

KIC 009636300

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})
009636300-01	OBS	No	34.962878	163.293059	26.6	1.526	14.2	12.9	22.31	4301	14.35	3813.61
009636300-02	OBS	No	88.213383	137.181151	44.2	12.376	10.9	8.6	22.31	4301	17.56	1110.28
009636300-03	OBS	No	242.300585	325.852795	23.6	4.732	10.8	4.0	22.31	4301	13.41	288.63
009636300-04	OBS	No	48.307873	132.510716	24.2	0.804	9.6	6.0	22.31	4301	13.87	2478.12
009636300-05	OBS	No	34.372299	138.174315	26.2	1.286	9.3	11.7	22.31	4301	12.87	3901.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009636300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009636300-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
009636300-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-05	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

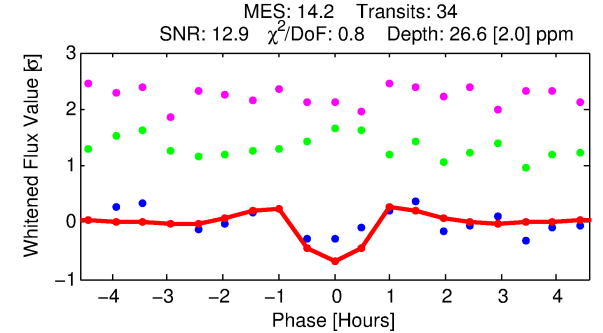
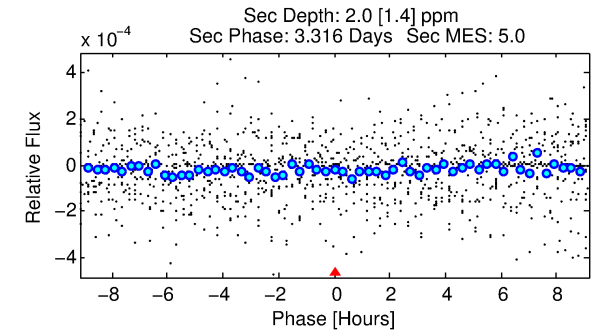
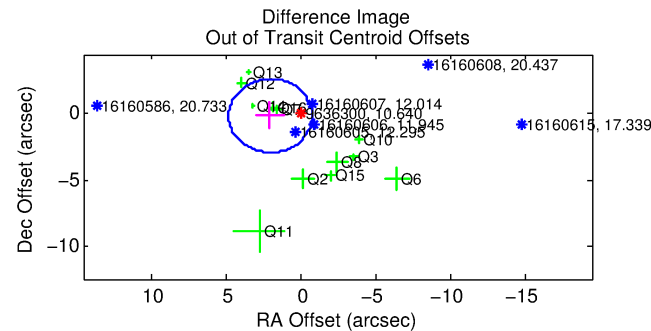
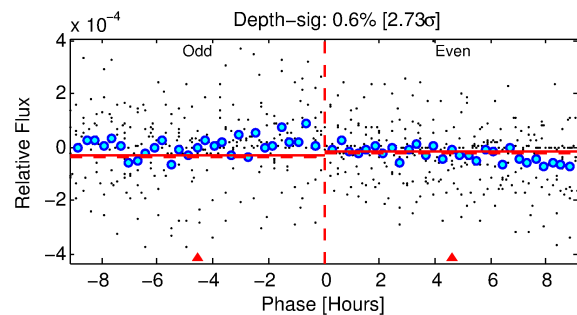
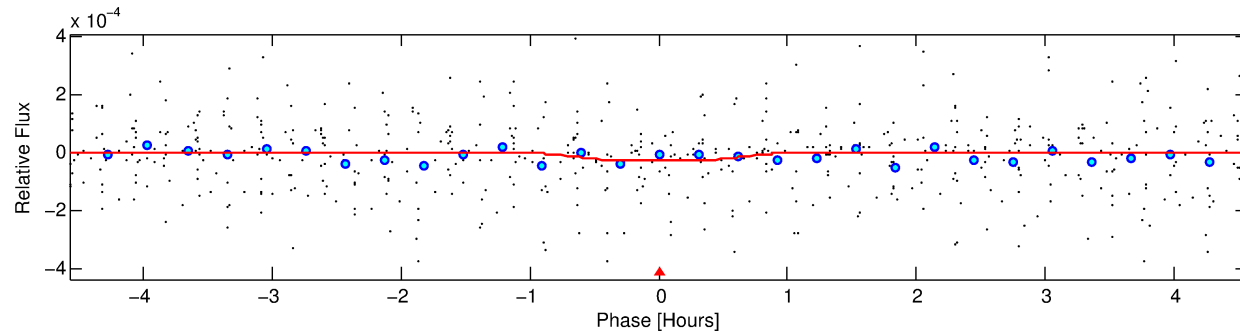
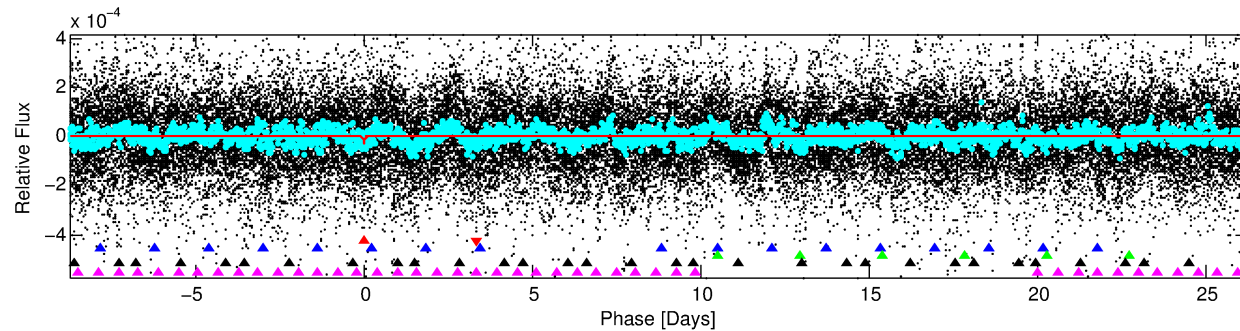
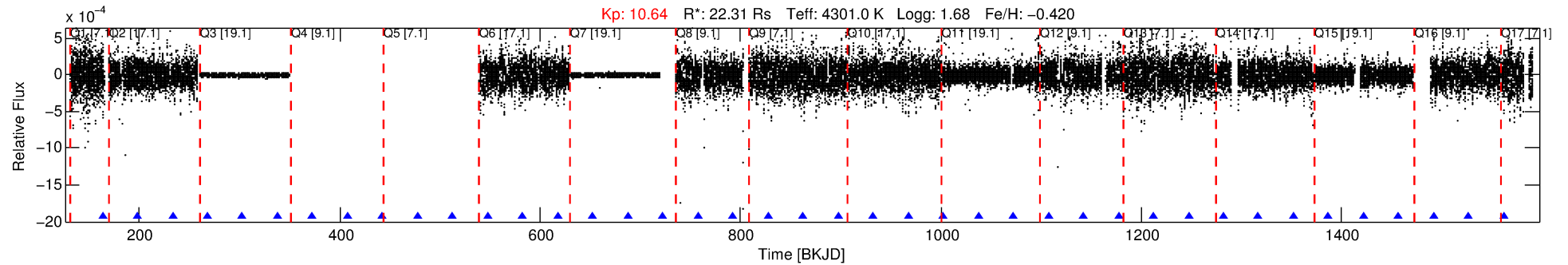
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009636300-01

No Significant Match Found

DV One-Page Summary

KIC: 9636300 Candidate: 1 of 5 Period: 34.963 d



DV Fit Results:

Period = 34.96288 [0.00023] d
Epoch = 163.2931 [0.0024] BKJD
Rp/R* = 0.0059 [0.0014]
a/R* = 78.45 [63.01]
b = 0.90 [0.18]
Seff = 3813.61 [694.31]
Teq = 2004 [91] K
Rp = 14.35 [4.95] Re
a = 0.2000 [0.0334] AU
Ag = 0.21 [0.19] [-4.25 σ]
Teffp = 2104 [450] K [0.22 σ]

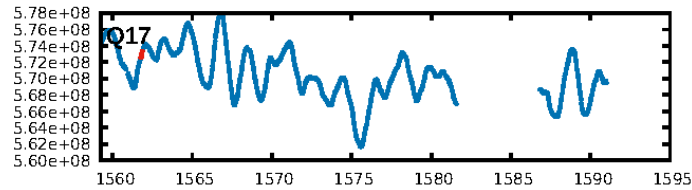
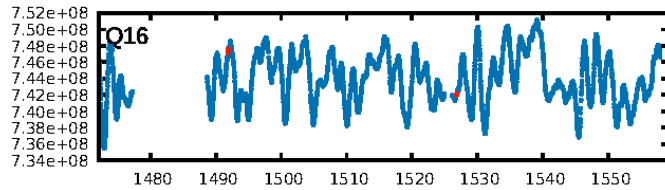
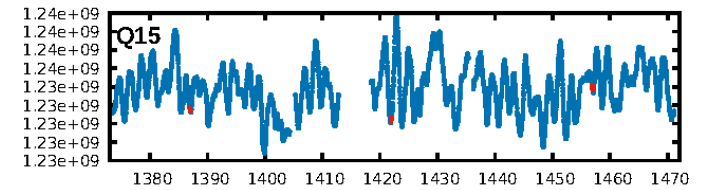
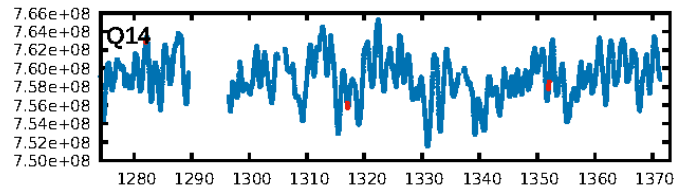
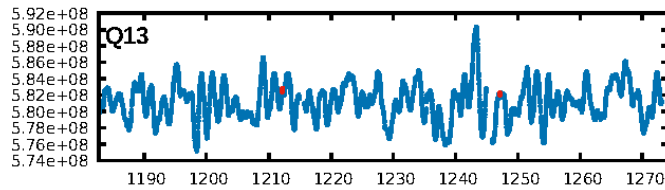
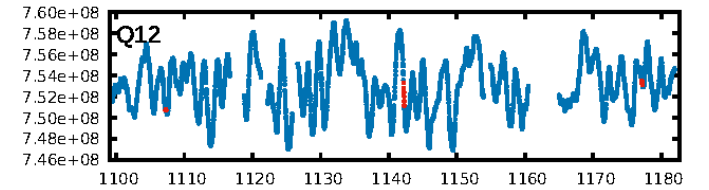
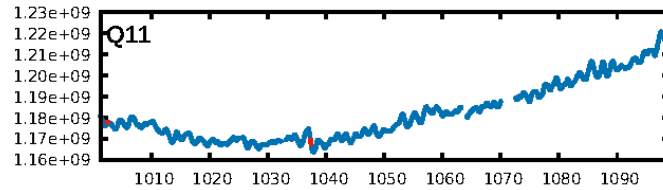
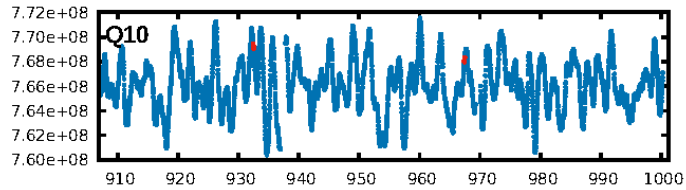
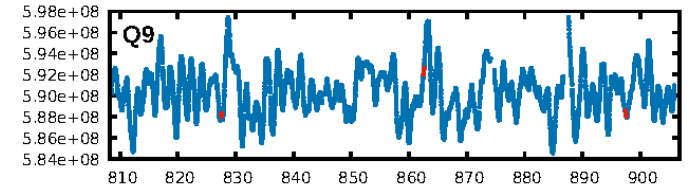
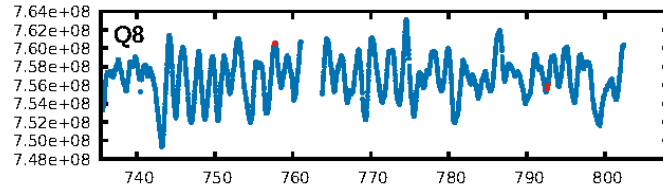
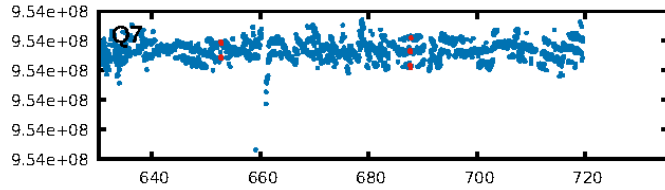
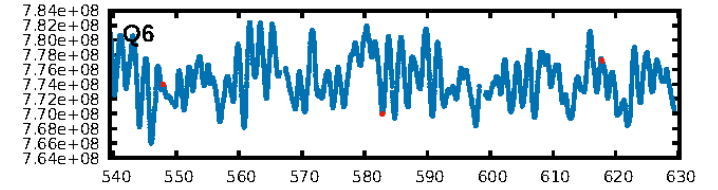
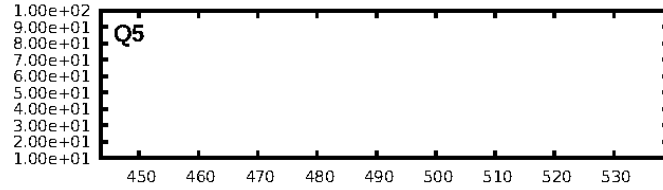
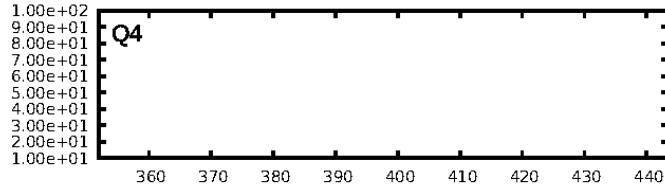
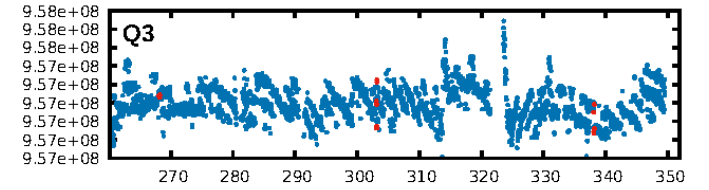
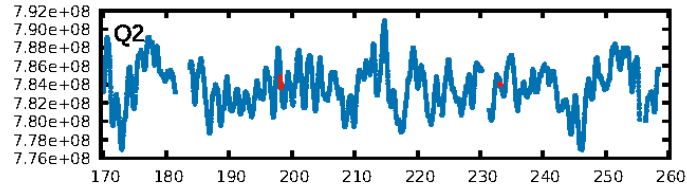
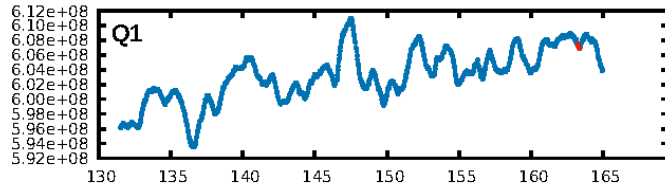
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.10 σ]
LongPeriod-sig: 100.0% [185.75 σ]
ModelChiSquare2-sig: 67.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.34e-19
RollingBand-fgt: 1.00 [32/32]
GhostDiagnostic-chr: -1.574
Centroid-sig: 23.3%
Centroid-so: 4.106 arcsec [1.39 σ]
OotOffset-rm: 2.007 arcsec [2.16 σ]
KicOffset-rm: 2.437 arcsec [2.17 σ]
OotOffset-st: 4/4/3/1 [12]
KicOffset-st: 4/4/3/1 [12]
DiffImageQuality-fgm: 0.08 [1/12]
DiffImageOverlap-fno: 1.00 [15/15]

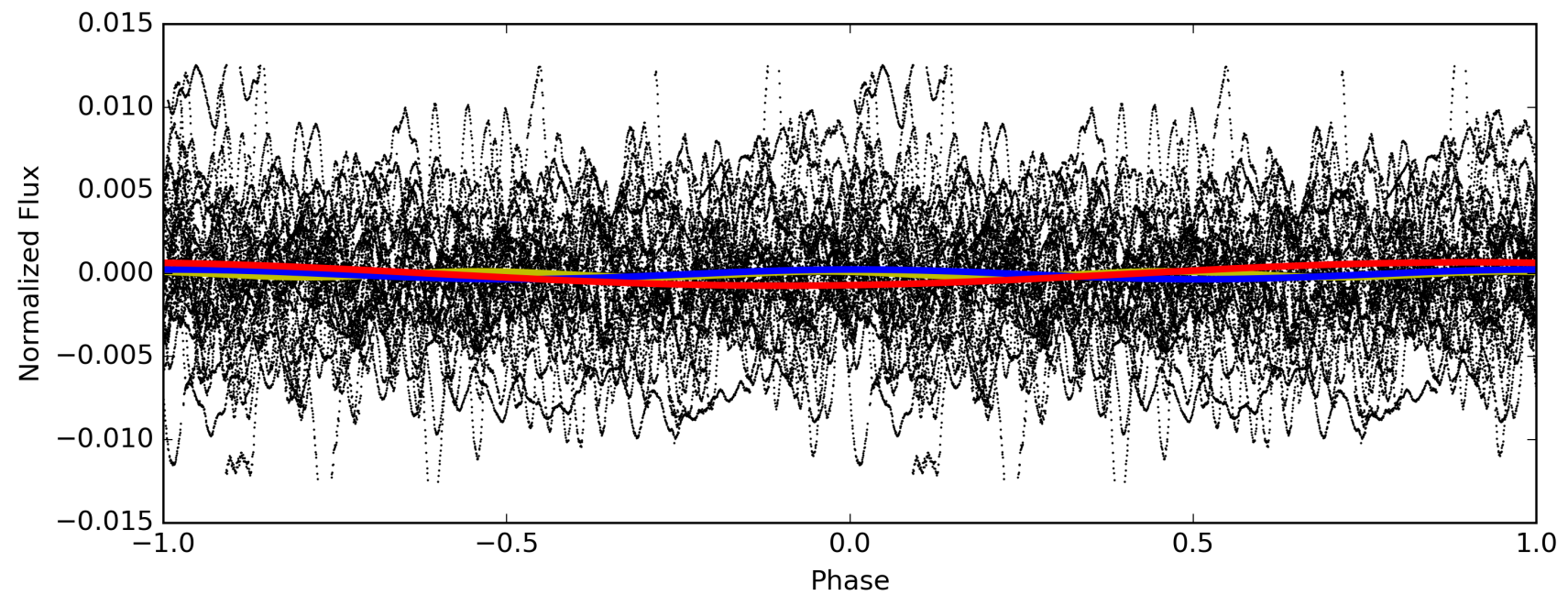
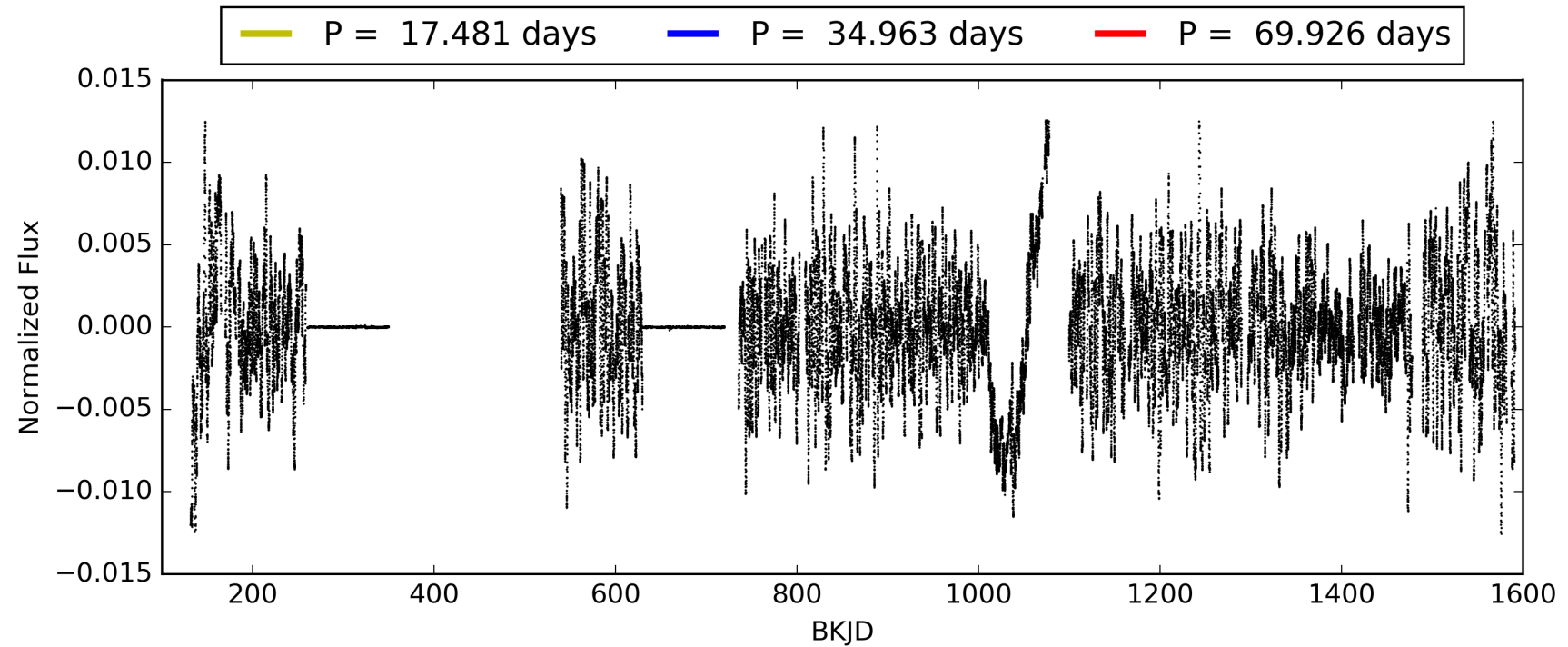
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:00:13 Z

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

TCE 009636300-01, PDC Light Curves

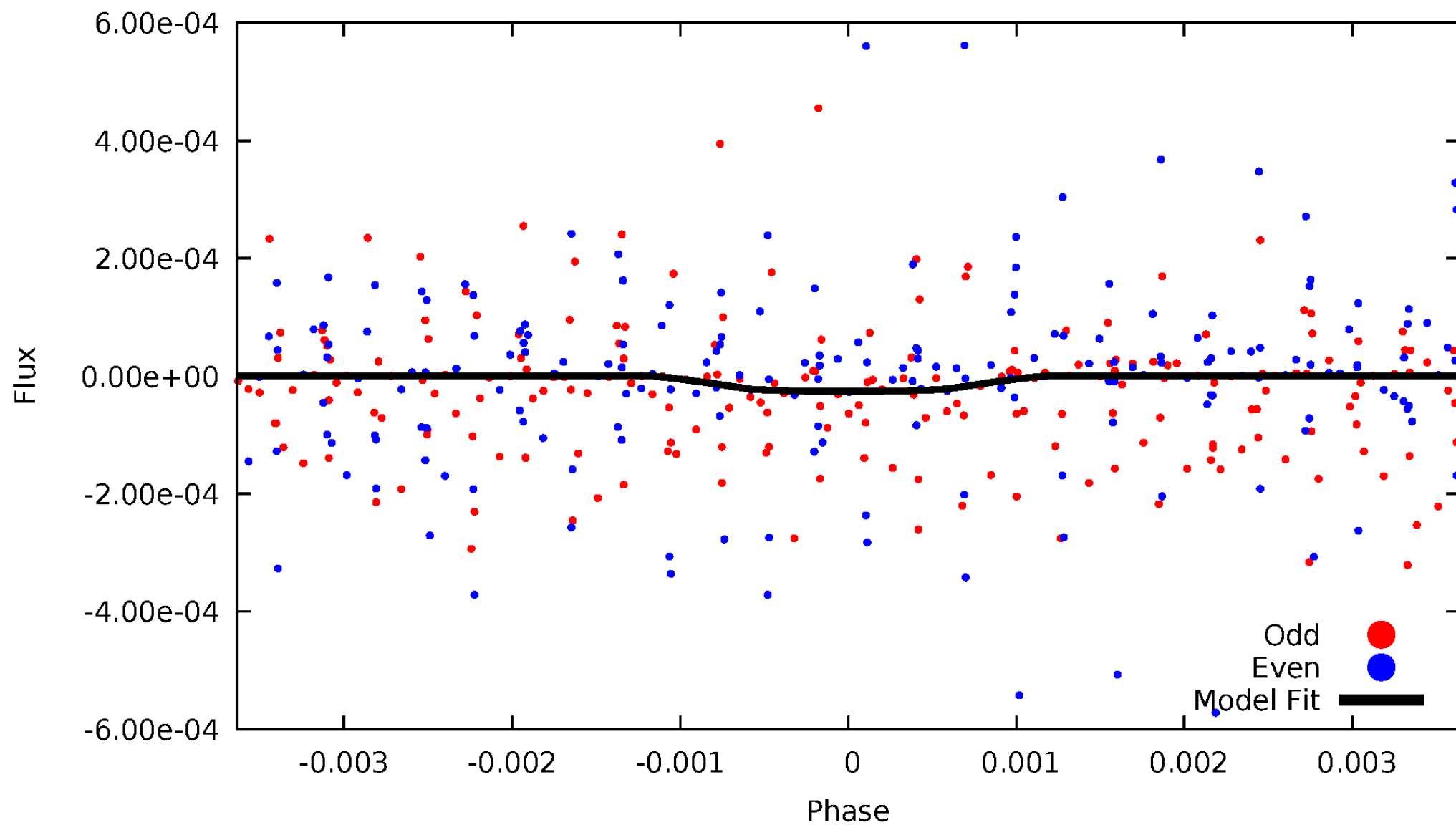


TCE 009636300-01



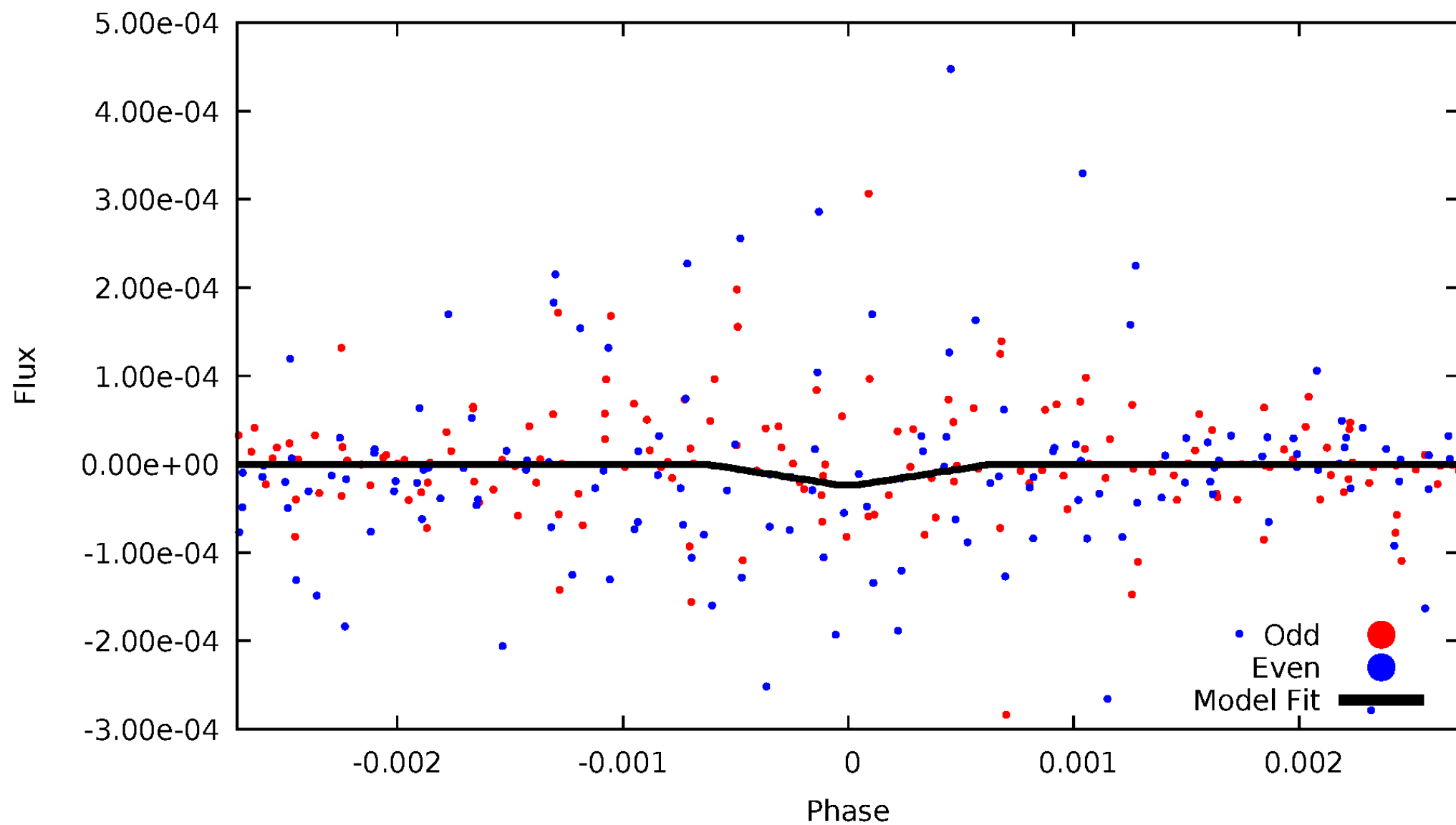
DV Odd/Even

TCE 009636300-01

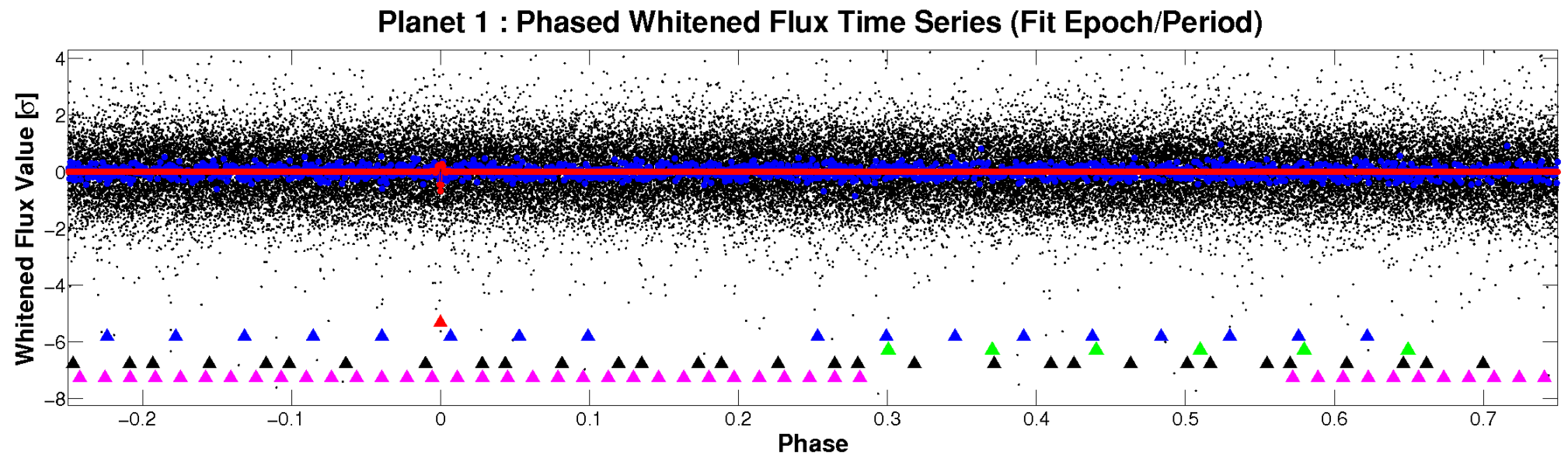
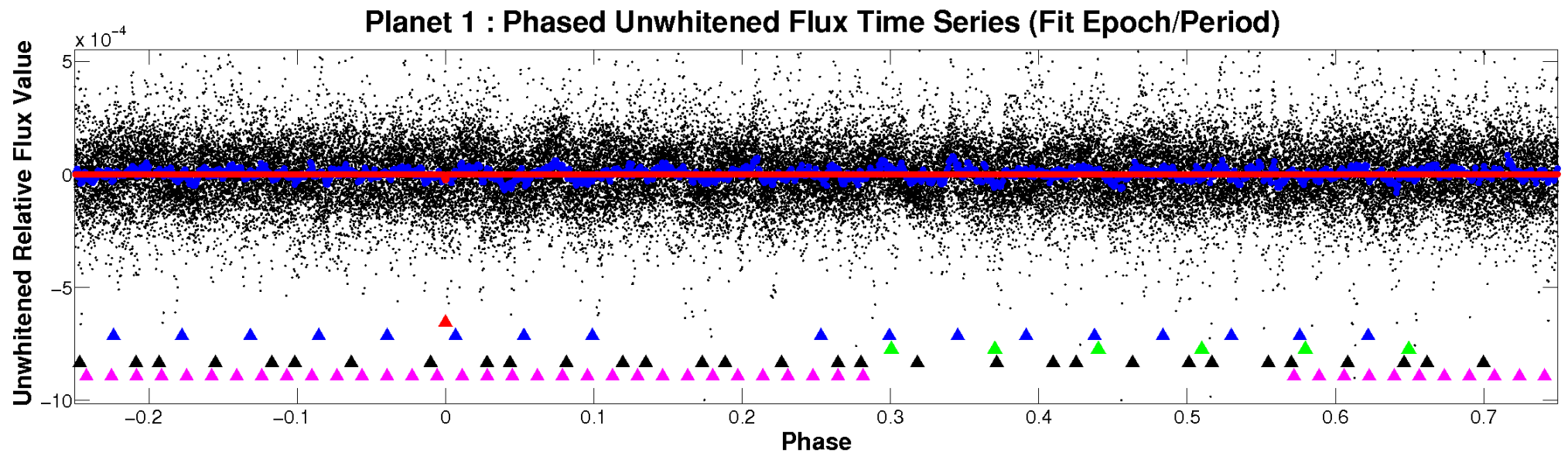


ALT Odd/Even

TCE 009636300-01

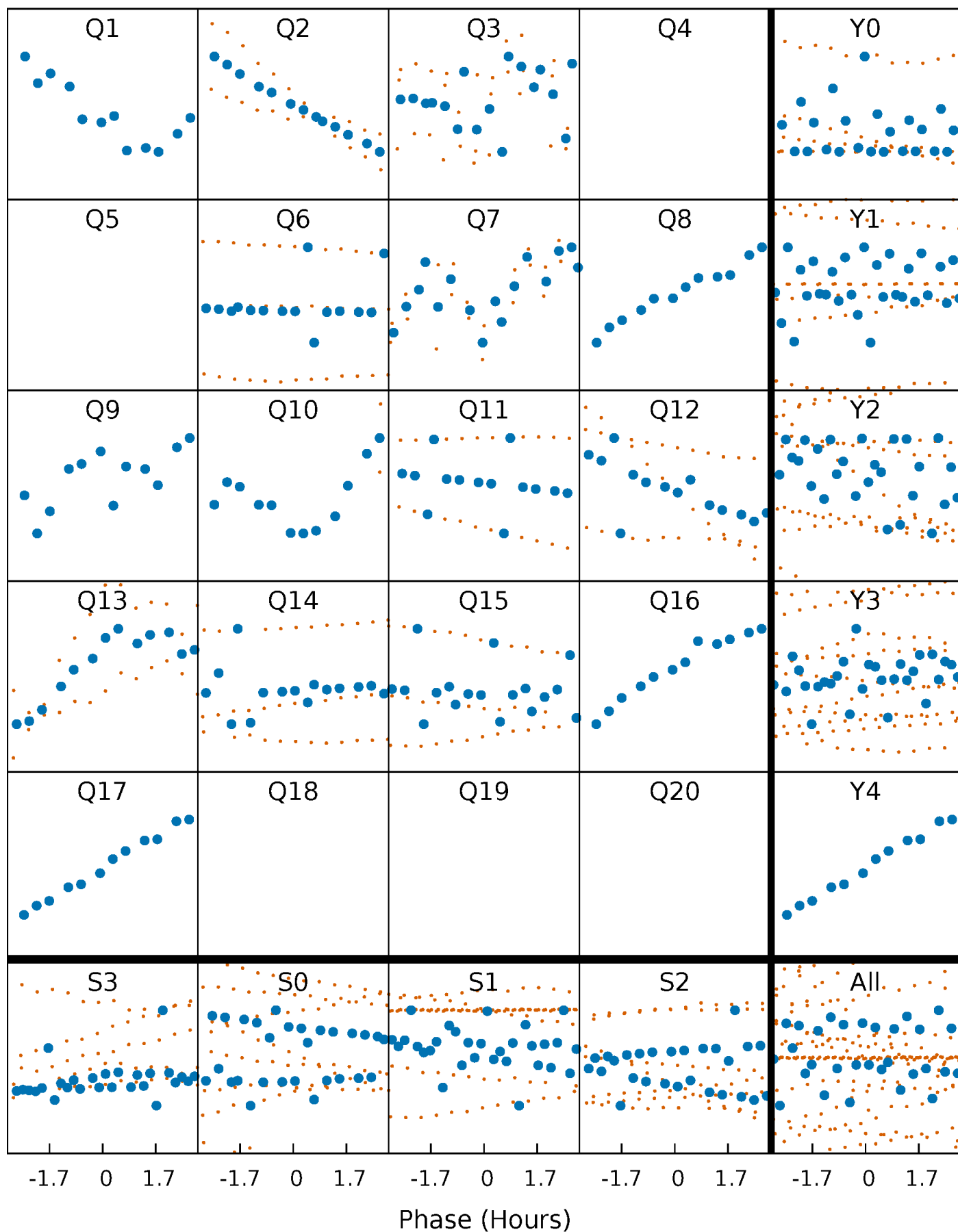


Non-Whitened Vs. Whitened Light Curve



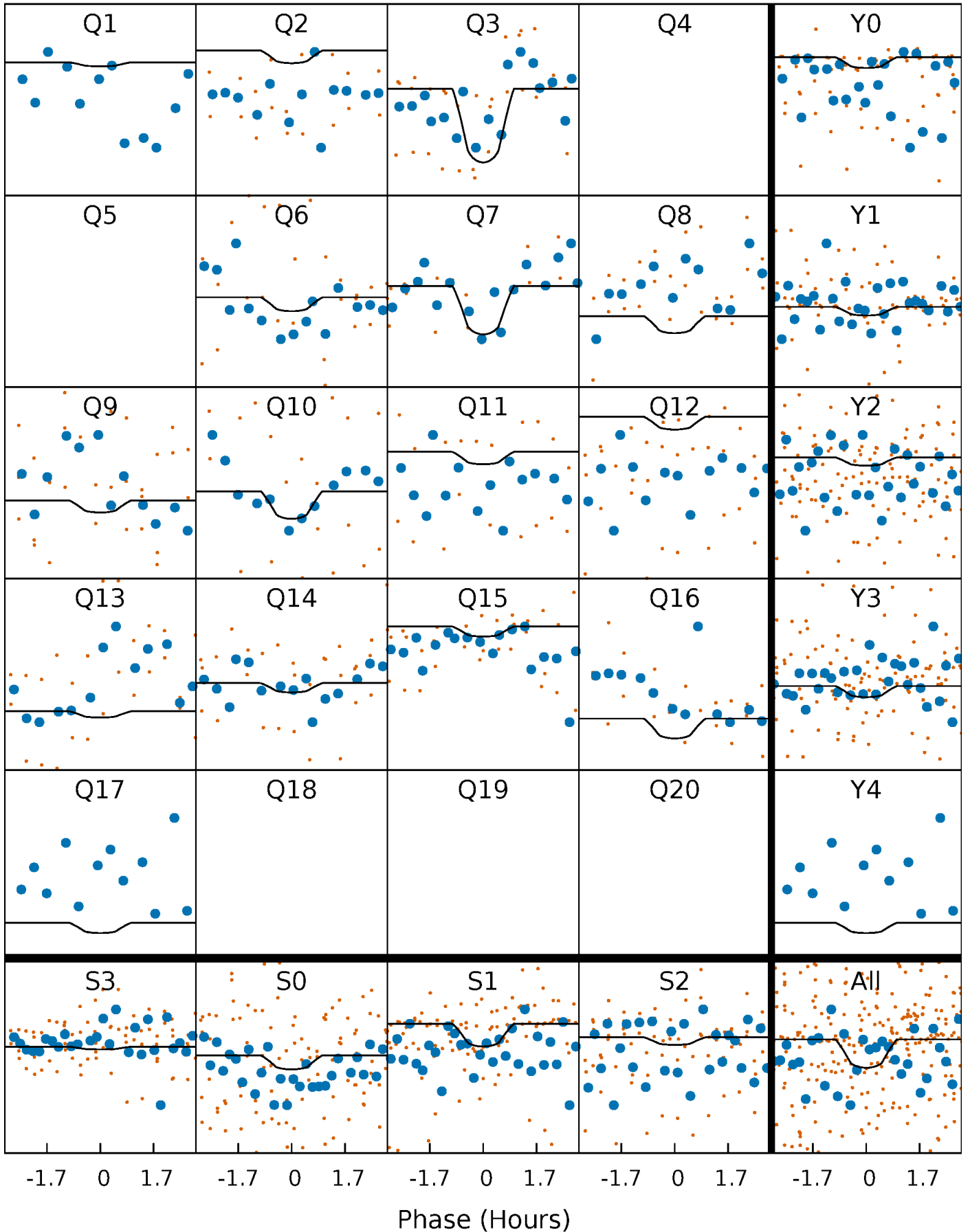
PDC Quarter-Phased Transit Curves

TCE 009636300-01 P= 34.962878 Days $T_0=163.293059$ (BKJD)



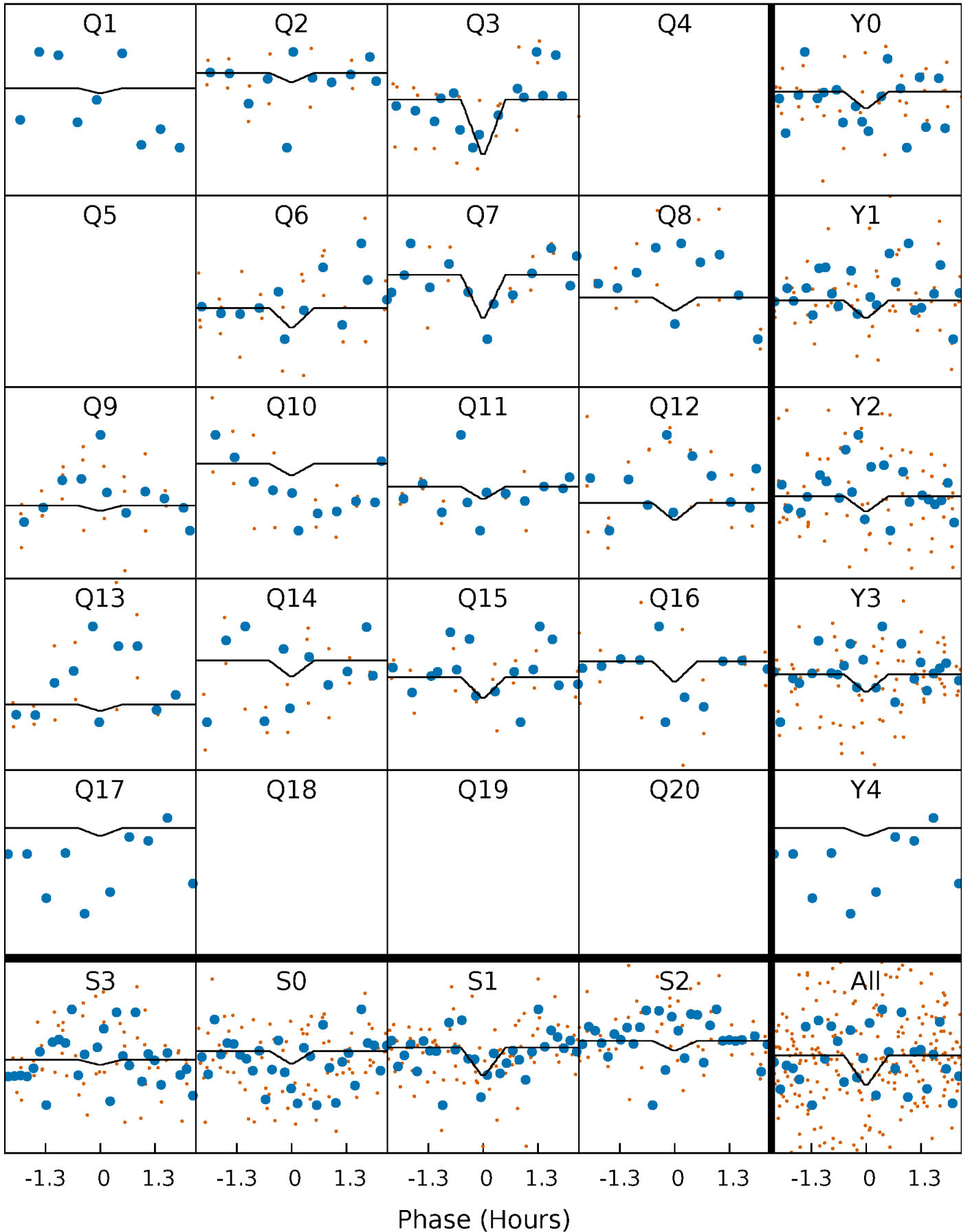
DV Quarter-Phased Transit Curves

TCE 009636300-01 P= 34.962878 Days $T_0=163.293059$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

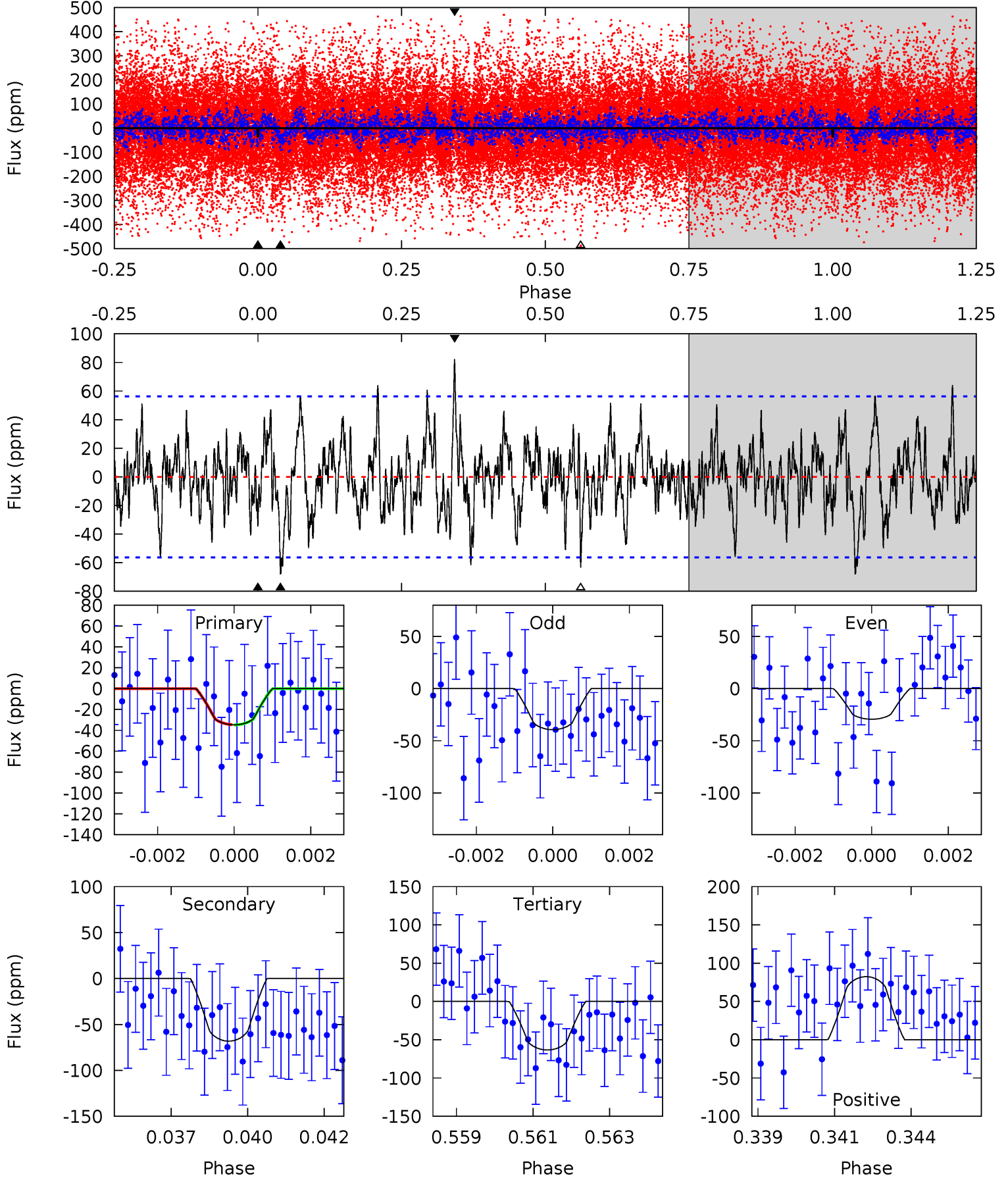
TCE 009636300-01 P= 34.962626 Days $T_0=163.288438$ (BKJD)



DV Model-Shift Uniqueness Test

009636300-01, P = 34.962878 Days, E = 128.330181 Days

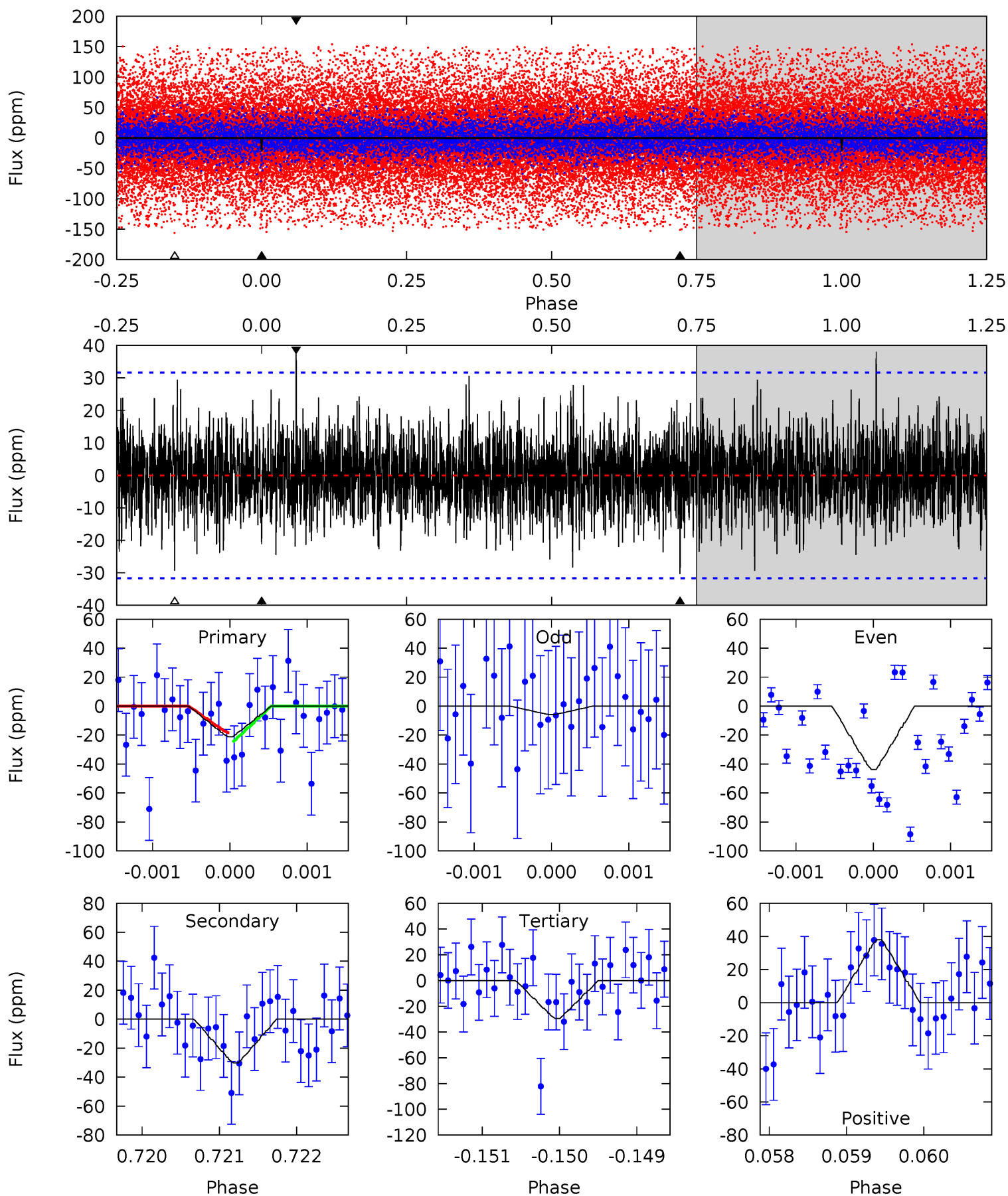
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.26	6.42	5.96	7.75	5.30	3.04	1.92	-2.70	-4.49	0.46	-1.34	0.47	0.95	0.55	0.01



