

KIC 009775385

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})
009775385-01	OBS	No	0.639057	131.528930	23.4	1.923	8.8	9.7	2.02	7675	1.14	42592.99
009775385-02	OBS	No	3.511950	133.481174	63.6	3.206	9.2	9.3	2.02	7675	1.88	4391.98
009775385-03	OBS	No	3.512003	133.175231	62.3	3.446	8.6	9.2	2.02	7675	1.85	4391.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009775385-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009775385-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
009775385-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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 009775385-01

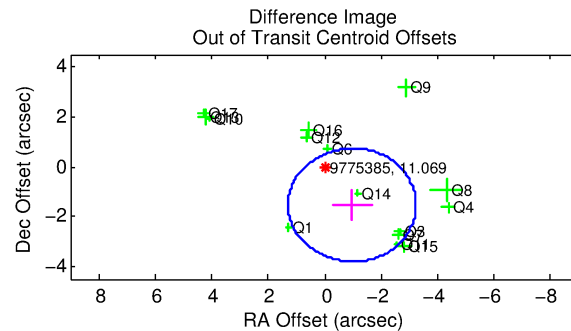
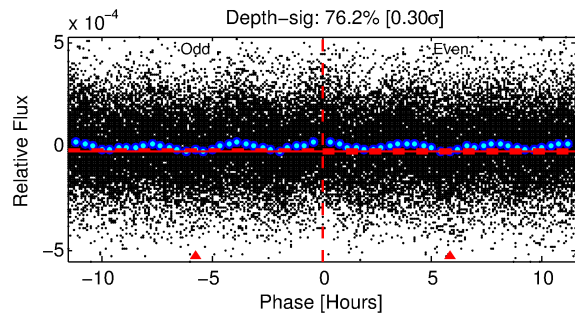
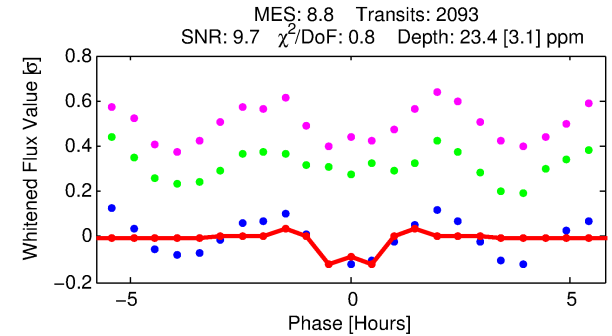
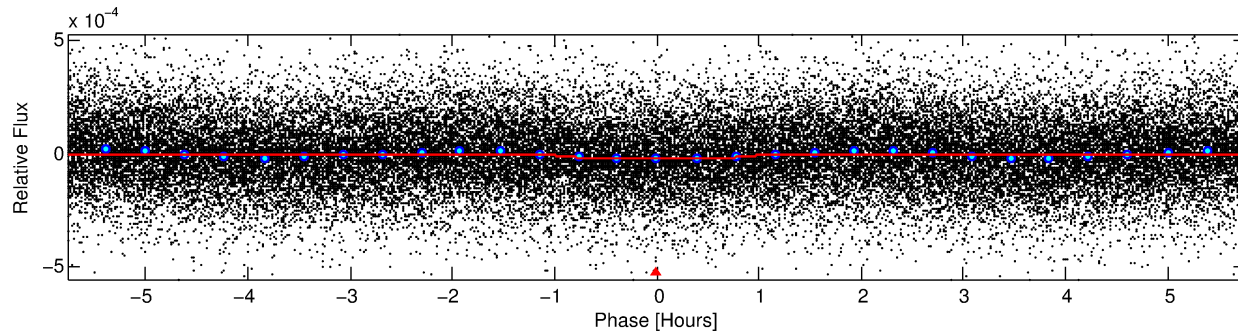
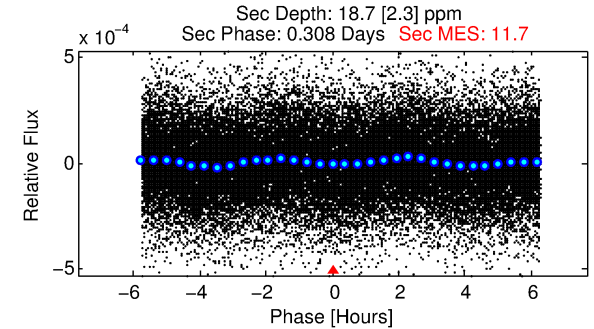
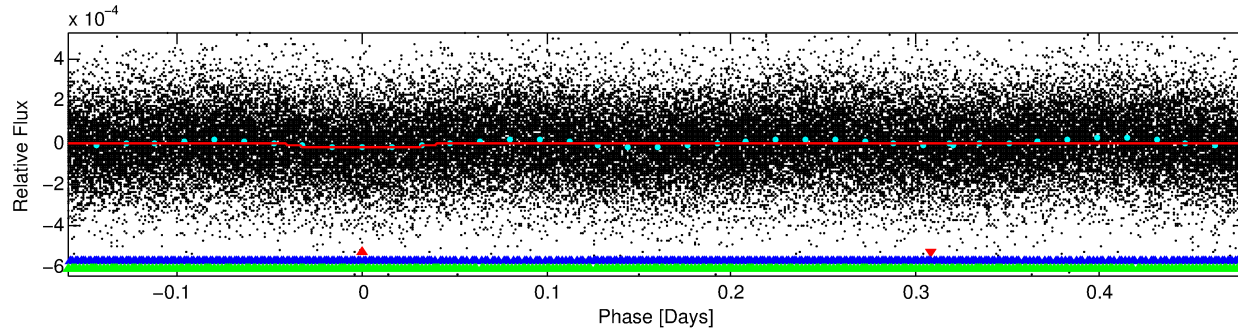
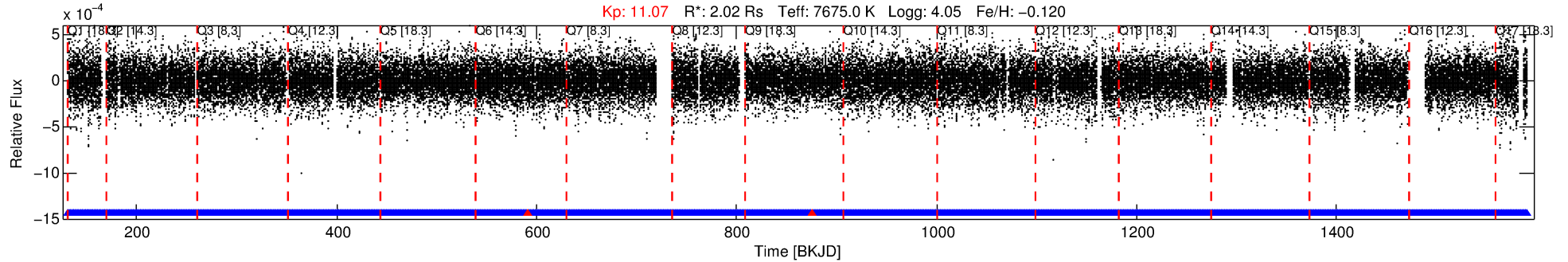
No Significant Match Found

DV One-Page Summary

KIC: 9775385 Candidate: 1 of 3 Period: 0.639 d

KOI: K04462 Corr: No Ephemeris Match

Kp: 11.07 R*: 2.02 Rs Teff: 7675.0 K Logg: 4.05 Fe/H: -0.120



DV Fit Results:

Period = 0.63906 [0.00001] d
Epoch = 131.5289 [0.0014] BKJD
Rp/R* = 0.0052 [0.0009]
a/R* = 1.45 [0.82]
b = 0.91 [0.22]
Seff = 42592.99 [14973.28]
Teq = 3663 [322] K
Rp = 1.14 [0.35] Re
a = 0.0172 [0.0037] AU
Ag = 2.37 [1.16] [1.18σ]
Teffp = 7026 [721] K [4.26σ]

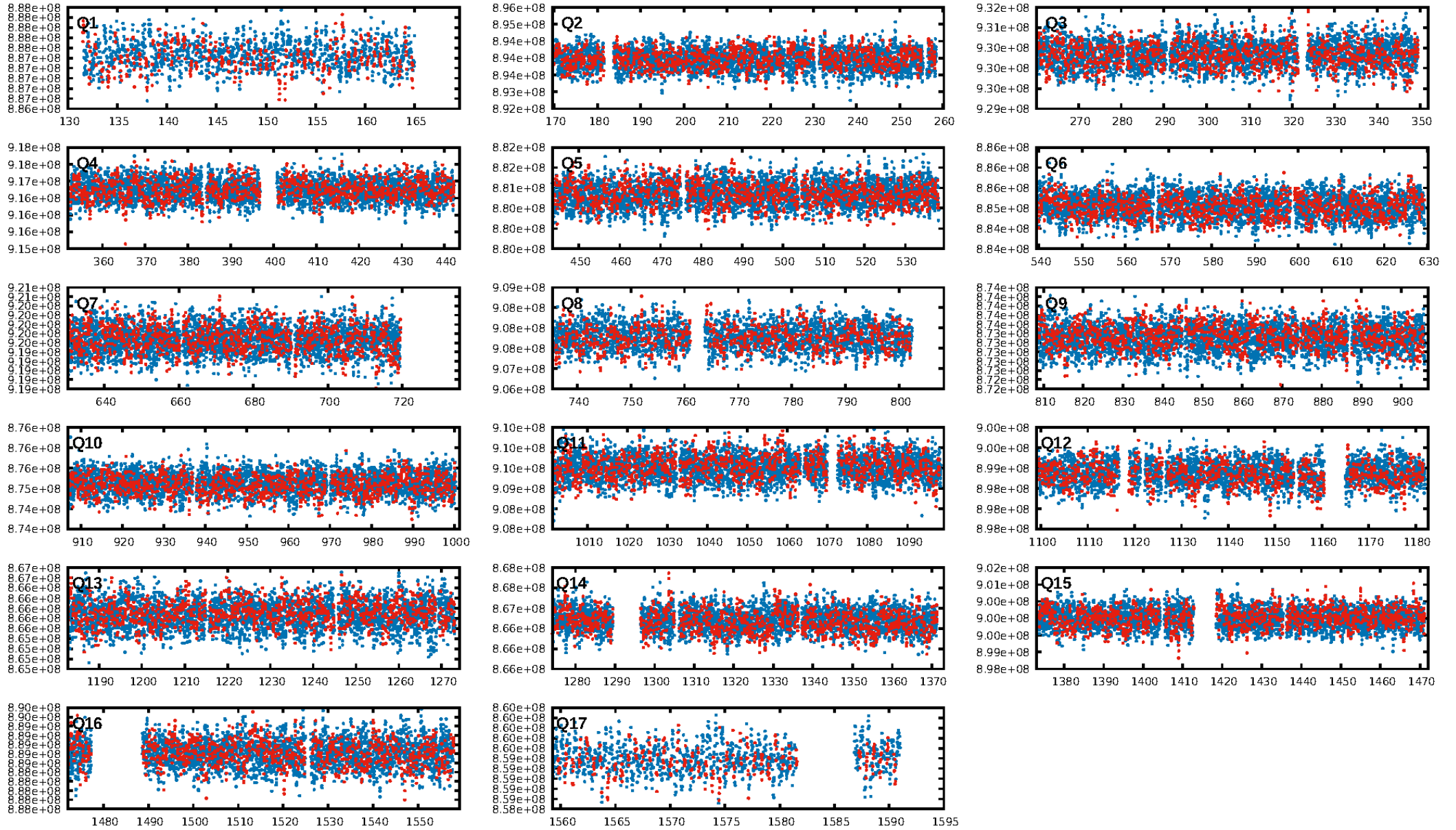
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [18.44σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.47e-12
RollingBand-fgt: 1.00 [1997/1999]
GhostDiagnostic-chr: 6.418
Centroid-sig: N/A
Centroid-so: 0.255 arcsec [0.50σ]
OotOffset-rm: 1.819 arcsec [2.41σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-rm: 1.479 arcsec [2.04σ]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 1.00 [17/17]

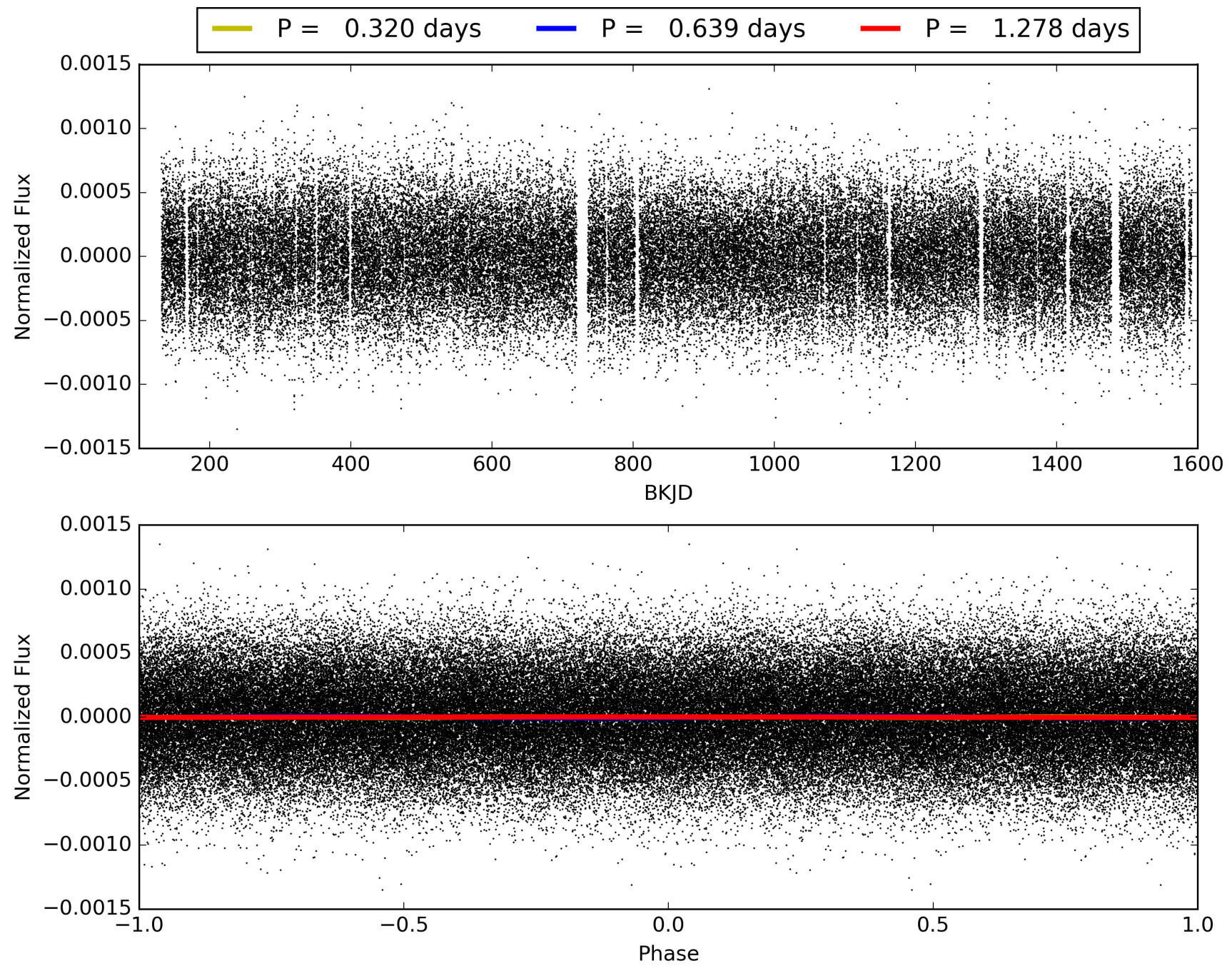
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:57:03 Z

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

TCE 009775385-01, PDC Light Curves

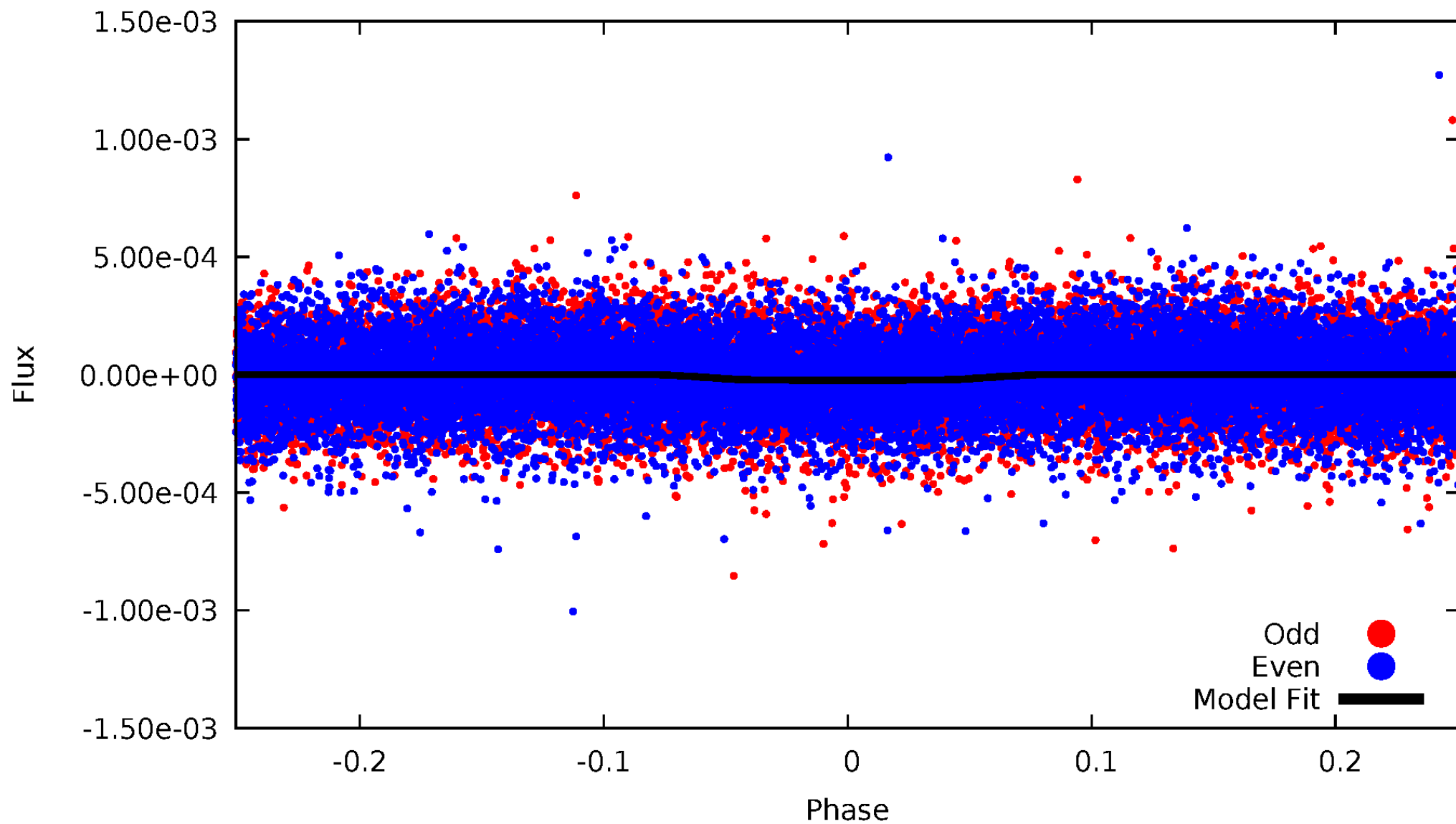


TCE 009775385-01



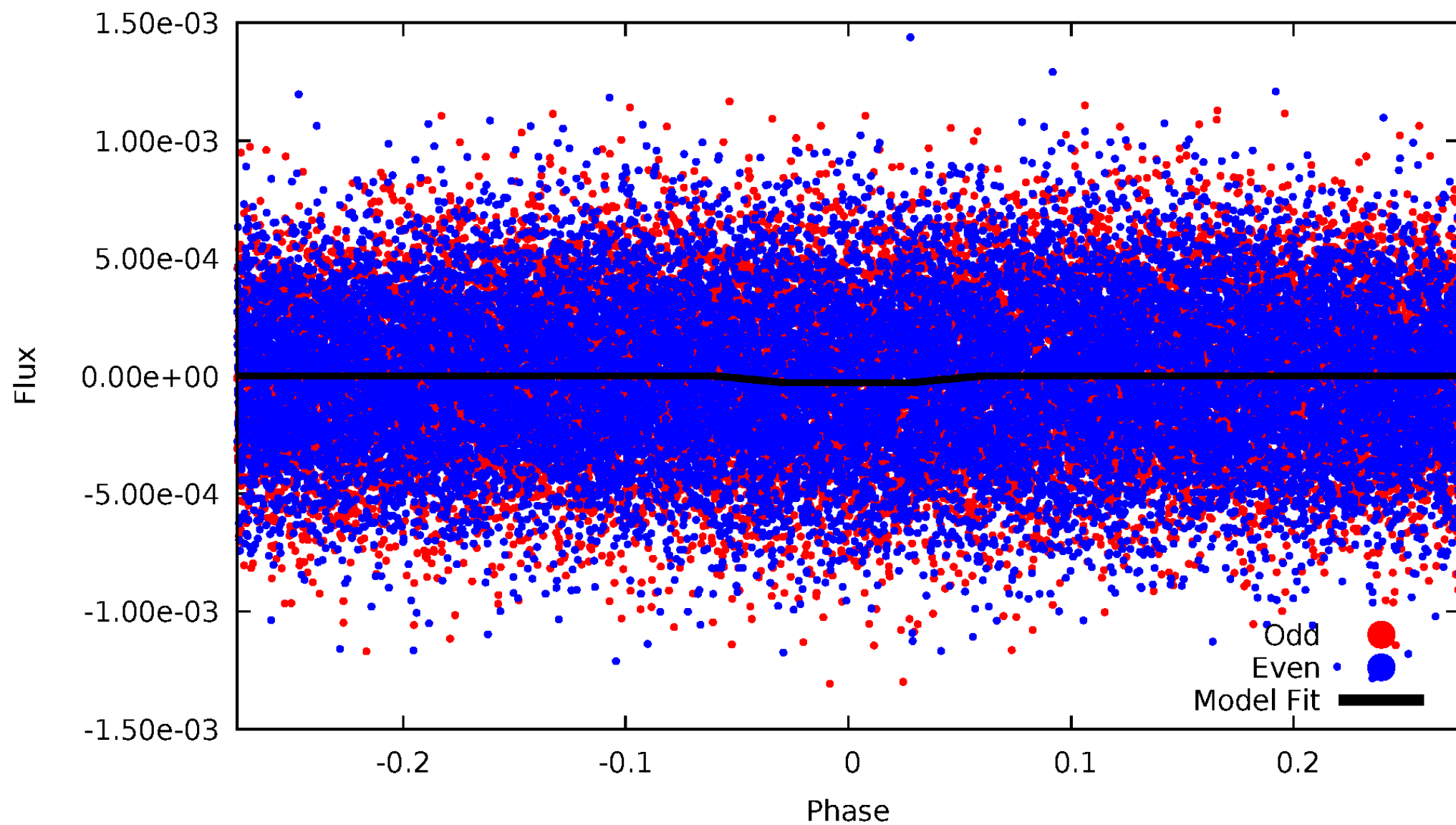
DV Odd/Even

TCE 009775385-01



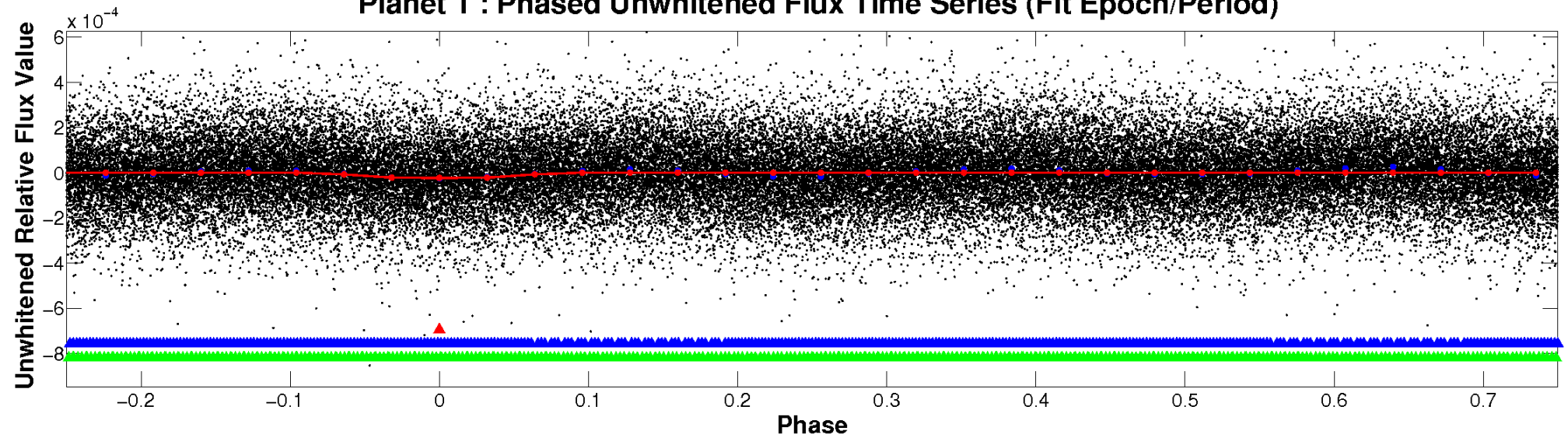
ALT Odd/Even

TCE 009775385-01

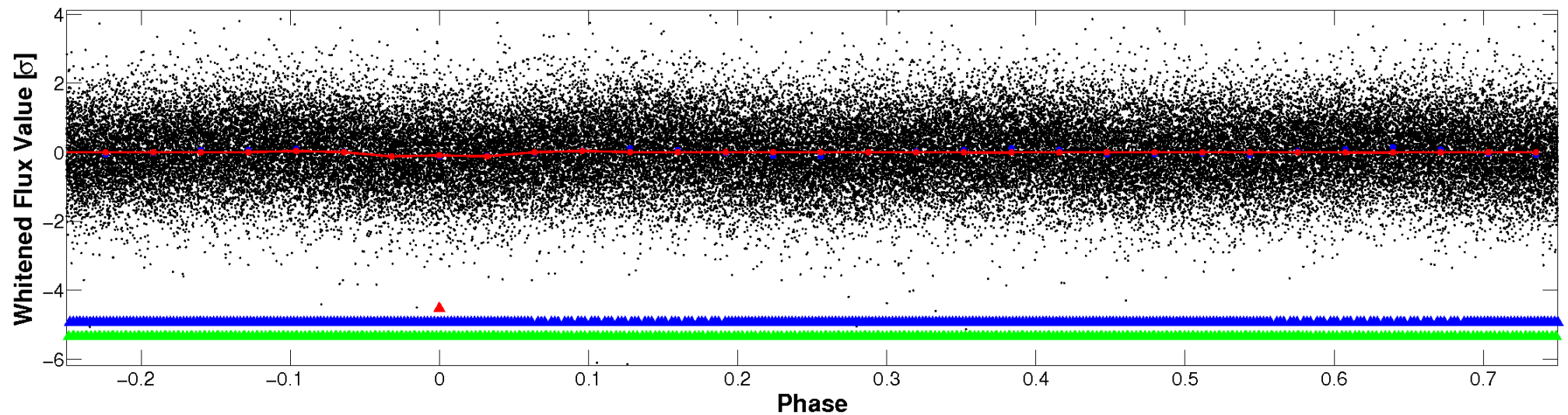


Non-Whitened Vs. Whitened Light Curve

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

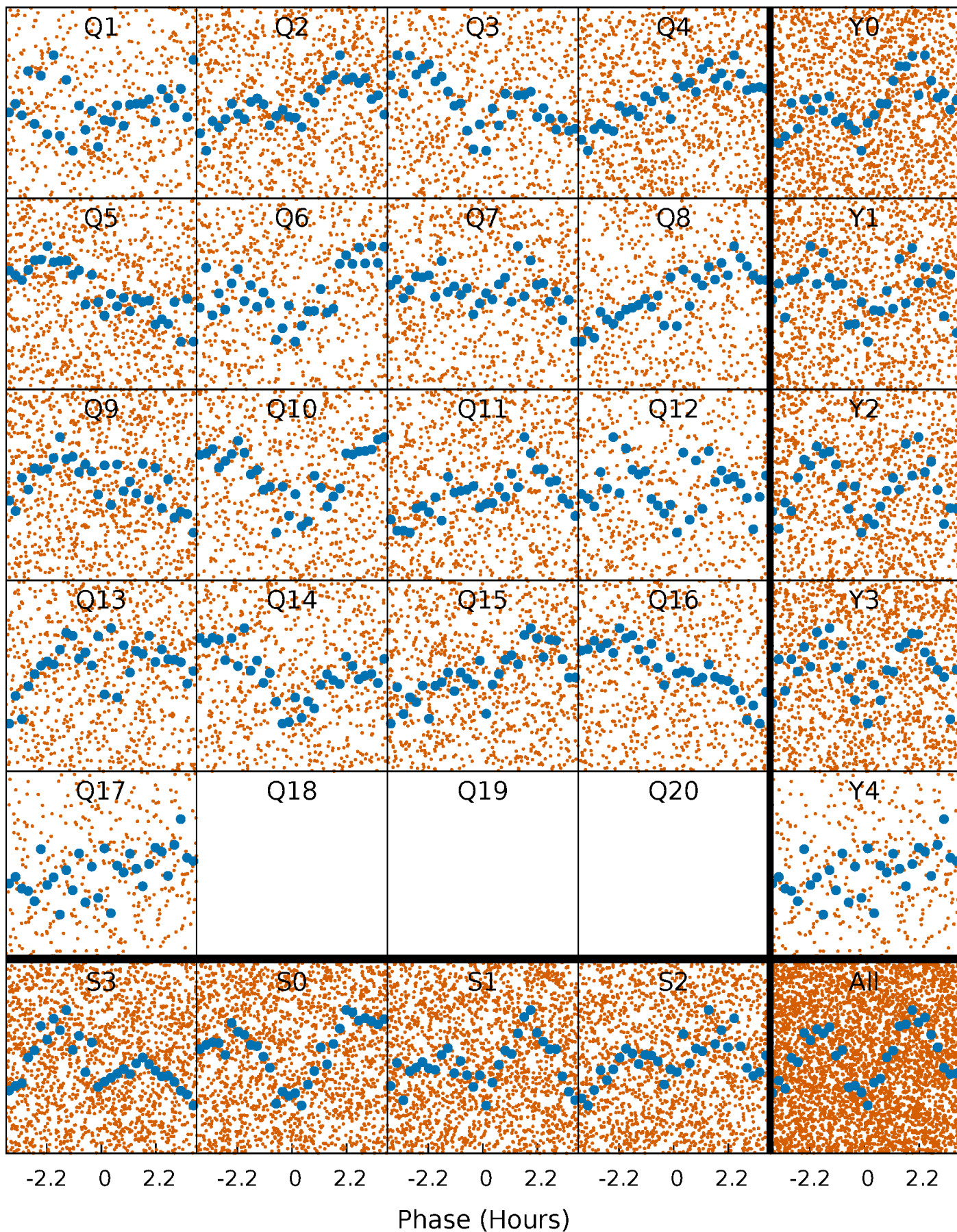


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



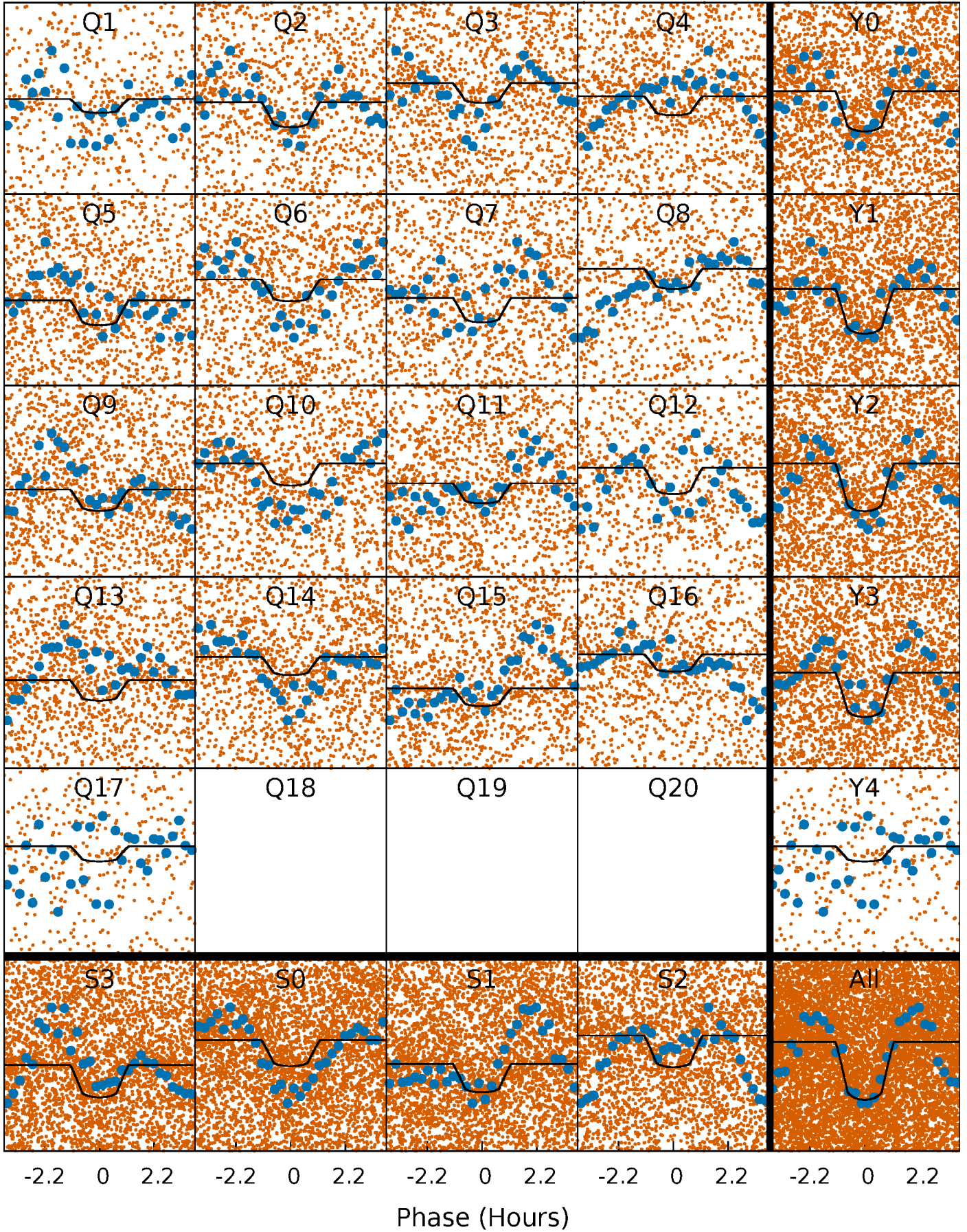
PDC Quarter-Phased Transit Curves

TCE 009775385-01 P= 0.639057 Days $T_0=131.528930$ (BKJD)



