

KIC 007019489

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})
007019489-01	OBS	2128.01	24.259785	132.482099	1506.3	3.860	24.5	27.2	0.81	5485	5.86	21.16
007019489-02	OBS	No	24.260239	139.617654	396.4	2.805	7.5	8.0	0.81	5485	1.82	21.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007019489-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
007019489-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_FEW_DIFFS

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 007019489-01

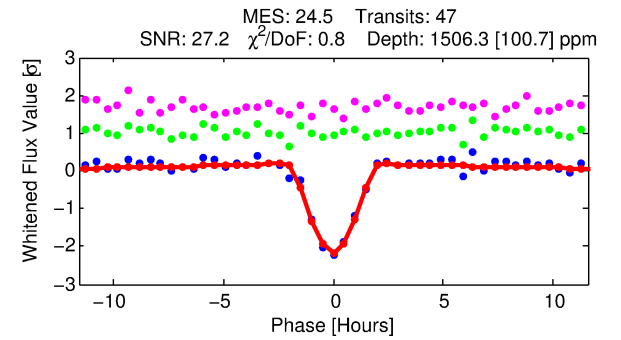
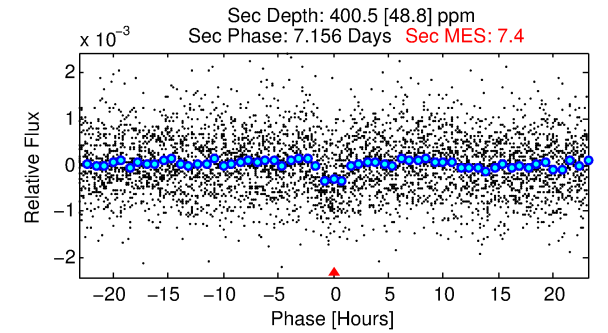
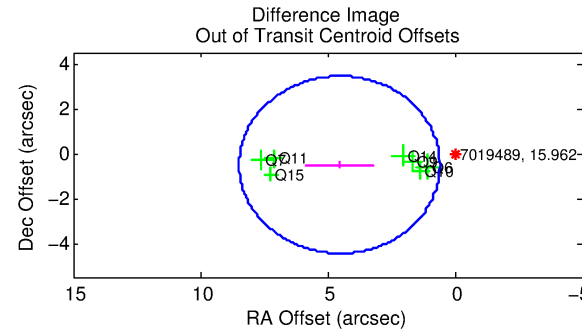
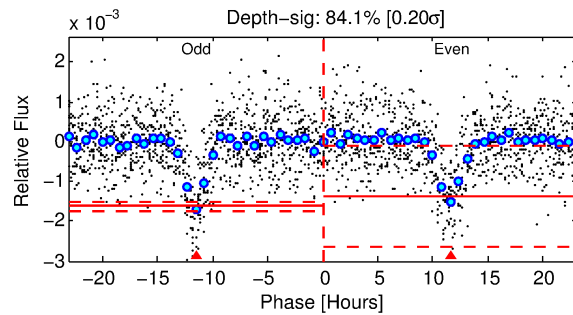
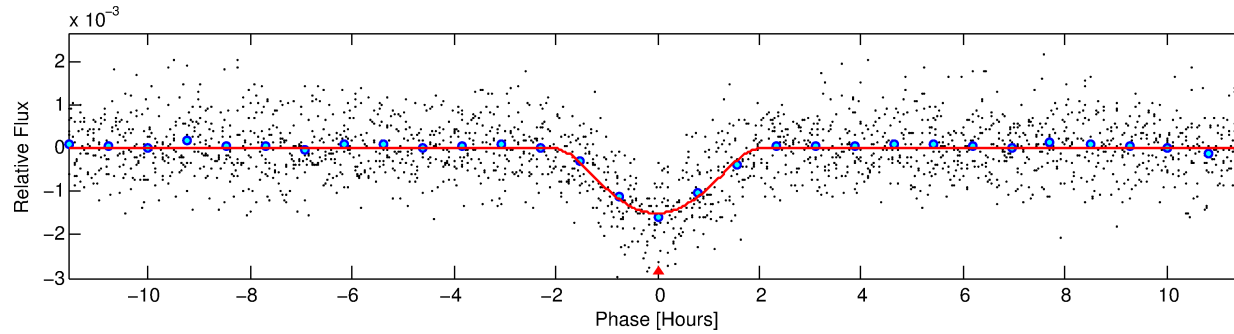
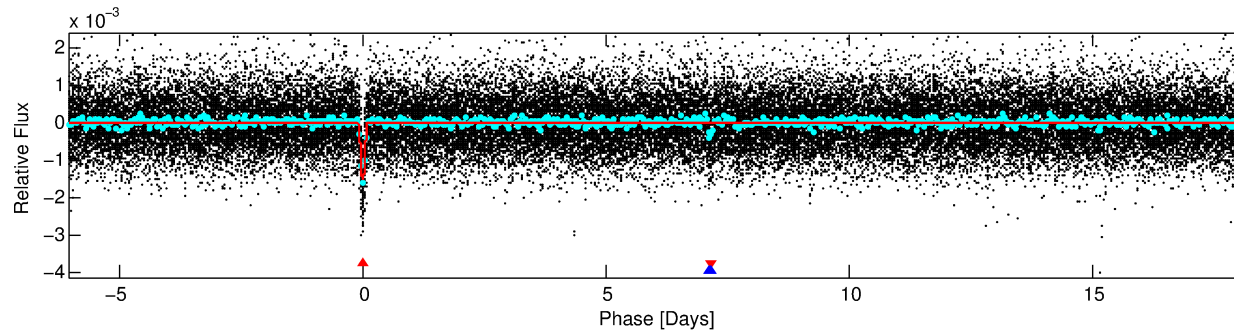
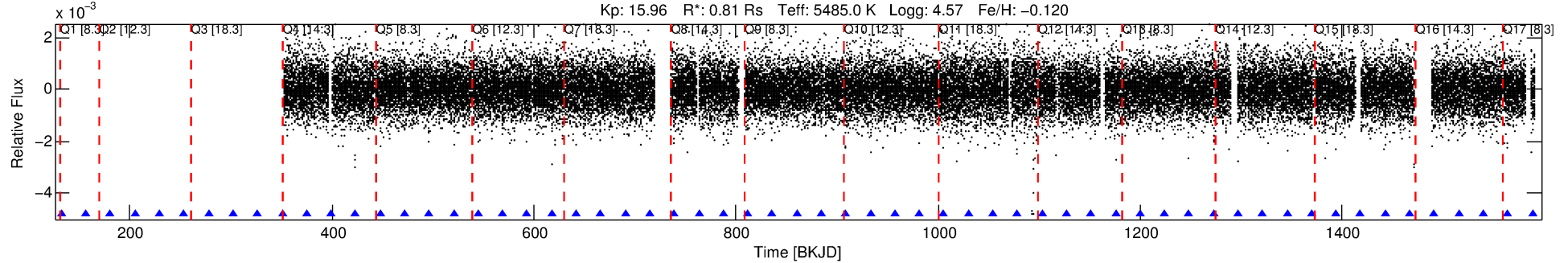
No Significant Match Found

DV One-Page Summary

KIC: 7019489 Candidate: 1 of 2 Period: 24.260 d

KOI: K02128.01 Corr: 0.987

Kp: 15.96 R*: 0.81 Rs Teff: 5485.0 K Logg: 4.57 Fe/H: -0.120



DV Fit Results:

Period = 24.25979 [0.00011] d
Epoch = 132.4821 [0.0041] BKJD
Rp/R* = 0.0667 [0.0942]
a/R* = 18.38 [6.12]
b = 1.00 [0.14]
Seff = 21.16 [6.27]
Teq = 547 [40] K
Rp = 5.86 [8.37] Re
a = 0.1576 [0.0288] AU
Ag = 159.18 [451.63] [0.35σ]
Teffp = 3004 [2124] K [1.16σ]

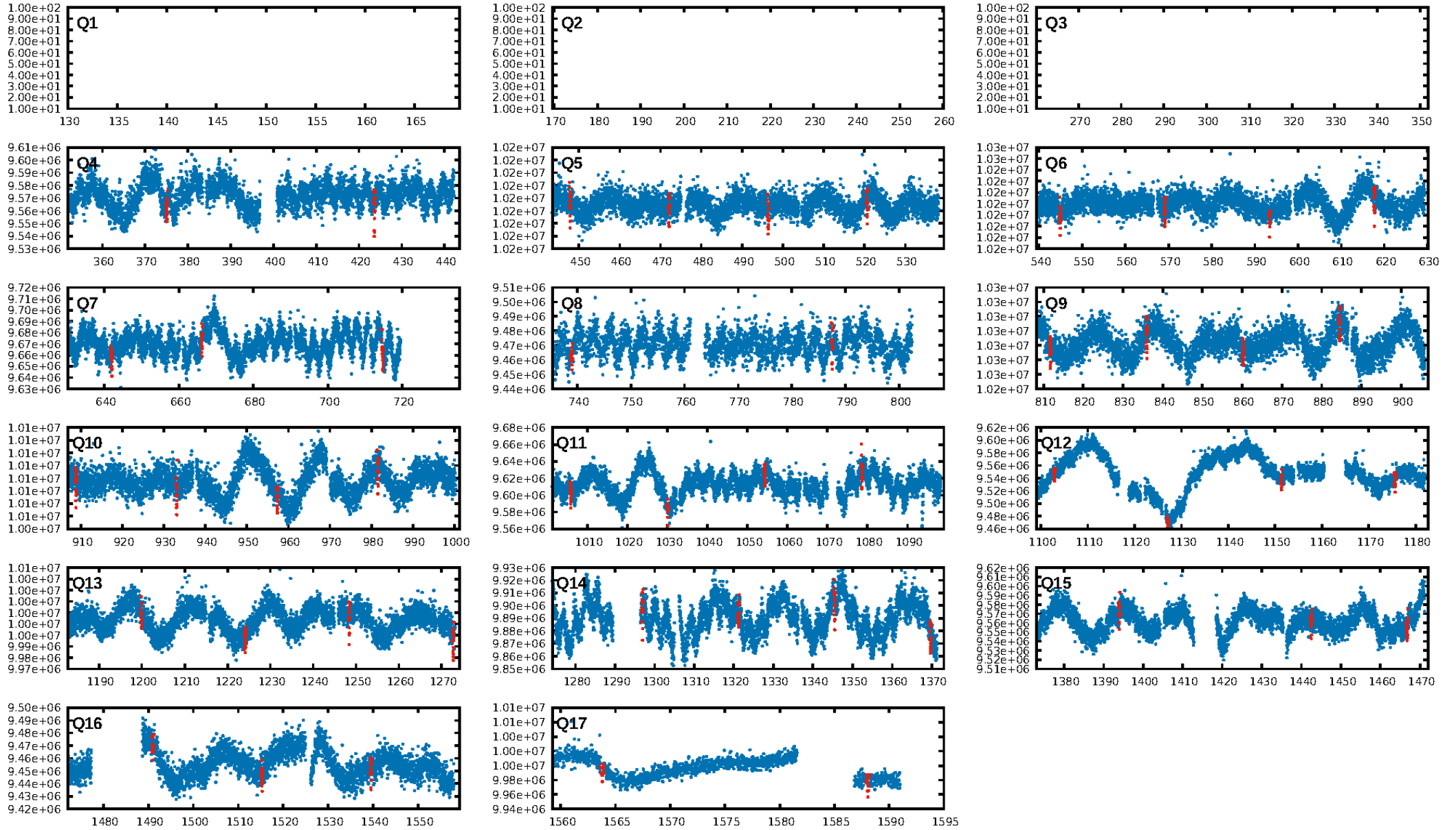
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 71.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.21e-125
RollingBand-fgt: 1.00 [45/45]
GhostDiagnostic-chr: 4.28
Centroid-sig: 0.0%
Centroid-so: 1.124 arcsec [2.29σ]
OotOffset-rm: 4.555 arcsec [3.46σ]
KicOffset-rm: 1.212 arcsec [9.22σ]
OotOffset-st: 3/3/0/1 [7]
KicOffset-st: 3/3/3/1 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [14/14]

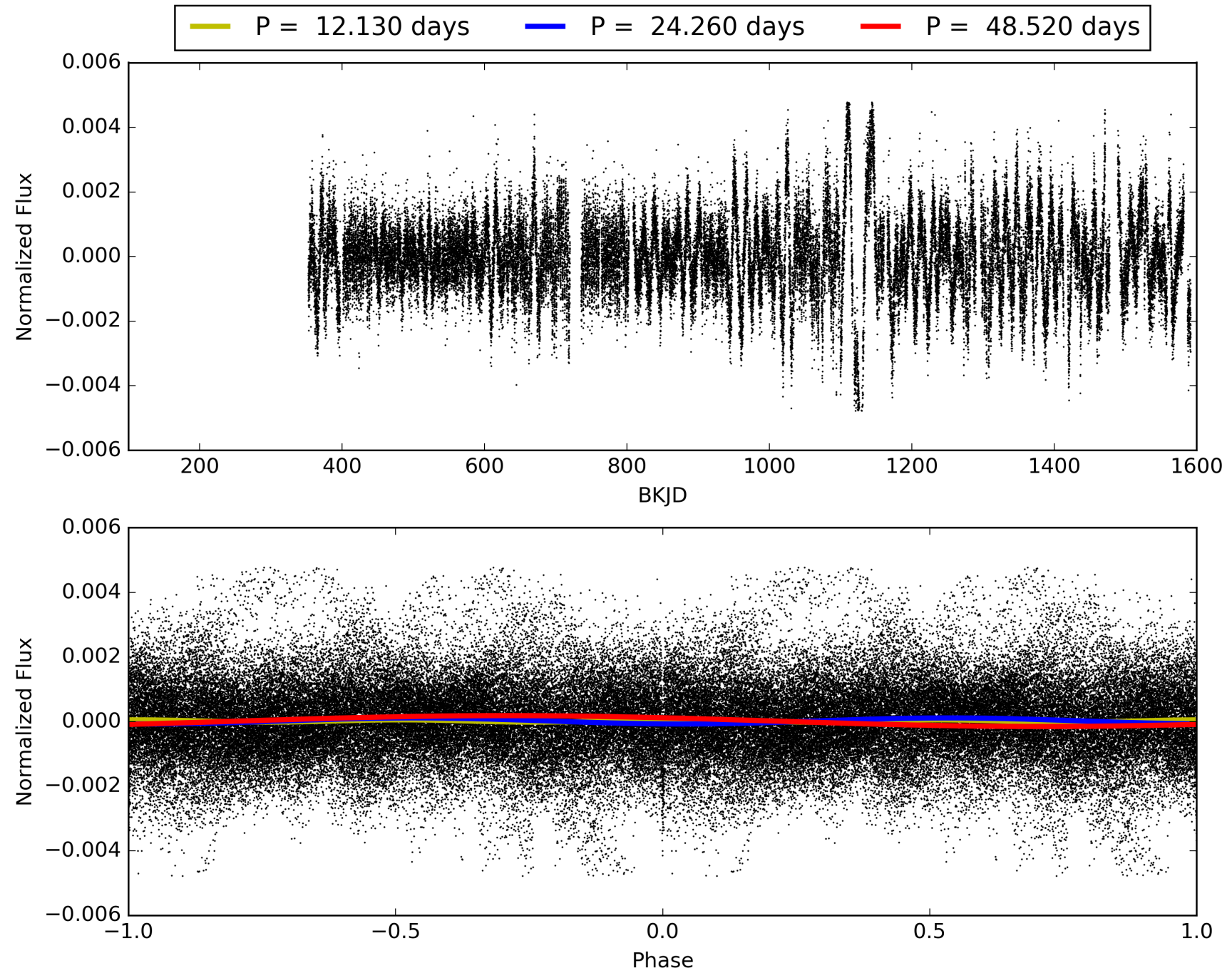
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:41:15 Z