Alt Model-Shift Uniqueness Test

009636300-01, $P = 34.962626$ Days, $E = 128.325812$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	5.18	5.04	6.51	5.42	3.24	1.44	-1.42	-2.89	0.15	-1.33	3.24	0.06	0.56	0.56



Stellar Parameters For KIC 009636300

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4301^{+65}_{-45}	$1.682^{+0.027}_{-0.030}$	$-0.420^{+0.150}_{-0.100}$	$22.308^{+5.536}_{-0.615}$	$0.873^{+0.479}_{-0.024}$	$0.000^{+0.000}_{-0.000}$
	+2%/-1%	+2%/-2%	+36%/-24%	+25%/-3%	+55%/-3%	+9%/-23%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009636300-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-68 ± 11	$14.38^{+3.72}_{-3.73}$	2801^{+56}_{-42}	4885^{+722}_{-477}	$7.243^{+6.036}_{-2.776}$
Alt.	-30 ± 6	$11.79^{+3.56}_{-3.33}$	2798^{+58}_{-42}	4487^{+704}_{-480}	$4.856^{+4.571}_{-2.044}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

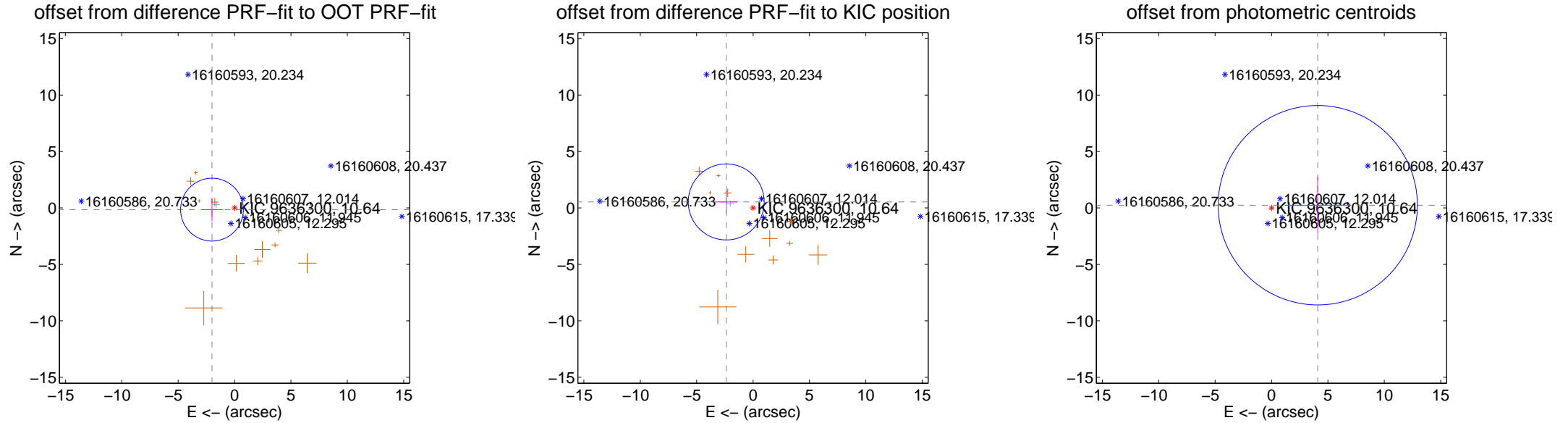
DV Centroid Data

Supplemental centroid analysis for 009636300-01. **Kepler magnitude: 10.64.** Transit SNR 12.92

There are 1 quarters with good PRF difference image offsets

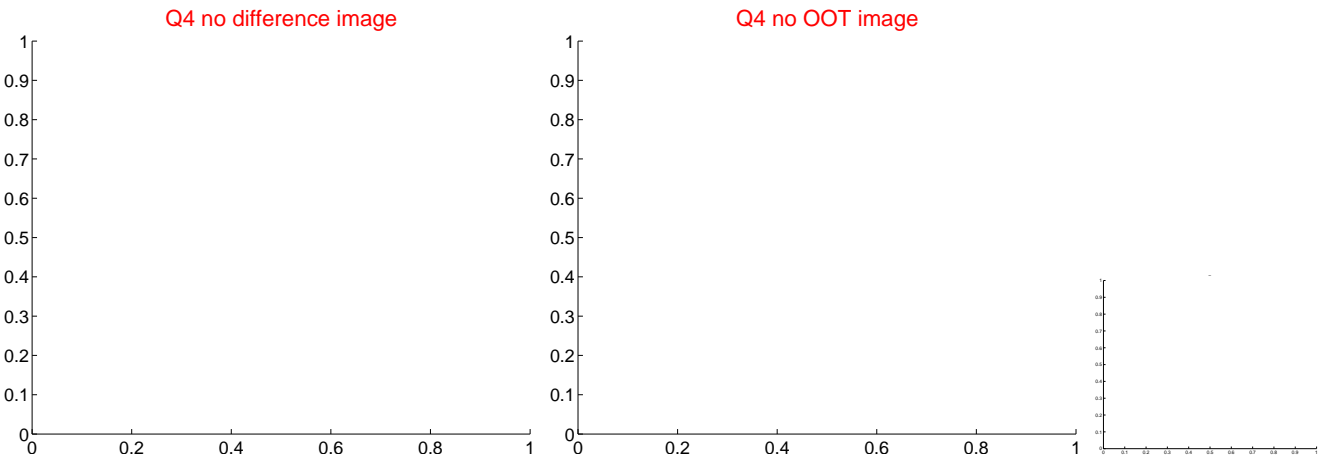
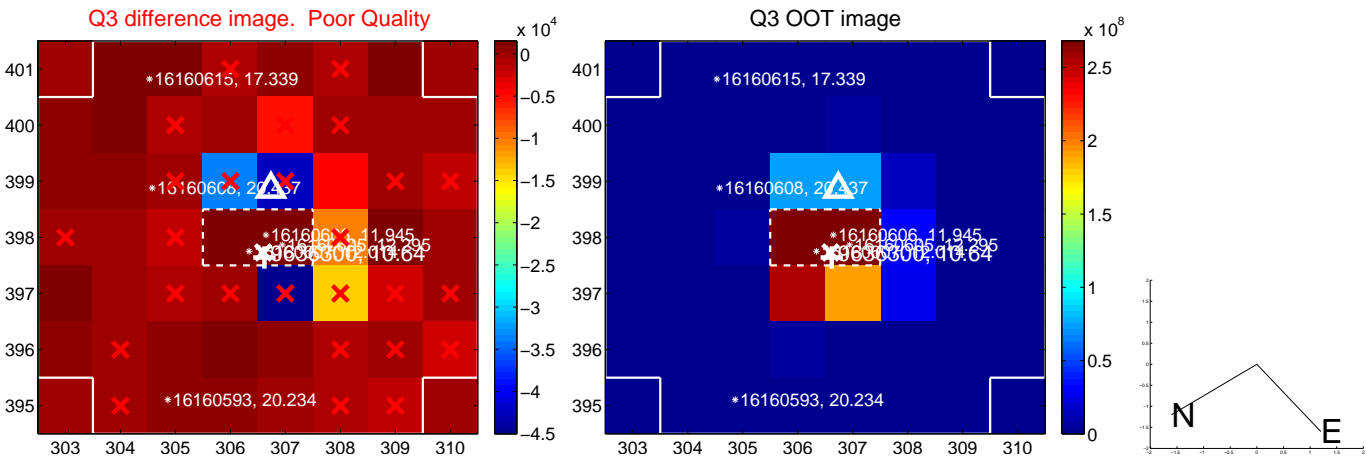
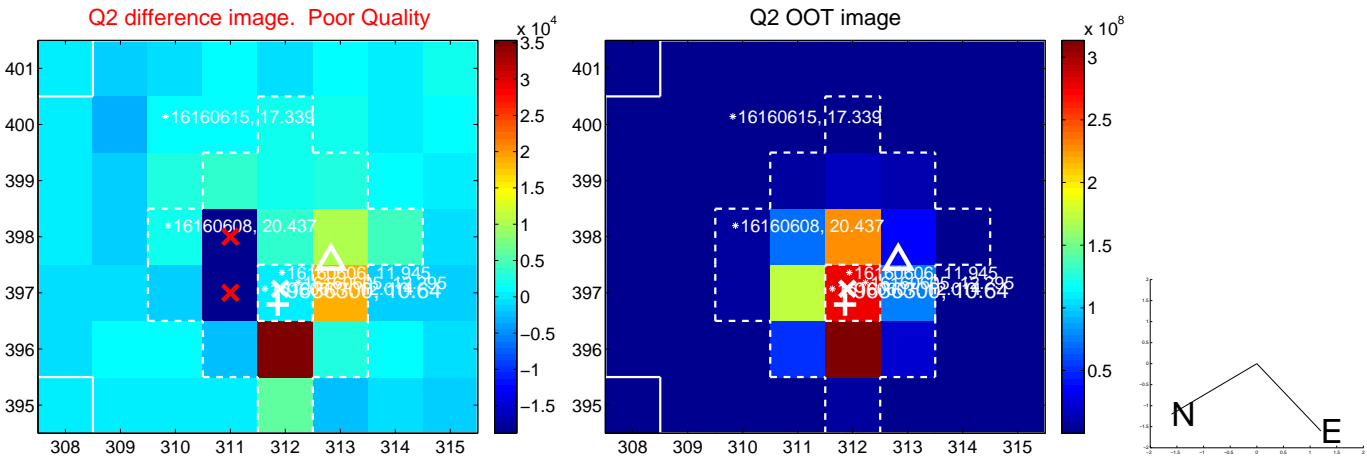
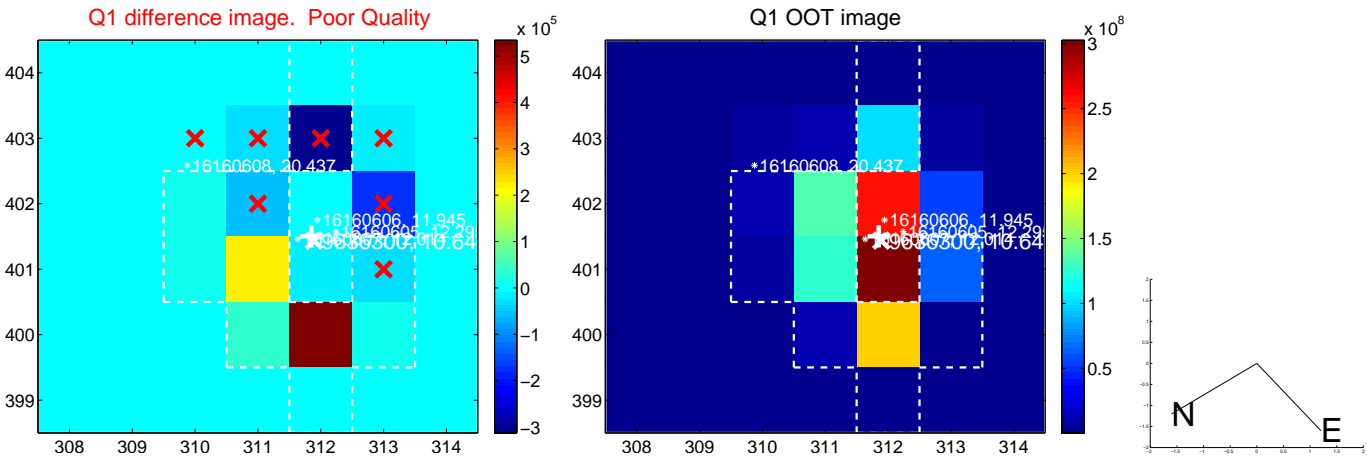
The direct PRF centroid is offset from the target star catalog position by about 0.95 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.007 ± 0.928	2.16	2.001 ± 0.972	-0.149 ± 1.010
PRF-fit source offset from KIC position	2.437 ± 1.122	2.17	2.379 ± 1.027	0.532 ± 0.986
photometric centroid source offset	4.11 ± 2.94	1.39	-4.10 ± 2.95	0.24 ± 2.52

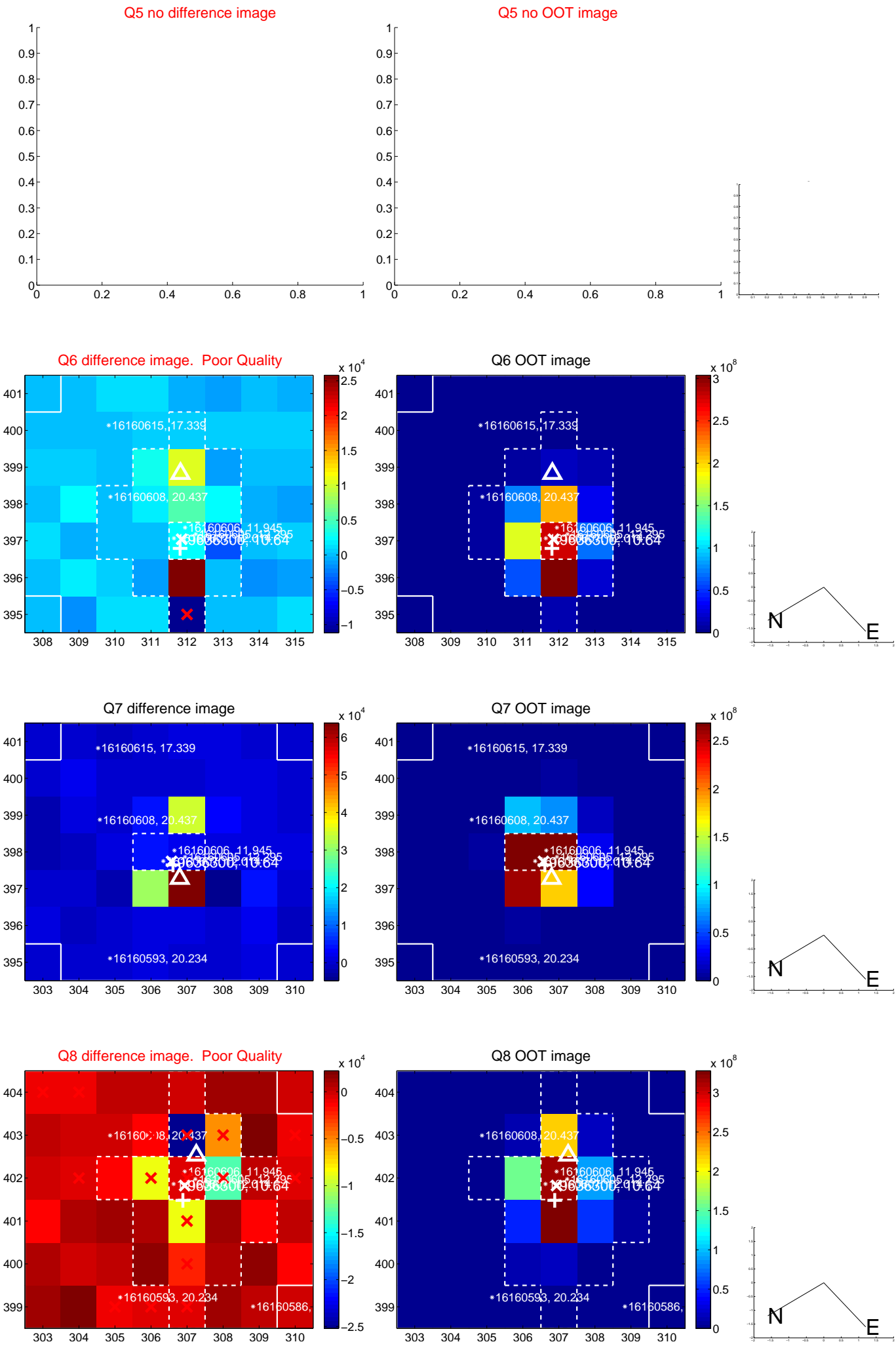


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

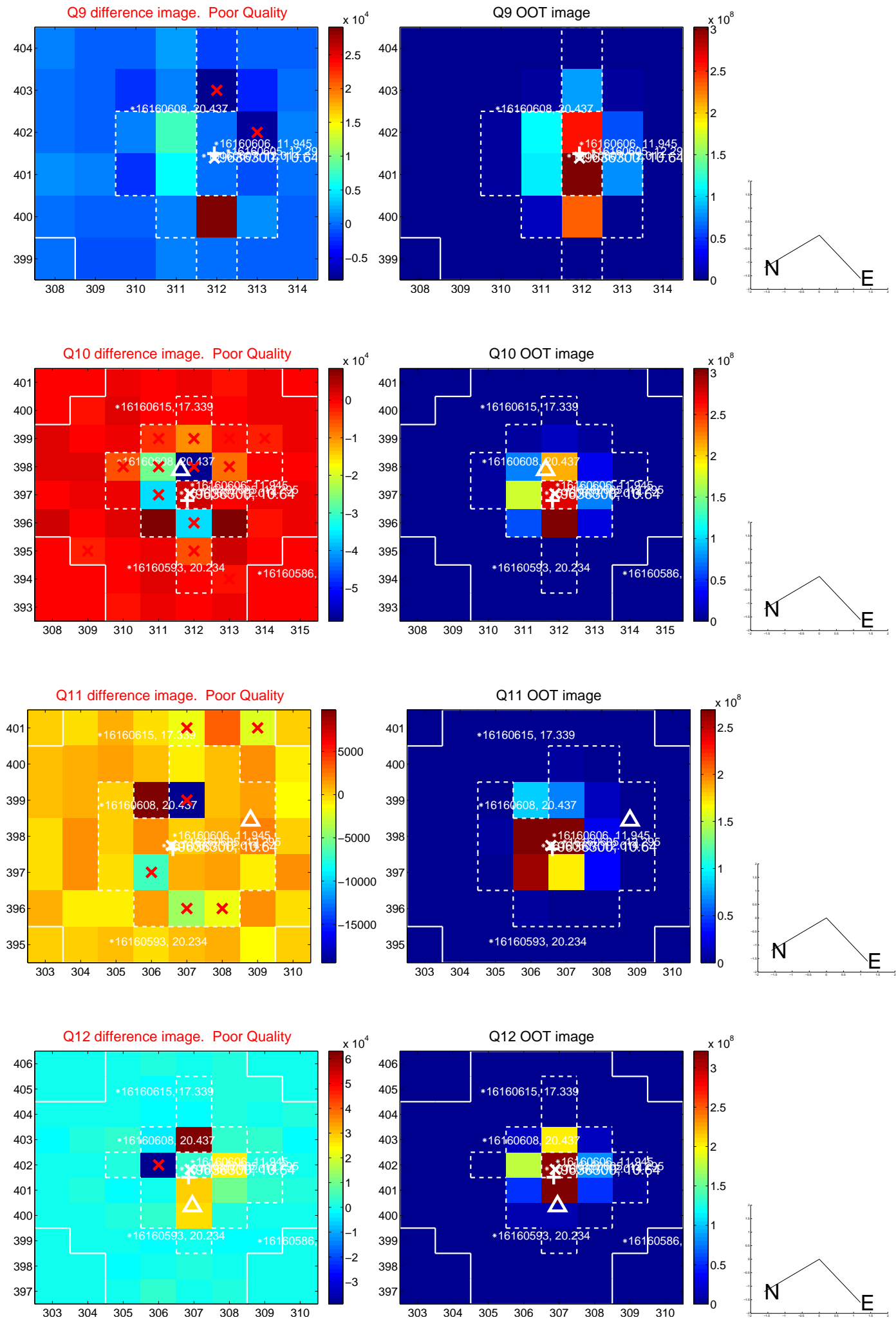
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



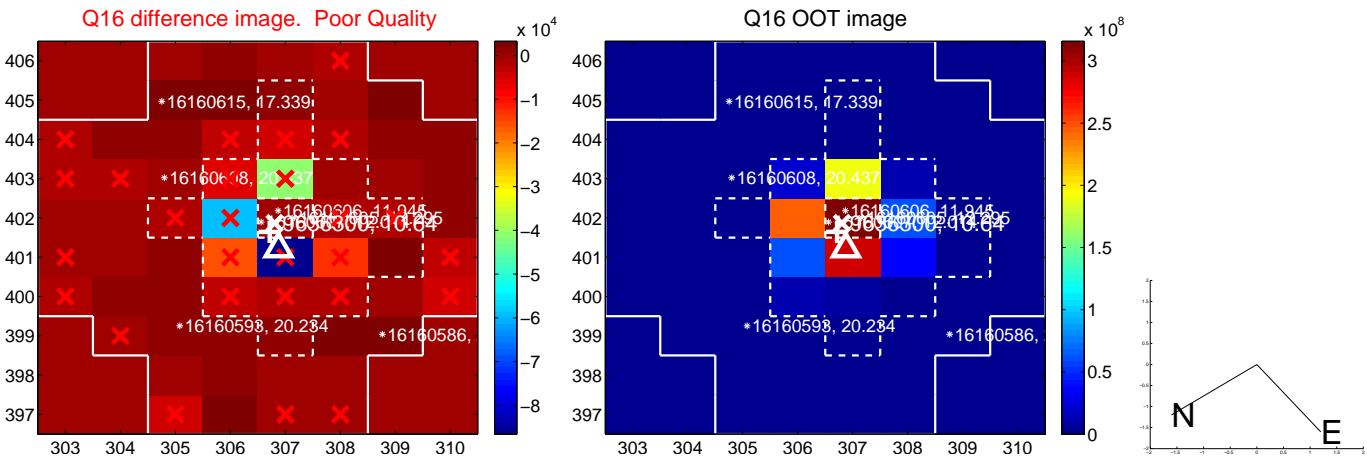
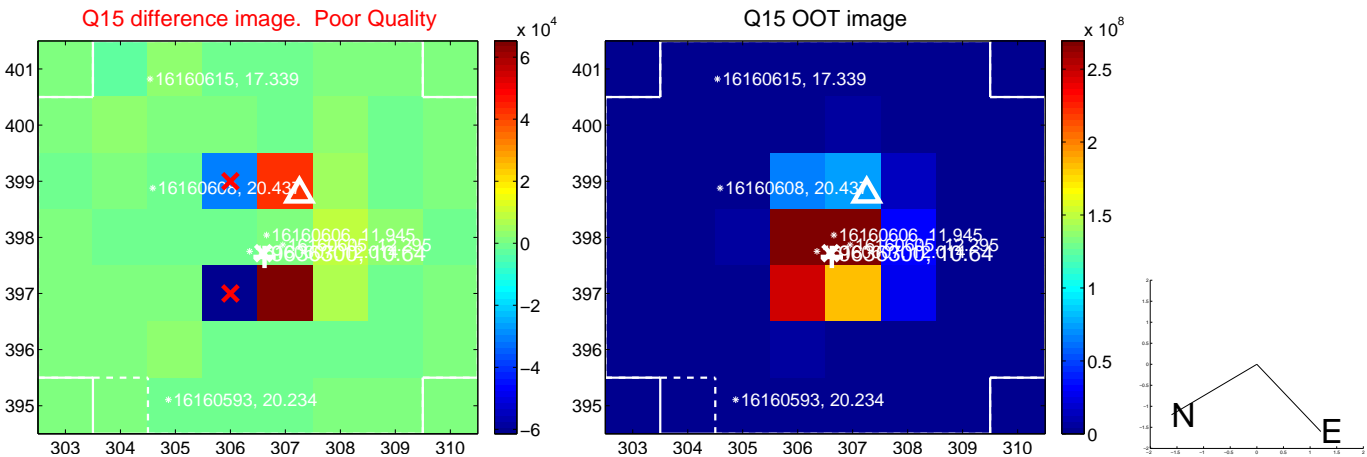
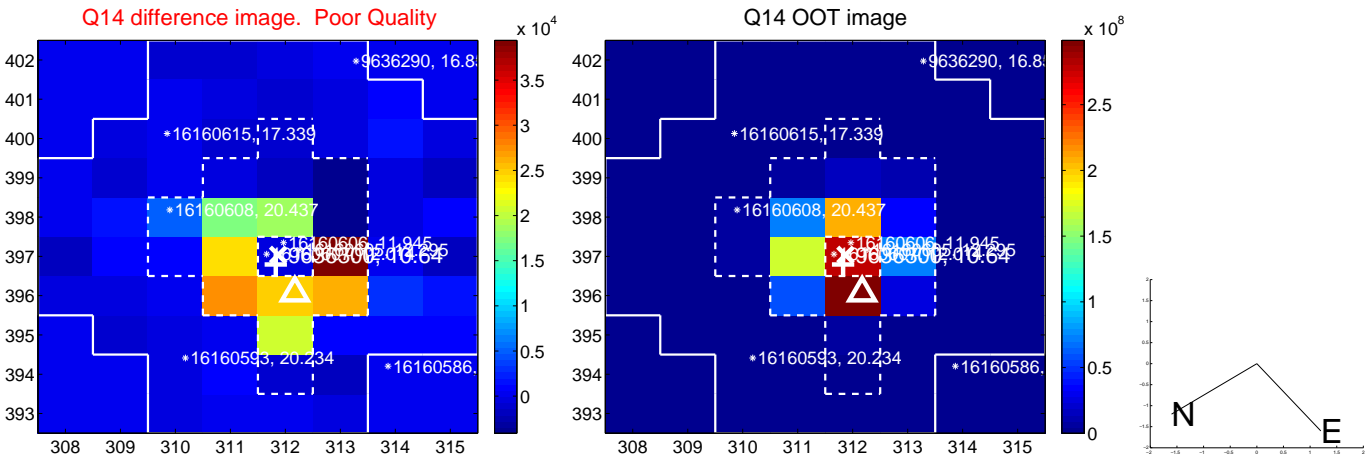
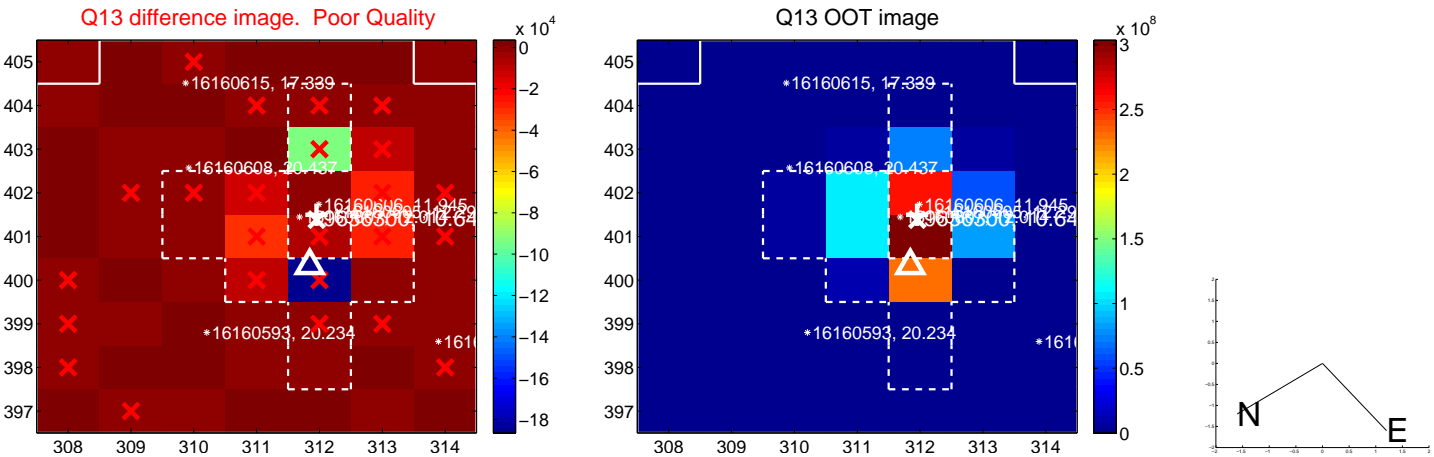
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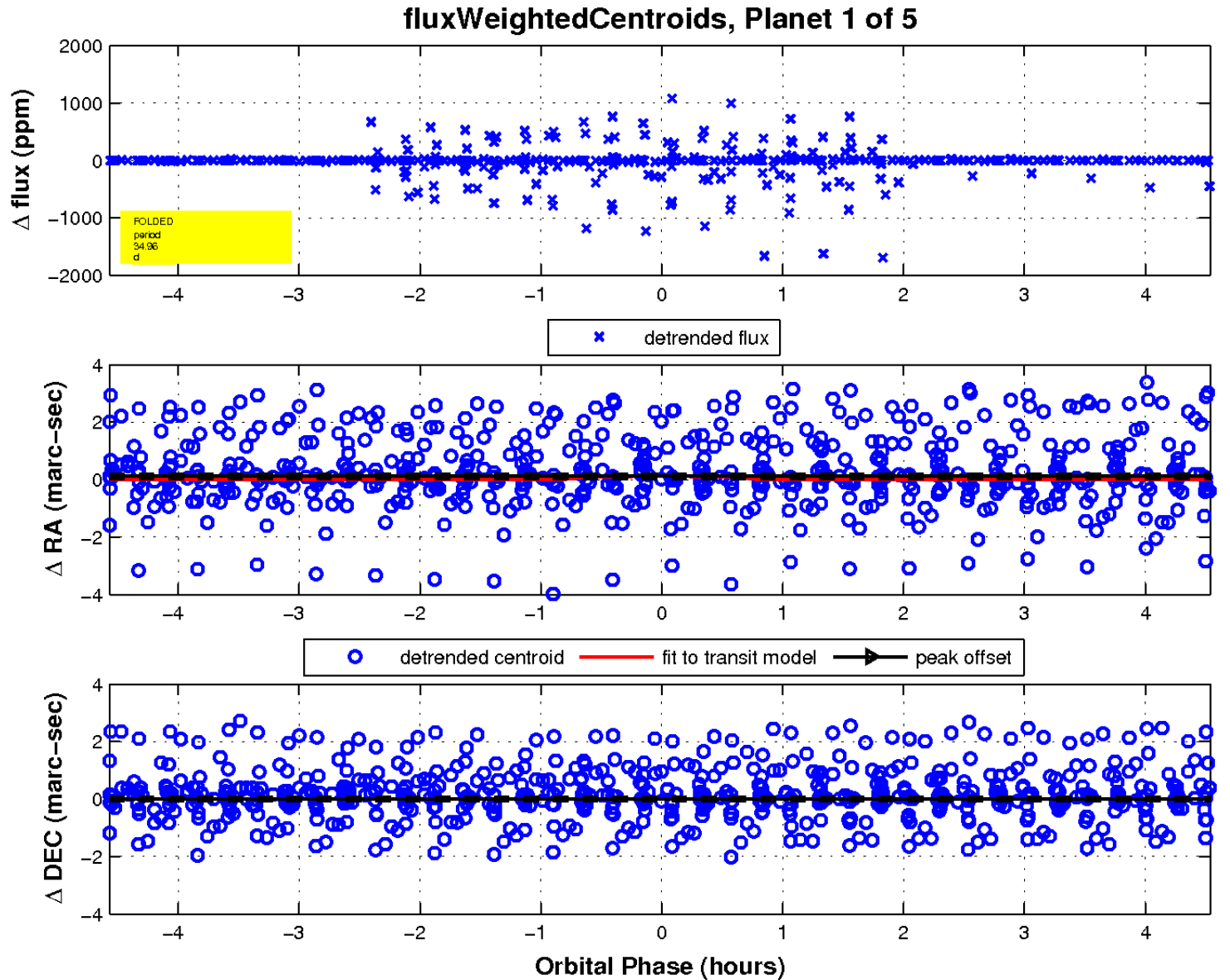
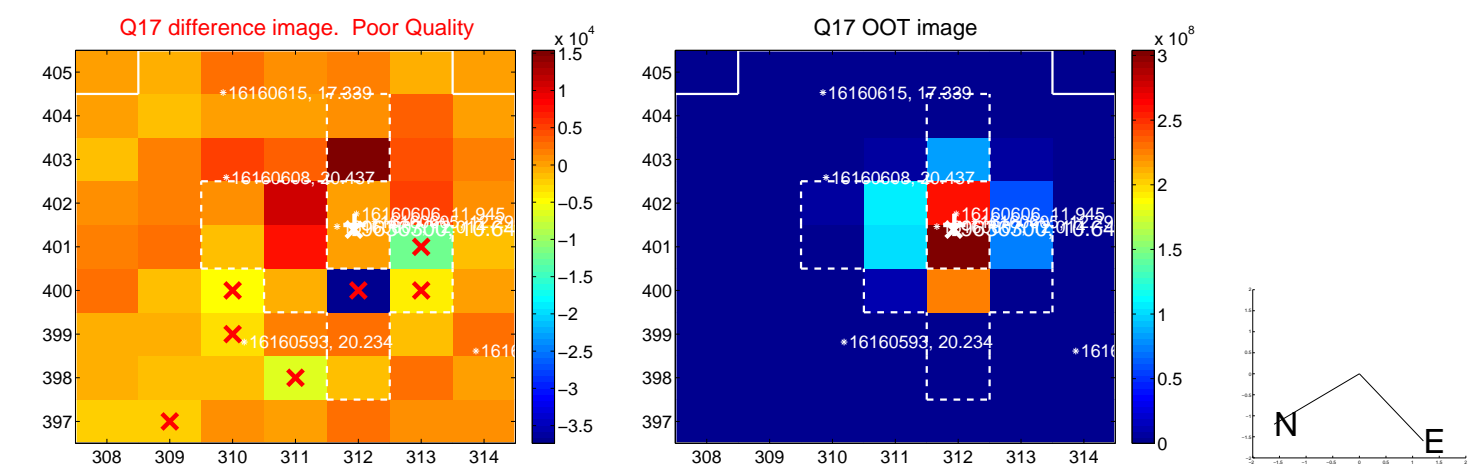
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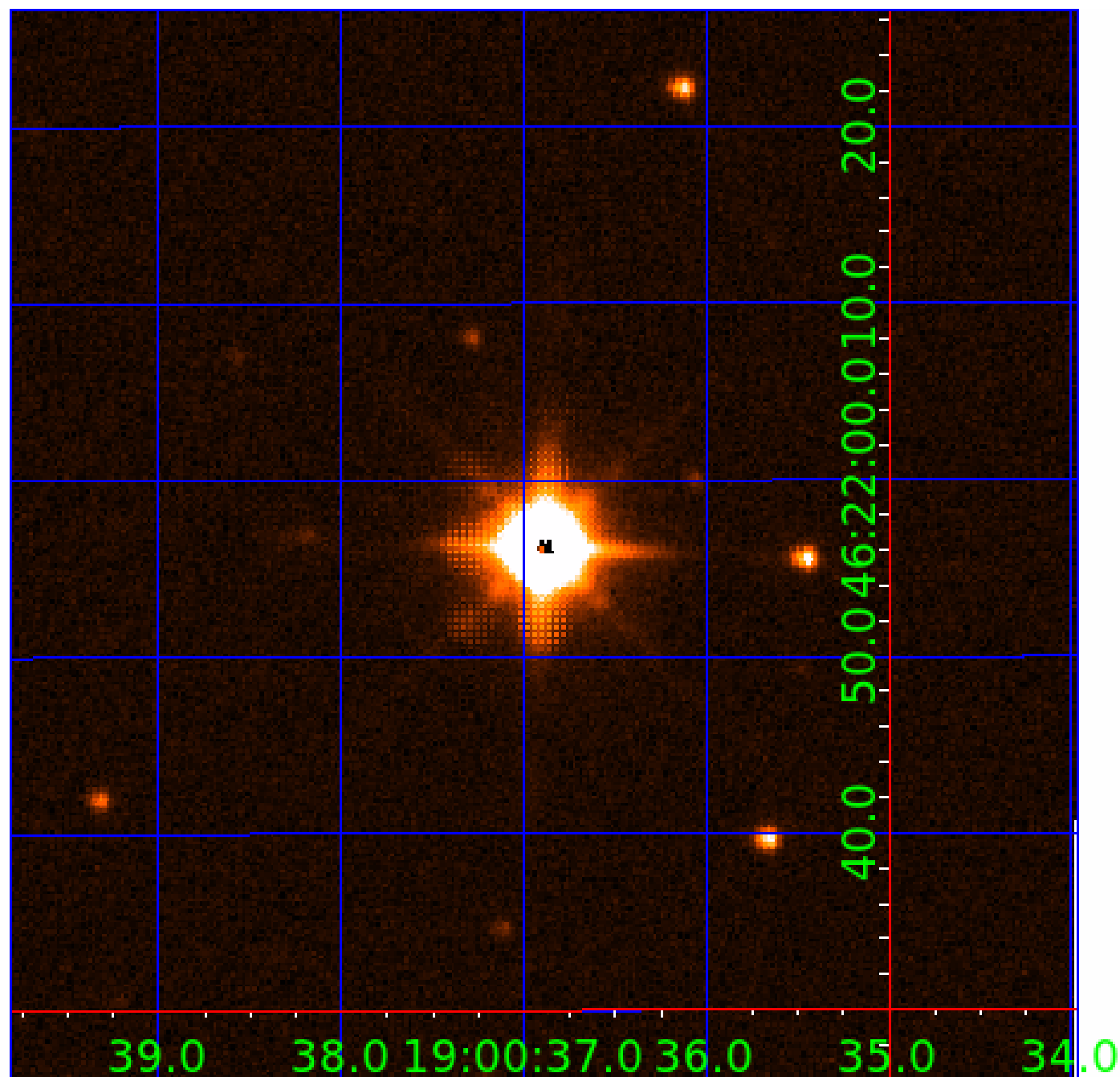


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UKIRT Image

Declination



KIC 009636300

Q1-17 DR25 TCE Parameters

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Robovetter Results

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009636300-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009636300-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
009636300-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-05	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

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N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

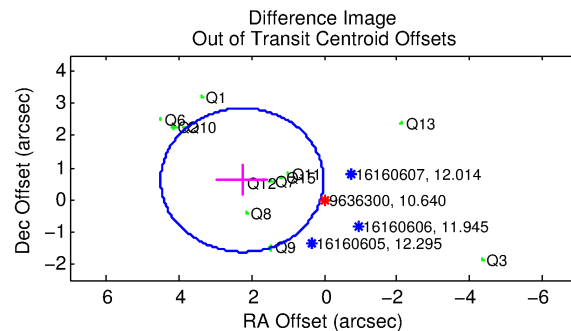
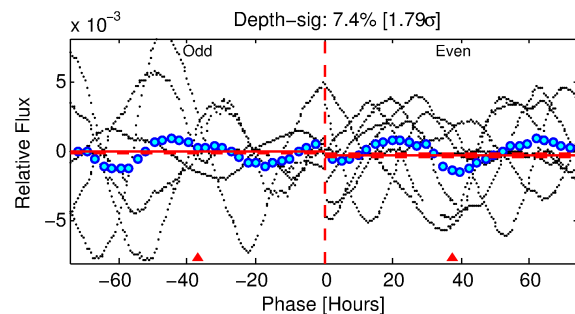
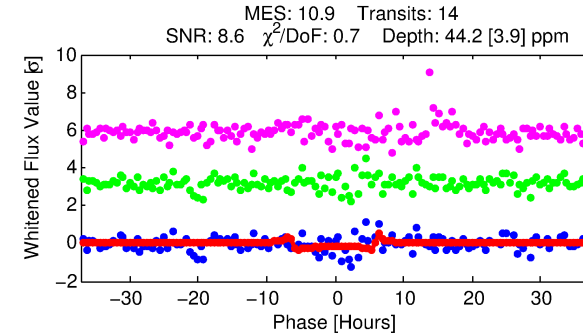
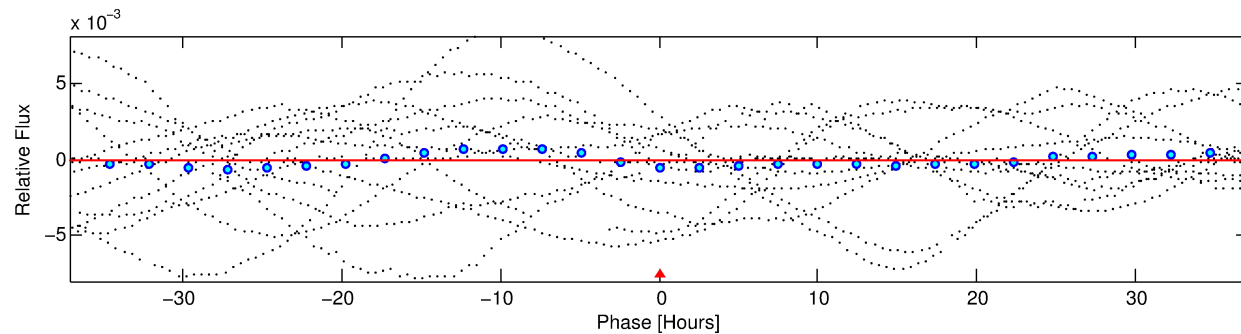
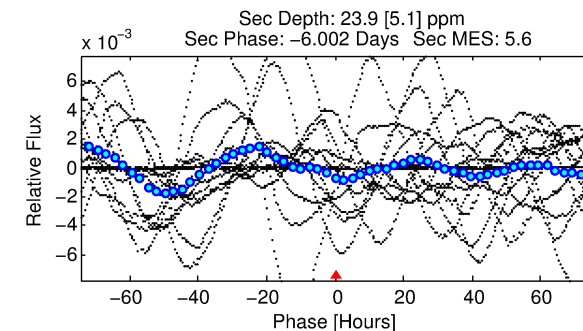
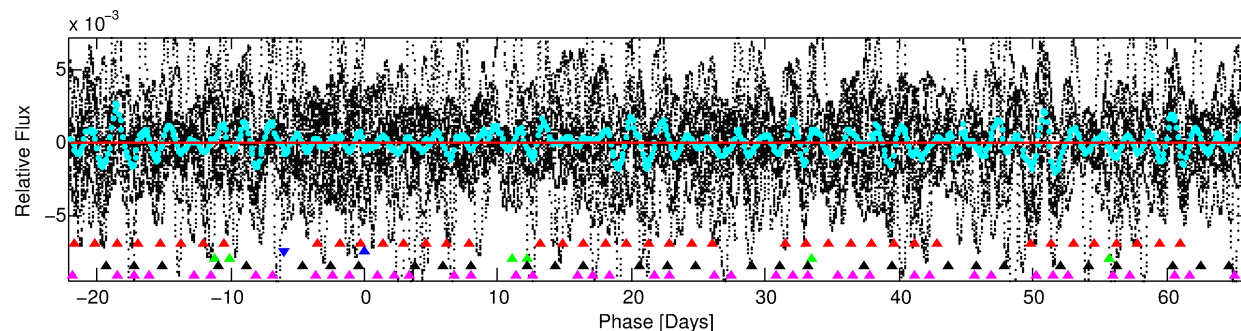
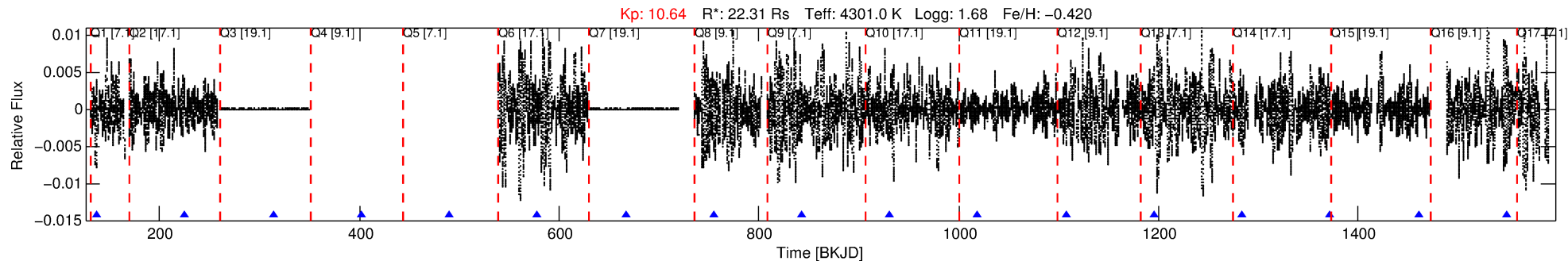
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009636300-02

No Significant Match Found

DV One-Page Summary

KIC: 9636300 Candidate: 2 of 5 Period: 88.213 d



DV Fit Results:

Period = 88.21338 [0.00101] d
Epoch = 137.1812 [0.0059] BKJD
Rp/R* = 0.0072 [0.0009]
a/R* = 28.67 [12.32]
b = 0.86 [0.13]
Seff = 1110.28 [202.14]
Teq = 1472 [67] K
Rp = 17.56 [4.86] Re
a = 0.3707 [0.0619] AU
Ag = 5.87 [2.15] [2.27σ]
Teff = 3542 [291] K [6.93σ]

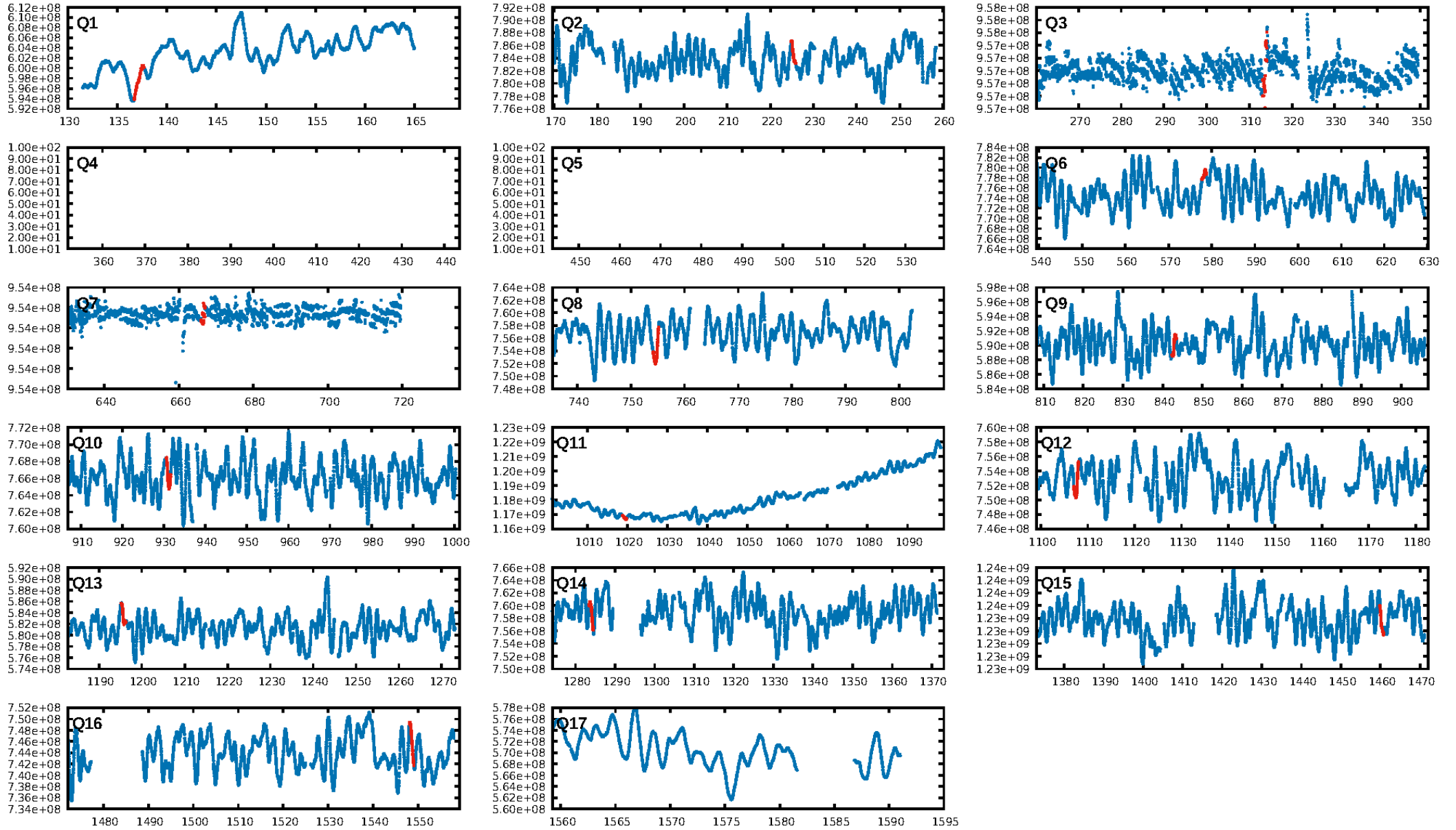
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [77.22σ]
LongPeriod-sig: 100.0% [279.10σ]
ModelChiSquare2-sig: 79.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.88e-11
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: -14.93
Centroid-sig: 12.3%
Centroid-so: 3.991 arcsec [1.54σ]
OotOffset-rm: 2.338 arcsec [3.13σ]
KicOffset-rm: 2.869 arcsec [3.39σ]
OotOffset-st: 3/4/2/3 [12]
KicOffset-st: 3/4/2/3 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.83 [10/12]