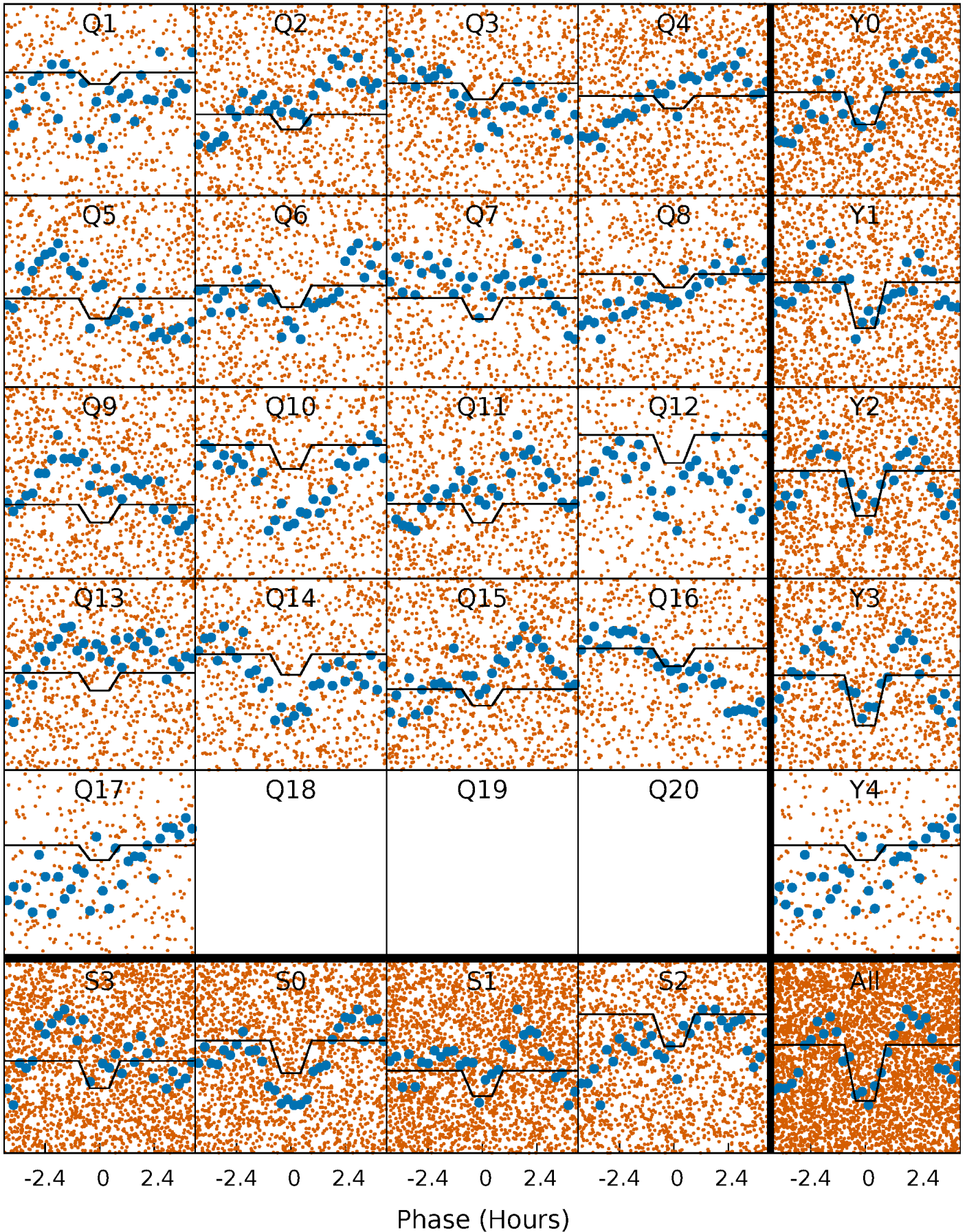
DV Quarter-Phased Transit Curves

TCE 009775385-01 P= 0.639057 Days $T_0=131.528930$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

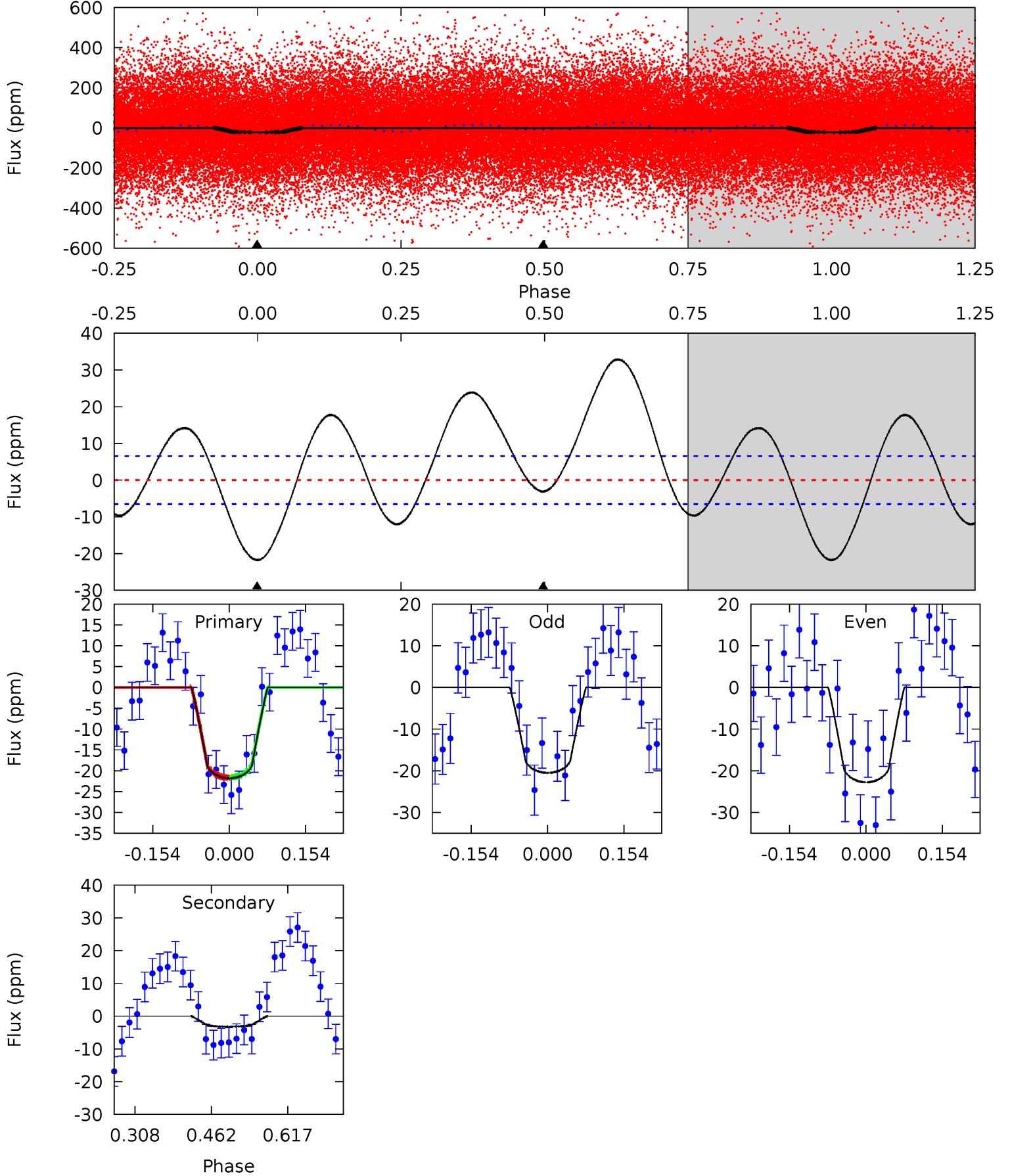
TCE 009775385-01 P= 0.639069 Days $T_0=131.514870$ (BKJD)



DV Model-Shift Uniqueness Test

009775385-01, P = 0.639057 Days, E = 130.889873 Days

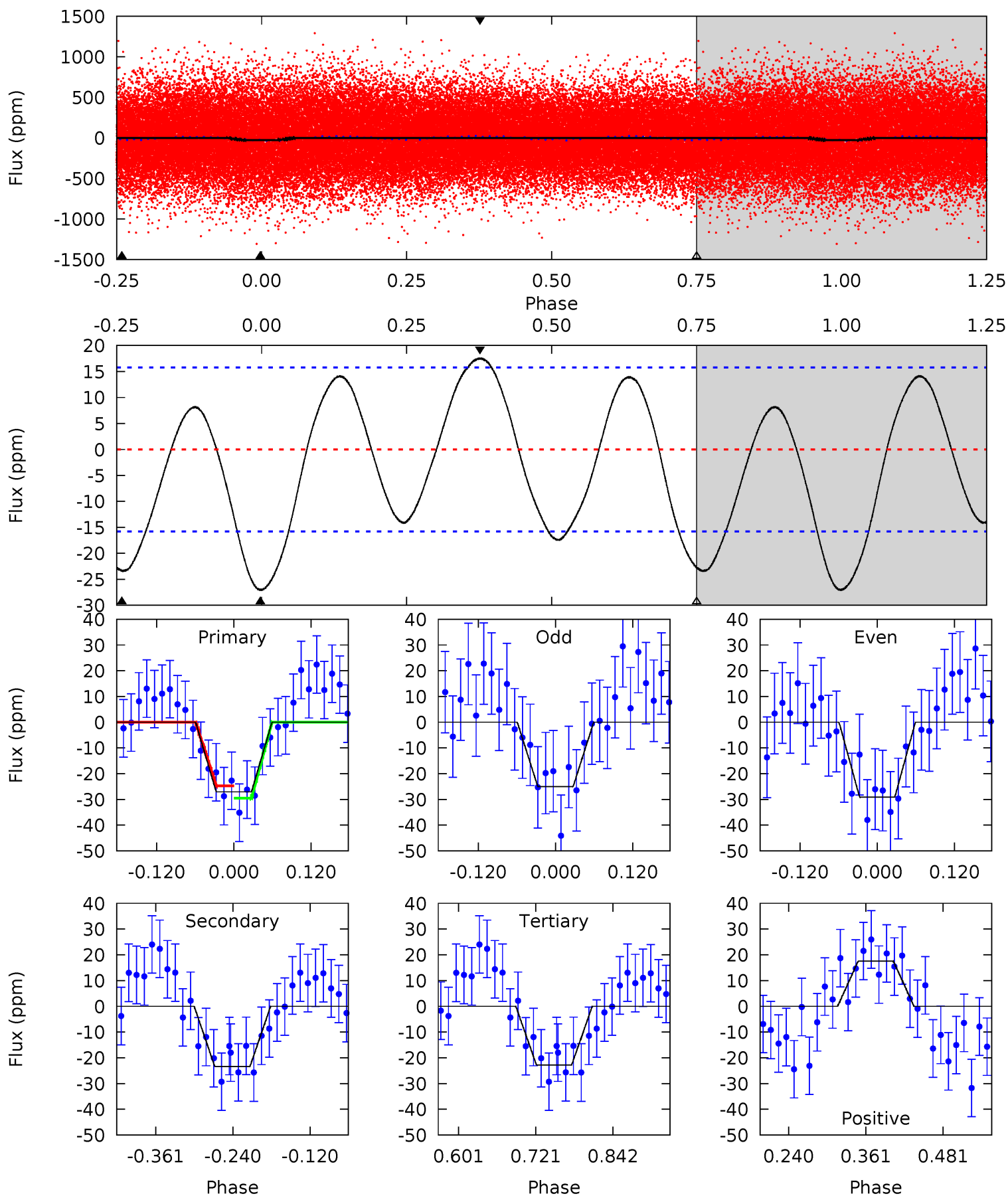
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	2.18	0	0	4.47	1.43	7.24	14.9	14.9	2.18	2.18	0.77	1.09	0.60	0.03



Alt Model-Shift Uniqueness Test

009775385-01, P = 0.639069 Days, E = 130.875801 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.76	6.70	6.53	5.03	4.53	1.55	3.36	1.24	2.74	0.18	1.68	0.58	0.84	0.39	0.64



Stellar Parameters For KIC 009775385

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7675^{+211}_{-316}	$4.051^{+0.170}_{-0.153}$	$-0.120^{+0.200}_{-0.350}$	$2.015^{+0.509}_{-0.458}$	$1.665^{+0.198}_{-0.273}$	$0.287^{+0.286}_{-0.124}$
	+3%/-4%	+4%/-4%	+167%/-292%	+25%/-23%	+12%/-16%	+100%/-43%
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 009775385-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 1	$1.13^{+0.26}_{-0.24}$	5080^{+368}_{-327}	3514^{+1041}_{-7161}	$0.390^{+0.367}_{-0.200}$
Alt.	-23 ± 3	$1.16^{+0.30}_{-0.23}$	5082^{+373}_{-348}	6903^{+1002}_{-748}	$2.813^{+1.578}_{-1.077}$

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

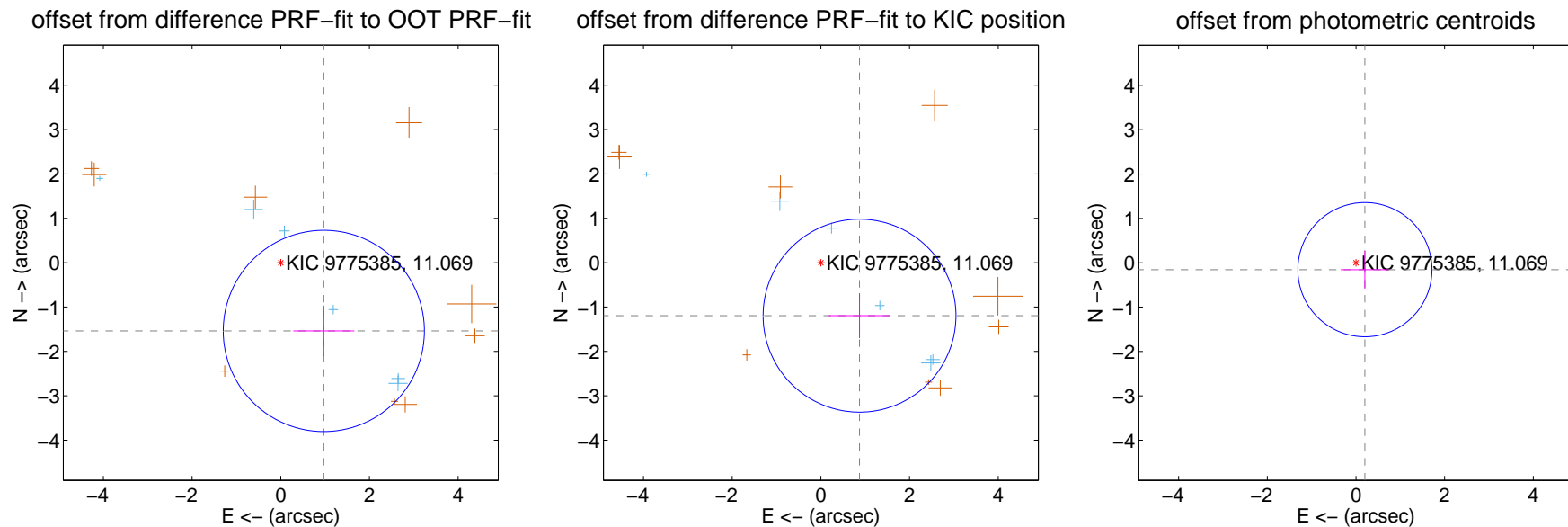
DV Centroid Data

Supplemental centroid analysis for 009775385-01. **Kepler magnitude: 11.07.** Transit SNR 9.70

There are 6 quarters with good PRF difference image offsets

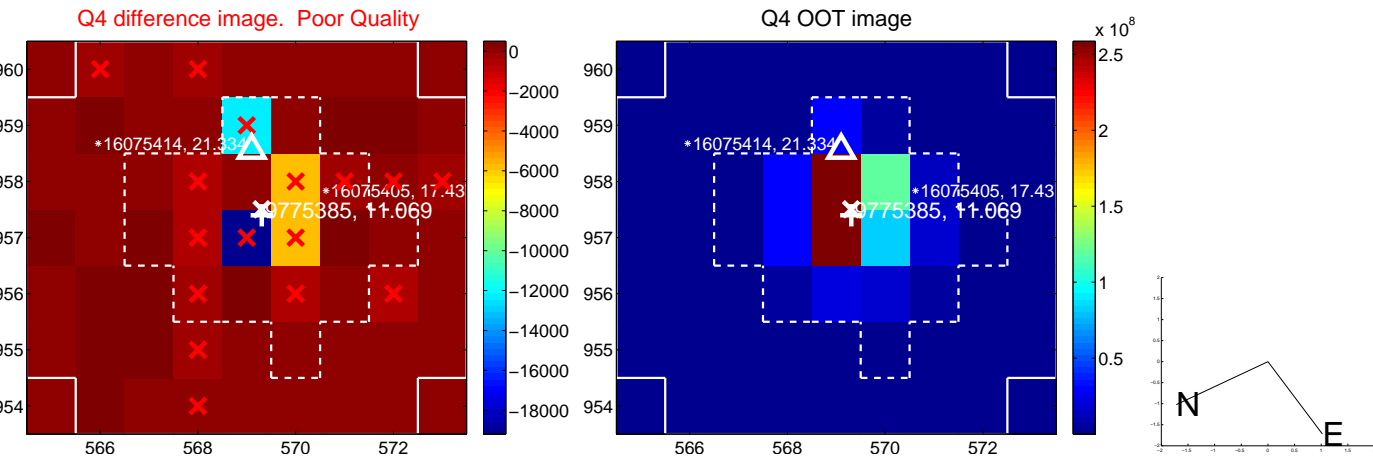
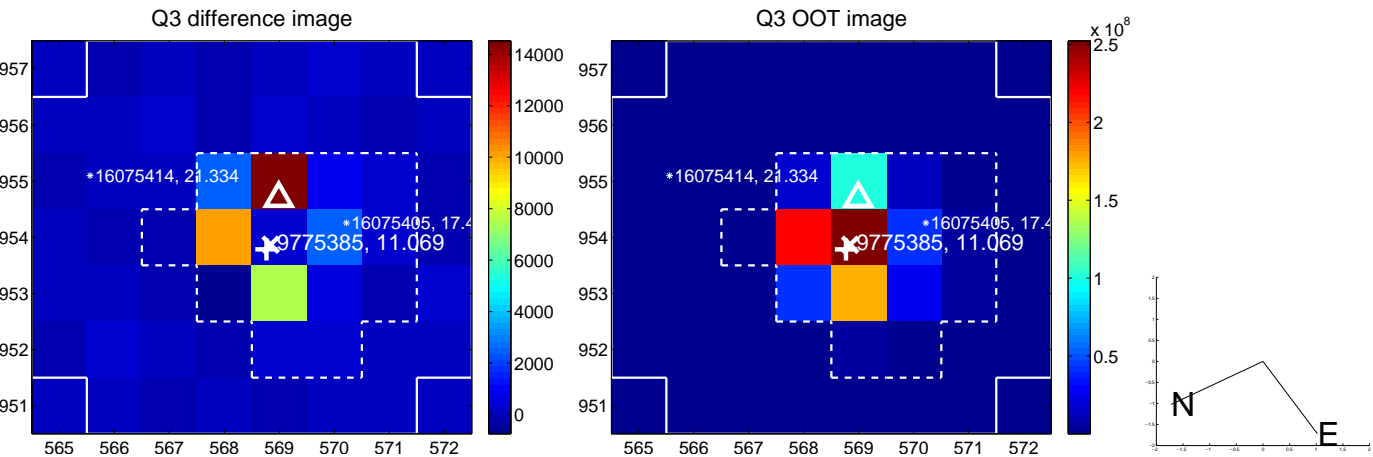
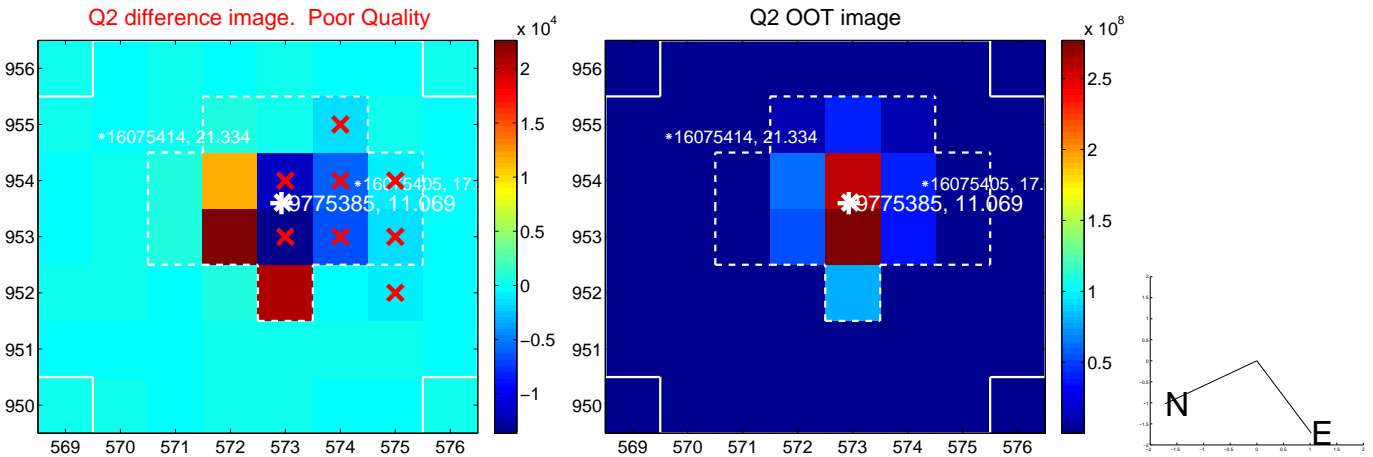
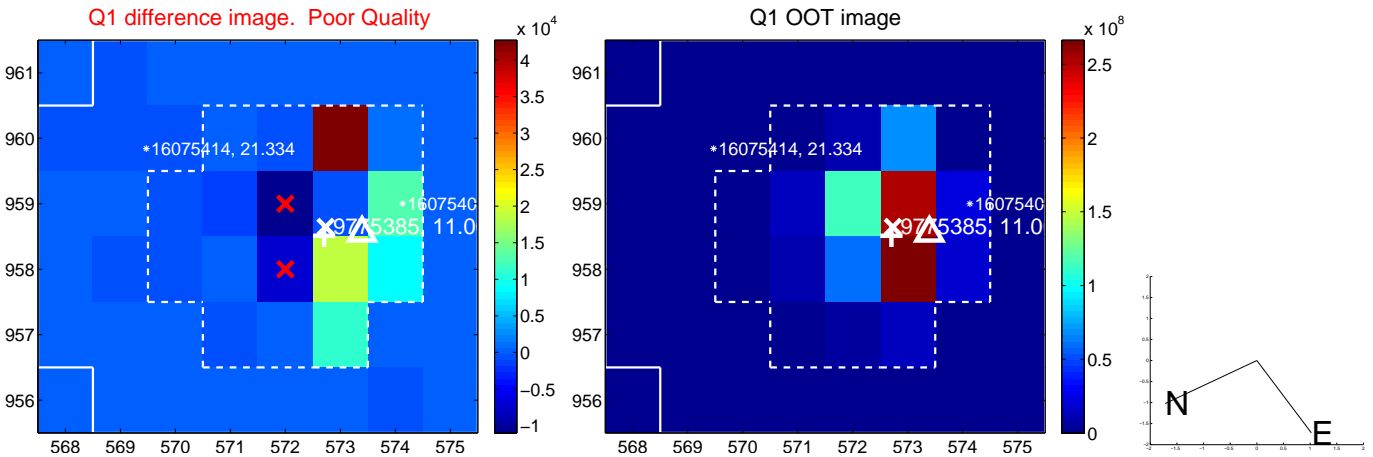
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.819 ± 0.756	2.41	-0.971 ± 0.687	-1.538 ± 0.572
PRF-fit source offset from KIC position	1.479 ± 0.725	2.04	-0.872 ± 0.692	-1.194 ± 0.506
photometric centroid source offset	0.25 ± 0.50	0.50	-0.20 ± 0.54	-0.16 ± 0.43

