

KIC 010122538

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})
010122538-01	OBS	2926.02	5.536075	131.885052	1199.7	2.293	17.2	18.4	0.56	3891	2.12	24.31
010122538-02	OBS	2926.01	12.285494	131.899000	1659.5	3.220	16.7	19.2	0.56	3891	2.66	8.40
010122538-03	OBS	2926.03	20.956933	139.081400	1970.0	3.834	16.2	17.4	0.56	3891	2.86	4.12
010122538-04	OBS	2926.04	37.633670	158.810095	1922.6	5.405	12.8	13.9	0.56	3891	3.12	1.89
010122538-05	OBS	2926.05	75.732965	201.937097	2704.5	4.691	11.4	13.0	0.56	3891	3.55	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010122538-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
010122538-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-05	OBS	PC	0.89	0	0	0	0	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.

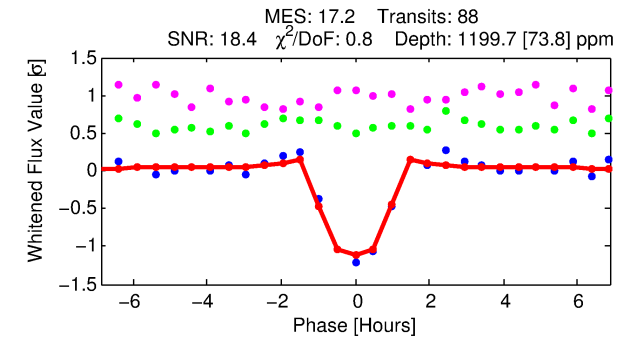
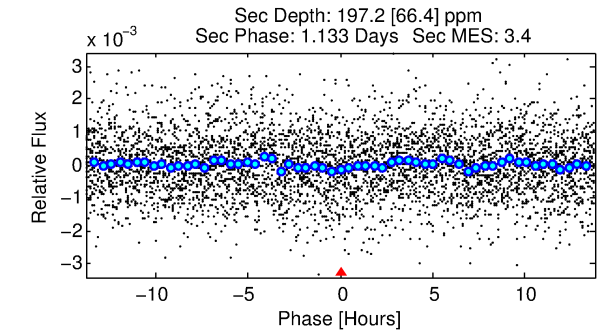
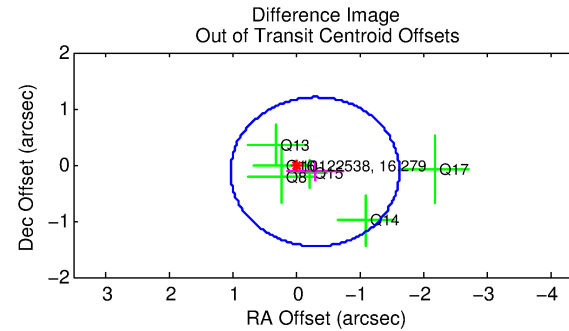
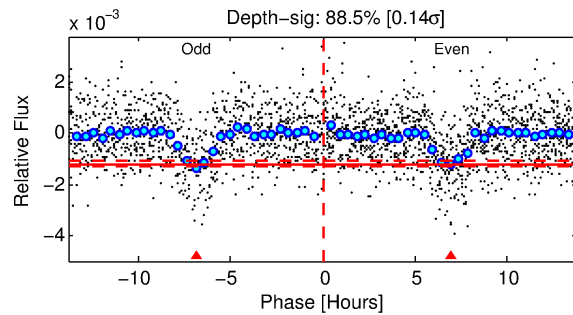
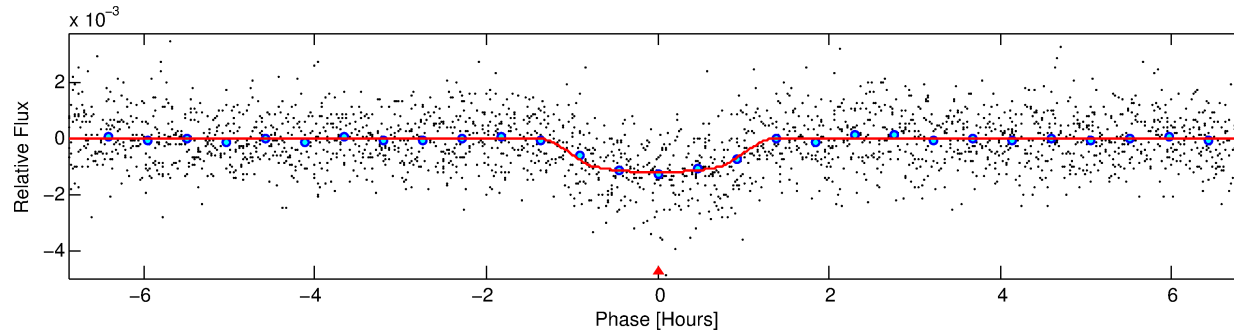
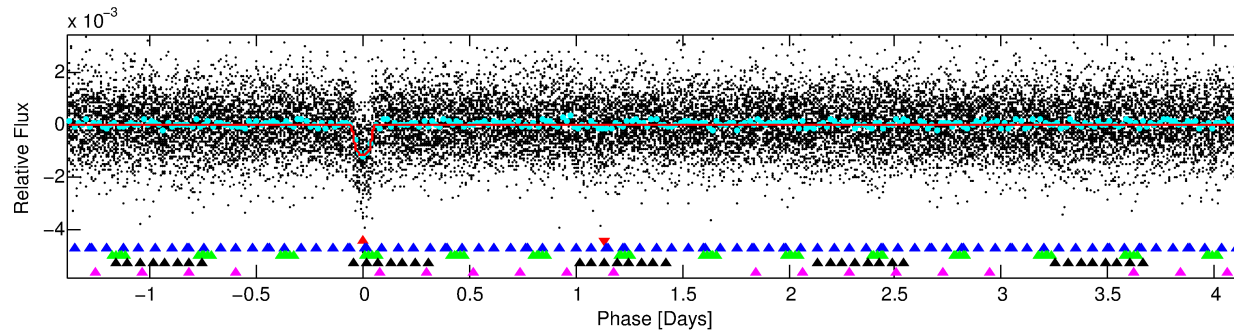
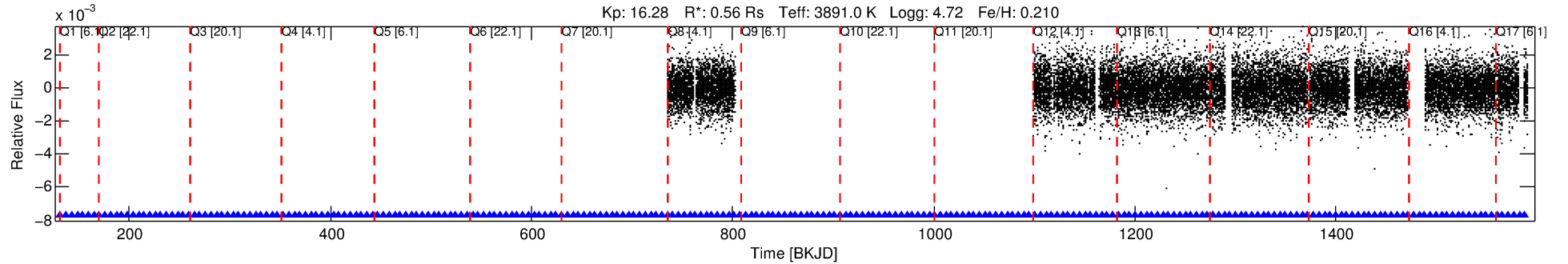
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010122538-01

No Significant Match Found

DV One-Page Summary

KIC: 10122538 Candidate: 1 of 5 Period: 5.536 d
KOI: K02926.02 Corr: 0.974



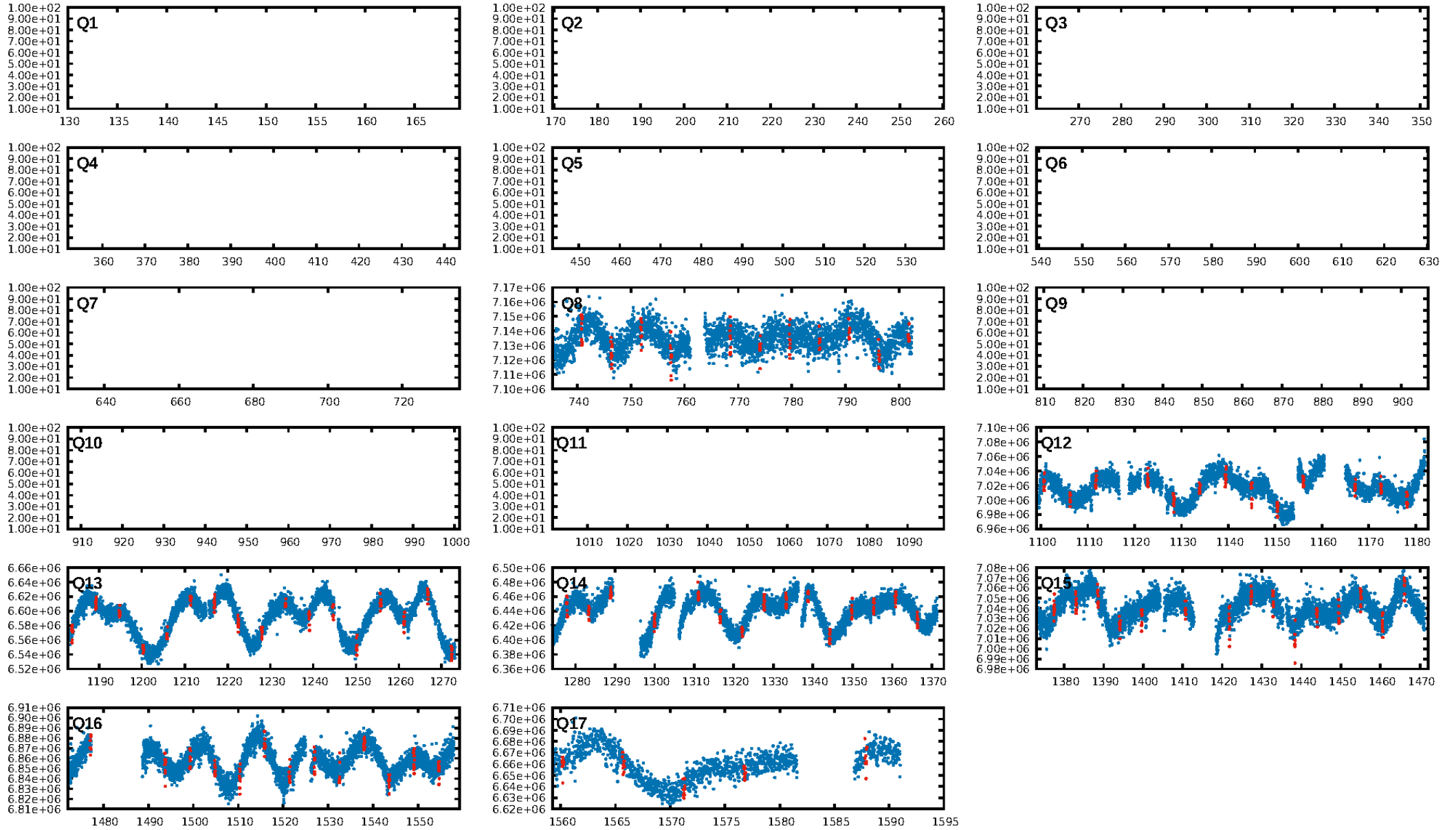
DV Fit Results:

Period = 5.53607 [0.00001] d
Epoch = 131.8851 [0.0024] BKJD
Rp/R* = 0.0345 [0.0215]
a/R* = 13.38 [30.21]
b = 0.74 [1.43]
Seff = 24.31 [2.84]
Teq = 566 [17] K
Rp = 2.12 [1.33] Re
a = 0.0518 [0.0027] AU
Ag = 64.85 [84.04] [0.76 σ]
Teffp = 2484 [805] K [2.38 σ]

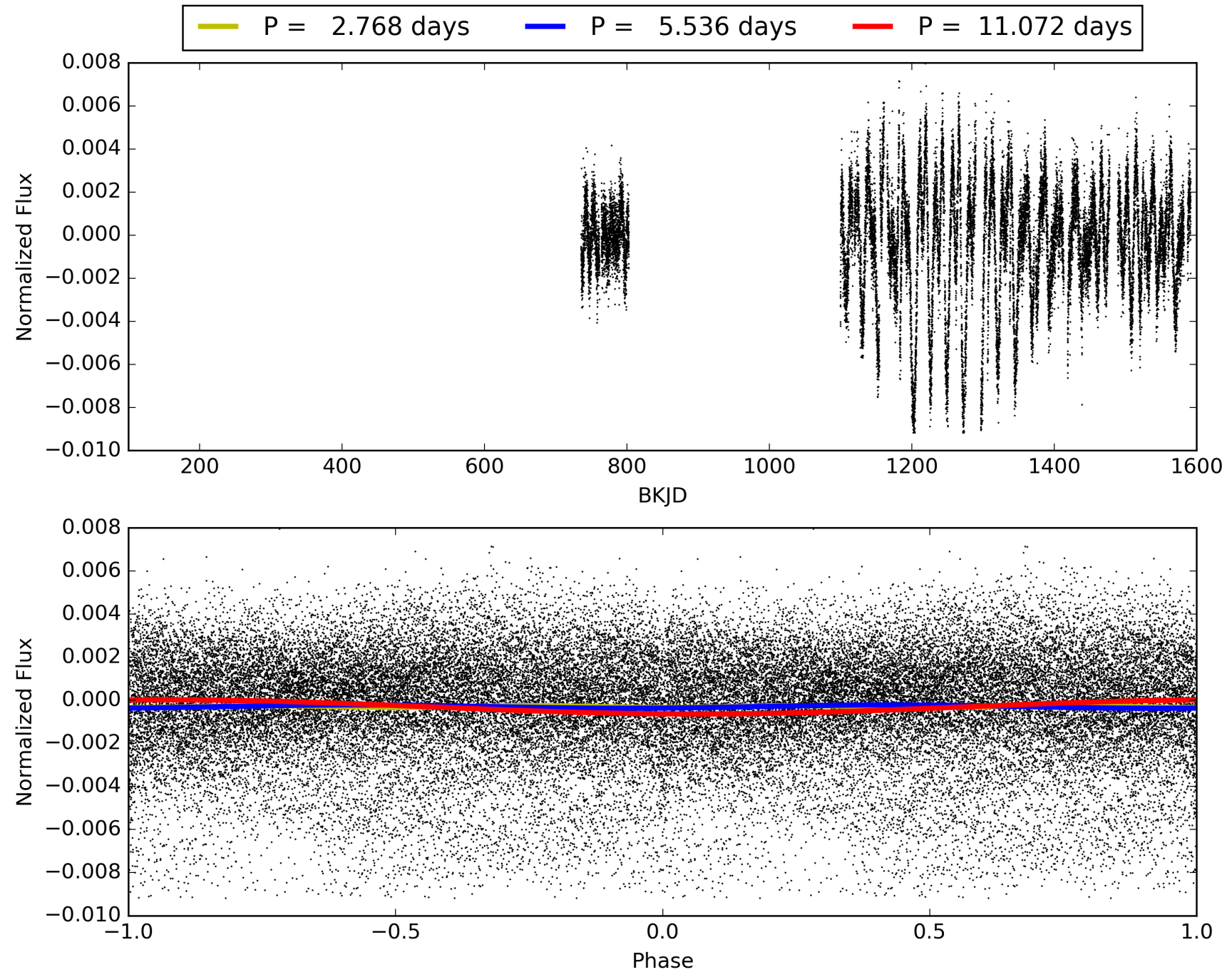
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [40.97 σ]
ModelChiSquare2-sig: 93.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.33e-65
RollingBand-fgt: 1.00 [83/83]
GhostDiagnostic-chr: 35.13
Centroid-sig: 1.5%
Centroid-so: 1.199 arcsec [2.00 σ]
OotOffset-rm: 0.329 arcsec [0.74 σ]
OotOffset-st: 1/1/2/2 [6]
KicOffset-rm: 0.538 arcsec [1.38 σ]
KicOffset-st: 1/1/2/2 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 1.00 [7/7]

TCE 010122538-01, PDC Light Curves

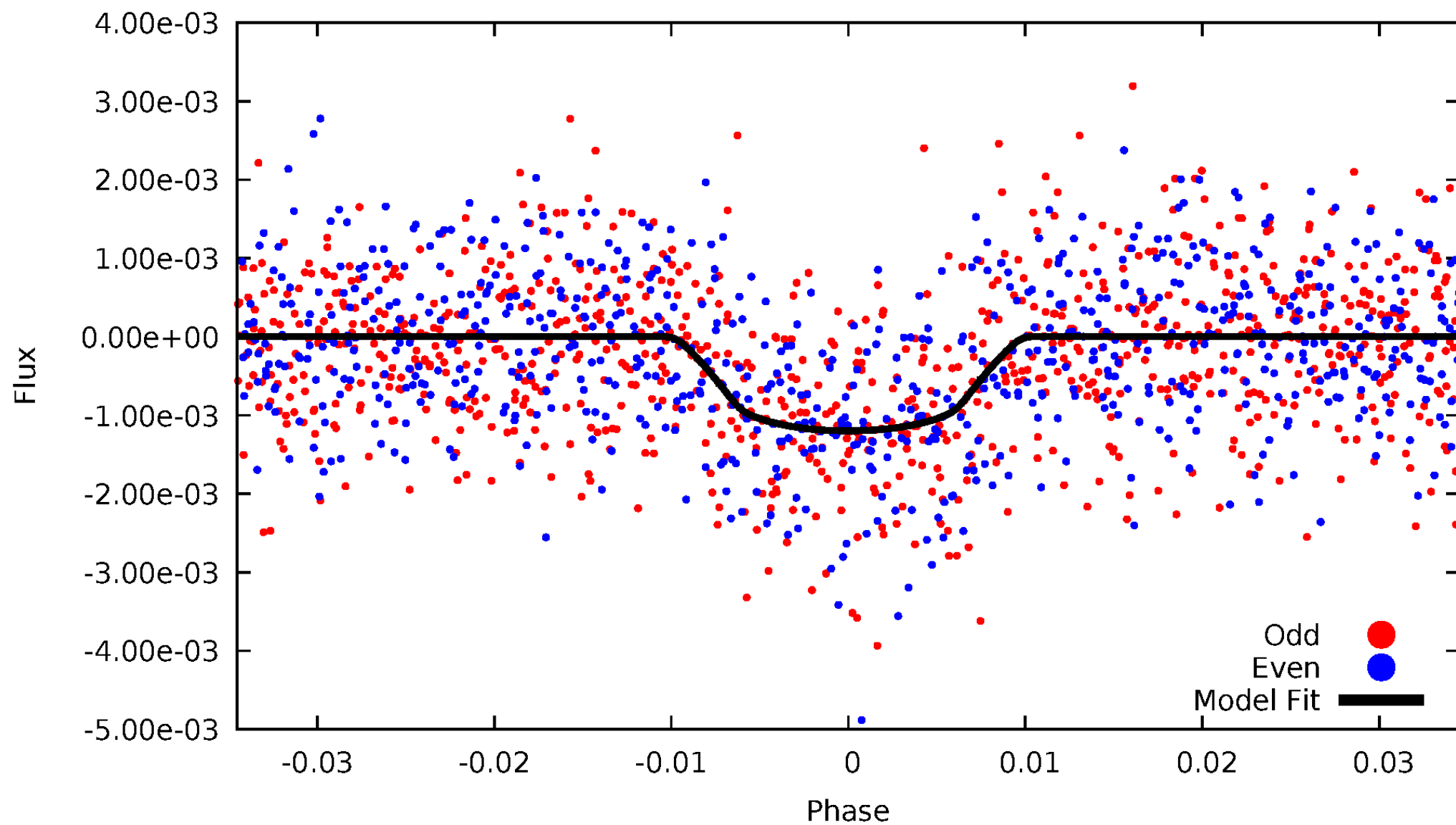


TCE 010122538-01



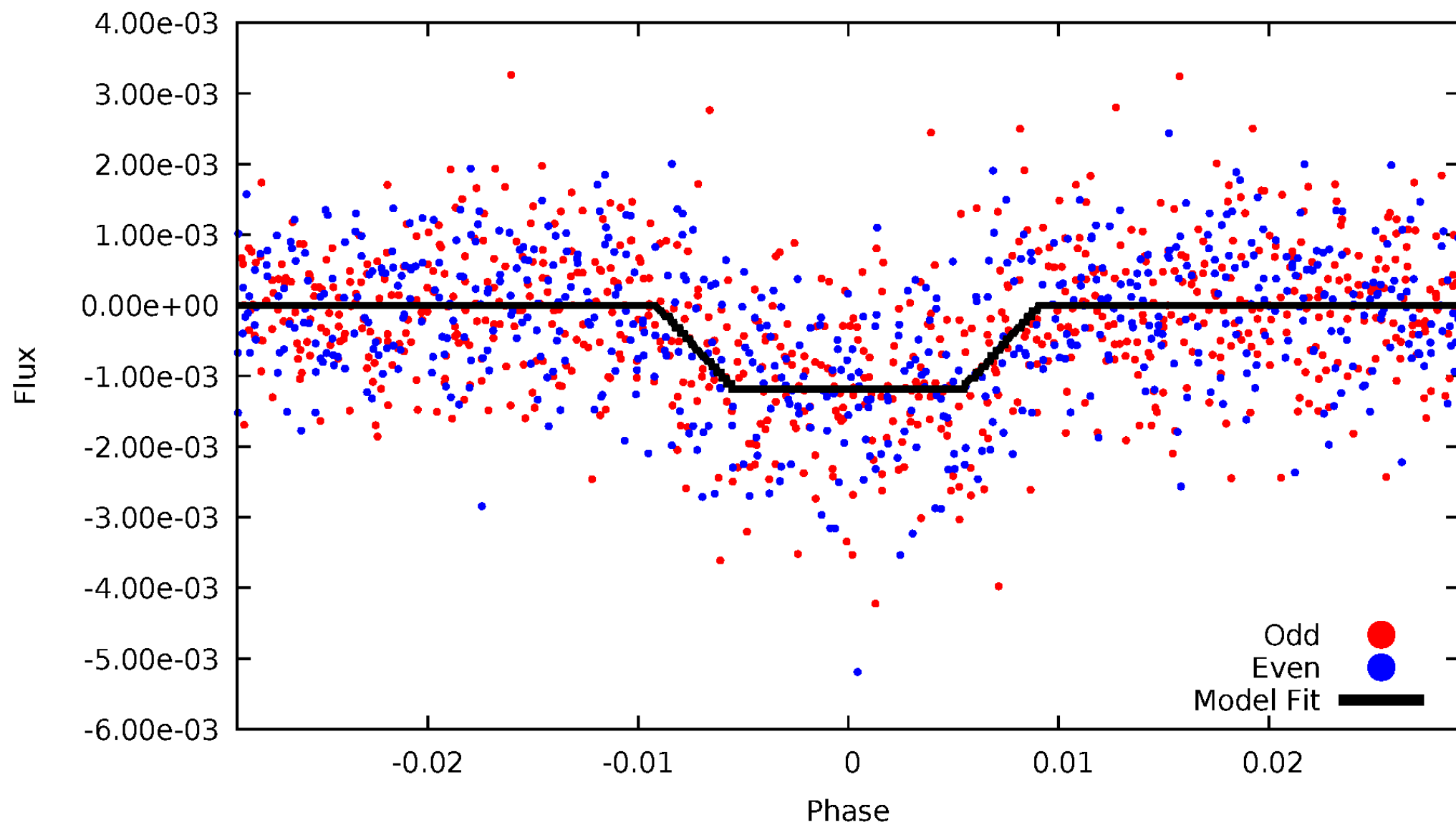
DV Odd/Even

TCE 010122538-01

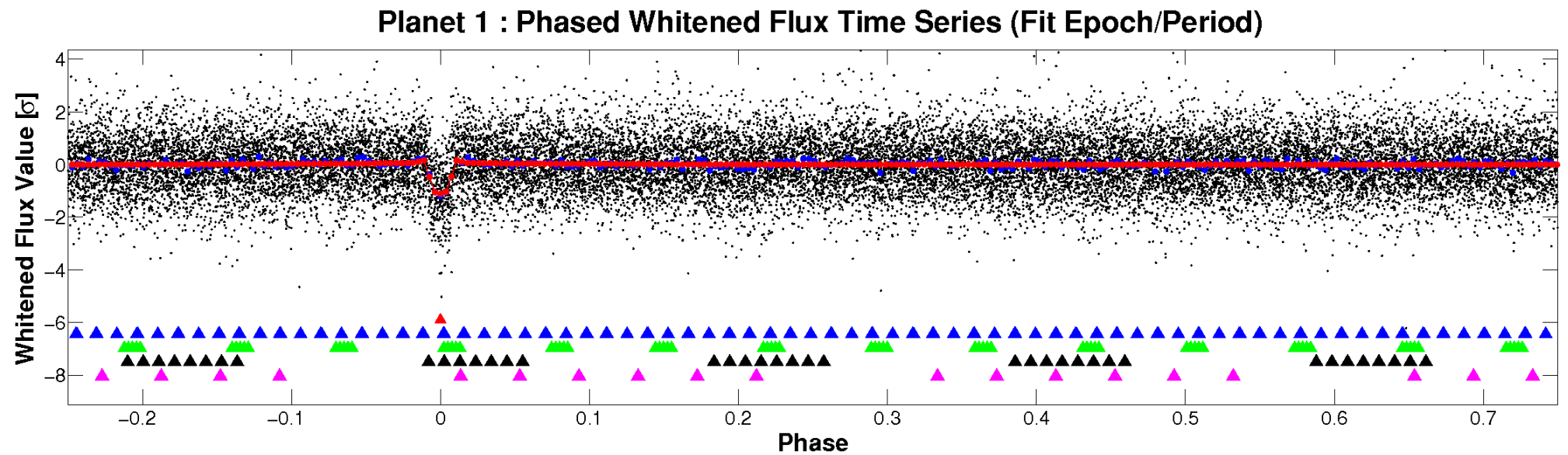
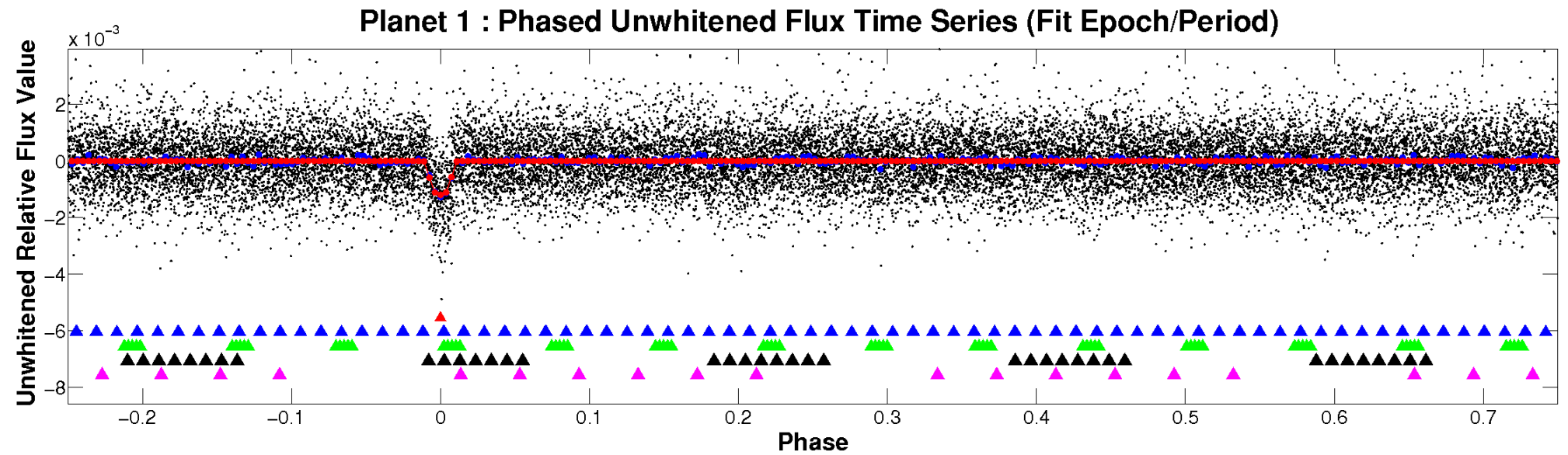


ALT Odd/Even

TCE 010122538-01

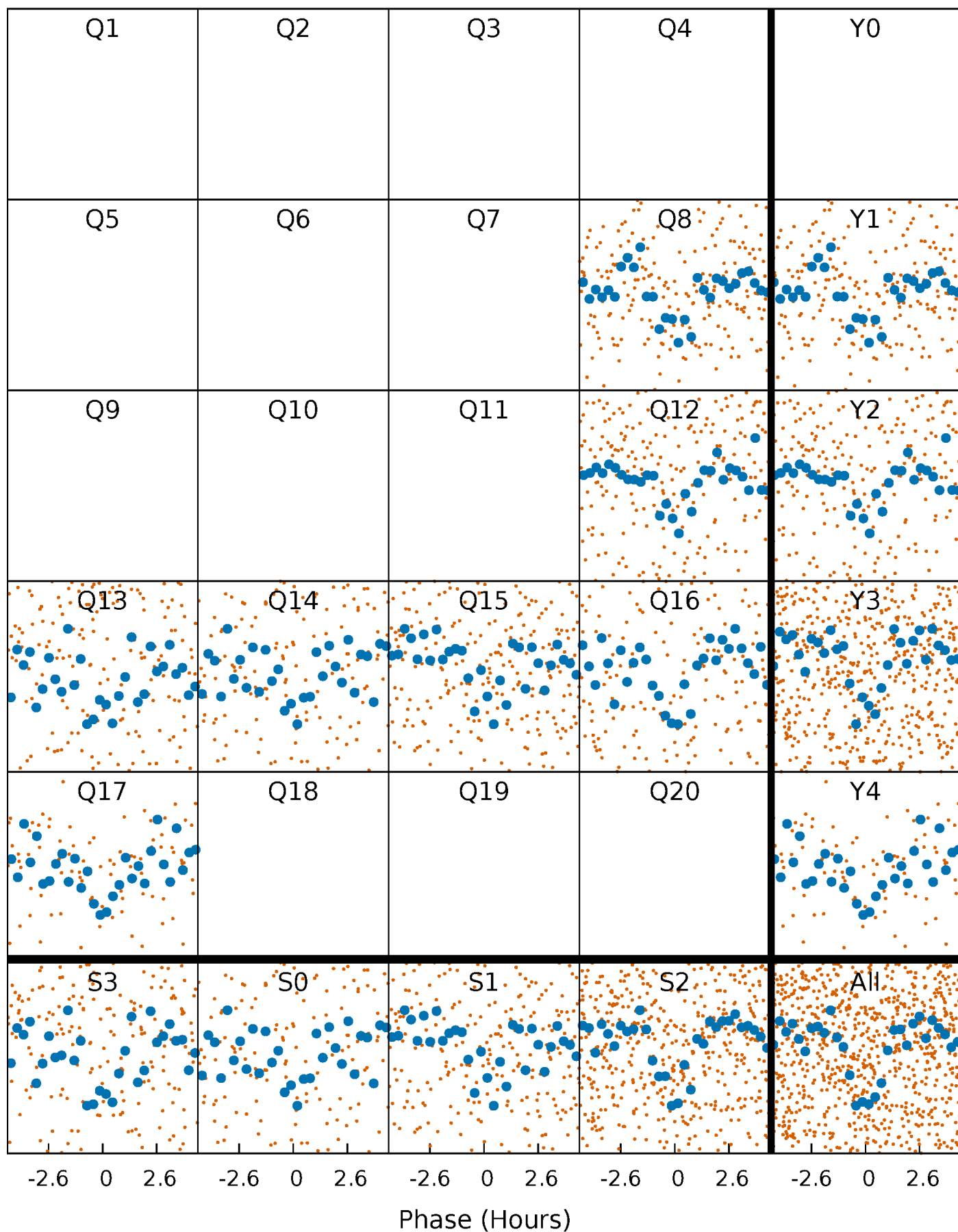


Non-Whitened Vs. Whitened Light Curve



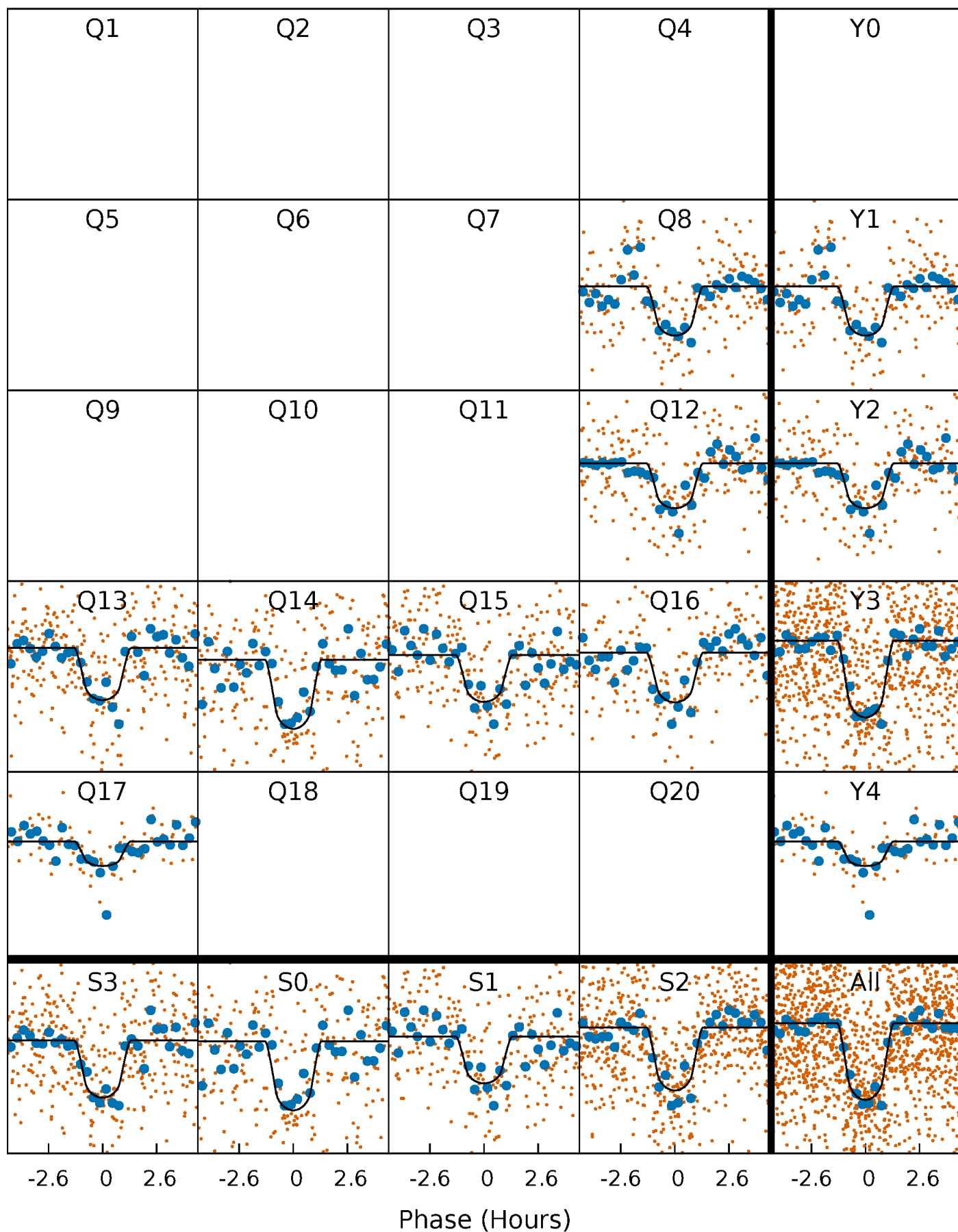
PDC Quarter-Phased Transit Curves

TCE 010122538-01 P= 5.536075 Days $T_0=131.885052$ (BKJD)



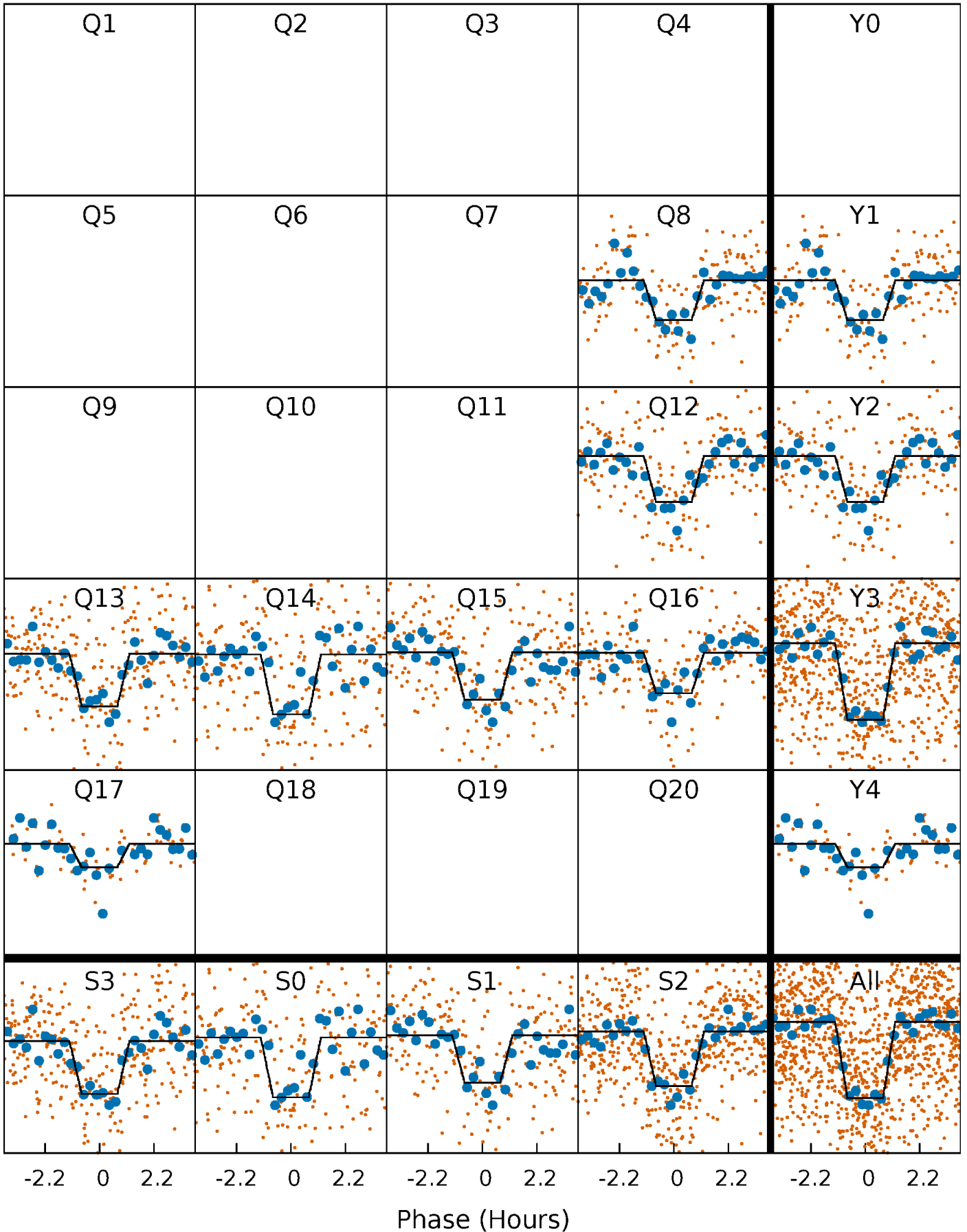
DV Quarter-Phased Transit Curves

TCE 010122538-01 P= 5.536075 Days $T_0=131.885052$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

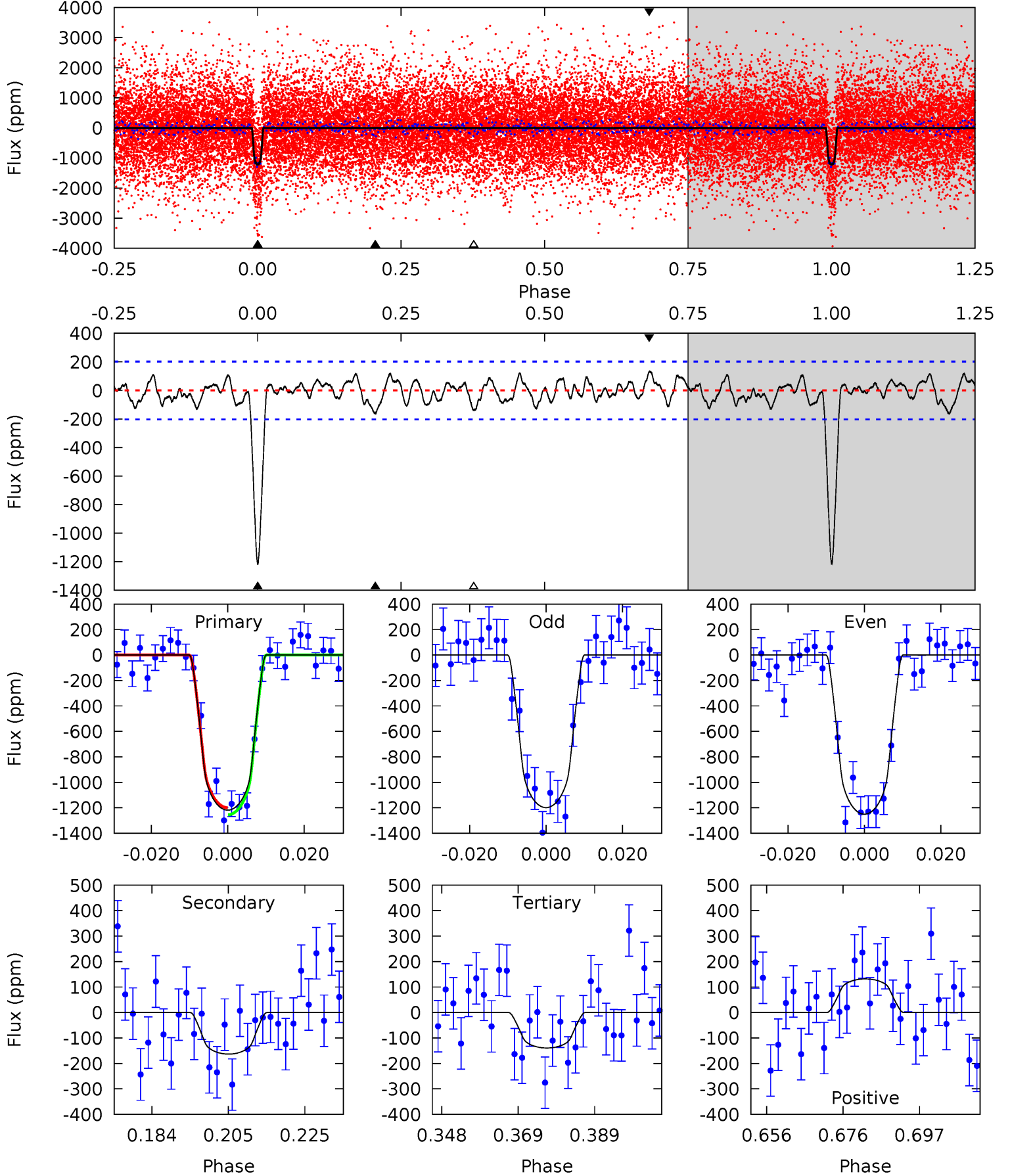
TCE 010122538-01 P= 5.536071 Days $T_0=131.887675$ (BKJD)



DV Model-Shift Uniqueness Test

010122538-01, P = 5.536075 Days, E = 131.885052 Days

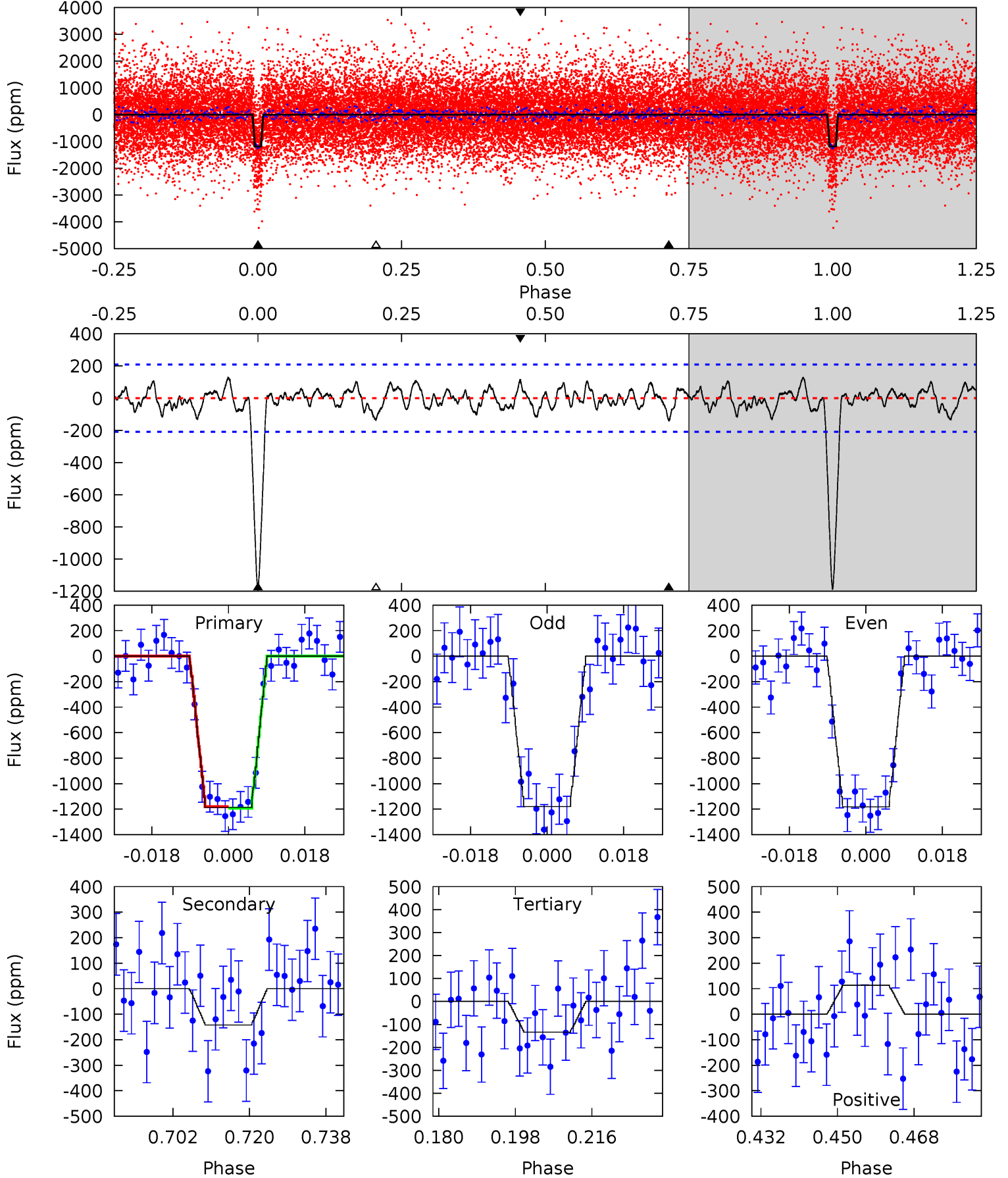
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	3.95	3.37	3.19	4.89	2.32	1.41	26.1	26.3	0.58	0.76	0.62	1.02	0.10	0.67



