KIC 006523351

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 ($S_\oplus$)
006523351-01	OBS	3117.01	6.066604	136.148295	68.5	1.878	11.1	12.4	0.89	5569	0.88	165.83
006523351-02	OBS	No	384.037068	236.055485	255.2	5.187	8.8	7.3	0.89	5569	1.60	0.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006523351-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
006523351-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

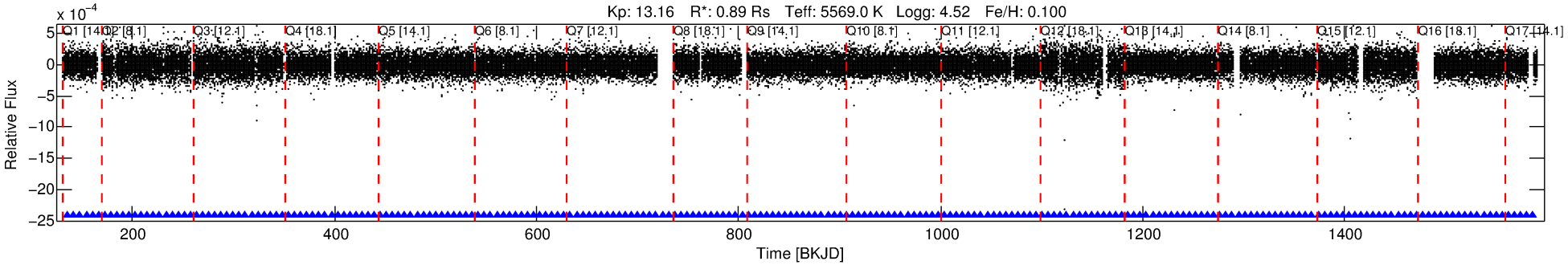
Ephemeris Match Information For 006523351-01

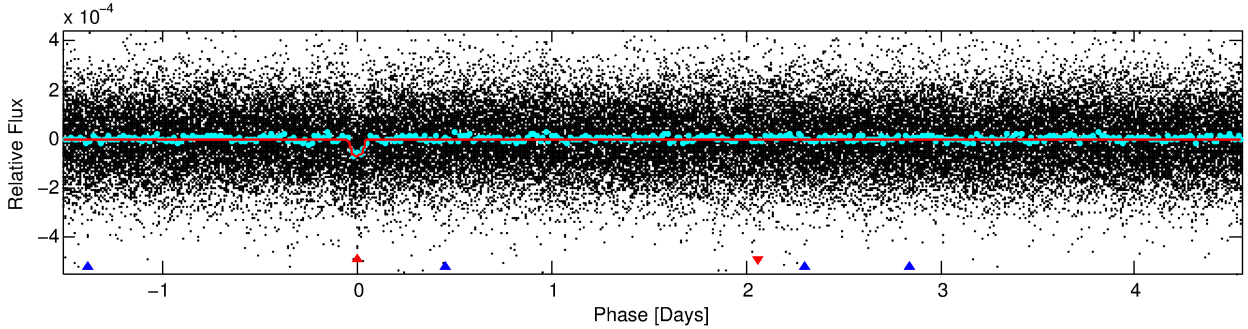
No Significant Match Found

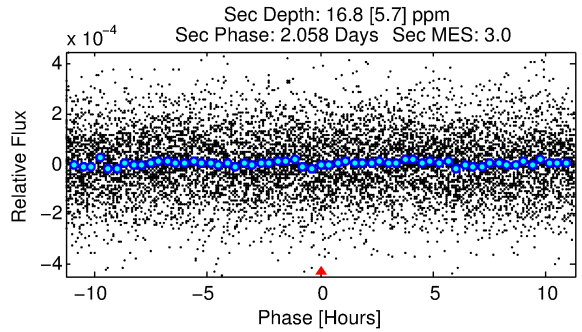
DV One-Page Summary

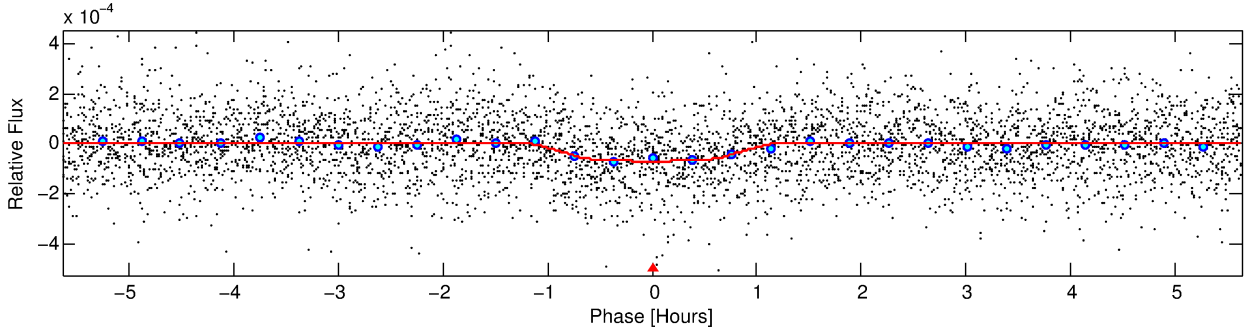
KIC: 6523351 Candidate: 1 of 2 Period: 6.067 d
KOI: K03117.01 Corr: 0.915

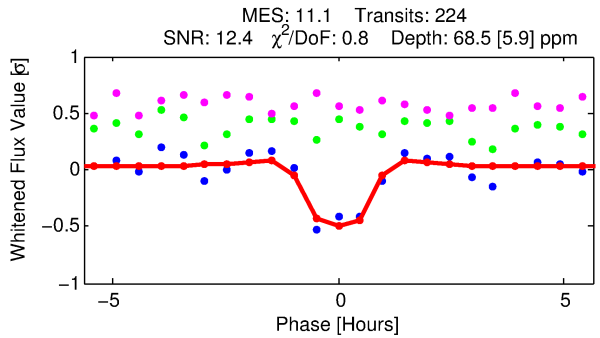
Kp: 13.16 R*: 0.89 Rs Teff: 5569.0 K Logg: 4.52 Fe/H: 0.100

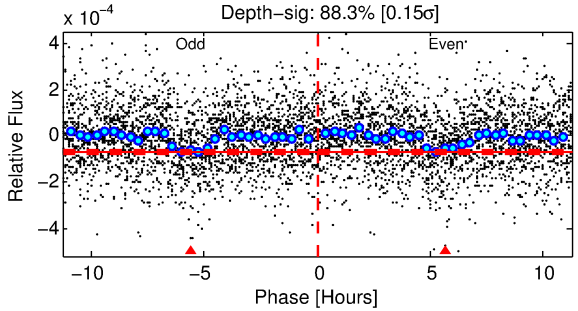


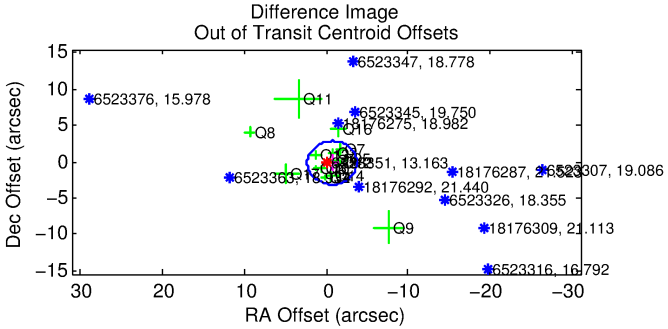












DV Fit Results:

Period = 6.06660 [0.00003] d
Epoch = 136.1483 [0.0029] BKJD
Rp/R* = 0.0090 [0.0045]
a/R* = 11.75 [25.74]
b = 0.89 [0.53]

Seff = 165.83 [34.98]
Teq = 915 [48] K
Rp = 0.88 [0.45] Re
a = 0.0643 [0.0081] AU

Ag = 49.50 [52.78] [0.92σ]
Teffp = 3753 [986] K [2.87σ]

DV Diagnostic Results:

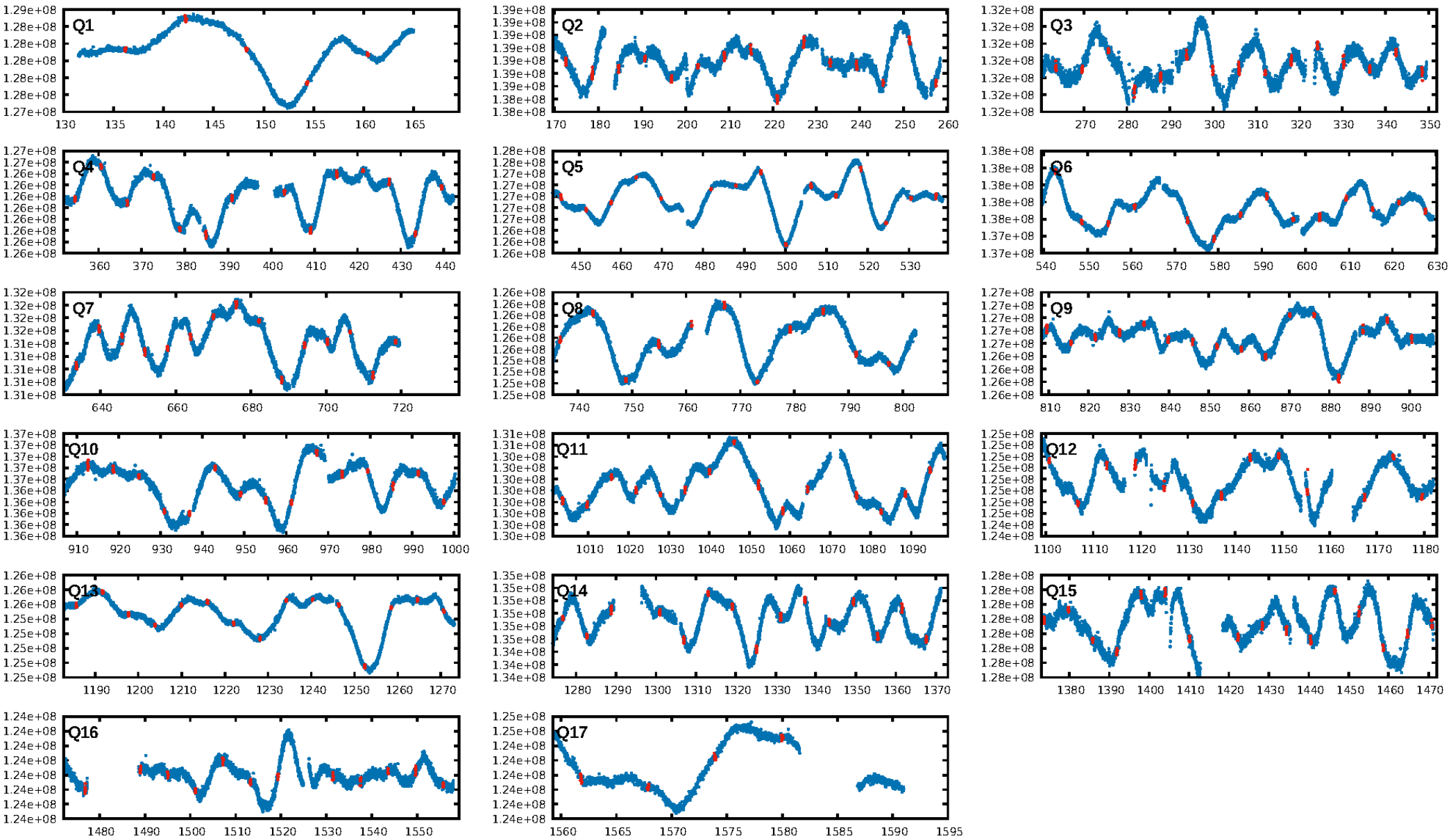
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [1644.29σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: 4.11e−28
RollingBand−fgt: 1.00 [215/215]
GhostDiagnostic−chr: −12.25

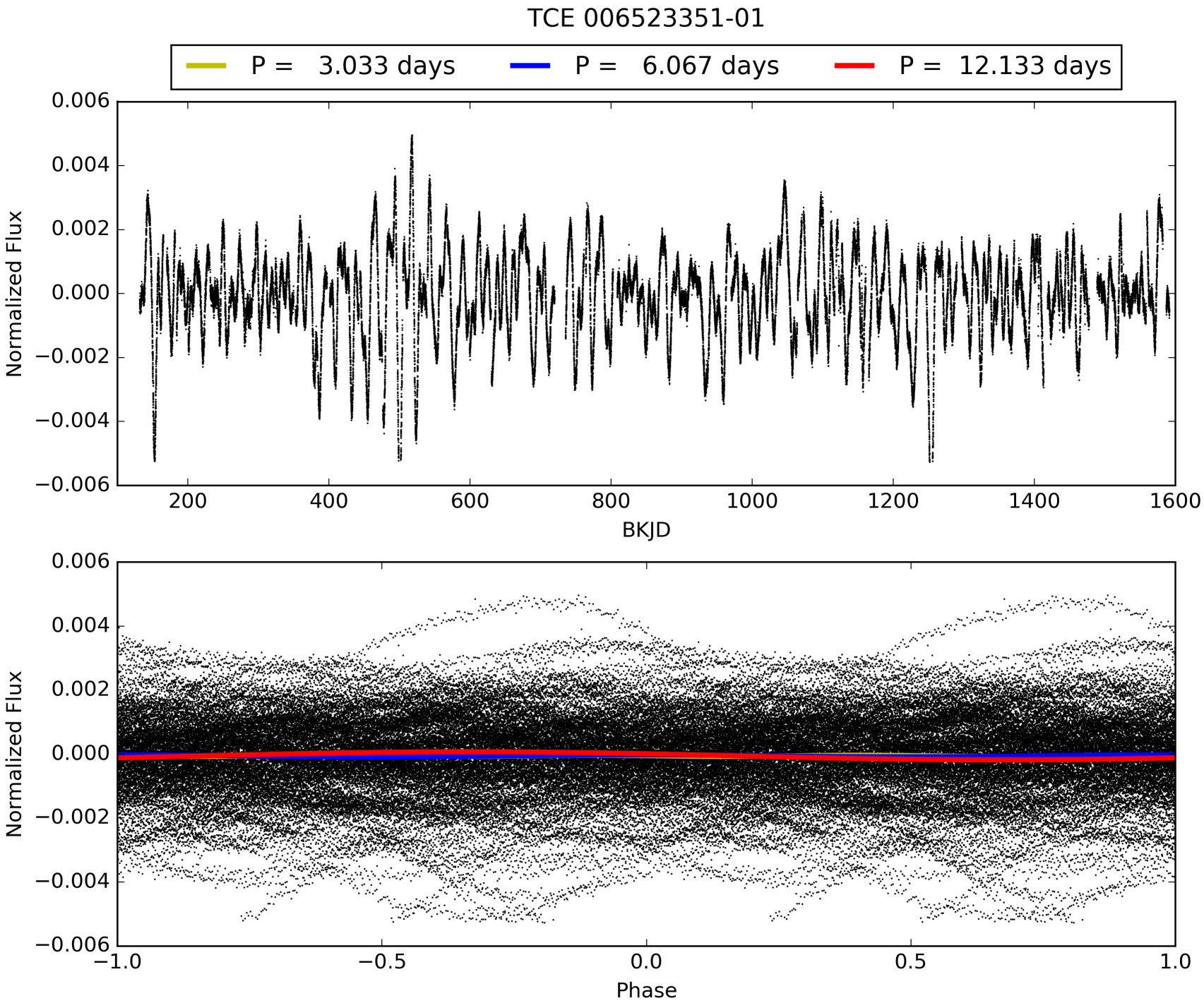
Centroid−sig: 87.7%
Centroid−so: 0.302 arcsec [0.34σ]
OotOffset−rm: 0.705 arcsec [0.71σ]
KicOffset−rm: 0.724 arcsec [0.74σ]
OotOffset−st: 4/3/4/4 [15]
KicOffset−st: 4/3/4/4 [15]
DiffImageQuality−fgm: 0.60 [9/15]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29−Jan−2016 07:55:06 Z

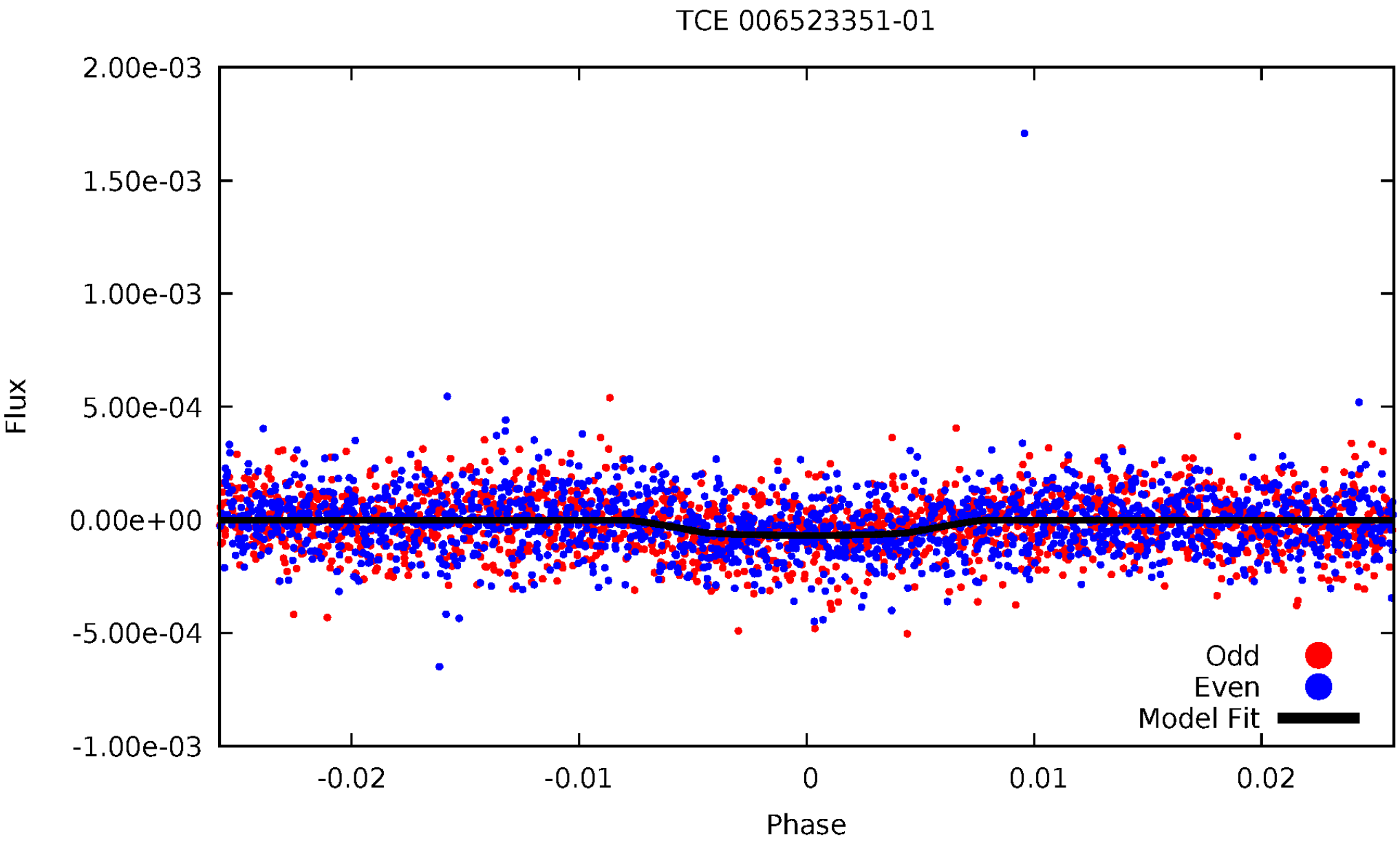
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006523351-01, PDC Light Curves

