KIC 006511019

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 ($S_\oplus$)
006511019-01	OBS	No	2.455213	132.962400	313.8	8.649	11.8	12.1	2.04	7589	4.51	6939.20
006511019-02	OBS	No	3.810606	133.530177	469.2	45.727	9.1	21.2	2.04	7589	5.20	3861.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006511019-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006511019-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—CENT_UNRESOLVED_OFFSET

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.

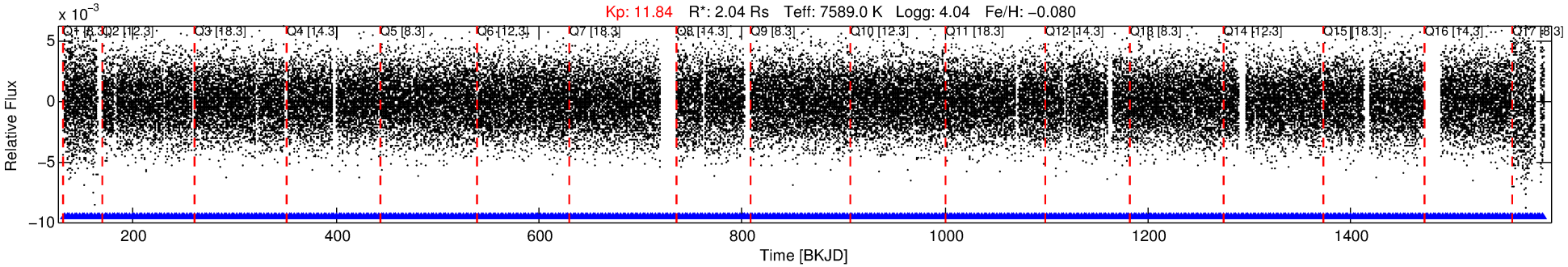
Ephemeris Match Information For 006511019-01

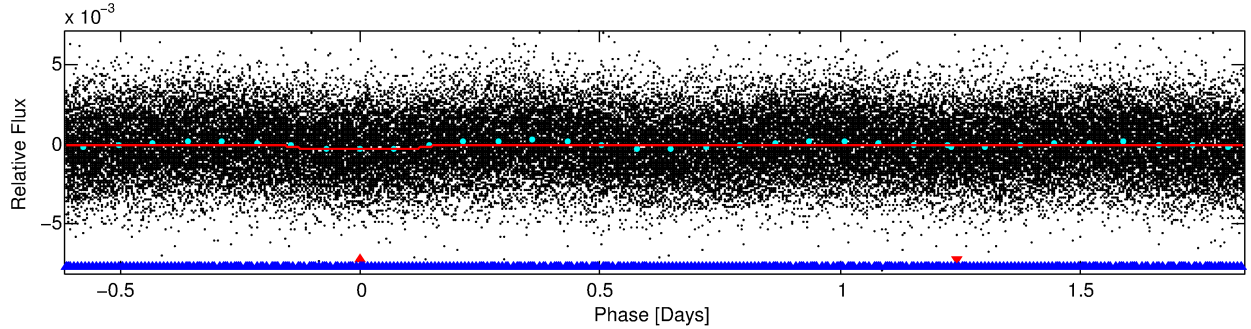
No Significant Match Found

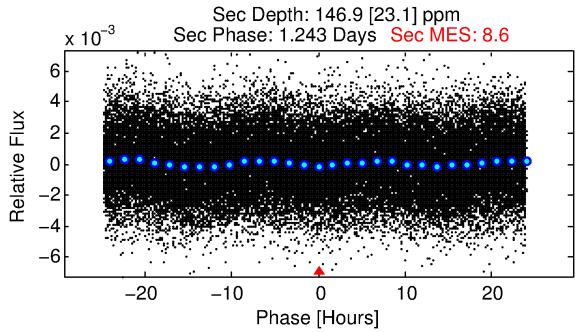
DV One-Page Summary

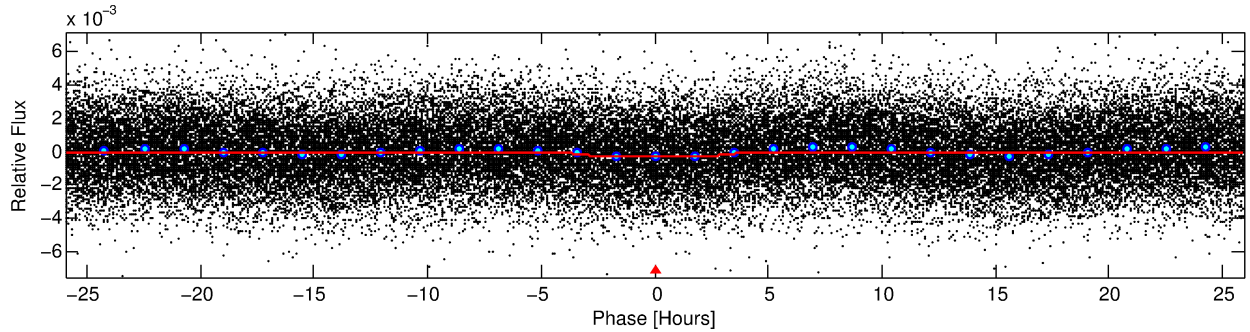
KIC: 6511019 Candidate: 1 of 2 Period: 2.455 d

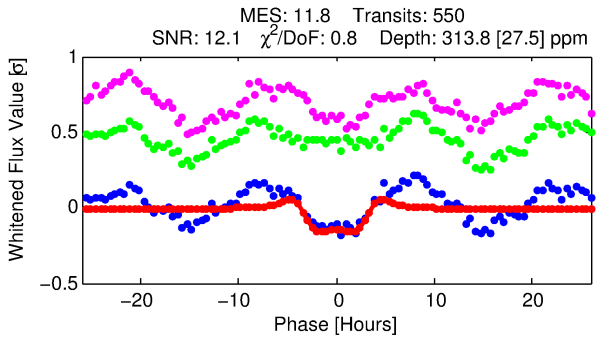
Kp: 11.84 R*: 2.04 Rs Teff: 7589.0 K Logg: 4.04 Fe/H: −0.080

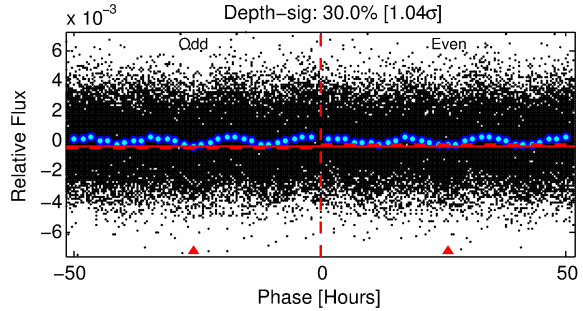


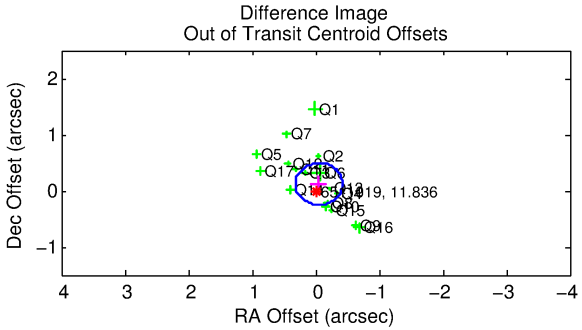












DV Fit Results:

Period = 2.45521 [0.00003] d
Epoch = 132.9624 [0.0102] BKJD
Rp/R* = 0.0202 [0.0012]
a/R* = 1.22 [0.08]
b = 0.96 [0.02]

Seff = 6939.20 [2685.30]
Teq = 2327 [225] K
Rp = 4.51 [1.19] Re
a = 0.0423 [0.0096] AU

Ag = 7.11 [2.81] [2.18σ]
Teffp = 5876 [392] K [7.84σ]

DV Diagnostic Results:

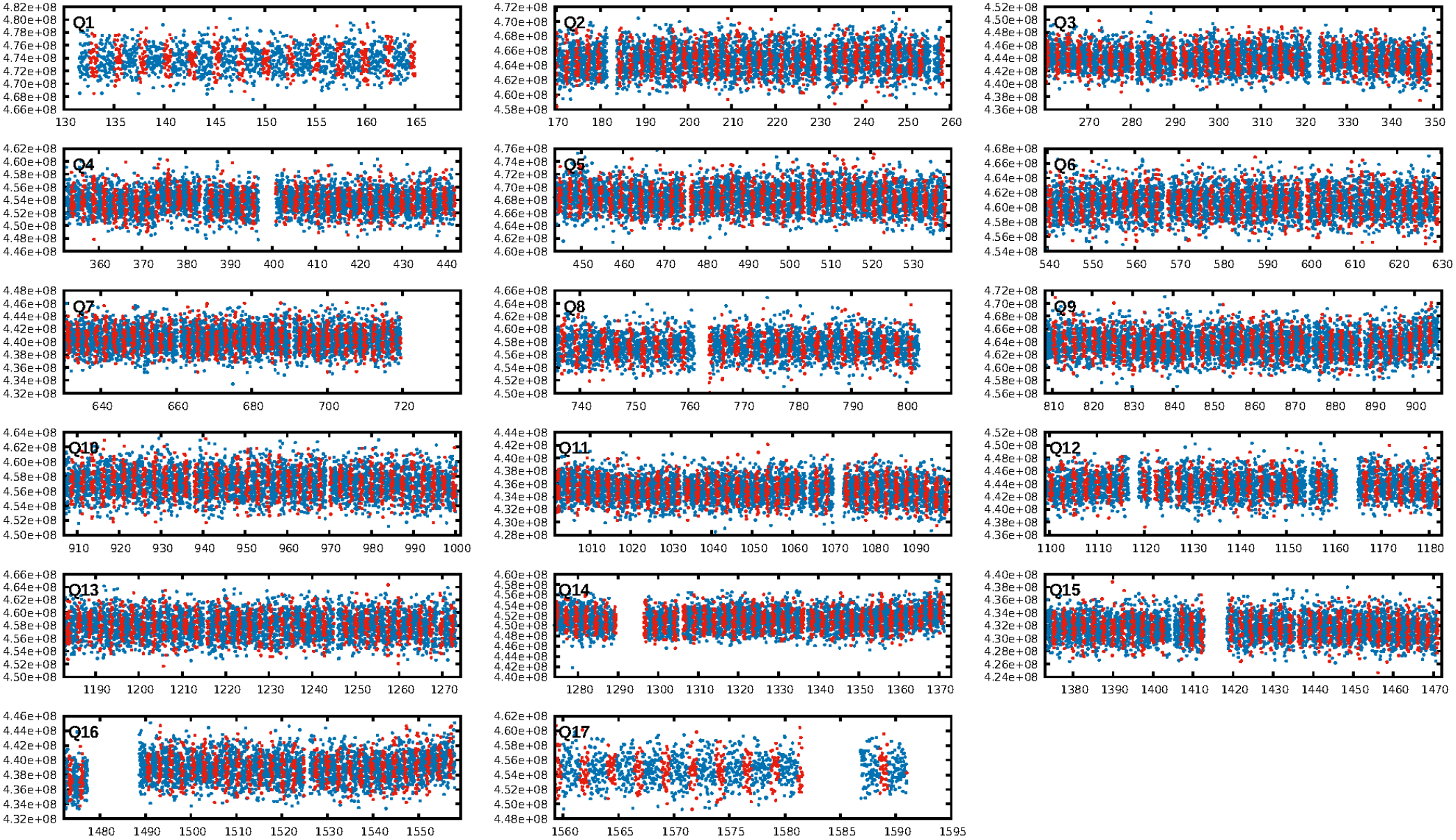
ShortPeriod−sig: N/A
LongPeriod−sig: 51.5% [0.70σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [525/525]
GhostDiagnostic−chr: 1.418

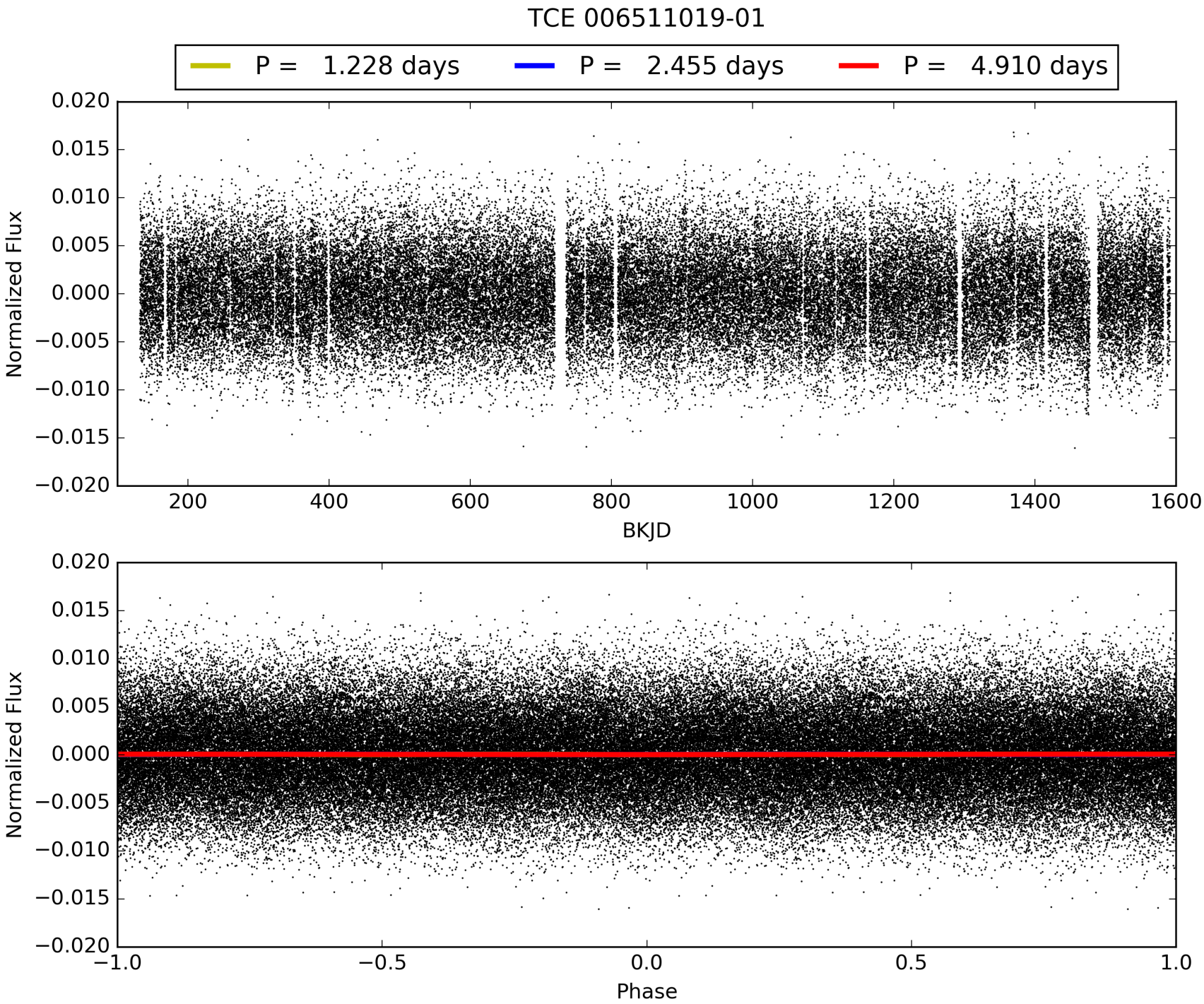
Centroid−sig: 0.1%
Centroid−so: 0.224 arcsec [6.70σ]
OotOffset−rm: 0.131 arcsec [1.06σ]
KicOffset−rm: 0.234 arcsec [1.54σ]
OotOffset−st: 4/4/4/5 [17]
KicOffset−st: 4/4/4/5 [17]
DiffImageQuality−fgm: 0.82 [14/17]
DiffImageOverlap−fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 −− Date Generated: 02−Feb−2016 01:00:10 Z

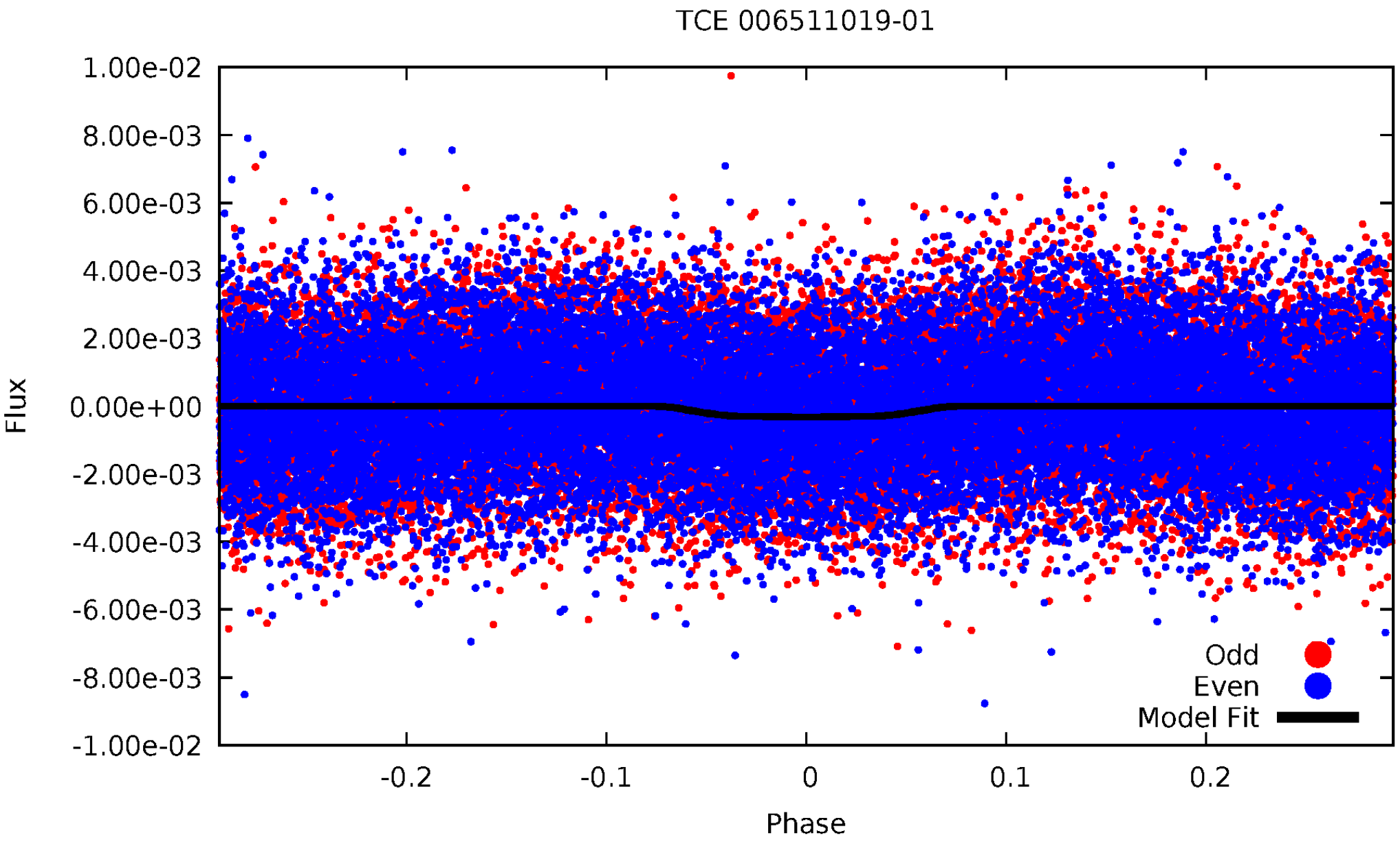
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006511019-01, PDC Light Curves

