

KIC 011773022

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})
011773022-01	OBS	0620.02	130.177553	212.034434	11595.6	8.293	204.0	189.2	0.97	6046	10.43	4.32
011773022-02	OBS	0620.01	45.155275	159.106545	6212.1	5.873	176.5	176.0	0.97	6046	7.84	17.71
011773022-03	OBS	0620.03	85.316845	209.996831	1809.6	2.754	27.5	25.6	0.97	6046	5.80	7.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011773022-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011773022-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011773022-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT

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

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

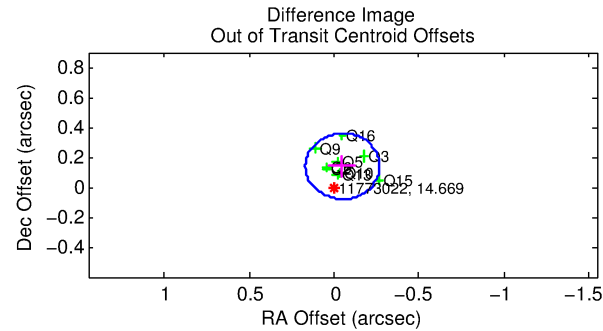
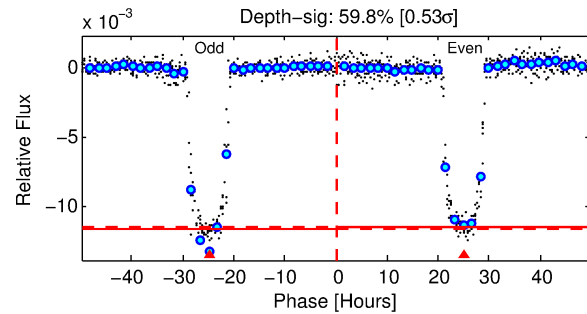
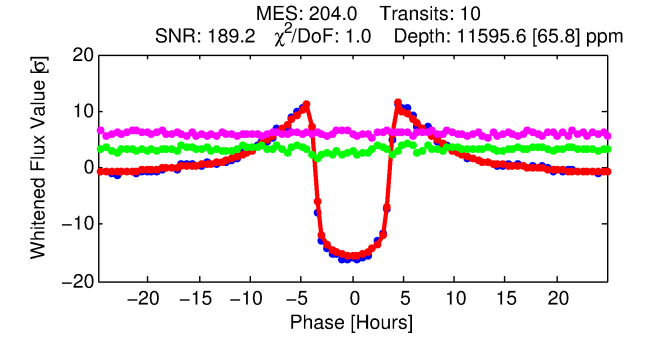
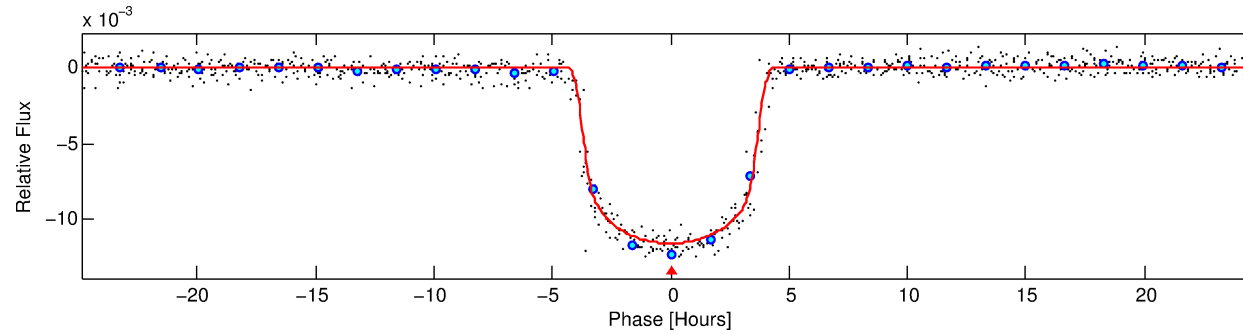
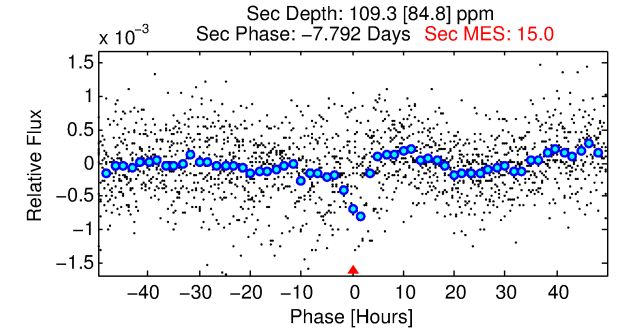
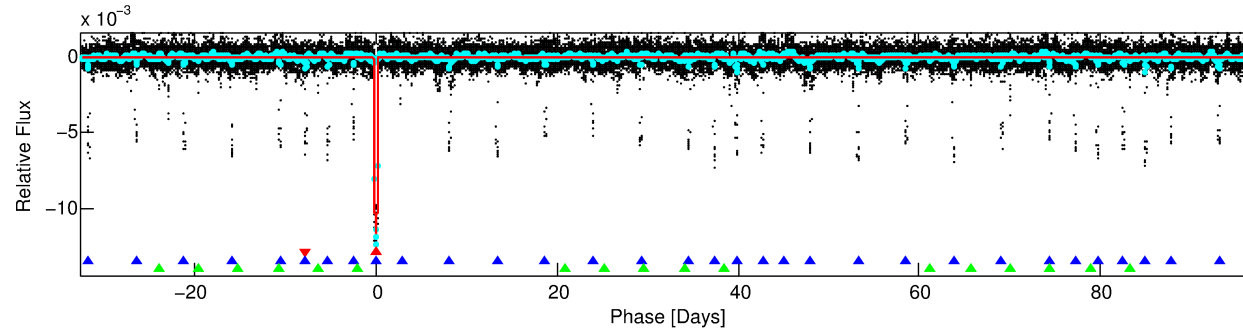
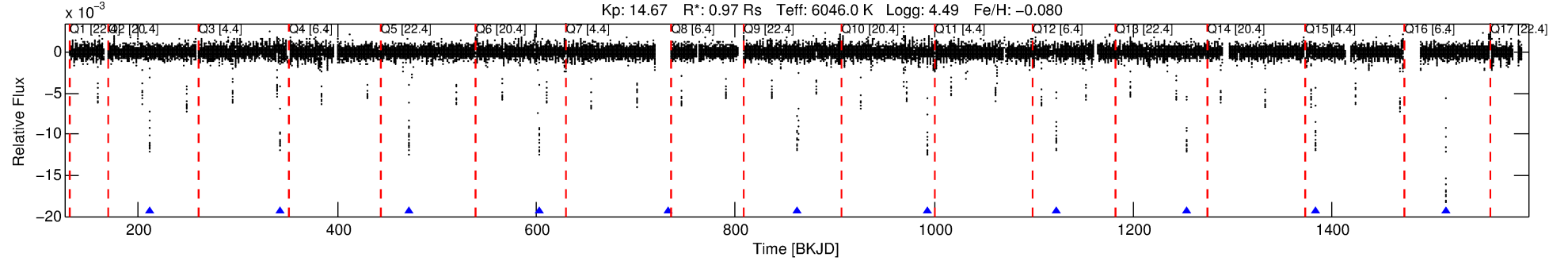
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011773022-01

No Significant Match Found

DV One-Page Summary

KIC: 11773022 Candidate: 1 of 3 Period: 130.178 d
KOI: K00620.02 Name: Kepler-51d Corr: 0.990



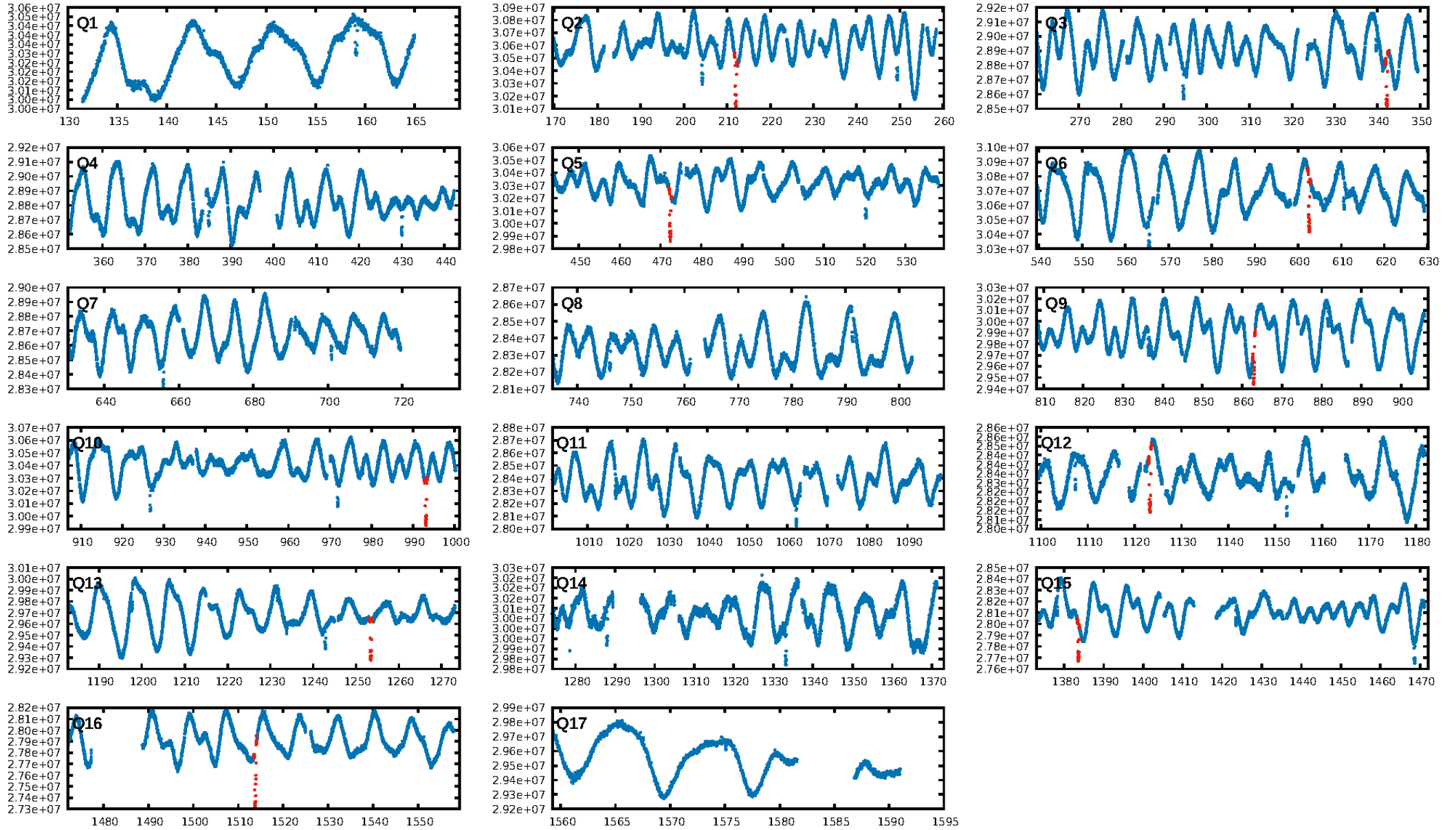
DV Fit Results:

Period = 130.17755 [0.00009] d
Epoch = 212.0344 [0.0005] BKJD
Rp/R* = 0.0984 [0.0008]
a/R* = 131.72 [4.53]
b = 0.00 [41.78]
Seff = 4.32 [1.80]
Teq = 368 [38] K
Rp = 10.43 [3.22] Re
a = 0.5119 [0.1365] AU
Ag = 144.81 [126.16] [1.14 σ]
Teffp = 1971 [388] K [4.12 σ]

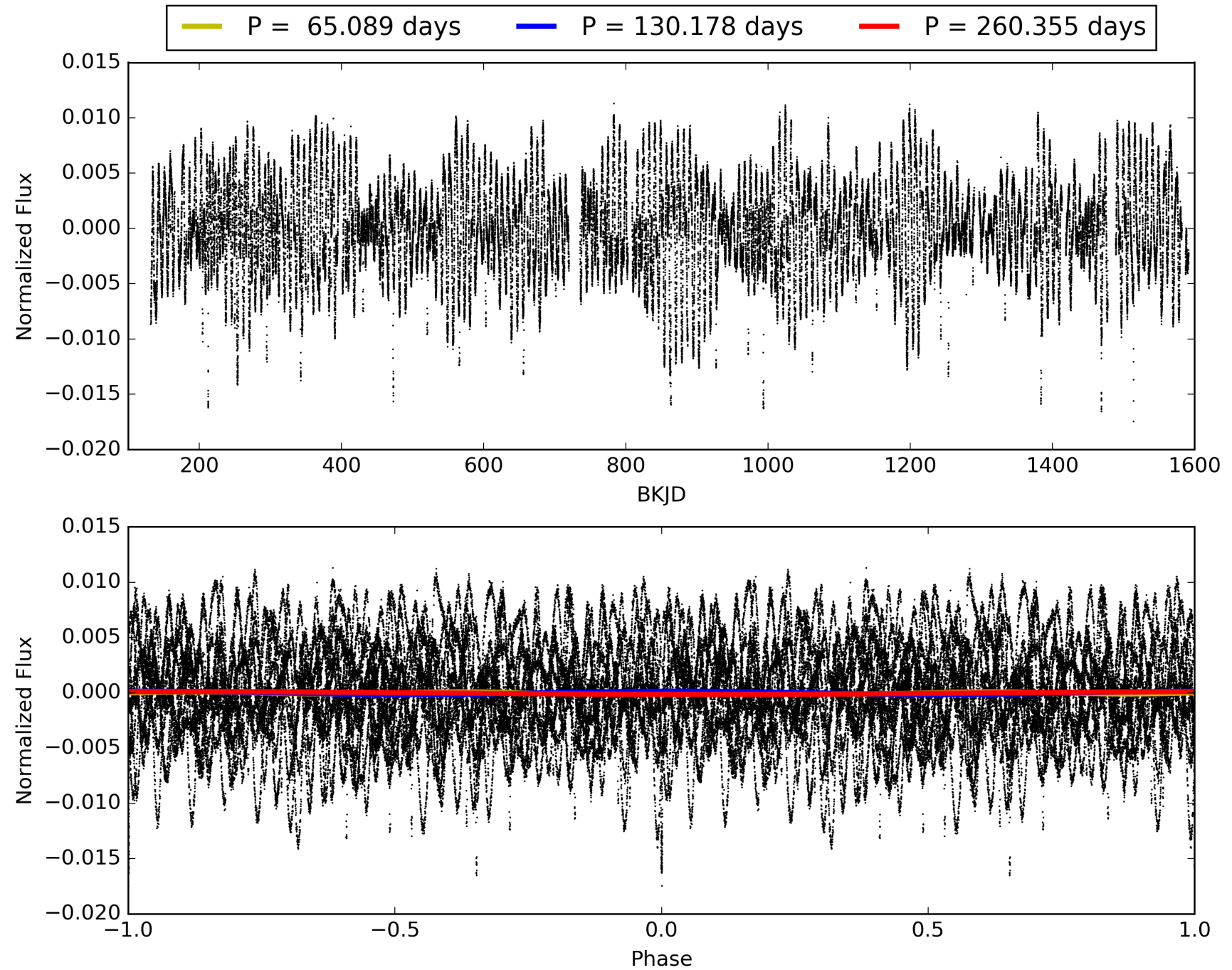
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [123.21 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.6%
ModelChiSquareGof-sig: 98.3%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 2.547
Centroid-sig: 0.0%
Centroid-so: 0.445 arcsec [6.13 σ]
OotOffset-rm: 0.147 arcsec [2.02 σ]
KicOffset-rm: 0.101 arcsec [1.27 σ]
OotOffset-st: 3/2/1/3 [9]
KicOffset-st: 3/2/1/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.89 [8/9]

TCE 011773022-01, PDC Light Curves

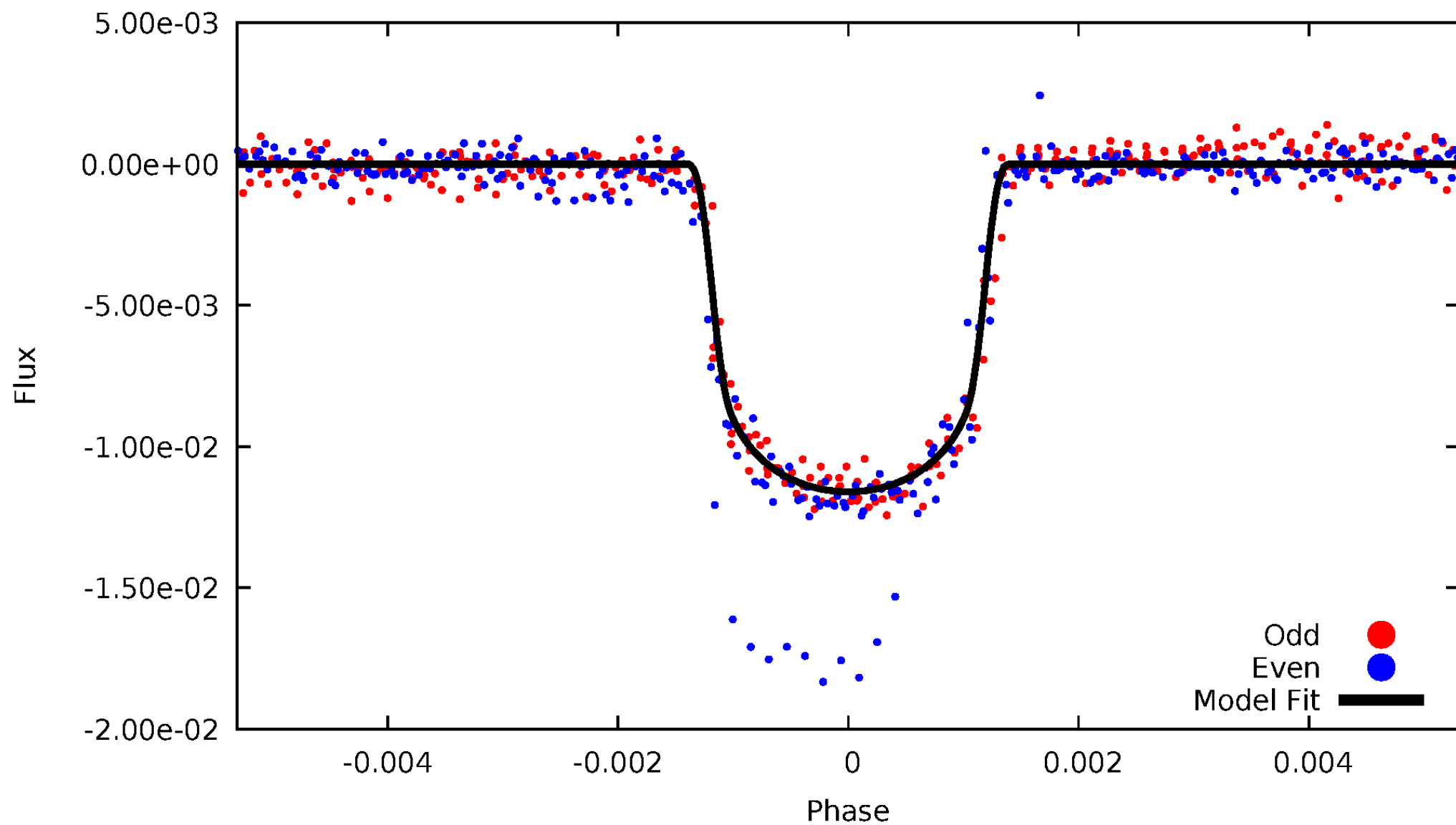


TCE 011773022-01



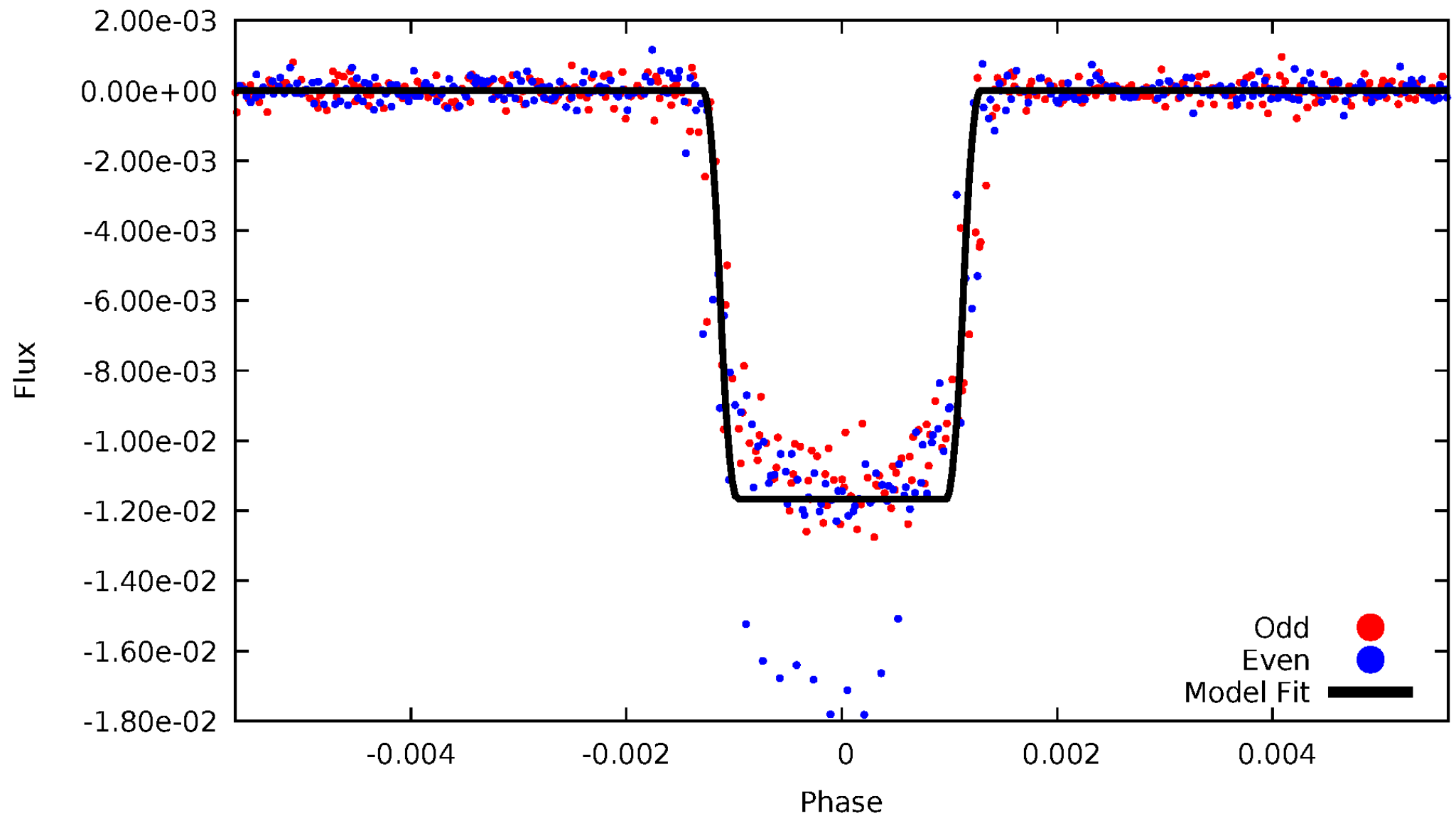
DV Odd/Even

TCE 011773022-01



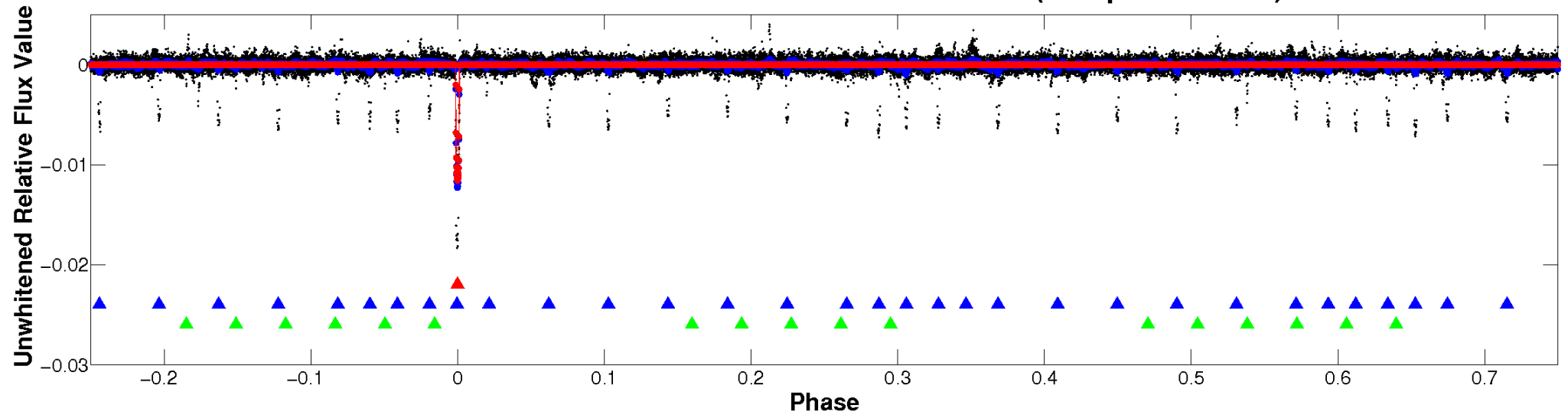
ALT Odd/Even

TCE 011773022-01

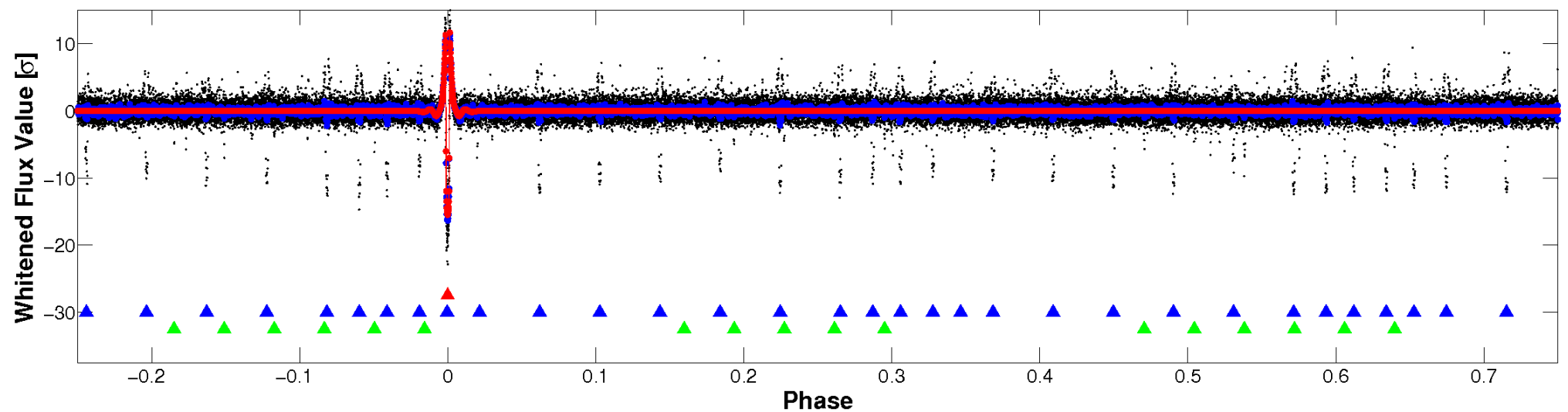


Non-Whitened Vs. Whitened Light Curve

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

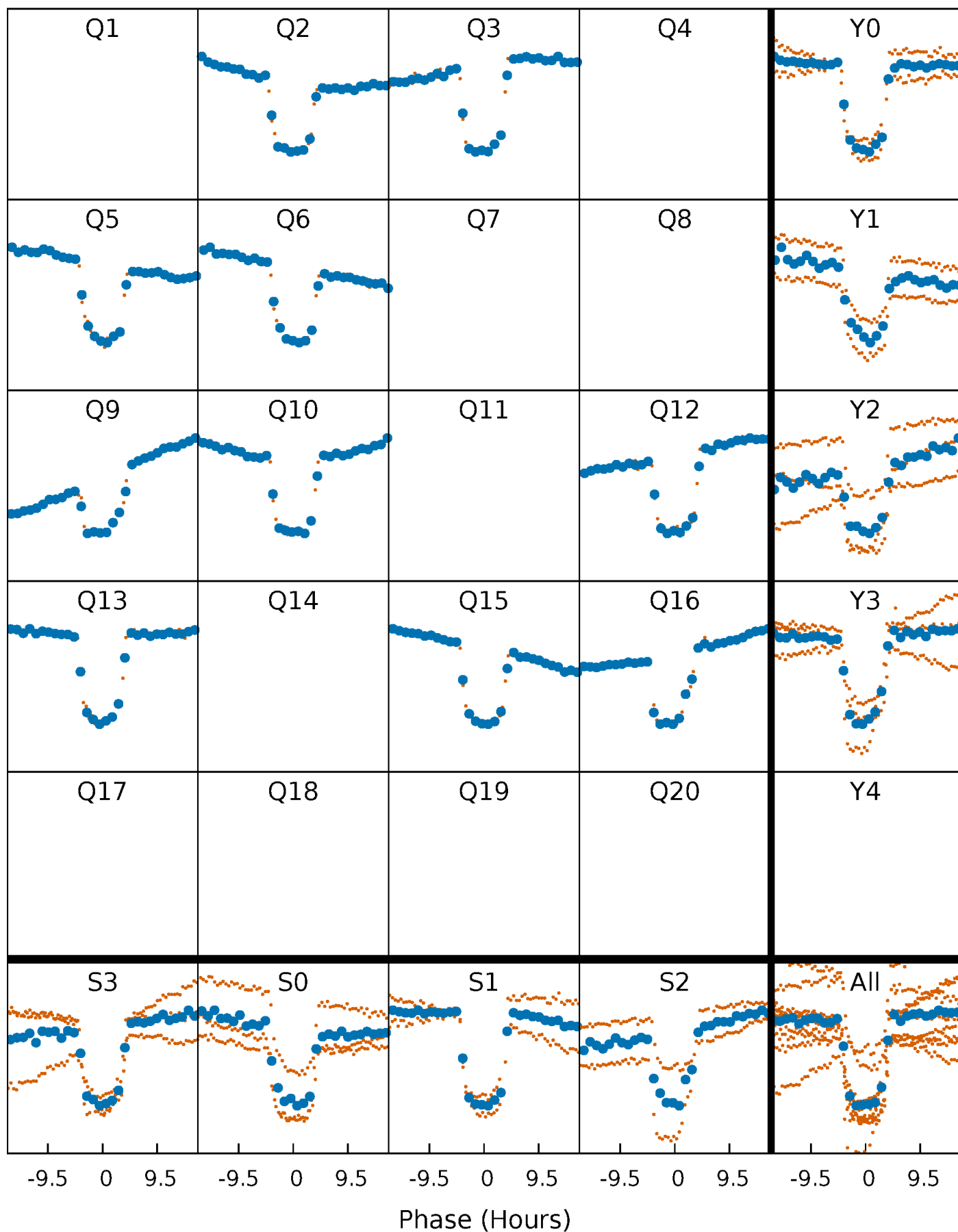


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



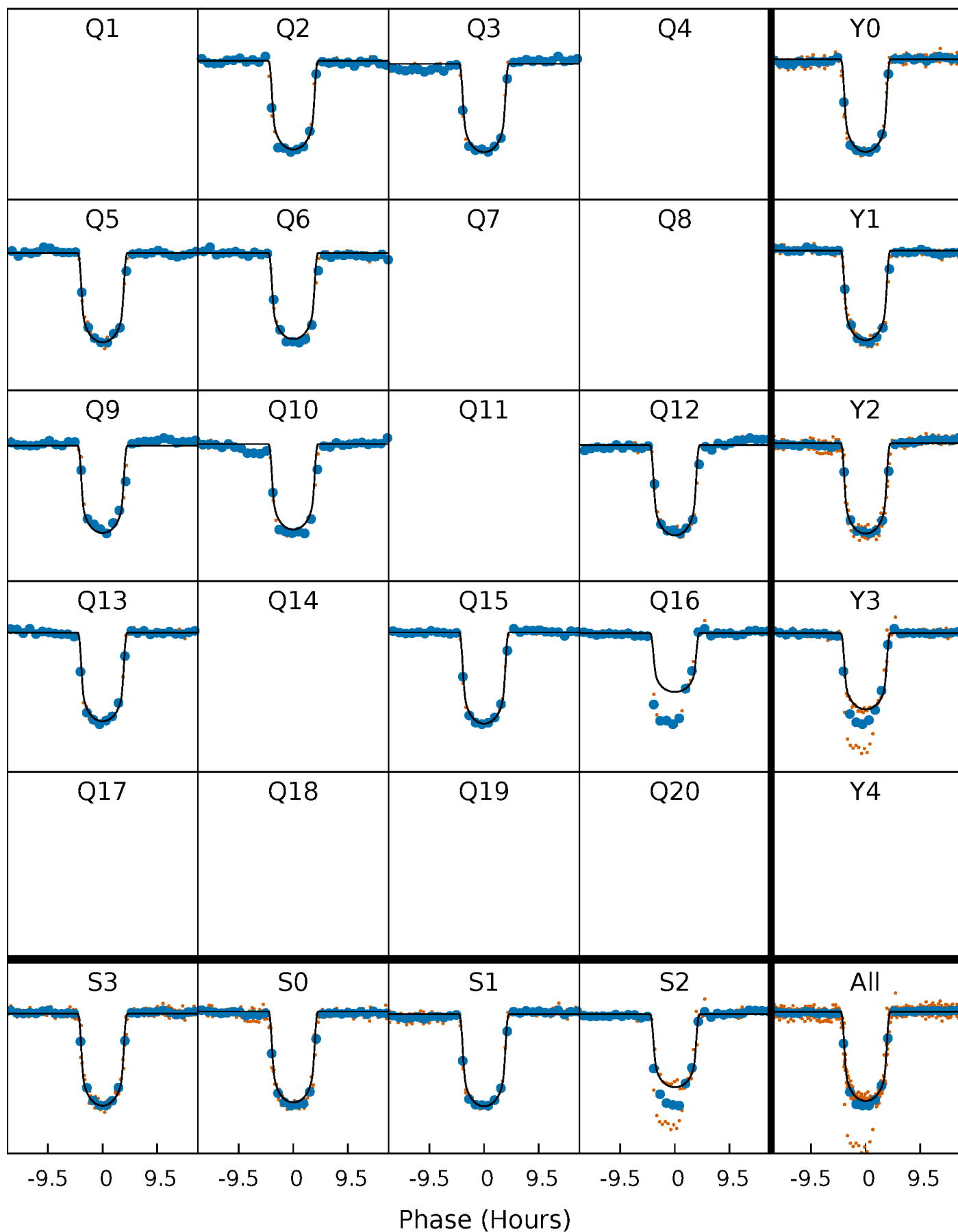
PDC Quarter-Phased Transit Curves

TCE 011773022-01 P=130.177553 Days $T_0=212.034434$ (BKJD)