Alt Model-Shift Uniqueness Test

010122538-01, P = 5.536071 Days, E = 131.887675 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.9	3.35	3.14	2.67	4.91	2.37	1.20	24.8	25.2	0.21	0.68	0.03	0.96	0.10	0.14



Stellar Parameters For KIC 010122538

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3891^{+70}_{-86}	$4.718^{+0.018}_{-0.042}$	$0.210^{+0.150}_{-0.150}$	$0.564^{+0.035}_{-0.026}$	$0.605^{+0.025}_{-0.034}$	$4.759^{+0.443}_{-0.674}$
	+2%/-2%	+0%/-1%	+71%/-71%	+6%/-5%	+4%/-6%	+9%/-14%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010122538-01 / KOI 2926.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-163 ± 41	$2.22^{+1.24}_{-1.14}$	795^{+19}_{-20}	2831^{+708}_{-327}	48^{+165}_{-29}
Alt.	-142 ± 43	$2.15^{+1.34}_{-1.18}$	795^{+18}_{-20}	2810^{+763}_{-358}	46^{+180}_{-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

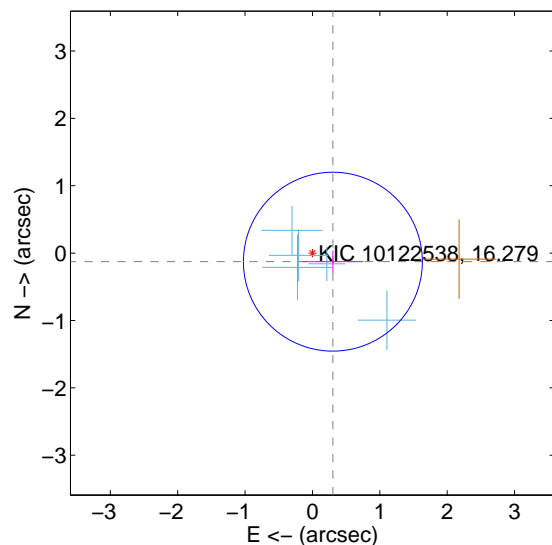
Supplemental centroid analysis for 010122538-01. Kepler magnitude: 16.28. Transit SNR 18.39

There are 5 quarters with good PRF difference image offsets

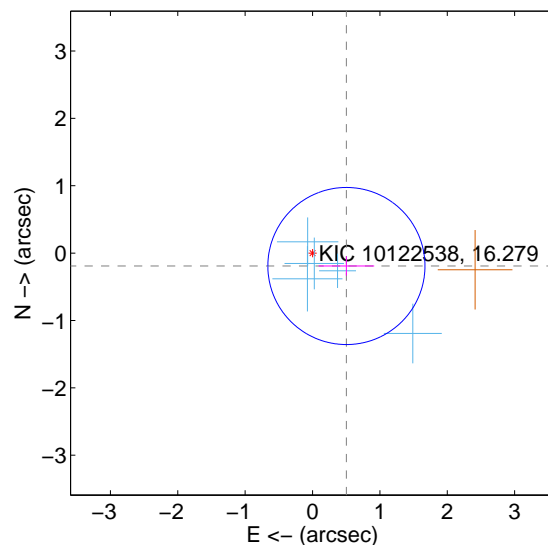
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.329 ± 0.443	0.74	-0.303 ± 0.449	-0.127 ± 0.165
PRF-fit source offset from KIC position	0.538 ± 0.389	1.38	-0.503 ± 0.412	-0.192 ± 0.143
photometric centroid source offset	1.20 ± 0.60	2.00	-0.15 ± 0.57	-1.19 ± 0.60

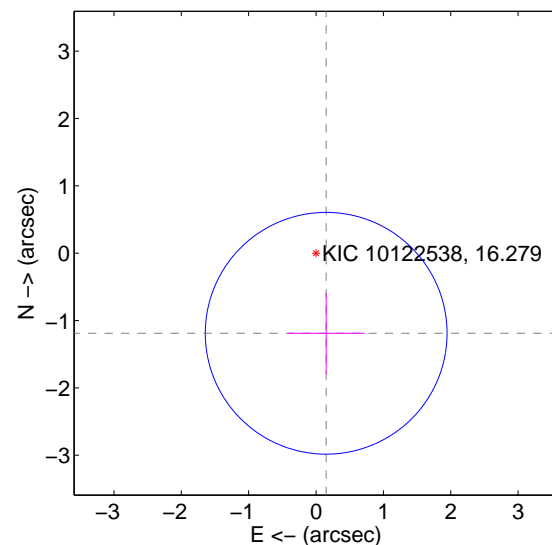
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

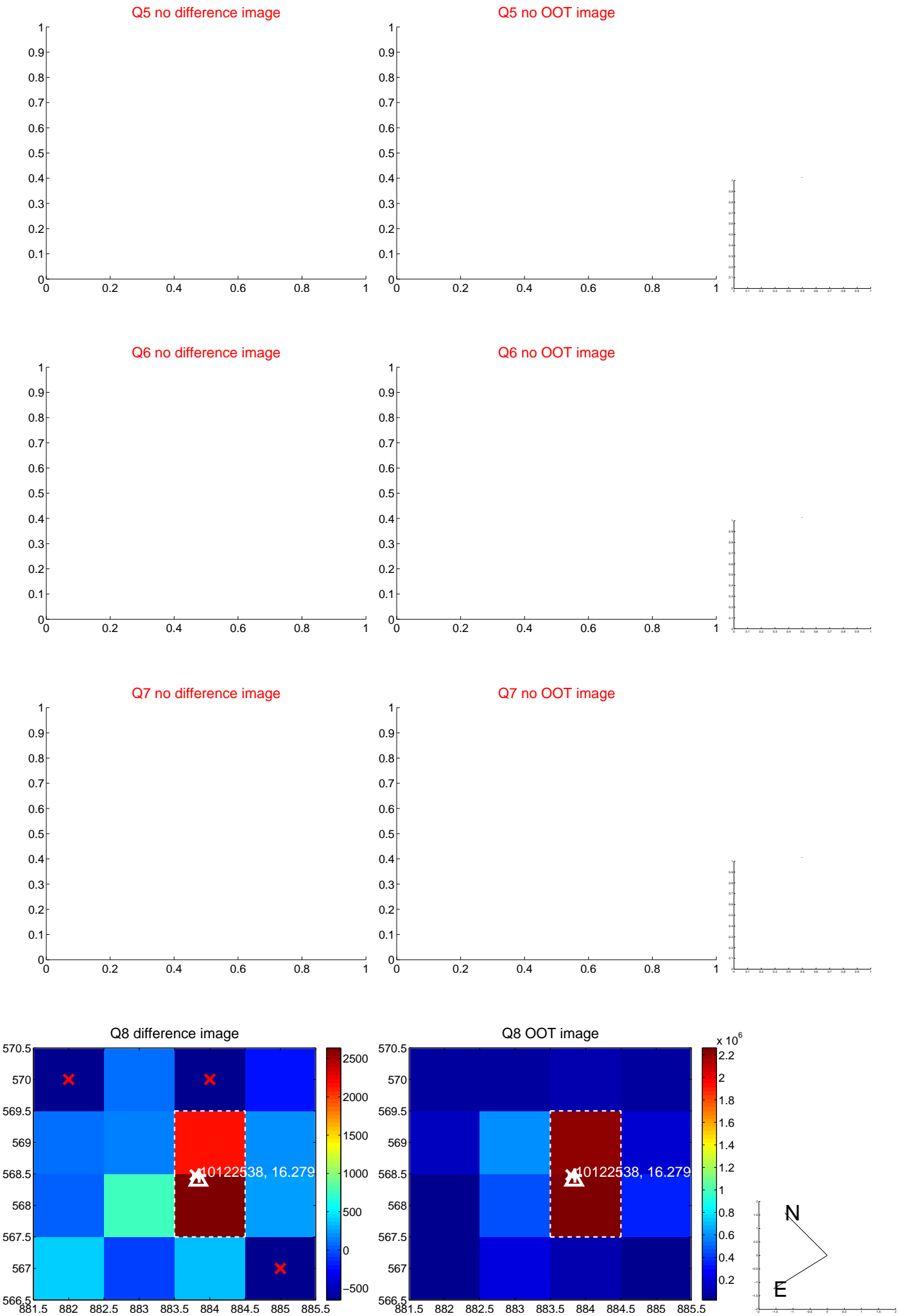


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

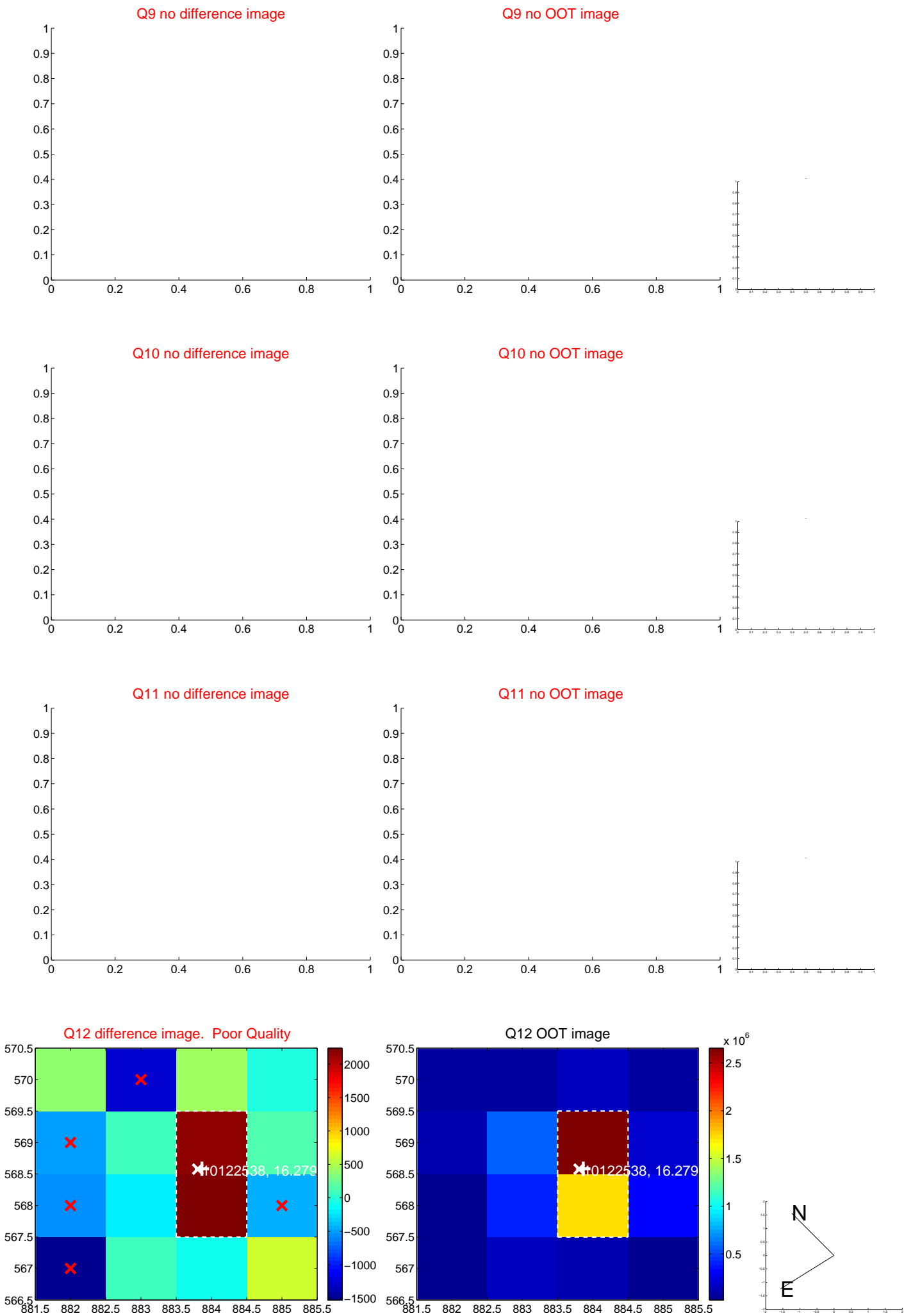
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



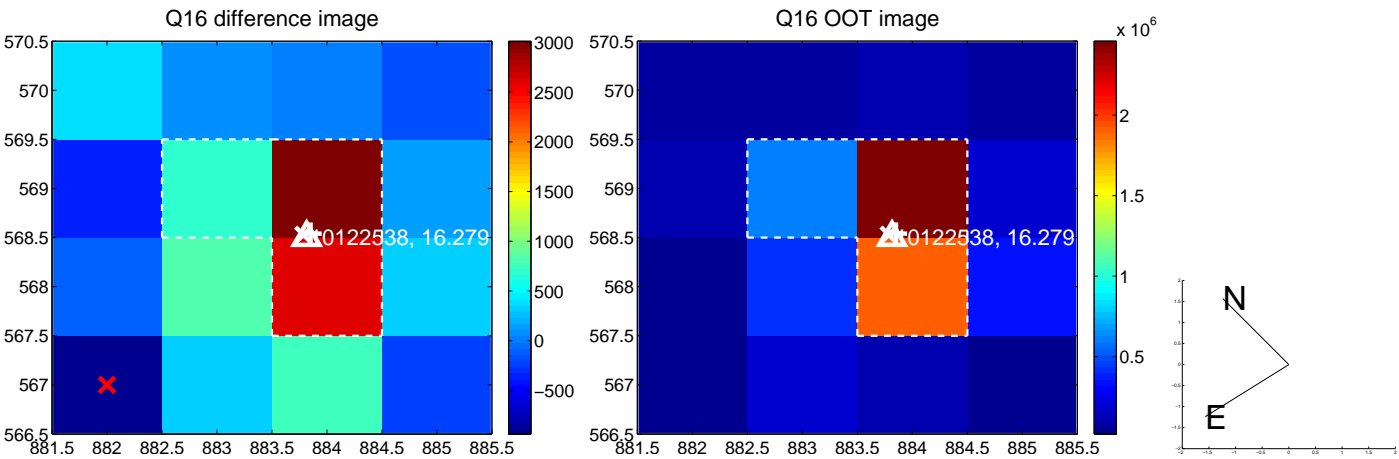
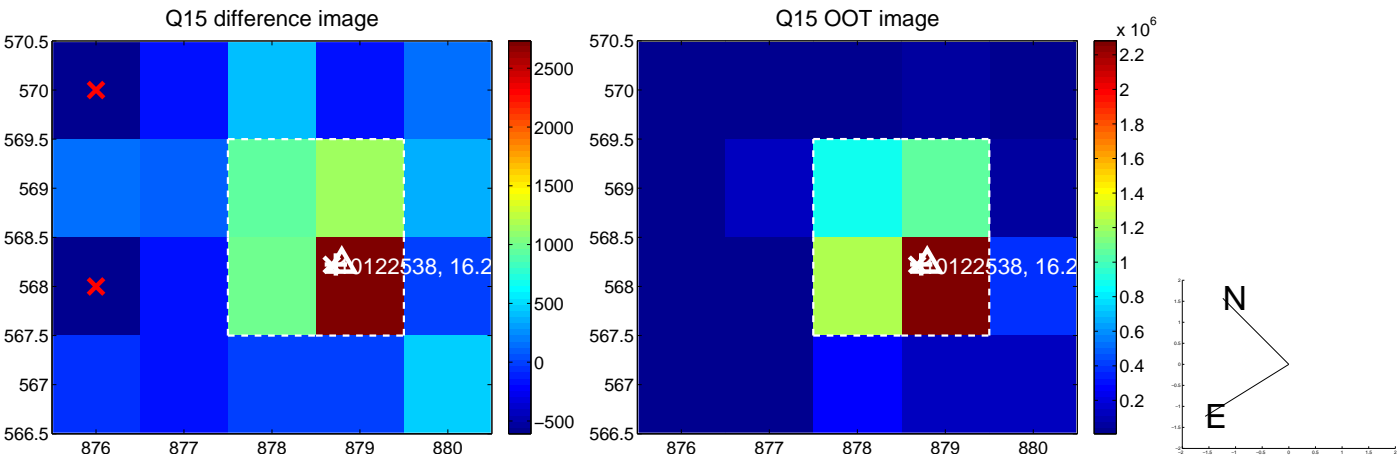
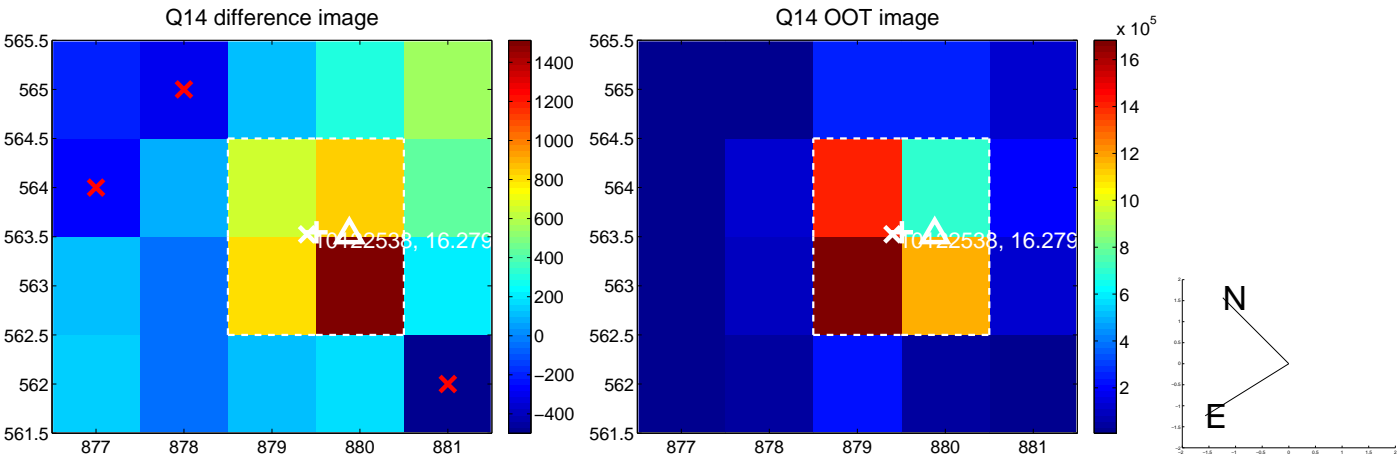
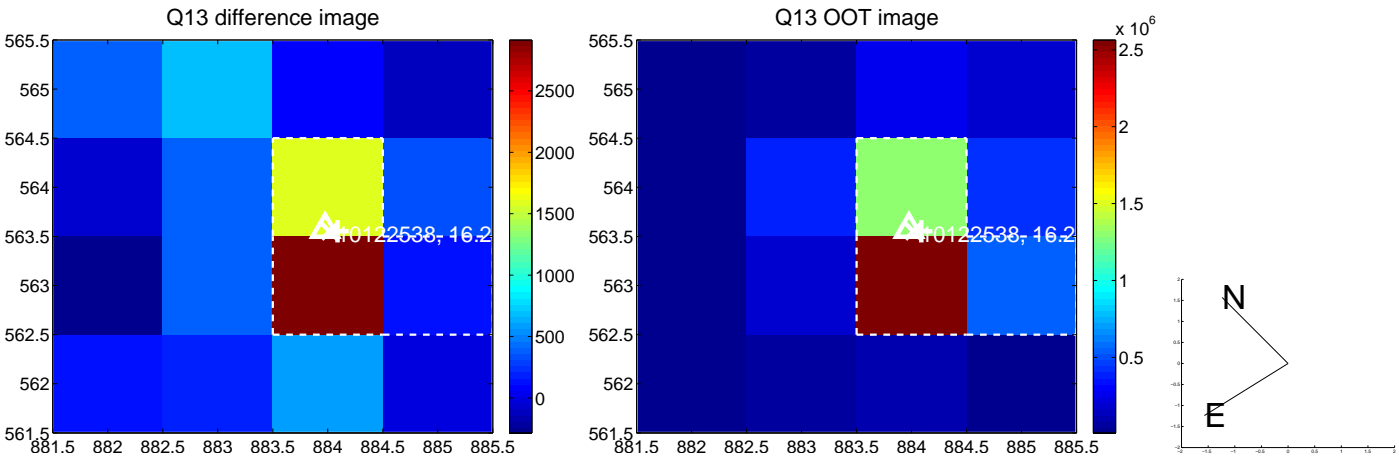
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



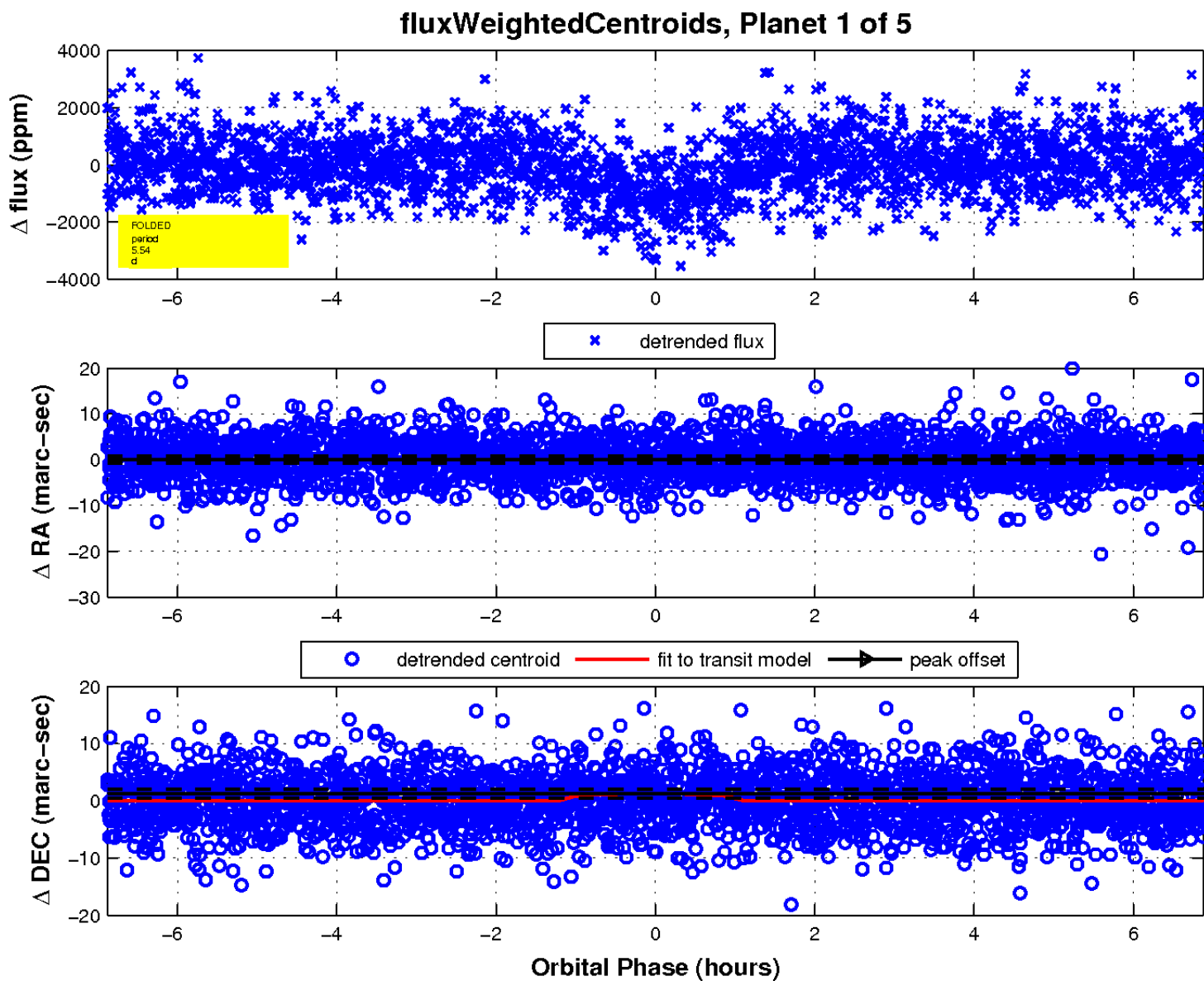
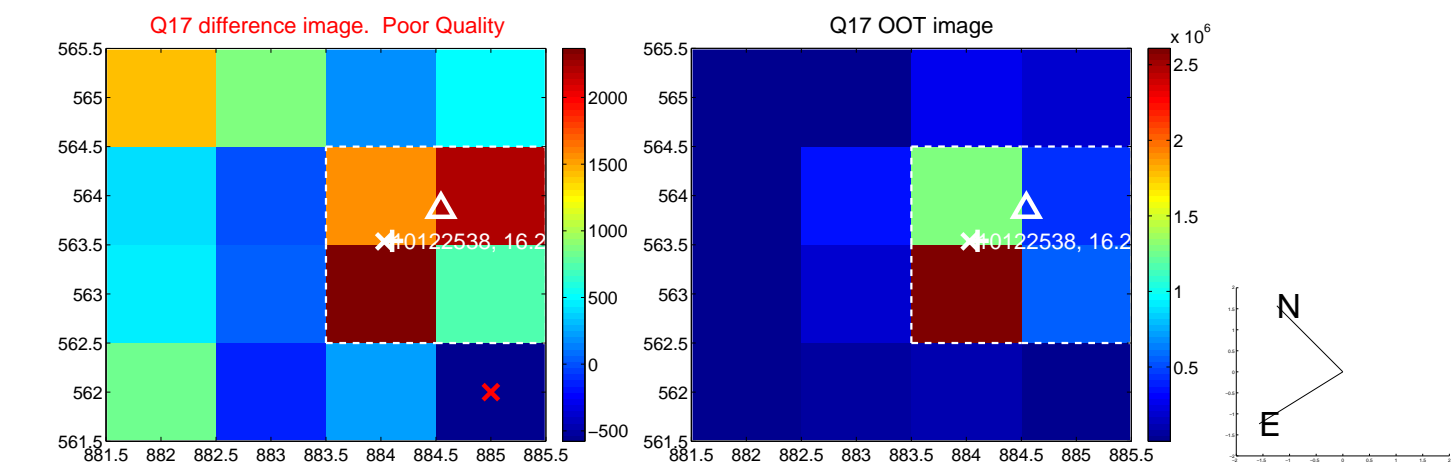
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

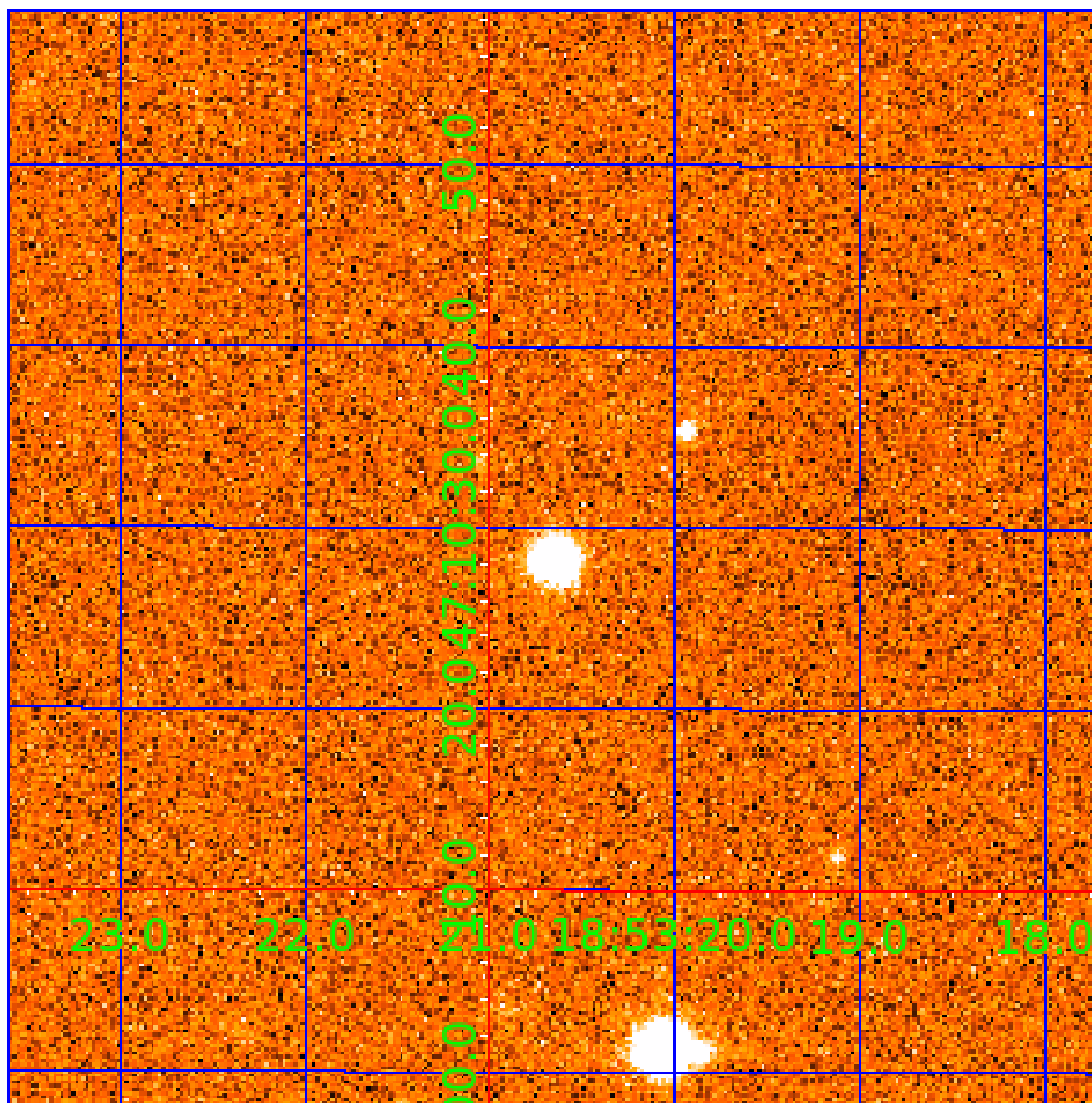


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010122538

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})
010122538-01	OBS	2926.02	5.536075	131.885052	1199.7	2.293	17.2	18.4	0.56	3891	2.12	24.31
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010122538-04	OBS	2926.04	37.633670	158.810095	1922.6	5.405	12.8	13.9	0.56	3891	3.12	1.89
010122538-05	OBS	2926.05	75.732965	201.937097	2704.5	4.691	11.4	13.0	0.56	3891	3.55	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010122538-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
010122538-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-05	OBS	PC	0.89	0	0	0	0	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.

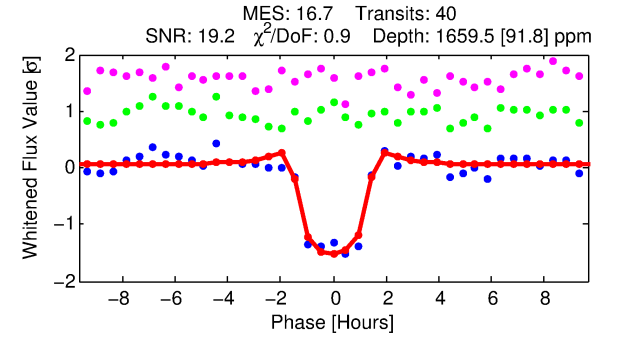
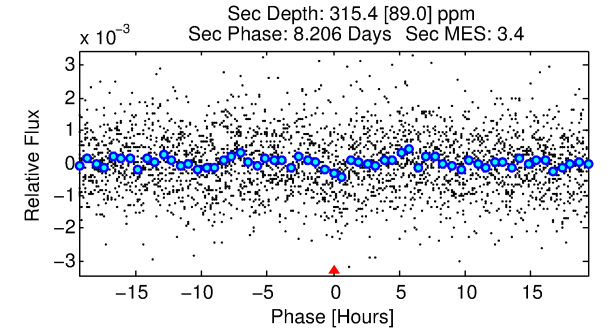
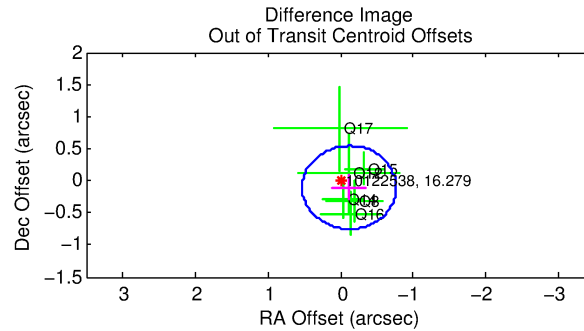
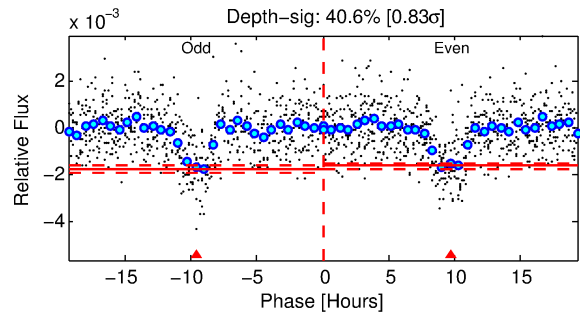
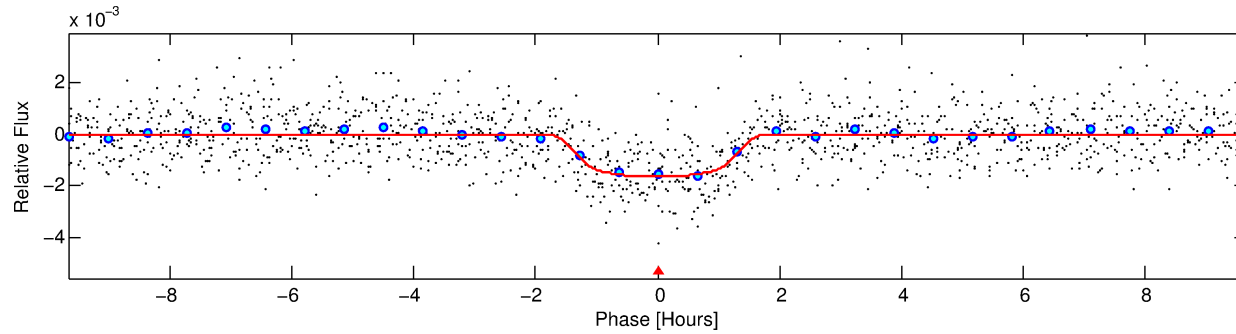
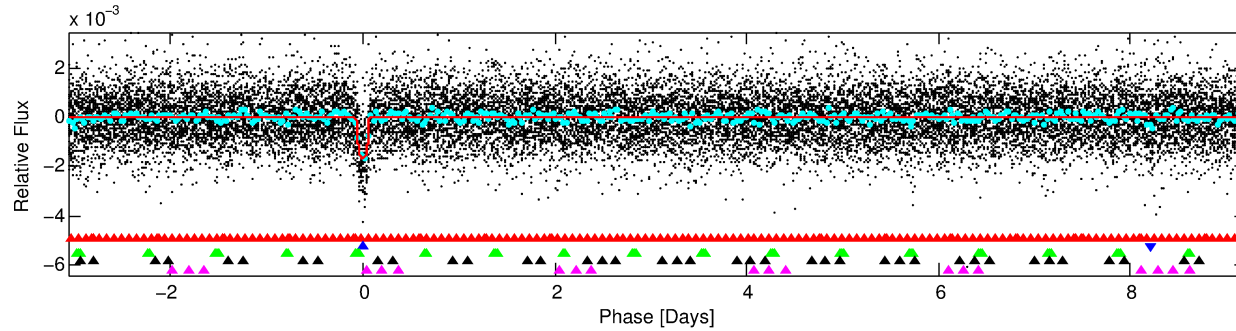
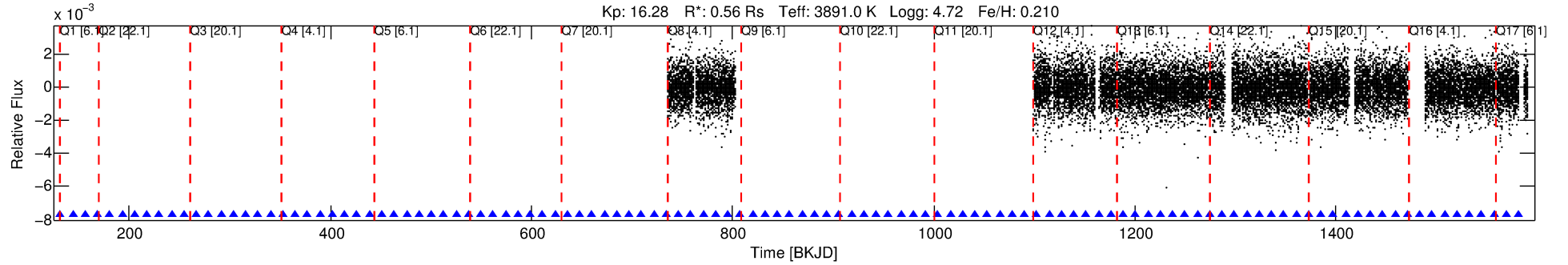
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010122538-02

No Significant Match Found

DV One-Page Summary

KIC: 10122538 Candidate: 2 of 5 Period: 12.285 d
KOI: K02926.01 Corr: 0.971



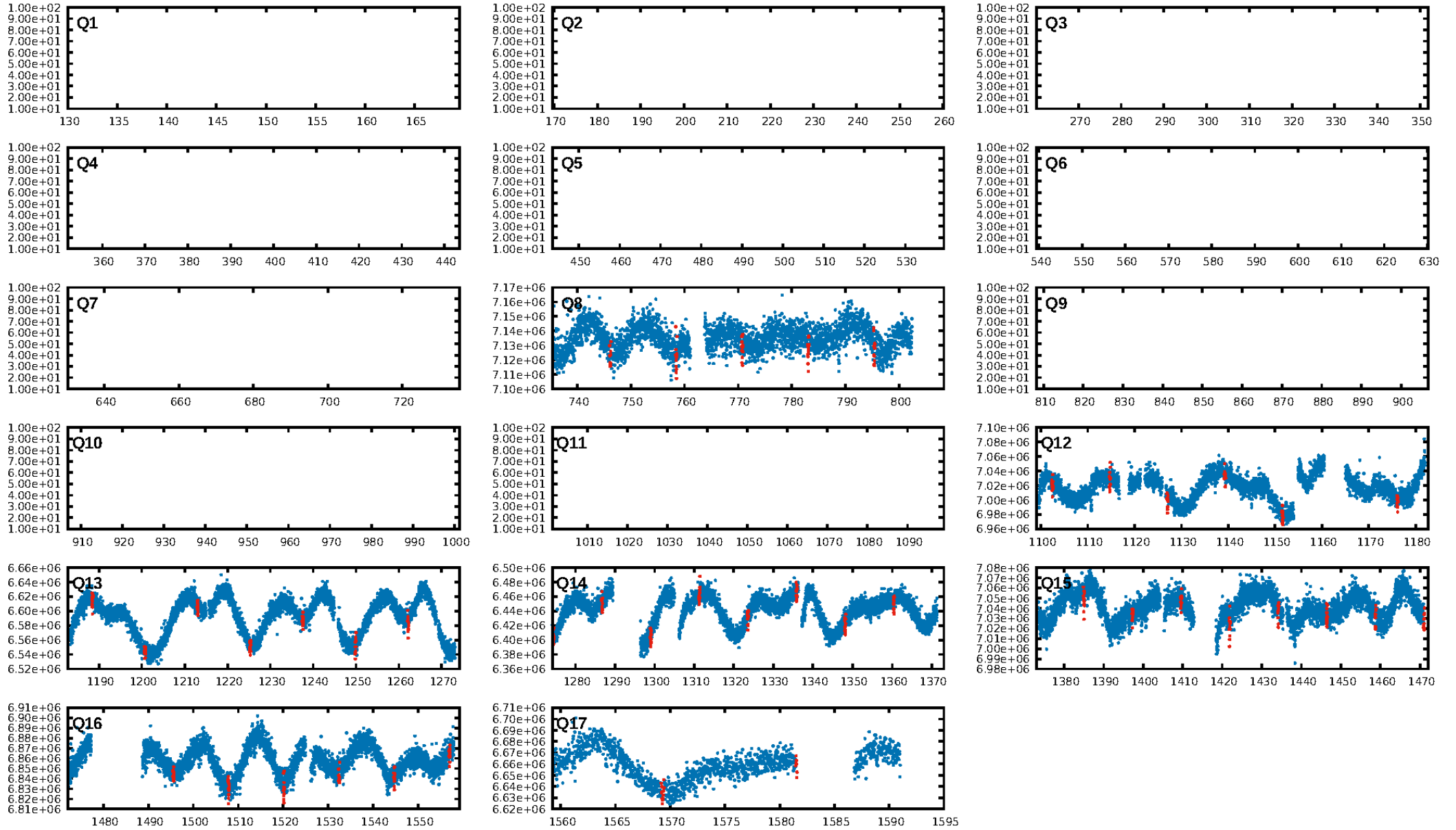
DV Fit Results:

Period = 12.28549 [0.00008] d
Epoch = 131.8990 [0.0069] BKJD
Rp/R* = 0.0432 [0.0070]
a/R* = 17.65 [10.40]
b = 0.85 [0.20]
Seff = 8.40 [0.98]
Teq = 434 [13] K
Rp = 2.66 [0.46] Re
a = 0.0882 [0.0046] AU
Ag = 190.74 [83.02] [2.29 σ]
Teffp = 2494 [273] K [7.54 σ]

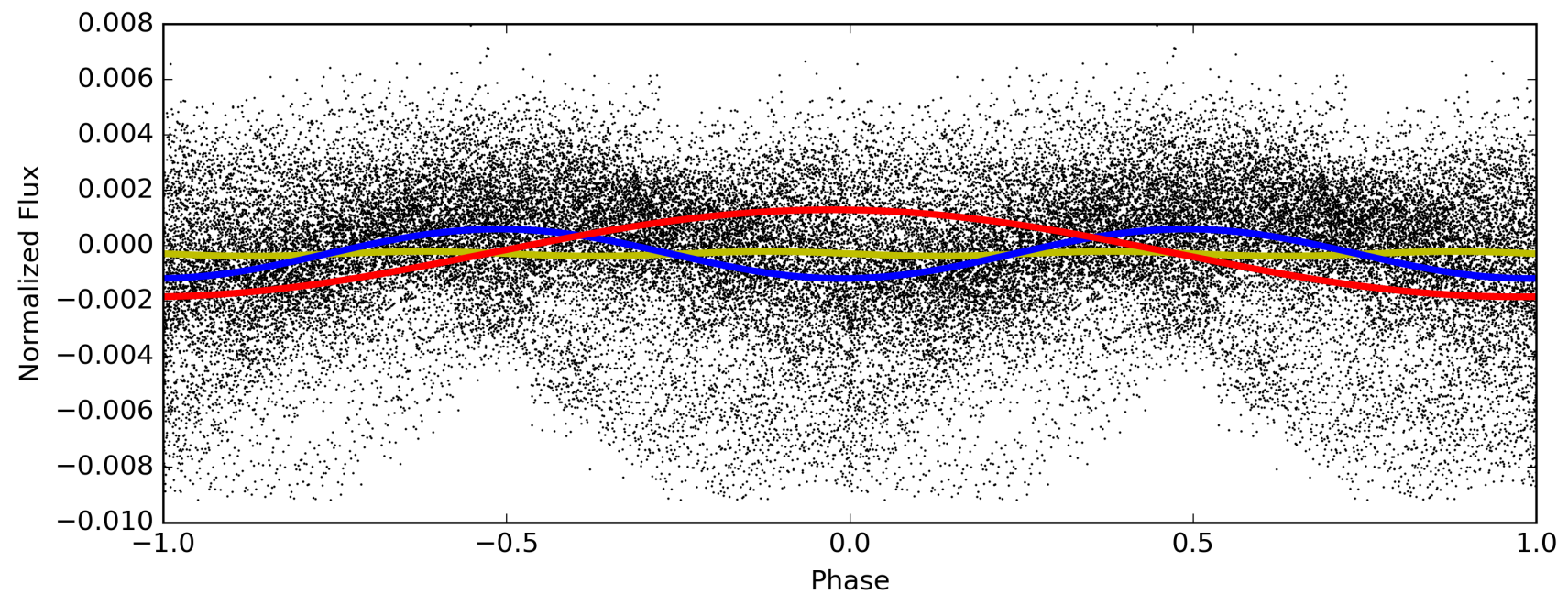
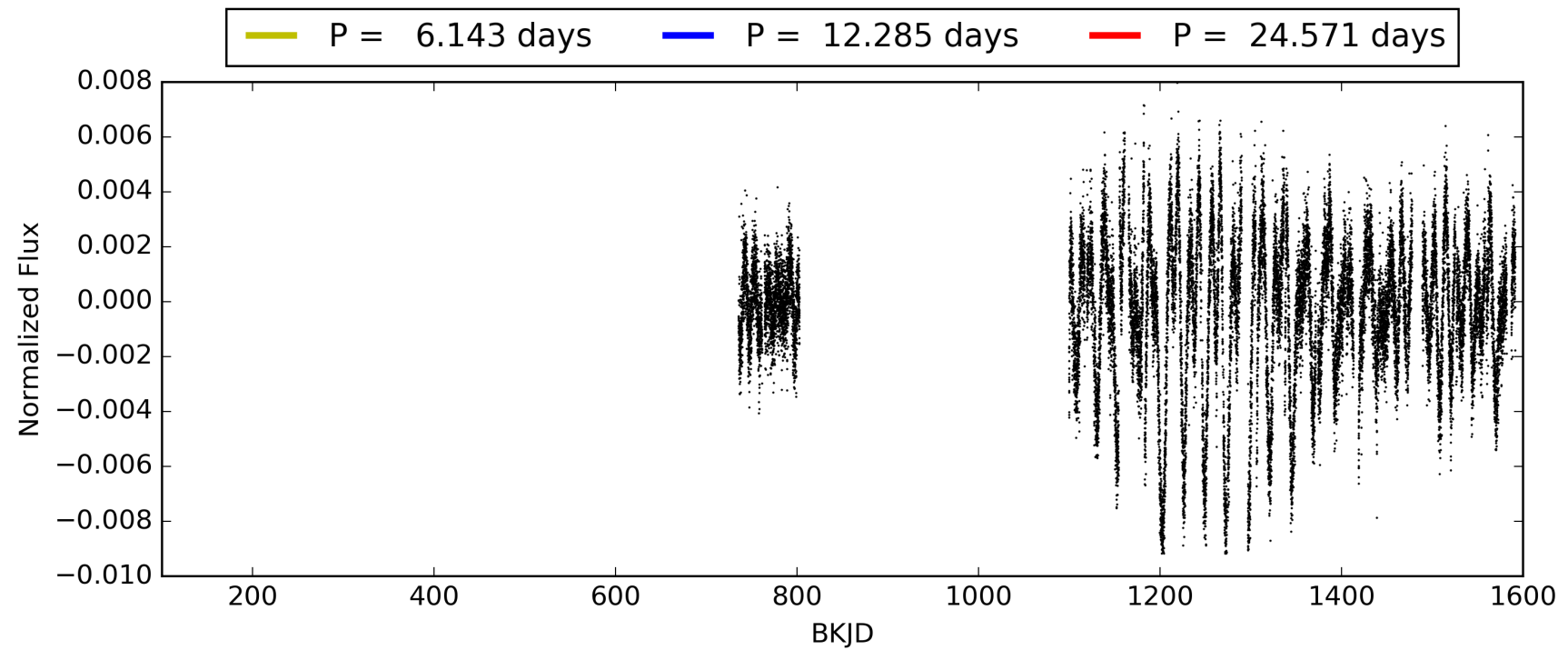
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.97 σ]
LongPeriod-sig: 100.0% [41.57 σ]
ModelChiSquare2-sig: 40.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.65e-61
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 8.361
Centroid-sig: 80.7%
Centroid-so: 0.074 arcsec [0.14 σ]
OotOffset-rm: 0.157 arcsec [0.73 σ]
KicOffset-rm: 0.479 arcsec [2.16 σ]
OotOffset-st: 1/1/3/1 [6]
KicOffset-st: 1/1/3/1 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [7/7]

