

KIC 011081377

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})
011081377-01	OBS	No	322.177819	207.552187	617.5	2.880	12.2	7.8	0.61	4056	1.73	0.15
011081377-03	OBS	No	262.266082	327.153610	477.9	6.941	9.8	7.3	0.61	4056	1.35	0.20
011081377-04	OBS	No	411.842240	192.081518	373.2	6.223	10.9	4.9	0.61	4056	1.32	0.11
011081377-05	OBS	No	449.264705	415.813161	552.0	1.540	13.8	6.9	0.61	4056	1.44	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES
011081377-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—HALO_GHOST
011081377-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011081377-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

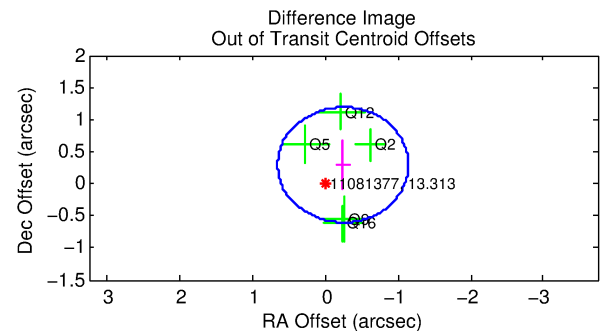
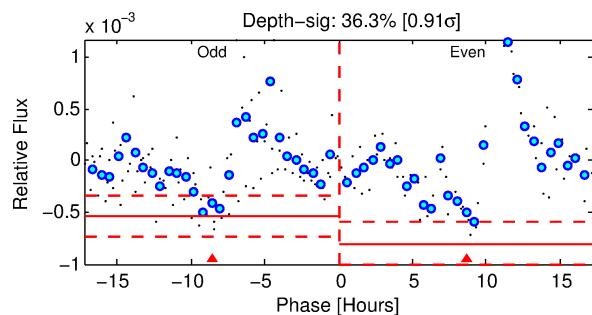
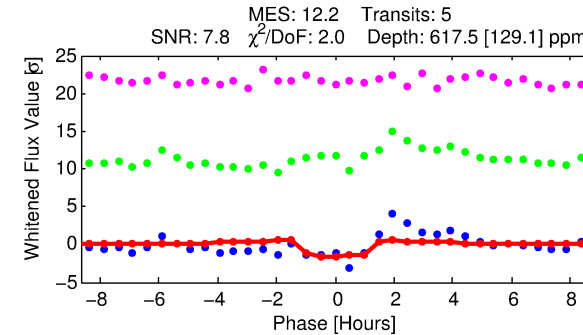
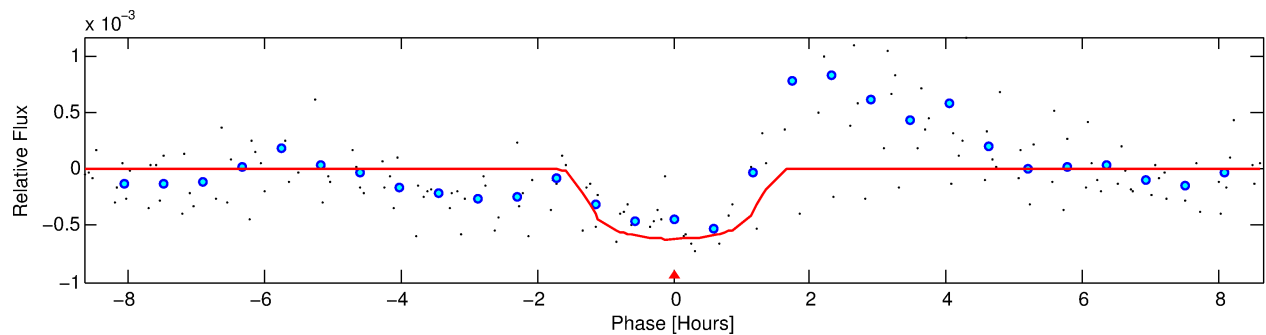
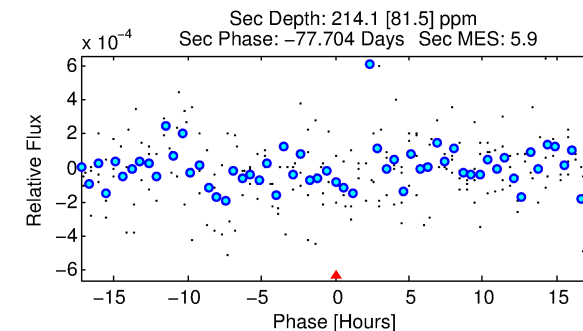
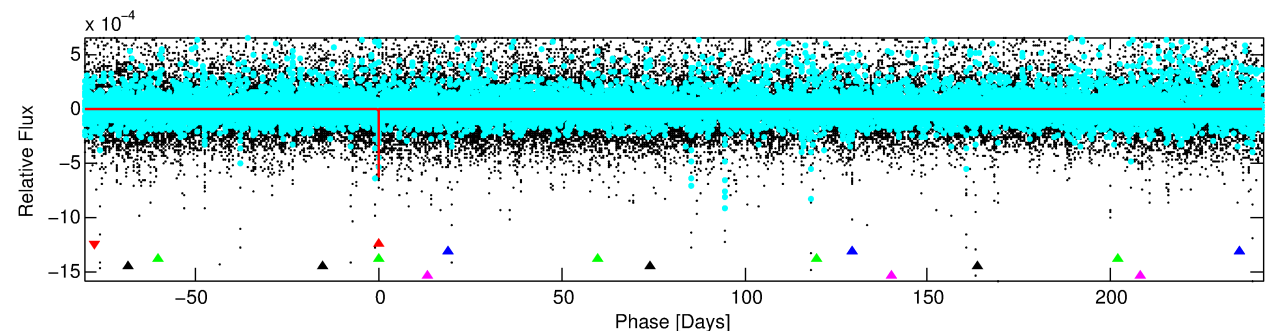
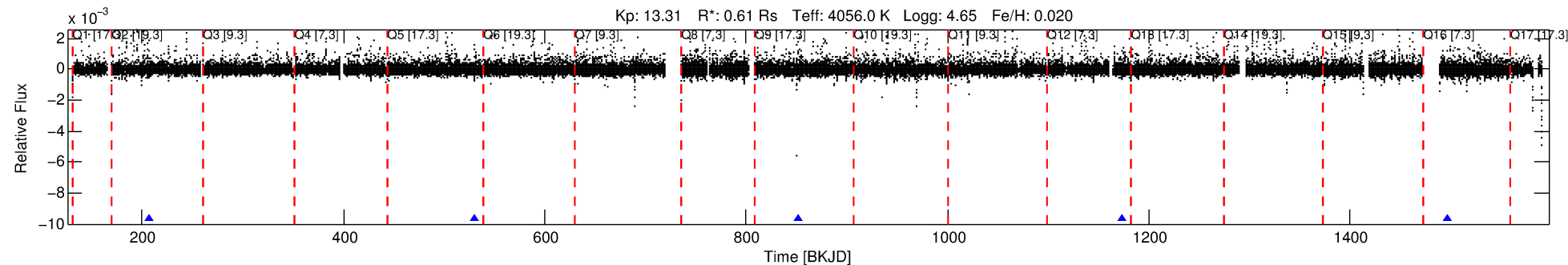
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011081377-01

No Significant Match Found

DV One-Page Summary

KIC: 11081377 Candidate: 1 of 5 Period: 322.178 d



DV Fit Results:

Period = 322.17782 [0.00319] d
Epoch = 207.5522 [0.0082] BKJD
Rp/R* = 0.0260 [0.0334]
a/R* = 519.42 [2540.66]
b = 0.83 [1.90]
Seff = 0.15 [0.03]
Teq = 159 [8] K
Rp = 1.73 [2.23] Re
a = 0.7774 [0.0694] AU
Ag = 23838.39 [62056.40] [0.38 σ]
Teff = 3045 [1983] K [1.46 σ]

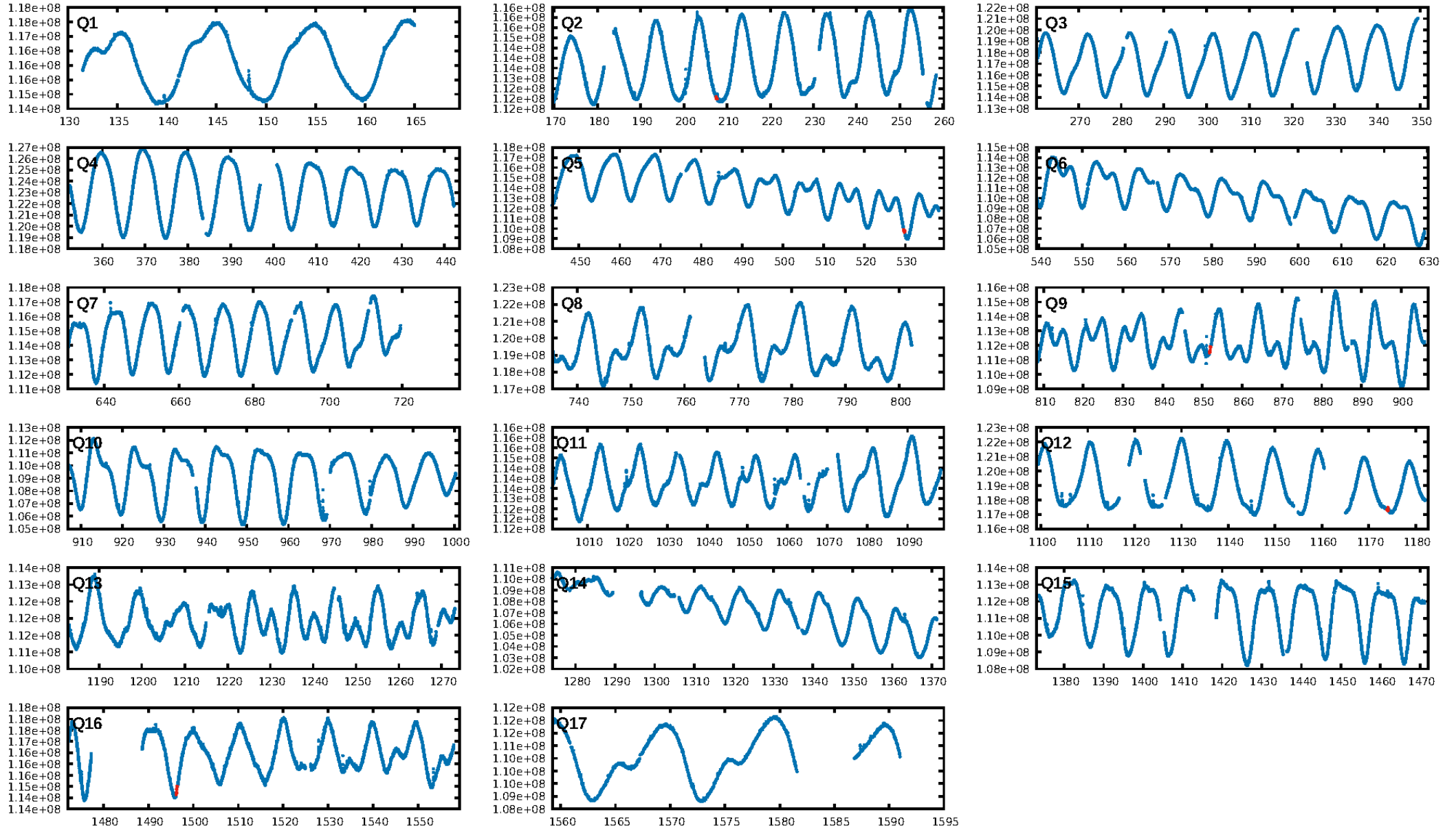
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [191.33 σ]
LongPeriod-sig: 100.0% [313.80 σ]
ModelChiSquare2-sig: 24.3%
ModelChiSquareGof-sig: 48.3%
Bootstrap-pfa: 1.28e-11
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -2.8
Centroid-sig: 89.9%
Centroid-so: 0.148 arcsec [0.25 σ]
OotOffset-rm: 0.381 arcsec [1.28 σ]
OotOffset-st: 1/0/2/2 [5]
KicOffset-rm: 0.544 arcsec [1.56 σ]
KicOffset-st: 1/0/2/2 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 0.80 [4/5]

