

KIC 012068975

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})
012068975-01	OBS	0623.01	10.349740	132.663374	115.8	4.498	33.1	36.2	1.11	6003	1.42	177.45
012068975-02	OBS	0623.03	5.599307	132.281260	84.8	3.871	32.7	35.6	1.11	6003	1.20	402.54
012068975-03	OBS	0623.02	15.677490	132.441856	109.0	5.466	26.4	28.2	1.11	6003	1.34	102.00
012068975-04	OBS	0623.04	25.210037	154.407078	56.7	6.856	9.9	11.3	1.11	6003	0.99	54.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012068975-01	OBS	PC	0.28	0	0	0	0	CENT_KIC_POS
012068975-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
012068975-03	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
012068975-04	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

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.

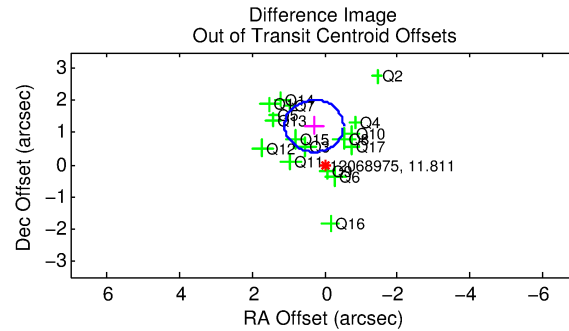
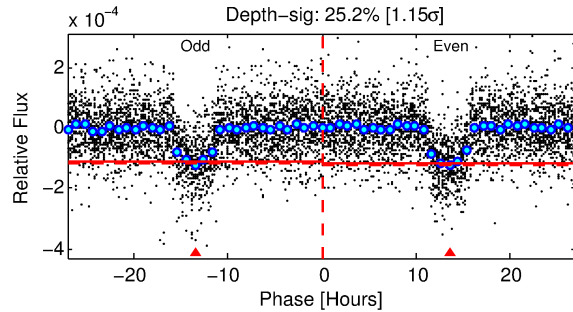
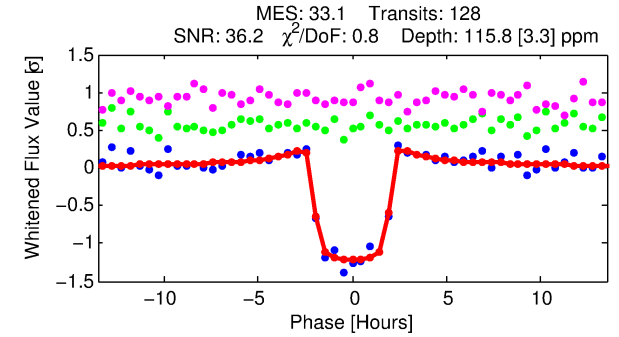
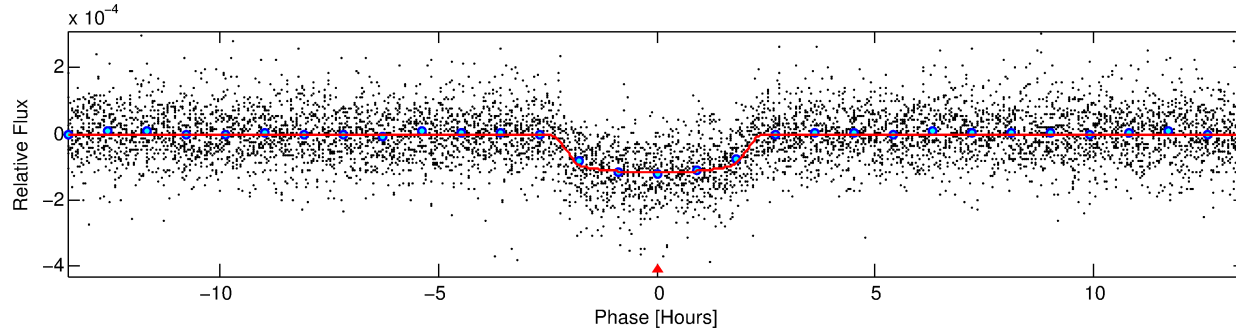
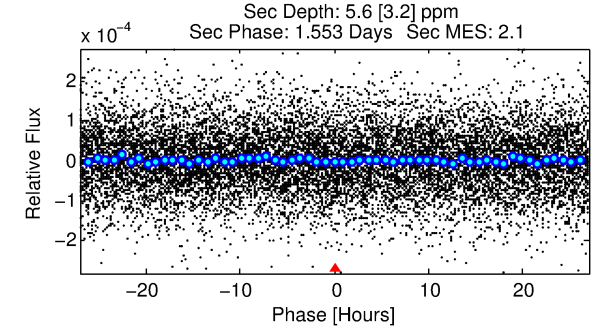
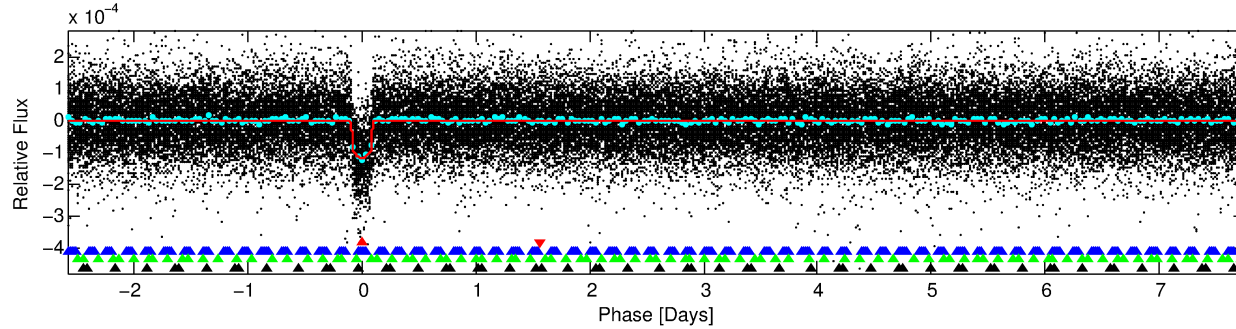
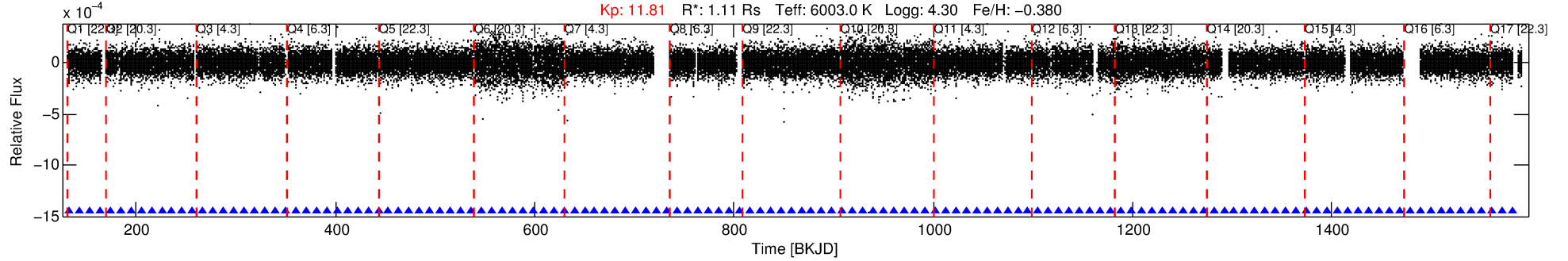
Ephemeris Match Information For 012068975-01

No Significant Match Found

DV One-Page Summary

KIC: 12068975 Candidate: 1 of 4 Period: 10.350 d
KOI: K00623.01 Name: Kepler-197c Corr: 0.976

Kp: 11.81 R*: 1.11 Rs Teff: 6003.0 K Logg: 4.30 Fe/H: -0.380



DV Fit Results:

Period = 10.34974 [0.00003] d
Epoch = 132.6634 [0.0019] BKJD
Rp/R* = 0.0117 [0.0010]
a/R* = 7.83 [3.58]
b = 0.91 [0.09]
Seff = 177.45 [14.33]
Teq = 931 [19] K
Rp = 1.42 [0.13] Re
a = 0.0898 [0.0025] AU
Ag = 12.44 [7.48] [1.53σ]
Teffp = 2703 [408] K [4.33σ]

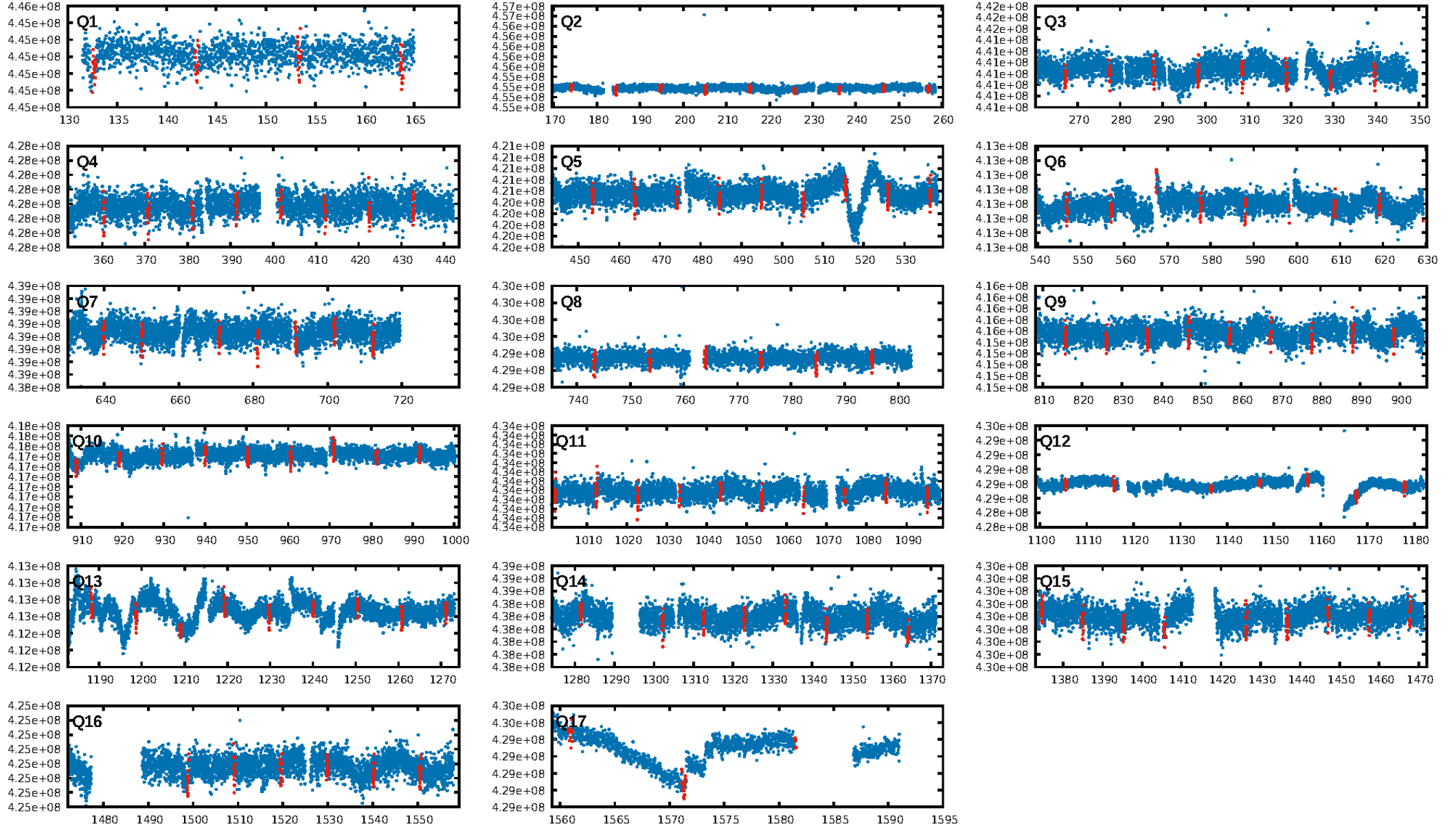
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.21σ]
LongPeriod-sig: 100.0% [18.06σ]
ModelChiSquare2-sig: 92.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.49e-210
RollingBand-fgt: 1.00 [121/121]
GhostDiagnostic-chr: 7.35
Centroid-sig: 0.0%
Centroid-so: 0.871 arcsec [2.49σ]
OotOffset-rm: 1.240 arcsec [4.60σ]
KicOffset-rm: 1.696 arcsec [6.50σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.94 [16/17]

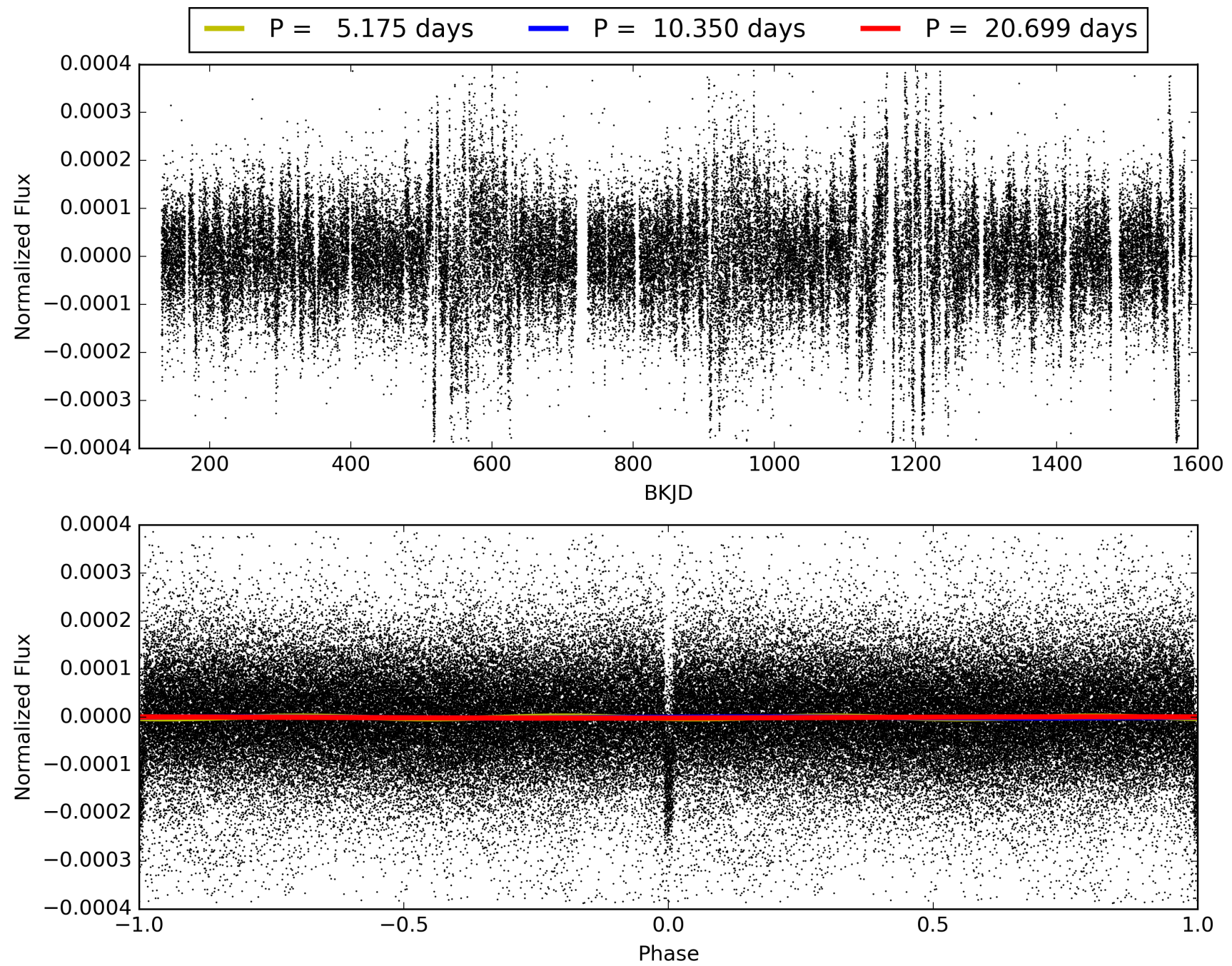
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:48:25 Z

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

TCE 012068975-01, PDC Light Curves

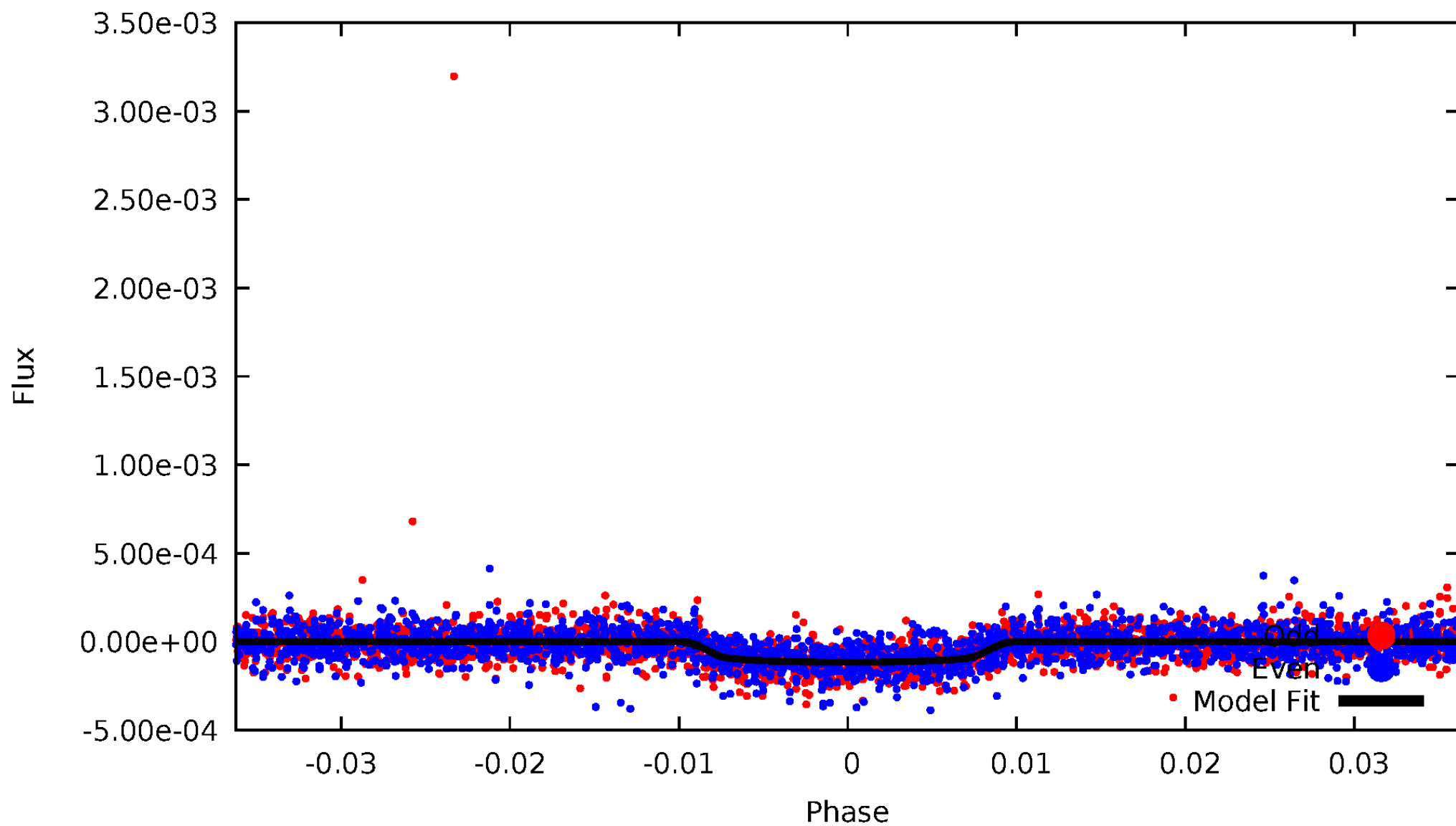


TCE 012068975-01



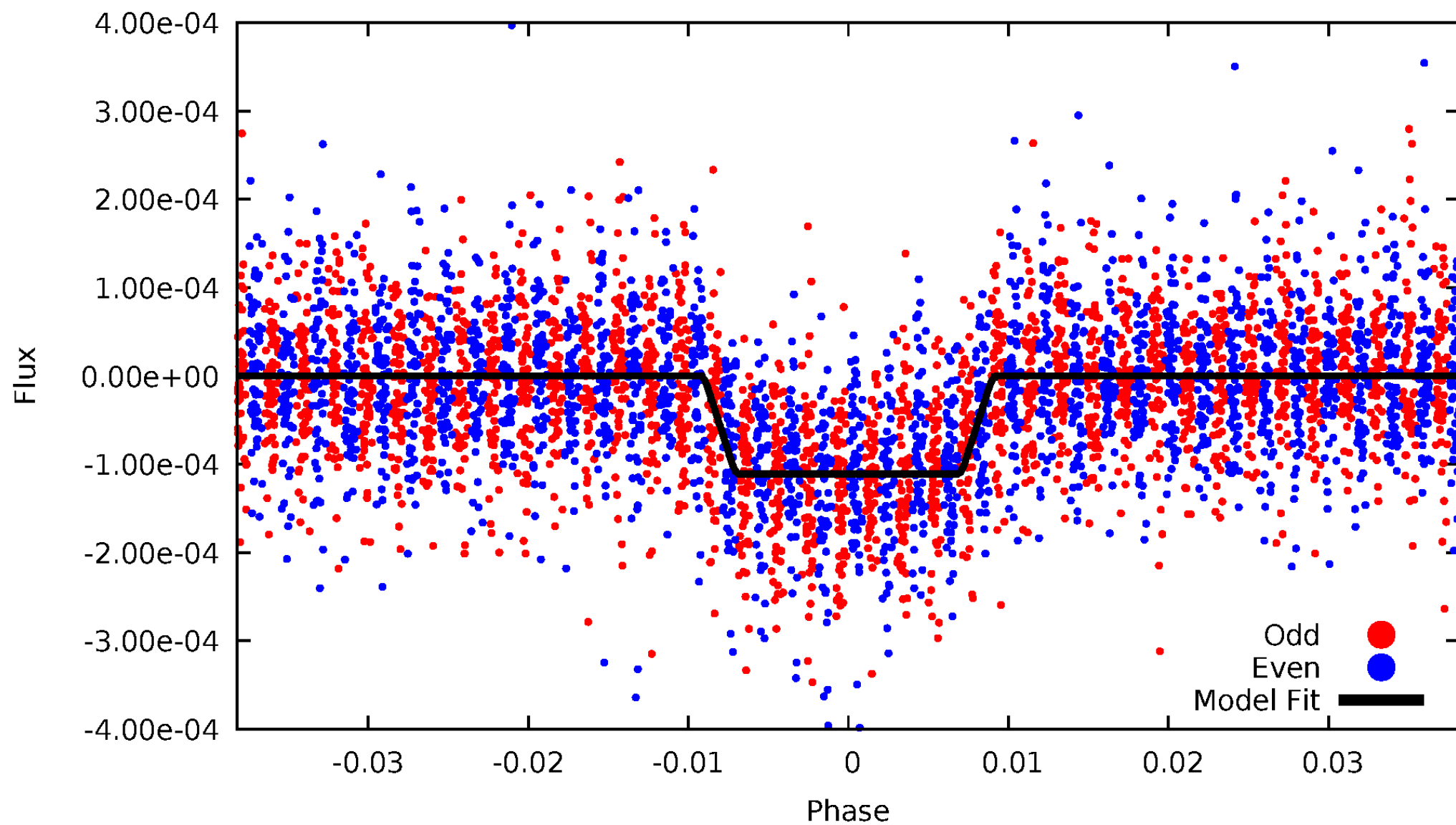
DV Odd/Even

TCE 012068975-01



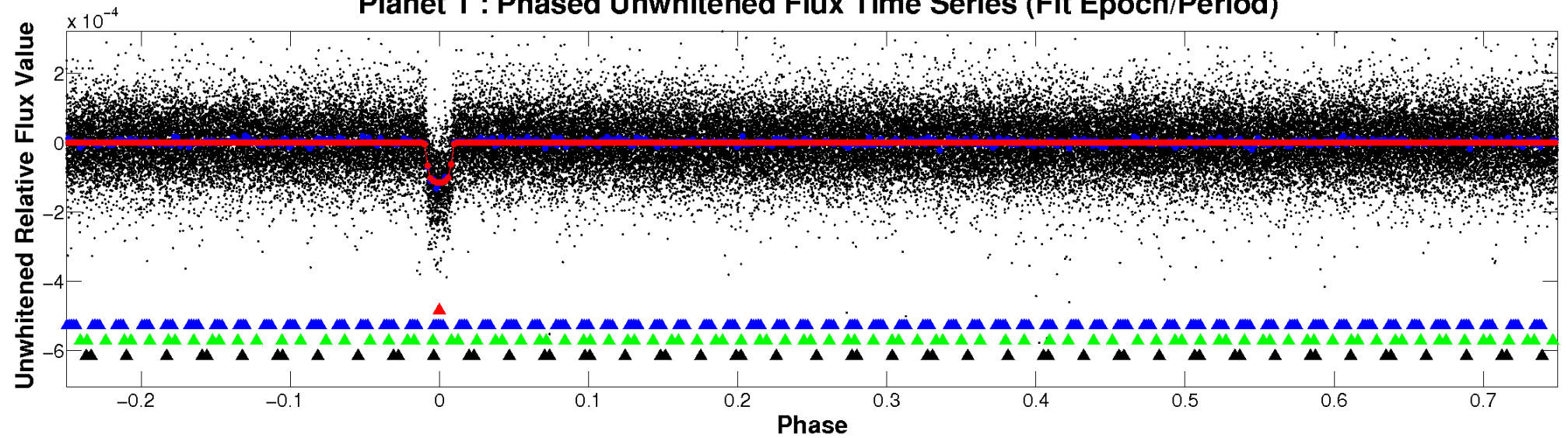
ALT Odd/Even

TCE 012068975-01

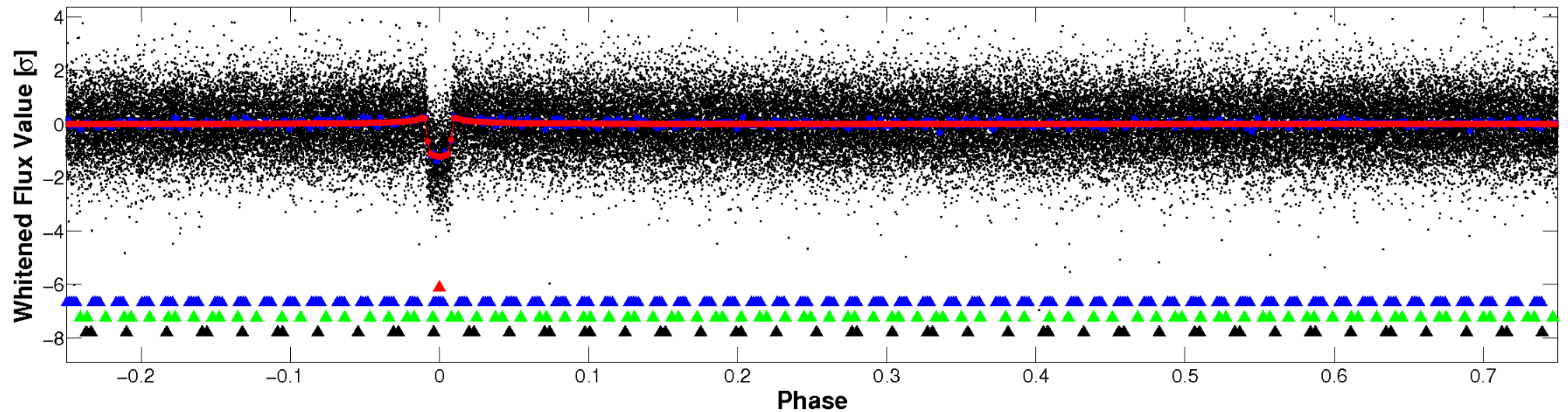


Non-Whitened Vs. Whitened Light Curve

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

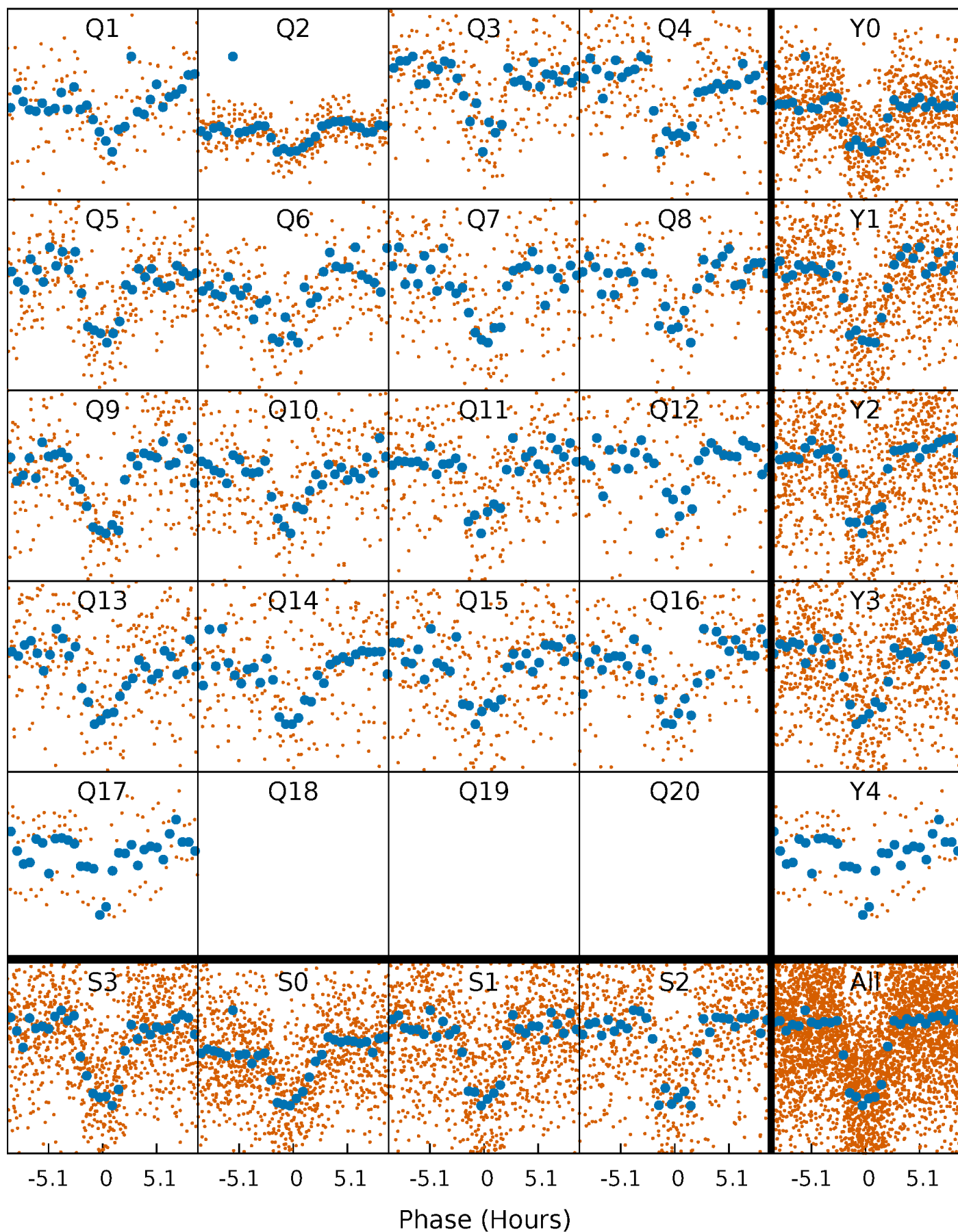


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



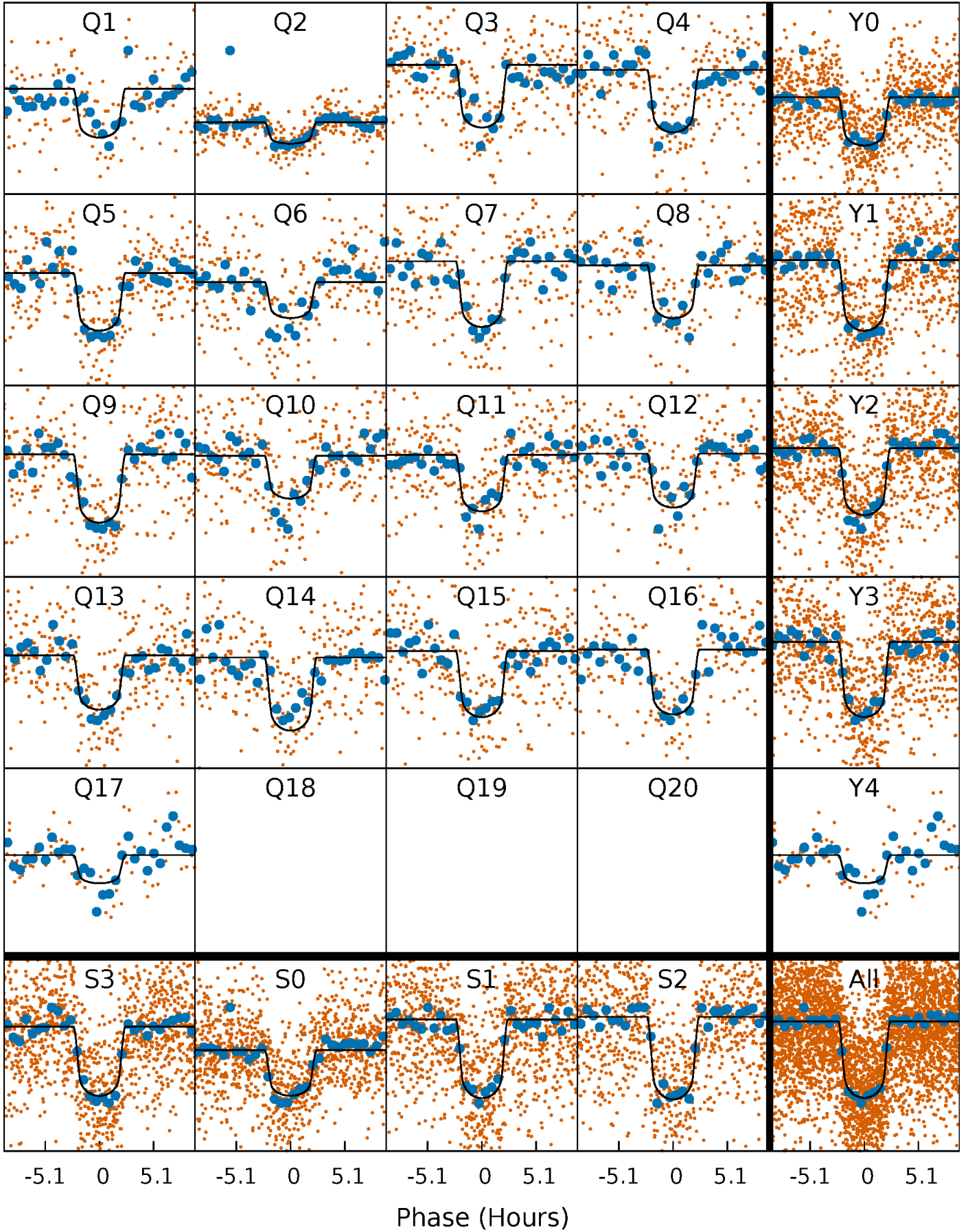
PDC Quarter-Phased Transit Curves

TCE 012068975-01 P= 10.349740 Days $T_0=132.663374$ (BKJD)



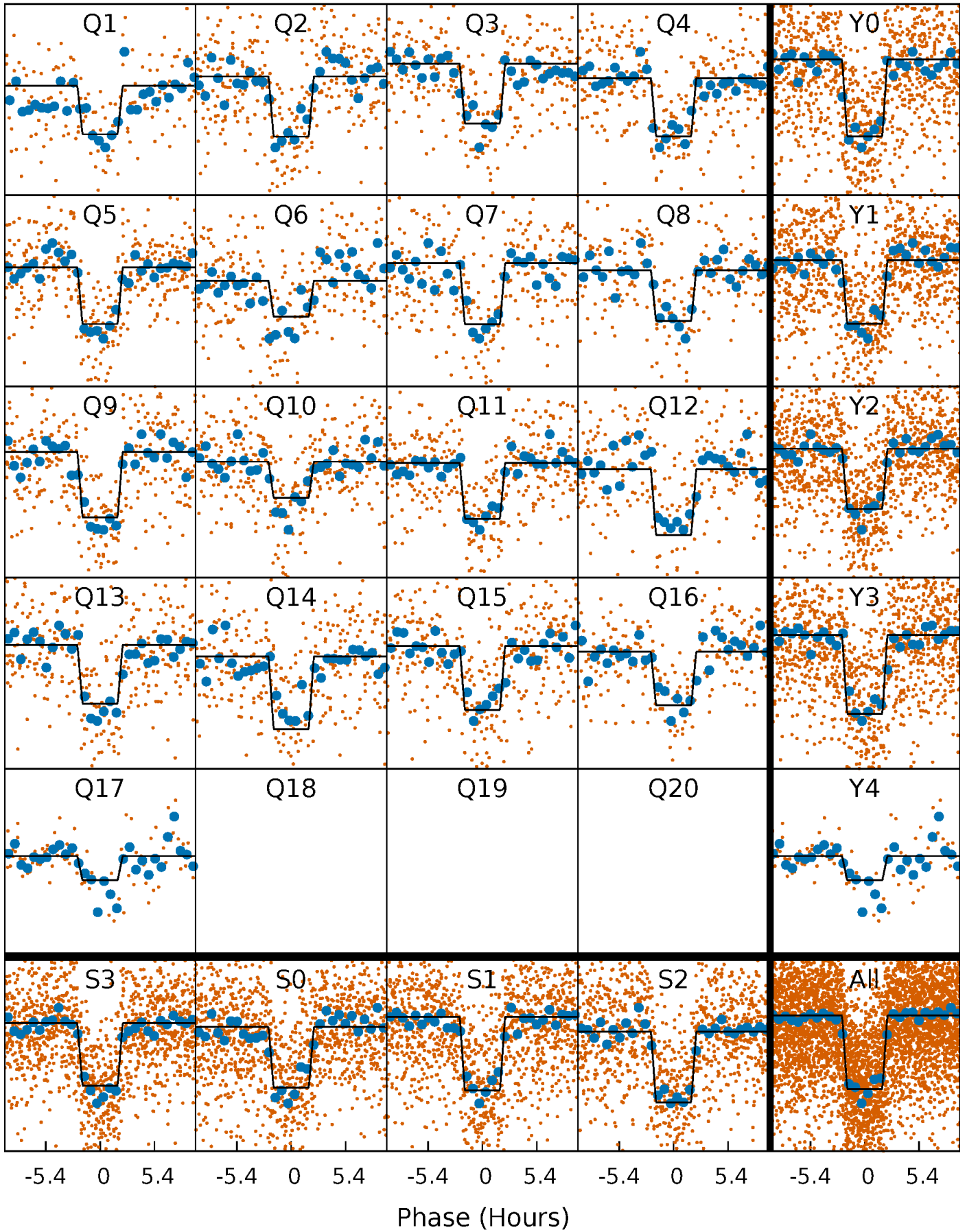
DV Quarter-Phased Transit Curves

TCE 012068975-01 P= 10.349740 Days $T_0=132.663374$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

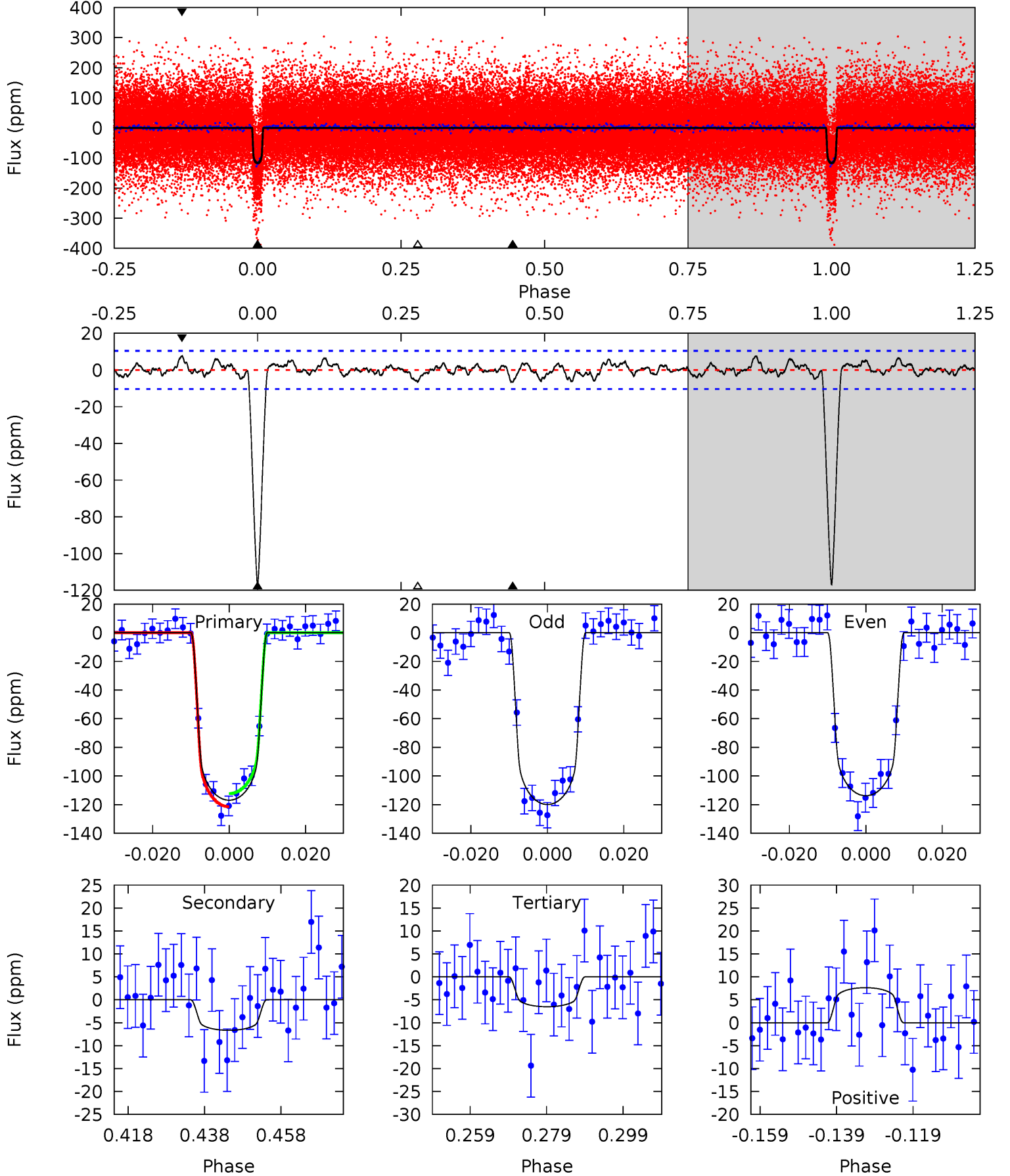
TCE 012068975-01 P= 10.349568 Days $T_0=132.675077$ (BKJD)



