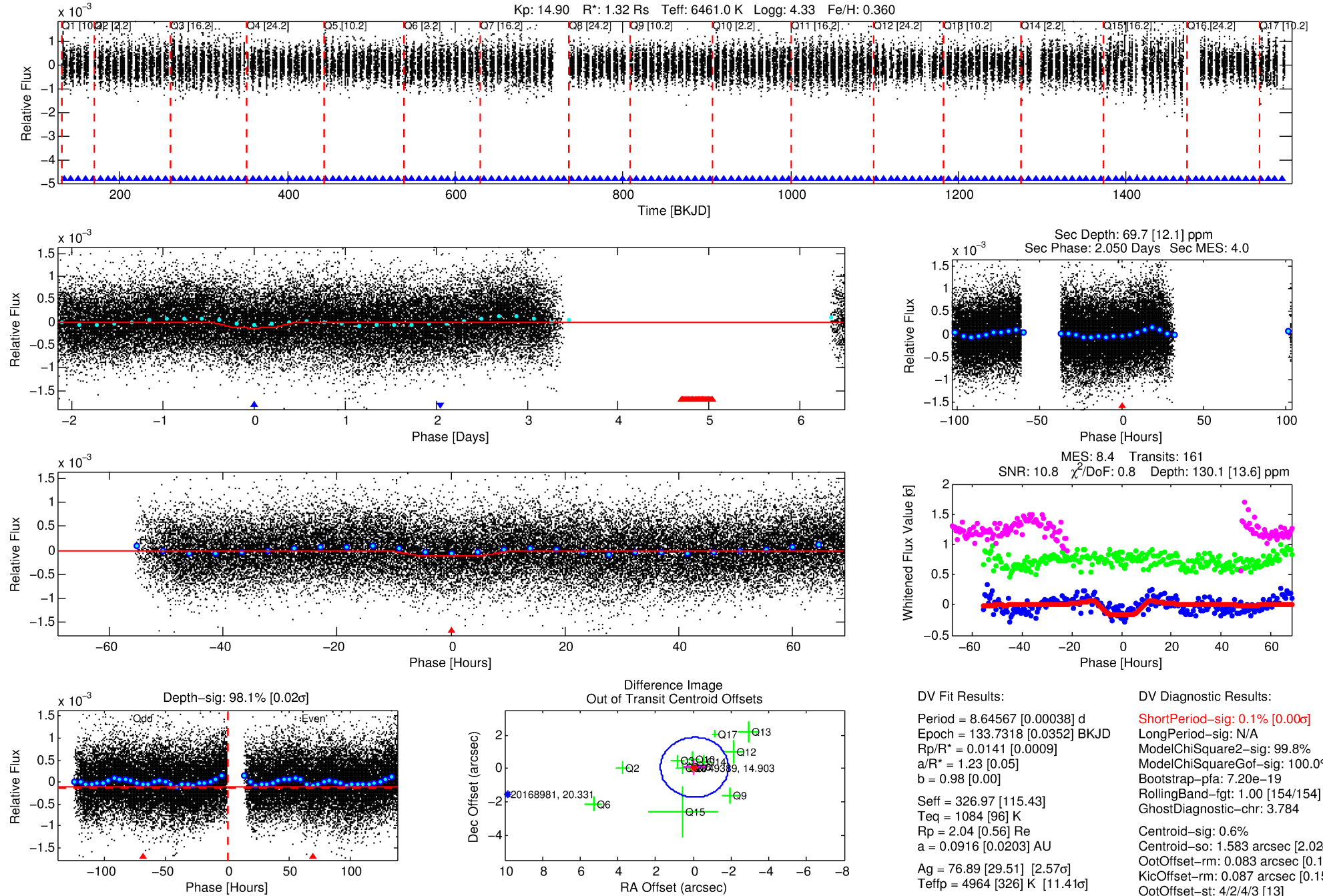
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003749389-02

No Significant Match Found

DV One-Page Summary

KIC: 3749389 Candidate: 2 of 2 Period: 8.646 d



DV Fit Results:

Period = 8.64567 [0.00038] d
Epoch = 133.7318 [0.0352] BKJD
Rp/R* = 0.0141 [0.0009]
a/R* = 1.23 [0.05]
b = 0.98 [0.00]
Seff = 326.97 [115.43]
Teff = 1084 [96] K
Rp = 2.04 [0.56] Re
a = 0.0916 [0.0203] AU
Ag = 76.89 [29.51] [2.57 σ]
Teffp = 4964 [326] K [11.41 σ]

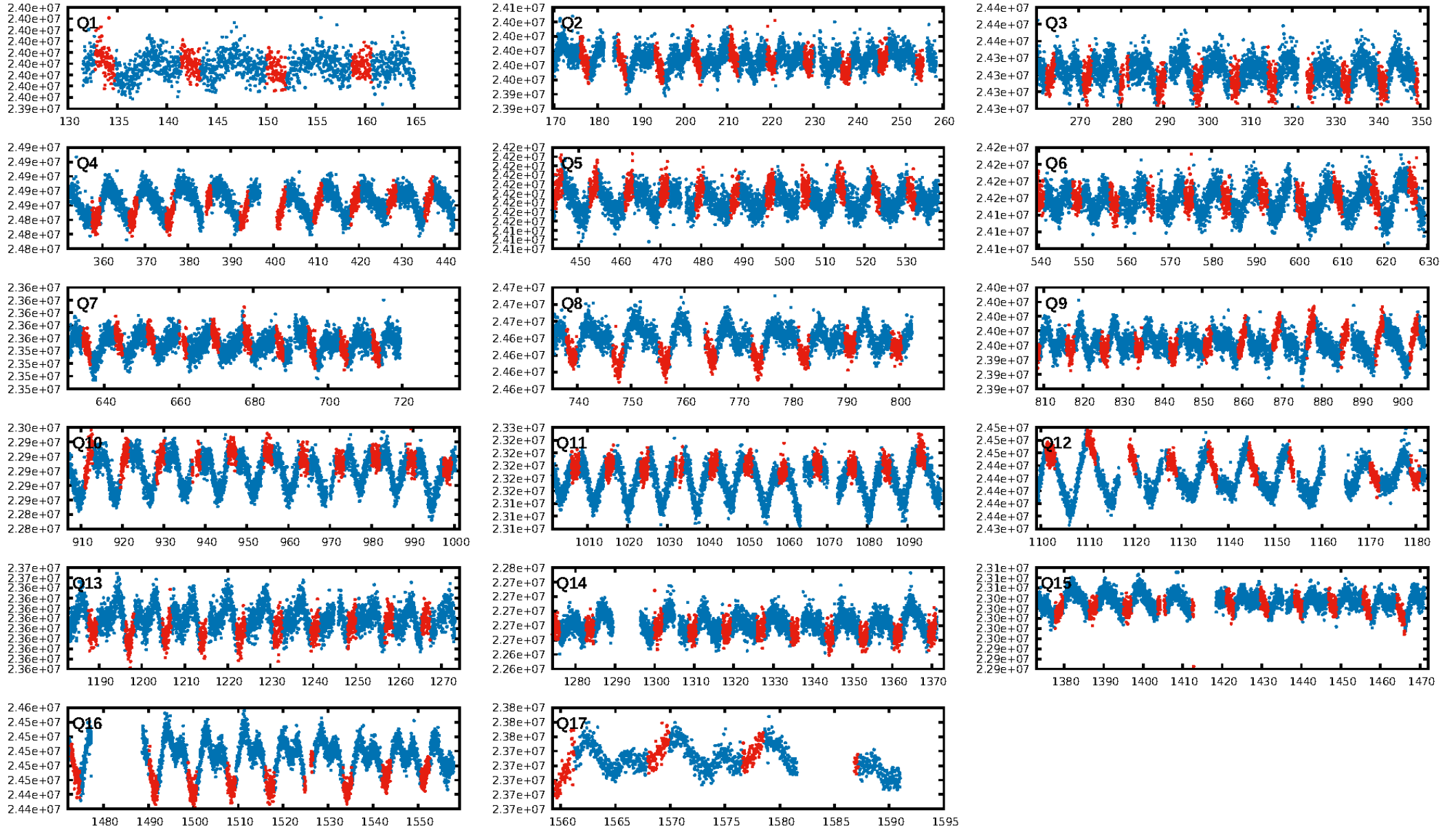
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.20e-19
RollingBand-fgt: 1.00 [154/154]
GhostDiagnostic-chr: 3.784
Centroid-sig: 0.6%
Centroid-so: 1.583 arcsec [2.02 σ]
OotOffset-rm: 0.083 arcsec [0.14 σ]
KicOffset-rm: 0.087 arcsec [0.15 σ]
OotOffset-st: 4/2/4/3 [13]
KicOffset-st: 4/2/4/3 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

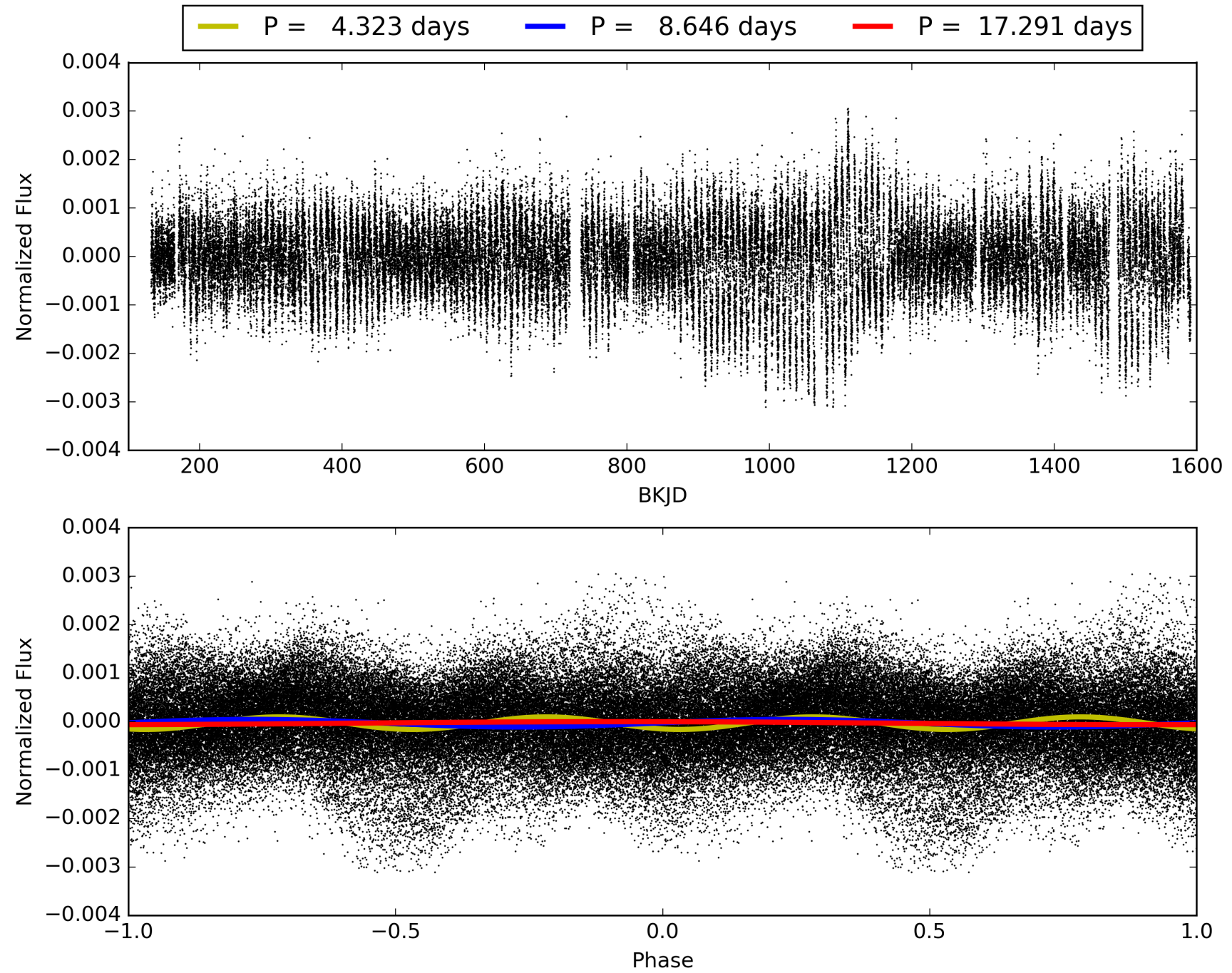
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:28:43 Z

