KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

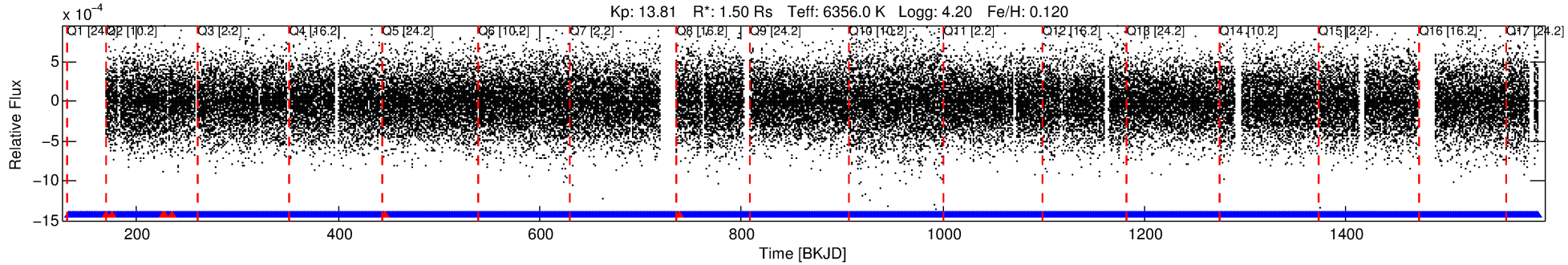
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

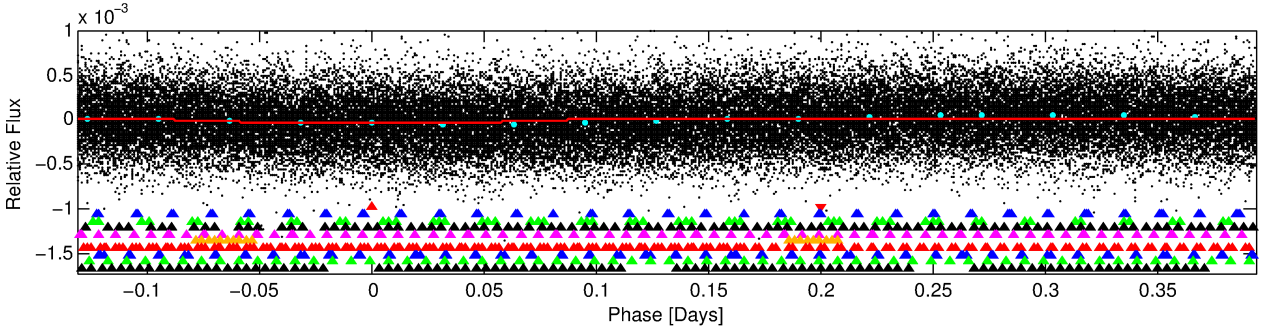
Ephemeris Match Information For 009113058-01

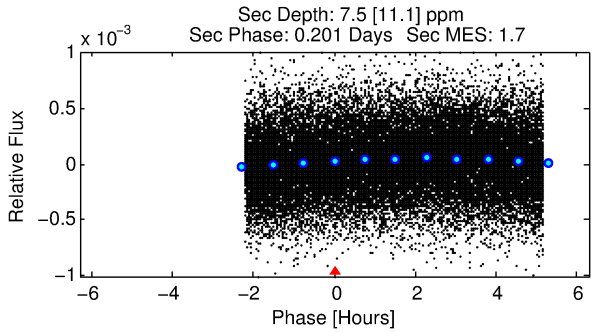
No Significant Match Found

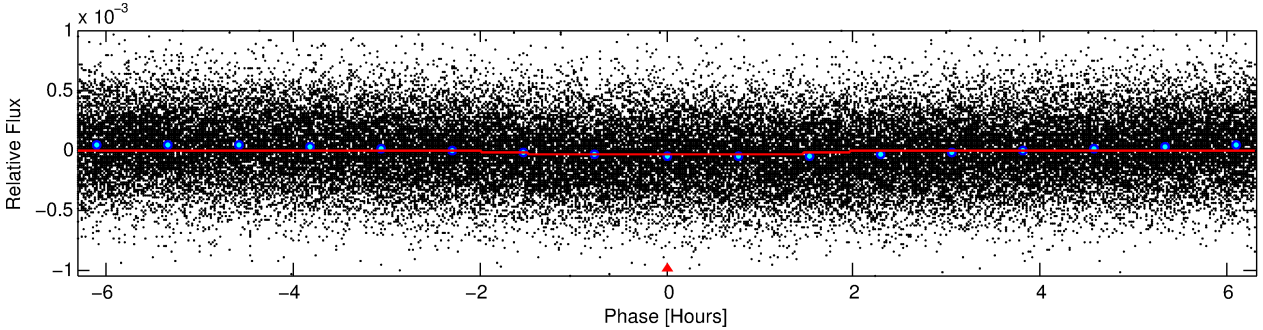
DV One-Page Summary

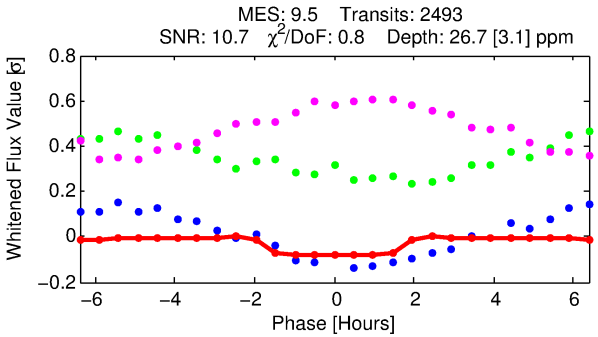
KIC: 9113058 Candidate: 1 of 10 Period: 0.526 d

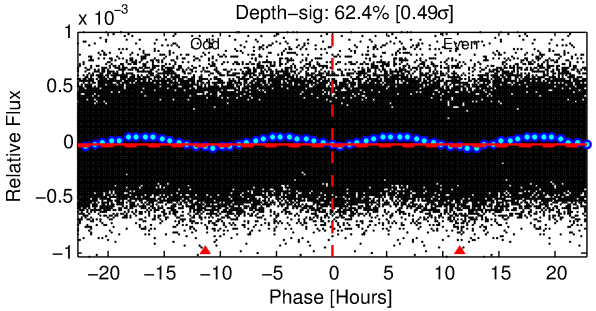


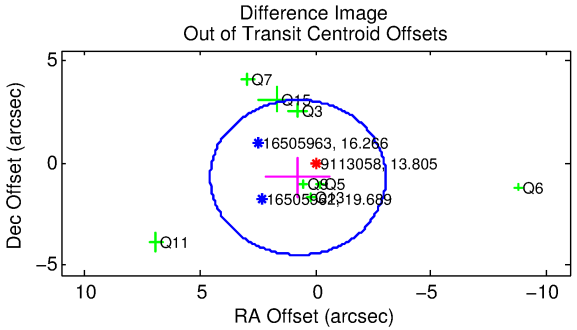












DV Fit Results:

Period = 0.52556 [0.00001] d
Epoch = 131.9589 [0.0039] BKJD
Rp/R* = 0.0048 [0.0046]
a/R* = 1.22 [1.90]
b = 0.32 [13.58]

Seff = 17030.32 [6882.38]
Teq = 2913 [294] K
Rp = 0.78 [0.79] Re
a = 0.0139 [0.0037] AU

Ag = 1.30 [3.19] [0.09σ]
Teffp = 4810 [2918] K [0.65σ]

DV Diagnostic Results:

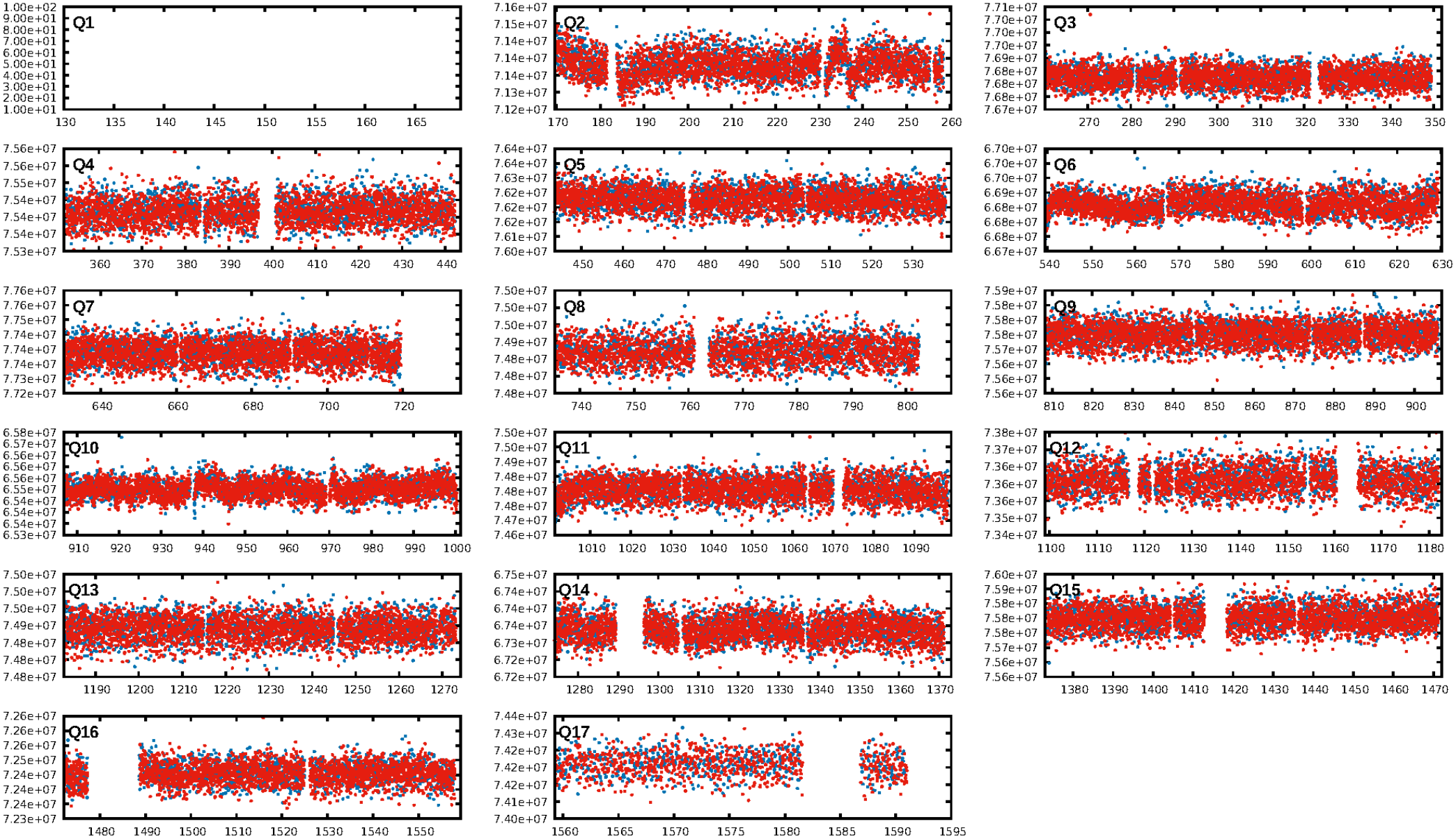
ShortPeriod−sig: N/A
LongPeriod−sig: 100.0% [45.62σ]
ModelChiSquare2−sig: N/A
ModelChiSquareGof−sig: N/A
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [2435/2442]
GhostDiagnostic−chr: 2.799

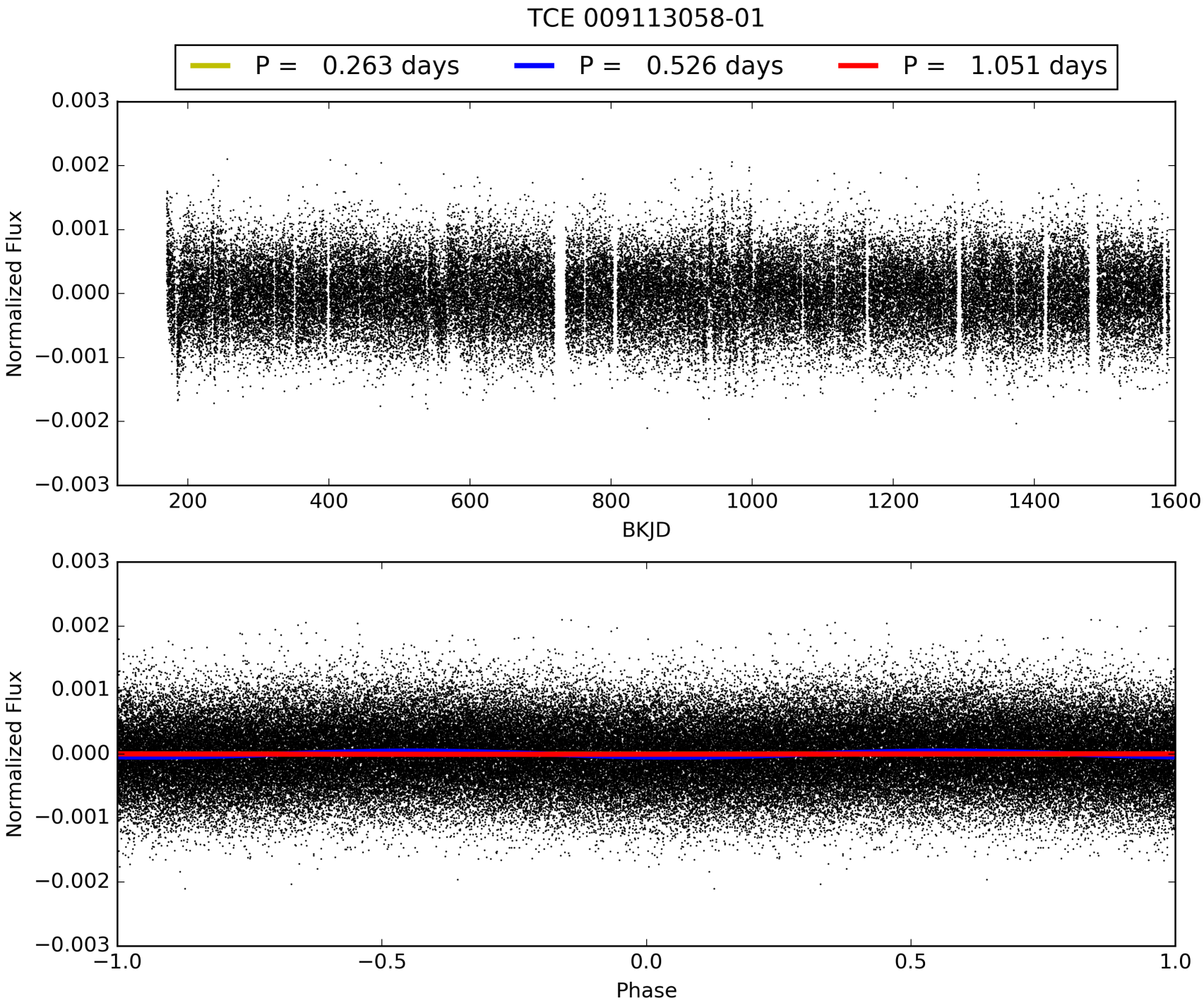
Centroid−sig: 2.2%
Centroid−so: 1.716 arcsec [2.09σ]
OotOffset−rm: 1.045 arcsec [0.83σ]
KicOffset−rm: 1.129 arcsec [0.87σ]
OotOffset−st: 1/4/0/3 [8]
KicOffset−st: 1/4/0/3 [8]
DiffImageQuality−fgm: 0.38 [3/8]
DiffImageOverlap−fno: 1.00 [16/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:21 Z

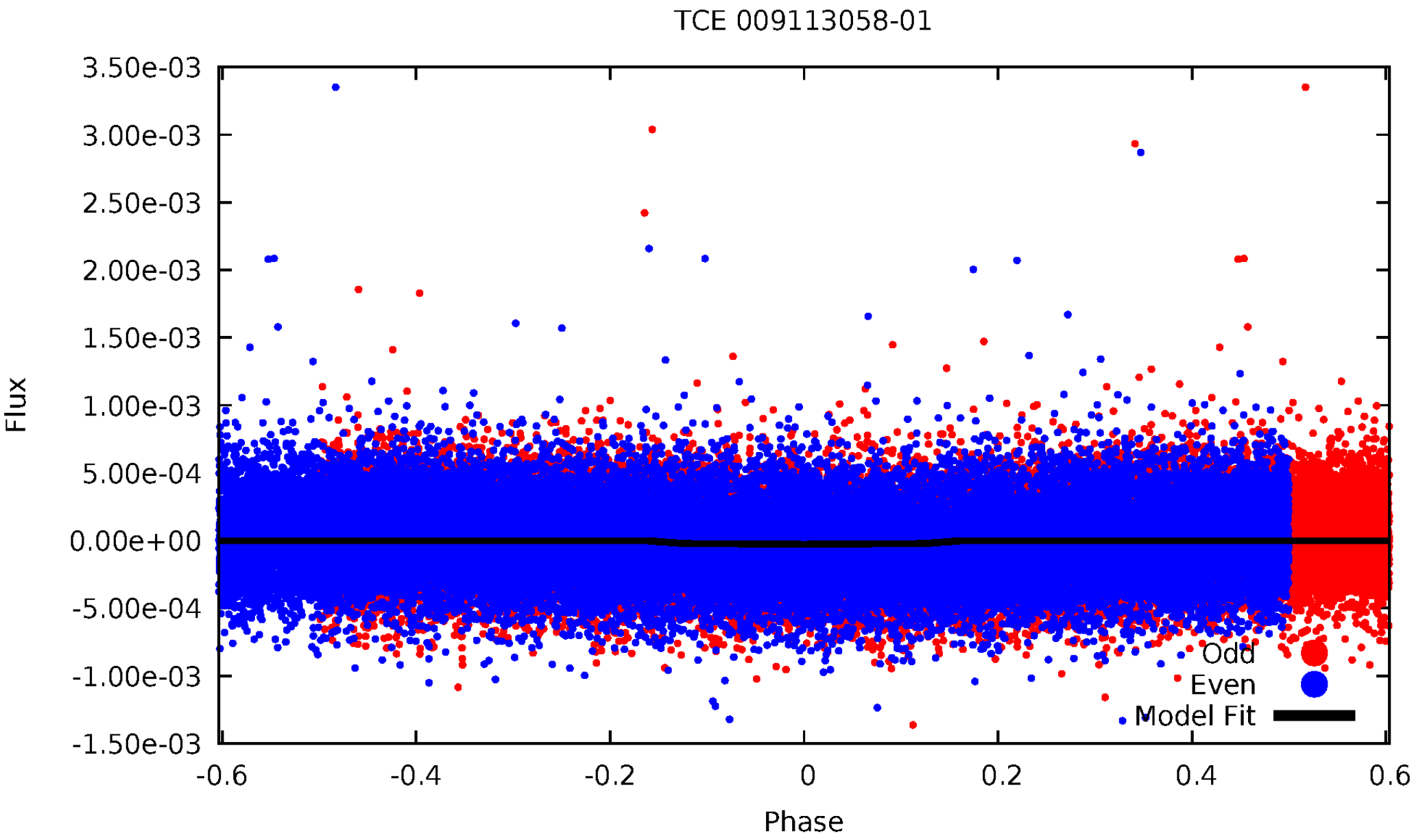
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-01, PDC Light Curves




TCE 009113058-01
P = 0.263 days
P = 0.526 days
P = 1.051 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even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3.00e-03
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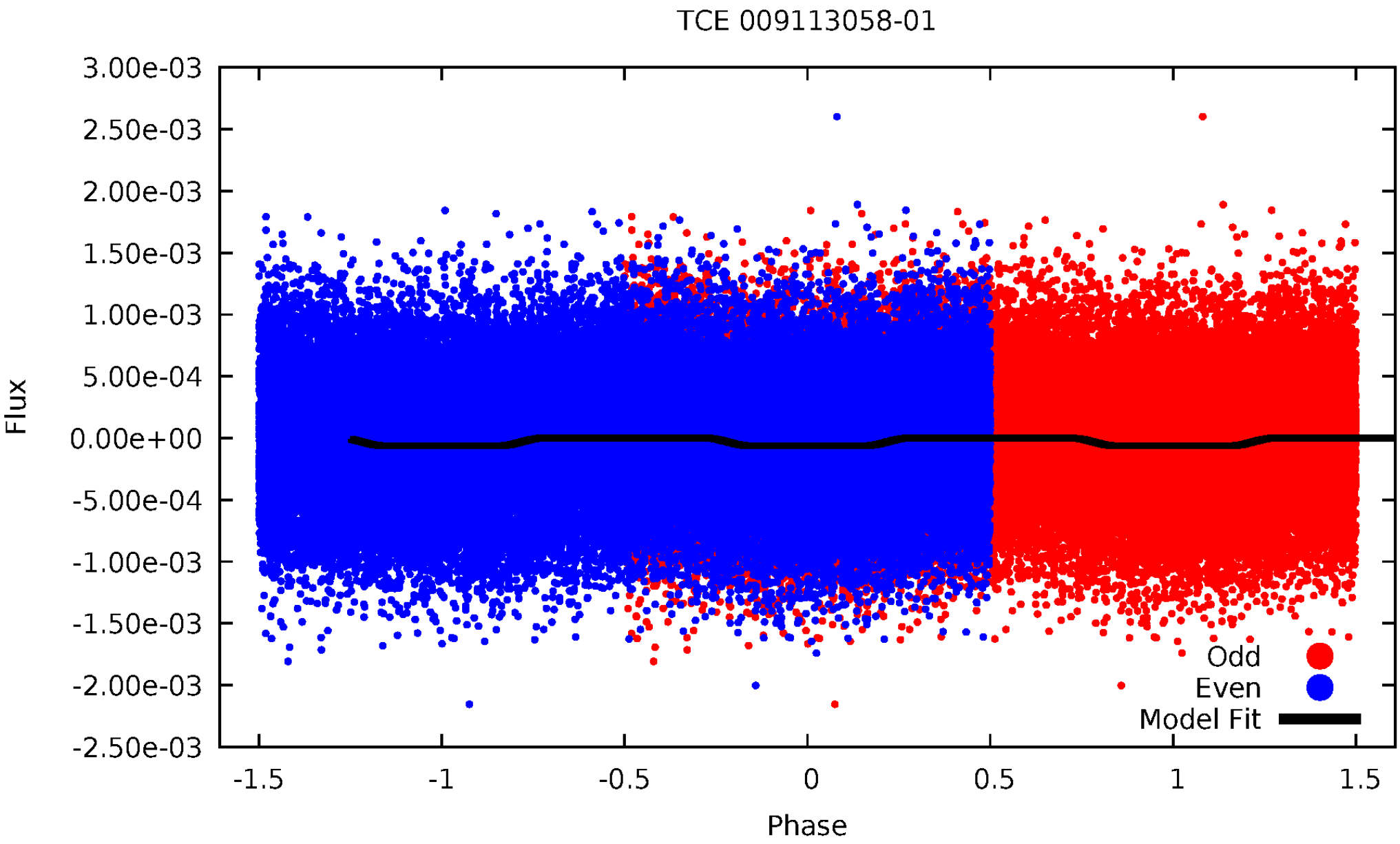
2.00e-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009113058-01
3.00e-03
2.50e-03
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1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
-2.00e-03
-2.50e-03
Flux
-1.5
-1
-0.5
0
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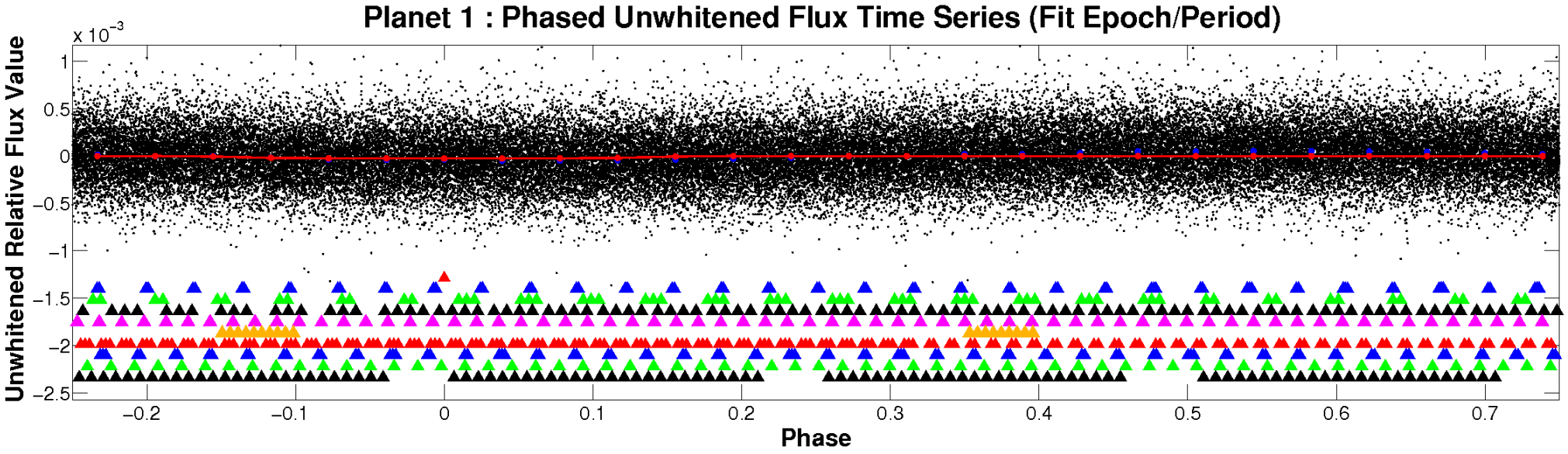
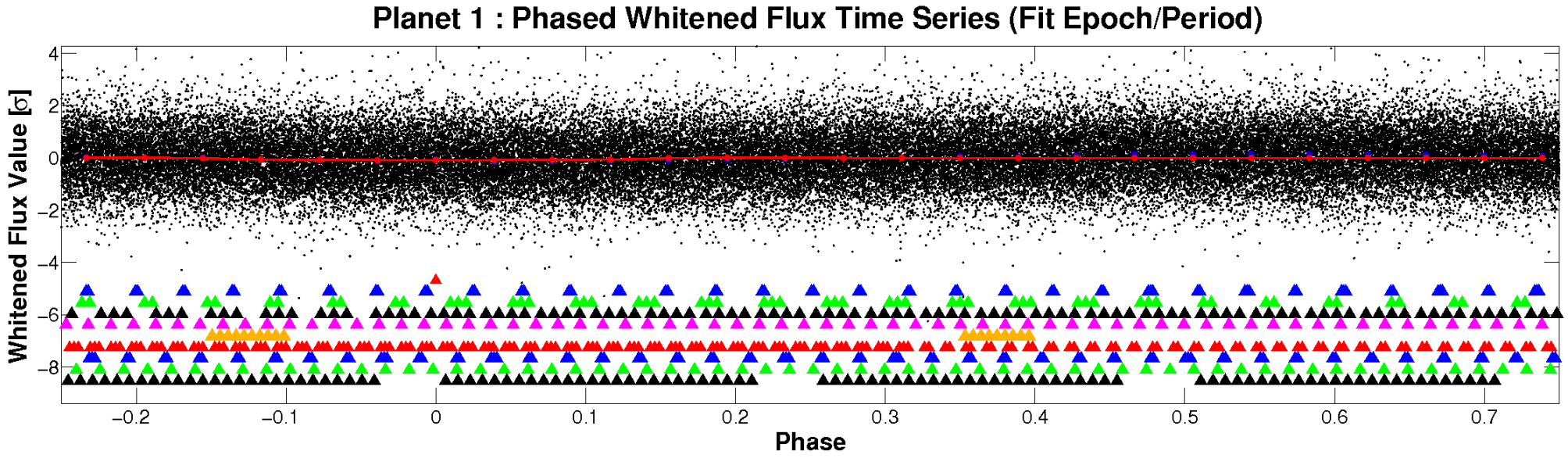
1
1.5
Phase
Odd
Even
Model Fit

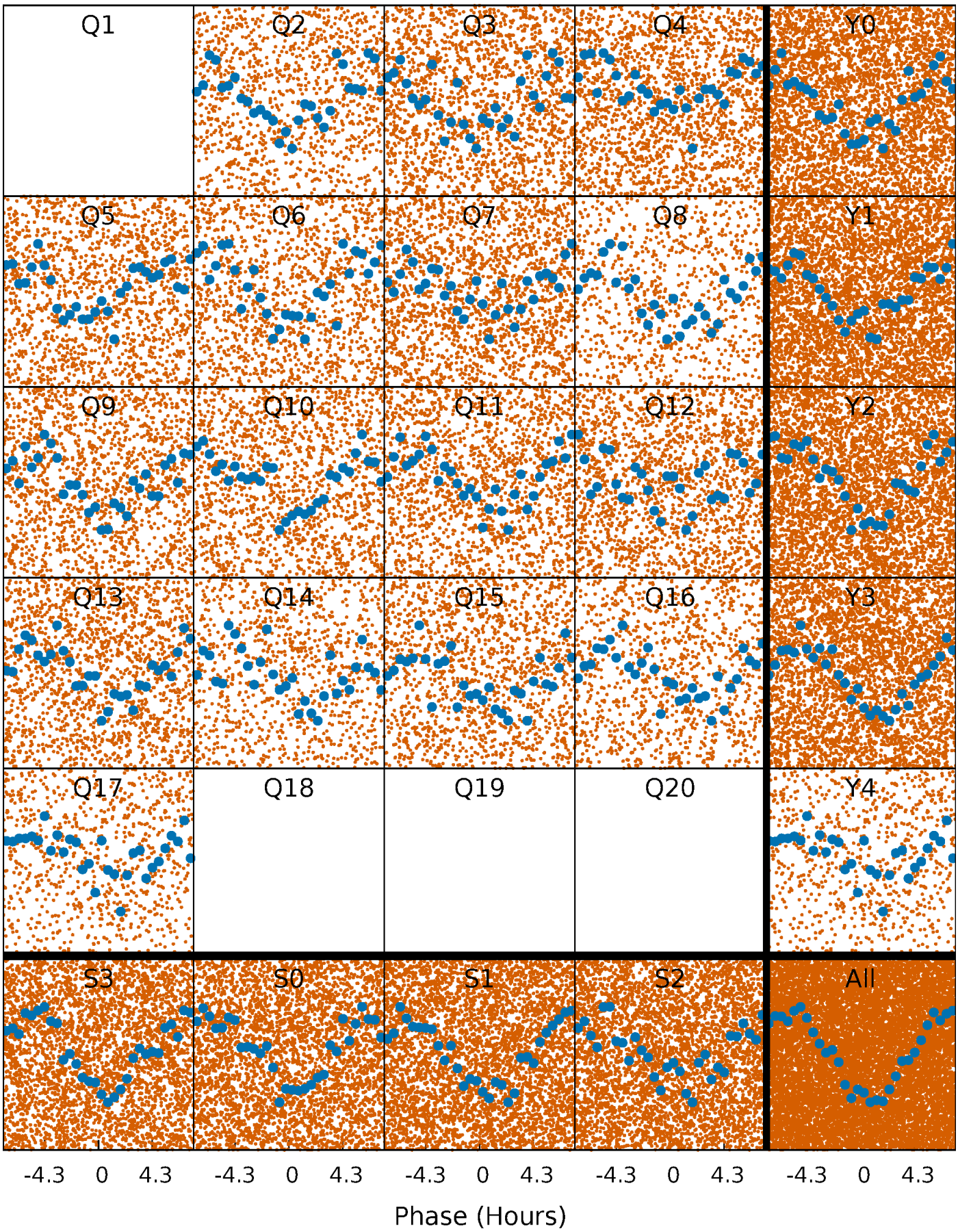
Non-Whitened Vs. Whitened Light Curve





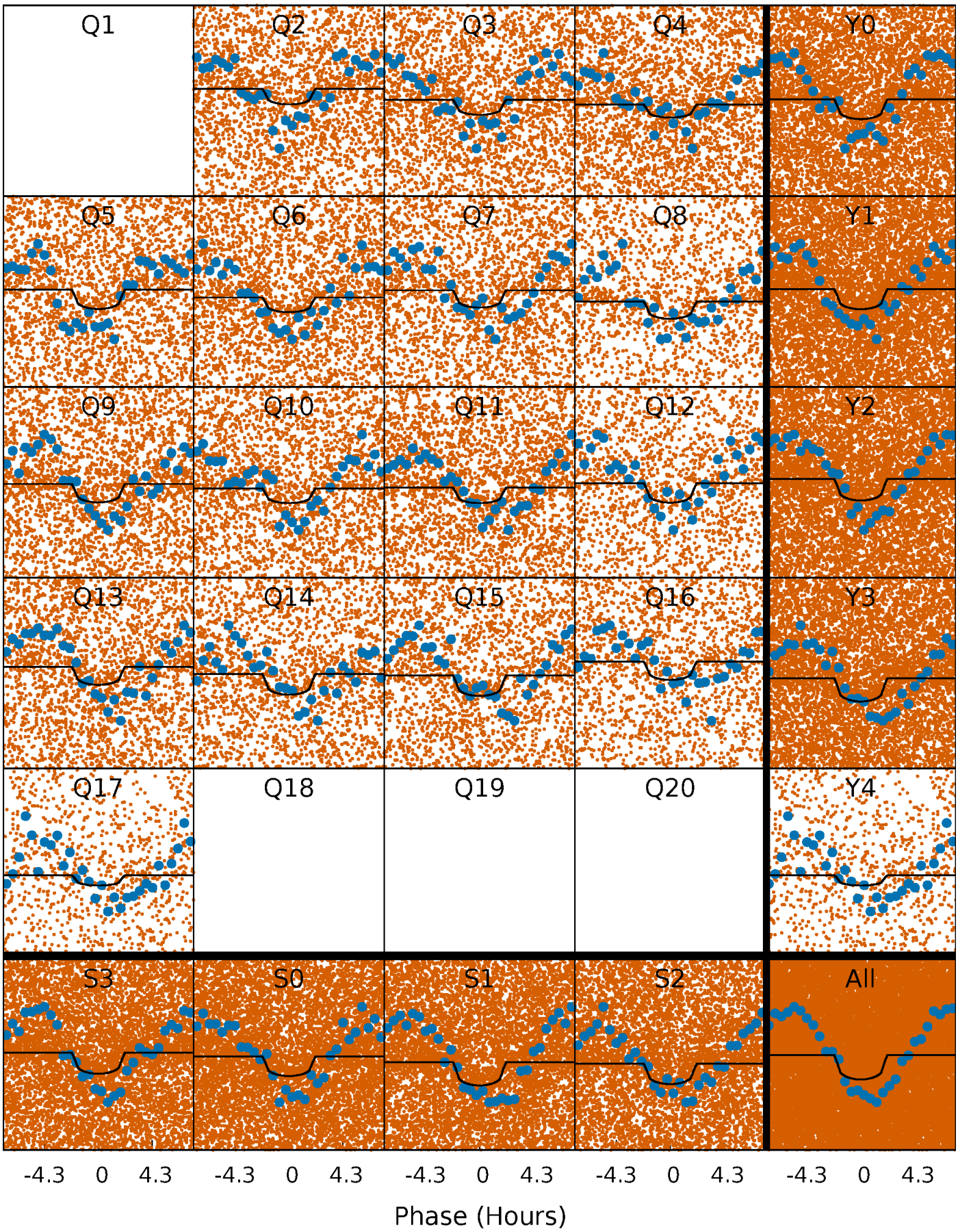
PDC Quarter-Phased Transit Curves

TCE 009113058-01 P= 0.525564 Days T_0=131.958931 (BKJD)



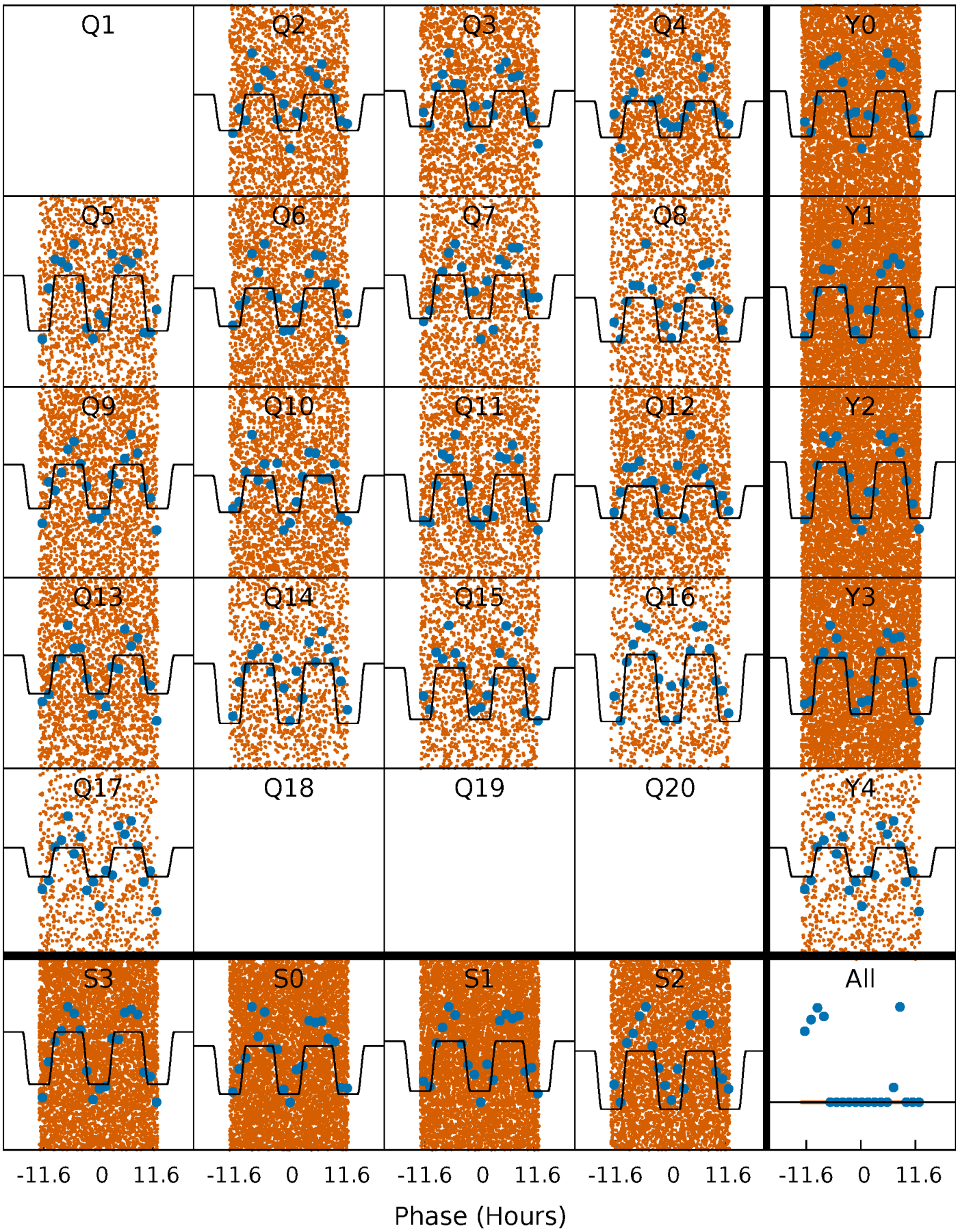
DV Quarter-Phased Transit Curves

TCE 009113058-01 P= 0.525564 Days T_0=131.958931 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

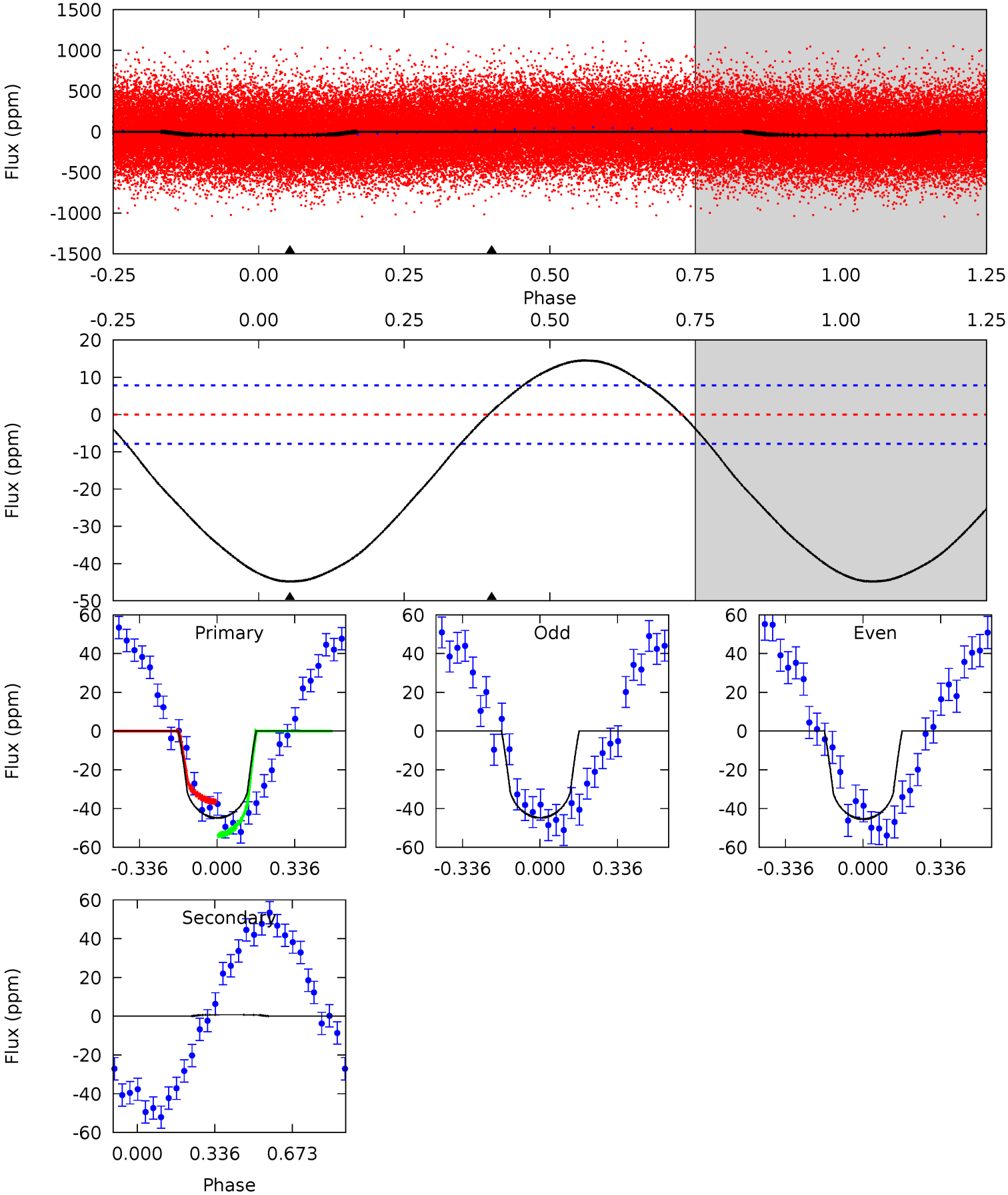
TCE 009113058-01 P= 0.525600 Days T_0=131.937364 (BKJD)



DV Model-Shift Uniqueness Test

009113058-01, P = 0.525564 Days, E = 131.958931 Days

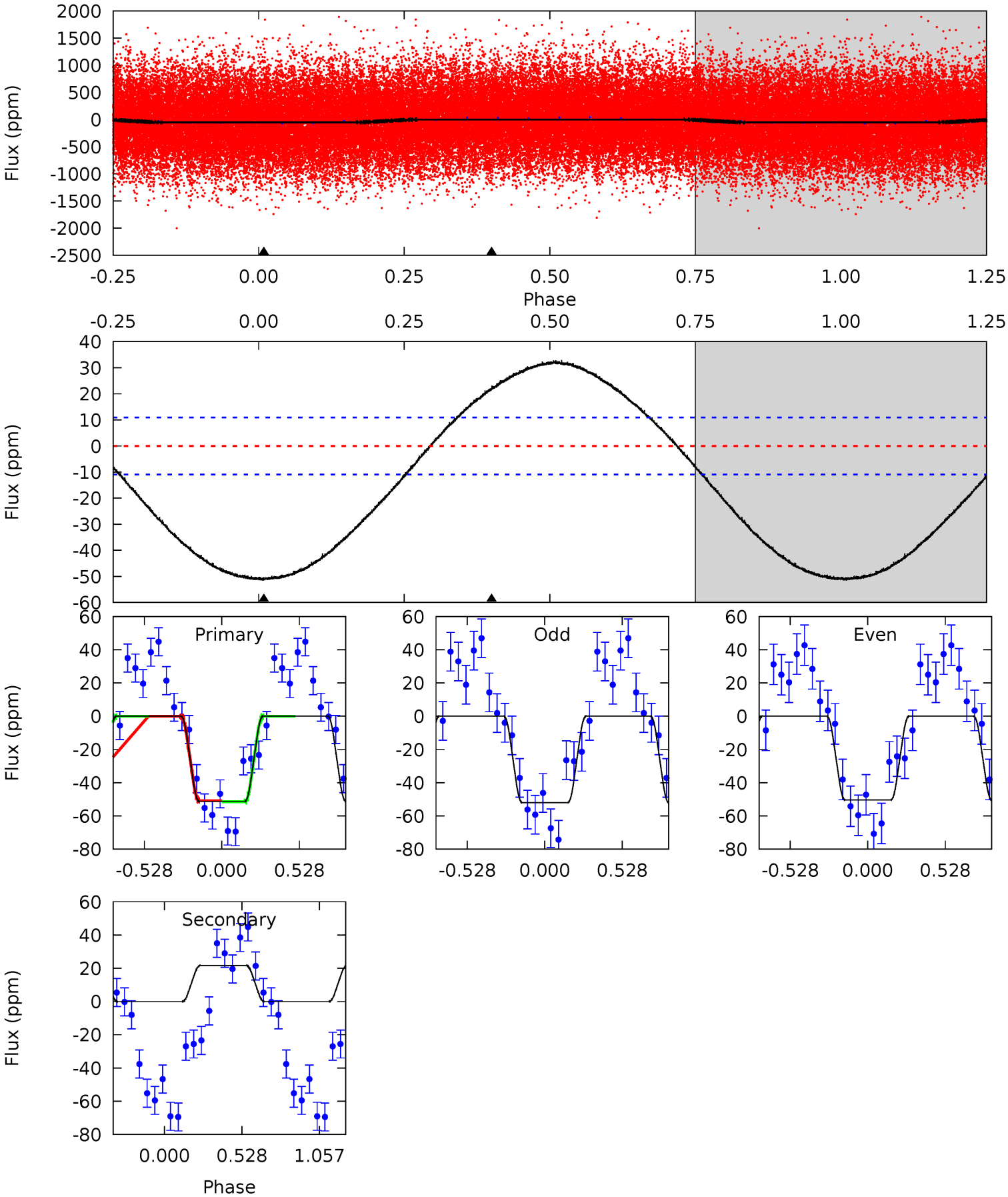
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	-0.43	0	0	4.30	0.96	2.50	24.6	24.6	-0.43	-0.43	0.18	1.01	0.25	4.68



Alt Model-Shift Uniqueness Test

009113058-01, P = 0.525600 Days, E = 131.937364 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	-8.35	0	0	4.20	0.63	2.75	19.7	19.7	-8.35	-8.35	0.30	1.10	0.39	0.11



Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-01 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	1±2	$0.93^{+0.72}_{-0.59}$	4082^{+333}_{-280}	-3877^{+626}_{-732}	$-0.048^{+0.209}_{-0.582}$
Alt.	22±3	$1.32^{+0.81}_{-0.70}$	4094^{+335}_{-290}	-5179^{+700}_{-2087}	$-1.298^{+0.814}_{-4.256}$

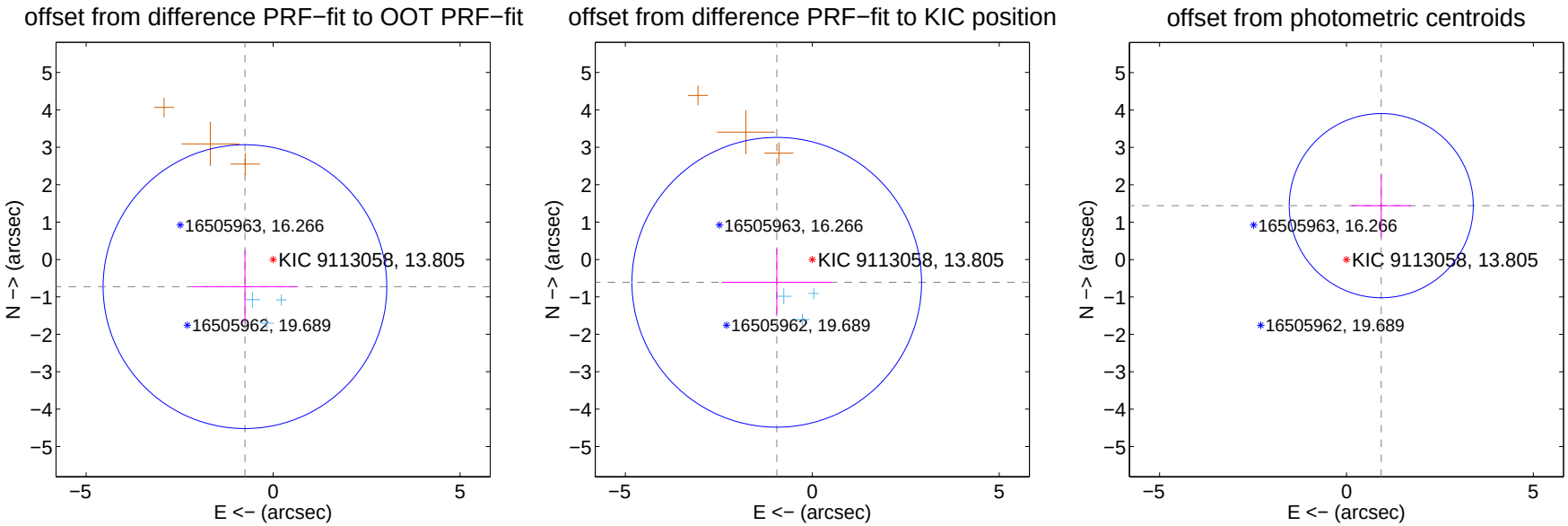
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

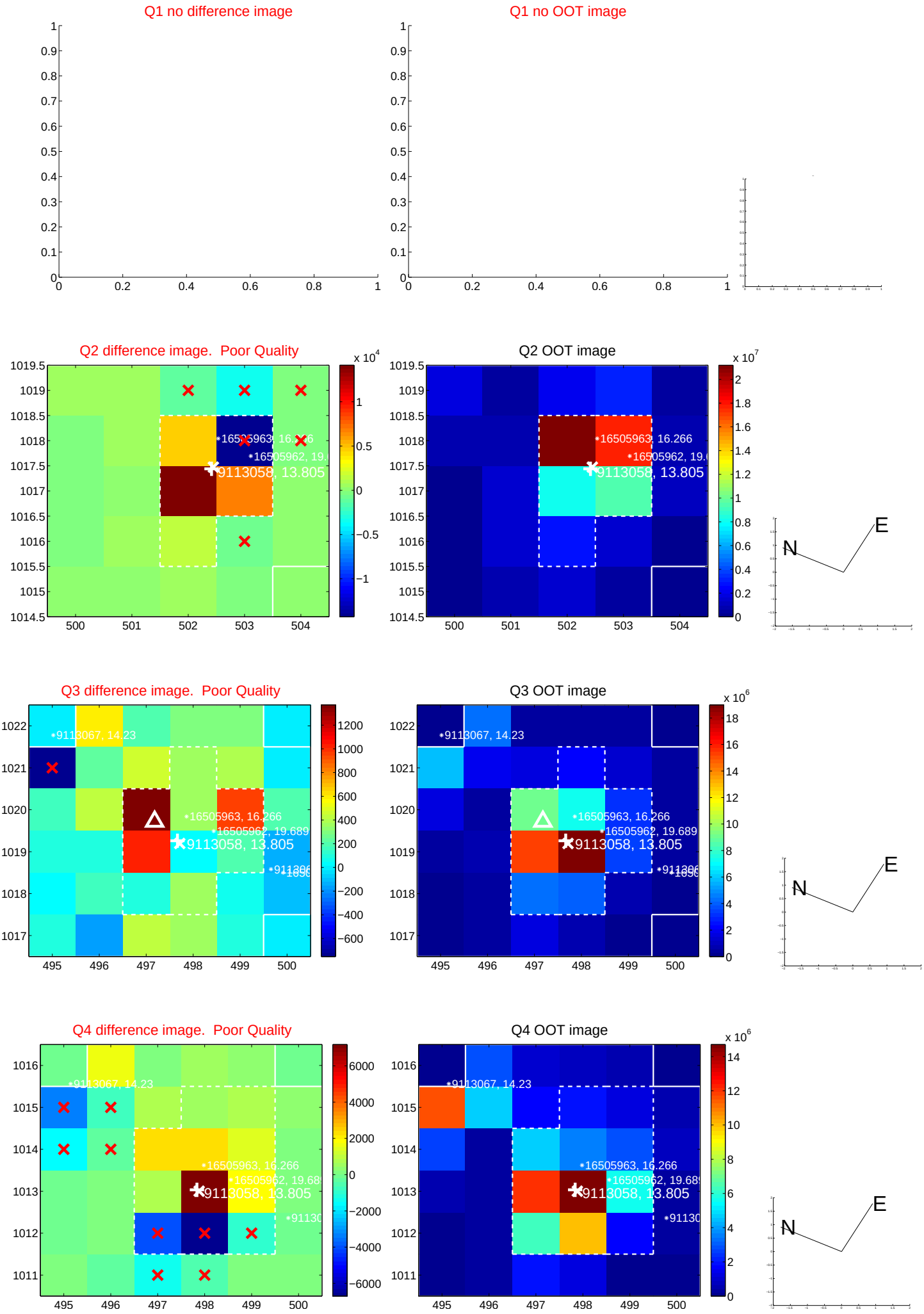
Supplemental centroid analysis for 009113058-01. Kepler magnitude: 13.80. Transit SNR 10.69
There are 3 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.045 ± 1.264	0.83	0.752 ± 1.396	-0.725 ± 0.969
PRF-fit source offset from KIC position	1.129 ± 1.291	0.87	0.950 ± 1.462	-0.609 ± 0.903
photometric centroid source offset	1.72 ± 0.82	2.09	-0.93 ± 0.79	1.44 ± 0.83

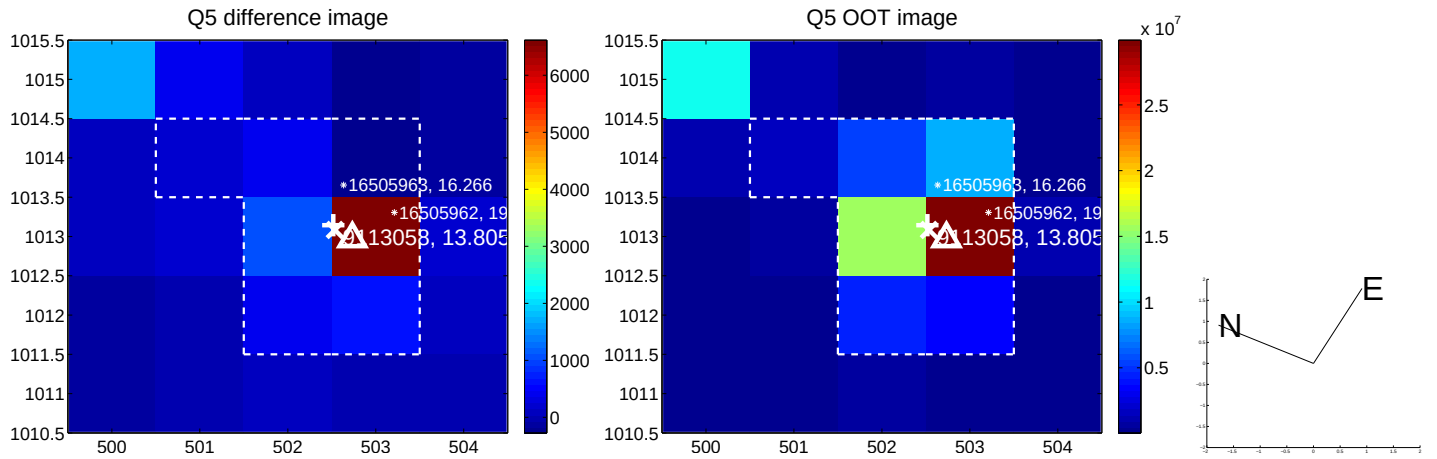


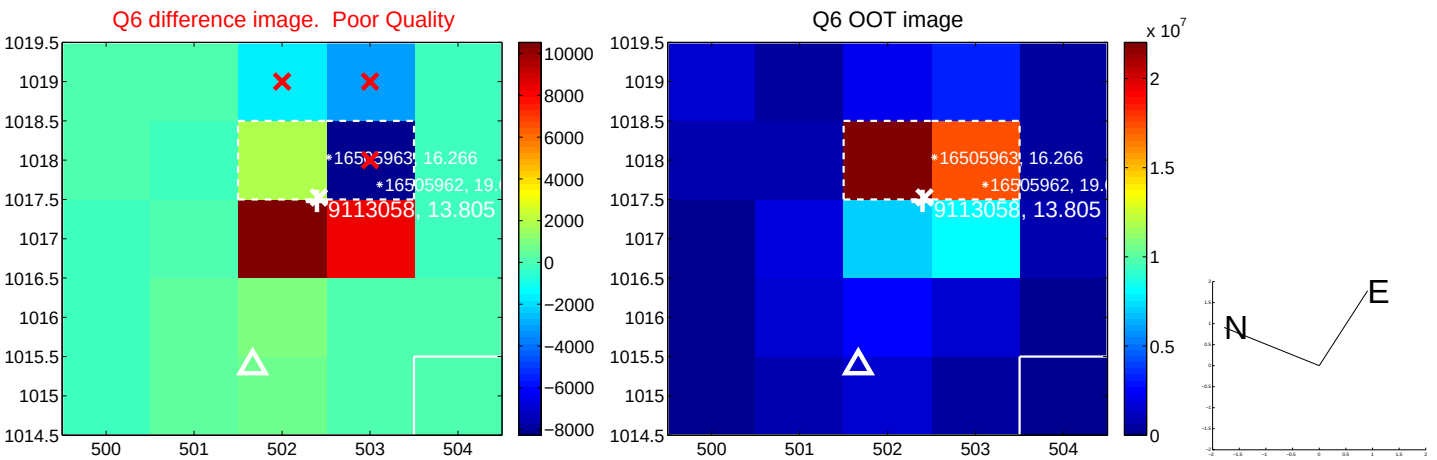
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

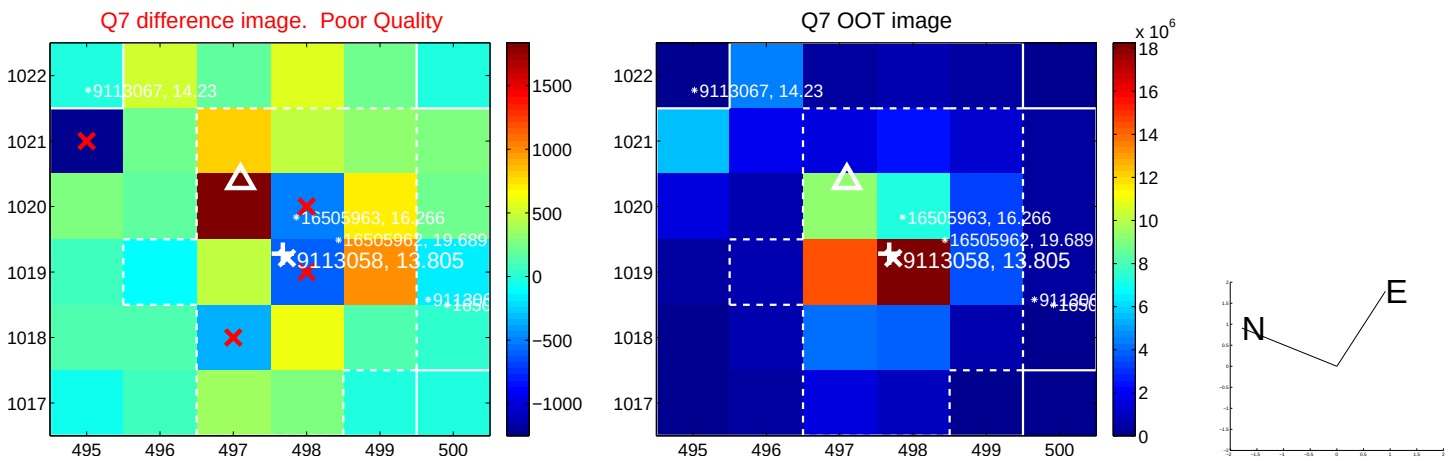
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

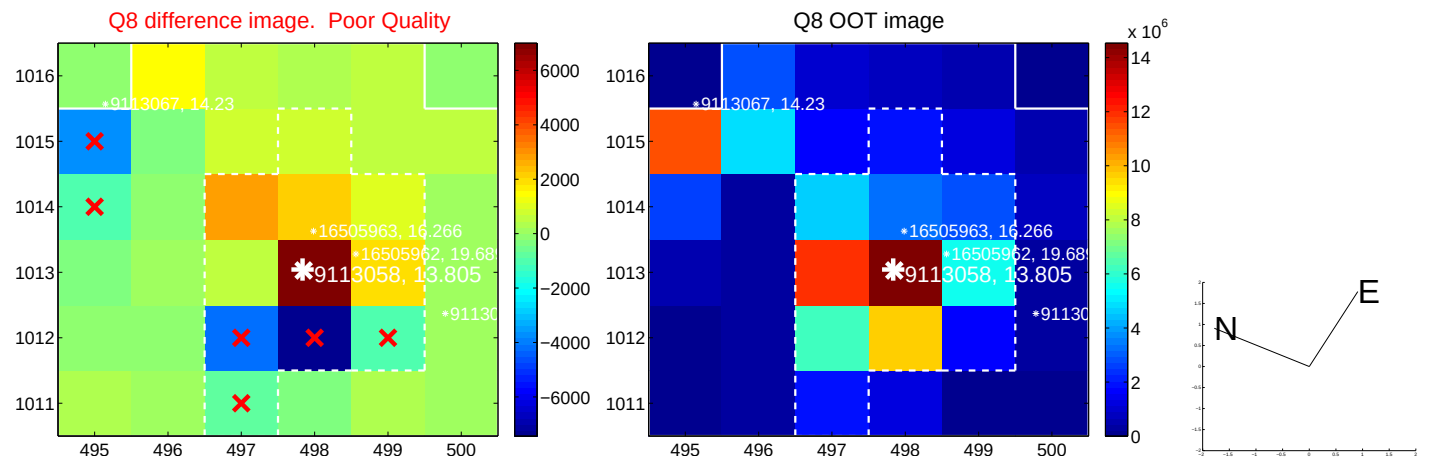


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

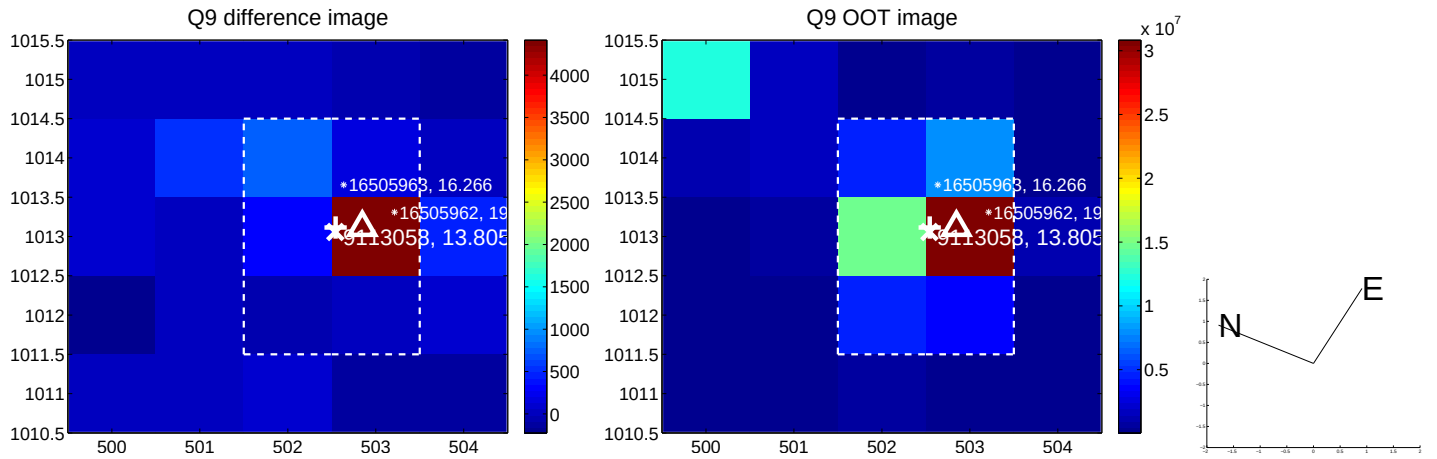


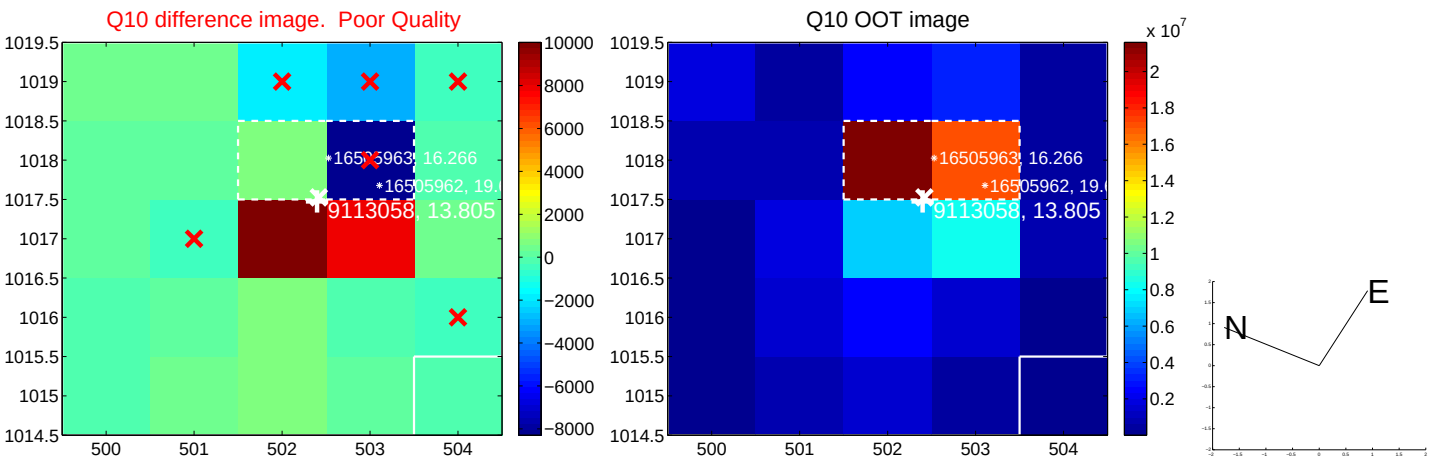


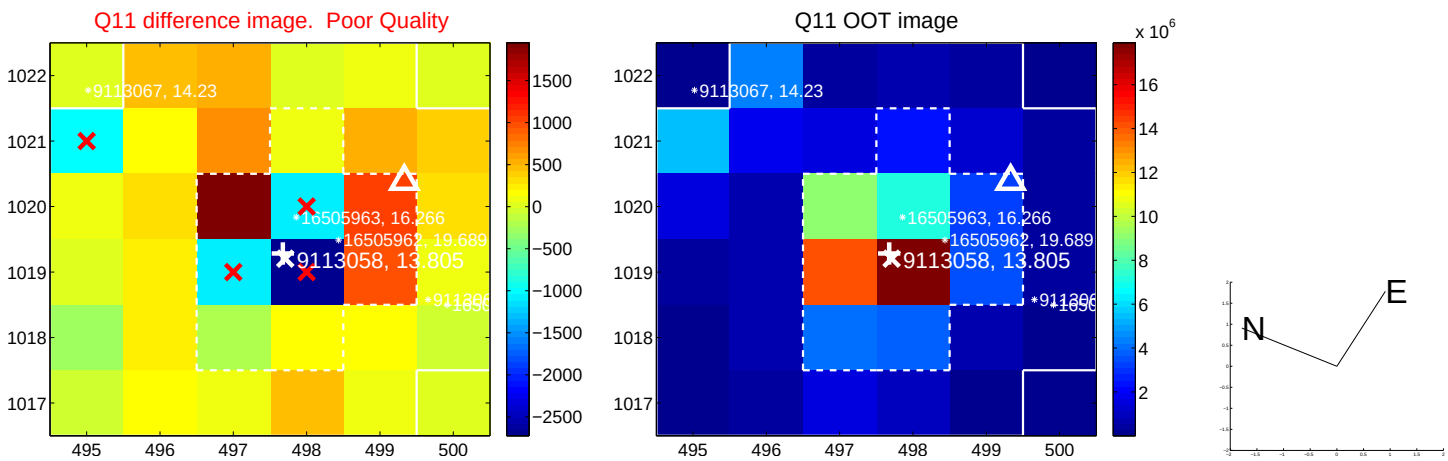


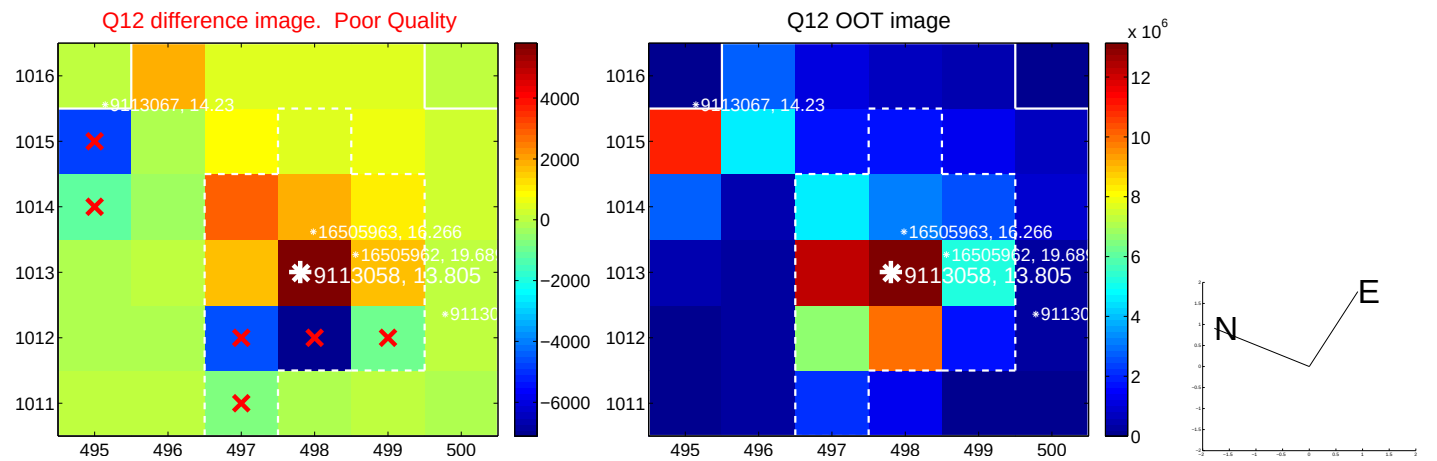


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

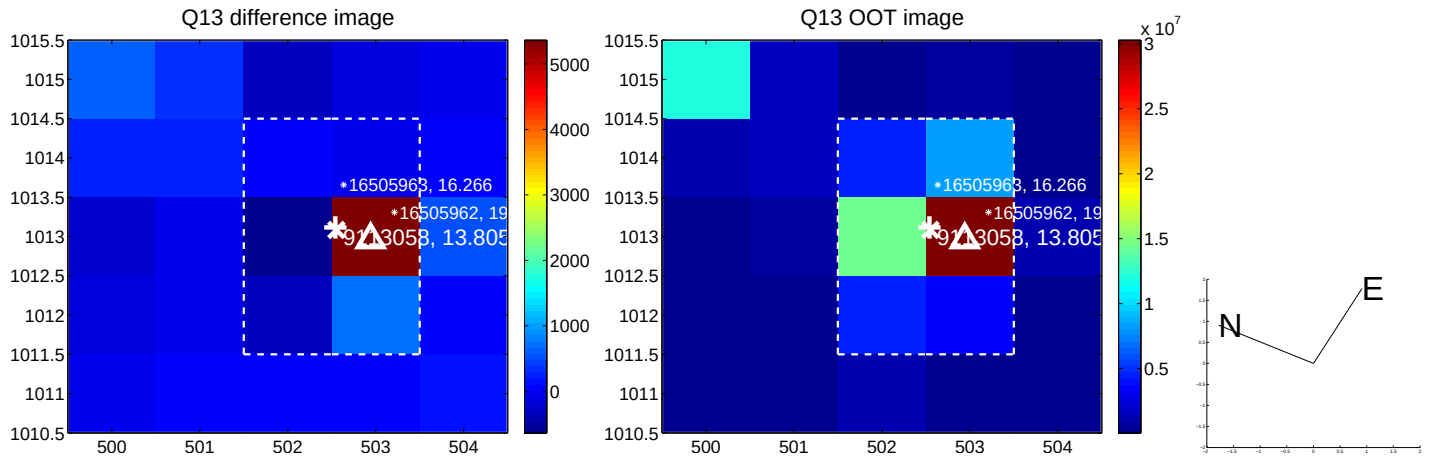


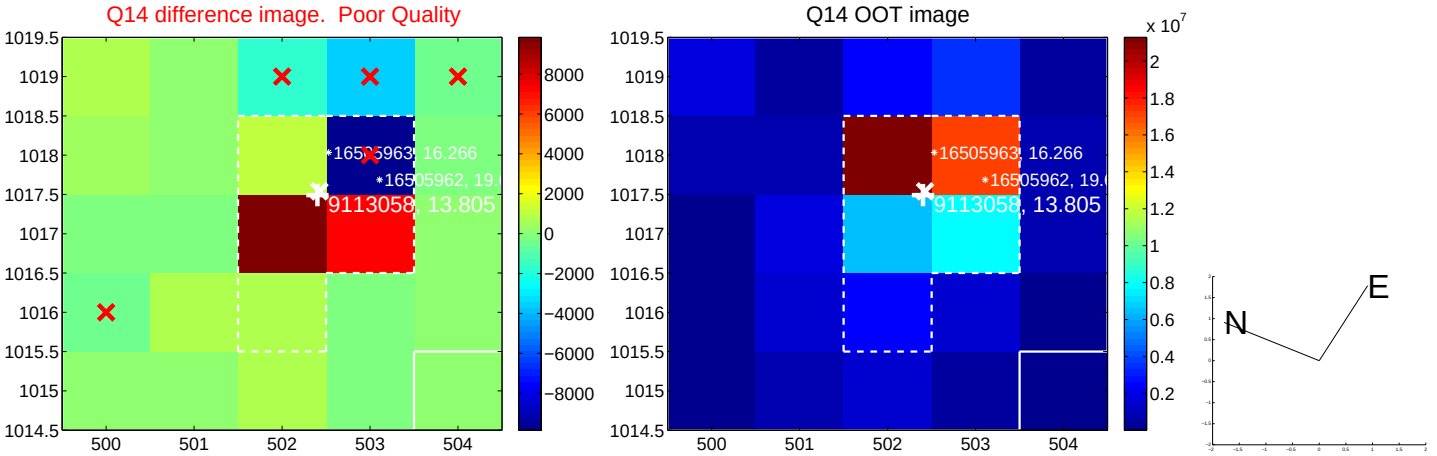


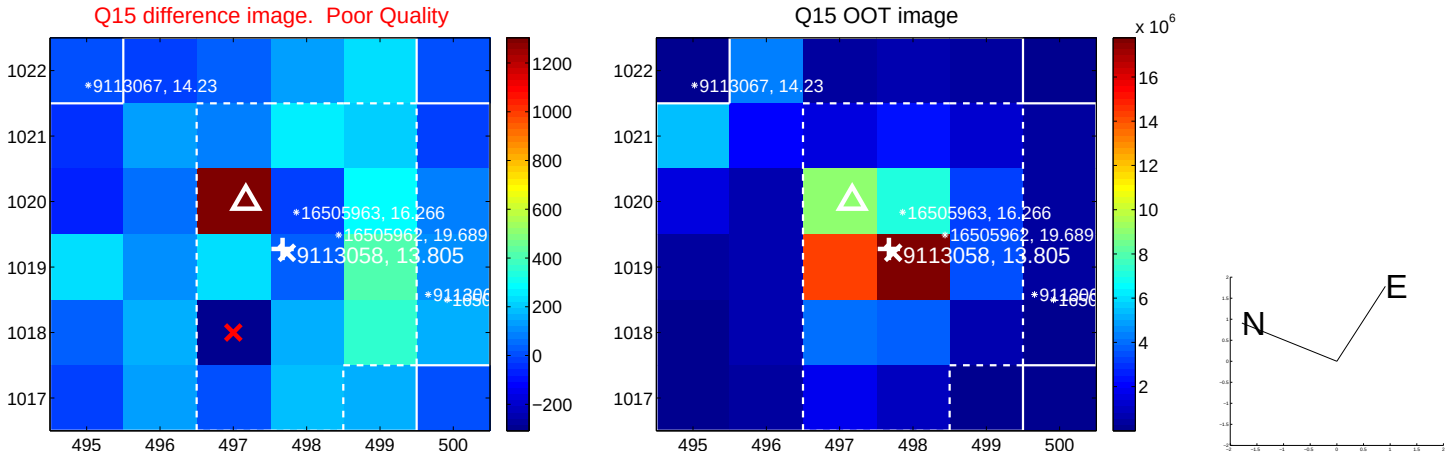


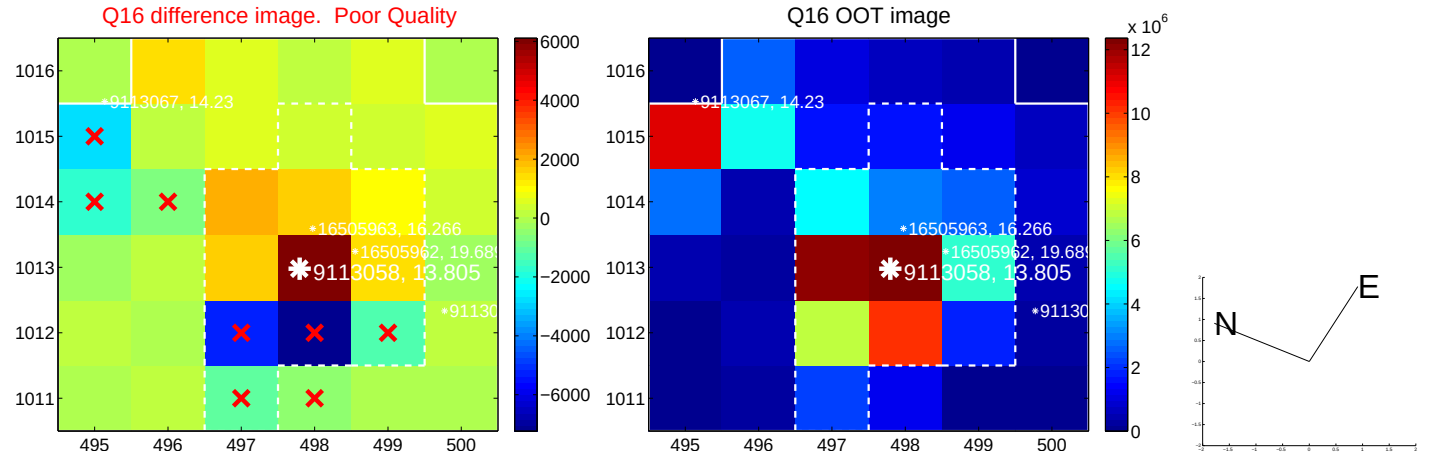


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

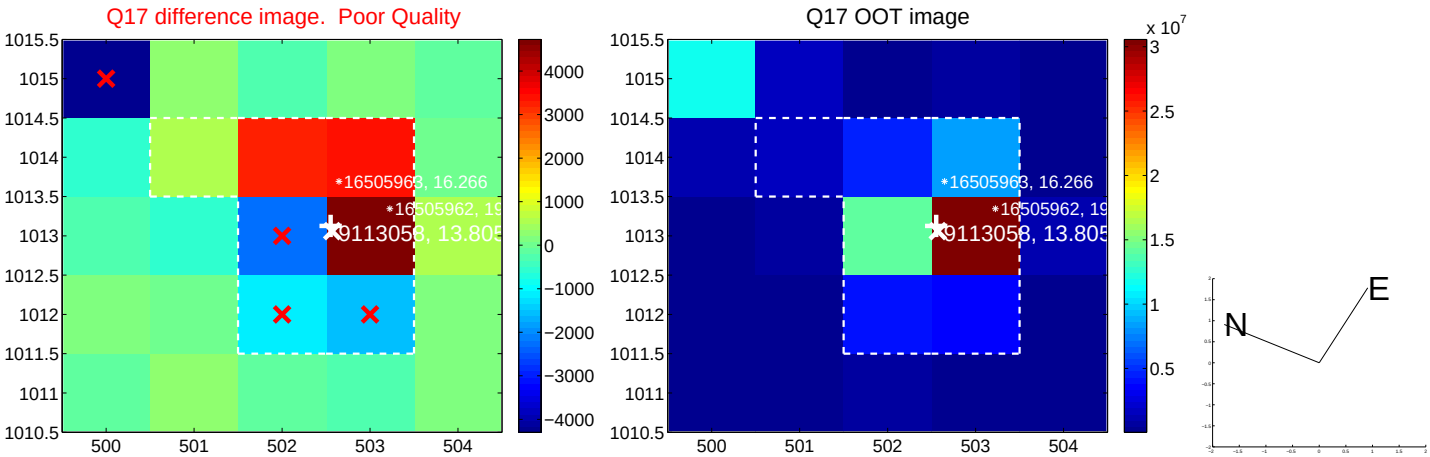


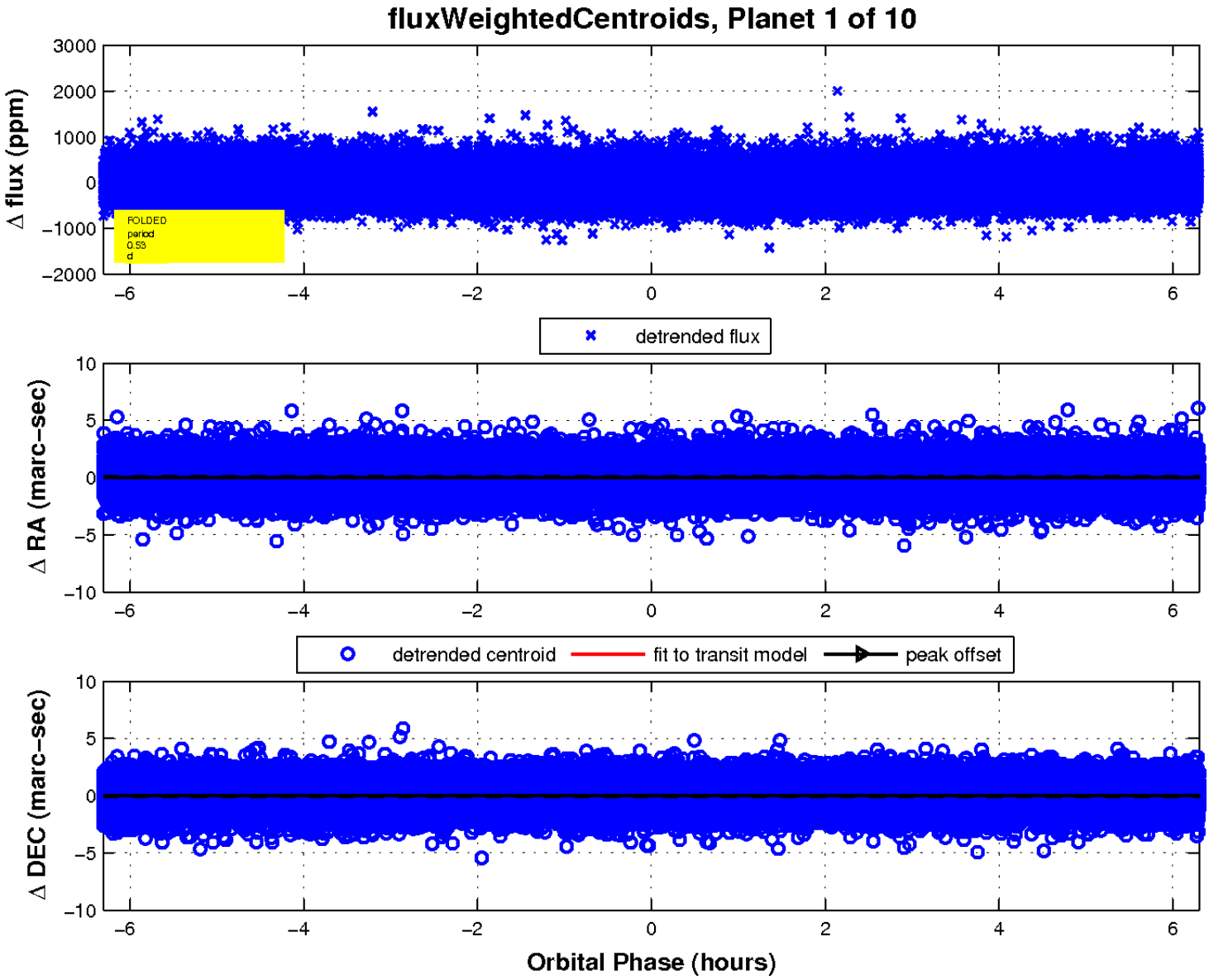




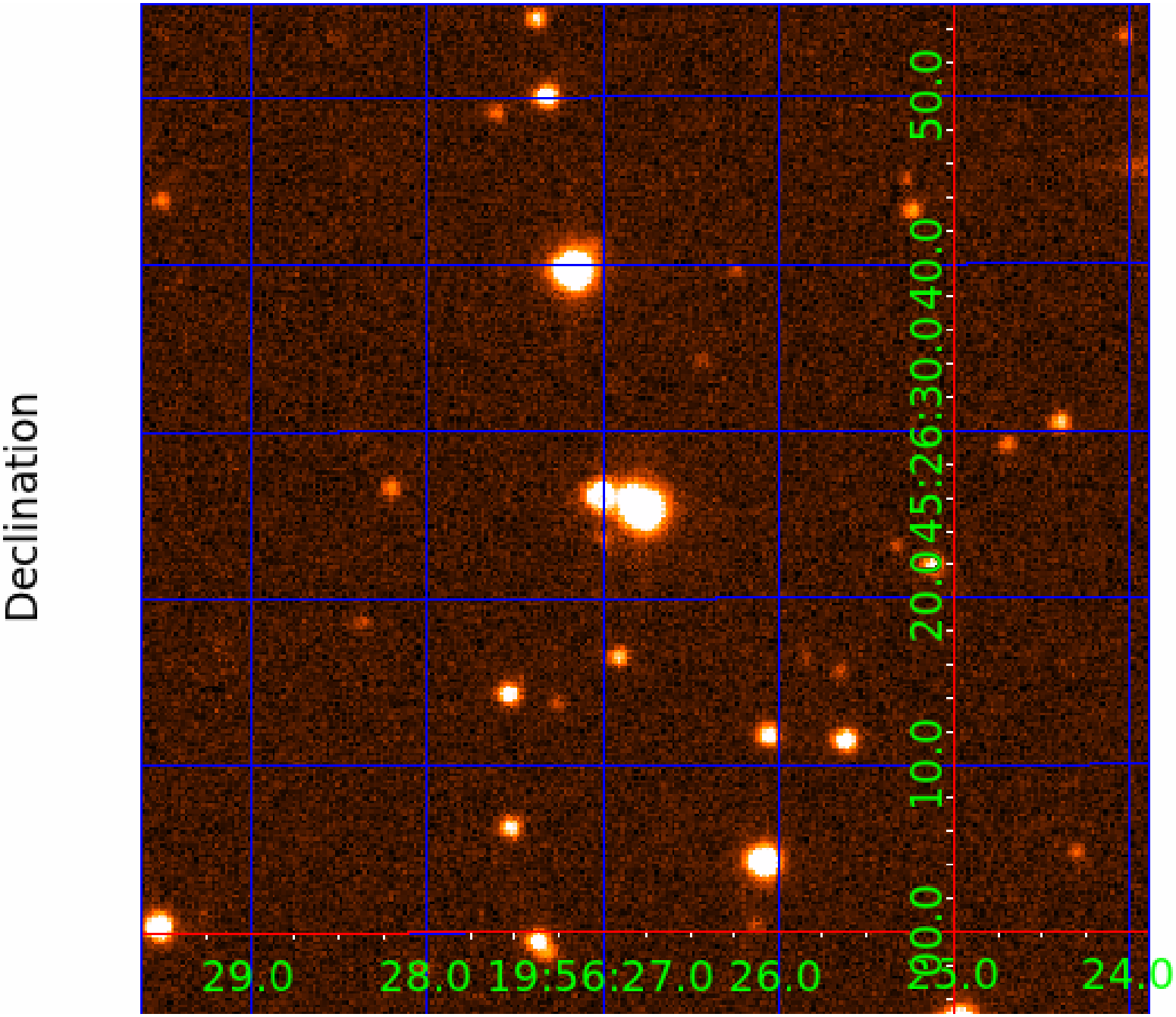


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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28.0
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26.0
25.0
24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