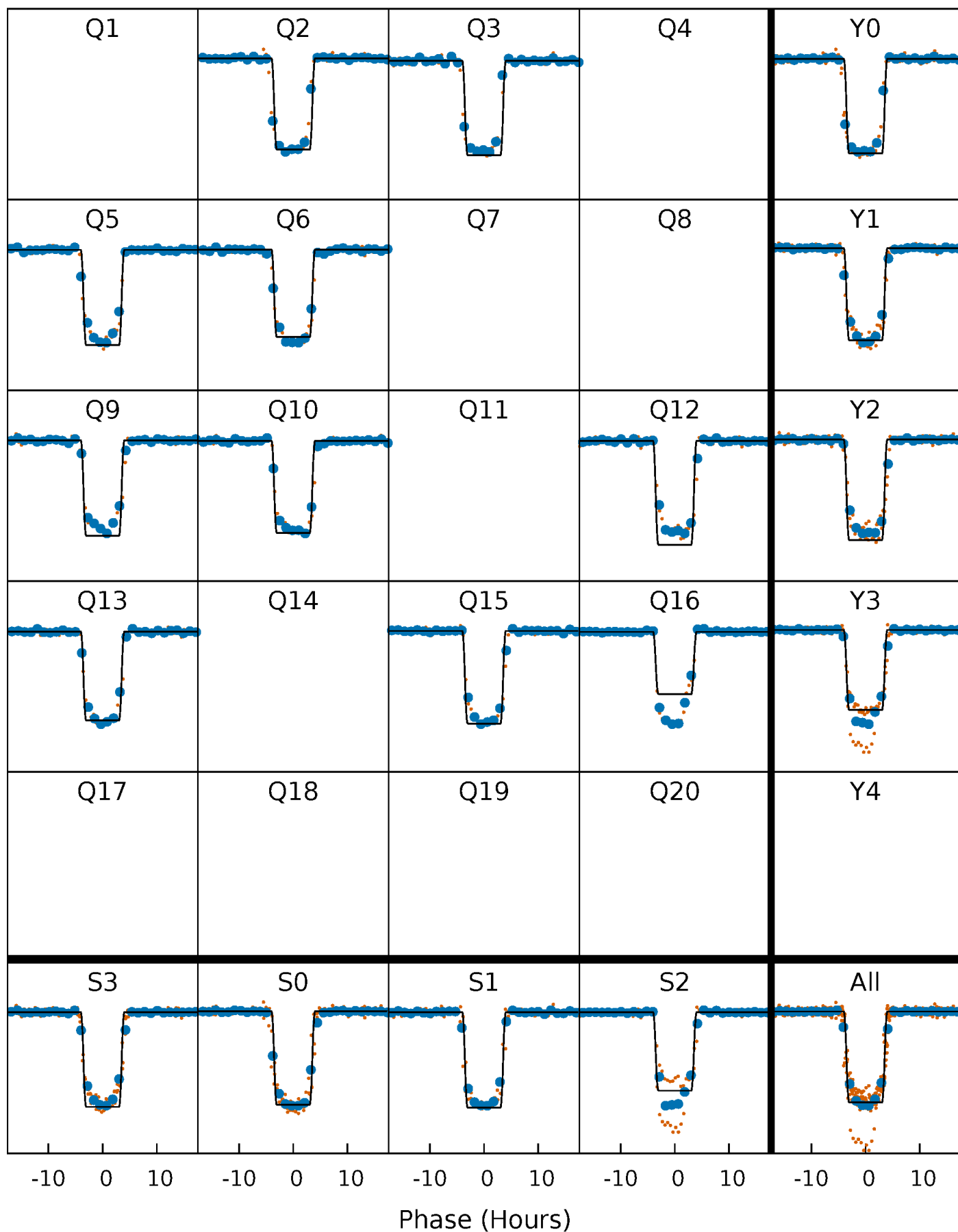
DV Quarter-Phased Transit Curves

TCE 011773022-01 P=130.177553 Days $T_0=212.034434$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

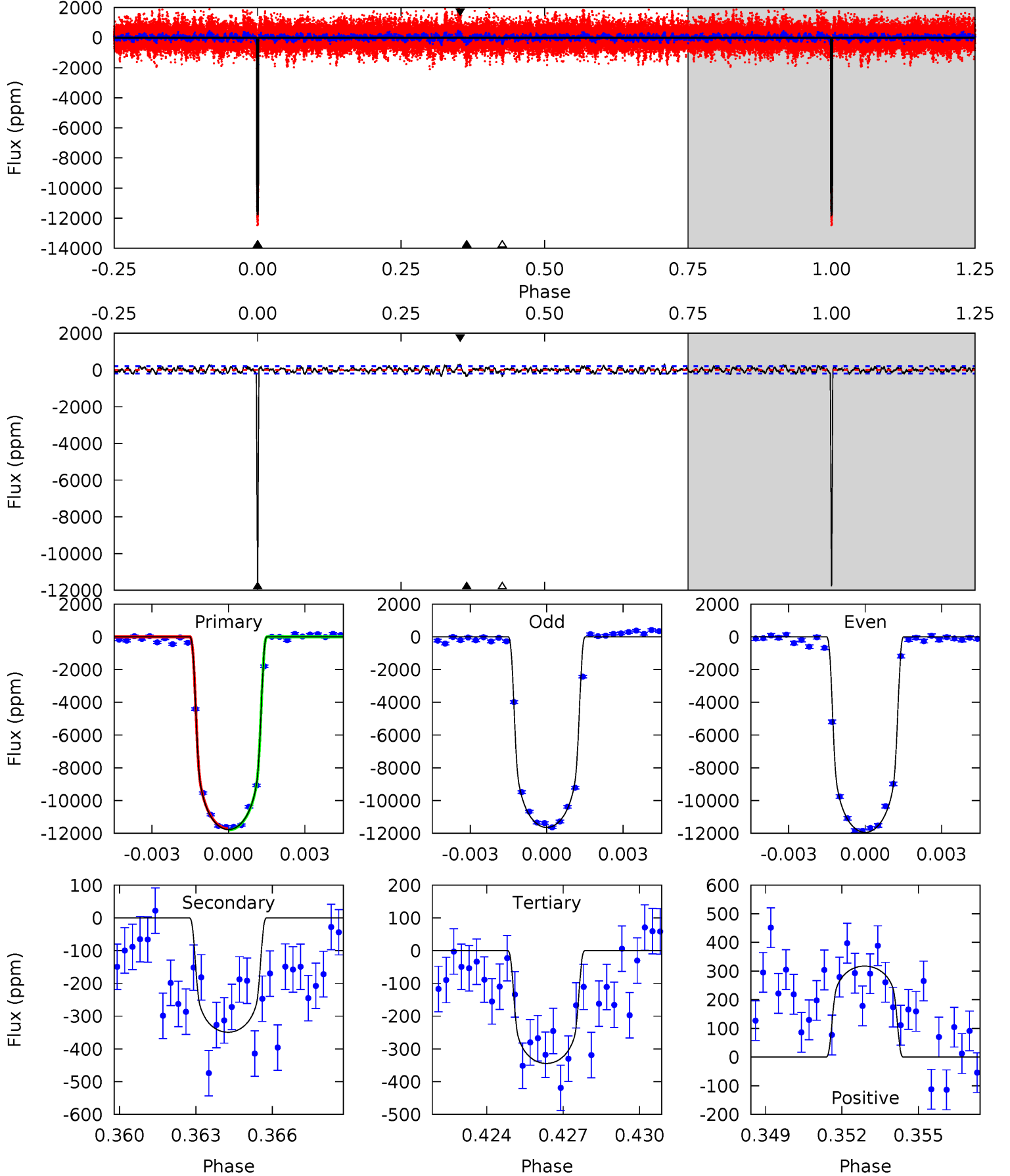
TCE 011773022-01 P=130.174813 Days $T_0=212.046844$ (BKJD)



DV Model-Shift Uniqueness Test

011773022-01, $P = 130.177553$ Days, $E = 81.856881$ Days

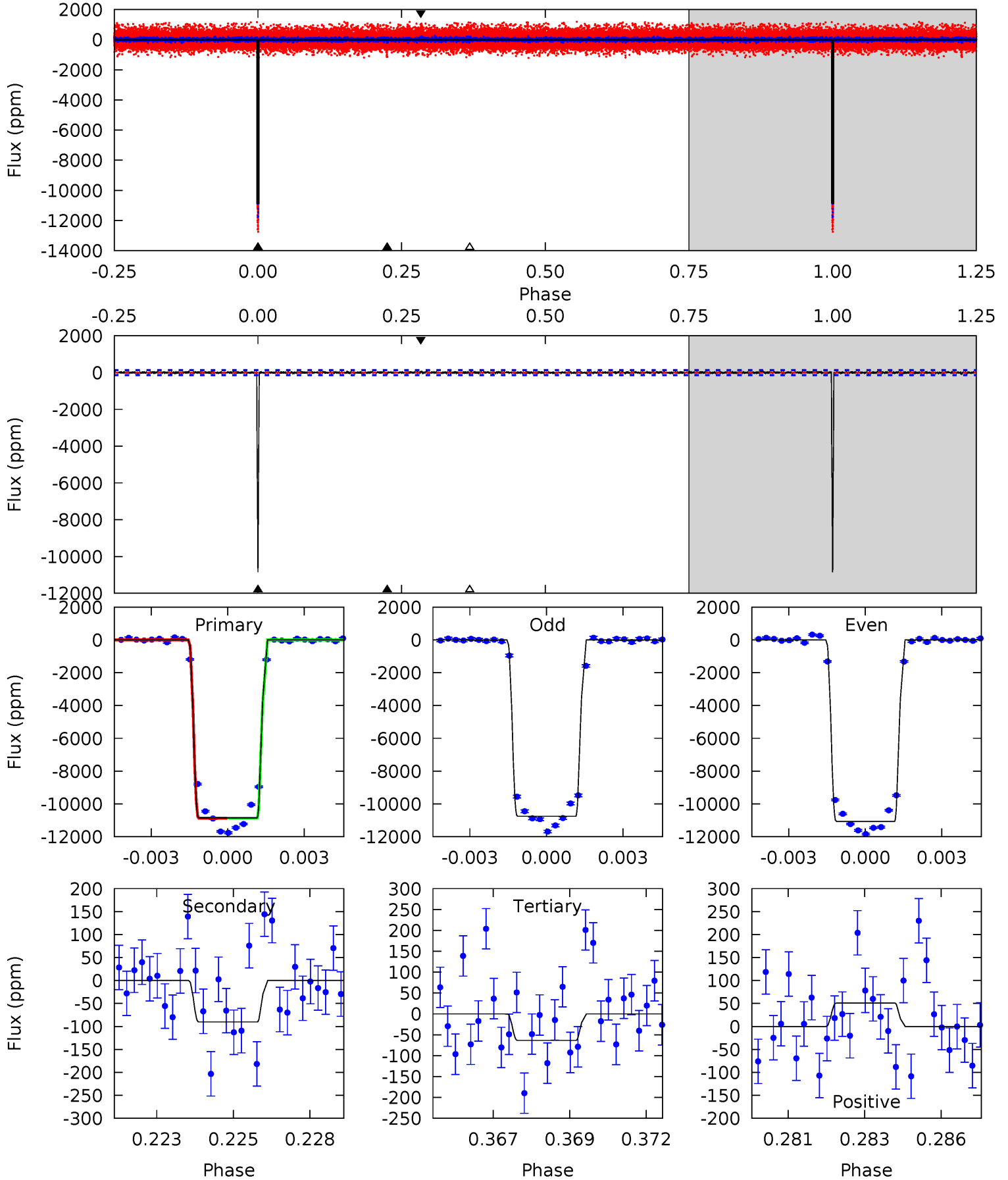
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
314.7	9.34	9.21	8.49	5.27	2.99	2.67	305.5	306.2	0.13	0.85	3.99	1.04	0.03	0.97



Alt Model-Shift Uniqueness Test

011773022-01, P = 130.174813 Days, E = 81.872031 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
412.3	3.43	2.41	1.93	5.28	3.02	0.52	409.9	410.3	1.02	1.50	5.95	1.03	0.00	0.32



Stellar Parameters For KIC 011773022

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+162}_{-198}	$4.486^{+0.052}_{-0.221}$	$-0.080^{+0.250}_{-0.350}$	$0.972^{+0.300}_{-0.100}$	$1.053^{+0.129}_{-0.142}$	$1.615^{+0.447}_{-0.834}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+12%/-13%	+28%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011773022-01 / KOI 0620.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-349 ± 37	$10.71^{+1.78}_{-0.80}$	524^{+42}_{-23}	3217^{+78}_{-85}	420^{+87}_{-106}
Alt.	-90 ± 26	$11.88^{+2.07}_{-0.98}$	527^{+37}_{-25}	2607^{+94}_{-121}	85^{+36}_{-30}

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

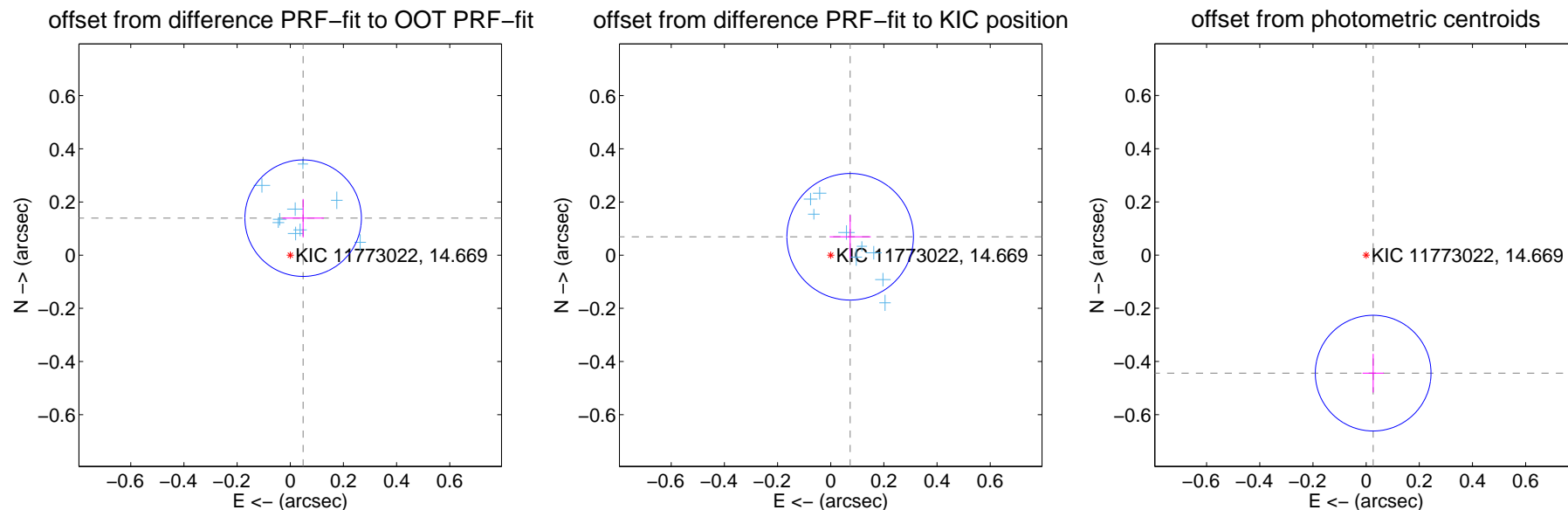
DV Centroid Data

Supplemental centroid analysis for 011773022-01. Kepler magnitude: 14.67. Transit SNR 189.23

There are 9 quarters with good PRF difference image offsets

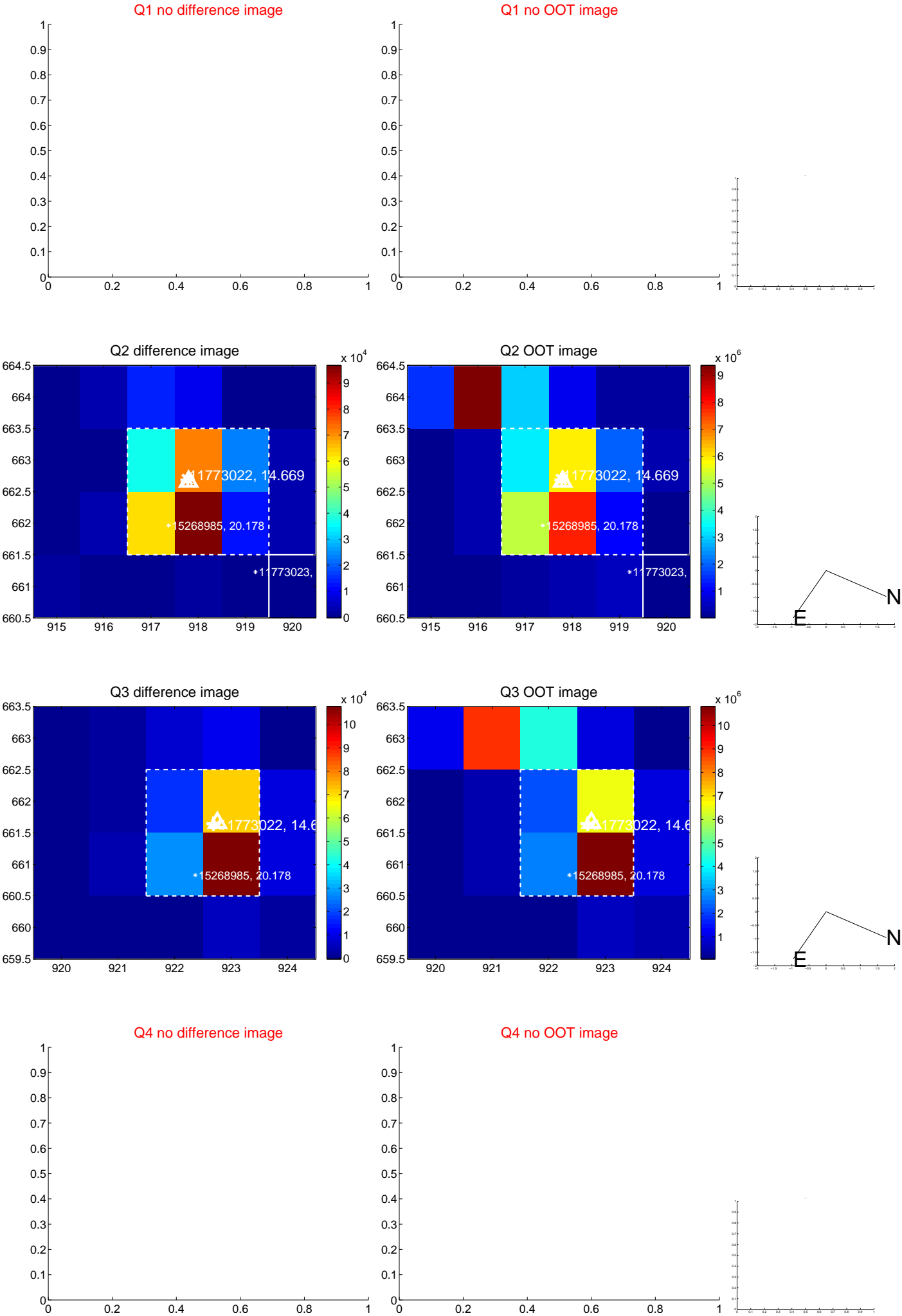
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.073	2.02	-0.048 ± 0.078	0.139 ± 0.072
PRF-fit source offset from KIC position	0.101 ± 0.079	1.27	-0.073 ± 0.077	0.069 ± 0.081
photometric centroid source offset	0.44 ± 0.07	6.13	-0.03 ± 0.04	-0.44 ± 0.07

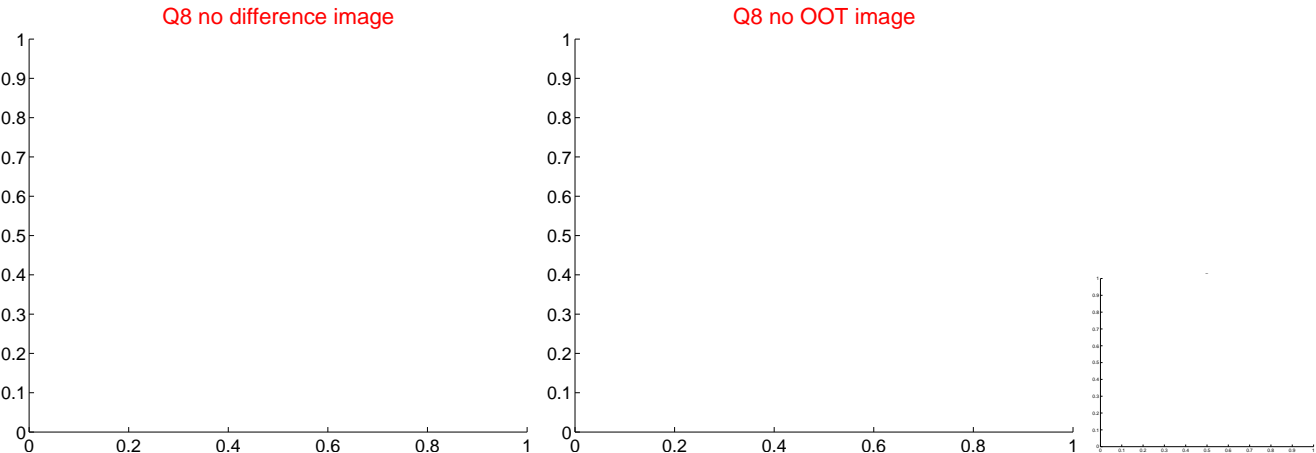
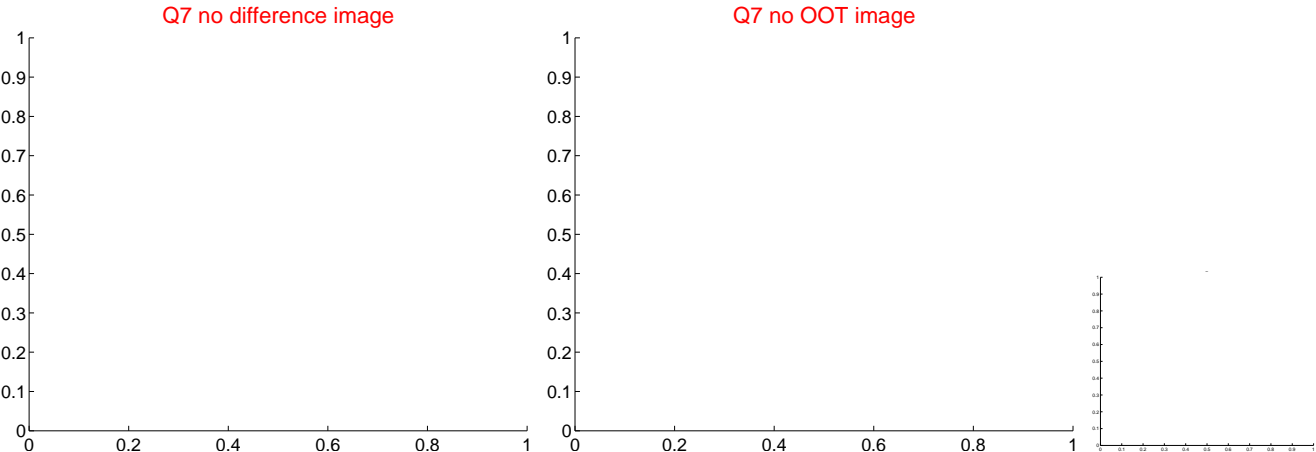
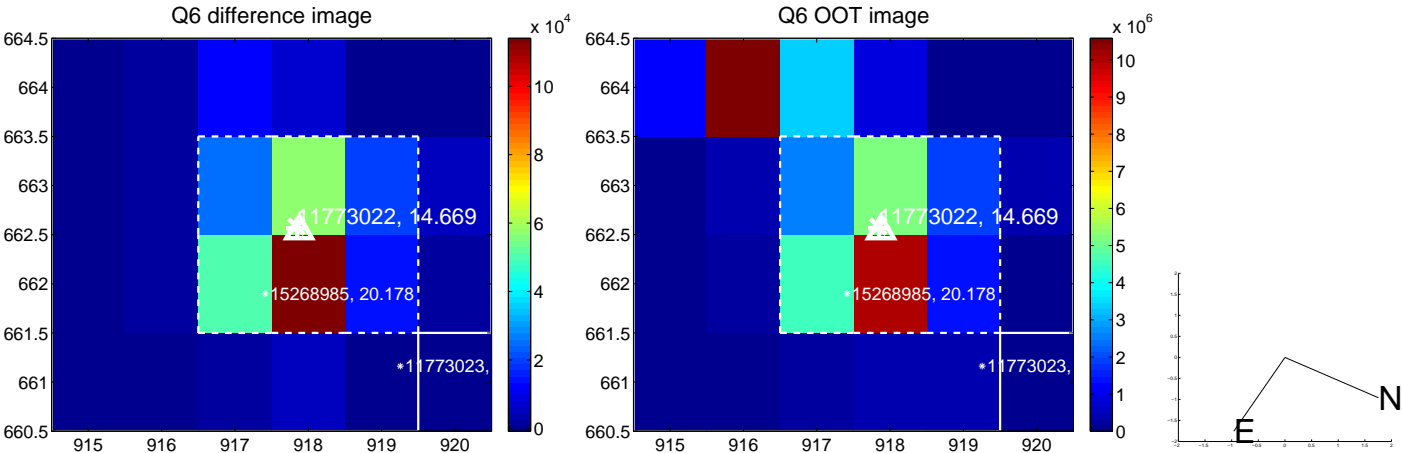
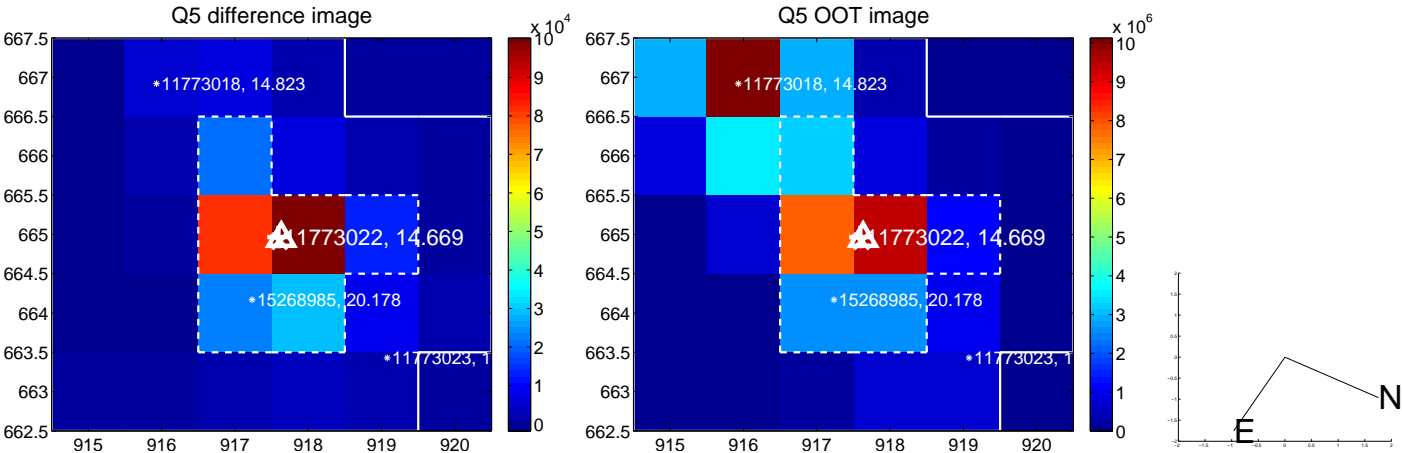


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

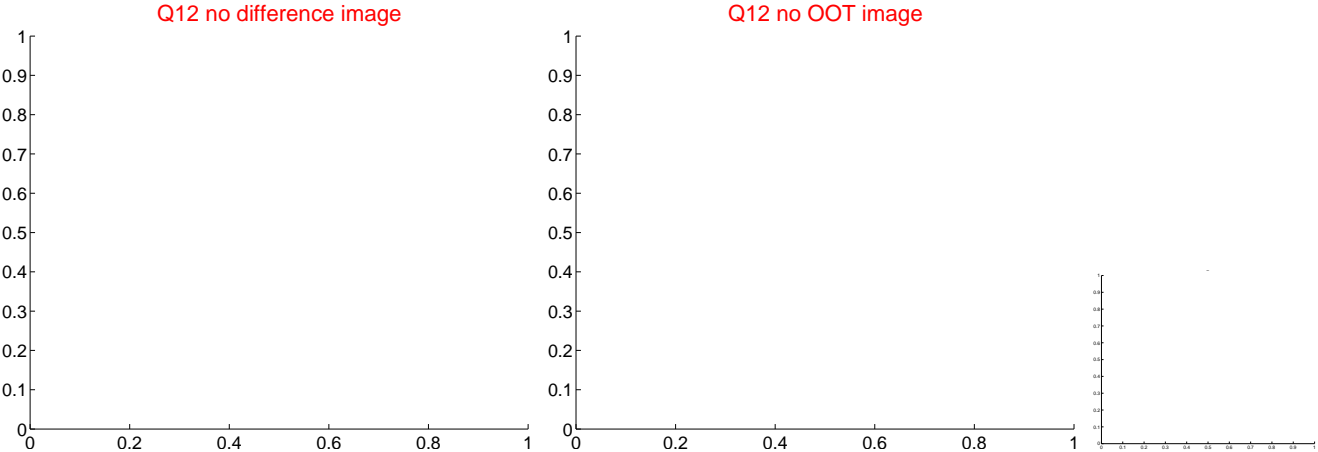
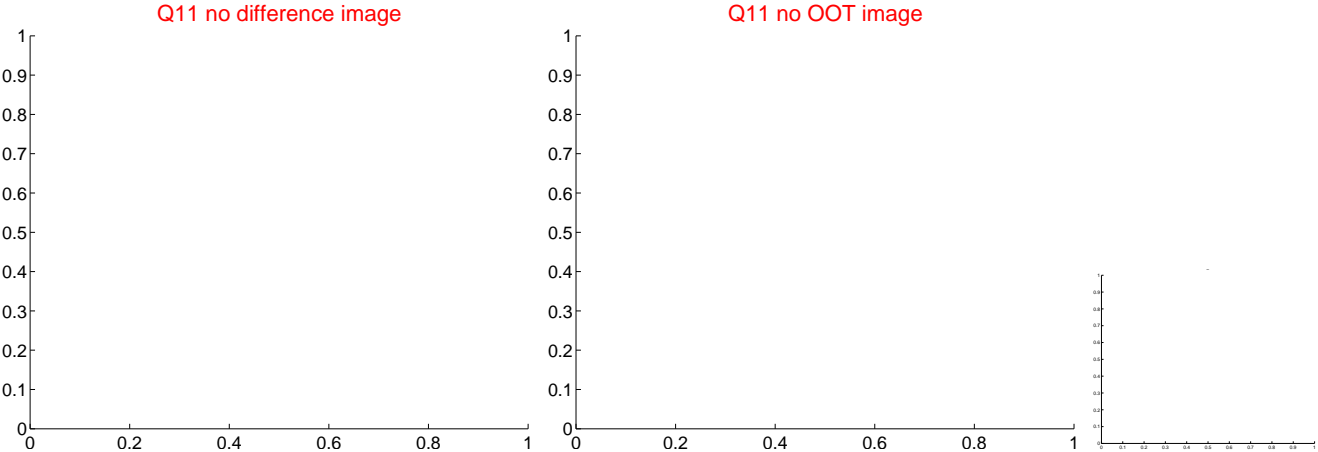
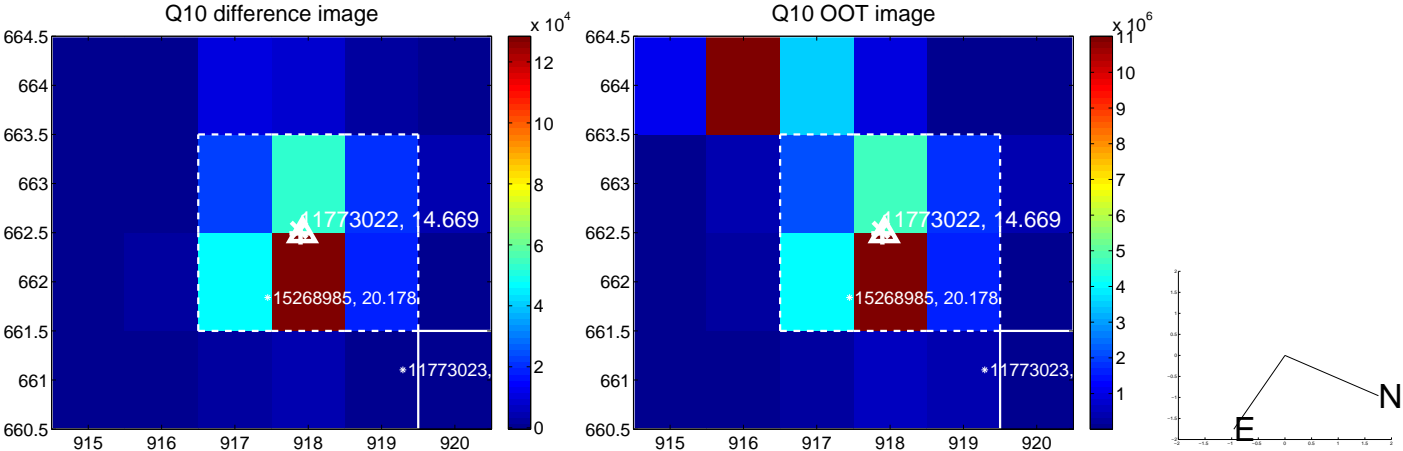
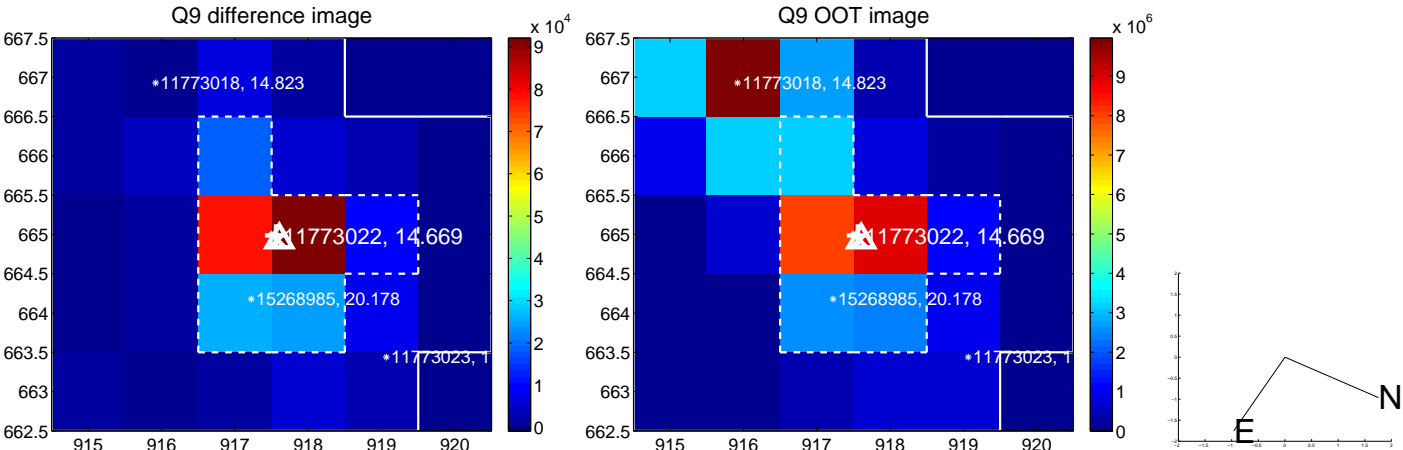
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