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

TCE 007019489-01, PDC Light Curves

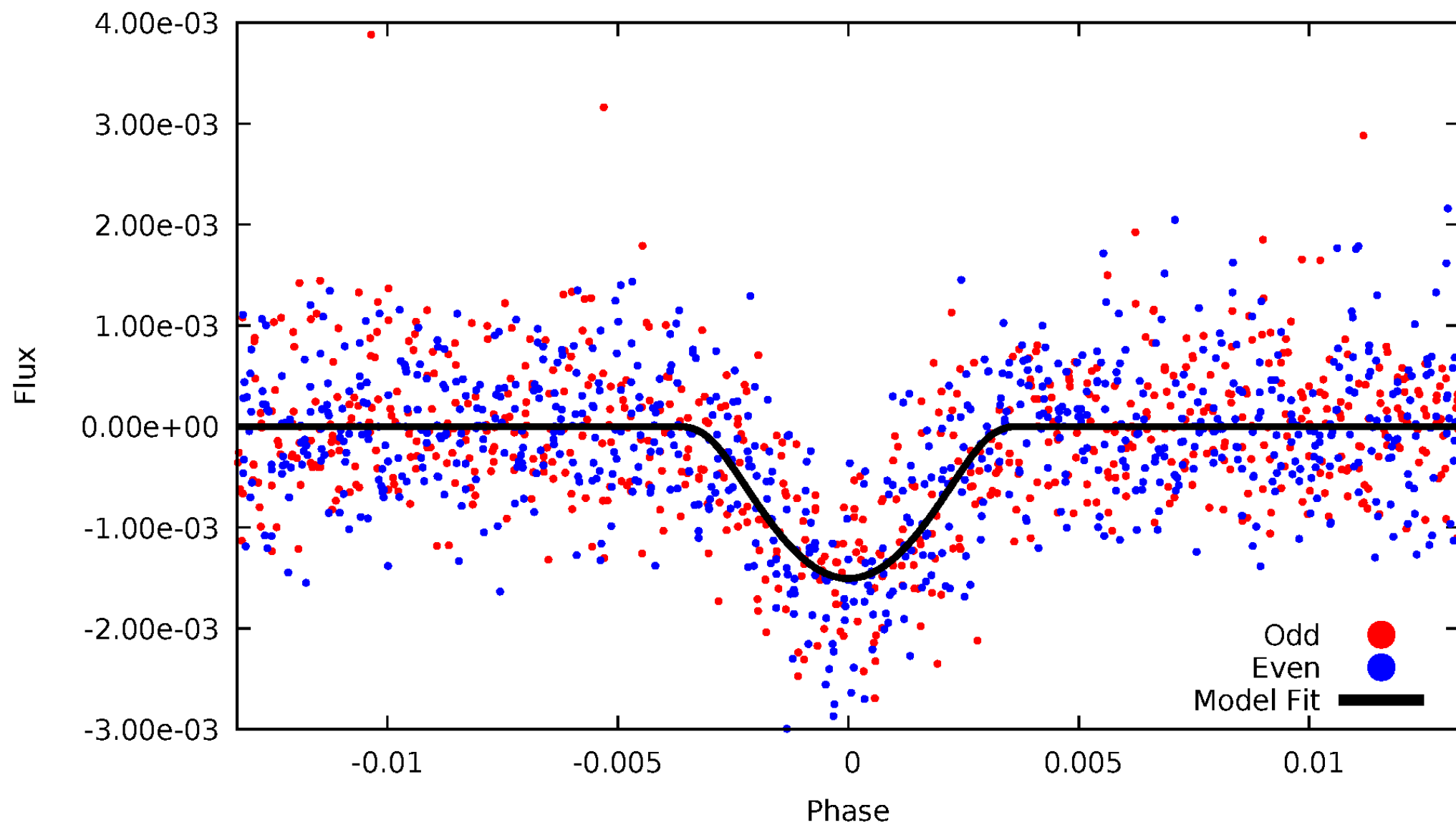


TCE 007019489-01



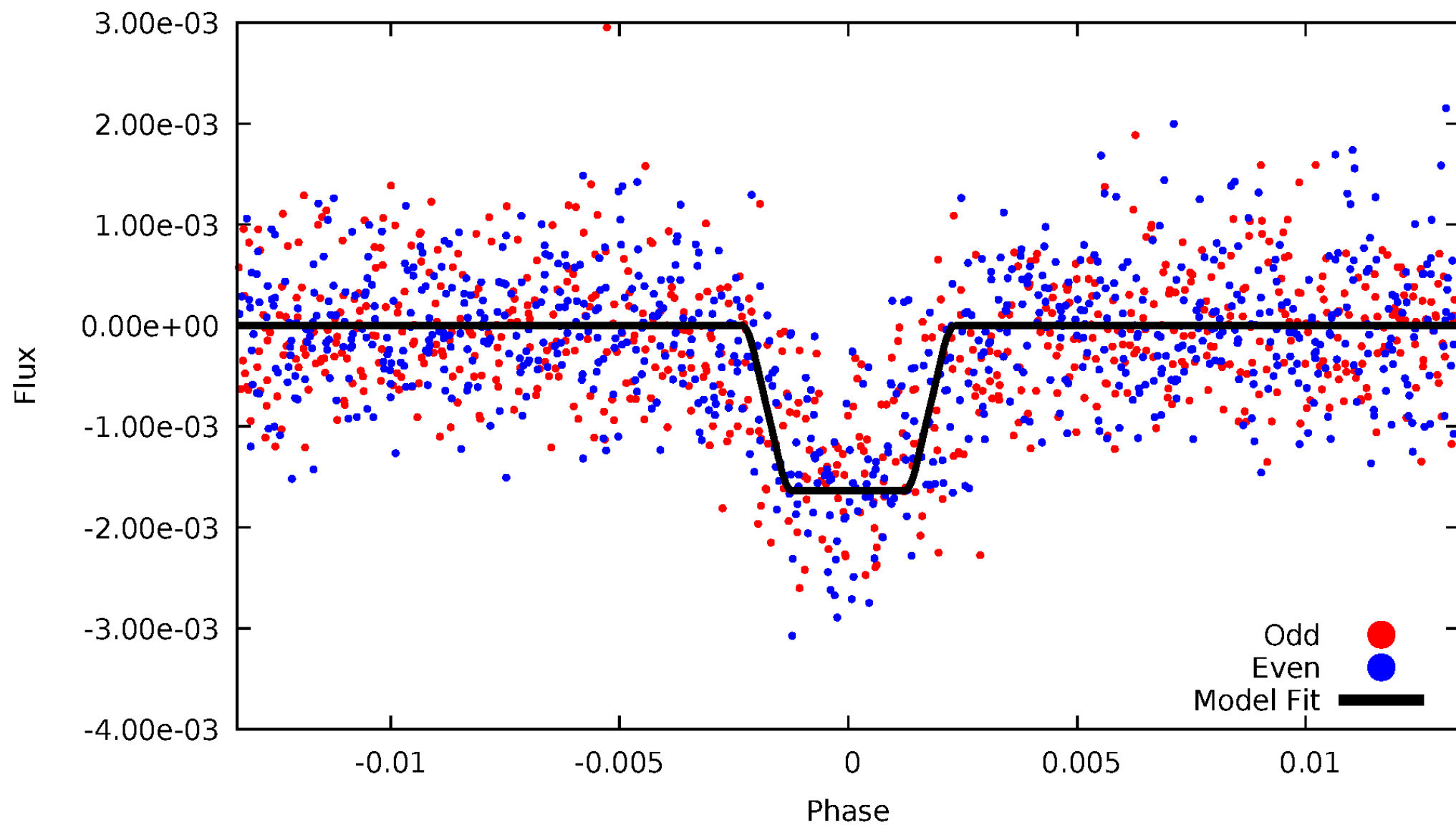
DV Odd/Even

TCE 007019489-01



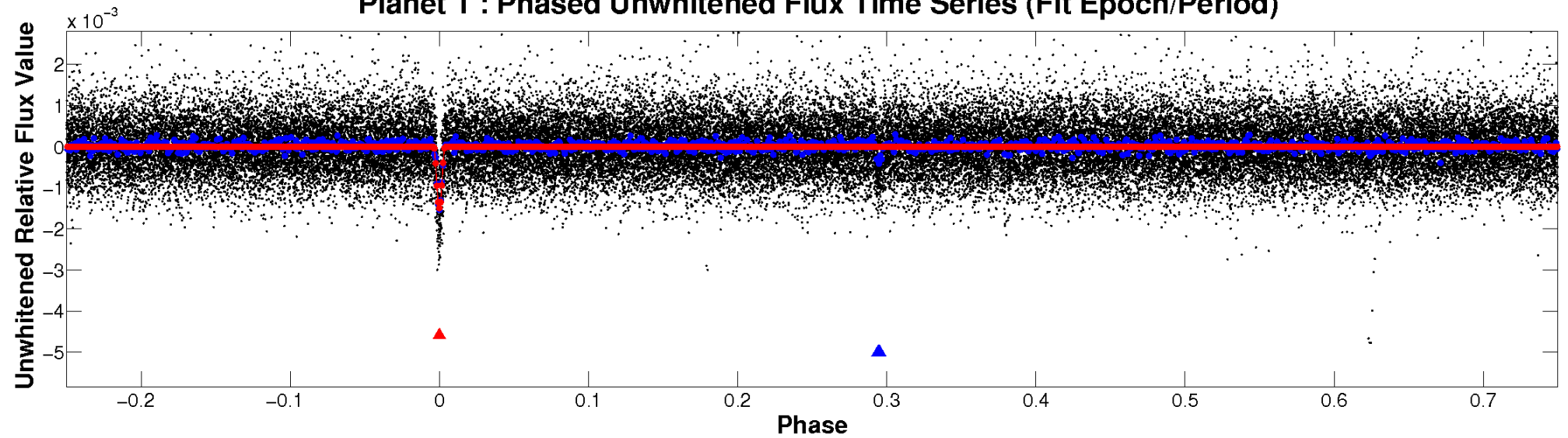
ALT Odd/Even

TCE 007019489-01

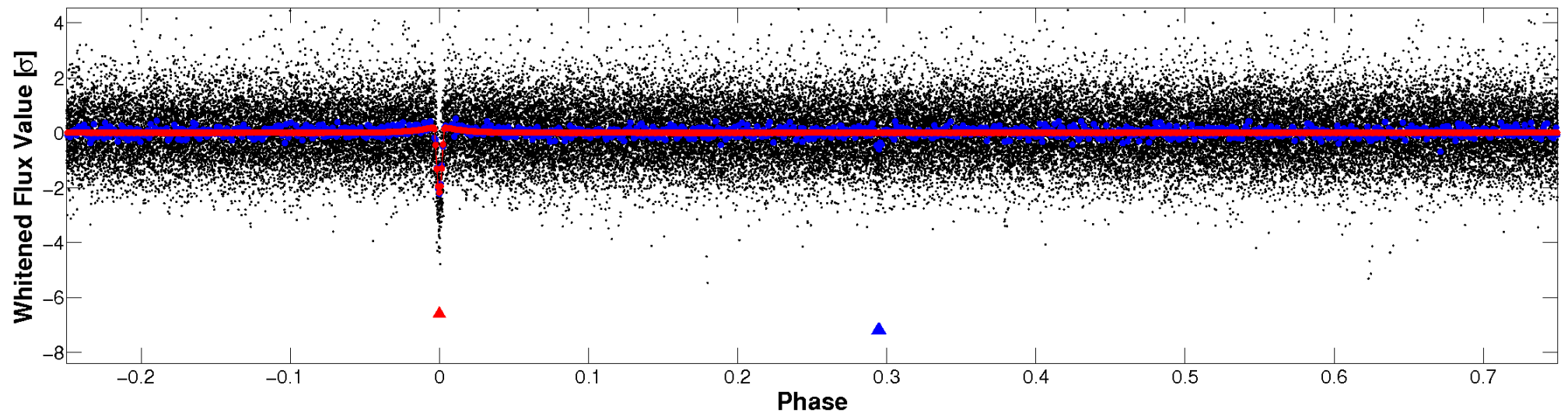


Non-Whitened Vs. Whitened Light Curve

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

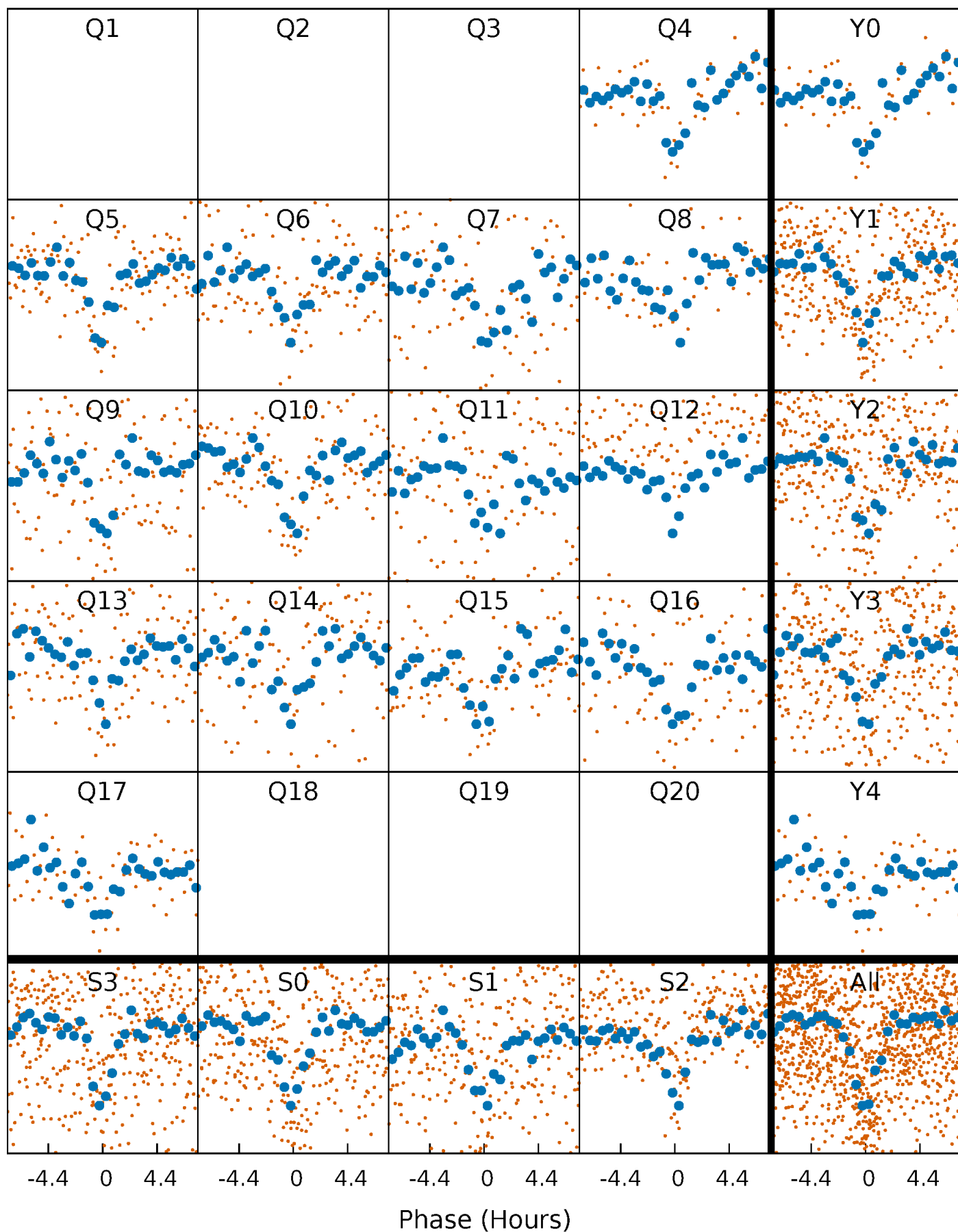


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



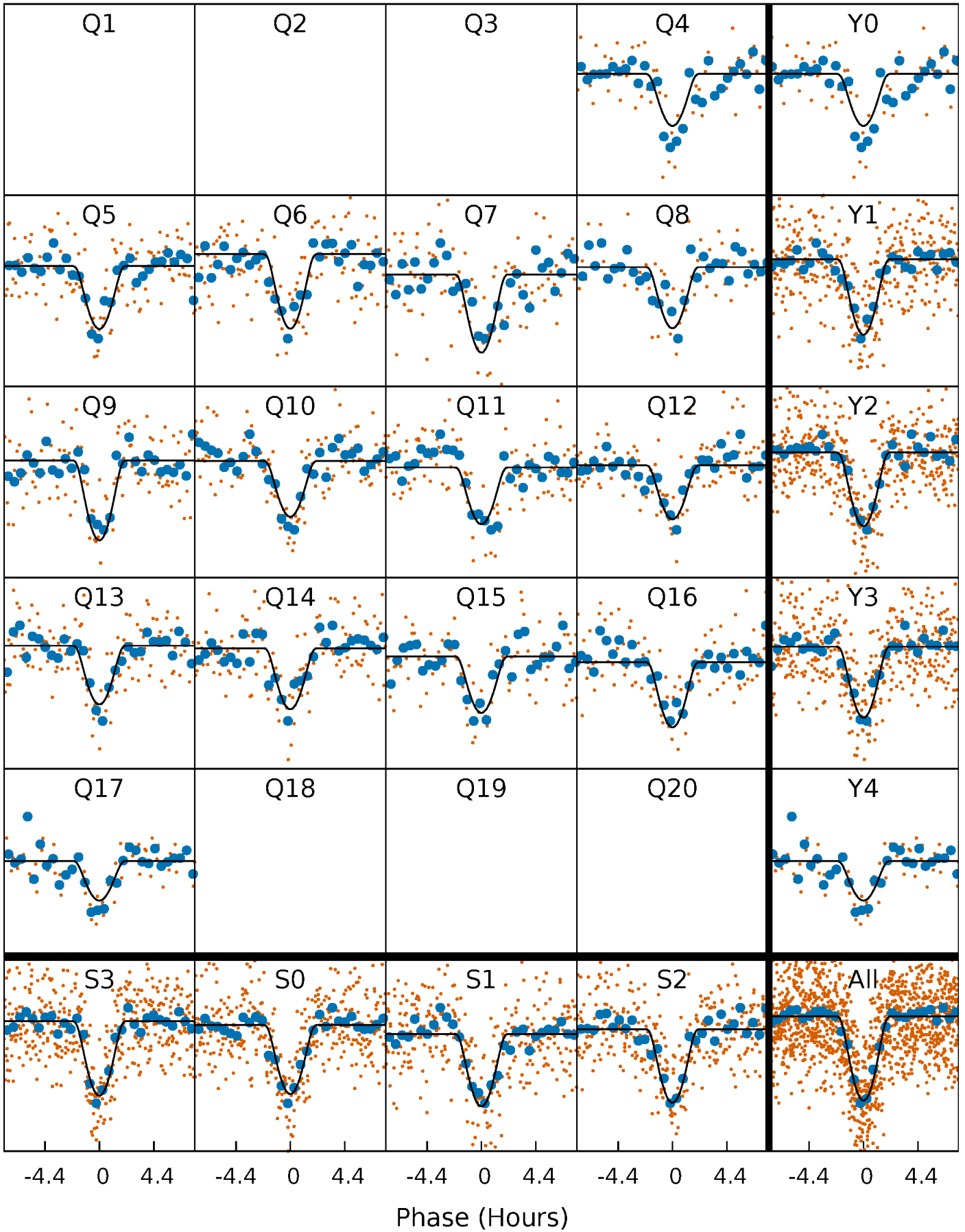
PDC Quarter-Phased Transit Curves

TCE 007019489-01 P= 24.259785 Days $T_0=132.482099$ (BKJD)



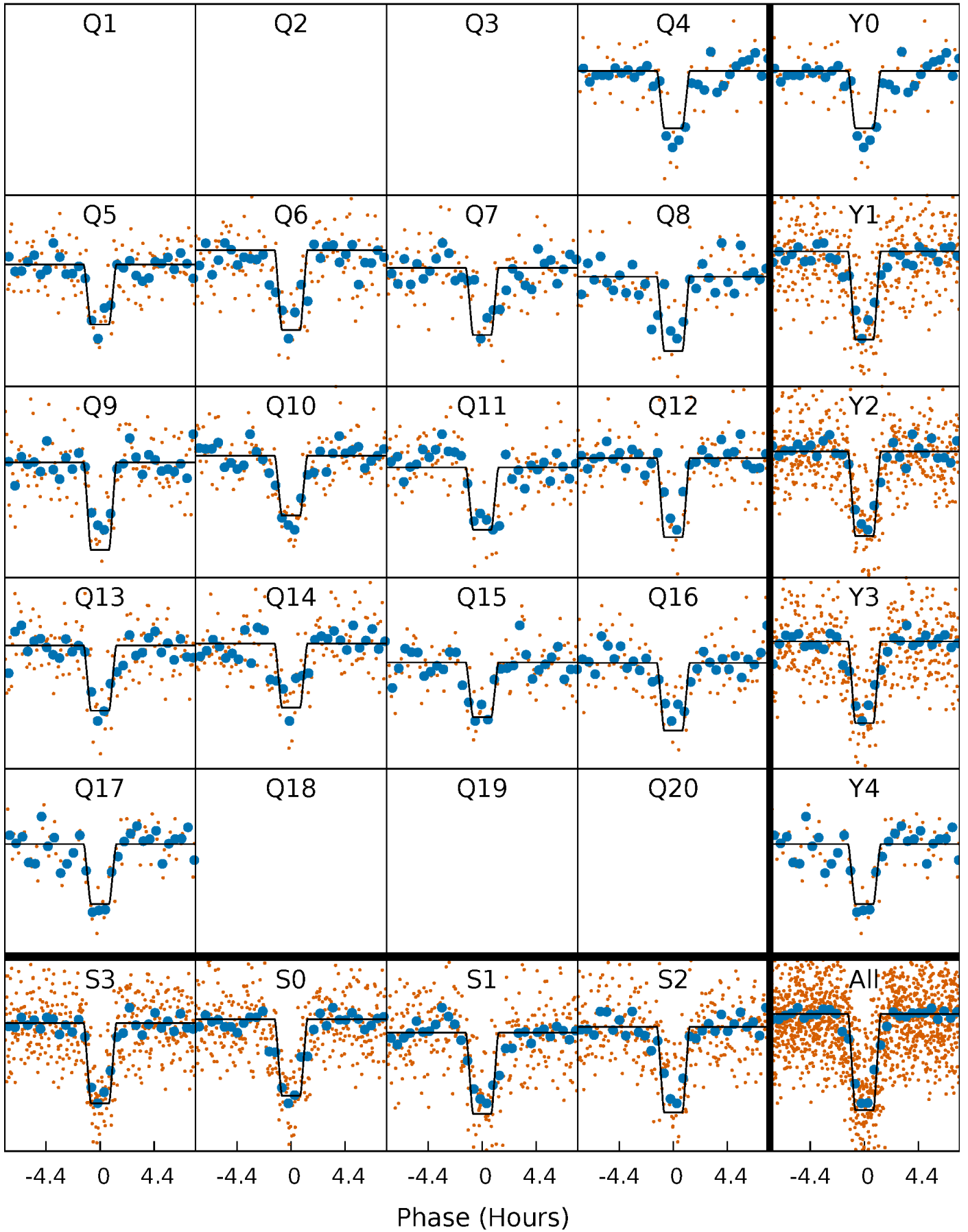
DV Quarter-Phased Transit Curves

TCE 007019489-01 P= 24.259785 Days $T_0=132.482099$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

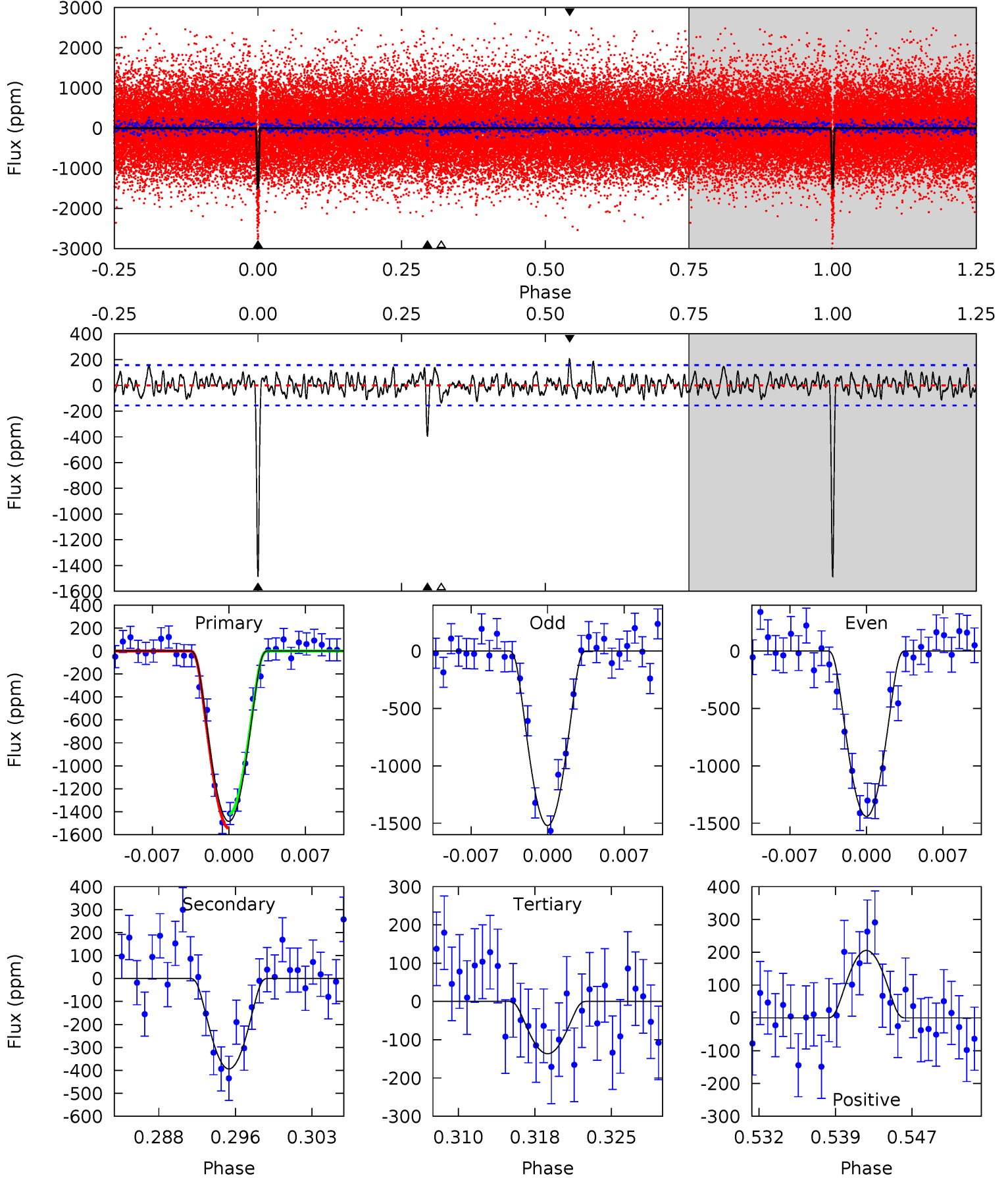
TCE 007019489-01 P= 24.259854 Days $T_0=132.478709$ (BKJD)