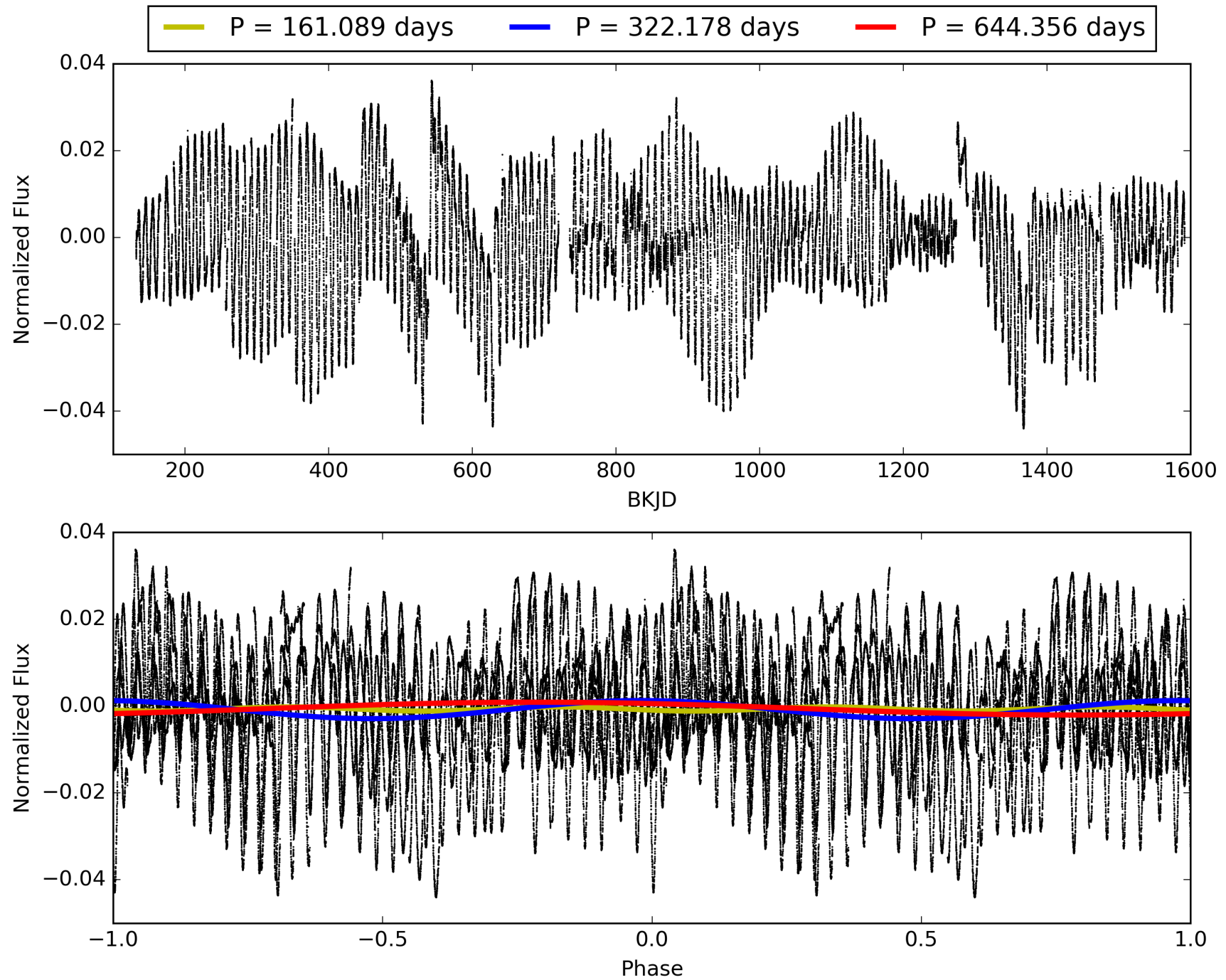
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:11:03 Z