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

TCE 003749389-02, PDC Light Curves

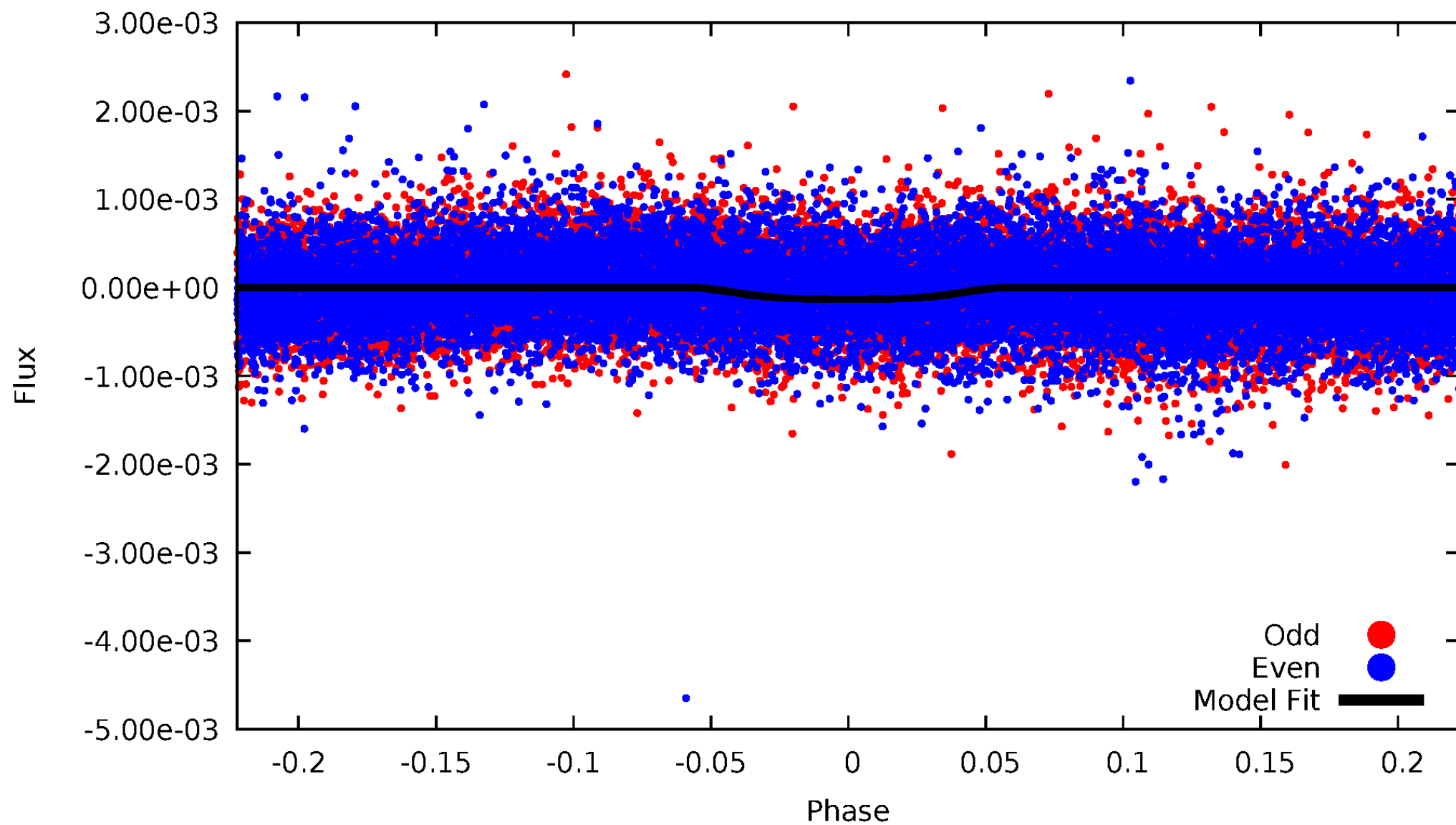


TCE 003749389-02



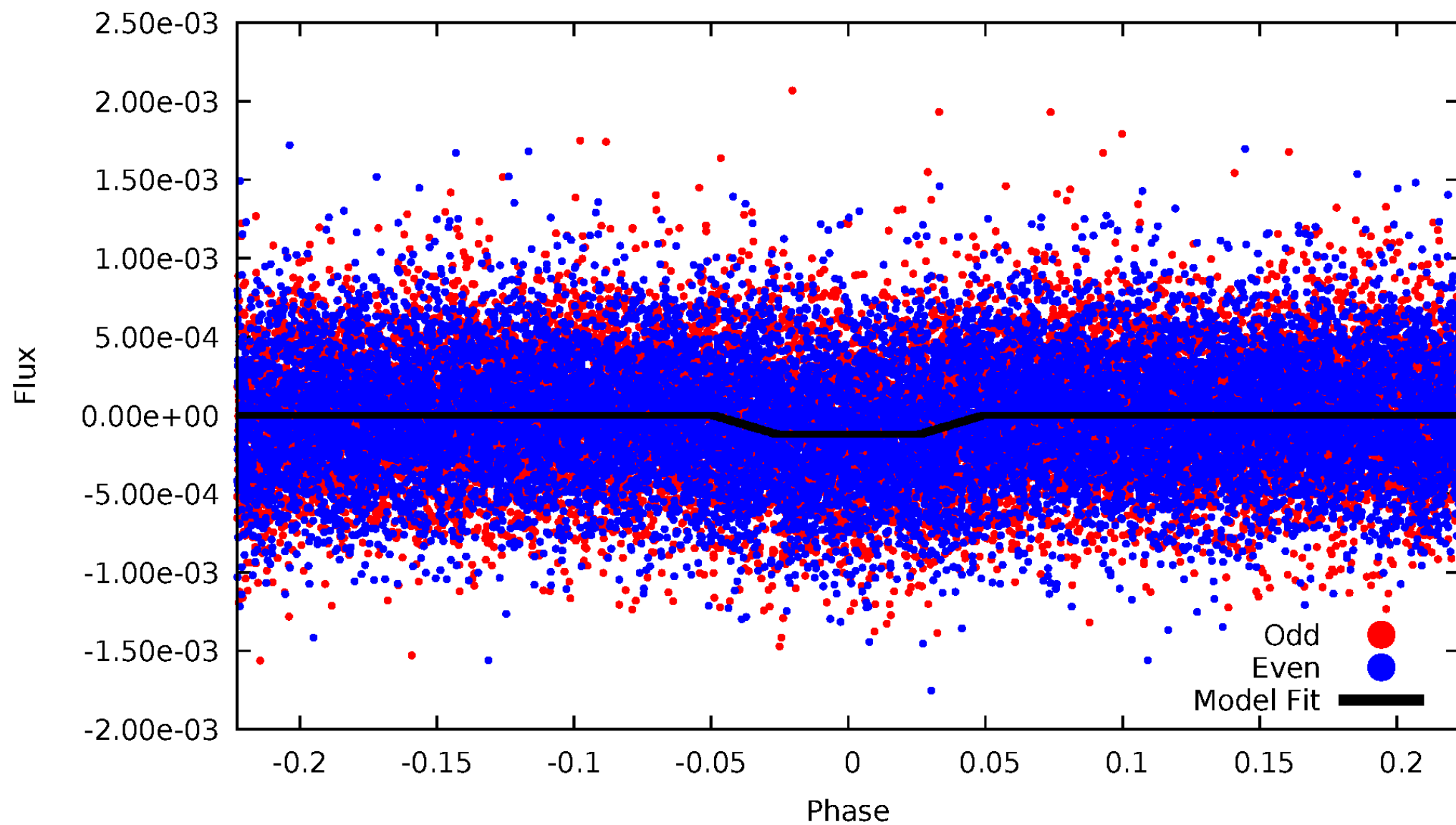
DV Odd/Even

TCE 003749389-02



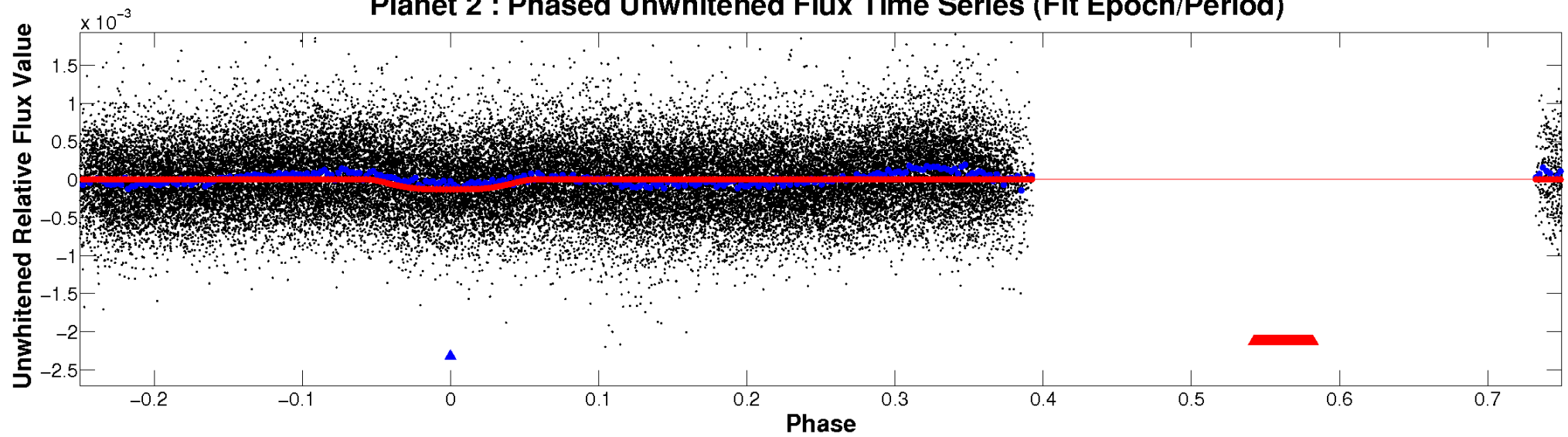
ALT Odd/Even

TCE 003749389-02

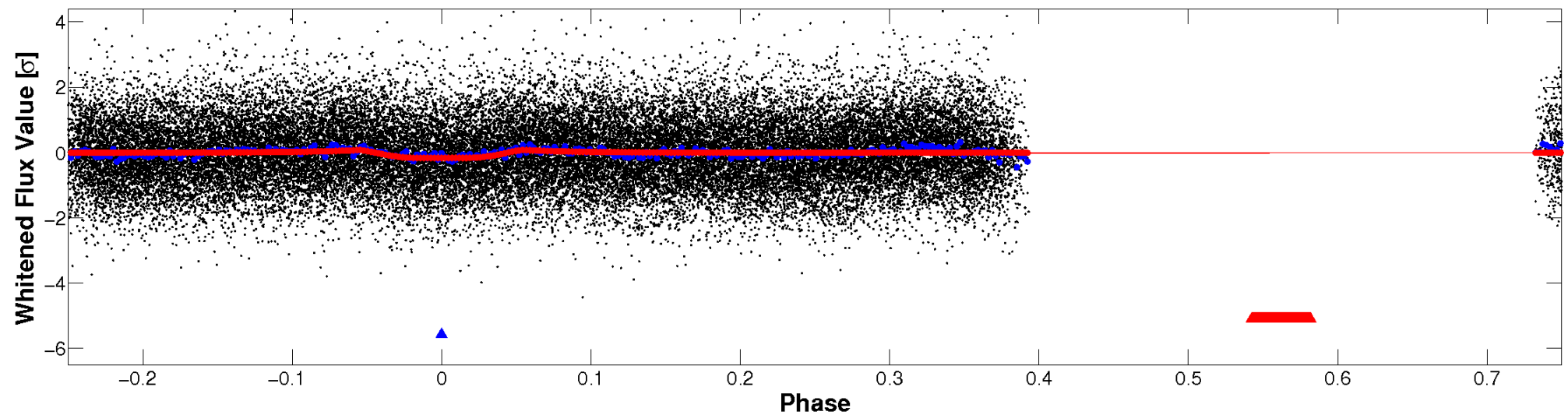