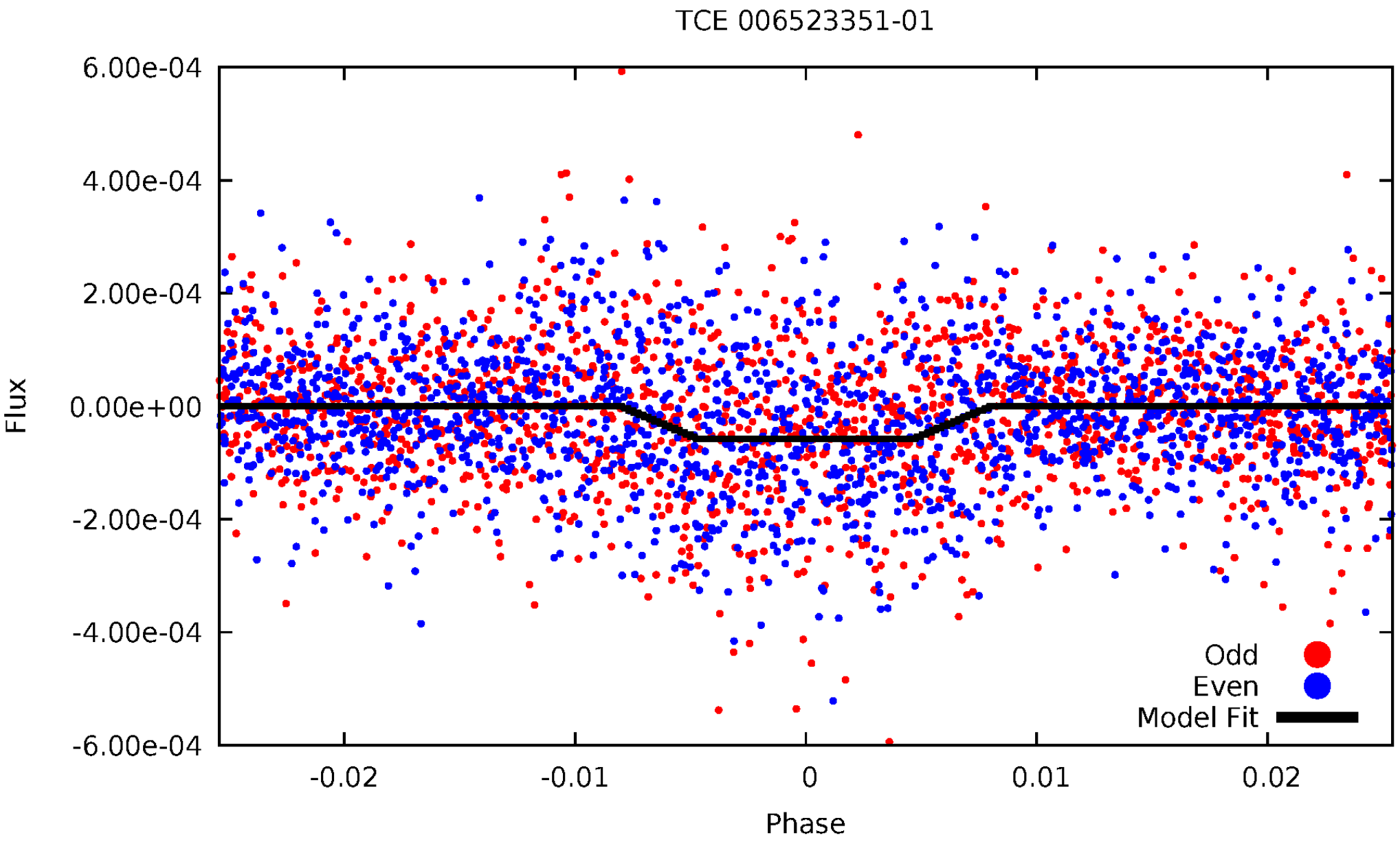



TCE 006523351-01
P = 3.033 days
P = 6.067 days
P = 12.133 days
Normalized Flux
BKJD
Normalized Flux
Phase

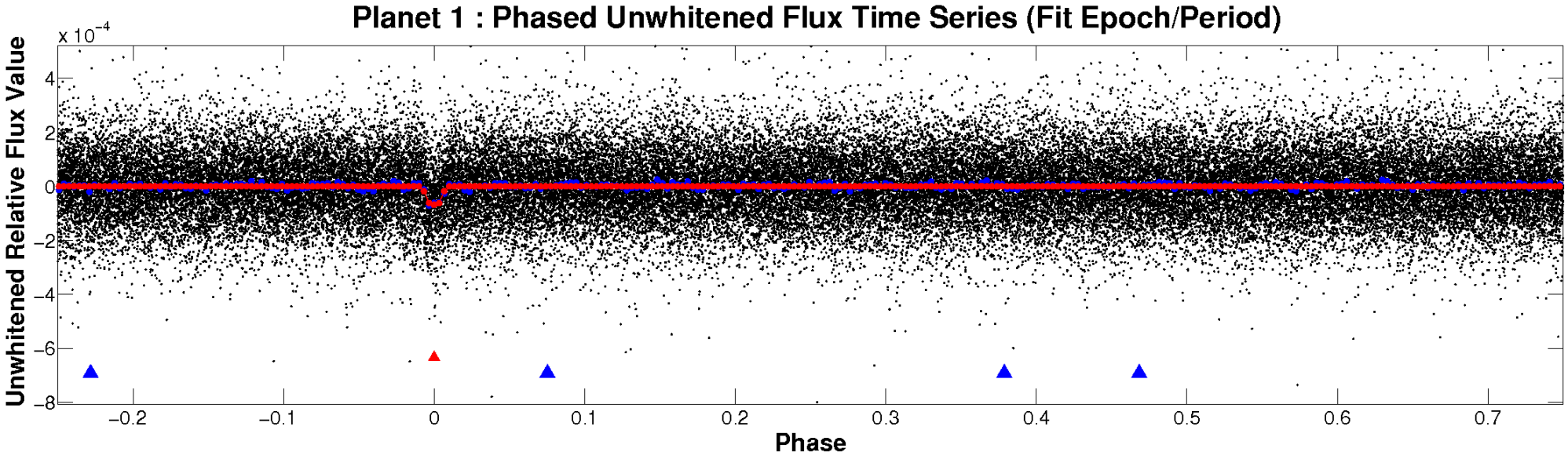
DV Odd/Even

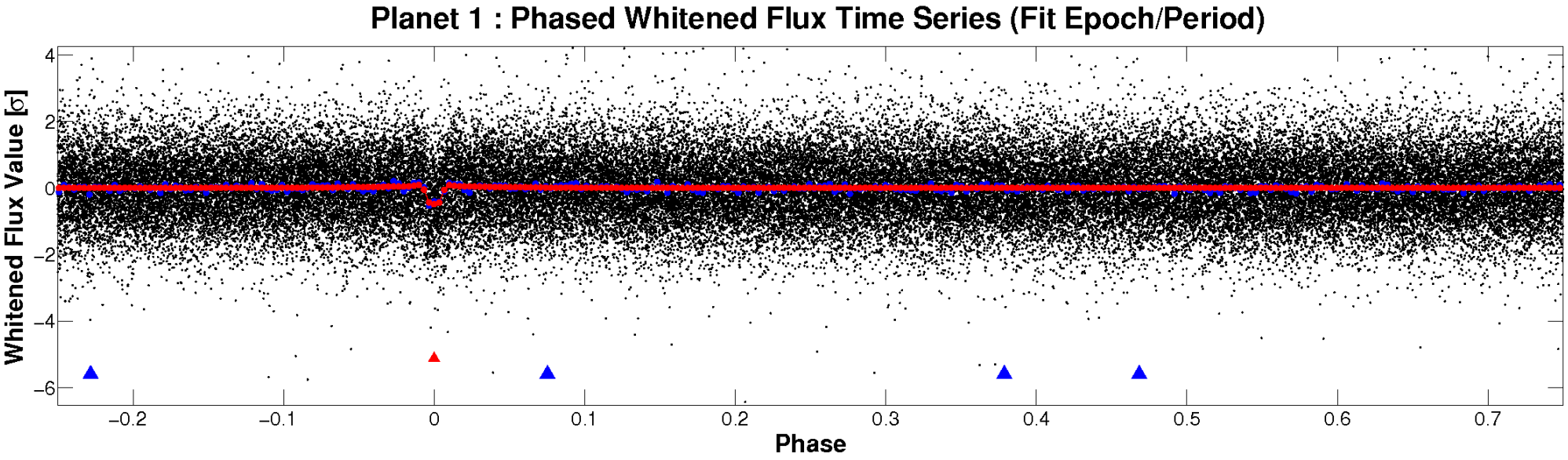

TCE 006523351-01
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
Flux
-0.02
-0.01
0
0.01
0.02
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006523351-01
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.02
-0.01
0
0.01
0.02
Phase
Odd
Even
Model Fit

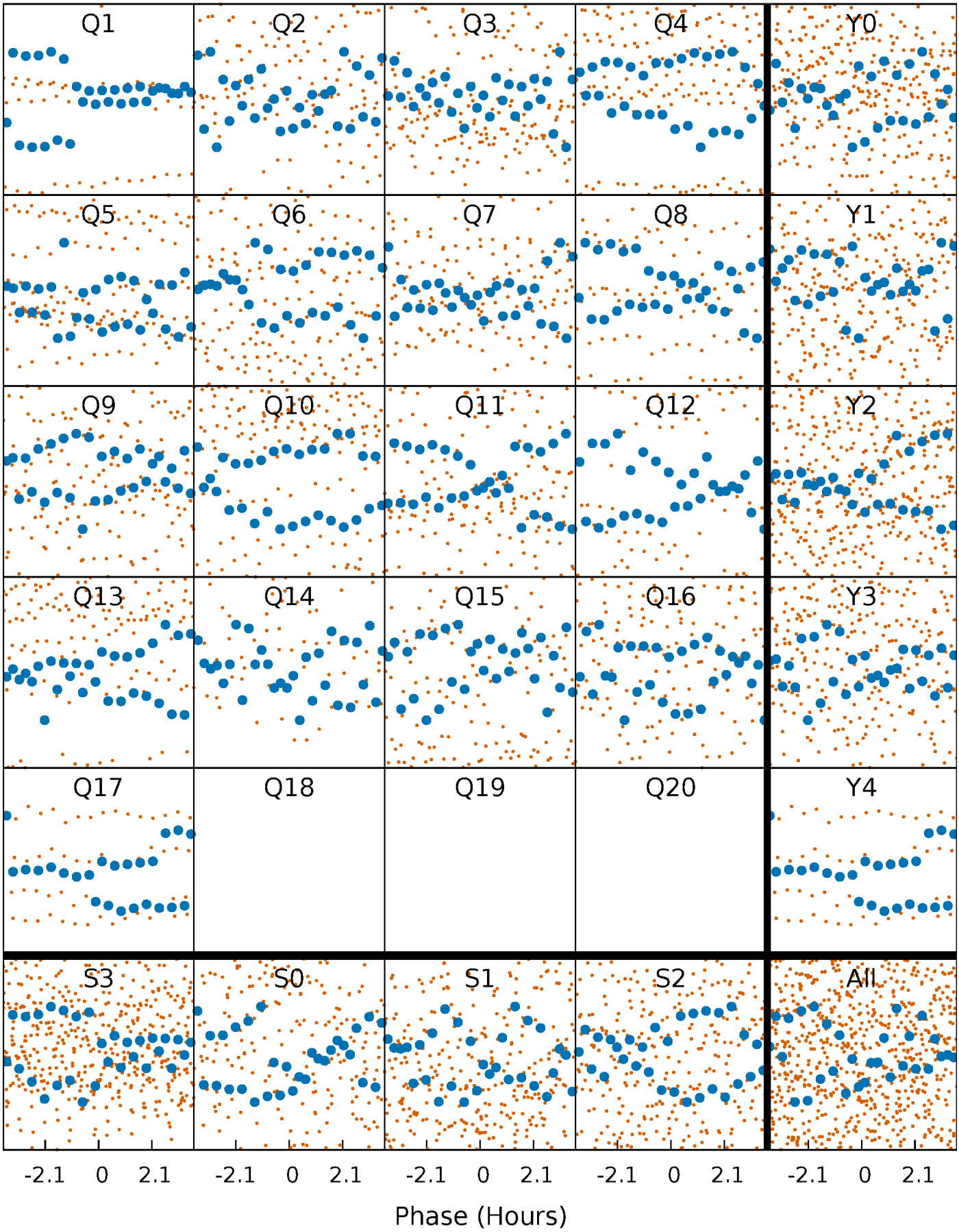
Non-Whitened Vs. Whitened Light Curve





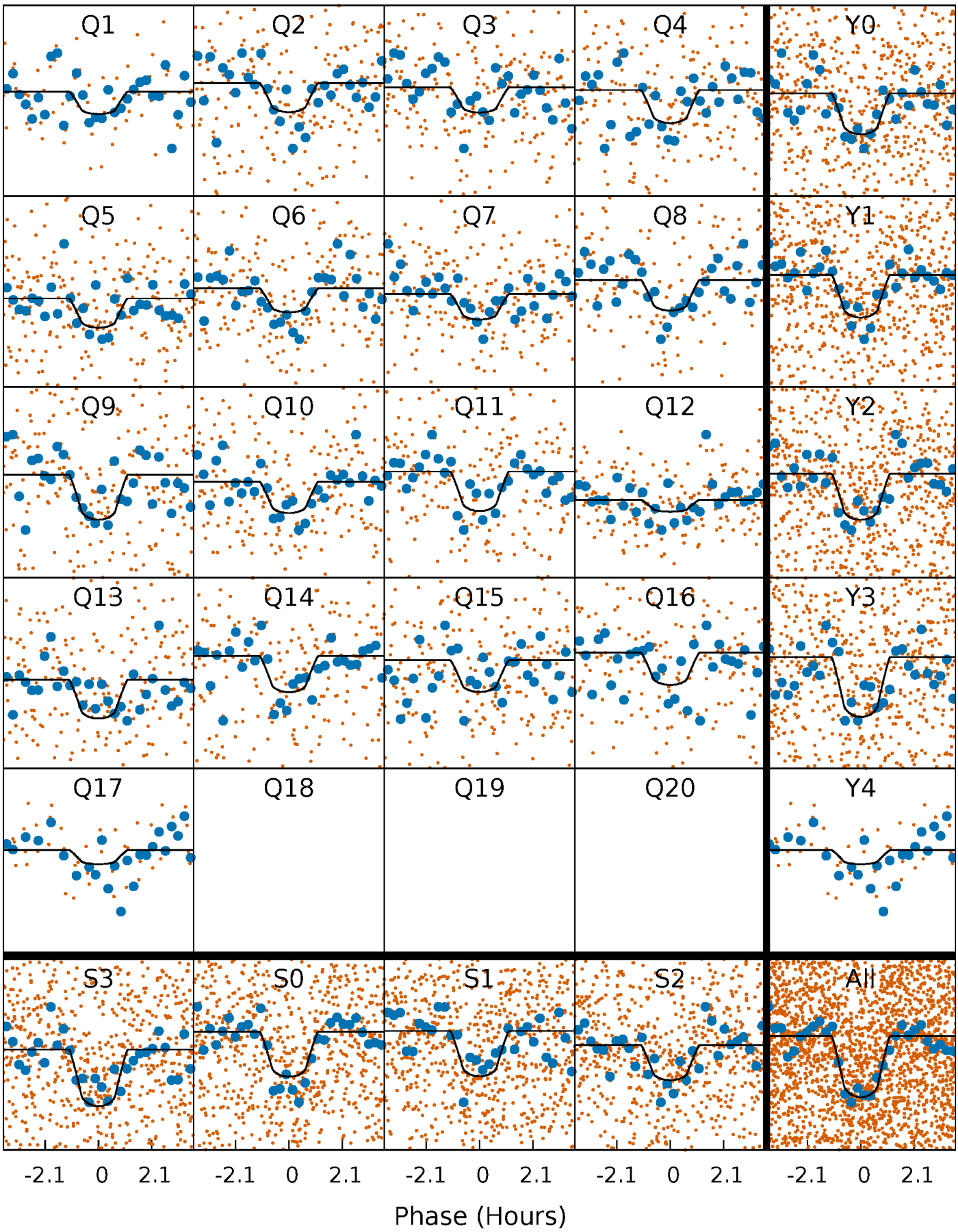
PDC Quarter-Phased Transit Curves

TCE 006523351-01 P= 6.066604 Days T_0=136.148295 (BKJD)



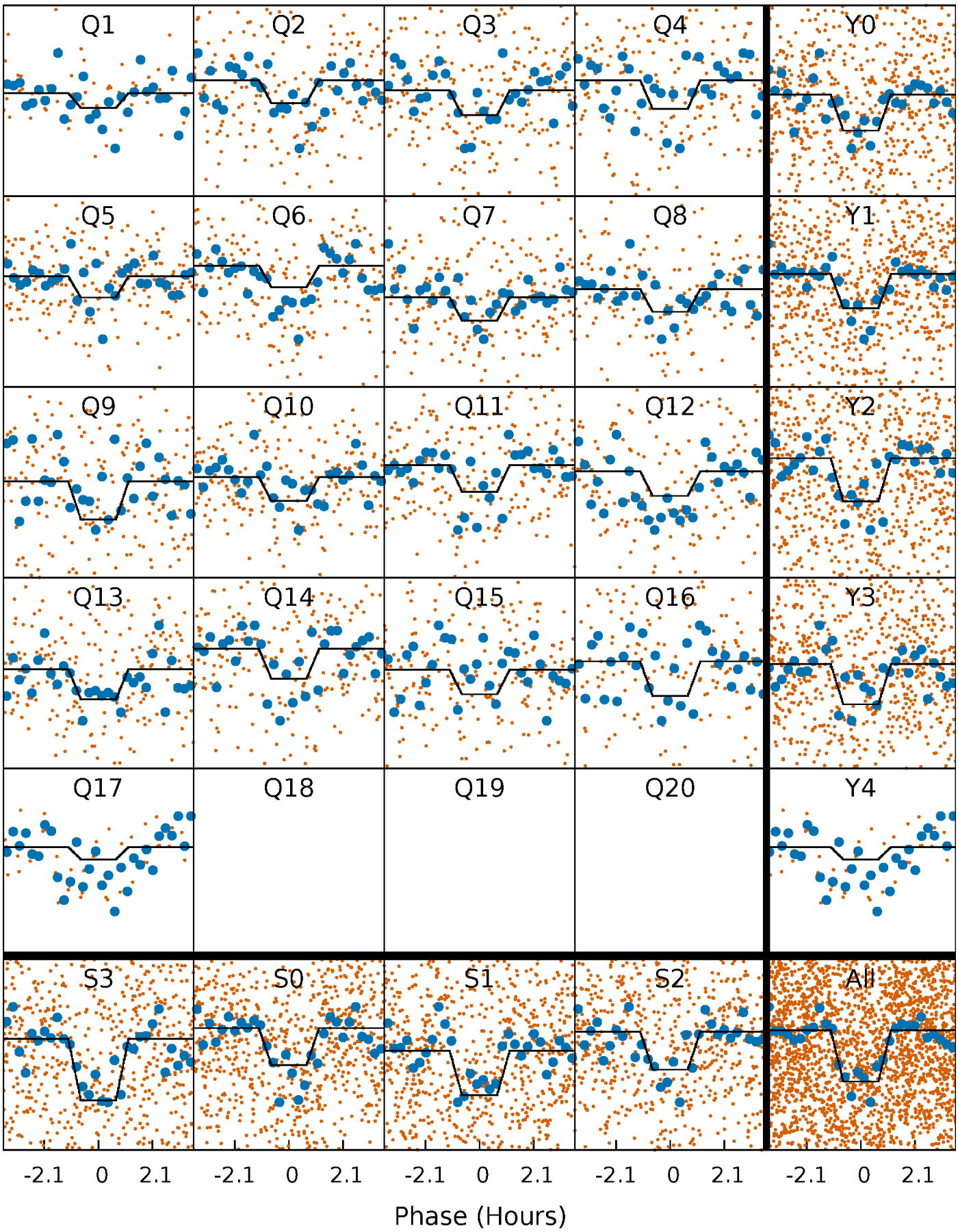
DV Quarter-Phased Transit Curves

TCE 006523351-01 P= 6.066604 Days T_0=136.148295 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

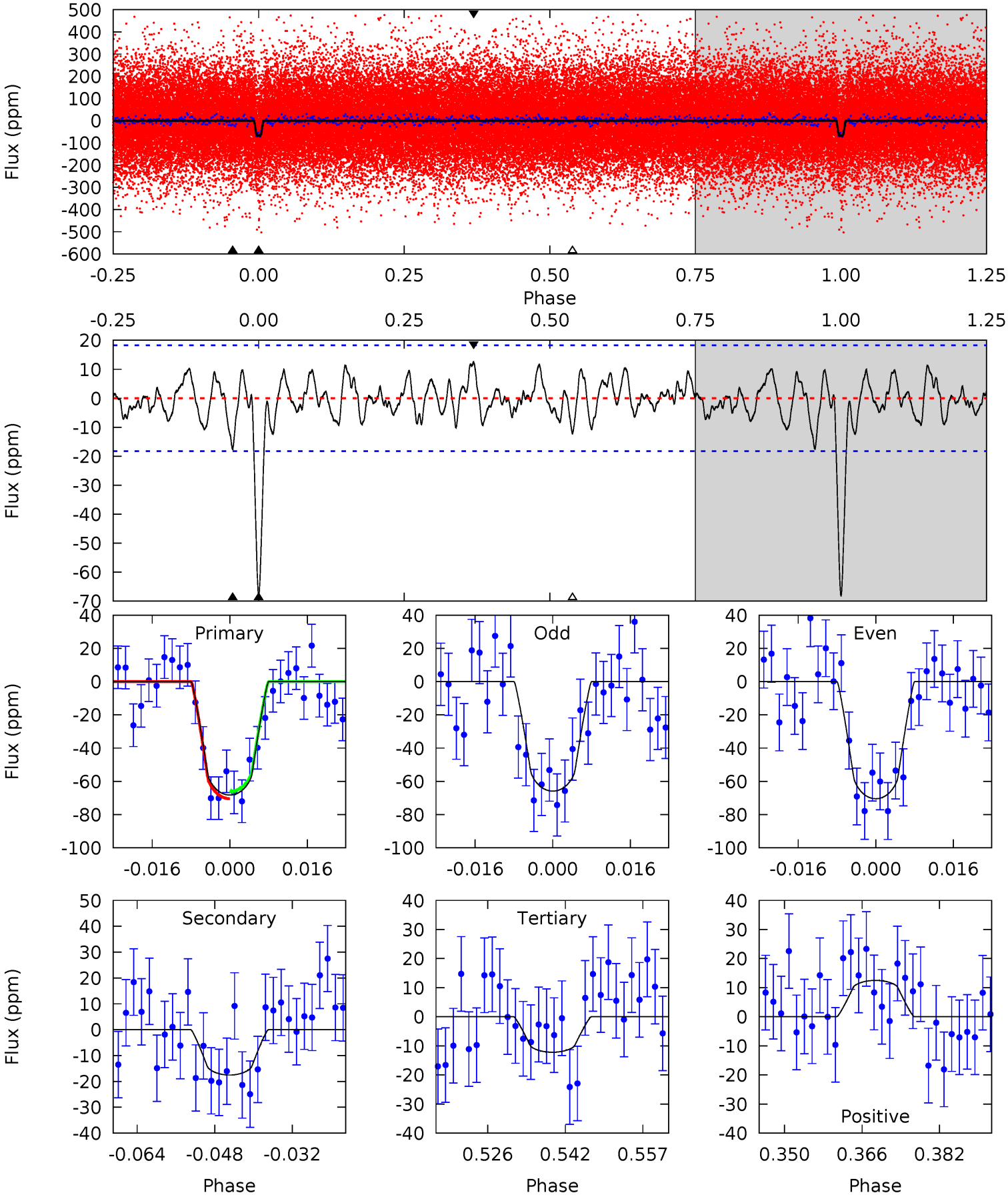
TCE 006523351-01 P= 6.066683 Days T_0=136.140283 (BKJD)