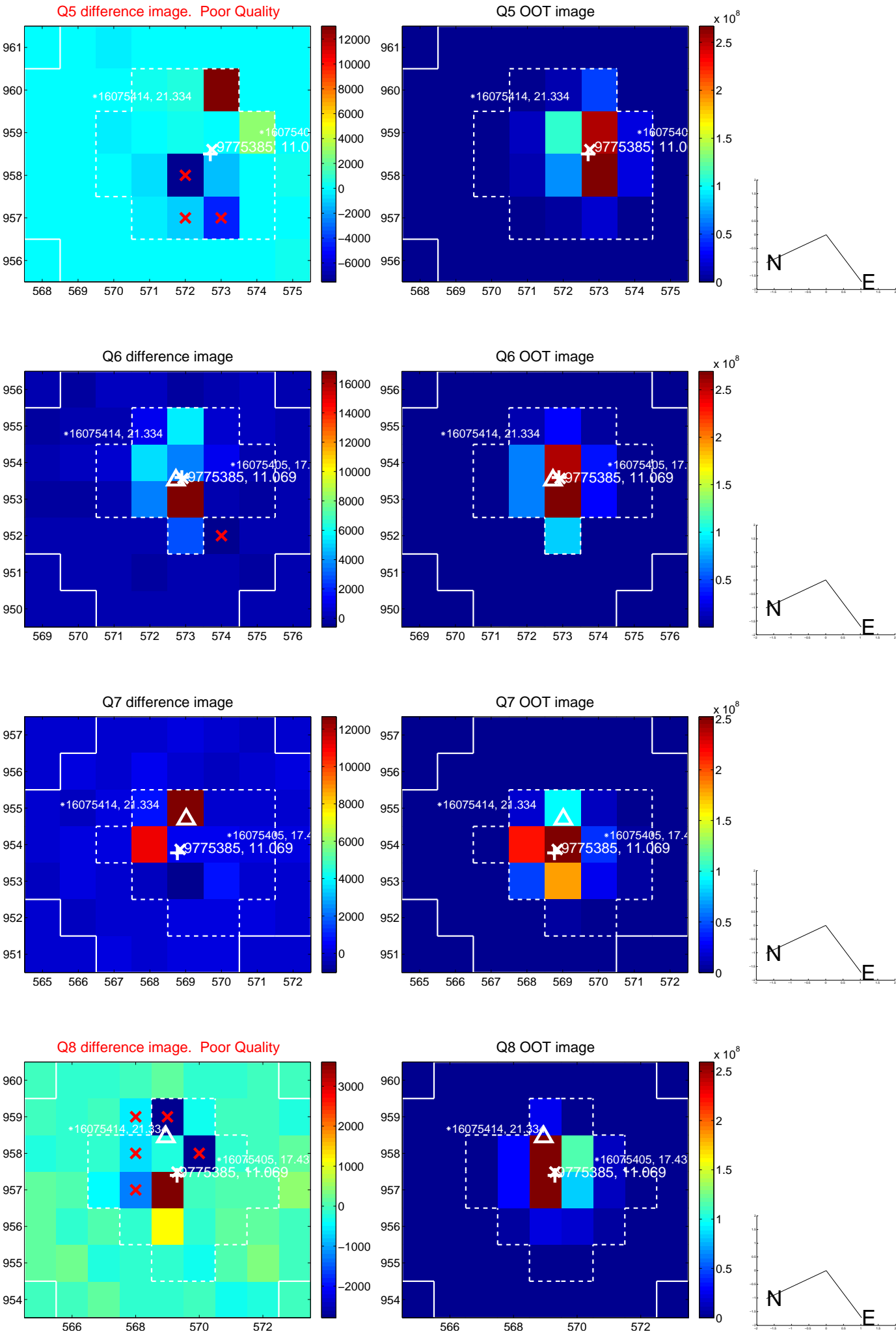


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

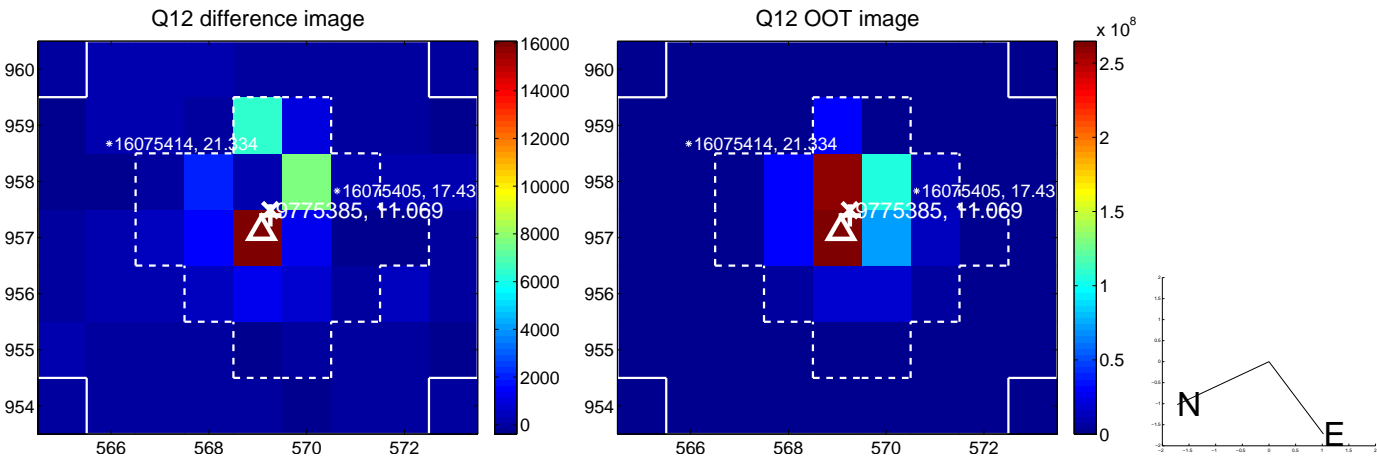
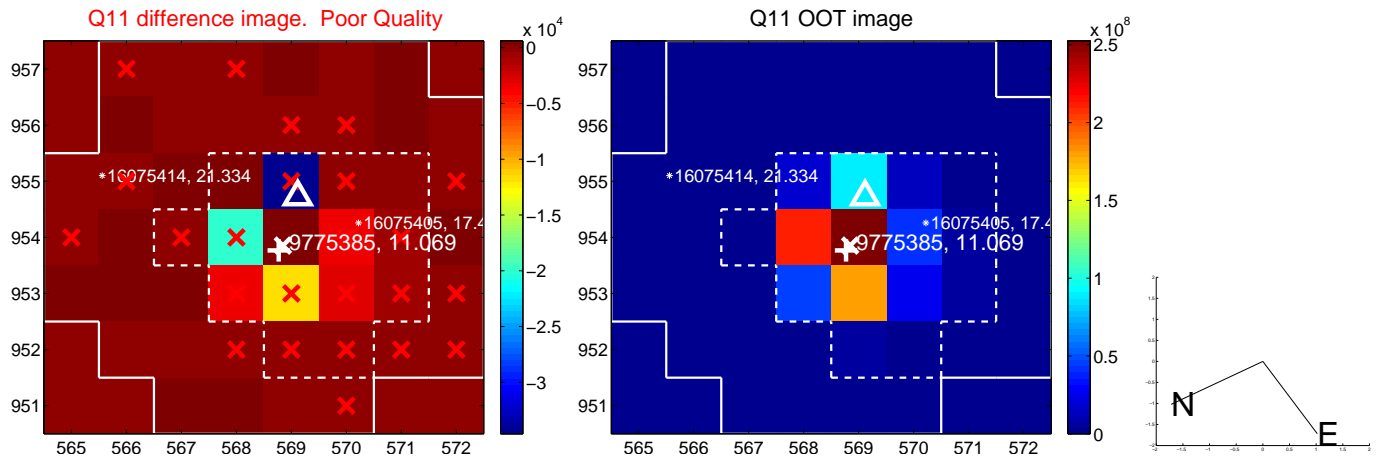
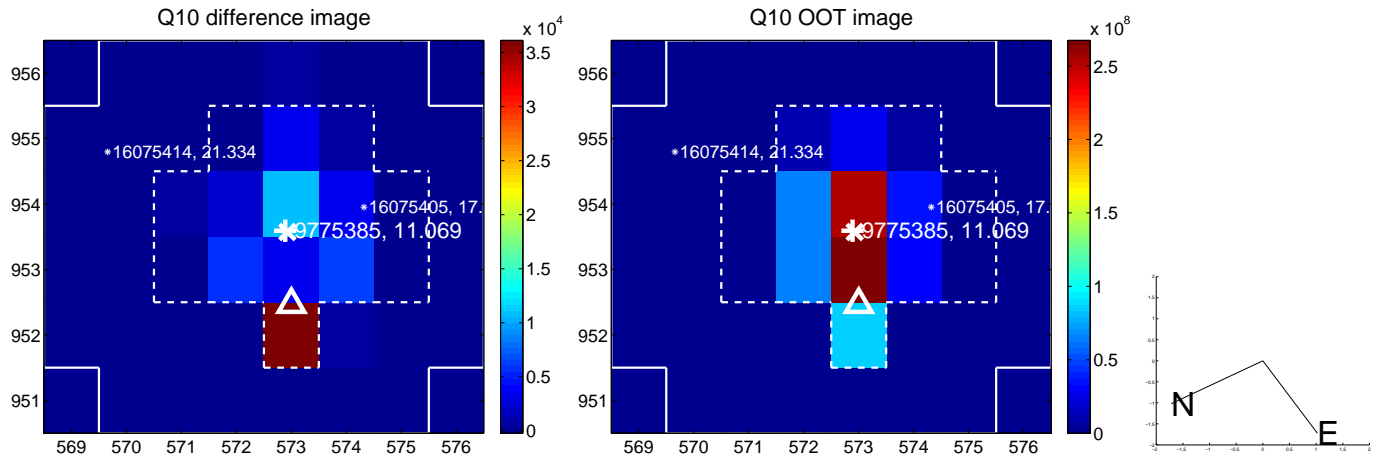
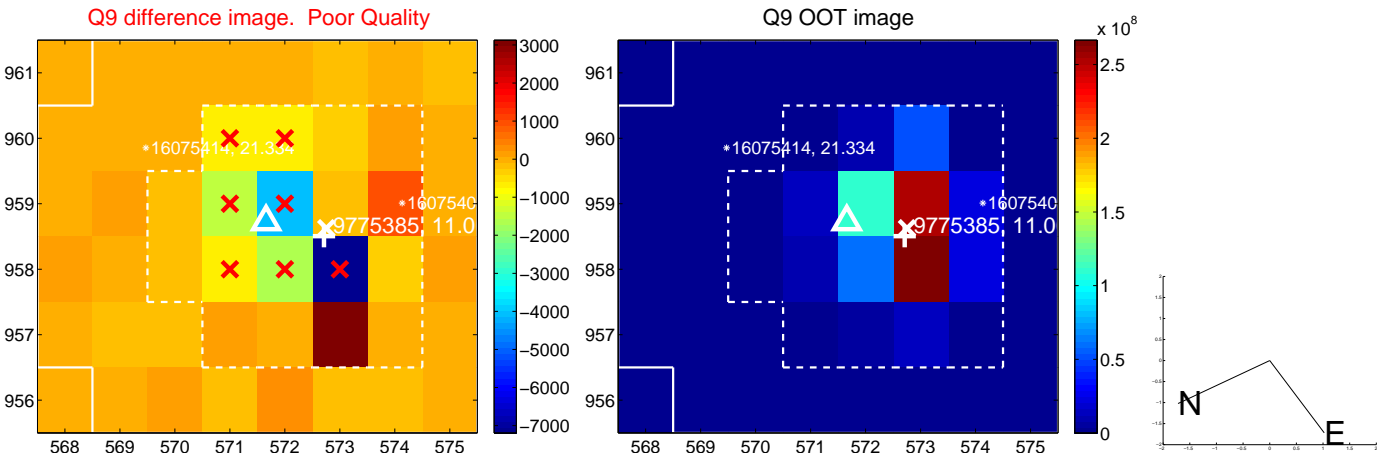
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



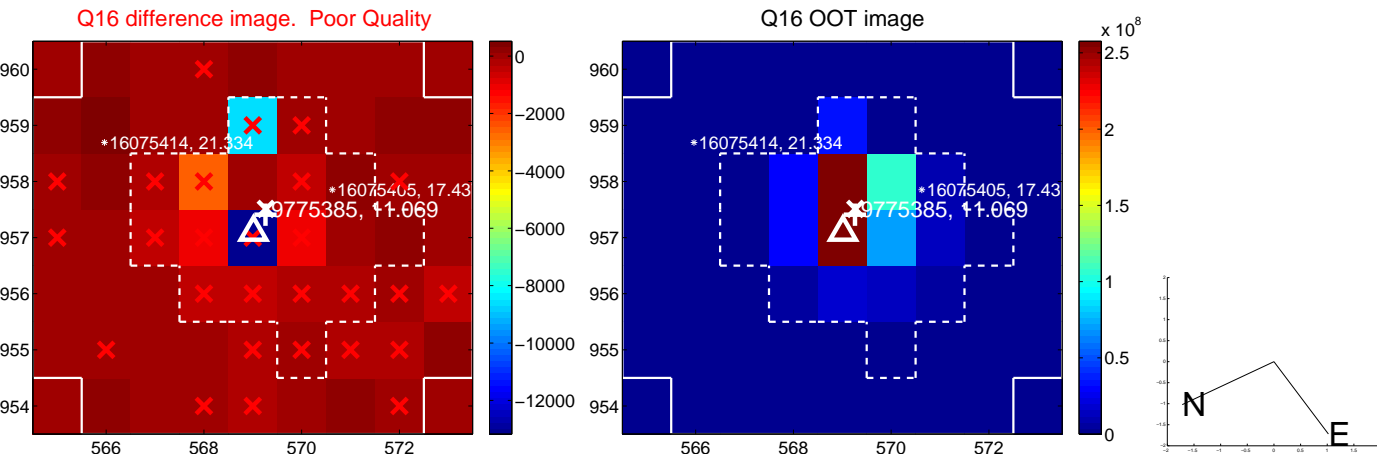
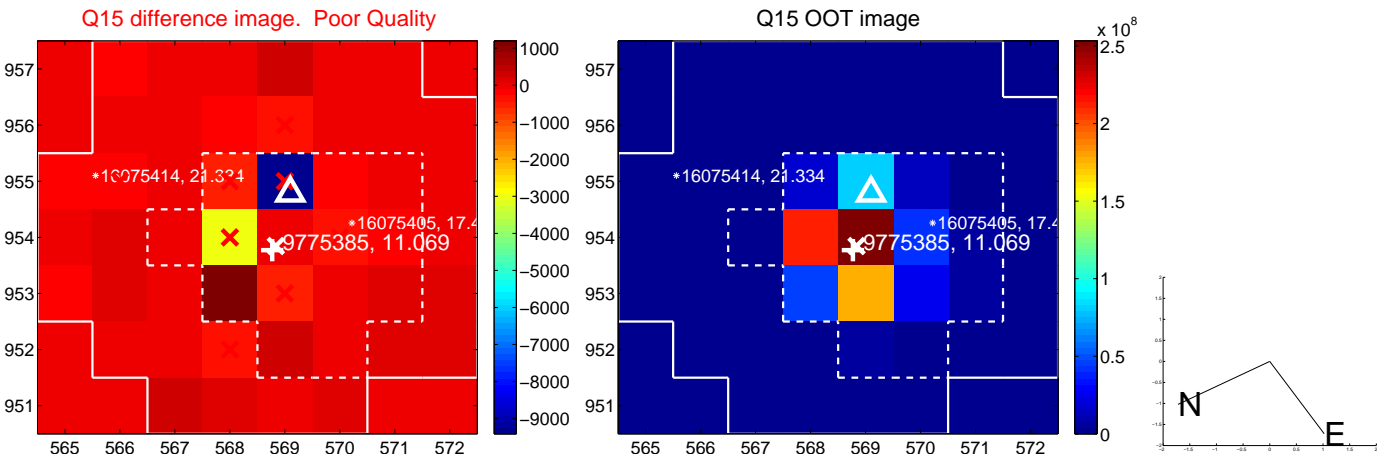
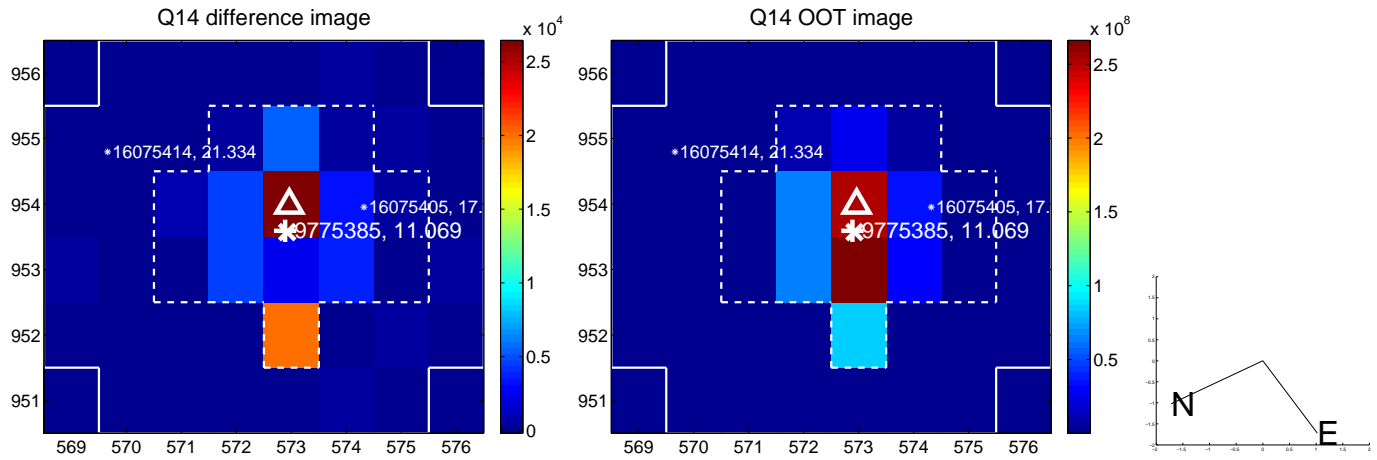
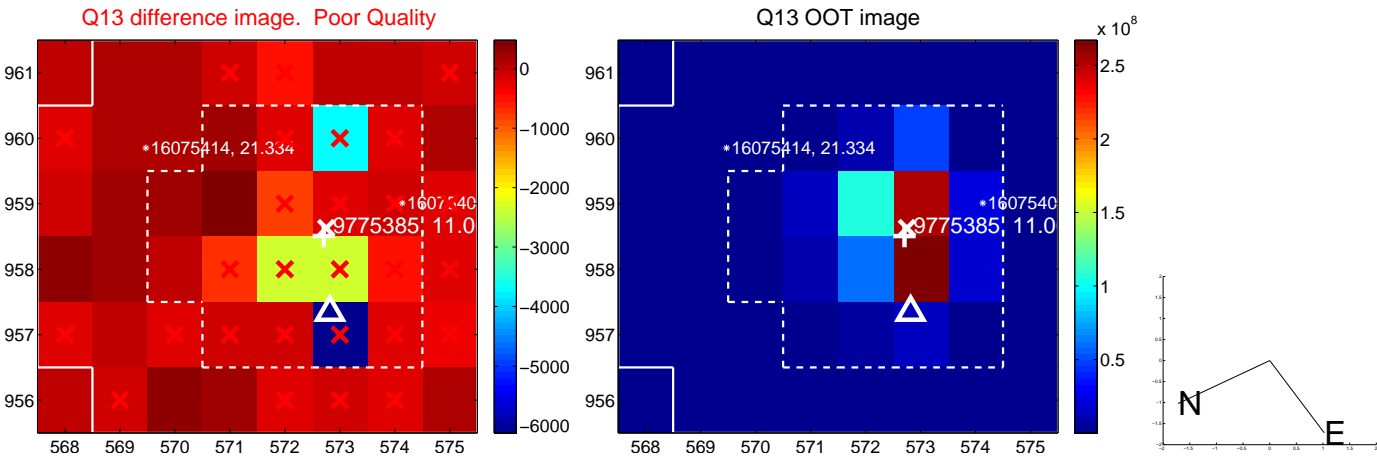
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



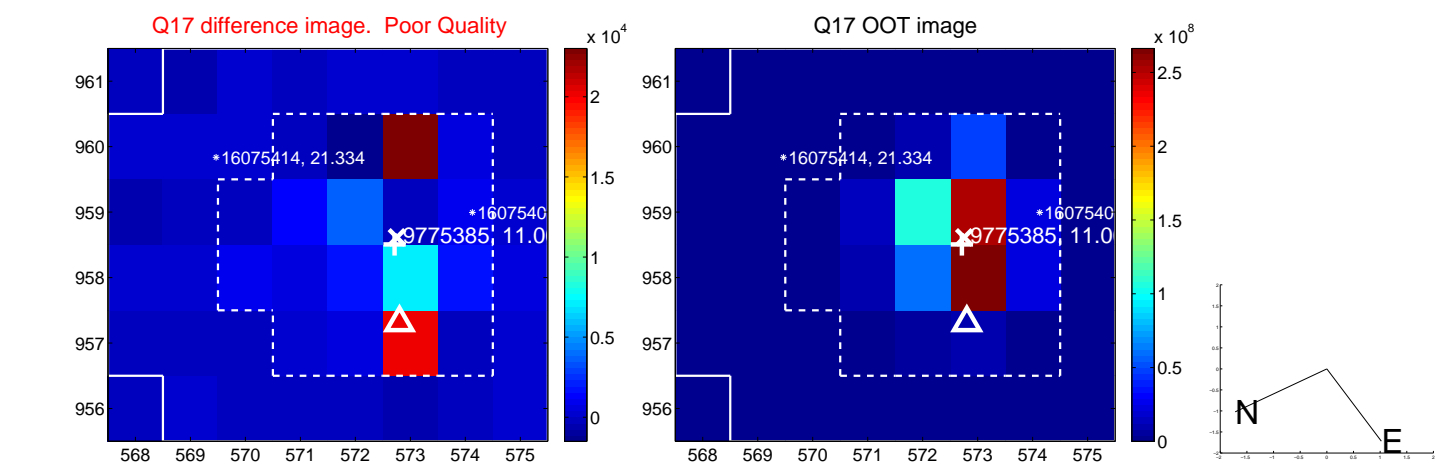
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



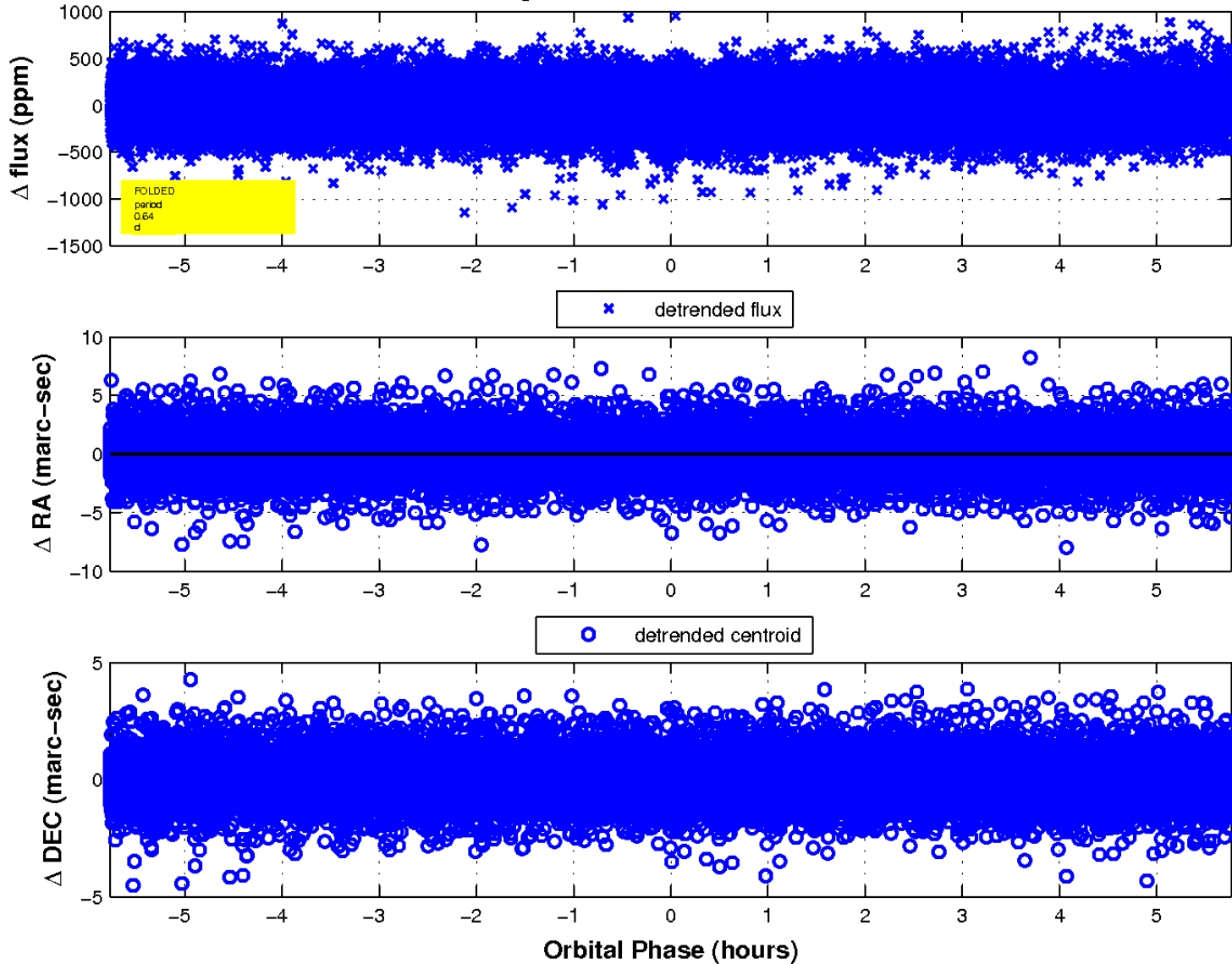
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

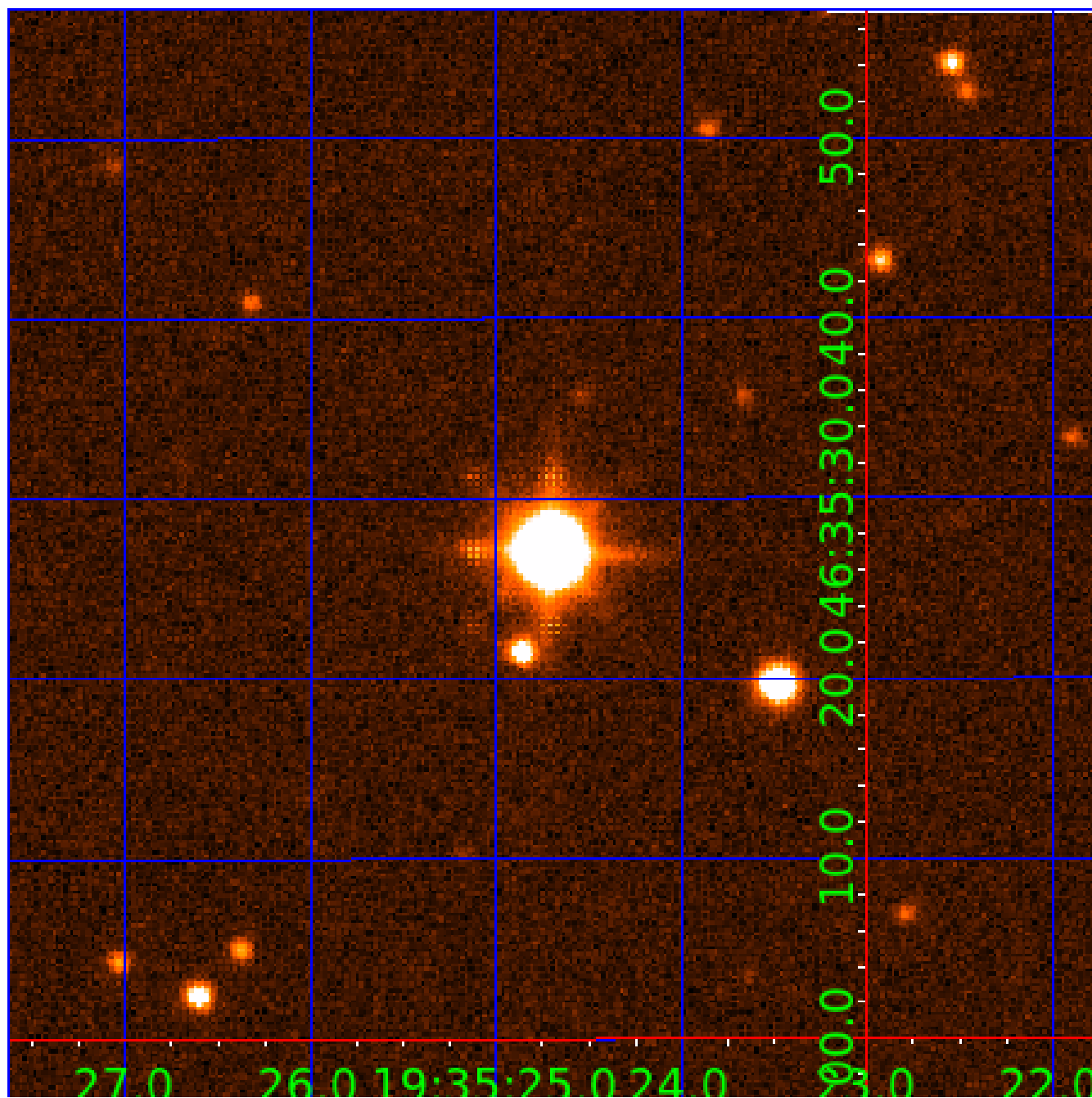


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 009775385

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})
009775385-01	OBS	No	0.639057	131.528930	23.4	1.923	8.8	9.7	2.02	7675	1.14	42592.99
009775385-02	OBS	No	3.511950	133.481174	63.6	3.206	9.2	9.3	2.02	7675	1.88	4391.98
009775385-03	OBS	No	3.512003	133.175231	62.3	3.446	8.6	9.2	2.02	7675	1.85	4391.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009775385-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009775385-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
009775385-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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 009775385-02

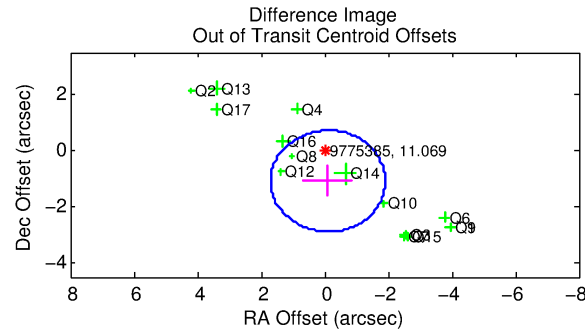
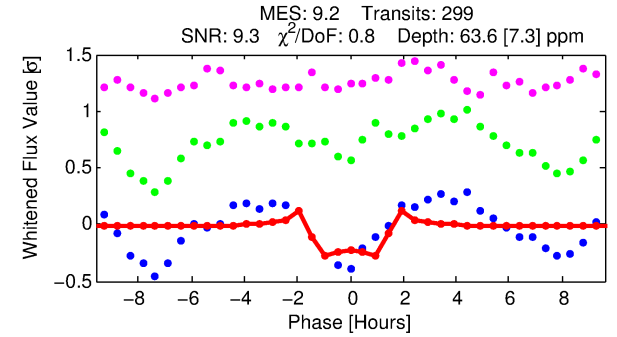
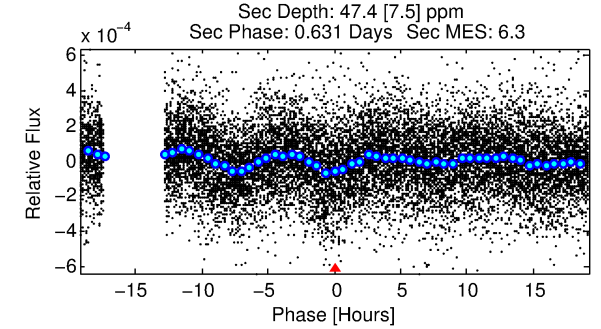
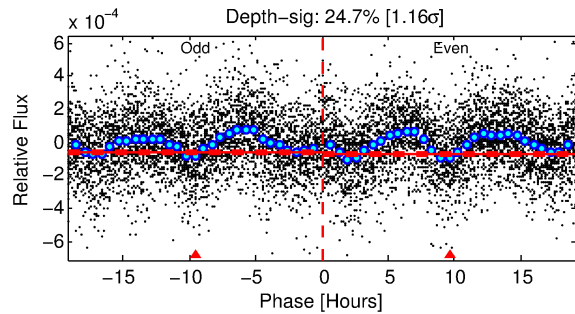
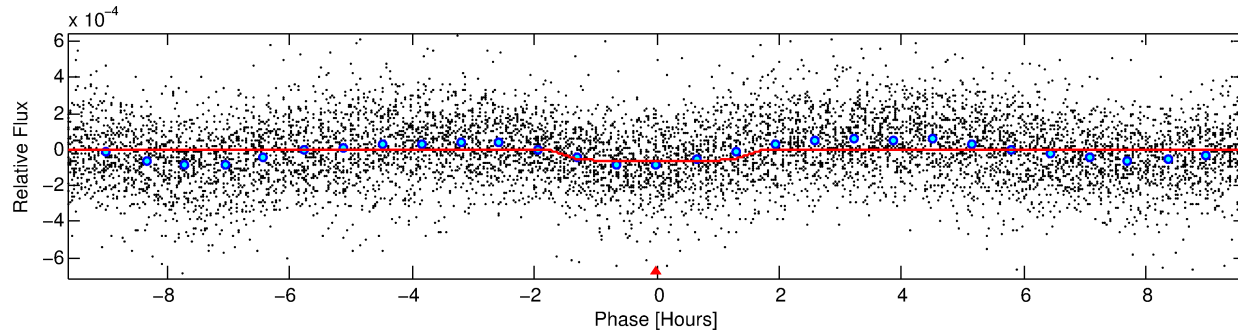
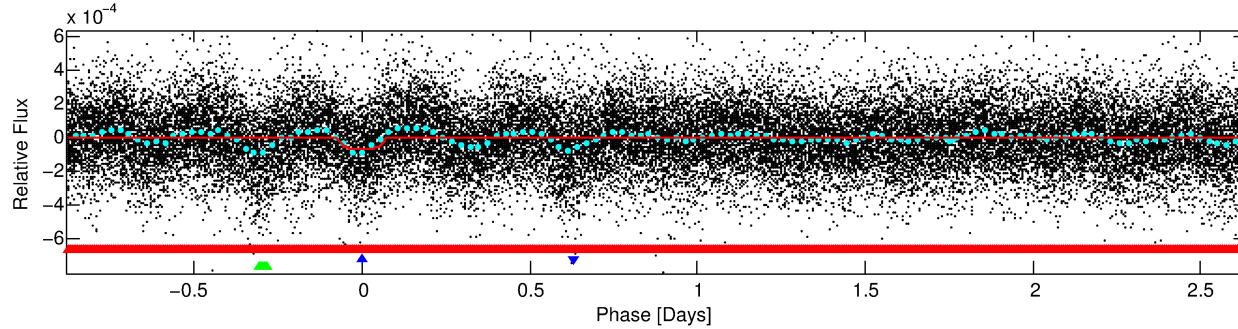
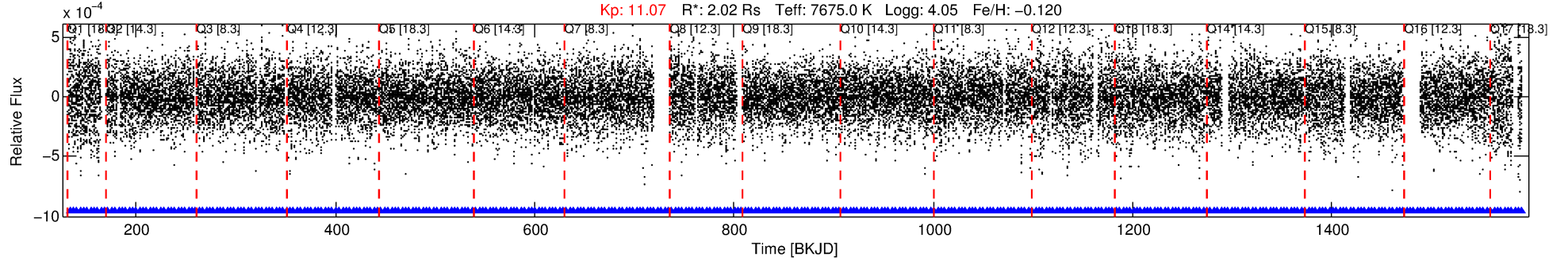
No Significant Match Found

DV One-Page Summary

KIC: 9775385 Candidate: 2 of 3 Period: 3.512 d

KOI: K04462 Corr: No Ephemeris Match

Kp: 11.07 R*: 2.02 Rs Teff: 7675.0 K Logg: 4.05 Fe/H: -0.120



DV Fit Results:

Period = 3.51195 [0.00002] d
Epoch = 133.4812 [0.0023] BKJD
Rp/R* = 0.0085 [0.0018]
a/R* = 3.75 [4.61]
b = 0.91 [0.25]
Seff = 4391.98 [1543.97]
Teq = 2076 [182] K
Rp = 1.88 [0.63] Re
a = 0.0536 [0.0114] AU
Ag = 21.21 [11.78] [1.72σ]
Teffp = 6887 [842] K [5.58σ]