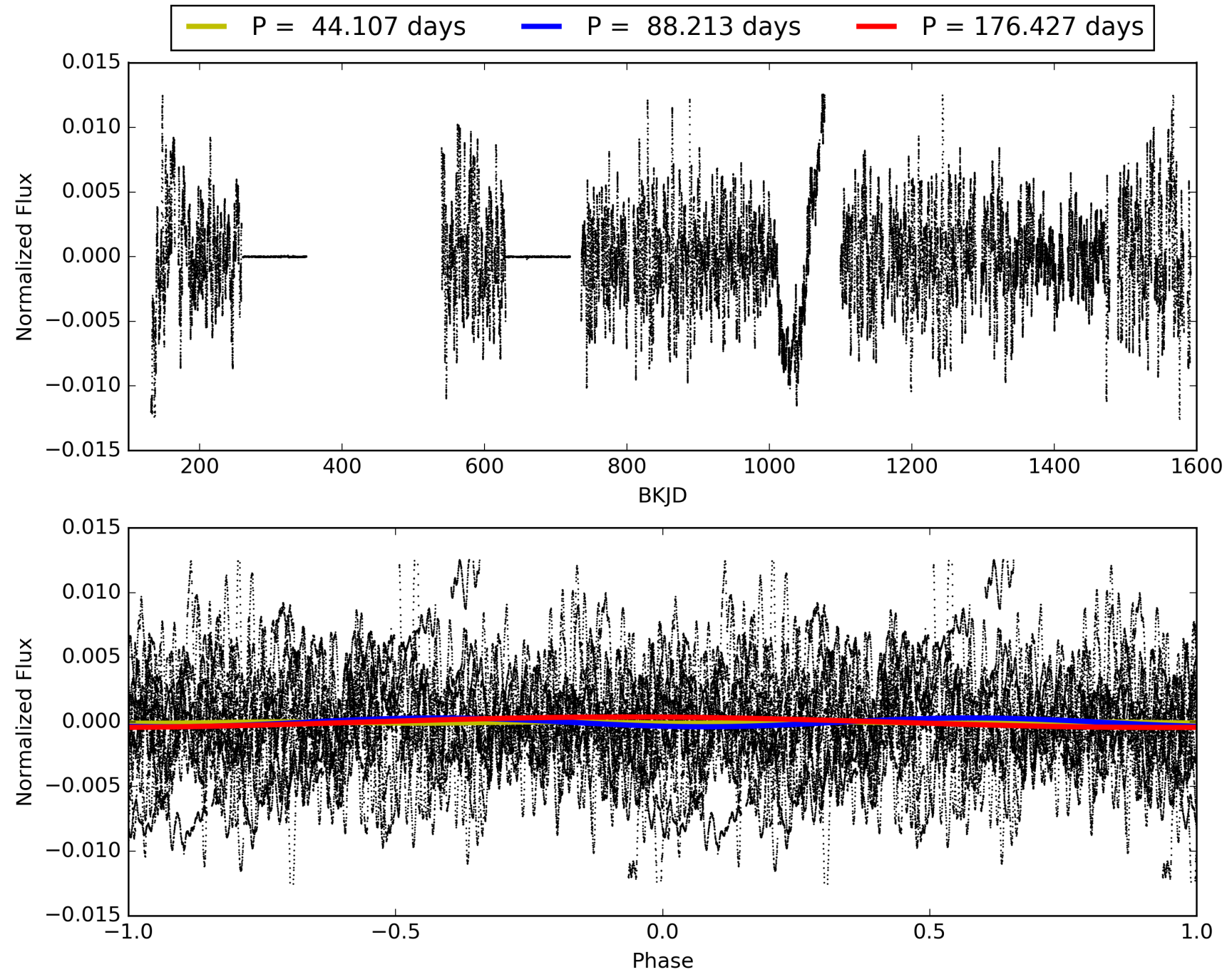
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:00:19 Z

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

TCE 009636300-02, PDC Light Curves

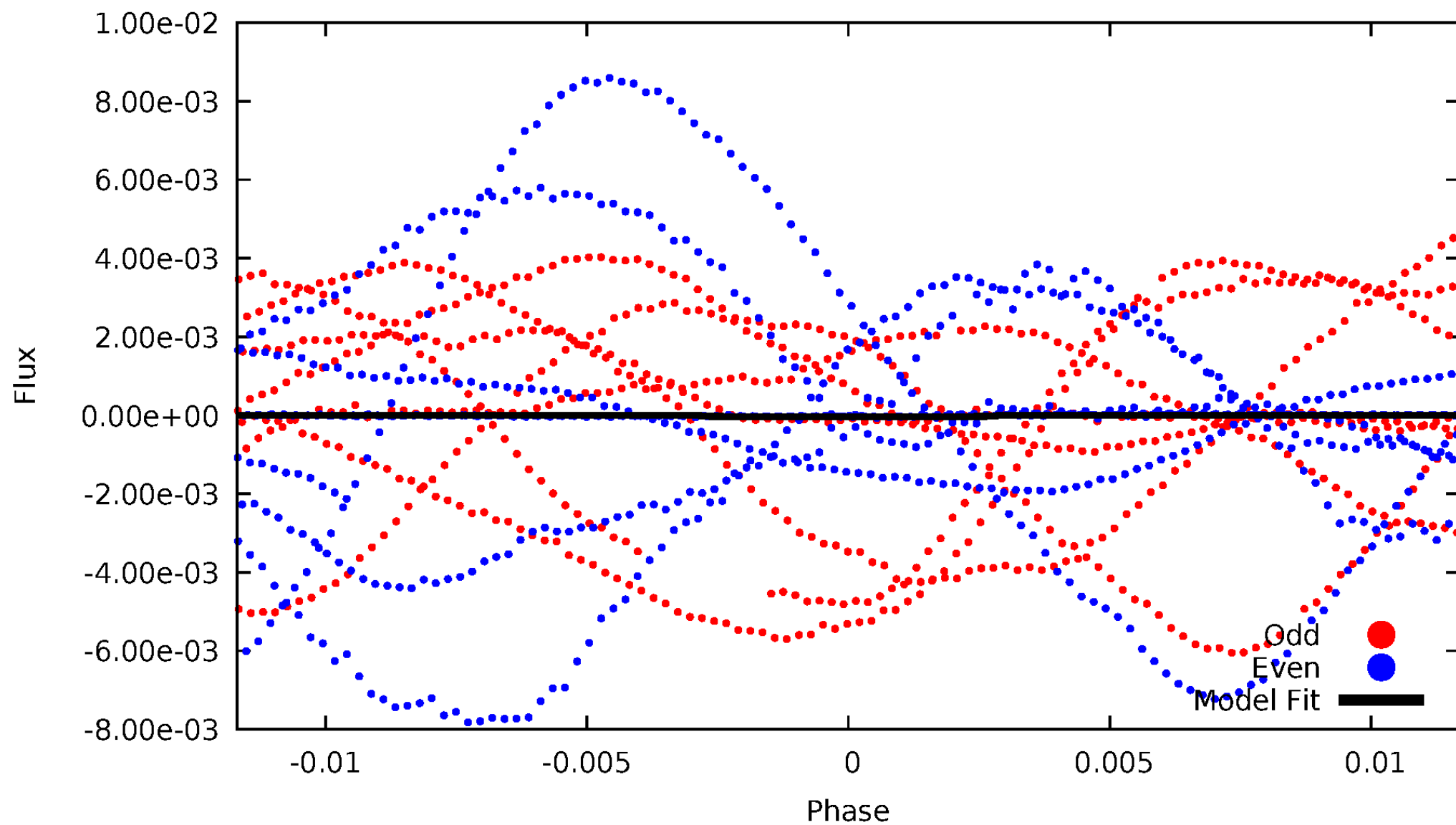


TCE 009636300-02



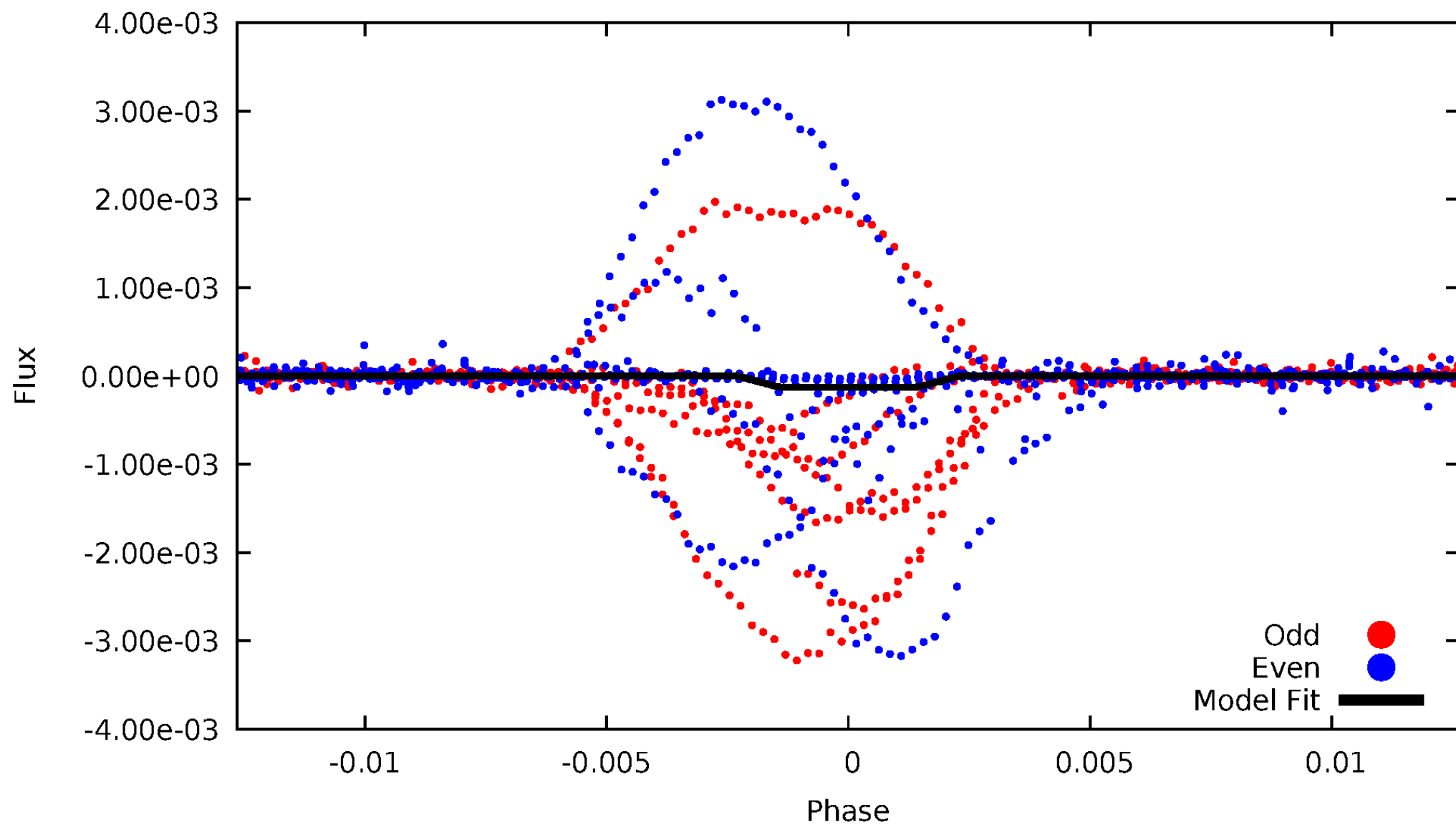
DV Odd/Even

TCE 009636300-02



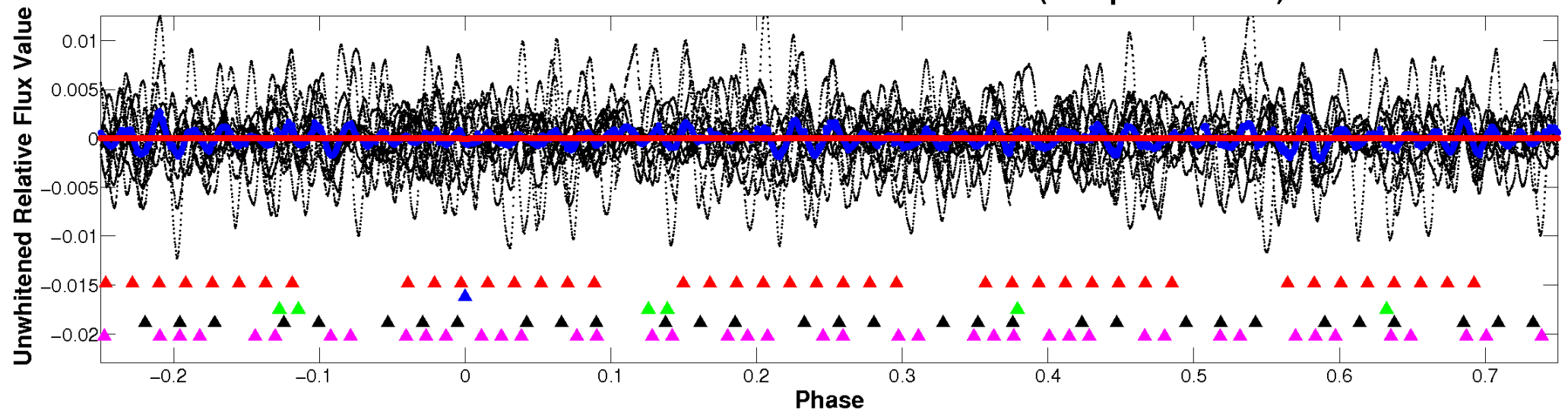
ALT Odd/Even

TCE 009636300-02

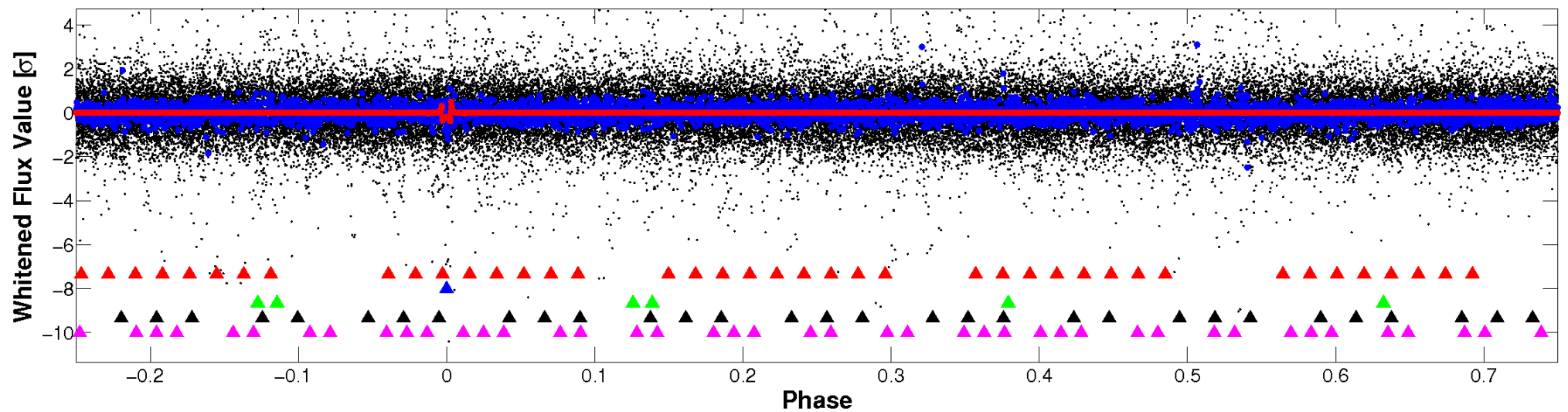


Non-Whitened Vs. Whitened Light Curve

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

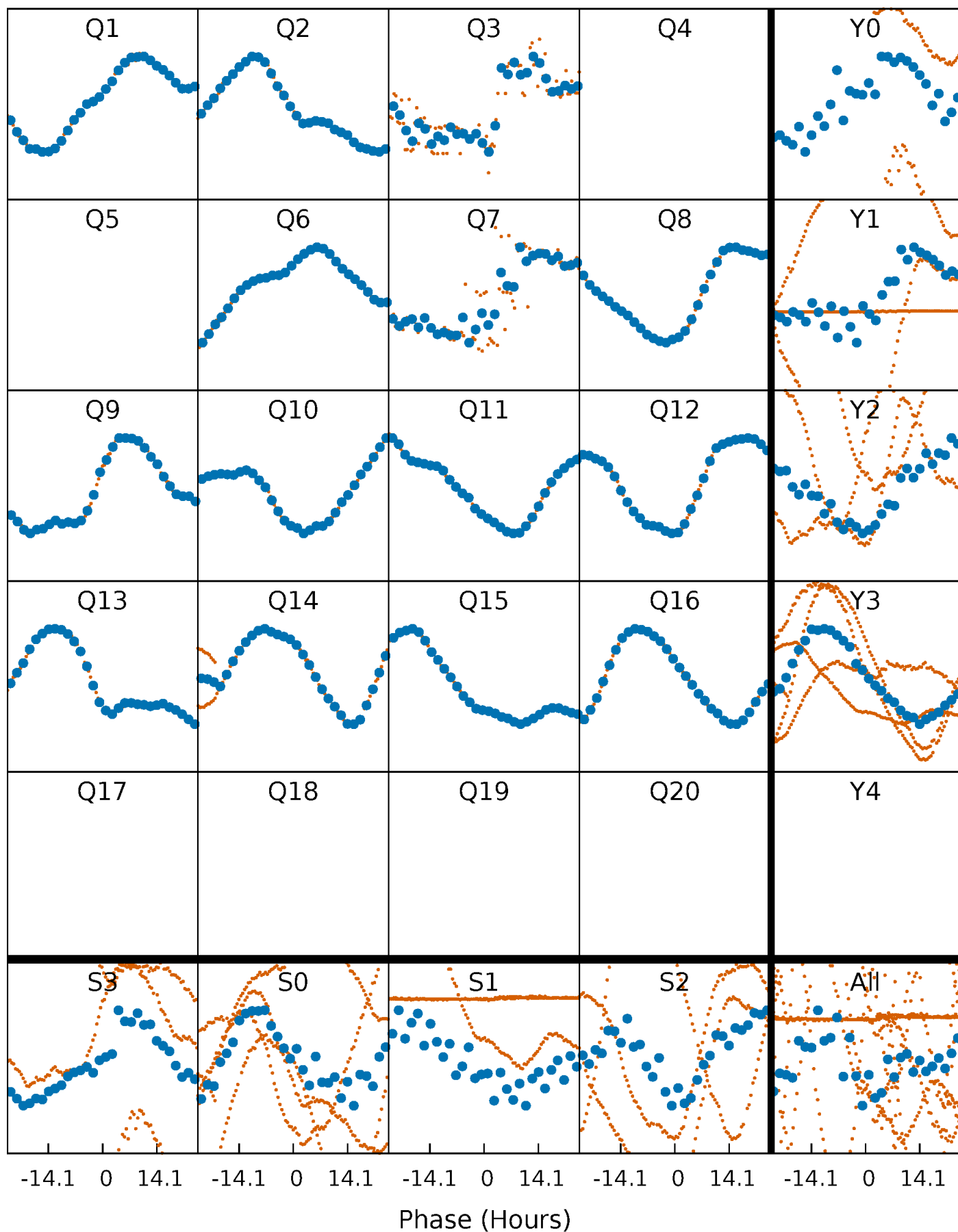


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



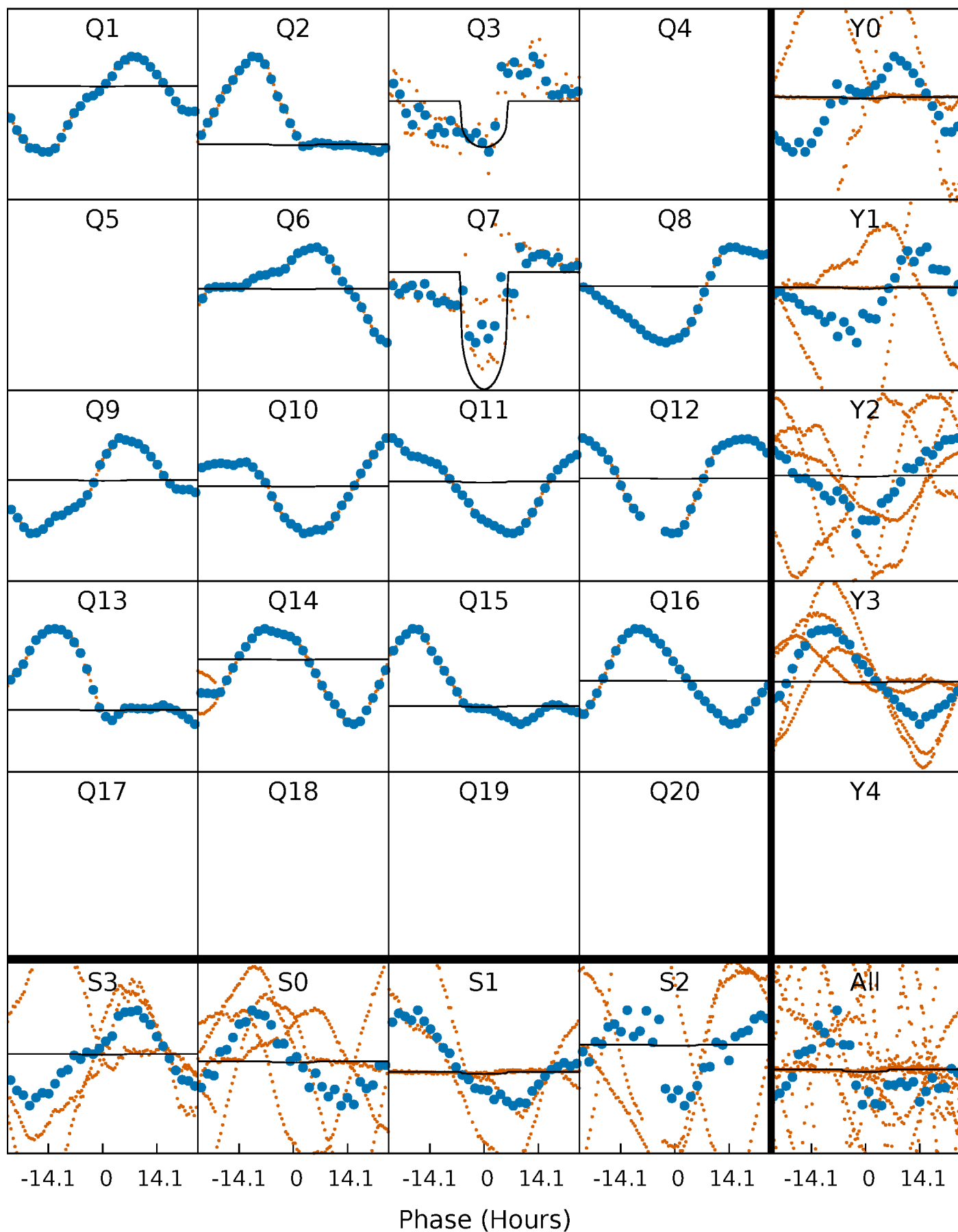
PDC Quarter-Phased Transit Curves

TCE 009636300-02 P= 88.213383 Days $T_0=137.181151$ (BKJD)



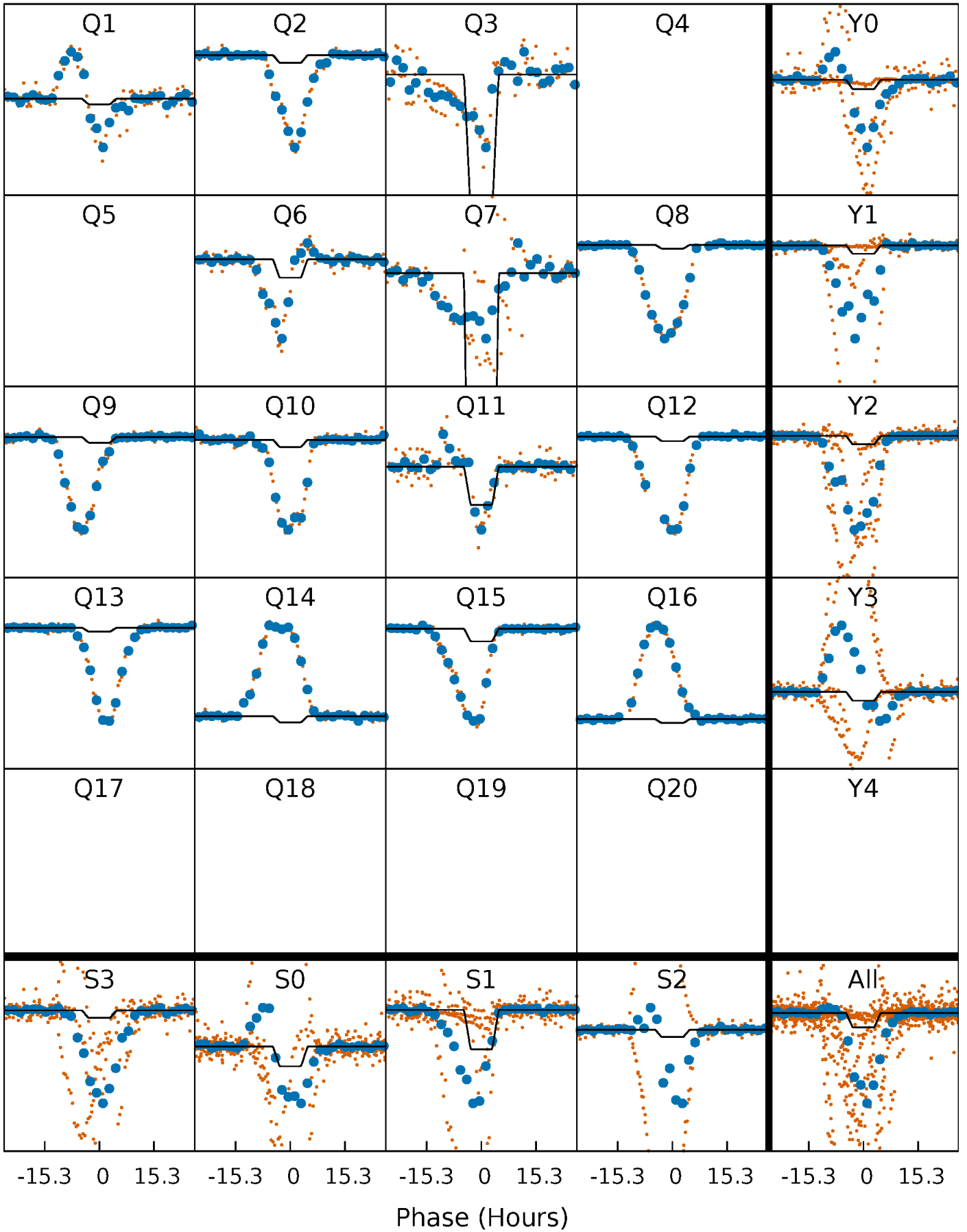
DV Quarter-Phased Transit Curves

TCE 009636300-02 P= 88.213383 Days $T_0=137.181151$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

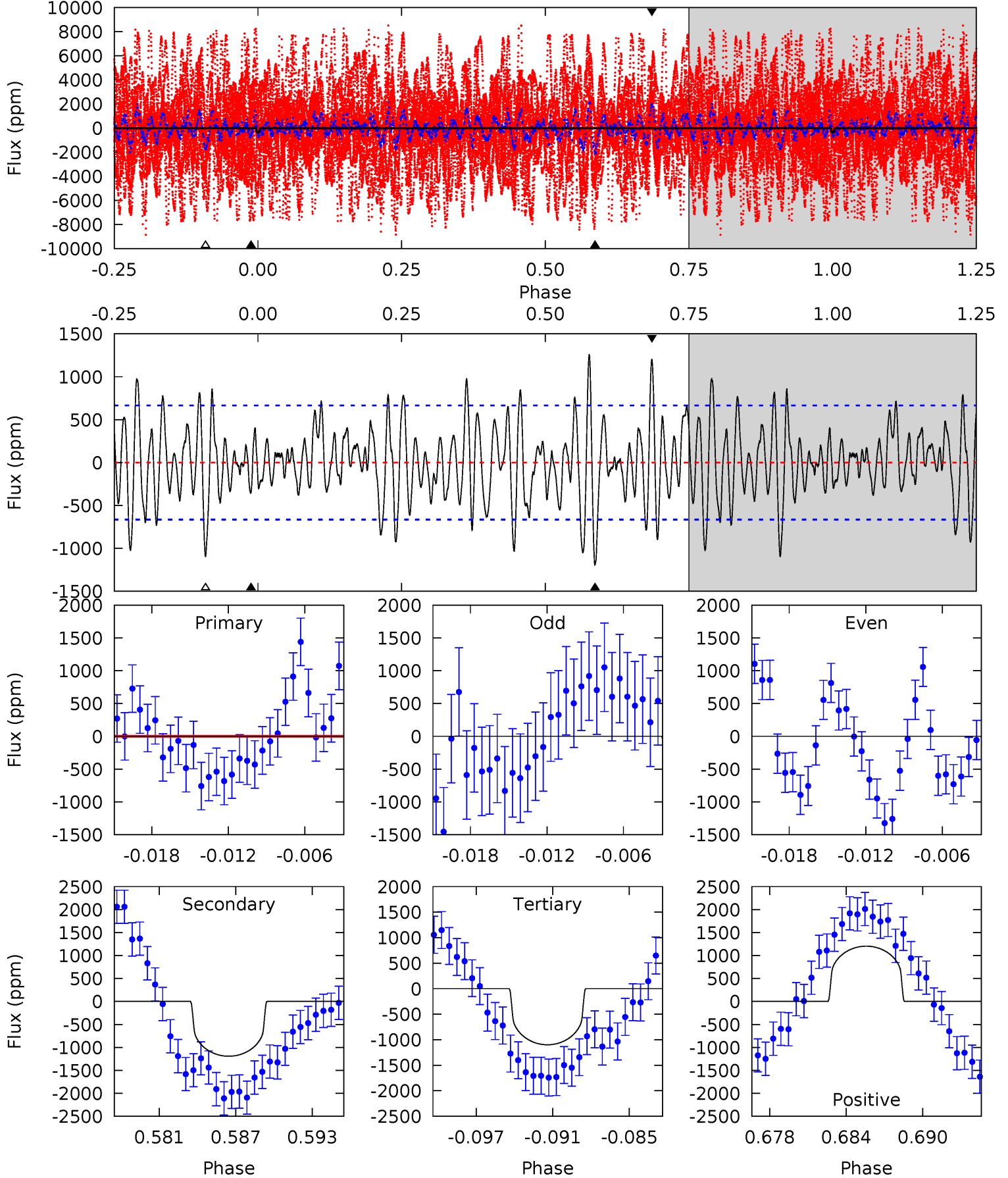
TCE 009636300-02 P= 88.206693 Days $T_0=137.218139$ (BKJD)



DV Model-Shift Uniqueness Test

009636300-02, P = 88.213383 Days, E = 48.967768 Days

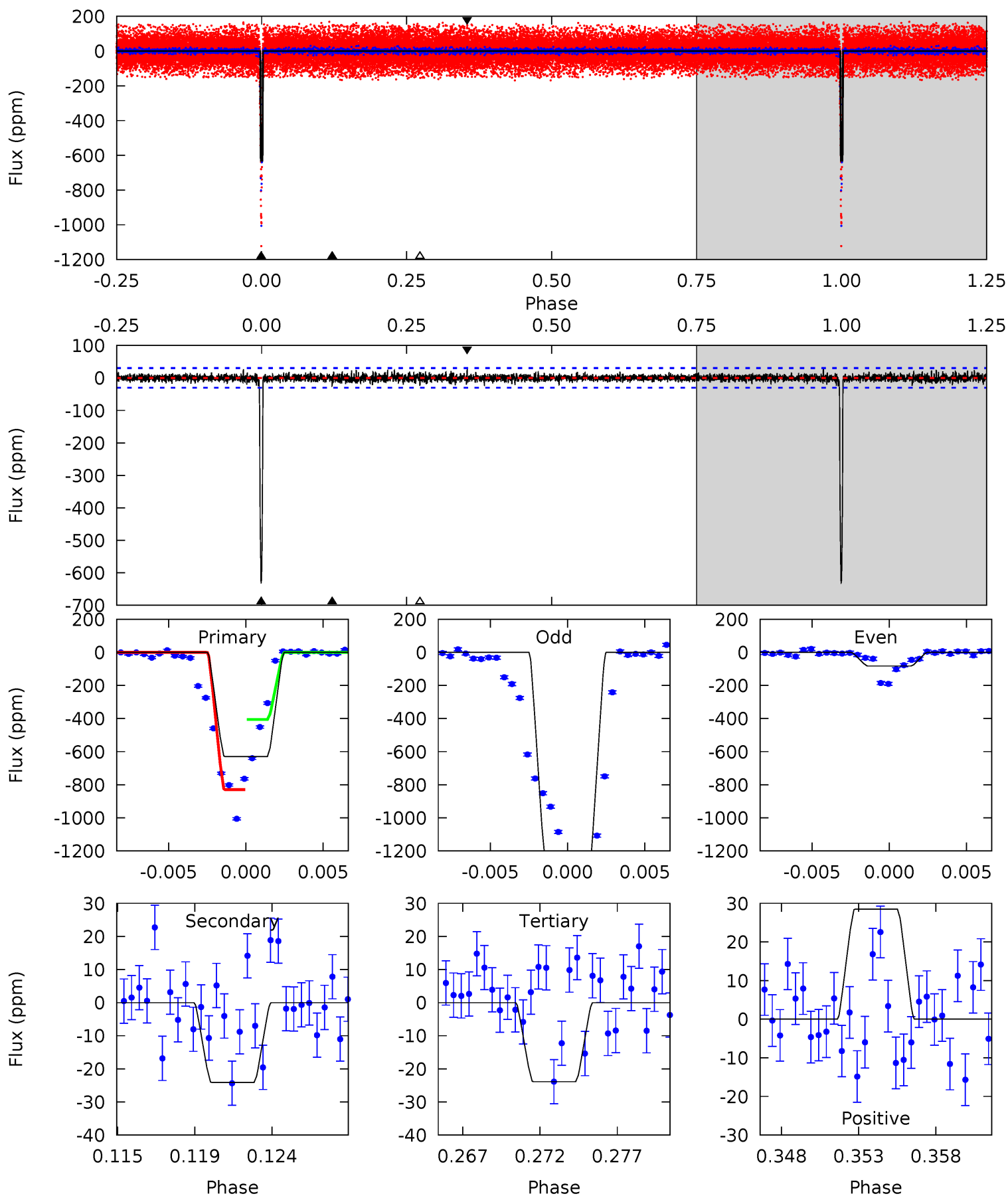
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.70	9.18	8.46	9.27	5.12	2.74	3.10	-5.76	-6.57	0.72	-0.09	3.57	-234.5	0.51	1.58



Alt Model-Shift Uniqueness Test

009636300-02, P = 88.206693 Days, E = 49.011446 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
107.2	4.10	4.06	4.84	5.17	2.82	1.06	103.1	102.3	0.04	-0.74	134.7	1.00	0.04	35.4



Stellar Parameters For KIC 009636300

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4301^{+65}_{-45}	$1.682^{+0.027}_{-0.030}$	$-0.420^{+0.150}_{-0.100}$	$22.308^{+5.536}_{-0.615}$	$0.873^{+0.479}_{-0.024}$	$0.000^{+0.000}_{-0.000}$
	+2%/-1%	+2%/-2%	+36%/-24%	+25%/-3%	+55%/-3%	+9%/-23%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009636300-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1192 ± 130	$17.76^{+2.50}_{-2.45}$	2060^{+45}_{-32}	9517^{+1133}_{-795}	287^{+99}_{-64}
Alt.	-24 ± 6	$27.42^{+3.10}_{-2.38}$	2056^{+43}_{-32}	3185^{+163}_{-183}	$2.343^{+0.823}_{-0.651}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

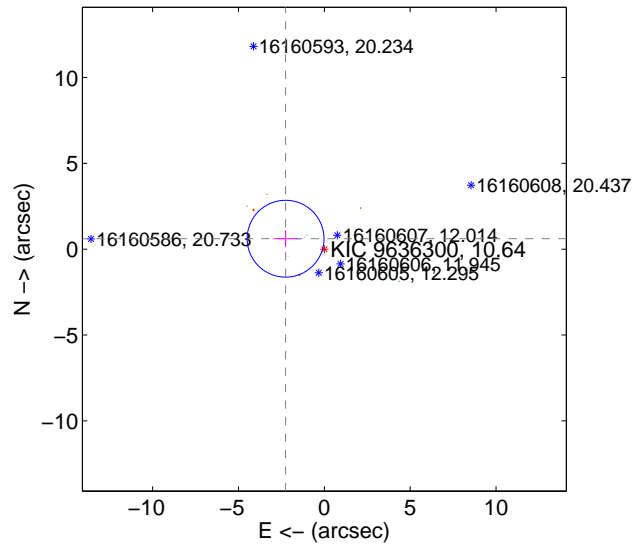
Supplemental centroid analysis for 009636300-02. **Kepler magnitude: 10.64.** Transit SNR 8.56

There are 5 quarters with good PRF difference image offsets

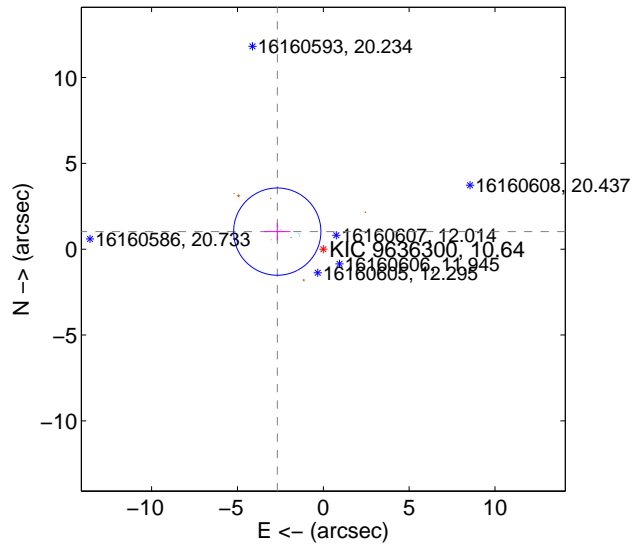
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.338 \pm 0.746	3.13	2.257 \pm 0.691	0.610 \pm 0.479
PRF-fit source offset from KIC position	2.869 \pm 0.847	3.39	2.681 \pm 0.763	1.023 \pm 0.511
photometric centroid source offset	3.99 \pm 2.58	1.54	-3.98 \pm 2.59	0.24 \pm 2.12

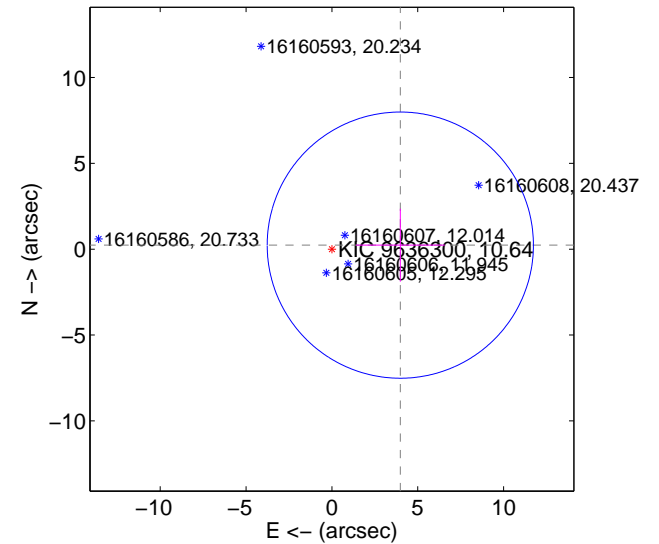
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

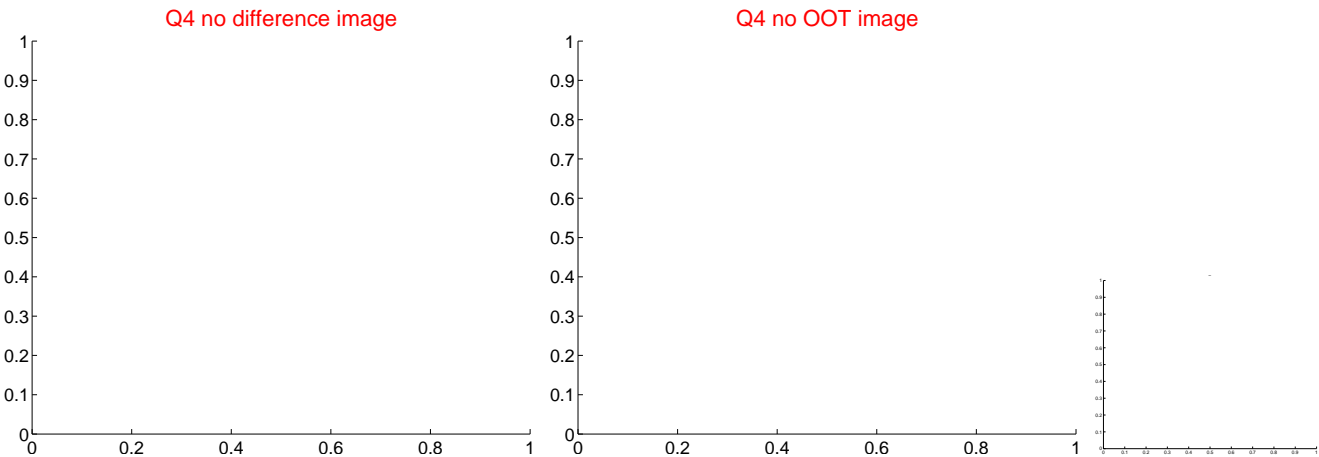
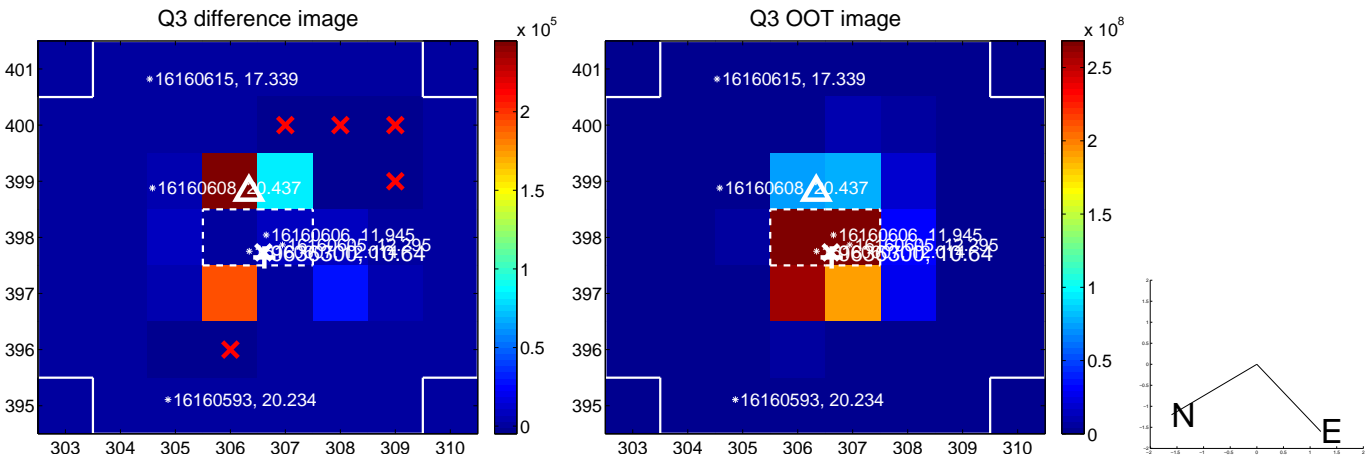
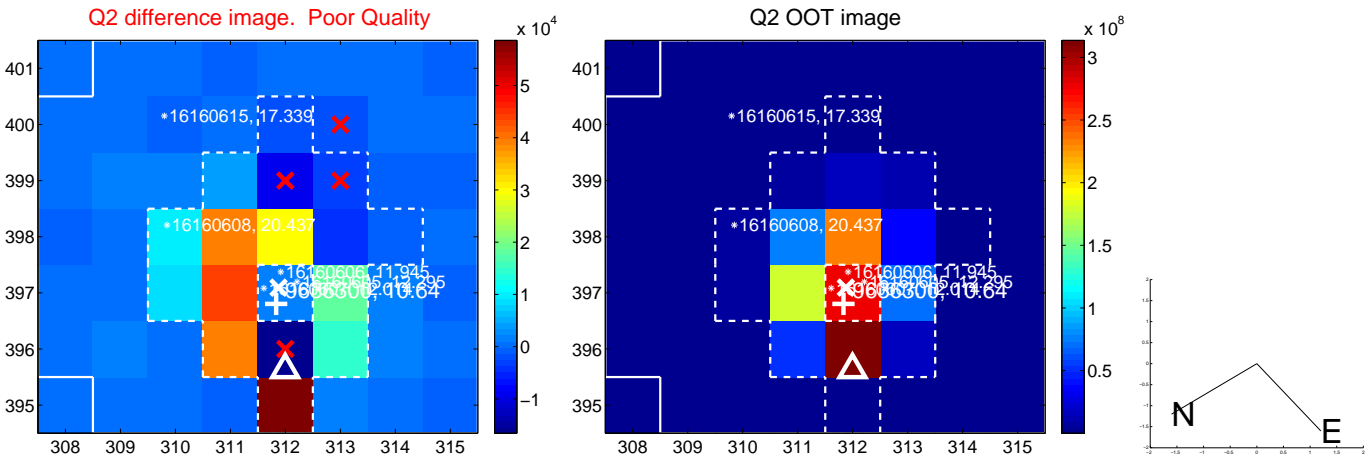
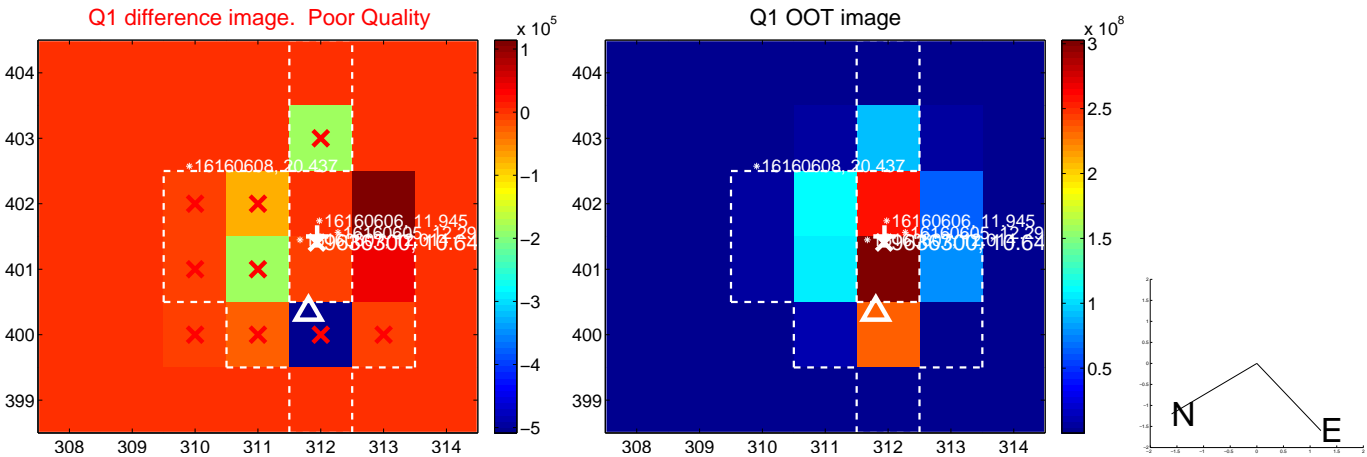


offset from photometric centroids

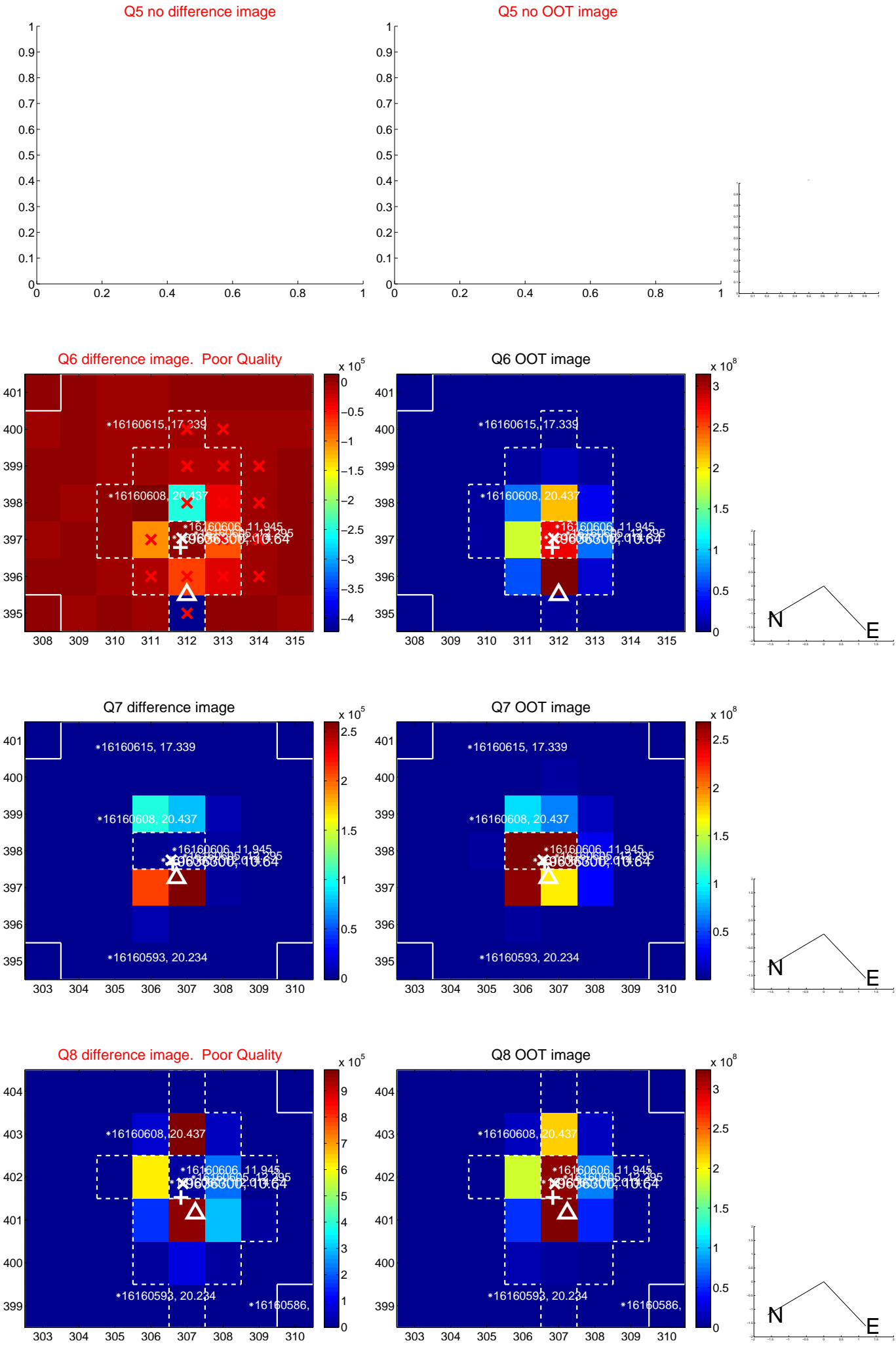


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

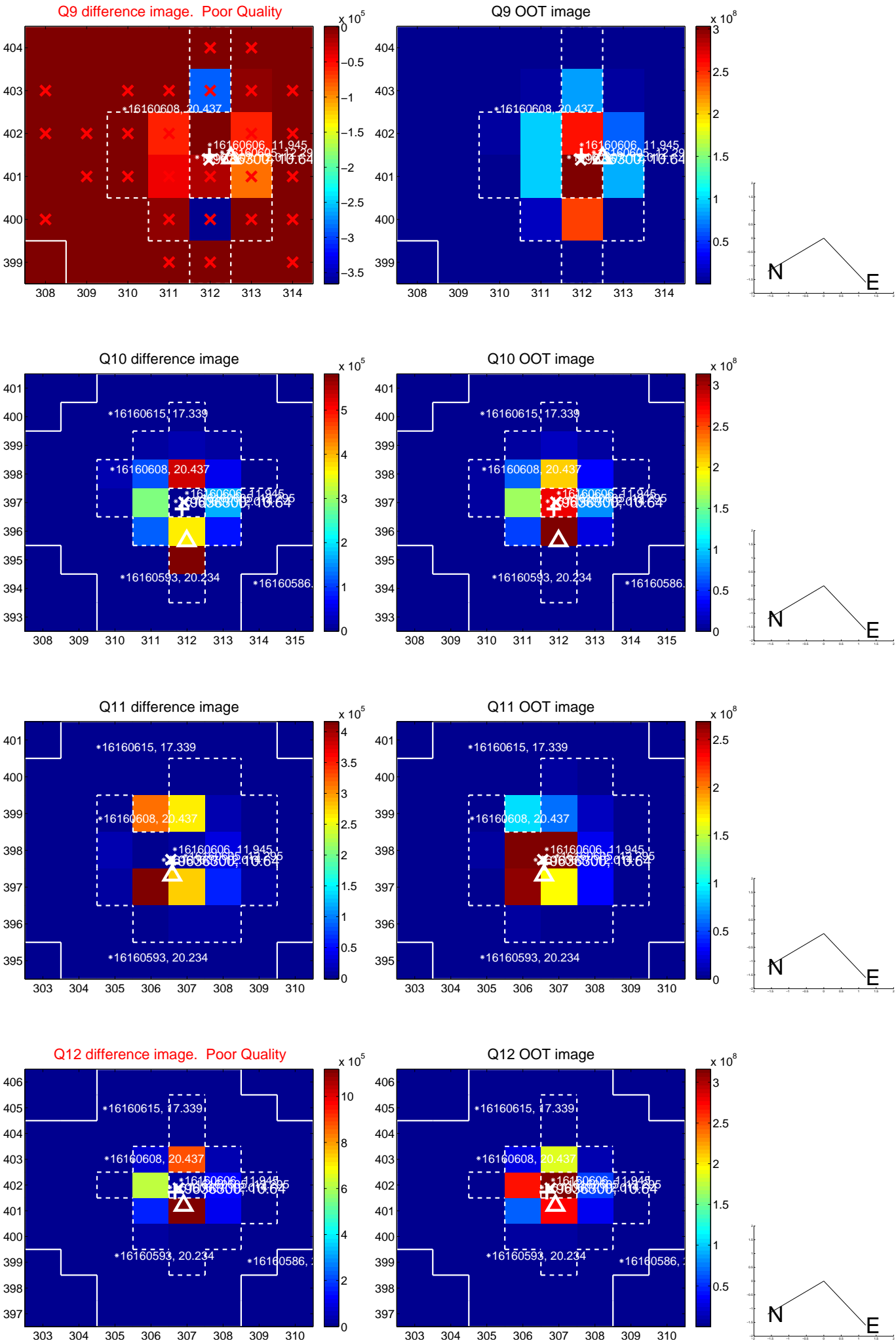
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