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

TCE 011081377-01, PDC Light Curves

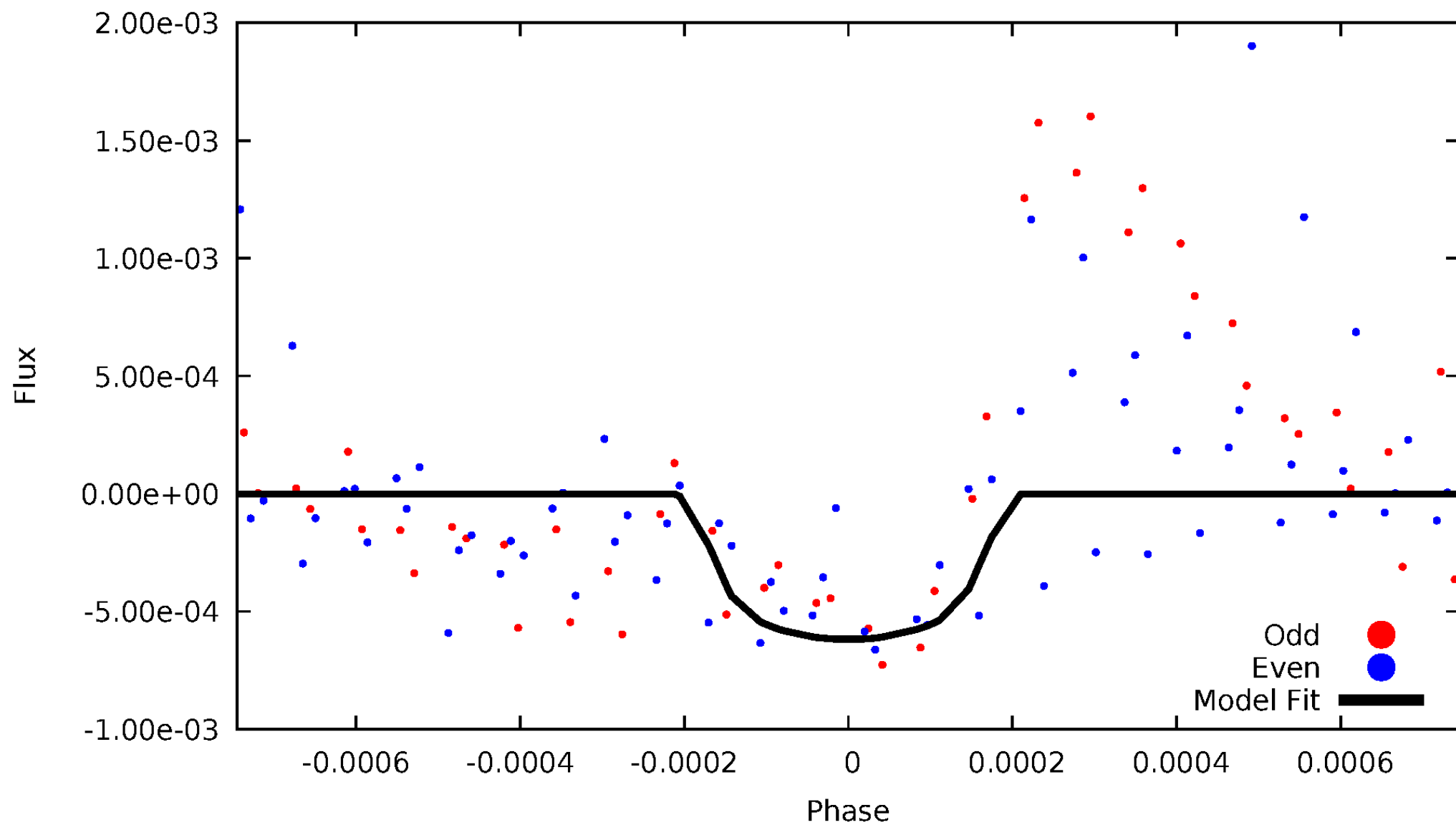


TCE 011081377-01



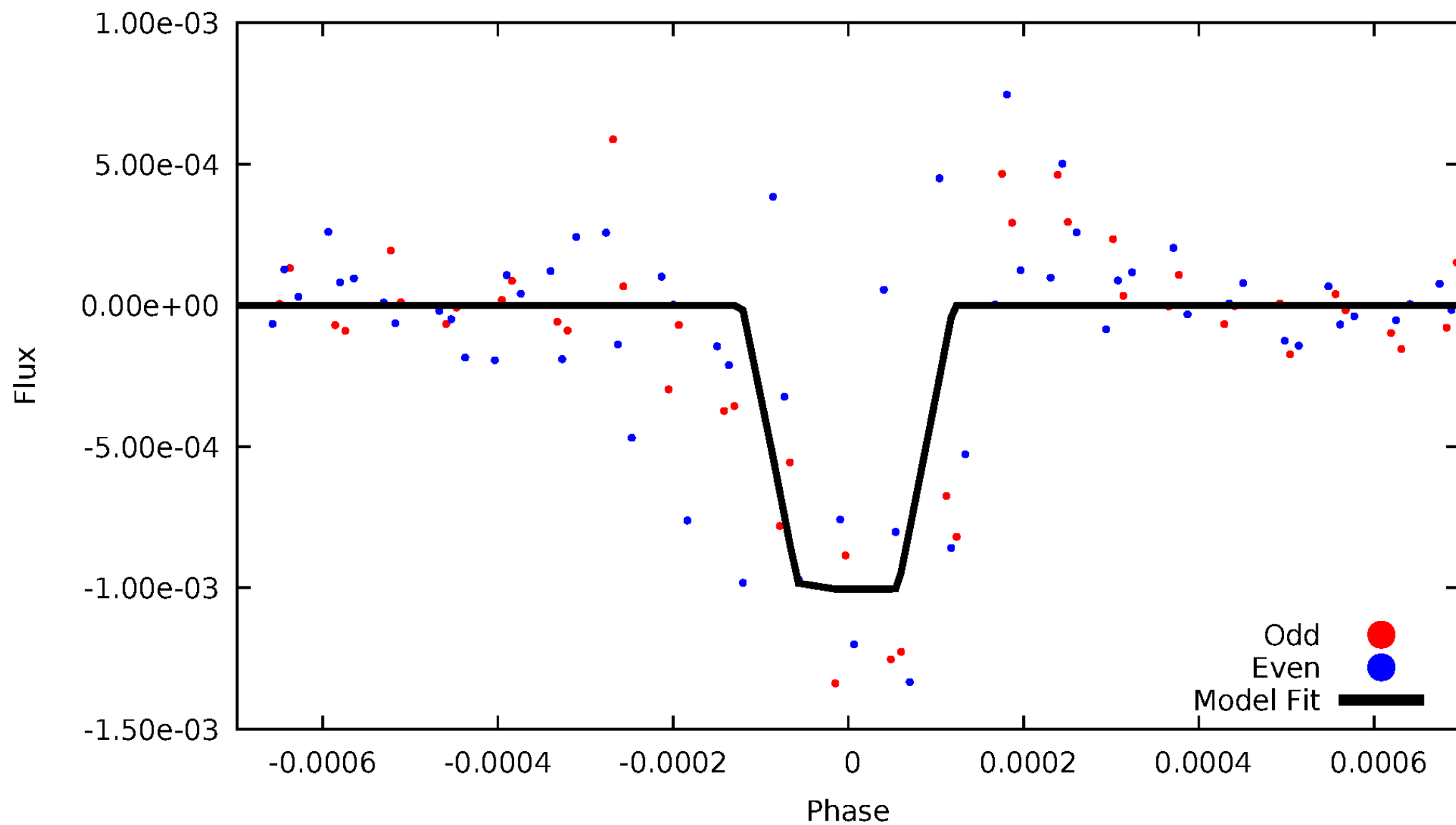
DV Odd/Even

TCE 011081377-01



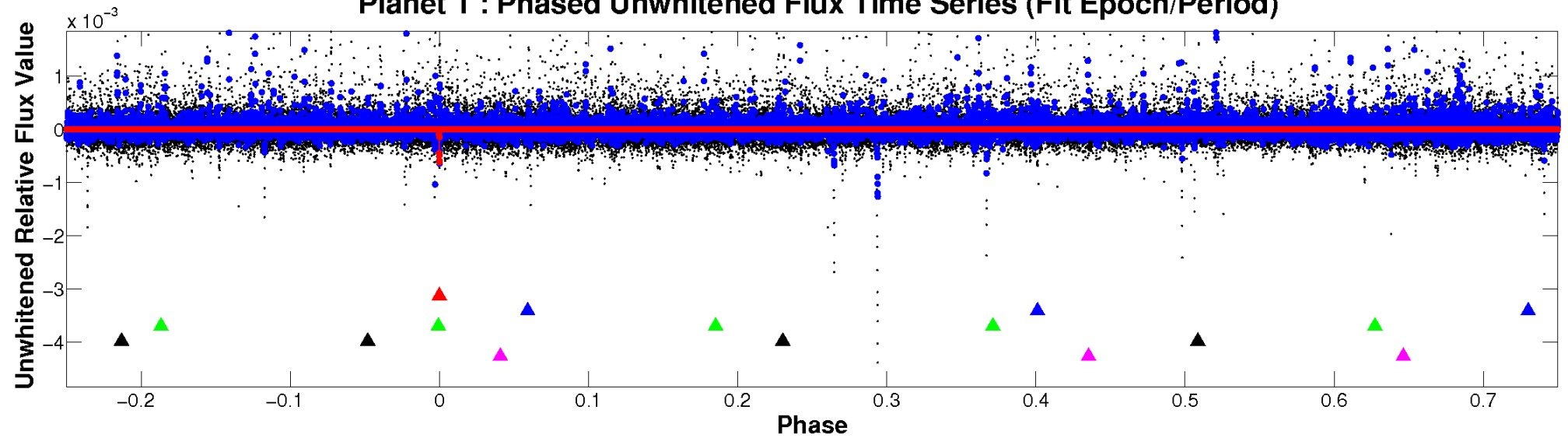
ALT Odd/Even

TCE 011081377-01

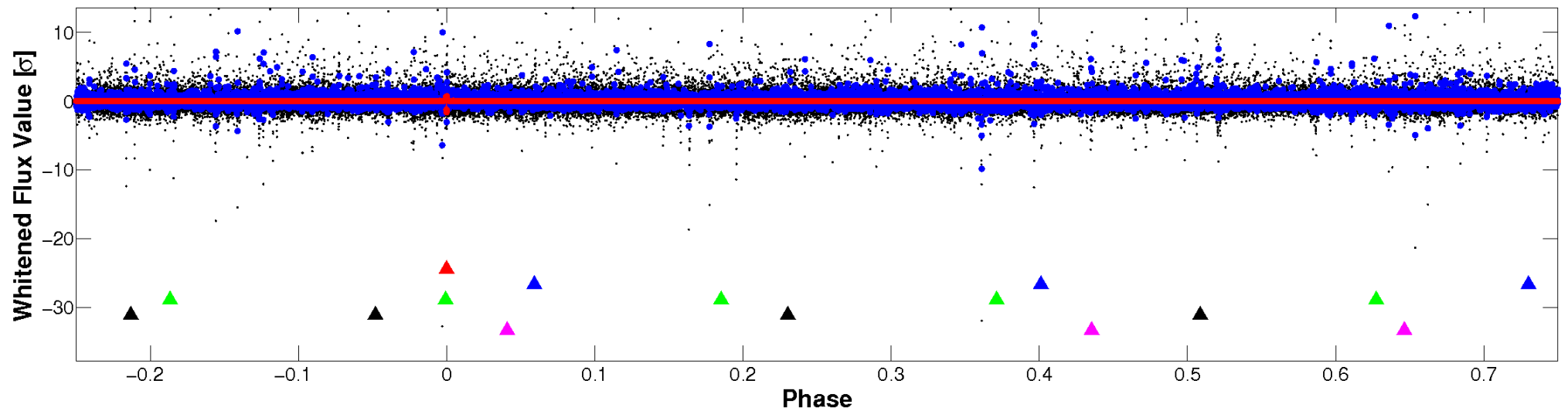


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



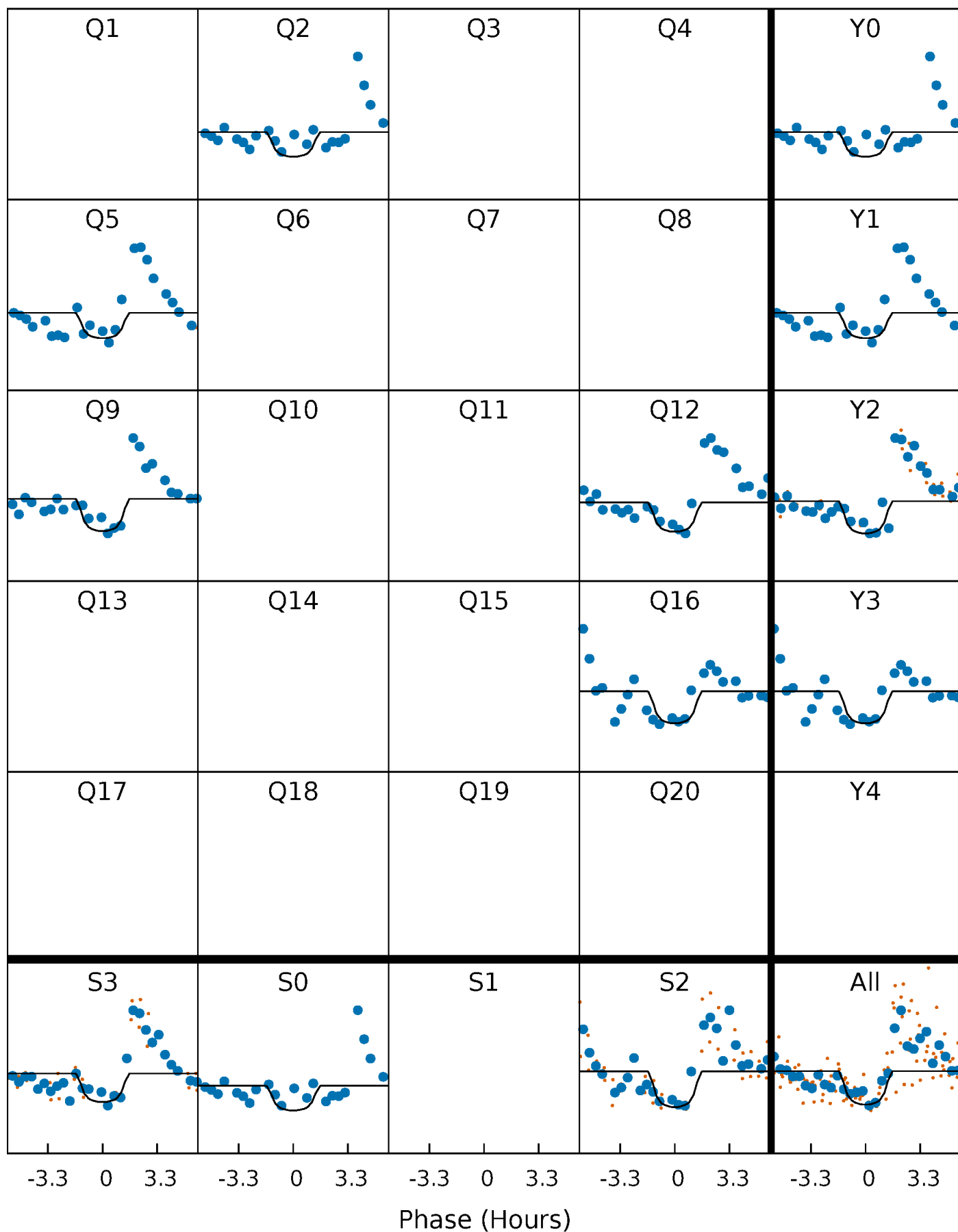
PDC Quarter-Phased Transit Curves

TCE 011081377-01 P=322.177819 Days $T_0=207.552187$ (BKJD)



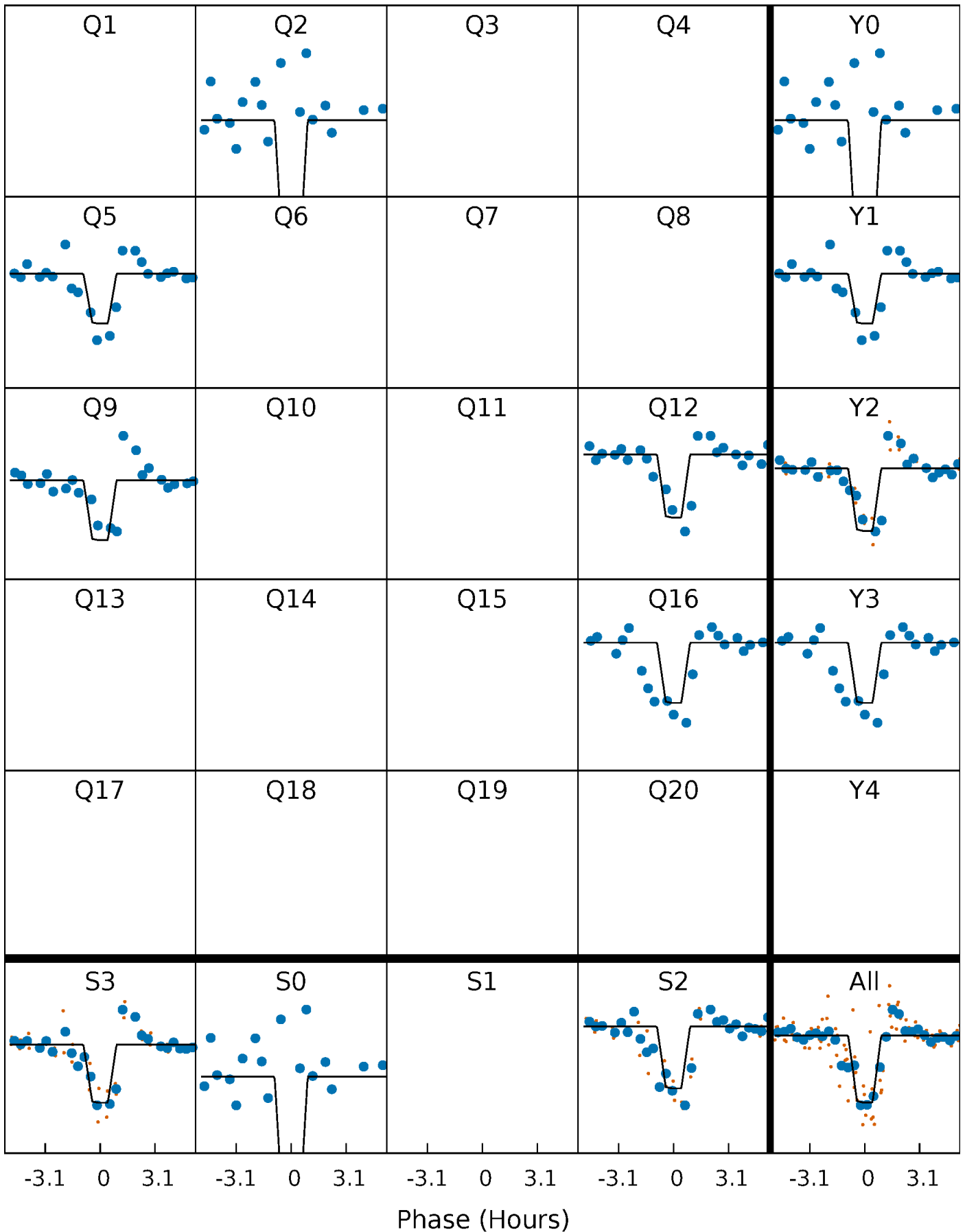
DV Quarter-Phased Transit Curves

TCE 011081377-01 P=322.177819 Days $T_0=207.552187$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