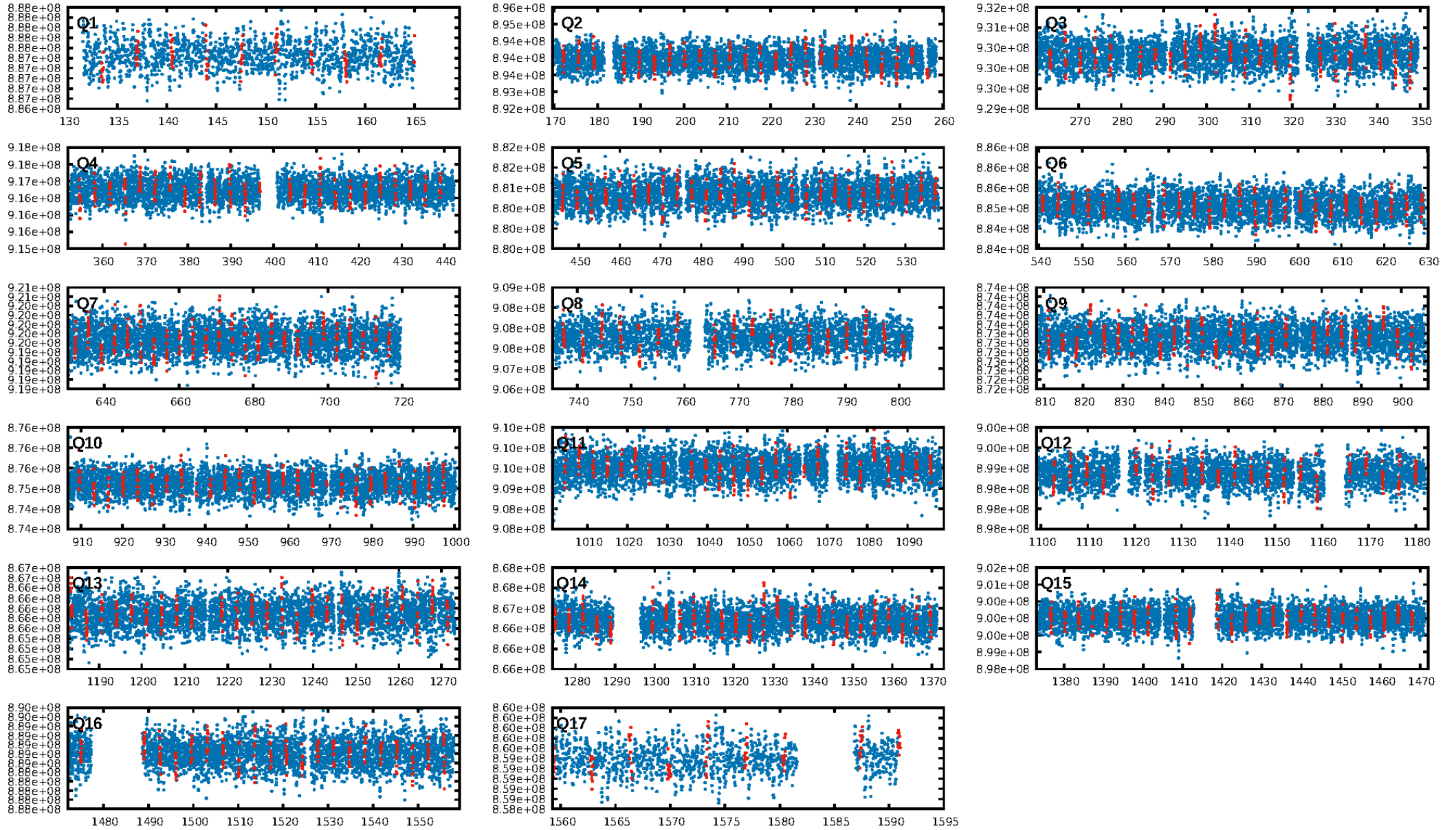
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.44σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.06e-14
RollingBand-fgt: 1.00 [286/286]
GhostDiagnostic-chr: 1.265
Centroid-sig: N/A
Centroid-so: 0.073 arcsec [0.19σ]
OotOffset-rm: 1.090 arcsec [1.81σ]
KicOffset-rm: 0.839 arcsec [1.67σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.00 [0/17]

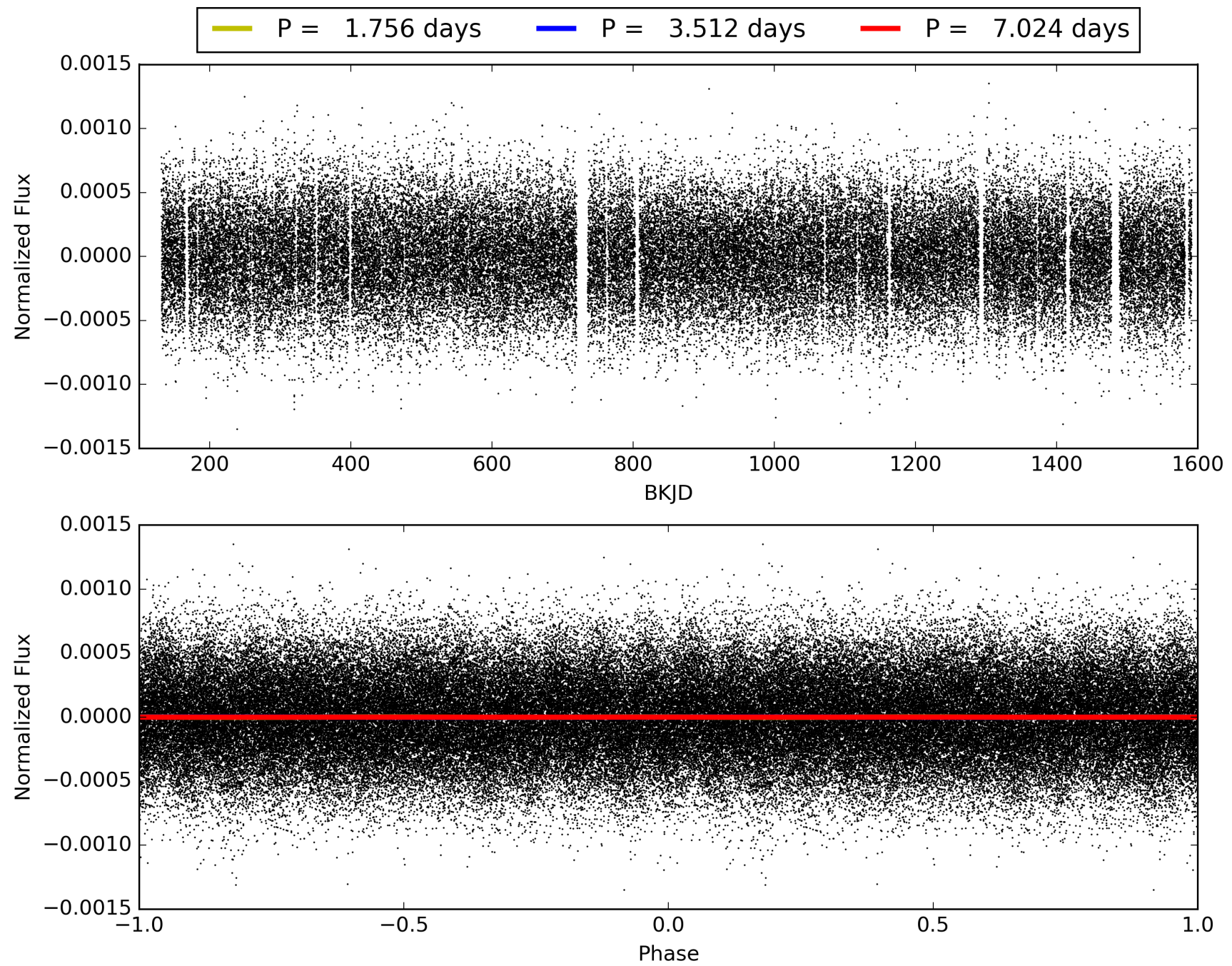
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:57:13 Z

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

TCE 009775385-02, PDC Light Curves

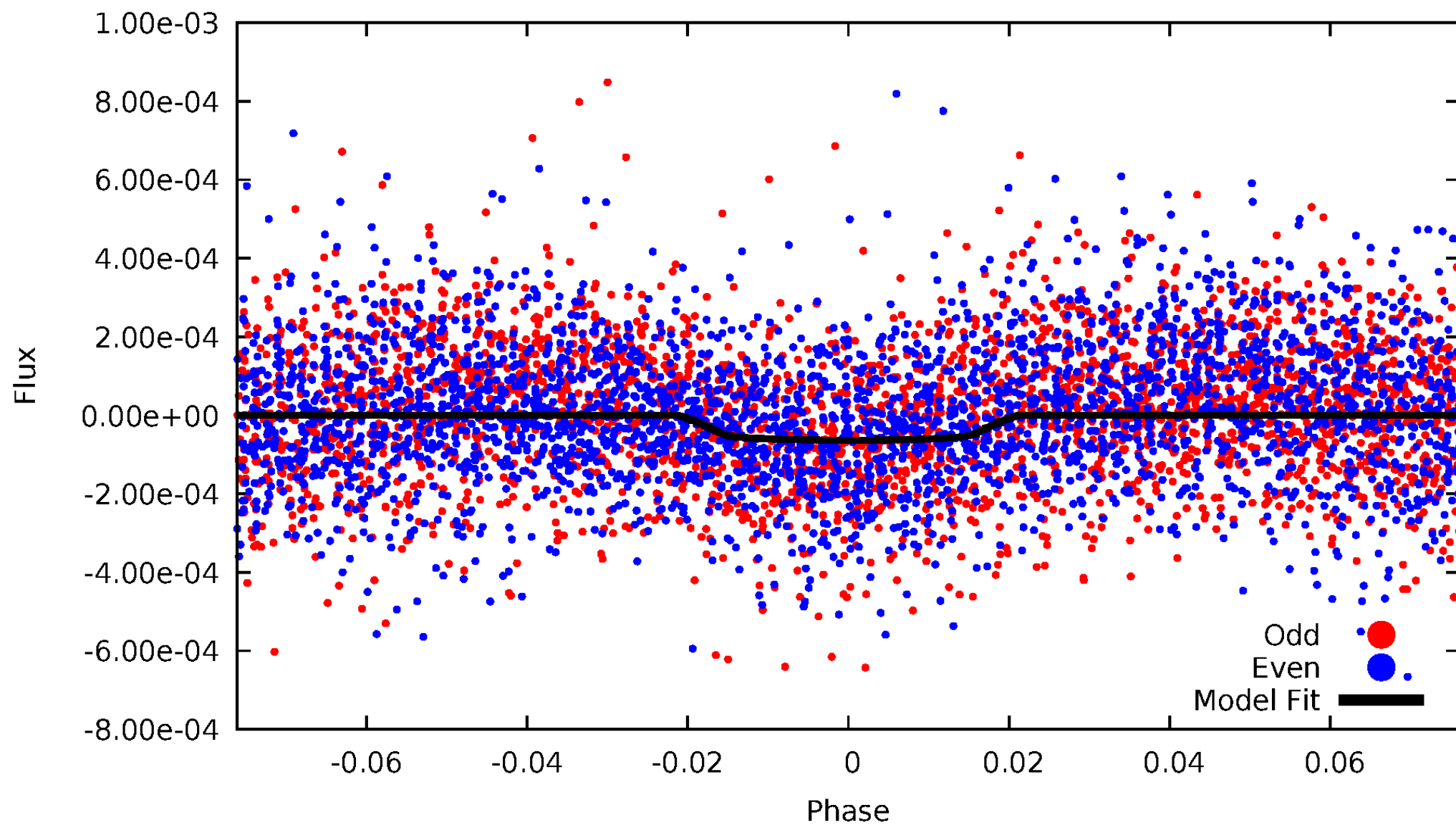


TCE 009775385-02



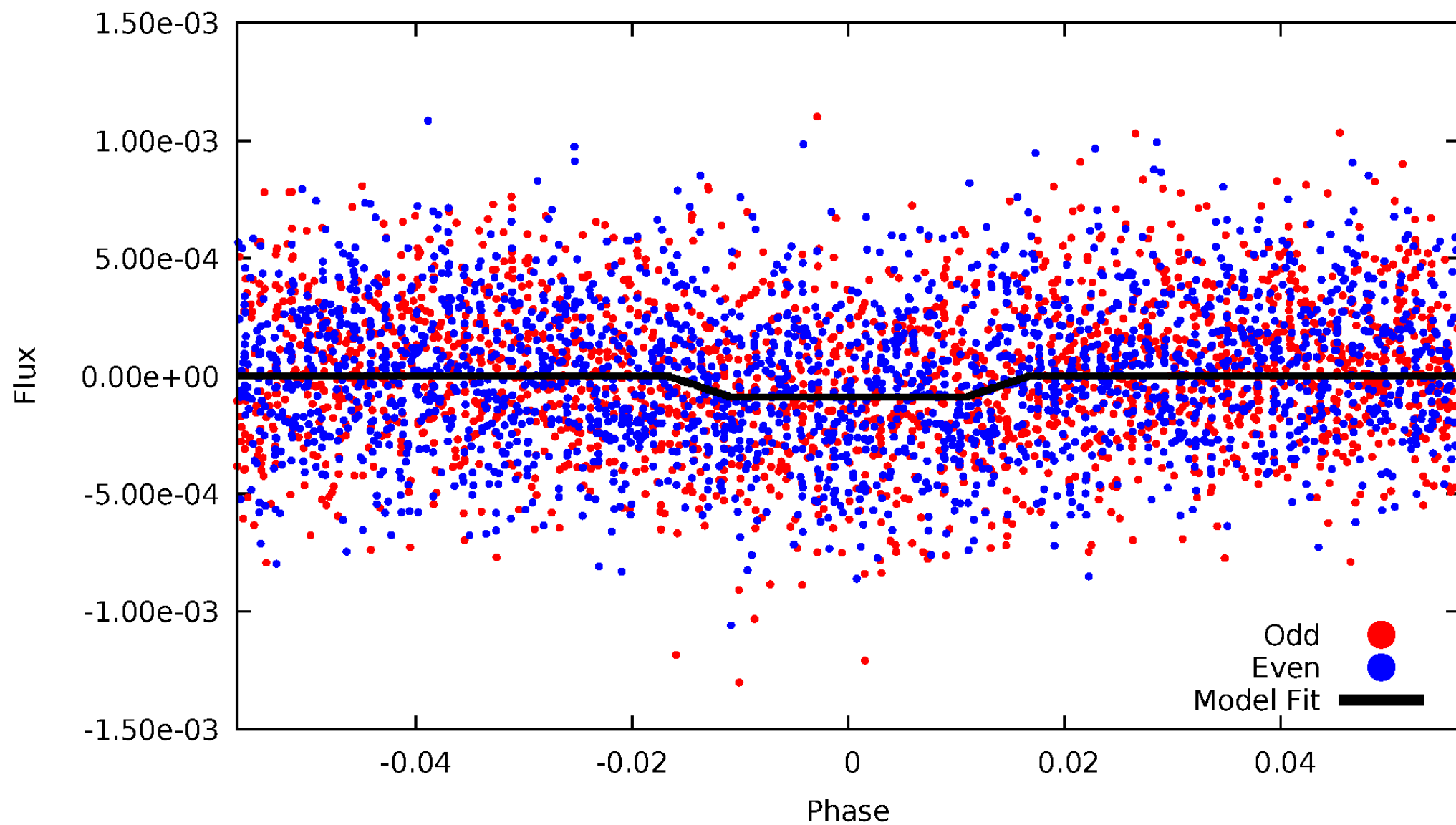
DV Odd/Even

TCE 009775385-02



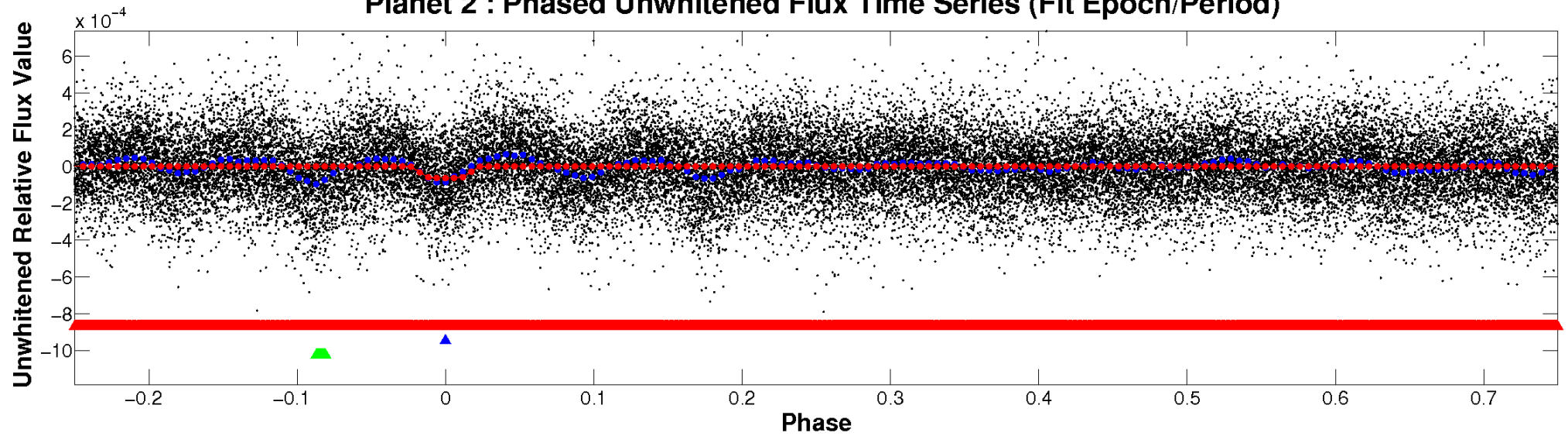
ALT Odd/Even

TCE 009775385-02

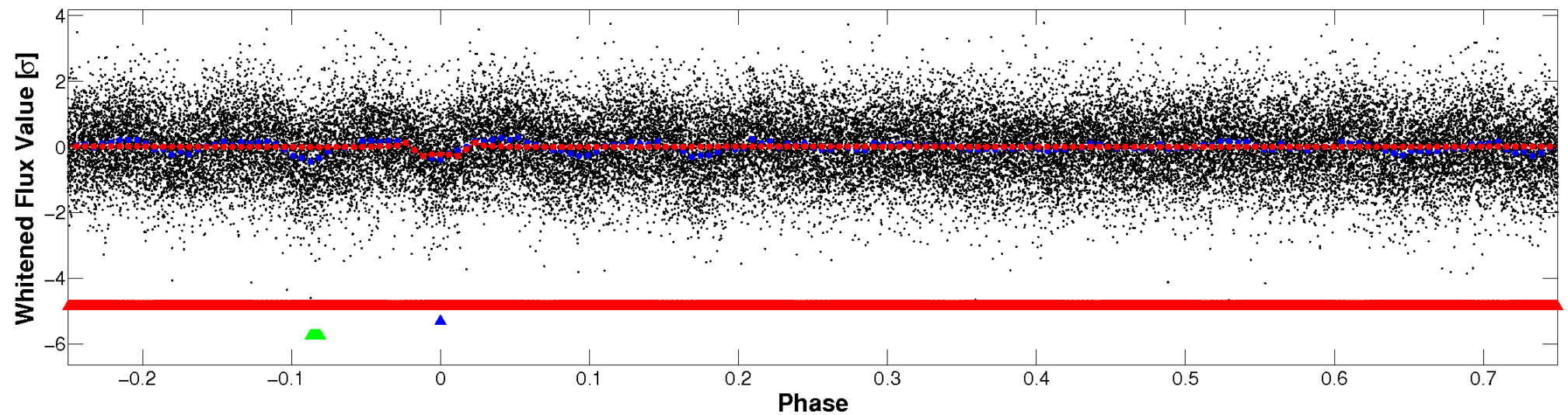


Non-Whitened Vs. Whitened Light Curve

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

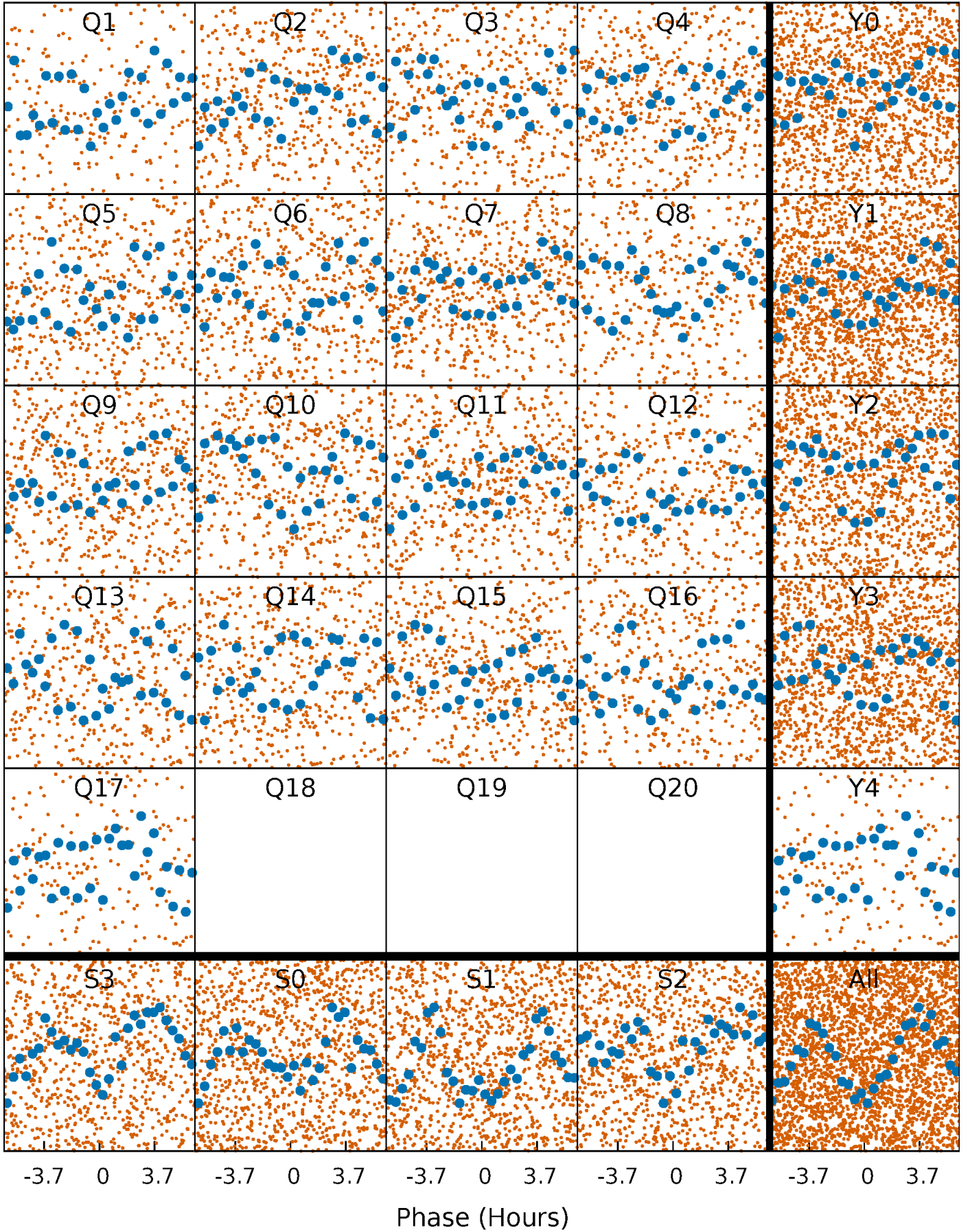


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



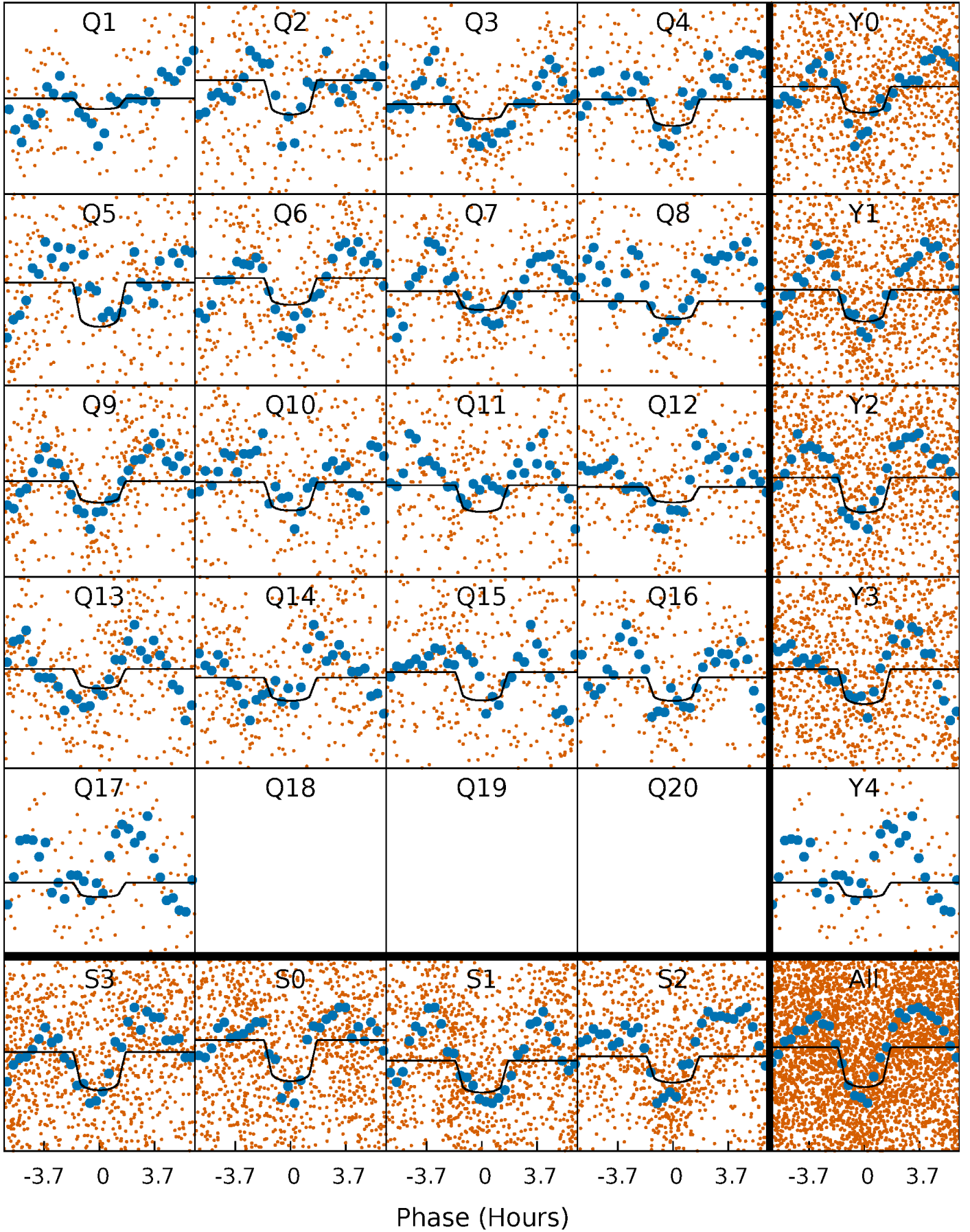
PDC Quarter-Phased Transit Curves

TCE 009775385-02 P= 3.511950 Days $T_0=133.481174$ (BKJD)



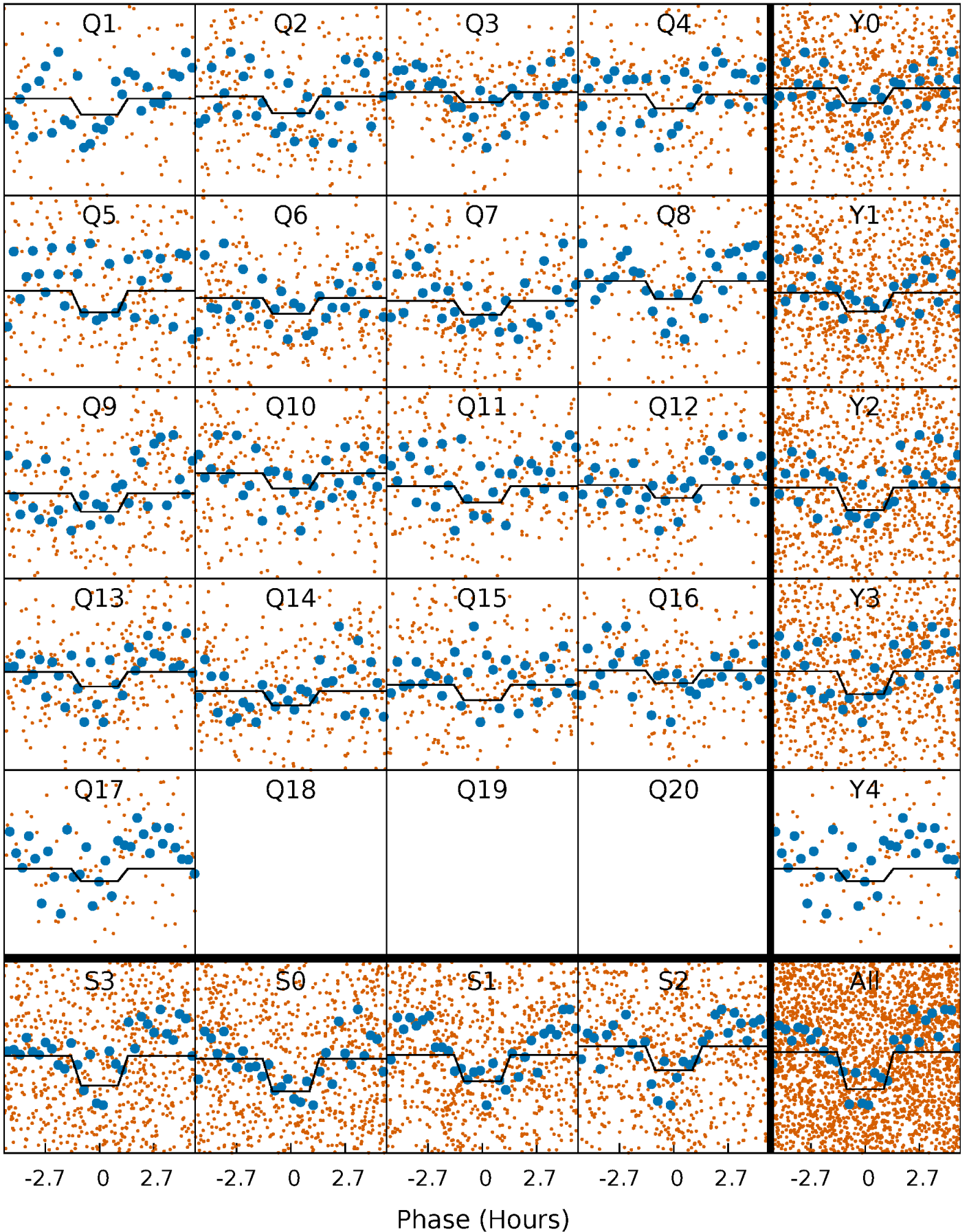
DV Quarter-Phased Transit Curves

TCE 009775385-02 P= 3.511950 Days $T_0=133.481174$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

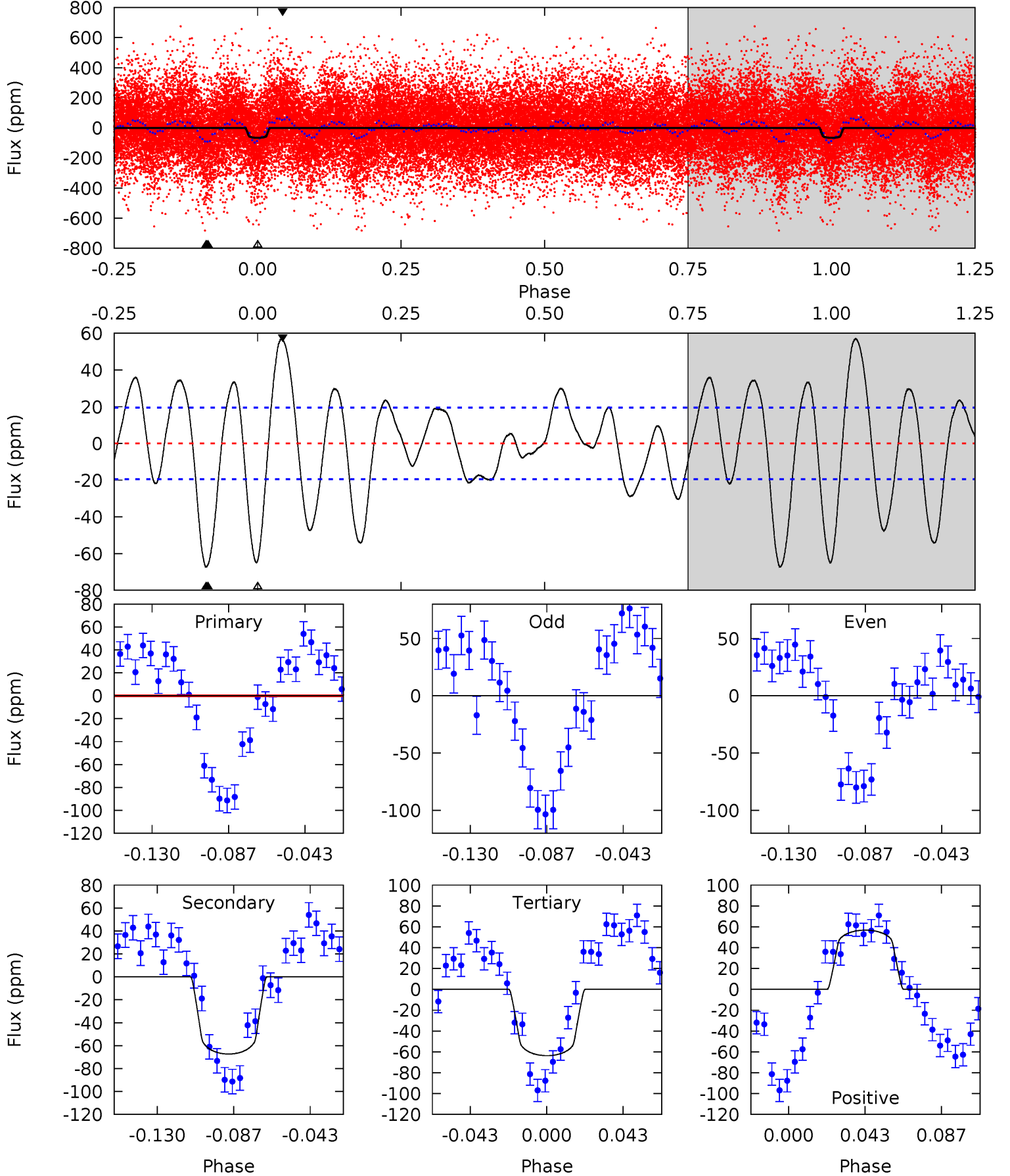
TCE 009775385-02 P= 3.511903 Days $T_0=133.486956$ (BKJD)