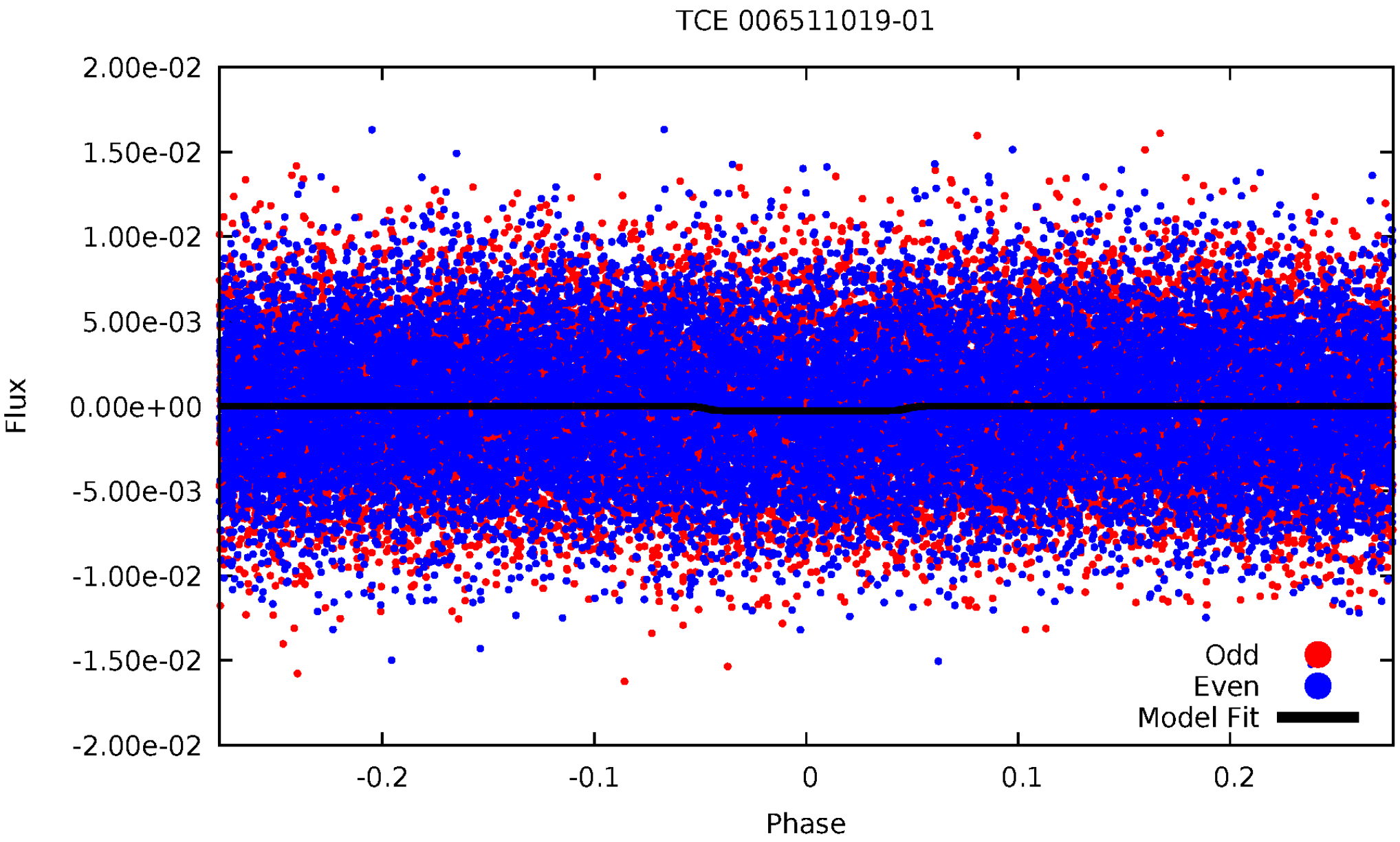



TCE 006511019-01
P = 1.228 days
P = 2.455 days
P = 4.910 days
Normalized Flux
BKJD
Normalized Flux
Phase

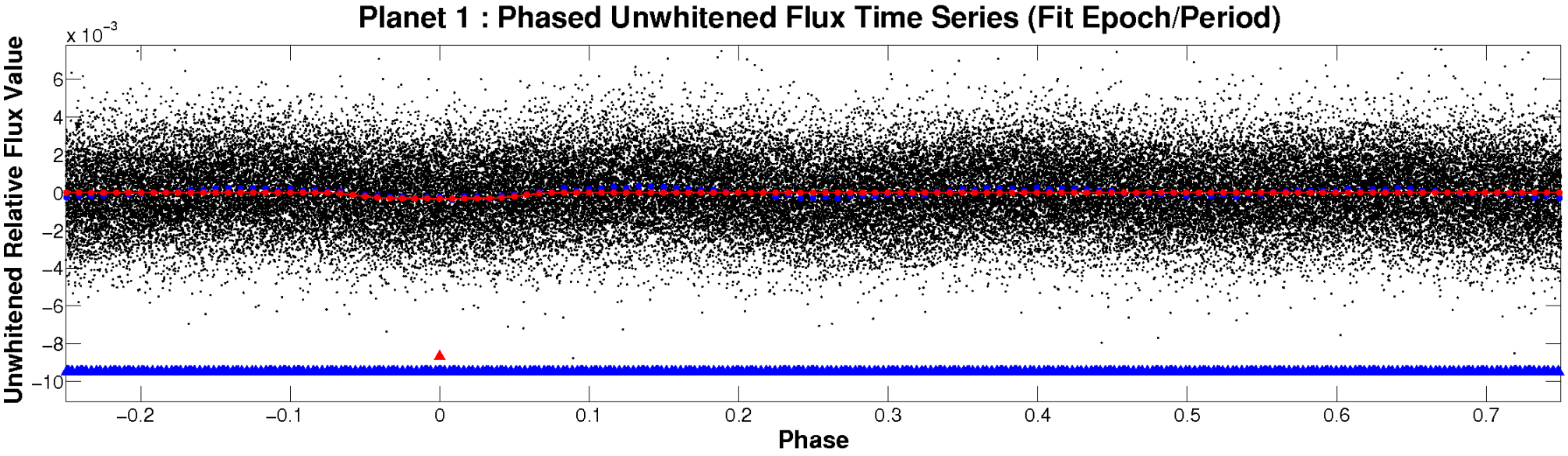
DV Odd/Even

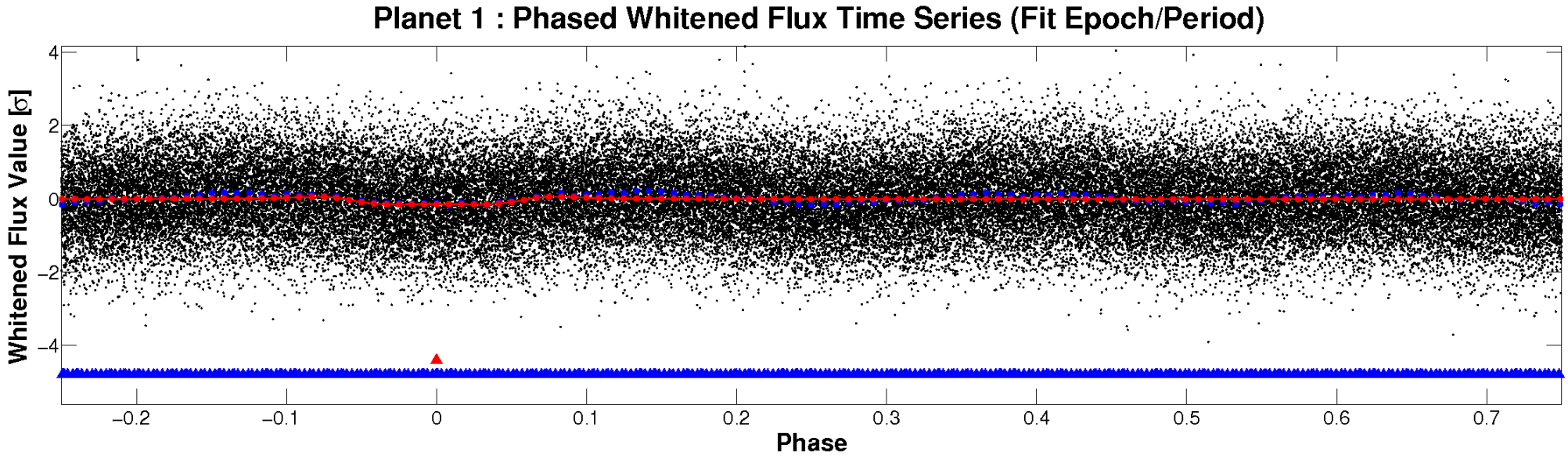

TCE 006511019-01
1.00e-02
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
-1.00e-02
Flux
-0.2
-0.1
0
0.1
0.2
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006511019-01
2.00e-02
1.50e-02
1.00e-02
5.00e-03
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
-2.00e-02
Flux
-0.2
-0.1
0
0.1
0.2
Phase
Odd
Even
Model Fit

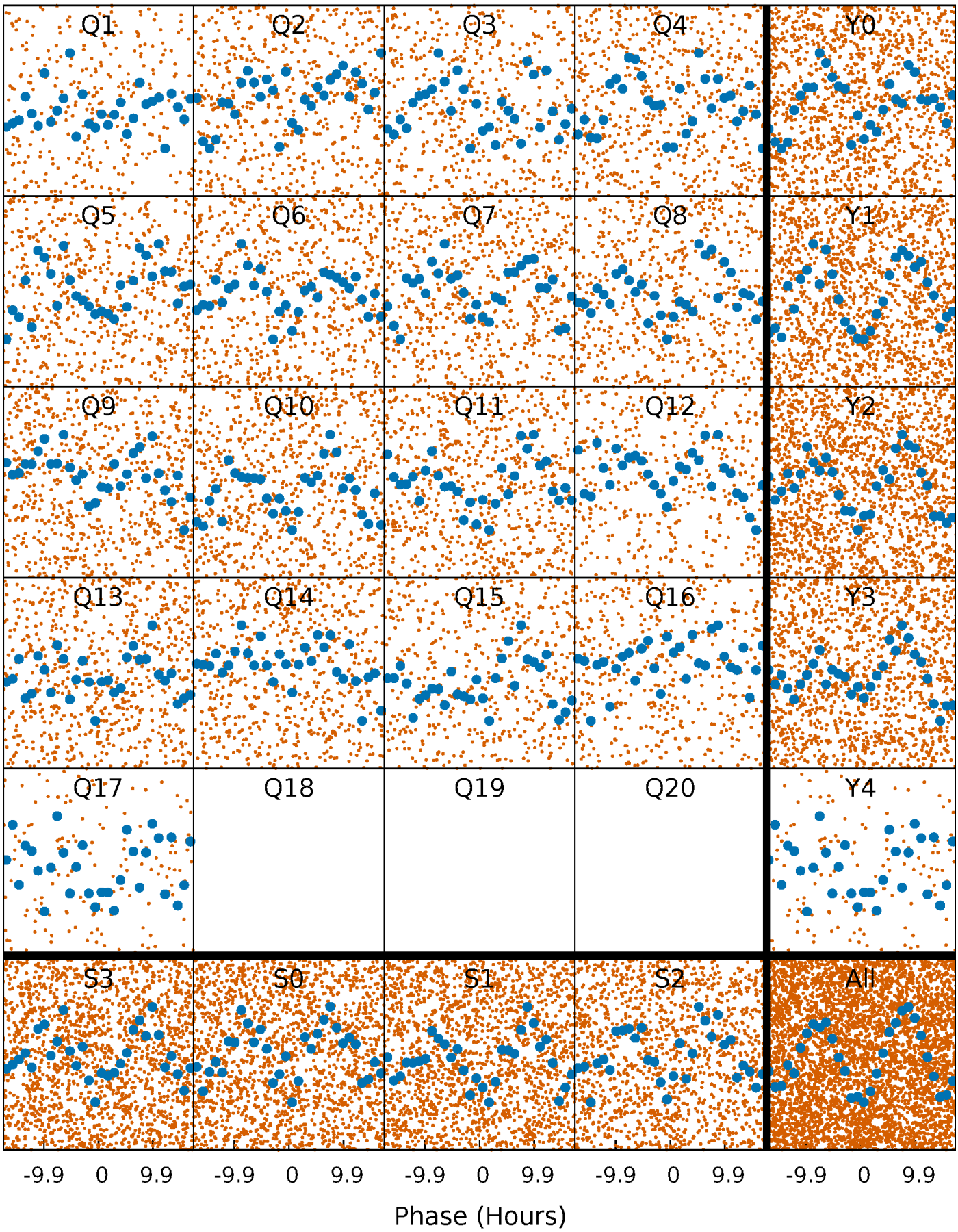
Non-Whitened Vs. Whitened Light Curve





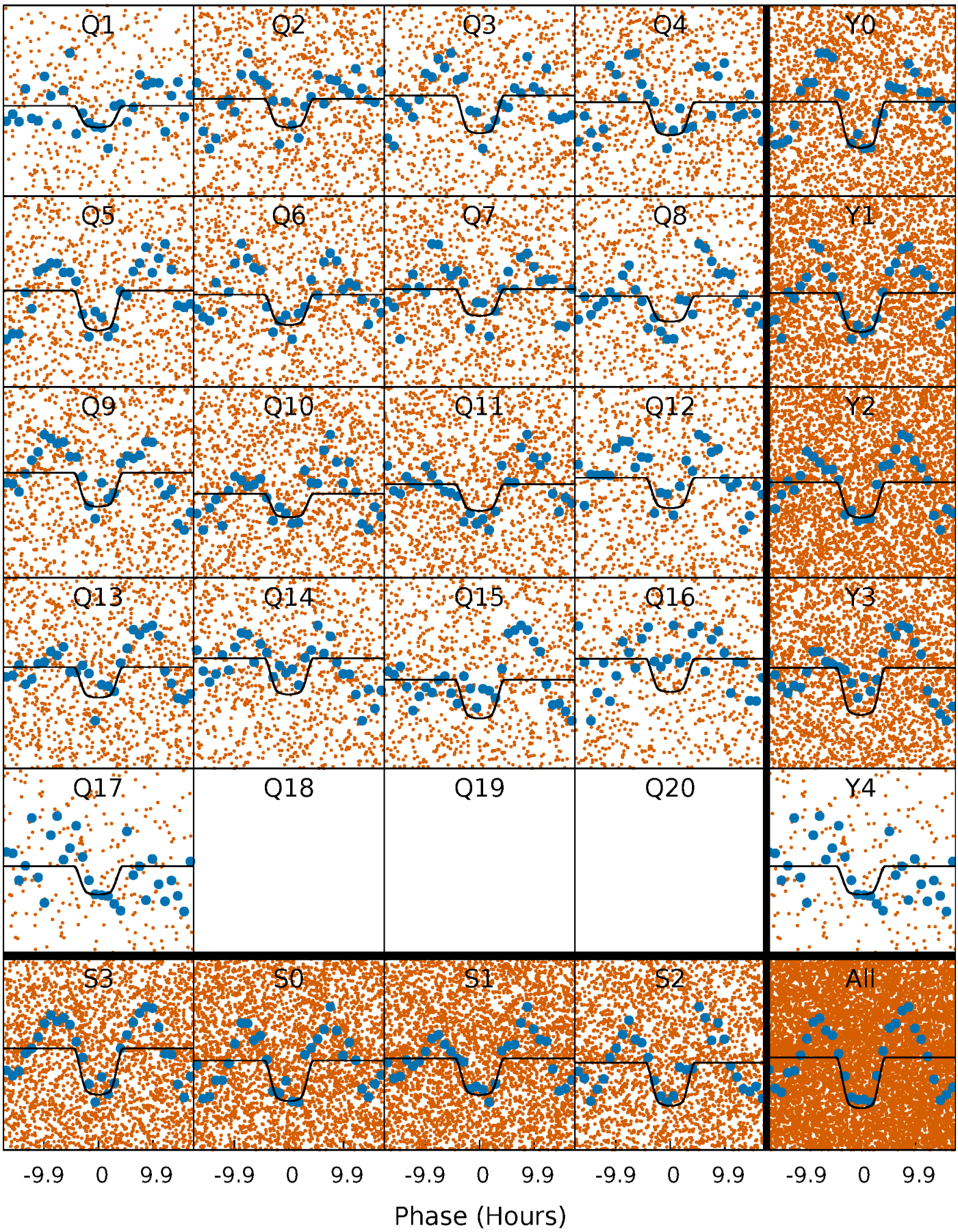
PDC Quarter-Phased Transit Curves

TCE 006511019-01 P= 2.455213 Days T_0=132.962400 (BKJD)



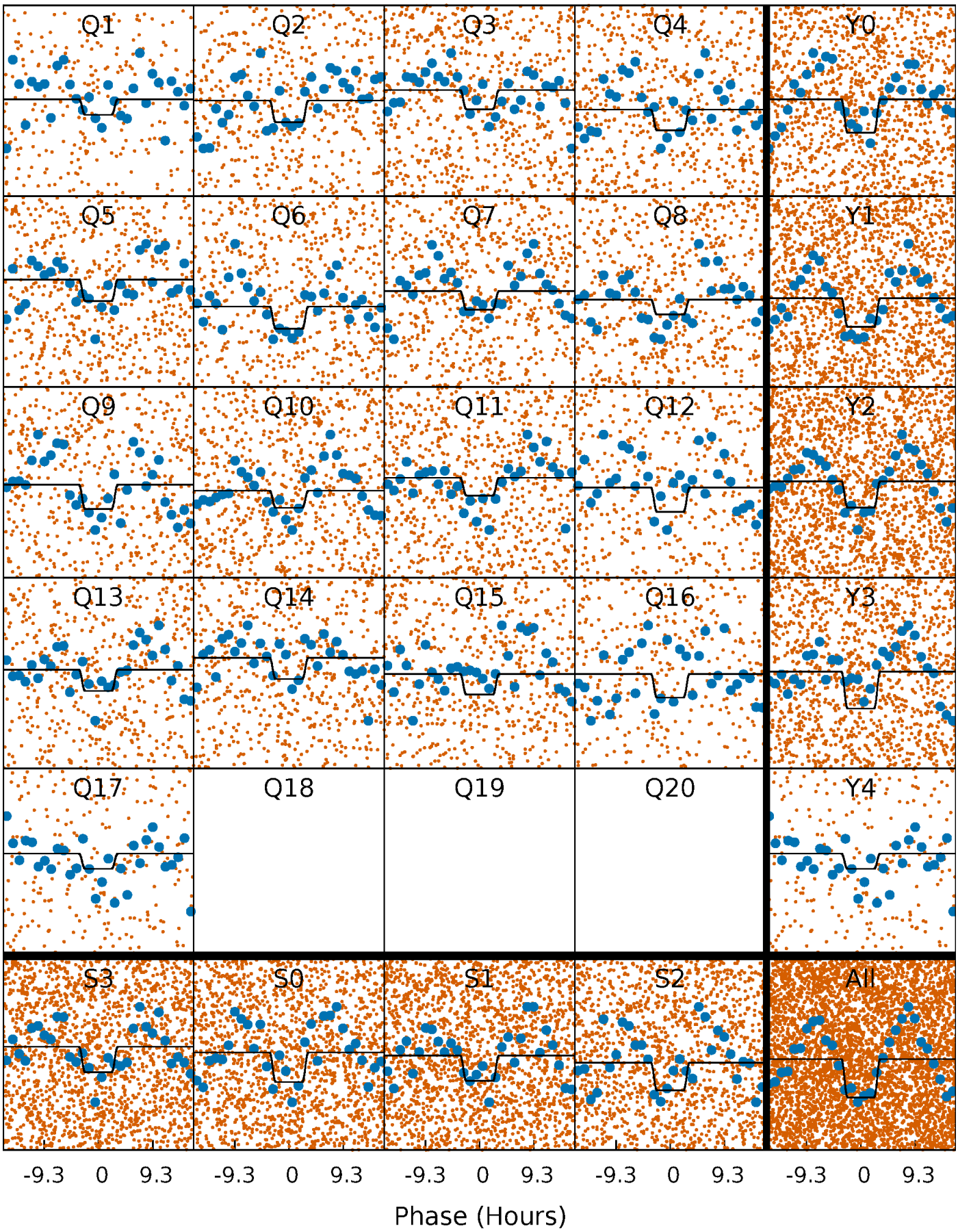
DV Quarter-Phased Transit Curves

TCE 006511019-01 P= 2.455213 Days T_0=132.962400 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