DV Model-Shift Uniqueness Test

007019489-01, P = 24.259785 Days, E = 132.482099 Days

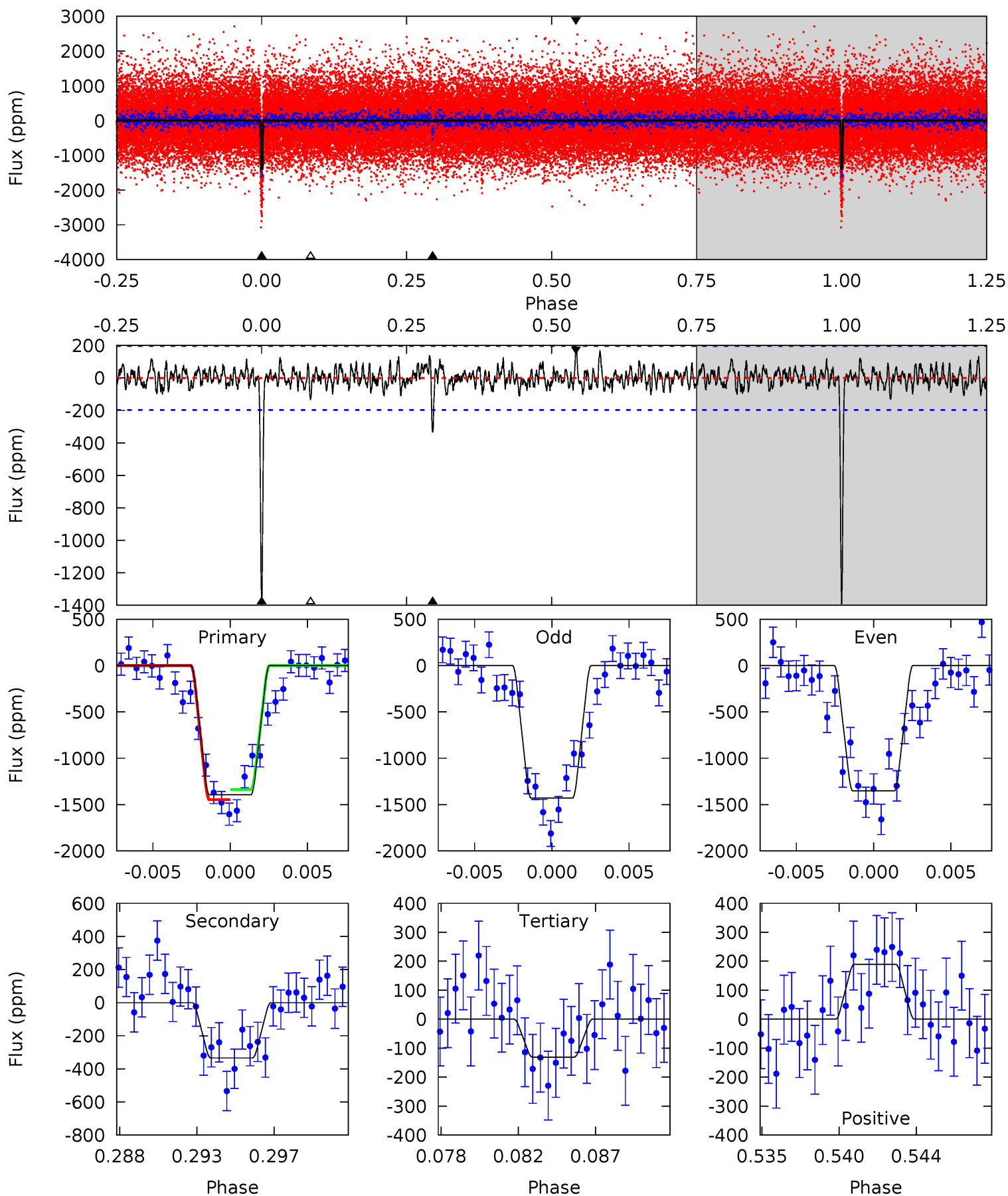
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.1	12.8	4.43	6.66	5.08	2.68	1.68	43.7	41.4	8.34	6.10	1.28	1.02	0.12	1.97



Alt Model-Shift Uniqueness Test

007019489-01, $P = 24.259854$ Days, $E = 132.478709$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.5	8.77	3.44	4.96	5.17	2.84	1.21	33.1	31.6	5.34	3.82	1.01	1.01	0.12	1.46



Stellar Parameters For KIC 007019489

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5485^{+182}_{-182}	$4.574^{+0.036}_{-0.144}$	$-0.120^{+0.300}_{-0.300}$	$0.805^{+0.176}_{-0.075}$	$0.891^{+0.081}_{-0.102}$	$2.406^{+0.473}_{-1.003}$
	+3%/-3%	+1%/-3%	+250%/-250%	+22%/-9%	+9%/-11%	+20%/-42%
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 007019489-01 / KOI 2128.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-394 ± 31	$8.24^{+7.71}_{-5.38}$	778^{+40}_{-33}	3174^{+1308}_{-522}	79^{+561}_{-58}
Alt.	-335 ± 38	$7.26^{+7.36}_{-4.75}$	778^{+42}_{-35}	3199^{+1450}_{-562}	82^{+638}_{-61}

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

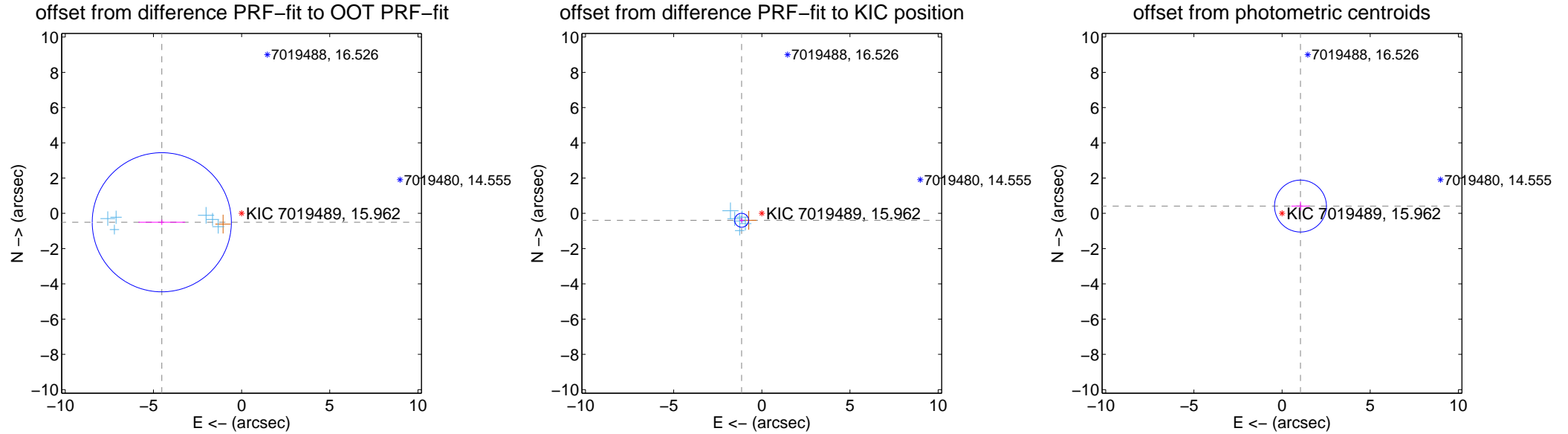
DV Centroid Data

Supplemental centroid analysis for 007019489-01. Kepler magnitude: 15.96. Transit SNR 27.18

There are 9 quarters with good PRF difference image offsets

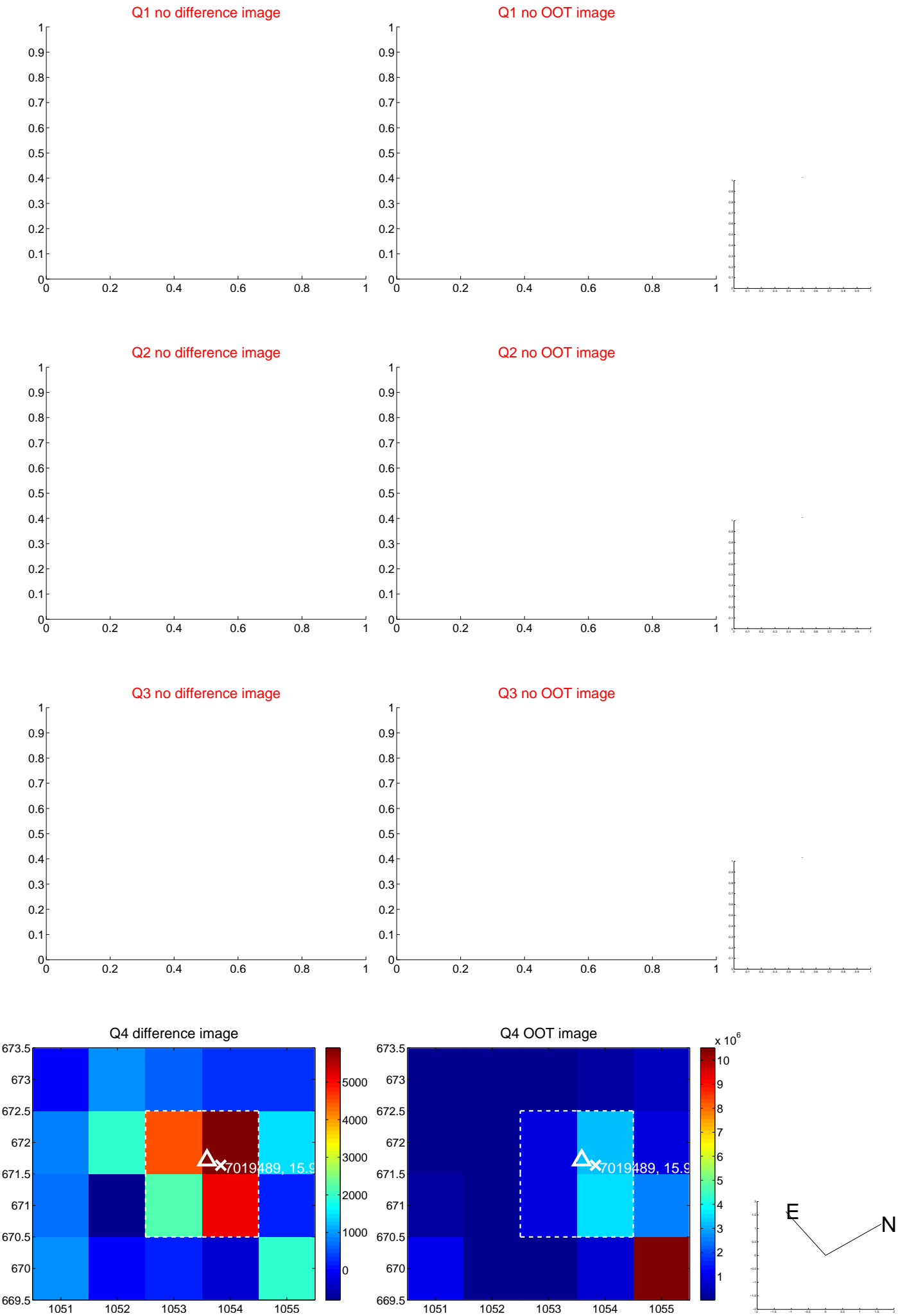
The OOT PRF centroid is offset from the target star catalog position by about 5.95 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.555 ± 1.315	3.46	4.527 ± 1.323	-0.505 ± 0.151
PRF-fit source offset from KIC position	1.212 ± 0.131	9.22	1.147 ± 0.131	-0.392 ± 0.138
photometric centroid source offset	1.12 ± 0.49	2.29	-1.05 ± 0.52	0.41 ± 0.25

