KIC 006445968

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 ($S_\oplus$)
006445968-01	OBS	No	413.180414	222.229408	2176.8	5.955	10.2	7.7	0.75	5266	3.47	0.41
006445968-02	OBS	No	275.668605	207.767508	1460.7	10.400	11.5	5.7	0.75	5266	2.87	0.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006445968-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006445968-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

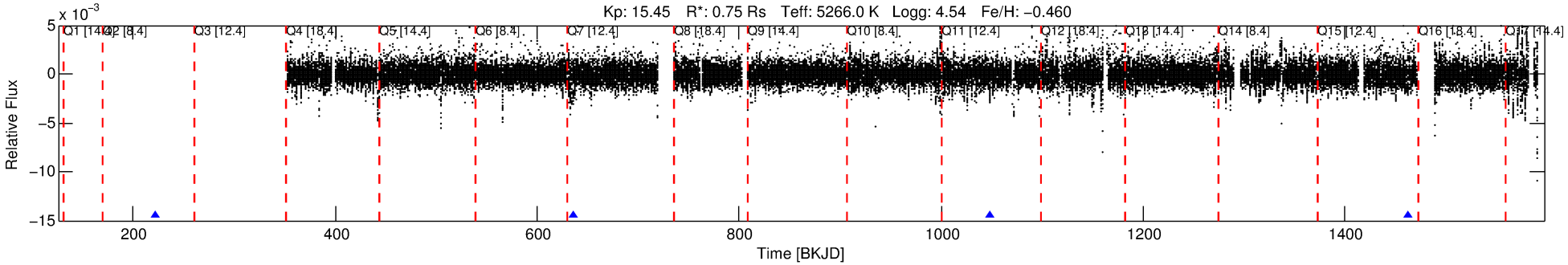
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

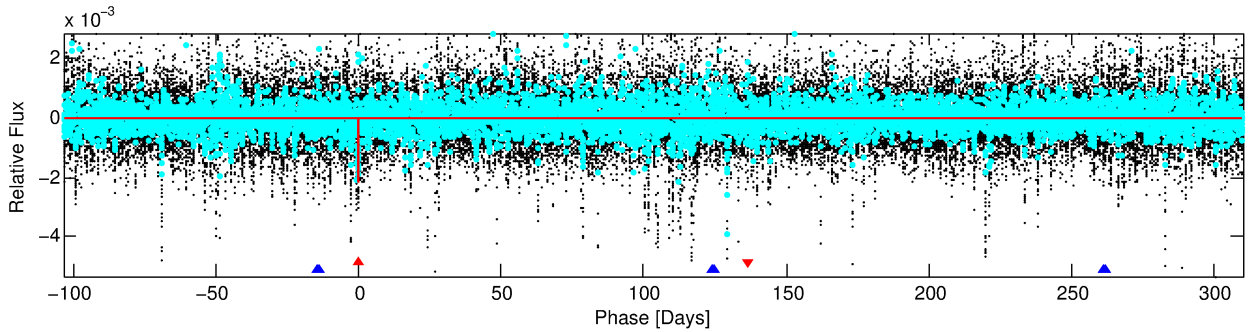
Ephemeris Match Information For 006445968-01

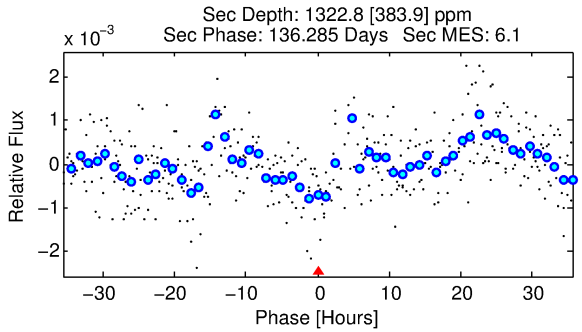
No Significant Match Found

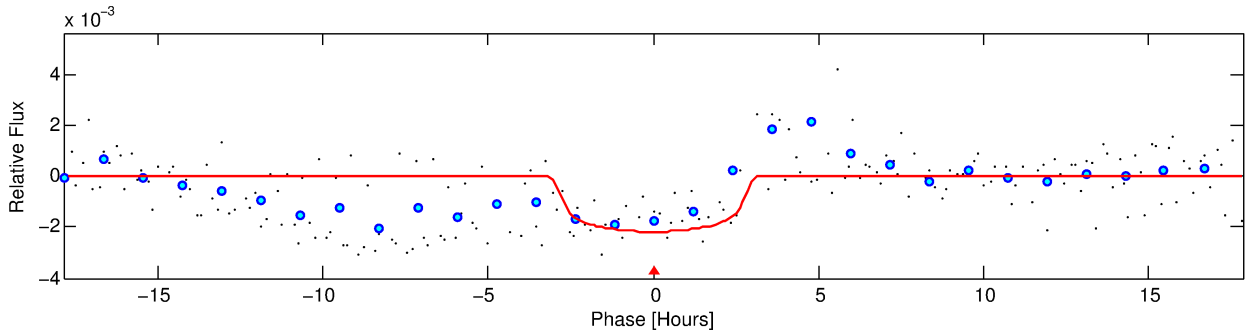
DV One-Page Summary

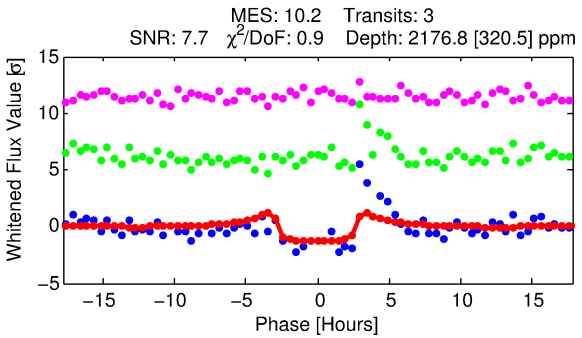
KIC: 6445968 Candidate: 1 of 2 Period: 413.180 d

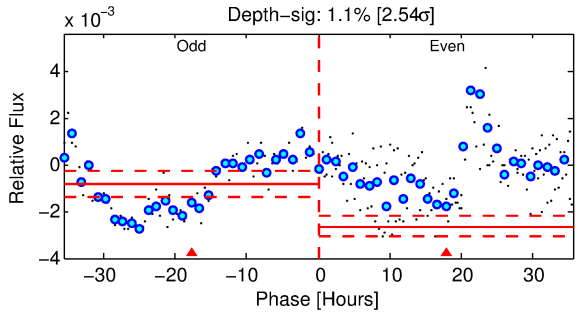


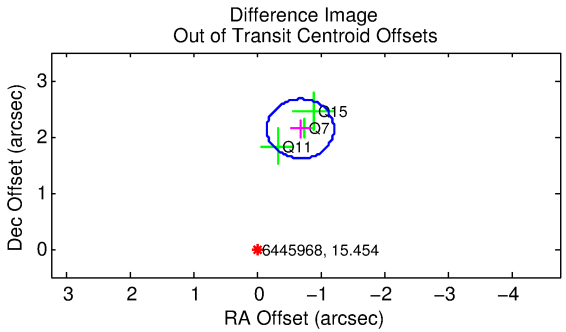












DV Fit Results:

Period = 413.18041 [0.00593] d
Epoch = 222.2294 [0.0129] BKJD
Rp/R* = 0.0425 [0.0405]
a/R* = 528.03 [1979.39]
b = 0.31 [11.12]

Seff = 0.41 [0.09]
Teq = 205 [11] K
Rp = 3.47 [3.34] Re
a = 0.9656 [0.1093] AU

Ag = 56287.96 [108985.79] [0.52σ]
Teffp = 4873 [2356] K [1.98σ]

DV Diagnostic Results:

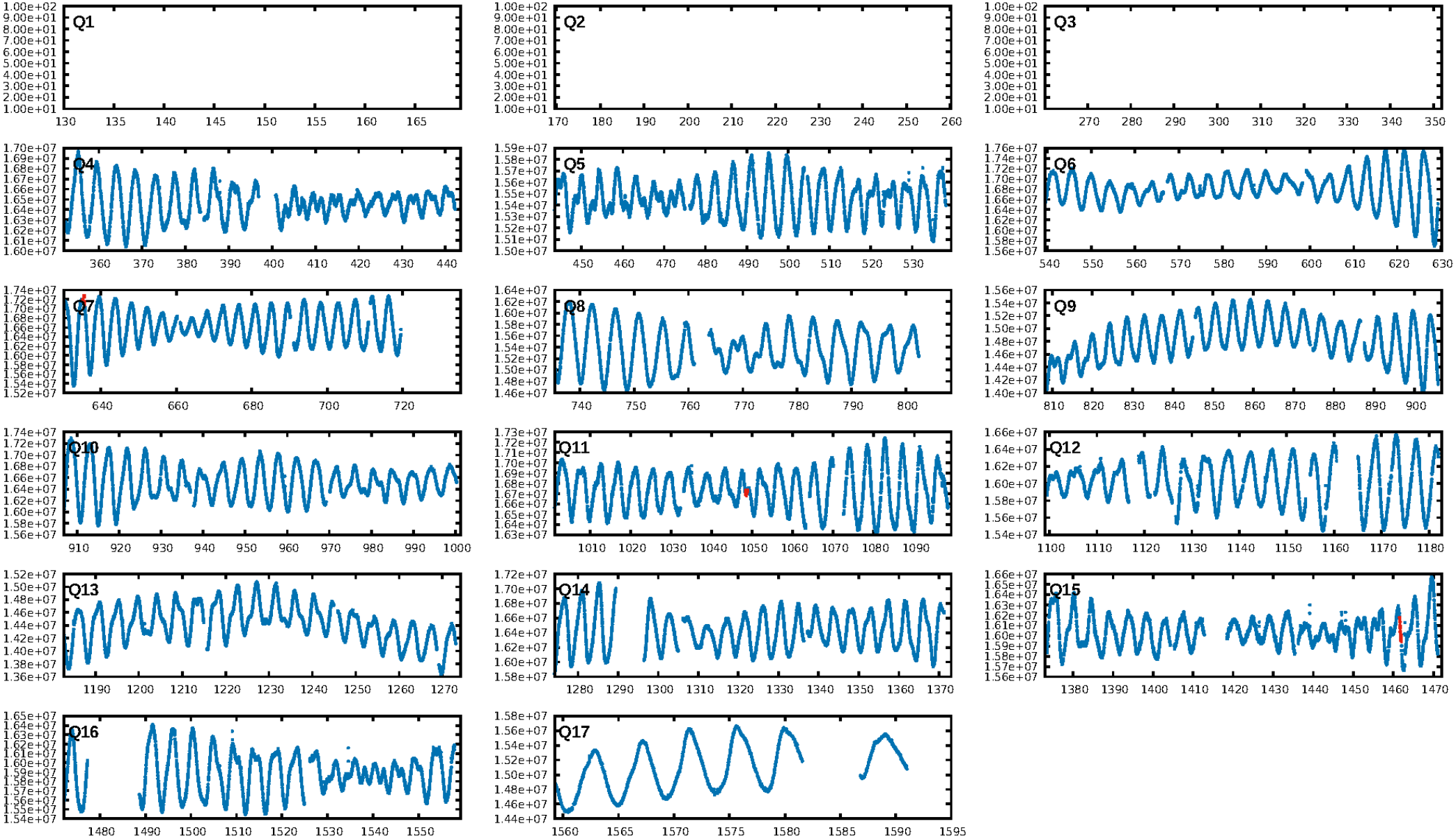
ShortPeriod−sig: 100.0% [275.39σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: 6.0%
ModelChiSquareGof−sig: 96.9%
Bootstrap−pfa: 6.07e−10
RollingBand−fgt: 1.00 [3/3]
GhostDiagnostic−chr: 0.2402

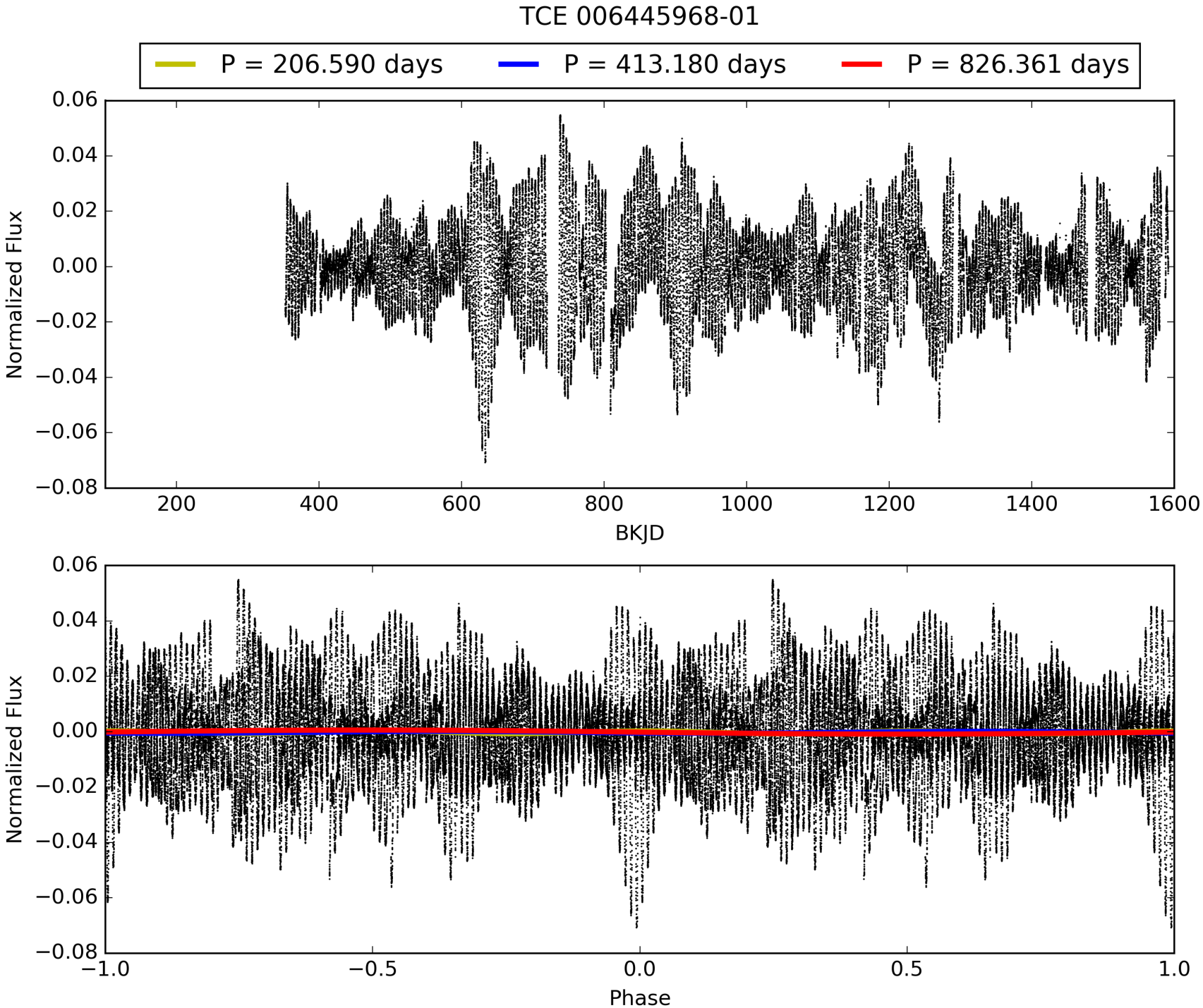
Centroid−sig: 0.0%
Centroid−so: 0.705 arcsec [0.89σ]
OotOffset−rm: 2.243 arcsec [12.75σ]
KicOffset−rm: 0.095 arcsec [0.54σ]
OotOffset−st: 0/3/0/0 [3]
KicOffset−st: 0/3/0/0 [3]
DiffImageQuality−fgm: 0.67 [2/3]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 20:17:04 Z

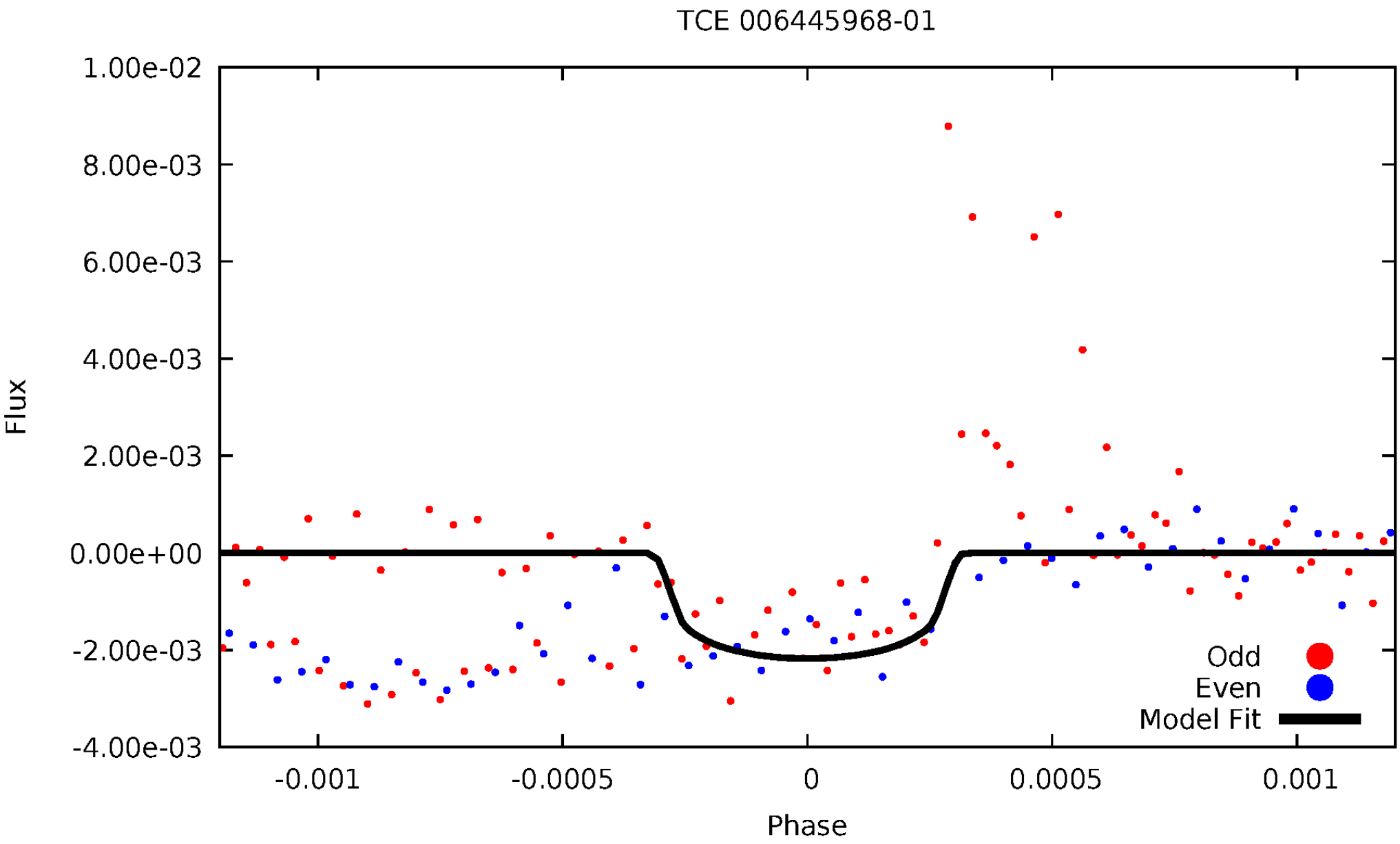
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006445968-01, PDC Light Curves