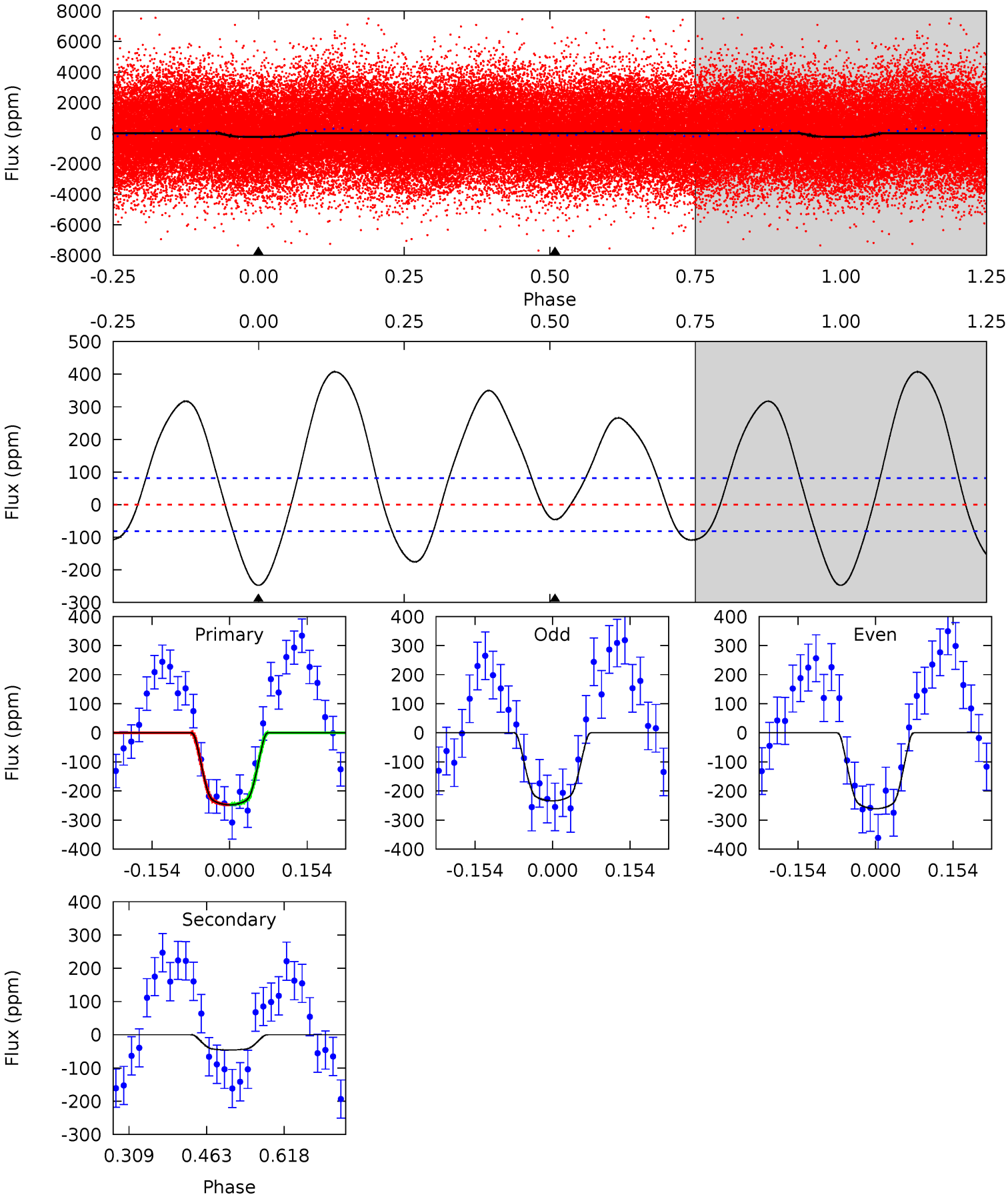
TCE 006511019-01 P= 2.455140 Days T_0=132.987774 (BKJD)



DV Model-Shift Uniqueness Test

006511019-01, P = 2.455213 Days, E = 130.507187 Days

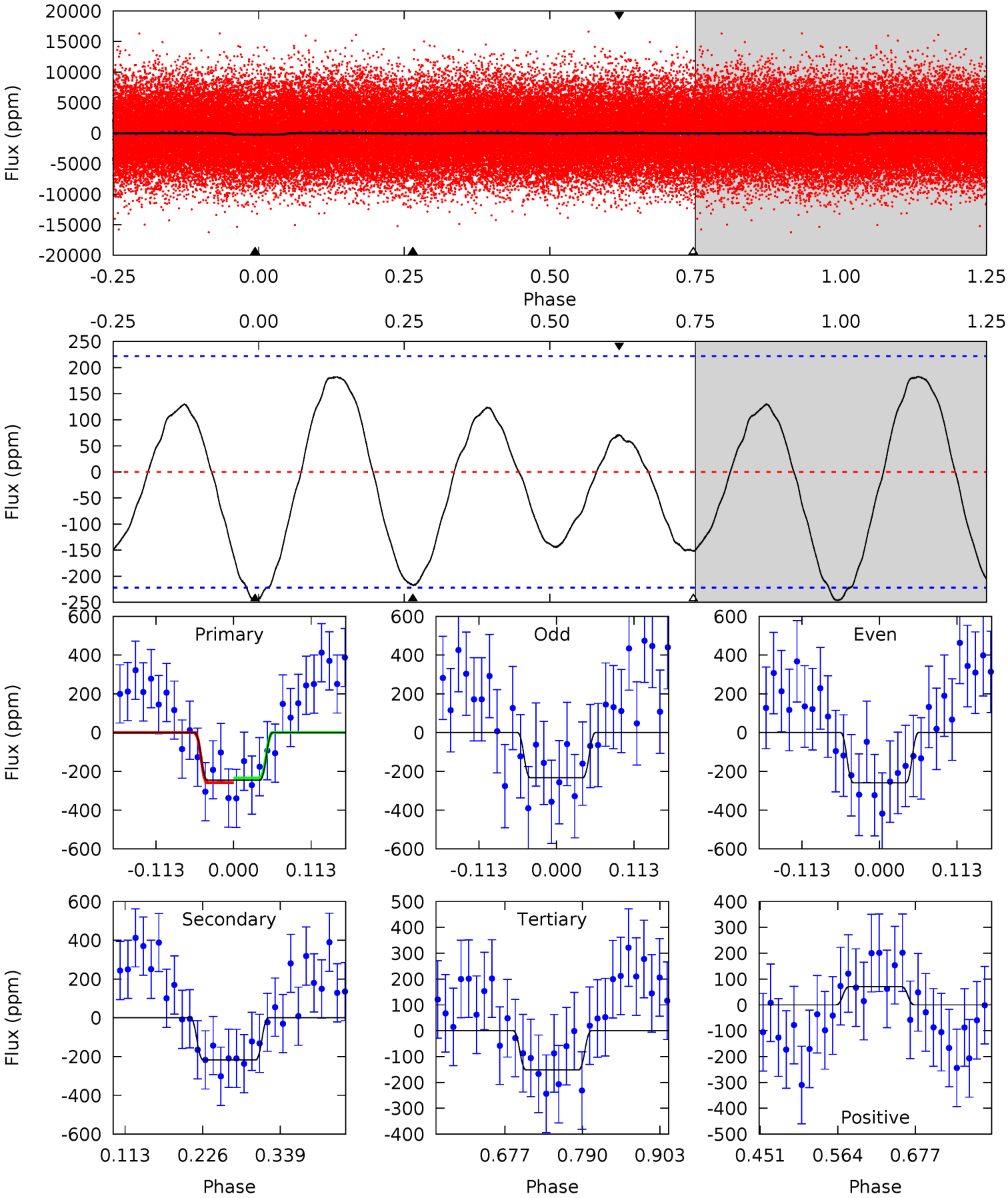
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	2.51	0	0	4.47	1.42	7.89	13.6	13.6	2.51	2.51	0.75	0.95	0.62	0.02



Alt Model-Shift Uniqueness Test

006511019-01, P = 2.455140 Days, E = 130.532634 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.03	4.44	3.10	1.44	4.54	1.59	2.09	1.93	3.59	1.34	3.00	0.26	1.02	0.43	0.26



Stellar Parameters For KIC 006511019

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7589^{+211}_{-343}	$4.041^{+0.193}_{-0.158}$	$-0.080^{+0.200}_{-0.350}$	$2.045^{+0.525}_{-0.525}$	$1.674^{+0.184}_{-0.315}$	$0.276^{+0.291}_{-0.121}$
	+3%/-5%	+5%/-4%	+250%/-438%	+26%/-26%	+11%/-19%	+106%/-44%
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 006511019-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-46±18	$4.49^{+0.67}_{-0.66}$	3227^{+237}_{-214}	4350^{+380}_{-462}	$2.147^{+1.381}_{-0.908}$
Alt.	-217±49	$3.60^{+0.55}_{-0.56}$	3213^{+244}_{-224}	7036^{+576}_{-557}	16^{+8}_{-5}

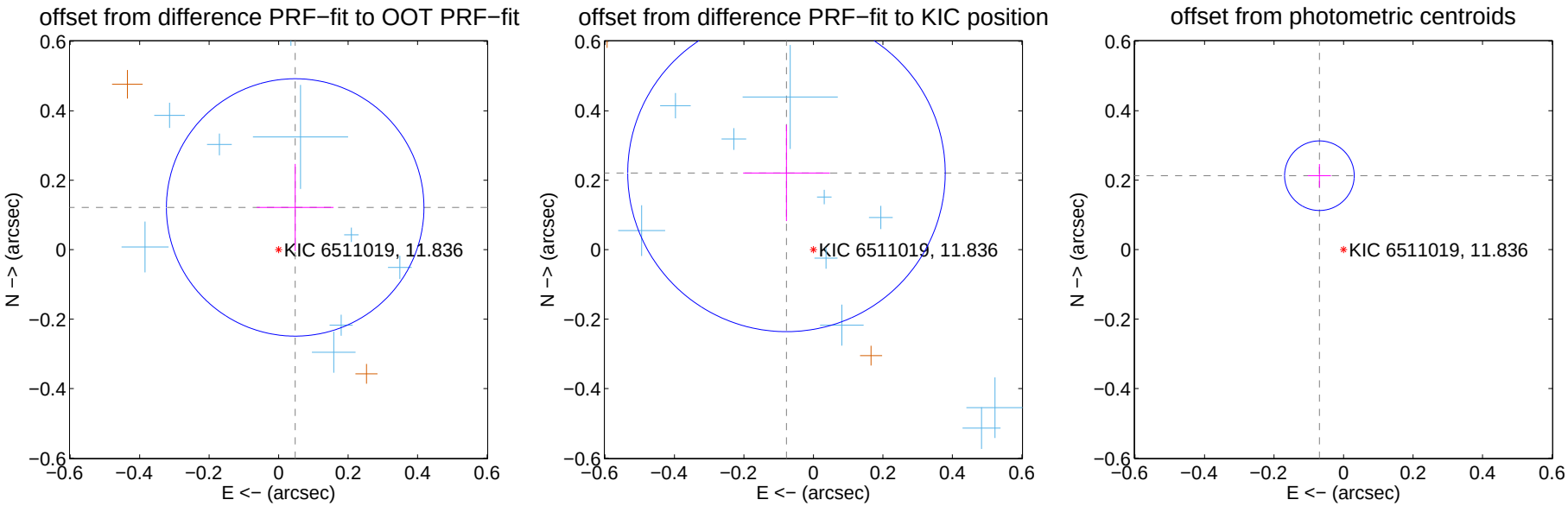
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

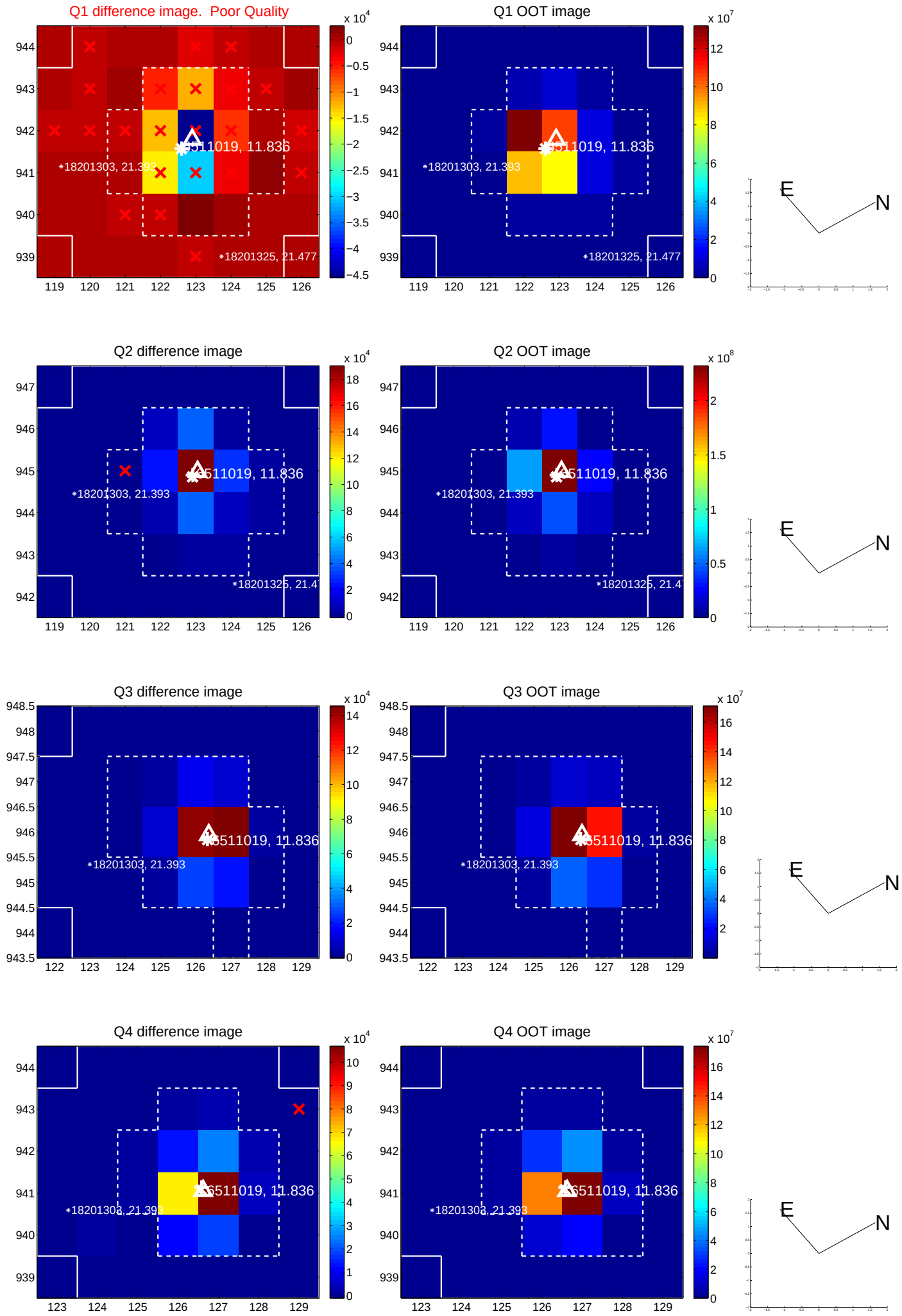
Supplemental centroid analysis for 006511019-01. Kepler magnitude: 11.84. Transit SNR 12.07
There are 14 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.131 ± 0.124	1.06	-0.048 ± 0.111	0.122 ± 0.125
PRF-fit source offset from KIC position	0.234 ± 0.152	1.54	0.078 ± 0.125	0.221 ± 0.139
photometric centroid source offset	0.22 ± 0.03	6.70	0.07 ± 0.03	0.21 ± 0.03