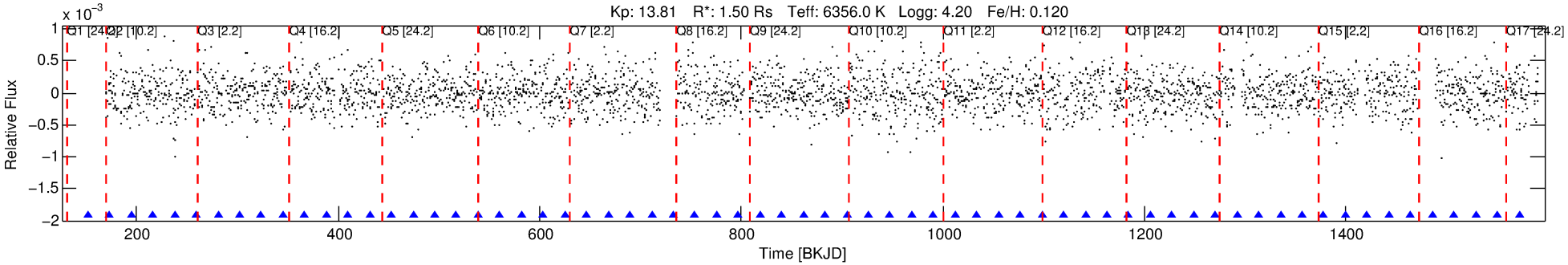
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

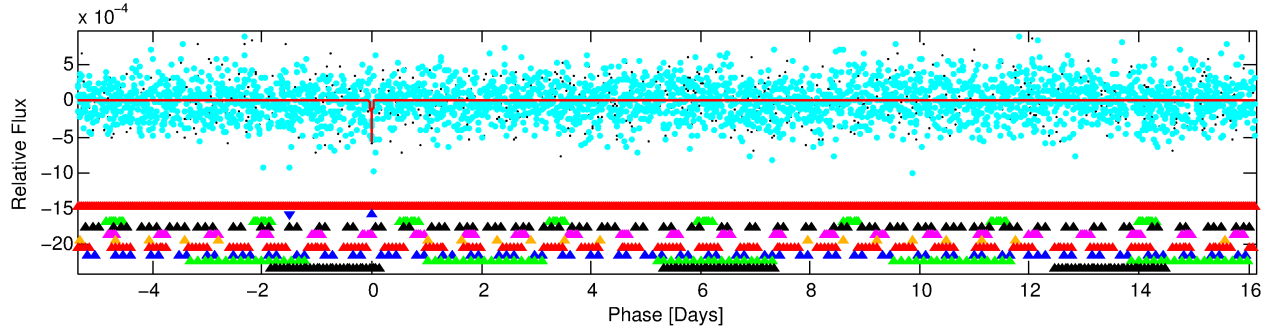
Ephemeris Match Information For 009113058-02

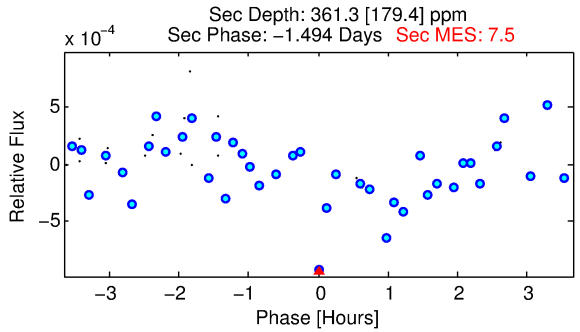
No Significant Match Found

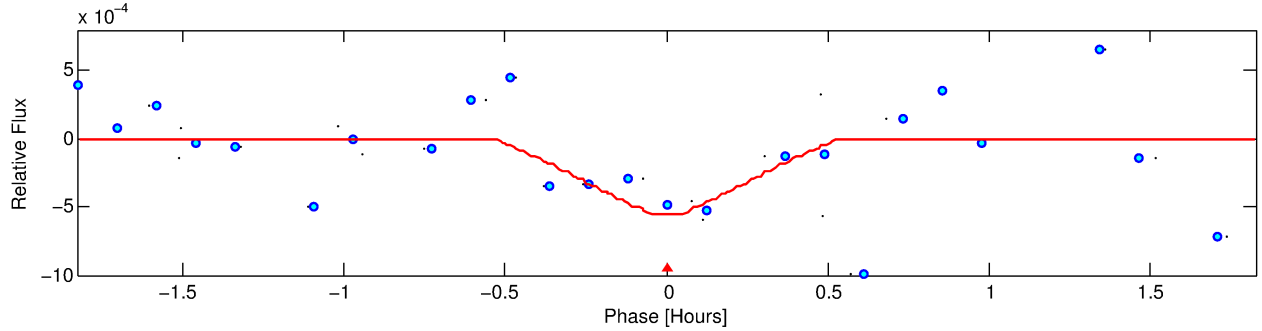
DV One-Page Summary

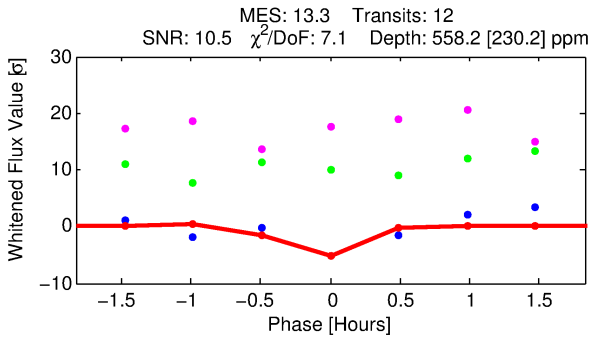
KIC: 9113058 Candidate: 2 of 10 Period: 21.514 d

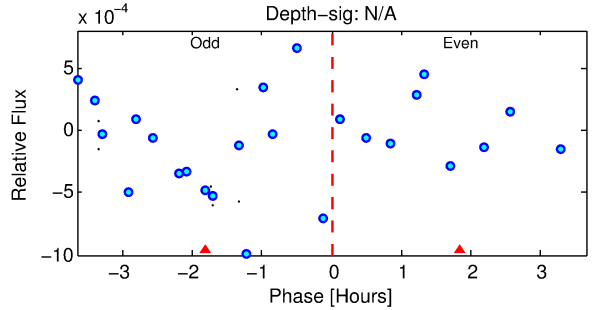


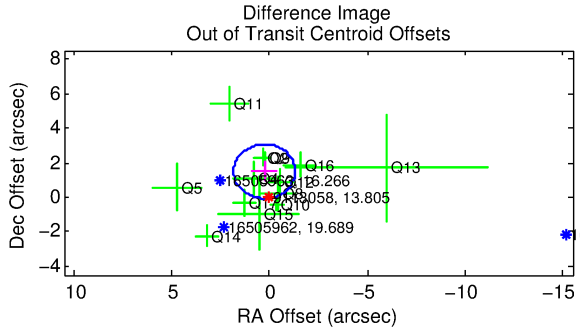












DV Fit Results:

Period = 21.51426 [0.00021] d
Epoch = 151.7903 [0.0083] BKJD
Rp/R* = 0.0226 [0.0405]
a/R* = 258.64 [2257.54]
b = 0.36 [21.57]

Seff = 120.71 [48.78]
Teq = 845 [85] K
Rp = 3.68 [6.72] Re
a = 0.1645 [0.0437] AU

Ag = 396.44 [1444.40] [0.27σ]
Teffp = 5831 [5288] K [0.94σ]

DV Diagnostic Results:

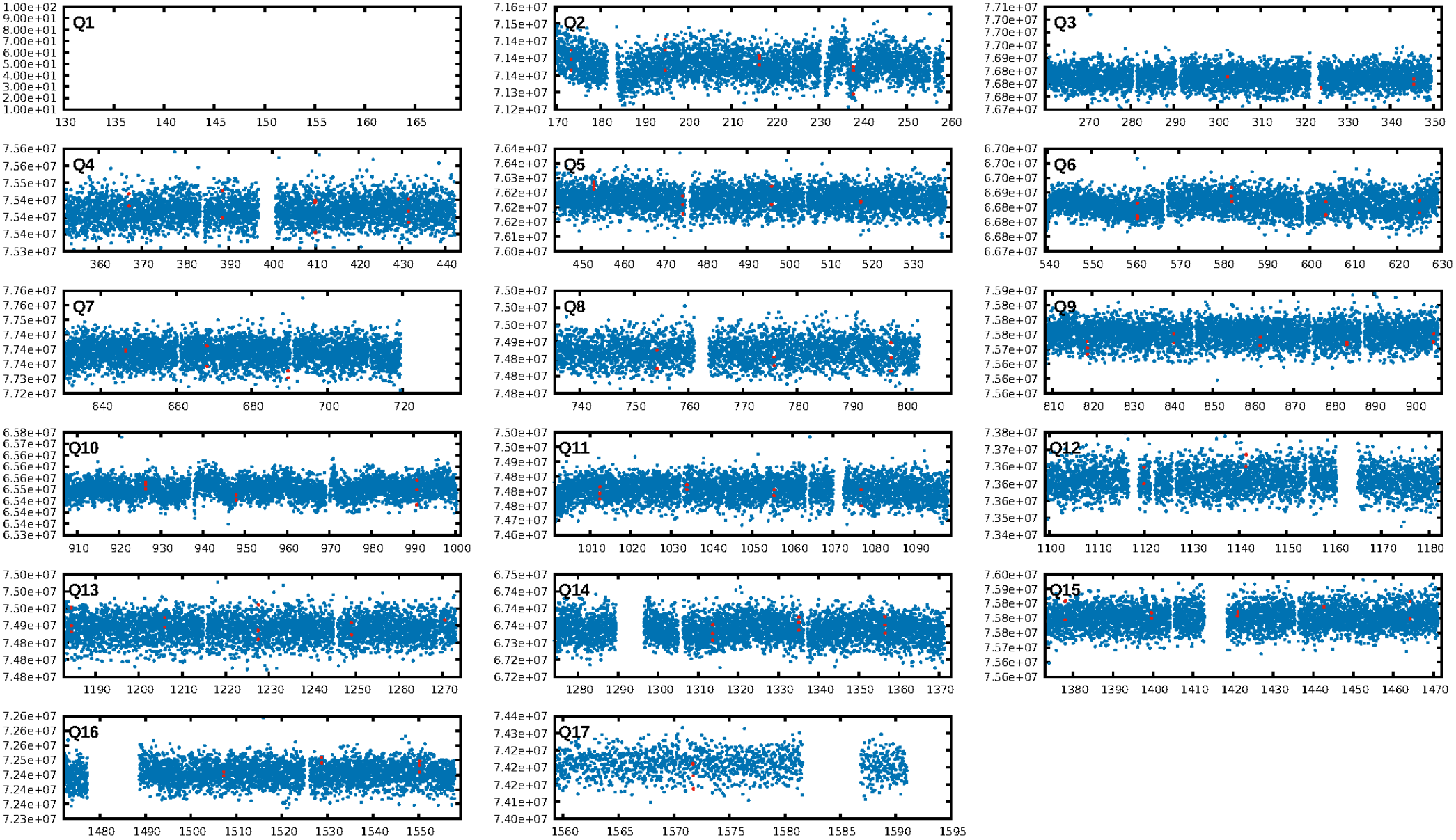
ShortPeriod−sig: 100.0% [70.63σ]
LongPeriod−sig: 100.0% [18.38σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 3.4%
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [11/11]
GhostDiagnostic−chr: 0.2852

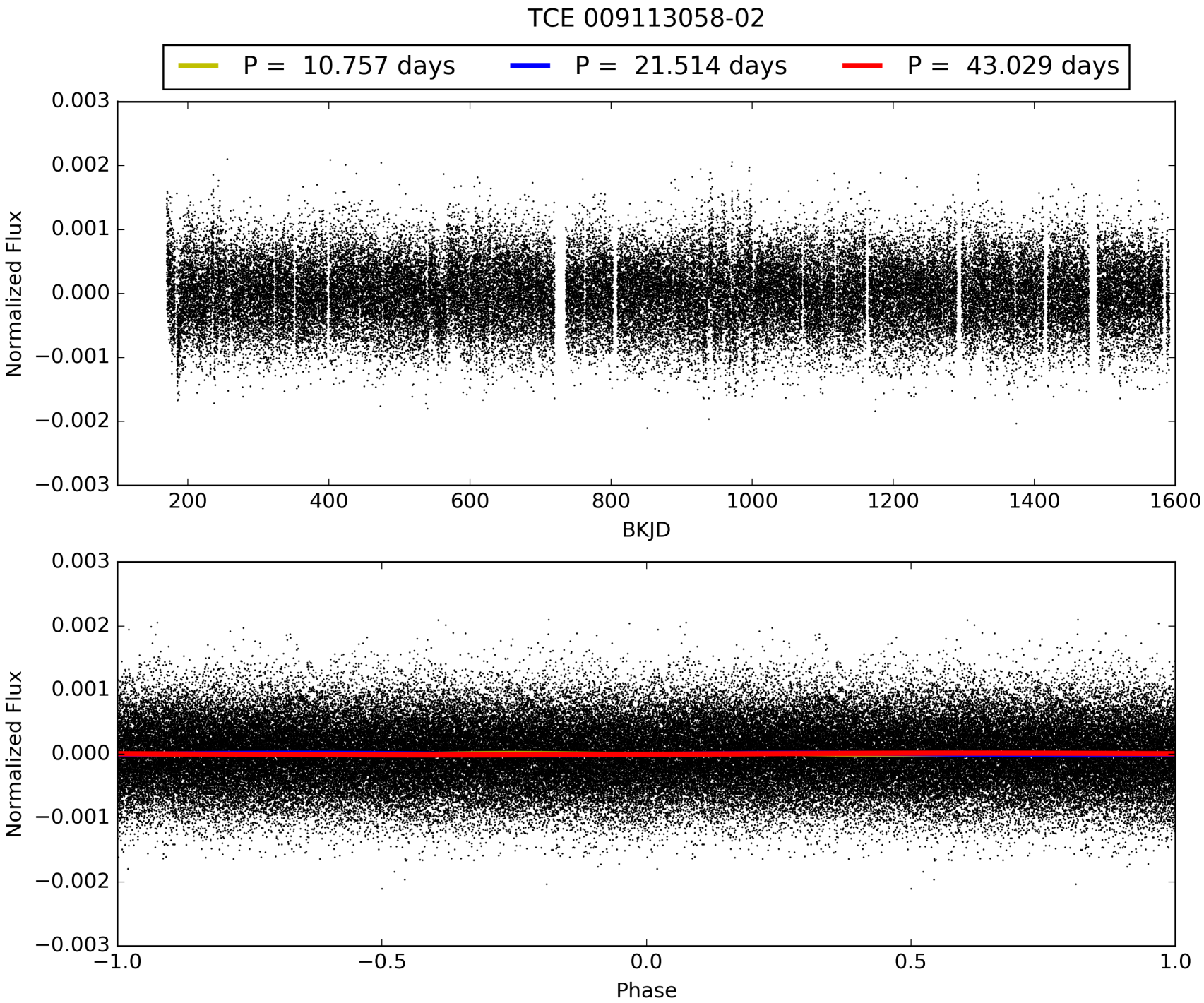
Centroid−sig: 0.3%
Centroid−so: 0.561 arcsec [0.84σ]
OotOffset−rm: 1.520 arcsec [2.91σ]
KicOffset−rm: 1.637 arcsec [3.01σ]
OotOffset−st: 3/2/4/4 [13]
KicOffset−st: 3/2/4/4 [13]
DiffImageQuality−fgm: 0.23 [3/13]
DiffImageOverlap−fno: 0.00 [0/15]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:33 Z

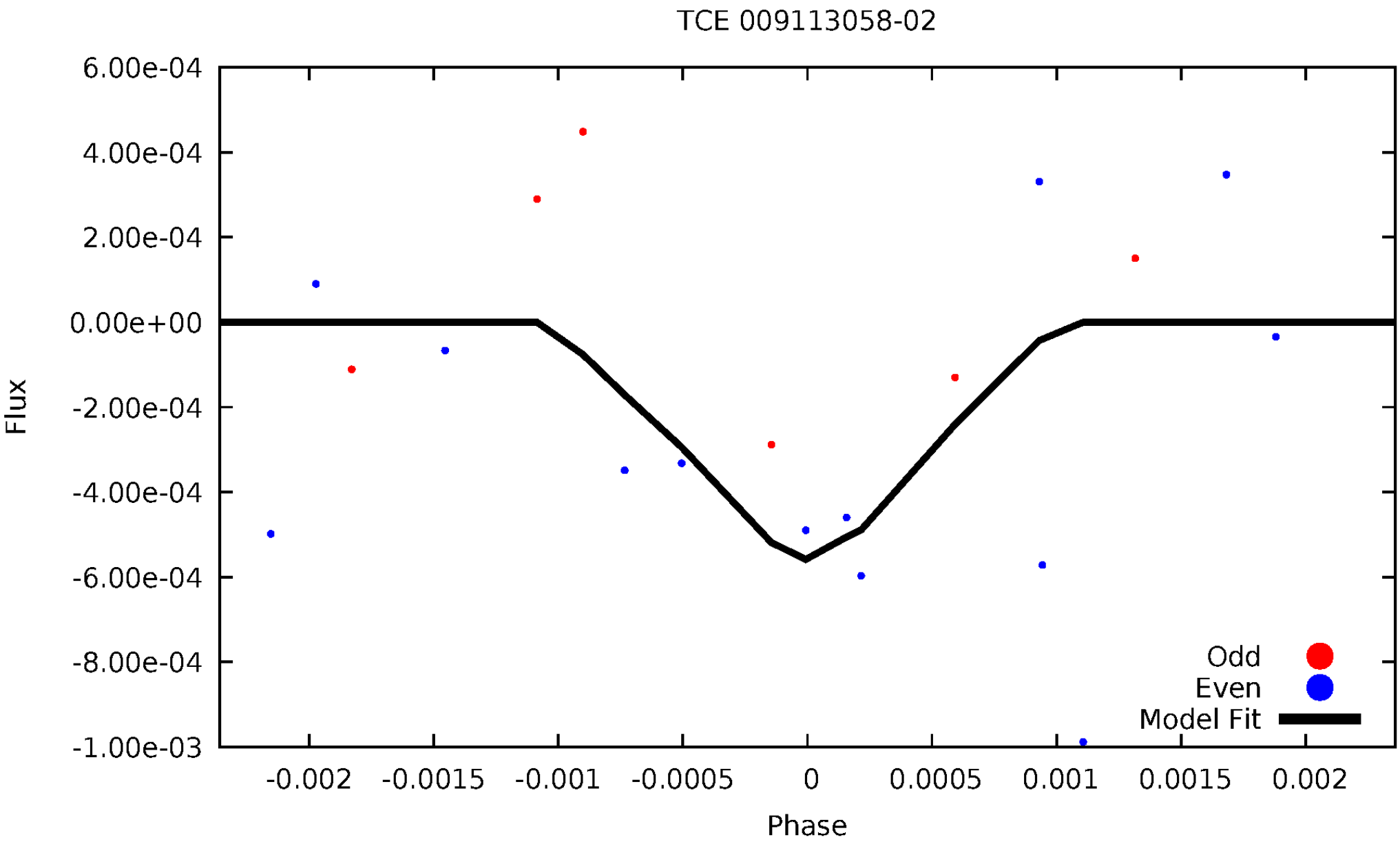
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-02, PDC Light Curves




TCE 009113058-02
P = 10.757 days
P = 21.514 days
P = 43.029 days
Normalized Flux
BKJD
Normalized Flux
Phase

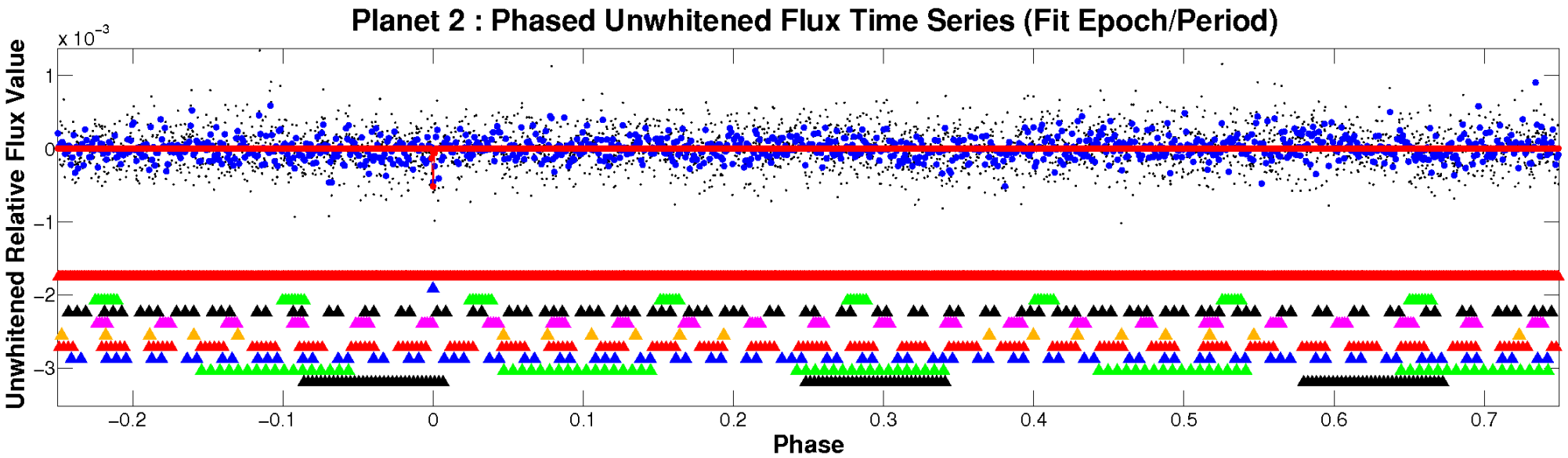
DV Odd/Even

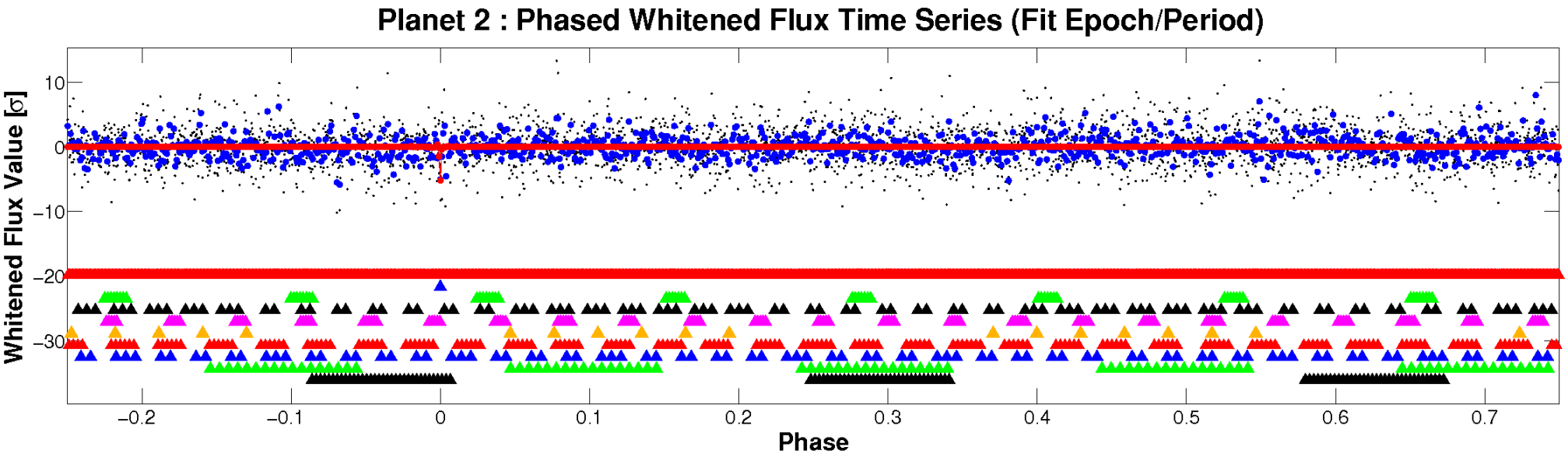

TCE 009113058-02
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
Flux
-0.002
-0.0015
-0.001
-0.0005
0
0.0005
0.001
0.0015
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even

This plot does not exist for this TCE.

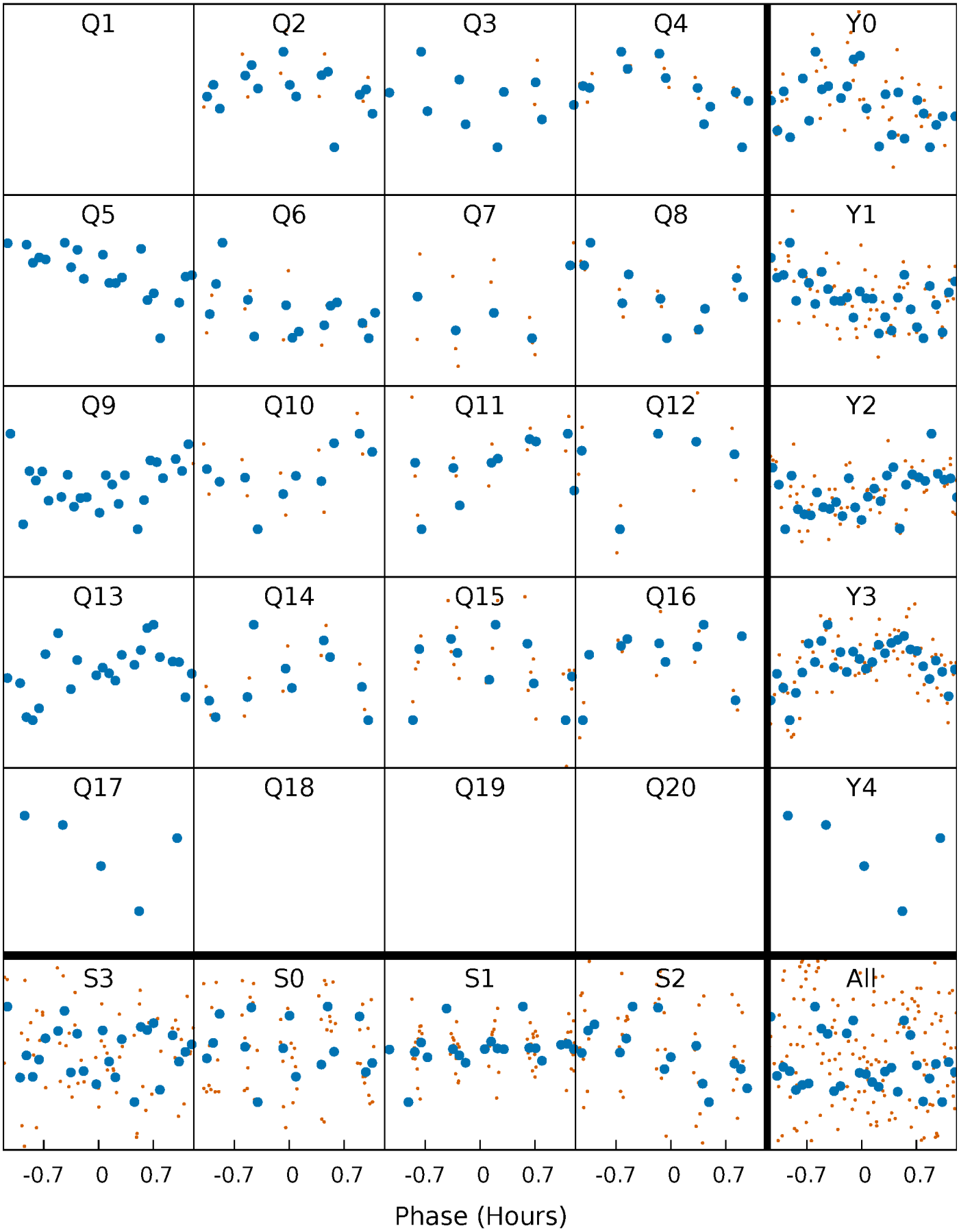
Non-Whitened Vs. Whitened Light Curve





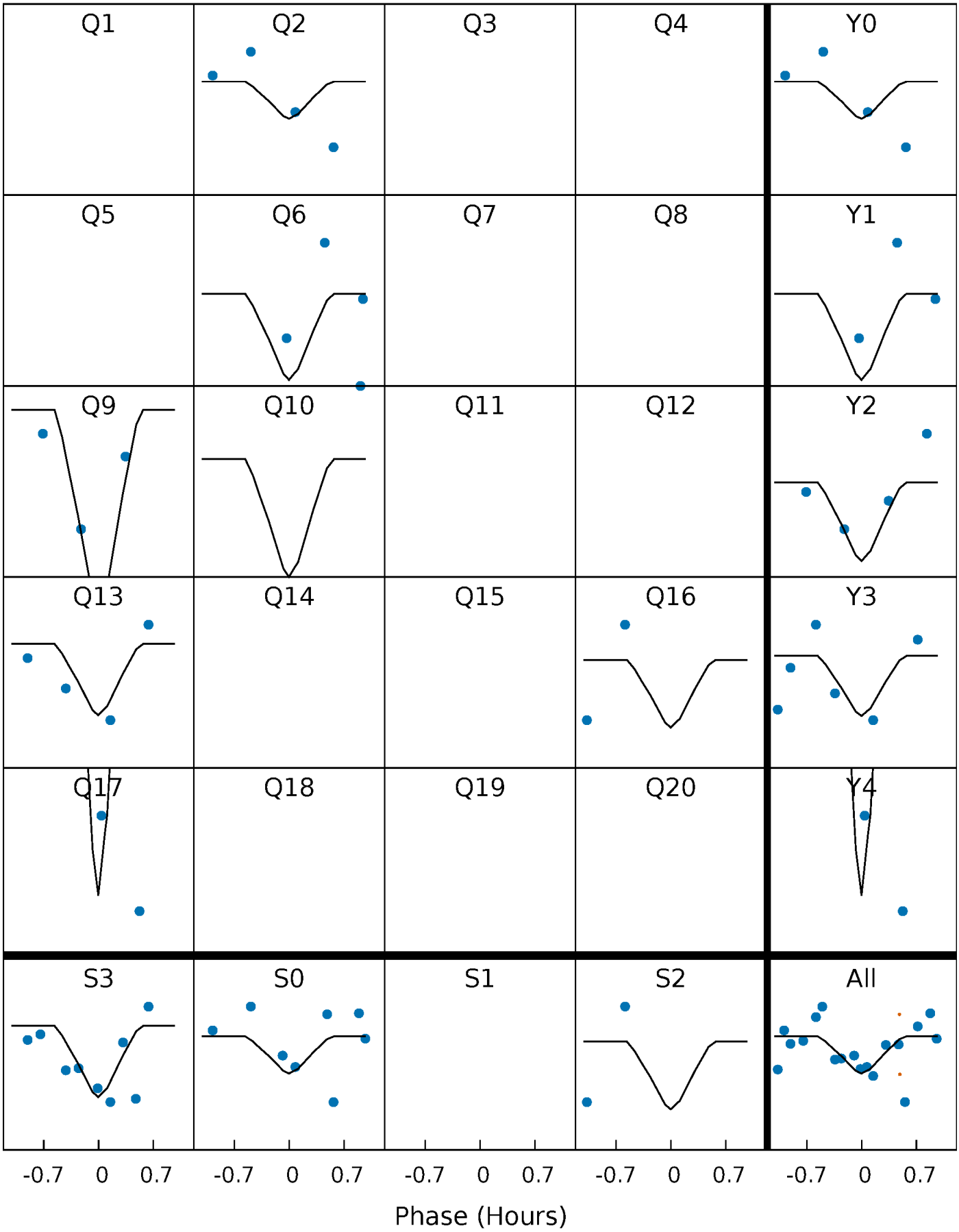
PDC Quarter-Phased Transit Curves

TCE 009113058-02 P= 21.514259 Days T_0=151.790322 (BKJD)



DV Quarter-Phased Transit Curves

TCE 009113058-02 P= 21.514259 Days T_0=151.790322 (BKJD)

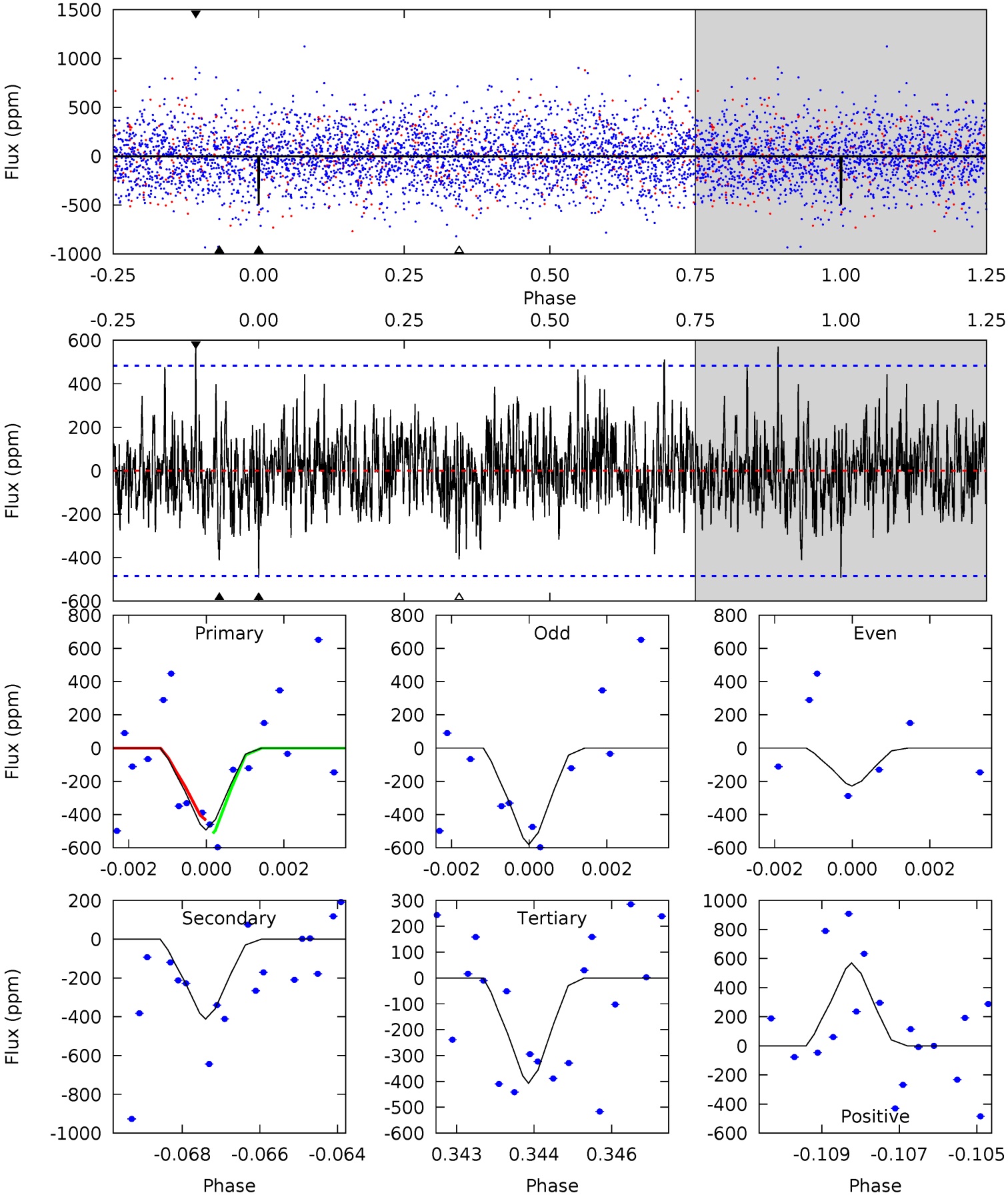


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009113058-02, P = 21.514259 Days, E = 151.790322 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.44	4.55	4.50	6.30	5.34	3.11	1.48	0.94	-0.86	0.05	-1.75	1.69	1.00	0.54	0.43



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-02 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-412±91	$5.96^{+5.83}_{-4.01}$	1188^{+98}_{-86}	4839^{+3804}_{-1094}	163^{+1474}_{-121}
Alt.	N/A	N/A	N/A	N/A	N/A

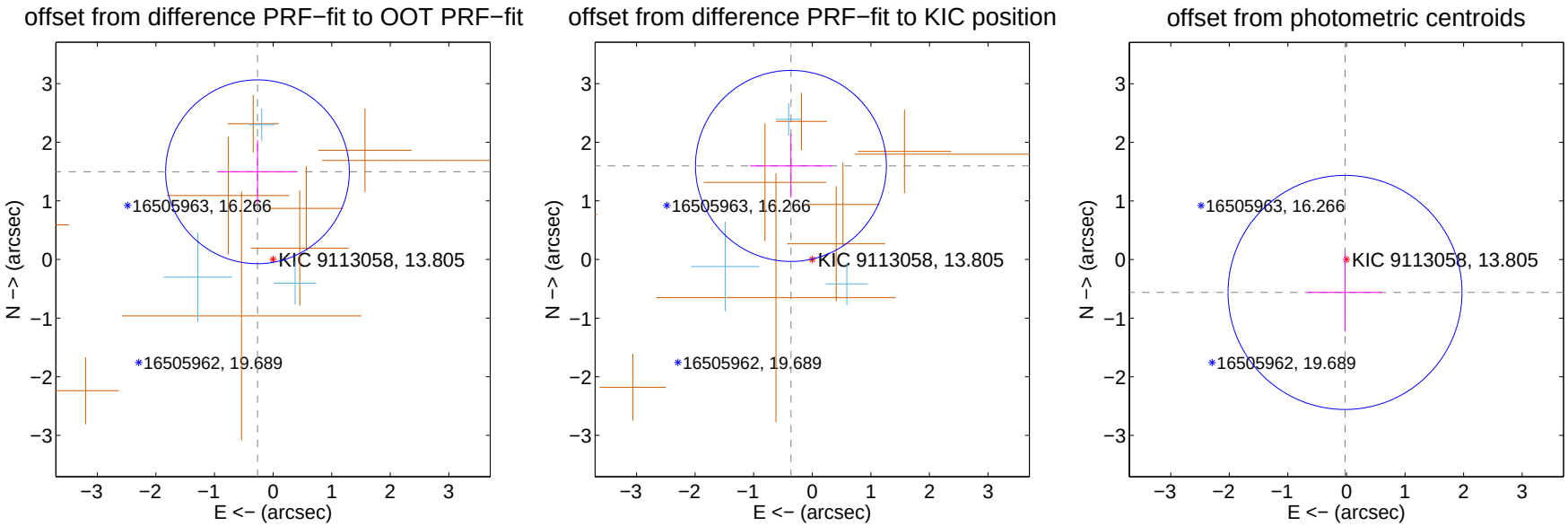
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

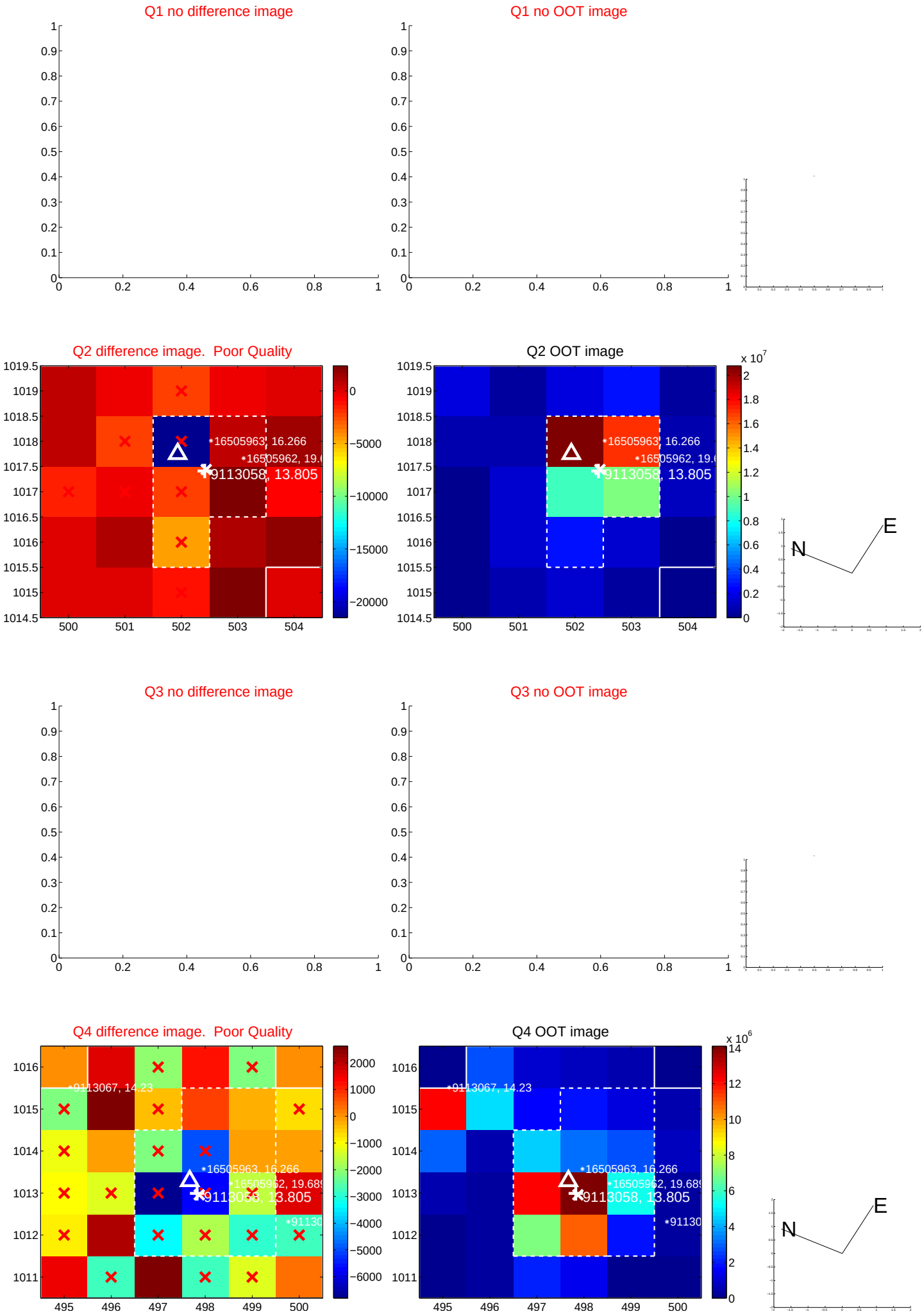
Supplemental centroid analysis for 009113058-02. Kepler magnitude: 13.80. Transit SNR 10.51
There are 3 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.520 ± 0.523	2.91	0.266 ± 0.663	1.496 ± 0.537
PRF-fit source offset from KIC position	1.637 ± 0.543	3.01	0.364 ± 0.699	1.596 ± 0.542
photometric centroid source offset	0.56 ± 0.67	0.84	0.02 ± 0.64	-0.56 ± 0.67

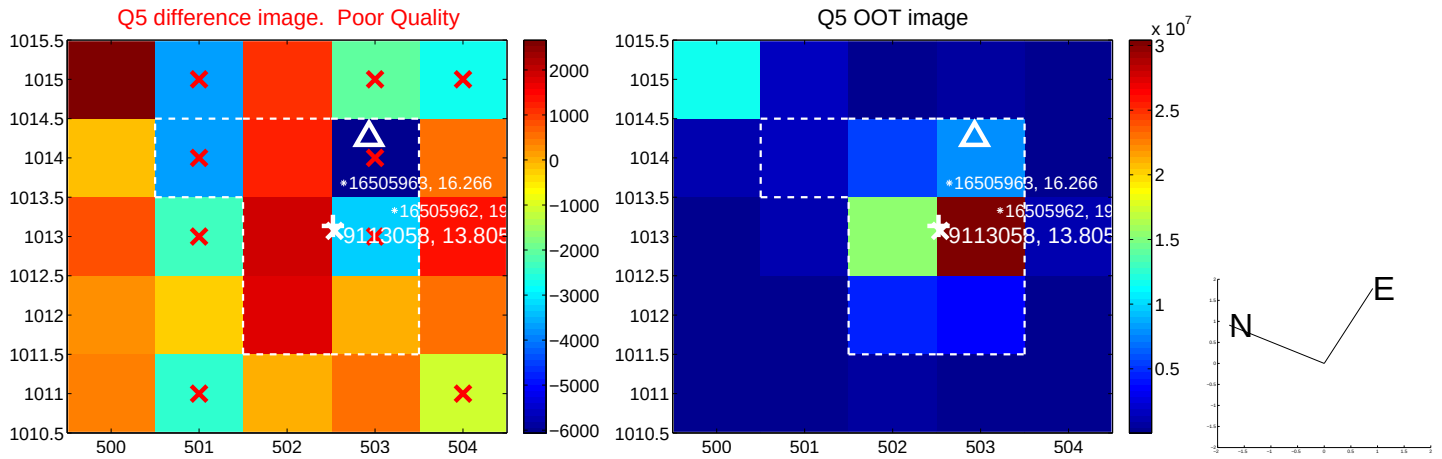


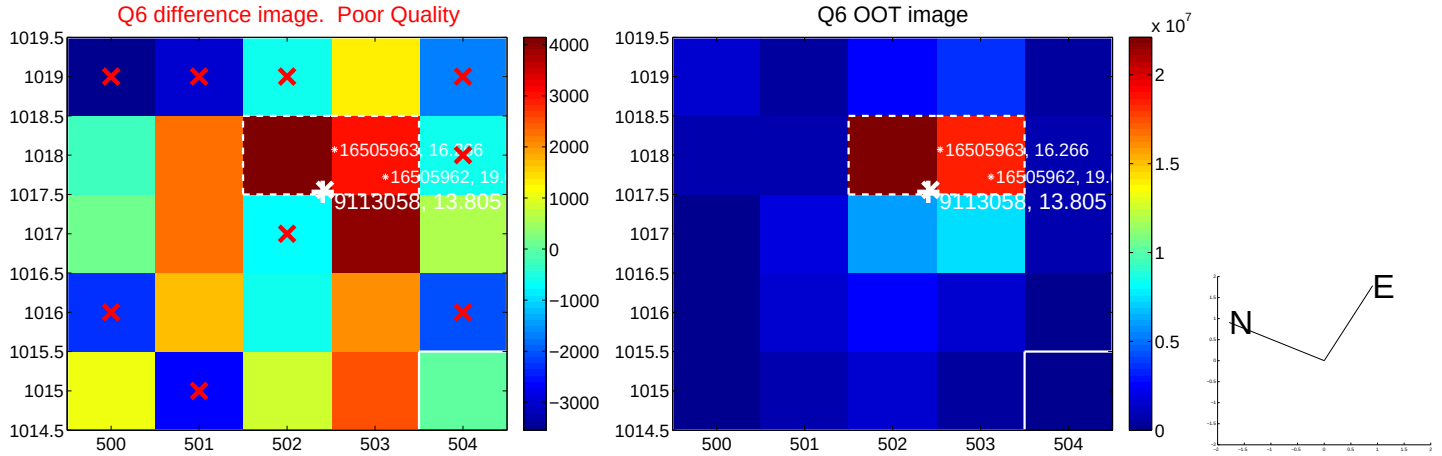
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

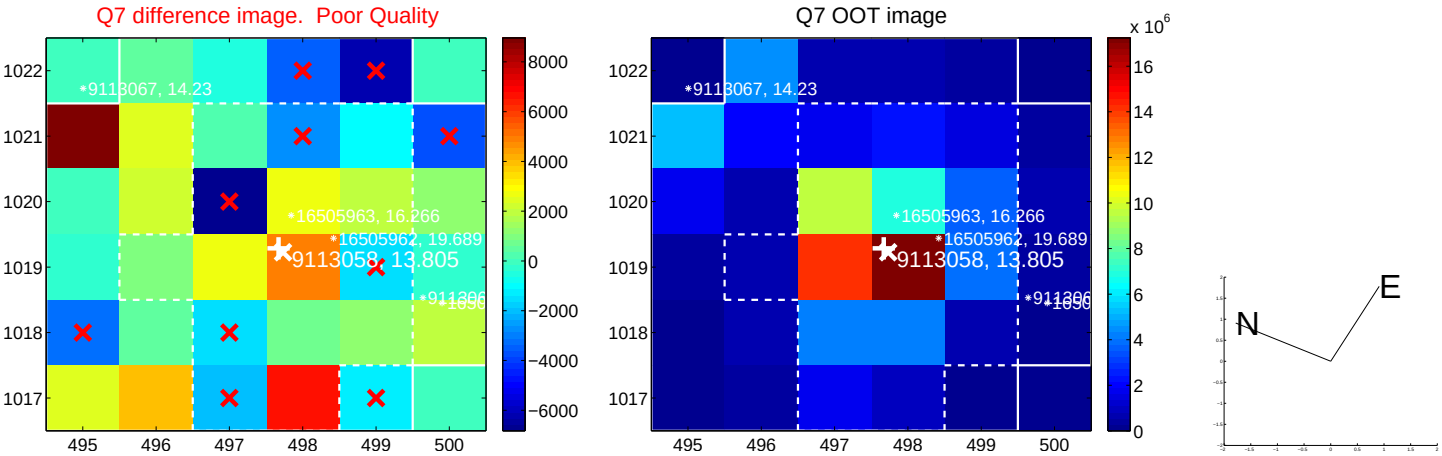
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

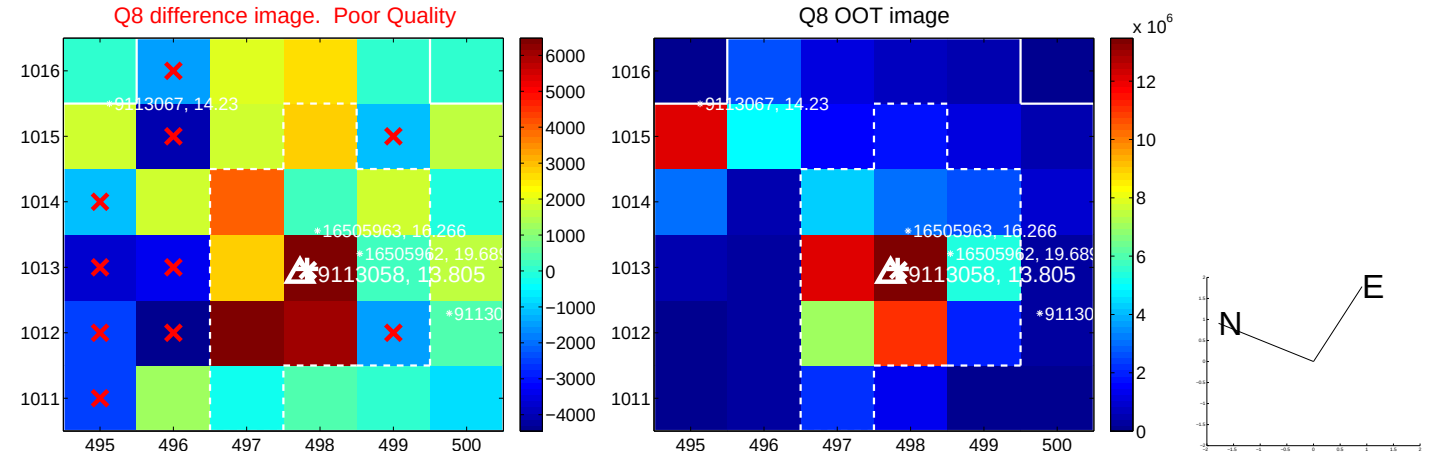


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

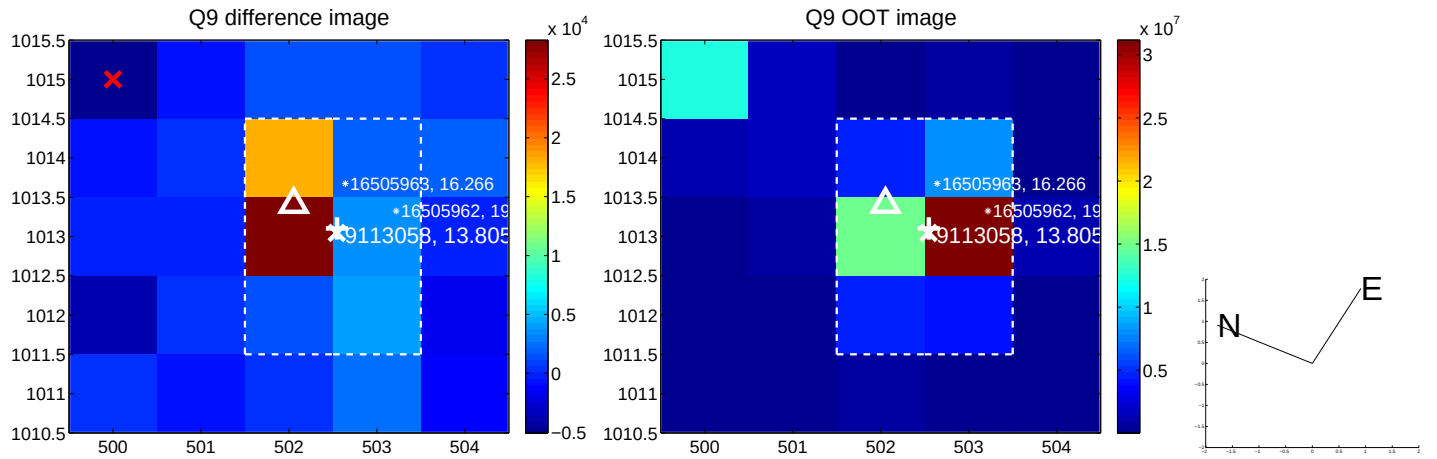


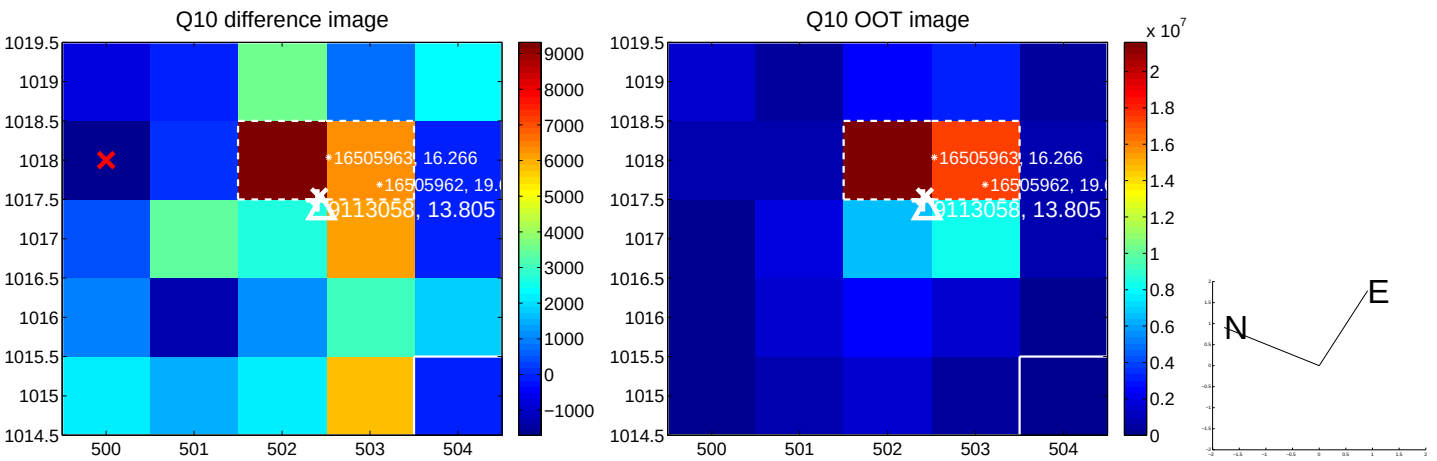


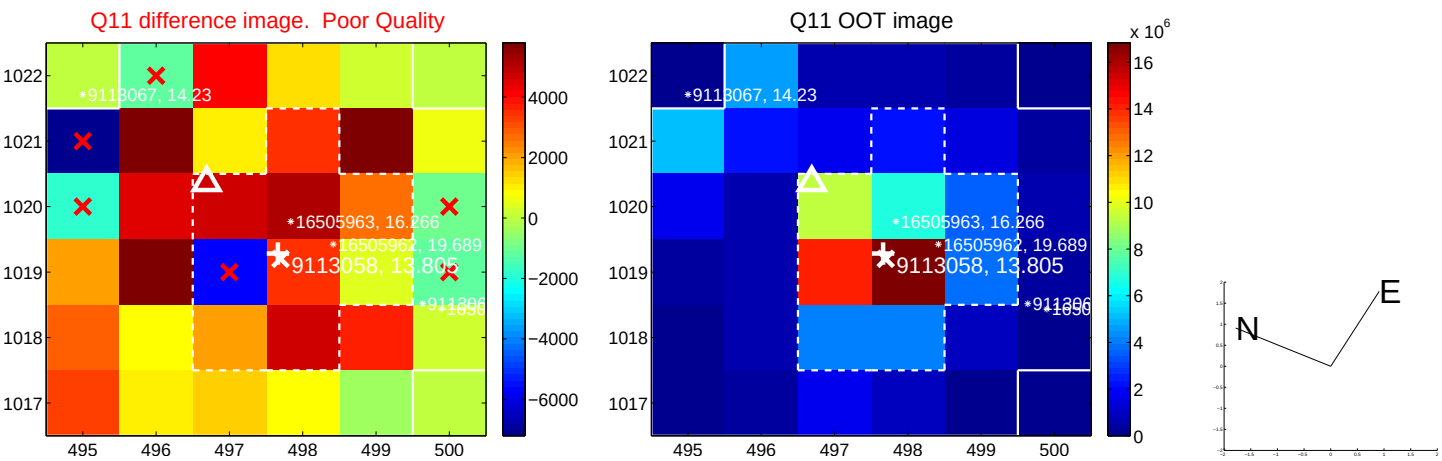


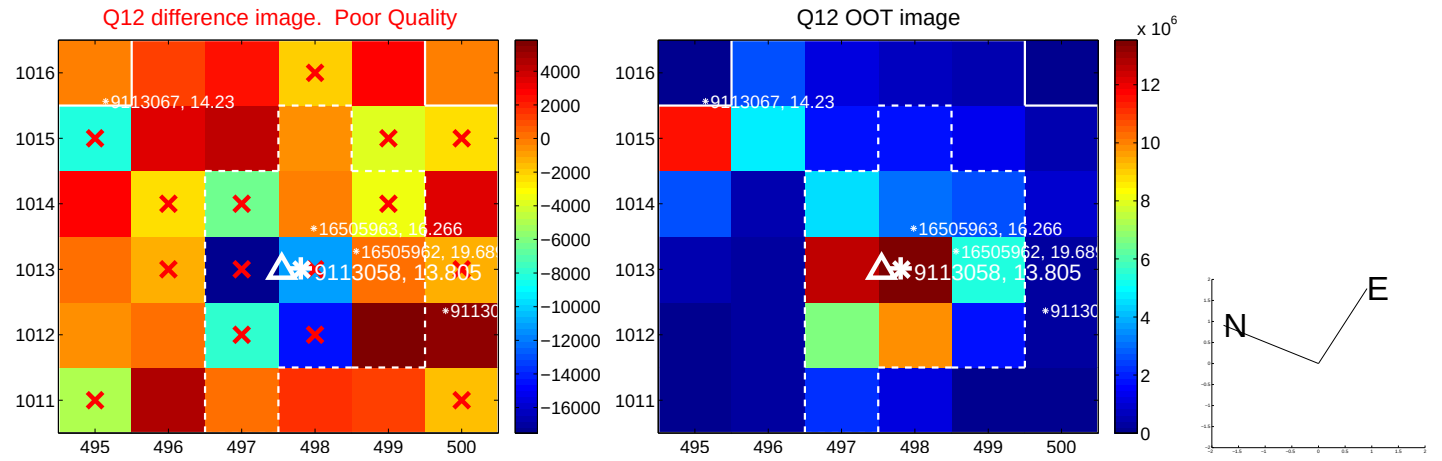


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

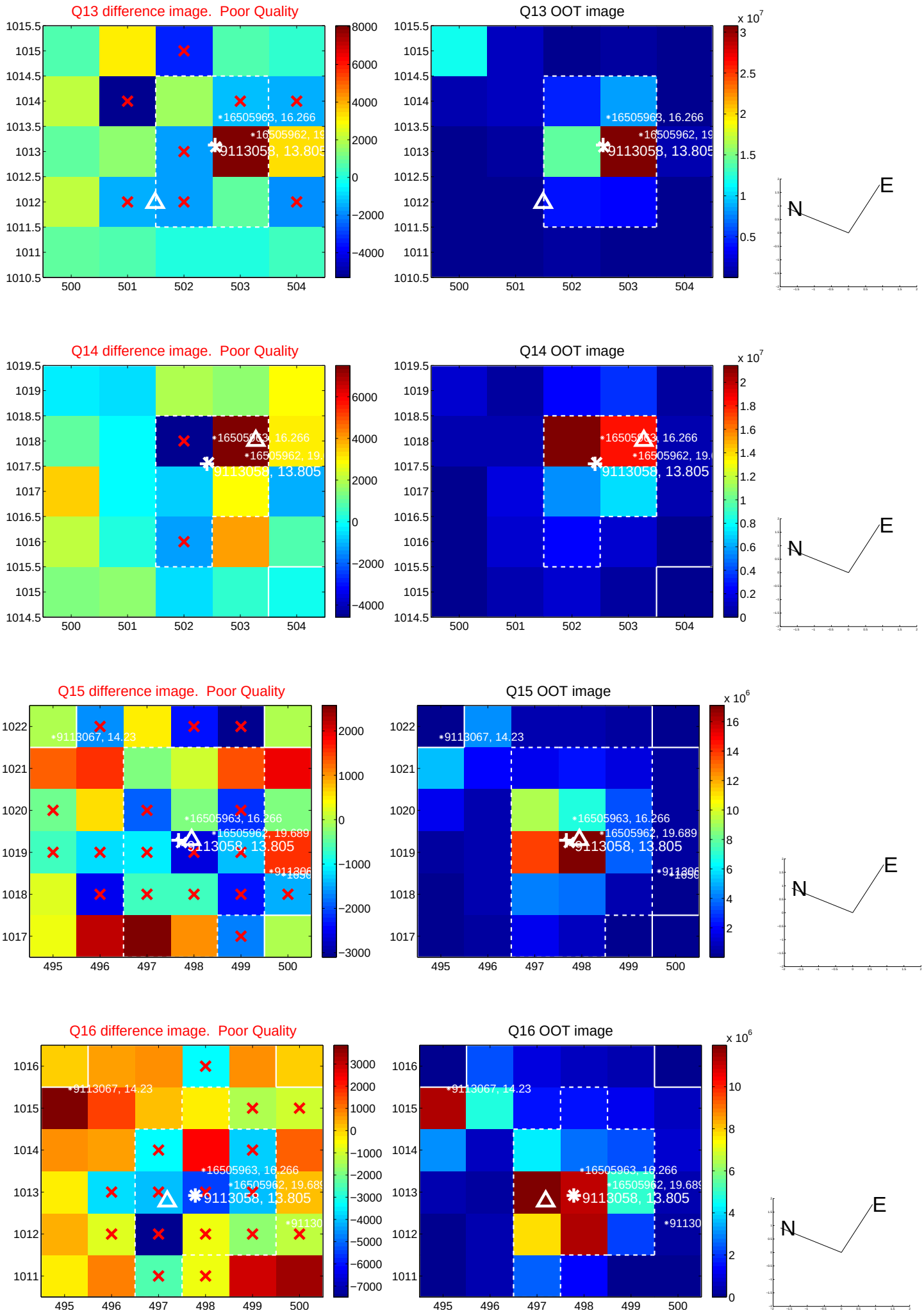




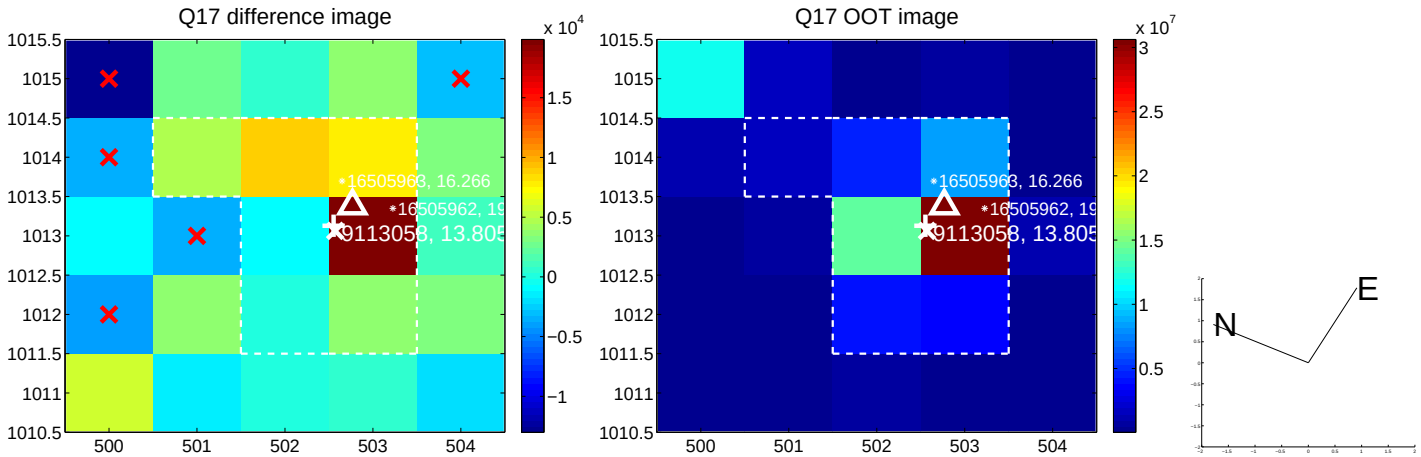


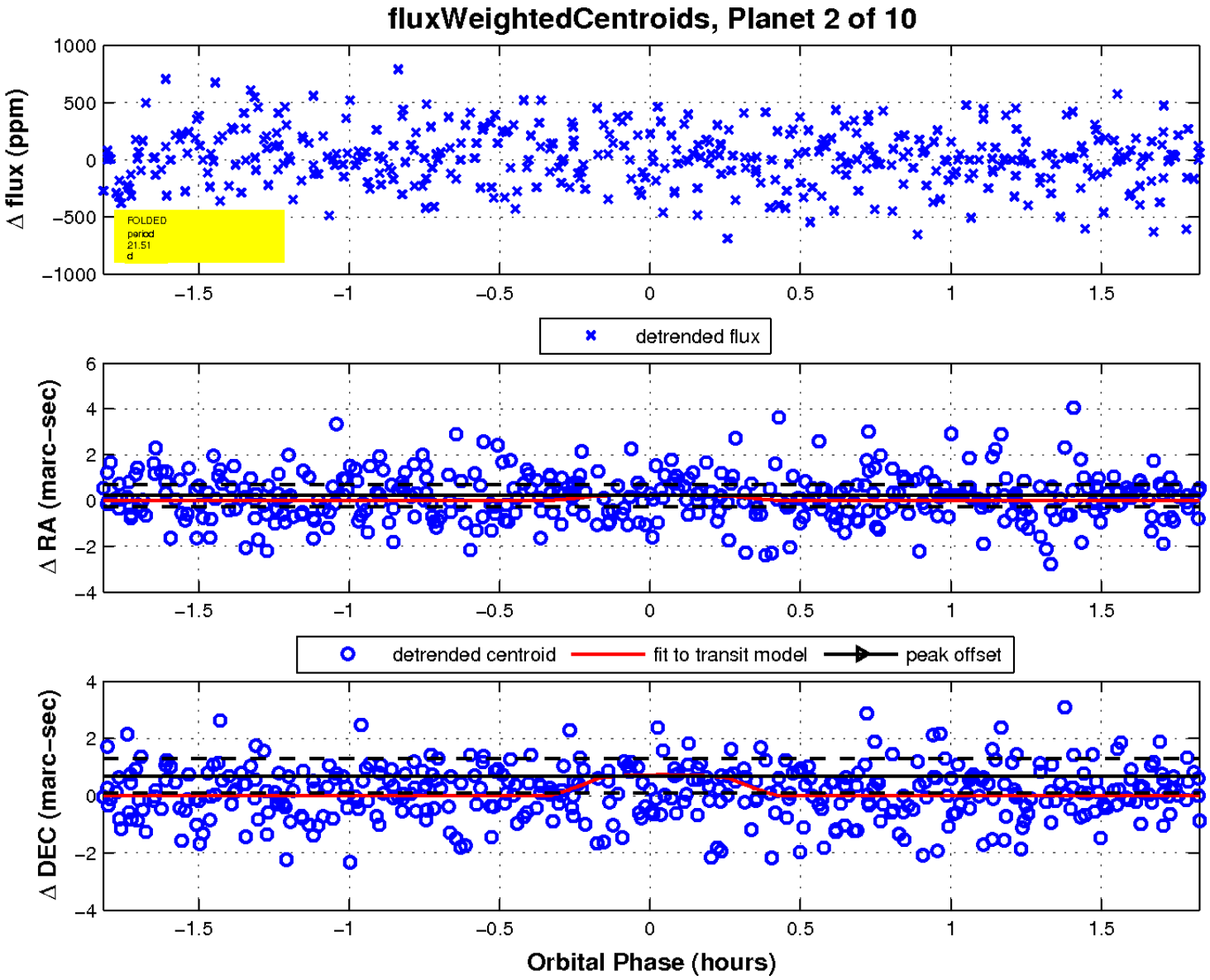


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

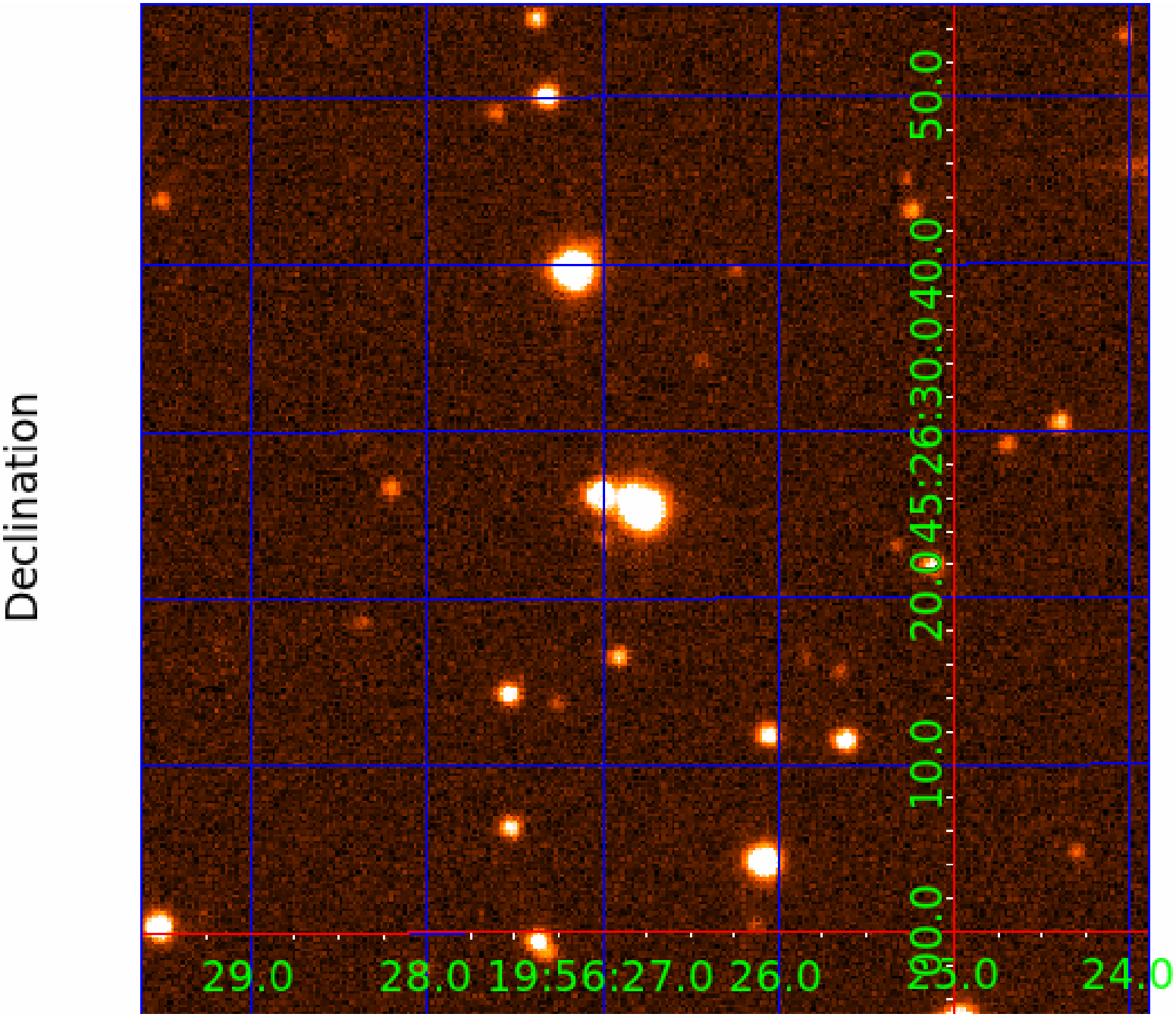


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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25.0
24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

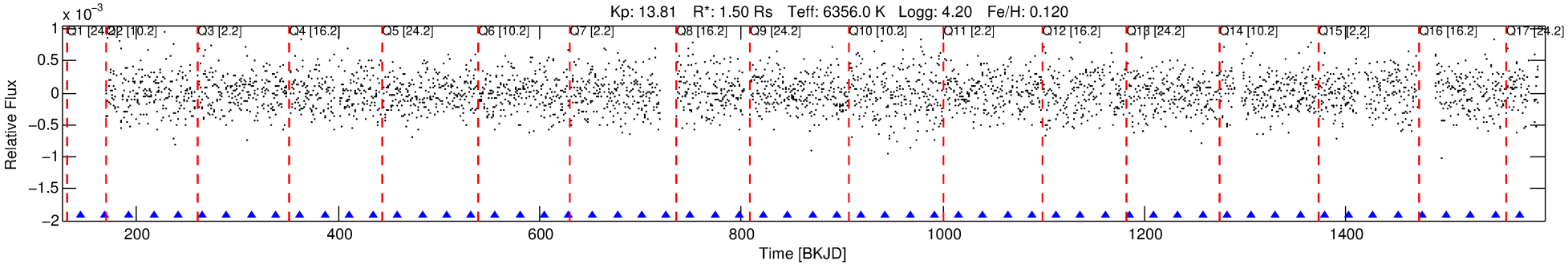
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

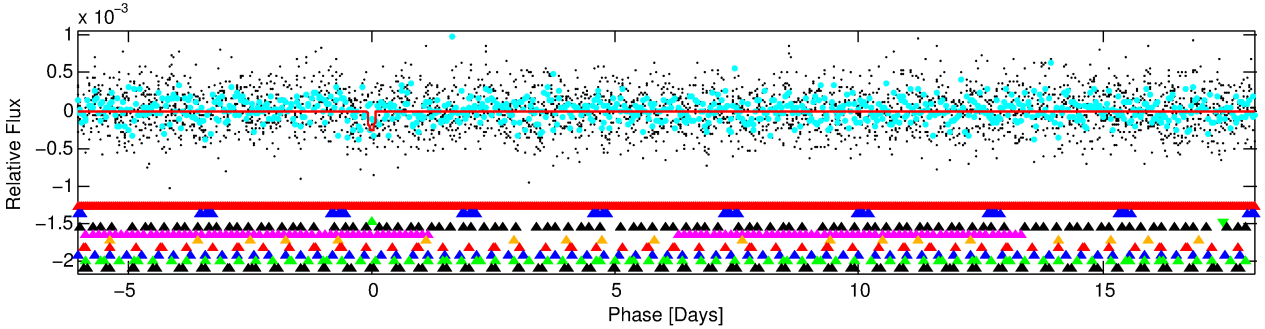
Ephemeris Match Information For 009113058-03

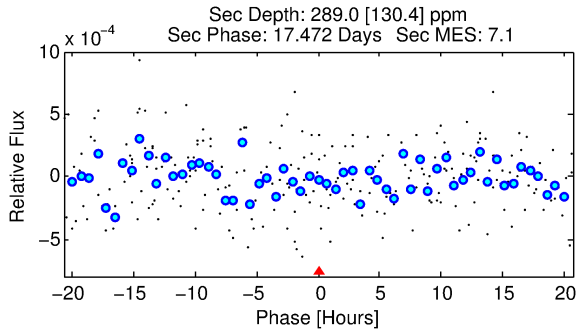
No Significant Match Found

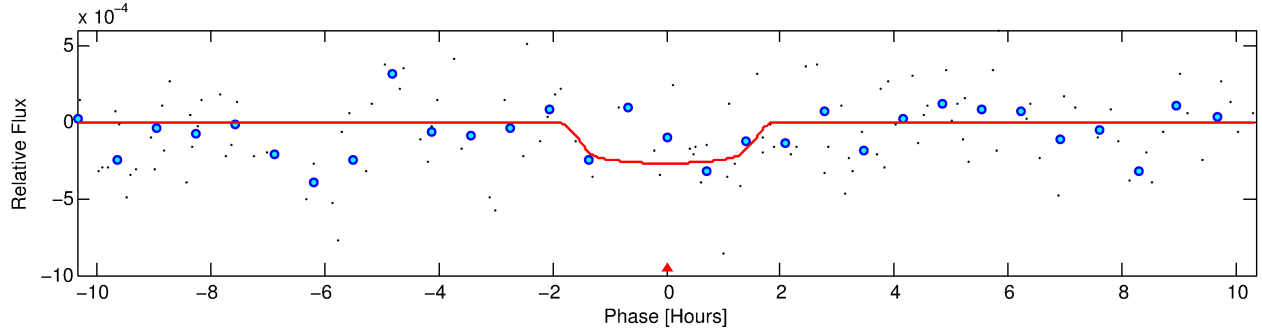
DV One-Page Summary

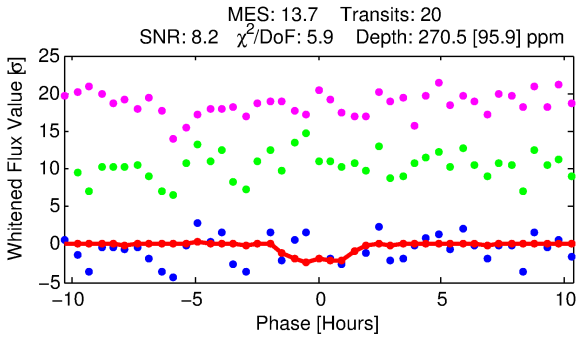
KIC: 9113058 Candidate: 3 of 10 Period: 24.198 d

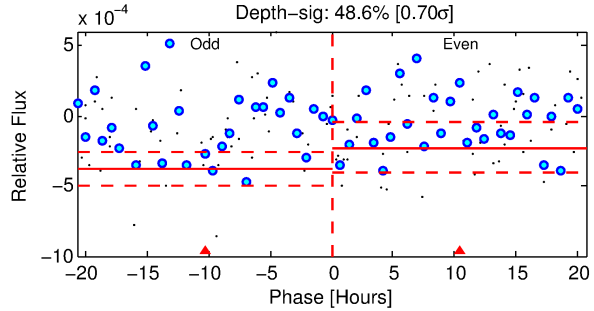


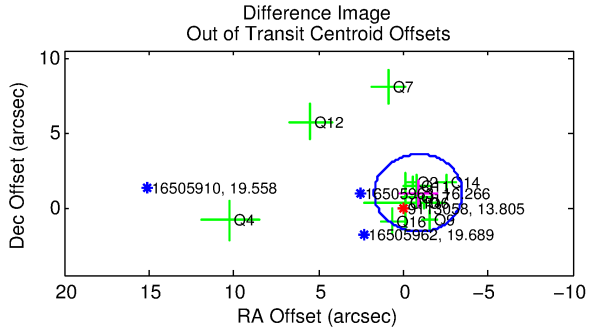












DV Fit Results:

Period = 24.19798 [0.00103] d
Epoch = 144.5776 [0.0351] BKJD
Rp/R* = 0.0177 [0.0240]
a/R* = 25.61 [185.87]
b = 0.90 [1.58]

Seff = 103.20 [41.71]
Teq = 813 [82] K
Rp = 2.88 [4.03] Re
a = 0.1780 [0.0473] AU

Ag = 605.85 [1686.49] [0.36σ]
Teffp = 6234 [4306] K [1.26σ]

DV Diagnostic Results:

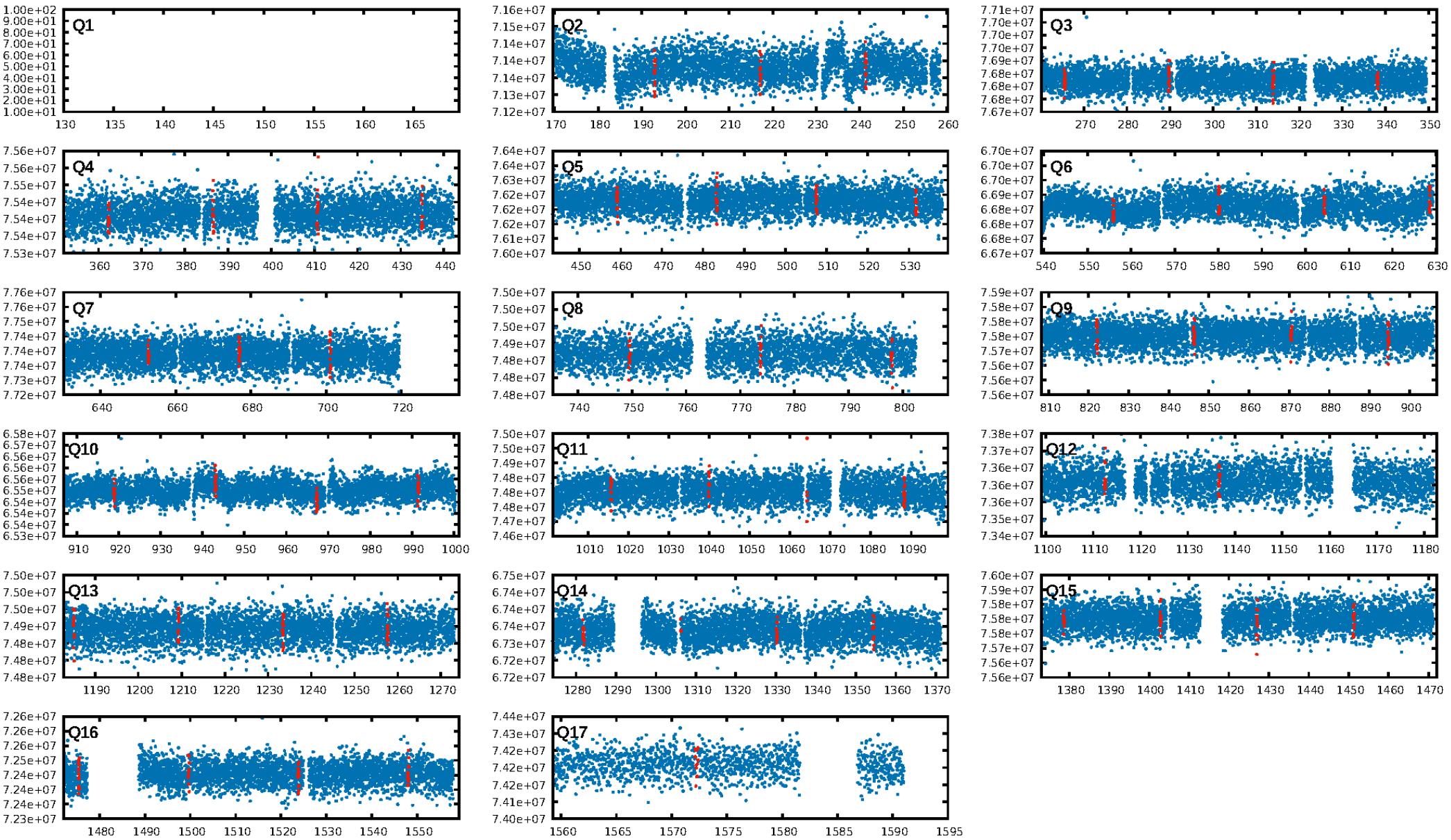
ShortPeriod−sig: 100.0% [18.38σ]
LongPeriod−sig: 100.0% [121.08σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [19/19]
GhostDiagnostic−chr: 0.179