TCE 010122538-02, PDC Light Curves

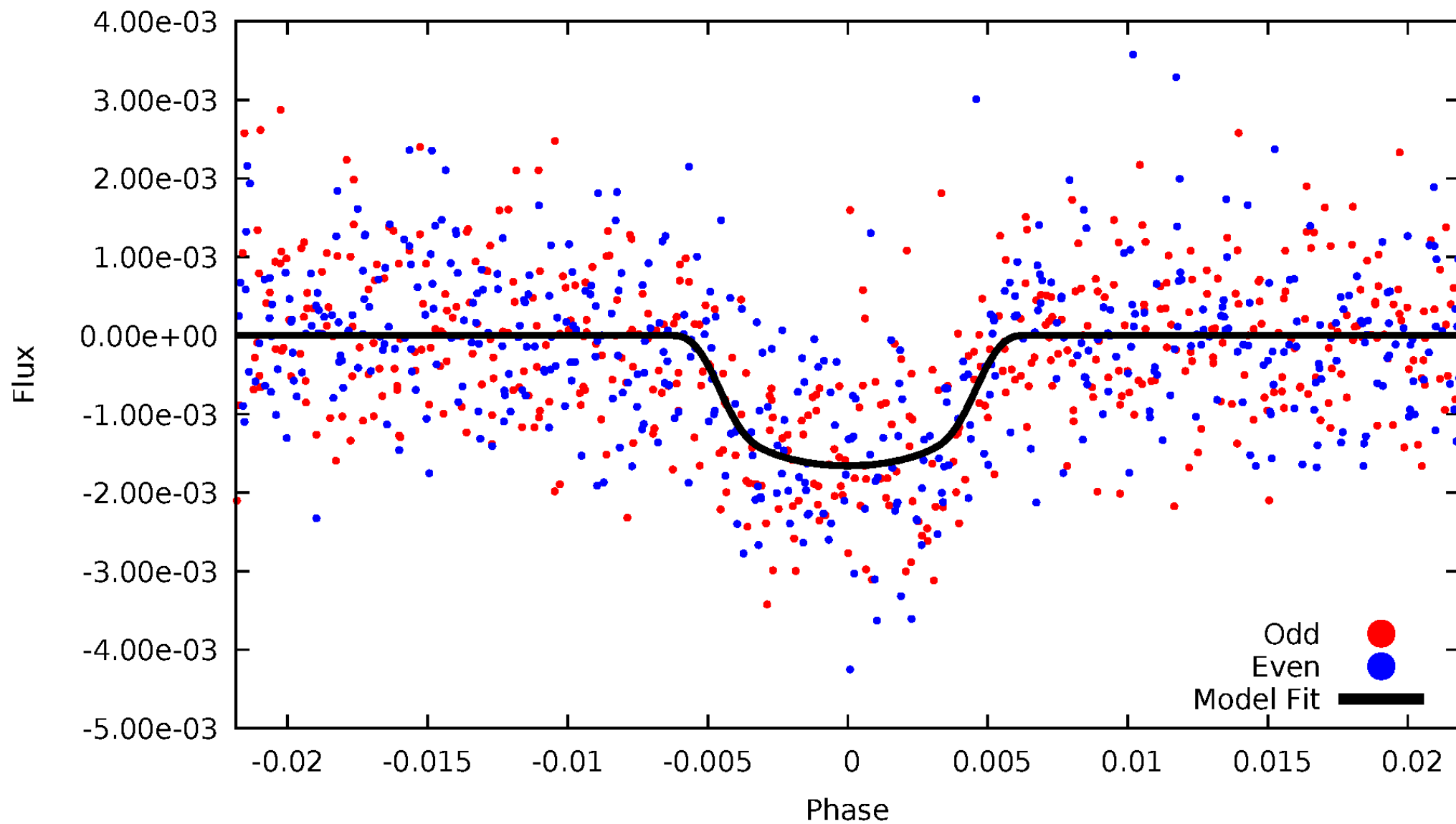


TCE 010122538-02



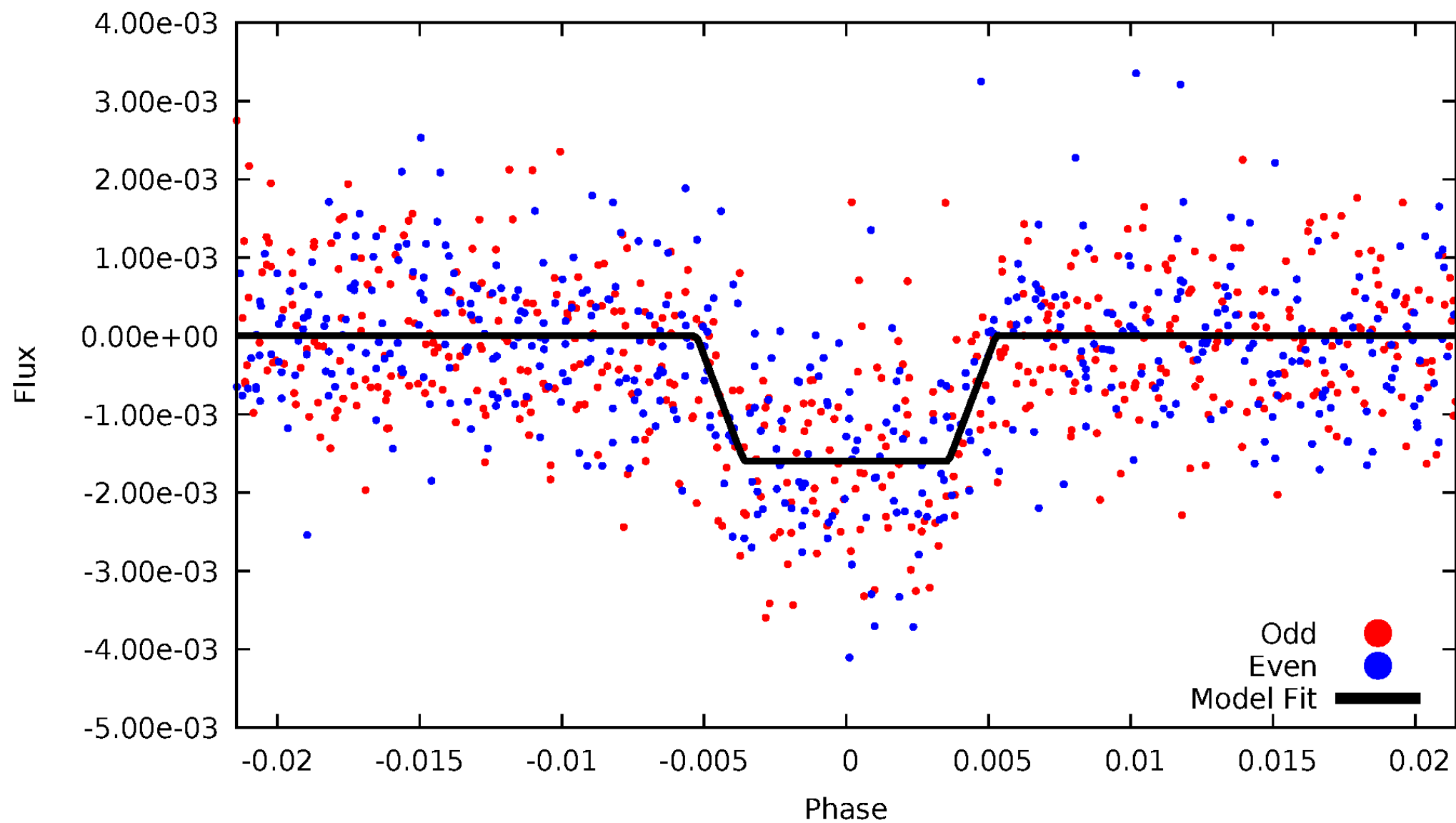
DV Odd/Even

TCE 010122538-02



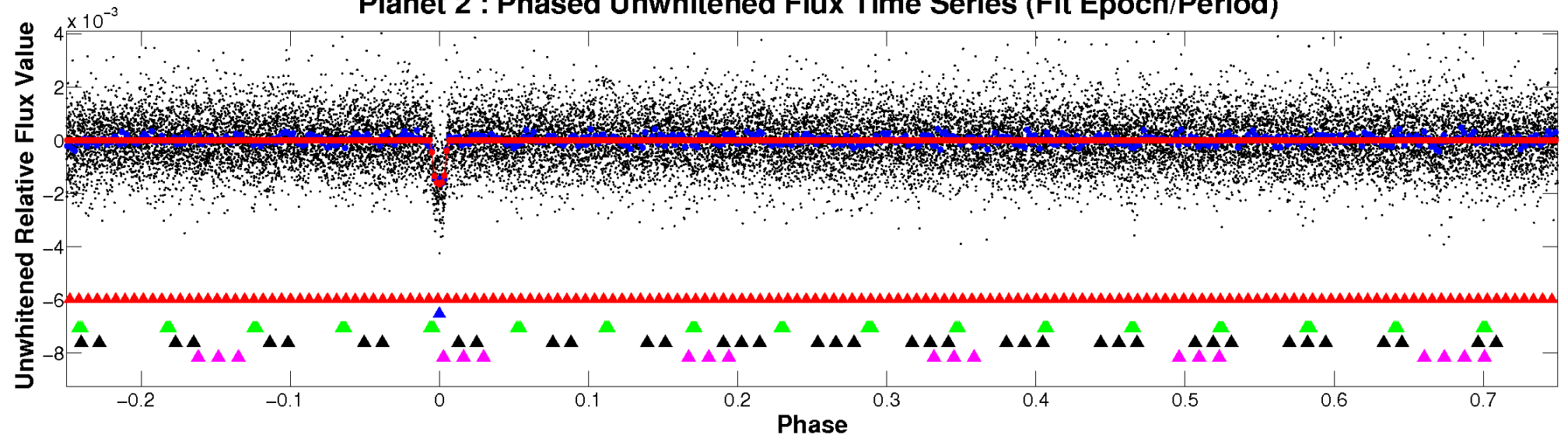
ALT Odd/Even

TCE 010122538-02

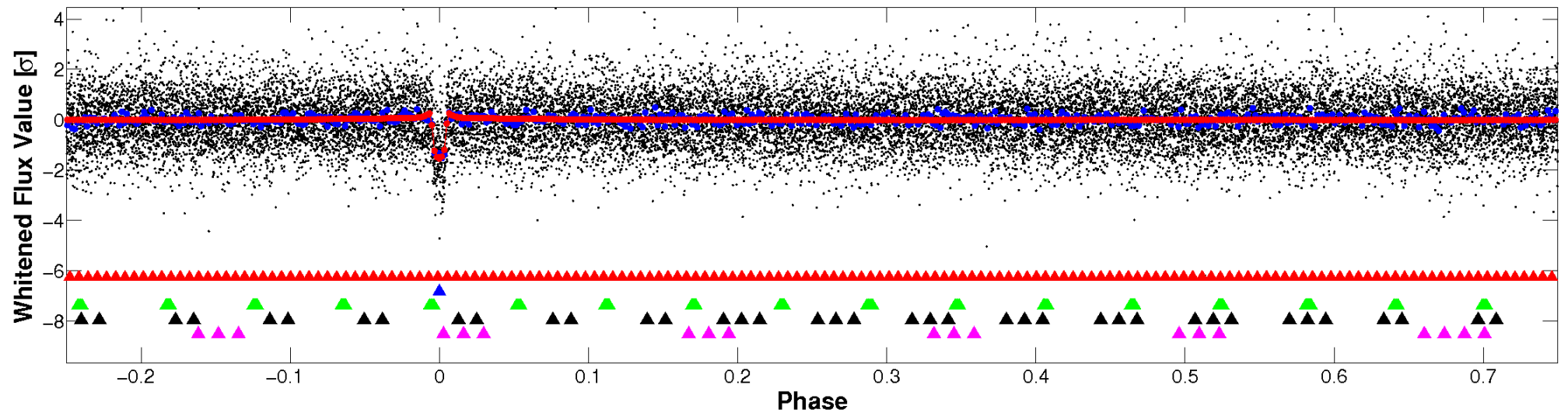


Non-Whitened Vs. Whitened Light Curve

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

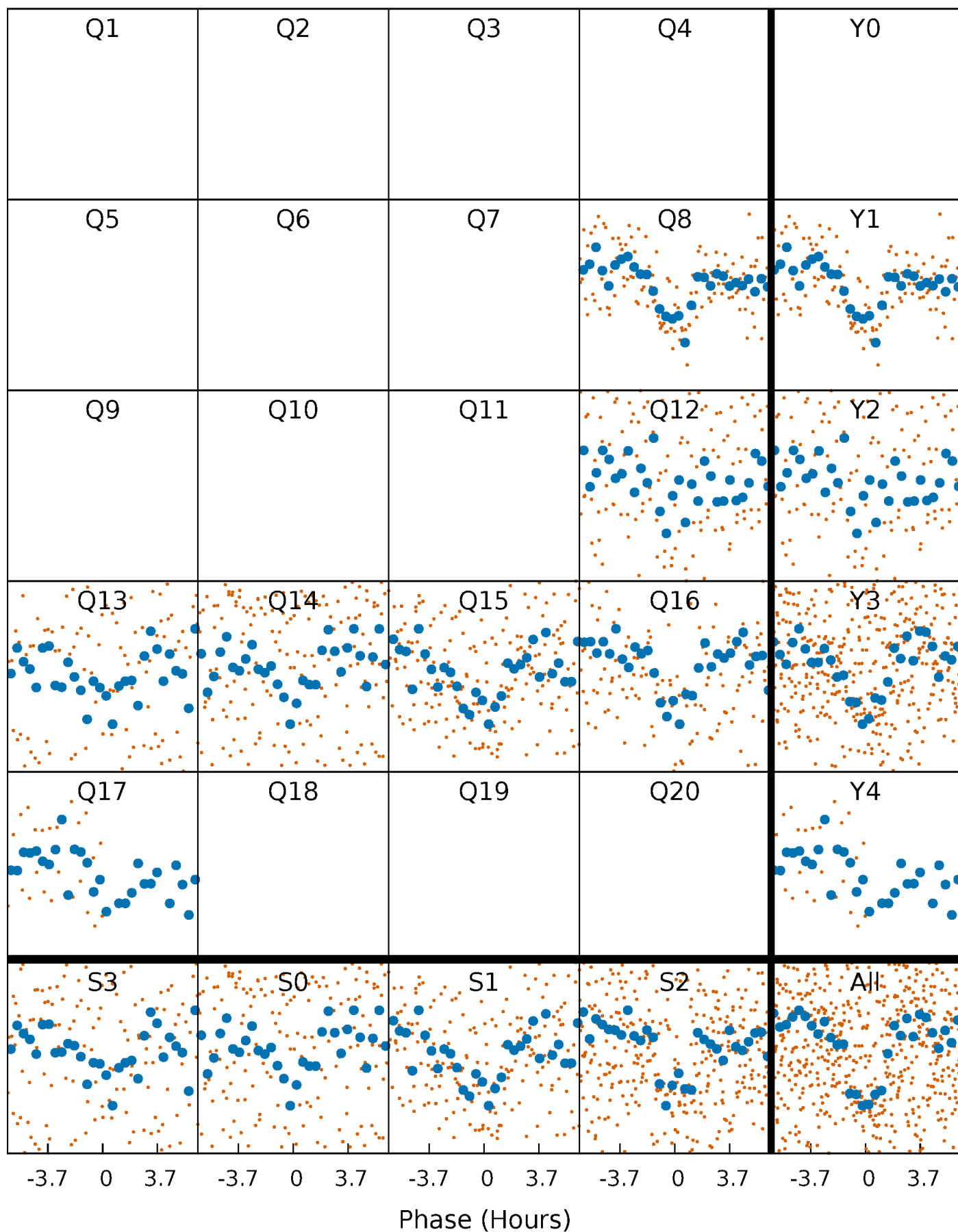


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



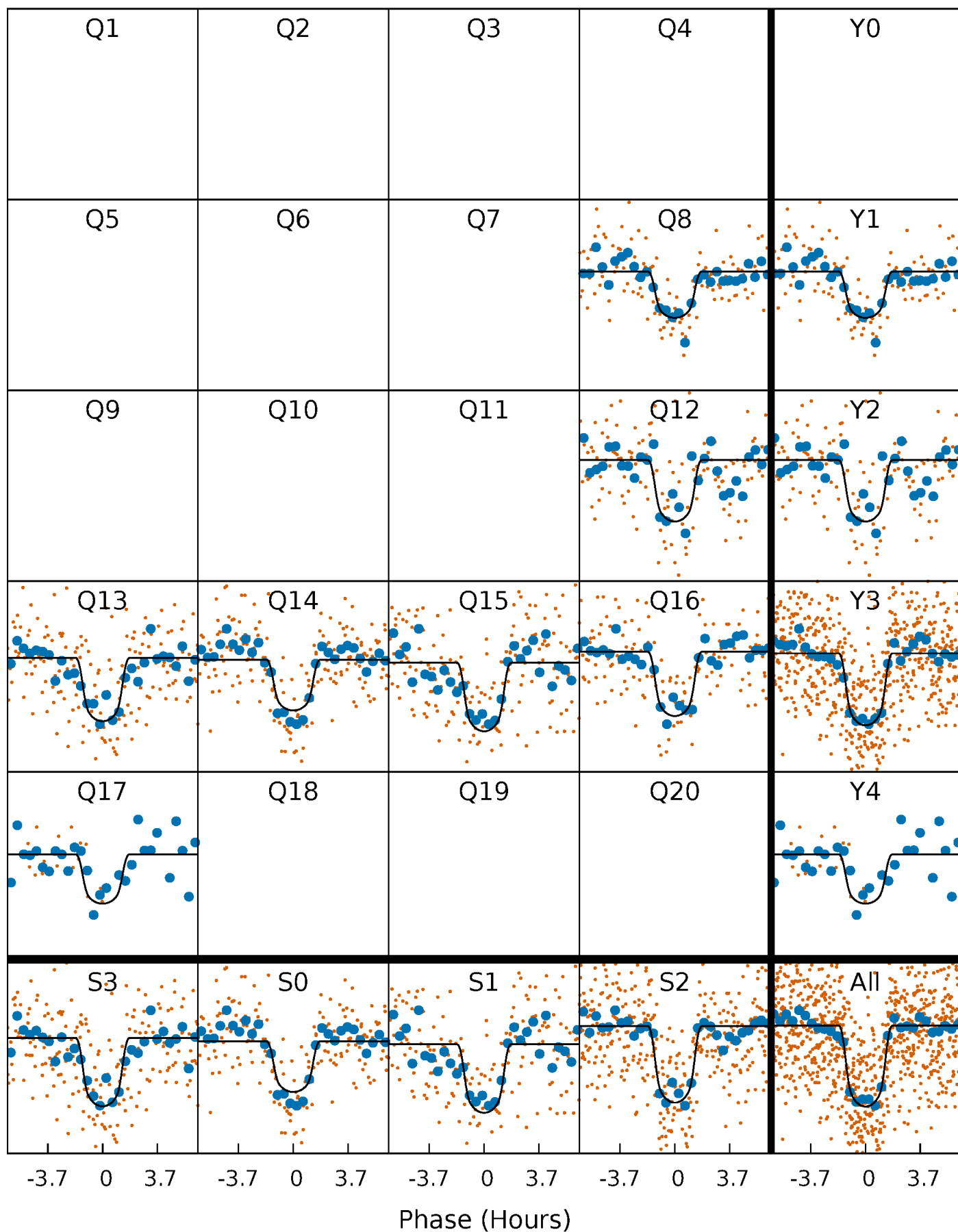
PDC Quarter-Phased Transit Curves

TCE 010122538-02 P= 12.285494 Days $T_0=131.899000$ (BKJD)



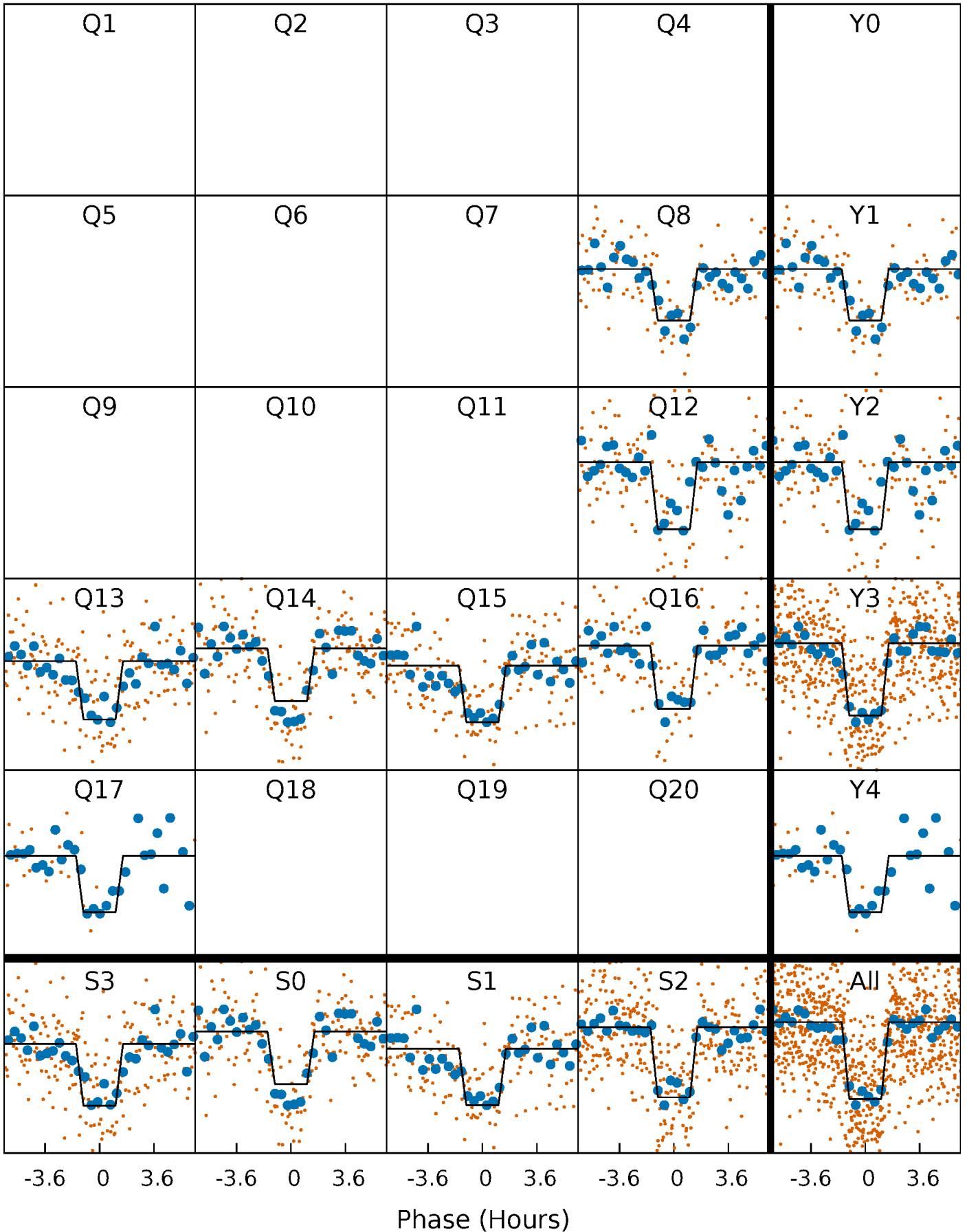
DV Quarter-Phased Transit Curves

TCE 010122538-02 $P = 12.285494$ Days $T_0 = 131.899000$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

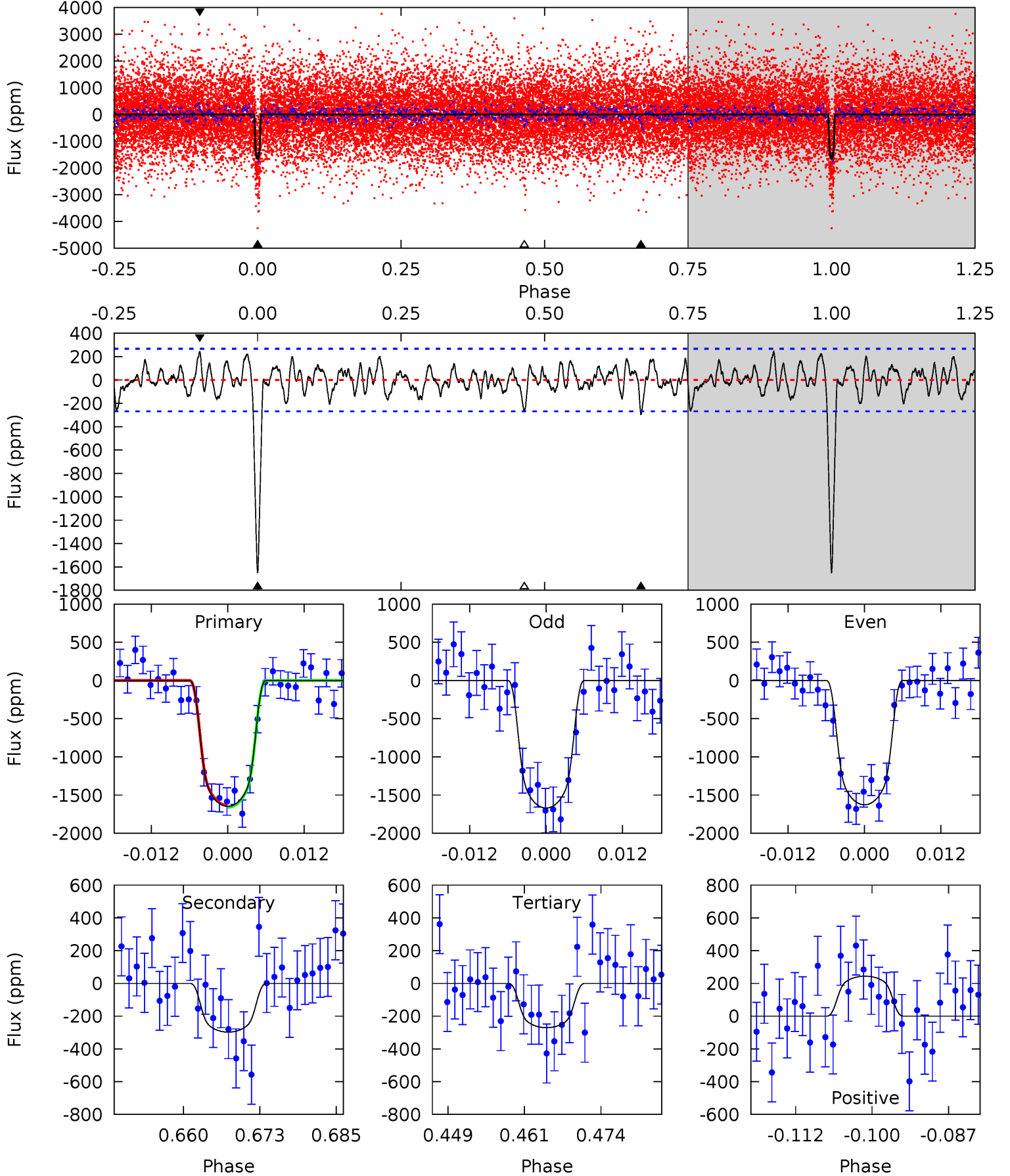
TCE 010122538-02 P= 12.285600 Days $T_0=131.888785$ (BKJD)



DV Model-Shift Uniqueness Test

010122538-02, P = 12.285494 Days, E = 131.899000 Days

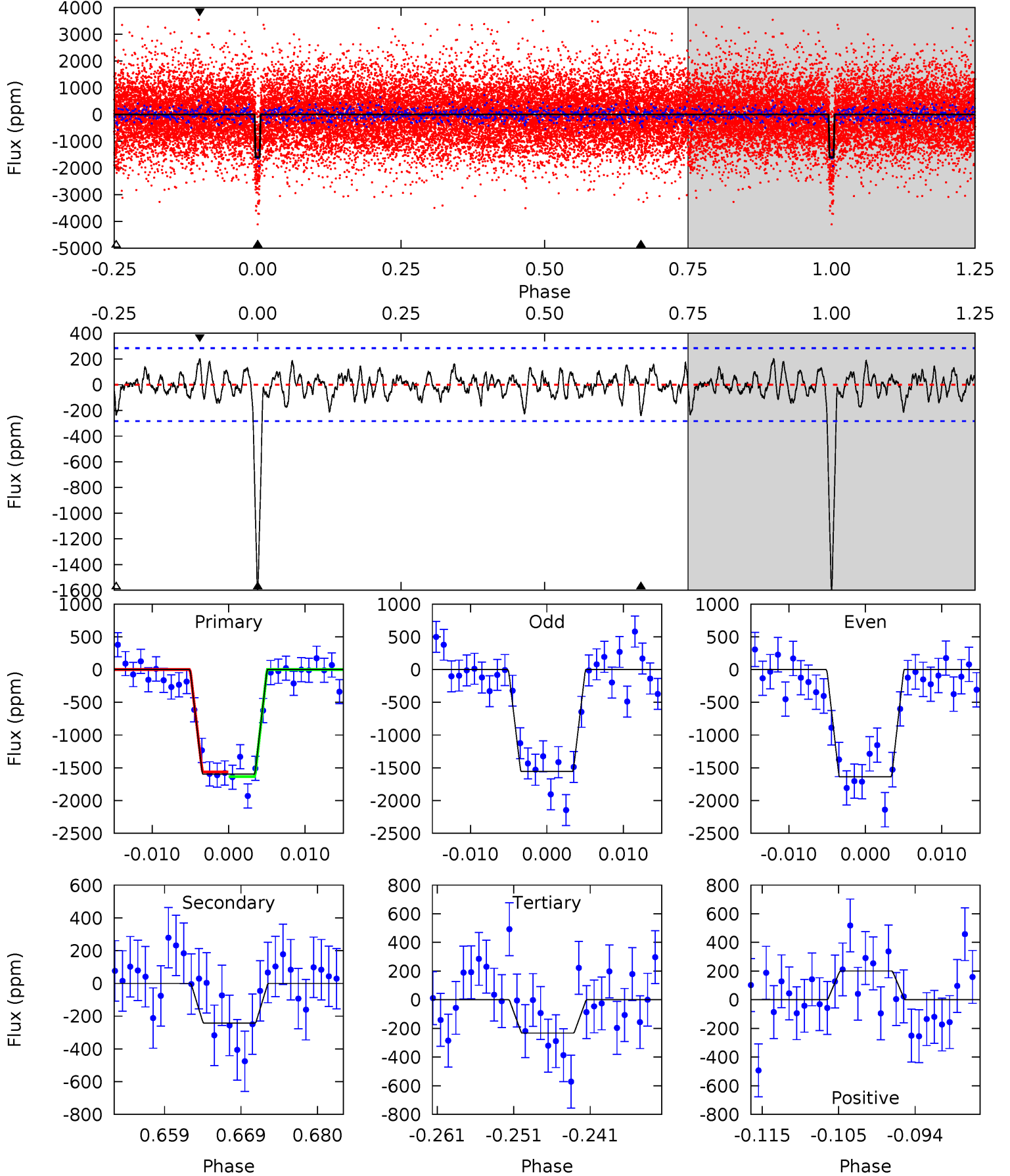
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.7	5.55	5.04	4.55	4.98	2.50	1.65	25.7	26.2	0.50	1.00	0.40	0.98	0.13	0.21



Alt Model-Shift Uniqueness Test

010122538-02, P = 12.285600 Days, E = 131.888785 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.3	4.28	4.11	3.55	5.02	2.56	1.30	24.1	24.7	0.17	0.73	0.74	0.99	0.11	0.65



Stellar Parameters For KIC 010122538

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3891^{+70}_{-86}	$4.718^{+0.018}_{-0.042}$	$0.210^{+0.150}_{-0.150}$	$0.564^{+0.035}_{-0.026}$	$0.605^{+0.025}_{-0.034}$	$4.759^{+0.443}_{-0.674}$
	+2%/-2%	+0%/-1%	+71%/-71%	+6%/-5%	+4%/-6%	+9%/-14%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010122538-02 / KOI 2926.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-298 ± 54	$2.68^{+0.48}_{-0.44}$	609^{+13}_{-15}	2919^{+185}_{-153}	172^{+89}_{-54}
Alt.	-242 ± 57	$2.48^{+0.42}_{-0.48}$	609^{+14}_{-15}	2910^{+198}_{-173}	170^{+101}_{-60}

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

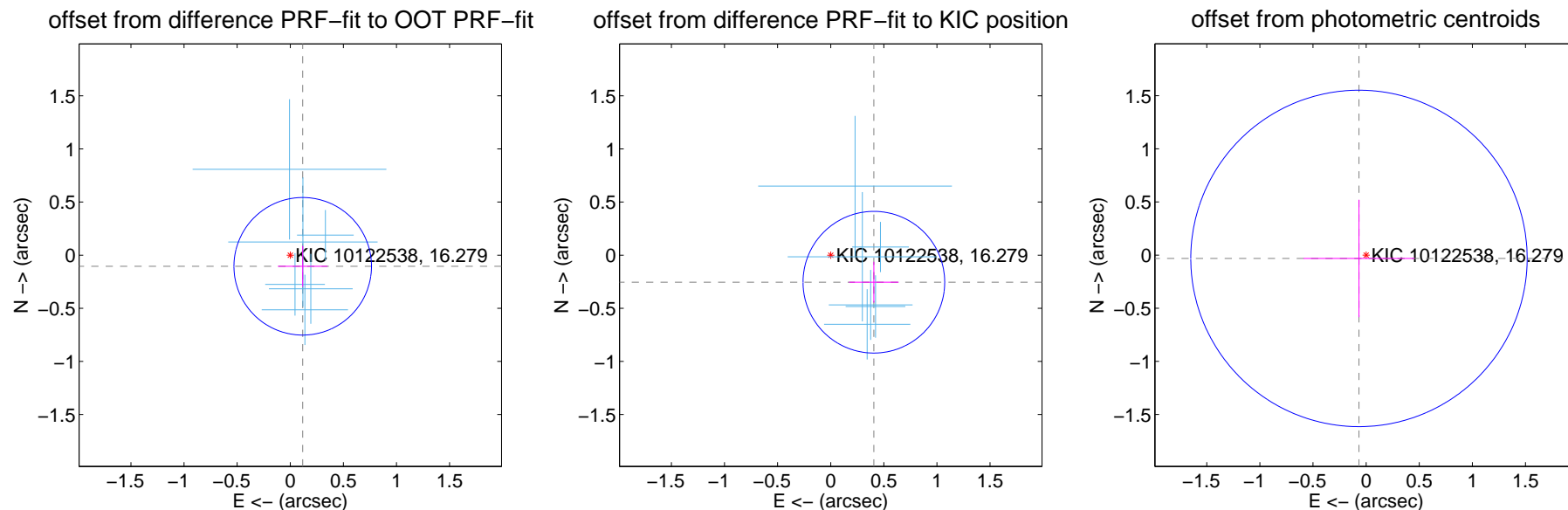
DV Centroid Data

Supplemental centroid analysis for 010122538-02. Kepler magnitude: 16.28. Transit SNR 19.20

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.157 ± 0.216	0.73	-0.117 ± 0.233	-0.105 ± 0.192
PRF-fit source offset from KIC position	0.479 ± 0.222	2.16	-0.406 ± 0.233	-0.255 ± 0.192
photometric centroid source offset	0.07 ± 0.53	0.14	0.07 ± 0.52	-0.03 ± 0.55

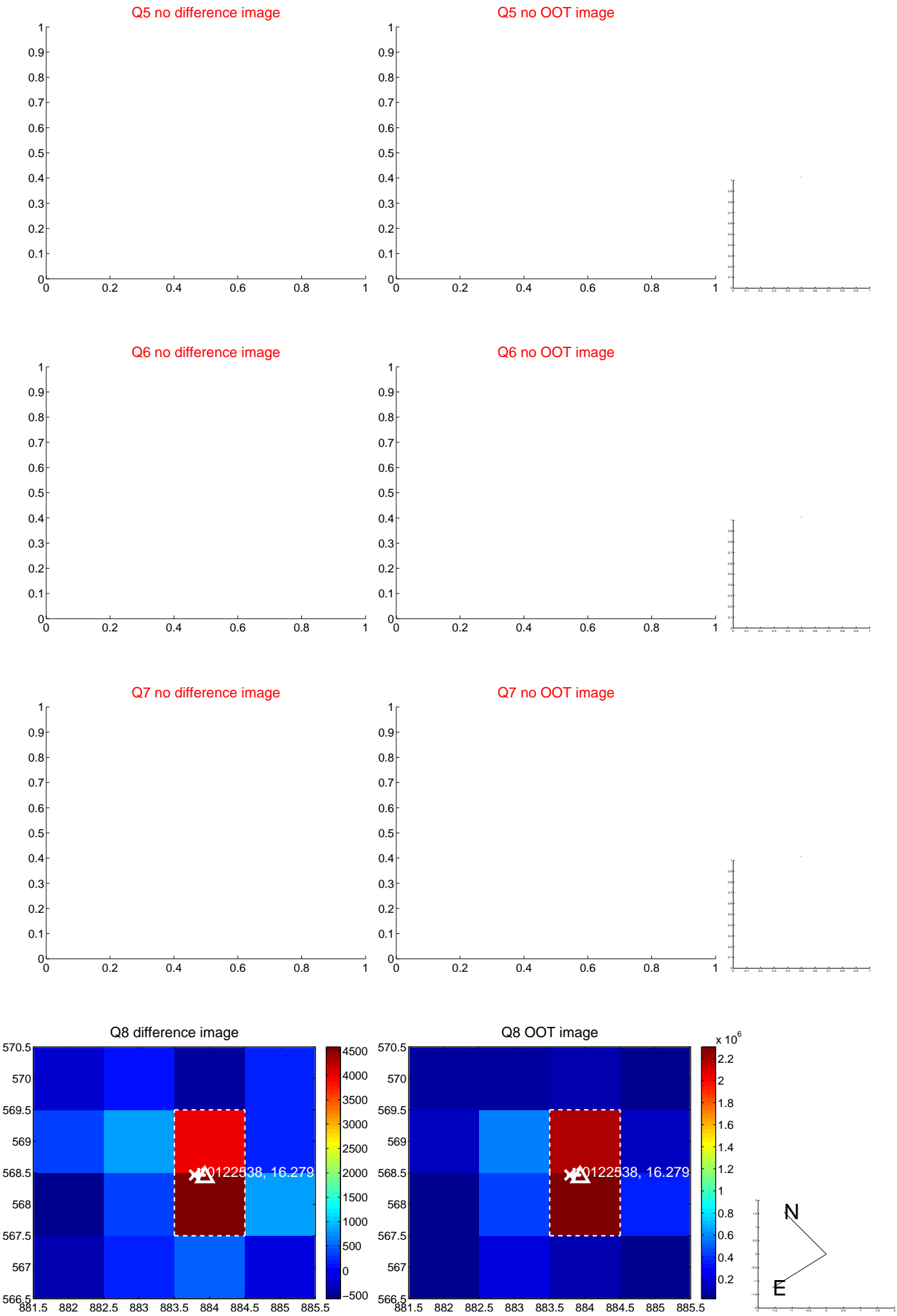


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

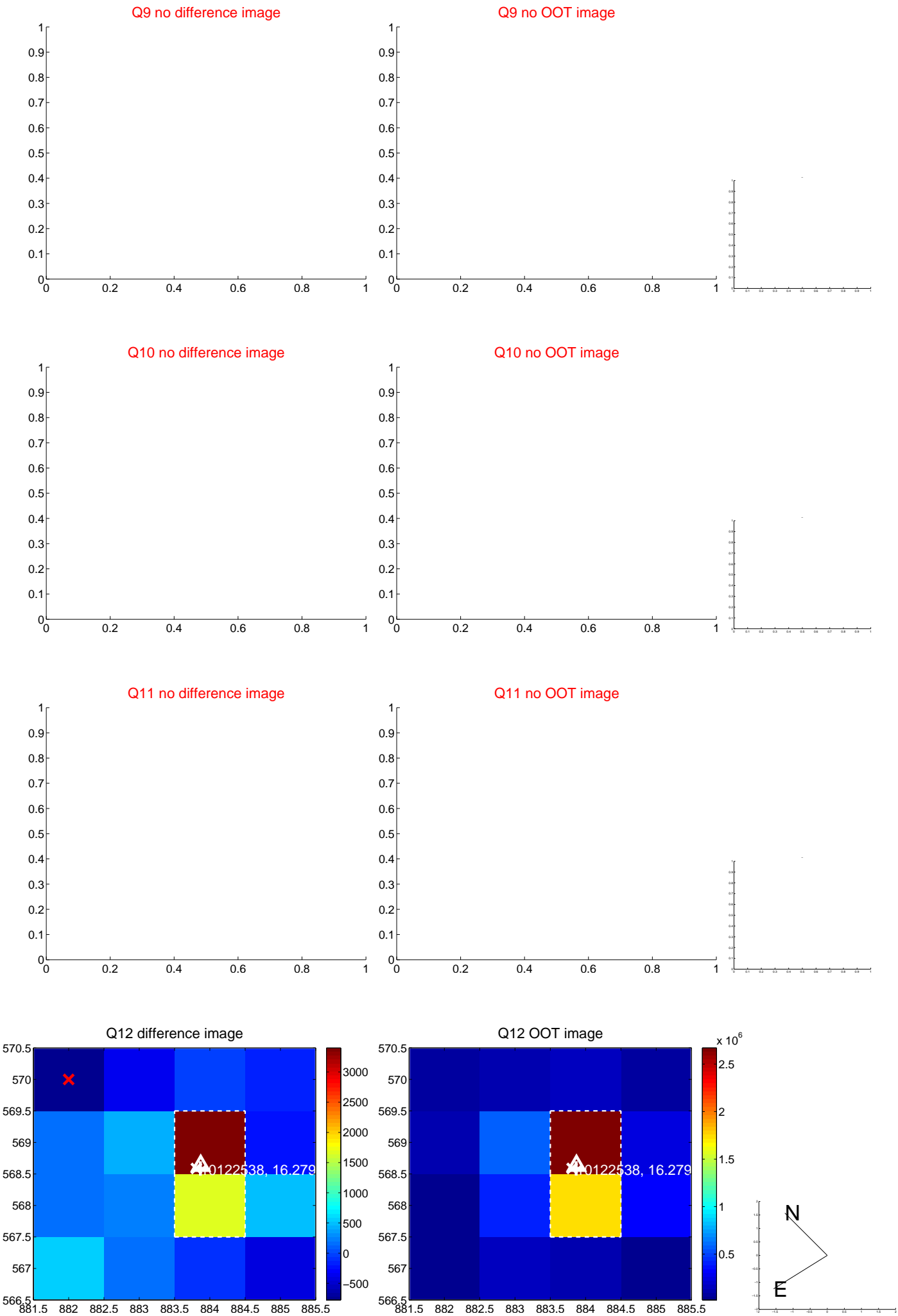
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