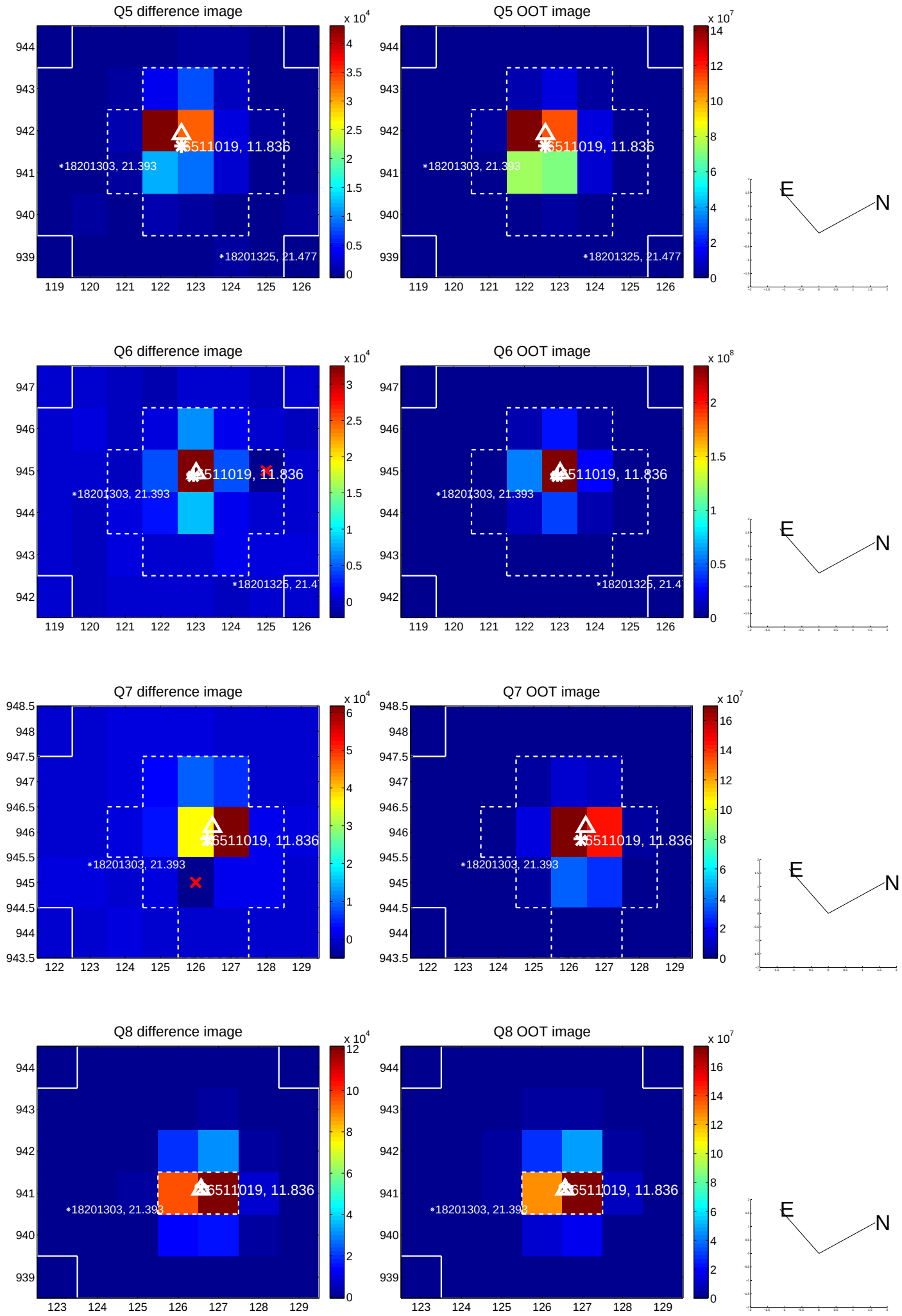


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

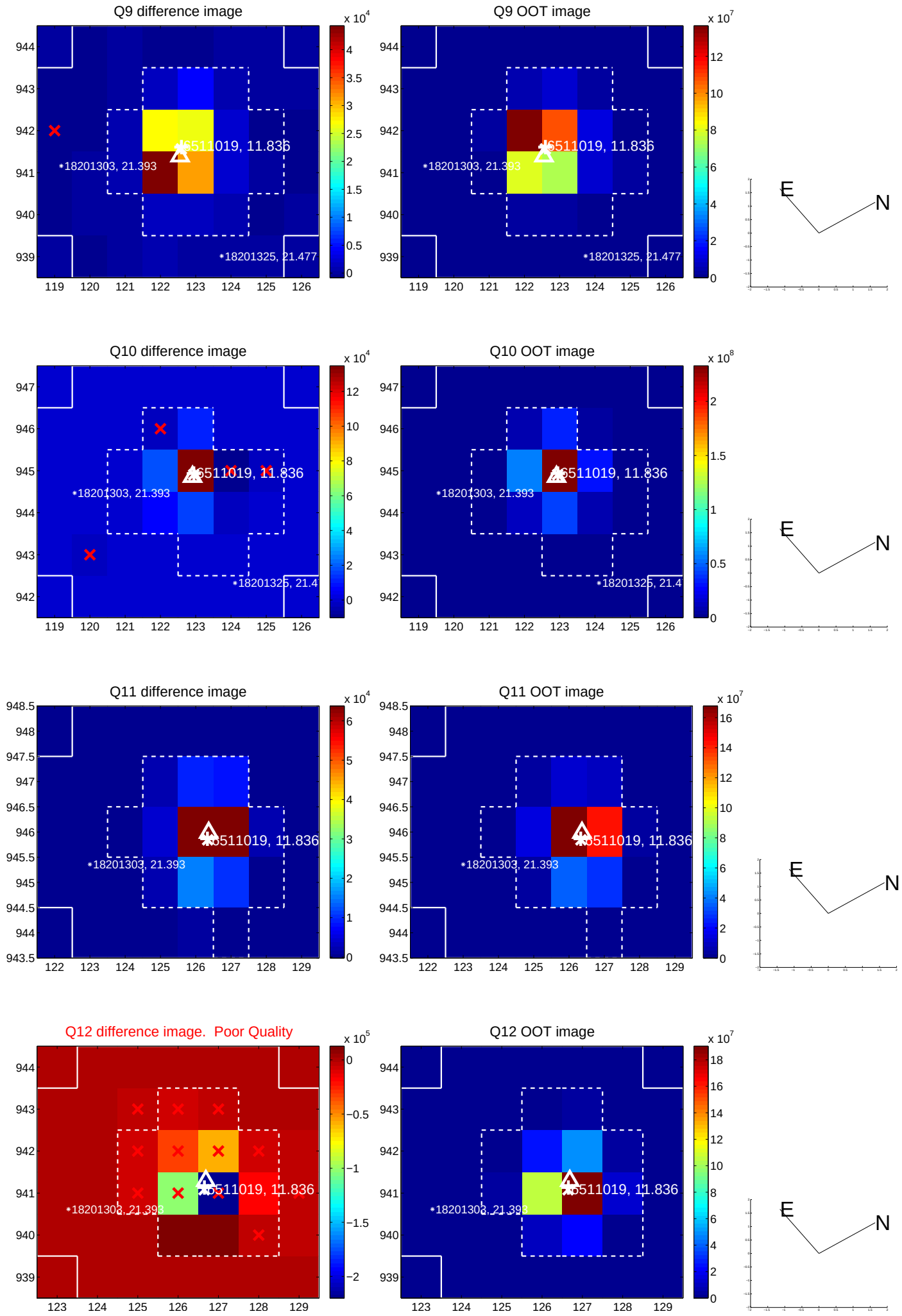
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



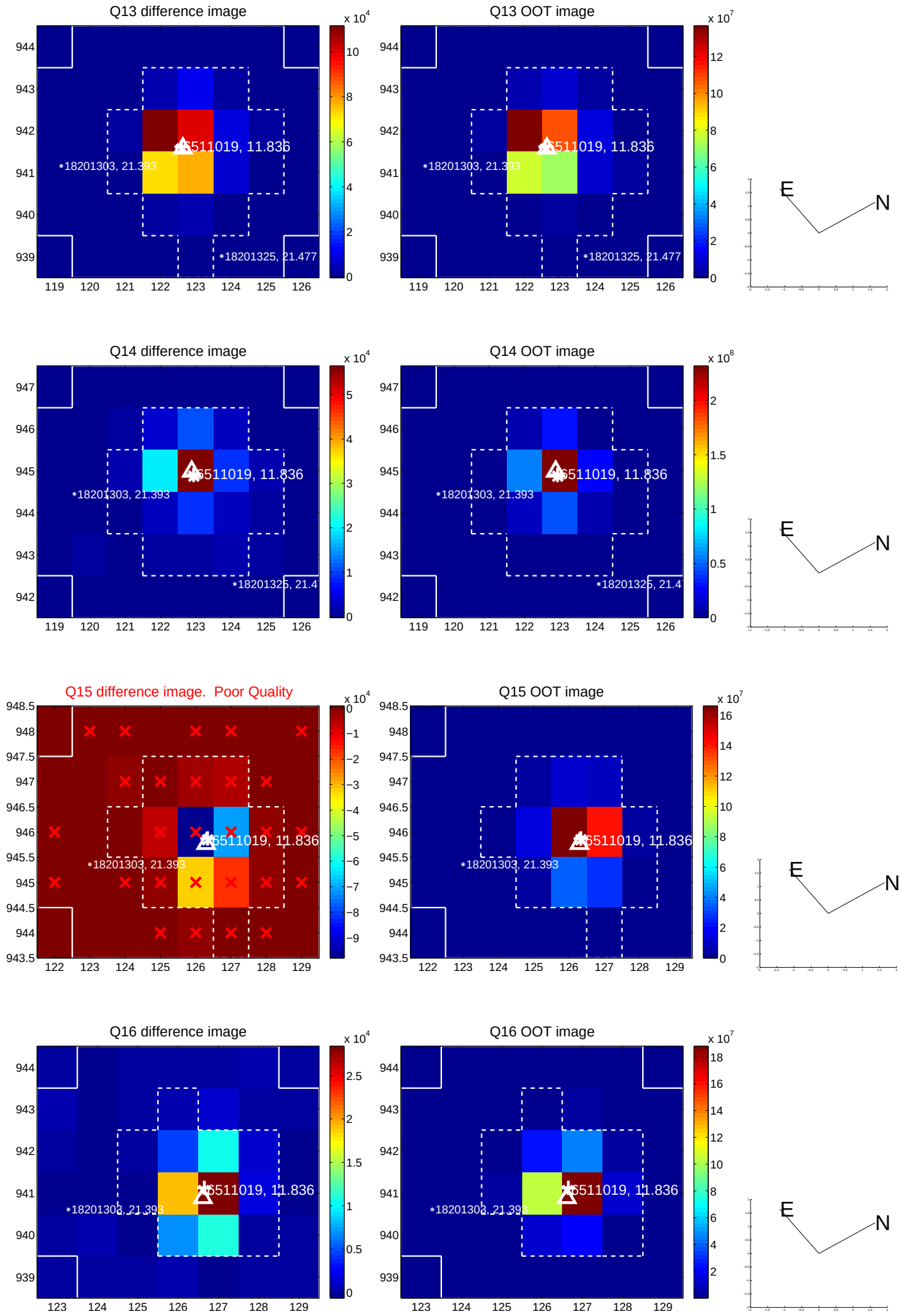
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



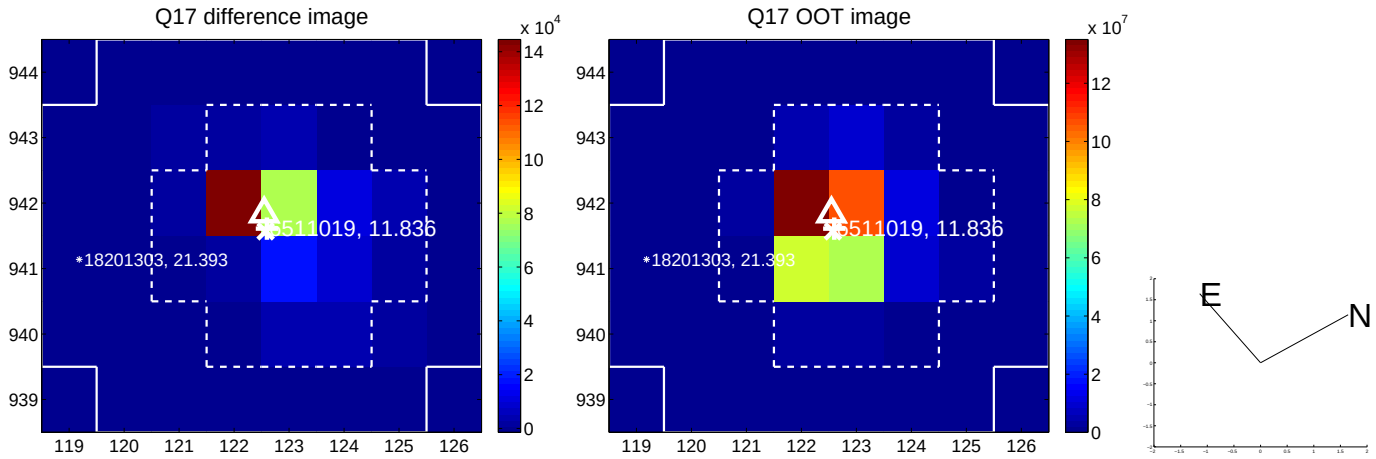
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

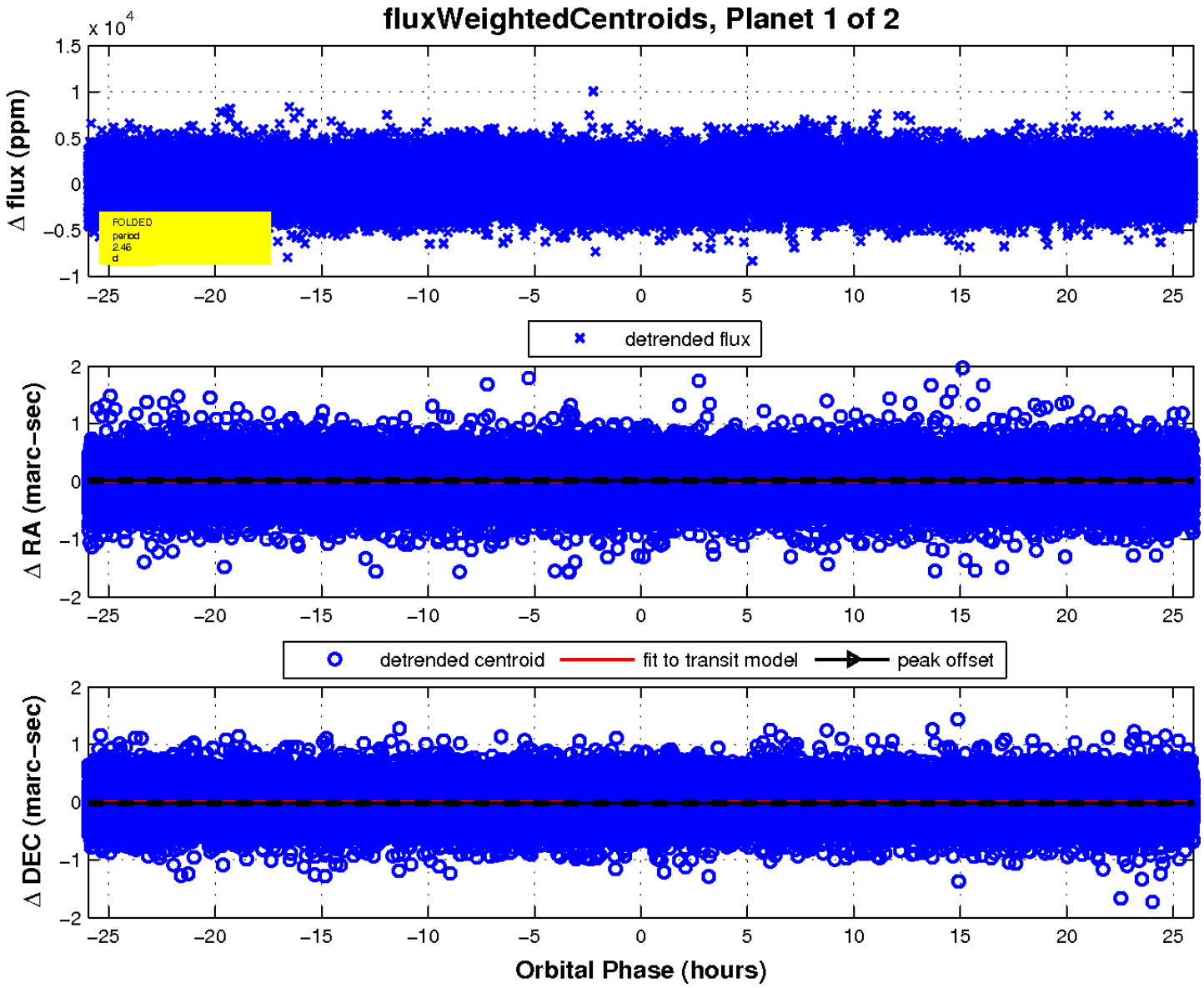


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

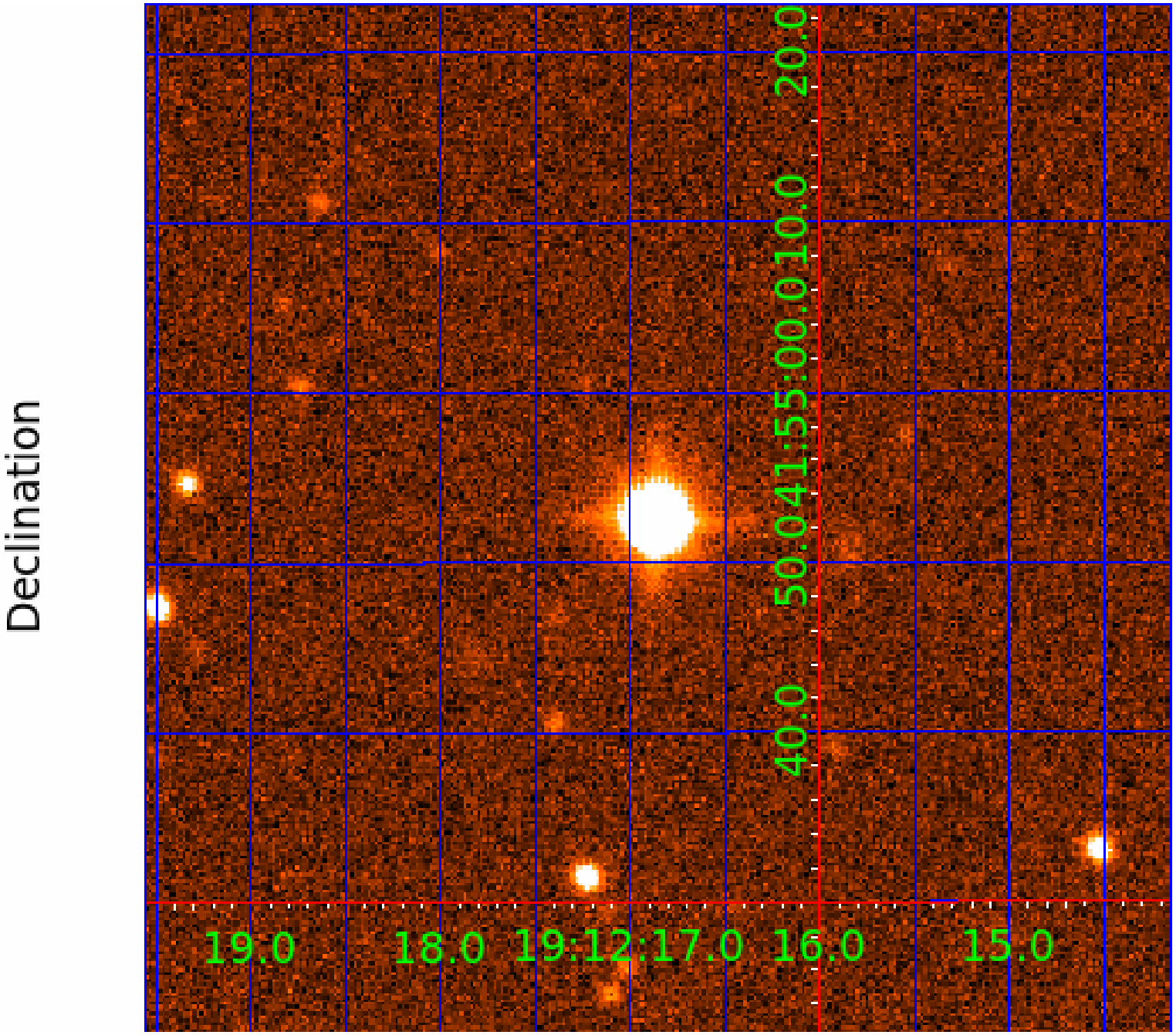


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image



KIC 006511019

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 ($S_\oplus$)
006511019-01	OBS	No	2.455213	132.962400	313.8	8.649	11.8	12.1	2.04	7589	4.51	6939.20
006511019-02	OBS	No	3.810606	133.530177	469.2	45.727	9.1	21.2	2.04	7589	5.20	3861.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006511019-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006511019-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—CENT_UNRESOLVED_OFFSET

