

KIC 011243149

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})
011243149-01	OBS	No	626.485687	251.665090	1398.5	2.970	18.1	8.7	0.58	4556	2.10	0.09
011243149-02	OBS	No	496.386348	316.261543	2054.9	12.961	13.4	8.2	0.58	4556	2.57	0.12
011243149-03	OBS	No	450.655982	215.909980	1063.8	3.308	15.0	7.4	0.58	4556	1.97	0.14
011243149-04	OBS	No	484.428007	543.817932	1243.9	4.174	13.6	7.4	0.58	4556	2.17	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011243149-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011243149-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011243149-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
011243149-04	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.

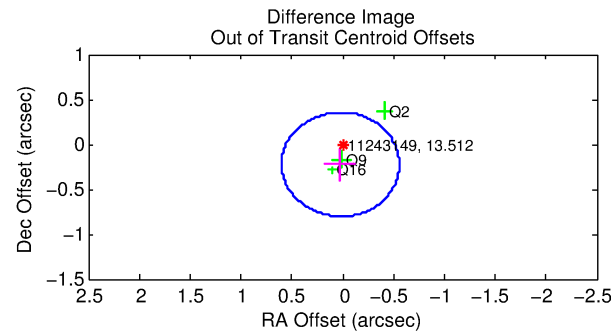
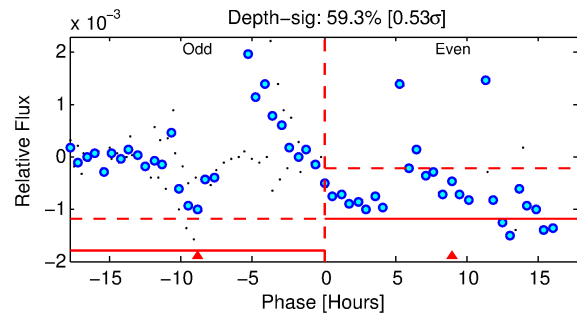
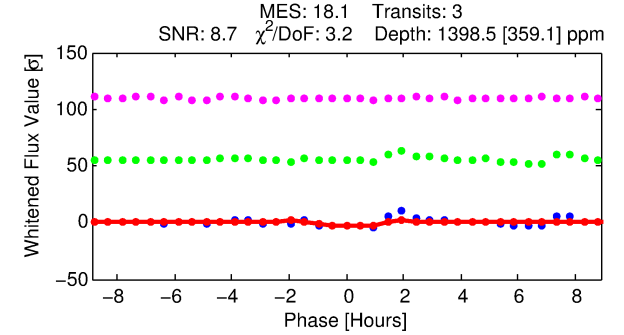
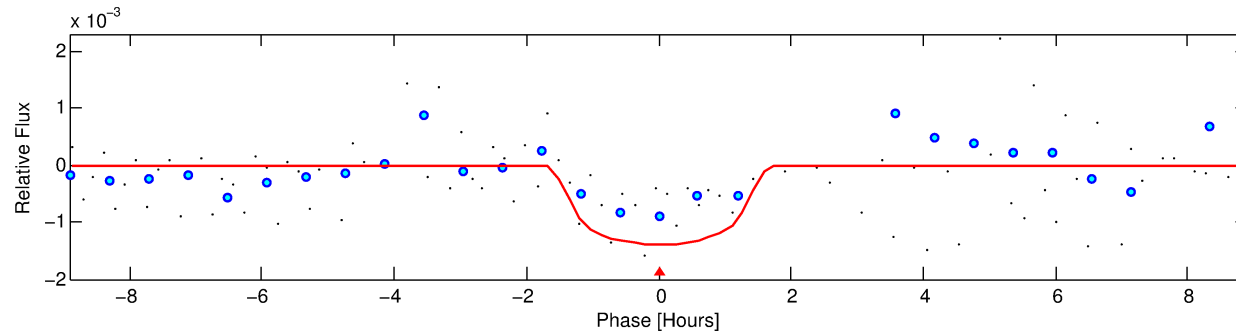
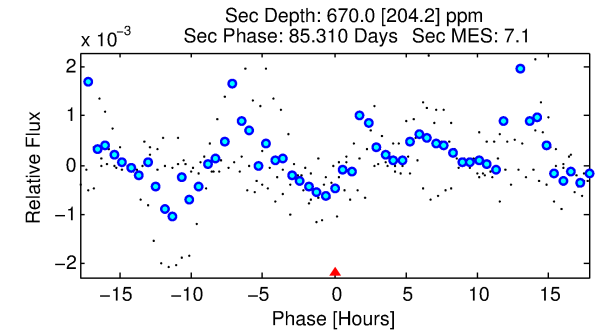
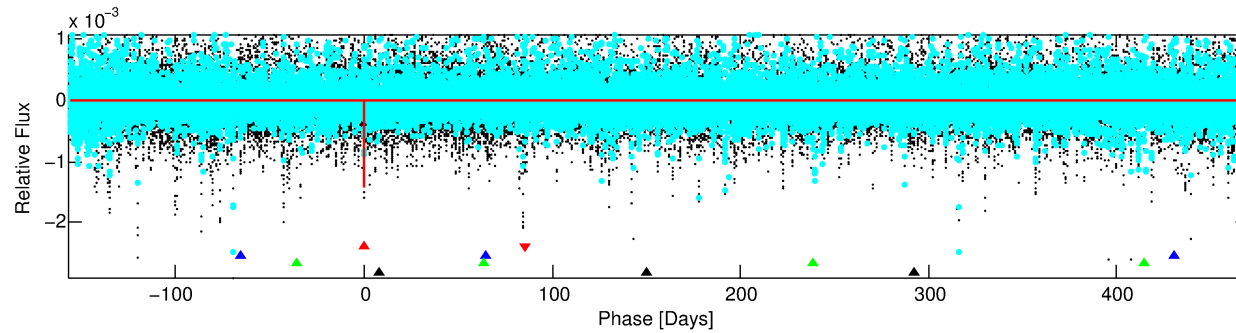
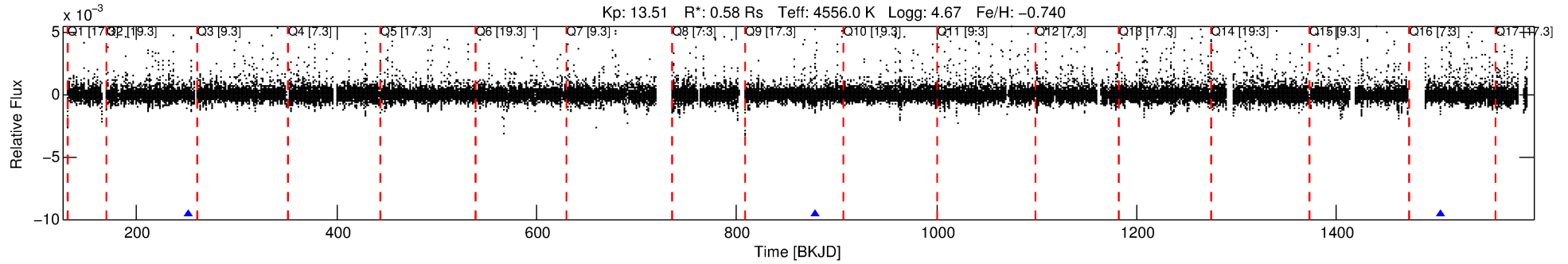
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011243149-01

No Significant Match Found

DV One-Page Summary

KIC: 11243149 Candidate: 1 of 4 Period: 626.486 d



DV Fit Results:

Period = 626.48569 [0.00934] d
Epoch = 251.6651 [0.0104] BKJD
Rp/R* = 0.0335 [0.1802]
a/R* = 1607.30 [28425.59]
b = 0.27 [61.85]
Seff = 0.09 [0.01]
Teq = 140 [5] K
Rp = 2.10 [11.33] Re
a = 1.1855 [0.0800] AU
Ag = 117075.14 [1261589.58] [0.09 σ]
Teffp = 4007 [10794] K [0.36 σ]

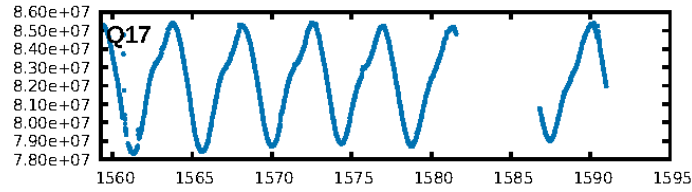
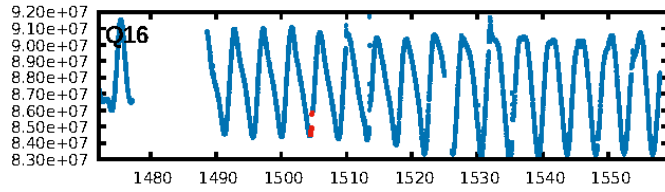
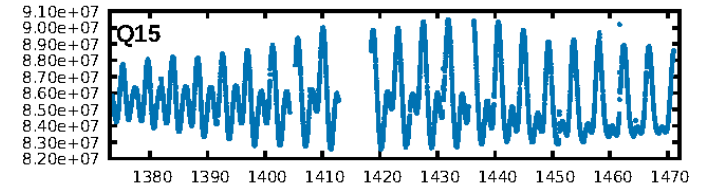
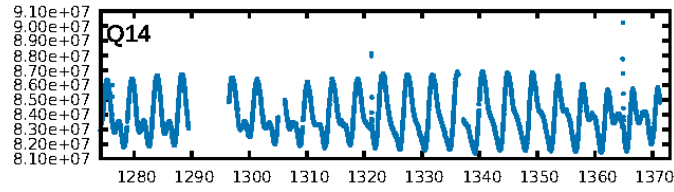
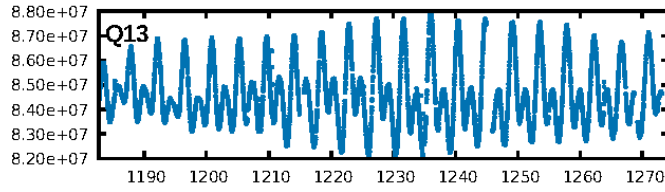
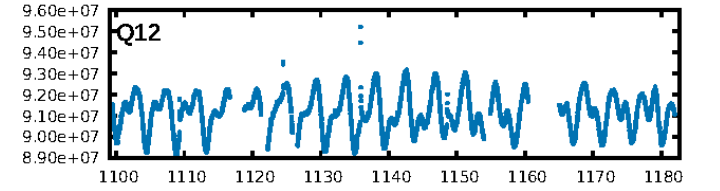
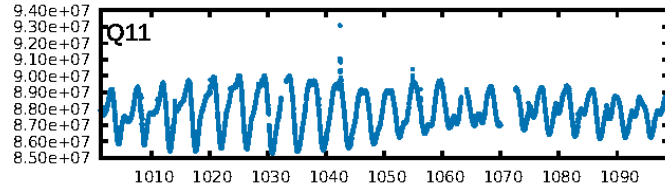
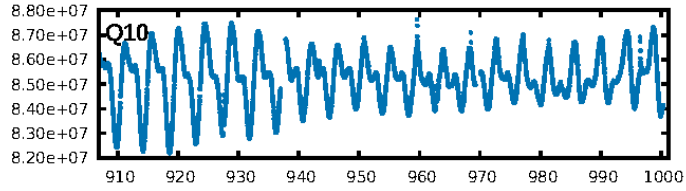
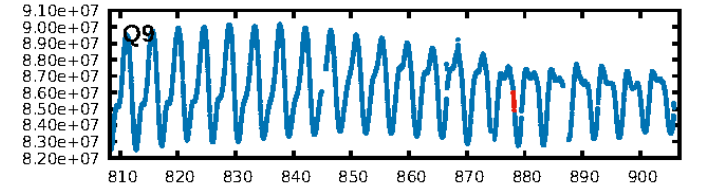
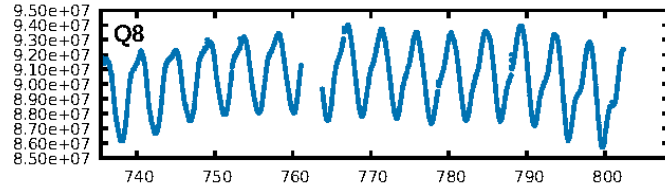
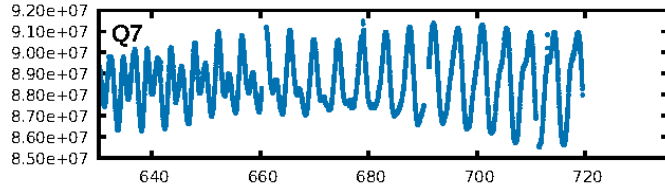
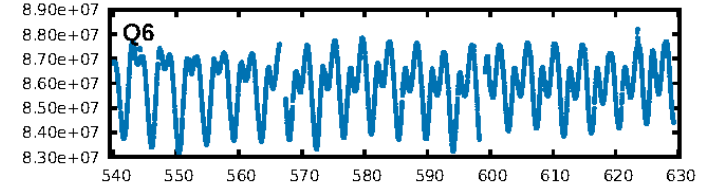
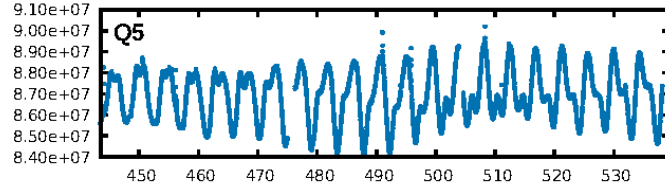
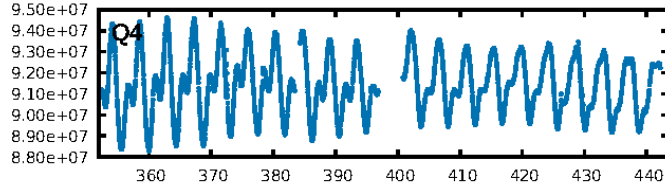
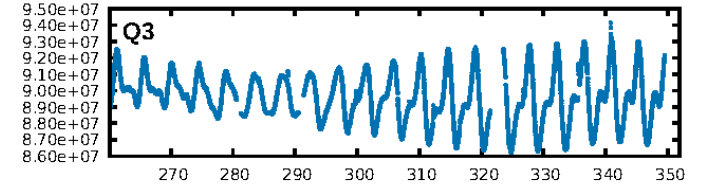
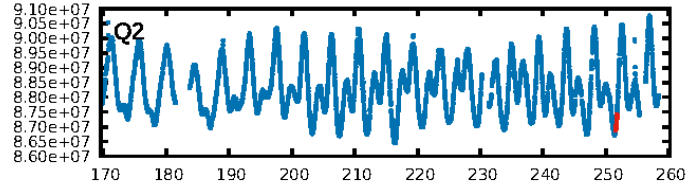
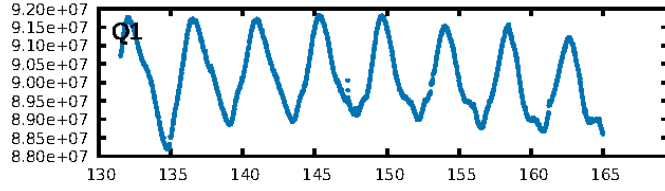
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [234.82 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.5%
Bootstrap-pfa: 3.04e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -33.49
Centroid-sig: 44.5%
Centroid-so: 0.156 arcsec [0.29 σ]
OotOffset-rm: 0.226 arcsec [1.17 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.081 arcsec [0.40 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

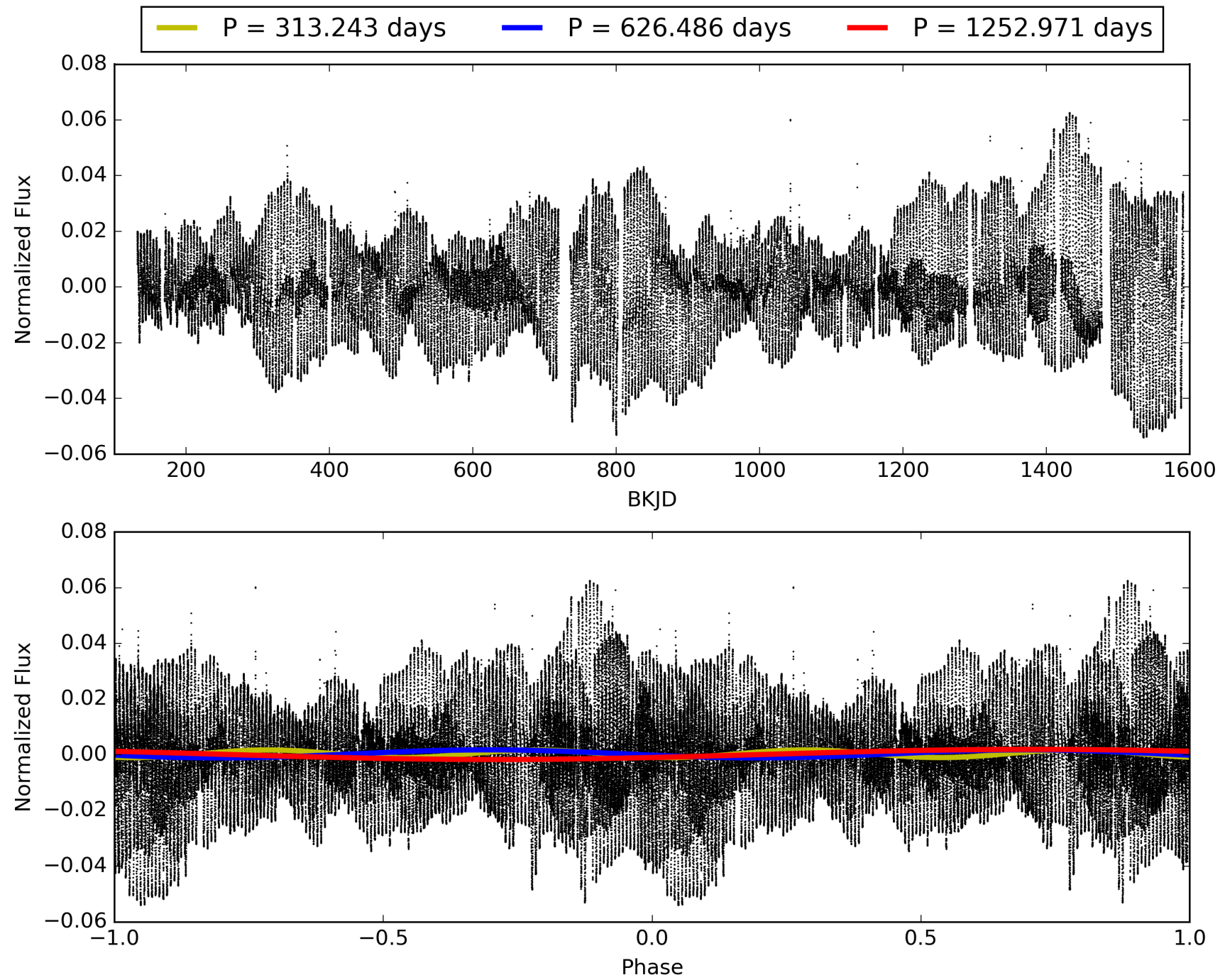
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011243149-01, PDC Light Curves

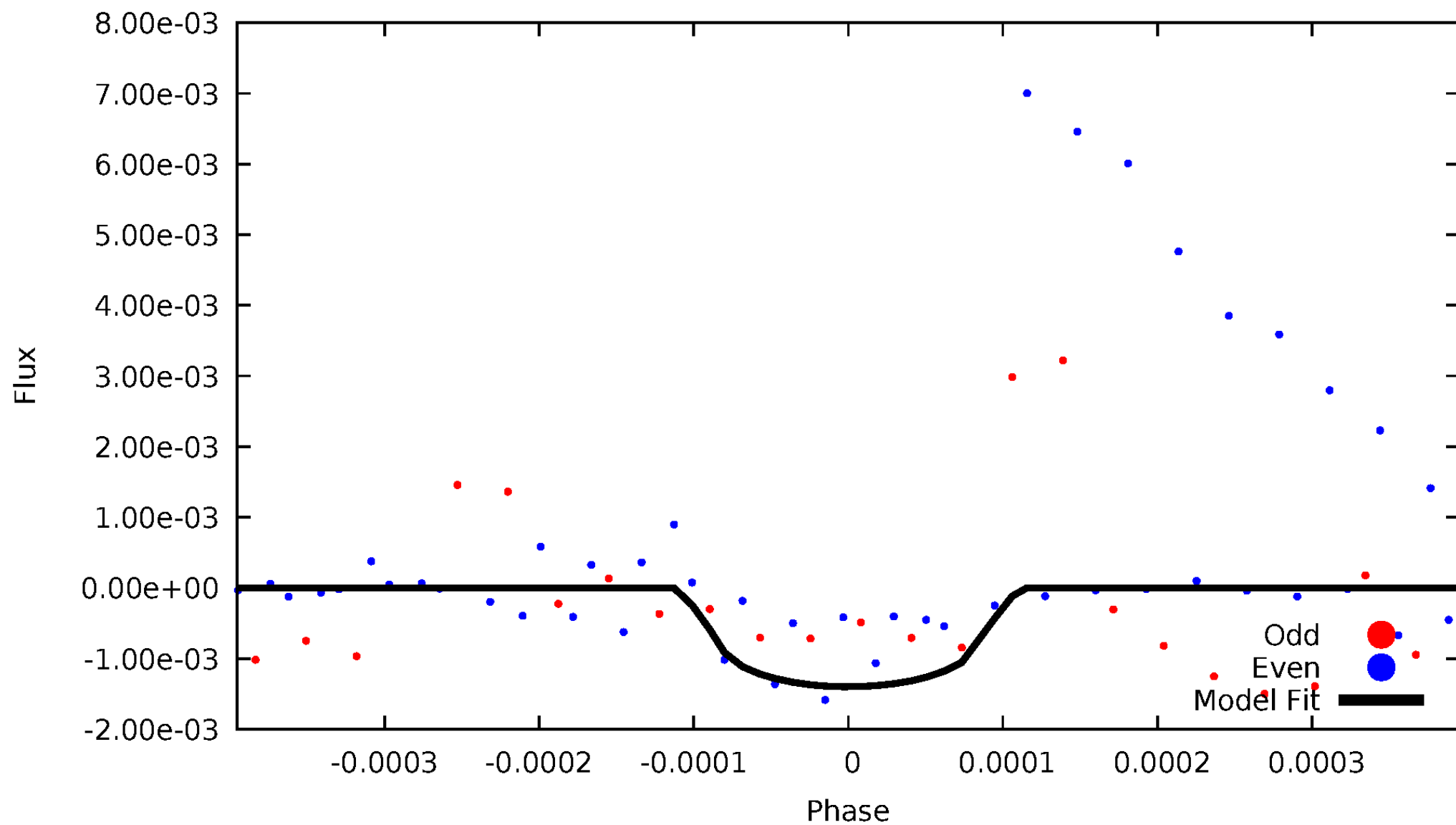


TCE 011243149-01



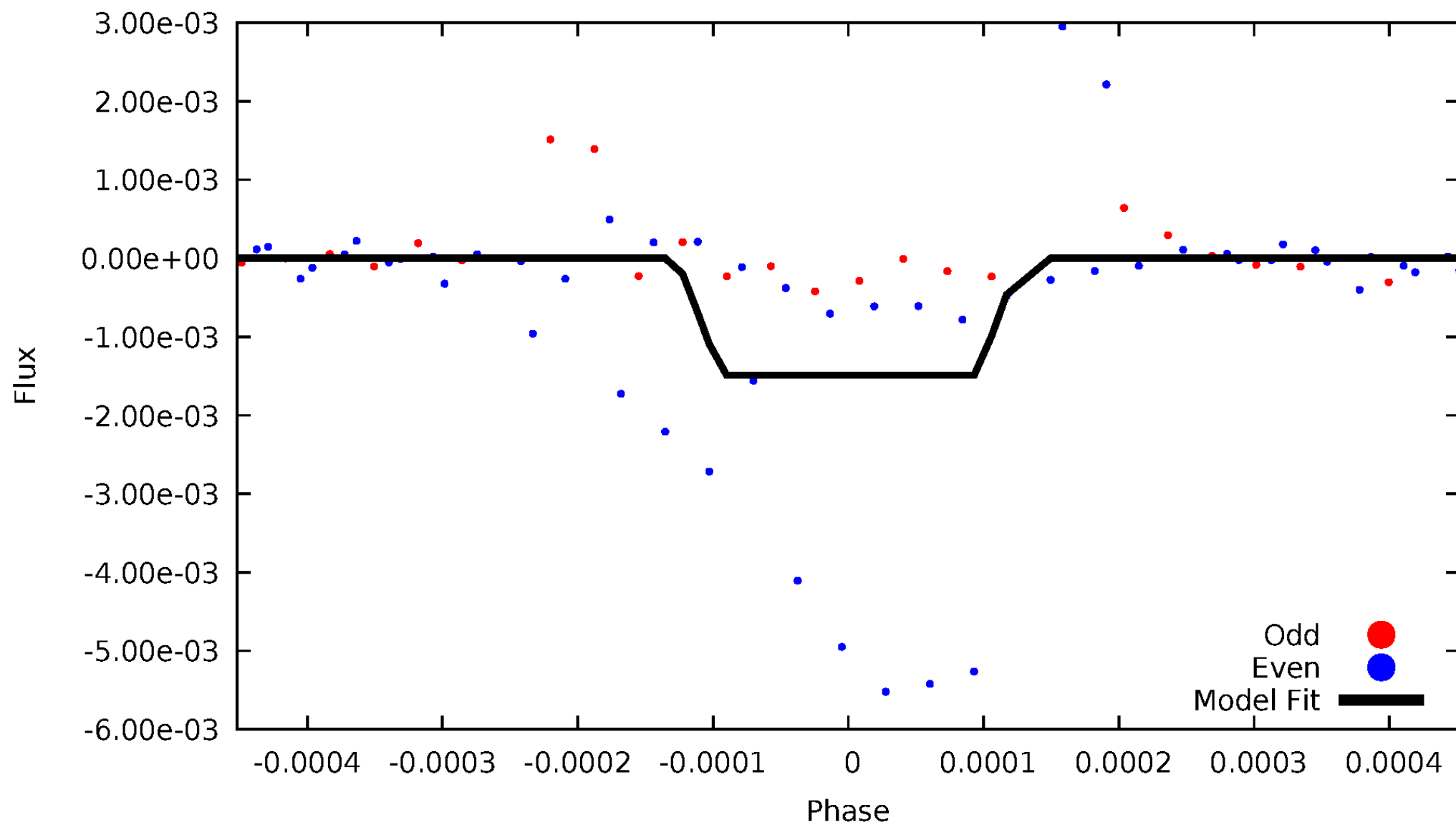
DV Odd/Even

TCE 011243149-01



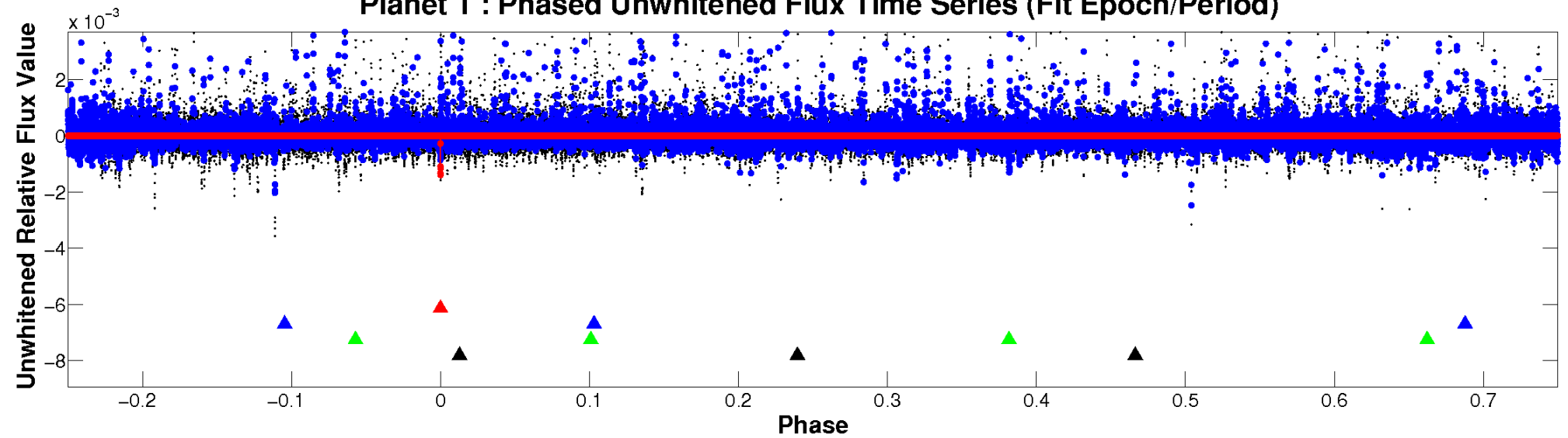
ALT Odd/Even

TCE 011243149-01

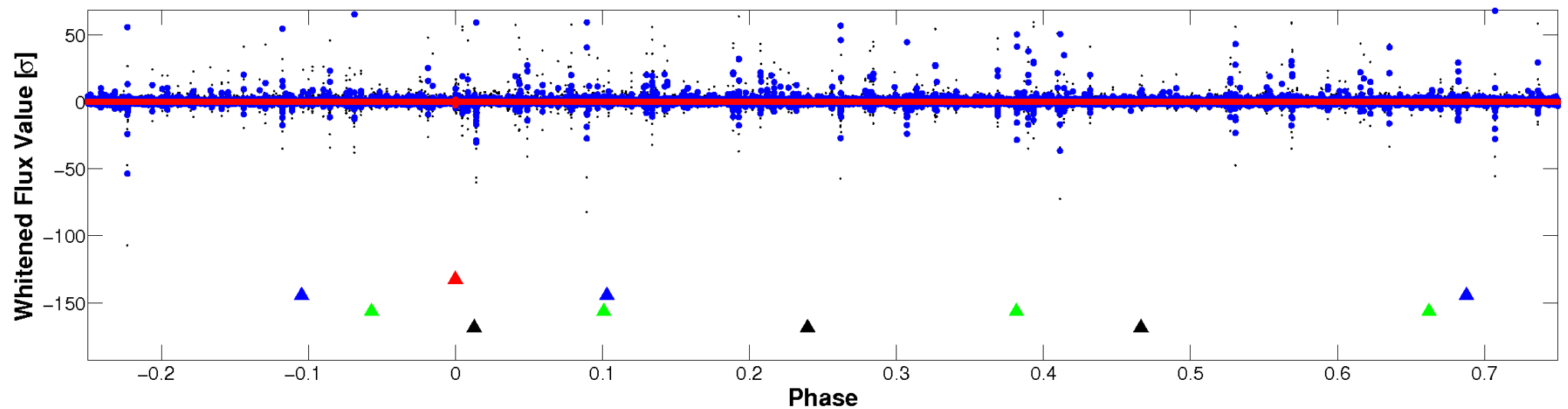


Non-Whitened Vs. Whitened Light Curve

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

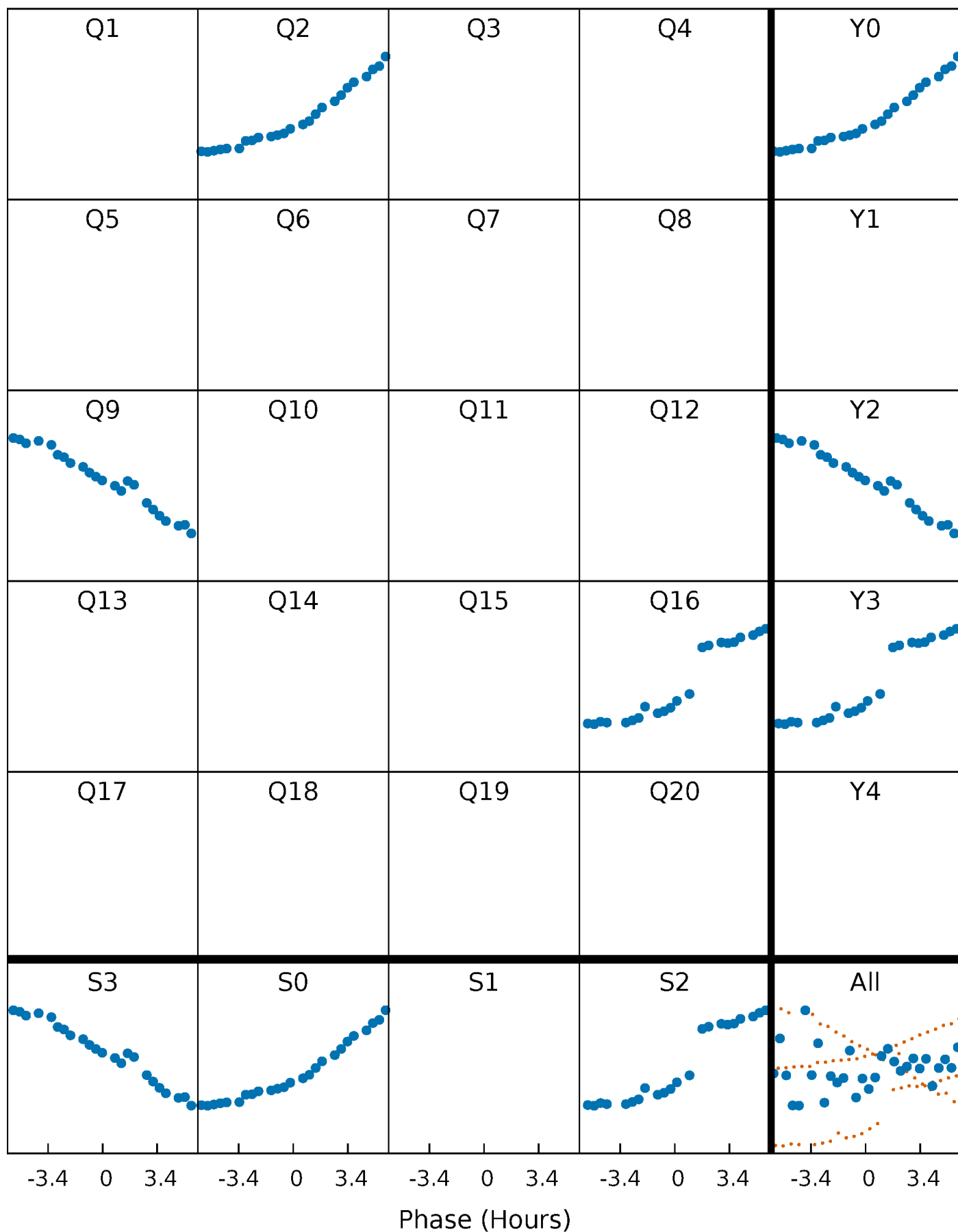


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



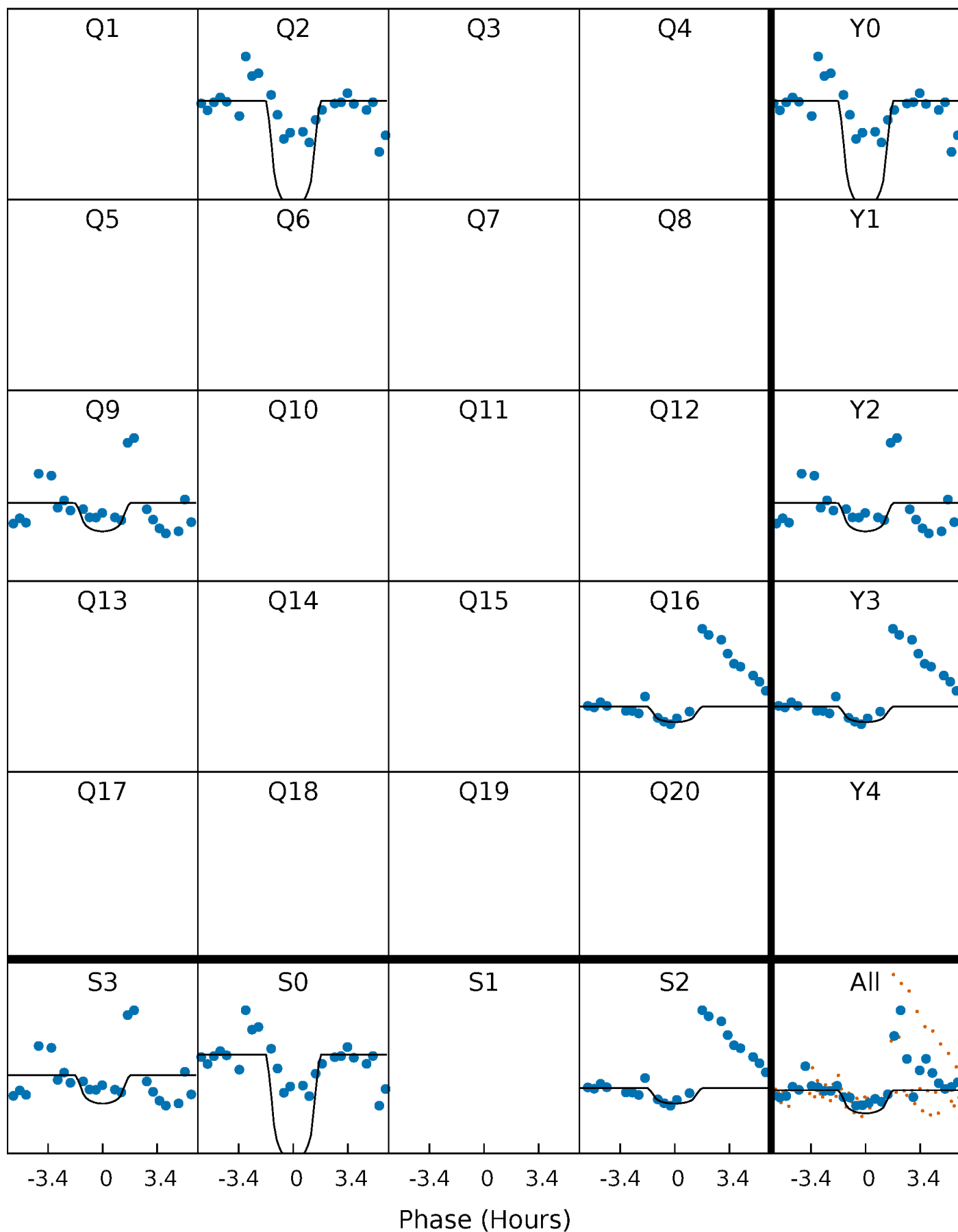
PDC Quarter-Phased Transit Curves

TCE 011243149-01 P=626.485687 Days $T_0=251.665090$ (BKJD)