Non-Whitened Vs. Whitened Light Curve

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

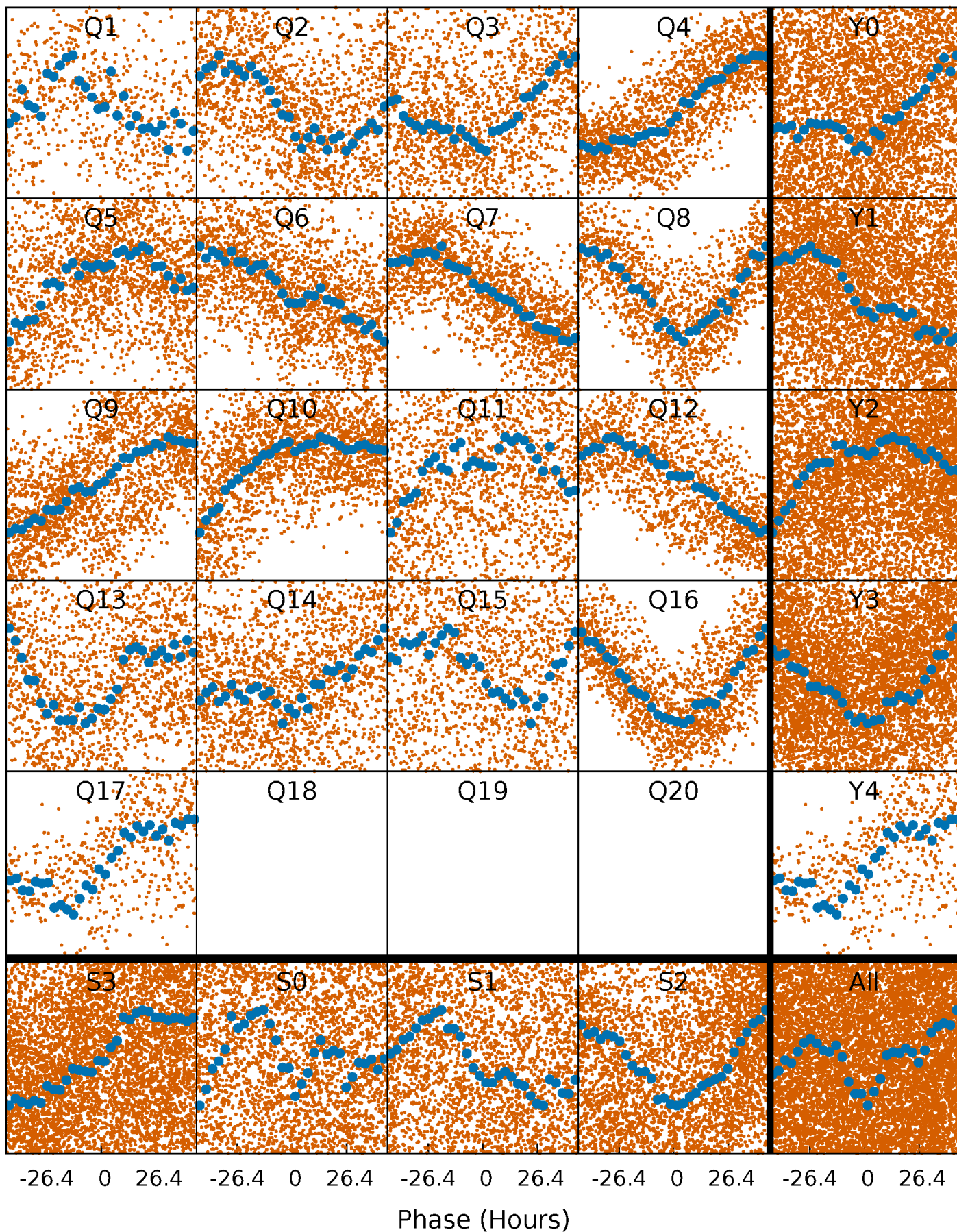


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



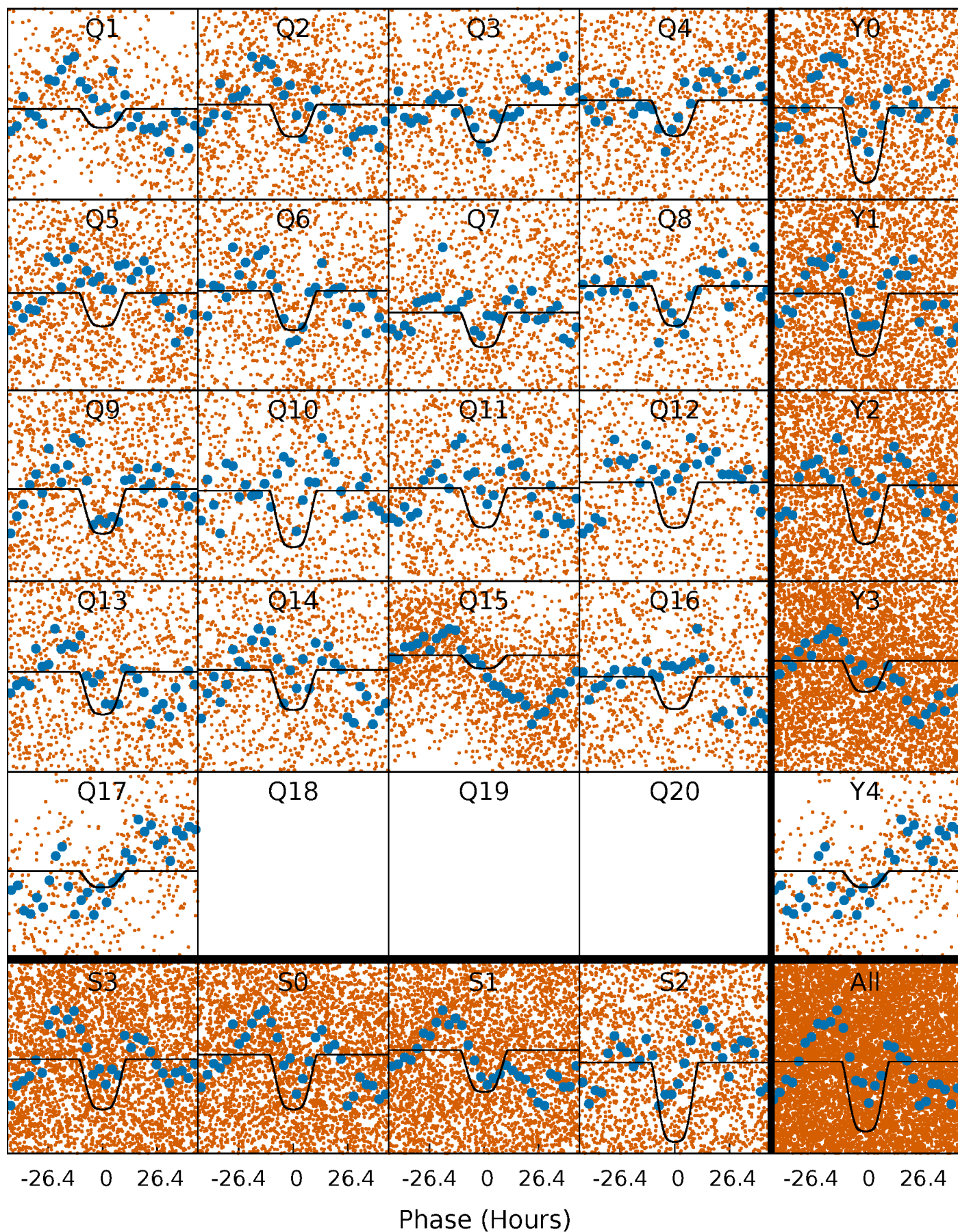
PDC Quarter-Phased Transit Curves

TCE 003749389-02 P= 8.645673 Days $T_0=133.731752$ (BKJD)