TCE 006445968-01
P = 206.590 days
P = 413.180 days
P = 826.361 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even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8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
Flux
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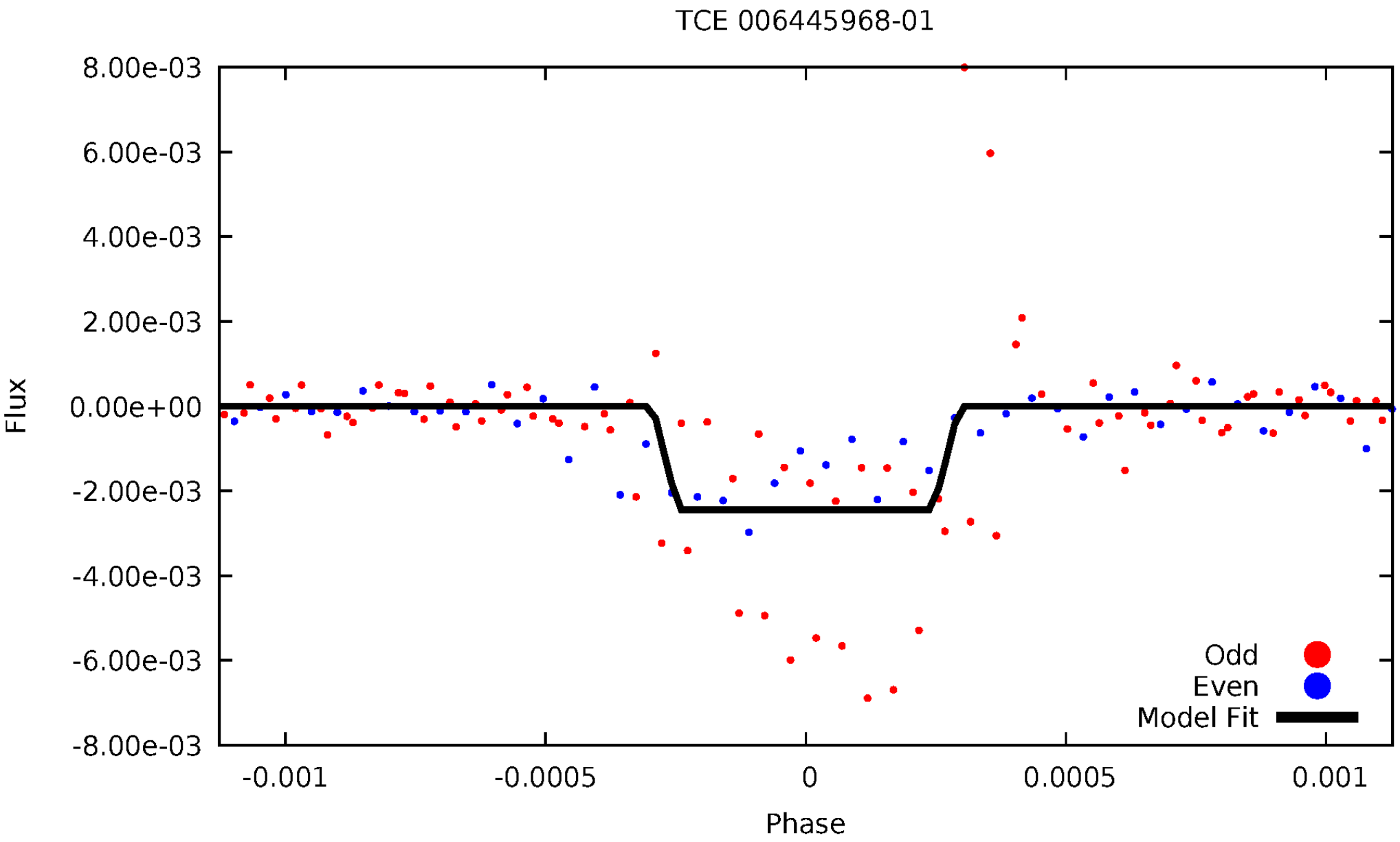
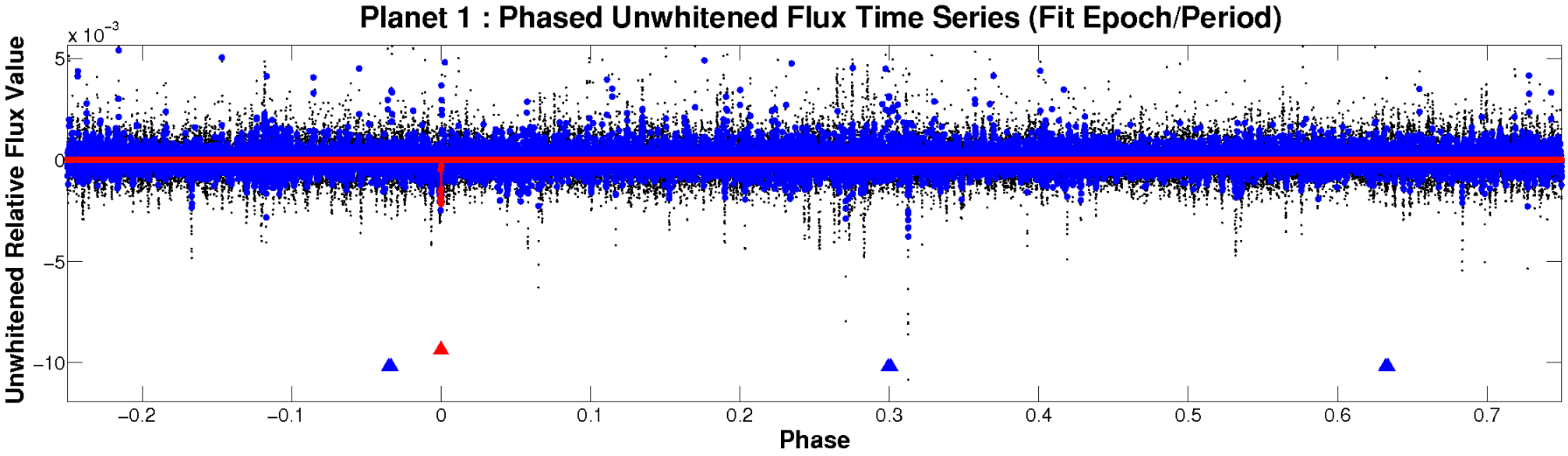
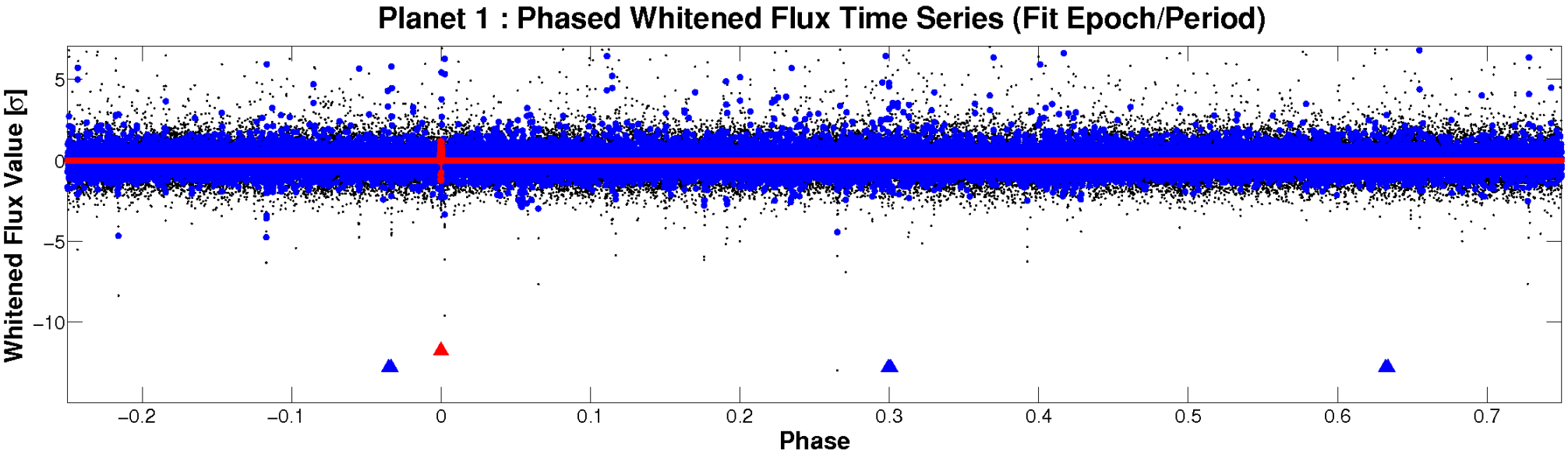
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006445968-01
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
Flux
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

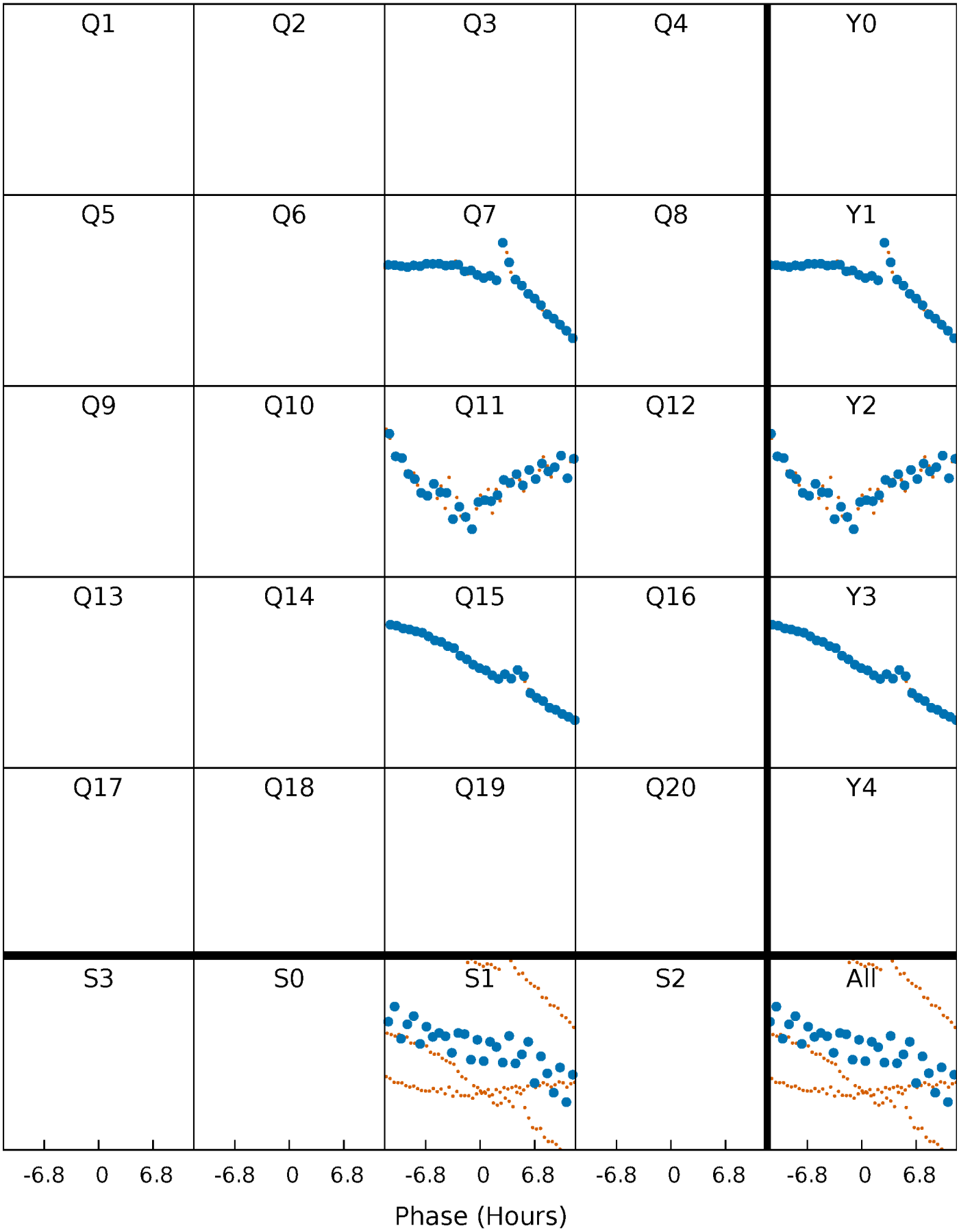
Non-Whitened Vs. Whitened Light Curve





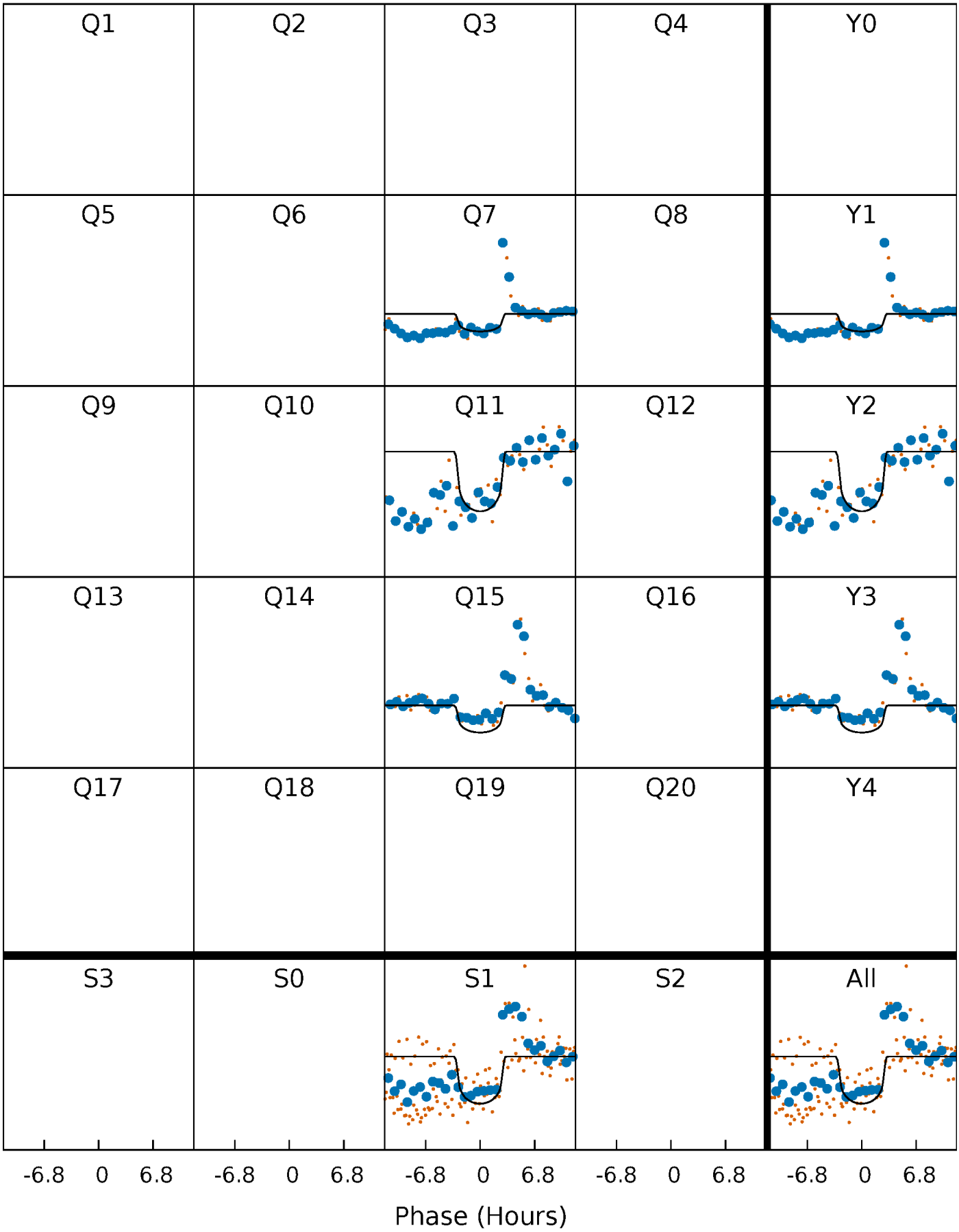
PDC Quarter-Phased Transit Curves

TCE 006445968-01 P=413.180414 Days T_0=222.229408 (BKJD)



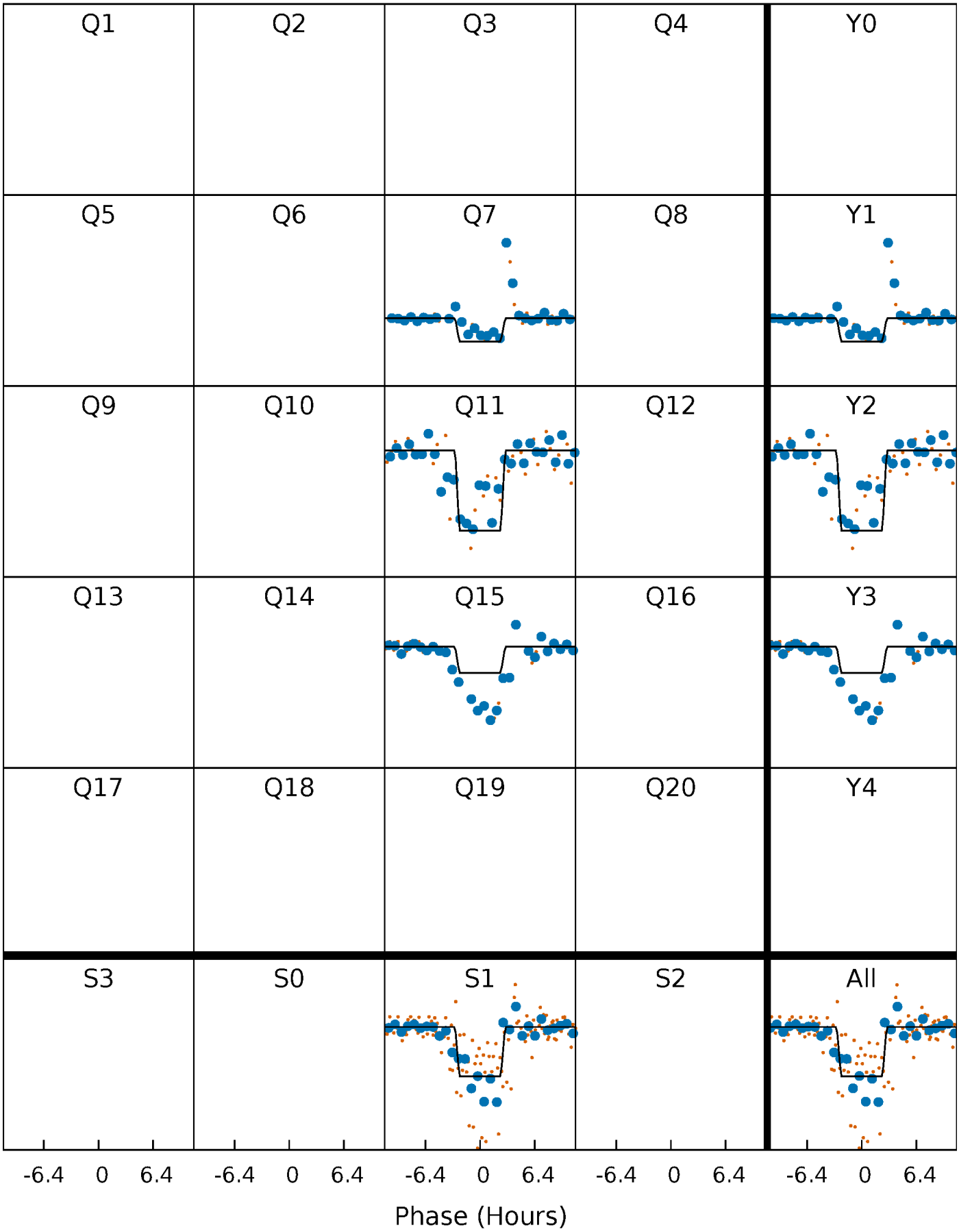
DV Quarter-Phased Transit Curves

TCE 006445968-01 P=413.180414 Days T_0=222.229408 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