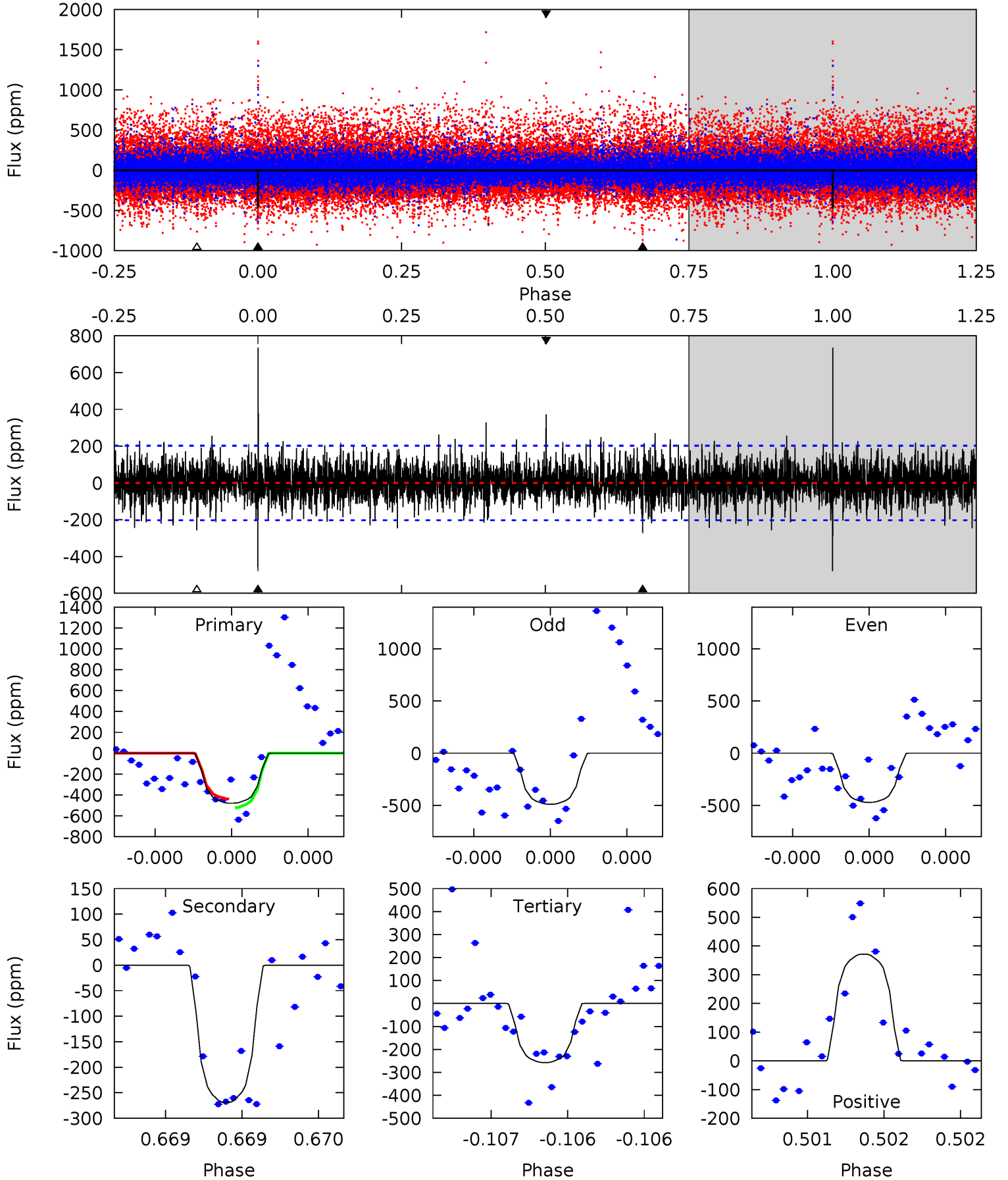
TCE 011081377-01 P=322.173177 Days $T_0=207.575016$ (BKJD)



DV Model-Shift Uniqueness Test

011081377-01, P = 322.177819 Days, E = 207.552187 Days

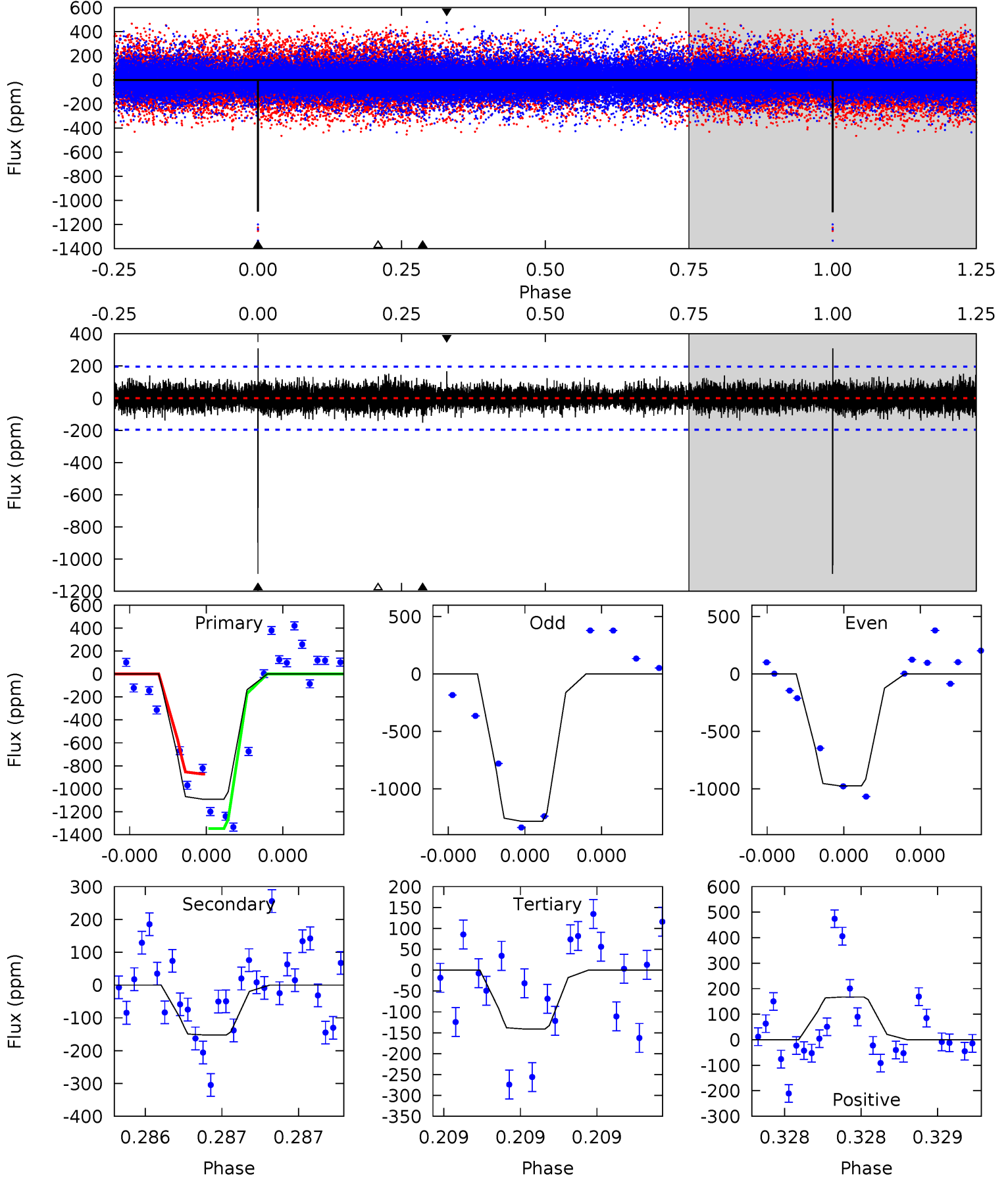
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	7.42	7.10	10.3	5.60	3.52	1.88	6.12	2.96	0.33	-2.83	0.22	0.95	0.61	1.17



Alt Model-Shift Uniqueness Test

011081377-01, P = 322.173177 Days, E = 207.575016 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.9	4.45	4.11	4.89	5.72	3.71	1.02	27.7	27.0	0.33	-0.44	4.46	0.82	0.22	7.00



Stellar Parameters For KIC 011081377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4056^{+141}_{-155}	$4.648^{+0.060}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.610^{+0.038}_{-0.070}$	$0.604^{+0.057}_{-0.063}$	$3.743^{+1.093}_{-0.389}$
	+3%/-4%	+1%/-0%	+1250%/-1500%	+6%/-11%	+9%/-10%	+29%/-10%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011081377-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-269 ± 36	$2.29^{+2.03}_{-1.48}$	220^{+8}_{-9}	3170^{+1341}_{-493}	$16668^{+124259}_{-11766}$
Alt.	-152 ± 34	$2.41^{+2.11}_{-1.54}$	220^{+8}_{-9}	2884^{+1050}_{-426}	8374^{+55793}_{-5866}

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 $A_{obs} \gg 1.0$

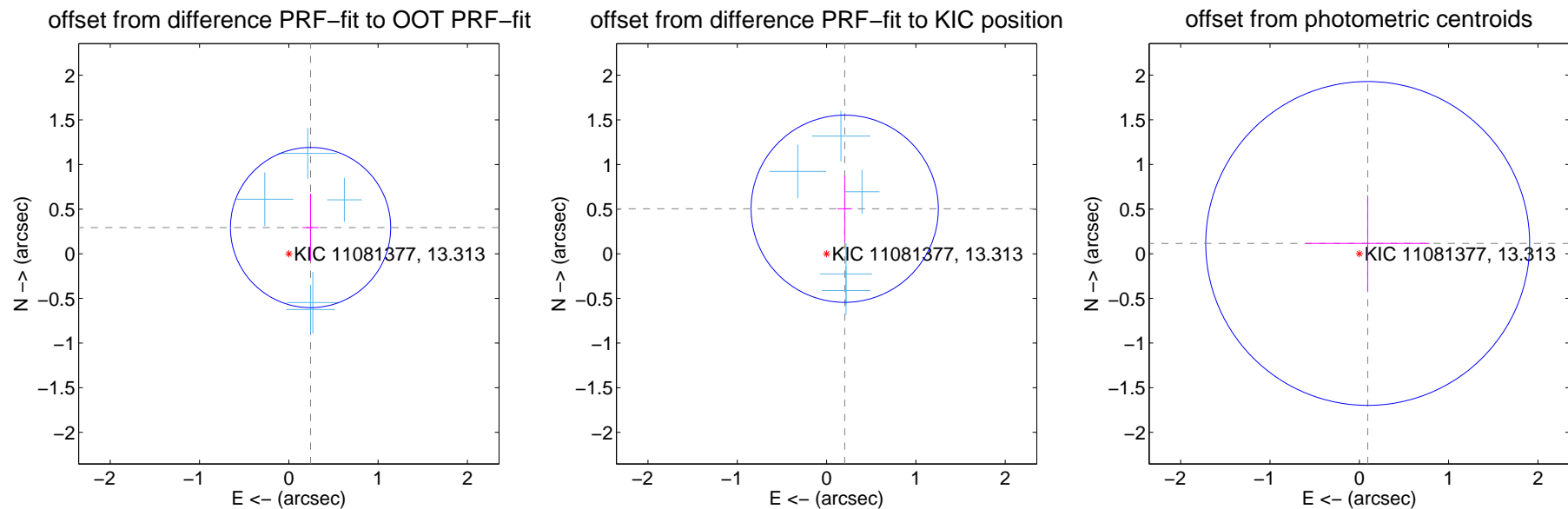
DV Centroid Data

Supplemental centroid analysis for 011081377-01. Kepler magnitude: 13.31. Transit SNR 7.76

There are 5 quarters with good PRF difference image offsets

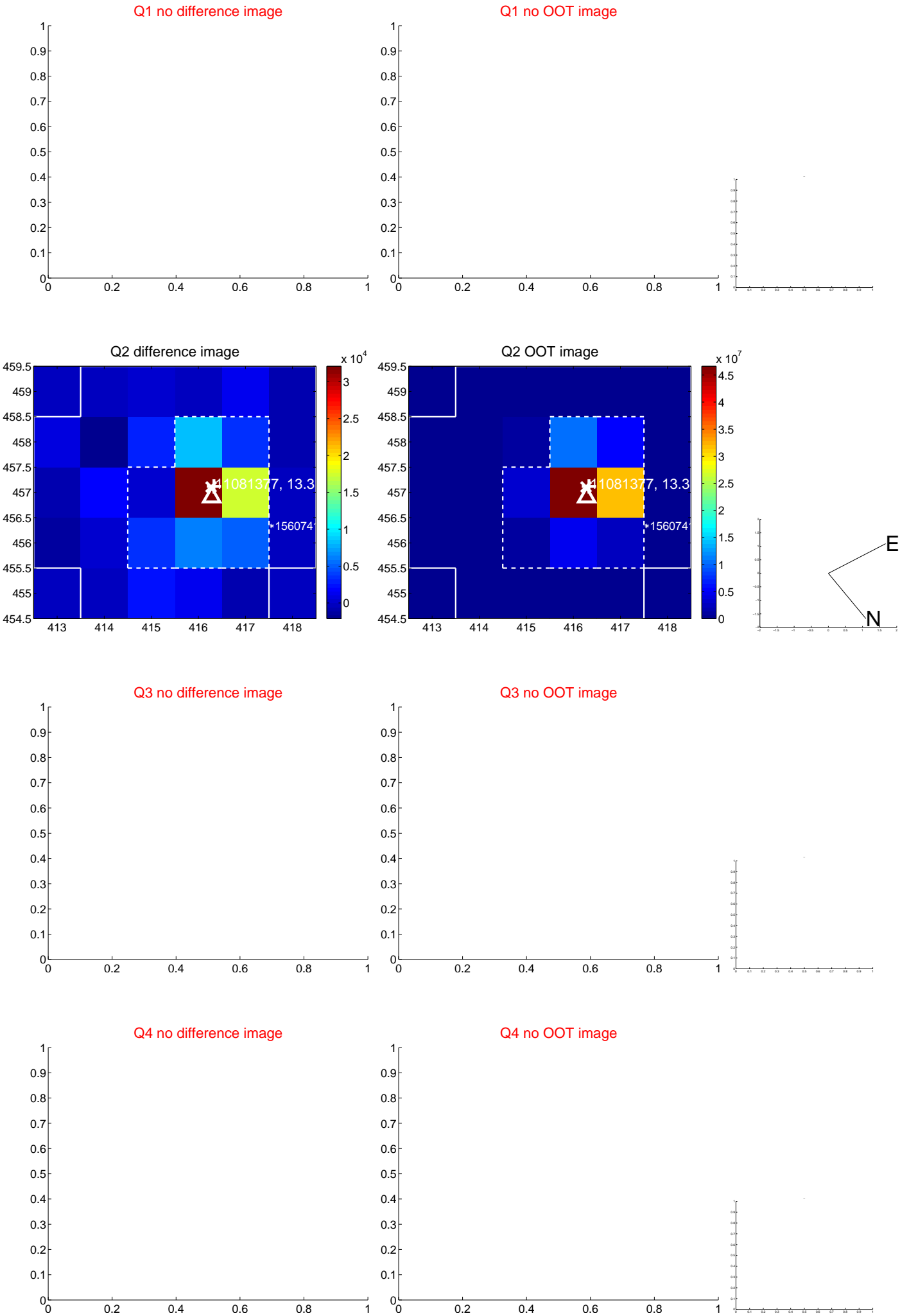
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.381 ± 0.299	1.28	-0.244 ± 0.091	0.294 ± 0.381
PRF-fit source offset from KIC position	0.544 ± 0.349	1.56	-0.203 ± 0.083	0.504 ± 0.375
photometric centroid source offset	0.15 ± 0.60	0.25	-0.09 ± 0.69	0.11 ± 0.54