DV Model-Shift Uniqueness Test

009775385-02, P = 3.511950 Days, E = 129.969224 Days

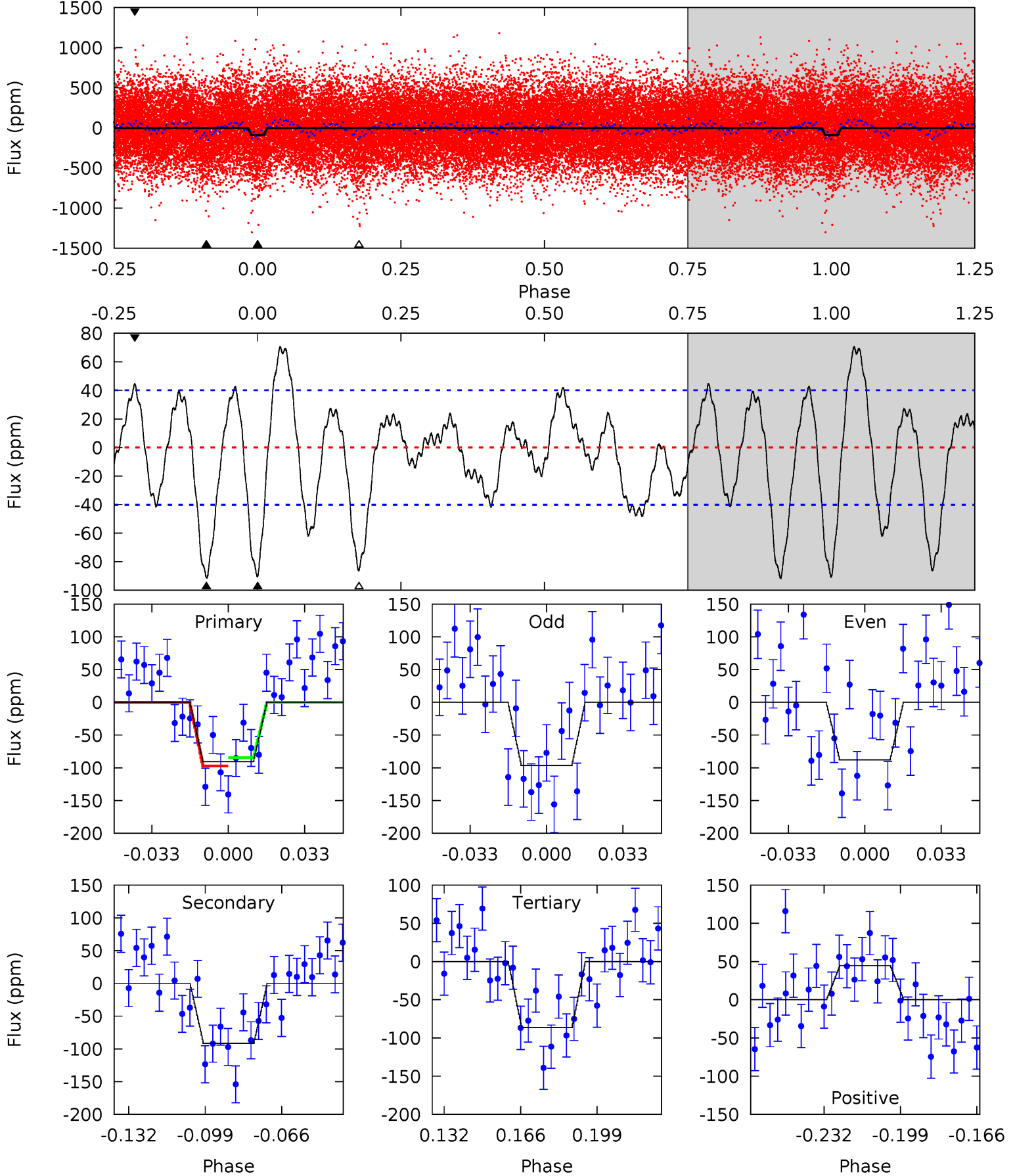
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	16.3	15.4	13.8	4.74	2.02	5.71	0.58	2.24	0.90	2.56	1.39	1.06	0.46	2.80



Alt Model-Shift Uniqueness Test

009775385-02, P = 3.511903 Days, E = 129.975053 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	10.9	10.3	5.34	4.79	2.13	3.44	0.53	5.49	0.62	5.58	0.53	0.95	0.44	0.76



Stellar Parameters For KIC 009775385

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7675^{+211}_{-316}	$4.051^{+0.170}_{-0.153}$	$-0.120^{+0.200}_{-0.350}$	$2.015^{+0.509}_{-0.458}$	$1.665^{+0.198}_{-0.273}$	$0.287^{+0.286}_{-0.124}$
	+3%/-4%	+4%/-4%	+167%/-292%	+25%/-23%	+12%/-16%	+100%/-43%
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 009775385-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-67 ± 4	$1.86^{+0.50}_{-0.45}$	2880^{+225}_{-181}	7454^{+1284}_{-837}	30^{+22}_{-11}
Alt.	-91 ± 8	$2.06^{+0.46}_{-0.45}$	2893^{+213}_{-212}	7643^{+1135}_{-802}	33^{+20}_{-11}

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

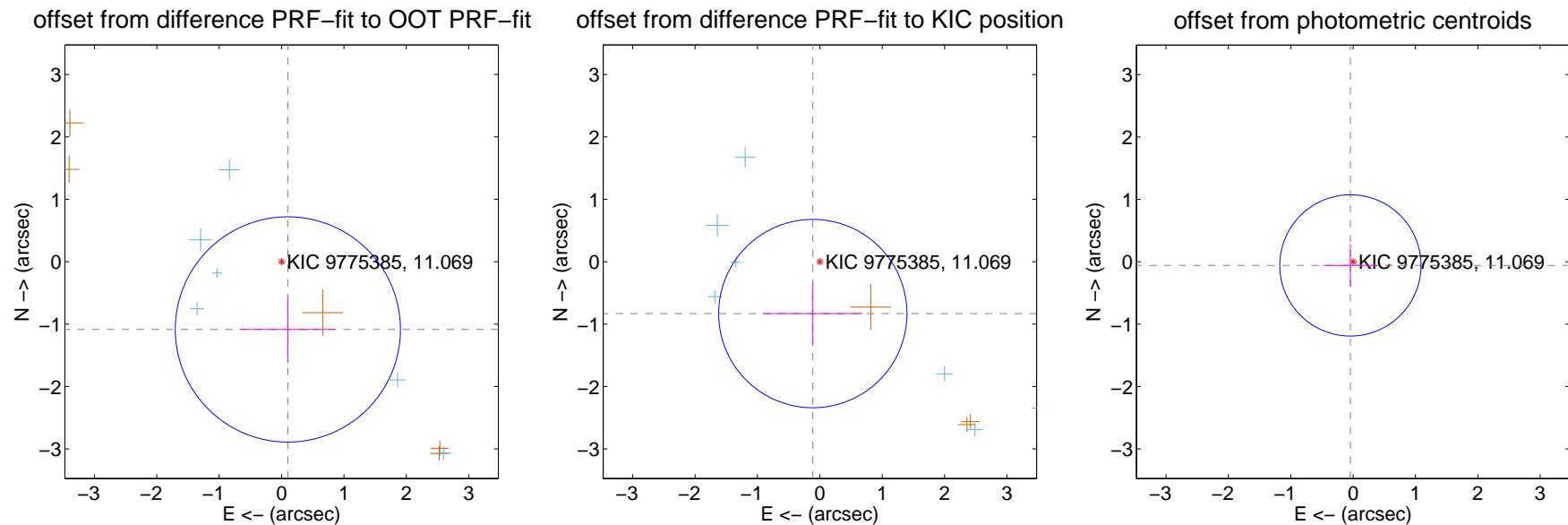
DV Centroid Data

Supplemental centroid analysis for 009775385-02. **Kepler magnitude: 11.07.** Transit SNR 9.28

There are 8 quarters with good PRF difference image offsets

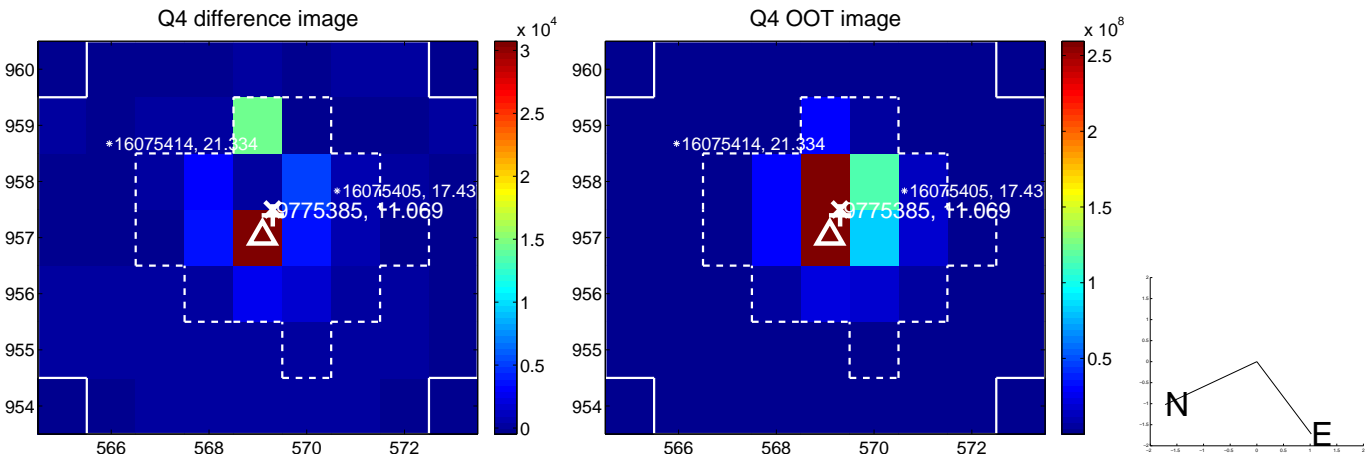
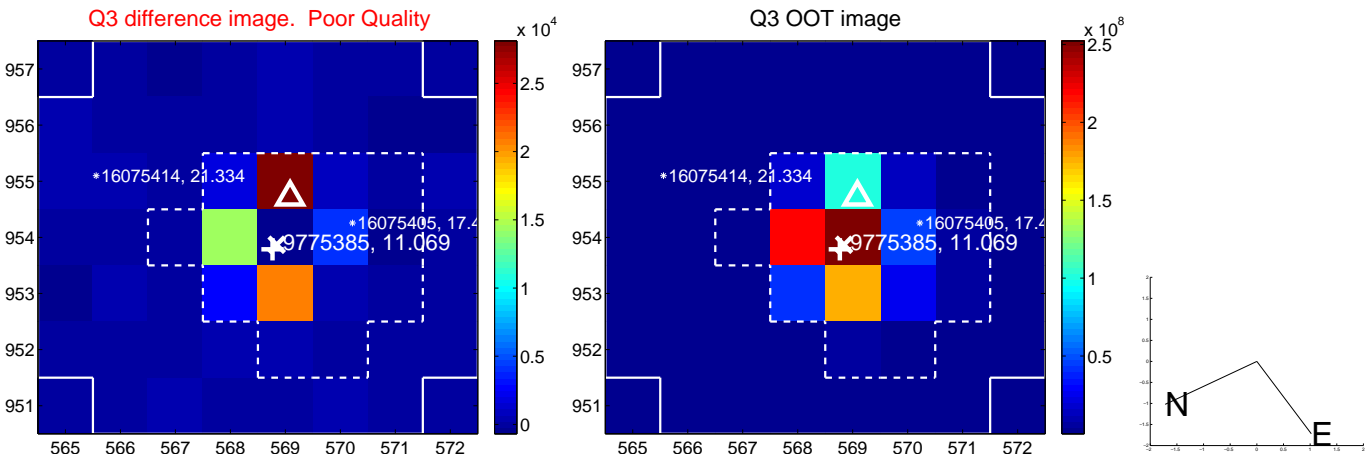
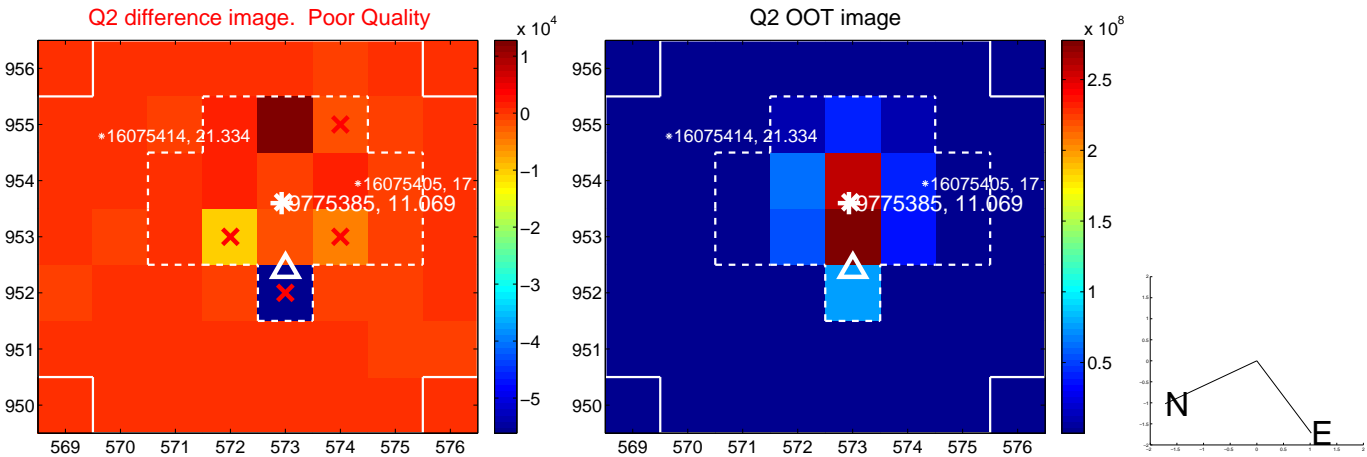
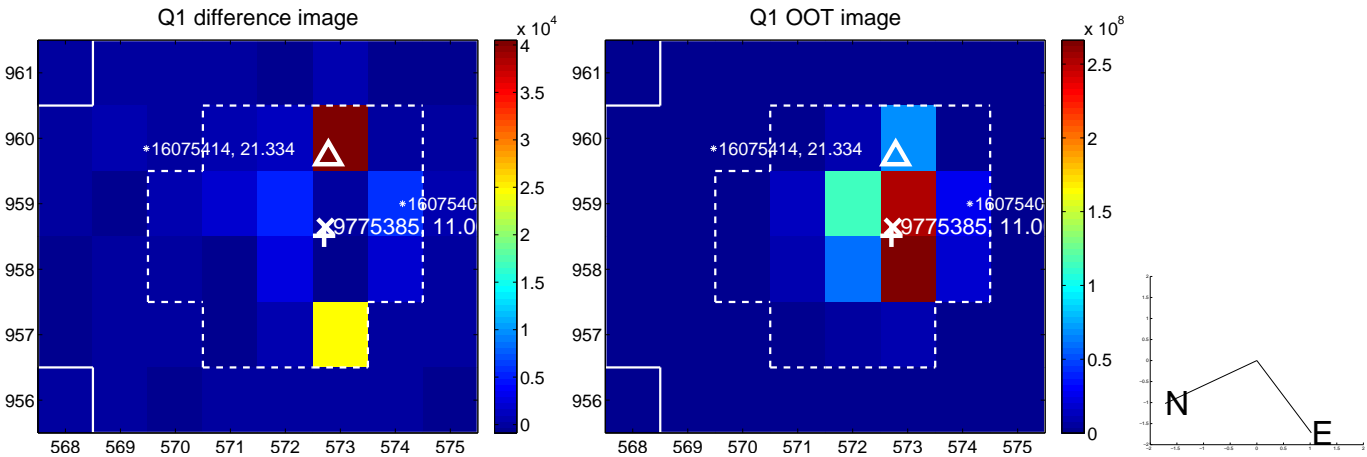
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.090 ± 0.602	1.81	-0.101 ± 0.768	-1.086 ± 0.537
PRF-fit source offset from KIC position	0.839 ± 0.503	1.67	0.113 ± 0.798	-0.832 ± 0.496
photometric centroid source offset	0.07 ± 0.38	0.19	0.04 ± 0.44	-0.06 ± 0.34

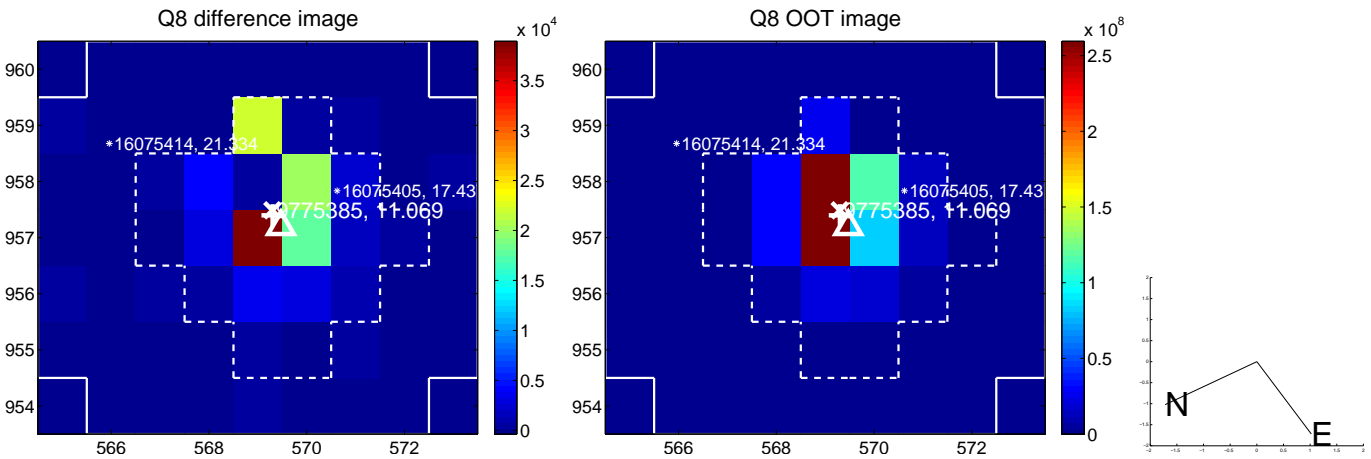
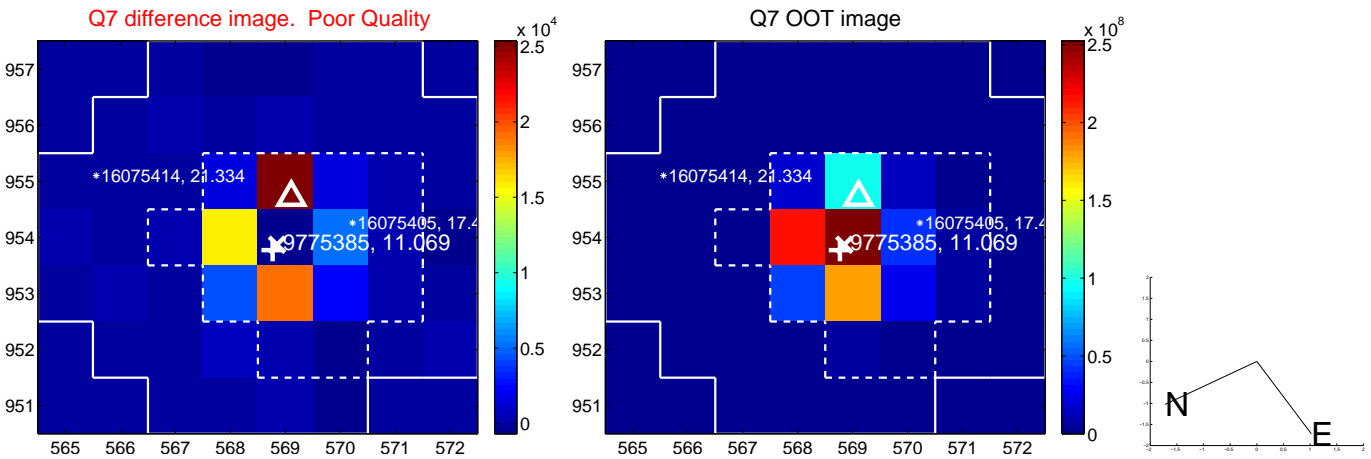
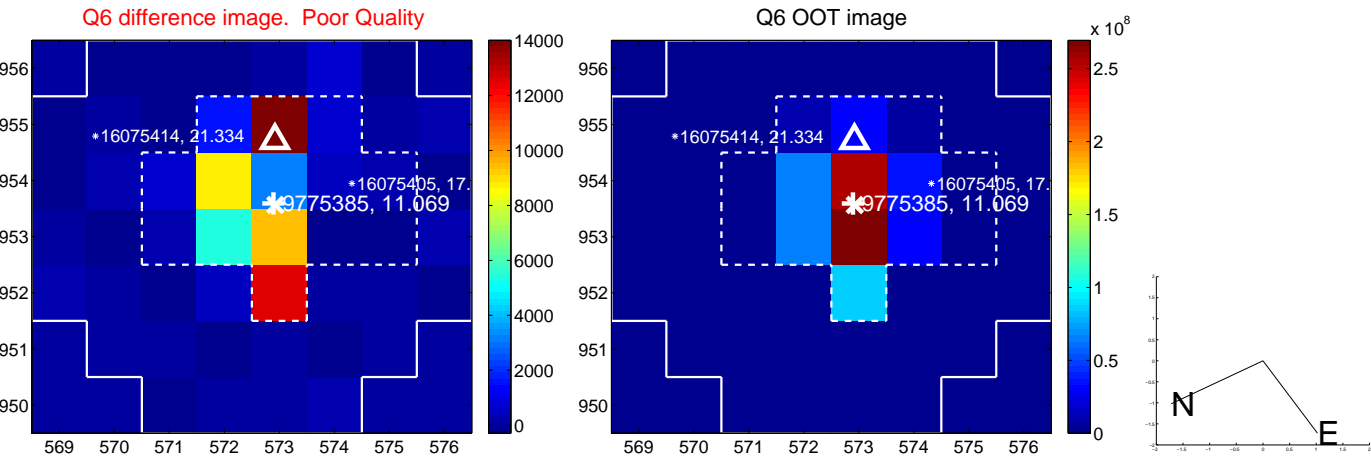
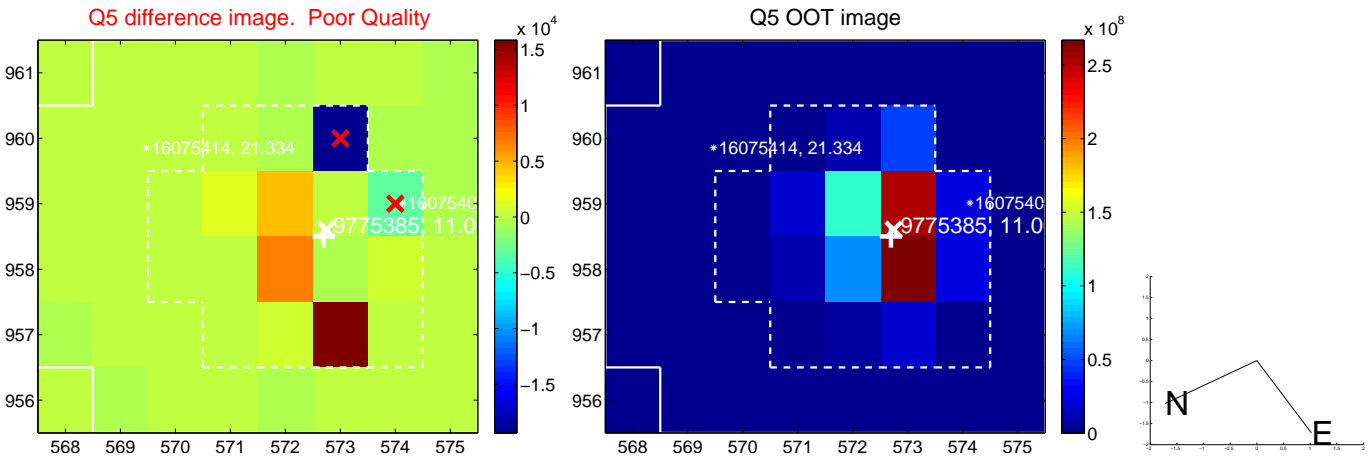


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

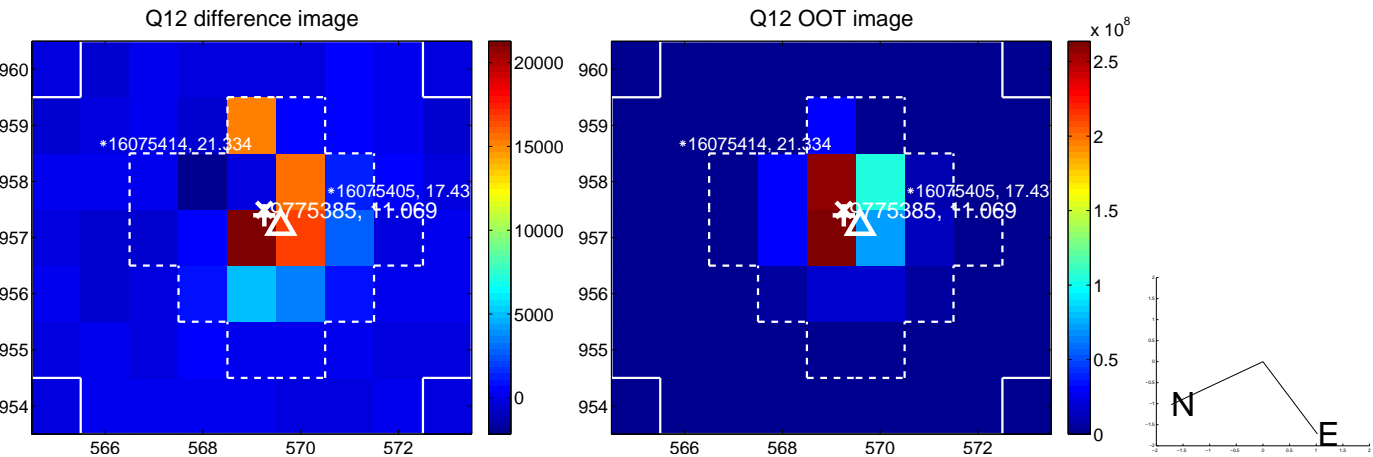
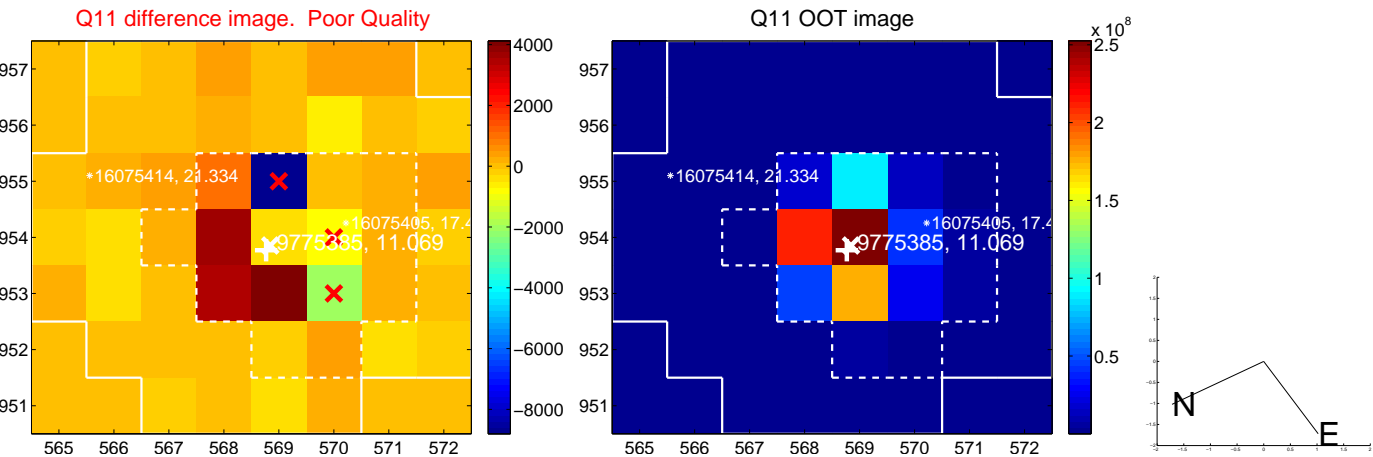
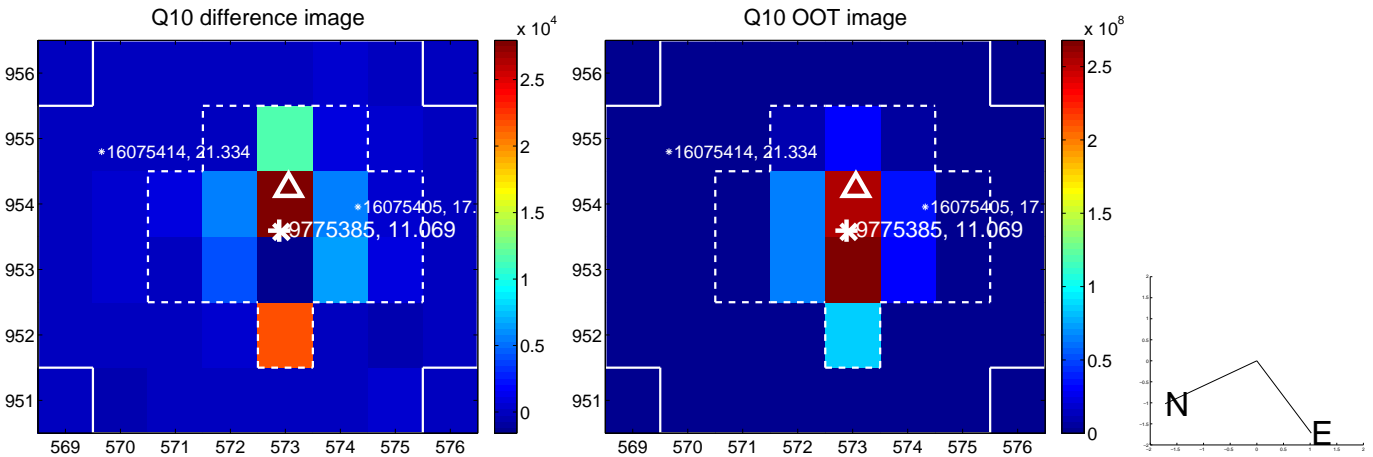
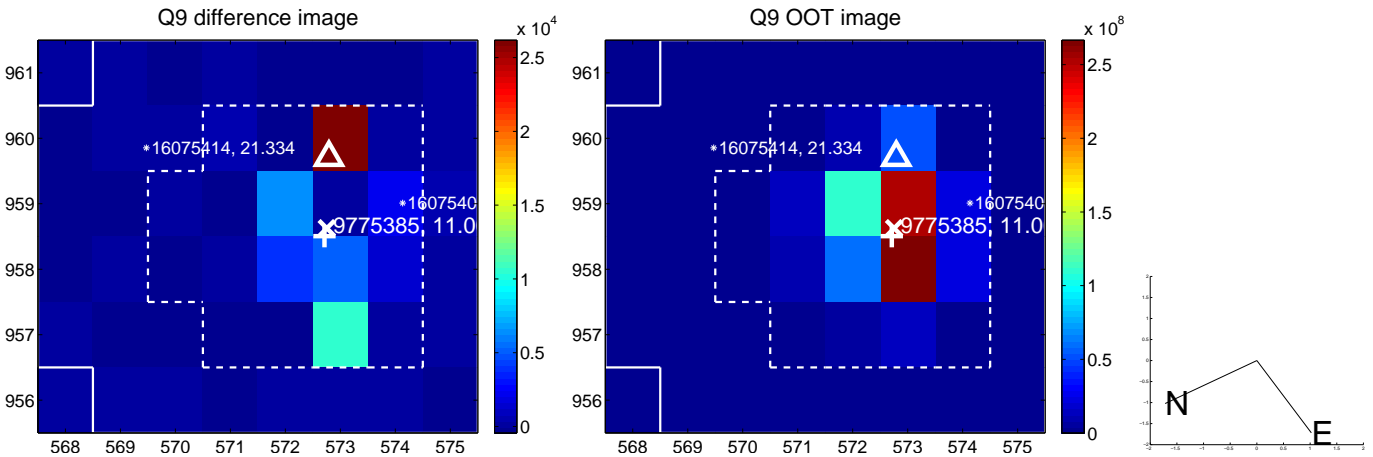
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



