

KIC 010922482

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})
010922482-01	OBS	No	439.975552	387.358725	1680.8	4.271	13.5	4.8	0.85	5795	3.62	0.59
010922482-02	OBS	No	389.690872	355.934971	1582.8	3.391	14.5	5.6	0.85	5795	5.10	0.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010922482-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010922482-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

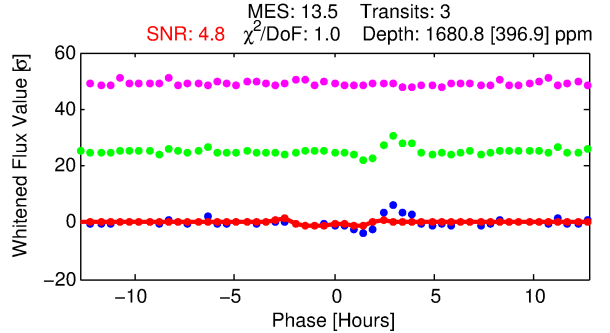
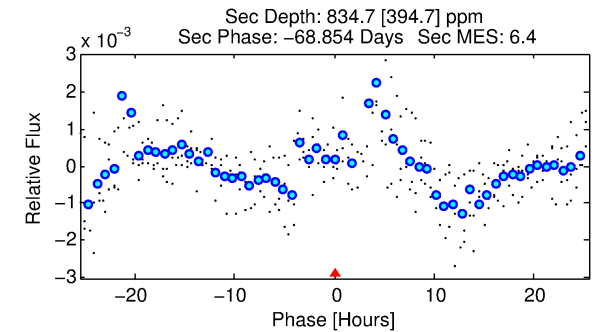
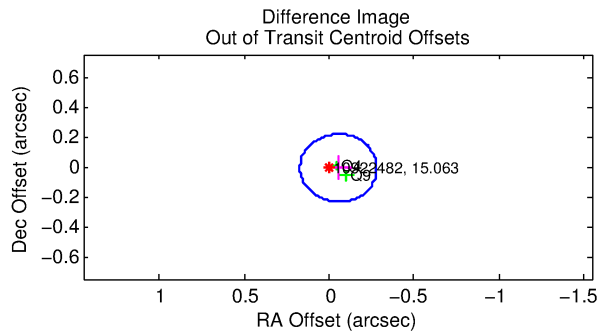
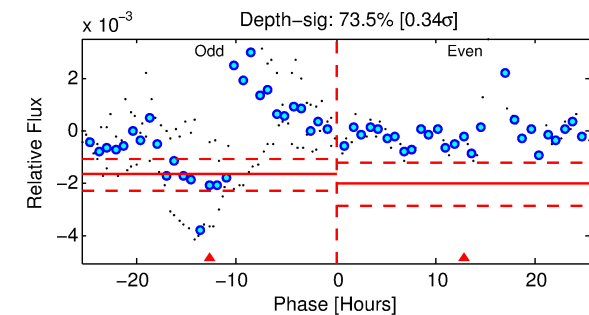
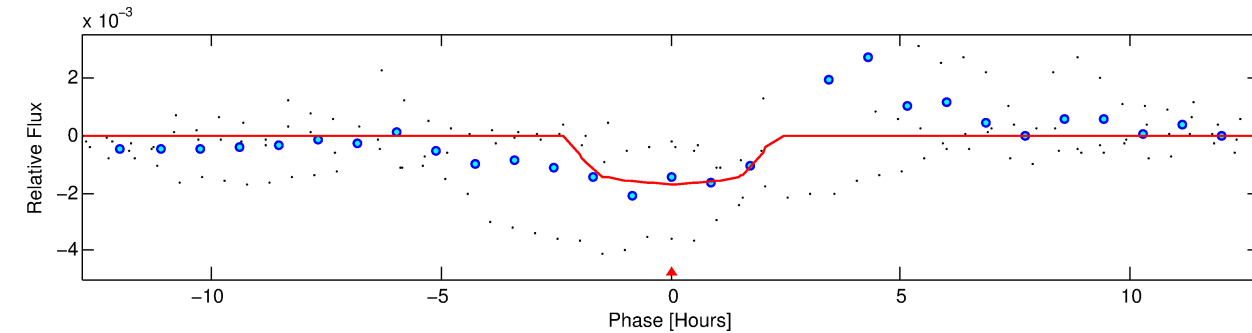
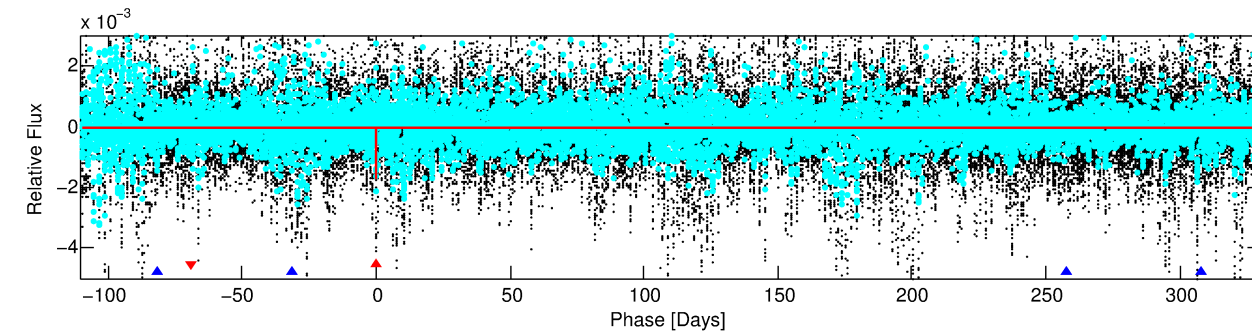
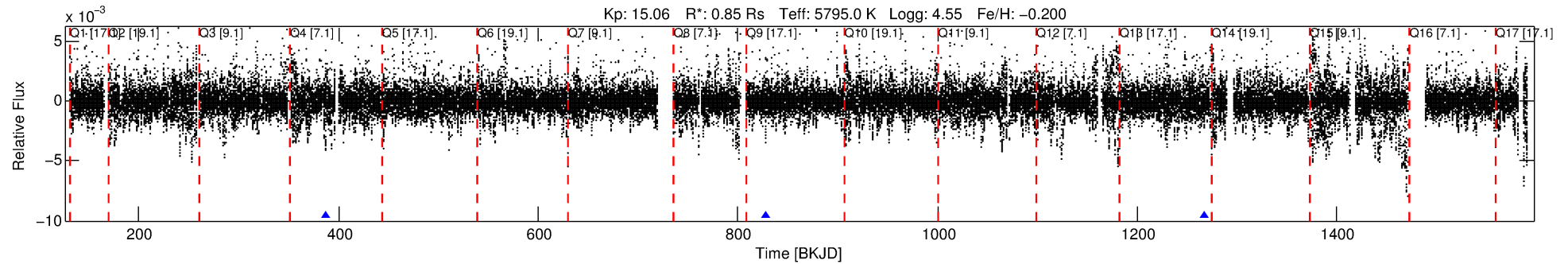
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010922482-01

No Significant Match Found

DV One-Page Summary

KIC: 10922482 Candidate: 1 of 2 Period: 439.976 d



DV Fit Results:

Period = 439.97555 [0.00485] d
Epoch = 387.3587 [0.0062] BKJD
Rp/R* = 0.0391 [0.0666]
a/R* = 667.96 [5108.96]
b = 0.60 [8.24]
Seff = 0.59 [0.19]
Teq = 224 [18] K
Rp = 3.62 [6.23] Re
a = 1.1090 [0.2337] AU
Ag = 43035.04 [148391.63] [0.29 σ]
Teffp = 4978 [4277] K [1.11 σ]

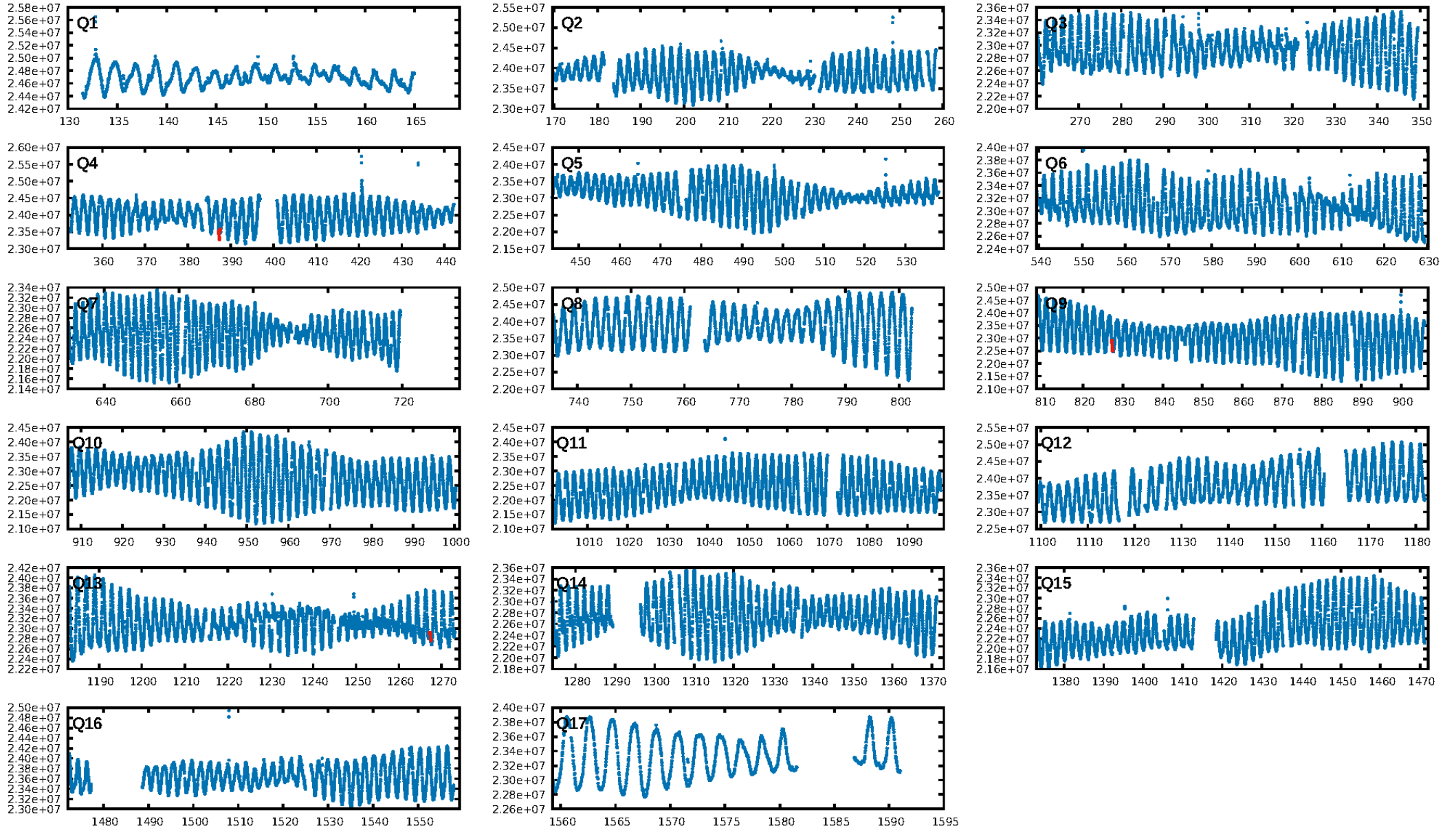
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [221.29 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 4.5%
ModelChiSquareGof-sig: 86.4%
Bootstrap-pfa: 3.38e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -48.13
Centroid-sig: 50.2%
Centroid-so: 0.479 arcsec [0.56 σ]
OotOffset-rm: 0.055 arcsec [0.73 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-rm: 0.057 arcsec [0.56 σ]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

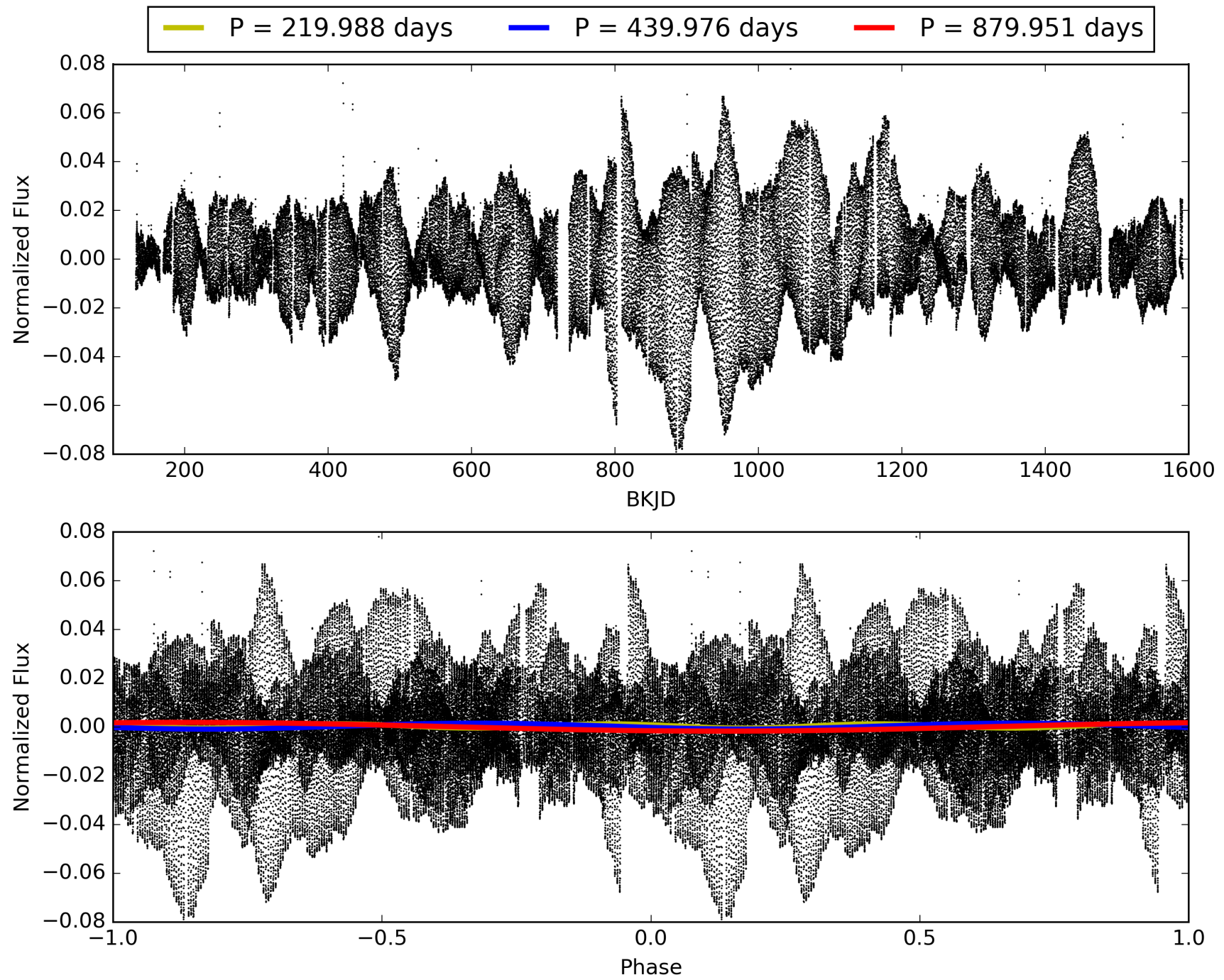
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010922482-01, PDC Light Curves