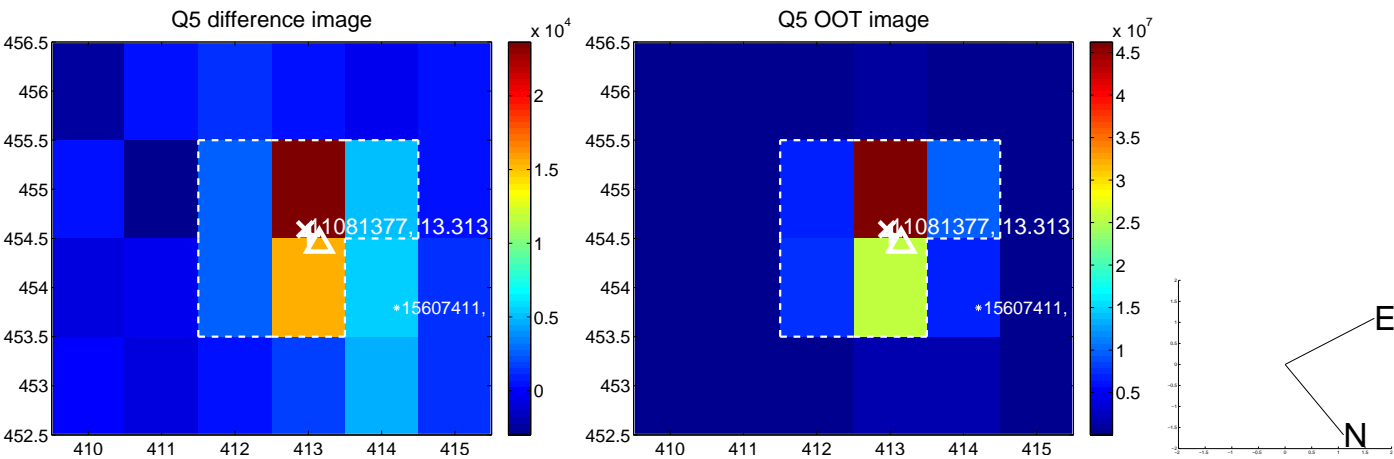


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

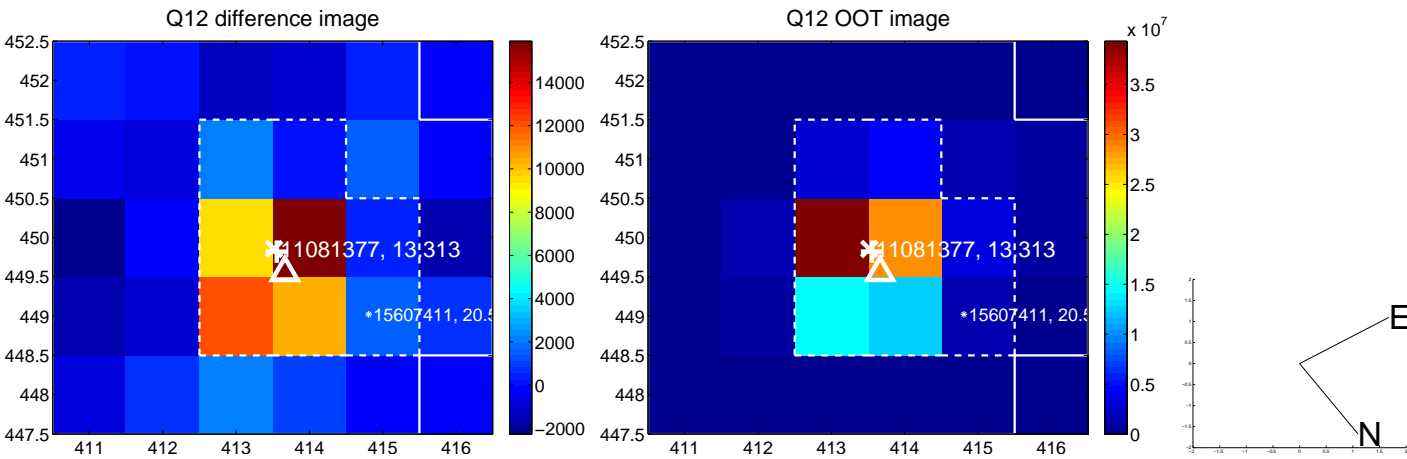
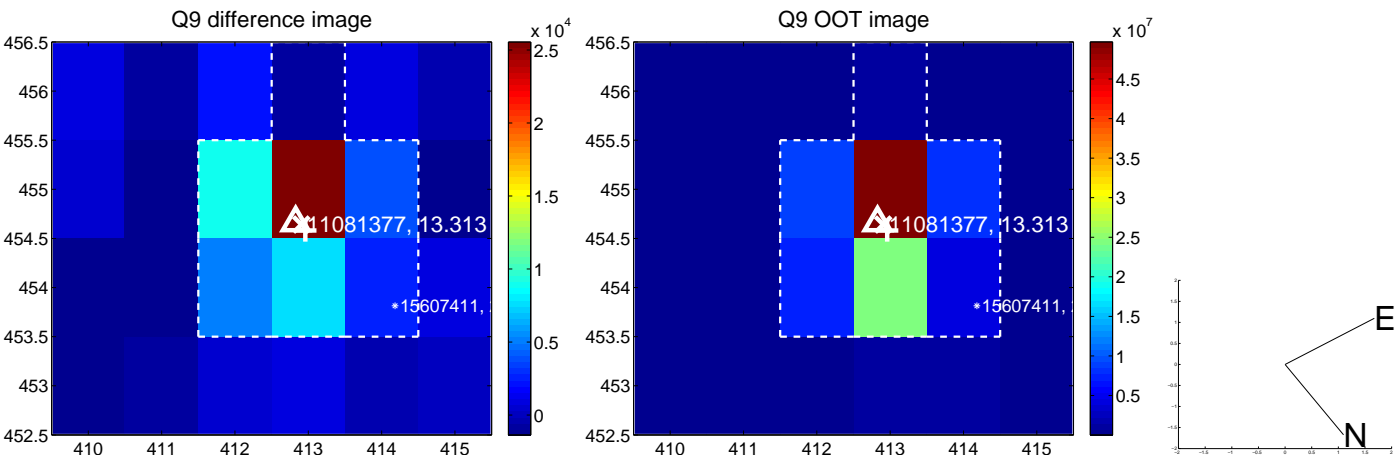
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



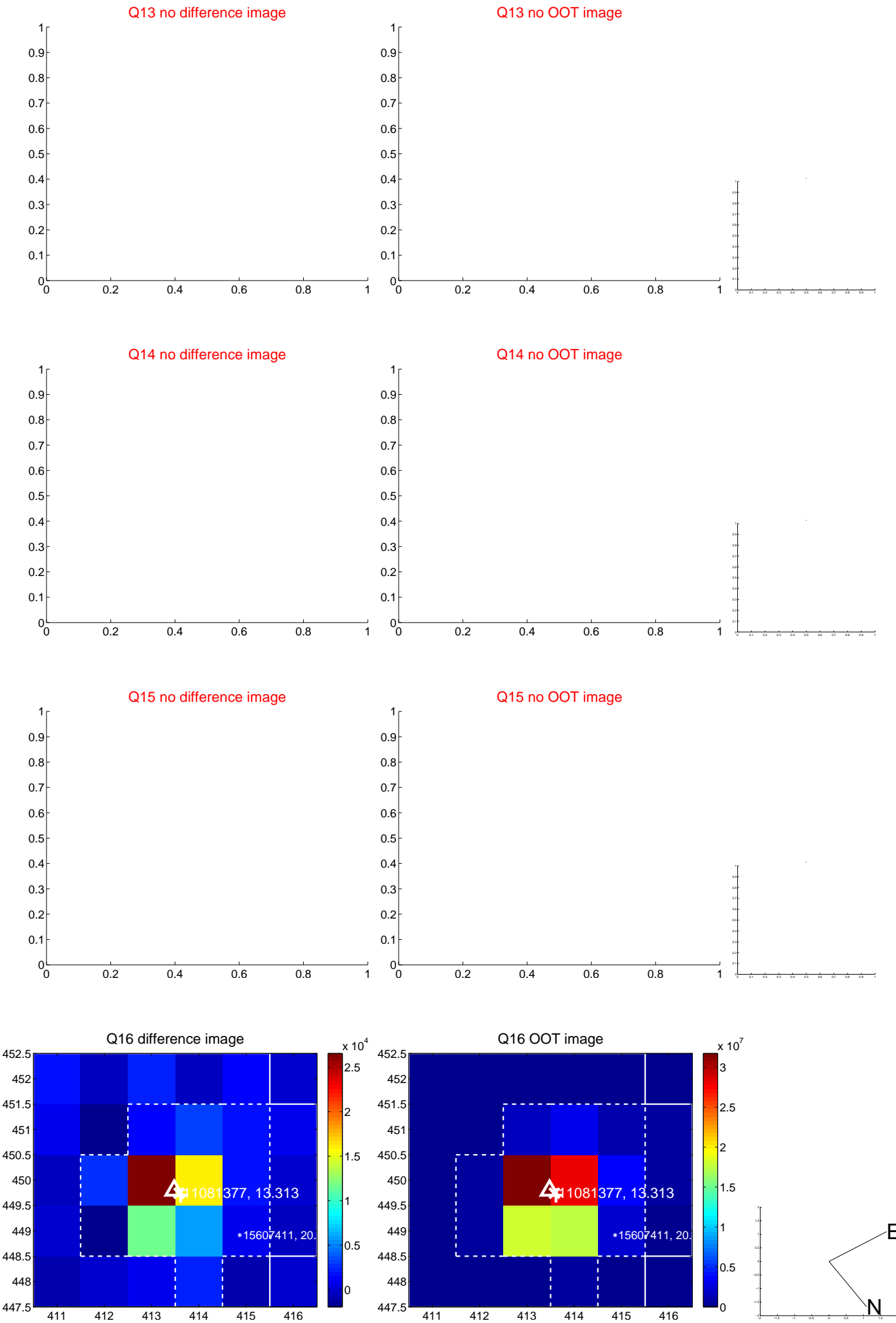
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