DV Model-Shift Uniqueness Test

006523351-01, P = 6.066604 Days, E = 130.081691 Days

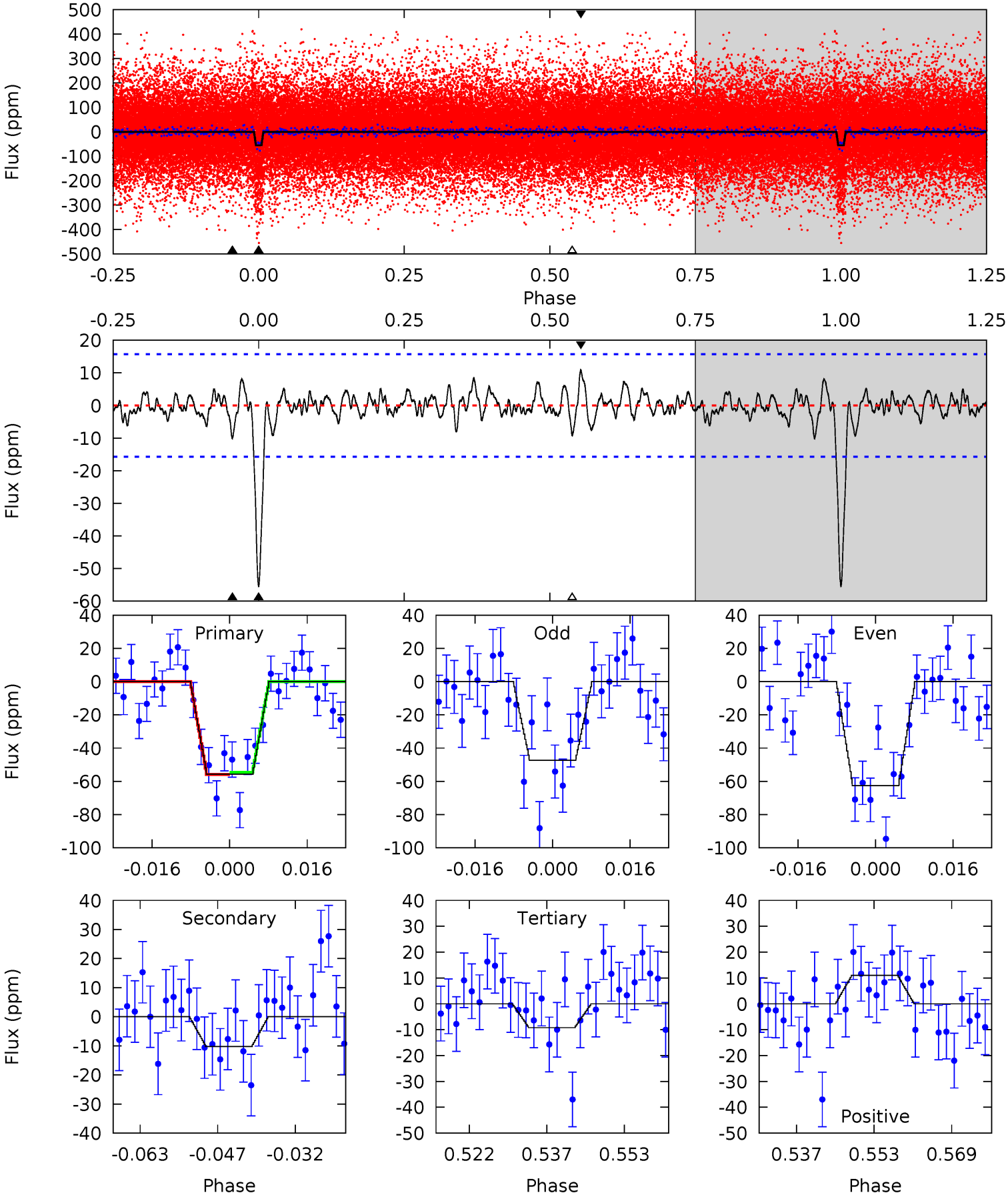
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	4.74	3.29	3.38	4.94	2.41	1.40	15.2	15.1	1.44	1.36	0.62	1.14	0.15	0.60



Alt Model-Shift Uniqueness Test

006523351-01, P = 6.066683 Days, E = 130.073600 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	3.20	2.89	3.46	4.94	2.41	0.97	14.6	14.0	0.31	-0.25	2.39	1.02	0.17	0.22



Stellar Parameters For KIC 006523351

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5569^{+100}_{-111}	$4.521^{+0.028}_{-0.112}$	$0.100^{+0.150}_{-0.150}$	$0.892^{+0.124}_{-0.044}$	$0.963^{+0.047}_{-0.071}$	$1.909^{+0.255}_{-0.596}$
	+2%/-2%	+1%/-2%	+150%/-150%	+14%/-5%	+5%/-7%	+13%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 006523351-01 / KOI 3117.01

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18±4	$0.94^{+0.42}_{-0.48}$	1293^{+50}_{-36}	3977^{+1306}_{-475}	41^{+141}_{-22}
Alt.	-10±3	$0.77^{+0.48}_{-0.41}$	1293^{+43}_{-35}	3868^{+1333}_{-567}	36^{+132}_{-23}

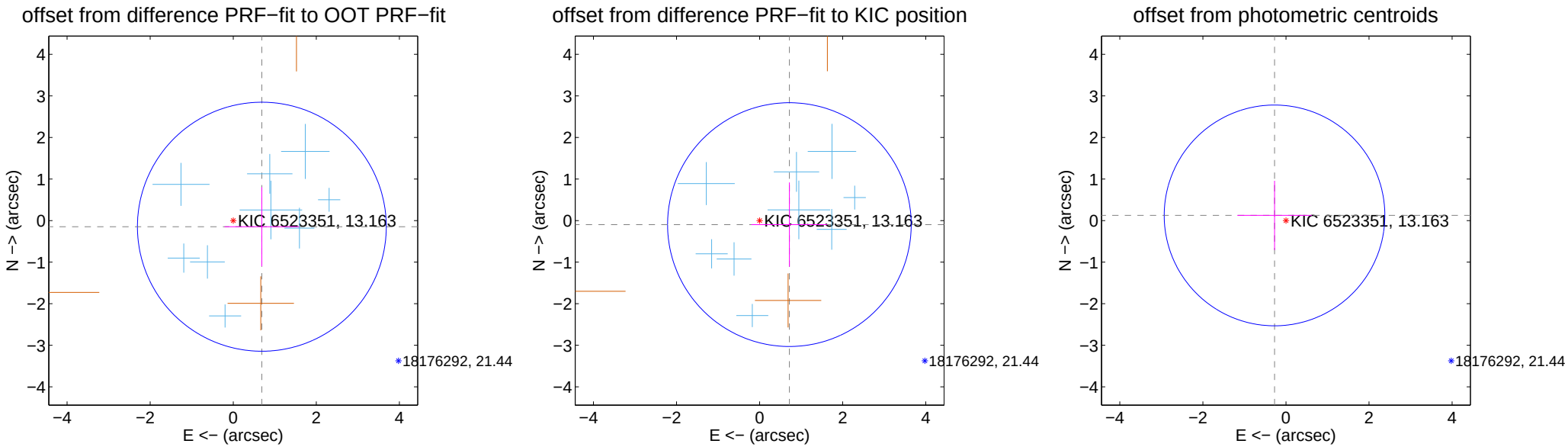
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

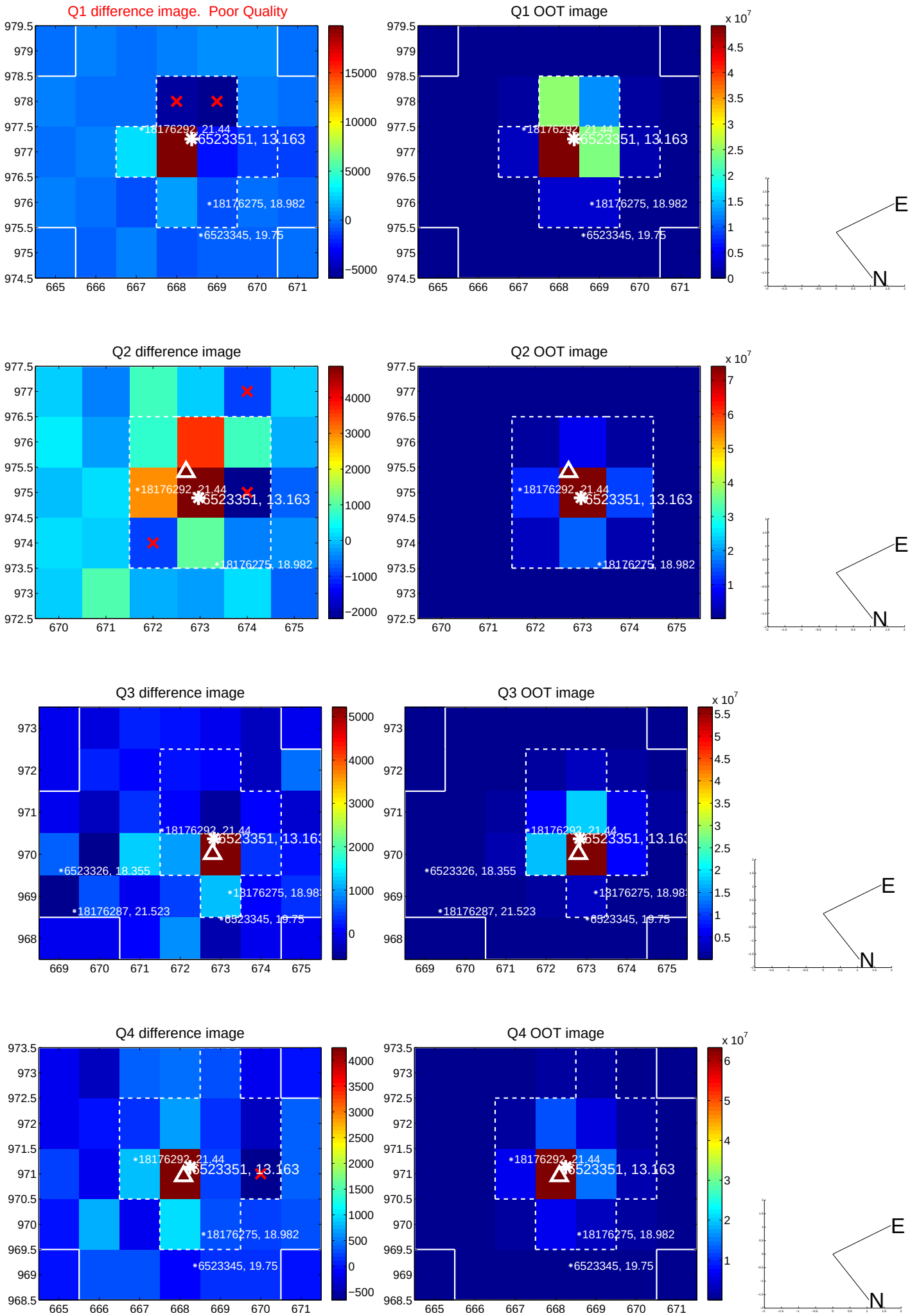
Supplemental centroid analysis for 006523351-01. Kepler magnitude: 13.16. Transit SNR 12.35
There are 9 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.705 ± 0.998	0.71	-0.689 ± 0.897	-0.148 ± 0.951
PRF-fit source offset from KIC position	0.724 ± 0.977	0.74	-0.717 ± 0.911	-0.097 ± 1.014
photometric centroid source offset	0.30 ± 0.89	0.34	0.28 ± 0.90	0.12 ± 0.83

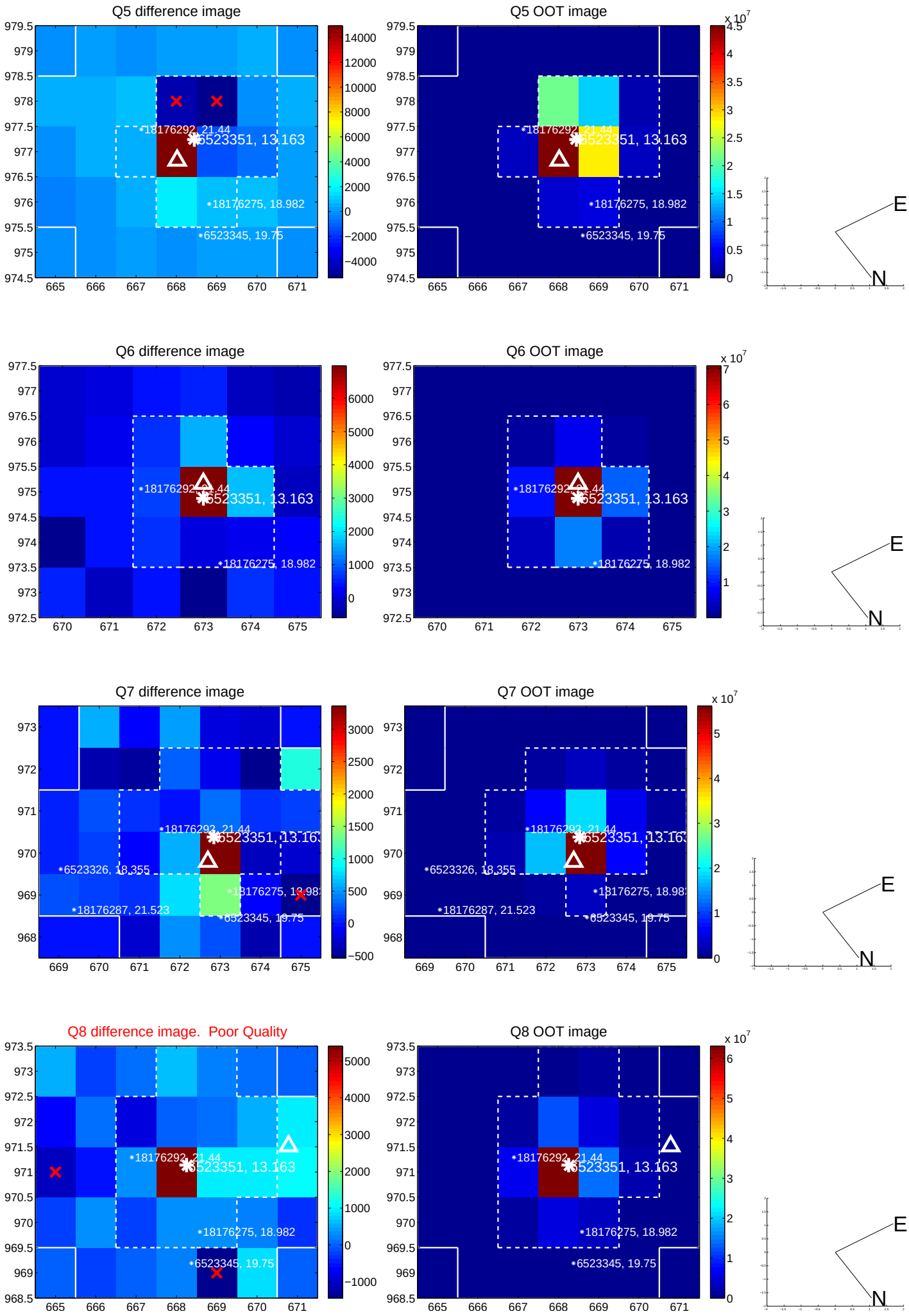


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

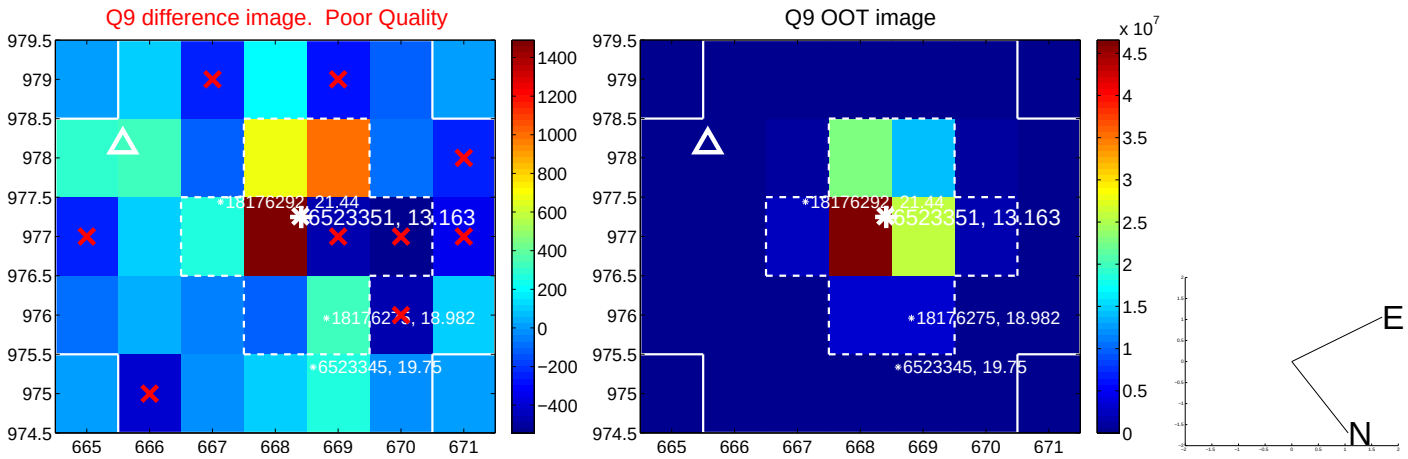
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

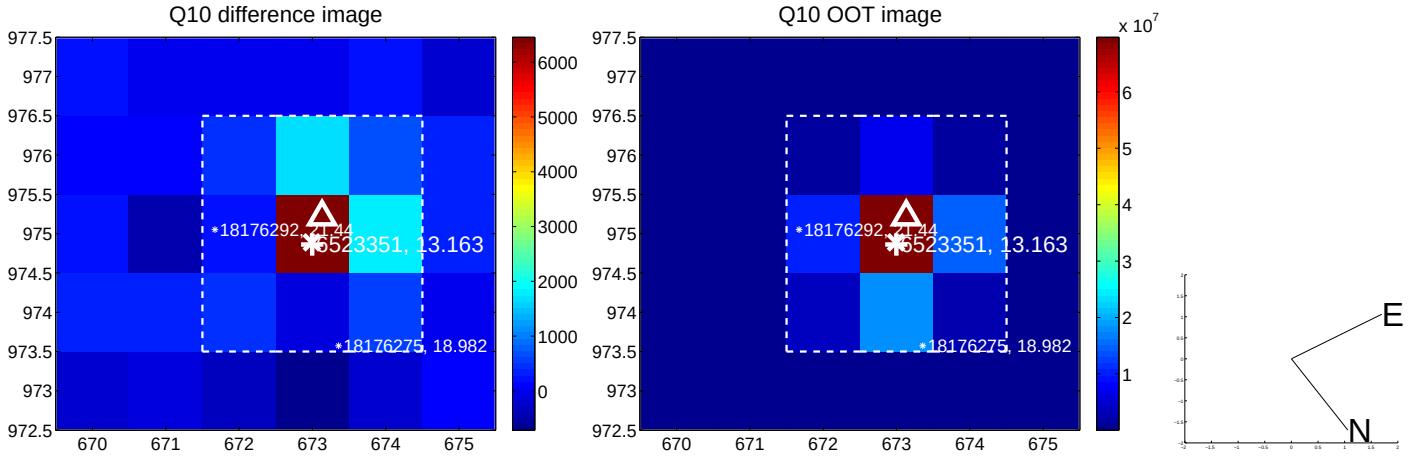


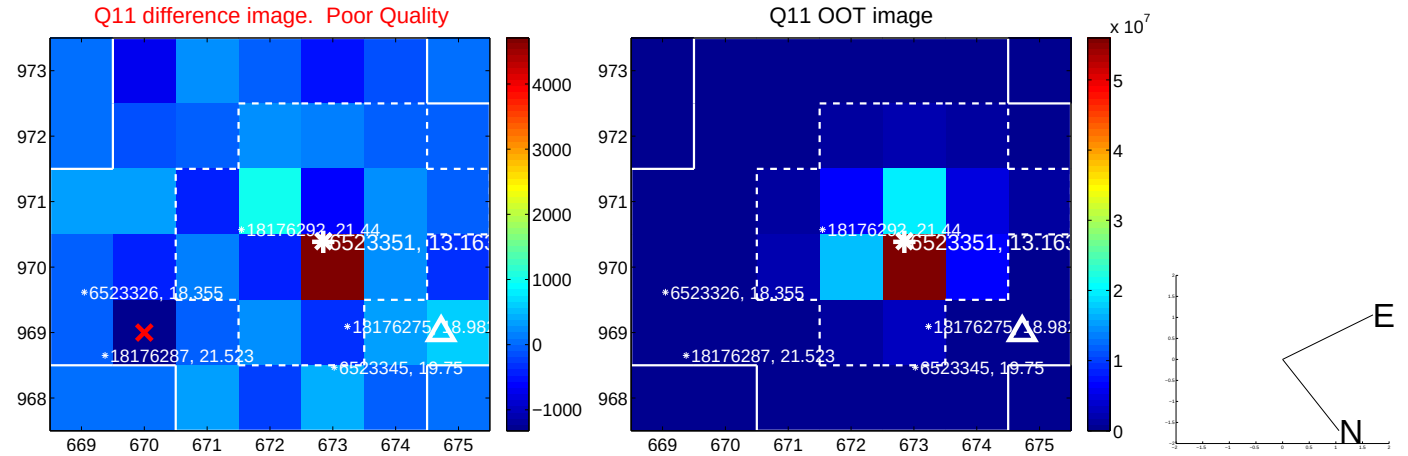
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