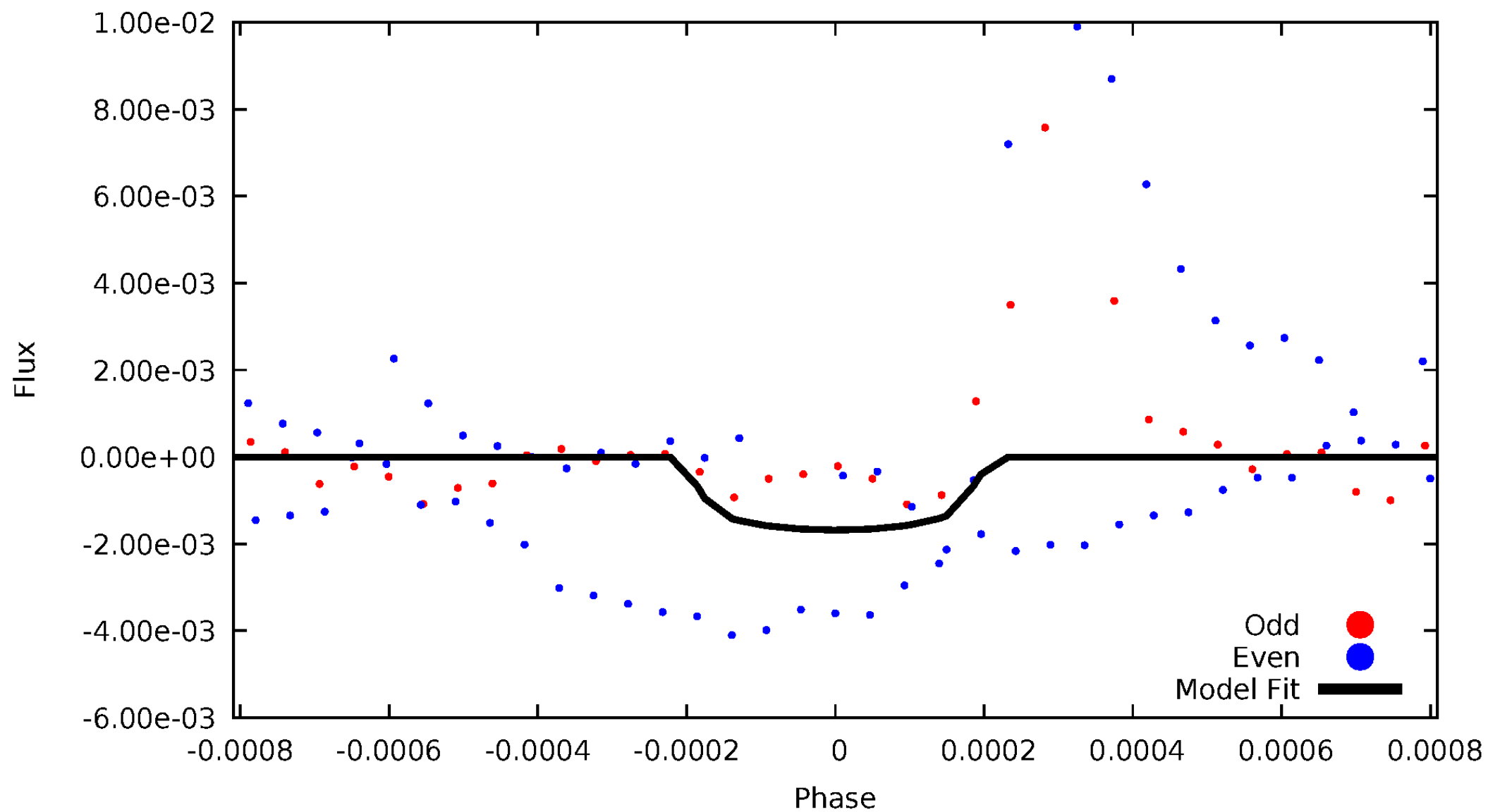


TCE 010922482-01



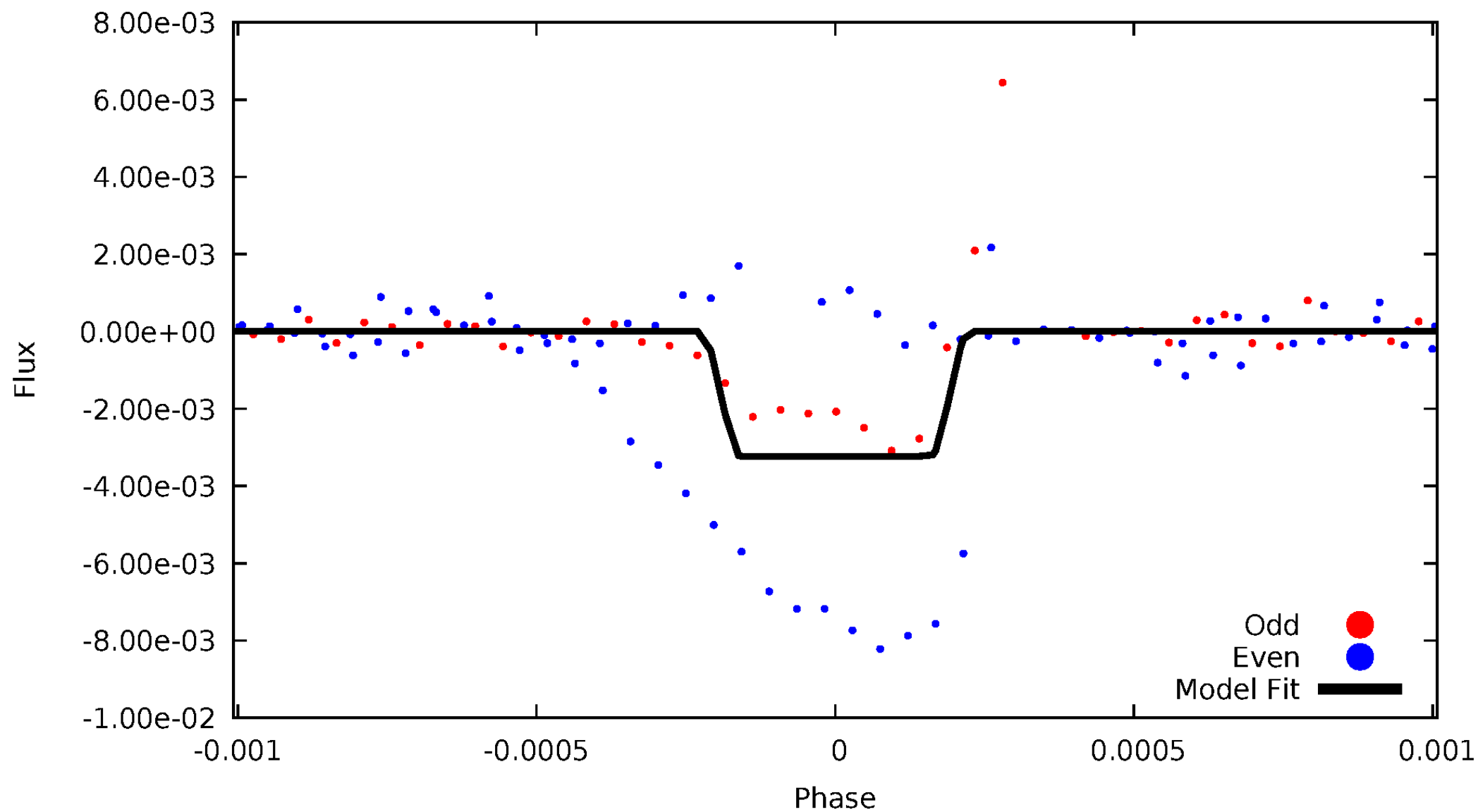
DV Odd/Even

TCE 010922482-01

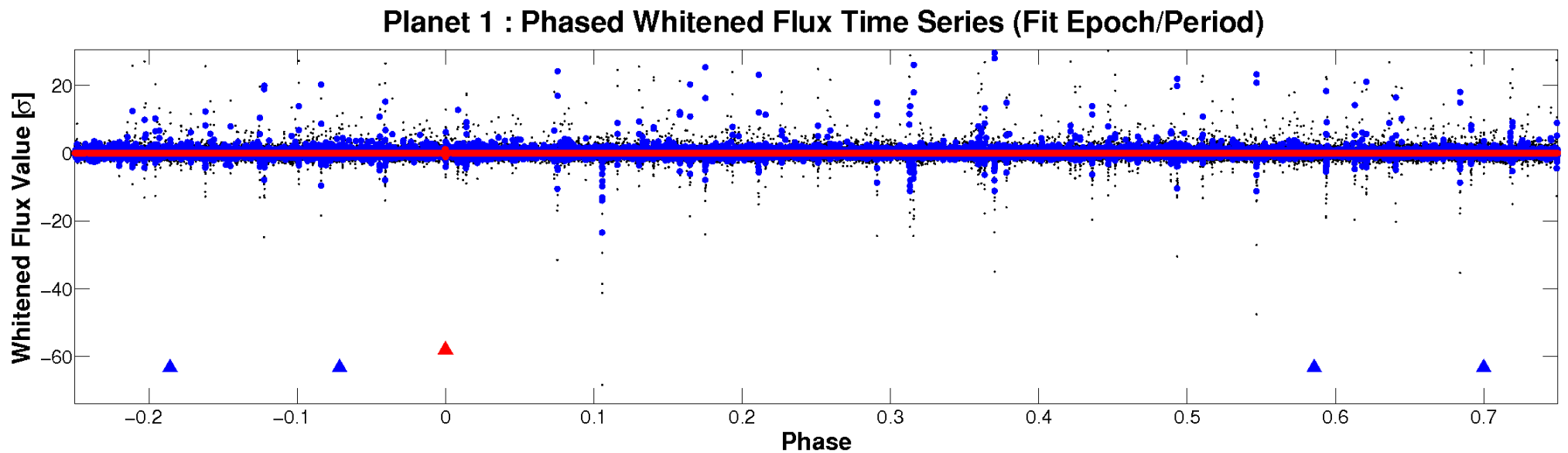
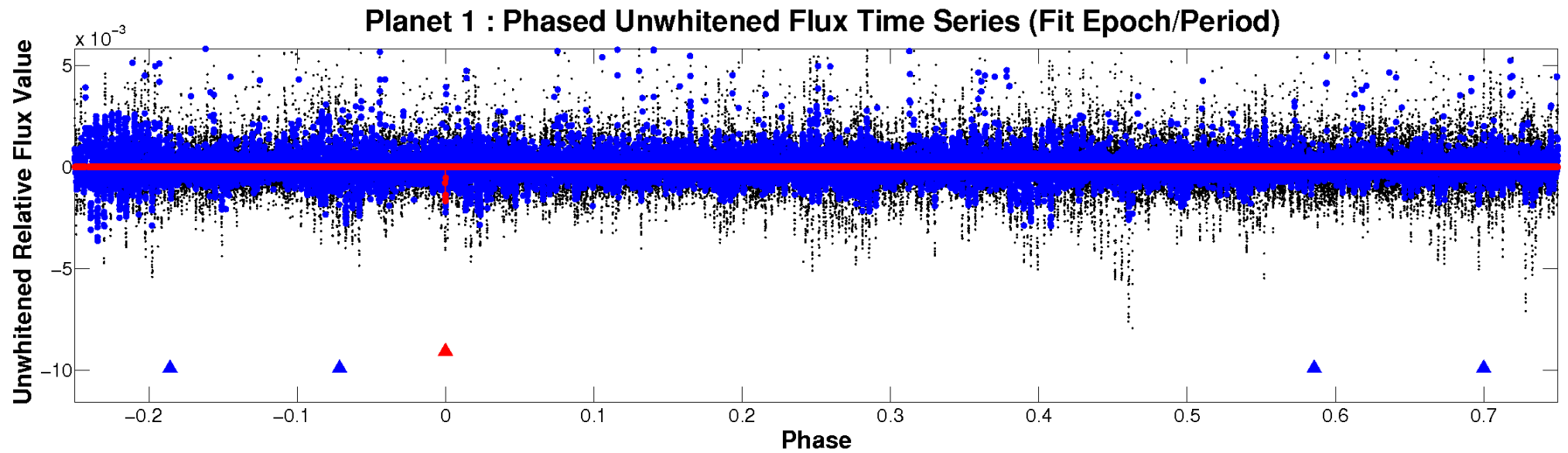


ALT Odd/Even

TCE 010922482-01

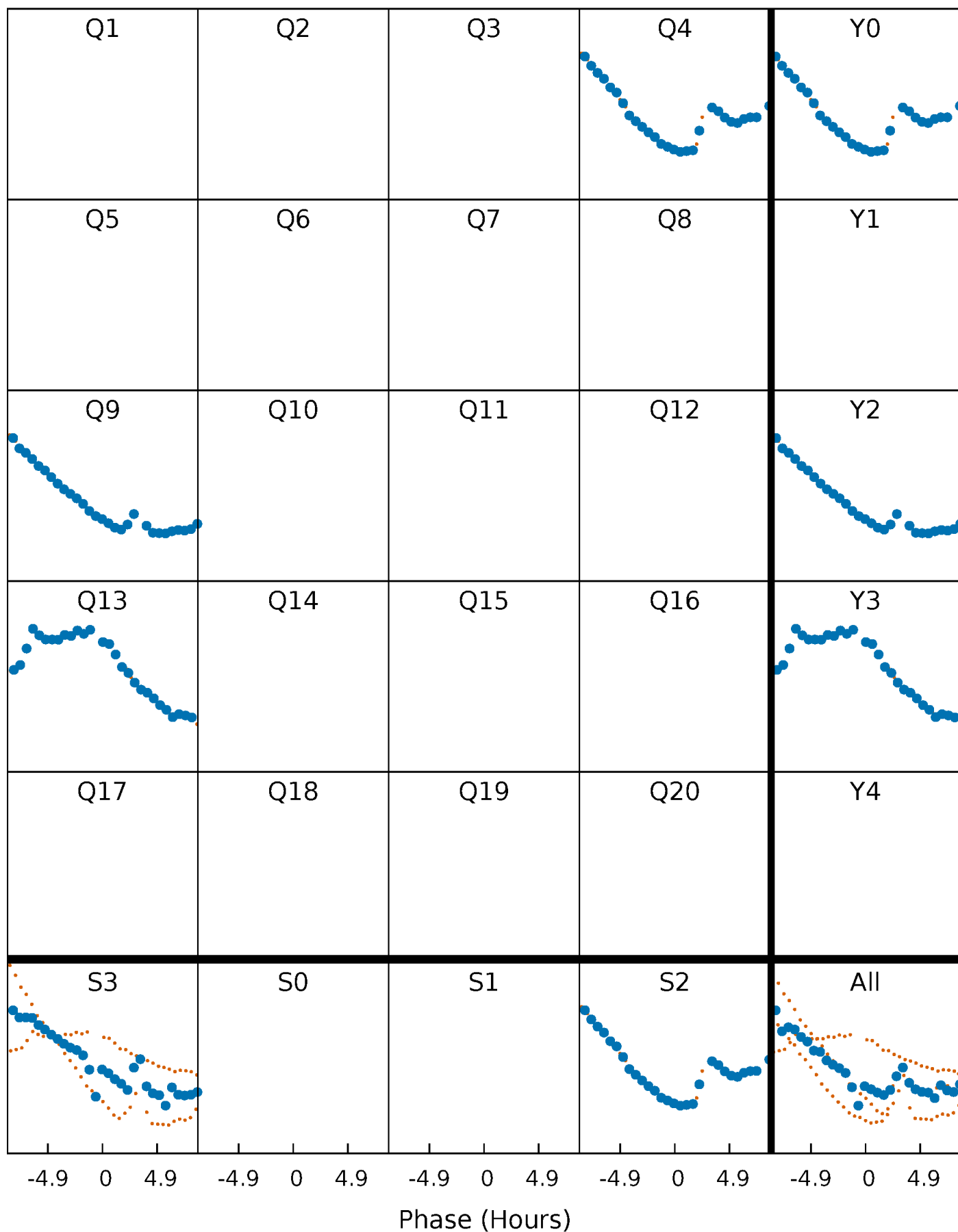


Non-Whitened Vs. Whitened Light Curve



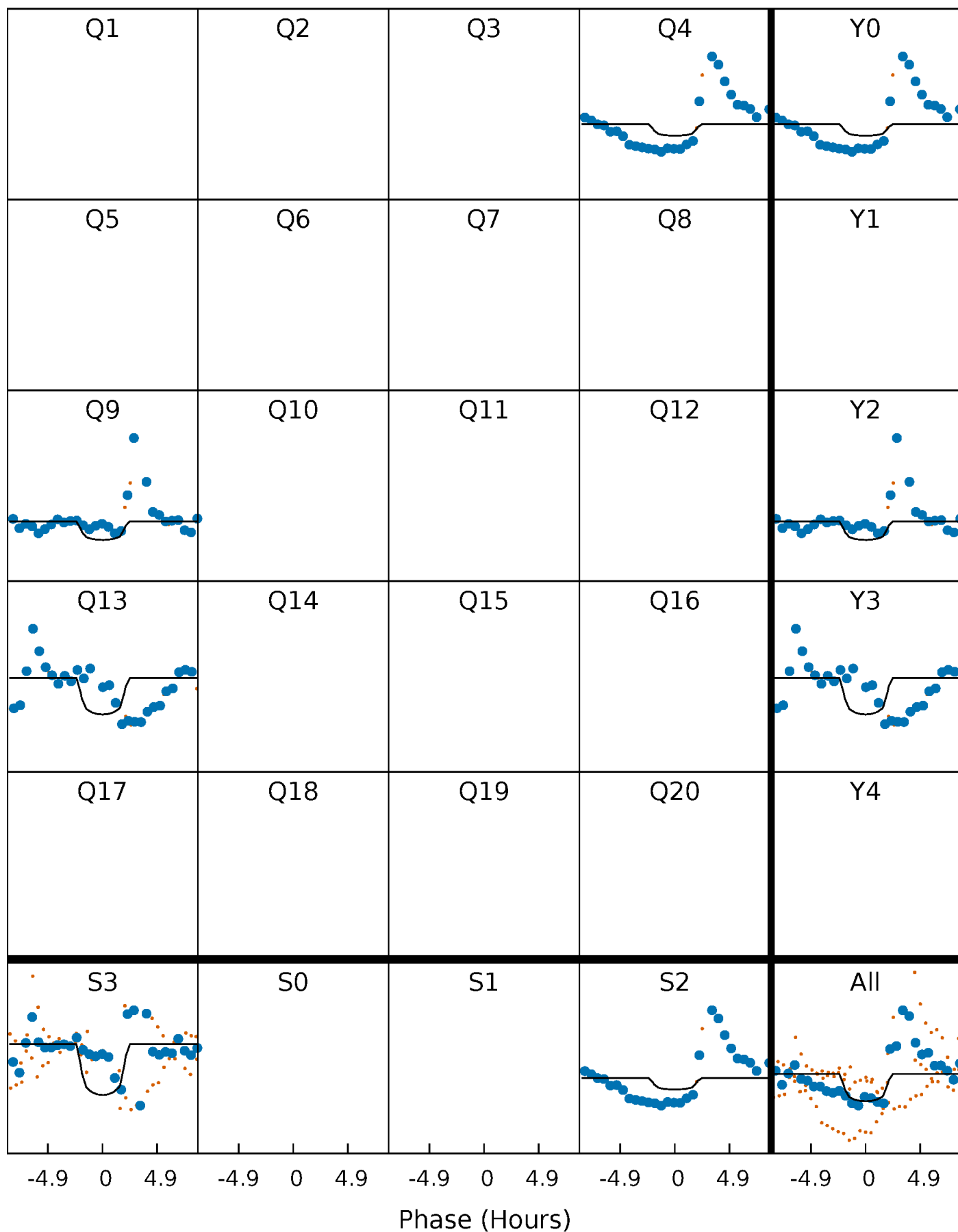
PDC Quarter-Phased Transit Curves

TCE 010922482-01 P=439.975552 Days $T_0=387.358725$ (BKJD)