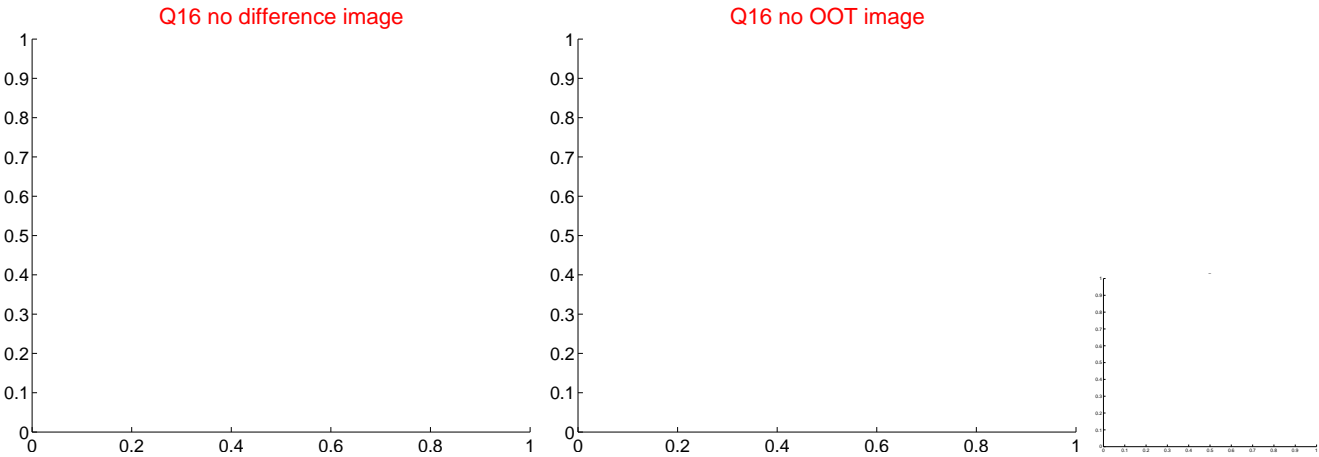
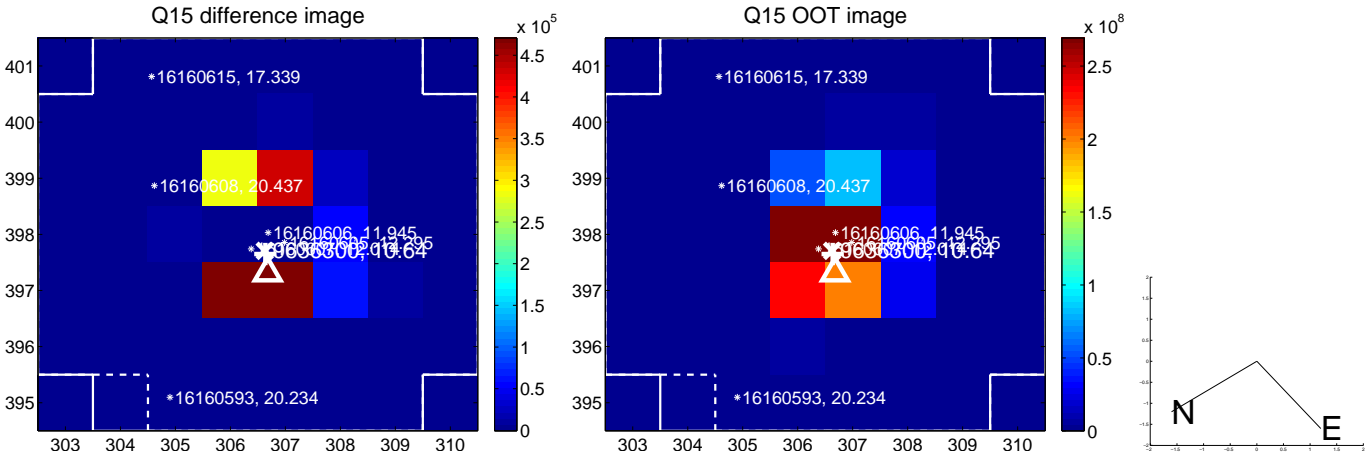
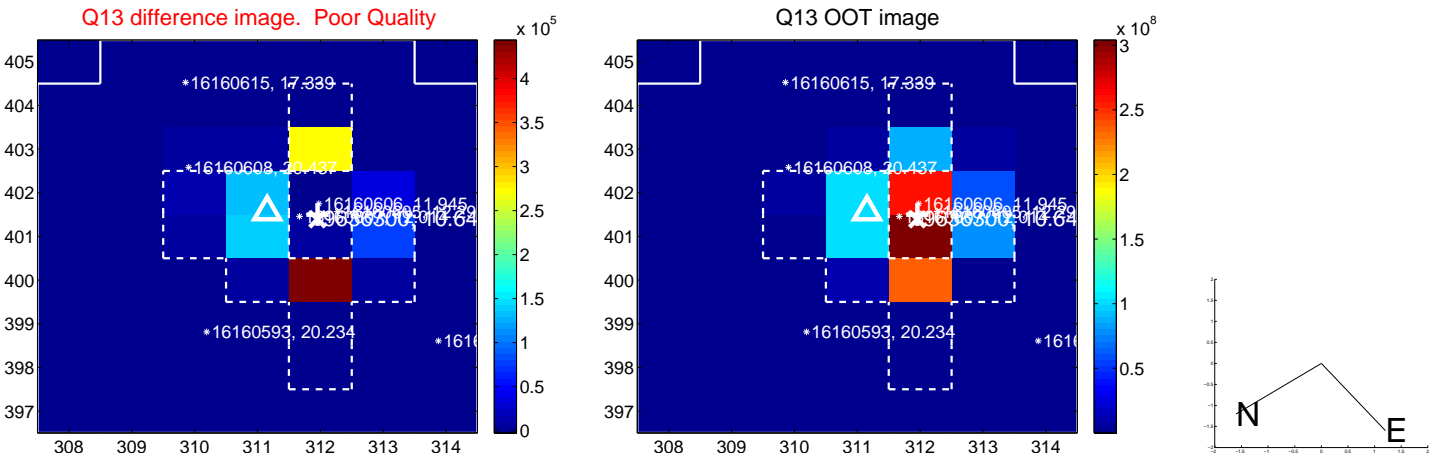
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



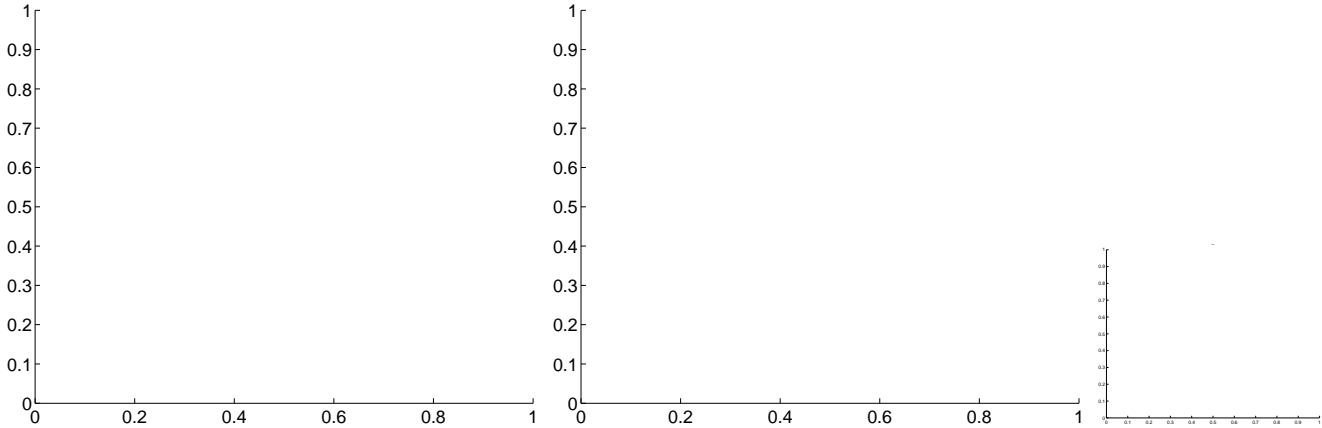
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



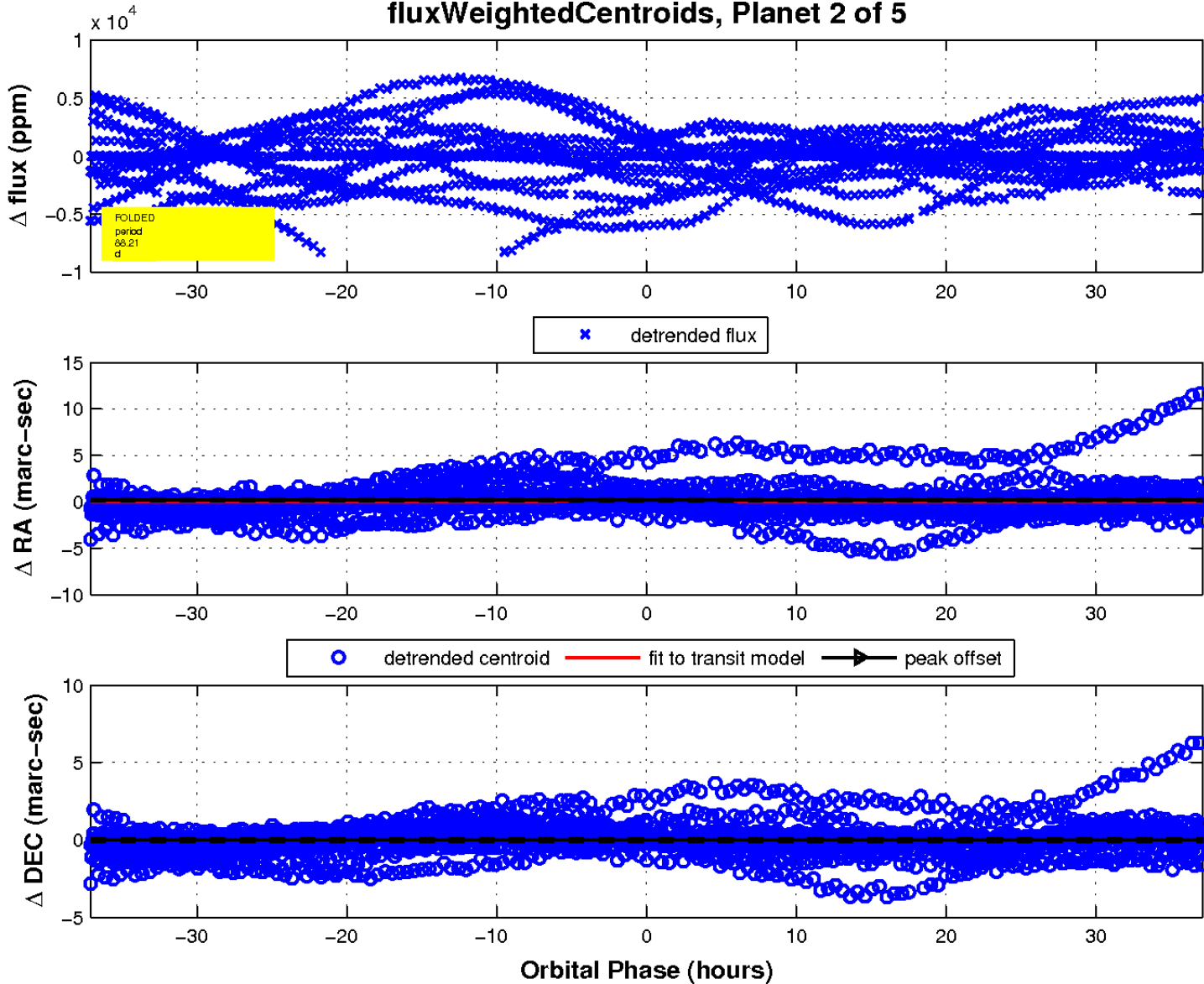
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

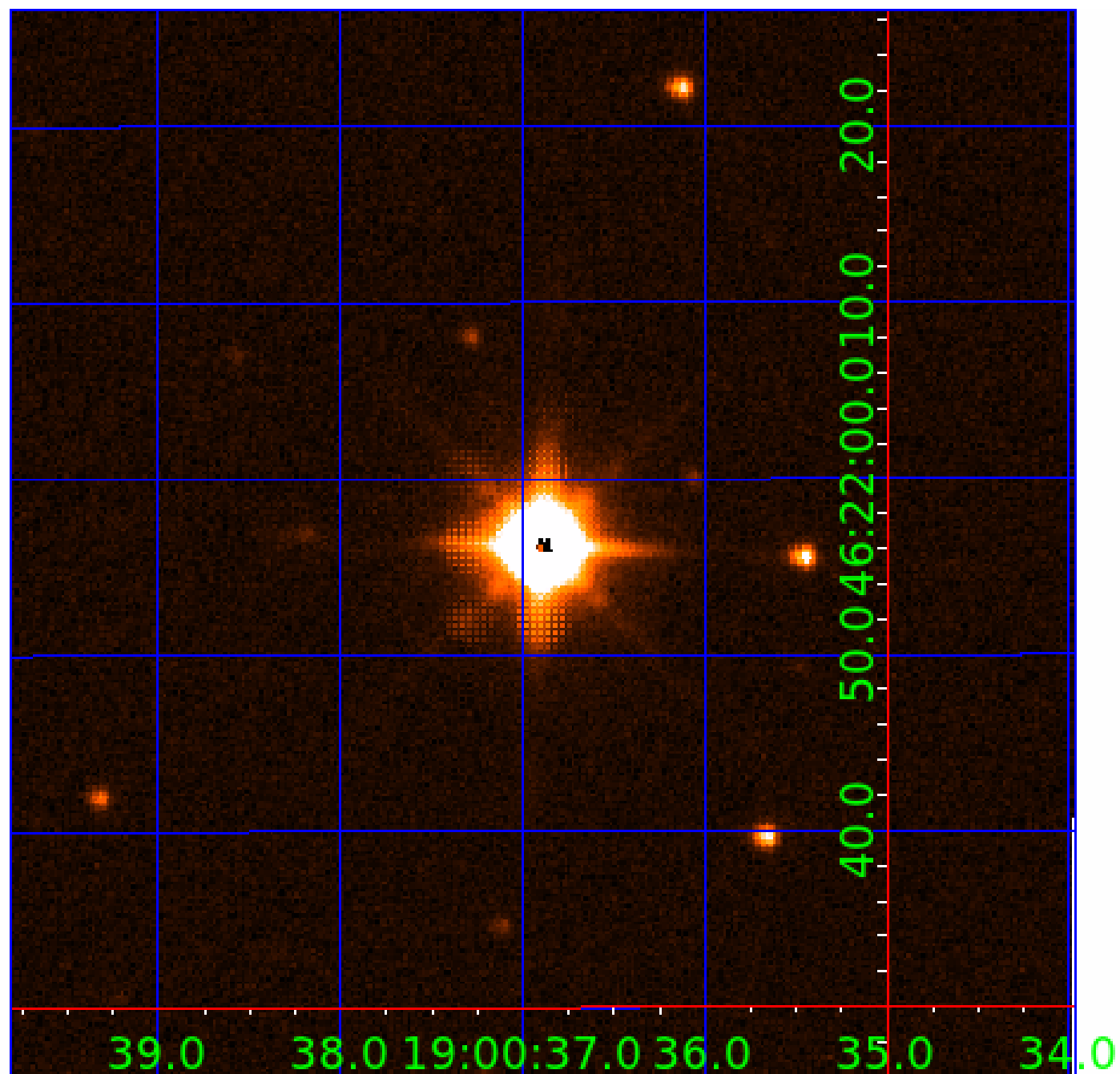


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 009636300

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})
009636300-01	OBS	No	34.962878	163.293059	26.6	1.526	14.2	12.9	22.31	4301	14.35	3813.61
009636300-02	OBS	No	88.213383	137.181151	44.2	12.376	10.9	8.6	22.31	4301	17.56	1110.28
009636300-03	OBS	No	242.300585	325.852795	23.6	4.732	10.8	4.0	22.31	4301	13.41	288.63
009636300-04	OBS	No	48.307873	132.510716	24.2	0.804	9.6	6.0	22.31	4301	13.87	2478.12
009636300-05	OBS	No	34.372299	138.174315	26.2	1.286	9.3	11.7	22.31	4301	12.87	3901.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009636300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009636300-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
009636300-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-05	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

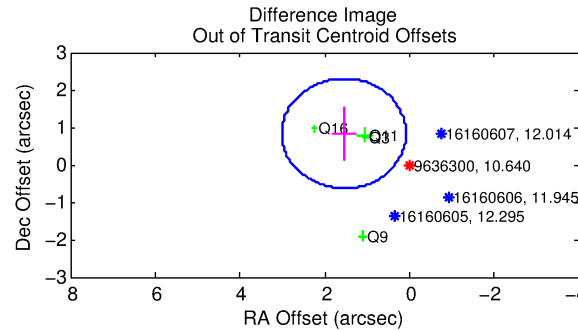
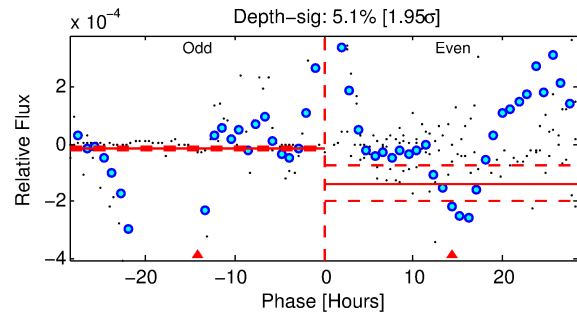
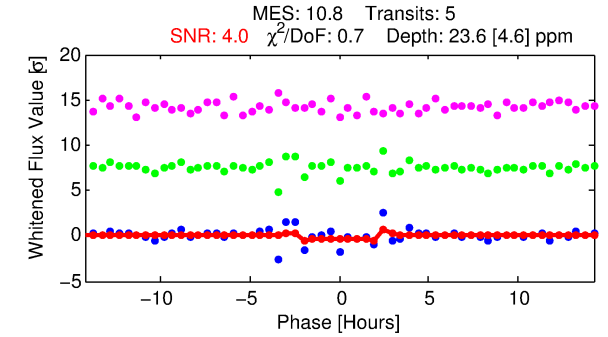
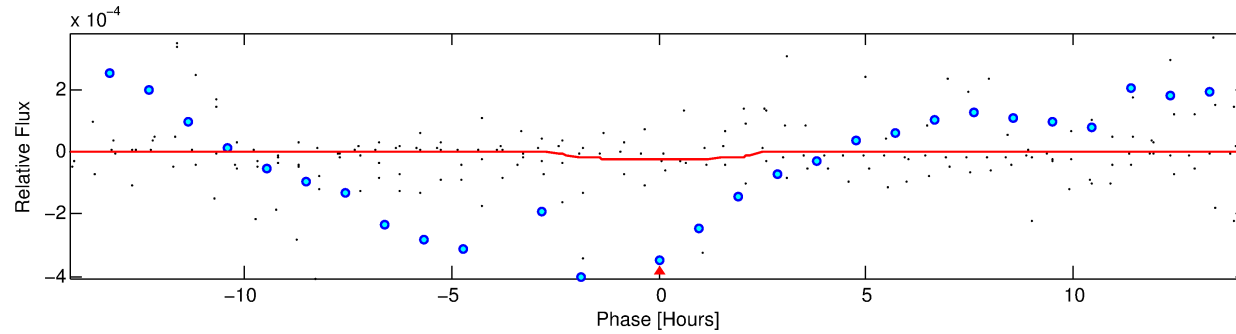
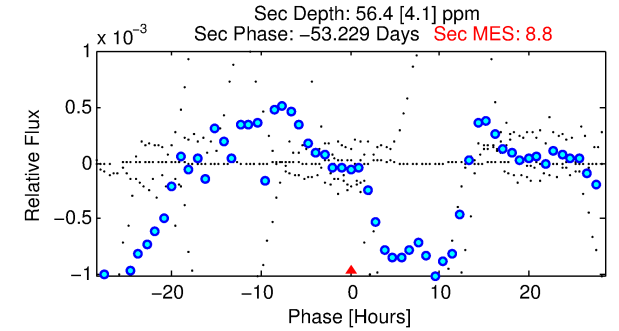
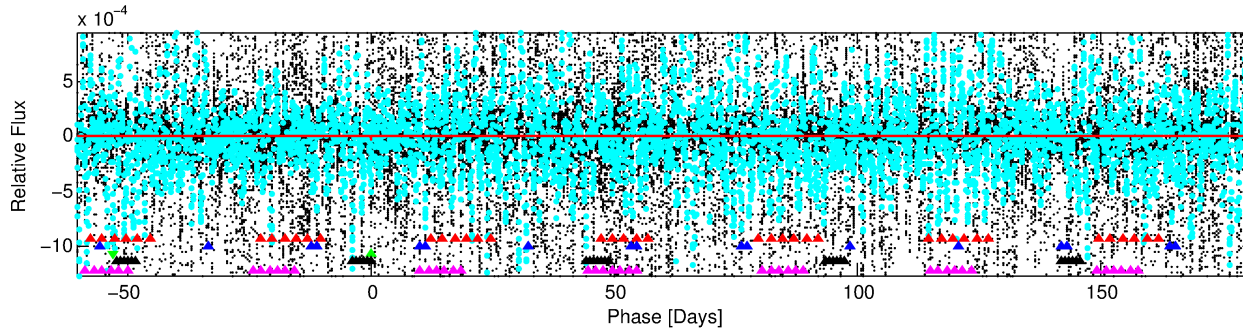
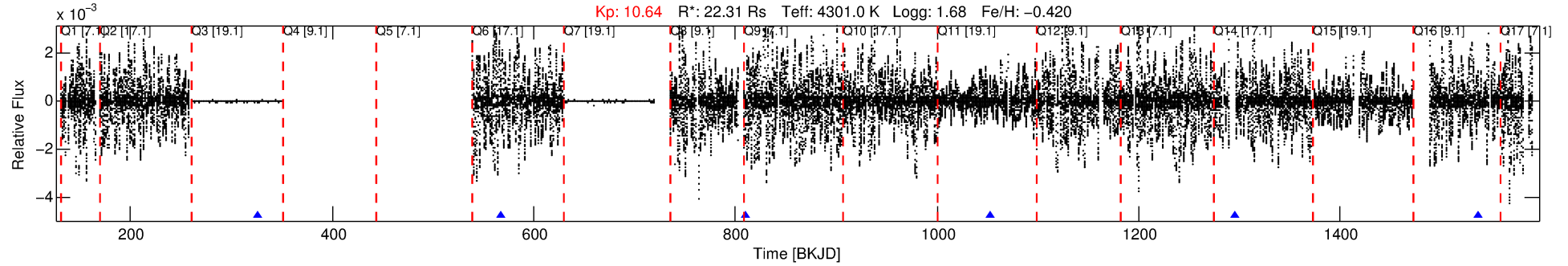
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009636300-03

No Significant Match Found

DV One-Page Summary

KIC: 9636300 Candidate: 3 of 5 Period: 242.301 d



DV Fit Results:

Period = 242.30059 [0.01063] d
Epoch = 325.8528 [0.0046] BKJD
Rp/R* = 0.0055 [0.0030]
a/R* = 176.86 [331.35]
b = 0.90 [0.43]
Seff = 288.63 [52.55]
Teq = 1051 [48] K
Rp = 13.41 [8.08] Re
a = 0.7271 [0.1214] AU
Ag = 91.18 [101.54] [0.89σ]
Teffp = 5021 [1383] K [2.87σ]

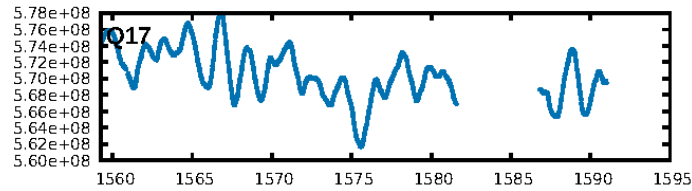
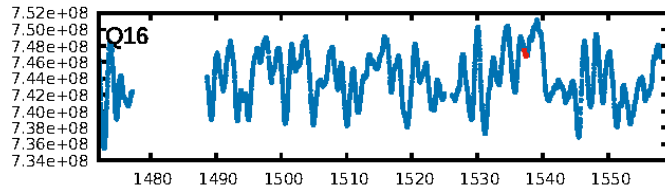
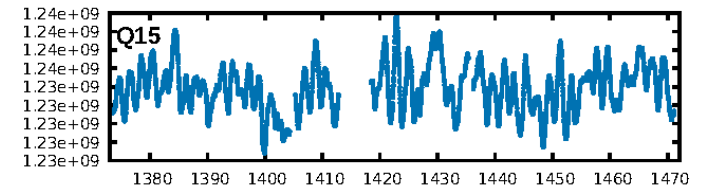
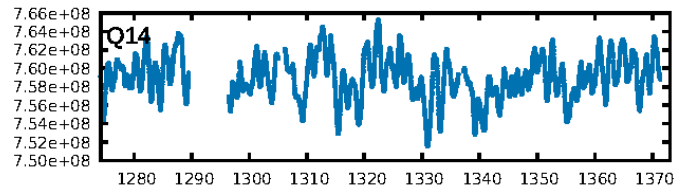
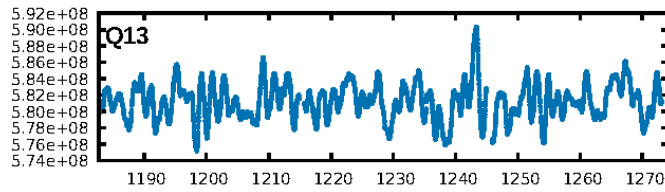
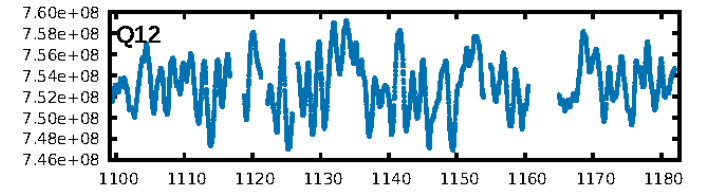
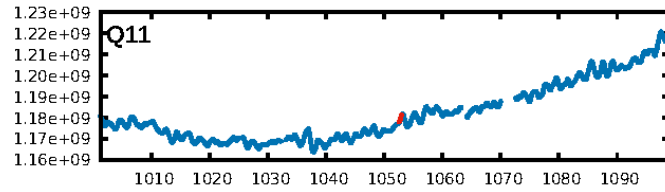
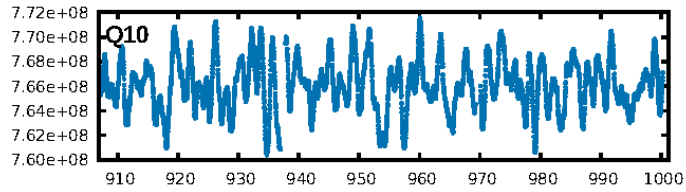
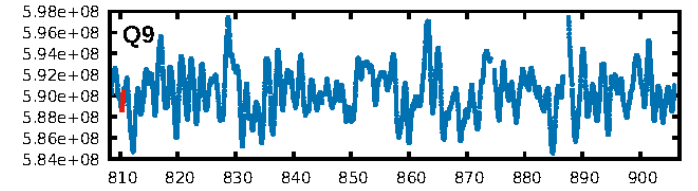
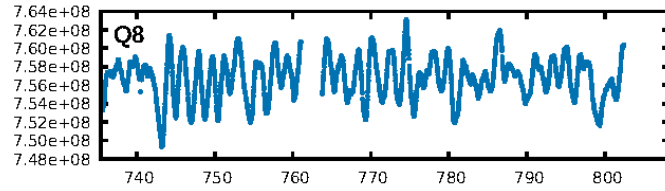
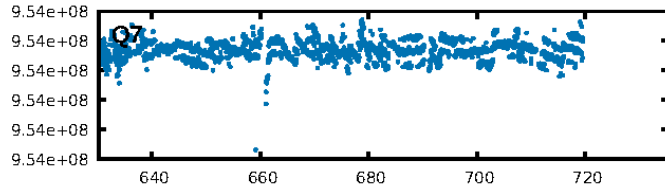
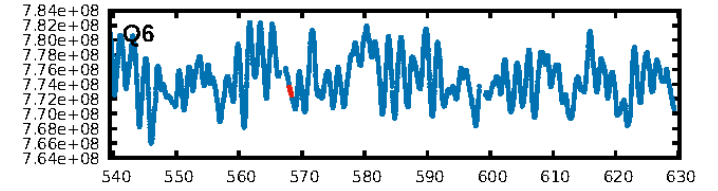
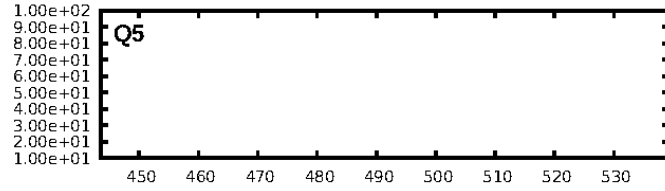
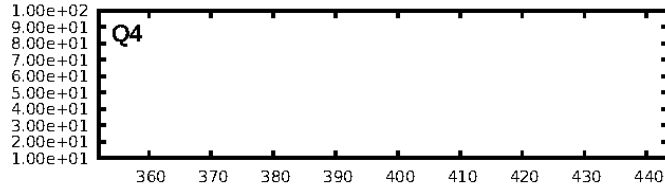
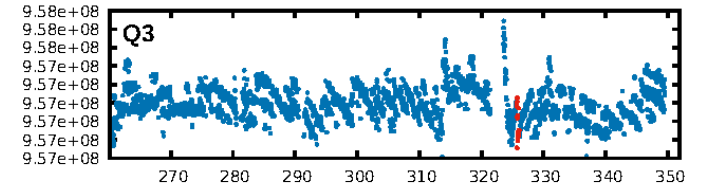
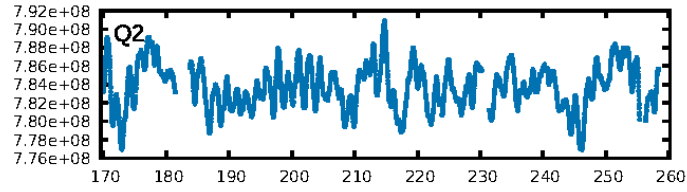
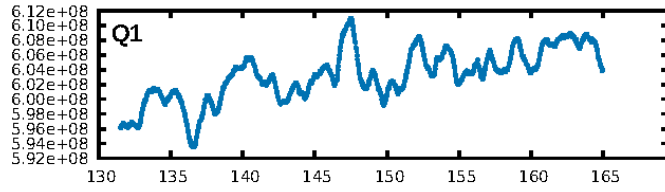
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [279.10σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 54.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.92e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.8673
Centroid-sig: 1.0%
Centroid-so: 10.601 arcsec [1.75σ]
OotOffset-rm: 1.757 arcsec [3.60σ]
OotOffset-st: 0/2/1/1 [4]
KicOffset-rm: 2.208 arcsec [2.83σ]
KicOffset-st: 0/2/1/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.75 [3/4]

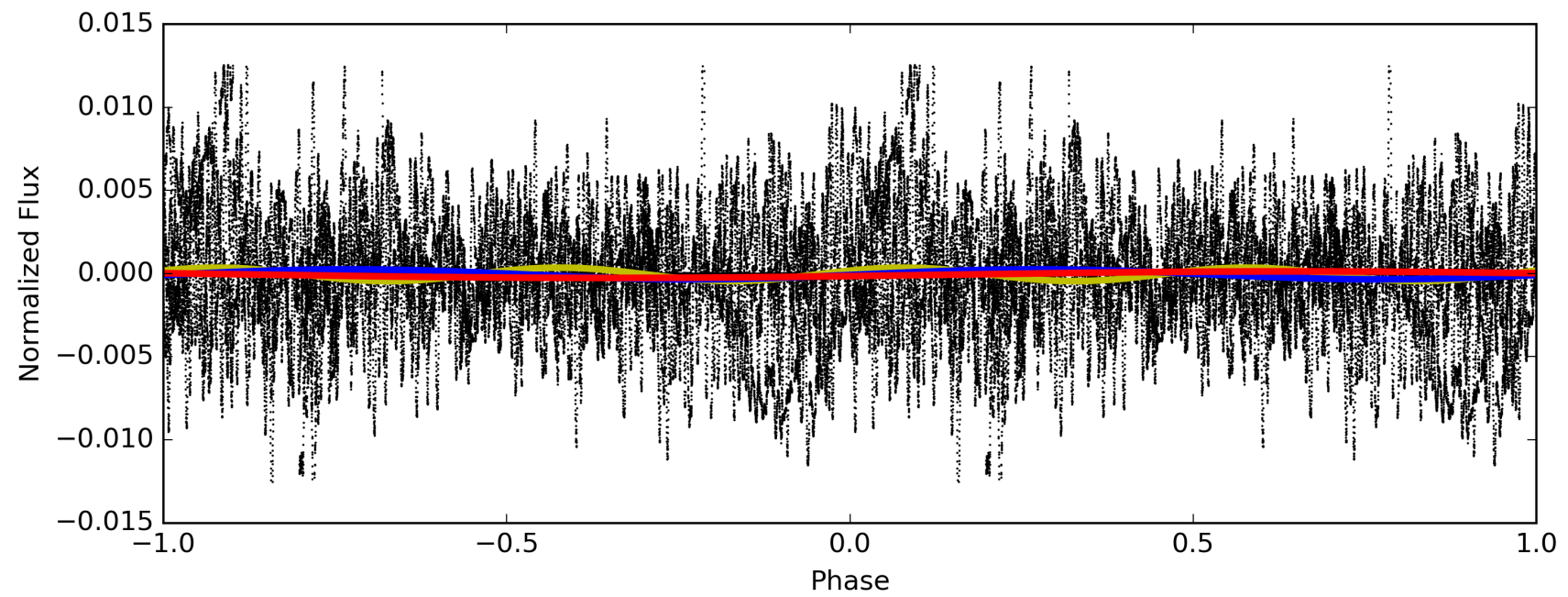
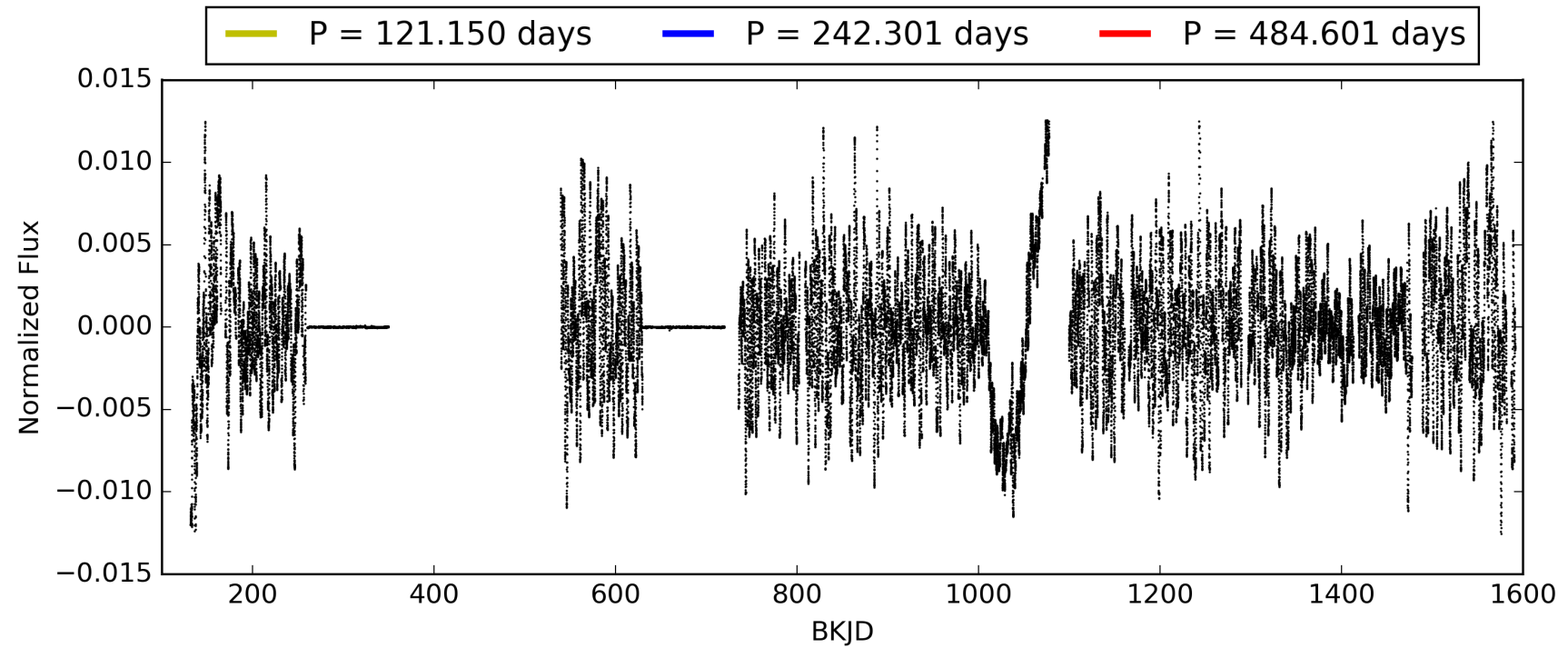
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:00:28 Z

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

TCE 009636300-03, PDC Light Curves

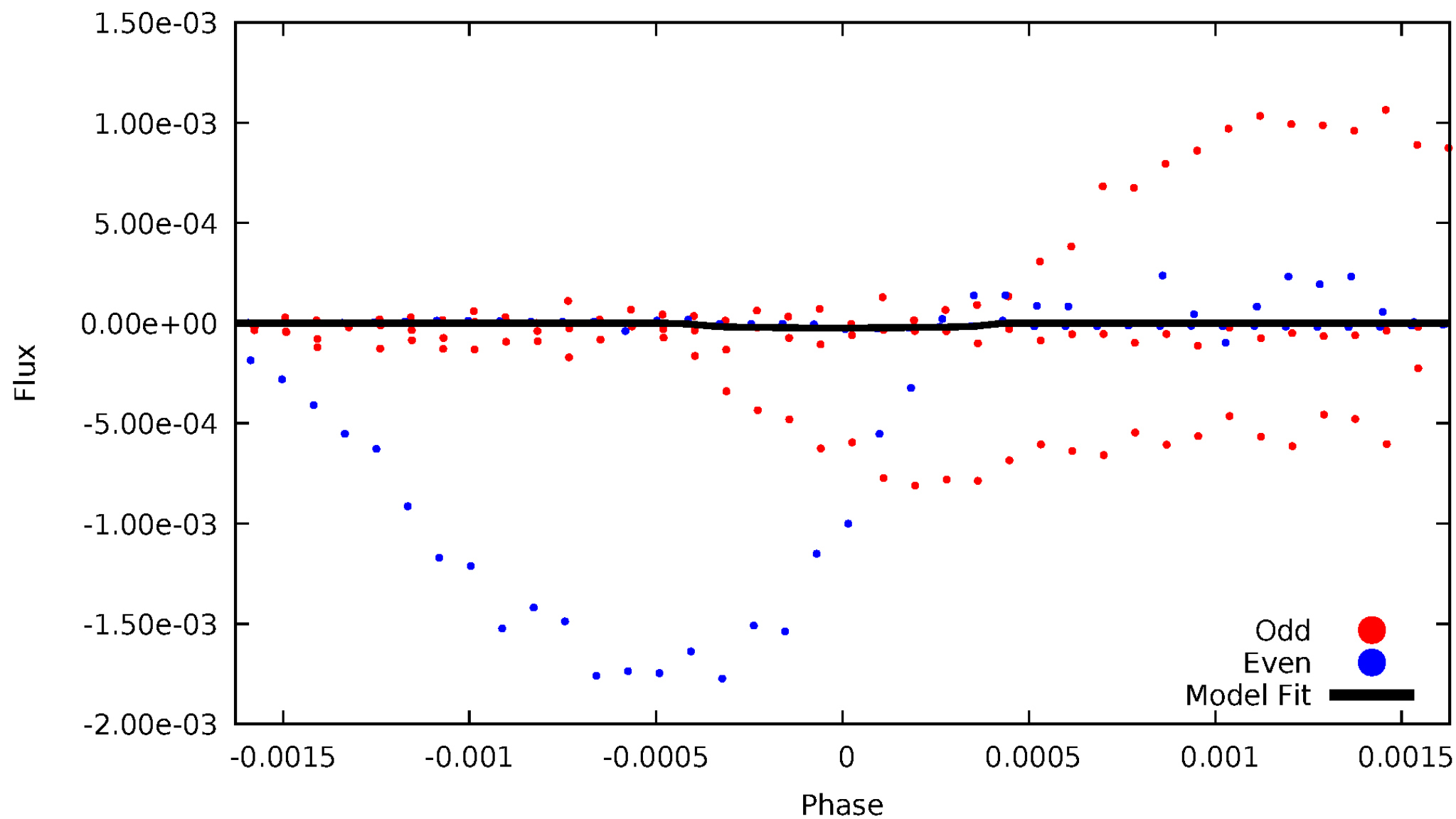


TCE 009636300-03



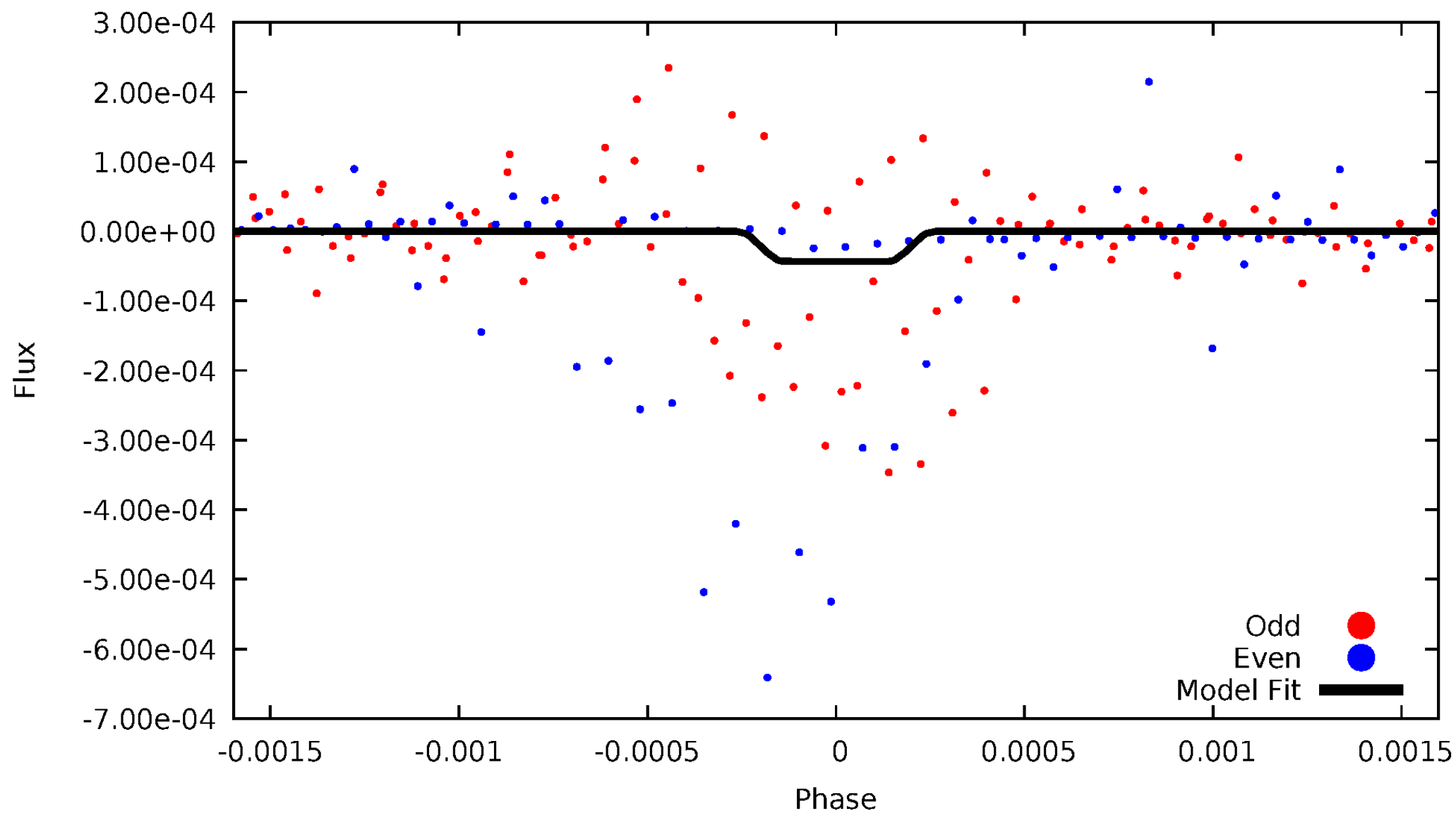
DV Odd/Even

TCE 009636300-03



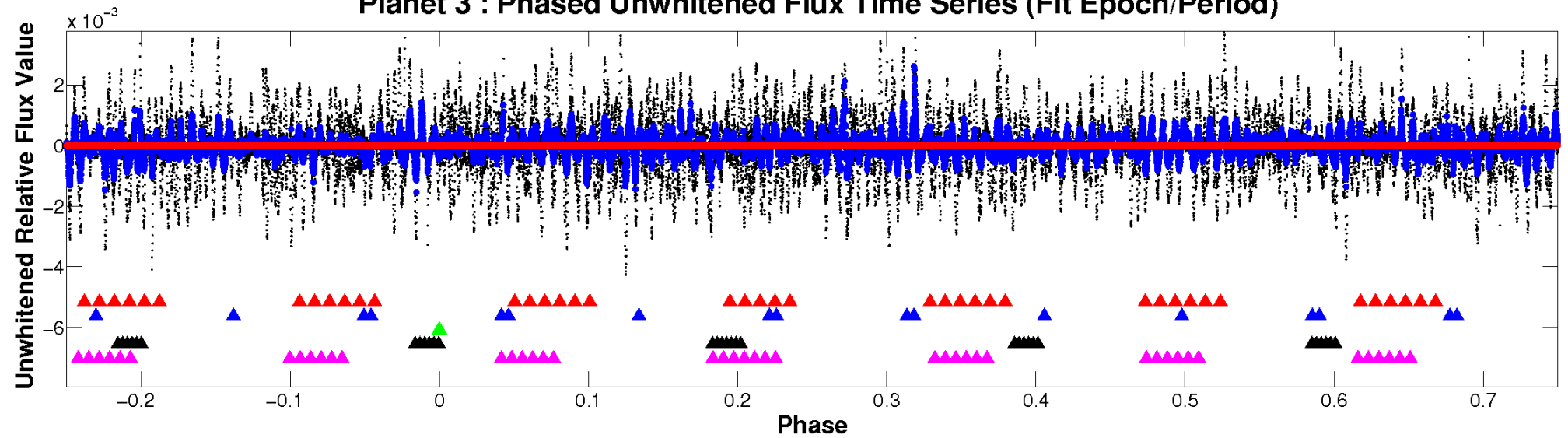
ALT Odd/Even

TCE 009636300-03

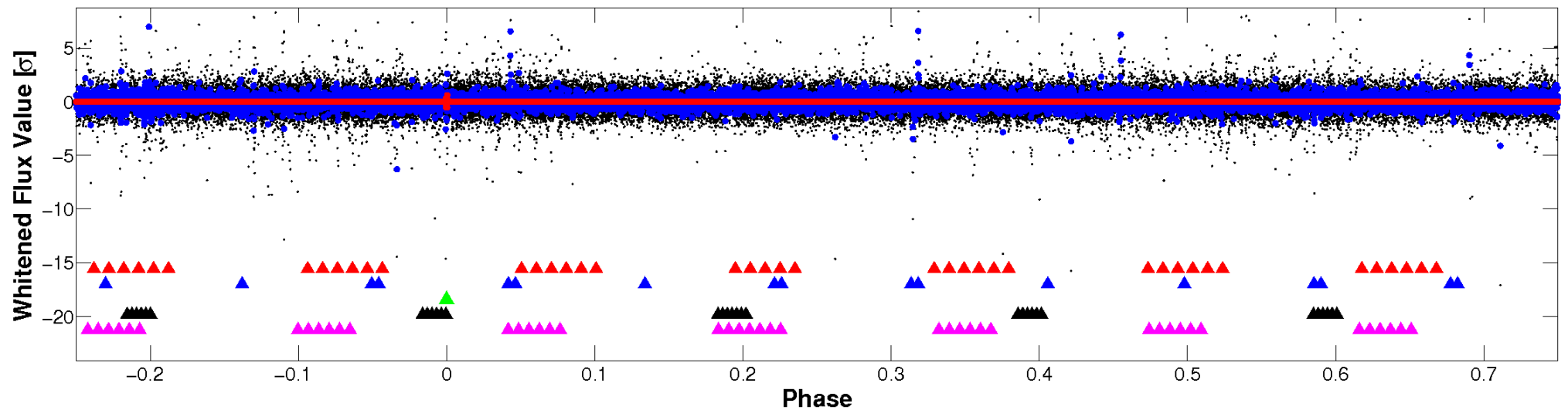


Non-Whitened Vs. Whitened Light Curve

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

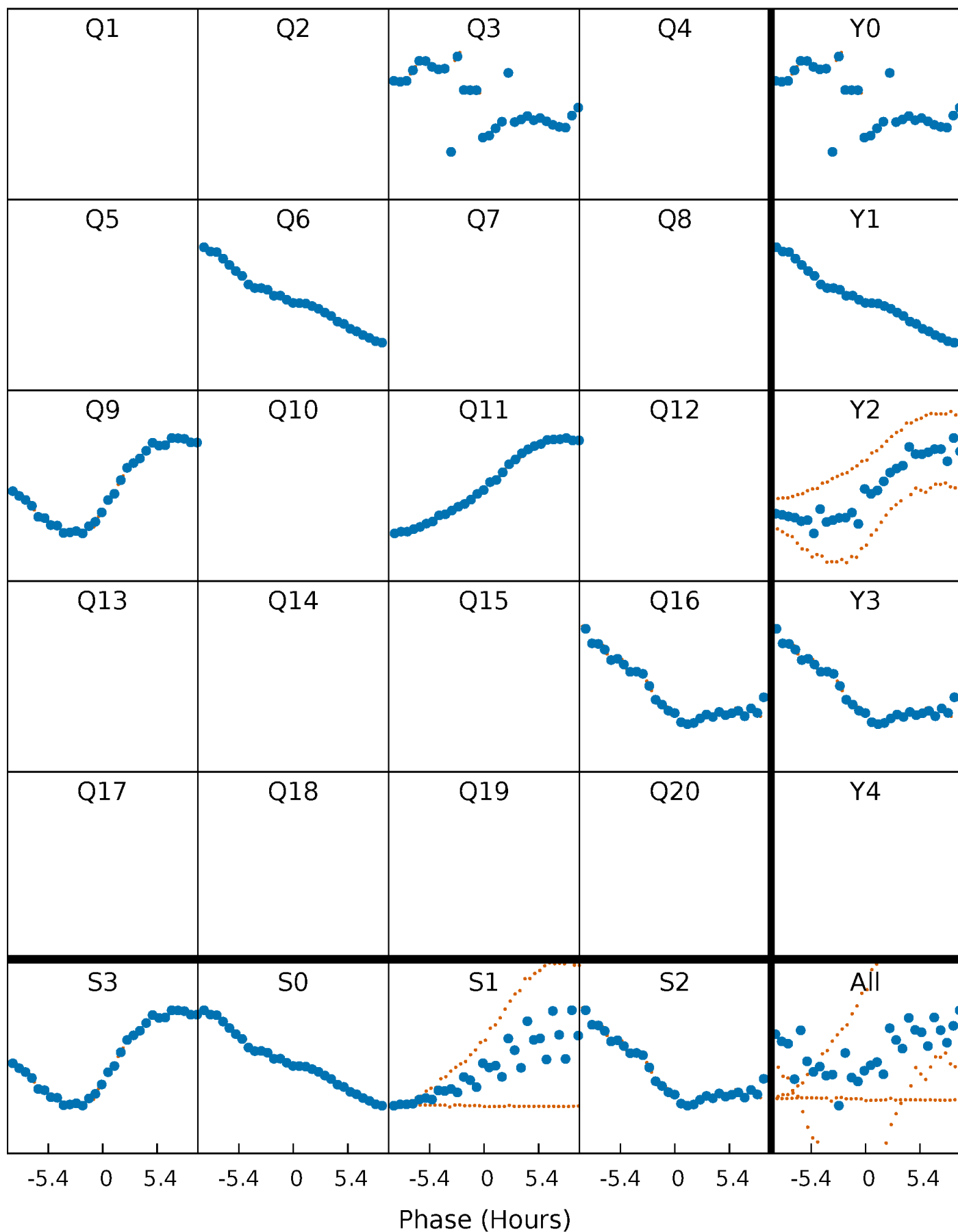


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



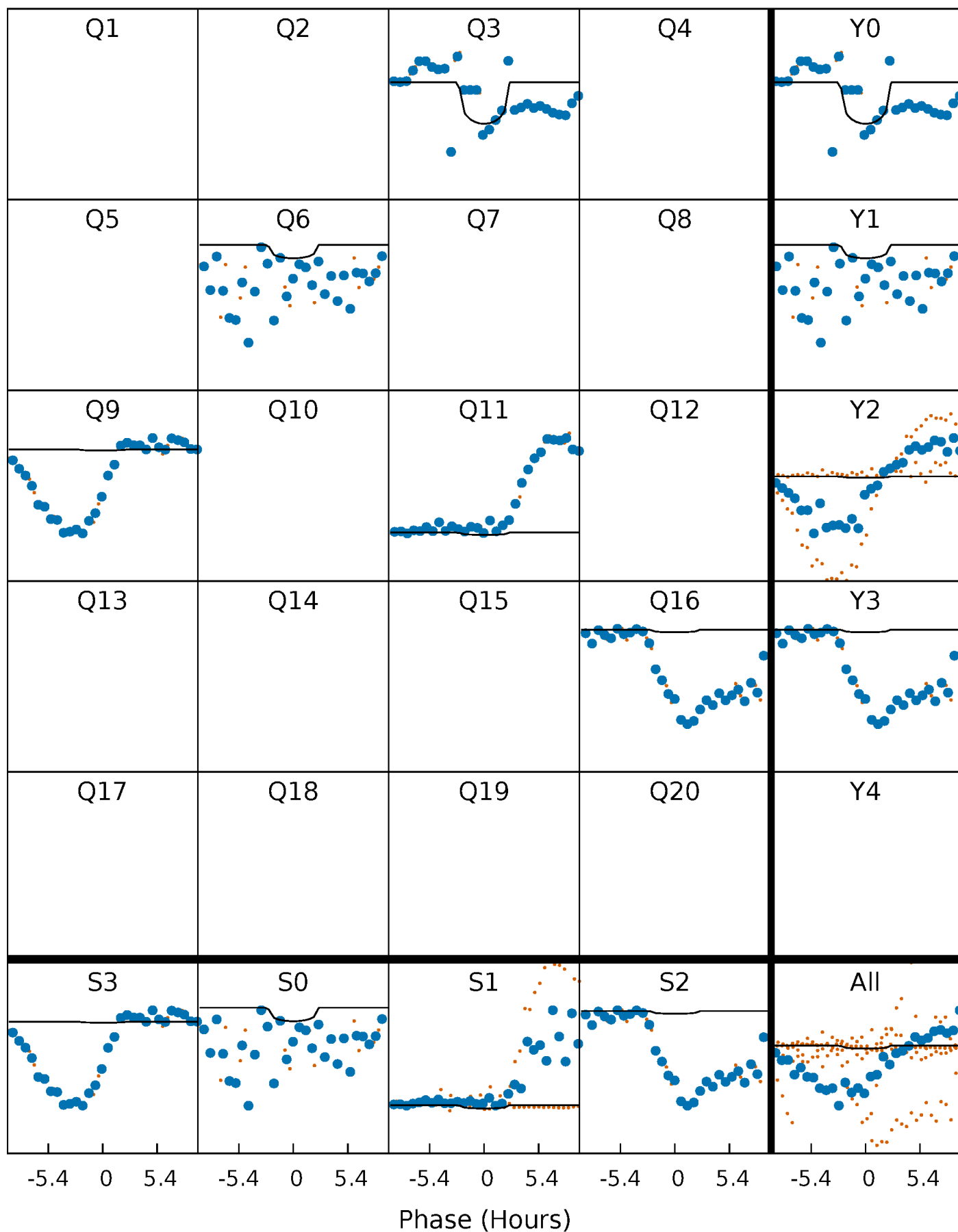
PDC Quarter-Phased Transit Curves

TCE 009636300-03 P=242.300585 Days $T_0=325.852795$ (BKJD)