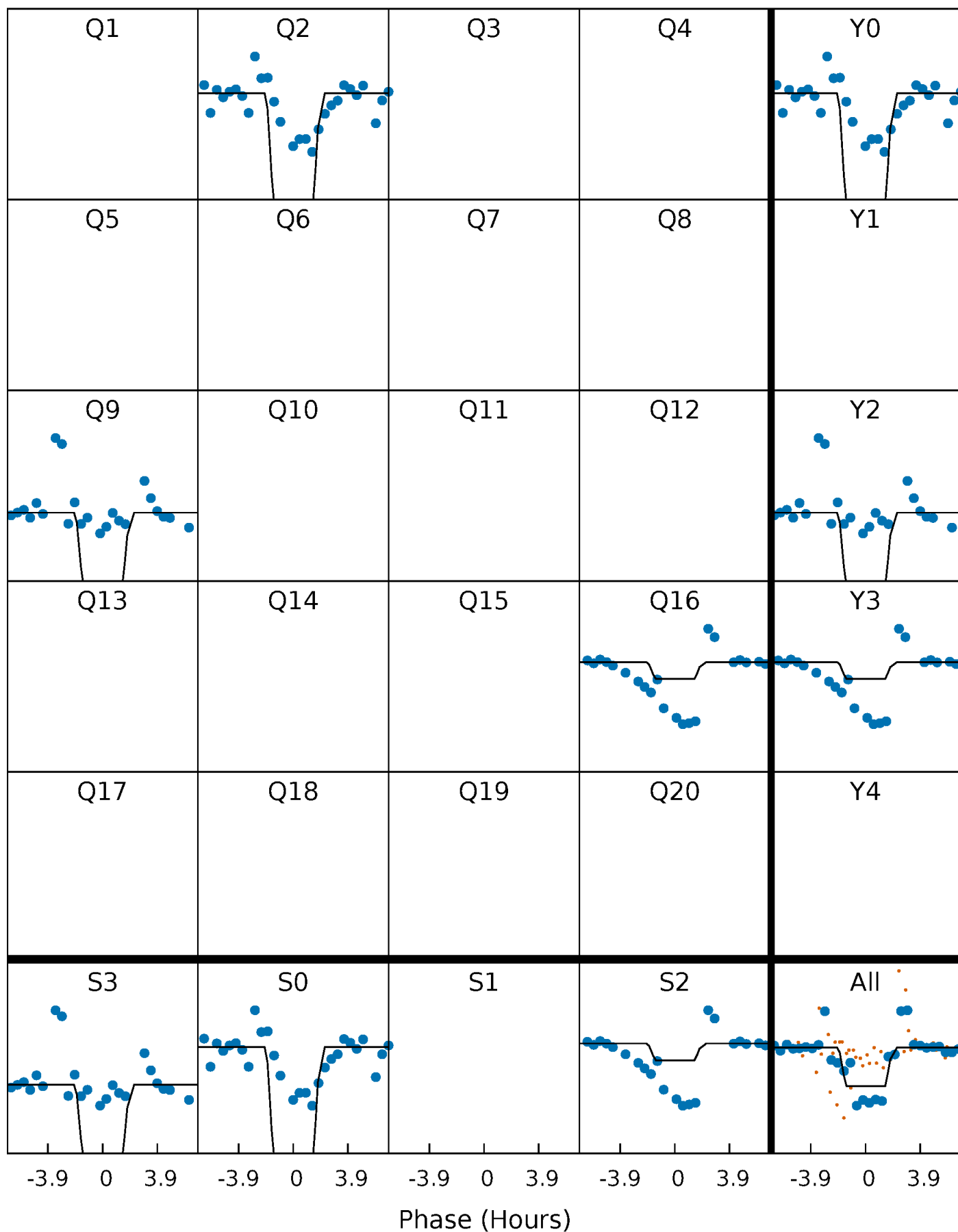
DV Quarter-Phased Transit Curves

TCE 011243149-01 P=626.485687 Days $T_0=251.665090$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

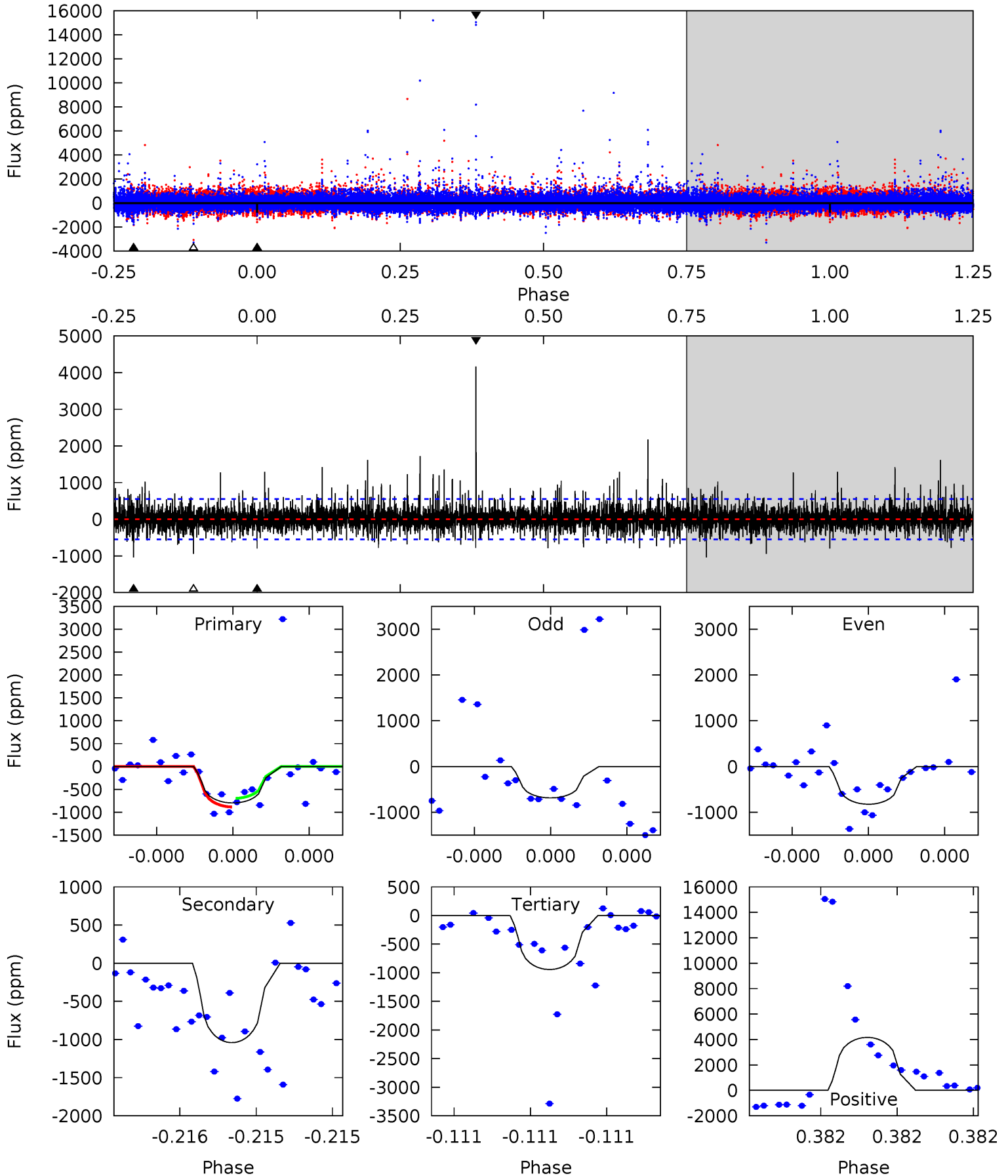
TCE 011243149-01 P=626.479327 Days $T_0=251.651105$ (BKJD)



DV Model-Shift Uniqueness Test

011243149-01, P = 626.485687 Days, E = 251.665090 Days

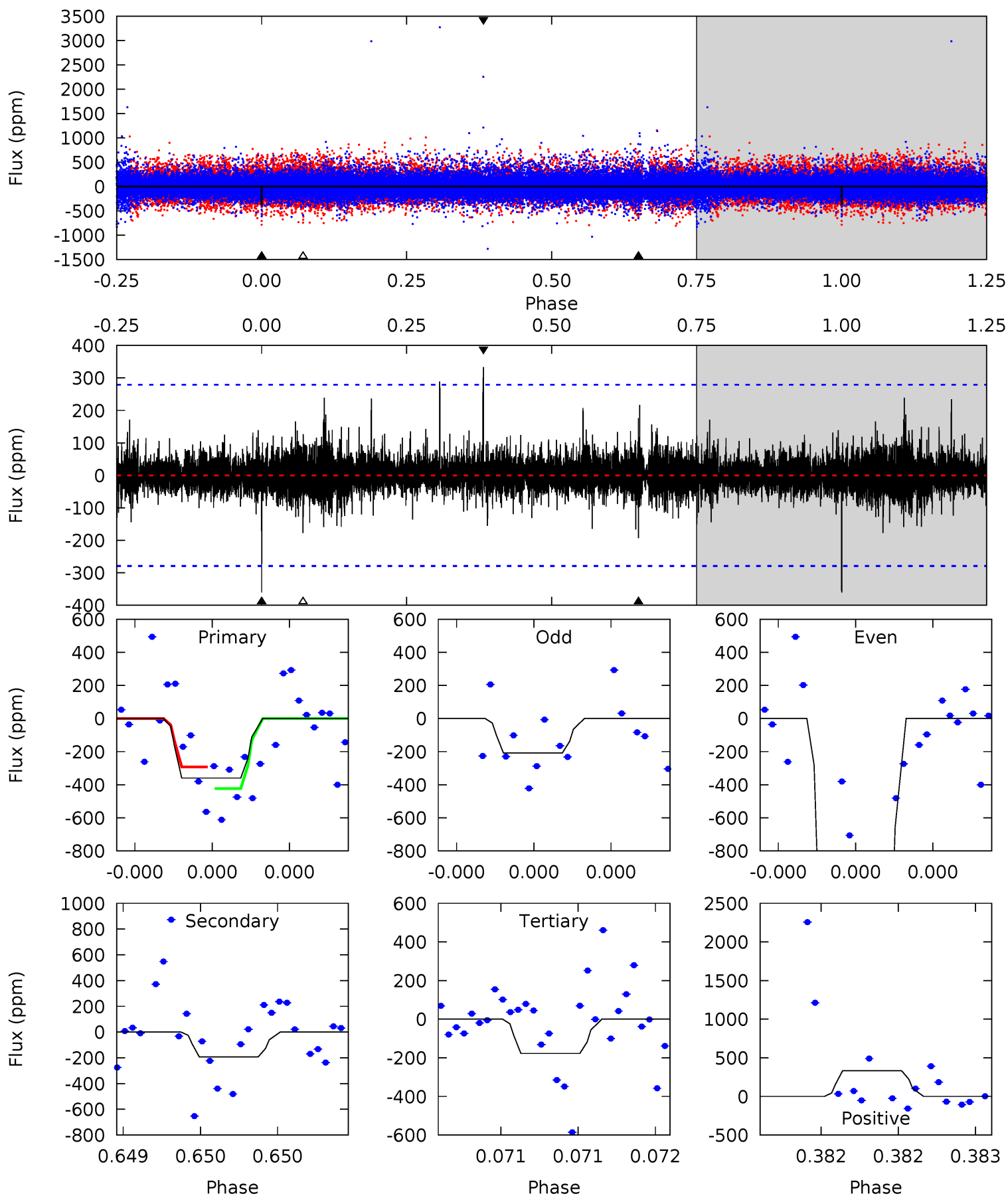
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.27	10.8	9.79	43.2	5.72	3.70	2.27	-1.52	-34.9	1.01	-32.4	0.37	1.15	0.80	0.98



Alt Model-Shift Uniqueness Test

011243149-01, P = 626.479327 Days, E = 251.651105 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.36	3.95	3.63	6.82	5.71	3.69	0.69	3.73	0.54	0.32	-2.88	17.1	3.32	0.48	0



Stellar Parameters For KIC 011243149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4556^{+123}_{-137}	$4.670^{+0.052}_{-0.028}$	$-0.740^{+0.300}_{-0.300}$	$0.576^{+0.047}_{-0.047}$	$0.566^{+0.053}_{-0.033}$	$4.172^{+0.958}_{-0.537}$
	+3%/-3%	+1%/-1%	+41%/-41%	+8%/-8%	+9%/-6%	+23%/-13%
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 011243149-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1041 ± 96	$8.77^{+8.48}_{-6.10}$	195^{+6}_{-7}	2825^{+1307}_{-420}	$10562^{+110584}_{-7832}$
Alt.	-193 ± 49	$8.34^{+8.80}_{-5.98}$	194^{+6}_{-6}	2316^{+898}_{-335}	2119^{+24490}_{-1635}

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

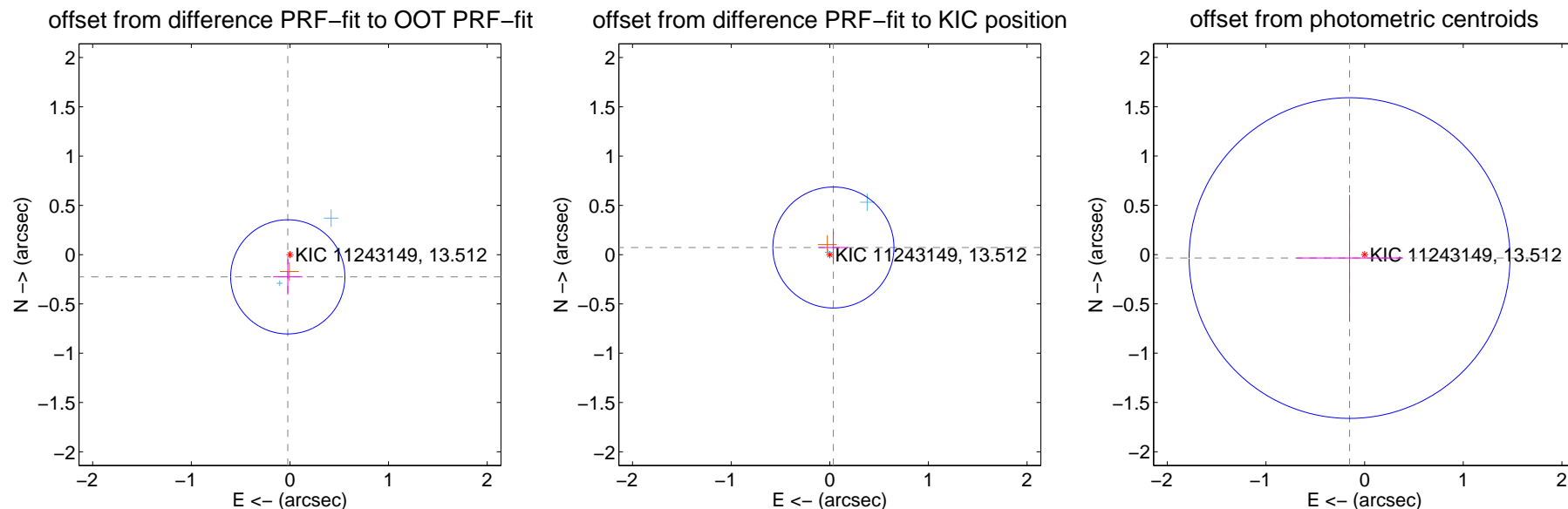
DV Centroid Data

Supplemental centroid analysis for 011243149-01. Kepler magnitude: 13.51. Transit SNR 8.70

There are 2 quarters with good PRF difference image offsets

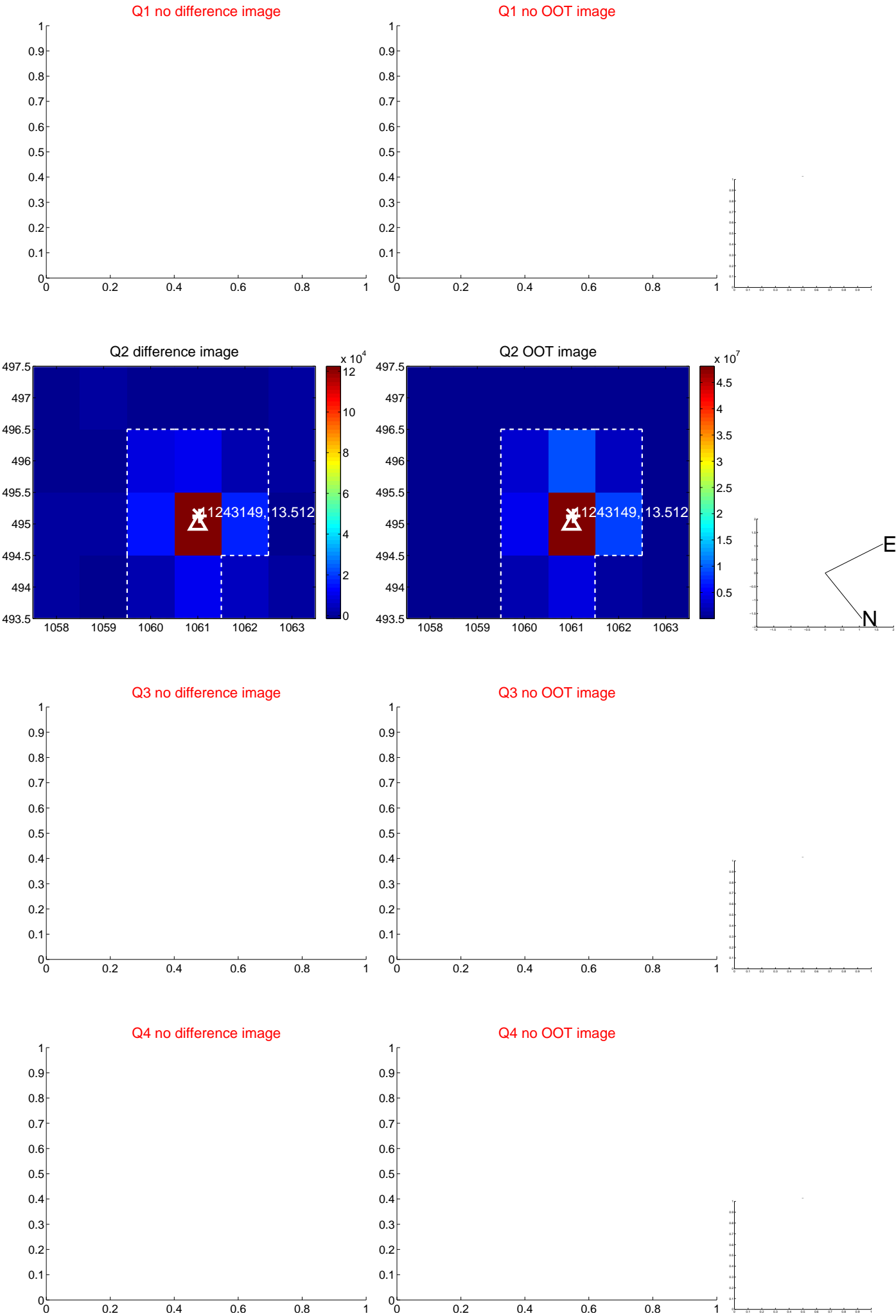
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.226 ± 0.193	1.17	0.022 ± 0.149	-0.225 ± 0.182
PRF-fit source offset from KIC position	0.081 ± 0.205	0.40	-0.036 ± 0.146	0.073 ± 0.166
photometric centroid source offset	0.16 ± 0.54	0.29	0.15 ± 0.54	-0.04 ± 0.64



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.

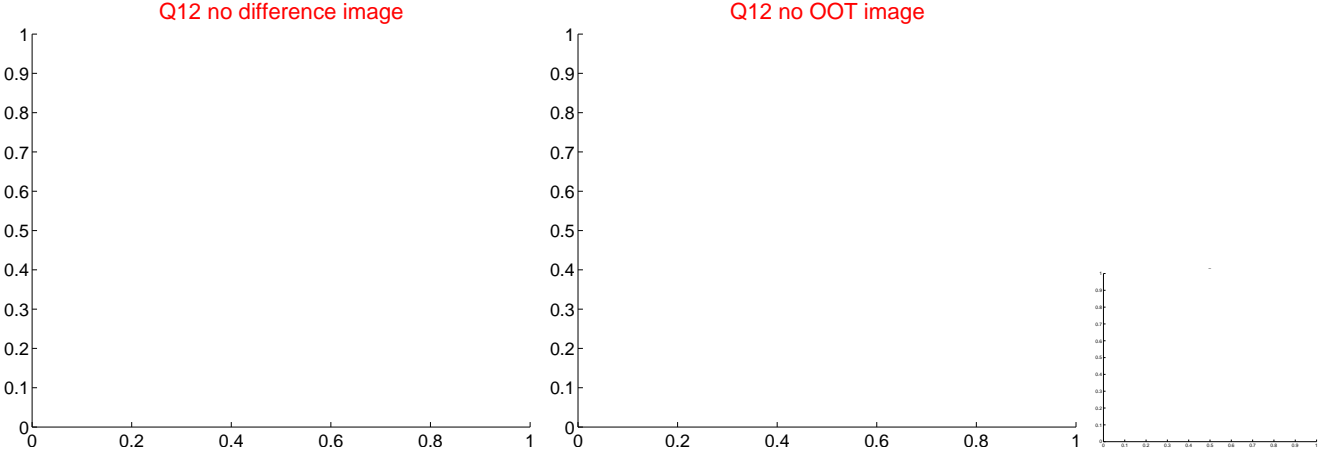
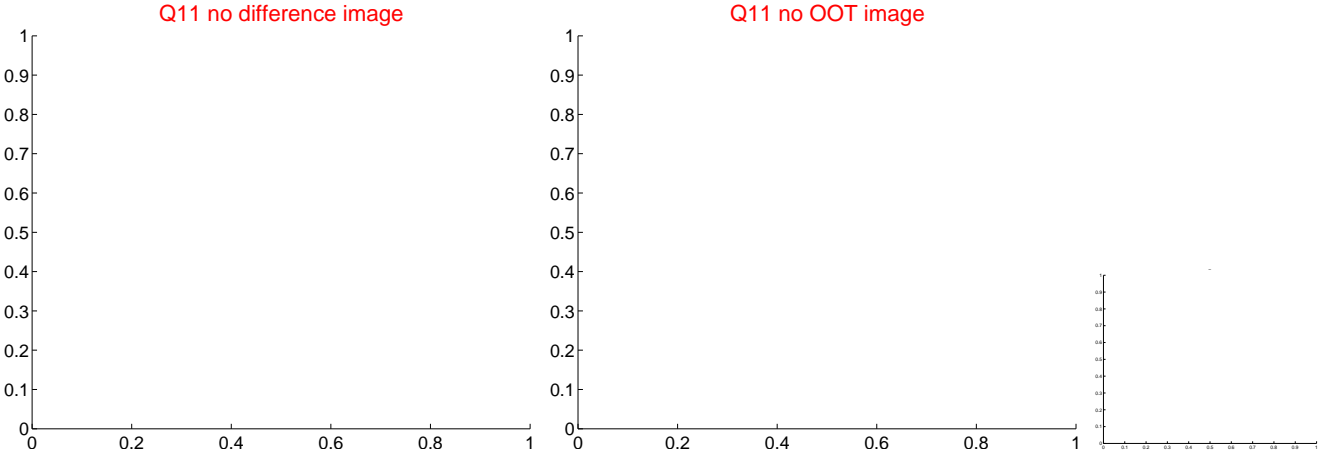
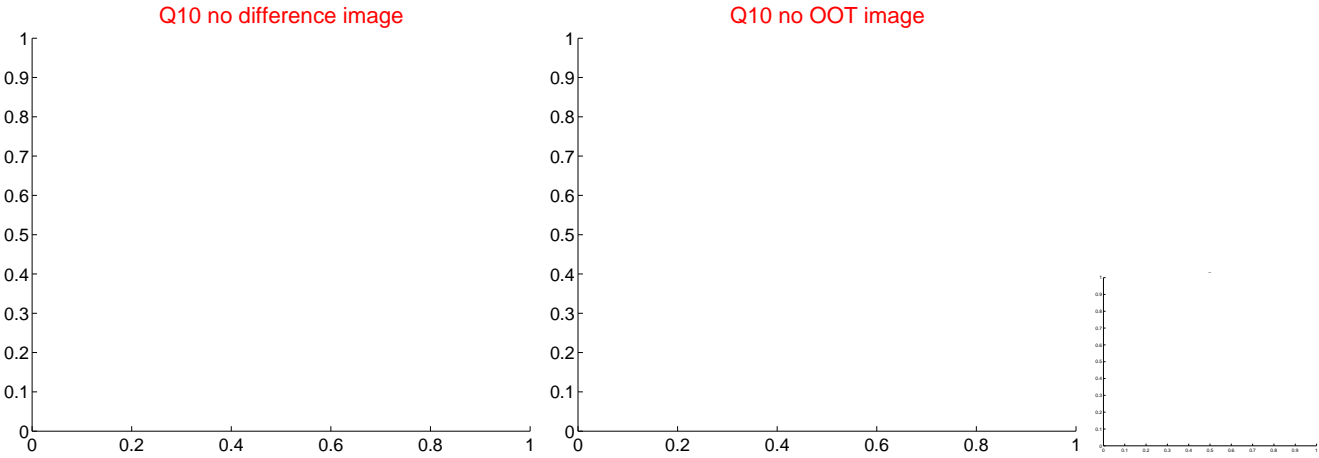
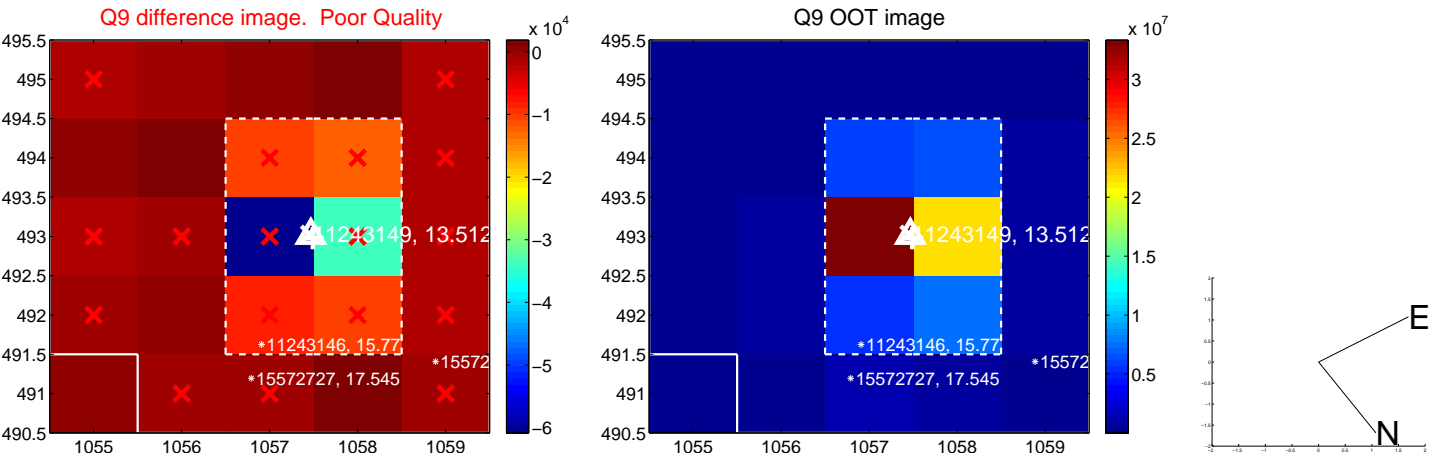
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



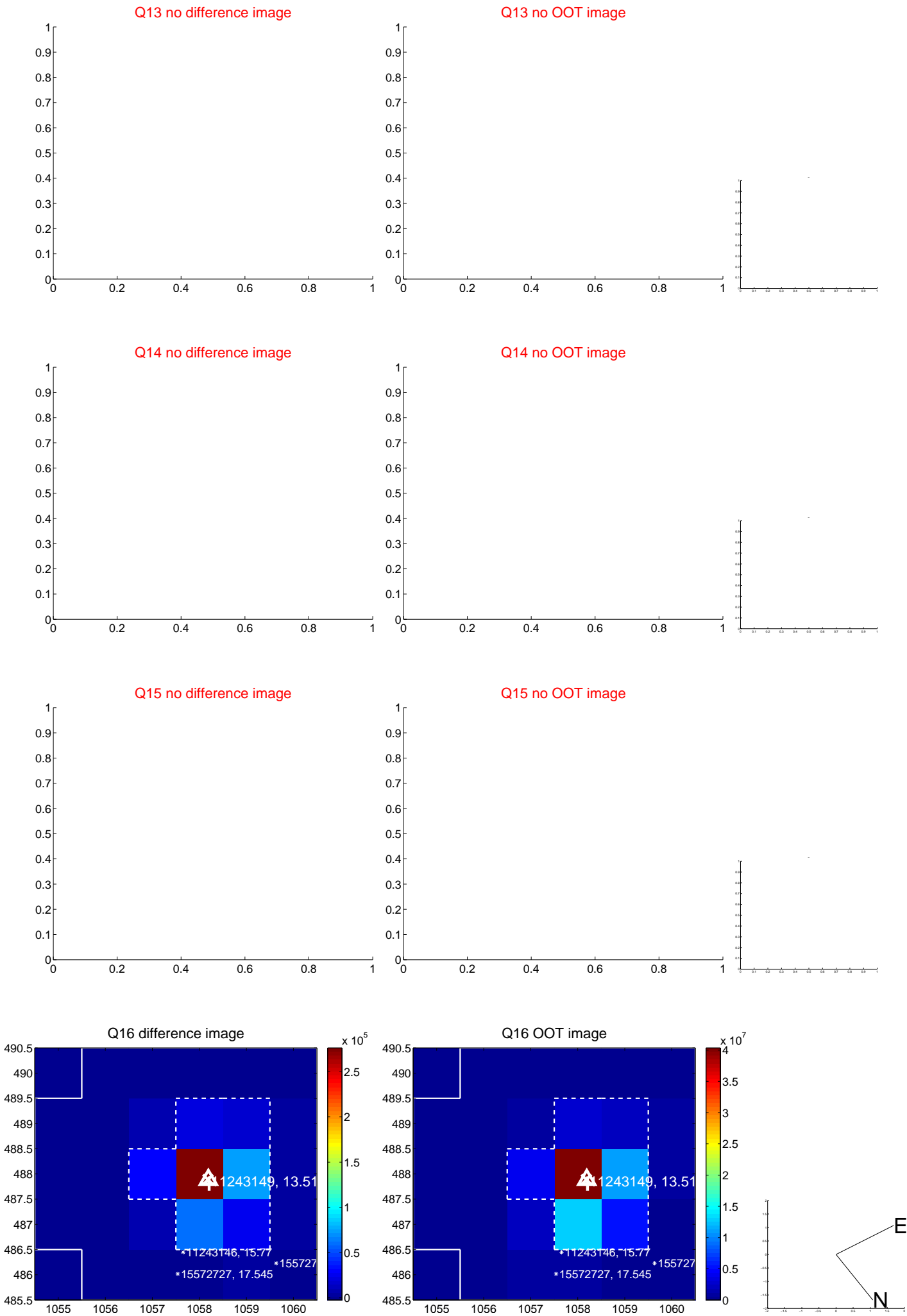
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



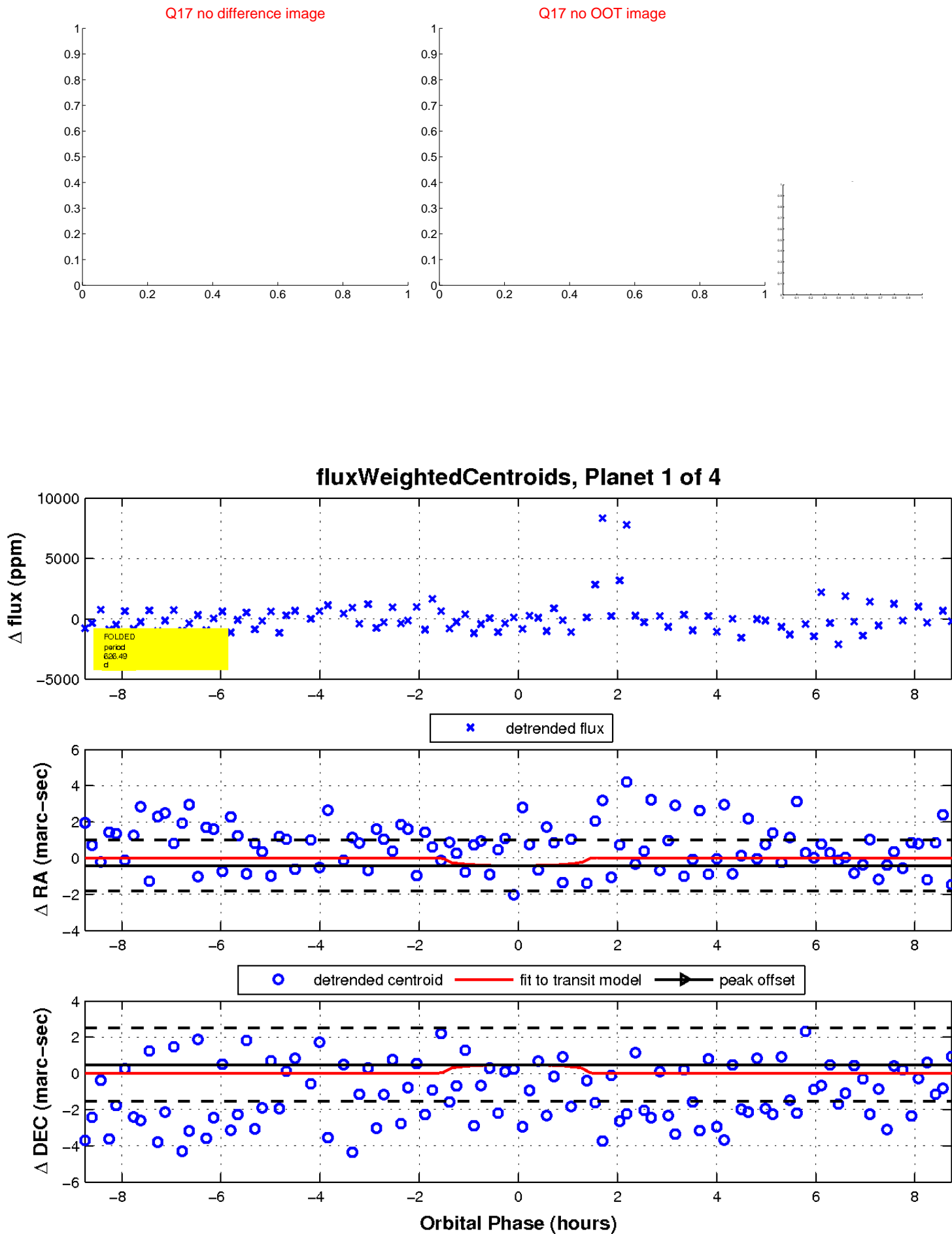
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

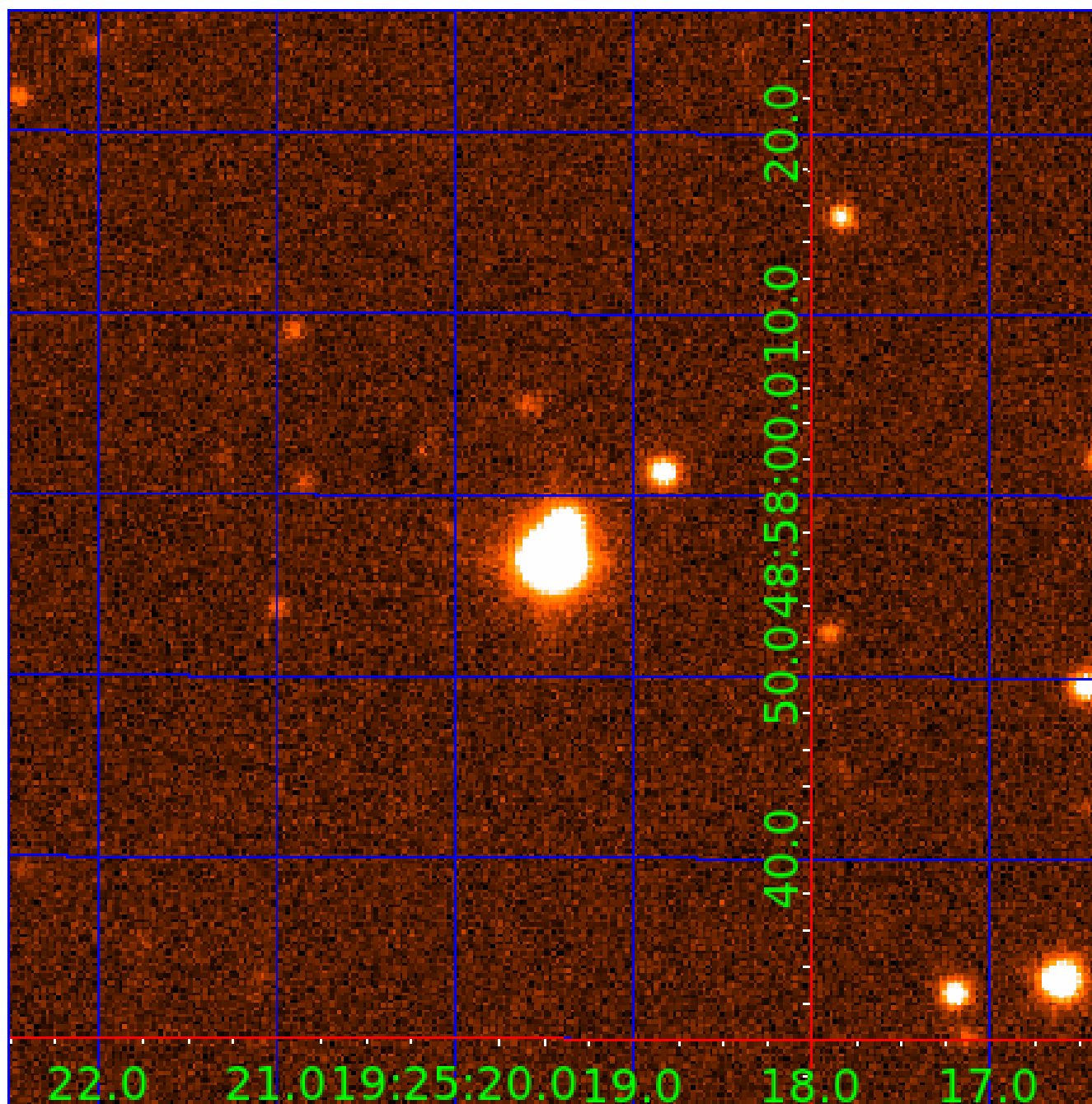


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011243149

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})
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011243149-03	OBS	No	450.655982	215.909980	1063.8	3.308	15.0	7.4	0.58	4556	1.97	0.14
011243149-04	OBS	No	484.428007	543.817932	1243.9	4.174	13.6	7.4	0.58	4556	2.17	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011243149-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011243149-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011243149-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
011243149-04	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.