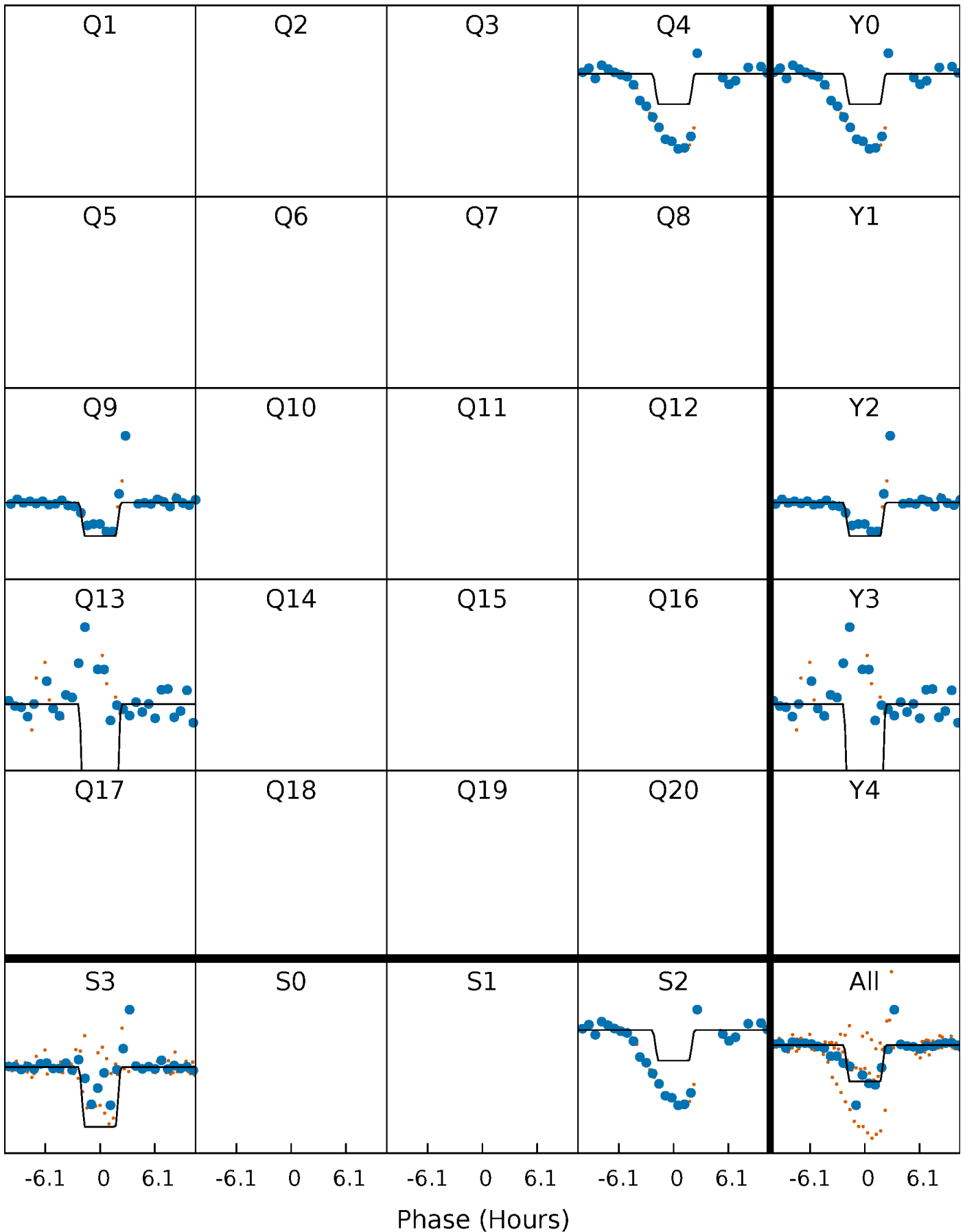
DV Quarter-Phased Transit Curves

TCE 010922482-01 P=439.975552 Days $T_0=387.358725$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

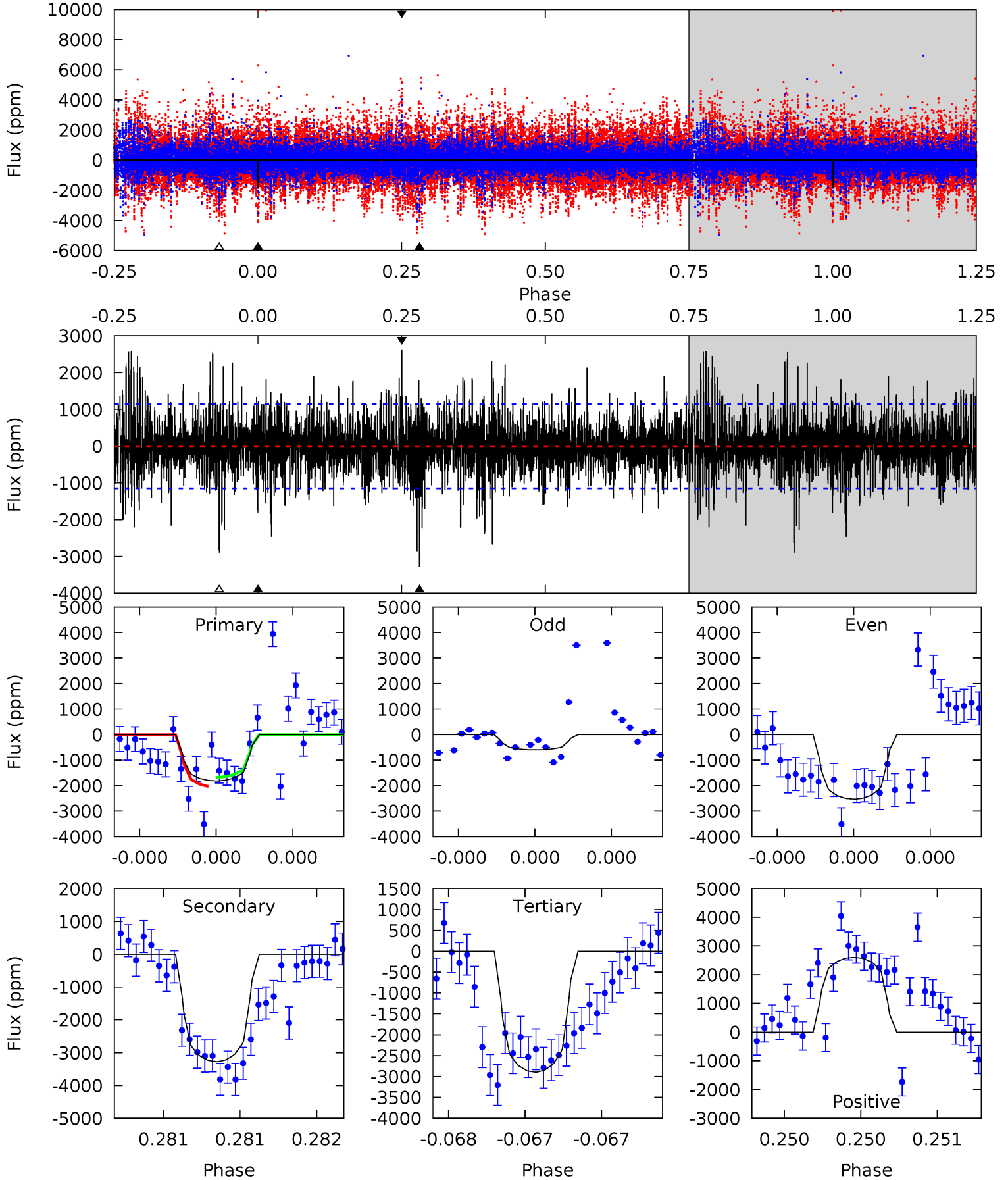
TCE 010922482-01 P=439.989036 Days $T_0=387.346135$ (BKJD)



DV Model-Shift Uniqueness Test

010922482-01, P = 439.975552 Days, E = 387.358725 Days

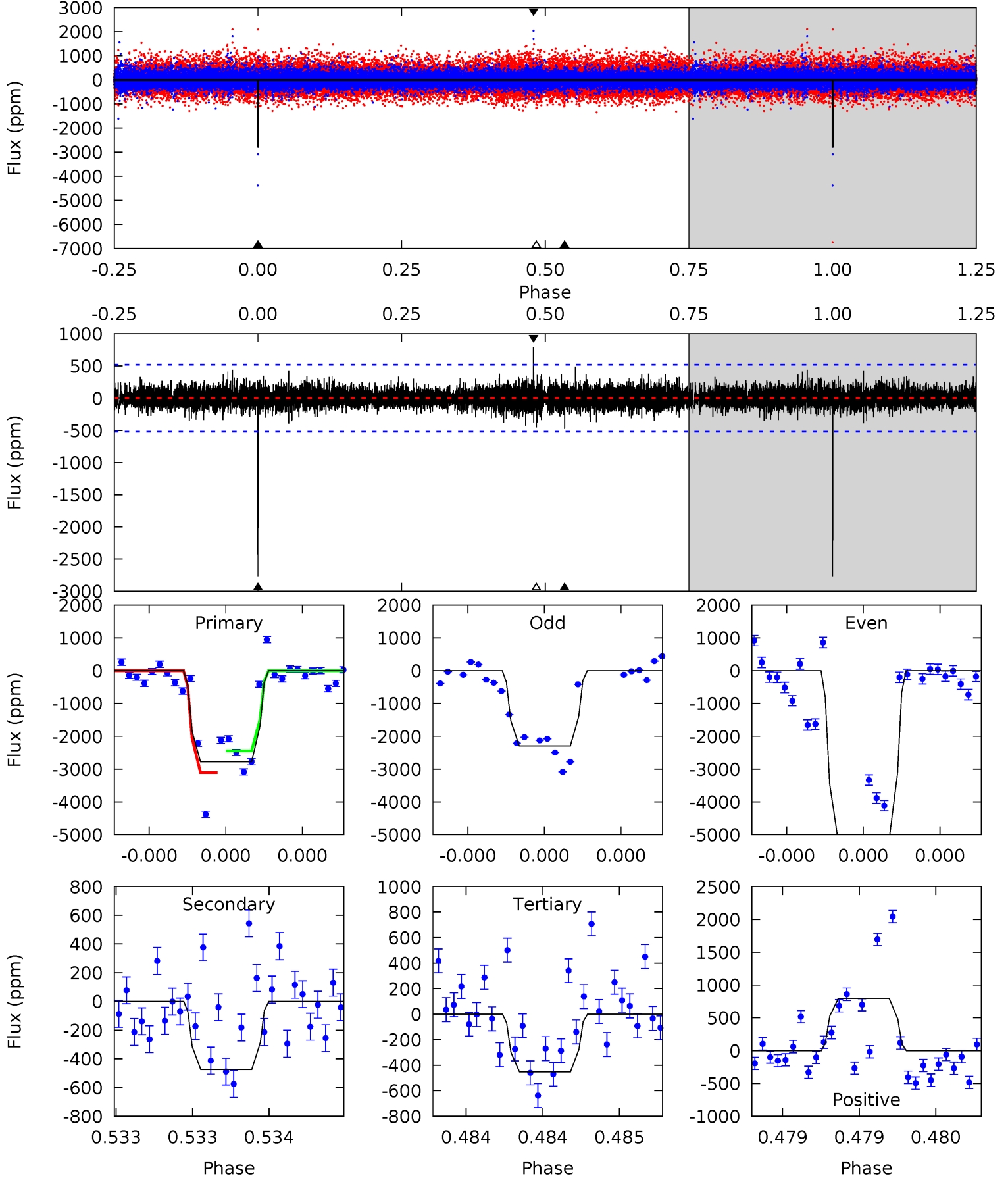
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.87	16.0	14.1	12.7	5.60	3.53	2.82	-5.27	-3.87	1.85	3.26	4.20	2.20	0.44	0.86



Alt Model-Shift Uniqueness Test

010922482-01, P = 439.989036 Days, E = 387.346135 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	5.11	4.87	8.57	5.60	3.53	0.96	25.0	21.3	0.24	-3.46	21.0	1.32	0.22	0



Stellar Parameters For KIC 010922482

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5795^{+143}_{-172}	$4.554^{+0.031}_{-0.168}$	$-0.200^{+0.300}_{-0.300}$	$0.848^{+0.212}_{-0.071}$	$0.938^{+0.098}_{-0.109}$	$2.167^{+0.373}_{-1.023}$
	+2%/-3%	+1%/-4%	+150%/-150%	+25%/-8%	+10%/-12%	+17%/-47%
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 010922482-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3274 ± 205	$6.14^{+5.45}_{-4.00}$	320^{+18}_{-13}	5479^{+4770}_{-1205}	$56441^{+411885}_{-40030}$
Alt.	-474 ± 93	$7.41^{+6.03}_{-4.74}$	319^{+19}_{-12}	3529^{+1566}_{-567}	5541^{+36024}_{-3825}

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 $A_{obs} \gg 1.0$

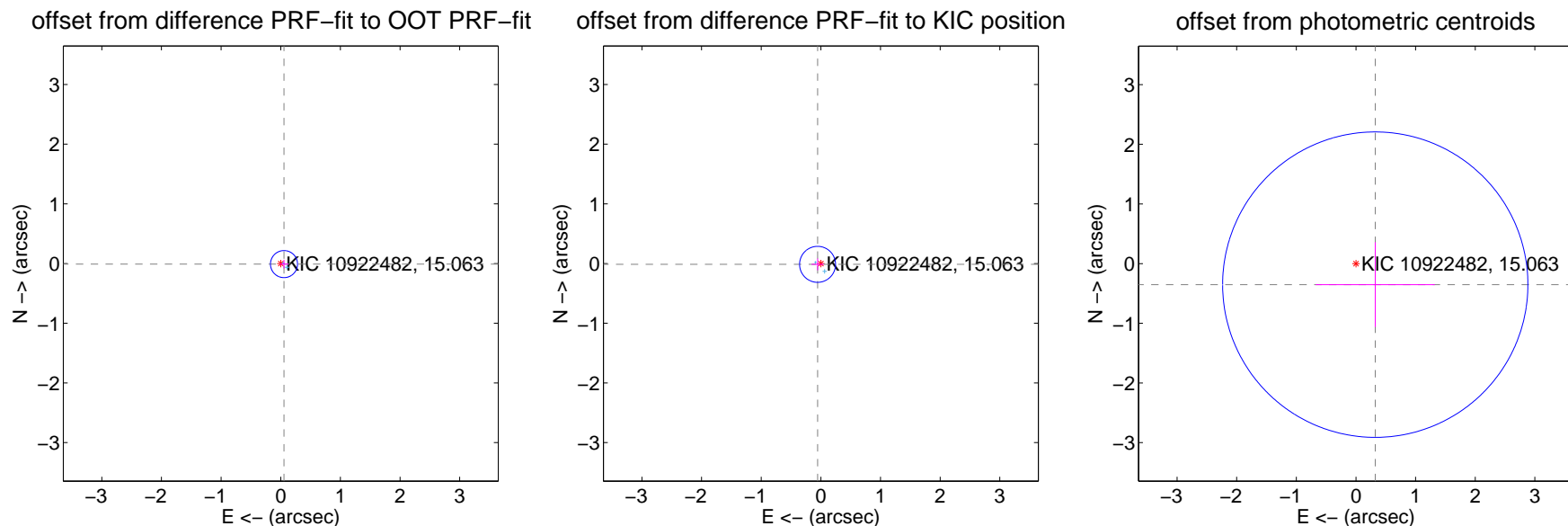
DV Centroid Data

Supplemental centroid analysis for 010922482-01. Kepler magnitude: 15.06. Transit SNR 4.77

There are 2 quarters with good PRF difference image offsets

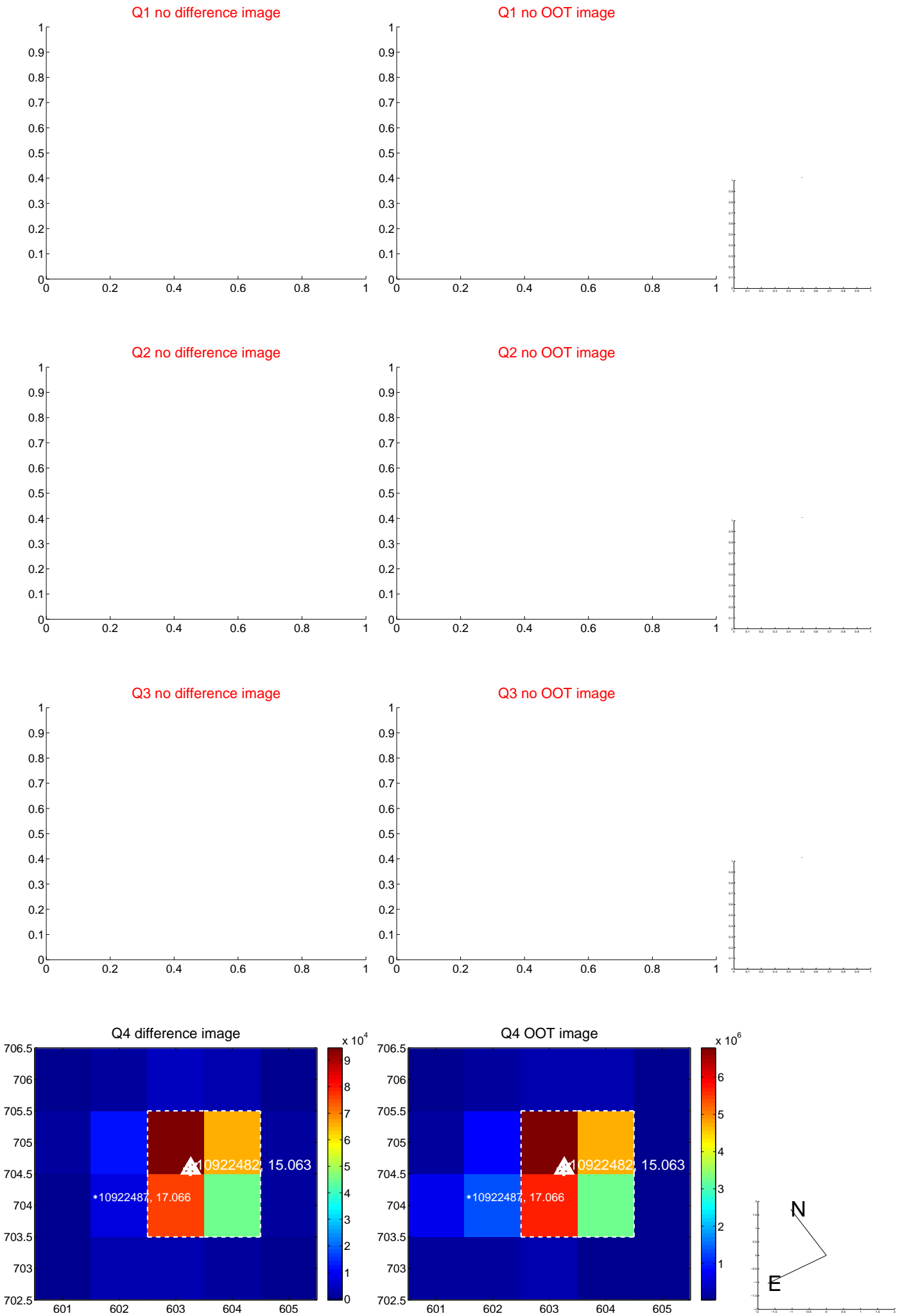
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.055 ± 0.076	0.73	-0.054 ± 0.073	-0.009 ± 0.074
PRF-fit source offset from KIC position	0.057 ± 0.100	0.56	0.055 ± 0.101	-0.013 ± 0.100
photometric centroid source offset	0.48 ± 0.85	0.56	-0.32 ± 1.00	-0.35 ± 0.71



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.