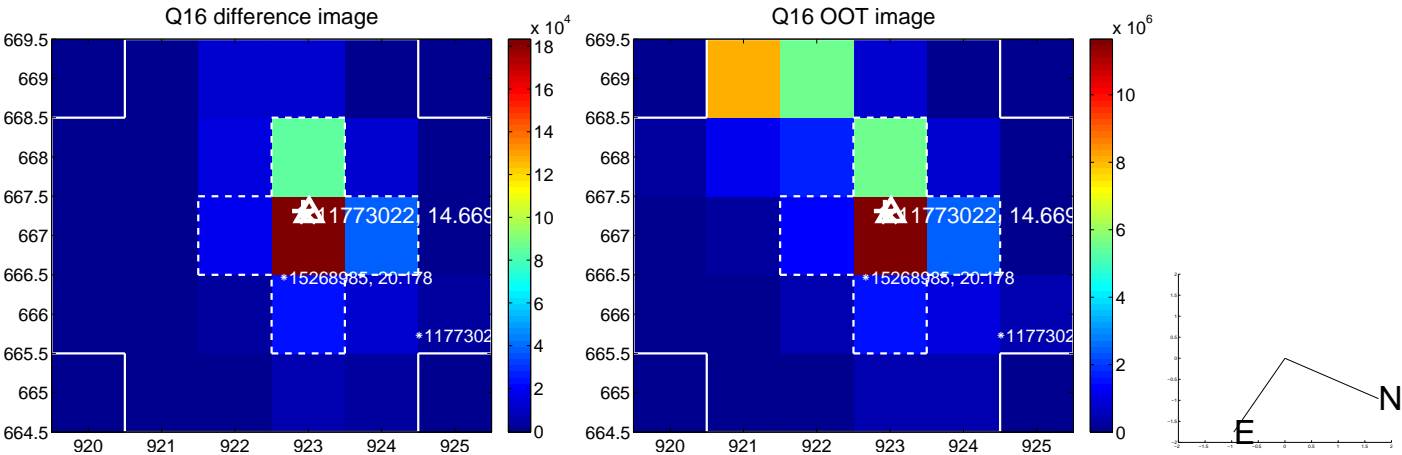
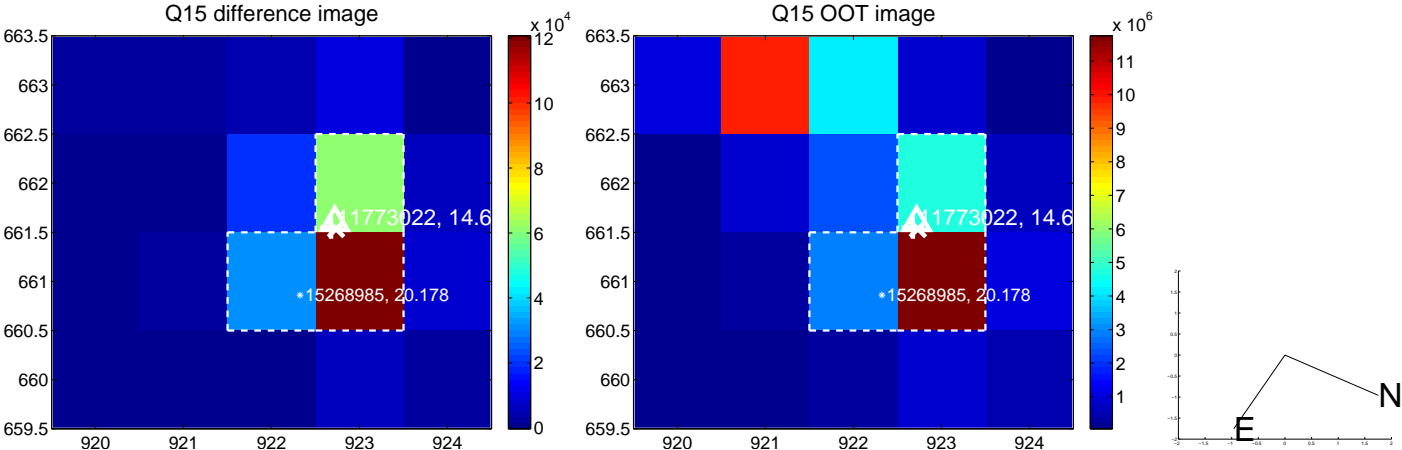
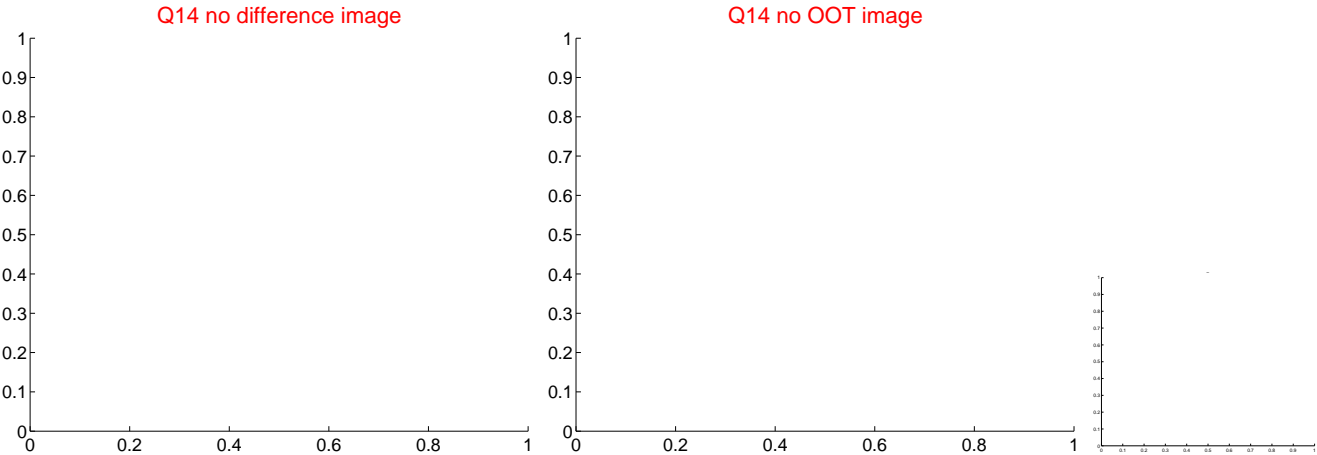
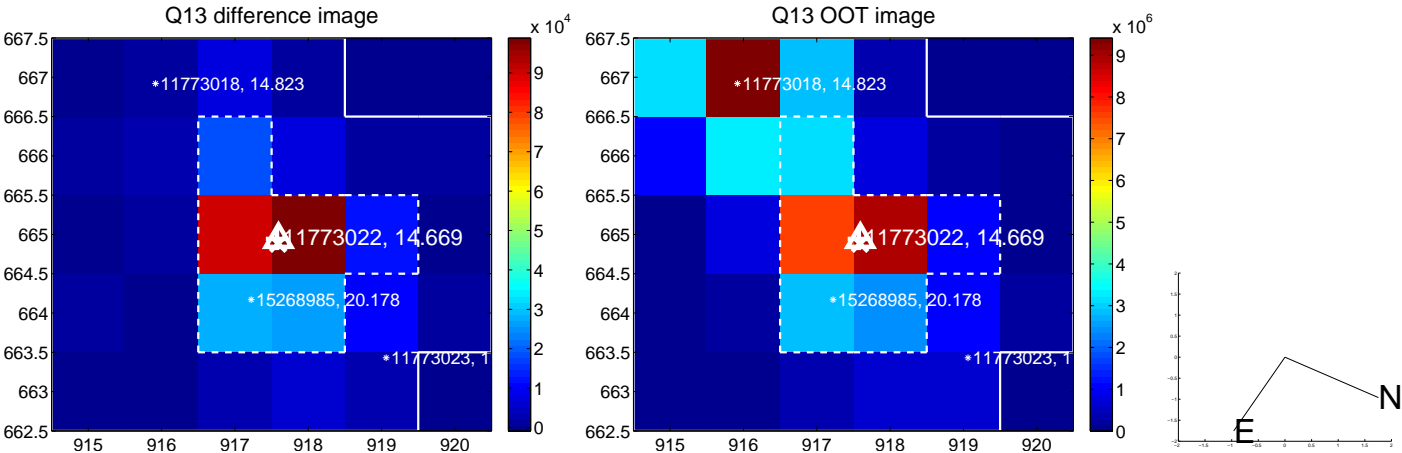
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

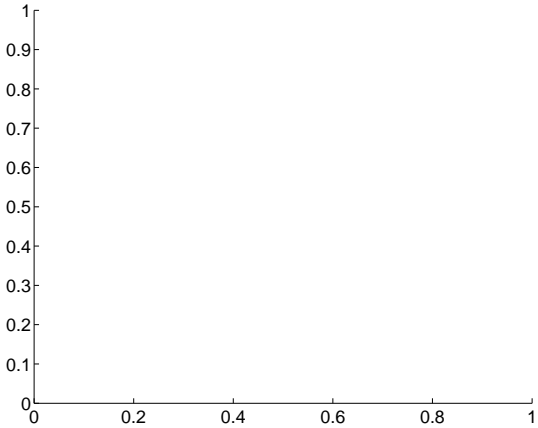


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

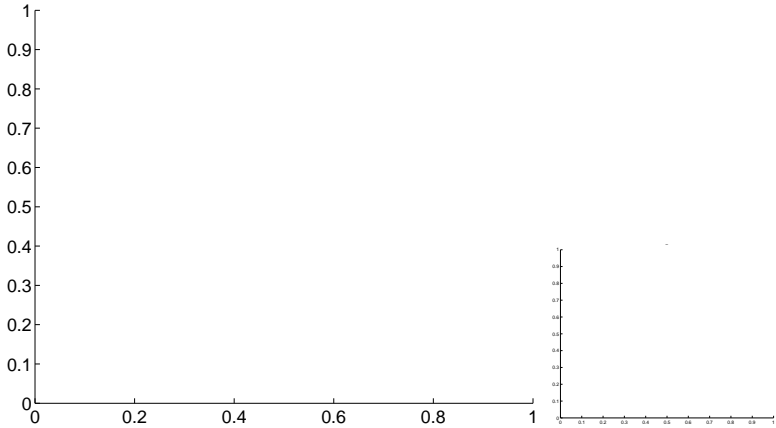


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

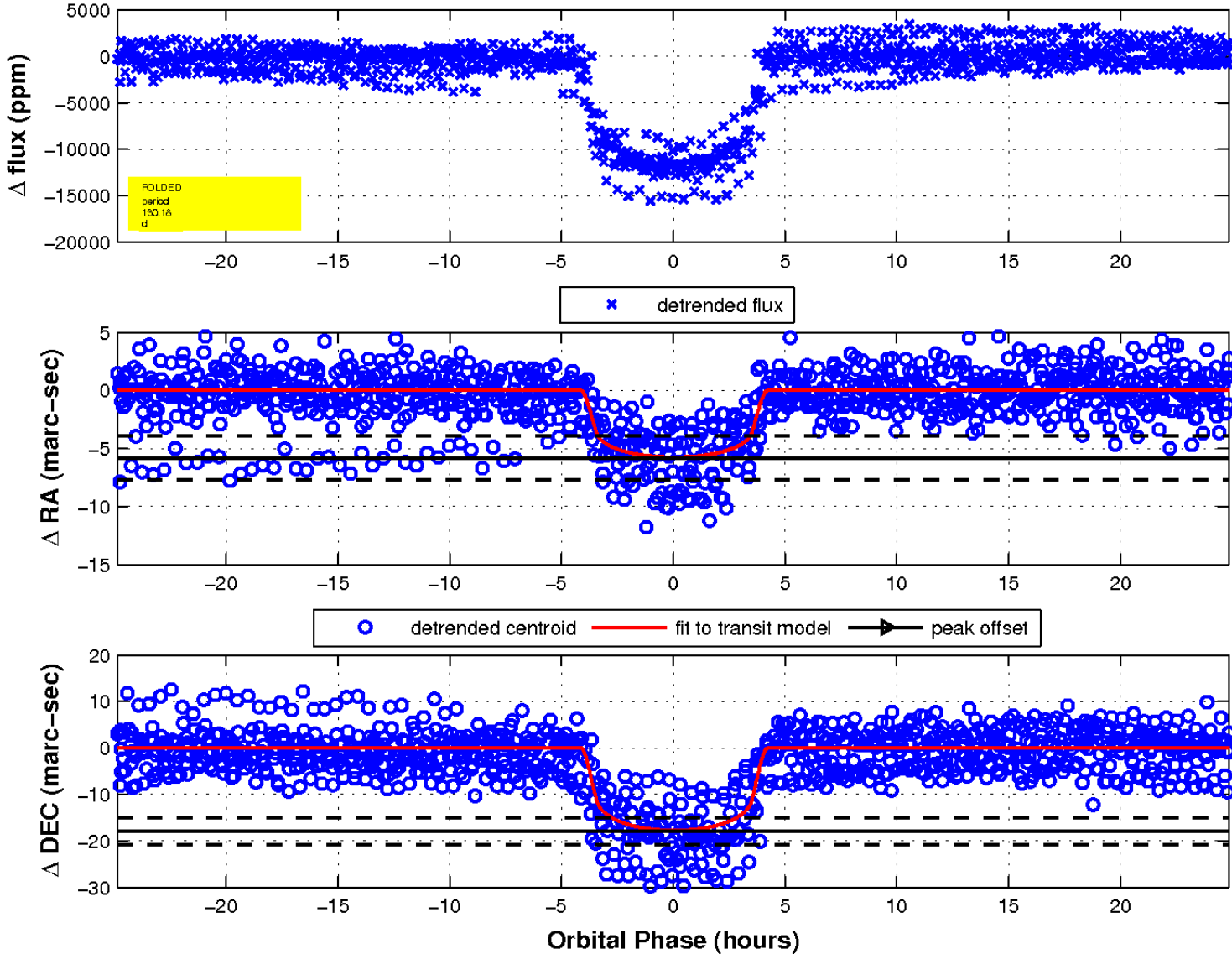
Q17 no difference image



Q17 no OOT image

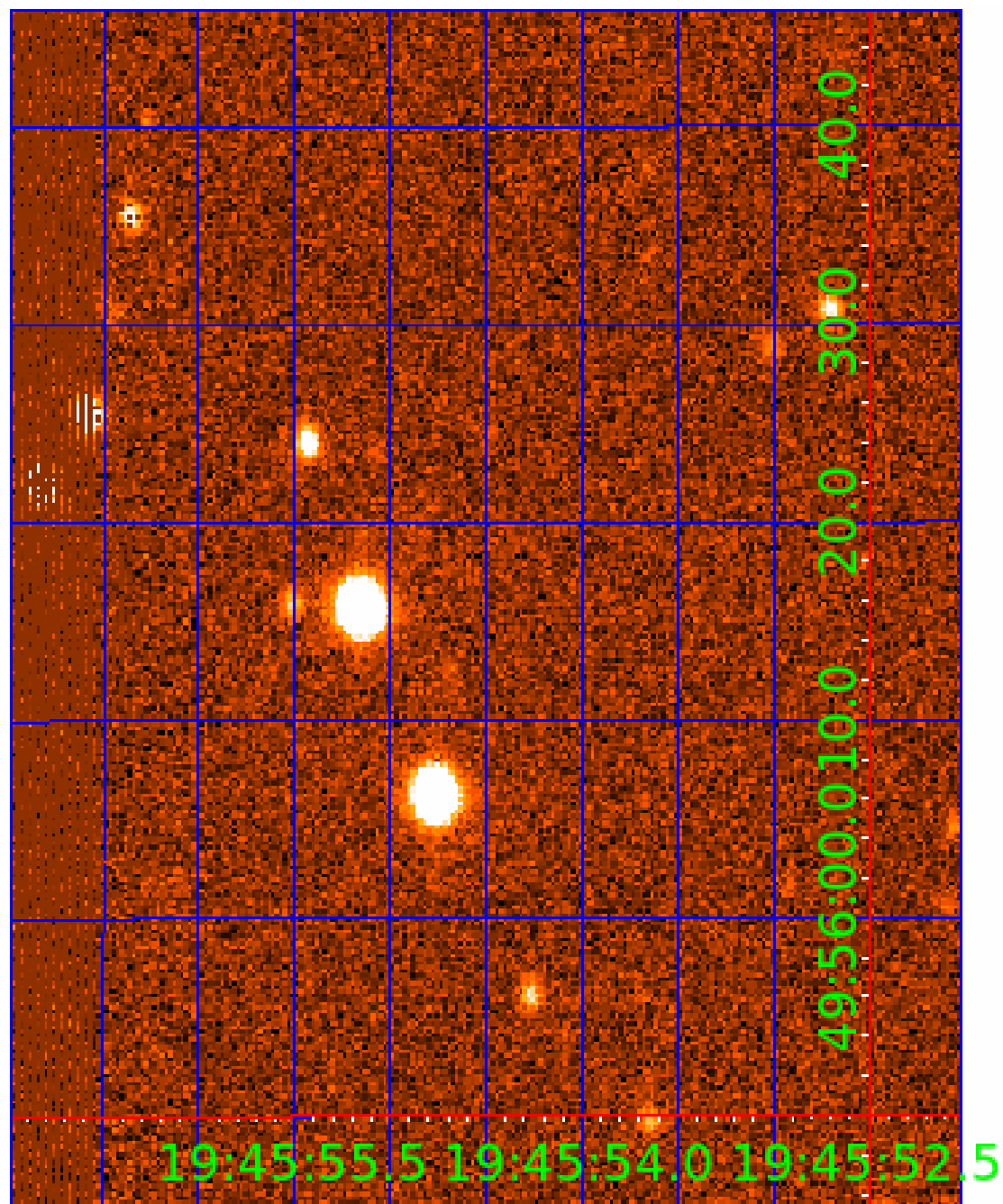


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 011773022

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})
011773022-01	OBS	0620.02	130.177553	212.034434	11595.6	8.293	204.0	189.2	0.97	6046	10.43	4.32
011773022-02	OBS	0620.01	45.155275	159.106545	6212.1	5.873	176.5	176.0	0.97	6046	7.84	17.71
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011773022-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011773022-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011773022-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT

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.

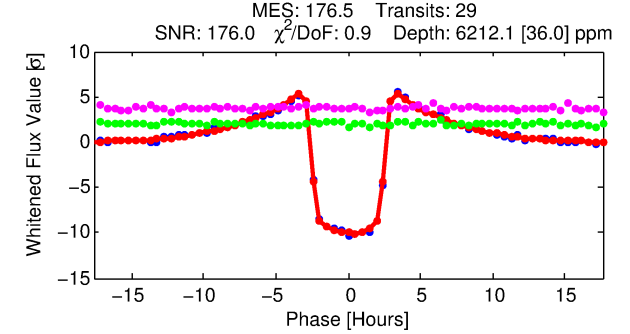
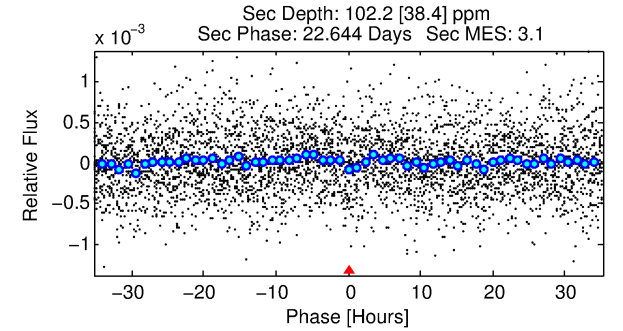
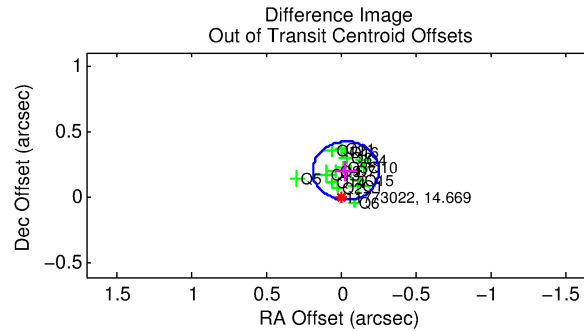
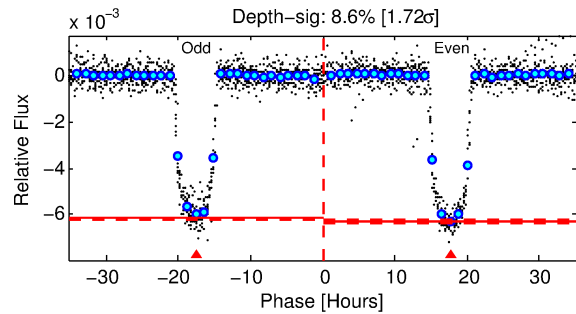
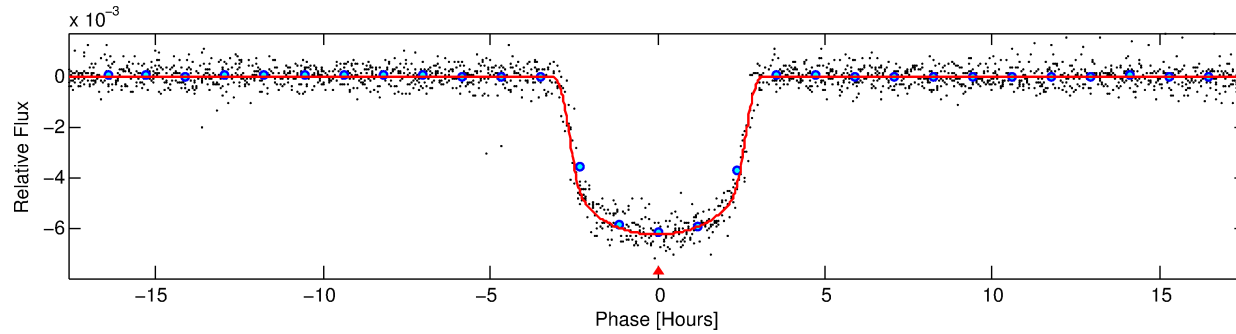
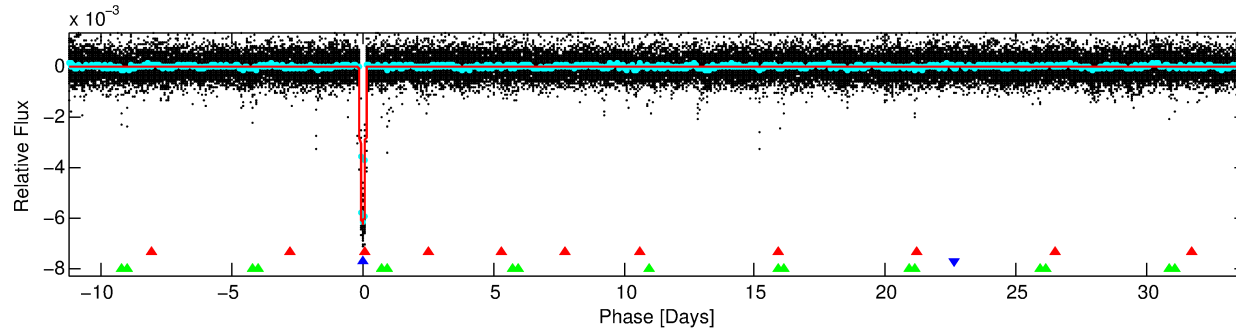
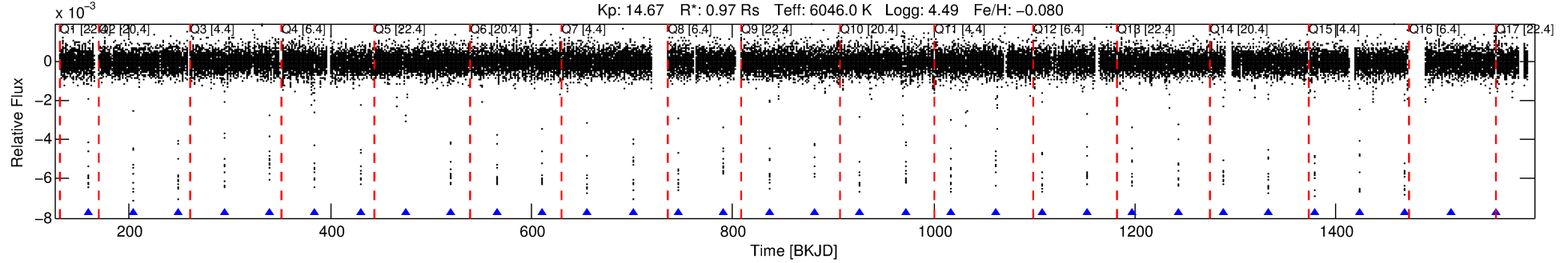
Ephemeris Match Information For 011773022-02

No Significant Match Found

DV One-Page Summary

KIC: 11773022 Candidate: 2 of 3 Period: 45.155 d
KOI: K00620.01 Name: Kepler-51b Corr: 0.994

Kp: 14.67 R*: 0.97 Rs Teff: 6046.0 K Logg: 4.49 Fe/H: -0.080



DV Fit Results:

Period = 45.15527 [0.00003] d
Epoch = 159.1065 [0.0005] BKJD
Rp/R* = 0.0739 [0.0009]
a/R* = 56.73 [2.90]
b = 0.47 [0.09]
Seff = 17.71 [7.40]
Teq = 523 [55] K
Rp = 7.84 [2.42] Re
a = 0.2527 [0.0674] AU
Ag = 58.47 [31.97] [1.80σ]
Teffp = 2237 [223] K [7.47σ]

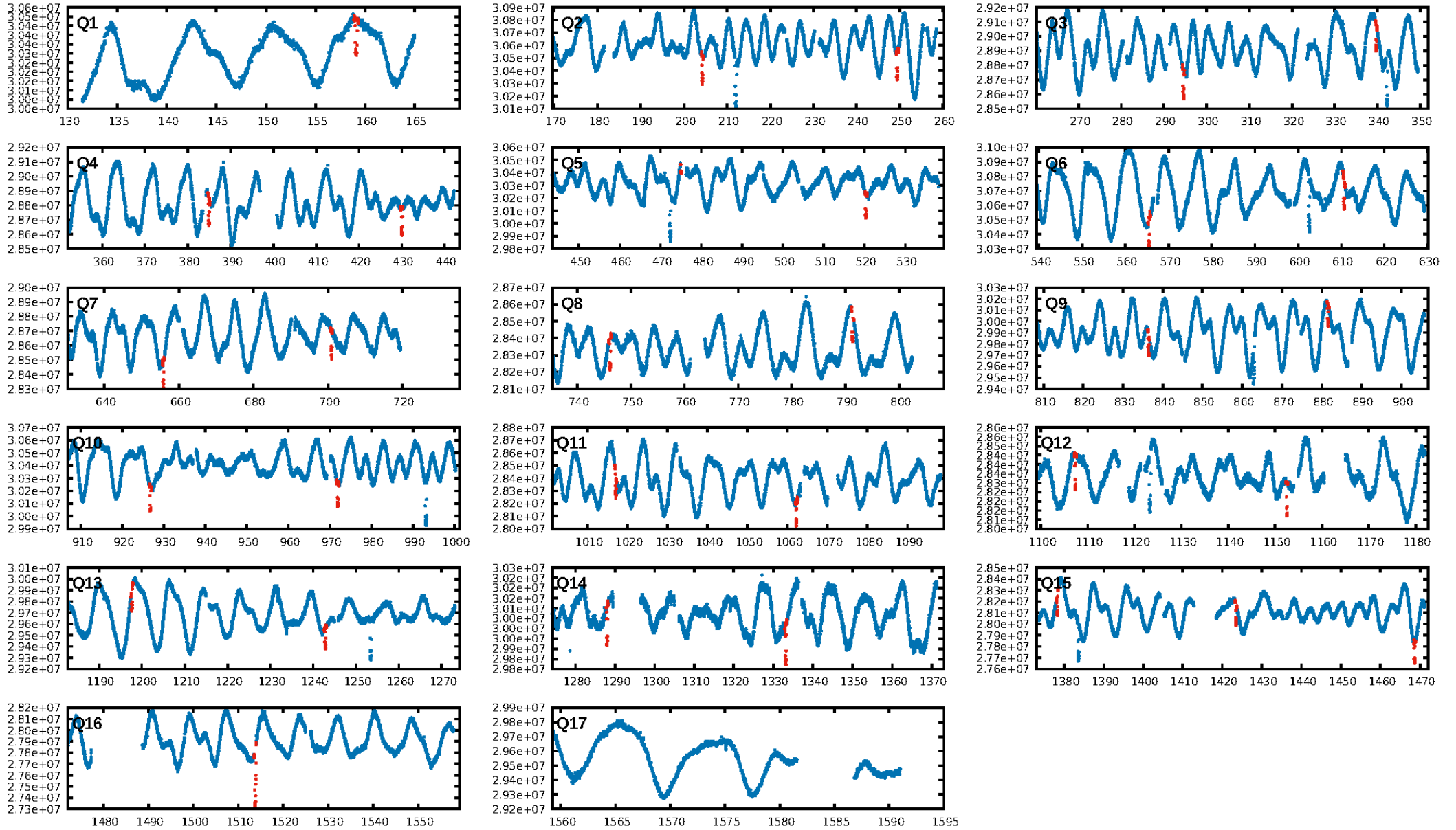
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [148.60σ]
ModelChiSquare2-sig: 92.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [28/28]
GhostDiagnostic-chr: 2.673
Centroid-sig: 0.0%
Centroid-so: 0.683 arcsec [9.52σ]
OotOffset-rm: 0.206 arcsec [2.79σ]
KicOffset-rm: 0.066 arcsec [0.93σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.94 [15/16]

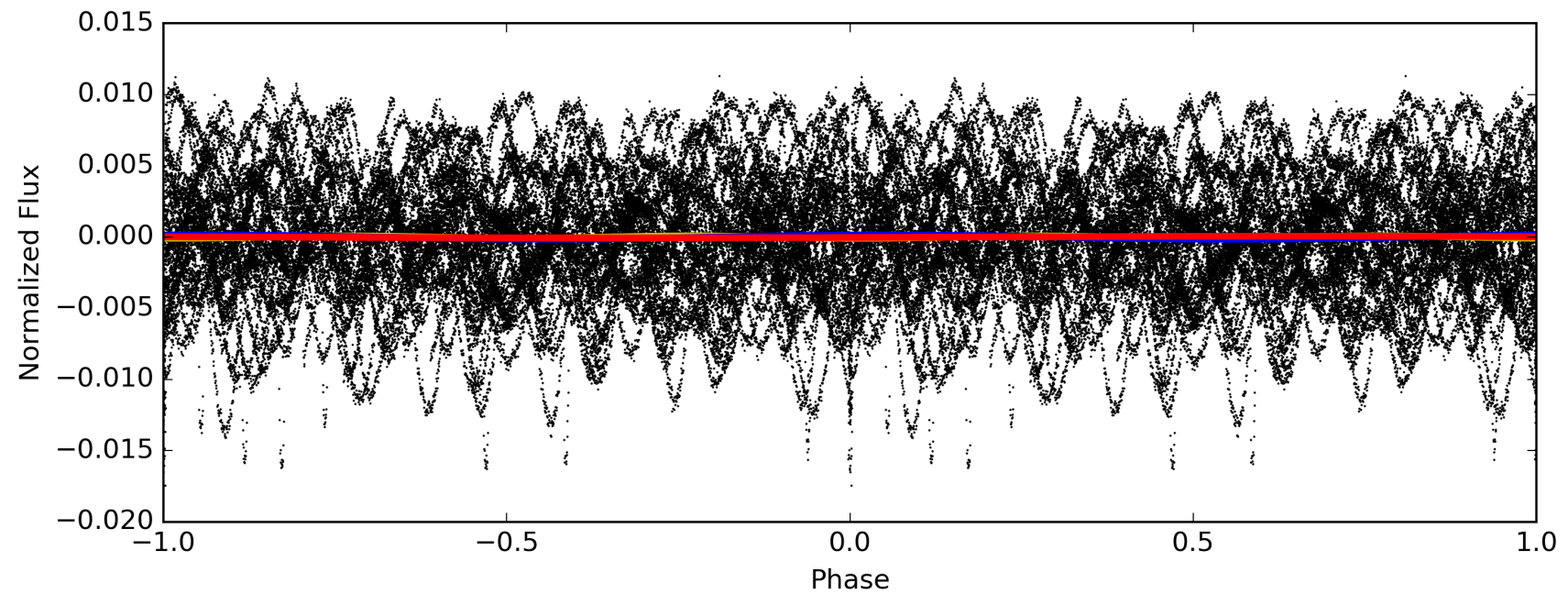
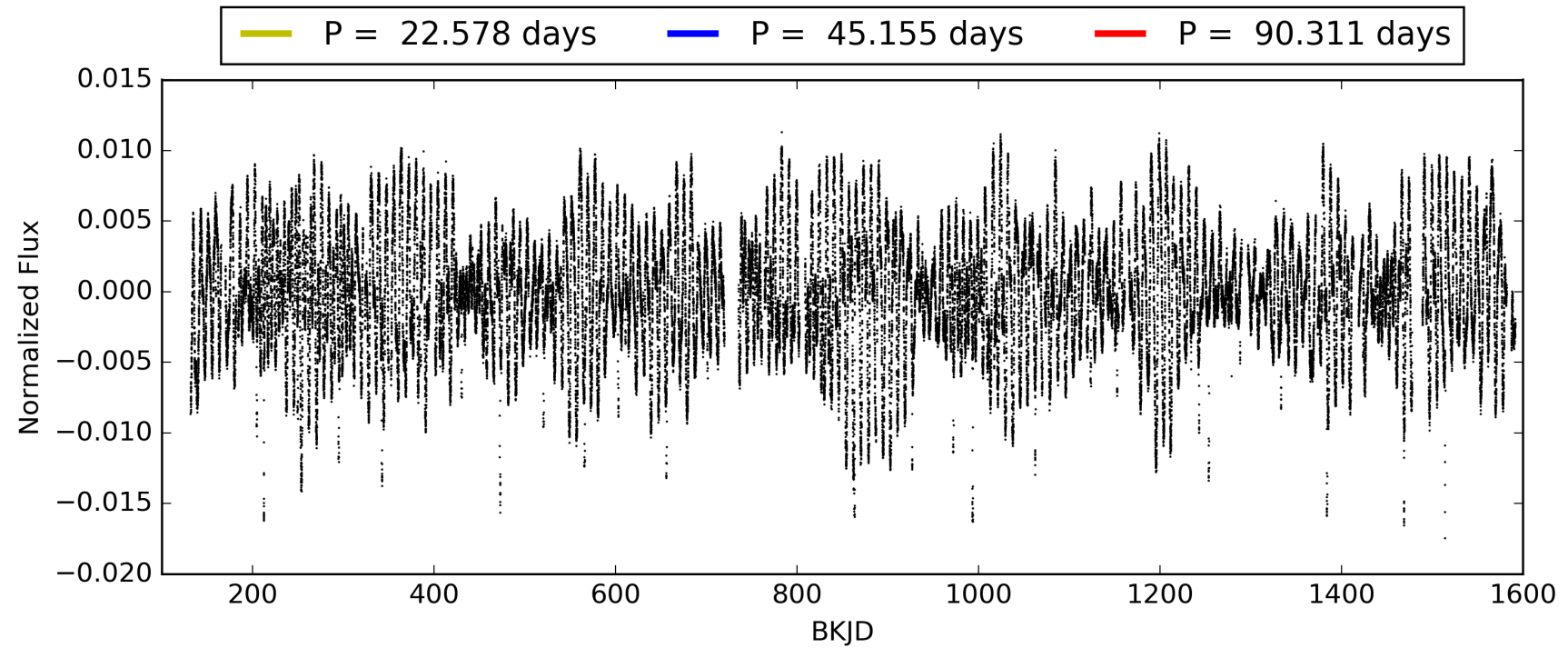
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:53:05 Z