DV Model-Shift Uniqueness Test

012068975-01, $P = 10.349740$ Days, $E = 122.313634$ Days

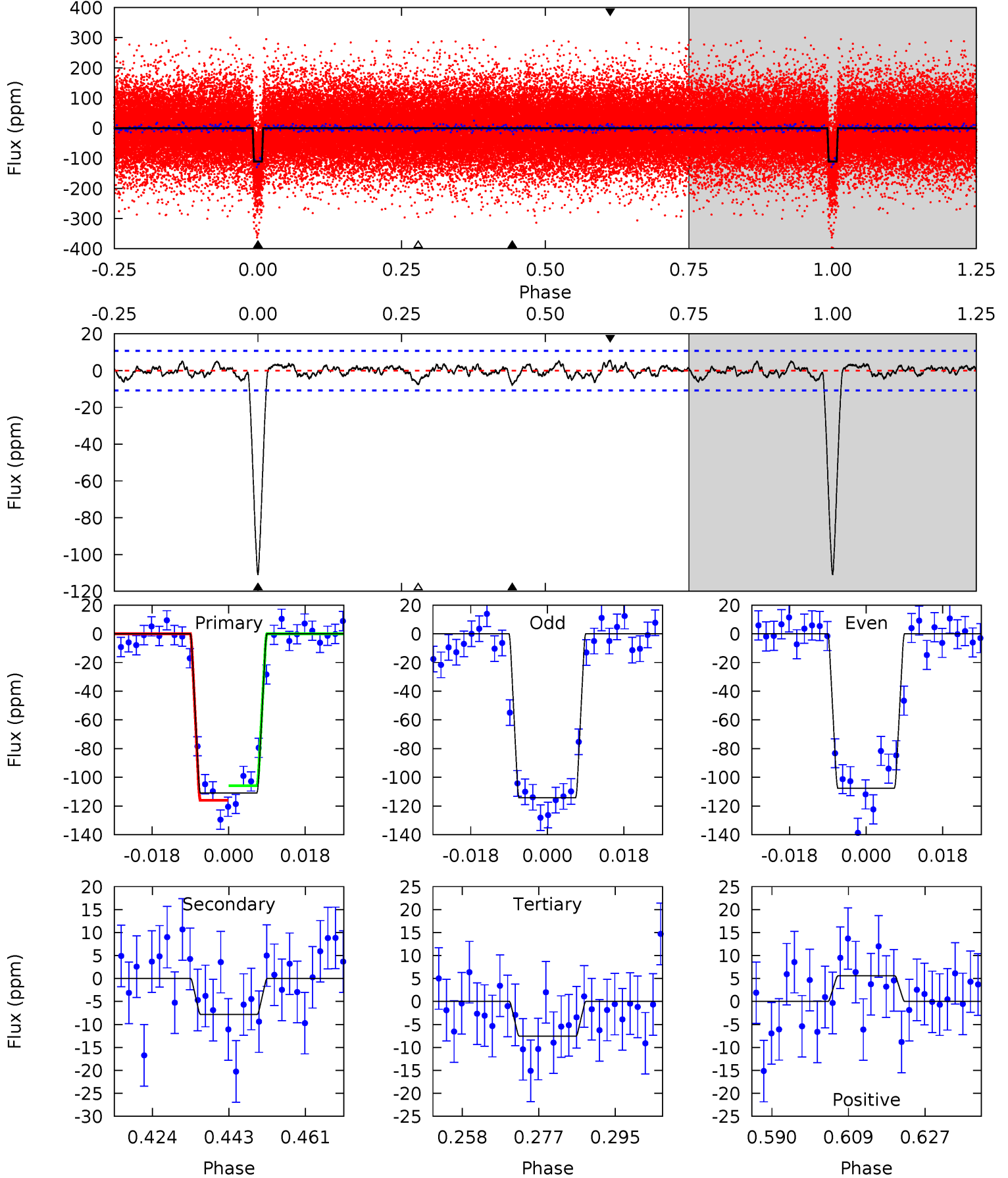
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.1	3.14	3.07	3.60	4.89	2.33	1.19	52.1	51.5	0.07	-0.46	1.45	1.04	0.06	2.15



Alt Model-Shift Uniqueness Test

012068975-01, P = 10.349568 Days, E = 122.325509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.5	3.55	3.44	2.54	4.91	2.36	1.06	47.0	47.9	0.12	1.01	1.53	1.07	0.05	2.32



Stellar Parameters For KIC 012068975

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6003^{+96}_{-108}	$4.303^{+0.018}_{-0.014}$	$-0.380^{+0.100}_{-0.100}$	$1.109^{+0.036}_{-0.040}$	$0.902^{+0.043}_{-0.049}$	$0.930^{+0.061}_{-0.047}$
	+2%/-2%	+0%/-0%	+26%/-26%	+3%/-4%	+5%/-5%	+7%/-5%
Source	SPE8	AST8	SPE8	DSEP		

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

Secondary Eclipse Parameters for KIC 012068975-01 / KOI 0623.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 2	$1.41^{+0.13}_{-0.12}$	1299^{+23}_{-24}	3335^{+208}_{-209}	15^{+6}_{-5}
Alt.	-8 ± 2	$1.27^{+0.11}_{-0.12}$	1299^{+24}_{-25}	3550^{+185}_{-211}	21^{+8}_{-6}

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

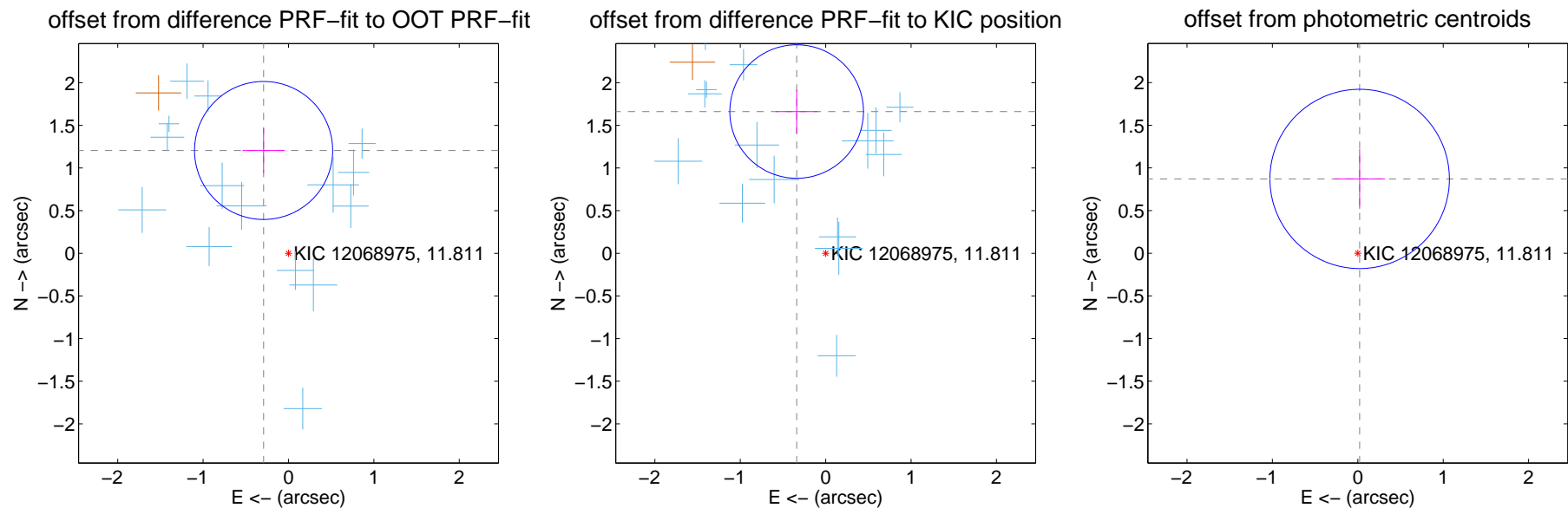
DV Centroid Data

Supplemental centroid analysis for 012068975-01. **Kepler magnitude: 11.81.** Transit SNR 36.19

There are 16 quarters with good PRF difference image offsets

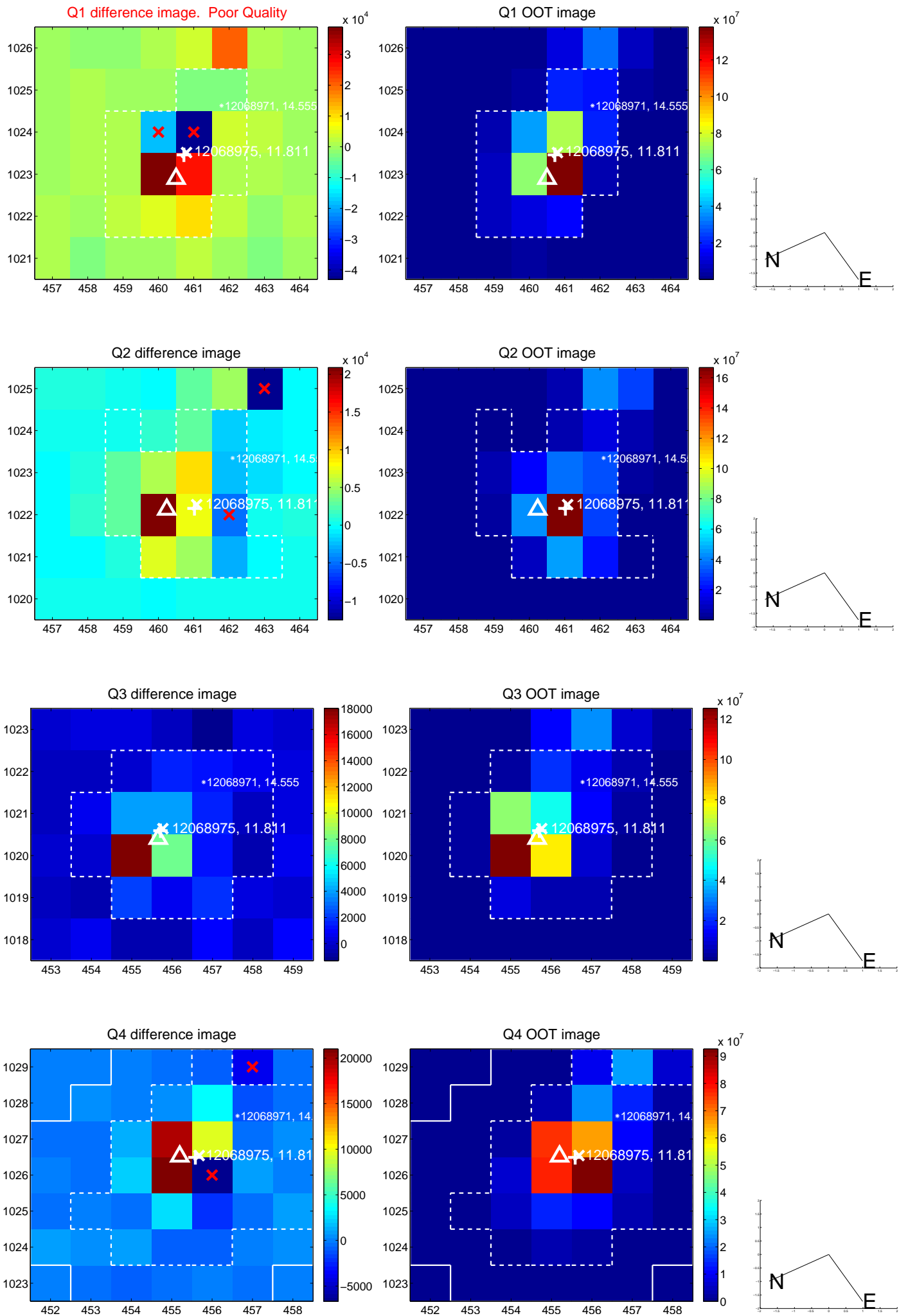
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.240 ± 0.270	4.60	0.292 ± 0.248	1.206 ± 0.263
PRF-fit source offset from KIC position	1.696 ± 0.261	6.50	0.340 ± 0.244	1.662 ± 0.256
photometric centroid source offset	0.87 ± 0.35	2.49	-0.02 ± 0.30	0.87 ± 0.35

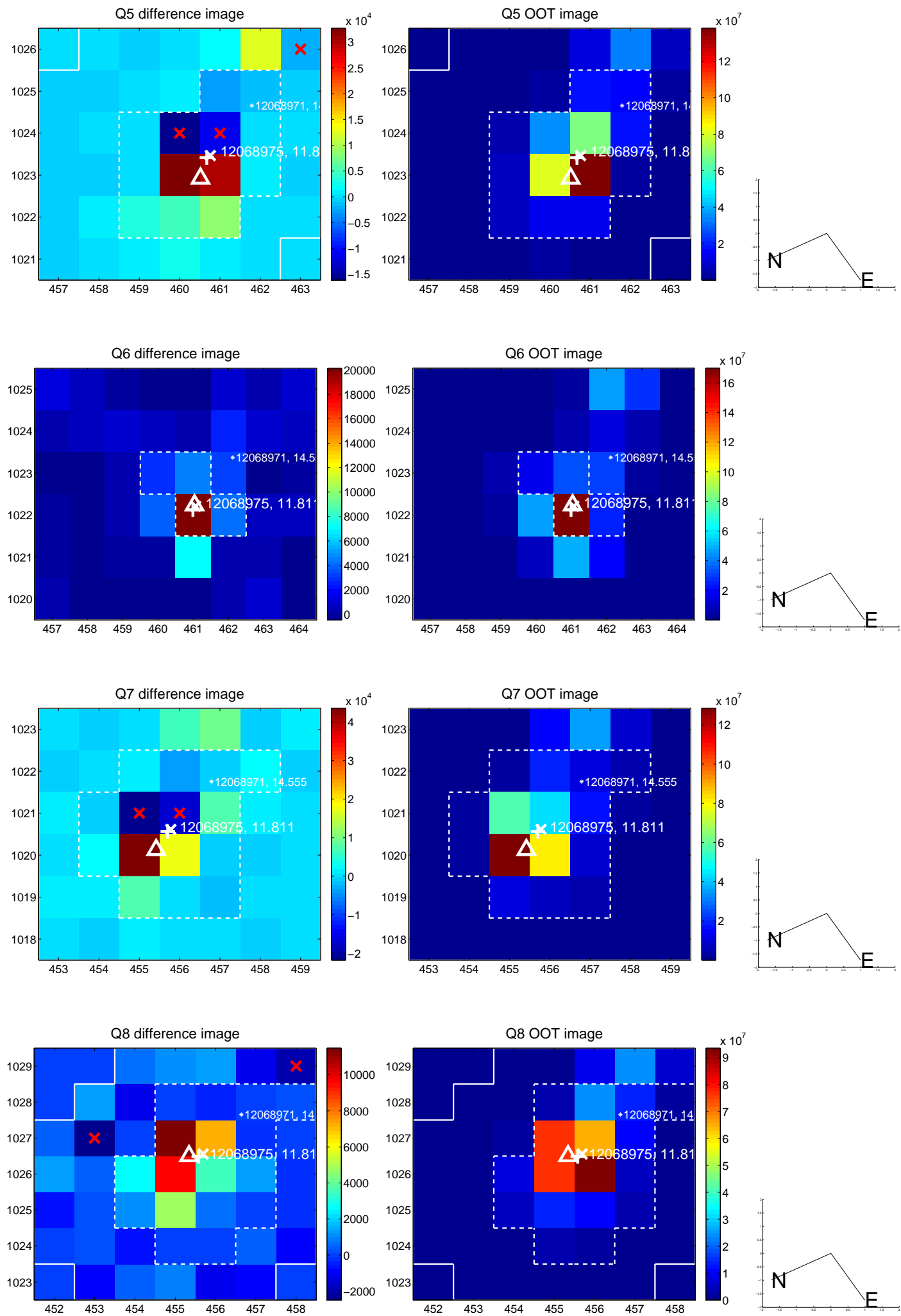


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

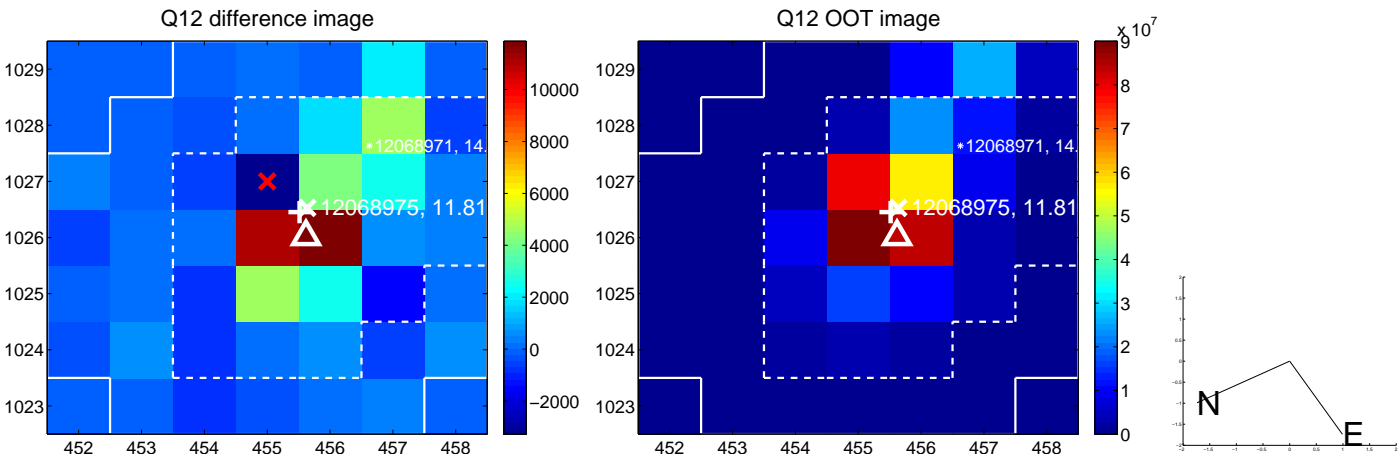
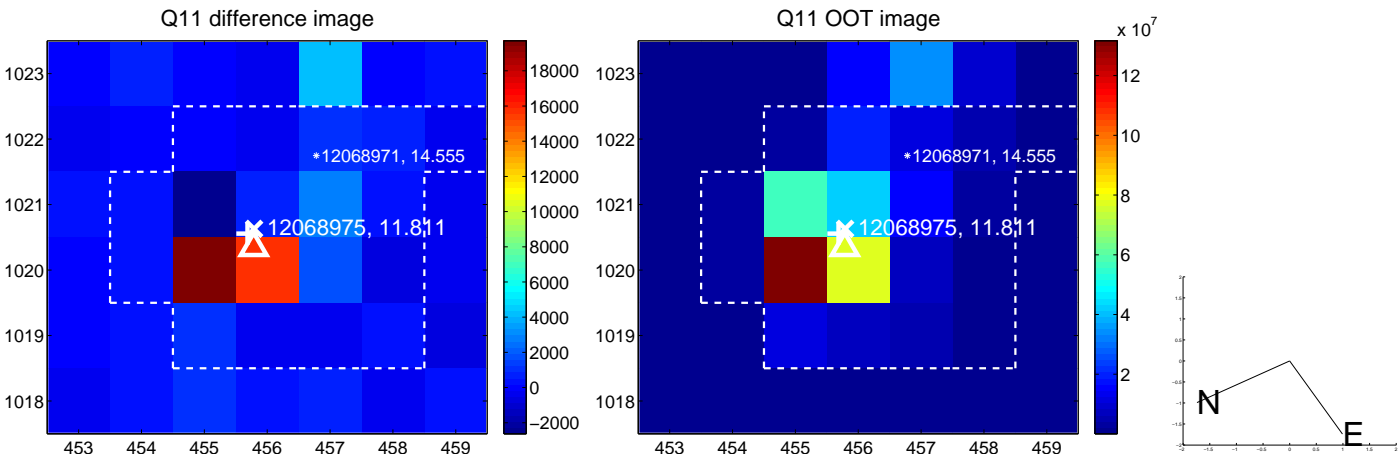
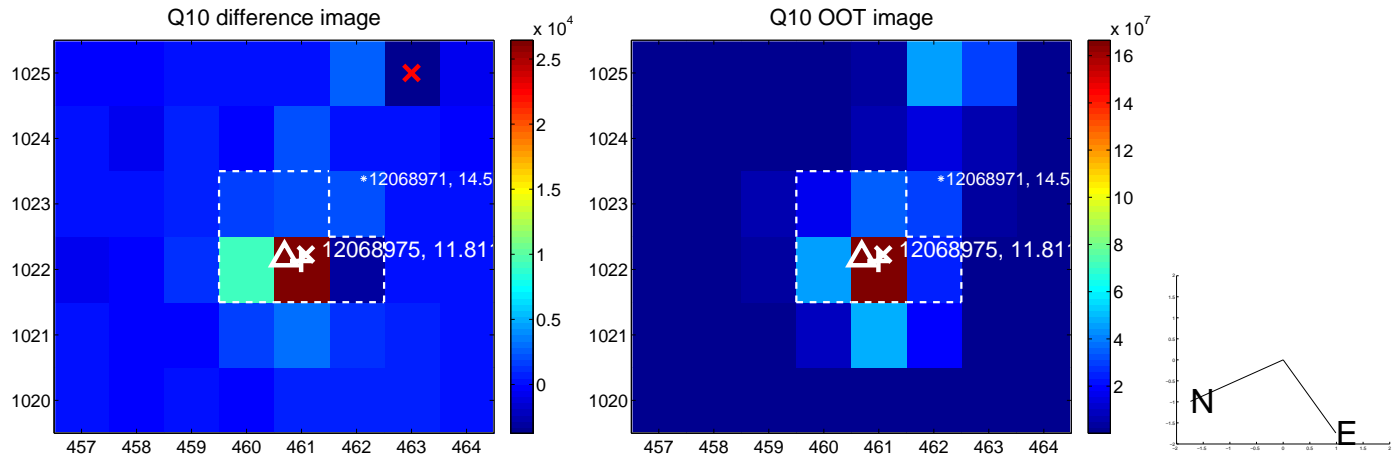
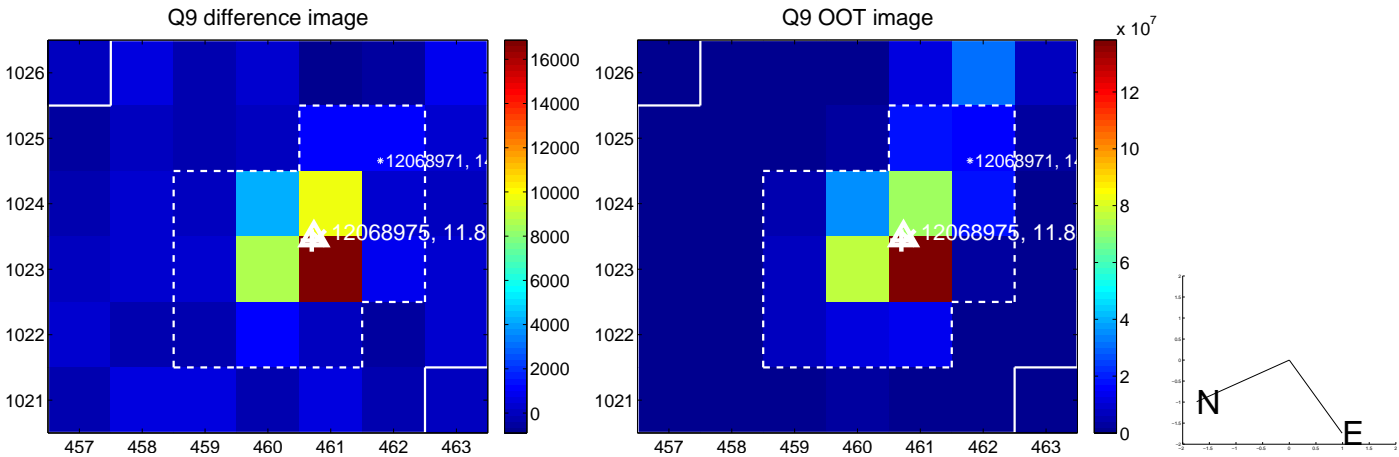
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



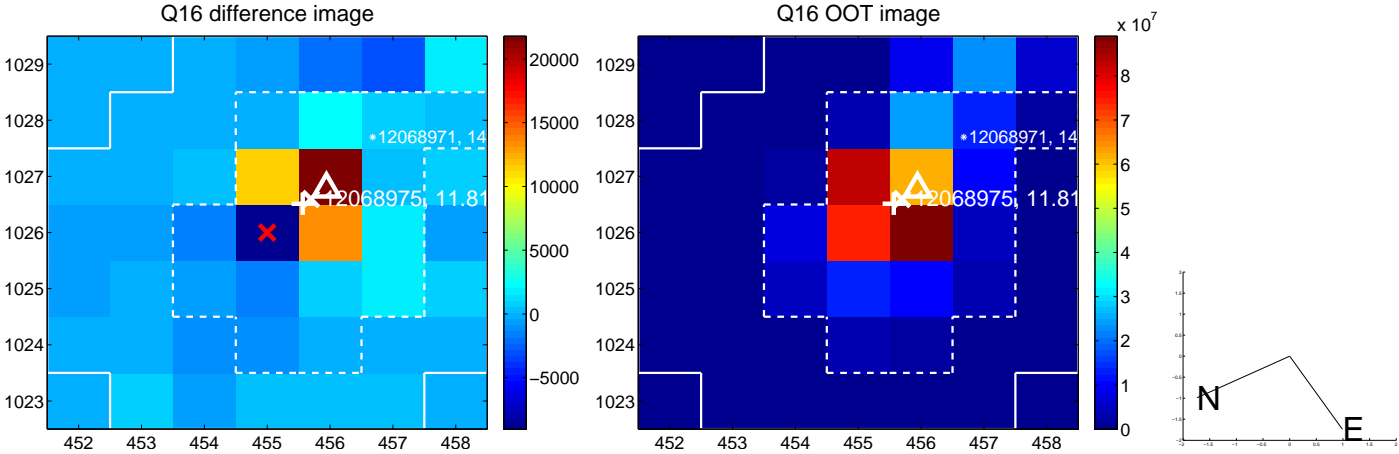
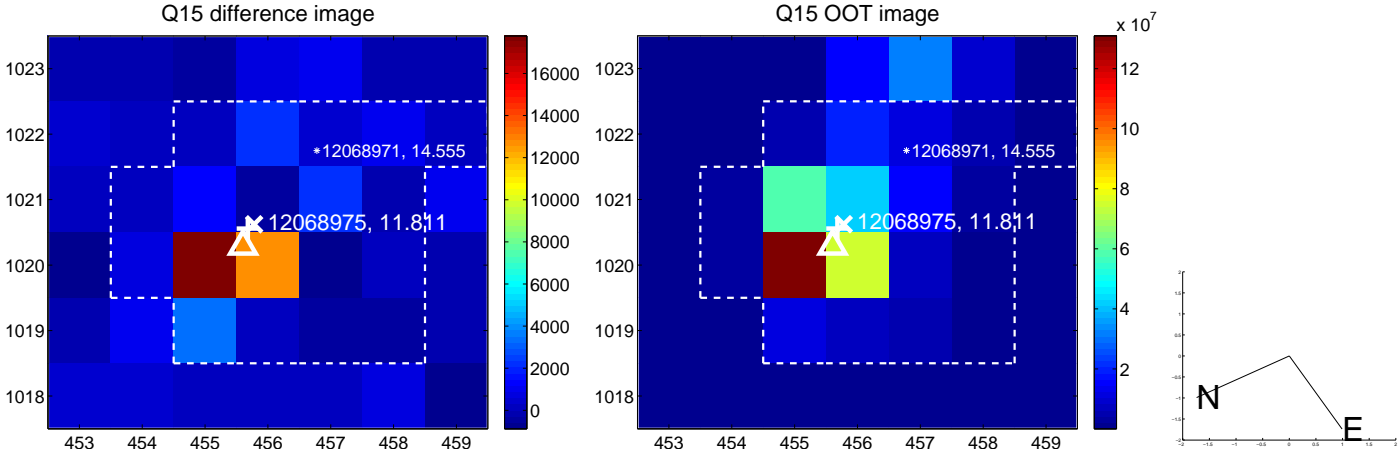
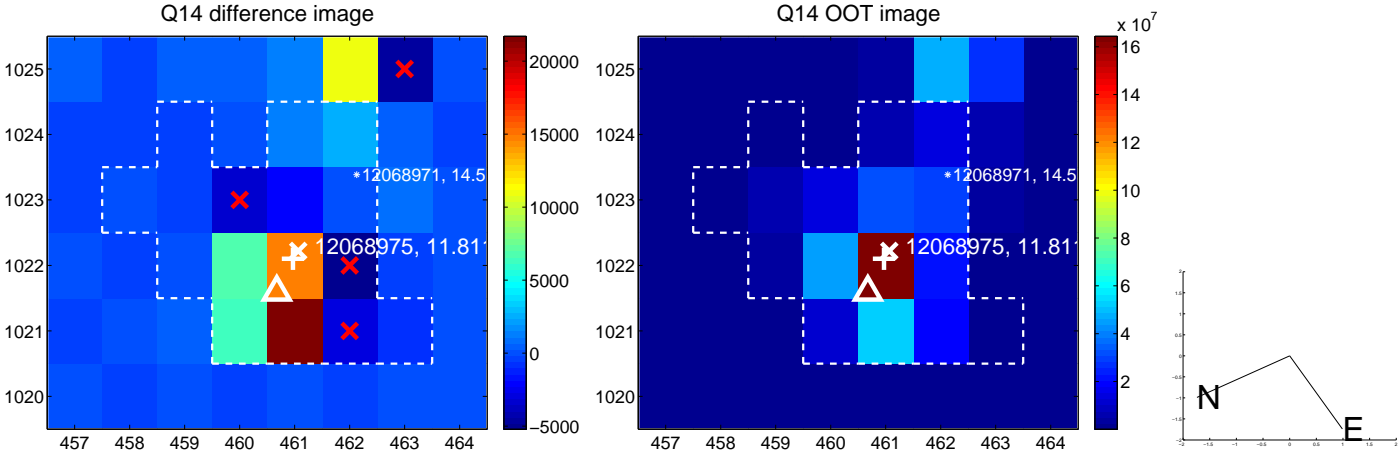
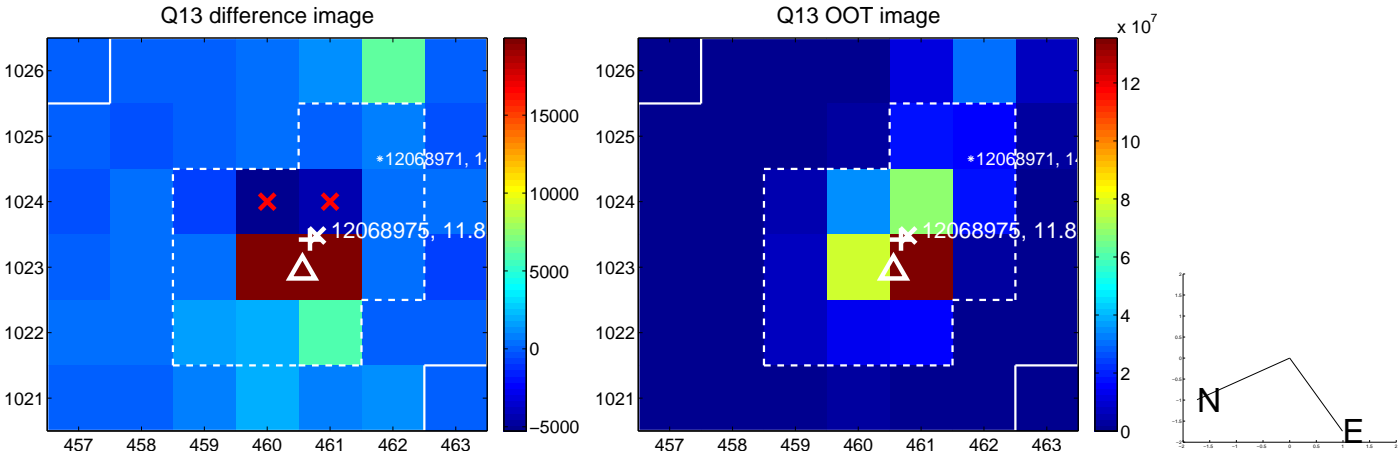
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



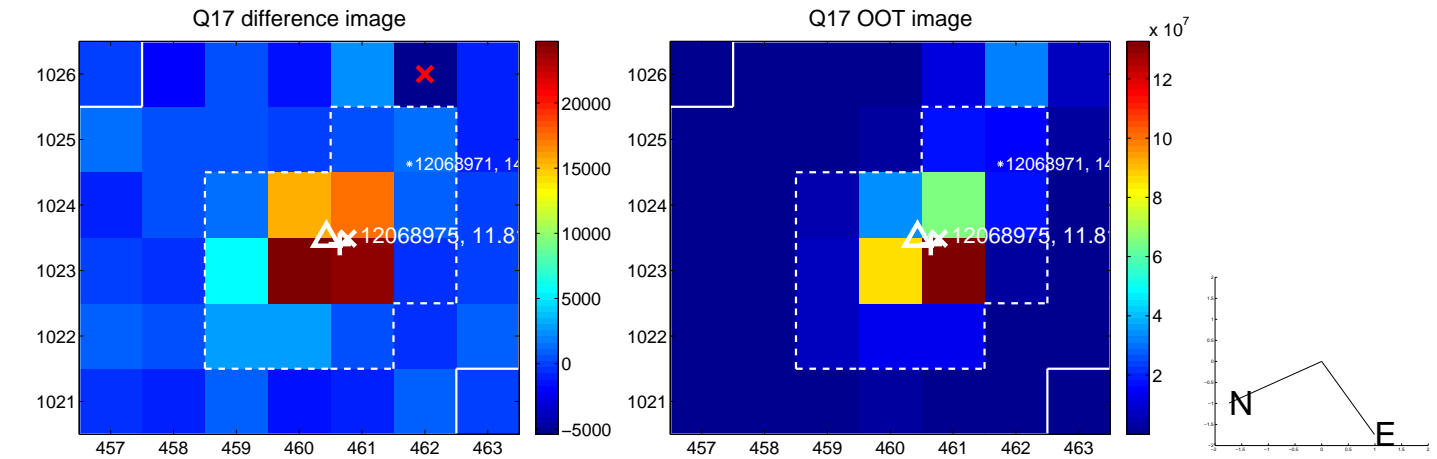
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



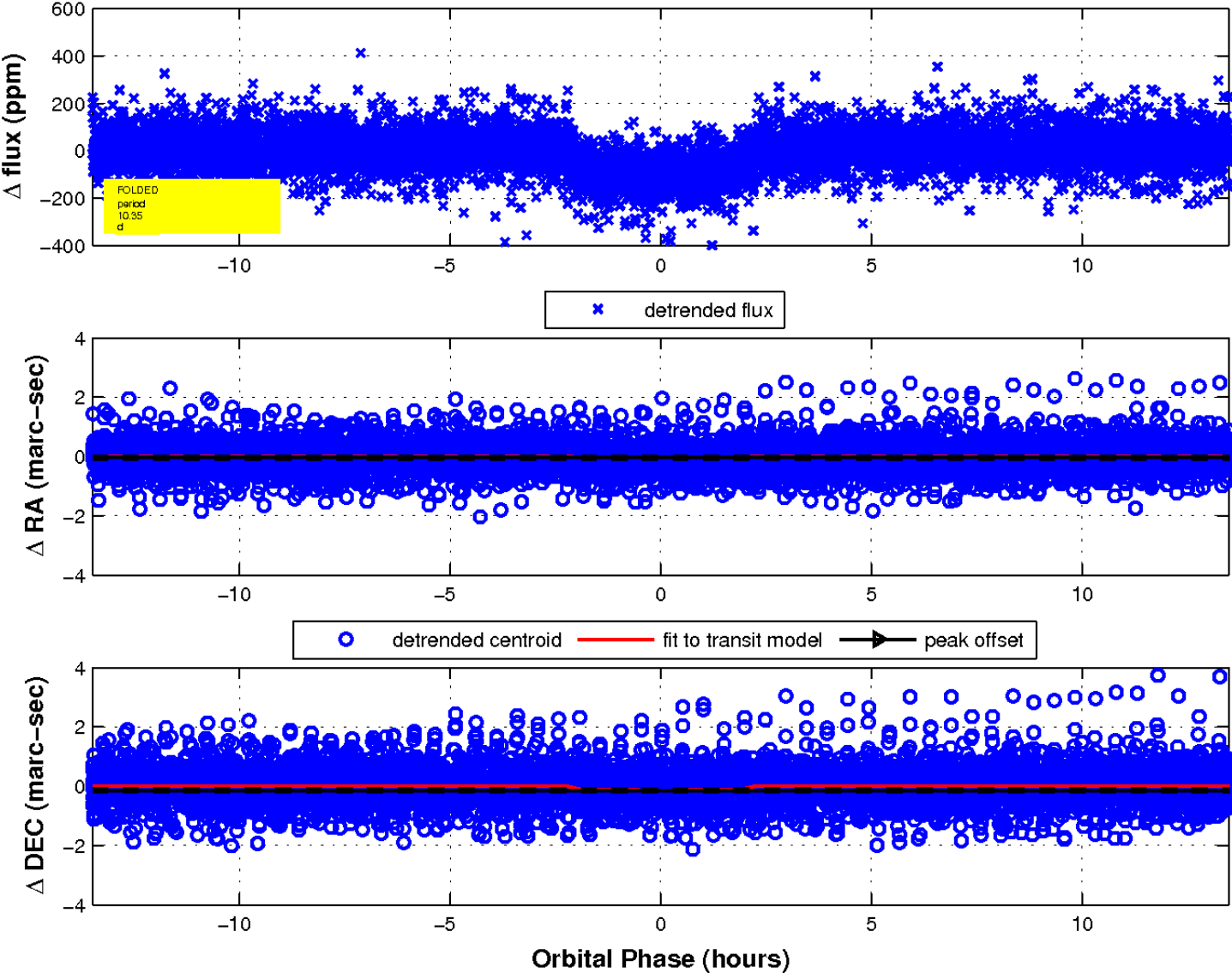
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

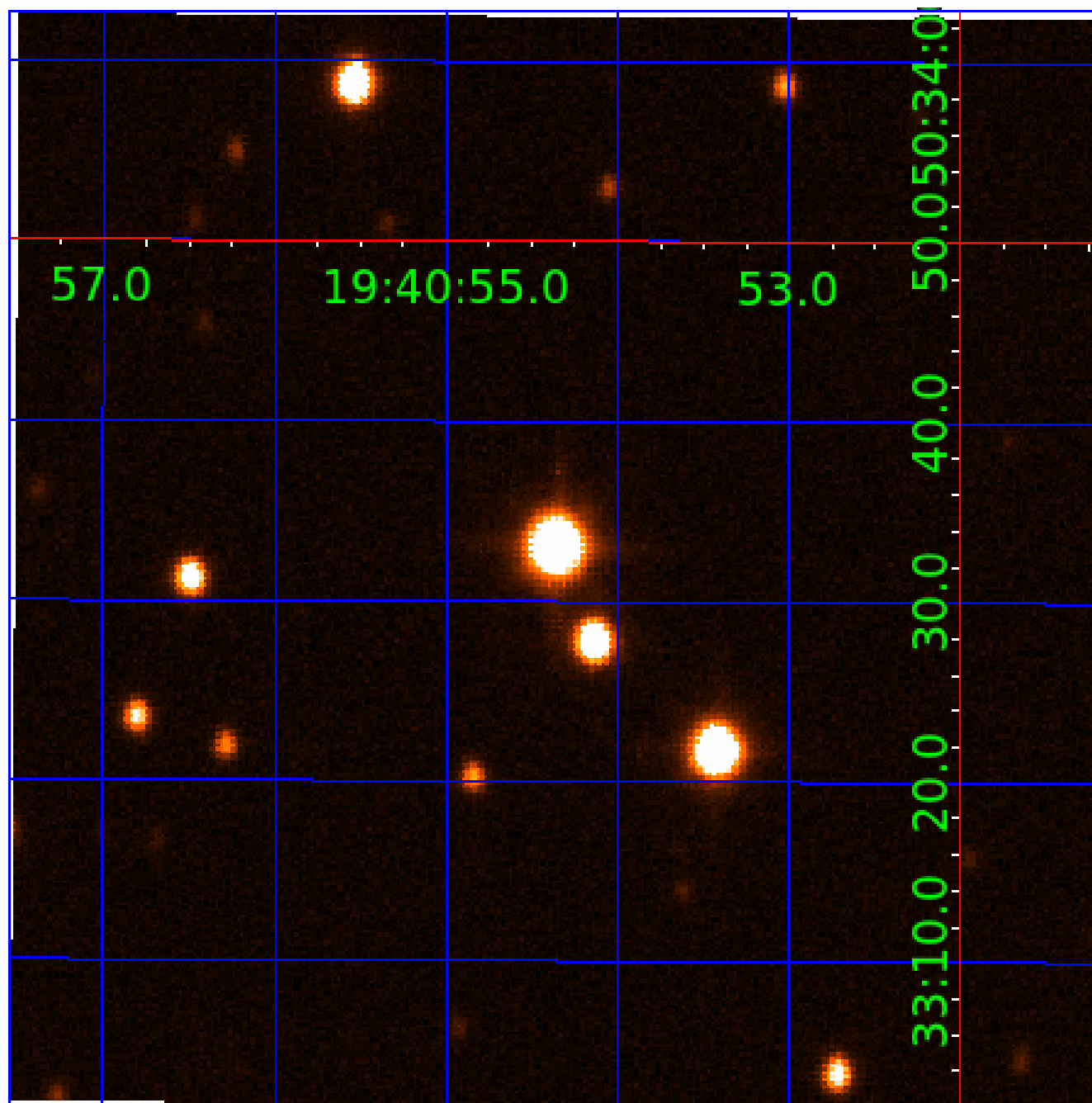


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 012068975

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})
012068975-01	OBS	0623.01	10.349740	132.663374	115.8	4.498	33.1	36.2	1.11	6003	1.42	177.45
012068975-02	OBS	0623.03	5.599307	132.281260	84.8	3.871	32.7	35.6	1.11	6003	1.20	402.54
012068975-03	OBS	0623.02	15.677490	132.441856	109.0	5.466	26.4	28.2	1.11	6003	1.34	102.00
012068975-04	OBS	0623.04	25.210037	154.407078	56.7	6.856	9.9	11.3	1.11	6003	0.99	54.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012068975-01	OBS	PC	0.28	0	0	0	0	CENT_KIC_POS
012068975-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
012068975-03	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
012068975-04	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