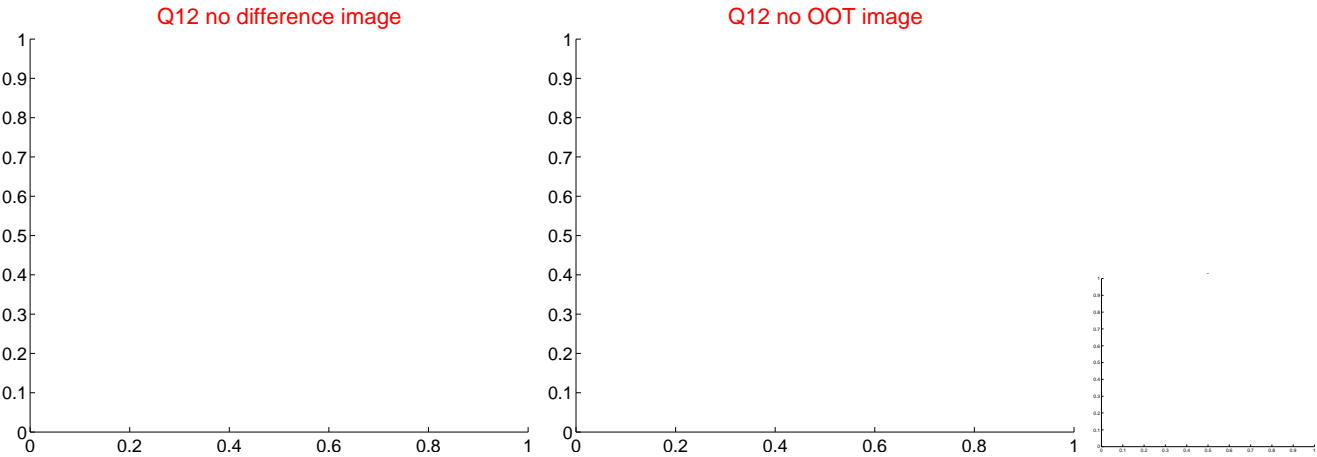
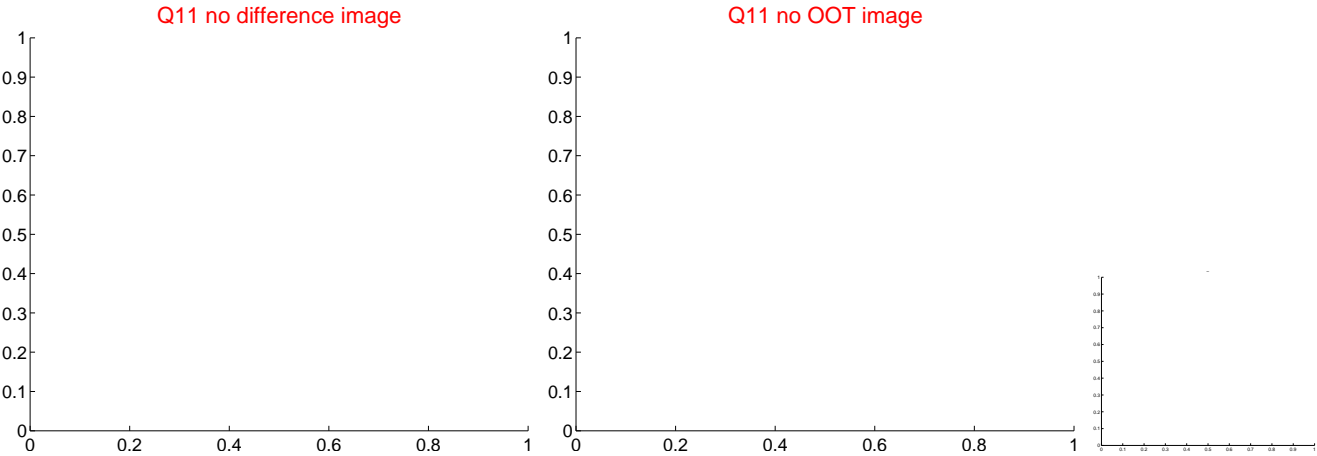
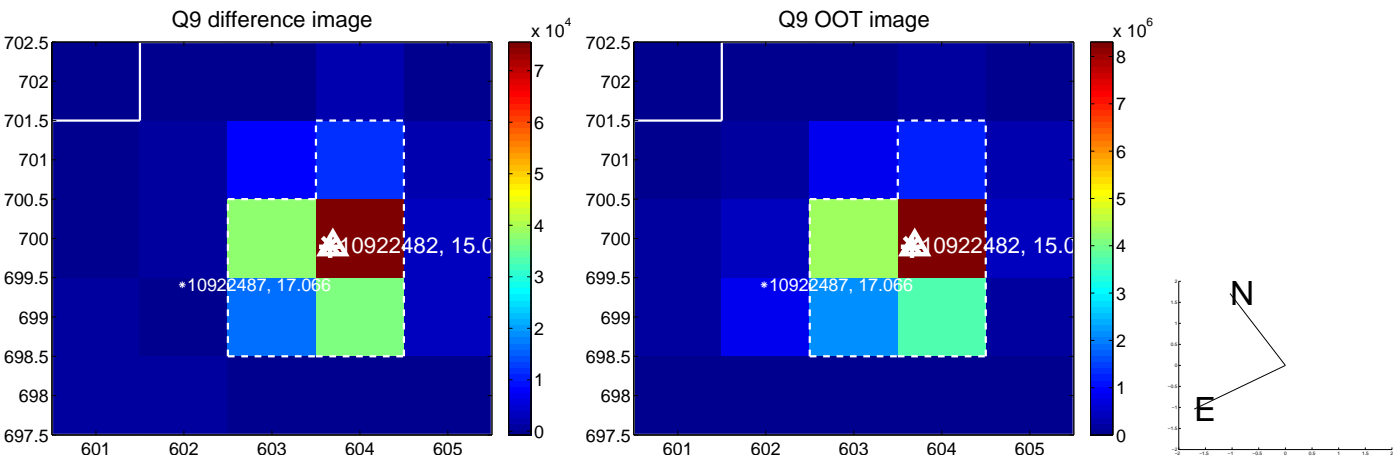
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



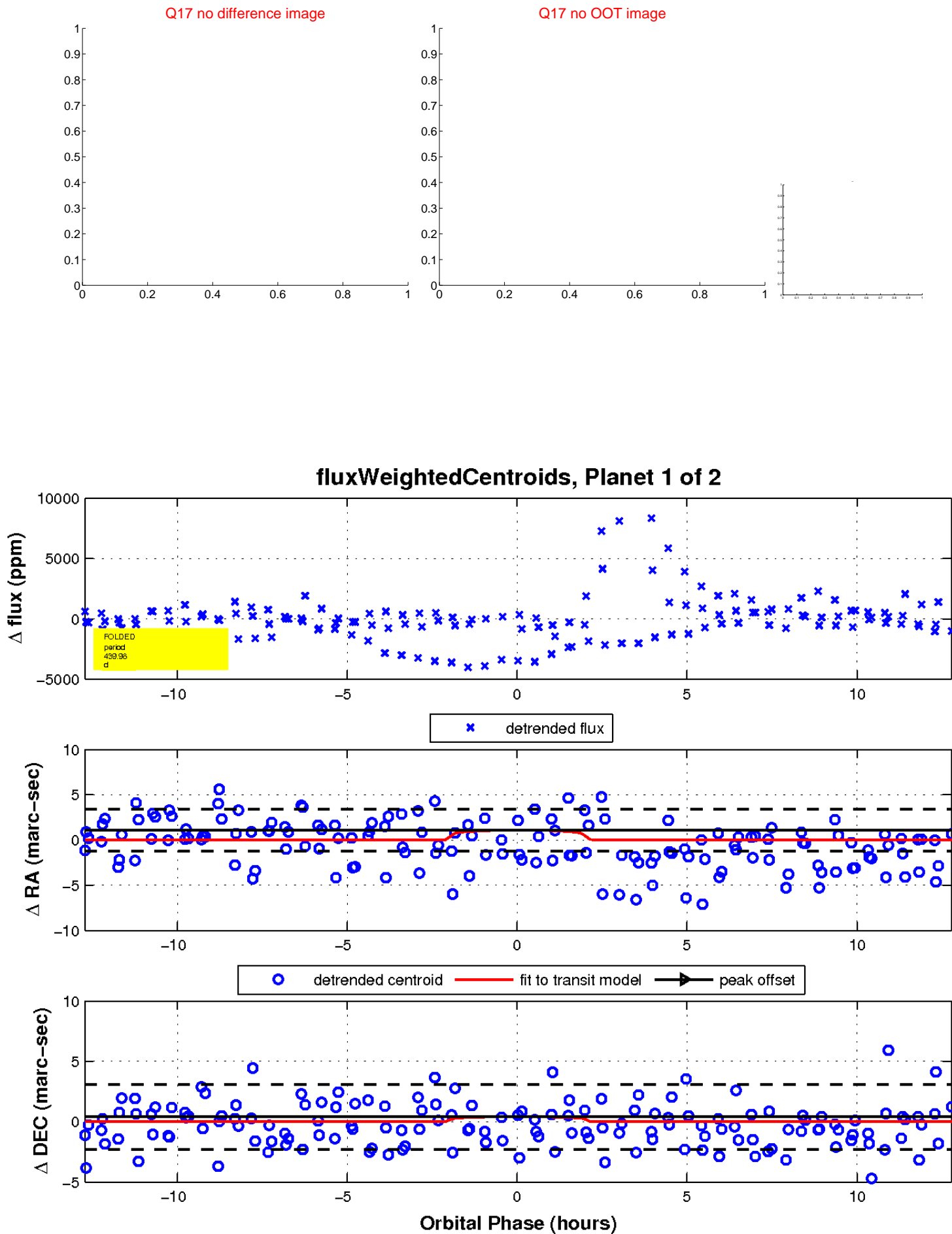
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

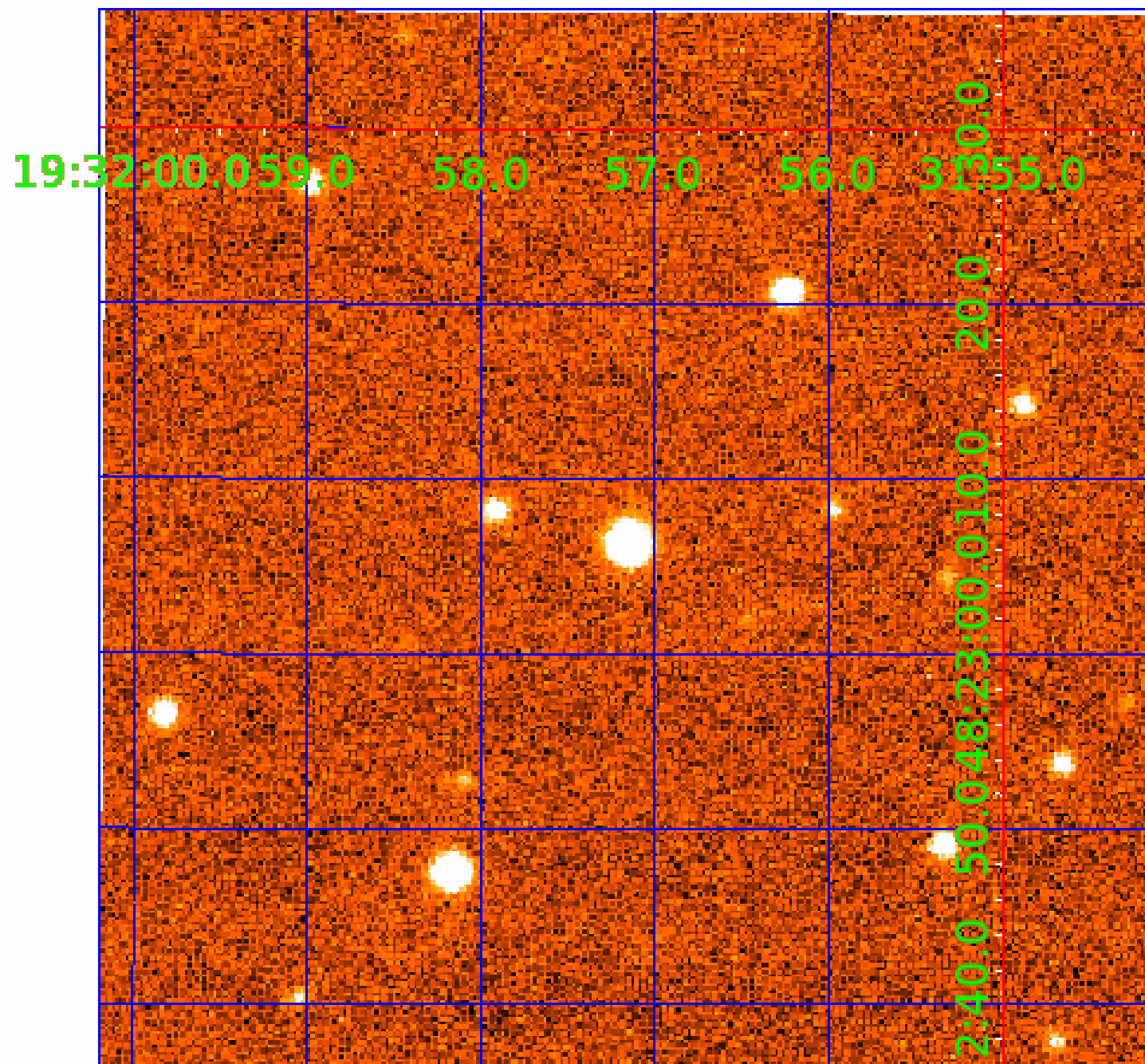


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010922482

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})
010922482-01	OBS	No	439.975552	387.358725	1680.8	4.271	13.5	4.8	0.85	5795	3.62	0.59
010922482-02	OBS	No	389.690872	355.934971	1582.8	3.391	14.5	5.6	0.85	5795	5.10	0.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010922482-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010922482-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

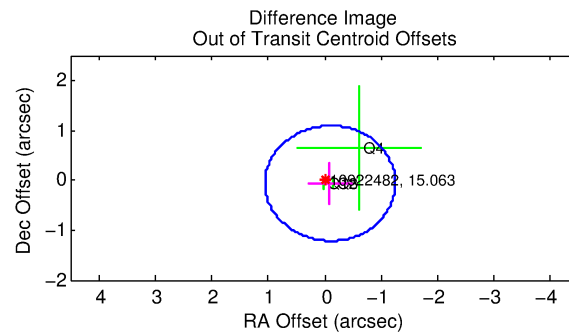
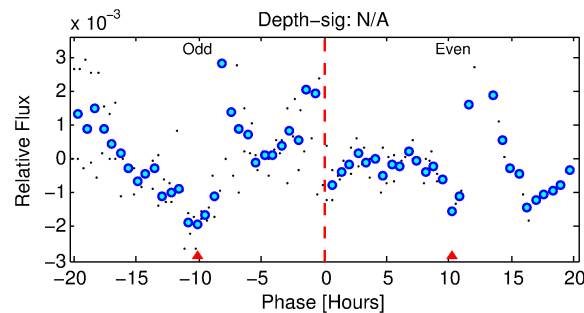
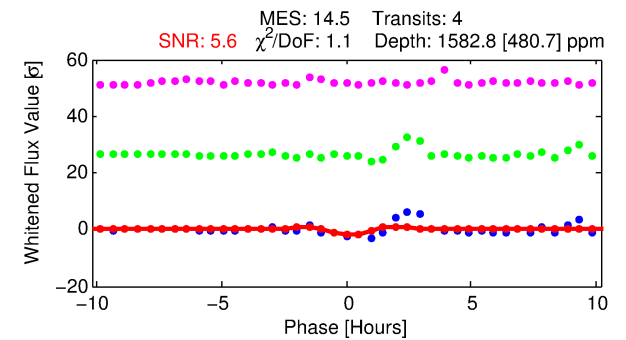
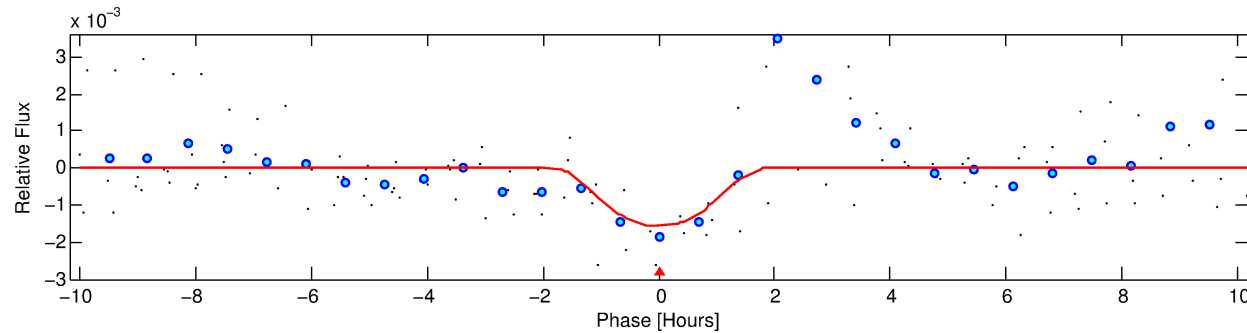
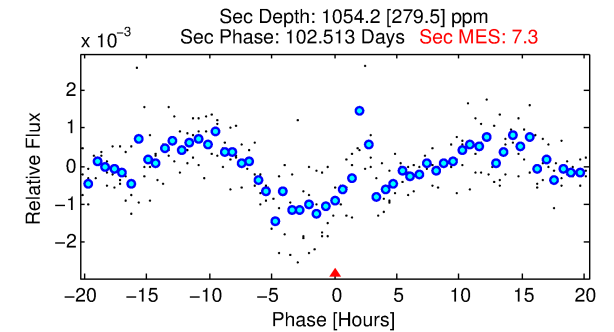
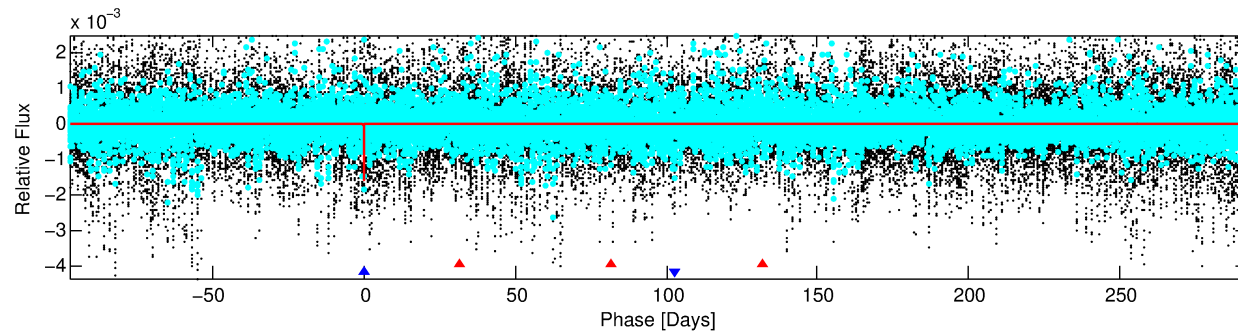
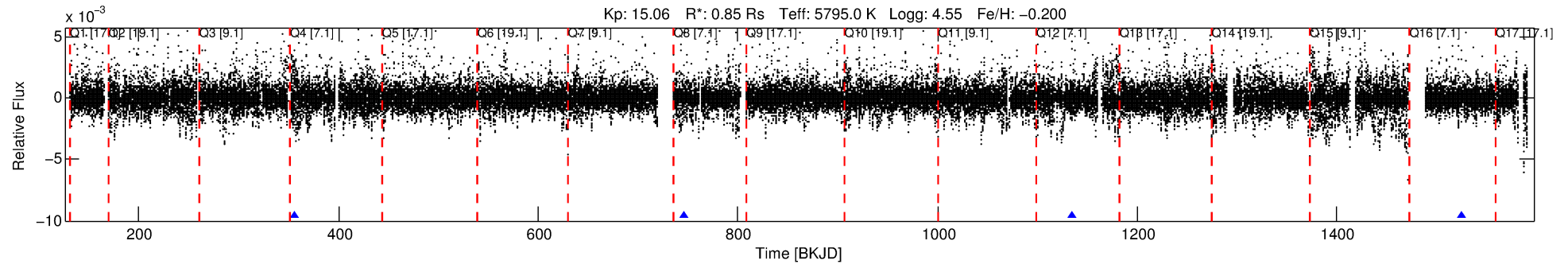
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010922482-02