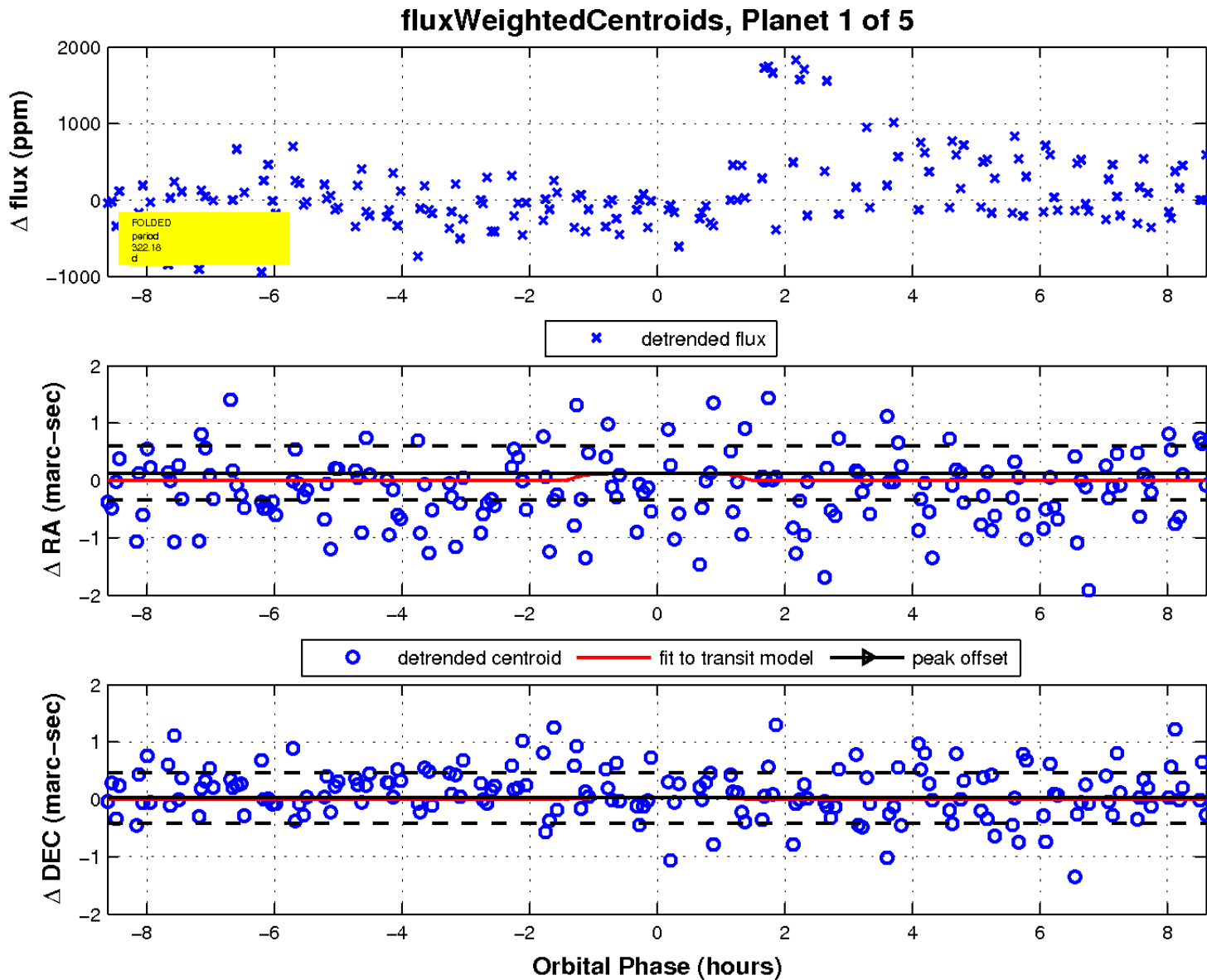
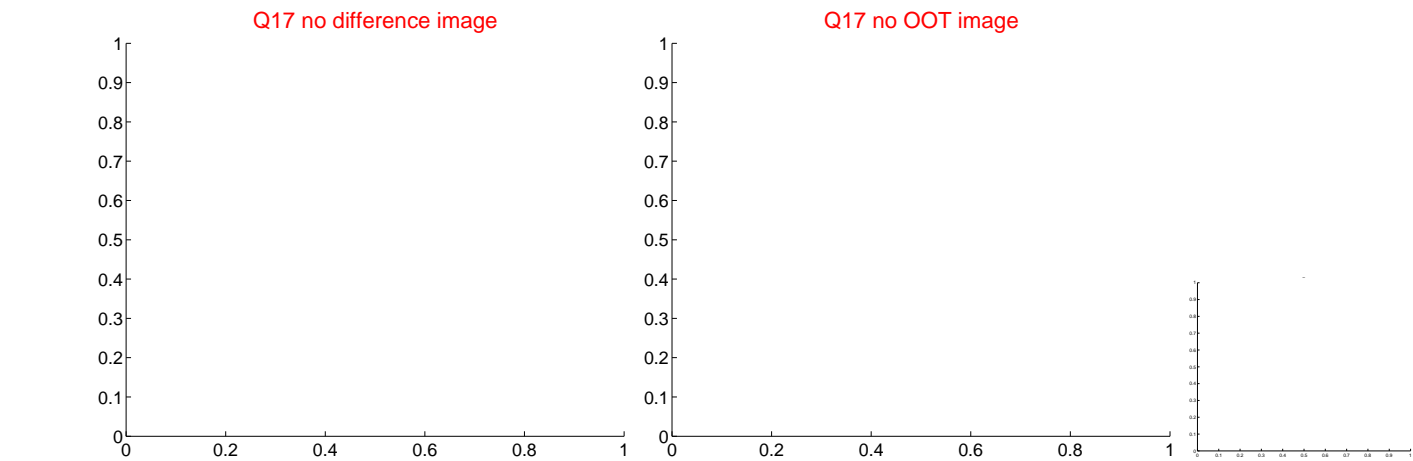
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

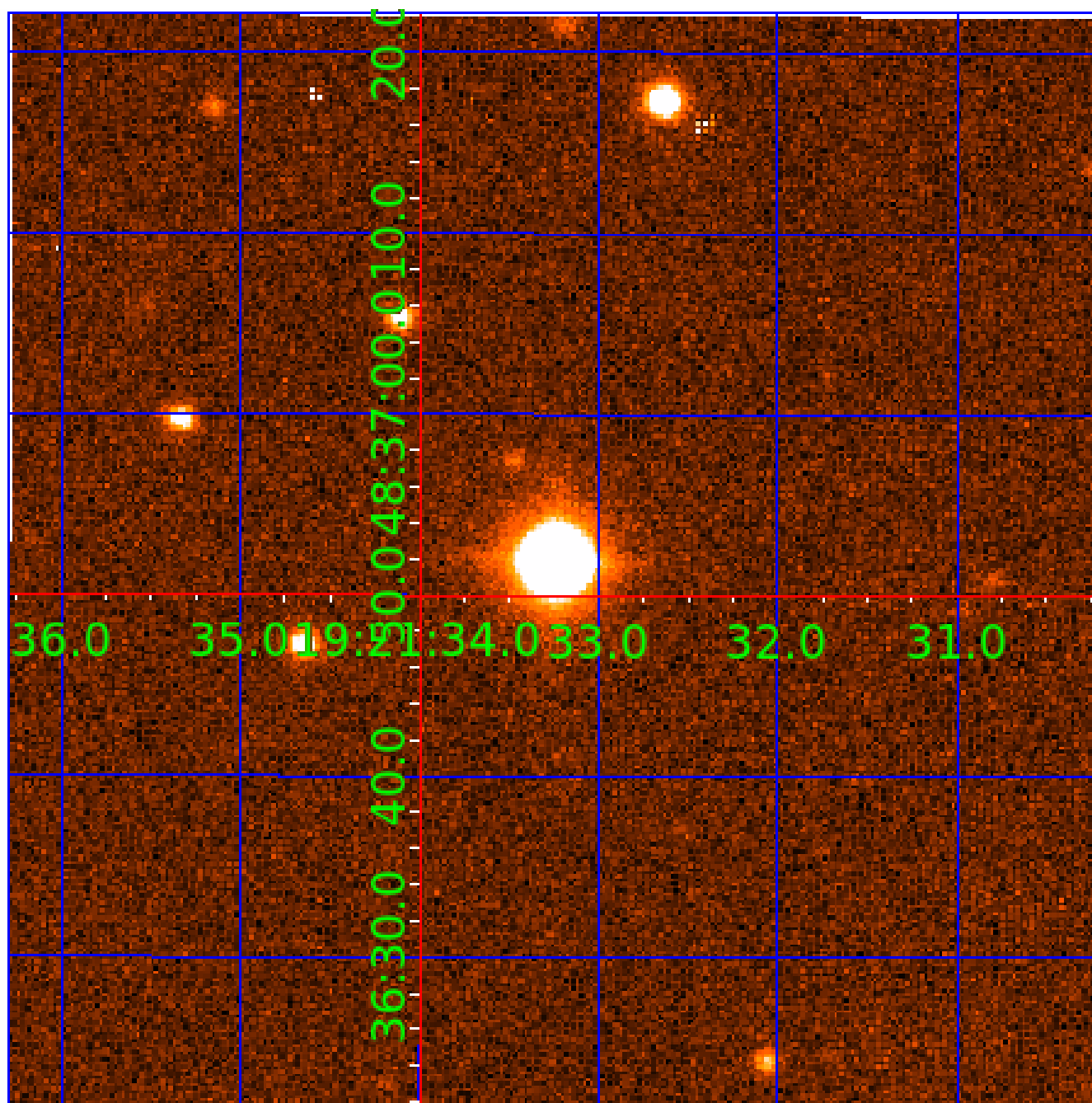


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011081377

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})
011081377-01	OBS	No	322.177819	207.552187	617.5	2.880	12.2	7.8	0.61	4056	1.73	0.15
011081377-03	OBS	No	262.266082	327.153610	477.9	6.941	9.8	7.3	0.61	4056	1.35	0.20
011081377-04	OBS	No	411.842240	192.081518	373.2	6.223	10.9	4.9	0.61	4056	1.32	0.11
011081377-05	OBS	No	449.264705	415.813161	552.0	1.540	13.8	6.9	0.61	4056	1.44	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES
011081377-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—HALO_GHOST
011081377-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011081377-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

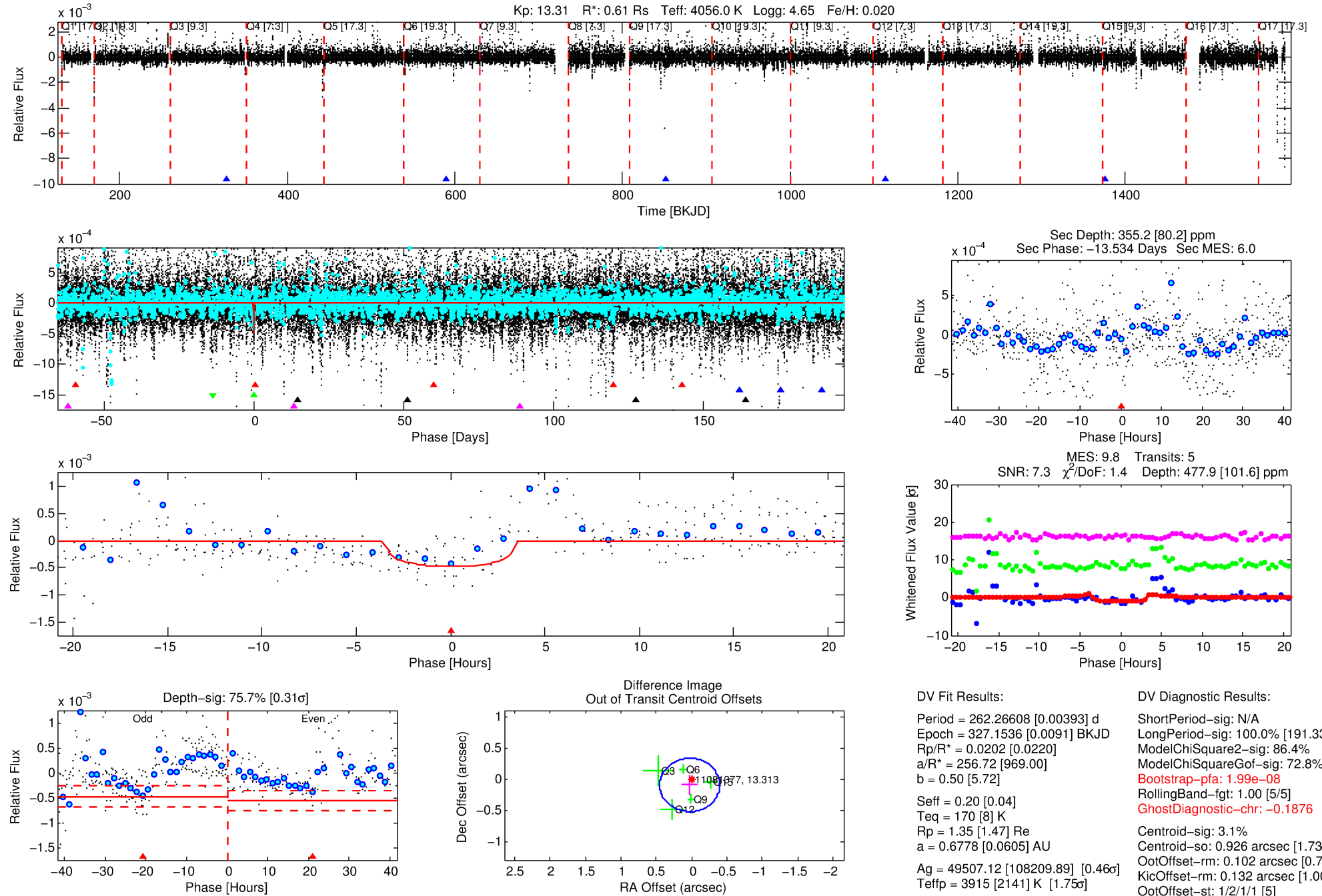
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011081377-03