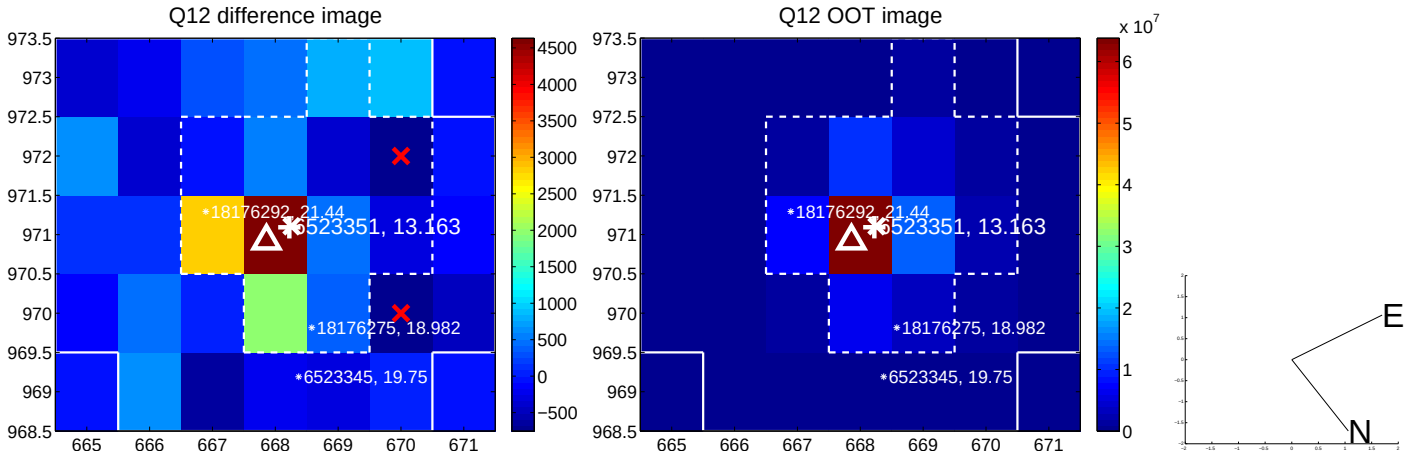


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

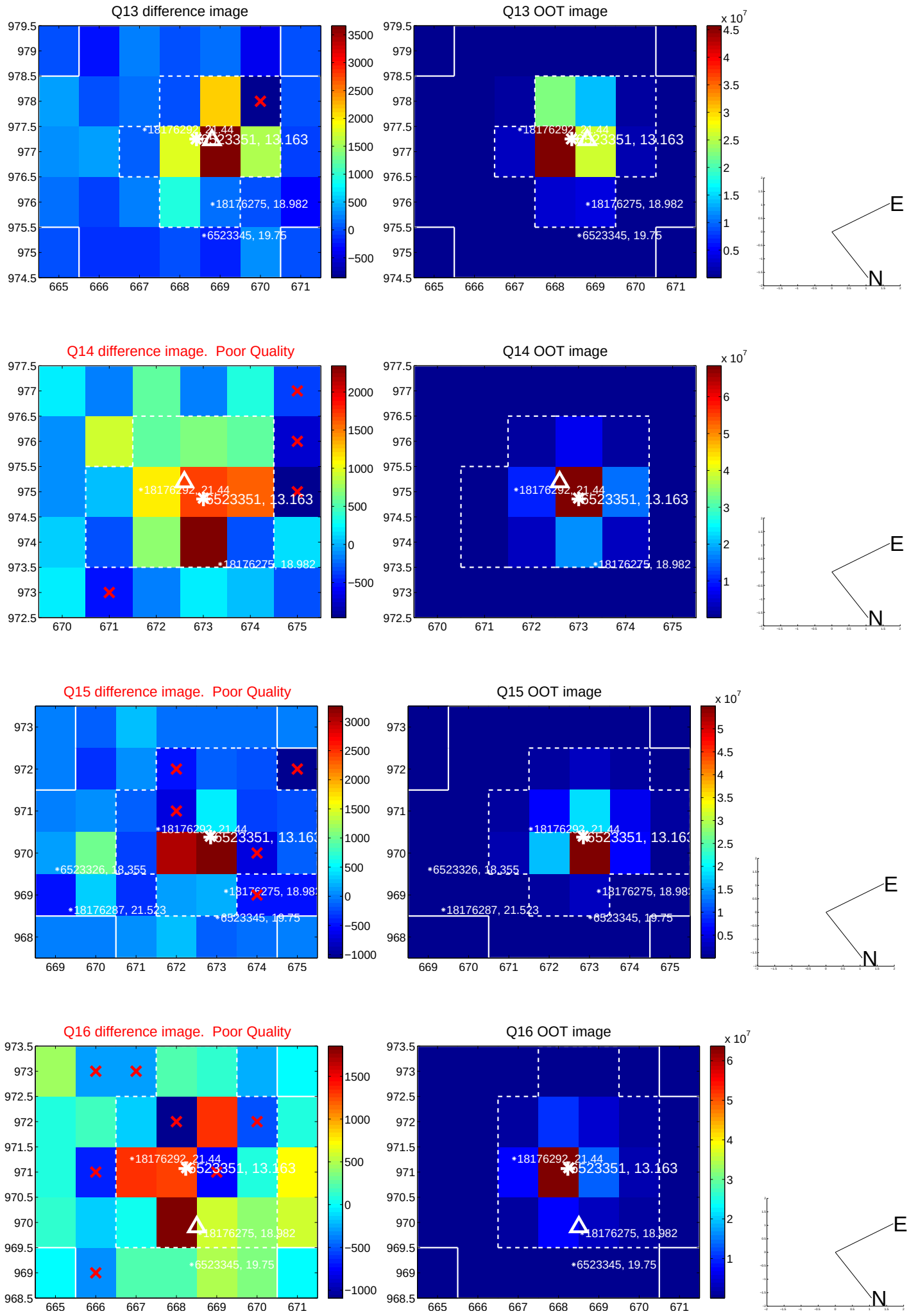




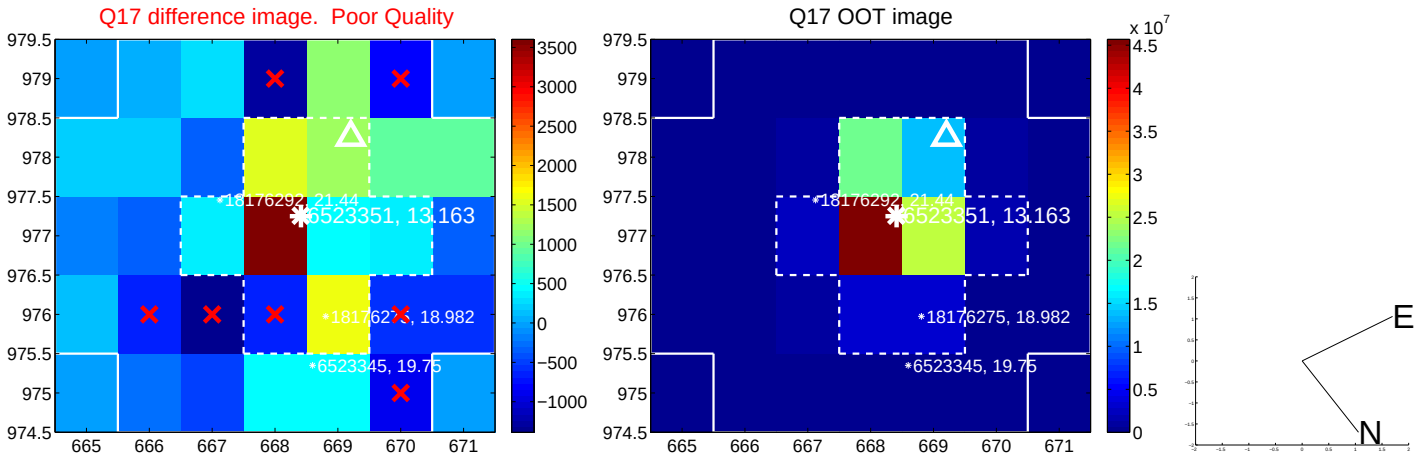


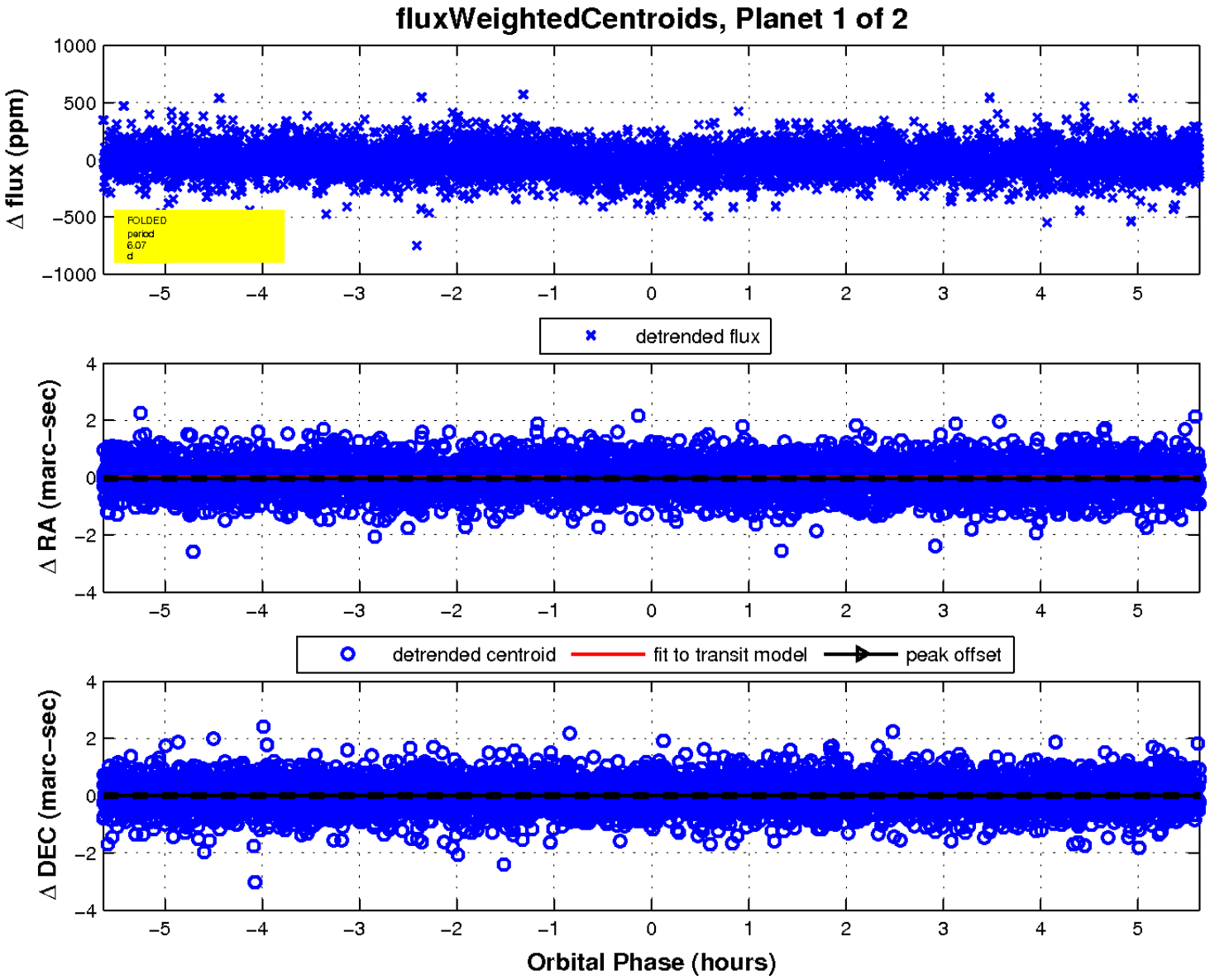


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

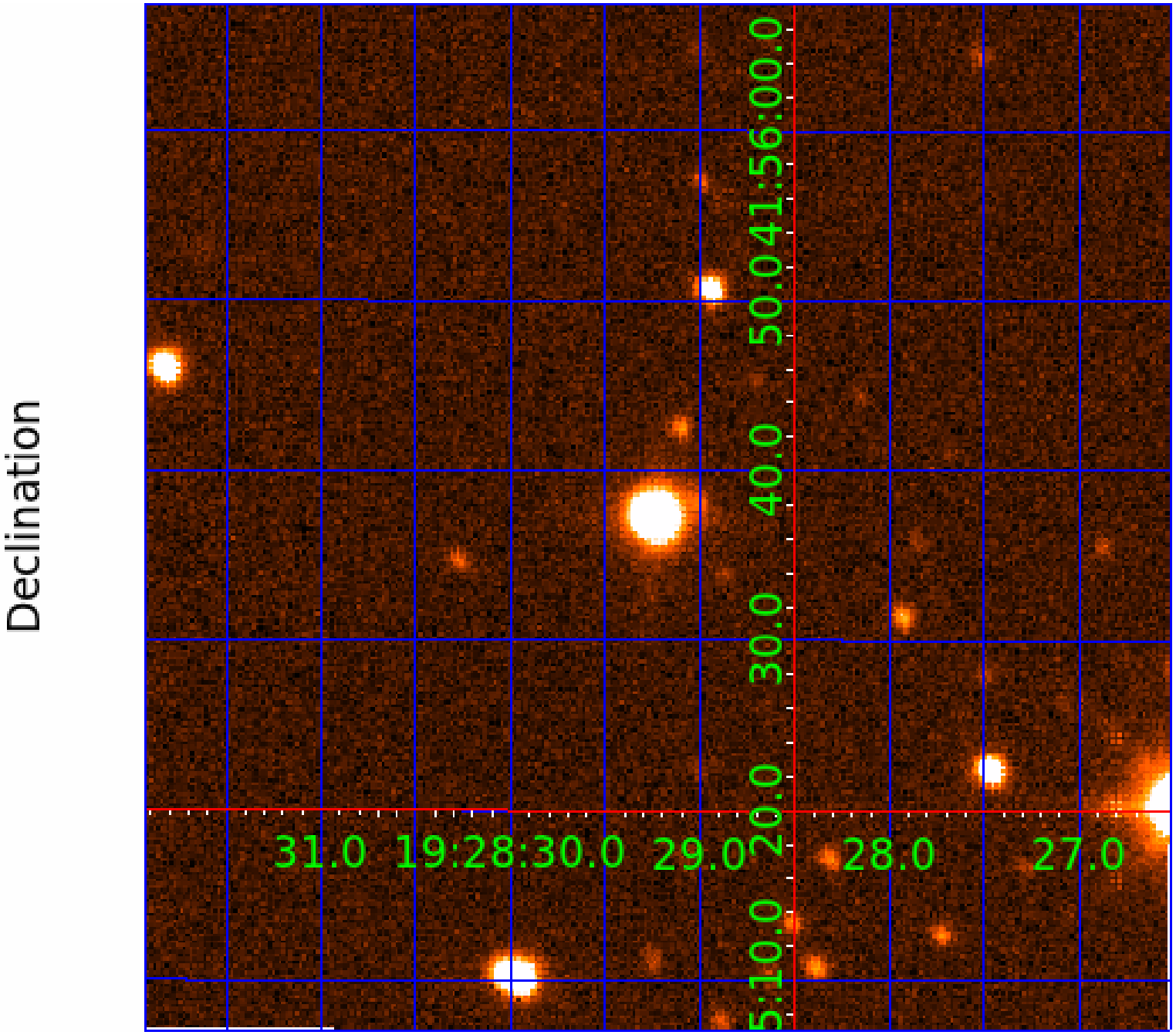


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
31.0
19:28:30.0
29.0
28.0
27.0
5:10.0
20.0
30.0
40.0
50.0
41:56:00.0

KIC 006523351

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 ($S_\oplus$)
006523351-01	OBS	3117.01	6.066604	136.148295	68.5	1.878	11.1	12.4	0.89	5569	0.88	165.83
006523351-02	OBS	No	384.037068	236.055485	255.2	5.187	8.8	7.3	0.89	5569	1.60	0.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006523351-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT
006523351-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

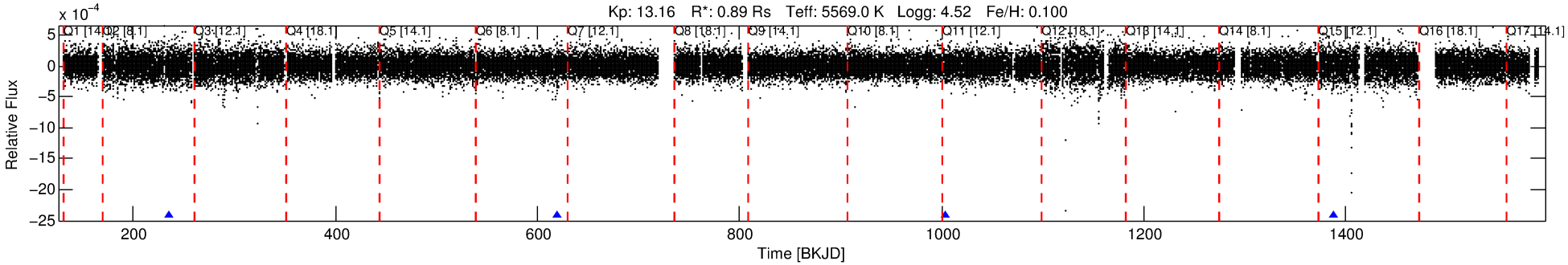
Ephemeris Match Information For 006523351-02

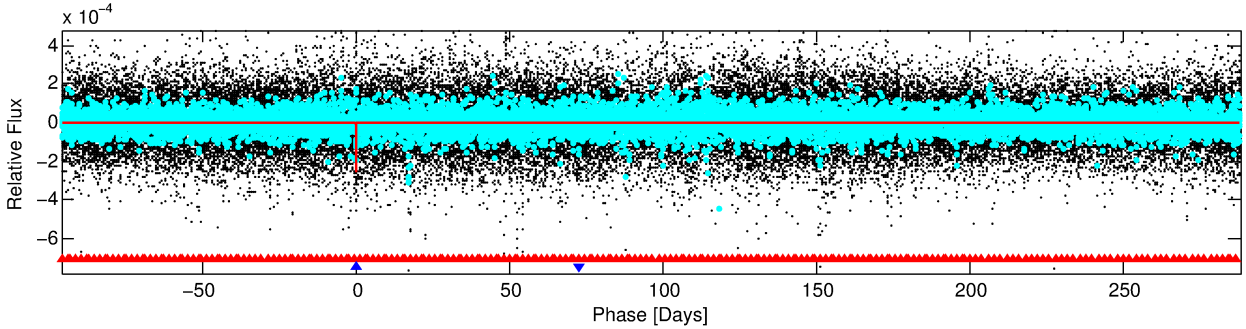
No Significant Match Found

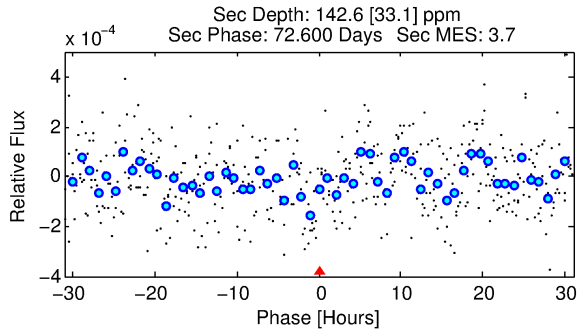
DV One-Page Summary

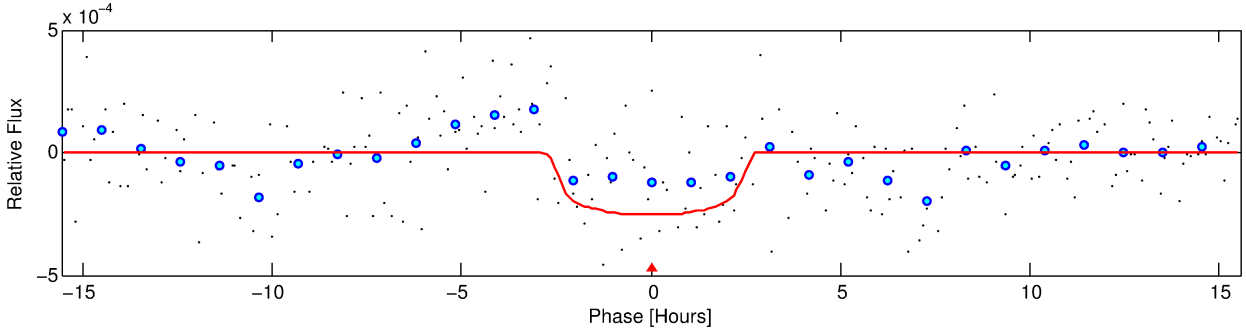
KIC: 6523351 Candidate: 2 of 2 Period: 384.037 d
KOI: K03117 Corr: No Ephemeris Match