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

TCE 011773022-02, PDC Light Curves

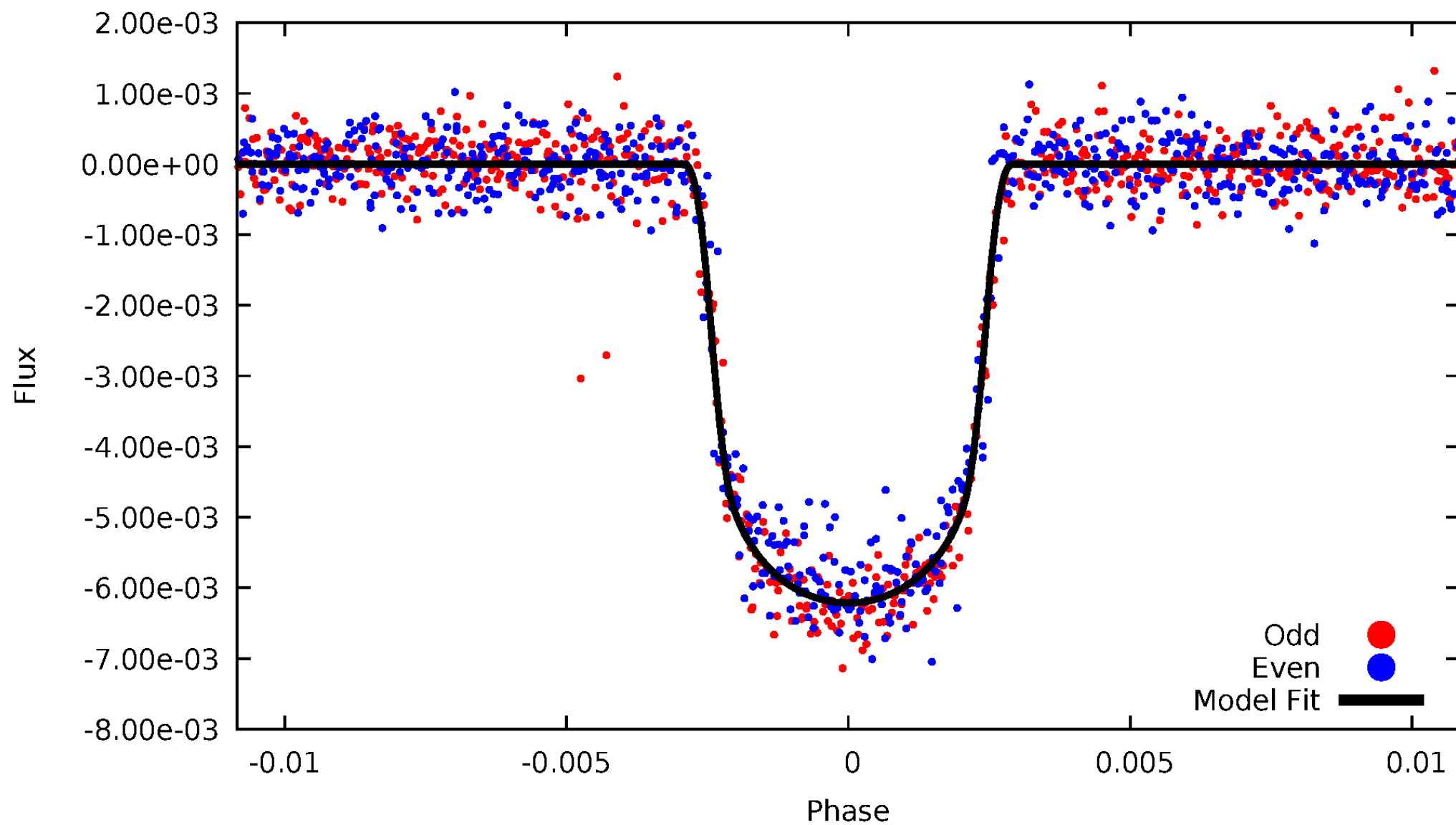


TCE 011773022-02



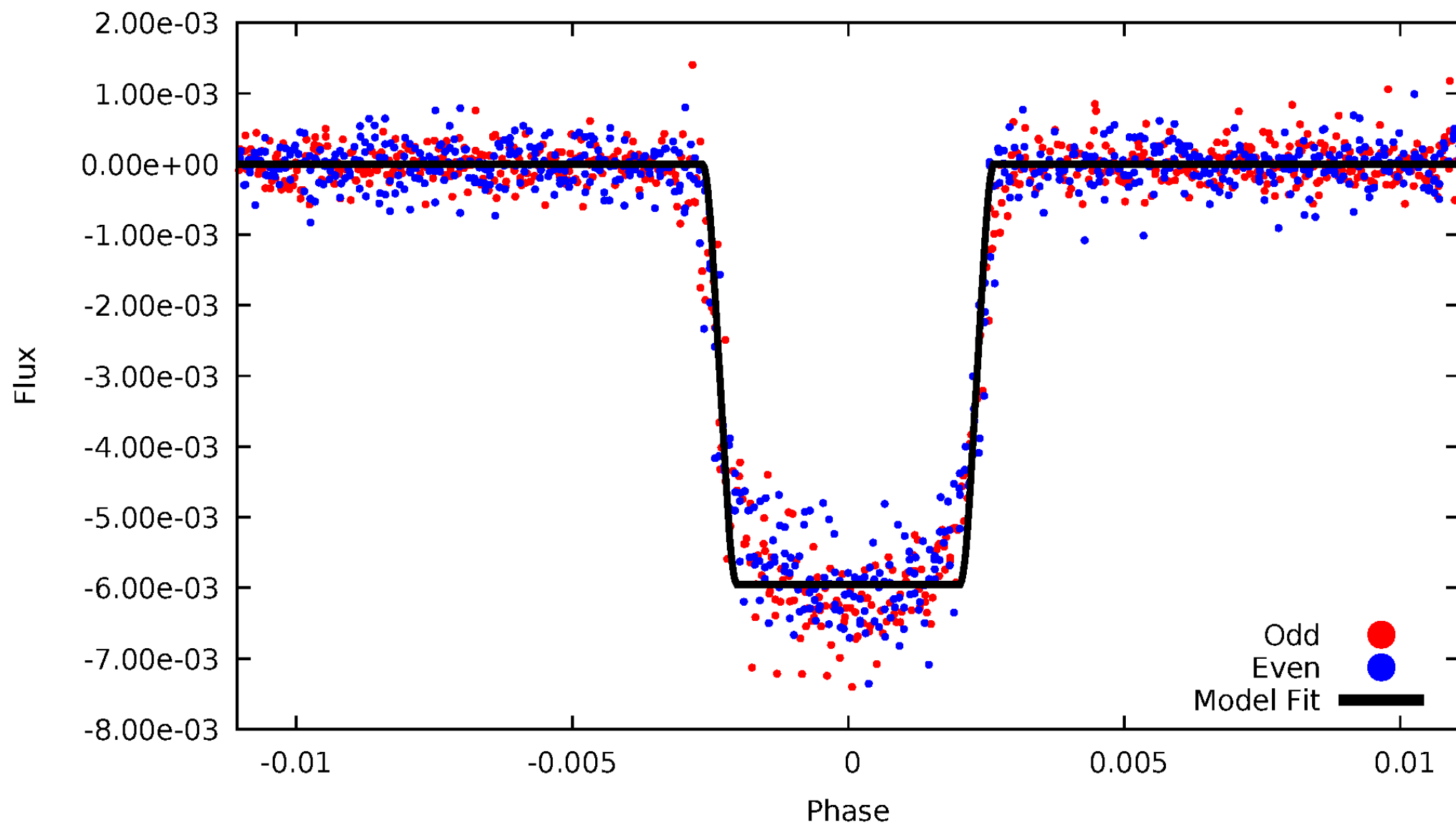
DV Odd/Even

TCE 011773022-02



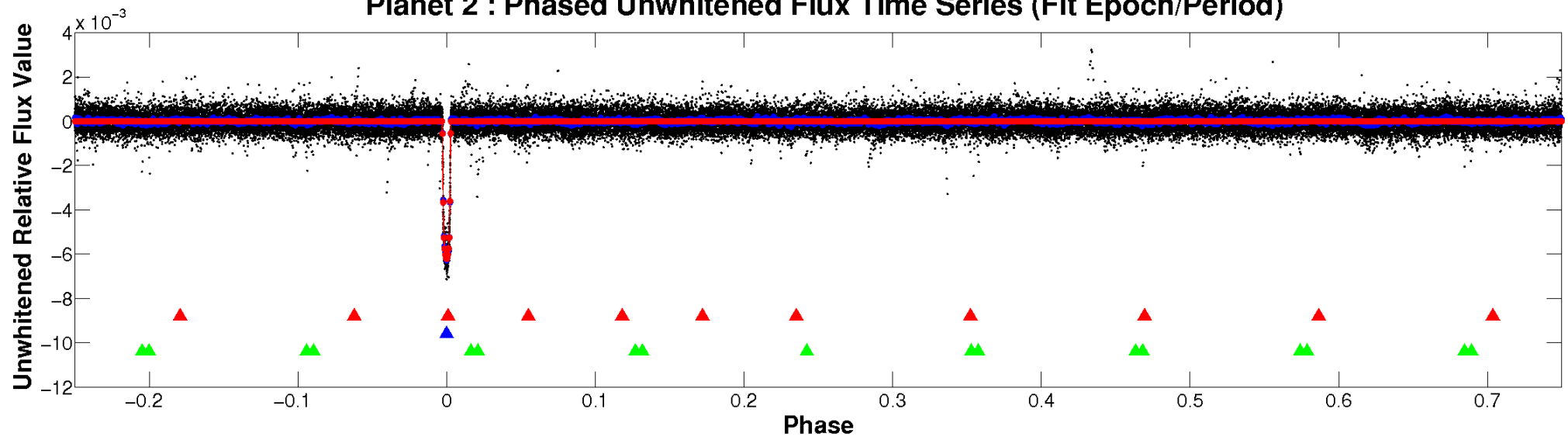
ALT Odd/Even

TCE 011773022-02

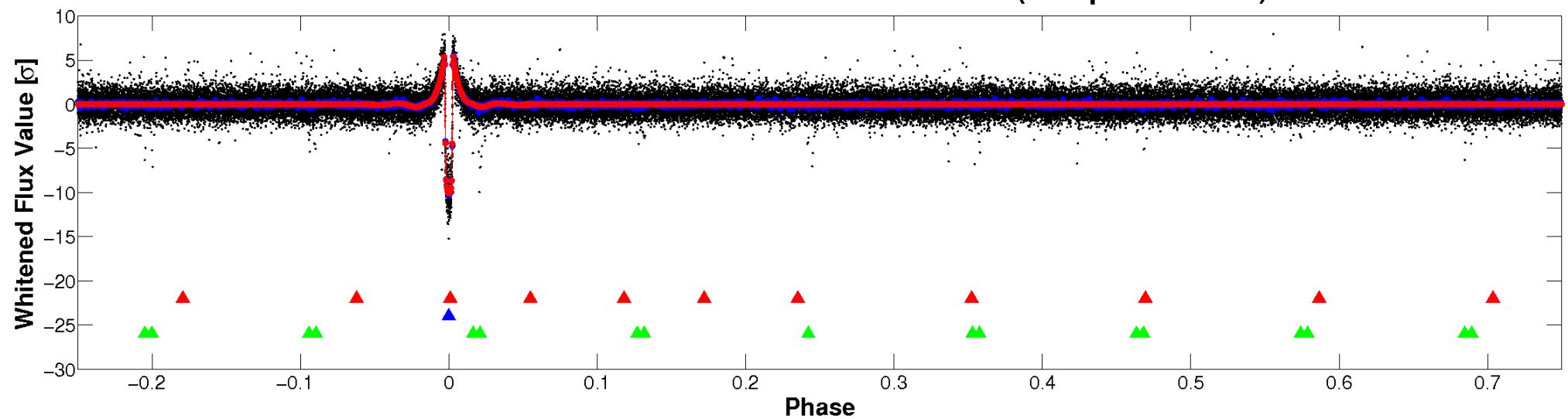


Non-Whitened Vs. Whitened Light Curve

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

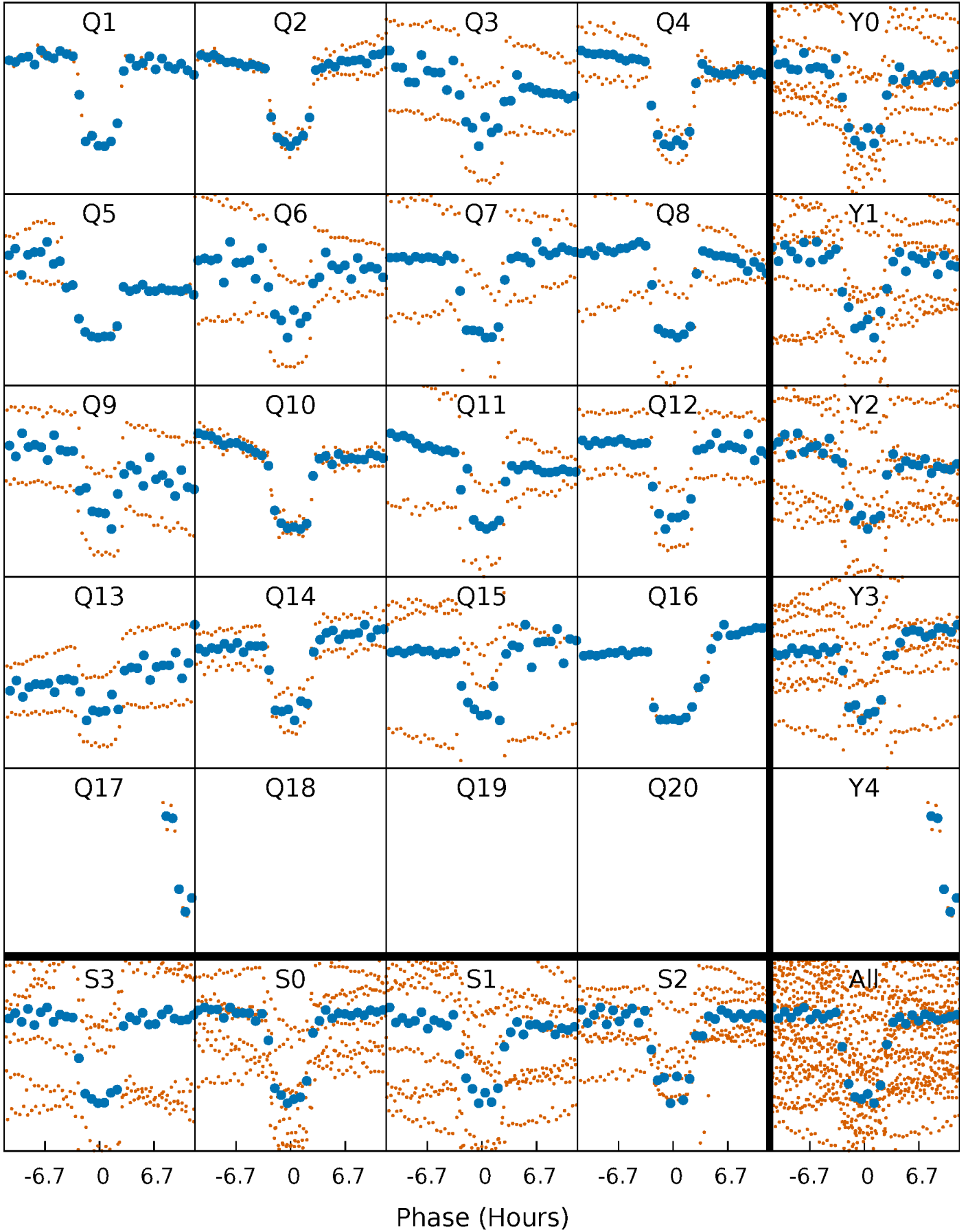


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



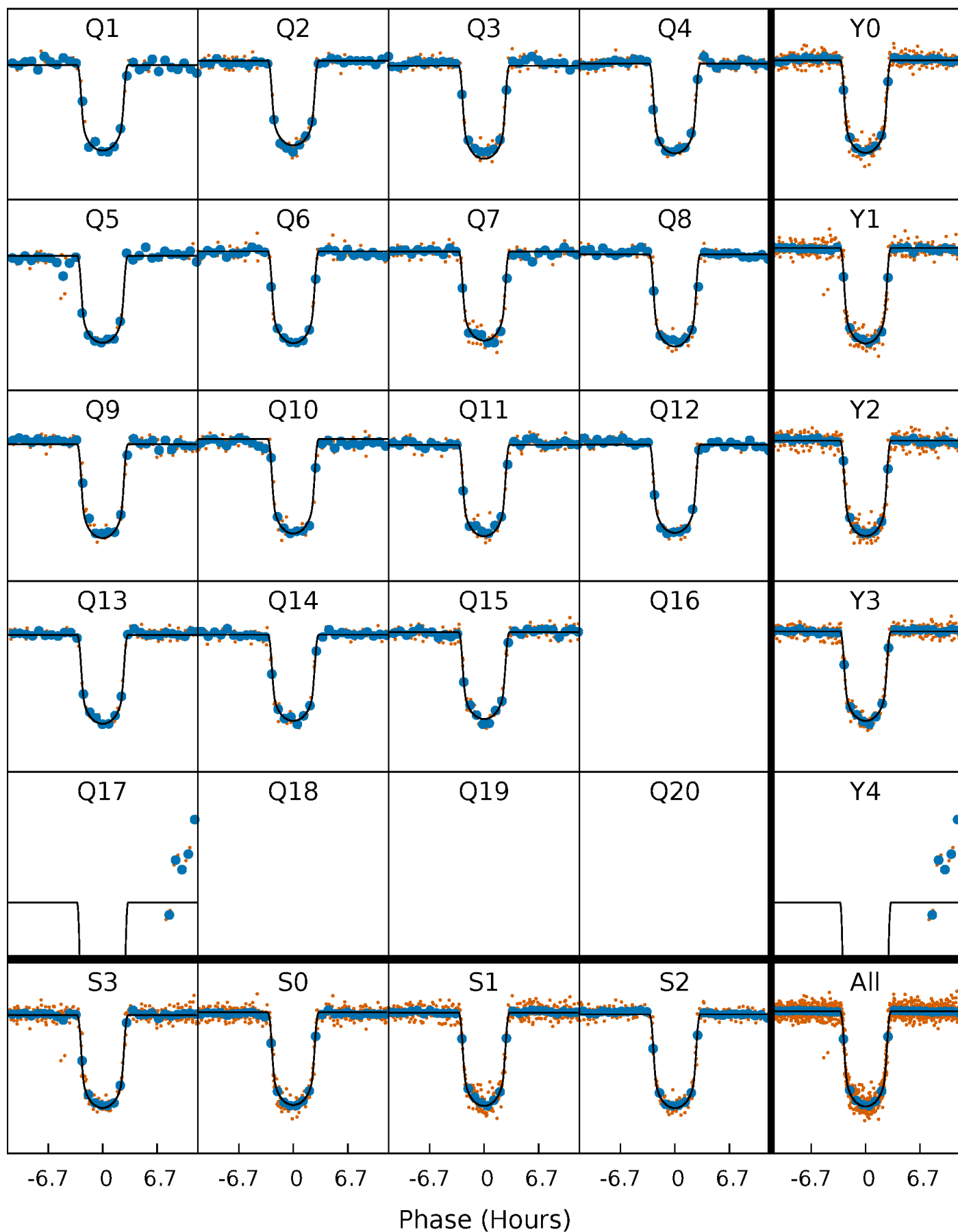
PDC Quarter-Phased Transit Curves

TCE 011773022-02 P= 45.155275 Days $T_0=159.106545$ (BKJD)



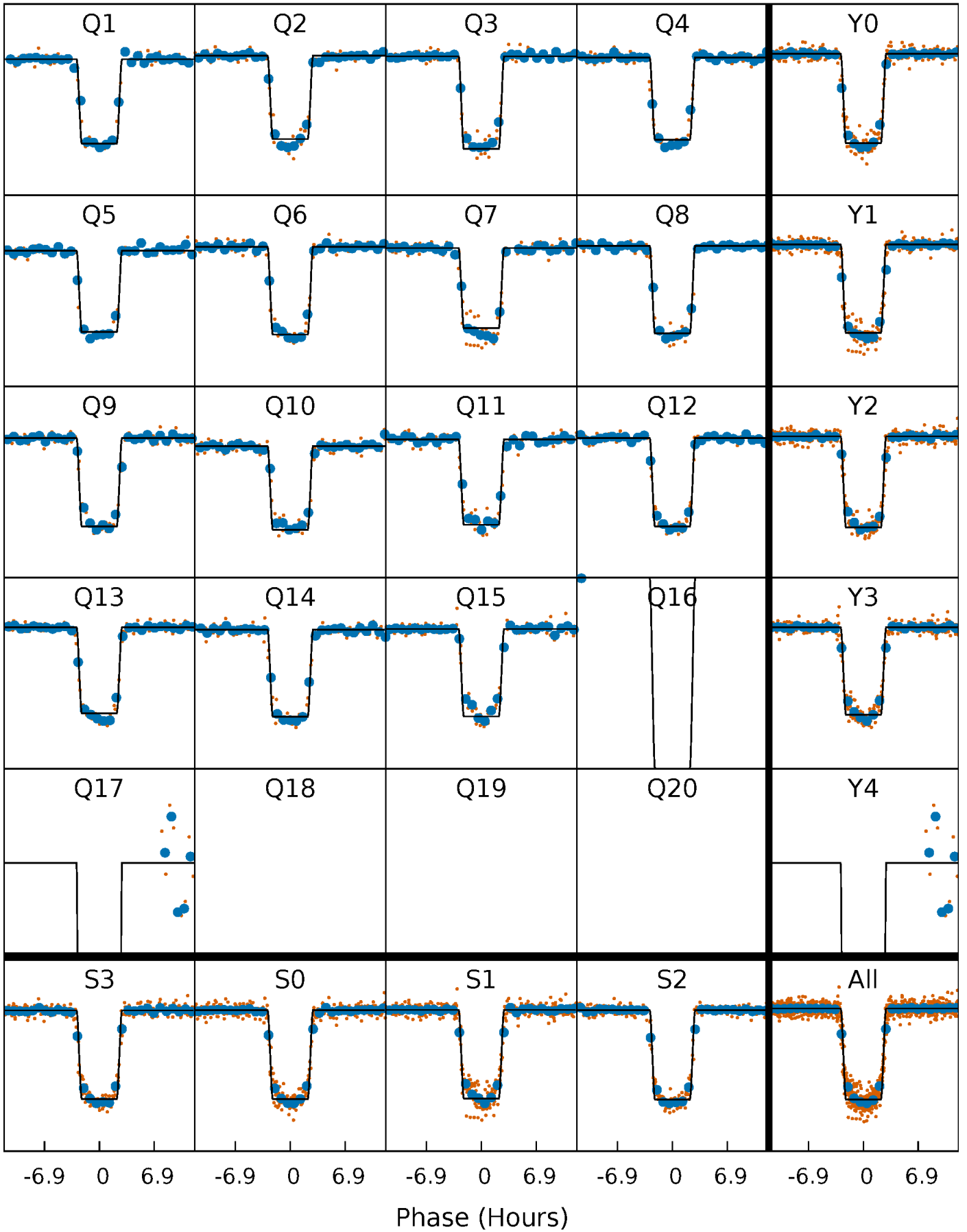
DV Quarter-Phased Transit Curves

TCE 011773022-02 P= 45.155275 Days $T_0=159.106545$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

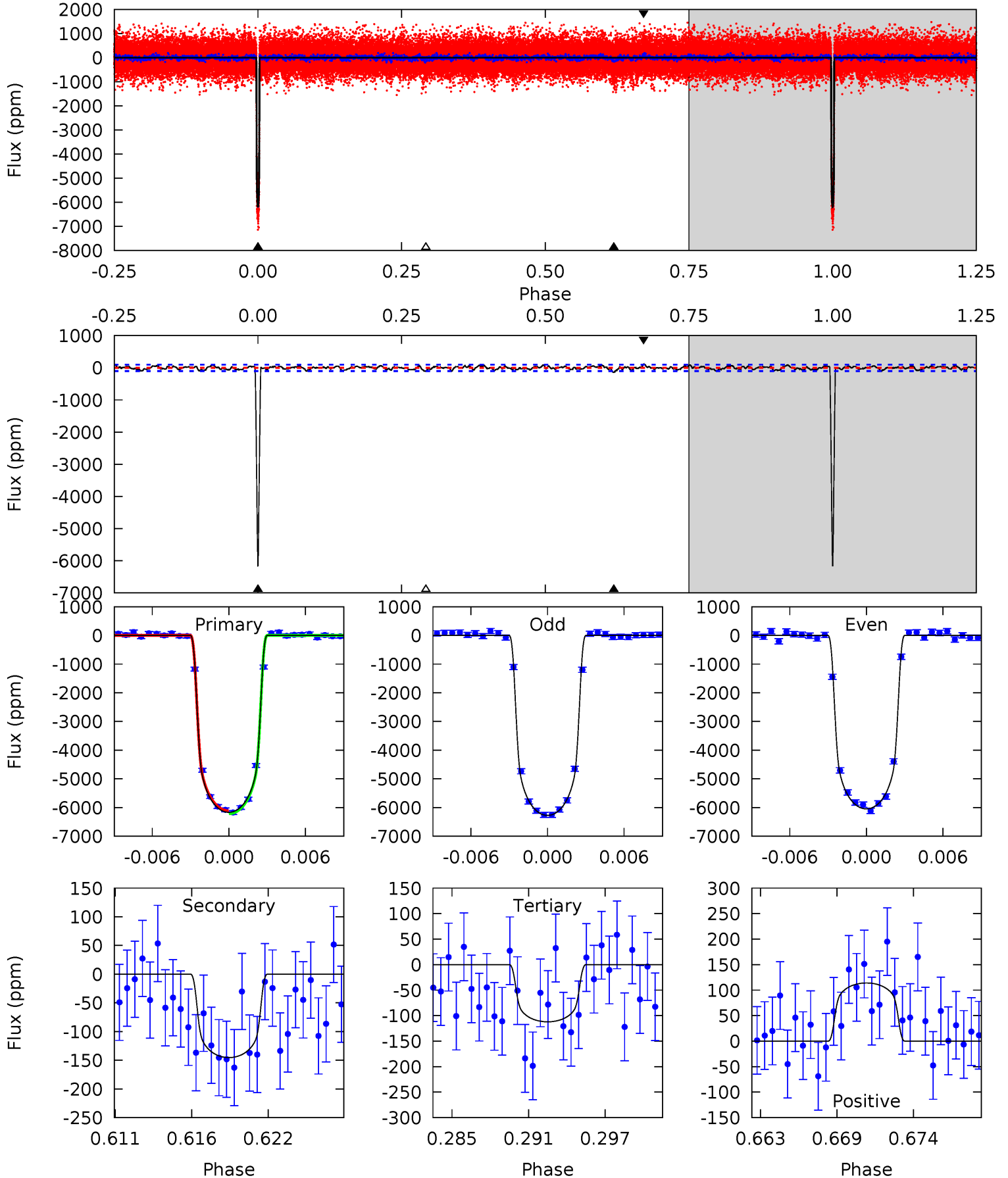
TCE 011773022-02 P= 45.155149 Days $T_0=159.109046$ (BKJD)



DV Model-Shift Uniqueness Test

011773022-02, P = 45.155275 Days, E = 113.951270 Days

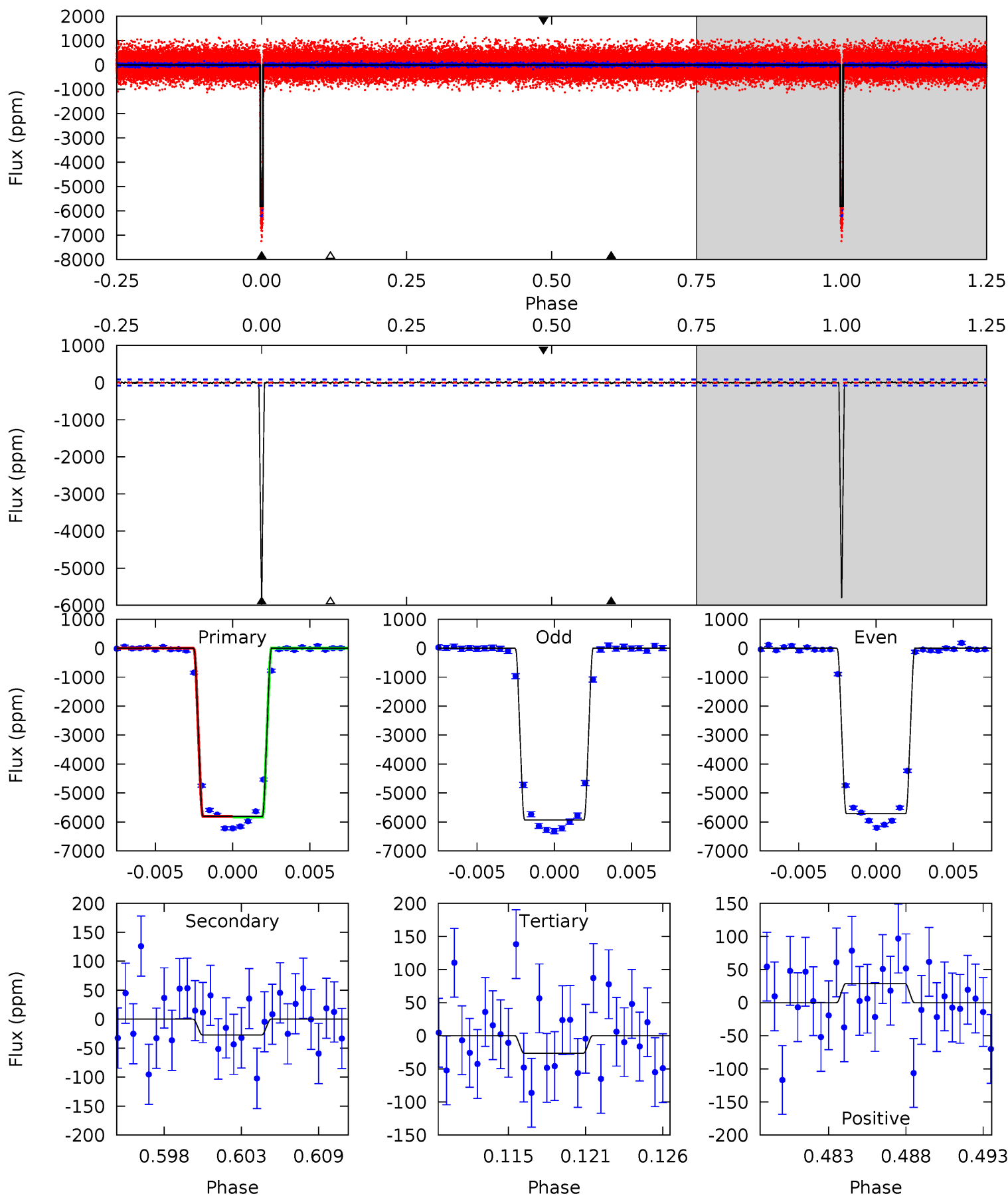
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
318.8	7.51	5.79	5.89	5.13	2.76	1.99	313.0	312.9	1.71	1.62	5.86	1.00	0.02	2.53



Alt Model-Shift Uniqueness Test

011773022-02, P = 45.155149 Days, E = 113.953897 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
365.0	1.71	1.66	1.80	5.15	2.79	0.49	363.3	363.2	0.05	-0.09	6.65	1.01	0.00	0.81



Stellar Parameters For KIC 011773022

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+162}_{-198}	$4.486^{+0.052}_{-0.221}$	$-0.080^{+0.250}_{-0.350}$	$0.972^{+0.300}_{-0.100}$	$1.053^{+0.129}_{-0.142}$	$1.615^{+0.447}_{-0.834}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+12%/-13%	+28%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011773022-02 / KOI 0620.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-145 ± 19	$8.04^{+1.32}_{-0.59}$	746^{+53}_{-35}	3078^{+84}_{-90}	75^{+18}_{-19}
Alt.	-27 ± 16	$8.48^{+1.45}_{-0.75}$	747^{+57}_{-37}	2430^{+152}_{-241}	12^{+9}_{-7}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