No Significant Match Found

DV One-Page Summary

KIC: 10922482 Candidate: 2 of 2 Period: 389.691 d



DV Fit Results:

Period = 389.69087 [0.00674] d
Epoch = 355.9350 [0.0109] BKJD
Rp/R* = 0.0551 [0.1054]
a/R* = 353.44 [258.71]
b = 0.98 [0.20]
Seff = 0.69 [0.23]
Teq = 233 [19] K
Rp = 5.10 [9.83] Re
a = 1.0228 [0.2155] AU
Ag = 23324.86 [89674.39] [0.26σ]
Teffp = 4448 [4263] K [0.99σ]

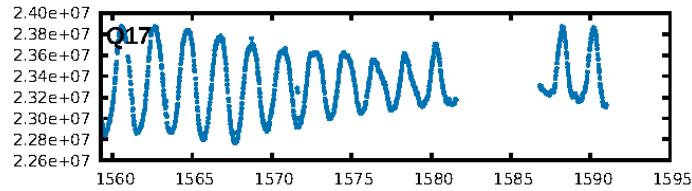
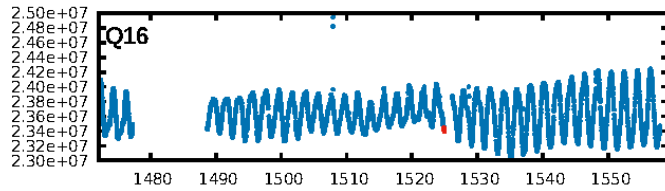
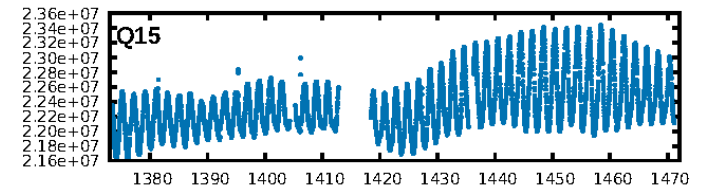
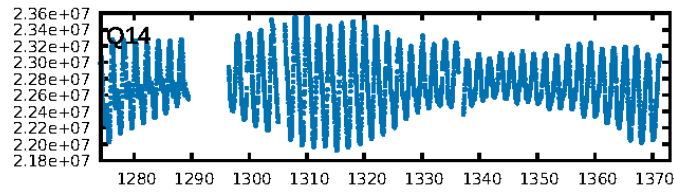
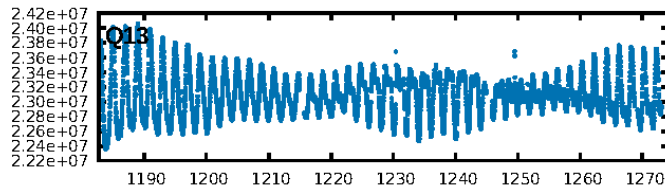
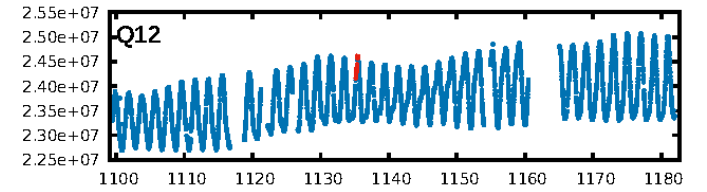
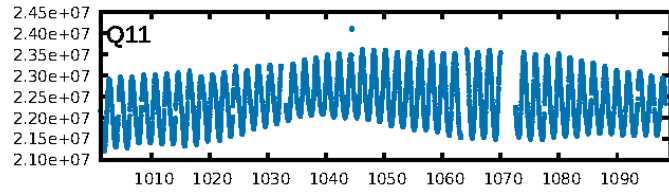
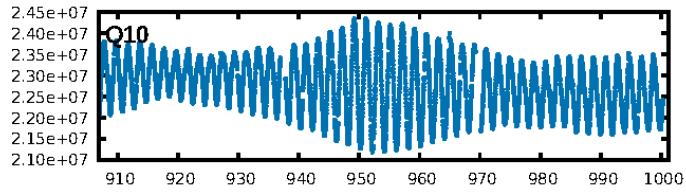
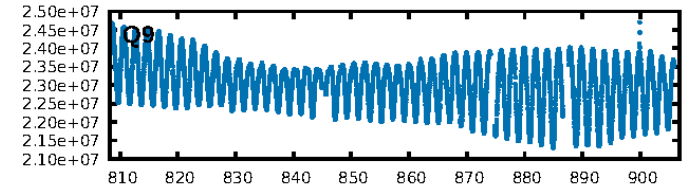
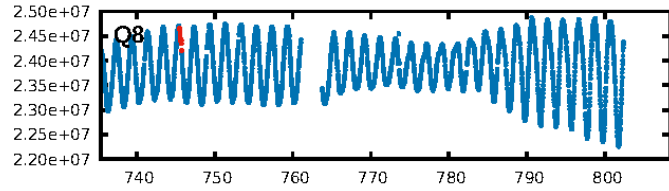
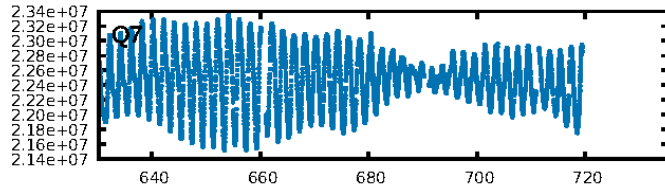
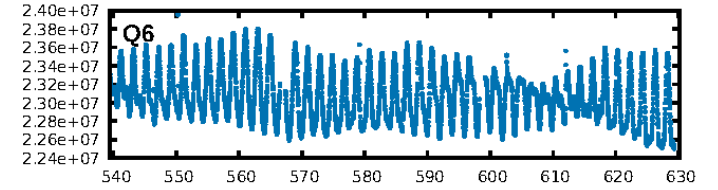
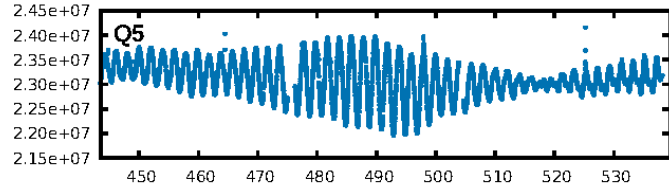
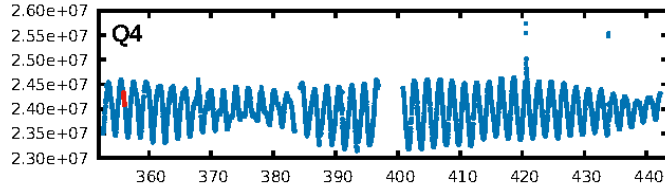
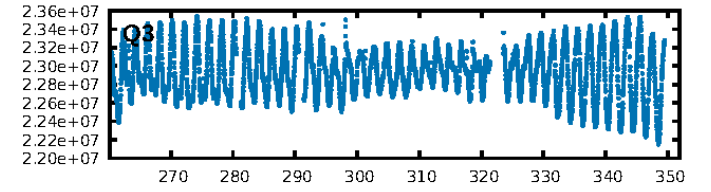
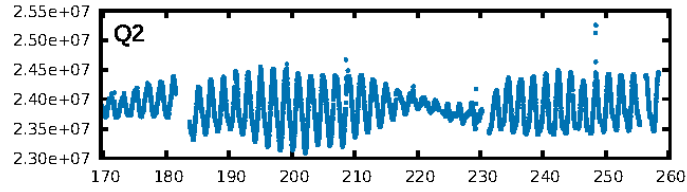
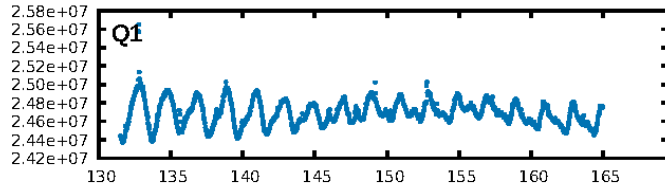
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [221.29σ]
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 98.4%
Bootstrap-pfa: 6.75e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.445
Centroid-sig: 89.0%
Centroid-so: 0.120 arcsec [0.11σ]
OotOffset-rm: 0.115 arcsec [0.30σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-rm: 0.160 arcsec [0.38σ]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

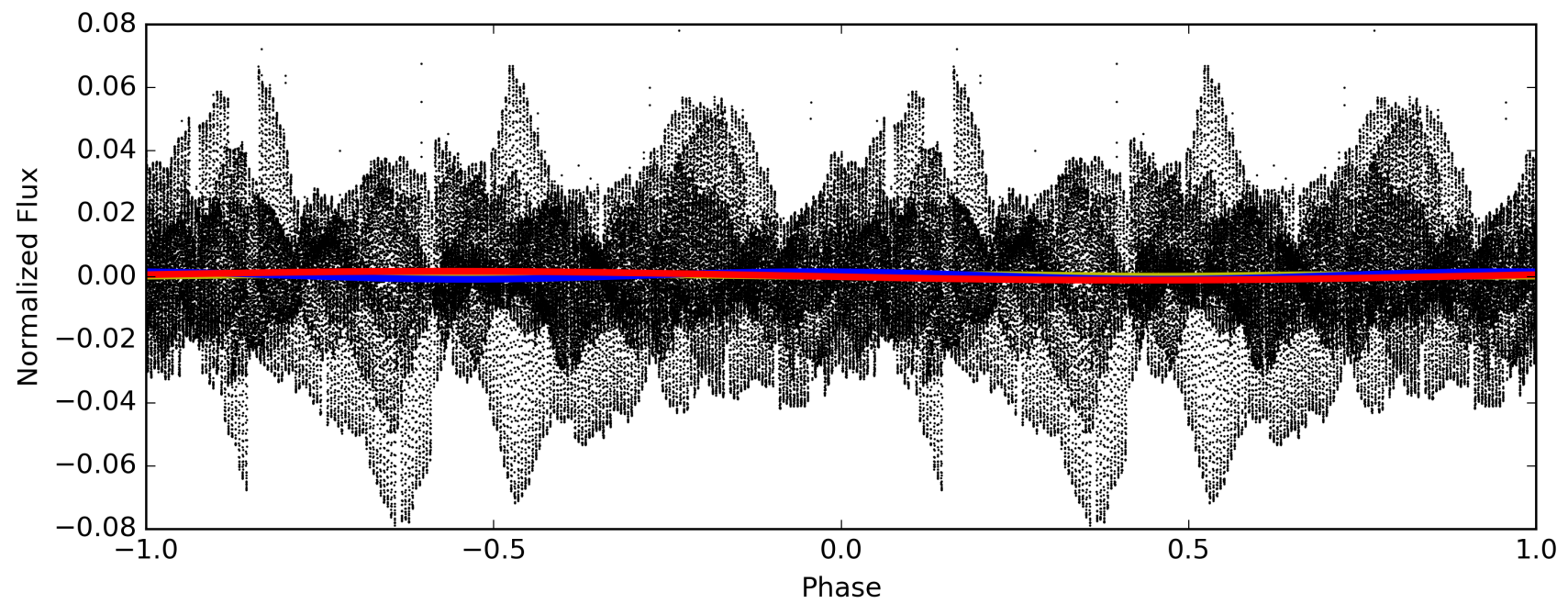
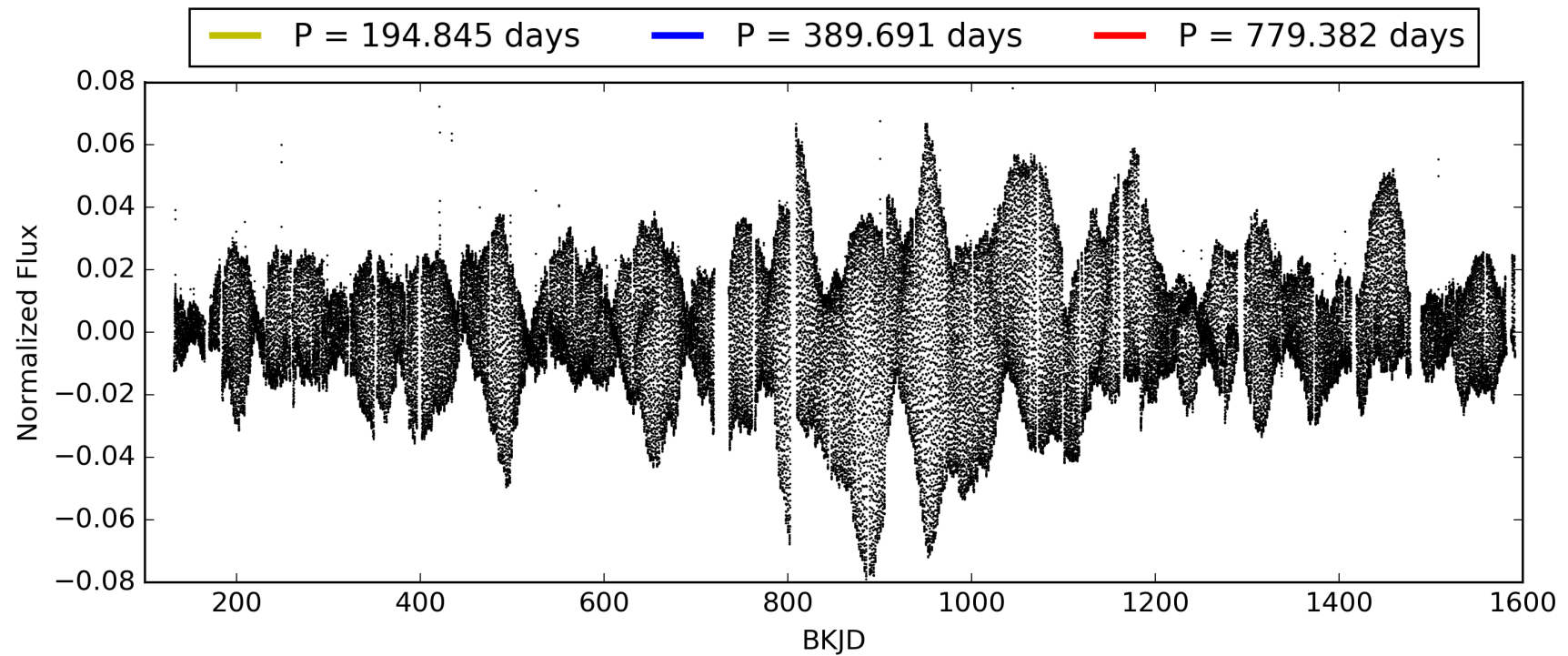
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010922482-02, PDC Light Curves