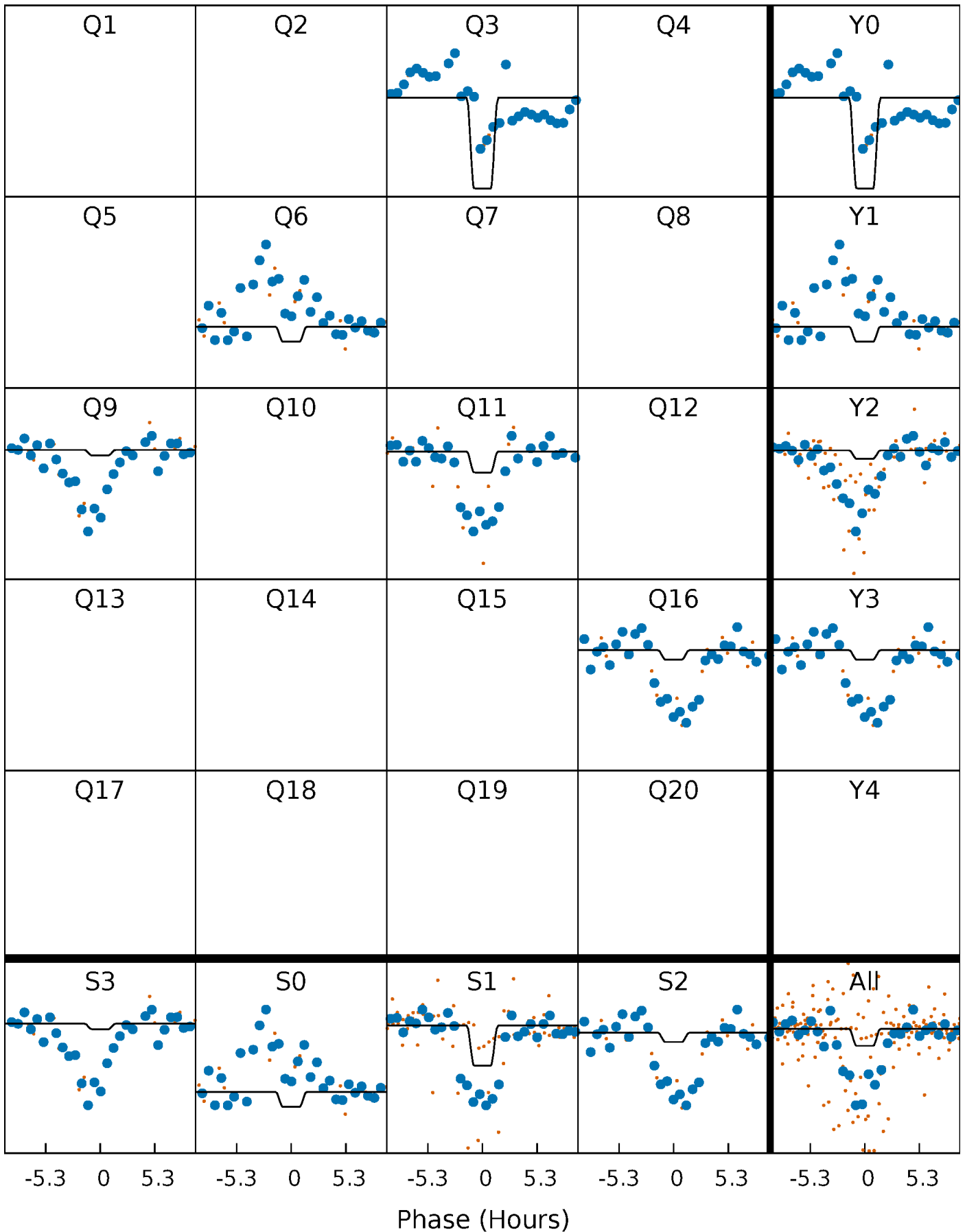
DV Quarter-Phased Transit Curves

TCE 009636300-03 P=242.300585 Days $T_0=325.852795$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

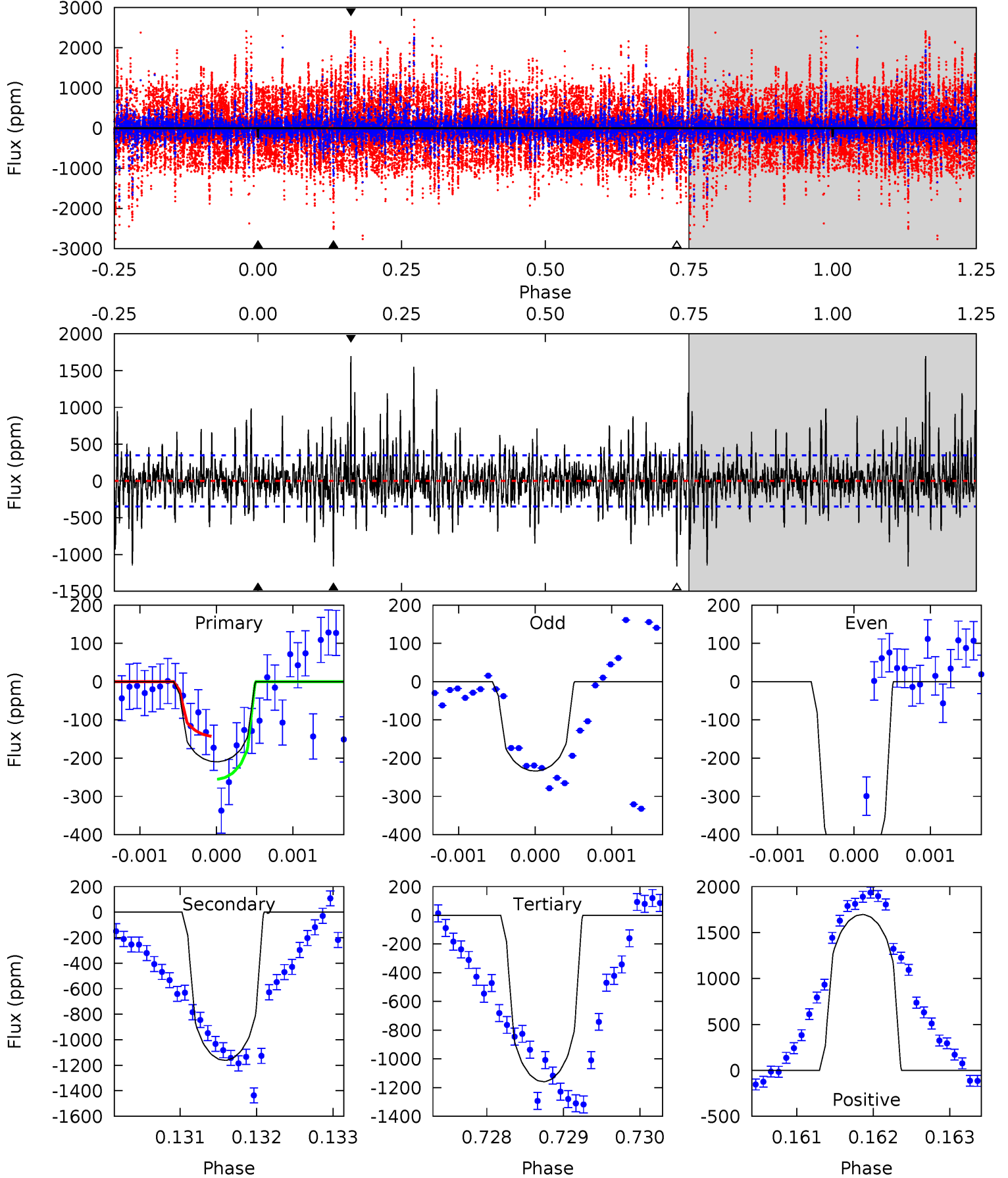
TCE 009636300-03 $P=242.295865$ Days $T_0=325.869058$ (BKJD)



DV Model-Shift Uniqueness Test

009636300-03, P = 242.300585 Days, E = 83.552210 Days

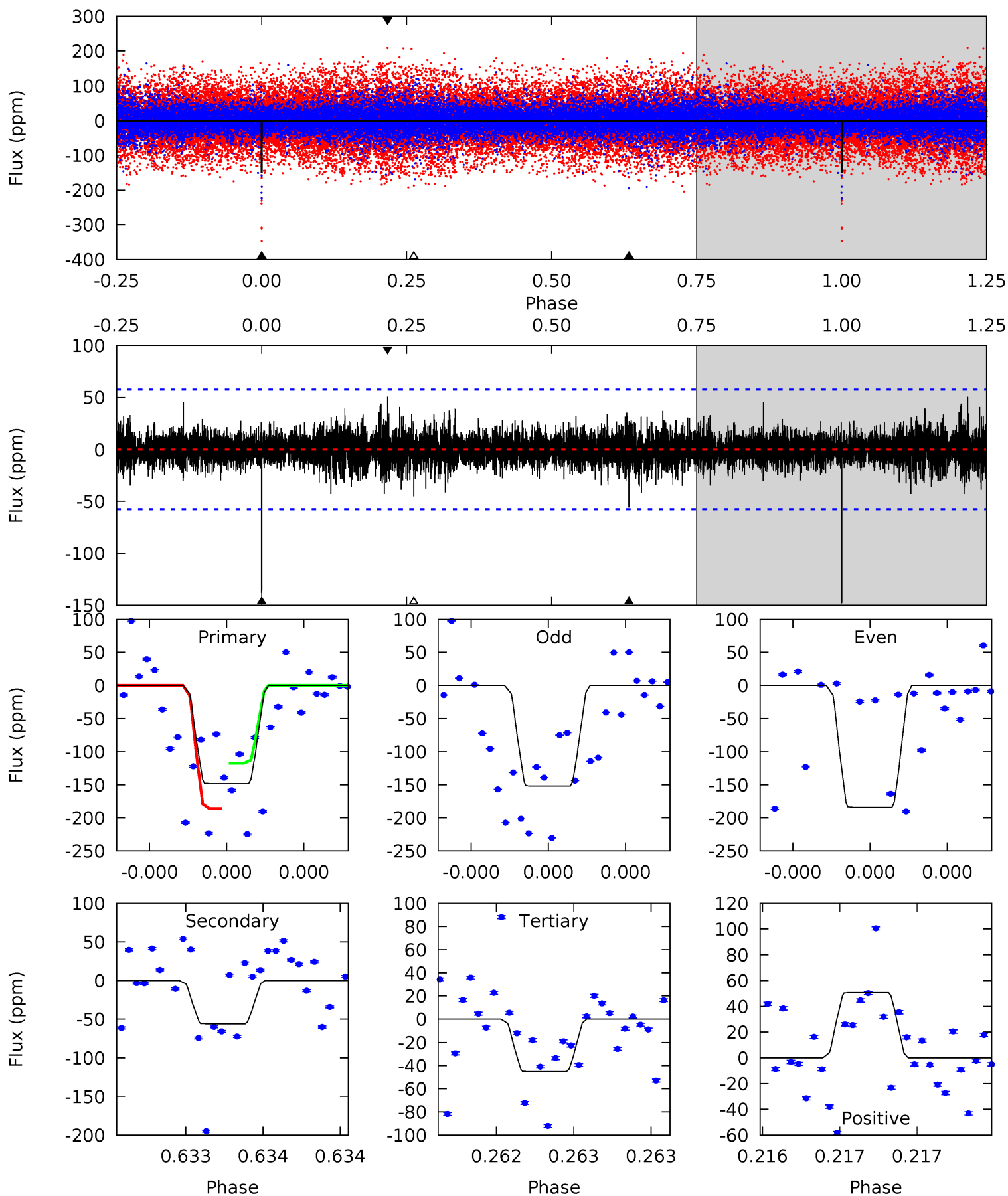
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.30	18.3	18.3	26.7	5.48	3.33	3.93	-15.0	-23.4	0.05	-8.42	1.65	4.71	0.59	0.90



Alt Model-Shift Uniqueness Test

009636300-03, P = 242.295865 Days, E = 83.573193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	5.42	4.38	4.91	5.57	3.48	0.96	9.98	9.45	1.05	0.52	1.46	1.10	0.25	0



Stellar Parameters For KIC 009636300

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4301^{+65}_{-45}	$1.682^{+0.027}_{-0.030}$	$-0.420^{+0.150}_{-0.100}$	$22.308^{+5.536}_{-0.615}$	$0.873^{+0.479}_{-0.024}$	$0.000^{+0.000}_{-0.000}$
	+2%/-1%	+2%/-2%	+36%/-24%	+25%/-3%	+55%/-3%	+9%/-23%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009636300-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1162 ± 63	$14.34^{+7.12}_{-6.99}$	1469^{+32}_{-22}	11100^{+9345}_{-2753}	1629^{+4363}_{-863}
Alt.	-56 ± 10	$15.66^{+7.78}_{-7.09}$	1470^{+29}_{-22}	4539^{+1402}_{-622}	64^{+159}_{-35}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

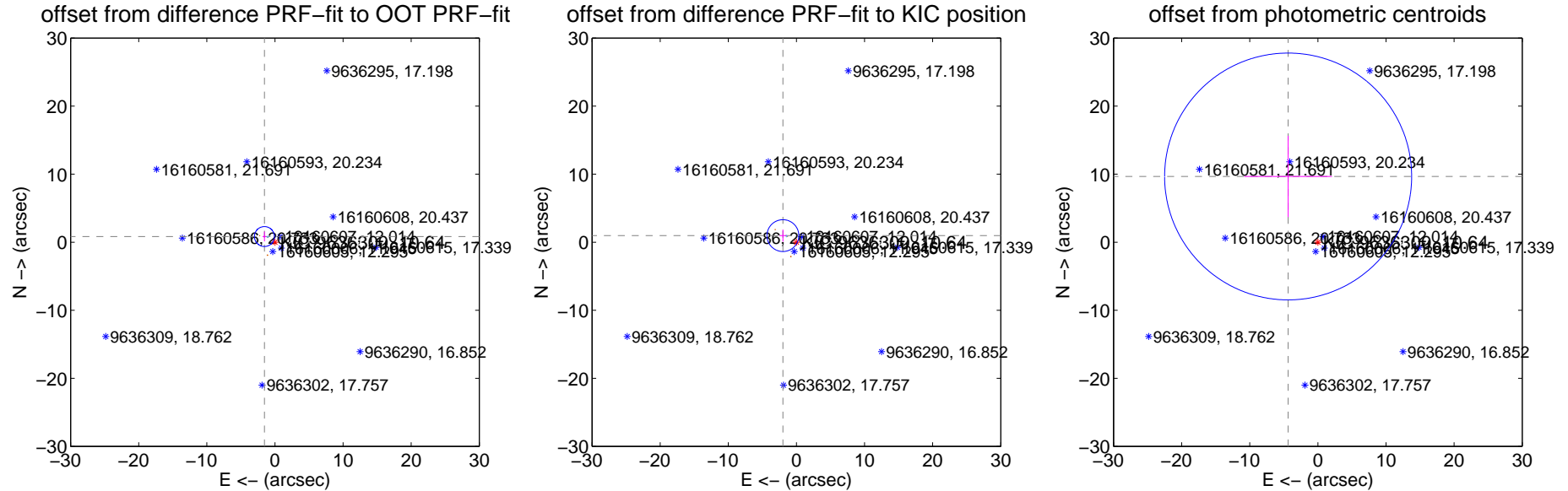
DV Centroid Data

Supplemental centroid analysis for 009636300-03. **Kepler magnitude: 10.64.** Transit SNR 4.02

There are 1 quarters with good PRF difference image offsets

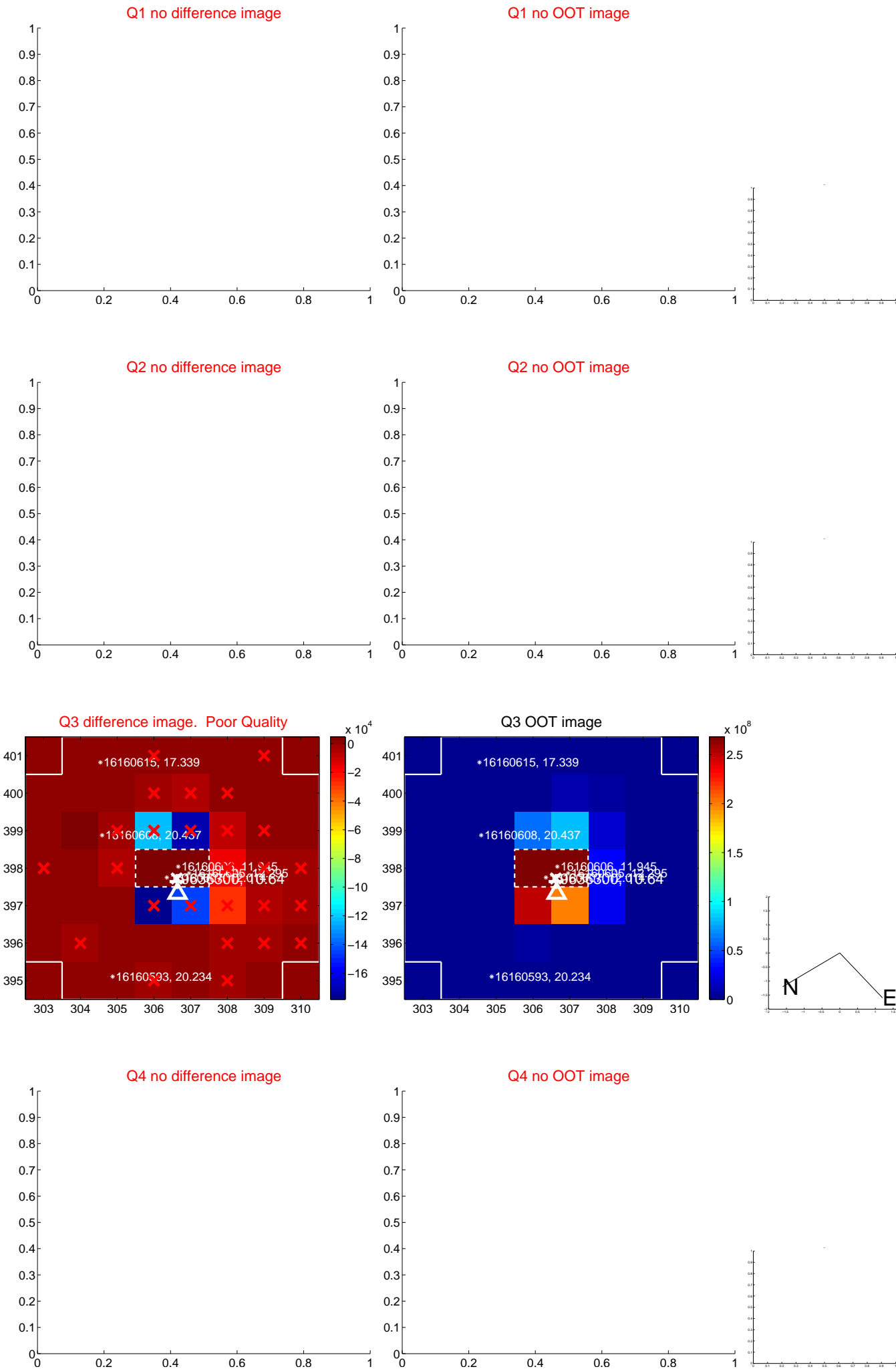
The direct PRF centroid is offset from the target star catalog position by about 1.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.757 \pm 0.488	3.60	1.546 \pm 0.275	0.833 \pm 0.716
PRF-fit source offset from KIC position	2.208 \pm 0.779	2.83	1.984 \pm 0.505	0.970 \pm 0.889
photometric centroid source offset	10.60 \pm 6.04	1.75	4.37 \pm 6.44	9.66 \pm 5.96



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

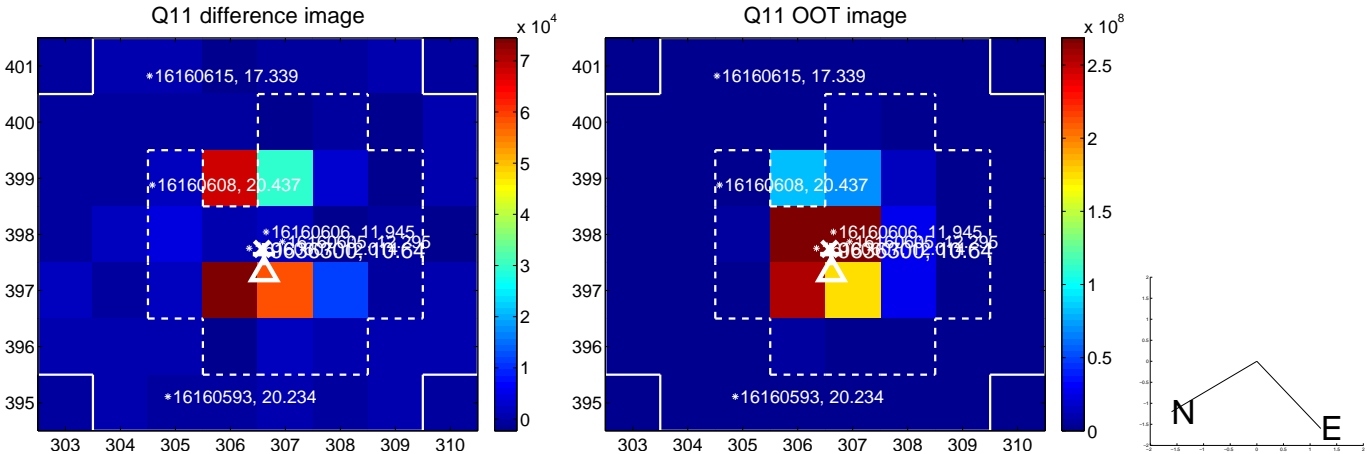
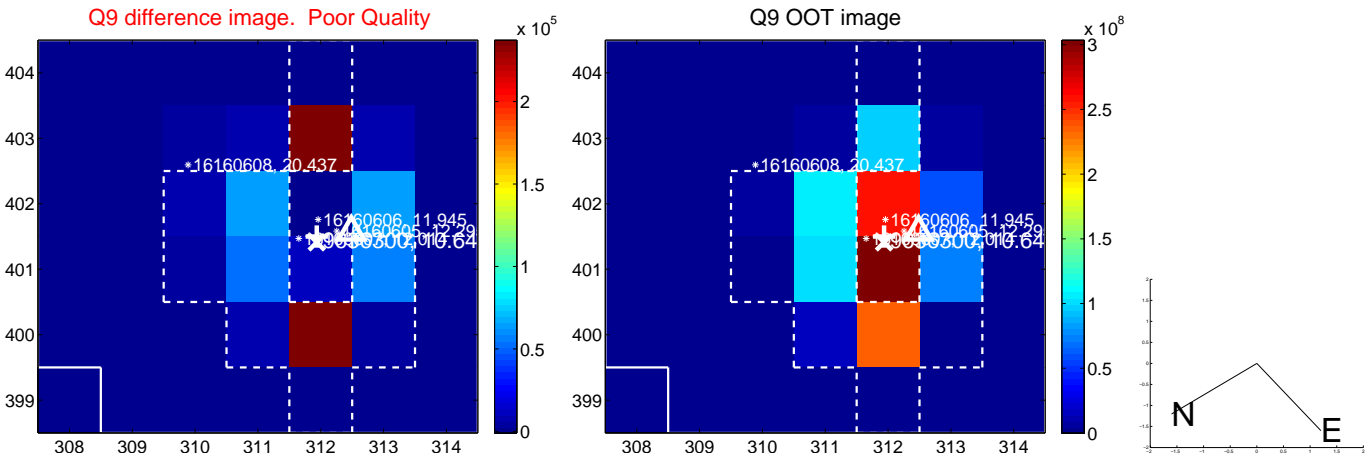
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



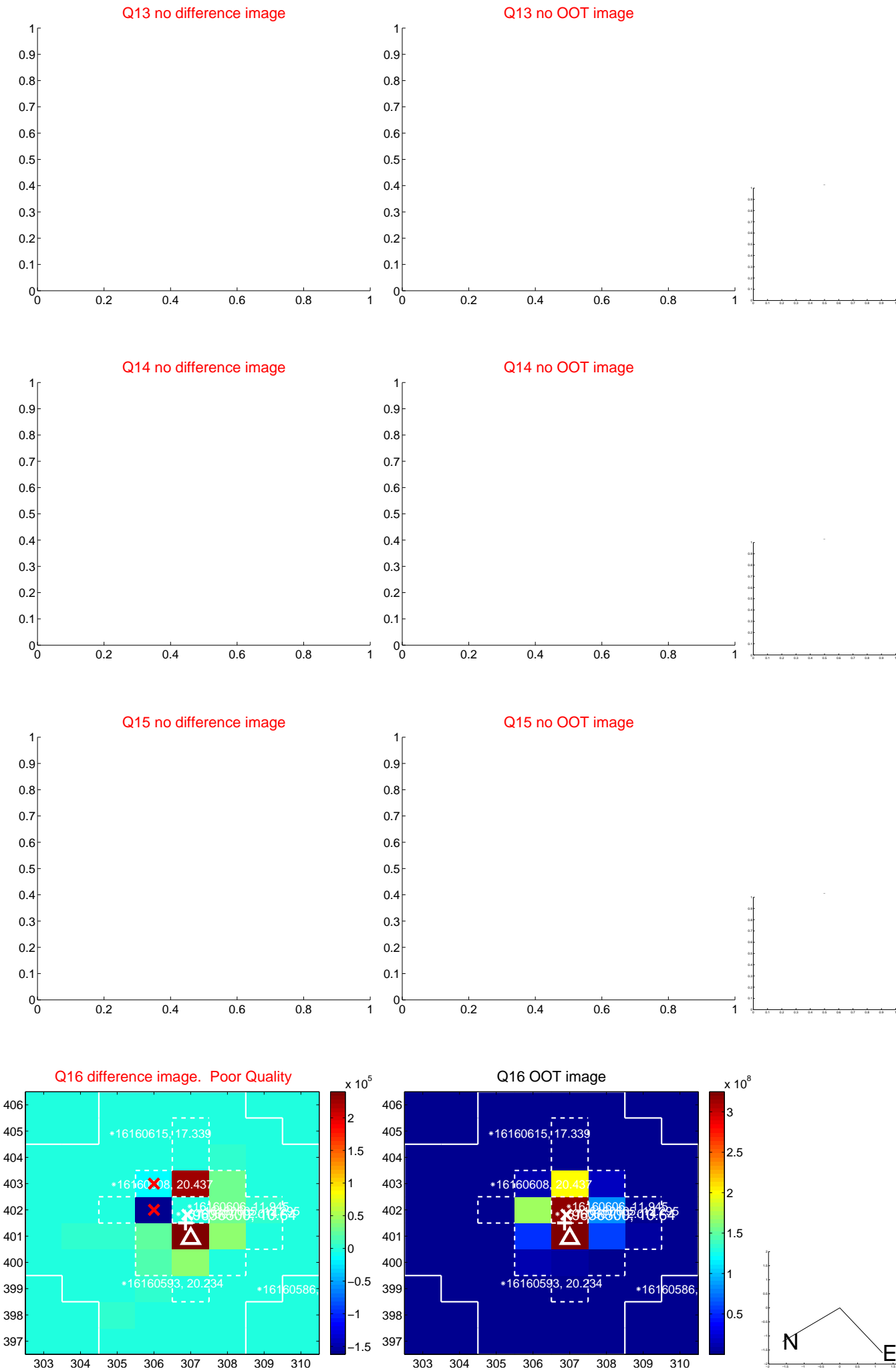
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



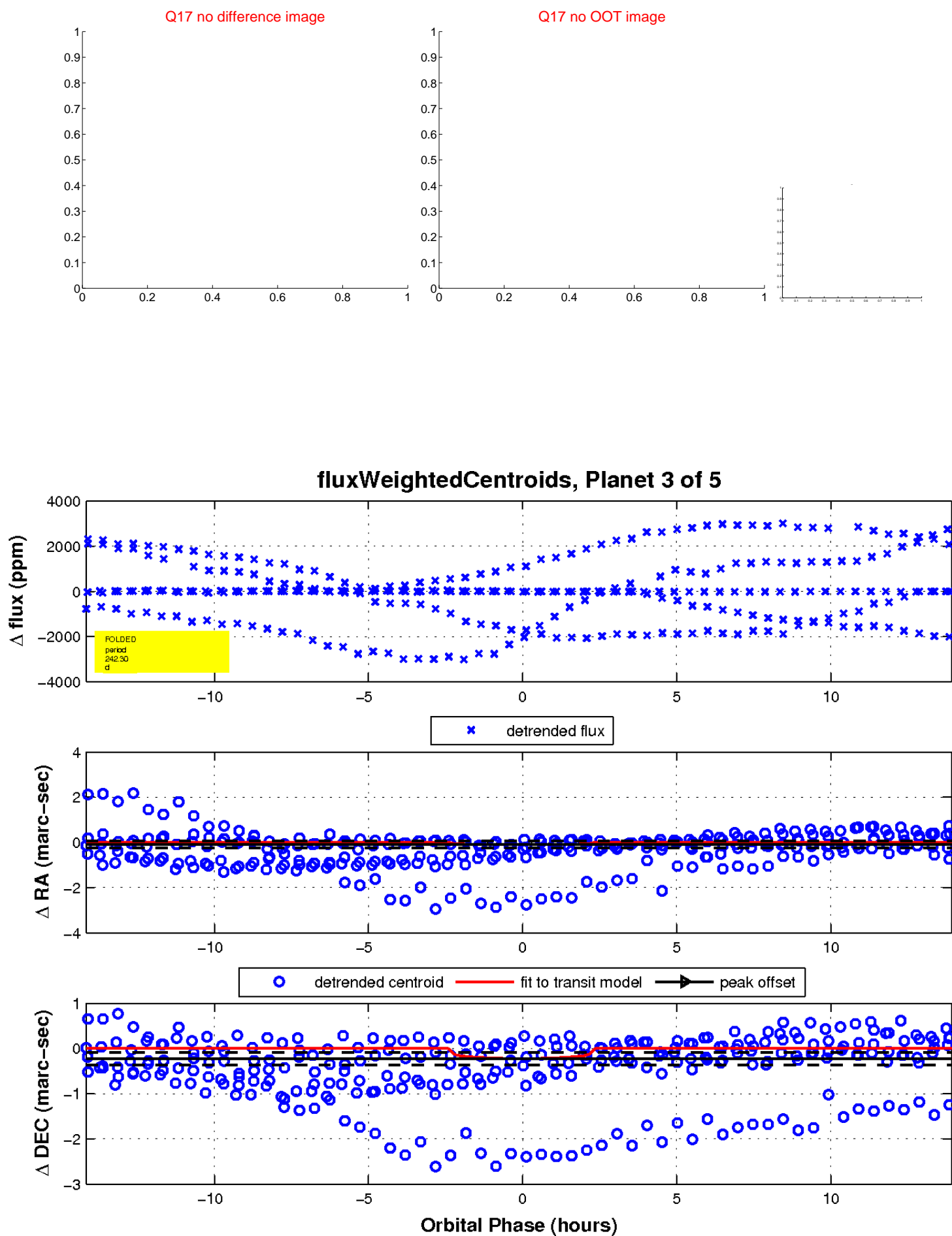
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

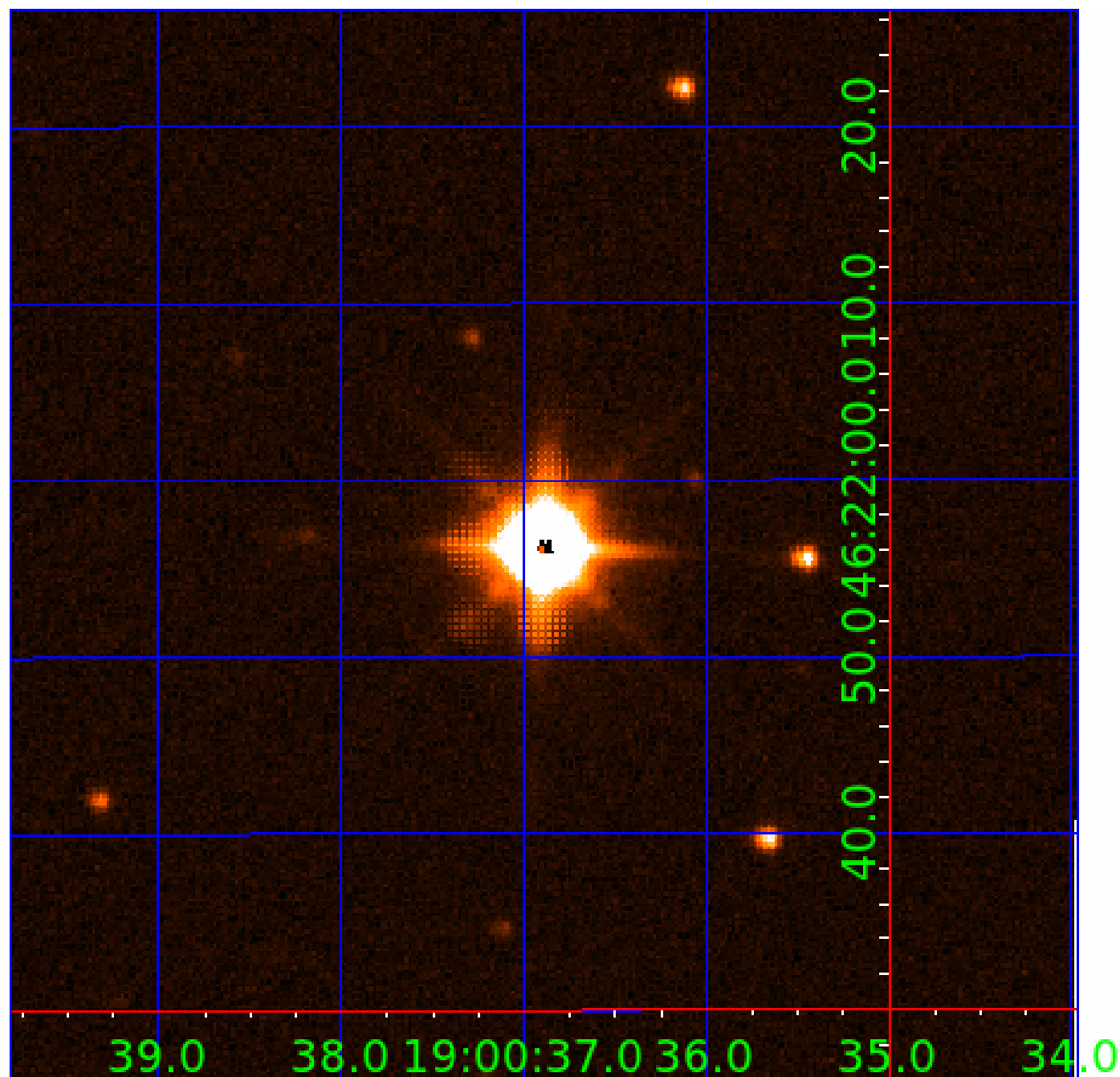


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009636300

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})
009636300-01	OBS	No	34.962878	163.293059	26.6	1.526	14.2	12.9	22.31	4301	14.35	3813.61
009636300-02	OBS	No	88.213383	137.181151	44.2	12.376	10.9	8.6	22.31	4301	17.56	1110.28
009636300-03	OBS	No	242.300585	325.852795	23.6	4.732	10.8	4.0	22.31	4301	13.41	288.63
009636300-04	OBS	No	48.307873	132.510716	24.2	0.804	9.6	6.0	22.31	4301	13.87	2478.12
009636300-05	OBS	No	34.372299	138.174315	26.2	1.286	9.3	11.7	22.31	4301	12.87	3901.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009636300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009636300-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
009636300-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-05	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

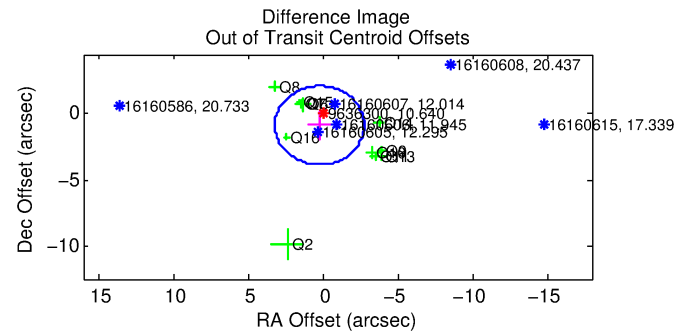
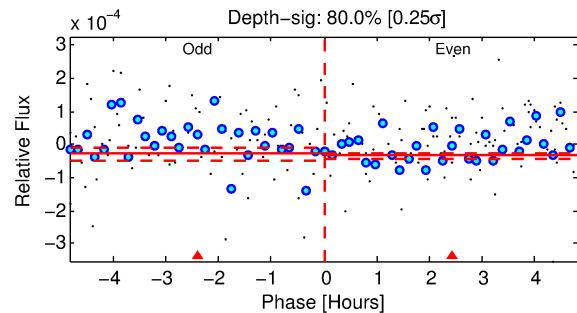
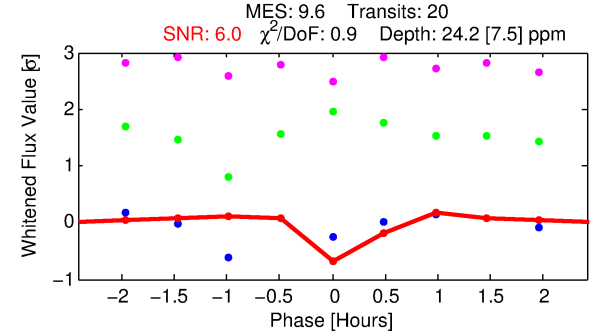
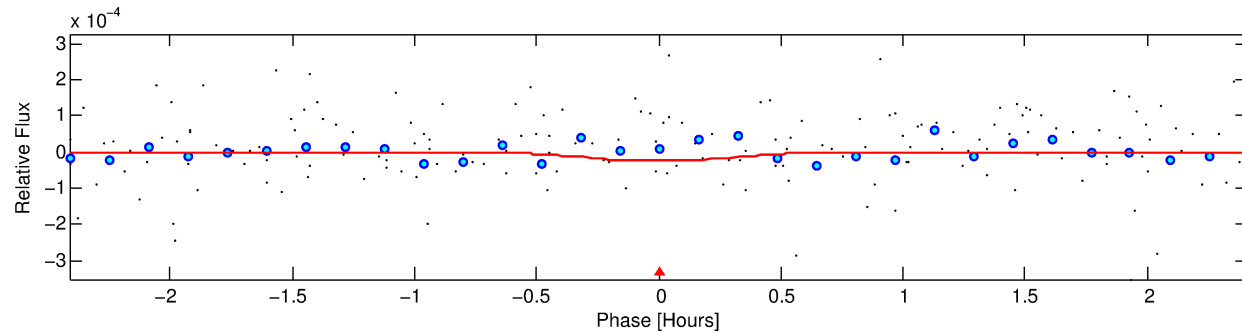
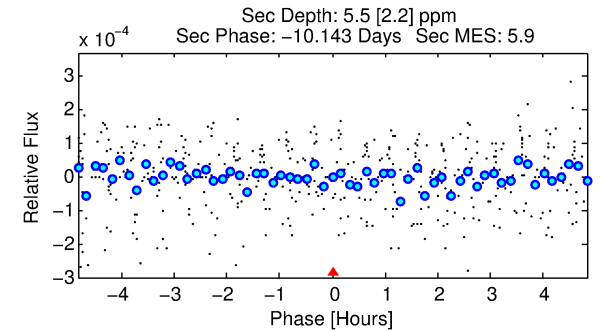
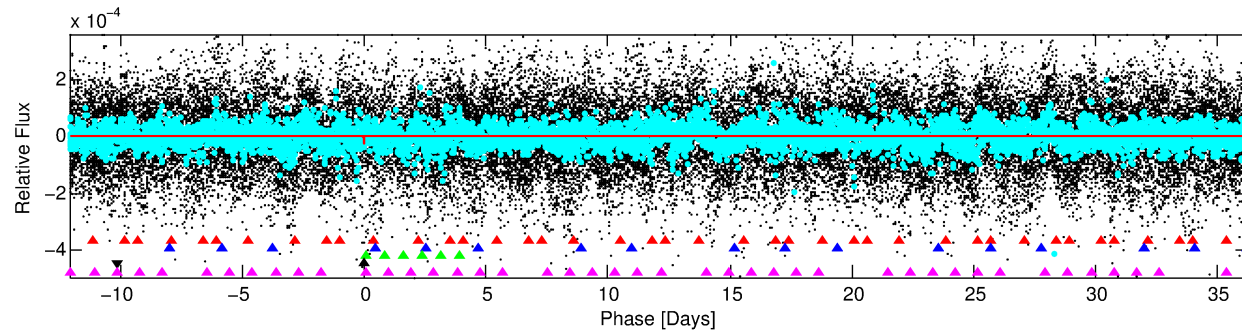
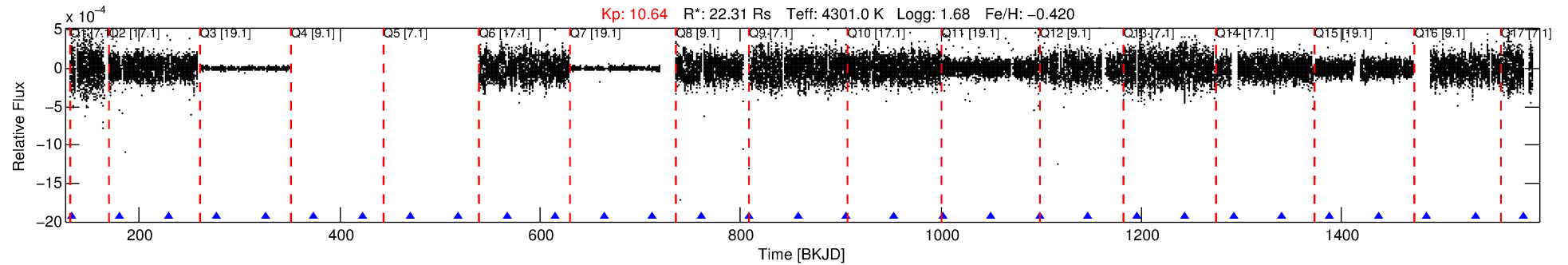
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009636300-04

No Significant Match Found

DV One-Page Summary

KIC: 9636300 Candidate: 4 of 5 Period: 48.308 d



DV Fit Results:

Period = 48.30787 [0.00039] d
Epoch = 132.5107 [0.0042] BKJD
Rp/R* = 0.0057 [0.0034]
a/R* = 206.82 [345.13]
b = 0.90 [0.38]
Seff = 2478.12 [451.17]
Teq = 1799 [82] K
Rp = 13.87 [8.93] Re
a = 0.2481 [0.0414] AU
Ag = 0.97 [1.23] [-0.02σ]
Teffp = 2763 [867] K [1.11σ]