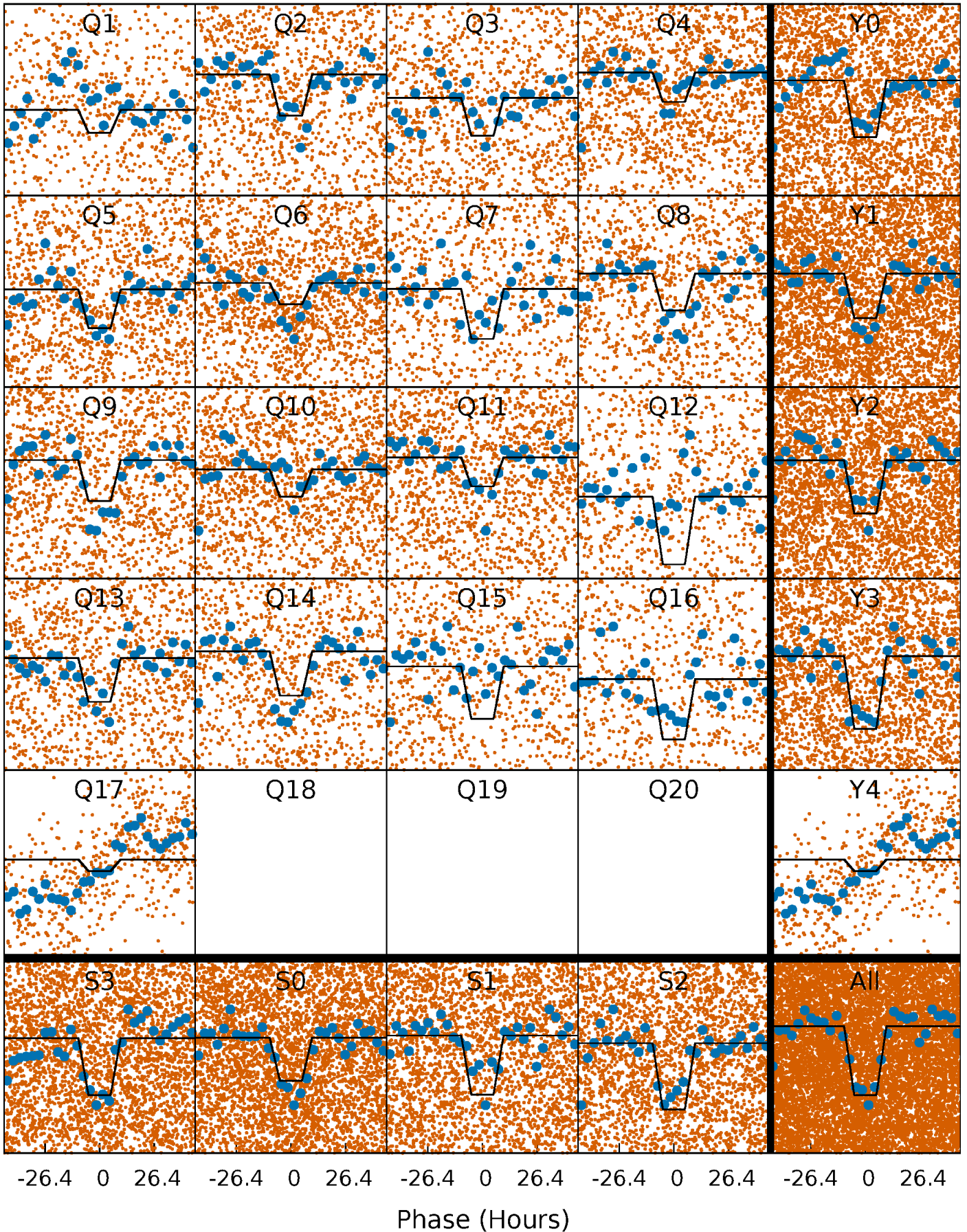
DV Quarter-Phased Transit Curves

TCE 003749389-02 P= 8.645673 Days $T_0=133.731752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

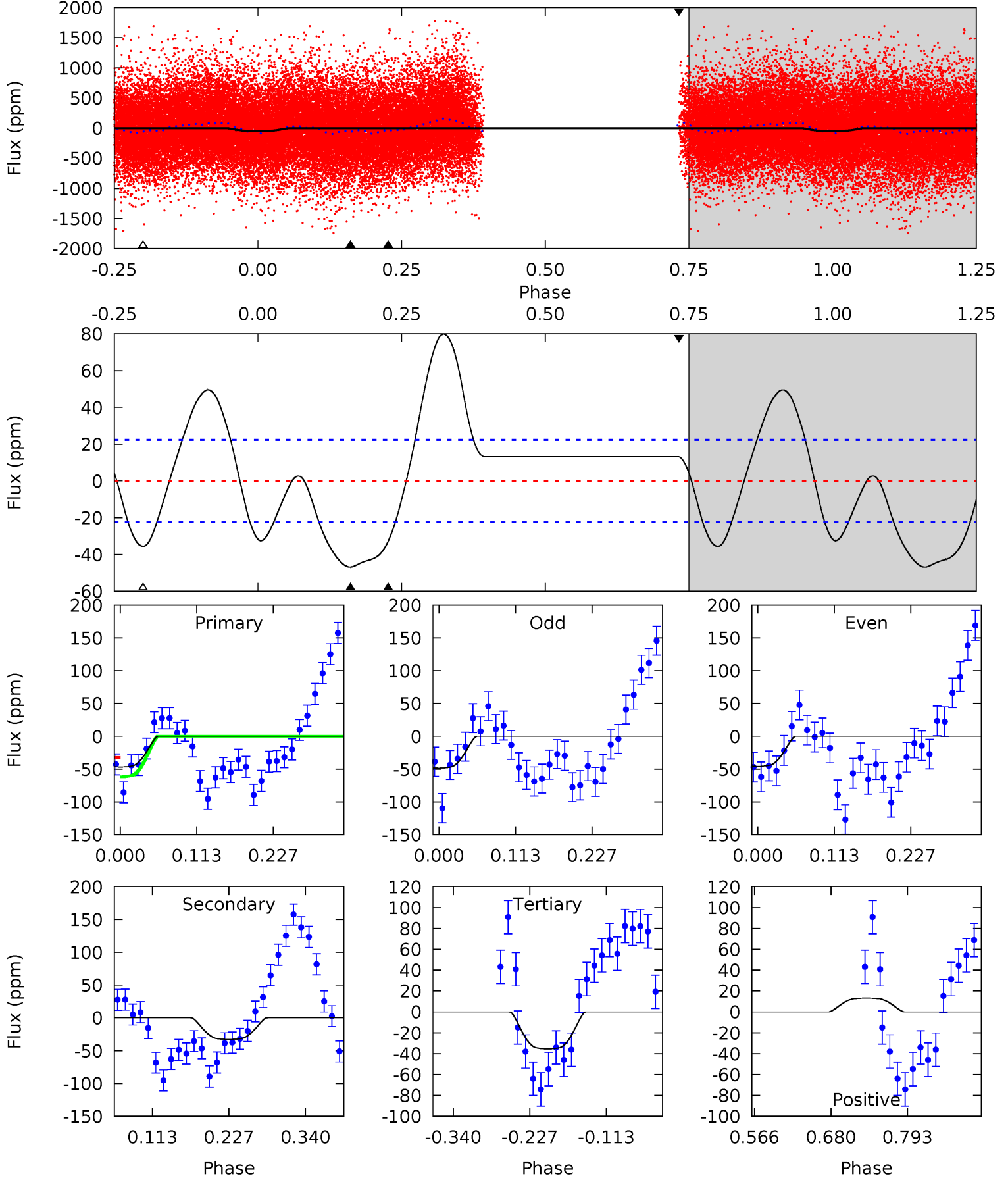
TCE 003749389-02 P= 8.646483 Days $T_0=133.655040$ (BKJD)



DV Model-Shift Uniqueness Test

003749389-02, P = 8.645673 Days, E = 125.086079 Days

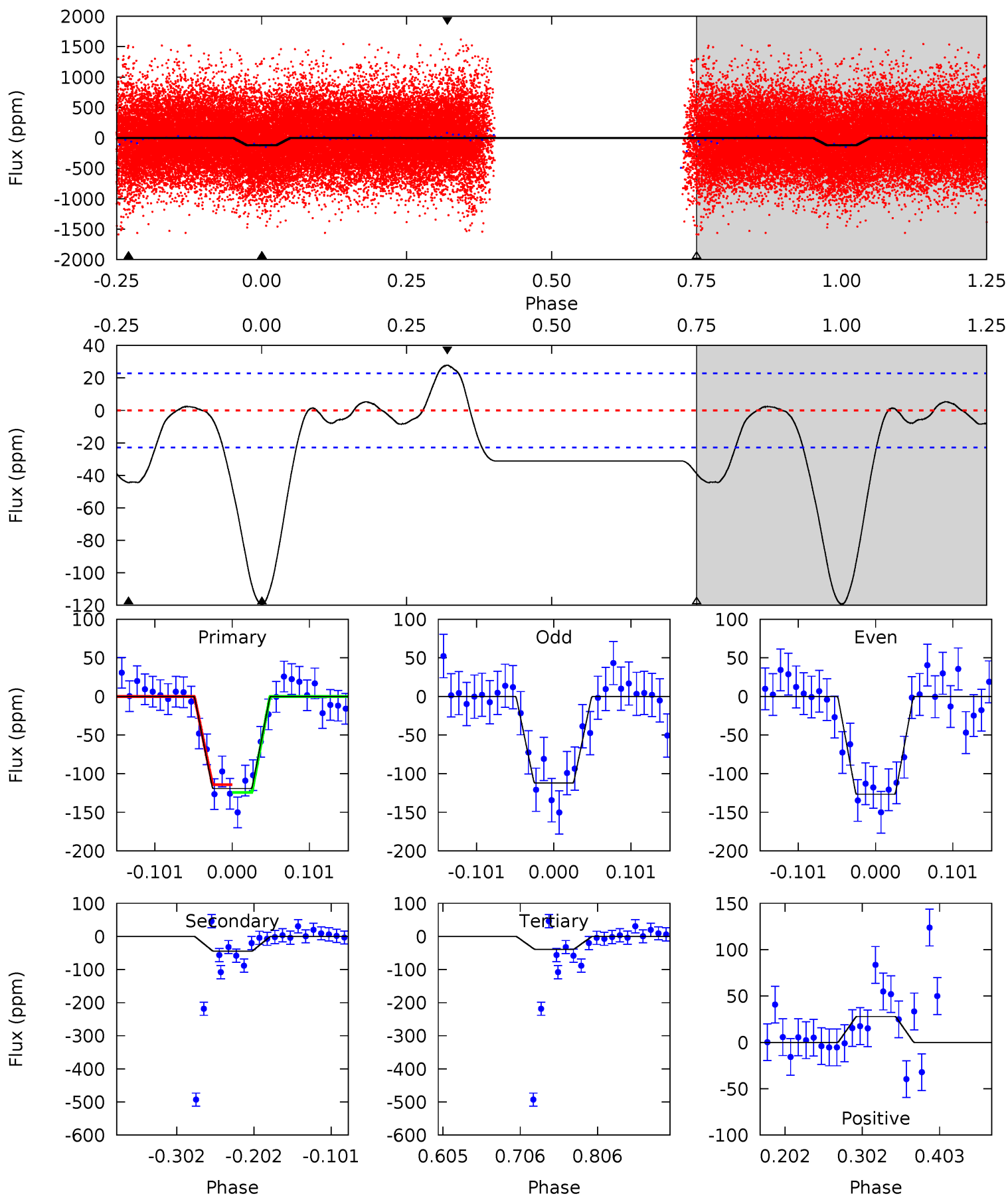
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.52	6.65	7.21	2.67	4.54	1.58	6.30	2.31	6.84	-0.55	3.98	0.28	0.40	0.63	2.98