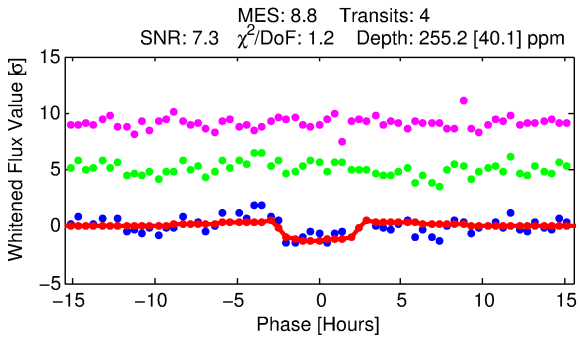
Kp: 13.16 R*: 0.89 Rs Teff: 5569.0 K Logg: 4.52 Fe/H: 0.100

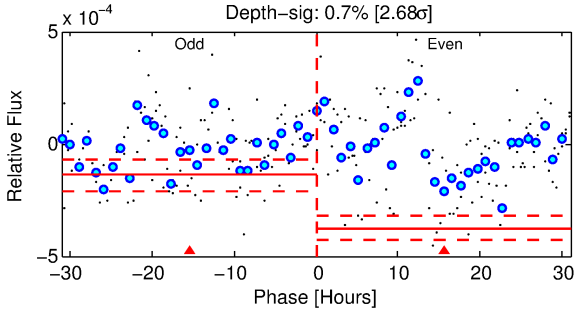


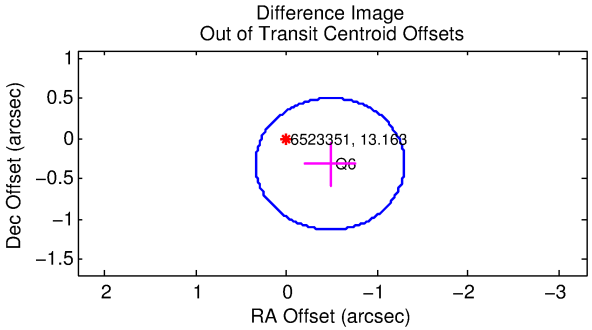












DV Fit Results:

Period = 384.03707 [0.00654] d
Epoch = 236.0555 [0.0106] BKJD
Rp/R* = 0.0164 [0.0133]
a/R* = 344.43 [1168.13]
b = 0.81 [1.43]

Seff = 0.66 [0.14]
Teq = 230 [12] K
Rp = 1.60 [1.31] Re
a = 1.0214 [0.1291] AU

Ag = 32067.32 [52886.18] [0.61σ]
Teffp = 4750 [1947] K [2.32σ]

DV Diagnostic Results:

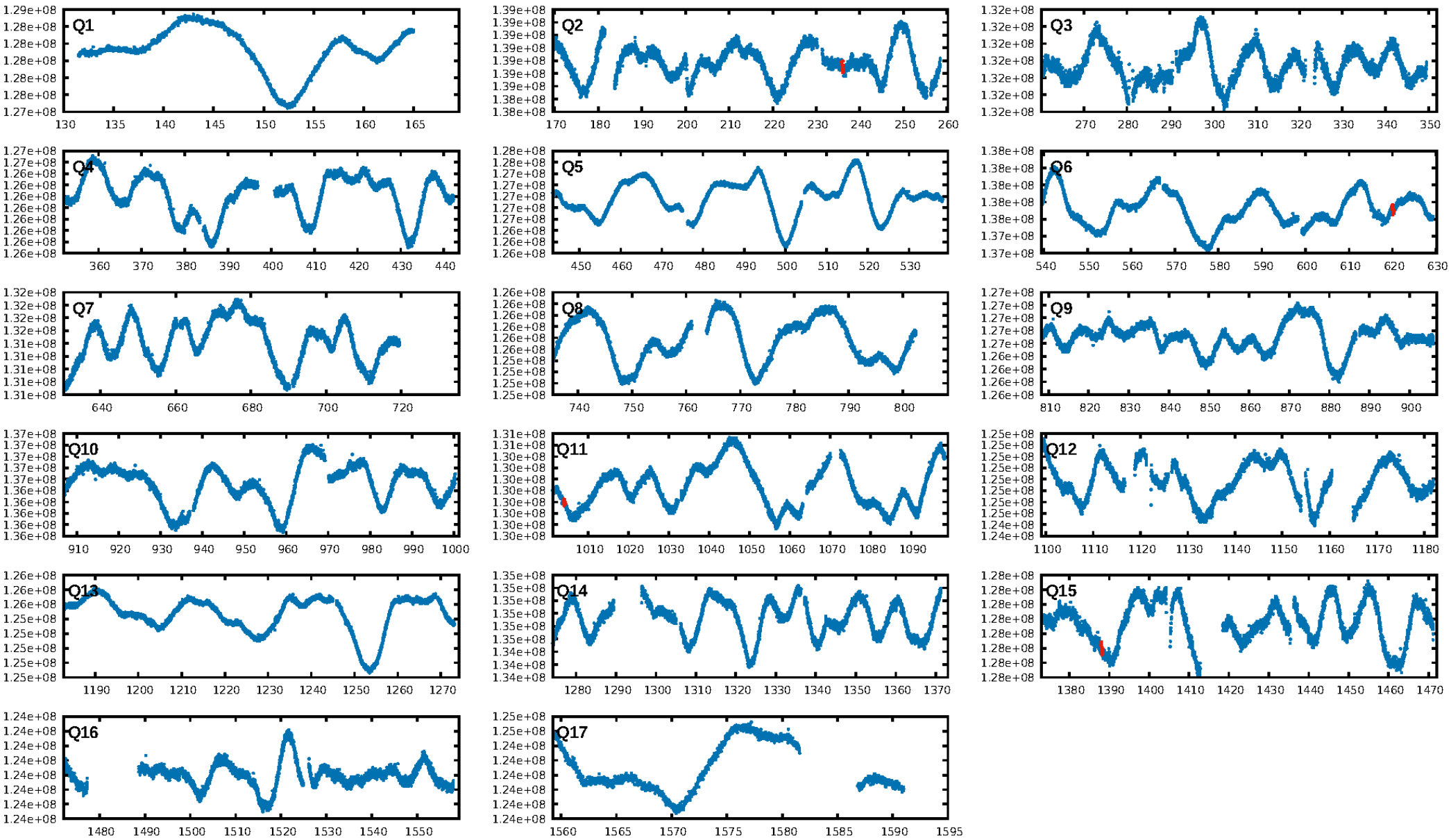
ShortPeriod−sig: 100.0% [1644.29σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 80.7%
Bootstrap−pfa: 9.95e−10
RollingBand−fgt: 1.00 [4/4]
GhostDiagnostic−chr: 1.296

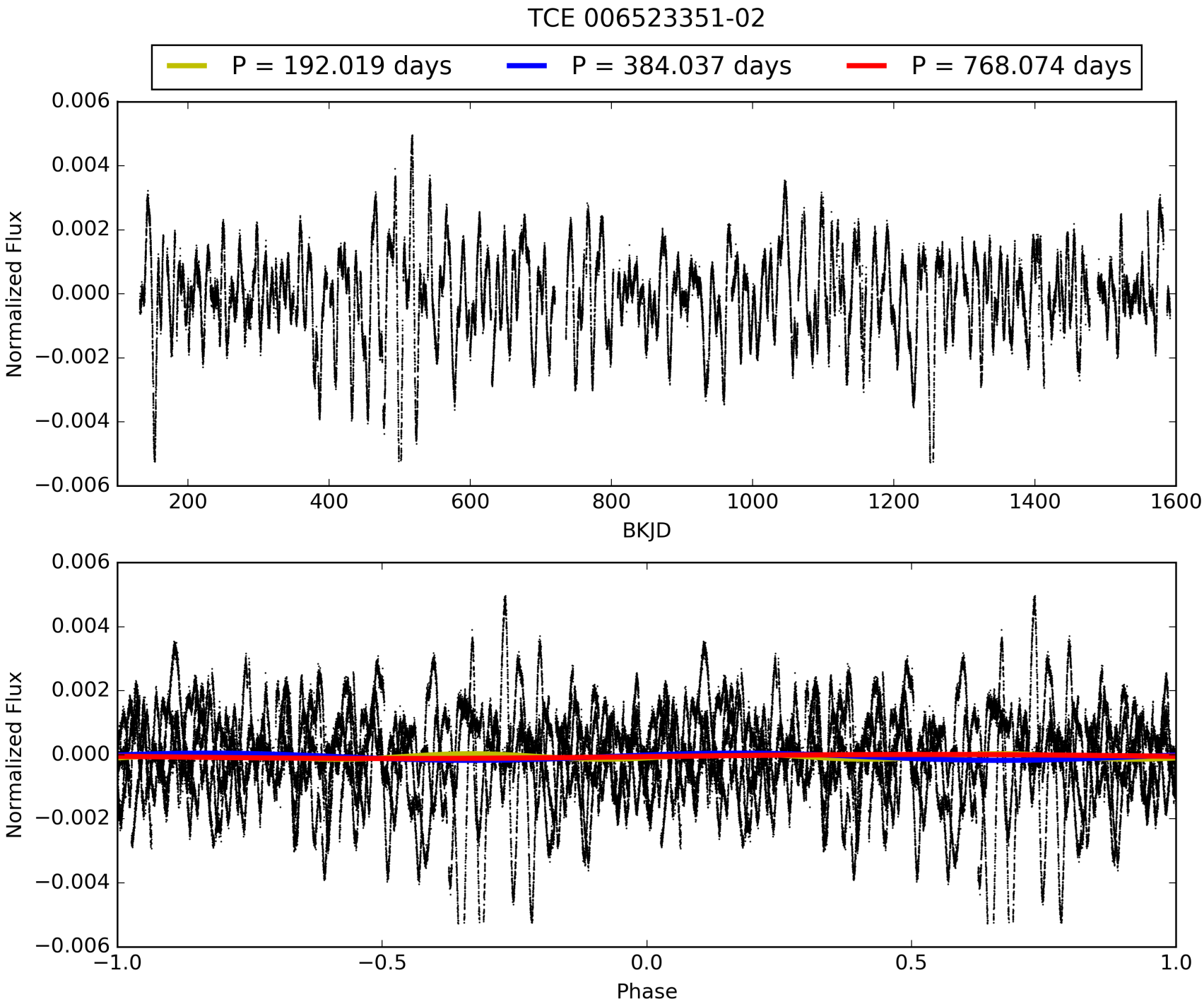
Centroid−sig: 62.4%
Centroid−so: 0.601 arcsec [0.55σ]
OotOffset−rm: 0.574 arcsec [2.10σ]
KicOffset−rm: 0.546 arcsec [2.00σ]
OotOffset−st: 1/0/0/0 [1]
KicOffset−st: 1/0/0/0 [1]
DiffImageQuality−fgm: 1.00 [1/1]
DiffImageOverlap−fno: 1.00 [3/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29−Jan−2016 07:55:19 Z

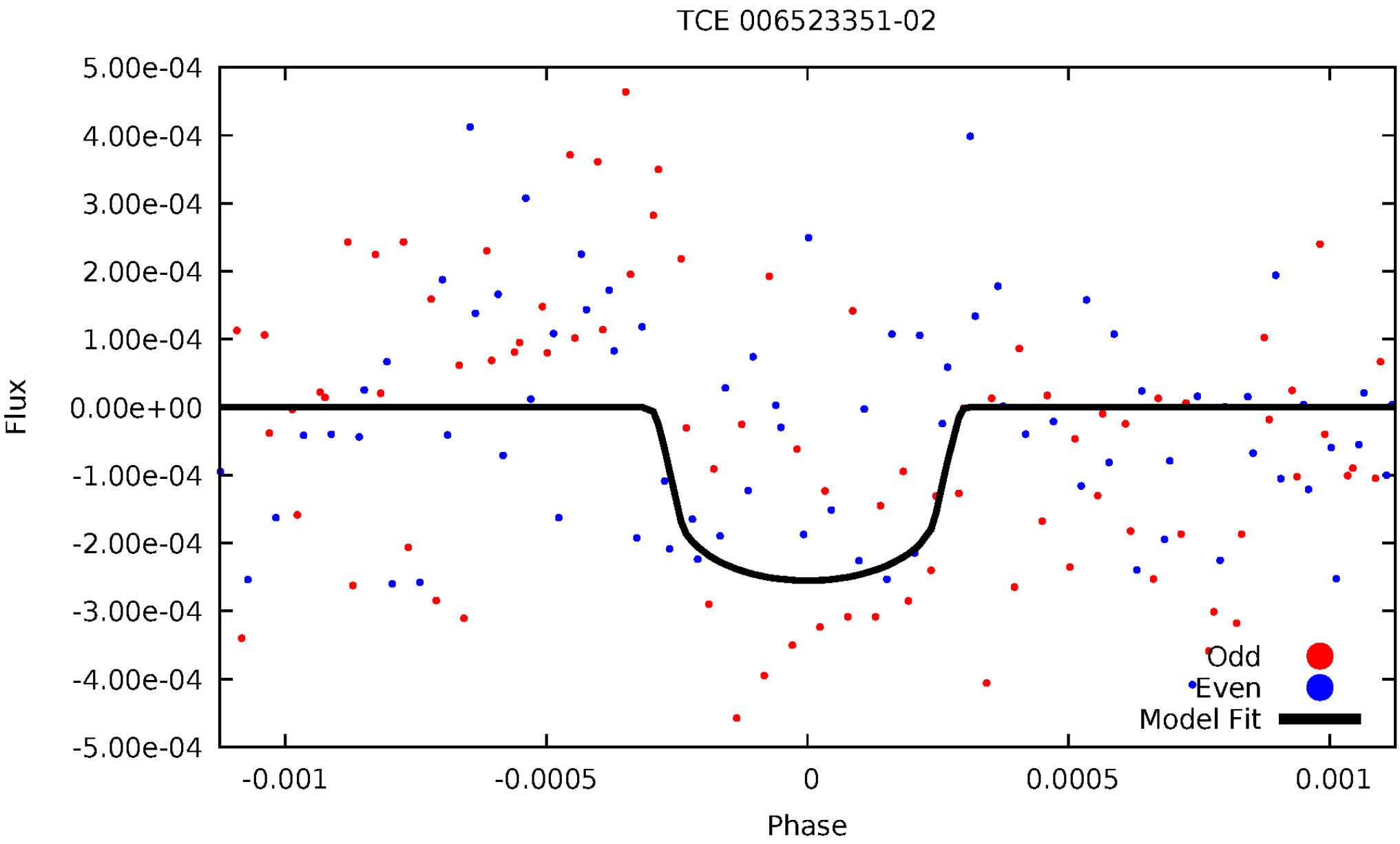
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006523351-02, PDC Light Curves

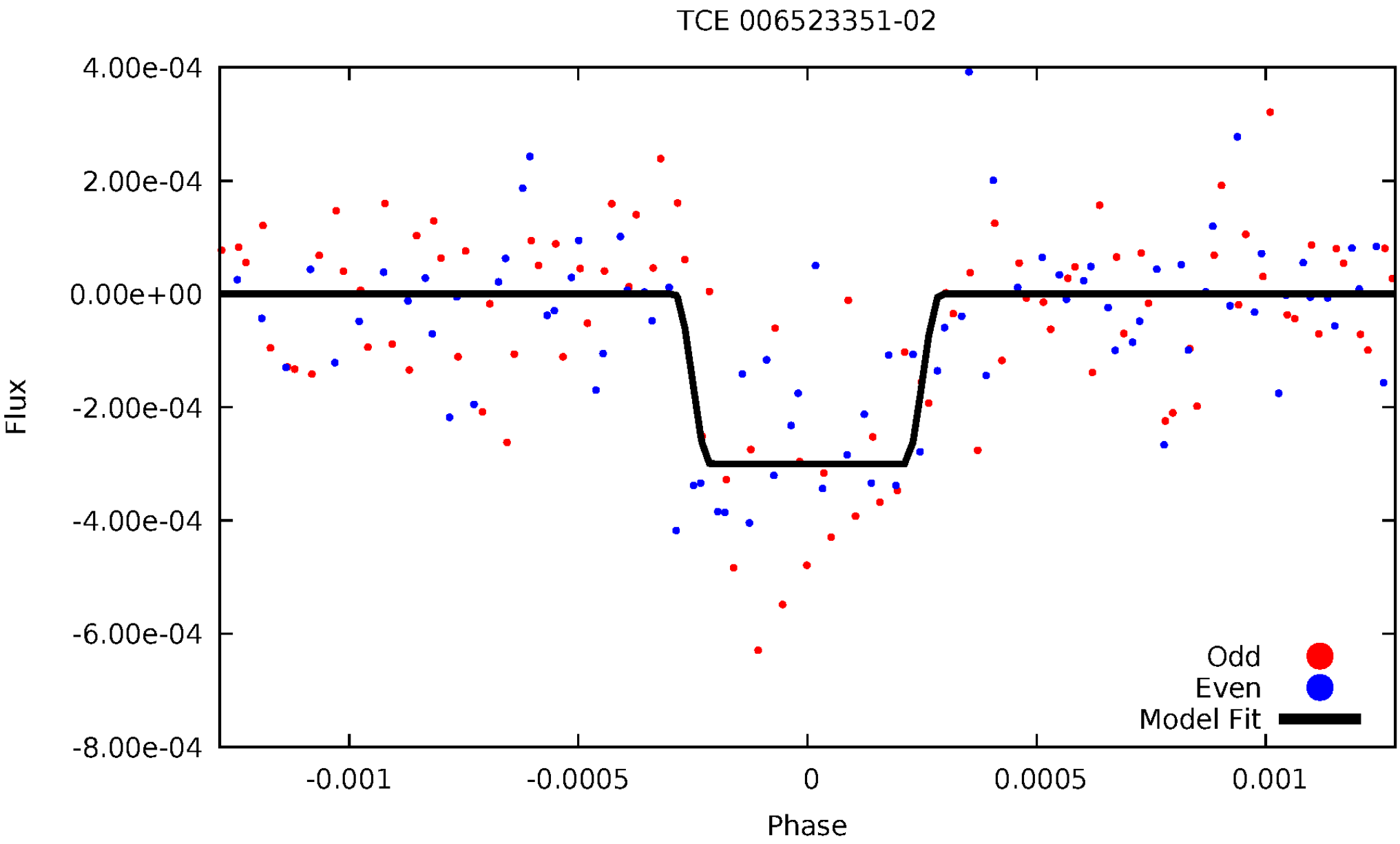



TCE 006523351-02
P = 192.019 days
P = 384.037 days
P = 768.074 days
Normalized Flux
BKJD
Normalized Flux
Phase