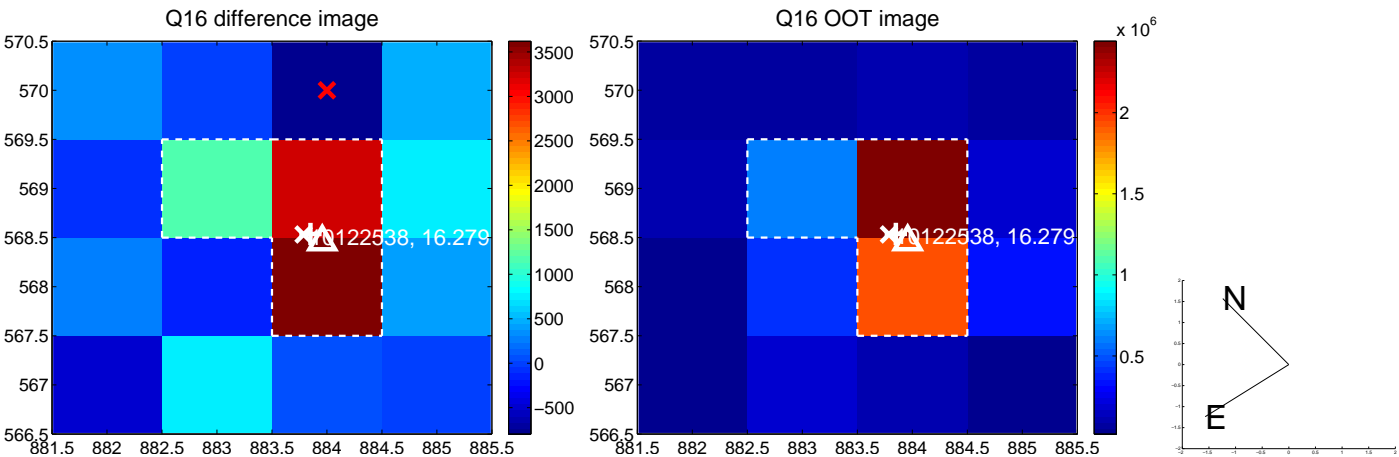
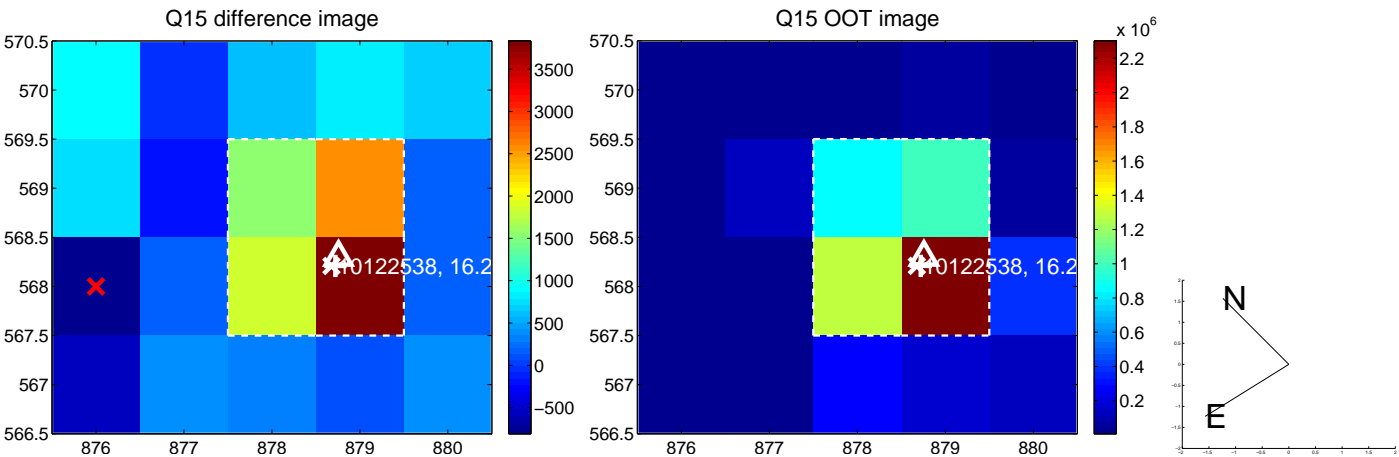
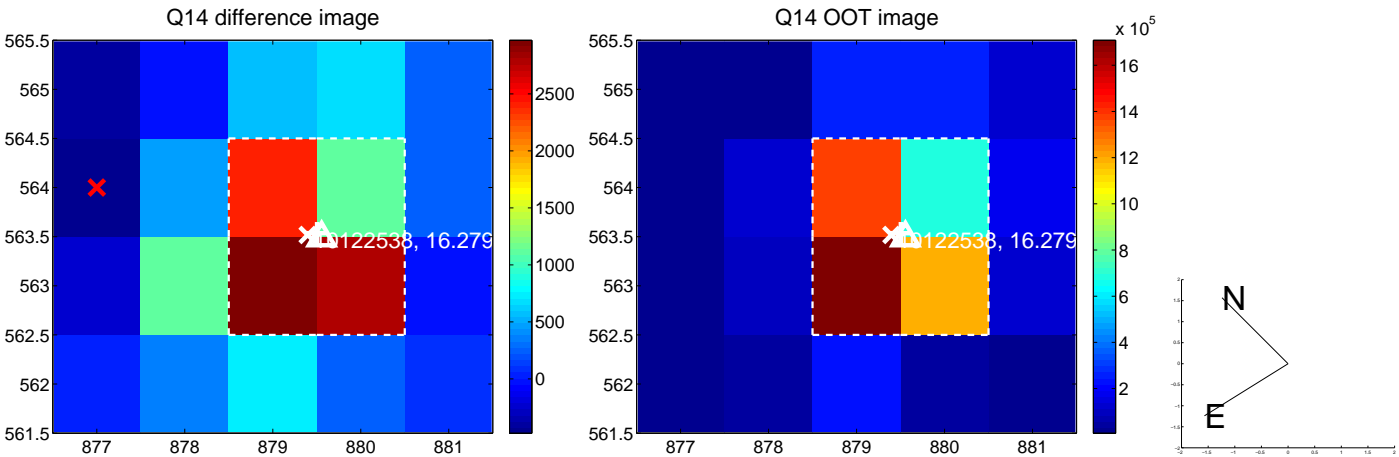
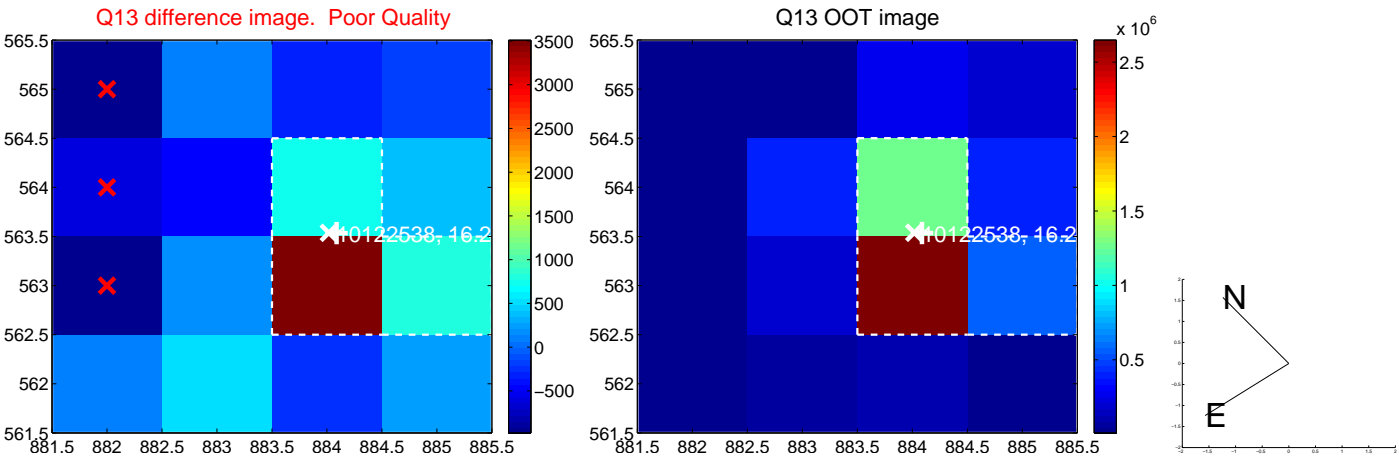
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



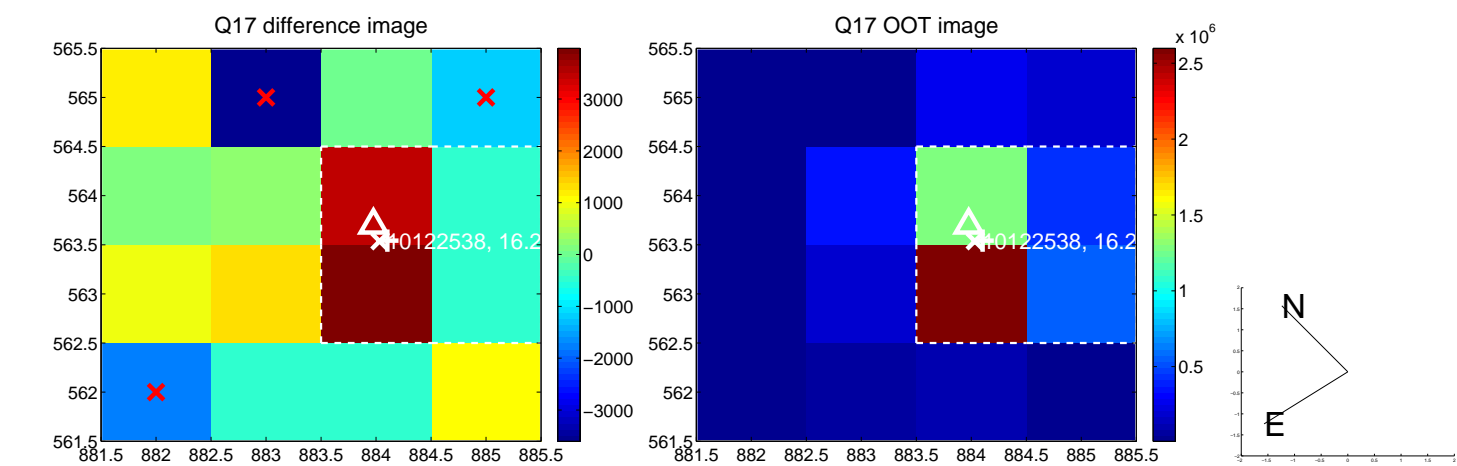
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



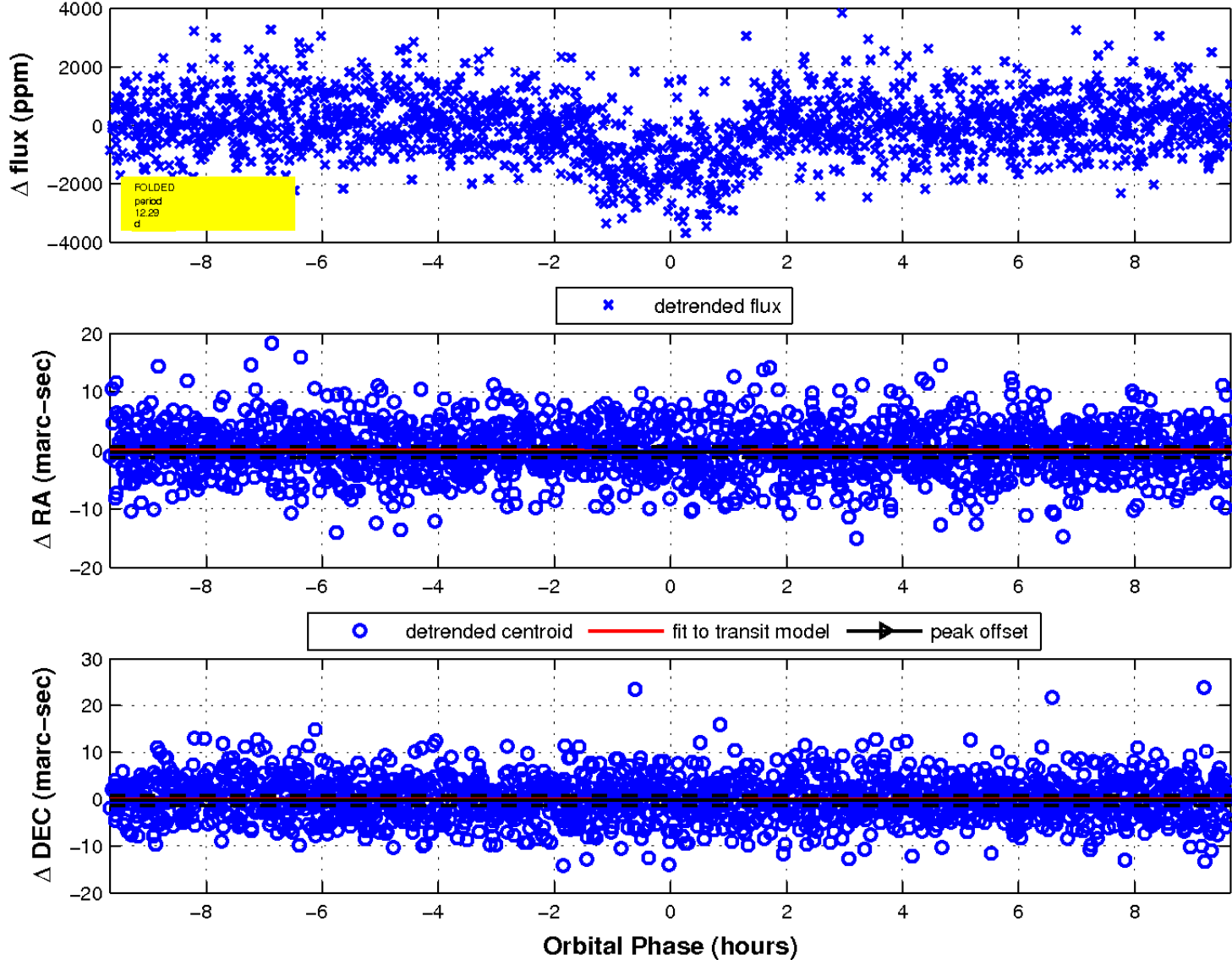
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

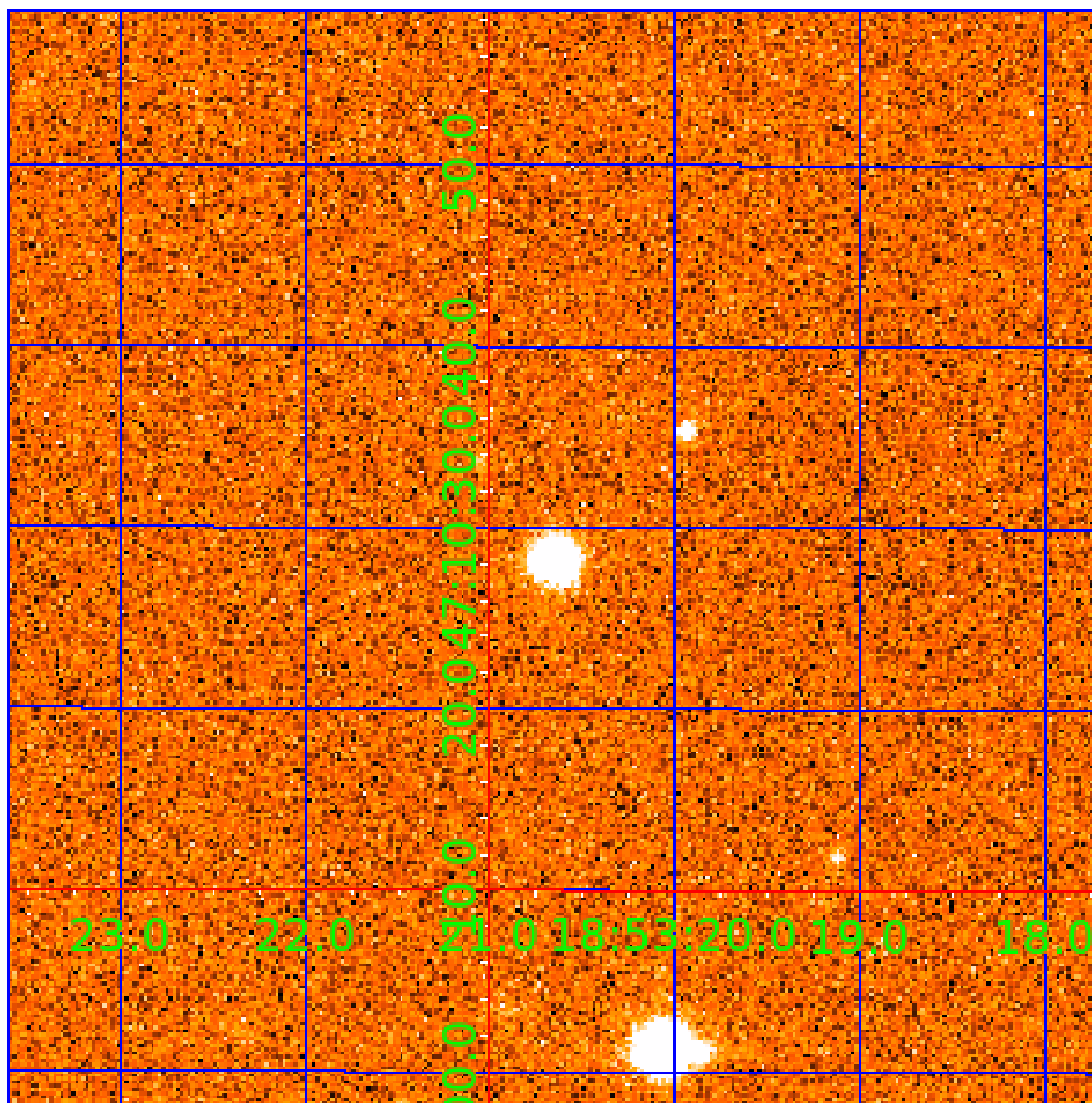


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 010122538

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})
010122538-01	OBS	2926.02	5.536075	131.885052	1199.7	2.293	17.2	18.4	0.56	3891	2.12	24.31
010122538-02	OBS	2926.01	12.285494	131.899000	1659.5	3.220	16.7	19.2	0.56	3891	2.66	8.40
010122538-03	OBS	2926.03	20.956933	139.081400	1970.0	3.834	16.2	17.4	0.56	3891	2.86	4.12
010122538-04	OBS	2926.04	37.633670	158.810095	1922.6	5.405	12.8	13.9	0.56	3891	3.12	1.89
010122538-05	OBS	2926.05	75.732965	201.937097	2704.5	4.691	11.4	13.0	0.56	3891	3.55	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010122538-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
010122538-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-05	OBS	PC	0.89	0	0	0	0	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.

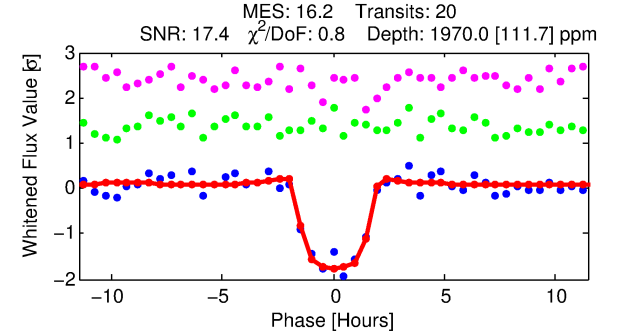
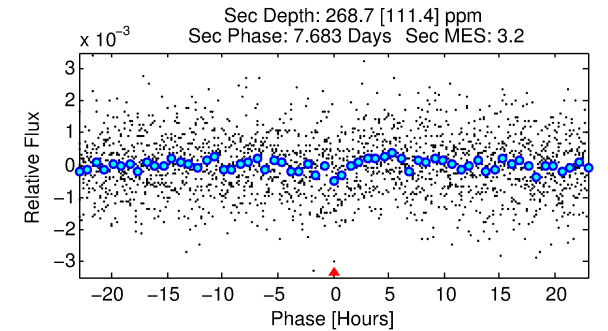
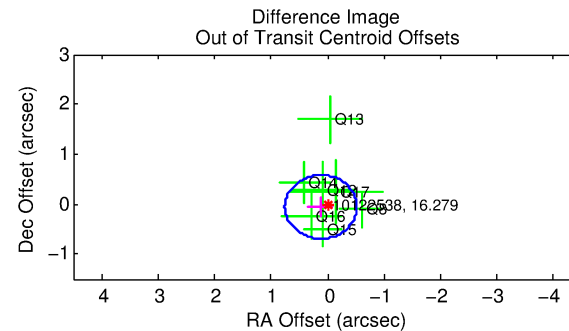
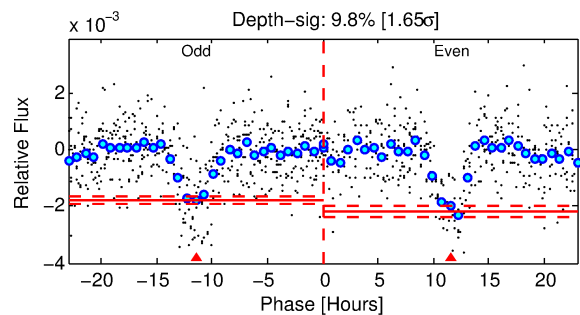
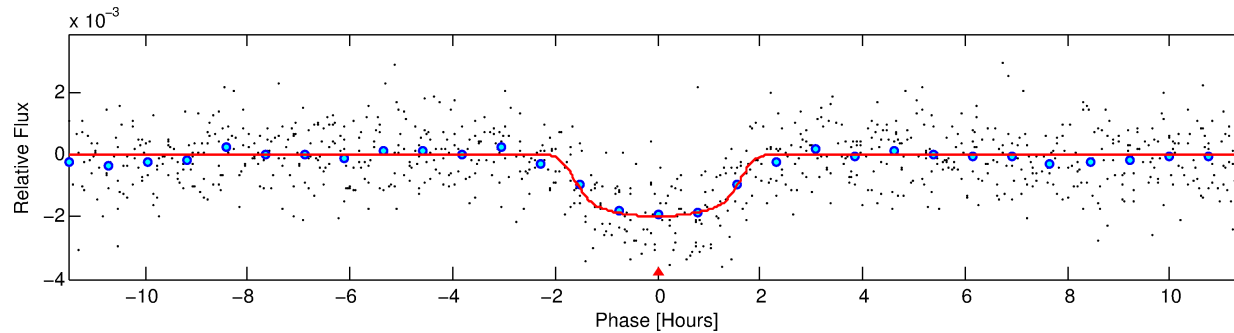
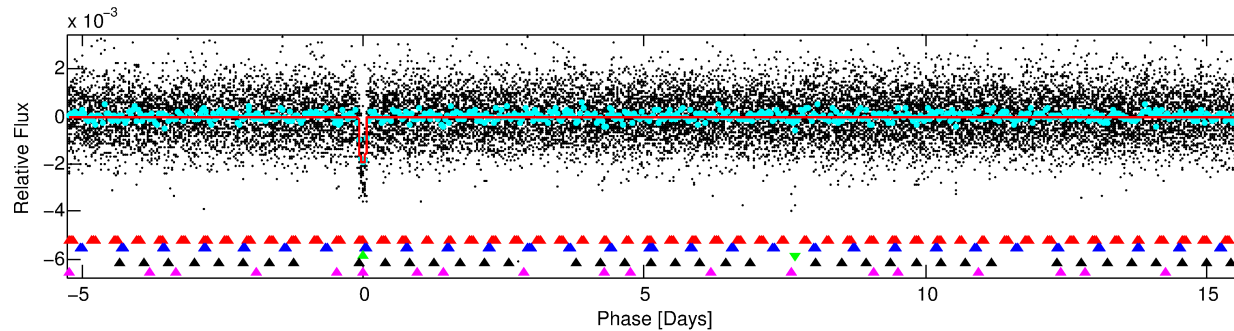
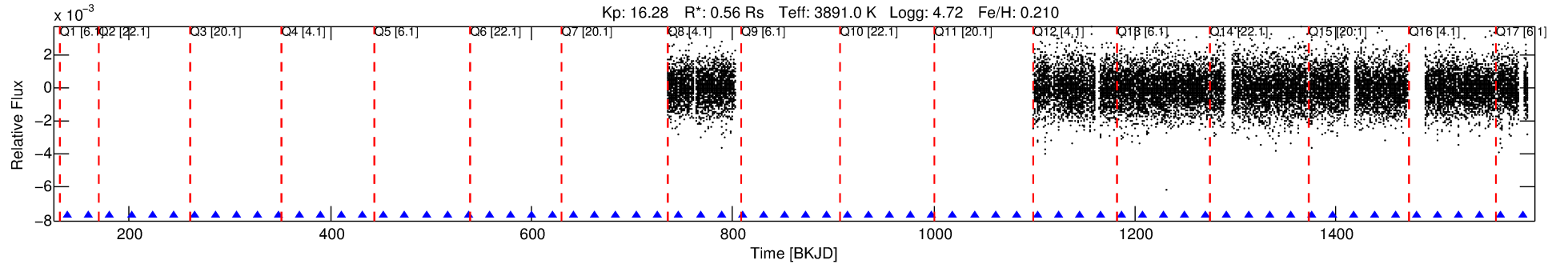
Ephemeris Match Information For 010122538-03

No Significant Match Found

DV One-Page Summary

KIC: 10122538 Candidate: 3 of 5 Period: 20.957 d

KOI: K02926.03 Corr: 0.963



DV Fit Results:

Period = 20.95693 [0.00017] d
Epoch = 139.0814 [0.0092] BKJD
Rp/R* = 0.0465 [0.0065]
a/R* = 26.48 [12.85]
b = 0.83 [0.18]
Seff = 4.12 [0.48]
Teq = 363 [11] K
Rp = 2.86 [0.44] Re
a = 0.1259 [0.0066] AU
Ag = 286.40 [144.62] [1.97 σ]
Teffp = 2311 [293] K [6.65 σ]

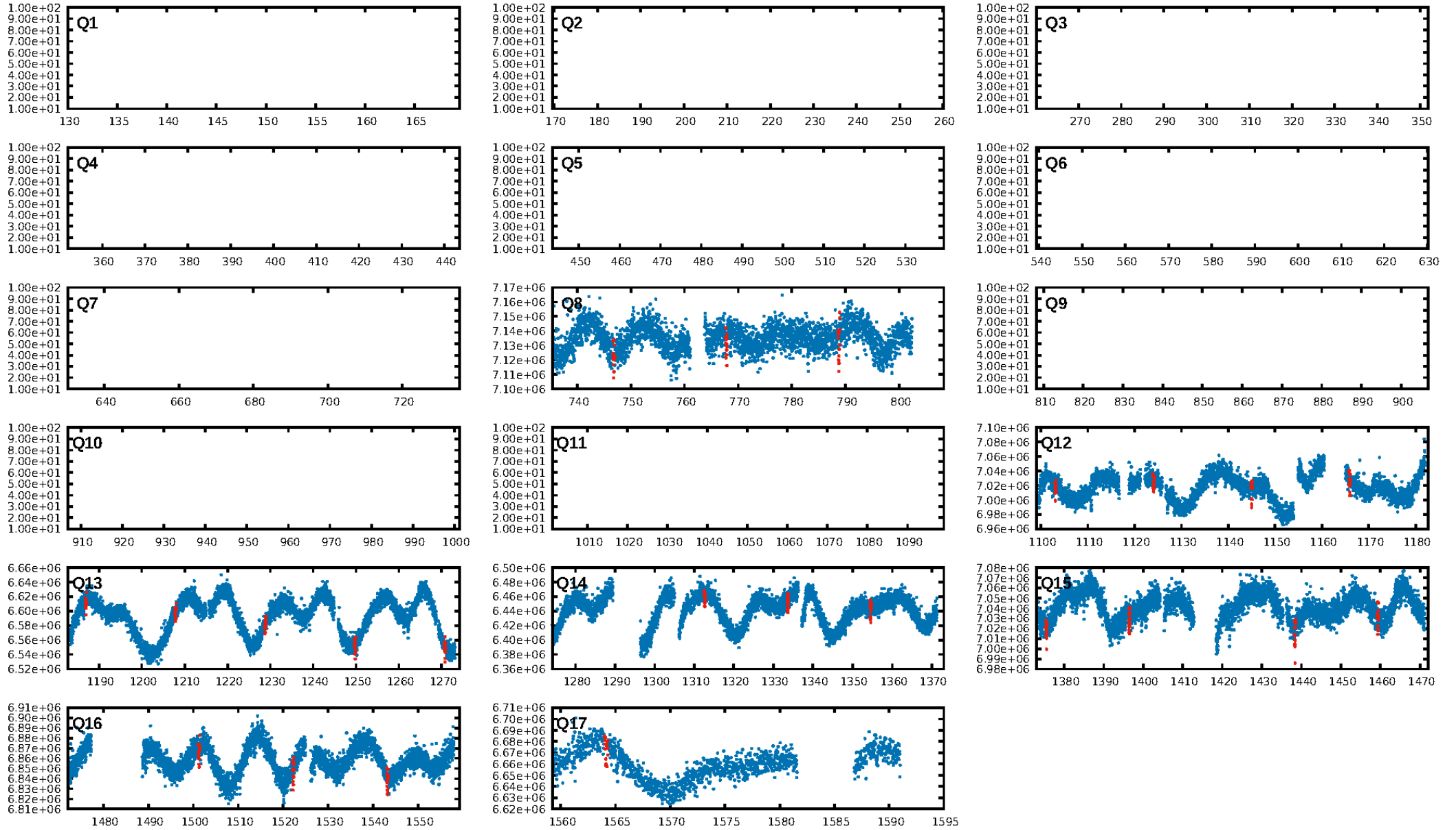
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.57 σ]
LongPeriod-sig: 100.0% [60.40 σ]
ModelChiSquare2-sig: 93.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.49e-56
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 4.595
Centroid-sig: 66.0%
Centroid-so: 0.145 arcsec [0.26 σ]
OotOffset-rm: 0.136 arcsec [0.64 σ]
KicOffset-rm: 0.207 arcsec [0.99 σ]
OotOffset-st: 1/1/3/2 [7]
KicOffset-st: 1/1/3/2 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [7/7]

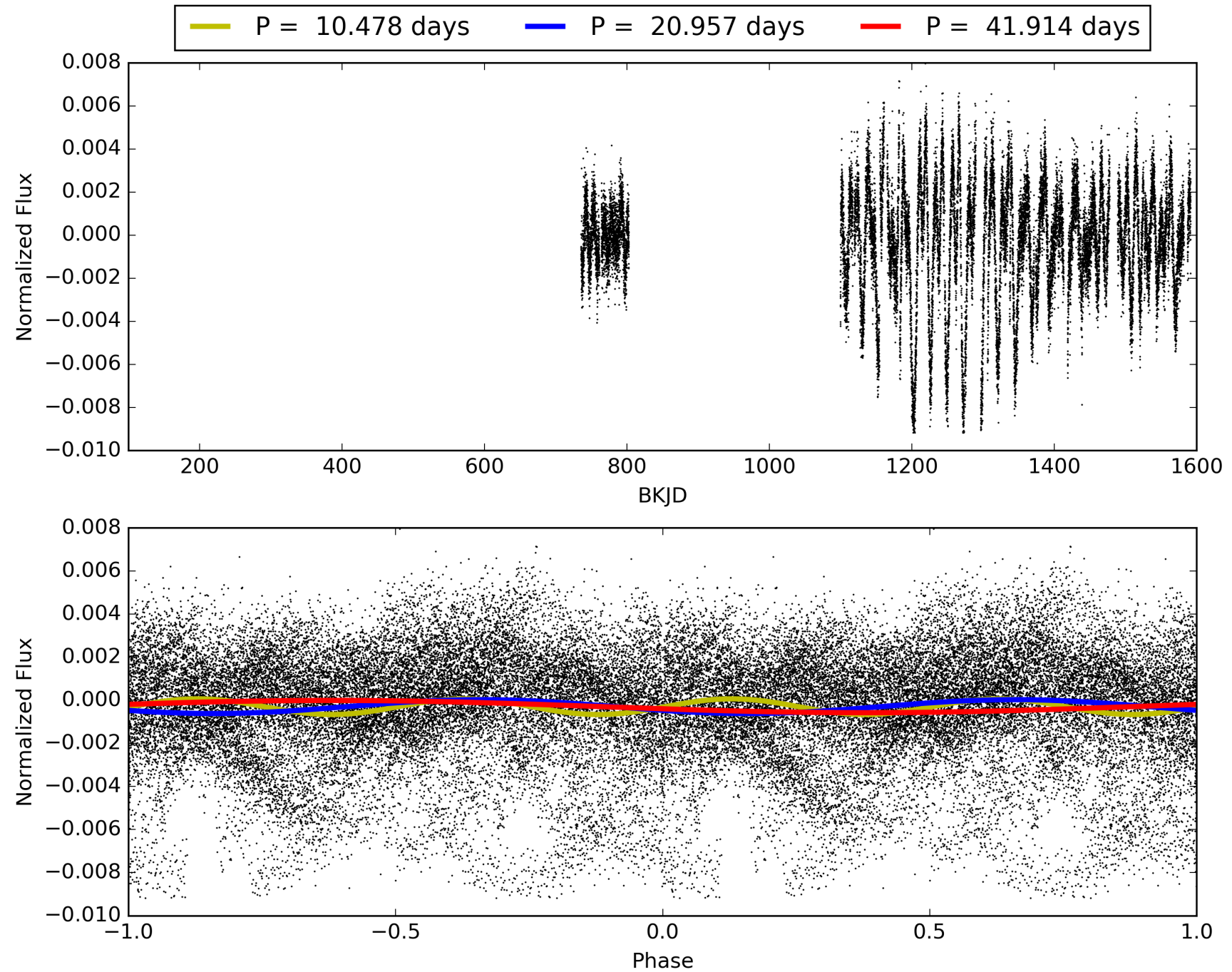
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:18:16 Z

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

TCE 010122538-03, PDC Light Curves

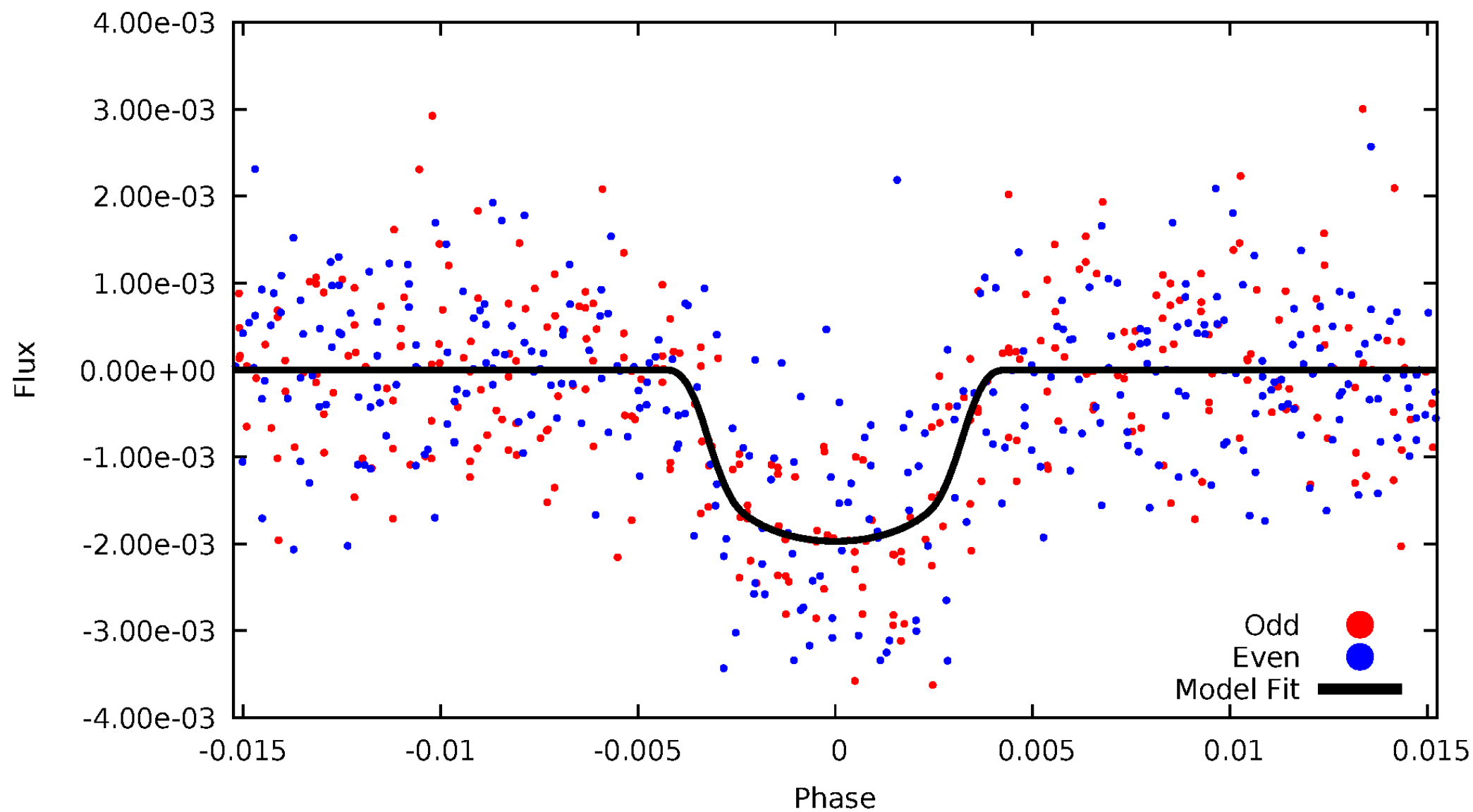


TCE 010122538-03



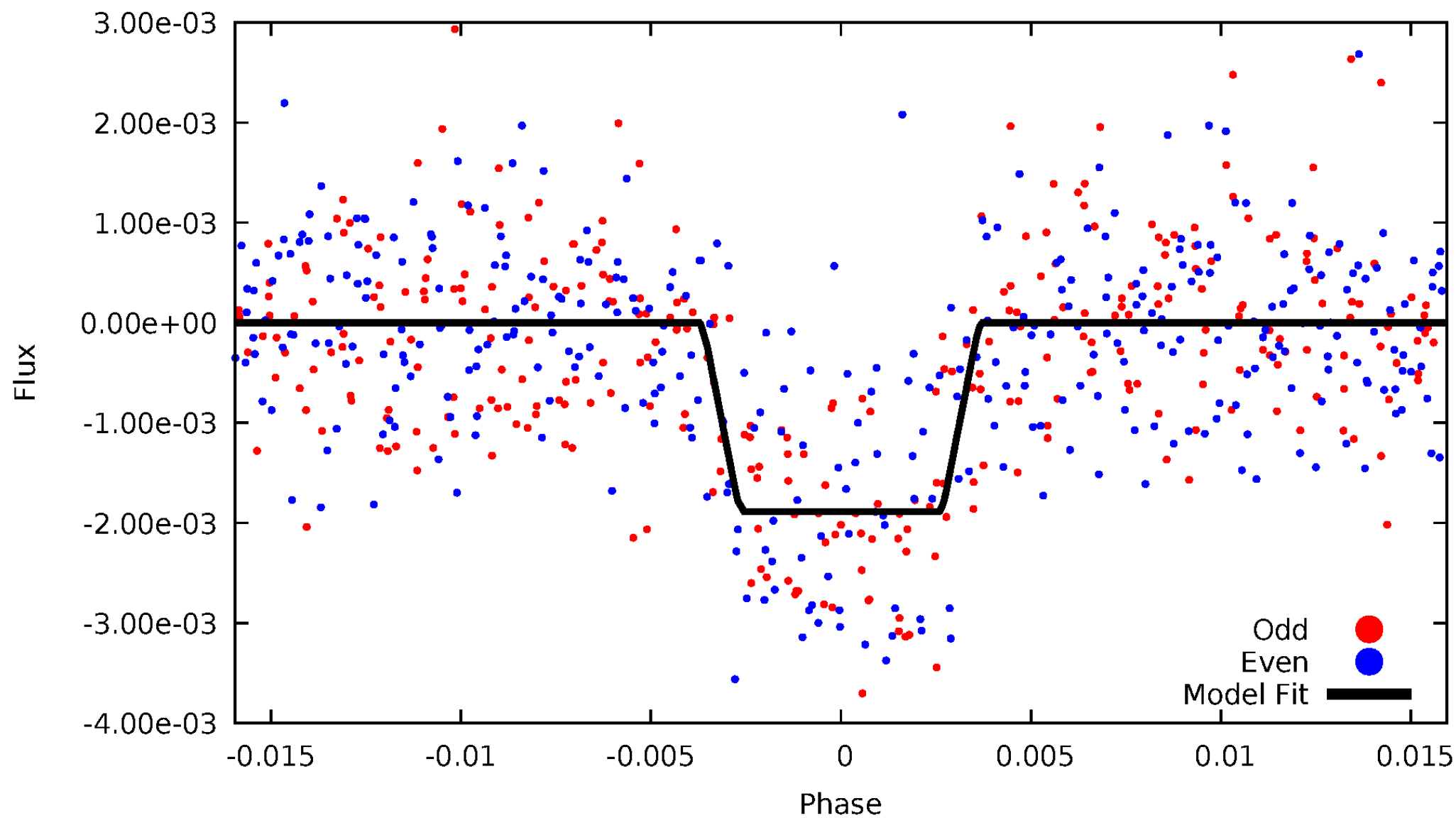
DV Odd/Even

TCE 010122538-03



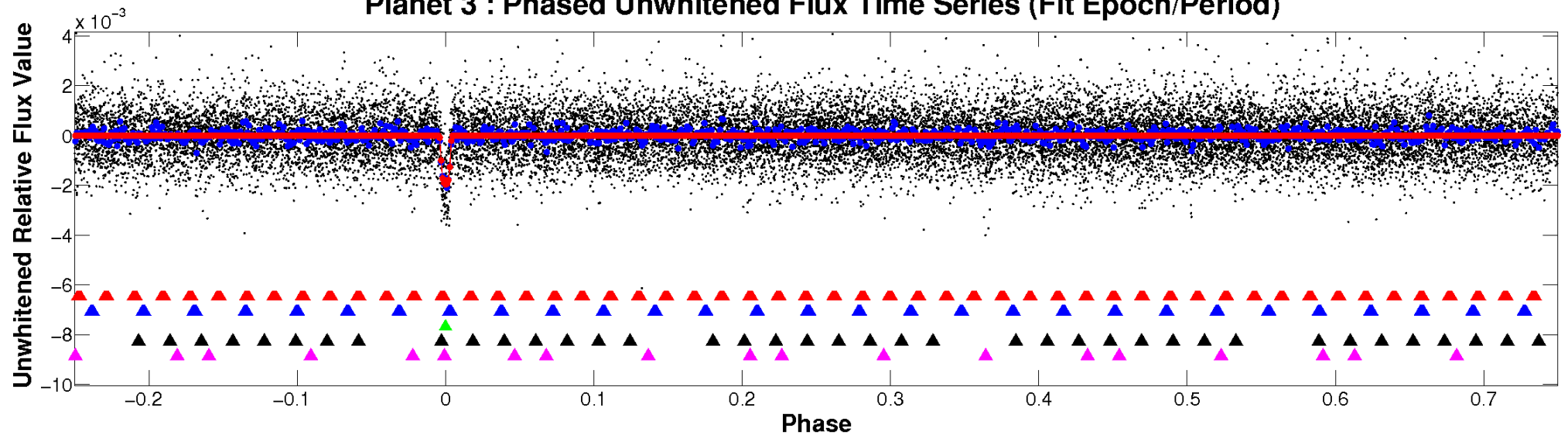
ALT Odd/Even

TCE 010122538-03

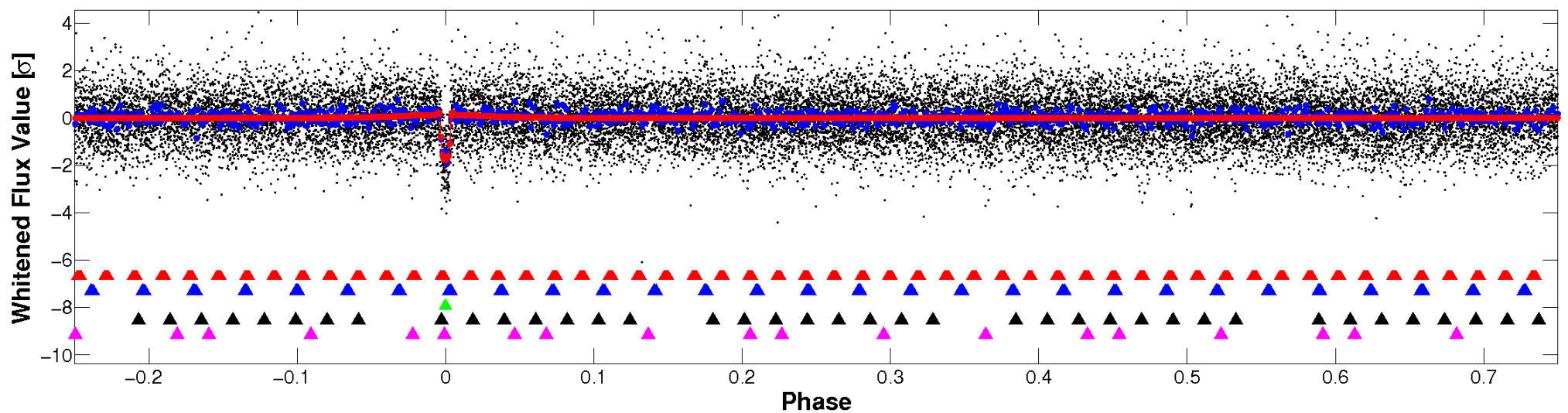


Non-Whitened Vs. Whitened Light Curve

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

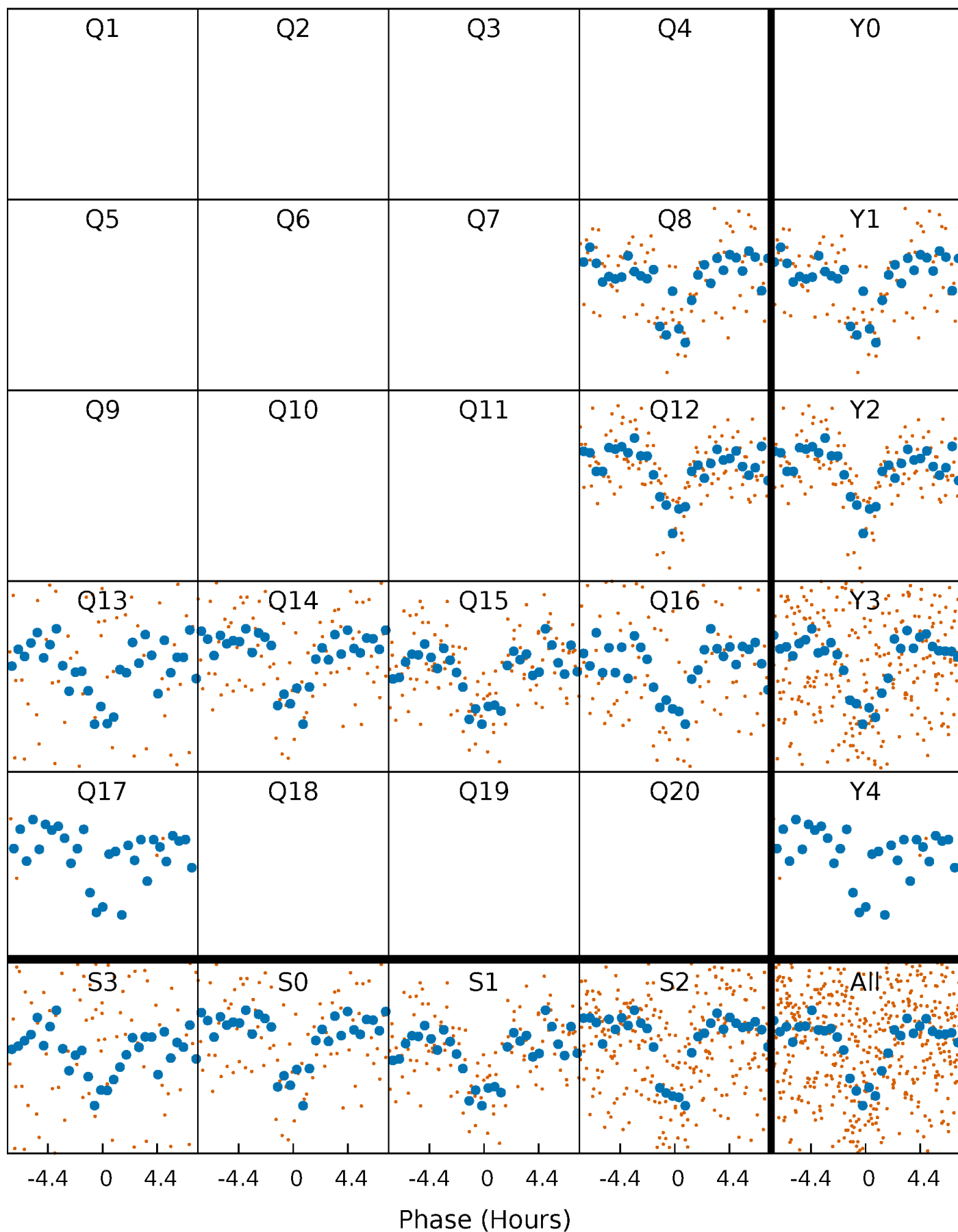


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



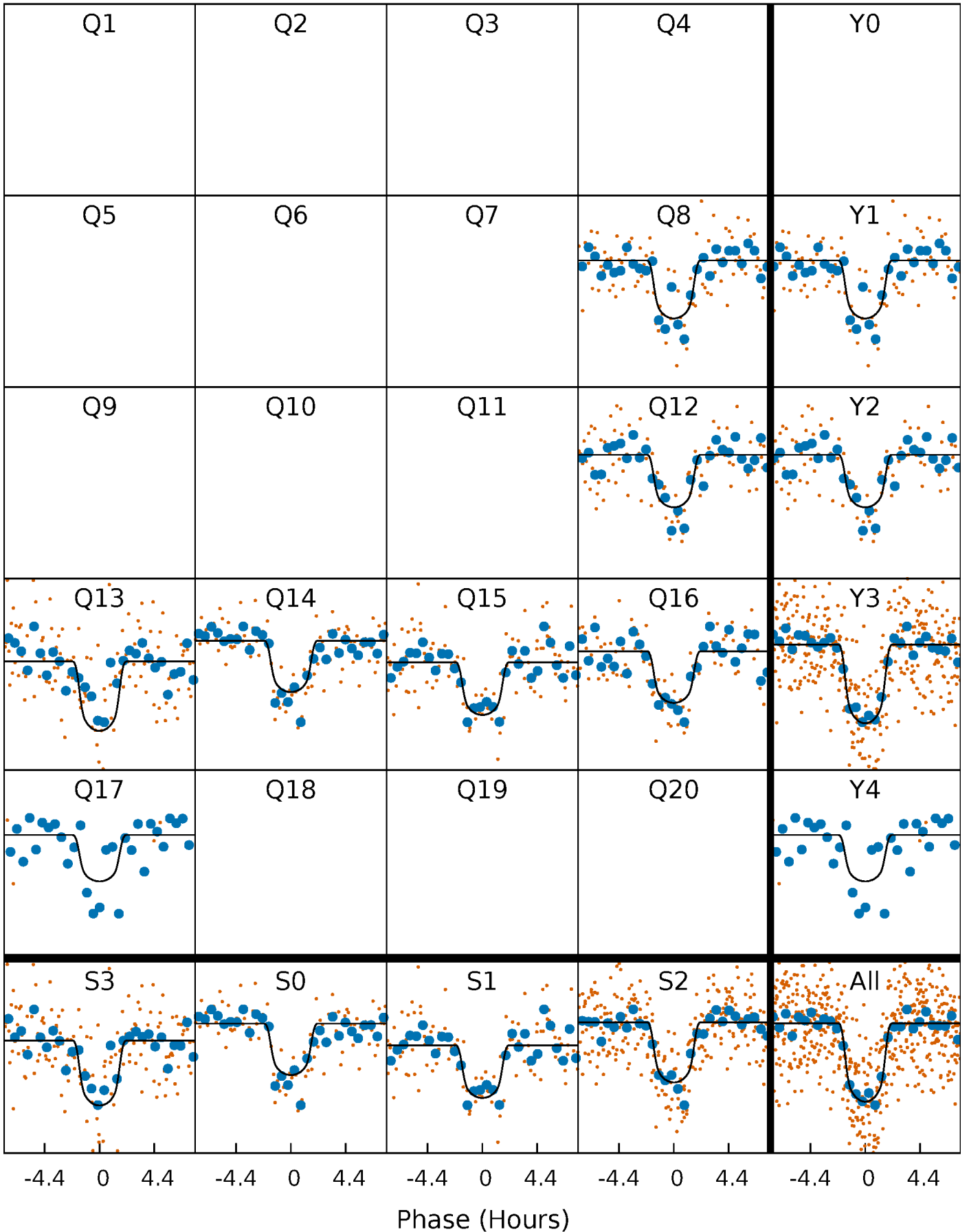
PDC Quarter-Phased Transit Curves

TCE 010122538-03 $P = 20.956933$ Days $T_0 = 139.081400$ (BKJD)