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

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

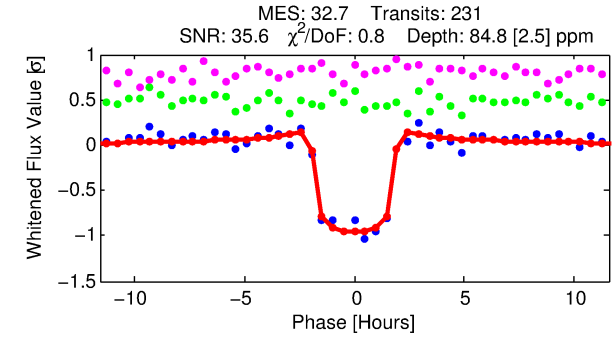
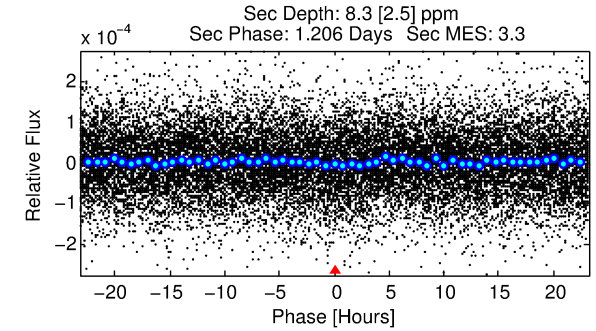
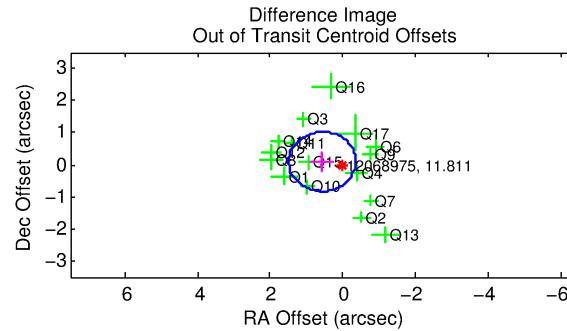
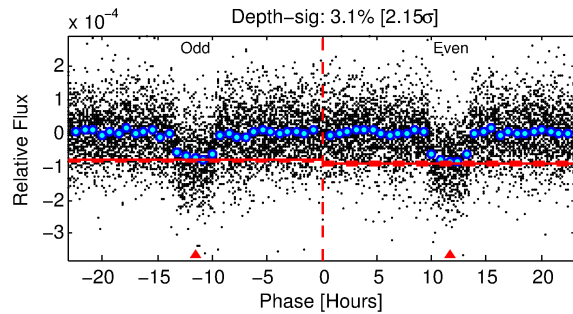
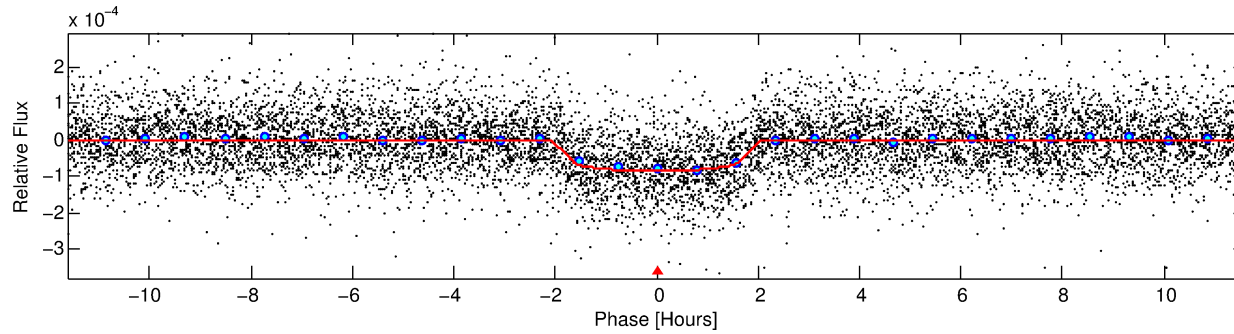
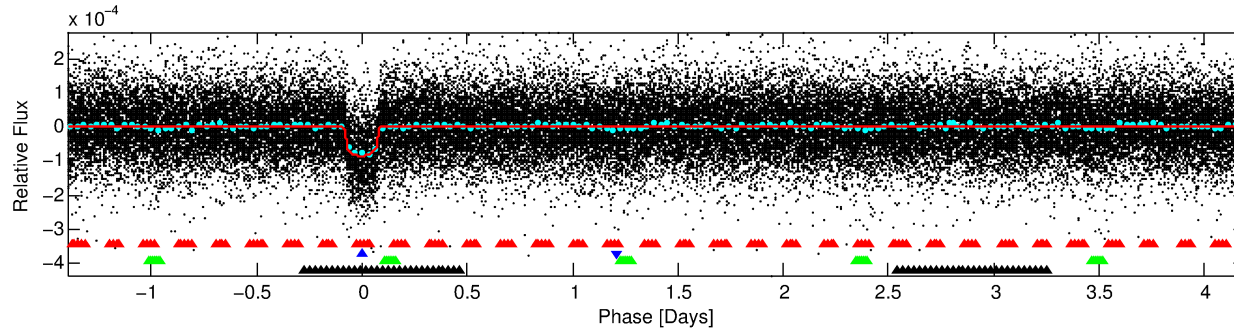
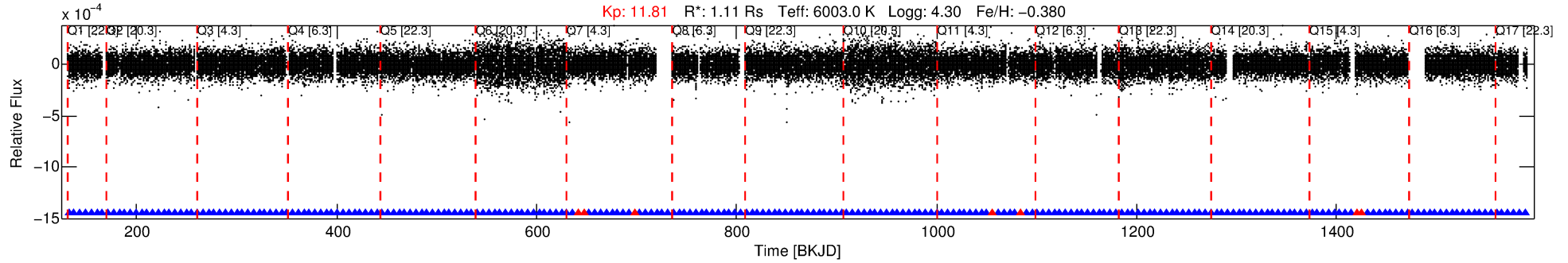
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012068975-02

No Significant Match Found

DV One-Page Summary

KIC: 12068975 Candidate: 2 of 4 Period: 5.599 d
KOI: K00623.03 Name: Kepler-197b Corr: 0.984



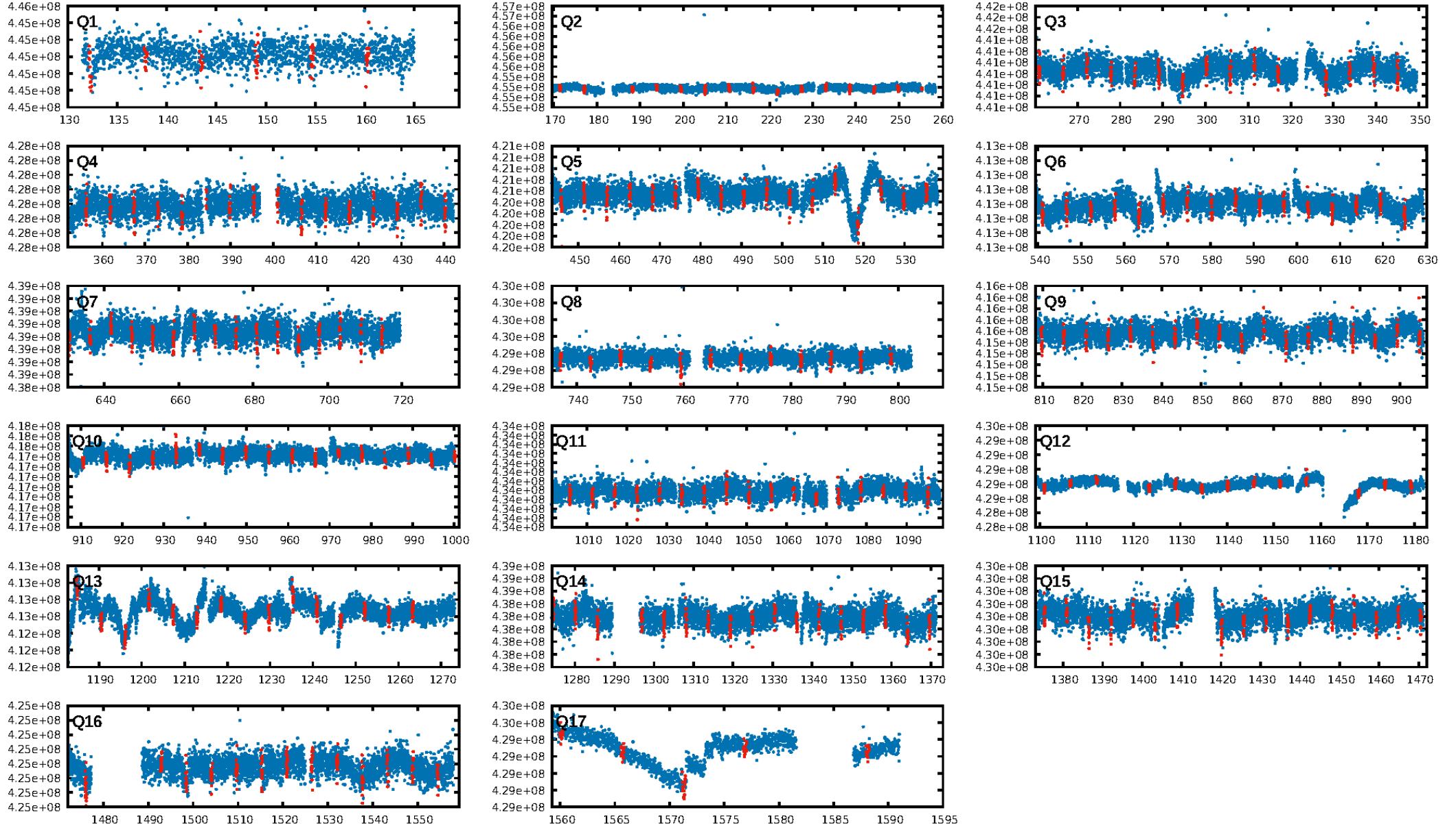
DV Fit Results:

Period = 5.59931 [0.00001] d
Epoch = 132.2813 [0.0016] BKJD
Rp/R* = 0.0099 [0.0012]
a/R* = 5.15 [3.21]
b = 0.90 [0.14]
Seff = 402.54 [32.50]
Teq = 1142 [23] K
Rp = 1.20 [0.15] Re
a = 0.0596 [0.0017] AU
Ag = 11.28 [4.34] [2.37 σ]
Teffp = 3236 [316] K [6.62 σ]

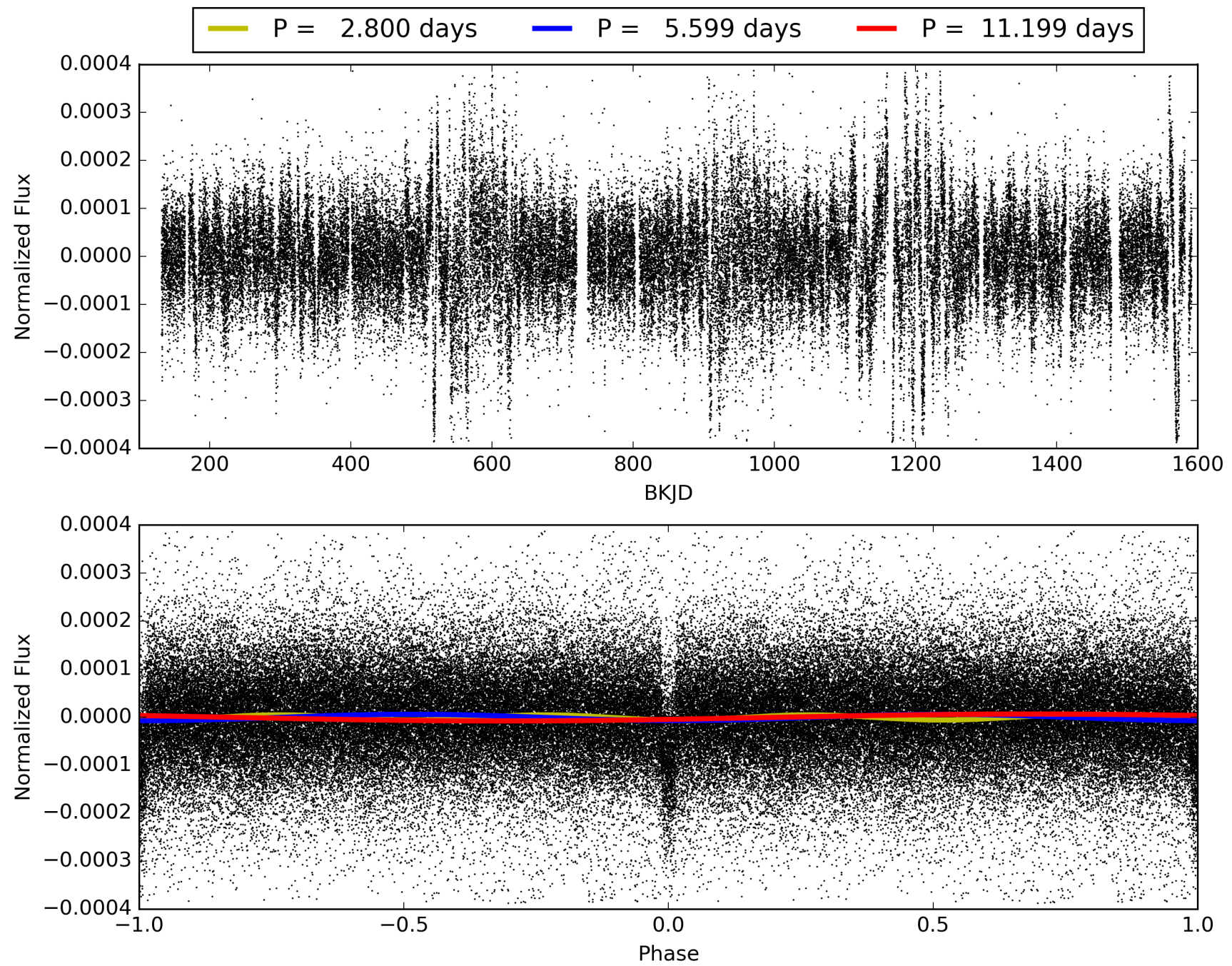
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [19.21 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.17e-213
RollingBand-fgt: 0.97 [214/221]
GhostDiagnostic-chr: 5.111
Centroid-sig: 0.0%
Centroid-so: 0.489 arcsec [1.40 σ]
OotOffset-rm: 0.576 arcsec [1.87 σ]
KicOffset-rm: 0.803 arcsec [2.40 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012068975-02, PDC Light Curves

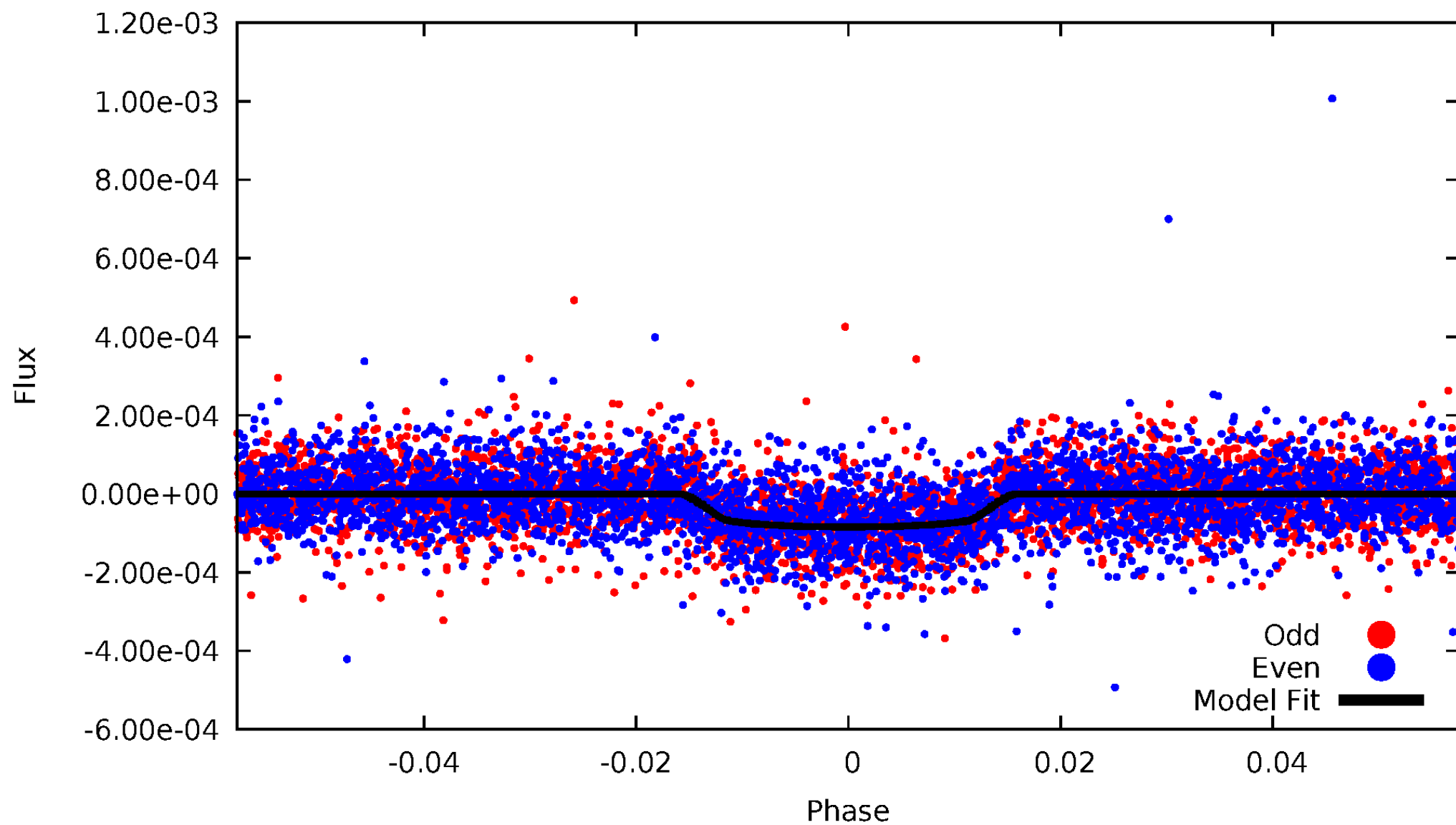


TCE 012068975-02



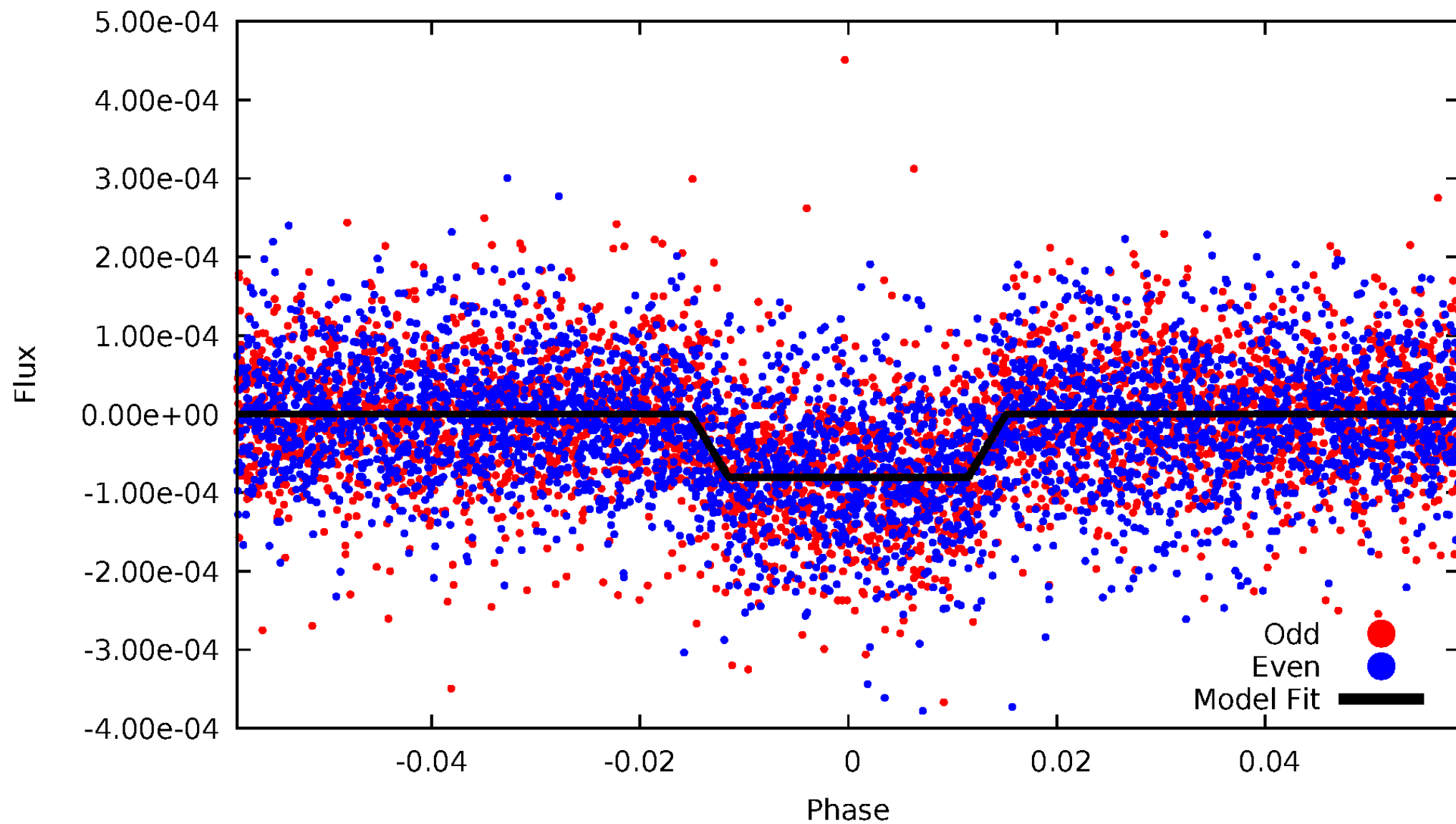
DV Odd/Even

TCE 012068975-02



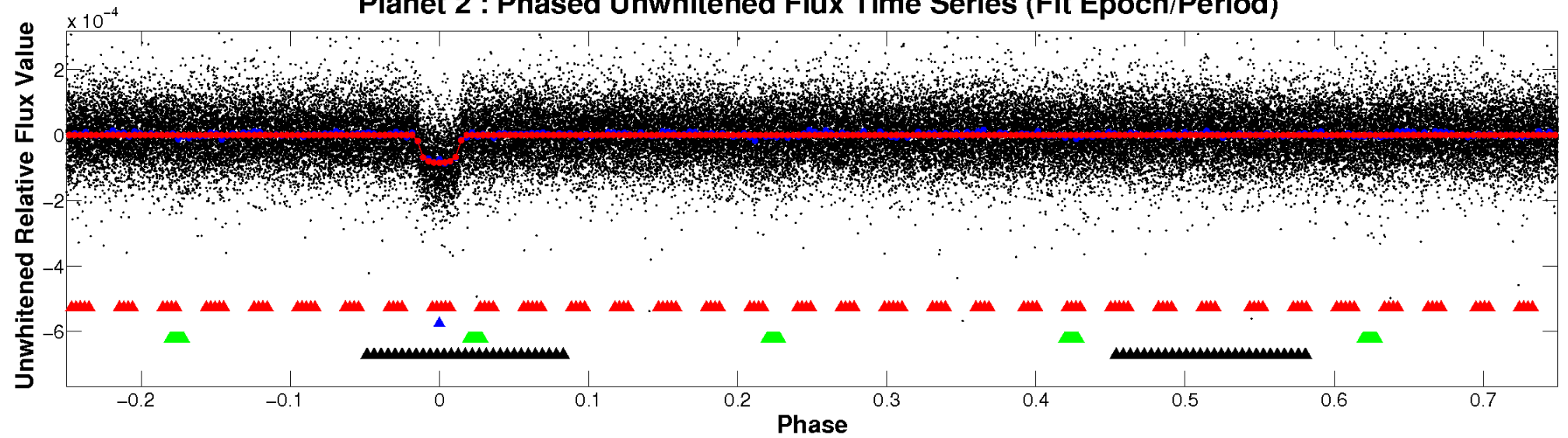
ALT Odd/Even

TCE 012068975-02

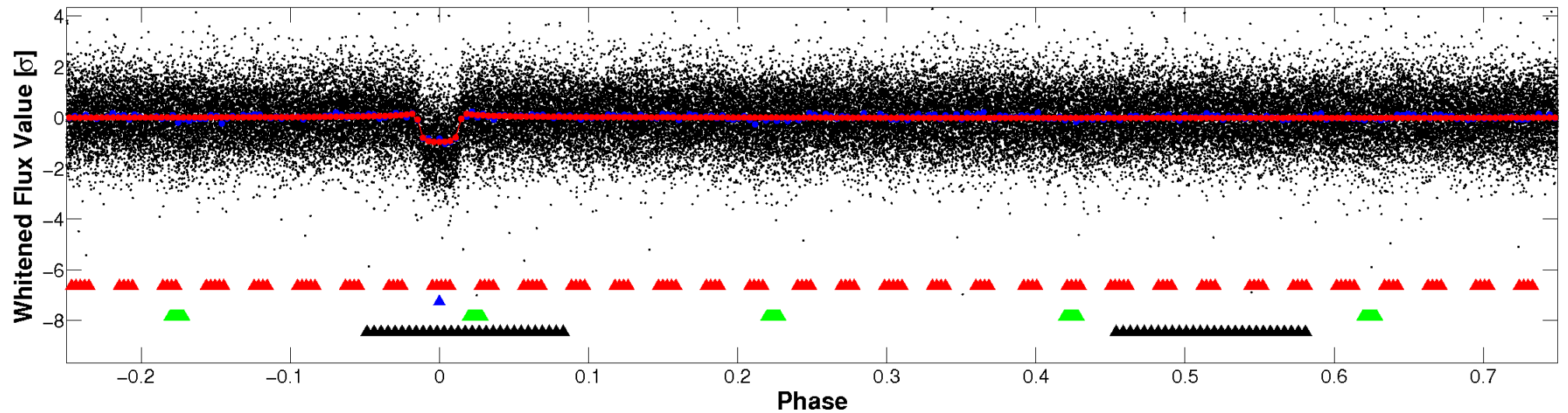


Non-Whitened Vs. Whitened Light Curve

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

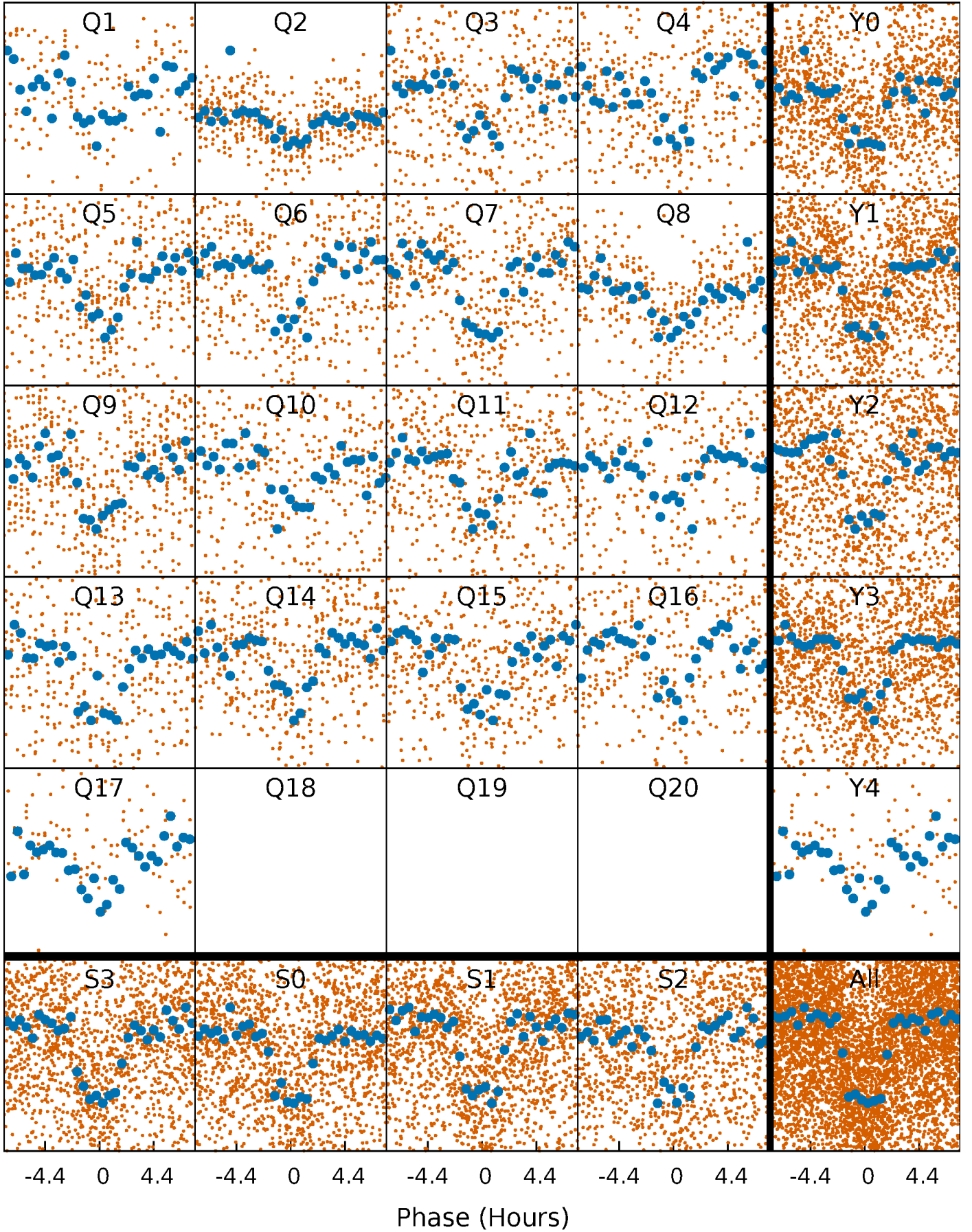


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



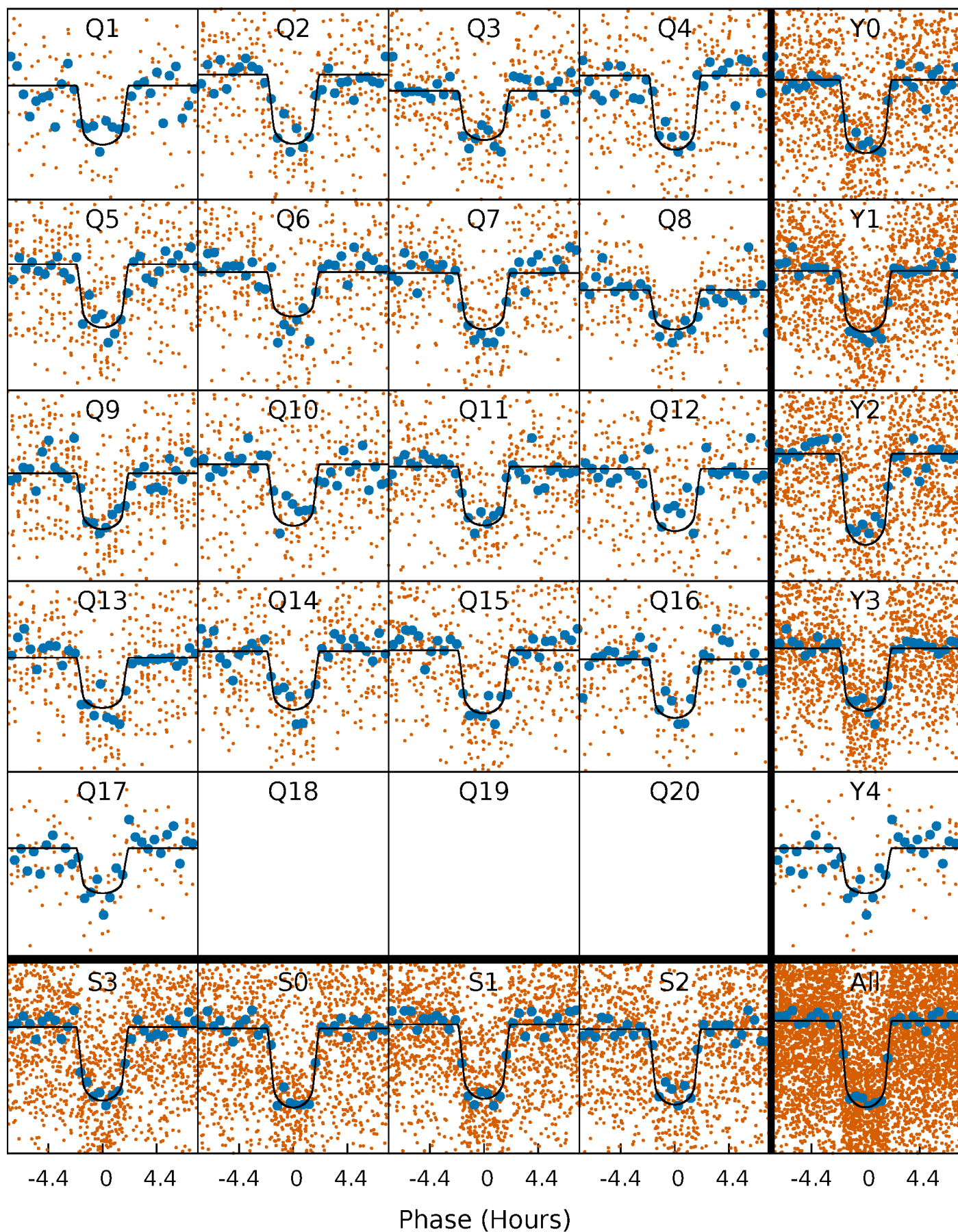
PDC Quarter-Phased Transit Curves

TCE 012068975-02 P= 5.599307 Days $T_0=132.281260$ (BKJD)



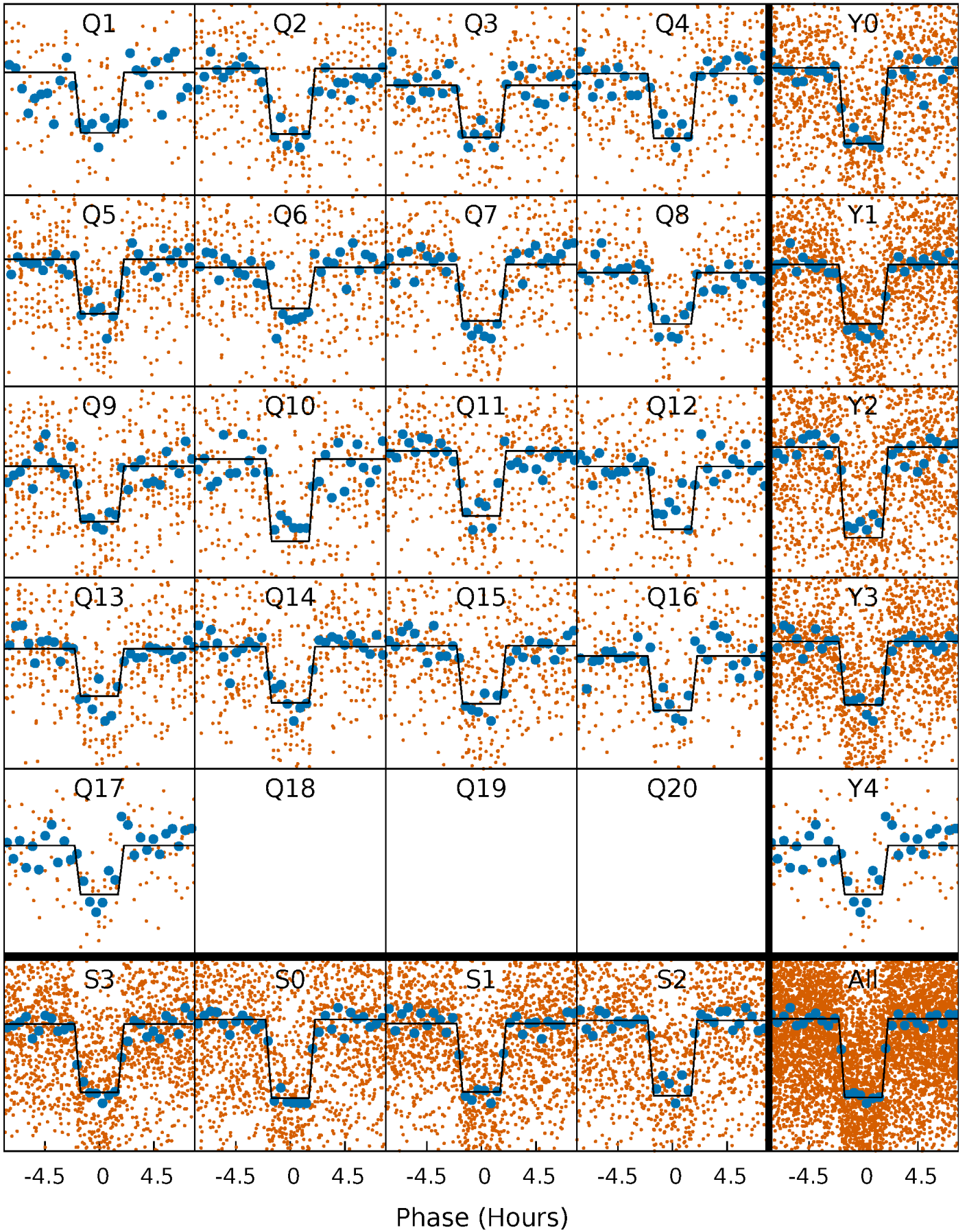
DV Quarter-Phased Transit Curves

TCE 012068975-02 P= 5.599307 Days $T_0=132.281260$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