Alt Model-Shift Uniqueness Test

003749389-02, P = 8.646483 Days, E = 125.008557 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	8.88	7.78	5.58	4.56	1.64	2.56	16.1	18.3	1.10	3.30	1.44	1.06	0.19	1.05



Stellar Parameters For KIC 003749389

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6461^{+156}_{-246}	$4.330^{+0.057}_{-0.172}$	$0.360^{+0.100}_{-0.350}$	$1.325^{+0.354}_{-0.177}$	$1.369^{+0.134}_{-0.184}$	$0.829^{+0.259}_{-0.391}$
	+2%/-4%	+1%/-4%	+28%/-97%	+27%/-13%	+10%/-13%	+31%/-47%
Source	PHO1	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 003749389-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 5	$2.12^{+0.31}_{-0.24}$	1540^{+103}_{-76}	4320^{+200}_{-197}	33^{+10}_{-8}
Alt.	-44 ± 5	$1.65^{+0.26}_{-0.18}$	1531^{+93}_{-73}	5043^{+239}_{-234}	74^{+19}_{-19}

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

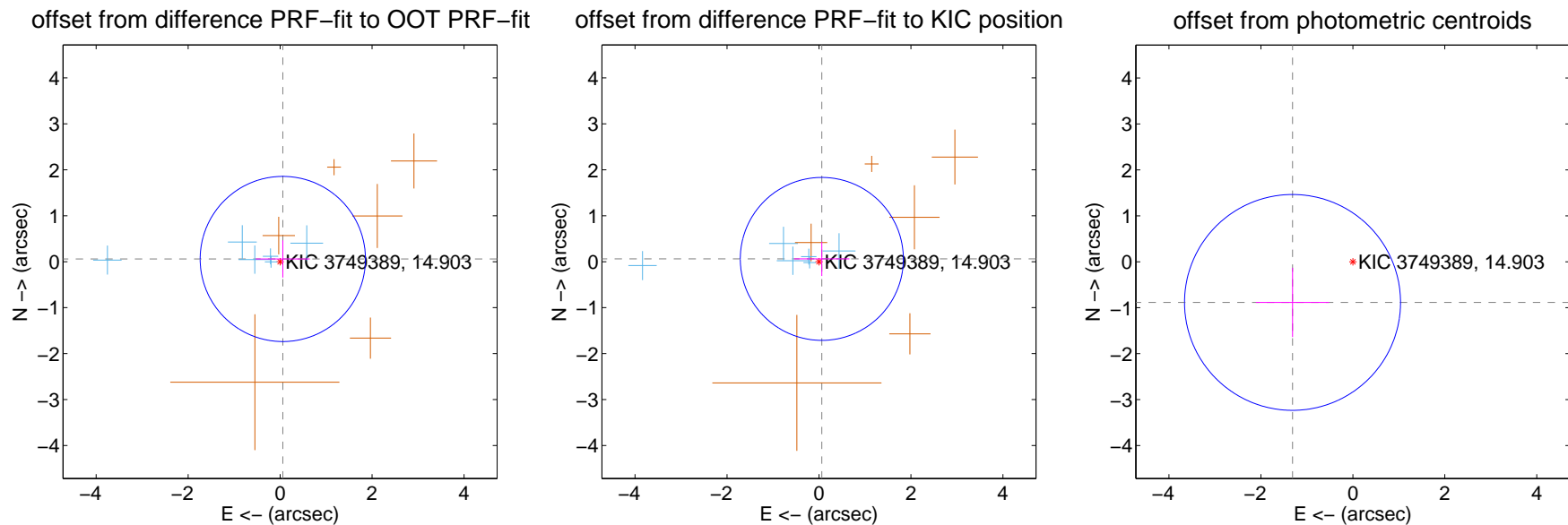
DV Centroid Data

Supplemental centroid analysis for 003749389-02. Kepler magnitude: 14.90. Transit SNR 10.82

There are 6 quarters with good PRF difference image offsets

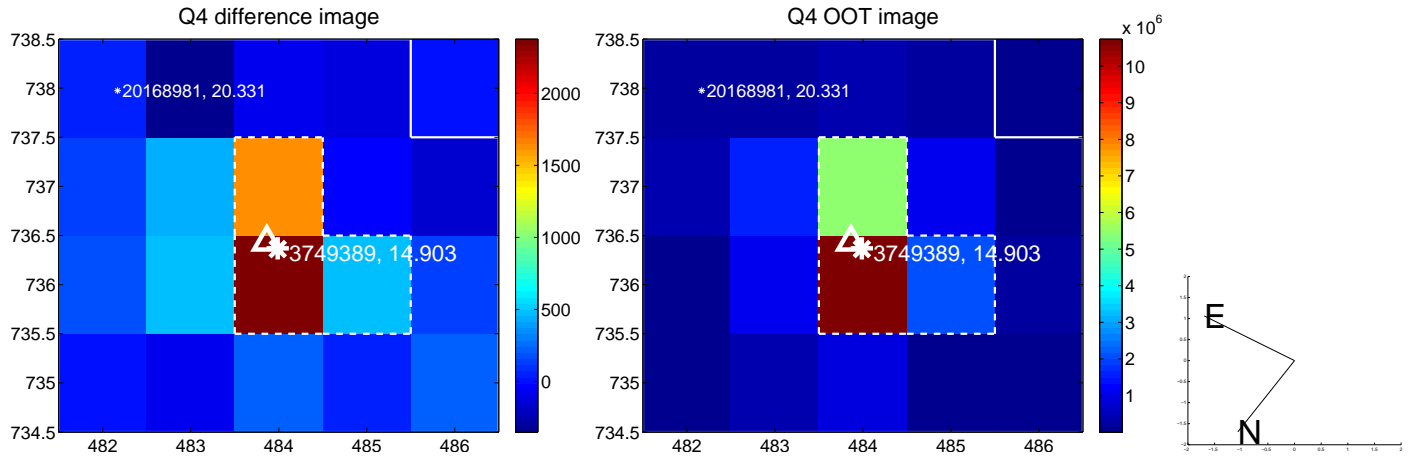
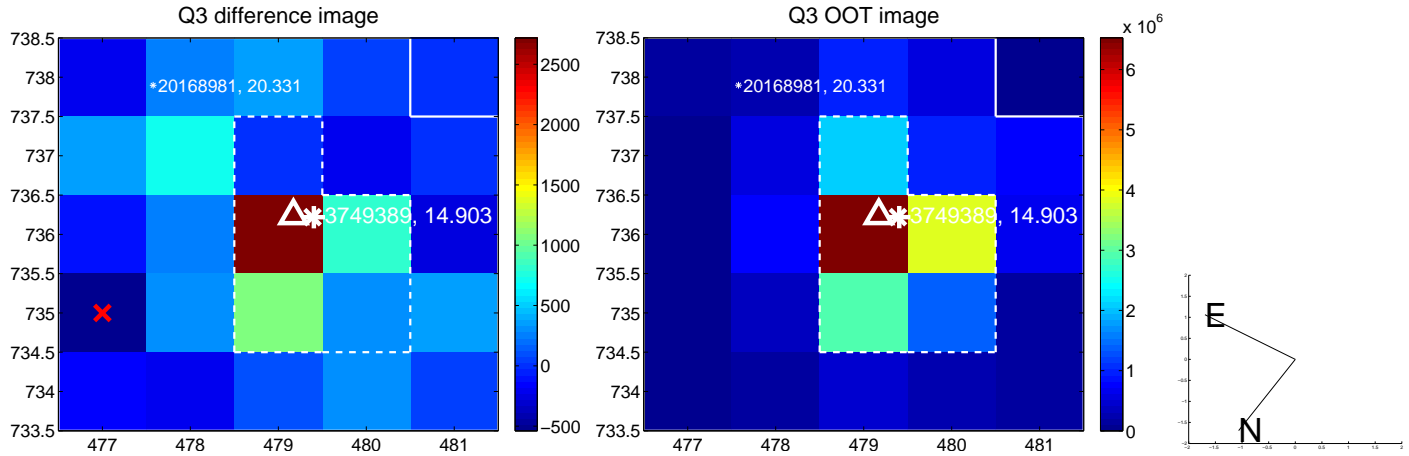
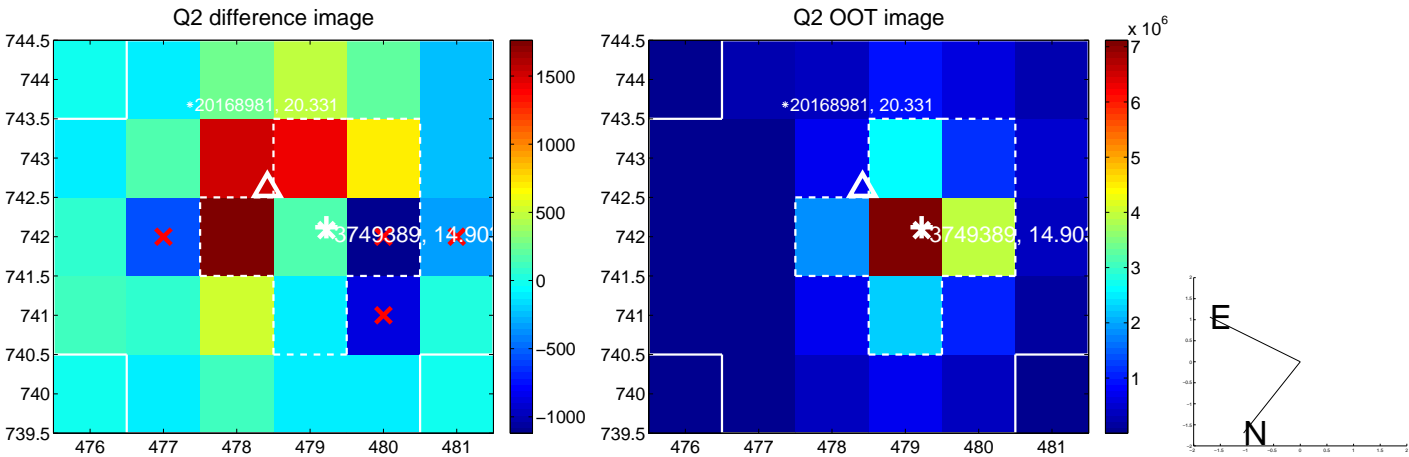
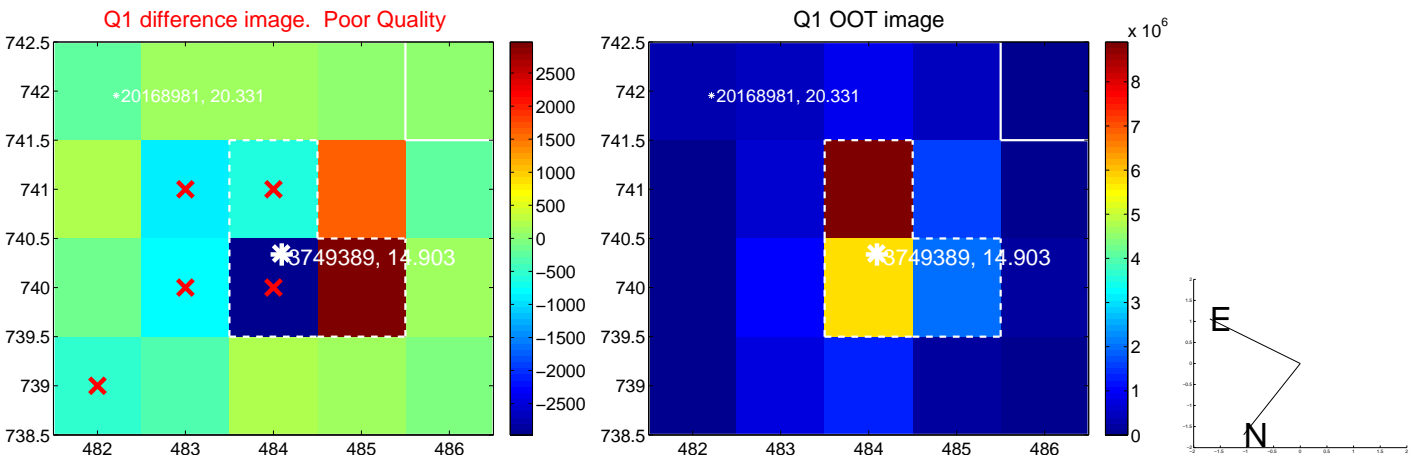
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.083 ± 0.599	0.14	-0.059 ± 0.588	0.059 ± 0.405
PRF-fit source offset from KIC position	0.087 ± 0.591	0.15	-0.062 ± 0.600	0.061 ± 0.373
photometric centroid source offset	1.58 ± 0.78	2.02	1.31 ± 0.80	-0.89 ± 0.75