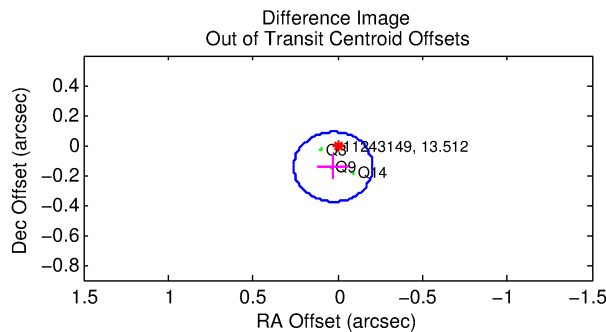
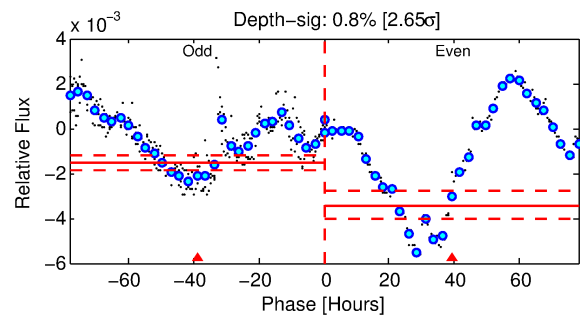
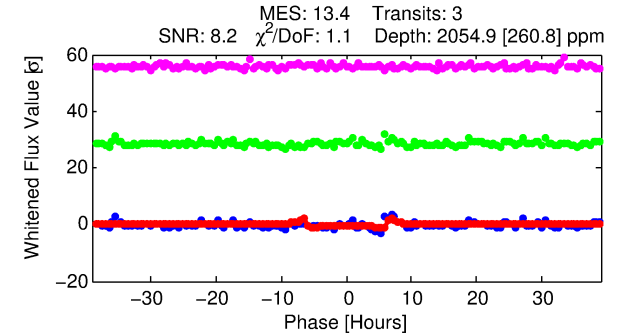
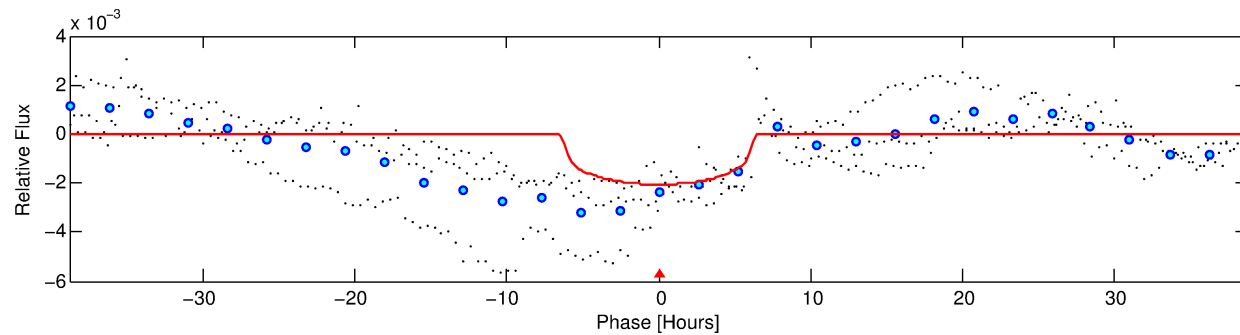
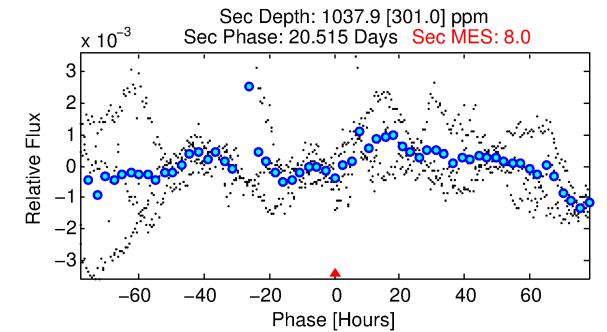
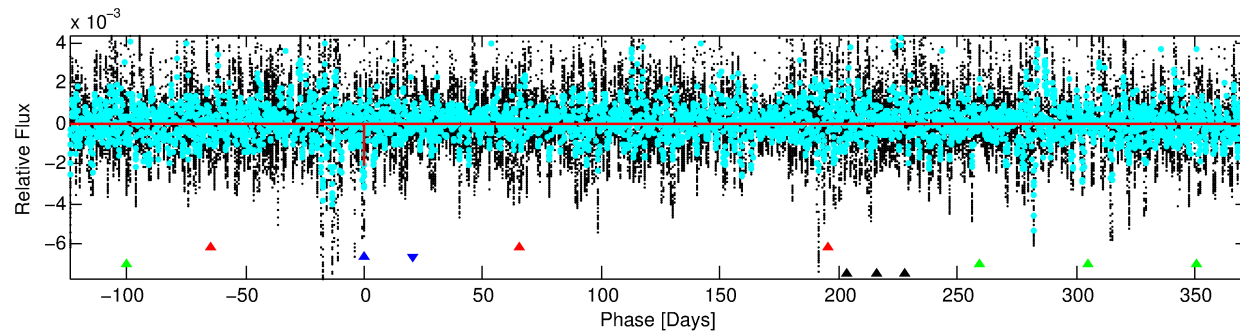
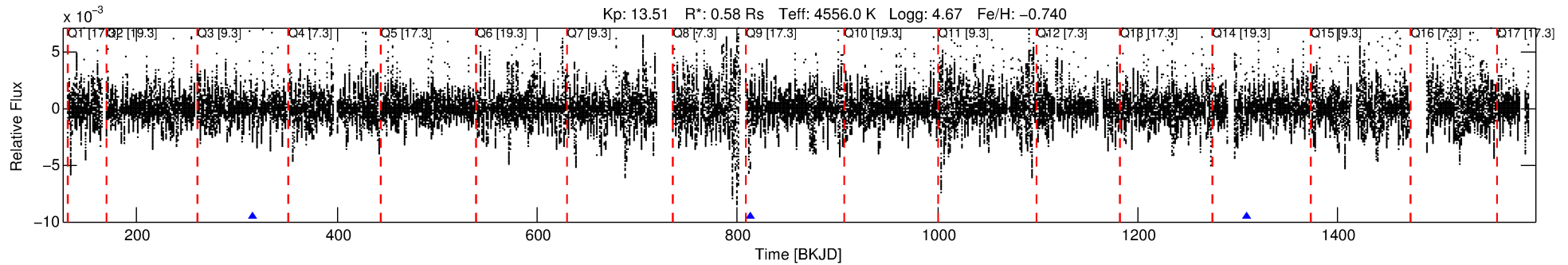
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011243149-02

No Significant Match Found

DV One-Page Summary

KIC: 11243149 Candidate: 2 of 4 Period: 496.386 d



DV Fit Results:

Period = 496.38635 [0.00388] d
Epoch = 316.2615 [0.0043] BKJD
Rp/R* = 0.0409 [0.0084]
a/R* = 286.40 [179.61]
b = 0.35 [1.55]
Seff = 0.12 [0.02]
Teq = 151 [6] K
Rp = 2.57 [0.57] Re
a = 1.0151 [0.0685] AU
Ag = 89209.44 [45699.95] [1.95 σ]
Teffp = 4046 [523] K [7.44 σ]

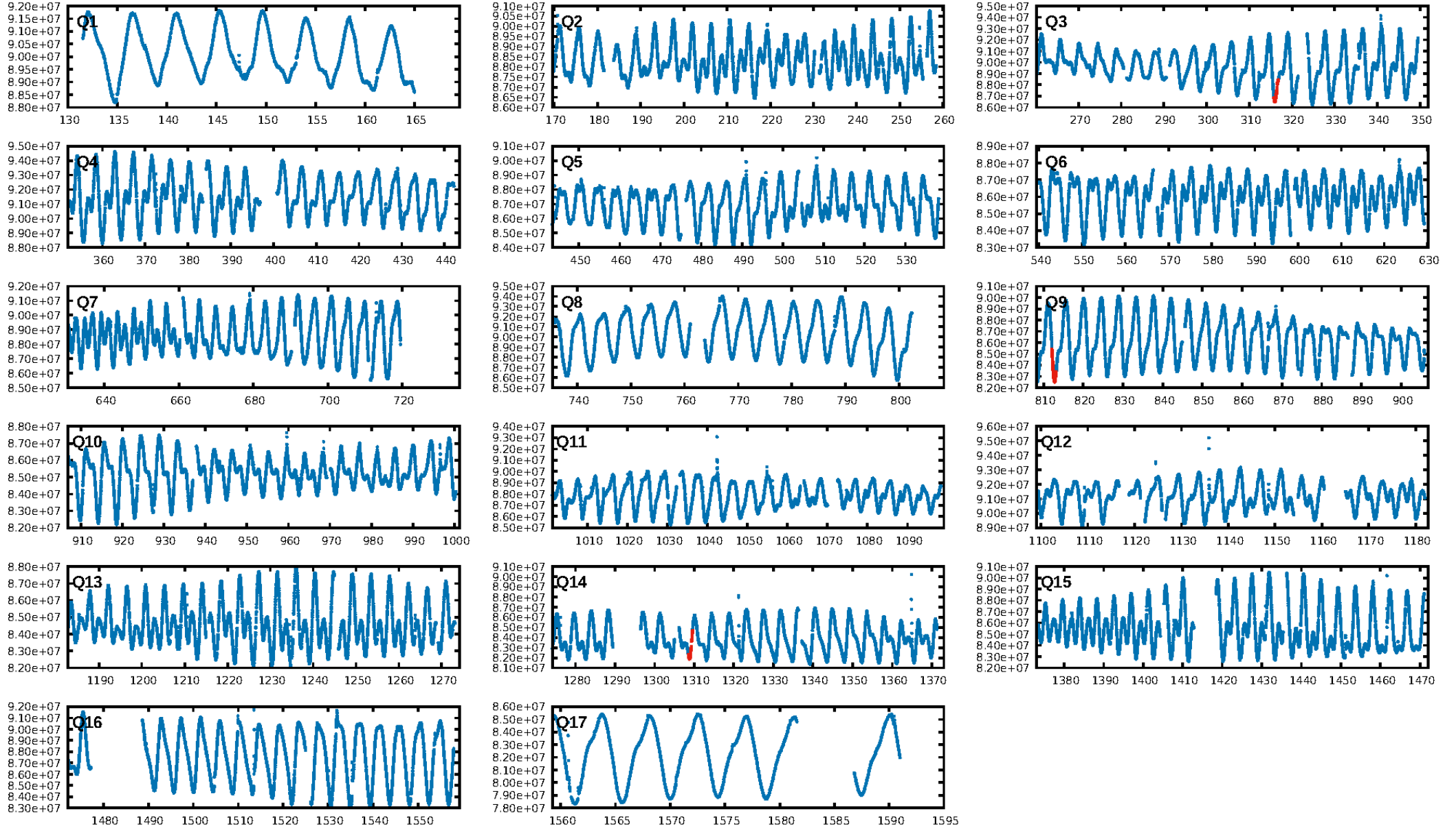
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [21.08 σ]
LongPeriod-sig: 100.0% [234.82 σ]
ModelChiSquare2-sig: 46.2%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 8.65e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 4.049
Centroid-sig: 19.3%
Centroid-so: 0.256 arcsec [0.76 σ]
OotOffset-rm: 0.147 arcsec [1.89 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.137 arcsec [1.49 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

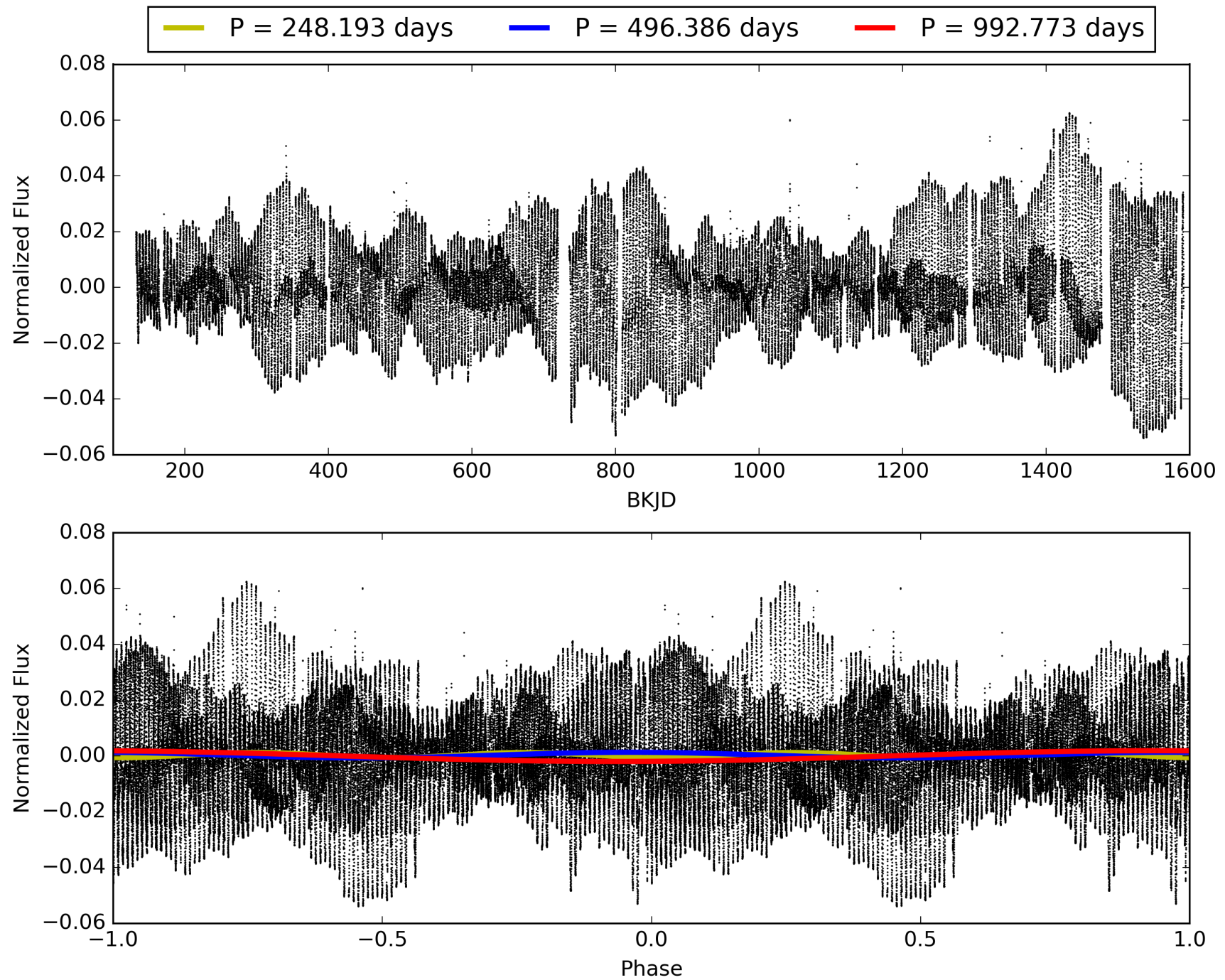
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:07 Z

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

TCE 011243149-02, PDC Light Curves

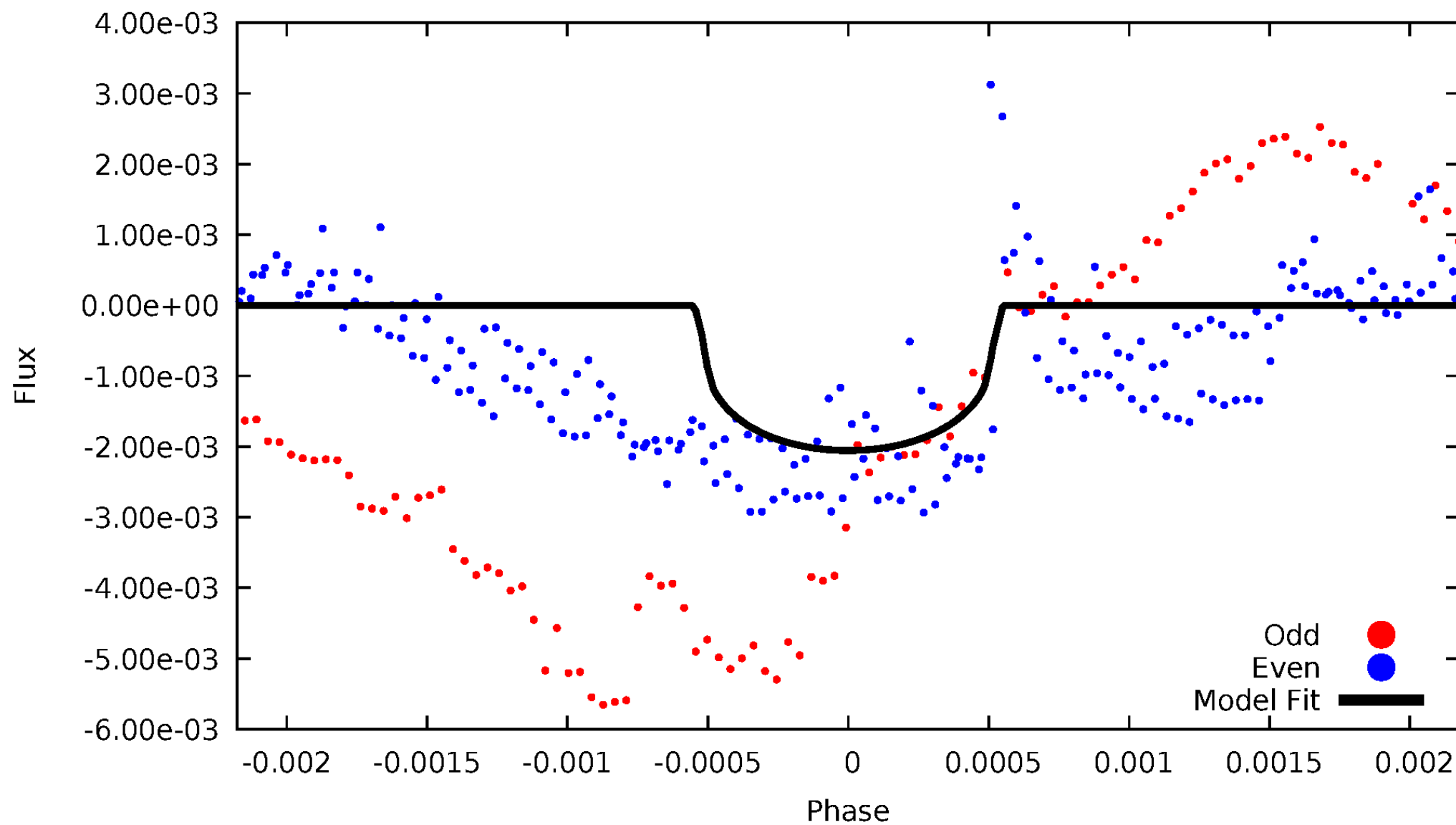


TCE 011243149-02



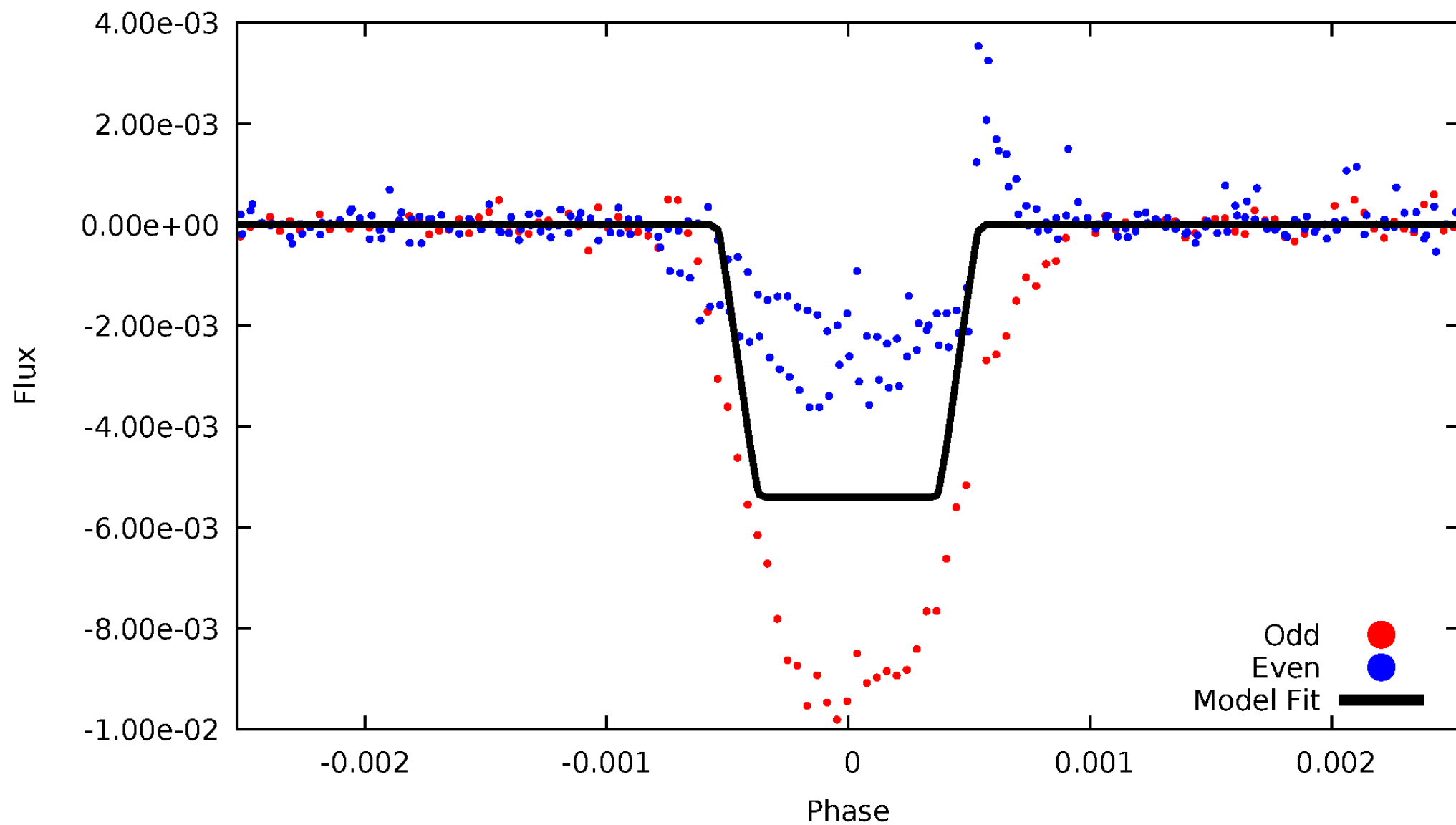
DV Odd/Even

TCE 011243149-02



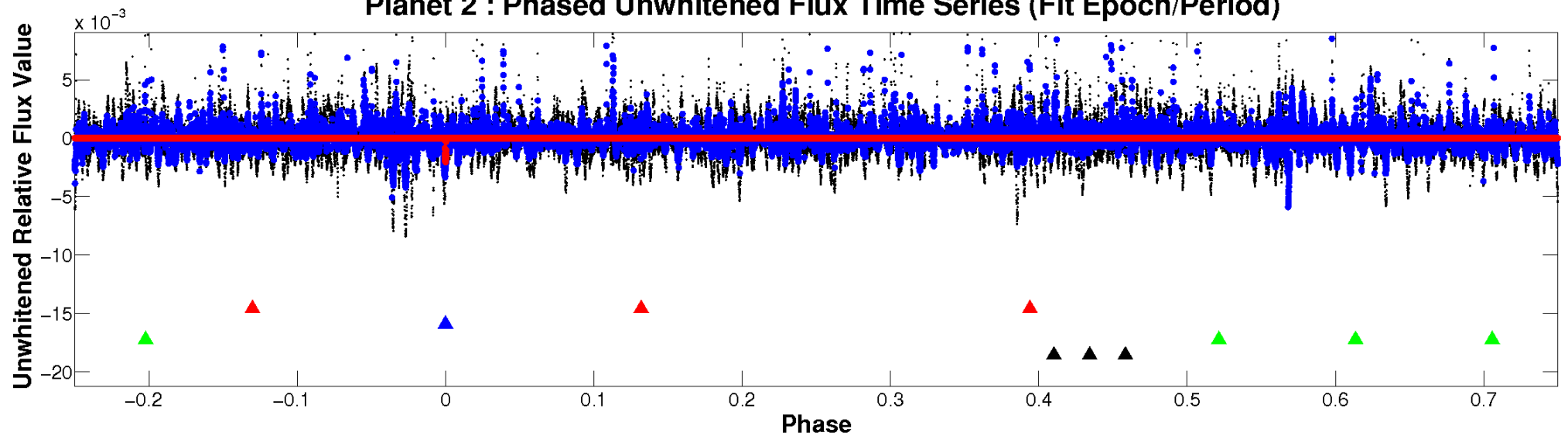
ALT Odd/Even

TCE 011243149-02

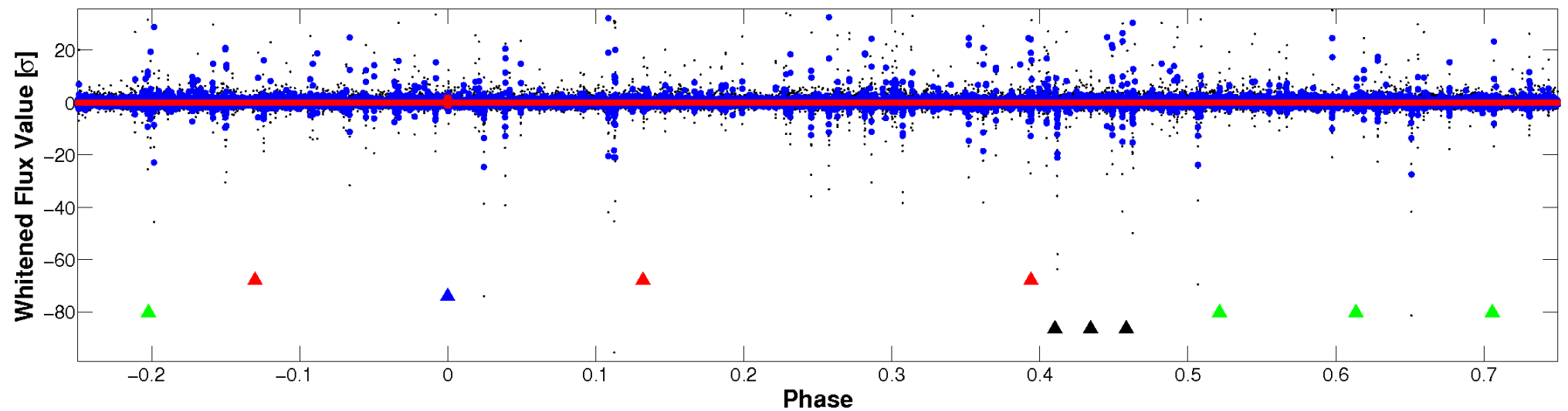


Non-Whitened Vs. Whitened Light Curve

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

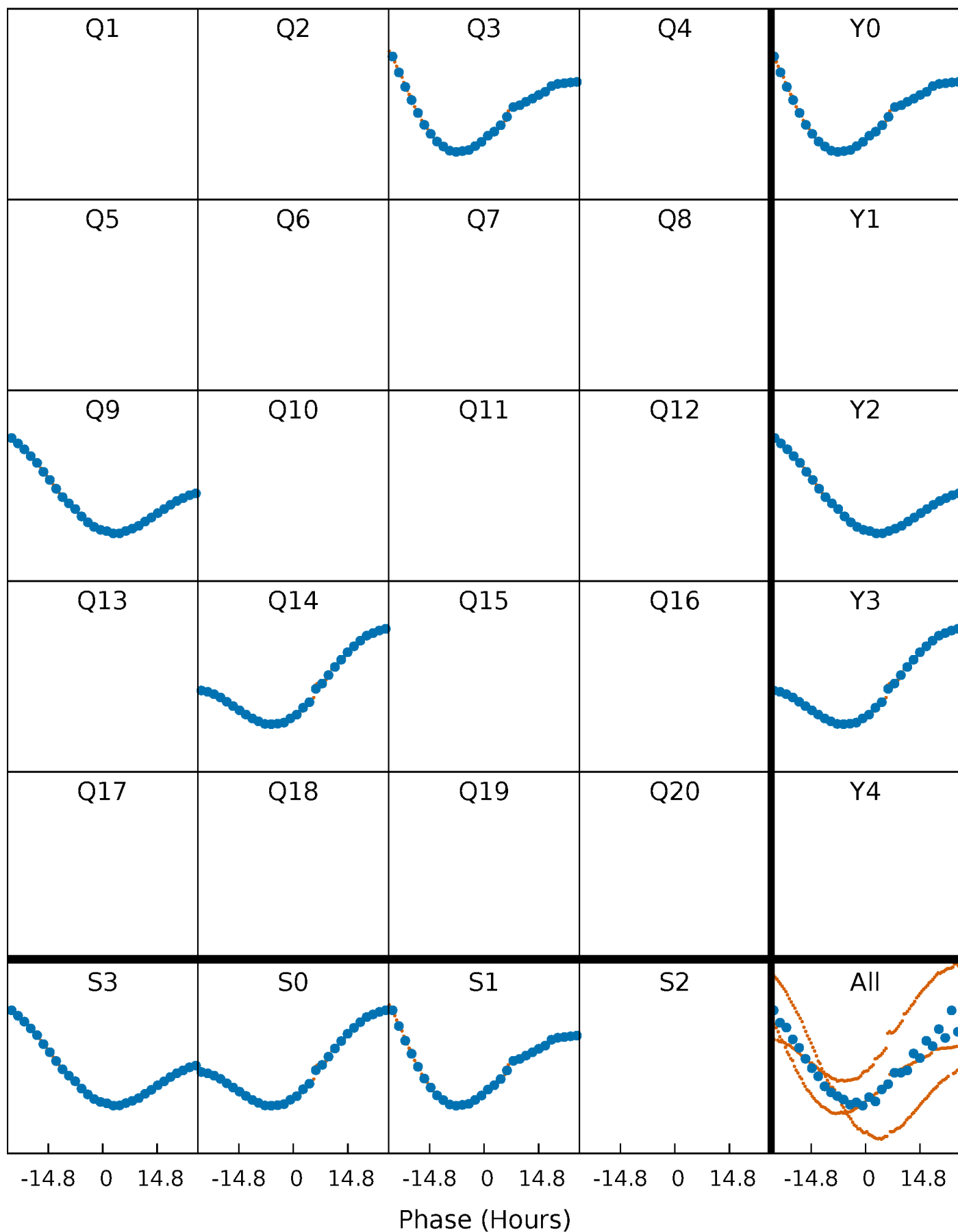


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



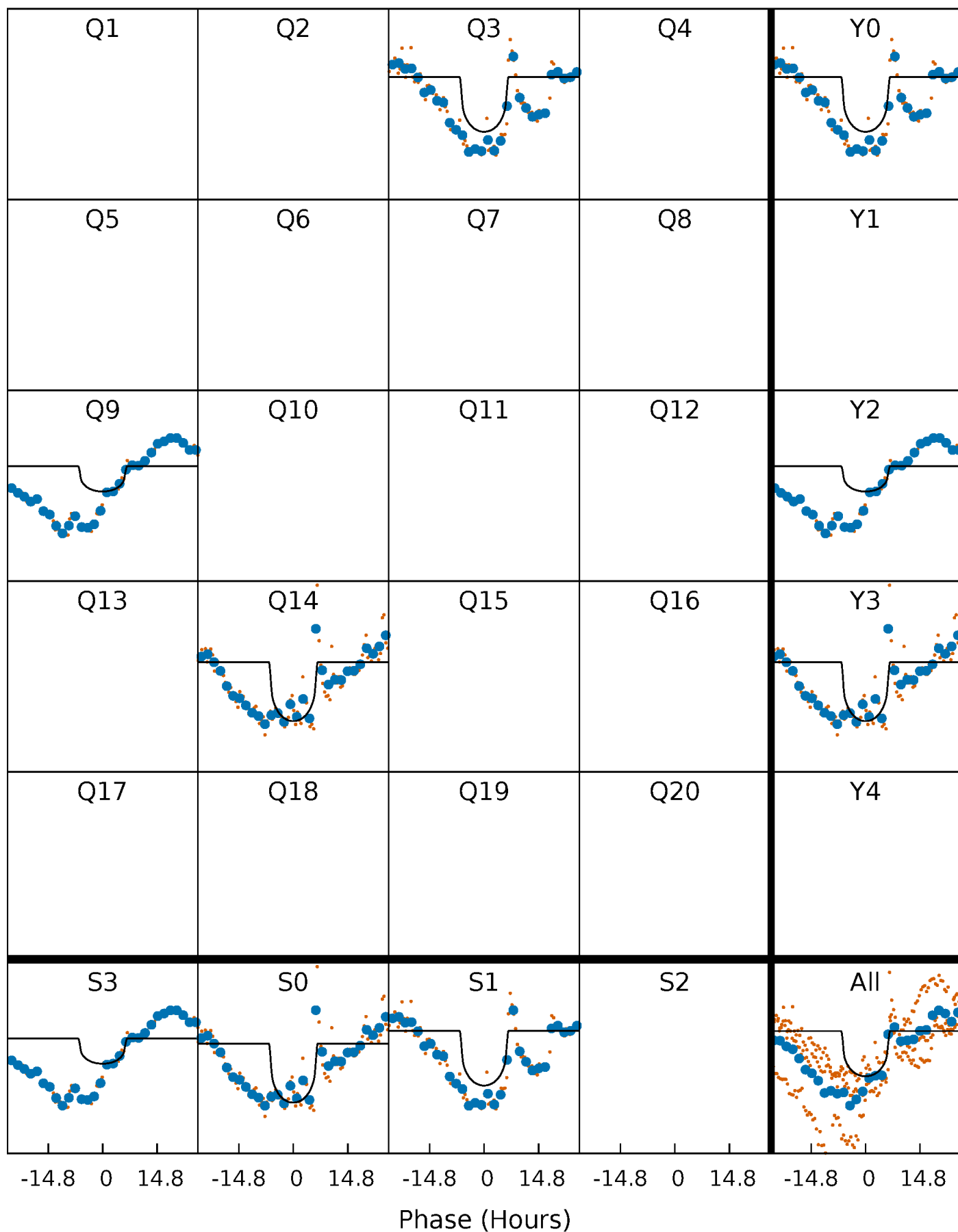
PDC Quarter-Phased Transit Curves

TCE 011243149-02 P=496.386348 Days $T_0=316.261543$ (BKJD)