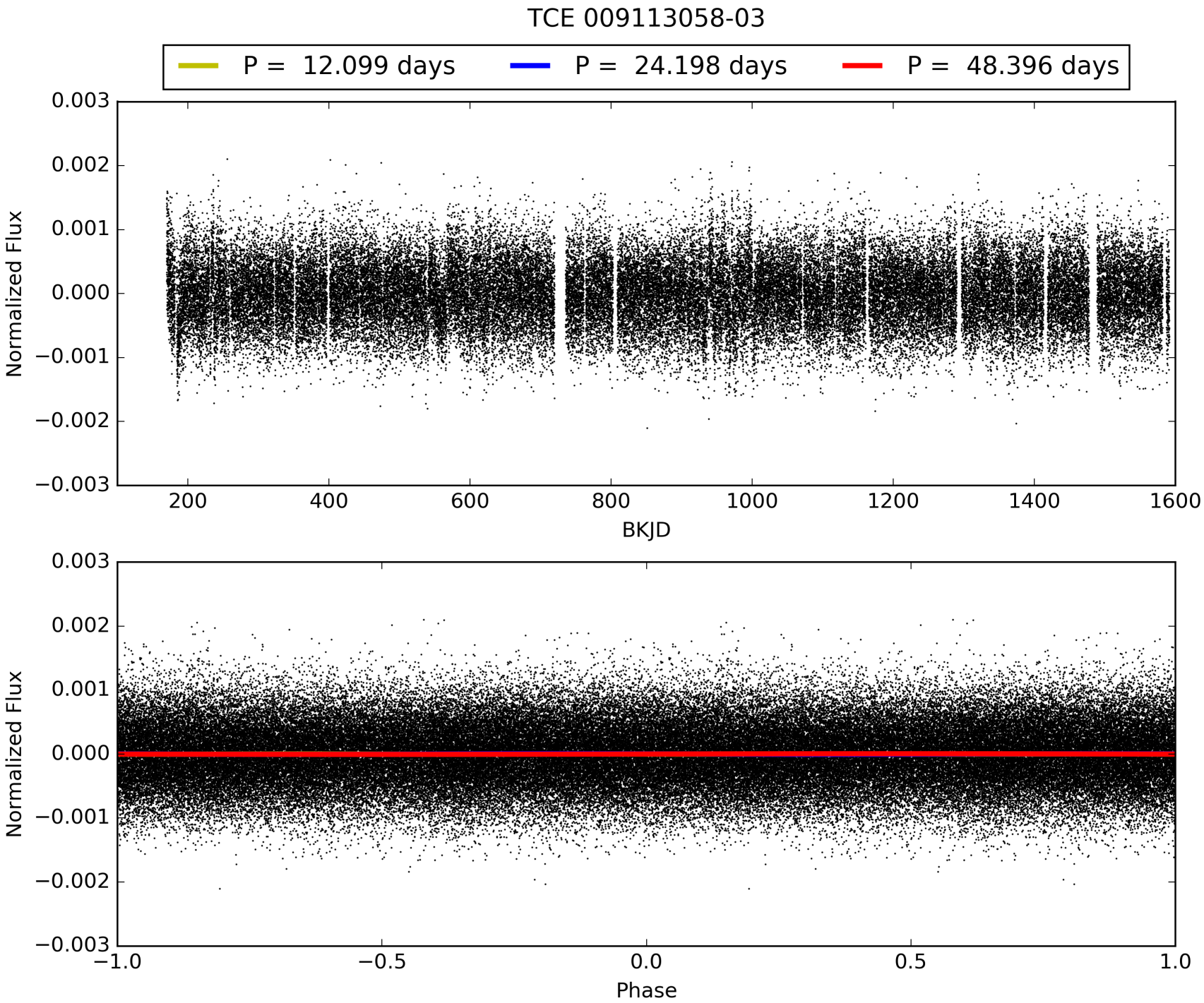
Centroid−sig: 2.5%
Centroid−so: 1.701 arcsec [2.87σ]
OotOffset−rm: 1.314 arcsec [1.52σ]
KicOffset−rm: 1.399 arcsec [1.46σ]
OotOffset−st: 4/2/3/2 [11]
KicOffset−st: 4/2/3/2 [11]
DiffImageQuality−fgm: 0.45 [5/11]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:36 Z

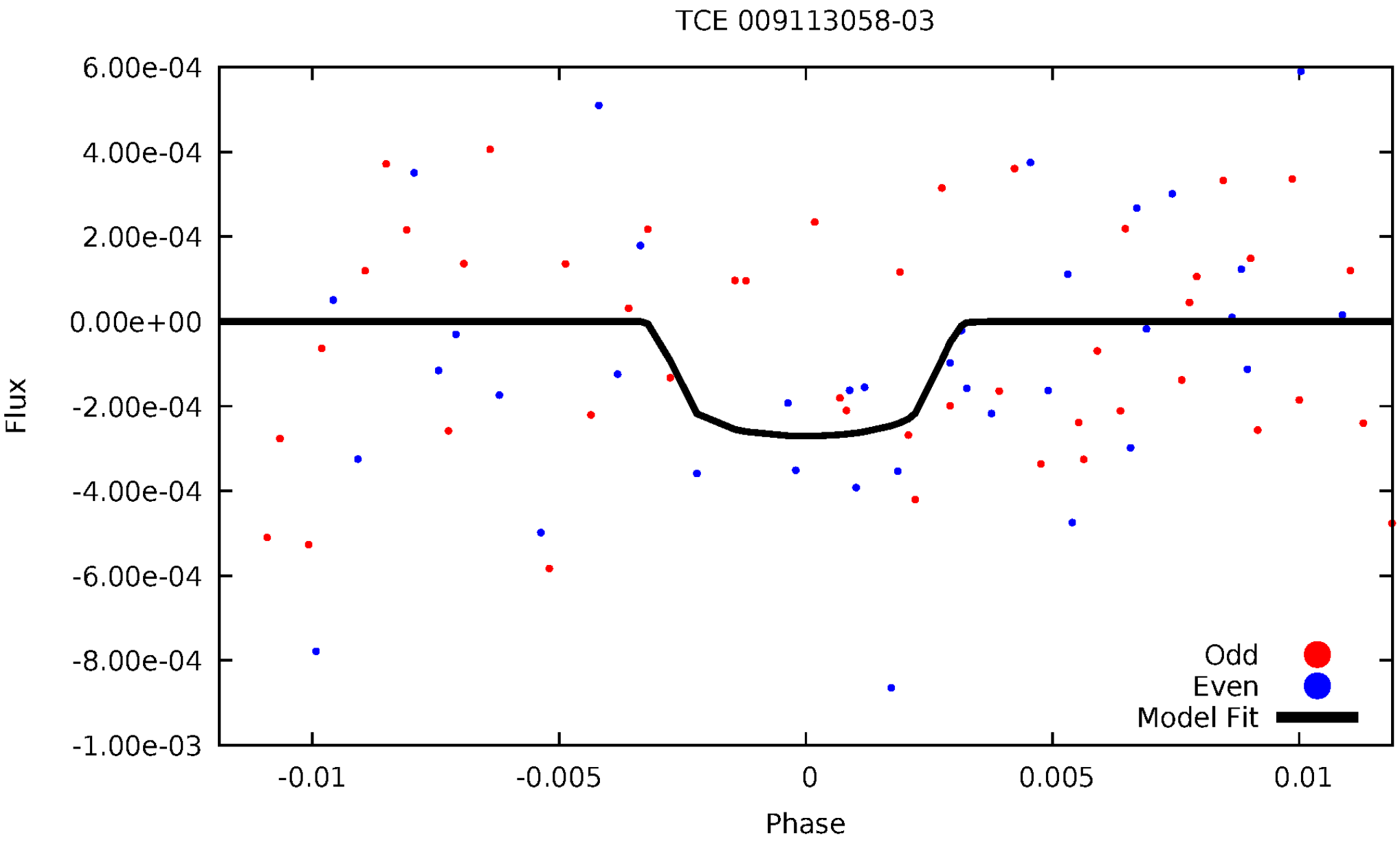
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-03, PDC Light Curves

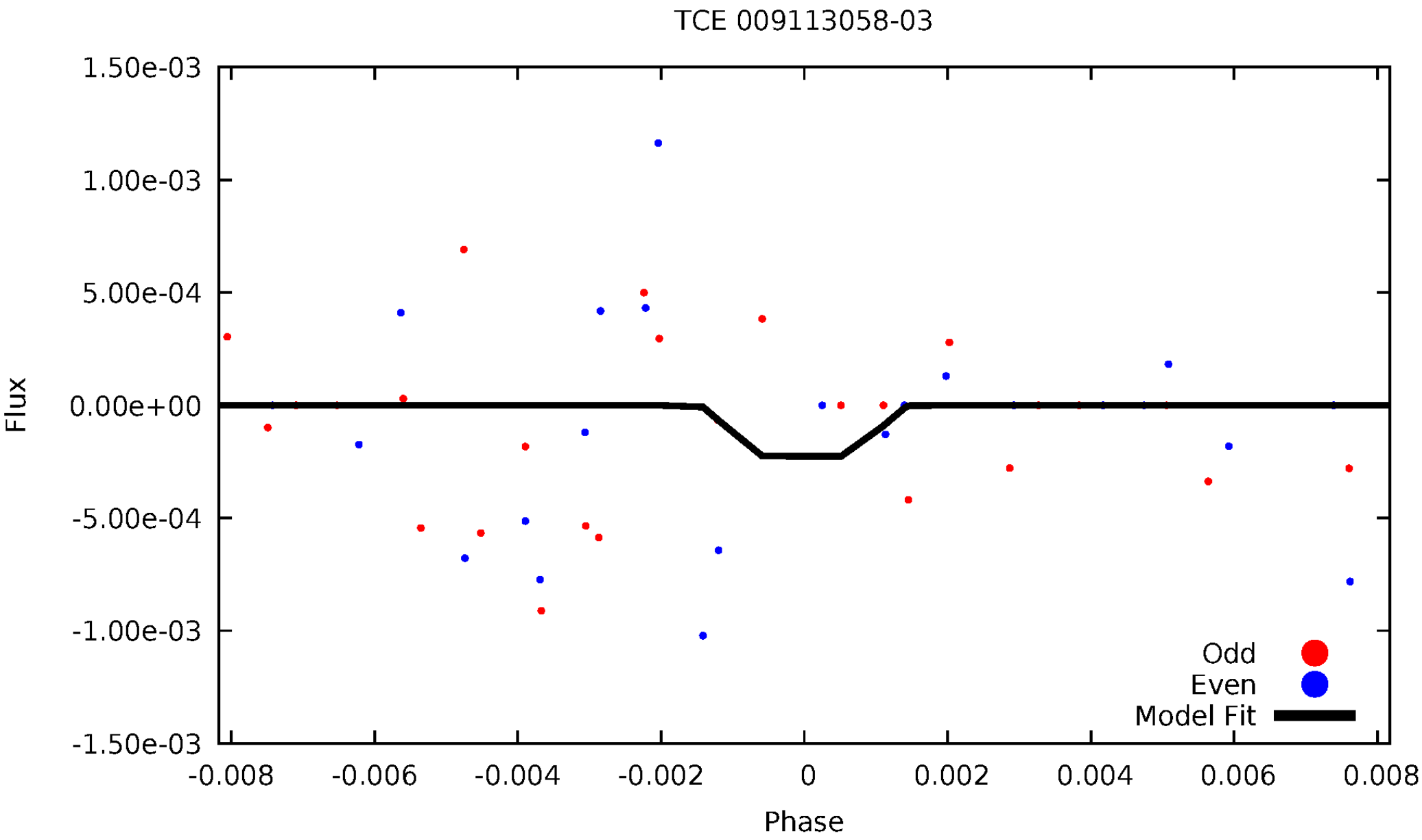



TCE 009113058-03
P = 12.099 days
P = 24.198 days
P = 48.396 days
Normalized Flux
BKJD
Normalized Flux
Phase

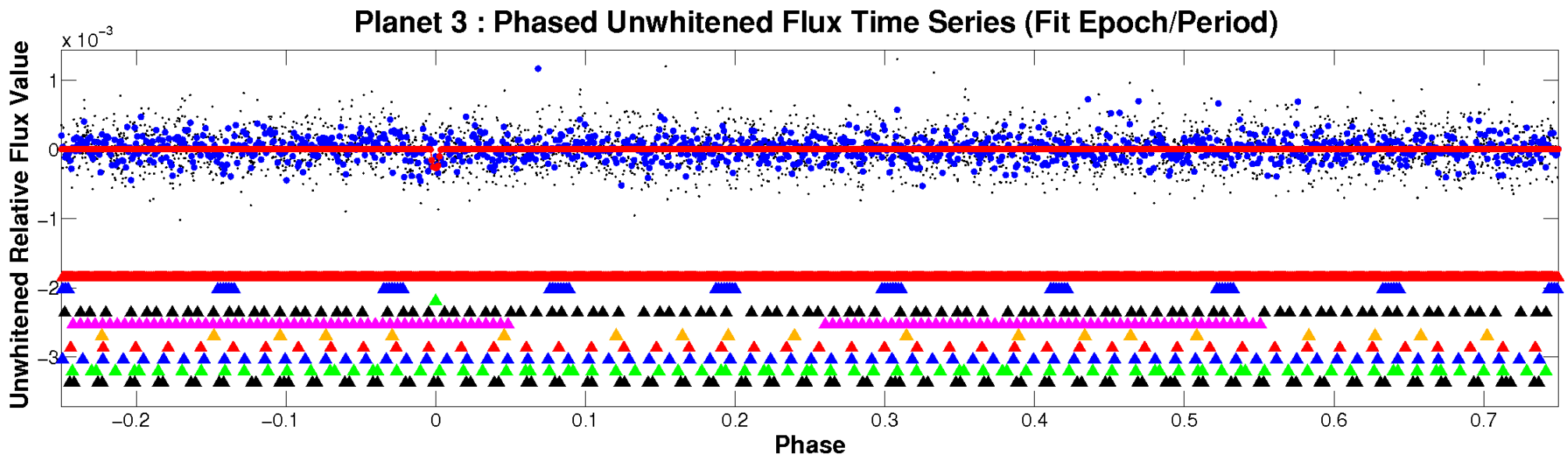
DV Odd/Even

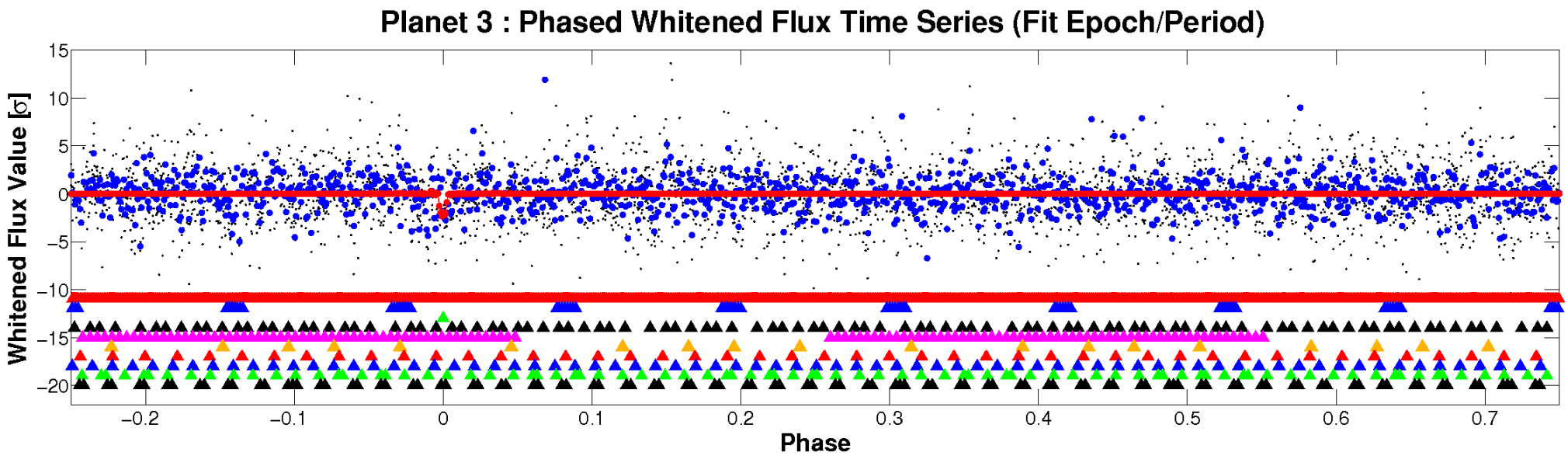

TCE 009113058-03
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
Flux
-0.01
-0.005
0
0.005
0.01
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009113058-03
1.50e-03
1.00e-03
5.00e-04
0.00e+00
-5.00e-04
-1.00e-03
-1.50e-03
Flux
-0.008
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
0.008
Phase
Odd
Even
Model Fit

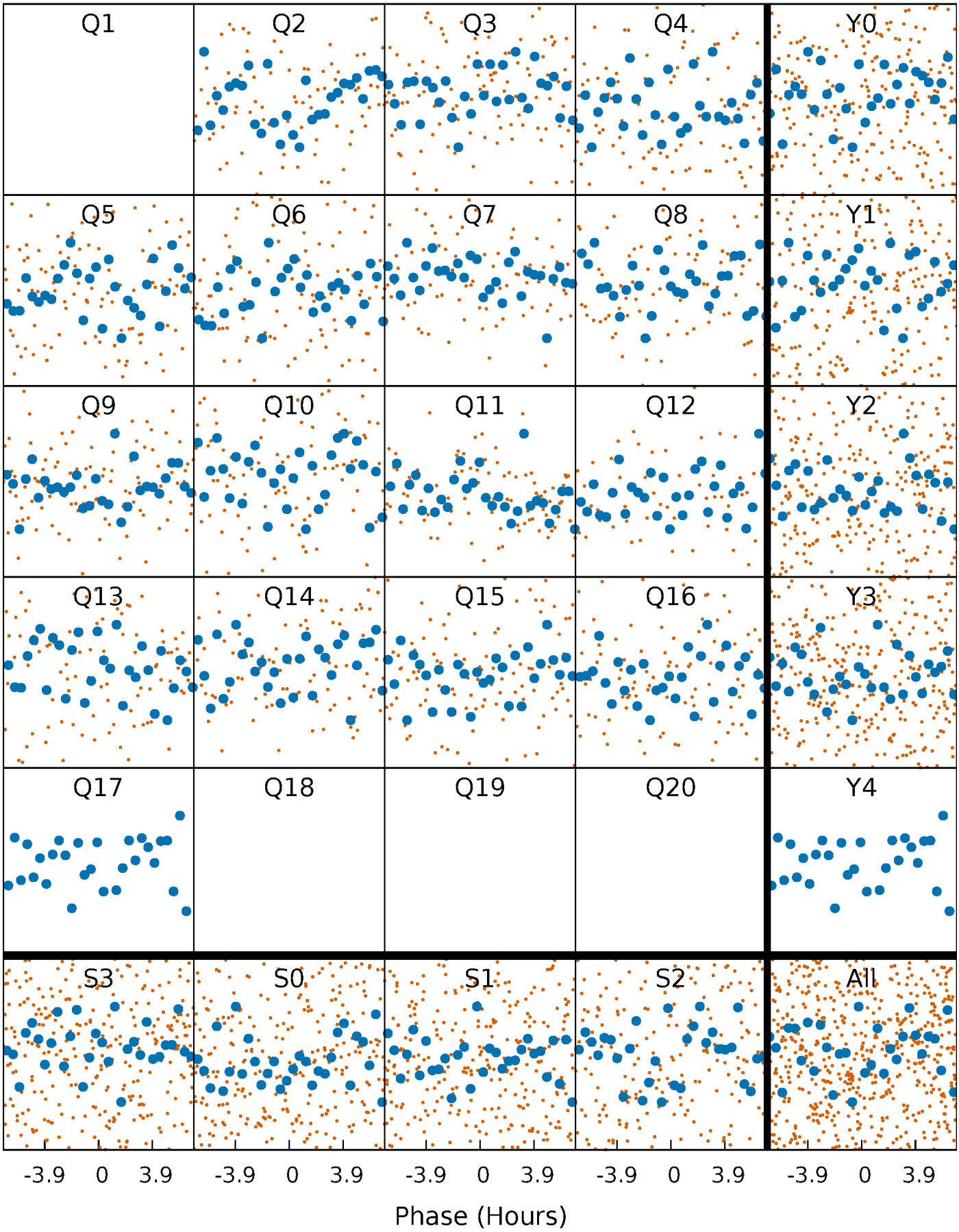
Non-Whitened Vs. Whitened Light Curve





PDC Quarter-Phased Transit Curves

TCE 009113058-03 P= 24.197977 Days T_0=144.577587 (BKJD)



DV Quarter-Phased Transit Curves

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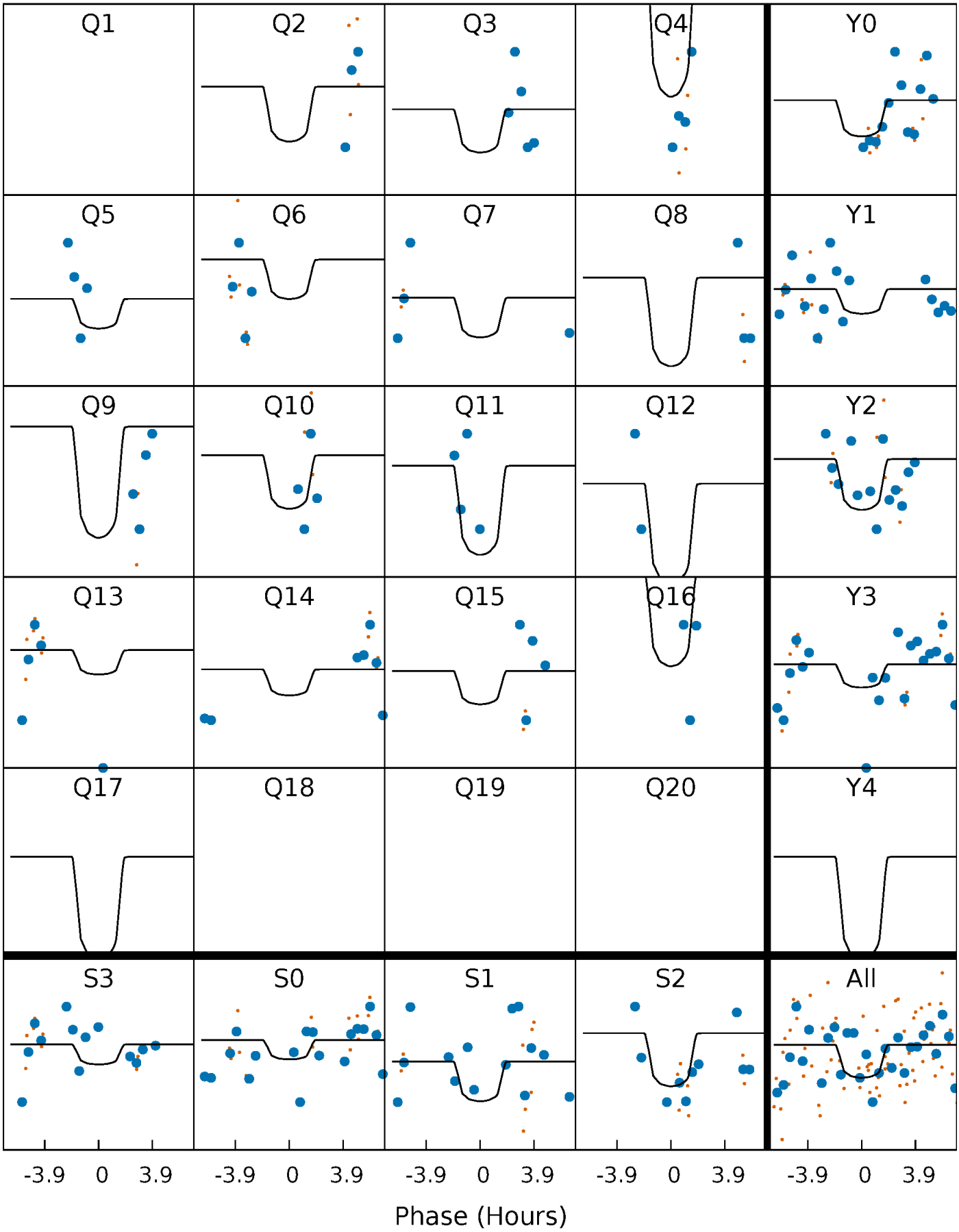
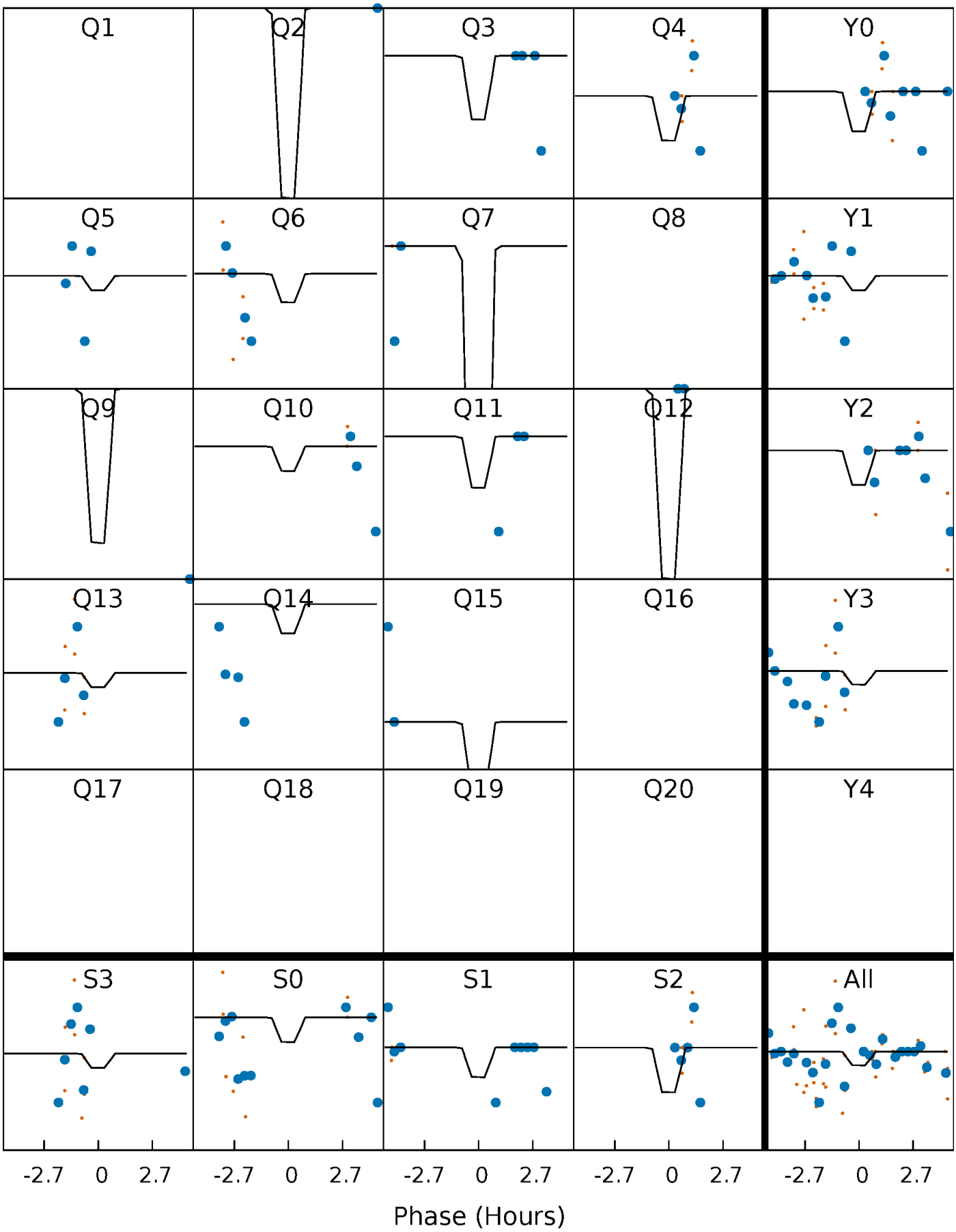


Alt. Detrend Quarter-Phased Transit Curves

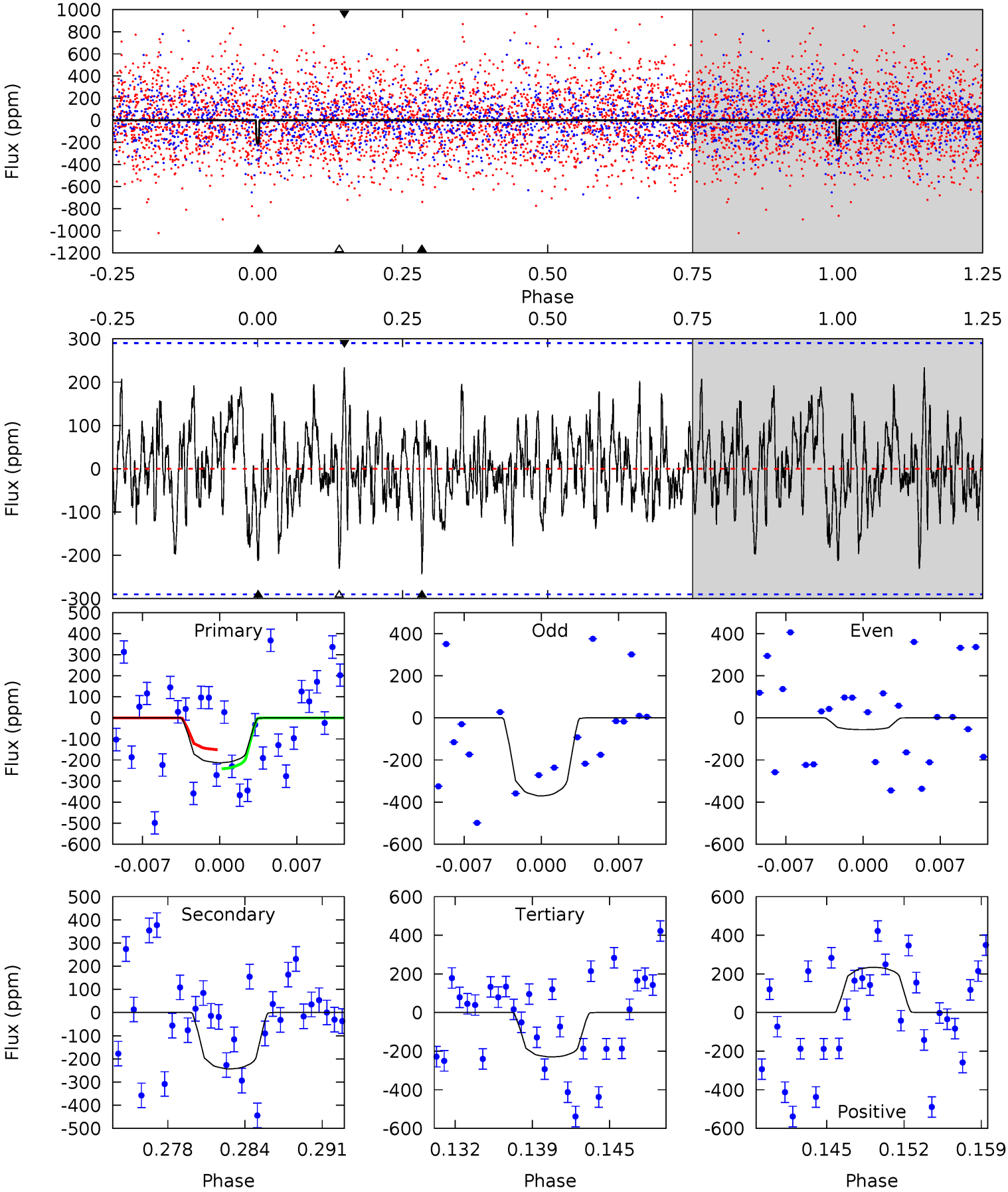
TCE 009113058-03 P= 24.193864 Days T_0=144.615931 (BKJD)



DV Model-Shift Uniqueness Test

009113058-03, P = 24.197977 Days, E = 144.577587 Days

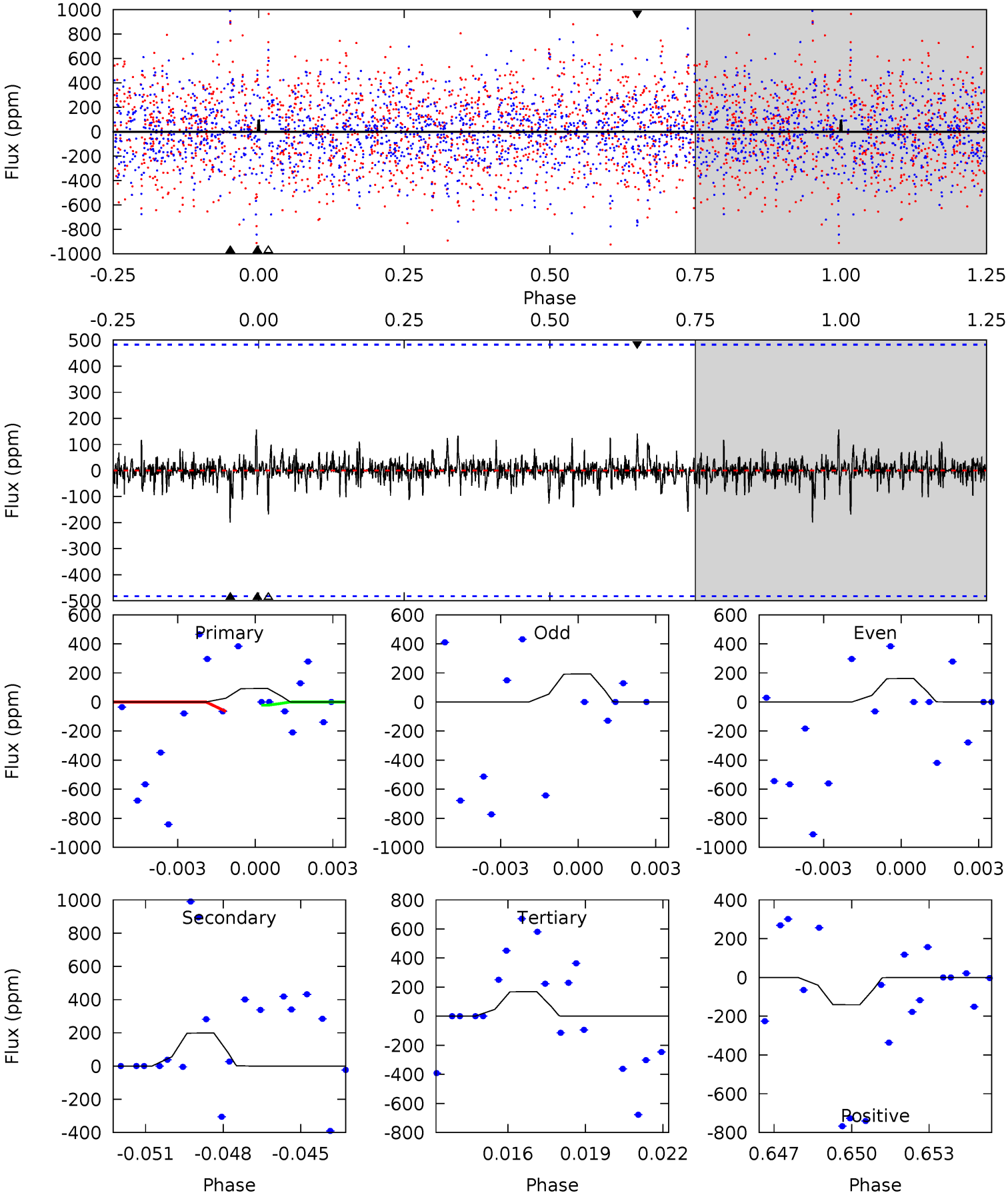
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.74	4.28	4.05	4.12	5.11	2.72	1.31	-0.30	-0.38	0.23	0.16	2.74	0.70	0.49	0.75



Alt Model-Shift Uniqueness Test

009113058-03, P = 24.193864 Days, E = 144.615931 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.01	2.17	1.84	1.53	5.24	2.95	0.35	-0.83	-0.53	0.33	0.63	0.17	0	0.44	0



Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-03 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-243±57	$4.04^{+3.76}_{-2.72}$	1140^{+91}_{-79}	5137^{+3662}_{-1196}	258^{+1803}_{-193}
Alt.	-199±92	$3.94^{+3.54}_{-2.62}$	1133^{+98}_{-83}	4885^{+3578}_{-1144}	205^{+1690}_{-154}

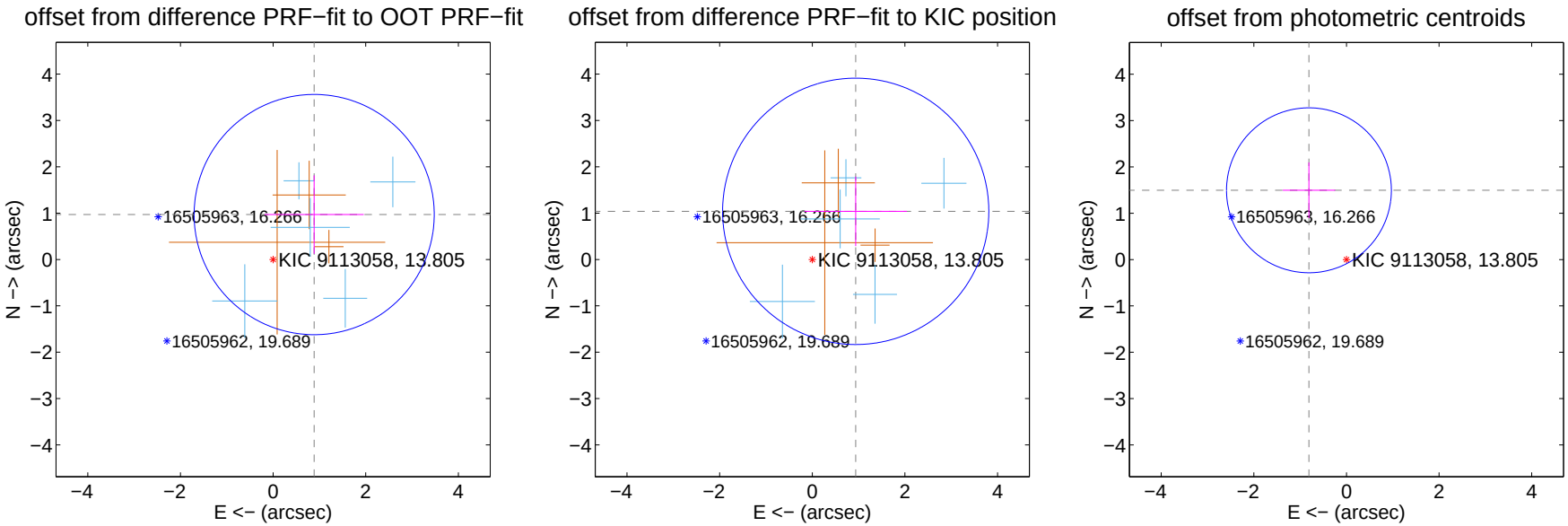
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

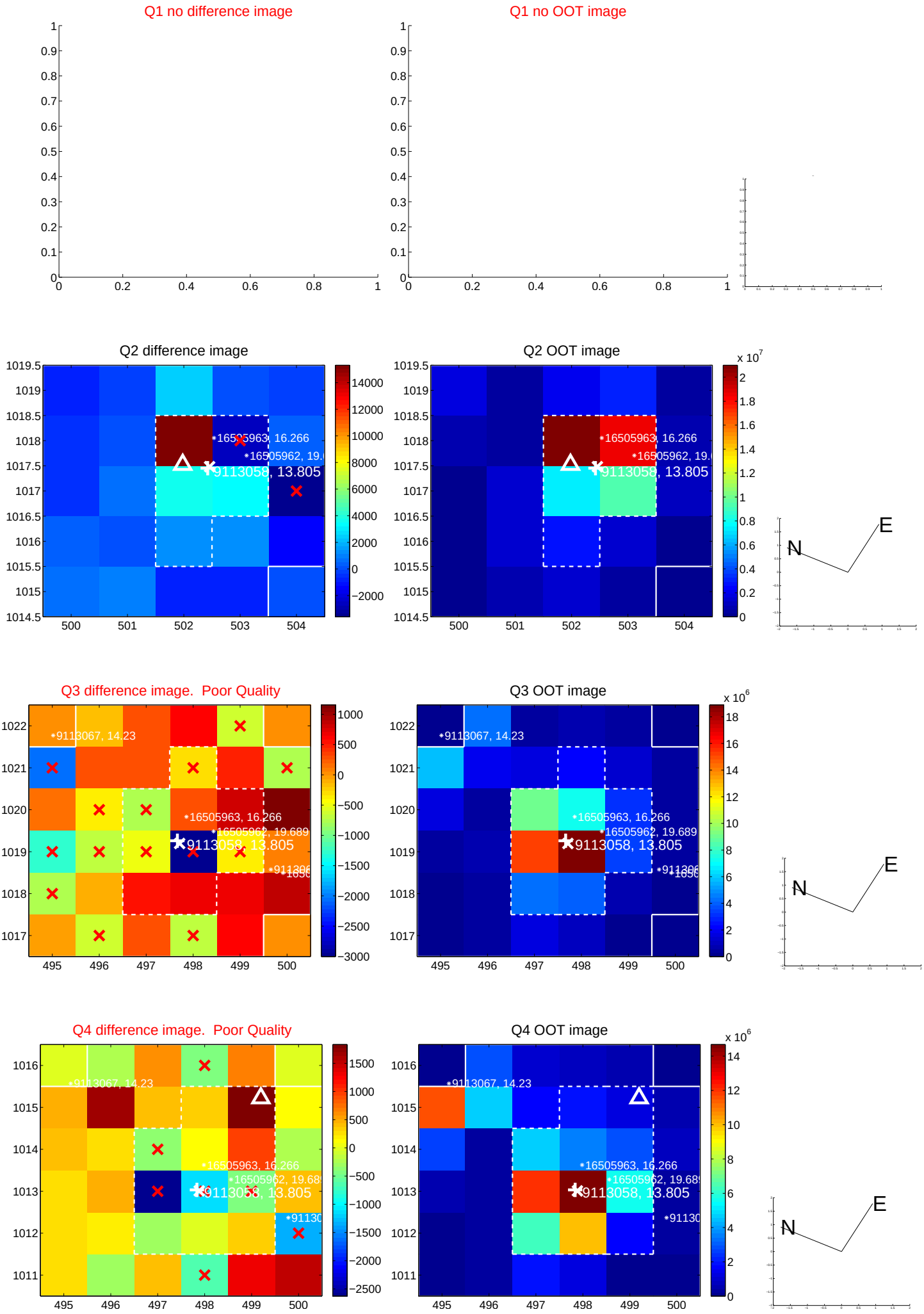
Supplemental centroid analysis for 009113058-03. Kepler magnitude: 13.80. Transit SNR 8.20
There are 5 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.314 ± 0.864	1.52	-0.887 ± 1.071	0.969 ± 0.847
PRF-fit source offset from KIC position	1.399 ± 0.958	1.46	-0.937 ± 1.106	1.039 ± 0.749
photometric centroid source offset	1.70 ± 0.59	2.87	0.81 ± 0.57	1.50 ± 0.60

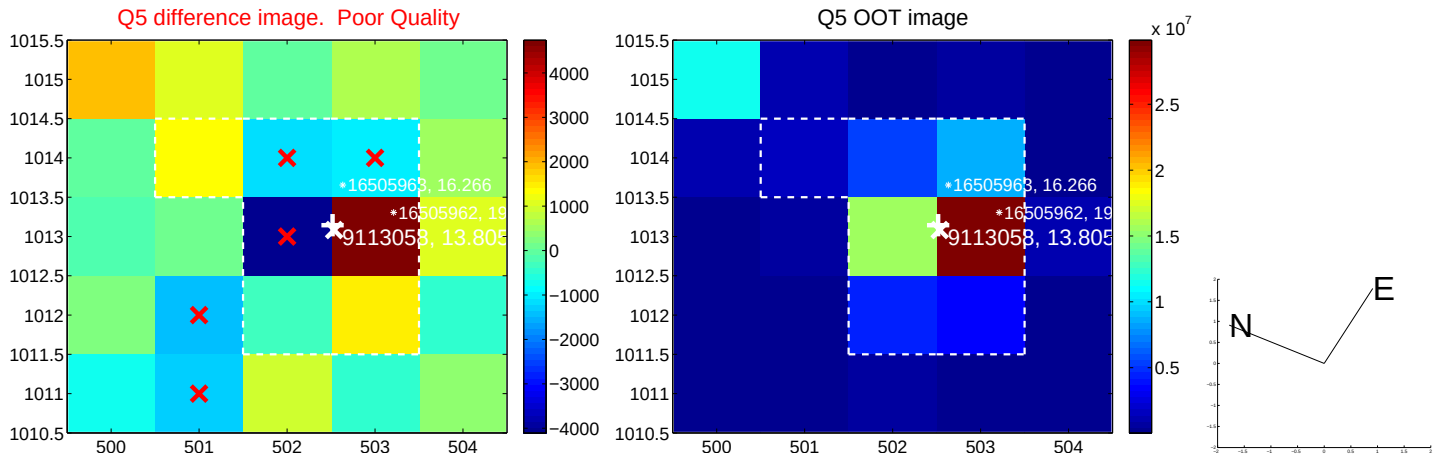


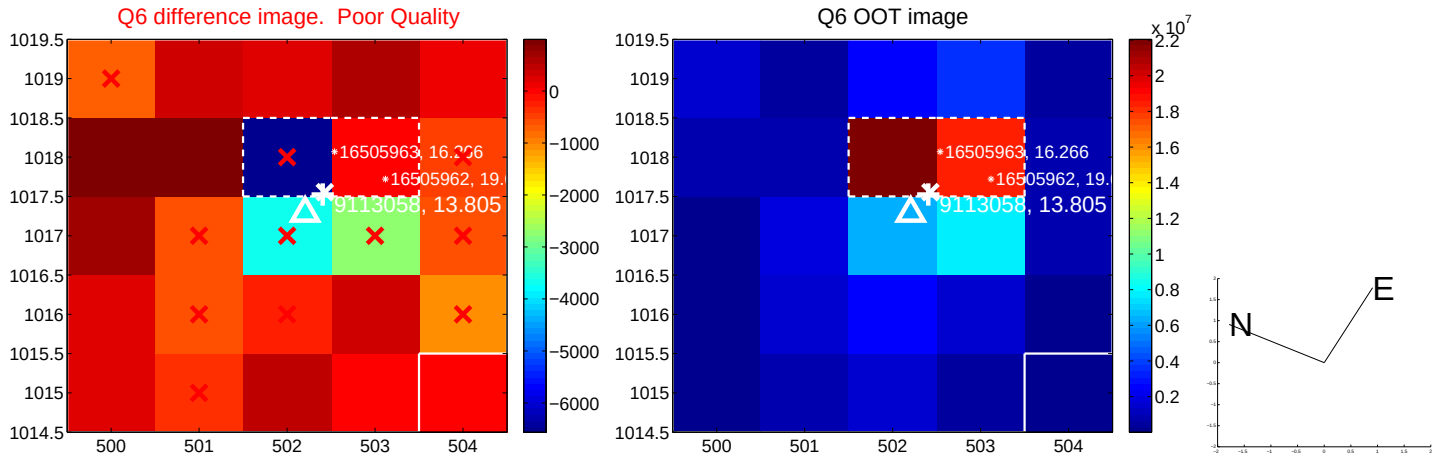
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

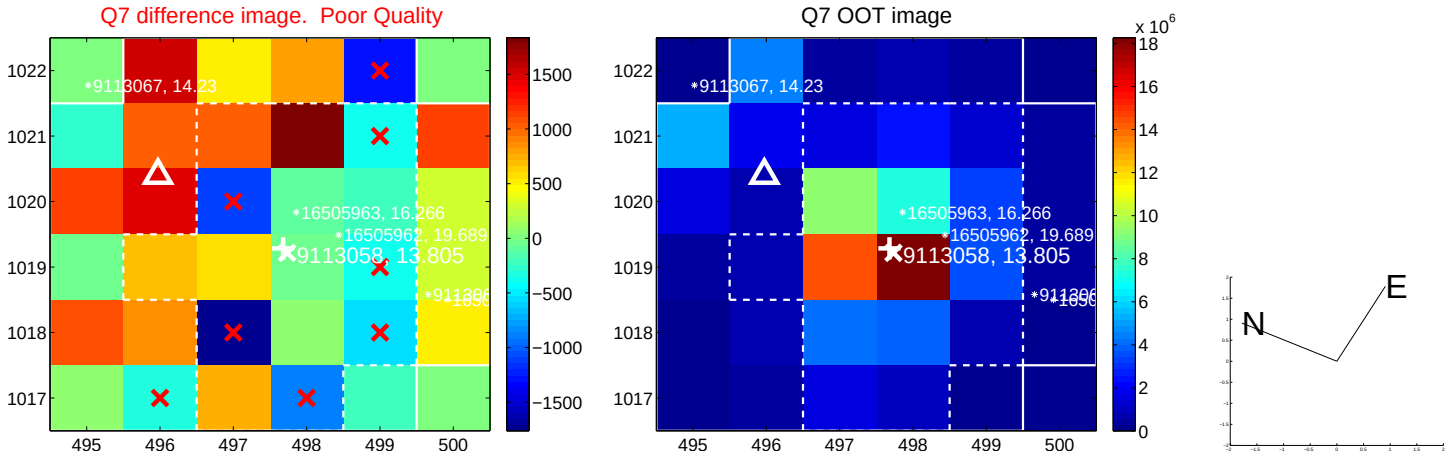
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

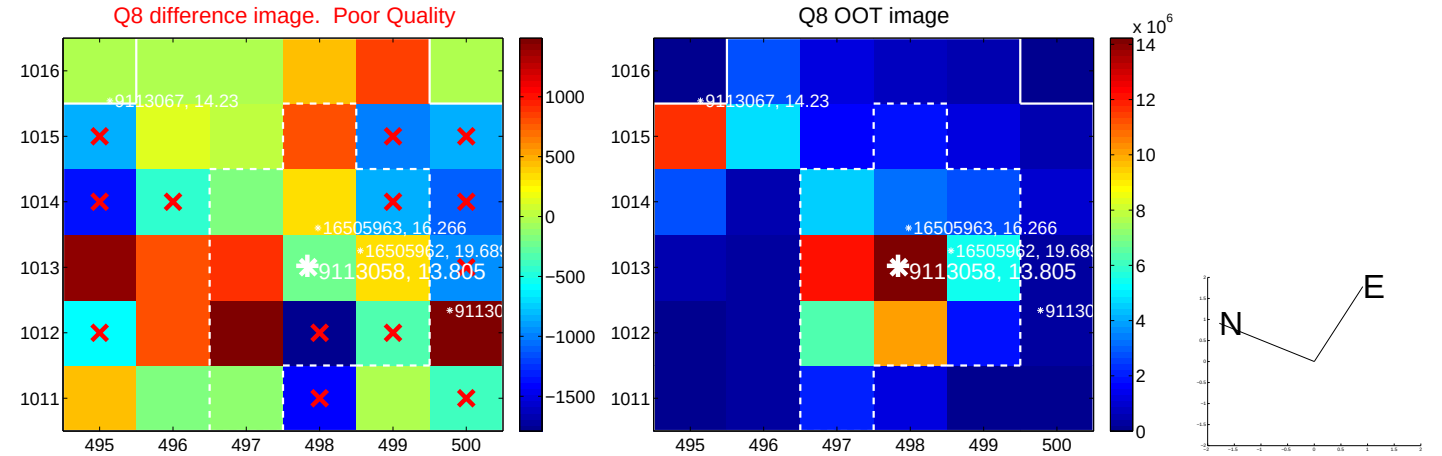


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

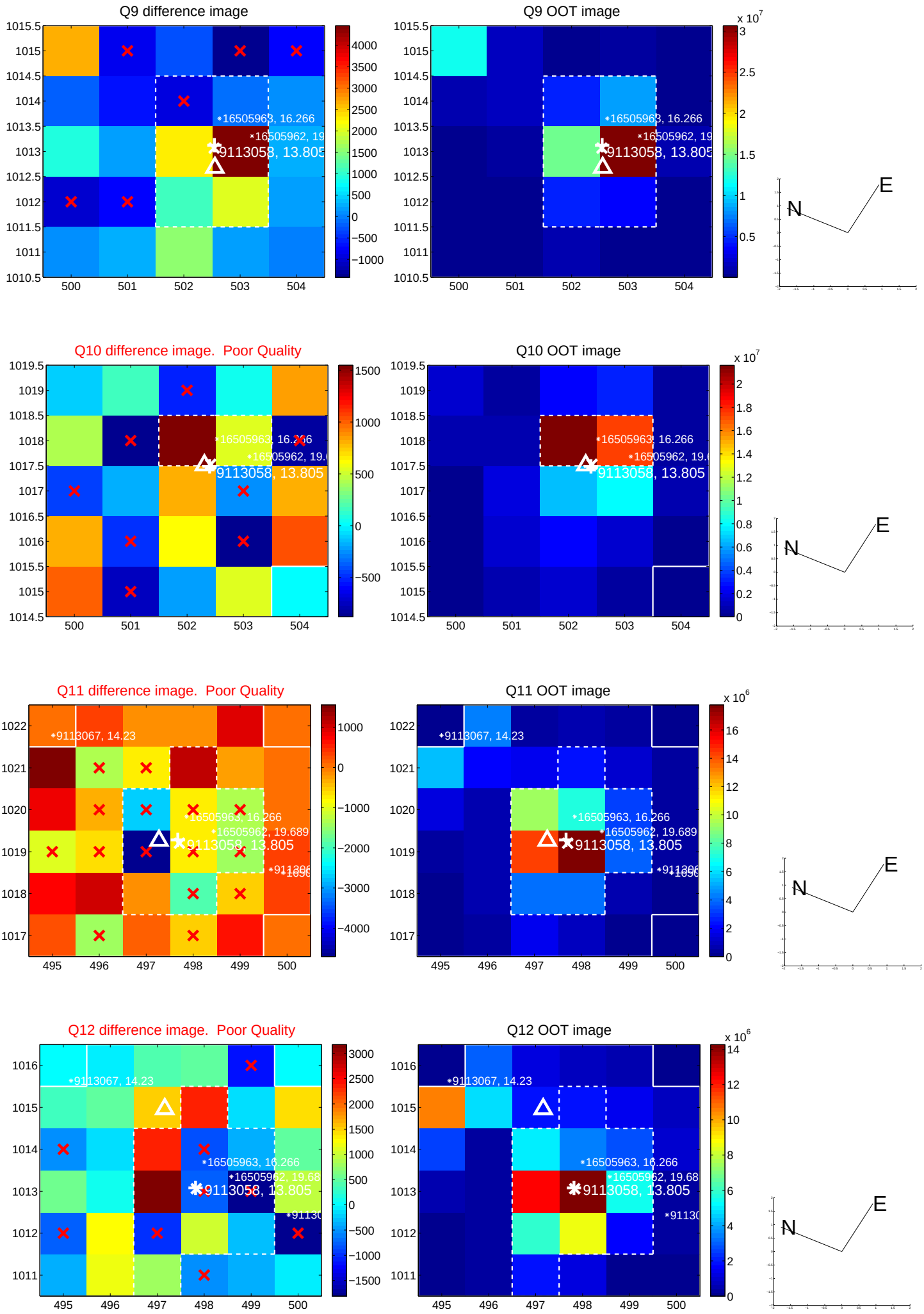




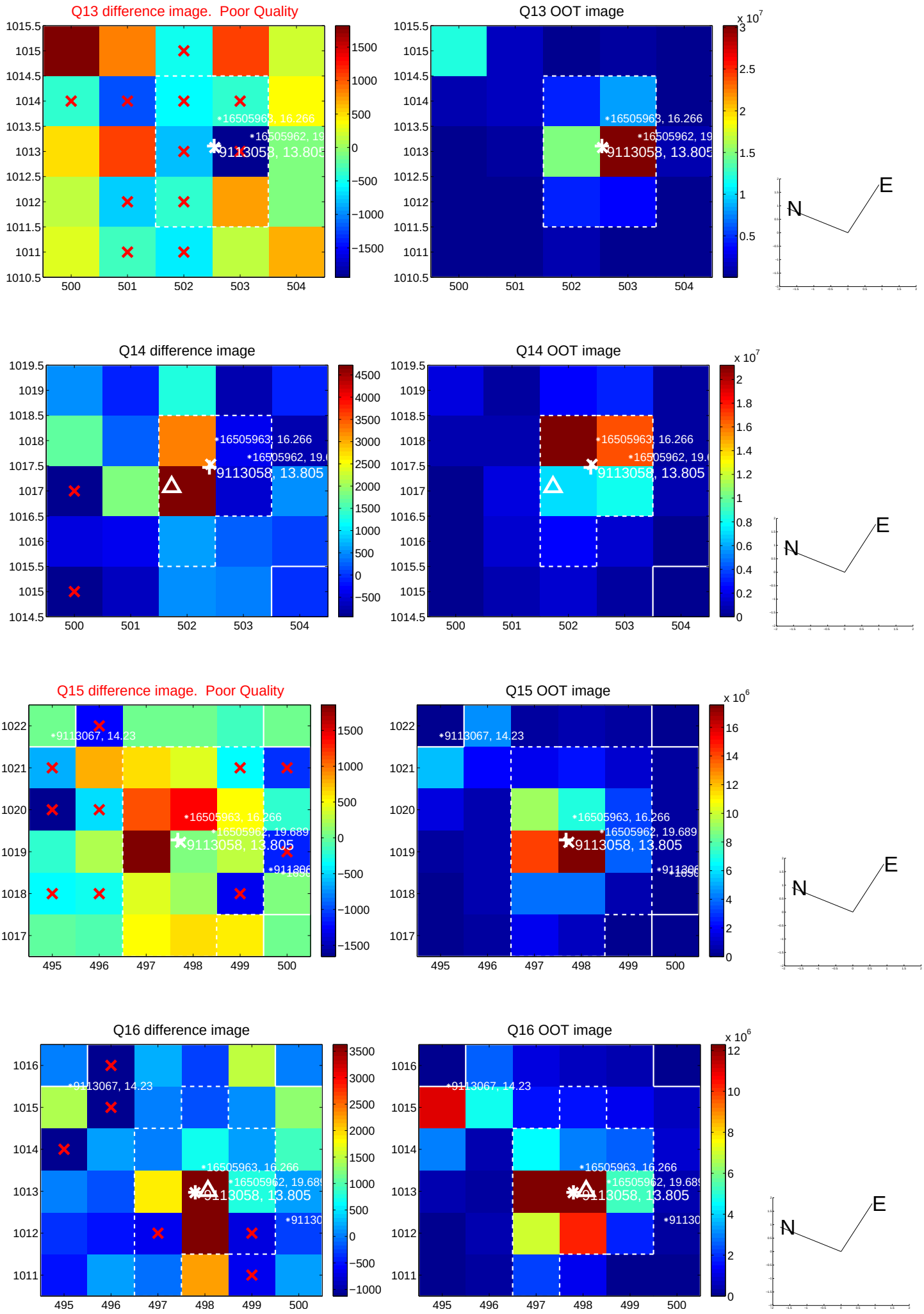




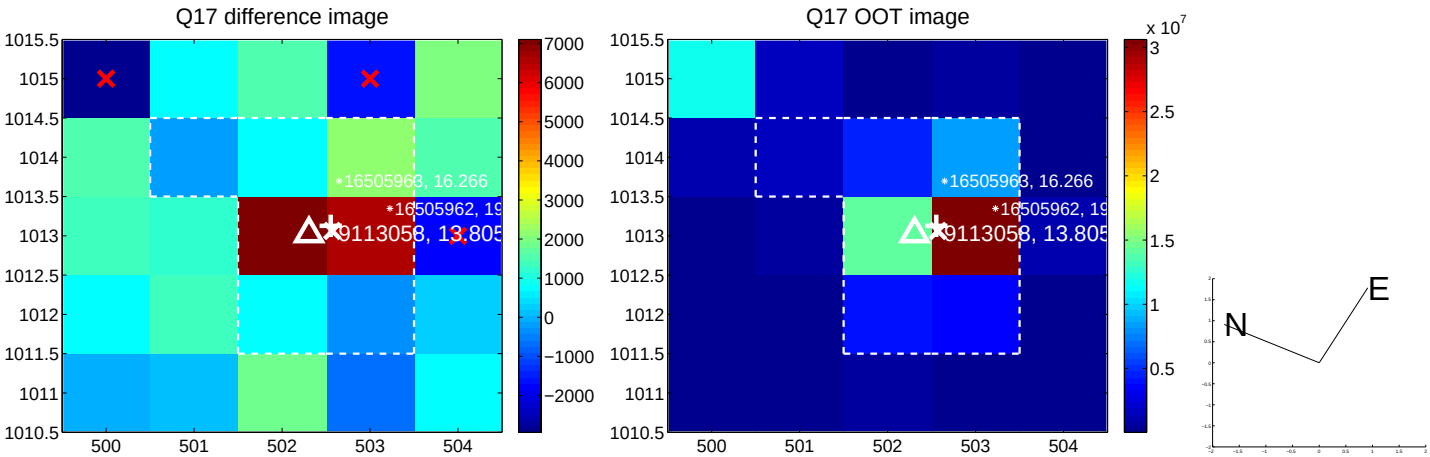
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

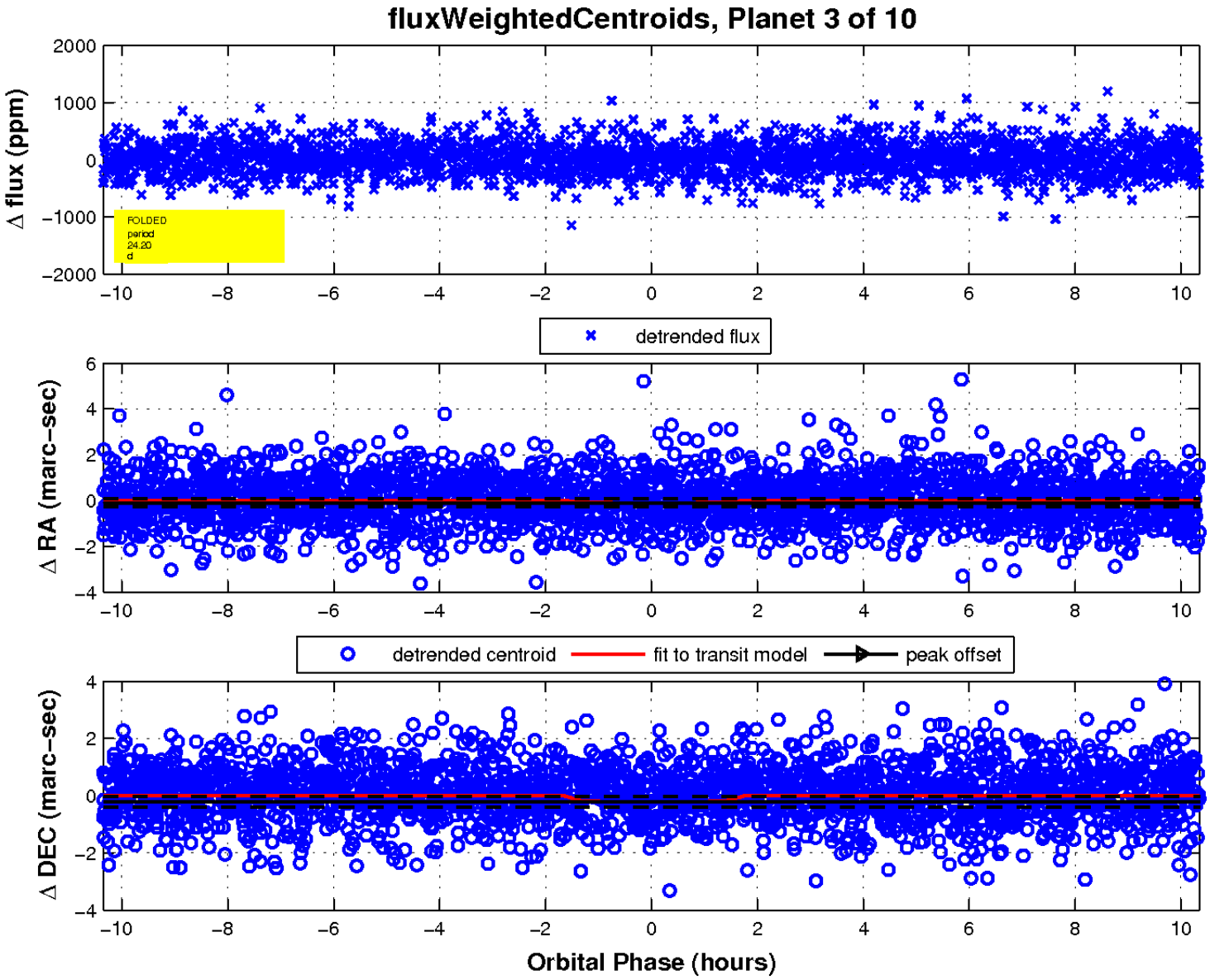


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

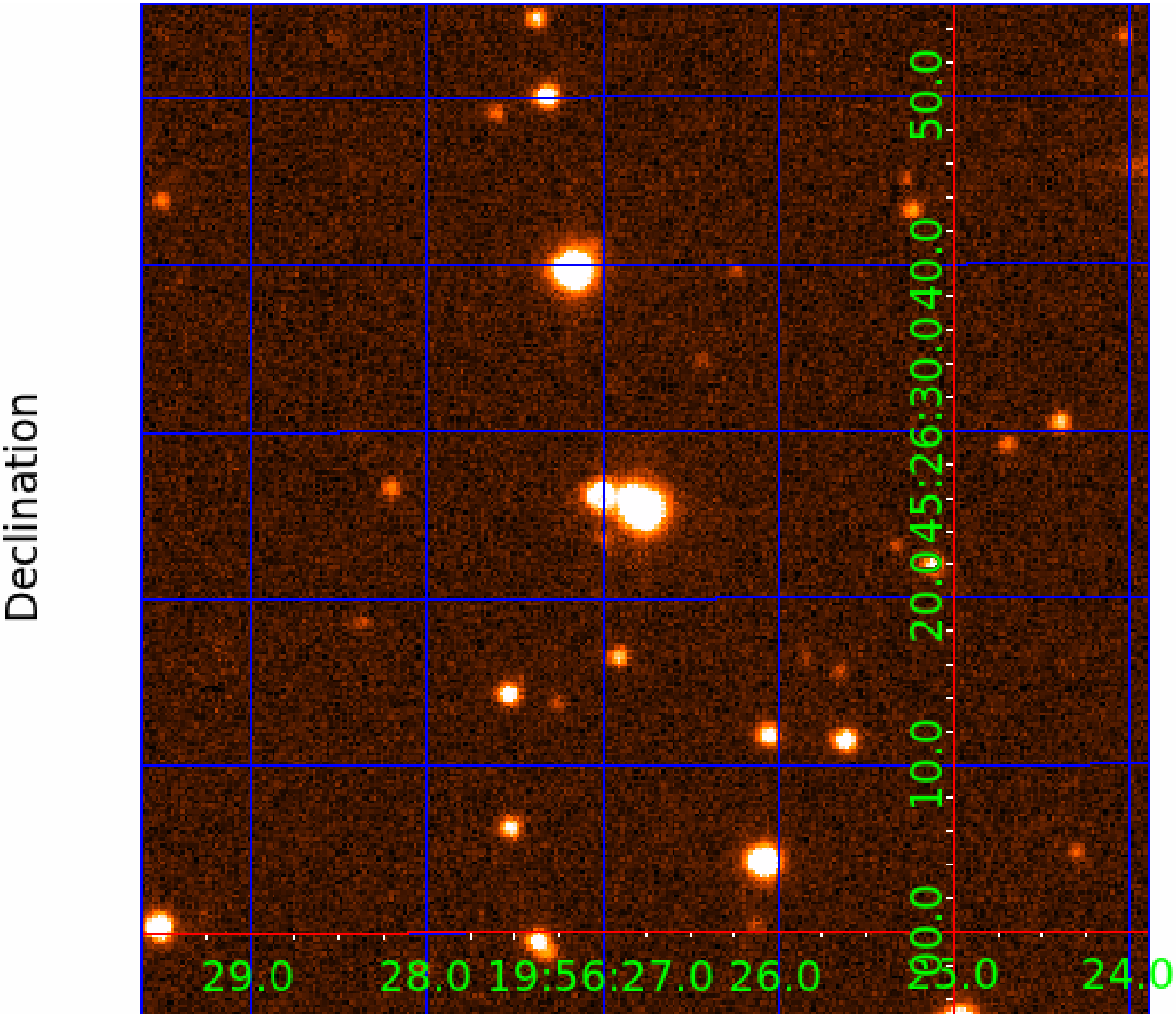


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

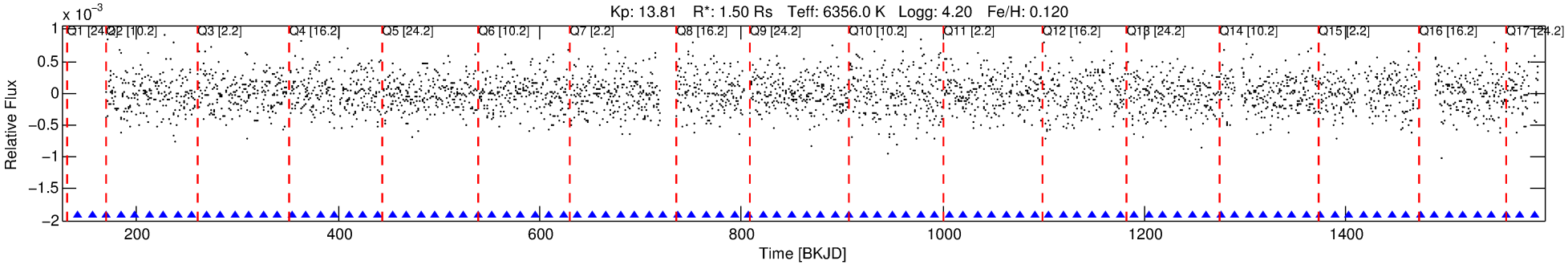
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

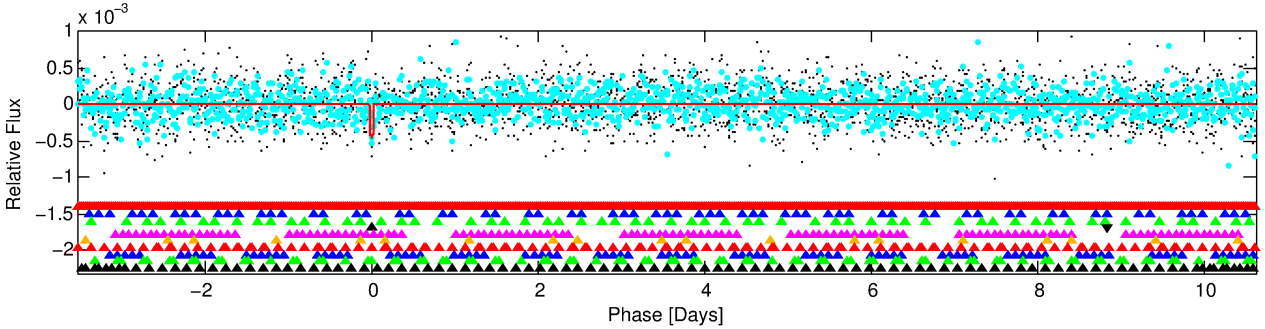
Ephemeris Match Information For 009113058-04

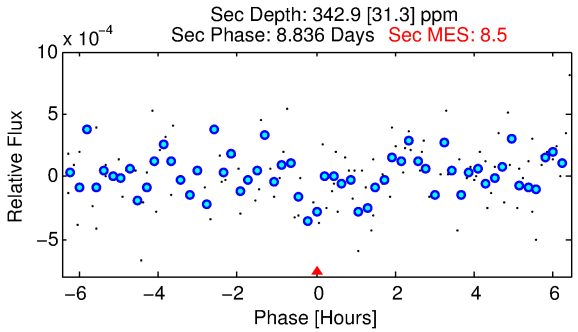
No Significant Match Found

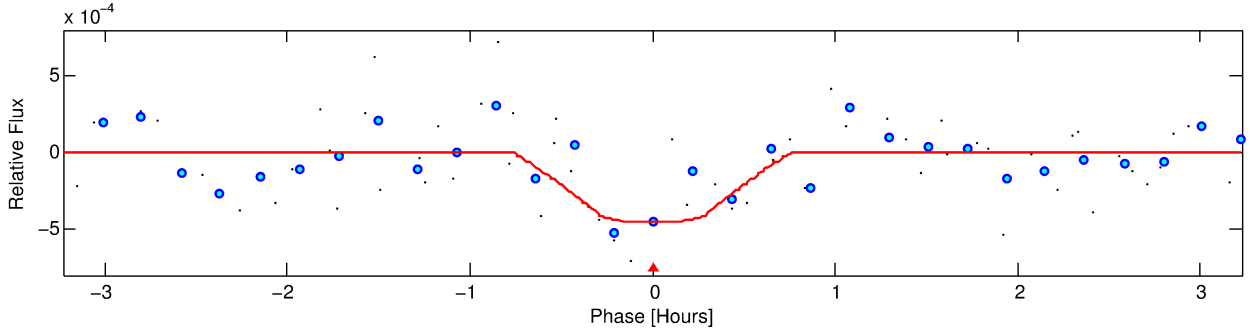
DV One-Page Summary

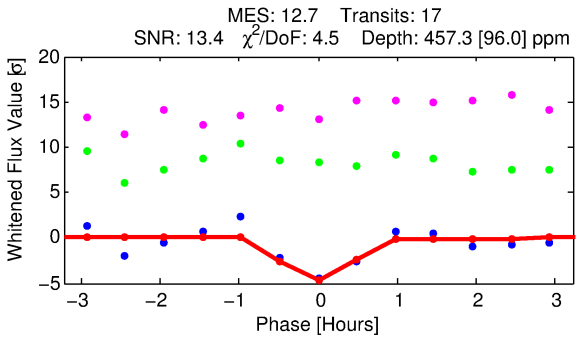
KIC: 9113058 Candidate: 4 of 10 Period: 14.171 d

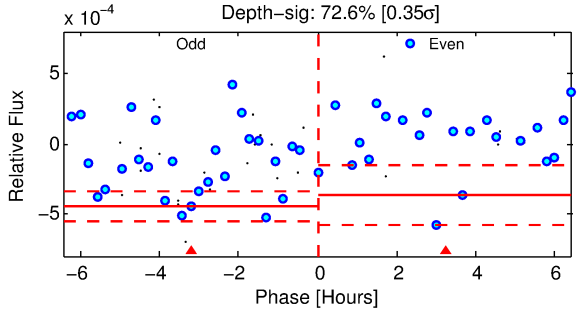


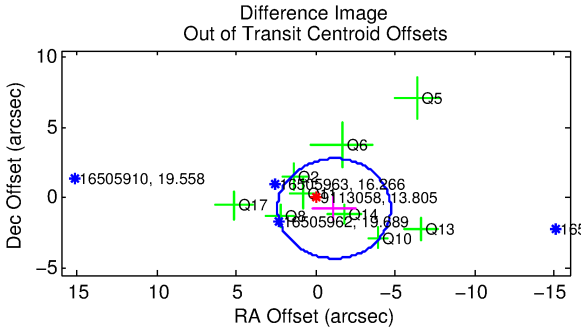












DV Fit Results:

Period = 14.17094 [0.00012] d
Epoch = 141.8034 [0.0054] BKJD
Rp/R* = 0.0198 [0.0285]
a/R* = 100.66 [721.01]
b = 0.19 [35.56]

Seff = 210.63 [85.12]
Teq = 971 [98] K
Rp = 3.23 [4.77] Re
a = 0.1246 [0.0331] AU

Ag = 279.72 [810.82] [0.34σ]
Teffp = 6142 [4420] K [1.17σ]

DV Diagnostic Results:

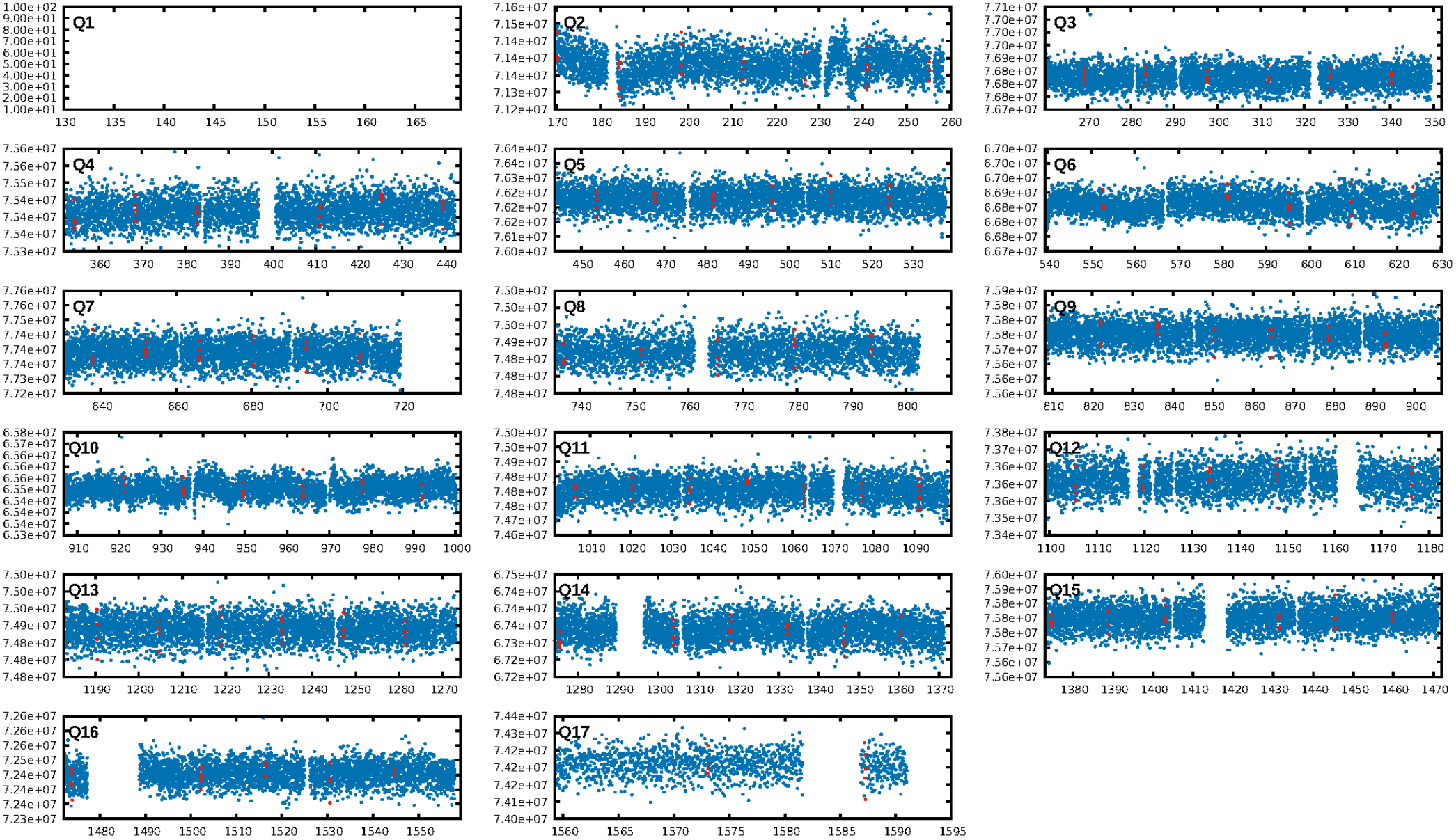
ShortPeriod−sig: 100.0% [27.17σ]
LongPeriod−sig: 85.3% [1.45σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 37.8%
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [17/17]
GhostDiagnostic−chr: −13.58

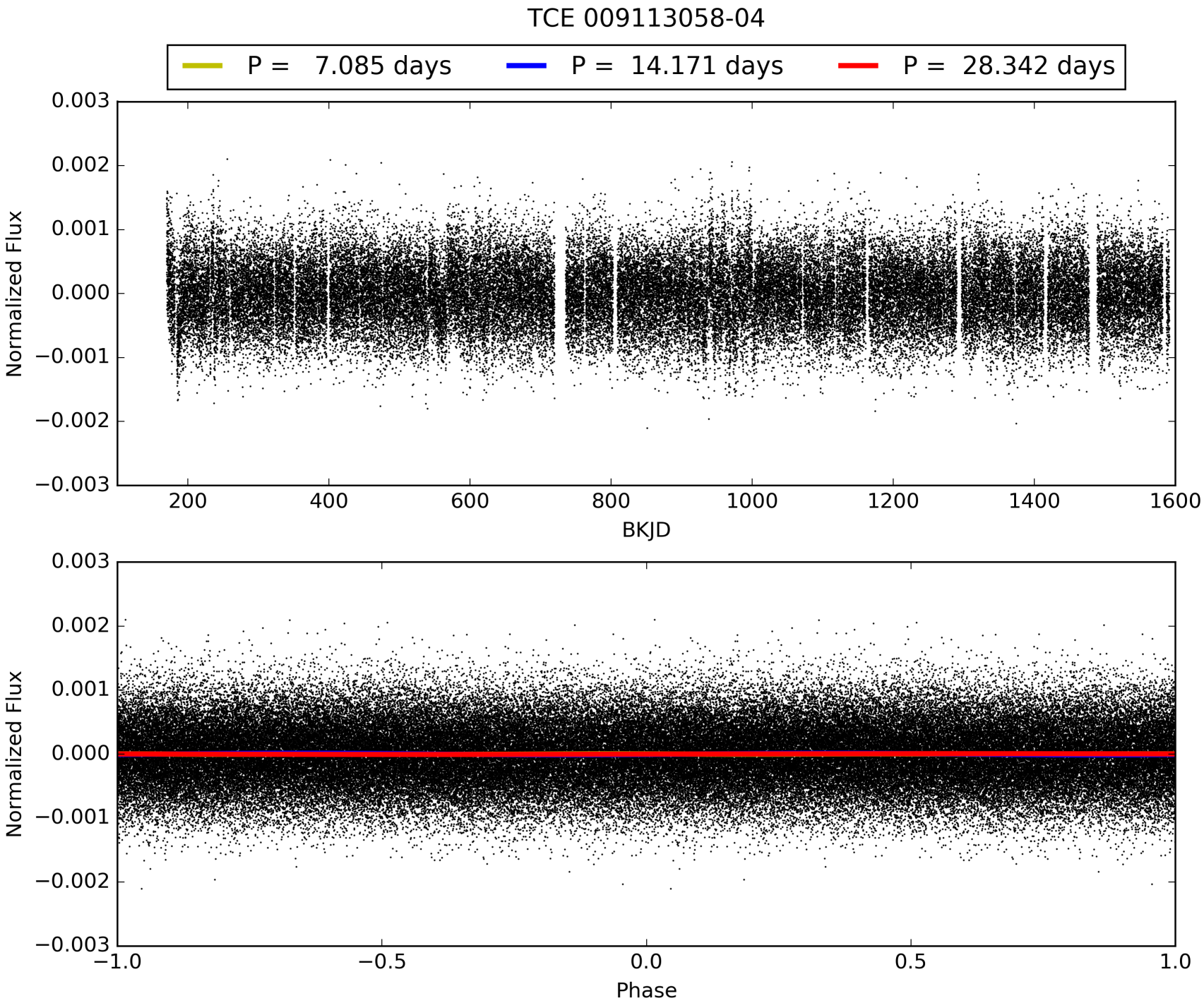
Centroid−sig: 4.5%
Centroid−so: 0.719 arcsec [1.54σ]
OotOffset−rm: 1.401 arcsec [1.18σ]
KicOffset−rm: 1.362 arcsec [1.11σ]
OotOffset−st: 4/1/1/3 [9]
KicOffset−st: 4/1/1/3 [9]
DiffImageQuality−fgm: 0.22 [2/9]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:40 Z