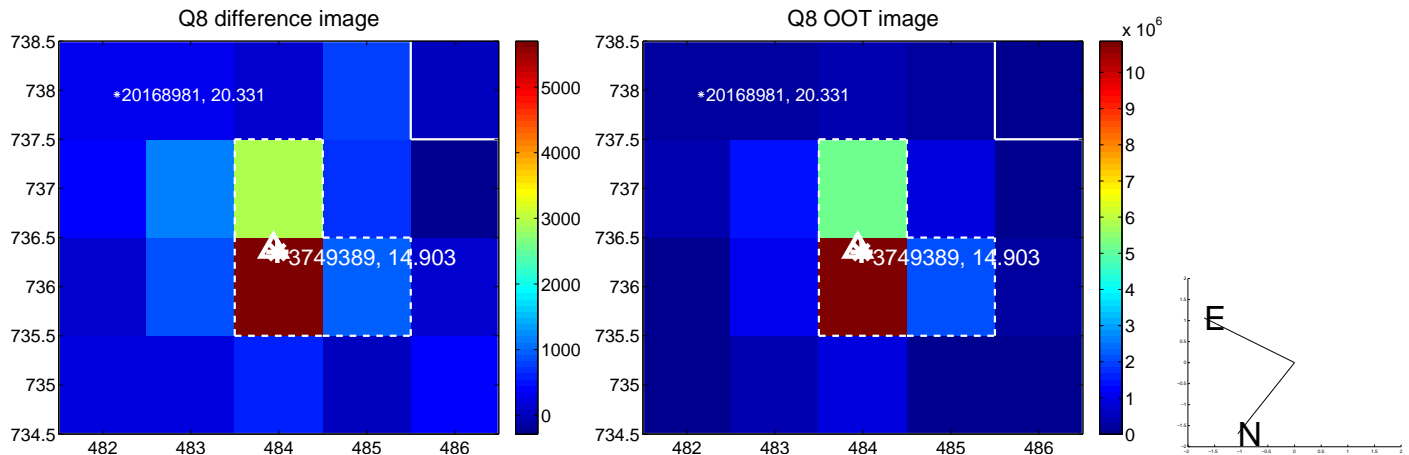
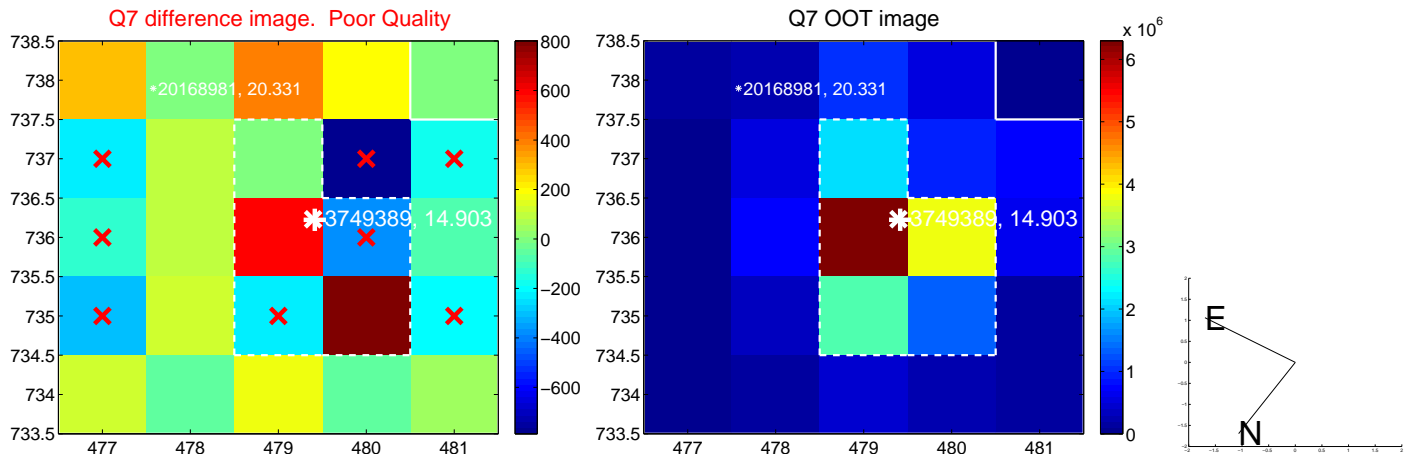
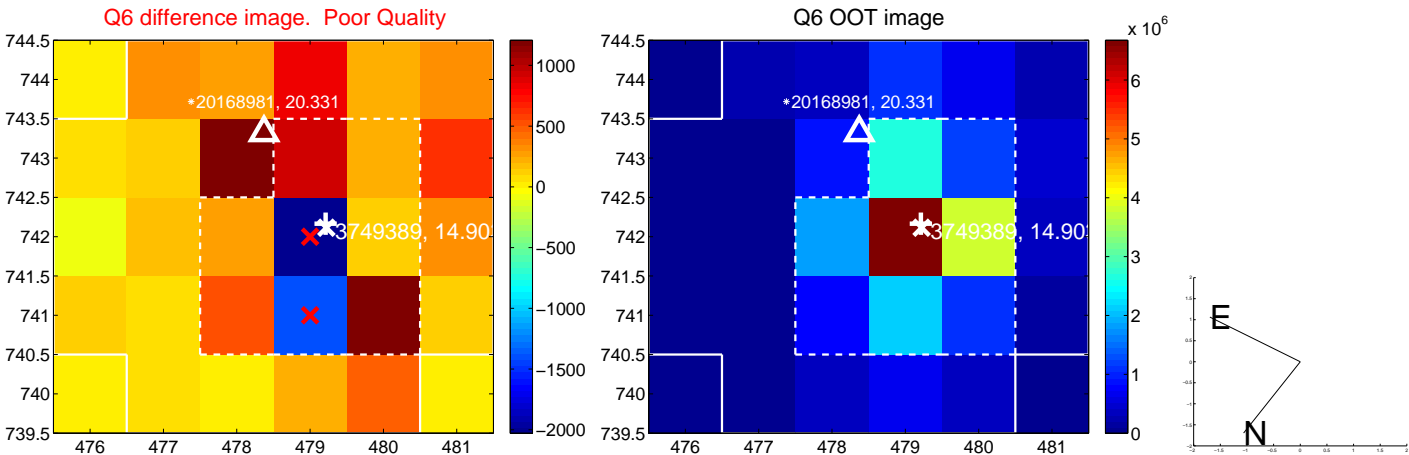
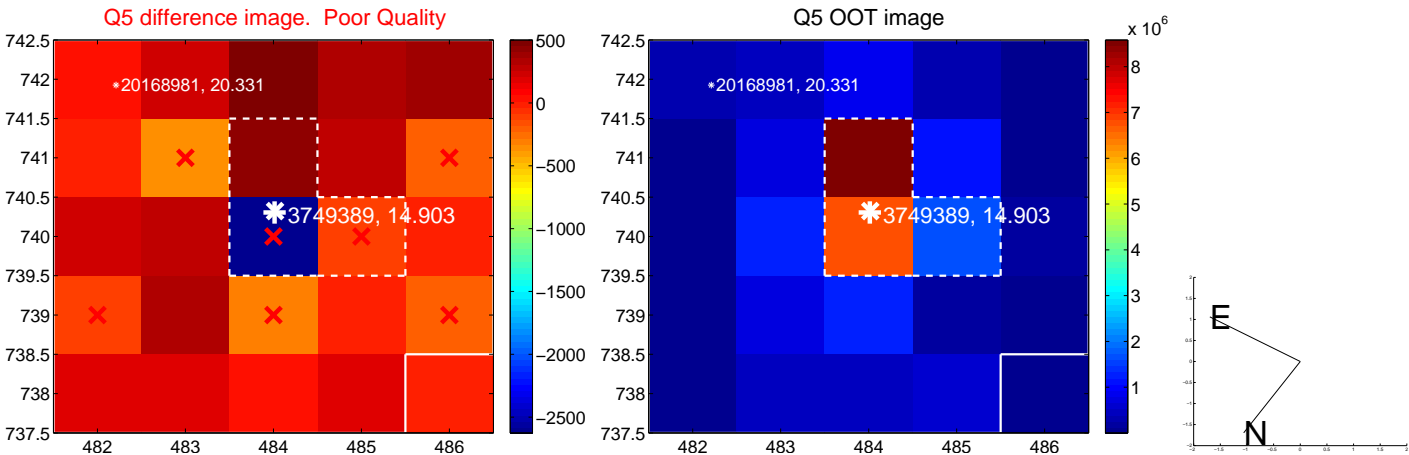