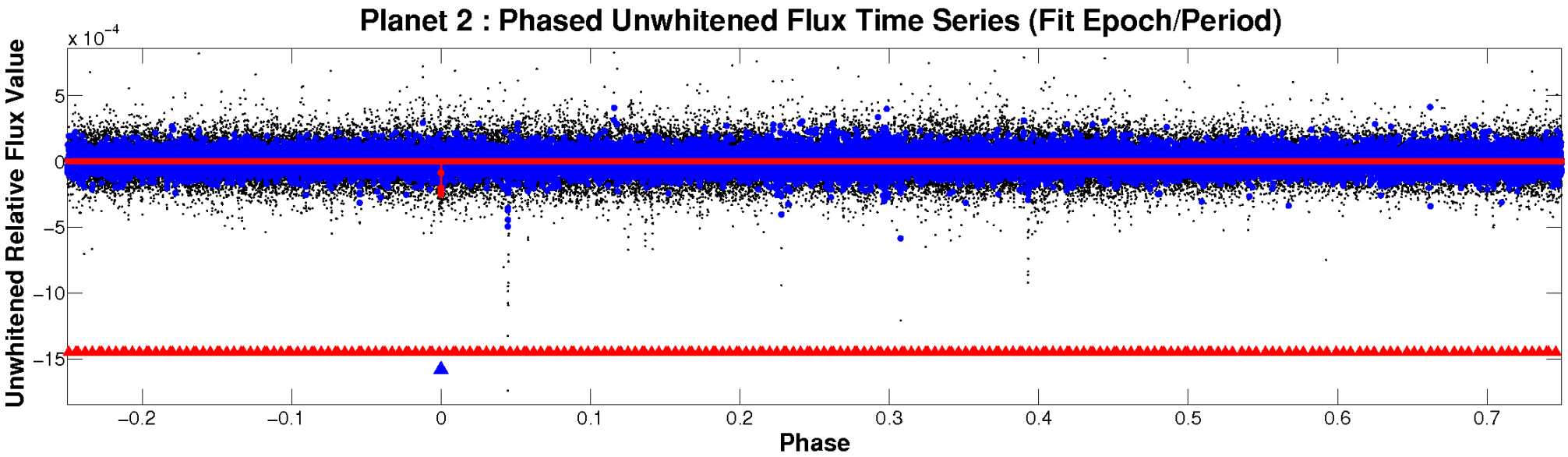
DV Odd/Even

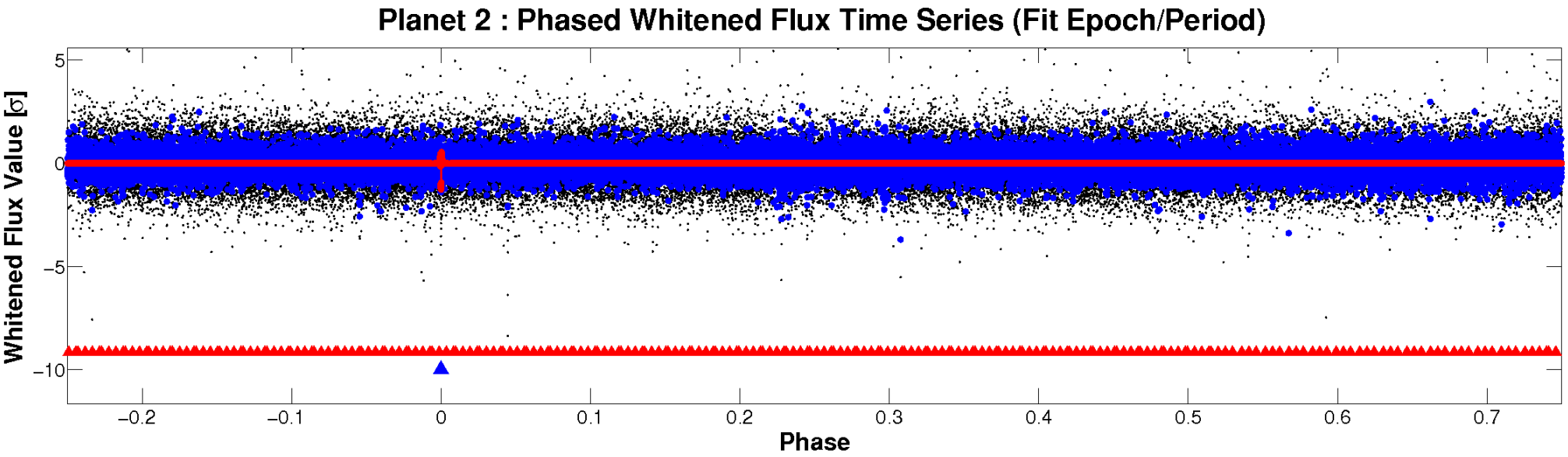

TCE 006523351-02
5.00e-04
4.00e-04
3.00e-04
2.00e-04
1.00e-04
0.00e+00
-1.00e-04
-2.00e-04
-3.00e-04
-4.00e-04
-5.00e-04
Flux
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006523351-02
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.001
-0.0005
0
0.0005
0.001
Phase
Odd
Even
Model Fit

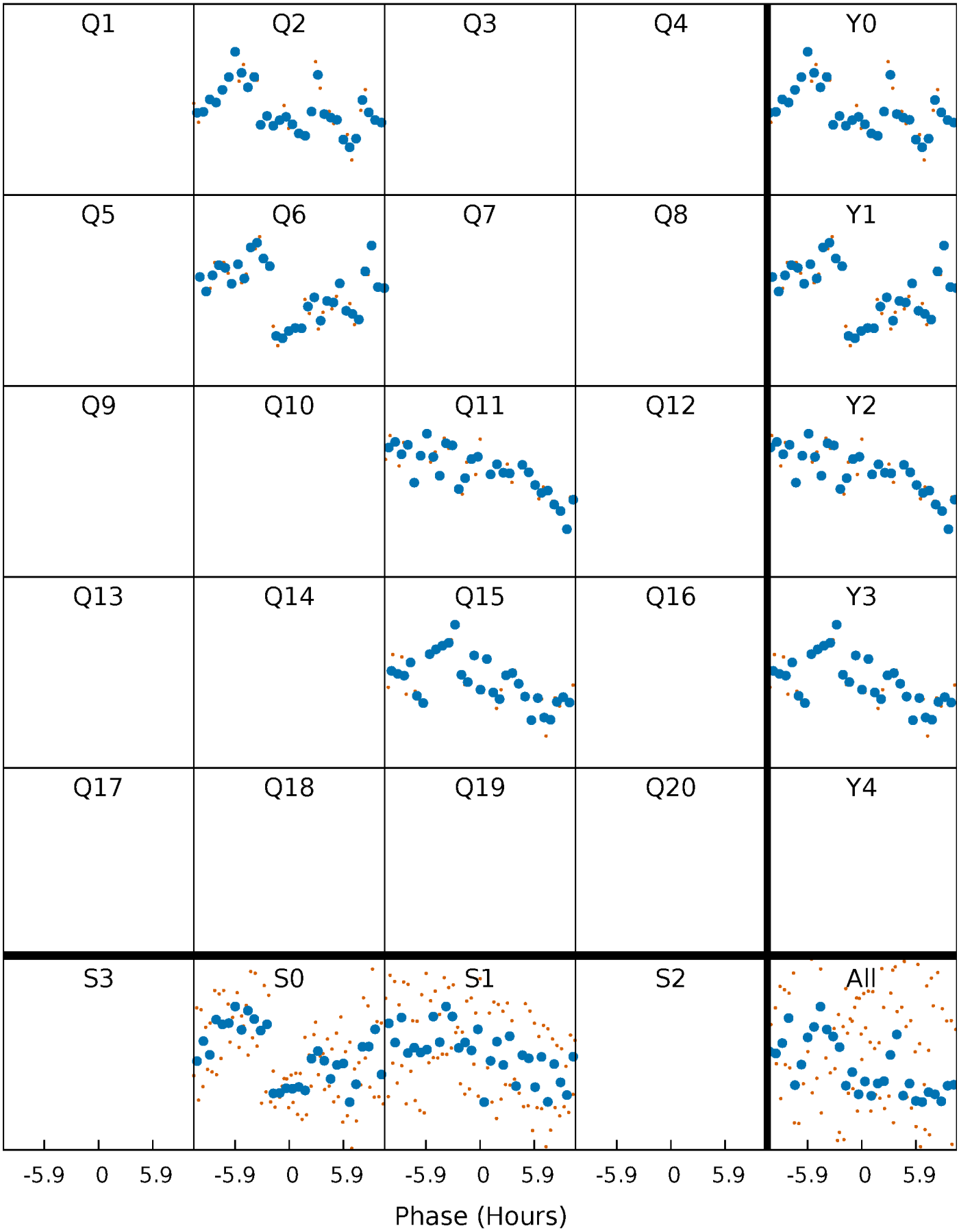
Non-Whitened Vs. Whitened Light Curve





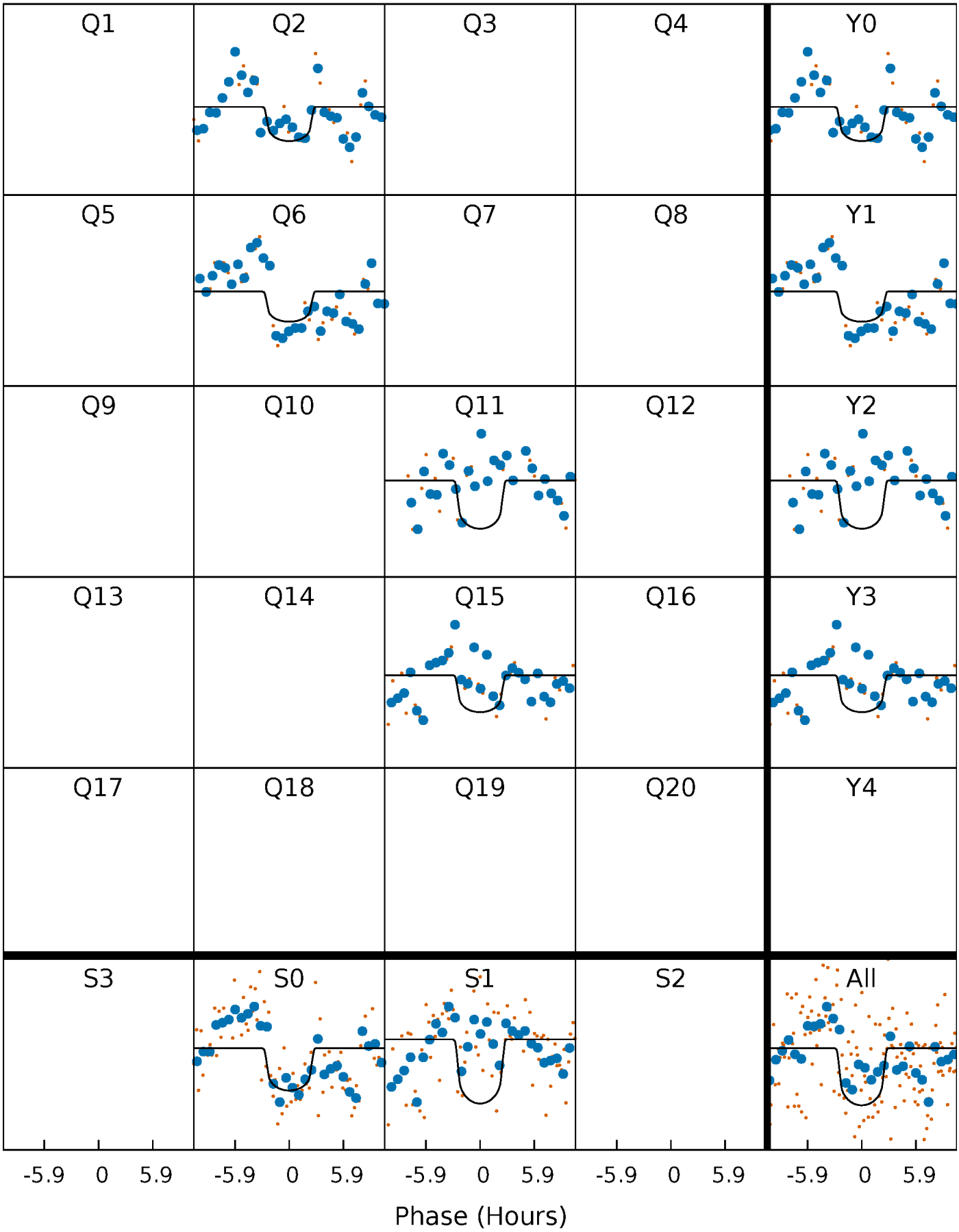
PDC Quarter-Phased Transit Curves

TCE 006523351-02 P=384.037068 Days T_0=236.055485 (BKJD)



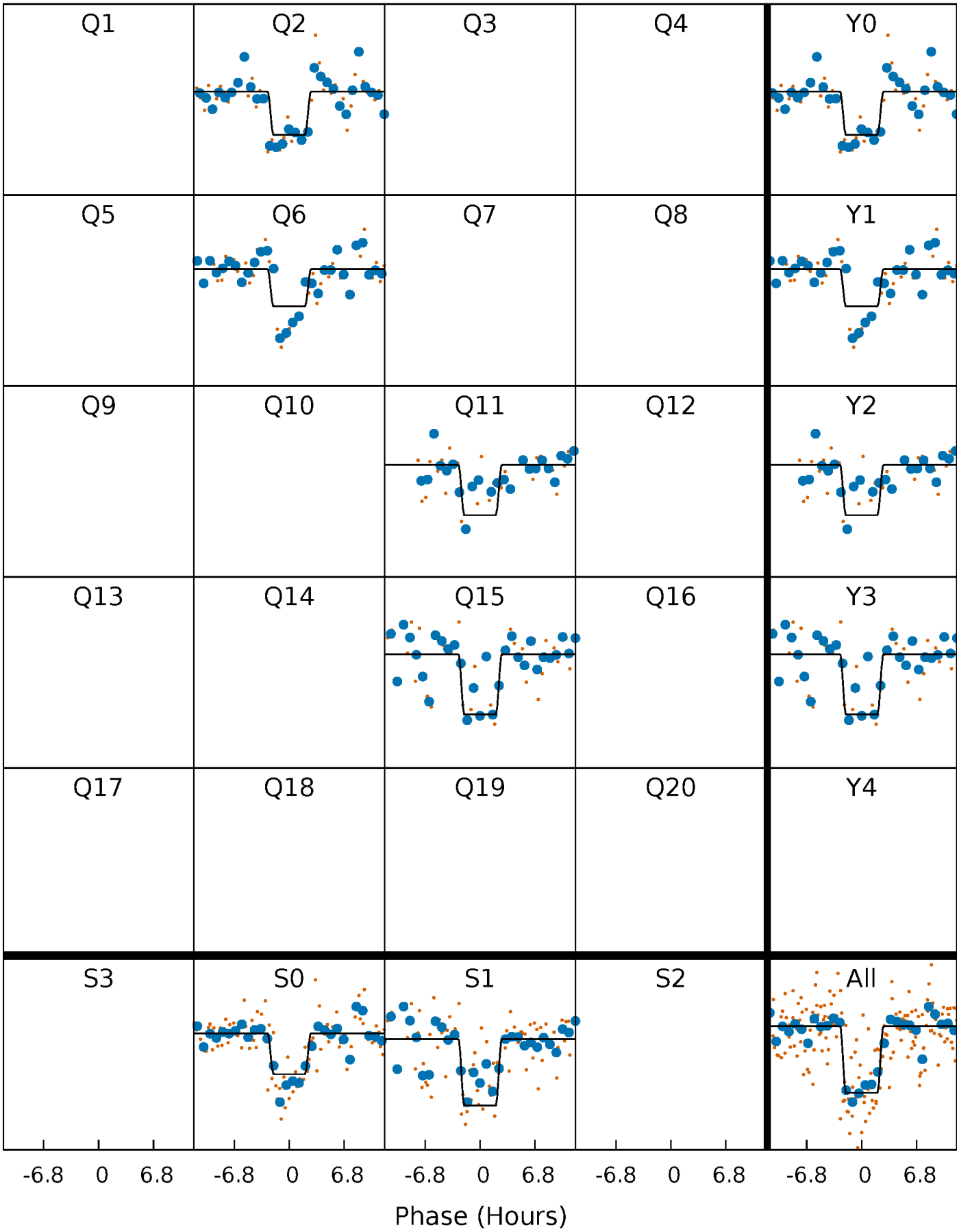
DV Quarter-Phased Transit Curves

TCE 006523351-02 P=384.037068 Days T_0=236.055485 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

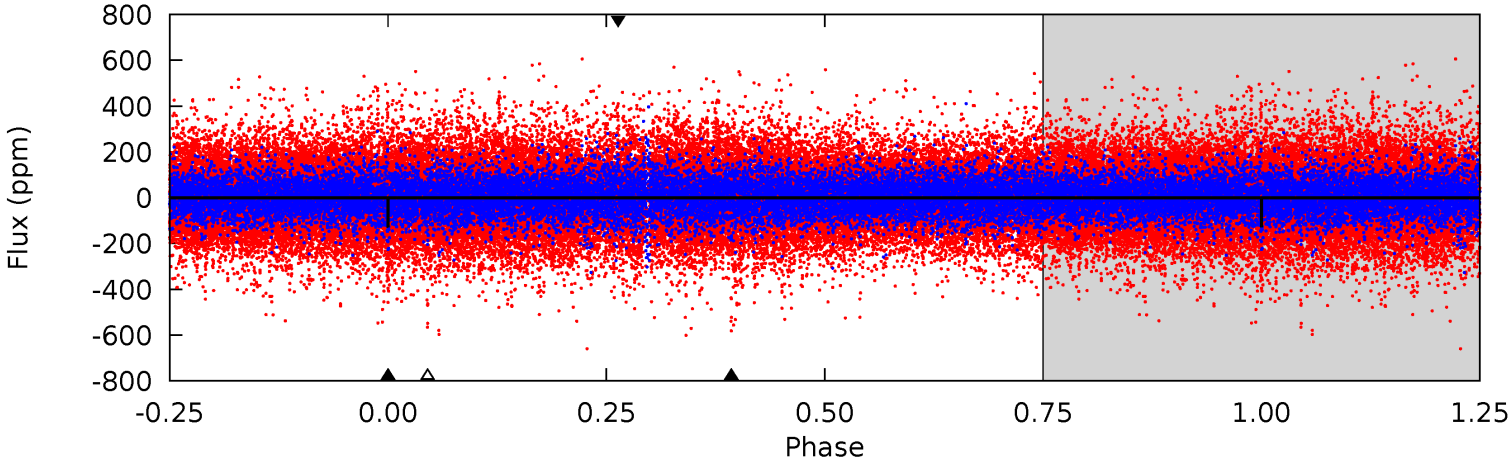
TCE 006523351-02 P=384.041949 Days T_0=236.039892 (BKJD)

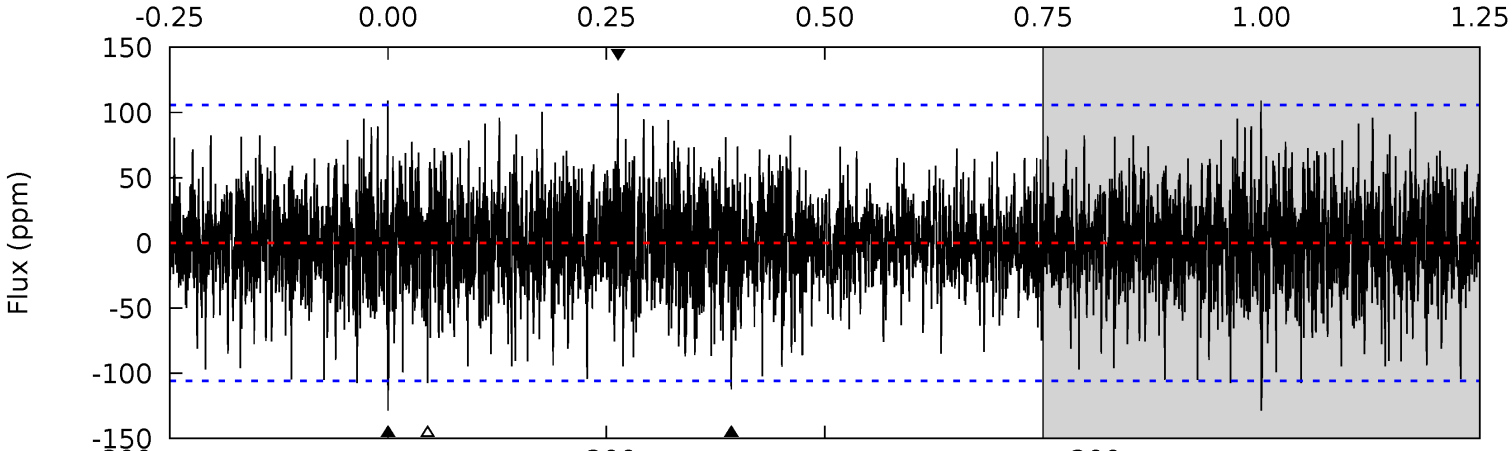


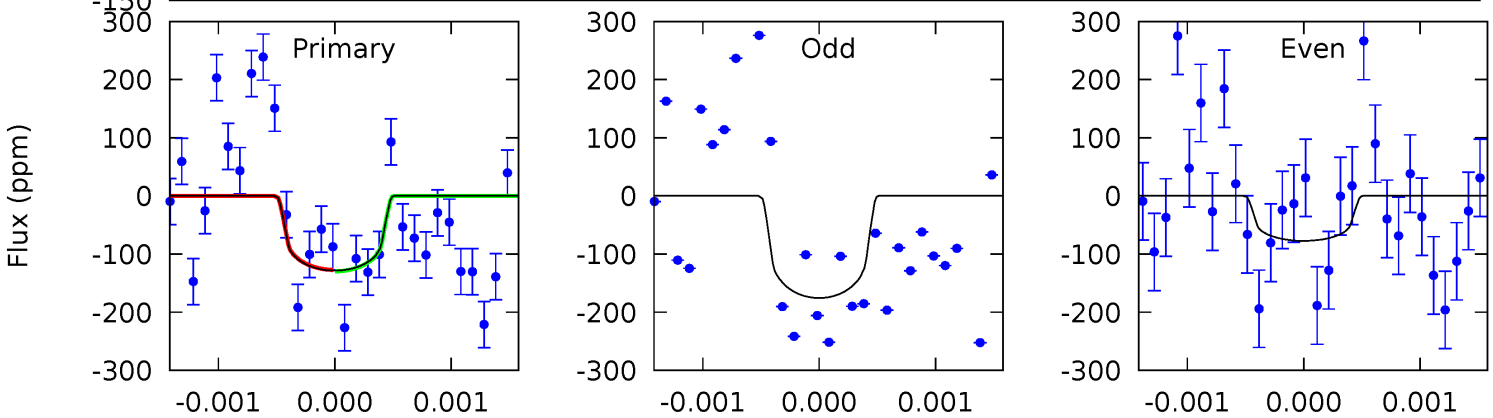
DV Model-Shift Uniqueness Test

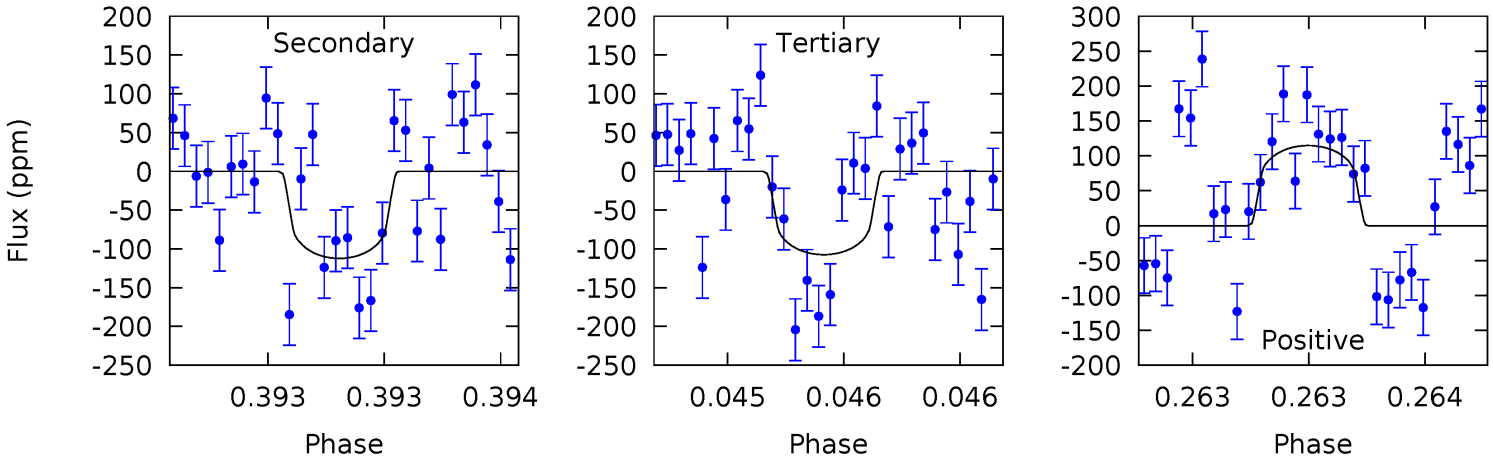
006523351-02, P = 384.037068 Days, E = 236.055485 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.73	5.88	5.63	6.01	5.54	3.43	1.53	1.10	0.72	0.25	-0.13	2.56	1.08	0.47	0.07