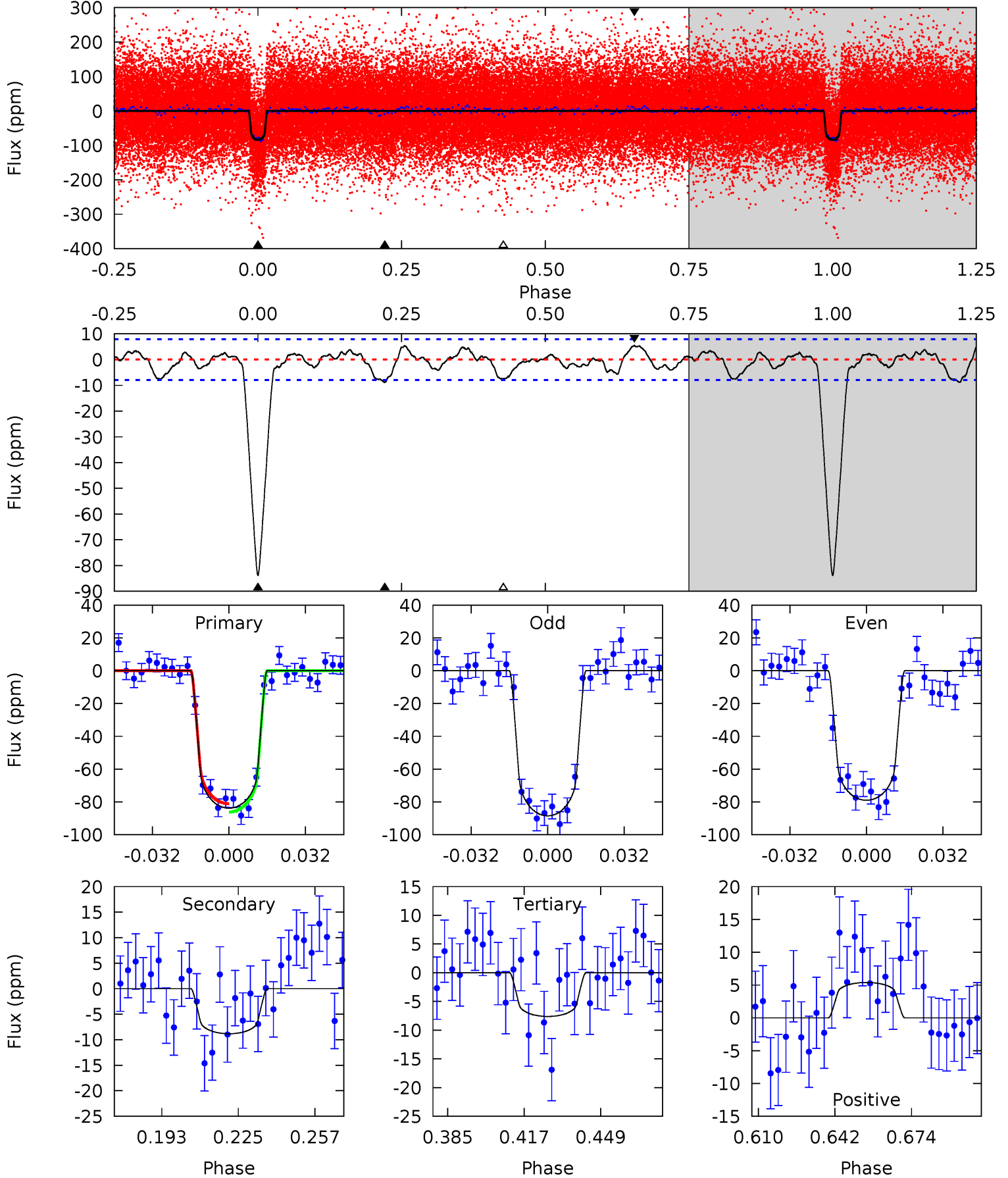
TCE 012068975-02 P= 5.599315 Days $T_0=132.280370$ (BKJD)



DV Model-Shift Uniqueness Test

012068975-02, P = 5.599307 Days, E = 126.681953 Days

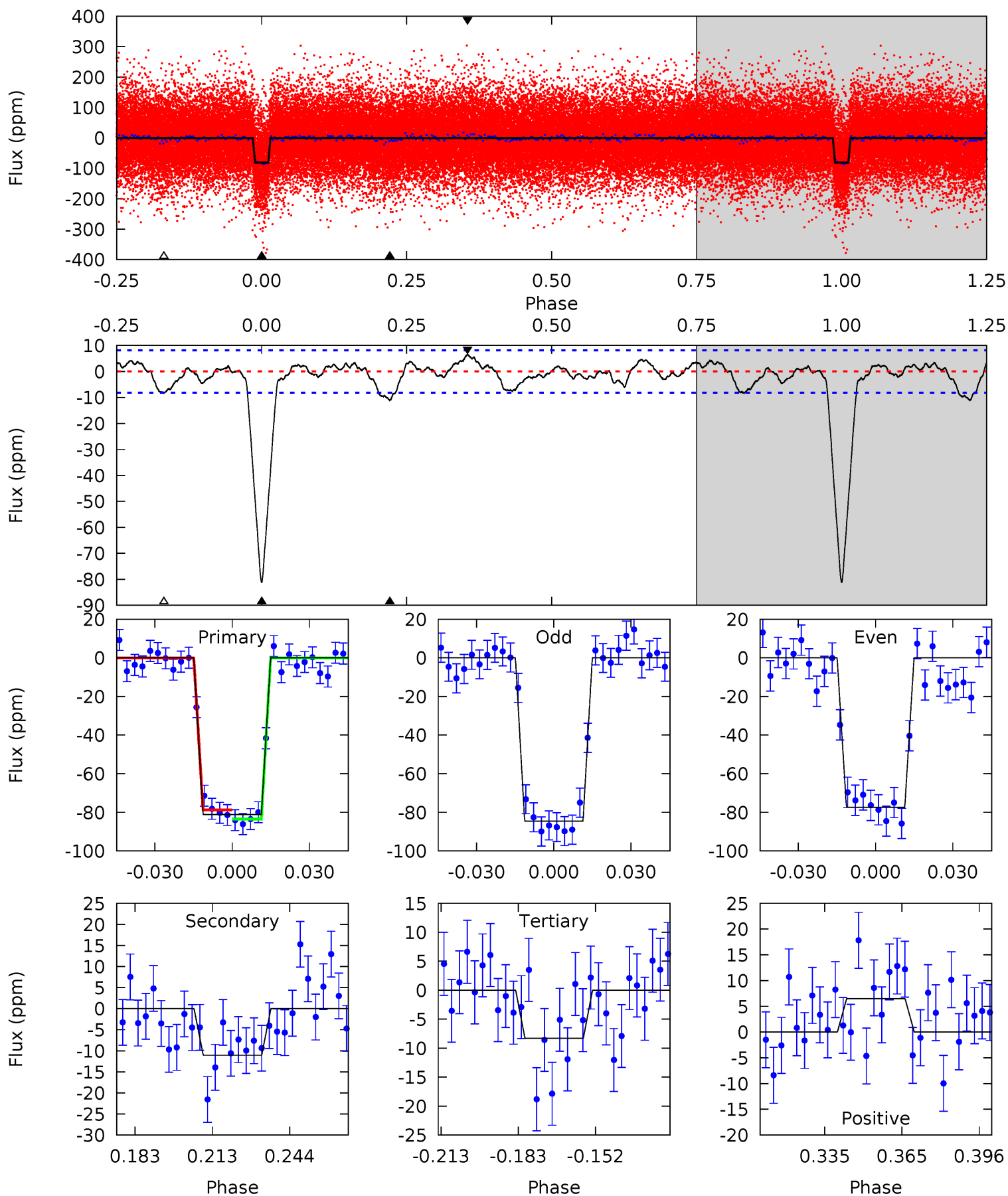
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.8	5.35	4.61	3.27	4.80	2.14	1.71	46.2	47.5	0.73	2.08	2.89	1.03	0.06	1.54



Alt Model-Shift Uniqueness Test

012068975-02, P = 5.599315 Days, E = 126.681055 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	6.52	4.89	3.84	4.81	2.16	1.73	43.0	44.0	1.63	2.69	2.11	1.04	0.07	1.39



Stellar Parameters For KIC 012068975

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6003^{+96}_{-108}	$4.303^{+0.018}_{-0.014}$	$-0.380^{+0.100}_{-0.100}$	$1.109^{+0.036}_{-0.040}$	$0.902^{+0.043}_{-0.049}$	$0.930^{+0.061}_{-0.047}$
	+2%/-2%	+0%/-0%	+26%/-26%	+3%/-4%	+5%/-5%	+7%/-5%
Source	SPE8	AST8	SPE8	DSEP		

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

Secondary Eclipse Parameters for KIC 012068975-02 / KOI 0623.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 2	$1.20^{+0.15}_{-0.15}$	1595^{+29}_{-32}	3689^{+212}_{-205}	12^{+4}_{-3}
Alt.	-11 ± 2	$1.09^{+0.15}_{-0.16}$	1598^{+25}_{-34}	3970^{+261}_{-224}	18^{+8}_{-5}

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

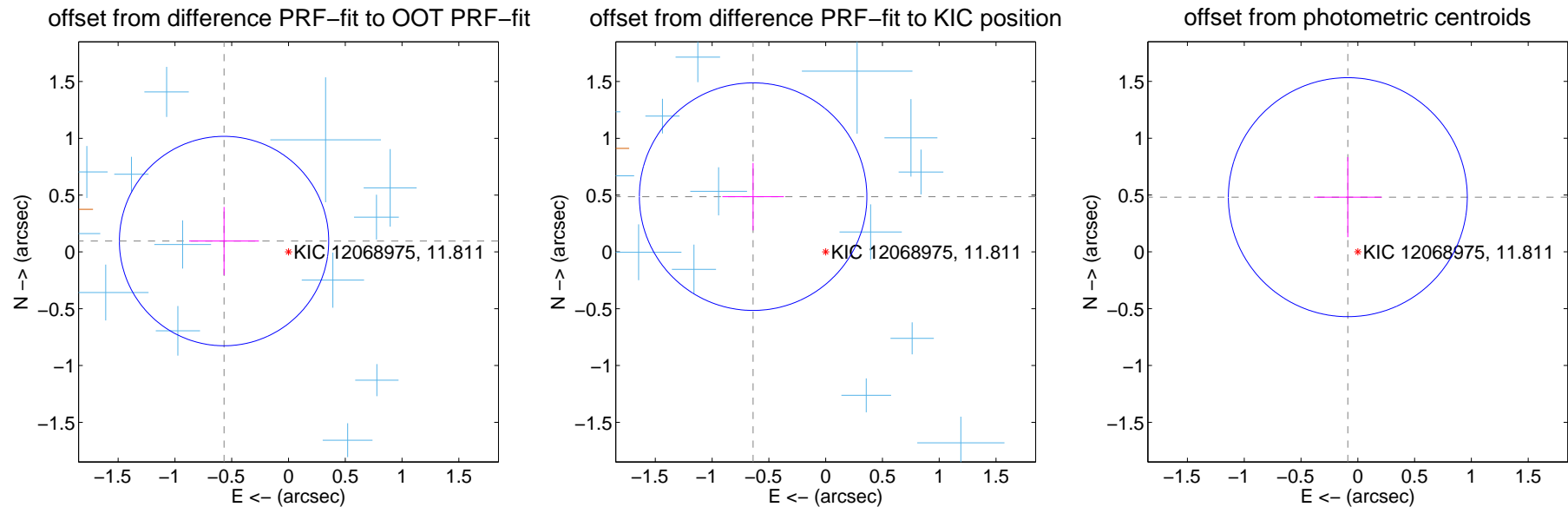
DV Centroid Data

Supplemental centroid analysis for 012068975-02. **Kepler magnitude: 11.81.** Transit SNR 35.63

There are 15 quarters with good PRF difference image offsets

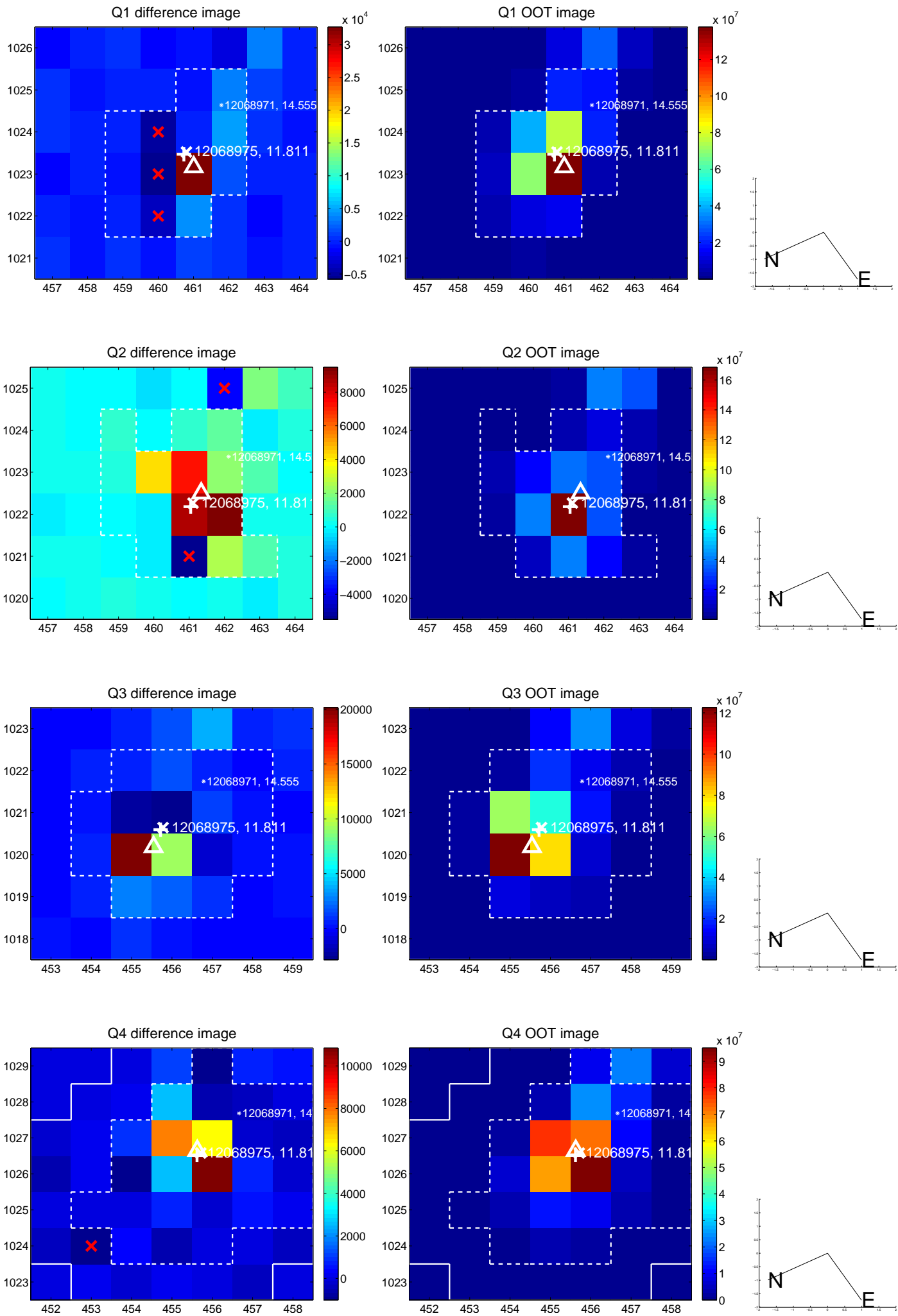
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.576 ± 0.307	1.87	0.568 ± 0.307	0.096 ± 0.300
PRF-fit source offset from KIC position	0.803 ± 0.334	2.40	0.639 ± 0.271	0.487 ± 0.297
photometric centroid source offset	0.49 ± 0.35	1.40	0.09 ± 0.30	0.48 ± 0.35

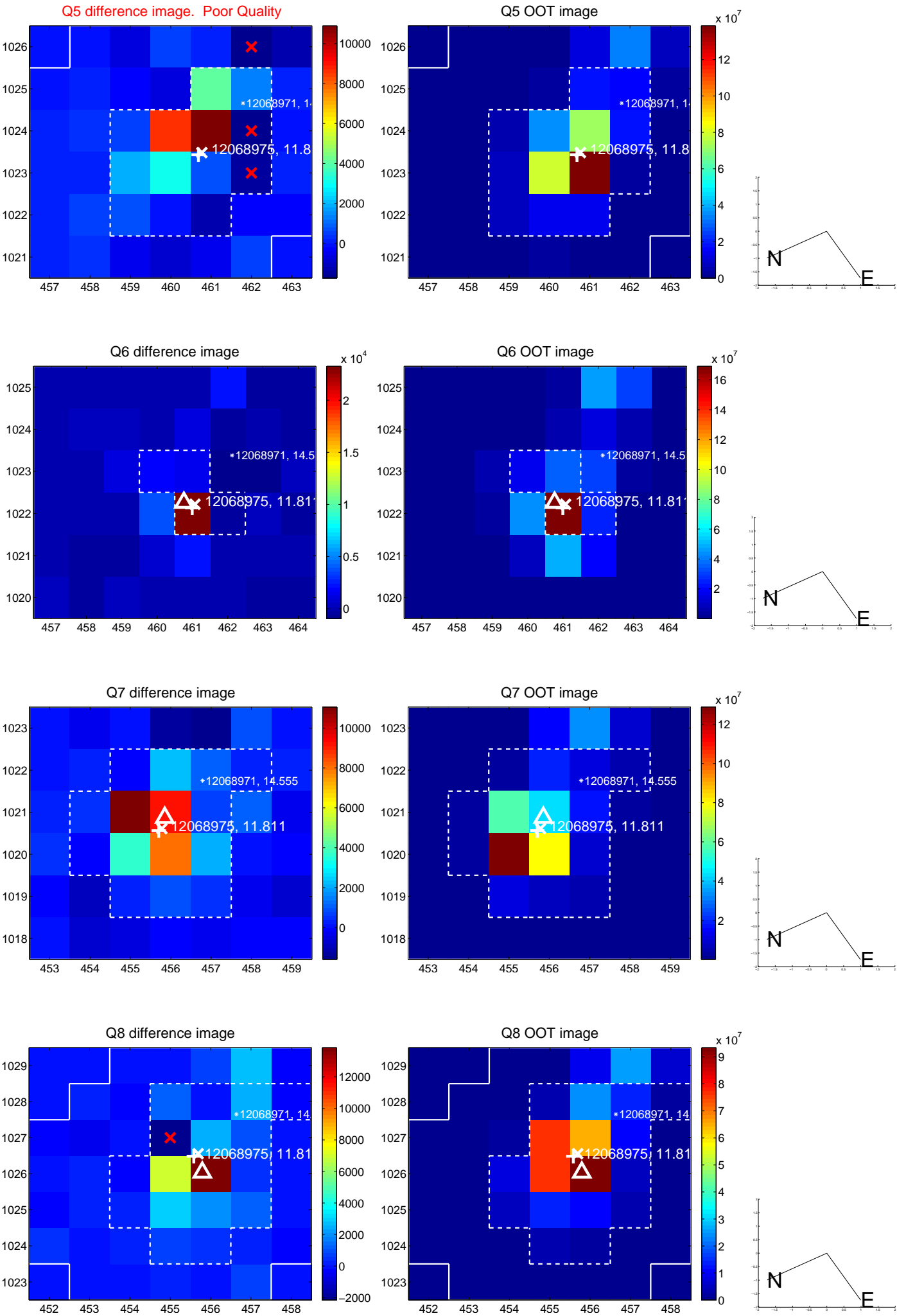


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

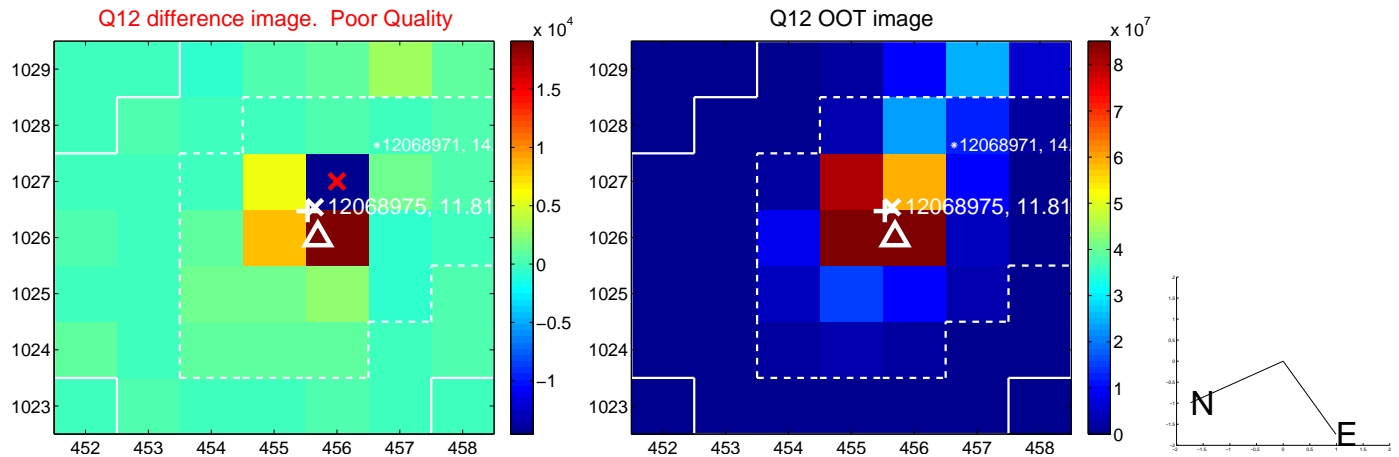
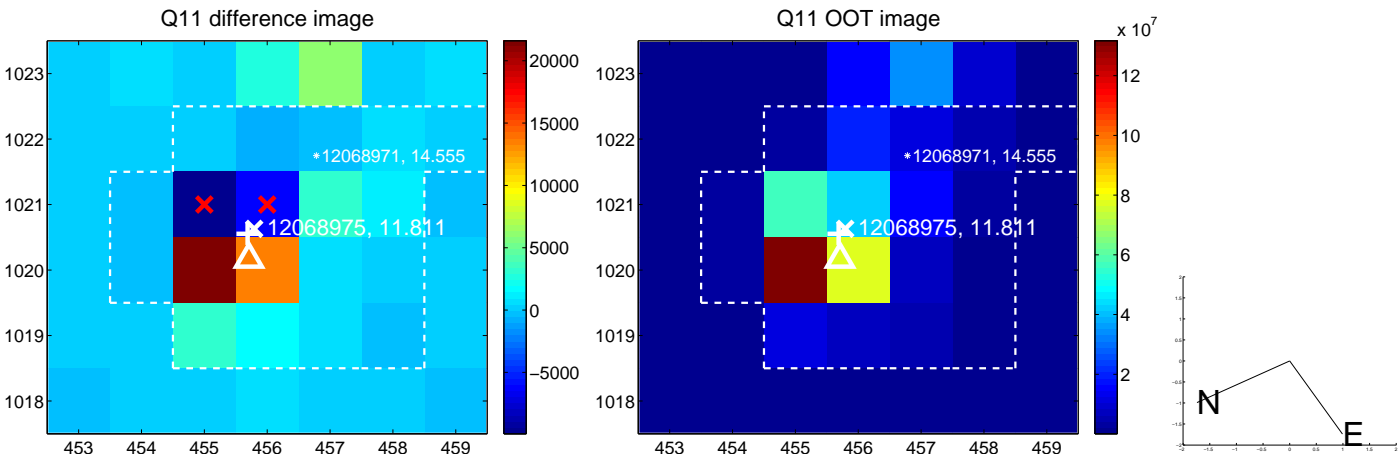
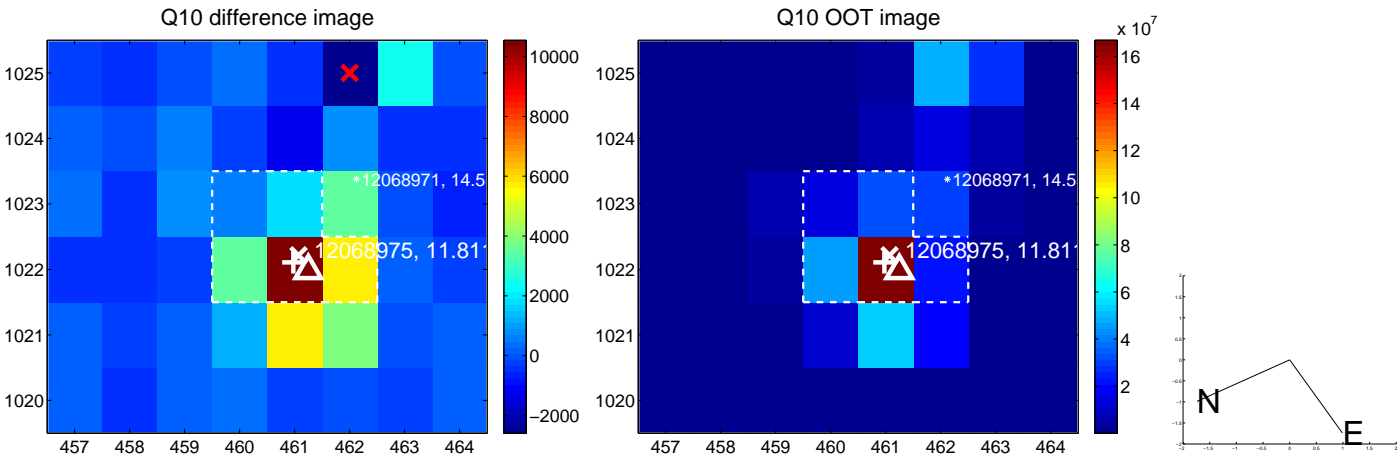
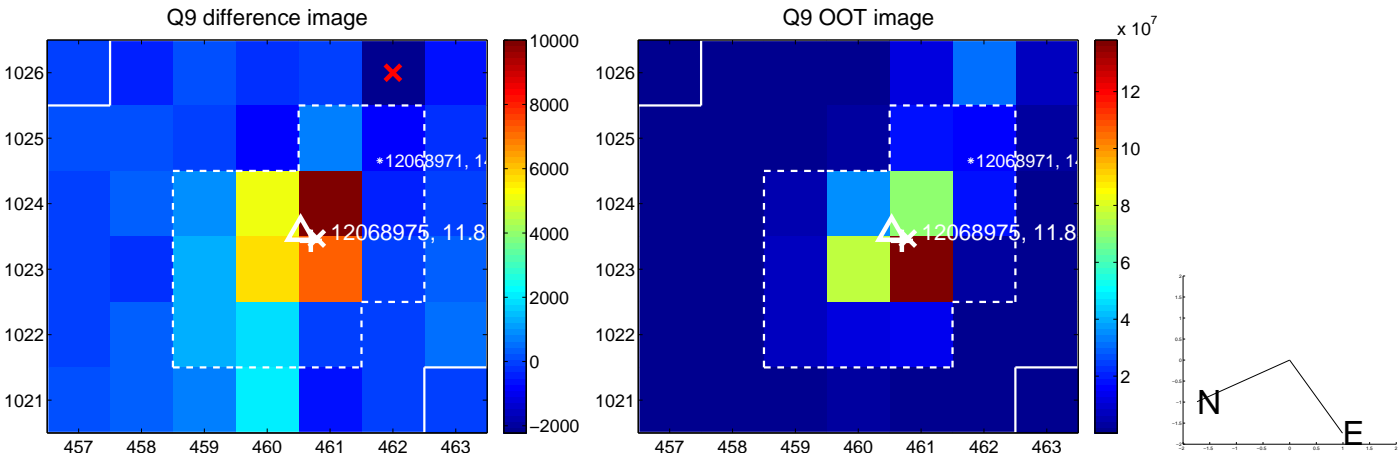
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



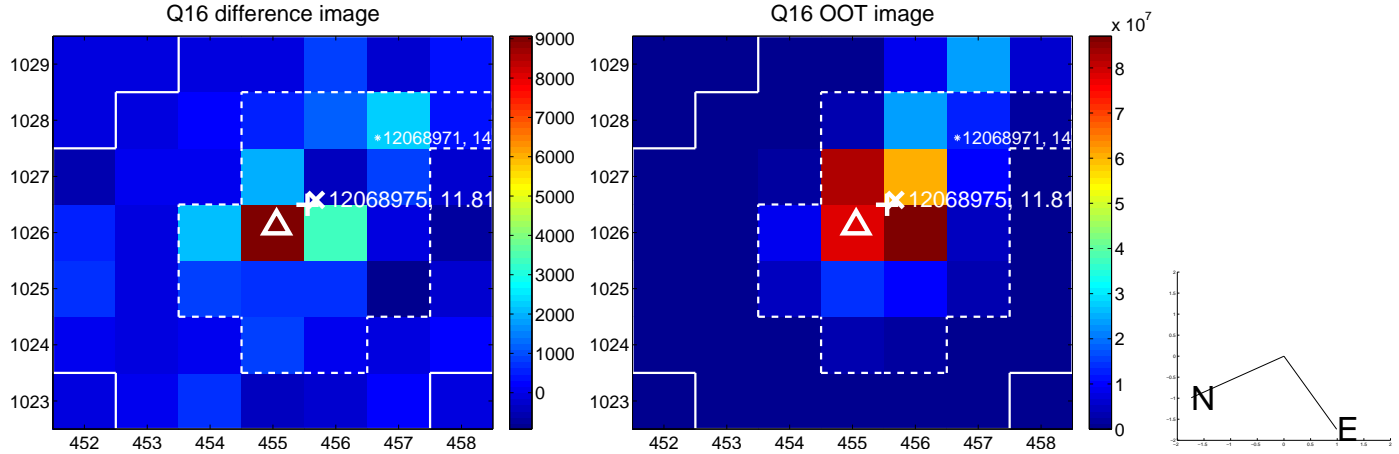
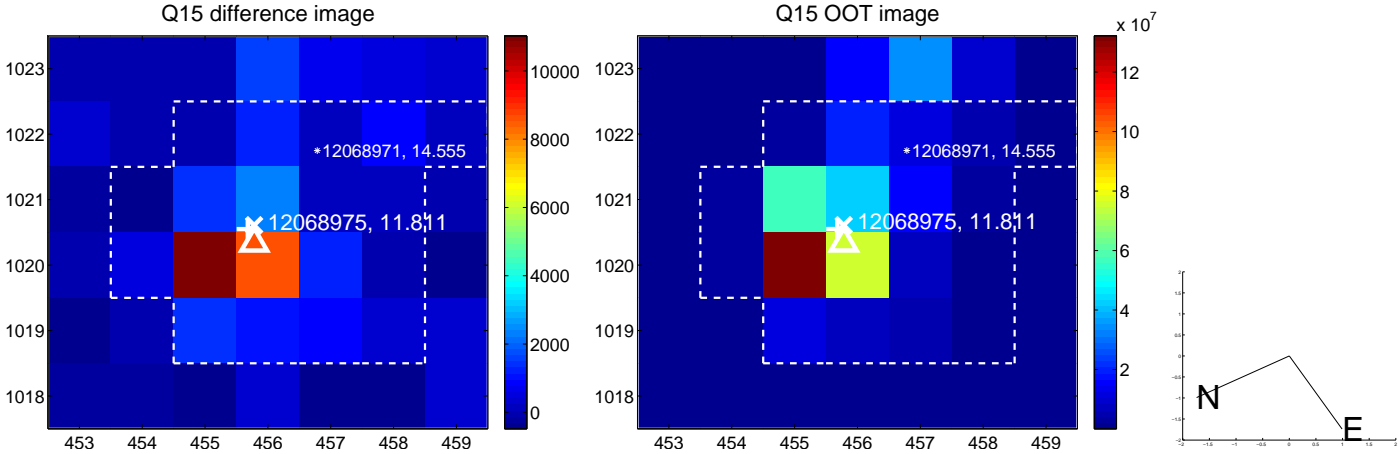
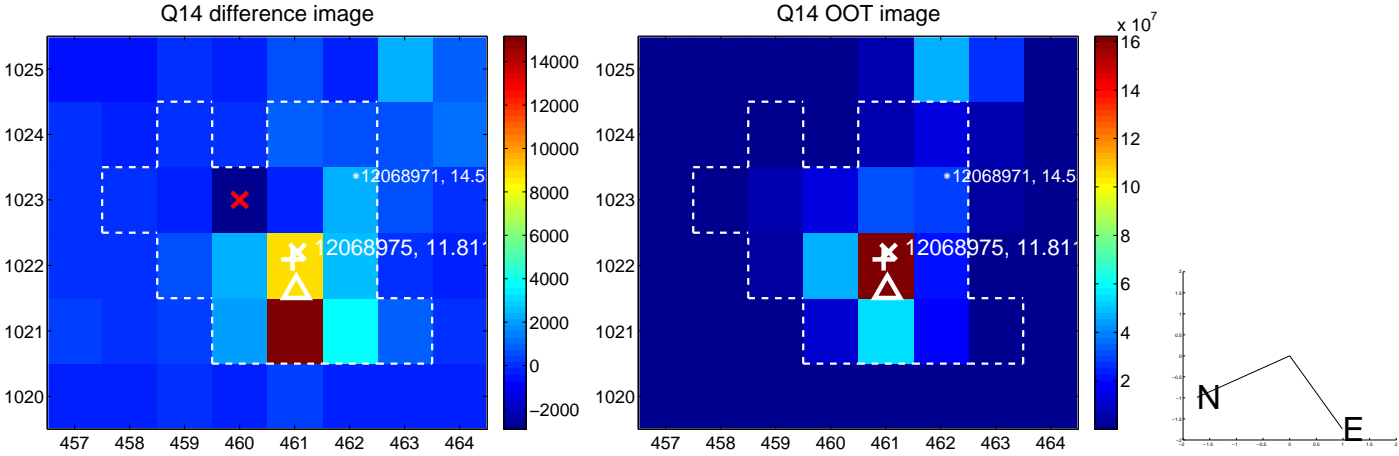
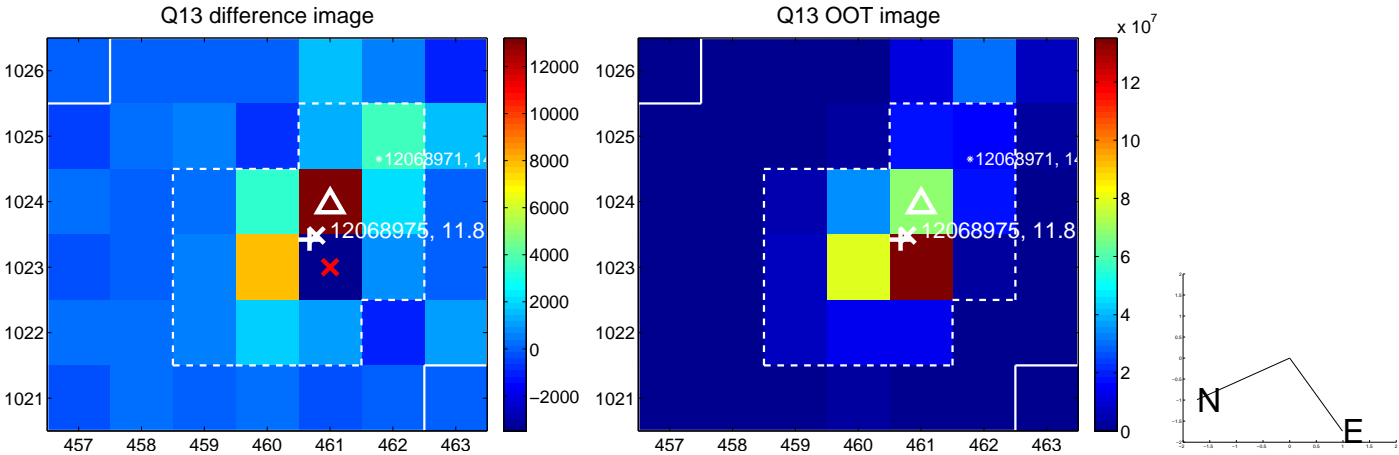
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



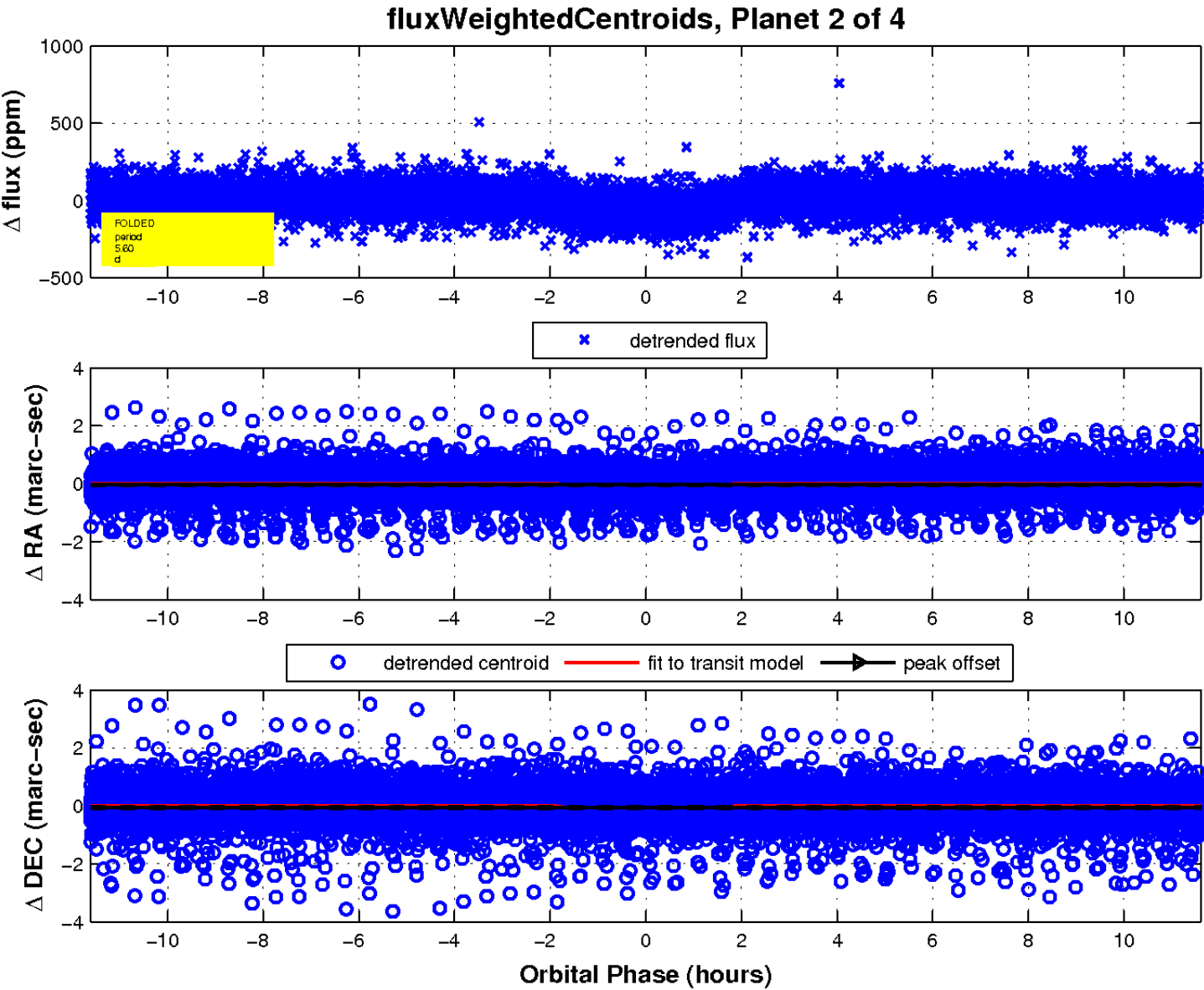
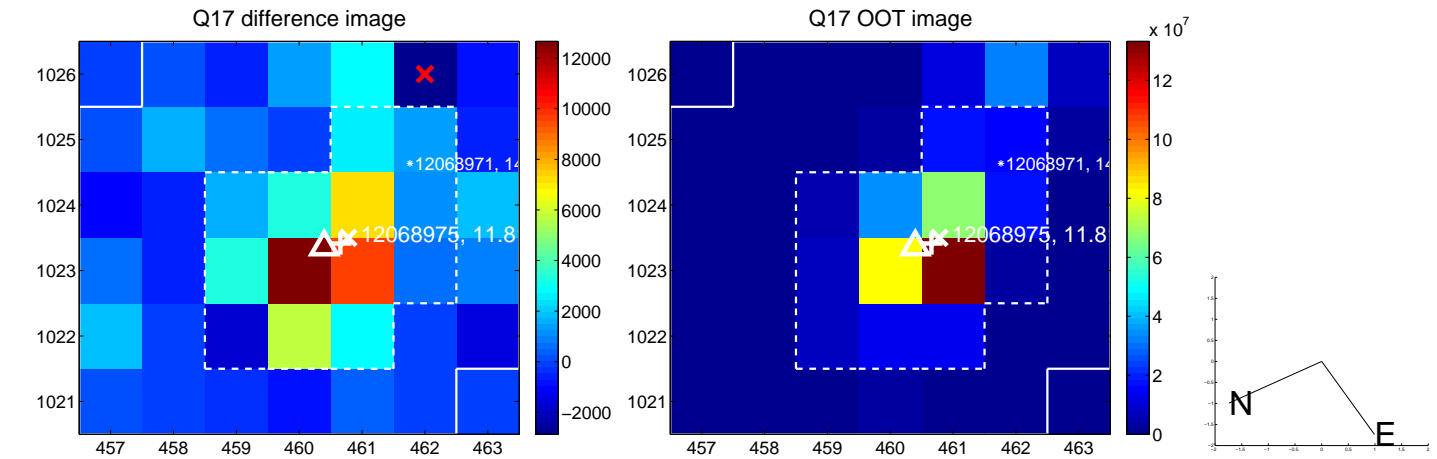
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