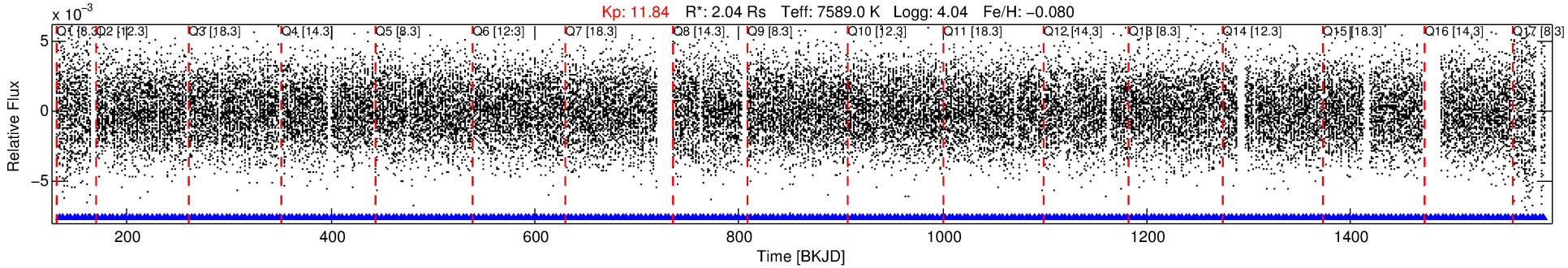
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

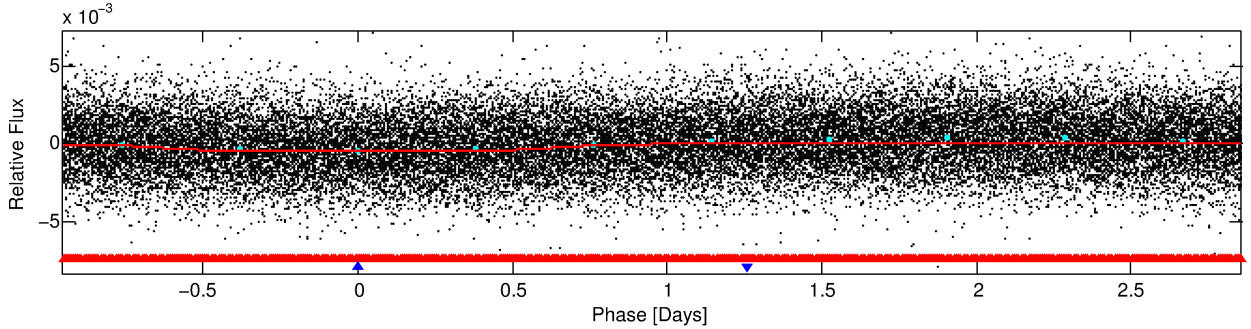
Ephemeris Match Information For 006511019-02

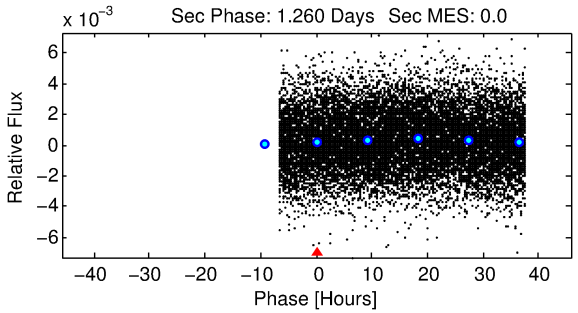
No Significant Match Found

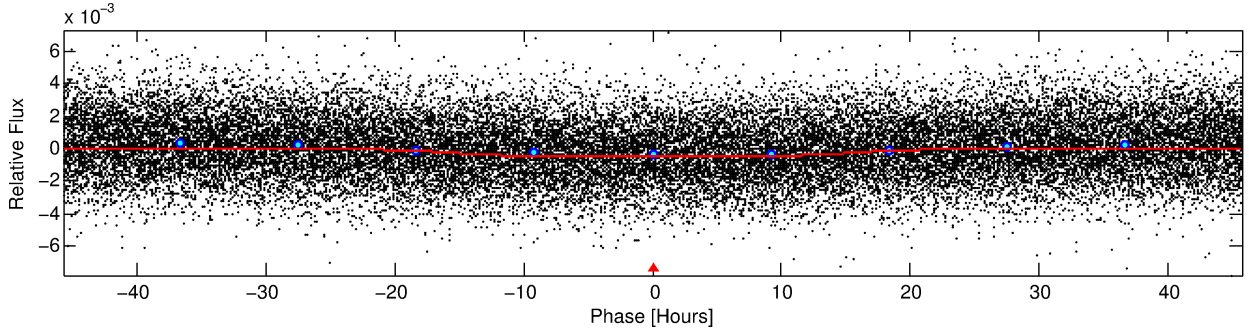
DV One-Page Summary

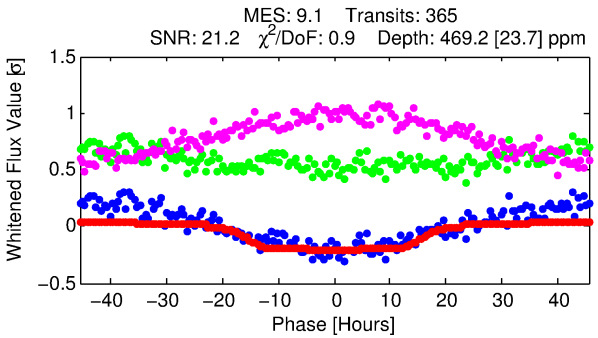
KIC: 6511019 Candidate: 2 of 2 Period: 3.811 d

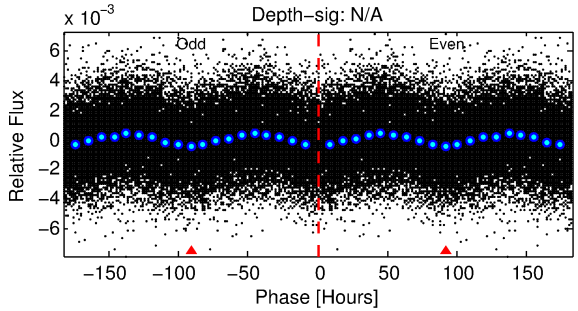


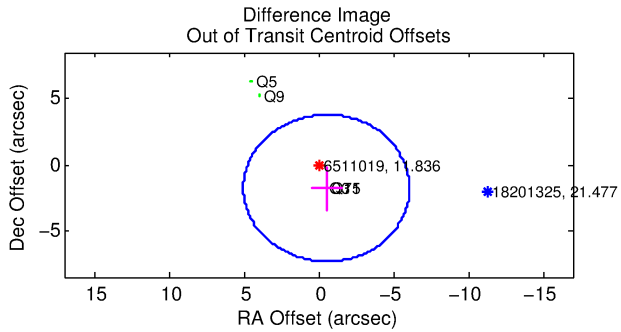












DV Fit Results:

Period = 3.81061 [0.00016] d
Epoch = 133.5302 [0.0339] BKJD
Rp/R* = 0.0233 [0.0007]
a/R* = 1.01 [0.00]
b = 0.92 [0.02]

Seff = 3861.62 [1494.35]
Teq = 2010 [194] K
Rp = 5.20 [1.34] Re
a = 0.0567 [0.0128] AU

Ag = N/A
Teffp = N/A

DV Diagnostic Results:

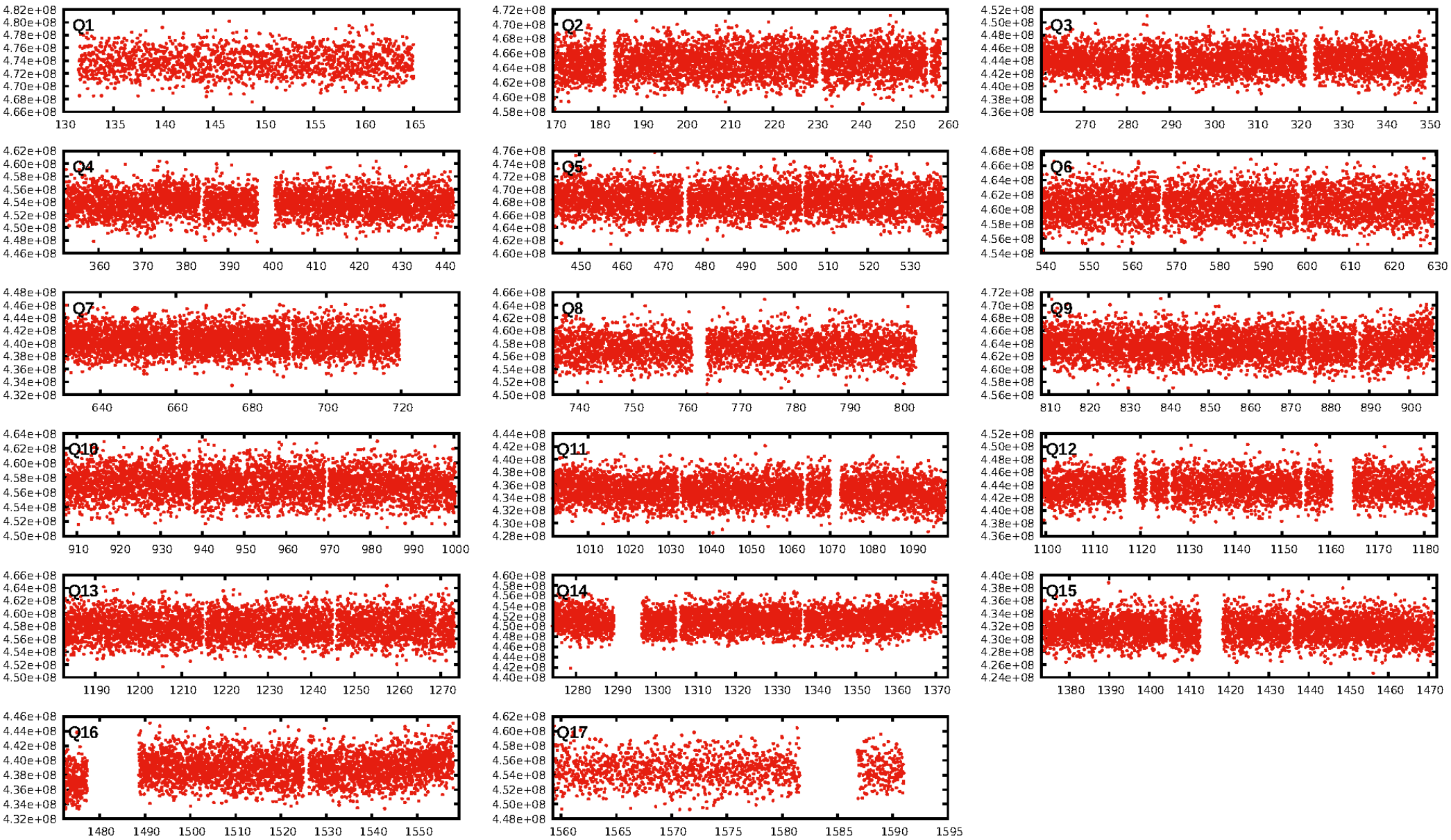
ShortPeriod−sig: 51.5% [0.70σ]
LongPeriod−sig: N/A
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [349/349]
GhostDiagnostic−chr: 2.127

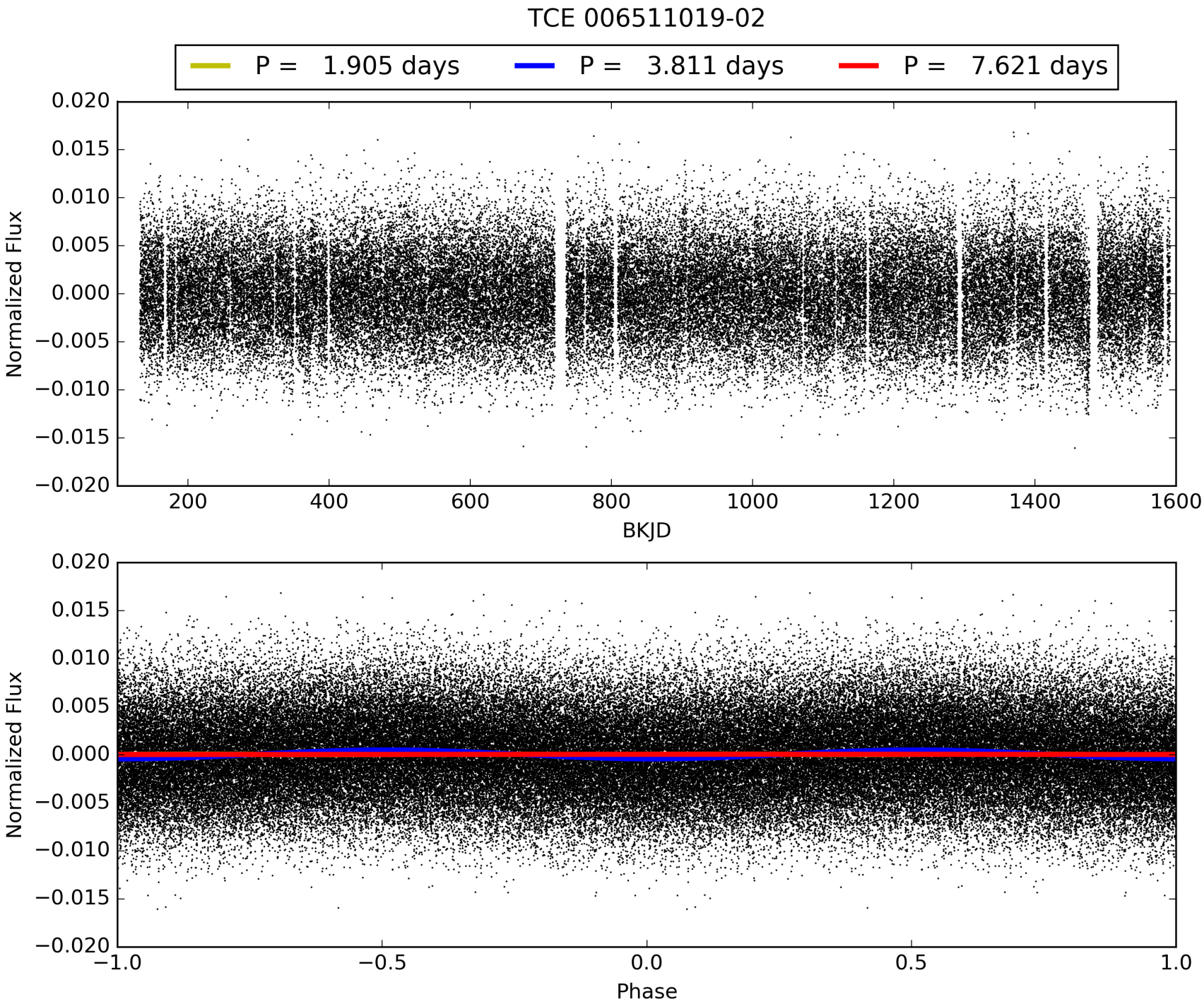
Centroid−sig: 0.0%
Centroid−so: 0.253 arcsec [16.39σ]
OotOffset−rm: 1.857 arcsec [1.00σ]
KicOffset−rm: 1.807 arcsec [1.28σ]
OotOffset−st: 0/4/0/2 [6]
KicOffset−st: 0/4/0/2 [6]
DiffImageQuality−fgm: 0.67 [4/6]
DiffImageOverlap−fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02−Feb−2016 01:00:27 Z

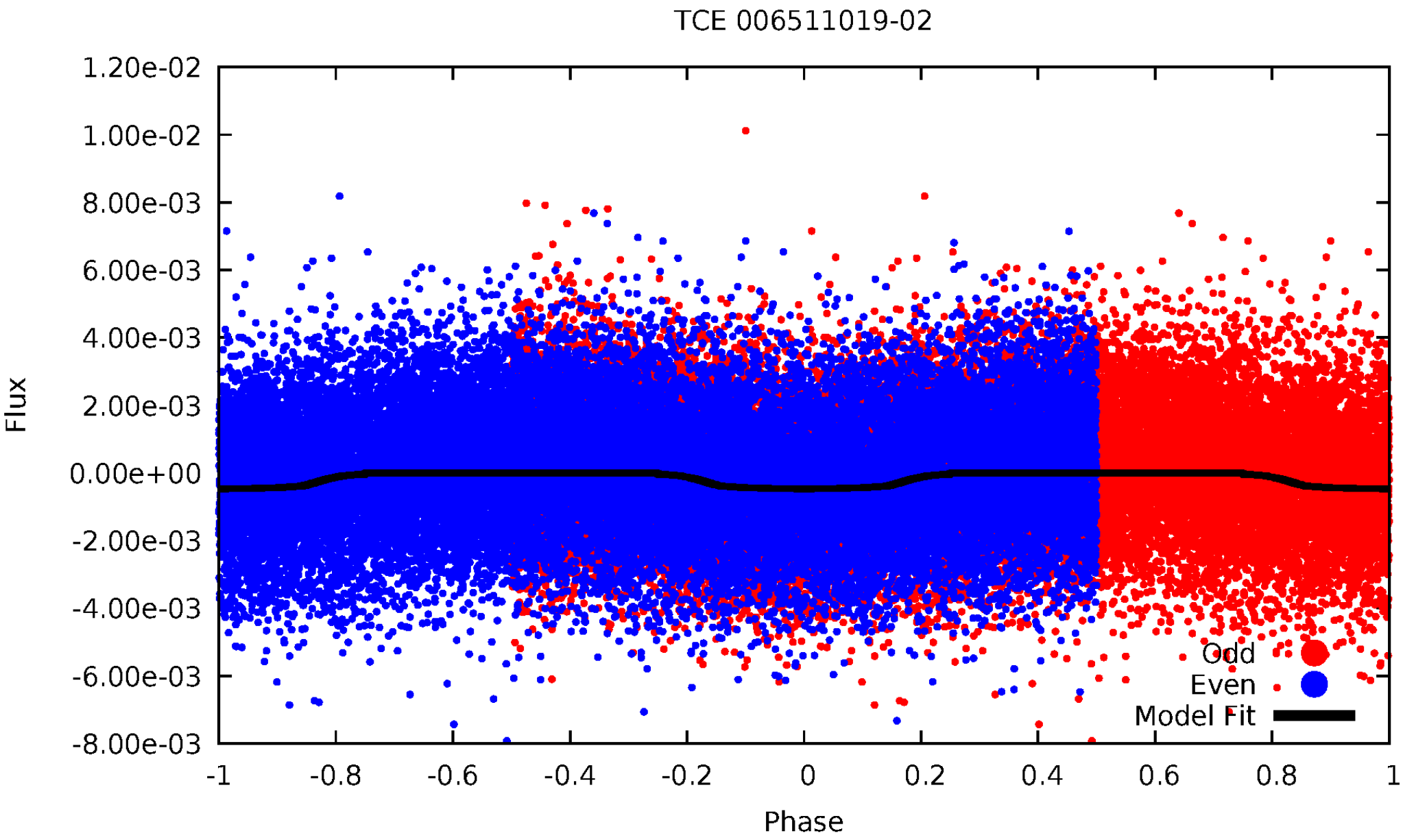
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006511019-02, PDC Light Curves