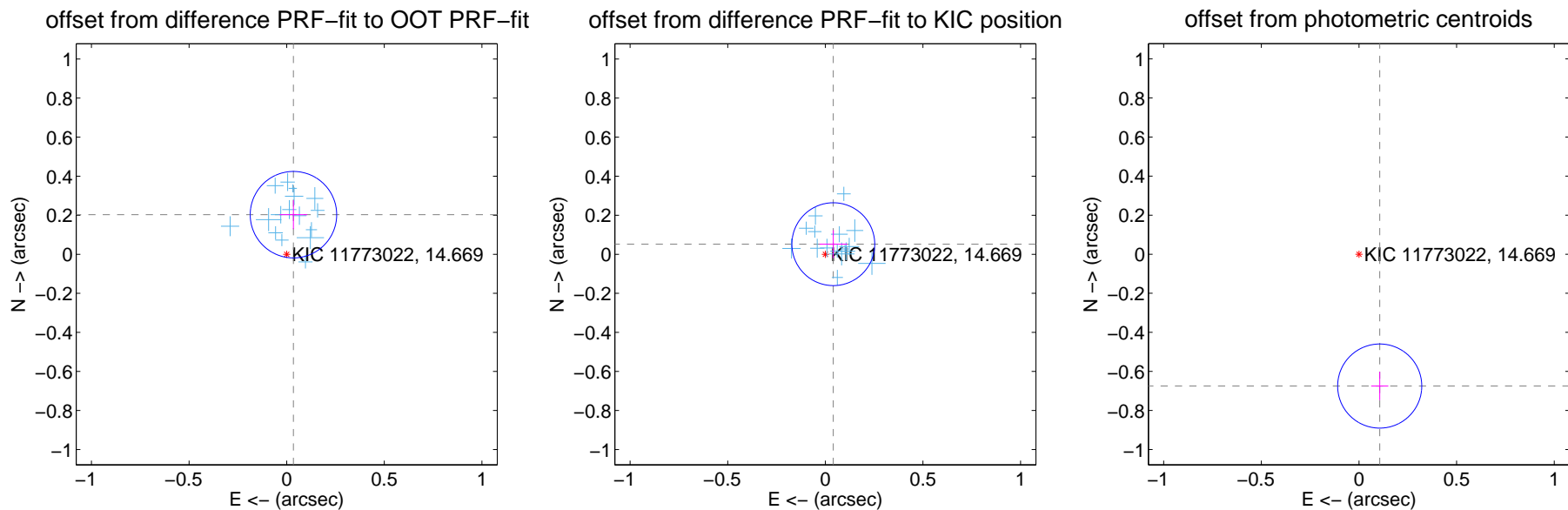
DV Centroid Data

Supplemental centroid analysis for 011773022-02. Kepler magnitude: 14.67. Transit SNR 175.95

There are 16 quarters with good PRF difference image offsets

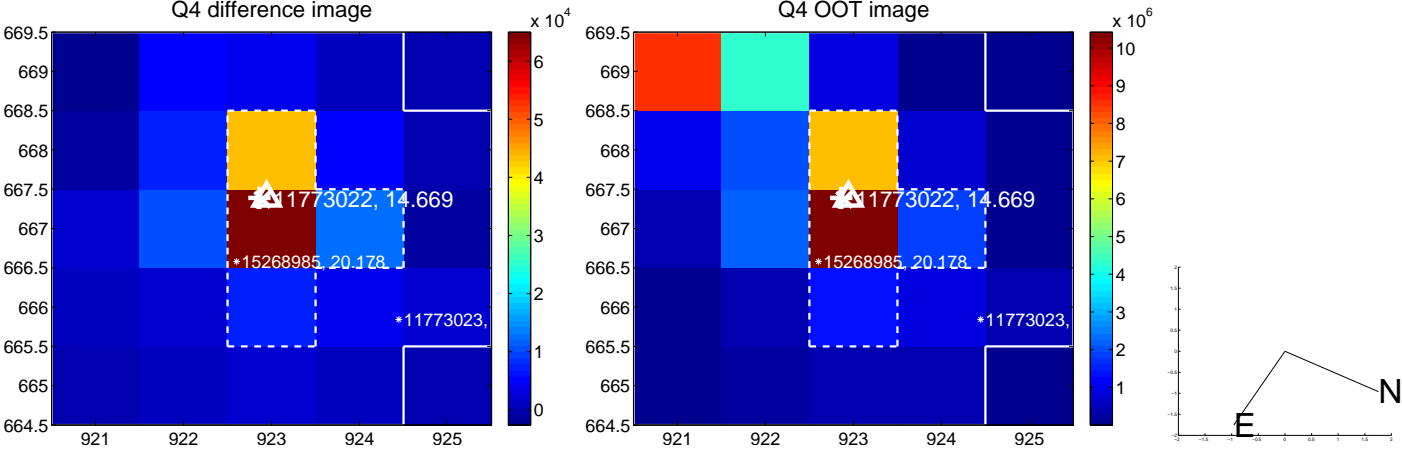
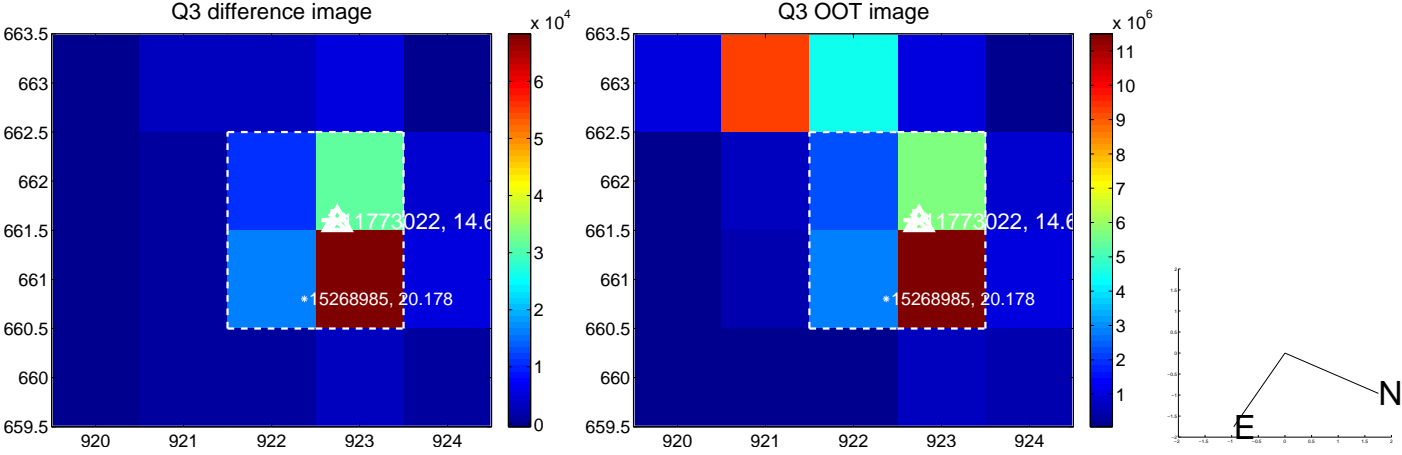
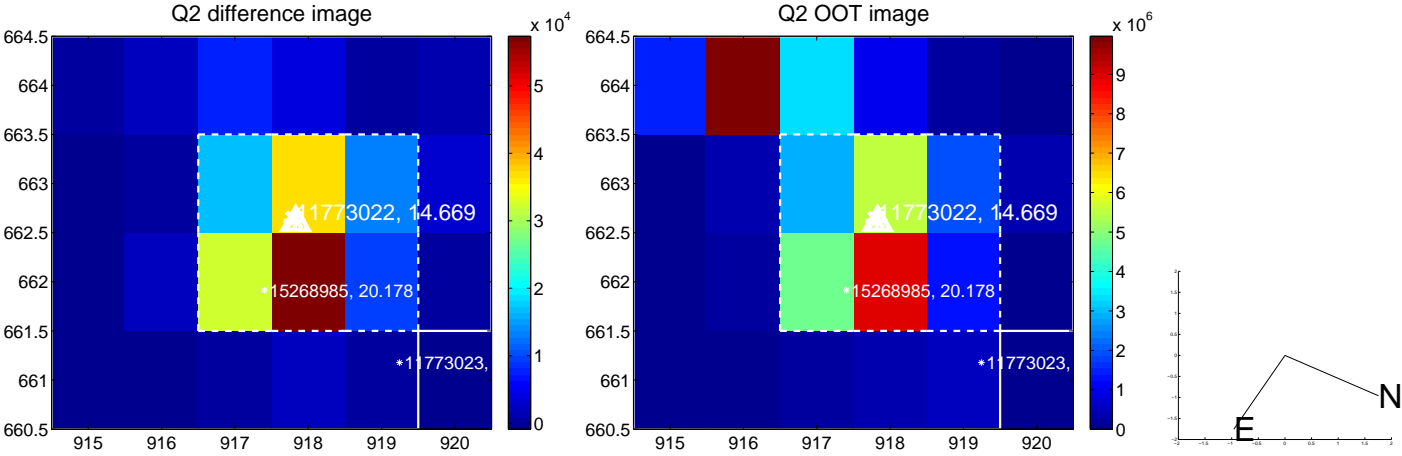
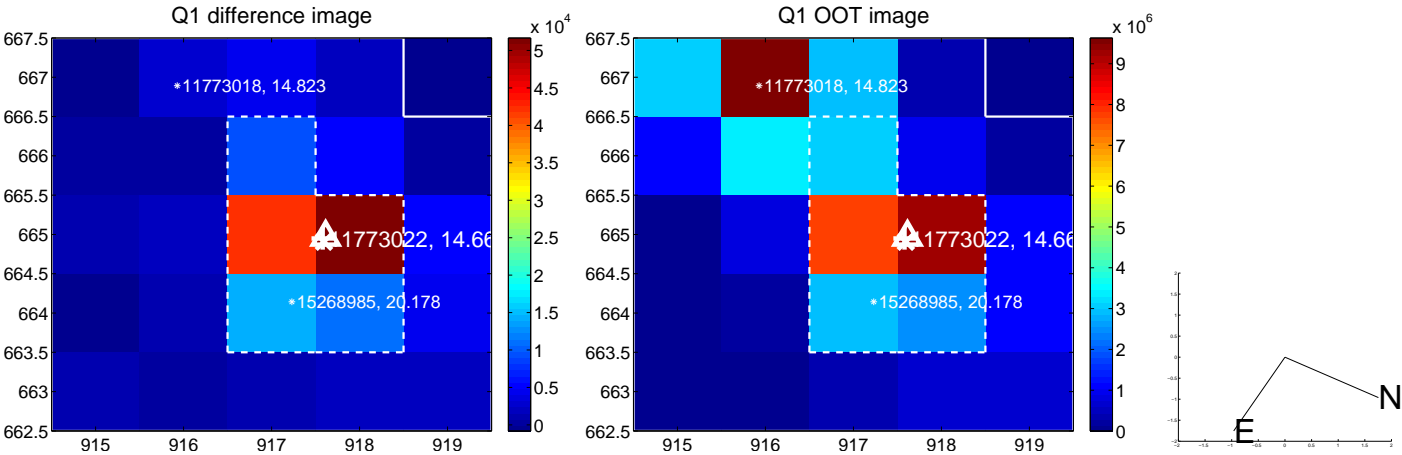
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.206 ± 0.074	2.79	-0.035 ± 0.071	0.203 ± 0.074
PRF-fit source offset from KIC position	0.066 ± 0.071	0.93	-0.041 ± 0.071	0.052 ± 0.071
photometric centroid source offset	0.68 ± 0.07	9.52	-0.11 ± 0.04	-0.68 ± 0.07

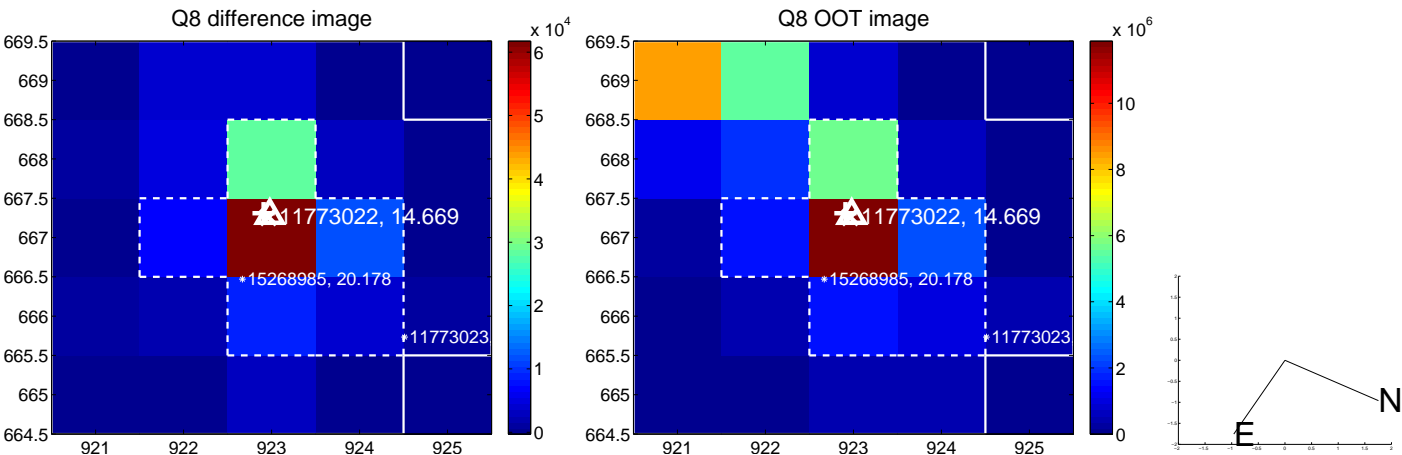
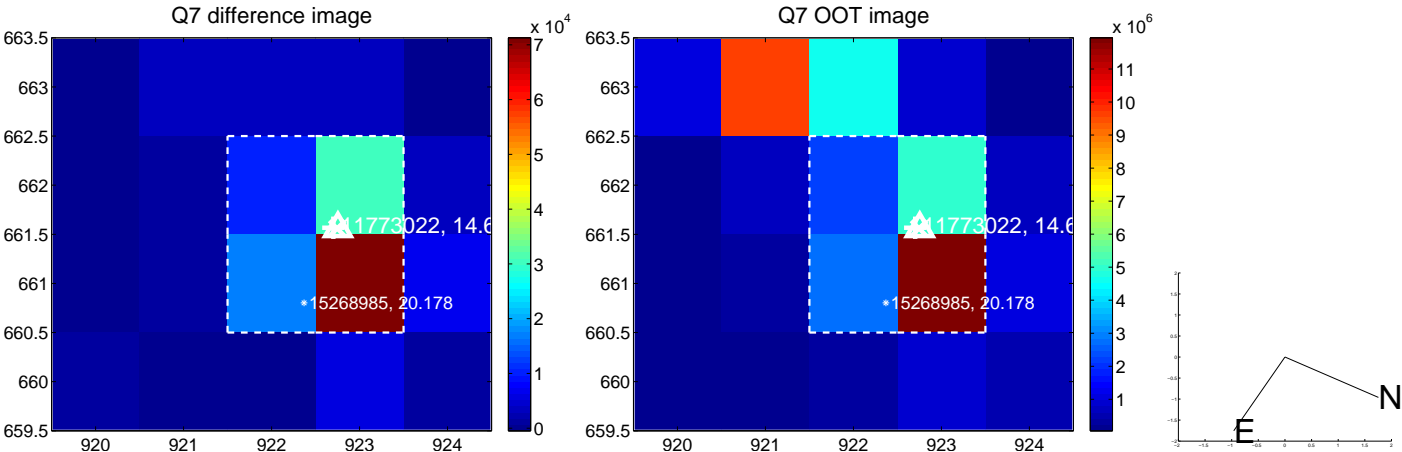
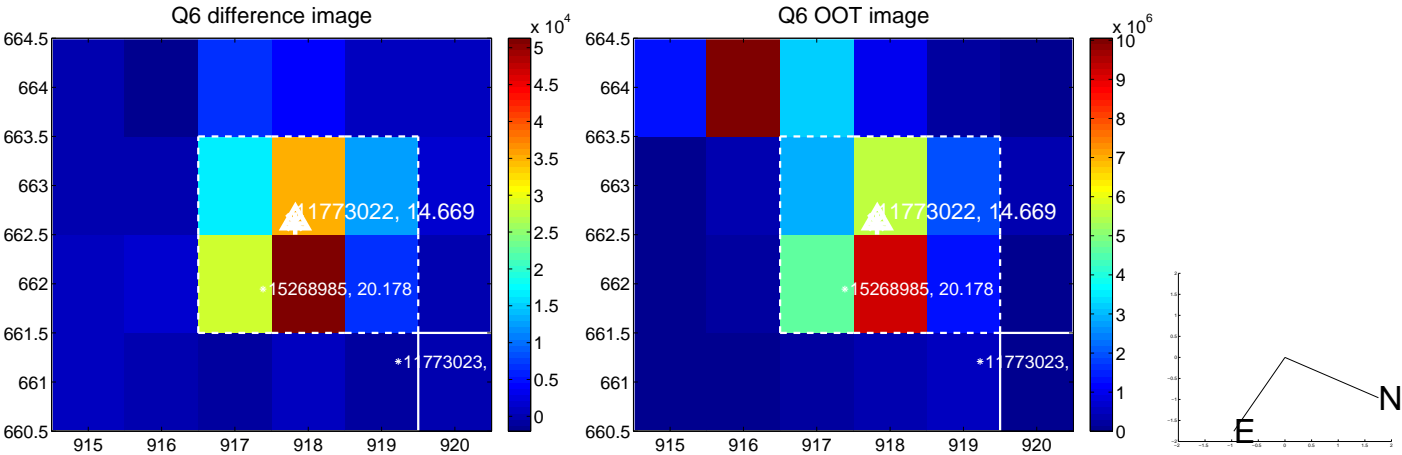
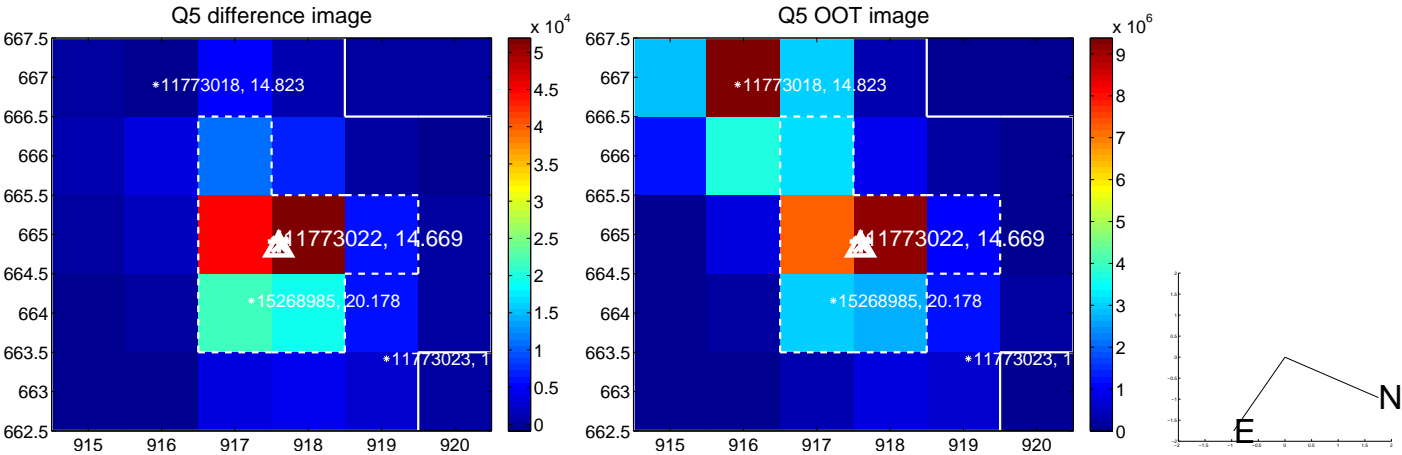


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

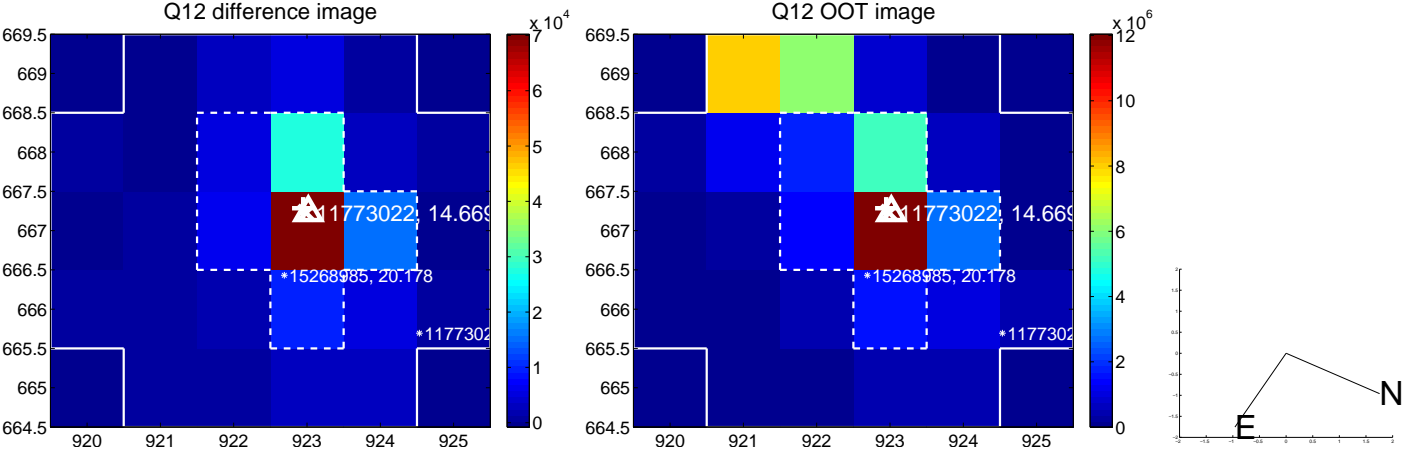
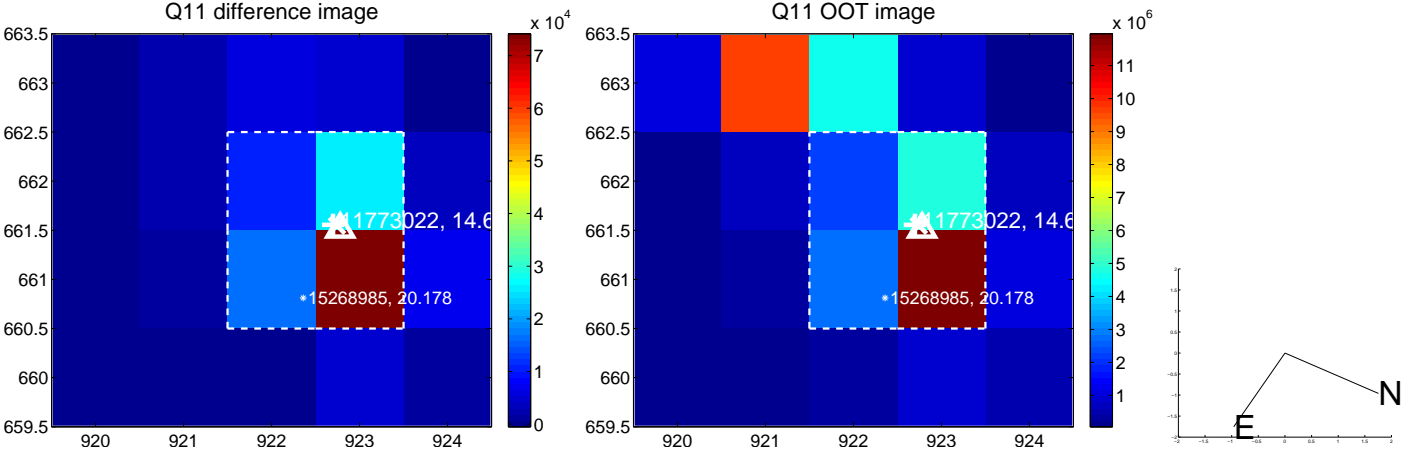
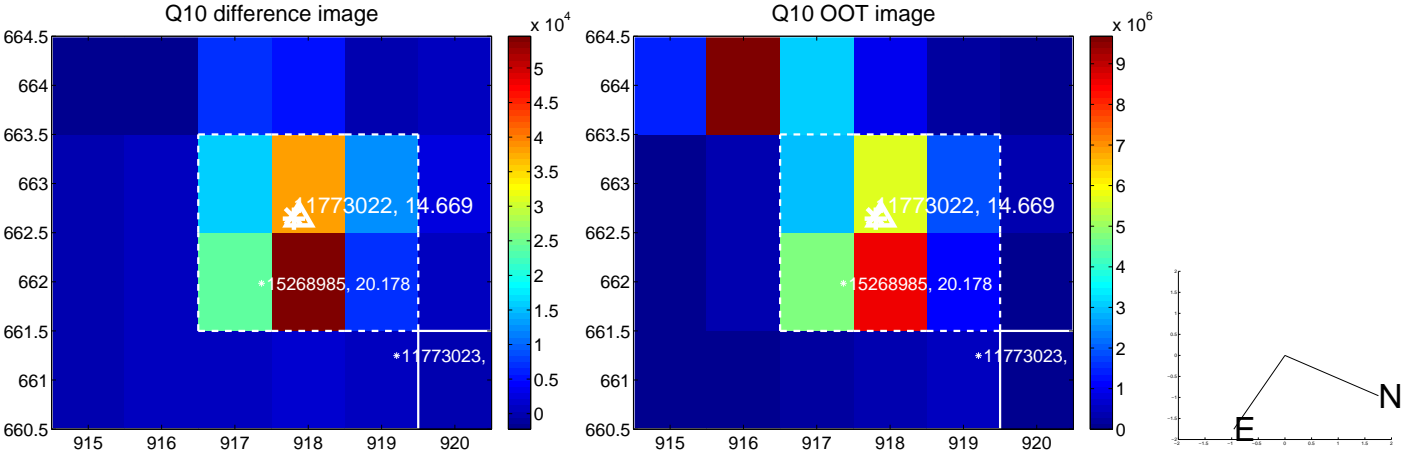
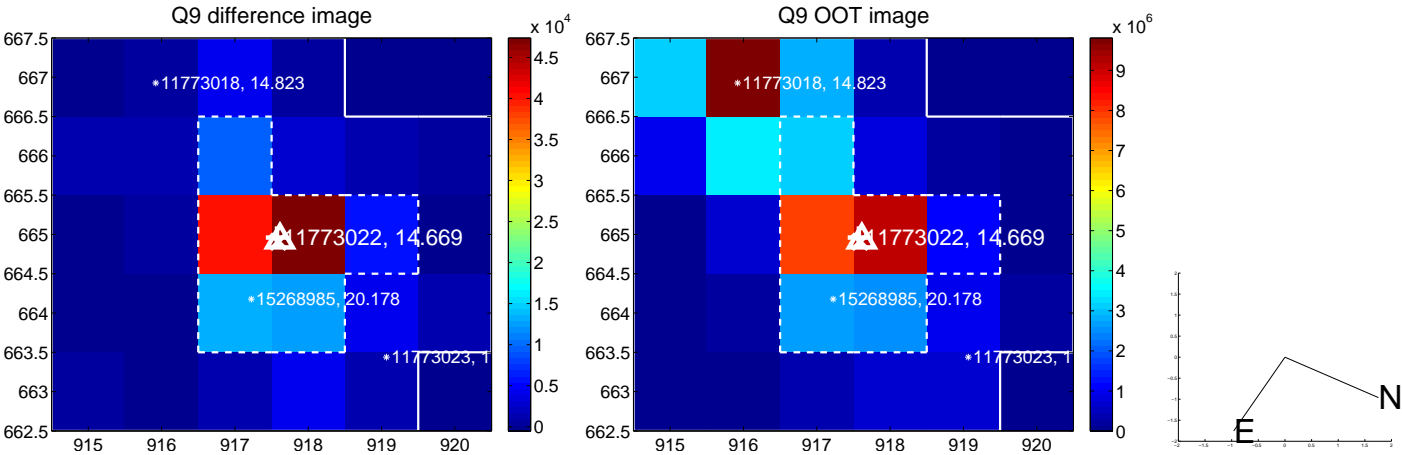
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



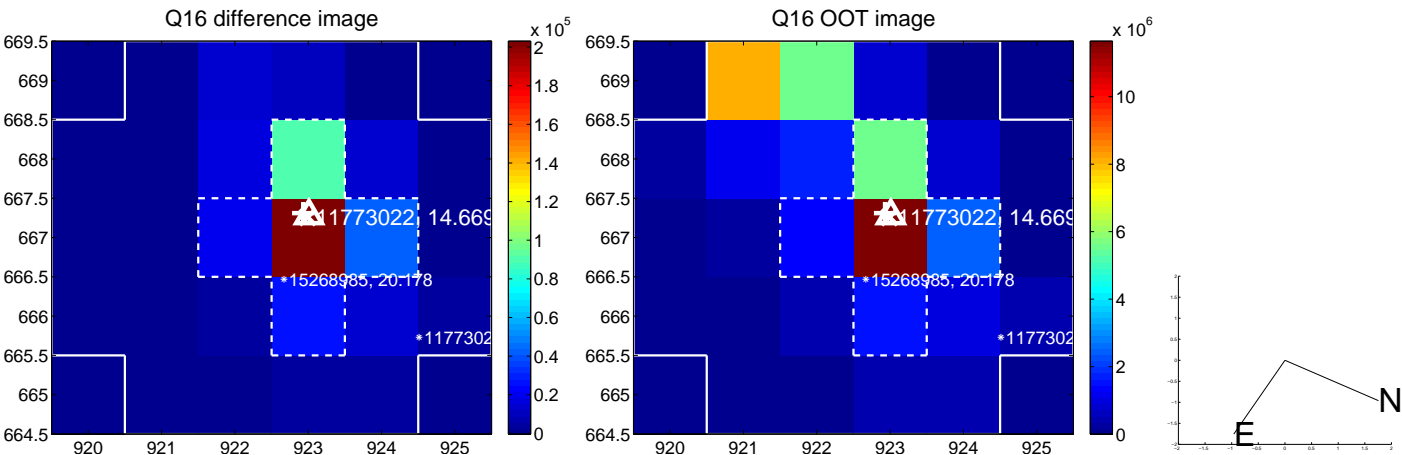
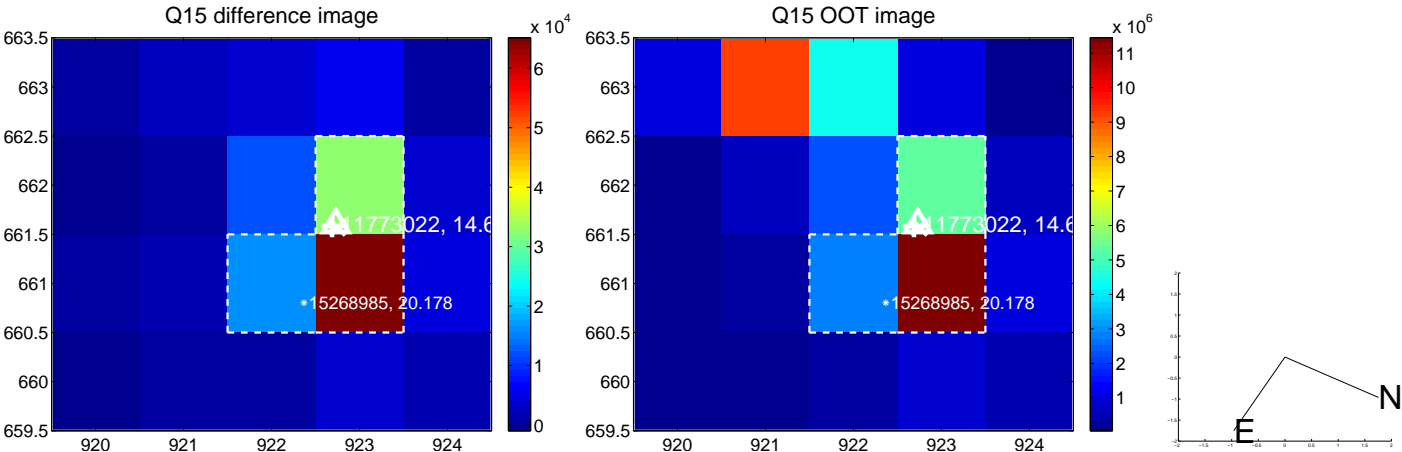
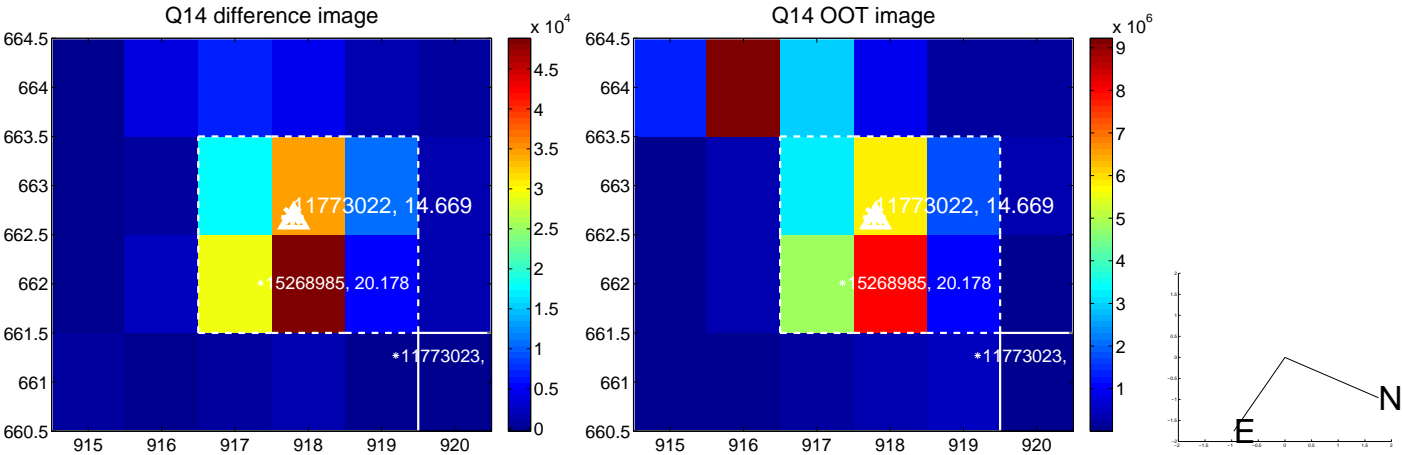
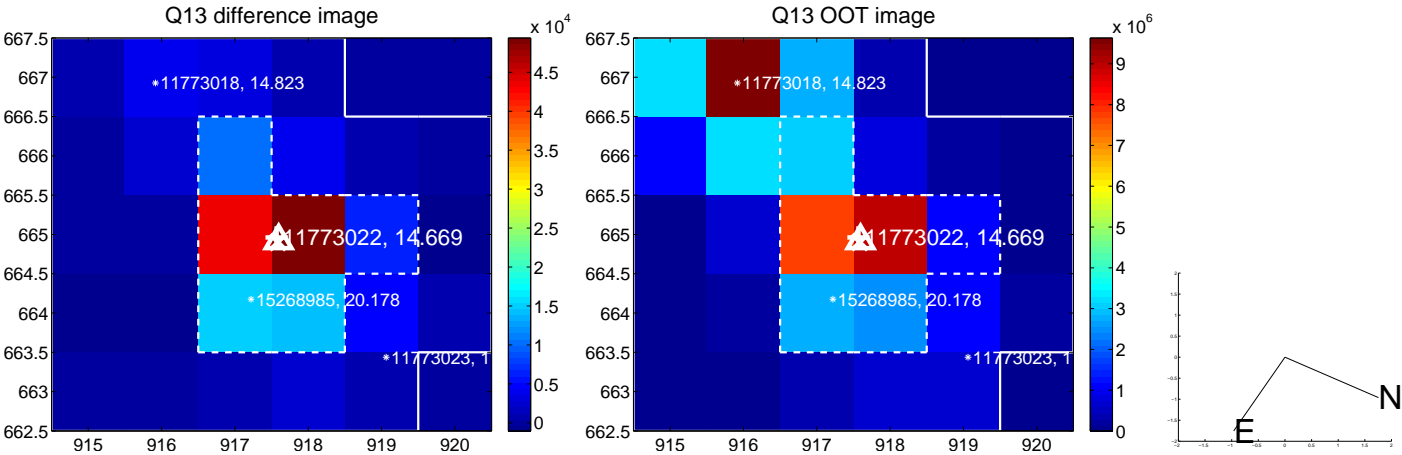
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