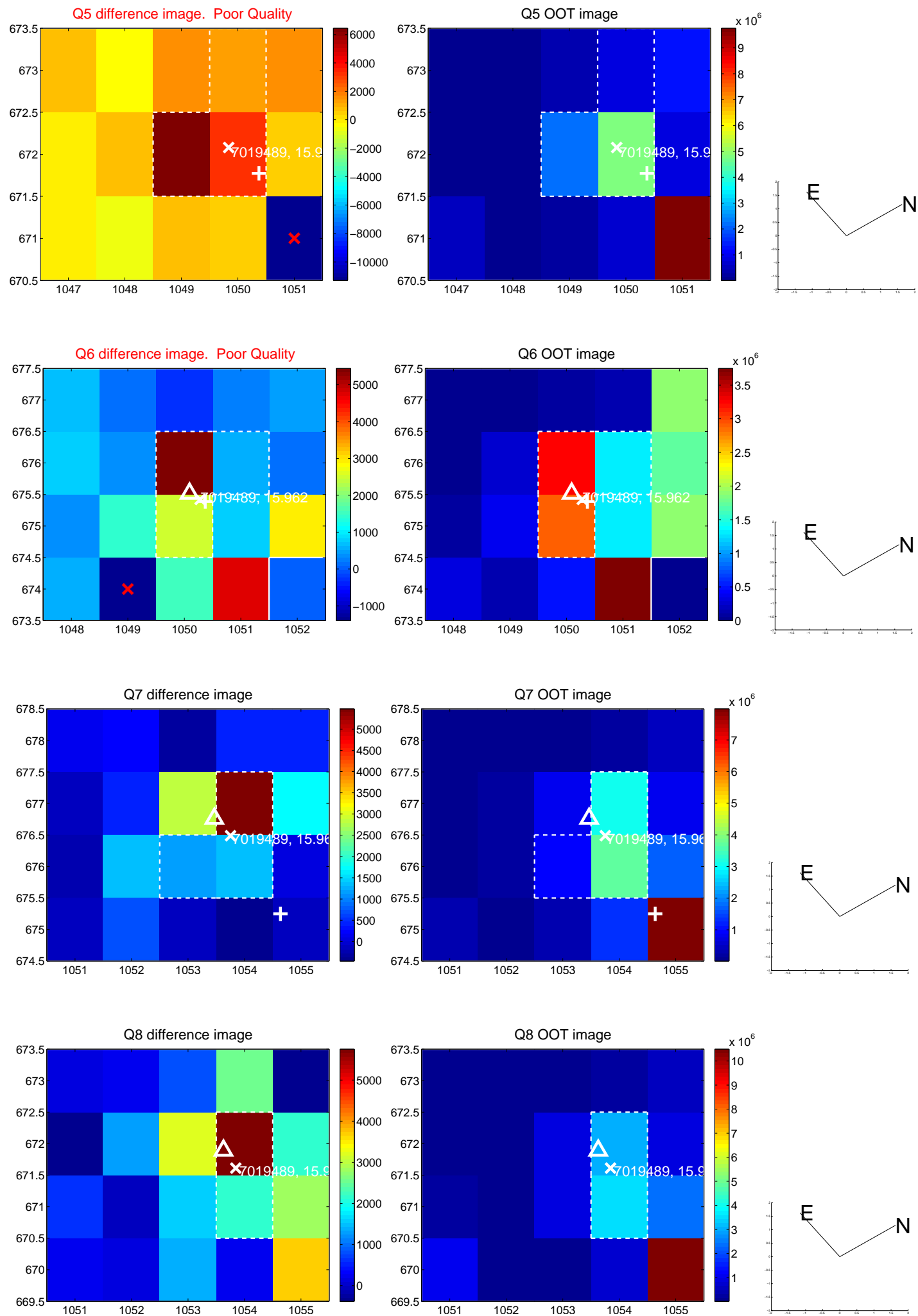


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

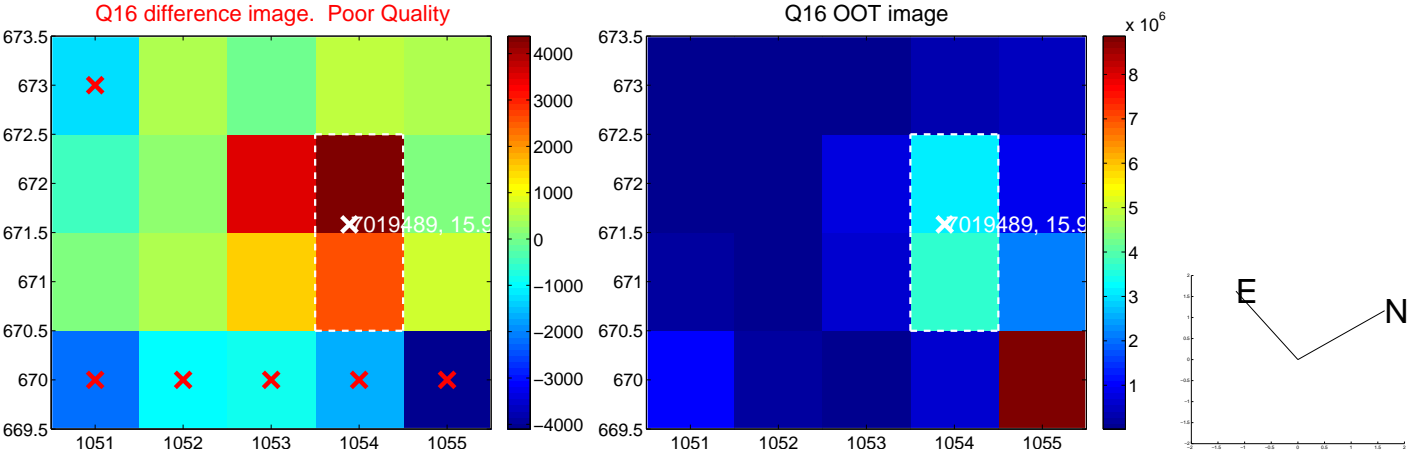
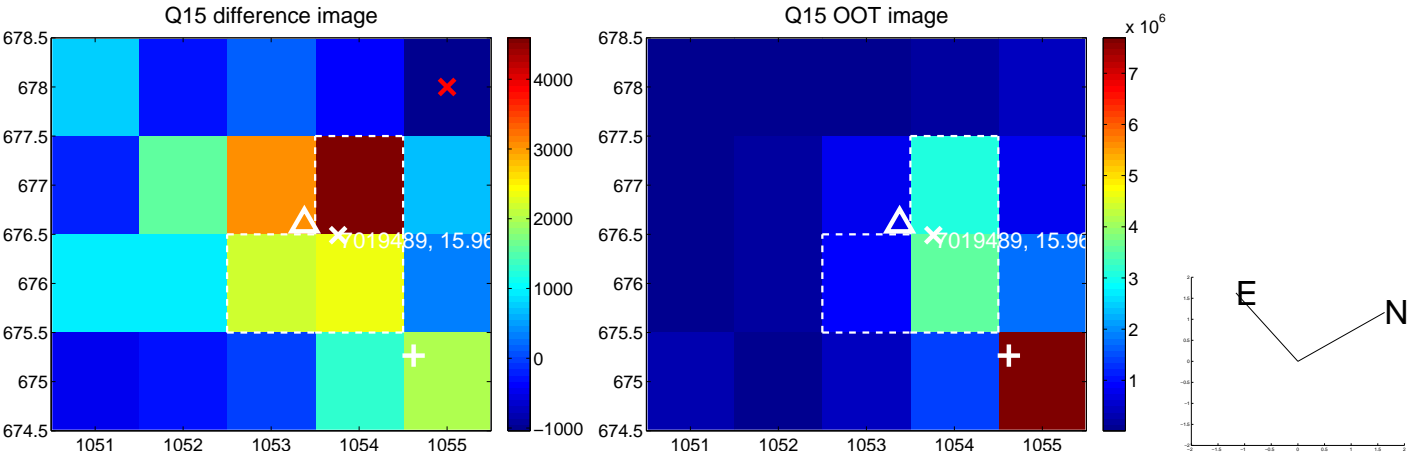
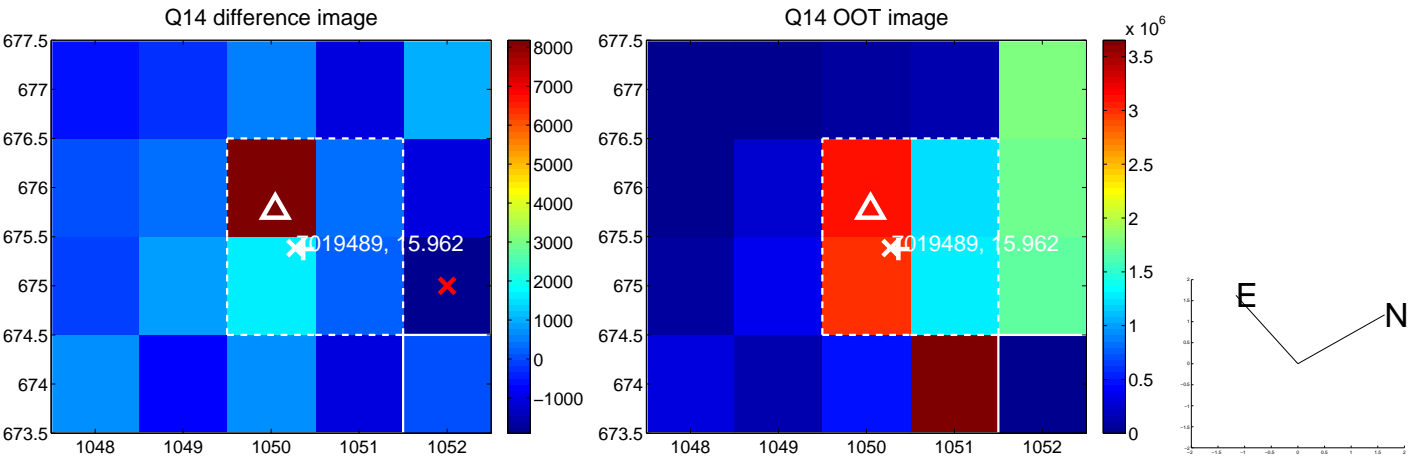
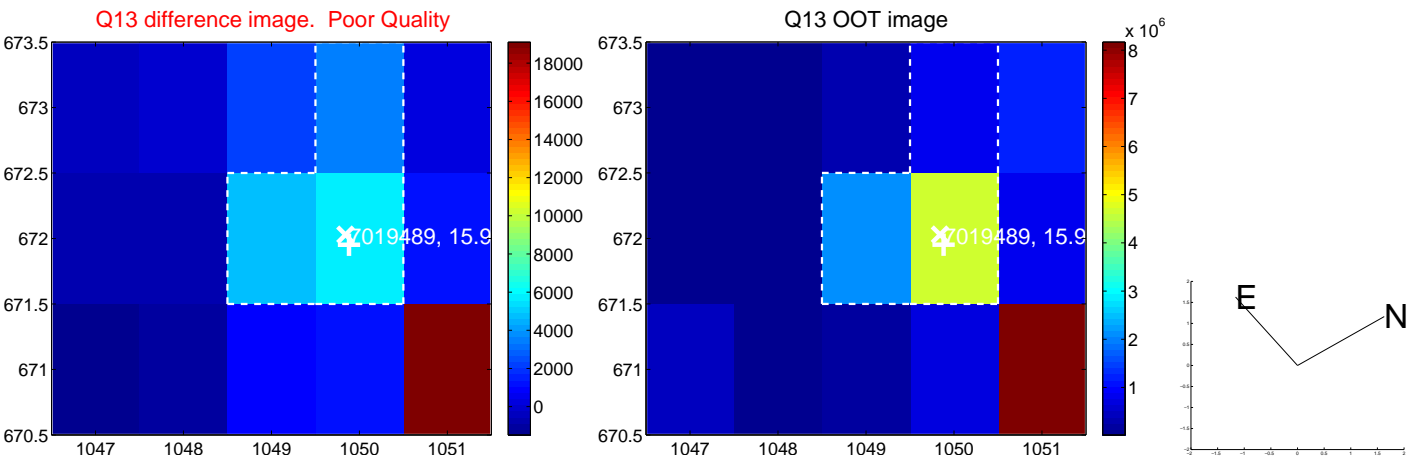
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



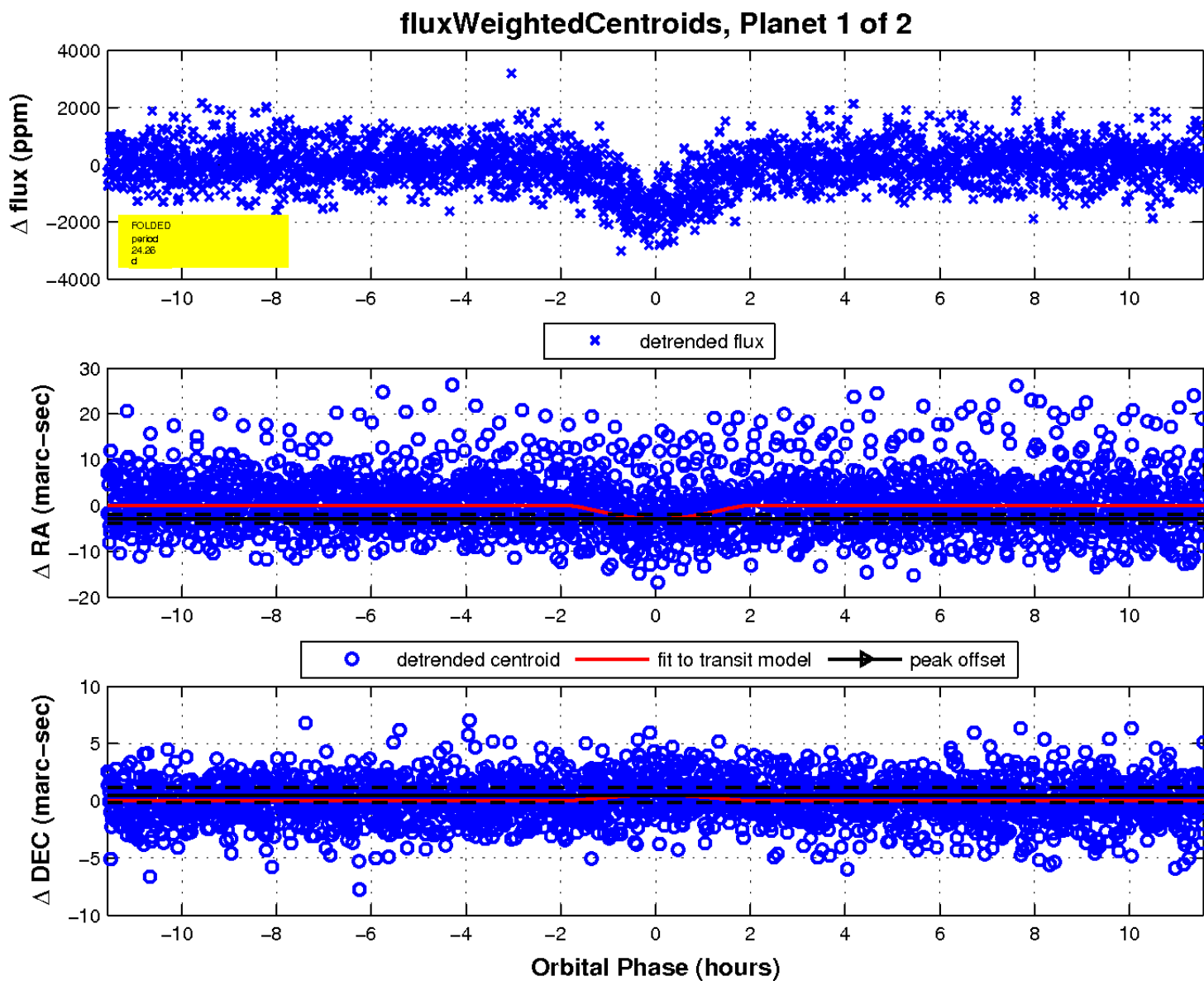
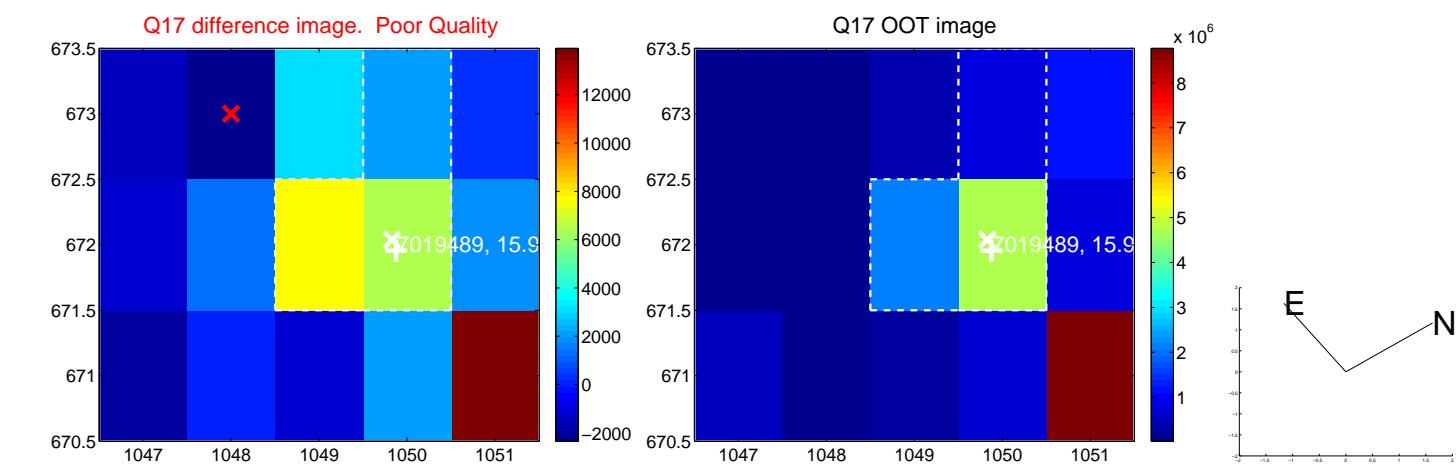
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

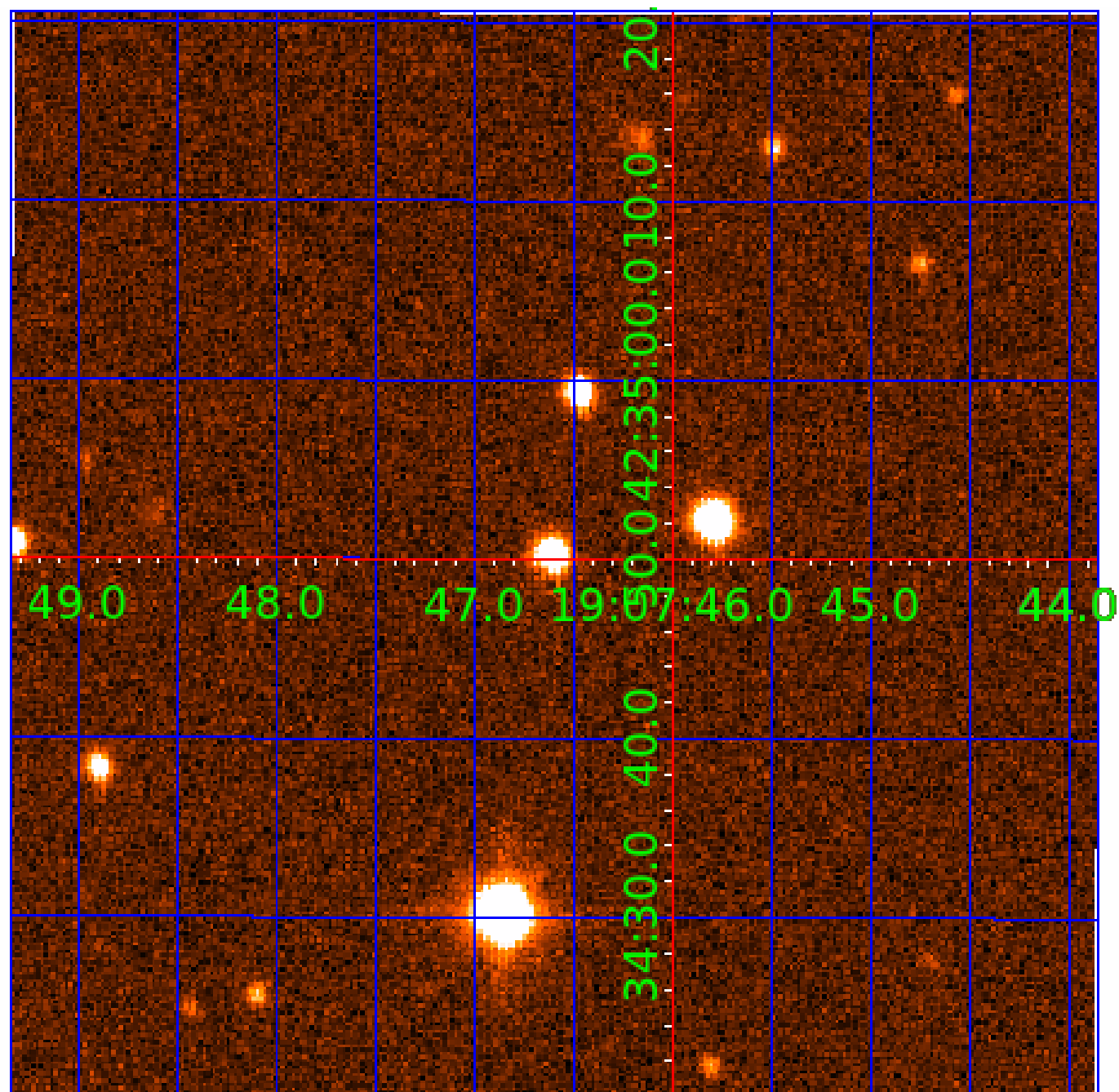


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007019489

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})
007019489-01	OBS	2128.01	24.259785	132.482099	1506.3	3.860	24.5	27.2	0.81	5485	5.86	21.16
007019489-02	OBS	No	24.260239	139.617654	396.4	2.805	7.5	8.0	0.81	5485	1.82	21.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007019489-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_KIC_POS
007019489-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_FEW_DIFFS

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.

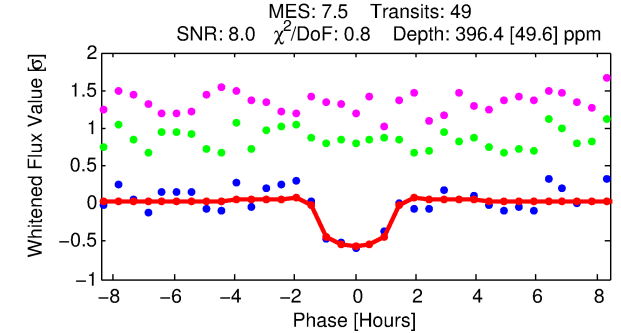
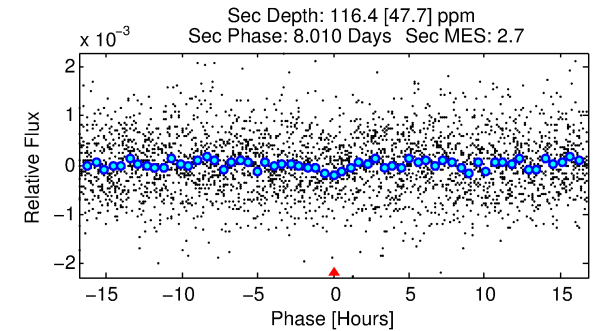
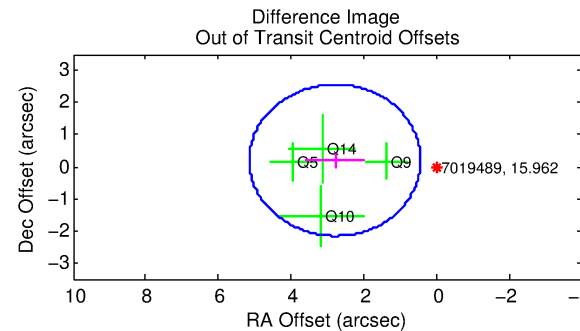
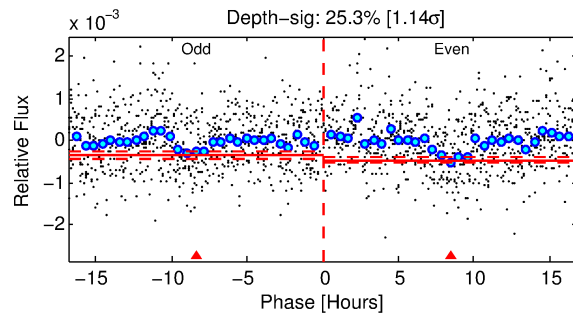
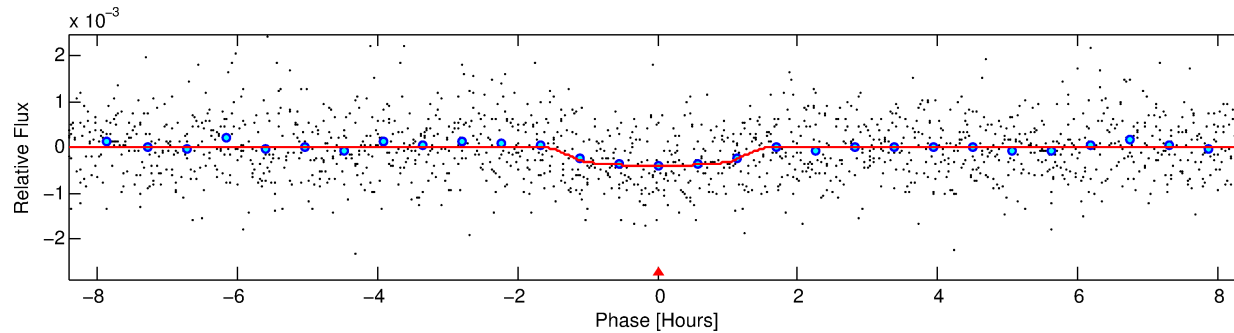
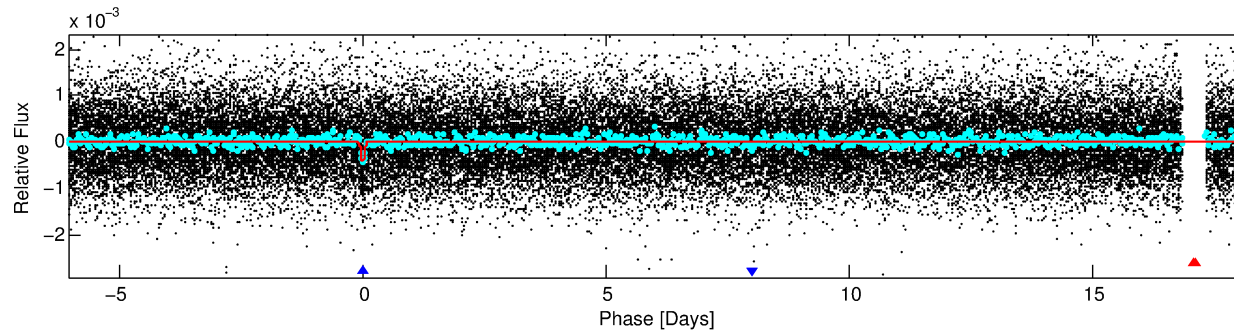
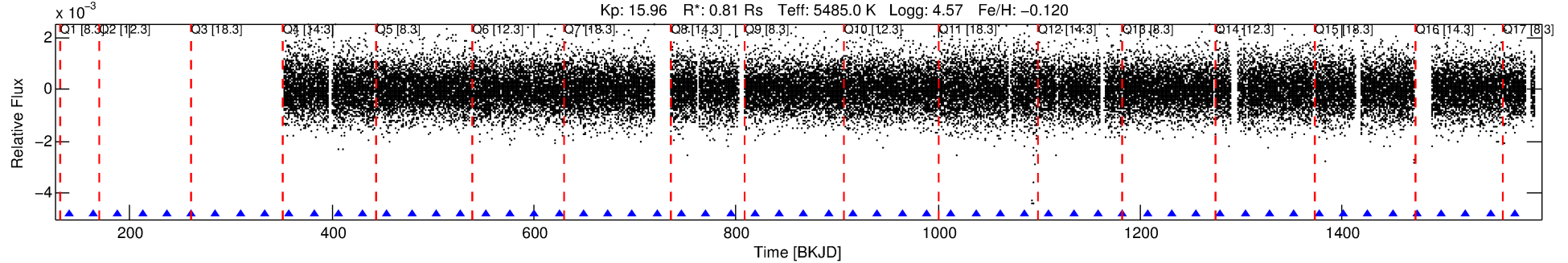
Ephemeris Match Information For 007019489-02