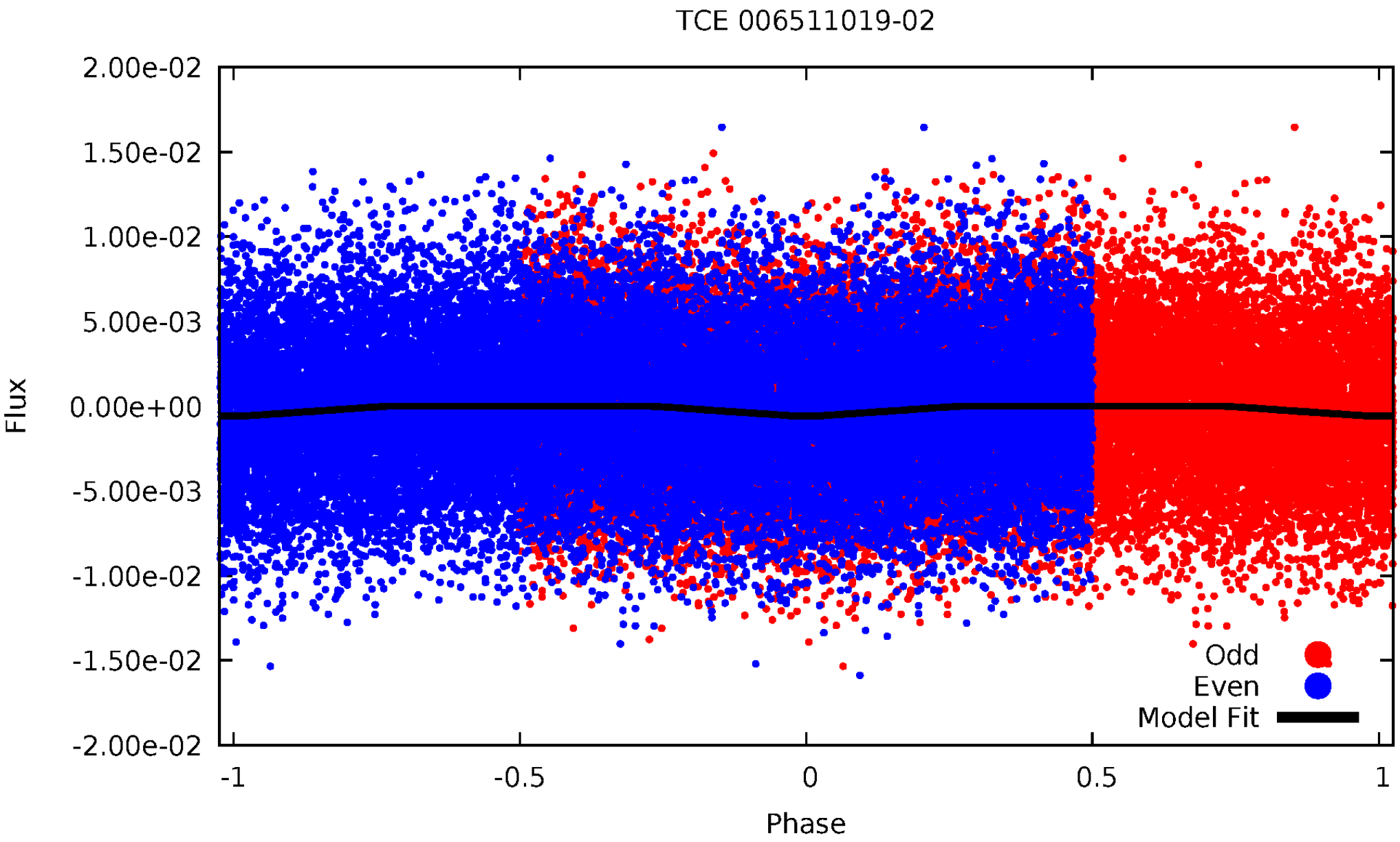



TCE 006511019-02
P = 1.905 days
P = 3.811 days
P = 7.621 days
Normalized Flux
BKJD
Normalized Flux
Phase

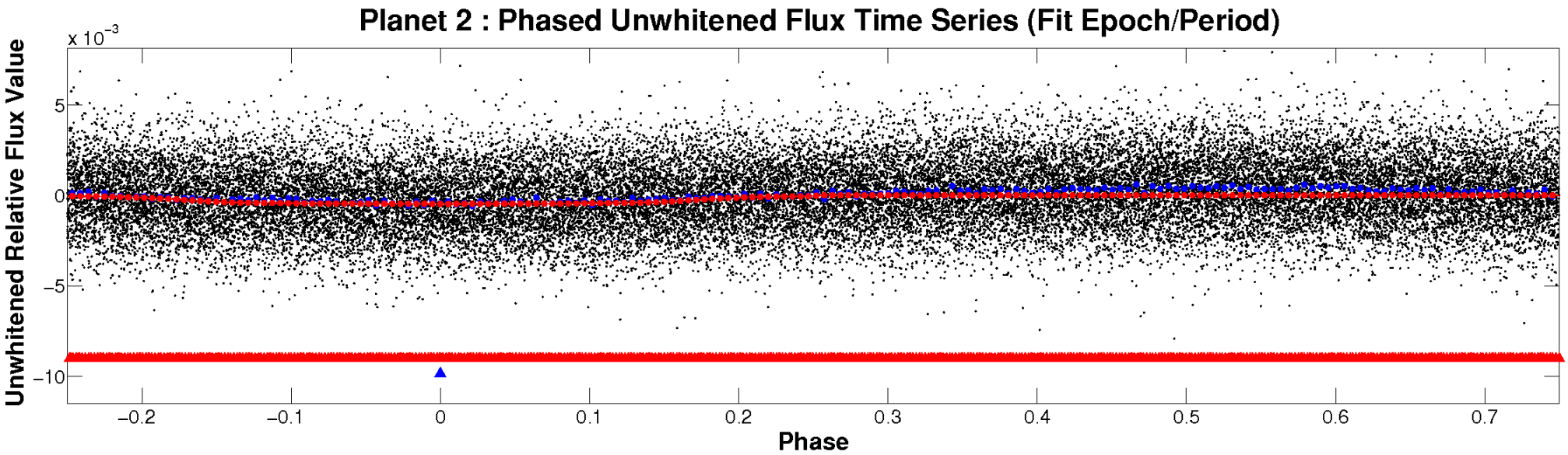
DV Odd/Even

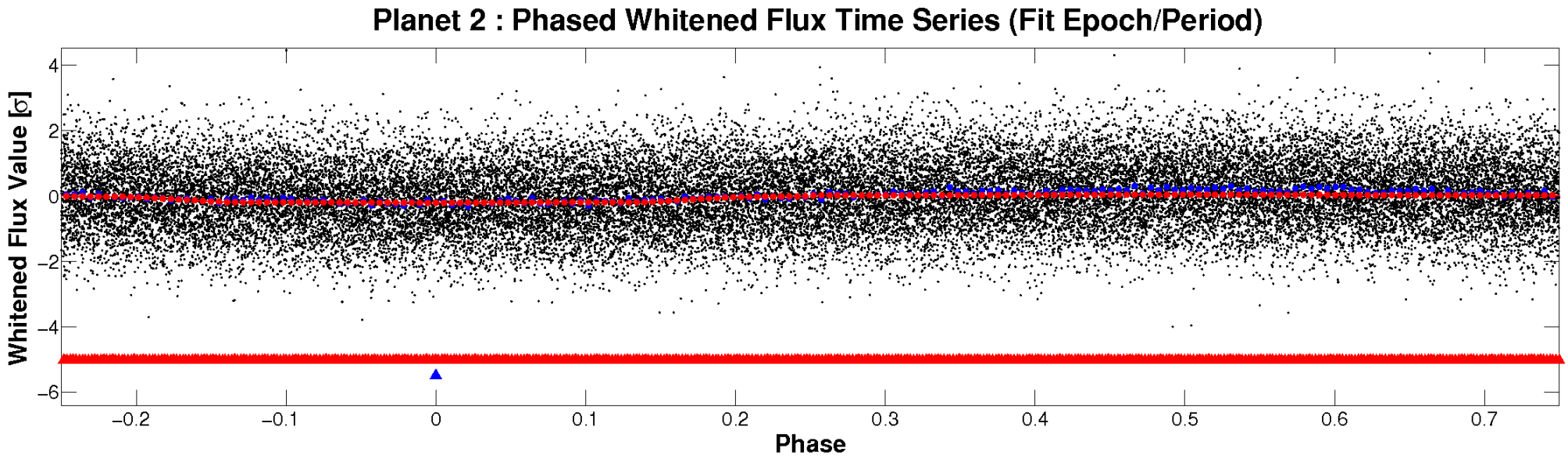

TCE 006511019-02
1.20e-02
1.00e-02
8.00e-03
6.00e-03
4.00e-03
2.00e-03
0.00e+00
-2.00e-03
-4.00e-03
-6.00e-03
-8.00e-03
Flux
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 006511019-02
2.00e-02
1.50e-02
1.00e-02
5.00e-03
0.00e+00
-5.00e-03
-1.00e-02
-1.50e-02
-2.00e-02
Flux
-1
-0.5
0
0.5
1
Phase
Odd
Even
Model Fit

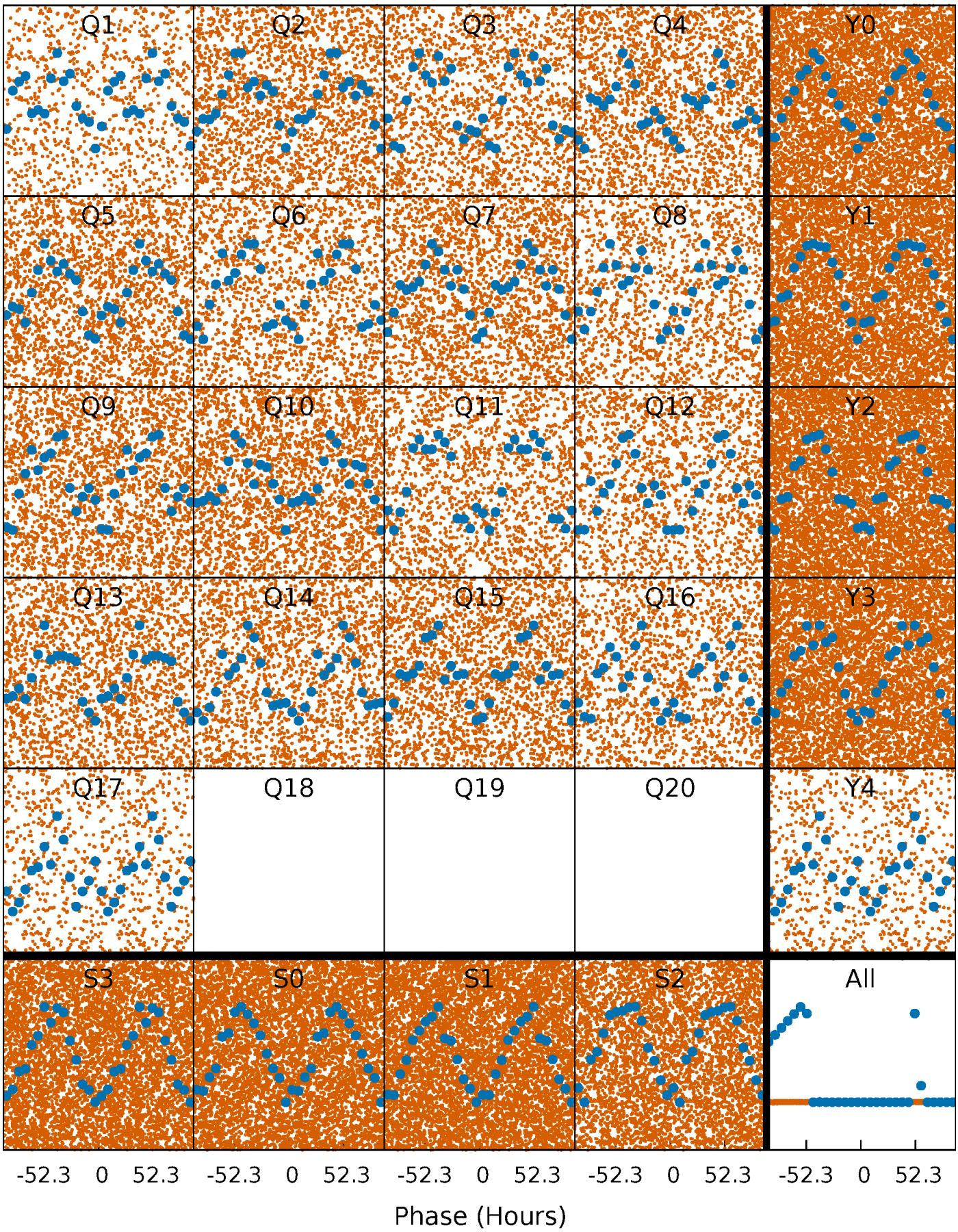
Non-Whitened Vs. Whitened Light Curve





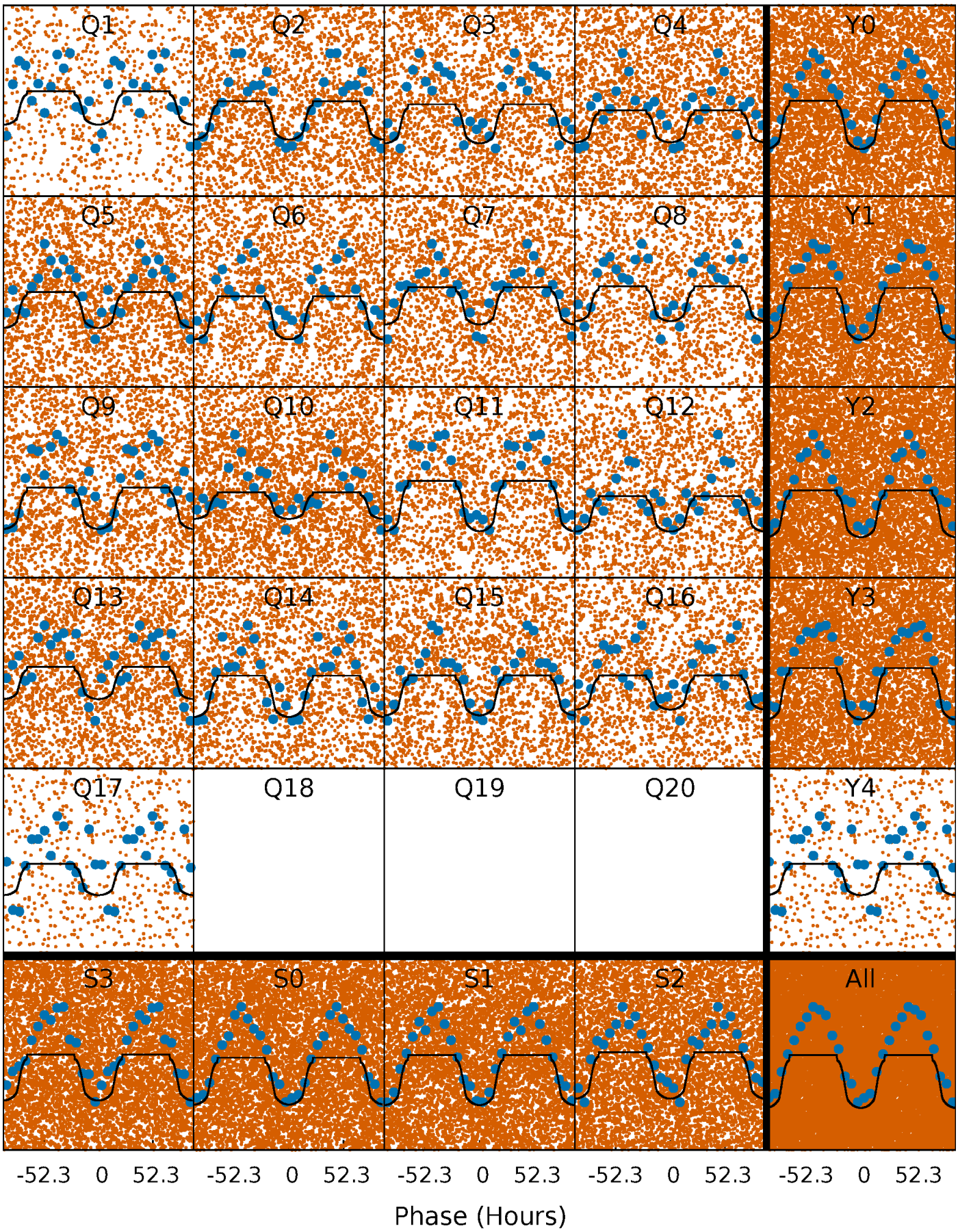
PDC Quarter-Phased Transit Curves

TCE 006511019-02 P= 3.810606 Days T_0=133.530177 (BKJD)



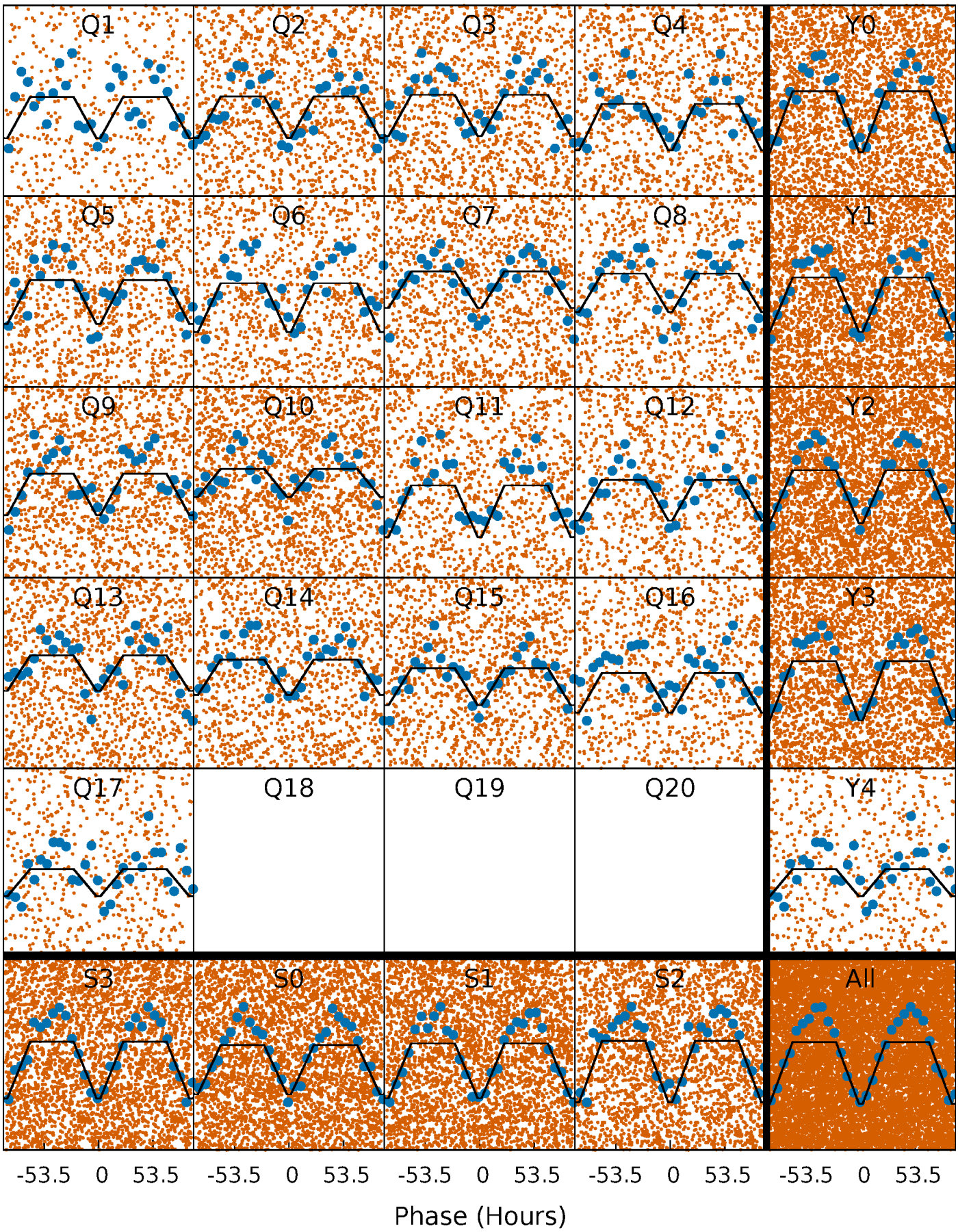
DV Quarter-Phased Transit Curves

TCE 006511019-02 P= 3.810606 Days T_0=133.530177 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