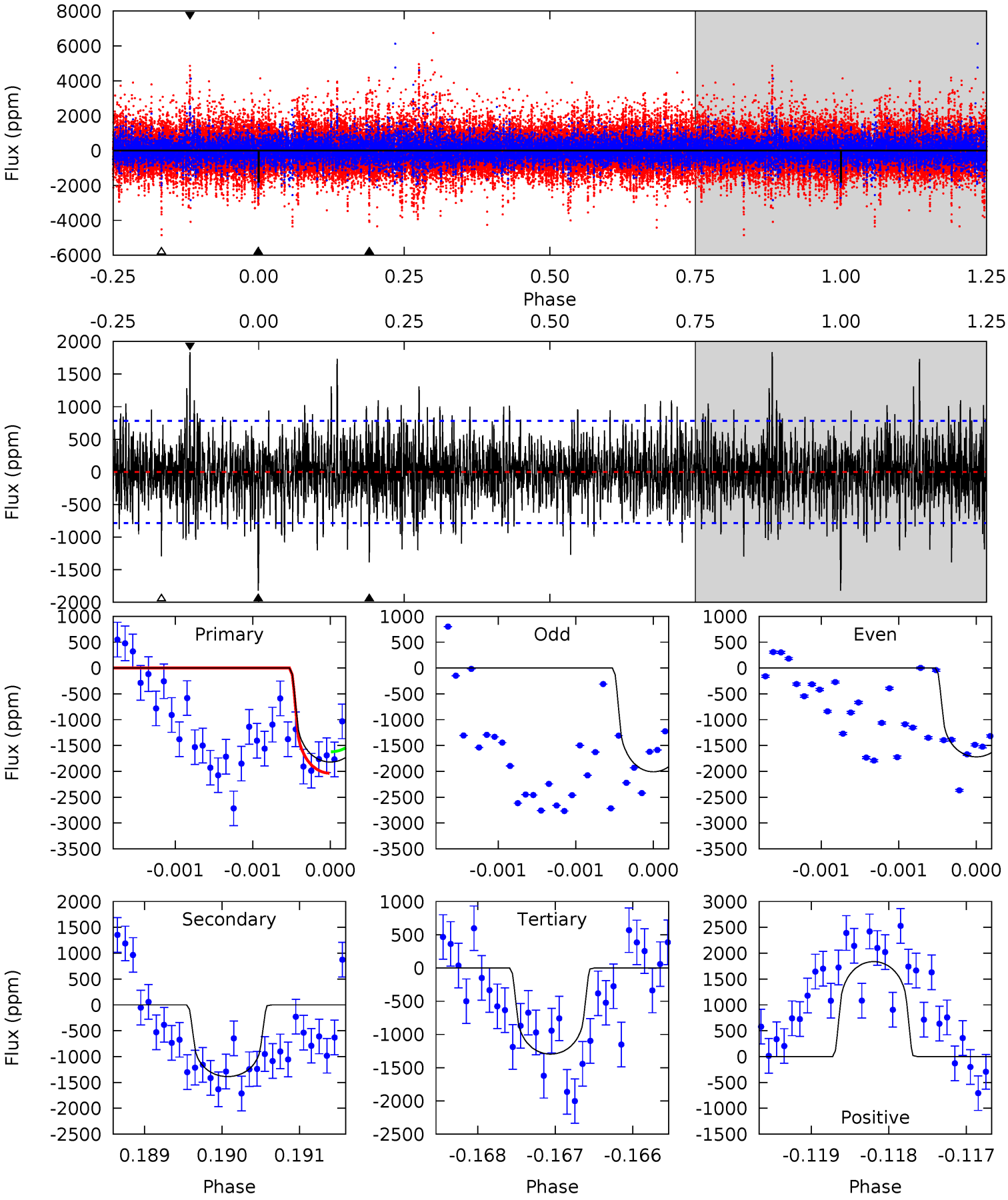
TCE 006445968-01 P=413.193828 Days T_0=222.208970 (BKJD)



DV Model-Shift Uniqueness Test

006445968-01, P = 413.180414 Days, E = 222.229408 Days

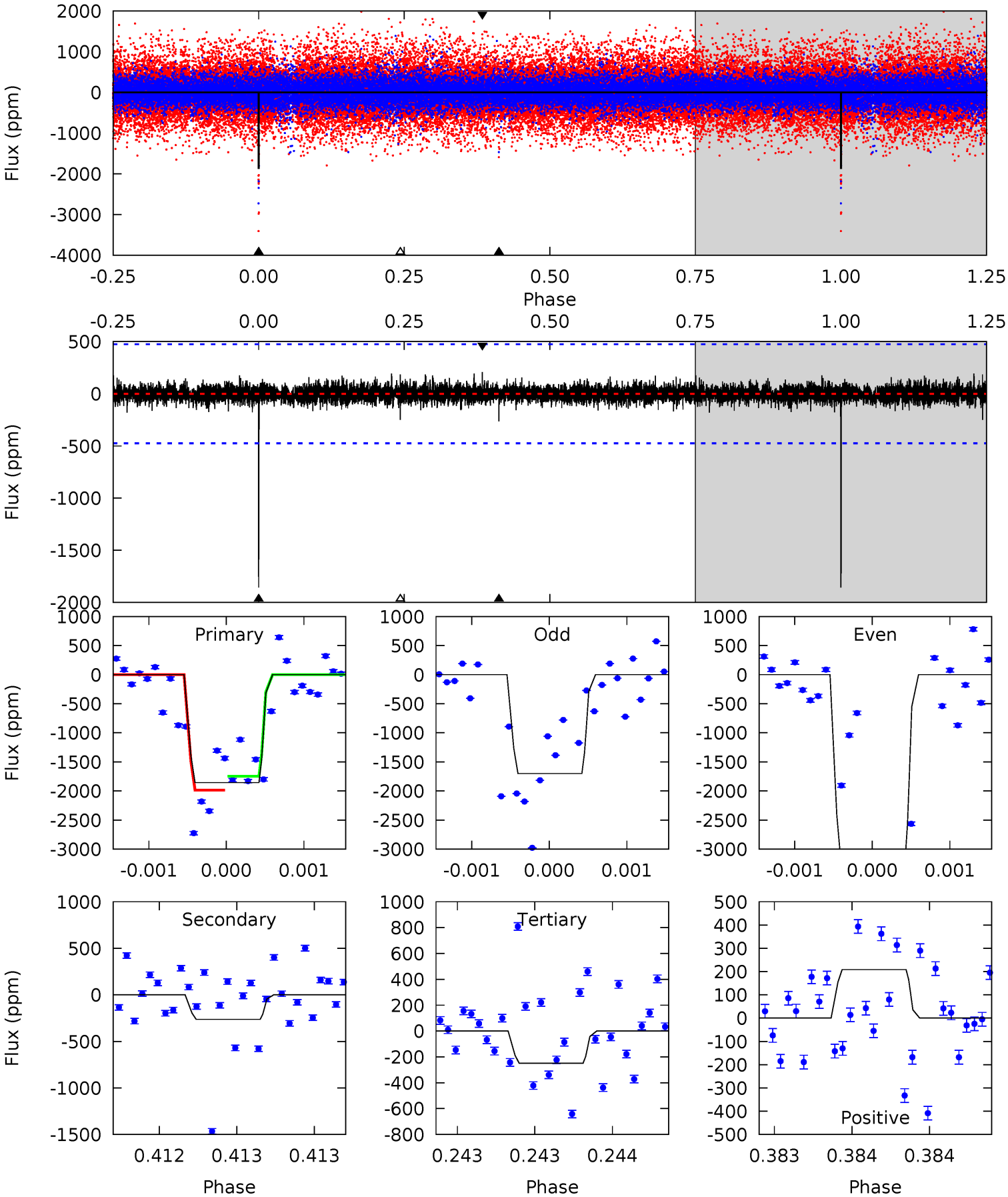
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	9.79	9.15	13.0	5.54	3.42	2.55	3.70	-0.13	0.64	-3.18	0.95	0.85	0.50	1.47



Alt Model-Shift Uniqueness Test

006445968-01, P = 413.193828 Days, E = 222.208970 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	3.09	2.92	2.44	5.55	3.45	0.51	18.8	19.3	0.17	0.65	10.1	1.66	0.10	1.41



Stellar Parameters For KIC 006445968

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5266^{+185}_{-185}	$4.536^{+0.094}_{-0.077}$	$-0.460^{+0.350}_{-0.300}$	$0.749^{+0.098}_{-0.088}$	$0.702^{+0.103}_{-0.044}$	$2.359^{+0.872}_{-0.584}$
	+4%/-4%	+2%/-2%	+76%/-65%	+13%/-12%	+15%/-6%	+37%/-25%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006445968-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1386±142	$4.03^{+3.03}_{-2.50}$	285^{+13}_{-14}	4712^{+2644}_{-951}	$45488^{+253489}_{-31064}$
Alt.	-264±86	$4.49^{+3.17}_{-2.62}$	285^{+13}_{-13}	3371^{+1153}_{-514}	6914^{+31724}_{-4814}

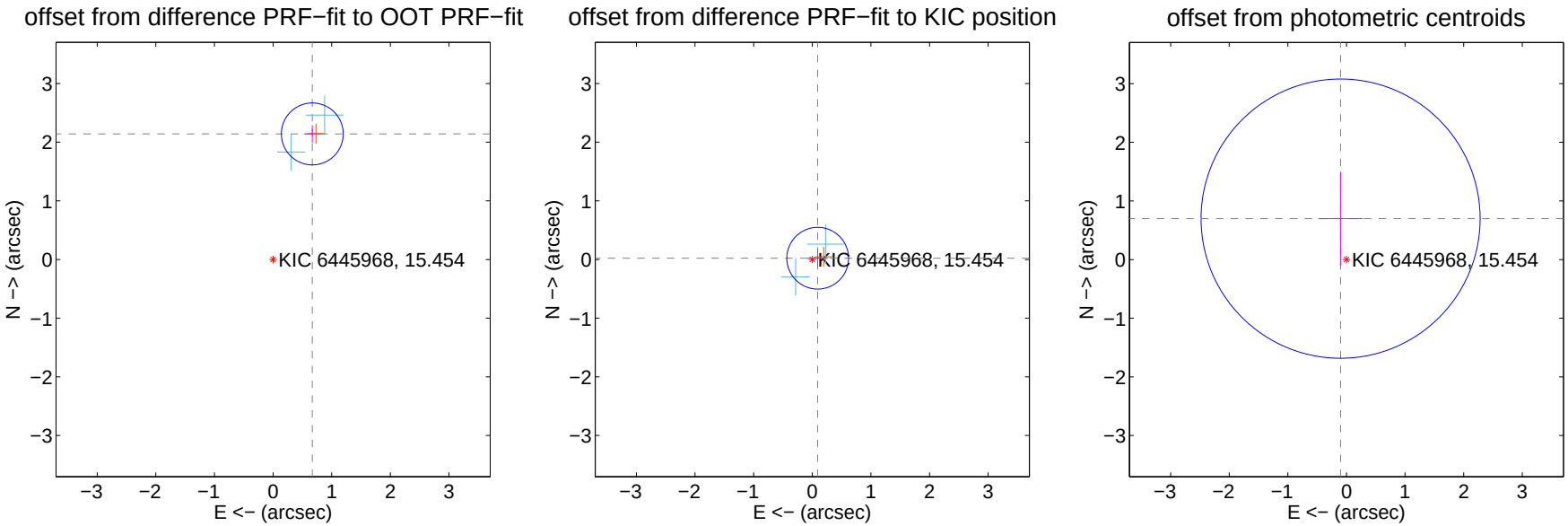
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

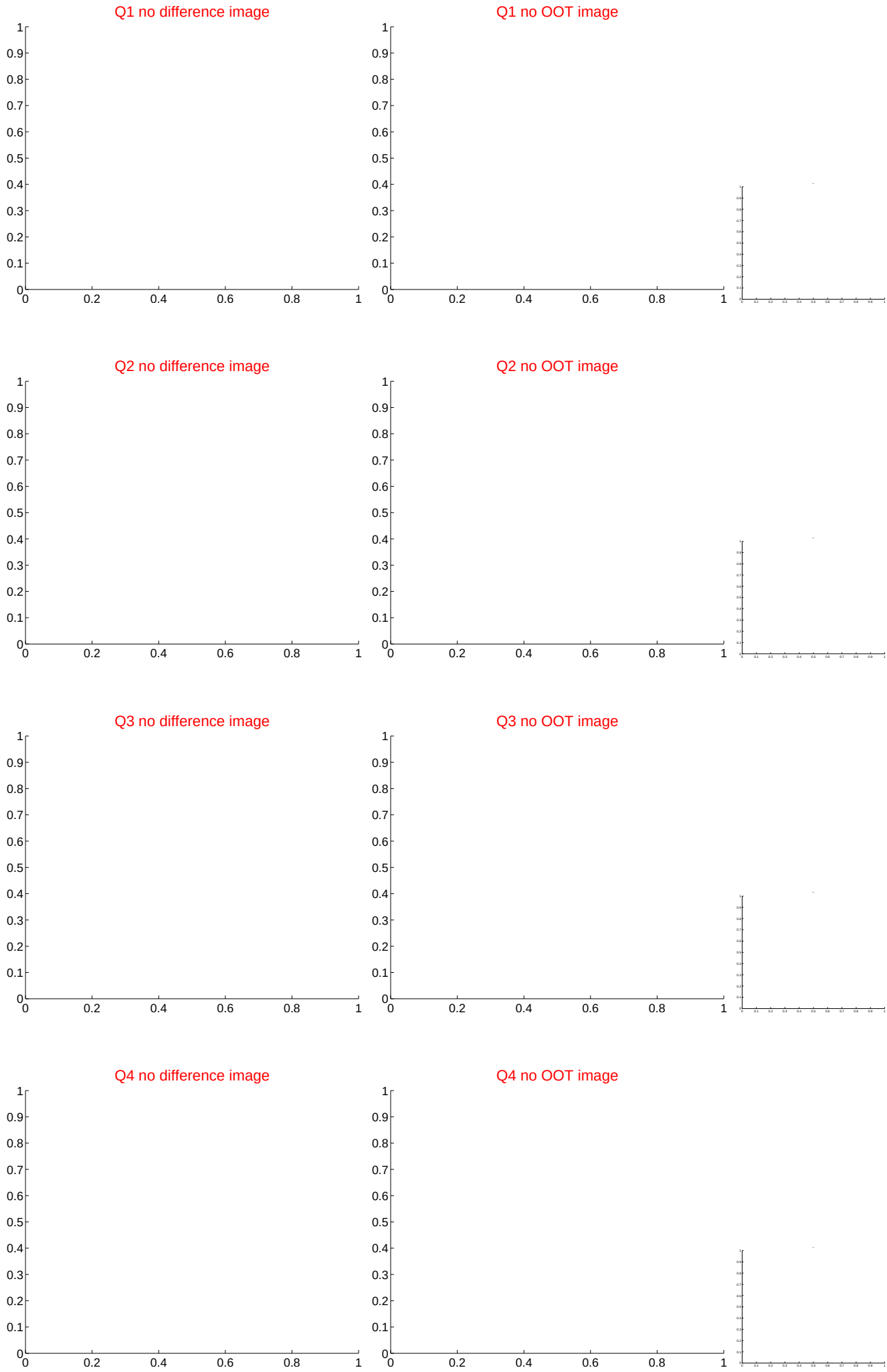
Supplemental centroid analysis for 006445968-01. Kepler magnitude: 15.45. Transit SNR 7.67
There are 2 quarters with good PRF difference image offsets
The OOT PRF centroid is offset from the target star catalog position by about 2.29 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.243 ± 0.176	12.75	-0.669 ± 0.143	2.141 ± 0.149
PRF-fit source offset from KIC position	0.095 ± 0.175	0.54	-0.092 ± 0.177	0.022 ± 0.149
photometric centroid source offset	0.71 ± 0.79	0.89	0.10 ± 0.38	0.70 ± 0.80

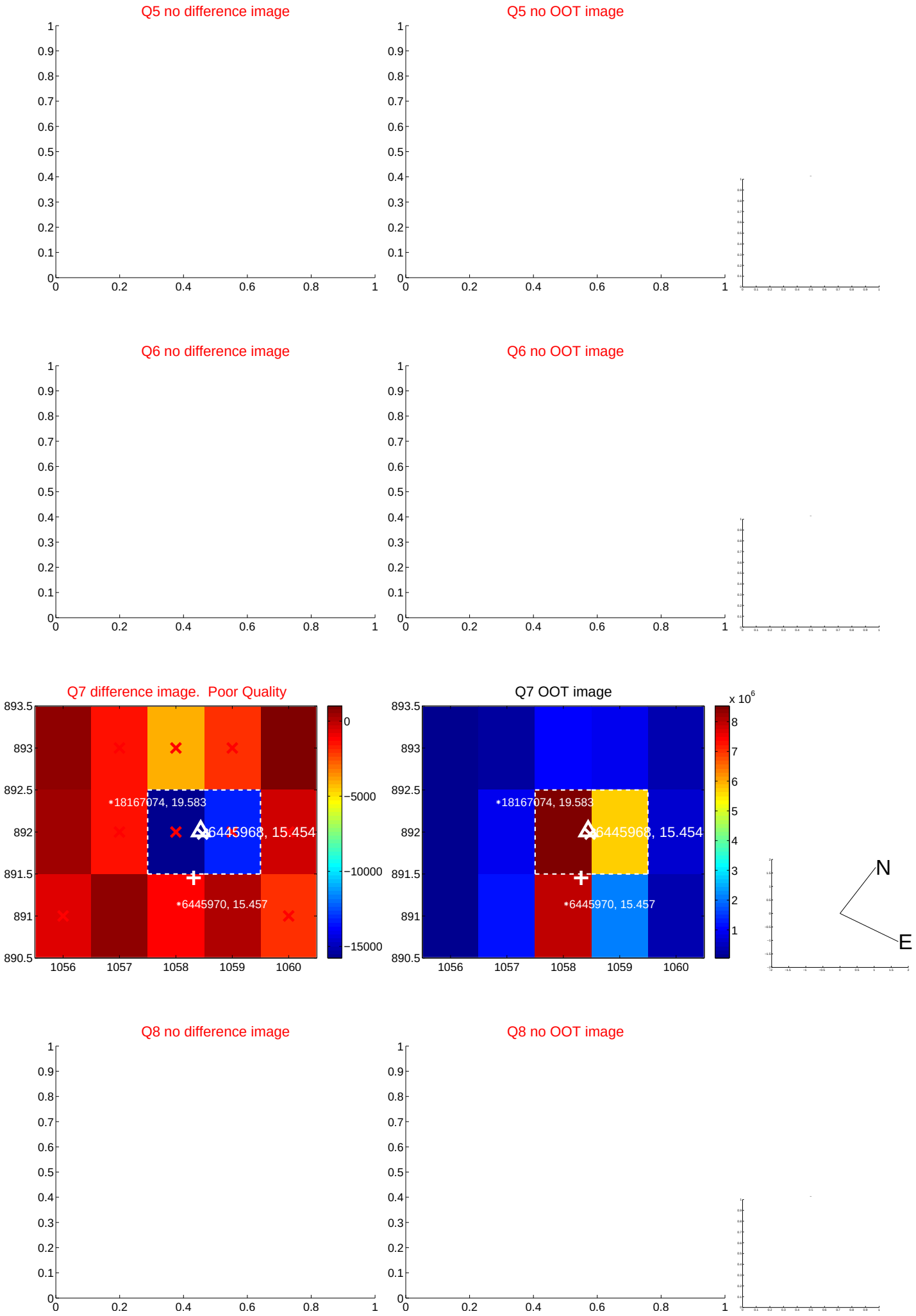


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

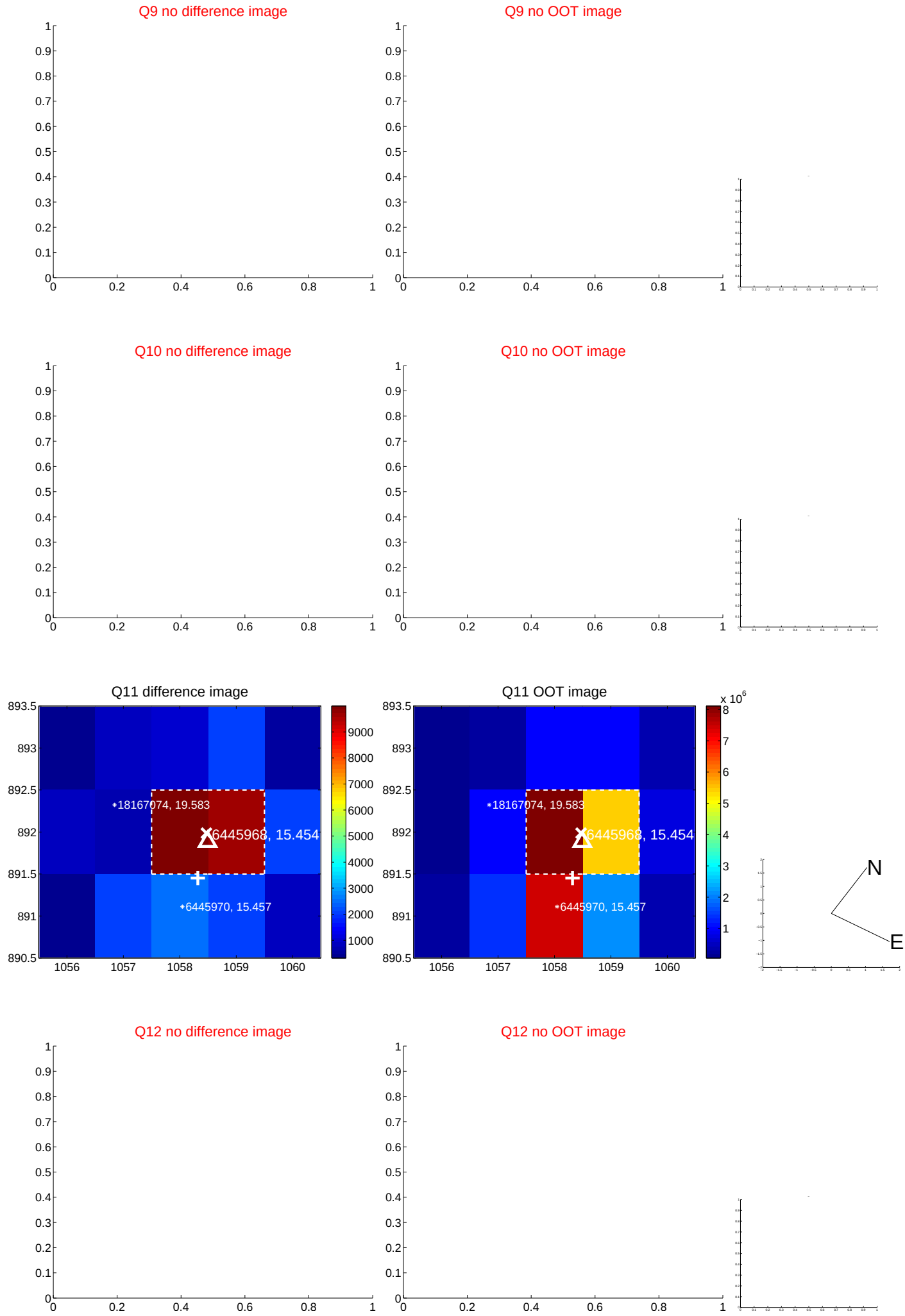
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