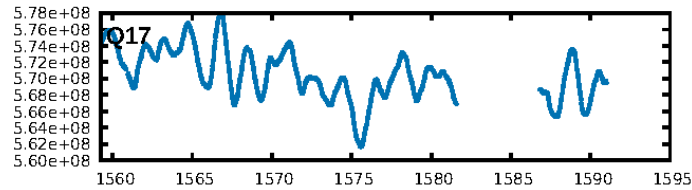
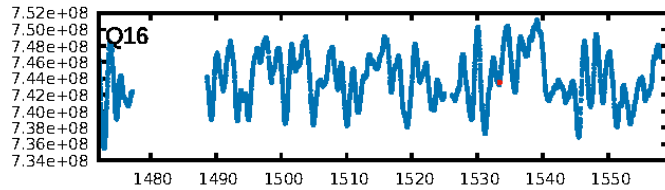
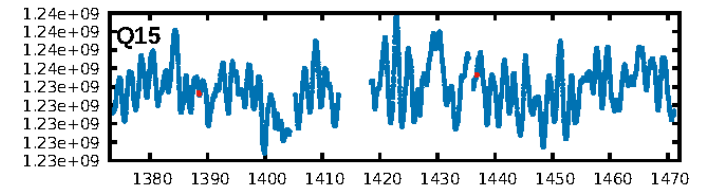
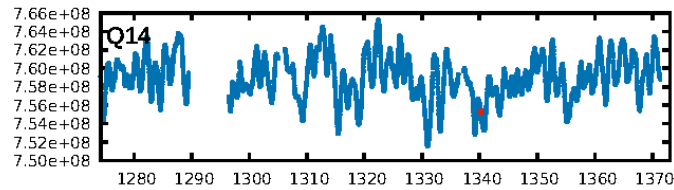
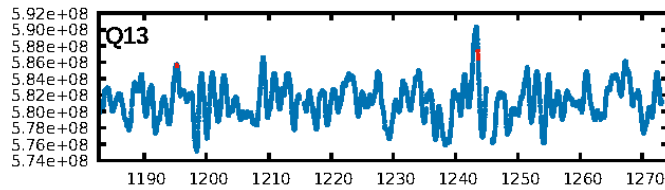
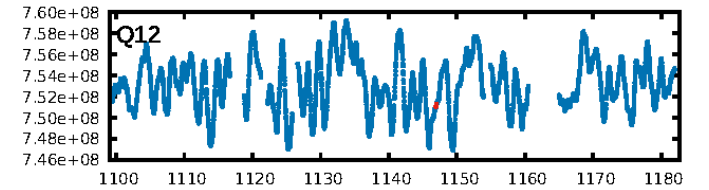
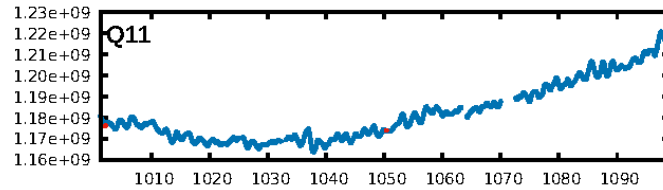
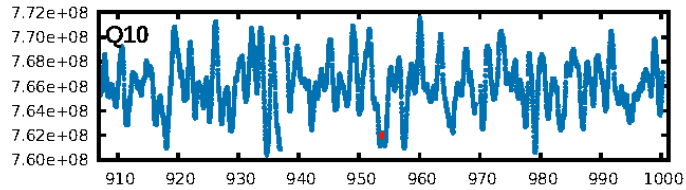
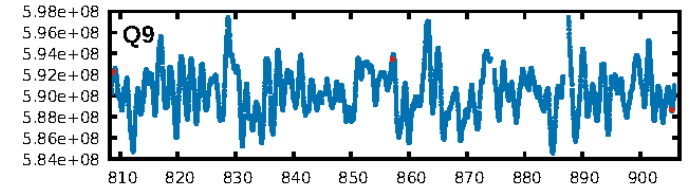
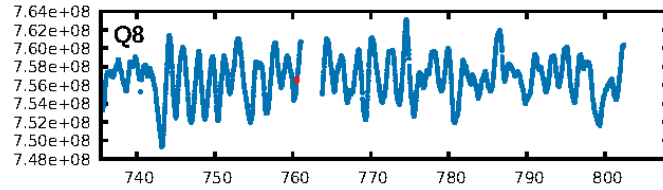
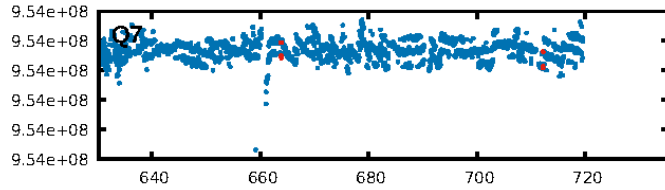
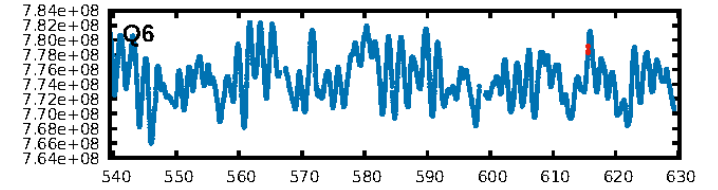
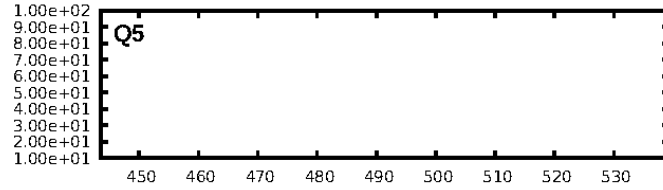
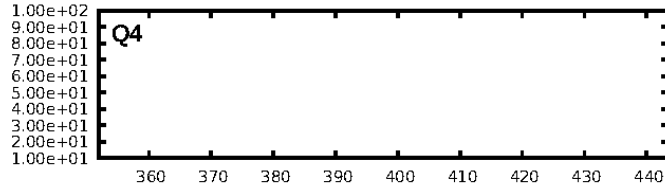
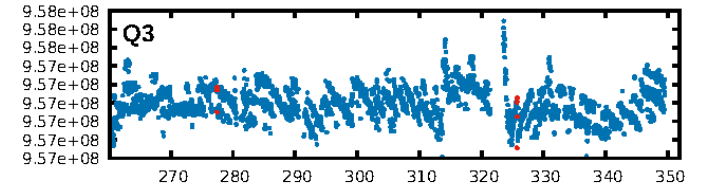
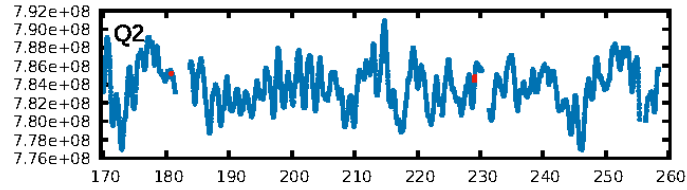
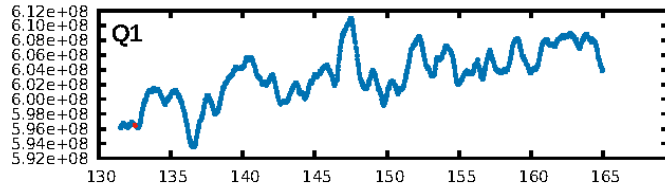
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [185.75σ]
LongPeriod-sig: 100.0% [77.22σ]
ModelChiSquare2-sig: 91.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.48e-10
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: -1.882
Centroid-sig: 14.1%
Centroid-so: 4.698 arcsec [1.07σ]
OotOffset-rm: 0.899 arcsec [0.90σ]
KicOffset-rm: 0.857 arcsec [0.94σ]
OotOffset-st: 4/3/2/2 [11]
KicOffset-st: 4/3/2/2 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 1.00 [14/14]

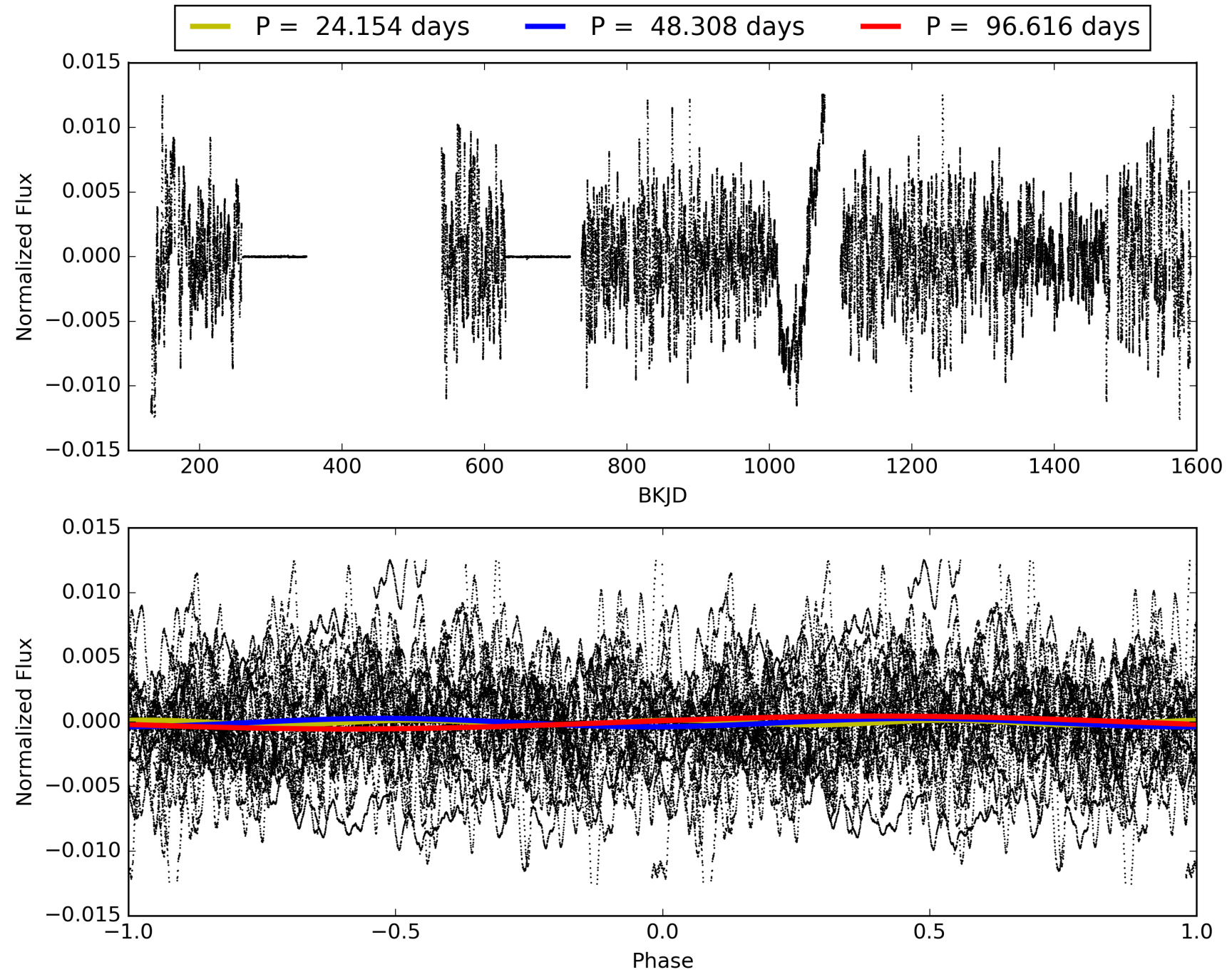
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:00:38 Z

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

TCE 009636300-04, PDC Light Curves

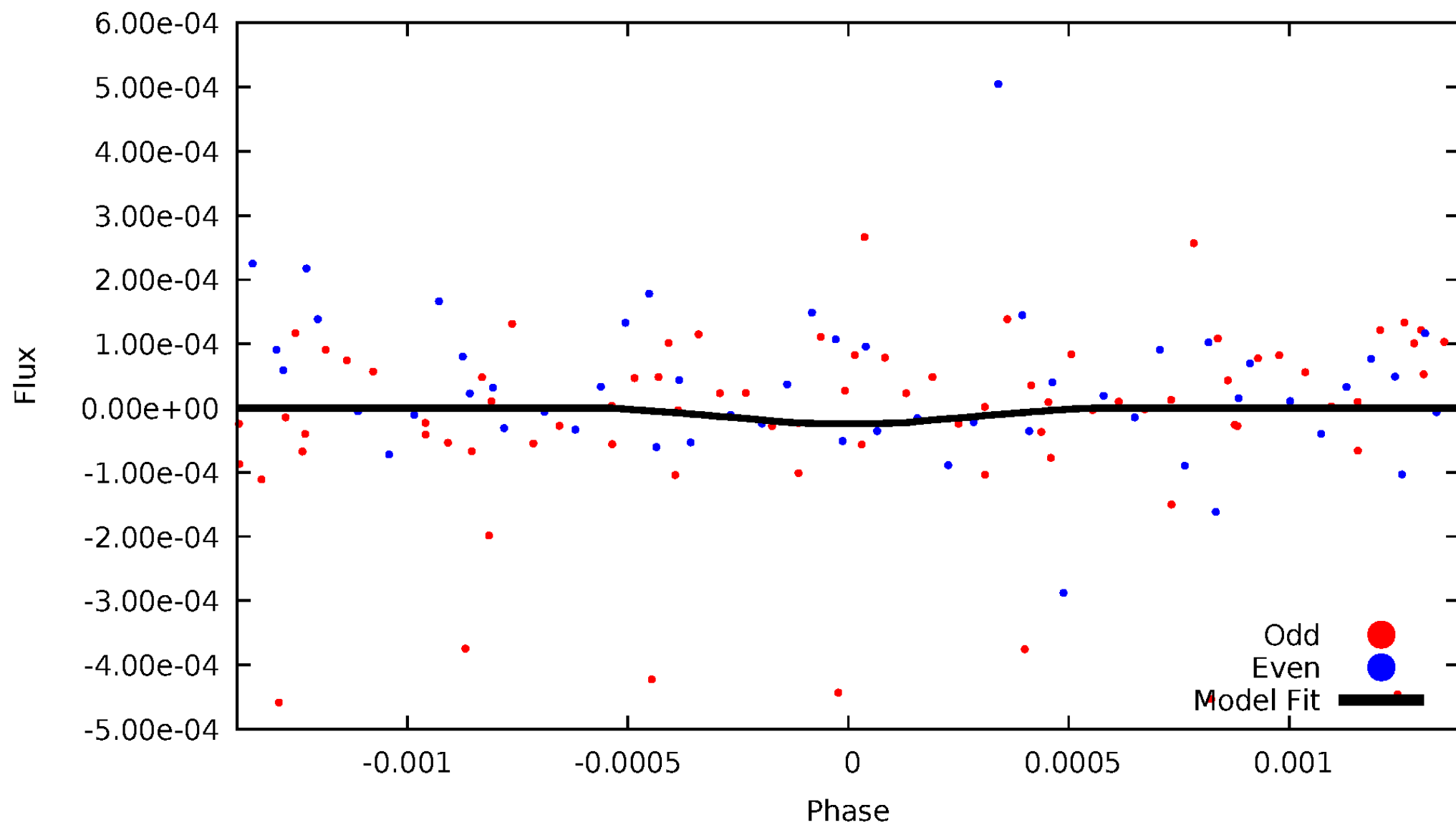


TCE 009636300-04



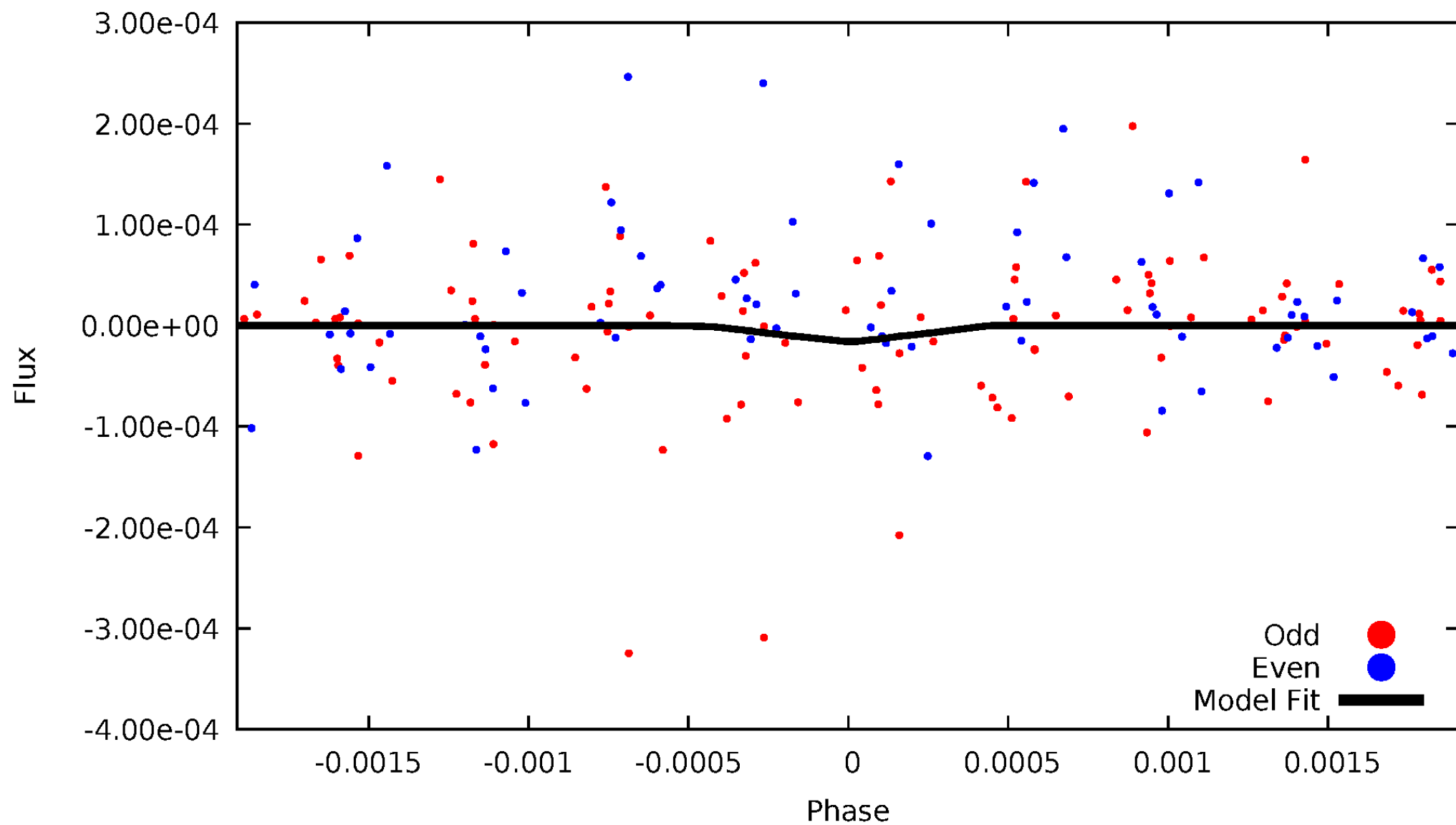
DV Odd/Even

TCE 009636300-04



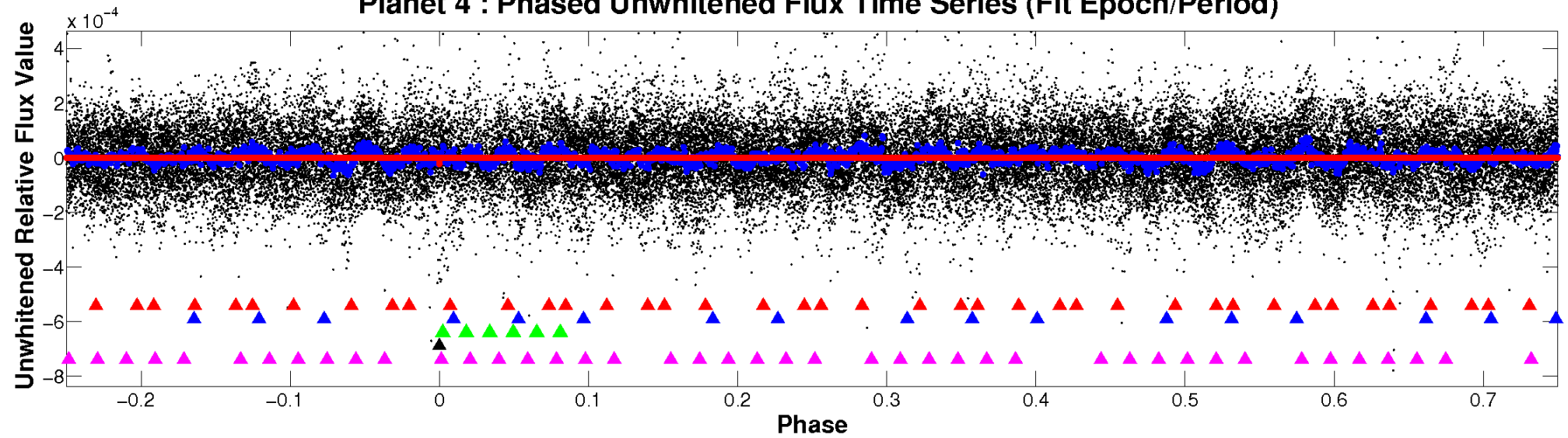
ALT Odd/Even

TCE 009636300-04

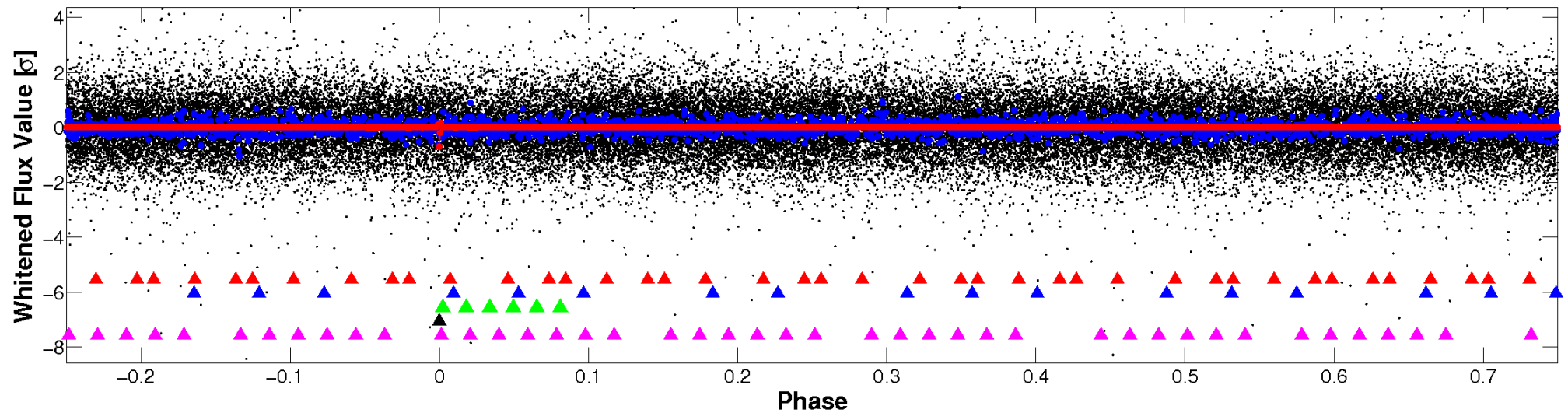


Non-Whitened Vs. Whitened Light Curve

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

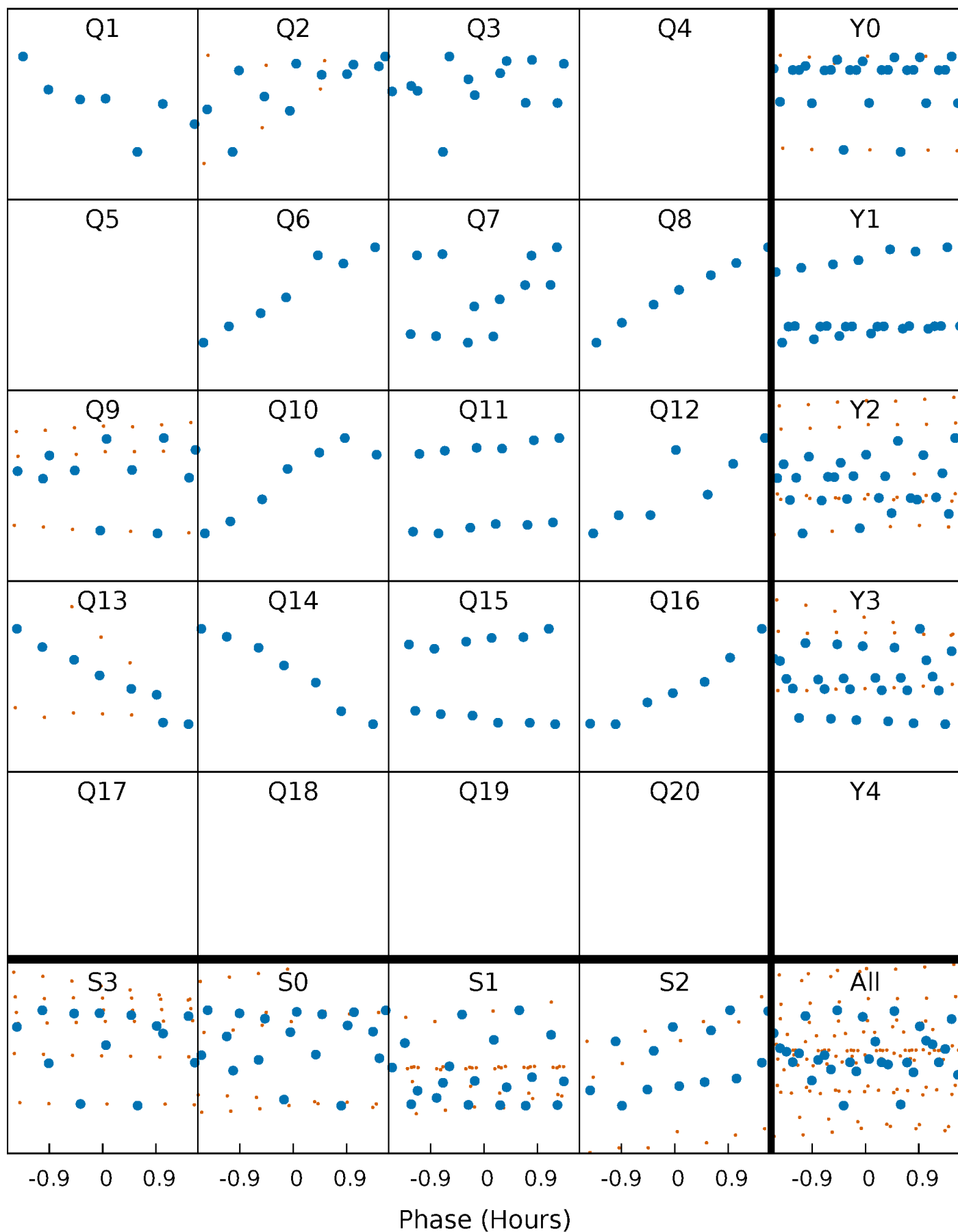


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



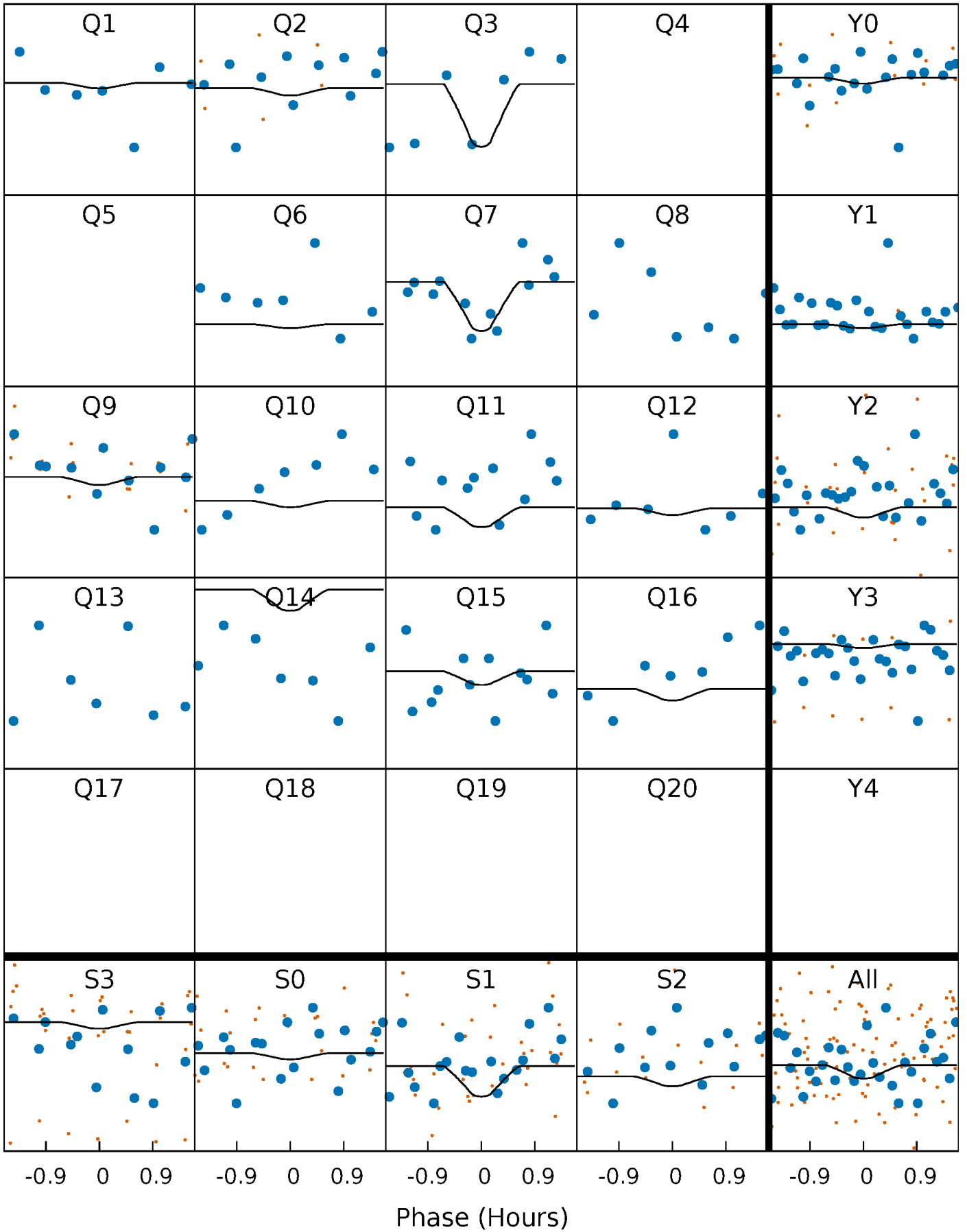
PDC Quarter-Phased Transit Curves

TCE 009636300-04 P= 48.307873 Days $T_0=132.510716$ (BKJD)



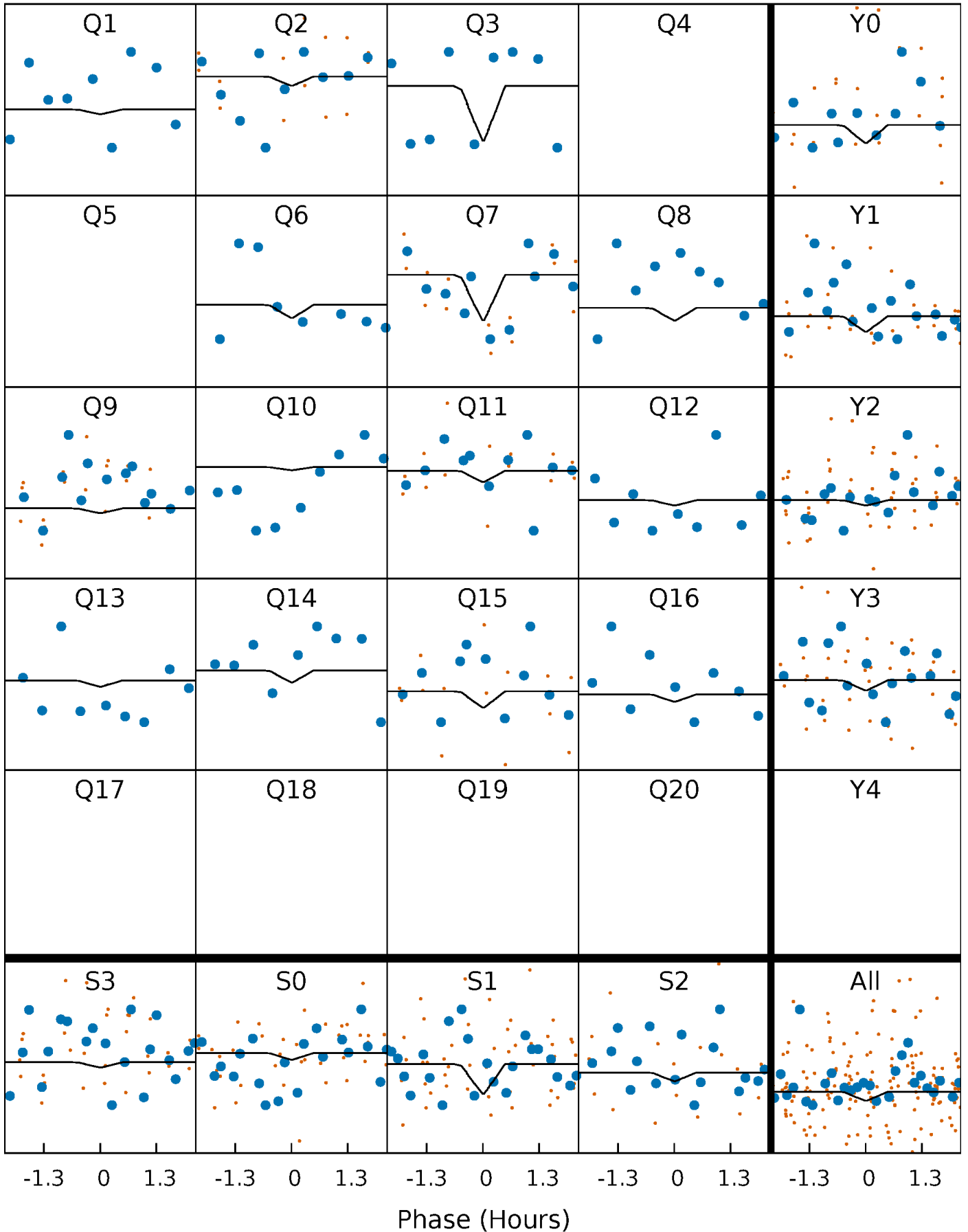
DV Quarter-Phased Transit Curves

TCE 009636300-04 $P = 48.307873$ Days $T_0 = 132.510716$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

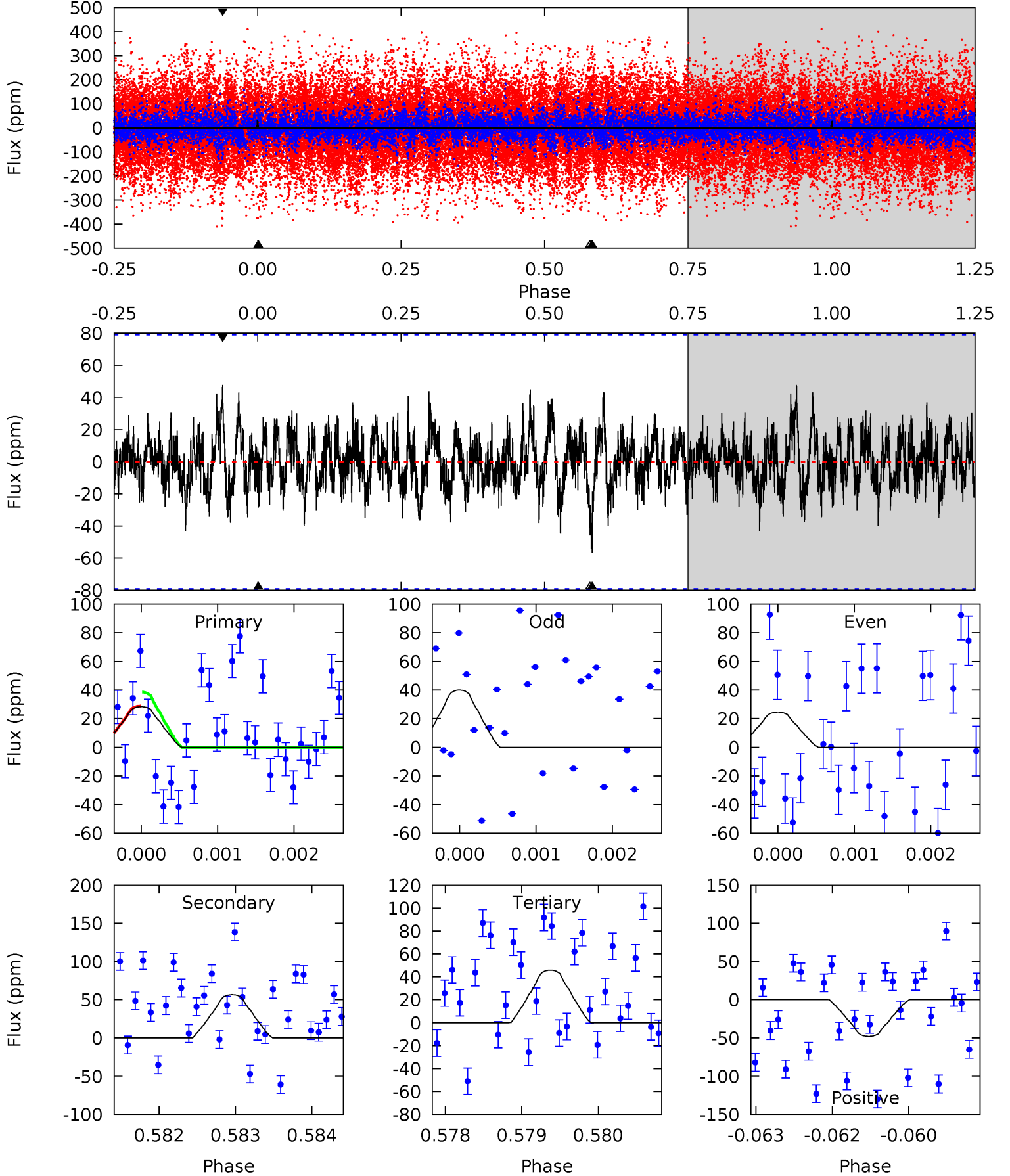
TCE 009636300-04 P= 48.305360 Days $T_0=132.522287$ (BKJD)



DV Model-Shift Uniqueness Test

009636300-04, P = 48.307873 Days, E = 84.202843 Days

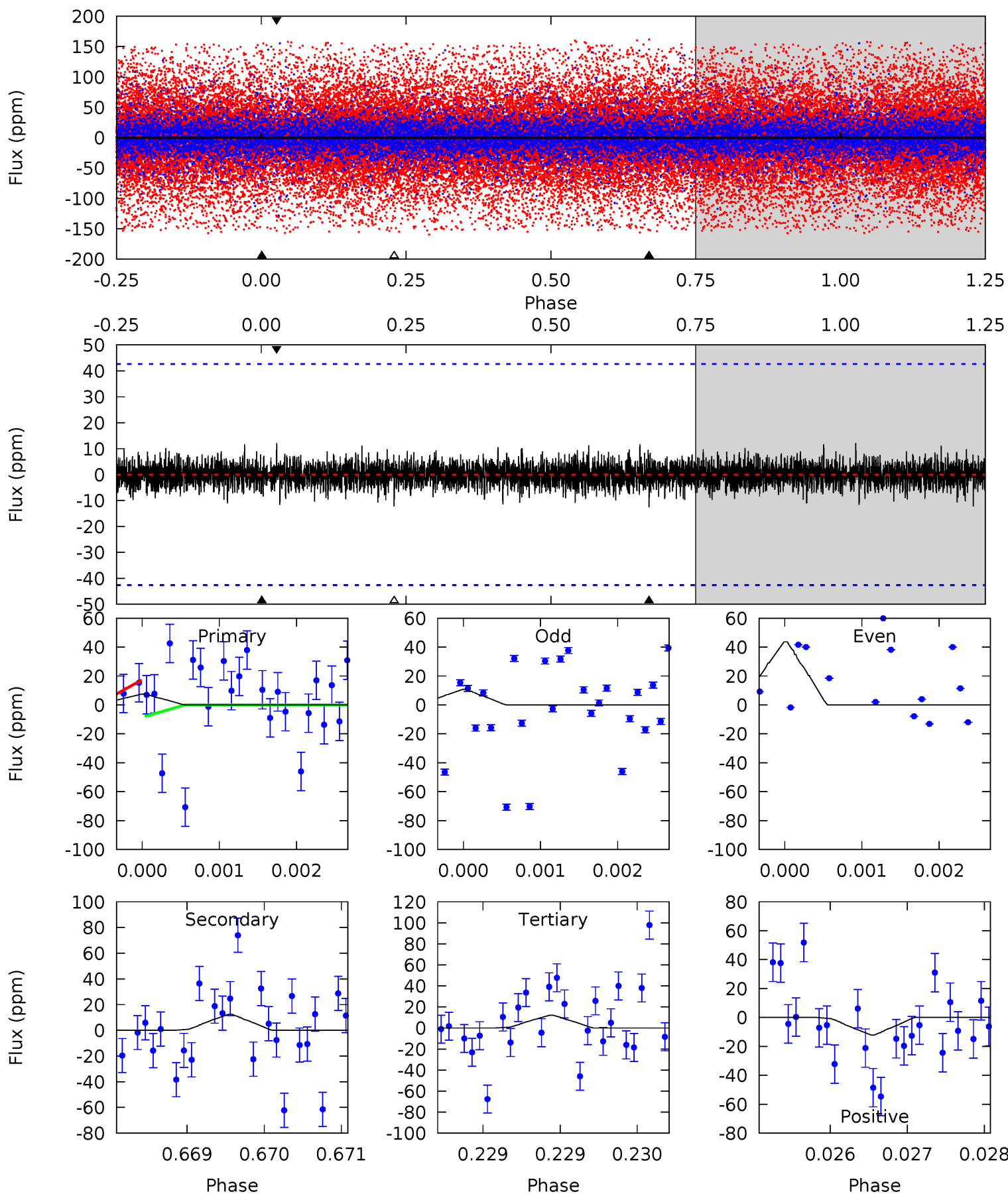
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.95	3.90	3.15	3.29	5.44	3.28	0.98	-1.20	-1.34	0.74	0.61	0.52	0.52	0.46	0.33



Alt Model-Shift Uniqueness Test

009636300-04, P = 48.305360 Days, E = 84.216927 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.96	1.61	1.57	1.56	5.49	3.35	0.42	-0.61	-0.60	0.04	0.05	2.07	0.42	0.49	0.59



Stellar Parameters For KIC 009636300

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4301^{+65}_{-45}	$1.682^{+0.027}_{-0.030}$	$-0.420^{+0.150}_{-0.100}$	$22.308^{+5.536}_{-0.615}$	$0.873^{+0.479}_{-0.024}$	$0.000^{+0.000}_{-0.000}$
	+2%/-1%	+2%/-2%	+36%/-24%	+25%/-3%	+55%/-3%	+9%/-23%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009636300-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-57 ± 15	$14.02^{+8.25}_{-7.51}$	2515^{+46}_{-40}	4746^{+2137}_{-814}	$9.749^{+35.393}_{-6.087}$
Alt.	-13 ± 8	$11.33^{+7.43}_{-6.72}$	2513^{+47}_{-36}	3760^{+1634}_{-973}	$2.931^{+14.785}_{-2.270}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

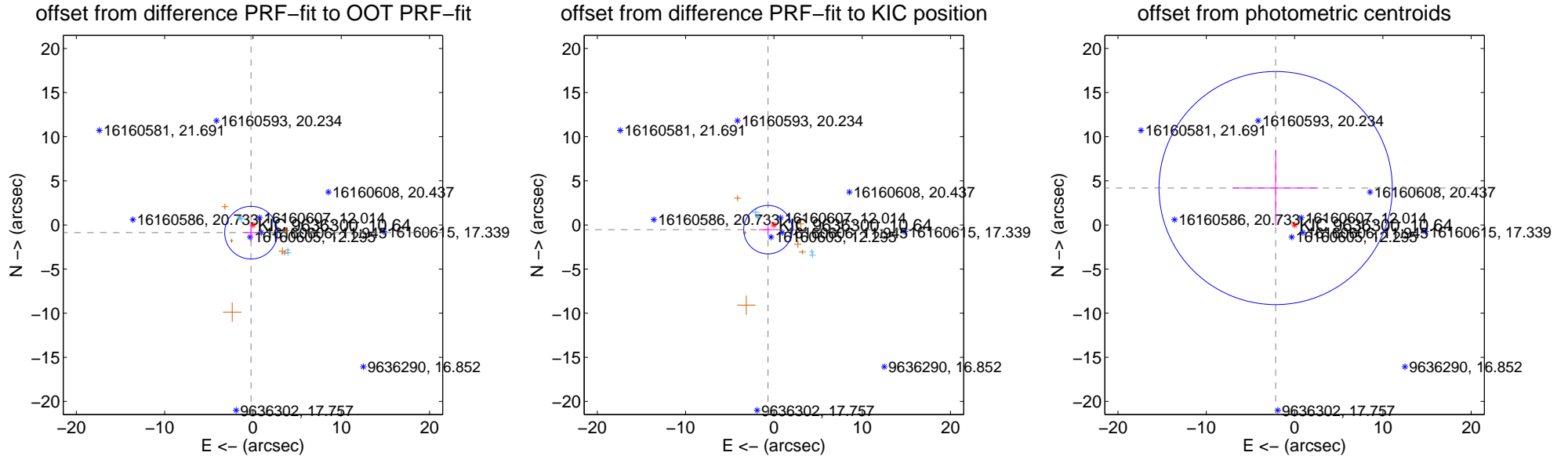
DV Centroid Data

Supplemental centroid analysis for 009636300-04. **Kepler magnitude: 10.64**. Transit SNR 6.03

There are 5 quarters with good PRF difference image offsets

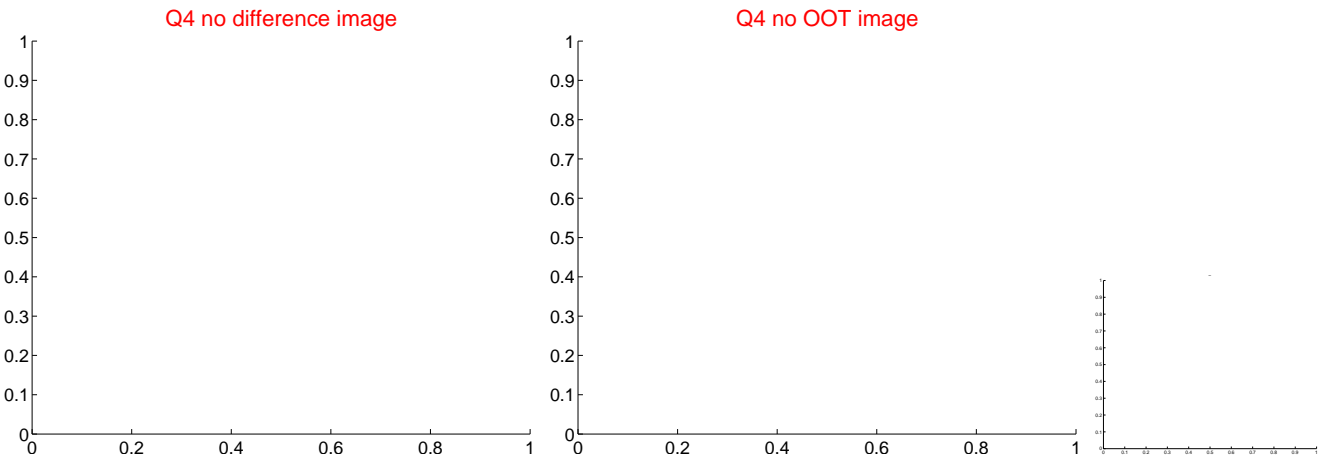
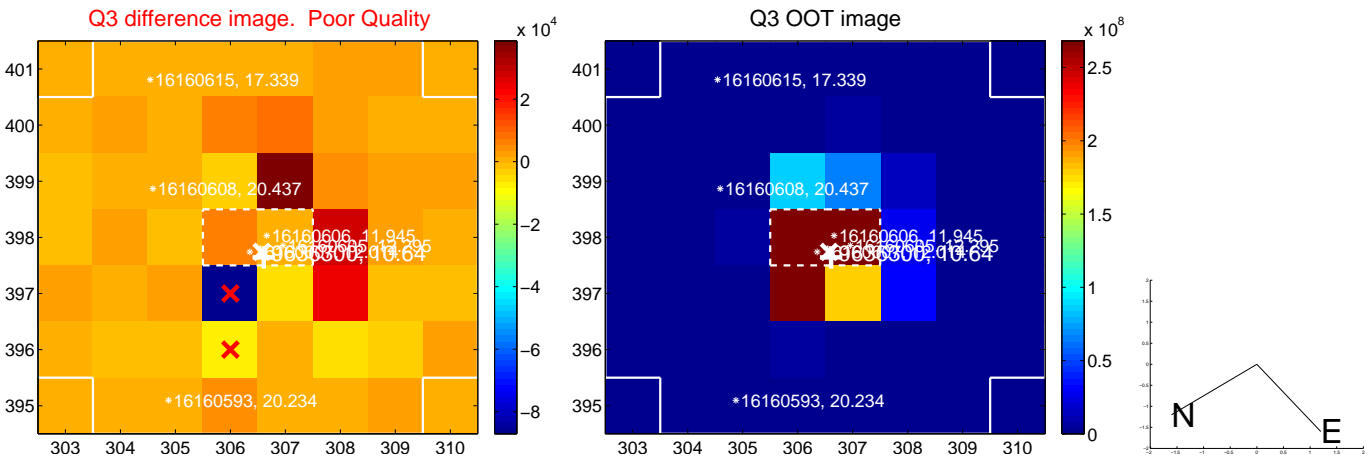
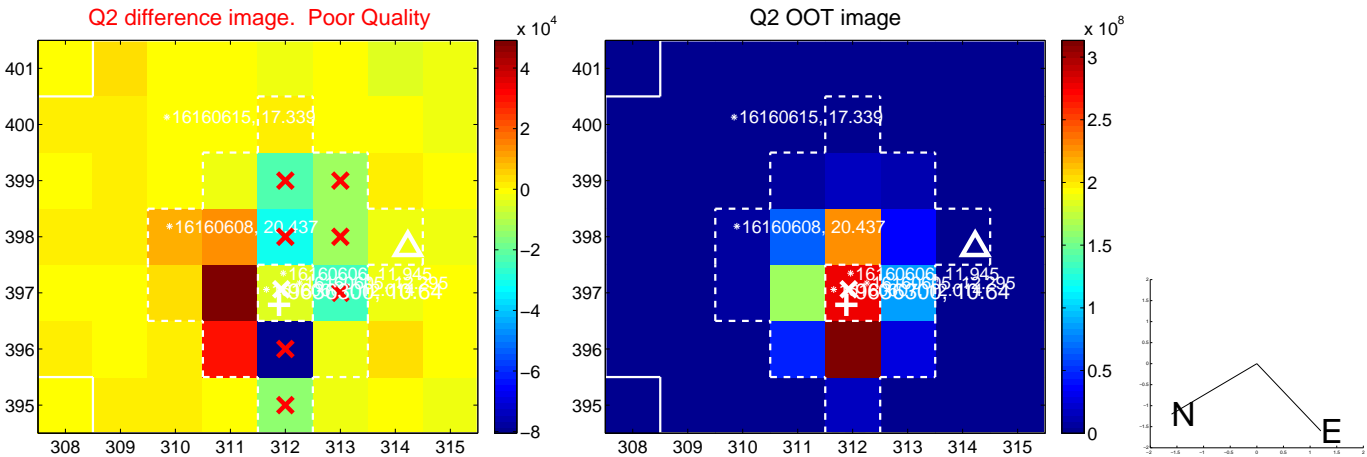
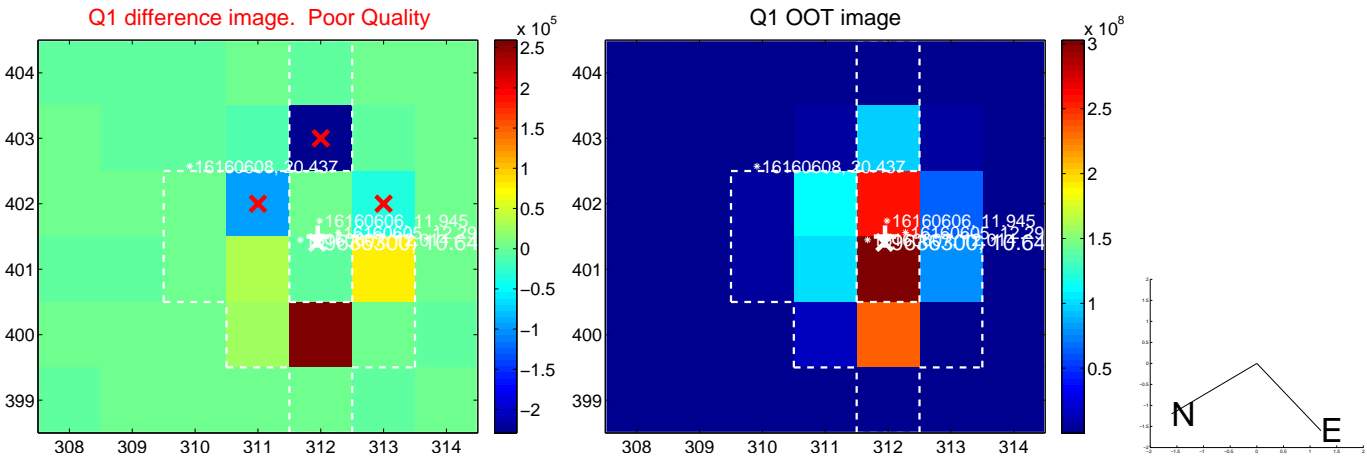
The direct PRF centroid is offset from the target star catalog position by about 1.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.899 ± 0.995	0.90	0.215 ± 0.782	-0.873 ± 1.010
PRF-fit source offset from KIC position	0.857 ± 0.915	0.94	0.671 ± 1.027	-0.534 ± 0.704
photometric centroid source offset	4.70 ± 4.40	1.07	2.14 ± 4.85	4.18 ± 4.28