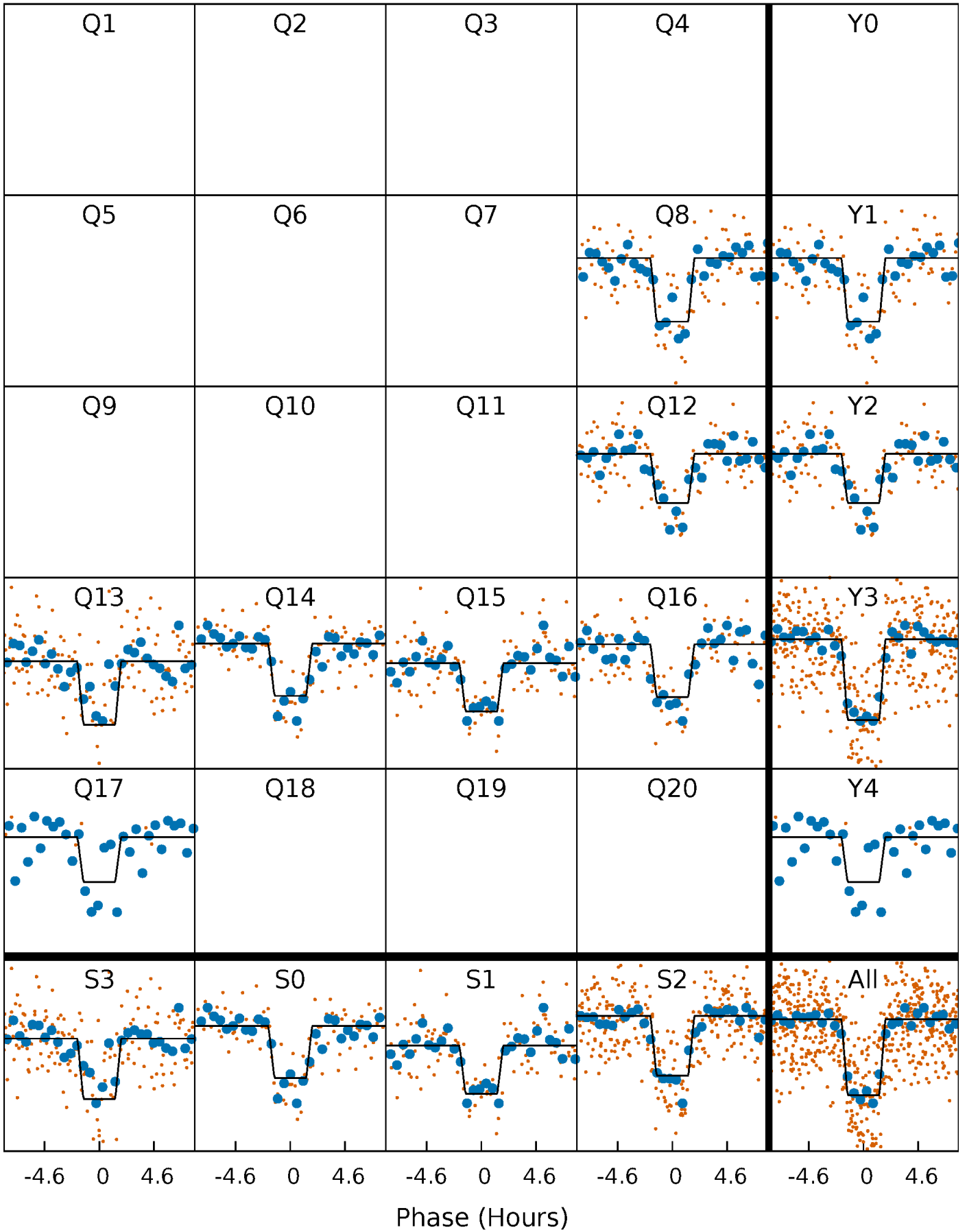
DV Quarter-Phased Transit Curves

TCE 010122538-03 $P = 20.956933$ Days $T_0 = 139.081400$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

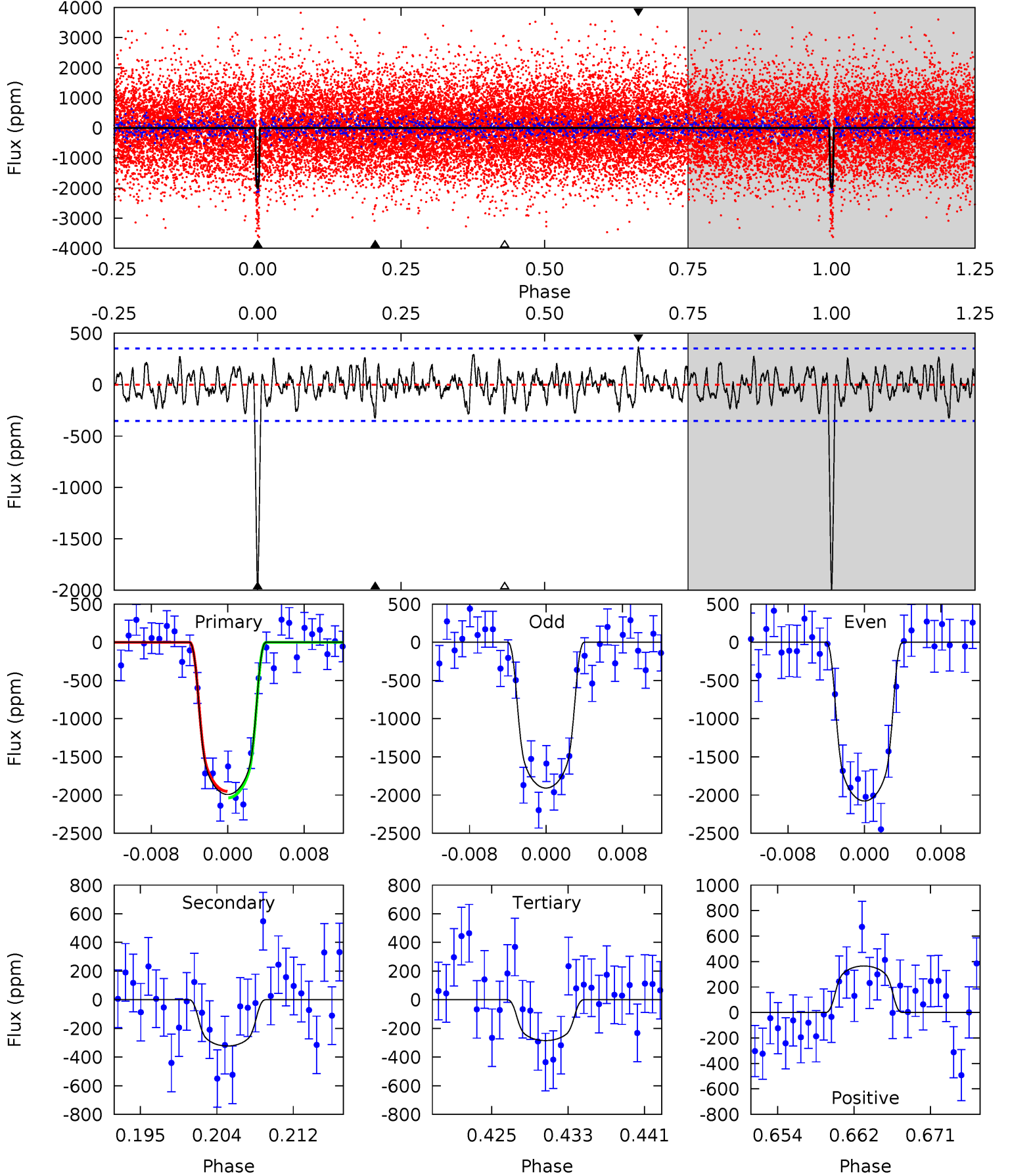
TCE 010122538-03 P= 20.956951 Days $T_0=139.079375$ (BKJD)



DV Model-Shift Uniqueness Test

010122538-03, P = 20.956933 Days, E = 139.081400 Days

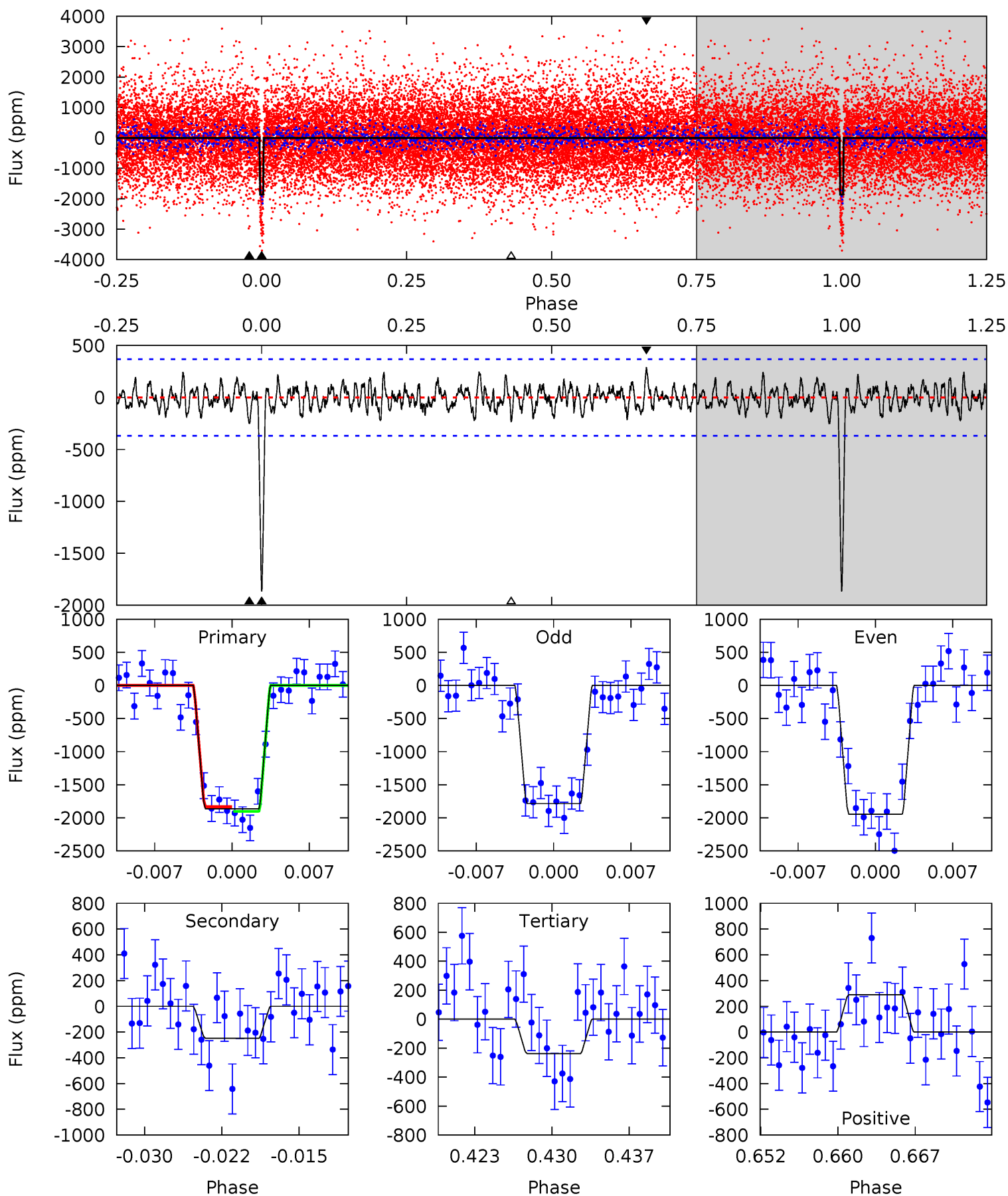
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	4.63	4.09	5.24	5.06	2.63	1.54	24.5	23.3	0.54	-0.61	1.22	0.95	0.15	0.61



Alt Model-Shift Uniqueness Test

010122538-03, P = 20.956951 Days, E = 139.079375 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	3.43	3.27	3.99	5.08	2.68	1.23	22.4	21.7	0.15	-0.57	1.10	1.01	0.13	0.47



Stellar Parameters For KIC 010122538

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3891^{+70}_{-86}	$4.718^{+0.018}_{-0.042}$	$0.210^{+0.150}_{-0.150}$	$0.564^{+0.035}_{-0.026}$	$0.605^{+0.025}_{-0.034}$	$4.759^{+0.443}_{-0.674}$
	+2%/-2%	+0%/-1%	+71%/-71%	+6%/-5%	+4%/-6%	+9%/-14%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010122538-03 / KOI 2926.03

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-323 ± 70	$2.88^{+0.42}_{-0.41}$	510^{+12}_{-12}	2901^{+148}_{-144}	335^{+139}_{-100}
Alt.	-249 ± 73	$2.70^{+0.42}_{-0.39}$	510^{+12}_{-13}	2851^{+167}_{-170}	297^{+145}_{-108}

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

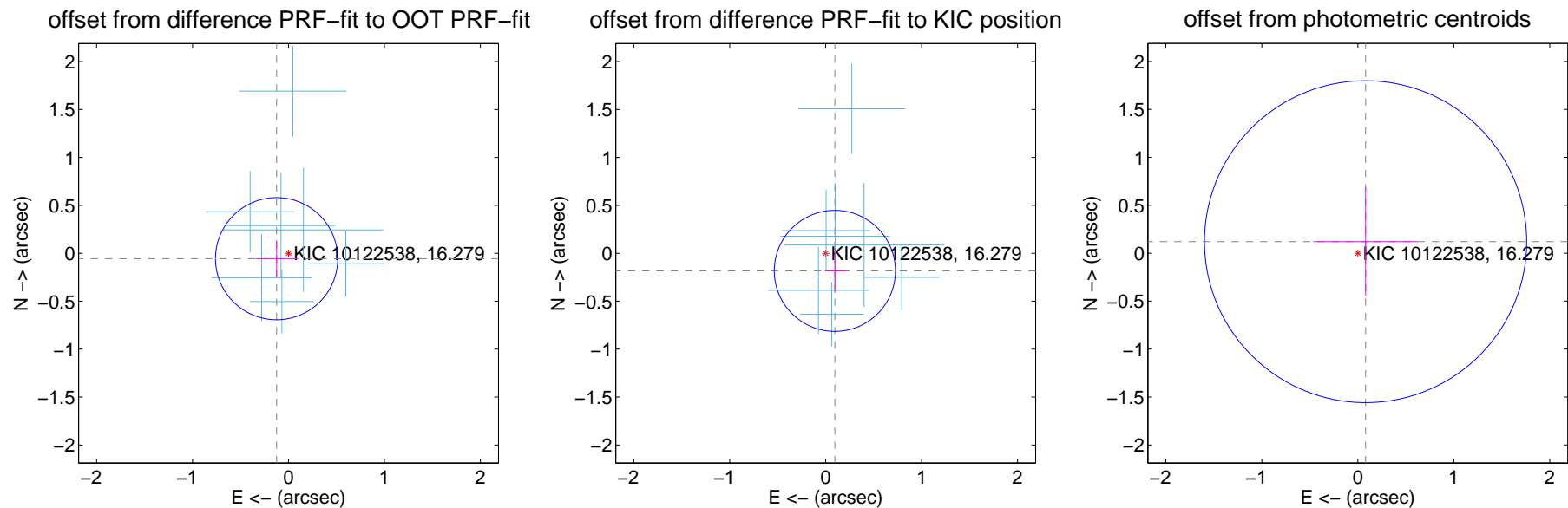
DV Centroid Data

Supplemental centroid analysis for 010122538-03. Kepler magnitude: 16.28. Transit SNR 17.41

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.136 ± 0.212	0.64	0.124 ± 0.217	-0.056 ± 0.191
PRF-fit source offset from KIC position	0.207 ± 0.210	0.99	-0.096 ± 0.103	-0.184 ± 0.231
photometric centroid source offset	0.14 ± 0.56	0.26	-0.08 ± 0.55	0.12 ± 0.57

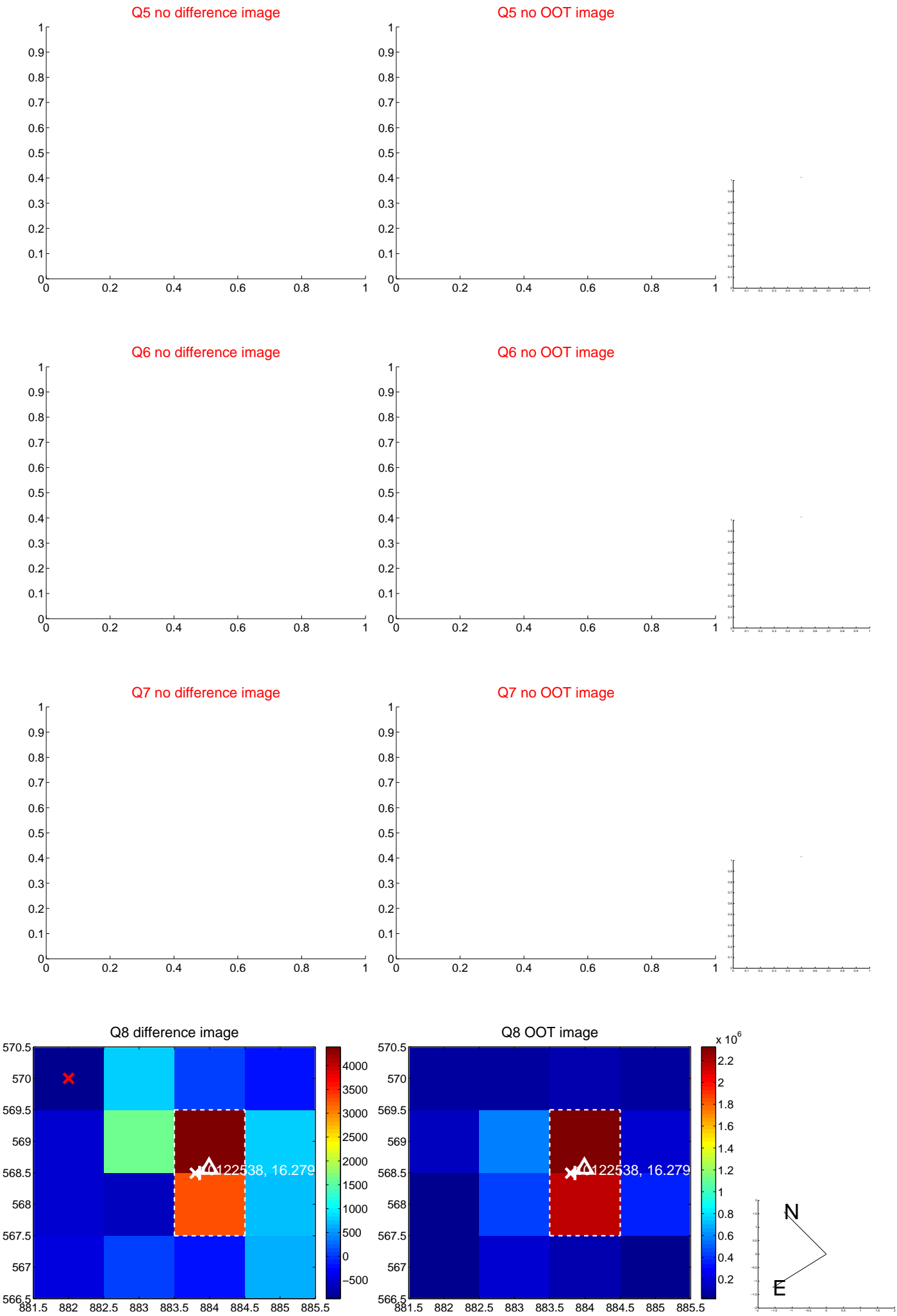


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

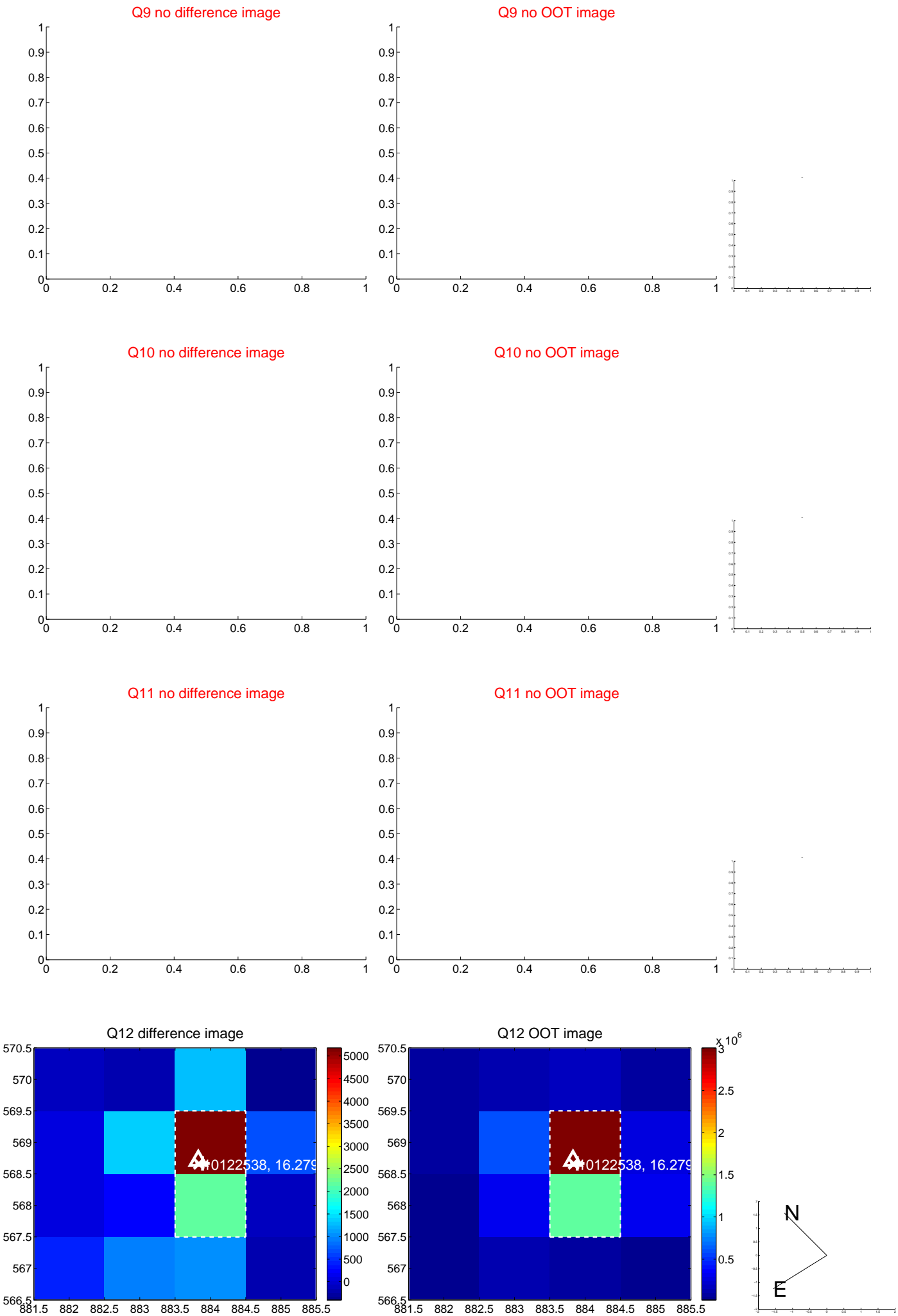
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



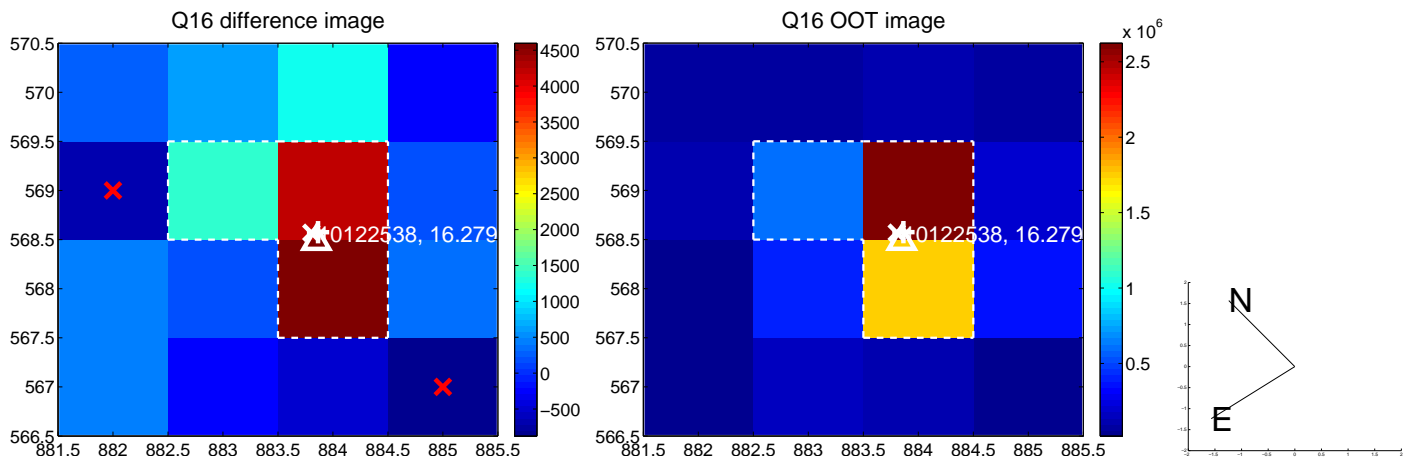
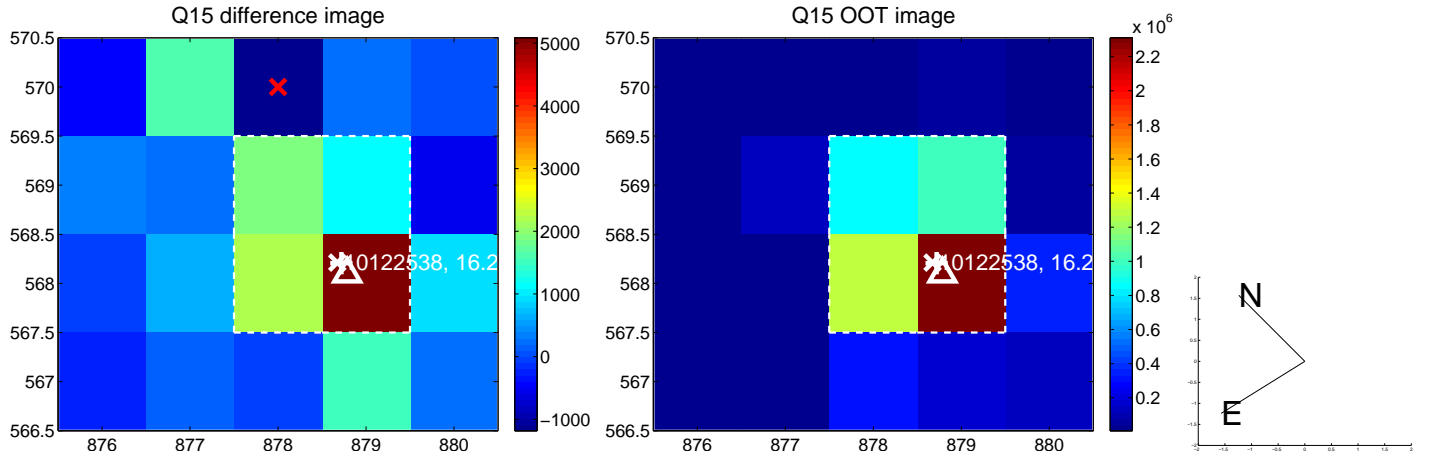
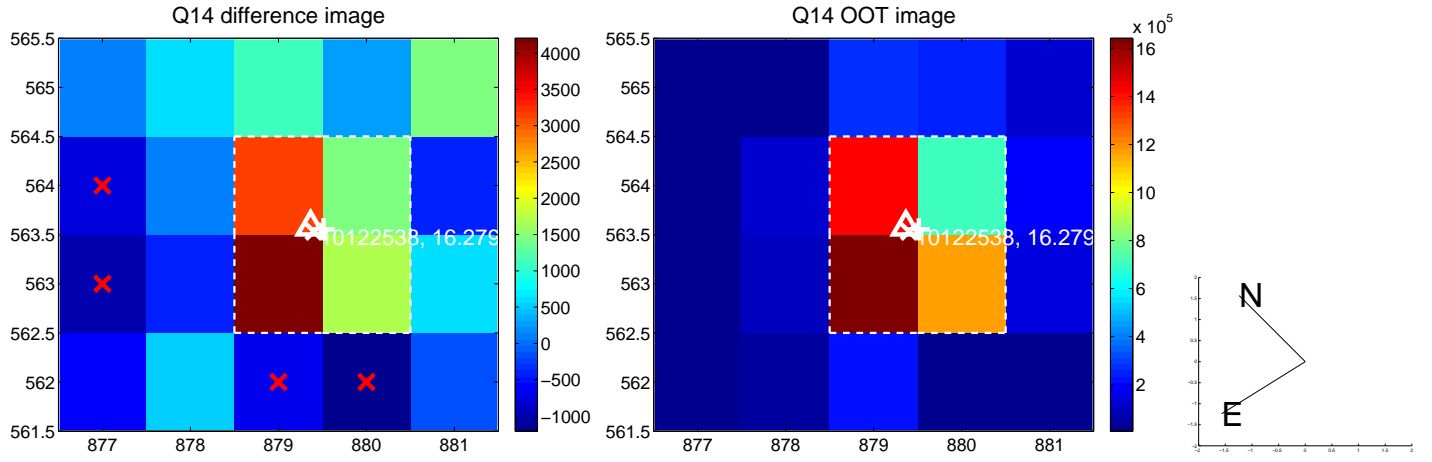
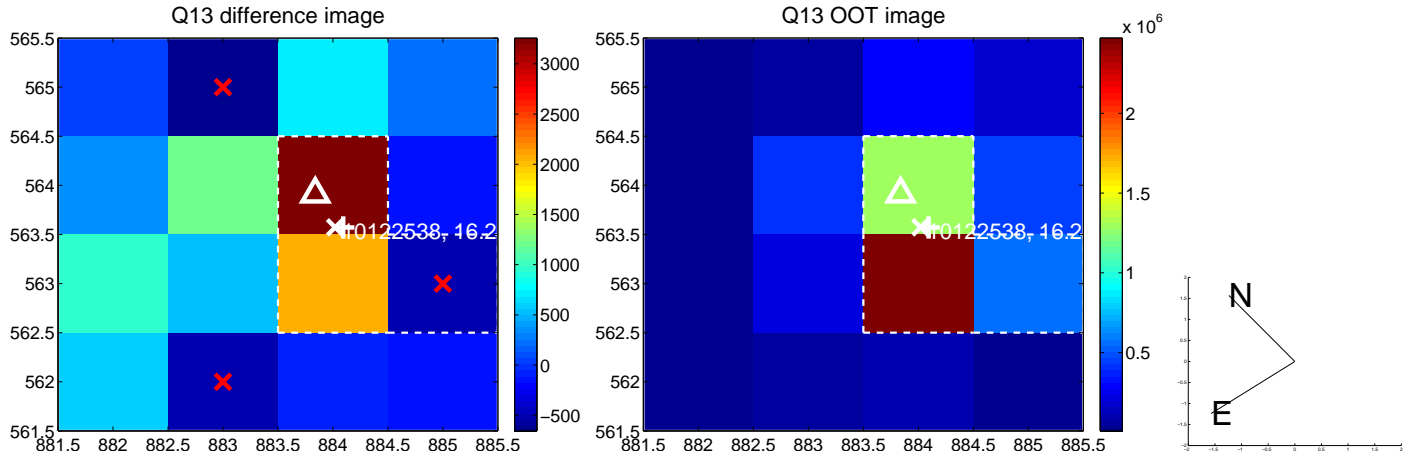
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



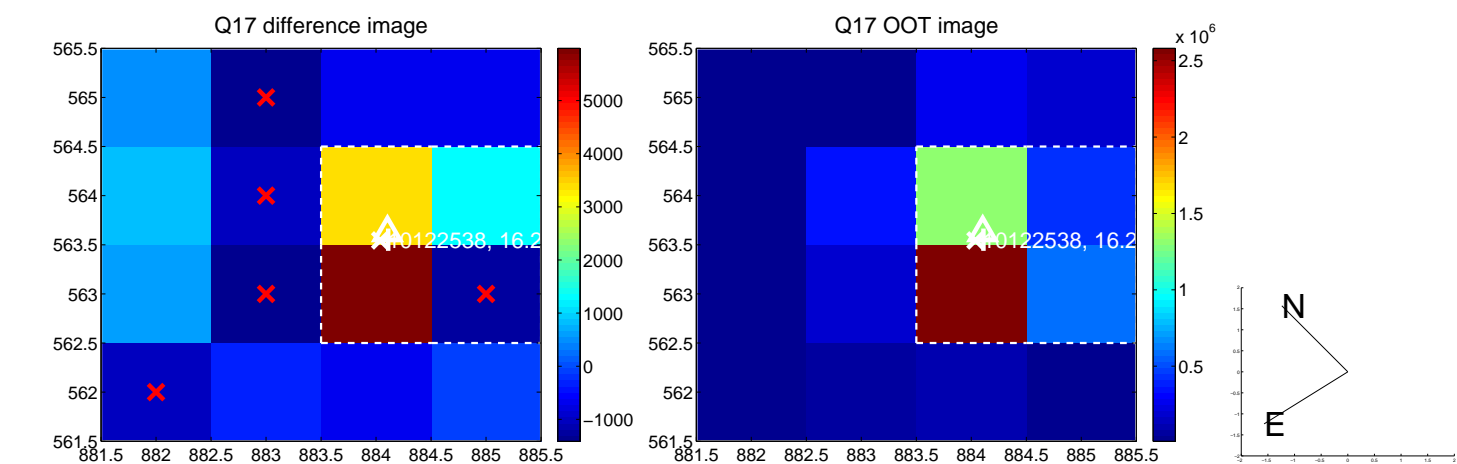
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



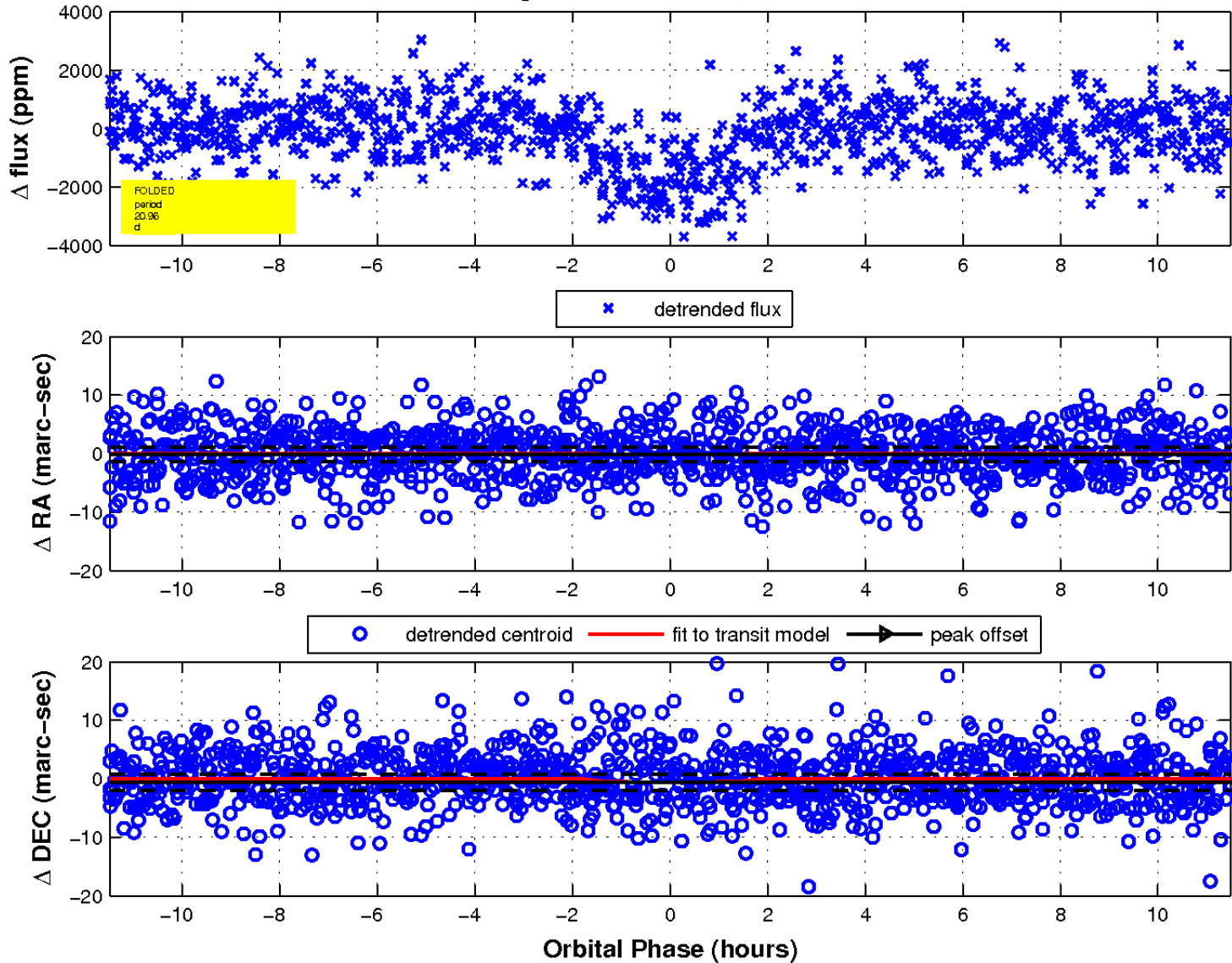
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

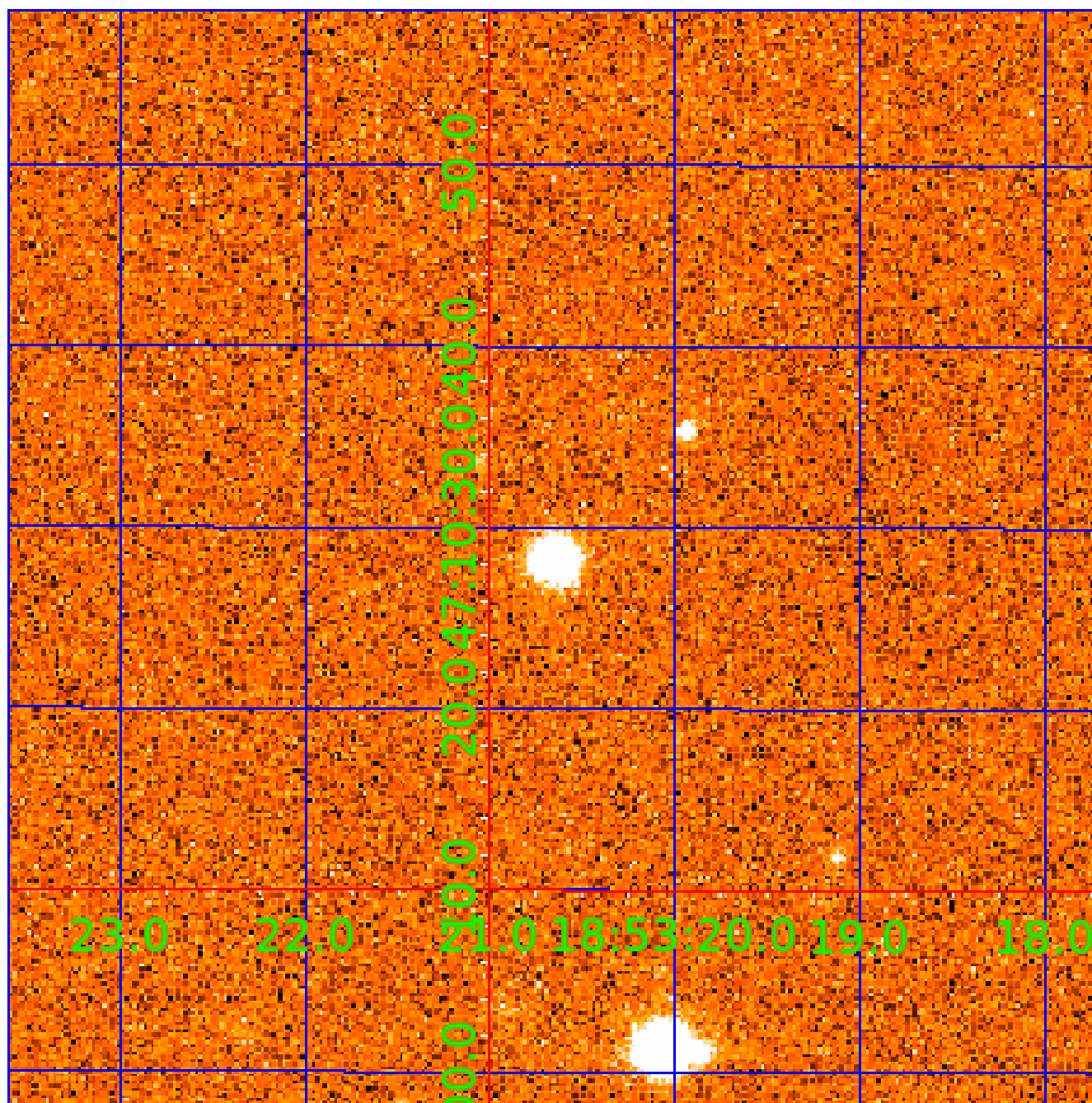


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 010122538

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})
010122538-01	OBS	2926.02	5.536075	131.885052	1199.7	2.293	17.2	18.4	0.56	3891	2.12	24.31
010122538-02	OBS	2926.01	12.285494	131.899000	1659.5	3.220	16.7	19.2	0.56	3891	2.66	8.40
010122538-03	OBS	2926.03	20.956933	139.081400	1970.0	3.834	16.2	17.4	0.56	3891	2.86	4.12
010122538-04	OBS	2926.04	37.633670	158.810095	1922.6	5.405	12.8	13.9	0.56	3891	3.12	1.89
010122538-05	OBS	2926.05	75.732965	201.937097	2704.5	4.691	11.4	13.0	0.56	3891	3.55	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010122538-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
010122538-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-05	OBS	PC	0.89	0	0	0	0	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.