No Significant Match Found

DV One-Page Summary

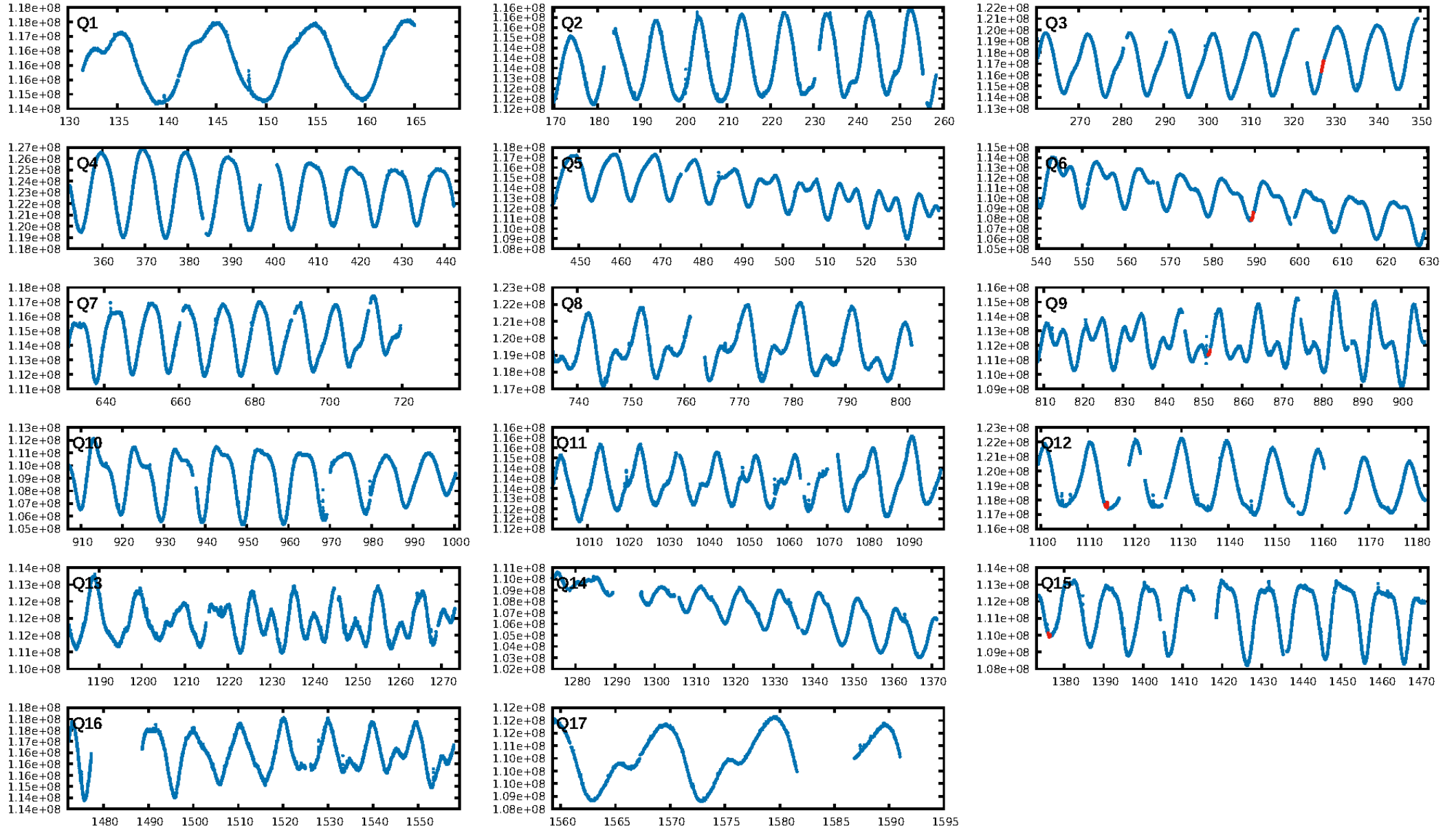
KIC: 11081377 Candidate: 3 of 5 Period: 262.266 d



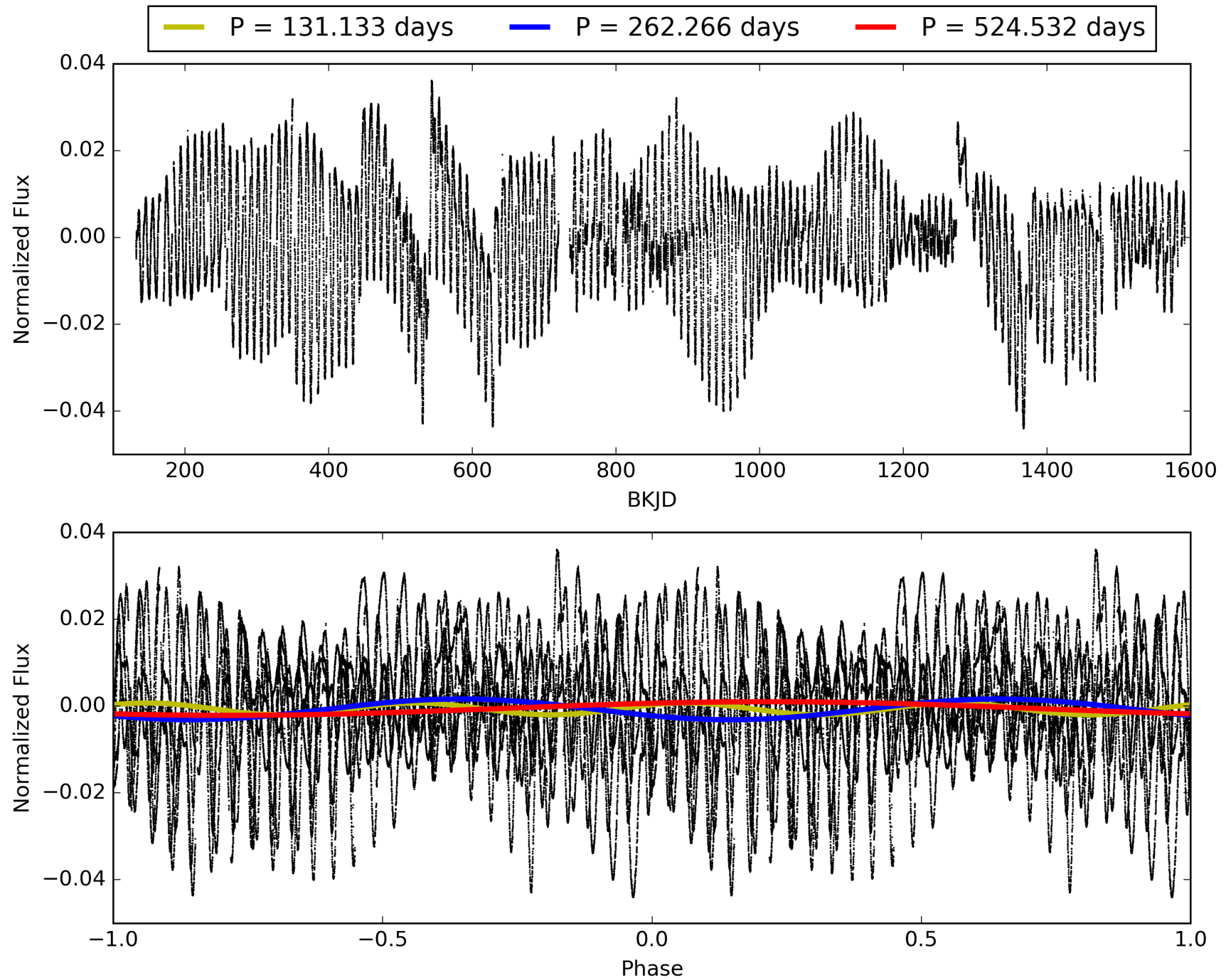
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:11:28 Z