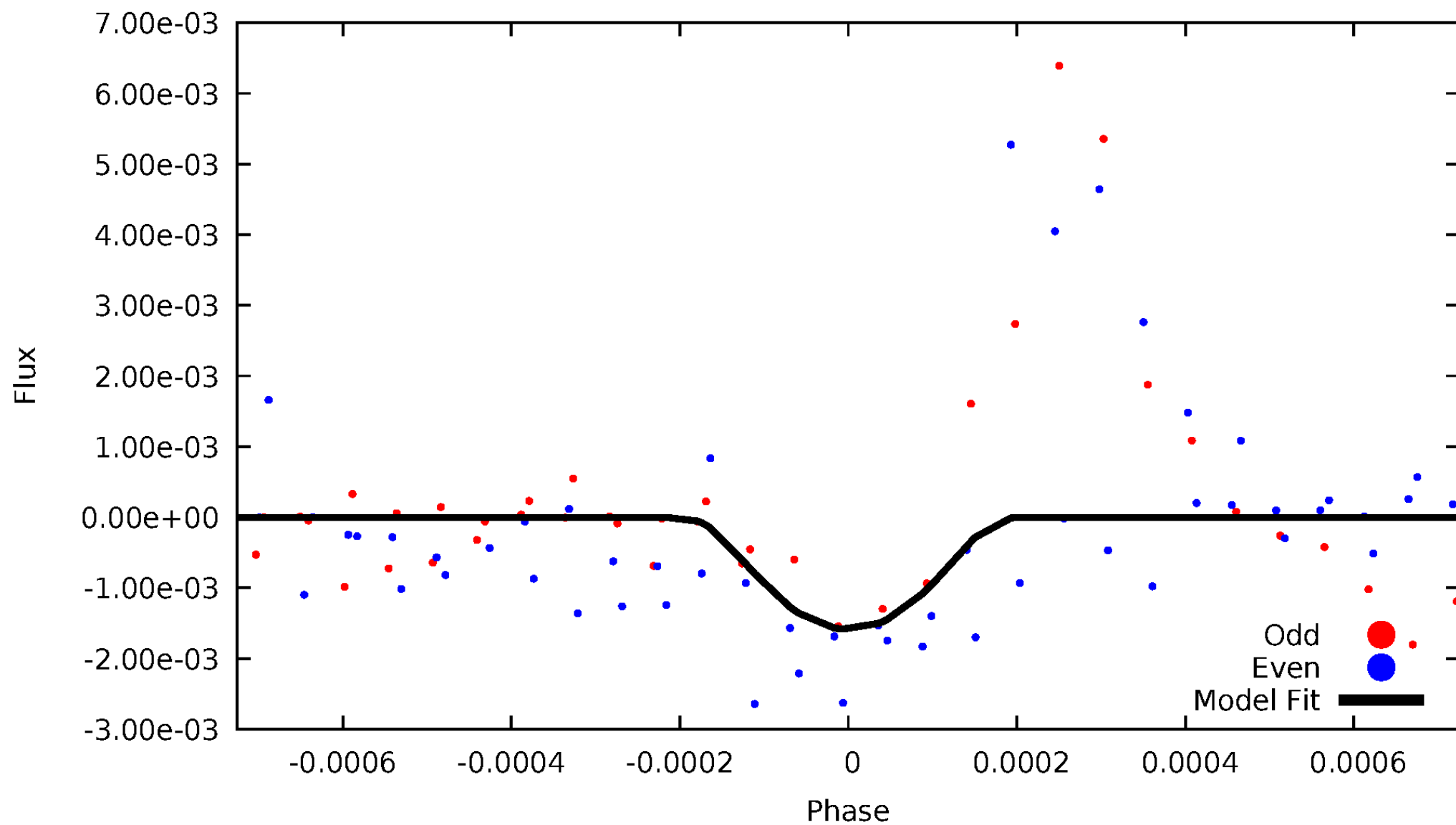


TCE 010922482-02



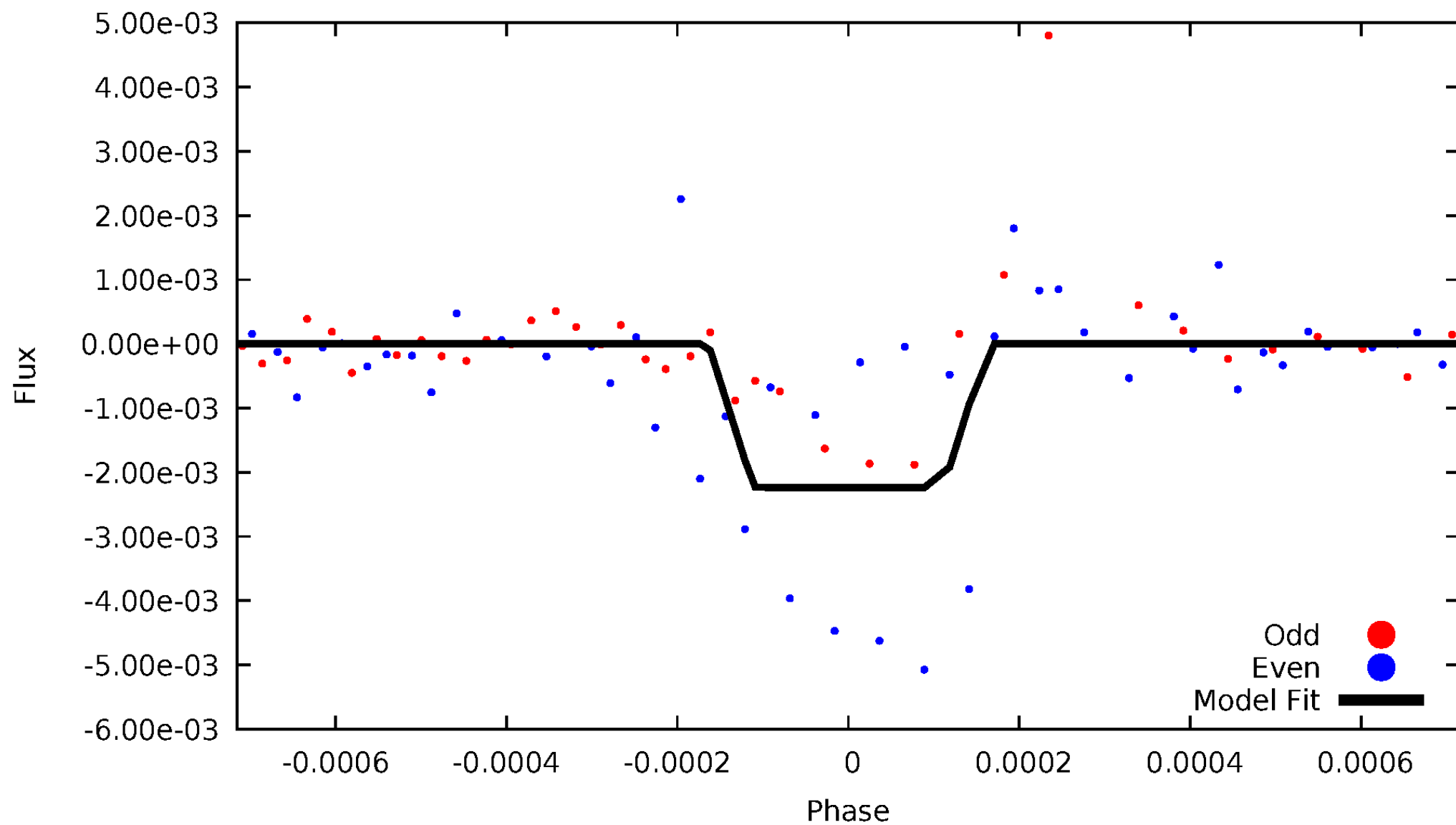
DV Odd/Even

TCE 010922482-02



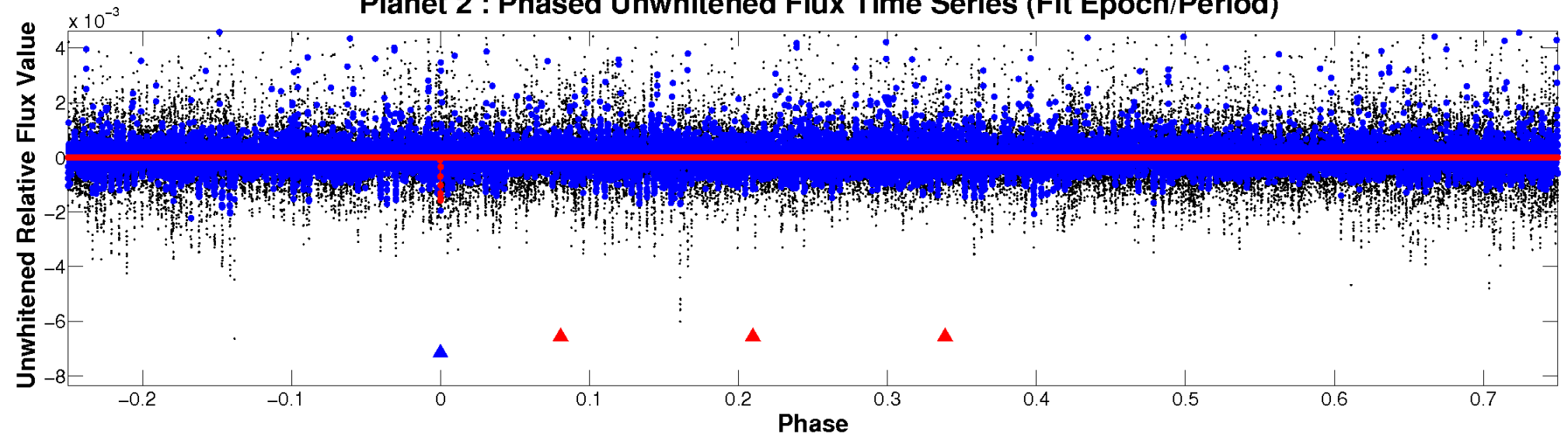
ALT Odd/Even

TCE 010922482-02

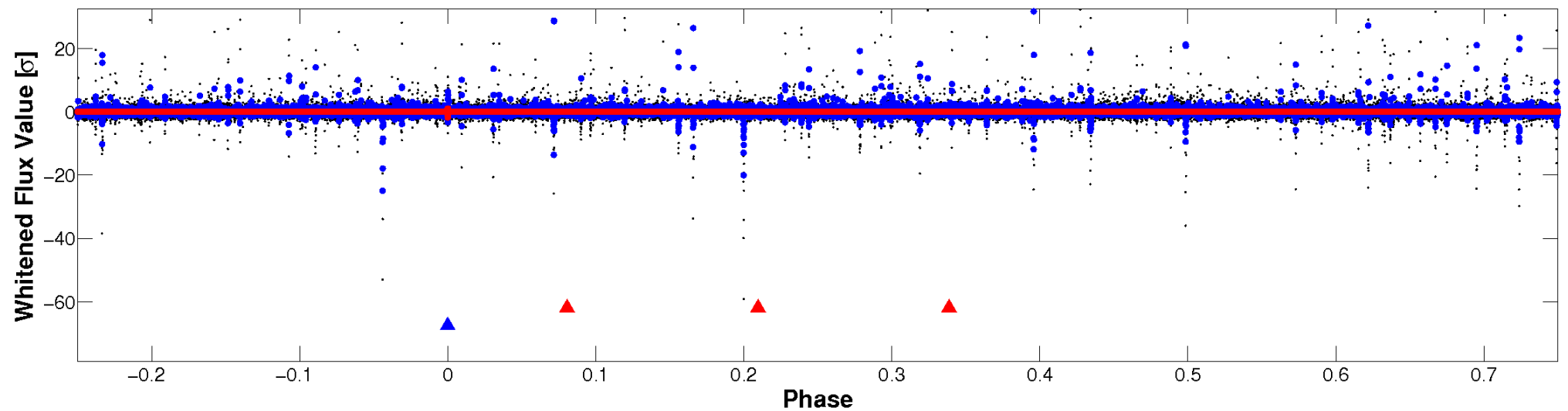


Non-Whitened Vs. Whitened Light Curve

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

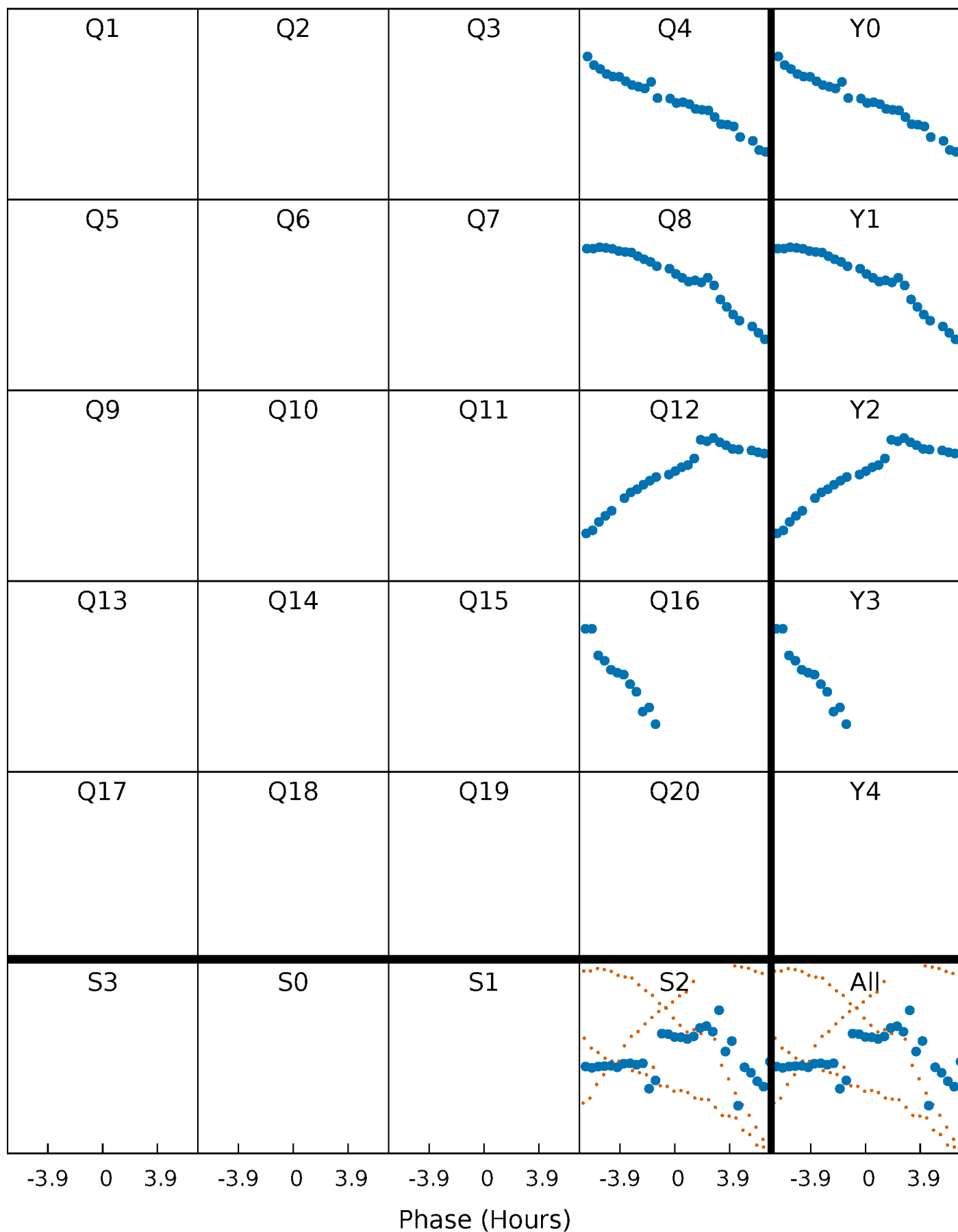


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



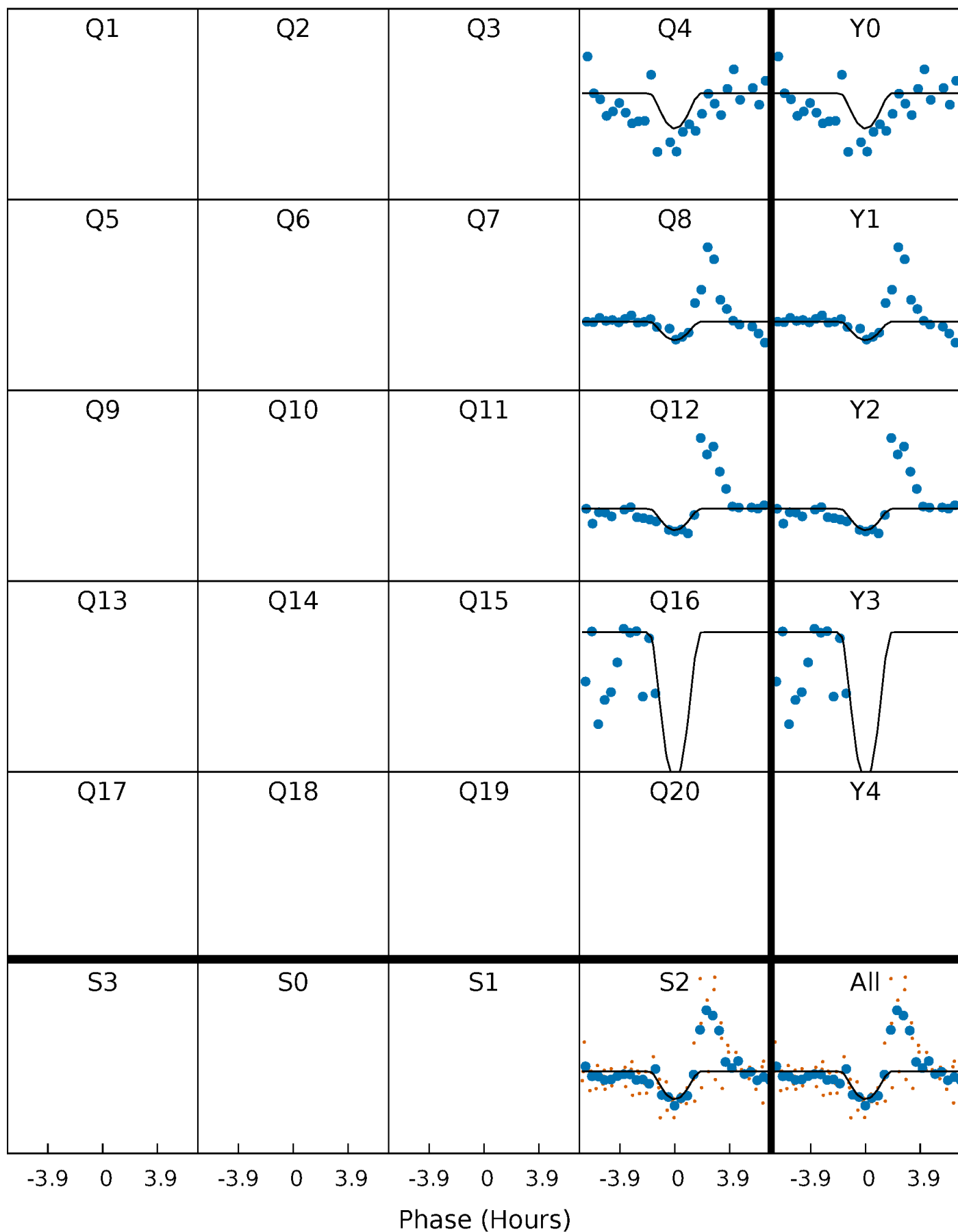
PDC Quarter-Phased Transit Curves

TCE 010922482-02 $P=389.690872$ Days $T_0=355.934971$ (BKJD)