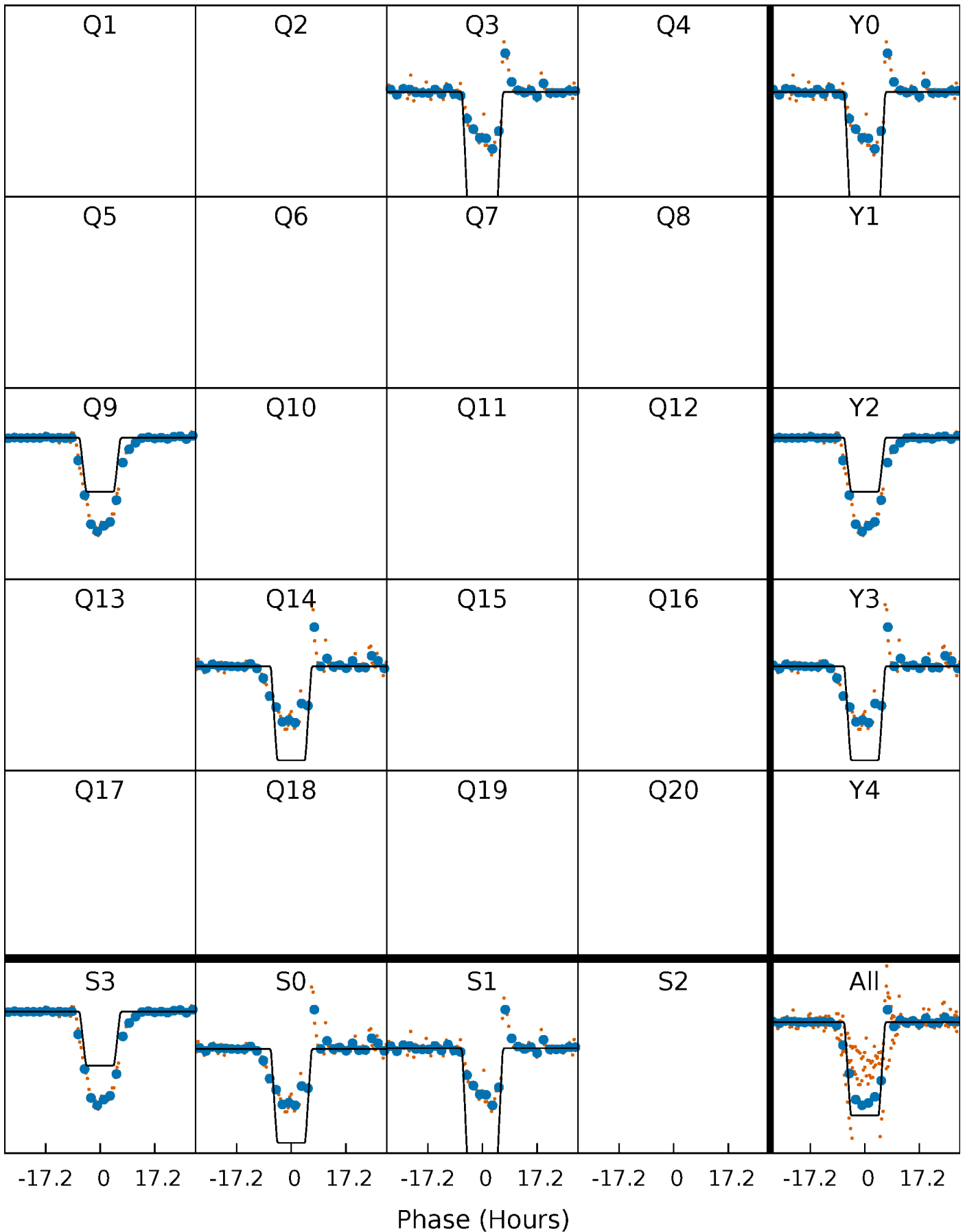
DV Quarter-Phased Transit Curves

TCE 011243149-02 P=496.386348 Days $T_0=316.261543$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

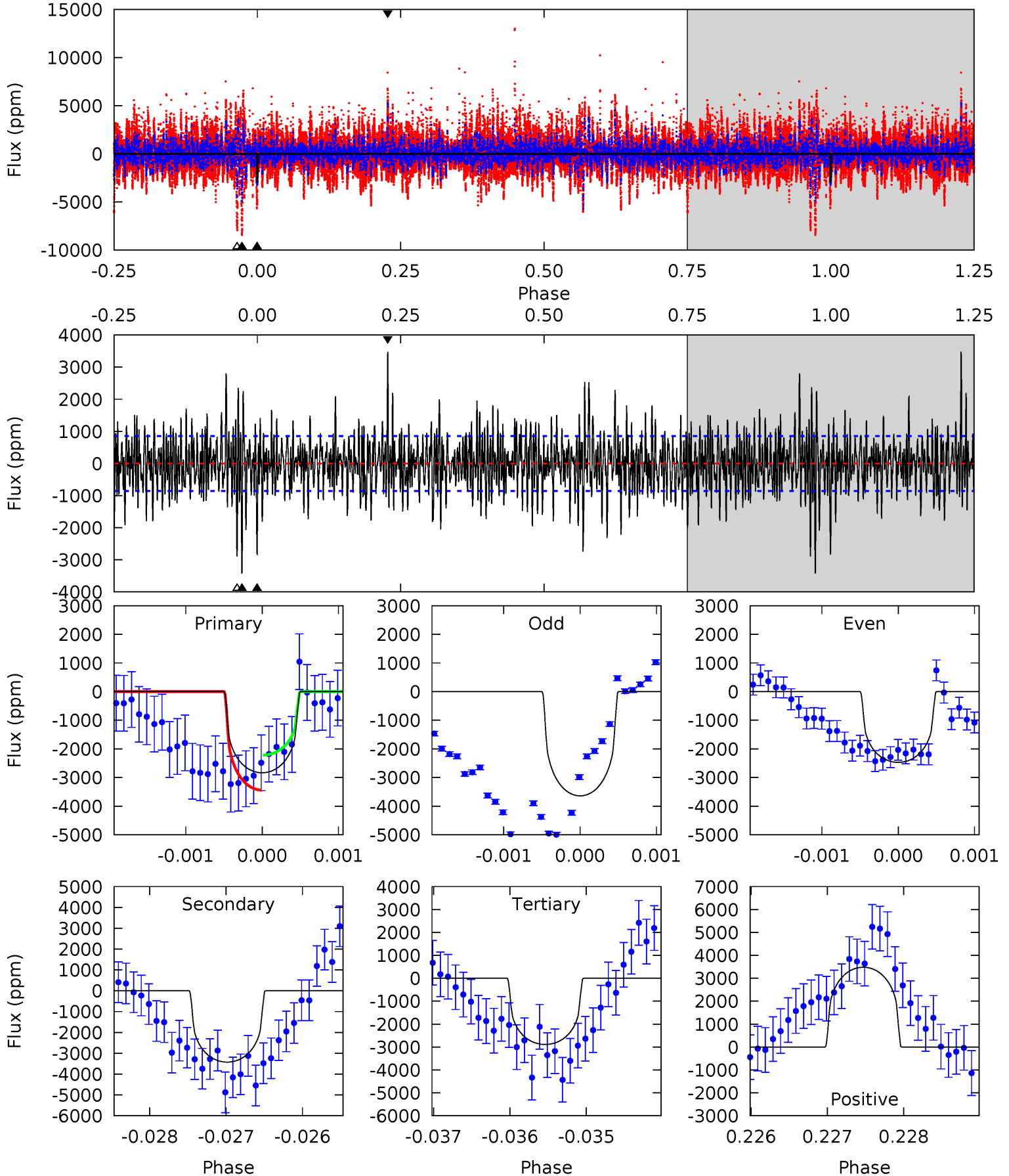
TCE 011243149-02 P=496.372040 Days $T_0=316.274410$ (BKJD)



DV Model-Shift Uniqueness Test

011243149-02, P = 496.386348 Days, E = 316.261543 Days

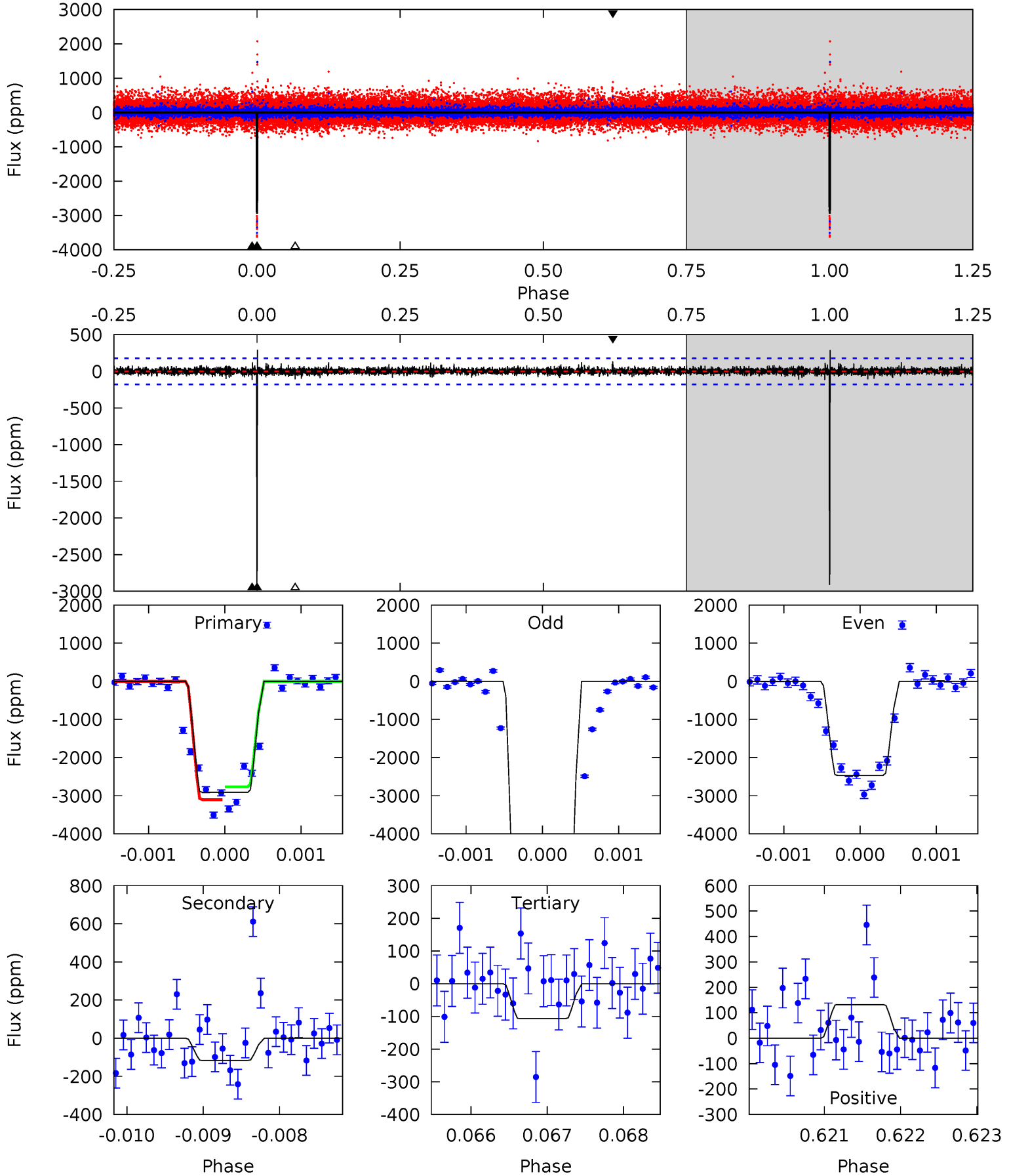
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	21.7	18.3	22.1	5.43	3.26	4.61	-0.35	-4.10	3.40	-0.35	3.05	0.97	0.50	3.89



Alt Model-Shift Uniqueness Test

011243149-02, P = 496.372040 Days, E = 316.274410 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.3	3.58	3.28	4.05	5.43	3.26	0.68	86.0	85.3	0.30	-0.48	130.0	1.53	0.09	0



Stellar Parameters For KIC 011243149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4556^{+123}_{-137}	$4.670^{+0.052}_{-0.028}$	$-0.740^{+0.300}_{-0.300}$	$0.576^{+0.047}_{-0.047}$	$0.566^{+0.053}_{-0.033}$	$4.172^{+0.958}_{-0.537}$
	+3%/-3%	+1%/-1%	+41%/-41%	+8%/-8%	+9%/-6%	+23%/-13%
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 011243149-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3425 ± 158	$2.59^{+0.54}_{-0.54}$	210^{+7}_{-7}	5262^{+623}_{-456}	$294281^{+182821}_{-93159}$
Alt.	-117 ± 33	$4.59^{+0.57}_{-0.56}$	210^{+7}_{-7}	2528^{+131}_{-130}	3234^{+1307}_{-1068}

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

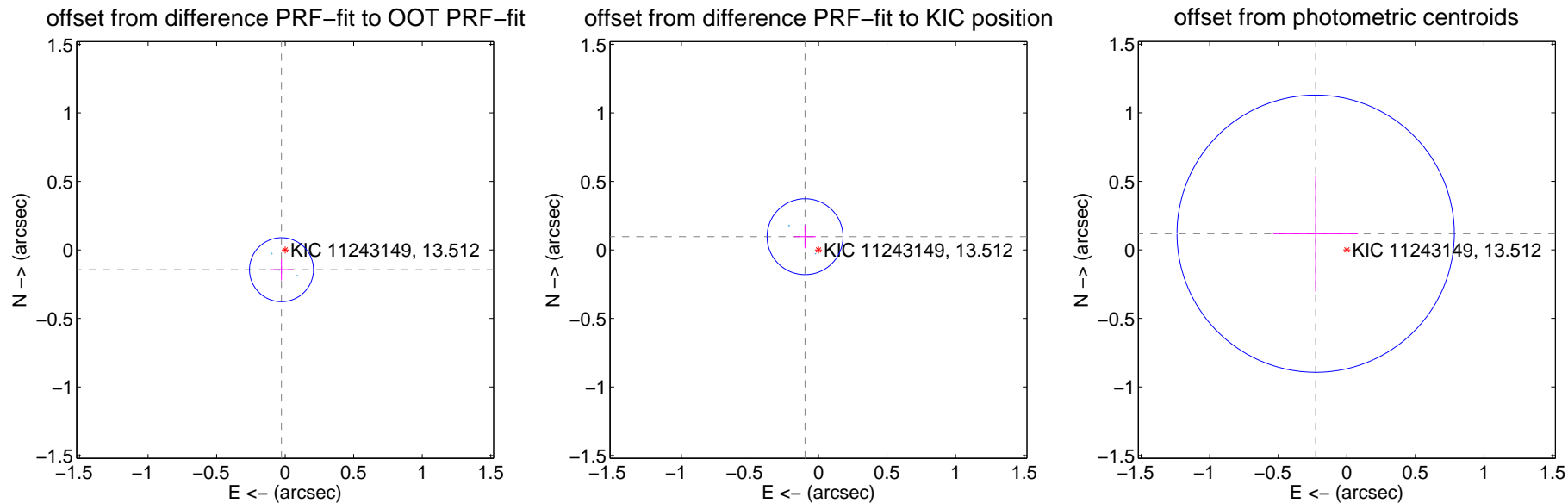
DV Centroid Data

Supplemental centroid analysis for 011243149-02. Kepler magnitude: 13.51. Transit SNR 8.21

There are 3 quarters with good PRF difference image offsets

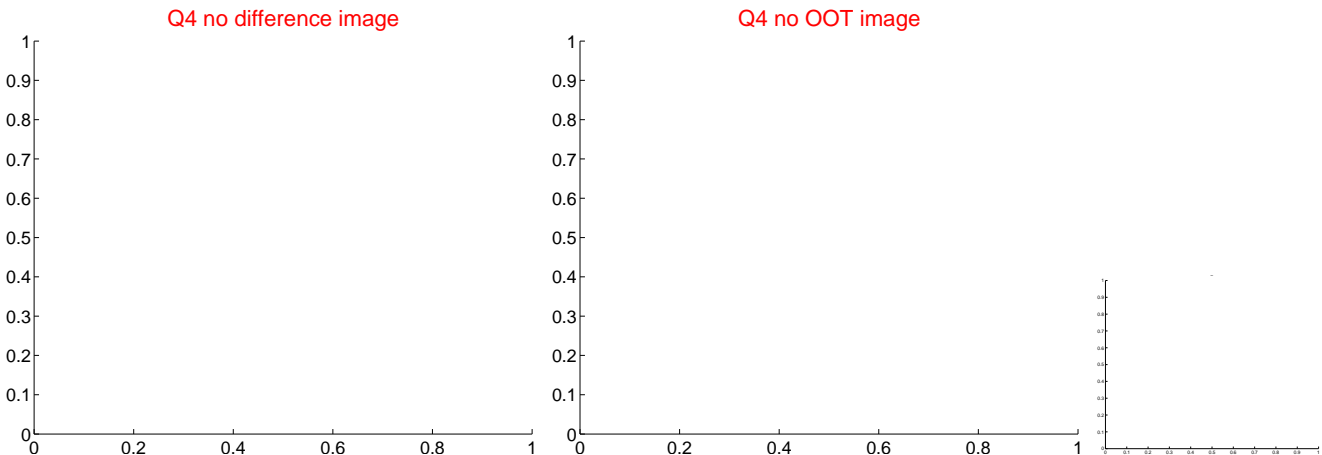
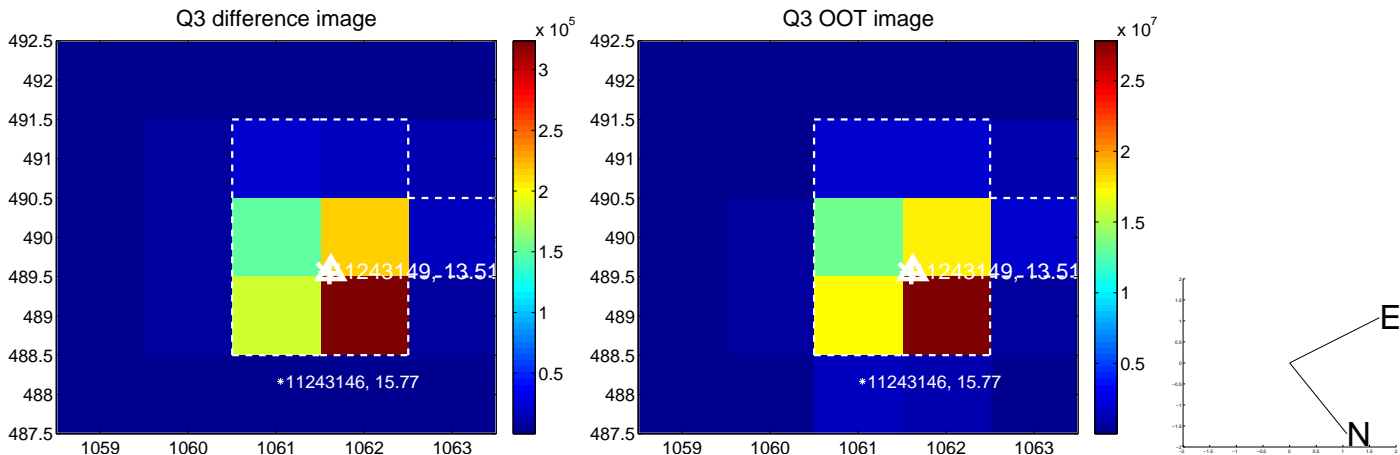
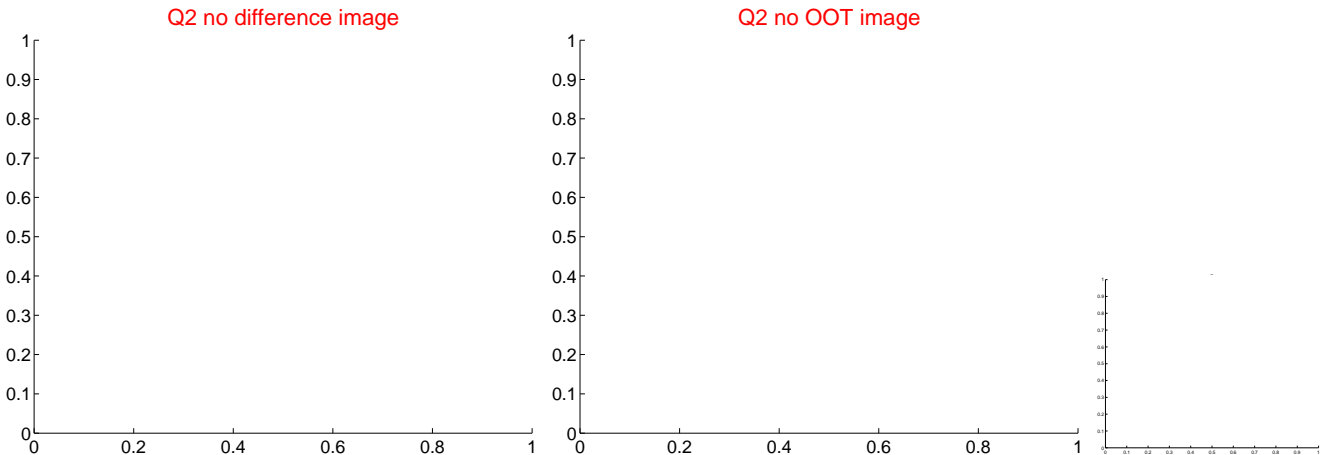
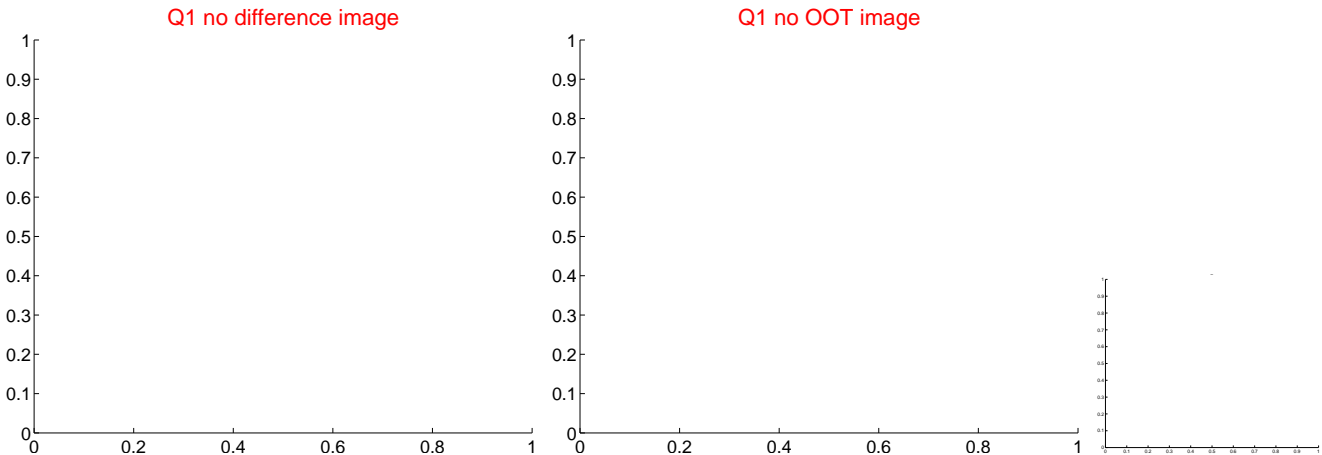
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.078	1.89	0.027 ± 0.086	-0.144 ± 0.078
PRF-fit source offset from KIC position	0.137 ± 0.092	1.49	0.098 ± 0.079	0.097 ± 0.084
photometric centroid source offset	0.26 ± 0.34	0.76	0.23 ± 0.31	0.12 ± 0.43



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.

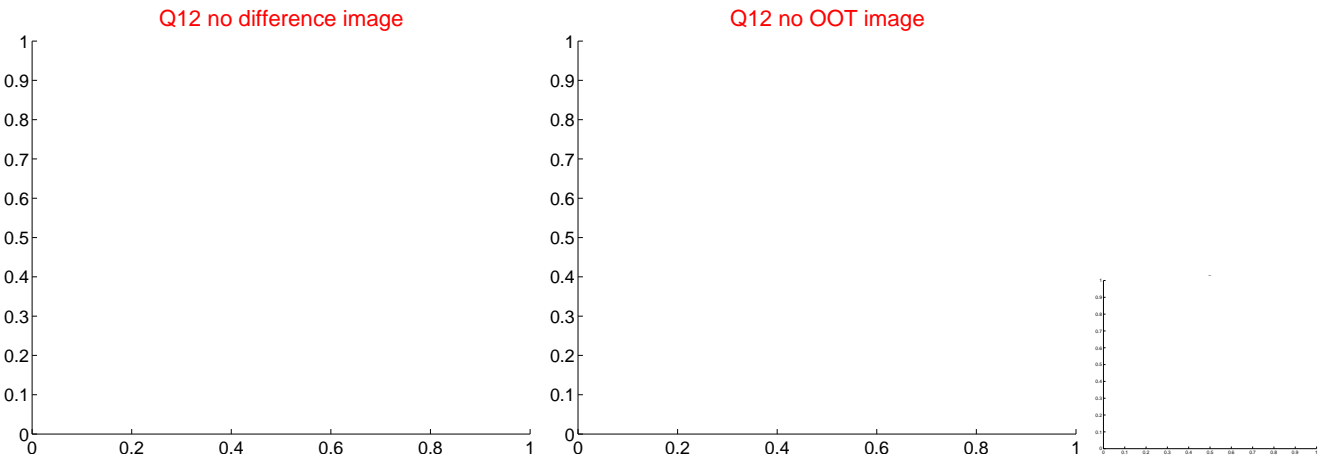
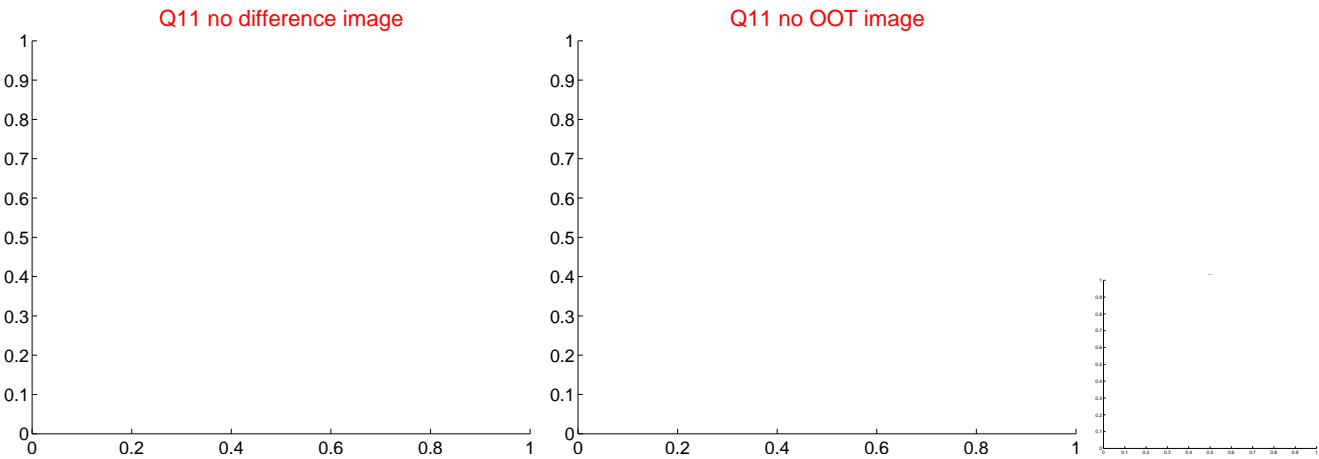
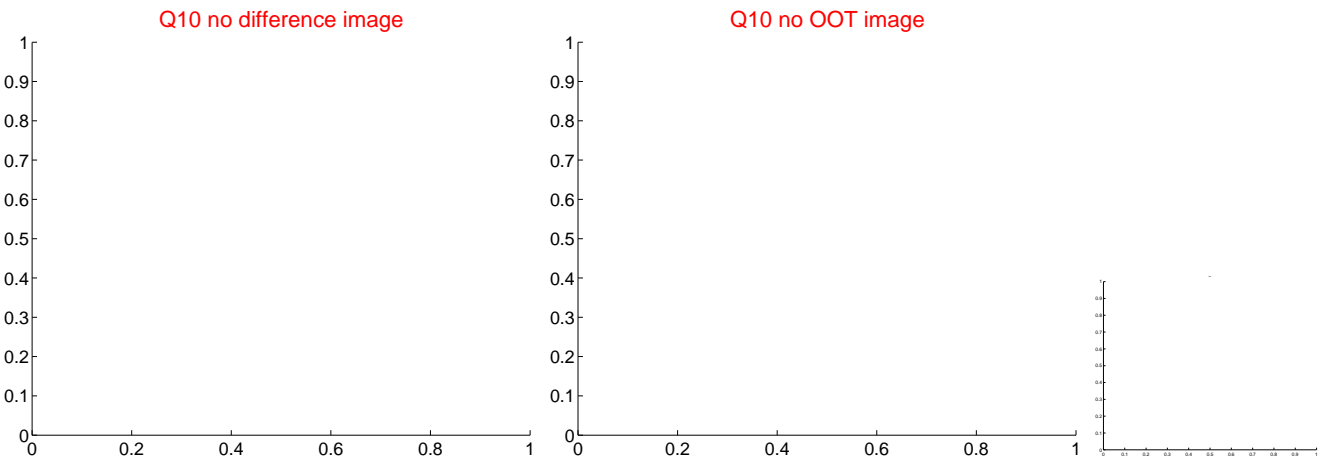
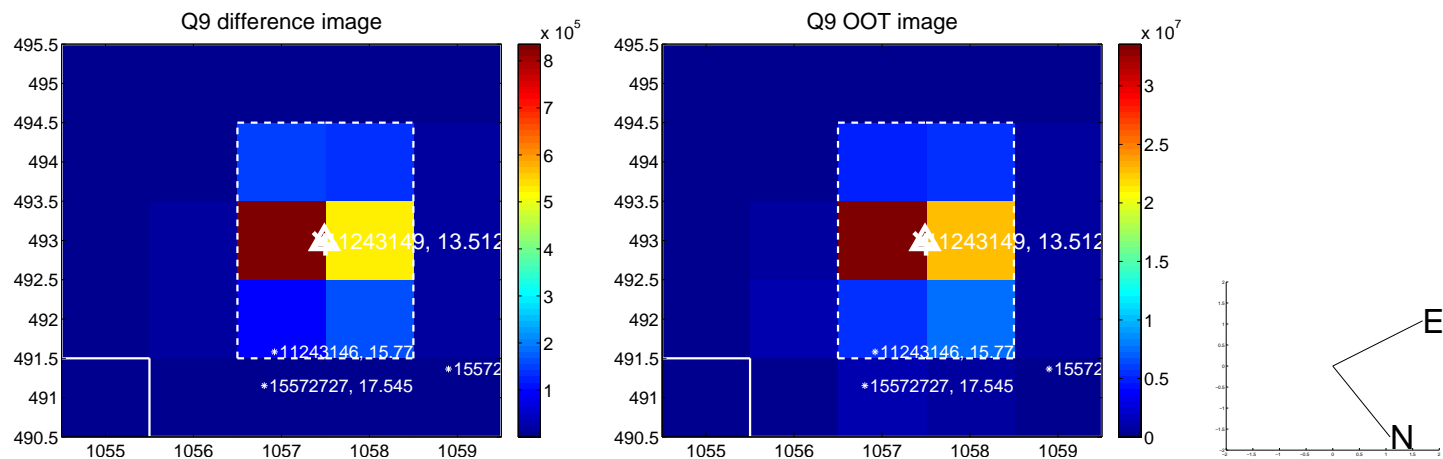
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



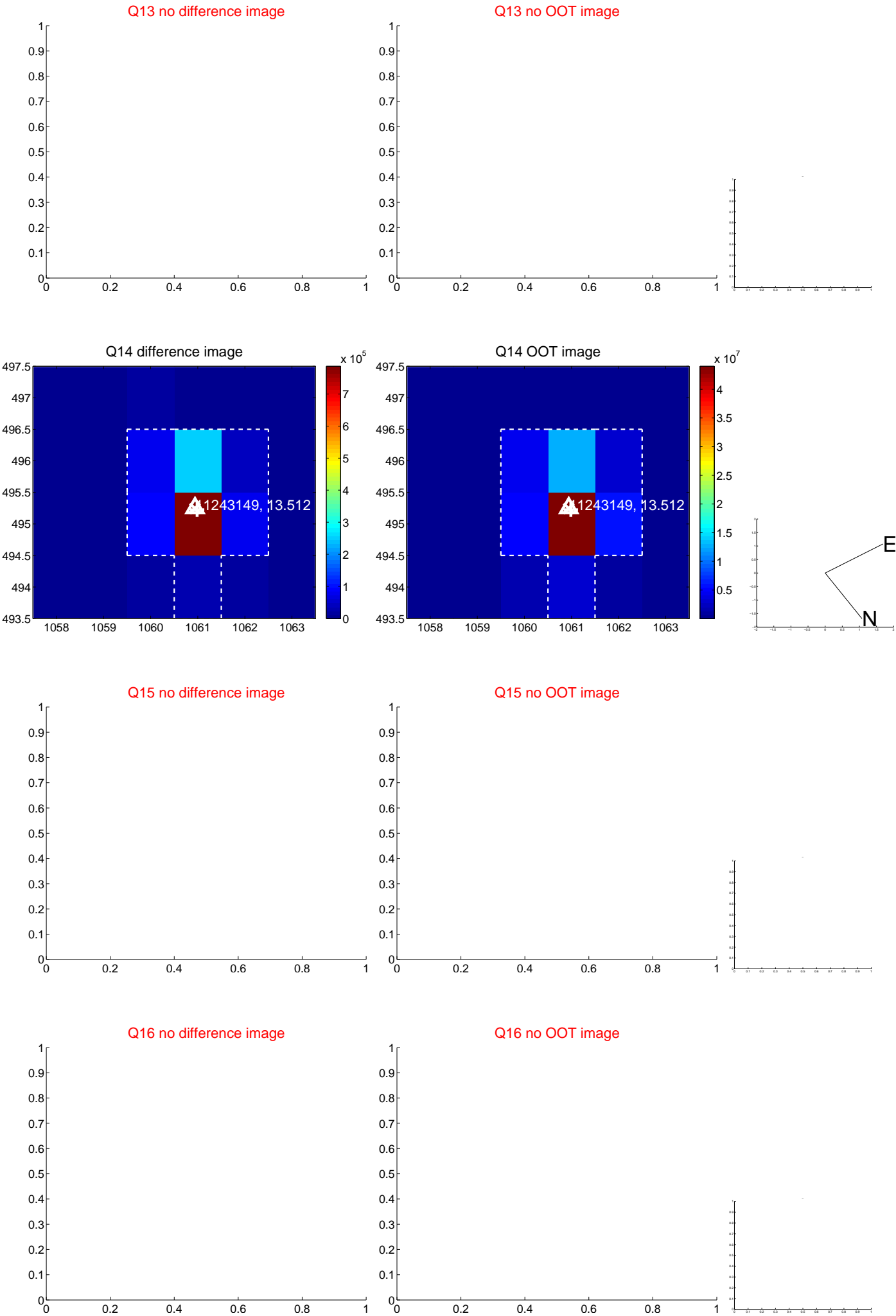
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



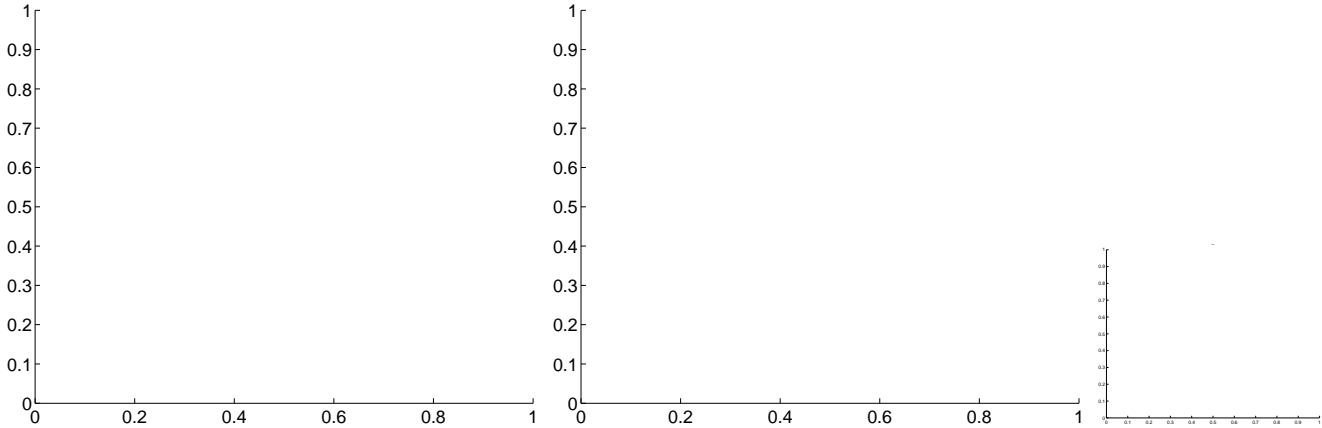
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



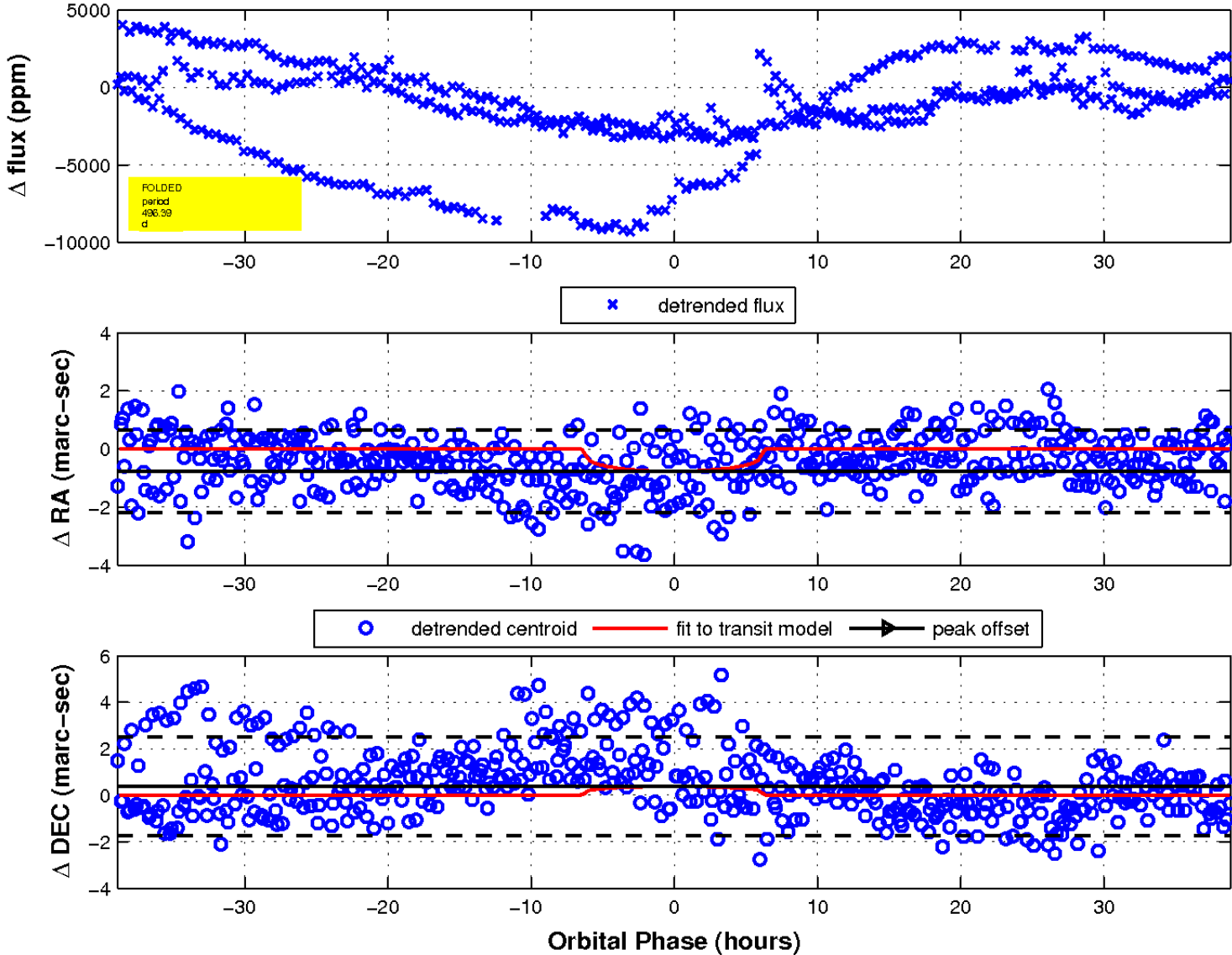
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