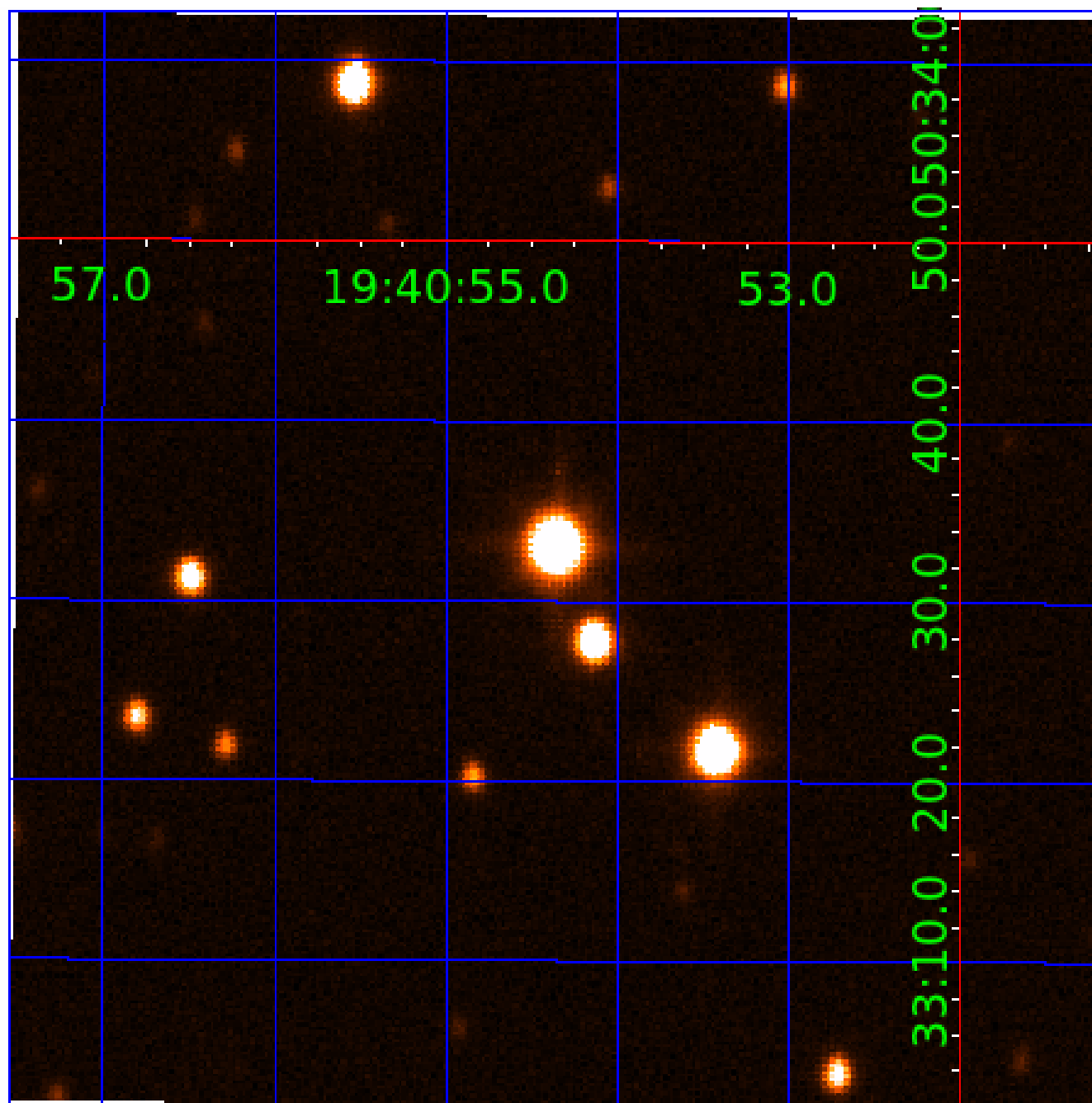


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012068975

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})
012068975-01	OBS	0623.01	10.349740	132.663374	115.8	4.498	33.1	36.2	1.11	6003	1.42	177.45
012068975-02	OBS	0623.03	5.599307	132.281260	84.8	3.871	32.7	35.6	1.11	6003	1.20	402.54
012068975-03	OBS	0623.02	15.677490	132.441856	109.0	5.466	26.4	28.2	1.11	6003	1.34	102.00
012068975-04	OBS	0623.04	25.210037	154.407078	56.7	6.856	9.9	11.3	1.11	6003	0.99	54.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012068975-01	OBS	PC	0.28	0	0	0	0	CENT_KIC_POS
012068975-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
012068975-03	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
012068975-04	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

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

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

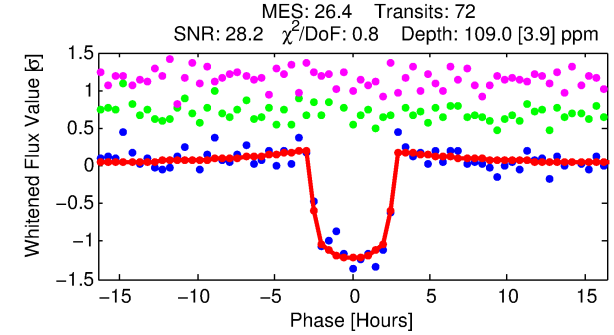
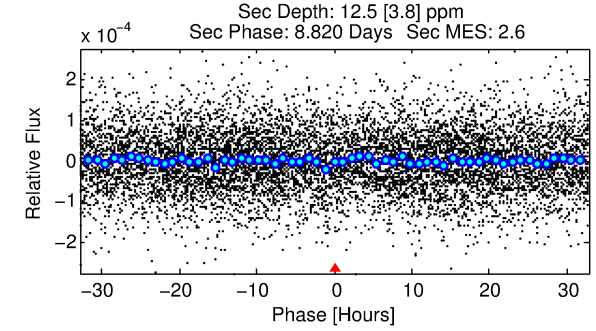
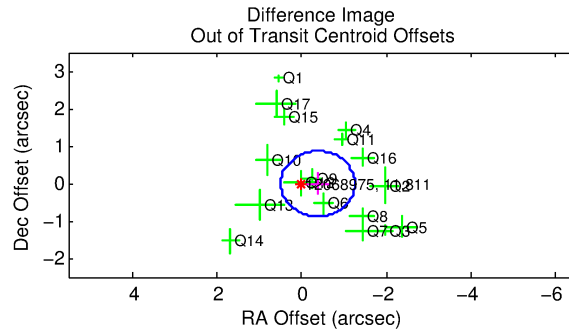
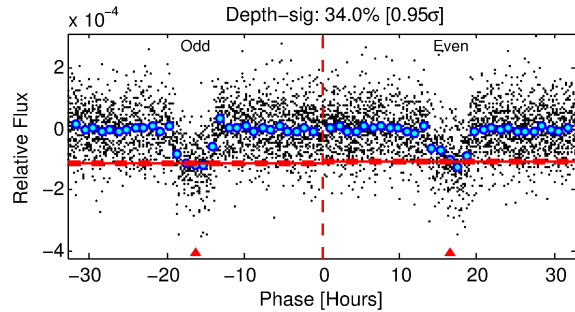
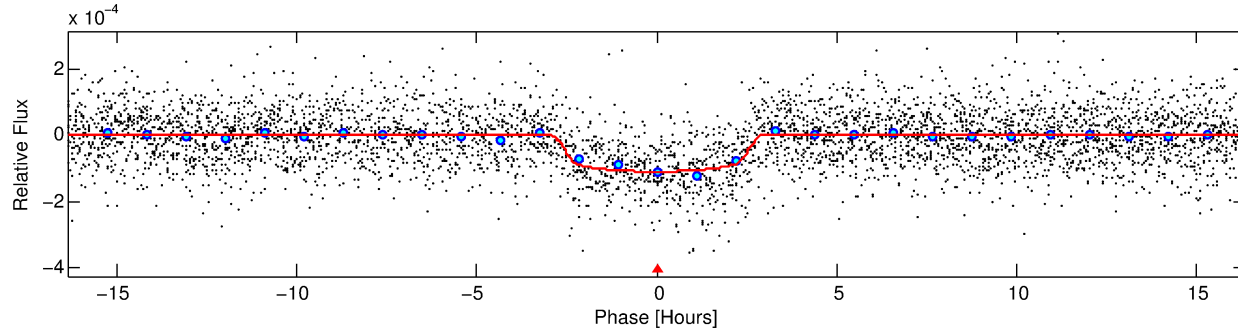
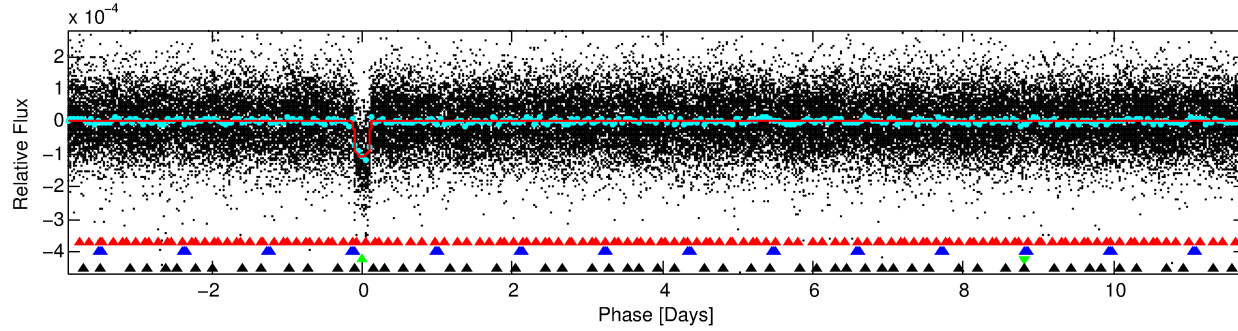
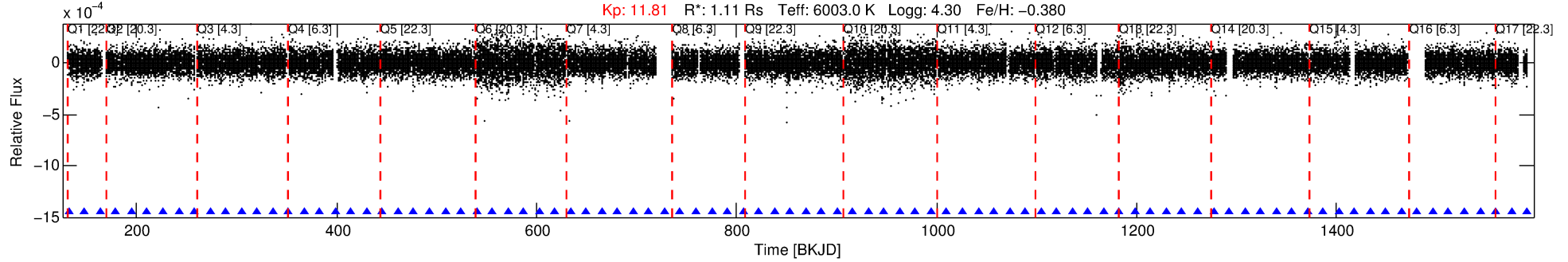
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012068975-03

No Significant Match Found

DV One-Page Summary

KIC: 12068975 Candidate: 3 of 4 Period: 15.677 d
KOI: K00623.02 Name: Kepler-197d Corr: 0.981



DV Fit Results:

Period = 15.67749 [0.00006] d
Epoch = 132.4419 [0.0031] BKJD
 R_p/R^* = 0.0111 [0.0014]
 a/R^* = 10.79 [6.91]
 b = 0.88 [0.16]
 S_{eff} = 102.00 [8.24]
 T_{eq} = 810 [16] K
 R_p = 1.34 [0.17] R_e
 a = 0.1184 [0.0033] AU
 A_g = 53.38 [21.14] [2.48 σ]
 T_{eff} = 3387 [339] K [7.58 σ]

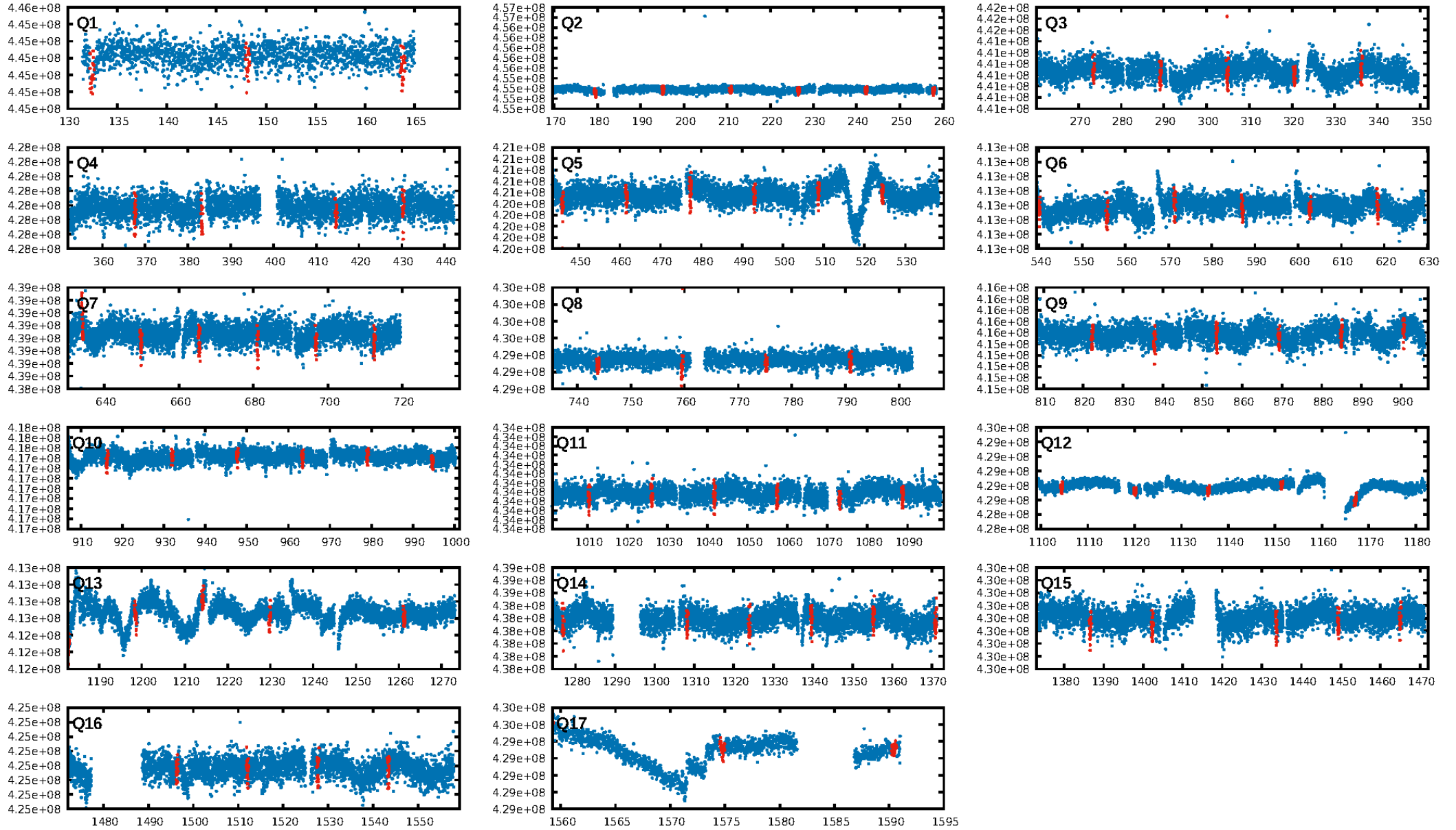
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [18.06 σ]
LongPeriod-sig: 100.0% [26.09 σ]
ModelChiSquare2-sig: 98.4%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.91e-138
RollingBand-fgt: 1.00 [69/69]
GhostDiagnostic-chr: 9.148
Centroid-sig: 62.8%
Centroid-so: 0.599 arcsec [1.47 σ]
OotOffset-rm: 0.385 arcsec [1.32 σ]
KicOffset-rm: 0.561 arcsec [1.93 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]

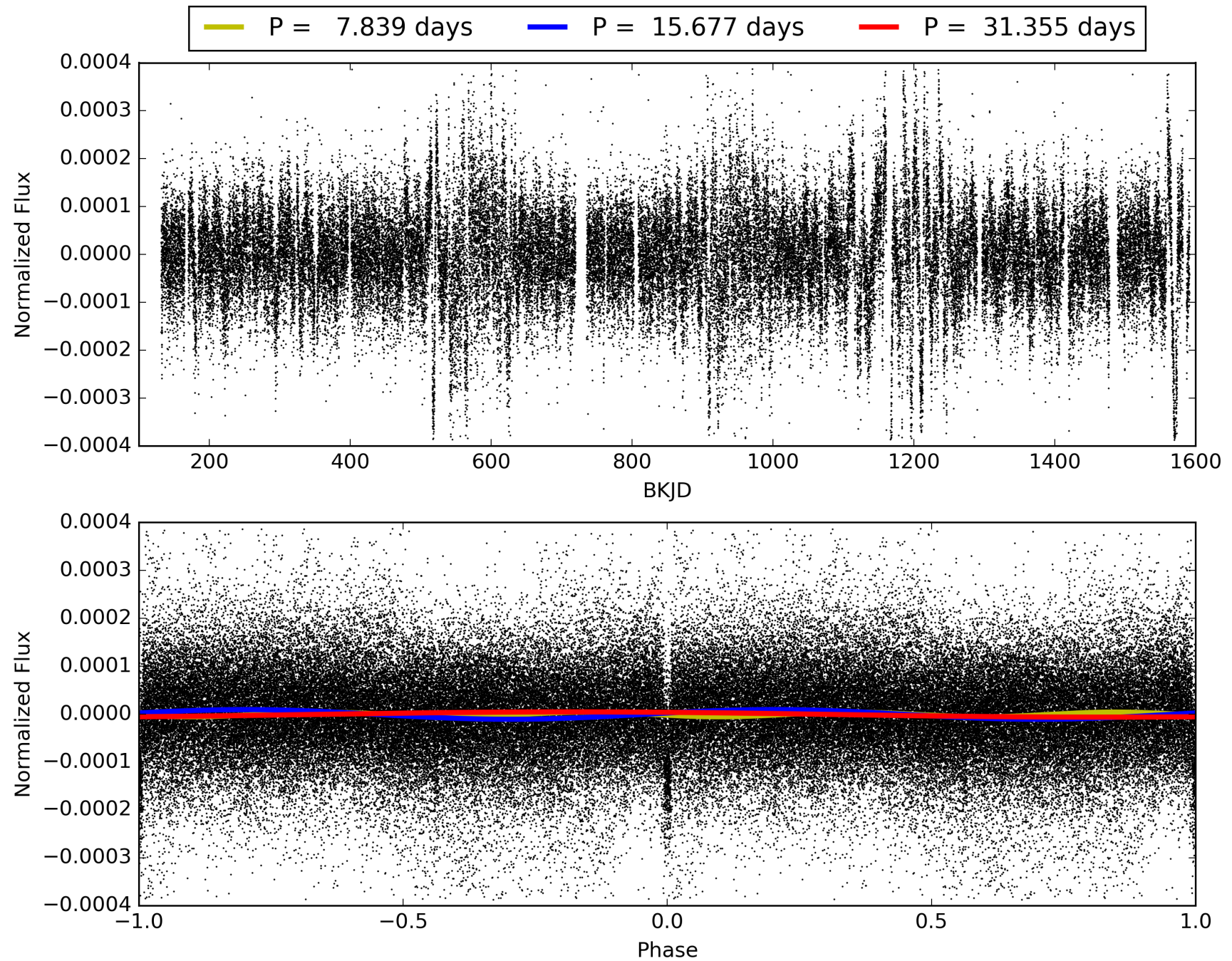
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:48:39 Z

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

TCE 012068975-03, PDC Light Curves

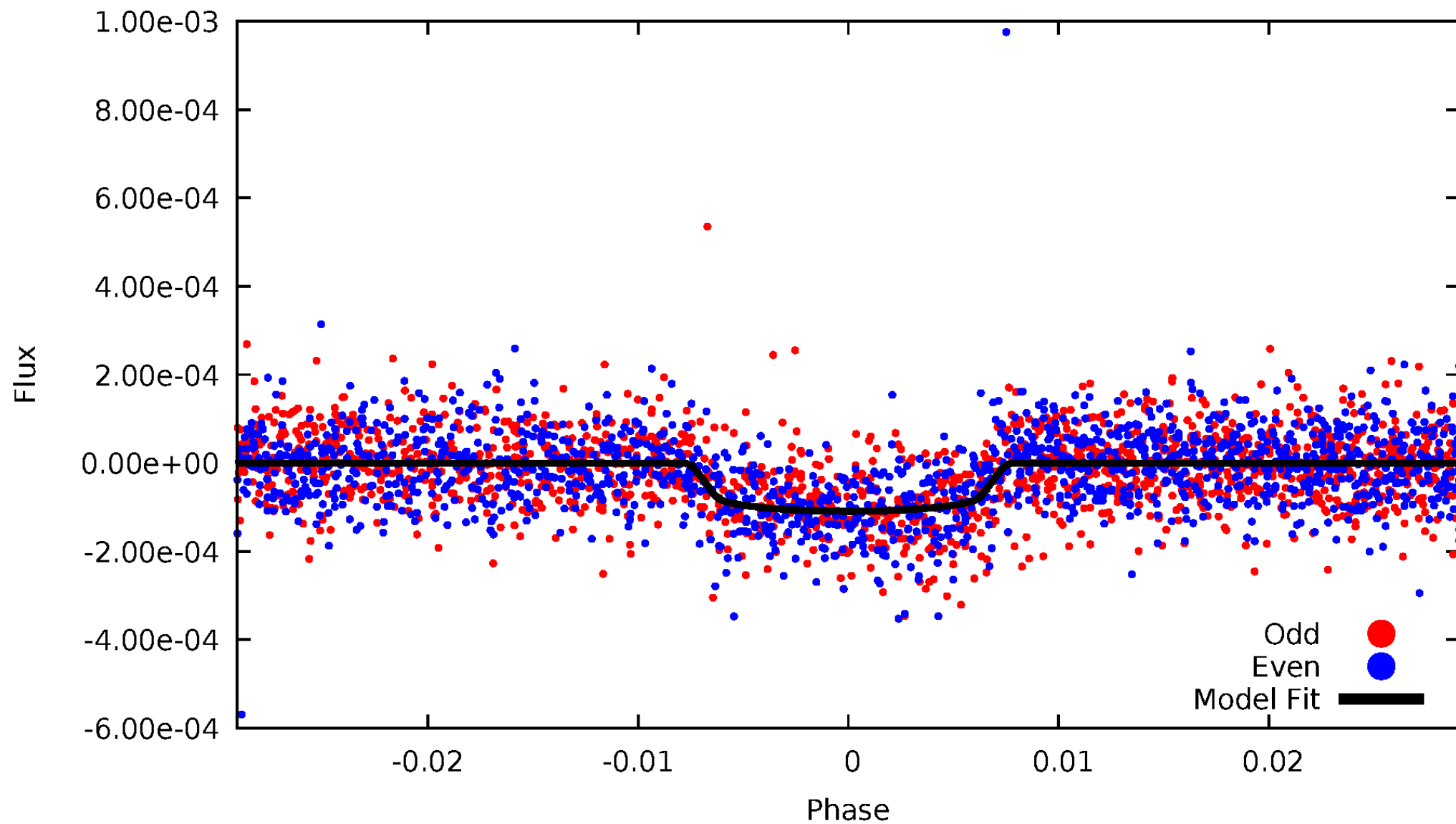


TCE 012068975-03



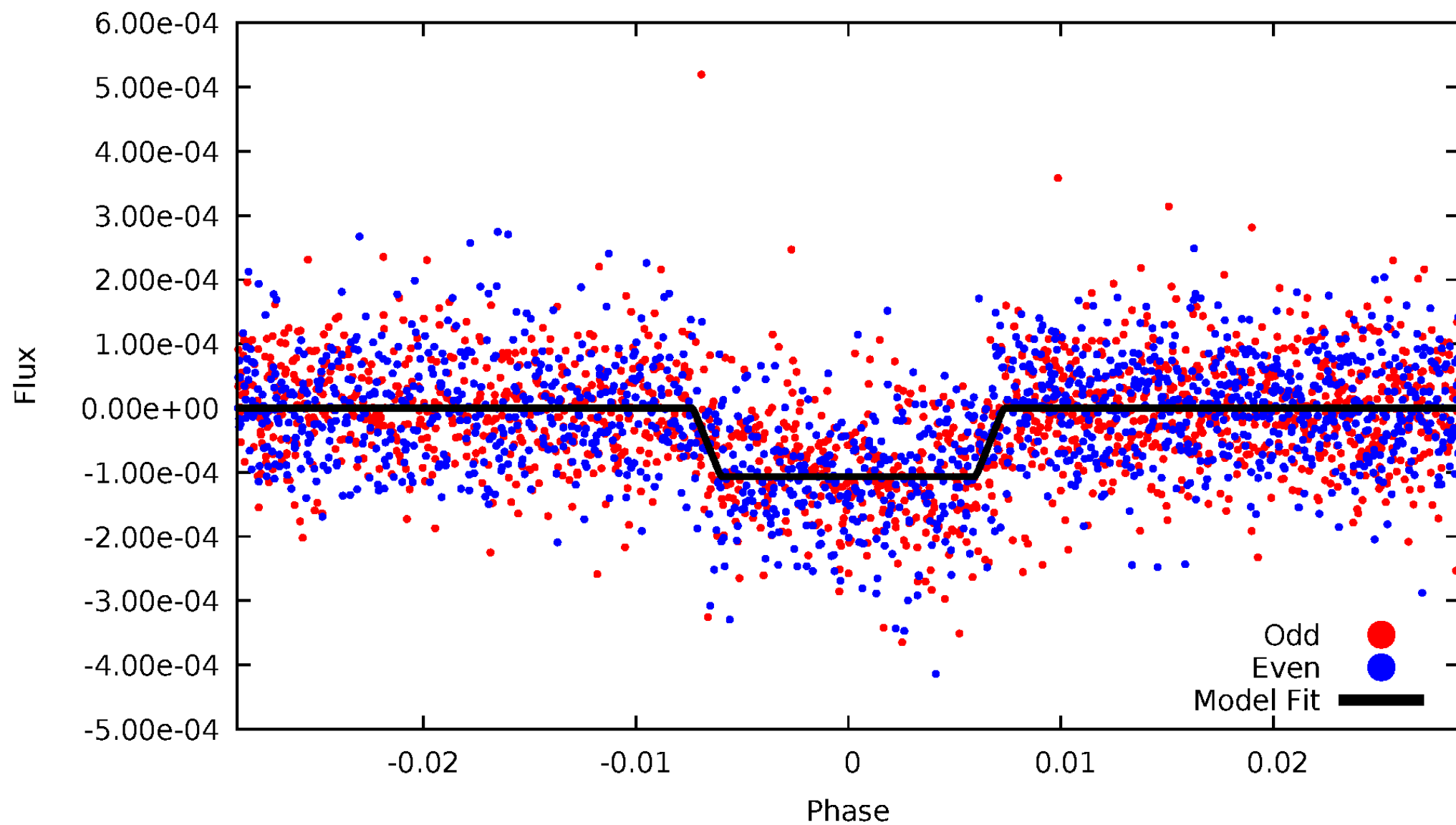
DV Odd/Even

TCE 012068975-03



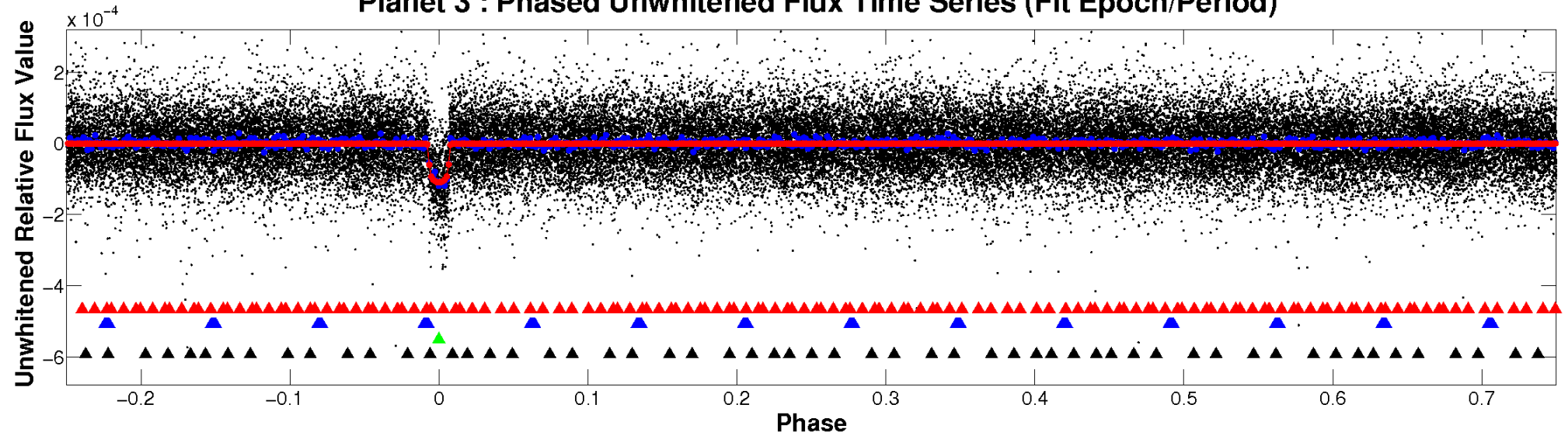
ALT Odd/Even

TCE 012068975-03

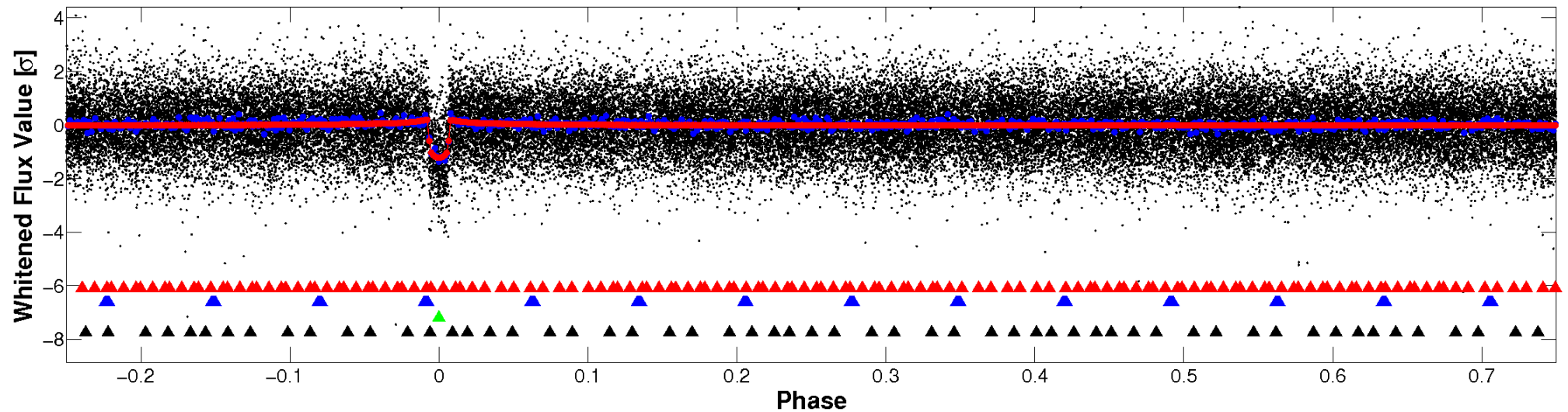


Non-Whitened Vs. Whitened Light Curve

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

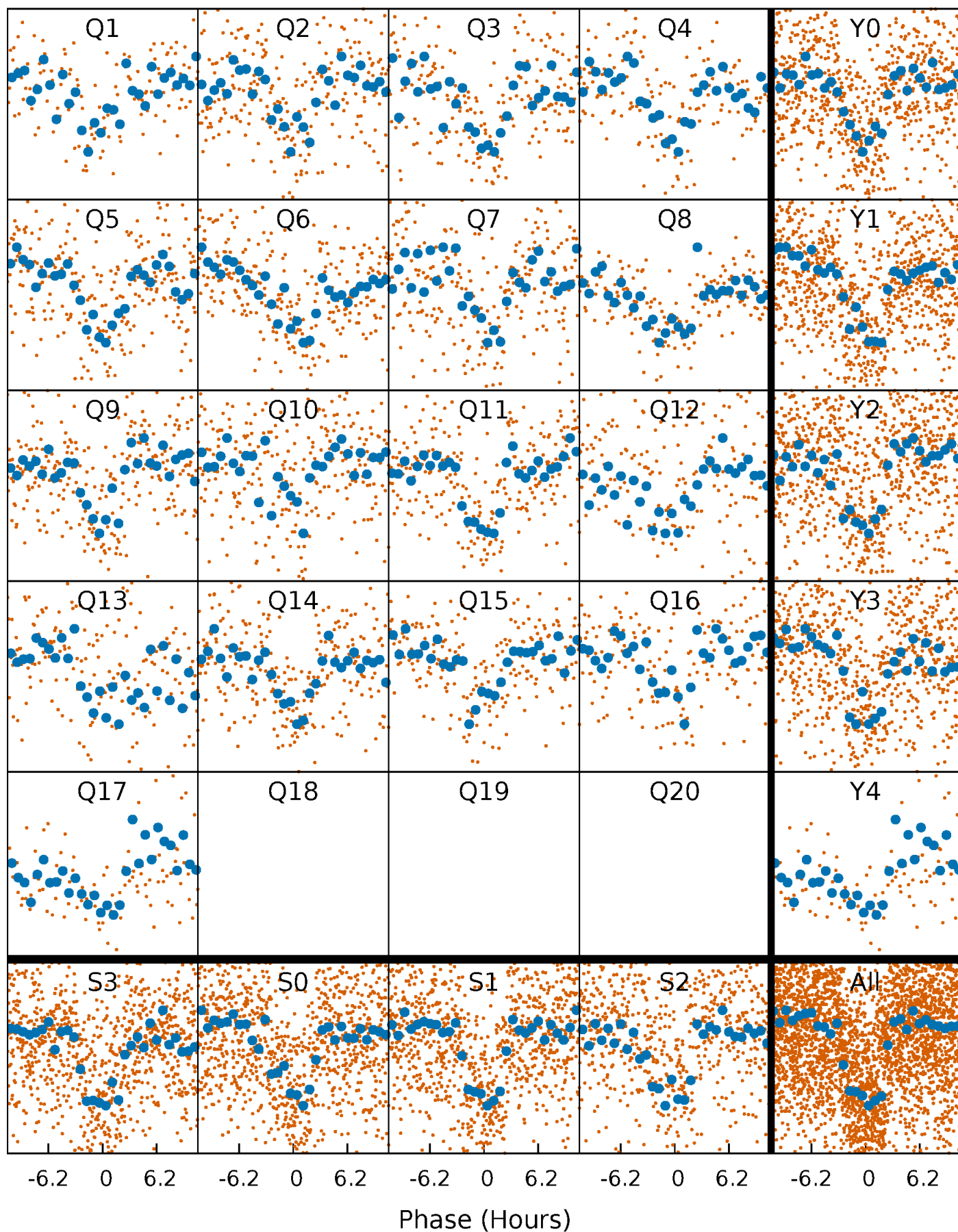


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



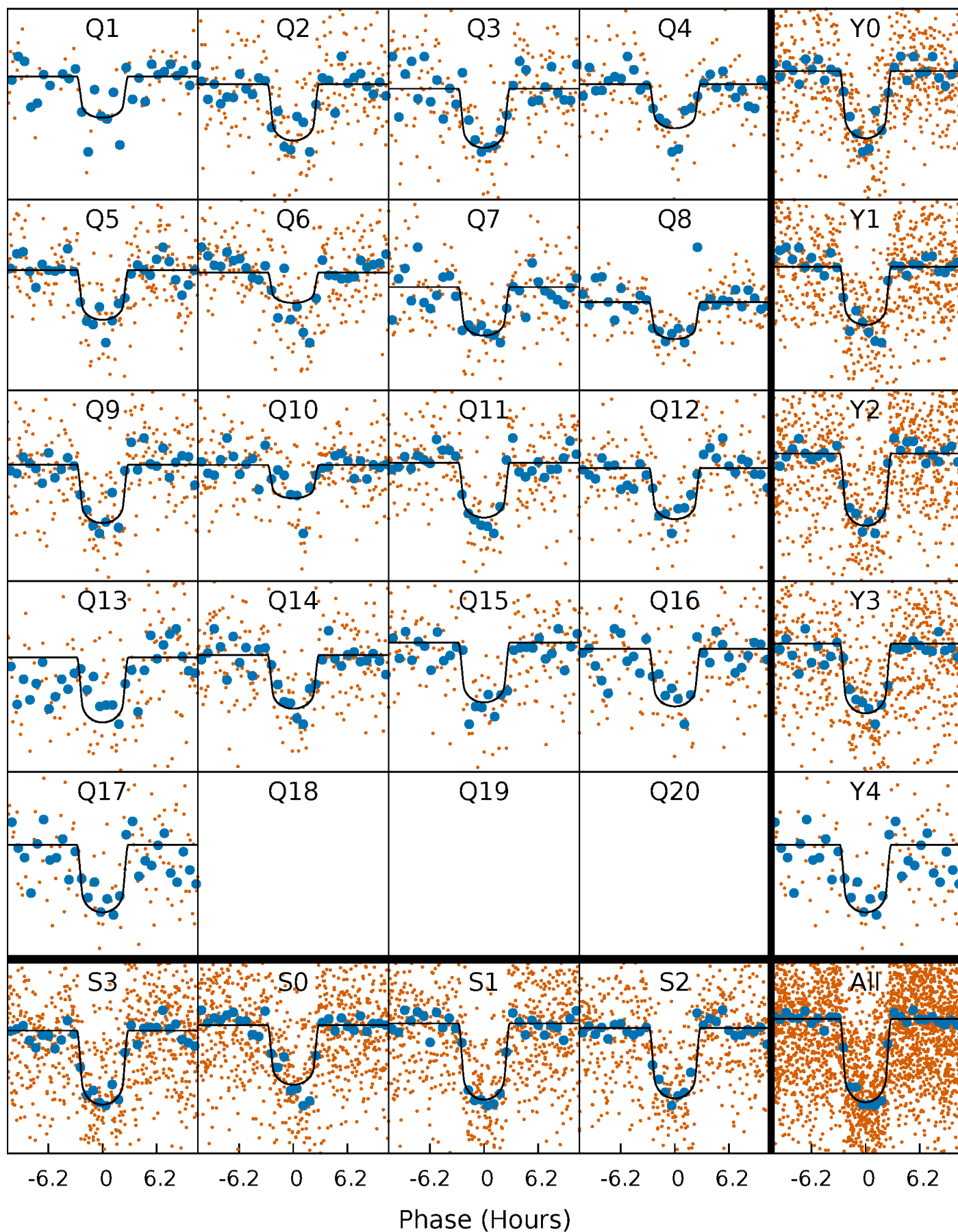
PDC Quarter-Phased Transit Curves

TCE 012068975-03 P= 15.677490 Days $T_0=132.441856$ (BKJD)



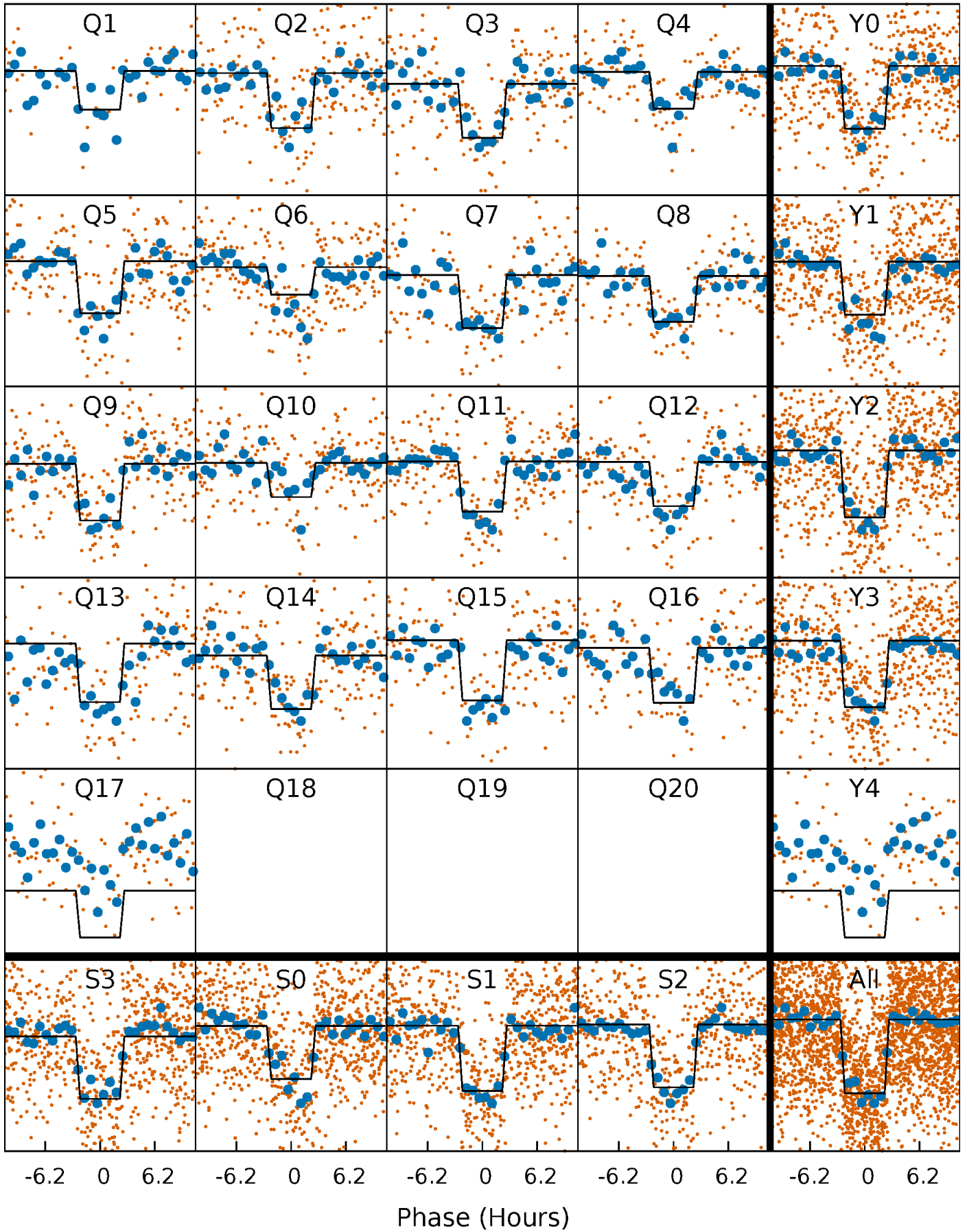
DV Quarter-Phased Transit Curves

TCE 012068975-03 P= 15.677490 Days $T_0=132.441856$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