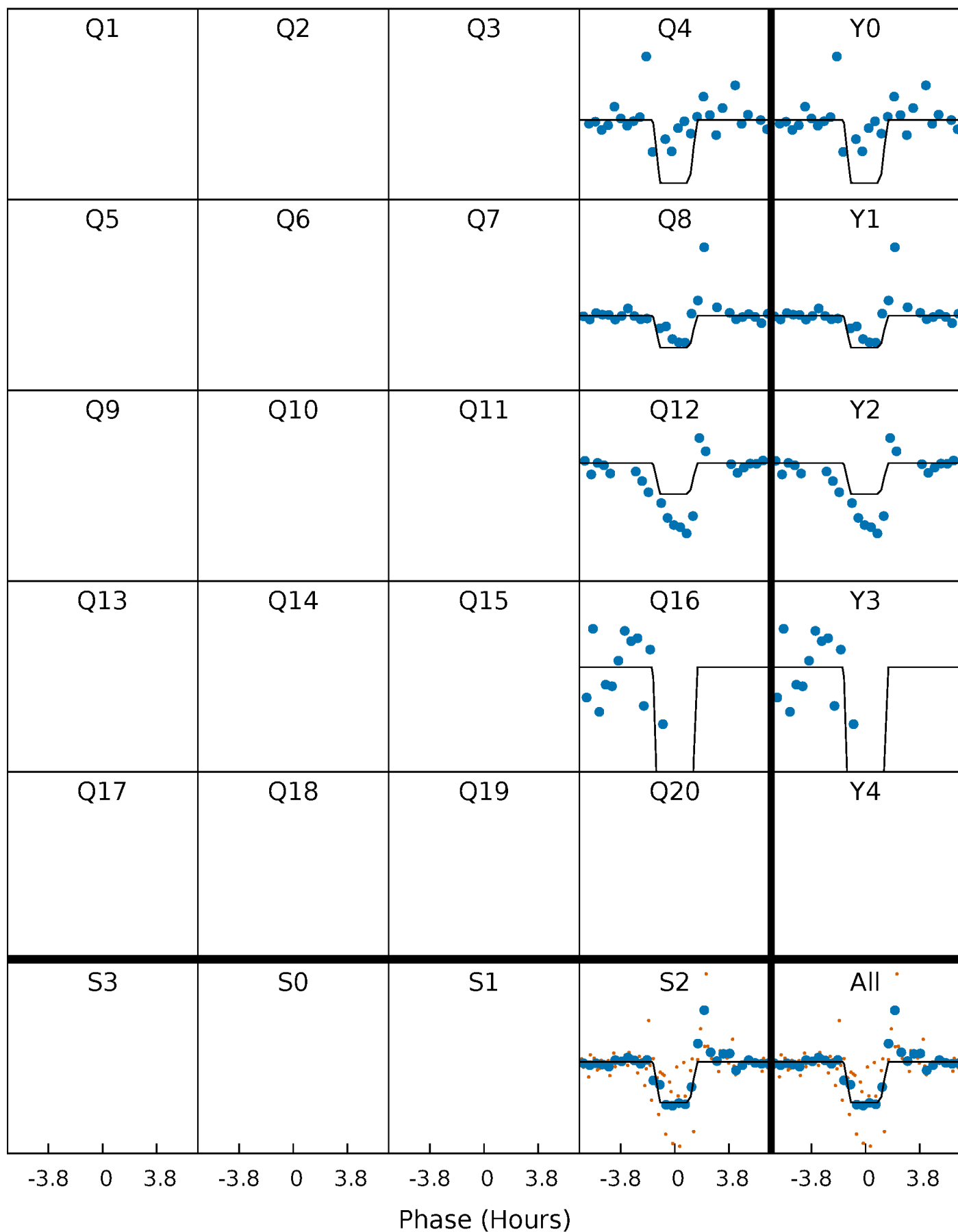
DV Quarter-Phased Transit Curves

TCE 010922482-02 $P=389.690872$ Days $T_0=355.934971$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

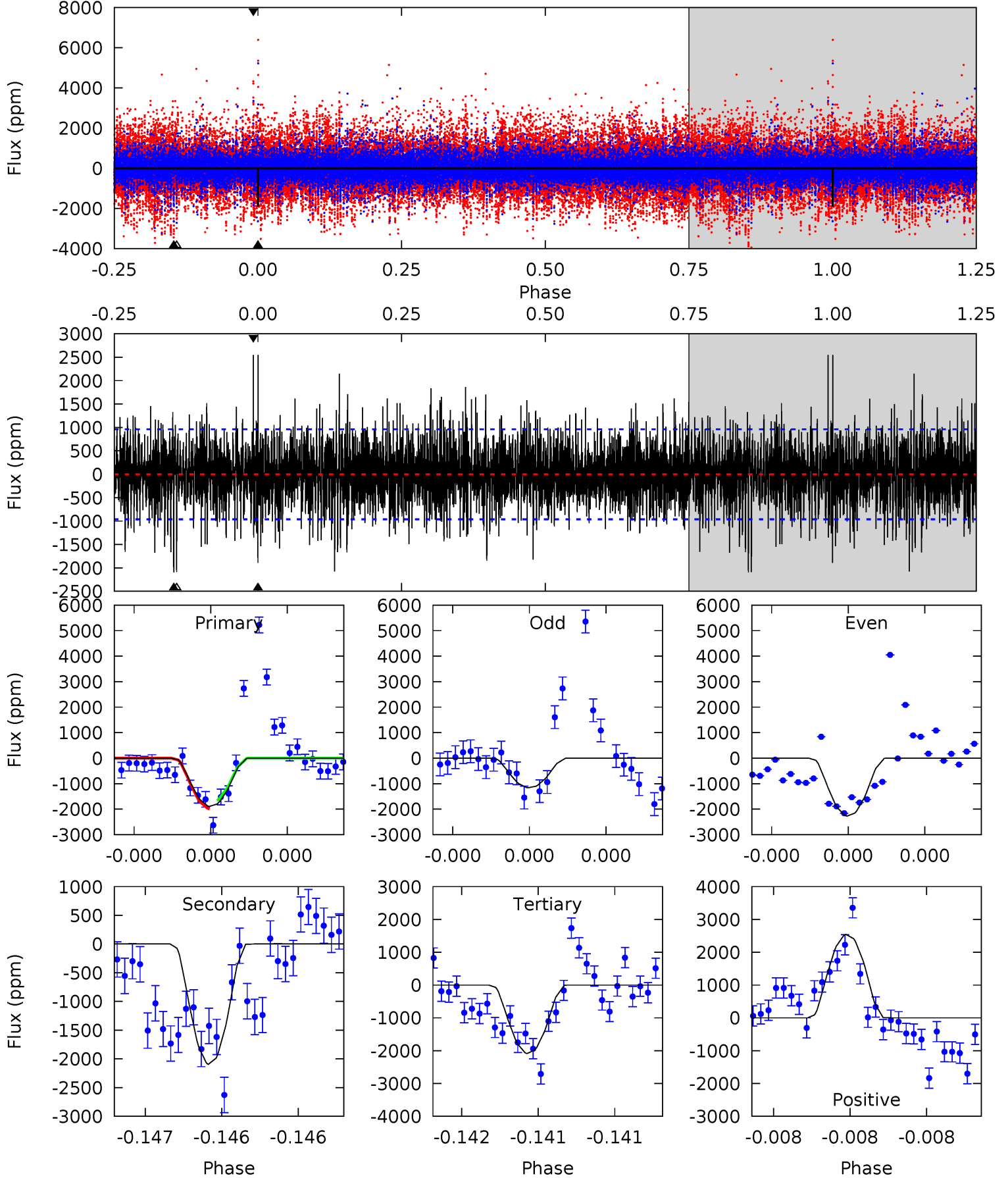
TCE 010922482-02 $P=389.684443$ Days $T_0=355.947570$ (BKJD)



DV Model-Shift Uniqueness Test

010922482-02, P = 389.690872 Days, E = 355.934971 Days

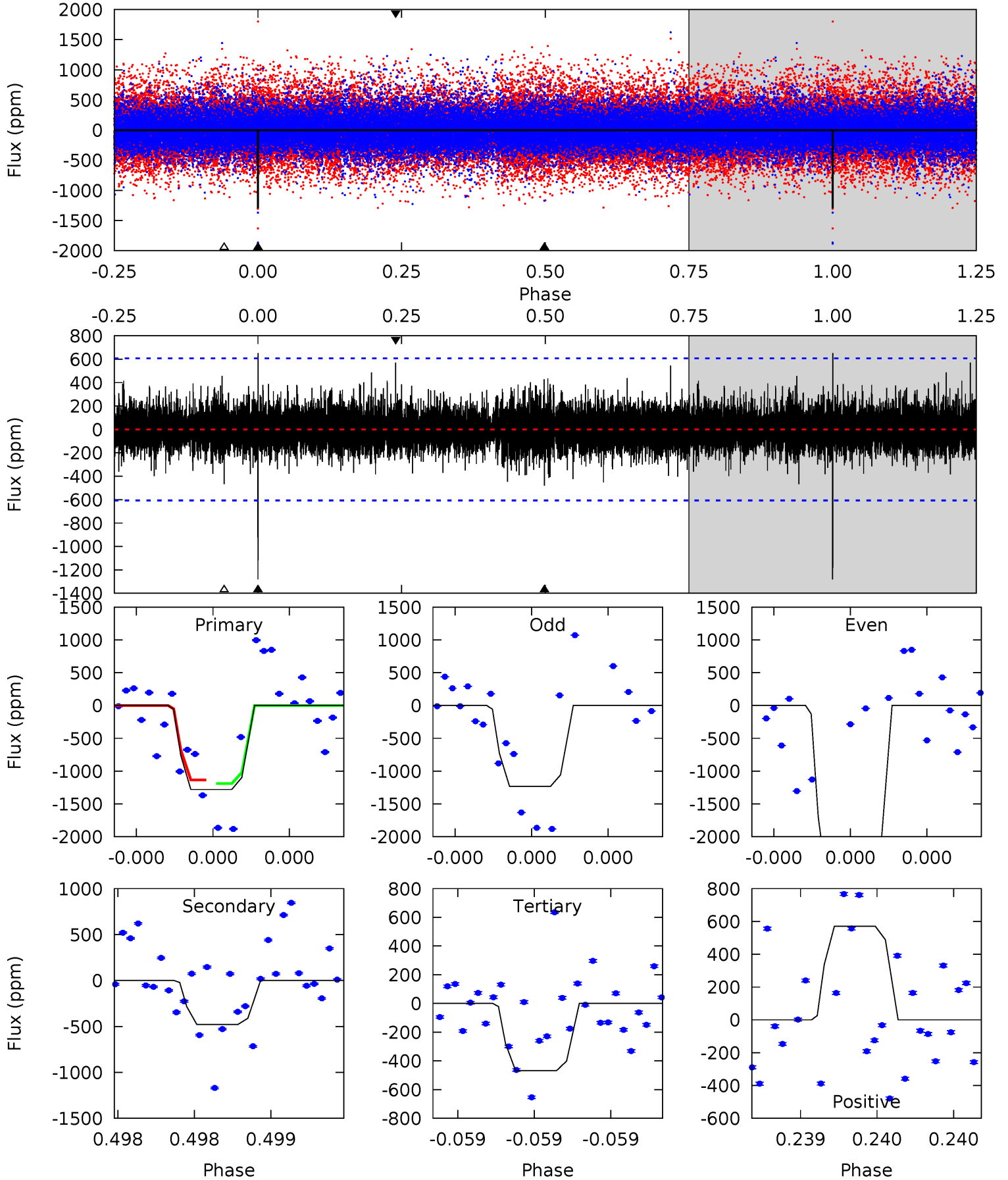
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	12.2	12.2	14.8	5.60	3.53	2.84	-1.14	-3.82	0.04	-2.63	2.92	1.02	0.55	0.94



Alt Model-Shift Uniqueness Test

010922482-02, P = 389.684443 Days, E = 355.947570 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	4.47	4.36	5.31	5.65	3.60	0.94	7.56	6.61	0.11	-0.84	10.5	1.80	0.34	0



Stellar Parameters For KIC 010922482

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5795^{+143}_{-172}	$4.554^{+0.031}_{-0.168}$	$-0.200^{+0.300}_{-0.300}$	$0.848^{+0.212}_{-0.071}$	$0.938^{+0.098}_{-0.109}$	$2.167^{+0.373}_{-1.023}$
	+2%/-3%	+1%/-4%	+150%/-150%	+25%/-8%	+10%/-12%	+17%/-47%
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 010922482-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2094 ± 171	$9.40^{+8.71}_{-6.17}$	333^{+20}_{-14}	4221^{+2601}_{-834}	$13565^{+102236}_{-9895}$
Alt.	-480 ± 107	$8.27^{+9.64}_{-5.61}$	332^{+19}_{-13}	3393^{+1881}_{-648}	3929^{+33099}_{-3139}

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 $A_{obs} \gg 1.0$

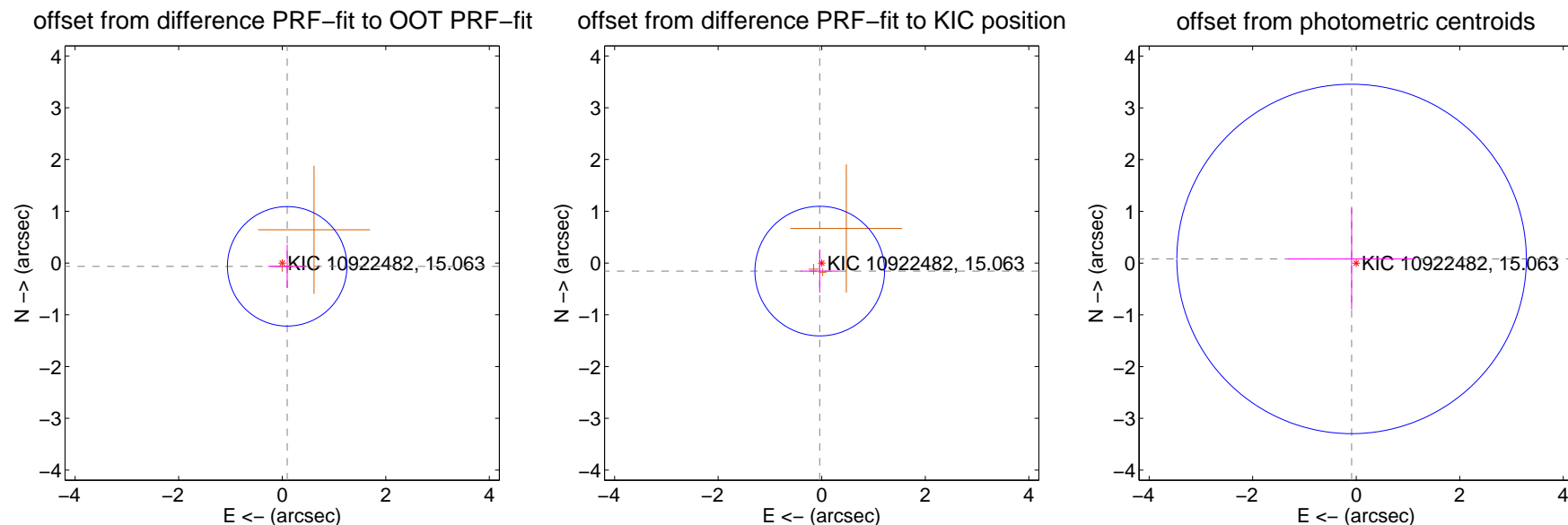
DV Centroid Data

Supplemental centroid analysis for 010922482-02. Kepler magnitude: 15.06. Transit SNR 5.59