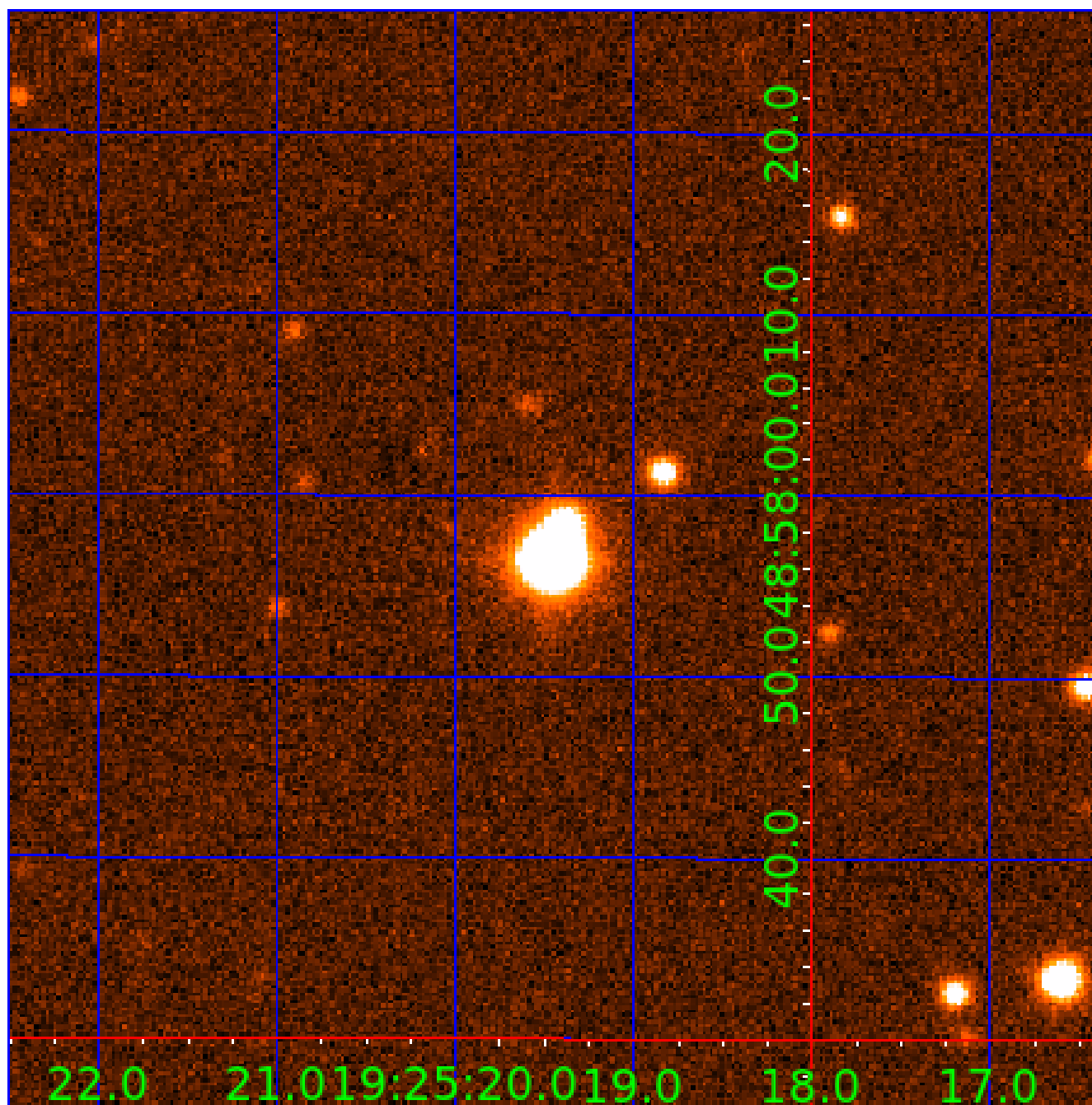


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 011243149

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})
011243149-01	OBS	No	626.485687	251.665090	1398.5	2.970	18.1	8.7	0.58	4556	2.10	0.09
011243149-02	OBS	No	496.386348	316.261543	2054.9	12.961	13.4	8.2	0.58	4556	2.57	0.12
011243149-03	OBS	No	450.655982	215.909980	1063.8	3.308	15.0	7.4	0.58	4556	1.97	0.14
011243149-04	OBS	No	484.428007	543.817932	1243.9	4.174	13.6	7.4	0.58	4556	2.17	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011243149-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011243149-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011243149-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
011243149-04	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.

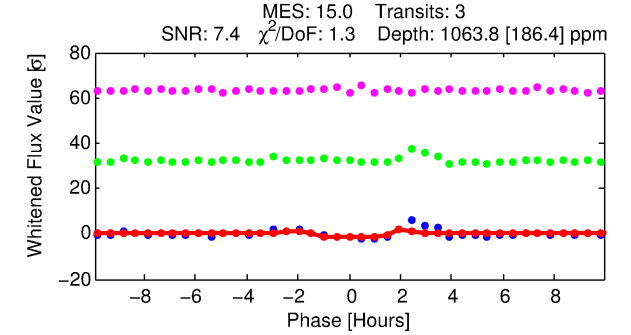
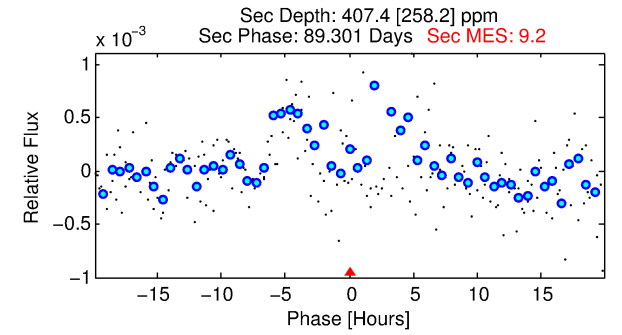
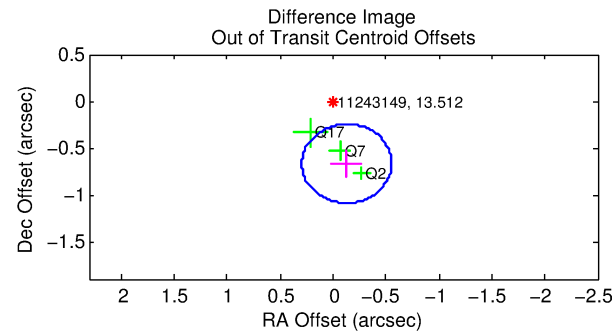
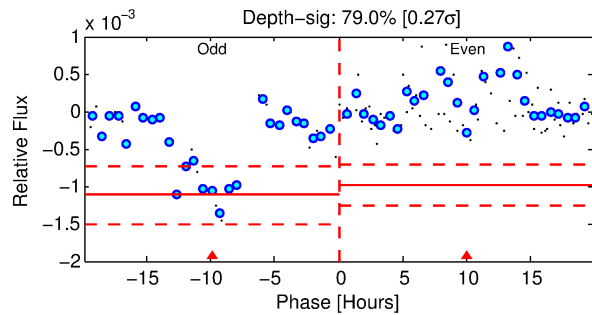
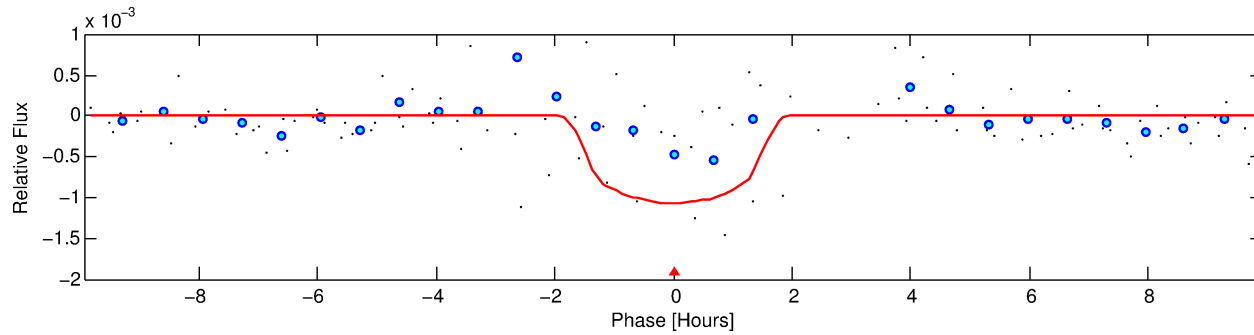
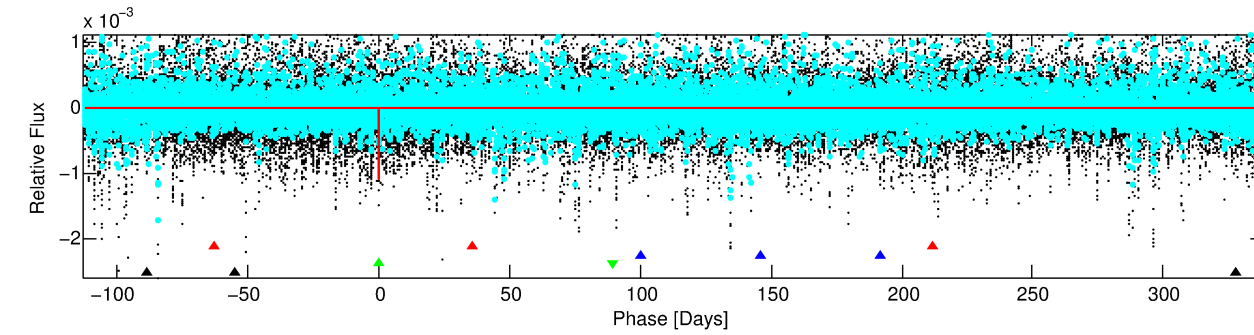
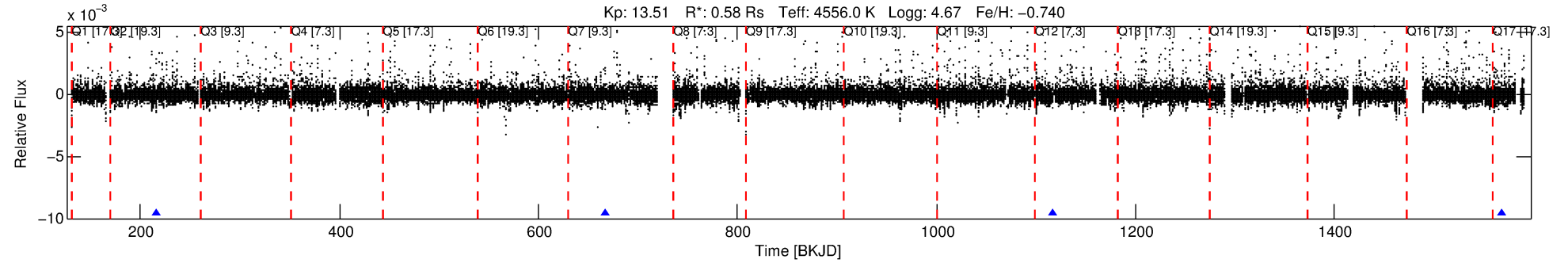
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011243149-03

No Significant Match Found

DV One-Page Summary

KIC: 11243149 Candidate: 3 of 4 Period: 450.656 d



DV Fit Results:

Period = 450.65598 [0.00324] d
Epoch = 215.9100 [0.0057] BKJD
Rp/R* = 0.0313 [0.0353]
a/R* = 831.39 [3080.67]
b = 0.65 [3.35]
Seff = 0.14 [0.02]
Teq = 156 [6] K
Rp = 1.97 [2.23] Re
a = 0.9518 [0.0642] AU
Ag = 52364.61 [122729.41] [0.43σ]
Teffp = 3657 [2144] K [1.63σ]

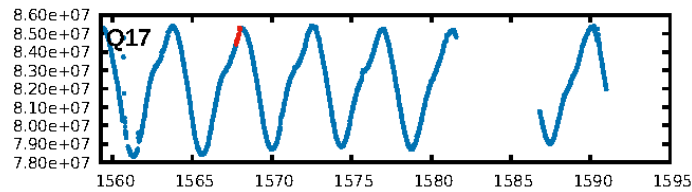
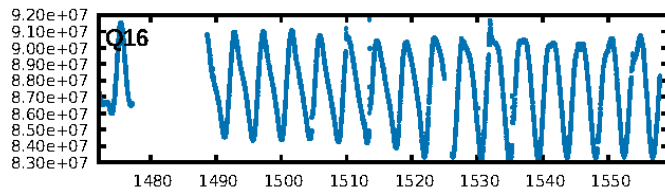
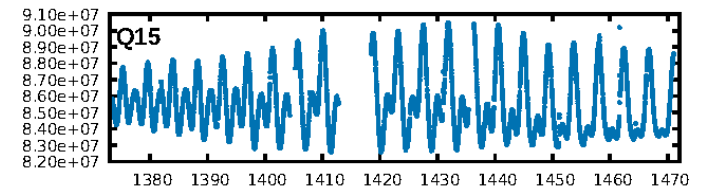
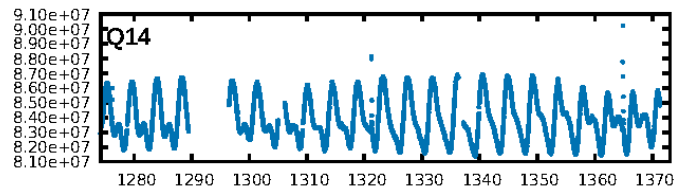
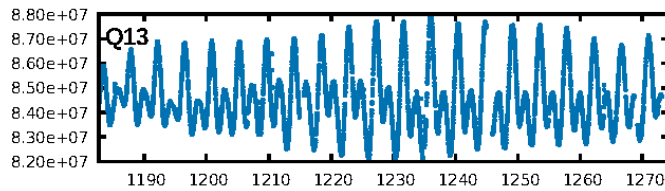
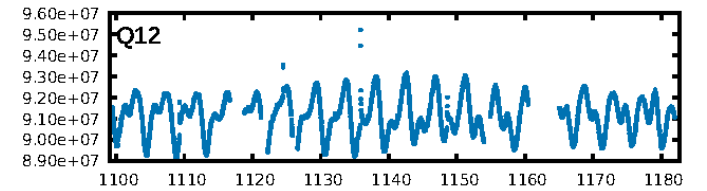
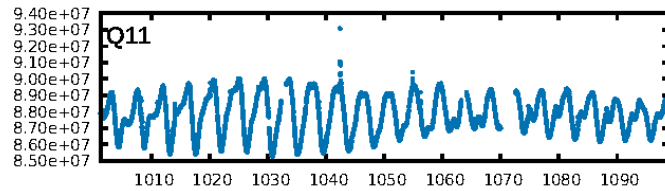
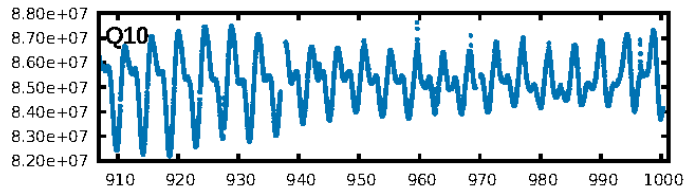
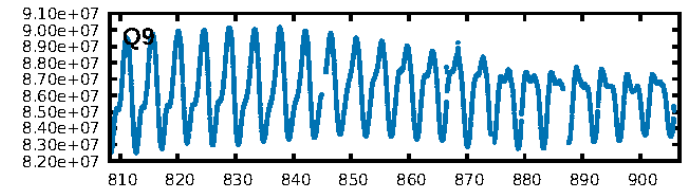
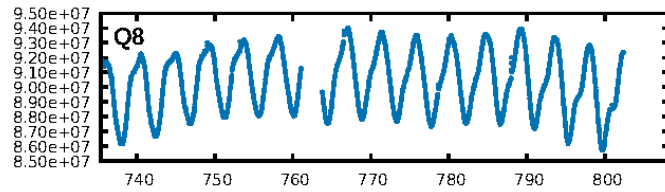
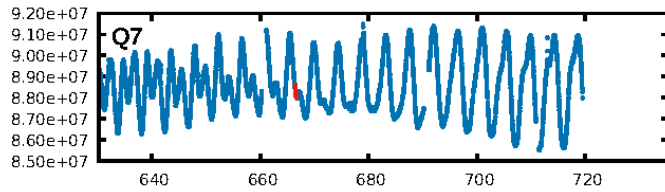
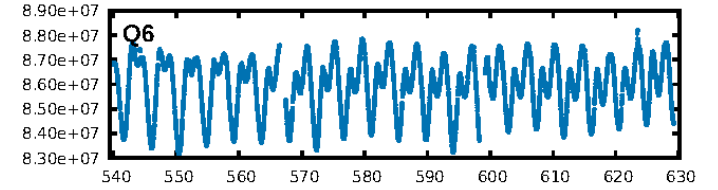
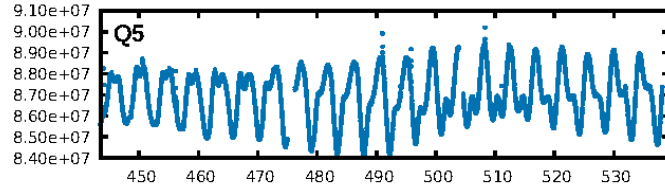
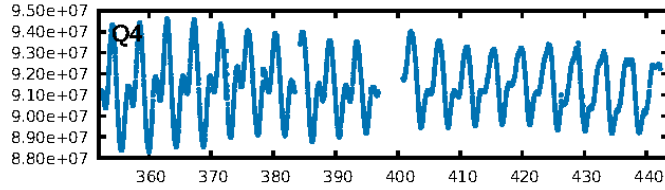
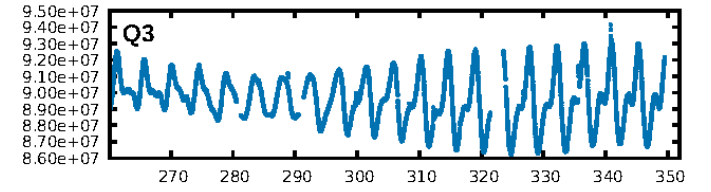
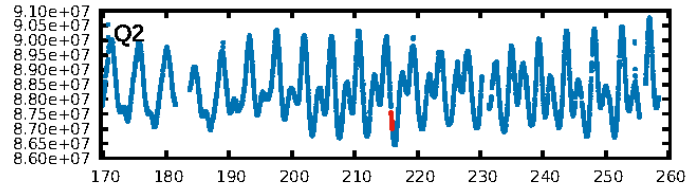
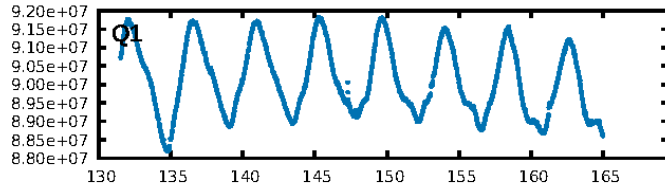
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [152.18σ]
ModelChiSquare2-sig: 12.6%
ModelChiSquareGof-sig: 53.4%
Bootstrap-pfa: 5.25e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.9383
Centroid-sig: 6.2%
Centroid-so: 0.789 arcsec [1.11σ]
OotOffset-rm: 0.681 arcsec [4.84σ]
KicOffset-rm: 0.524 arcsec [3.13σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

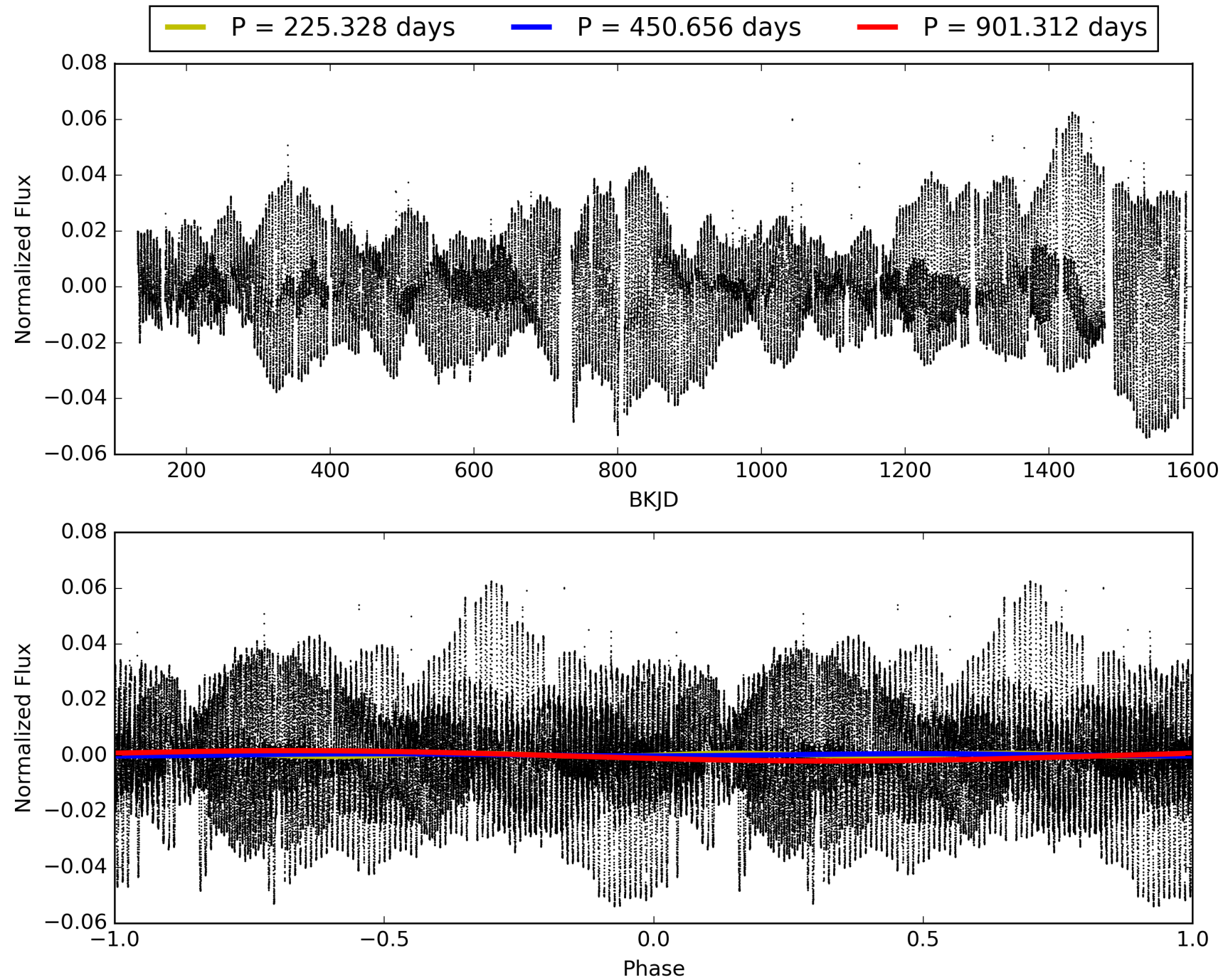
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:25 Z

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

TCE 011243149-03, PDC Light Curves

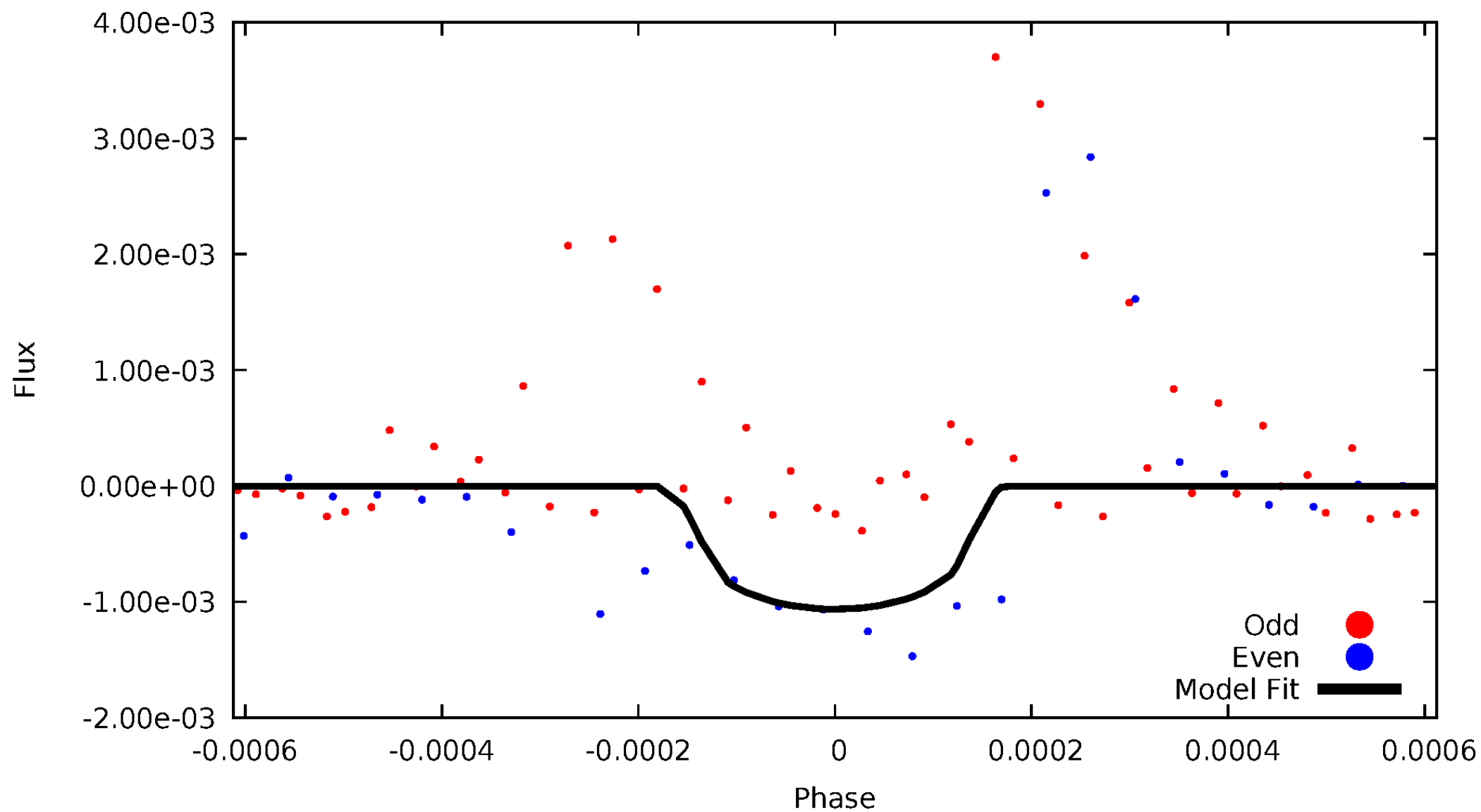


TCE 011243149-03



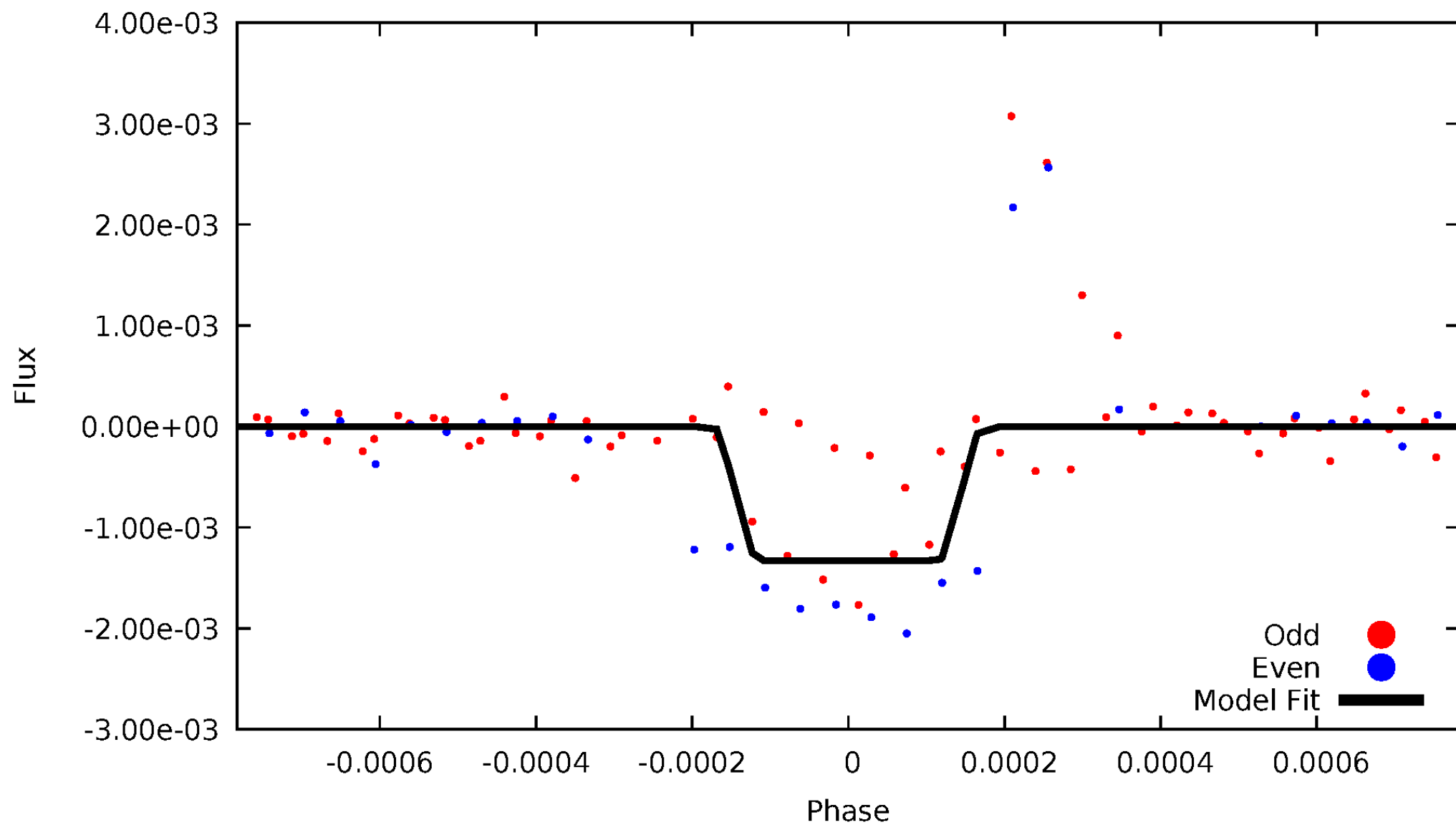
DV Odd/Even

TCE 011243149-03



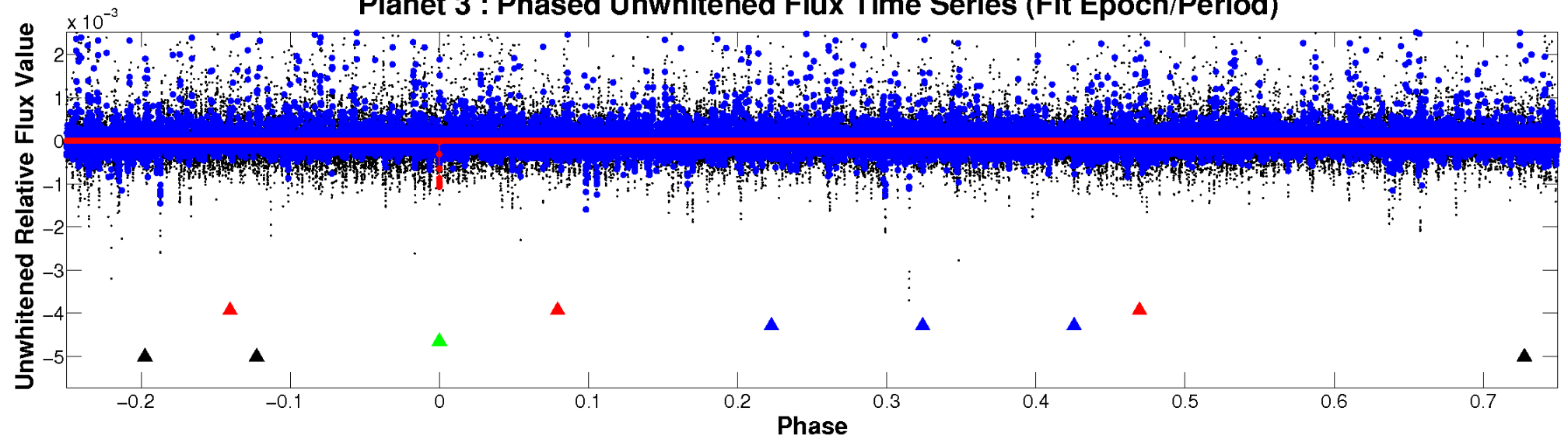
ALT Odd/Even

TCE 011243149-03

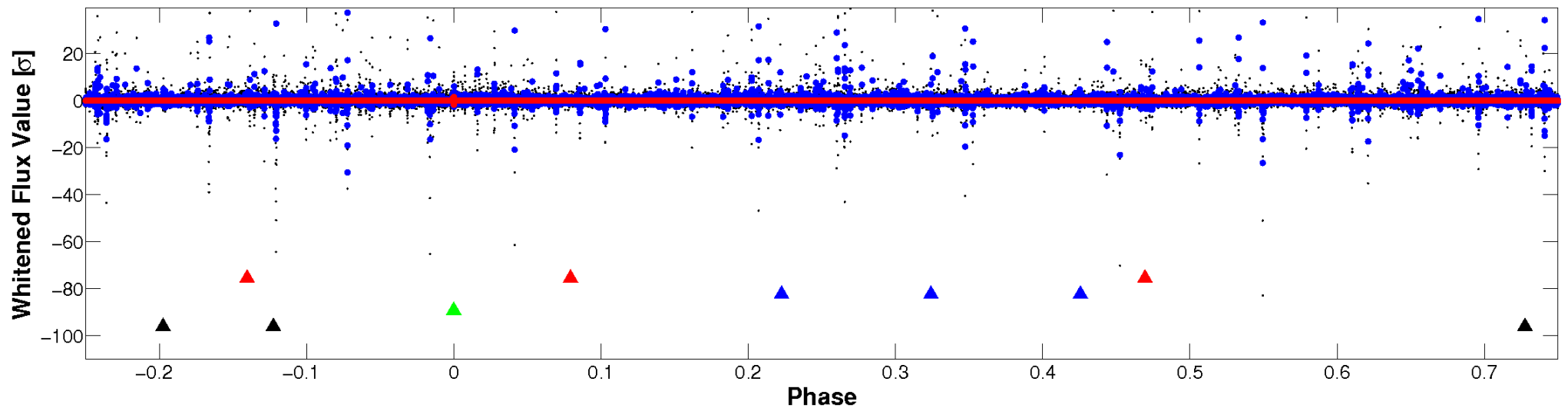


Non-Whitened Vs. Whitened Light Curve

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

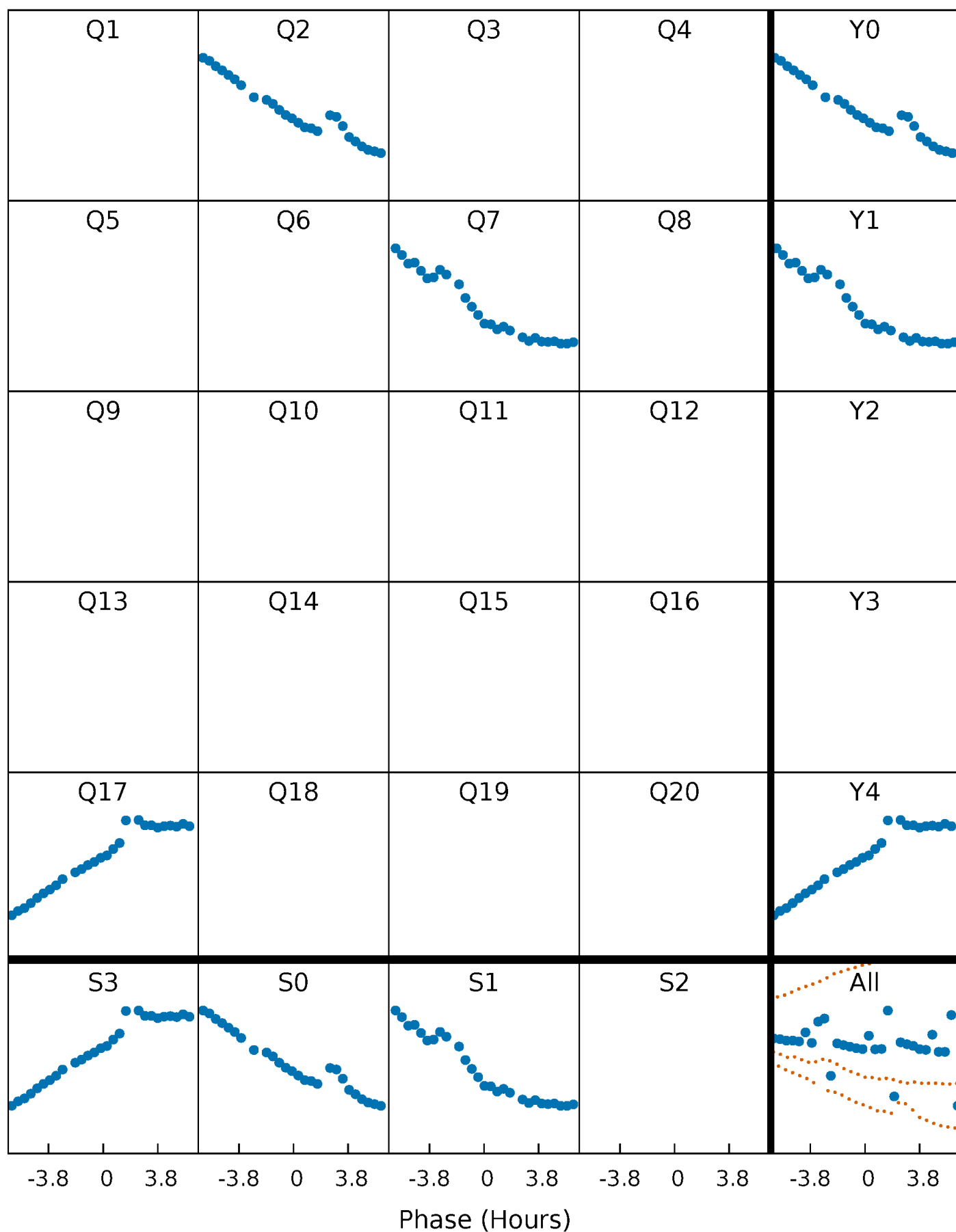


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 011243149-03 P=450.655982 Days $T_0=215.909980$ (BKJD)