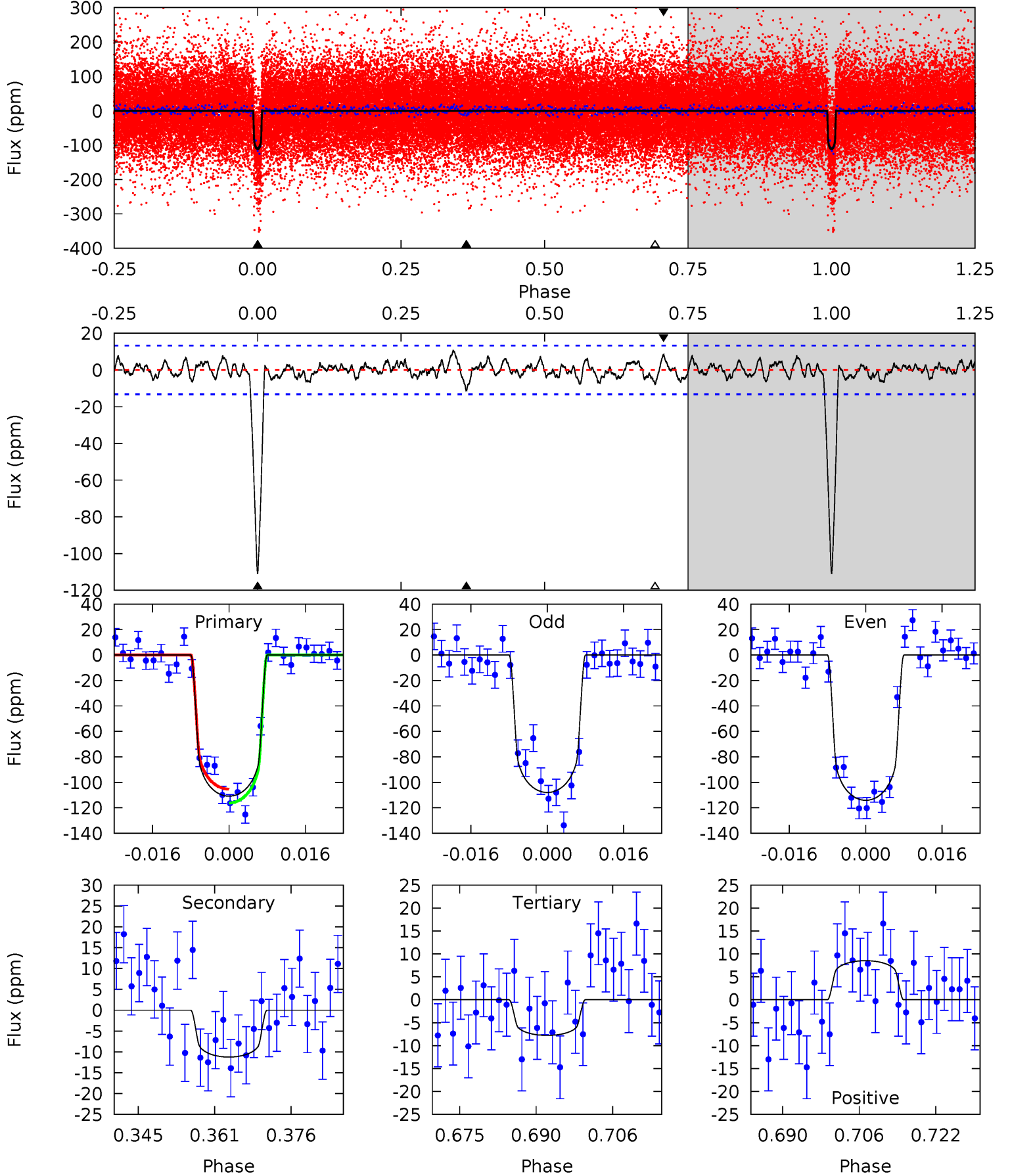
TCE 012068975-03 P= 15.677426 Days $T_0=132.445992$ (BKJD)



DV Model-Shift Uniqueness Test

012068975-03, $P = 15.677490$ Days, $E = 116.764366$ Days

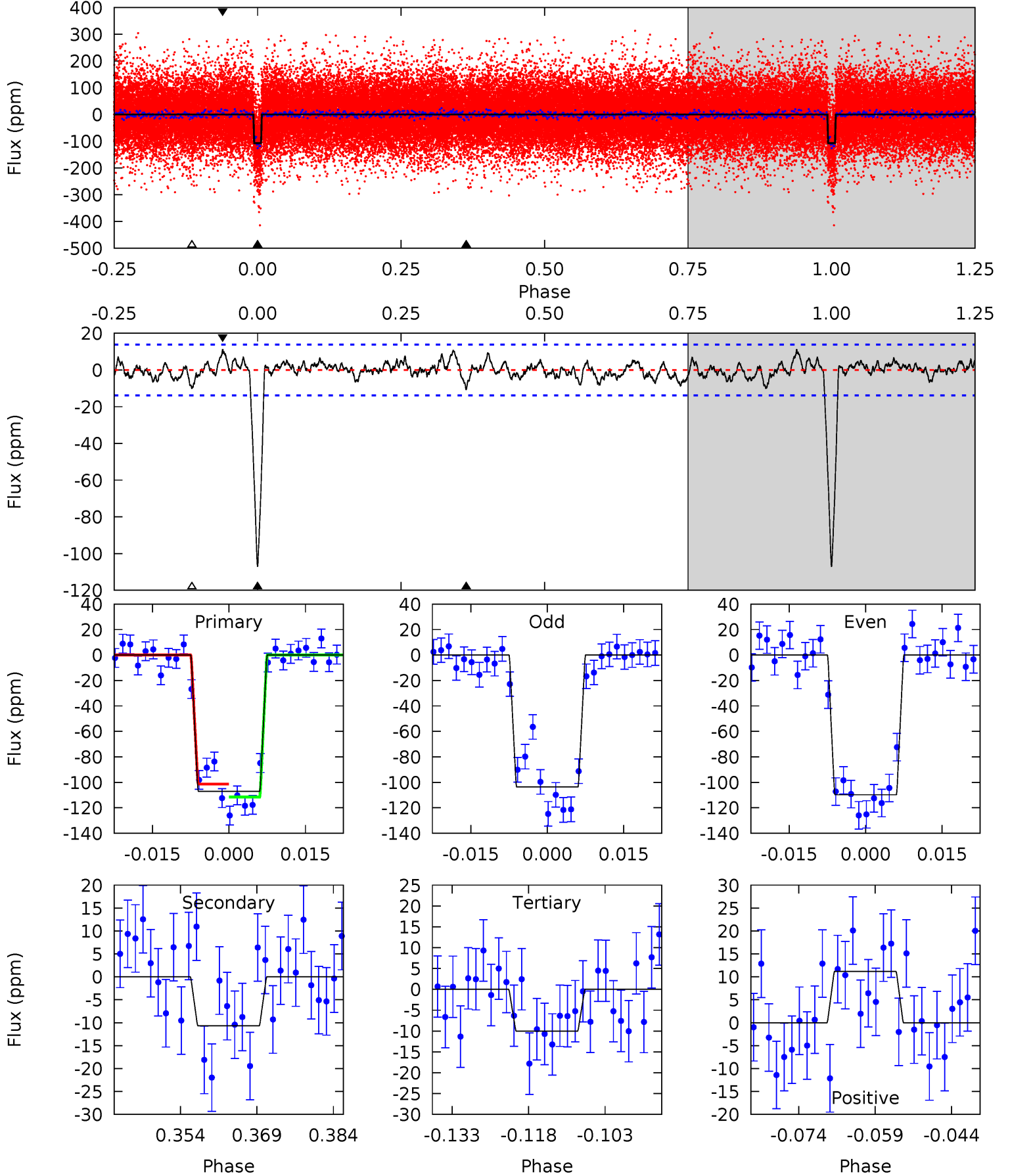
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.4	4.20	2.90	3.18	4.94	2.42	1.21	38.5	38.2	1.30	1.02	1.15	1.02	0.09	2.04



Alt Model-Shift Uniqueness Test

012068975-03, $P = 15.677426$ Days, $E = 116.768566$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.4	3.83	3.60	4.01	4.95	2.44	1.27	34.8	34.4	0.23	-0.18	1.10	1.01	0.09	1.83



Stellar Parameters For KIC 012068975

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6003^{+96}_{-108}	$4.303^{+0.018}_{-0.014}$	$-0.380^{+0.100}_{-0.100}$	$1.109^{+0.036}_{-0.040}$	$0.902^{+0.043}_{-0.049}$	$0.930^{+0.061}_{-0.047}$
	+2%/-2%	+0%/-0%	+26%/-26%	+3%/-4%	+5%/-5%	+7%/-5%
Source	SPE8	AST8	SPE8	DSEP		

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

Secondary Eclipse Parameters for KIC 012068975-03 / KOI 0623.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 3	$1.35^{+0.17}_{-0.16}$	1129^{+22}_{-21}	3689^{+237}_{-219}	48^{+20}_{-15}
Alt.	-11 ± 3	$1.24^{+0.17}_{-0.17}$	1131^{+19}_{-22}	3779^{+231}_{-263}	54^{+24}_{-18}

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

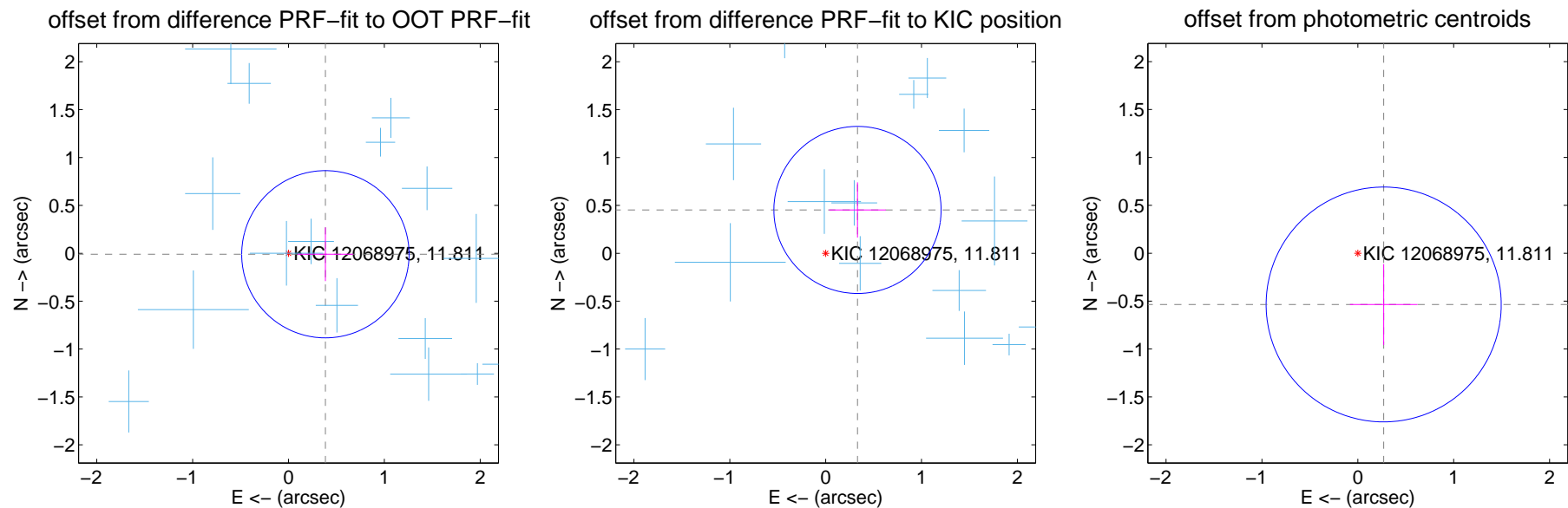
DV Centroid Data

Supplemental centroid analysis for 012068975-03. **Kepler magnitude: 11.81.** Transit SNR 28.18

There are 17 quarters with good PRF difference image offsets

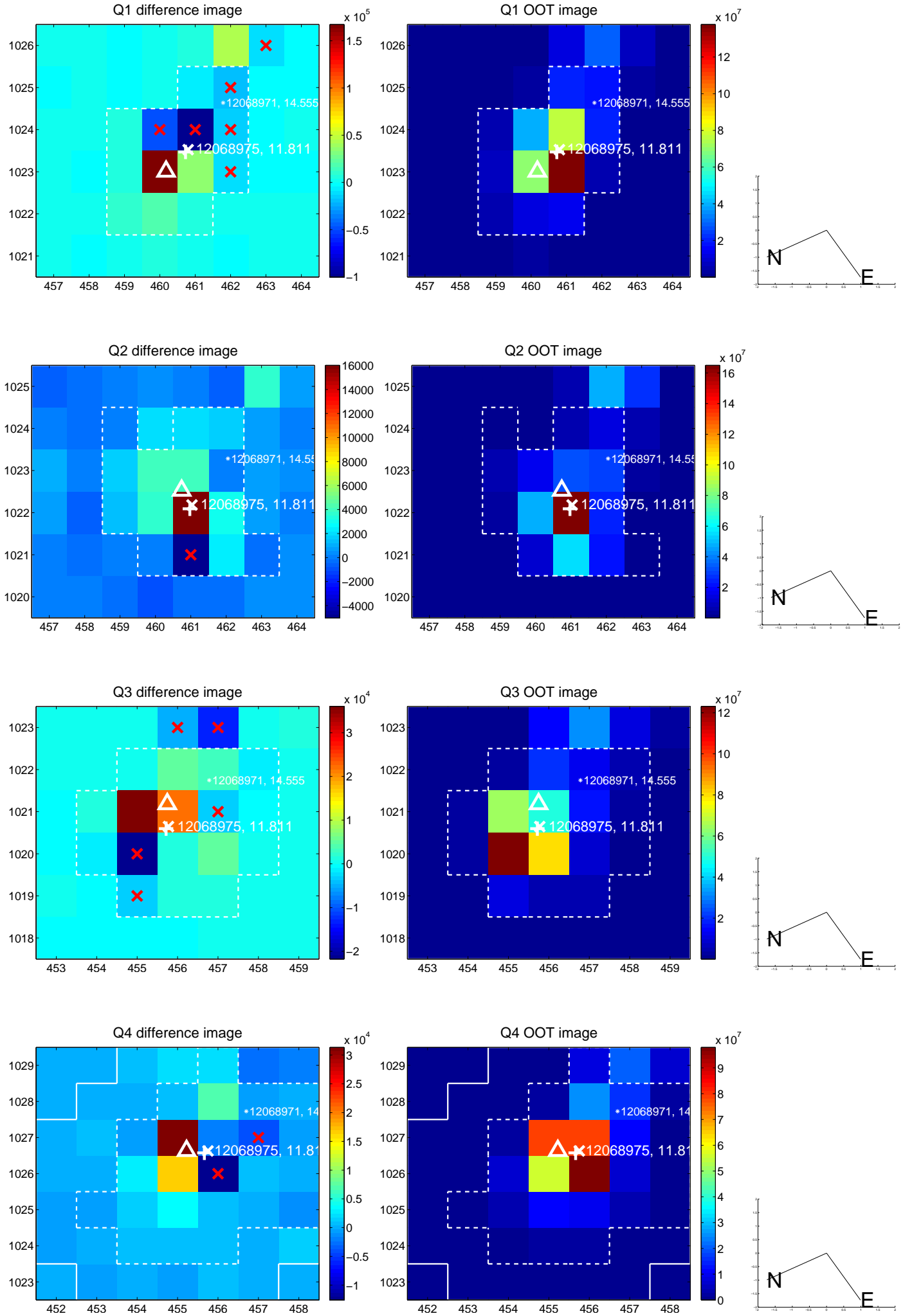
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.385 ± 0.291	1.32	-0.385 ± 0.291	-0.010 ± 0.281
PRF-fit source offset from KIC position	0.561 ± 0.291	1.93	-0.332 ± 0.295	0.453 ± 0.288
photometric centroid source offset	0.60 ± 0.41	1.47	-0.27 ± 0.35	-0.54 ± 0.42

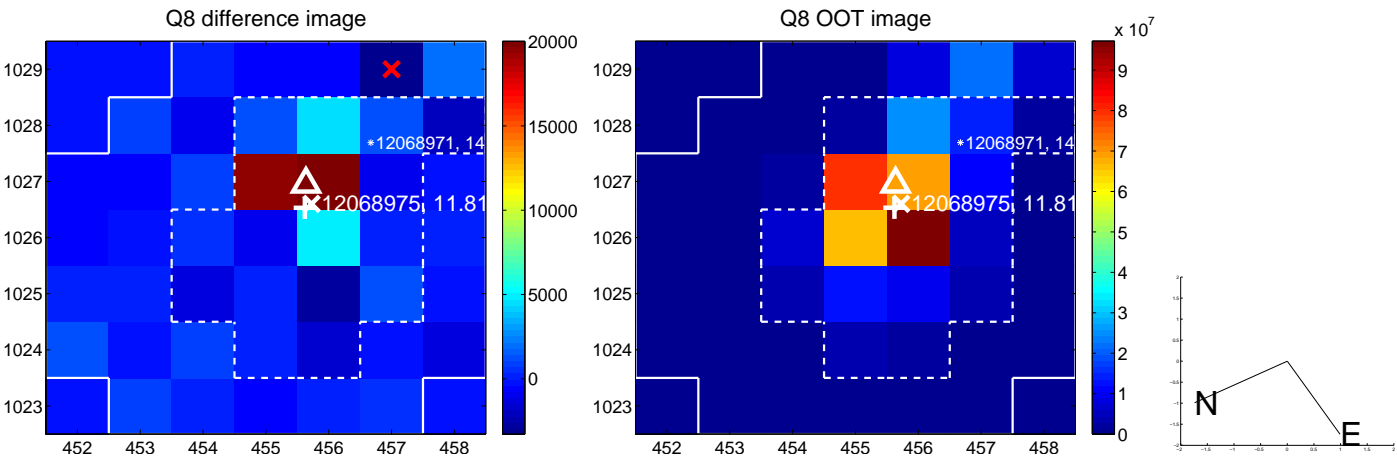
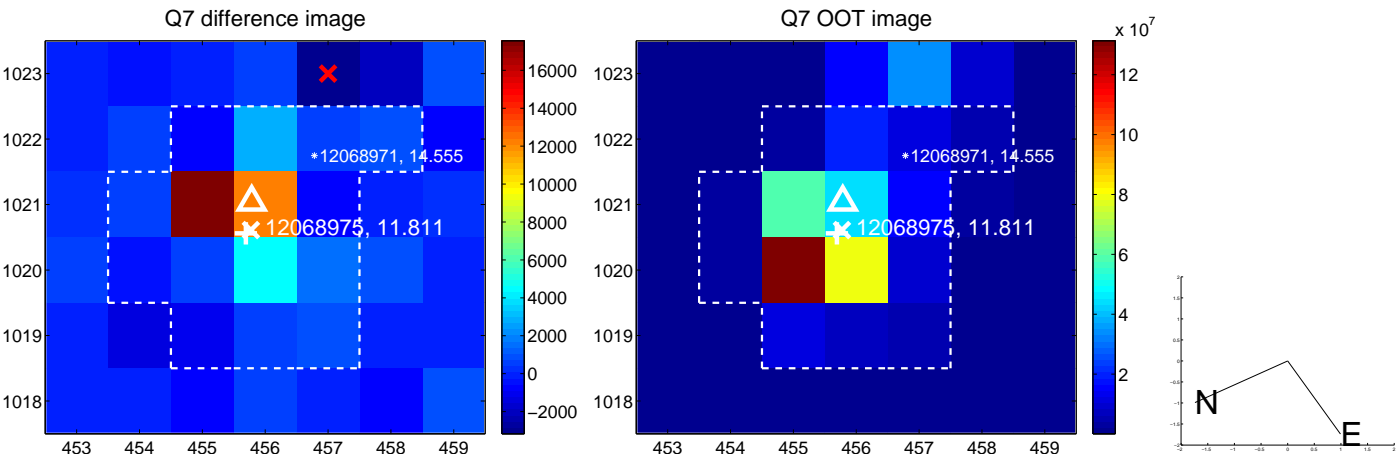
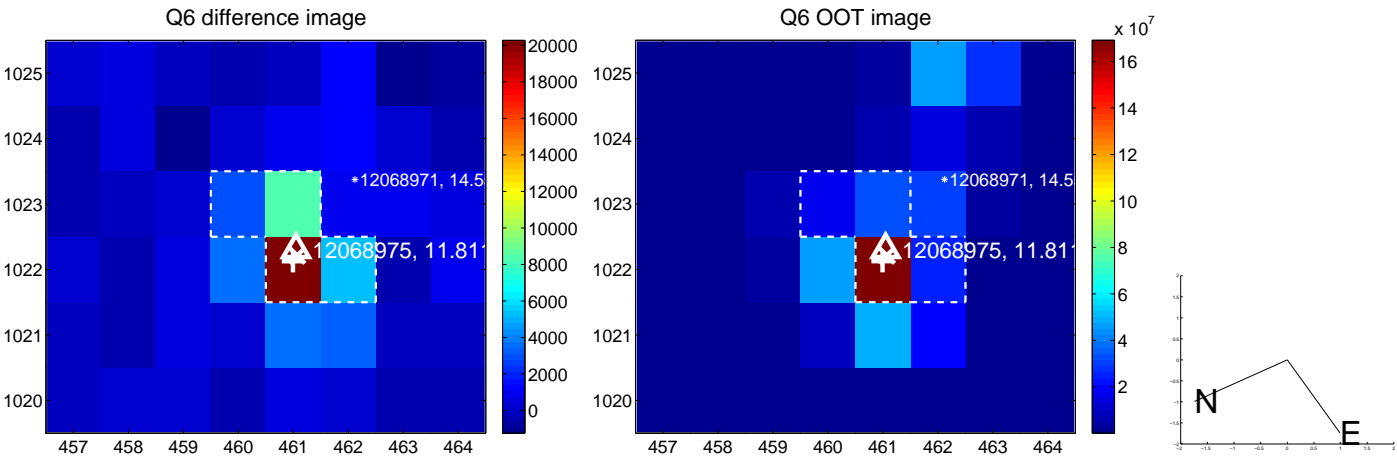
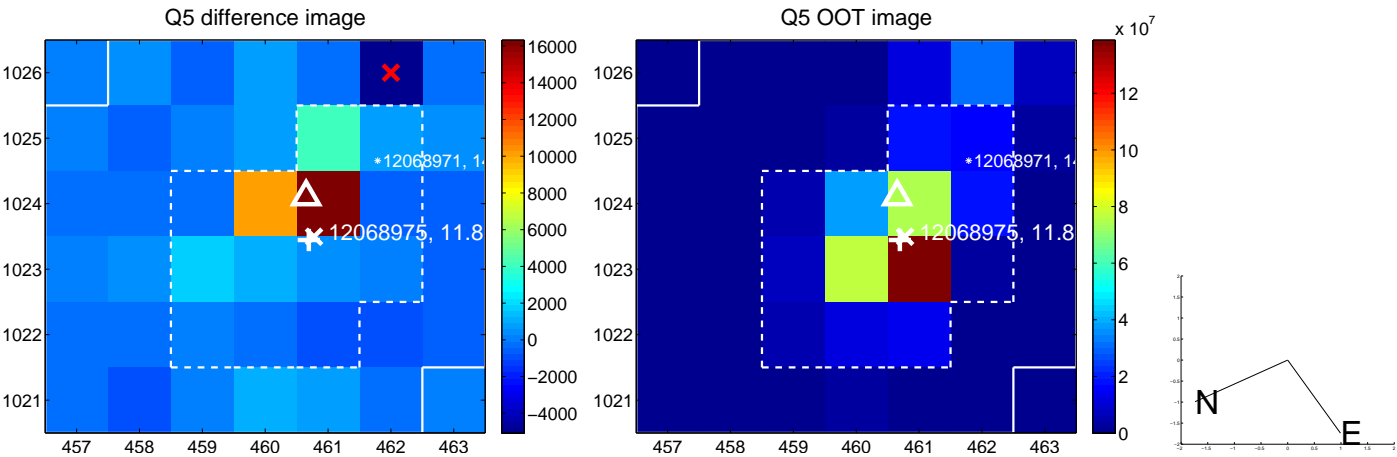


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

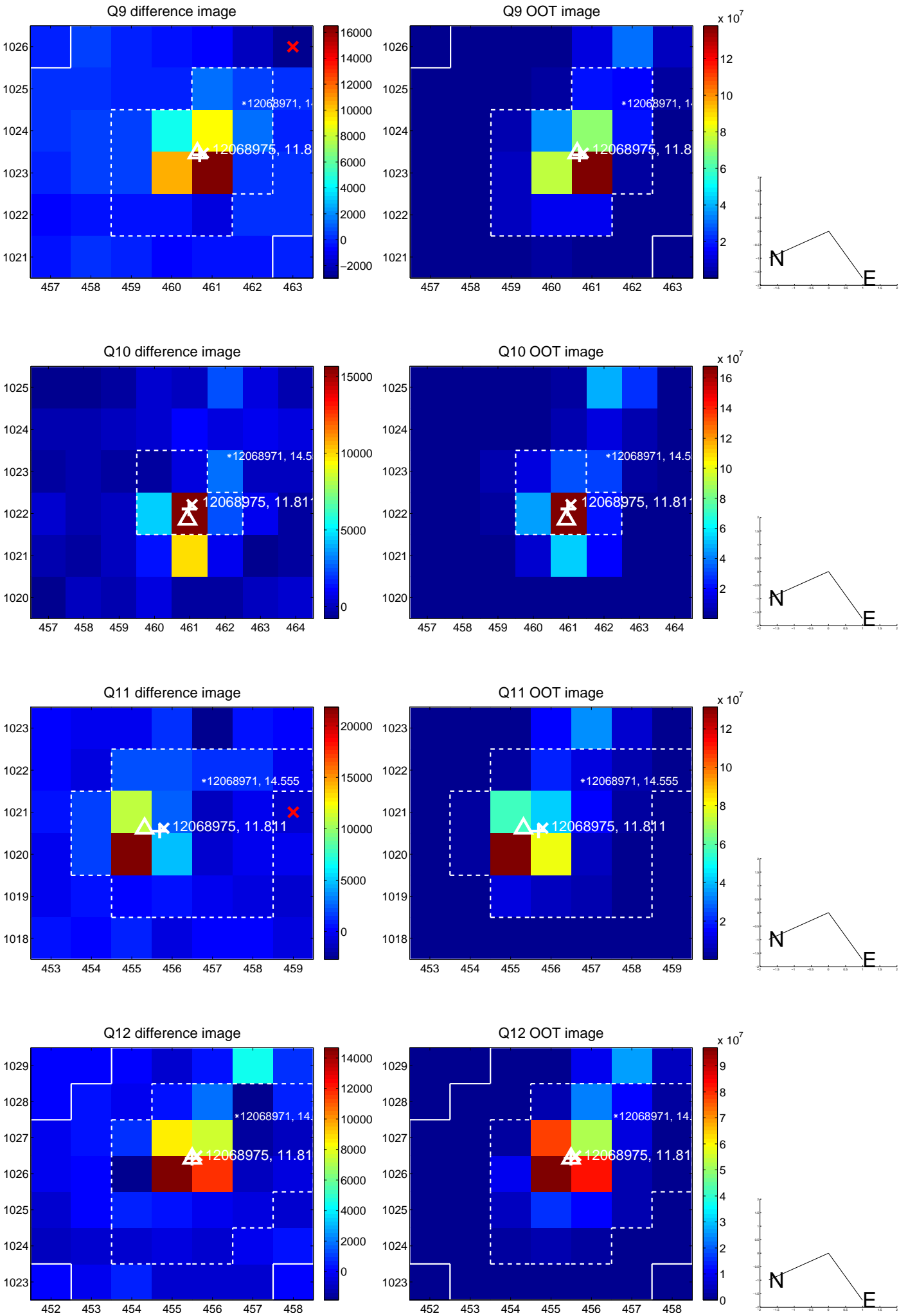
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



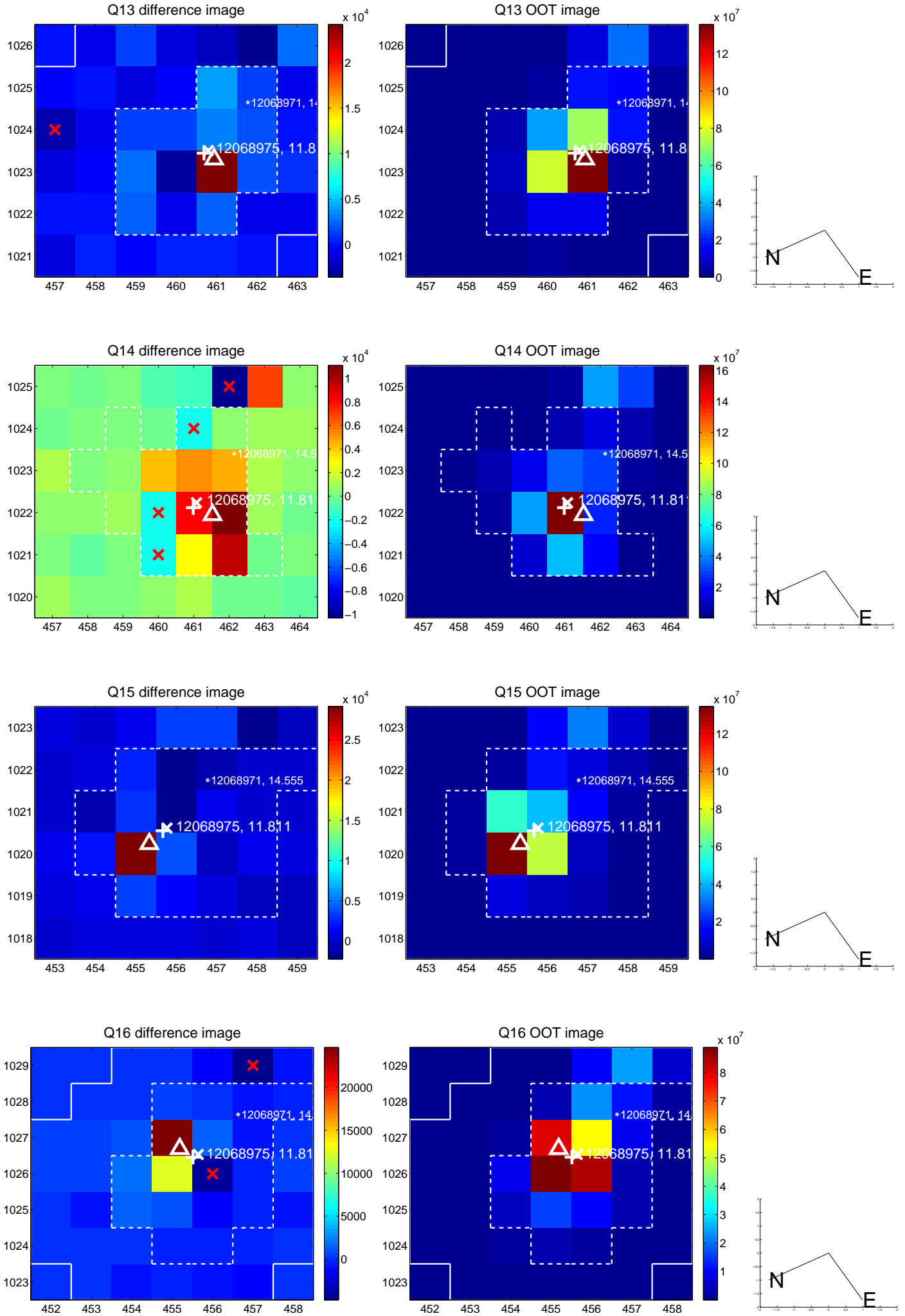
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



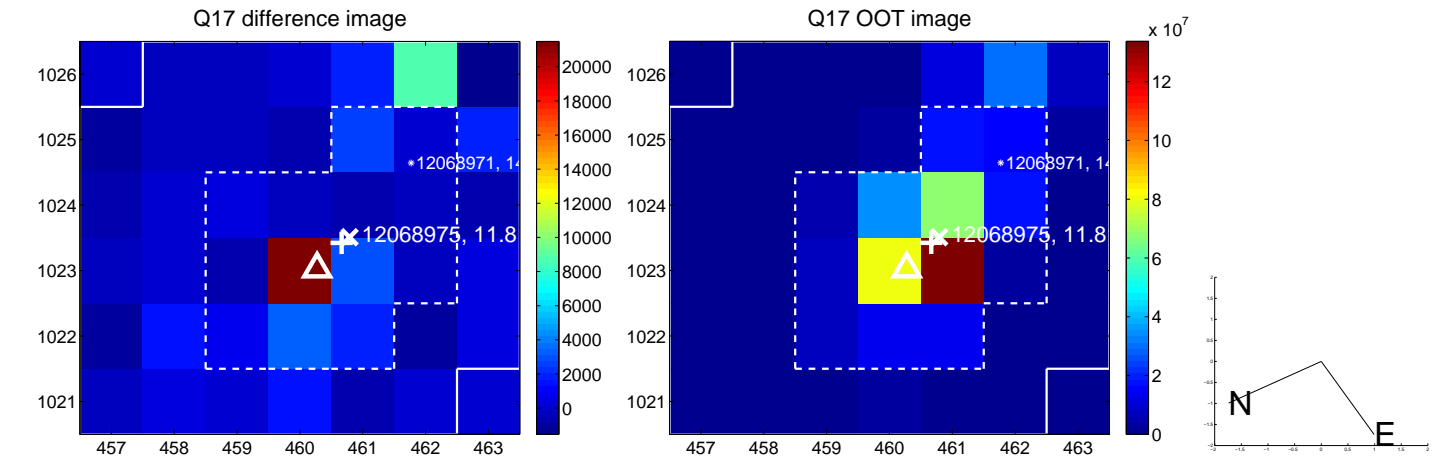
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



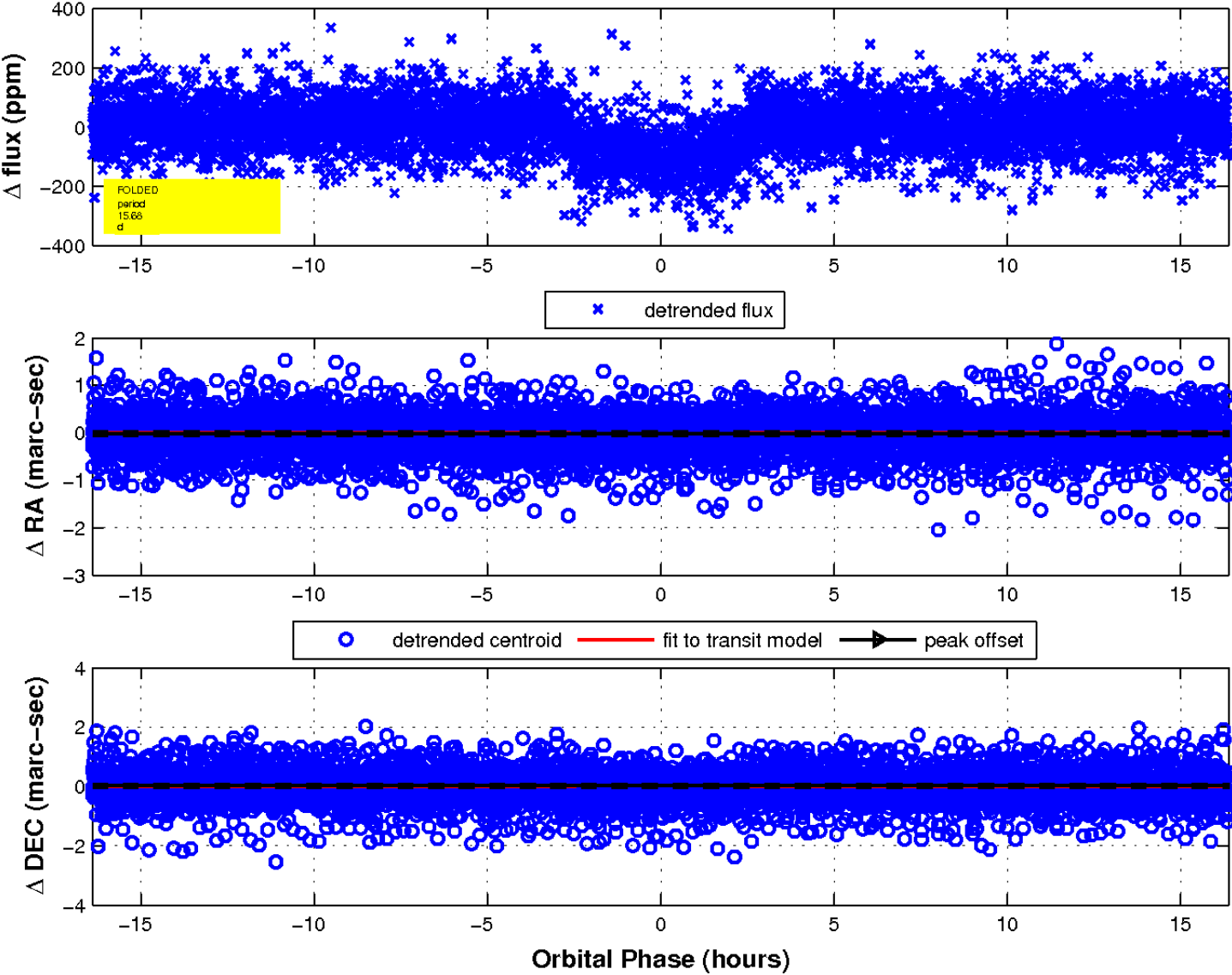
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

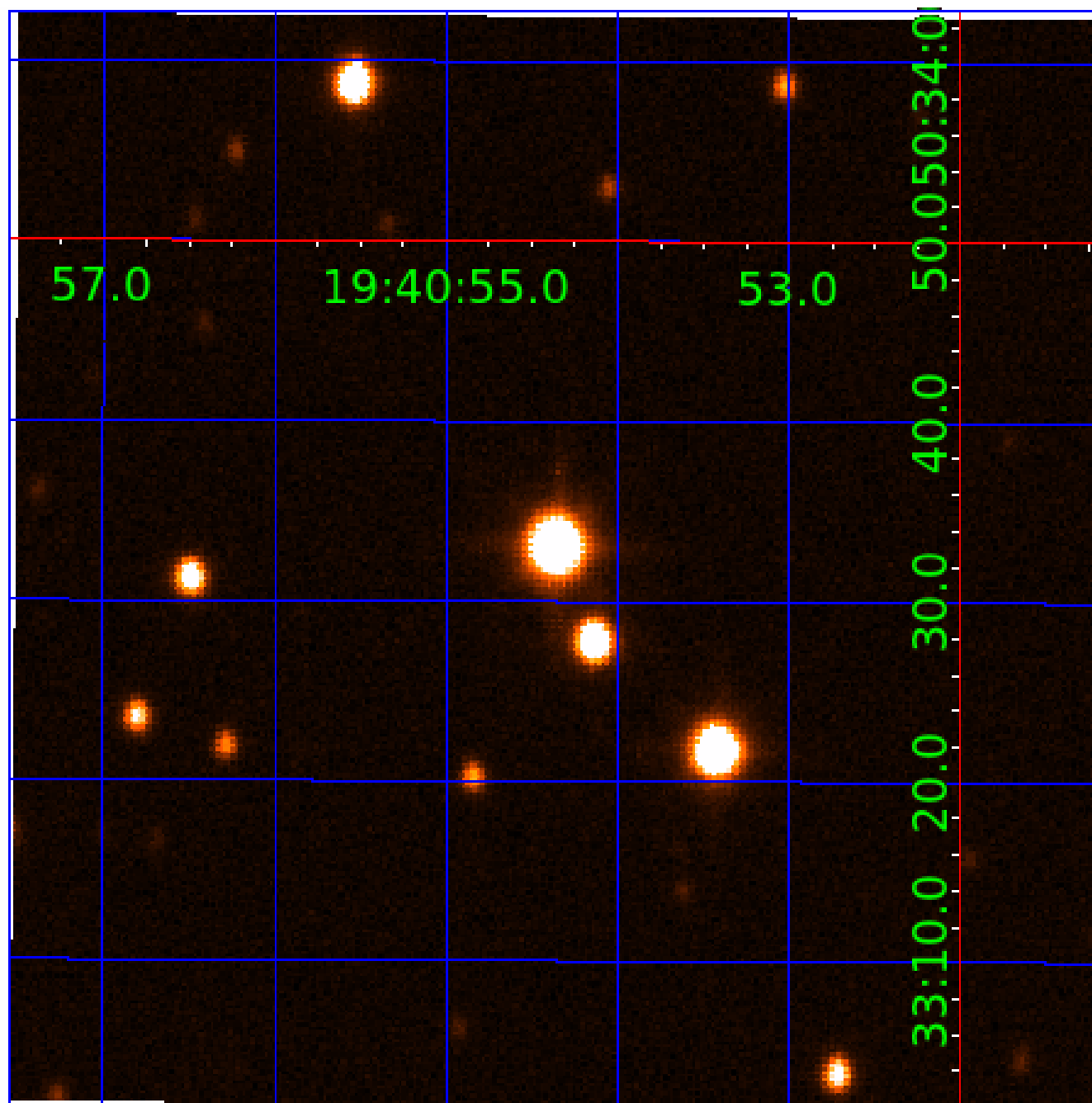


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 012068975

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})
012068975-01	OBS	0623.01	10.349740	132.663374	115.8	4.498	33.1	36.2	1.11	6003	1.42	177.45
012068975-02	OBS	0623.03	5.599307	132.281260	84.8	3.871	32.7	35.6	1.11	6003	1.20	402.54
012068975-03	OBS	0623.02	15.677490	132.441856	109.0	5.466	26.4	28.2	1.11	6003	1.34	102.00
012068975-04	OBS	0623.04	25.210037	154.407078	56.7	6.856	9.9	11.3	1.11	6003	0.99	54.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012068975-01	OBS	PC	0.28	0	0	0	0	CENT_KIC_POS
012068975-02	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS
012068975-03	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
012068975-04	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