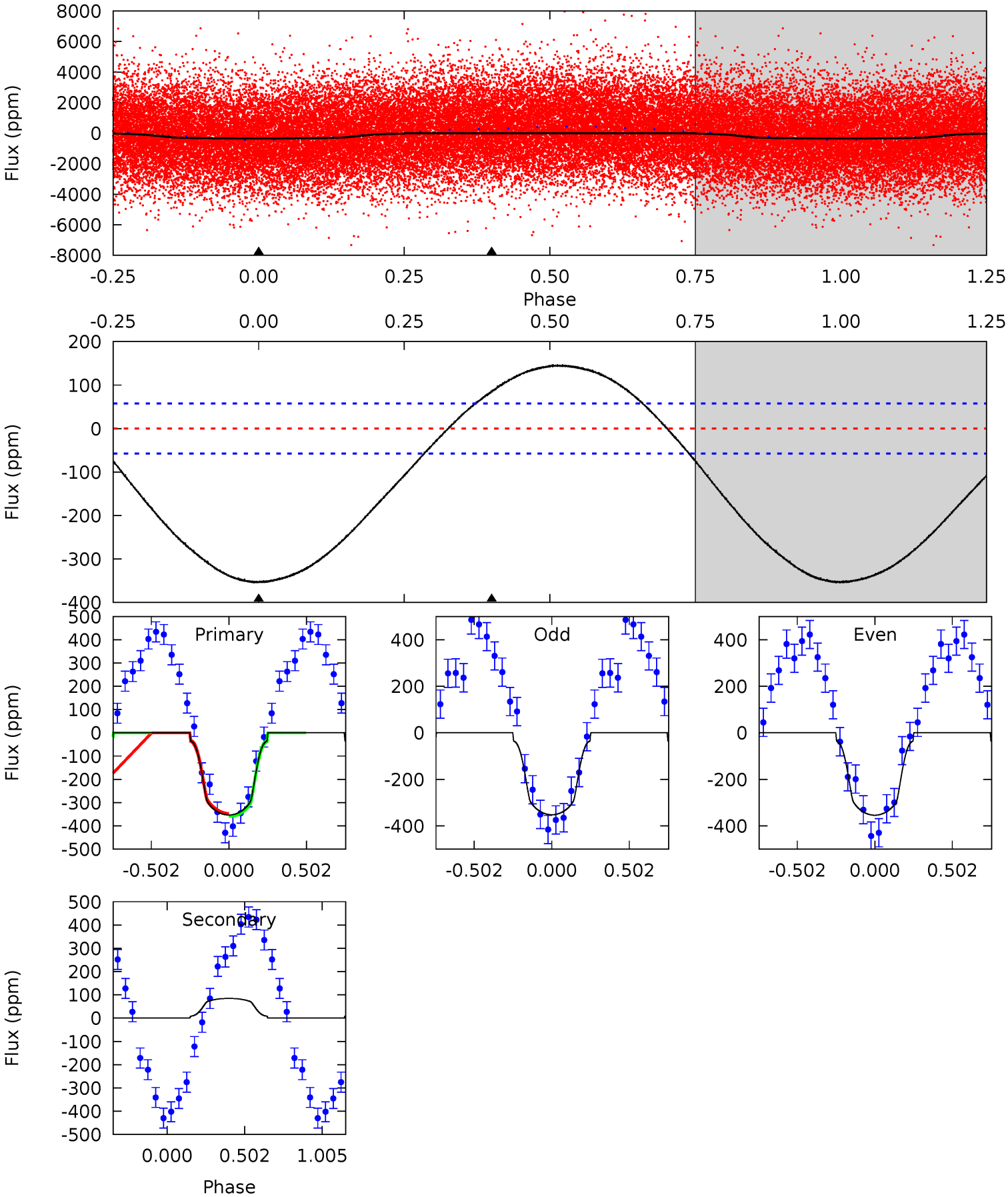
TCE 006511019-02 P= 3.810883 Days T_0=133.481131 (BKJD)



DV Model-Shift Uniqueness Test

006511019-02, P = 3.810606 Days, E = 129.719571 Days

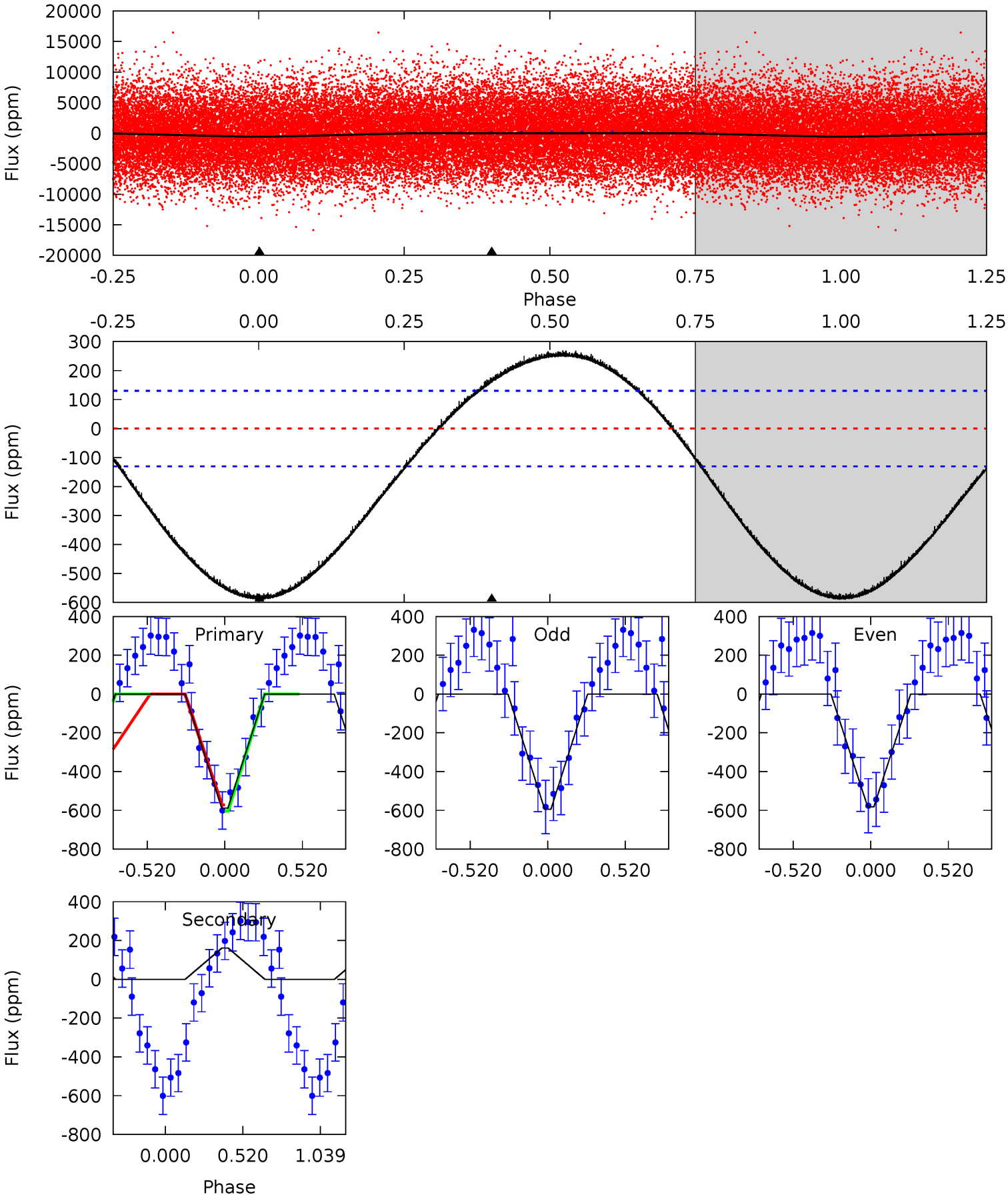
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	-6.20	0	0	4.21	0.67	3.14	25.8	25.8	-6.20	-6.20	0.07	0.99	0.30	0.46



Alt Model-Shift Uniqueness Test

006511019-02, P = 3.810883 Days, E = 129.670248 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	-5.21	0	0	4.21	0.64	2.36	19.0	19.0	-5.21	-5.21	0.21	1.35	0.31	0.52



Stellar Parameters For KIC 006511019

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	7589^{+211}_{-343}	$4.041^{+0.193}_{-0.158}$	$-0.080^{+0.200}_{-0.350}$	$2.045^{+0.525}_{-0.525}$	$1.674^{+0.184}_{-0.315}$	$0.276^{+0.291}_{-0.121}$
	+3%/-5%	+5%/-4%	+250%/-438%	+26%/-26%	+11%/-19%	+106%/-44%
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 006511019-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	85±14	$5.15^{+0.72}_{-0.73}$	2782^{+217}_{-220}	-4838^{+215}_{-198}	$-5.607^{+1.566}_{-2.040}$
Alt.	161±31	$5.34^{+0.78}_{-0.73}$	2806^{+200}_{-221}	-5455^{+292}_{-293}	$-9.769^{+2.773}_{-3.683}$

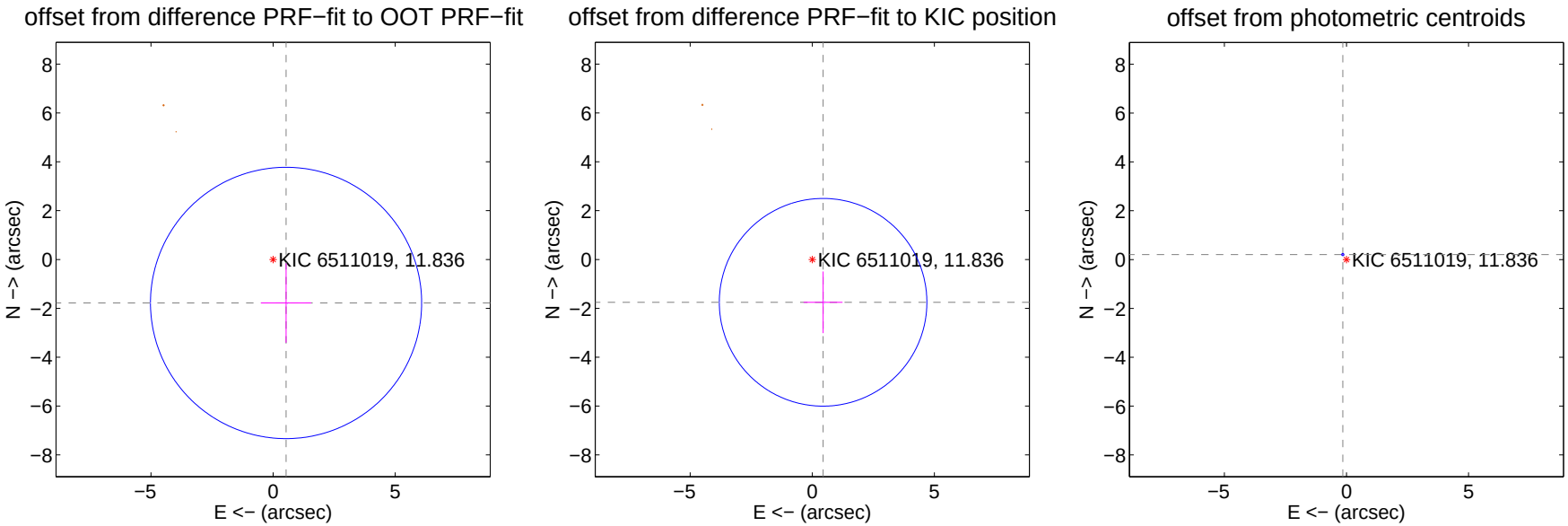
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

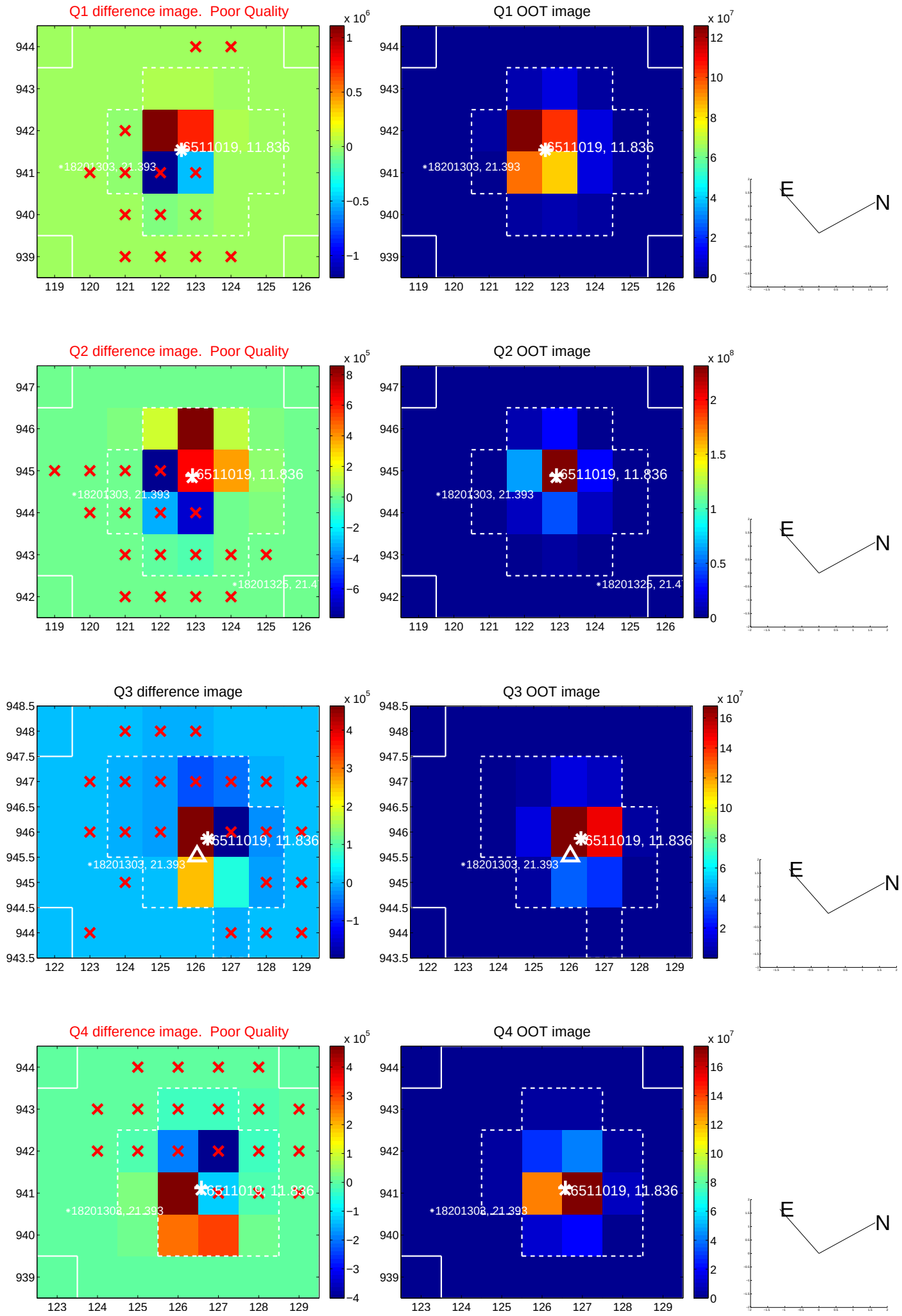
Supplemental centroid analysis for 006511019-02. Kepler magnitude: 11.84. Transit SNR 21.18
There are 4 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.857 ± 1.851	1.00	-0.531 ± 1.028	-1.779 ± 1.626
PRF-fit source offset from KIC position	1.807 ± 1.417	1.28	-0.443 ± 0.797	-1.752 ± 1.261
photometric centroid source offset	0.25 ± 0.02	16.39	0.15 ± 0.02	0.20 ± 0.02