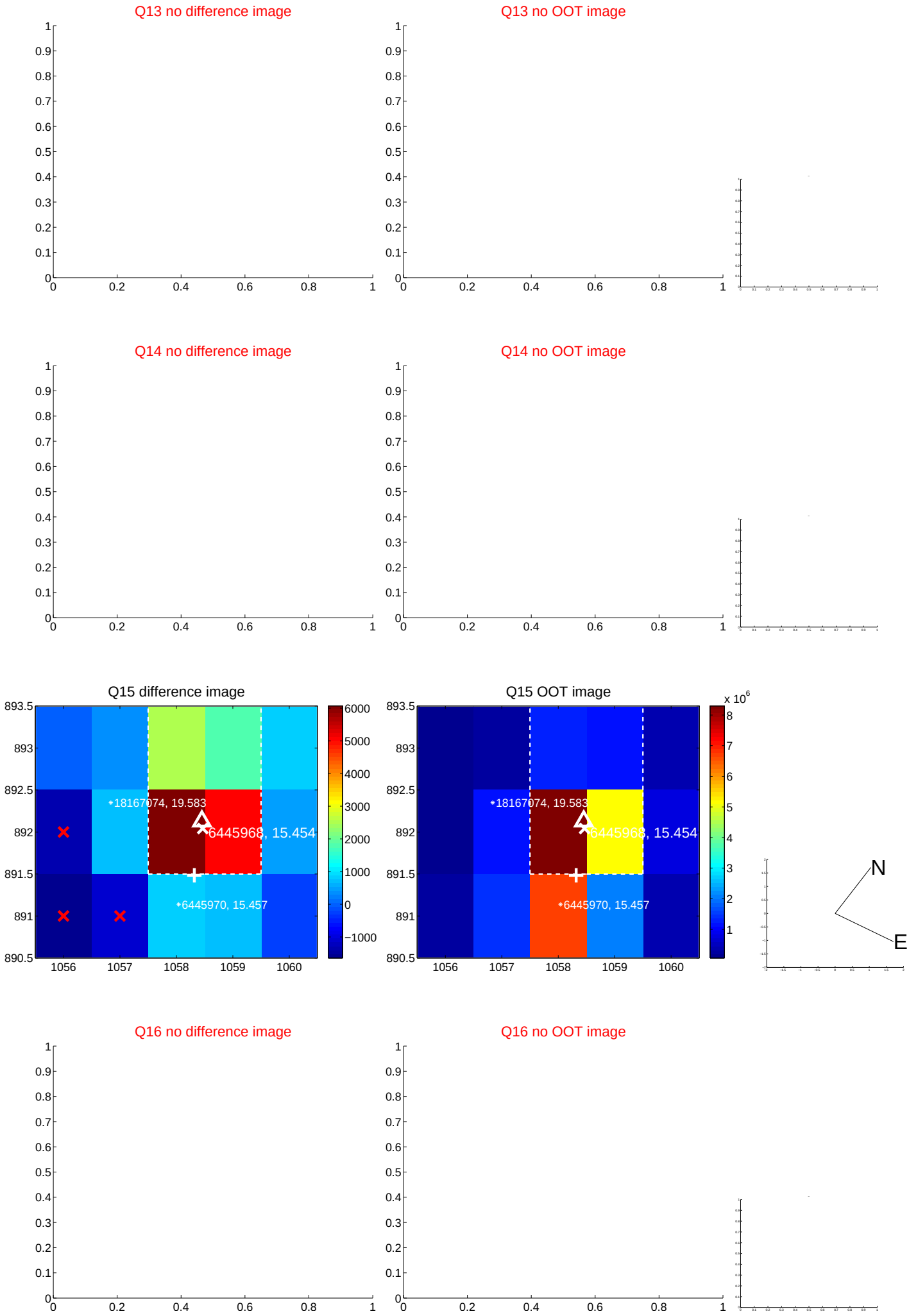
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



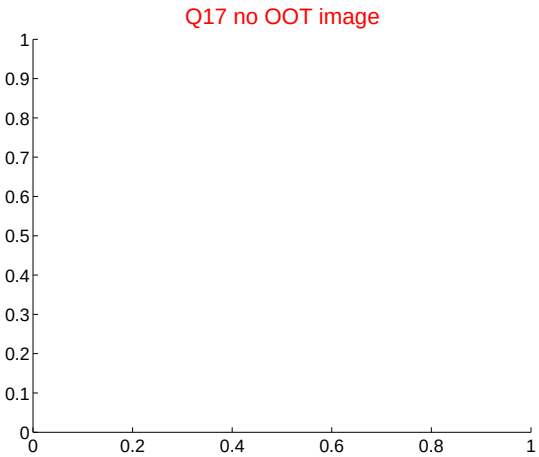
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

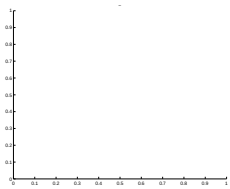


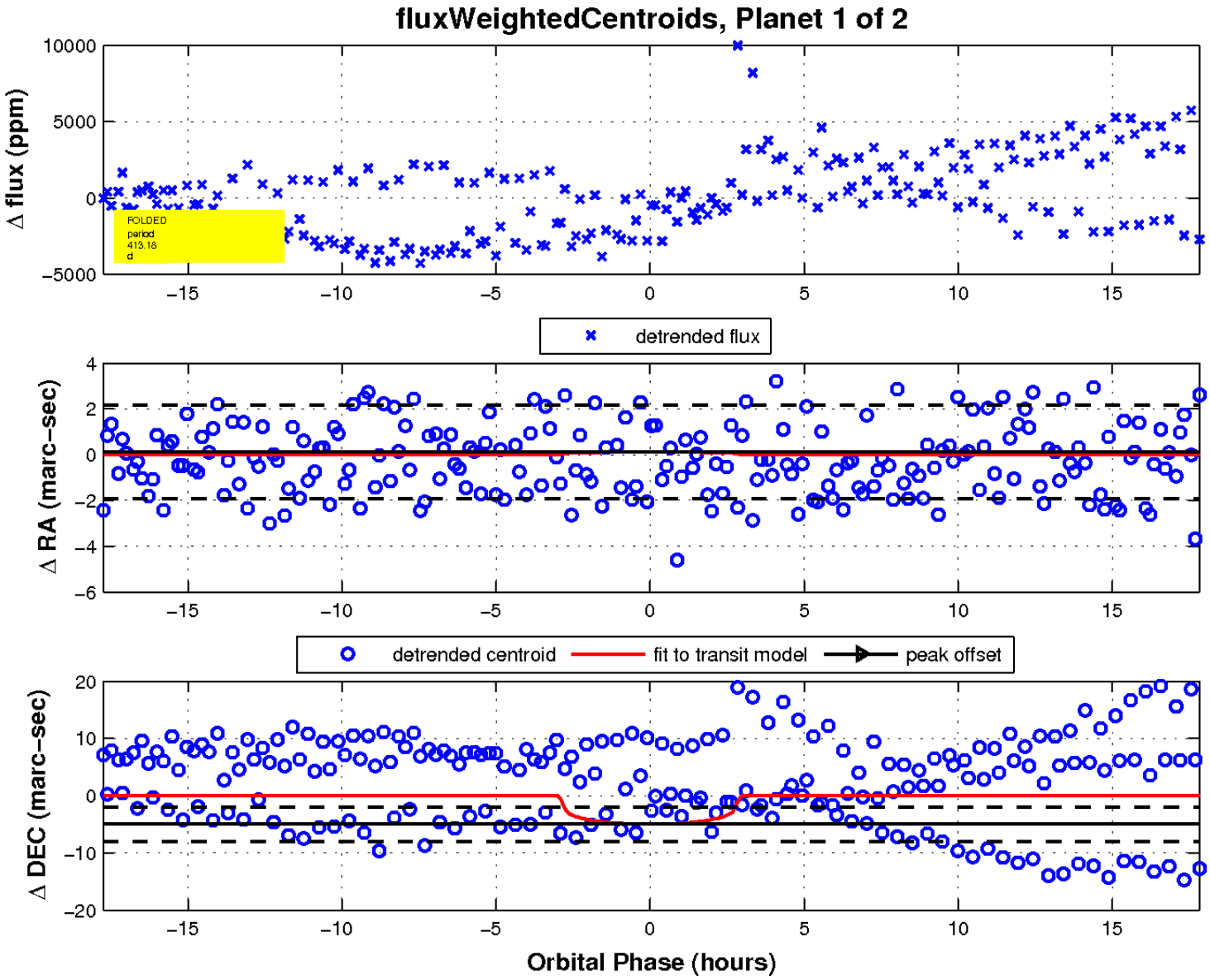
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



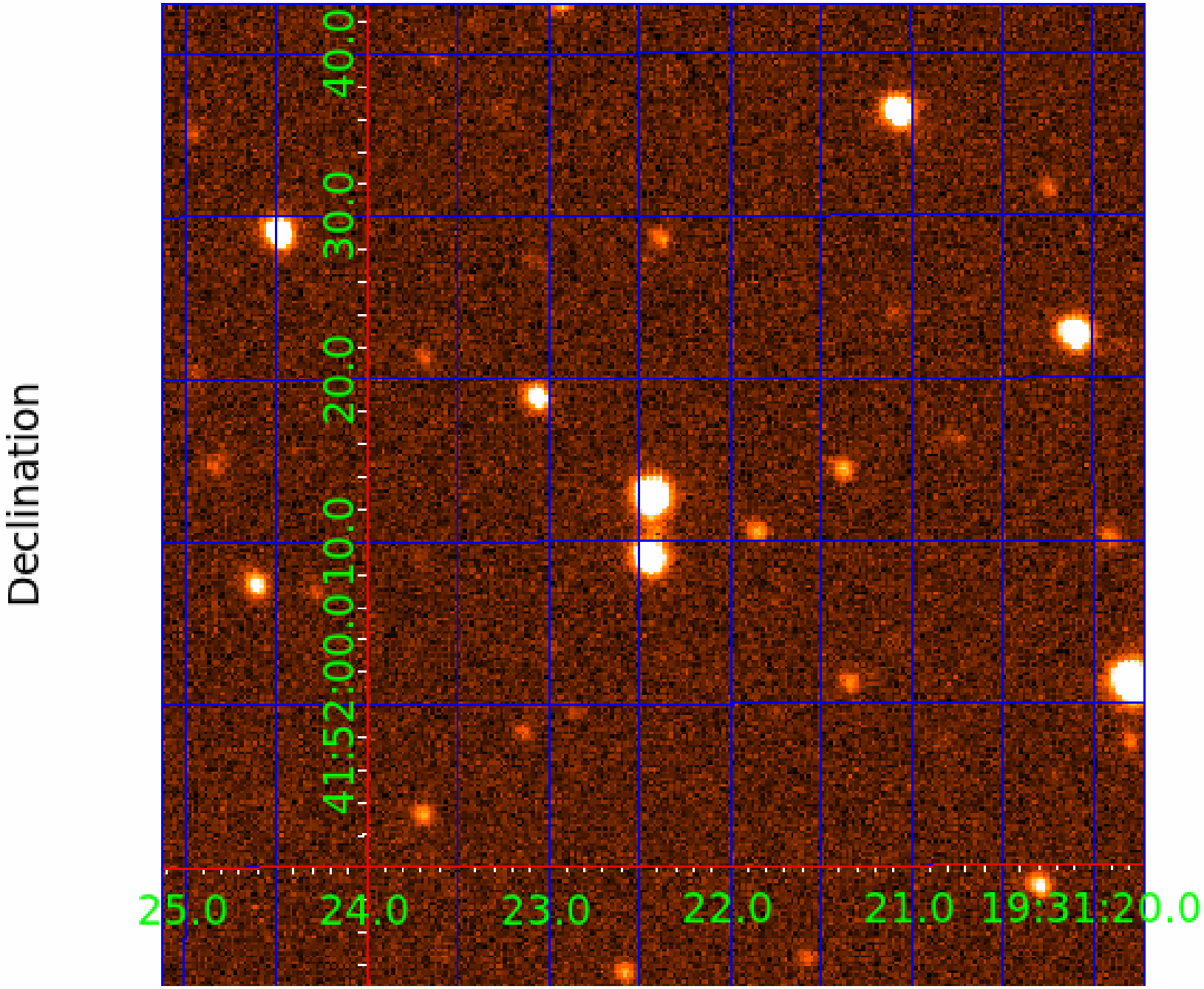
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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KIC 006445968

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 ($S_\oplus$)
006445968-01	OBS	No	413.180414	222.229408	2176.8	5.955	10.2	7.7	0.75	5266	3.47	0.41
006445968-02	OBS	No	275.668605	207.767508	1460.7	10.400	11.5	5.7	0.75	5266	2.87	0.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006445968-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
006445968-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

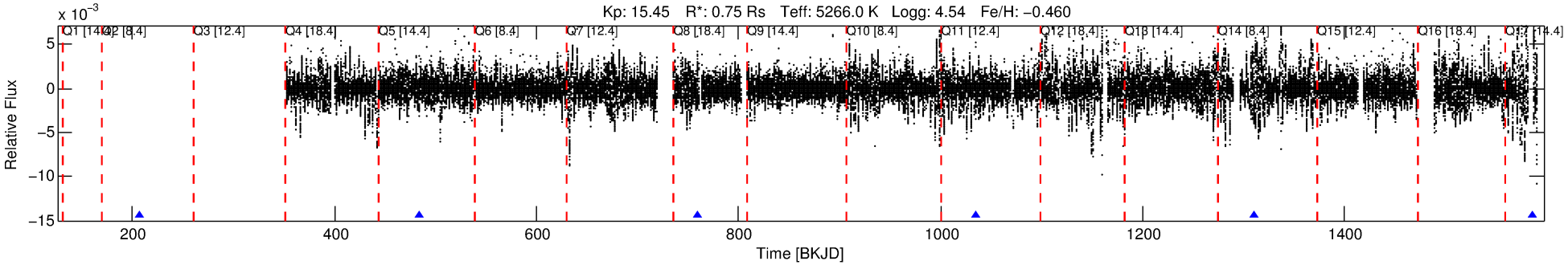
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

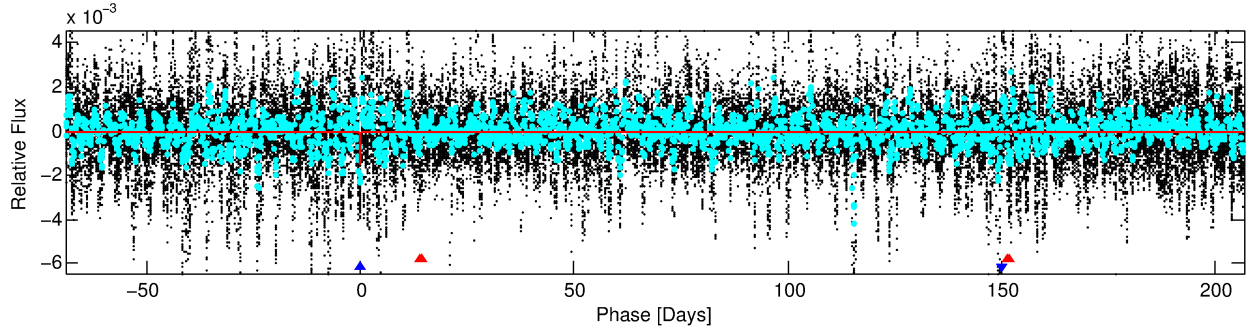
Ephemeris Match Information For 006445968-02

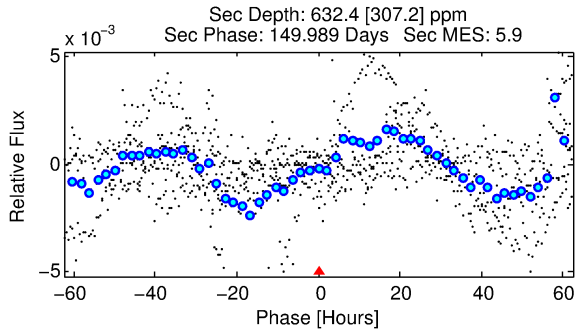
No Significant Match Found

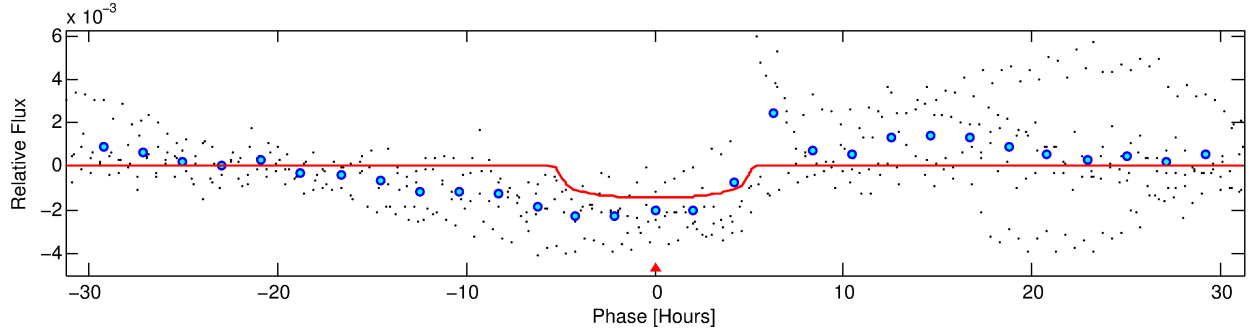
DV One-Page Summary

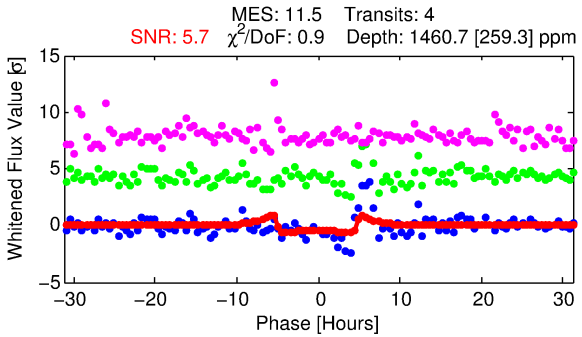
KIC: 6445968 Candidate: 2 of 2 Period: 275.669 d

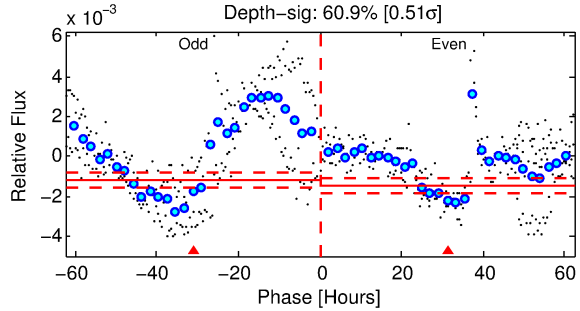


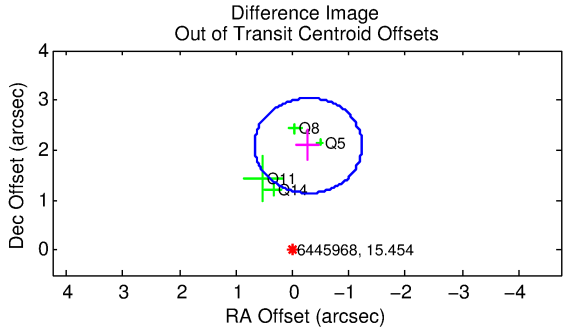












DV Fit Results:

Period = 275.66861 [0.00534] d
Epoch = 207.7675 [0.0147] BKJD
Rp/R* = 0.0351 [0.0184]
a/R* = 193.12 [386.12]
b = 0.40 [4.20]

Seff = 0.71 [0.16]
Teq = 234 [13] K
Rp = 2.87 [1.55] Re
a = 0.7372 [0.0835] AU

Ag = 22949.04 [26830.97] [0.86σ]
Teffp = 4456 [1298] K [3.25σ]

DV Diagnostic Results:

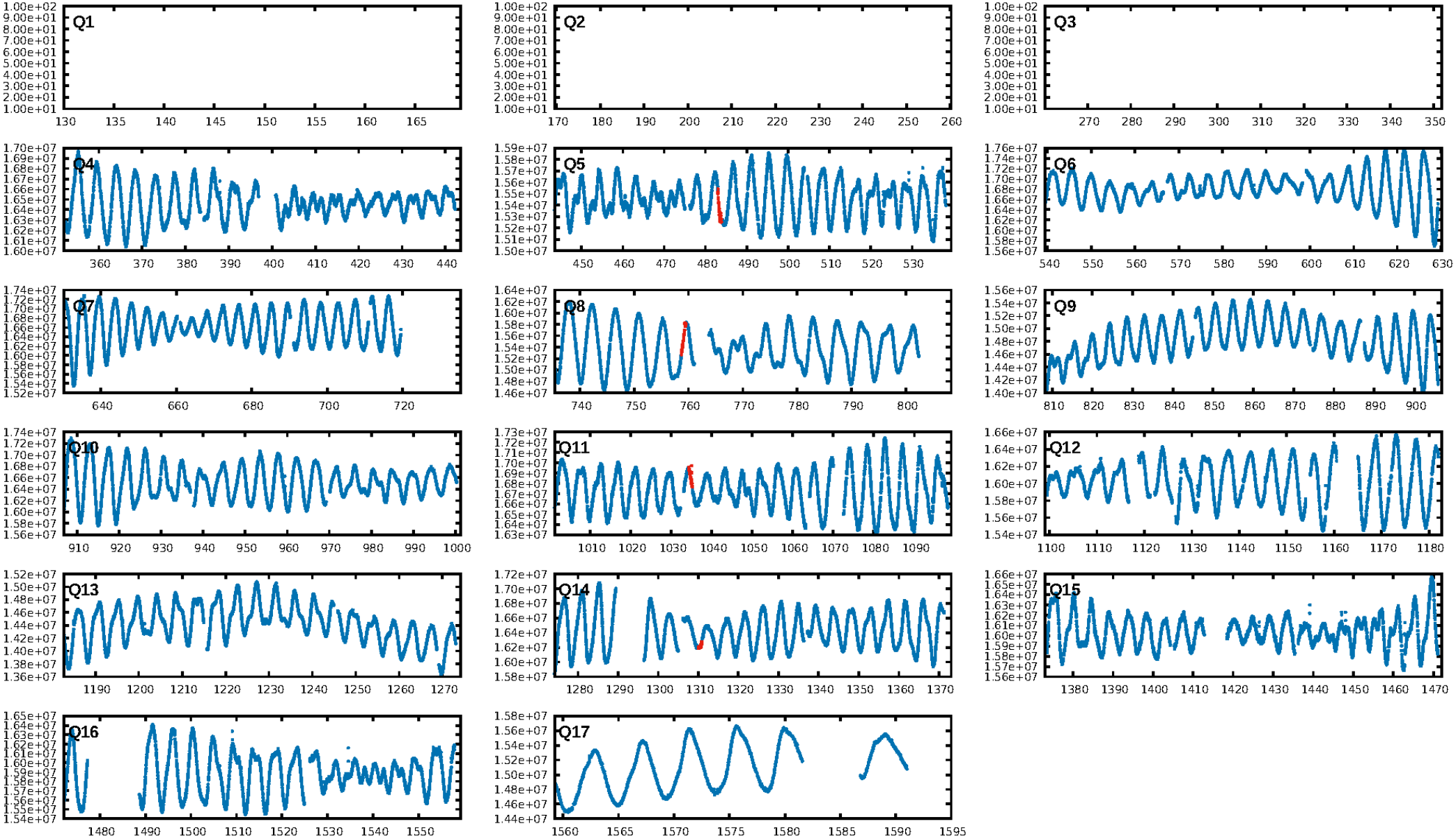
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [275.39σ]
ModelChiSquare2−sig: 39.1%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: 1.23e−12
RollingBand−fgt: 1.00 [4/4]
GhostDiagnostic−chr: −0.6712

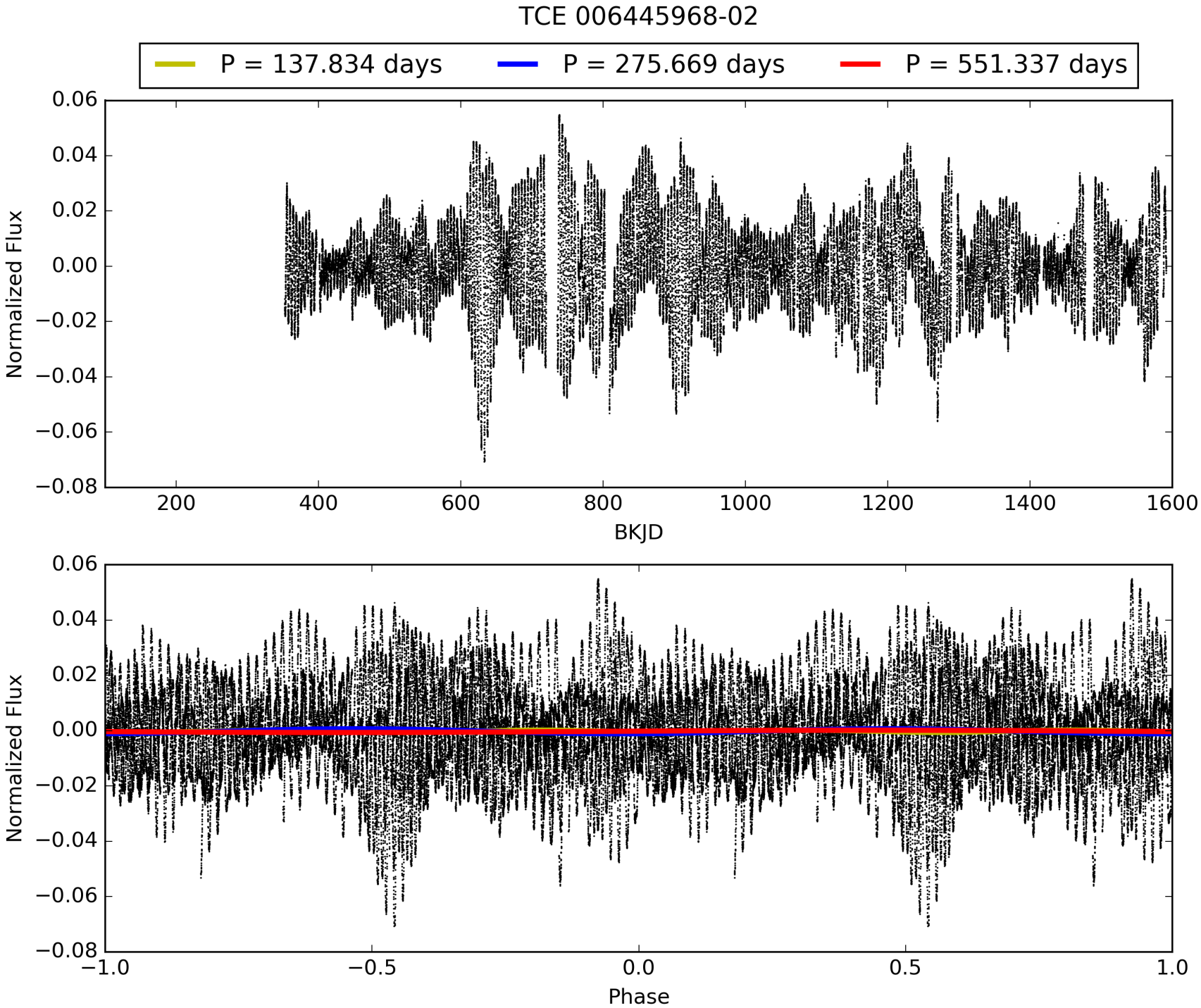
Centroid−sig: 38.2%
Centroid−so: 2.679 arcsec [2.16σ]
OotOffset−rm: 2.111 arcsec [6.65σ]
KicOffset−rm: 0.098 arcsec [0.50σ]
OotOffset−st: 1/1/1/1 [4]
KicOffset−st: 1/1/1/1 [4]
DiffImageQuality−fgm: 0.50 [2/4]
DiffImageOverlap−fno: 1.00 [4/4]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30−Jan−2016 20:17:21 Z

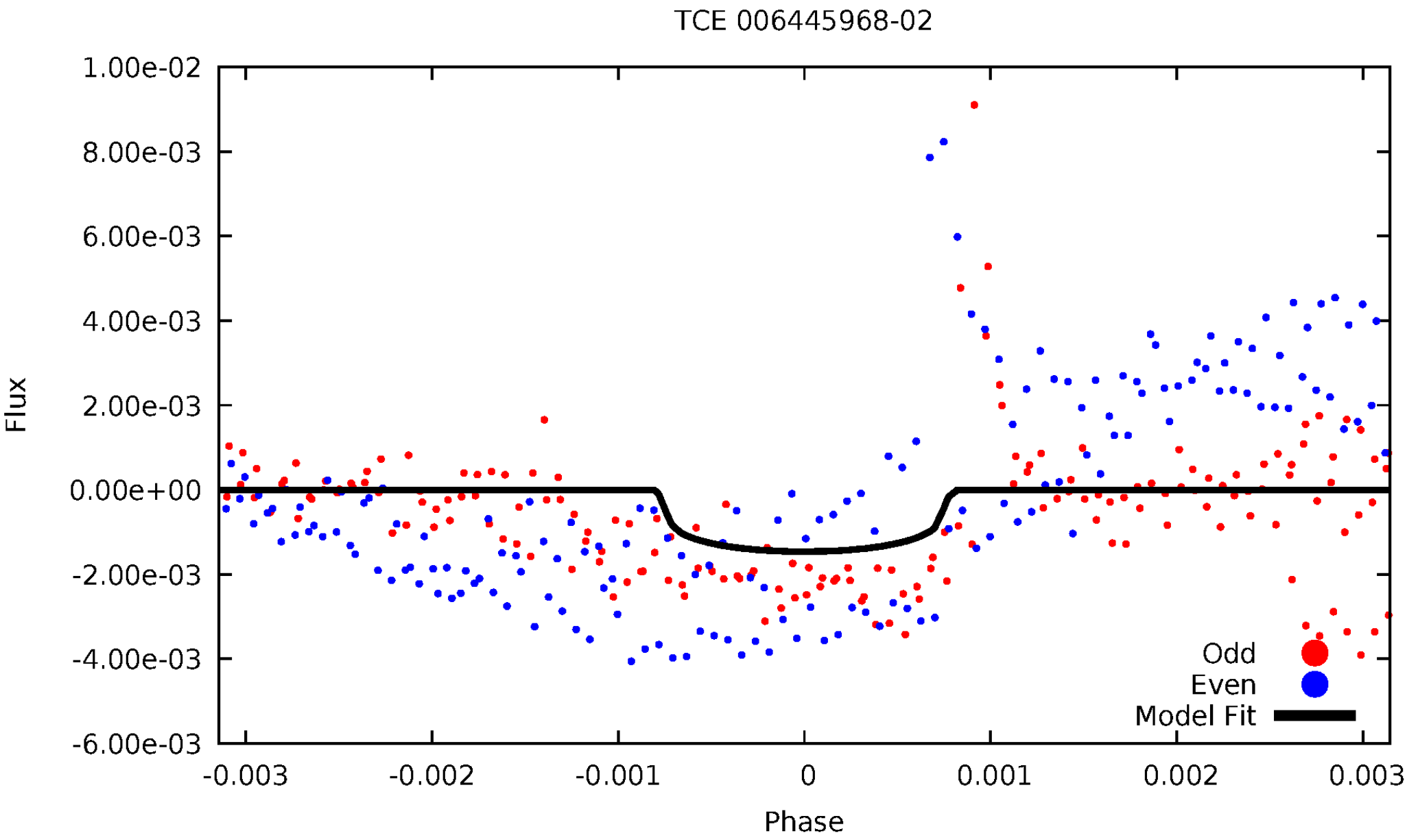
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006445968-02, PDC Light Curves




TCE 006445968-02
P = 137.834 days
P = 275.669 days
P = 551.337 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even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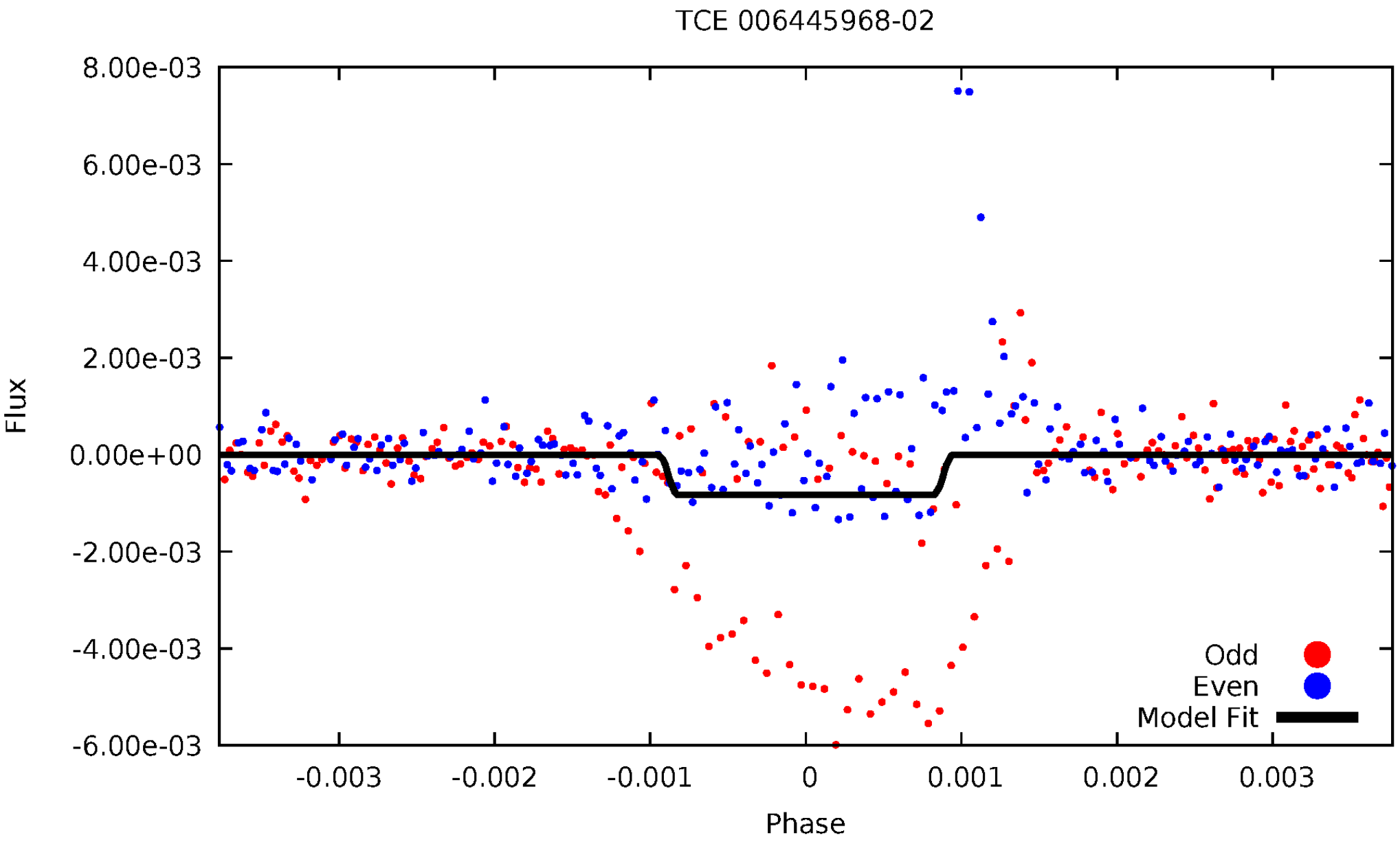
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

ALT Odd/Even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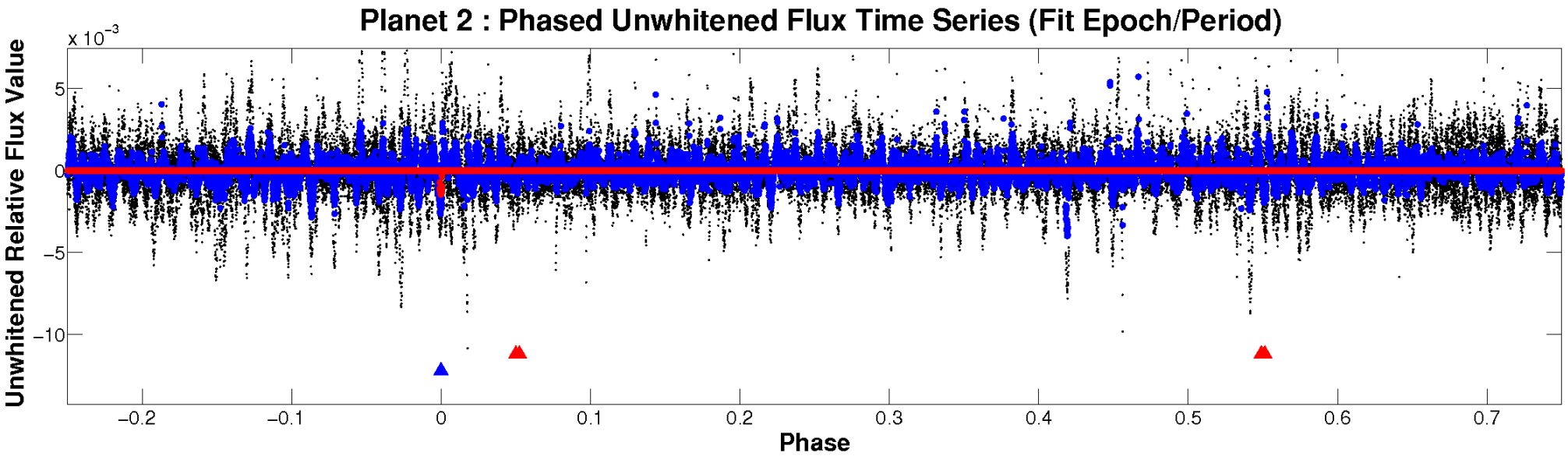
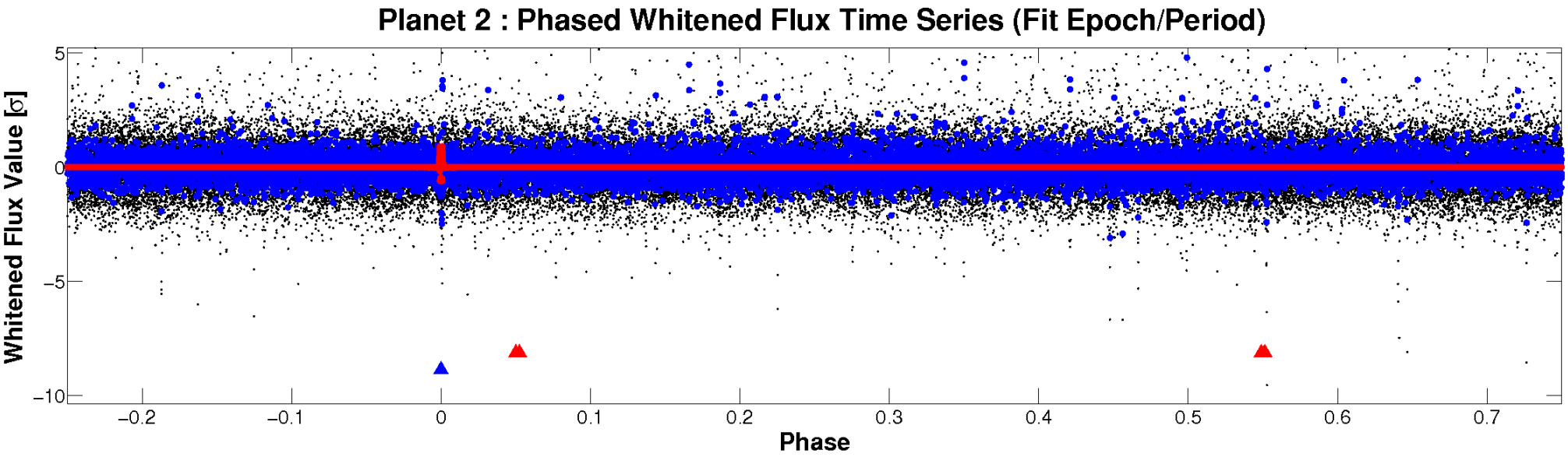
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