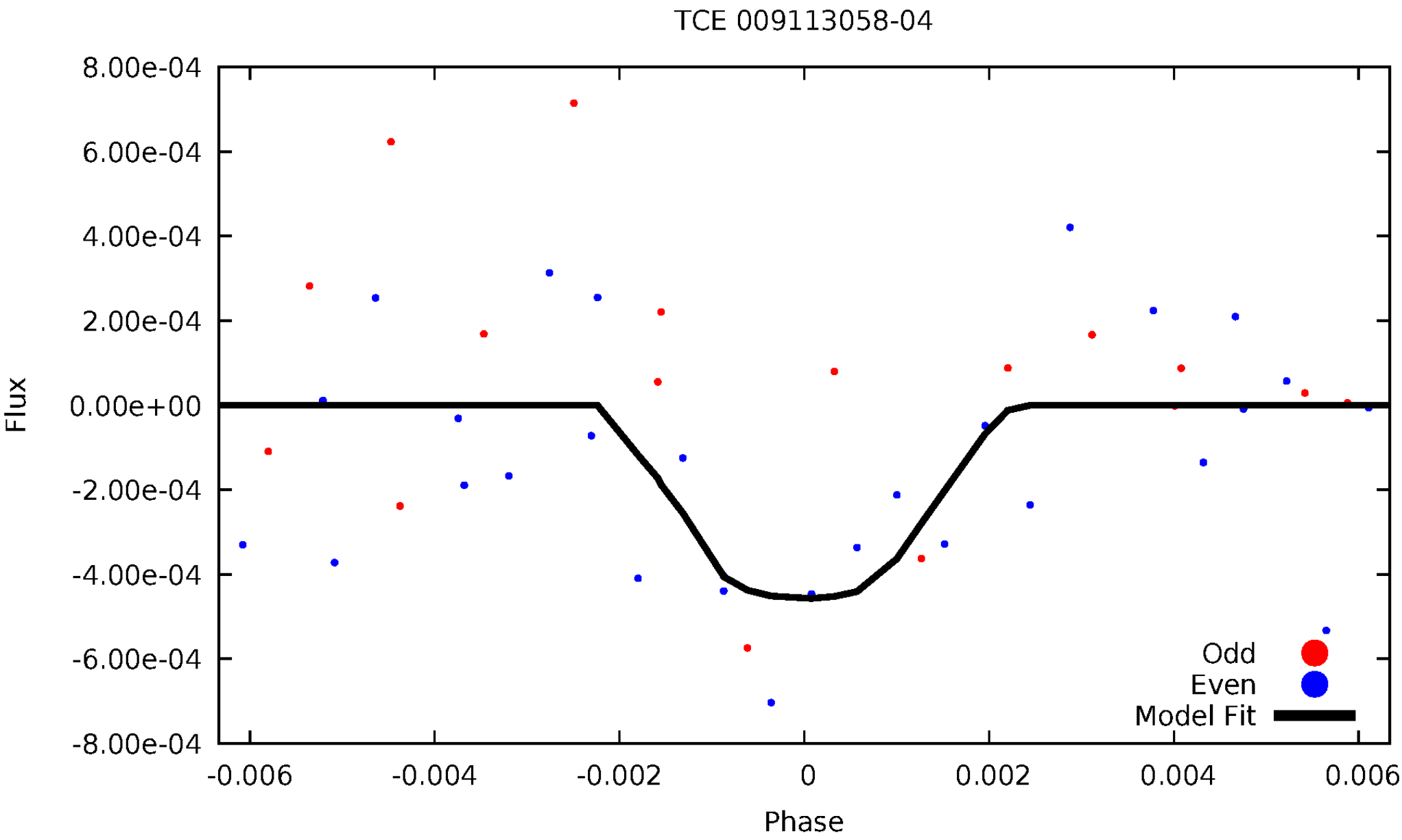
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-04, PDC Light Curves




TCE 009113058-04
P = 7.085 days
P = 14.171 days
P = 28.342 days
Normalized Flux
BKJD
Normalized Flux
Phase

DV Odd/Even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0.00e+00
-2.00e-04
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-6.00e-04
-8.00e-04
Flux
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-0.004
-0.002
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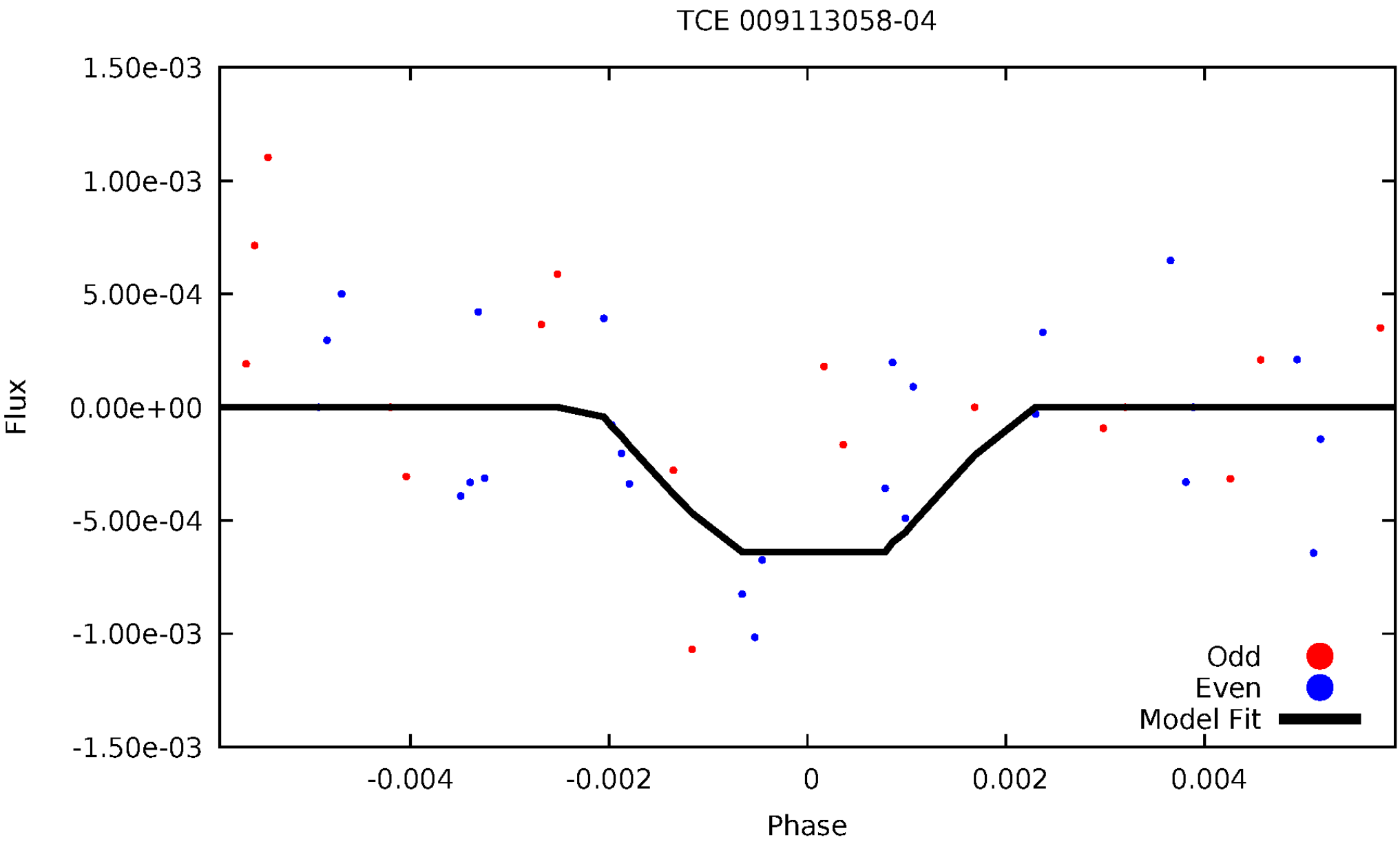
0.004
0.006
Phase
Odd
Even
Model Fit

ALT Odd/Even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Flux
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-0.002
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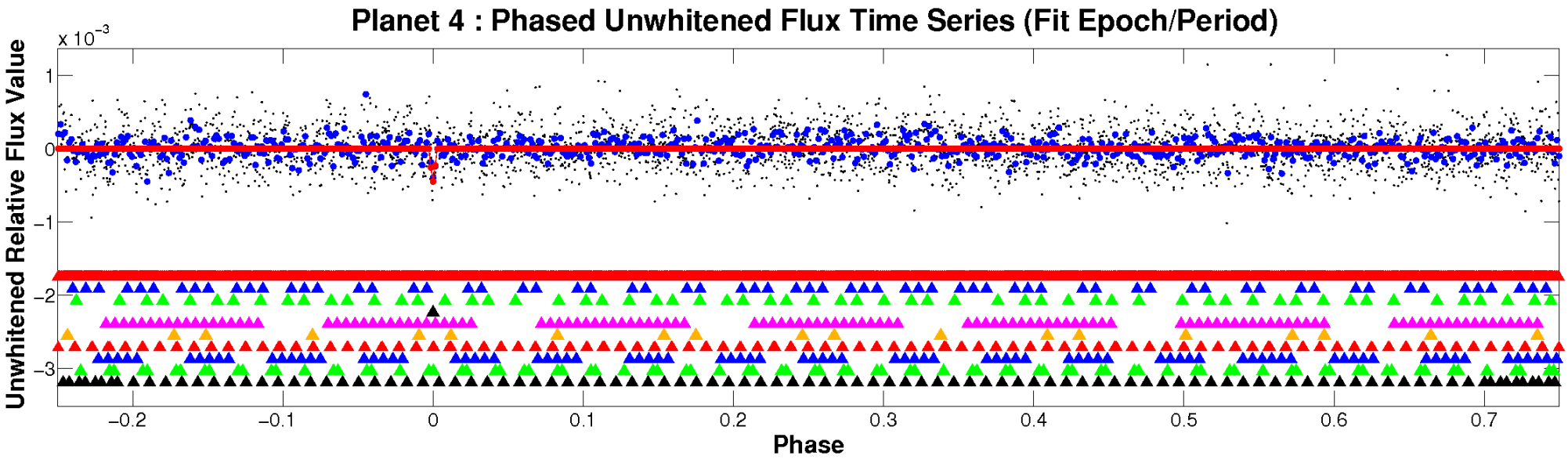
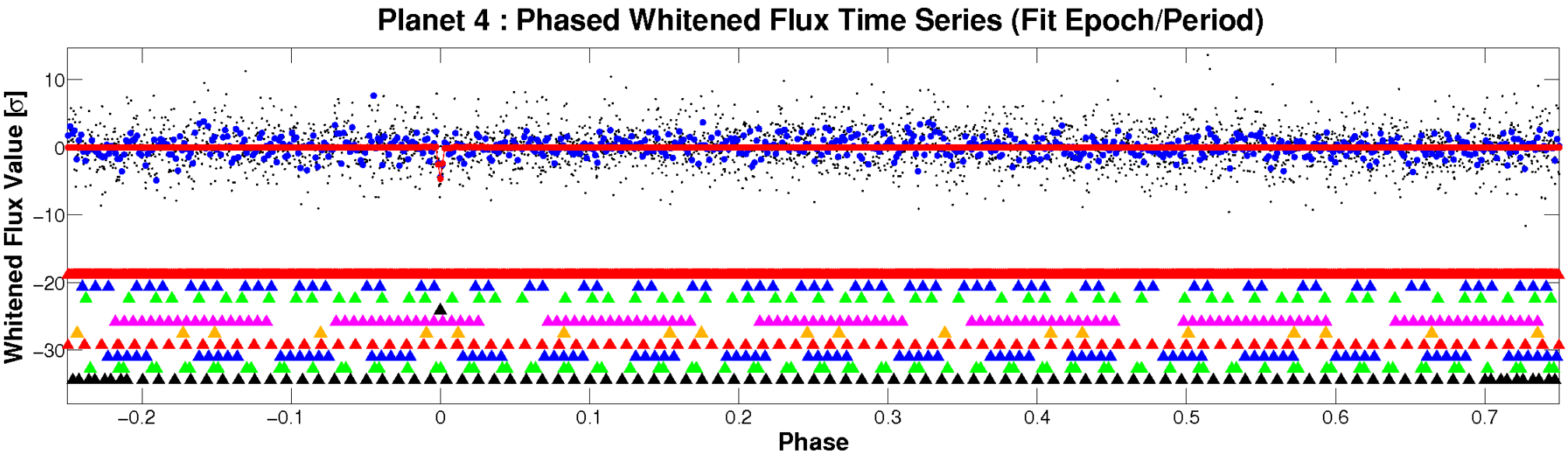
0.004
Phase
Odd
Even
Model Fit

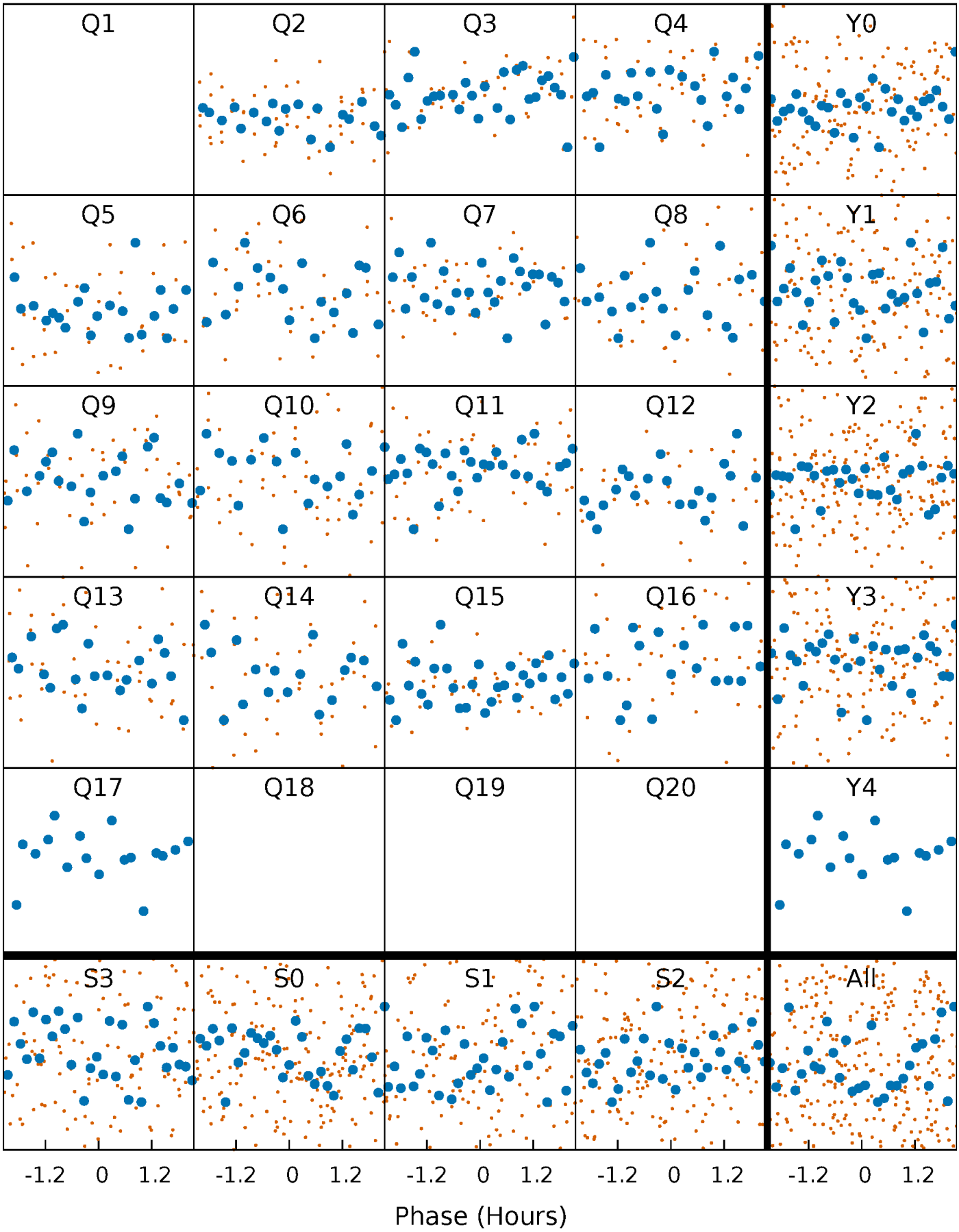
Non-Whitened Vs. Whitened Light Curve





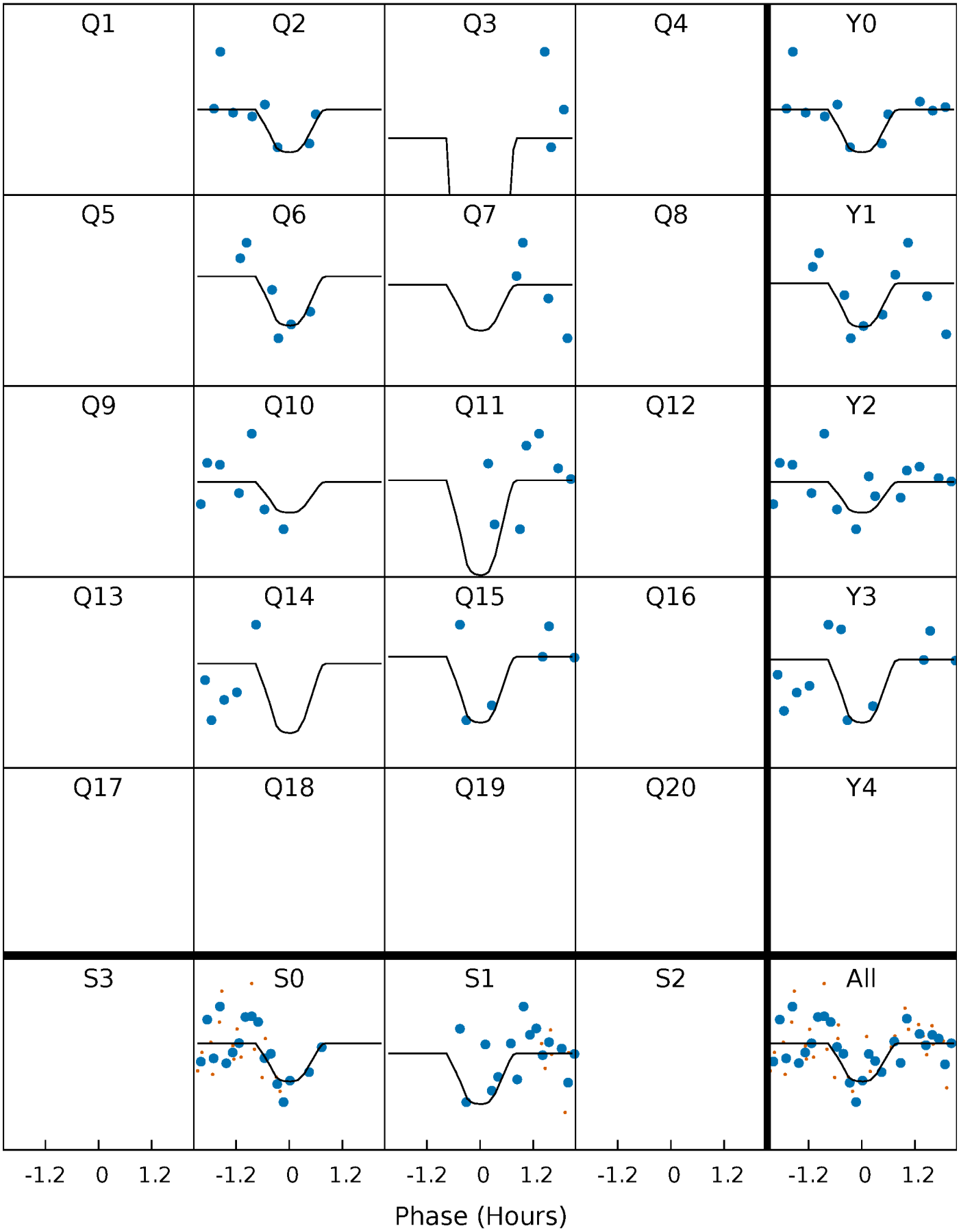
PDC Quarter-Phased Transit Curves

TCE 009113058-04 P= 14.170941 Days T_0=141.803376 (BKJD)



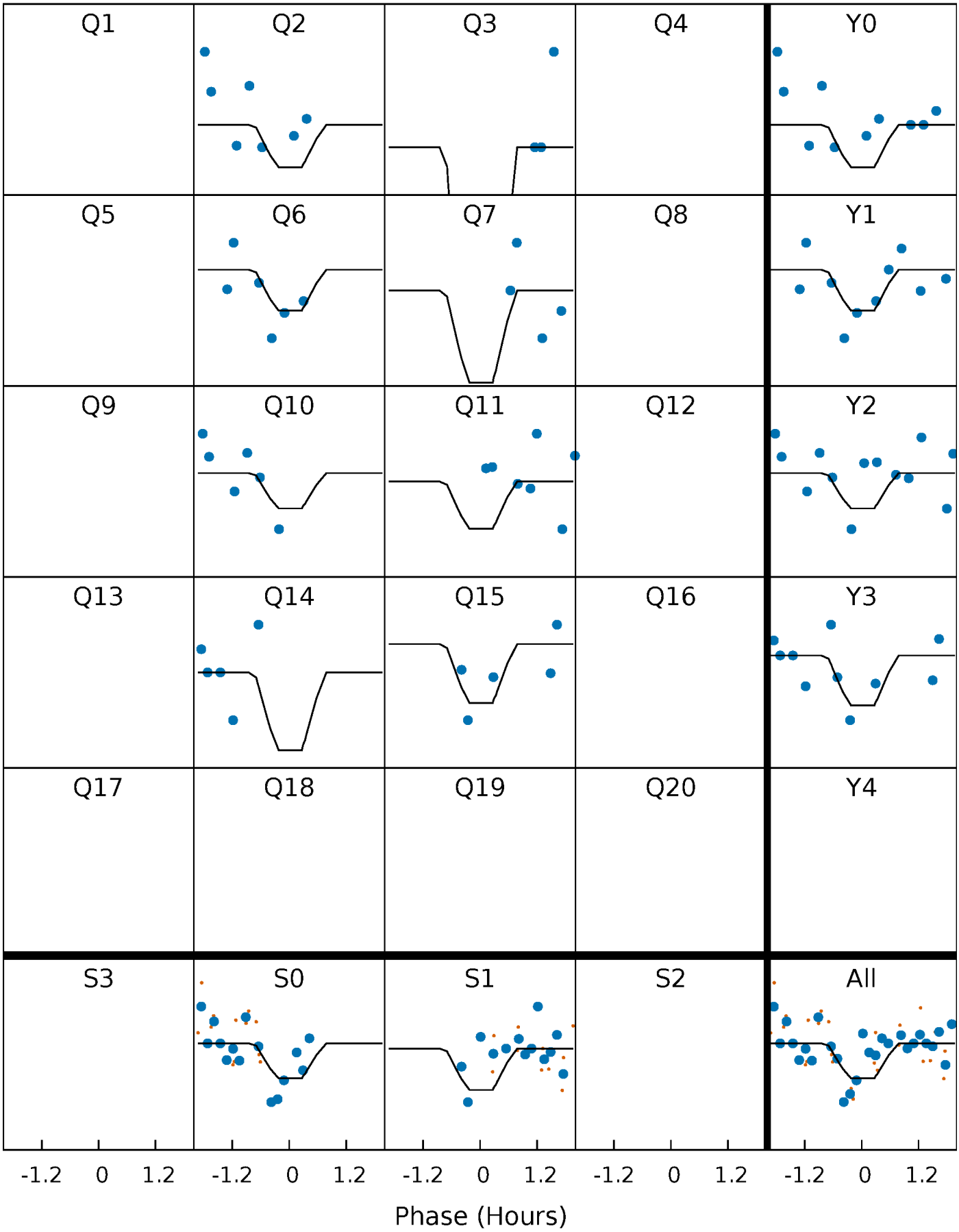
DV Quarter-Phased Transit Curves

TCE 009113058-04 P= 14.170941 Days T_0=141.803376 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

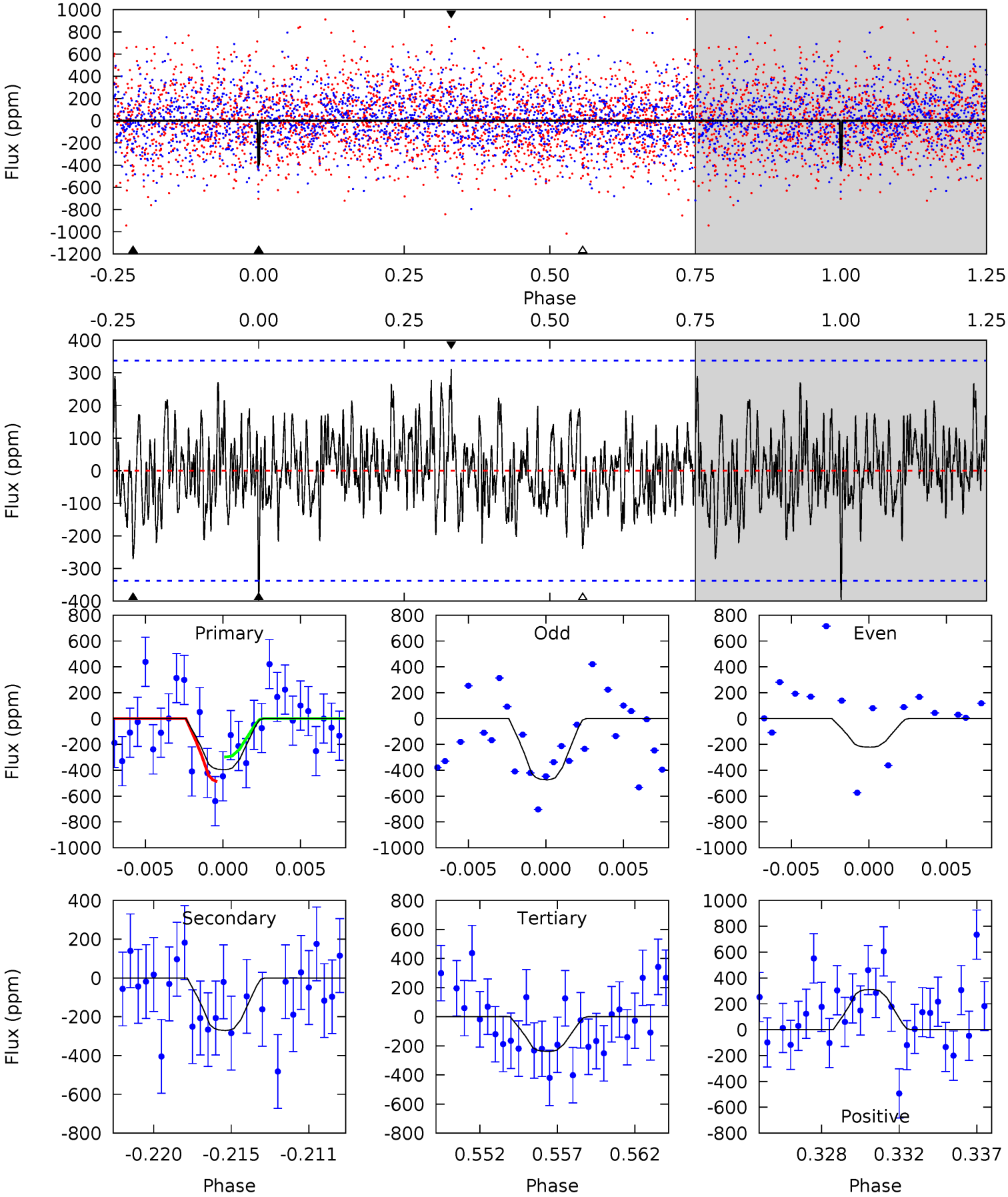
TCE 009113058-04 P= 14.170745 Days T_0=141.817585 (BKJD)



DV Model-Shift Uniqueness Test

009113058-04, P = 14.170941 Days, E = 141.803376 Days

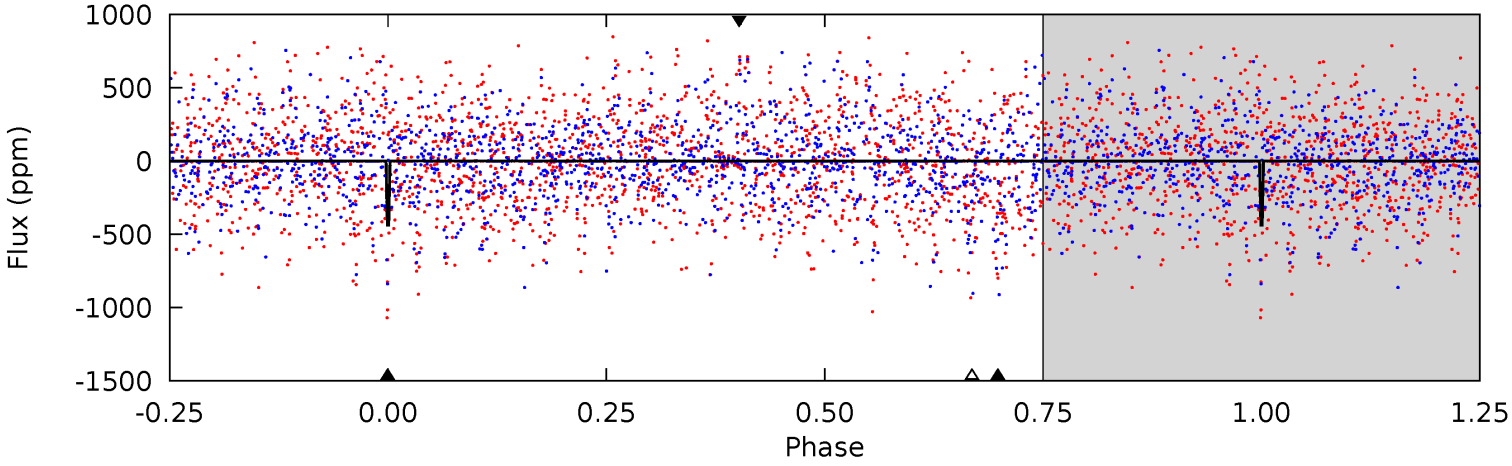
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.08	4.15	3.65	4.78	5.17	2.83	1.46	2.42	1.29	0.49	-0.63	1.90	1.13	0.44	1.47

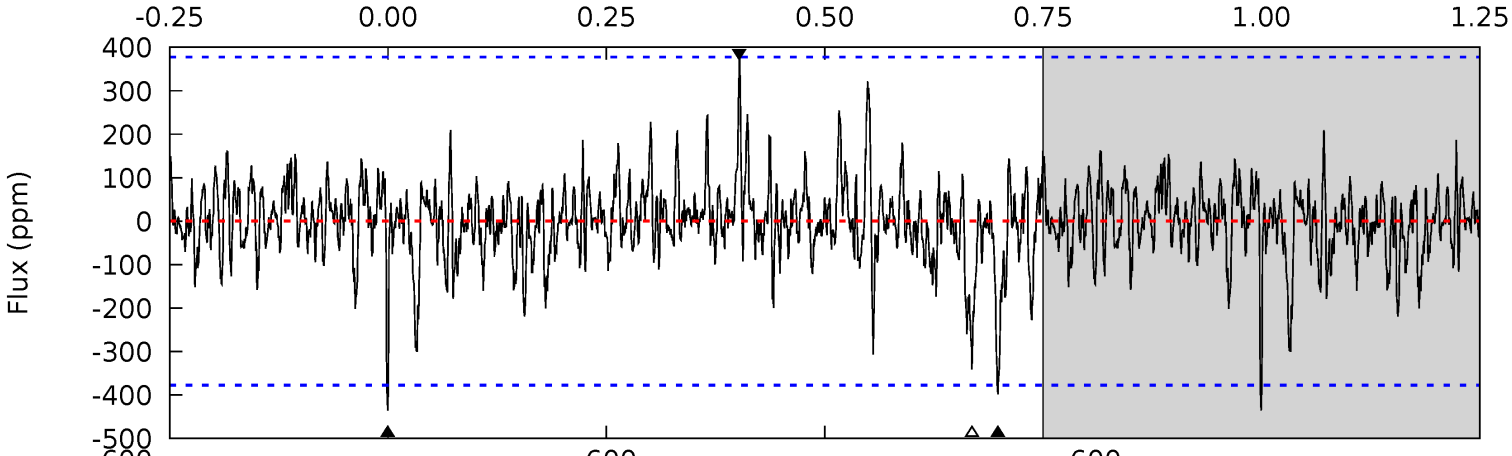


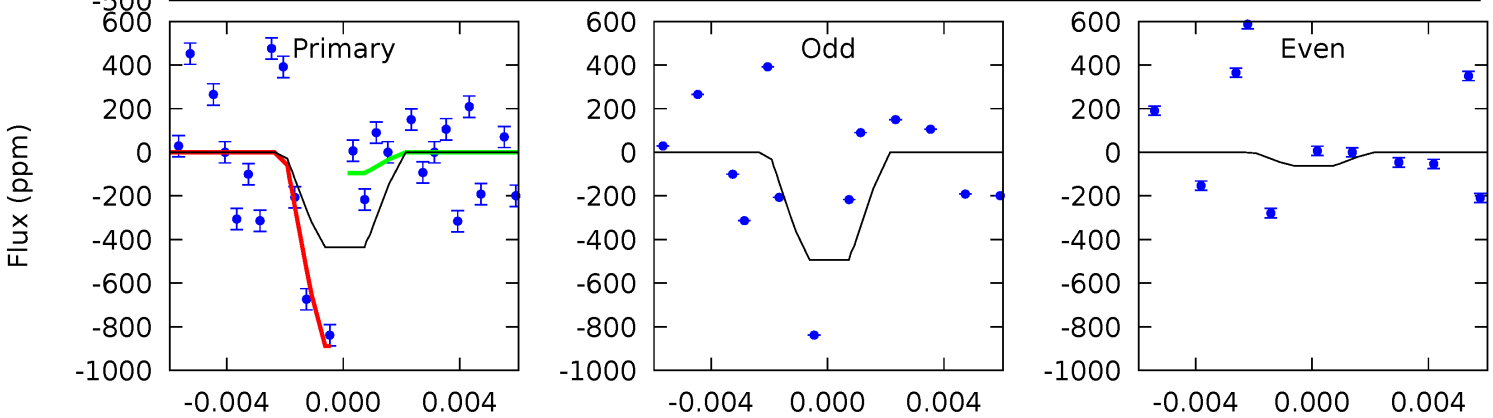
Alt Model-Shift Uniqueness Test

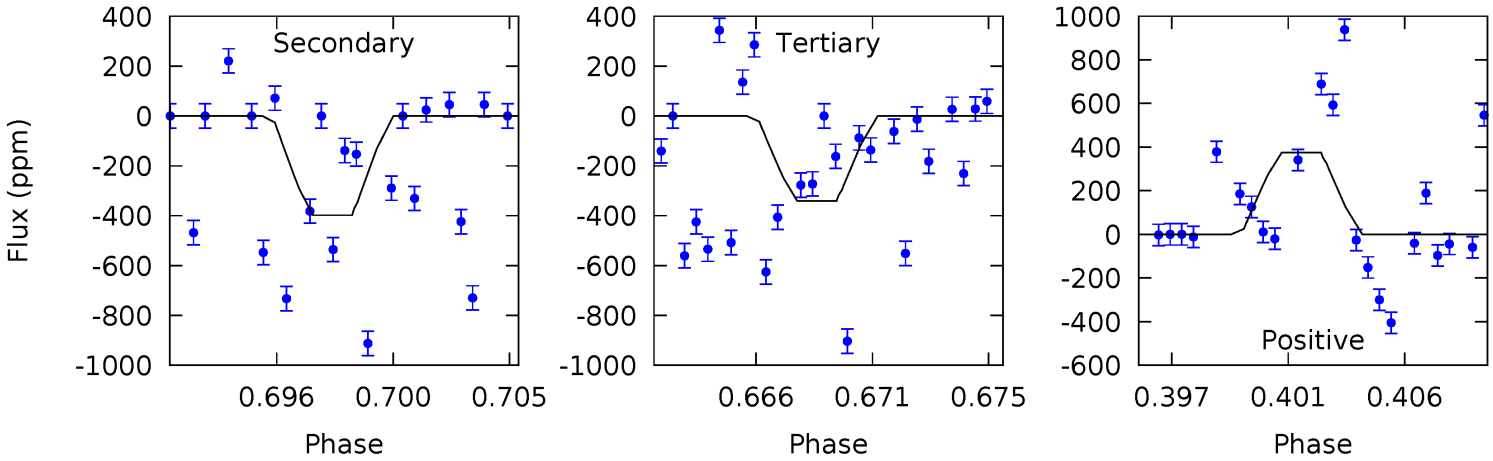
009113058-04, P = 14.170745 Days, E = 141.817585 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.98	5.47	4.69	5.16	5.19	2.86	1.14	1.29	0.82	0.78	0.31	2.65	1.18	0.46	5.61









Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-04 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-271±65	$4.59^{+4.48}_{-2.93}$	1364^{+118}_{-97}	4914^{+3566}_{-1096}	103^{+762}_{-76}
Alt.	-398±73	$5.16^{+4.48}_{-3.35}$	1358^{+105}_{-98}	5024^{+3982}_{-995}	119^{+923}_{-83}

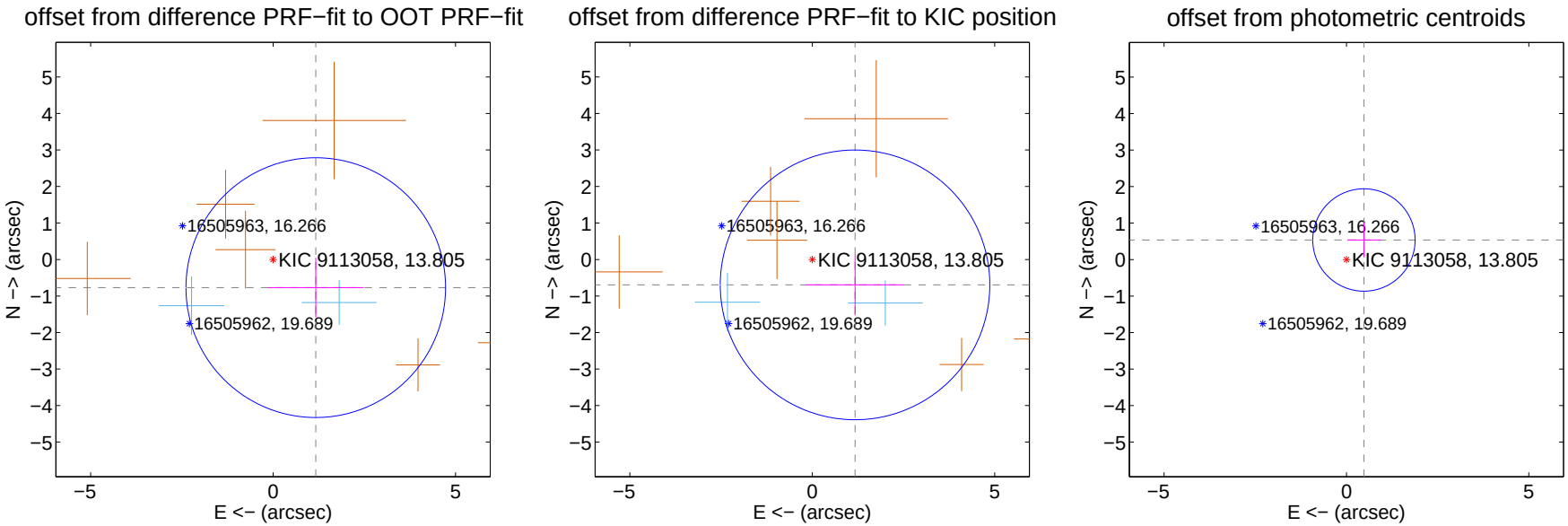
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

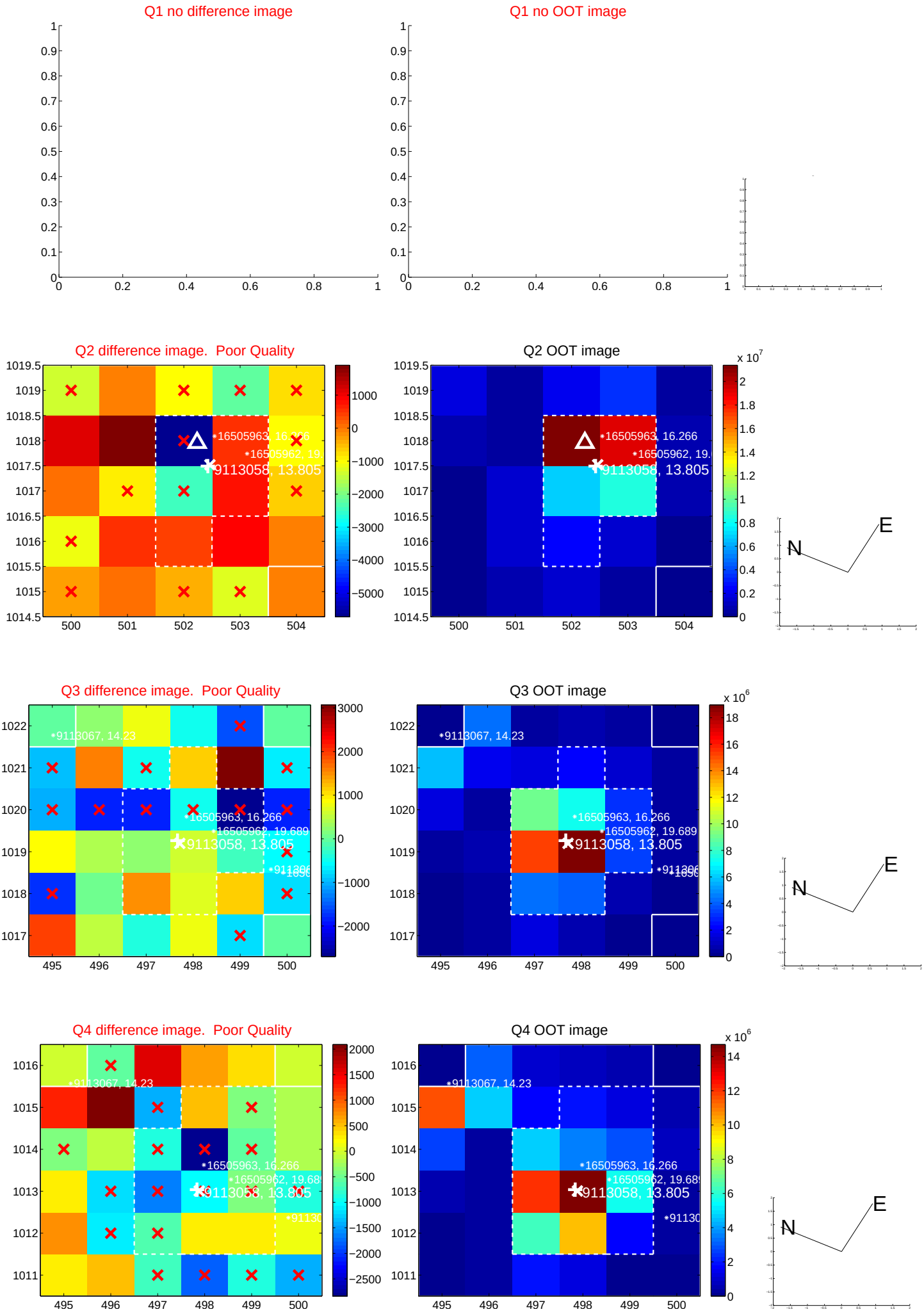
Supplemental centroid analysis for 009113058-04. Kepler magnitude: 13.80. Transit SNR 13.43
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.401 ± 1.186	1.18	-1.170 ± 1.314	-0.770 ± 0.817
PRF-fit source offset from KIC position	1.362 ± 1.231	1.11	-1.172 ± 1.343	-0.695 ± 0.834
photometric centroid source offset	0.72 ± 0.47	1.54	-0.48 ± 0.46	0.54 ± 0.48

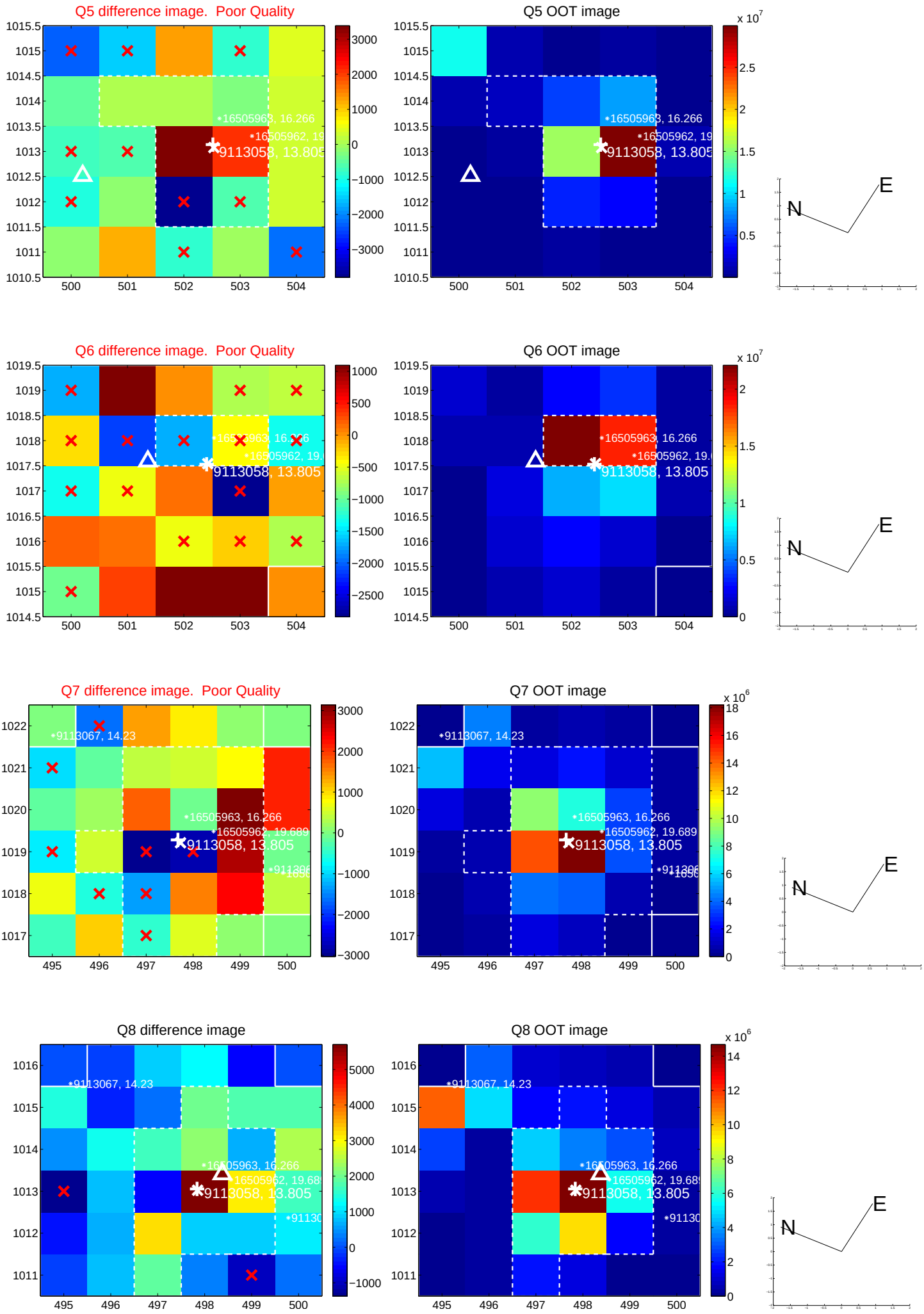


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

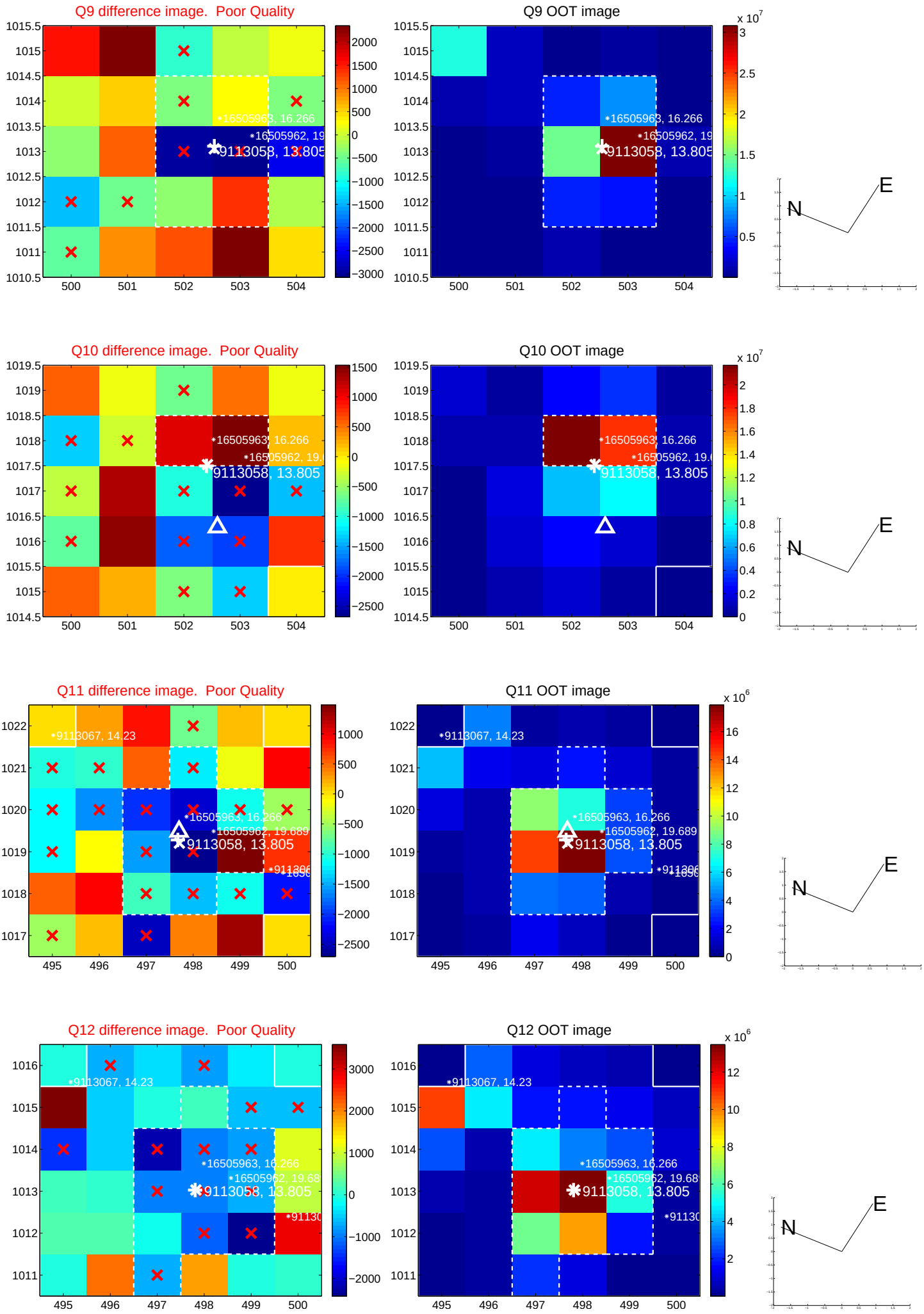
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



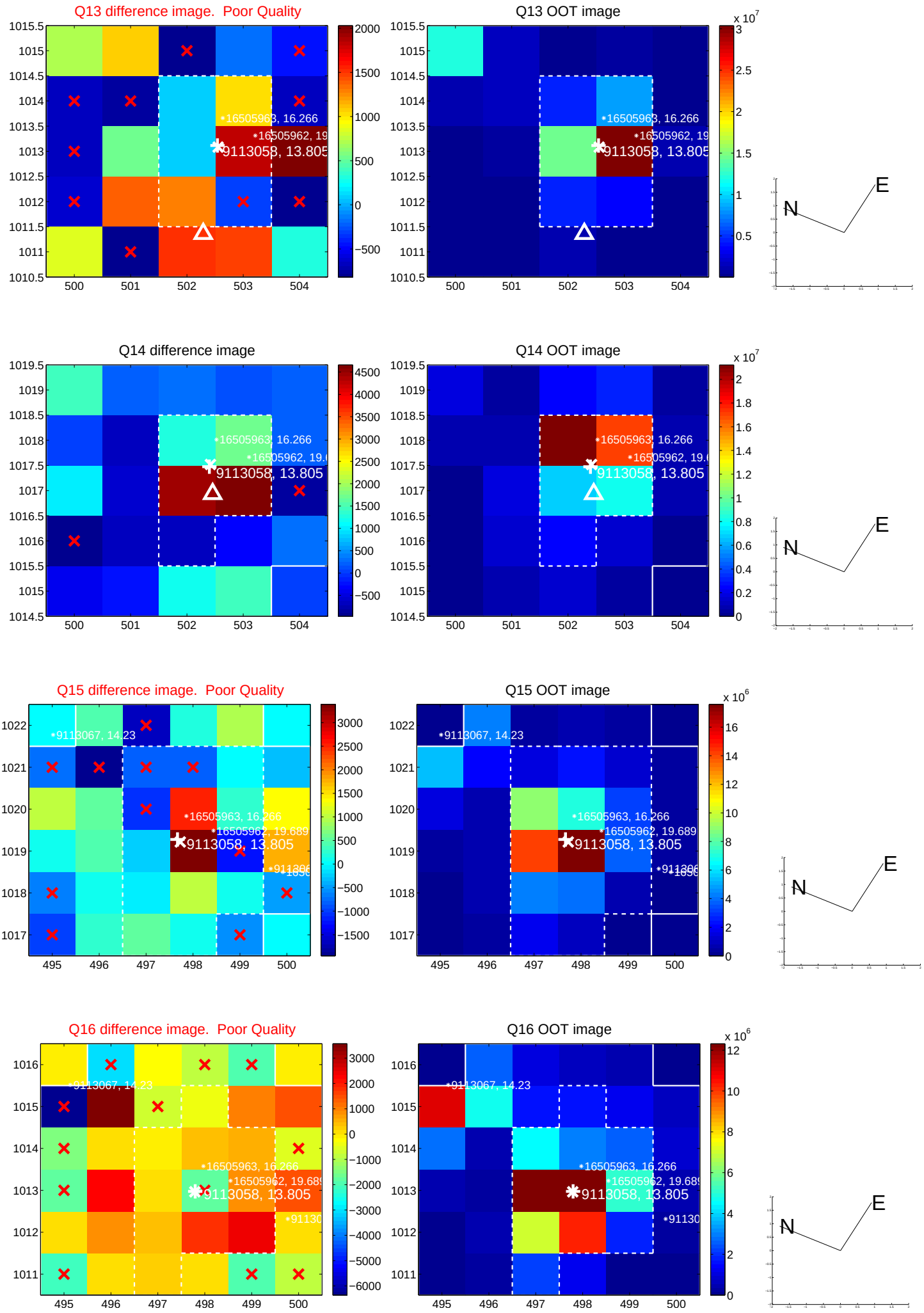
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



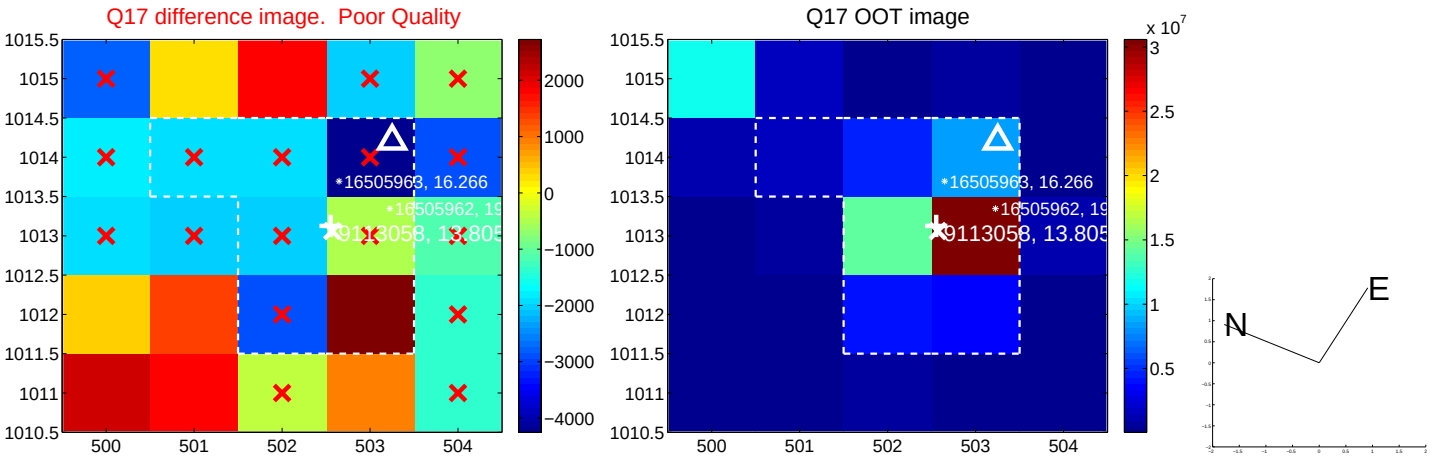
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

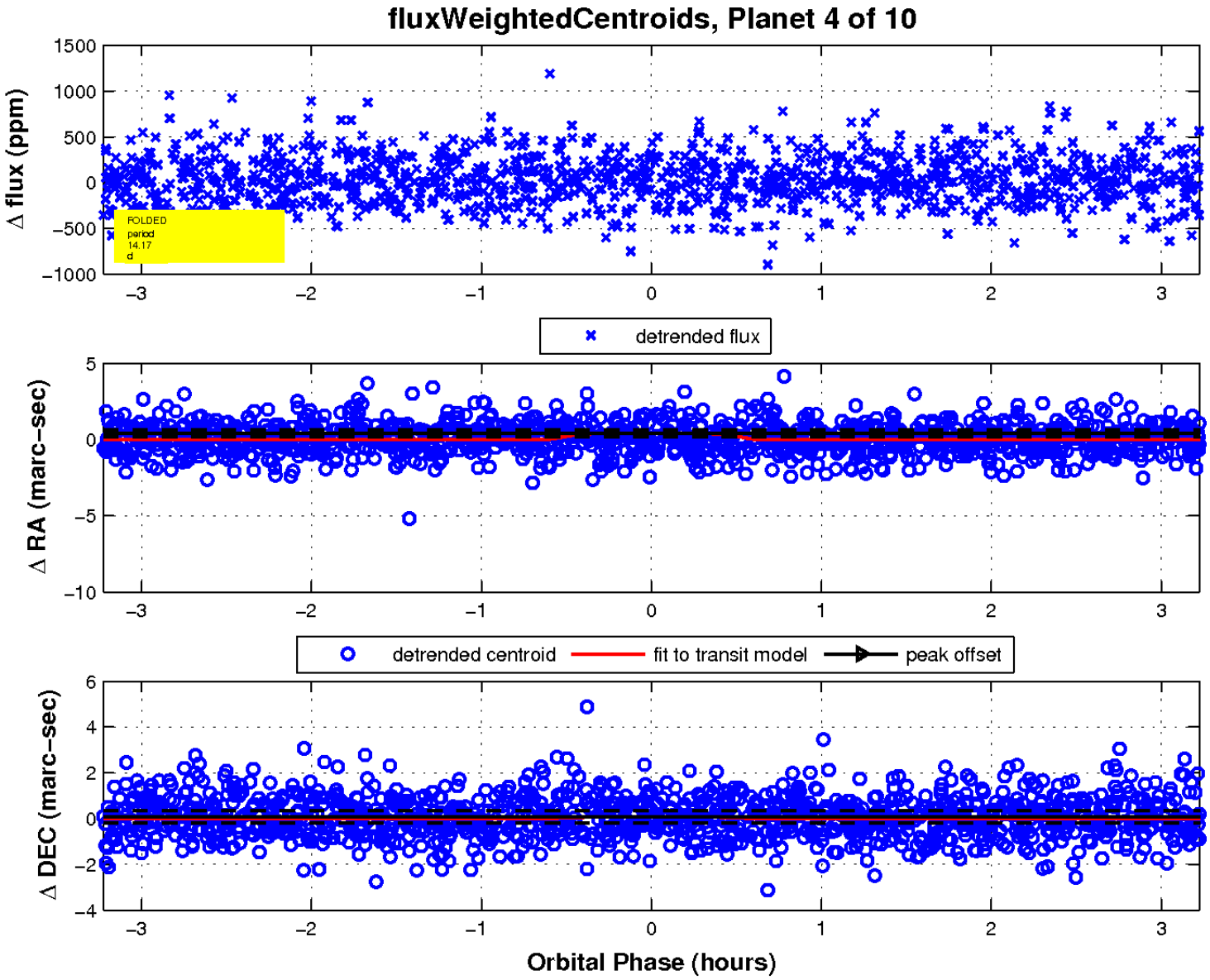


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

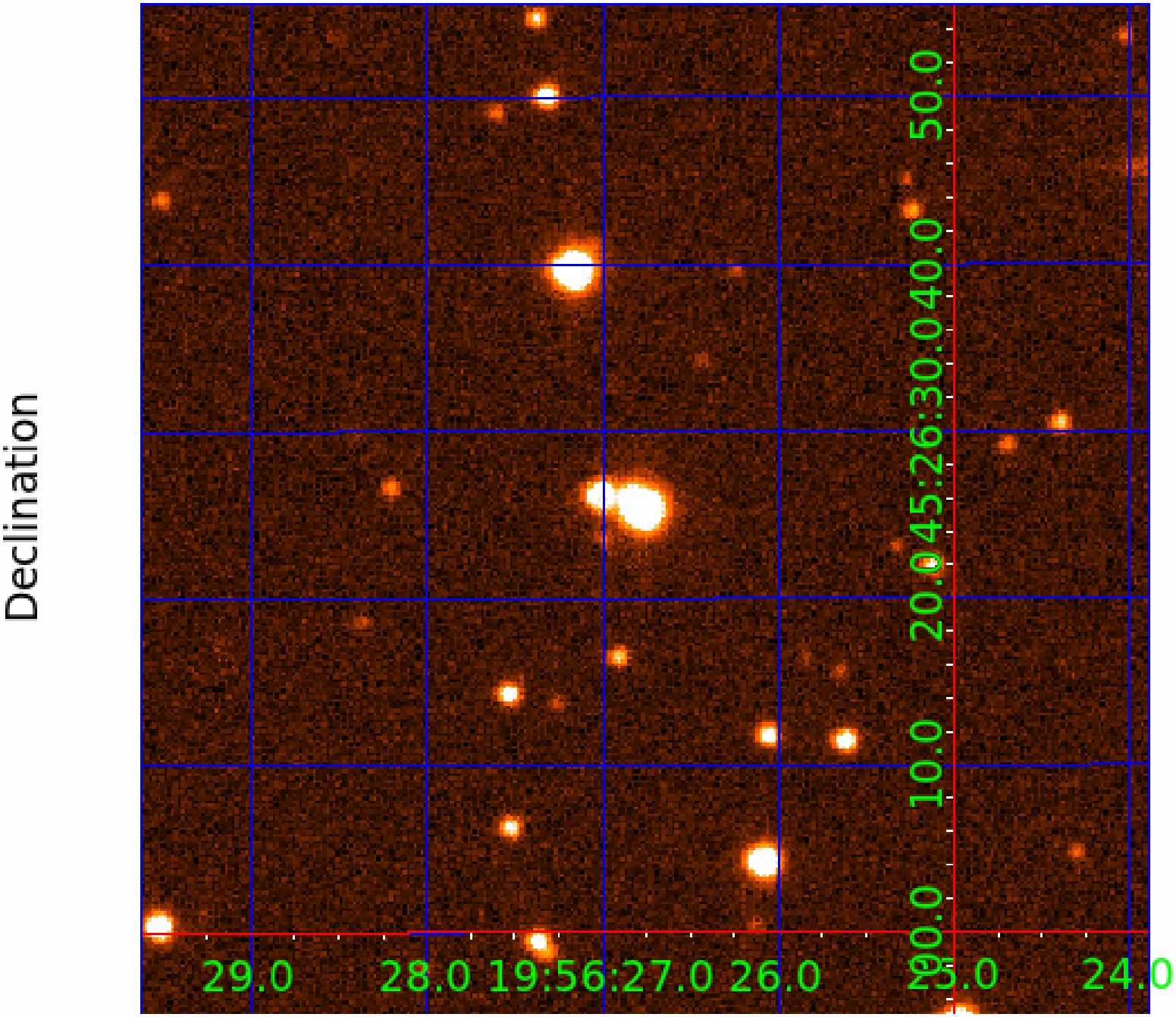


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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29.0
28.0
19:56:27.0
26.0
25.0
24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

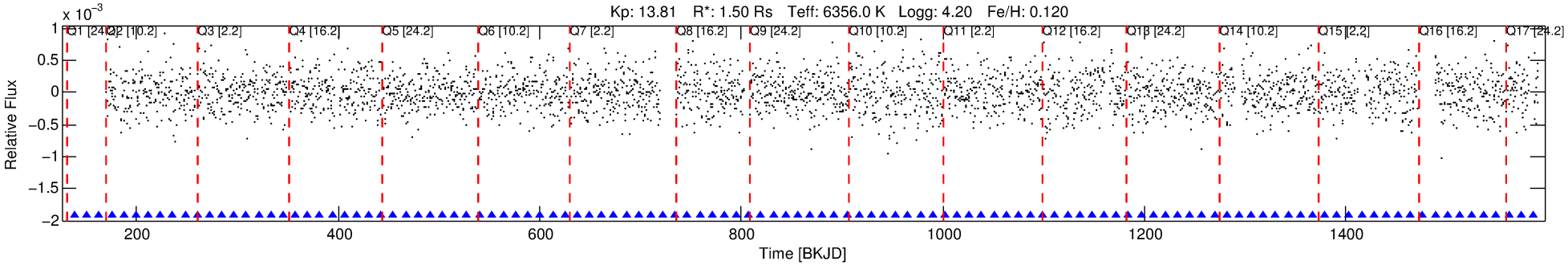
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

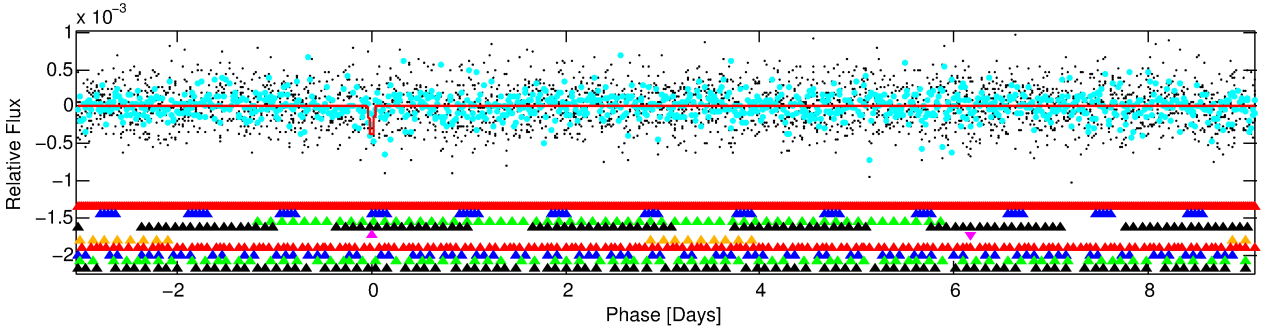
Ephemeris Match Information For 009113058-05

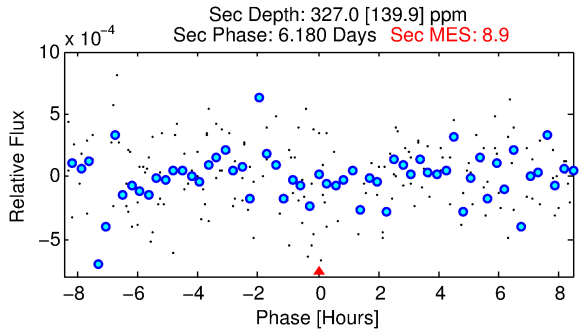
No Significant Match Found

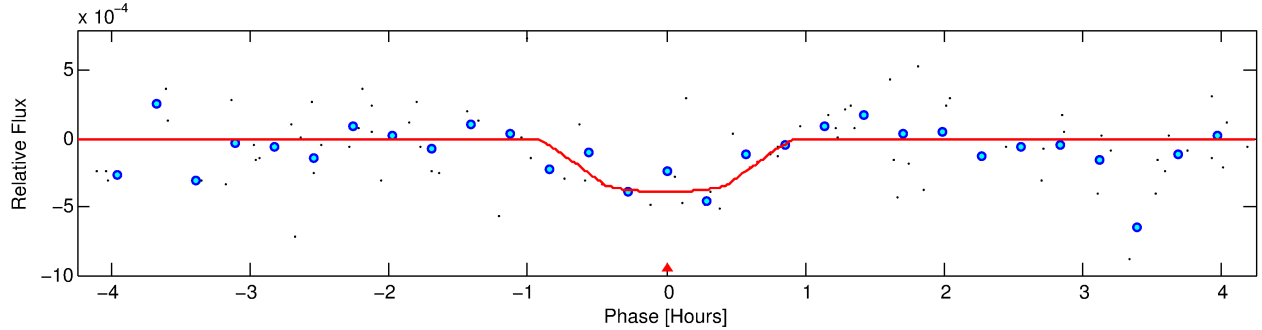
DV One-Page Summary

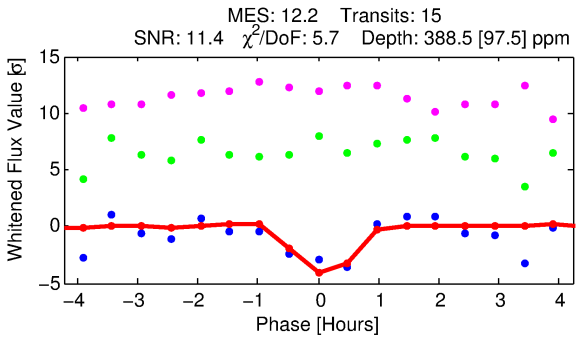
KIC: 9113058 Candidate: 5 of 10 Period: 12.159 d

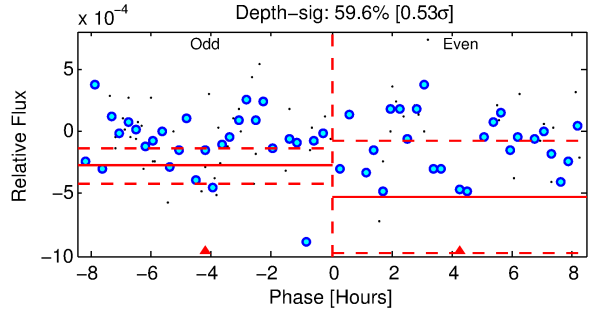


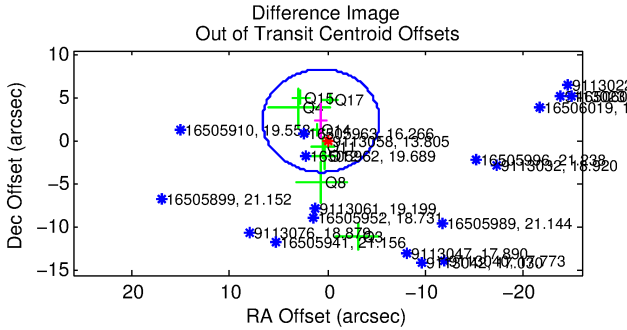












DV Fit Results:

Period = 12.15858 [0.00013] d
Epoch = 138.7167 [0.0087] BKJD
Rp/R* = 0.0187 [0.0374]
a/R* = 58.12 [587.25]
b = 0.50 [15.04]

Seff = 258.35 [104.41]
Teq = 1022 [103] K
Rp = 3.05 [6.18] Re
a = 0.1125 [0.0299] AU

Ag = 244.90 [990.24] [0.25σ]
Teffp = 6253 [6298] K [0.83σ]

DV Diagnostic Results:

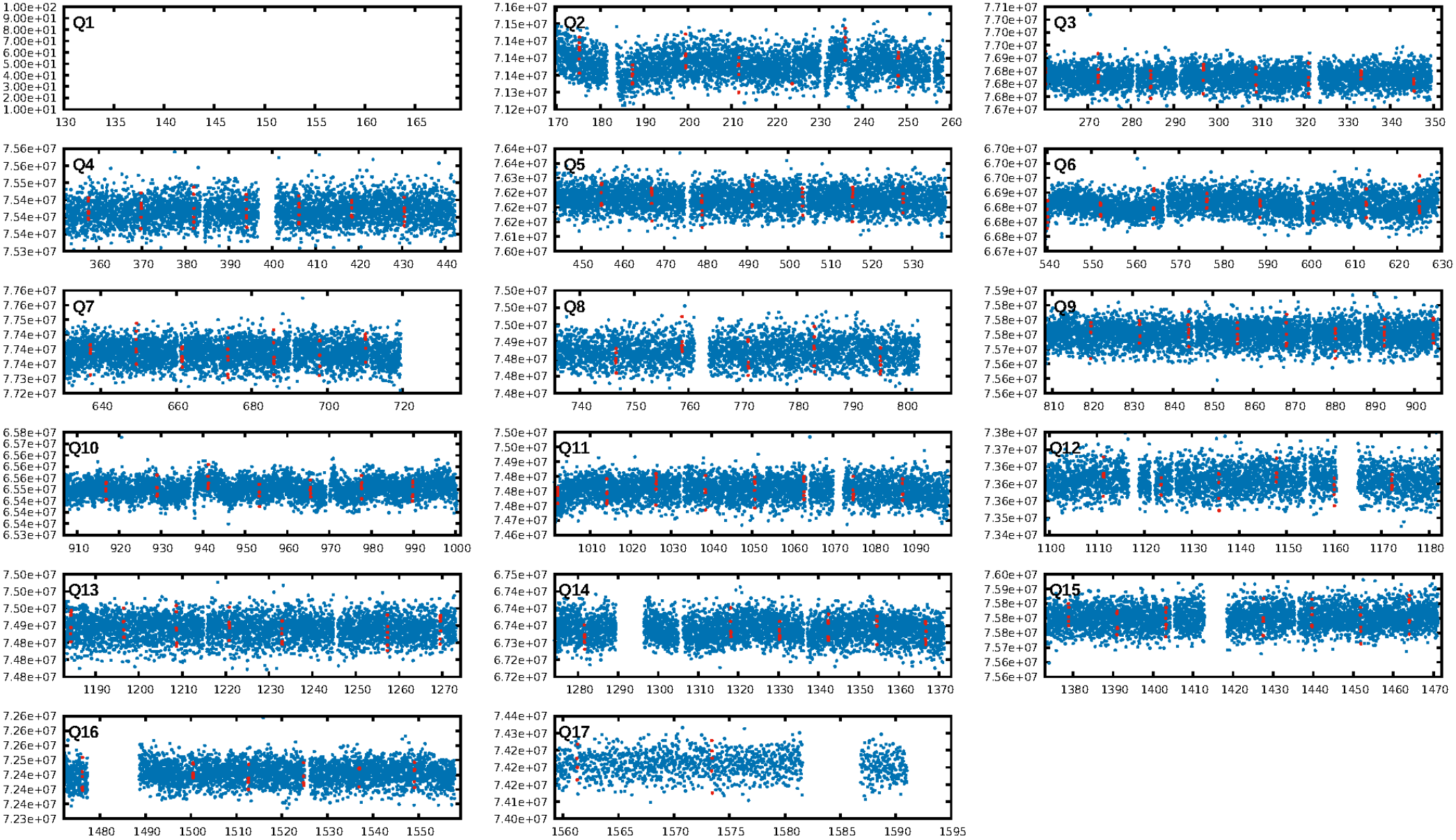
ShortPeriod−sig: 100.0% [64.39σ]
LongPeriod−sig: 100.0% [27.17σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 89.5%
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [15/15]
GhostDiagnostic−chr: 0.1125

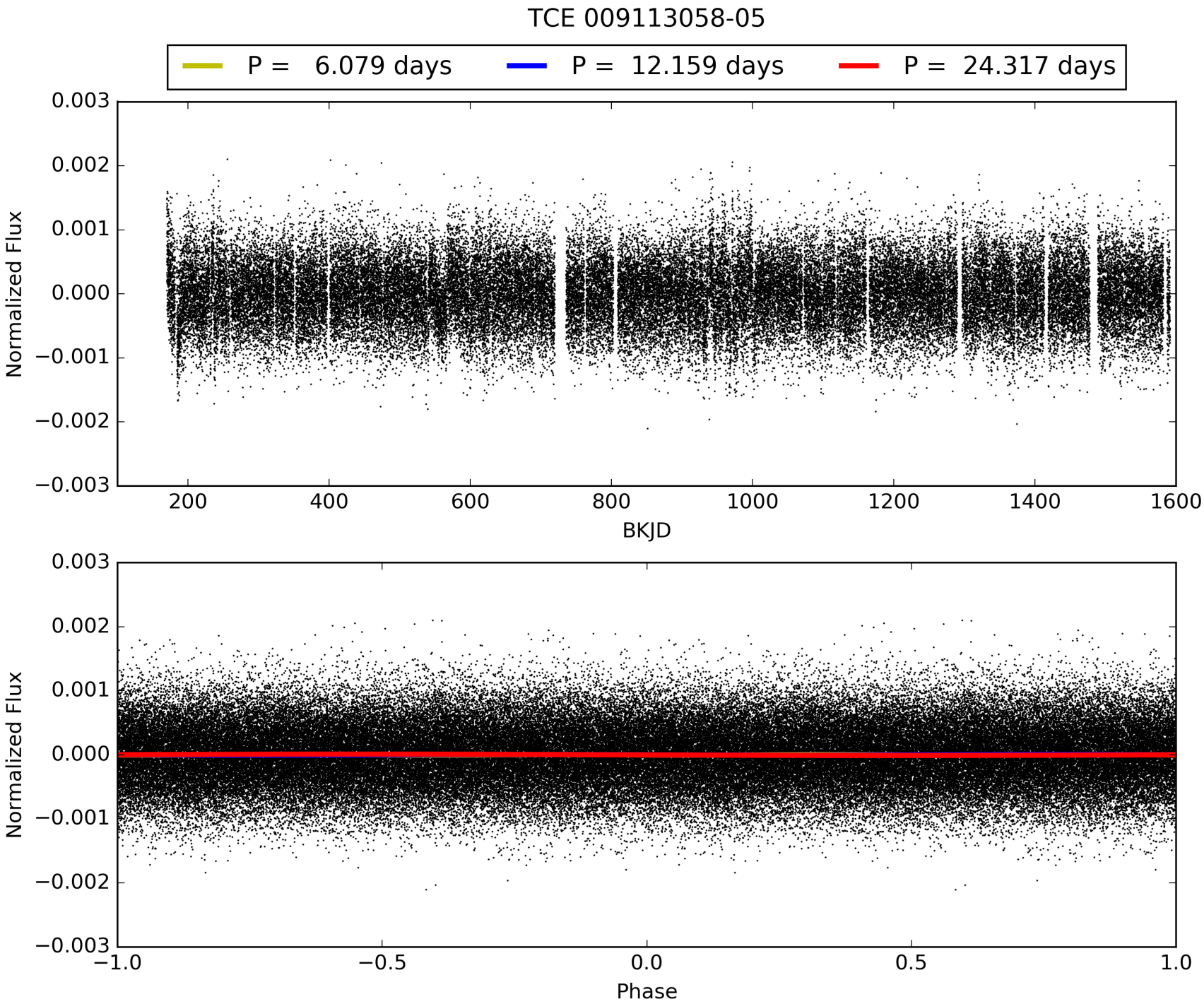
Centroid−sig: 5.9%
Centroid−so: 0.878 arcsec [1.93σ]
OotOffset−rm: 2.452 arcsec [1.23σ]
KicOffset−rm: 2.584 arcsec [1.30σ]
OotOffset−st: 1/3/3/1 [8]
KicOffset−st: 1/3/3/1 [8]
DiffImageQuality−fgm: 0.25 [2/8]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:43 Z

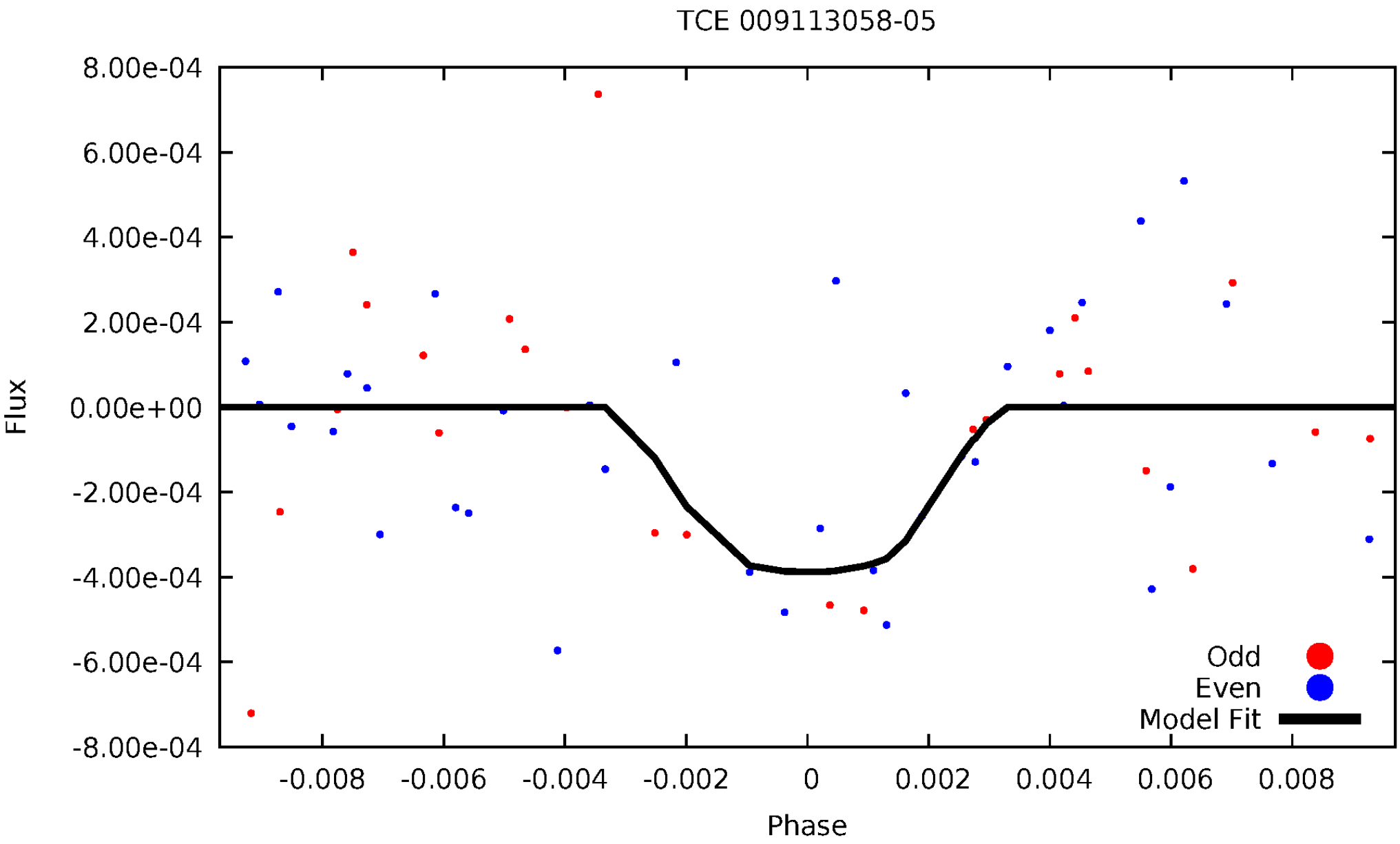
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-05, PDC Light Curves




TCE 009113058-05
P = 6.079 days
P = 12.159 days
P = 24.317 days
Normalized Flux
BKJD
Normalized Flux
Phase

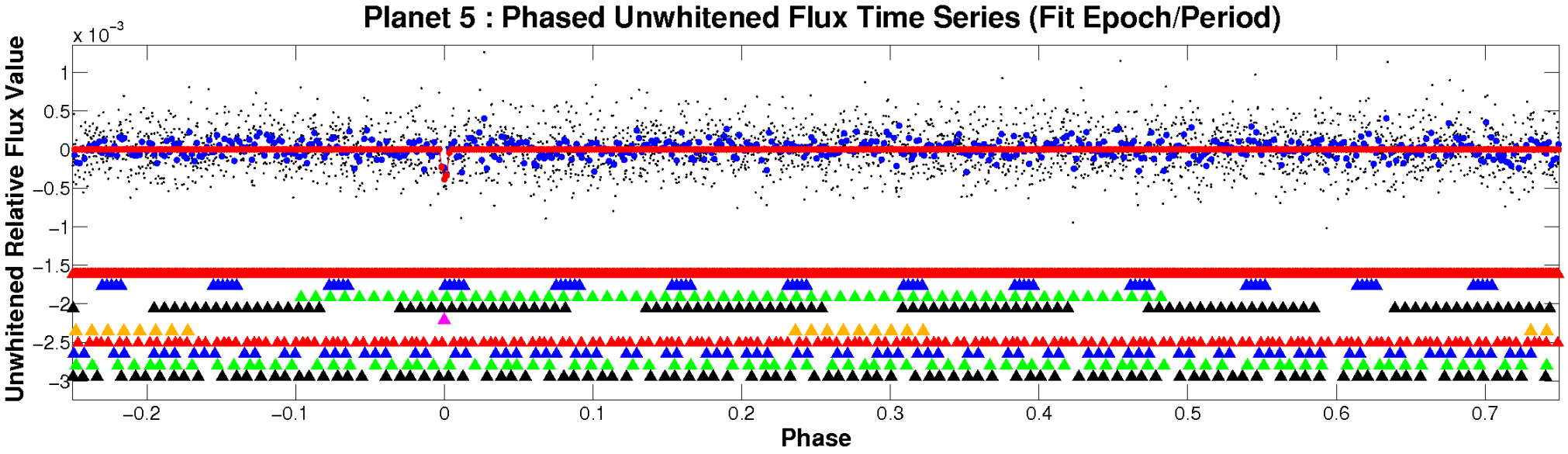
DV Odd/Even

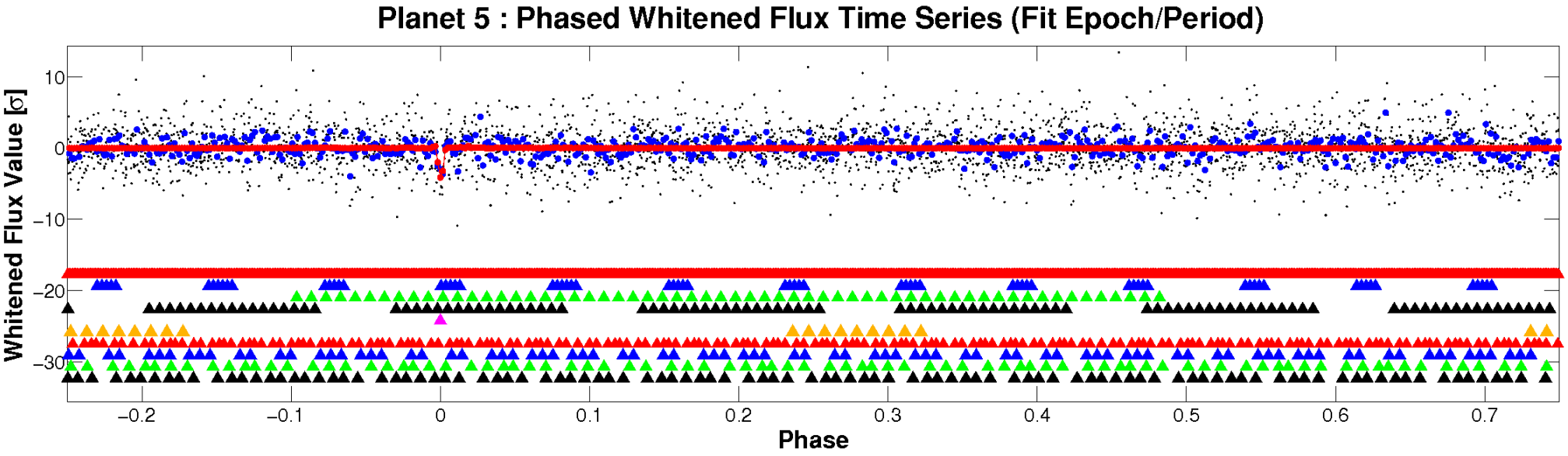

TCE 009113058-05
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.008
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
0.008
Phase
Odd
Even
Model Fit

ALT Odd/Even

This plot does not exist for this TCE.