No Significant Match Found

DV One-Page Summary

KIC: 7019489 Candidate: 2 of 2 Period: 24.260 d
KOI: K02128 Corr: No Ephemeris Match

Kp: 15.96 R*: 0.81 Rs Teff: 5485.0 K Logg: 4.57 Fe/H: -0.120



DV Fit Results:

Period = 24.26024 [0.00027] d
Epoch = 139.6177 [0.0099] BKJD
Rp/R* = 0.0208 [0.0213]
a/R* = 38.62 [168.11]
b = 0.84 [1.59]
Seff = 21.16 [6.27]
Teq = 547 [40] K
Rp = 1.82 [1.91] Re
a = 0.1576 [0.0288] AU
Ag = 477.97 [1008.28] [0.47σ]
Teffp = 3954 [2073] K [1.64σ]

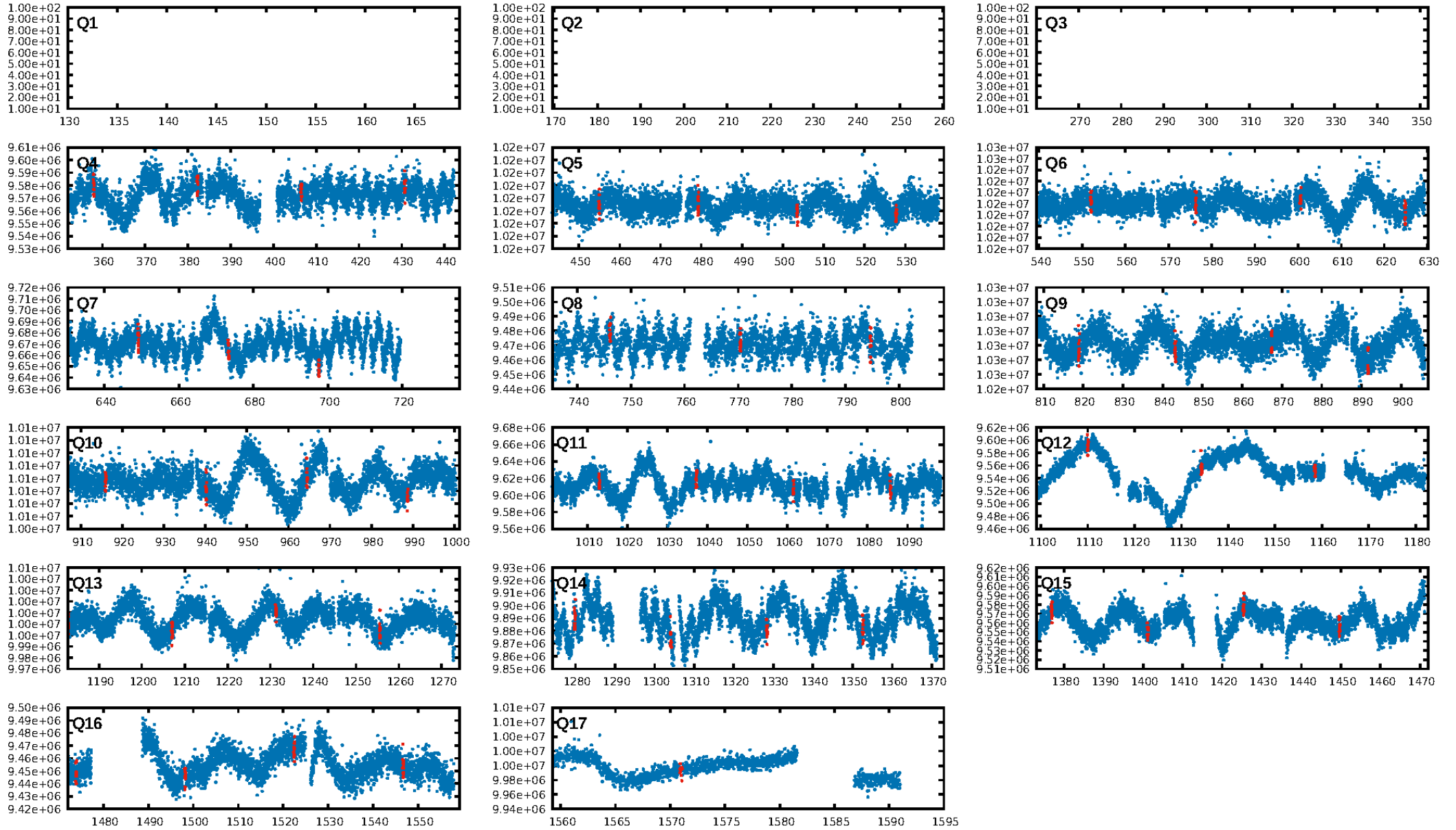
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.22e-13
RollingBand-fgt: 1.00 [48/48]
GhostDiagnostic-chr: 3.277
Centroid-sig: 0.5%
Centroid-so: 3.581 arcsec [2.17σ]
OotOffset-rm: 2.799 arcsec [3.56σ]
KicOffset-rm: 1.911 arcsec [4.14σ]
OotOffset-st: 2/0/0/2 [4]
KicOffset-st: 2/0/1/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 1.00 [14/14]

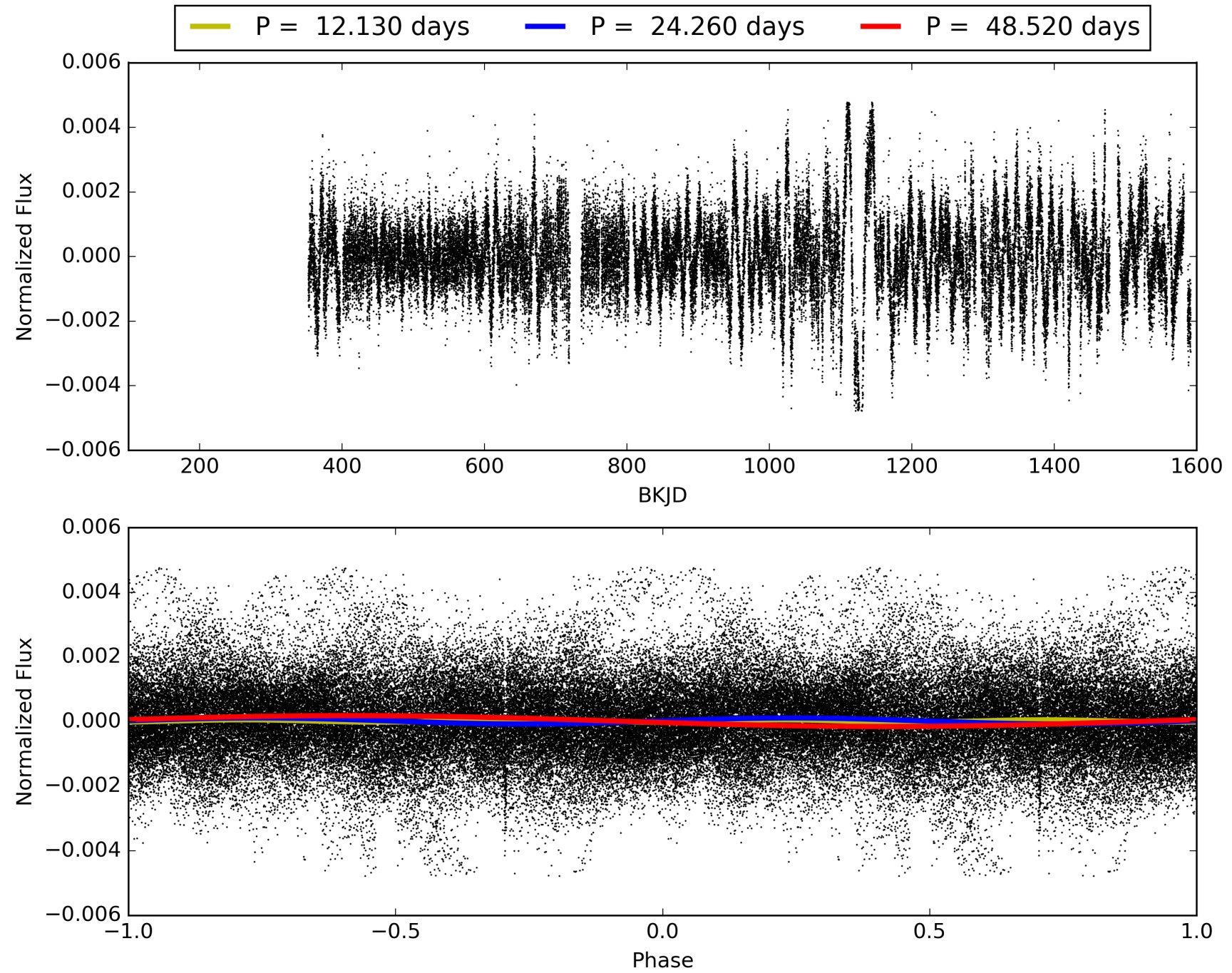
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:41:21 Z