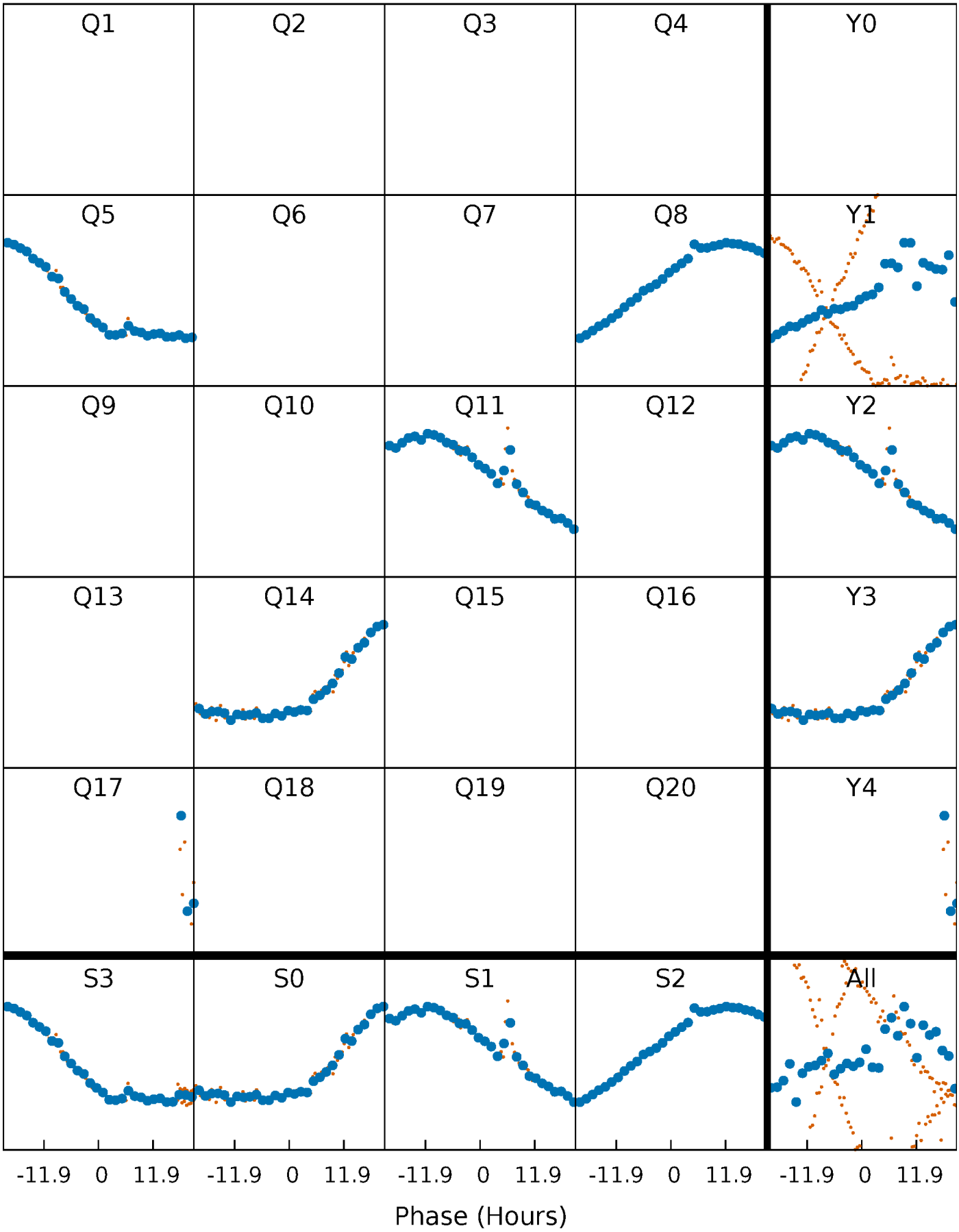
Non-Whitened Vs. Whitened Light Curve





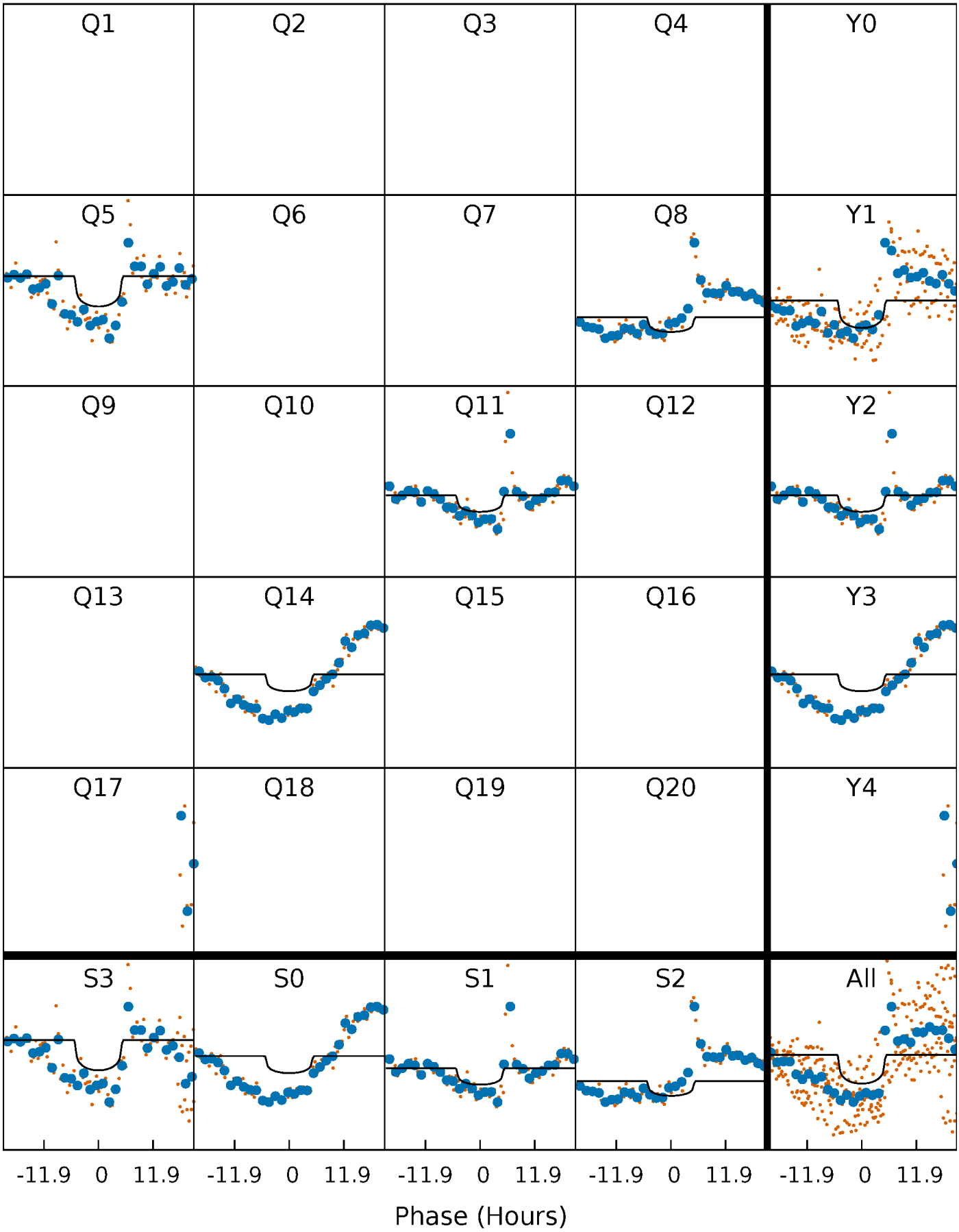
PDC Quarter-Phased Transit Curves

TCE 006445968-02 P=275.668605 Days T_0=207.767508 (BKJD)



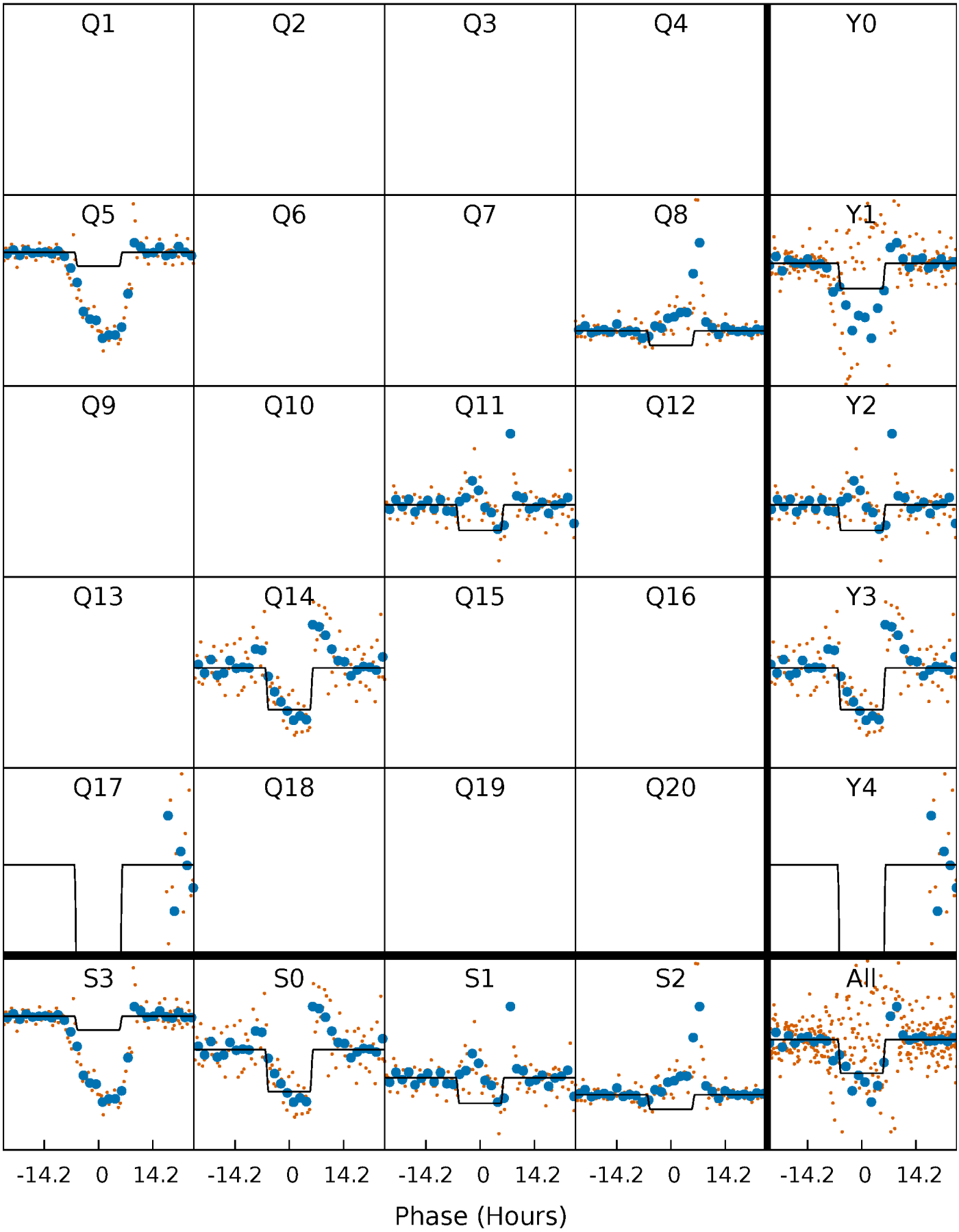
DV Quarter-Phased Transit Curves

TCE 006445968-02 P=275.668605 Days T_0=207.767508 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

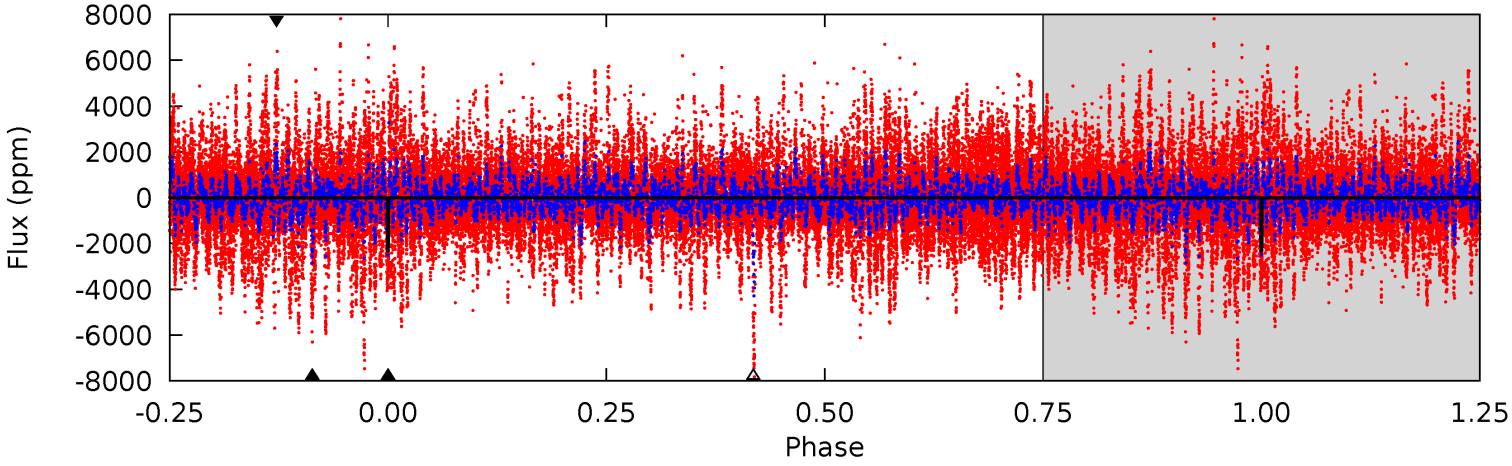
TCE 006445968-02 P=275.696403 Days T_0=207.628476 (BKJD)

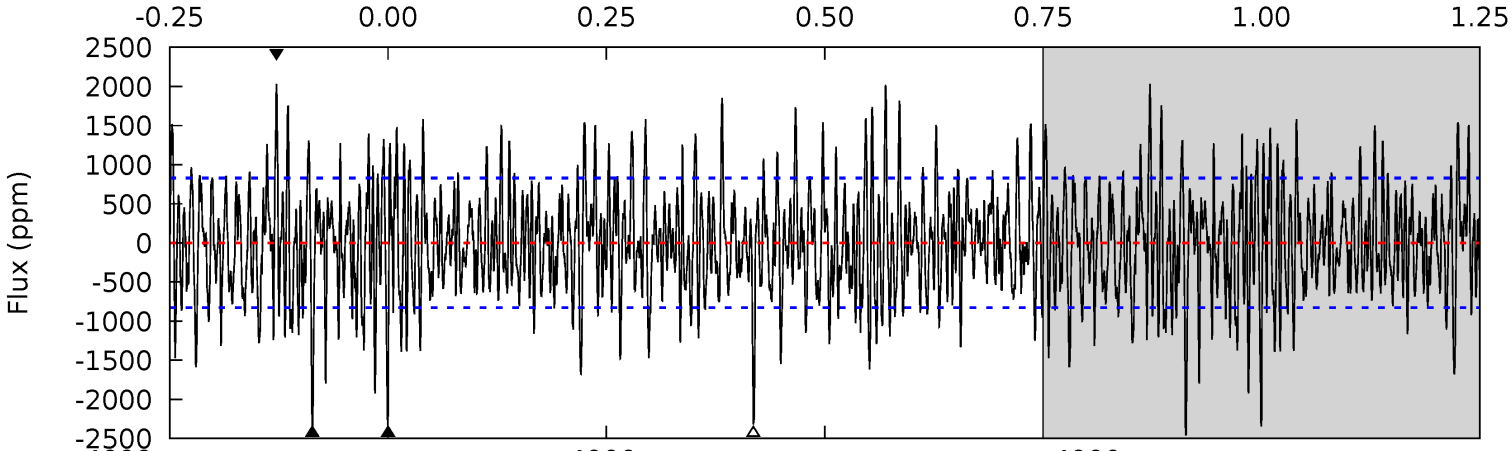


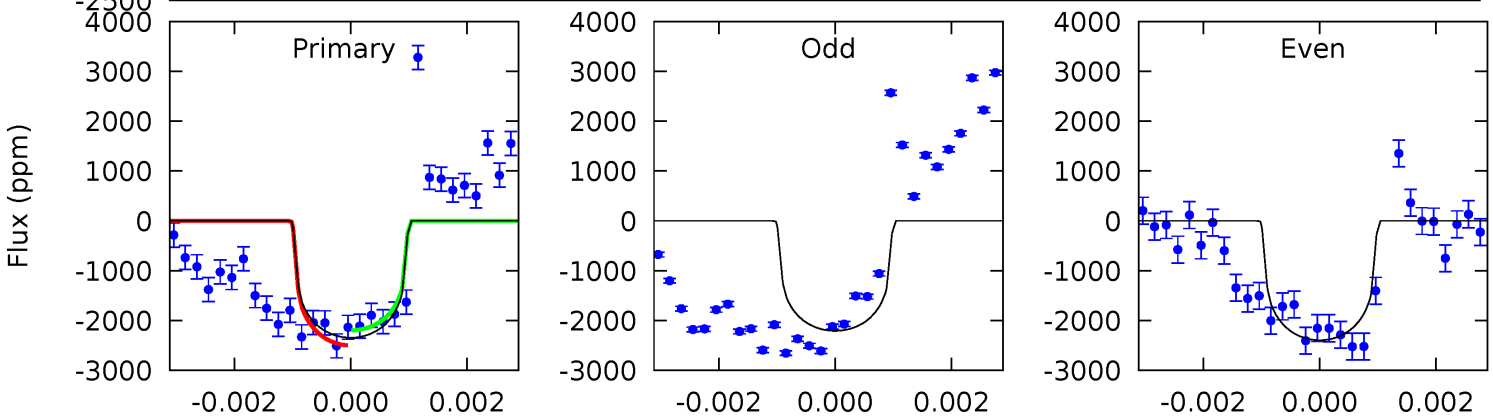
DV Model-Shift Uniqueness Test

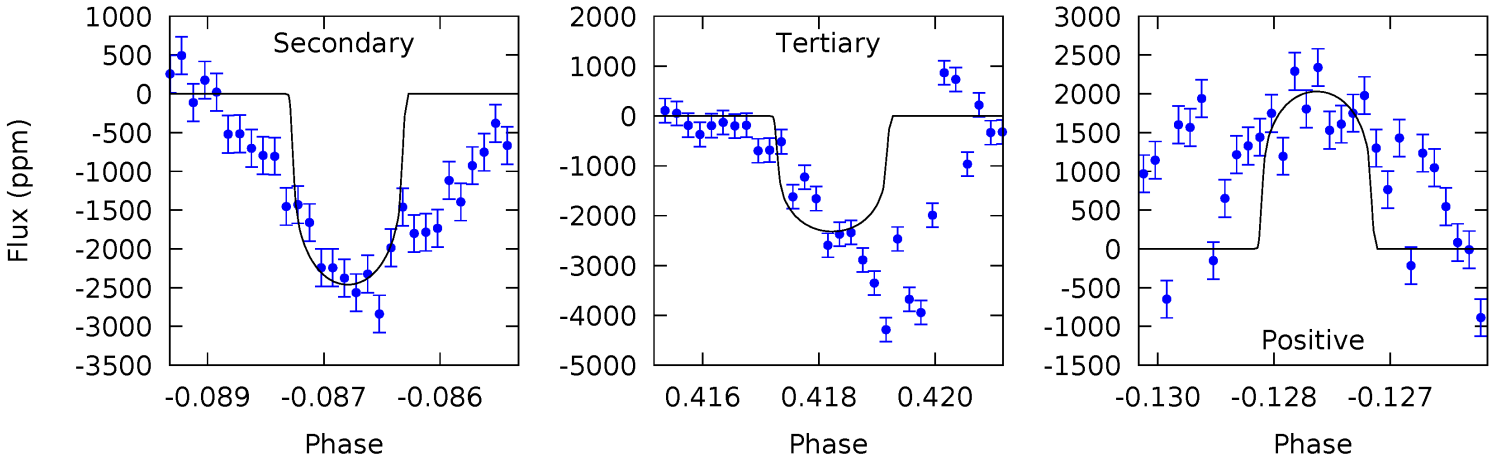
006445968-02, P = 275.668605 Days, E = 207.767508 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	15.9	15.0	13.1	5.37	3.16	4.00	0.18	2.04	0.93	2.80	0.60	0.92	0.45	0.99