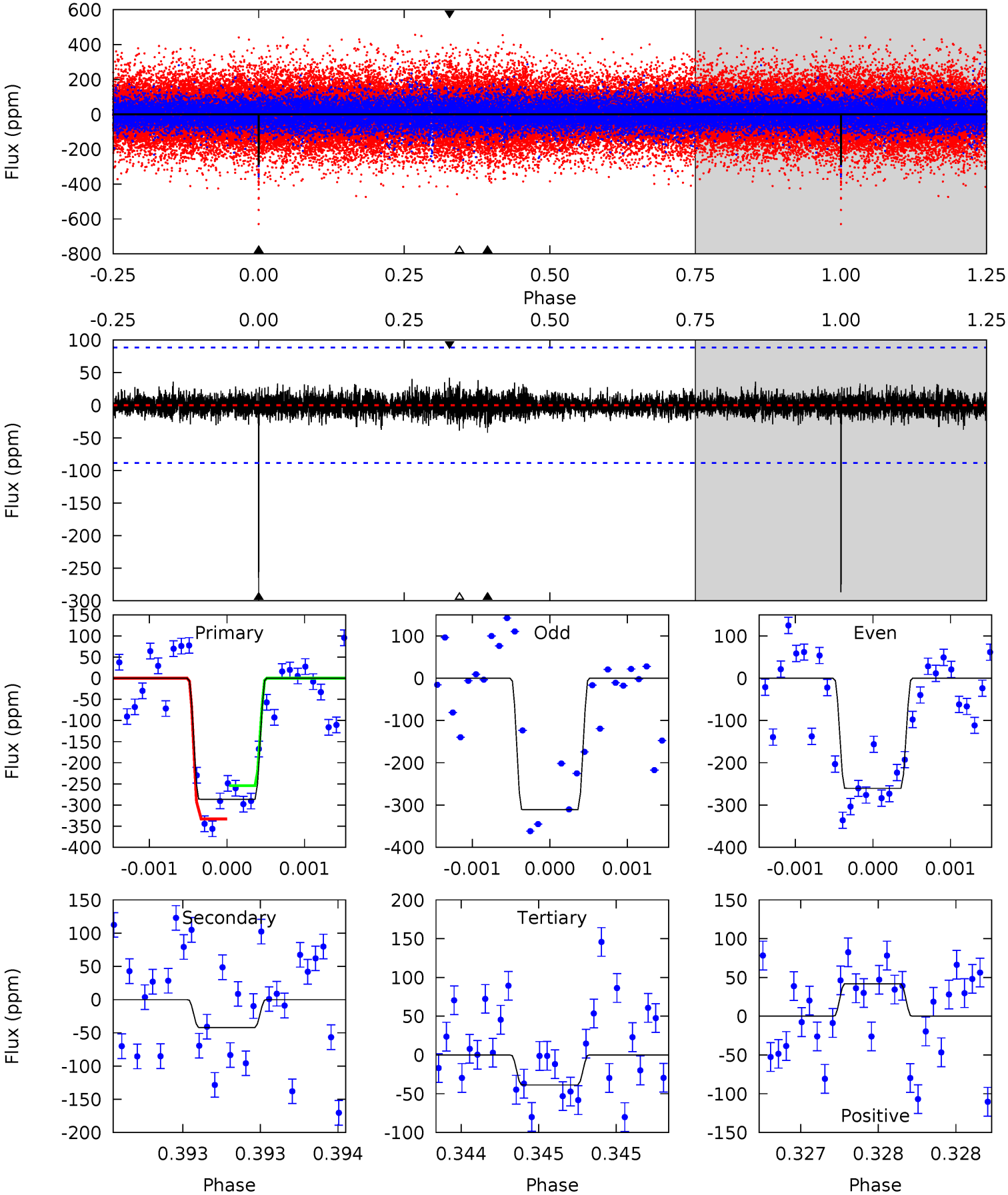




Alt Model-Shift Uniqueness Test

006523351-02, P = 384.041949 Days, E = 236.039892 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	2.63	2.42	2.63	5.55	3.44	0.57	15.5	15.3	0.21	0.00	1.60	0.98	0.13	2.44



Stellar Parameters For KIC 006523351

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	5569^{+100}_{-111}	$4.521^{+0.028}_{-0.112}$	$0.100^{+0.150}_{-0.150}$	$0.892^{+0.124}_{-0.044}$	$0.963^{+0.047}_{-0.071}$	$1.909^{+0.255}_{-0.596}$
	+2%/-2%	+1%/-2%	+150%/-150%	+14%/-5%	+5%/-7%	+13%/-31%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 006523351-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-112±19	$1.78^{+1.28}_{-1.07}$	324^{+12}_{-8}	4452^{+2309}_{-809}	19807^{+97671}_{-13423}
Alt.	-42±16	$1.91^{+1.21}_{-1.13}$	324^{+11}_{-9}	3652^{+1562}_{-567}	6492^{+36289}_{-4304}

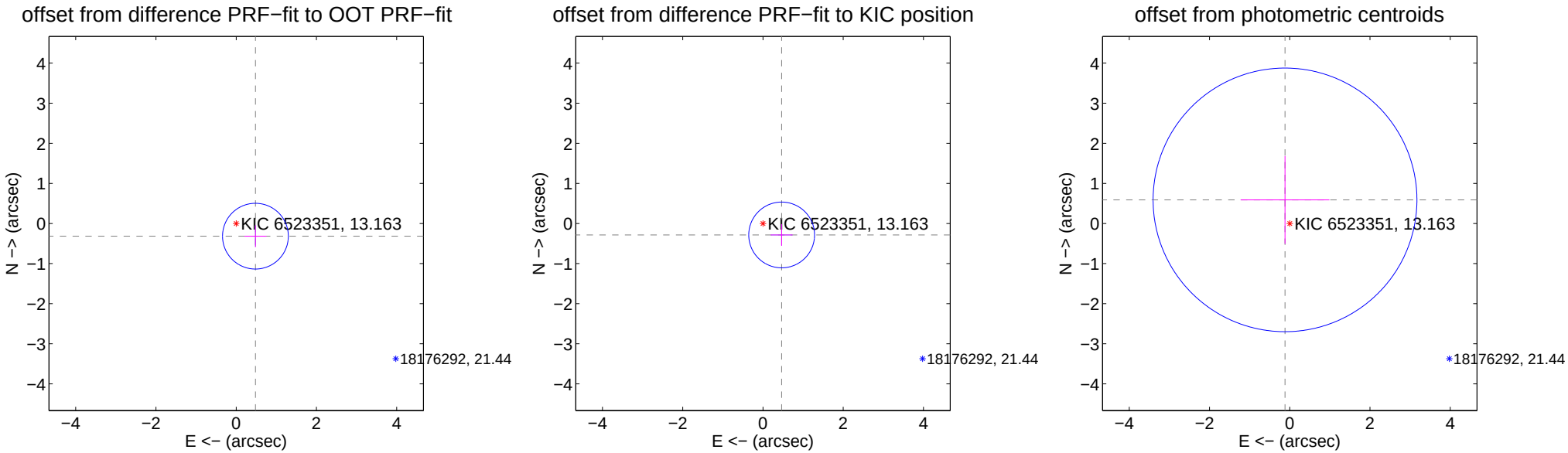
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

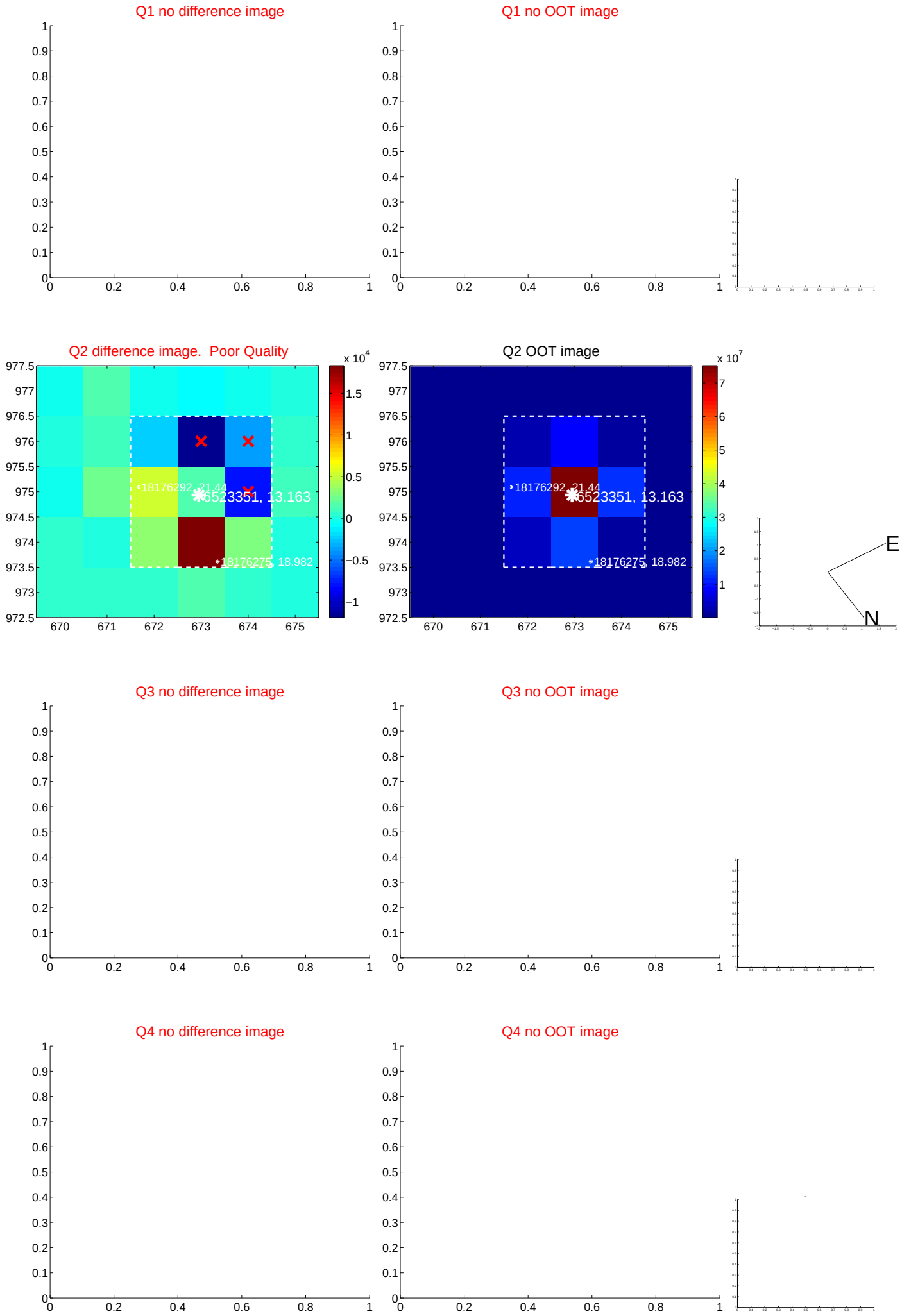
Supplemental centroid analysis for 006523351-02. Kepler magnitude: 13.16. Transit SNR 7.32
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.574 ± 0.273	2.10	-0.479 ± 0.274	-0.316 ± 0.272
PRF-fit source offset from KIC position	0.546 ± 0.273	2.00	-0.465 ± 0.274	-0.286 ± 0.272
photometric centroid source offset	0.60 ± 1.10	0.55	0.12 ± 1.11	0.59 ± 1.10

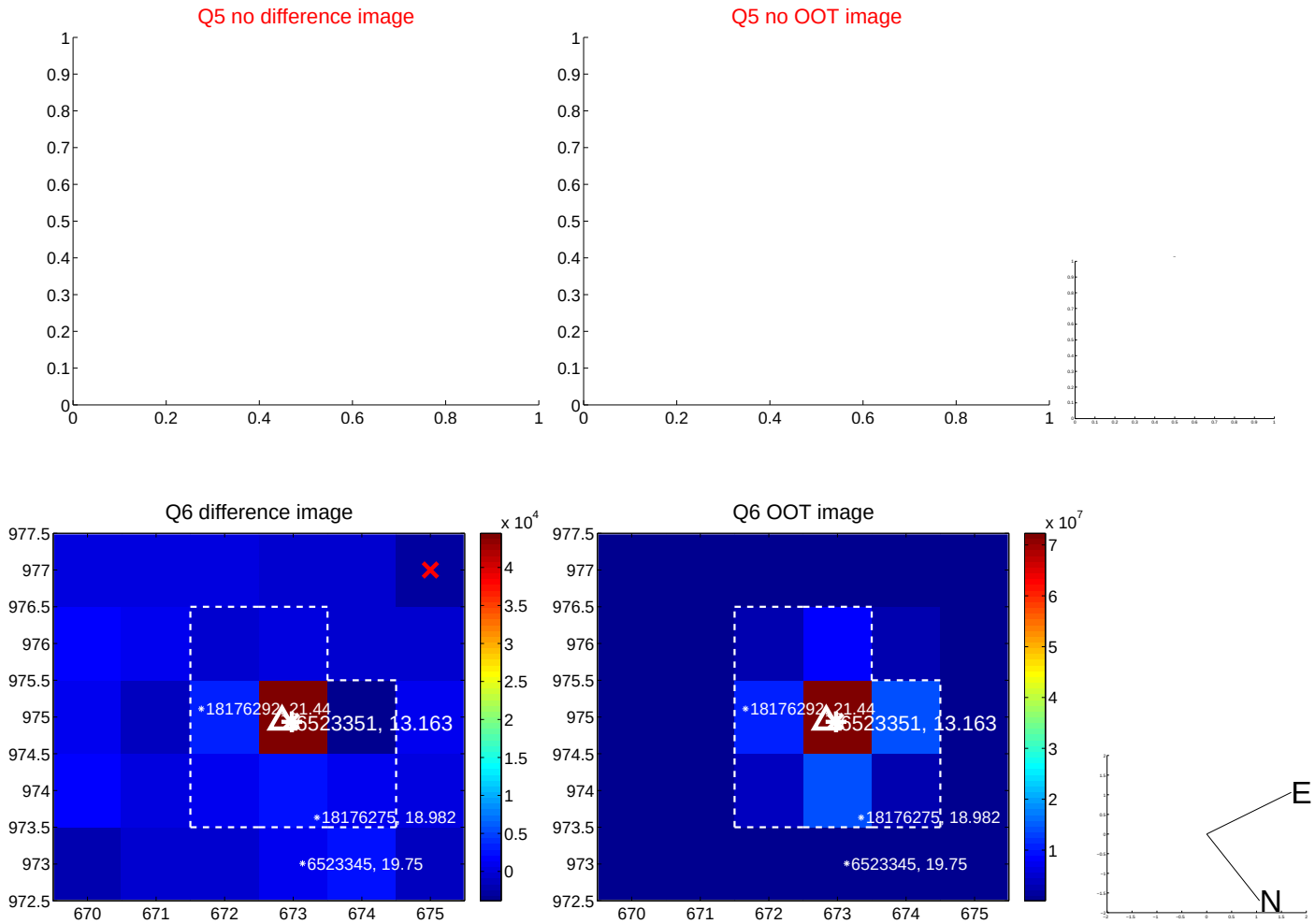


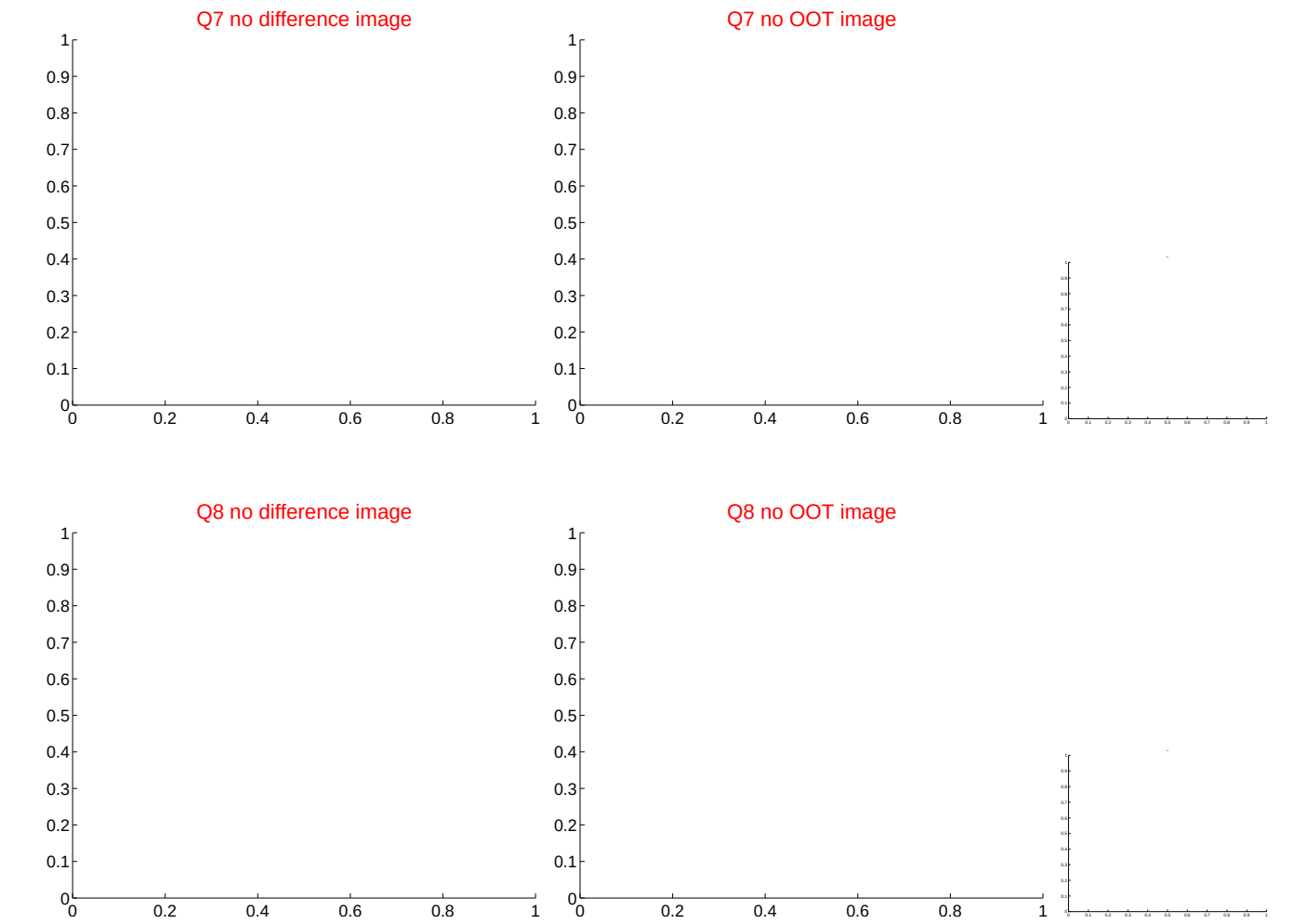
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