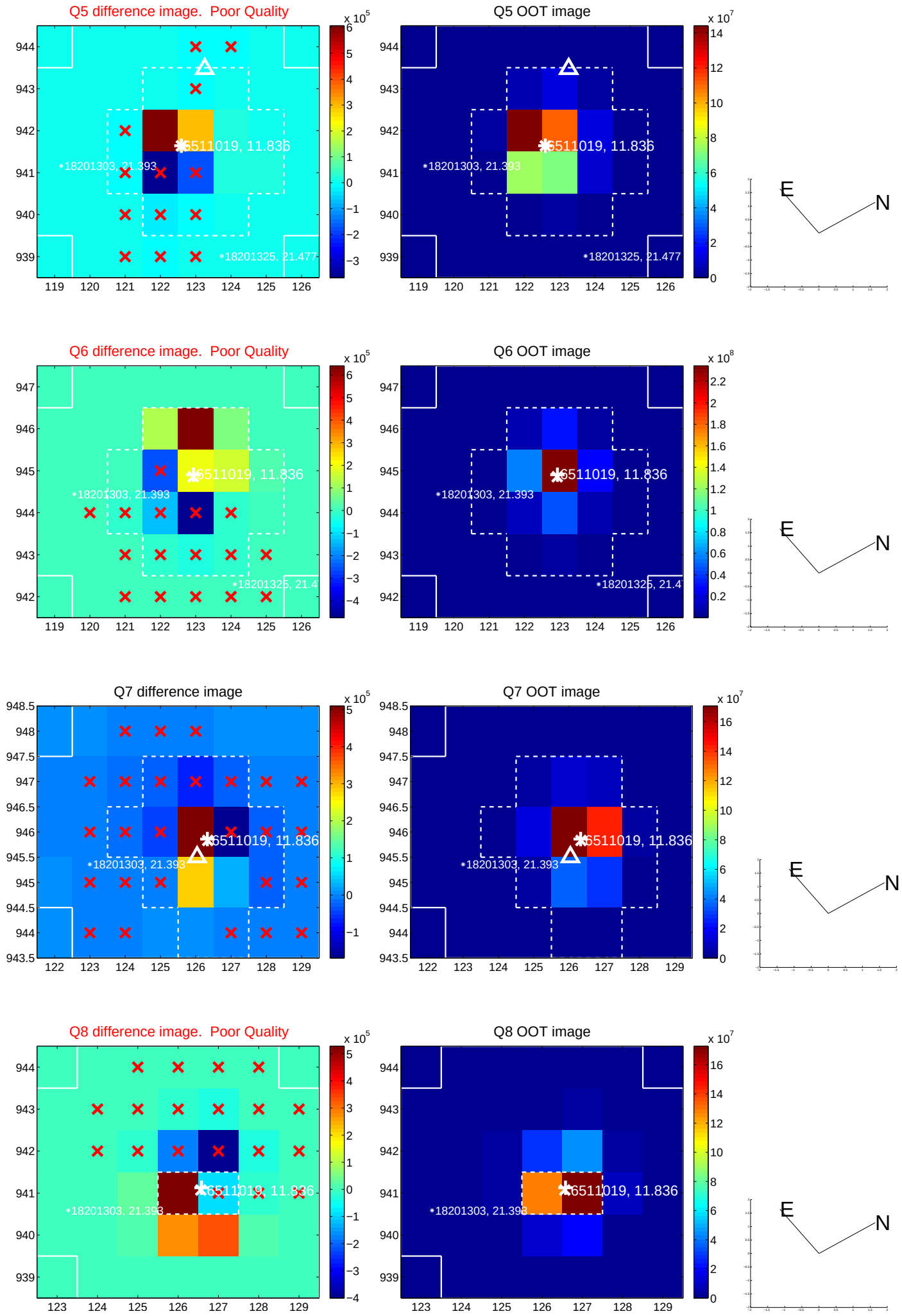


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

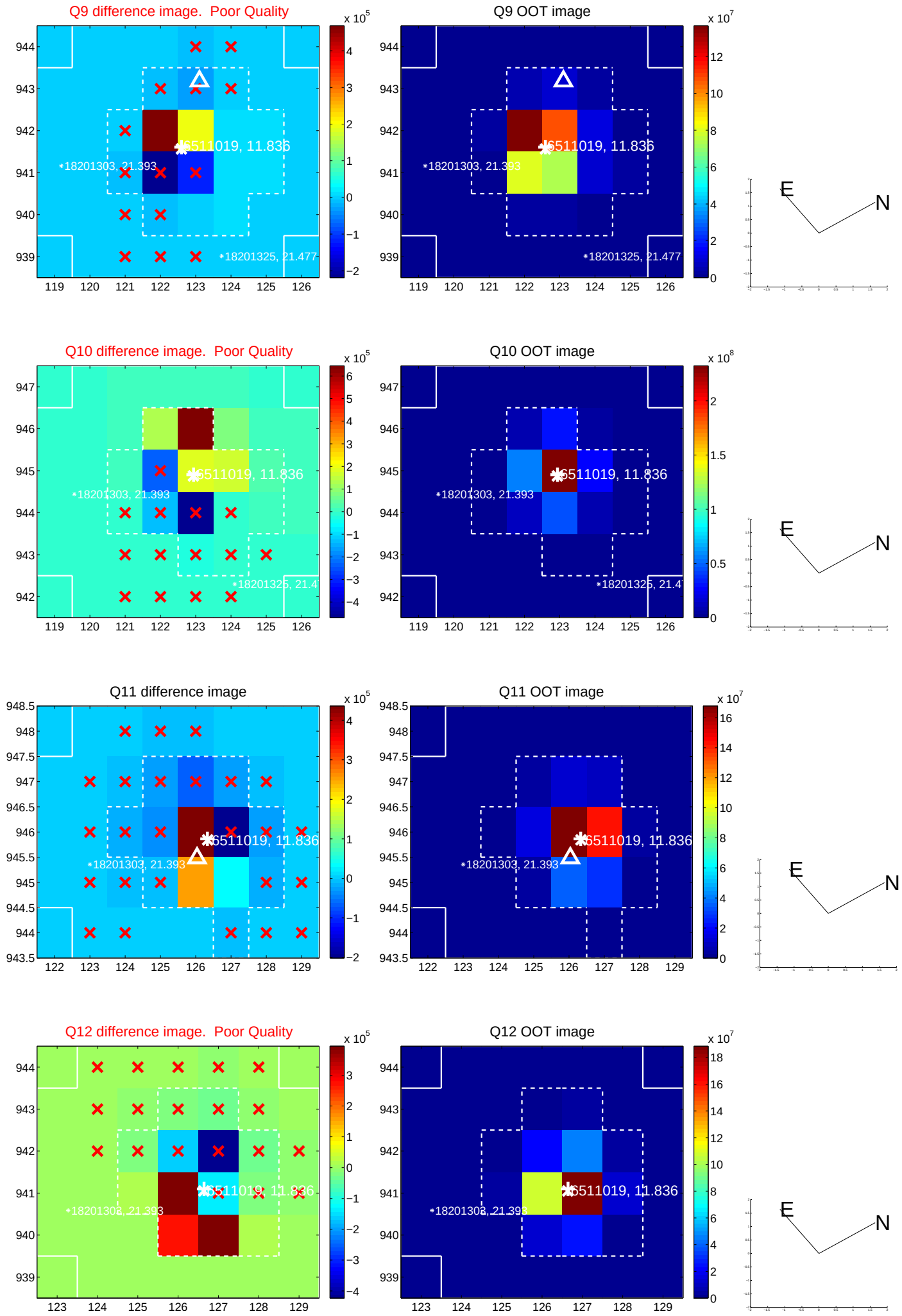
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



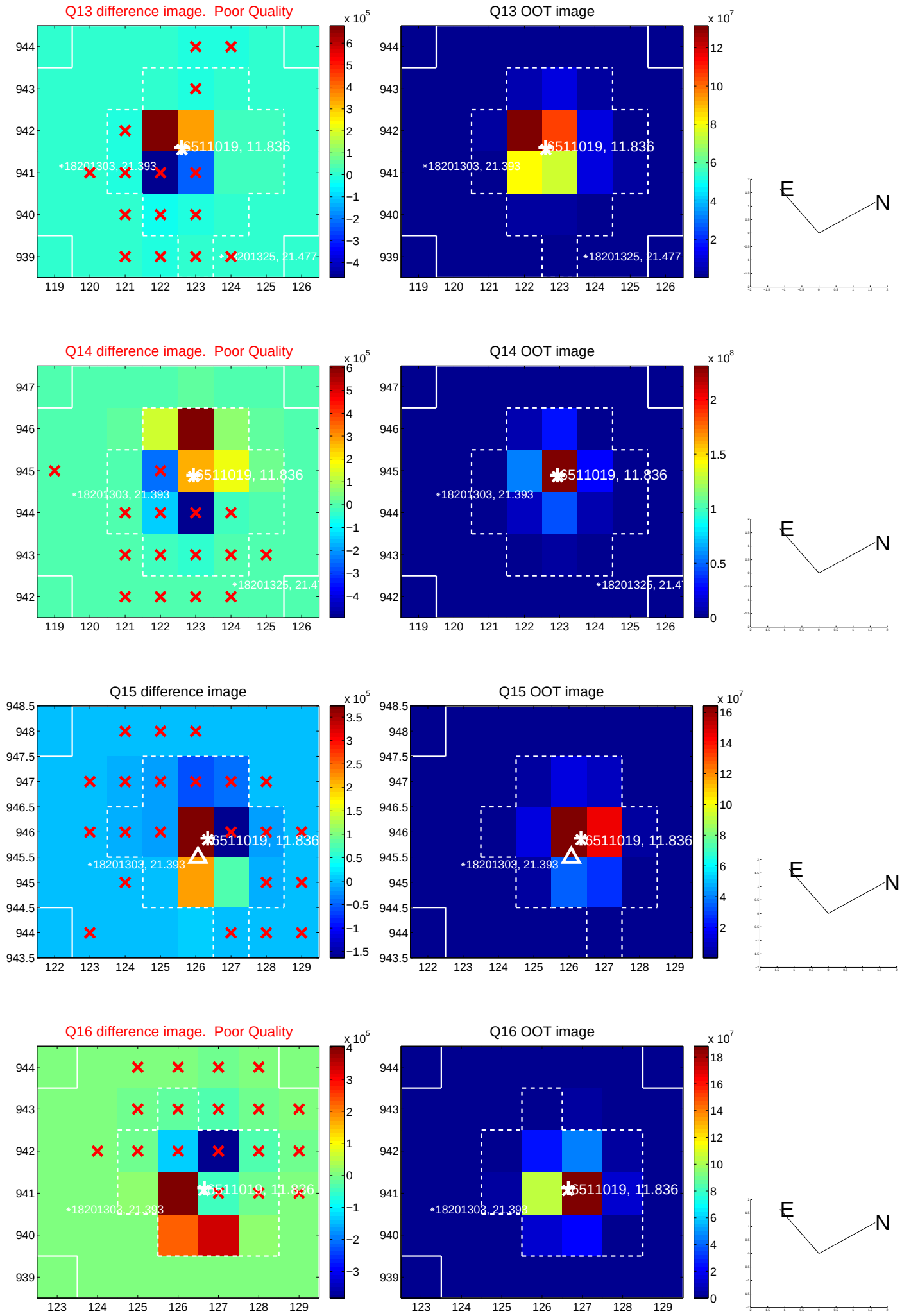
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



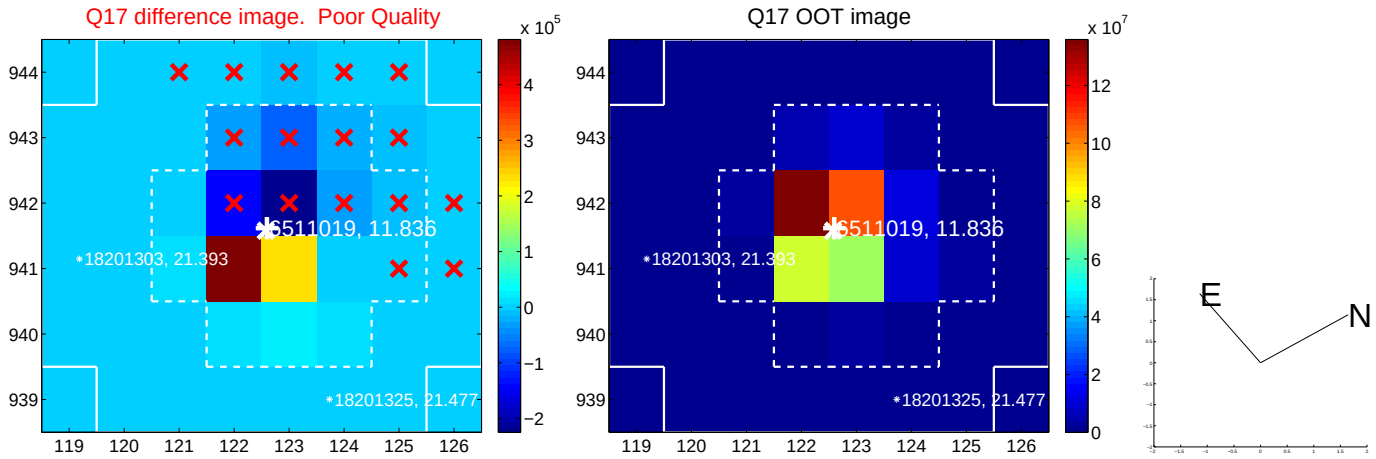
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

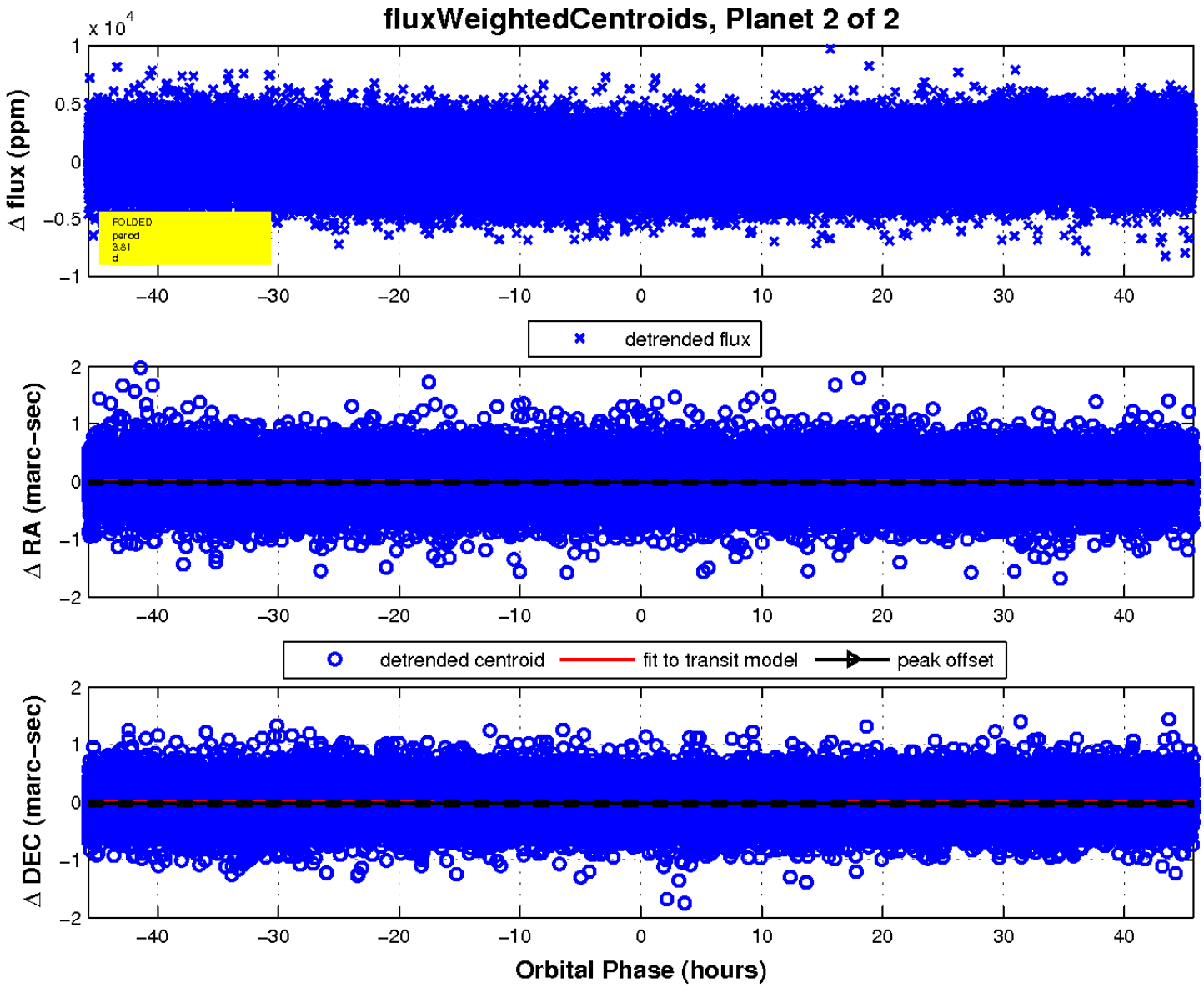
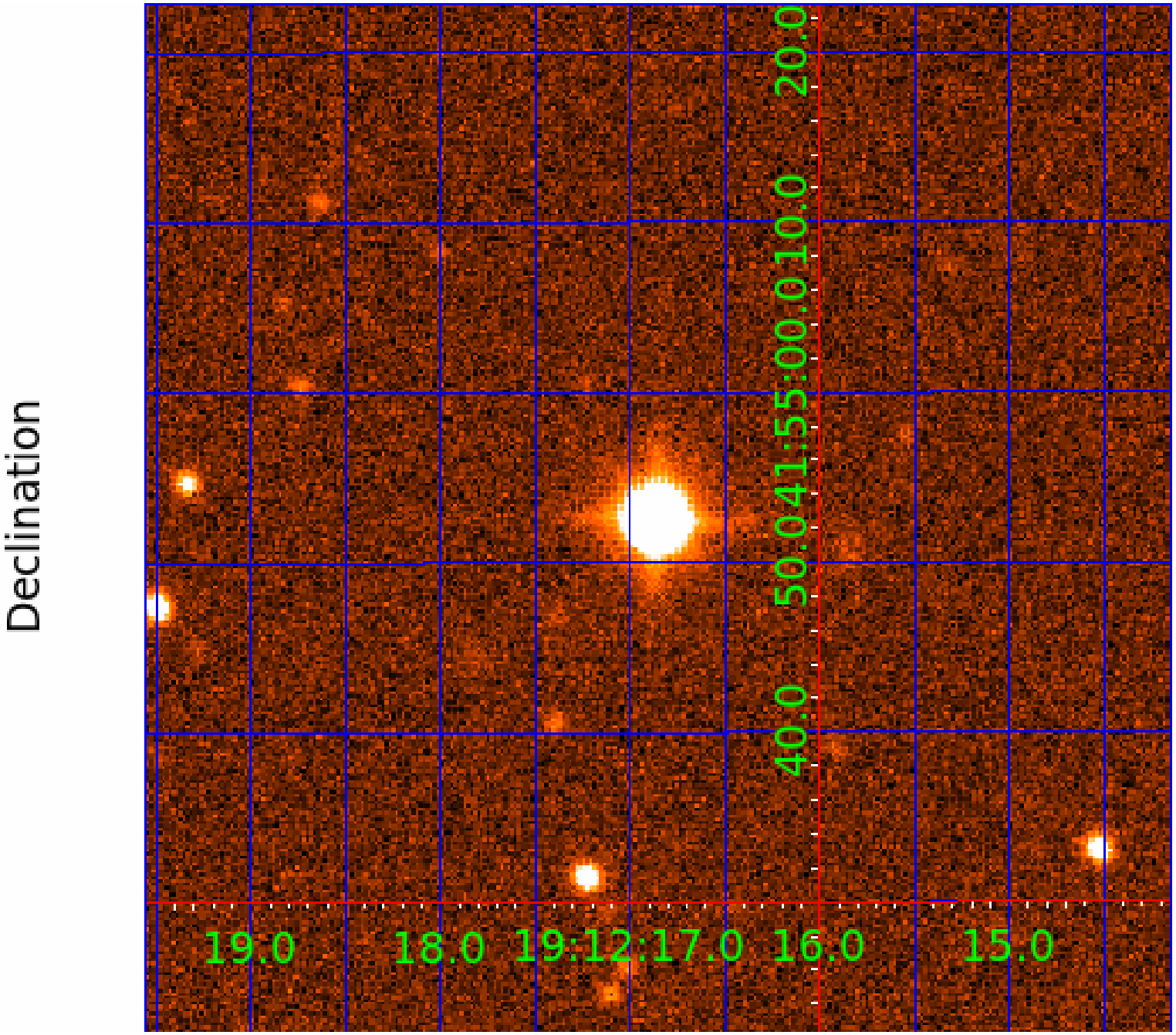


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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





UKIRT Image