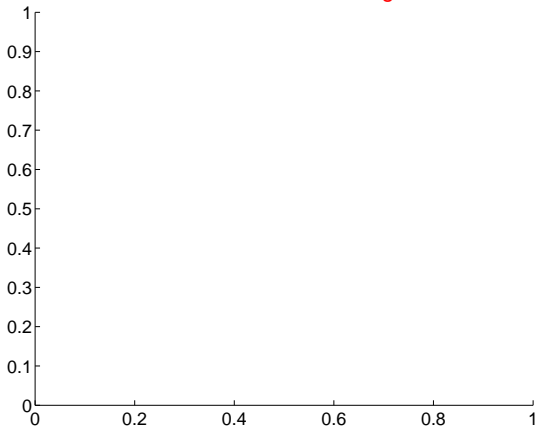


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

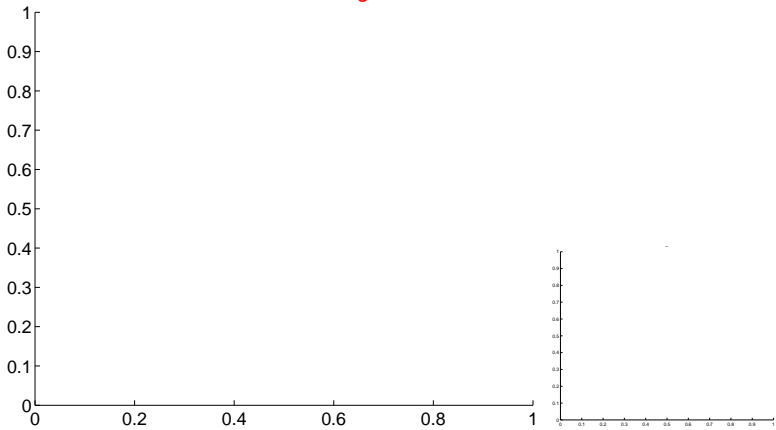


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

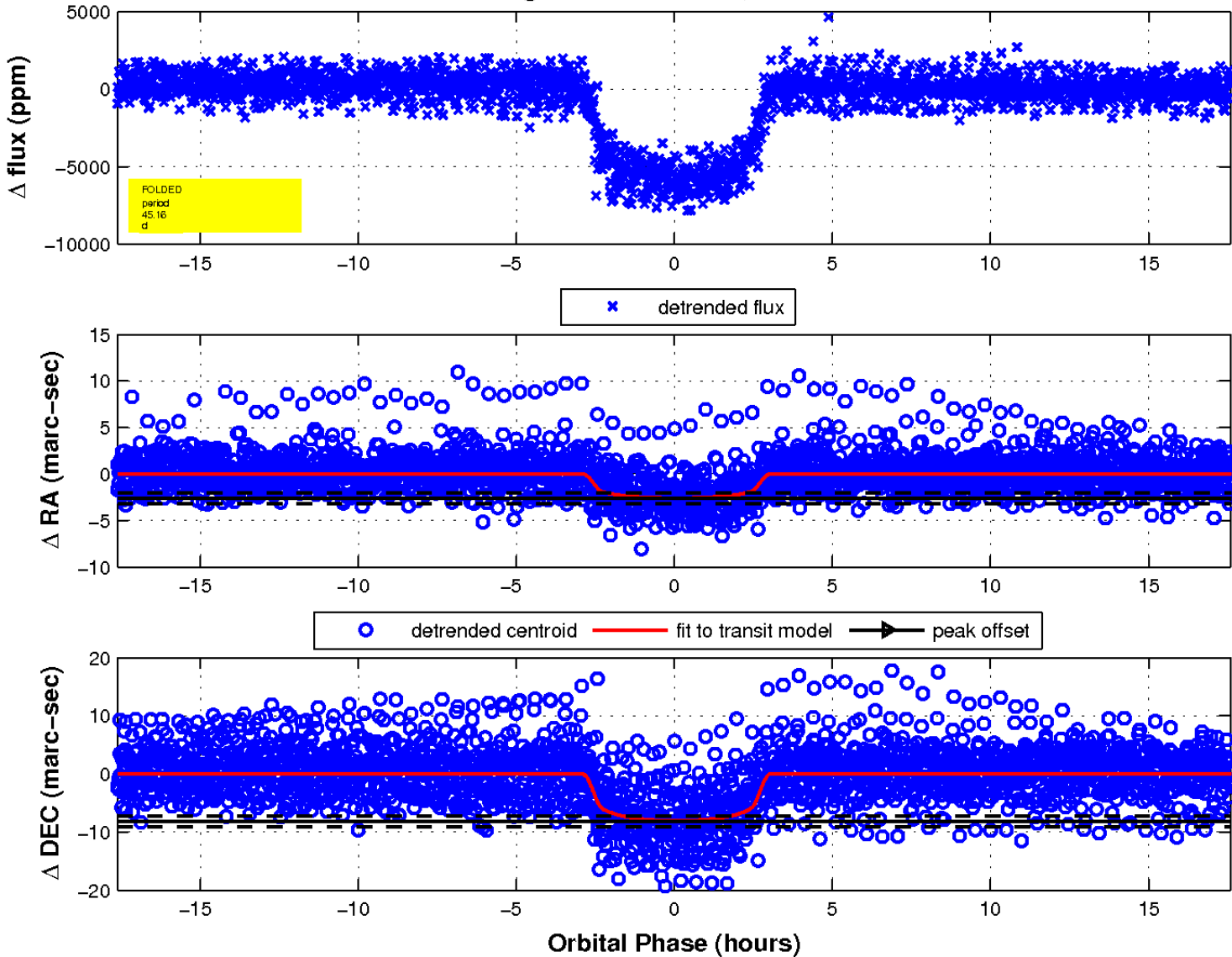
Q17 no difference image



Q17 no OOT image

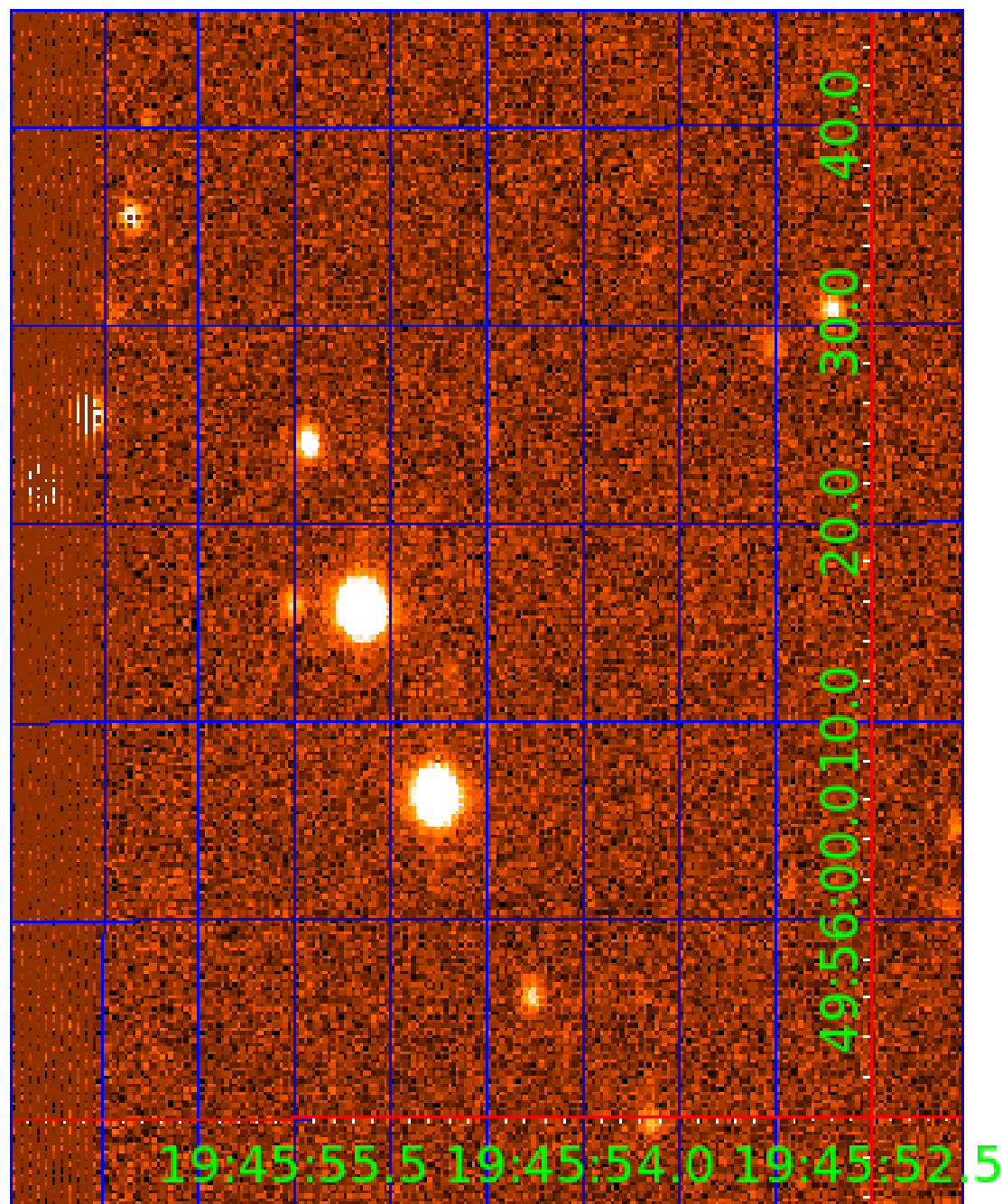


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 011773022

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})
011773022-01	OBS	0620.02	130.177553	212.034434	11595.6	8.293	204.0	189.2	0.97	6046	10.43	4.32
011773022-02	OBS	0620.01	45.155275	159.106545	6212.1	5.873	176.5	176.0	0.97	6046	7.84	17.71
011773022-03	OBS	0620.03	85.316845	209.996831	1809.6	2.754	27.5	25.6	0.97	6046	5.80	7.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011773022-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011773022-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT
011773022-03	OBS	PC	0.97	0	0	0	0	NO_COMMENT

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.

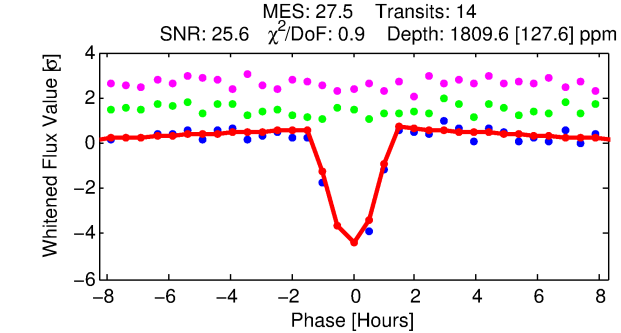
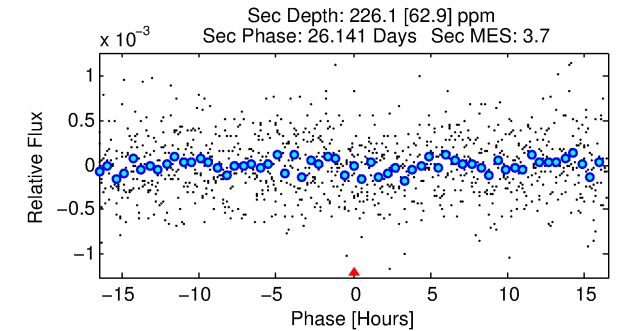
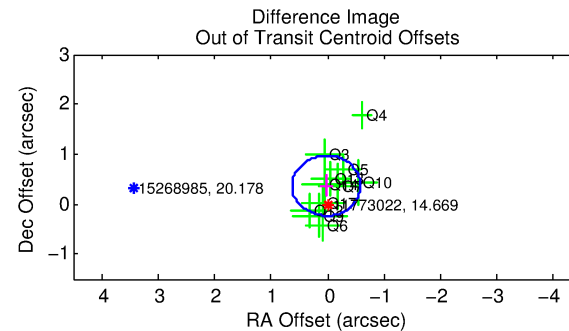
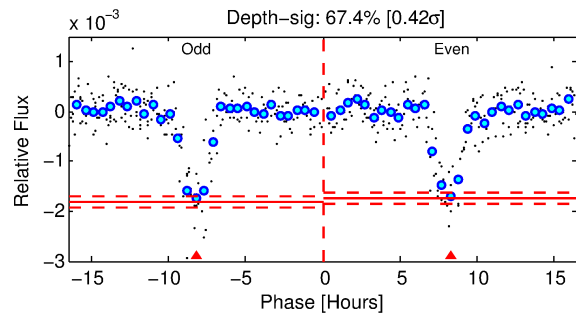
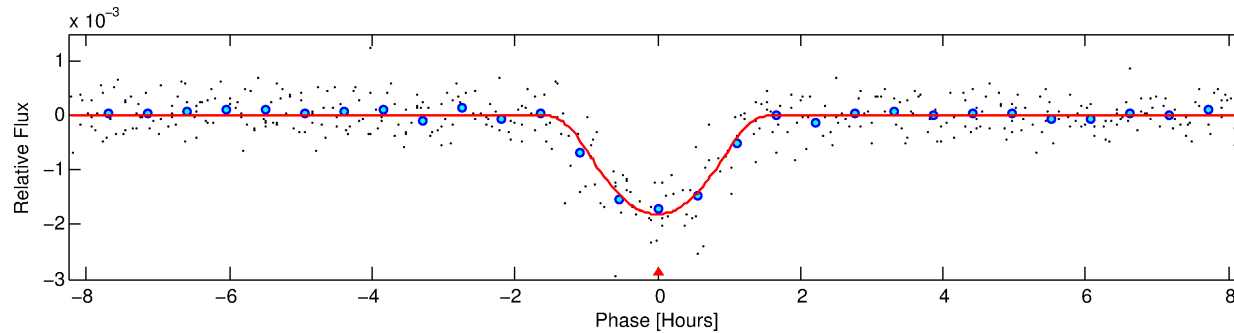
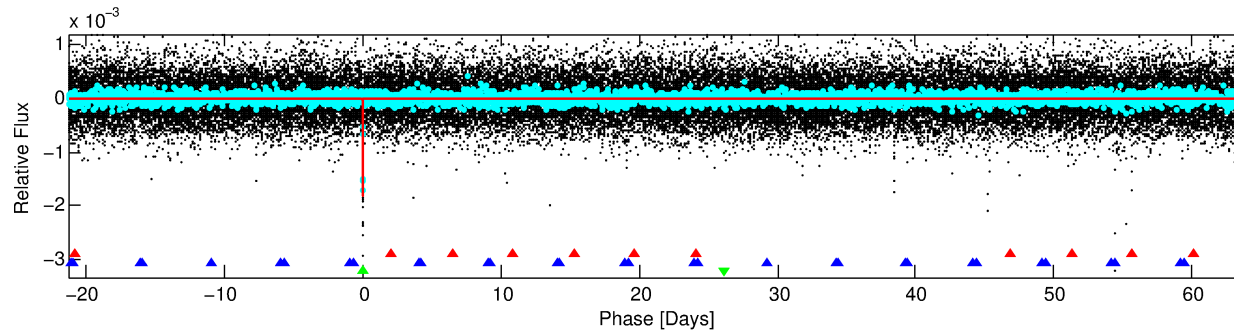
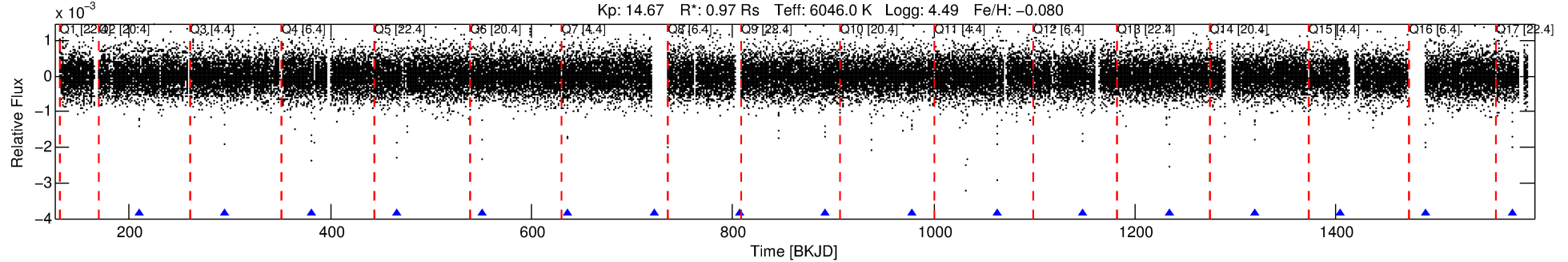
Ephemeris Match Information For 011773022-03

No Significant Match Found

DV One-Page Summary

KIC: 11773022 Candidate: 3 of 3 Period: 85.317 d
KOI: K00620.03 Name: Kepler-51c Corr: 0.967

Kp: 14.67 R*: 0.97 Rs Teff: 6046.0 K Logg: 4.49 Fe/H: -0.080



DV Fit Results:

Period = 85.31685 [0.00024] d
Epoch = 209.9968 [0.0022] BKJD
Rp/R* = 0.0547 [0.0195]
a/R* = 100.01 [17.67]
b = 0.97 [0.04]
Seff = 7.58 [3.17]
Teq = 423 [44] K
Rp = 5.80 [2.74] Re
a = 0.3862 [0.1030] AU
Ag = 551.38 [475.46] [1.16σ]
Teffp = 3170 [616] K [4.45σ]

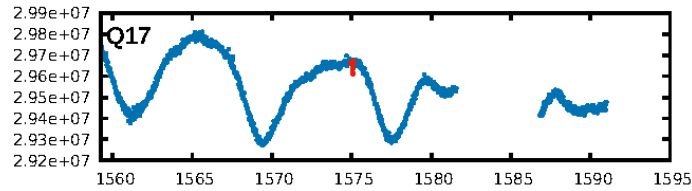
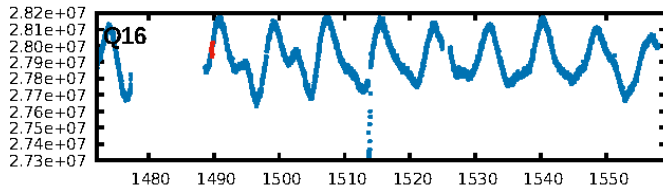
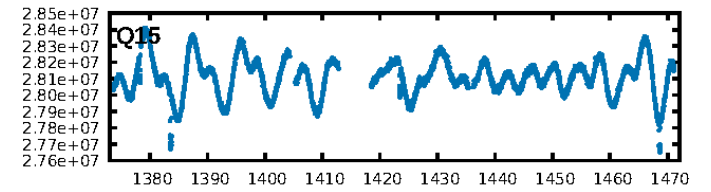
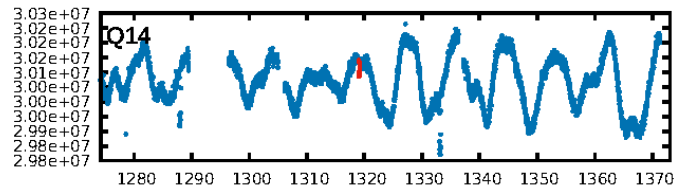
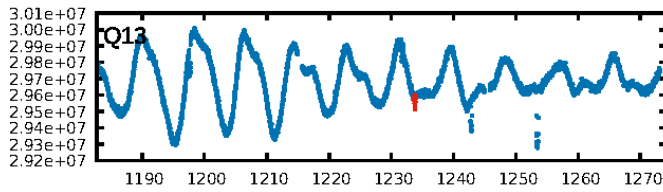
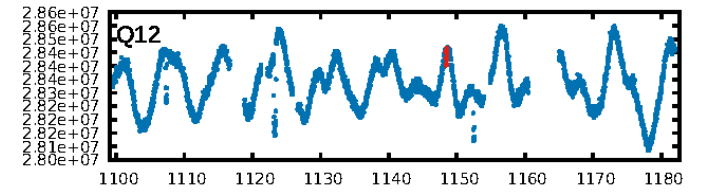
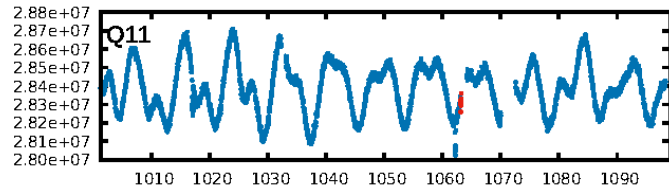
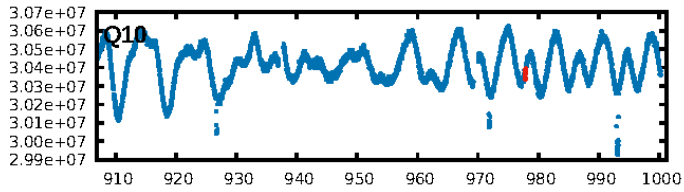
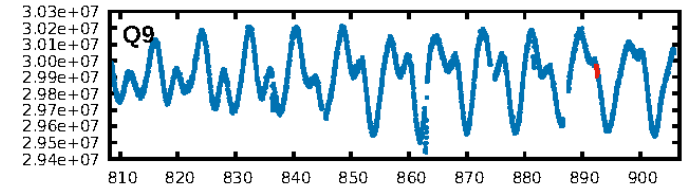
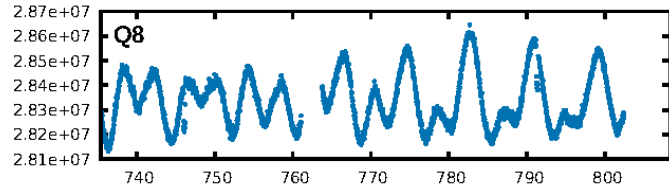
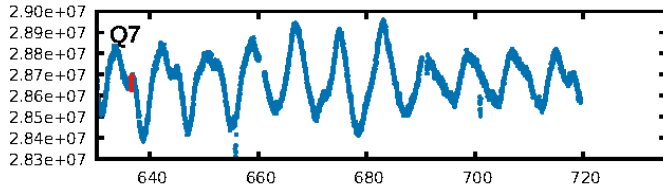
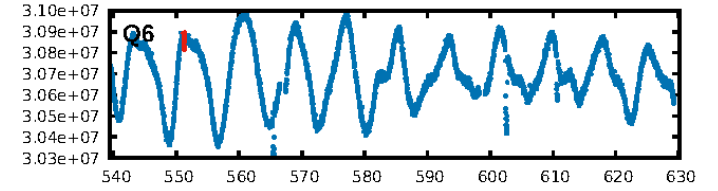
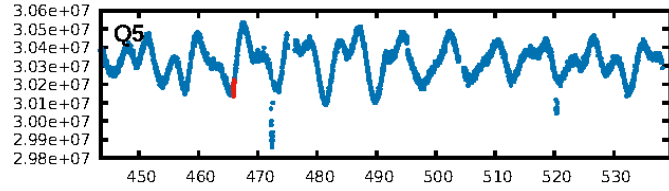
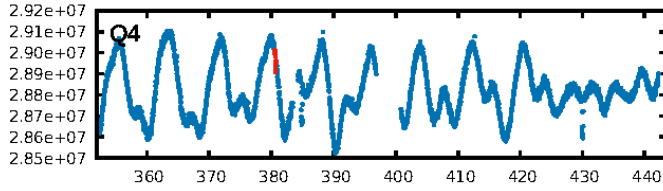
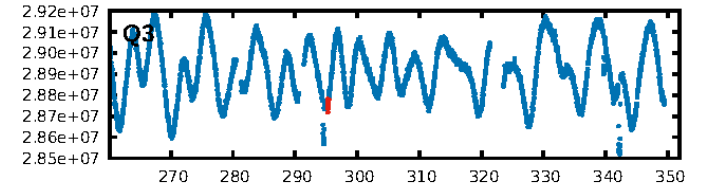
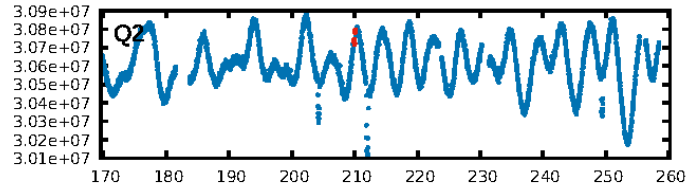
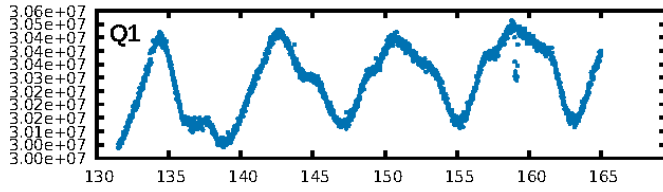
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [148.60σ]
LongPeriod-sig: 100.0% [123.21σ]
ModelChiSquare2-sig: 49.7%
ModelChiSquareGof-sig: 92.6%
Bootstrap-pfa: 1.01e-122
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 8.047
Centroid-sig: 0.3%
Centroid-so: 1.155 arcsec [2.22σ]
OotOffset-rm: 0.370 arcsec [1.84σ]
KicOffset-rm: 0.361 arcsec [1.98σ]
OotOffset-st: 3/2/2/4 [11]
KicOffset-st: 3/2/2/4 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [12/12]

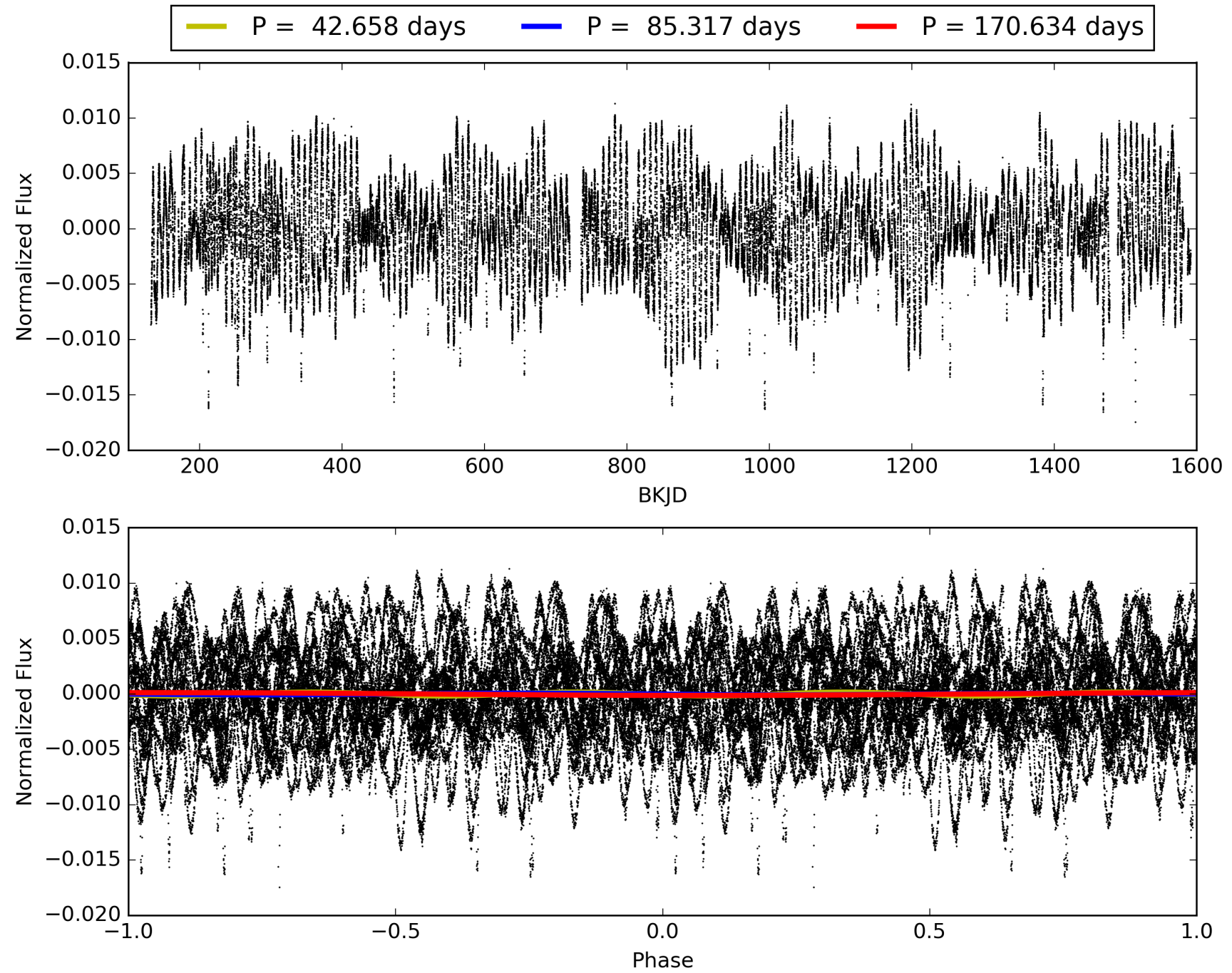
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:53:14 Z