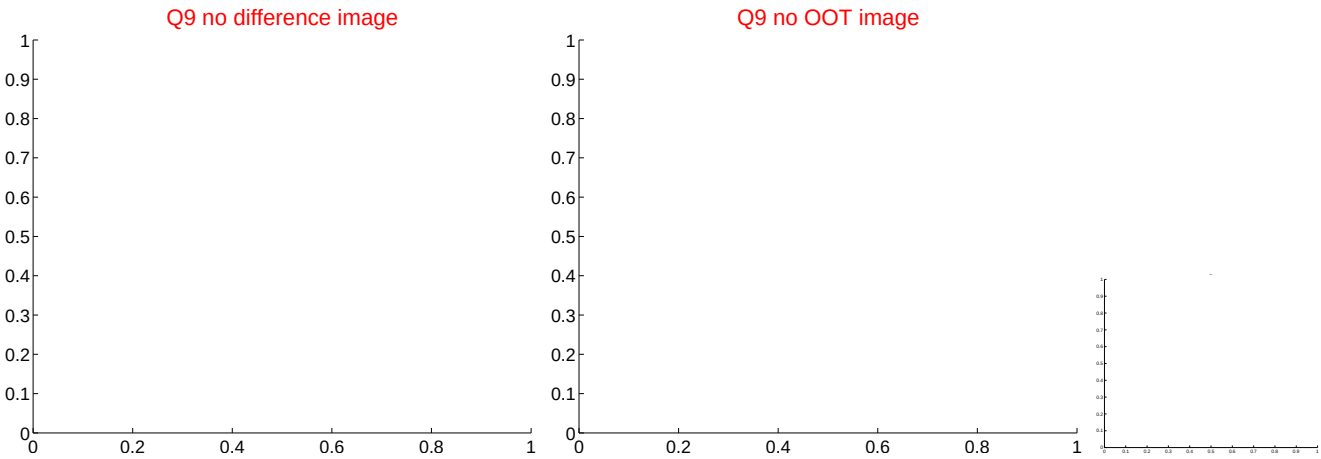


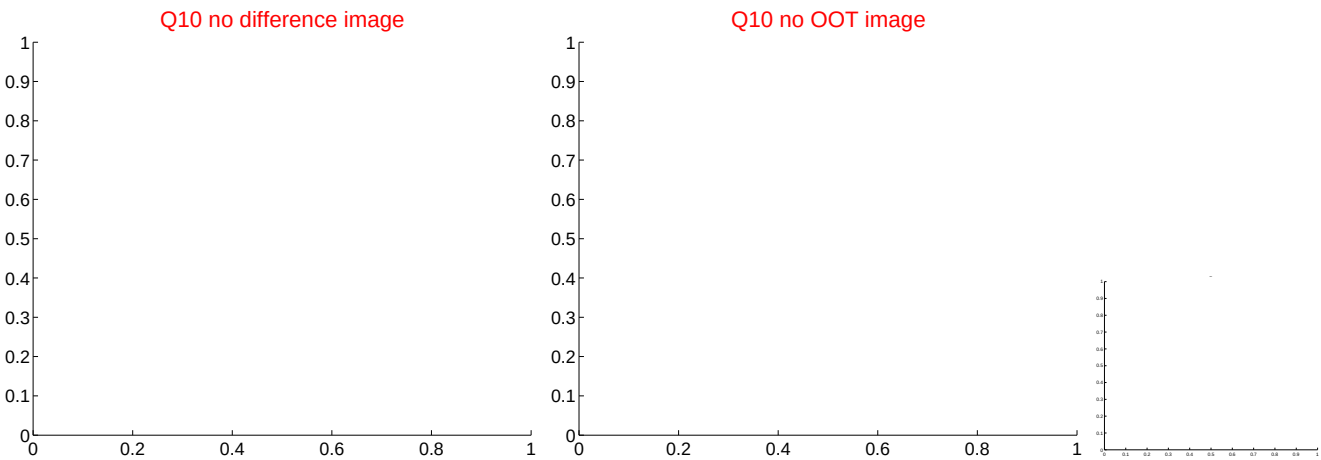
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

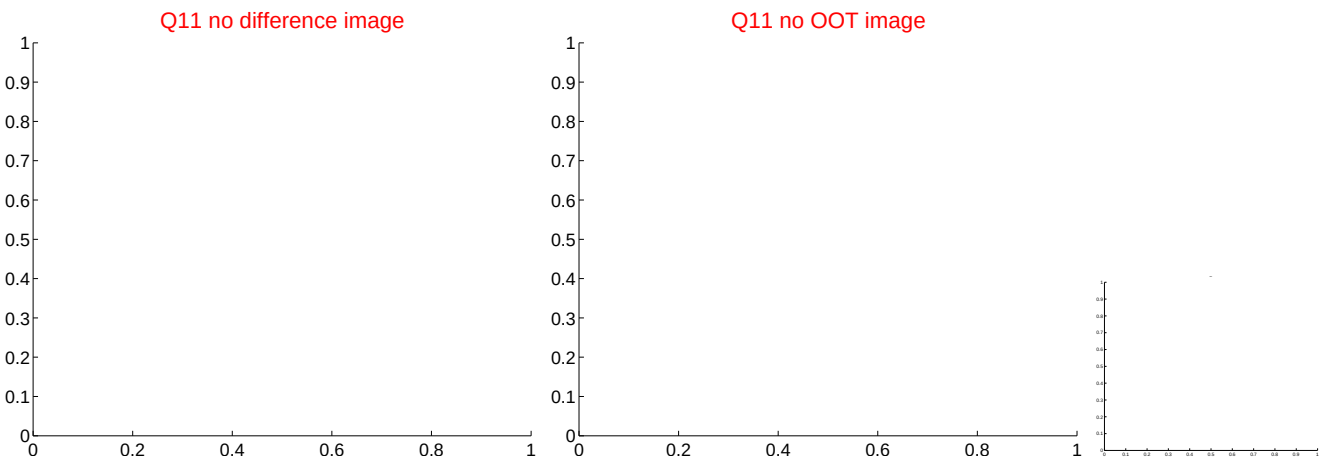


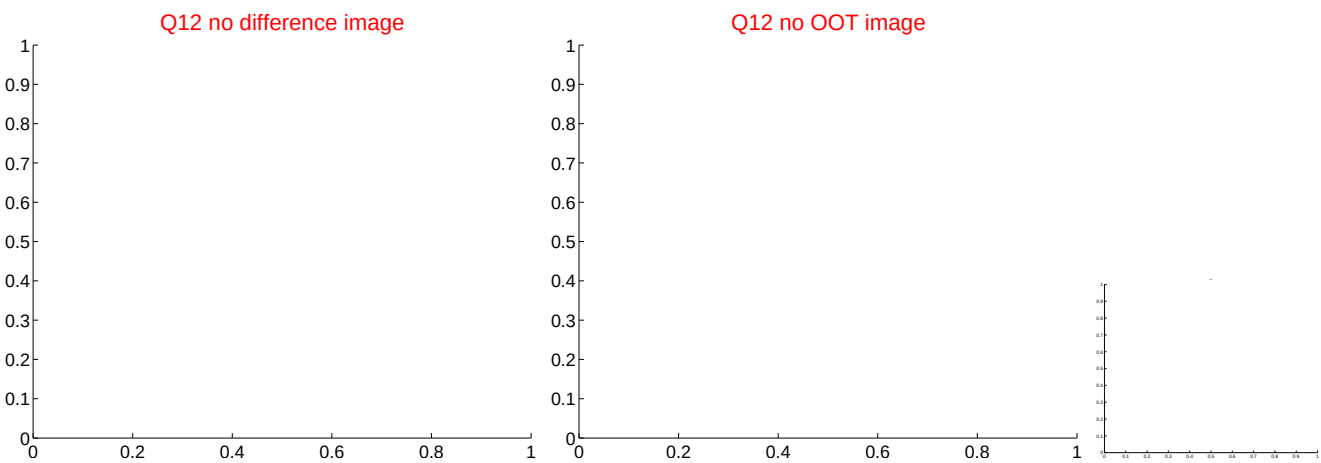


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

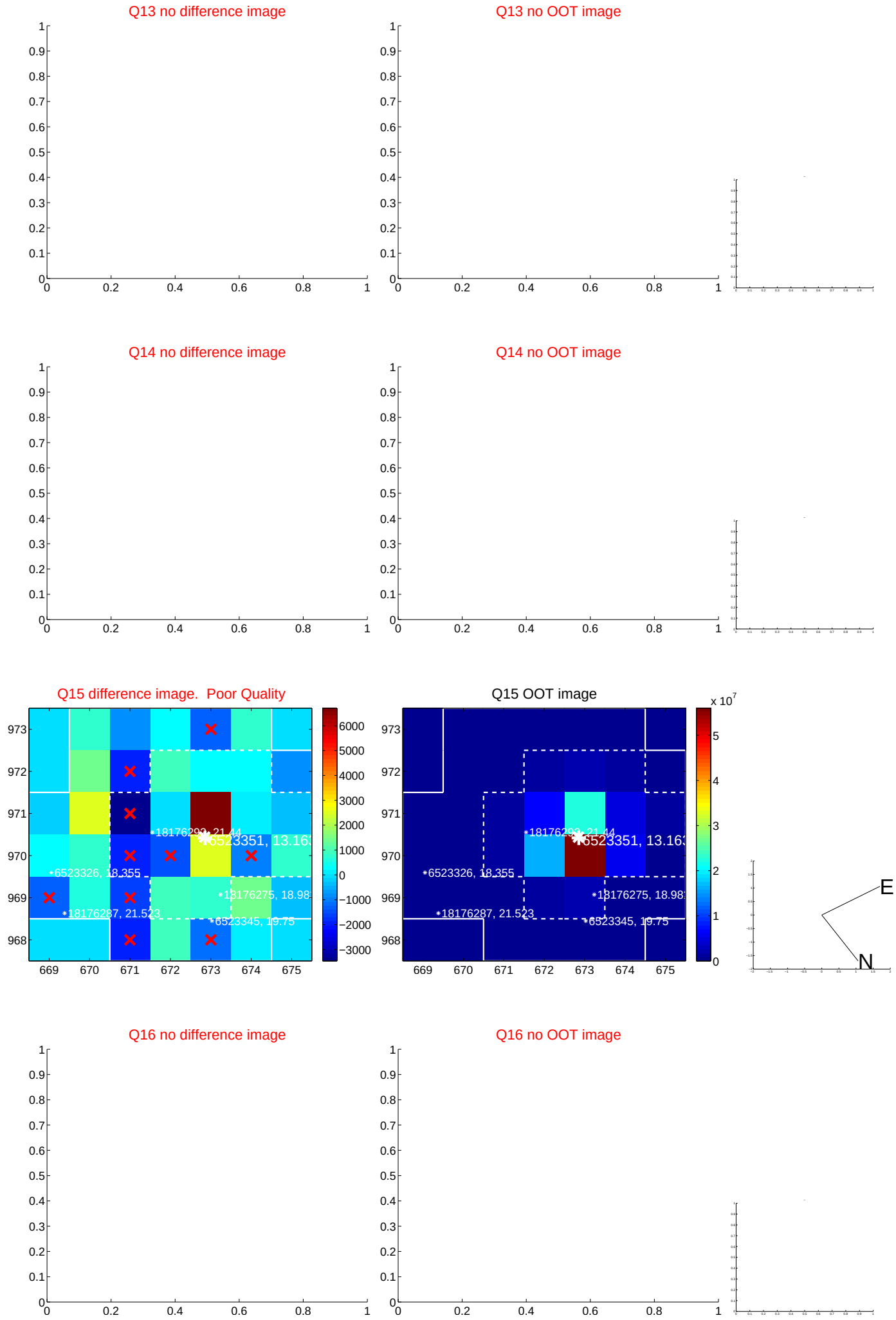




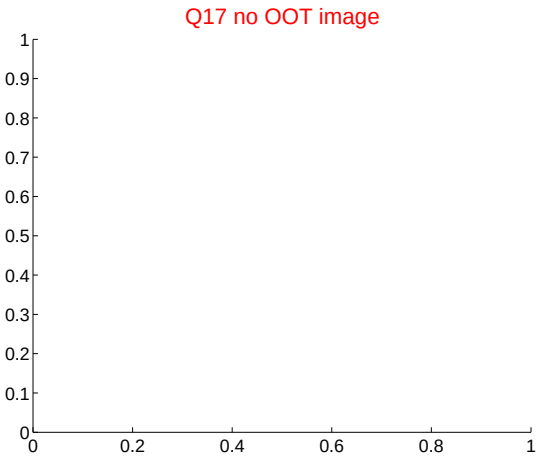


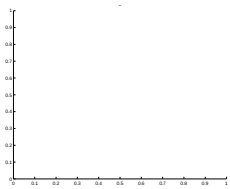


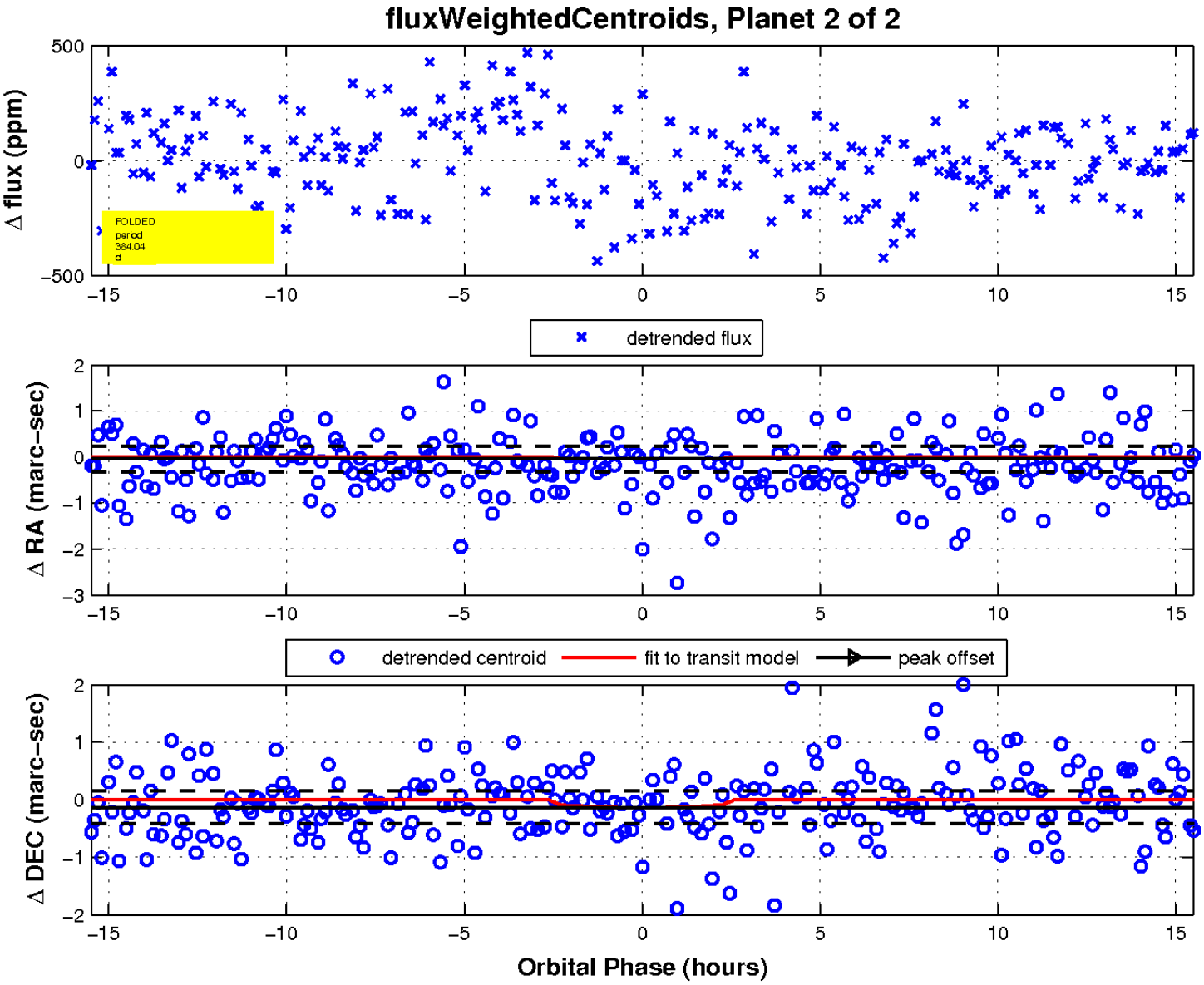
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



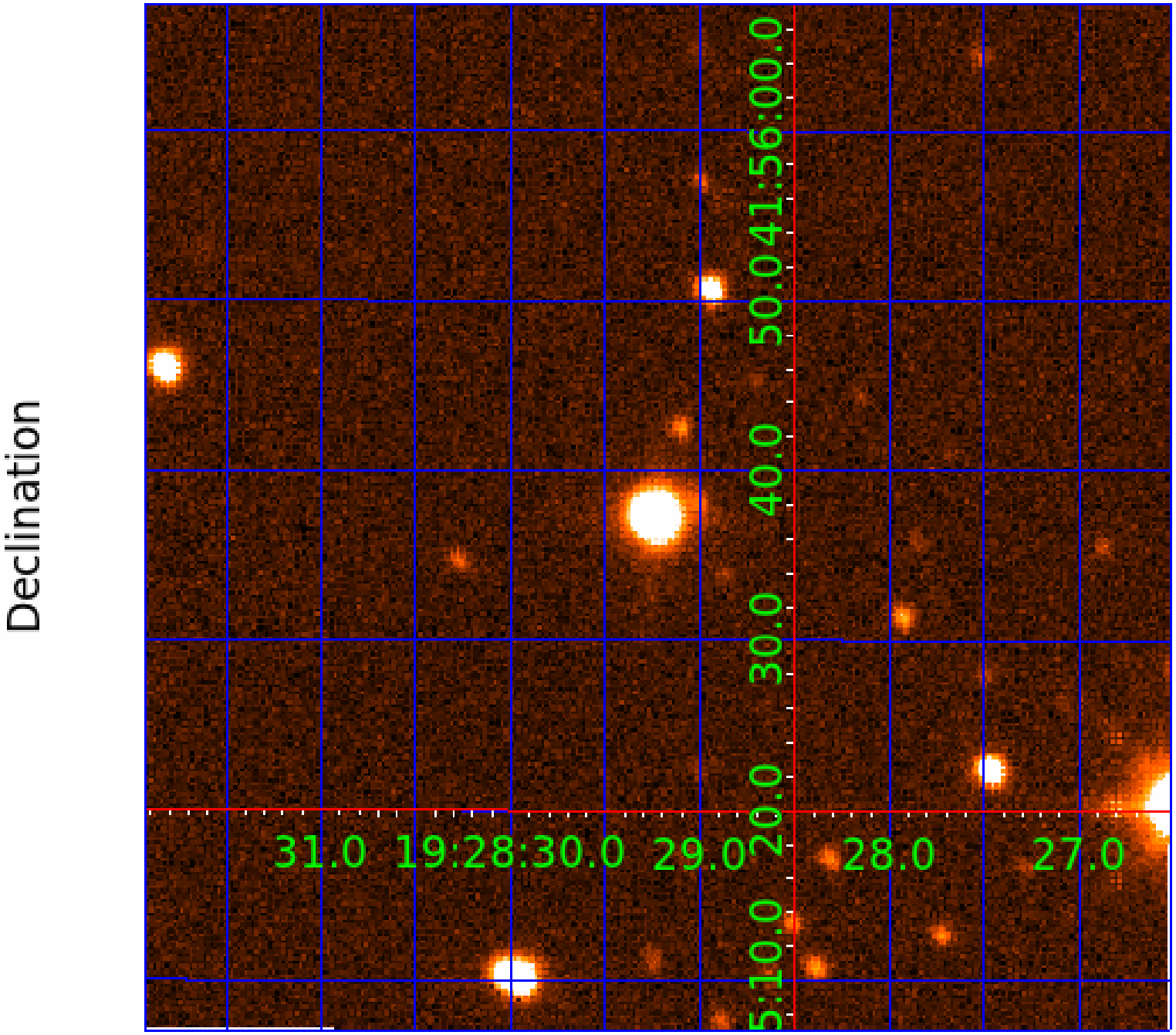
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.







UKIRT Image


Declination
31.0
19:28:30.0
29.0
28.0
27.0
5:10.0
20.0
30.0
40.0
50.0
41:56:00.0