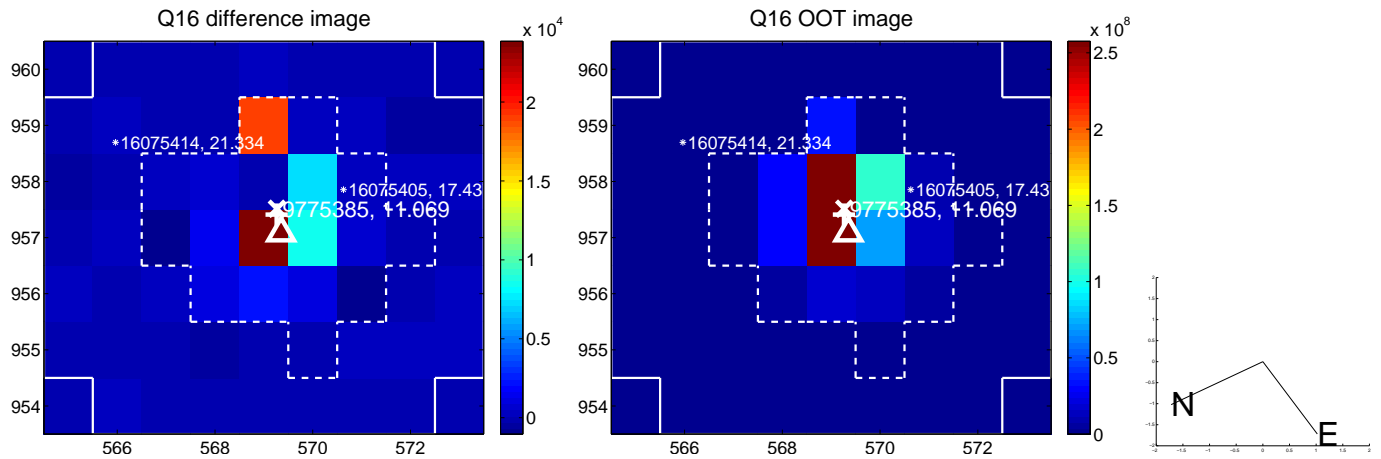
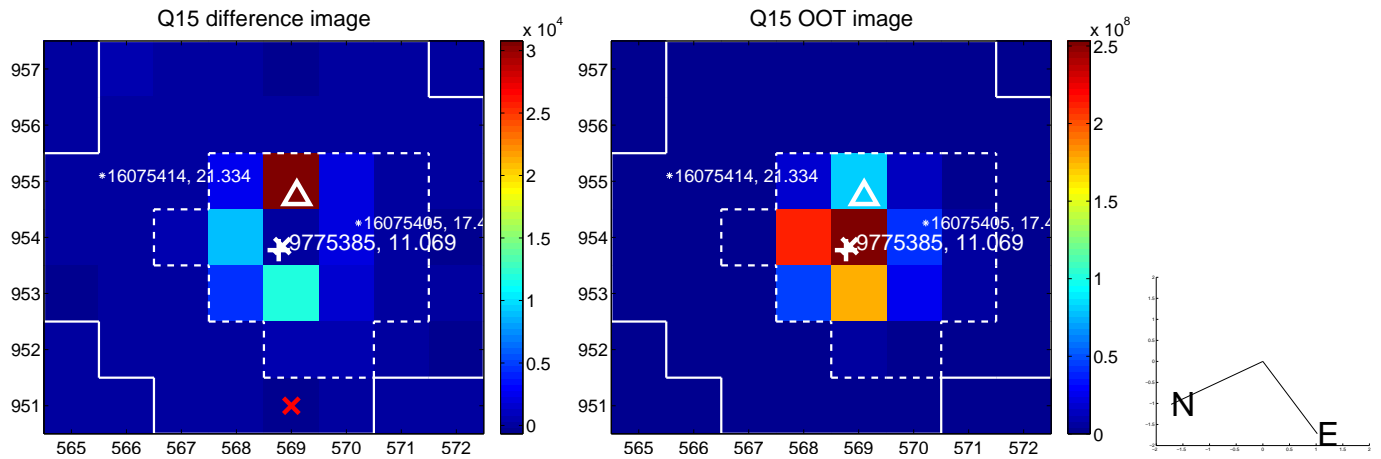
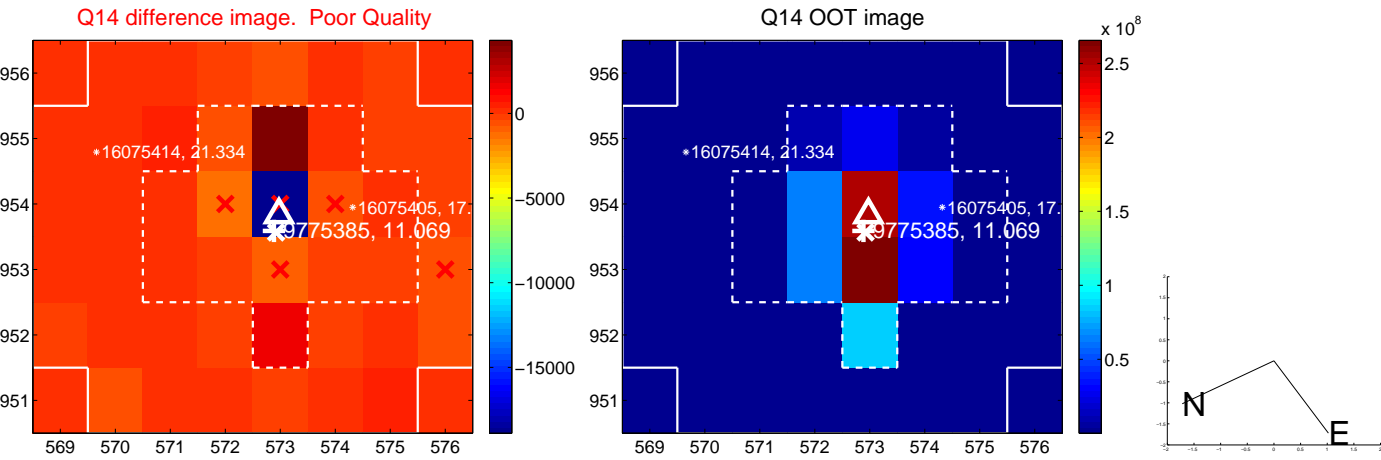
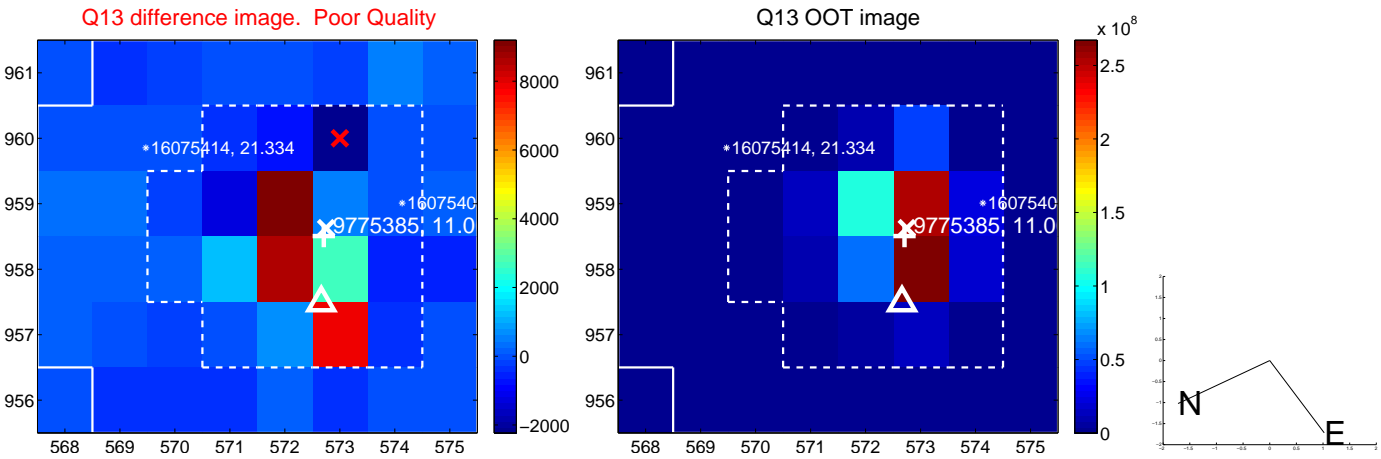
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



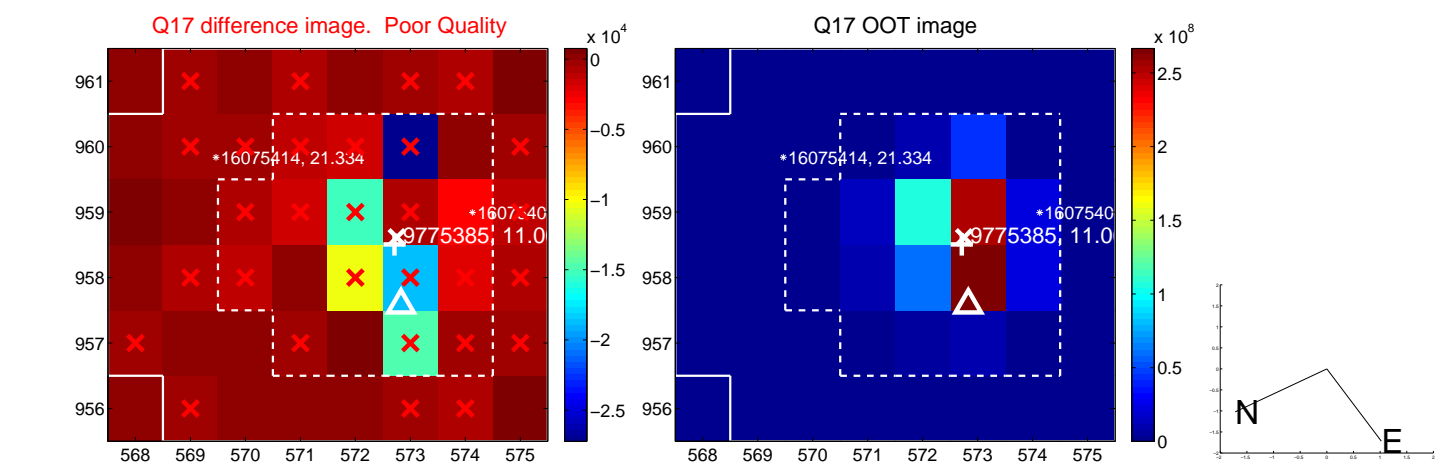
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



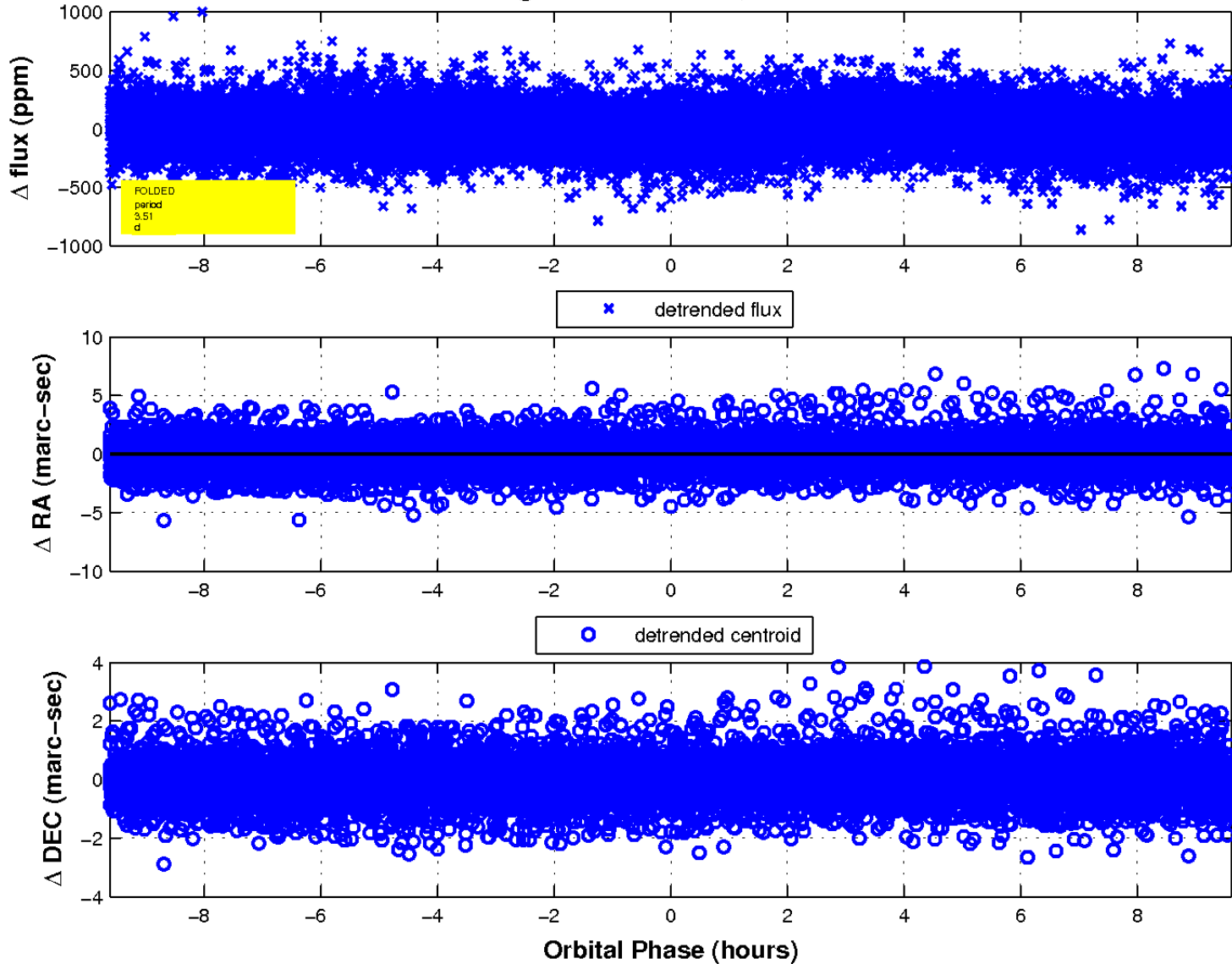
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

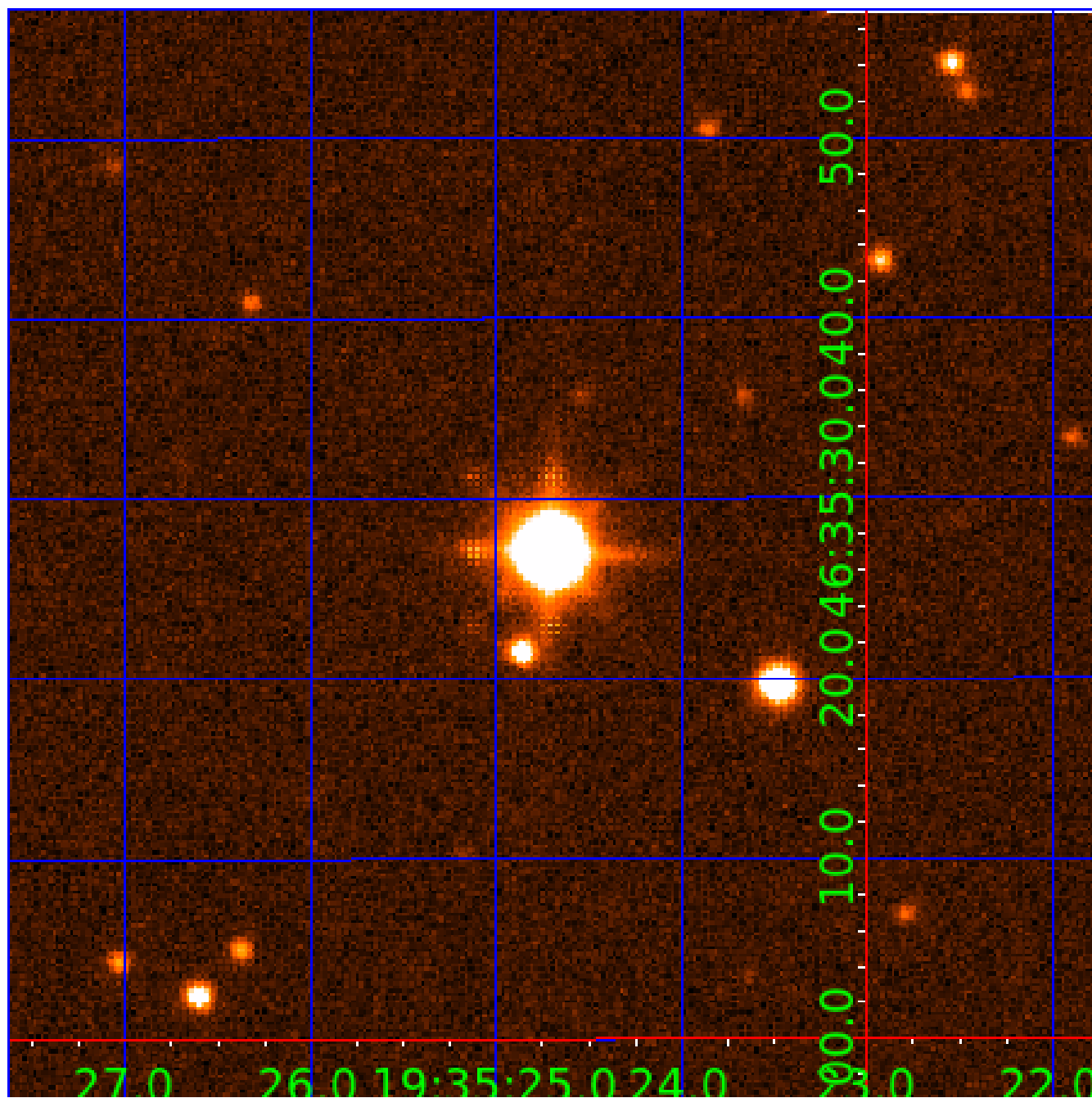


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 009775385

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})
009775385-01	OBS	No	0.639057	131.528930	23.4	1.923	8.8	9.7	2.02	7675	1.14	42592.99
009775385-02	OBS	No	3.511950	133.481174	63.6	3.206	9.2	9.3	2.02	7675	1.88	4391.98
009775385-03	OBS	No	3.512003	133.175231	62.3	3.446	8.6	9.2	2.02	7675	1.85	4391.89

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009775385-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009775385-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
009775385-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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.

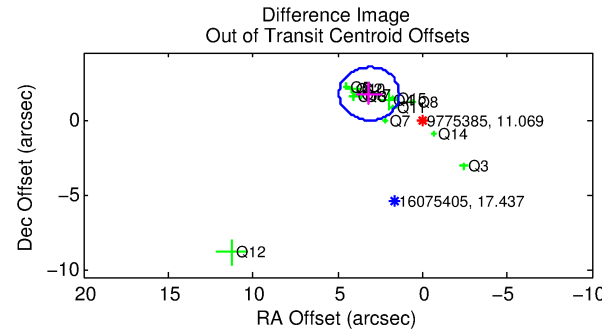
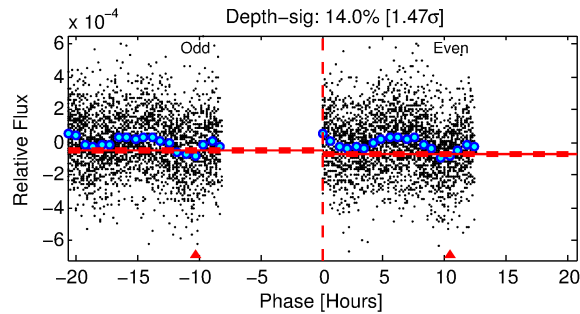
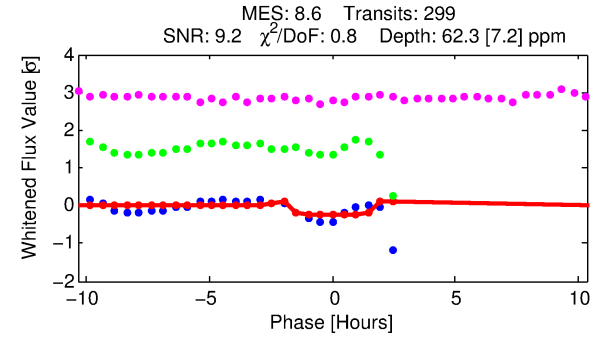
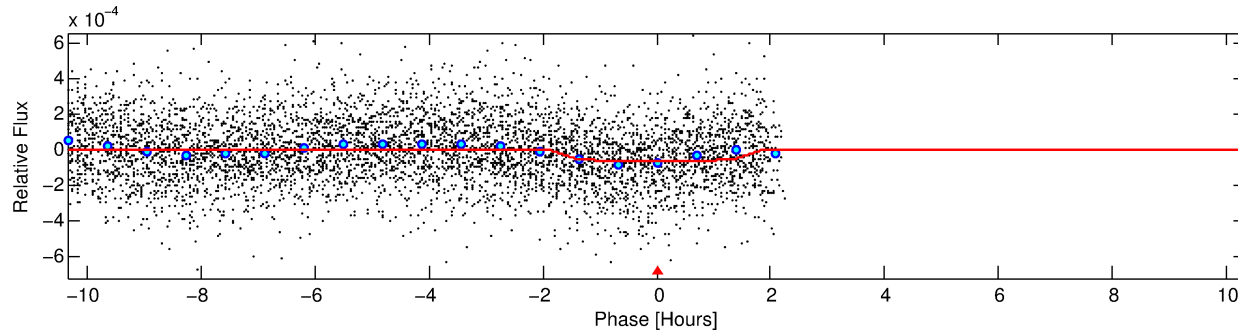
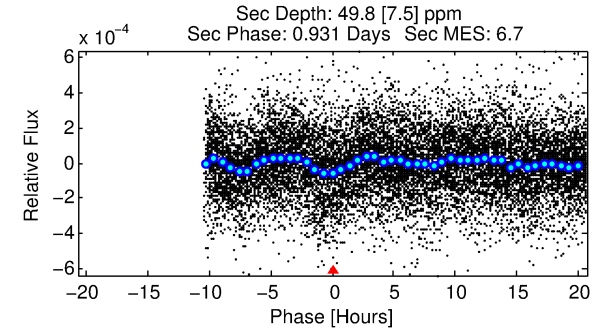
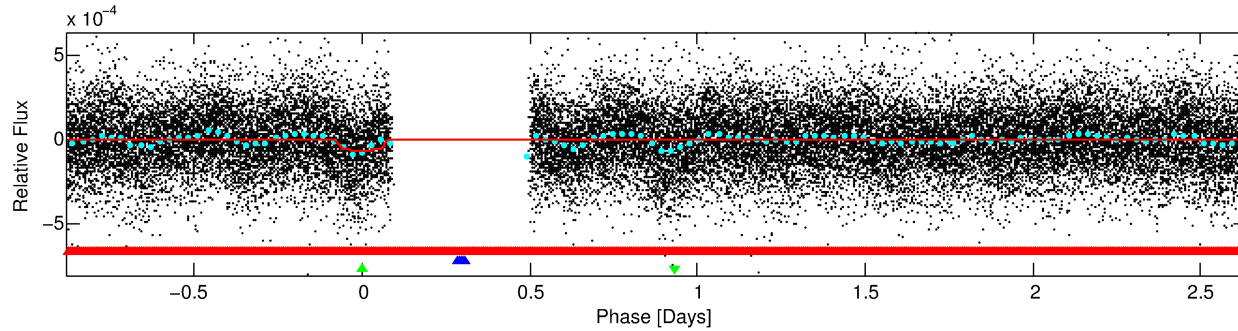
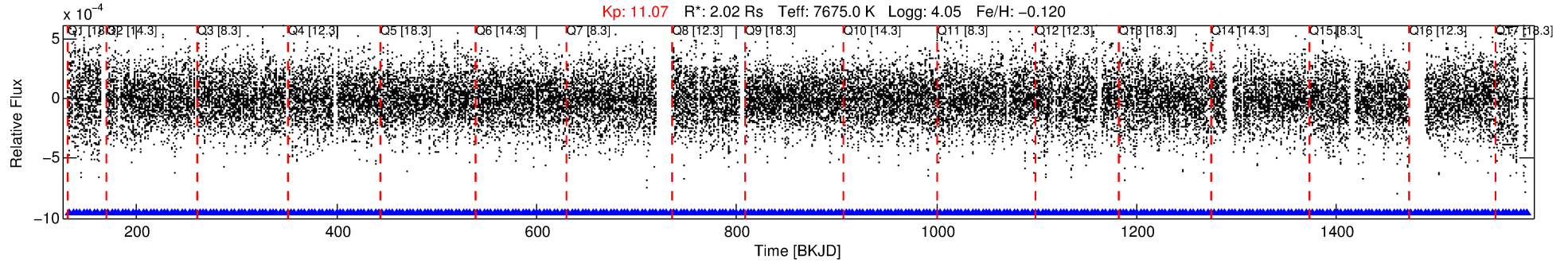
Ephemeris Match Information For 009775385-03

No Significant Match Found

DV One-Page Summary

KIC: 9775385 Candidate: 3 of 3 Period: 3.512 d

KOI: K04462 Corr: No Ephemeris Match



DV Fit Results:

Period = 3.51200 [0.00002] d
Epoch = 133.1752 [0.0030] BKJD
Rp/R* = 0.0084 [0.0018]
a/R* = 3.57 [4.40]
b = 0.91 [0.27]
Seff = 4391.89 [1543.94]
Teq = 2076 [182] K
Rp = 1.85 [0.62] Re
a = 0.0536 [0.0114] AU
Ag = 22.89 [12.75] [1.72σ]
Teffp = 7020 [861] K [5.62σ]

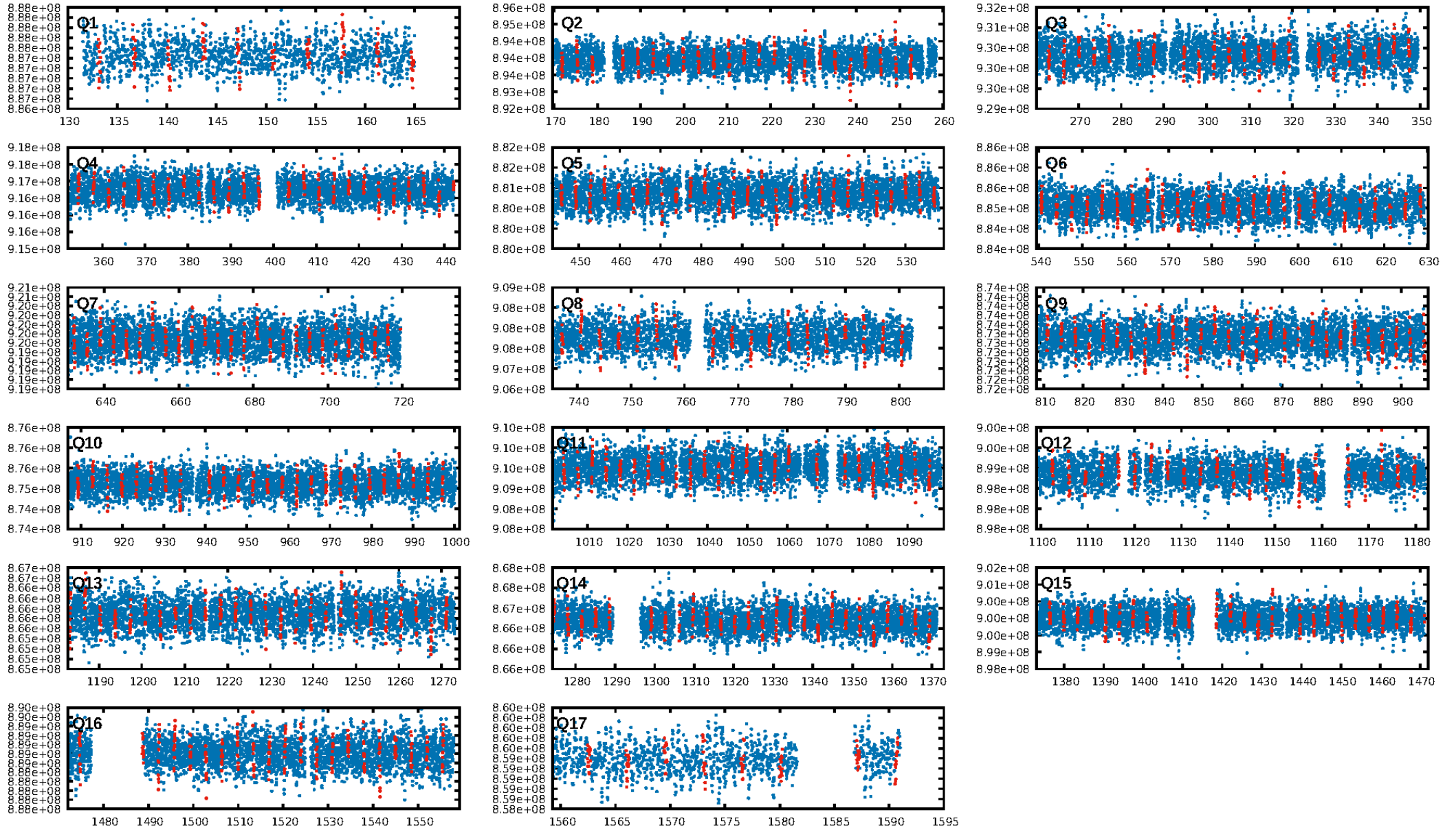
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.64e-13
RollingBand-fgt: 1.00 [286/286]
GhostDiagnostic-chr: 2.241
Centroid-sig: N/A
Centroid-so: 0.459 arcsec [1.34σ]
OotOffset-rm: 3.584 arcsec [6.05σ]
KicOffset-rm: 3.865 arcsec [6.43σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 0.00 [0/17]

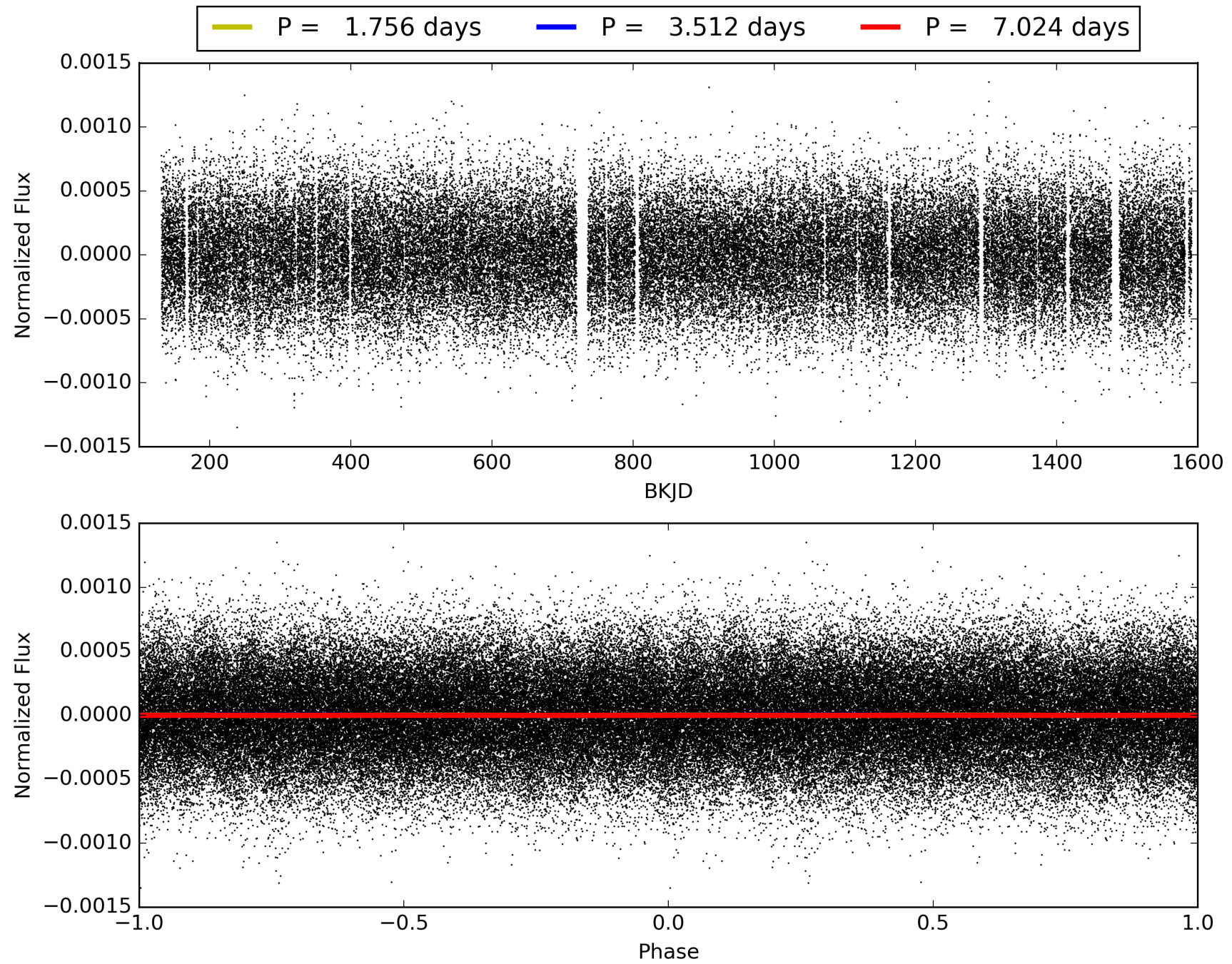
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:57:19 Z