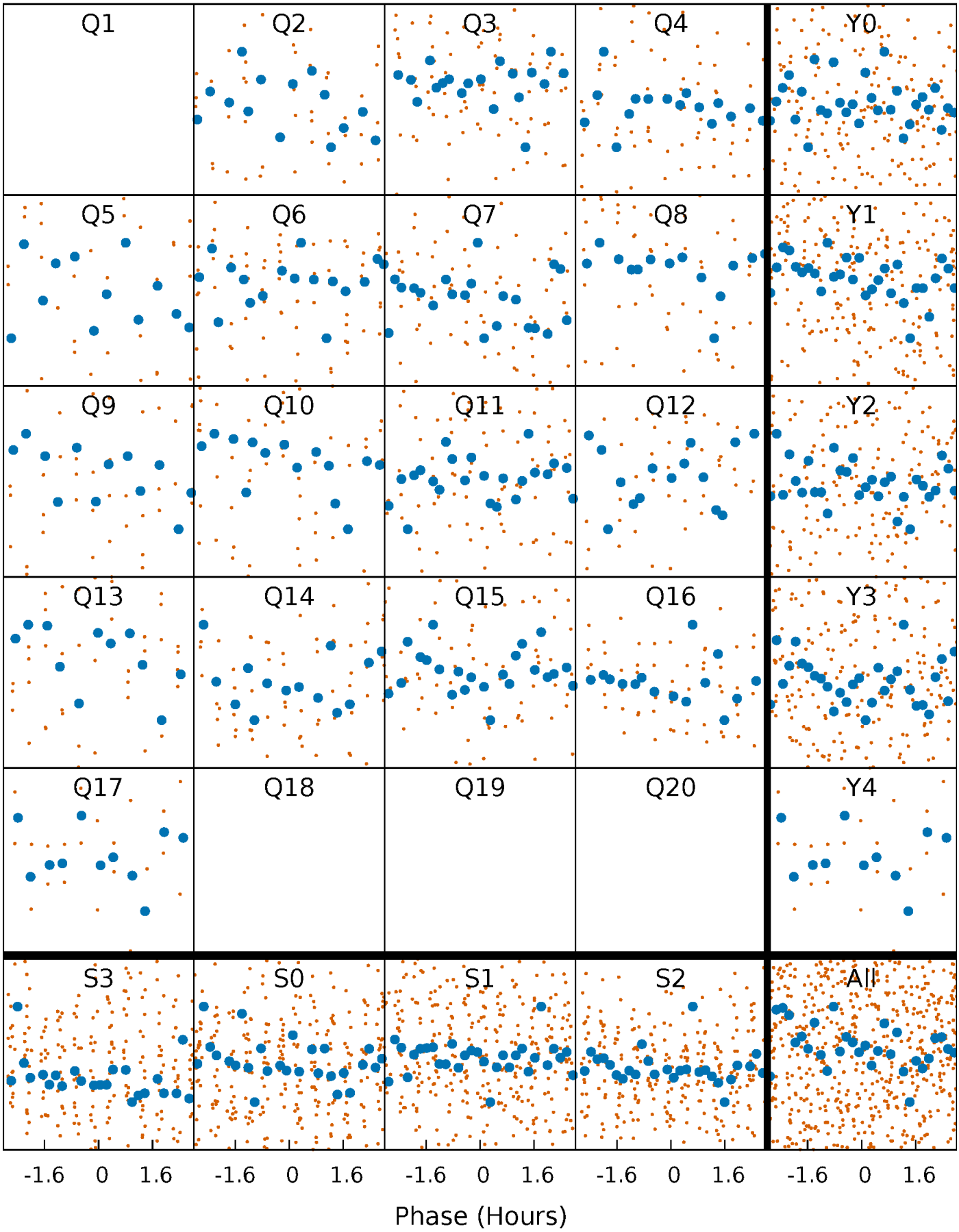
Non-Whitened Vs. Whitened Light Curve





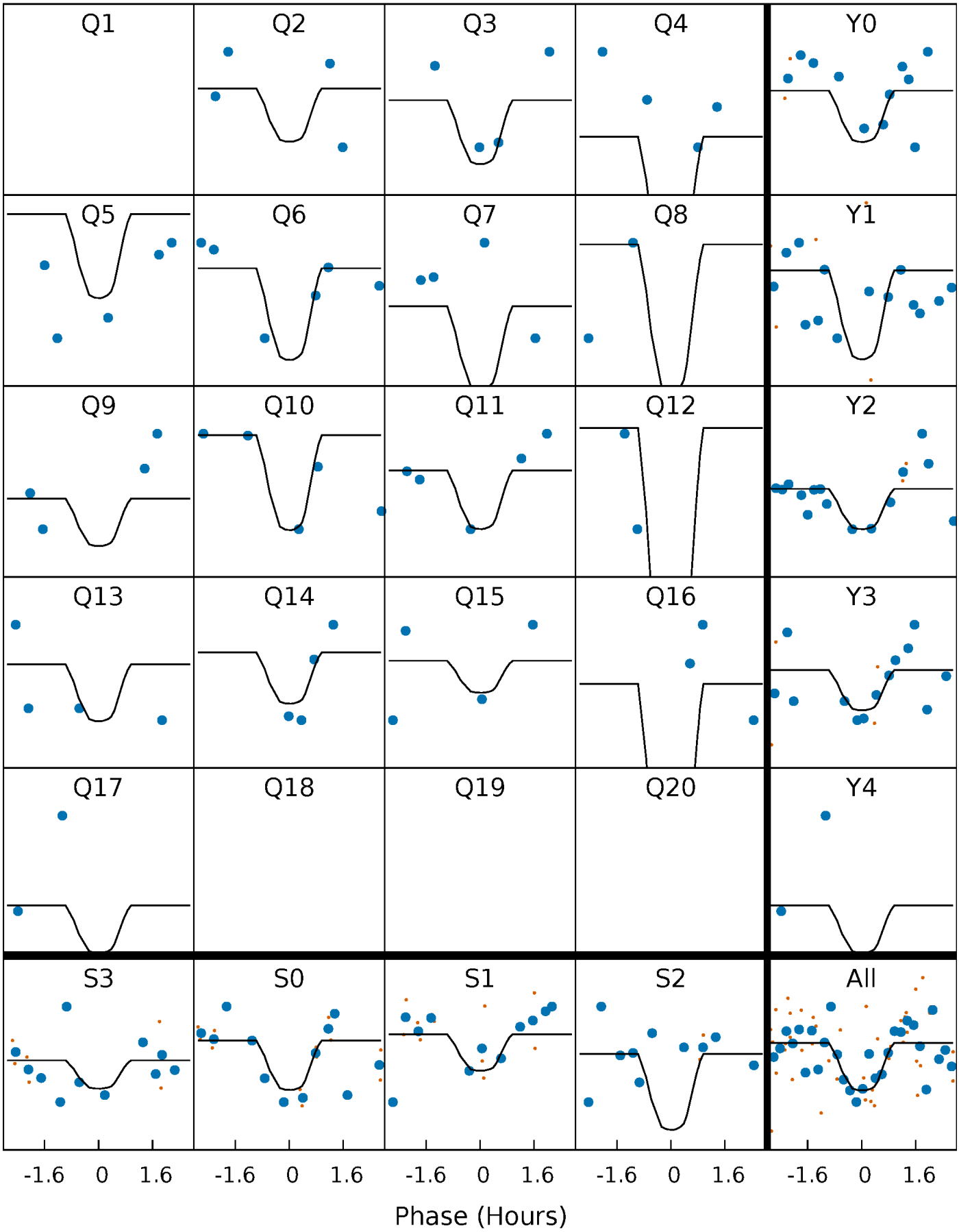
PDC Quarter-Phased Transit Curves

TCE 009113058-05 P= 12.158575 Days T_0=138.716732 (BKJD)



DV Quarter-Phased Transit Curves

TCE 009113058-05 P= 12.158575 Days T_0=138.716732 (BKJD)

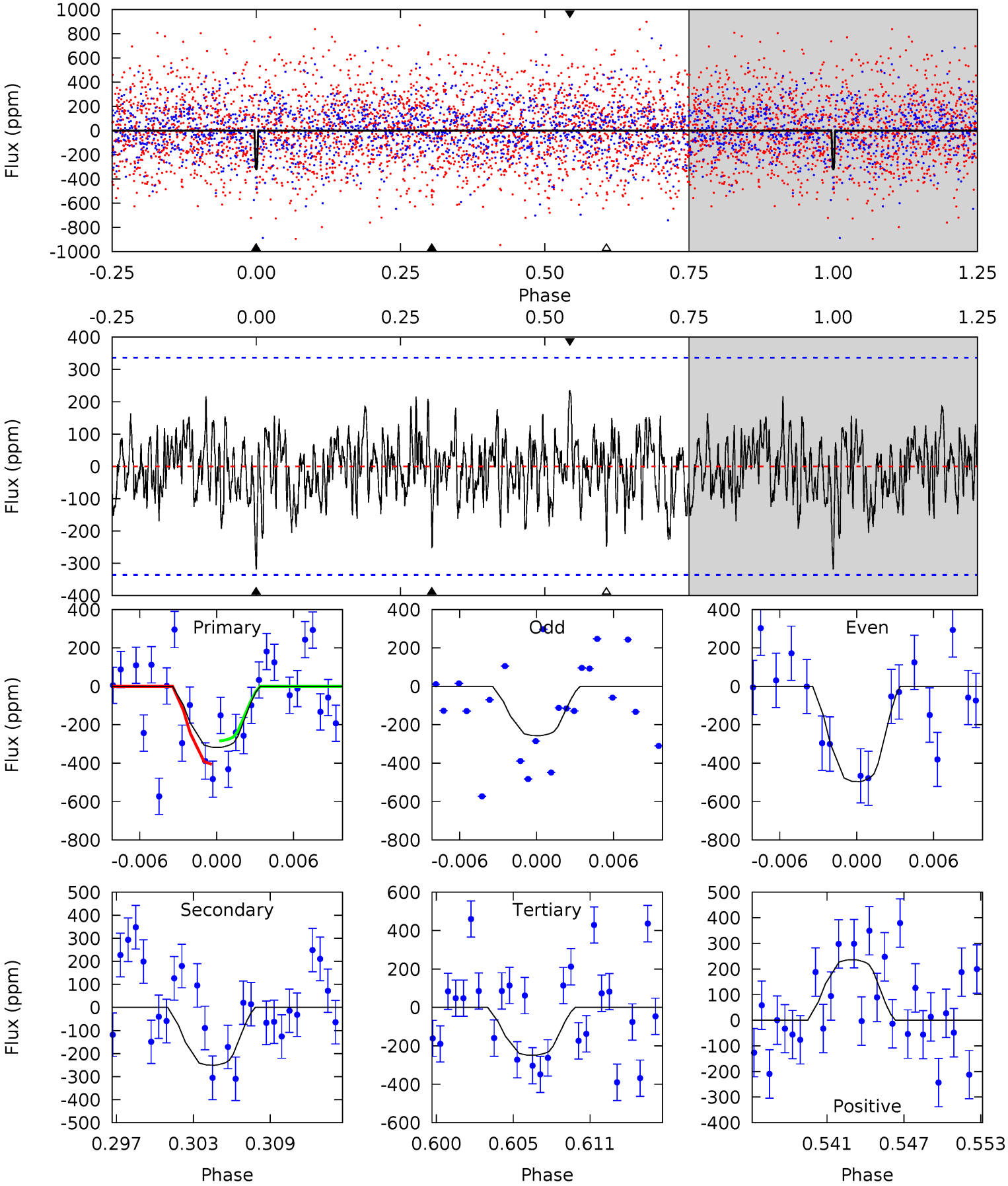


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009113058-05, P = 12.158575 Days, E = 138.716732 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.85	3.82	3.79	3.60	5.13	2.76	1.23	1.06	1.25	0.03	0.22	1.69	1.00	0.43	0.81



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-05 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-251±66	$5.41^{+5.40}_{-3.45}$	1437^{+113}_{-103}	4533^{+2988}_{-994}	55^{+395}_{-42}
Alt.	N/A	N/A	N/A	N/A	N/A

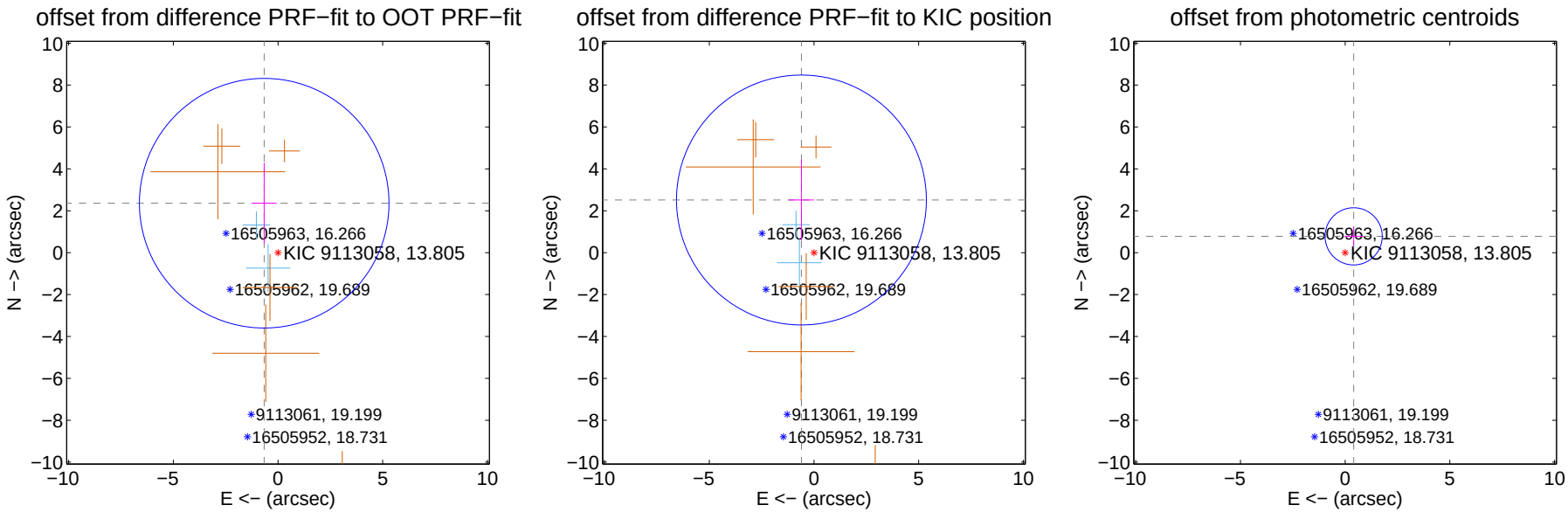
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

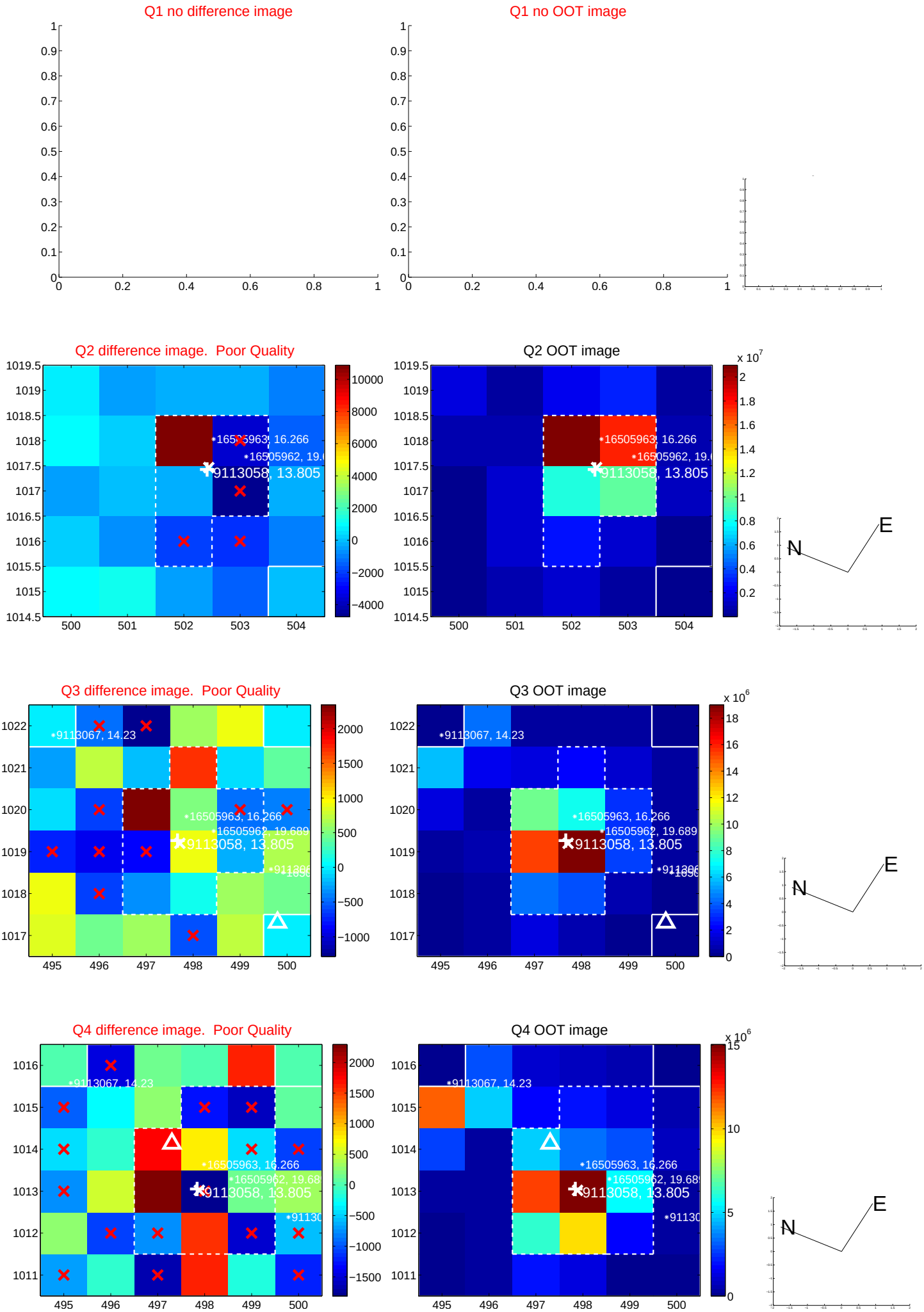
Supplemental centroid analysis for 009113058-05. Kepler magnitude: 13.80. Transit SNR 11.41
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.452 ± 1.986	1.23	0.660 ± 0.598	2.361 ± 1.929
PRF-fit source offset from KIC position	2.584 ± 1.988	1.30	0.599 ± 0.609	2.514 ± 1.929
photometric centroid source offset	0.88 ± 0.46	1.93	-0.41 ± 0.44	0.78 ± 0.46



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.



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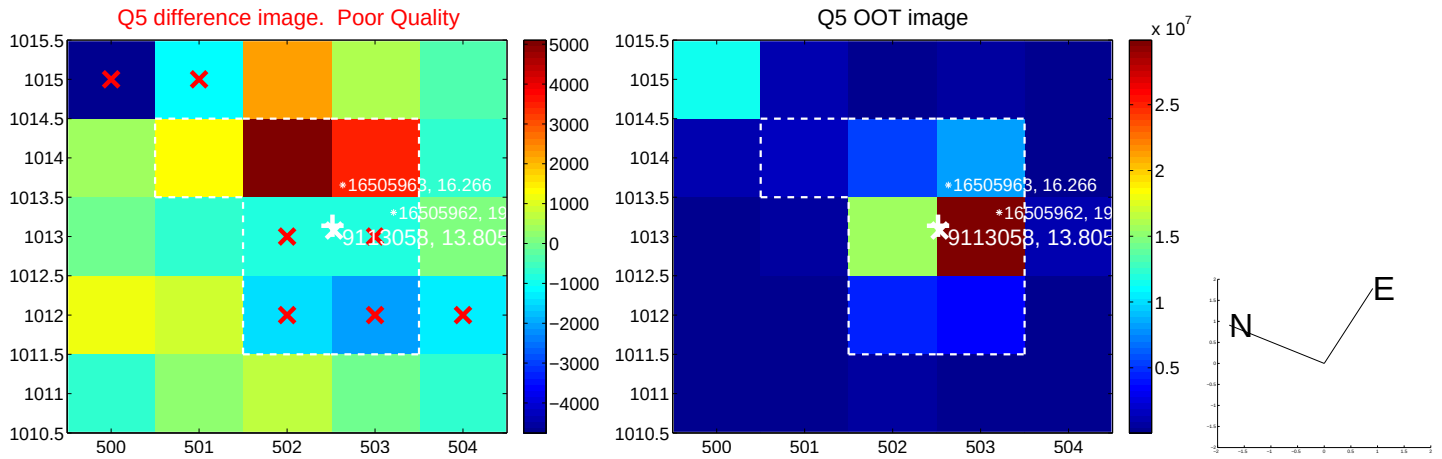
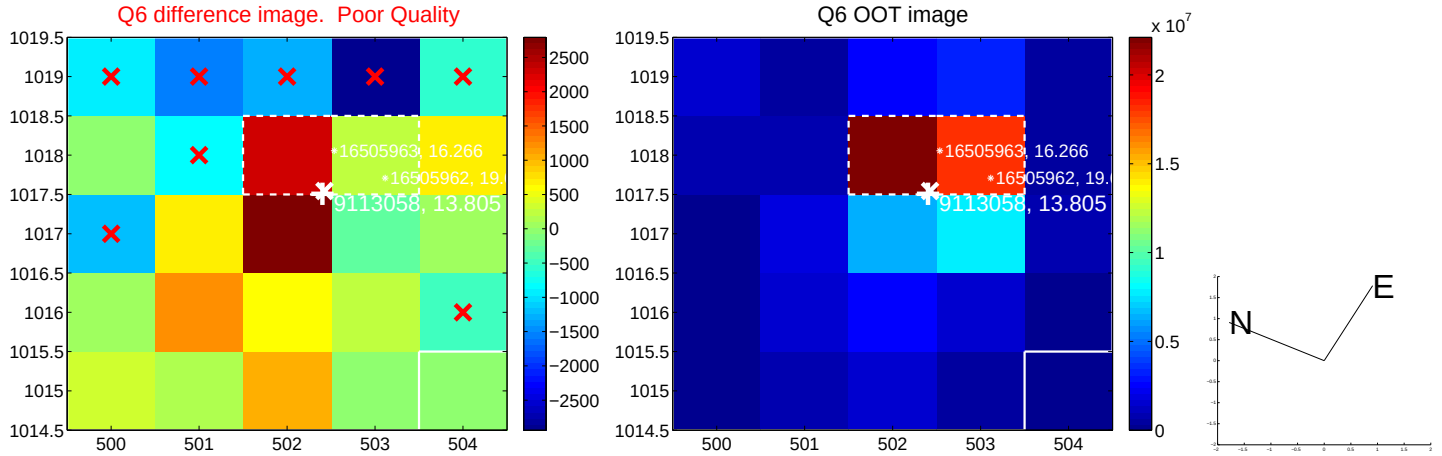
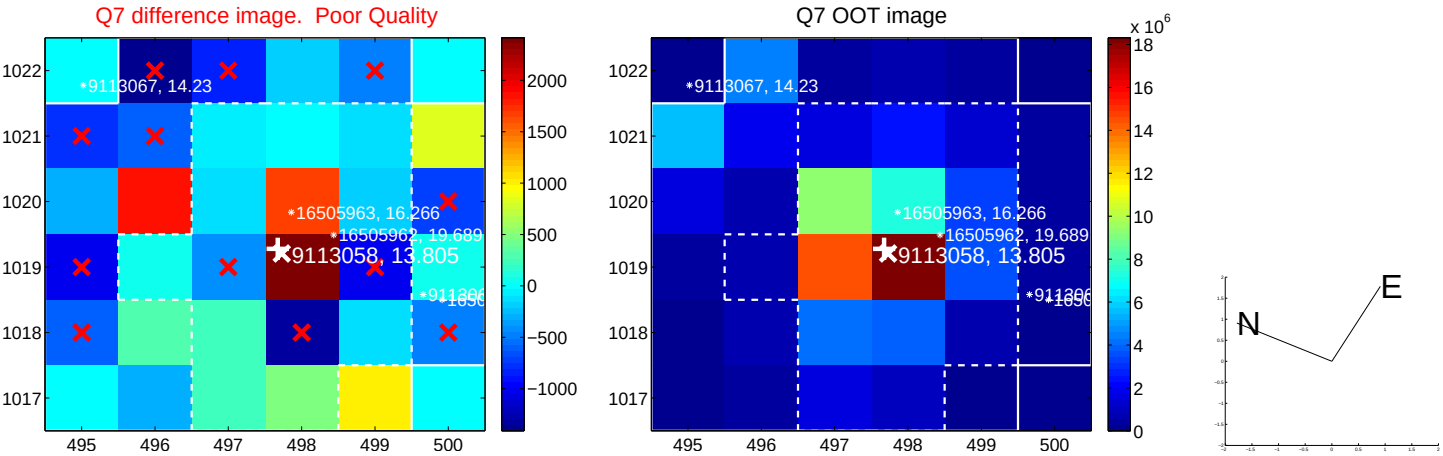
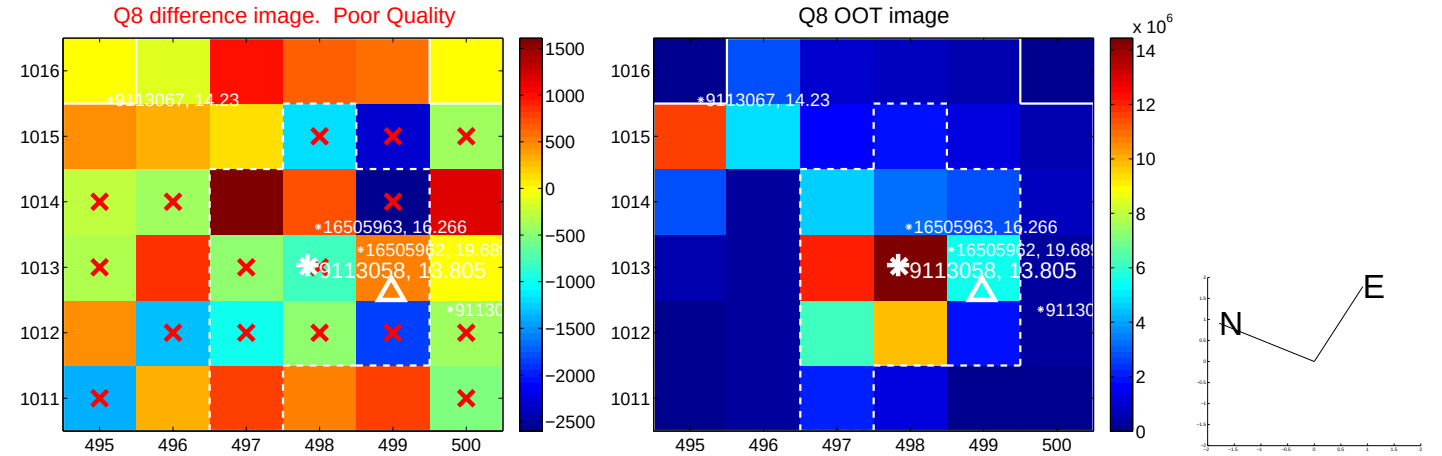
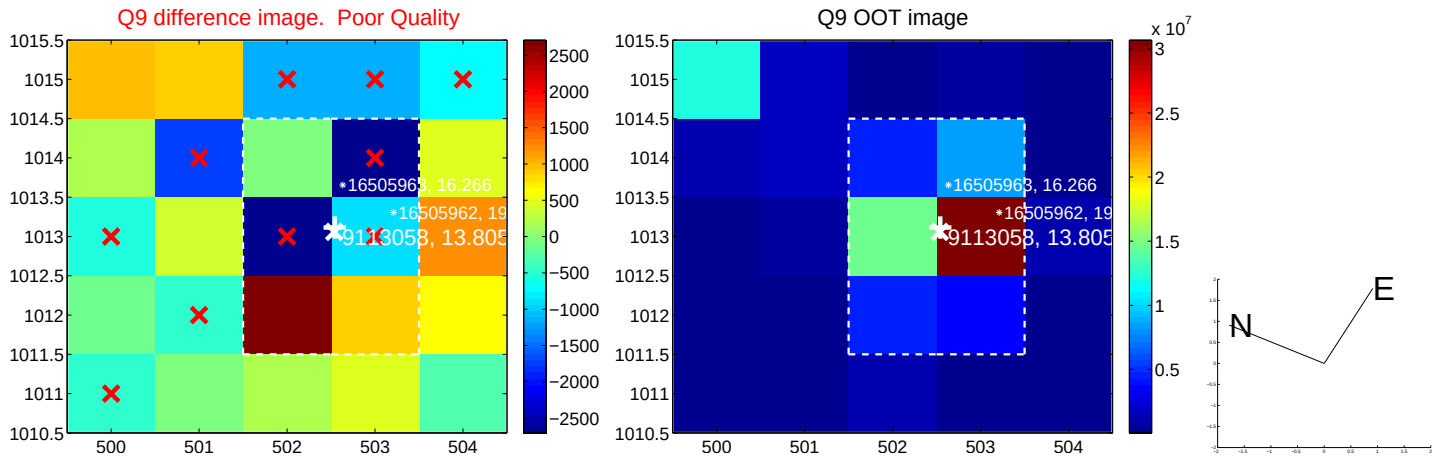


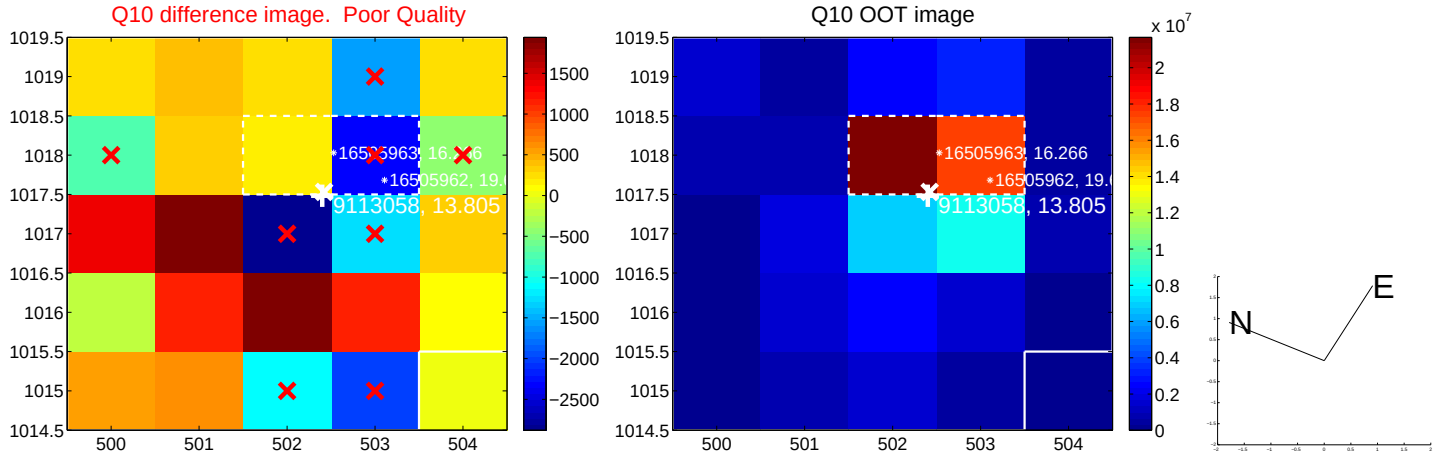


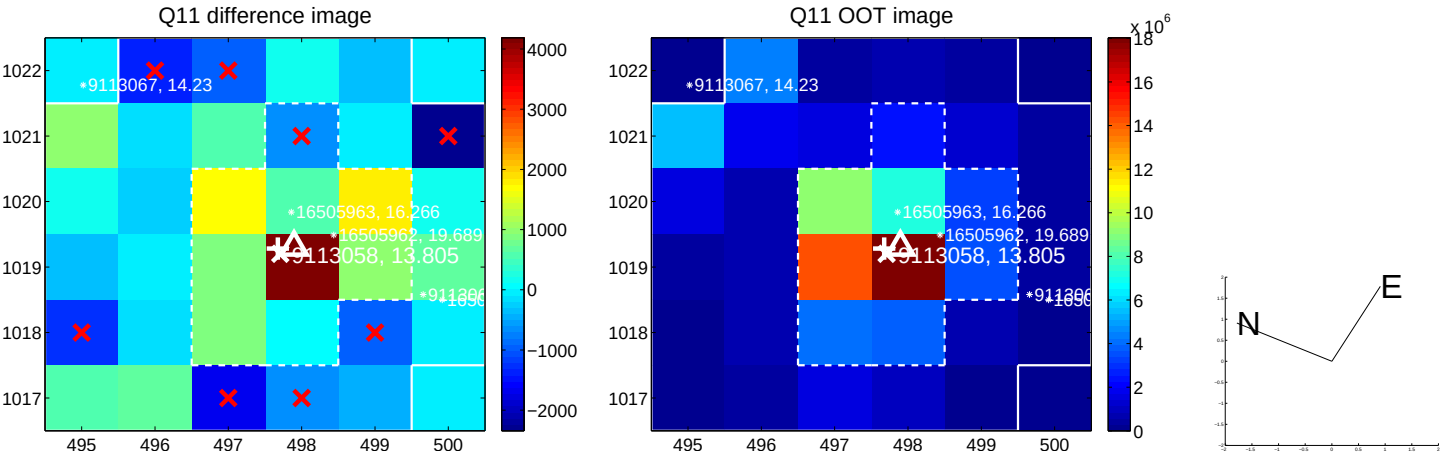


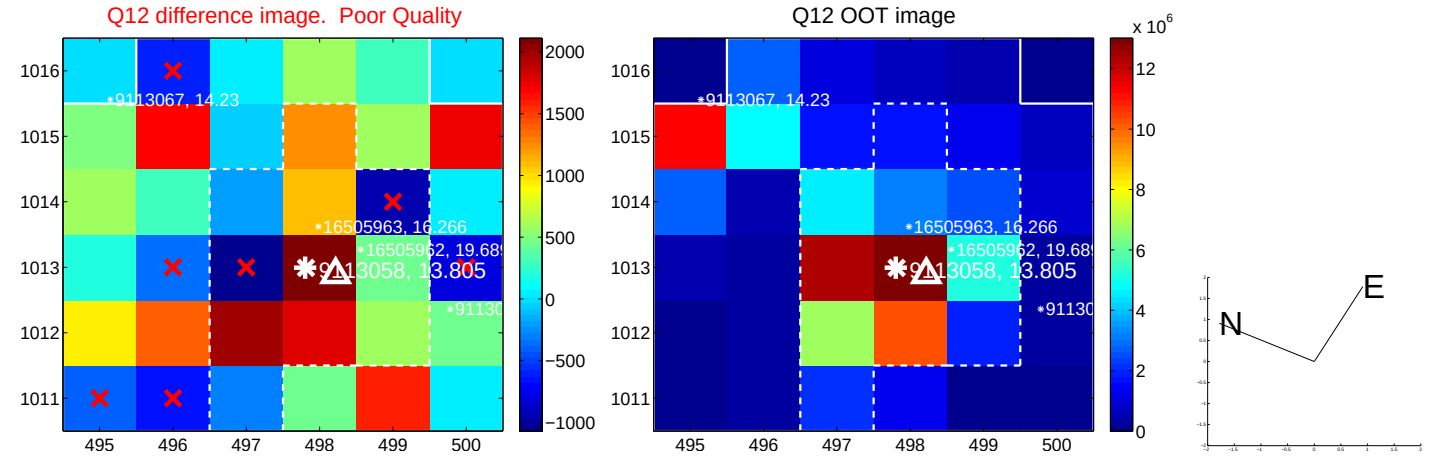


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.









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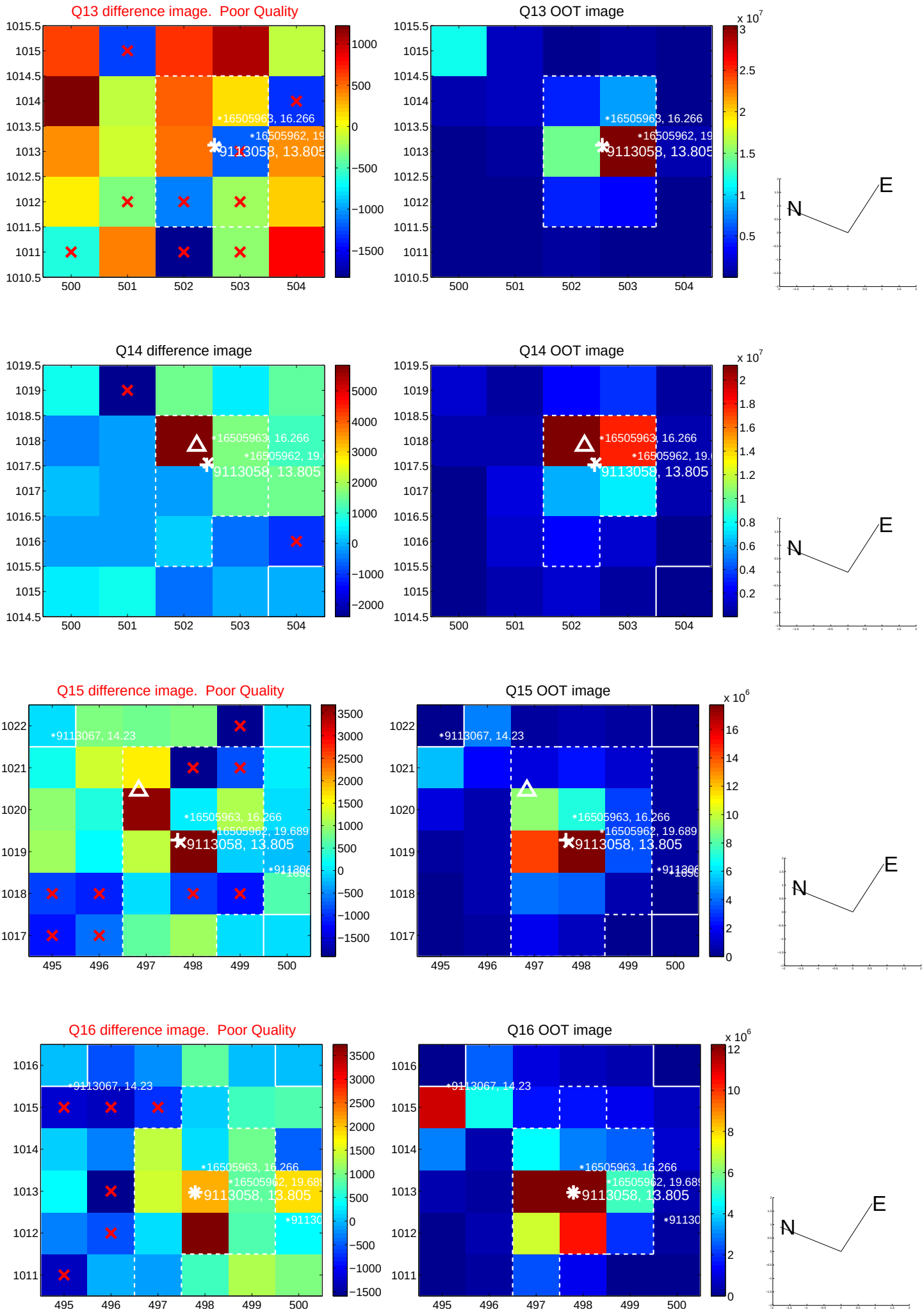
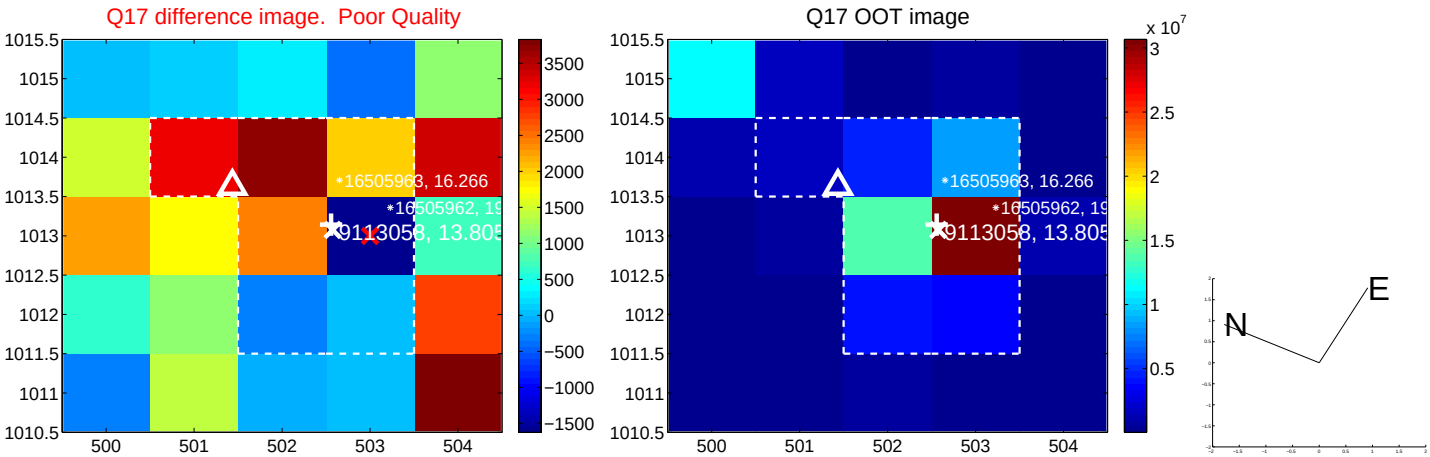
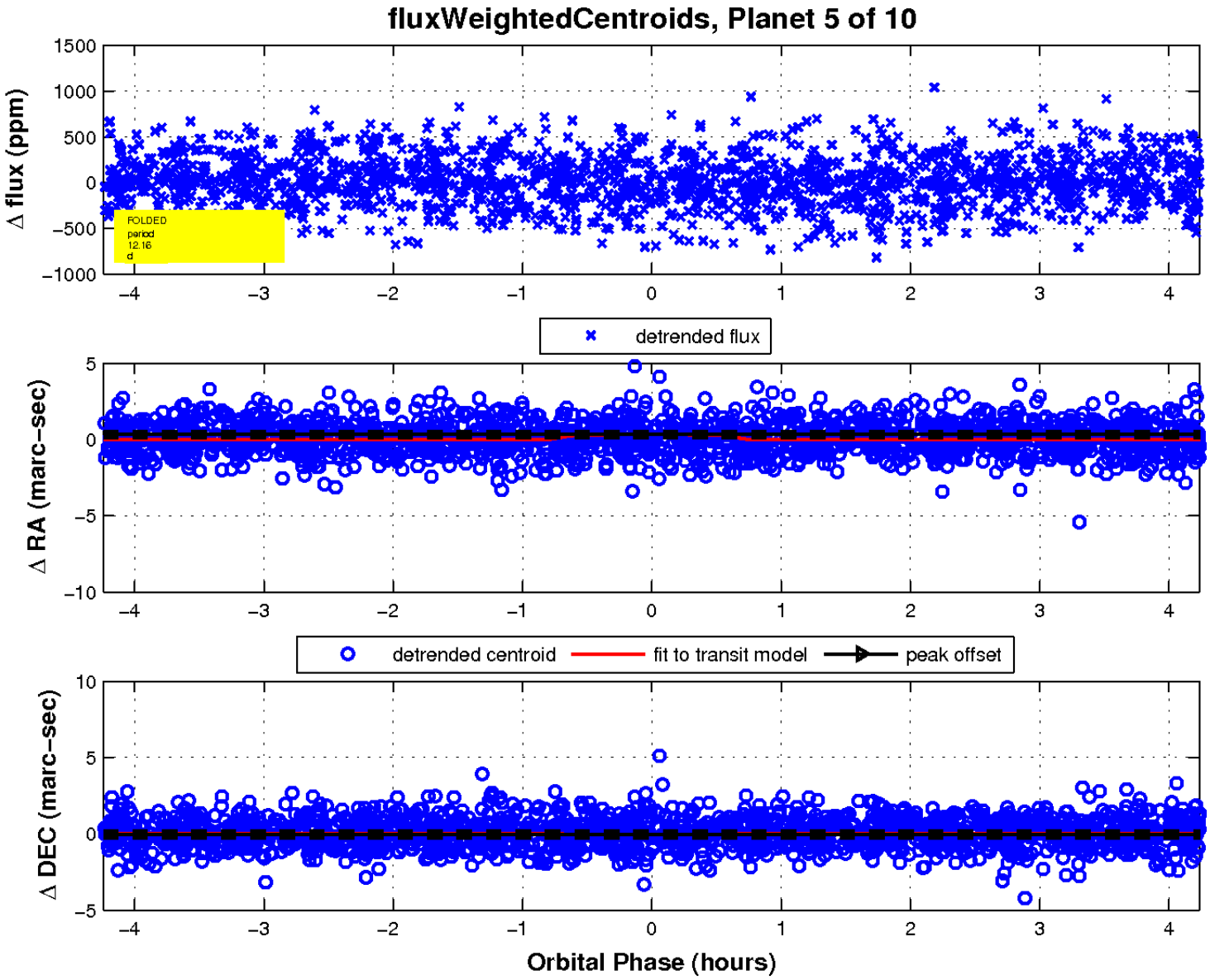
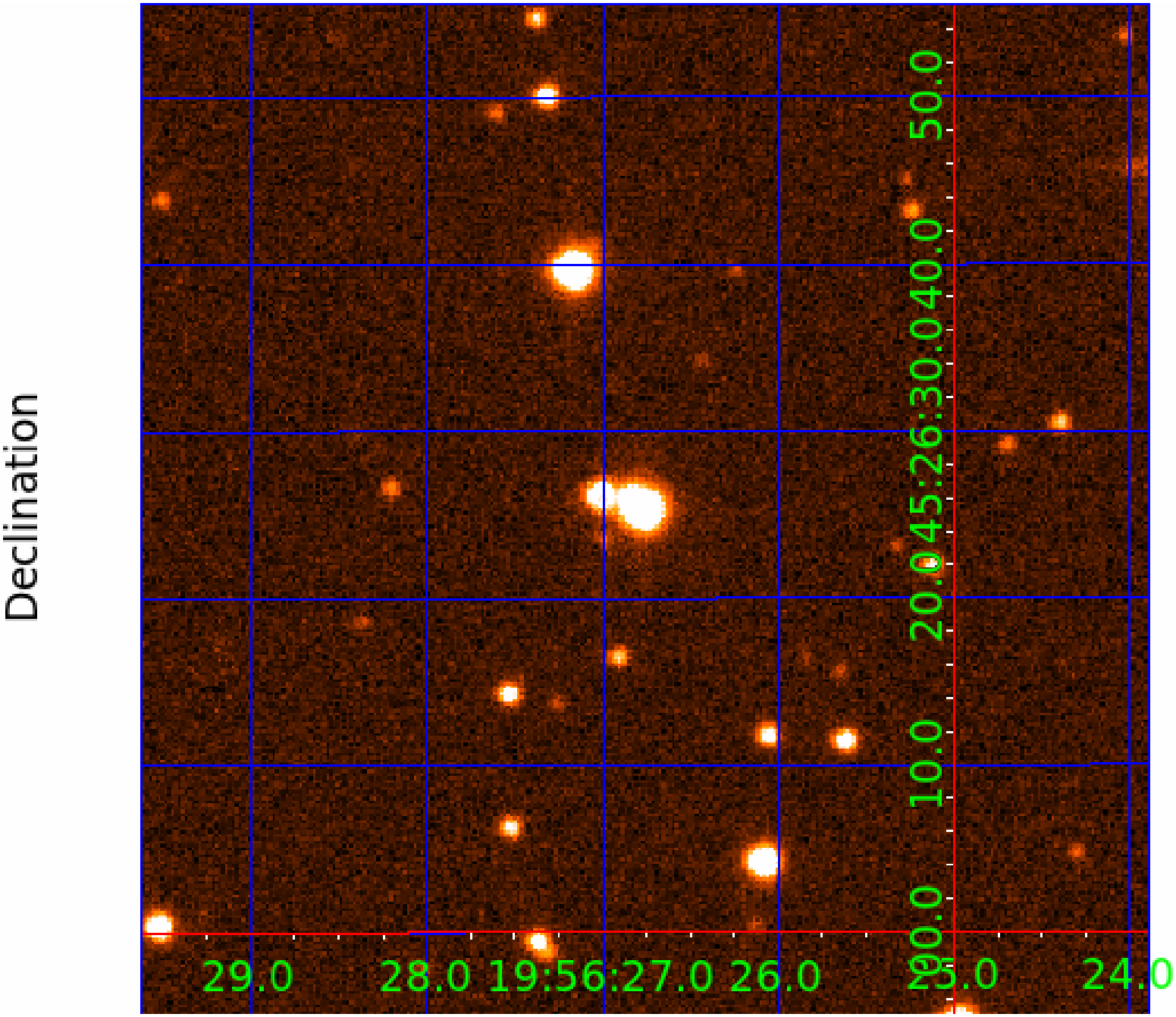


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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30.0
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45:
20.0
10.0
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28.0
19:56:27.0
26.0
25.0
24.0

KIC 009113058

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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009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

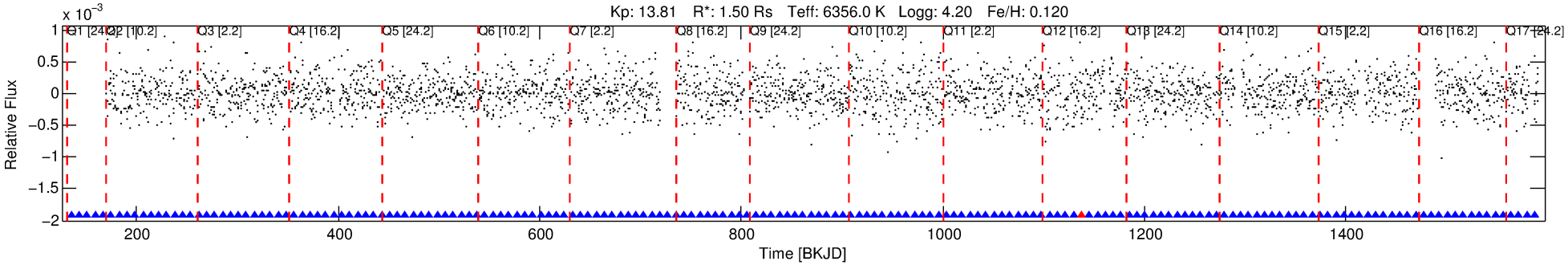
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

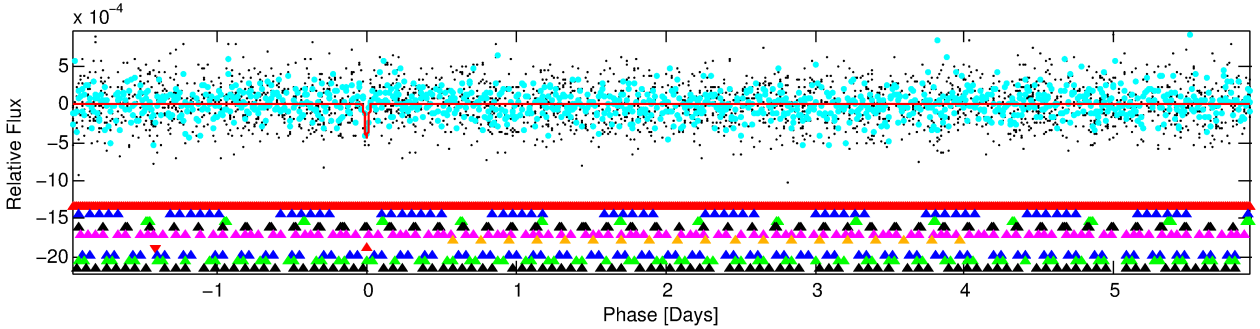
Ephemeris Match Information For 009113058-07

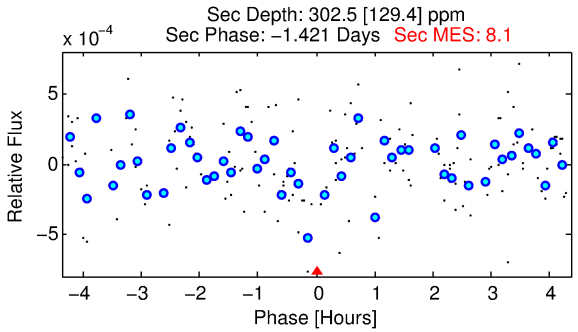
No Significant Match Found

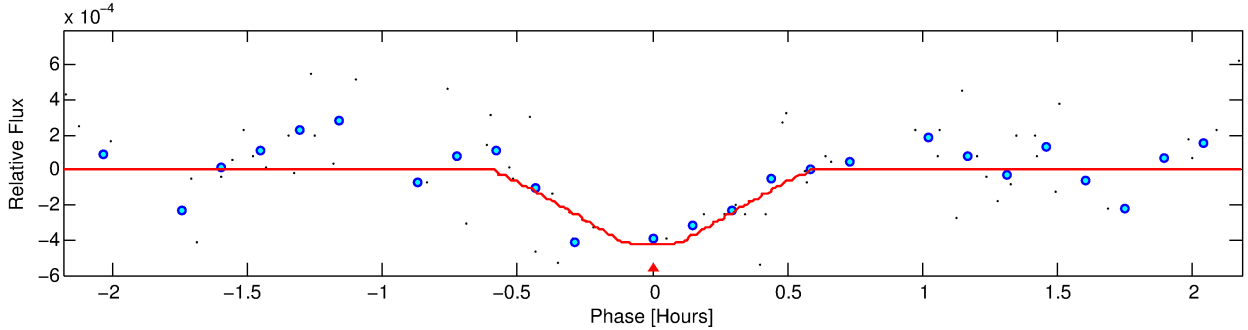
DV One-Page Summary

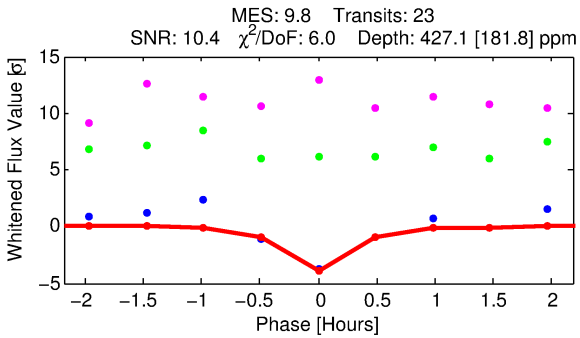
KIC: 9113058 Candidate: 7 of 10 Period: 7.891 d

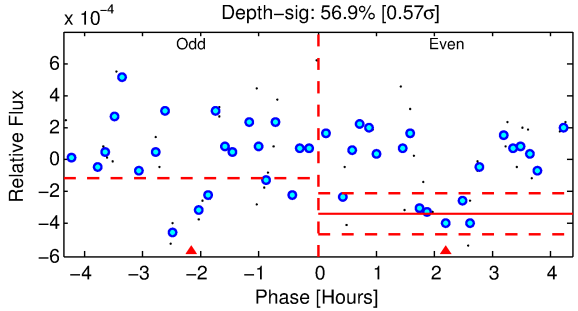


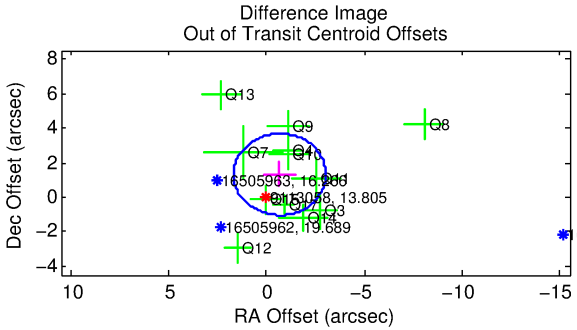












DV Fit Results:

Period = 7.89074 [0.00011] d
Epoch = 135.5125 [0.0068] BKJD
Rp/R* = 0.0197 [0.0266]
a/R* = 75.83 [515.60]
b = 0.45 [12.20]

Seff = 459.80 [185.82]
Teq = 1181 [119] K
Rp = 3.22 [4.46] Re
a = 0.0843 [0.0224] AU

Ag = 114.24 [314.39] [0.36σ]
Teffp = 5968 [4075] K [1.17σ]

DV Diagnostic Results:

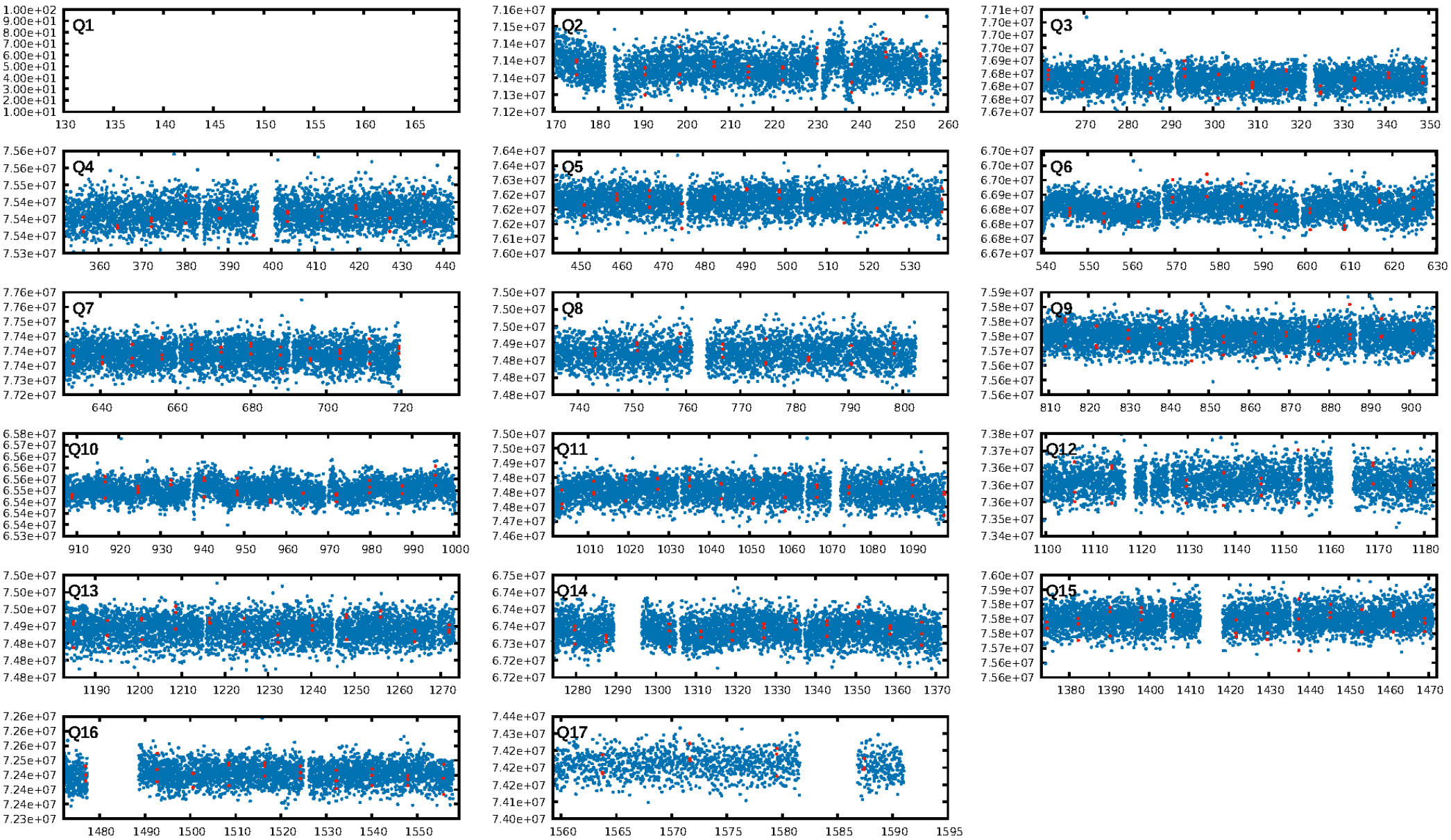
ShortPeriod−sig: 100.0% [45.62σ]
LongPeriod−sig: 100.0% [64.39σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 0.8%
Bootstrap−pfa: N/A
RollingBand−fgt: 0.96 [22/23]
GhostDiagnostic−chr: −1.402

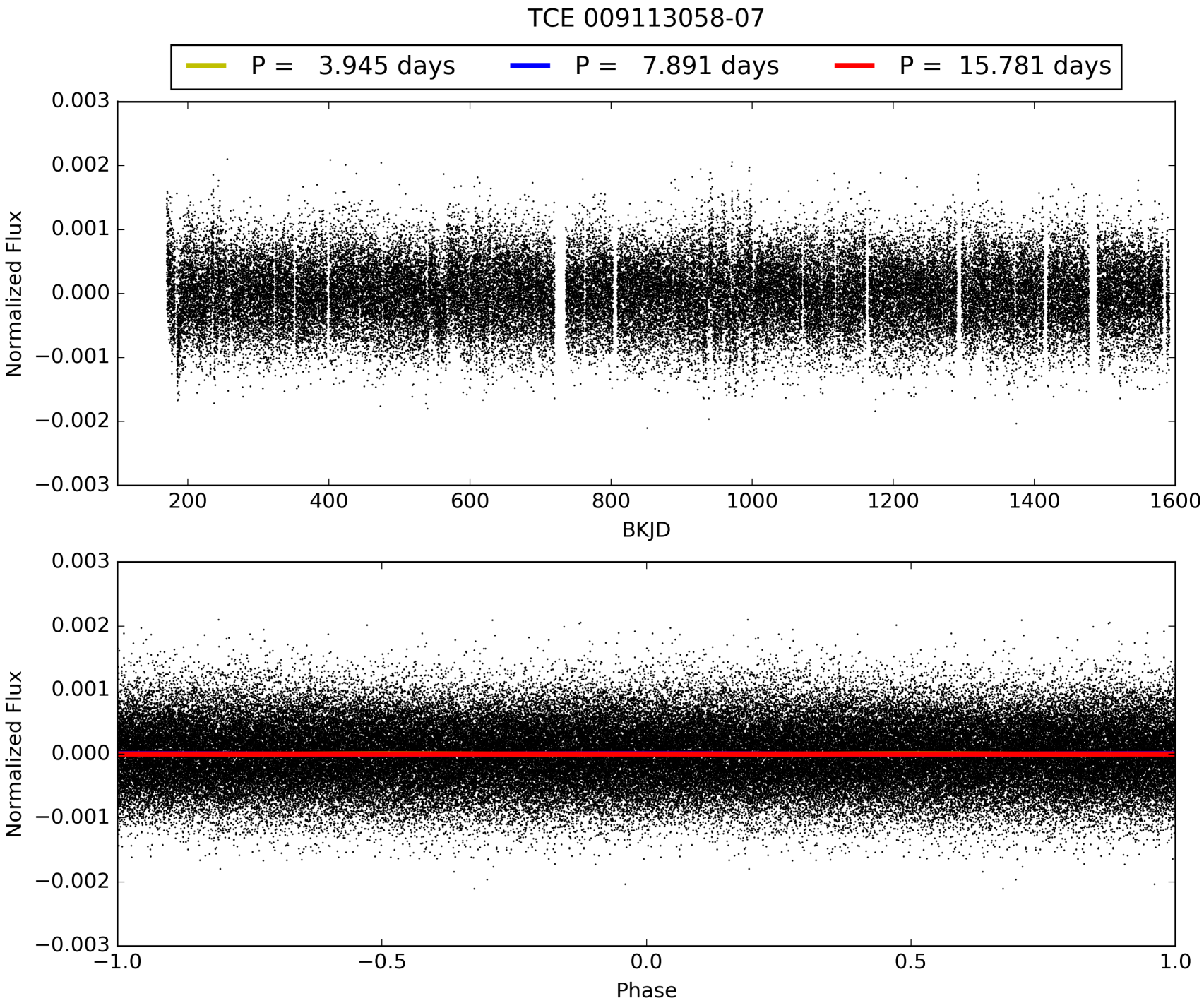
Centroid−sig: 60.0%
Centroid−so: 0.539 arcsec [1.19σ]
OotOffset−rm: 1.476 arcsec [1.87σ]
KicOffset−rm: 1.566 arcsec [2.01σ]
OotOffset−st: 2/4/3/3 [12]
KicOffset−st: 2/4/3/3 [12]
DiffImageQuality−fgm: 0.17 [2/12]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:49 Z

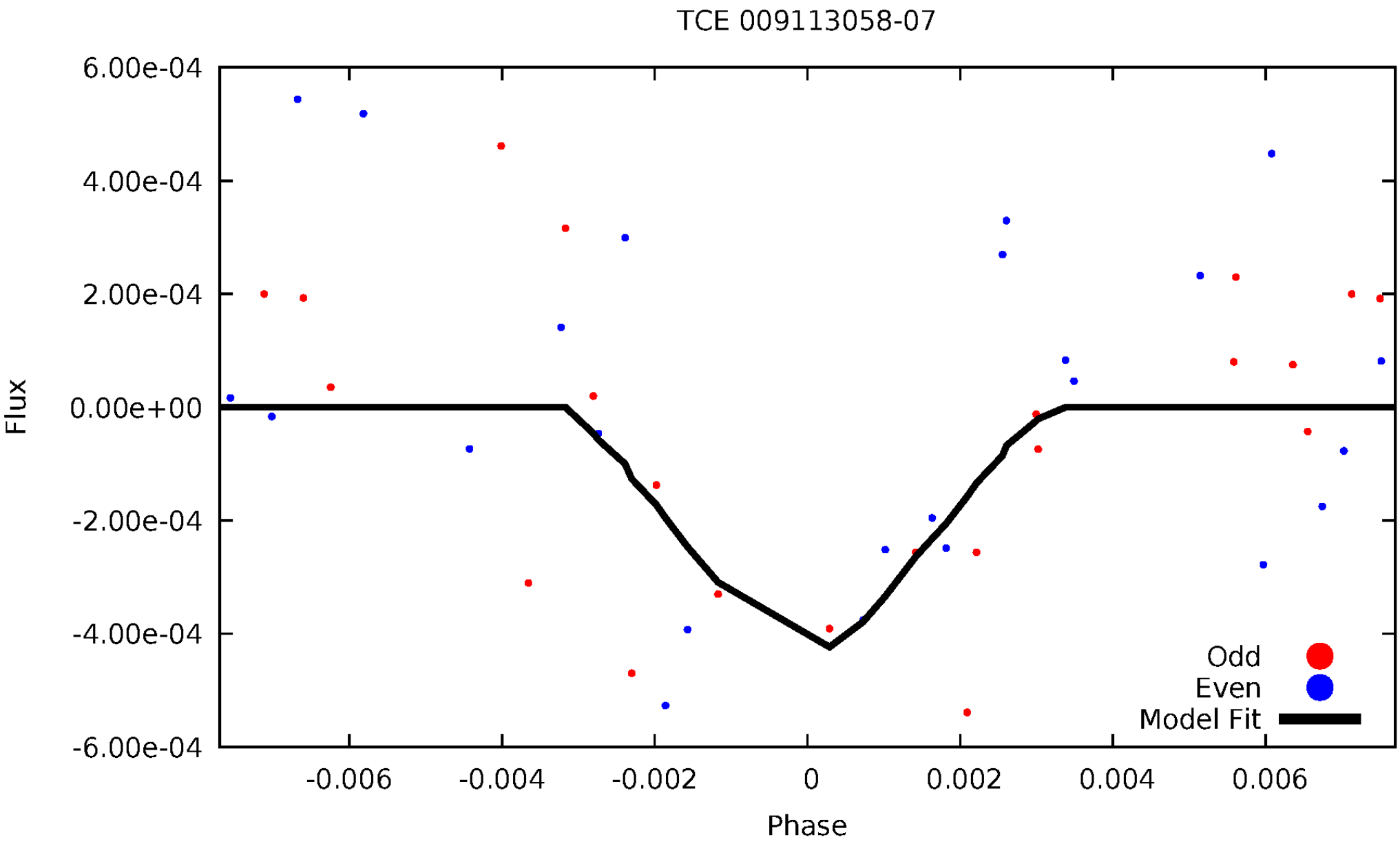
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-07, PDC Light Curves

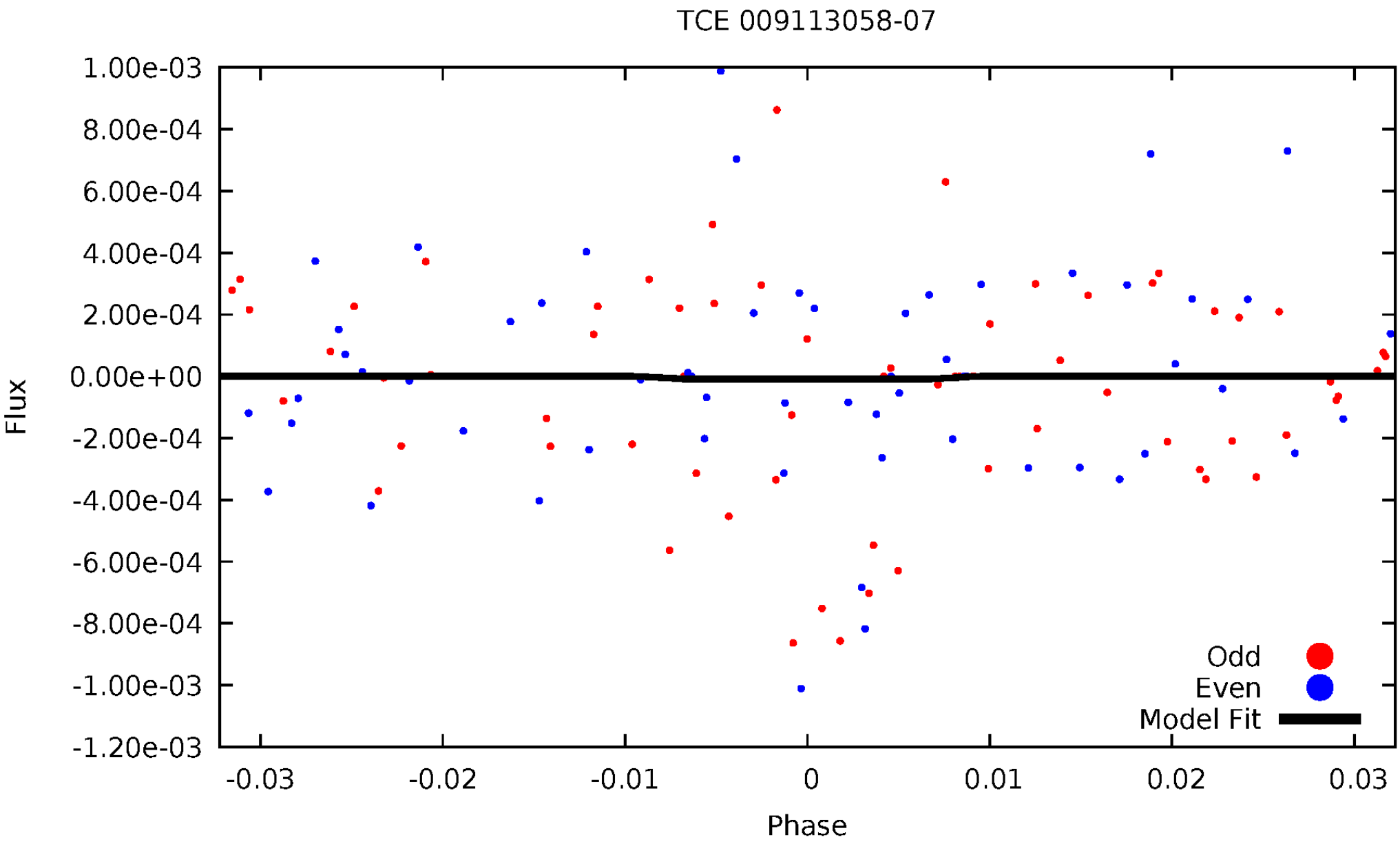



TCE 009113058-07
P = 3.945 days
P = 7.891 days
P = 15.781 days
Normalized Flux
BKJD
Normalized Flux
Phase

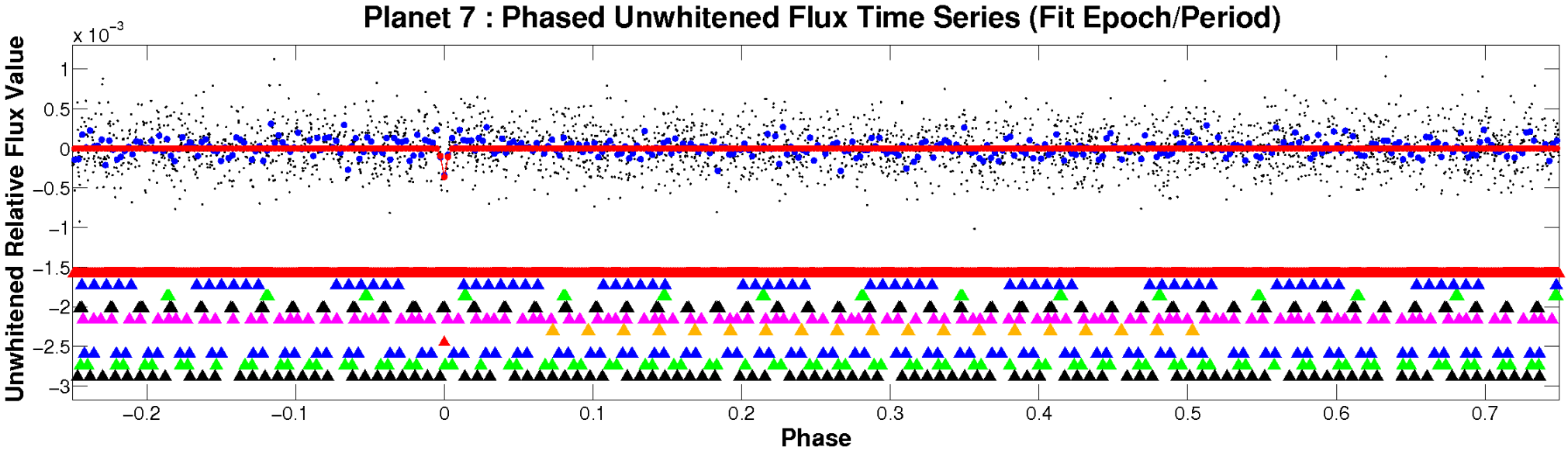
DV Odd/Even

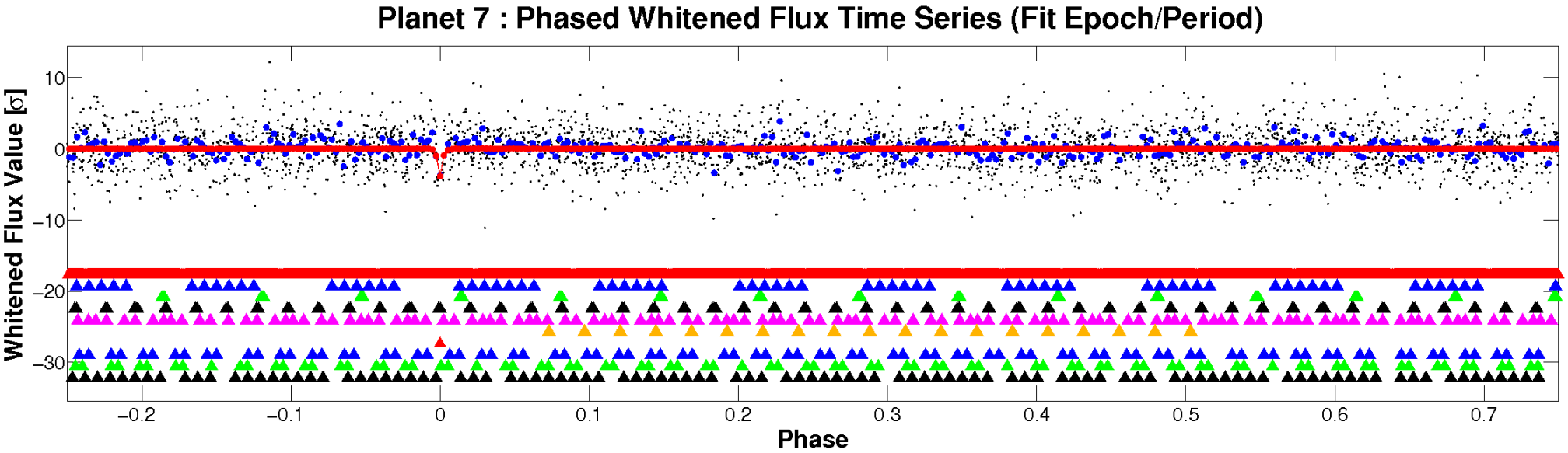

TCE 009113058-07
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009113058-07
1.00e-03
8.00e-04
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
-1.20e-03
Flux
-0.03
-0.02
-0.01
0
0.01
0.02
0.03
Phase
Odd
Even
Model Fit

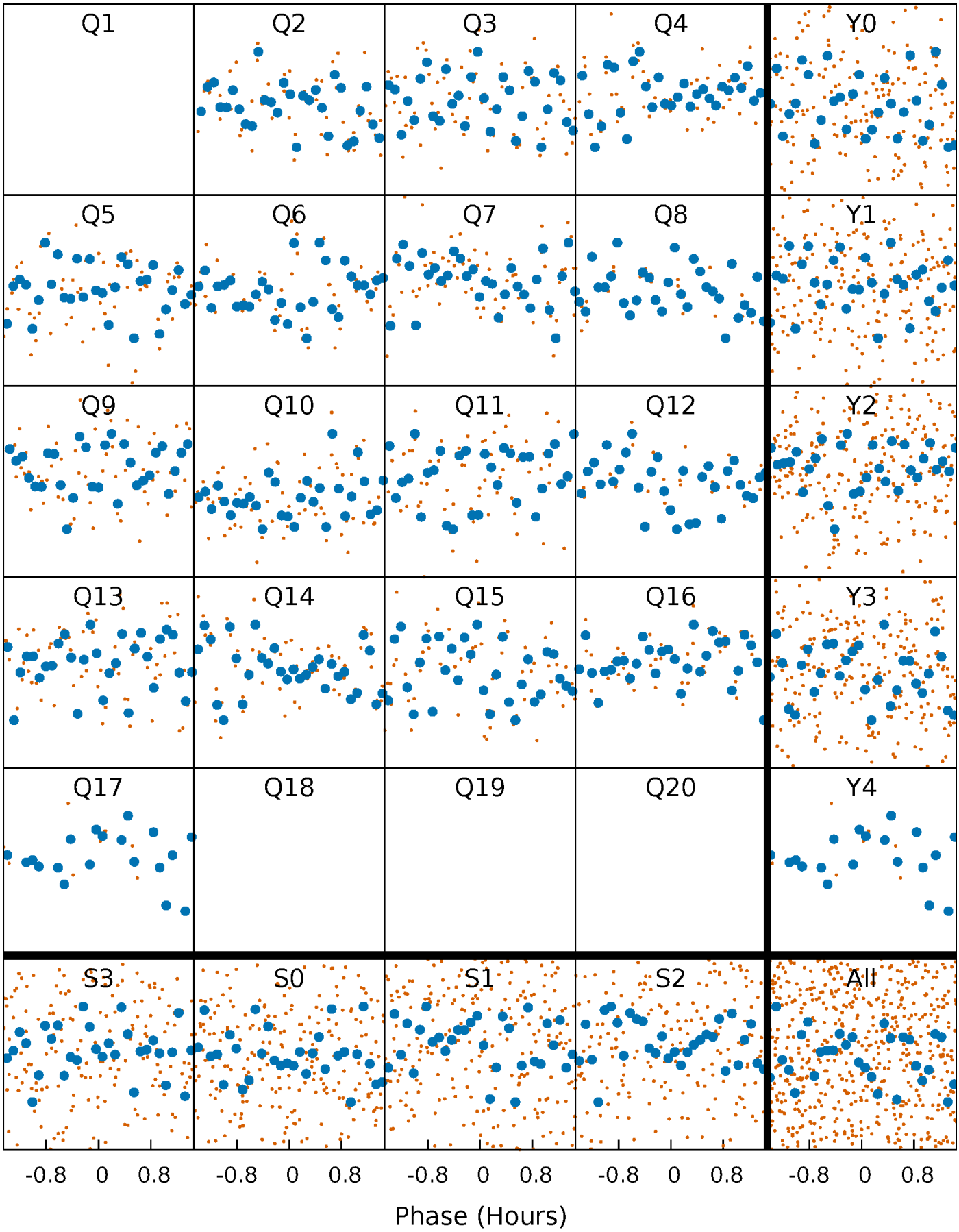
Non-Whitened Vs. Whitened Light Curve





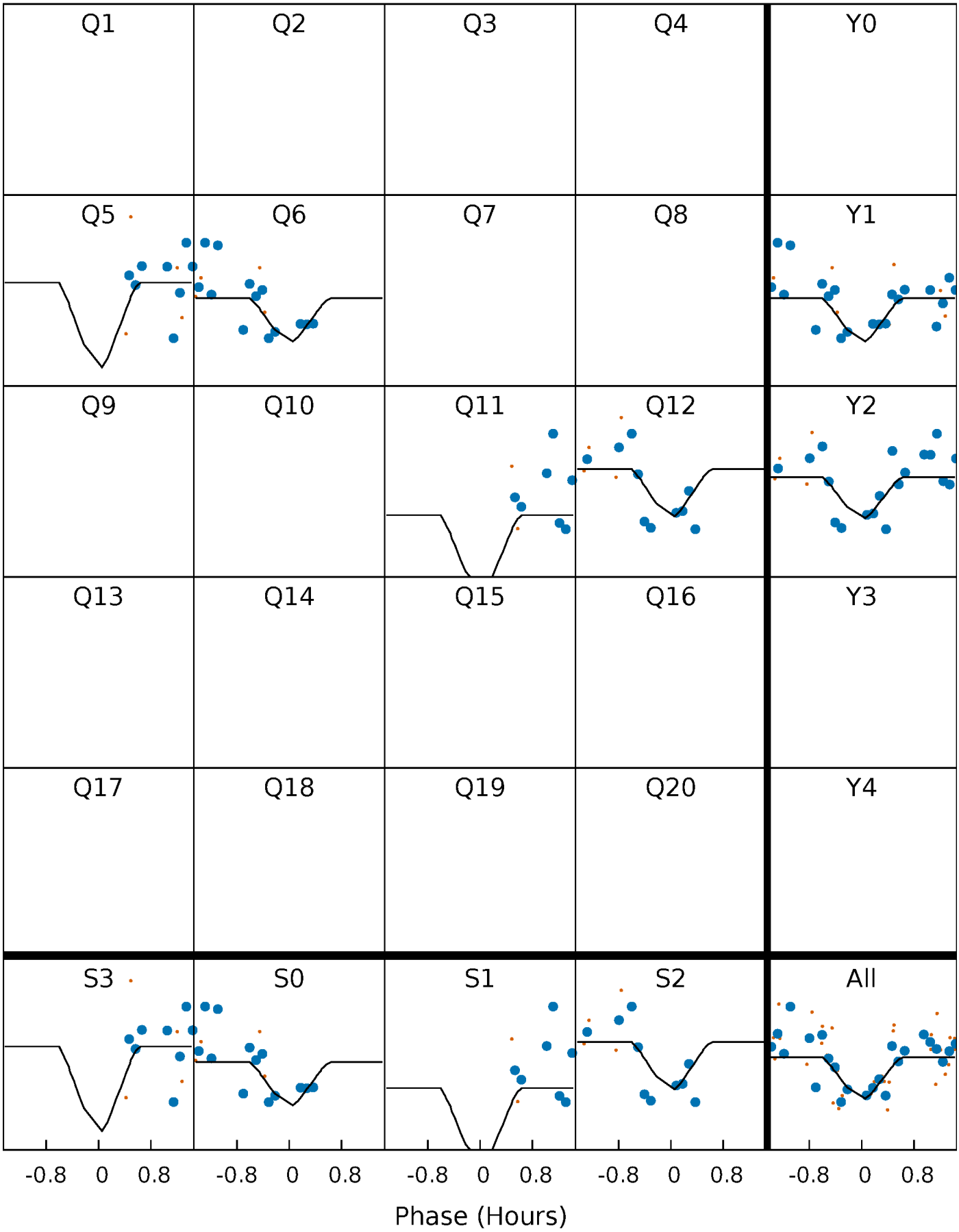
PDC Quarter-Phased Transit Curves

TCE 009113058-07 P= 7.890744 Days T_0=135.512462 (BKJD)