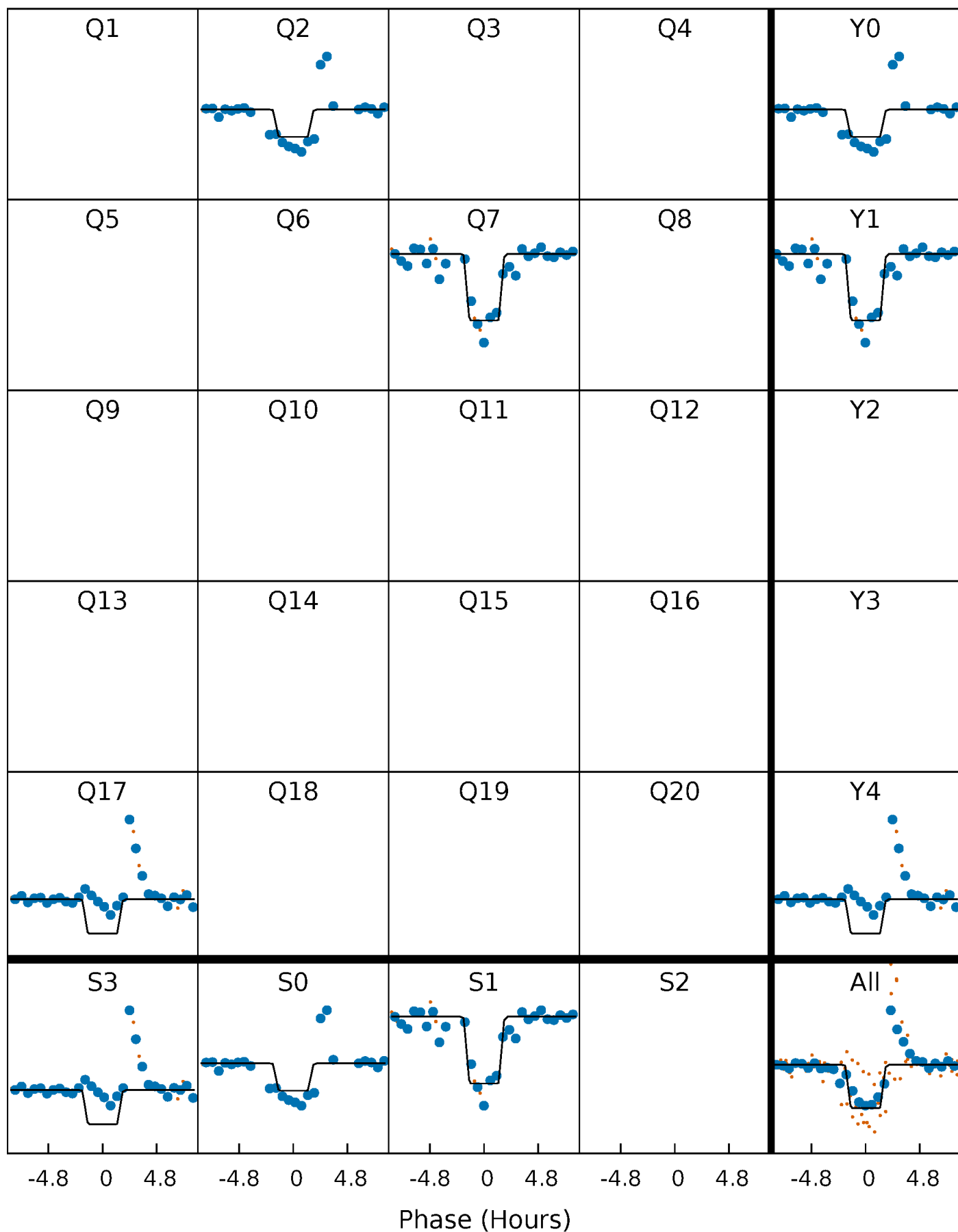
DV Quarter-Phased Transit Curves

TCE 011243149-03 $P=450.655982$ Days $T_0=215.909980$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

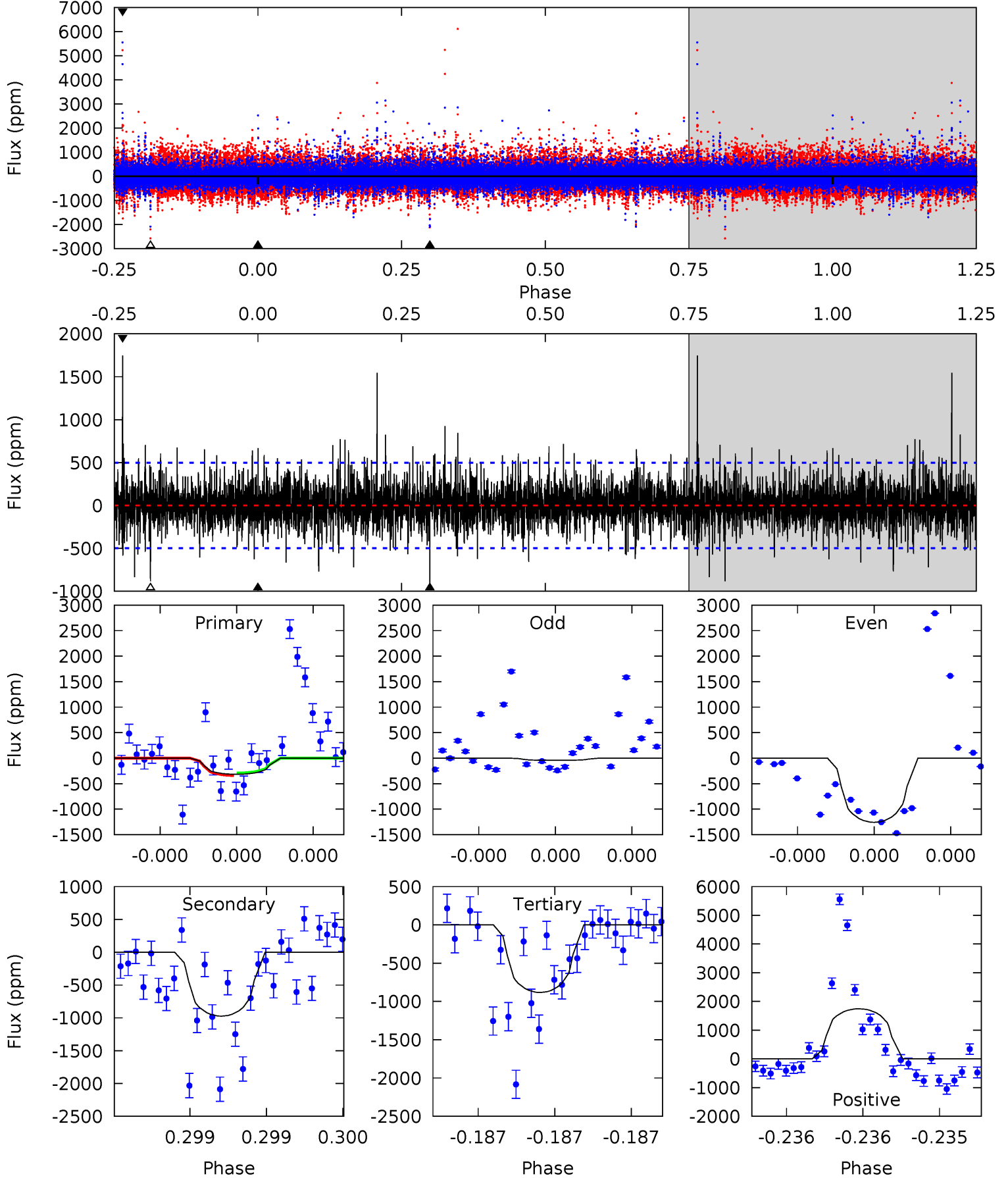
TCE 011243149-03 P=450.648543 Days $T_0=215.911775$ (BKJD)



DV Model-Shift Uniqueness Test

011243149-03, P = 450.655982 Days, E = 215.909980 Days

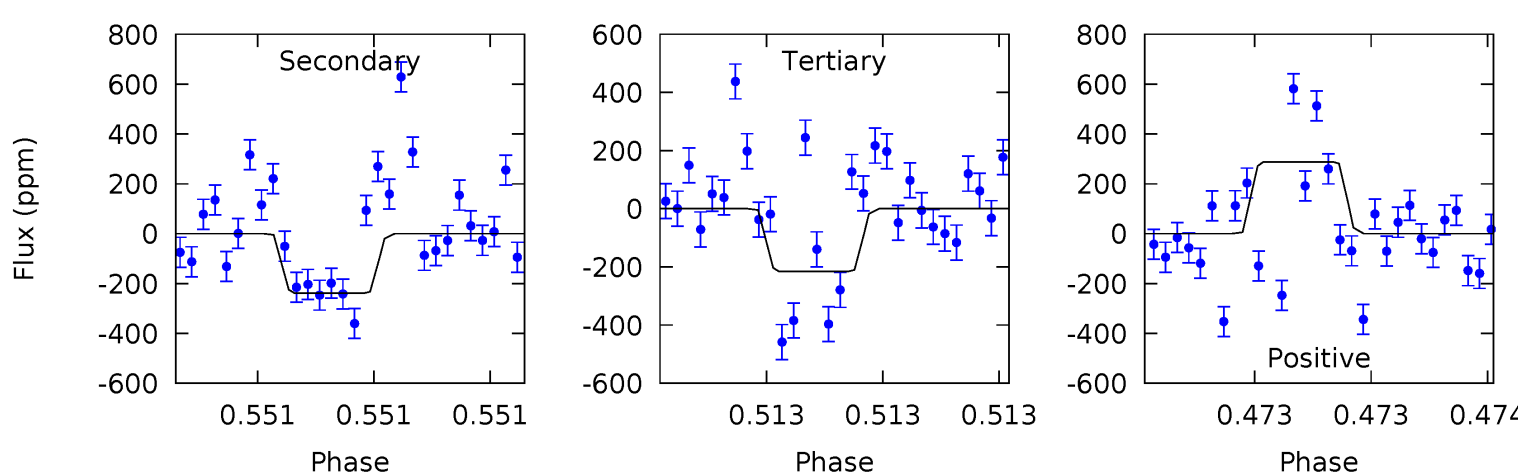
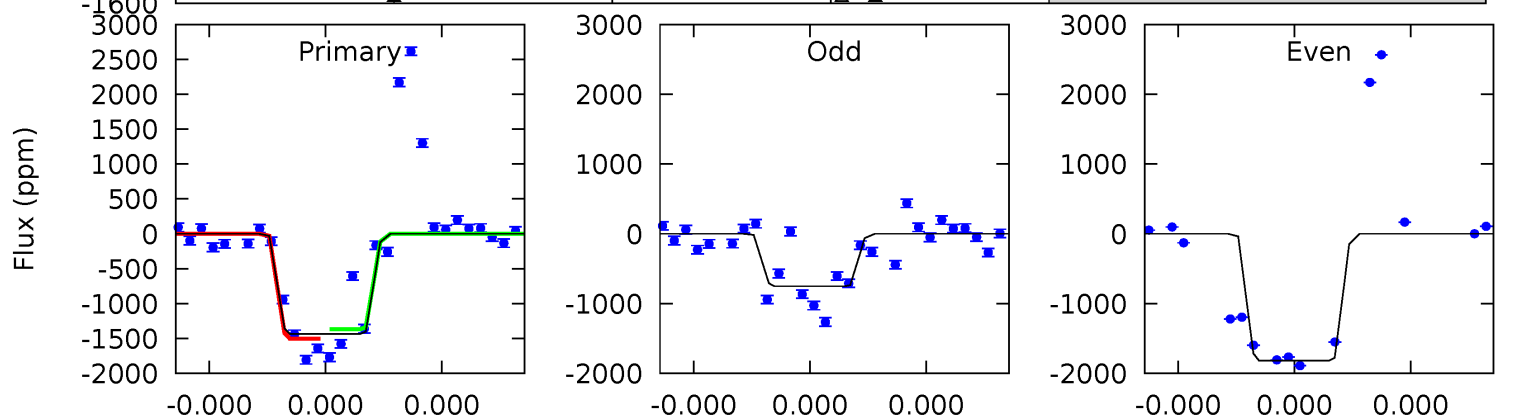
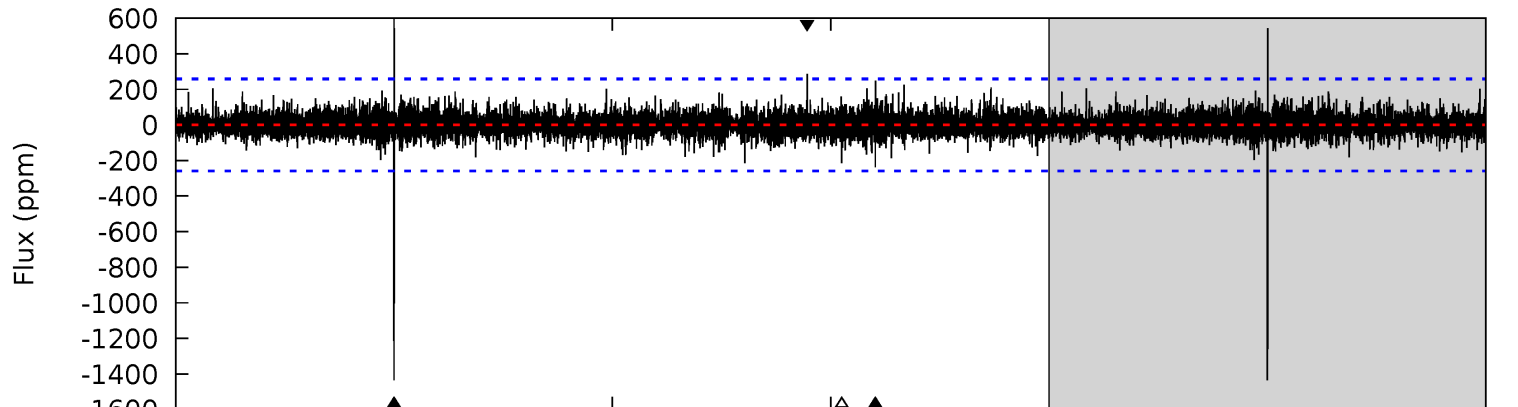
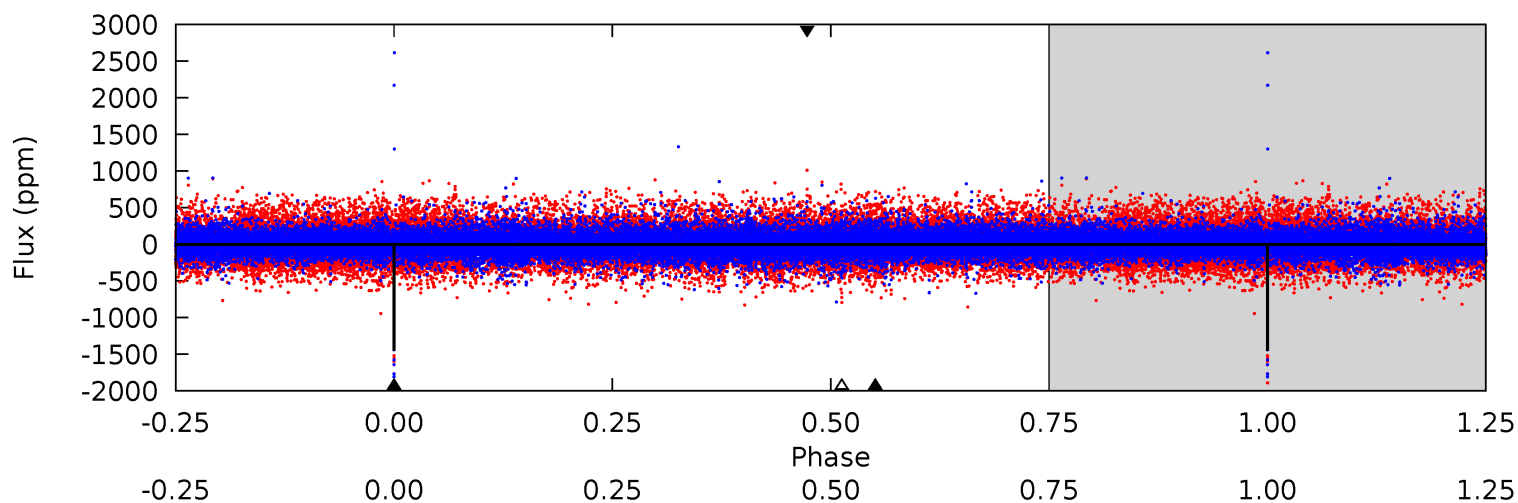
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.61	11.1	10.0	19.9	5.65	3.60	2.00	-6.43	-16.3	1.03	-8.78	4.98	7.37	0.64	0.28



Alt Model-Shift Uniqueness Test

011243149-03, P = 450.648543 Days, E = 215.911775 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.2	5.18	4.68	6.26	5.64	3.58	0.94	26.5	24.9	0.50	-1.08	12.5	0.83	0.27	1.49



Stellar Parameters For KIC 011243149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4556^{+123}_{-137}	$4.670^{+0.052}_{-0.028}$	$-0.740^{+0.300}_{-0.300}$	$0.576^{+0.047}_{-0.047}$	$0.566^{+0.053}_{-0.033}$	$4.172^{+0.958}_{-0.537}$
	+3%/-3%	+1%/-1%	+41%/-41%	+8%/-8%	+9%/-6%	+23%/-13%
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 011243149-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-974 ± 88	$2.43^{+2.00}_{-1.50}$	217^{+7}_{-8}	4171^{+2129}_{-758}	$82978^{+455110}_{-58457}$
Alt.	-238 ± 46	$2.69^{+1.92}_{-1.67}$	217^{+7}_{-7}	3205^{+1258}_{-464}	$16731^{+101818}_{-11362}$

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

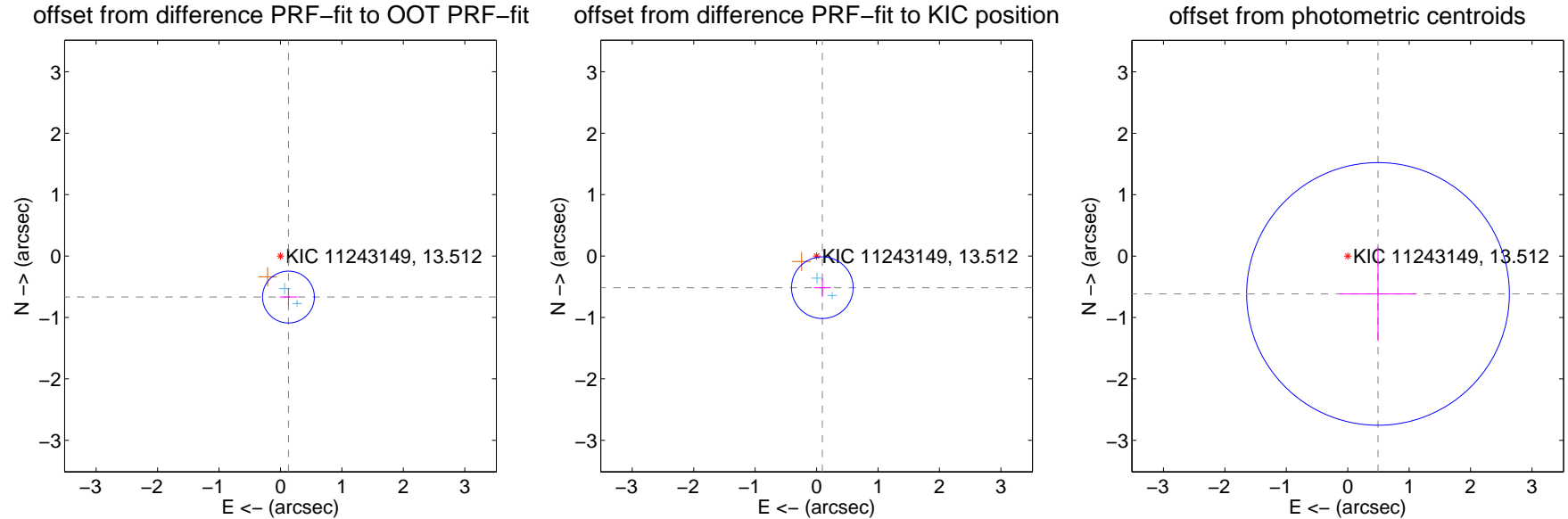
DV Centroid Data

Supplemental centroid analysis for 011243149-03. Kepler magnitude: 13.51. Transit SNR 7.43

There are 2 quarters with good PRF difference image offsets

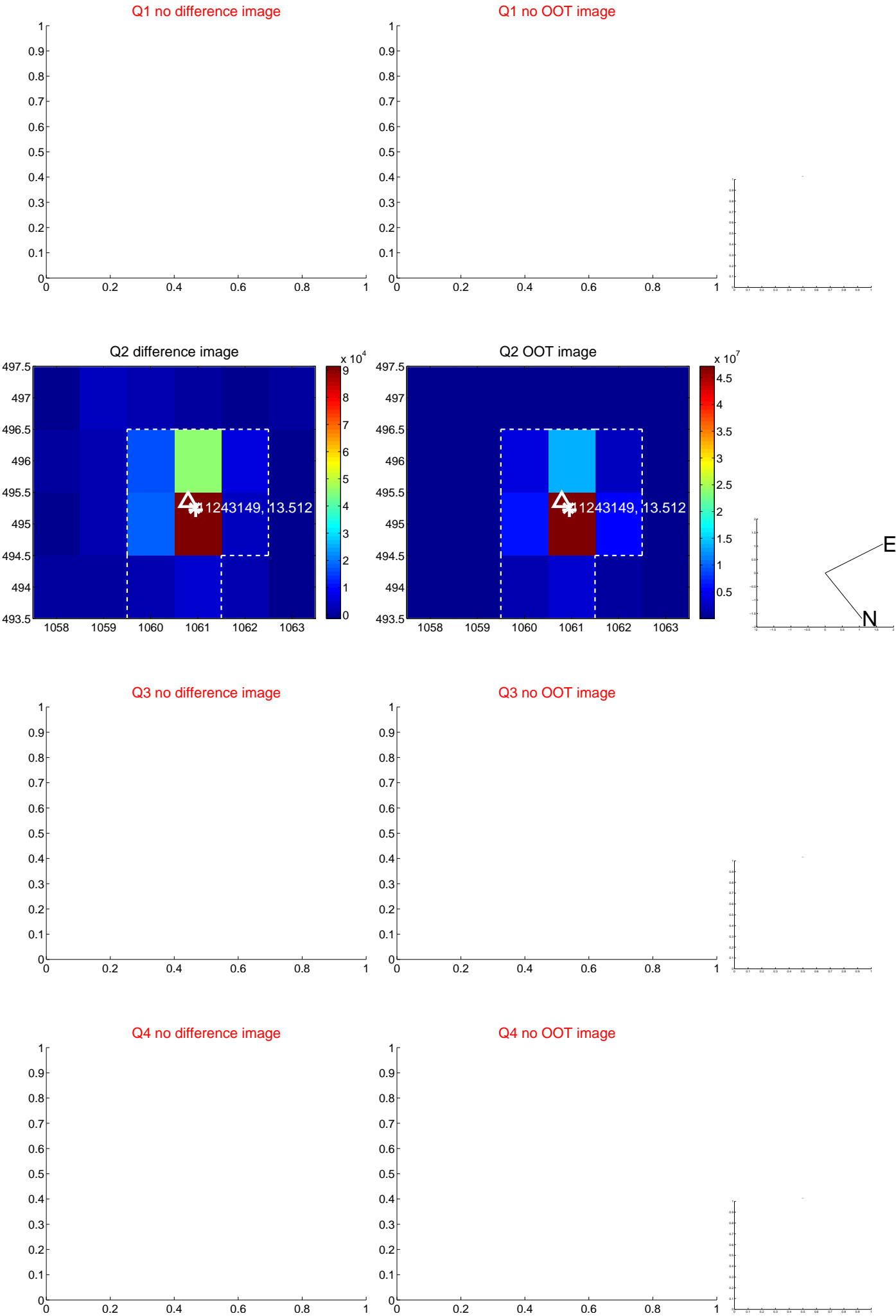
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.681 ± 0.141	4.84	-0.130 ± 0.143	-0.668 ± 0.141
PRF-fit source offset from KIC position	0.524 ± 0.167	3.13	-0.094 ± 0.138	-0.516 ± 0.150
photometric centroid source offset	0.79 ± 0.71	1.11	-0.49 ± 0.63	-0.62 ± 0.76

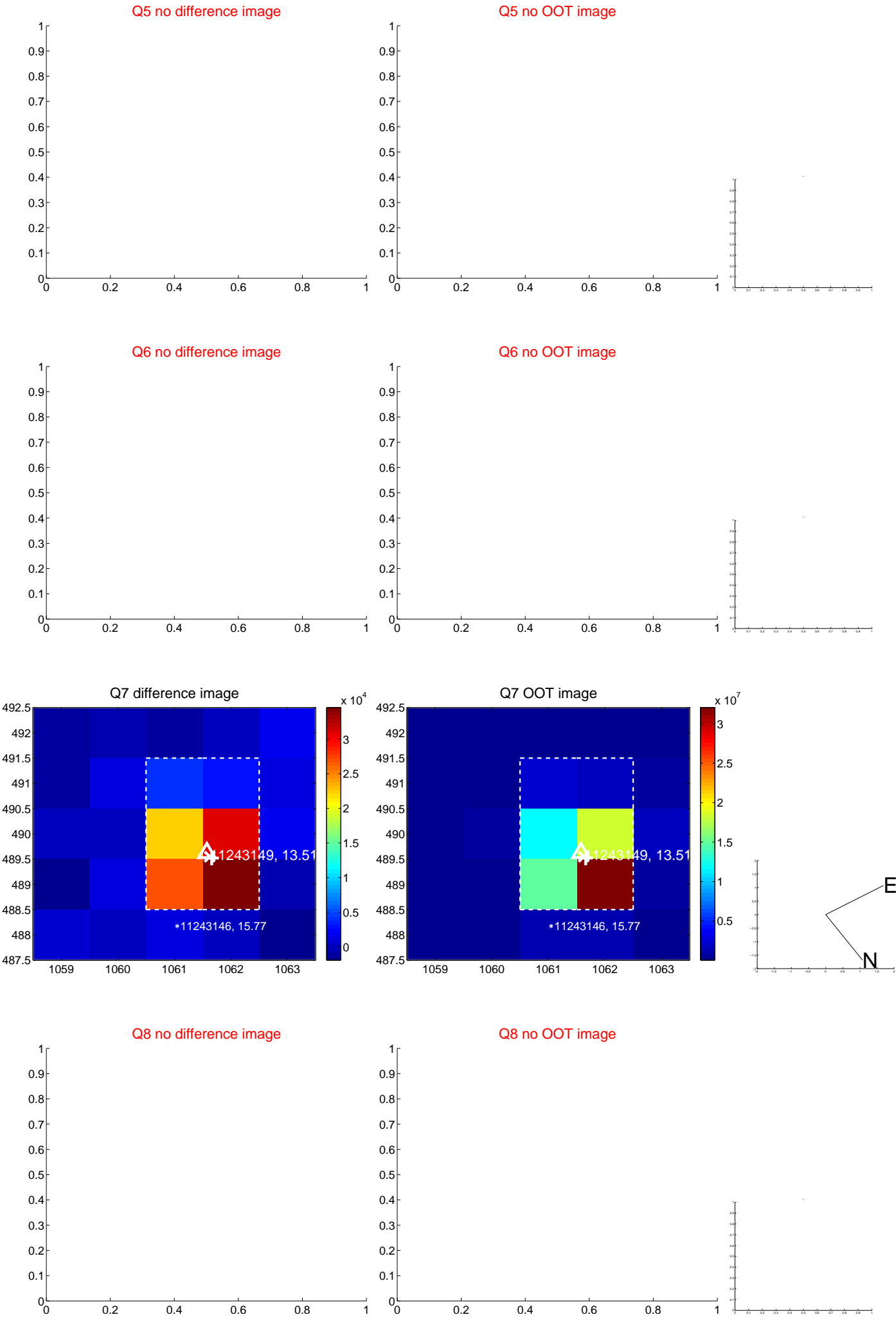


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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



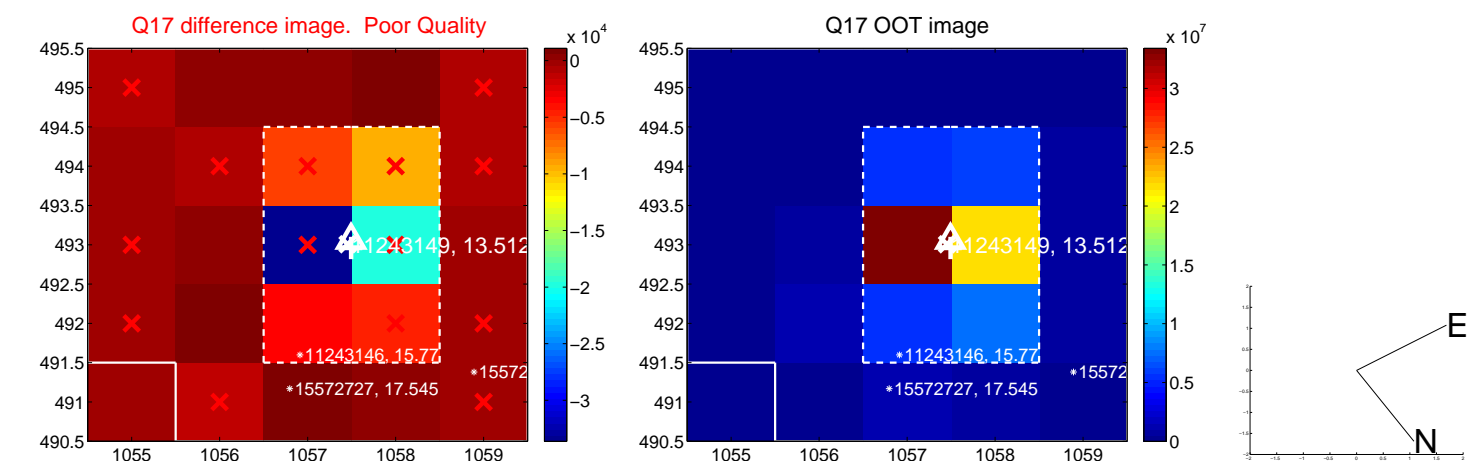
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



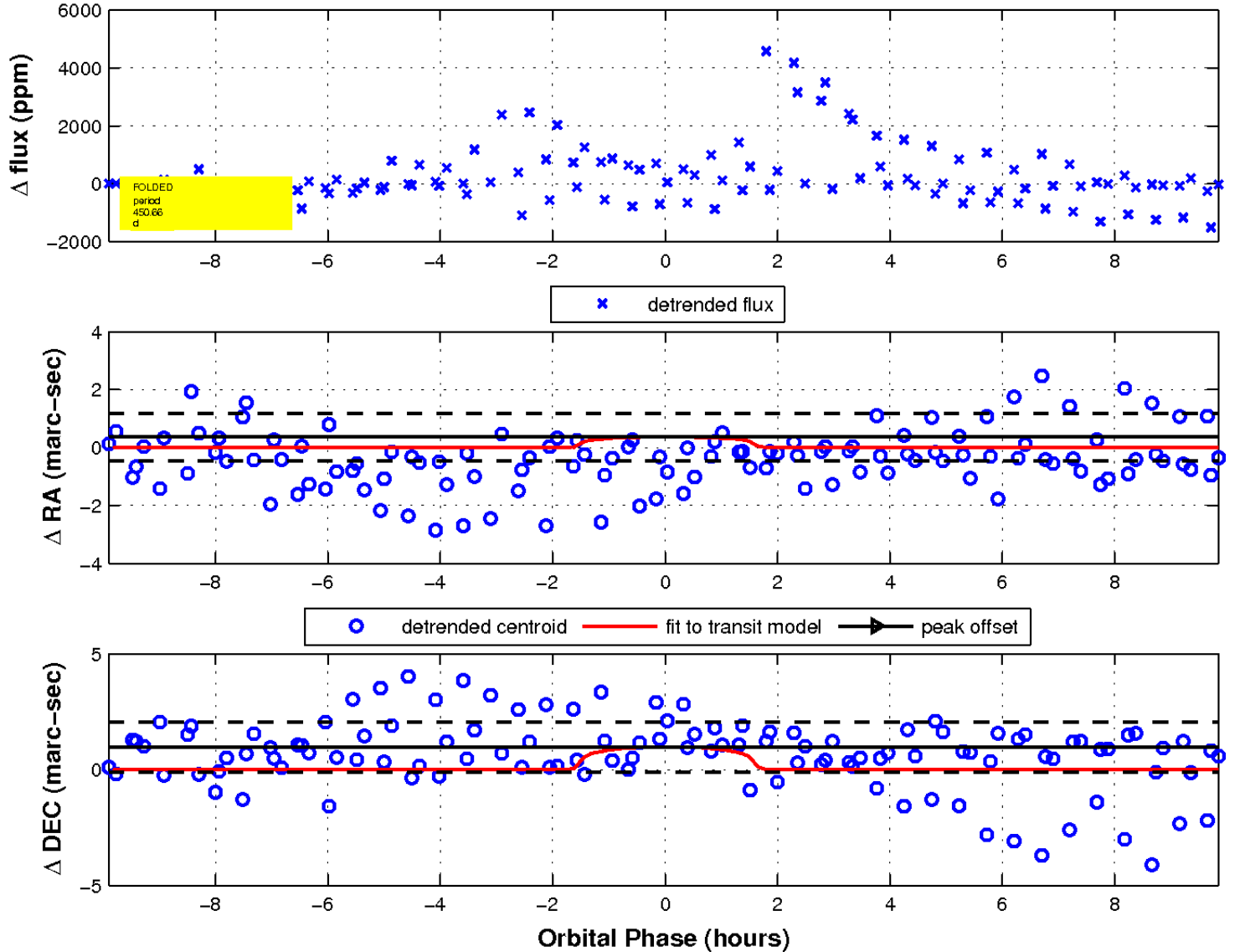
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

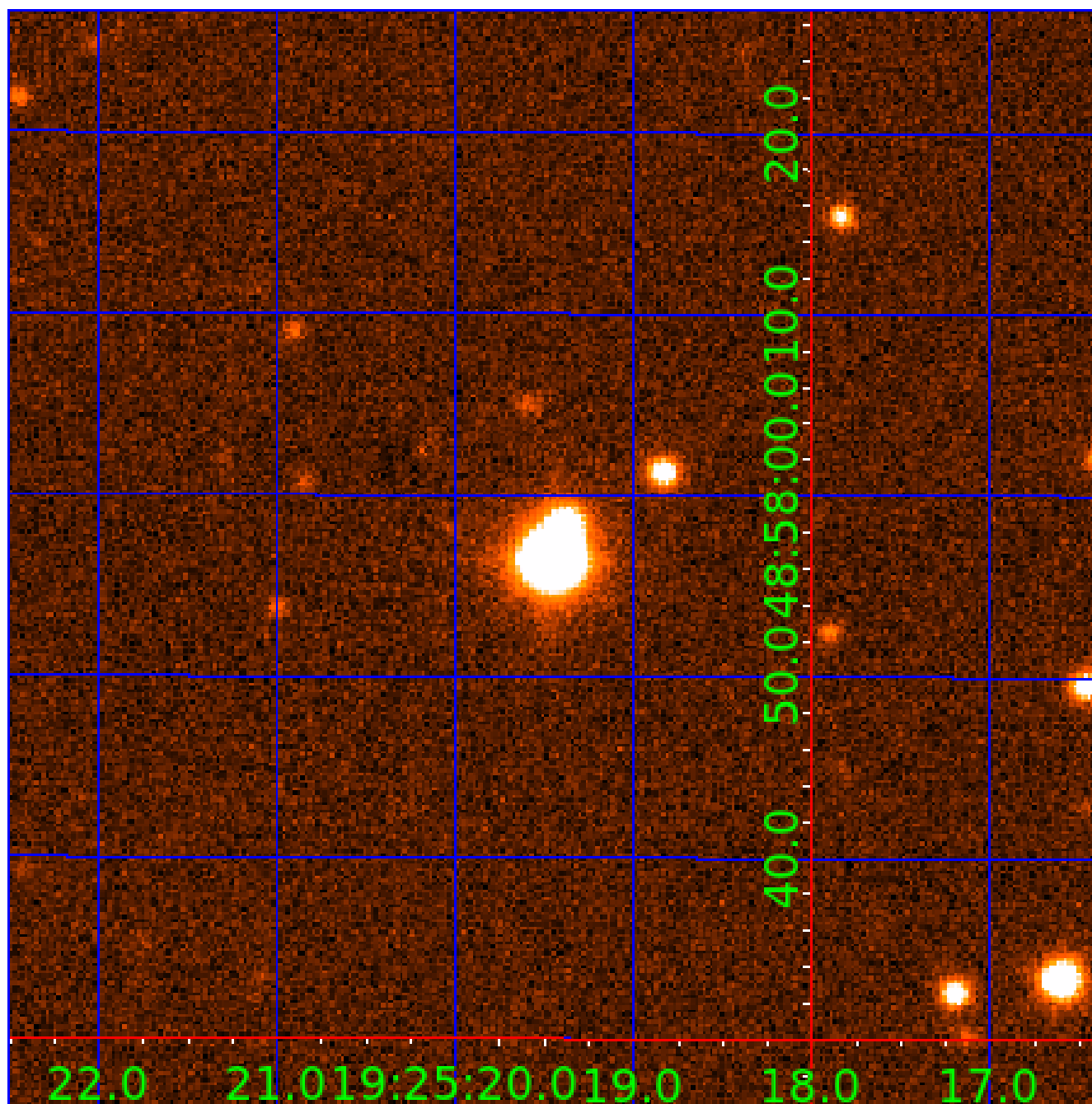


fluxWeightedCentroids, Planet 3 of 4



UKIRT Image

Declination



KIC 011243149

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})
011243149-01	OBS	No	626.485687	251.665090	1398.5	2.970	18.1	8.7	0.58	4556	2.10	0.09
011243149-02	OBS	No	496.386348	316.261543	2054.9	12.961	13.4	8.2	0.58	4556	2.57	0.12
011243149-03	OBS	No	450.655982	215.909980	1063.8	3.308	15.0	7.4	0.58	4556	1.97	0.14
011243149-04	OBS	No	484.428007	543.817932	1243.9	4.174	13.6	7.4	0.58	4556	2.17	0.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011243149-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011243149-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011243149-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
011243149-04	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.