There are 0 quarters with good PRF difference image offsets

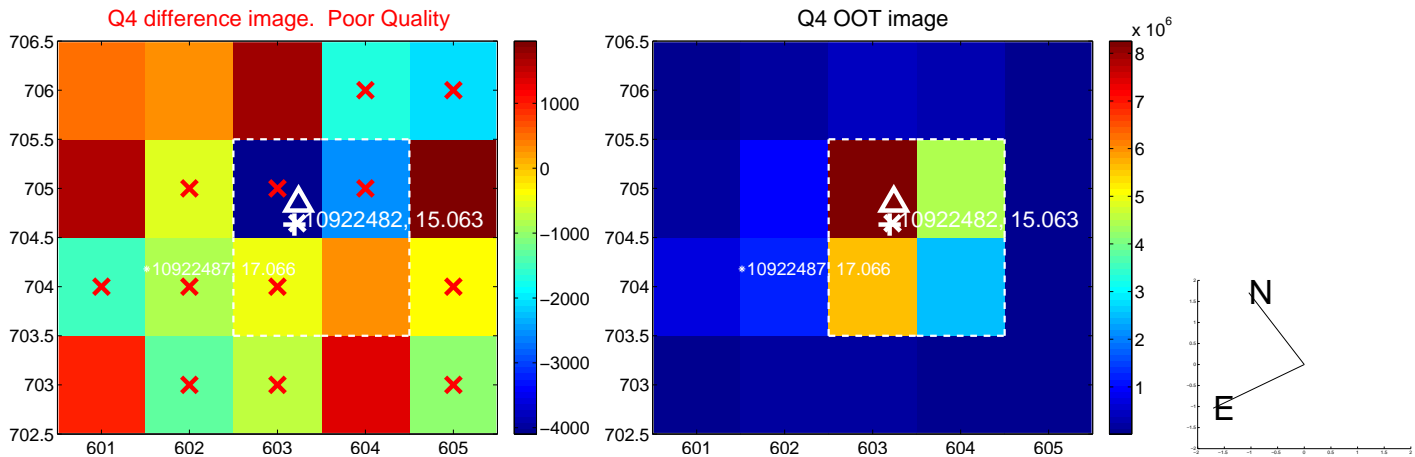
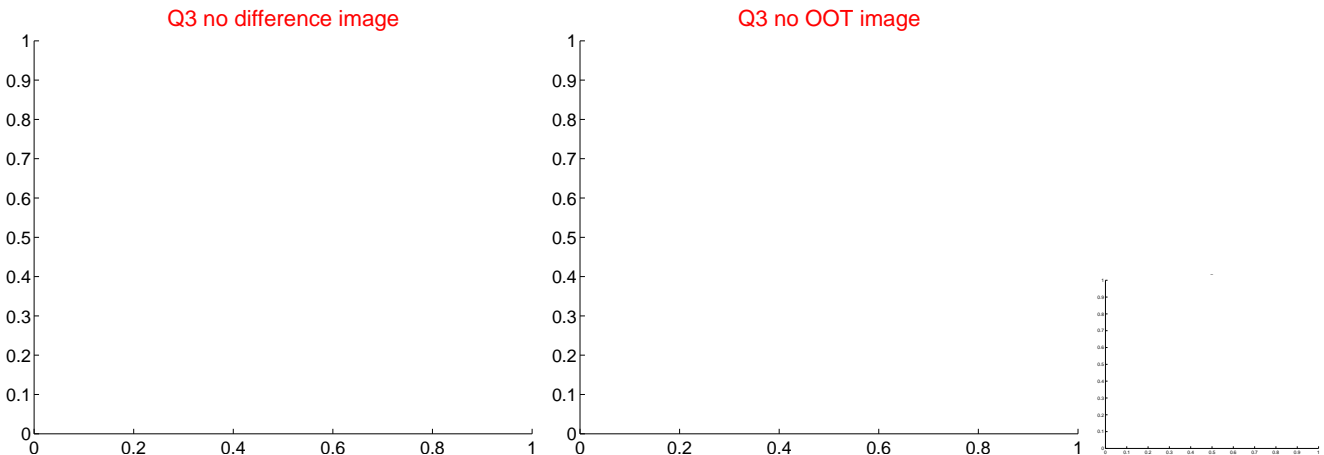
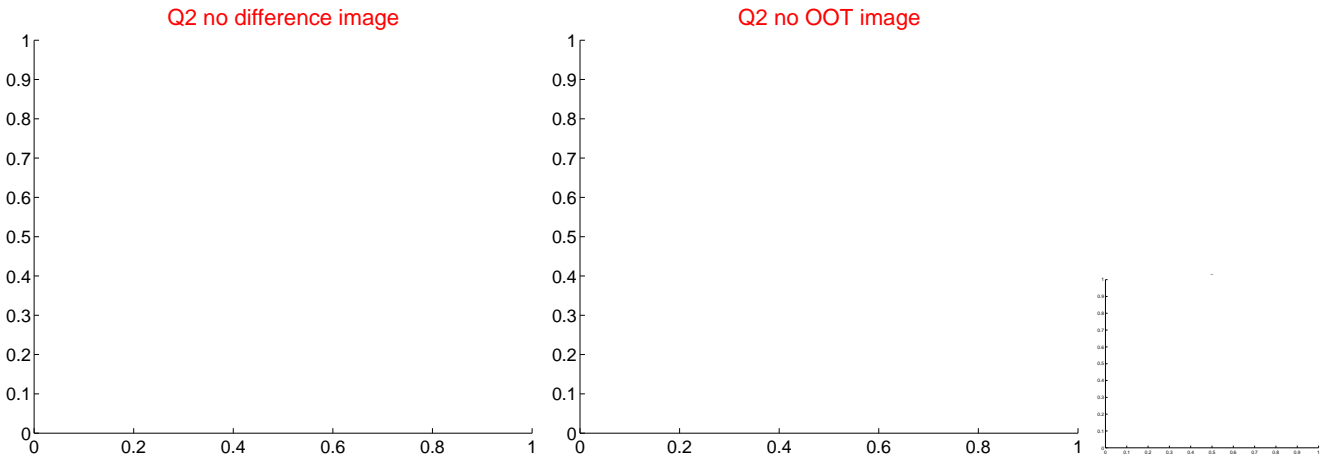
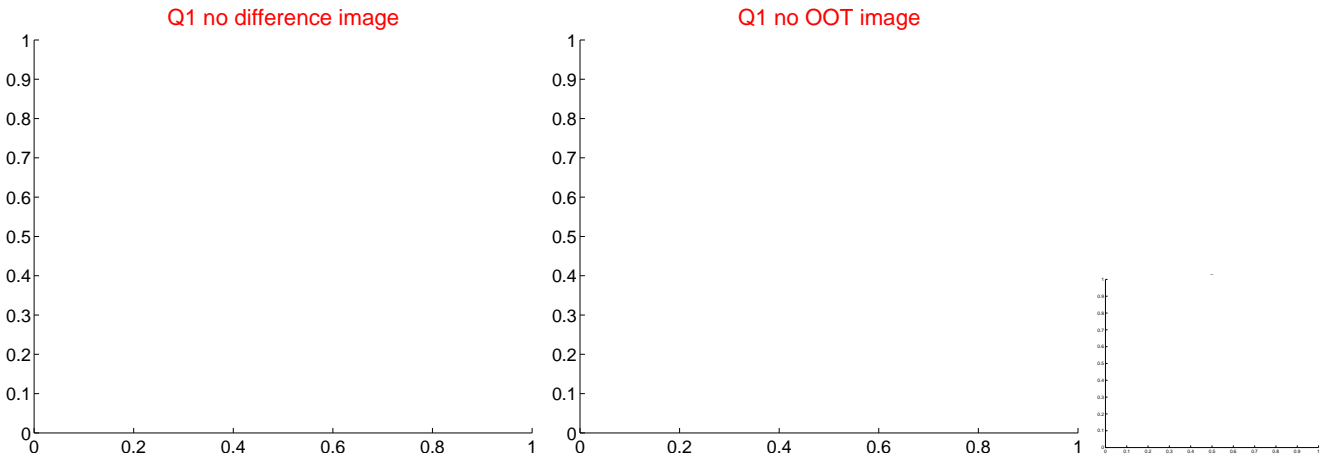
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.115 ± 0.385	0.30	-0.096 ± 0.368	-0.064 ± 0.420
PRF-fit source offset from KIC position	0.160 ± 0.417	0.38	0.038 ± 0.368	-0.156 ± 0.420
photometric centroid source offset	0.12 ± 1.13	0.11	0.09 ± 1.23	0.08 ± 0.98

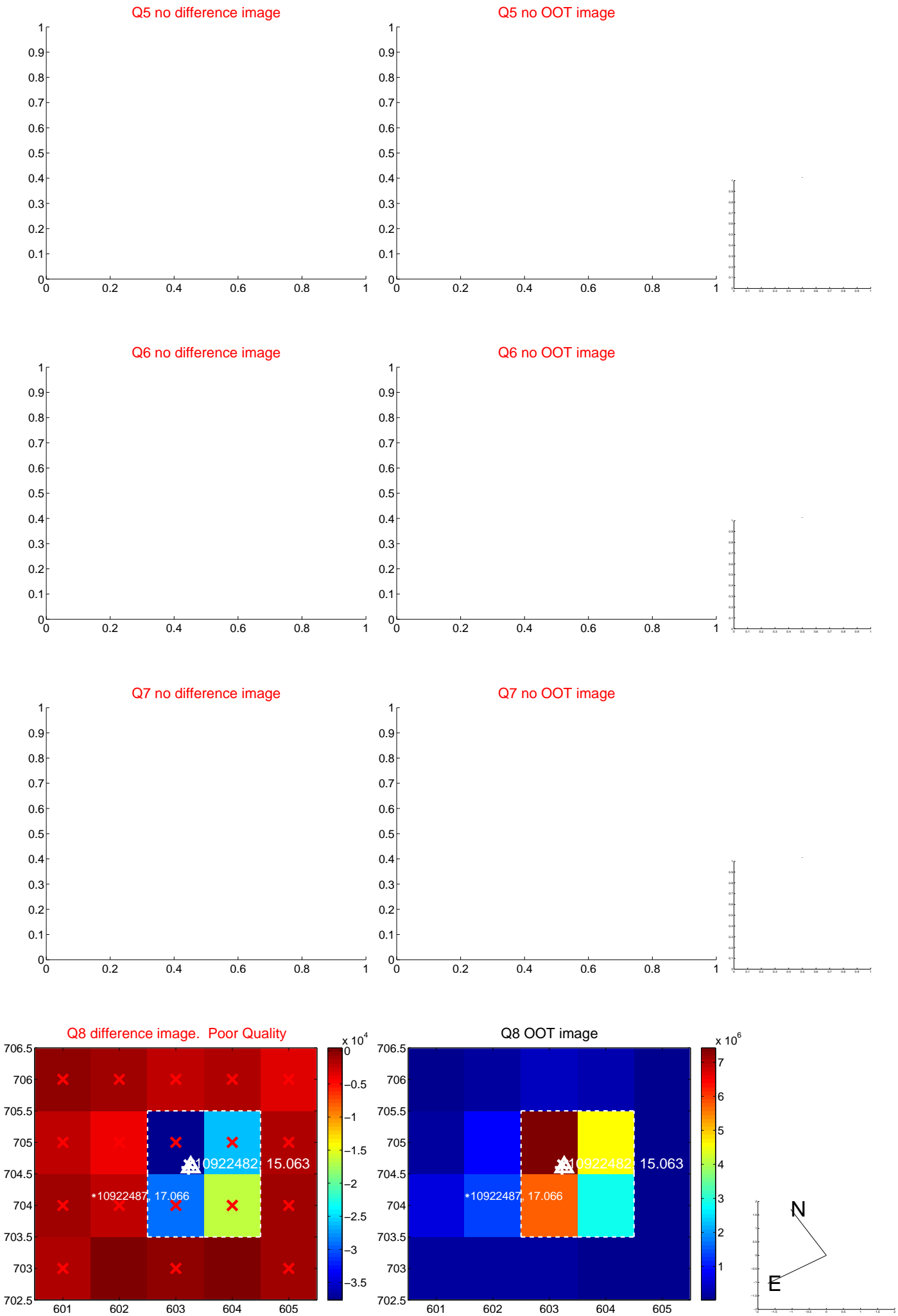


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

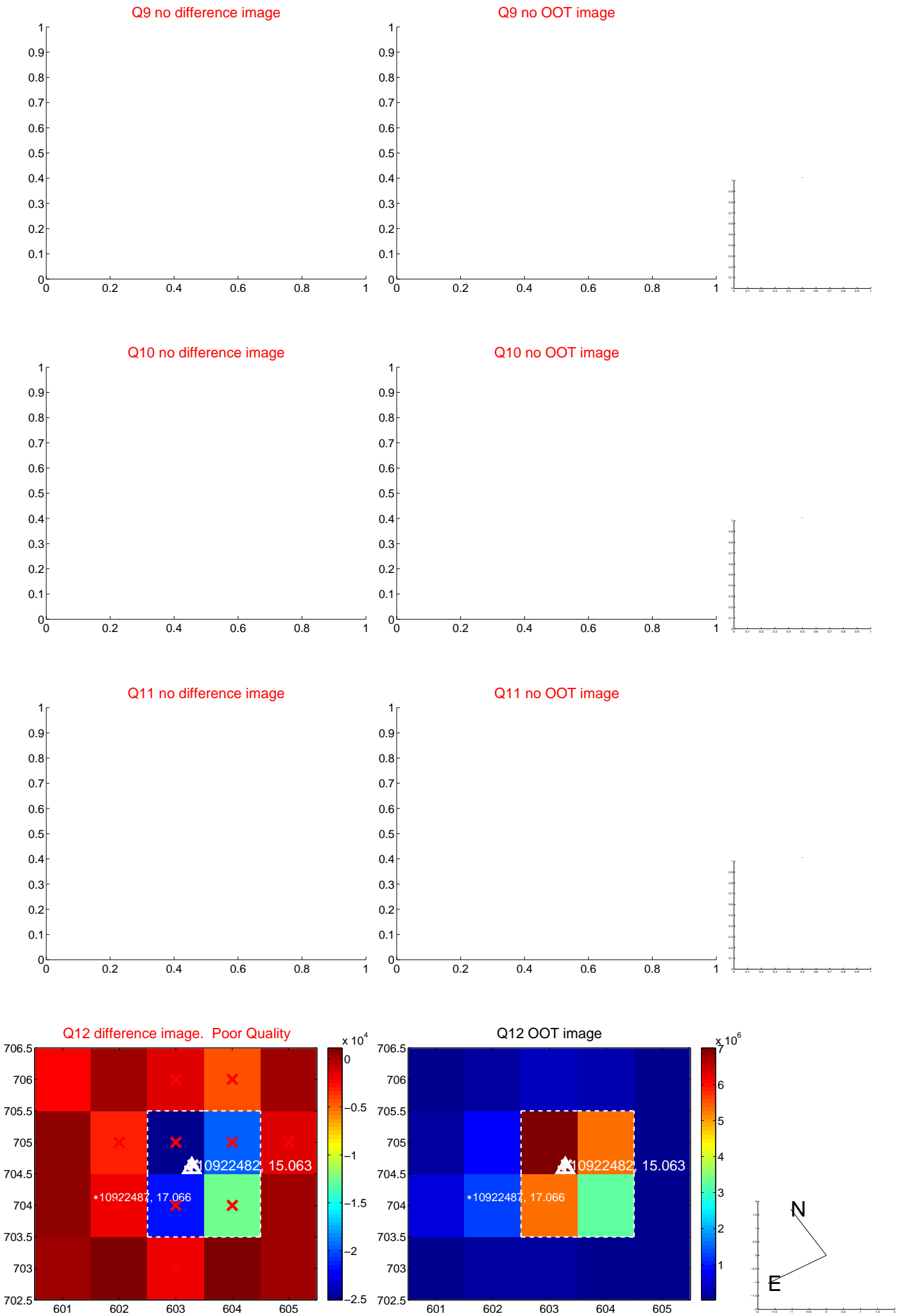
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



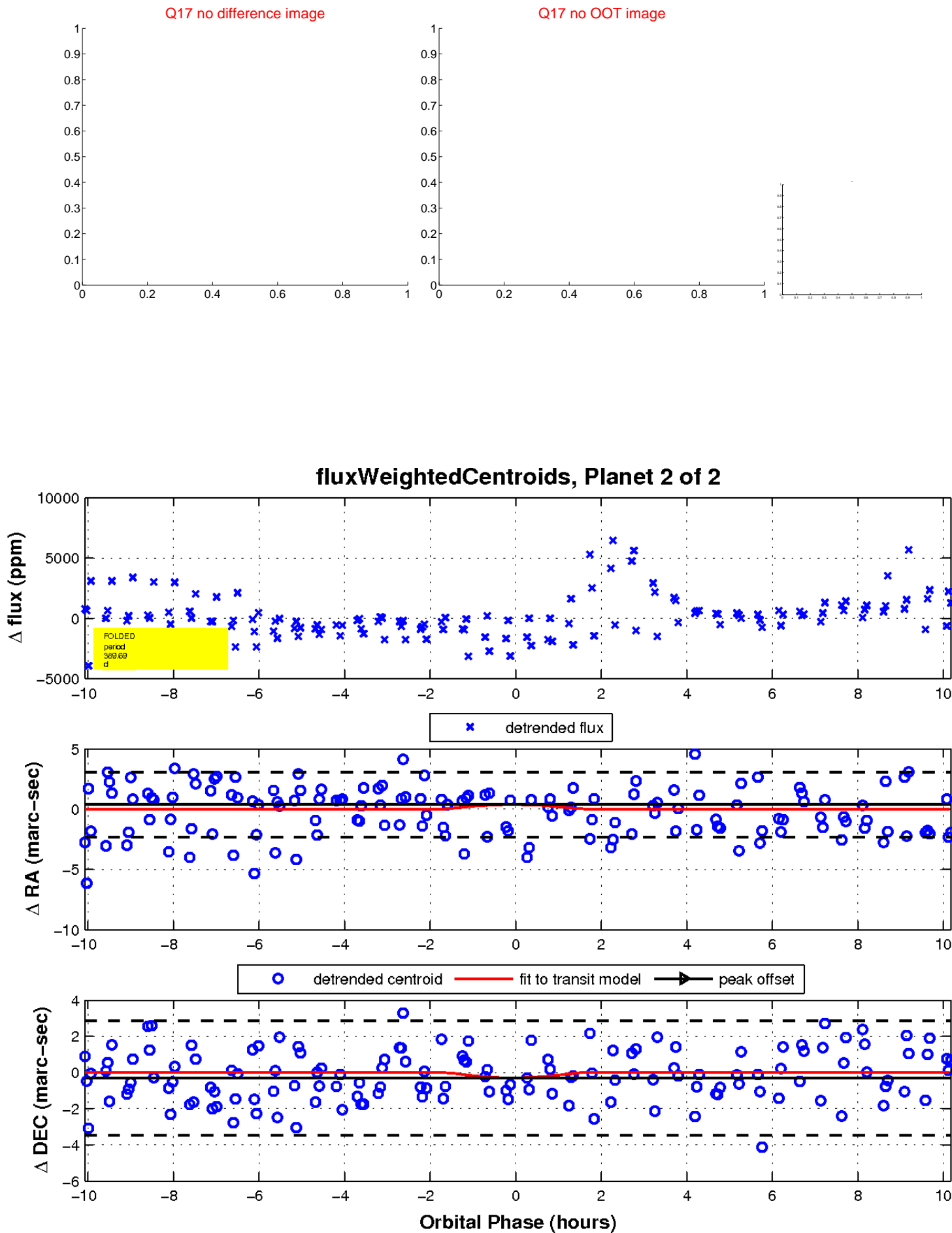
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