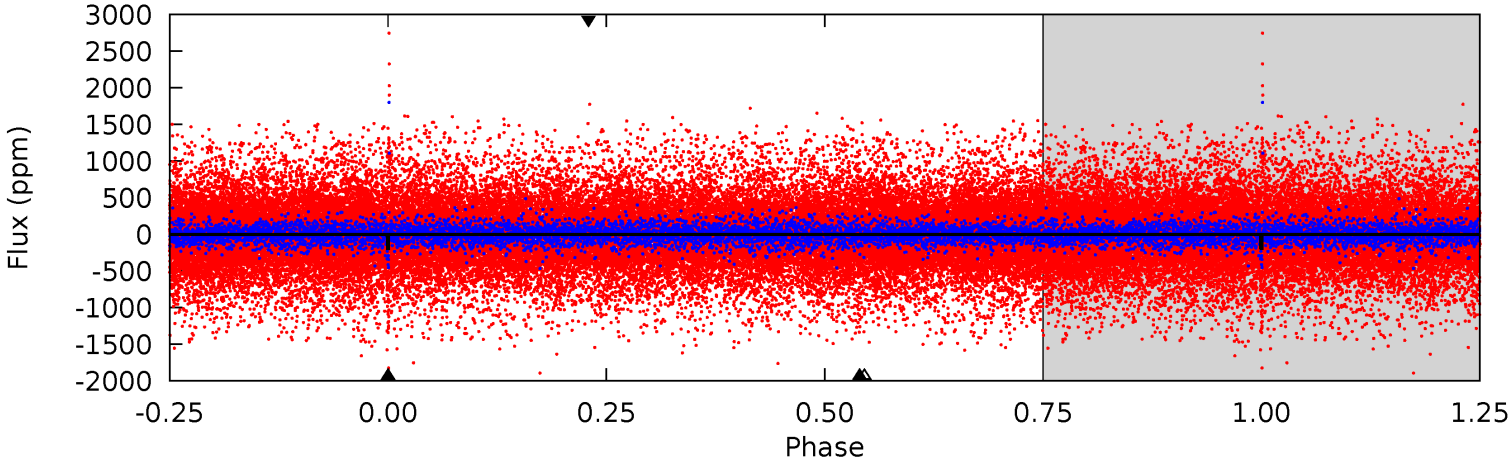


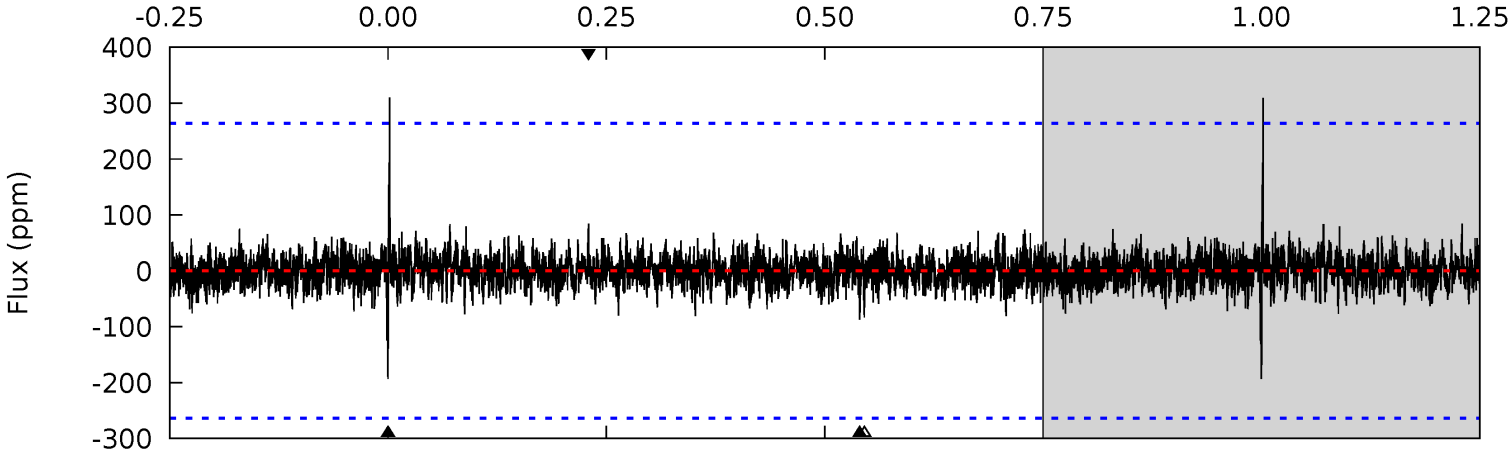


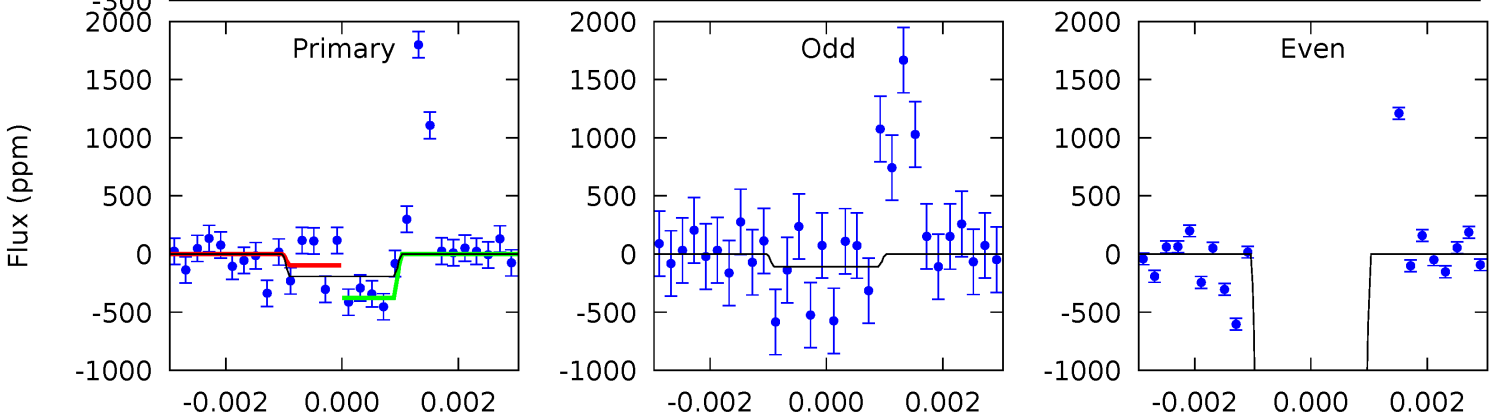
Alt Model-Shift Uniqueness Test

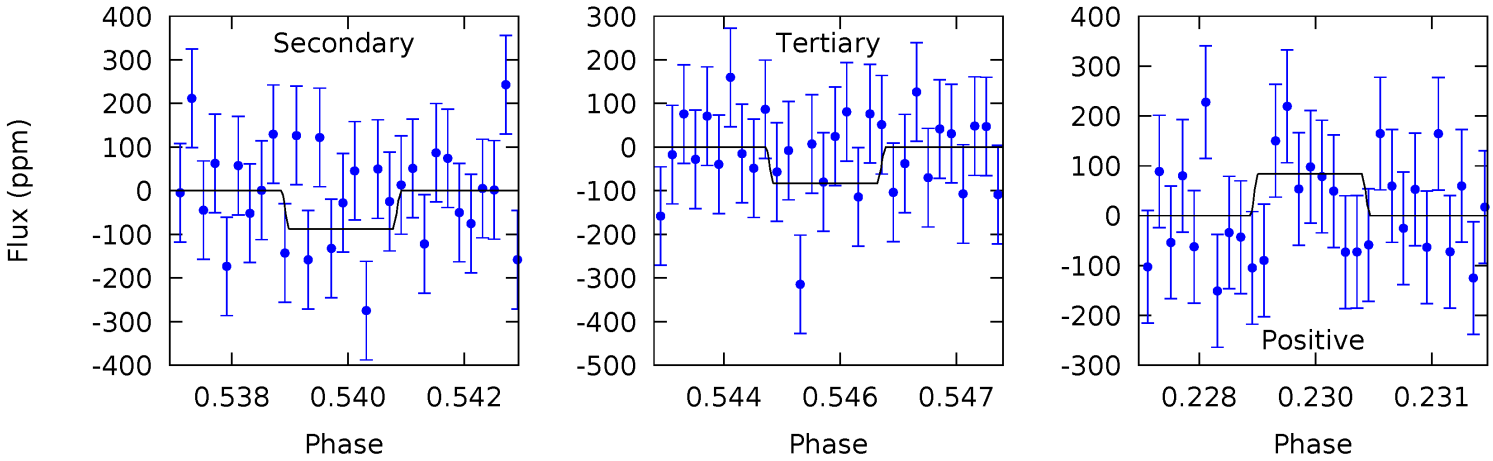
006445968-02, P = 275.696403 Days, E = 207.628476 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.92	1.78	1.68	1.70	5.34	3.12	0.45	2.24	2.22	0.09	0.08	27.2	3.12	0.62	2.81









Stellar Parameters For KIC 006445968

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5266^{+185}_{-185}	$4.536^{+0.094}_{-0.077}$	$-0.460^{+0.350}_{-0.300}$	$0.749^{+0.098}_{-0.088}$	$0.702^{+0.103}_{-0.044}$	$2.359^{+0.872}_{-0.584}$
	+4%/-4%	+2%/-2%	+76%/-65%	+13%/-12%	+15%/-6%	+37%/-25%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 006445968-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2461±154	$2.92^{+1.41}_{-1.37}$	326^{+16}_{-15}	6197^{+2766}_{-1089}	$88122^{+226377}_{-47815}$
Alt.	-88±49	$2.45^{+1.48}_{-1.28}$	326^{+16}_{-16}	3388^{+1032}_{-558}	4113^{+14144}_{-3048}

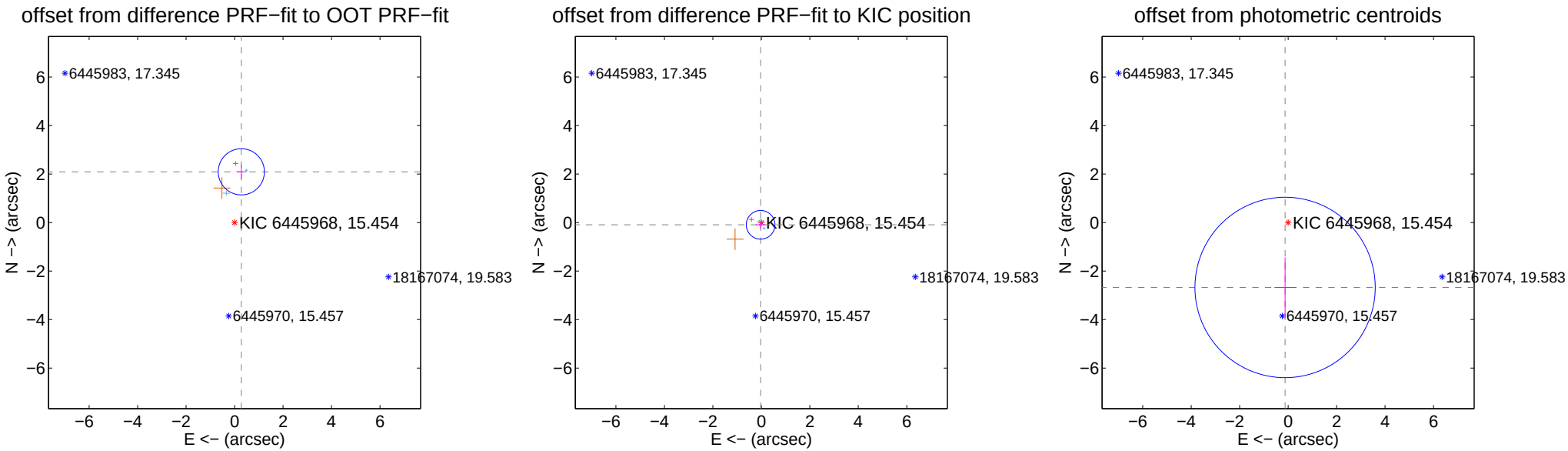
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

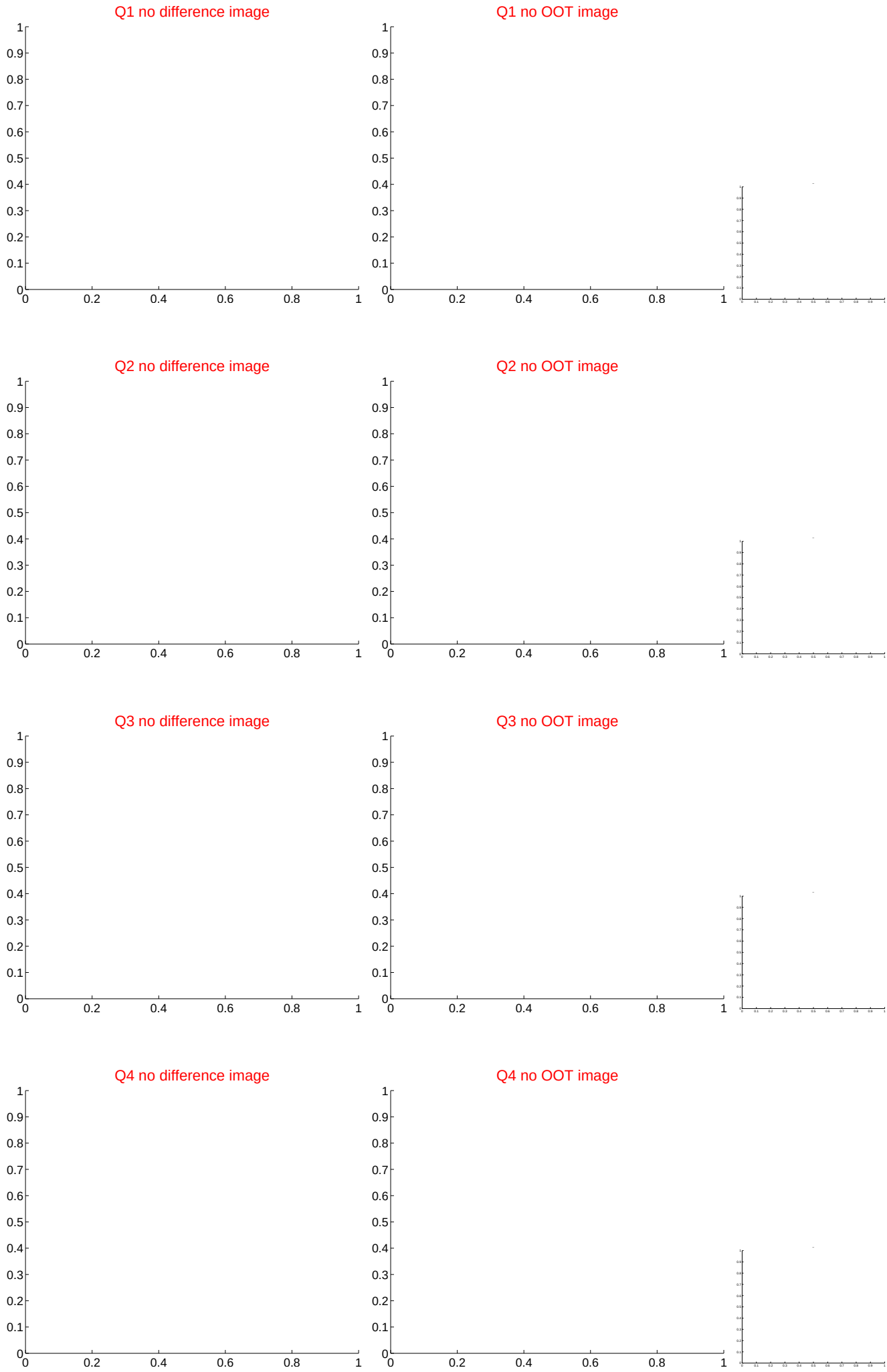
Supplemental centroid analysis for 006445968-02. Kepler magnitude: 15.45. Transit SNR 5.75
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 1.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.111 ± 0.317	6.65	-0.278 ± 0.202	2.092 ± 0.301
PRF-fit source offset from KIC position	0.098 ± 0.197	0.50	0.030 ± 0.205	-0.093 ± 0.158
photometric centroid source offset	2.68 ± 1.24	2.16	0.13 ± 0.44	-2.68 ± 1.24

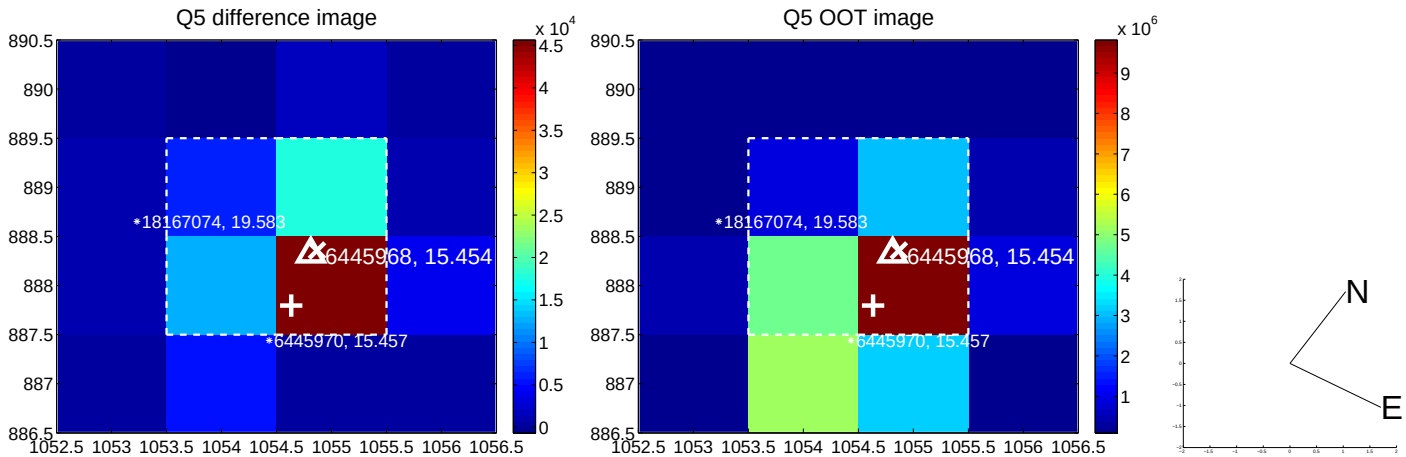


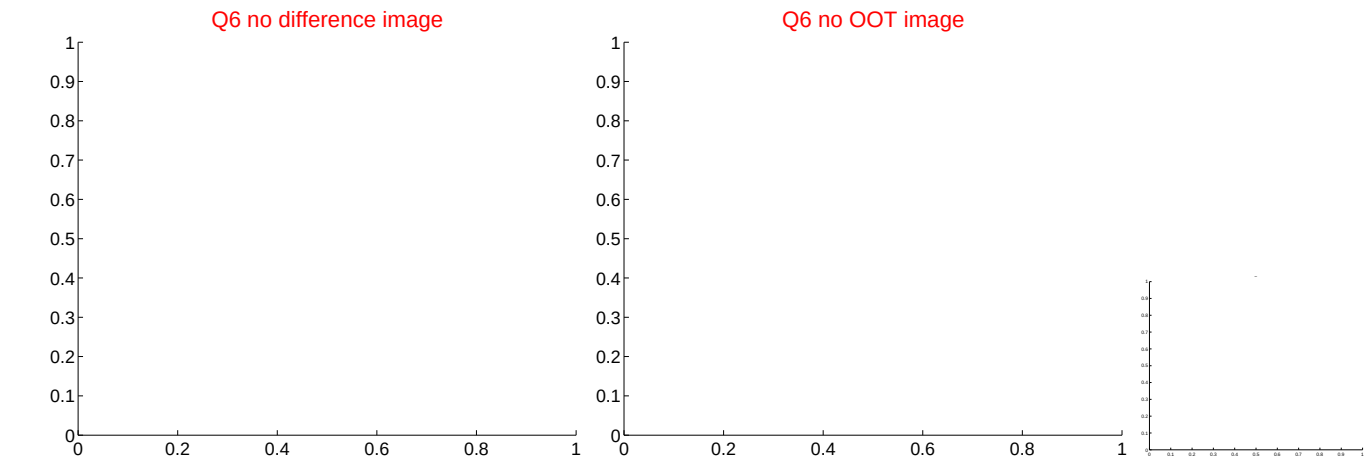
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