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

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

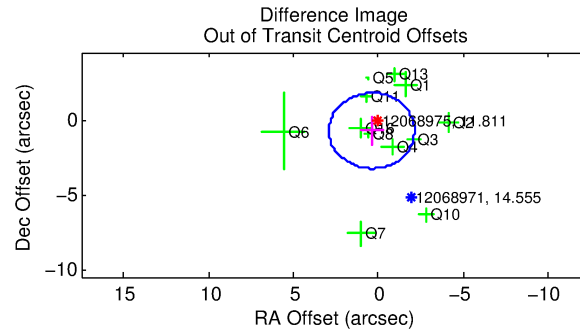
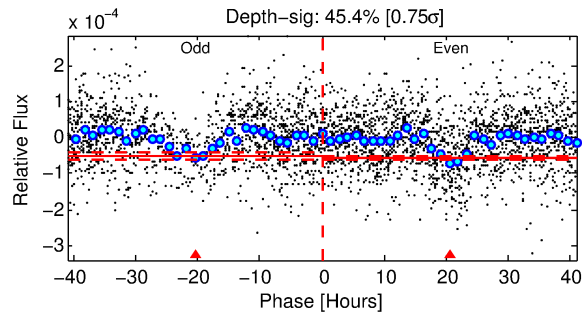
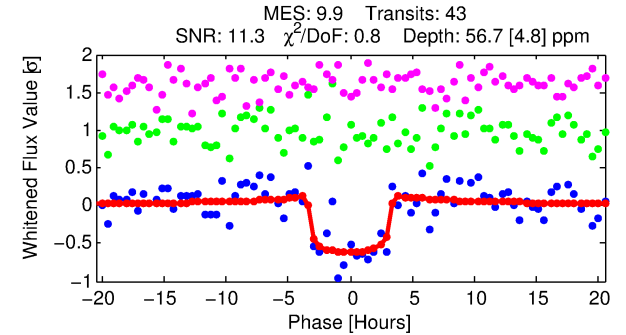
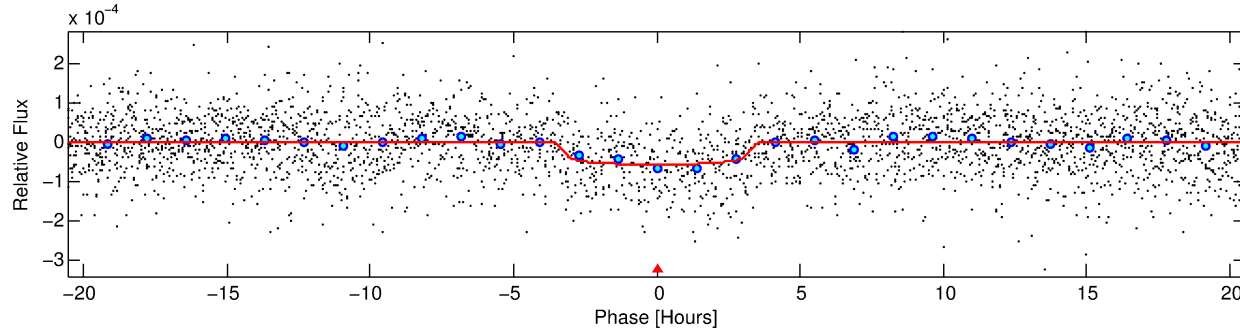
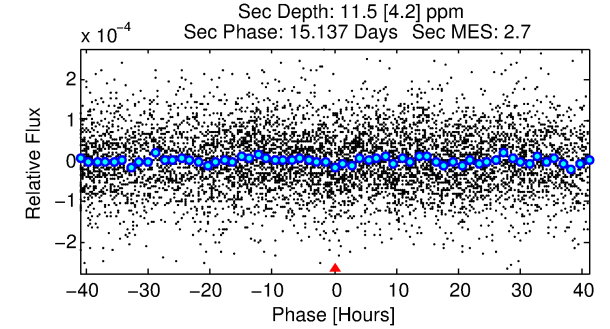
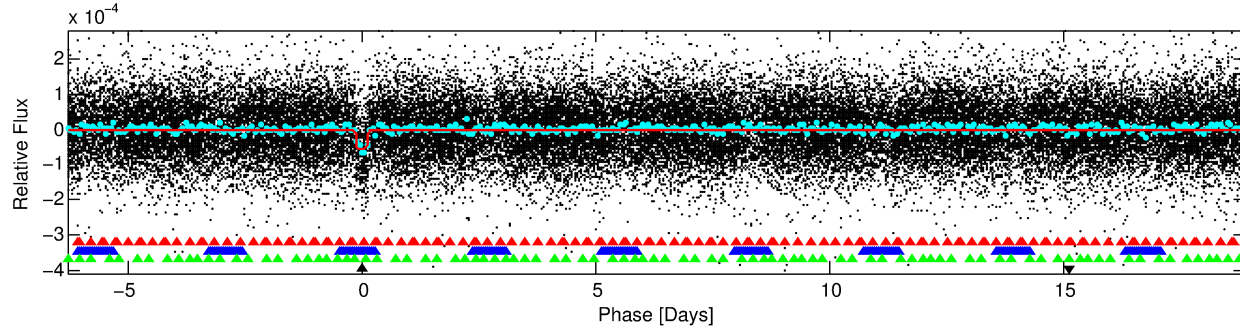
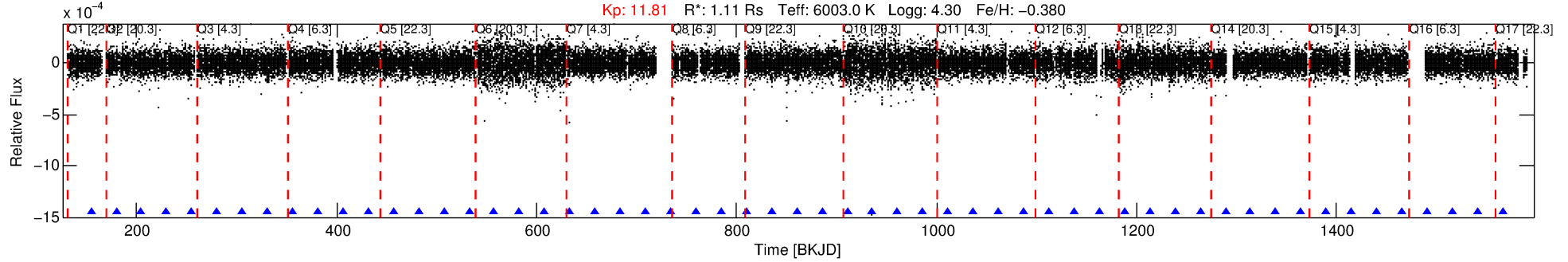
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012068975-04

No Significant Match Found

DV One-Page Summary

KIC: 12068975 Candidate: 4 of 4 Period: 25.210 d
KOI: K00623.04 Name: Kepler-197e Corr: 0.964



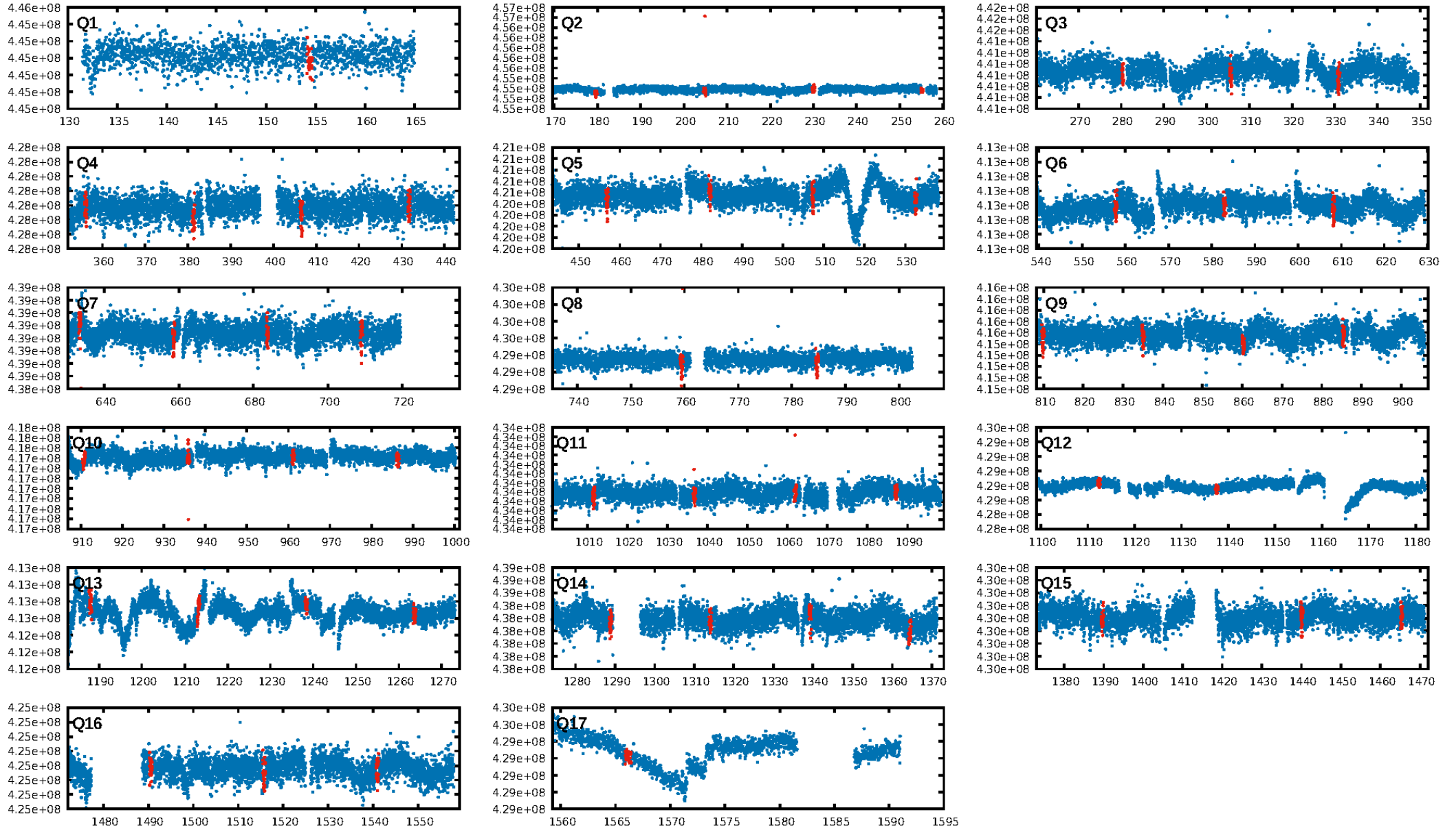
DV Fit Results:

Period = 25.21004 [0.00027] d
Epoch = 154.4071 [0.0096] BKJD
Rp/R* = 0.0082 [0.0019]
a/R* = 12.31 [14.84]
b = 0.91 [0.24]
Seff = 54.14 [4.37]
Teq = 692 [14] K
Rp = 0.99 [0.23] Re
a = 0.1626 [0.0045] AU
Ag = 171.25 [100.75] [1.69σ]
Teffp = 3869 [572] K [5.55σ]

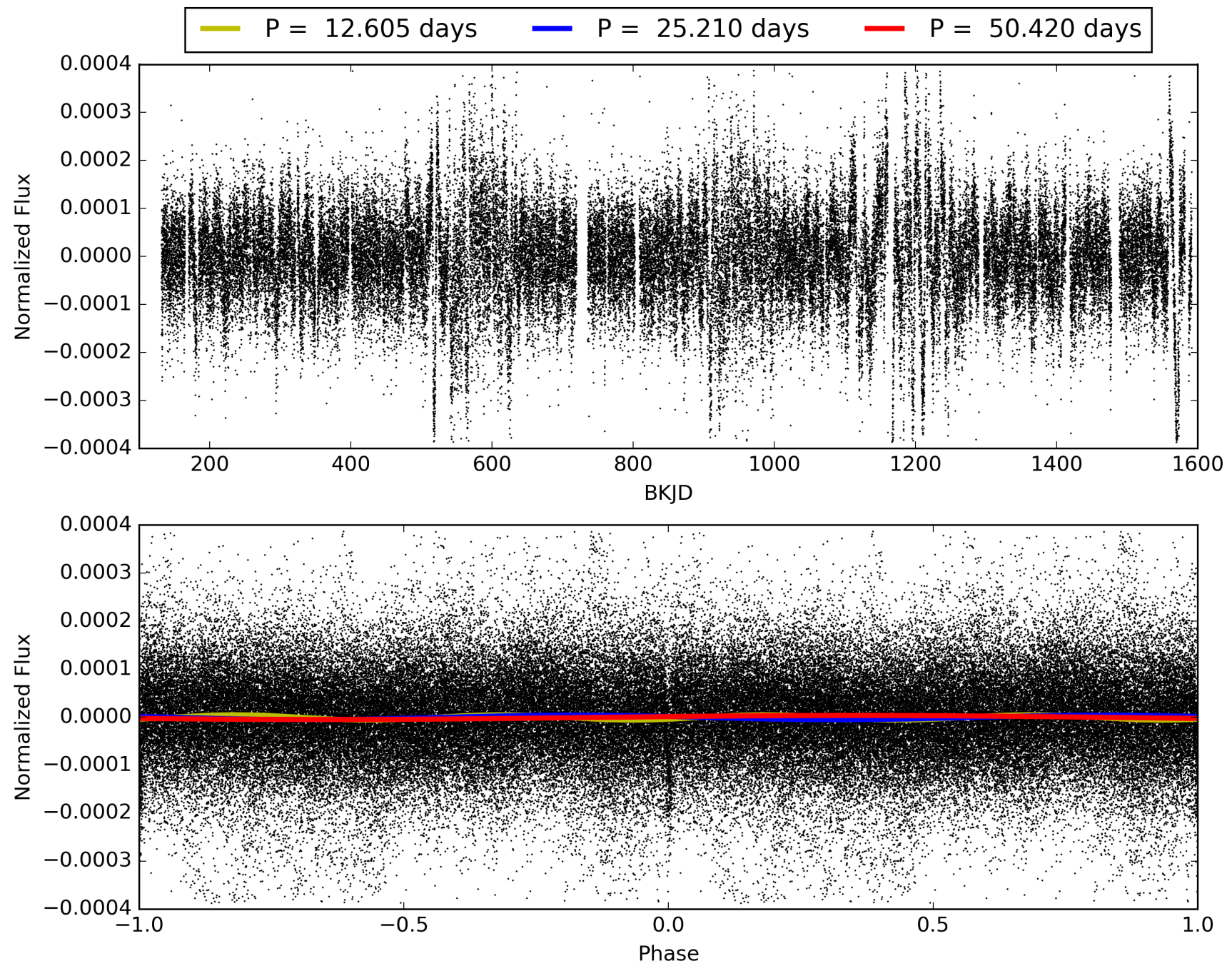
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [26.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 65.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.64e-21
RollingBand-fgt: 1.00 [41/41]
GhostDiagnostic-chr: 3.462
Centroid-sig: 0.1%
Centroid-so: 2.472 arcsec [2.61σ]
OotOffset-rm: 0.824 arcsec [0.98σ]
KicOffset-rm: 0.505 arcsec [0.64σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.76 [13/17]

TCE 012068975-04, PDC Light Curves

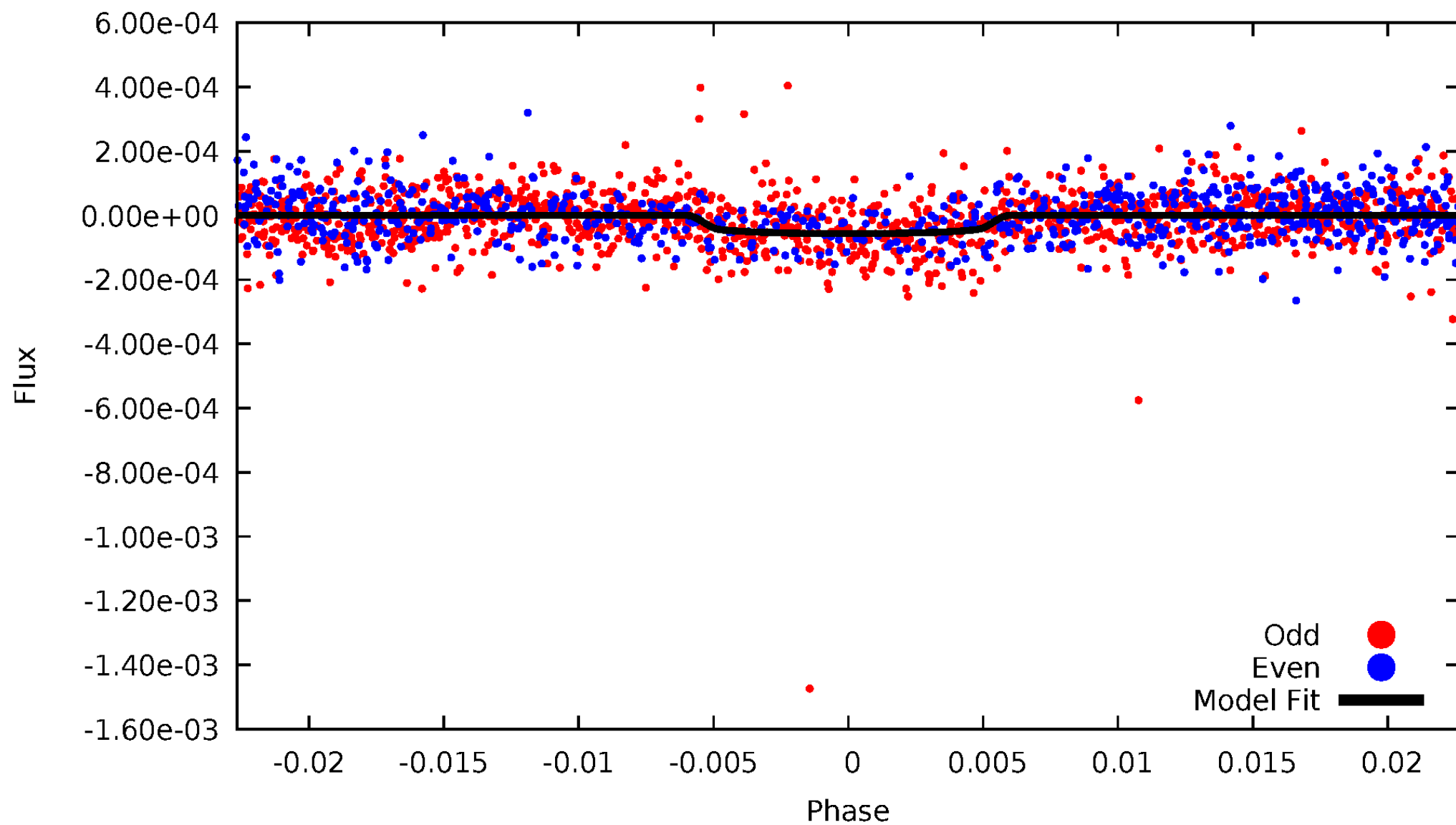


TCE 012068975-04



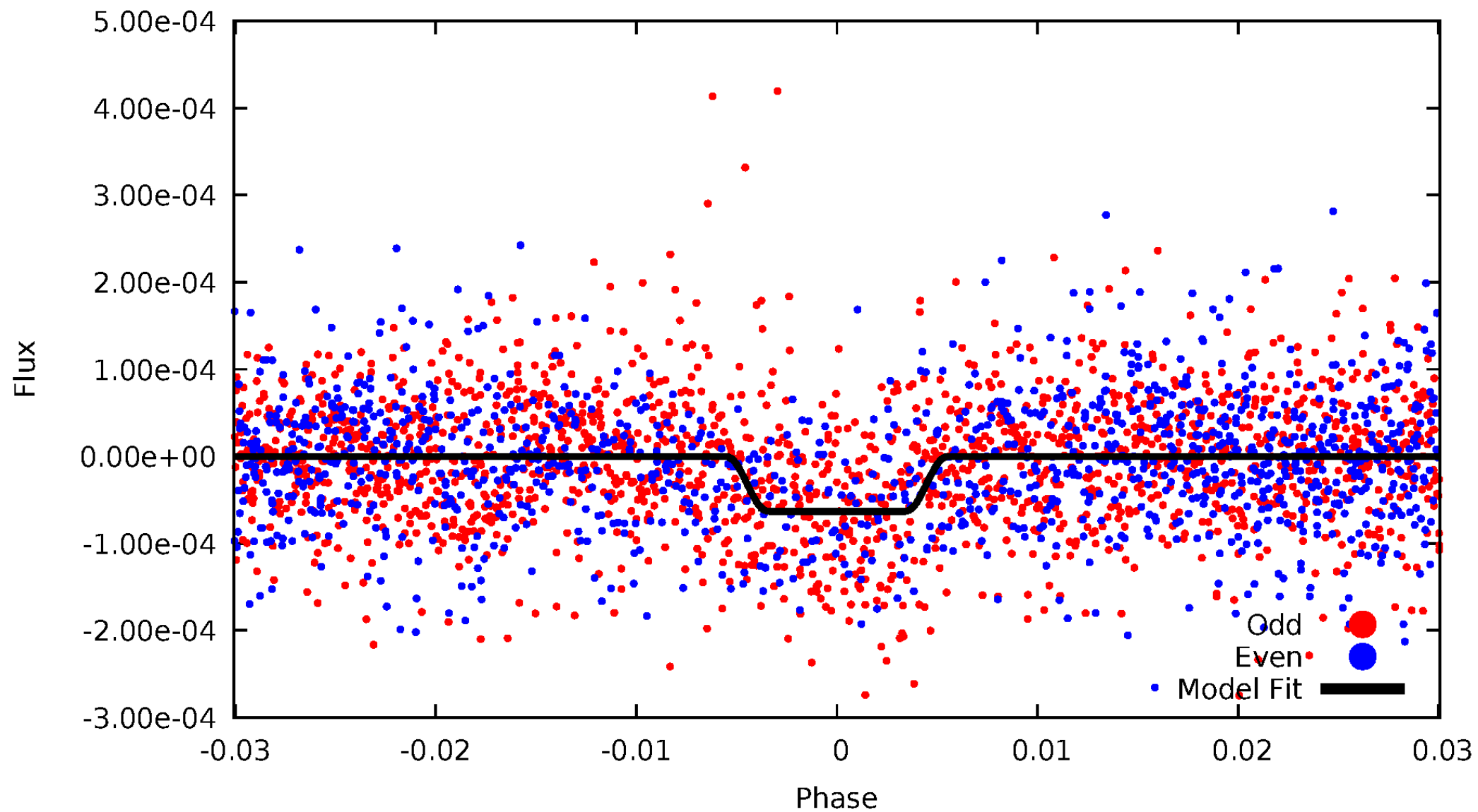
DV Odd/Even

TCE 012068975-04



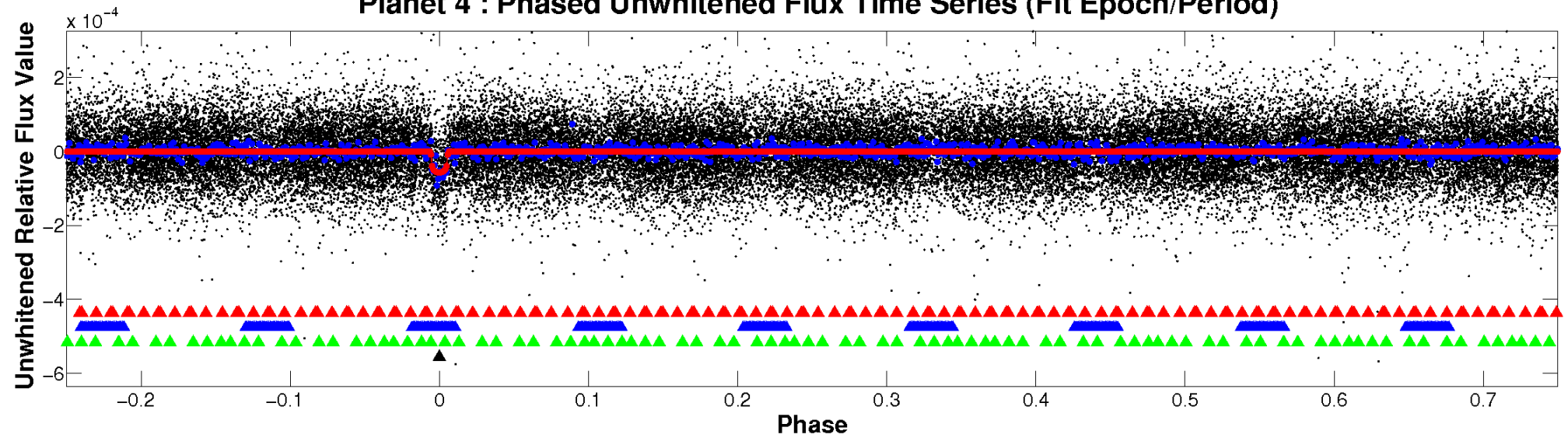
ALT Odd/Even

TCE 012068975-04

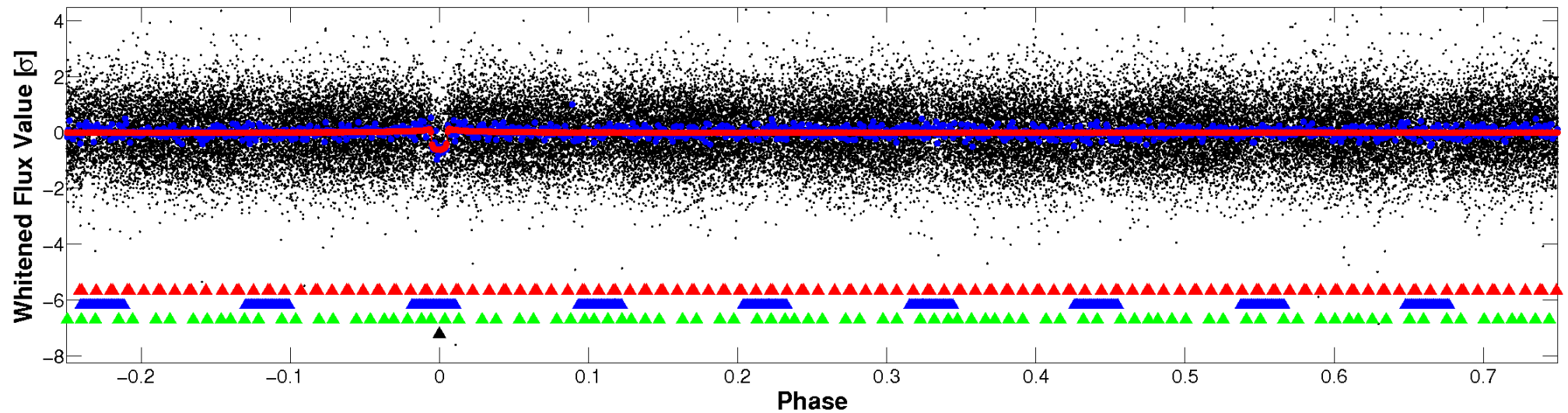


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

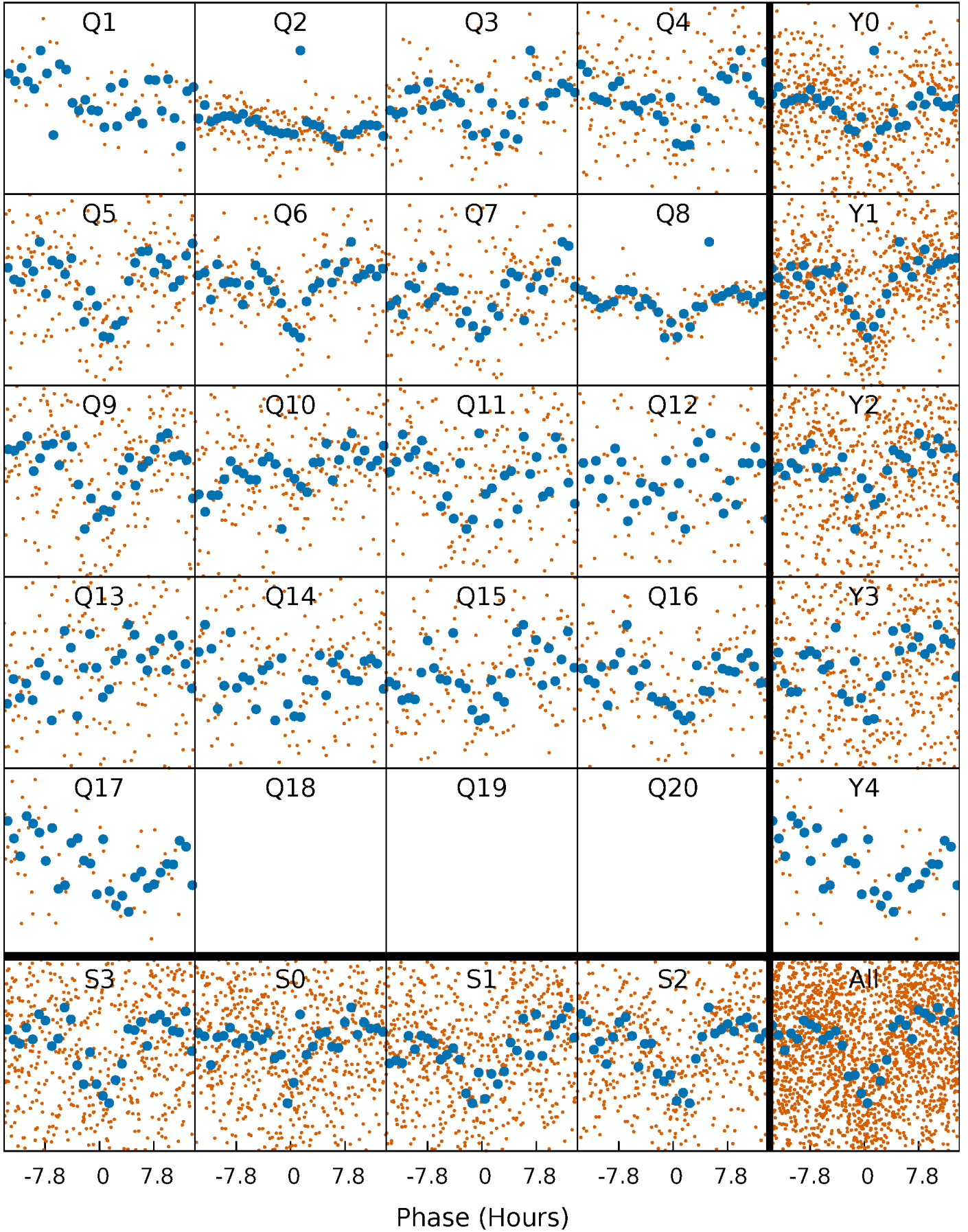


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



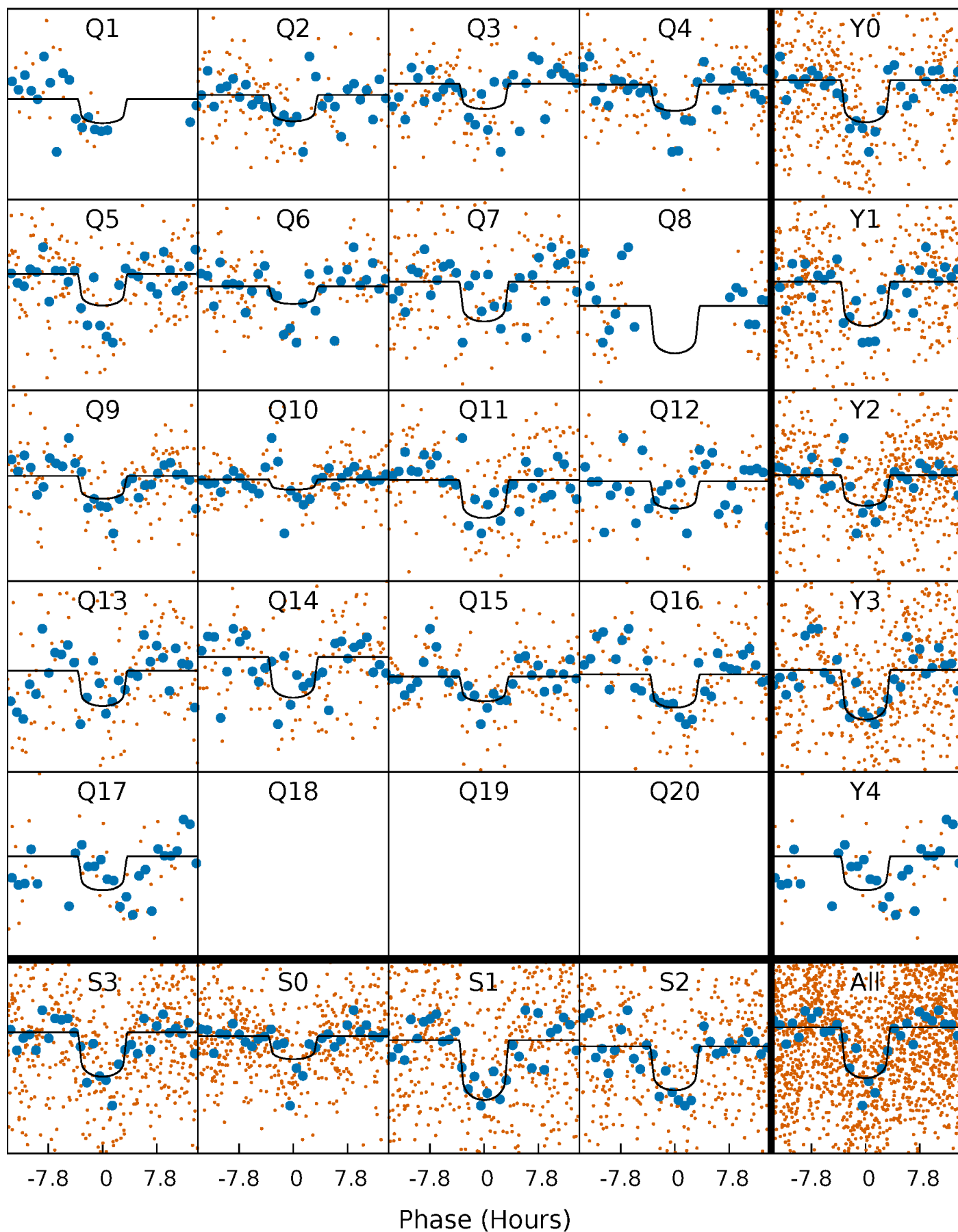
PDC Quarter-Phased Transit Curves

TCE 012068975-04 P= 25.210037 Days $T_0=154.407079$ (BKJD)



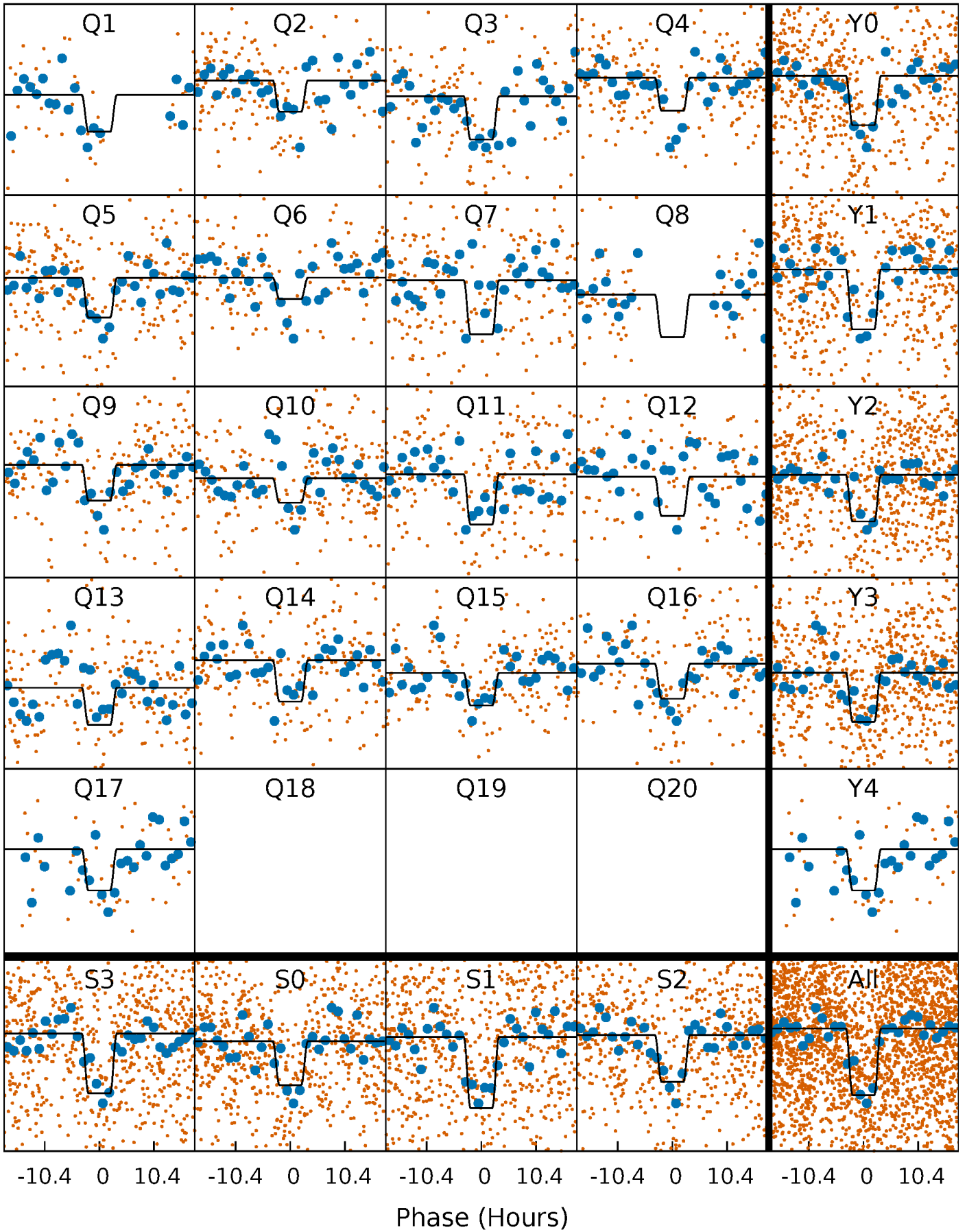
DV Quarter-Phased Transit Curves

TCE 012068975-04 P= 25.210037 Days $T_0=154.407079$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

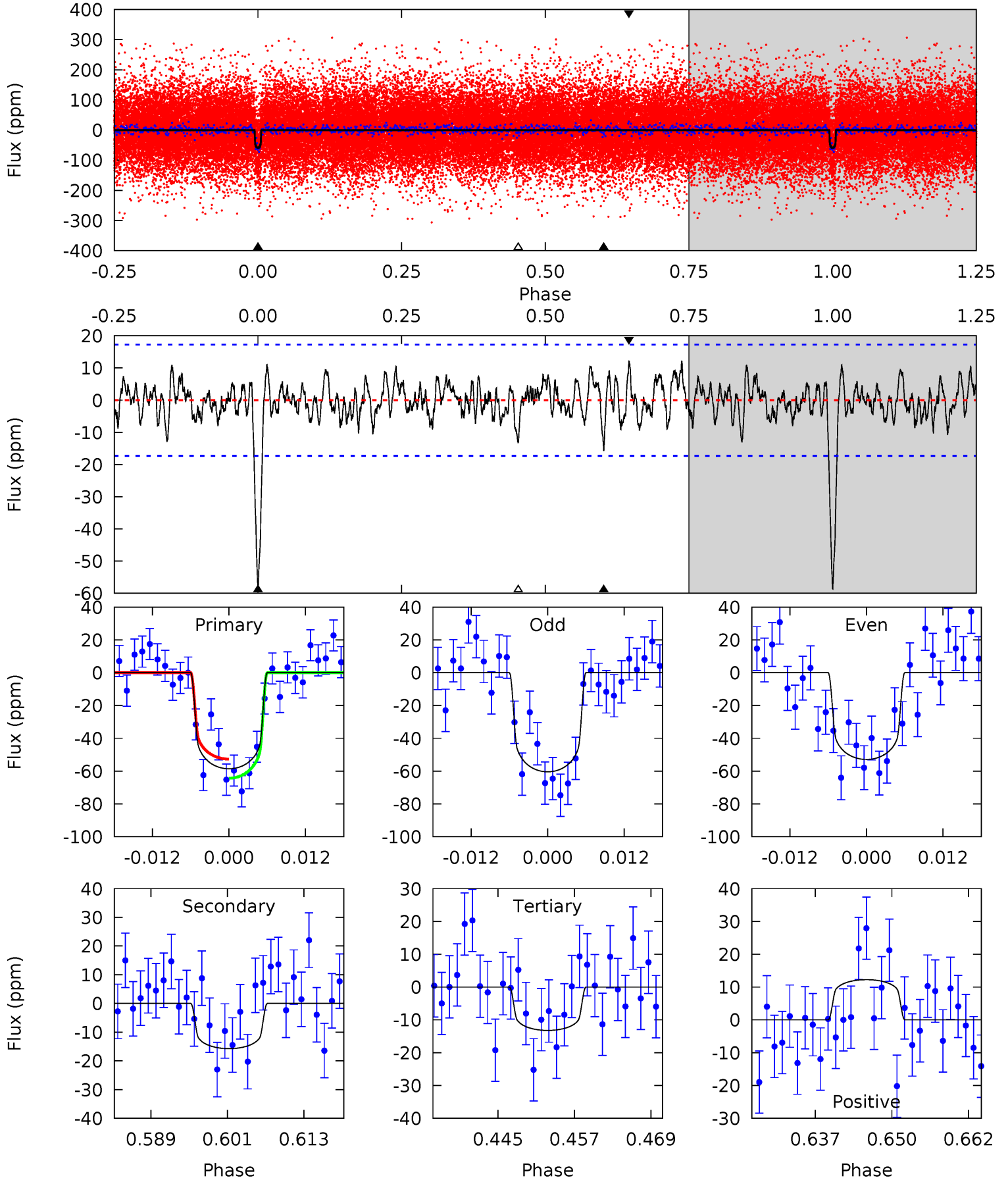
TCE 012068975-04 $P = 25.211237$ Days $T_0 = 154.387793$ (BKJD)