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

TCE 009775385-03, PDC Light Curves

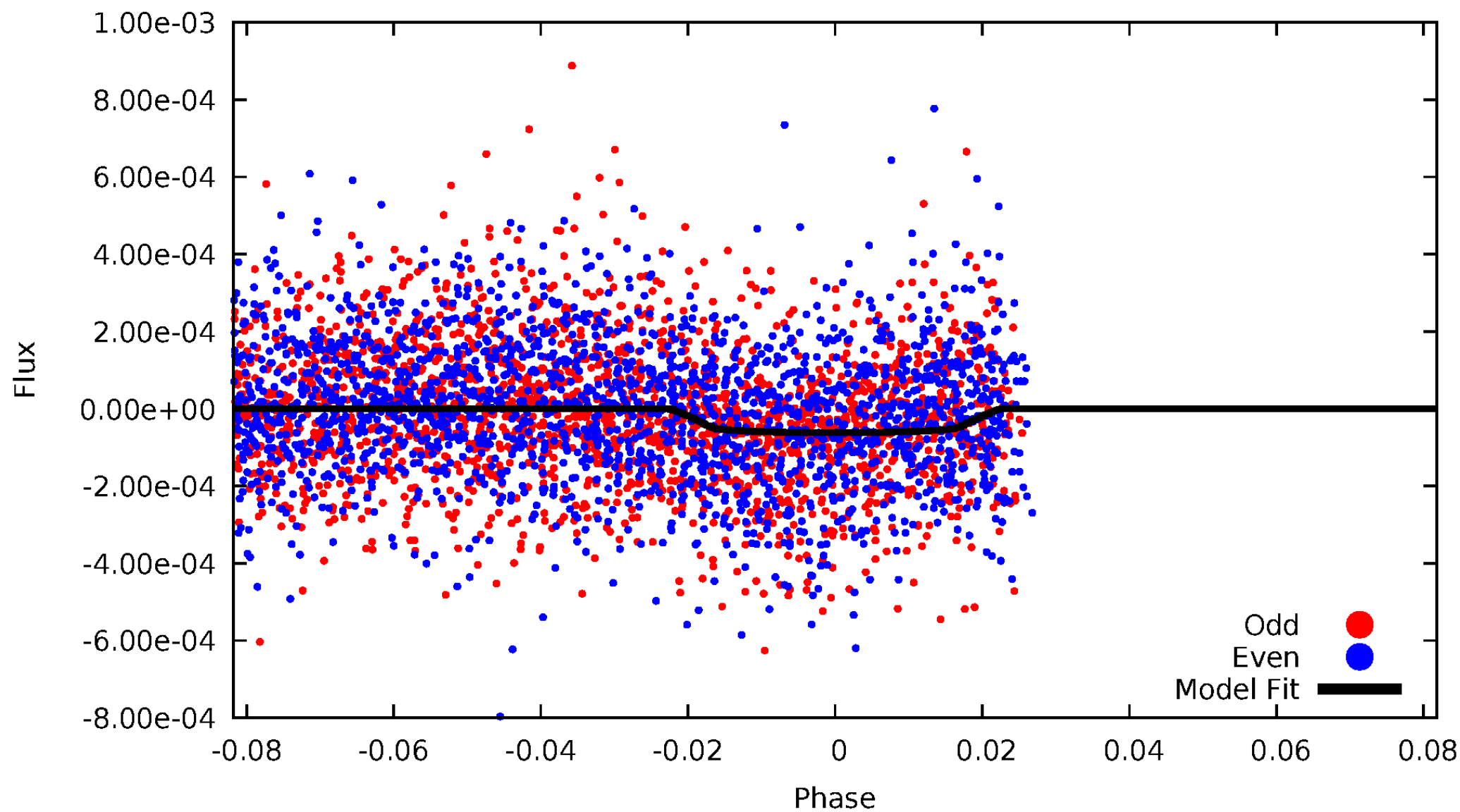


TCE 009775385-03



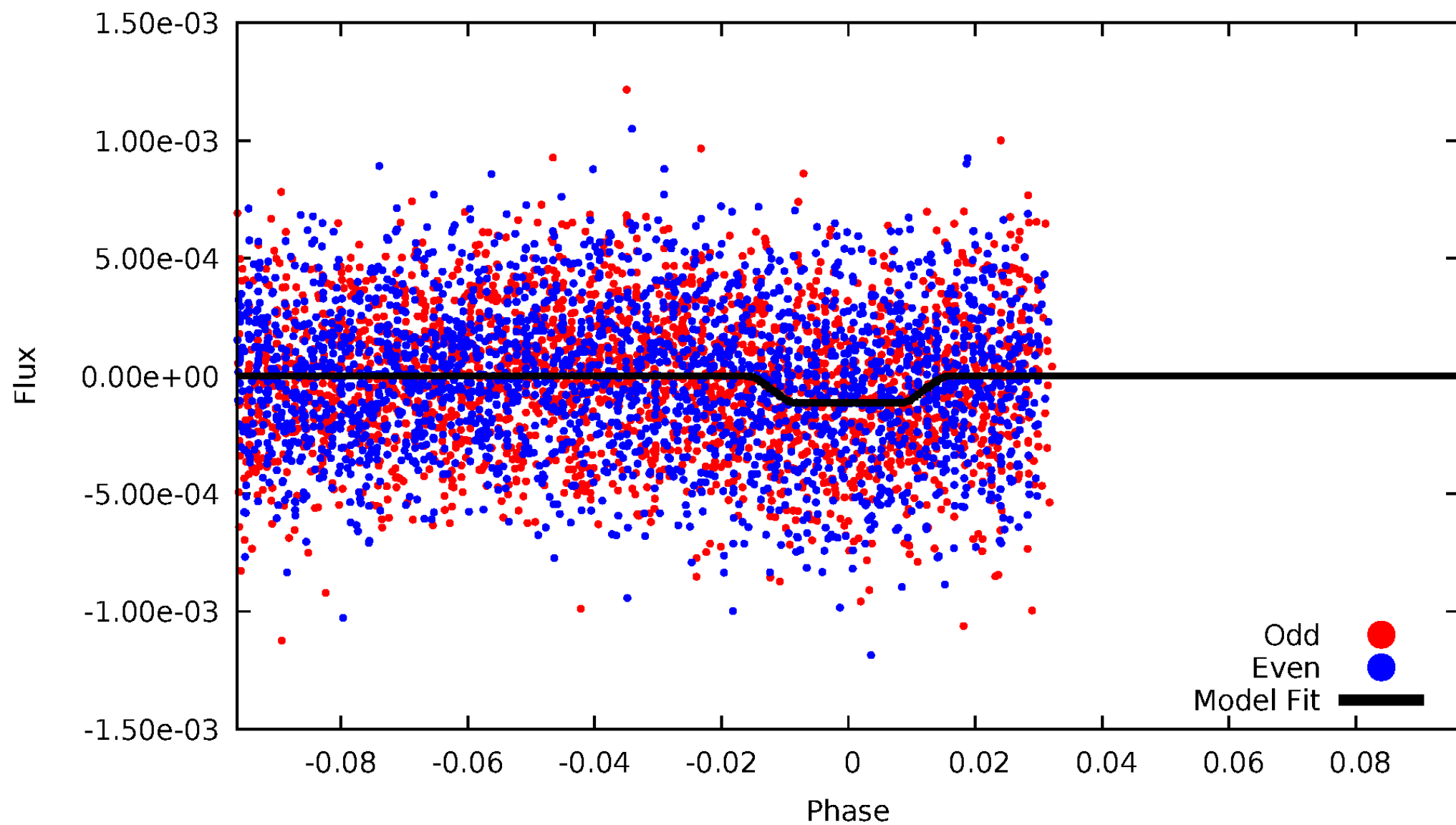
DV Odd/Even

TCE 009775385-03



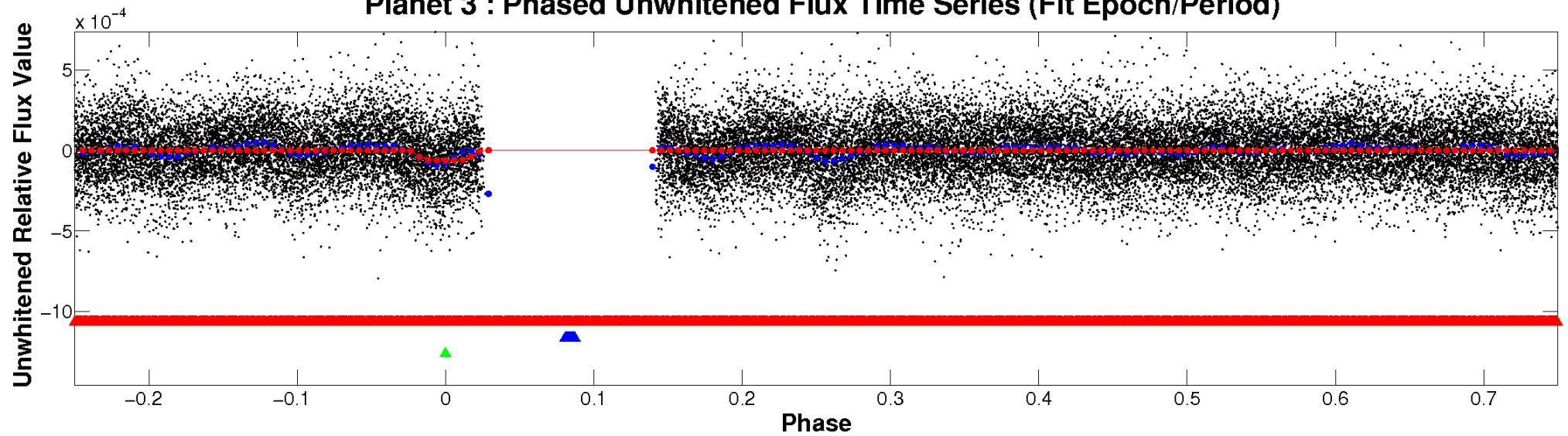
ALT Odd/Even

TCE 009775385-03

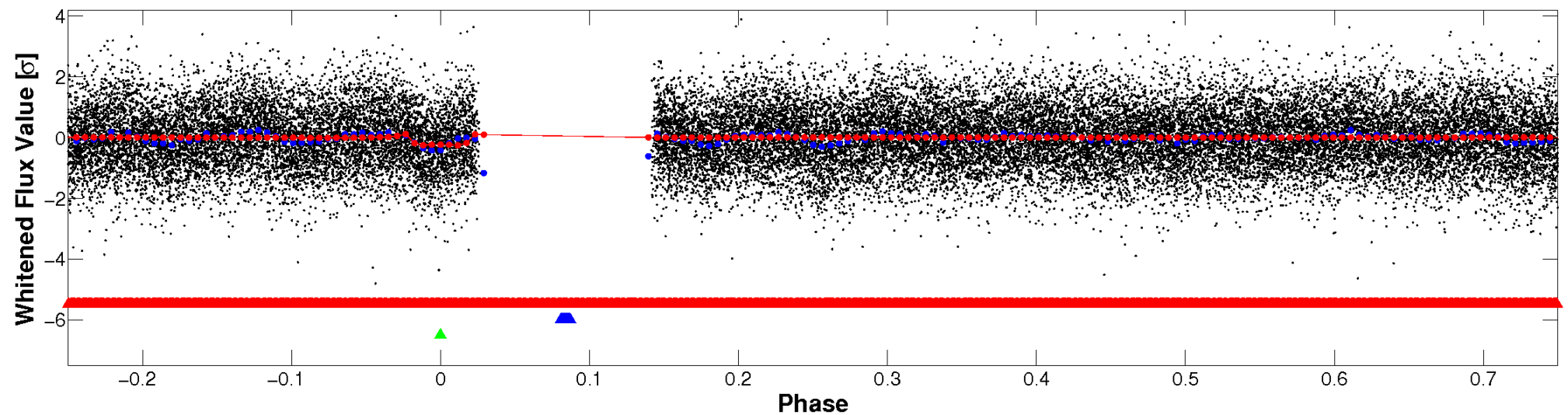


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

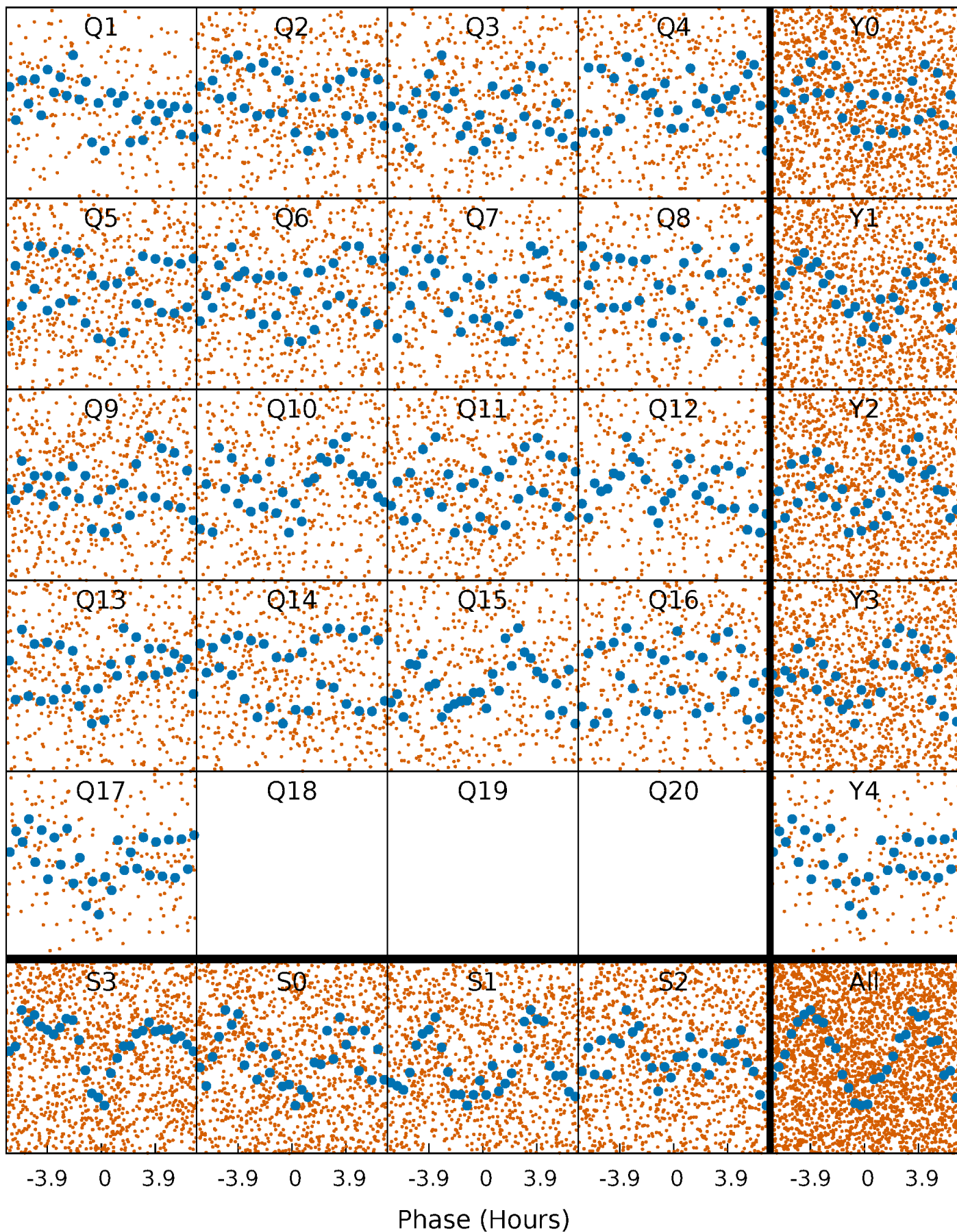


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



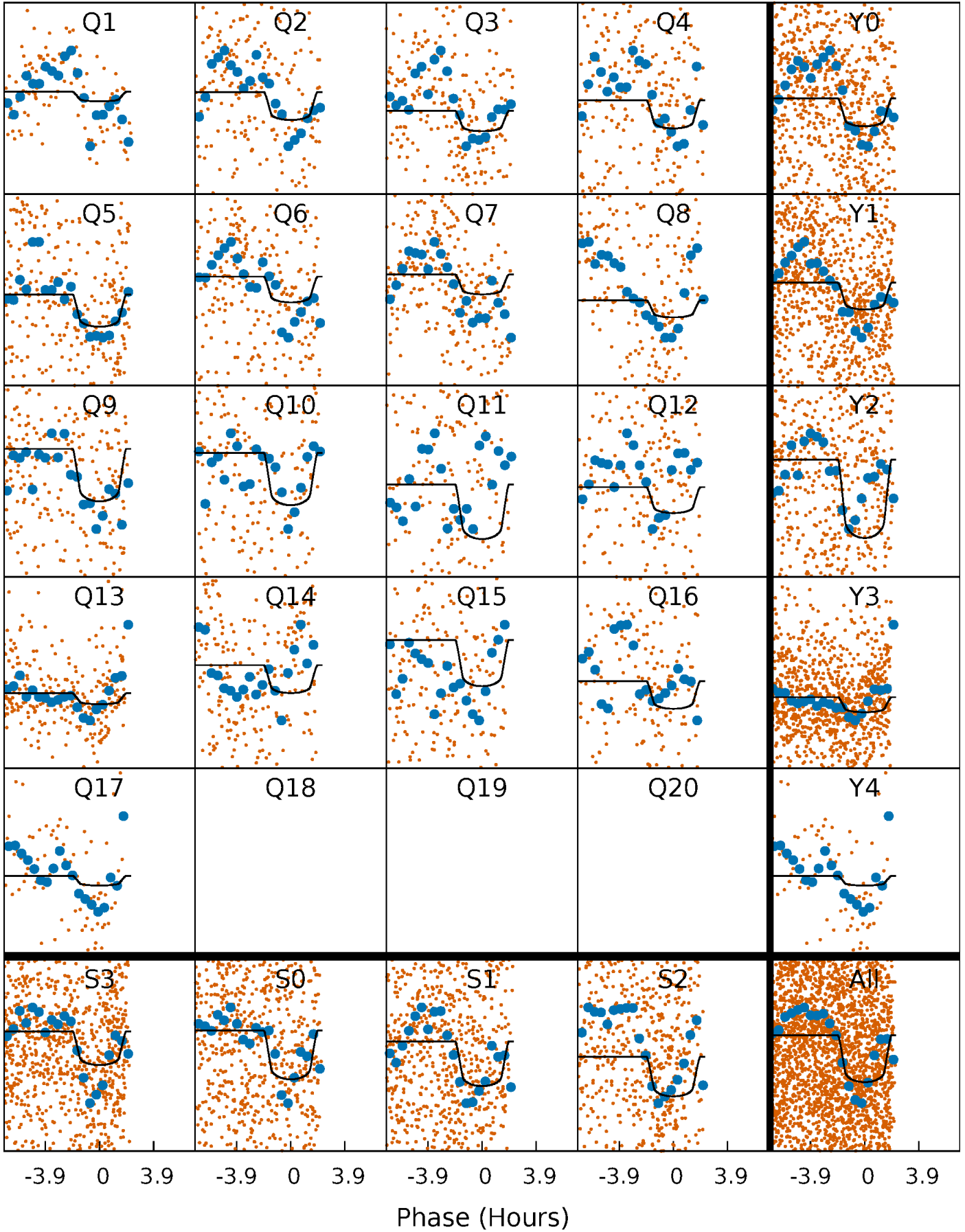
PDC Quarter-Phased Transit Curves

TCE 009775385-03 P= 3.512003 Days $T_0=133.175231$ (BKJD)



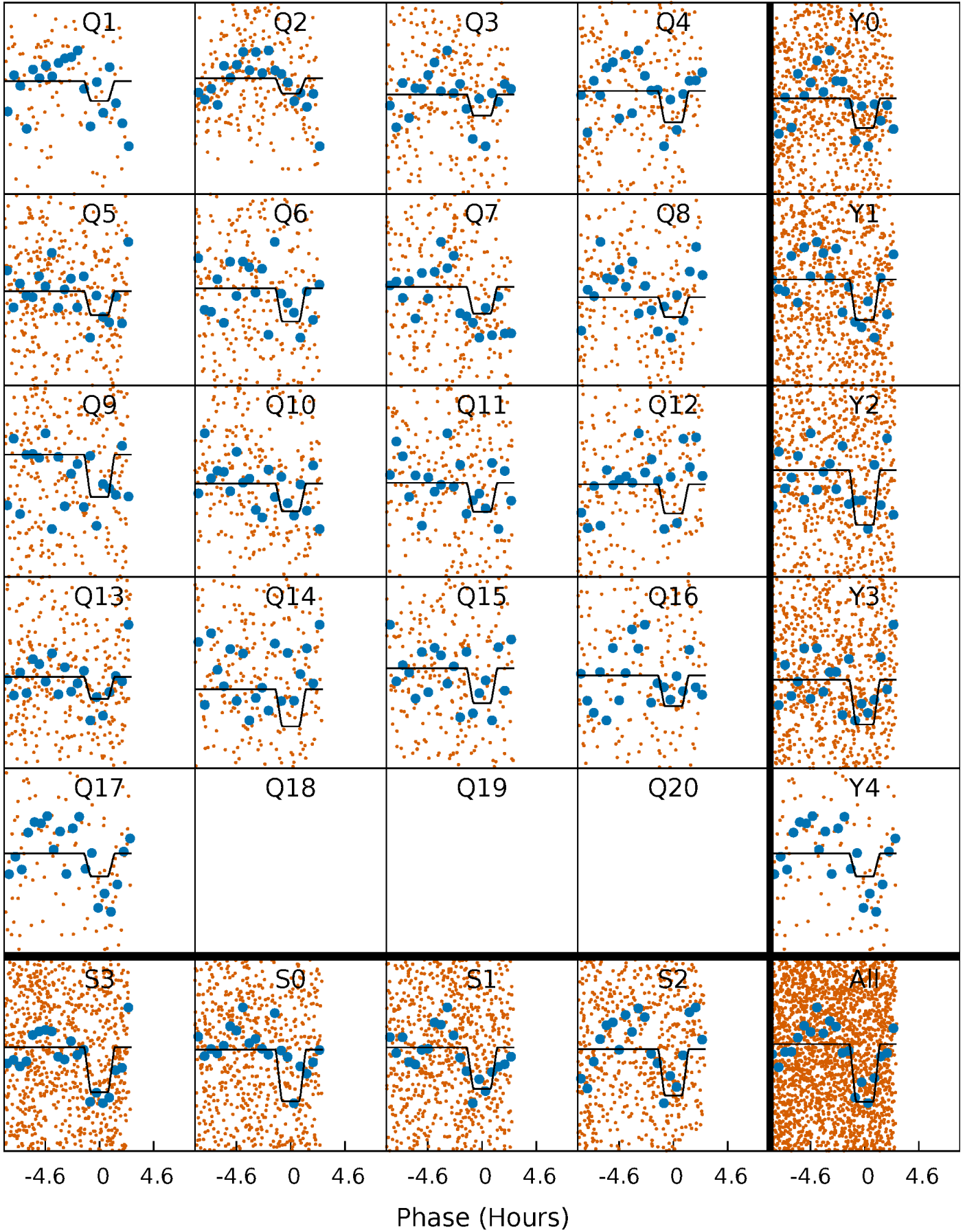
DV Quarter-Phased Transit Curves

TCE 009775385-03 P= 3.512003 Days $T_0=133.175231$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

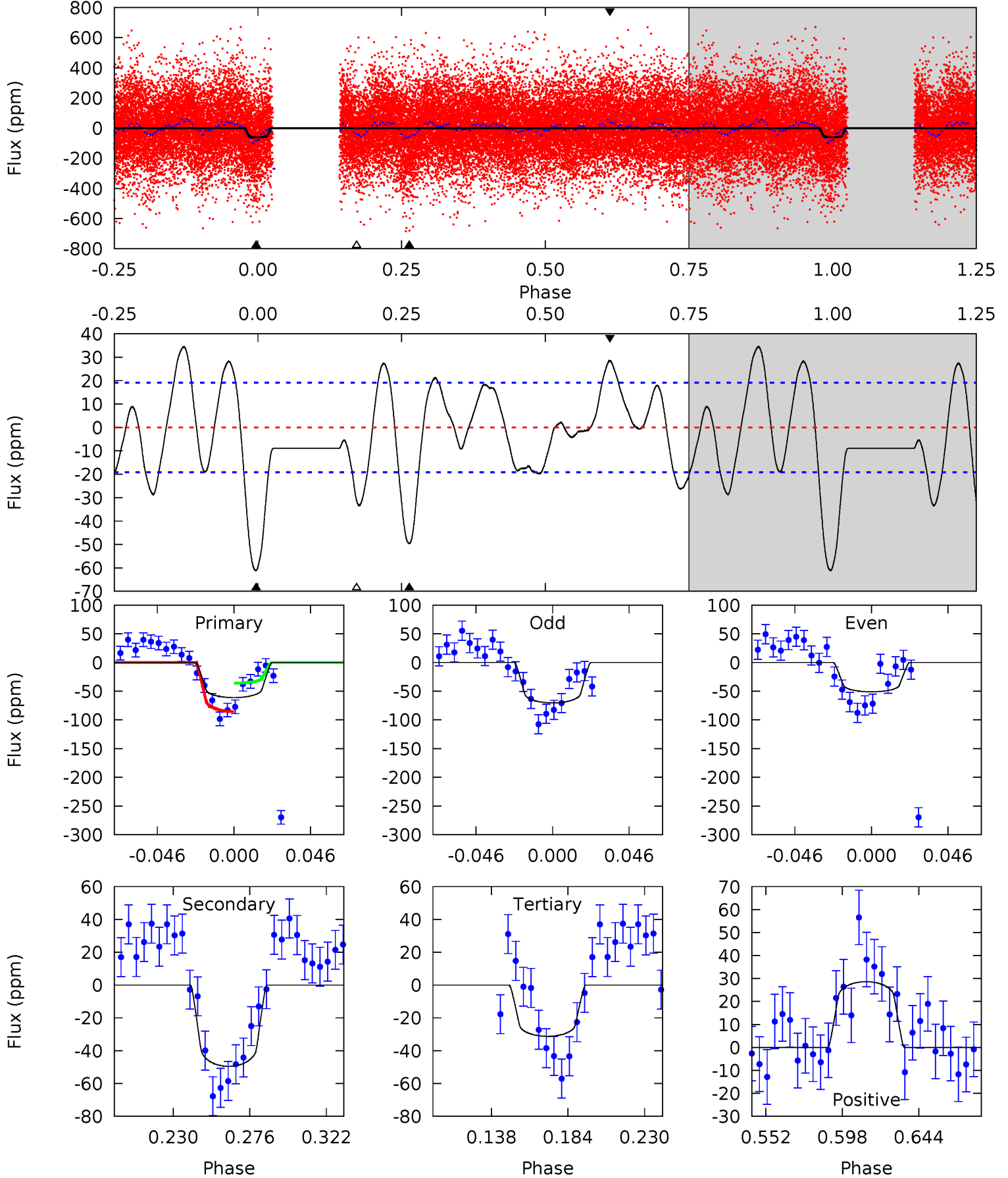
TCE 009775385-03 P= 3.511903 Days $T_0=133.175603$ (BKJD)



DV Model-Shift Uniqueness Test

009775385-03, P = 3.512003 Days, E = 129.663228 Days

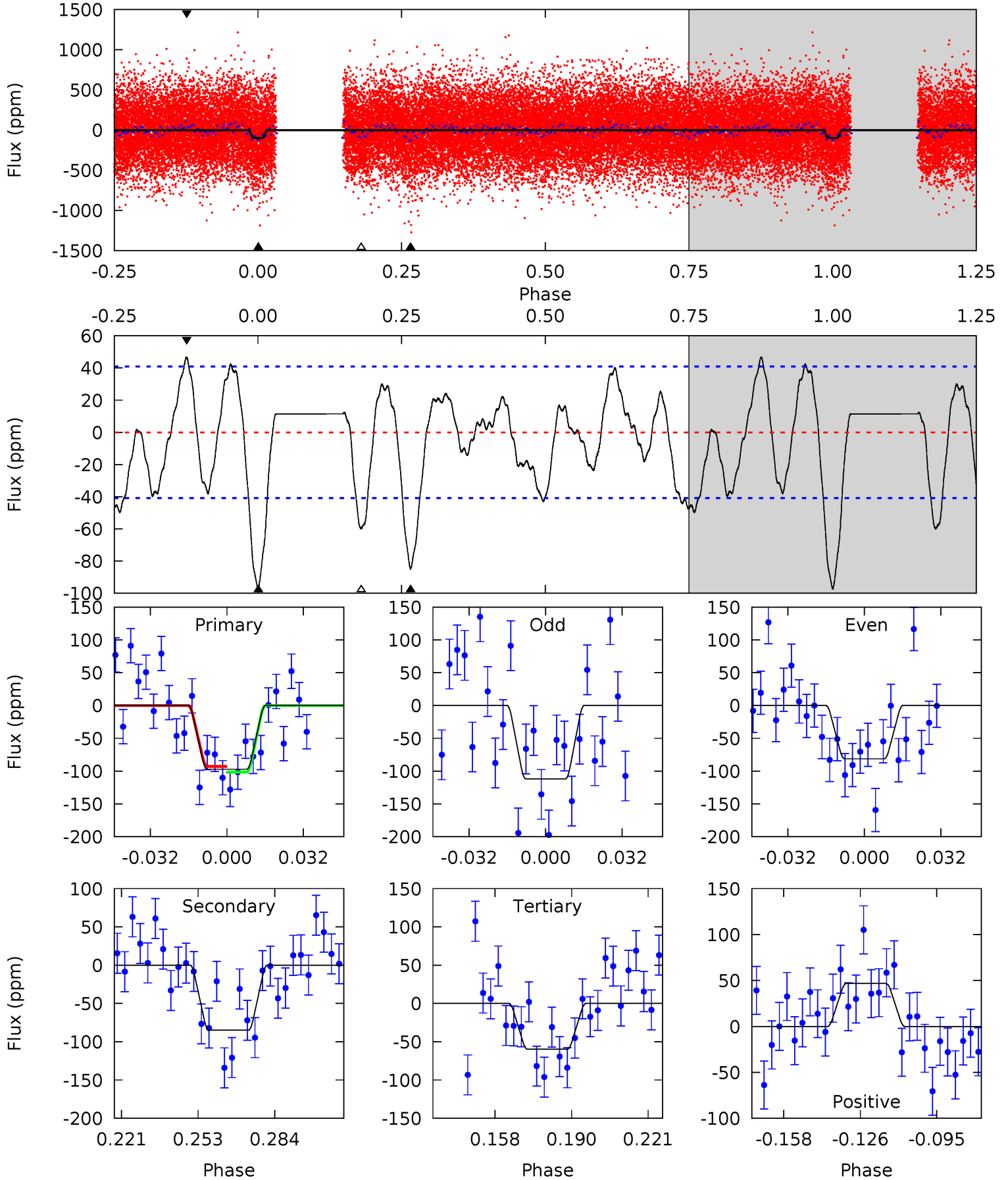
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	12.2	7.72	7.06	4.73	2.00	3.94	7.38	8.03	4.52	5.18	2.38	1.01	0.36	6.11



Alt Model-Shift Uniqueness Test

009775385-03, P = 3.511903 Days, E = 129.663700 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	9.97	7.03	5.49	4.80	2.15	2.88	4.38	5.92	2.94	4.48	1.80	0.98	0.32	0.51



Stellar Parameters For KIC 009775385

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7675^{+211}_{-316}	$4.051^{+0.170}_{-0.153}$	$-0.120^{+0.200}_{-0.350}$	$2.015^{+0.509}_{-0.458}$	$1.665^{+0.198}_{-0.273}$	$0.287^{+0.286}_{-0.124}$
	+3%/-4%	+4%/-4%	+167%/-292%	+25%/-23%	+12%/-16%	+100%/-43%
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 009775385-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-50 ± 4	$1.83^{+0.46}_{-0.45}$	2886^{+200}_{-197}	6871^{+1101}_{-707}	23^{+17}_{-8}
Alt.	-85 ± 9	$2.32^{+0.55}_{-0.47}$	2887^{+203}_{-197}	6978^{+963}_{-669}	25^{+15}_{-9}