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

TCE 007019489-02, PDC Light Curves

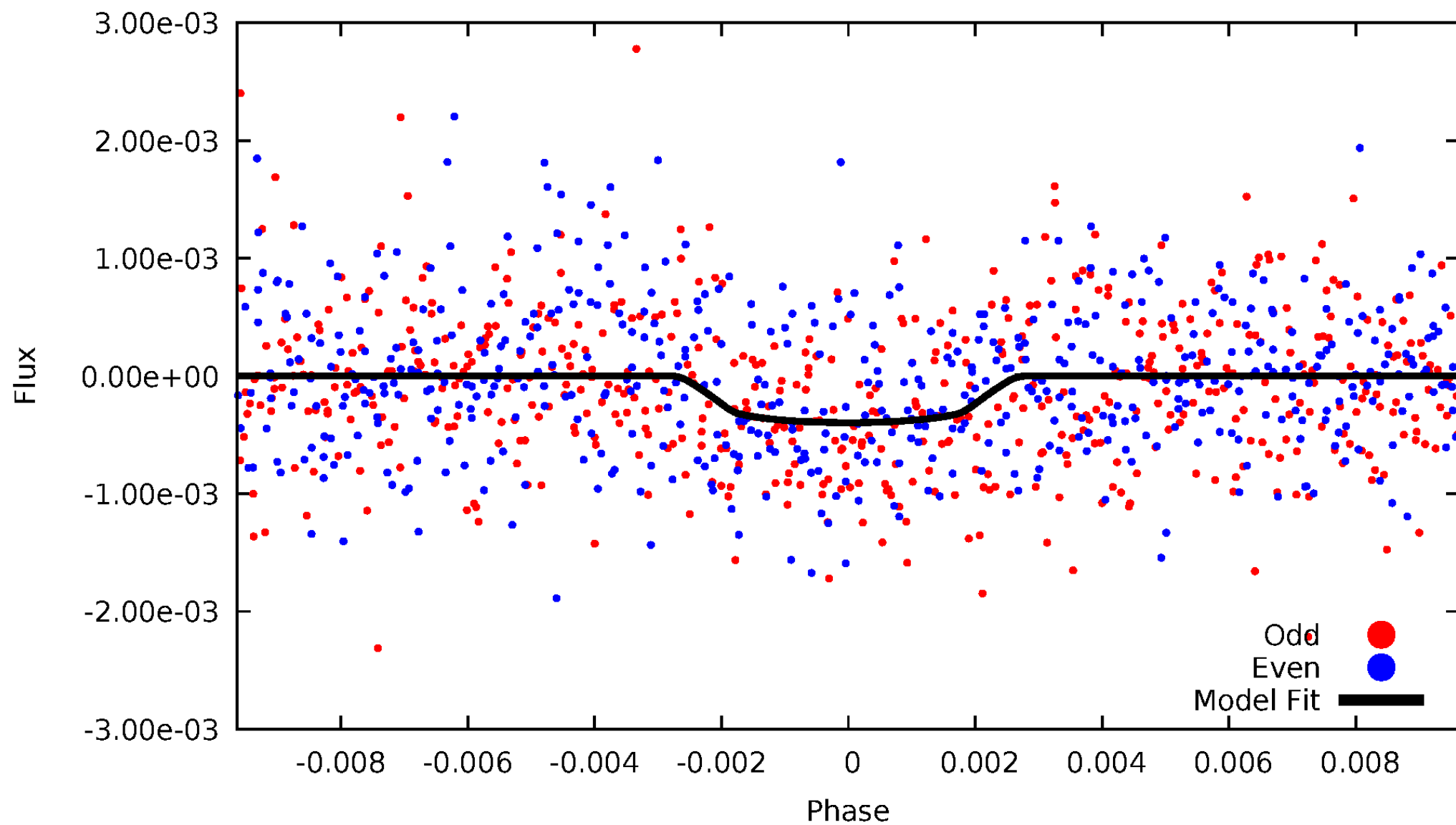


TCE 007019489-02



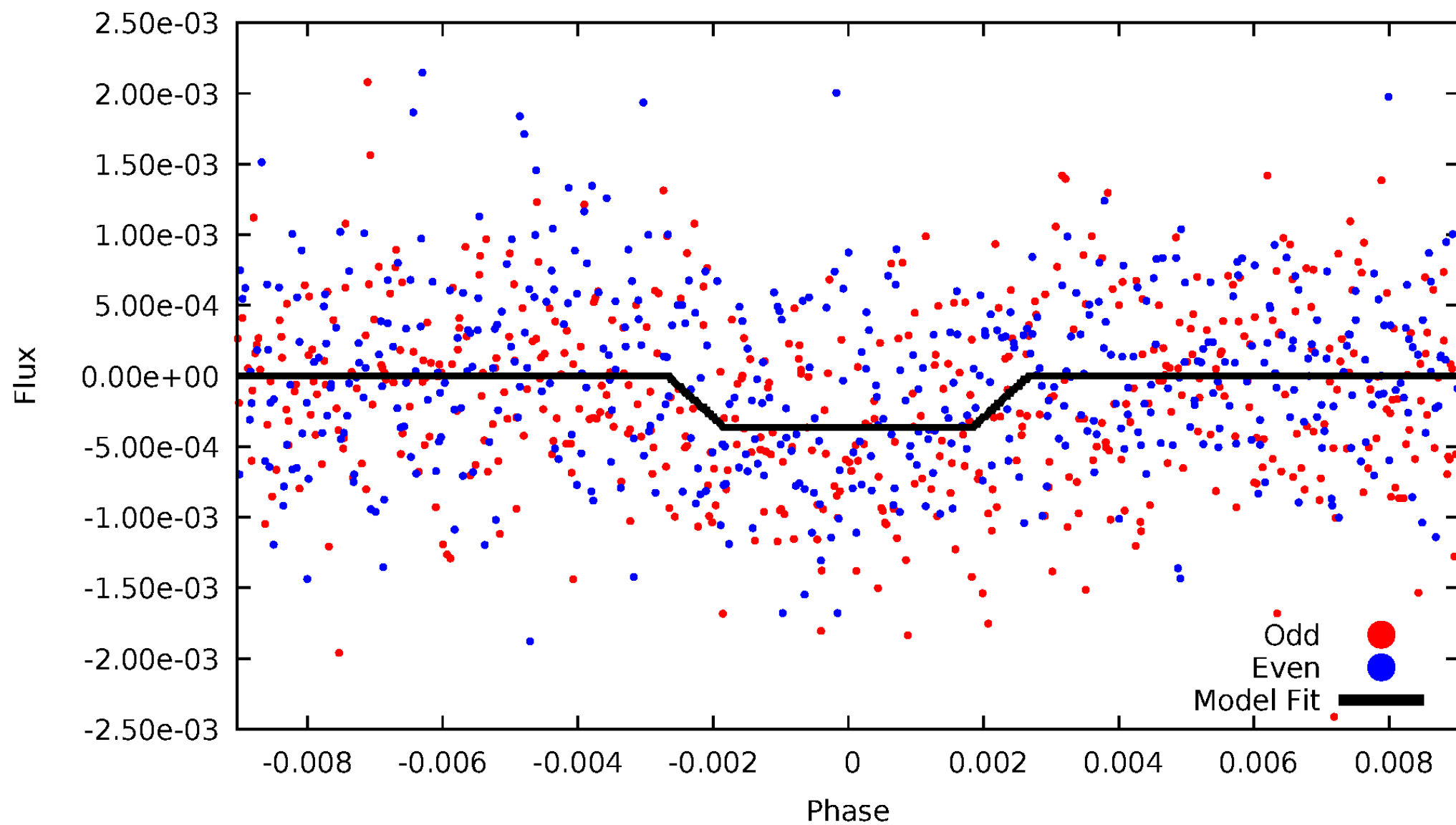
DV Odd/Even

TCE 007019489-02



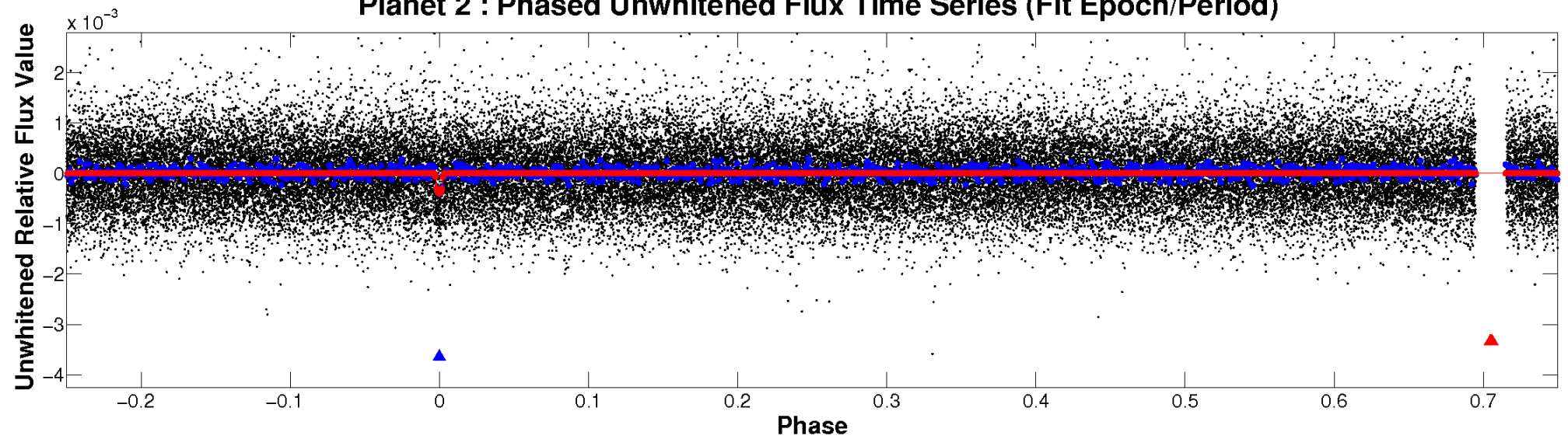
ALT Odd/Even

TCE 007019489-02

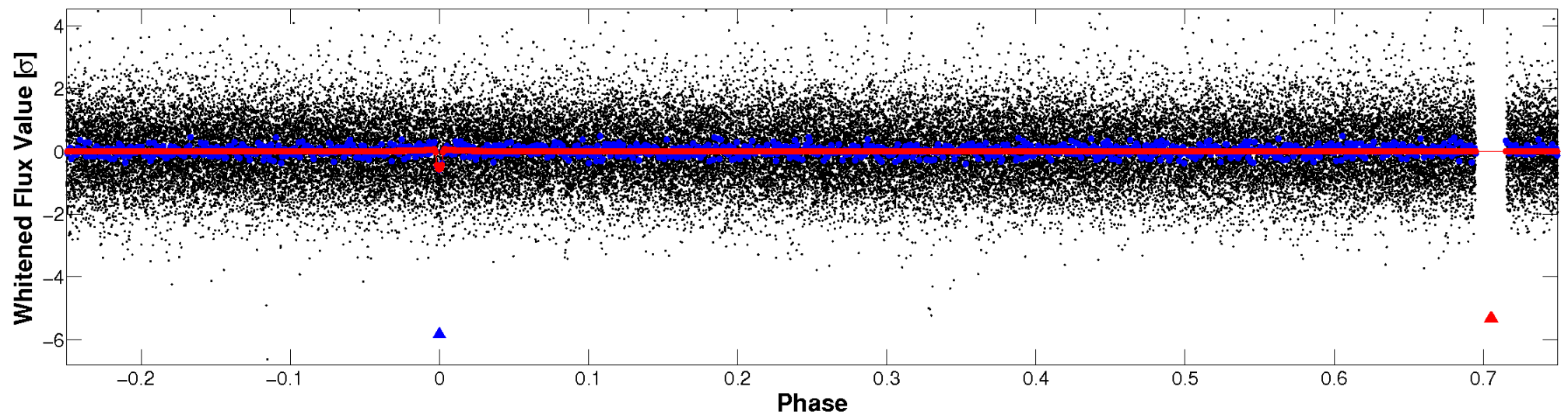


Non-Whitened Vs. Whitened Light Curve

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

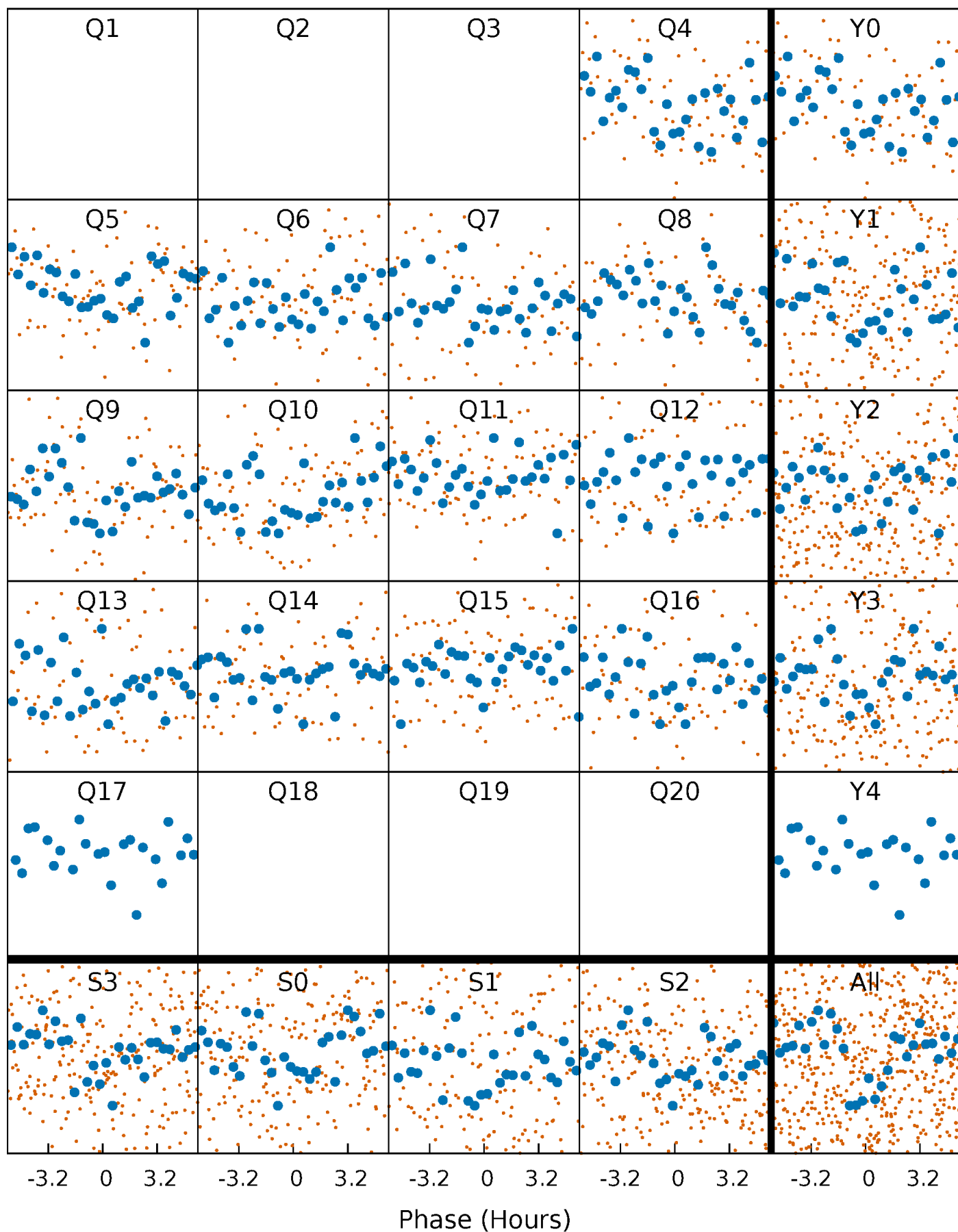


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



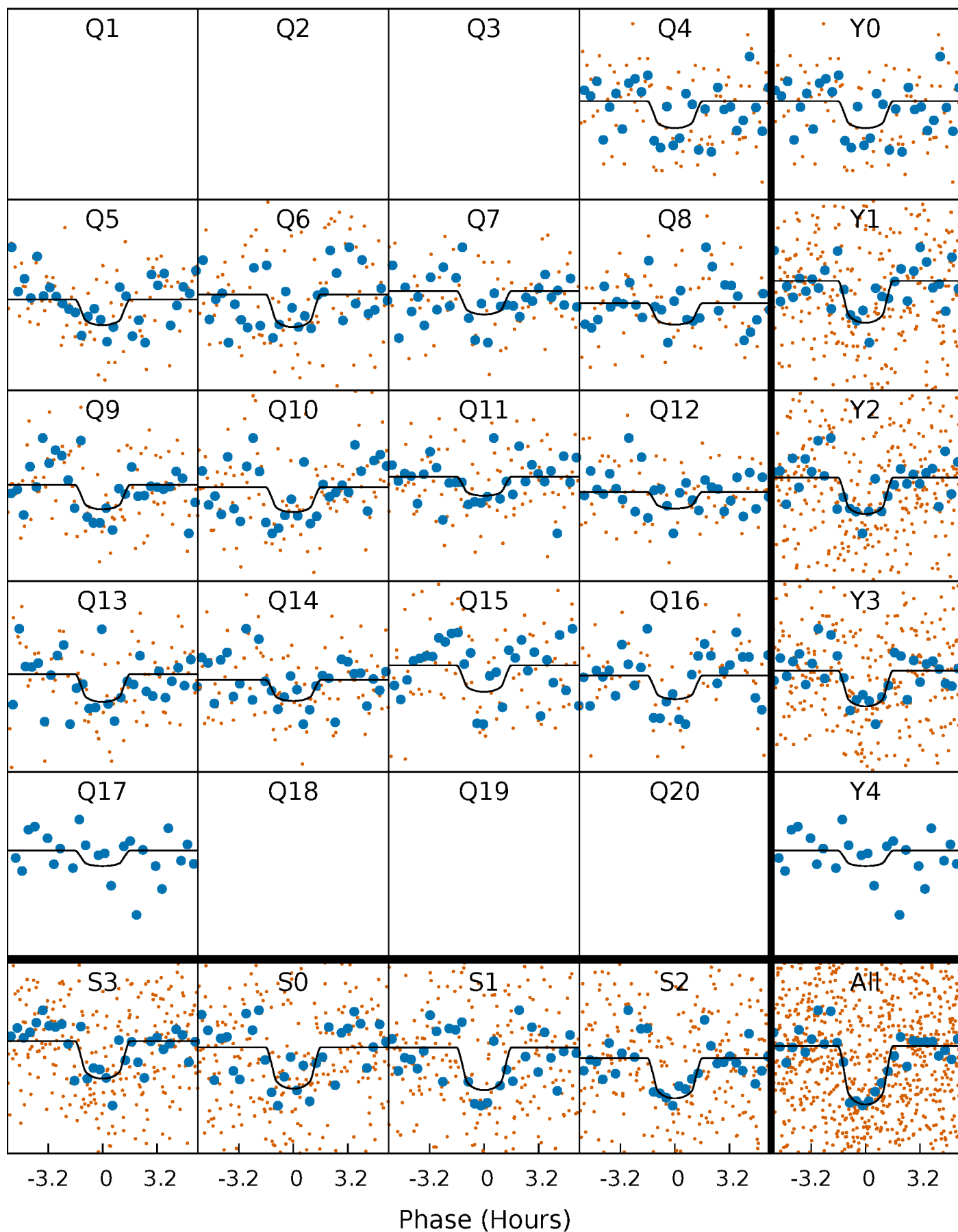
PDC Quarter-Phased Transit Curves

TCE 007019489-02 P= 24.260239 Days $T_0=139.617654$ (BKJD)



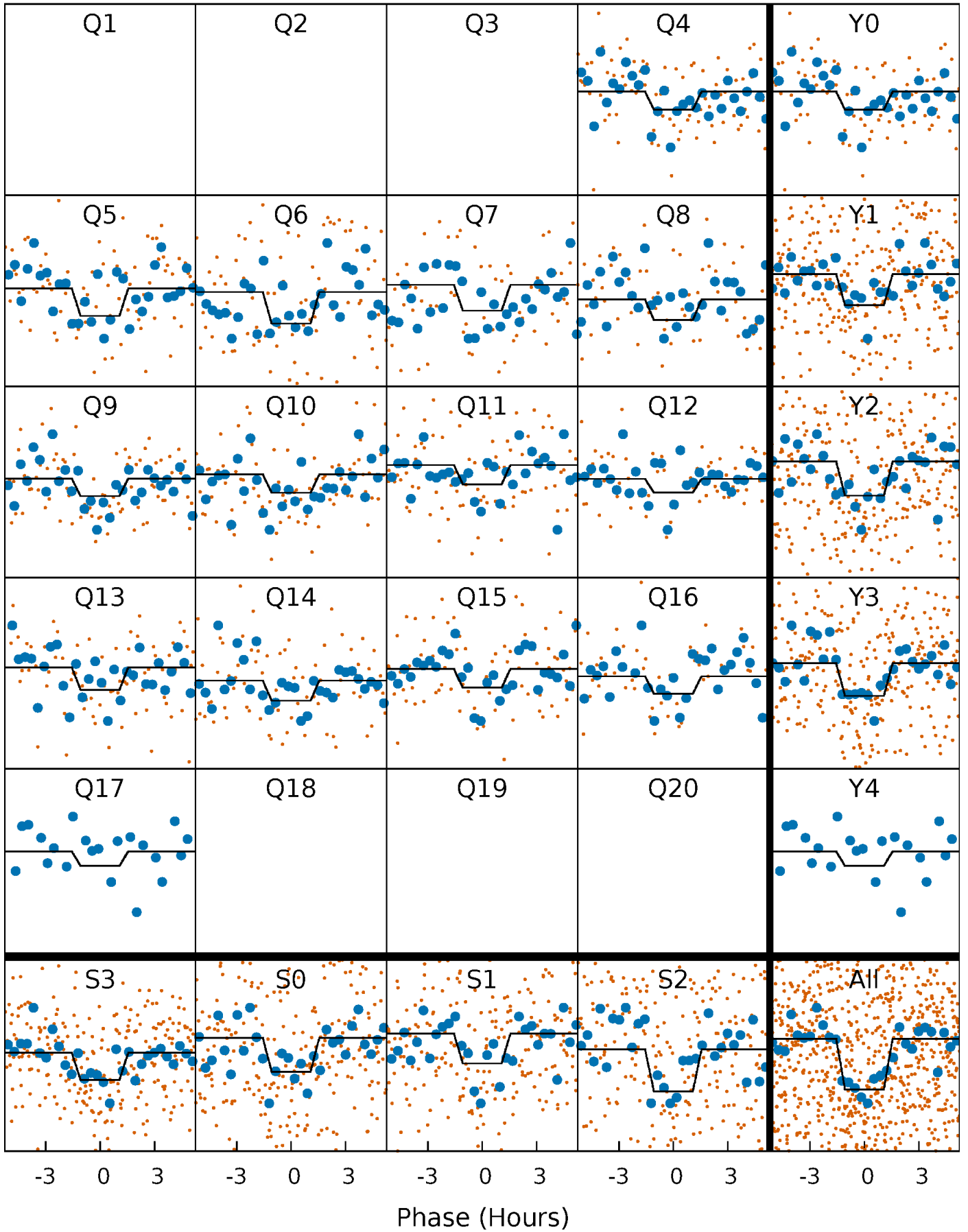
DV Quarter-Phased Transit Curves

TCE 007019489-02 P= 24.260239 Days $T_0=139.617654$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

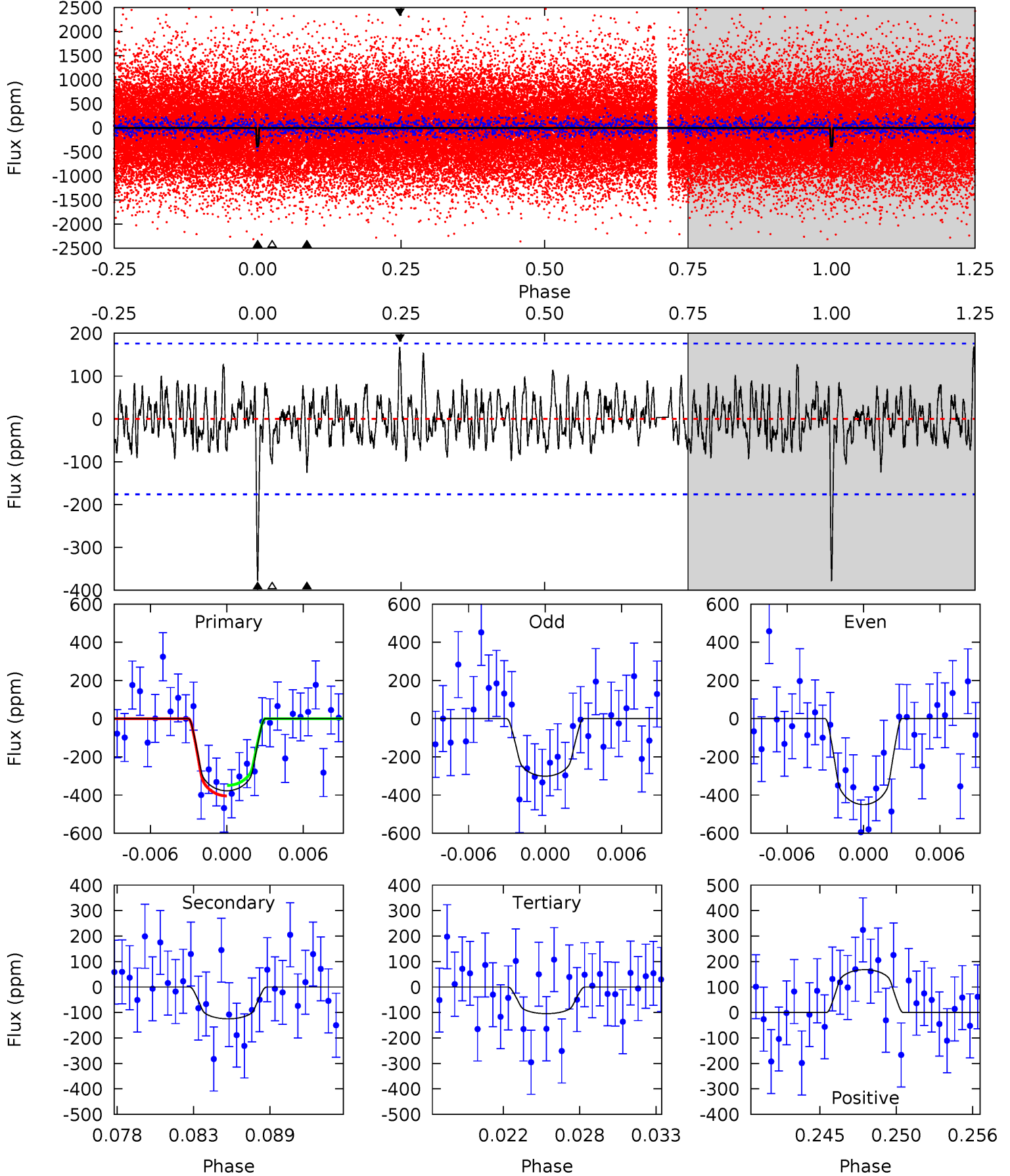
TCE 007019489-02 P= 24.260195 Days $T_0=139.621036$ (BKJD)



DV Model-Shift Uniqueness Test

007019489-02, P = 24.260239 Days, E = 139.617654 Days

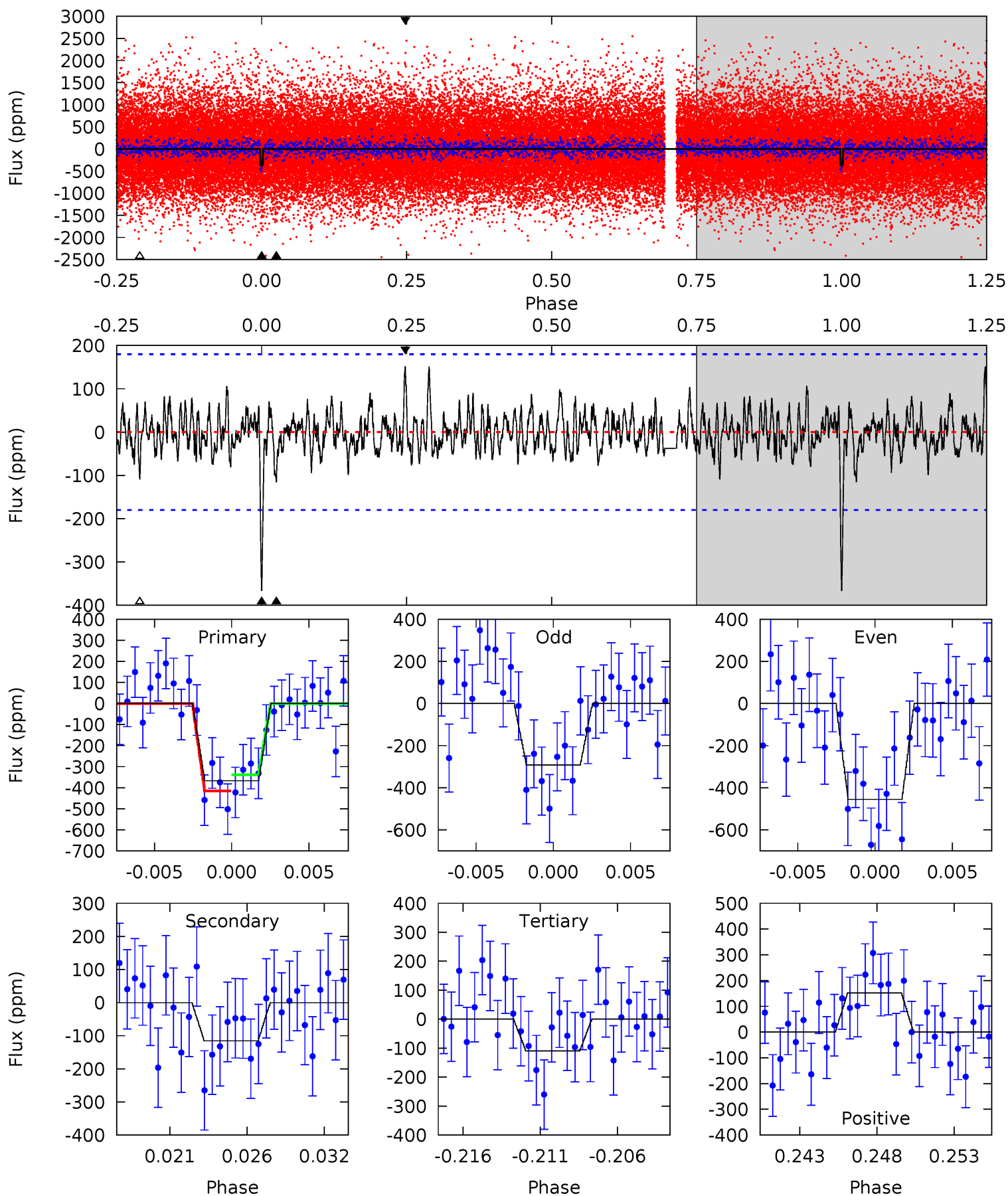
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	3.65	3.05	4.91	5.14	2.77	1.27	7.98	6.11	0.60	-1.27	2.17	1.10	0.31	0.80



Alt Model-Shift Uniqueness Test

007019489-02, $P = 24.260195$ Days, $E = 139.621036$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	3.31	3.14	4.34	5.15	2.79	1.07	7.36	6.16	0.17	-1.03	2.33	1.02	0.29	1.11



Stellar Parameters For KIC 007019489

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5485^{+182}_{-182}	$4.574^{+0.036}_{-0.144}$	$-0.120^{+0.300}_{-0.300}$	$0.805^{+0.176}_{-0.075}$	$0.891^{+0.081}_{-0.102}$	$2.406^{+0.473}_{-1.003}$
	+3%/-3%	+1%/-3%	+250%/-250%	+22%/-9%	+9%/-11%	+20%/-42%
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 007019489-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-125 ± 34	$2.31^{+1.67}_{-1.48}$	780^{+42}_{-33}	3950^{+1913}_{-689}	300^{+1834}_{-203}
Alt.	-116 ± 35	$2.19^{+1.81}_{-1.34}$	780^{+43}_{-32}	3946^{+1969}_{-708}	308^{+1899}_{-214}