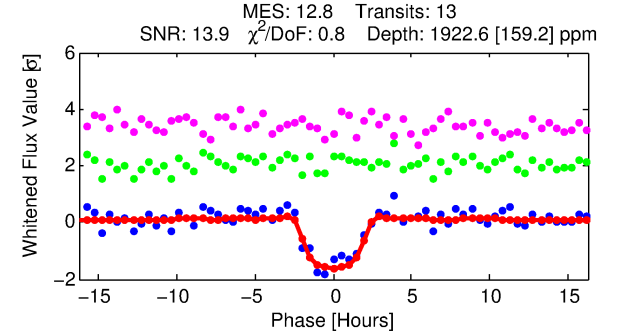
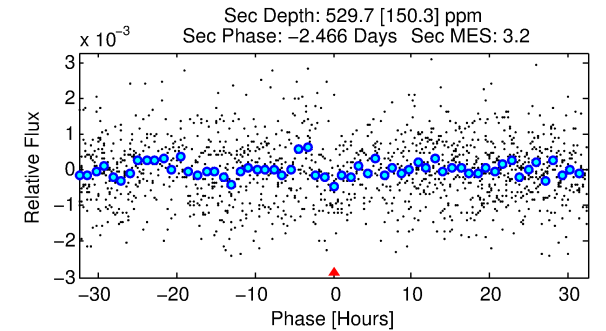
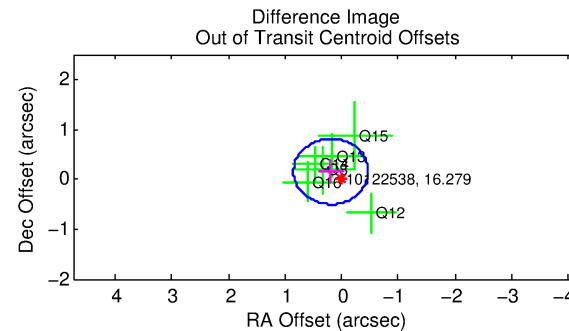
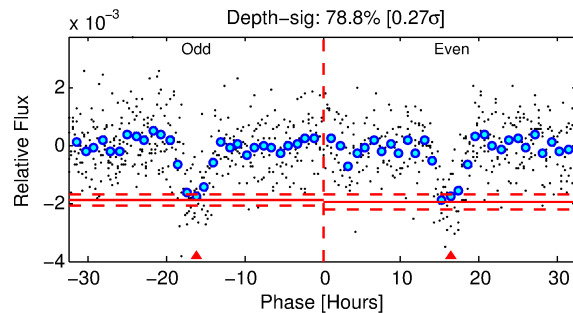
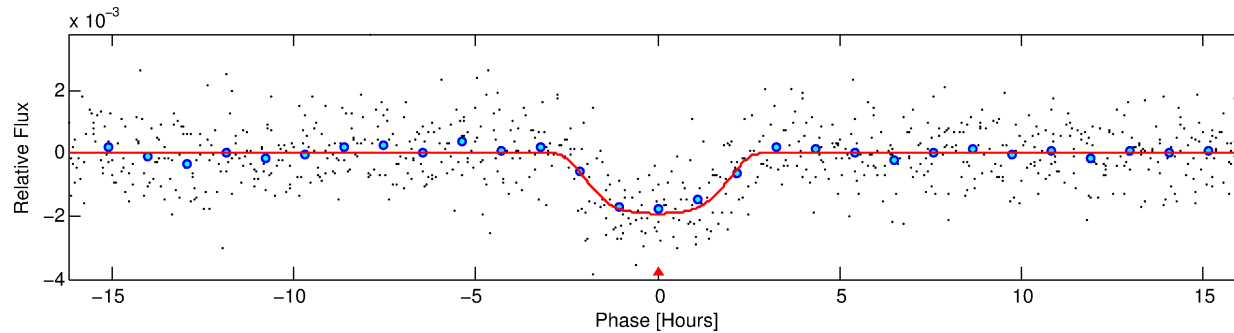
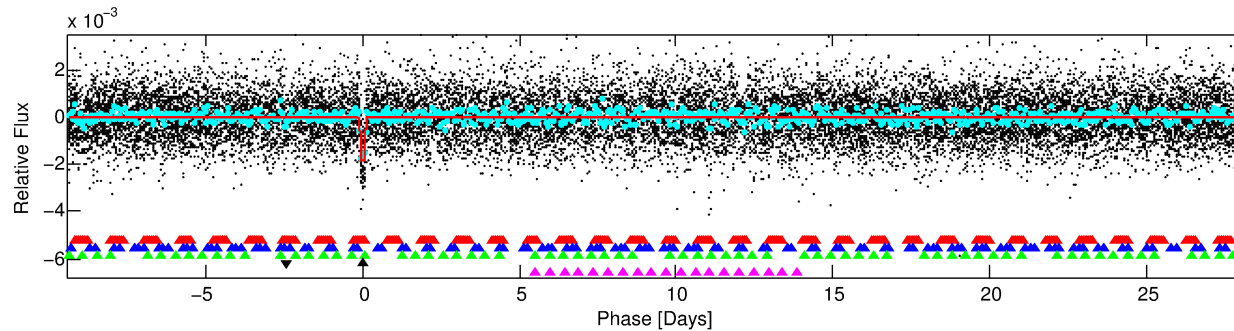
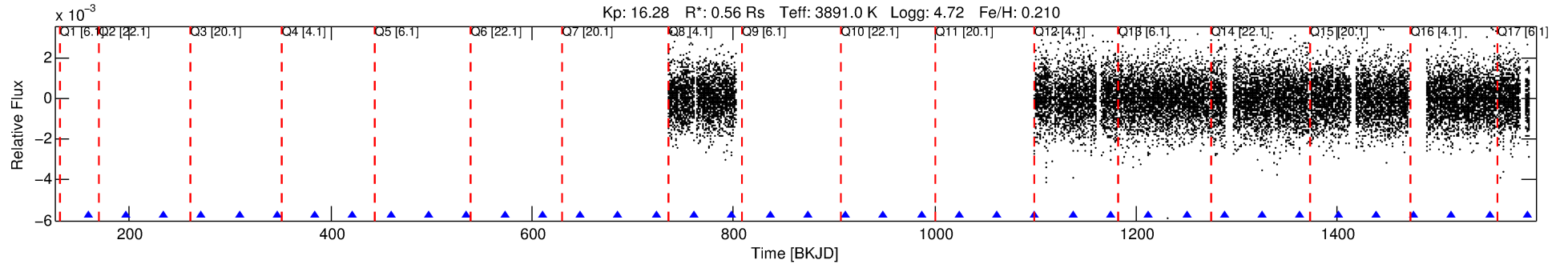
Ephemeris Match Information For 010122538-04

No Significant Match Found

DV One-Page Summary

KIC: 10122538 Candidate: 4 of 5 Period: 37.634 d

KOI: K02926.04 Corr: 0.916



DV Fit Results:

Period = 37.63367 [0.00056] d
Epoch = 158.8101 [0.0168] BKJD
Rp/R* = 0.0507 [0.0036]
a/R* = 26.31 [4.09]
b = 0.93 [0.03]
Seff = 1.89 [0.22]
Teq = 299 [9] K
Rp = 3.12 [0.29] Re
a = 0.1860 [0.0098] AU
Ag = 1034.45 [337.37] [3.06 σ]
Teffp = 2621 [216] K [10.76 σ]

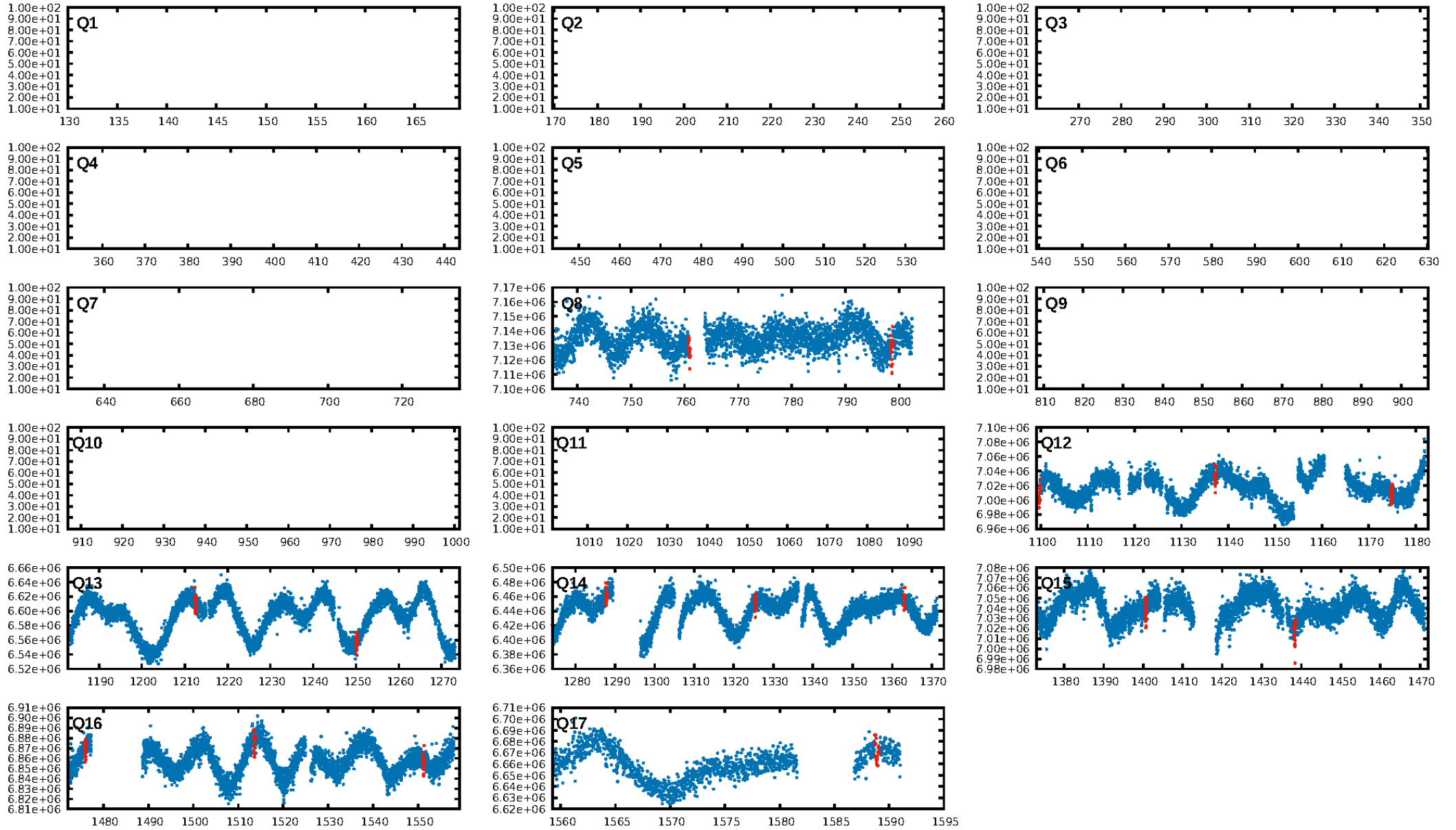
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [60.40 σ]
LongPeriod-sig: 100.0% [127.76 σ]
ModelChiSquare2-sig: 88.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.07e-36
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 1.603
Centroid-sig: 2.7%
Centroid-so: 1.092 arcsec [1.68 σ]
OotOffset-rm: 0.247 arcsec [1.13 σ]
KicOffset-rm: 0.018 arcsec [0.08 σ]
OotOffset-st: 1/1/3/1 [6]
KicOffset-st: 1/1/3/1 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 0.86 [6/7]

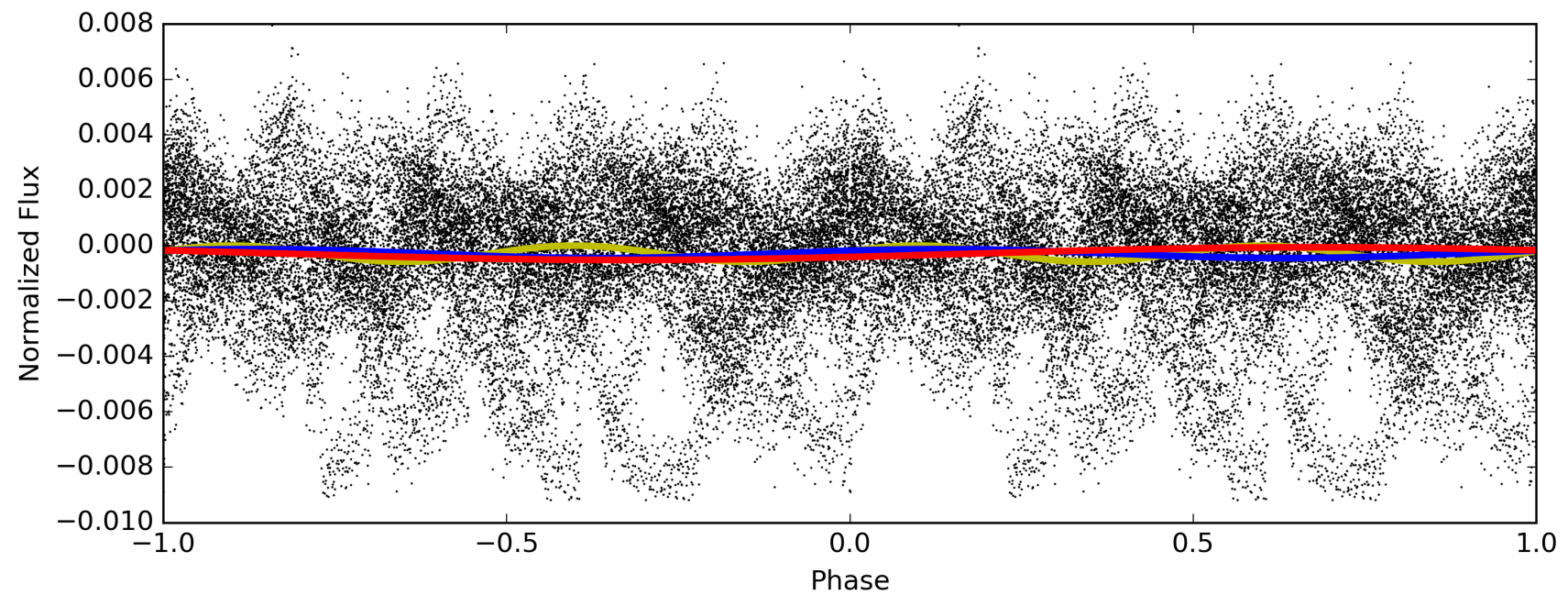
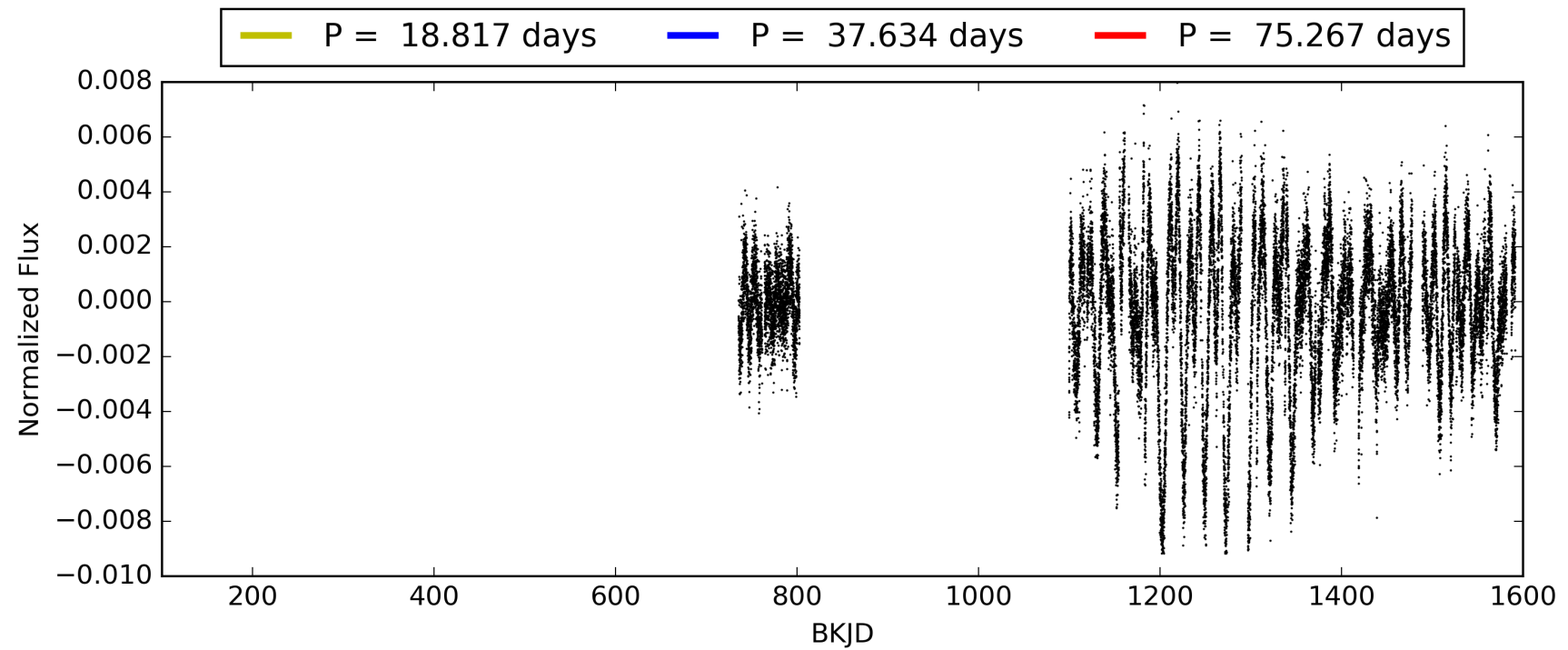
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:18:20 Z

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

TCE 010122538-04, PDC Light Curves

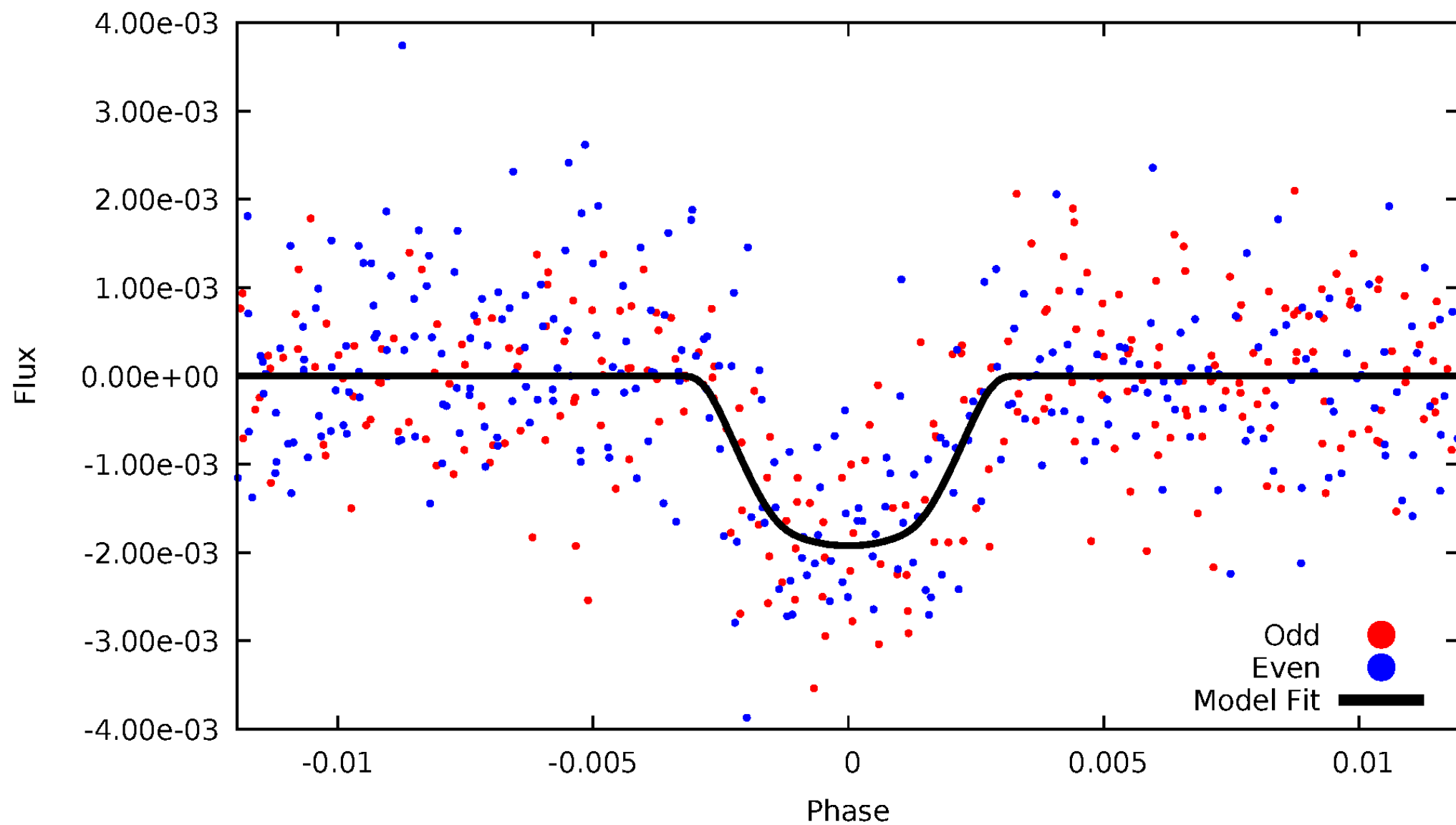


TCE 010122538-04



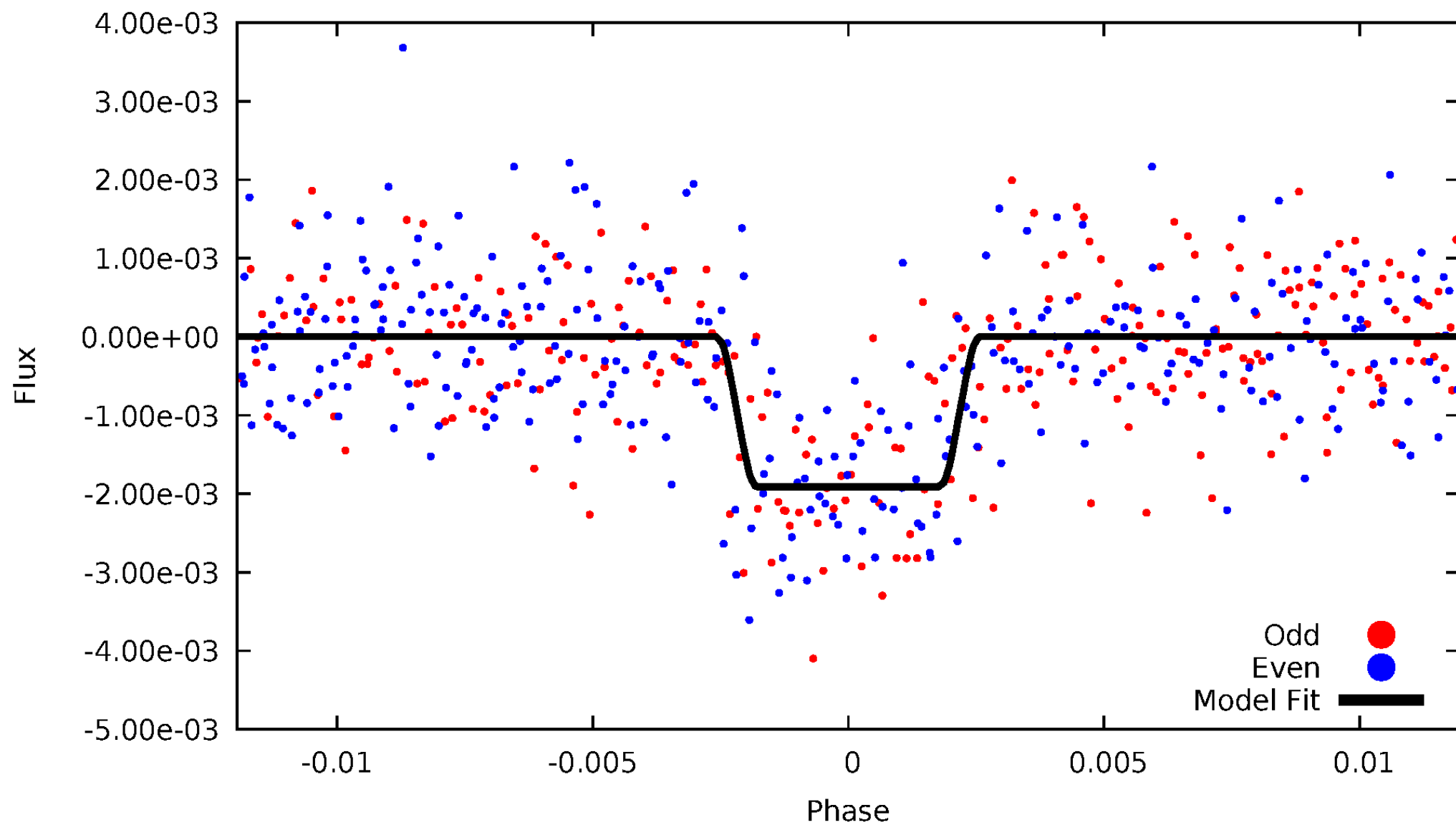
DV Odd/Even

TCE 010122538-04



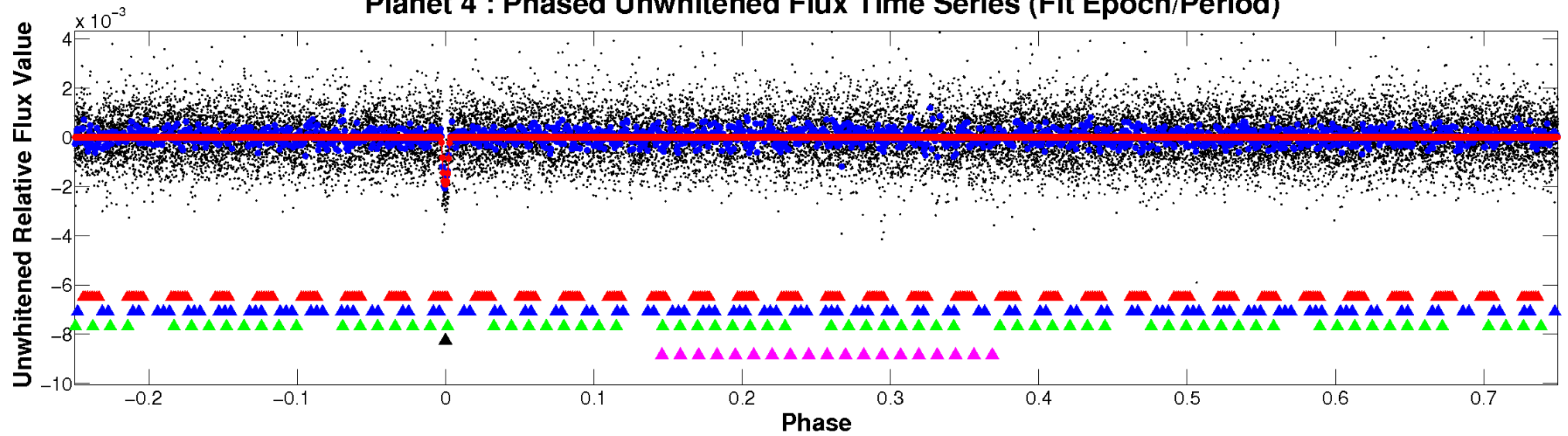
ALT Odd/Even

TCE 010122538-04

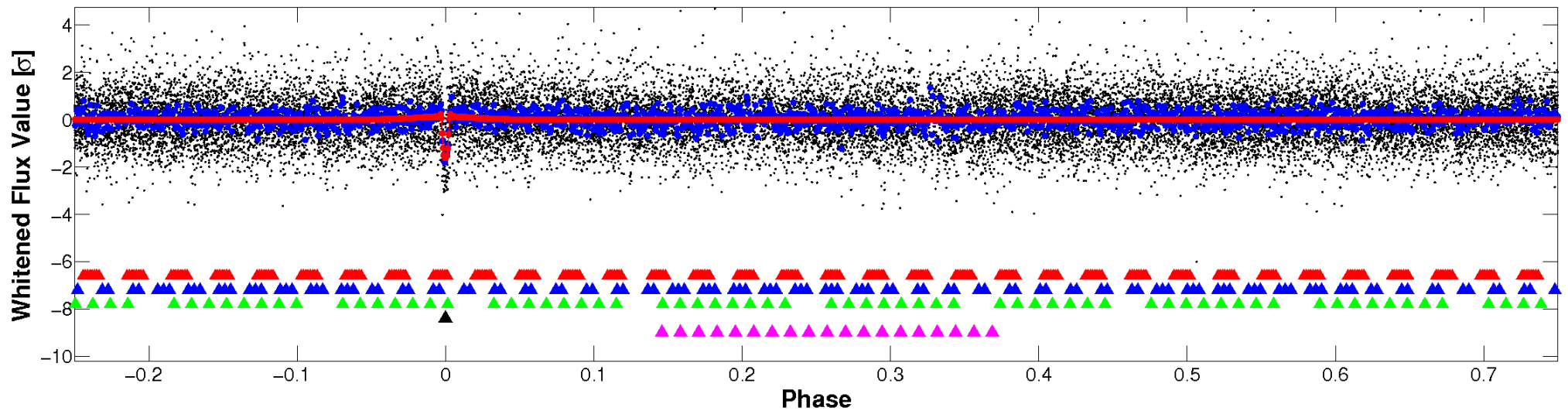


Non-Whitened Vs. Whitened Light Curve

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

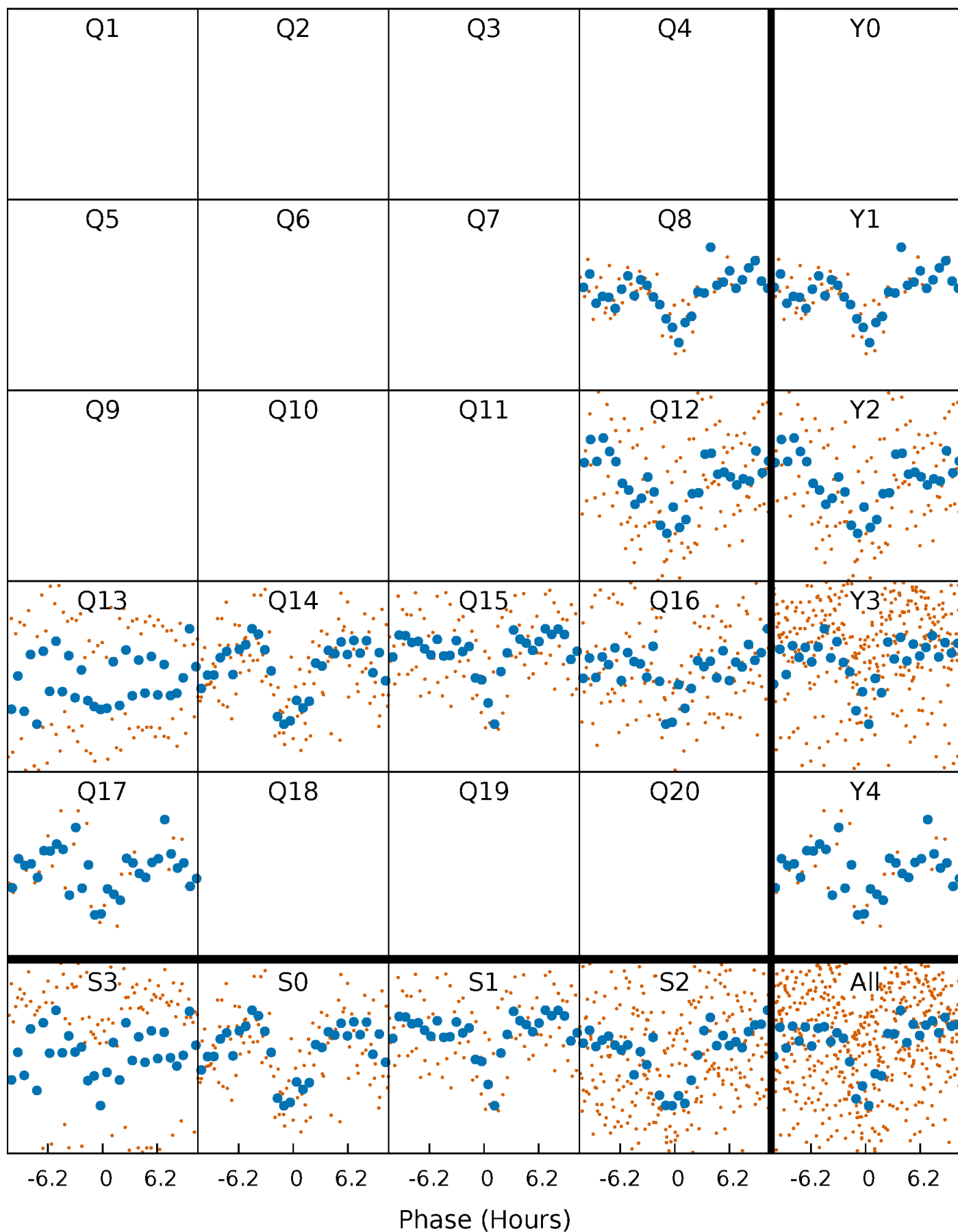


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



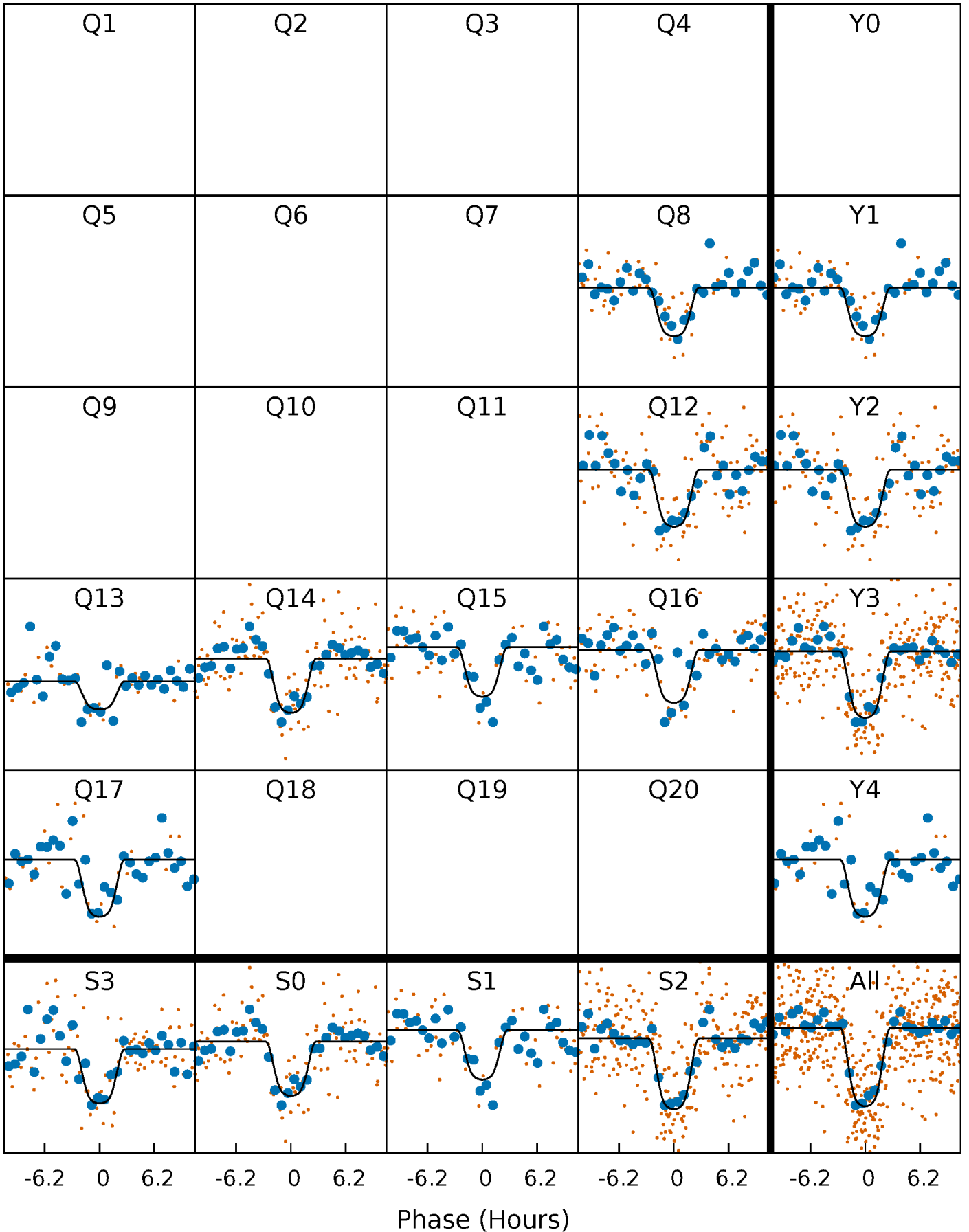
PDC Quarter-Phased Transit Curves

TCE 010122538-04 $P = 37.633670$ Days $T_0 = 158.810095$ (BKJD)



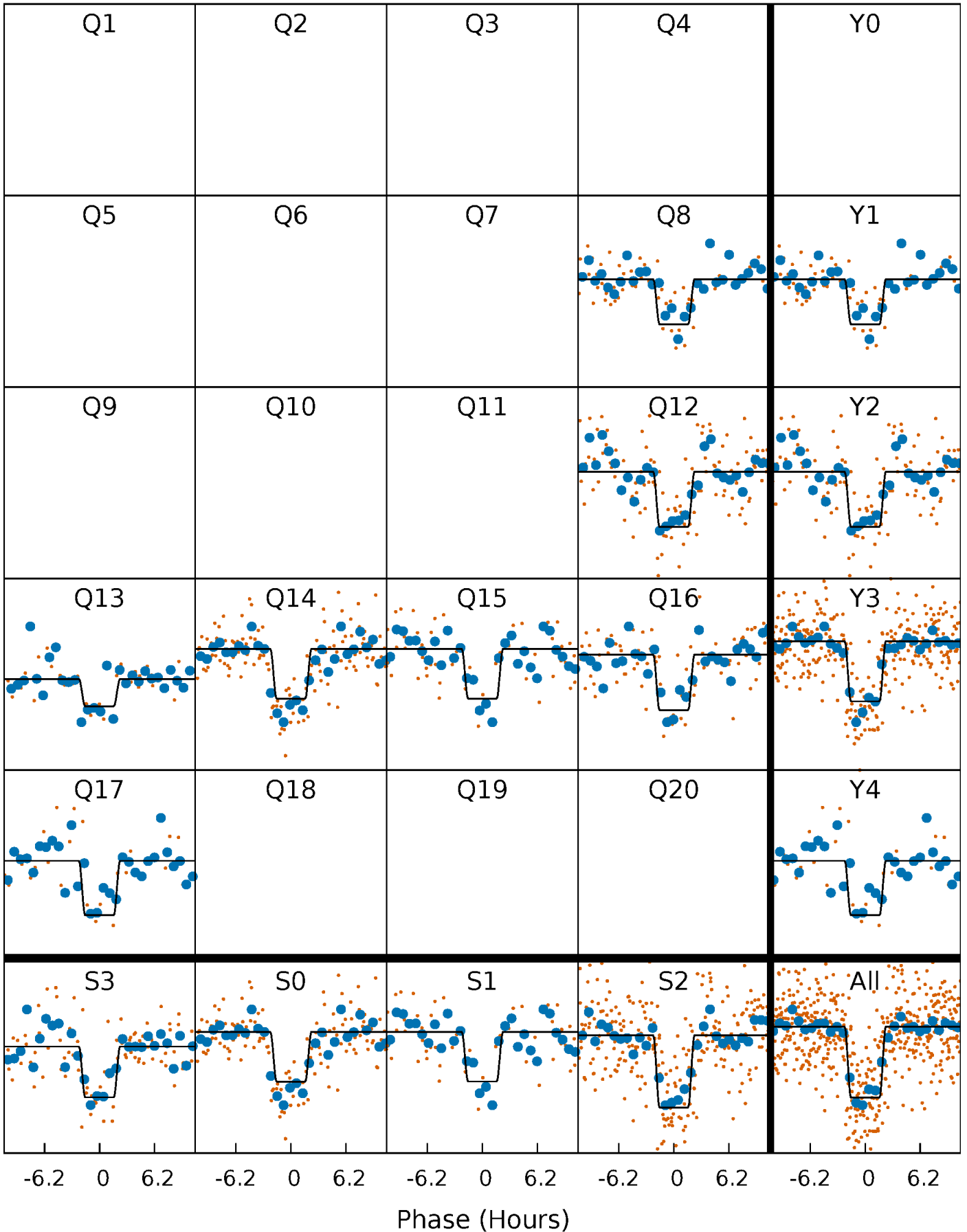
DV Quarter-Phased Transit Curves

TCE 010122538-04 P= 37.633670 Days $T_0=158.810095$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

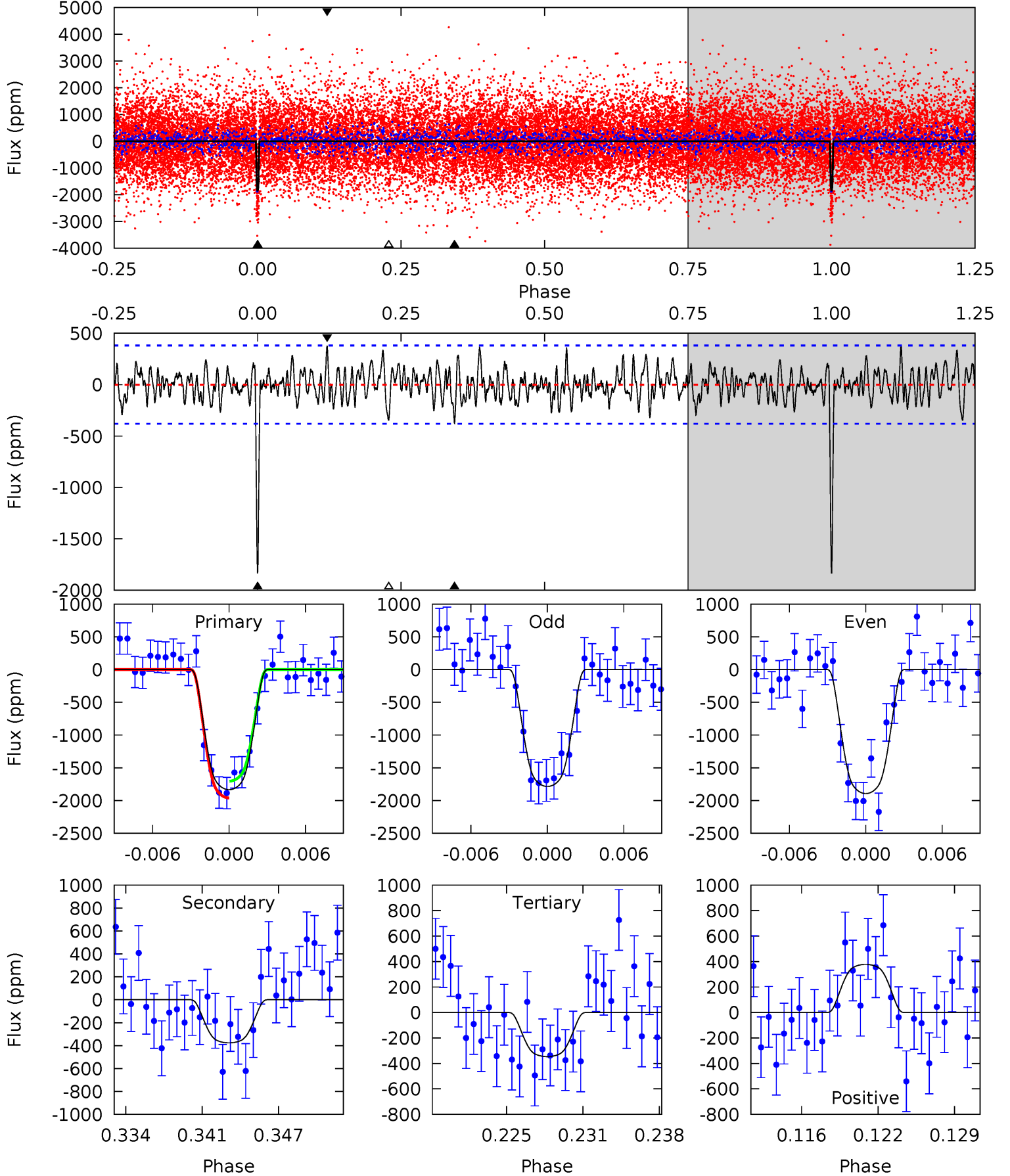
TCE 010122538-04 P= 37.634190 Days $T_0=158.794470$ (BKJD)



DV Model-Shift Uniqueness Test

010122538-04, $P = 37.633670$ Days, $E = 158.810095$ Days

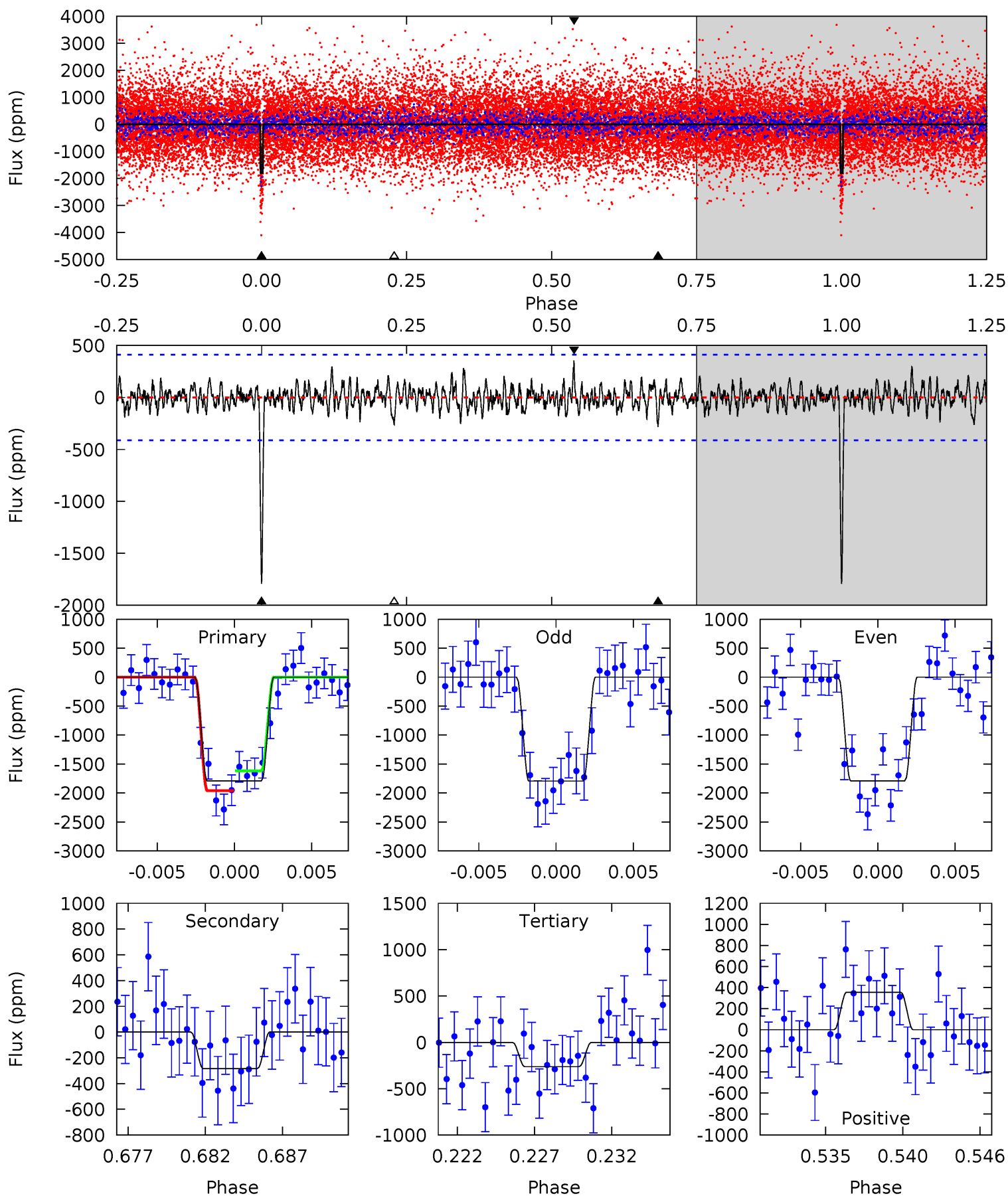
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	5.05	4.65	5.07	5.11	2.73	1.60	20.0	19.6	0.40	-0.02	0.73	0.99	0.17	1.72



Alt Model-Shift Uniqueness Test

010122538-04, P = 37.634190 Days, E = 158.794470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	3.55	3.28	4.44	5.16	2.80	1.06	19.2	18.0	0.27	-0.89	0.03	0.95	0.17	2.13



Stellar Parameters For KIC 010122538

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3891^{+70}_{-86}	$4.718^{+0.018}_{-0.042}$	$0.210^{+0.150}_{-0.150}$	$0.564^{+0.035}_{-0.026}$	$0.605^{+0.025}_{-0.034}$	$4.759^{+0.443}_{-0.674}$
	+2%/-2%	+0%/-1%	+71%/-71%	+6%/-5%	+4%/-6%	+9%/-14%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010122538-04 / KOI 2926.04