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

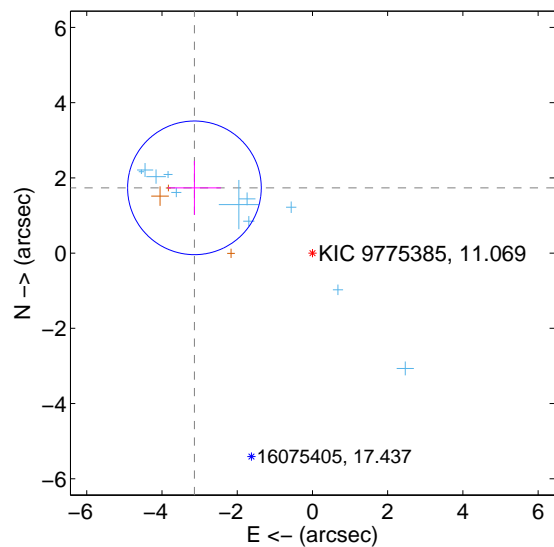
Supplemental centroid analysis for 009775385-03. **Kepler magnitude: 11.07.** Transit SNR 9.22

There are 11 quarters with good PRF difference image offsets

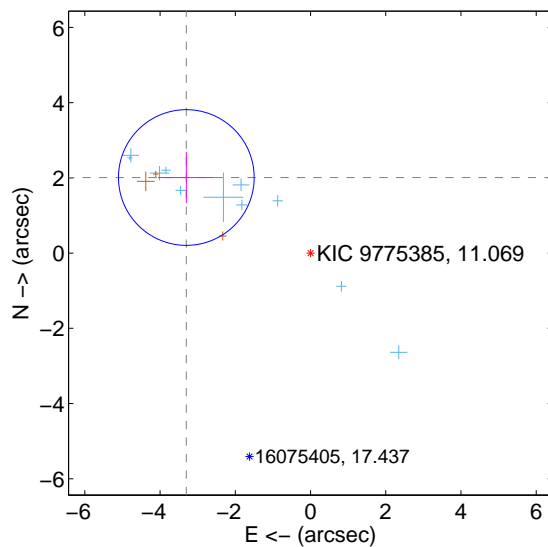
The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.584 ± 0.592	6.05	3.137 ± 0.707	1.735 ± 0.719
PRF-fit source offset from KIC position	3.865 ± 0.601	6.43	3.302 ± 0.753	2.009 ± 0.677
photometric centroid source offset	0.46 ± 0.34	1.34	-0.07 ± 0.44	0.45 ± 0.34

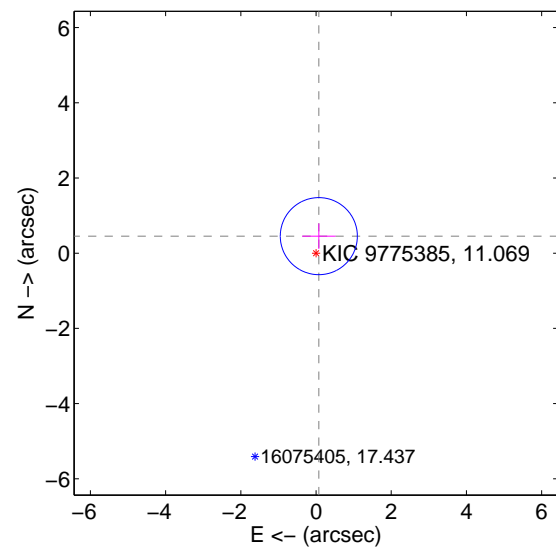
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

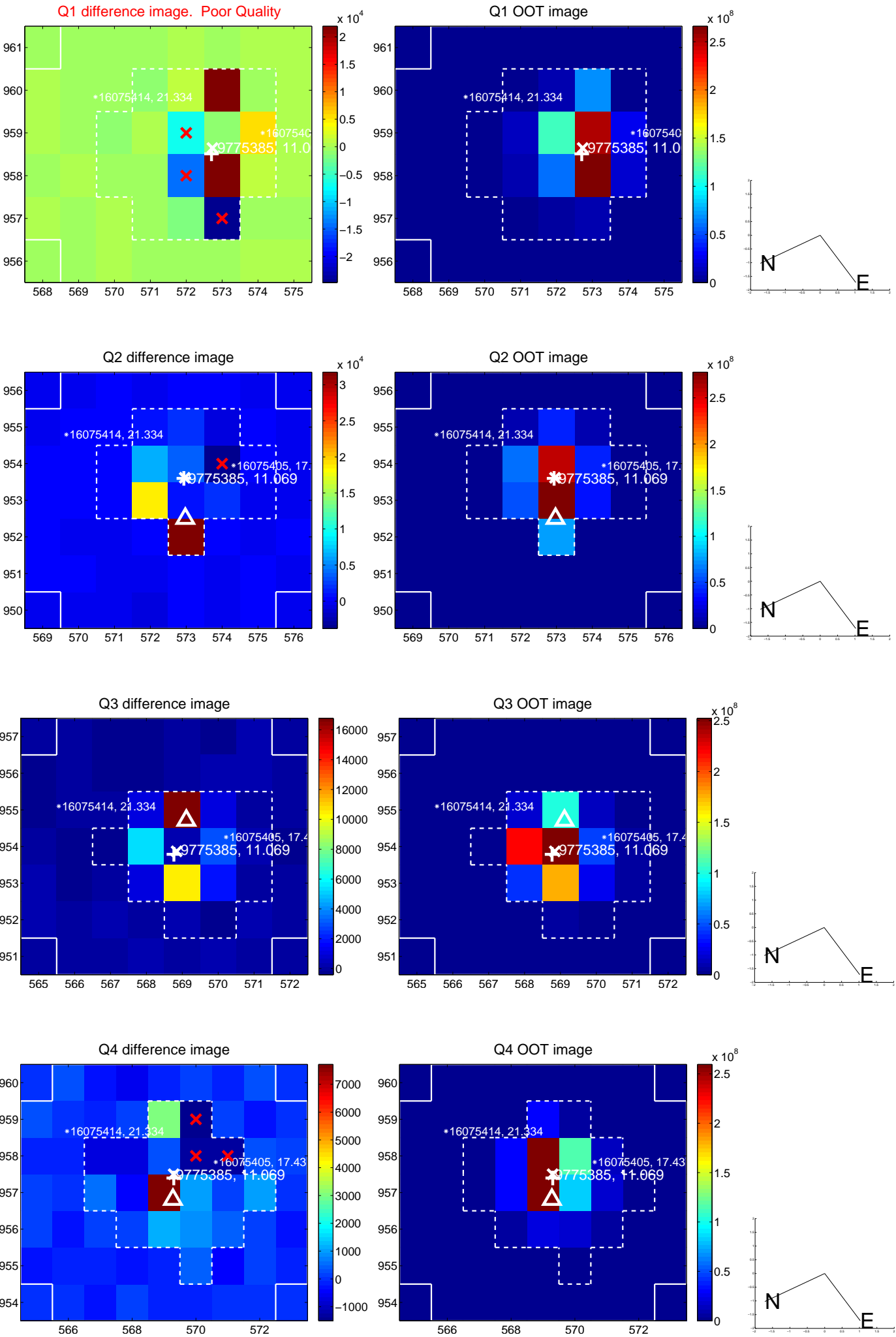


offset from photometric centroids

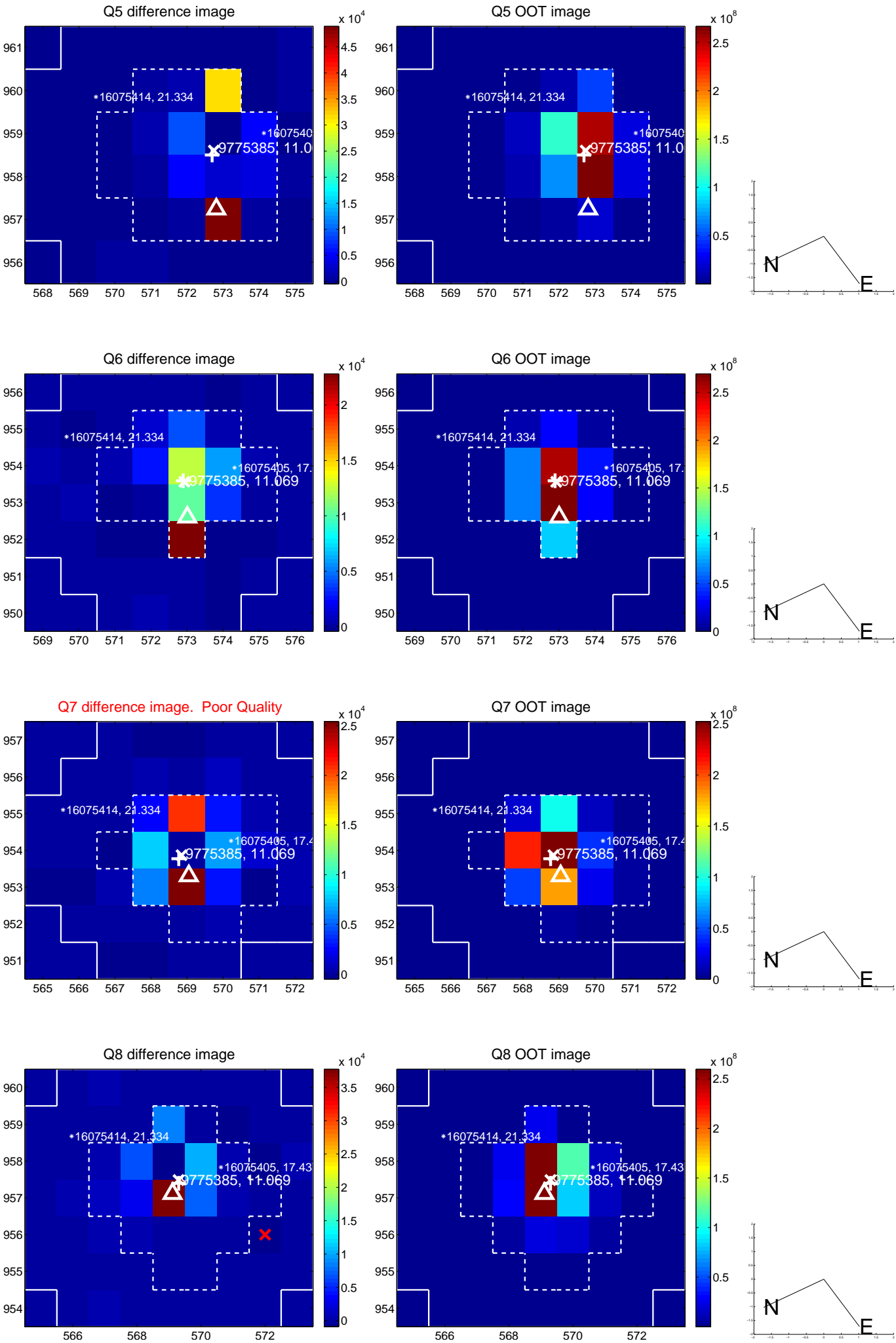


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

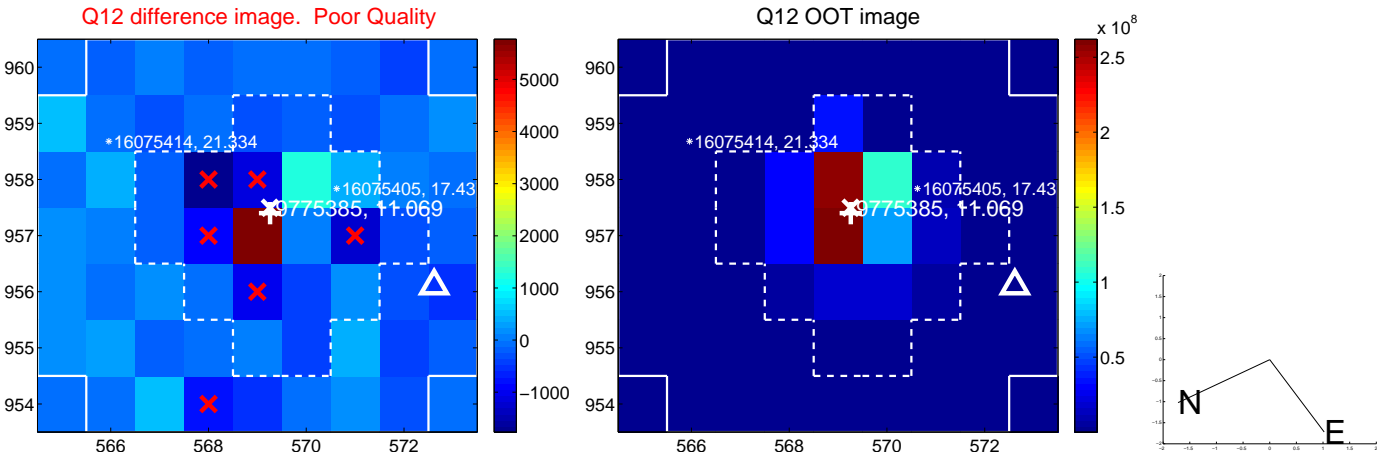
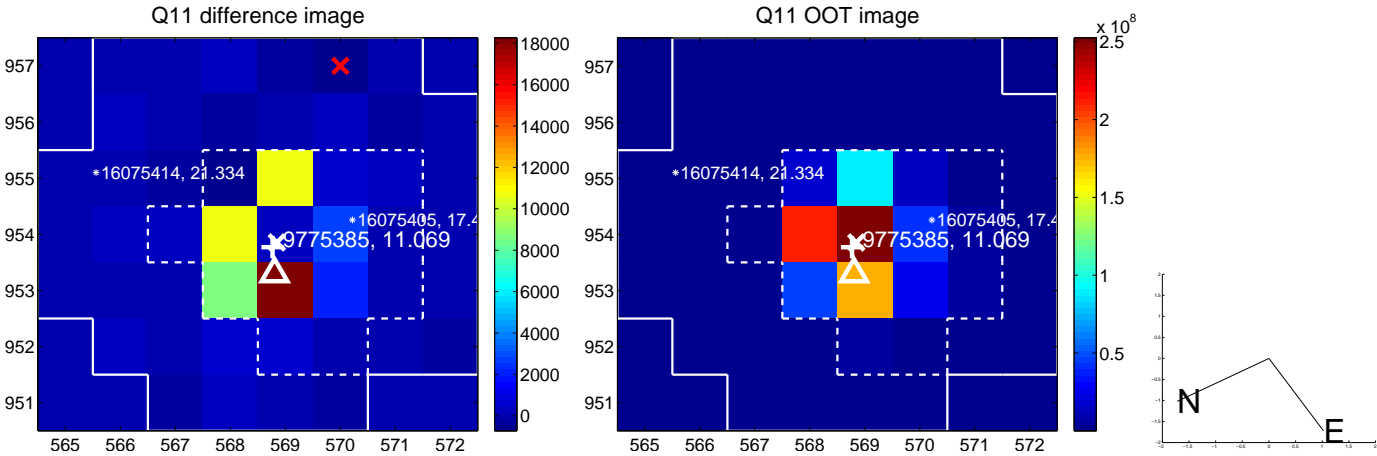
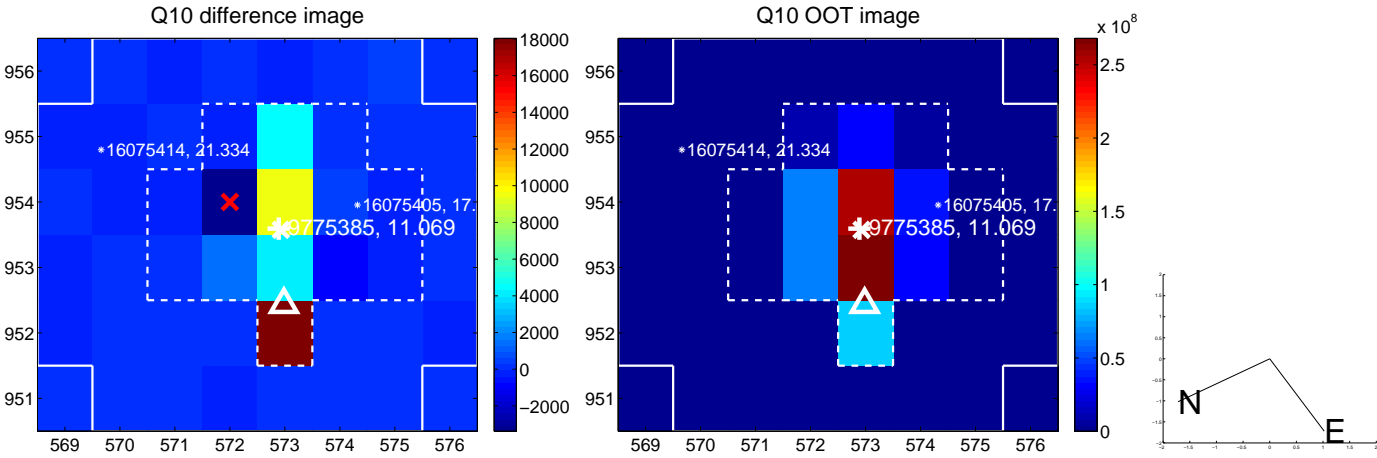
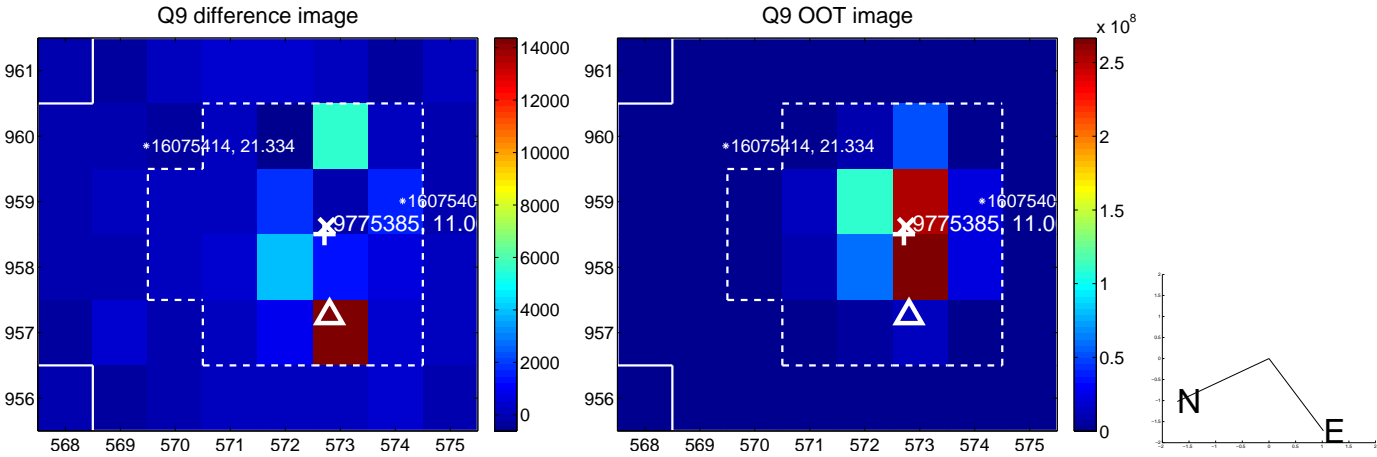
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



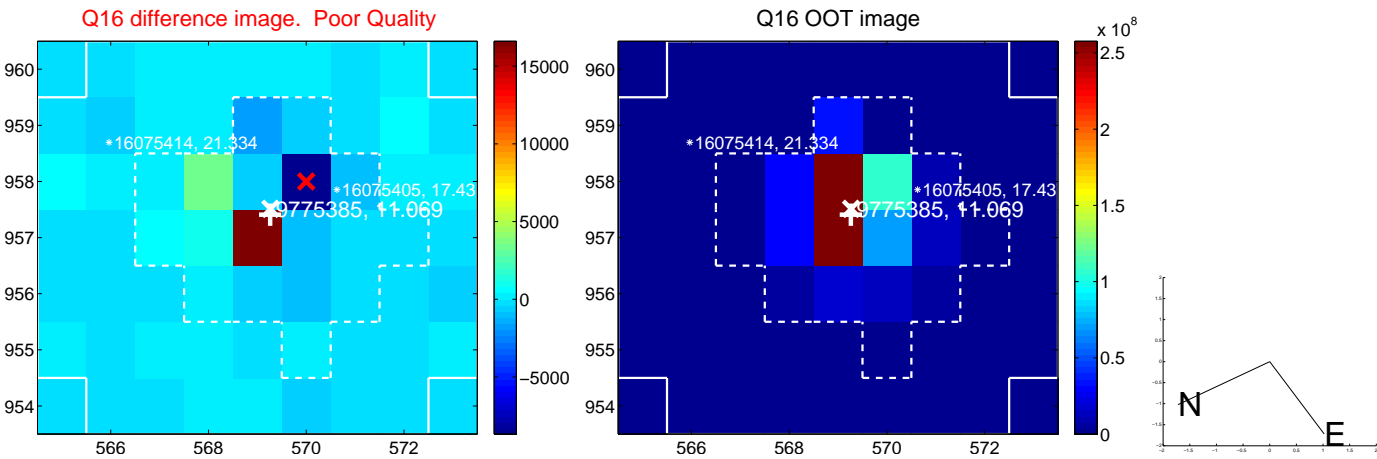
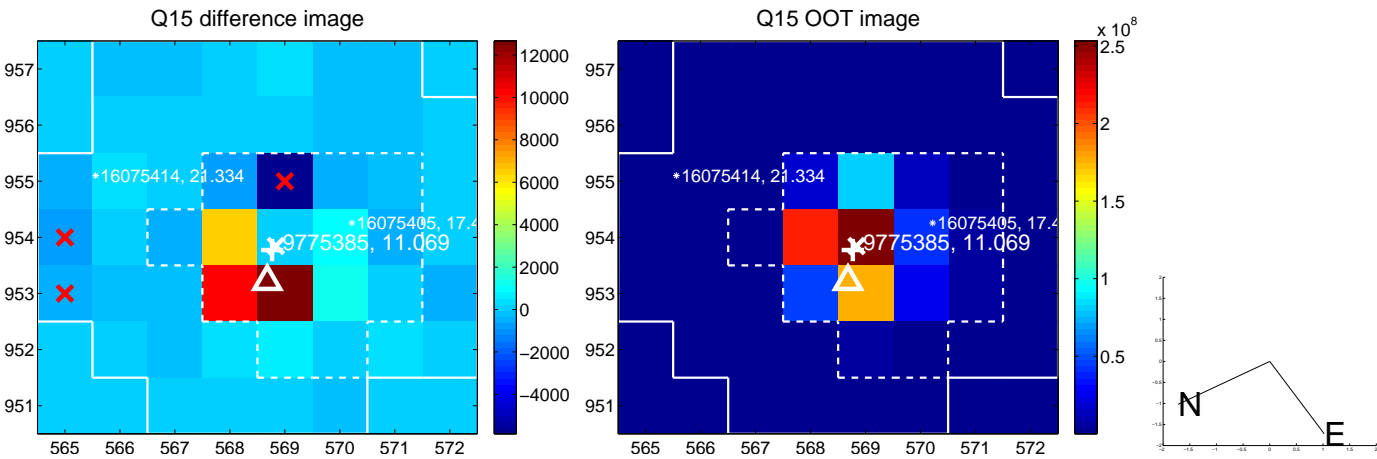
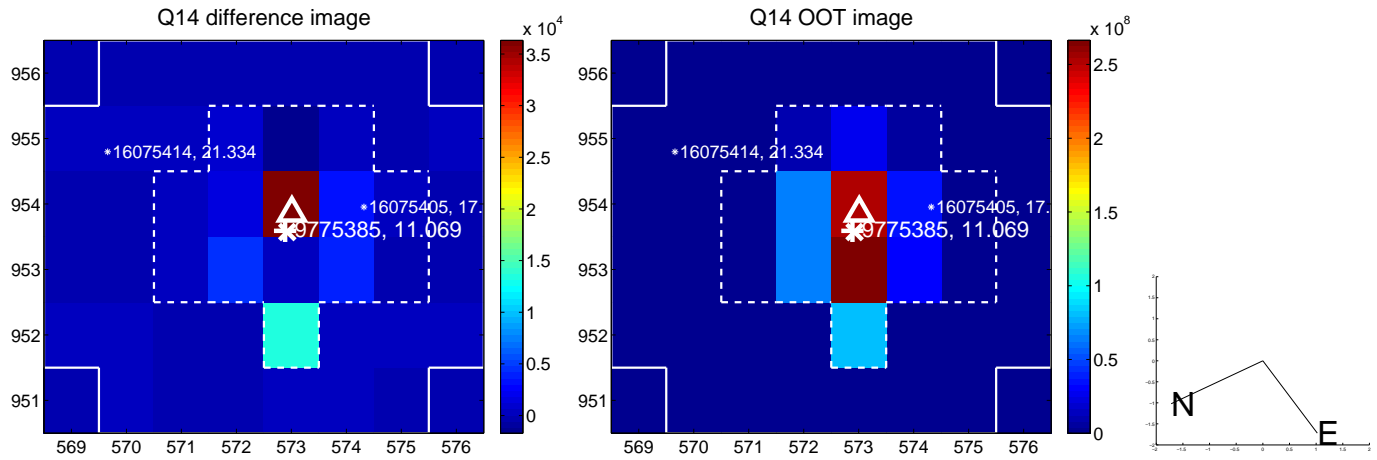
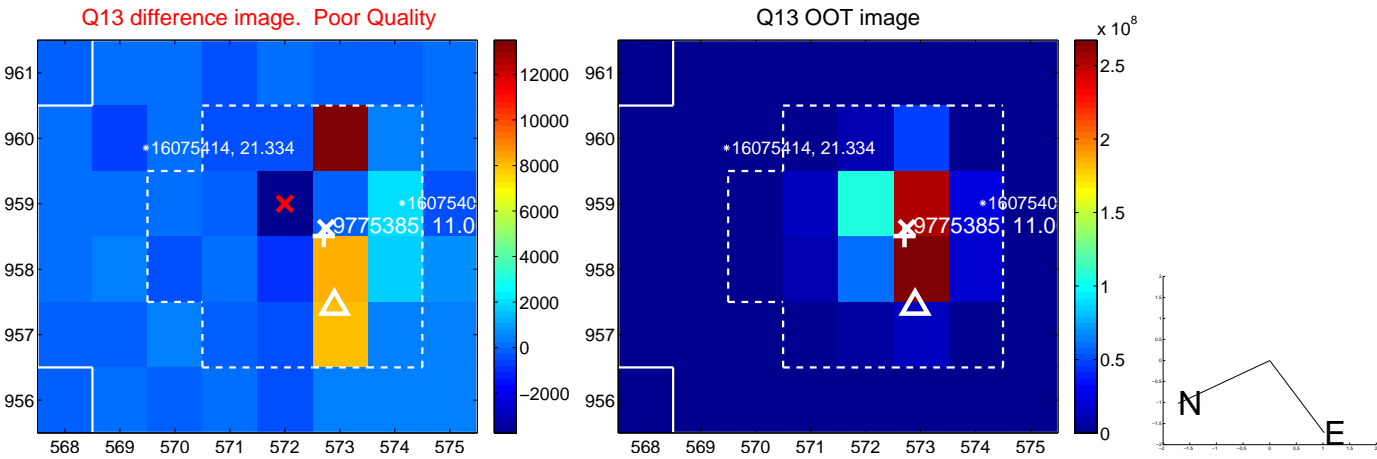
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



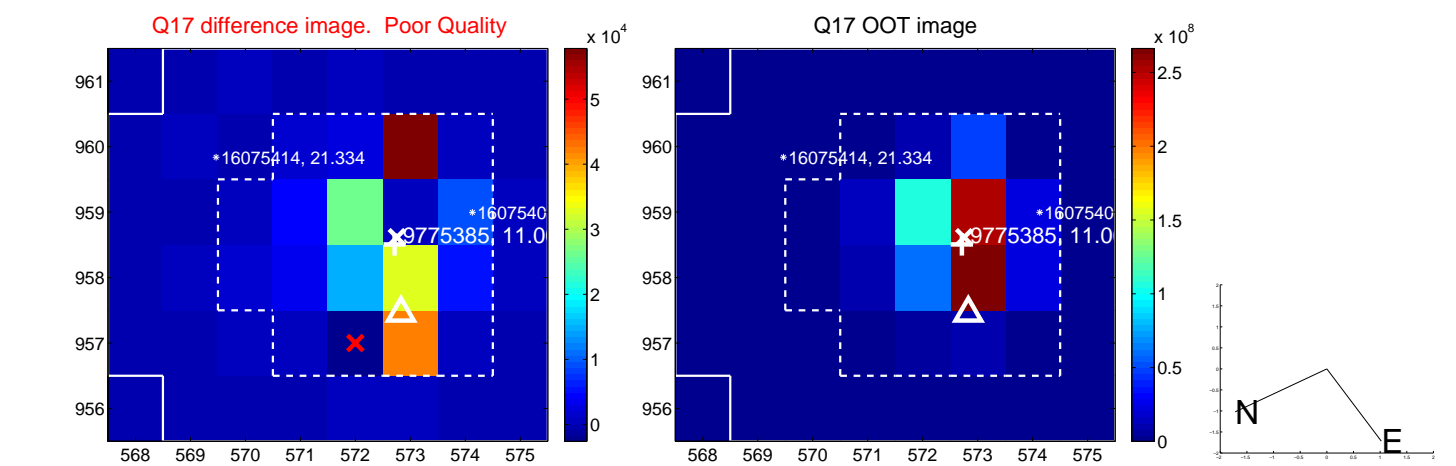
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



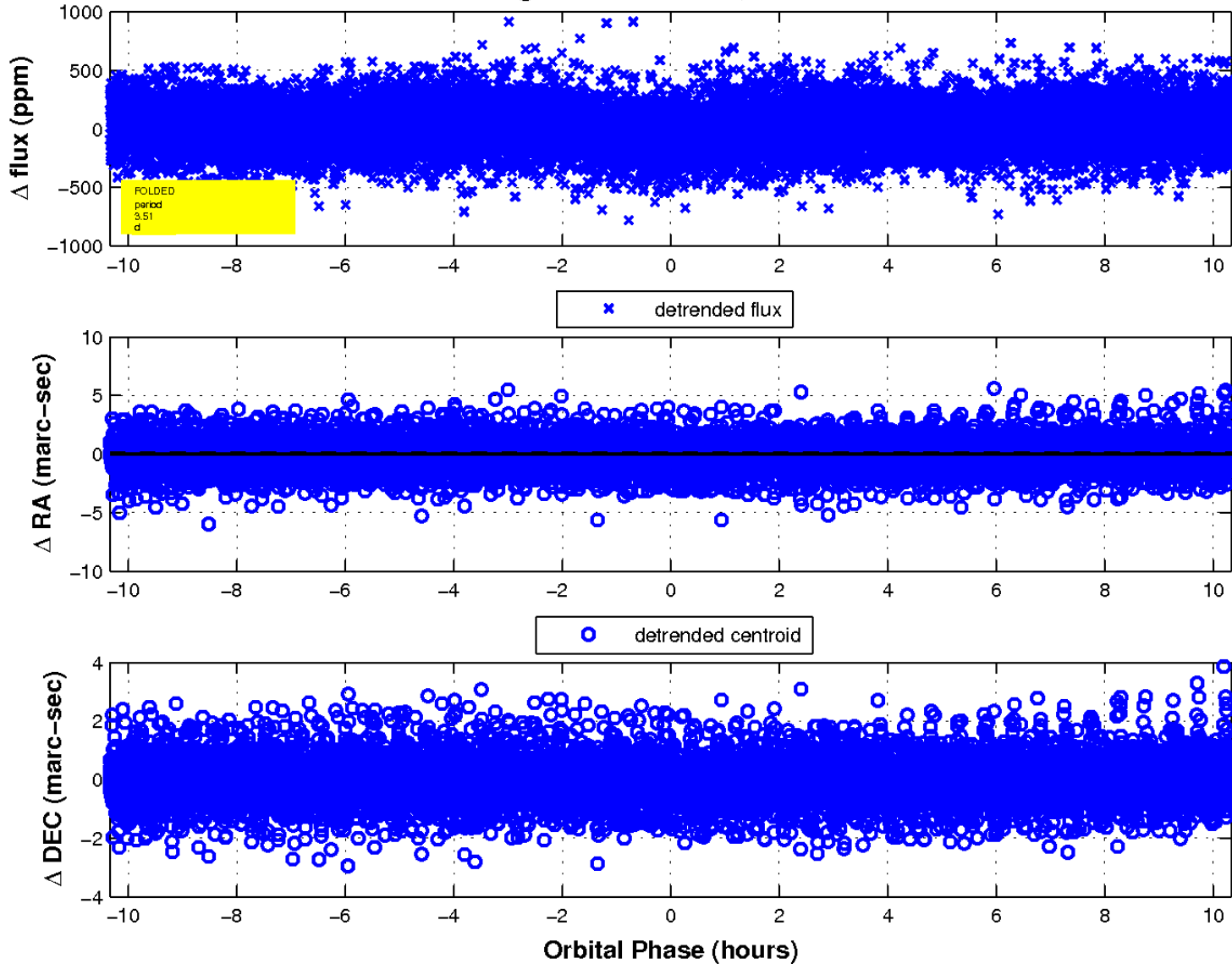
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