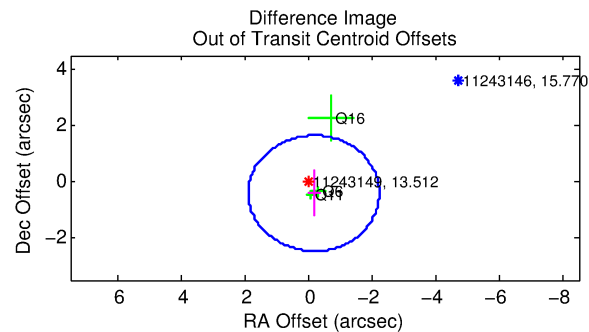
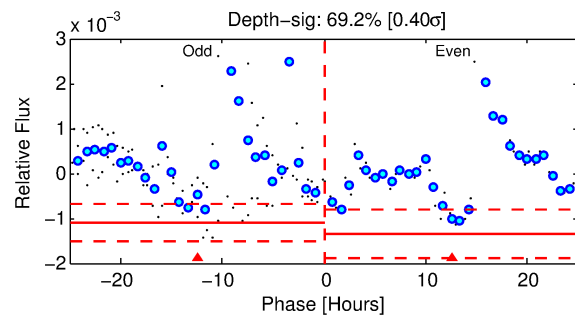
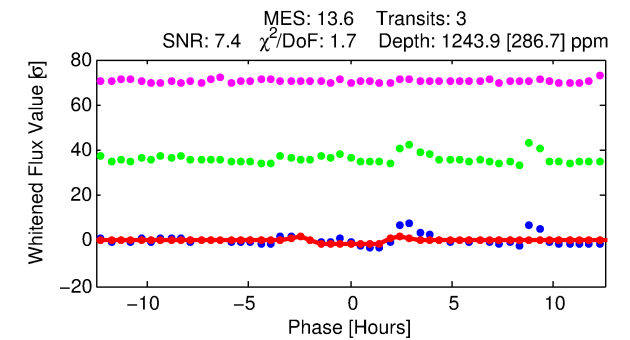
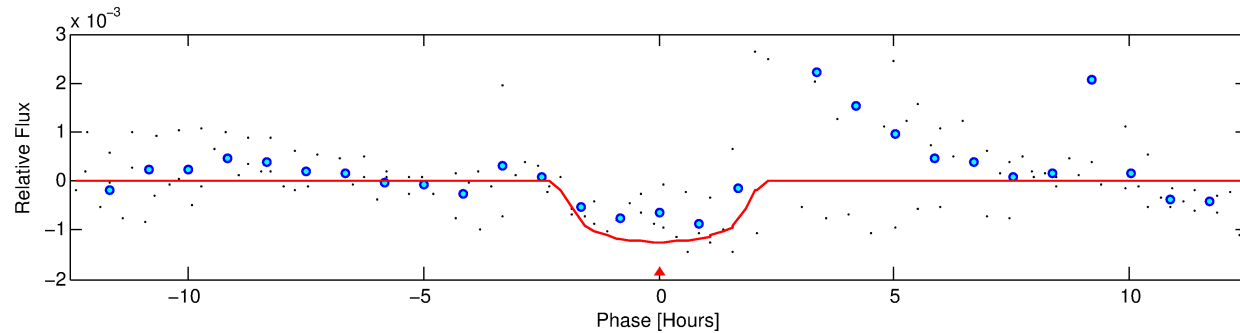
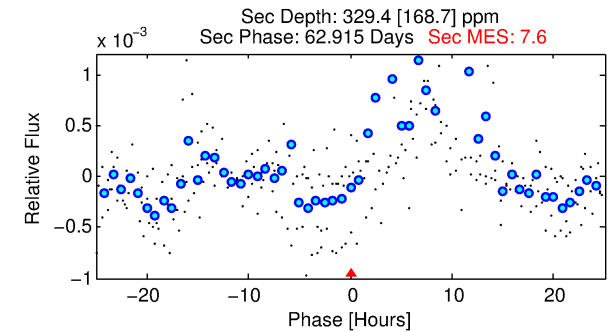
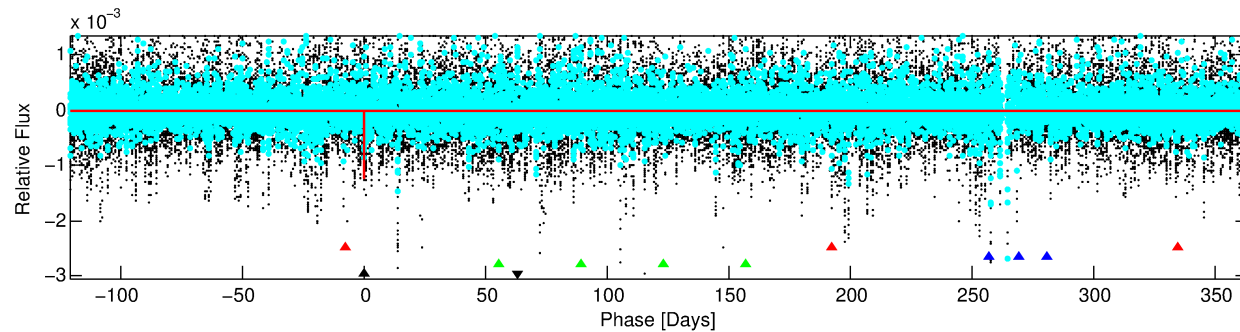
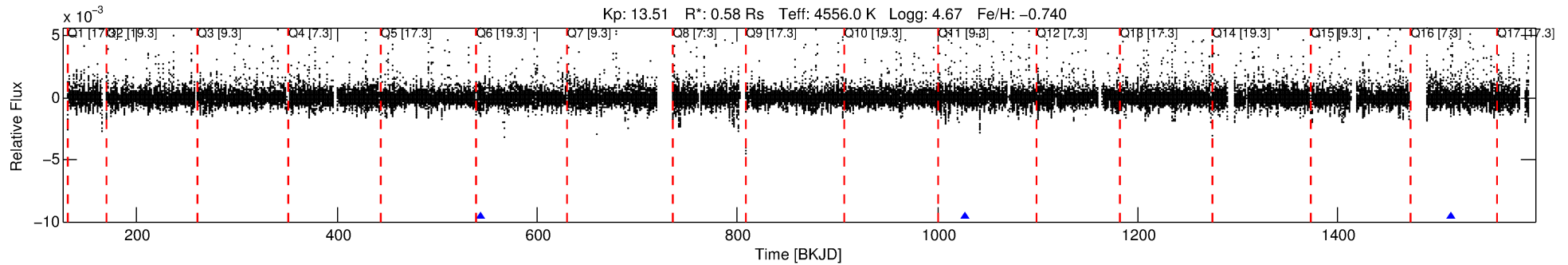
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011243149-04

No Significant Match Found

DV One-Page Summary

KIC: 11243149 Candidate: 4 of 4 Period: 484.428 d



DV Fit Results:

Period = 484.42801 [0.00560] d
Epoch = 543.8179 [0.0071] BKJD
Rp/R* = 0.0345 [0.0621]
a/R* = 672.20 [4134.40]
b = 0.70 [4.52]
Seff = 0.13 [0.02]
Teq = 153 [6] K
Rp = 2.17 [3.91] Re
a = 0.9988 [0.0674] AU
Ag = 38368.41 [139530.00] [0.27 σ]
Teffp = 3303 [3003] K [1.05 σ]

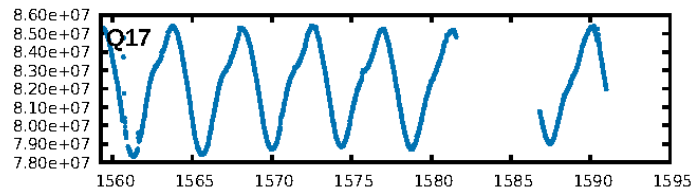
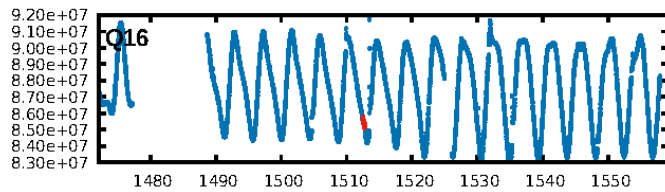
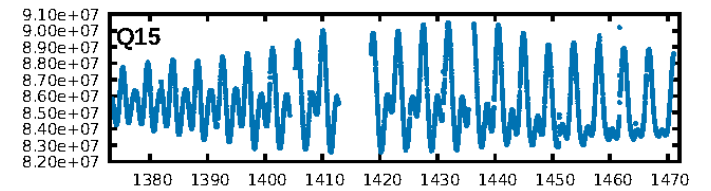
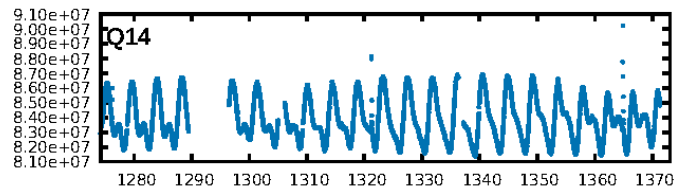
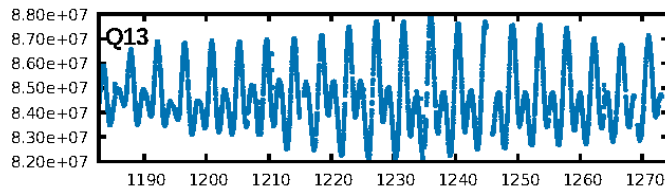
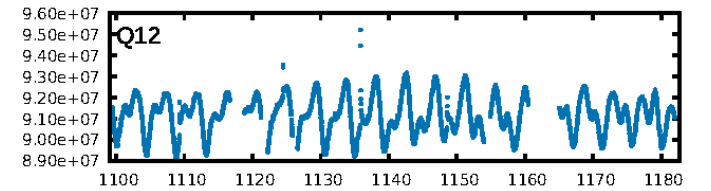
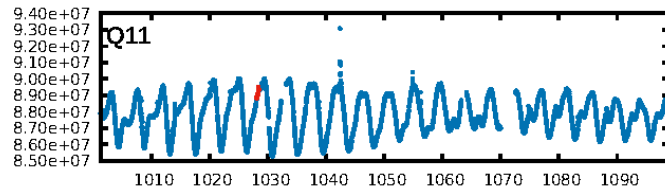
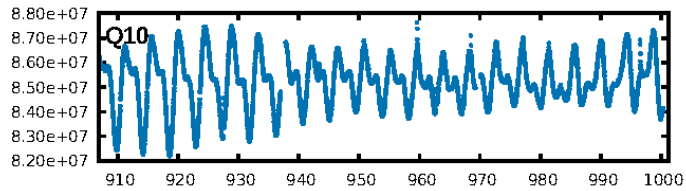
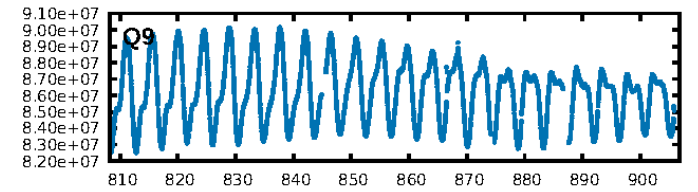
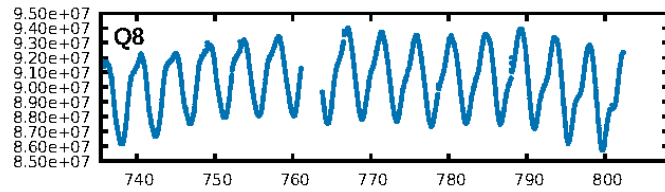
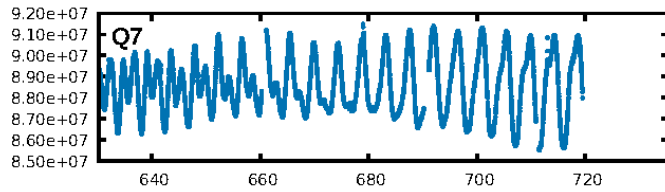
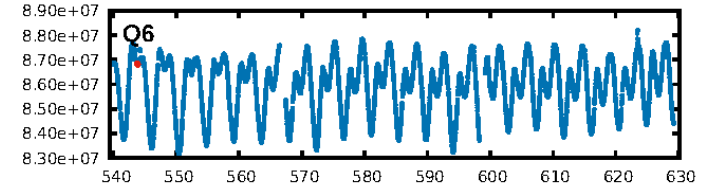
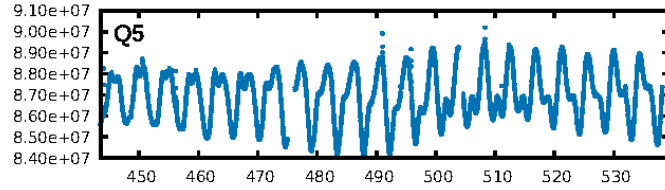
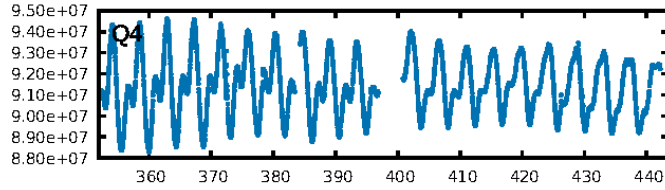
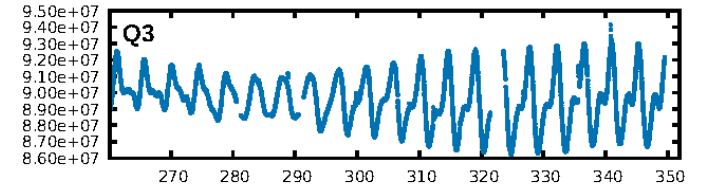
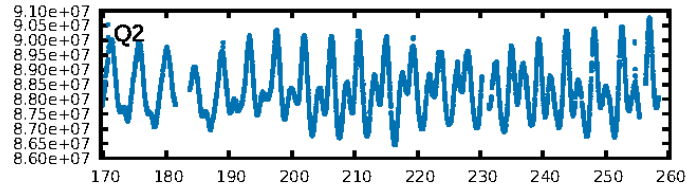
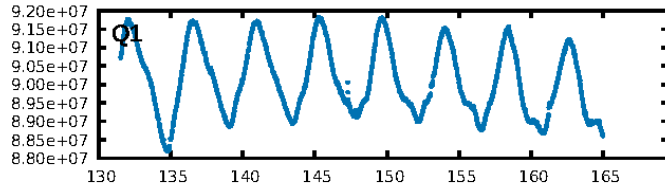
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [152.18 σ]
LongPeriod-sig: 100.0% [21.08 σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 12.3%
Bootstrap-pfa: 5.12e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.357
Centroid-sig: 1.3%
Centroid-so: 0.763 arcsec [1.31 σ]
OotOffset-rm: 0.443 arcsec [0.65 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-rm: 0.301 arcsec [0.45 σ]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

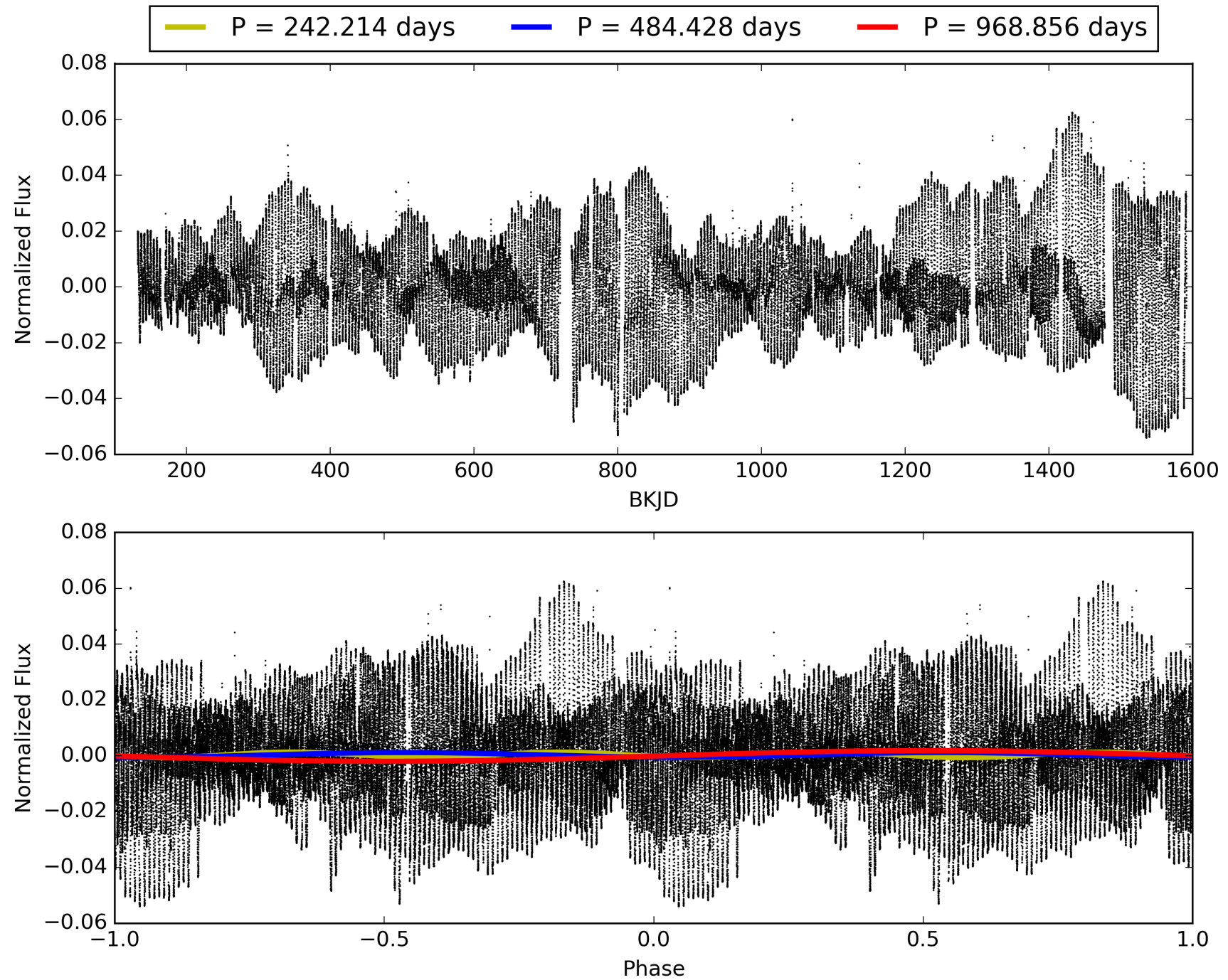
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:27:42 Z

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

TCE 011243149-04, PDC Light Curves

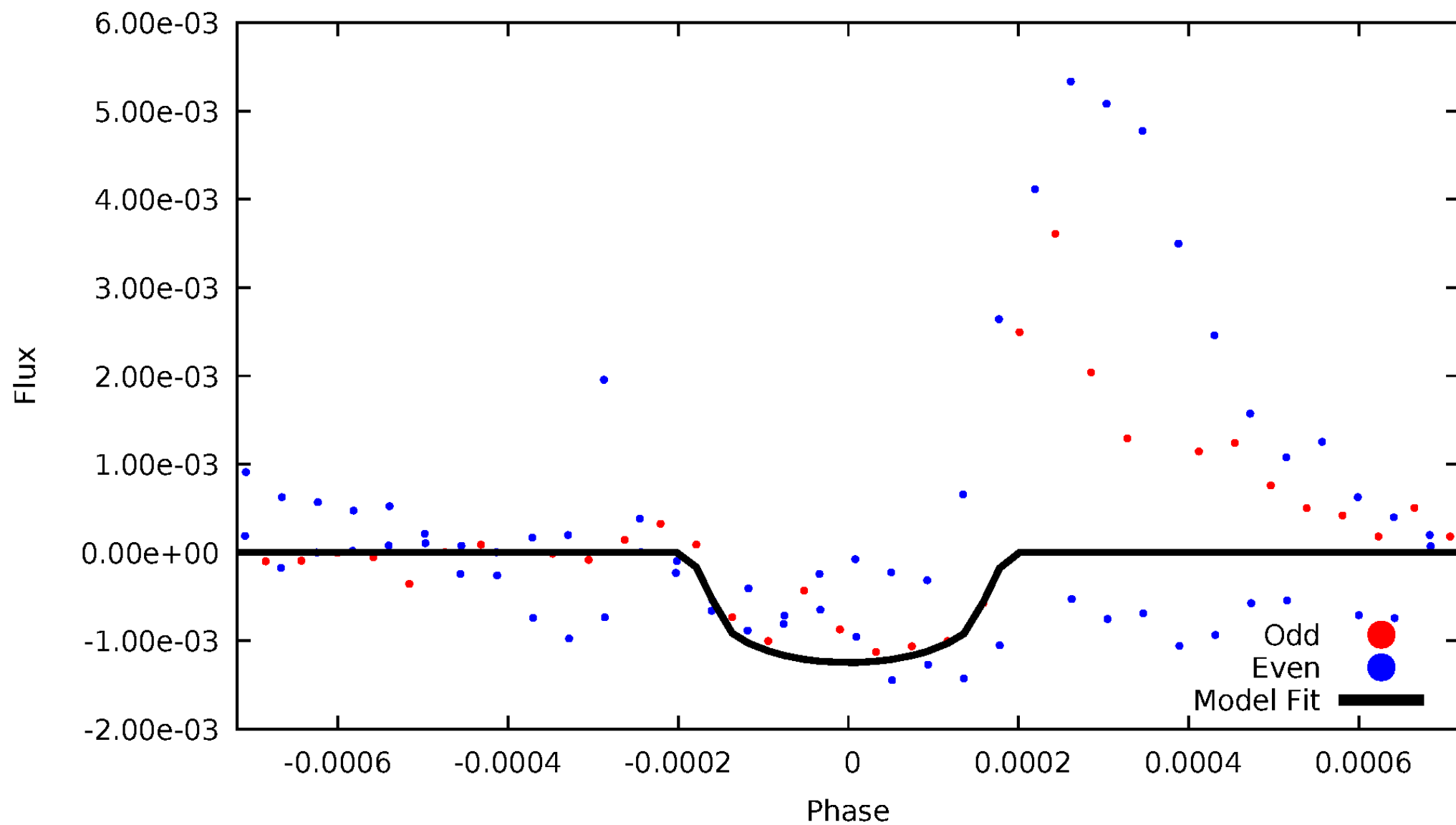


TCE 011243149-04



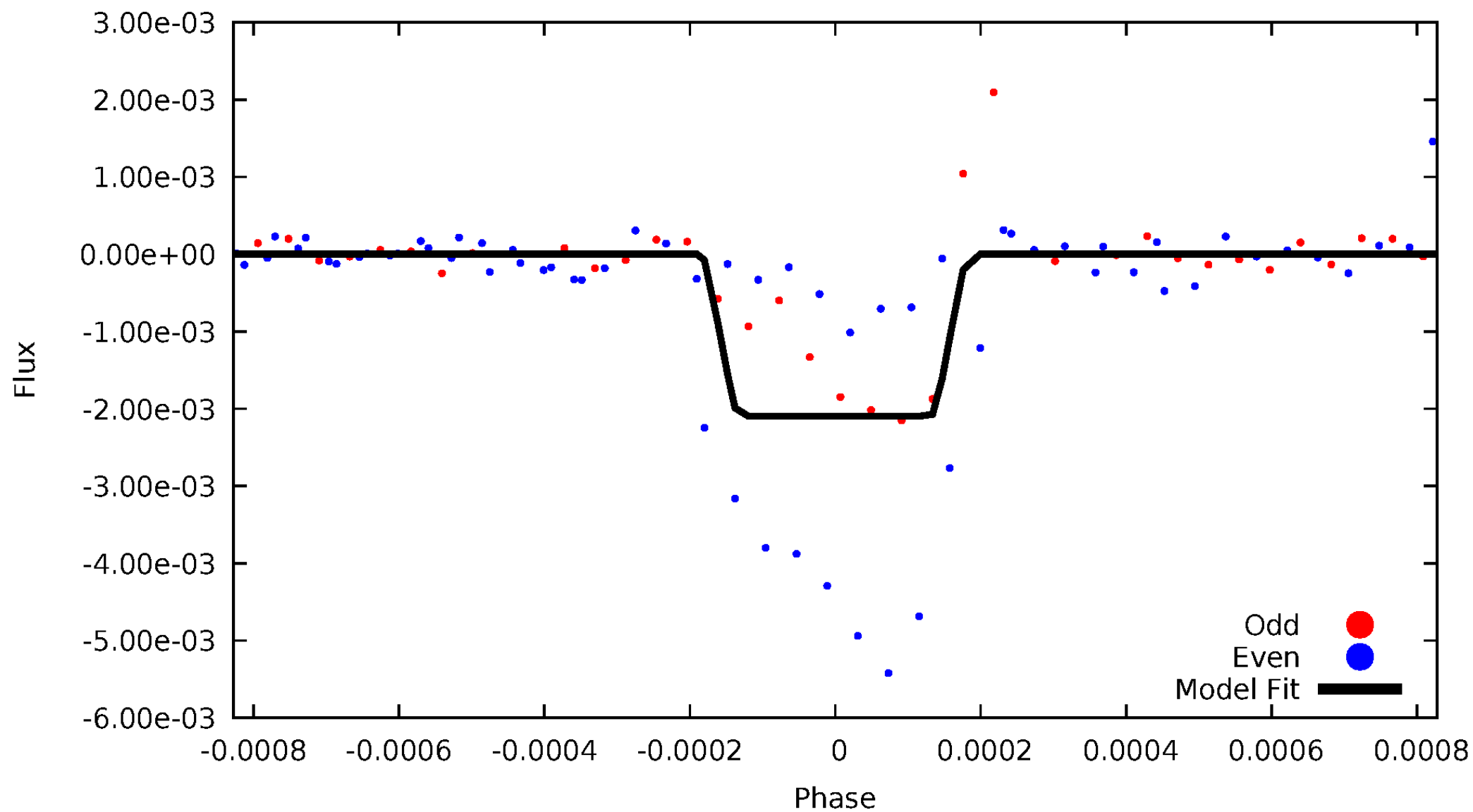
DV Odd/Even

TCE 011243149-04



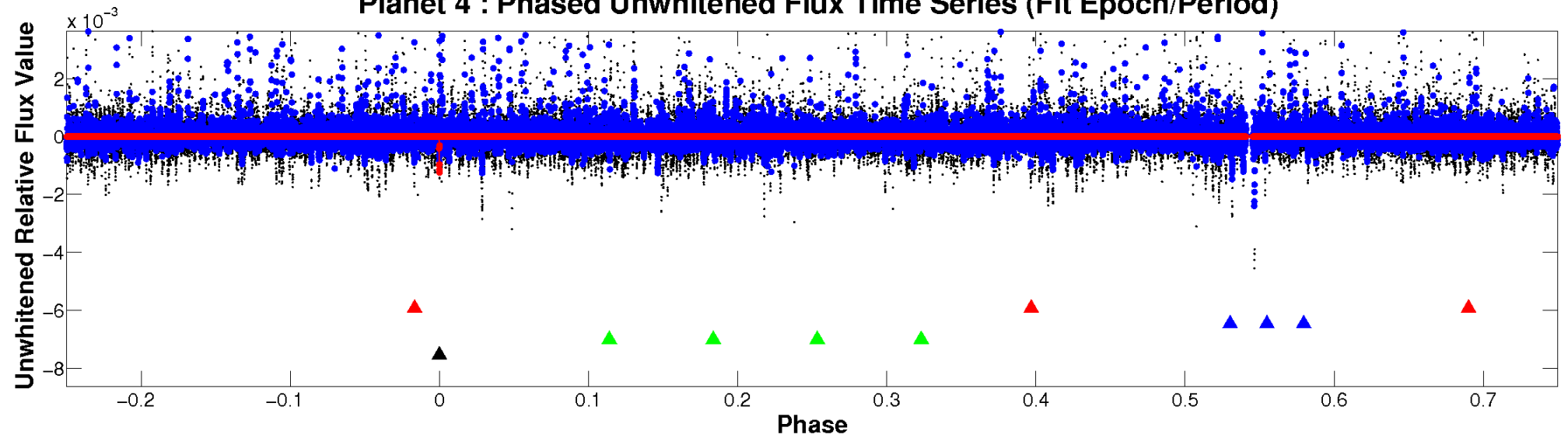
ALT Odd/Even

TCE 011243149-04

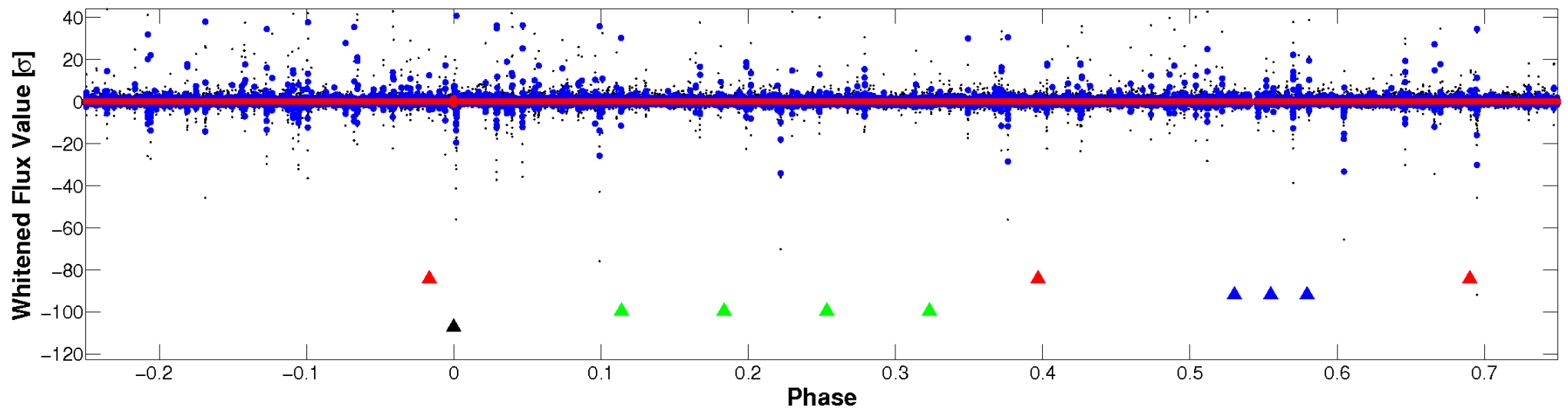


Non-Whitened Vs. Whitened Light Curve

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

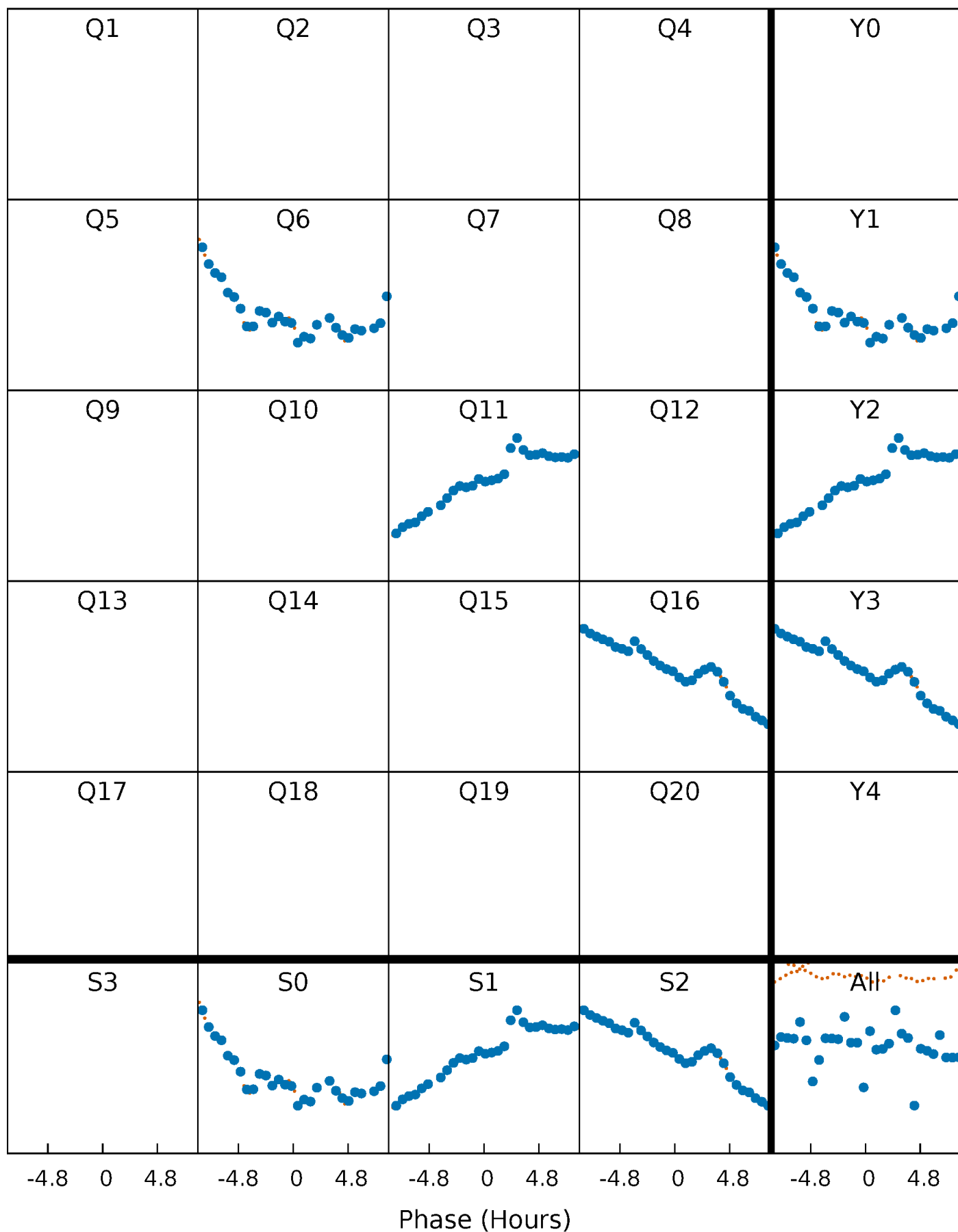


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



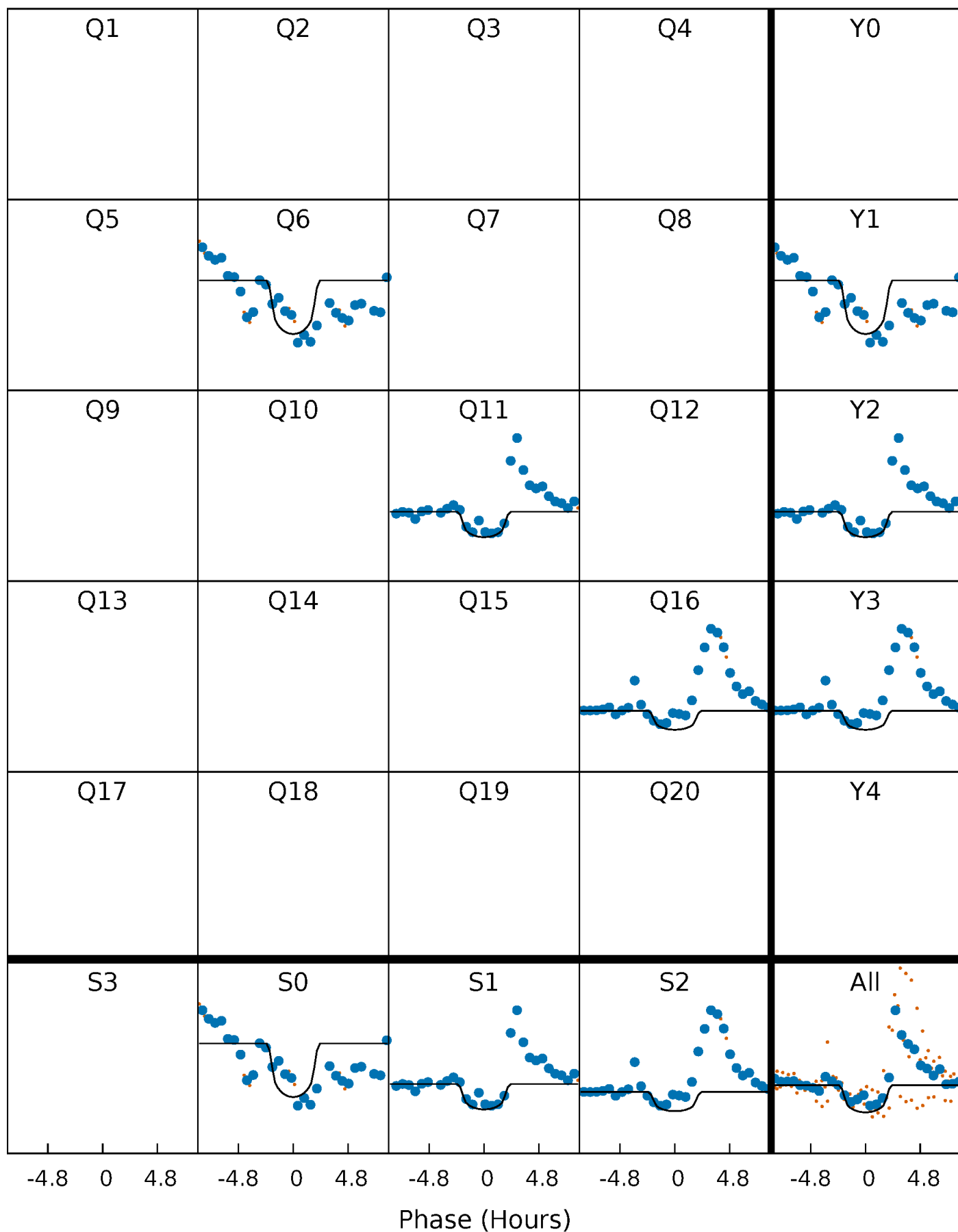
PDC Quarter-Phased Transit Curves

TCE 011243149-04 P=484.428007 Days $T_0=543.817932$ (BKJD)