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-376 ± 74	$3.13^{+0.26}_{-0.23}$	419^{+10}_{-10}	2892^{+101}_{-107}	716^{+178}_{-162}
Alt.	-283 ± 80	$2.71^{+0.23}_{-0.22}$	419^{+9}_{-10}	2883^{+151}_{-146}	716^{+273}_{-213}

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

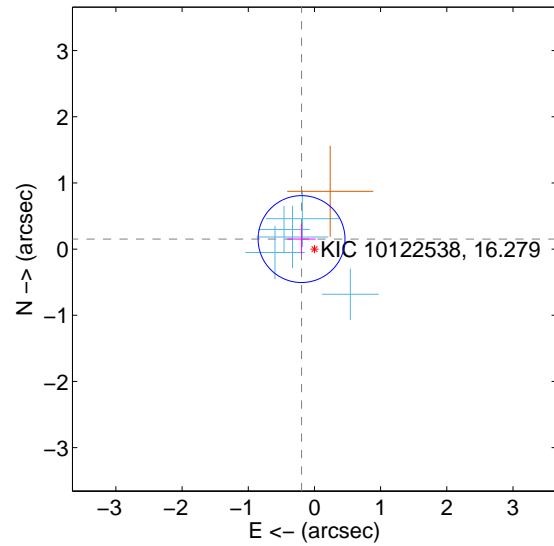
Supplemental centroid analysis for 010122538-04. Kepler magnitude: 16.28. Transit SNR 13.94

There are 5 quarters with good PRF difference image offsets

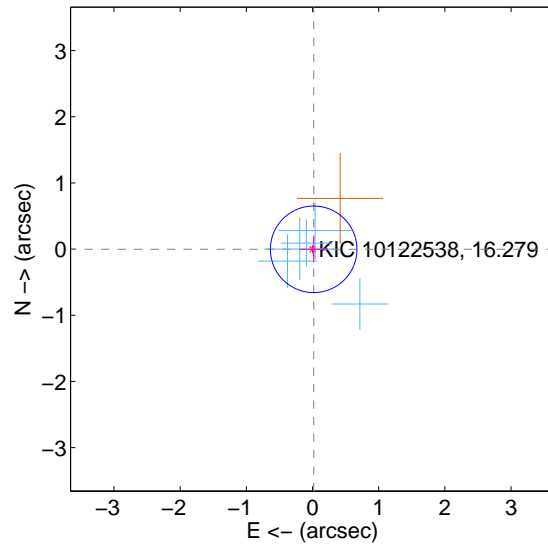
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.247 ± 0.219	1.13	0.195 ± 0.215	0.151 ± 0.224
PRF-fit source offset from KIC position	0.018 ± 0.218	0.08	-0.017 ± 0.218	-0.003 ± 0.203
photometric centroid source offset	1.09 ± 0.65	1.68	-0.73 ± 0.63	0.81 ± 0.67

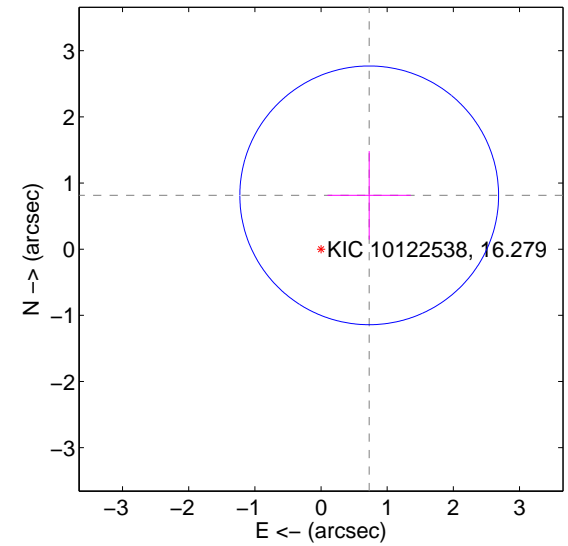
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

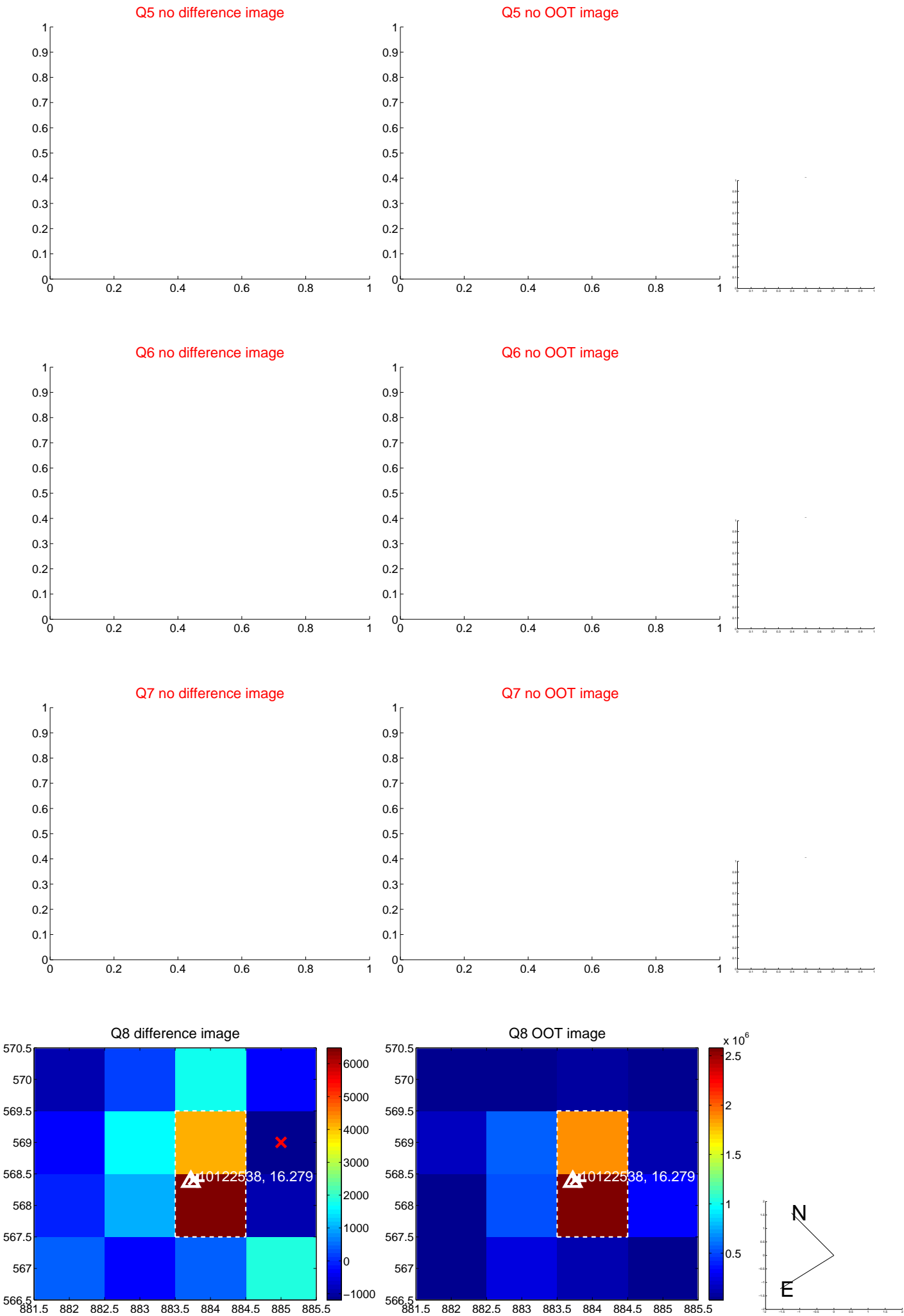


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

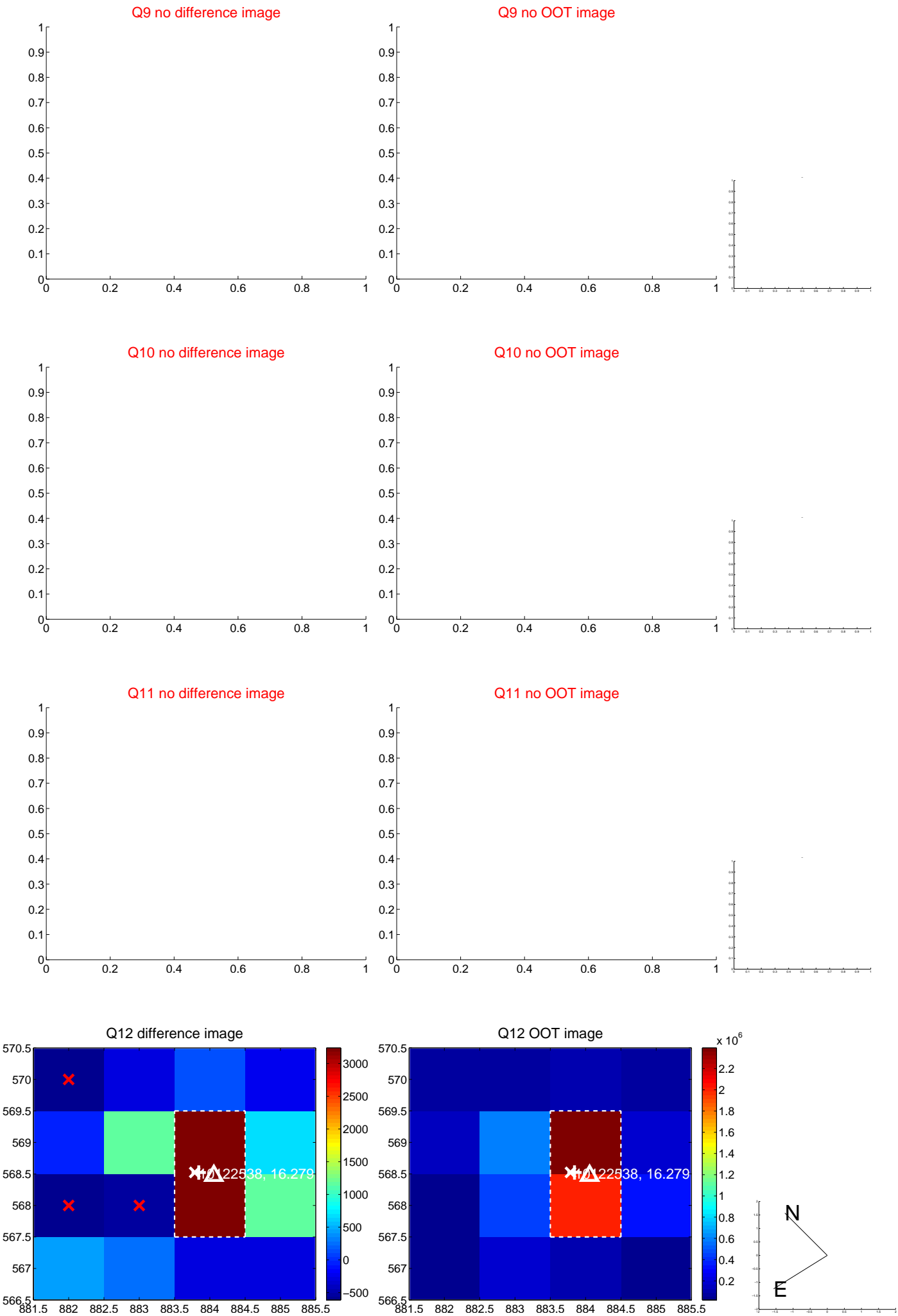
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



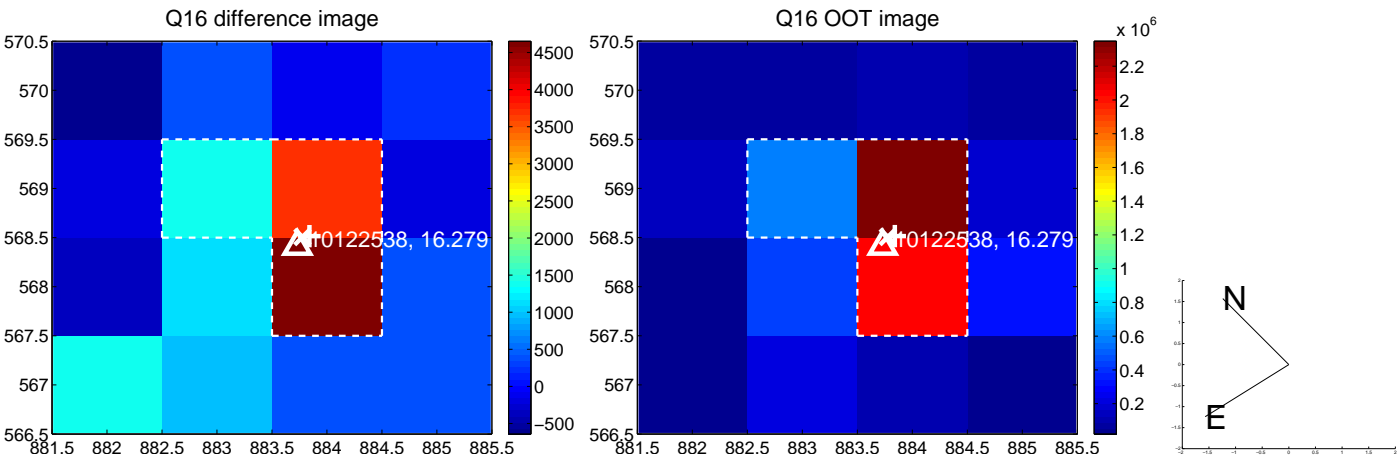
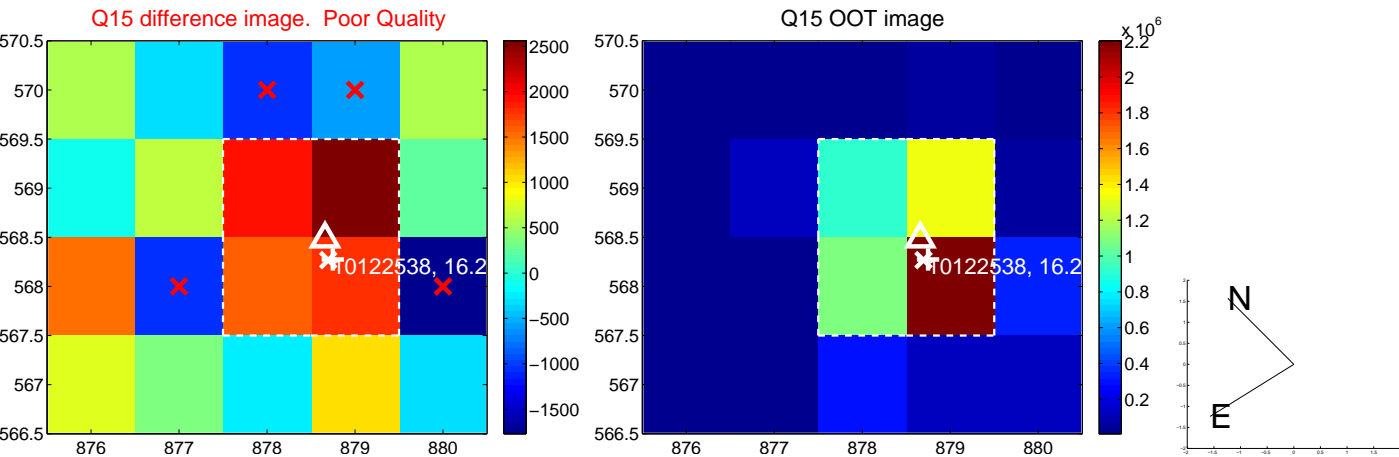
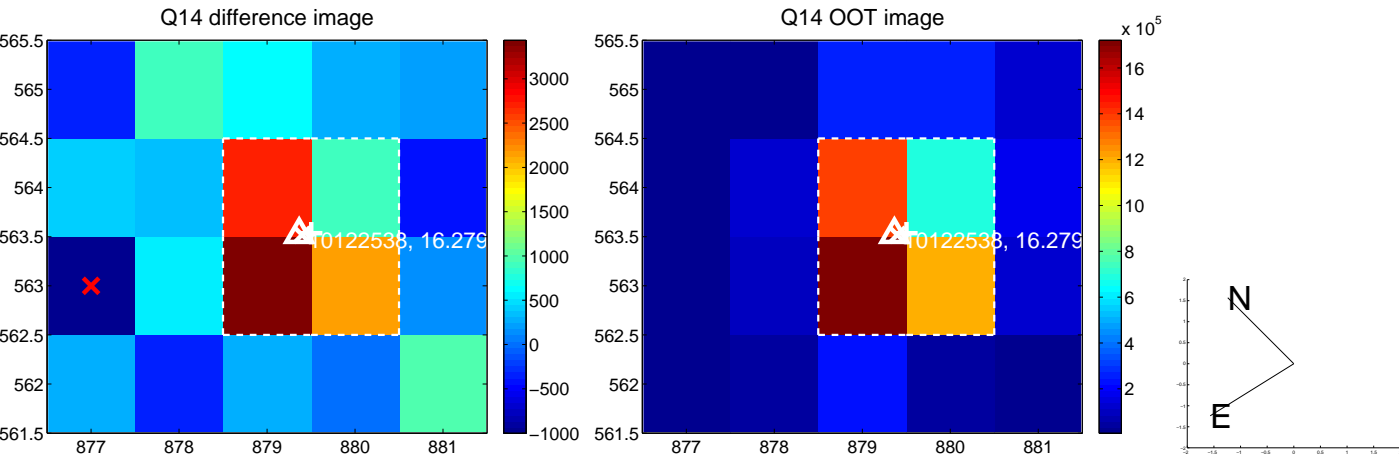
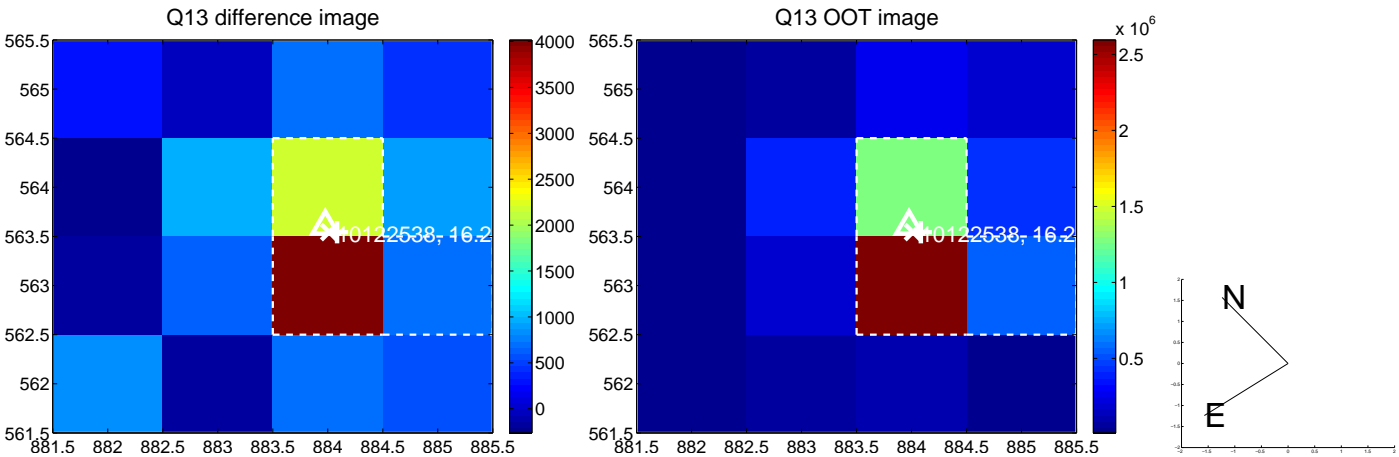
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



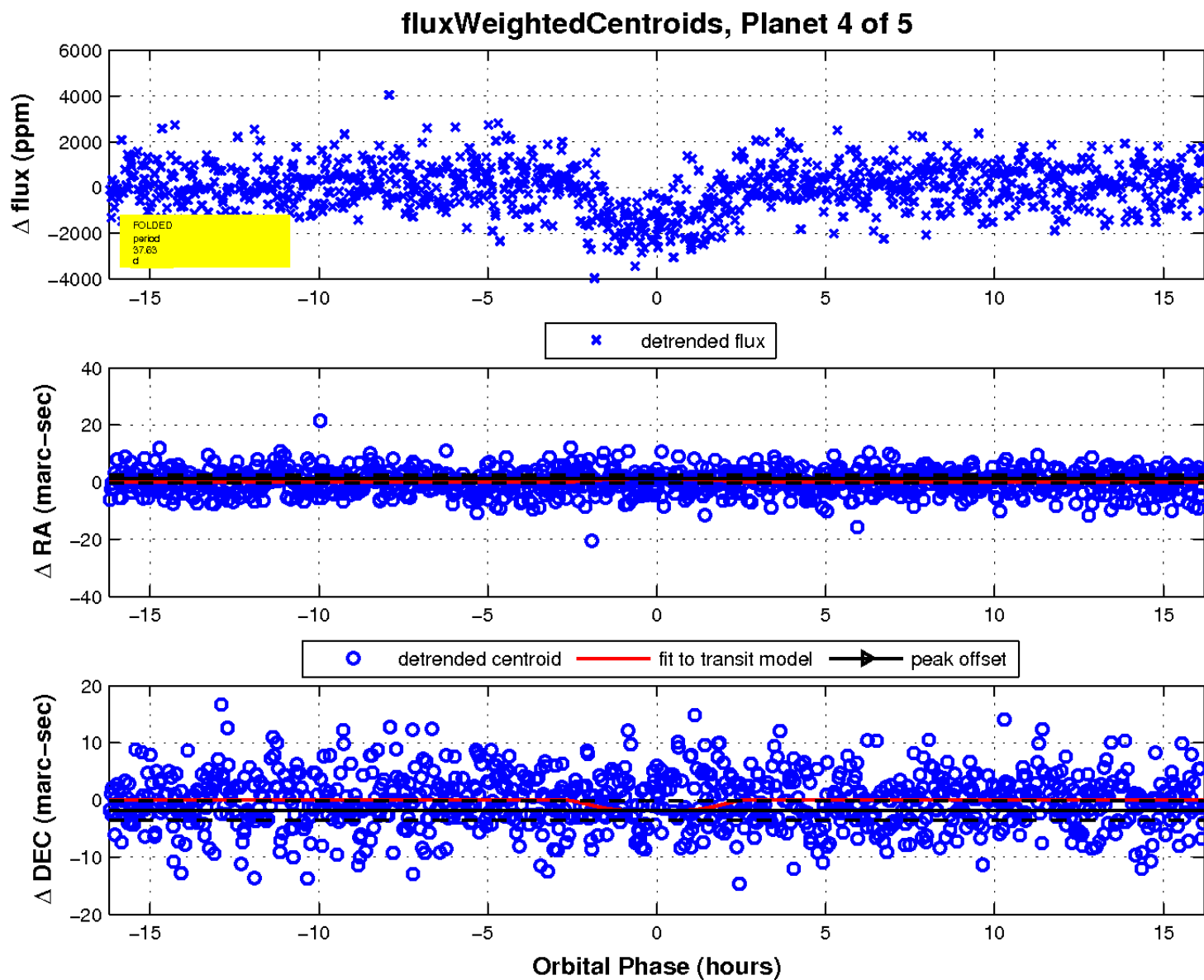
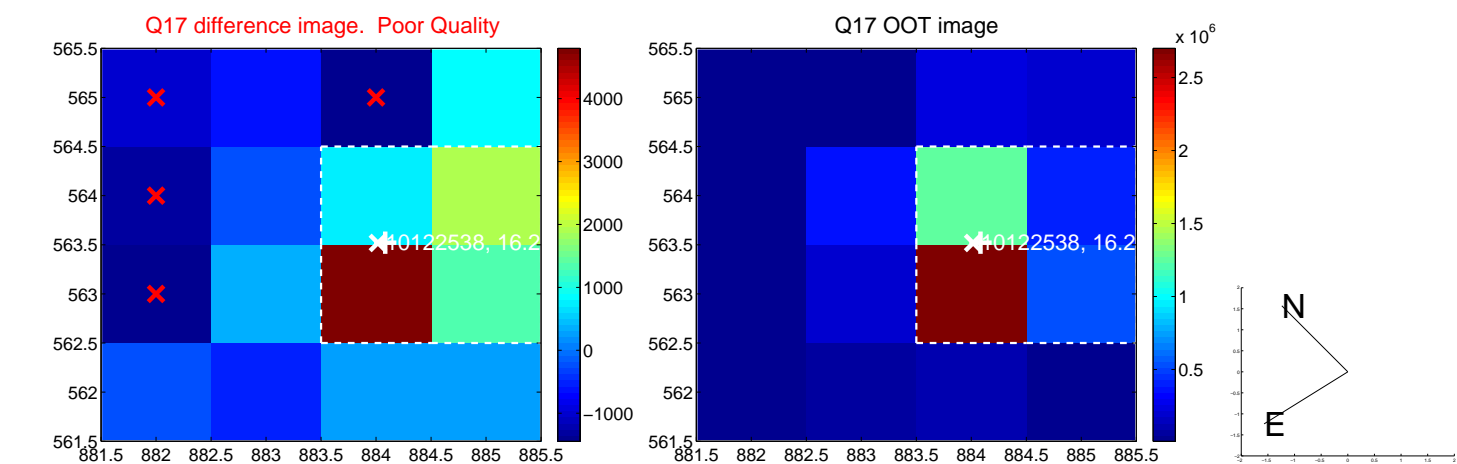
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

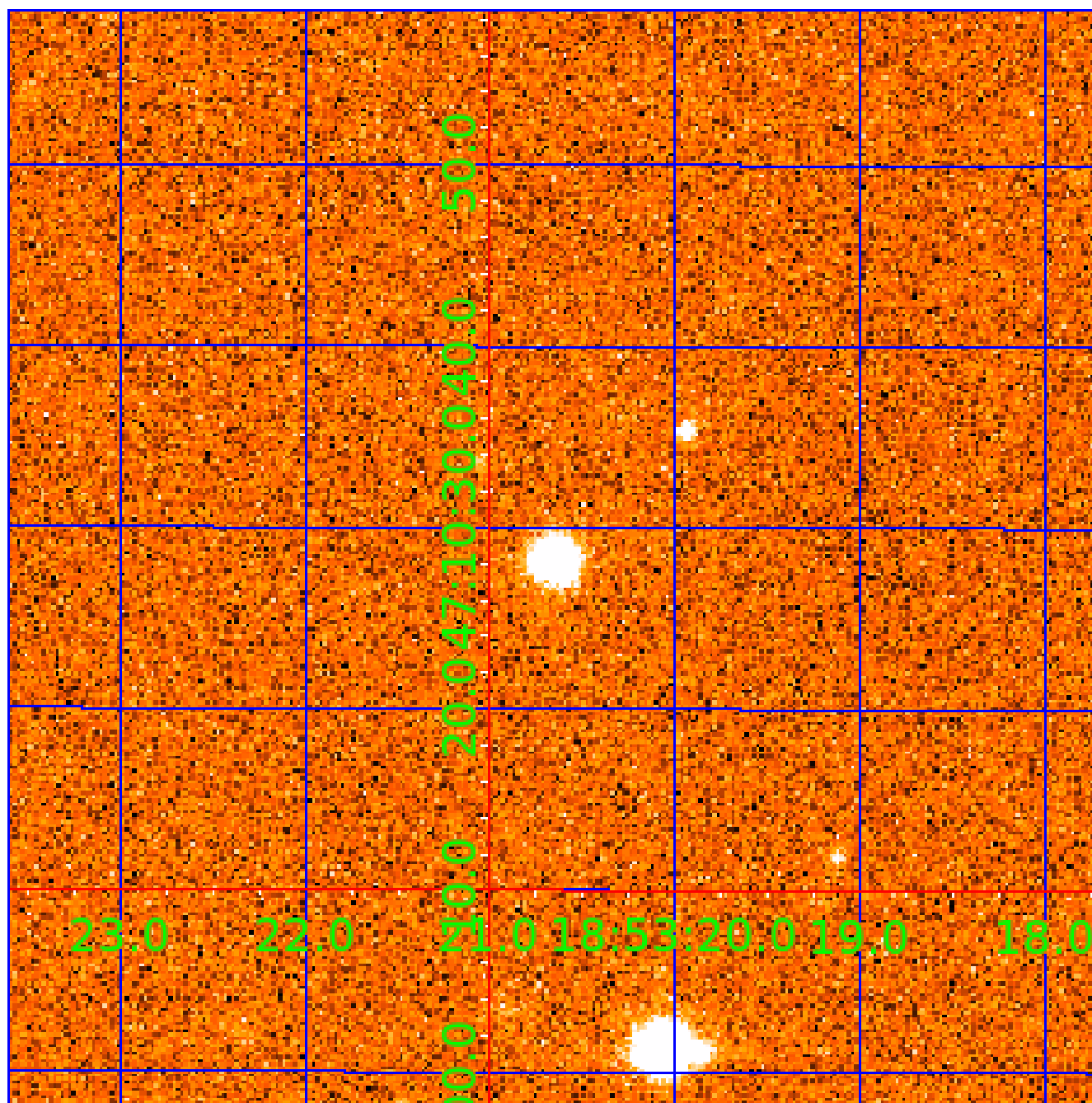


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010122538

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})
010122538-01	OBS	2926.02	5.536075	131.885052	1199.7	2.293	17.2	18.4	0.56	3891	2.12	24.31
010122538-02	OBS	2926.01	12.285494	131.899000	1659.5	3.220	16.7	19.2	0.56	3891	2.66	8.40
010122538-03	OBS	2926.03	20.956933	139.081400	1970.0	3.834	16.2	17.4	0.56	3891	2.86	4.12
010122538-04	OBS	2926.04	37.633670	158.810095	1922.6	5.405	12.8	13.9	0.56	3891	3.12	1.89
010122538-05	OBS	2926.05	75.732965	201.937097	2704.5	4.691	11.4	13.0	0.56	3891	3.55	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010122538-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
010122538-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-03	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-04	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010122538-05	OBS	PC	0.89	0	0	0	0	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.

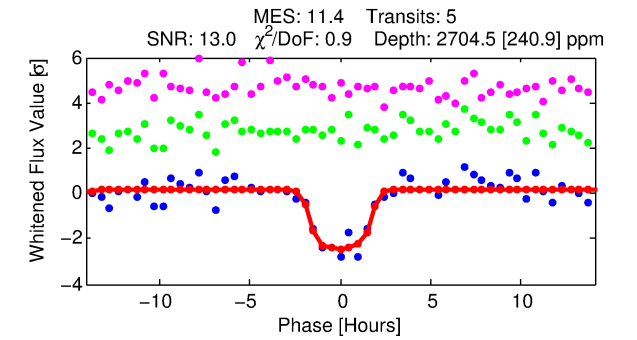
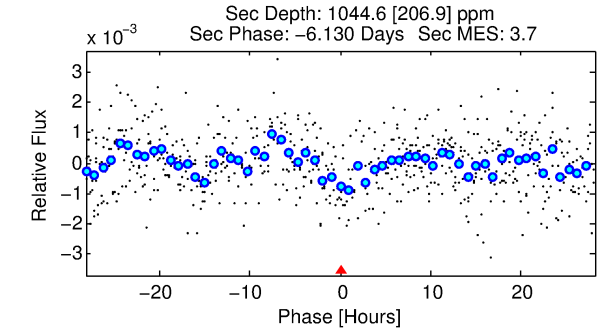
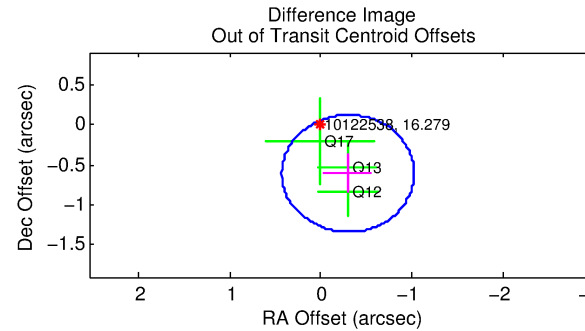
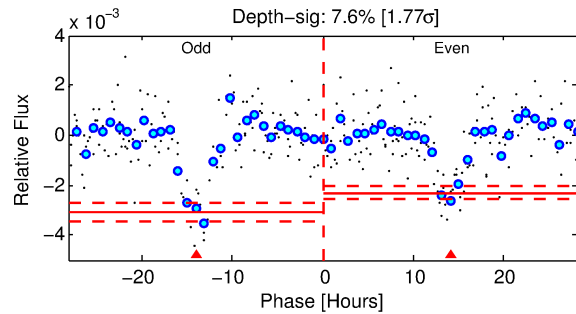
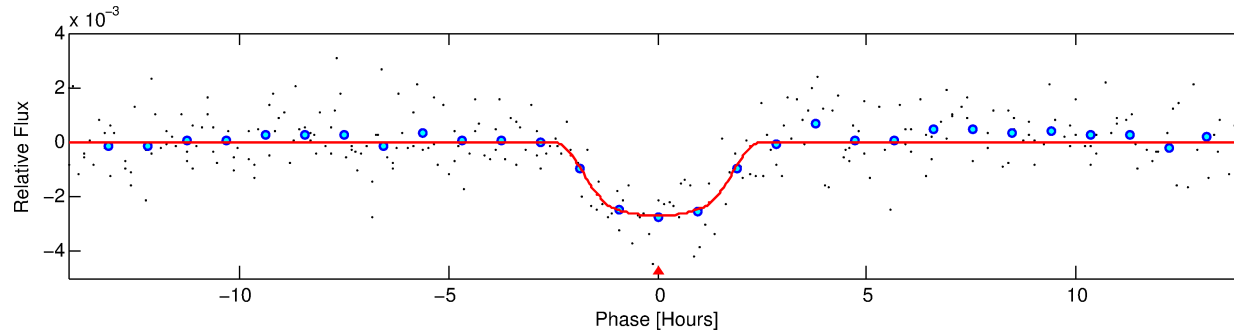
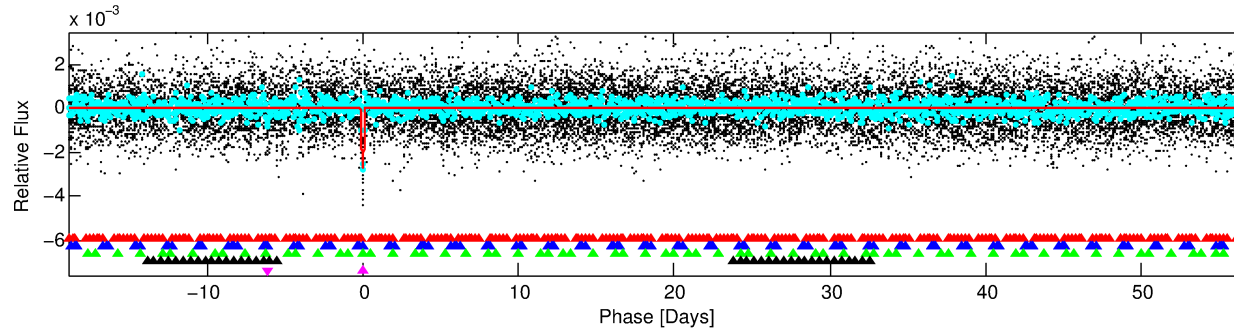
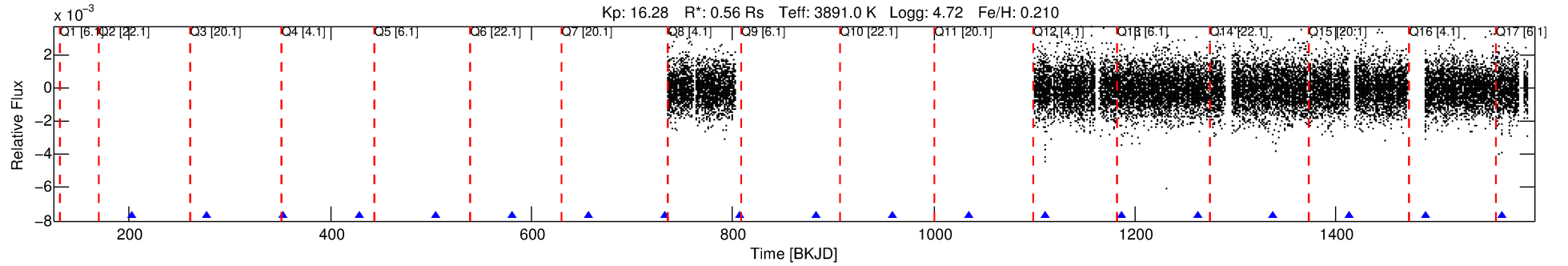
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010122538-05

No Significant Match Found

DV One-Page Summary

KIC: 10122538 Candidate: 5 of 5 Period: 75.733 d
KOI: K02926 Corr: No Ephemeris Match



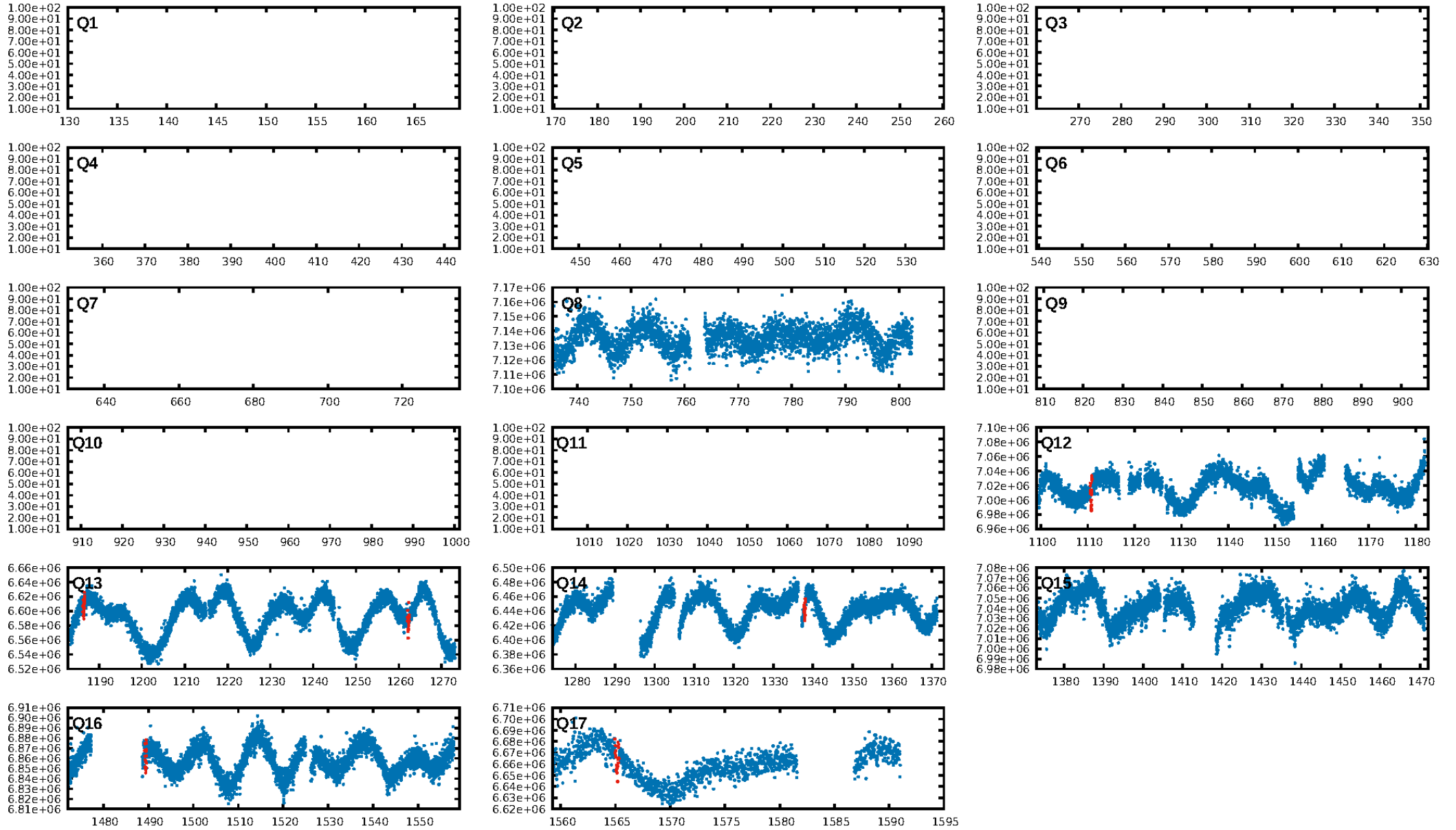
DV Fit Results:

Period = 75.73297 [0.00185] d
Epoch = 201.9371 [0.0285] BKJD
Rp/R* = 0.0578 [0.0056]
a/R* = 69.17 [18.73]
b = 0.90 [0.06]
Seff = 0.74 [0.09]
Teq = 237 [7] K
Rp = 3.55 [0.41] Re
a = 0.2965 [0.0156] AU
Ag = 3999.52 [1149.86] [3.48 σ]
Teffp = 2911 [212] K [12.63 σ]

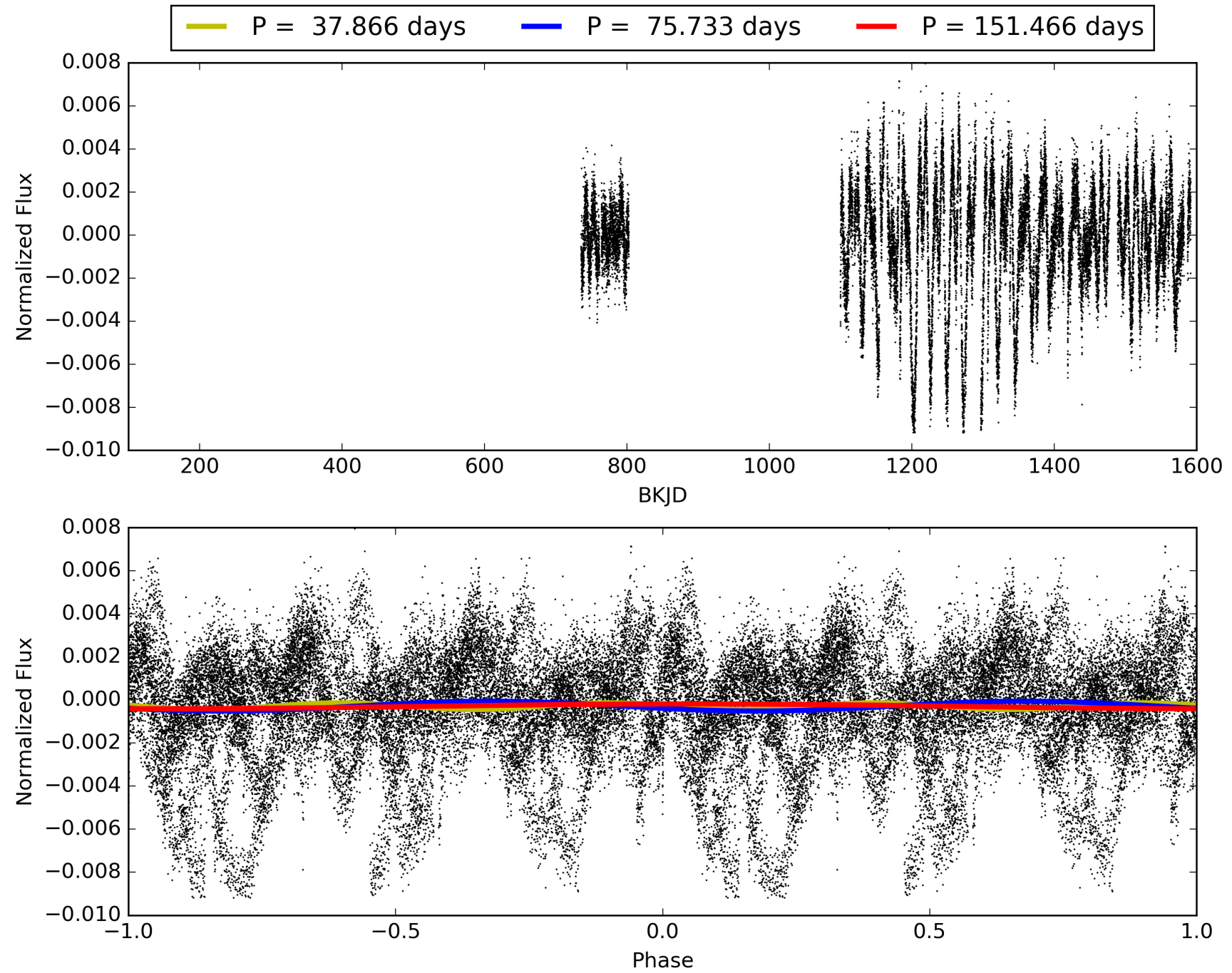
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [127.76 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 46.0%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 1.03e-28
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.54
Centroid-sig: 44.6%
Centroid-so: 0.741 arcsec [0.95 σ]
OotOffset-rm: 0.679 arcsec [2.80 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-rm: 0.894 arcsec [3.65 σ]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