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

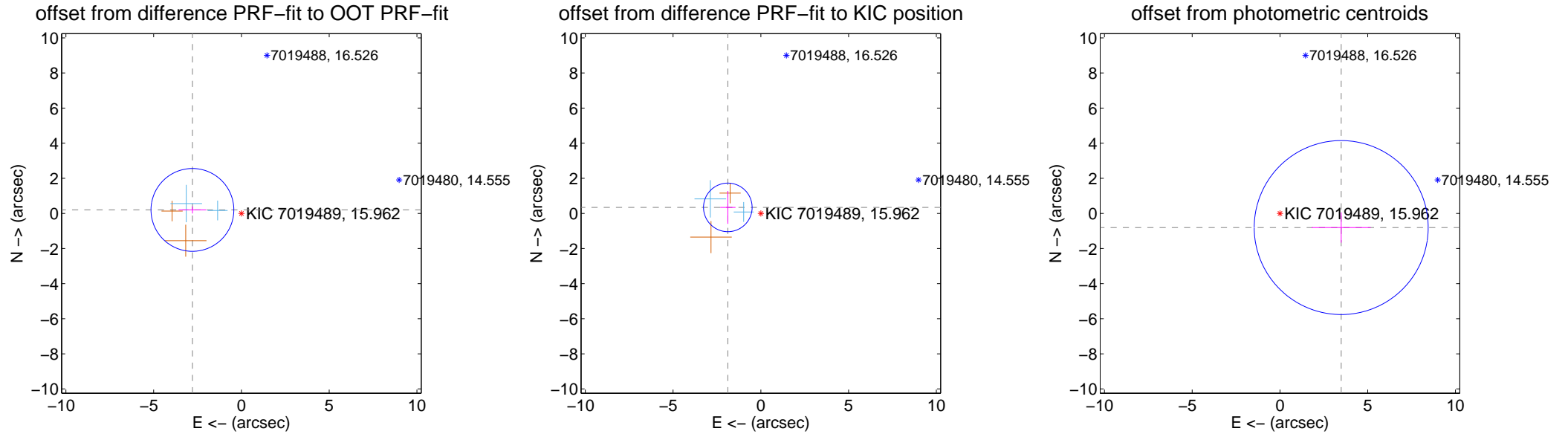
DV Centroid Data

Supplemental centroid analysis for 007019489-02. Kepler magnitude: 15.96. Transit SNR 8.00

There are 2 quarters with good PRF difference image offsets

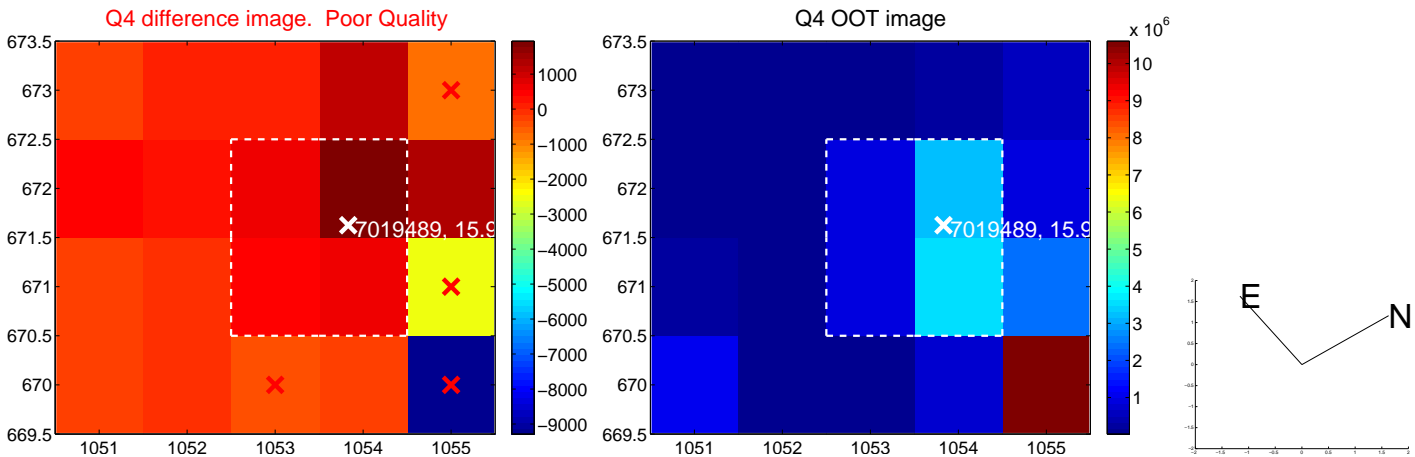
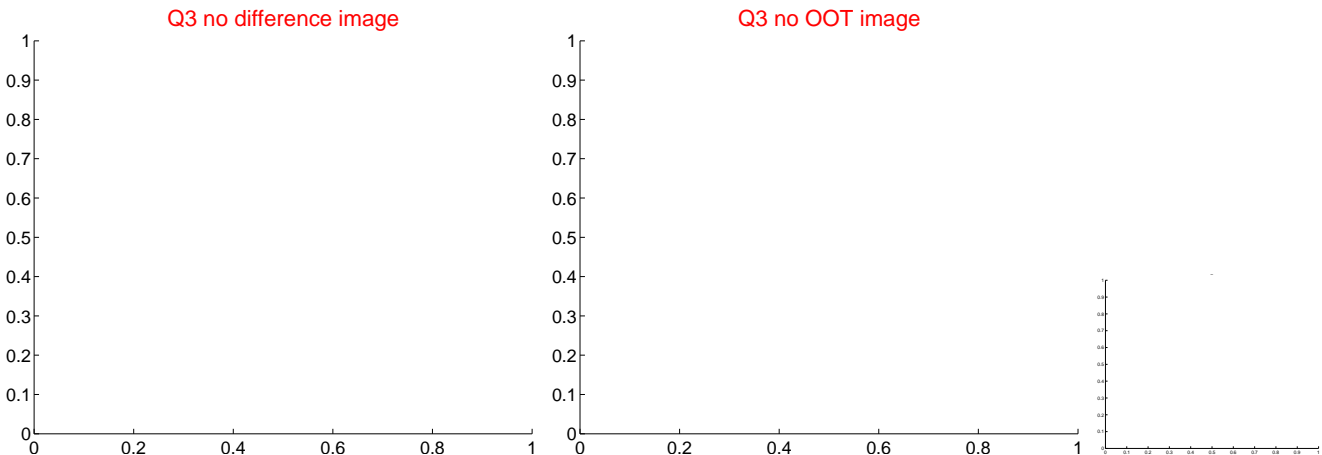
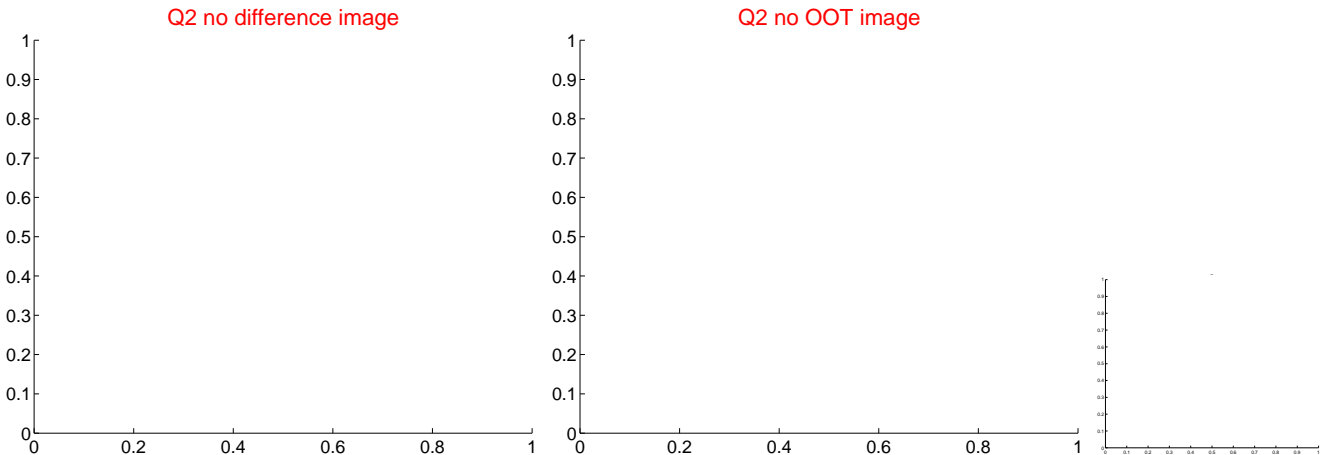
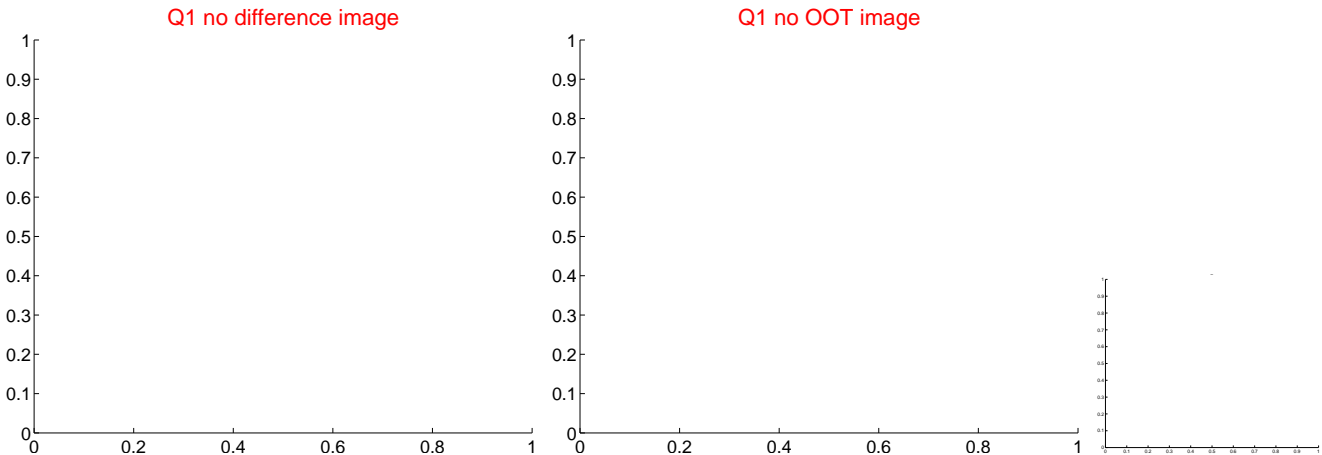
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.799 ± 0.787	3.56	2.792 ± 0.788	0.199 ± 0.203
PRF-fit source offset from KIC position	1.911 ± 0.461	4.14	1.880 ± 0.437	0.343 ± 0.937
photometric centroid source offset	3.58 ± 1.65	2.17	-3.49 ± 1.68	-0.81 ± 0.86

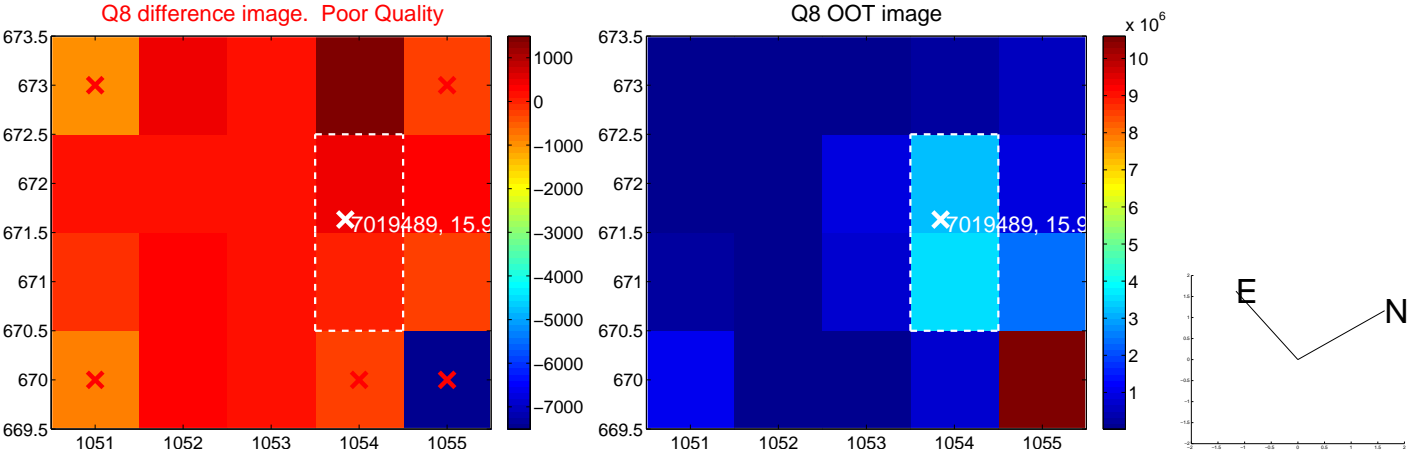
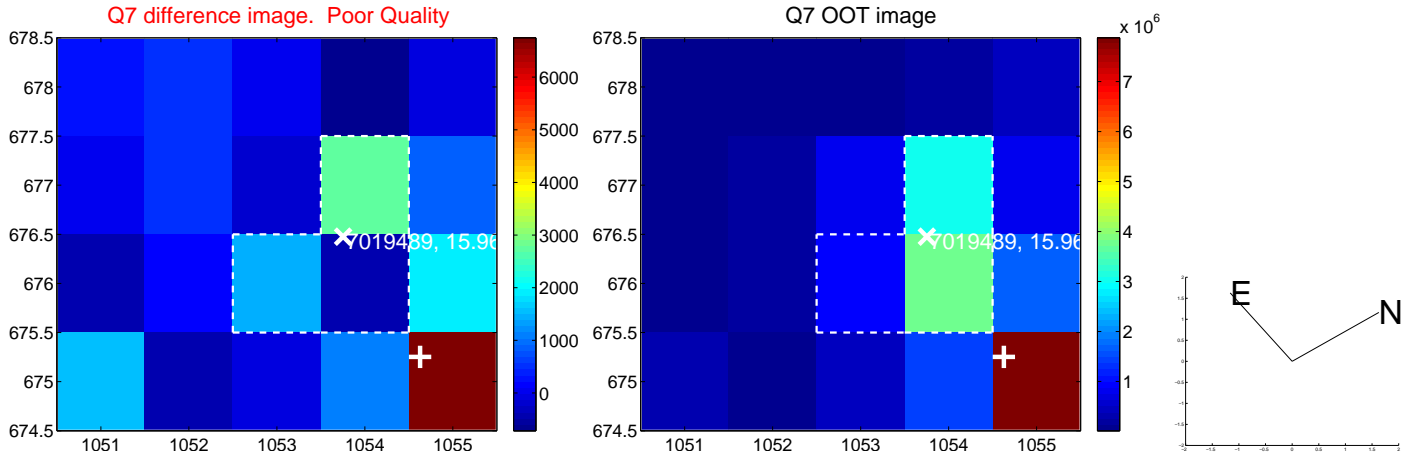
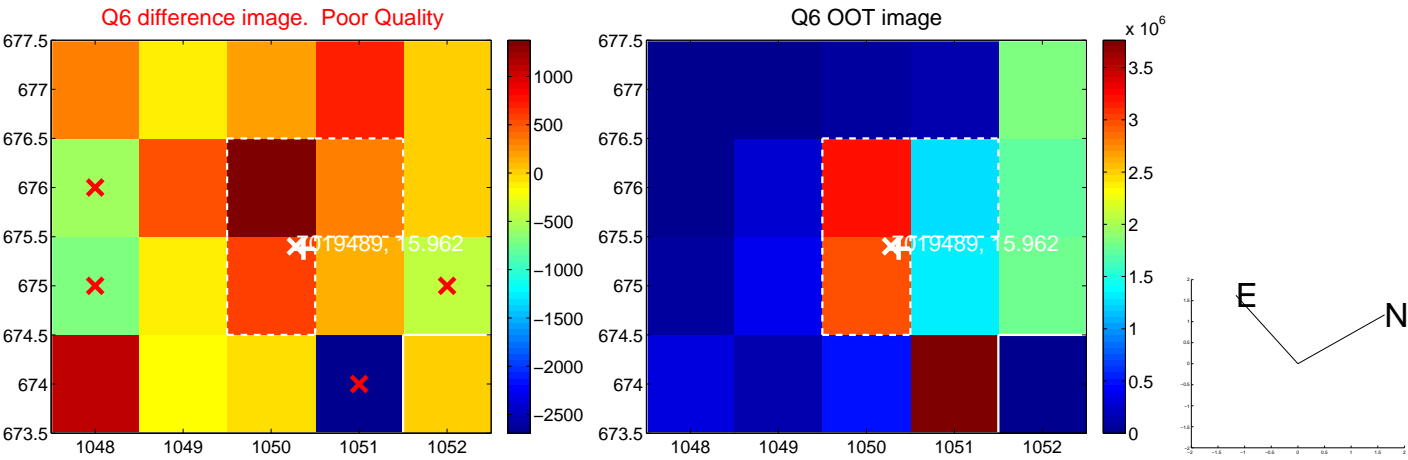
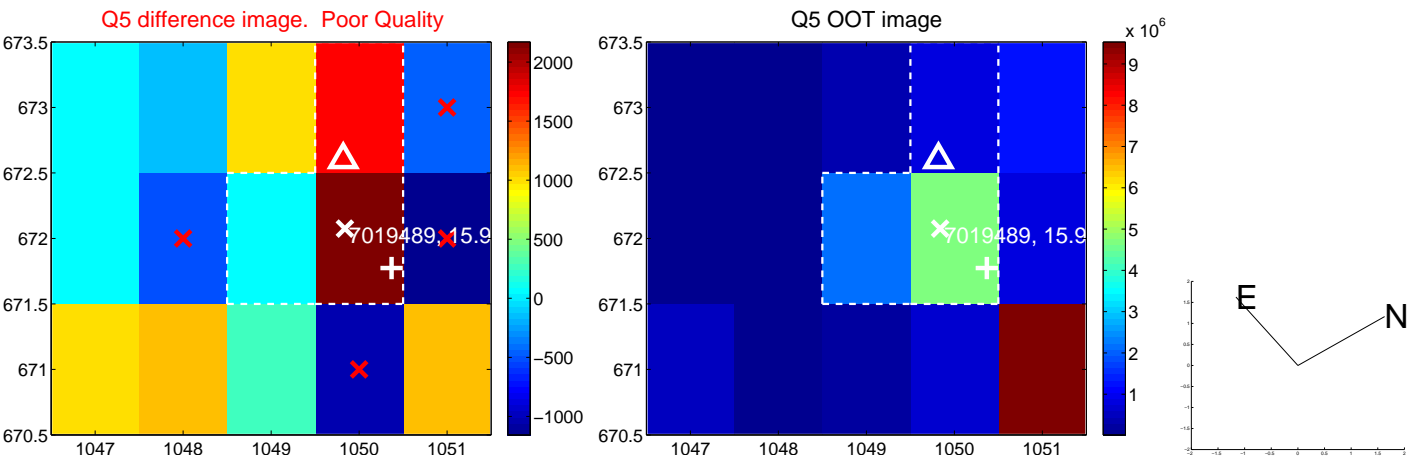