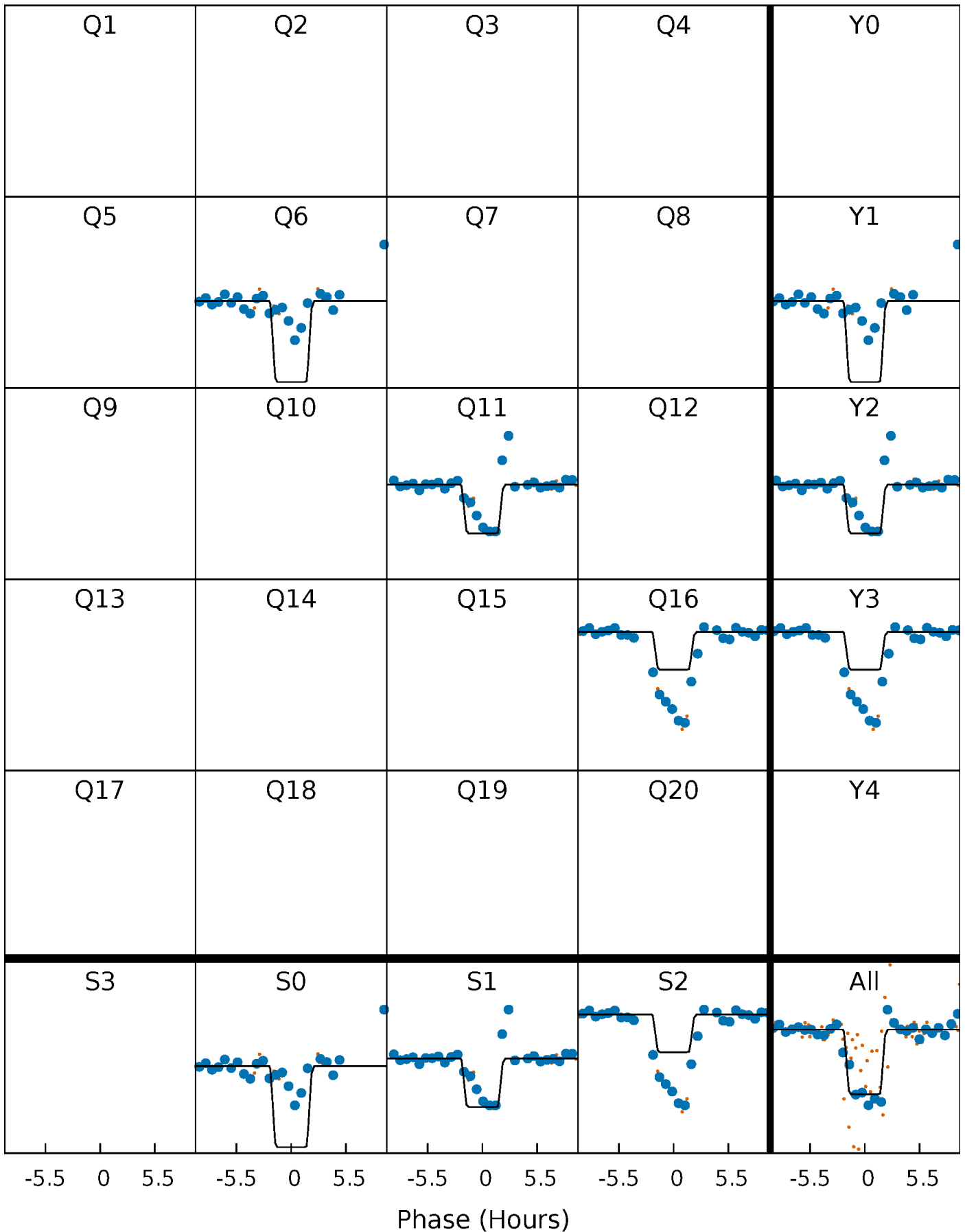
DV Quarter-Phased Transit Curves

TCE 011243149-04 P=484.428007 Days $T_0=543.817932$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

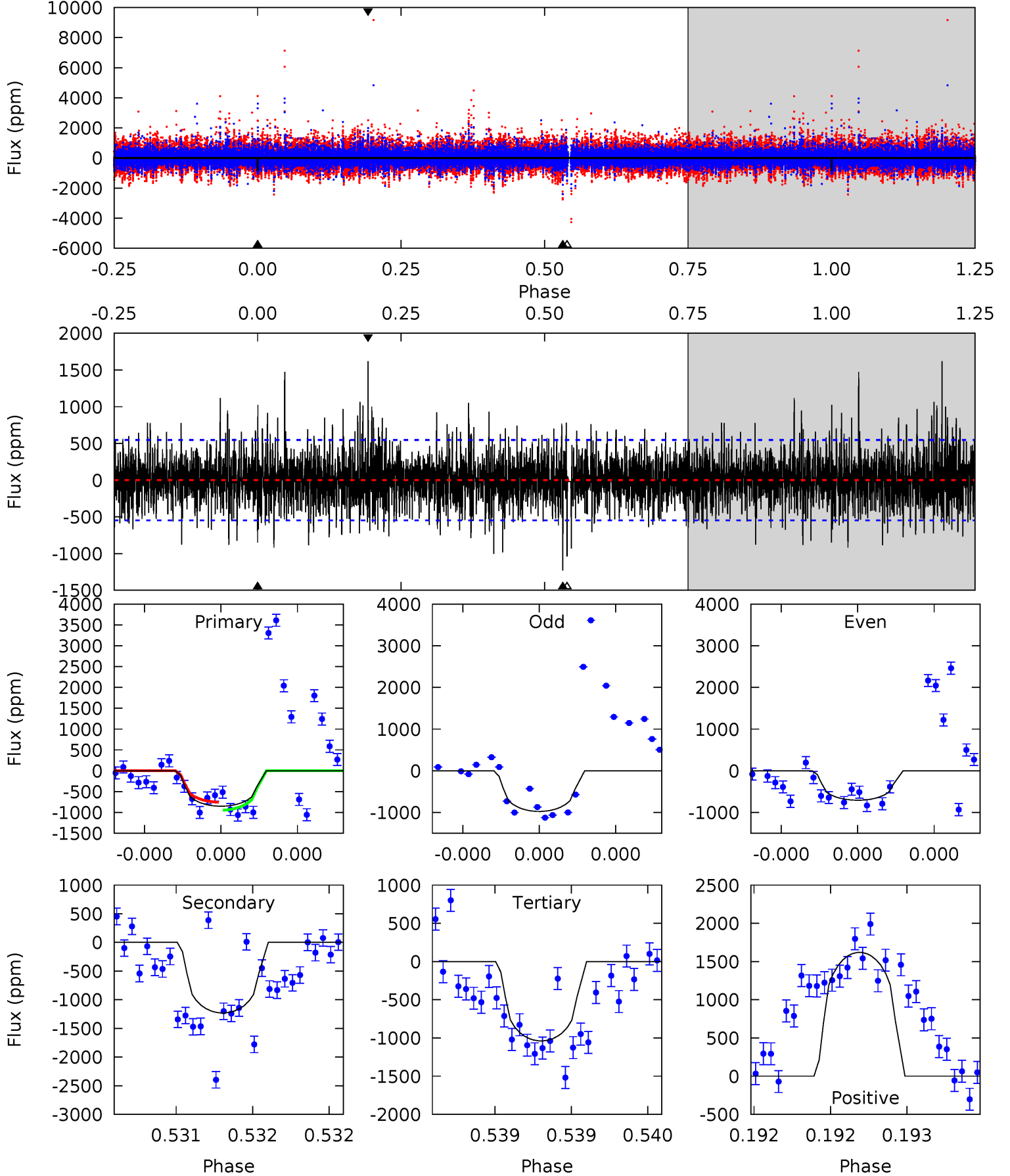
TCE 011243149-04 P=484.425218 Days $T_0=543.832908$ (BKJD)



DV Model-Shift Uniqueness Test

011243149-04, P = 484.428007 Days, E = 59.389925 Days

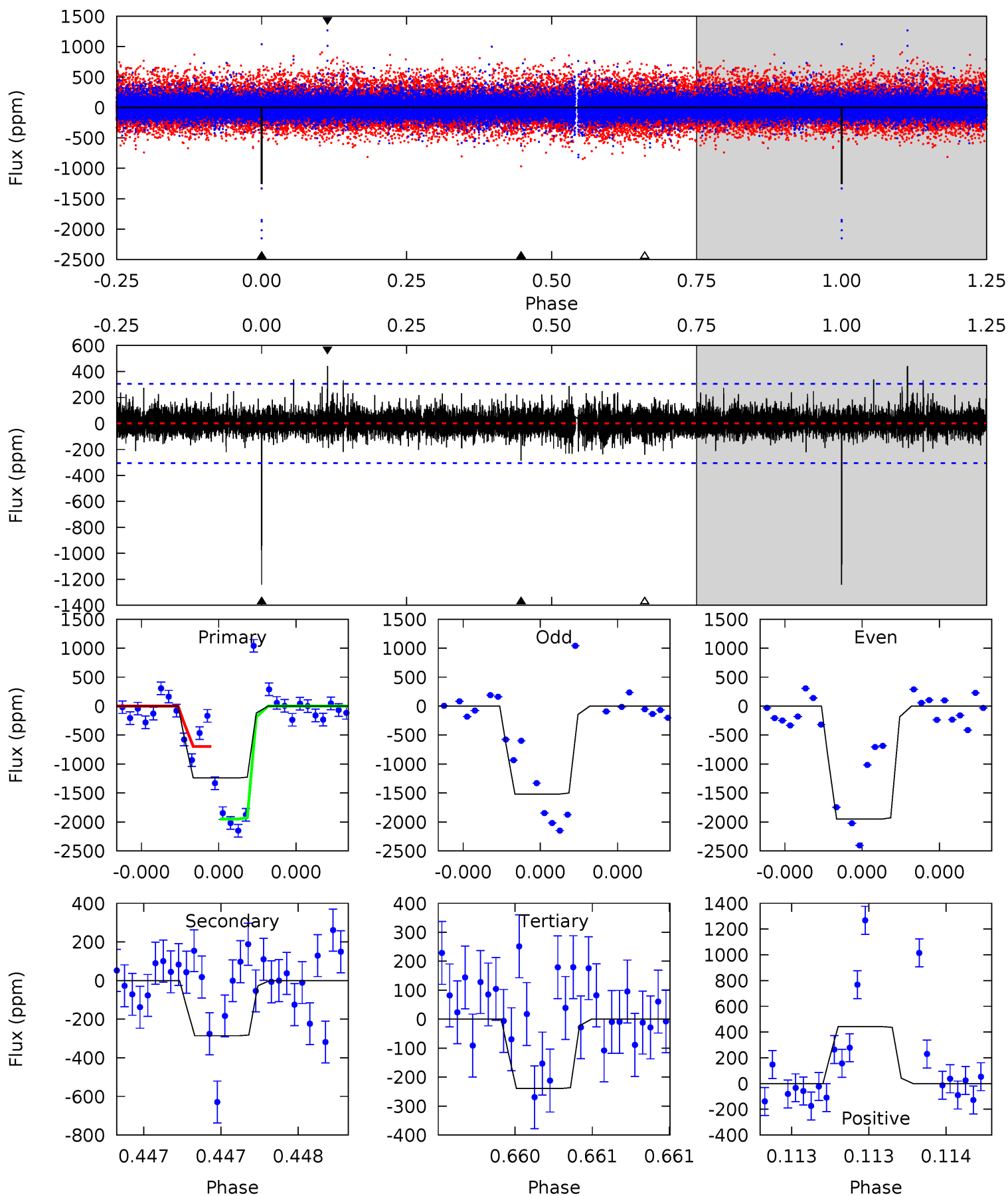
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.75	12.7	10.7	16.7	5.64	3.58	2.52	-1.94	-7.92	1.97	-4.01	0.86	0.80	0.57	0.99



Alt Model-Shift Uniqueness Test

011243149-04, P = 484.425218 Days, E = 59.407690 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	5.26	4.41	8.14	5.63	3.57	0.97	18.5	14.7	0.85	-2.88	4.68	1.41	0.26	0



Stellar Parameters For KIC 011243149

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4556^{+123}_{-137}	$4.670^{+0.052}_{-0.028}$	$-0.740^{+0.300}_{-0.300}$	$0.576^{+0.047}_{-0.047}$	$0.566^{+0.053}_{-0.033}$	$4.172^{+0.958}_{-0.537}$
	+3%/-3%	+1%/-1%	+41%/-41%	+8%/-8%	+9%/-6%	+23%/-13%
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 011243149-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1230 ± 97	$3.66^{+3.55}_{-2.47}$	211^{+8}_{-7}	3801^{+2111}_{-749}	$51563^{+411048}_{-38034}$
Alt.	-285 ± 54	$4.33^{+3.27}_{-2.87}$	212^{+6}_{-7}	2894^{+1113}_{-404}	8627^{+67909}_{-5955}

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 $A_{obs} \gg 1.0$

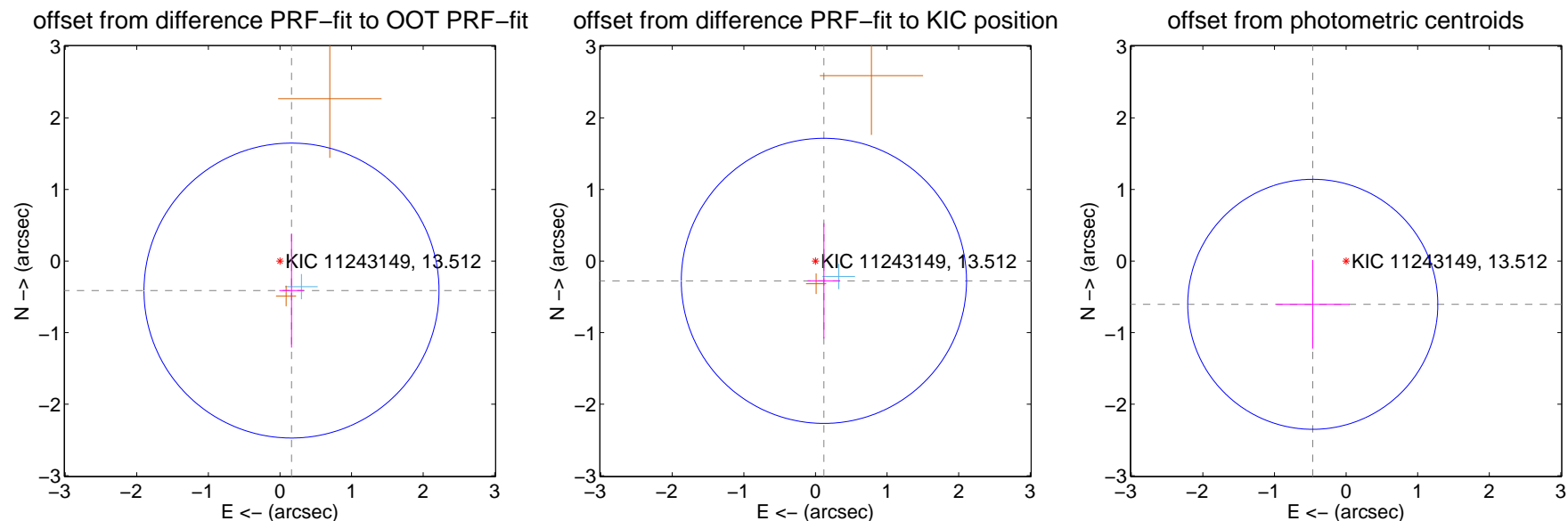
DV Centroid Data

Supplemental centroid analysis for 011243149-04. Kepler magnitude: 13.51. Transit SNR 7.36

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.443 ± 0.687	0.65	-0.161 ± 0.171	-0.413 ± 0.797
PRF-fit source offset from KIC position	0.301 ± 0.664	0.45	-0.118 ± 0.228	-0.277 ± 0.806
photometric centroid source offset	0.76 ± 0.58	1.31	0.47 ± 0.51	-0.60 ± 0.62

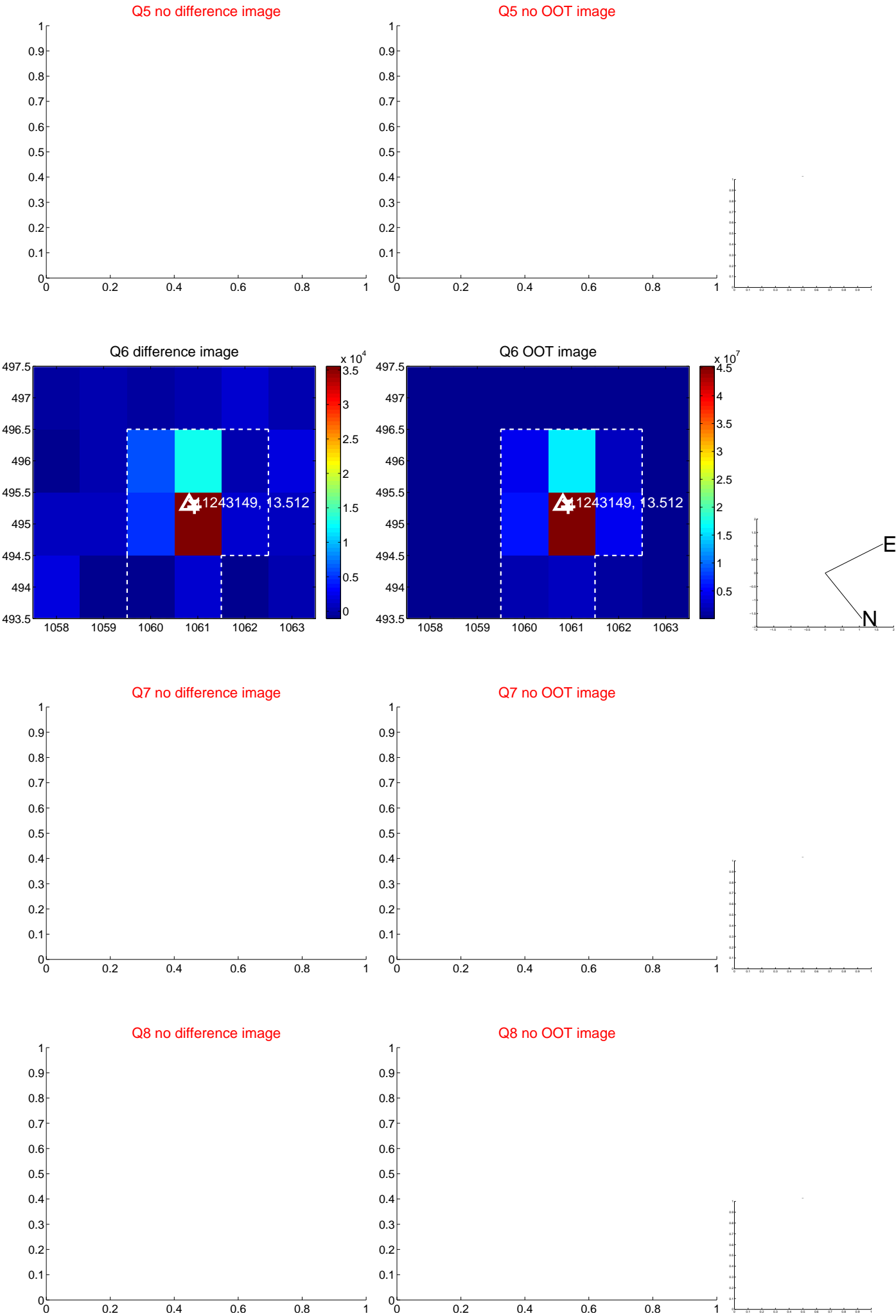


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

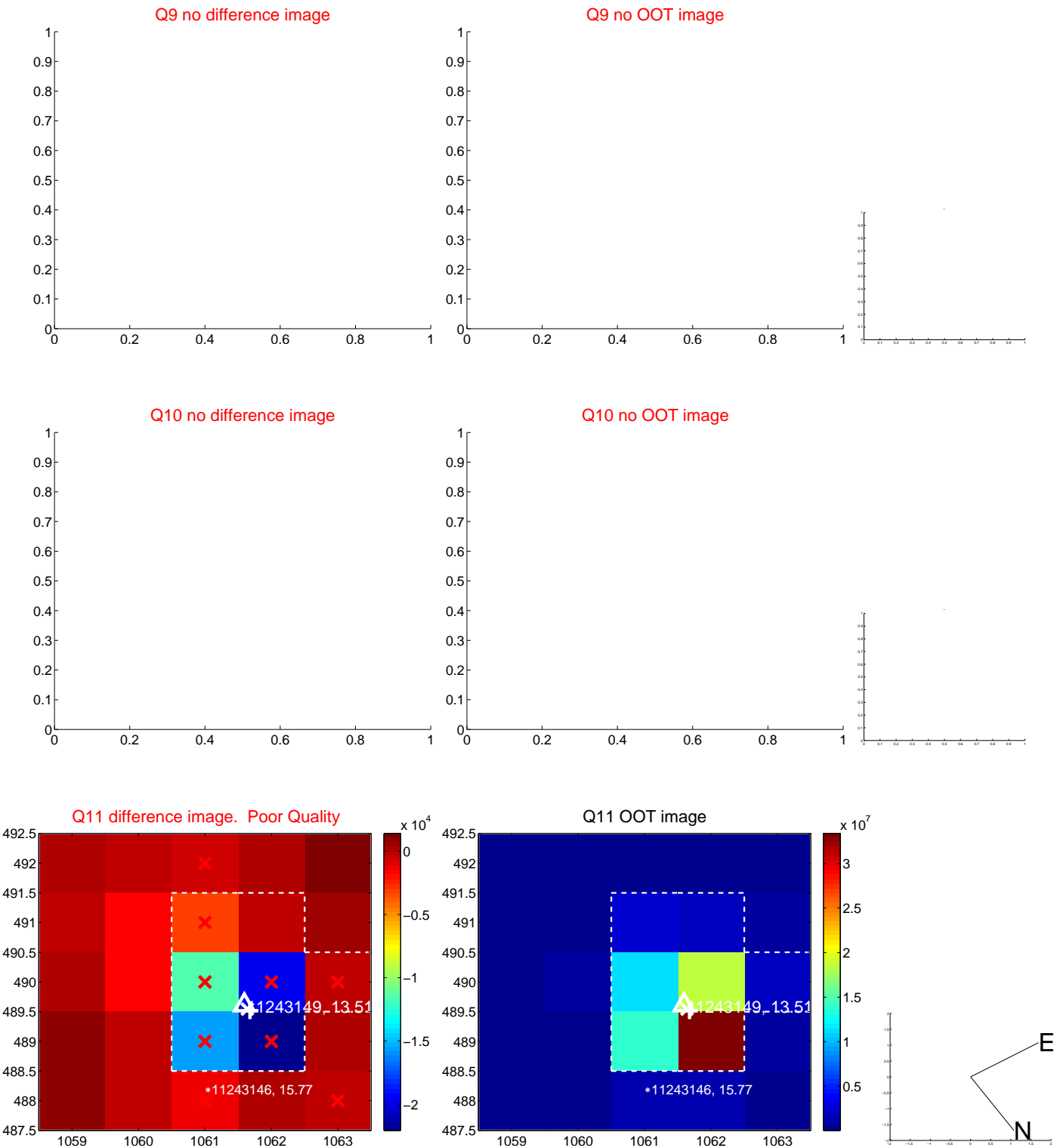
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



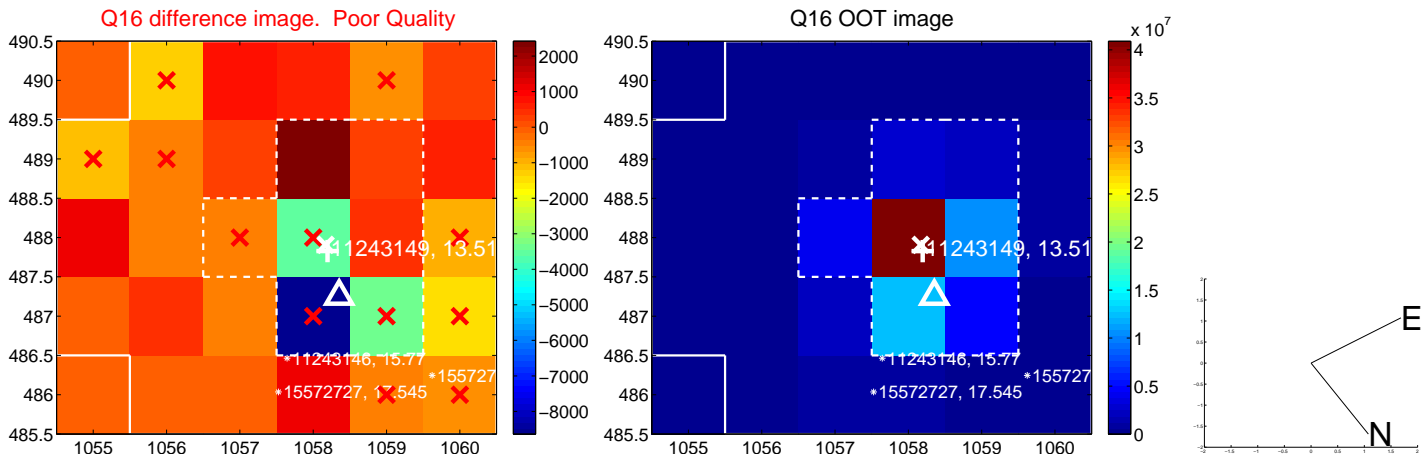
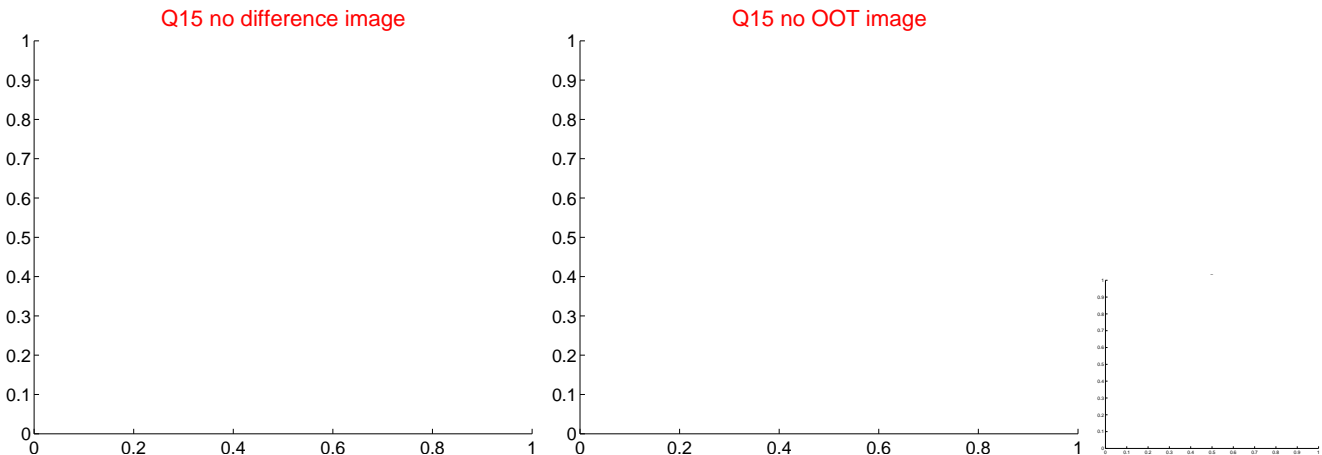
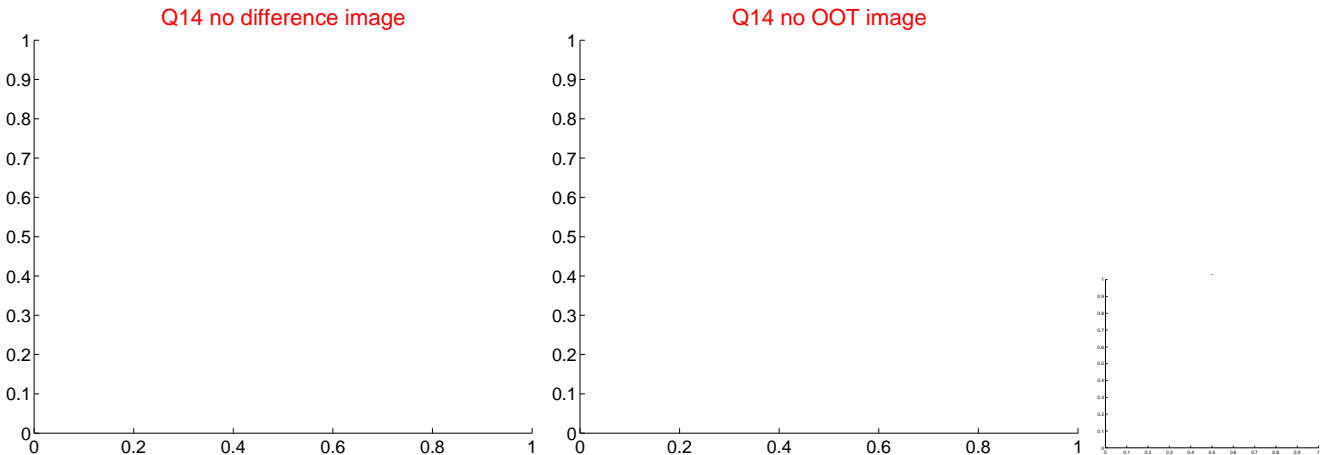
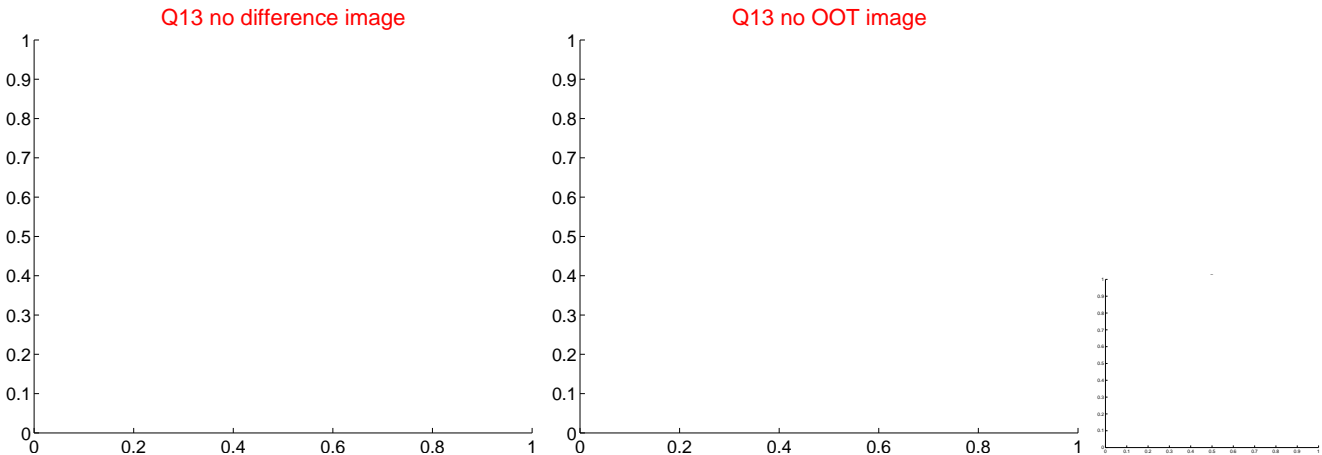
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



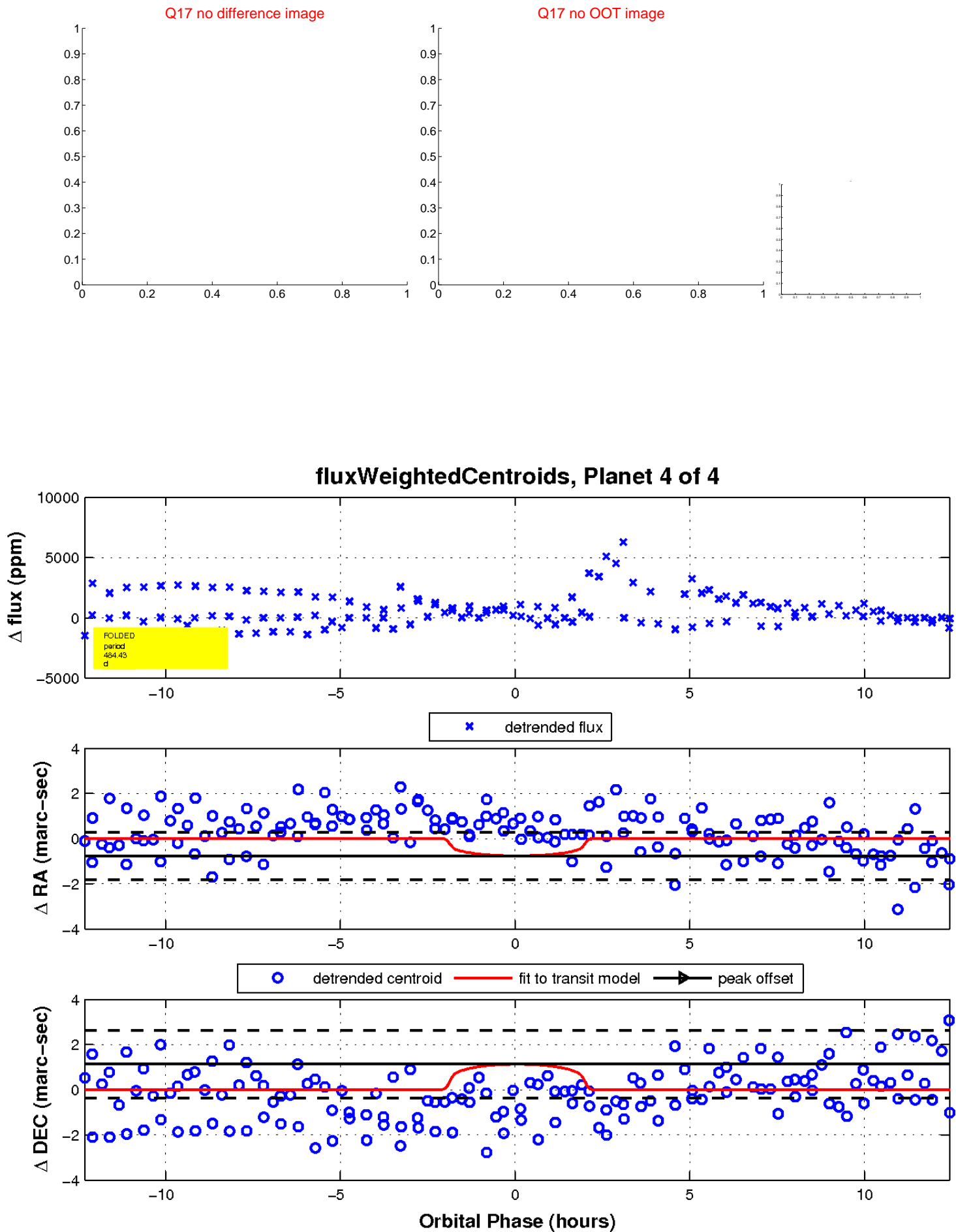
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white \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