TCE 010122538-05, PDC Light Curves

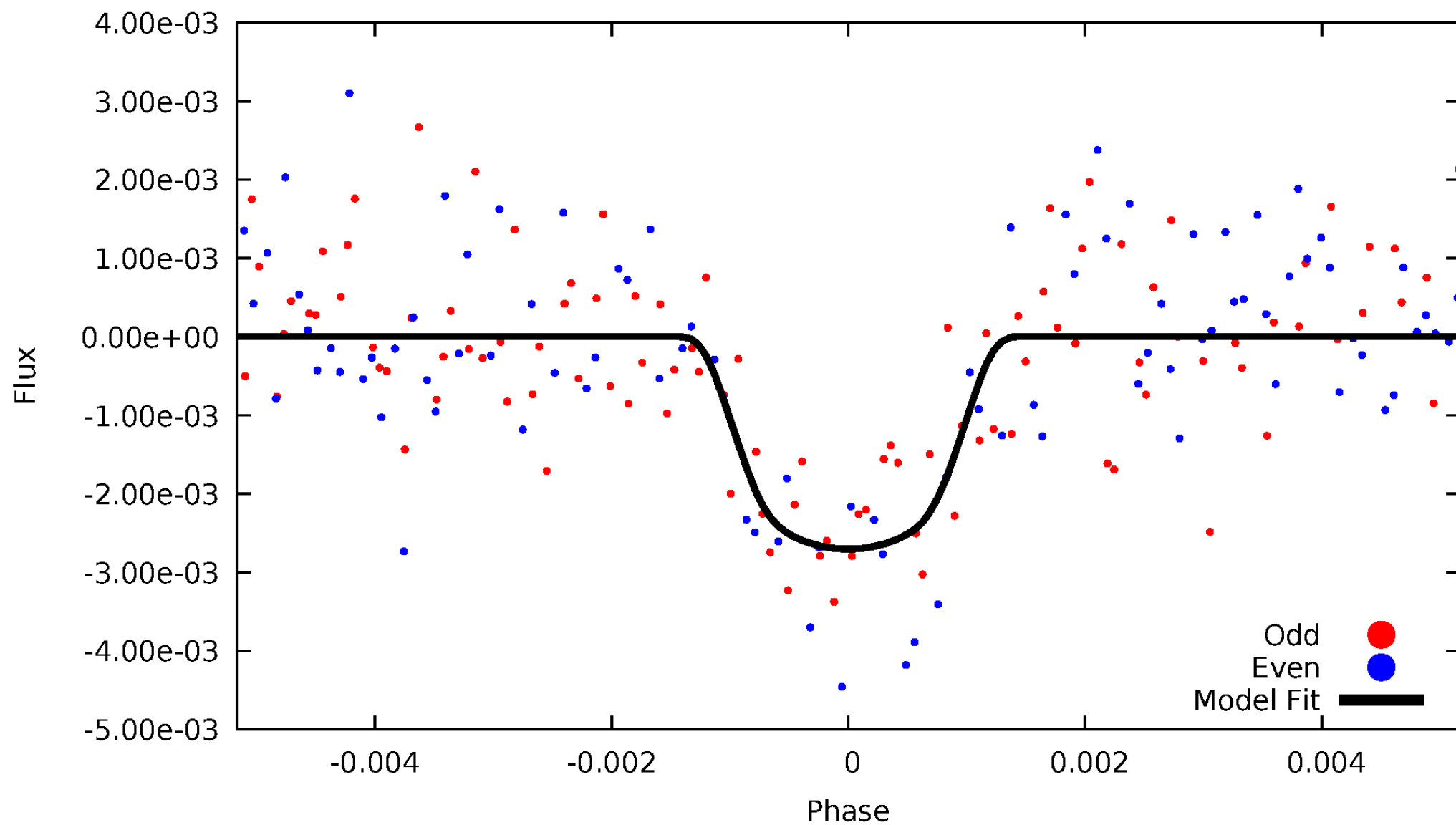


TCE 010122538-05



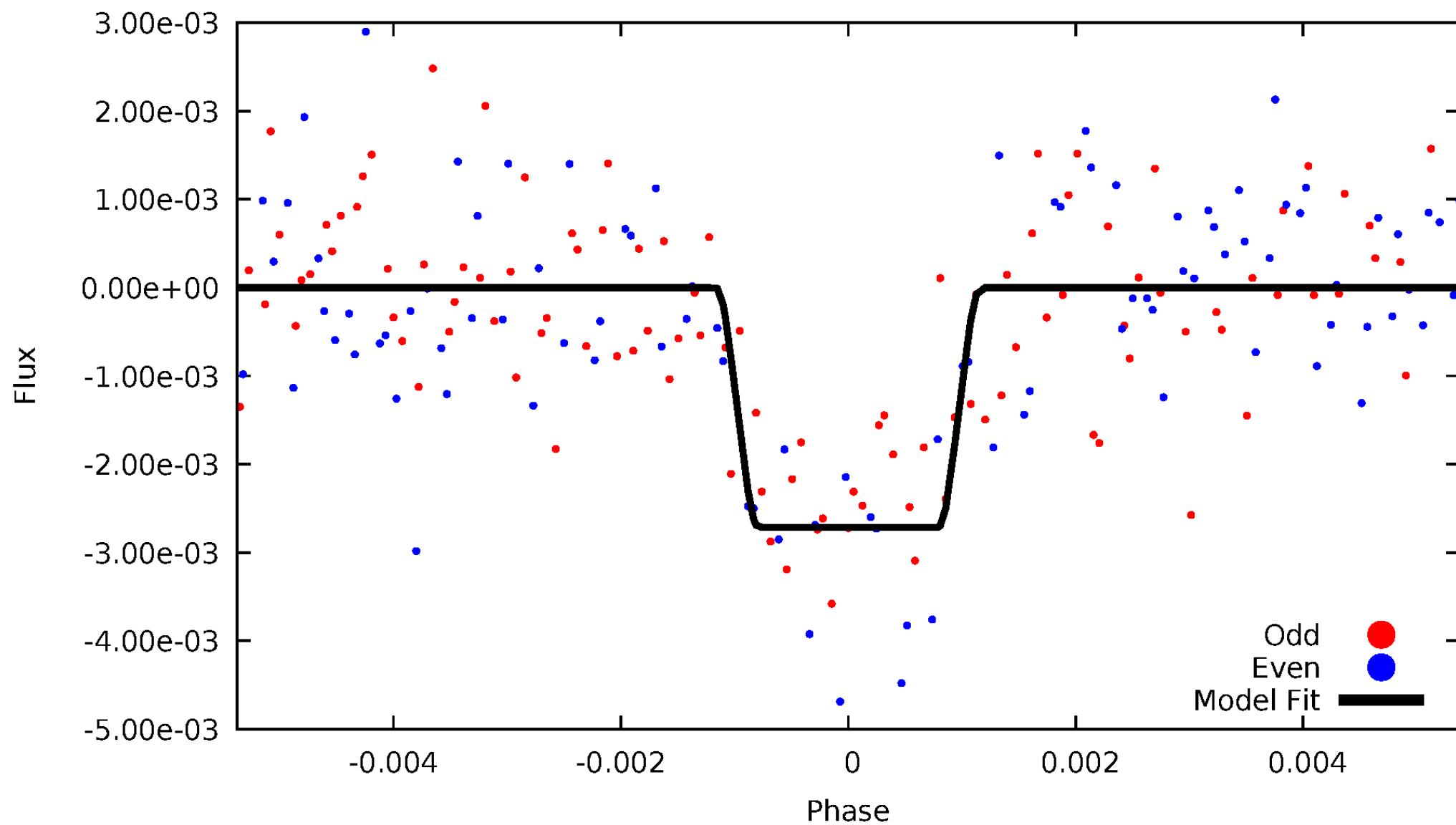
DV Odd/Even

TCE 010122538-05

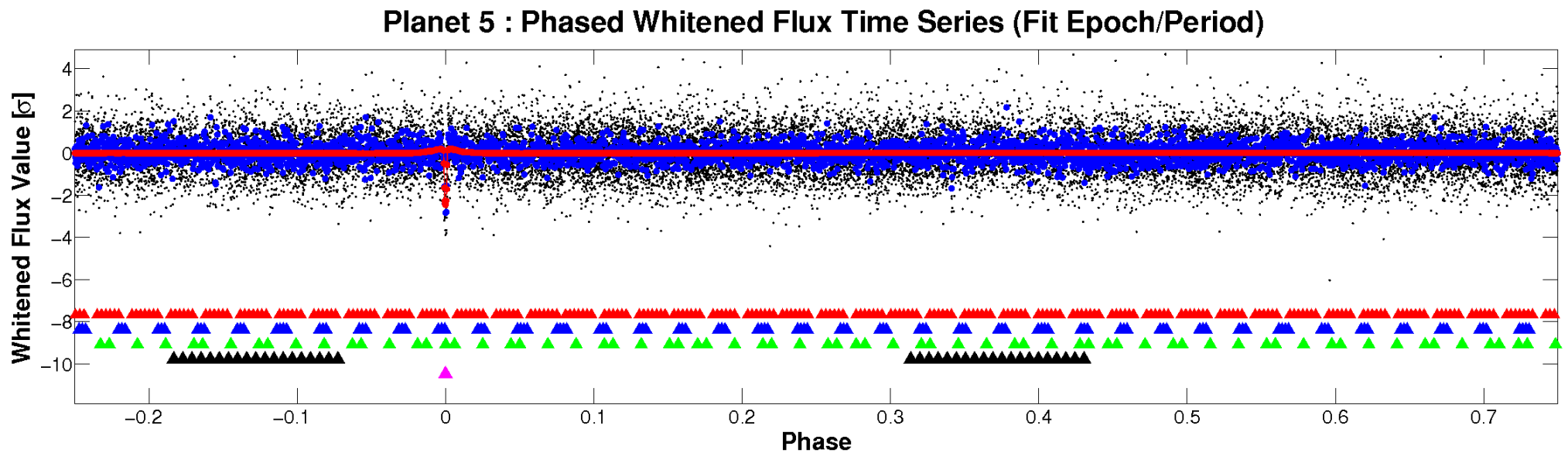
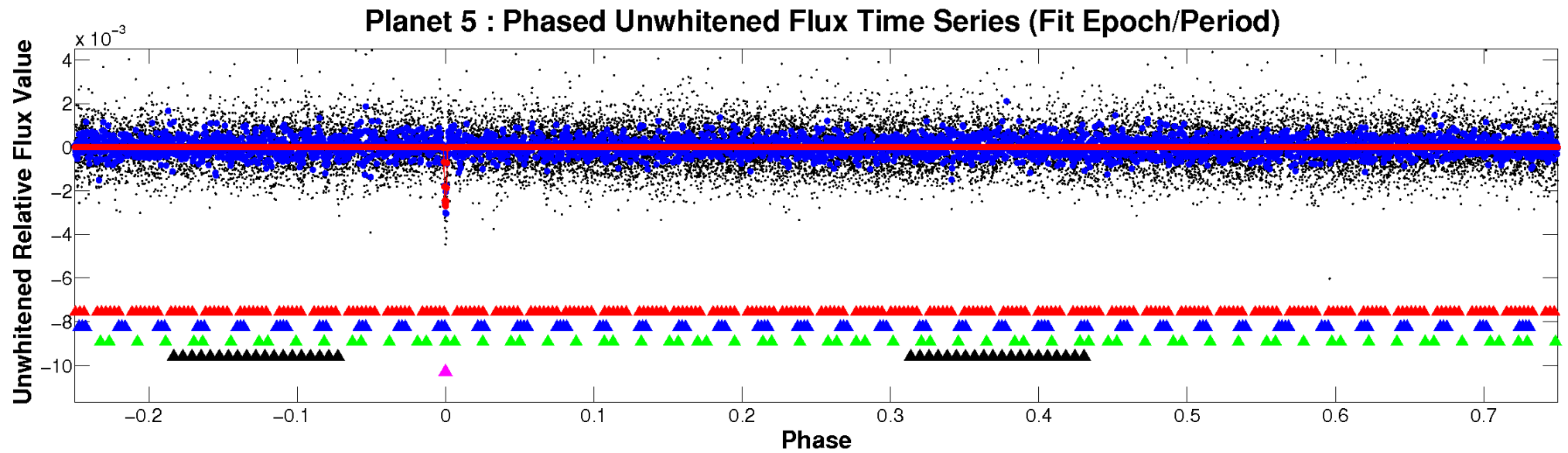


ALT Odd/Even

TCE 010122538-05

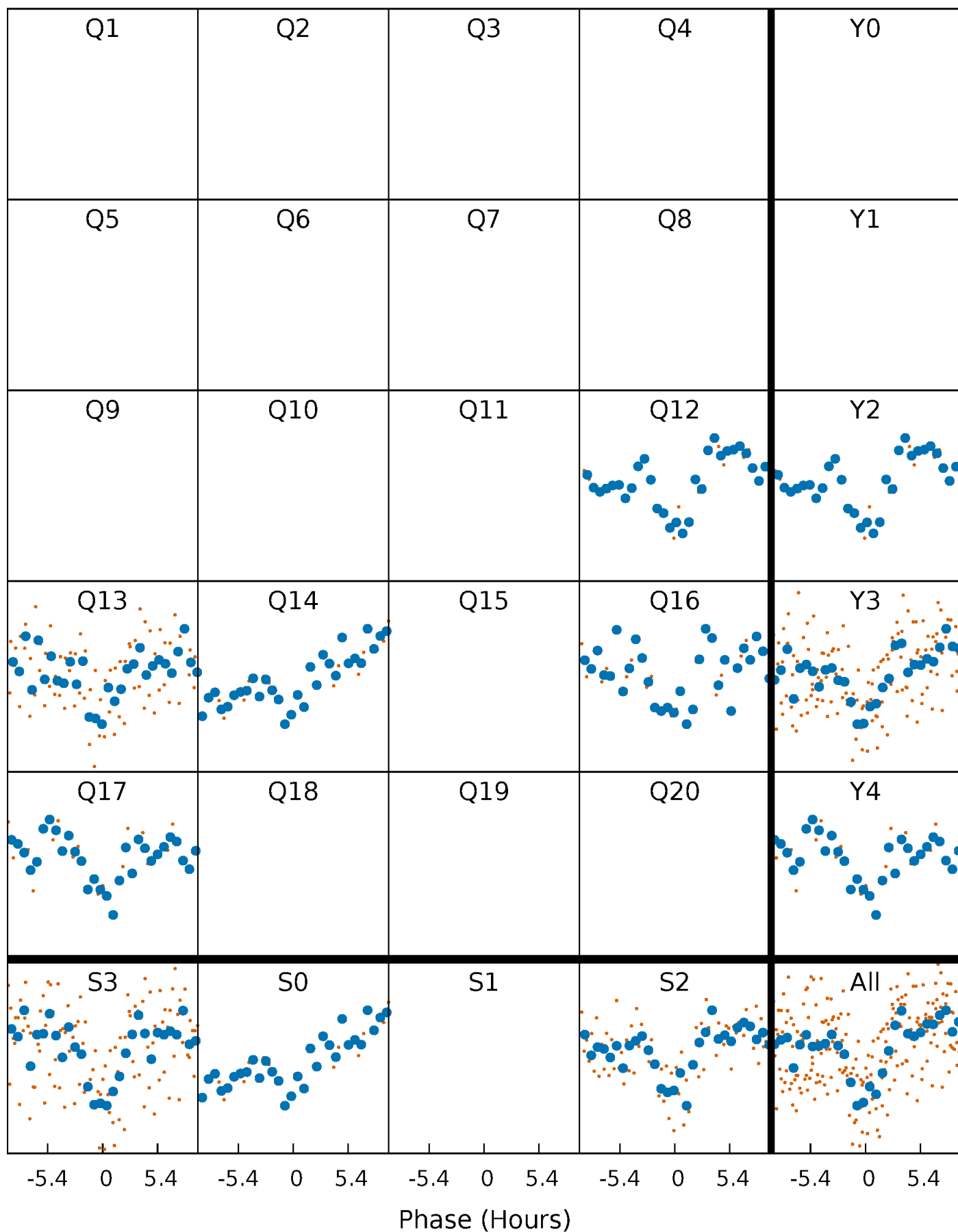


Non-Whitened Vs. Whitened Light Curve



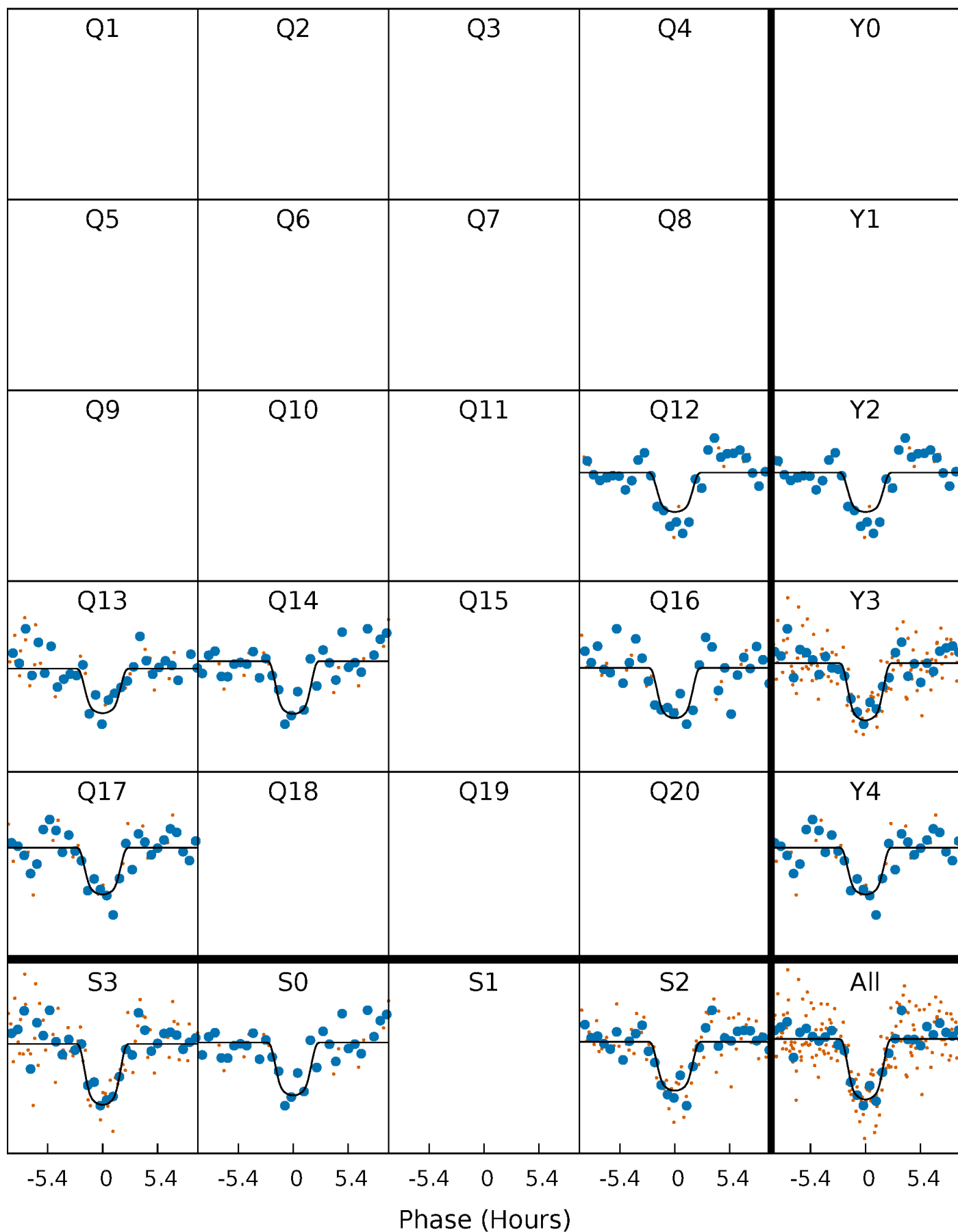
PDC Quarter-Phased Transit Curves

TCE 010122538-05 P= 75.732965 Days $T_0=201.937097$ (BKJD)



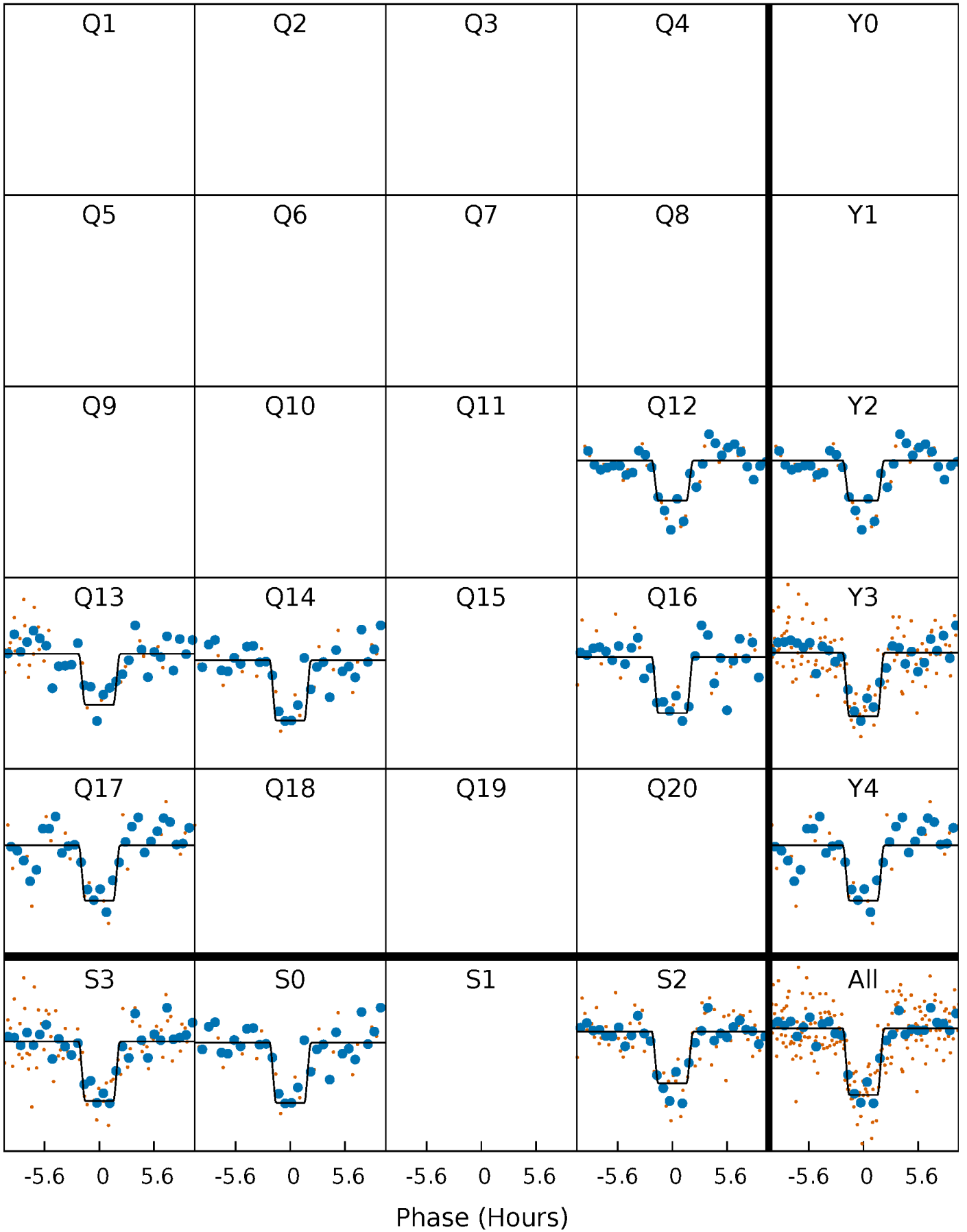
DV Quarter-Phased Transit Curves

TCE 010122538-05 $P = 75.732965$ Days $T_0 = 201.937097$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

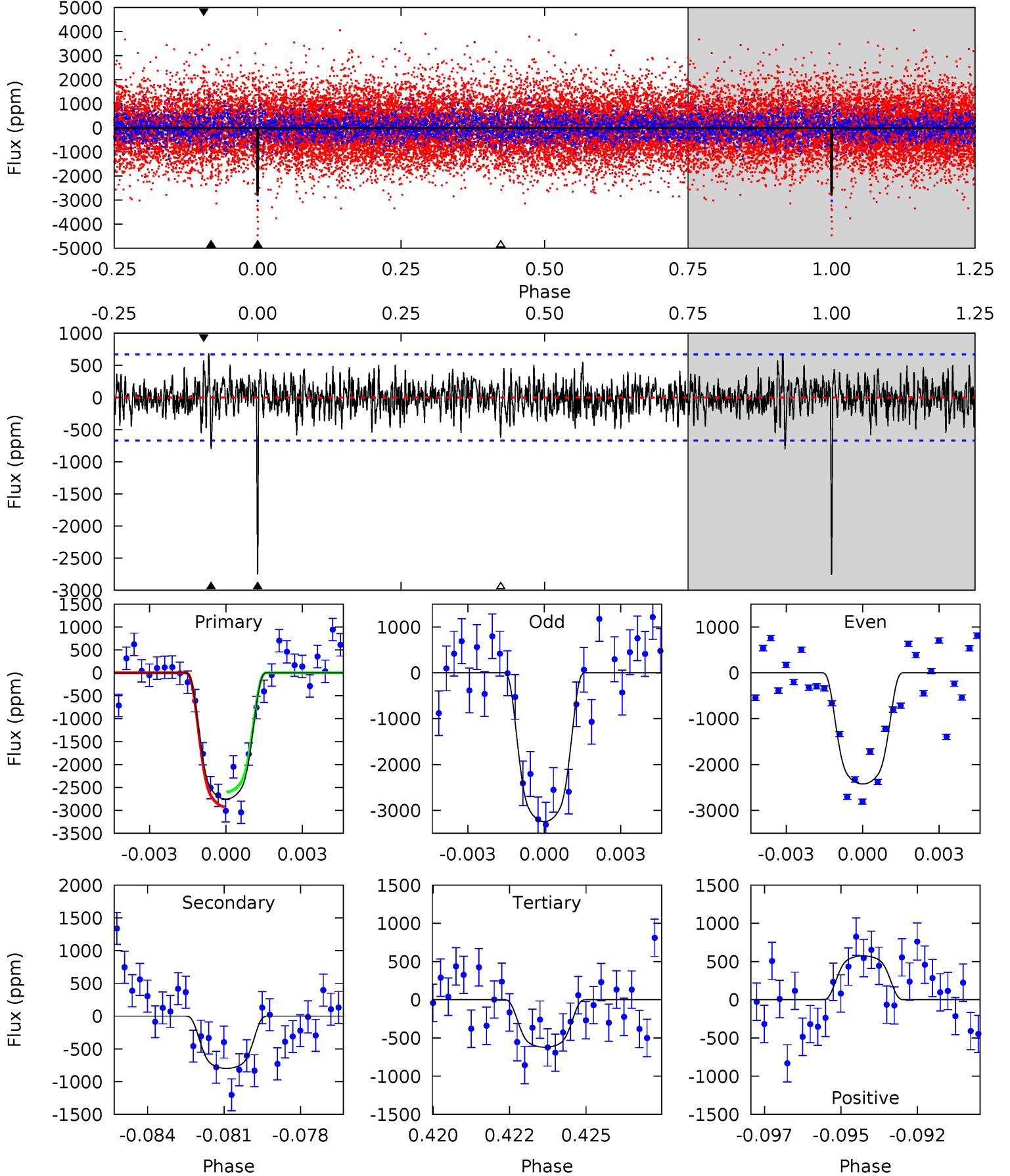
TCE 010122538-05 $P = 75.733271$ Days $T_0 = 201.934943$ (BKJD)



DV Model-Shift Uniqueness Test

010122538-05, $P = 75.732965$ Days, $E = 201.937097$ Days

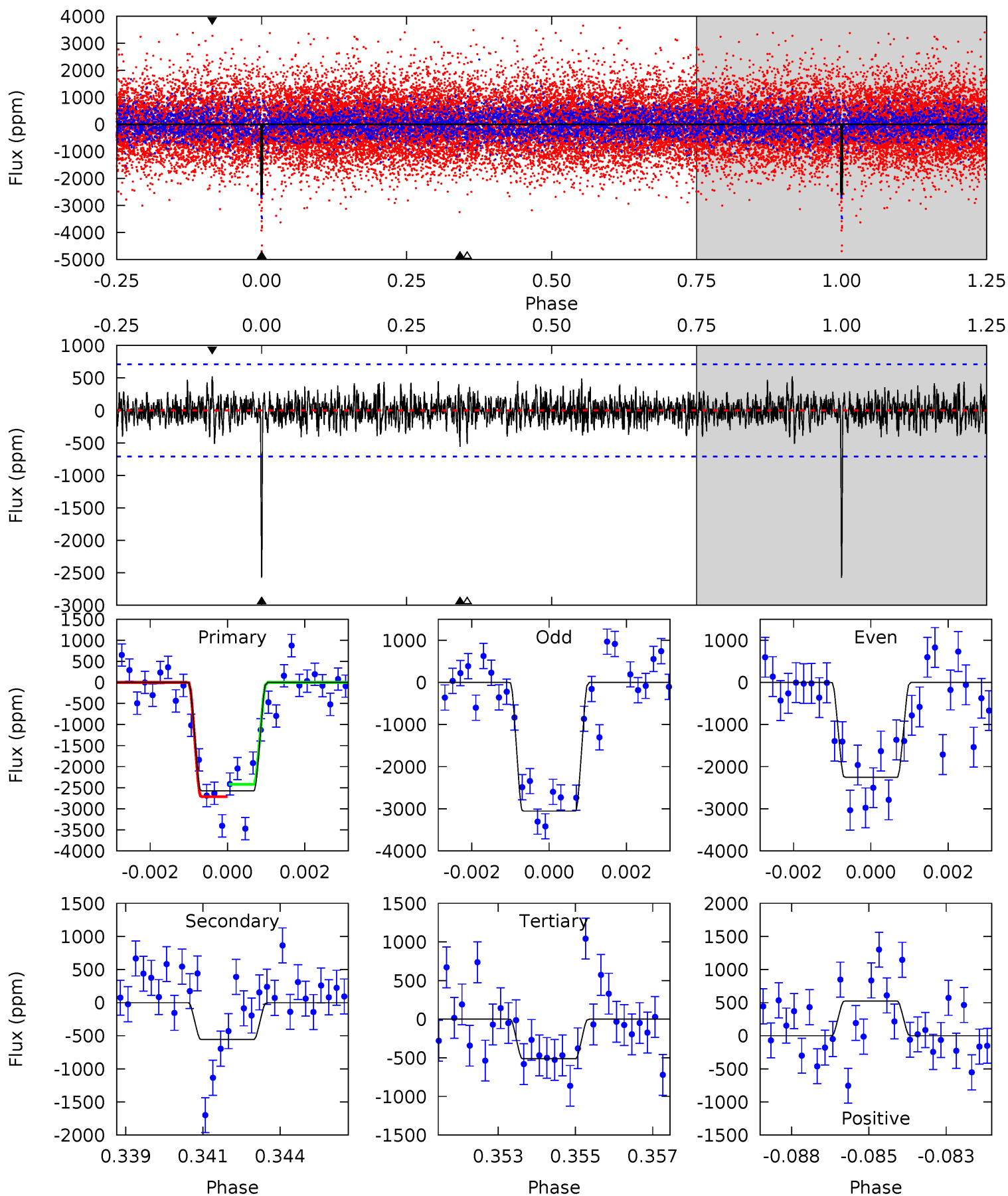
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	6.27	4.88	4.51	5.27	3.00	1.47	16.8	17.1	1.39	1.76	3.19	1.07	0.20	1.27



Alt Model-Shift Uniqueness Test

010122538-05, $P = 75.733271$ Days, $E = 201.934943$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	4.16	3.83	3.91	5.30	3.05	1.09	15.4	15.3	0.33	0.25	2.92	1.07	0.17	1.08



Stellar Parameters For KIC 010122538

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3891^{+70}_{-86}	$4.718^{+0.018}_{-0.042}$	$0.210^{+0.150}_{-0.150}$	$0.564^{+0.035}_{-0.026}$	$0.605^{+0.025}_{-0.034}$	$4.759^{+0.443}_{-0.674}$
	+2%/-2%	+0%/-1%	+71%/-71%	+6%/-5%	+4%/-6%	+9%/-14%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010122538-05 / KOI 2926.05

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-798 ± 127	$3.56^{+0.39}_{-0.34}$	333^{+8}_{-8}	3103^{+130}_{-126}	2995^{+839}_{-685}
Alt.	-557 ± 134	$3.23^{+0.36}_{-0.37}$	333^{+8}_{-9}	3030^{+146}_{-164}	2536^{+911}_{-761}

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

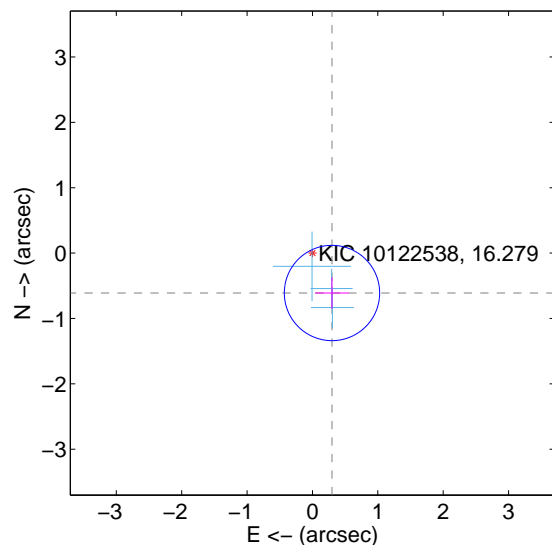
Supplemental centroid analysis for 010122538-05. Kepler magnitude: 16.28. Transit SNR 12.97

There are 3 quarters with good PRF difference image offsets

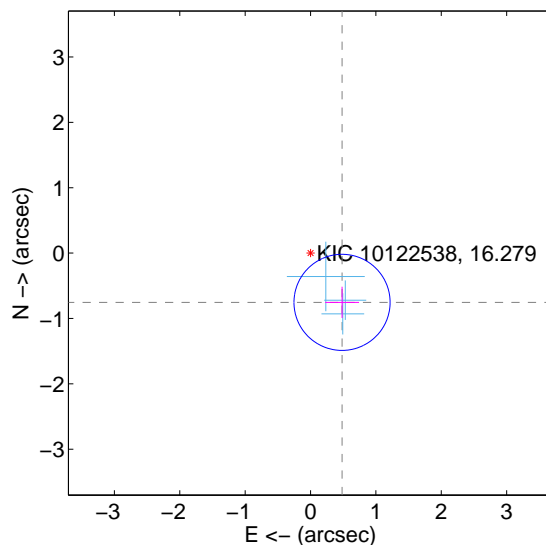
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.679 ± 0.243	2.80	-0.299 ± 0.259	-0.610 ± 0.239
PRF-fit source offset from KIC position	0.894 ± 0.245	3.65	-0.482 ± 0.259	-0.753 ± 0.239
photometric centroid source offset	0.74 ± 0.78	0.95	-0.15 ± 0.71	-0.72 ± 0.78

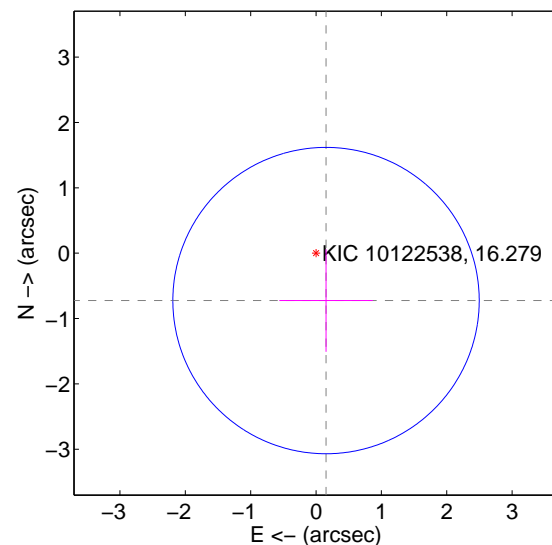
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

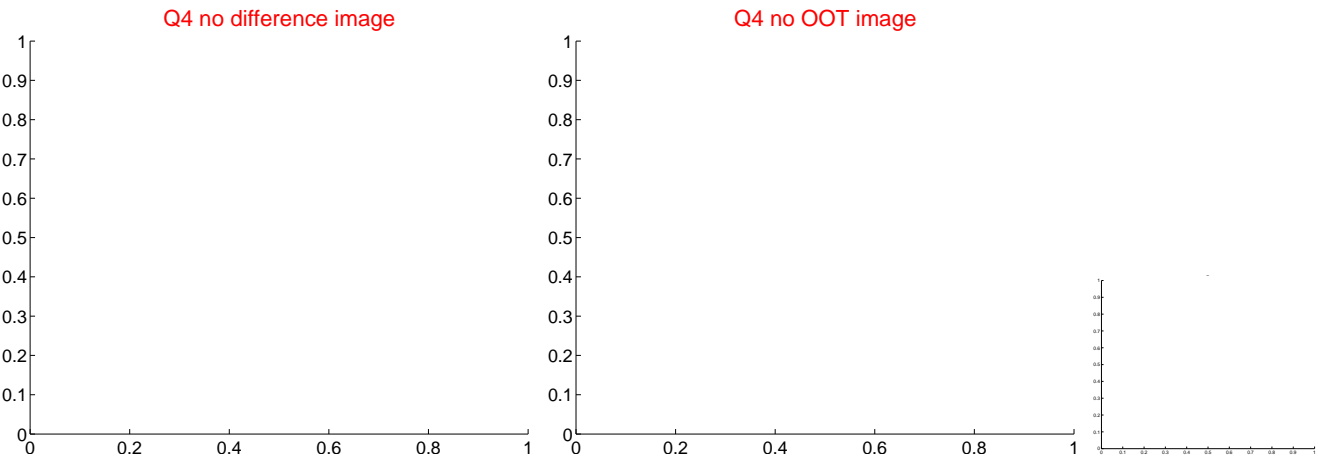


offset from photometric centroids



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.

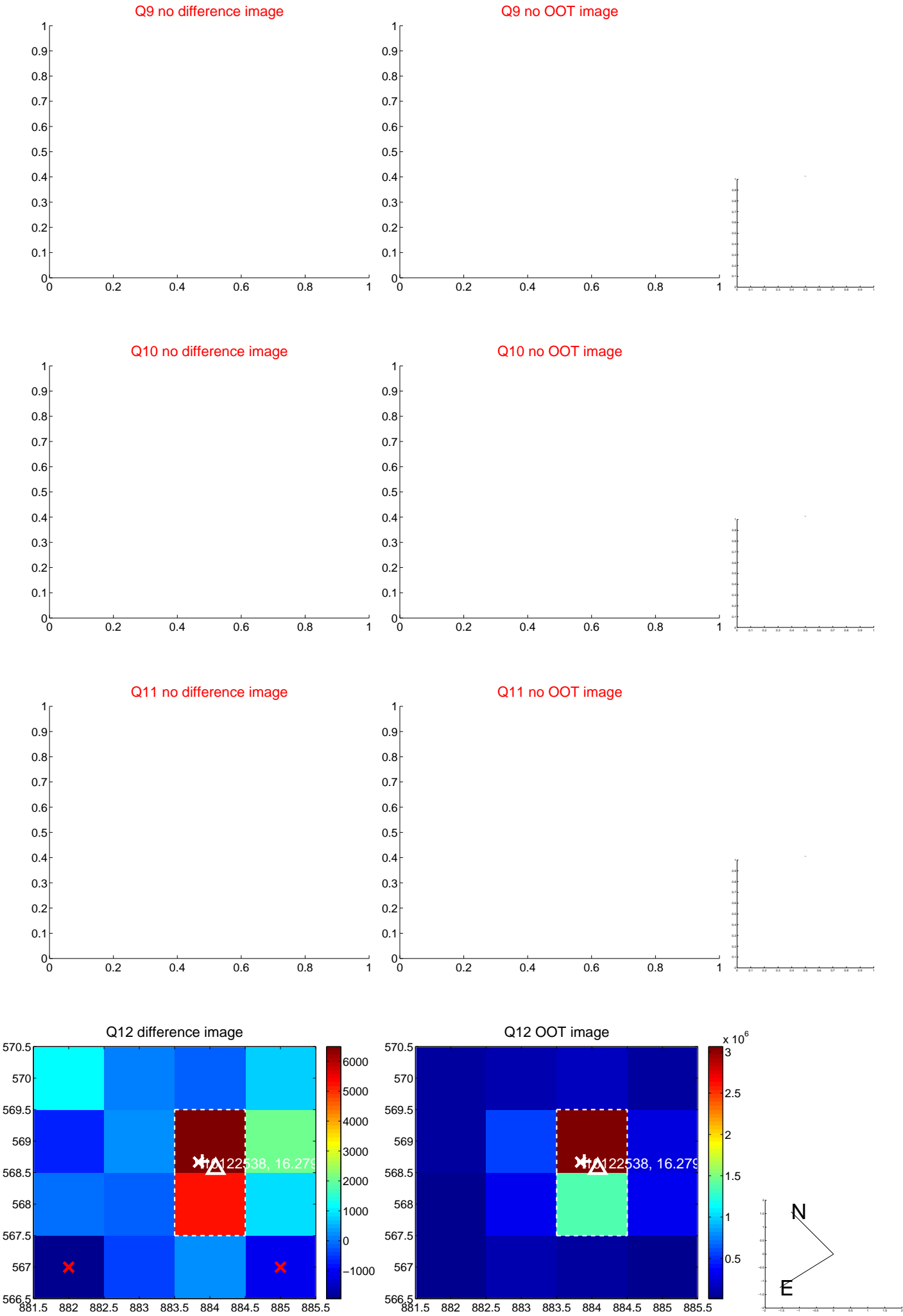
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



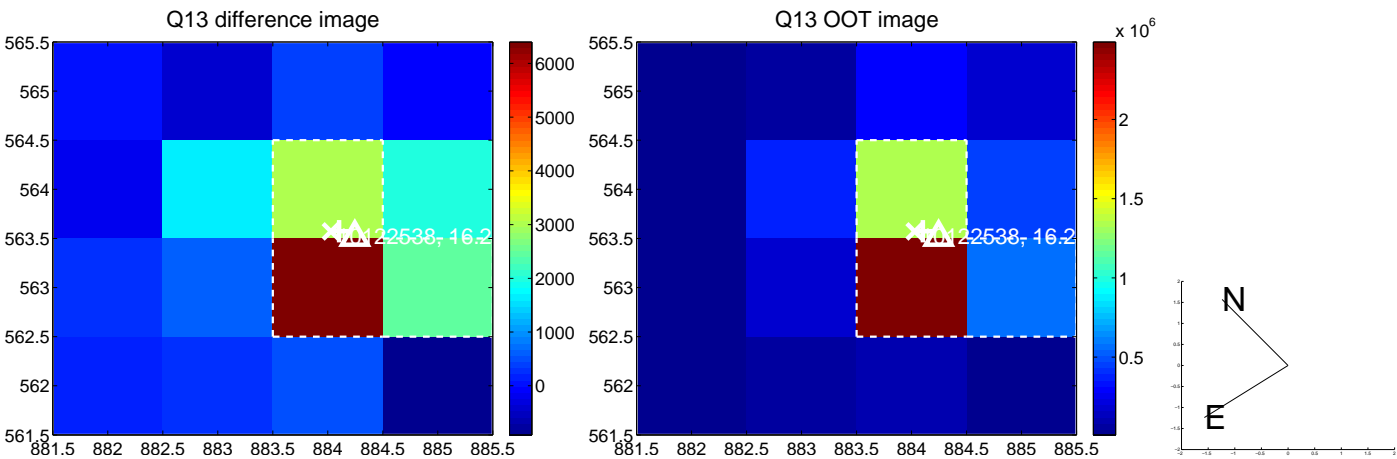
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



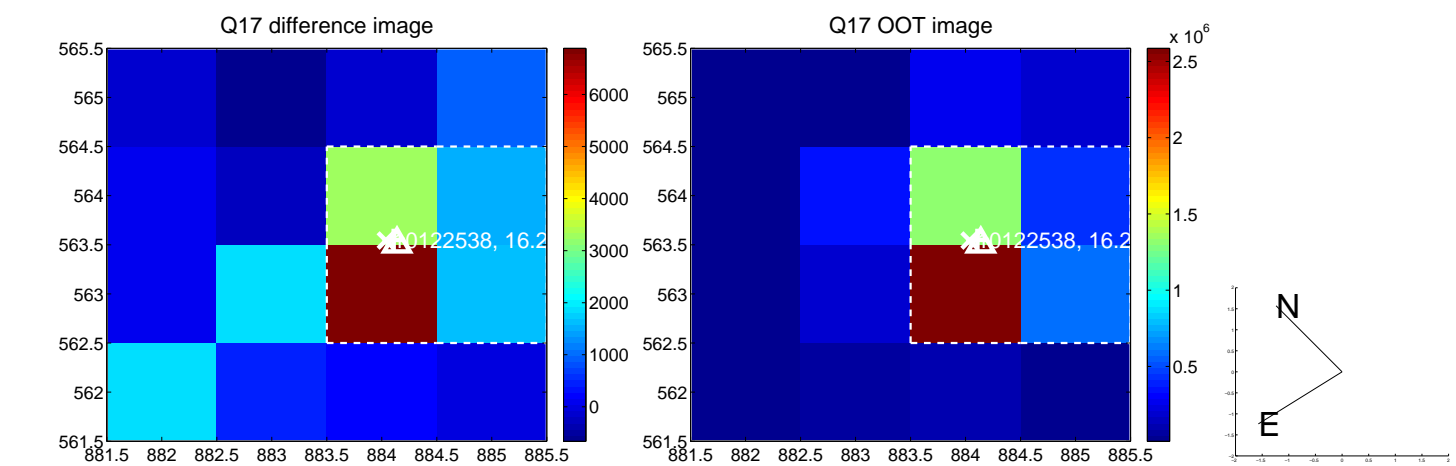
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



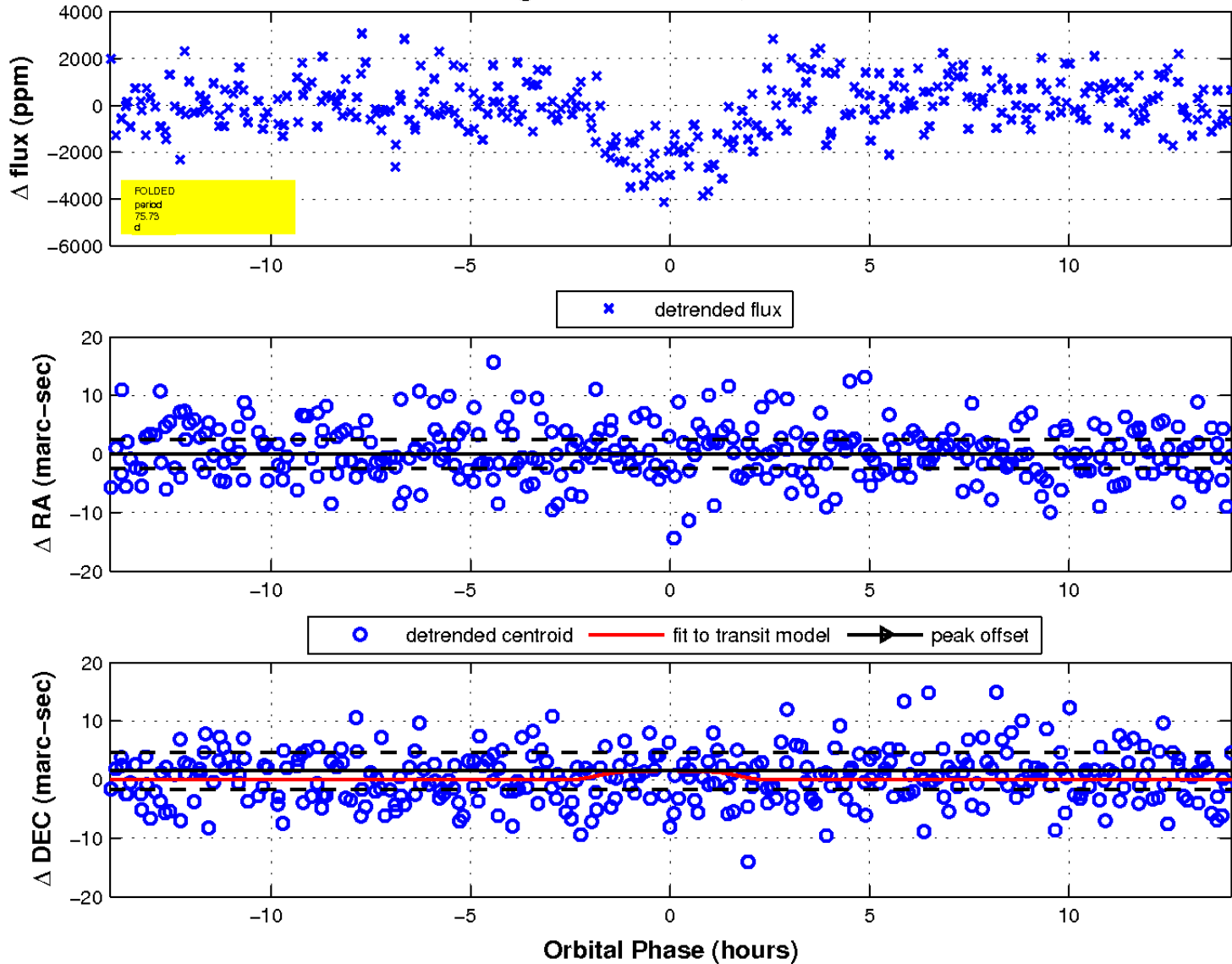
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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UKIRT Image

Declination