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

TCE 011773022-03, PDC Light Curves

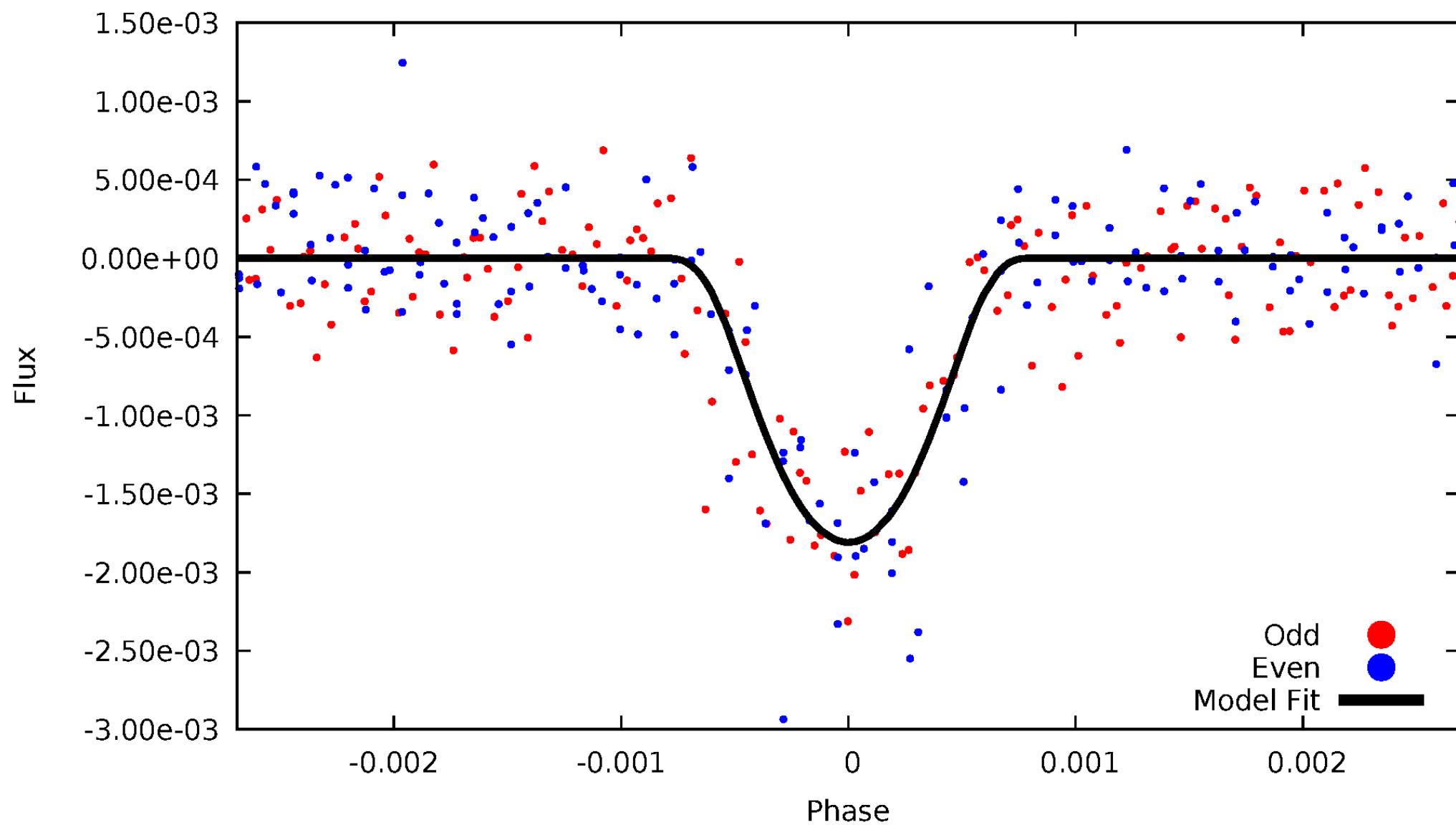


TCE 011773022-03



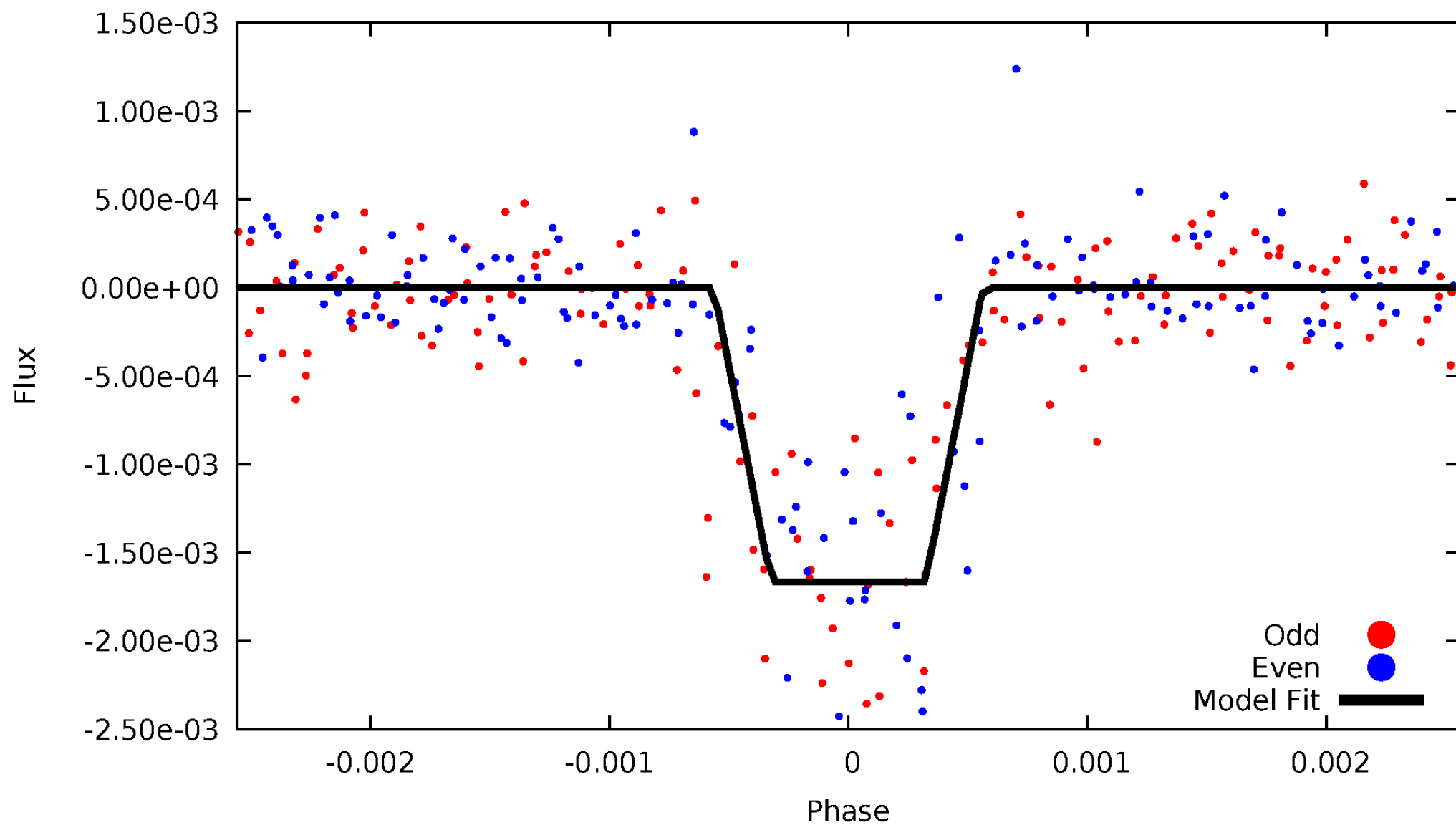
DV Odd/Even

TCE 011773022-03



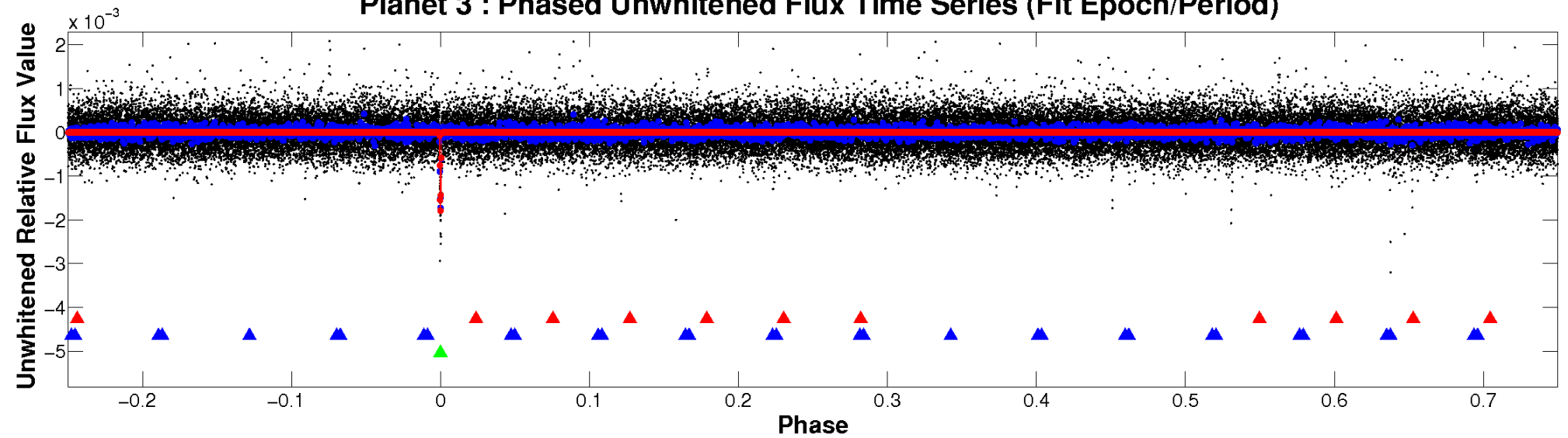
ALT Odd/Even

TCE 011773022-03

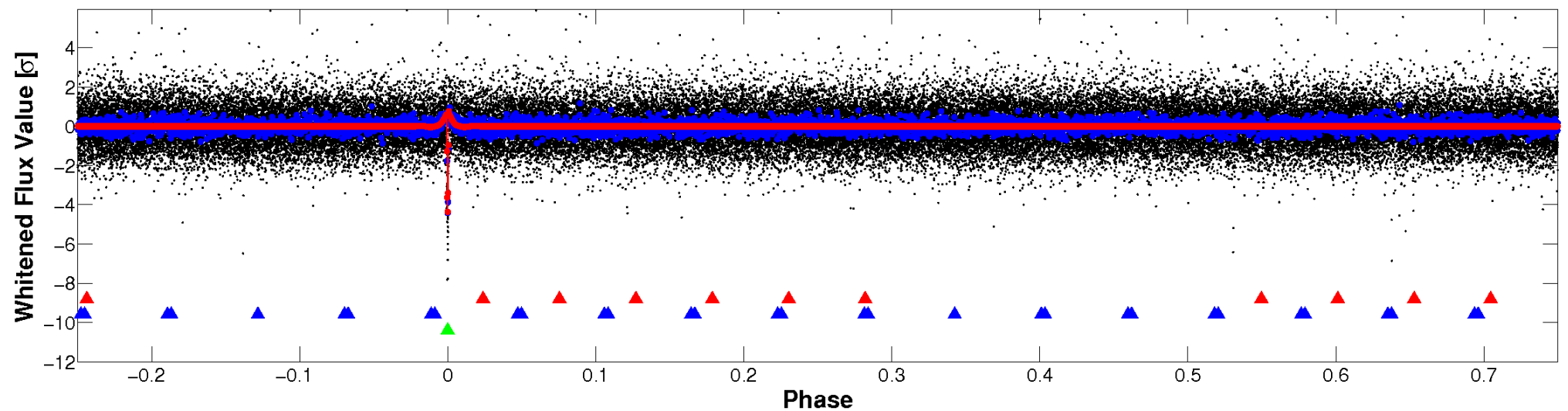


Non-Whitened Vs. Whitened Light Curve

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

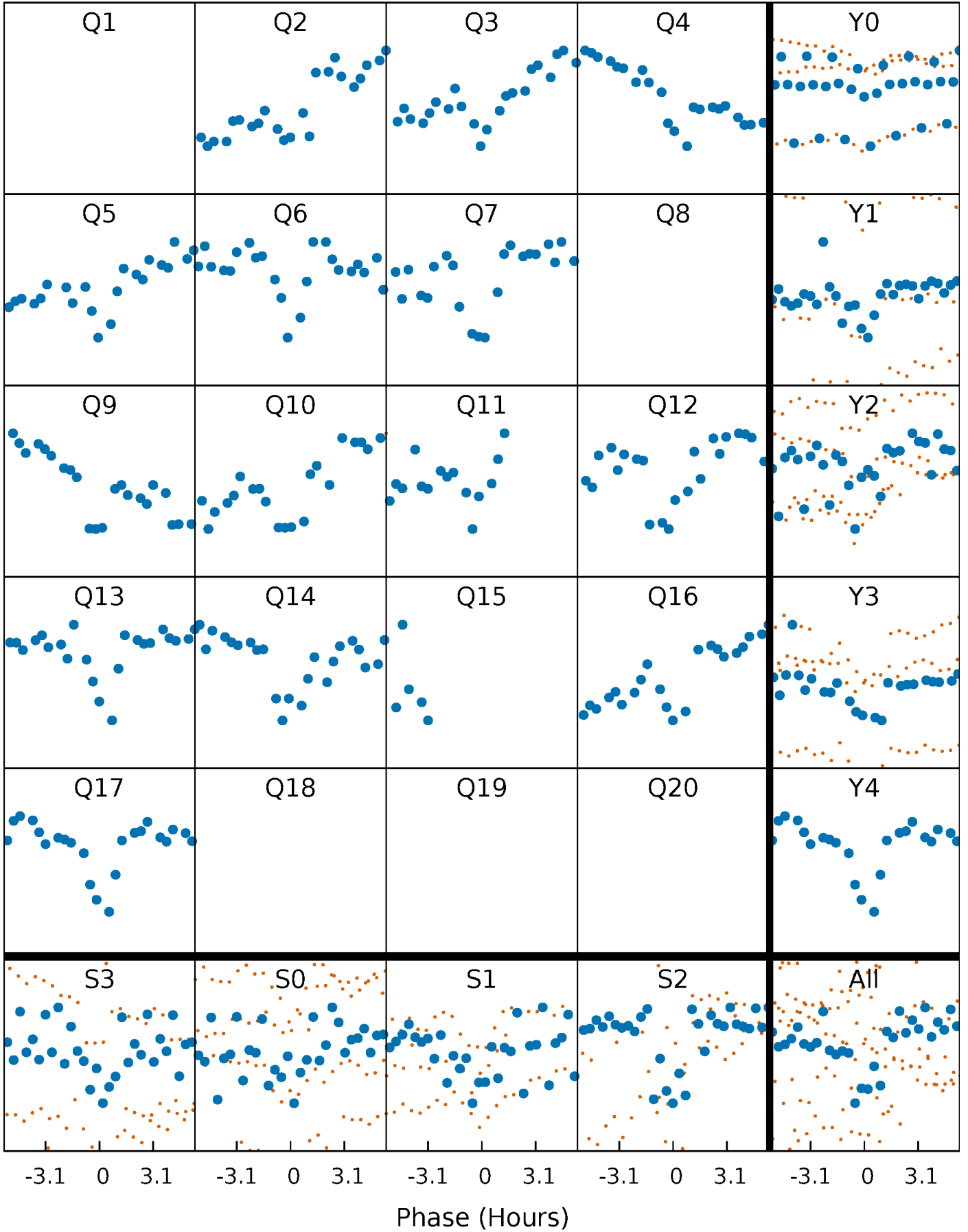


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



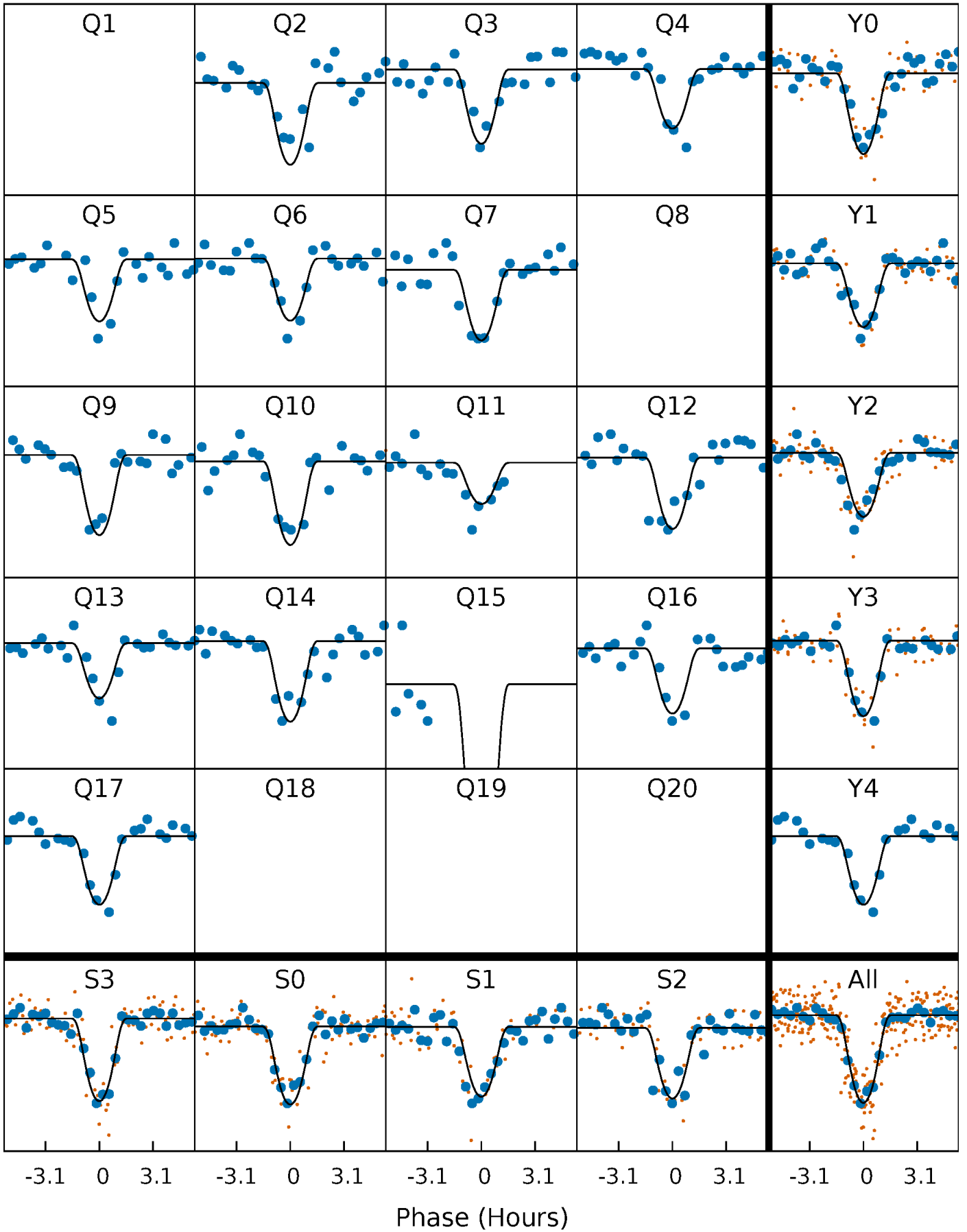
PDC Quarter-Phased Transit Curves

TCE 011773022-03 P= 85.316845 Days $T_0=209.996831$ (BKJD)



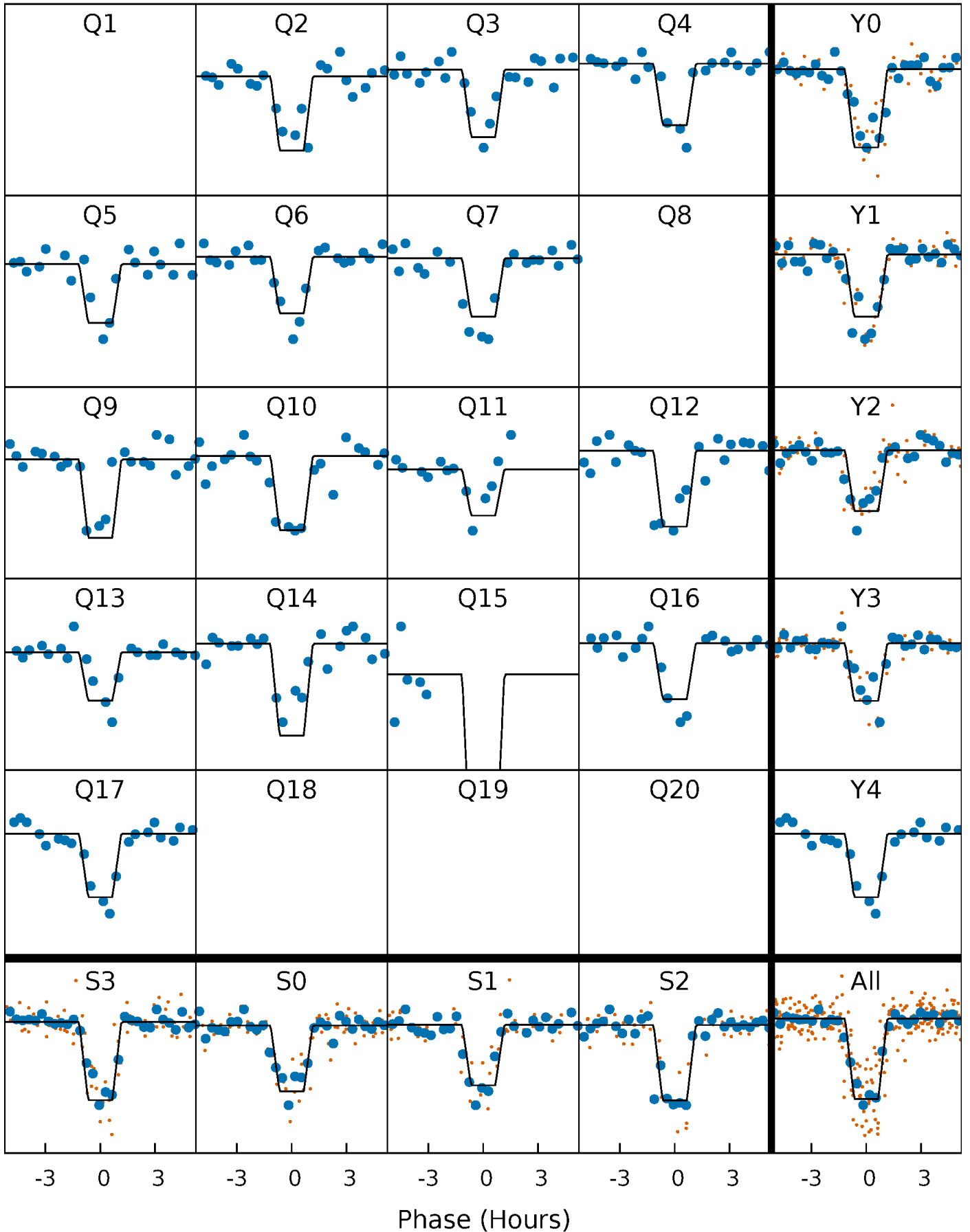
DV Quarter-Phased Transit Curves

TCE 011773022-03 P= 85.316845 Days $T_0=209.996831$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

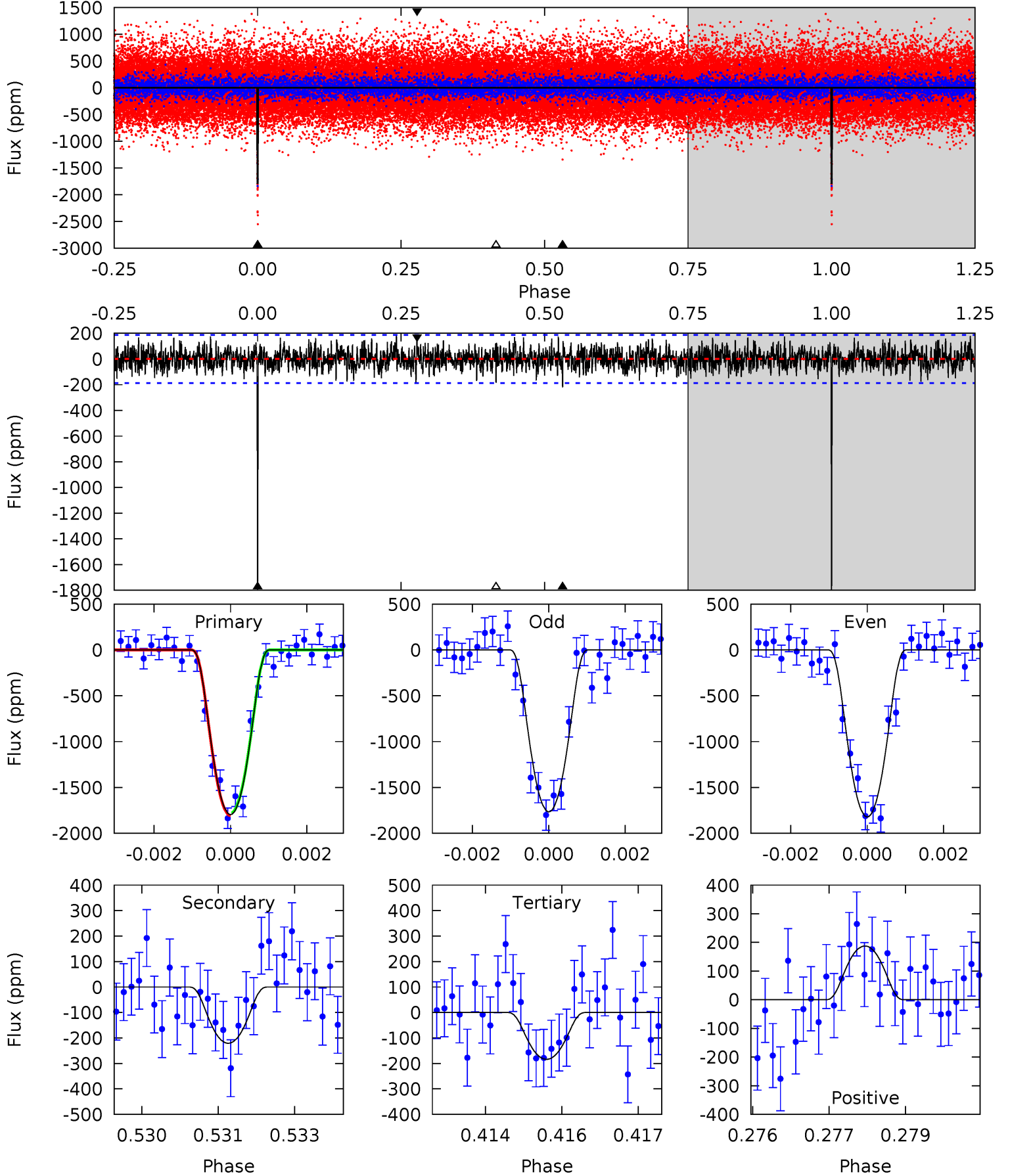
TCE 011773022-03 P= 85.316513 Days $T_0=209.997506$ (BKJD)



DV Model-Shift Uniqueness Test

011773022-03, P = 85.316845 Days, E = 124.679986 Days

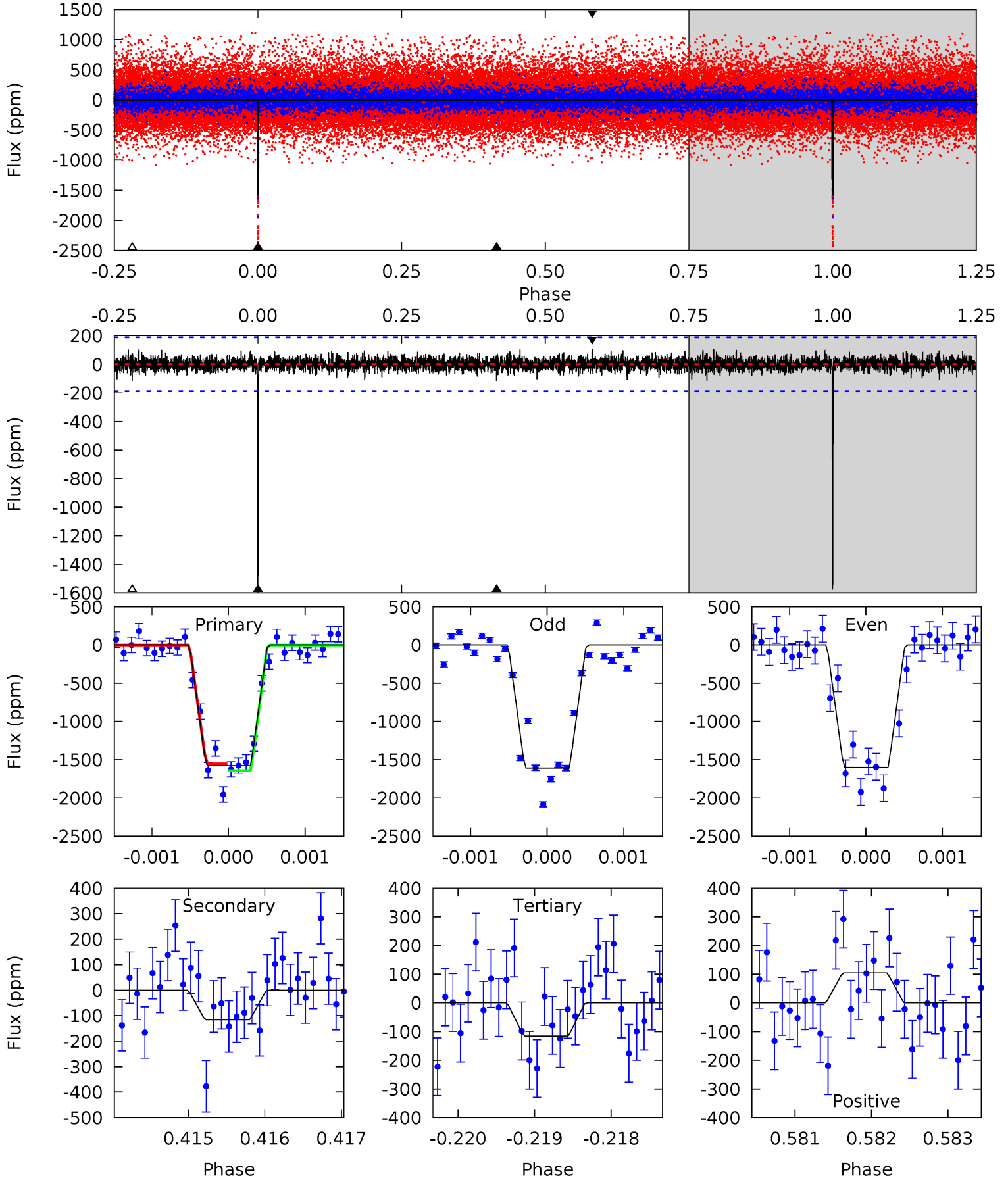
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.6	6.34	5.28	5.39	5.37	3.17	1.64	46.3	46.2	1.06	0.96	0.81	0.96	0.09	0.41



Alt Model-Shift Uniqueness Test

011773022-03, P = 85.316513 Days, E = 124.680993 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.4	3.37	3.33	3.02	5.43	3.26	0.84	42.1	42.4	0.03	0.35	0.10	1.03	0.06	1.29



Stellar Parameters For KIC 011773022

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+162}_{-198}	$4.486^{+0.052}_{-0.221}$	$-0.080^{+0.250}_{-0.350}$	$0.972^{+0.300}_{-0.100}$	$1.053^{+0.129}_{-0.142}$	$1.615^{+0.447}_{-0.834}$
	+3%/-3%	+1%/-5%	+312%/-438%	+31%/-10%	+12%/-13%	+28%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011773022-03 / KOI 0620.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-221 ± 35	$6.14^{+2.17}_{-2.26}$	602^{+44}_{-29}	3601^{+603}_{-346}	473^{+675}_{-226}
Alt.	-117 ± 35	$4.70^{+2.29}_{-2.29}$	601^{+45}_{-29}	3517^{+999}_{-412}	427^{+1225}_{-252}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
 A_{obs} = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

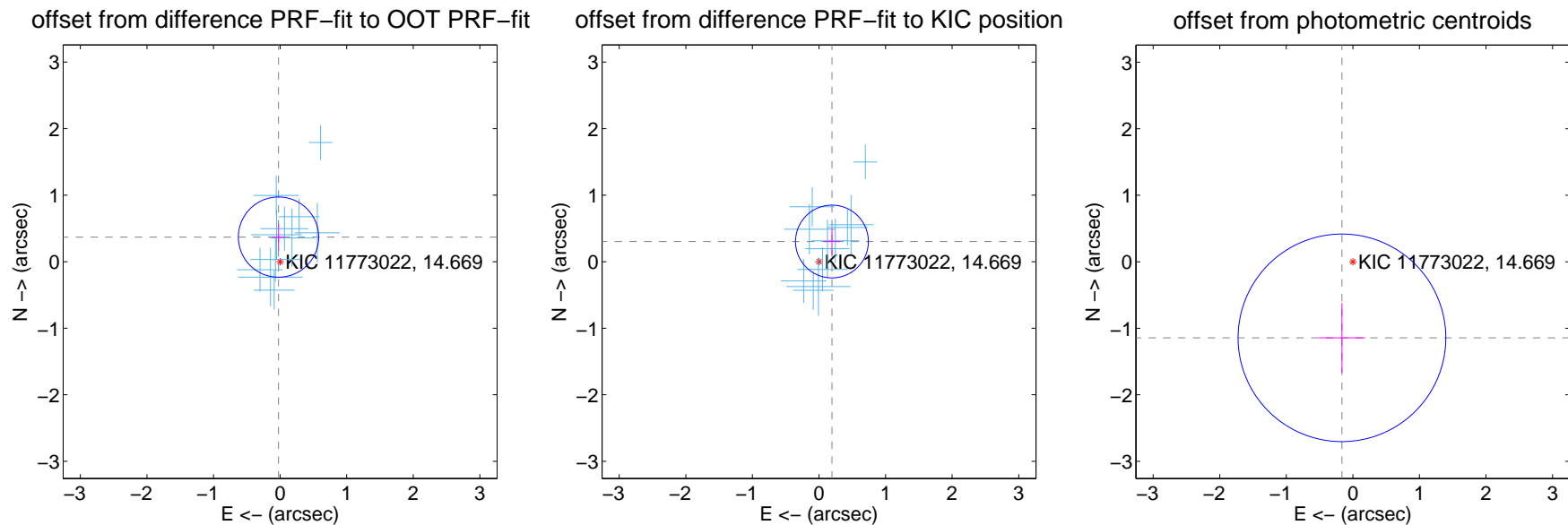
DV Centroid Data

Supplemental centroid analysis for 011773022-03. Kepler magnitude: 14.67. Transit SNR 25.55

There are 11 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

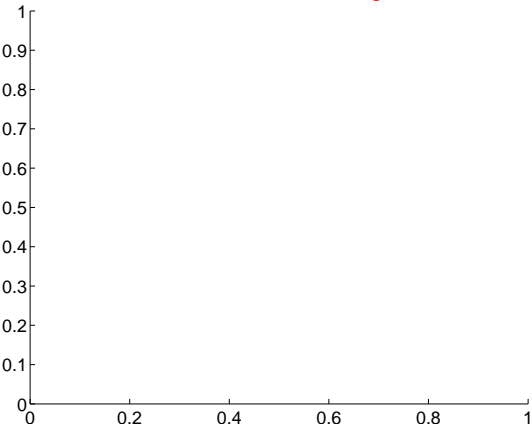
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.370 ± 0.201	1.84	0.024 ± 0.093	0.370 ± 0.201
PRF-fit source offset from KIC position	0.361 ± 0.182	1.98	-0.195 ± 0.122	0.303 ± 0.202
photometric centroid source offset	1.16 ± 0.52	2.22	0.16 ± 0.35	-1.14 ± 0.52



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.