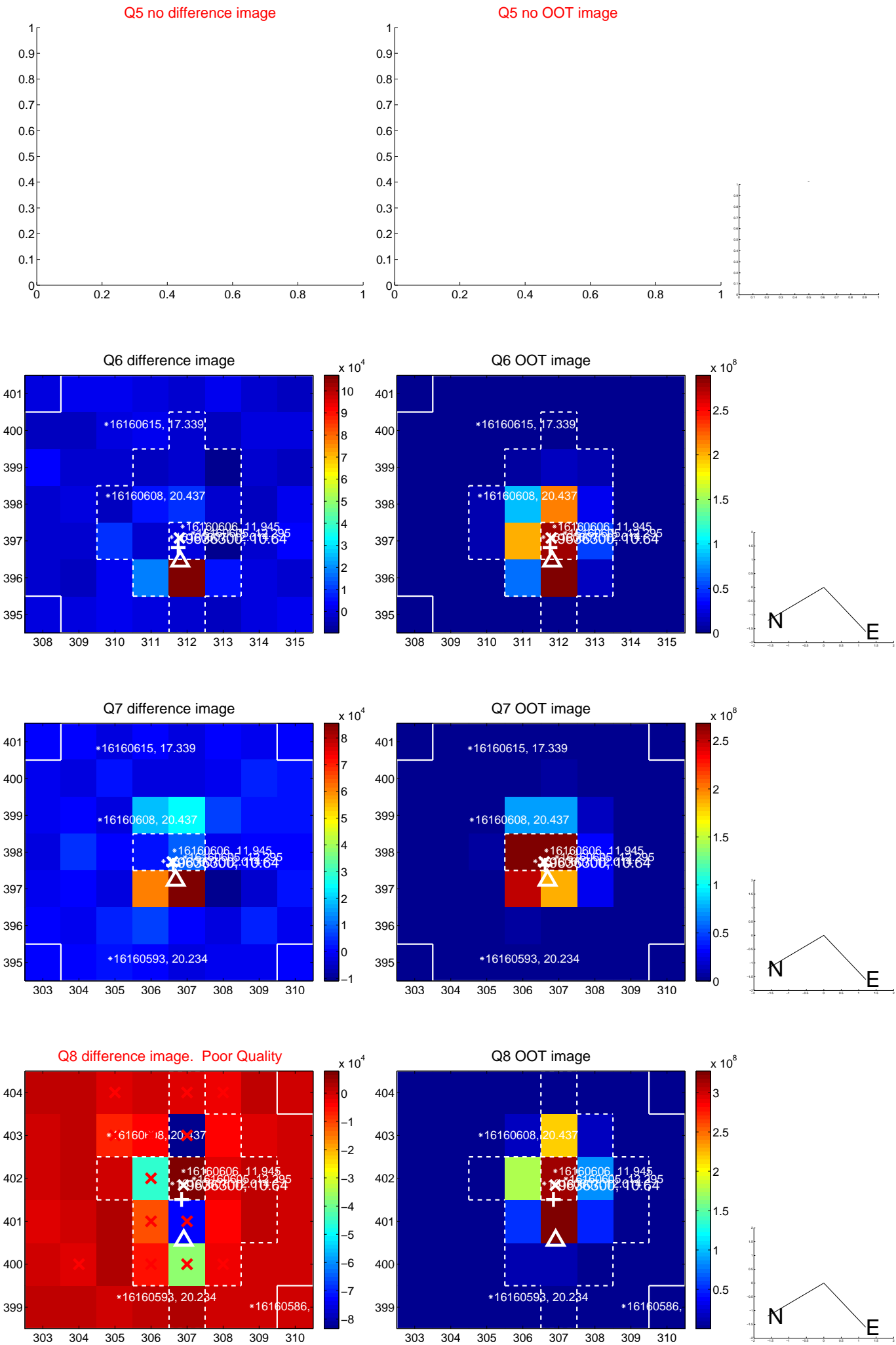


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

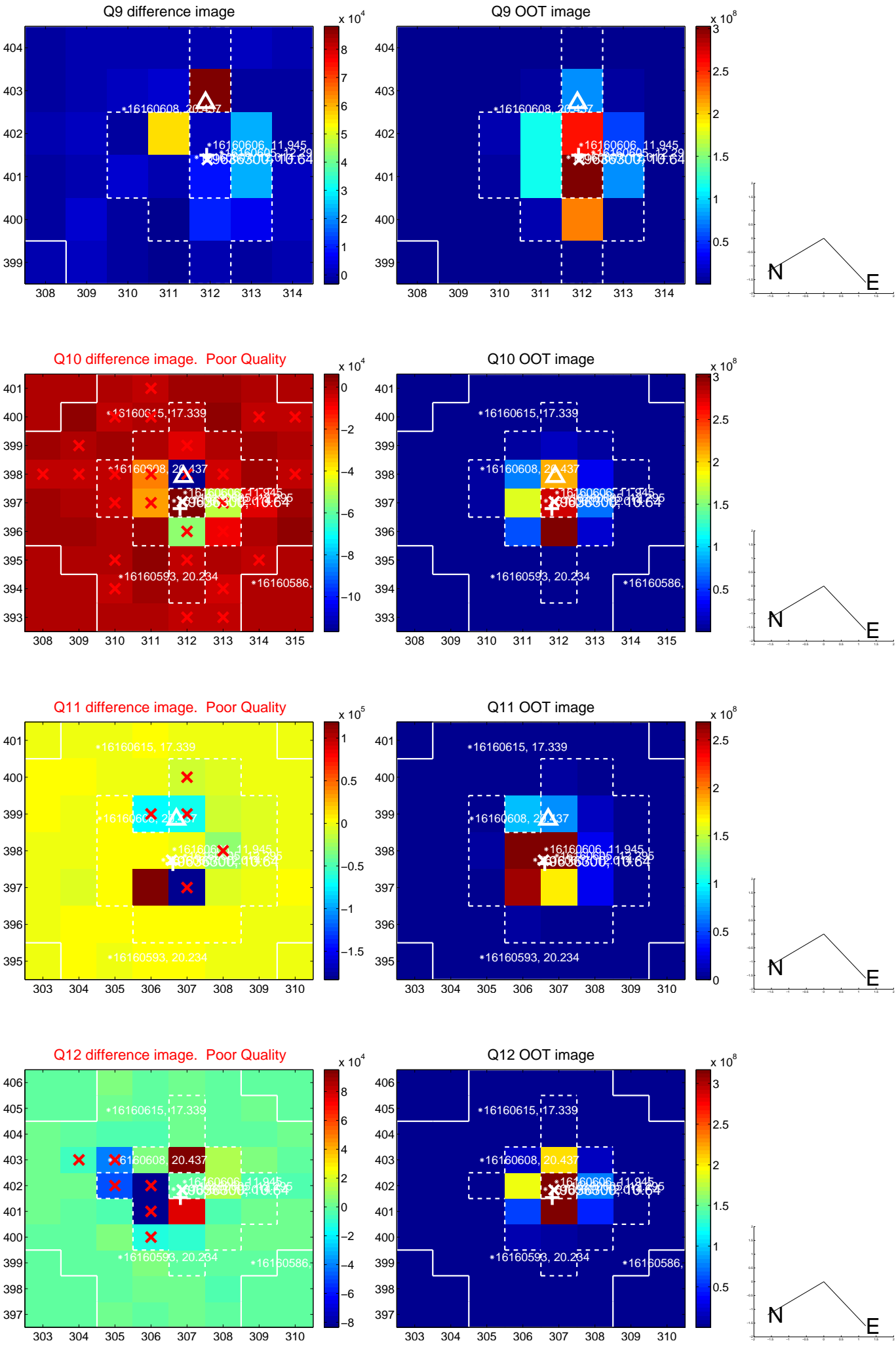
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



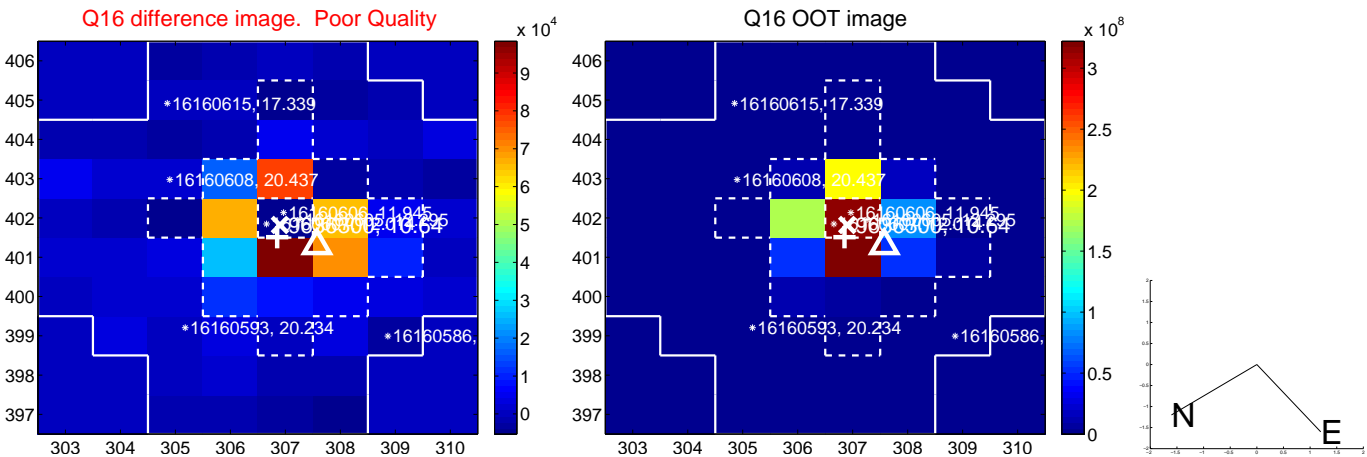
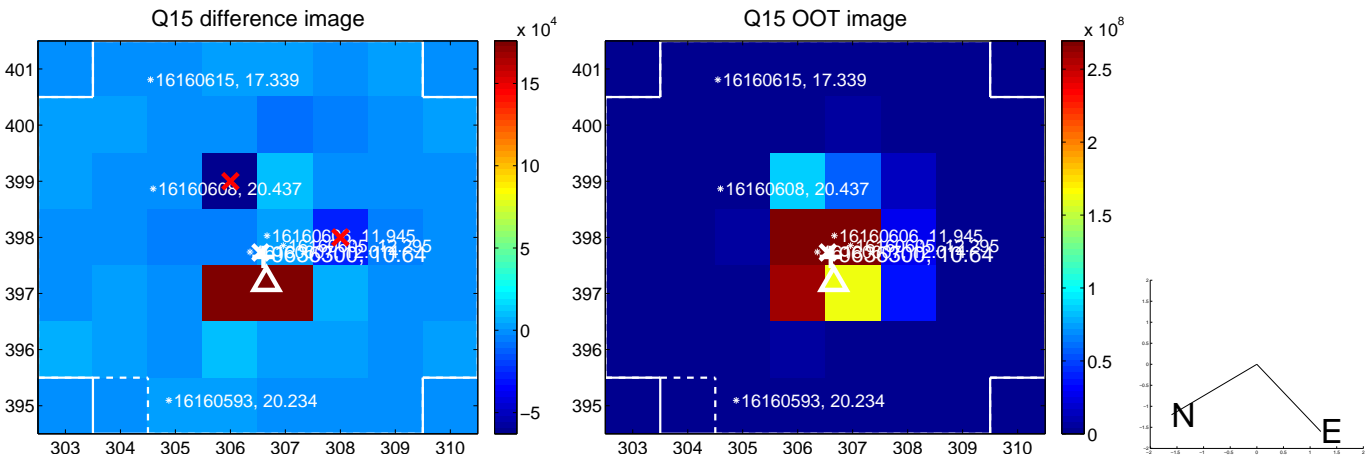
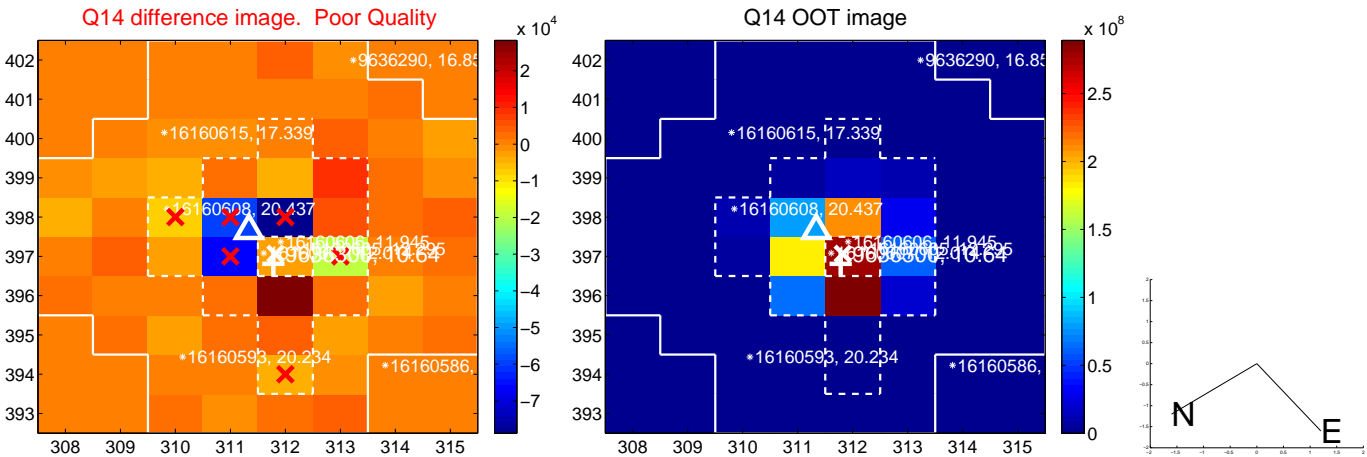
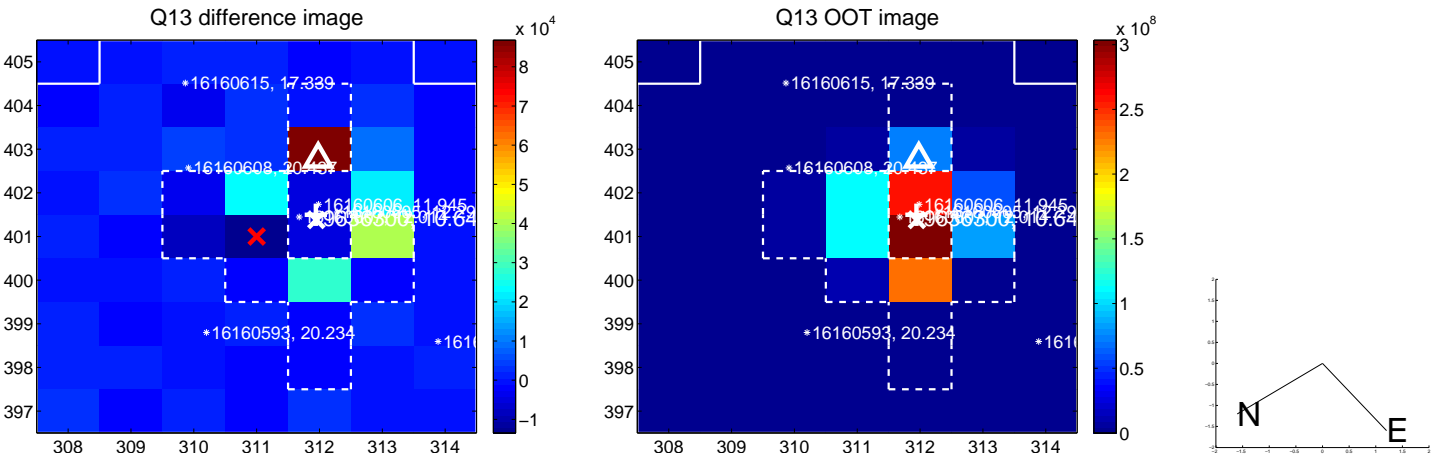
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



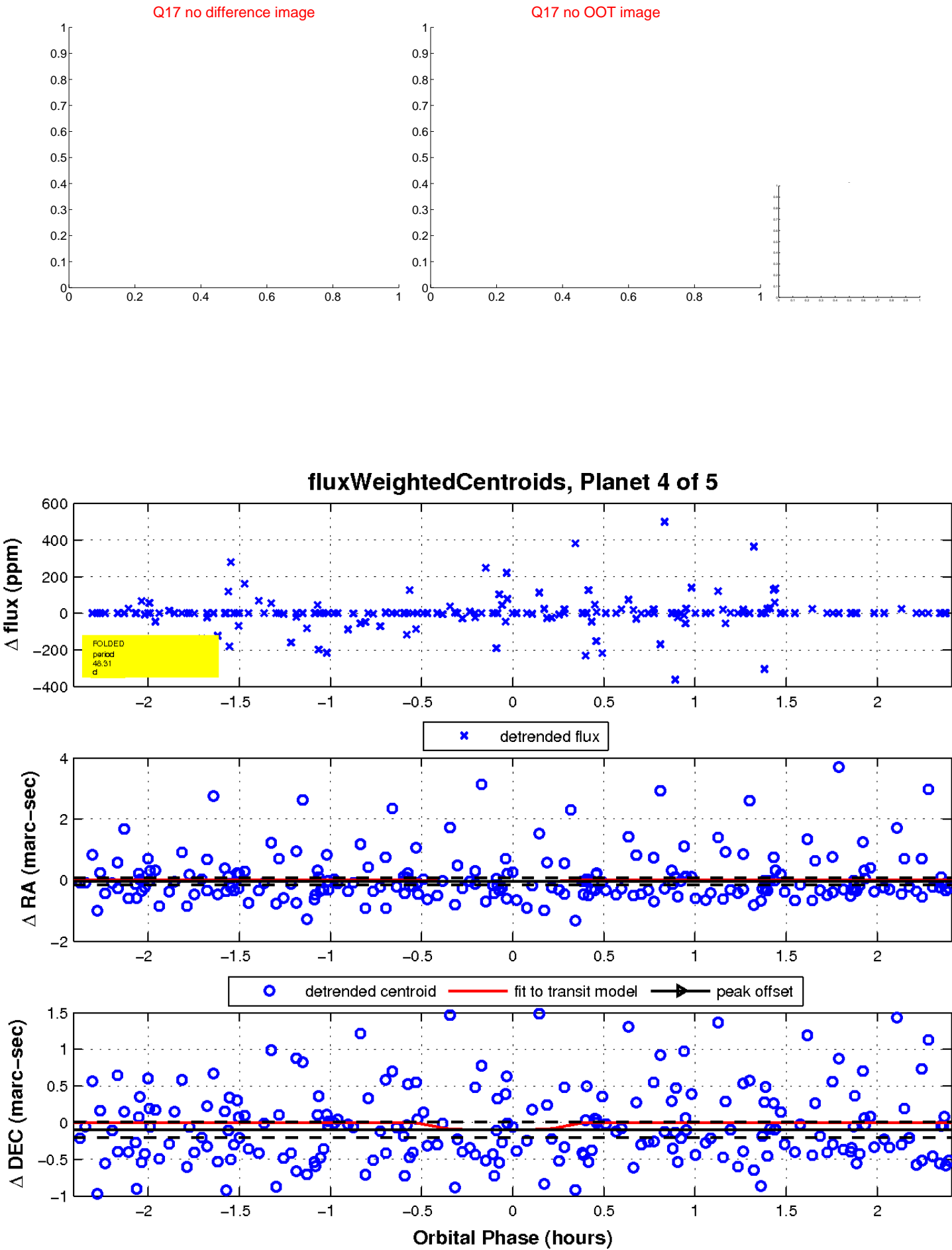
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

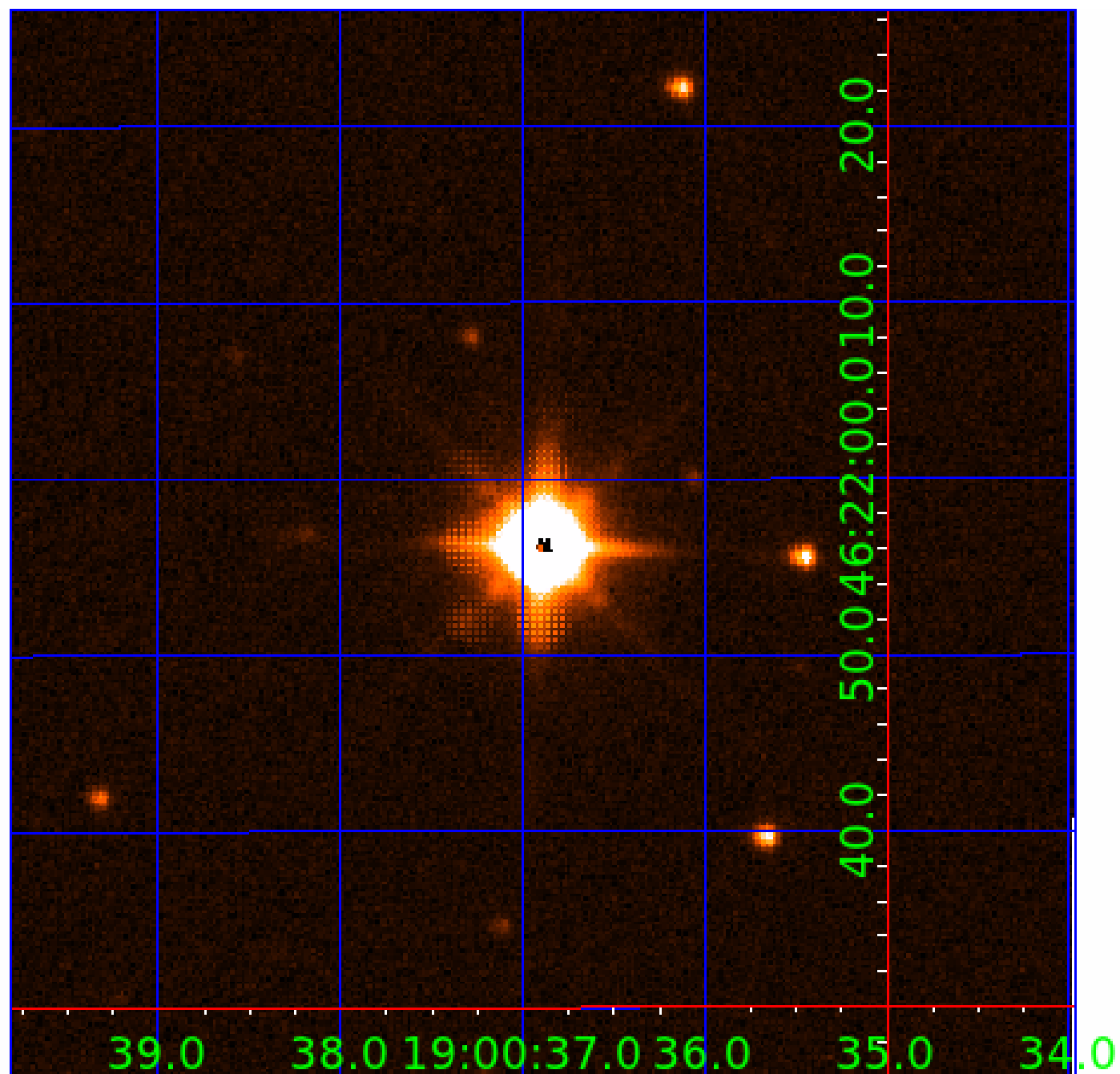


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009636300

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})
009636300-01	OBS	No	34.962878	163.293059	26.6	1.526	14.2	12.9	22.31	4301	14.35	3813.61
009636300-02	OBS	No	88.213383	137.181151	44.2	12.376	10.9	8.6	22.31	4301	17.56	1110.28
009636300-03	OBS	No	242.300585	325.852795	23.6	4.732	10.8	4.0	22.31	4301	13.41	288.63
009636300-04	OBS	No	48.307873	132.510716	24.2	0.804	9.6	6.0	22.31	4301	13.87	2478.12
009636300-05	OBS	No	34.372299	138.174315	26.2	1.286	9.3	11.7	22.31	4301	12.87	3901.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009636300-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_SATURATED
009636300-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_SATURATED
009636300-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009636300-05	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

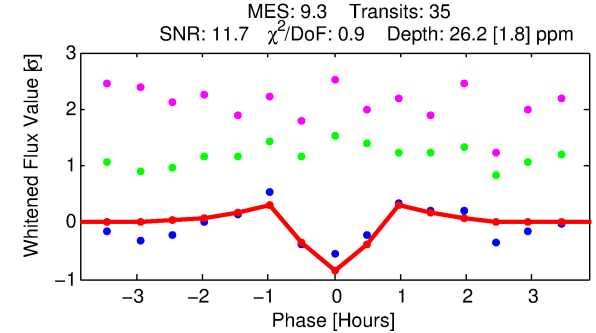
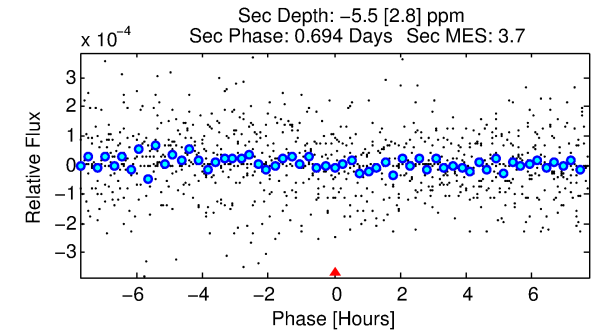
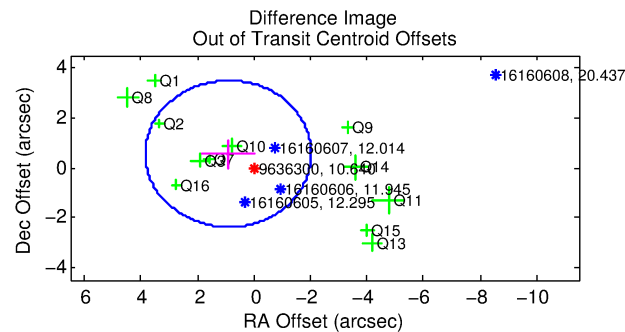
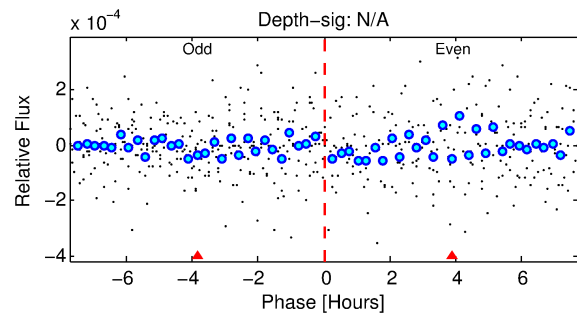
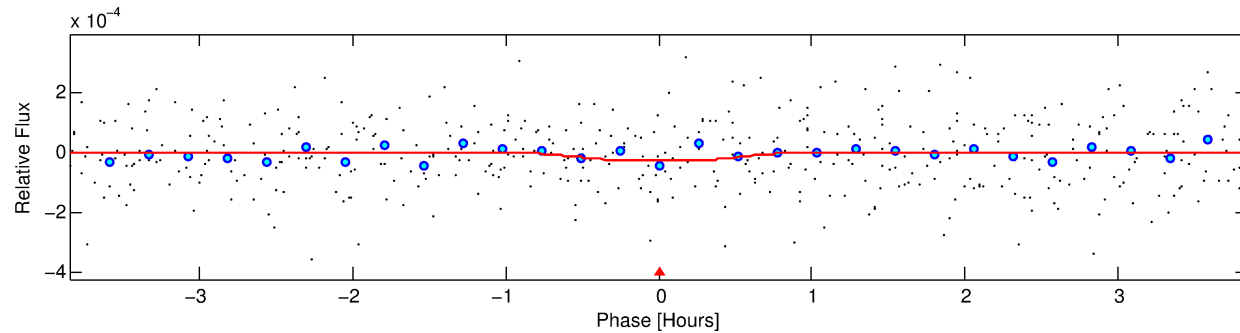
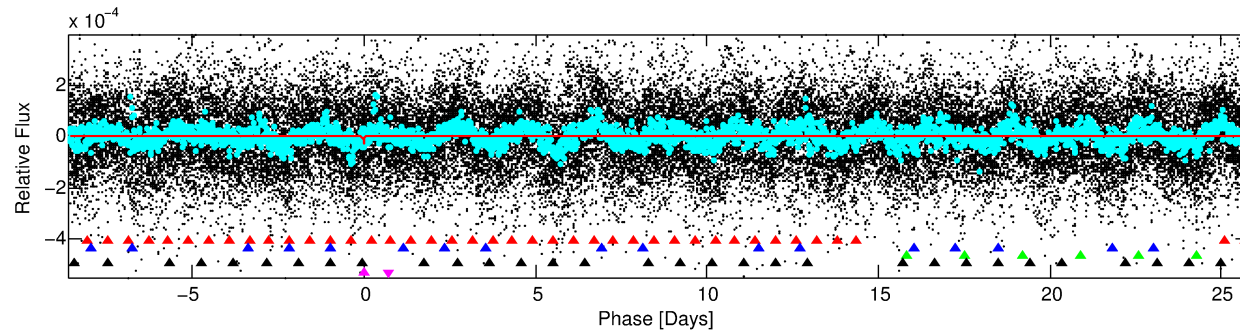
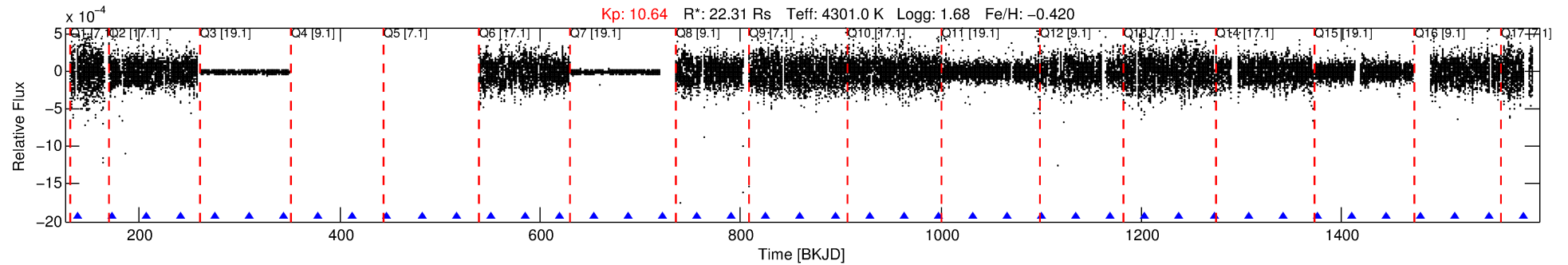
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009636300-05

No Significant Match Found

DV One-Page Summary

KIC: 9636300 Candidate: 5 of 5 Period: 34.372 d



DV Fit Results:

Period = 34.37230 [0.00019] d
Epoch = 138.1743 [0.0024] BKJD
Rp/R* = 0.0053 [0.0014]
a/R* = 127.66 [101.70]
b = 0.79 [0.39]
Seff = 3901.23 [710.26]
Teq = 2015 [92] K
Rp = 12.87 [4.59] Re
a = 0.1978 [0.0330] AU
Ag = N/A
Teffp = N/A

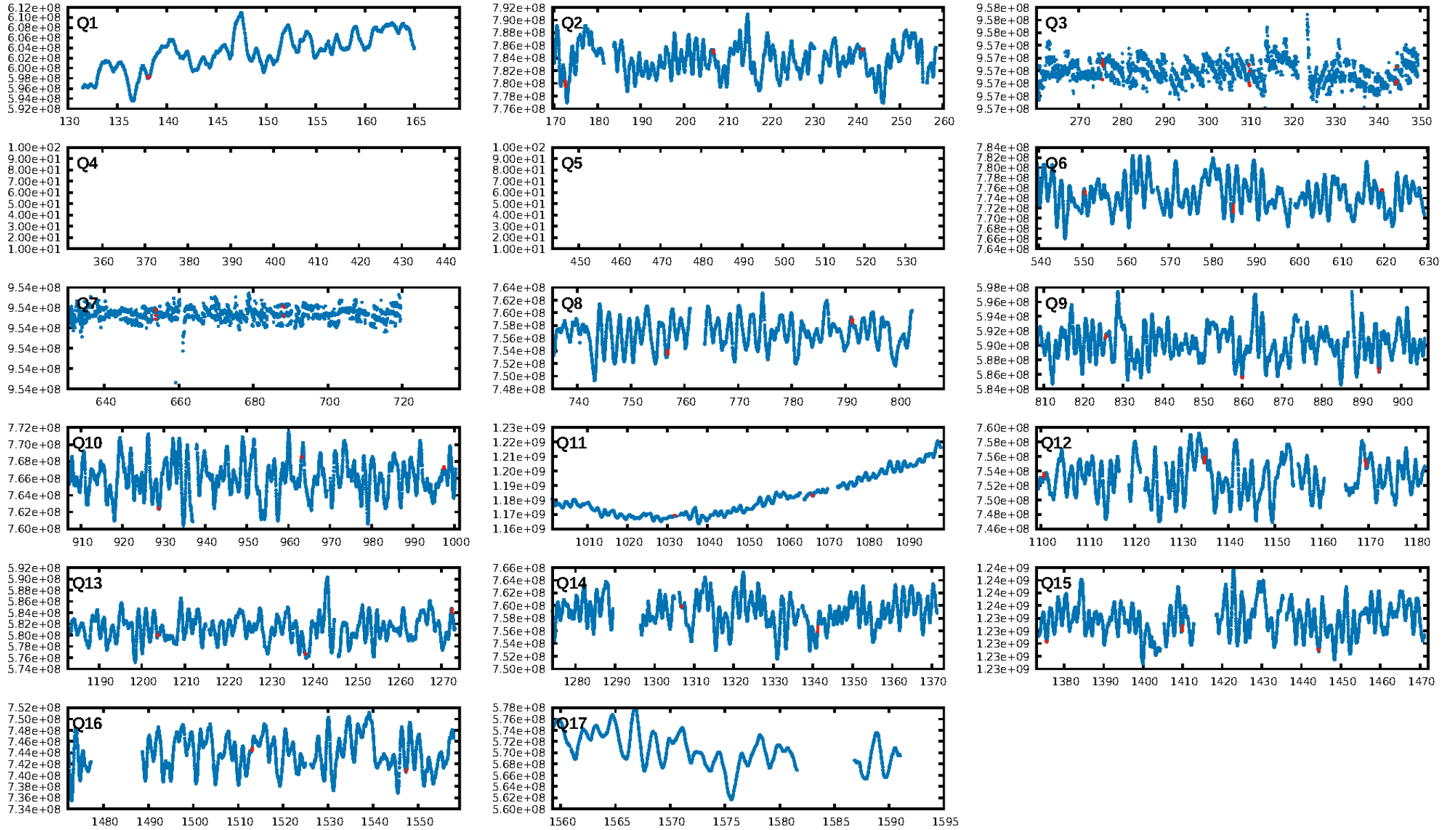
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [7.10σ]
ModelChiSquare2-sig: 31.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 6.57e-10
RollingBand-fgt: 1.00 [34/34]
GhostDiagnostic-chr: -0.1046
Centroid-sig: 9.8%
Centroid-so: 3.866 arcsec [1.33σ]
OotOffset-rm: 1.066 arcsec [1.09σ]
KicOffset-rm: 1.693 arcsec [1.58σ]
OotOffset-st: 3/4/2/3 [12]
KicOffset-st: 3/4/2/3 [12]
DiffImageQuality-fgm: 0.17 [2/12]
DiffImageOverlap-fno: 1.00 [14/14]

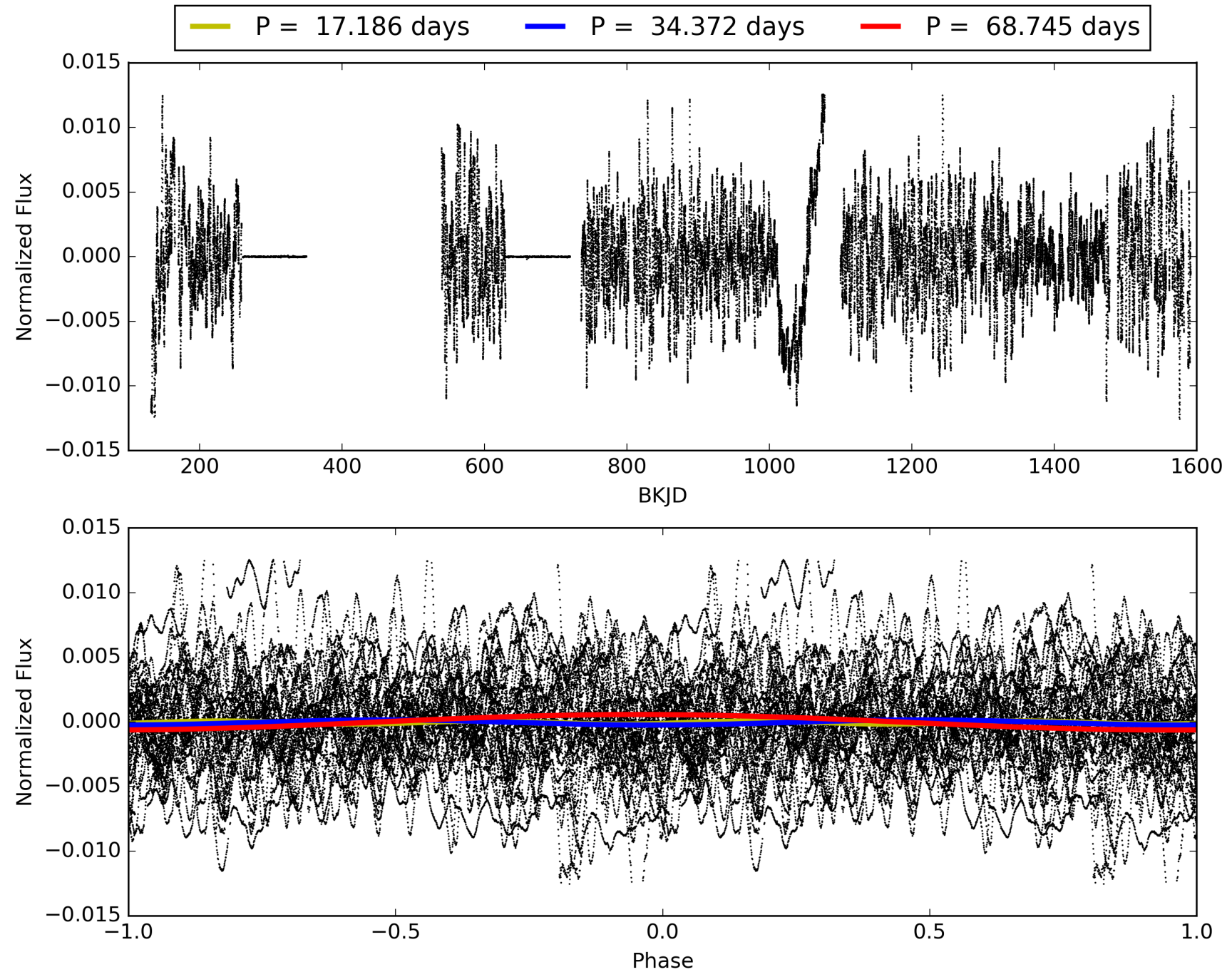
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:00:46 Z