DV Model-Shift Uniqueness Test

012068975-04, P = 25.210037 Days, E = 129.197042 Days

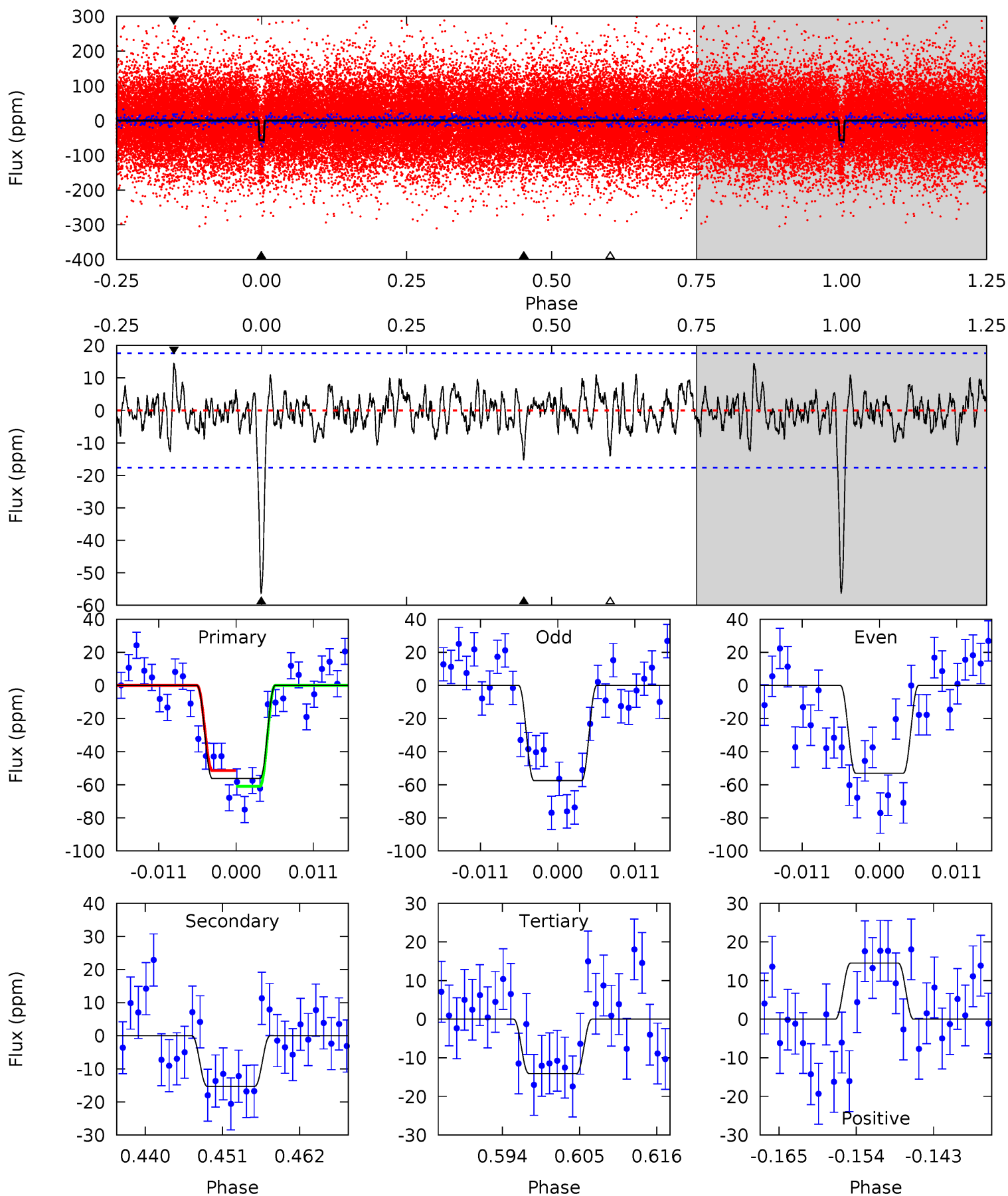
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	4.55	3.82	3.54	4.99	2.51	1.29	13.1	13.4	0.73	1.01	0.95	1.06	0.17	1.69



Alt Model-Shift Uniqueness Test

012068975-04, P = 25.211237 Days, E = 129.176556 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	4.34	4.00	4.13	5.01	2.54	1.24	12.0	11.9	0.34	0.21	0.57	1.09	0.21	1.35



Stellar Parameters For KIC 012068975

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6003^{+96}_{-108}	$4.303^{+0.018}_{-0.014}$	$-0.380^{+0.100}_{-0.100}$	$1.109^{+0.036}_{-0.040}$	$0.902^{+0.043}_{-0.049}$	$0.930^{+0.061}_{-0.047}$
	+2%/-2%	+0%/-0%	+26%/-26%	+3%/-4%	+5%/-5%	+7%/-5%
Source	SPE8	AST8	SPE8	DSEP		

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

Secondary Eclipse Parameters for KIC 012068975-04 / KOI 0623.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 3	$0.98^{+0.24}_{-0.22}$	964^{+18}_{-18}	4390^{+500}_{-378}	234^{+168}_{-89}
Alt.	-15 ± 4	$0.97^{+0.22}_{-0.22}$	964^{+17}_{-18}	4395^{+494}_{-397}	235^{+167}_{-94}

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

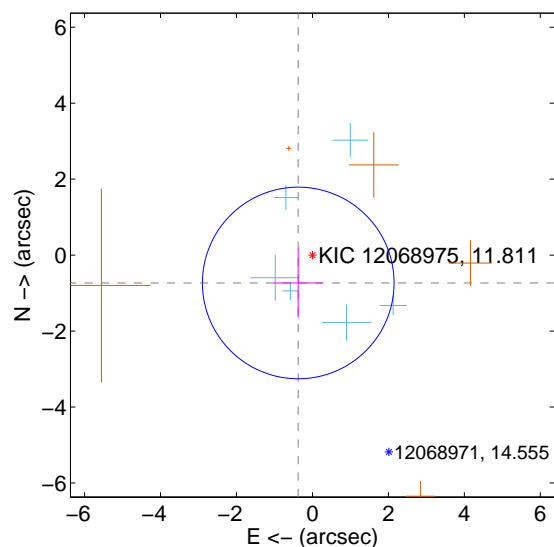
Supplemental centroid analysis for 012068975-04. **Kepler magnitude: 11.81.** Transit SNR 11.35

There are 6 quarters with good PRF difference image offsets

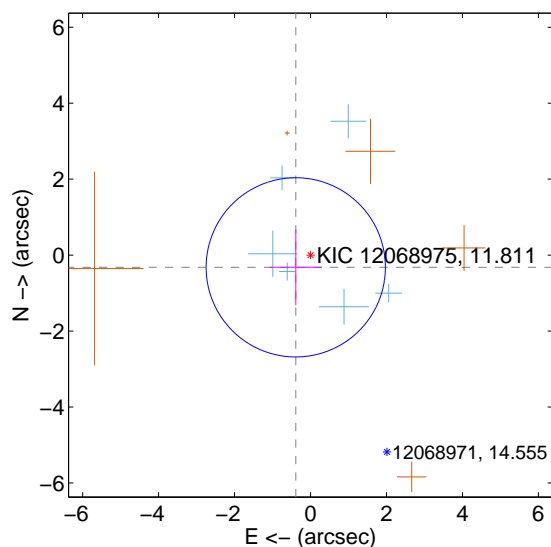
The direct PRF centroid is offset from the target star catalog position by about 0.63 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.824 ± 0.841	0.98	0.374 ± 0.647	-0.734 ± 0.911
PRF-fit source offset from KIC position	0.505 ± 0.787	0.64	0.389 ± 0.689	-0.323 ± 0.997
photometric centroid source offset	2.47 ± 0.95	2.61	-1.23 ± 0.82	-2.15 ± 0.98

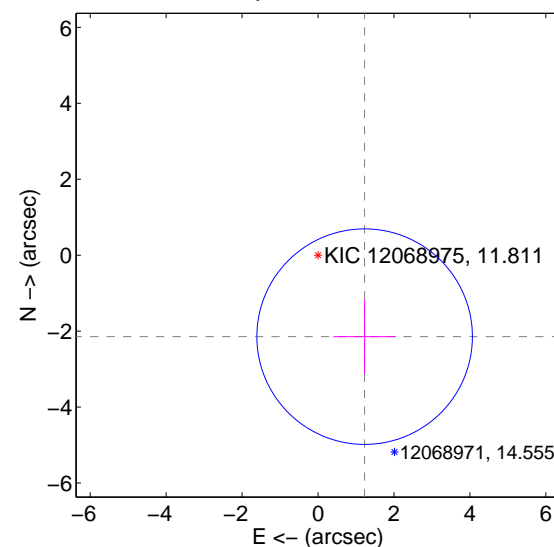
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

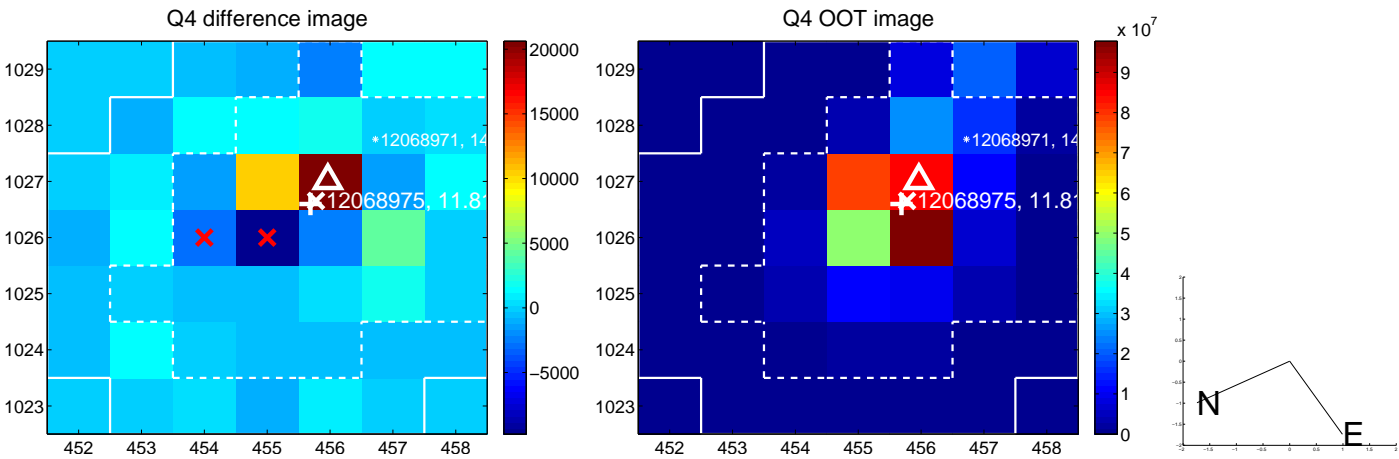
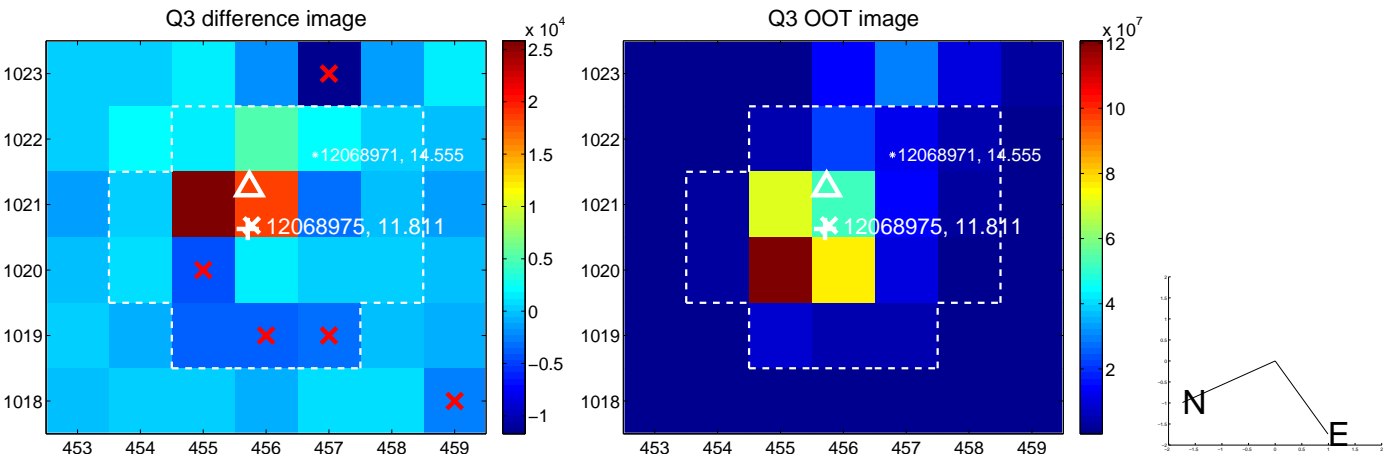
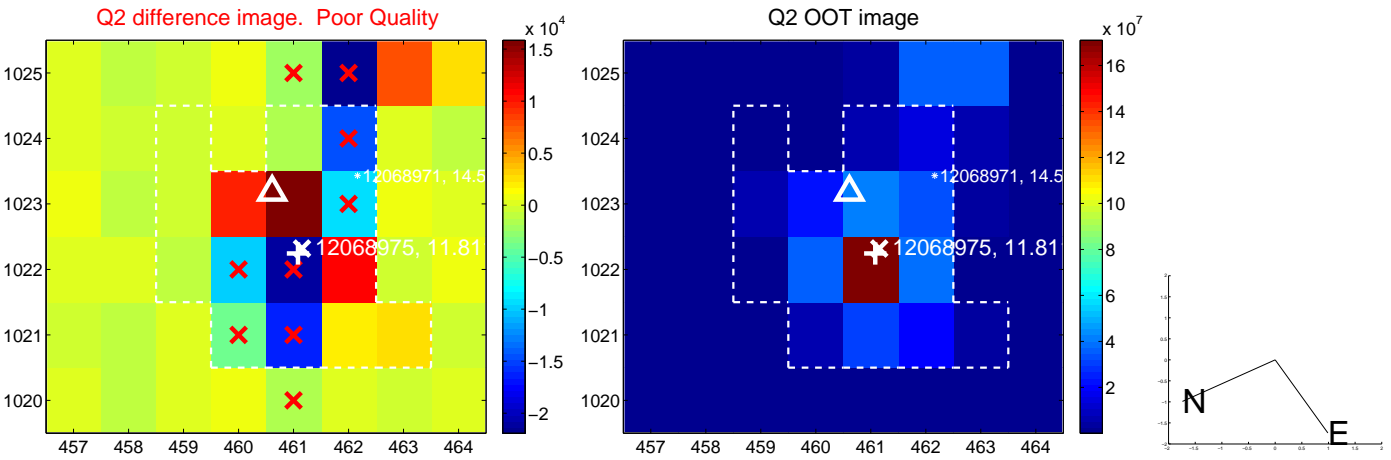
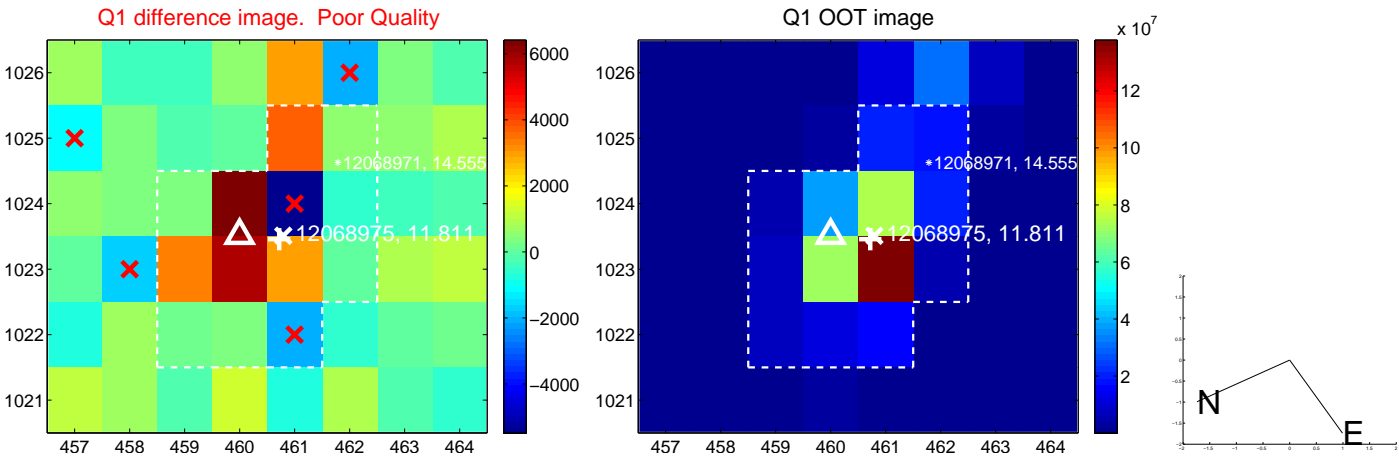


offset from photometric centroids

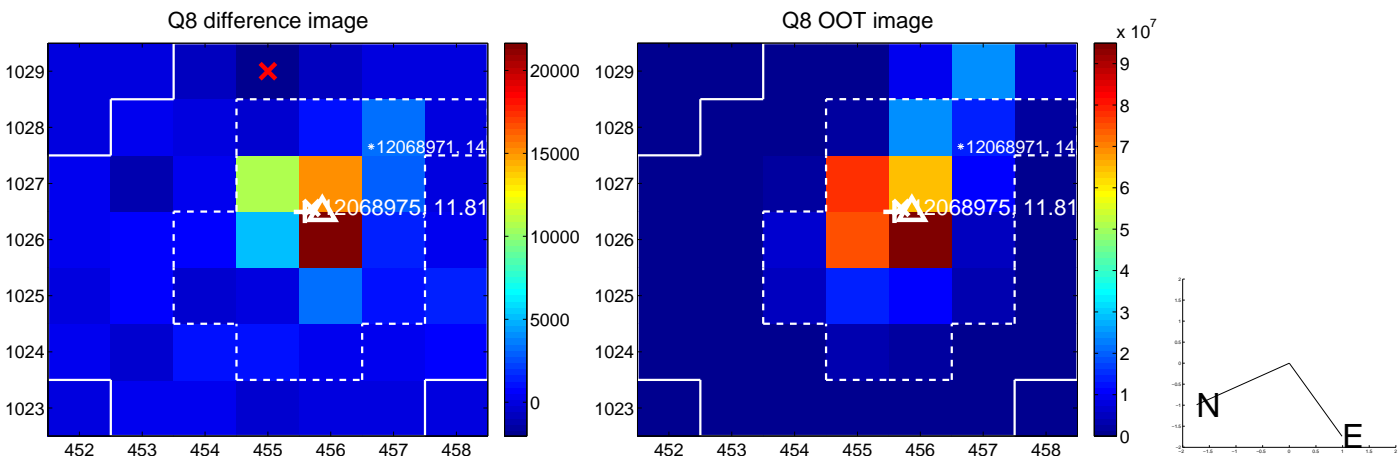
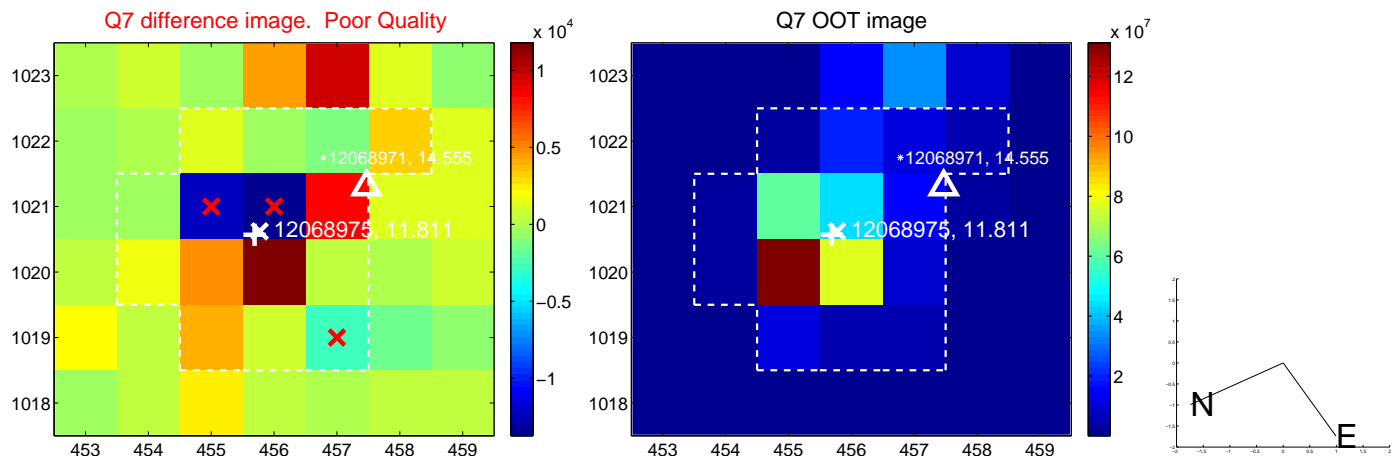
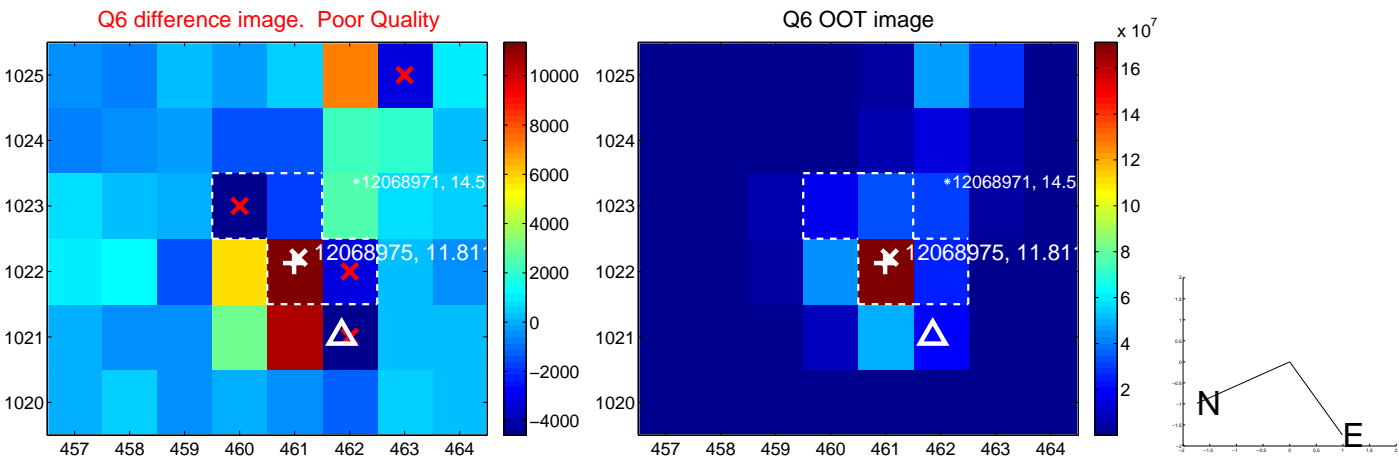
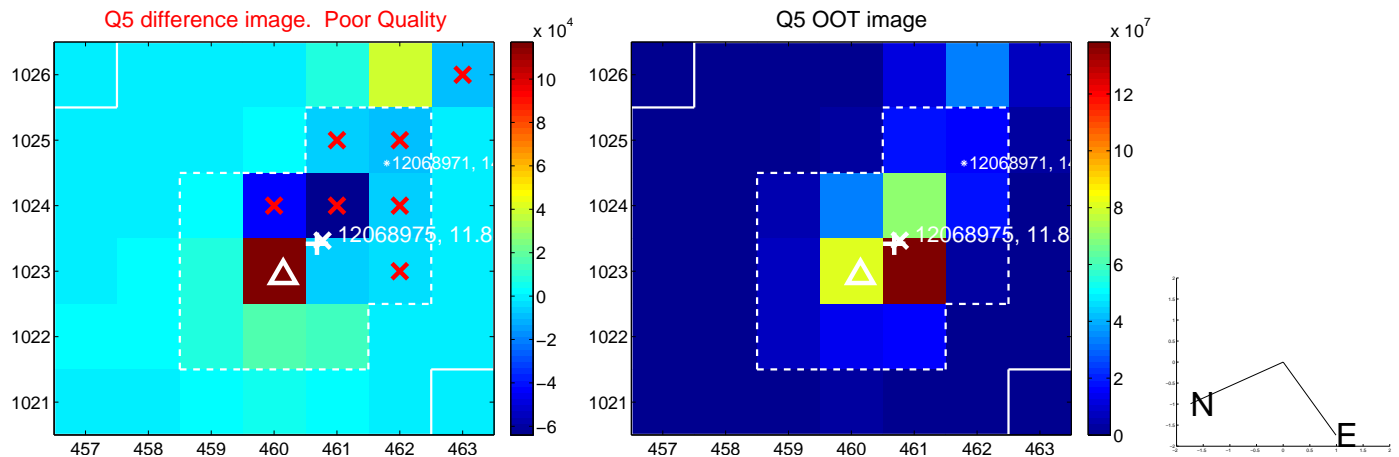


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

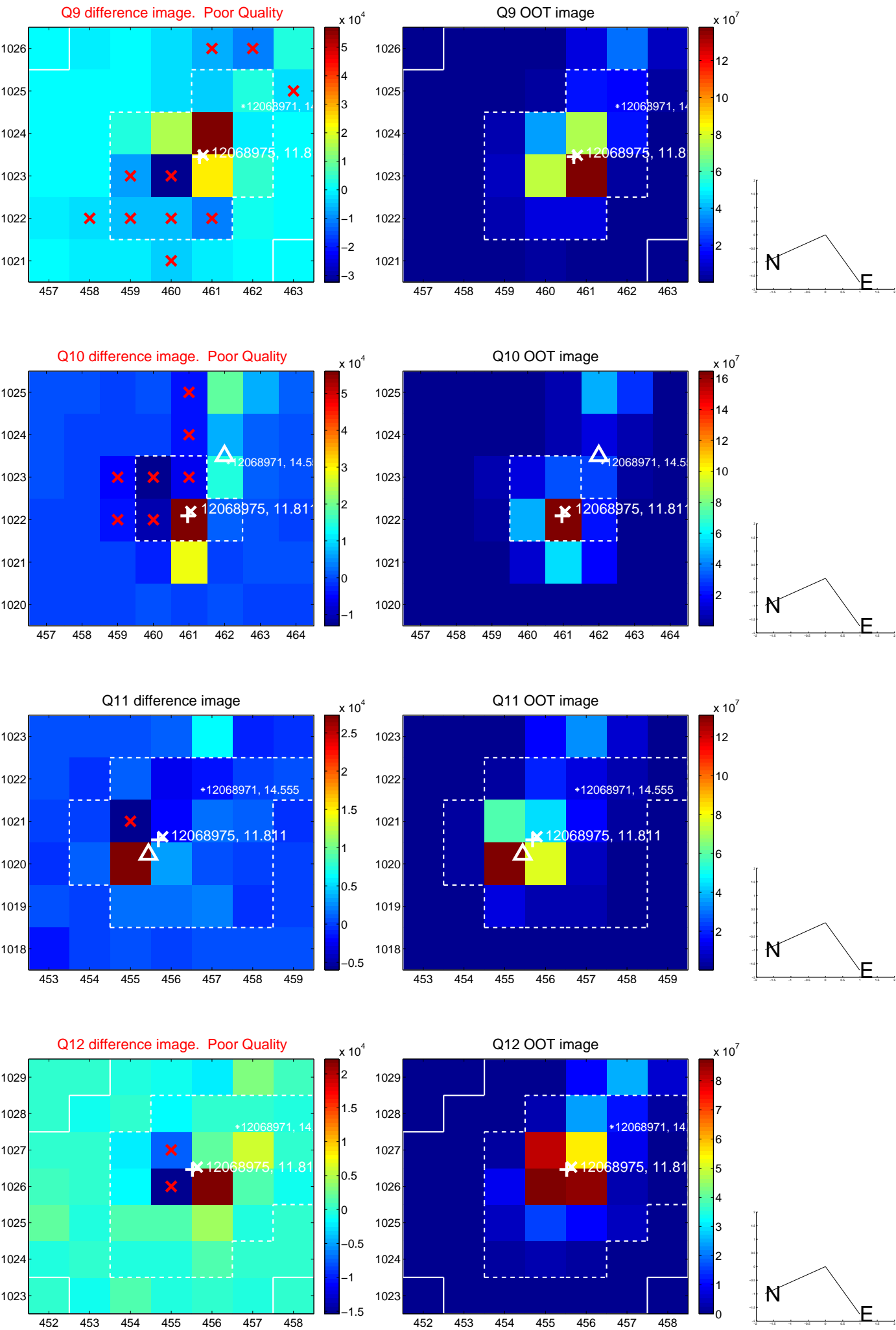
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



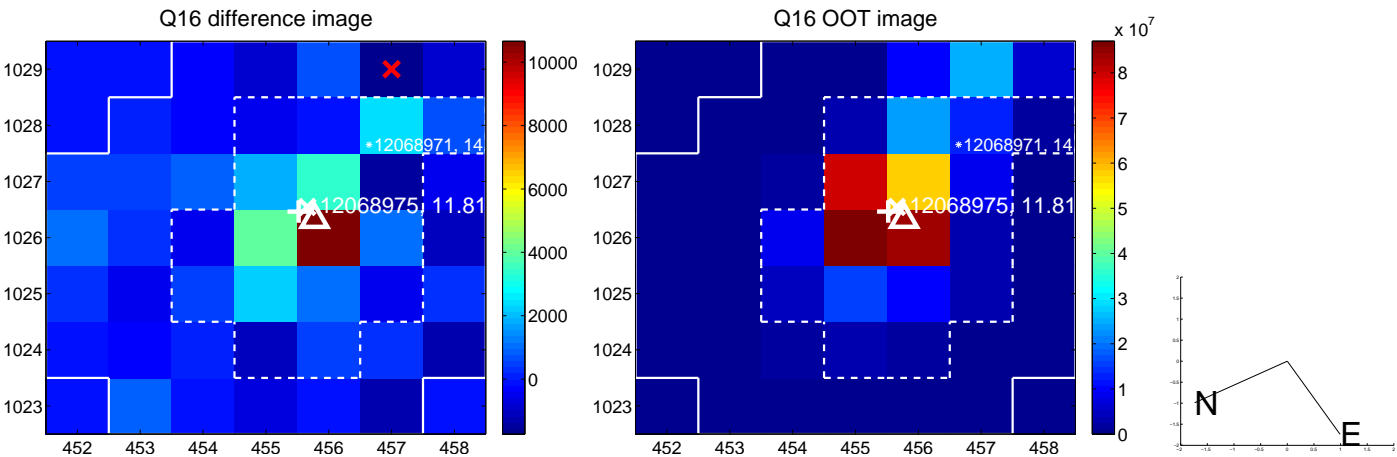
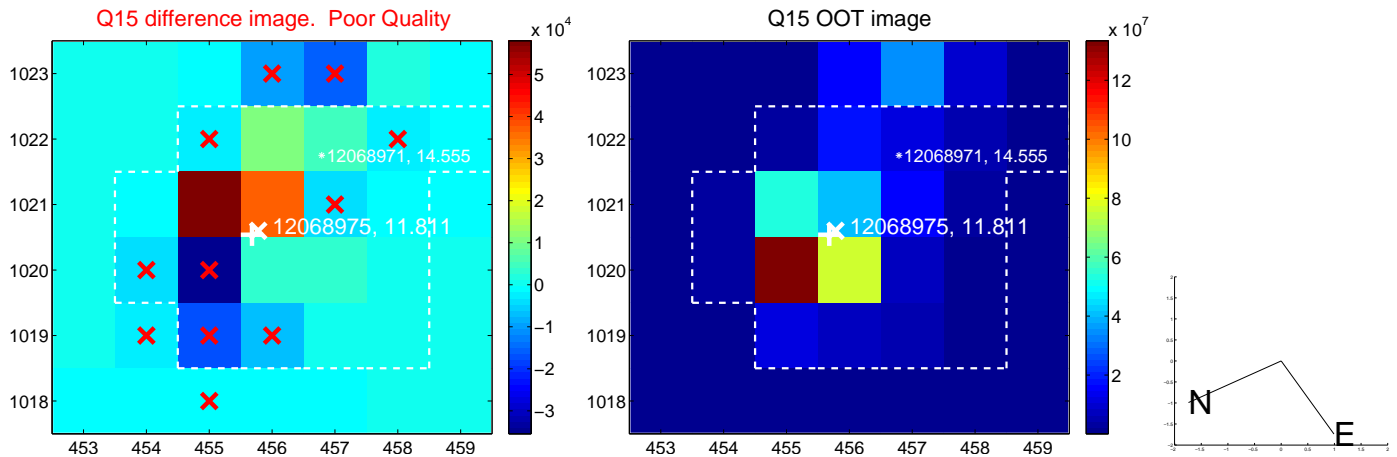
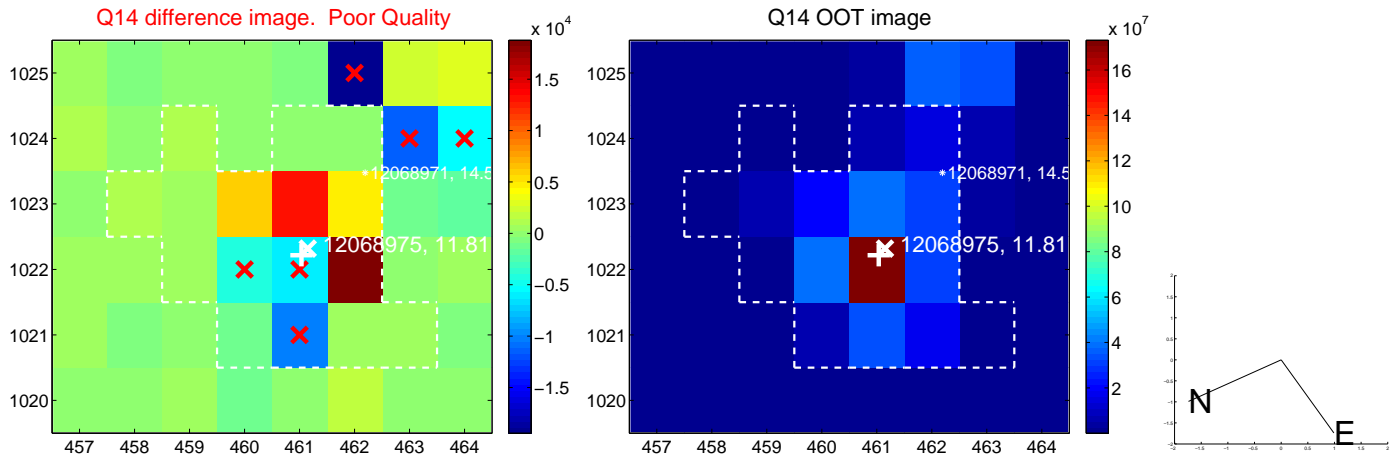
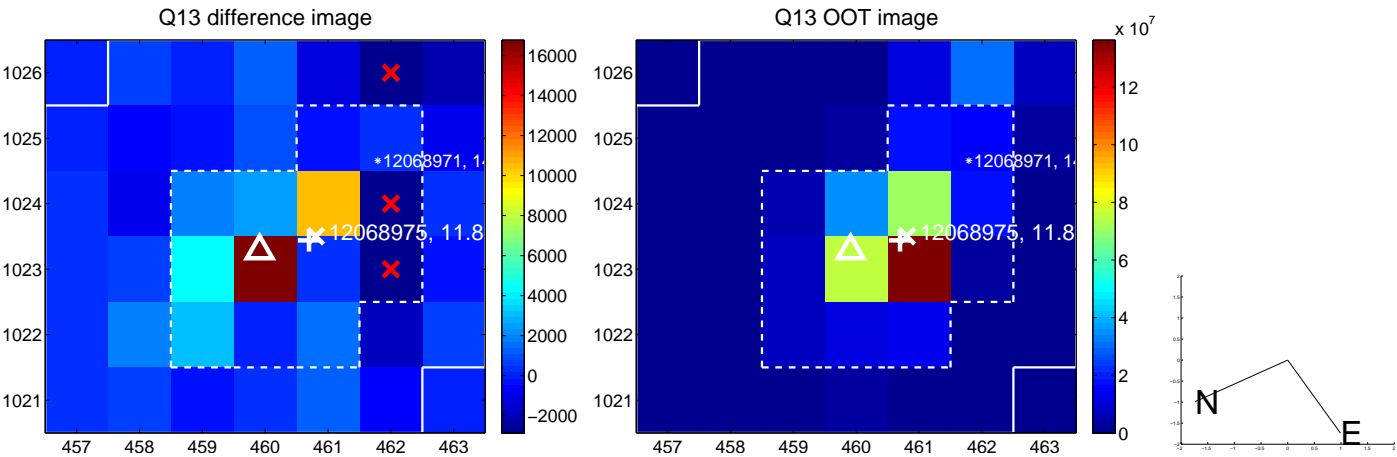
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



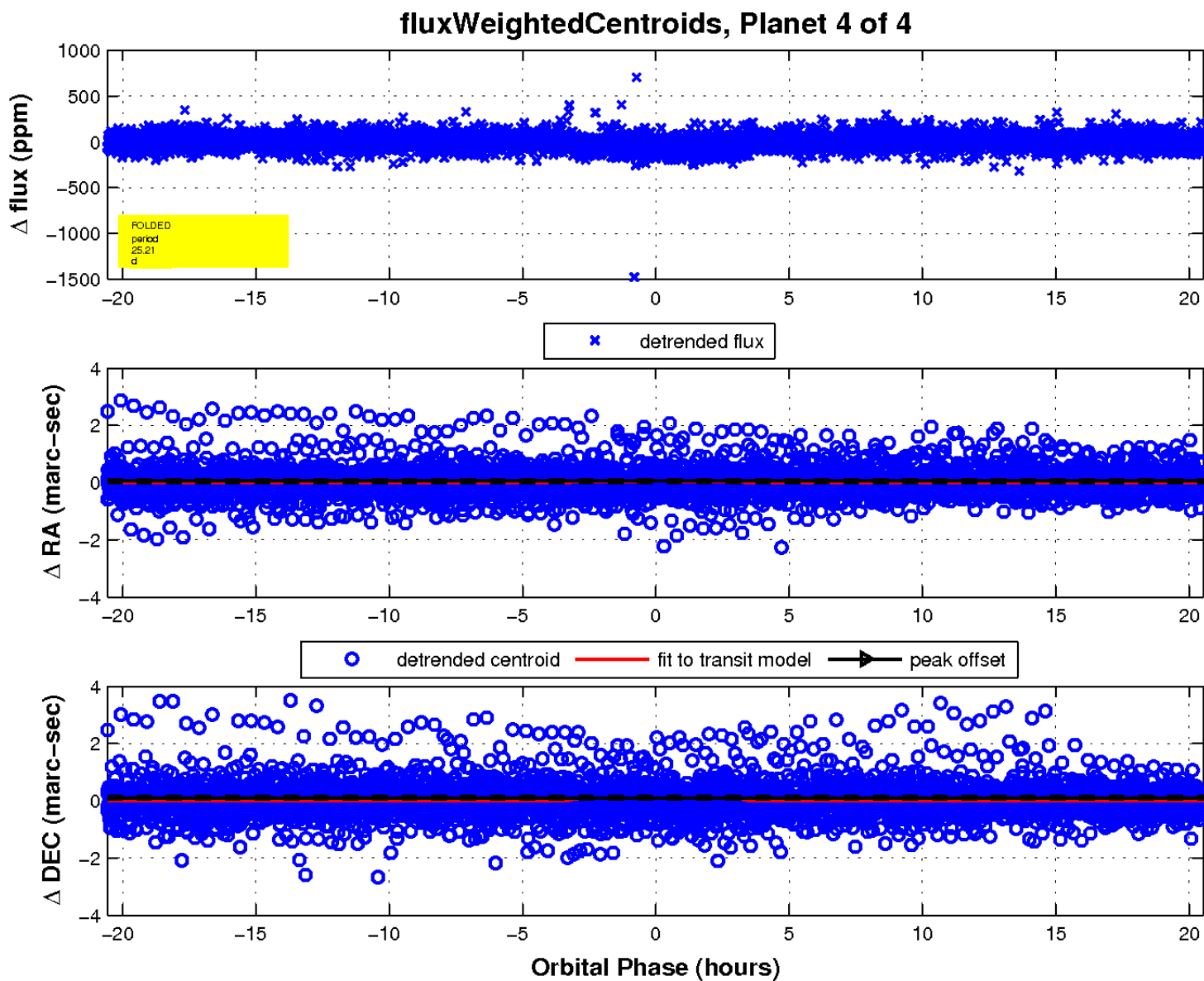
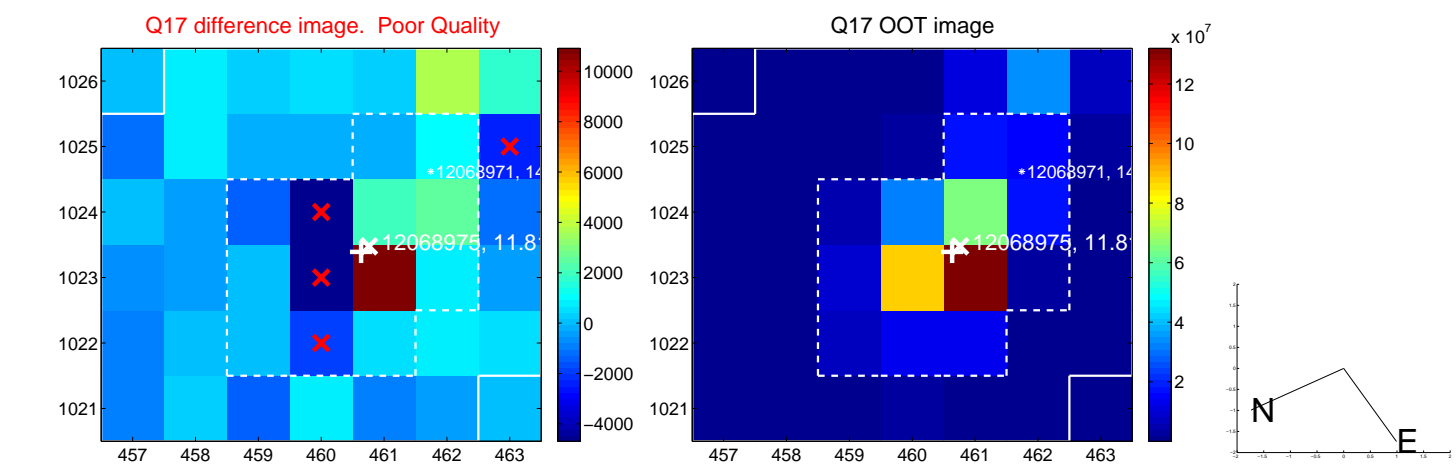
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