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

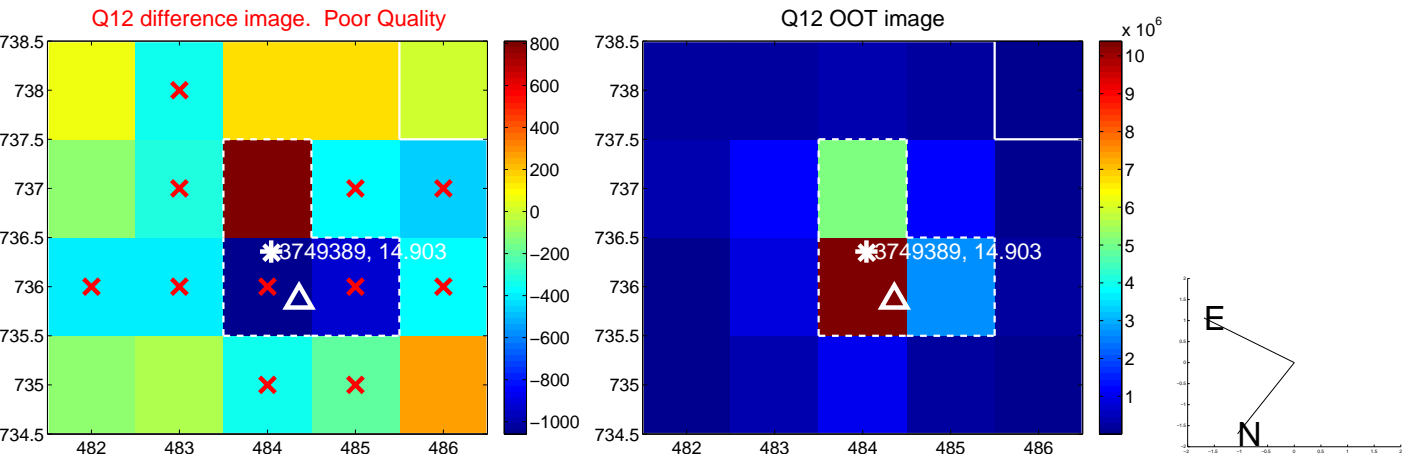
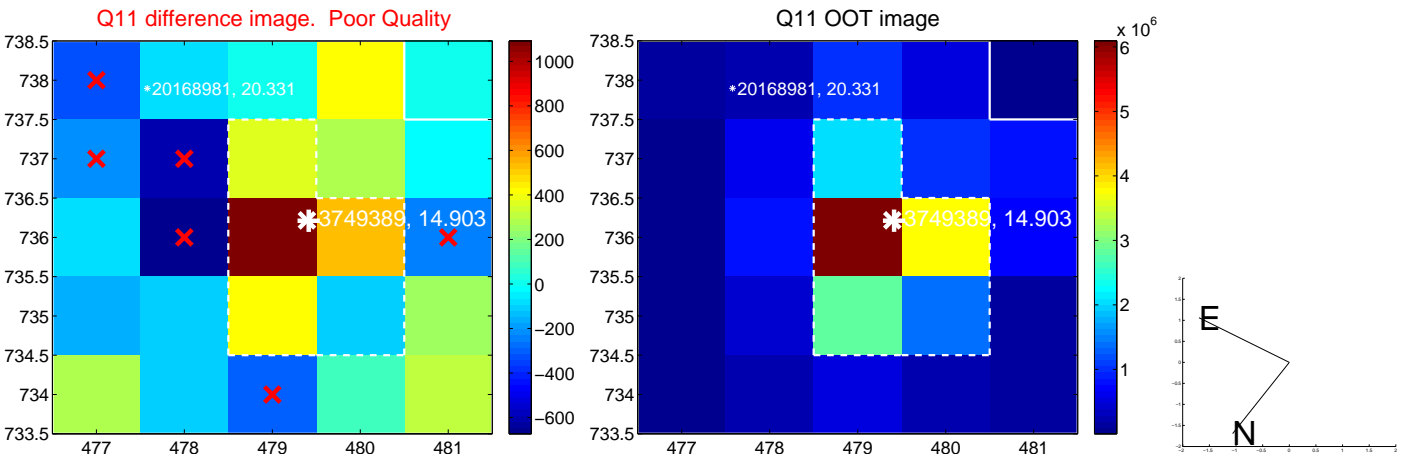
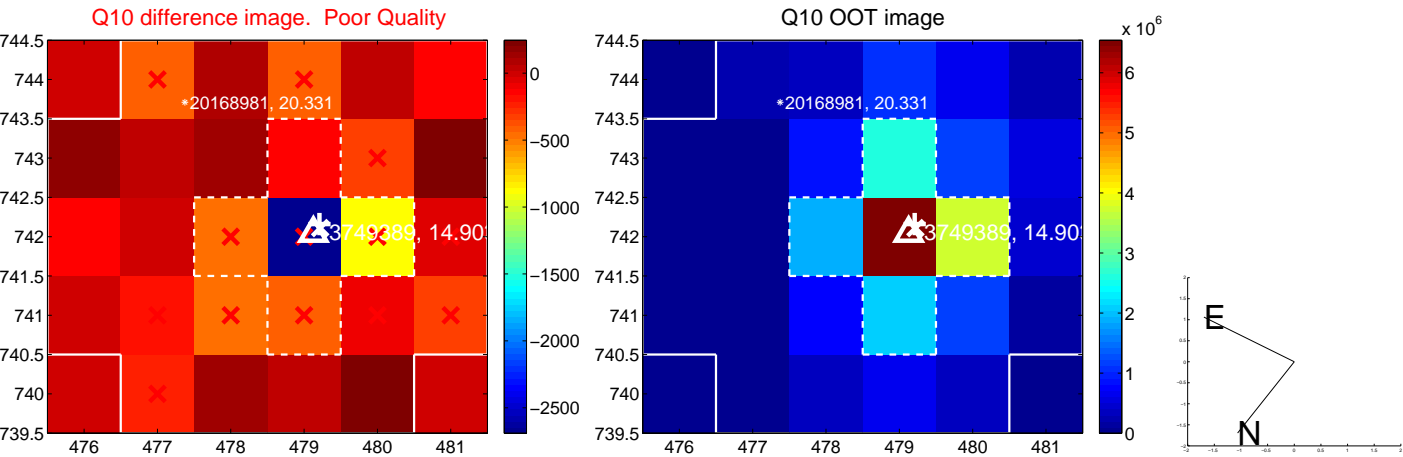
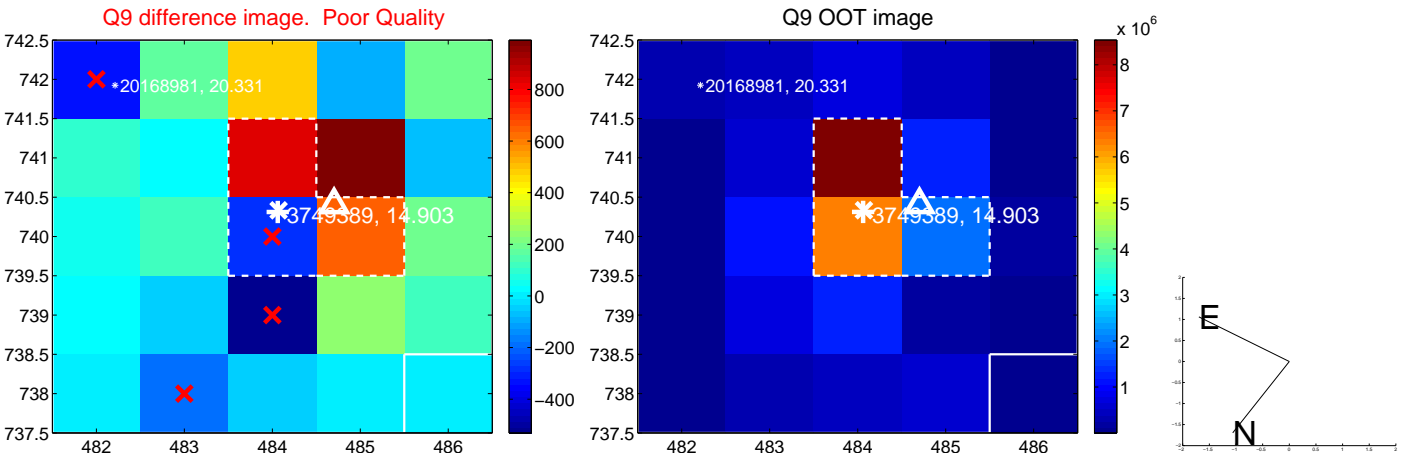
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