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

TCE 009636300-05, PDC Light Curves

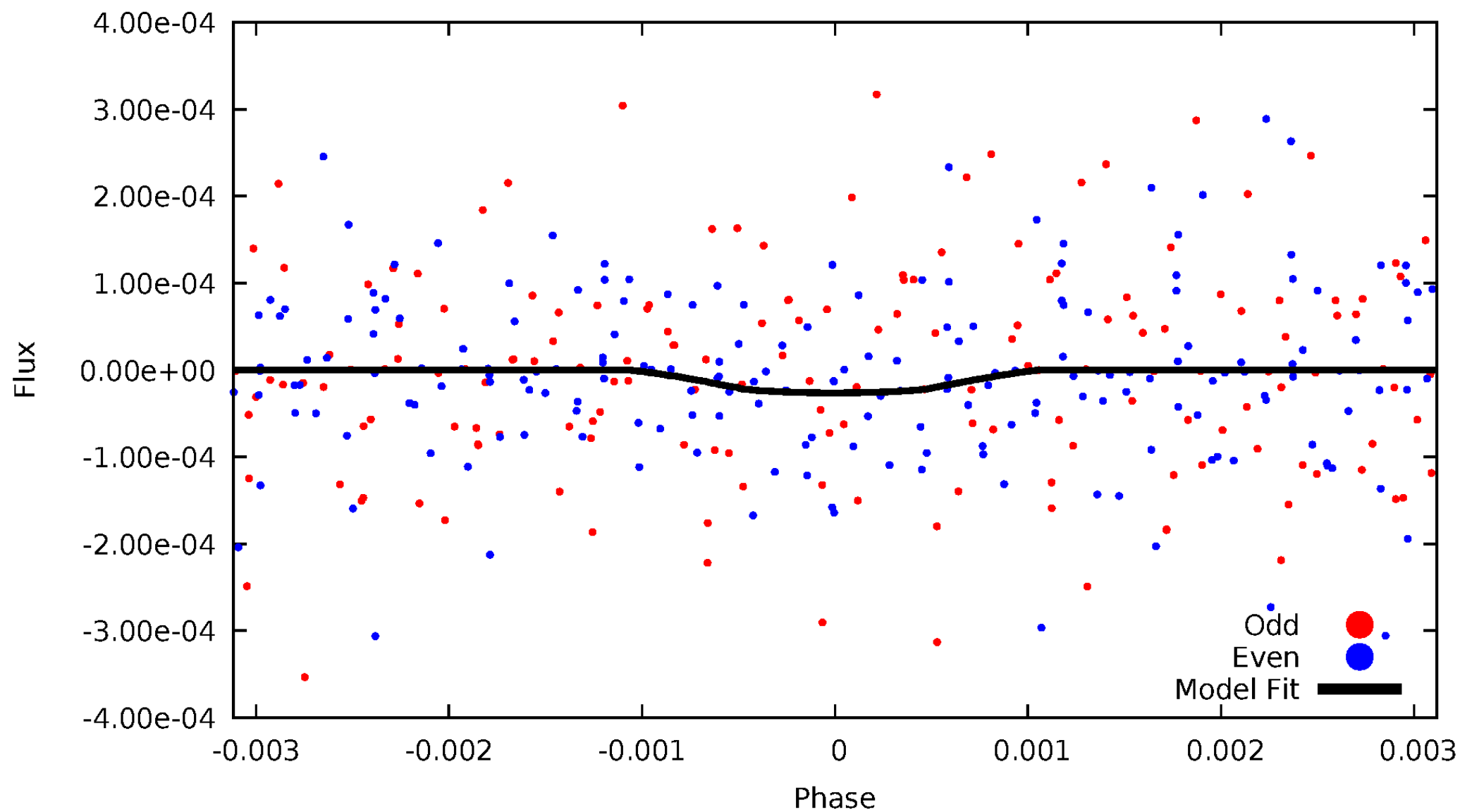


TCE 009636300-05



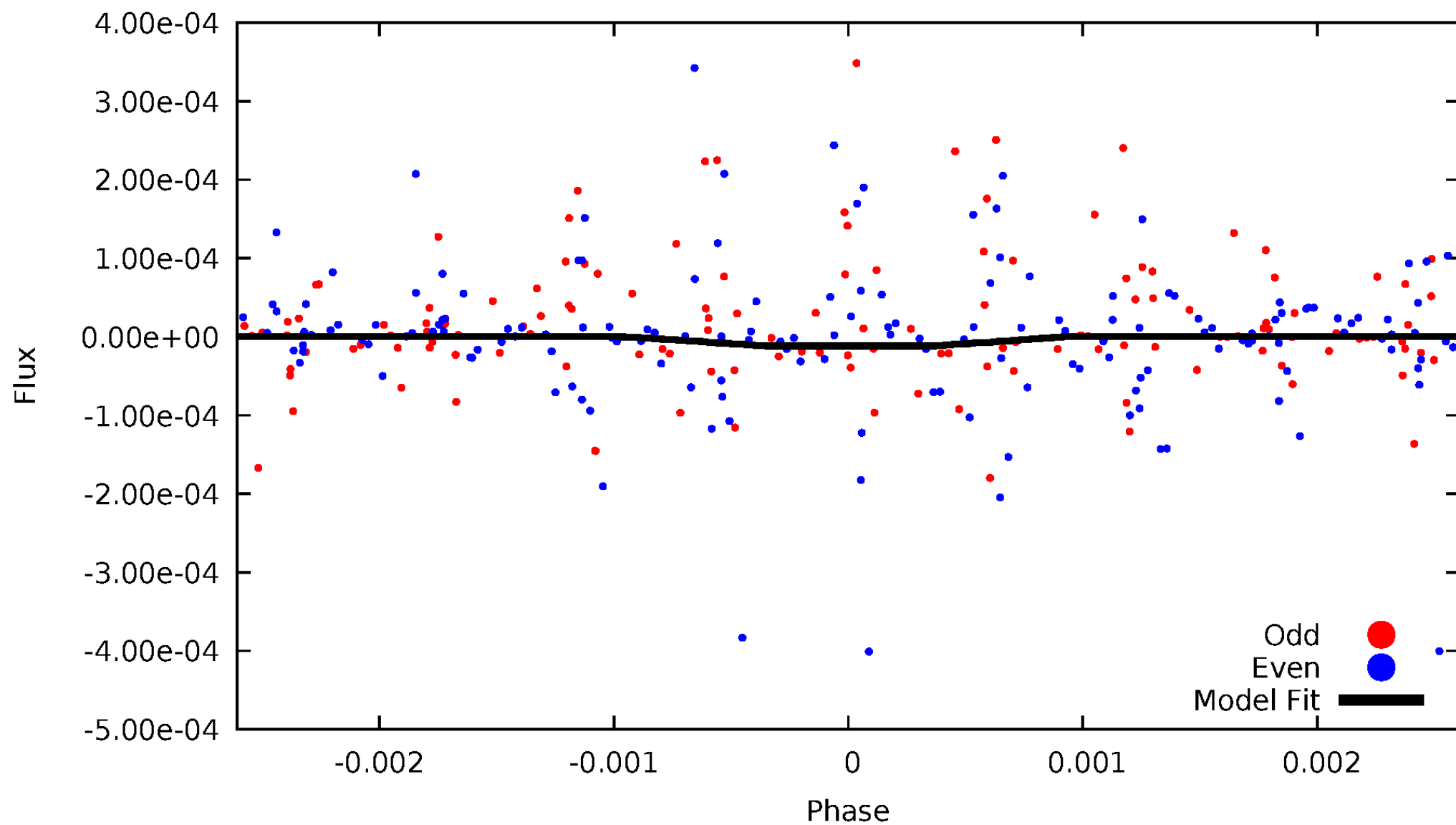
DV Odd/Even

TCE 009636300-05



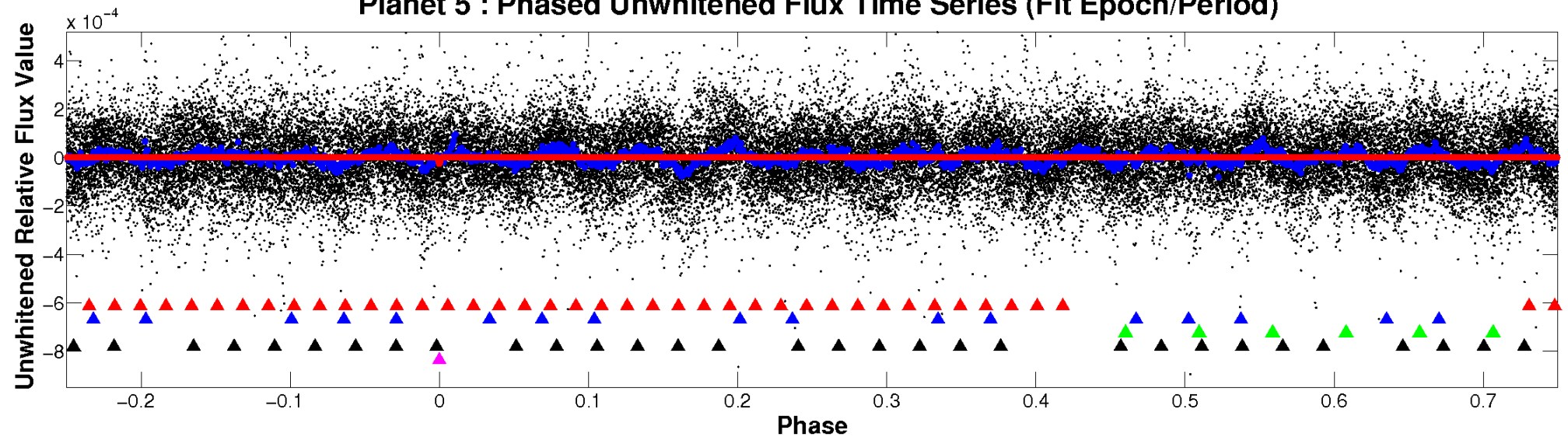
ALT Odd/Even

TCE 009636300-05

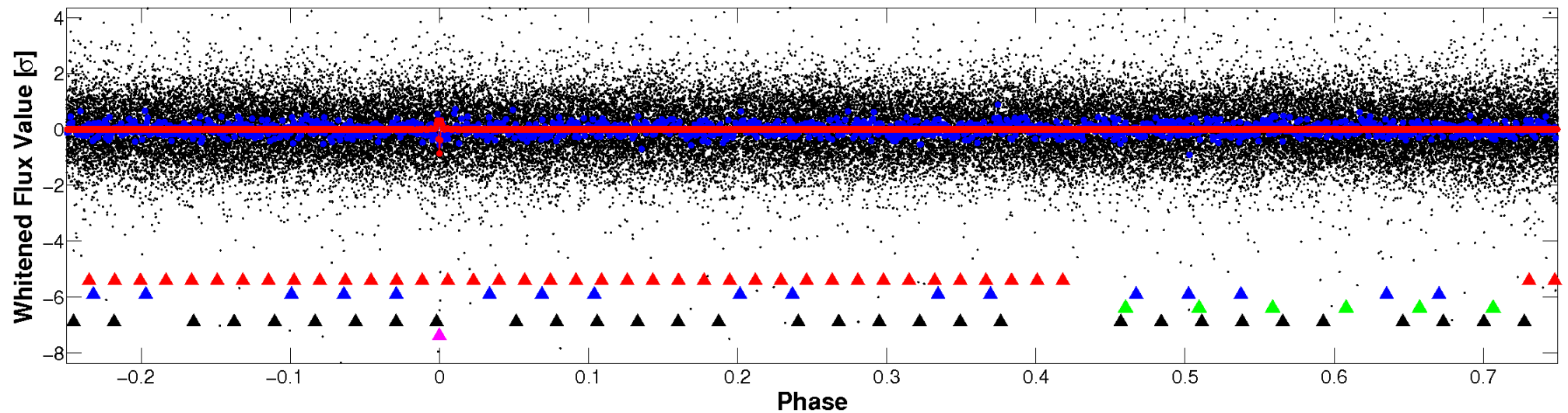


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

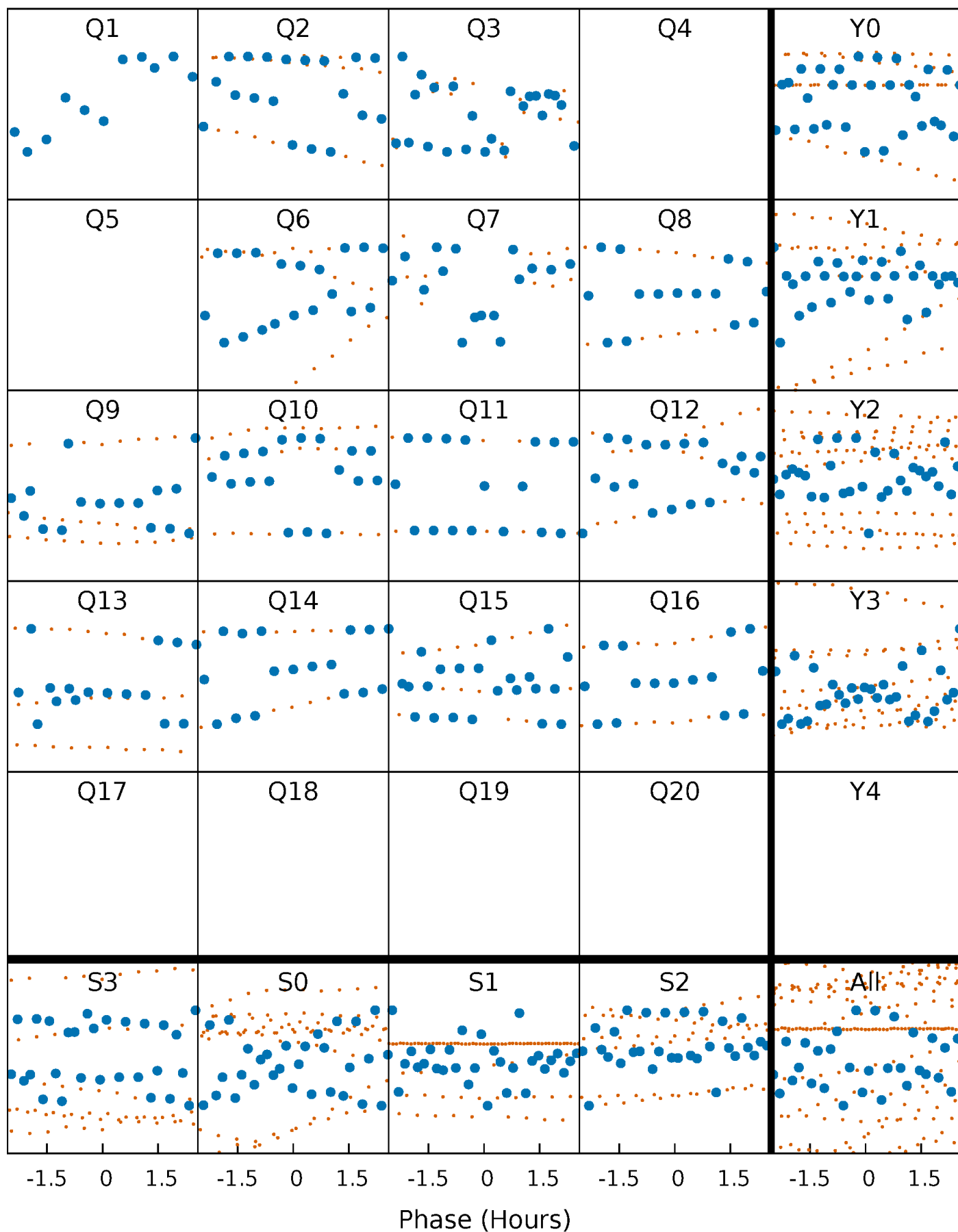


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



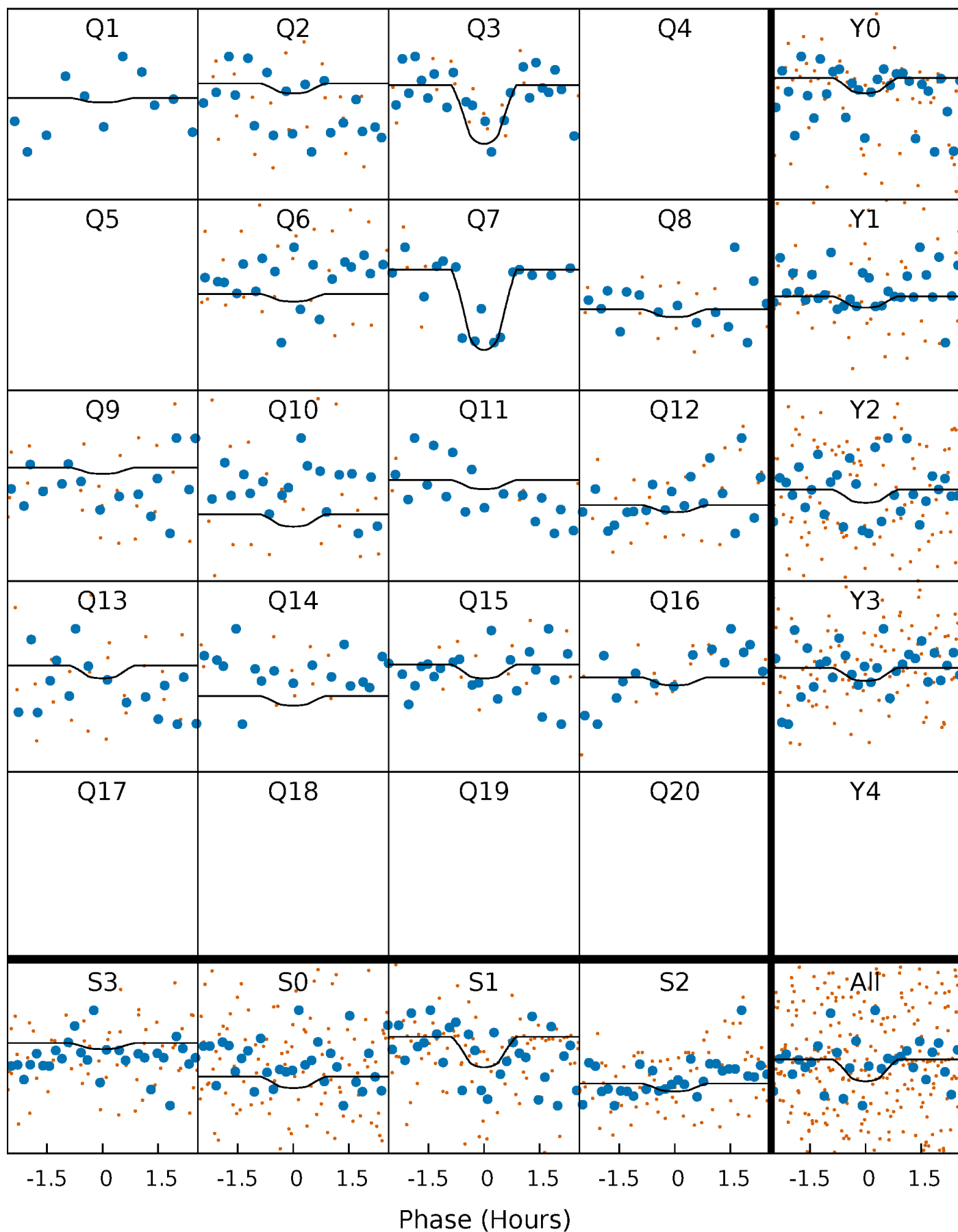
PDC Quarter-Phased Transit Curves

TCE 009636300-05 $P = 34.372299$ Days $T_0 = 138.174315$ (BKJD)



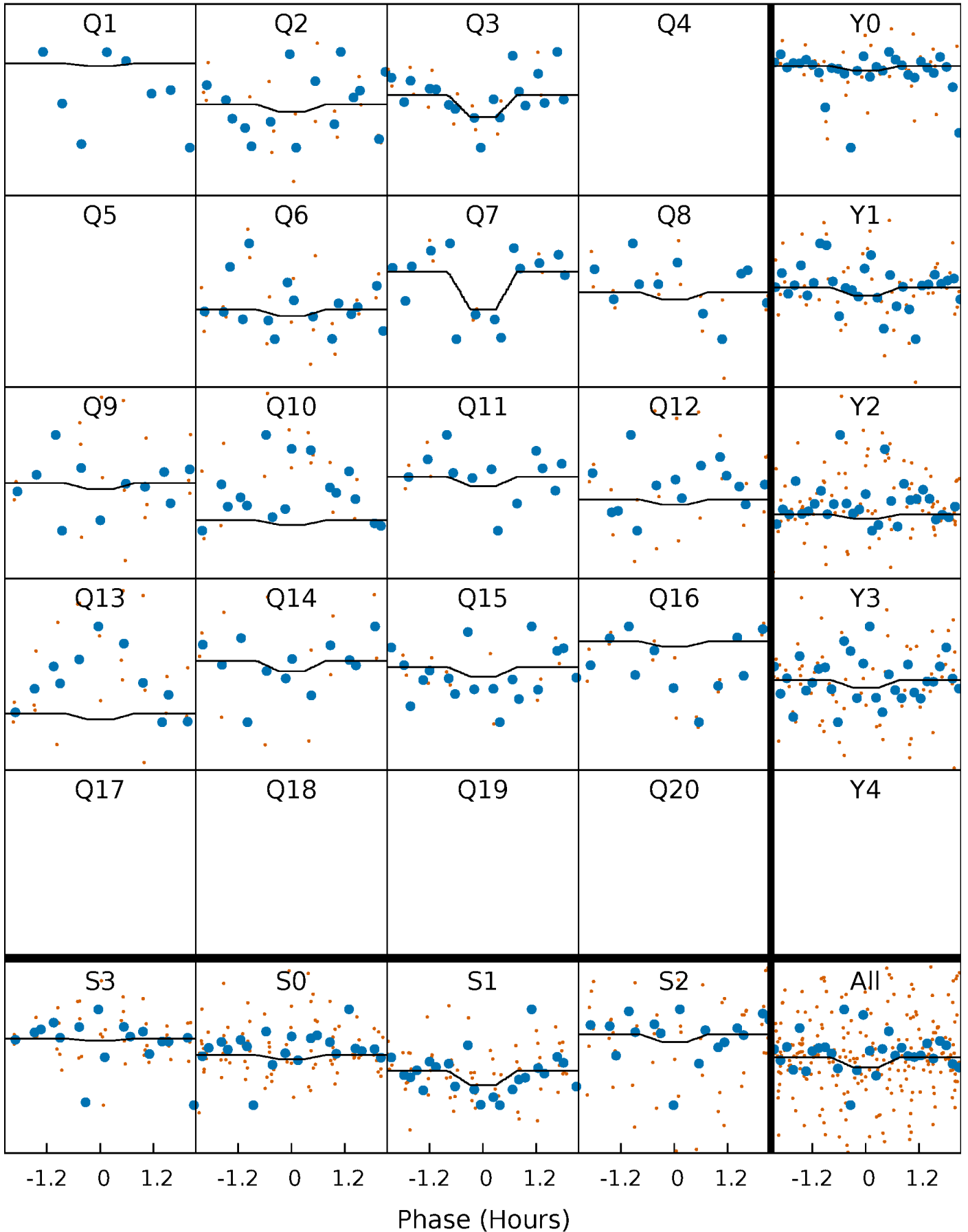
DV Quarter-Phased Transit Curves

TCE 009636300-05 $P = 34.372299$ Days $T_0 = 138.174315$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

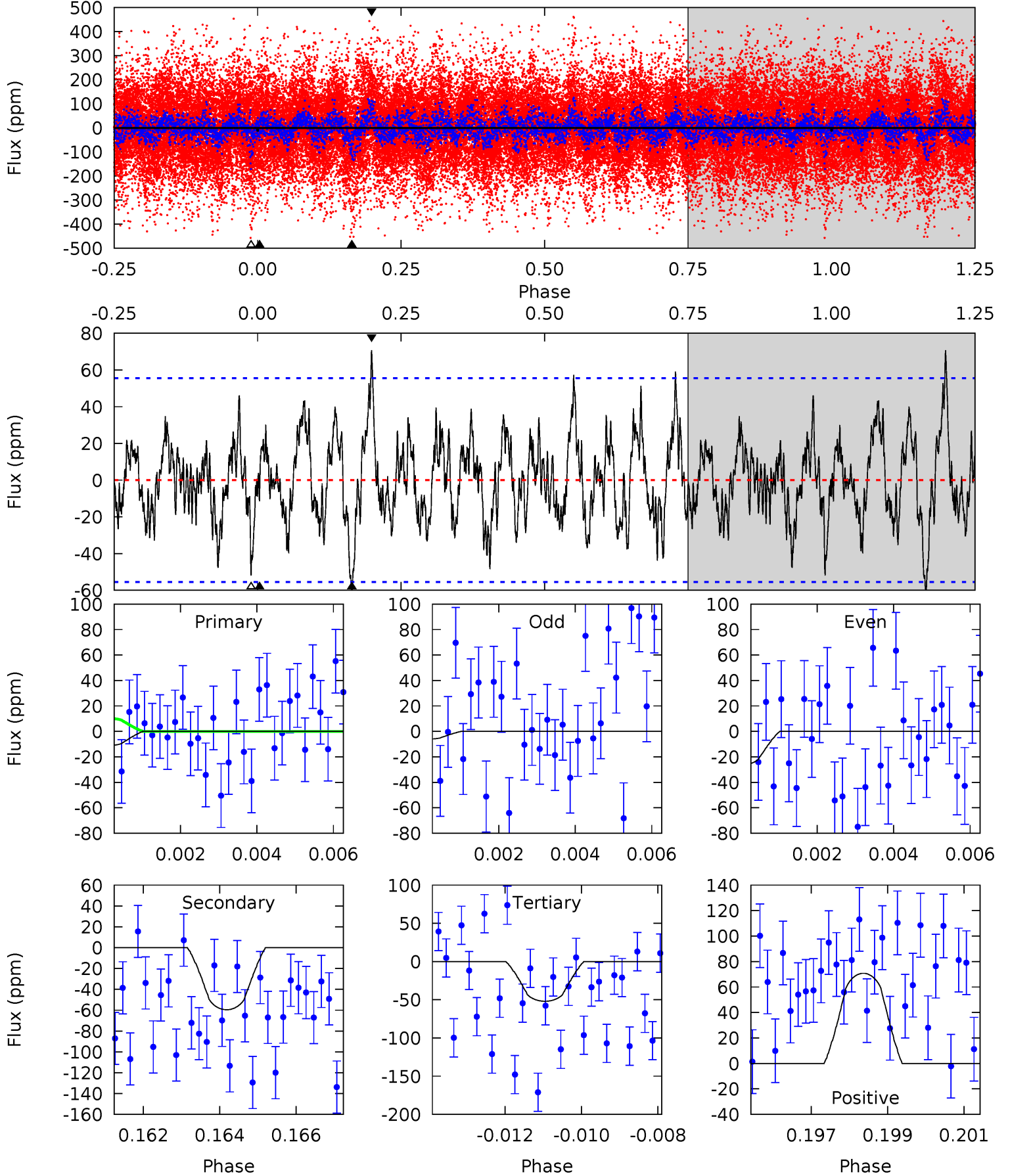
TCE 009636300-05 $P = 34.371354$ Days $T_0 = 138.189691$ (BKJD)



DV Model-Shift Uniqueness Test

009636300-05, $P = 34.372299$ Days, $E = 103.802016$ Days

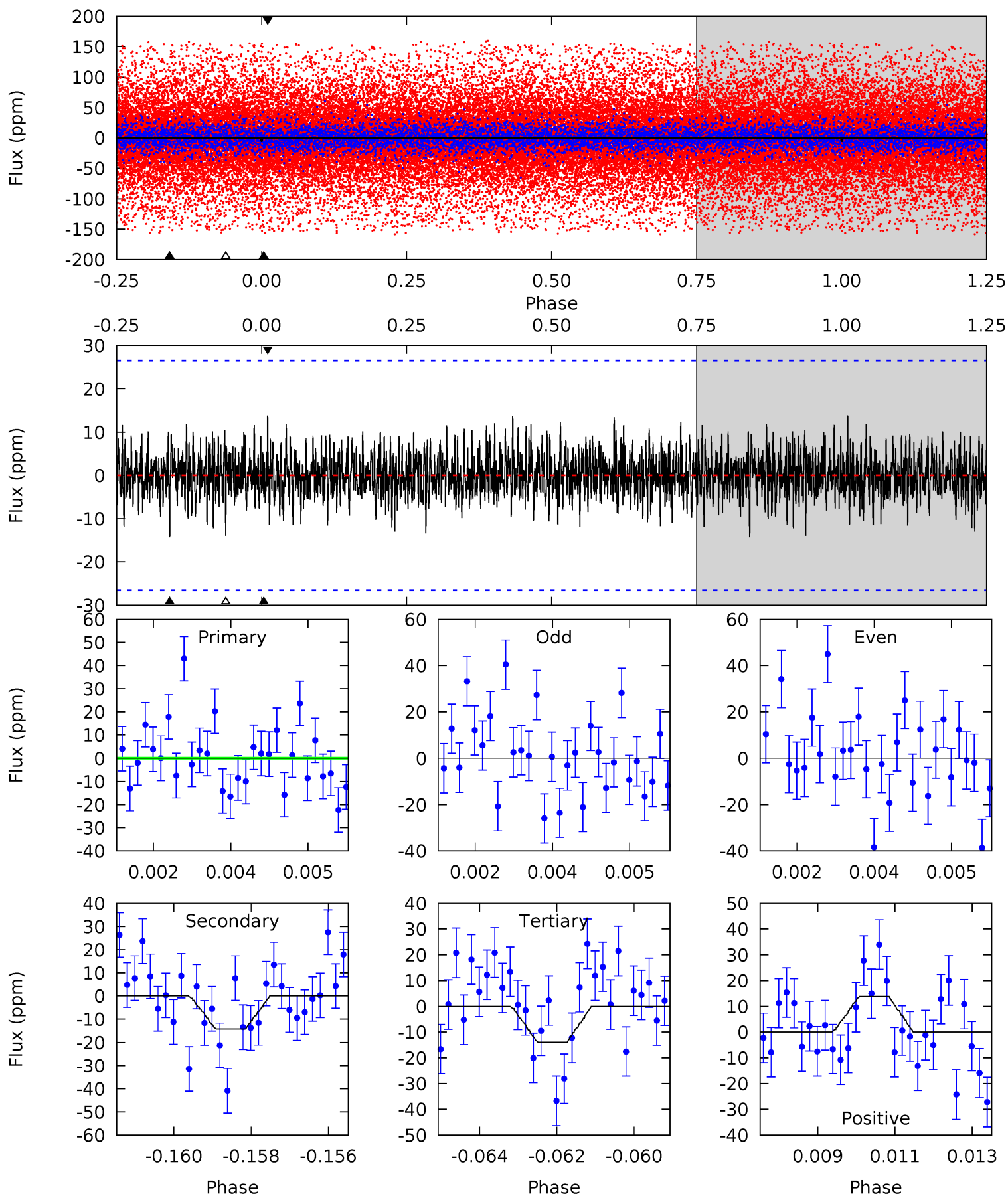
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.09	5.71	4.98	6.78	5.32	3.08	1.92	-3.89	-5.69	0.73	-1.07	0.97	0.75	0.54	0.88



Alt Model-Shift Uniqueness Test

009636300-05, $P = 34.371354$ Days, $E = 103.818337$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.03	2.87	2.81	2.79	5.34	3.12	0.86	-1.78	-1.76	0.07	0.09	0.72	-3.00	0.49	1.14



Stellar Parameters For KIC 009636300

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4301^{+65}_{-45}	$1.682^{+0.027}_{-0.030}$	$-0.420^{+0.150}_{-0.100}$	$22.308^{+5.536}_{-0.615}$	$0.873^{+0.479}_{-0.024}$	$0.000^{+0.000}_{-0.000}$
	+2%/-1%	+2%/-2%	+36%/-24%	+25%/-3%	+55%/-3%	+9%/-23%
Source	SPE74	AST9	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009636300-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-60 ± 10	$12.94^{+3.28}_{-3.43}$	2817^{+61}_{-43}	4958^{+724}_{-504}	$7.539^{+6.404}_{-2.913}$
Alt.	-14 ± 5	$8.30^{+3.38}_{-3.04}$	2816^{+56}_{-40}	4395^{+1096}_{-663}	$4.378^{+7.355}_{-2.457}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

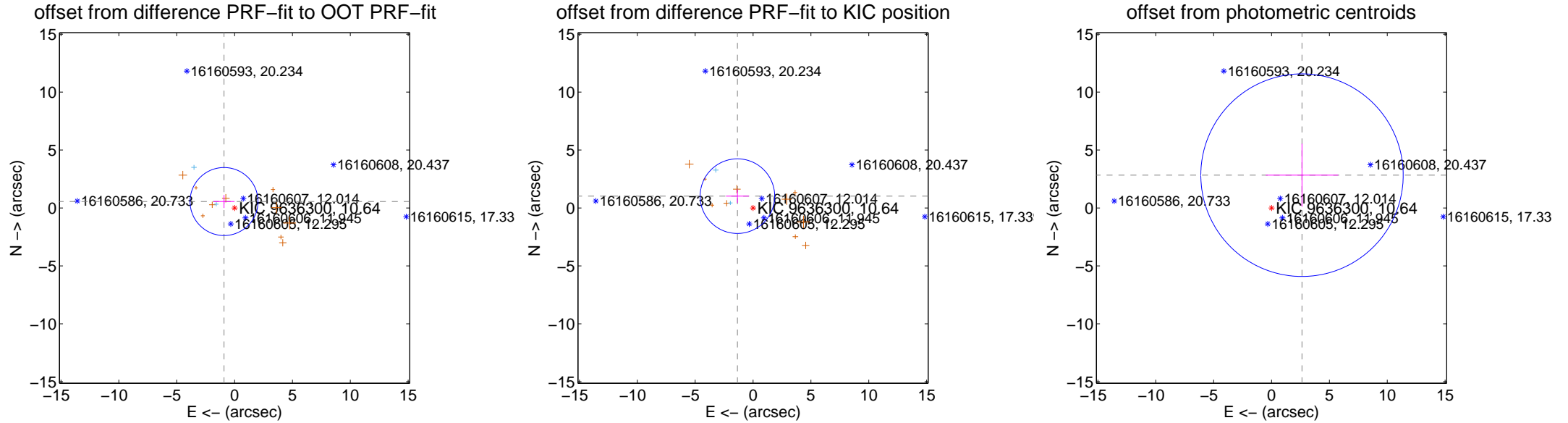
DV Centroid Data

Supplemental centroid analysis for 009636300-05. **Kepler magnitude: 10.64.** Transit SNR 11.65

There are 2 quarters with good PRF difference image offsets

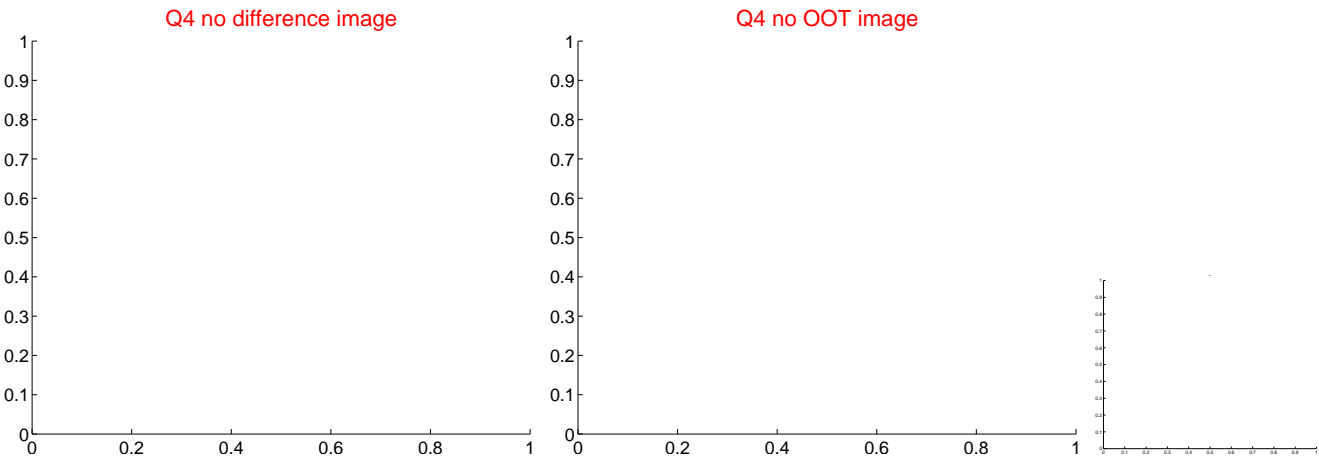
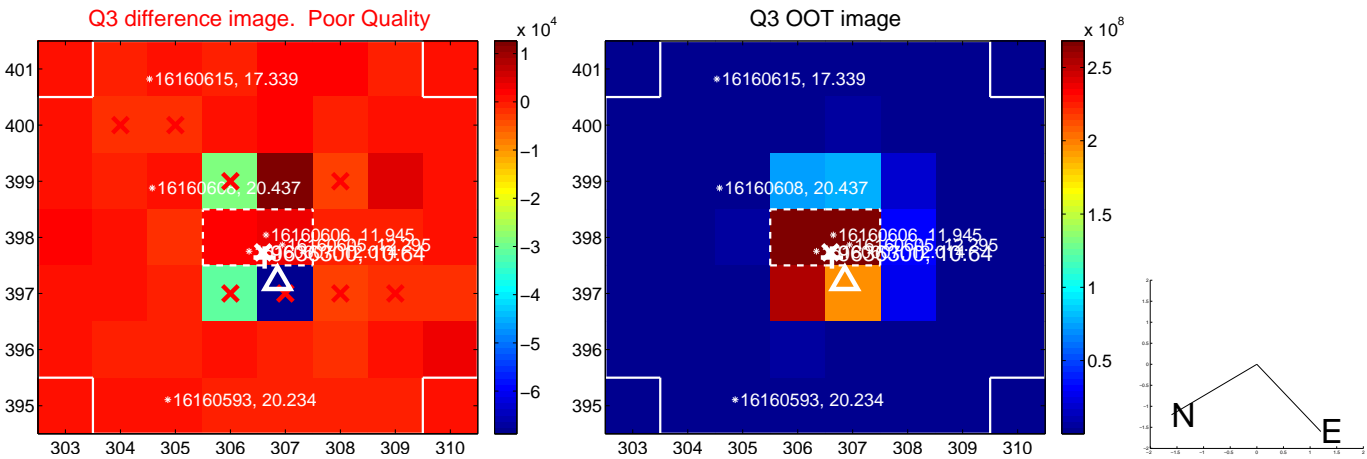
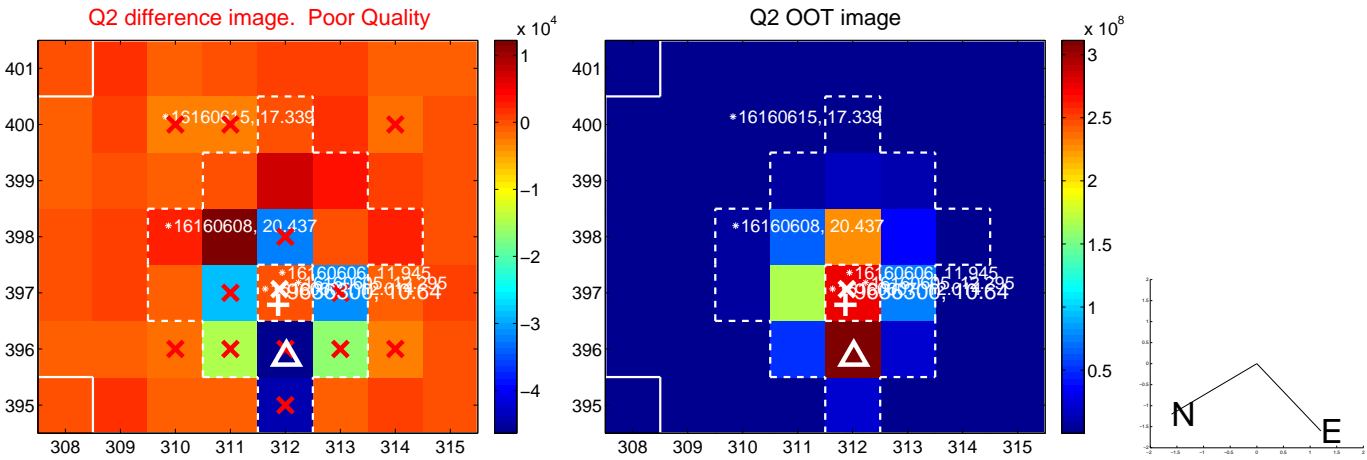
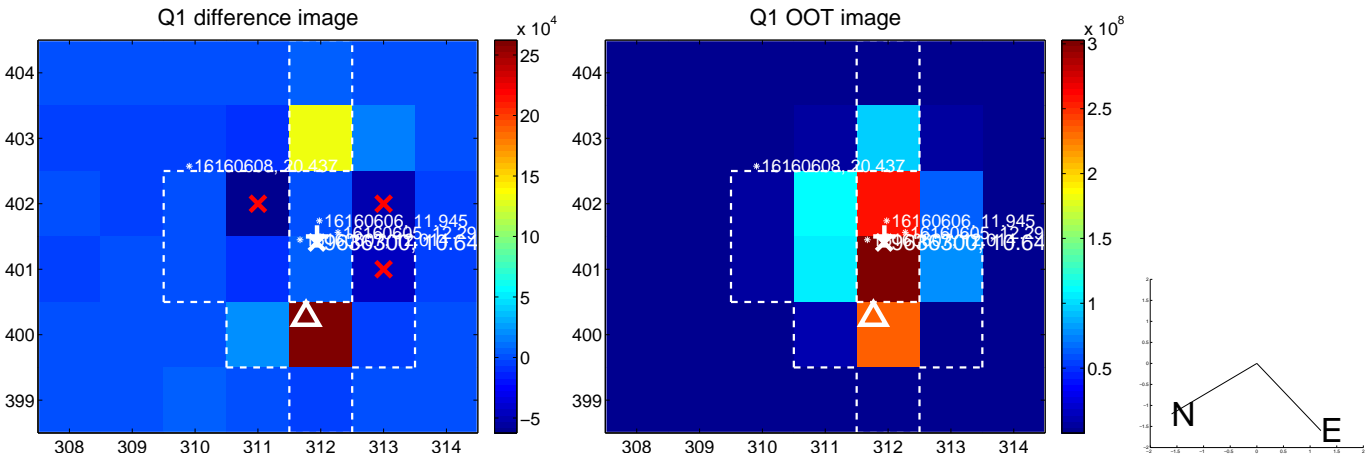
The direct PRF centroid is offset from the target star catalog position by about 1.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.066 ± 0.979	1.09	0.911 ± 0.909	0.555 ± 0.561
PRF-fit source offset from KIC position	1.693 ± 1.074	1.58	1.352 ± 0.988	1.019 ± 0.589
photometric centroid source offset	3.87 ± 2.91	1.33	-2.63 ± 3.13	2.83 ± 2.71

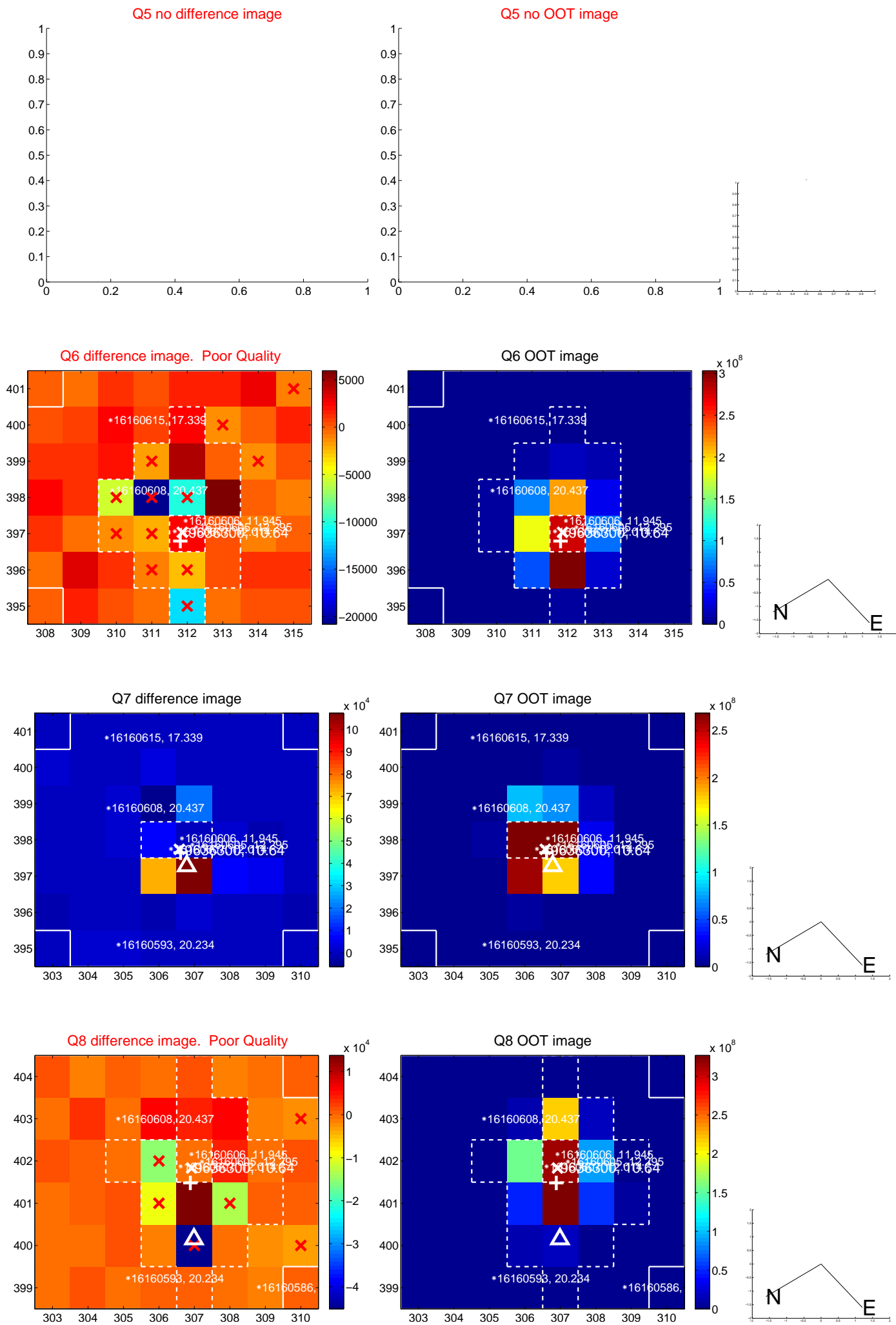


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

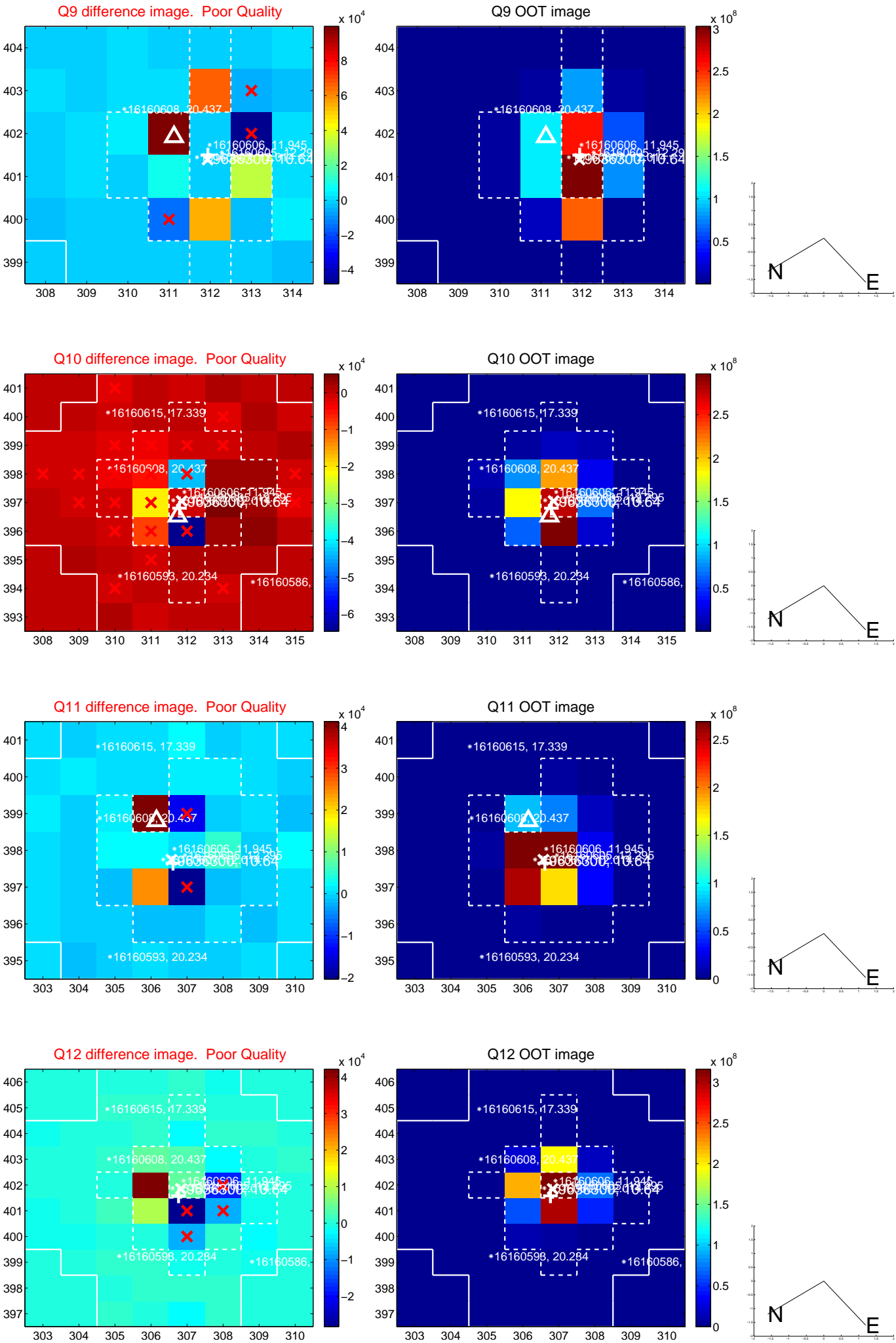
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



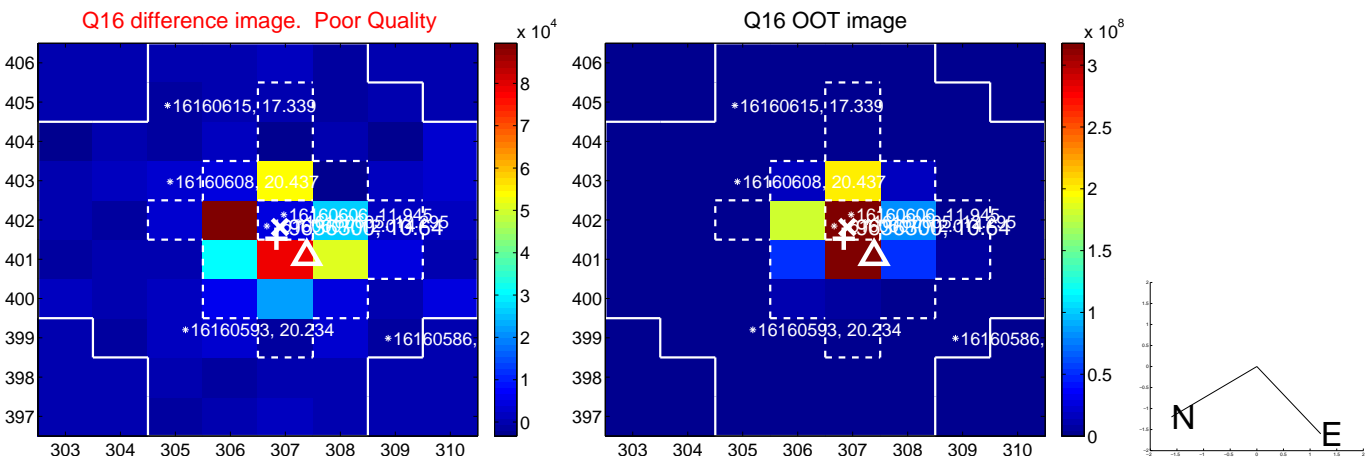
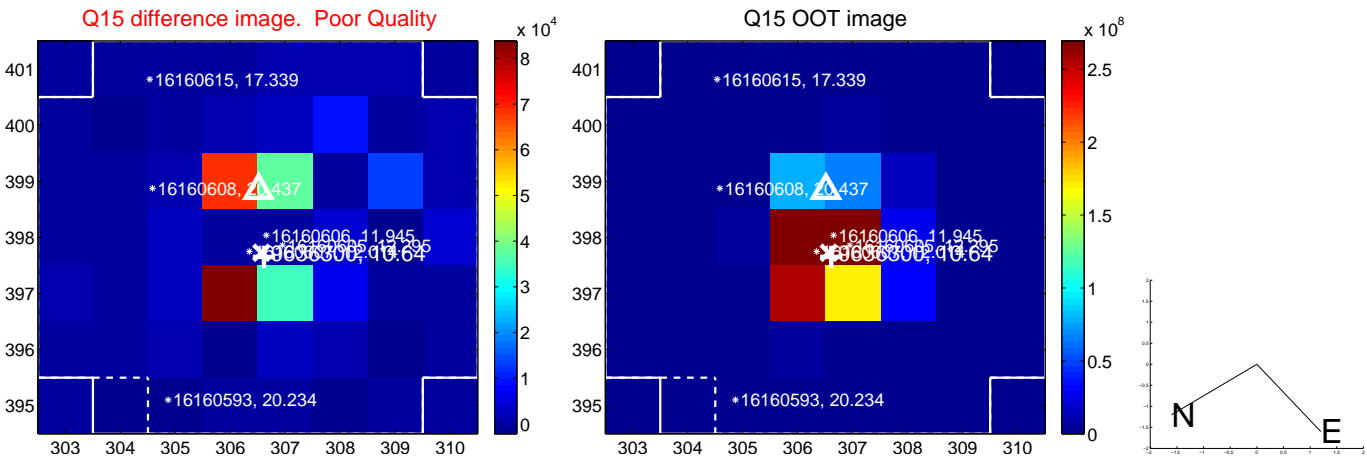
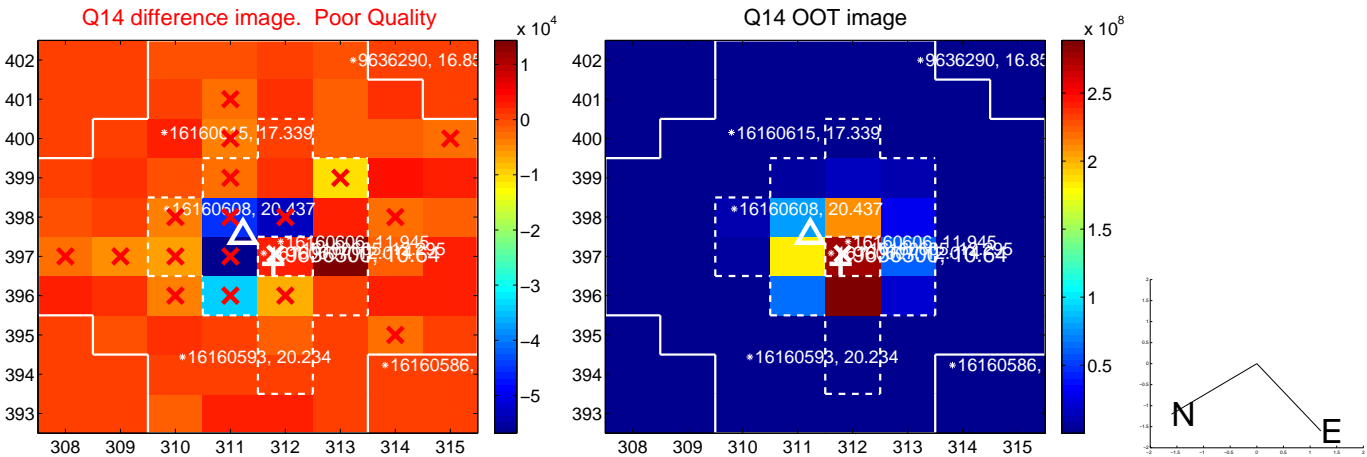
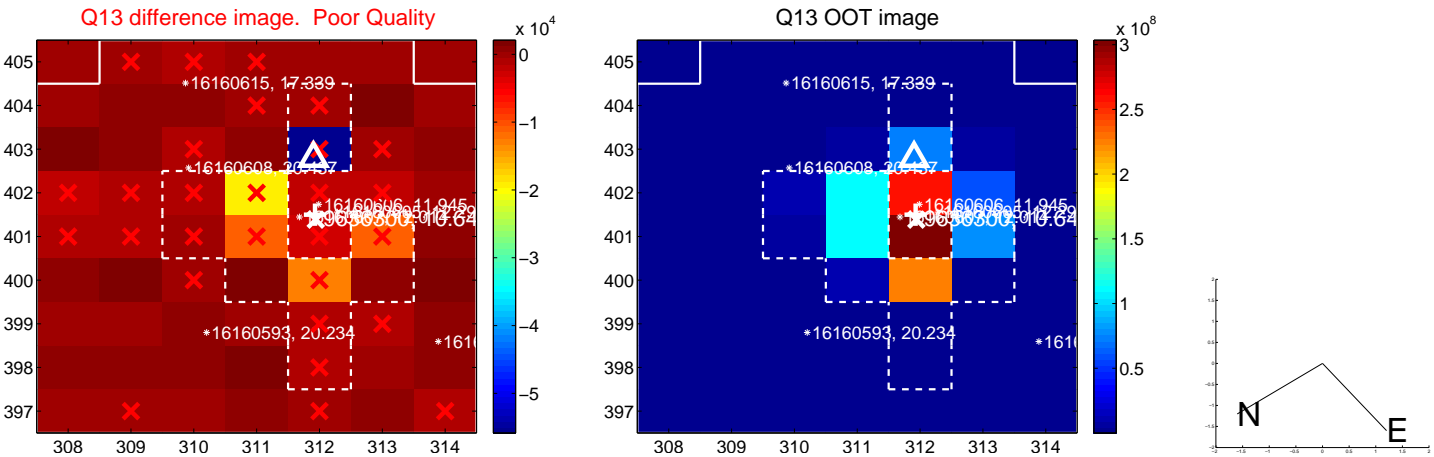
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



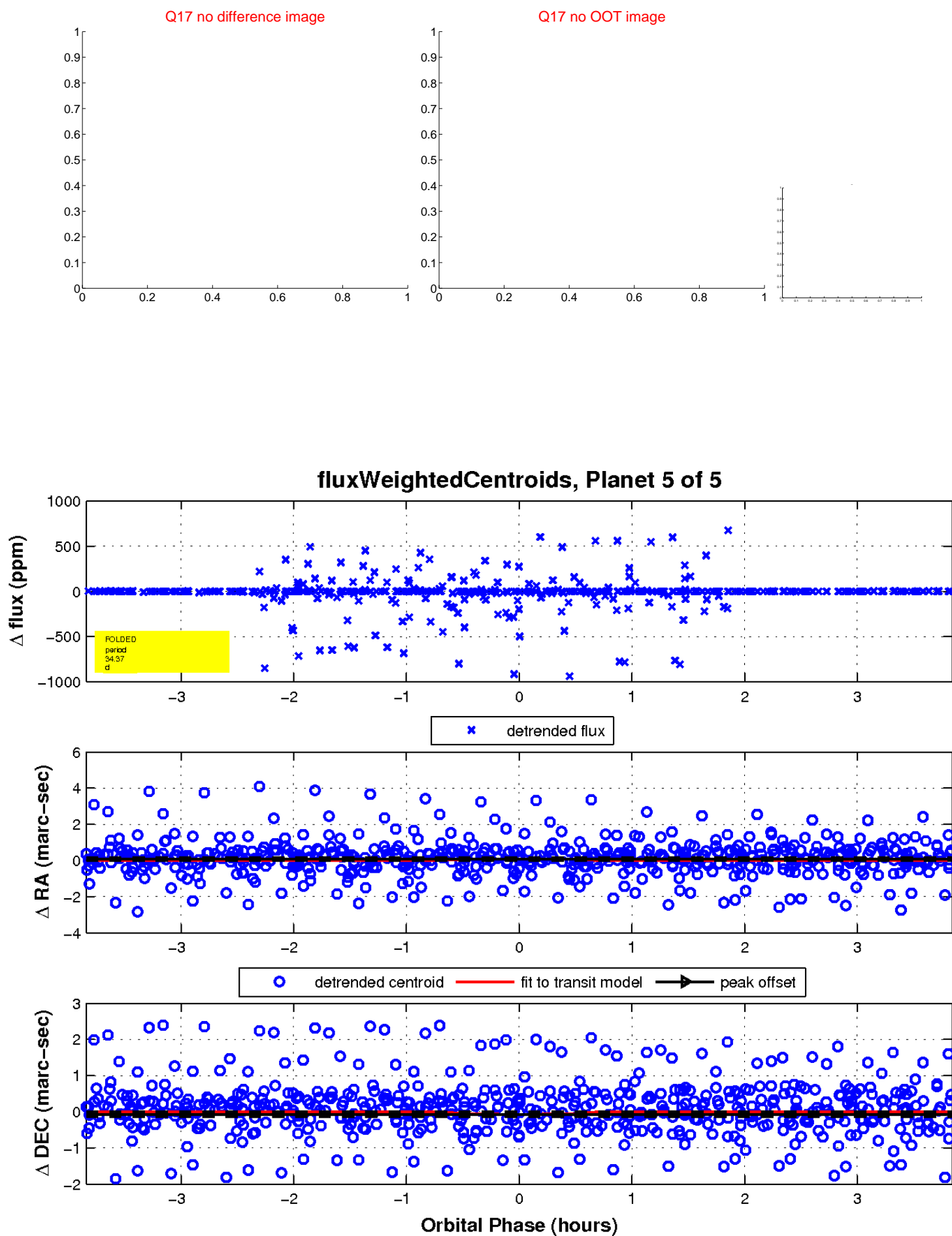
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