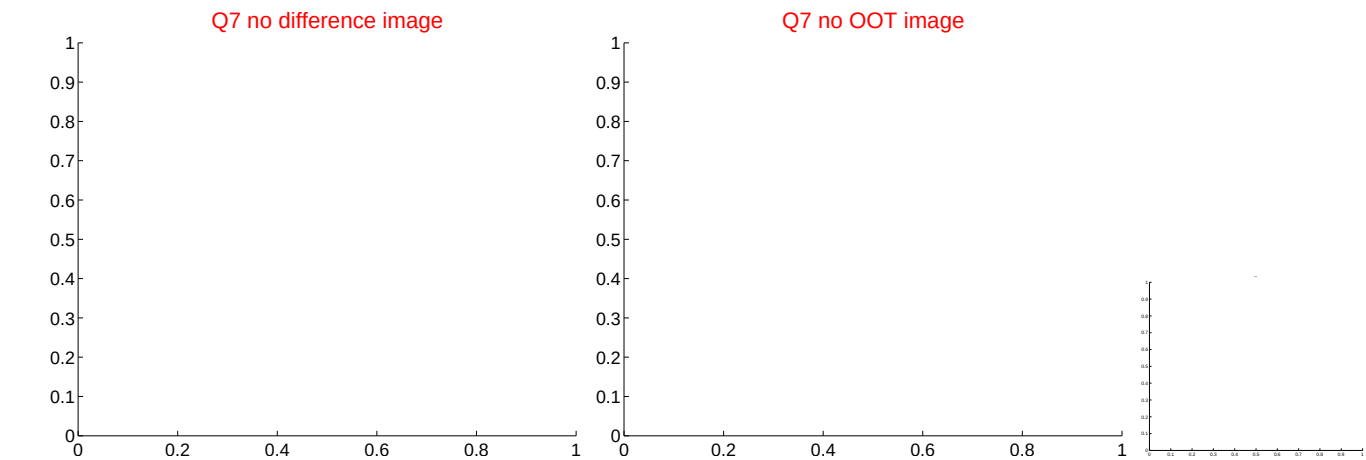
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

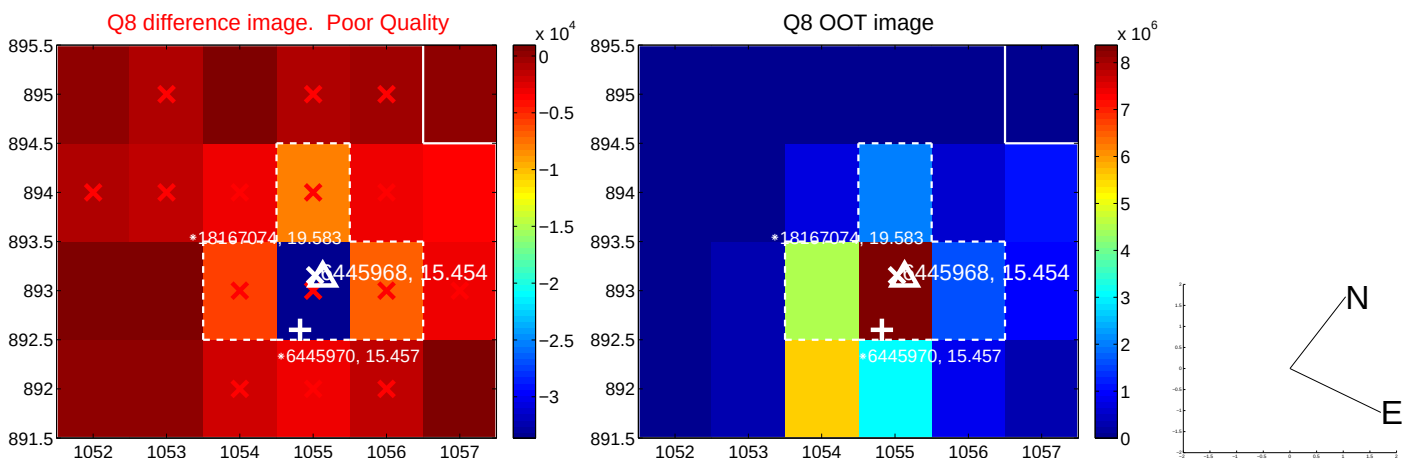


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

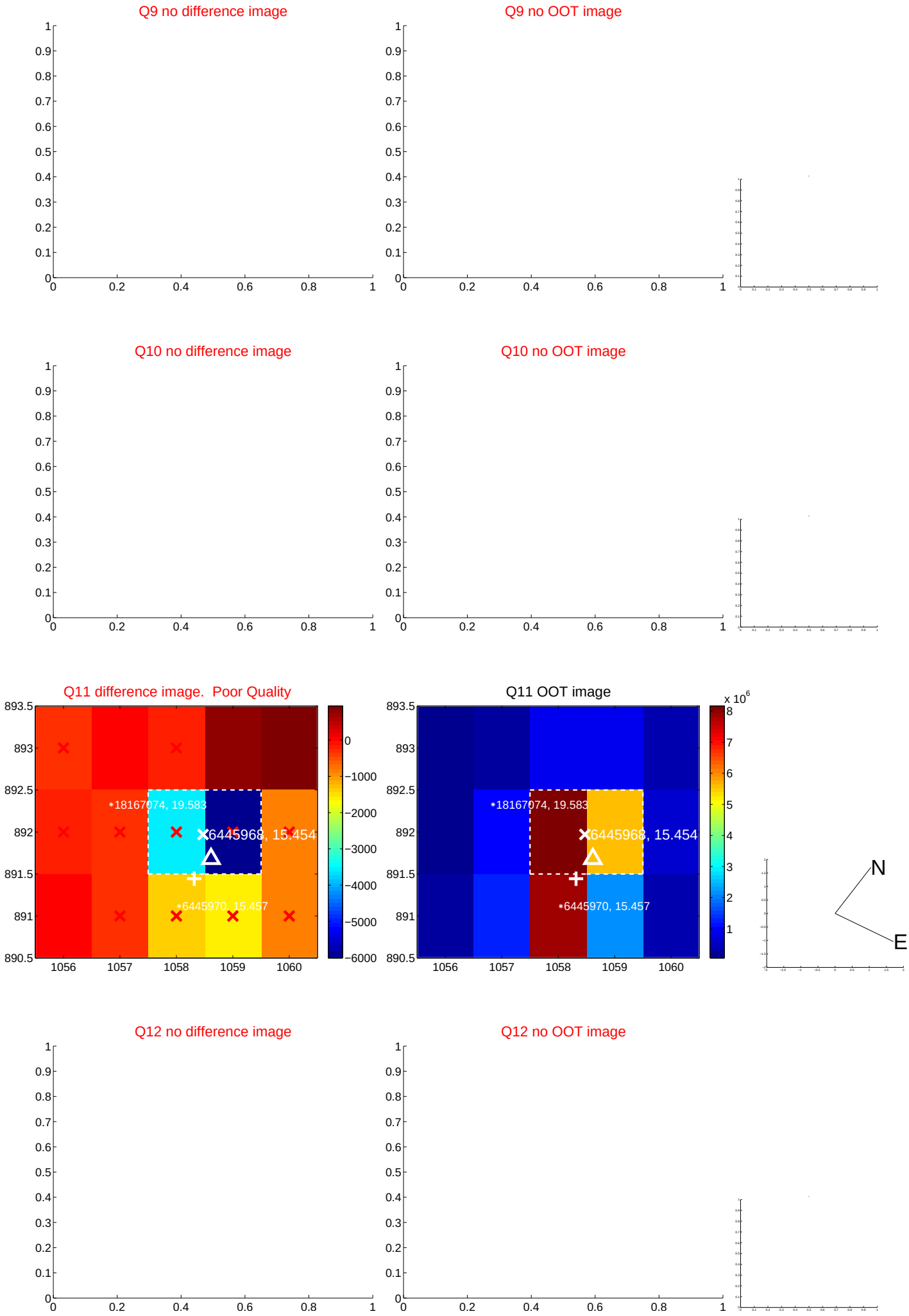




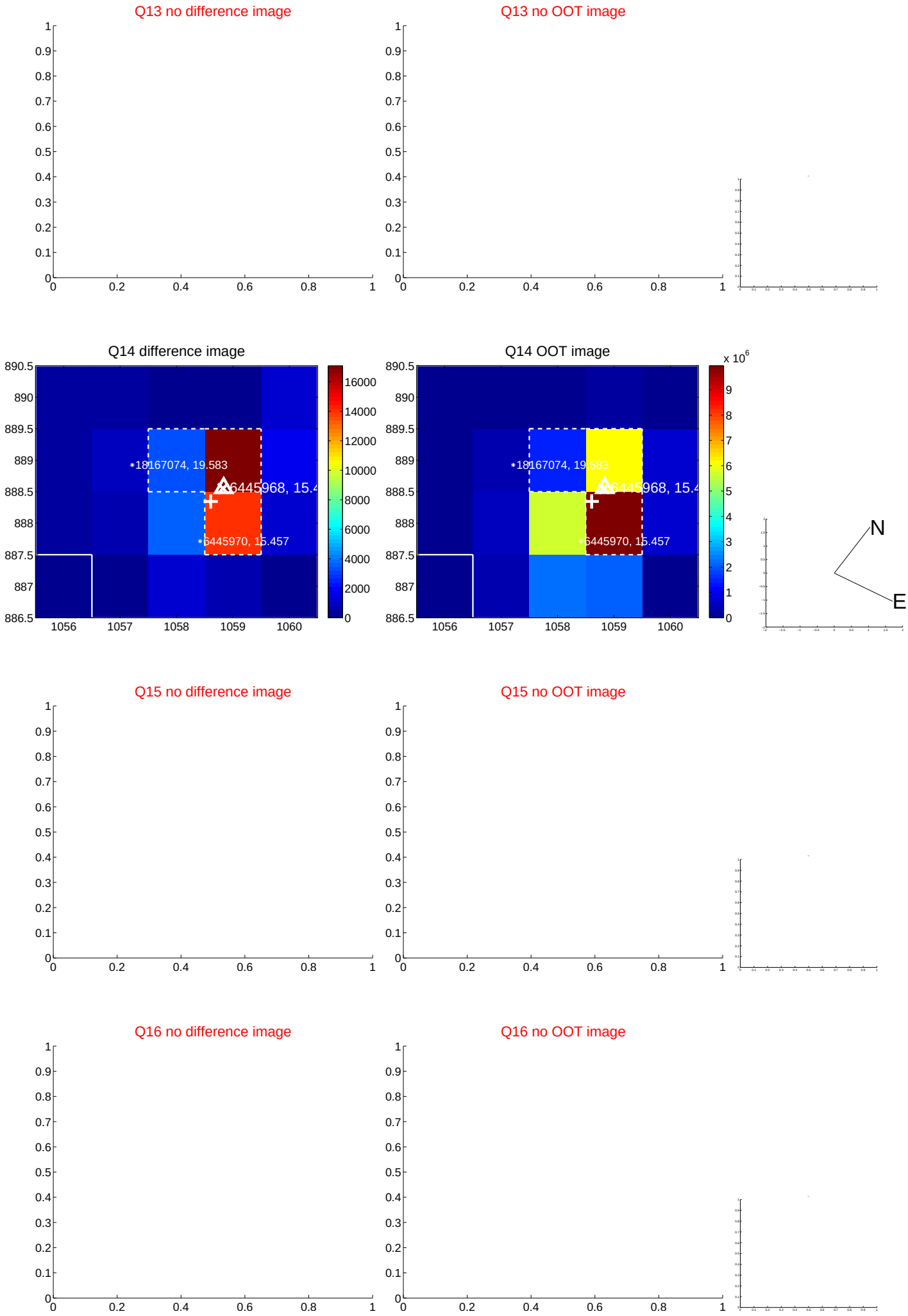




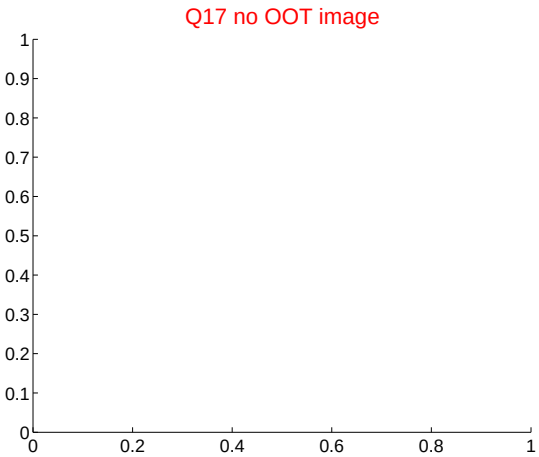
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

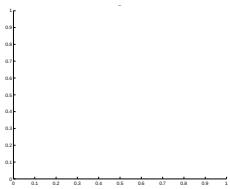


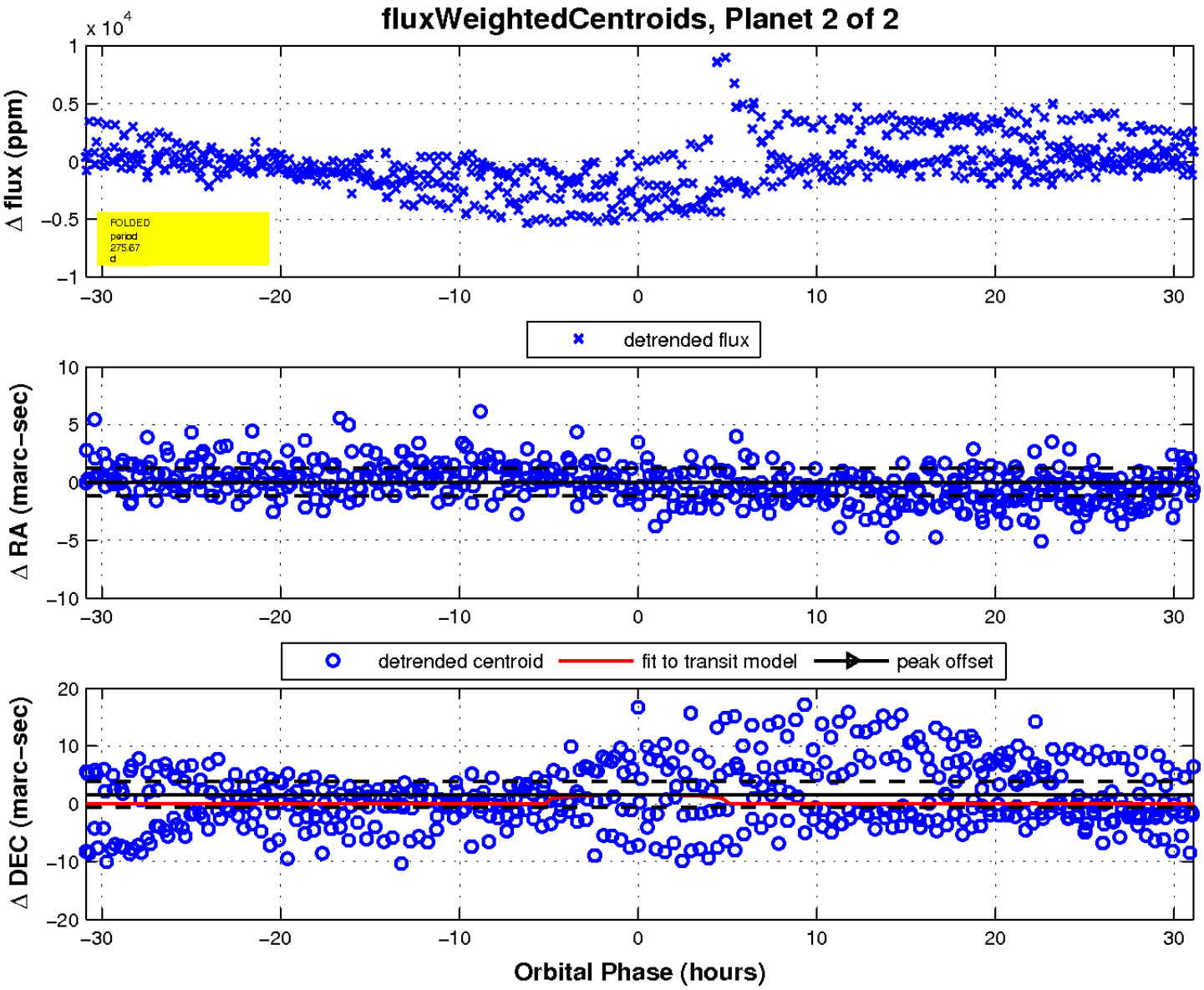
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



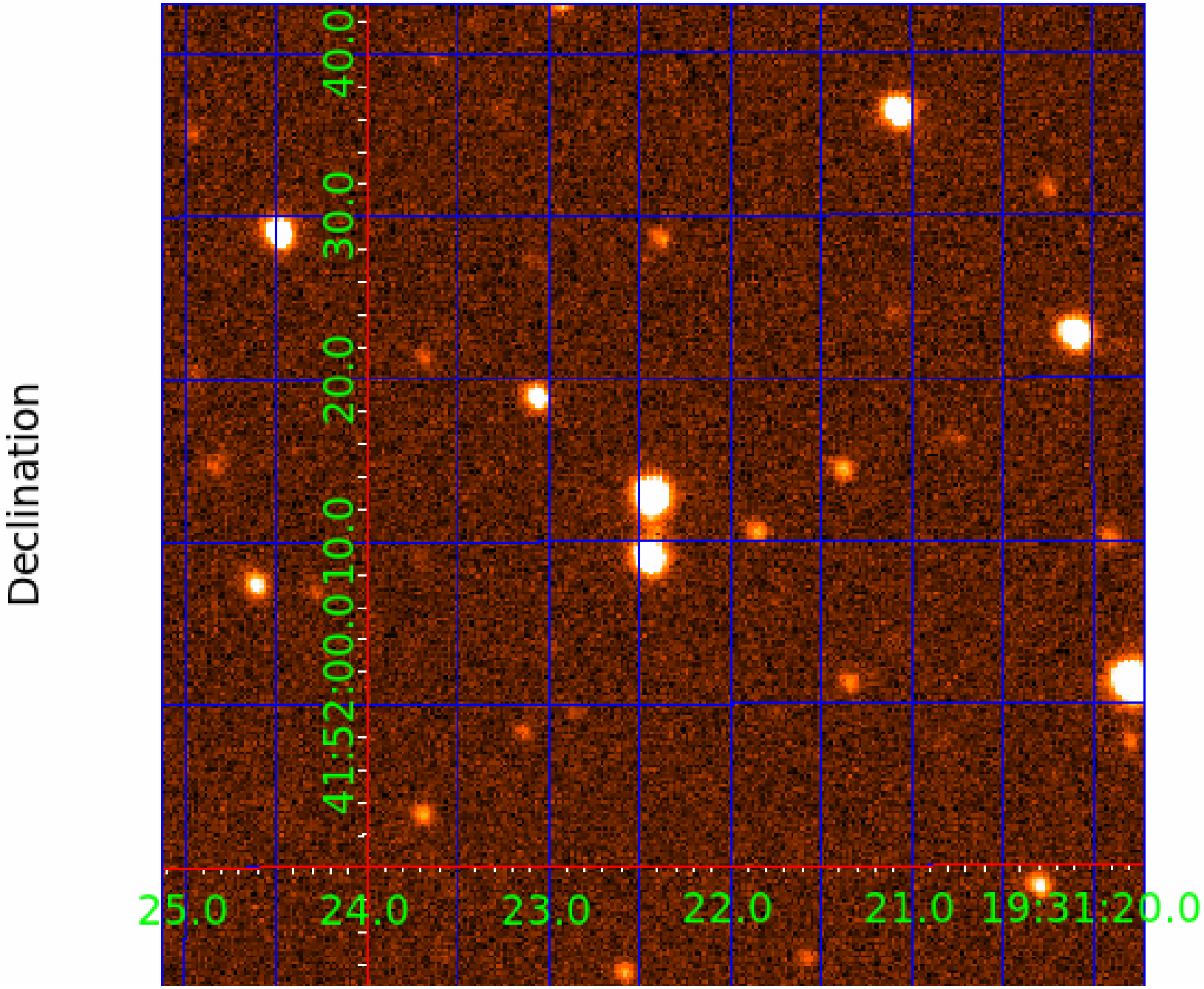
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image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