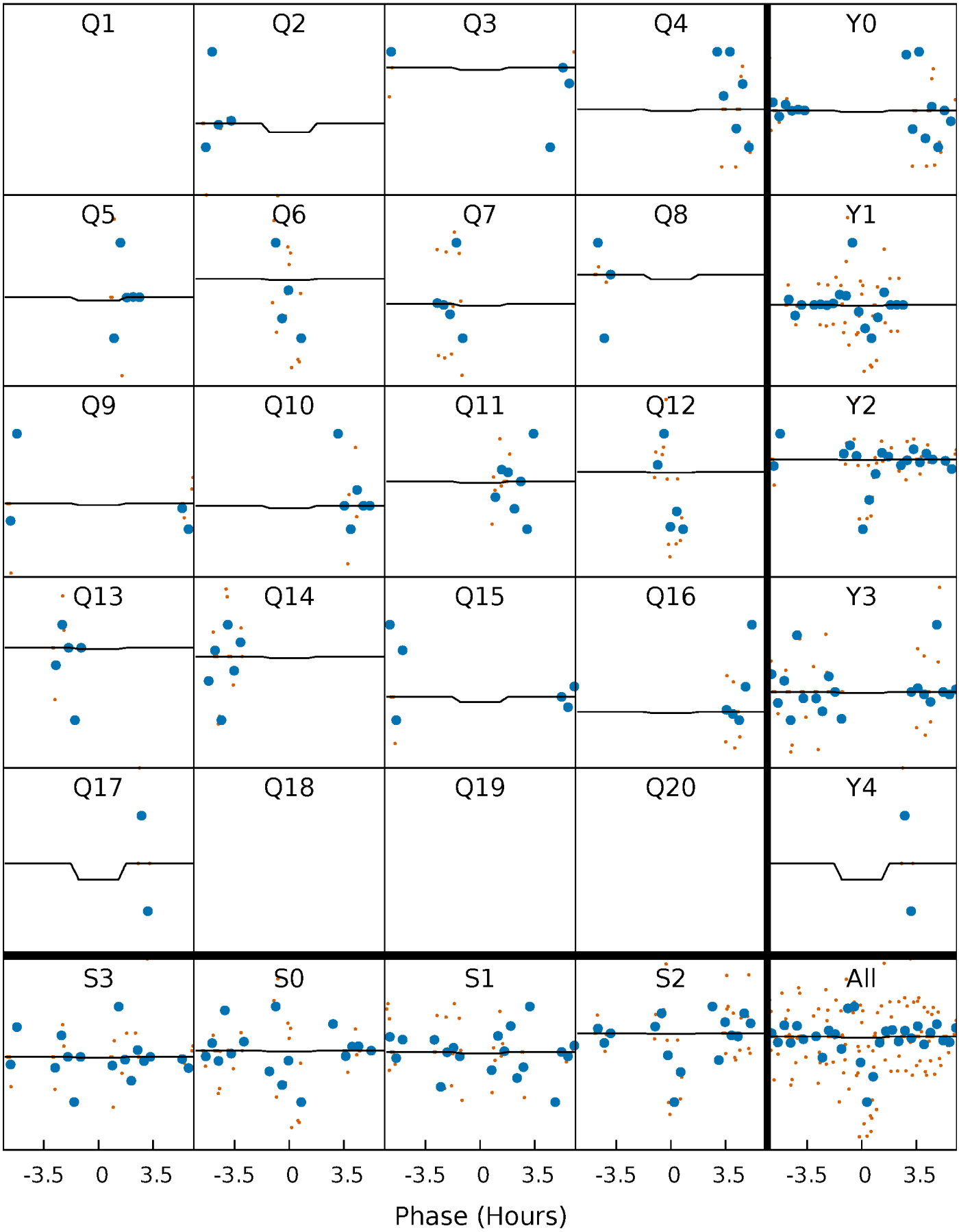
DV Quarter-Phased Transit Curves

TCE 009113058-07 P= 7.890744 Days T_0=135.512462 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

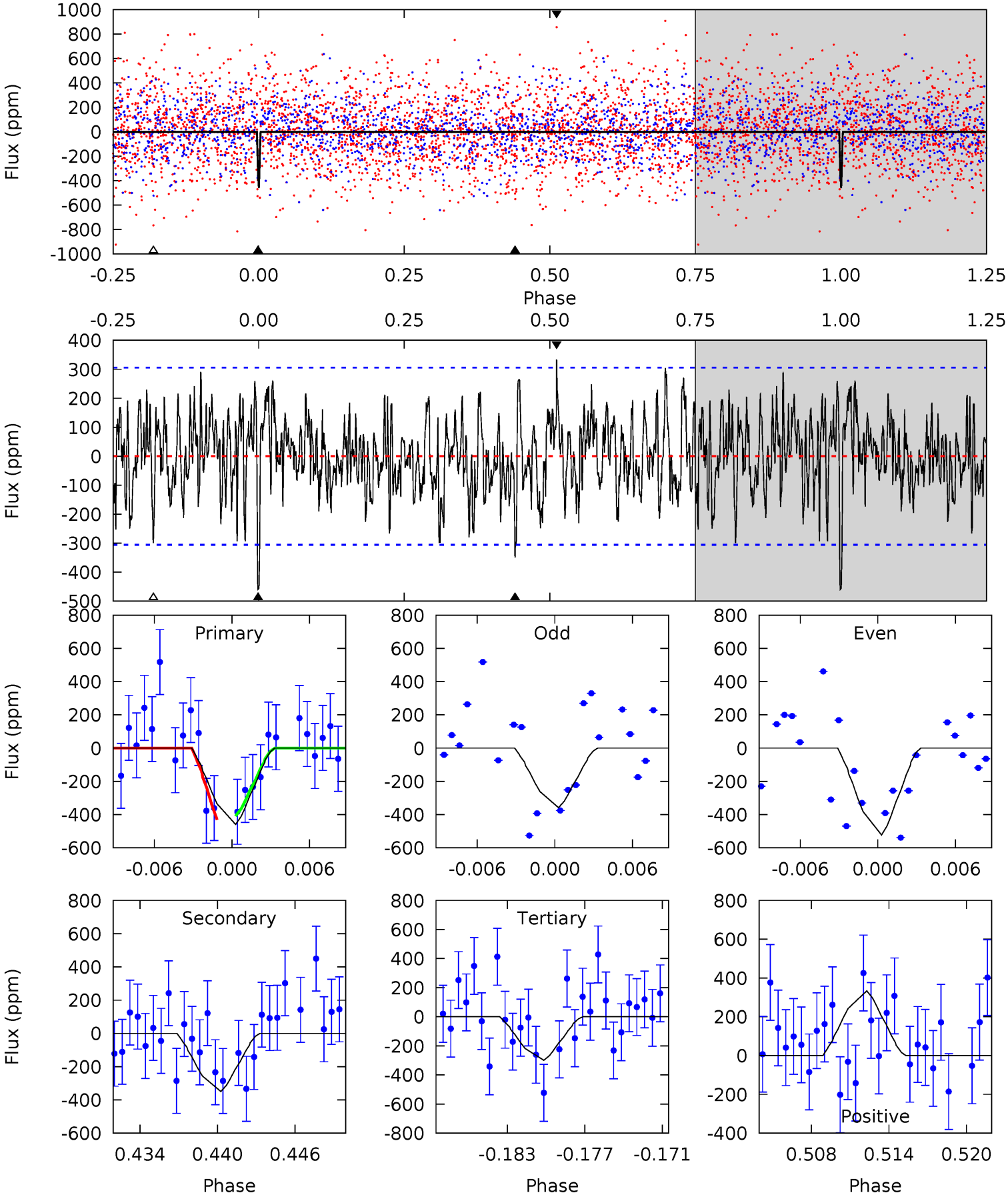
TCE 009113058-07 P= 7.890793 Days T_0=135.494392 (BKJD)



DV Model-Shift Uniqueness Test

009113058-07, P = 7.890744 Days, E = 135.512462 Days

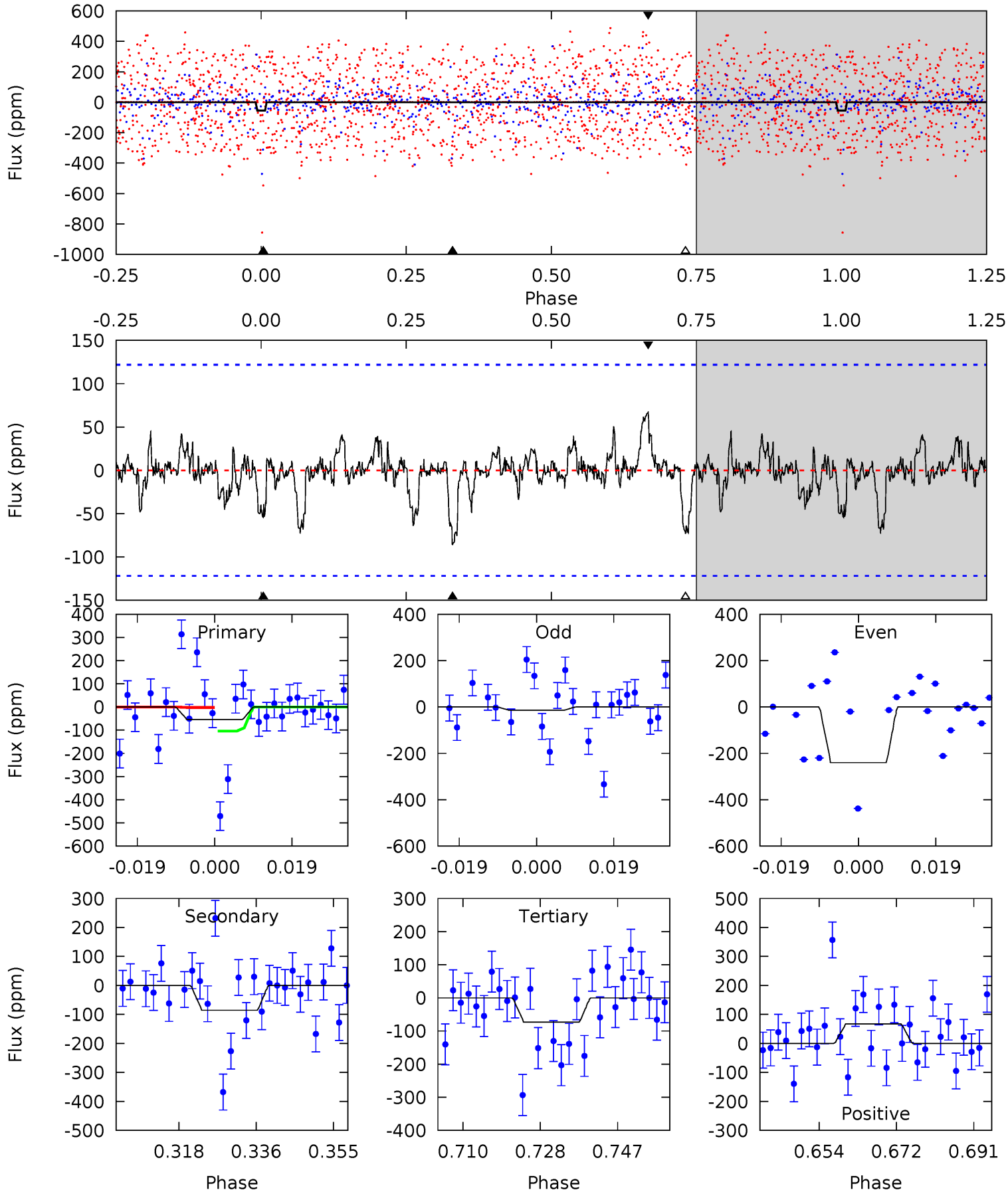
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.69	5.85	5.01	5.58	5.12	2.74	1.89	2.68	2.11	0.84	0.27	1.39	1.04	0.42	0.18



Alt Model-Shift Uniqueness Test

009113058-07, P = 7.890793 Days, E = 135.494392 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.19	3.45	2.95	2.70	4.91	2.35	0.71	-0.76	-0.51	0.51	0.75	4.45	13.4	0.44	2.05



Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-07 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-349±60	$4.54^{+3.89}_{-2.99}$	1660^{+118}_{-112}	5269^{+4250}_{-1160}	65^{+504}_{-47}
Alt.	-86±25	$3.20^{+3.12}_{-2.25}$	1654^{+142}_{-114}	4513^{+3735}_{-1003}	31^{+324}_{-23}

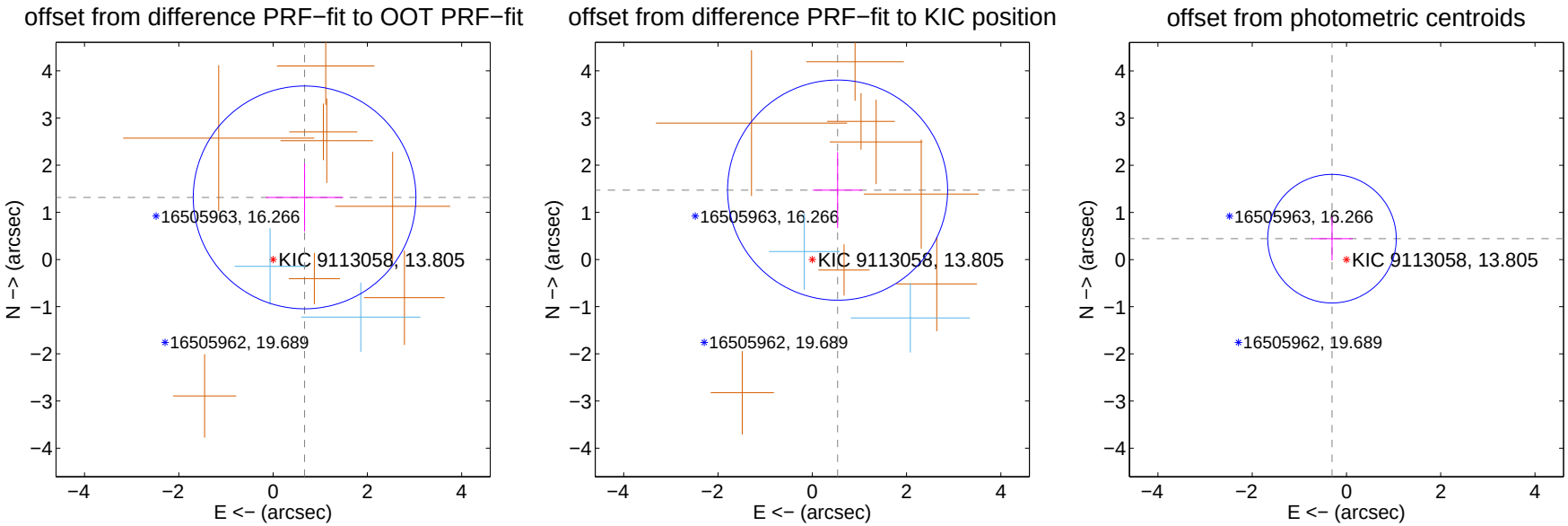
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

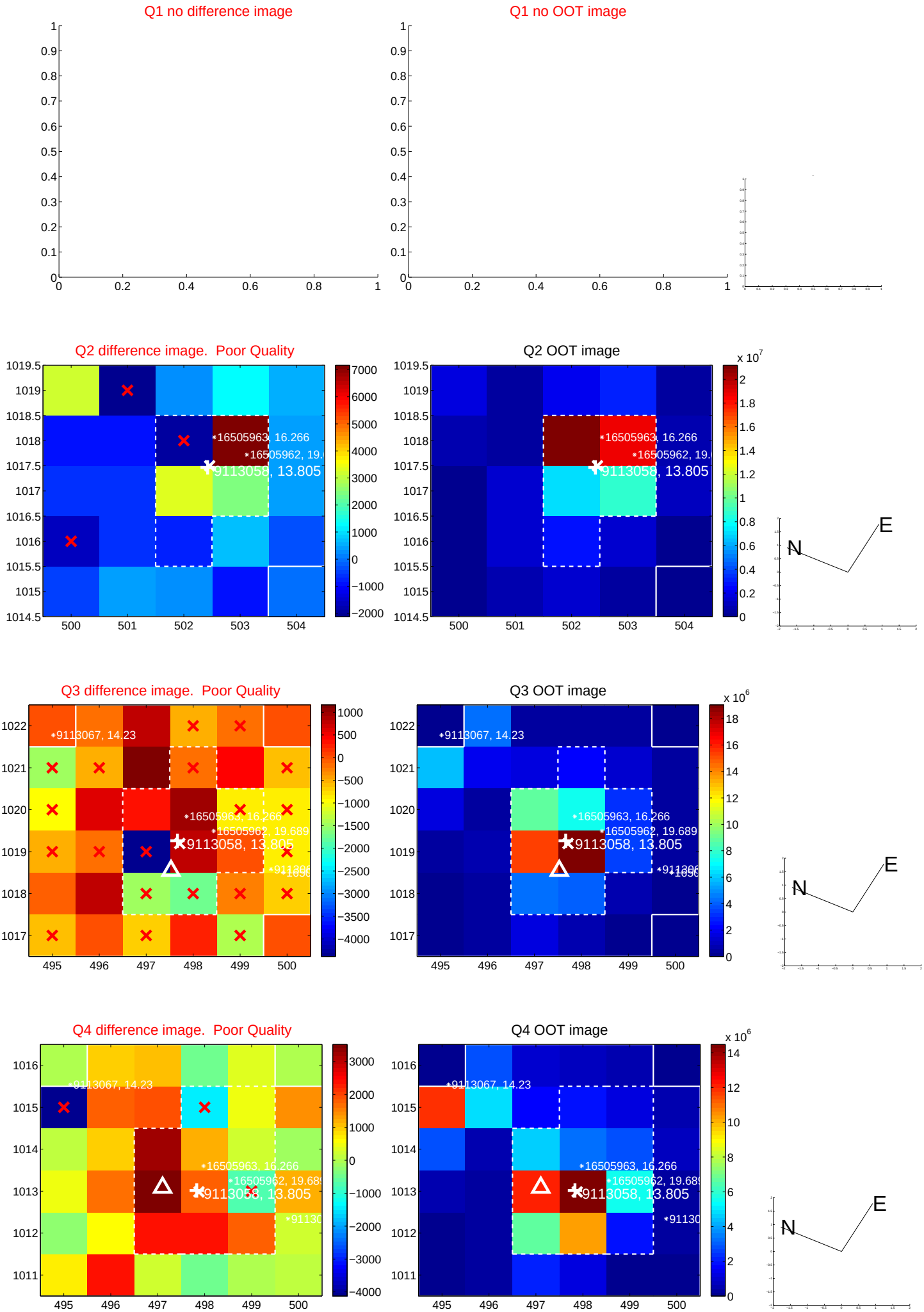
Supplemental centroid analysis for 009113058-07. Kepler magnitude: 13.80. Transit SNR 10.44
There are 2 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.476 ± 0.787	1.87	-0.668 ± 0.819	1.316 ± 0.721
PRF-fit source offset from KIC position	1.566 ± 0.778	2.01	-0.537 ± 0.526	1.471 ± 0.806
photometric centroid source offset	0.54 ± 0.45	1.19	0.31 ± 0.44	0.44 ± 0.46

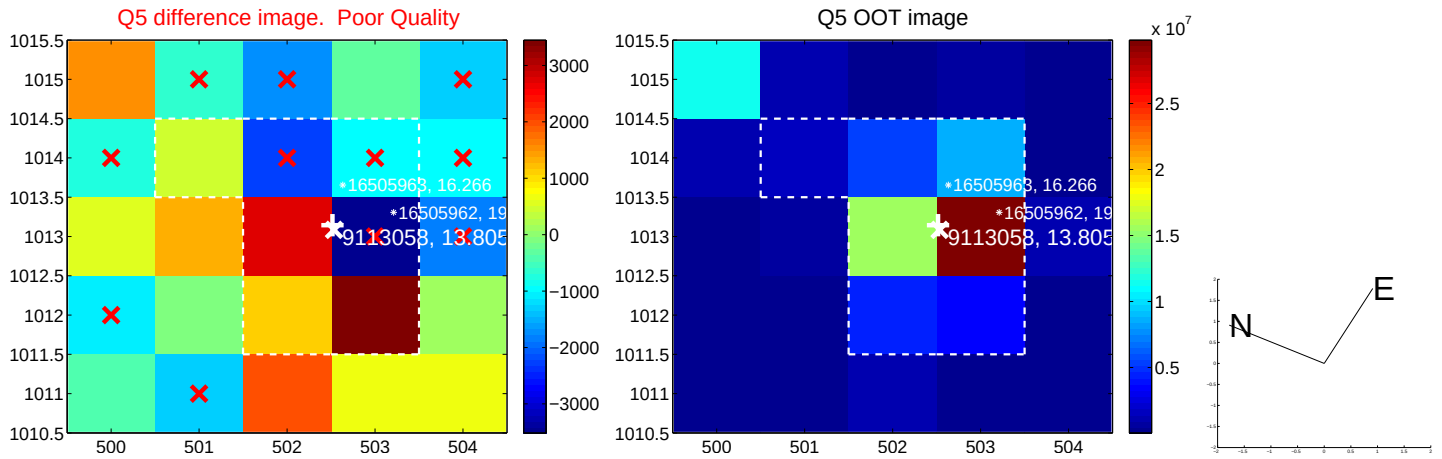


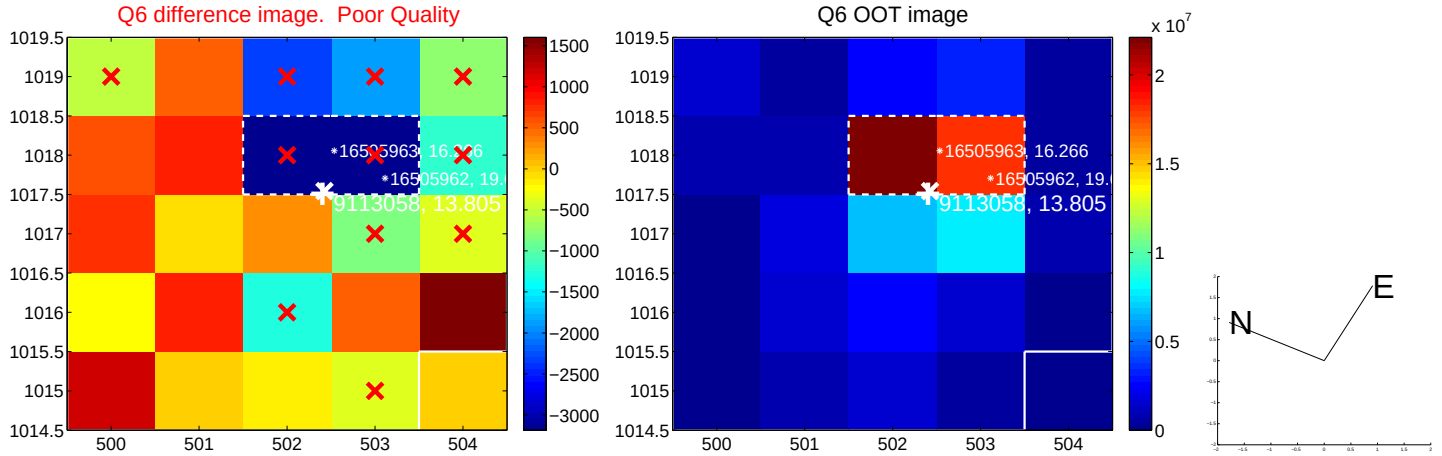
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

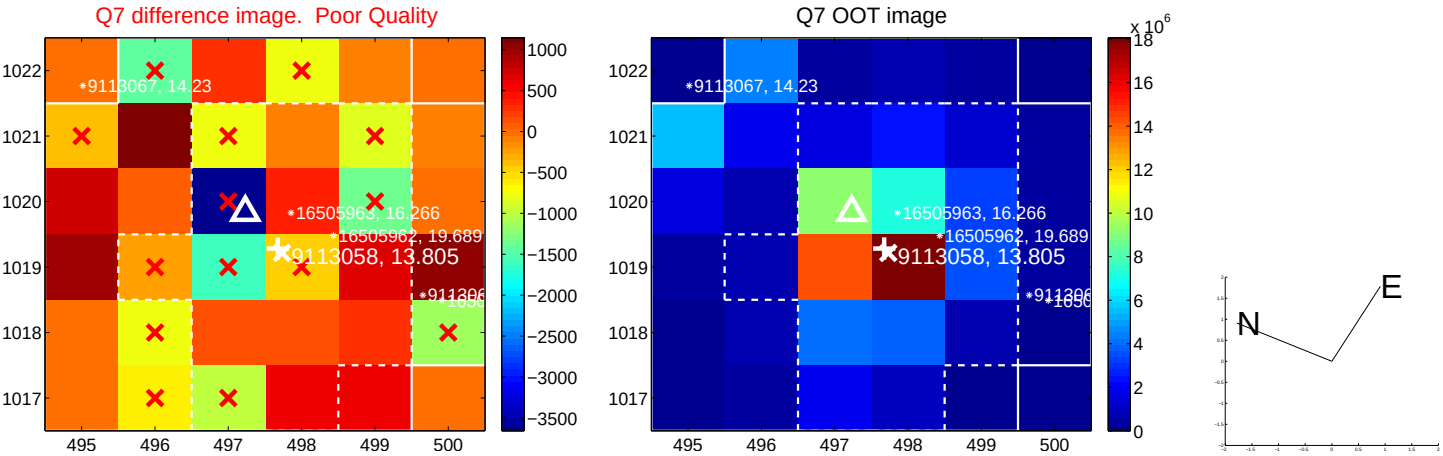
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

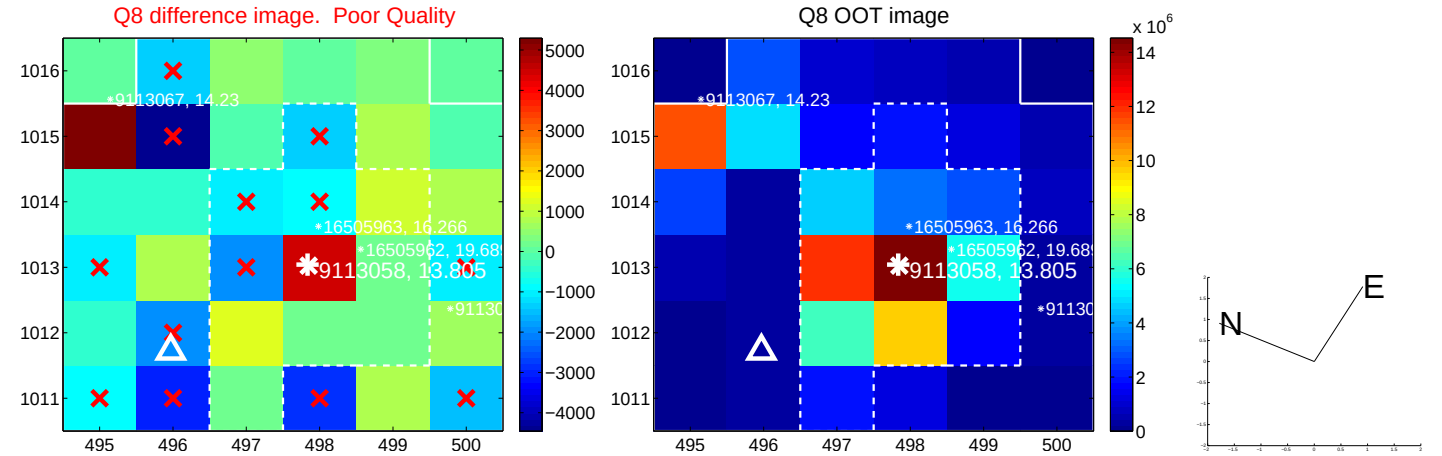


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

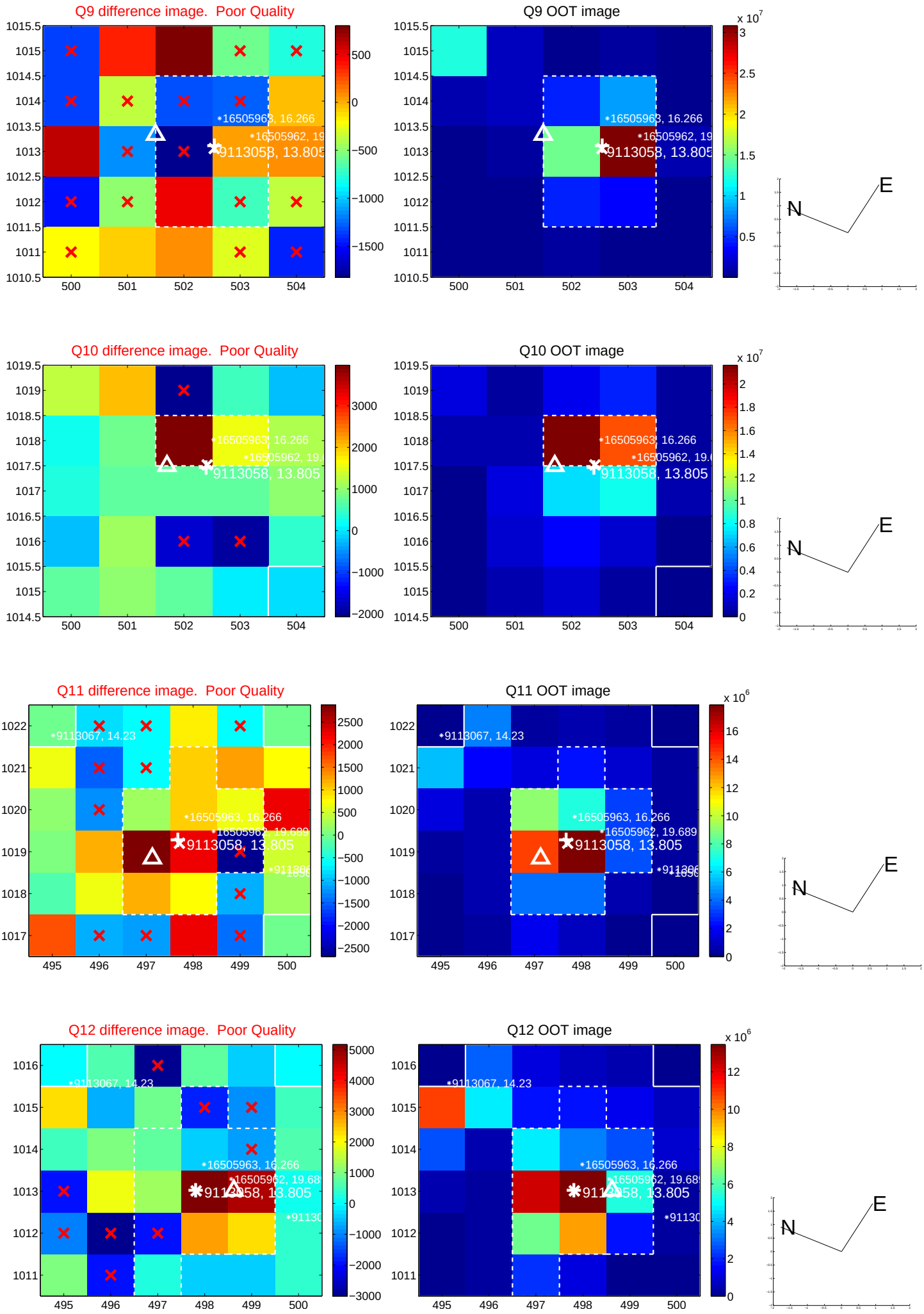




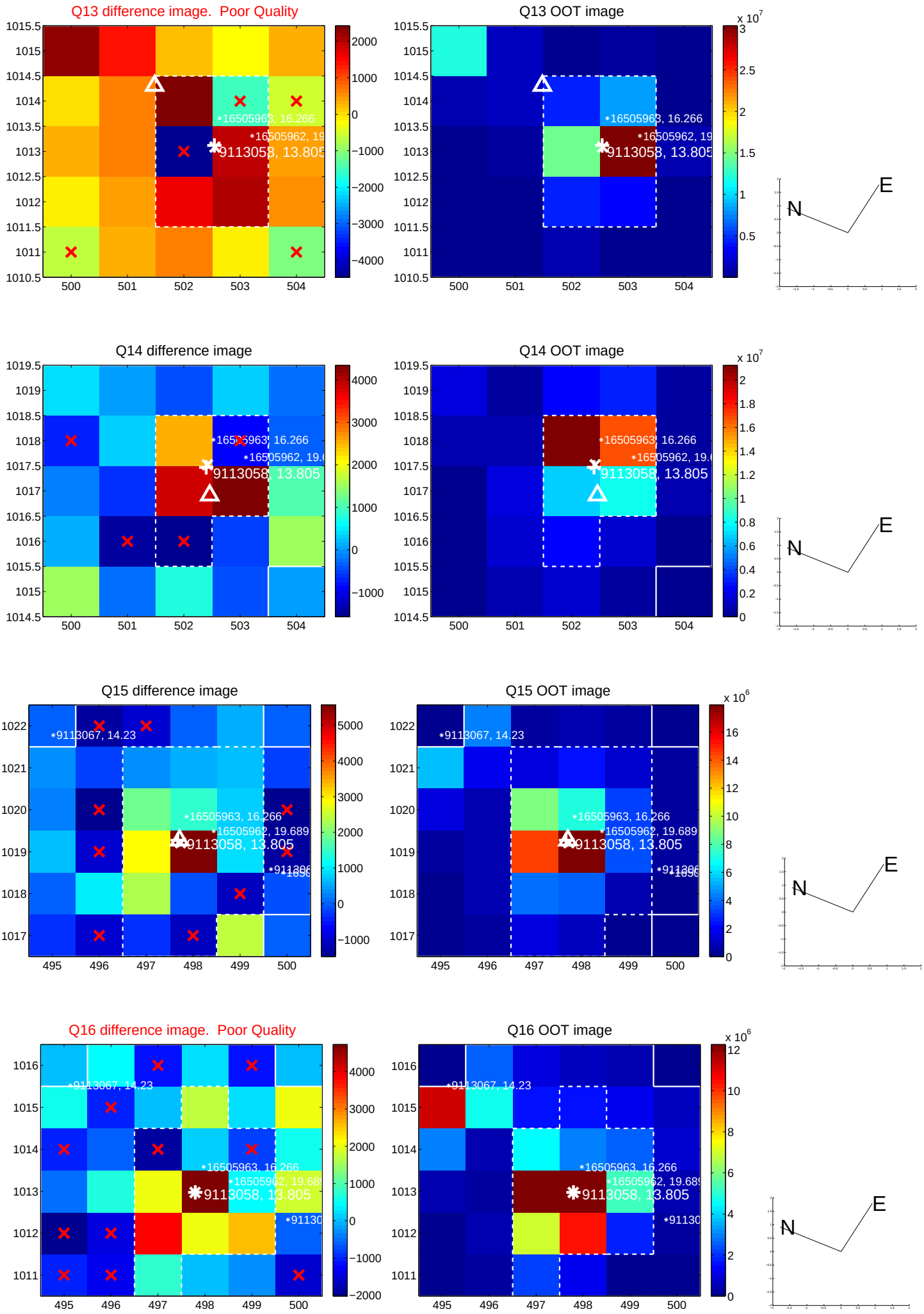




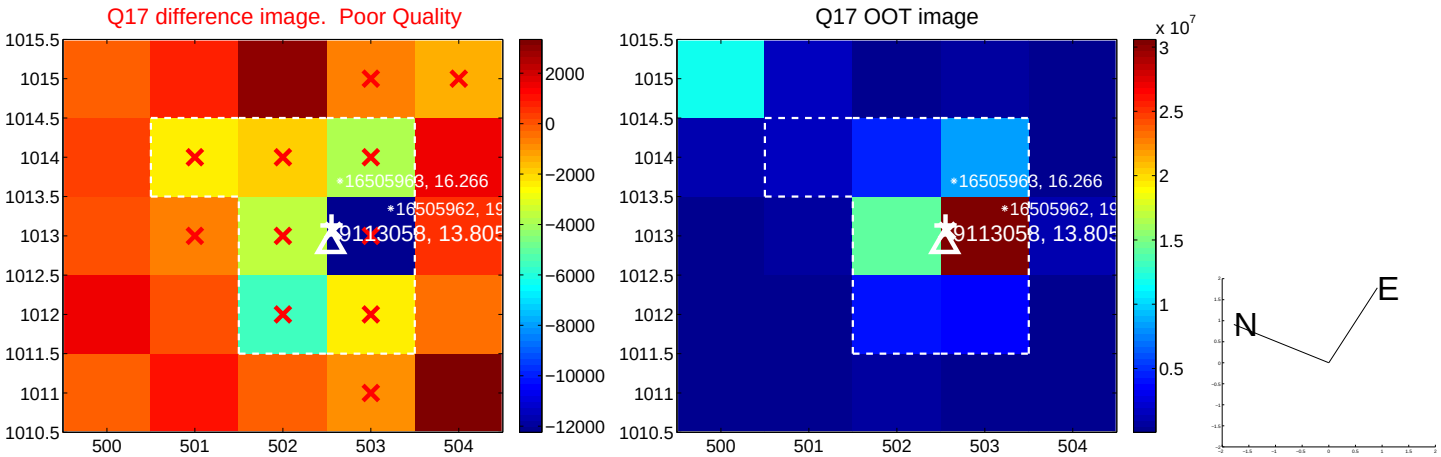
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

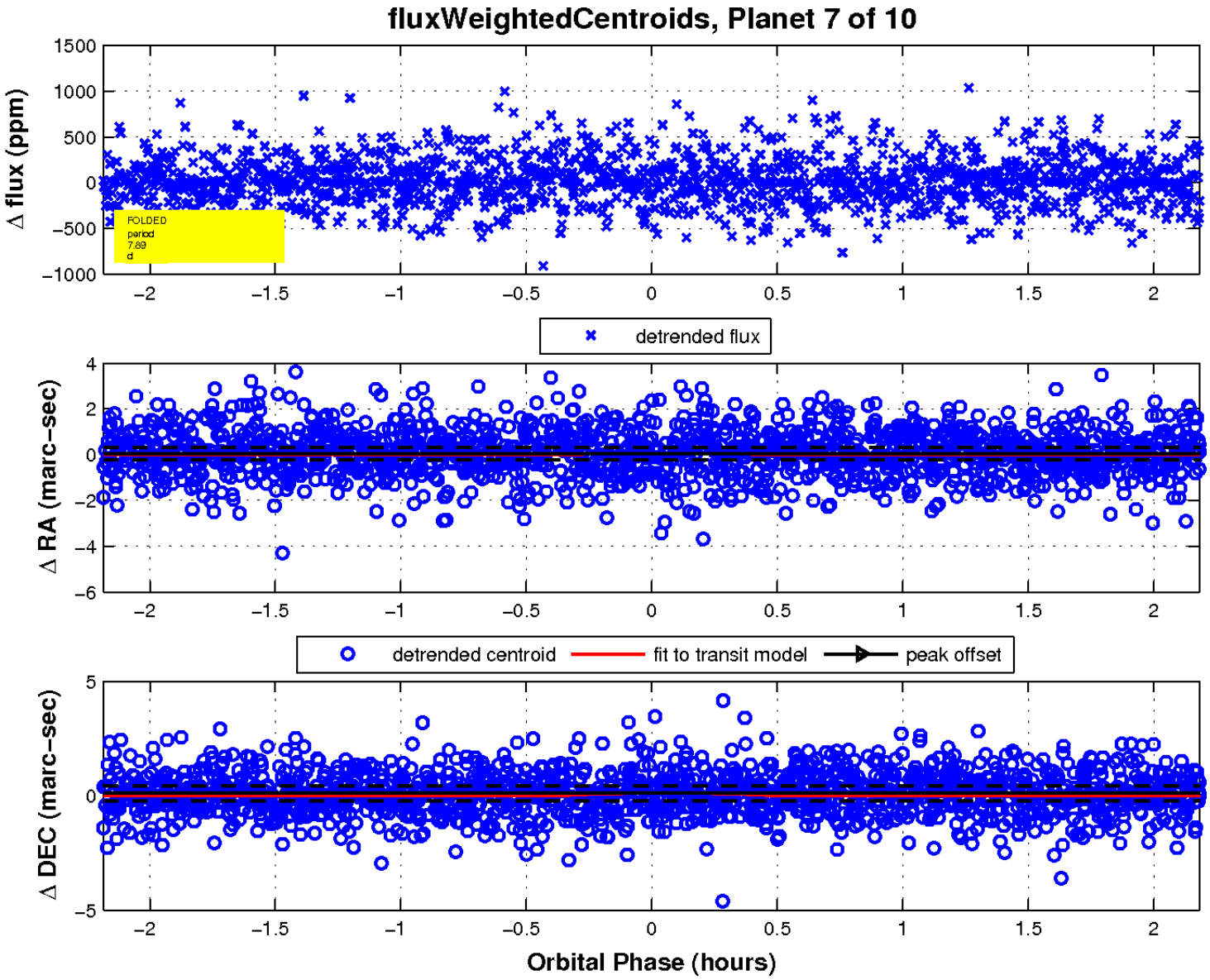


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

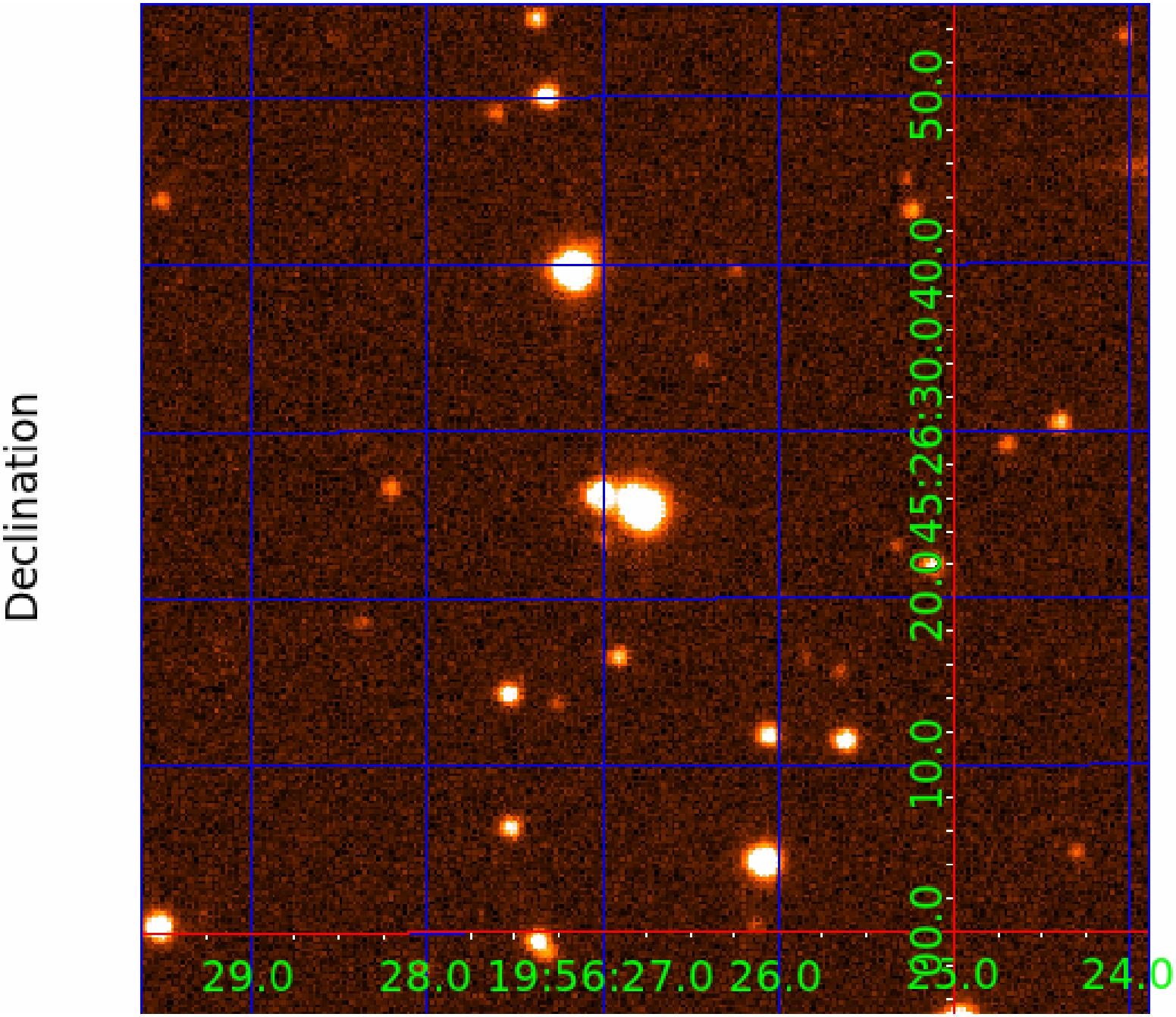


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
50.0
40.0
30.0
26:
45:
20.0
10.0
00.0
29.0
28.0
19:56:27.0
26.0
25.0
24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

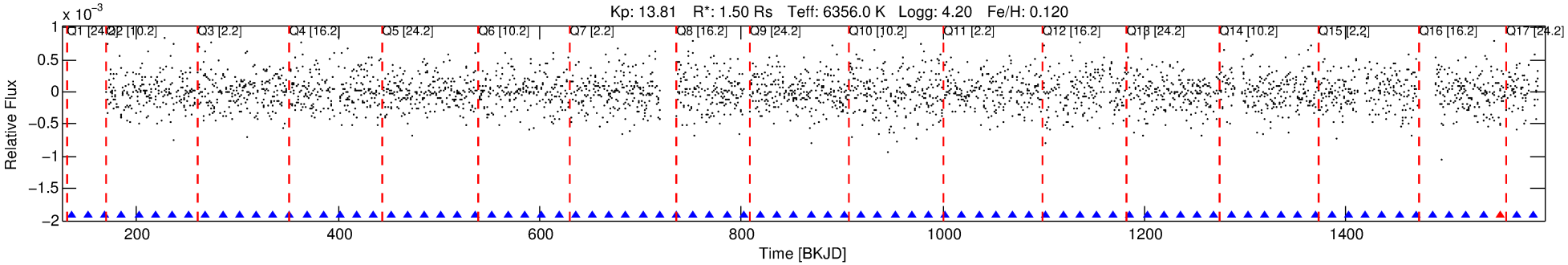
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

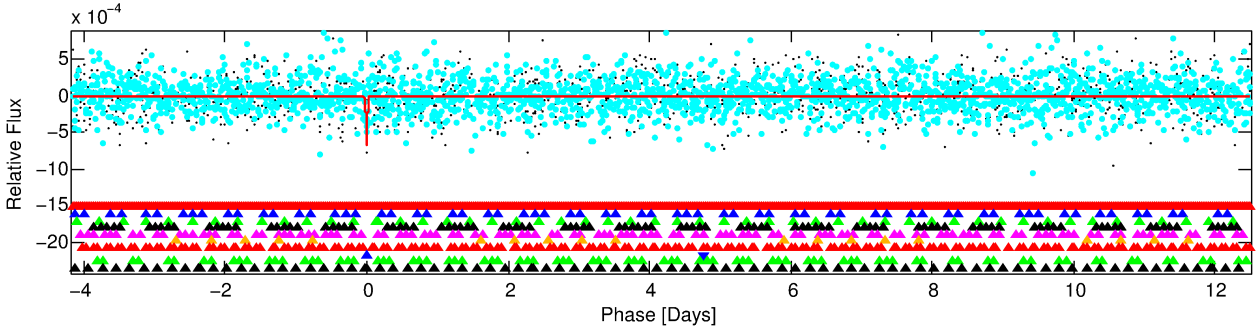
Ephemeris Match Information For 009113058-08

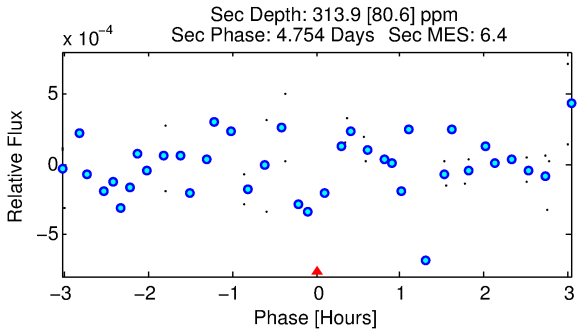
No Significant Match Found

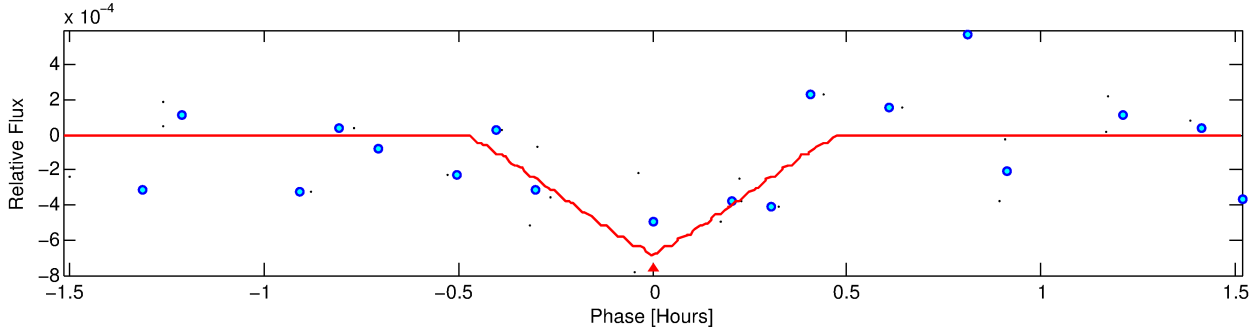
DV One-Page Summary

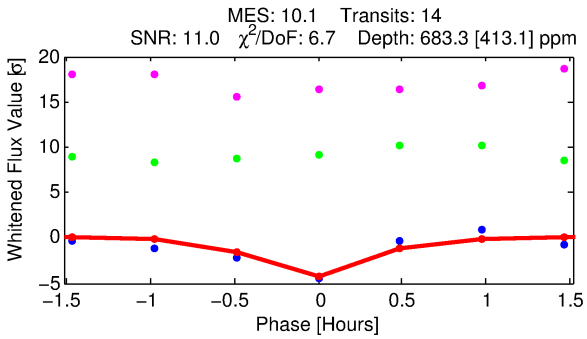
KIC: 9113058 Candidate: 8 of 10 Period: 16.677 d

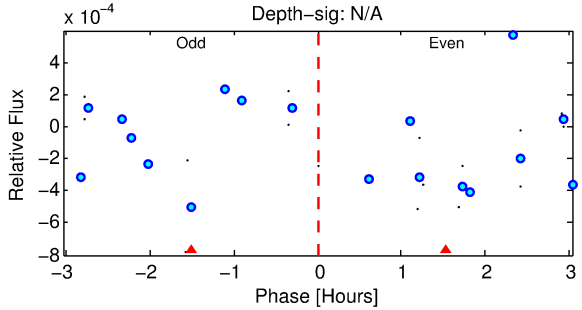


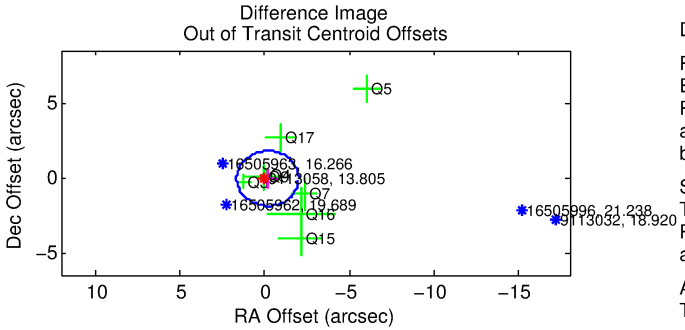












DV Fit Results:

Period = 16.67703 [0.00016] d
Epoch = 135.2748 [0.0086] BKJD
Rp/R* = 0.0270 [0.0537]
a/R* = 190.55 [1846.98]
b = 0.69 [7.44]

Seff = 169.52 [68.51]
Teq = 920 [93] K
Rp = 4.40 [8.88] Re
a = 0.1388 [0.0369] AU

Ag = 172.20 [690.51] [0.25σ]
Teffp = 5153 [5147] K [0.82σ]

DV Diagnostic Results:

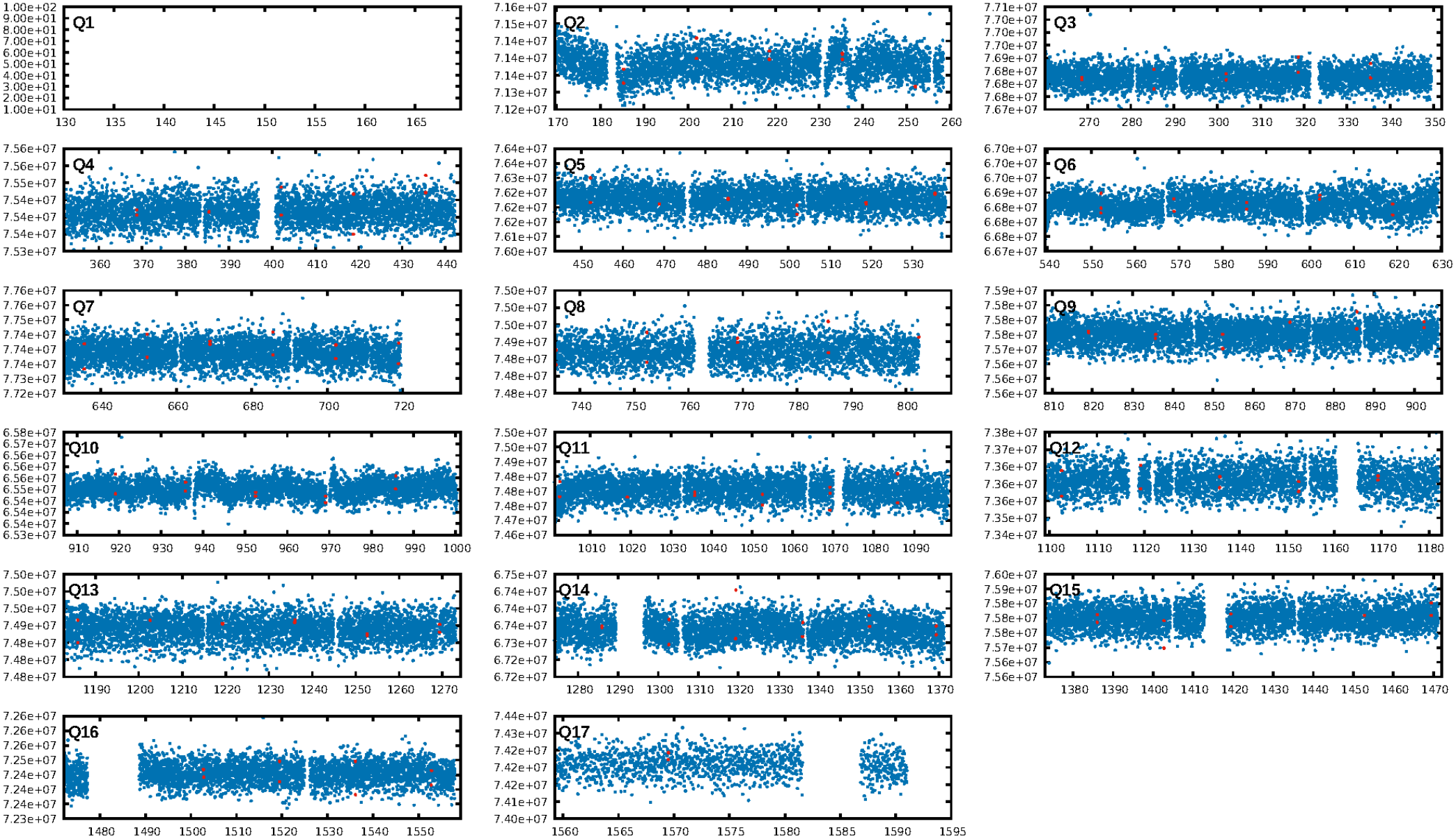
ShortPeriod−sig: 100.0% [24.28σ]
LongPeriod−sig: 100.0% [8.52σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 0.3%
Bootstrap−pfa: N/A
RollingBand−fgt: 0.93 [13/14]
GhostDiagnostic−chr: 3.059

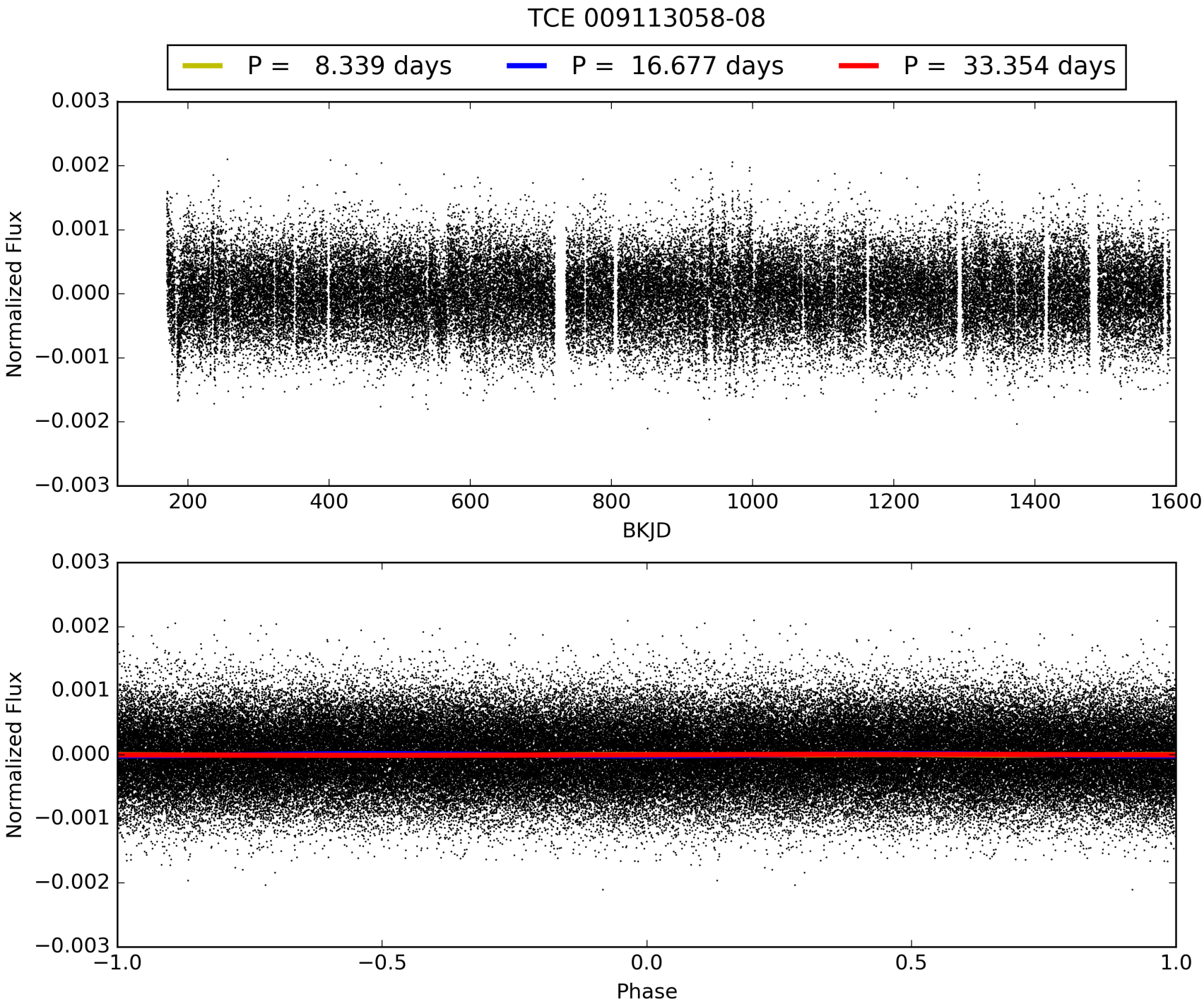
Centroid−sig: 72.9%
Centroid−so: 0.542 arcsec [1.06σ]
OotOffset−rm: 0.193 arcsec [0.32σ]
KicOffset−rm: 0.218 arcsec [0.21σ]
OotOffset−st: 0/3/2/3 [8]
KicOffset−st: 0/3/2/3 [8]
DiffImageQuality−fgm: 0.12 [1/8]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:53 Z

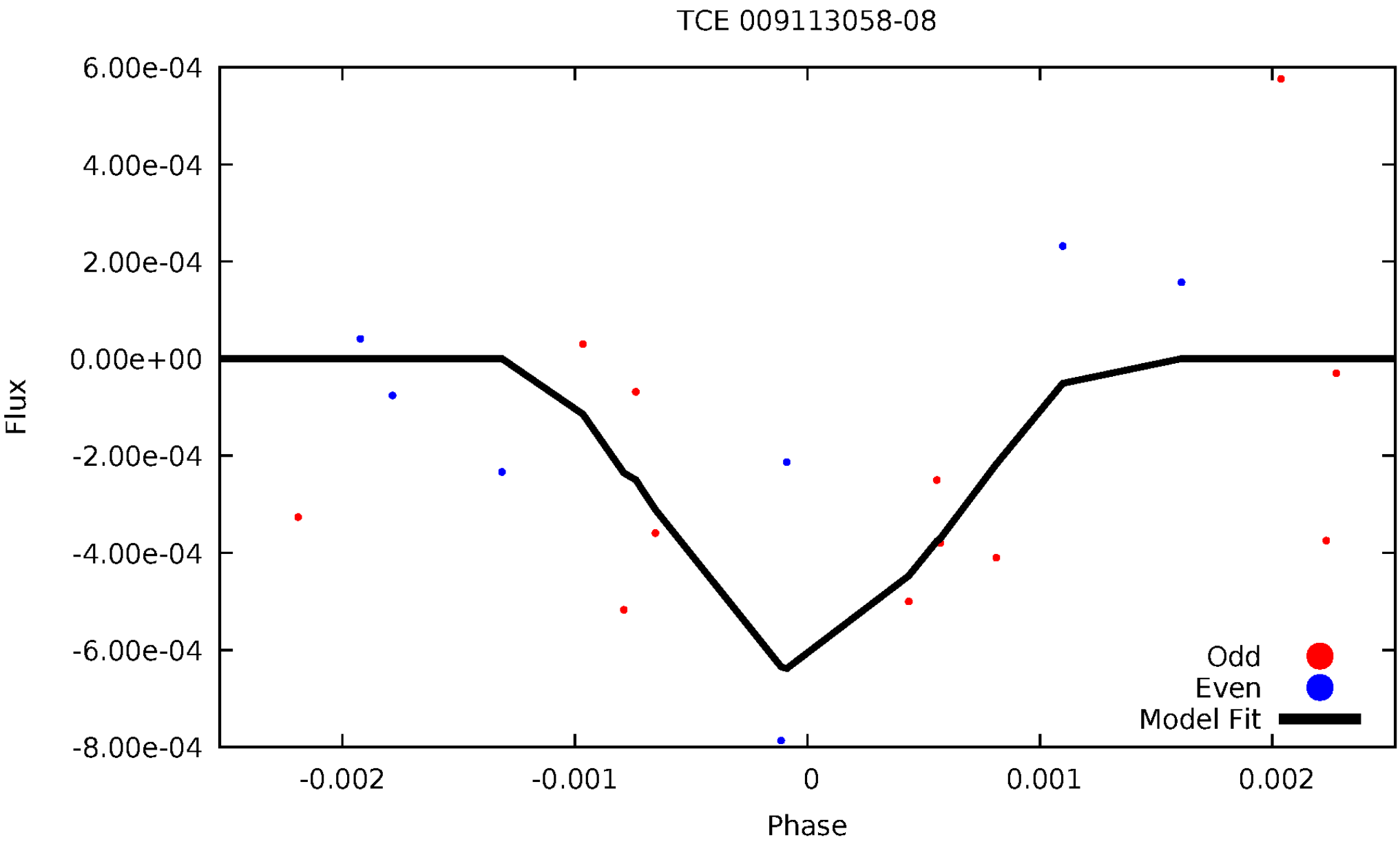
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-08, PDC Light Curves




TCE 009113058-08
P = 8.339 days
P = 16.677 days
P = 33.354 days
Normalized Flux
BKJD
Normalized Flux
Phase

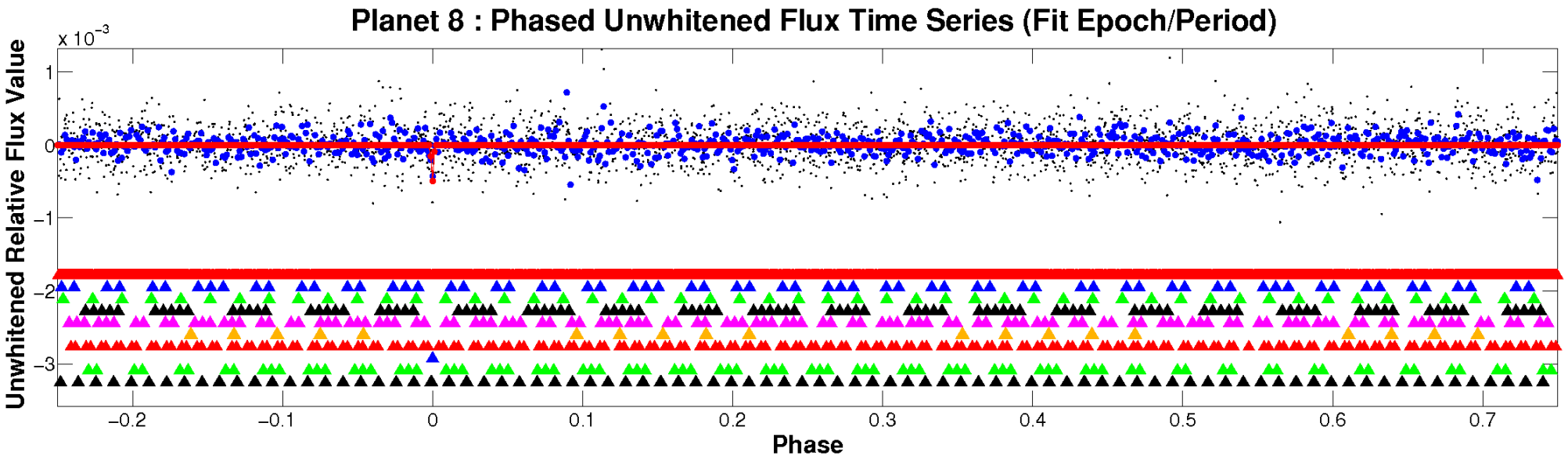
DV Odd/Even

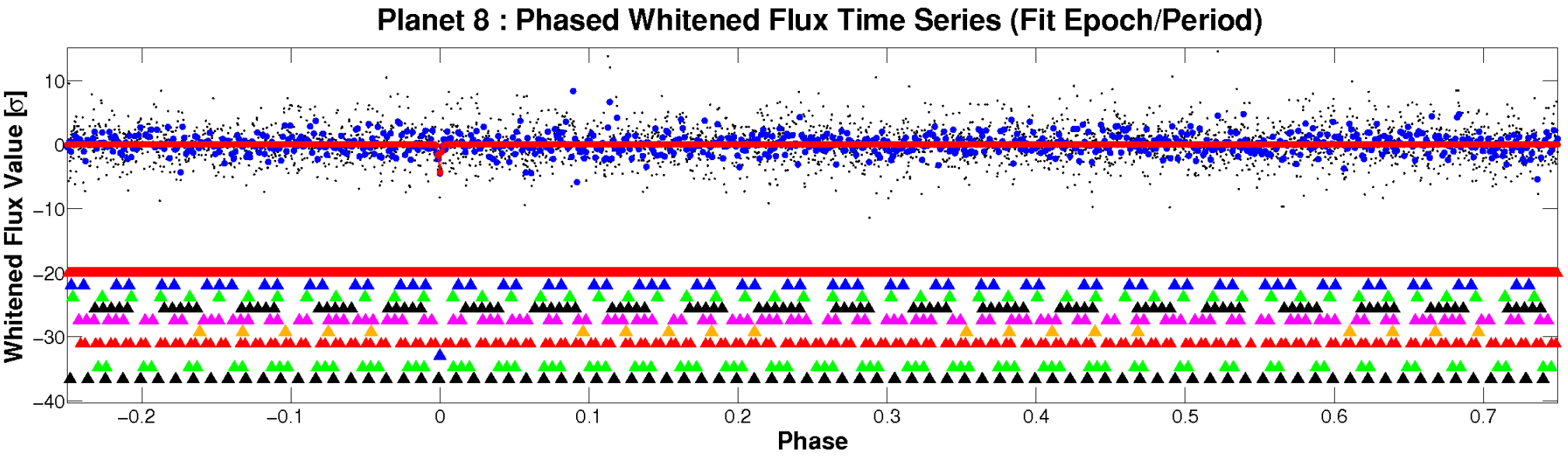

TCE 009113058-08
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.002
-0.001
0
0.001
0.002
Phase
Odd
Even
Model Fit

ALT Odd/Even

This plot does not exist for this TCE.

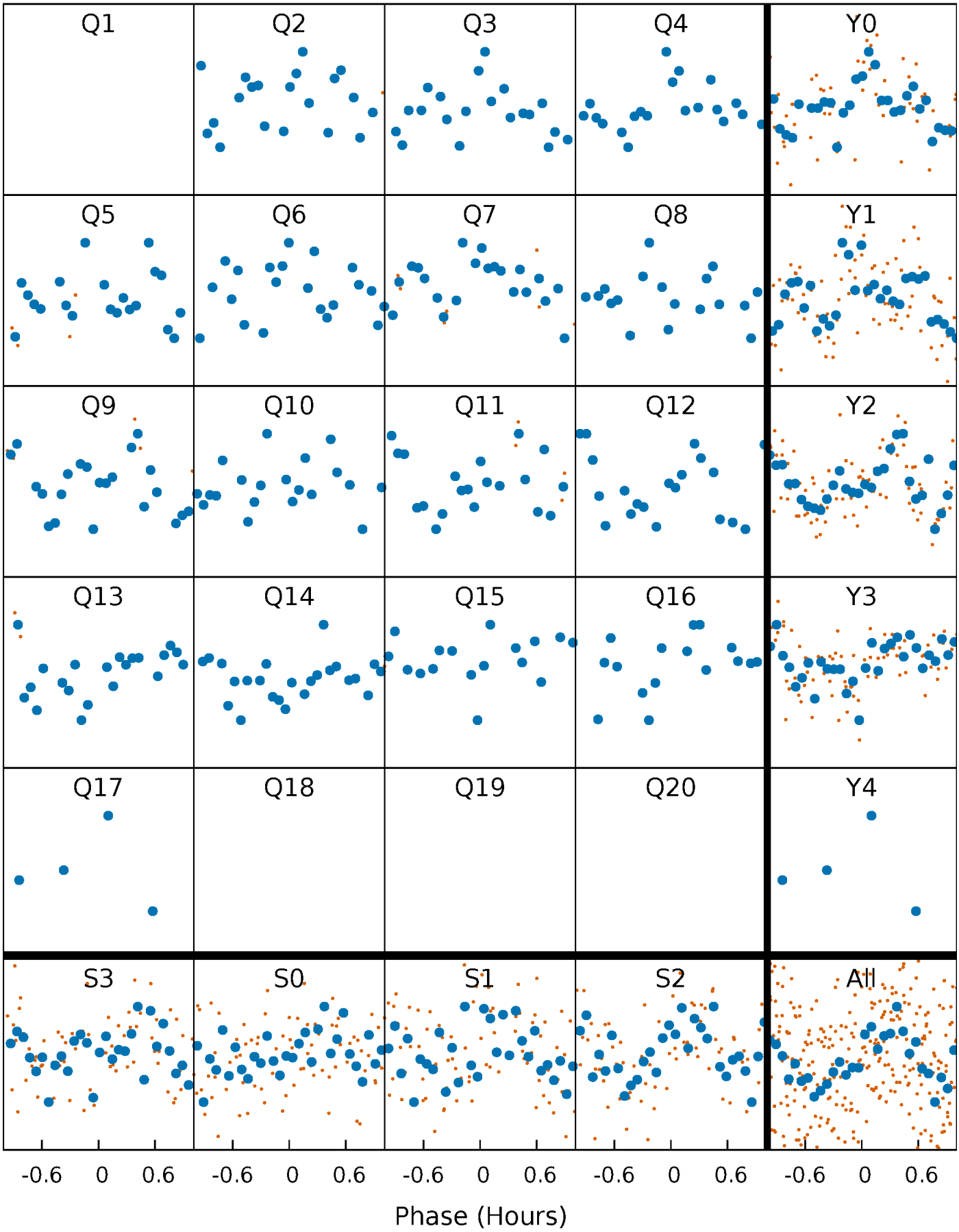
Non-Whitened Vs. Whitened Light Curve





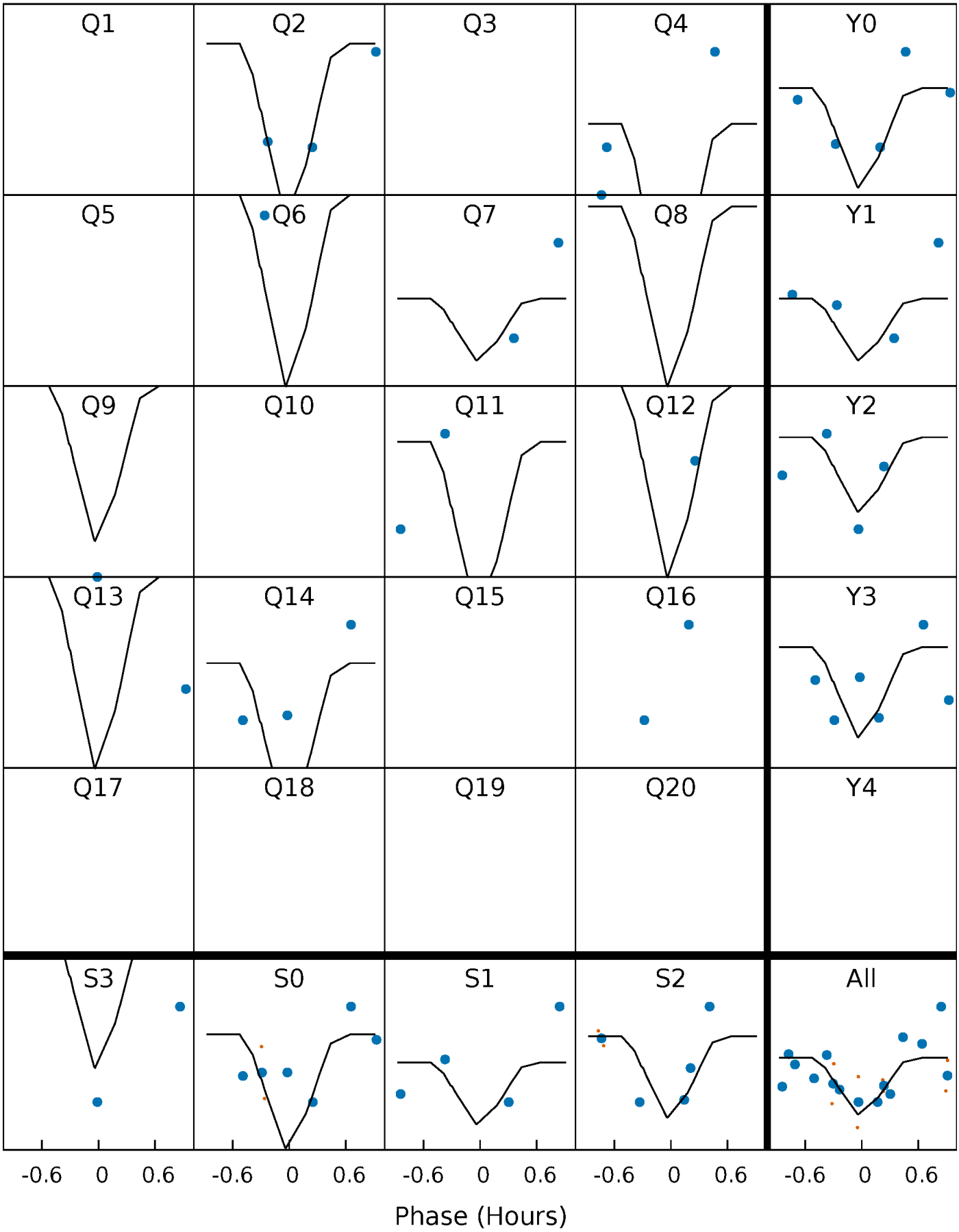
PDC Quarter-Phased Transit Curves

TCE 009113058-08 P= 16.677032 Days T_0=135.274774 (BKJD)



DV Quarter-Phased Transit Curves

TCE 009113058-08 P= 16.677032 Days T_0=135.274774 (BKJD)

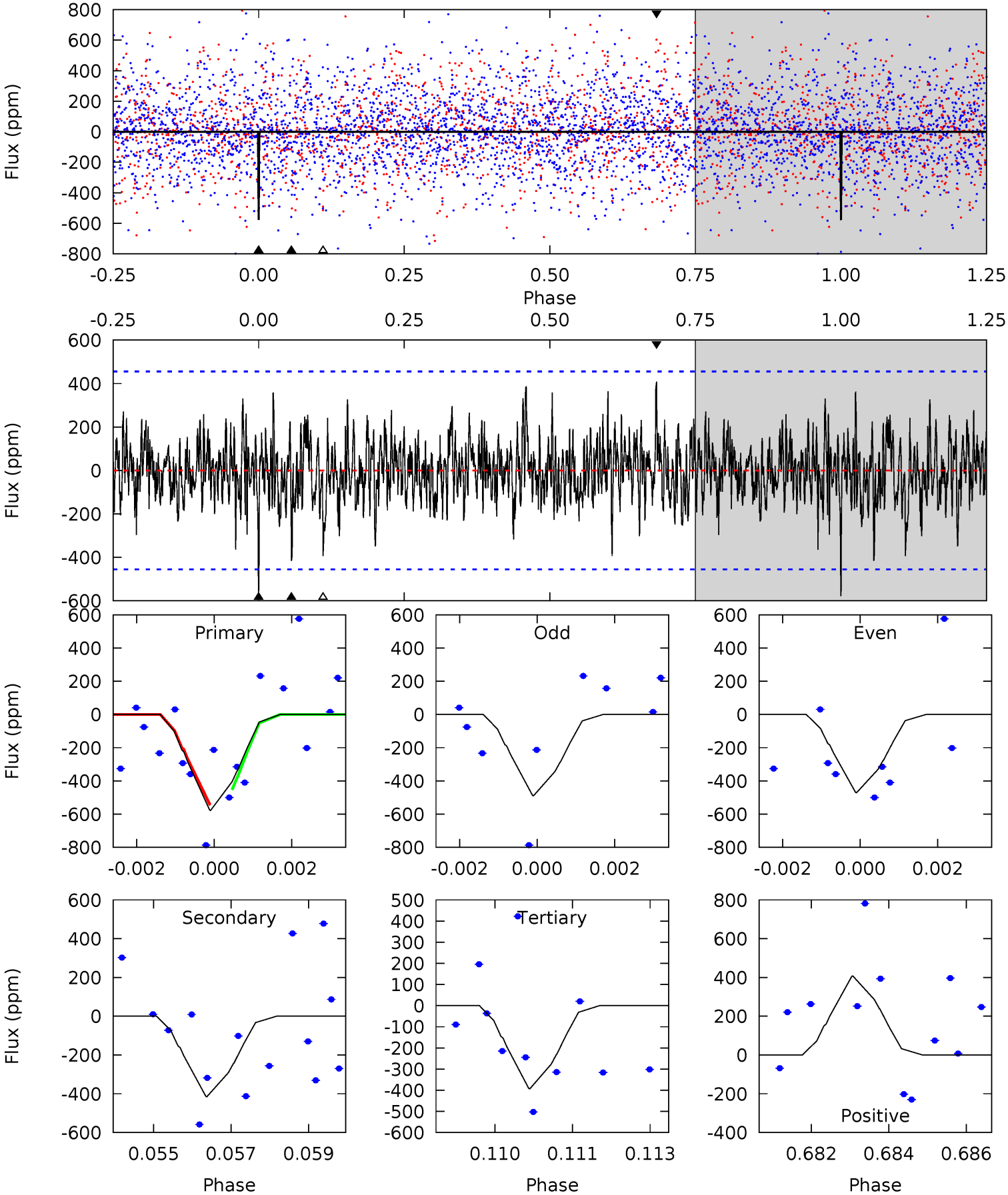


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009113058-08, P = 16.677032 Days, E = 135.274774 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.77	4.87	4.61	4.78	5.34	3.11	1.36	2.16	1.99	0.25	0.09	0.09	1.00	0.41	0.53



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-08 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-416±85	$7.58^{+7.73}_{-5.02}$	1292^{+111}_{-83}	4441^{+2938}_{-973}	76^{+607}_{-59}
Alt.	N/A	N/A	N/A	N/A	N/A

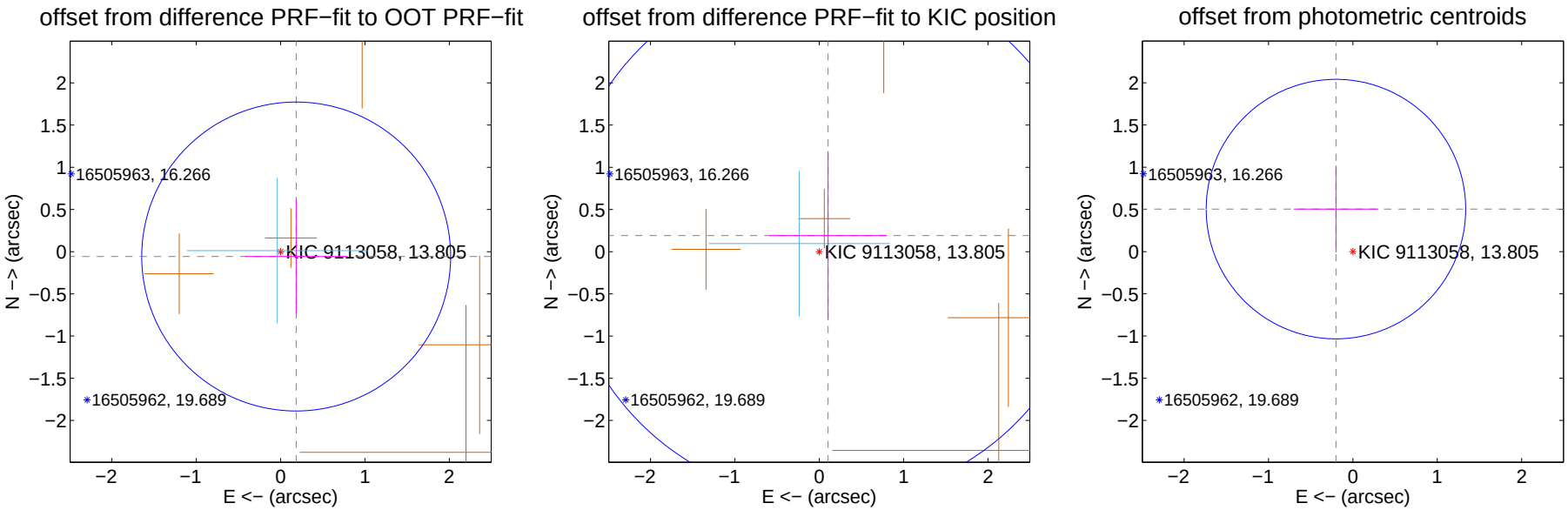
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

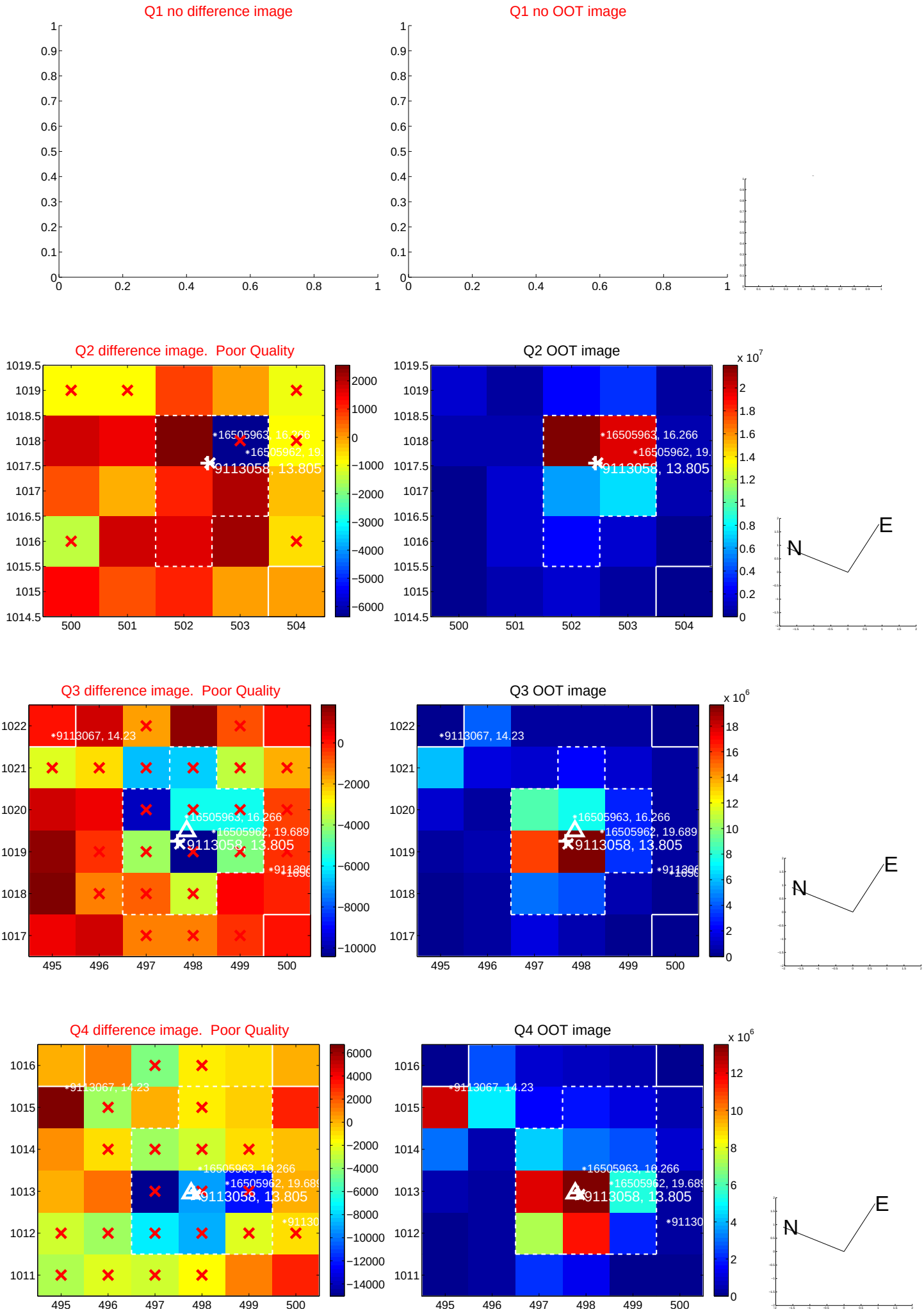
Supplemental centroid analysis for 009113058-08. Kepler magnitude: 13.80. Transit SNR 10.96
There are 1 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.193 ± 0.610	0.32	-0.185 ± 0.603	-0.057 ± 0.677
PRF-fit source offset from KIC position	0.218 ± 1.048	0.21	-0.105 ± 0.697	0.191 ± 1.001
photometric centroid source offset	0.54 ± 0.51	1.06	0.20 ± 0.50	0.50 ± 0.51