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

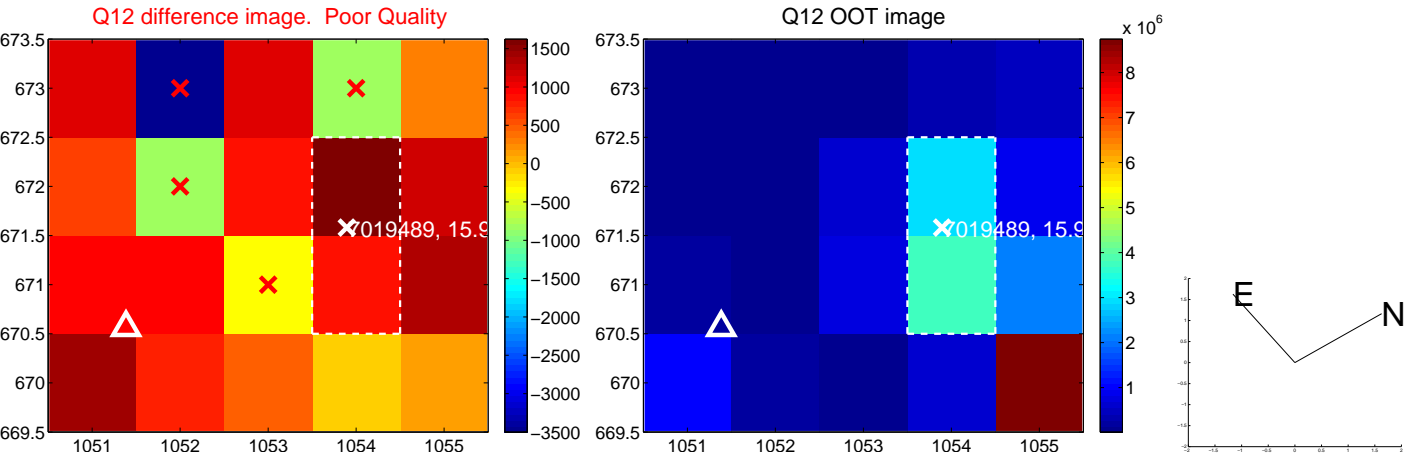
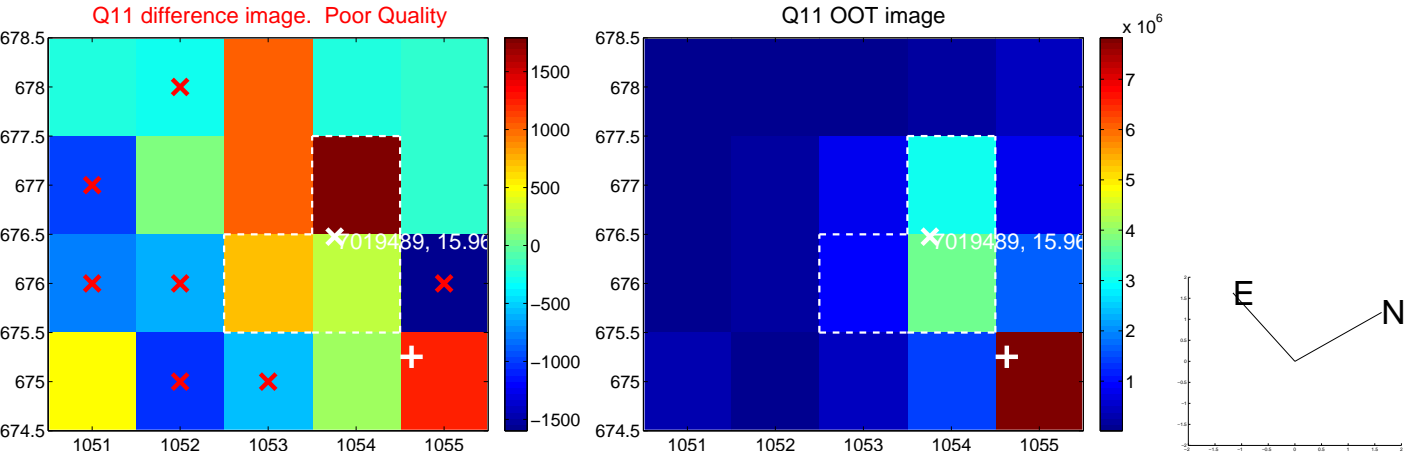
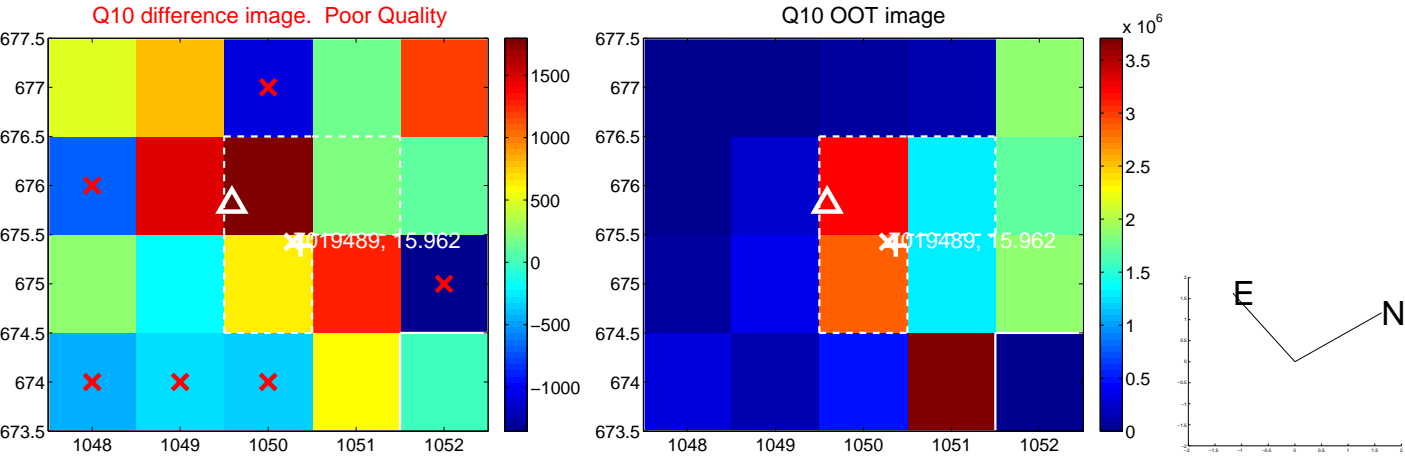
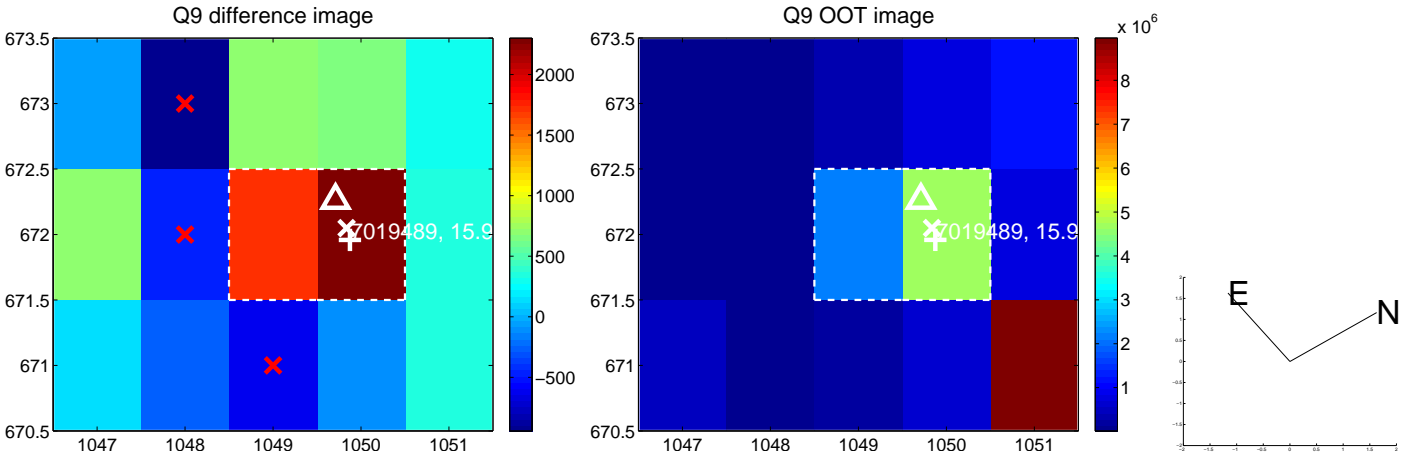
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



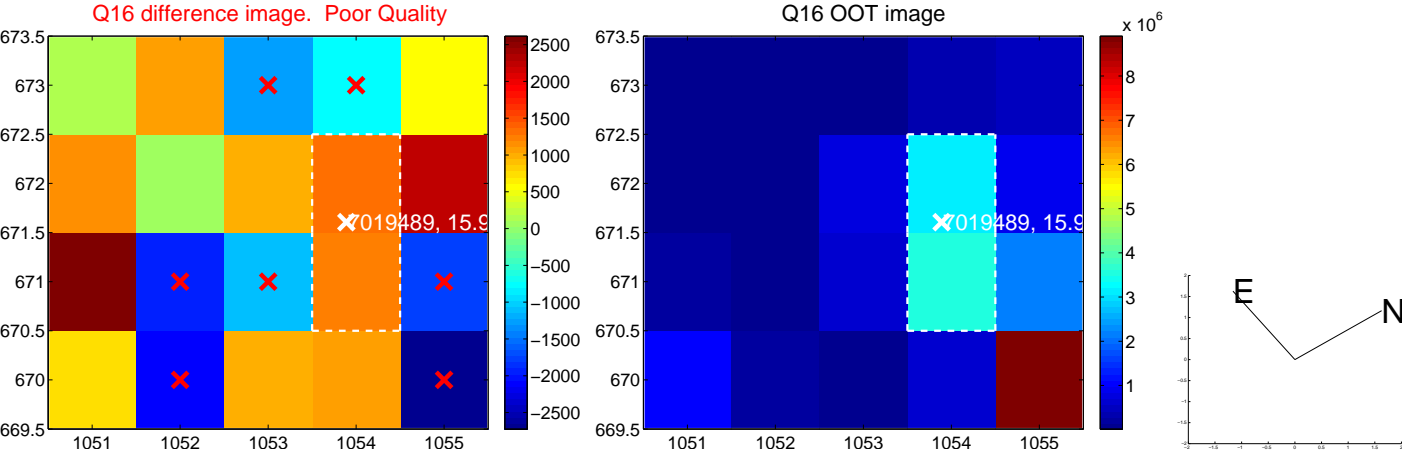
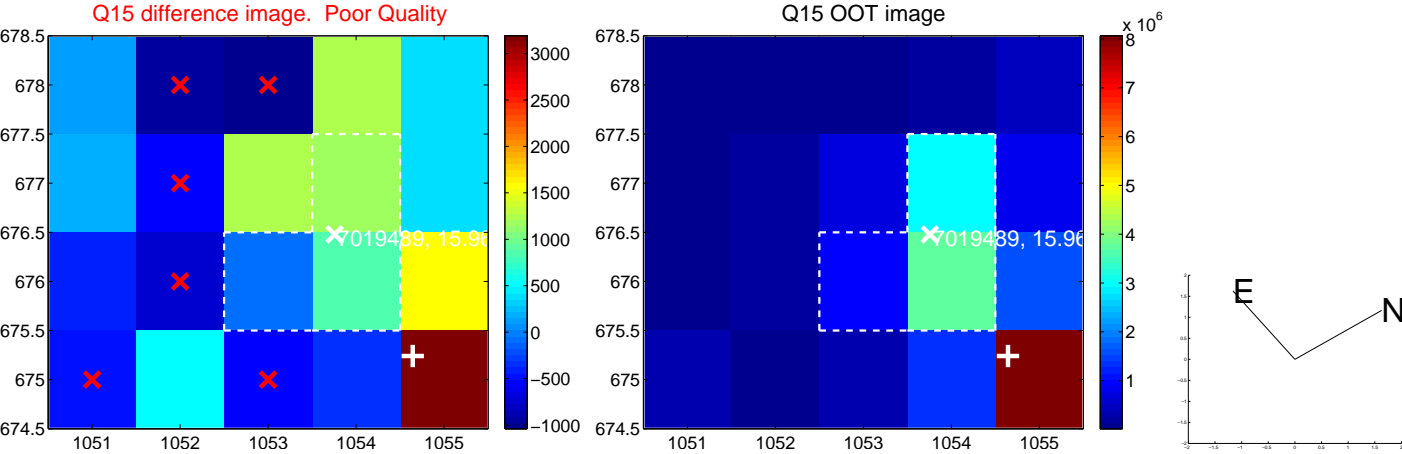
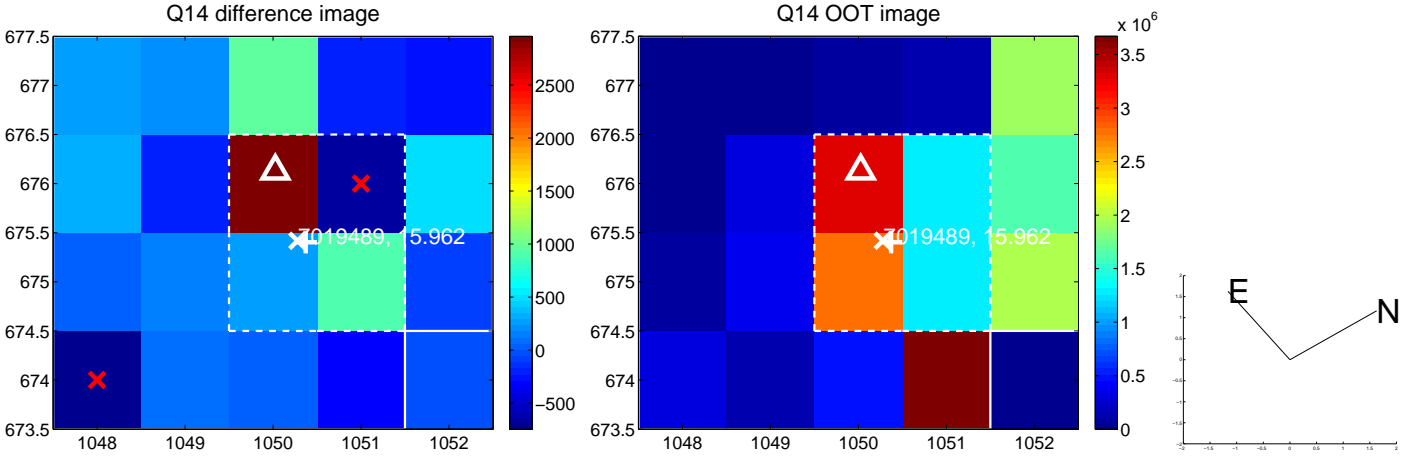
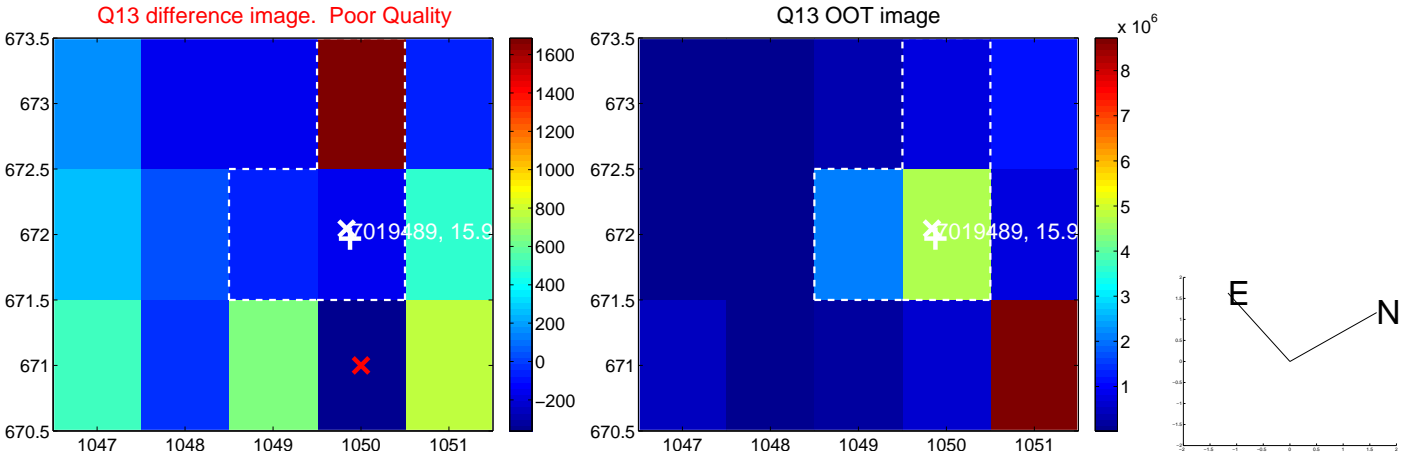
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



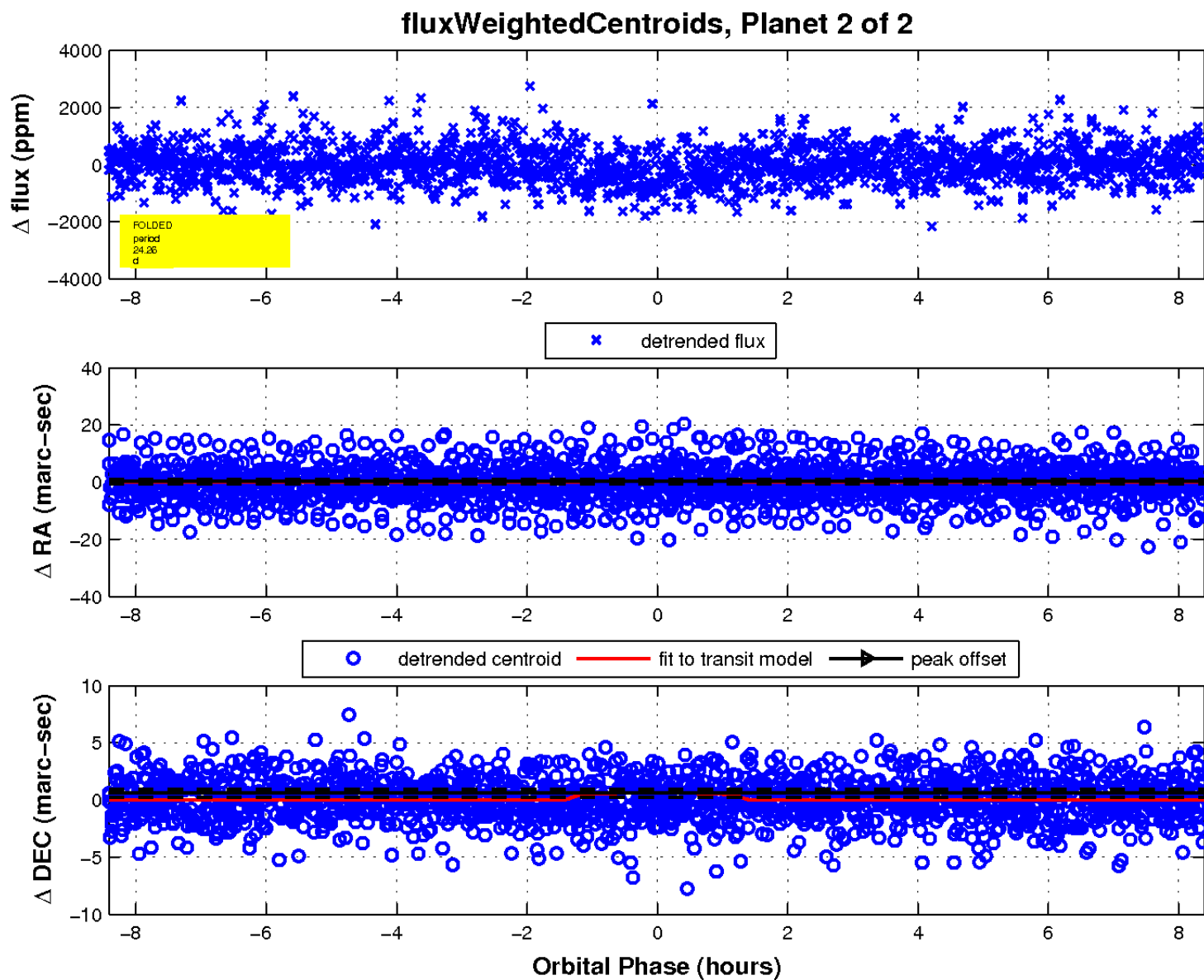
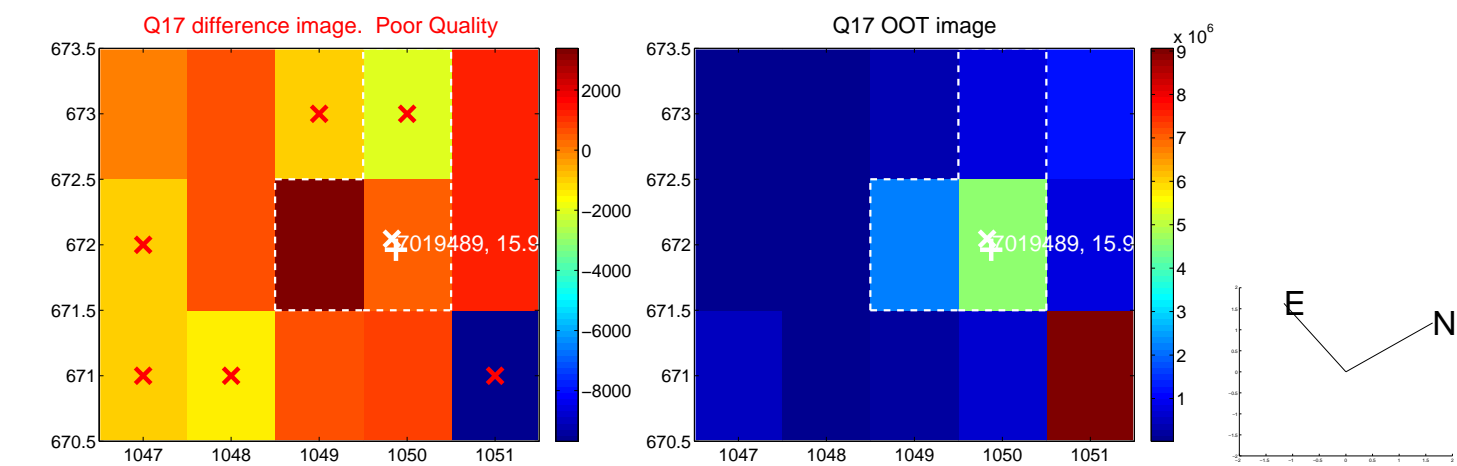
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