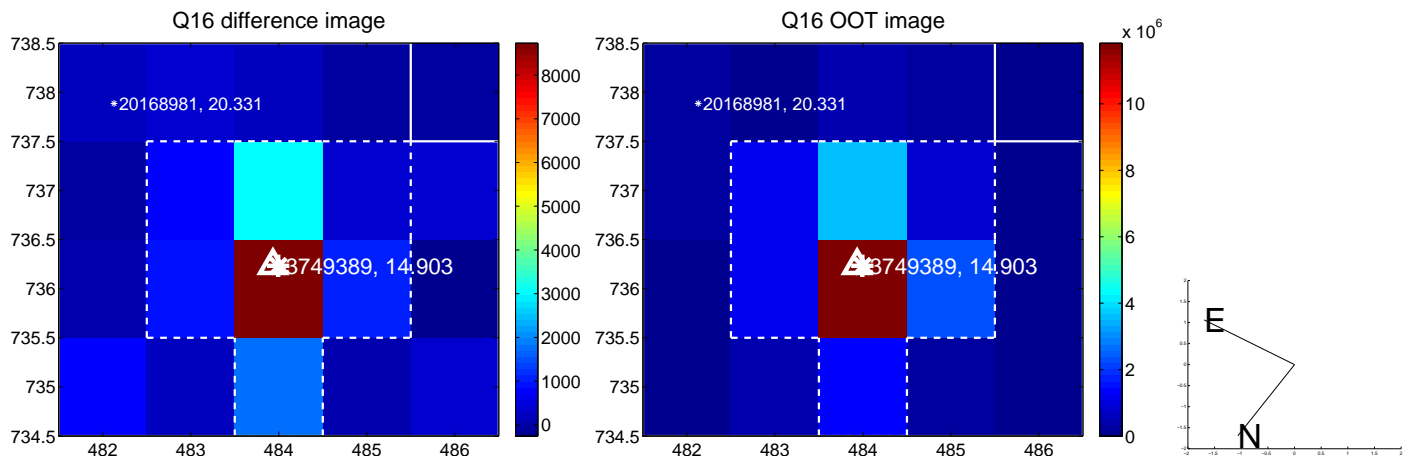
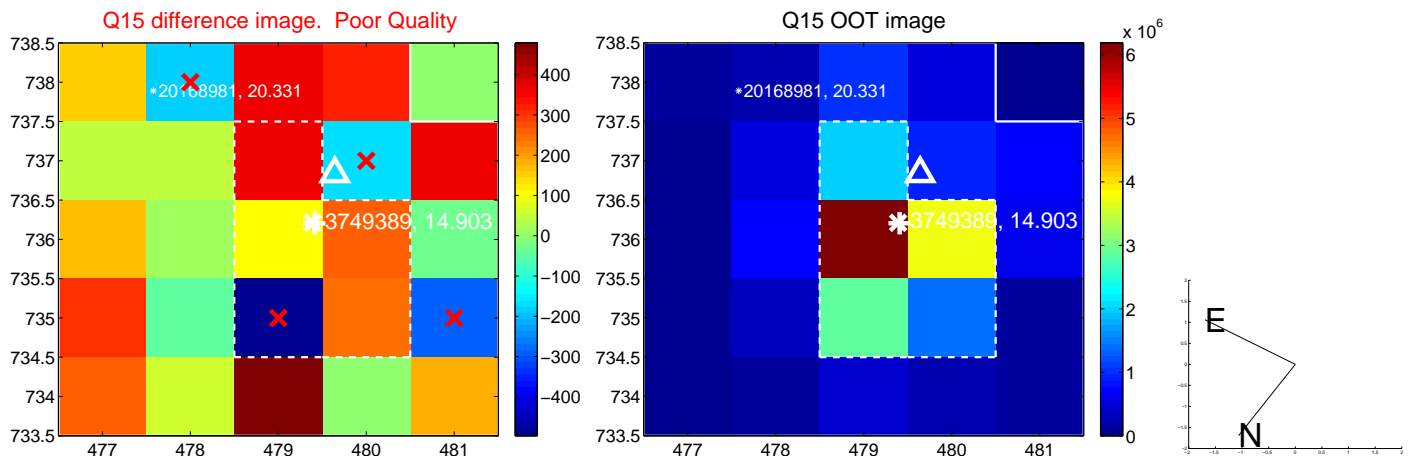
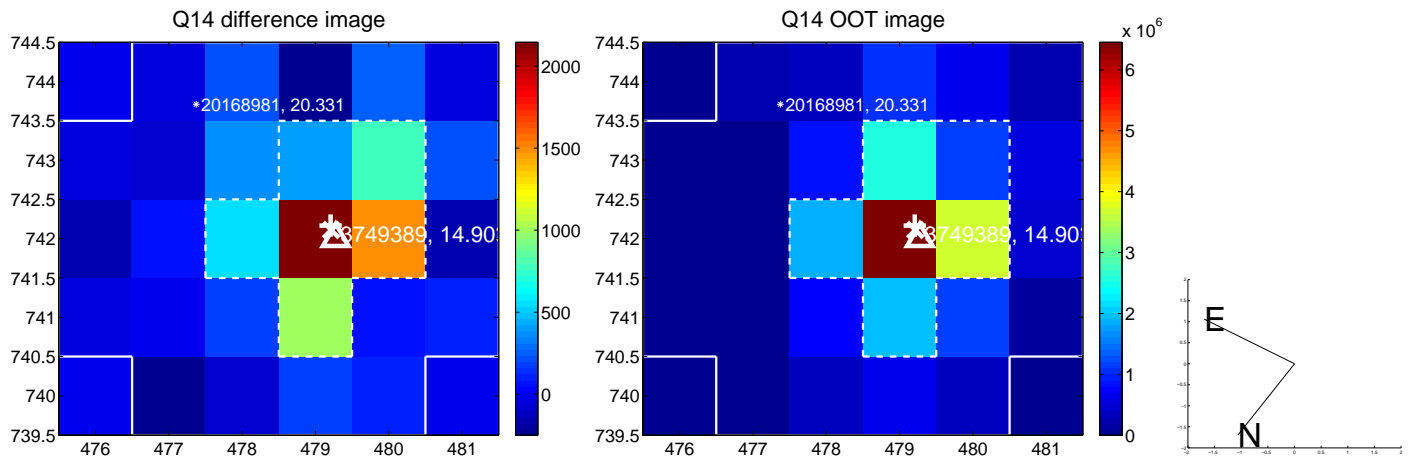
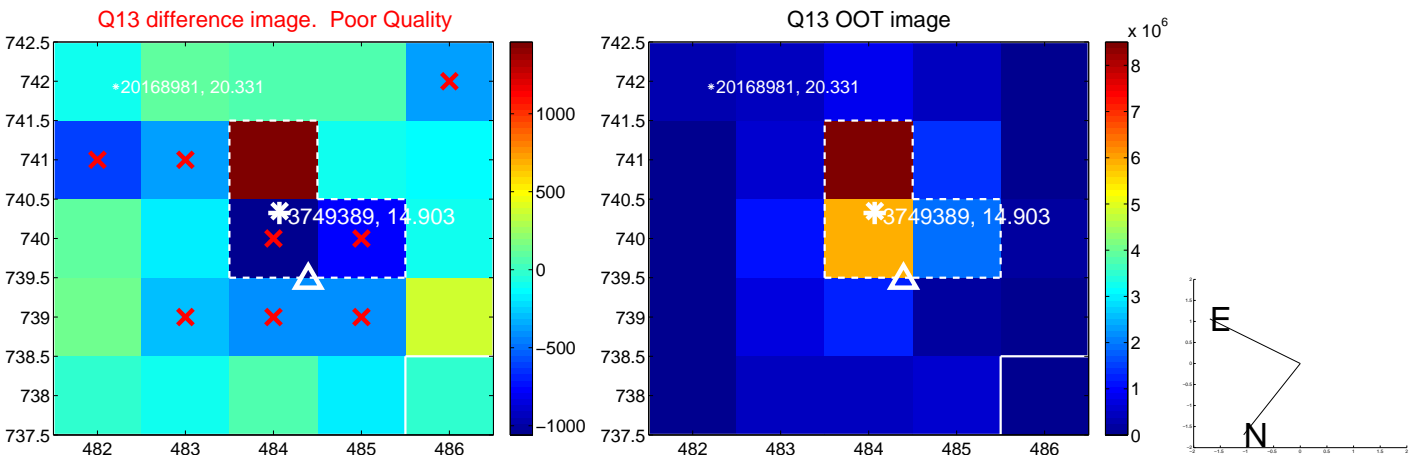
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



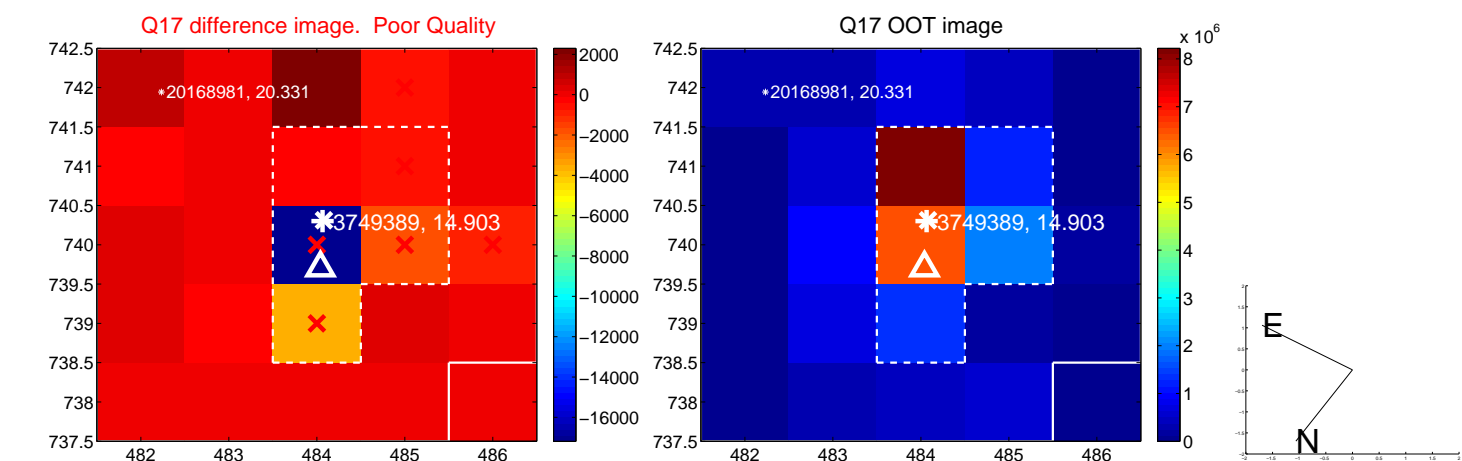
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



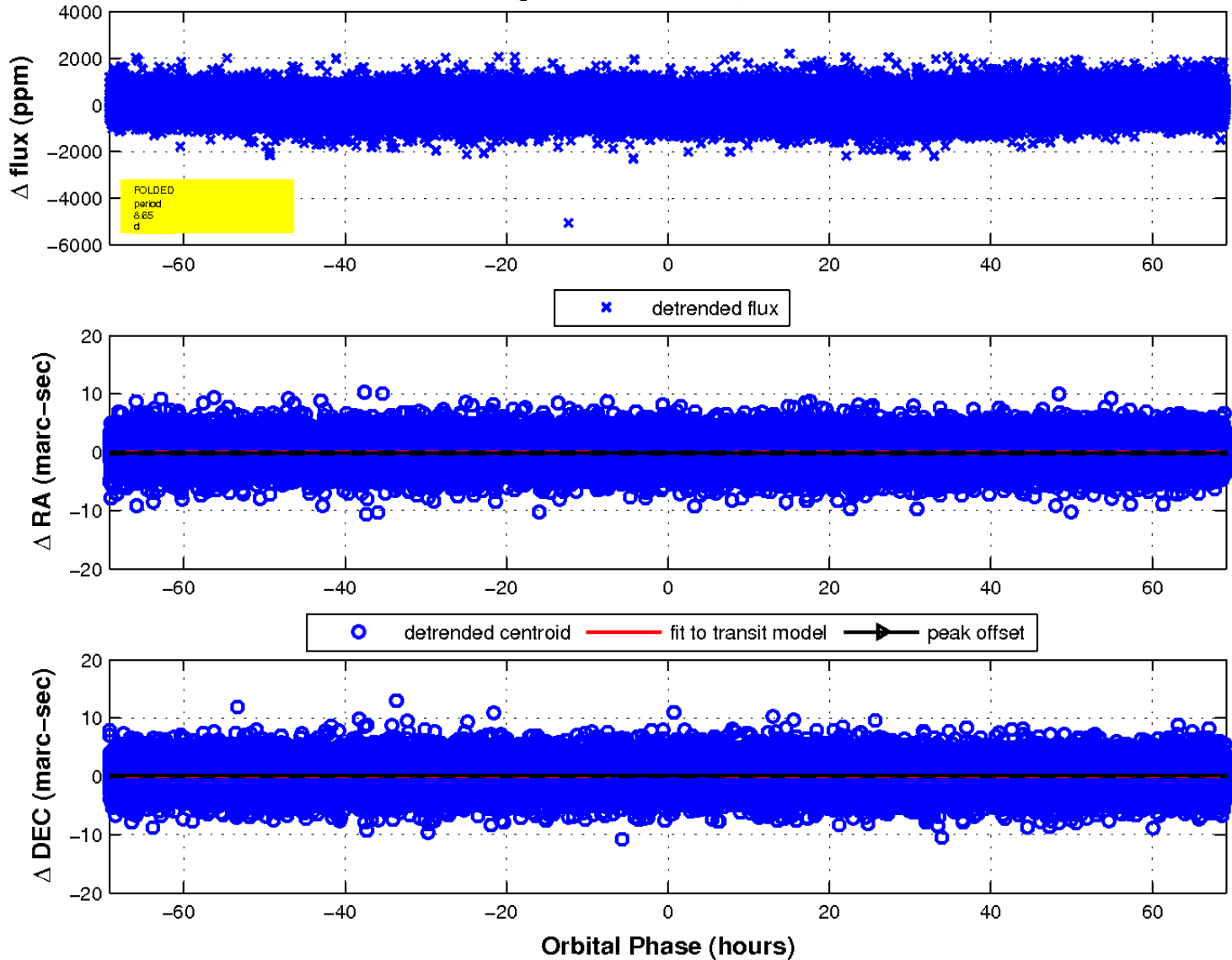
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