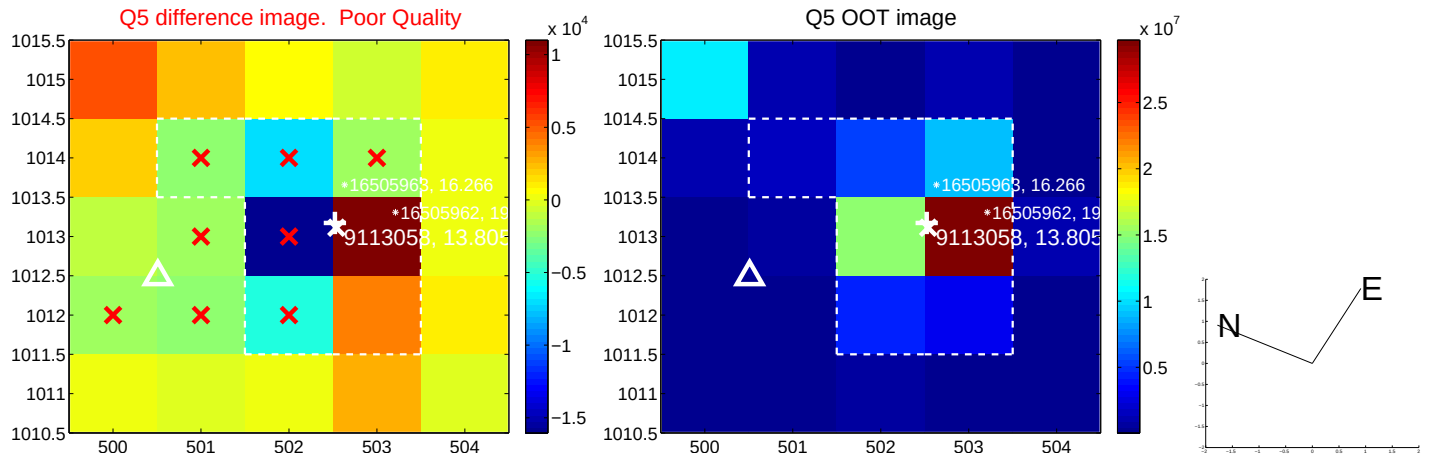


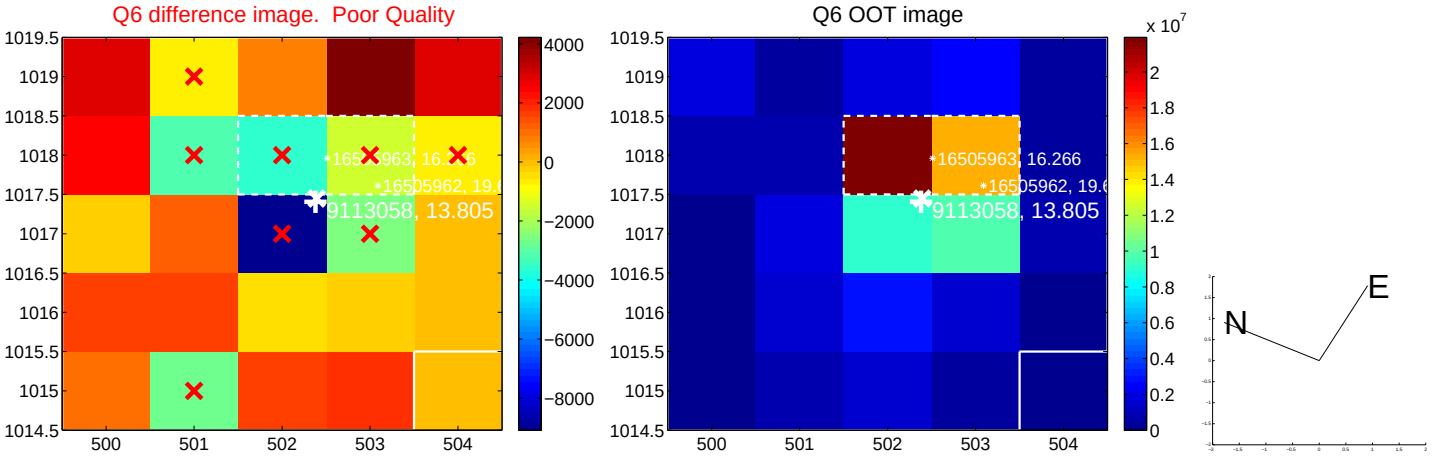
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

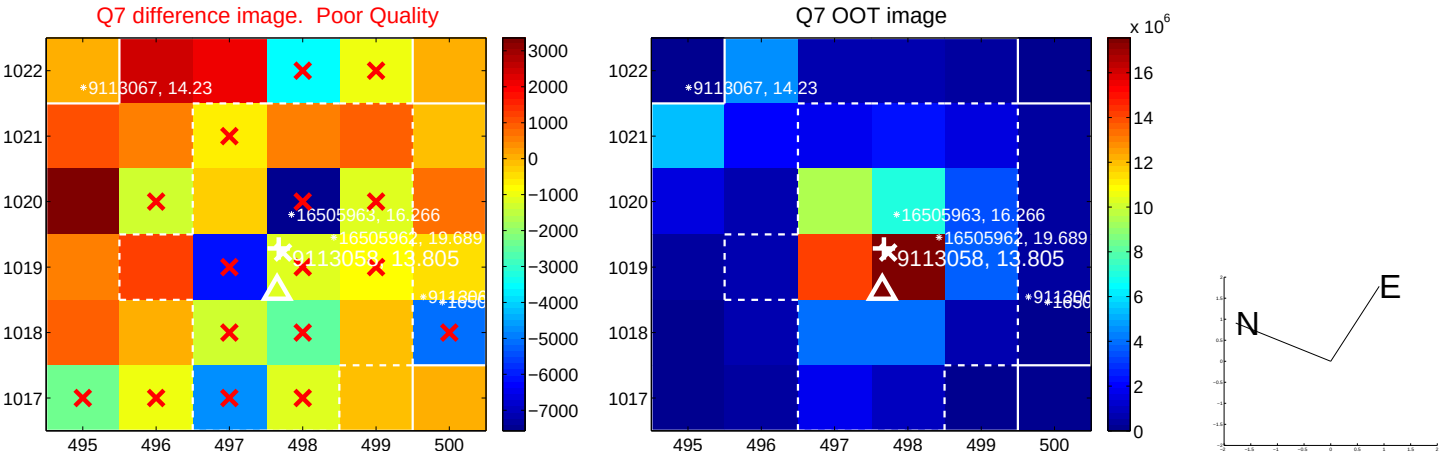
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

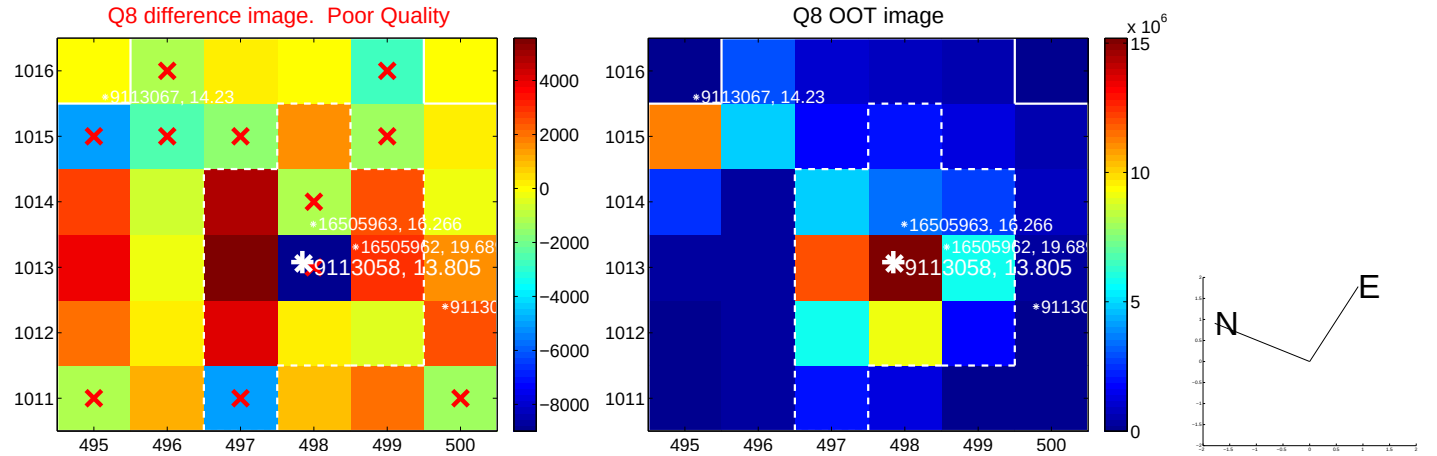


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

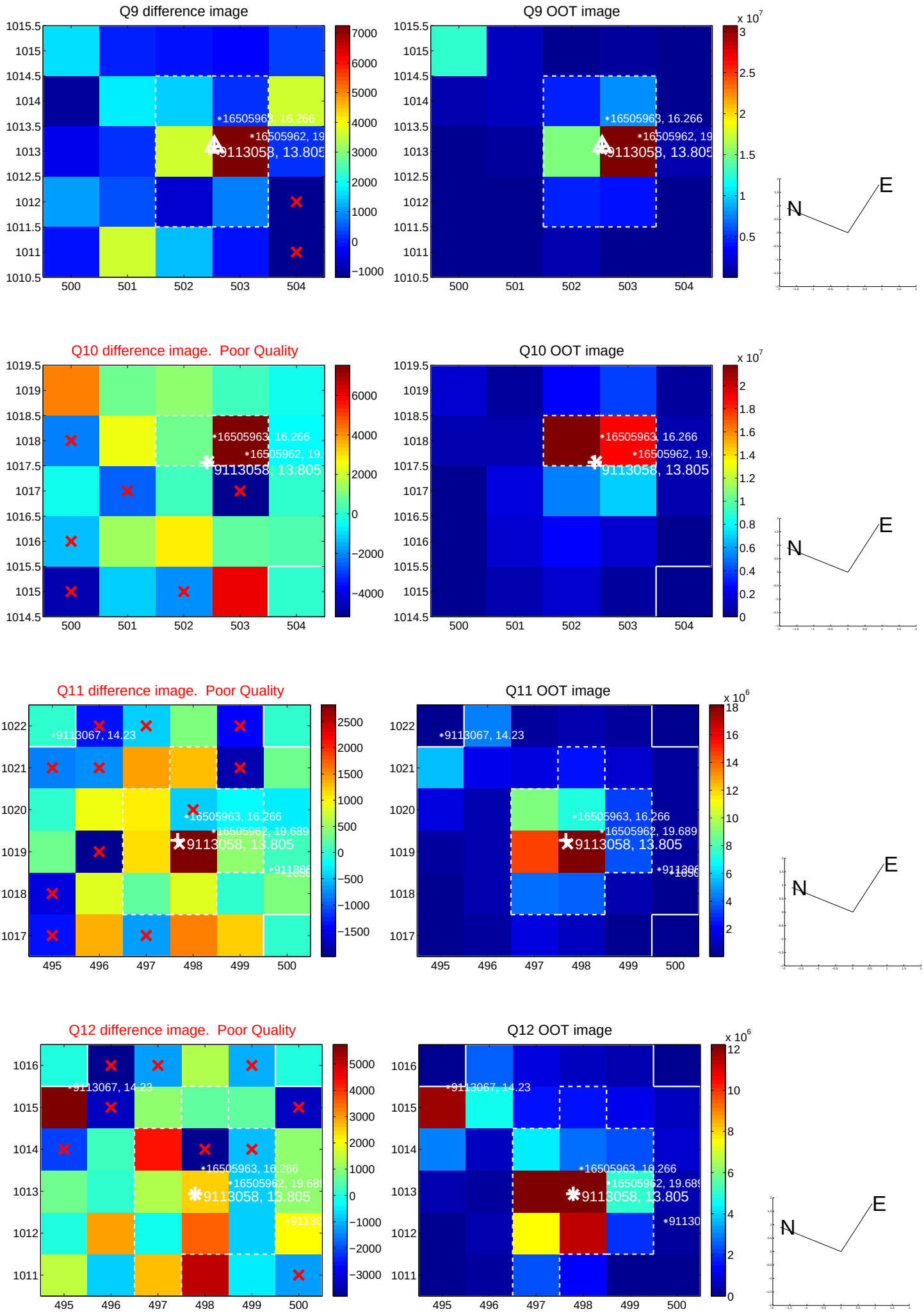




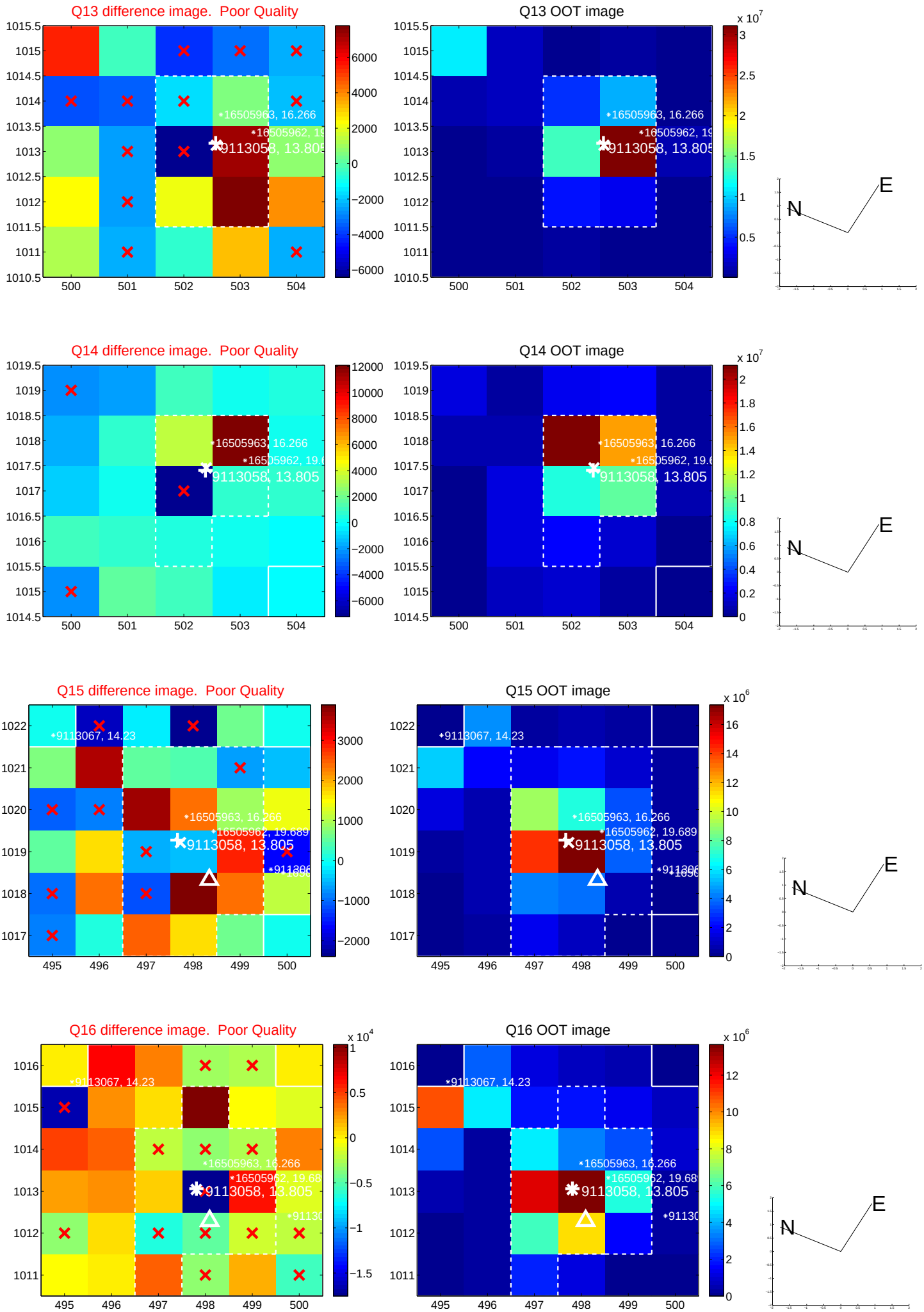




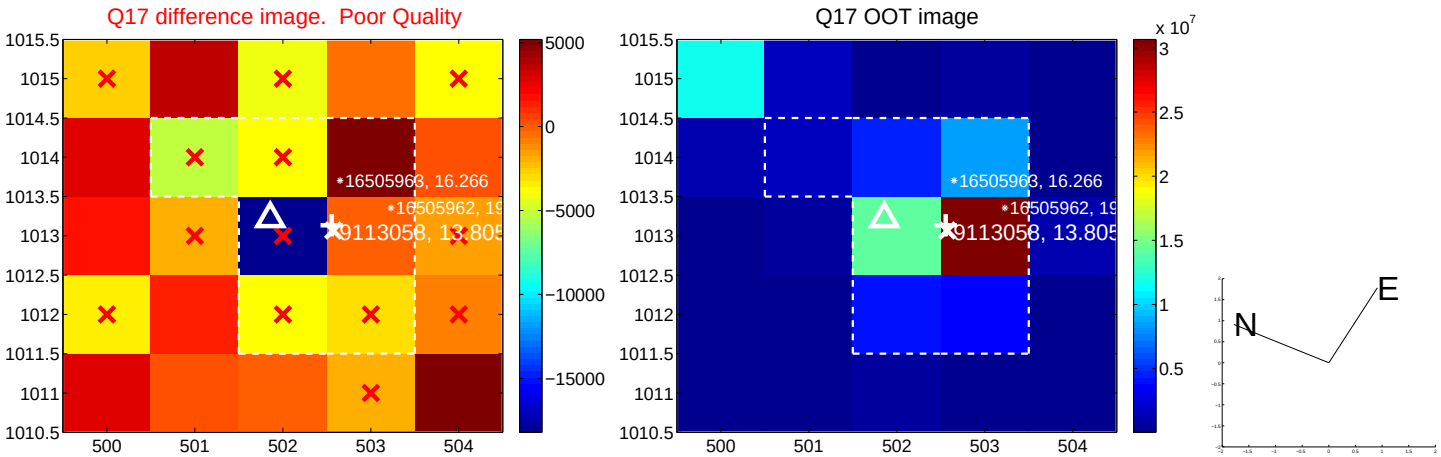
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

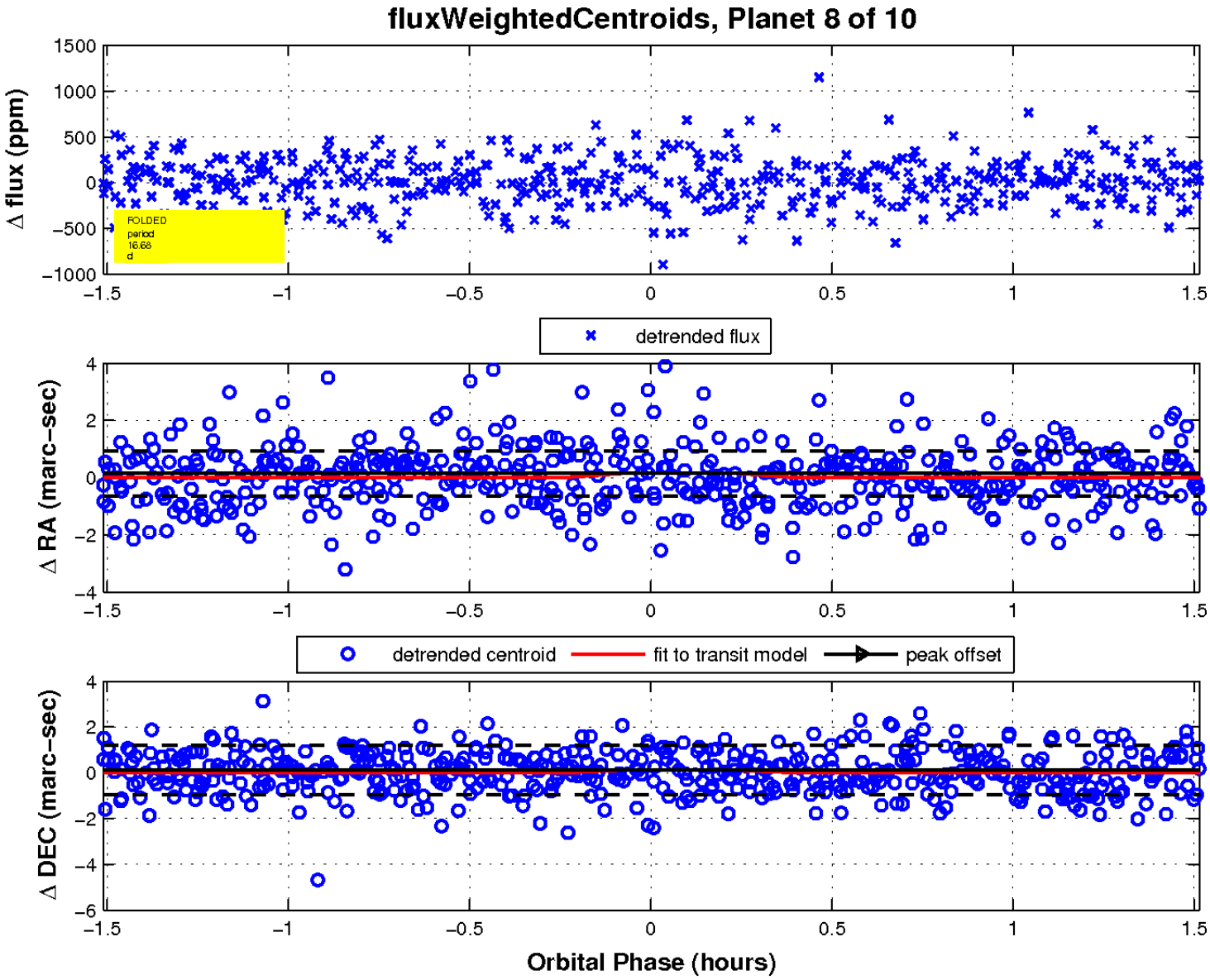


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

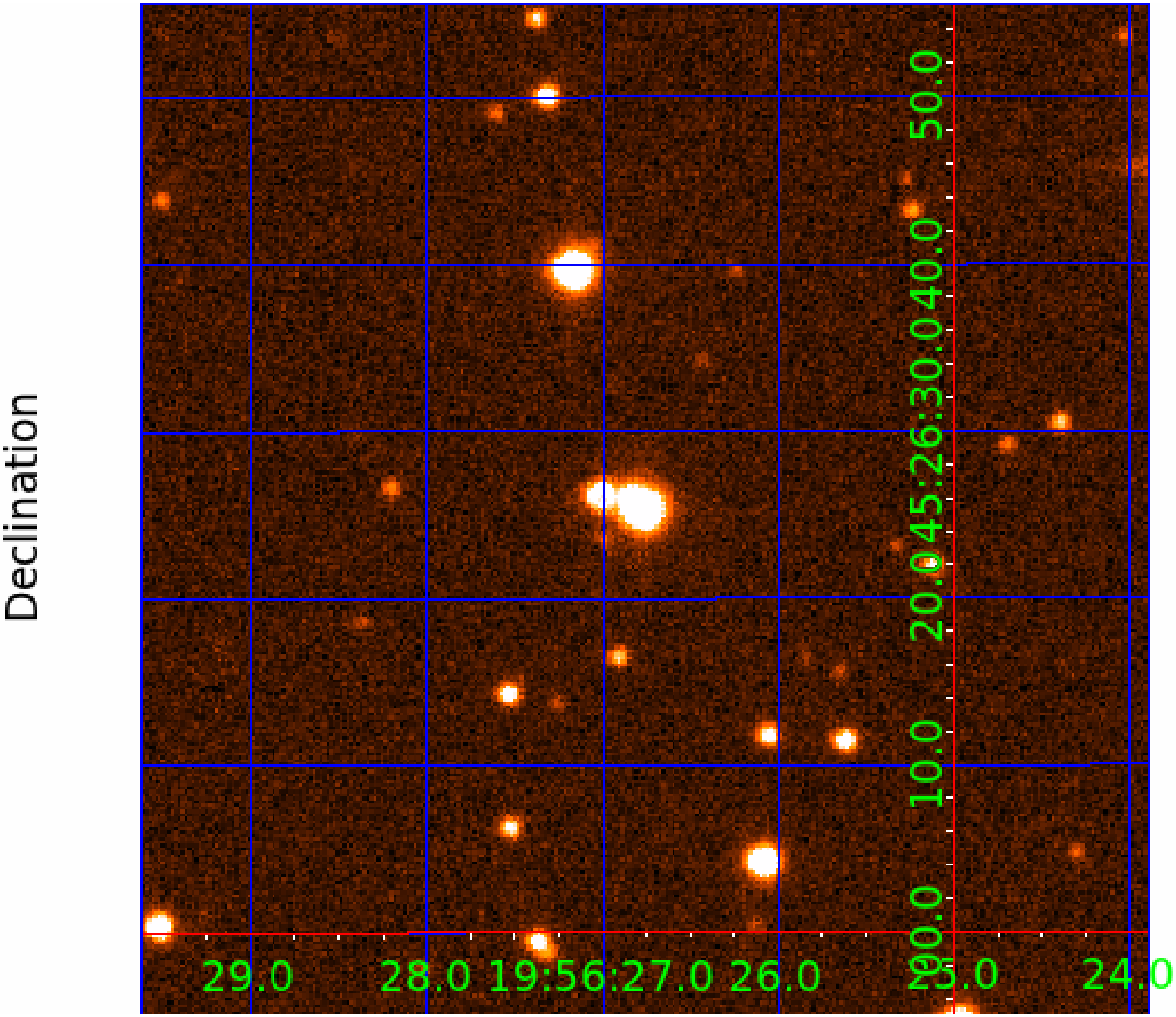


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image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45:
20.0
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29.0
28.0
19:56:27.0
26.0
25.0
24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

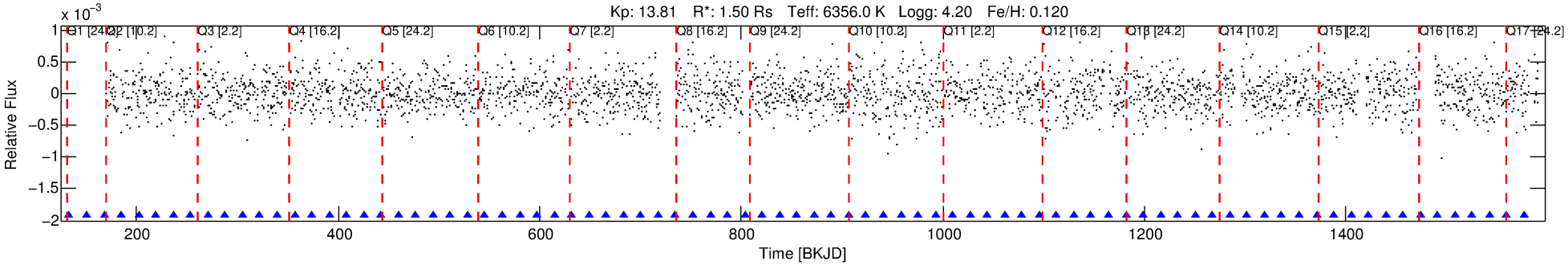
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

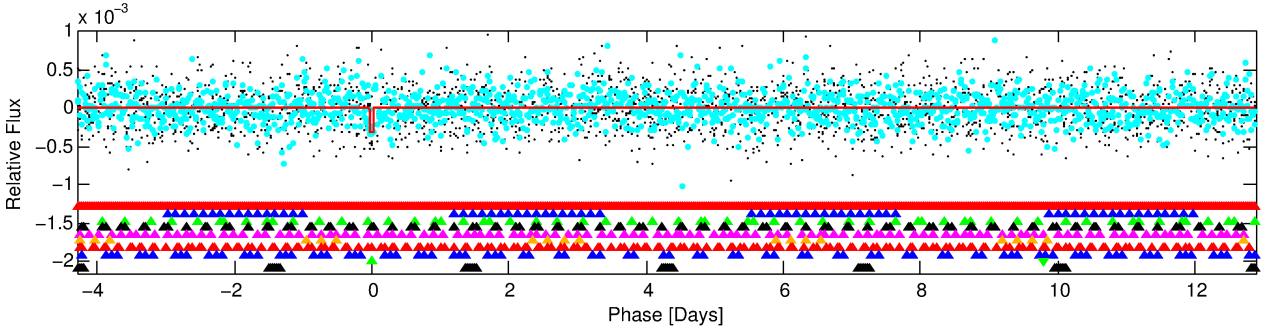
Ephemeris Match Information For 009113058-09

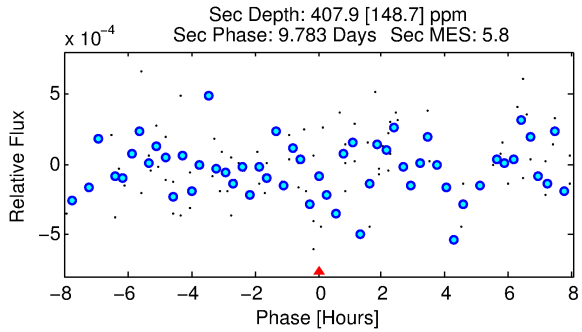
No Significant Match Found

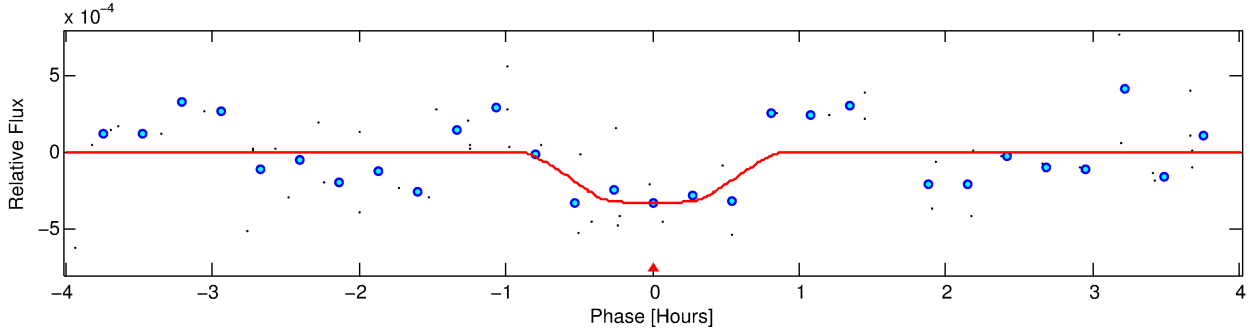
DV One-Page Summary

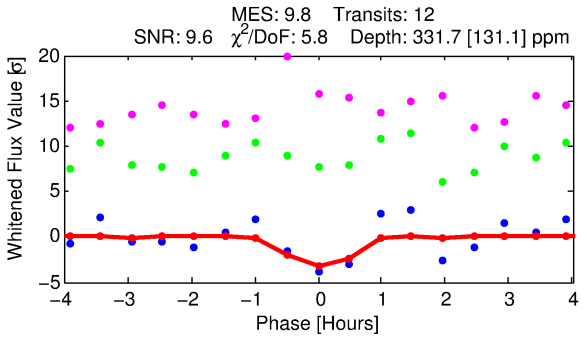
KIC: 9113058 Candidate: 9 of 10 Period: 17.185 d

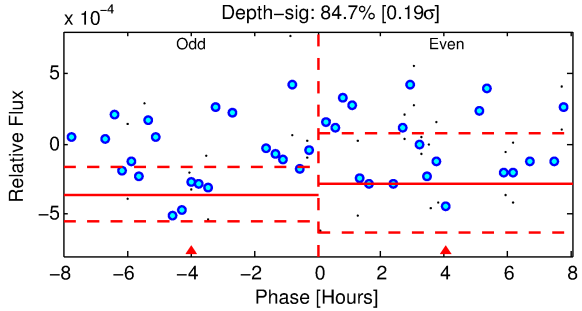


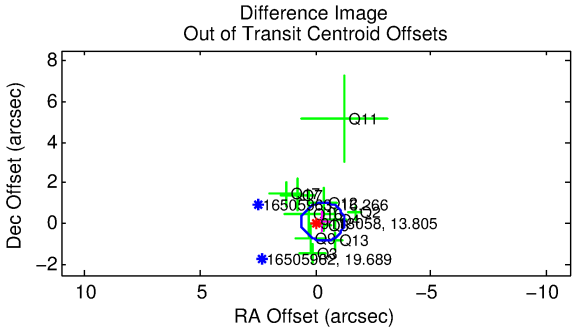












DV Fit Results:

Period = 17.18512 [0.00034] d
Epoch = 133.3928 [0.0168] BKJD
Rp/R* = 0.0196 [0.0617]
a/R* = 47.45 [803.07]
b = 0.90 [3.74]

Seff = 162.87 [65.82]
Teq = 911 [92] K
Rp = 3.20 [10.11] Re
a = 0.1417 [0.0377] AU

Ag = 438.76 [2765.14] [0.16σ]
Teffp = 6446 [10141] K [0.55σ]

DV Diagnostic Results:

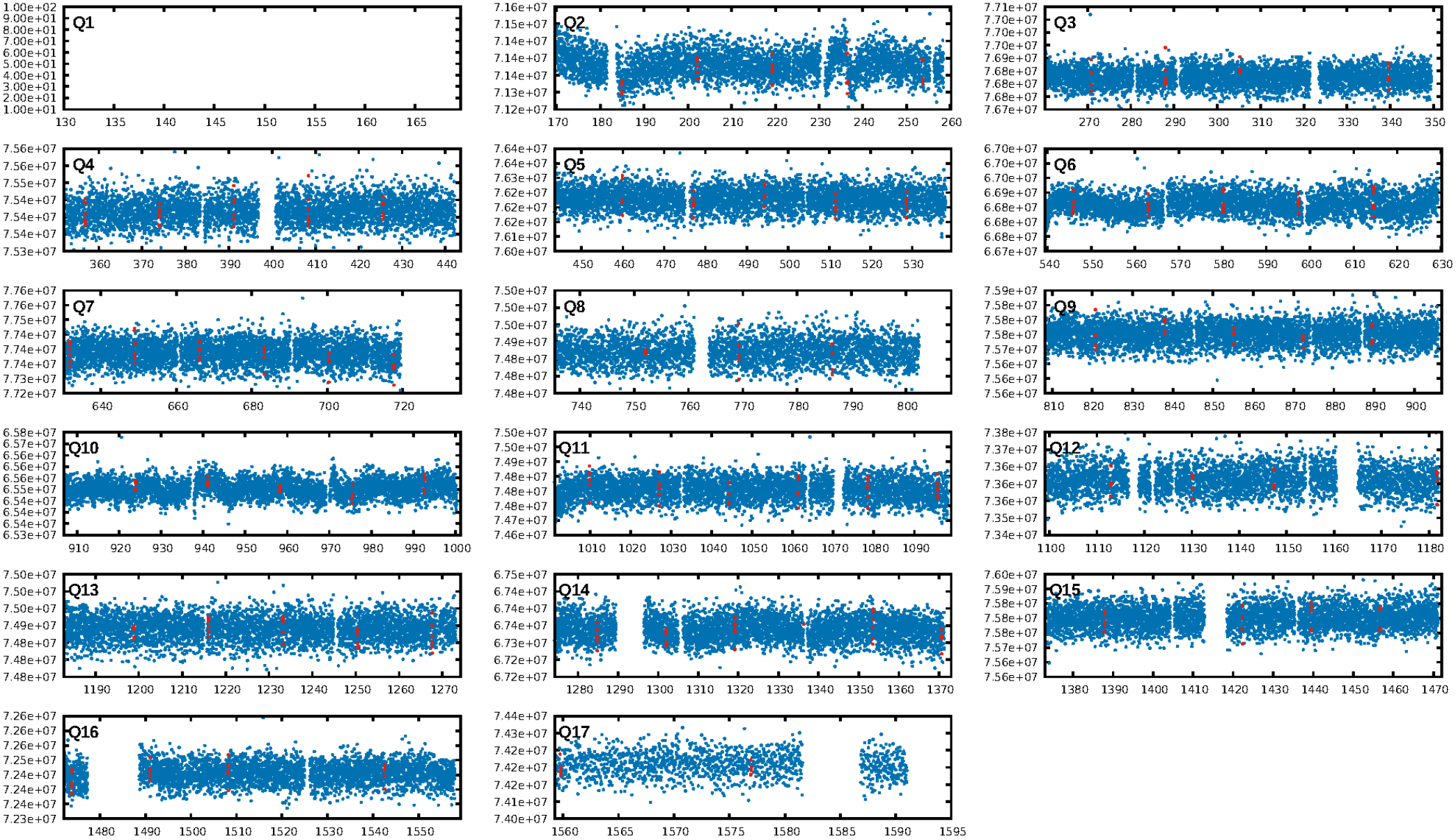
ShortPeriod−sig: 100.0% [8.52σ]
LongPeriod−sig: 100.0% [70.63σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 18.9%
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [12/12]
GhostDiagnostic−chr: −0.2178

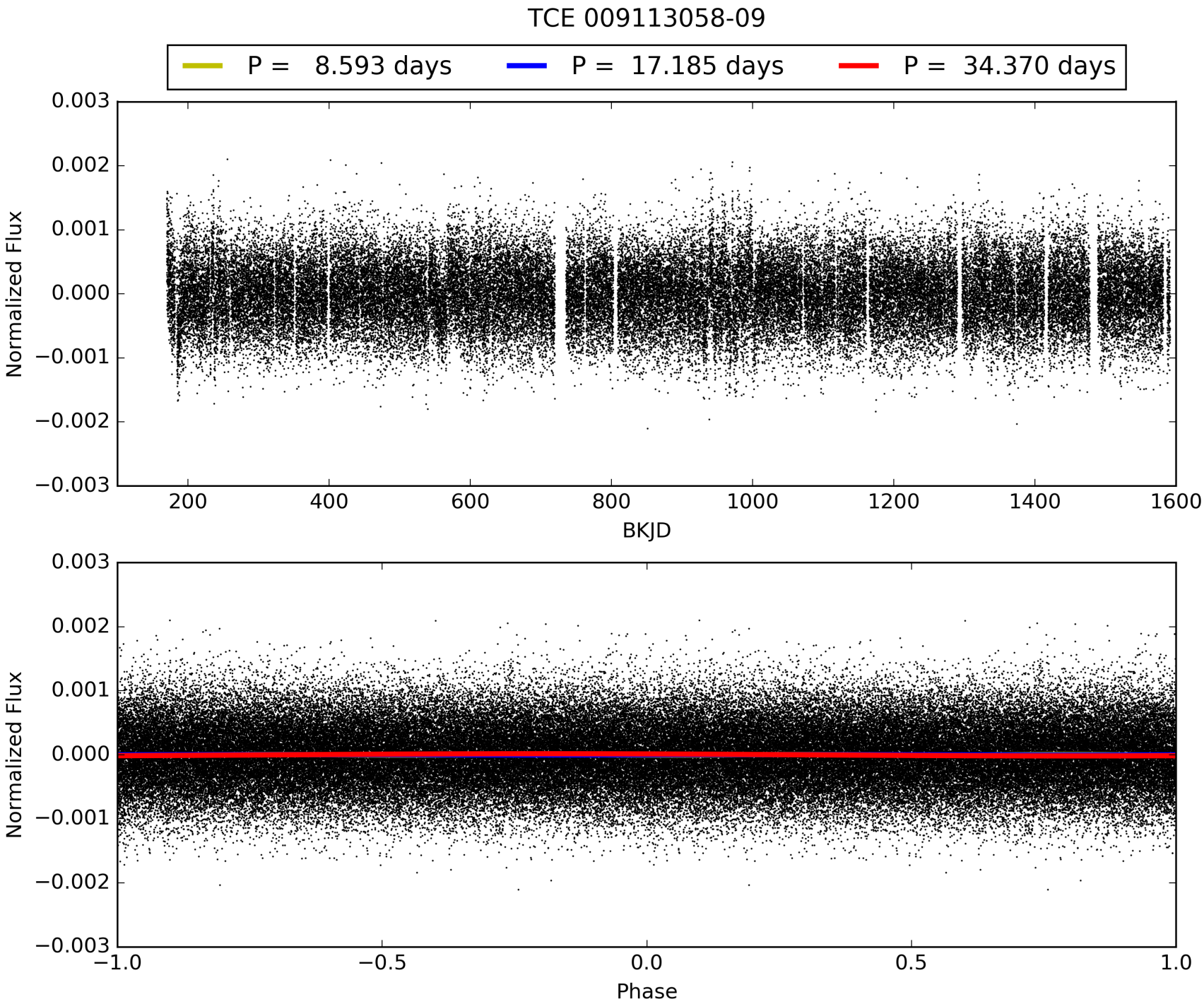
Centroid−sig: 71.7%
Centroid−so: 1.081 arcsec [1.65σ]
OotOffset−rm: 0.335 arcsec [1.08σ]
KicOffset−rm: 0.411 arcsec [1.12σ]
OotOffset−st: 2/3/3/3 [11]
KicOffset−st: 2/3/3/3 [11]
DiffImageQuality−fgm: 0.45 [5/11]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:35:57 Z

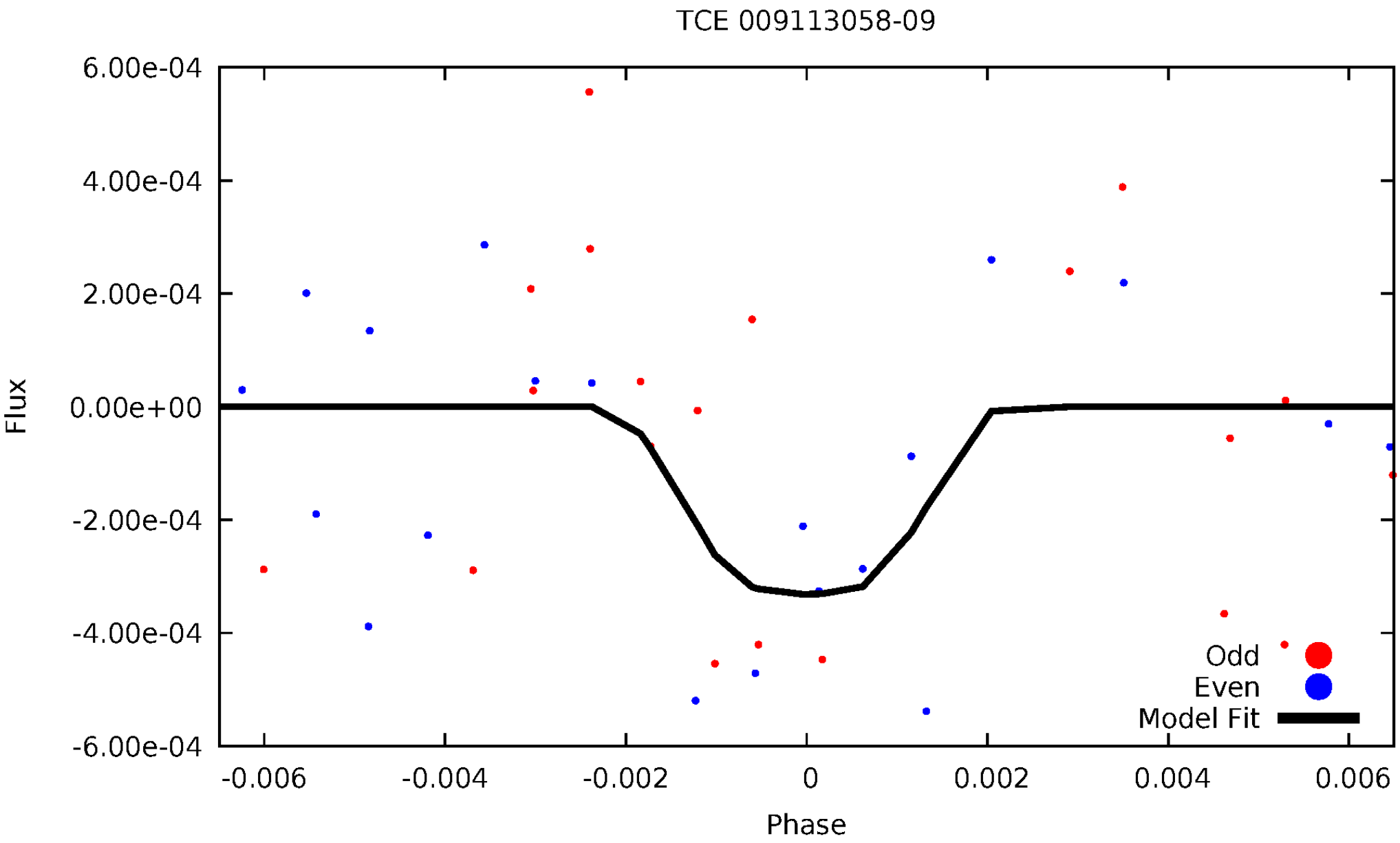
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-09, PDC Light Curves




TCE 009113058-09
P = 8.593 days
P = 17.185 days
P = 34.370 days
Normalized Flux
BKJD
Normalized Flux
Phase

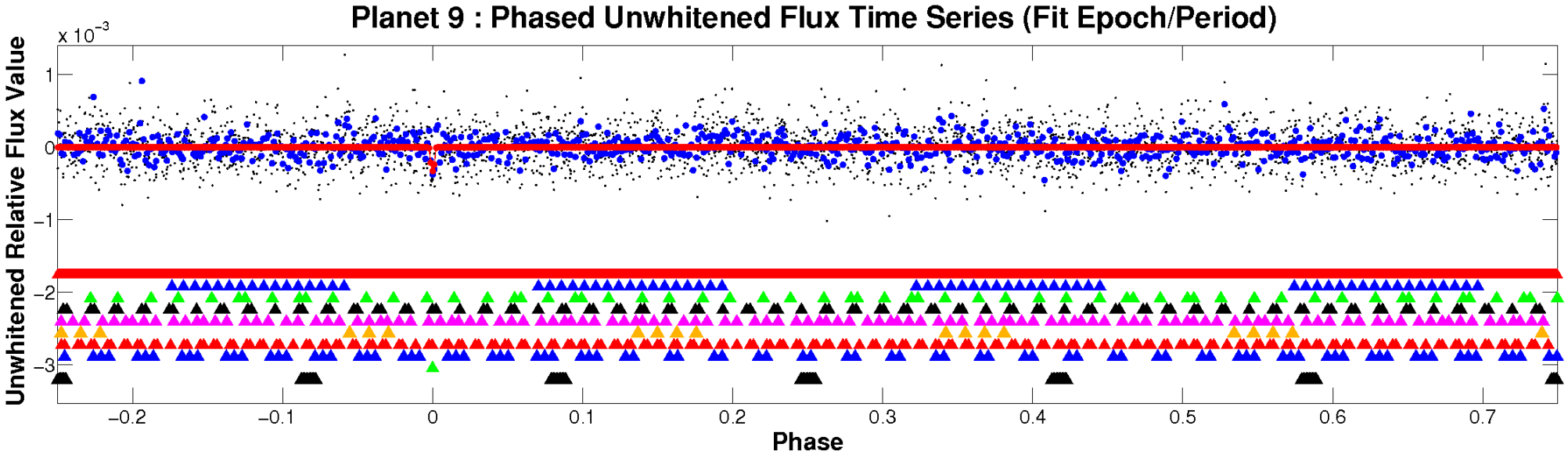
DV Odd/Even

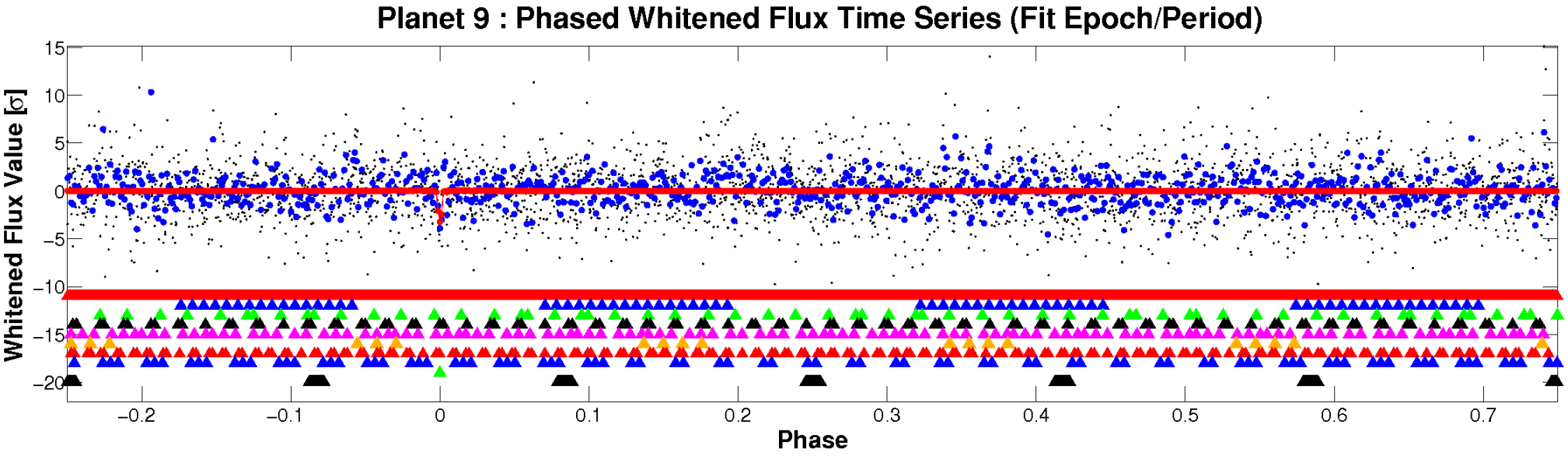

TCE 009113058-09
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
Flux
-0.006
-0.004
-0.002
0
0.002
0.004
0.006
Phase
Odd
Even
Model Fit

ALT Odd/Even

This plot does not exist for this TCE.

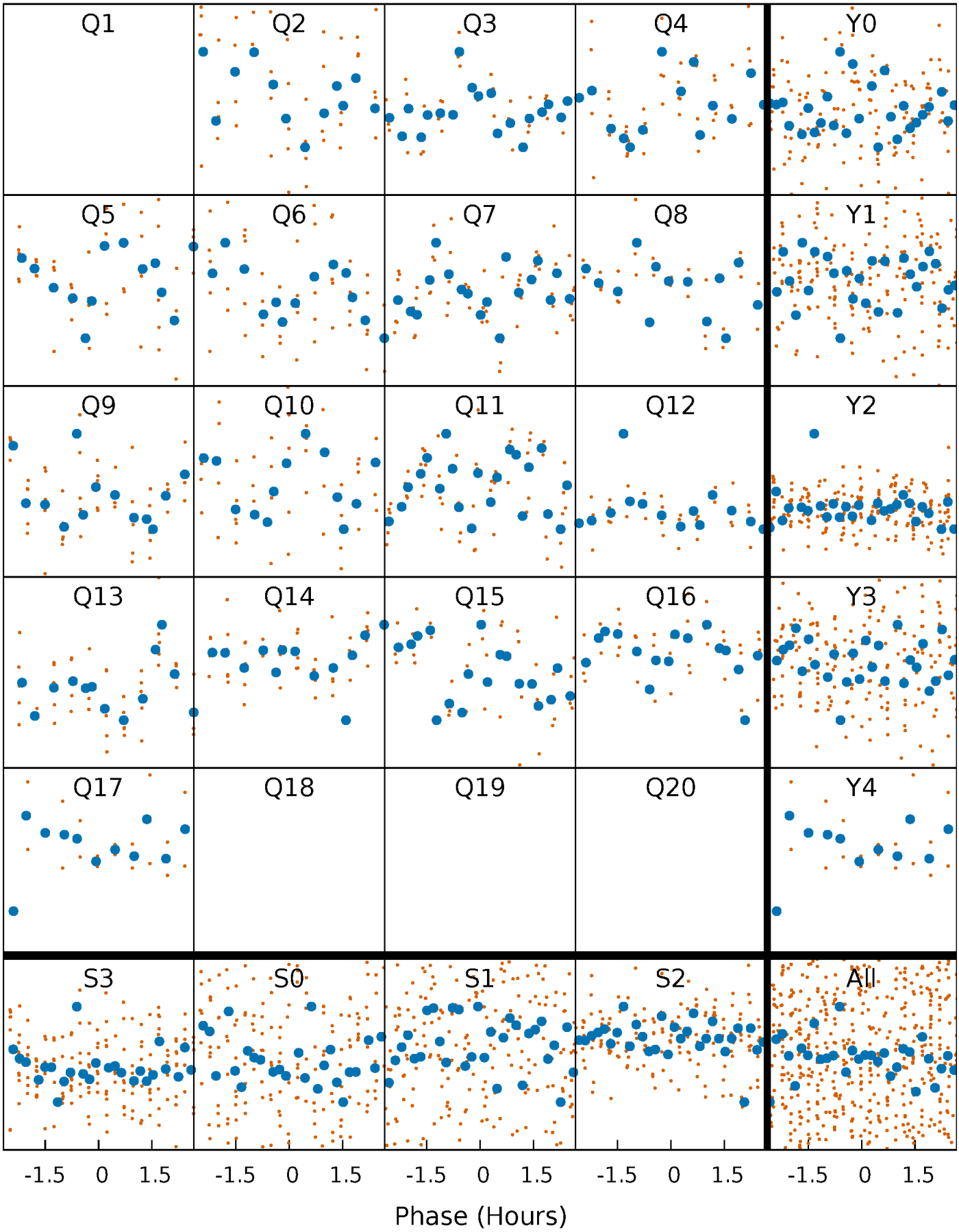
Non-Whitened Vs. Whitened Light Curve





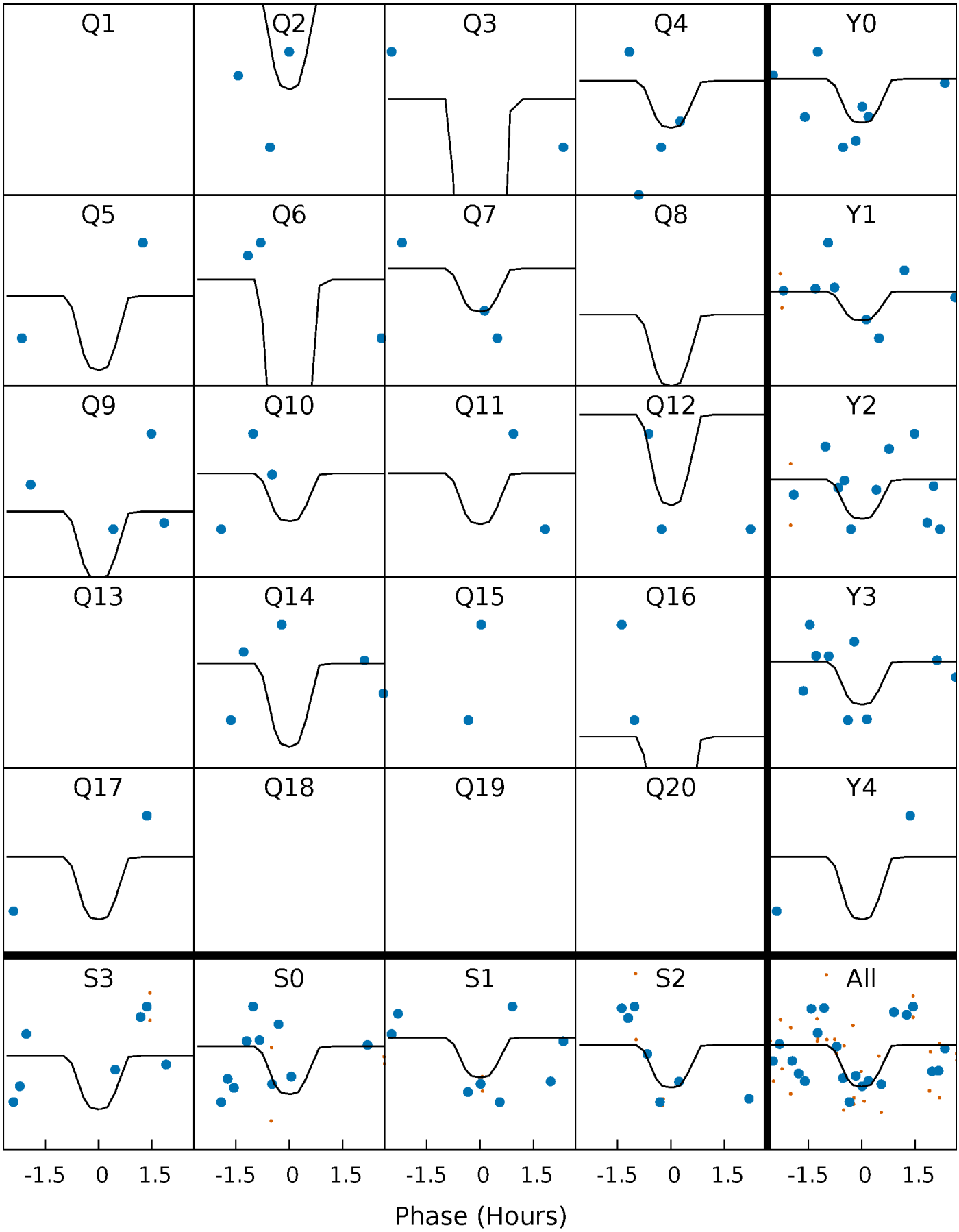
PDC Quarter-Phased Transit Curves

TCE 009113058-09 P= 17.185121 Days T_0=133.392814 (BKJD)



DV Quarter-Phased Transit Curves

TCE 009113058-09 P= 17.185121 Days T_0=133.392814 (BKJD)

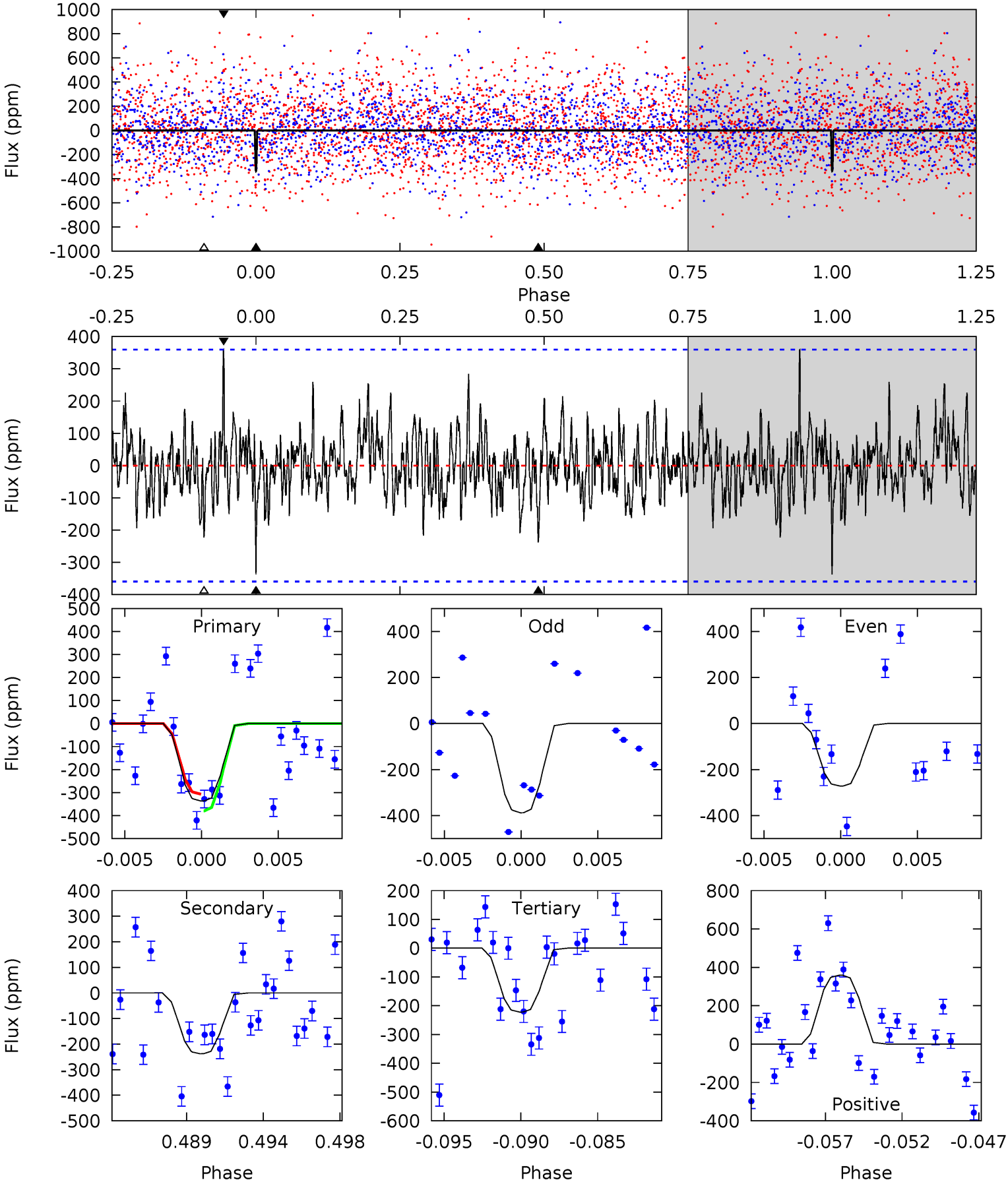


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009113058-09, P = 17.185121 Days, E = 133.392814 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.84	3.42	3.19	5.16	5.17	2.82	1.19	1.65	-0.32	0.23	-1.74	0.86	1.02	0.52	0.52



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-09 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-238±70	$8.62^{+8.26}_{-6.14}$	1278^{+106}_{-88}	3870^{+2519}_{-836}	38^{+365}_{-29}
Alt.	N/A	N/A	N/A	N/A	N/A

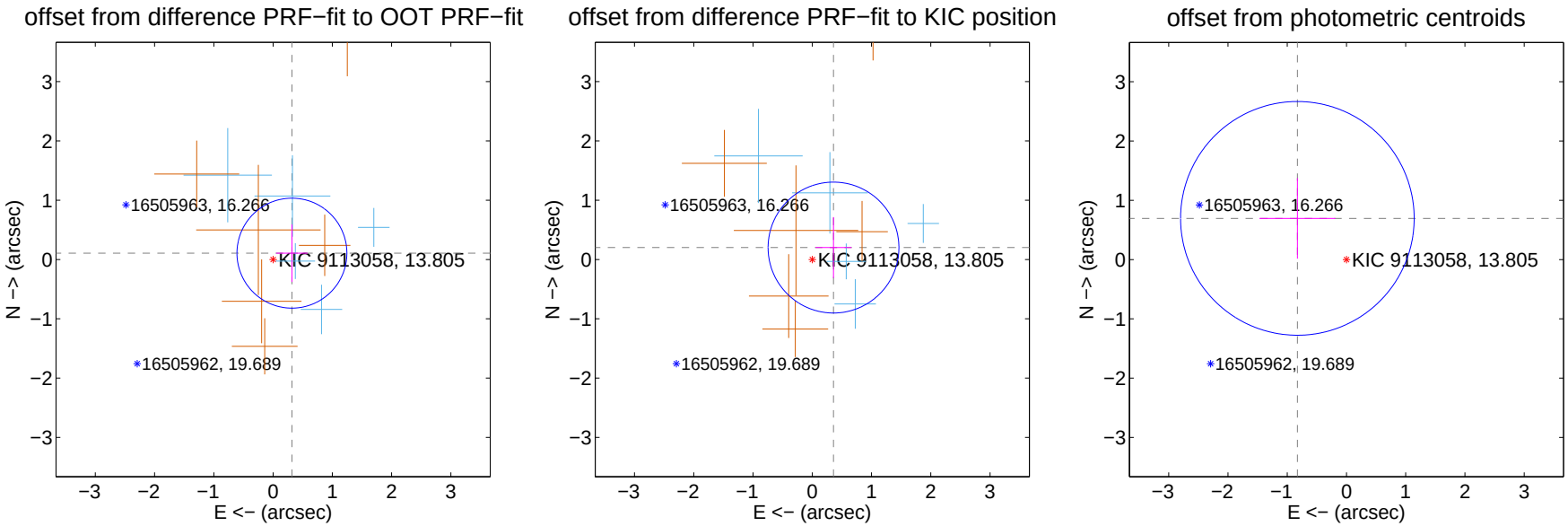
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

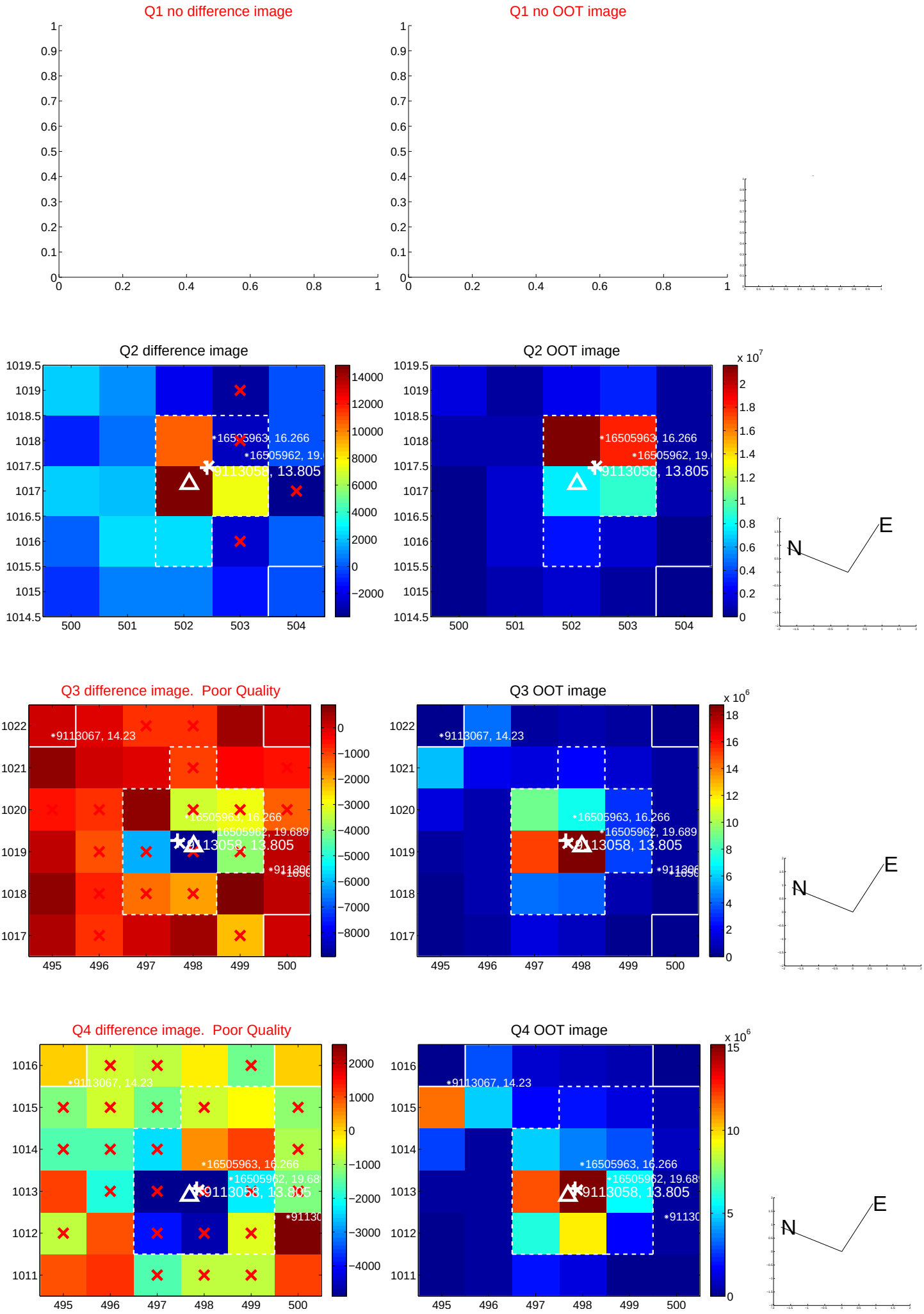
Supplemental centroid analysis for 009113058-09. Kepler magnitude: 13.80. Transit SNR 9.57
There are 5 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.335 ± 0.309	1.08	-0.318 ± 0.266	0.107 ± 0.483
PRF-fit source offset from KIC position	0.411 ± 0.368	1.12	-0.358 ± 0.303	0.201 ± 0.515
photometric centroid source offset	1.08 ± 0.66	1.65	0.83 ± 0.64	0.69 ± 0.68

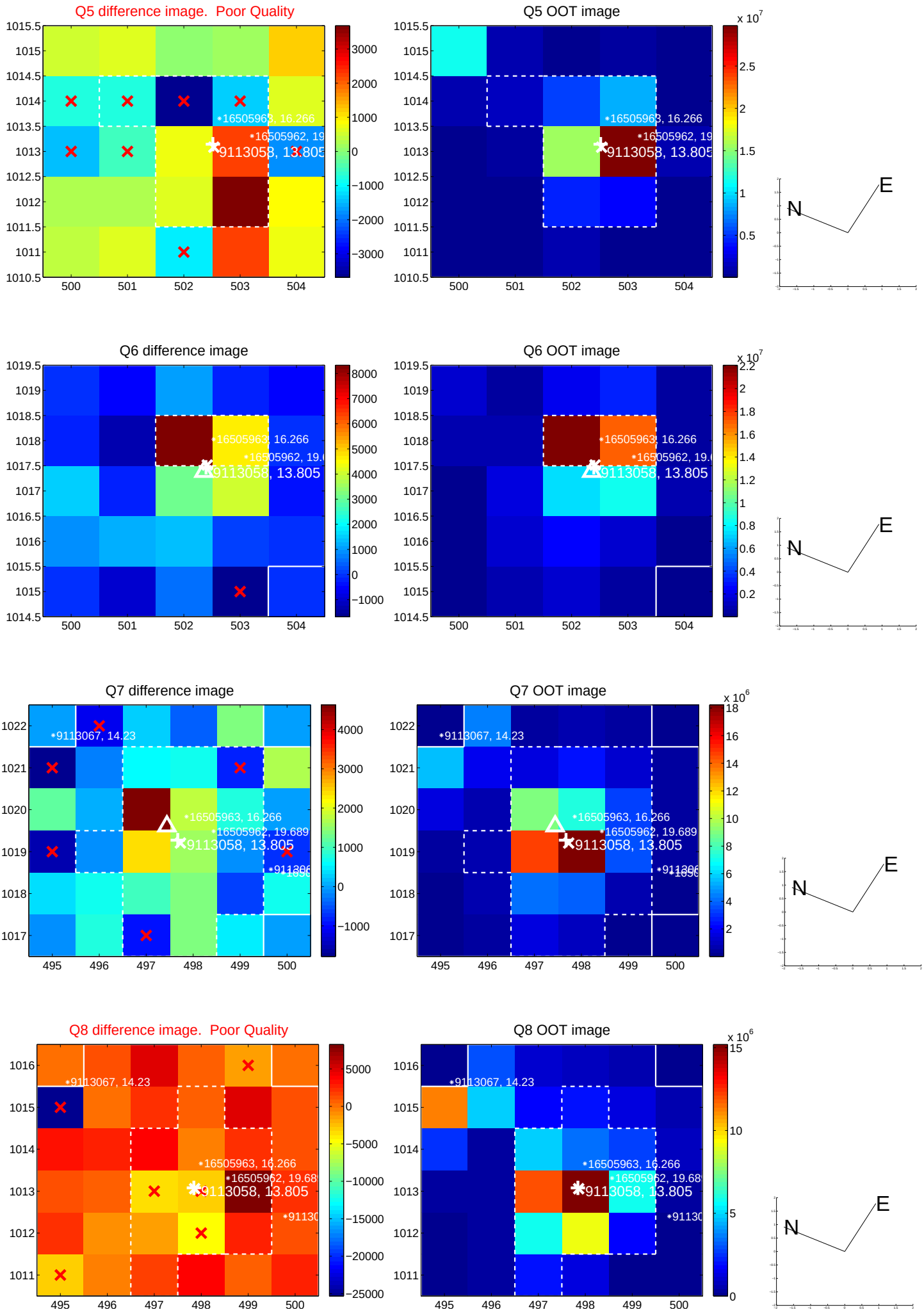


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

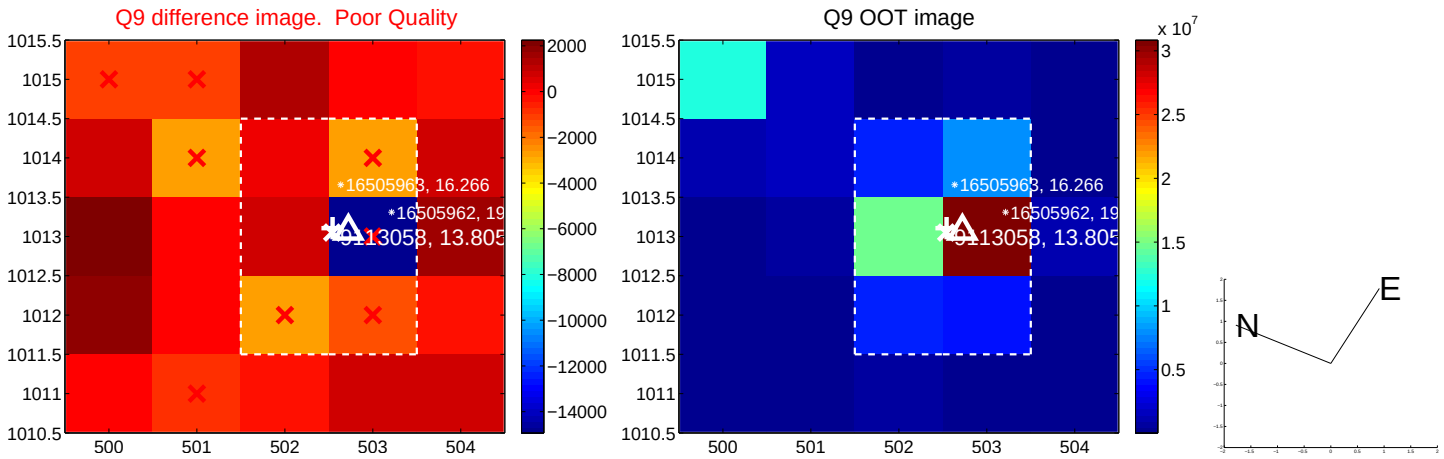
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

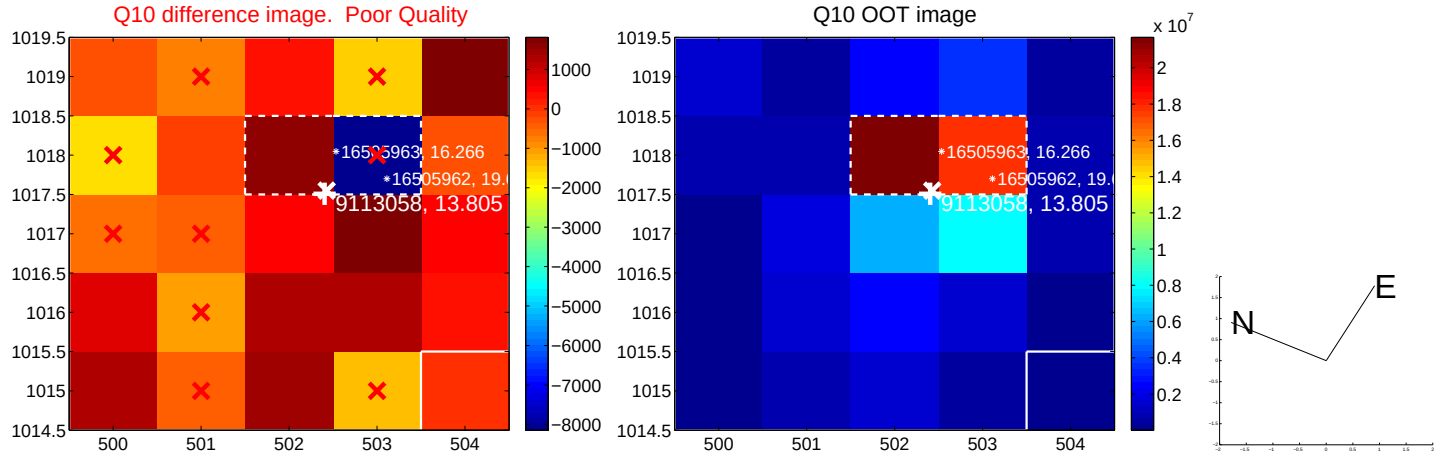


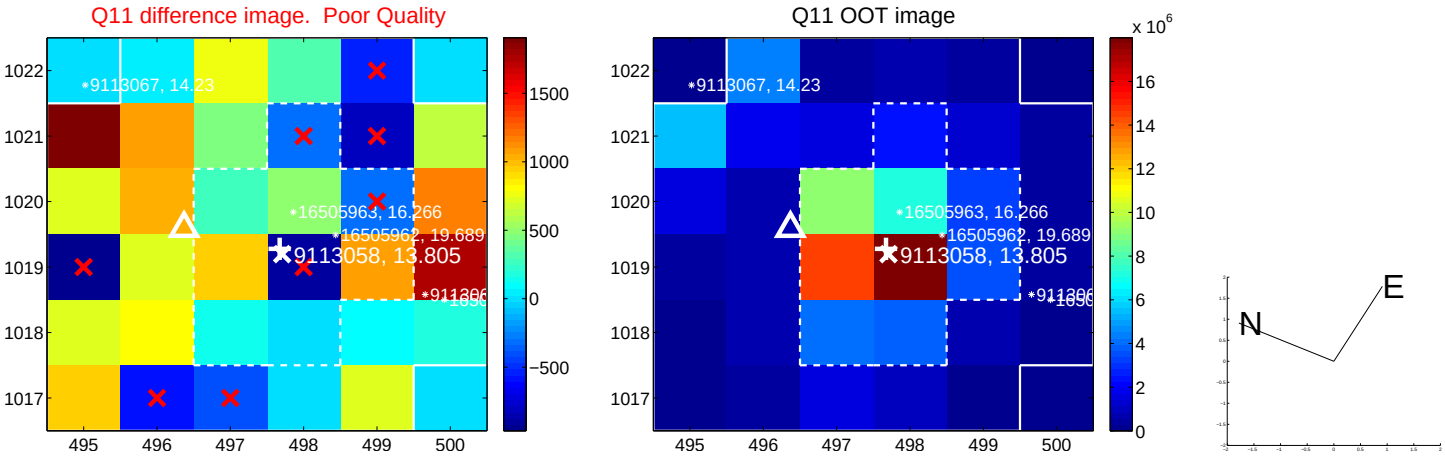
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

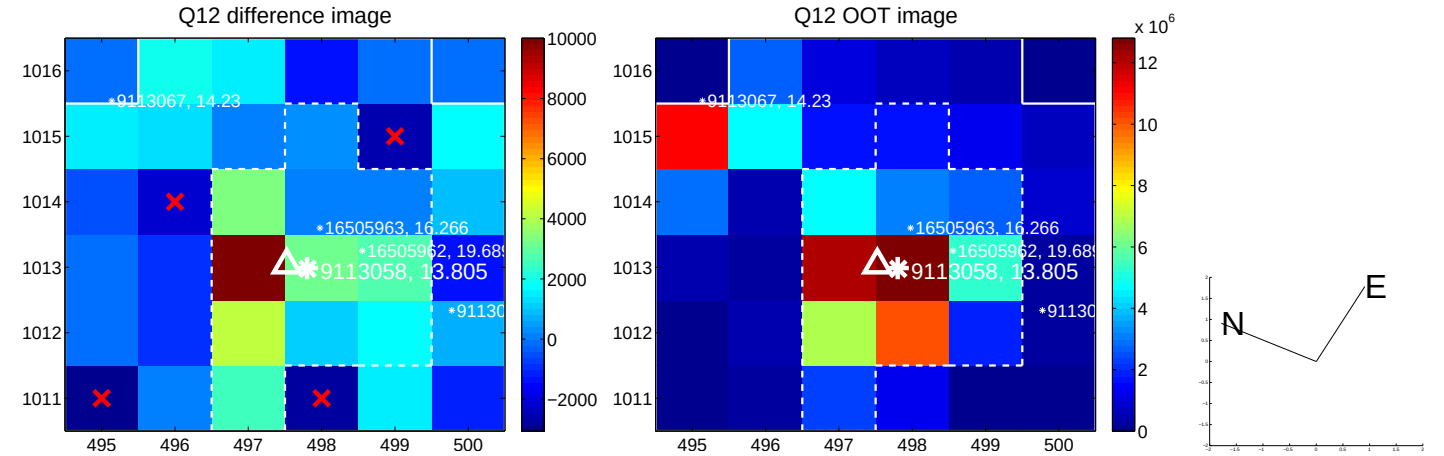


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

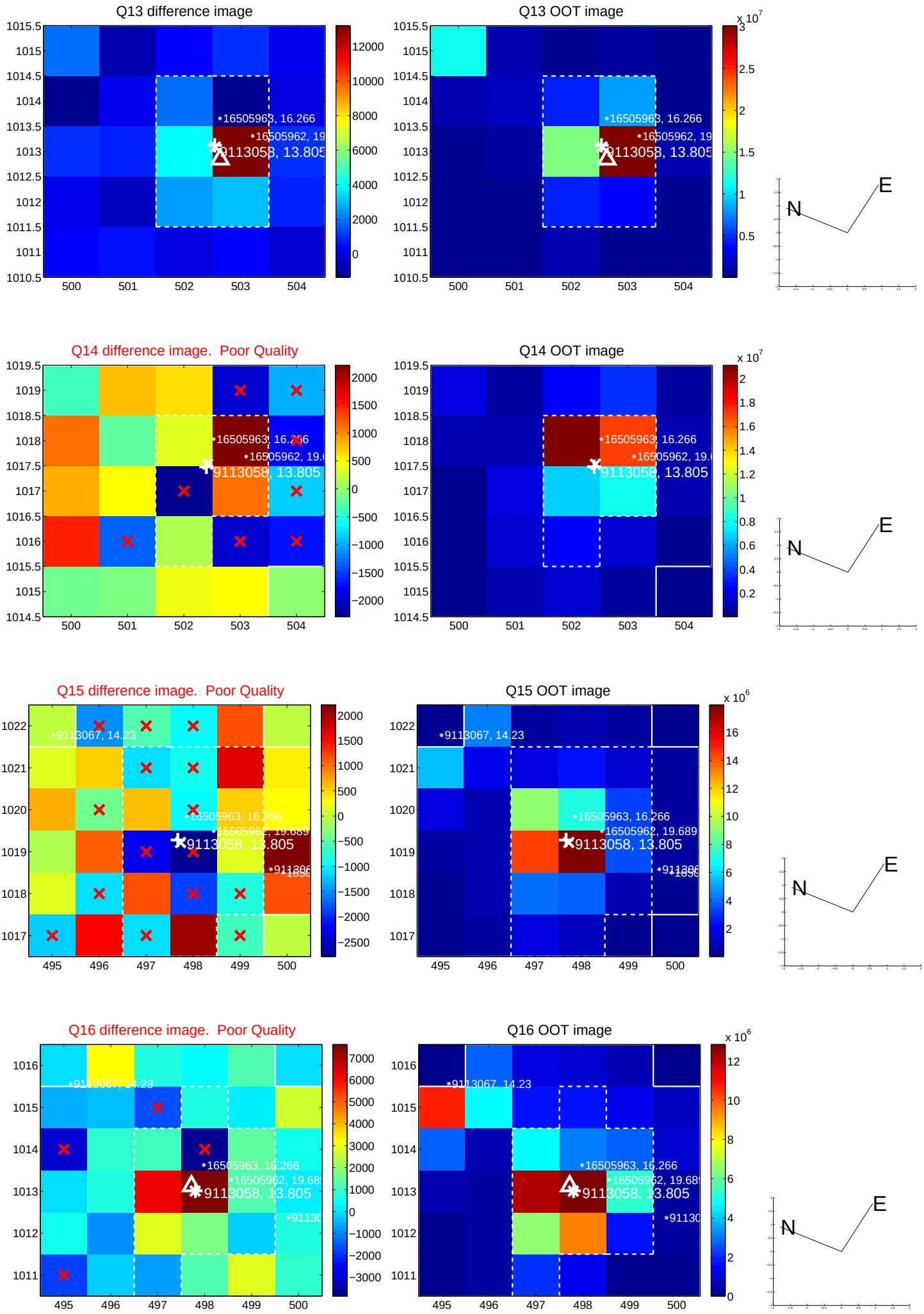




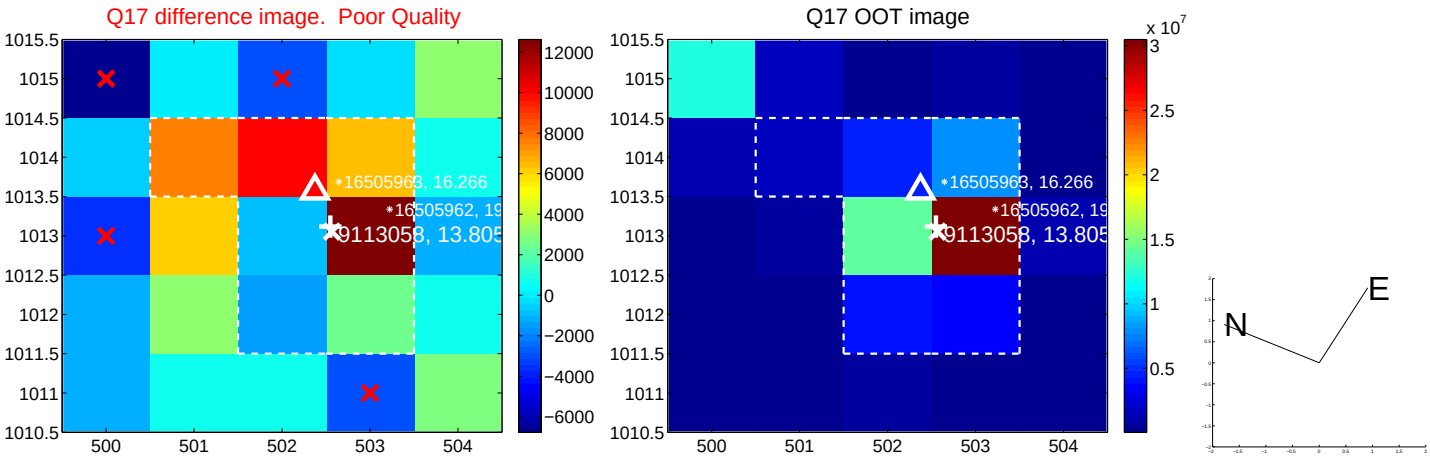


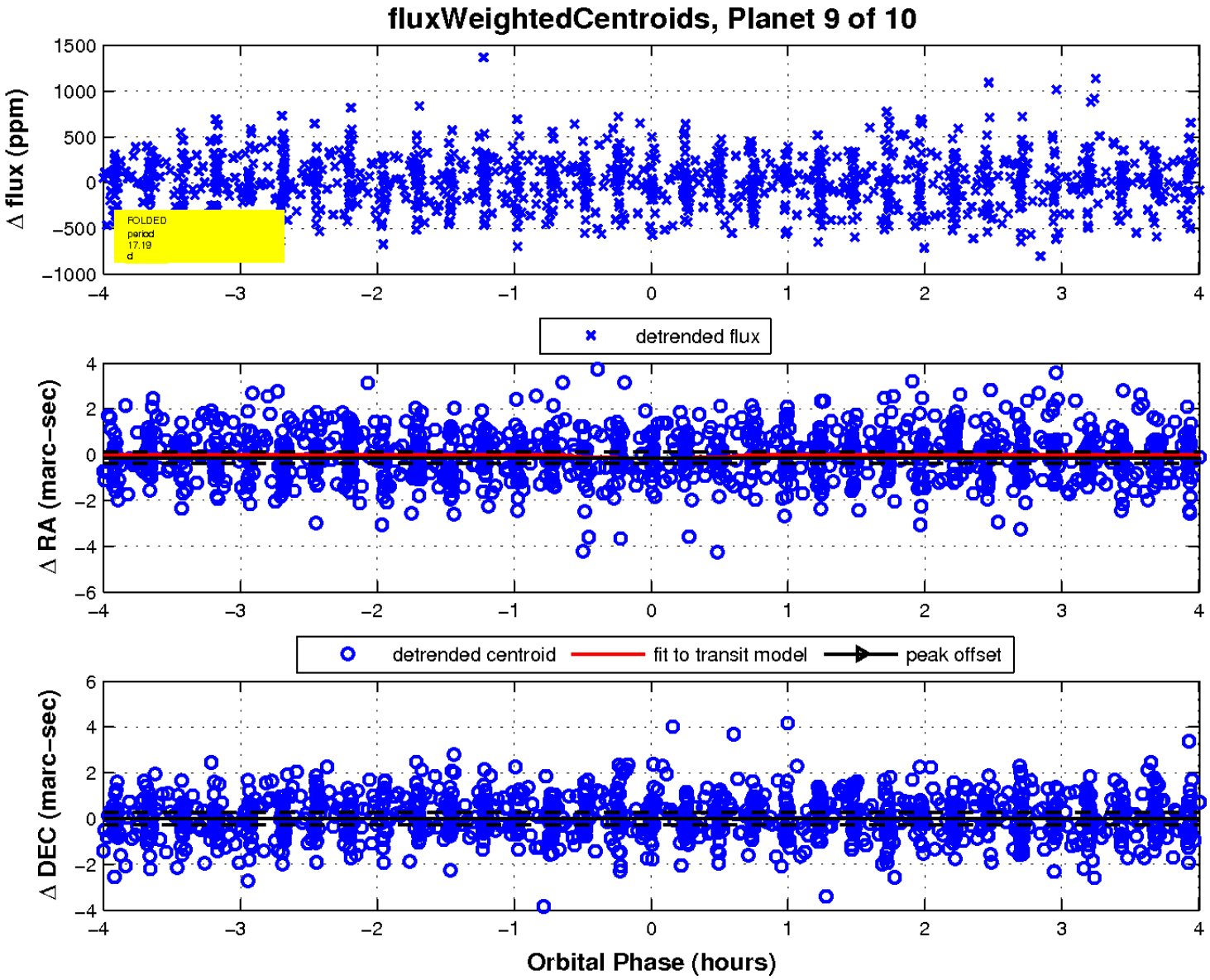


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

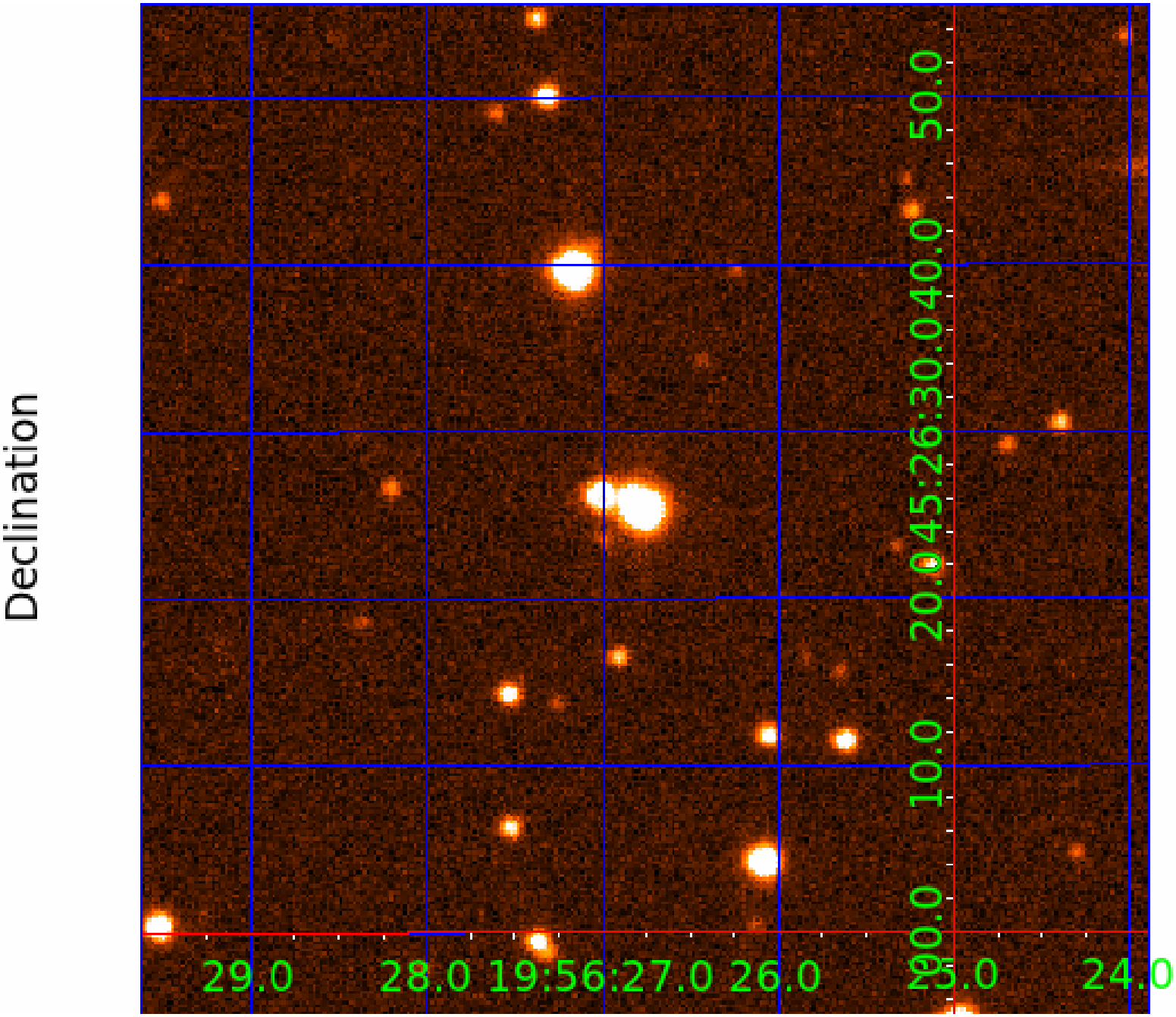


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
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30.0
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45:
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10.0
00.0
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28.0
19:56:27.0
26.0
25.0
24.0

KIC 009113058

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 ($S_\oplus$)
009113058-01	OBS	No	0.525564	131.958931	26.7	3.805	9.5	10.7	1.50	6356	0.78	17030.32
009113058-02	OBS	No	21.514259	151.790322	558.2	0.609	13.3	10.5	1.50	6356	3.68	120.71
009113058-03	OBS	No	24.197977	144.577587	270.5	3.451	13.7	8.2	1.50	6356	2.88	103.20
009113058-04	OBS	No	14.170941	141.803376	457.3	1.077	12.7	13.4	1.50	6356	3.23	210.63
009113058-05	OBS	No	12.158575	138.716732	388.5	1.414	12.2	11.4	1.50	6356	3.05	258.35
009113058-07	OBS	No	7.890744	135.512462	427.1	0.728	9.8	10.4	1.50	6356	3.22	459.80
009113058-08	OBS	No	16.677032	135.274774	683.3	0.506	10.1	11.0	1.50	6356	4.40	169.52
009113058-09	OBS	No	17.185121	133.392814	331.7	1.339	9.8	9.6	1.50	6356	3.20	162.88
009113058-10	OBS	No	14.322704	137.611121	367.8	2.272	9.5	11.7	1.50	6356	2.90	207.66

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009113058-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
009113058-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV
009113058-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
009113058-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—HALO_GHOST
009113058-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
009113058-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
009113058-09	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—HALO_GHOST
009113058-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

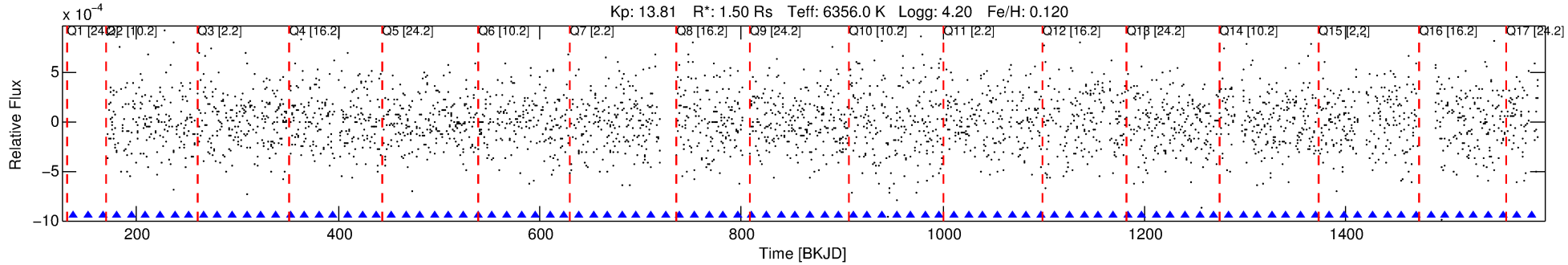
Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.
See `http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col` for comment definitions.