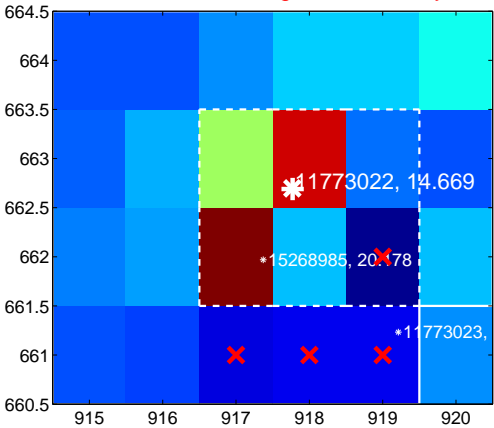
Q1 no difference image



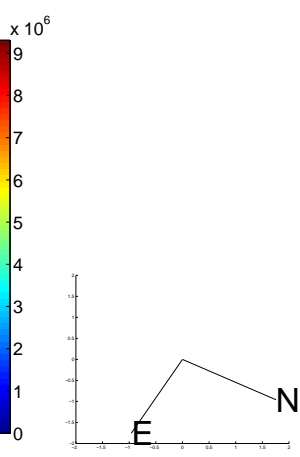
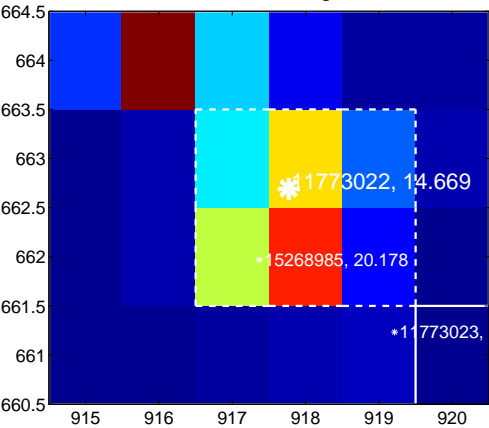
Q1 no OOT image



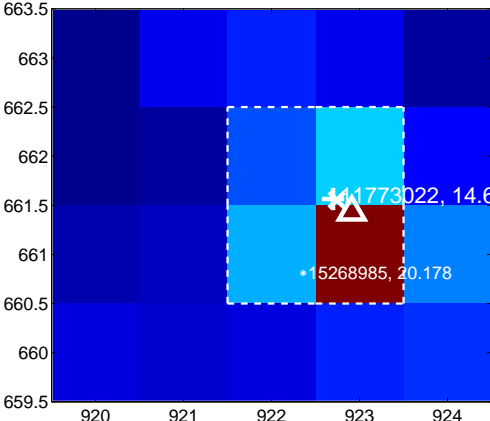
Q2 difference image. Poor Quality



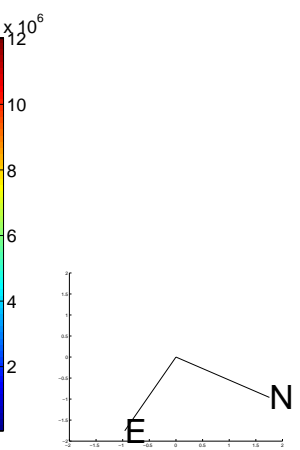
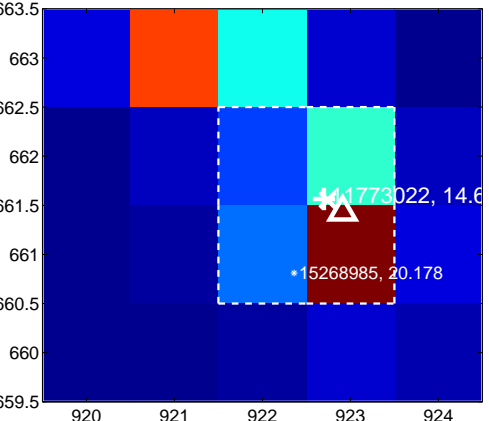
Q2 OOT image



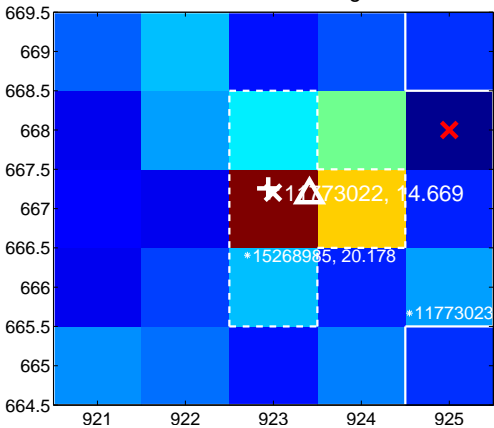
Q3 difference image



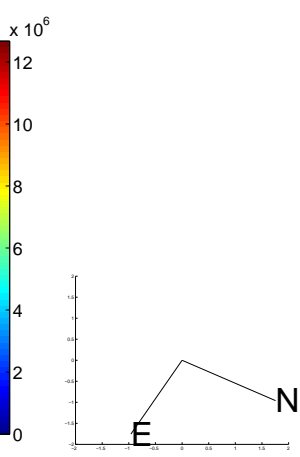
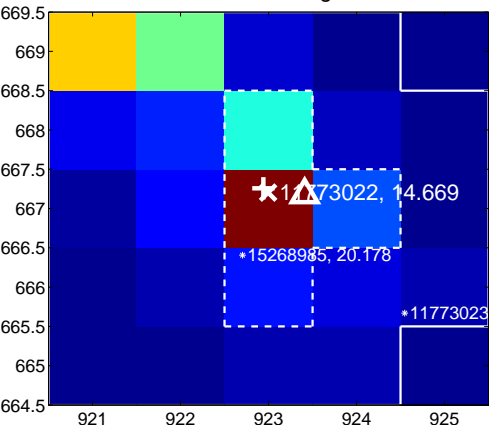
Q3 OOT image



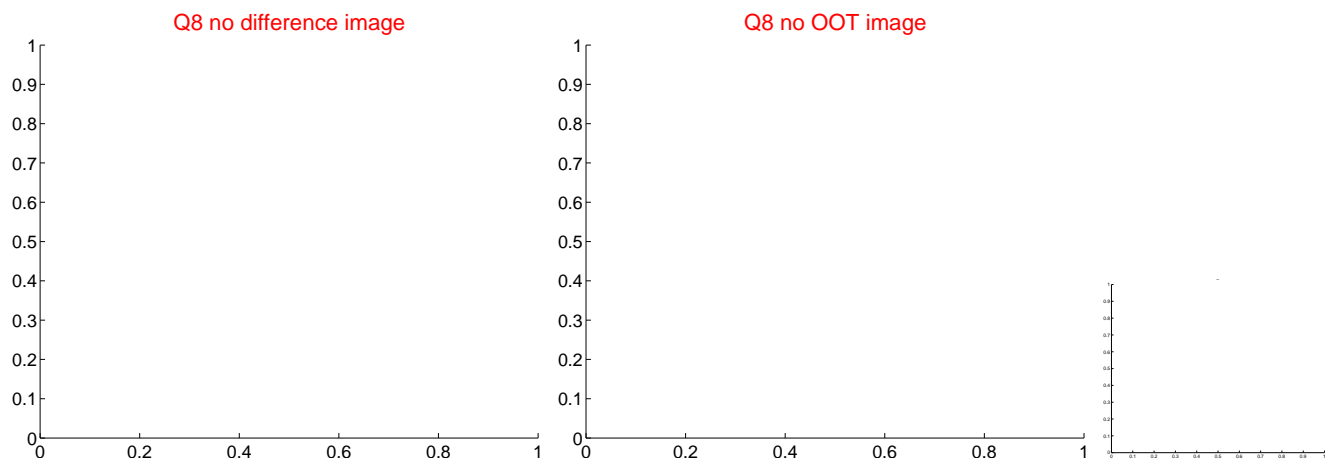
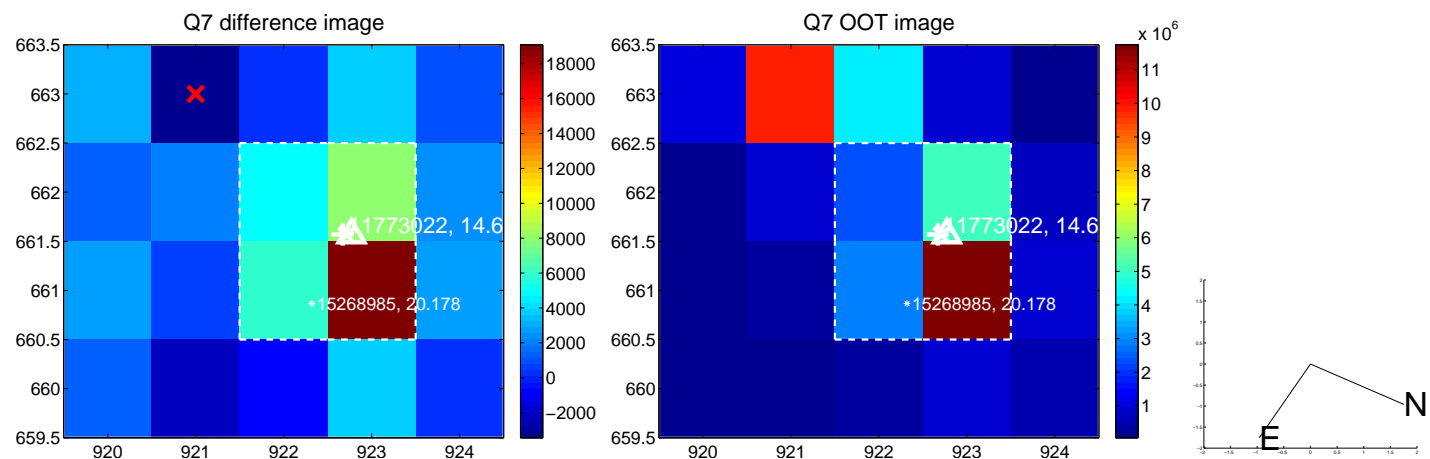
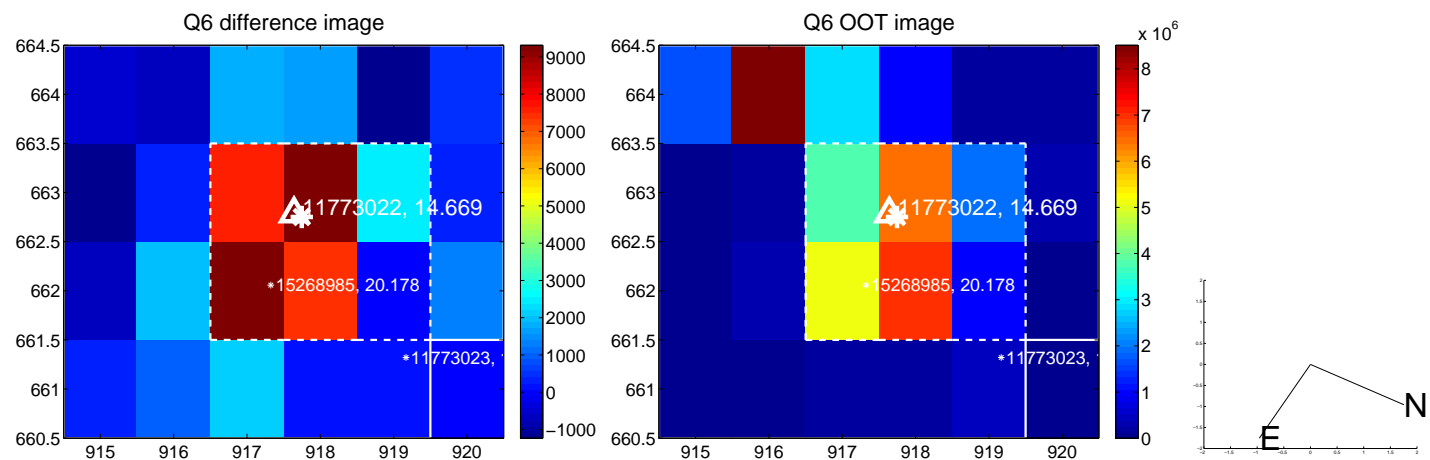
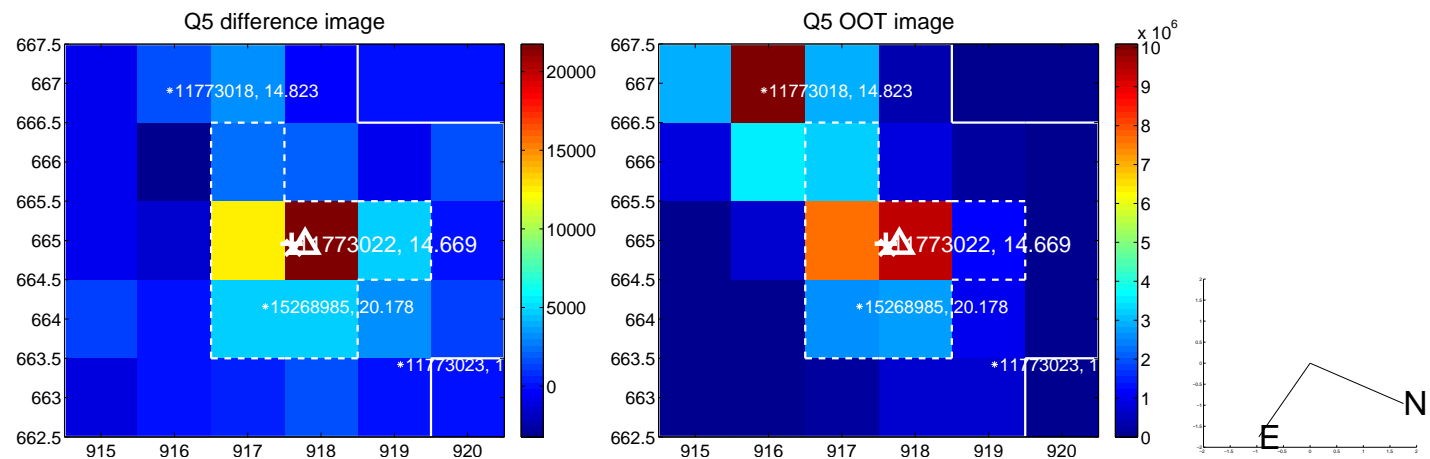
Q4 difference image



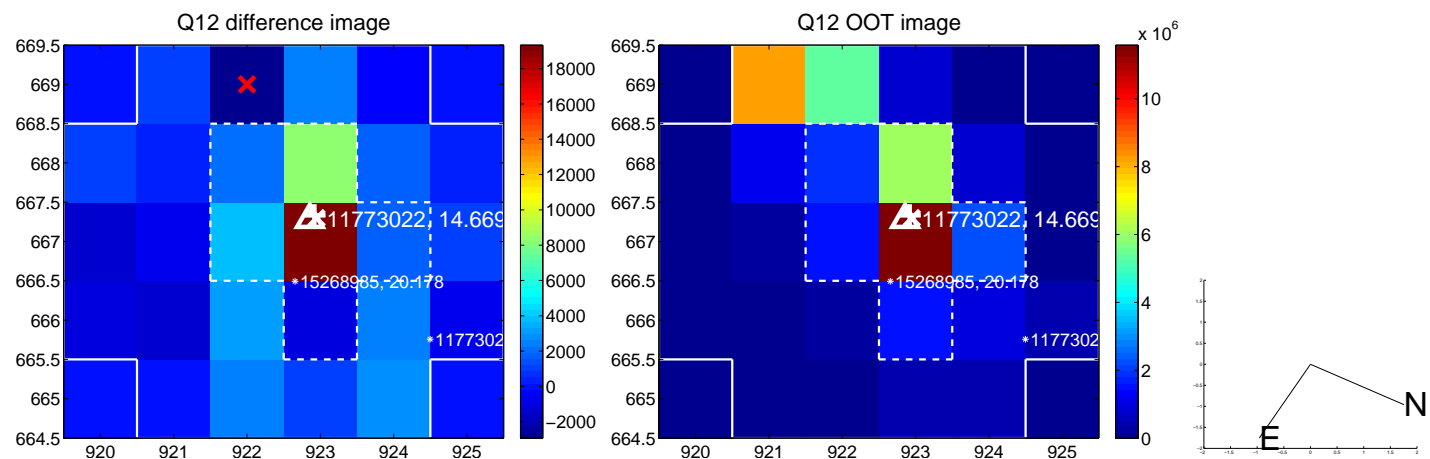
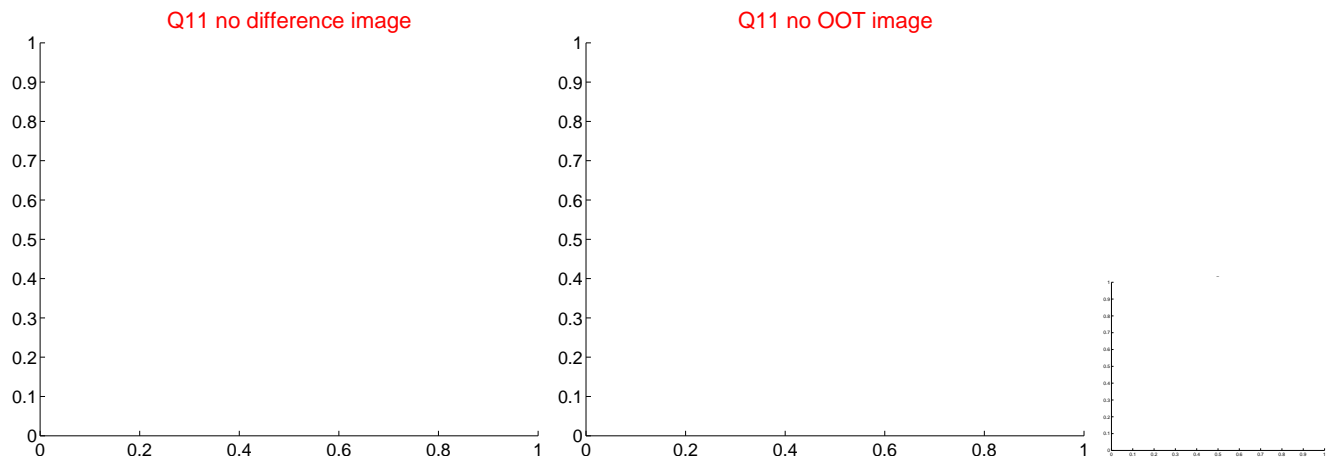
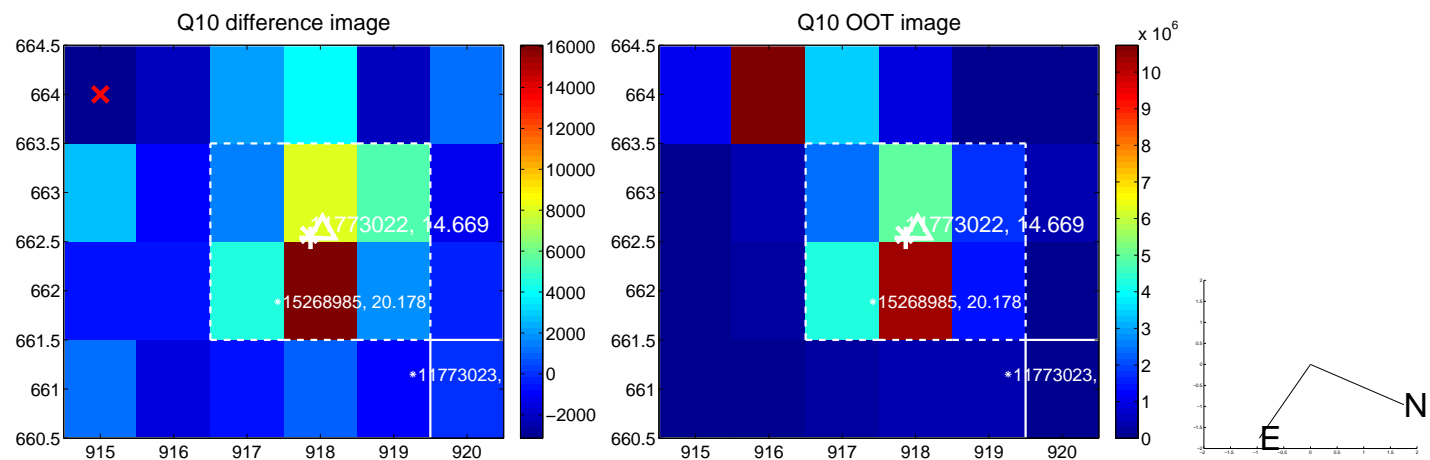
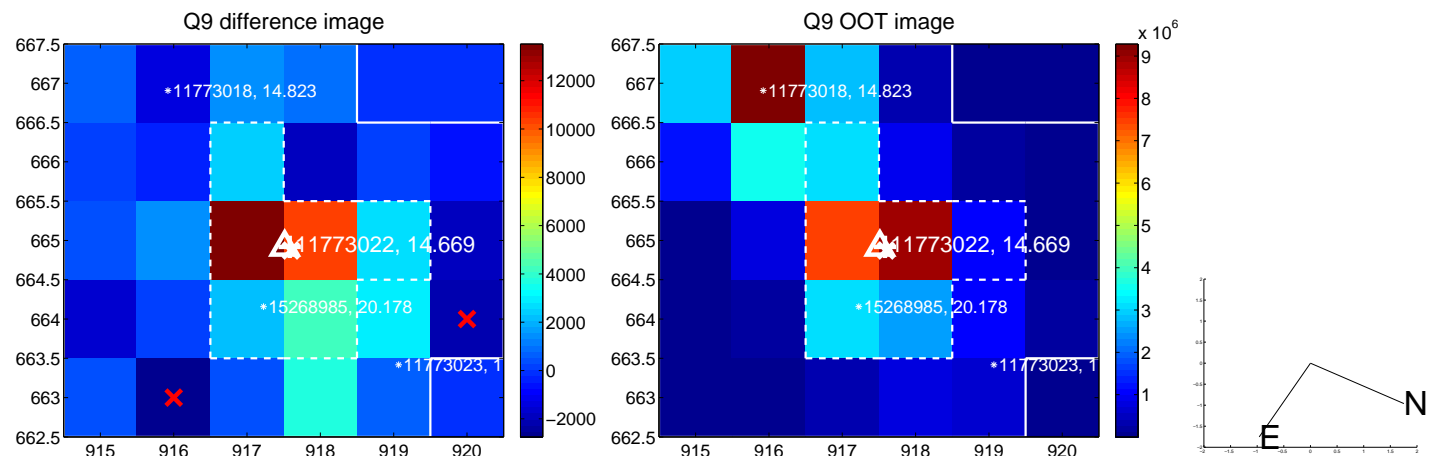
Q4 OOT image



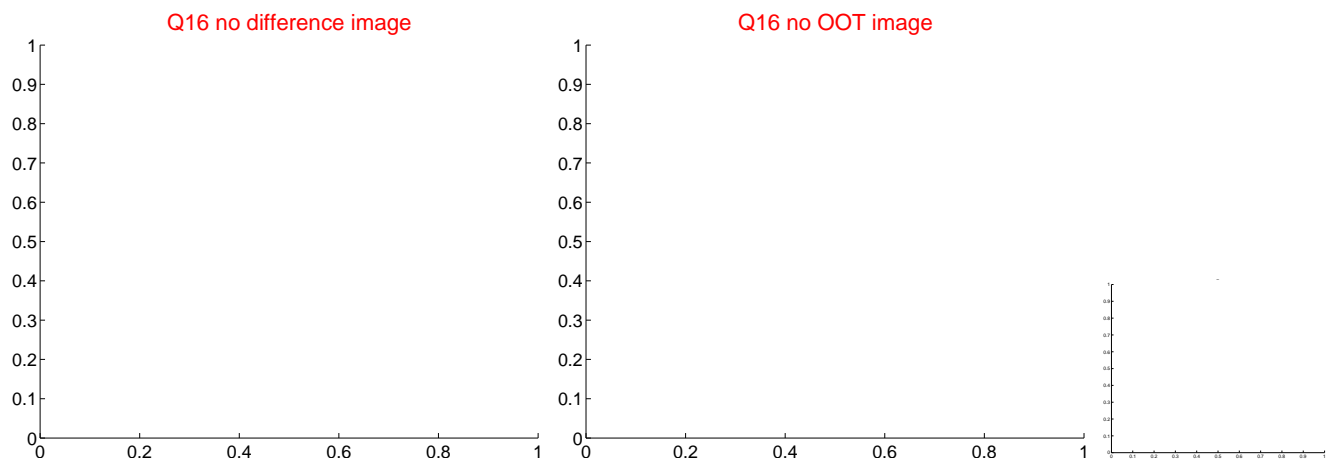
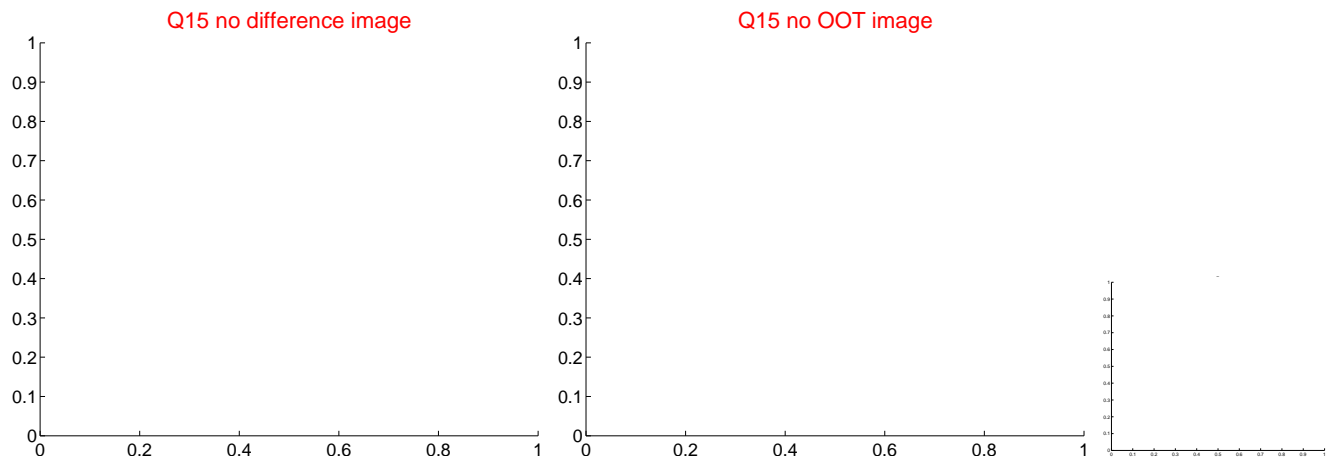
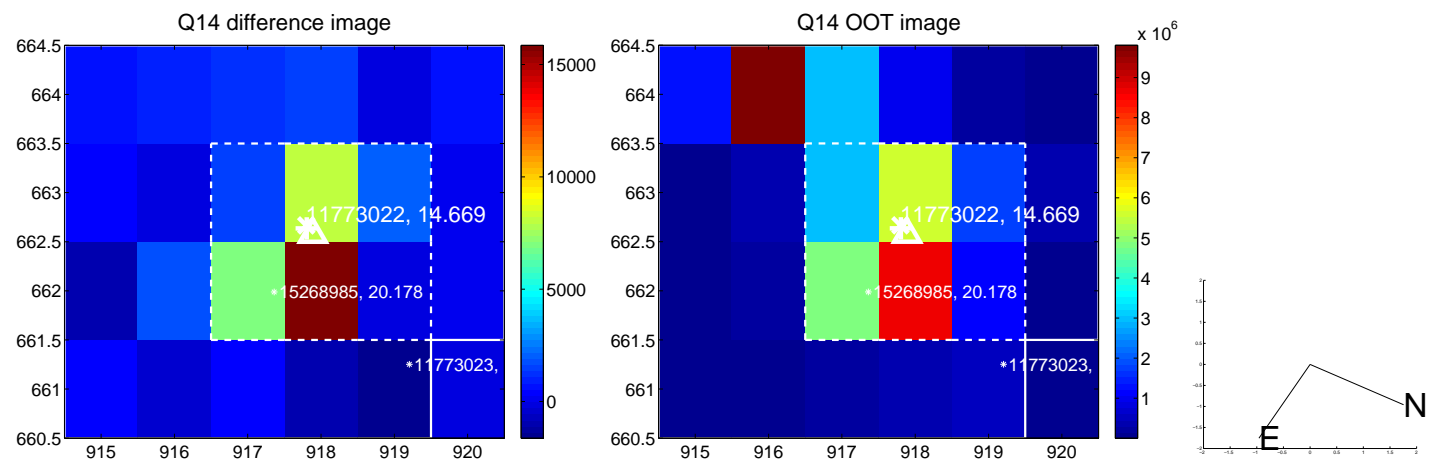
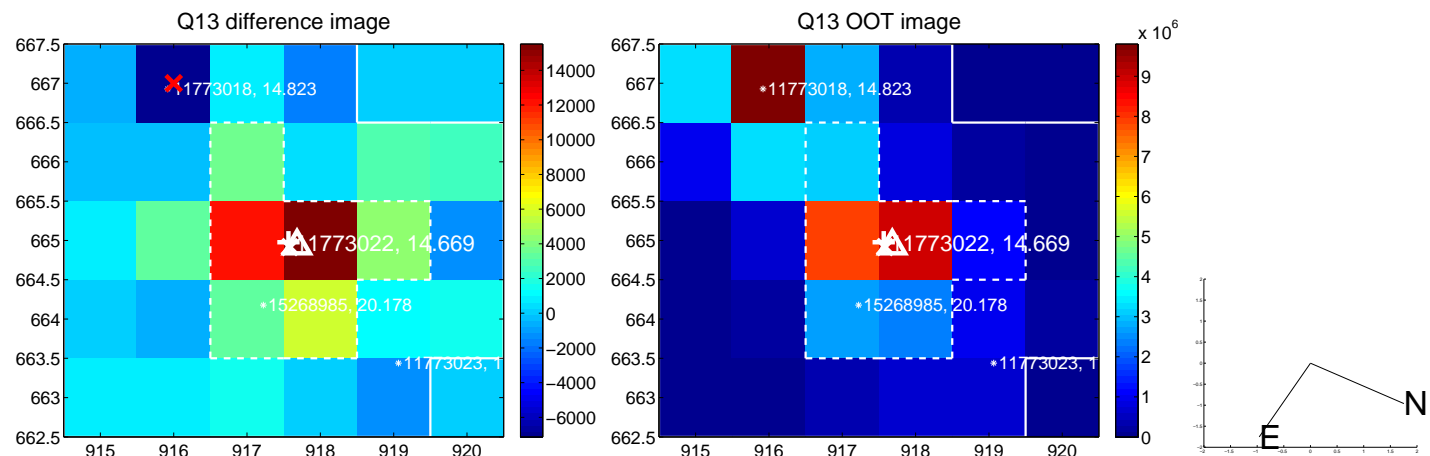
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



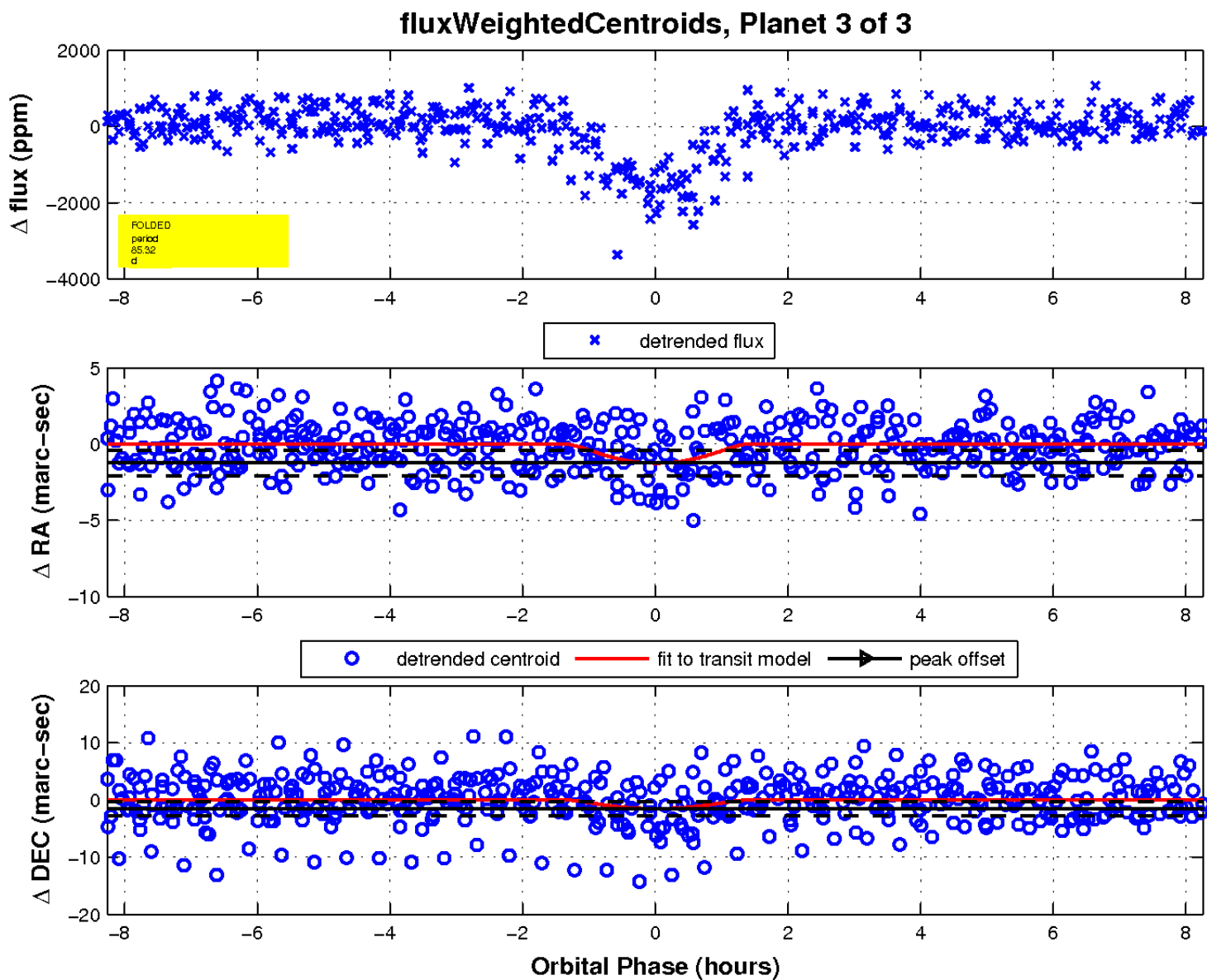
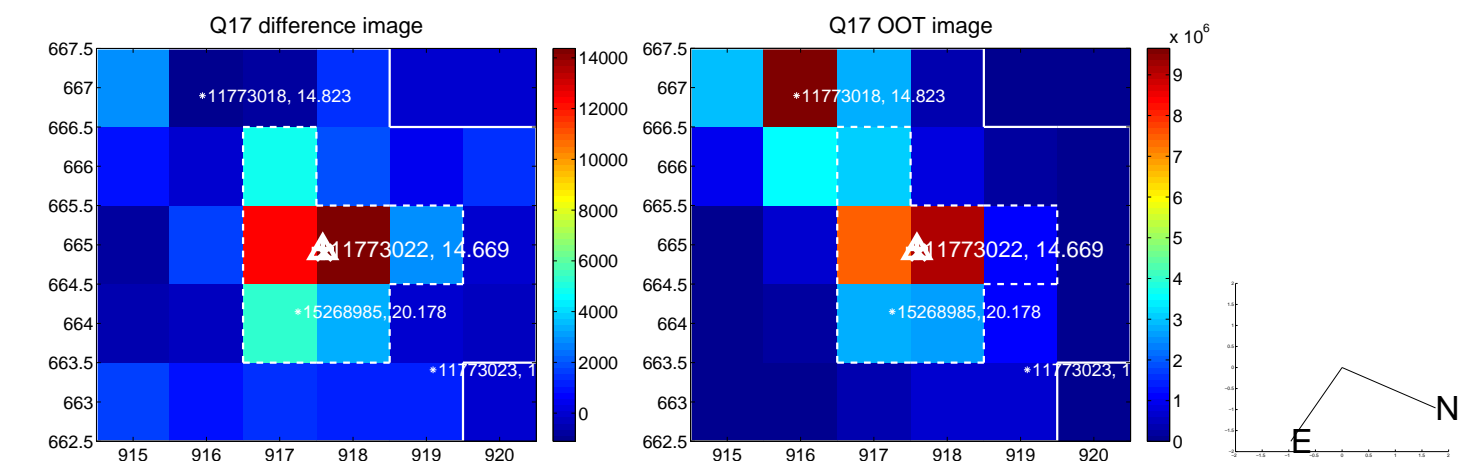
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