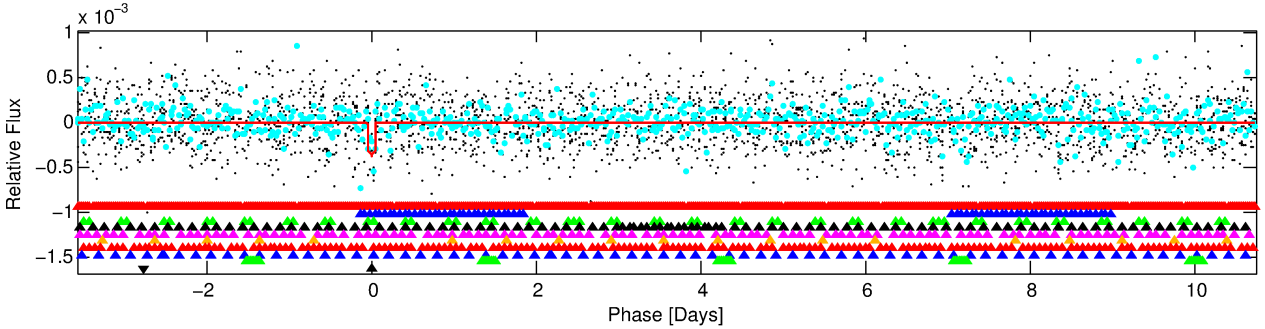
Ephemeris Match Information For 009113058-10

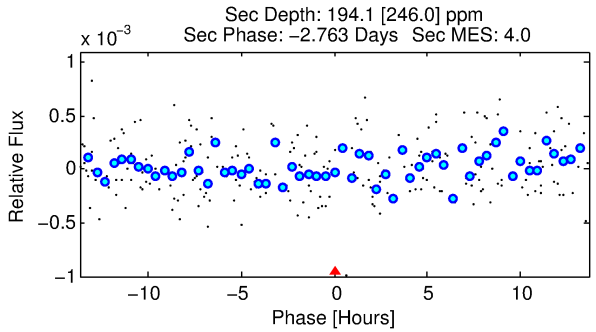
No Significant Match Found

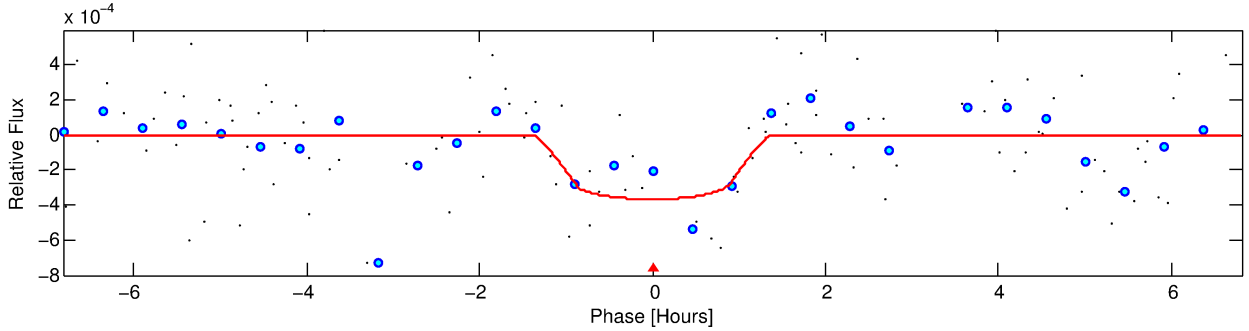
DV One-Page Summary

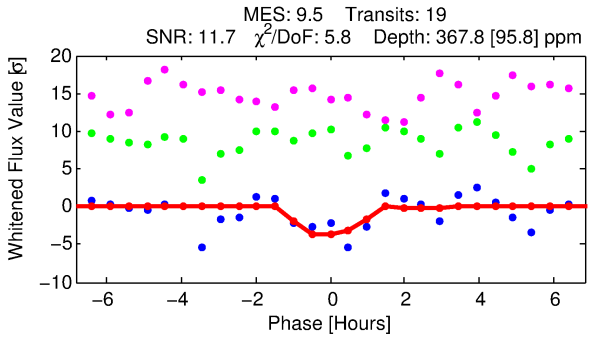
KIC: 9113058 Candidate: 10 of 10 Period: 14.323 d

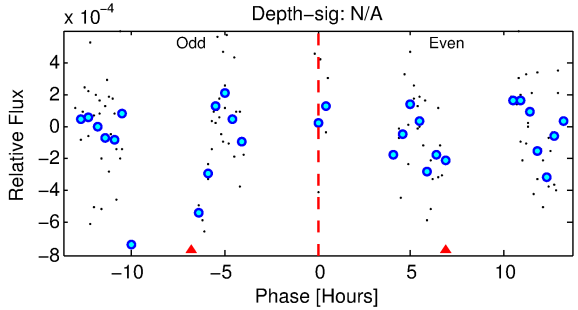


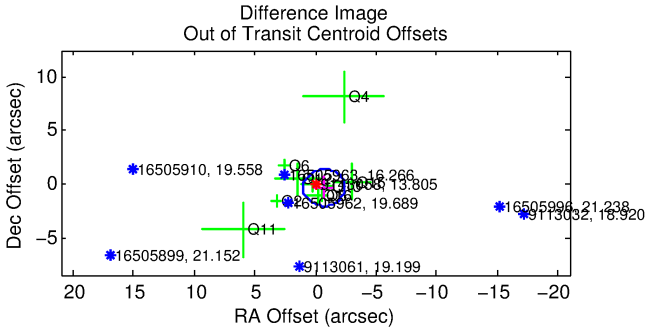












DV Fit Results:

Period = 14.32270 [0.00040] d
Epoch = 137.6111 [0.0231] BKJD
Rp/R* = 0.0178 [0.0398]
a/R* = 46.96 [528.60]
b = 0.29 [35.63]

Seff = 207.66 [83.92]
Teq = 968 [98] K
Rp = 2.90 [6.55] Re
a = 0.1255 [0.0333] AU

Ag = 199.95 [932.85] [0.21σ]
Teffp = 5628 [6546] K [0.71σ]

DV Diagnostic Results:

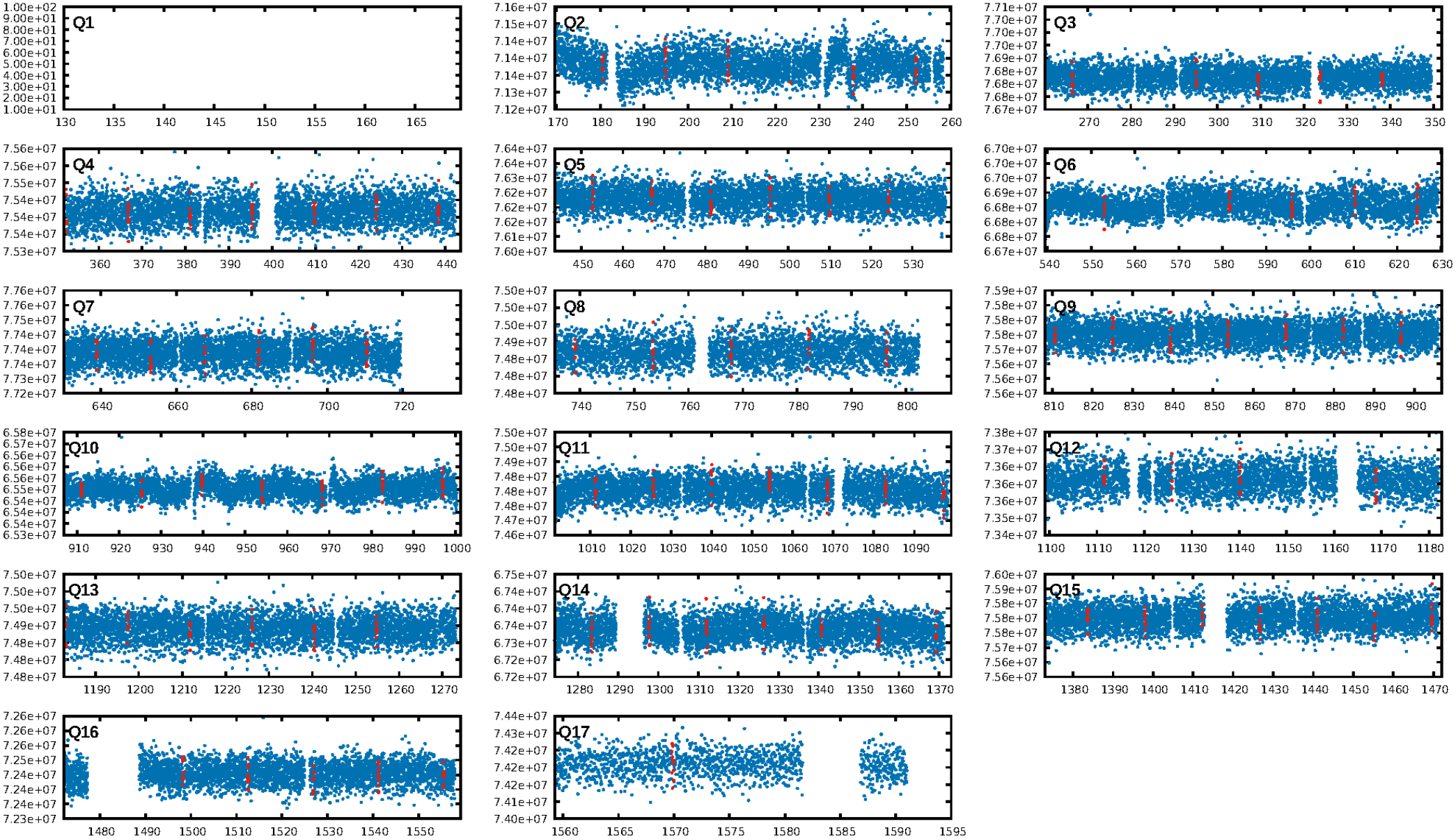
ShortPeriod−sig: 85.3% [1.45σ]
LongPeriod−sig: 100.0% [24.28σ]
ModelChiSquare2−sig: 0.0%
ModelChiSquareGof−sig: 100.0%
Bootstrap−pfa: N/A
RollingBand−fgt: 1.00 [19/19]
GhostDiagnostic−chr: 5.366

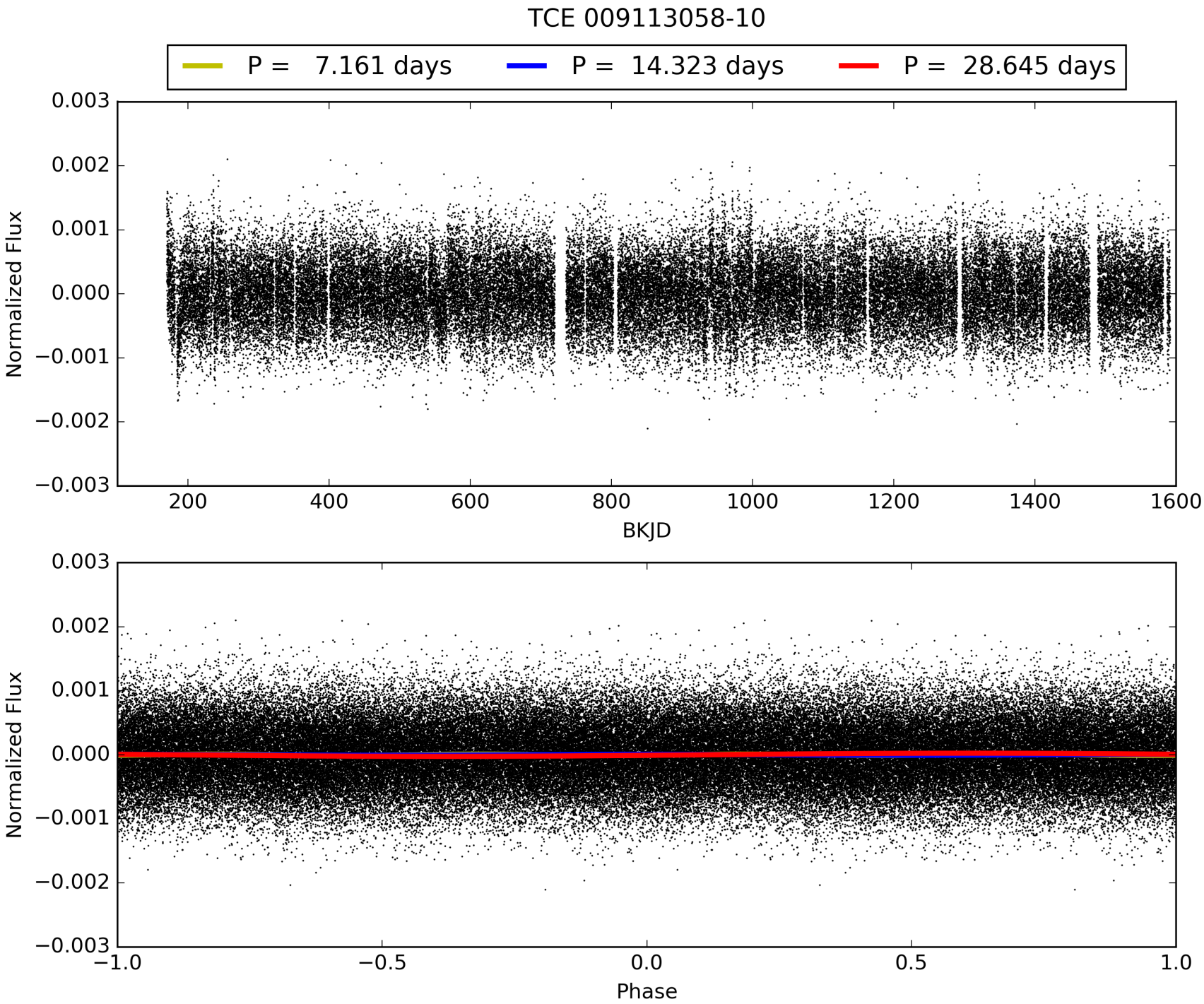
Centroid−sig: 17.6%
Centroid−so: 0.425 arcsec [1.05σ]
OotOffset−rm: 0.790 arcsec [1.38σ]
KicOffset−rm: 0.542 arcsec [1.02σ]
OotOffset−st: 3/2/4/1 [10]
KicOffset−st: 3/2/4/1 [10]
DiffImageQuality−fgm: 0.30 [3/10]
DiffImageOverlap−fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01−Feb−2016 23:36:00 Z

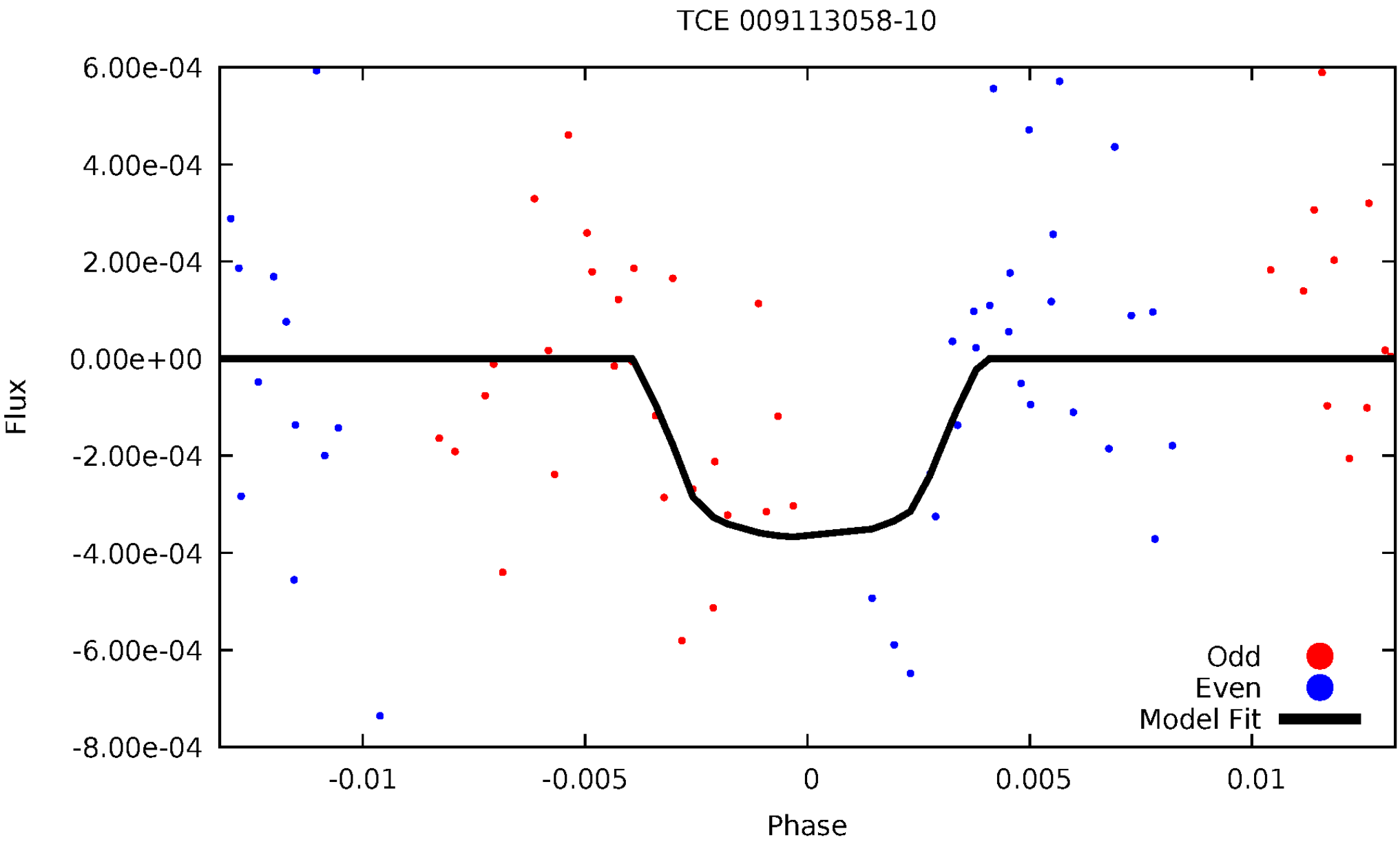
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009113058-10, PDC Light Curves

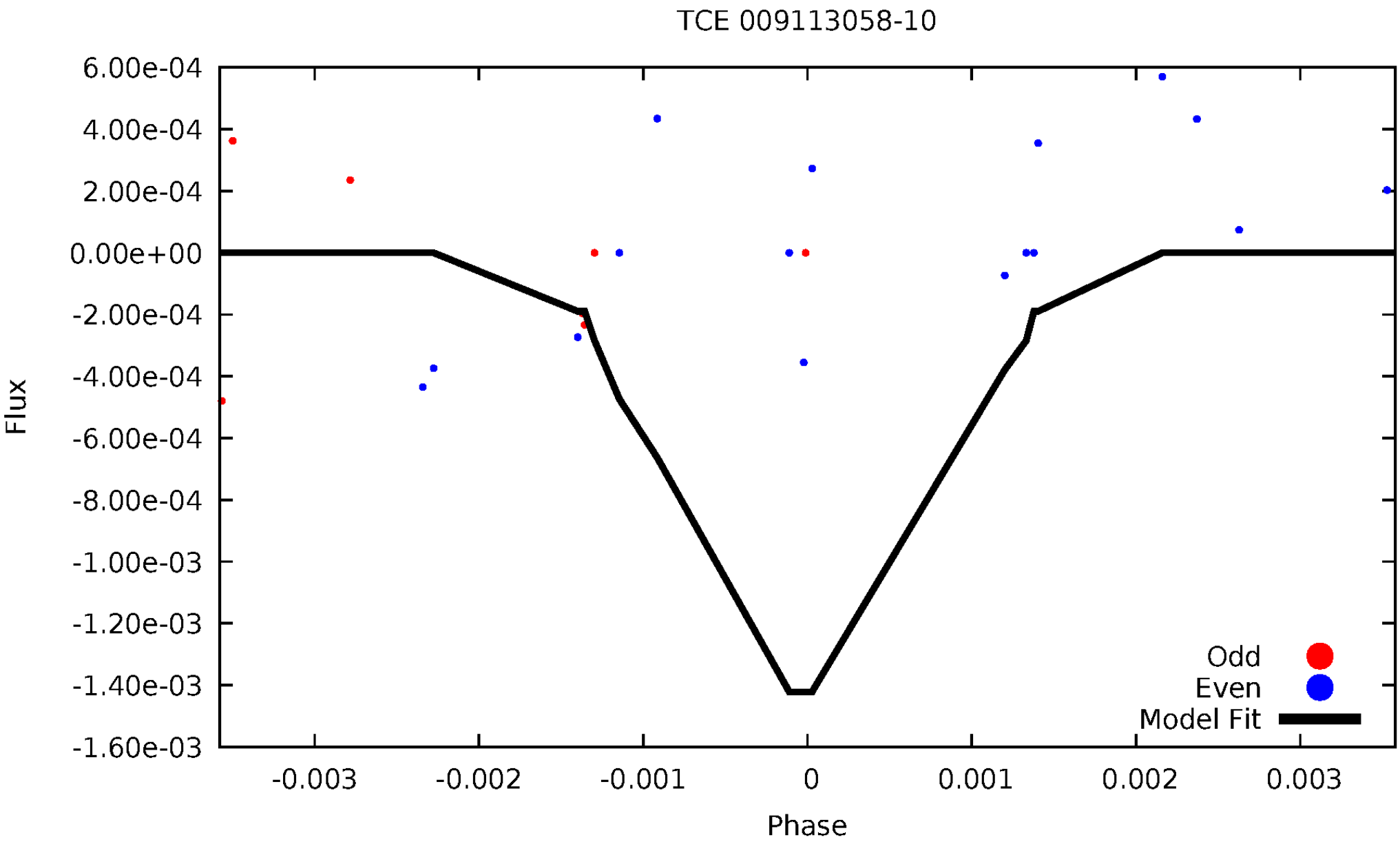



TCE 009113058-10
P = 7.161 days
P = 14.323 days
P = 28.645 days
Normalized Flux
BKJD
Normalized Flux
Phase

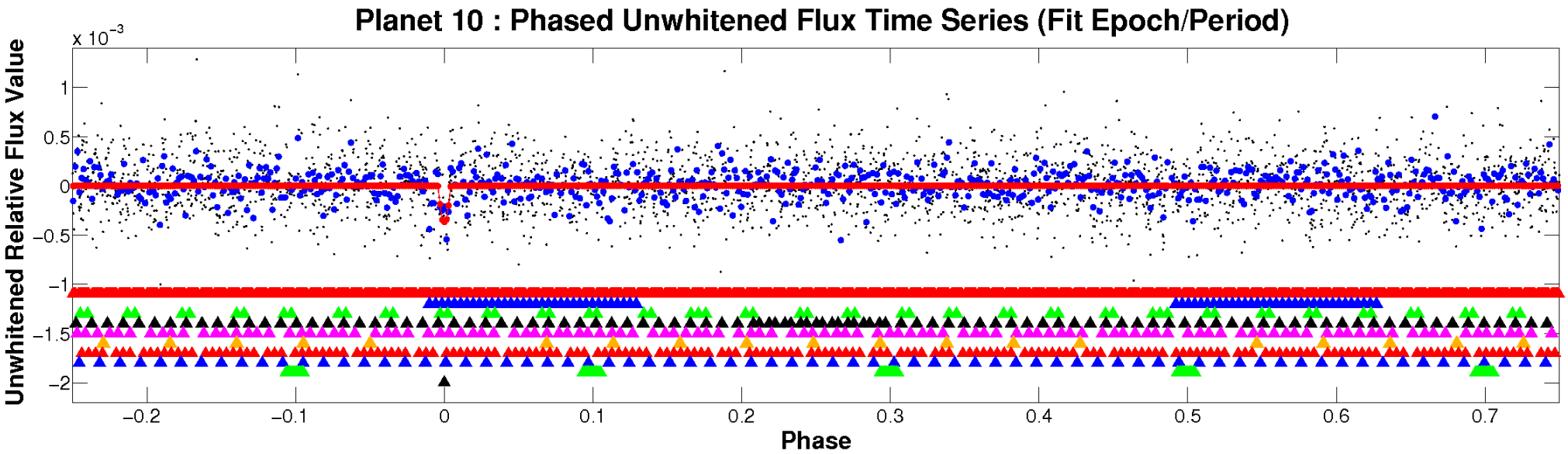
DV Odd/Even

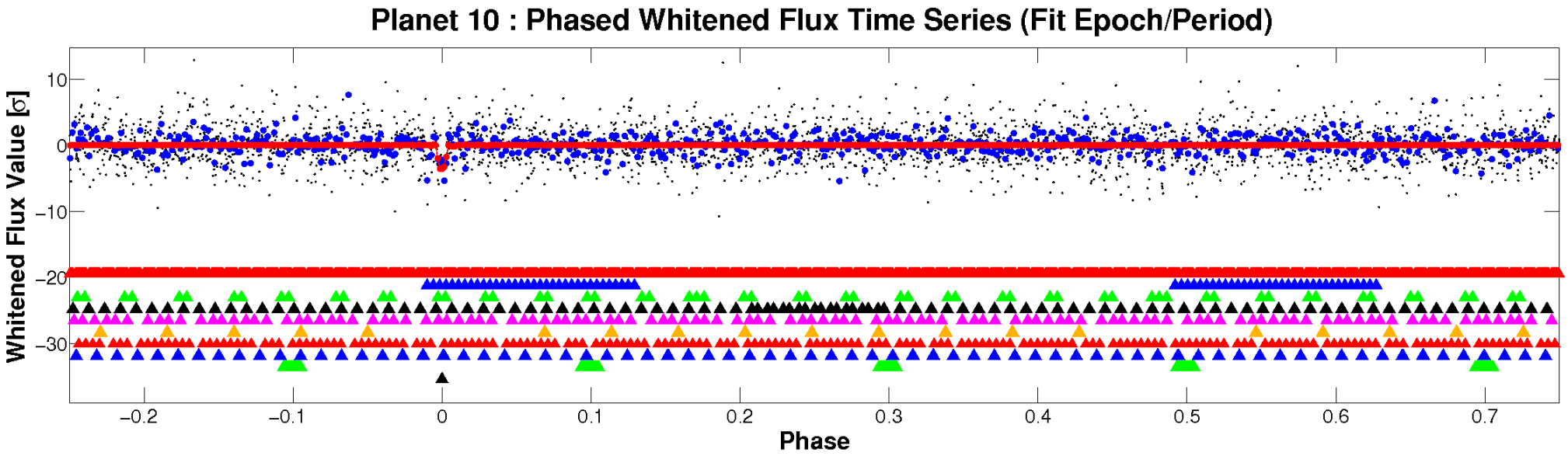

TCE 009113058-10
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
Flux
-0.01
-0.005
0
0.005
0.01
Phase
Odd
Even
Model Fit

ALT Odd/Even


TCE 009113058-10
6.00e-04
4.00e-04
2.00e-04
0.00e+00
-2.00e-04
-4.00e-04
-6.00e-04
-8.00e-04
-1.00e-03
-1.20e-03
-1.40e-03
-1.60e-03
Flux
-0.003
-0.002
-0.001
0
0.001
0.002
0.003
Phase
Odd
Even
Model Fit

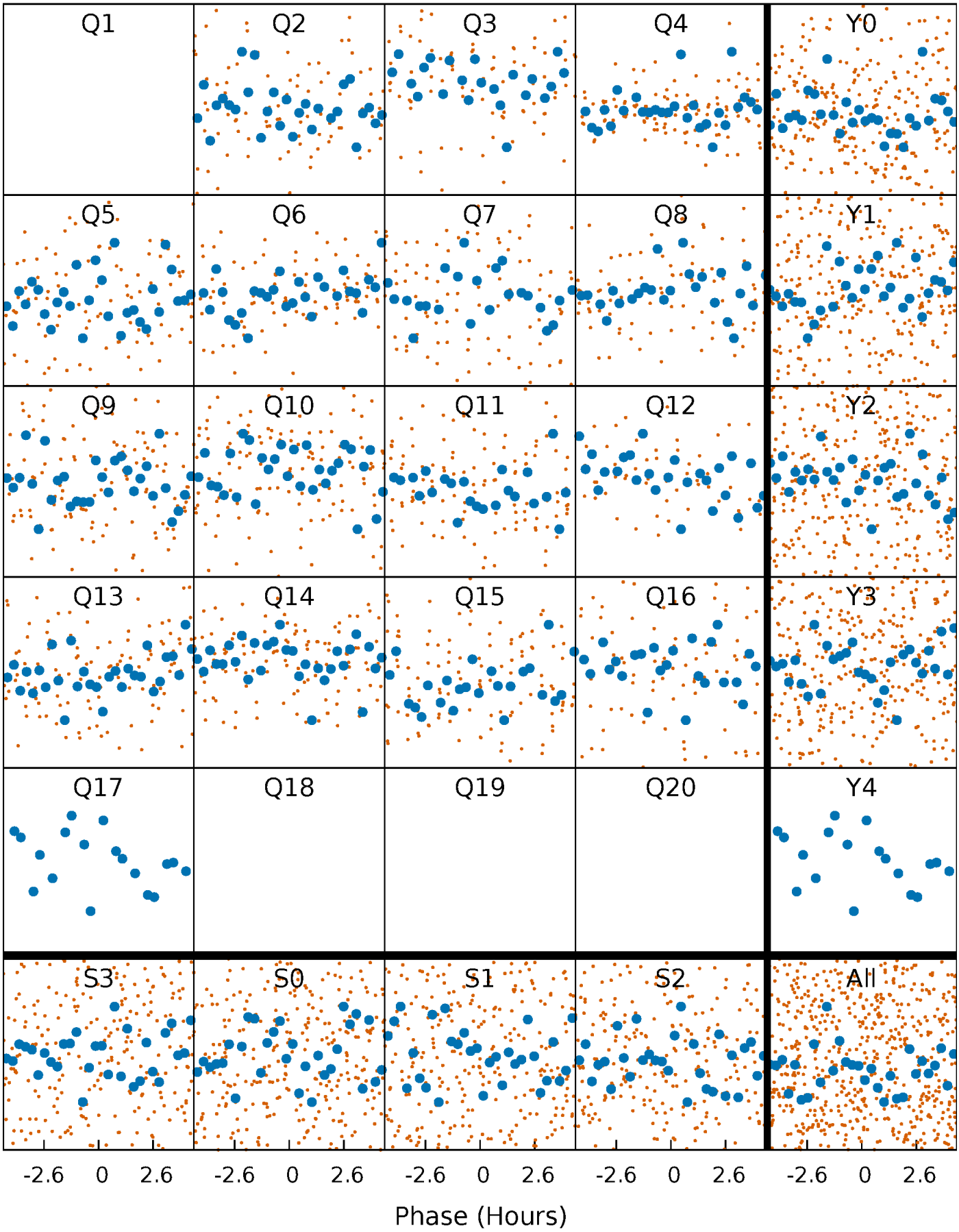
Non-Whitened Vs. Whitened Light Curve





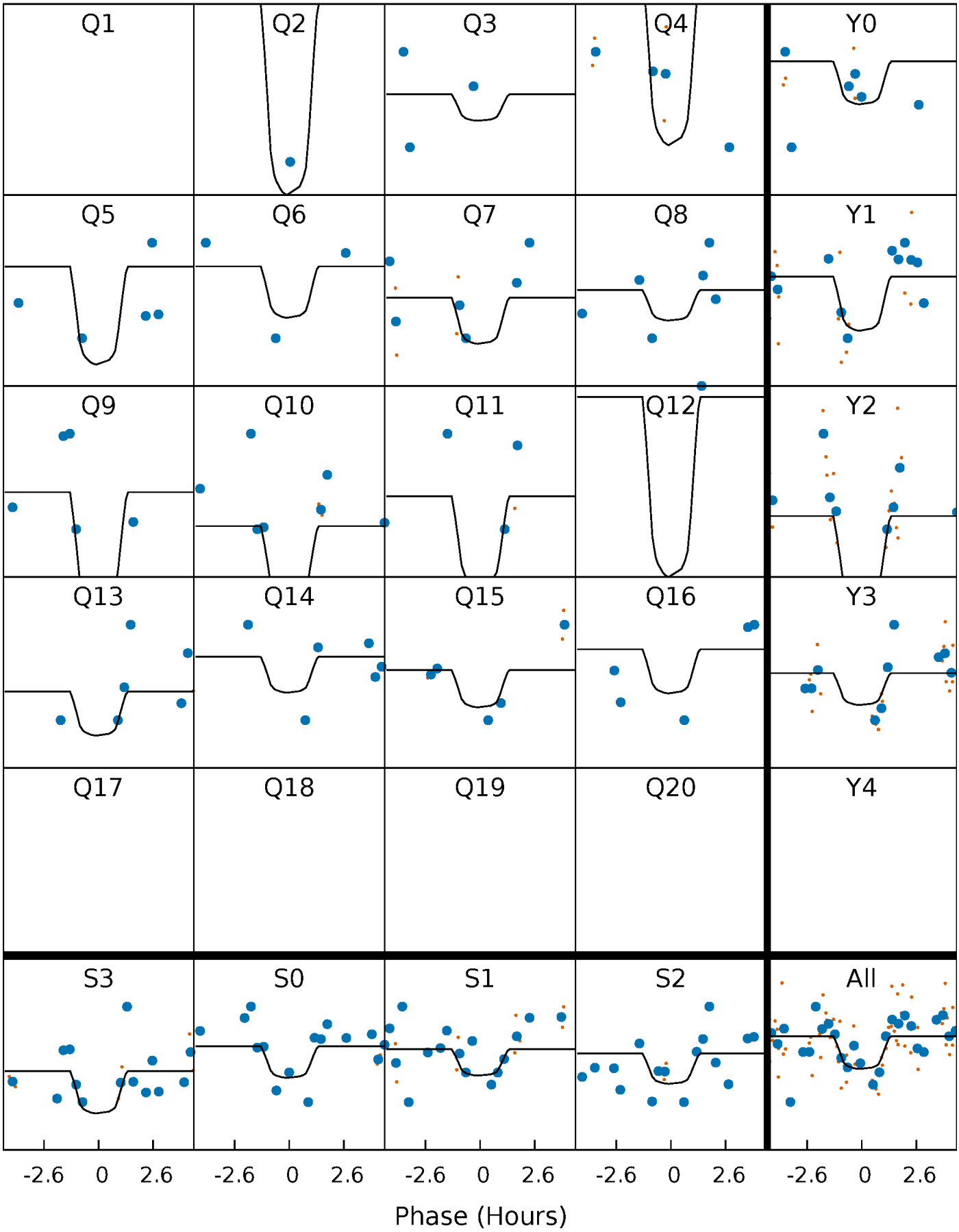
PDC Quarter-Phased Transit Curves

TCE 009113058-10 P= 14.322704 Days T_0=137.611121 (BKJD)



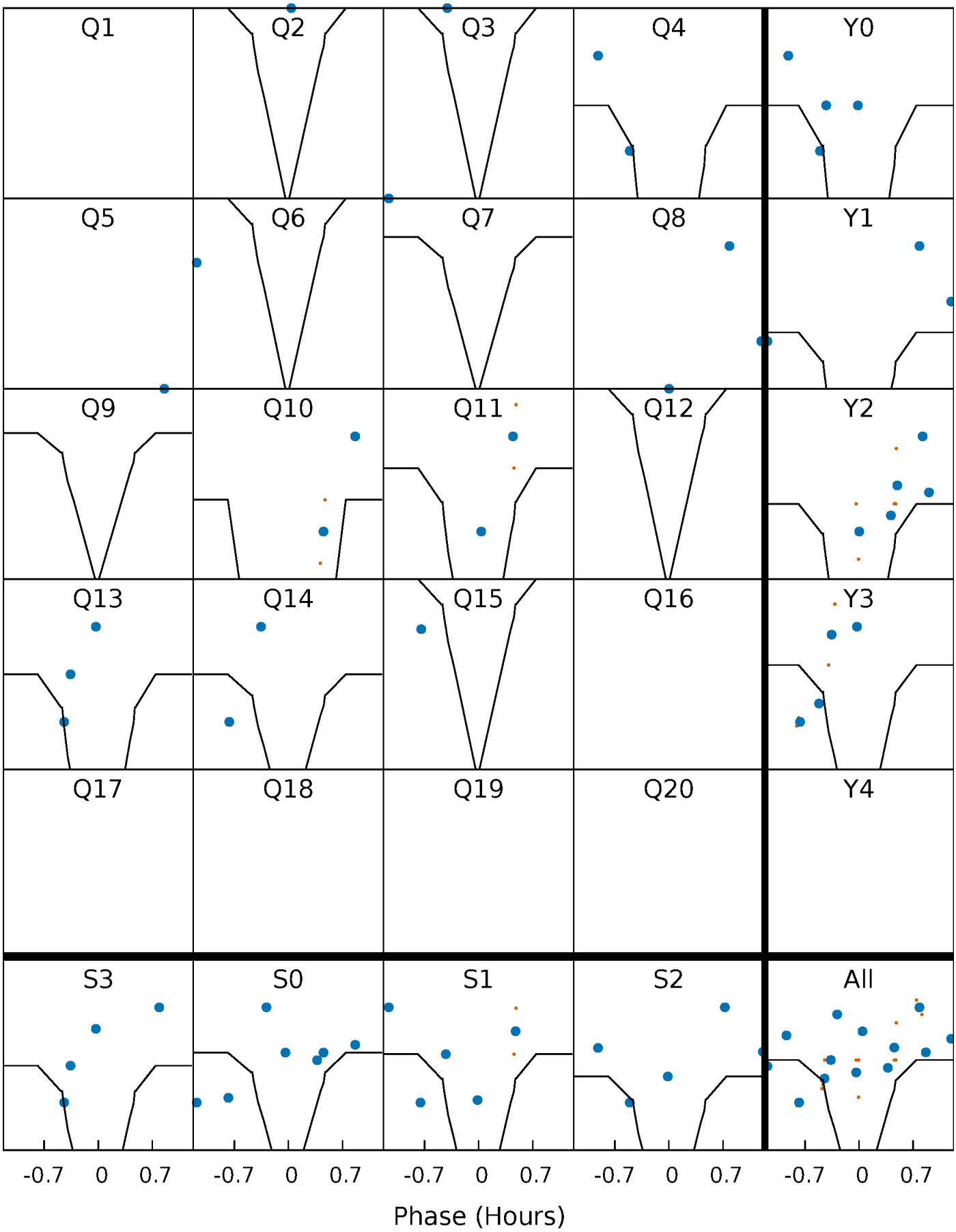
DV Quarter-Phased Transit Curves

TCE 009113058-10 P= 14.322704 Days T_0=137.611121 (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

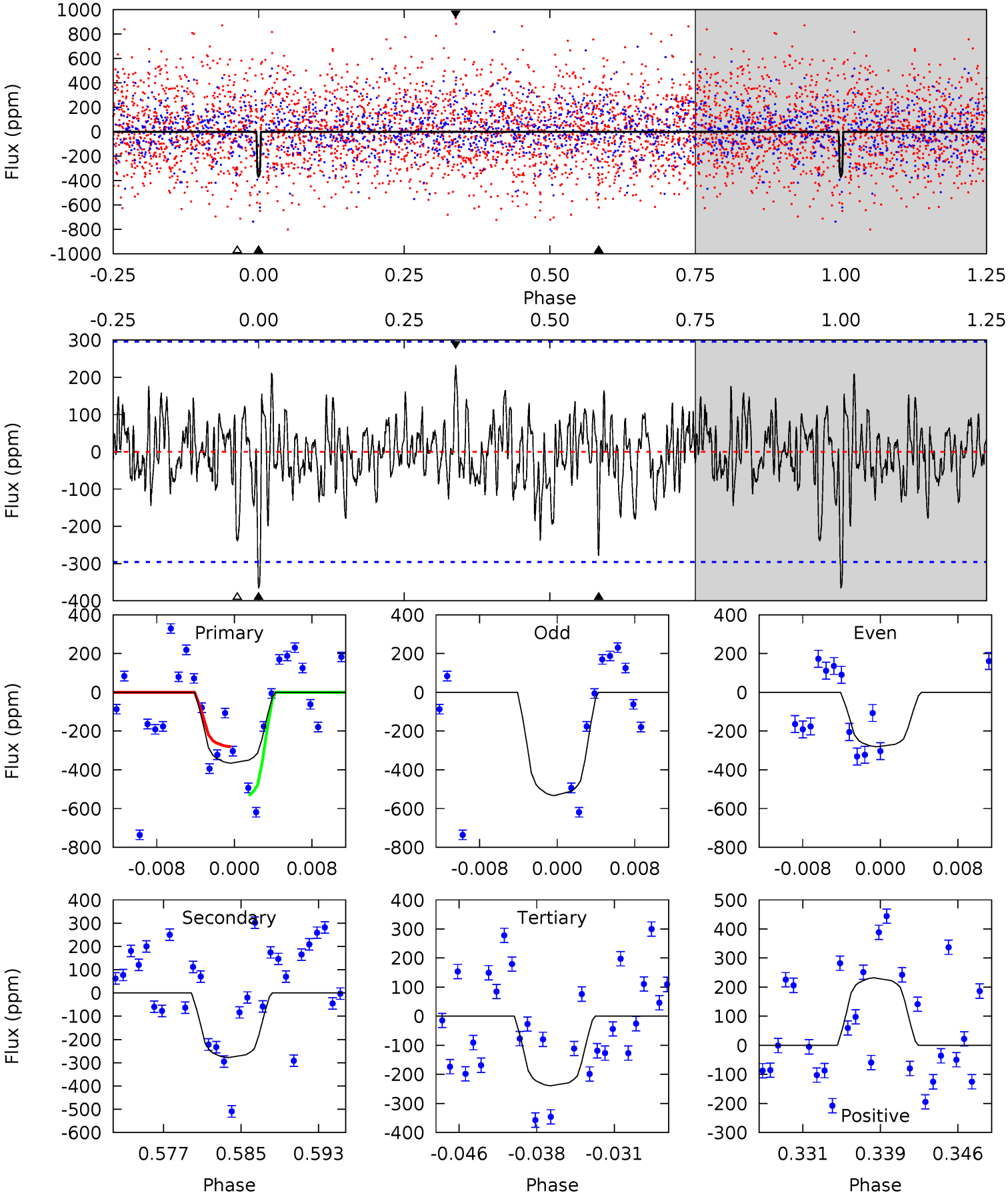
TCE 009113058-10 P= 14.323604 Days T_0=137.604017 (BKJD)



DV Model-Shift Uniqueness Test

009113058-10, P = 14.322704 Days, E = 137.611121 Days

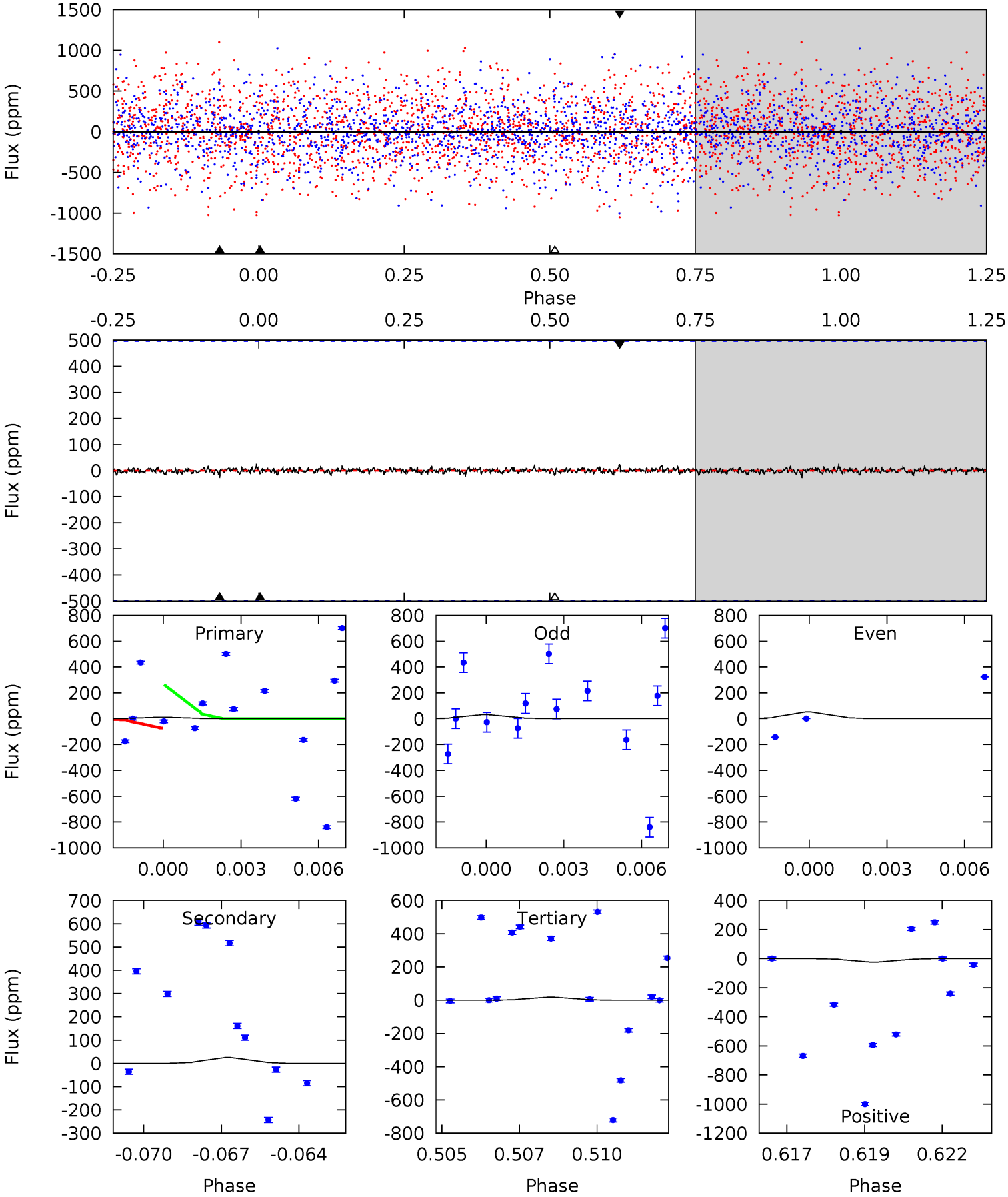
Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.28	4.77	4.11	3.98	5.08	2.67	1.25	2.17	2.29	0.67	0.79	2.16	0.99	0.39	2.13



Alt Model-Shift Uniqueness Test

009113058-10, P = 14.323604 Days, E = 137.604017 Days

Pri	Sec	Ter	Pos	FA_1	FA_2	F_{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.13	0.27	0.20	0.26	5.27	2.99	0.06	-0.07	-0.13	0.07	0.01	0.11	1.00	0.50	0.97



Stellar Parameters For KIC 009113058

	$T_{\rm eff}(K)$	$\log(g)$	[Fe/H]	R ($R_\odot$)	$M(M_\odot)$	$p_\star$ (g·cm^{-3})
	6356^{+177}_{-243}	$4.197^{+0.162}_{-0.198}$	$0.120^{+0.200}_{-0.300}$	$1.495^{+0.489}_{-0.367}$	$1.284^{+0.189}_{-0.209}$	$0.542^{+0.455}_{-0.284}$
	+3%/-4%	+4%/-5%	+167%/-250%	+33%/-25%	+15%/-16%	+84%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 009113058-10 / KOI

Detrend	Depth (ppm)	R_p ($R_\oplus$)	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-278±58	$5.69^{+5.72}_{-3.87}$	1365^{+109}_{-88}	4564^{+3405}_{-979}	73^{+672}_{-55}
Alt.	-26±94	$7.77^{+6.27}_{-5.17}$	1365^{+111}_{-93}	2658^{+1440}_{-5912}	$2.624^{+35.416}_{-12.702}$

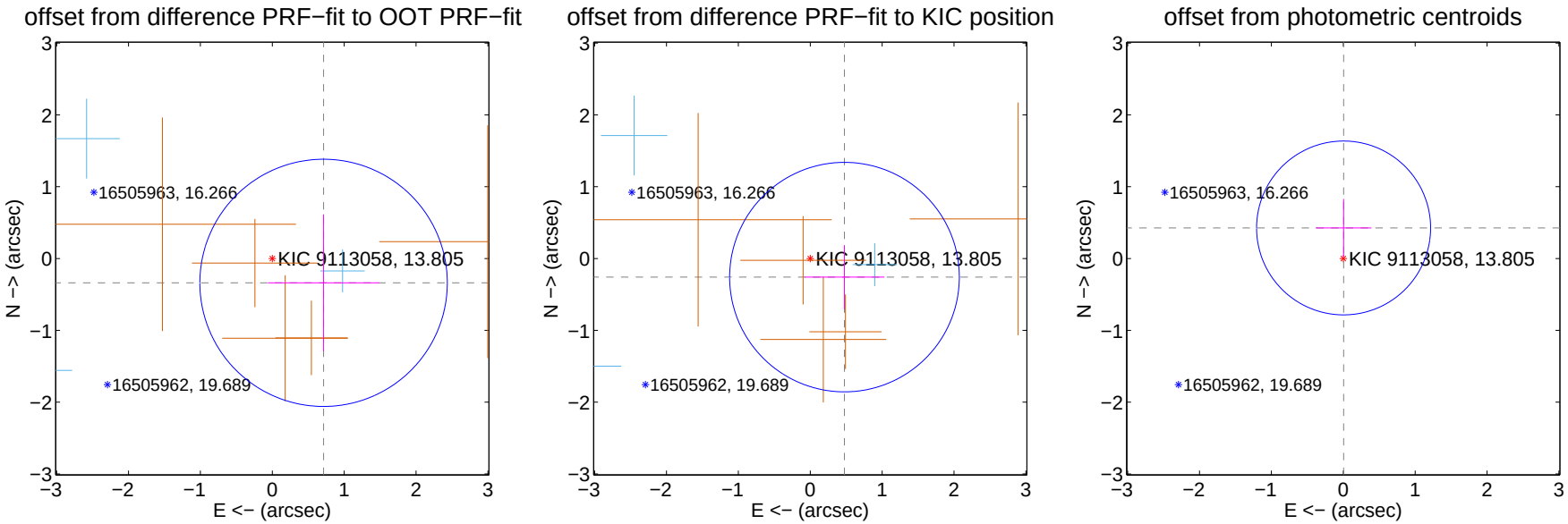
T_{max} = Theoretical Maximum Planetary Temperature
T_{obs} = Observed Planetary Temperature (Assuming A=0.3)
A_{obs} = Observed Albedo (Assuming T=0)

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

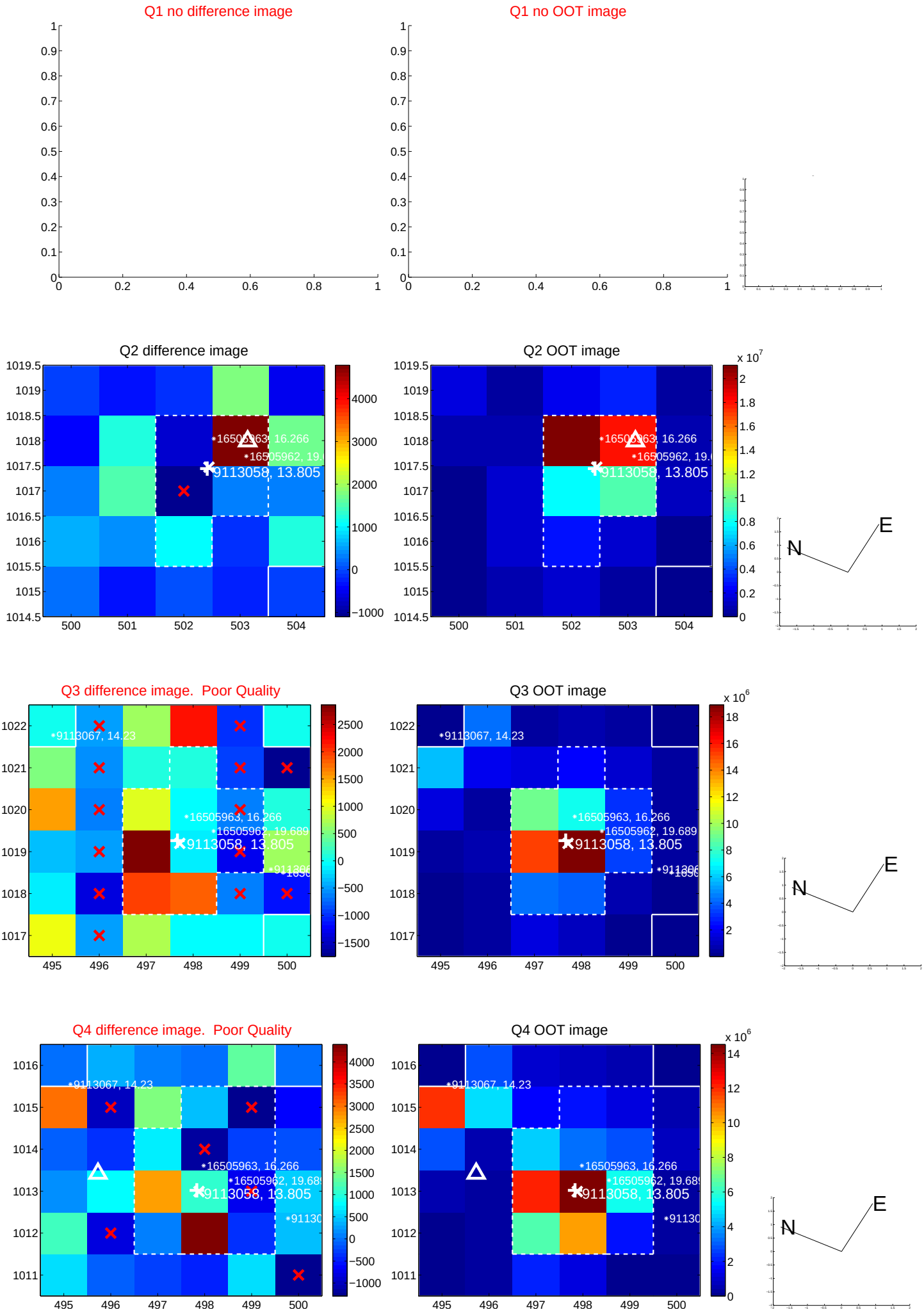
Supplemental centroid analysis for 009113058-10. Kepler magnitude: 13.80. Transit SNR 11.73
There are 3 quarters with good PRF difference image offsets
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.790 ± 0.574	1.38	-0.714 ± 0.773	-0.339 ± 0.954
PRF-fit source offset from KIC position	0.542 ± 0.533	1.02	-0.476 ± 0.556	-0.259 ± 0.445
photometric centroid source offset	0.43 ± 0.40	1.05	-0.00 ± 0.39	0.43 ± 0.40

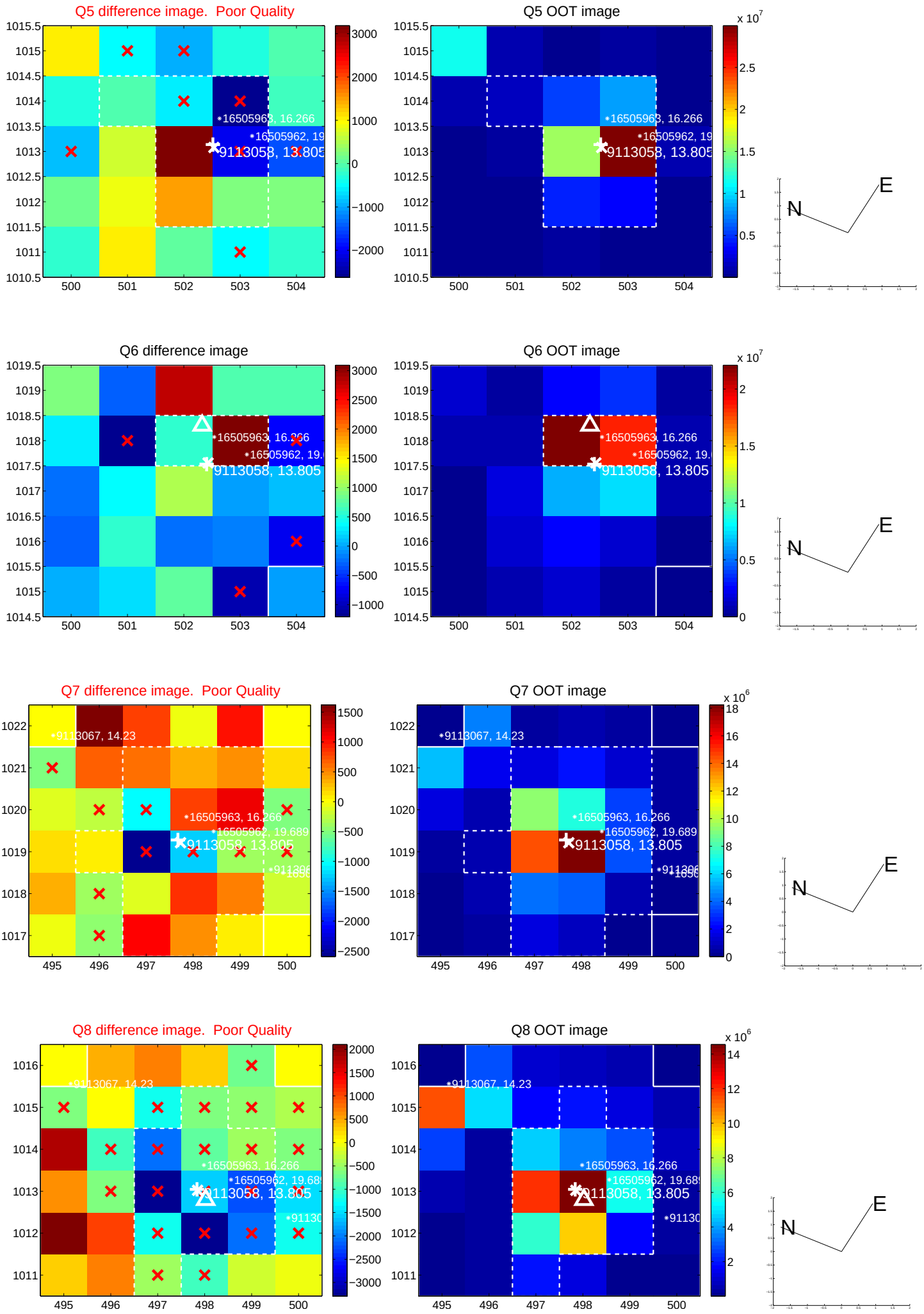


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one-σ uncertainty. Blue circle: three-σ. Red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

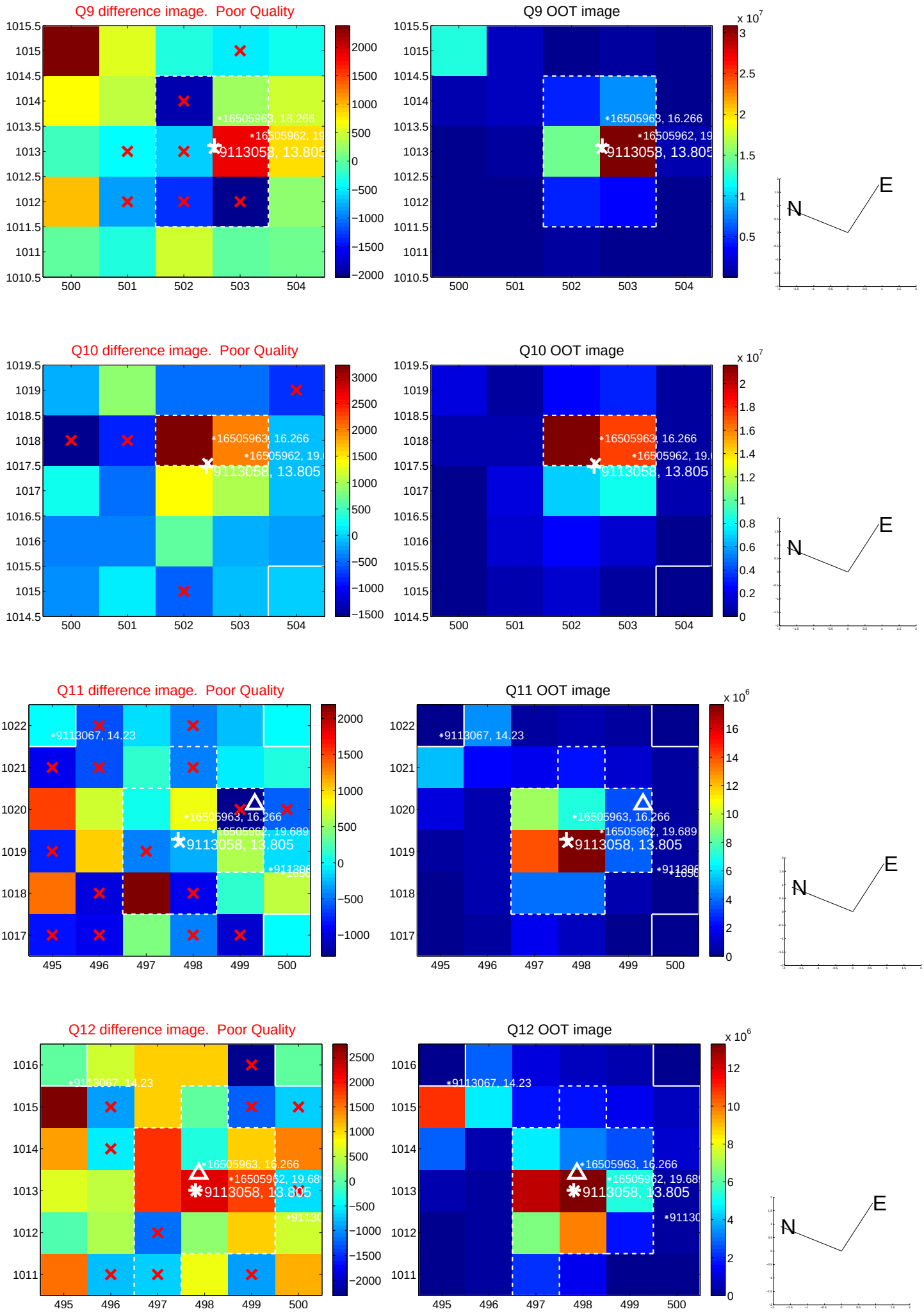
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



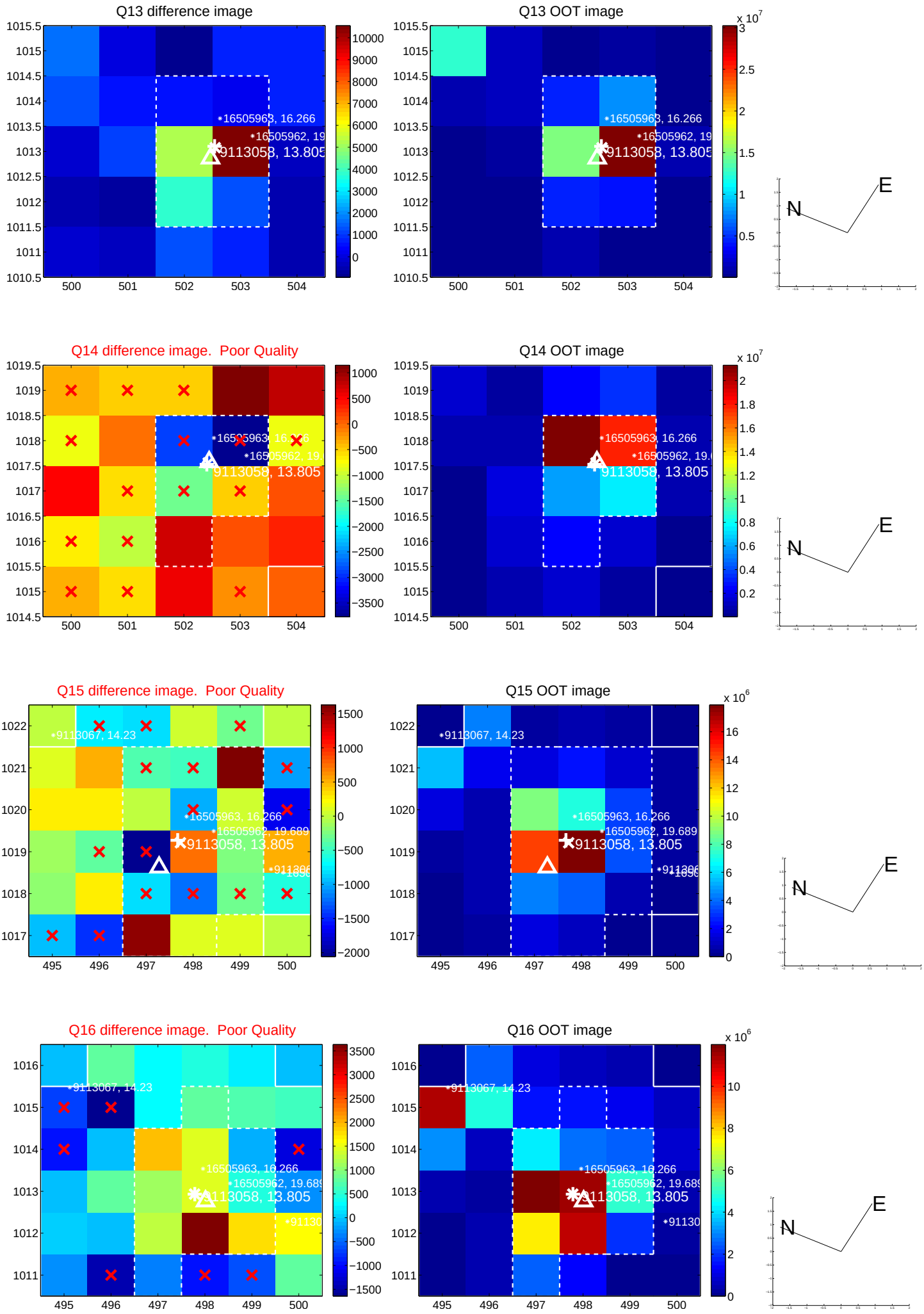
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



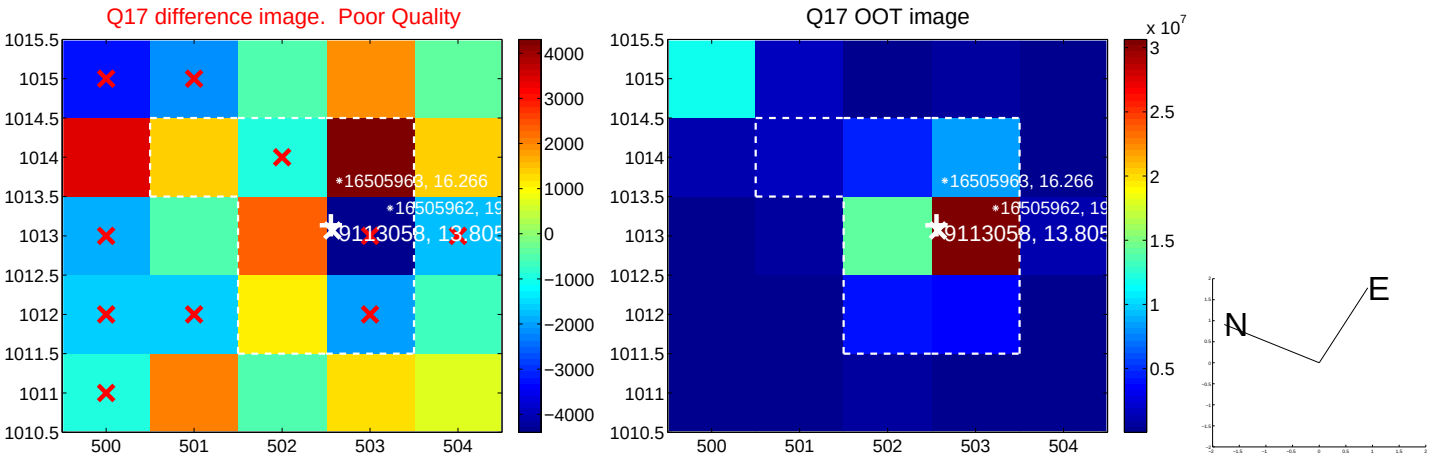
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

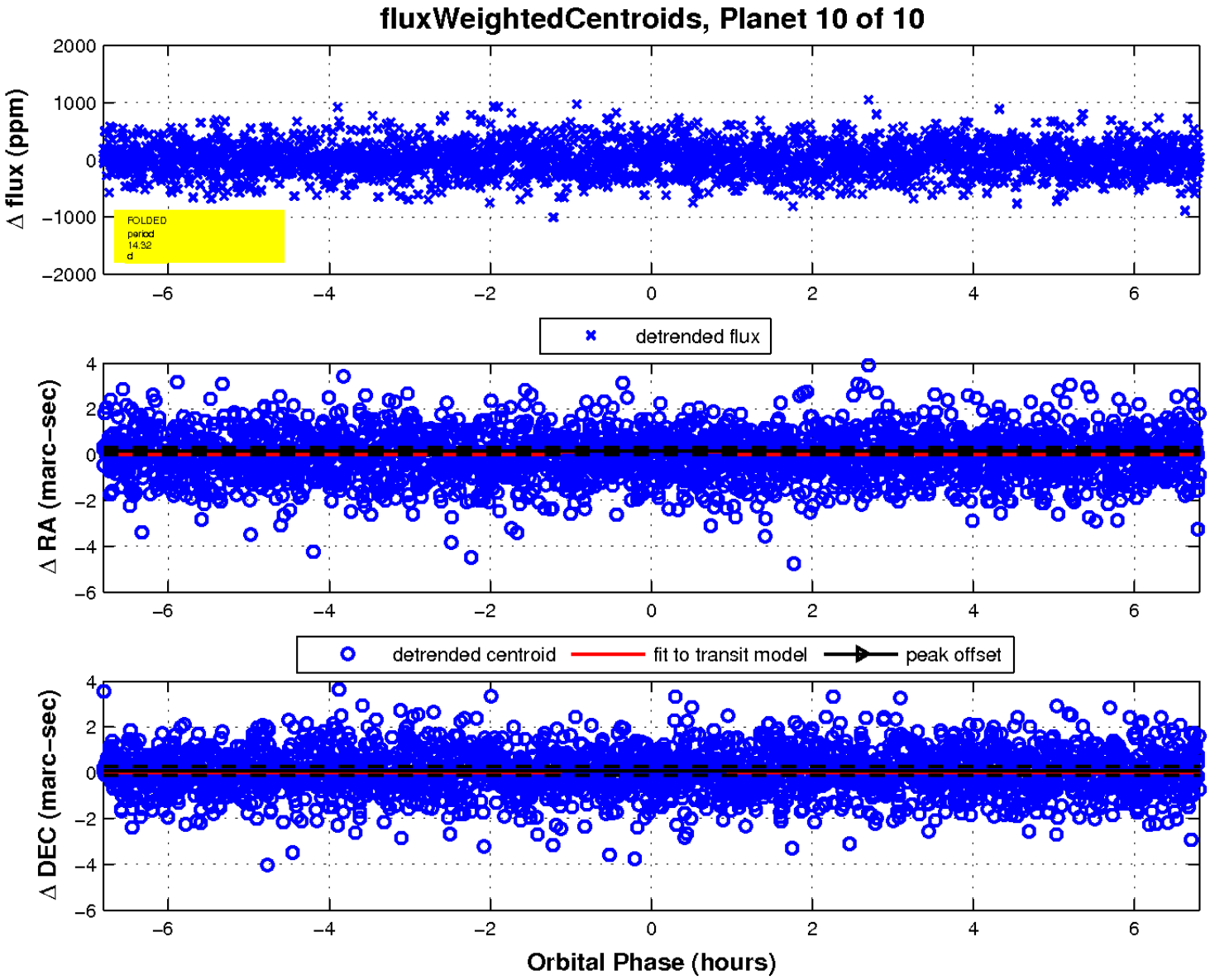


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

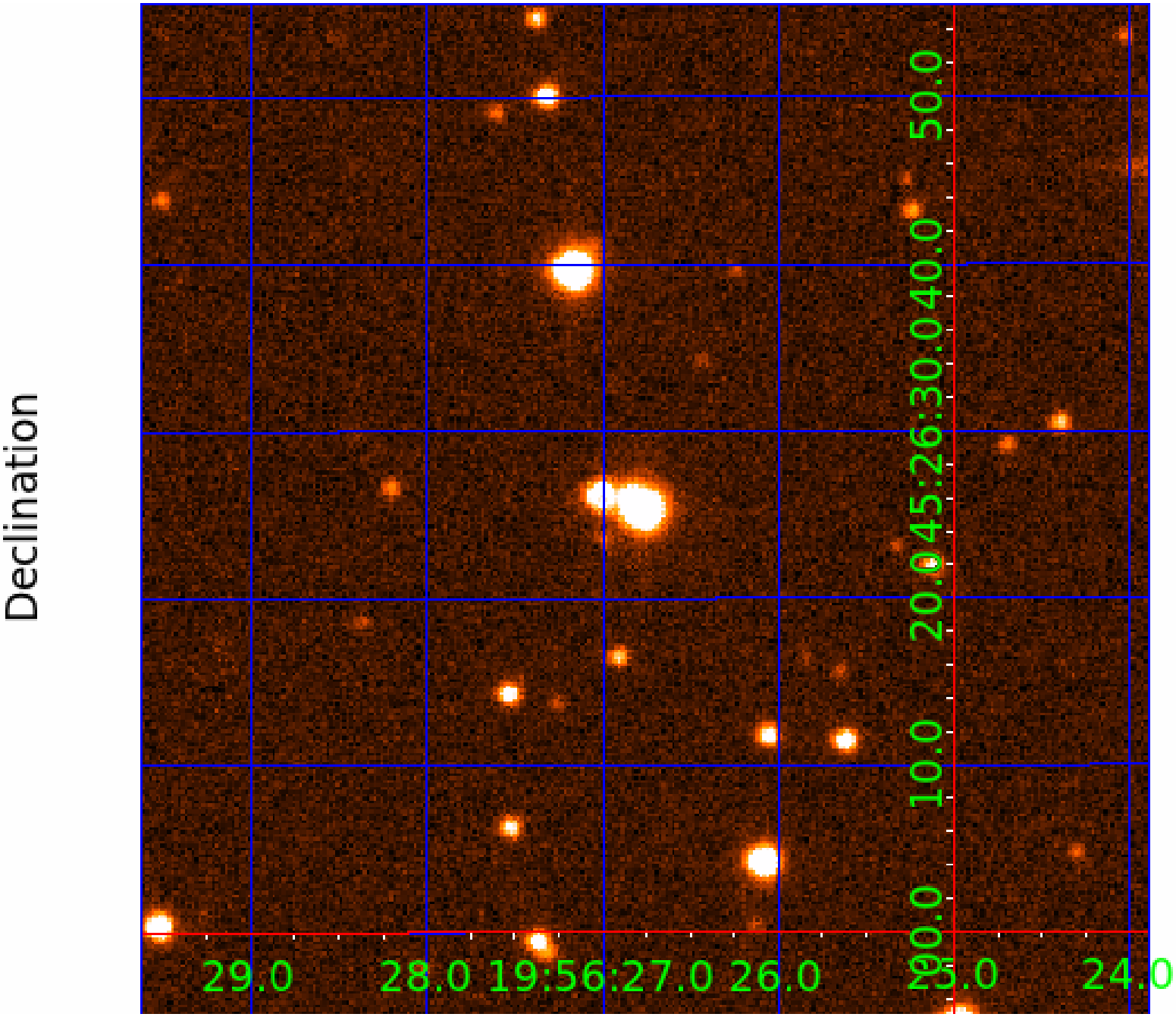


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.





UKIRT Image


Declination
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30.0
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45:
20.0
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29.0
28.0
19:56:27.0
26.0
25.0
24.0