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

TCE 011081377-03, PDC Light Curves

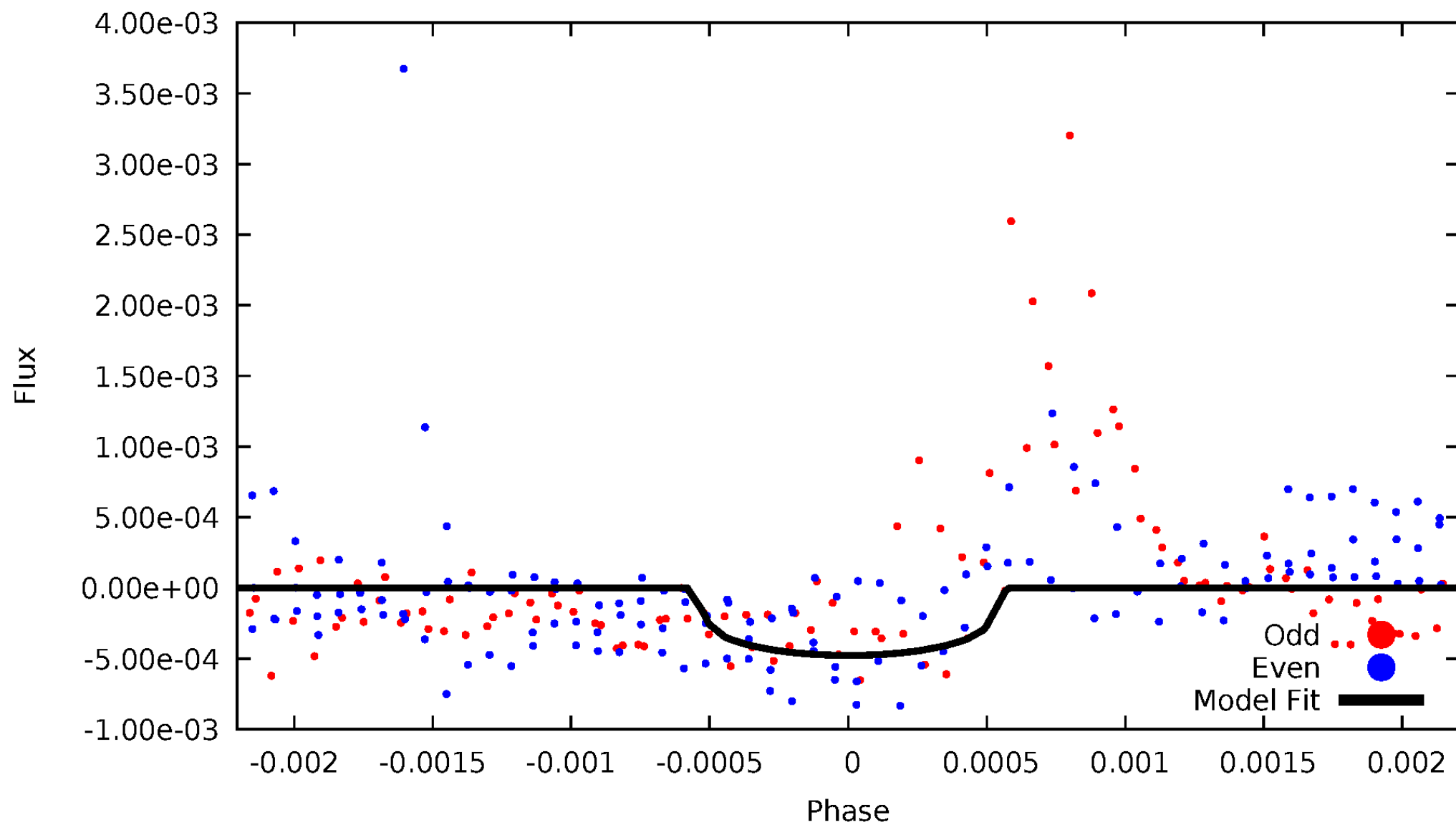


TCE 011081377-03



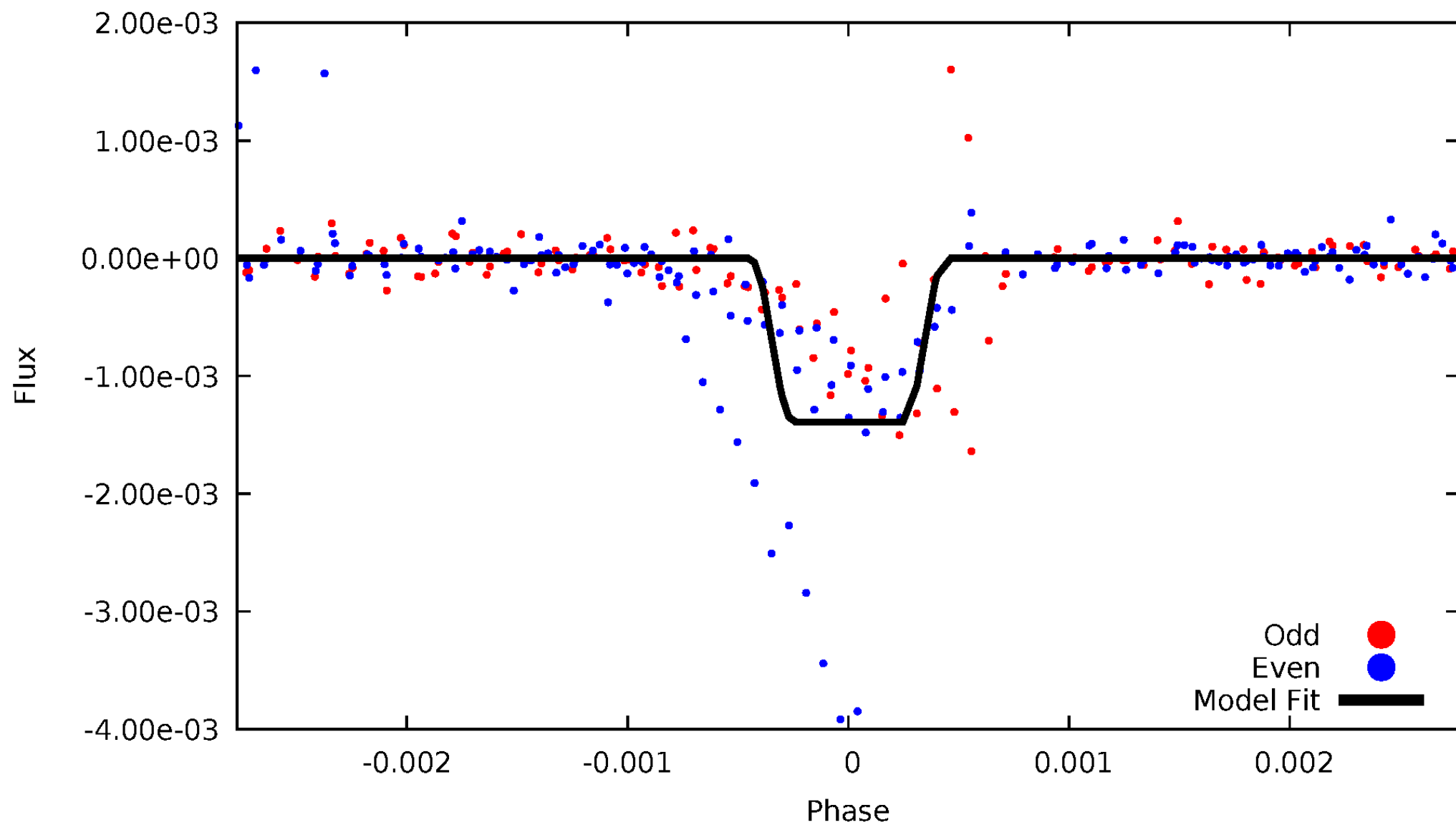
DV Odd/Even

TCE 011081377-03



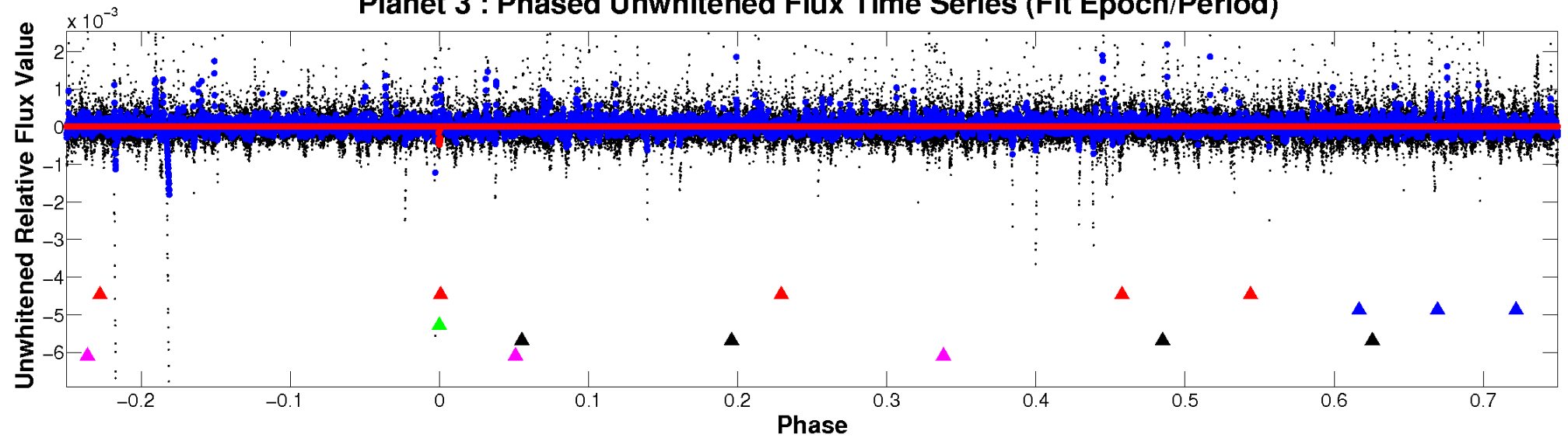
ALT Odd/Even

TCE 011081377-03

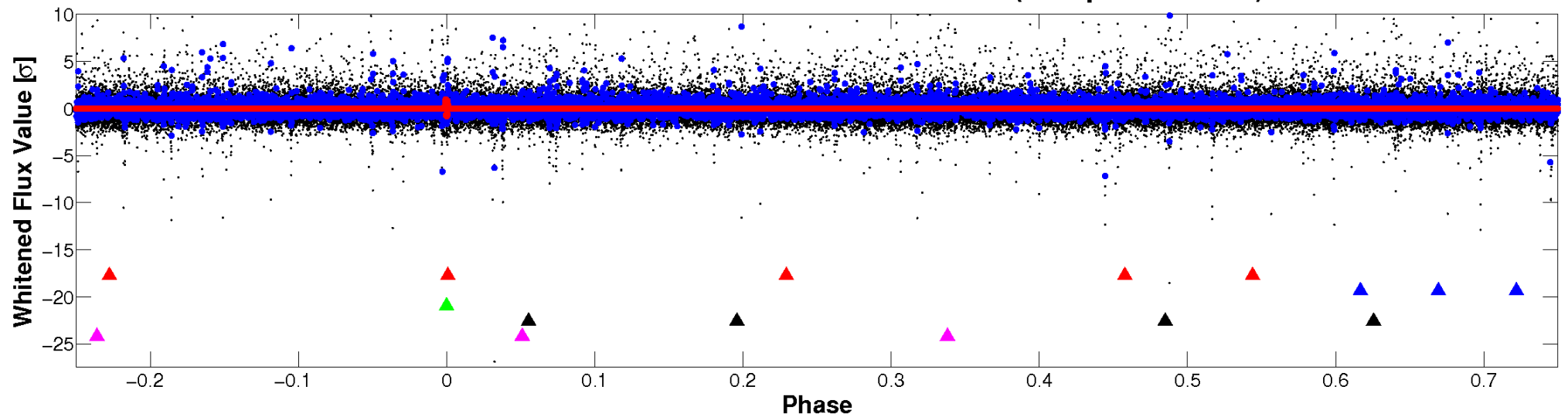


Non-Whitened Vs. Whitened Light Curve

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

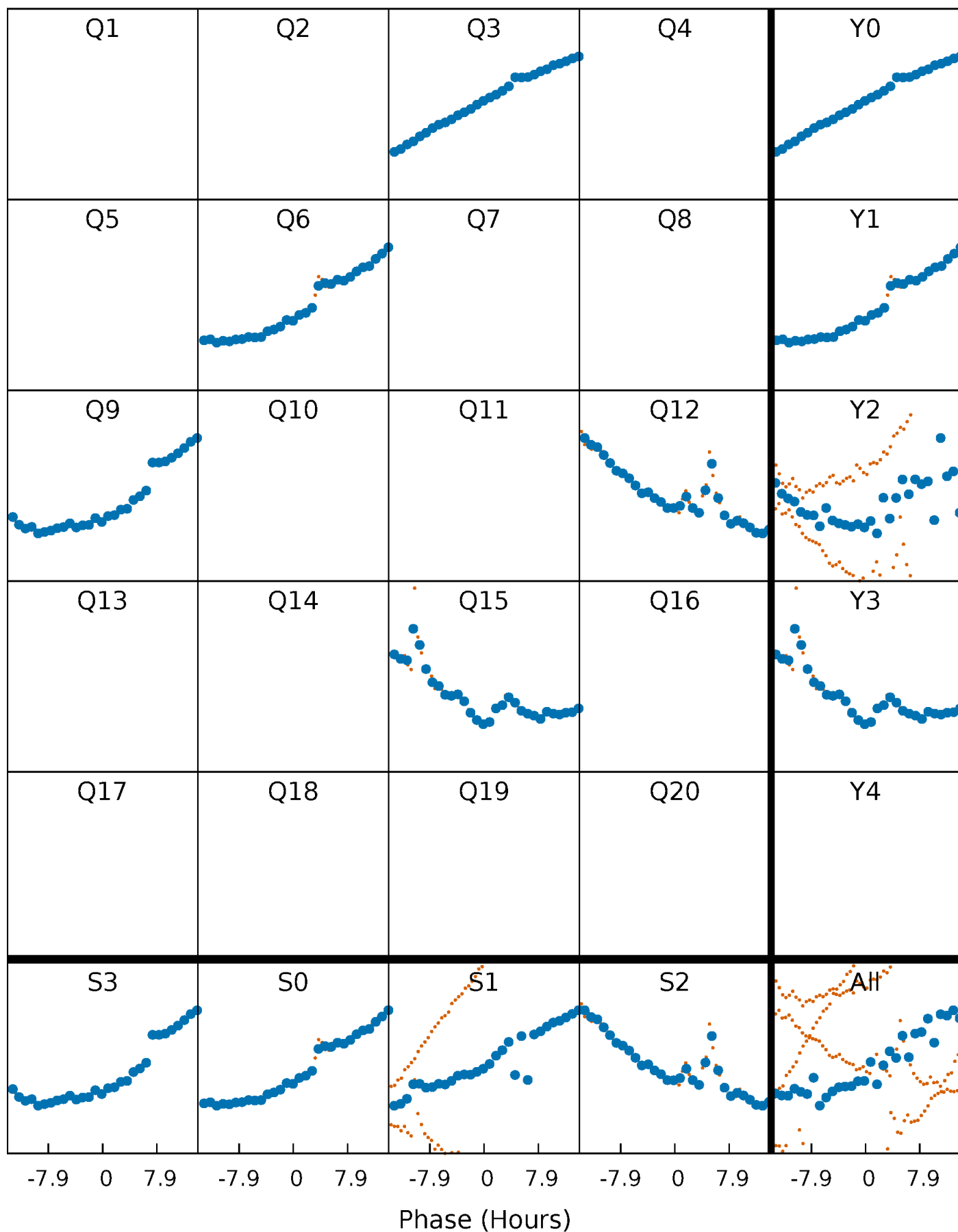


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



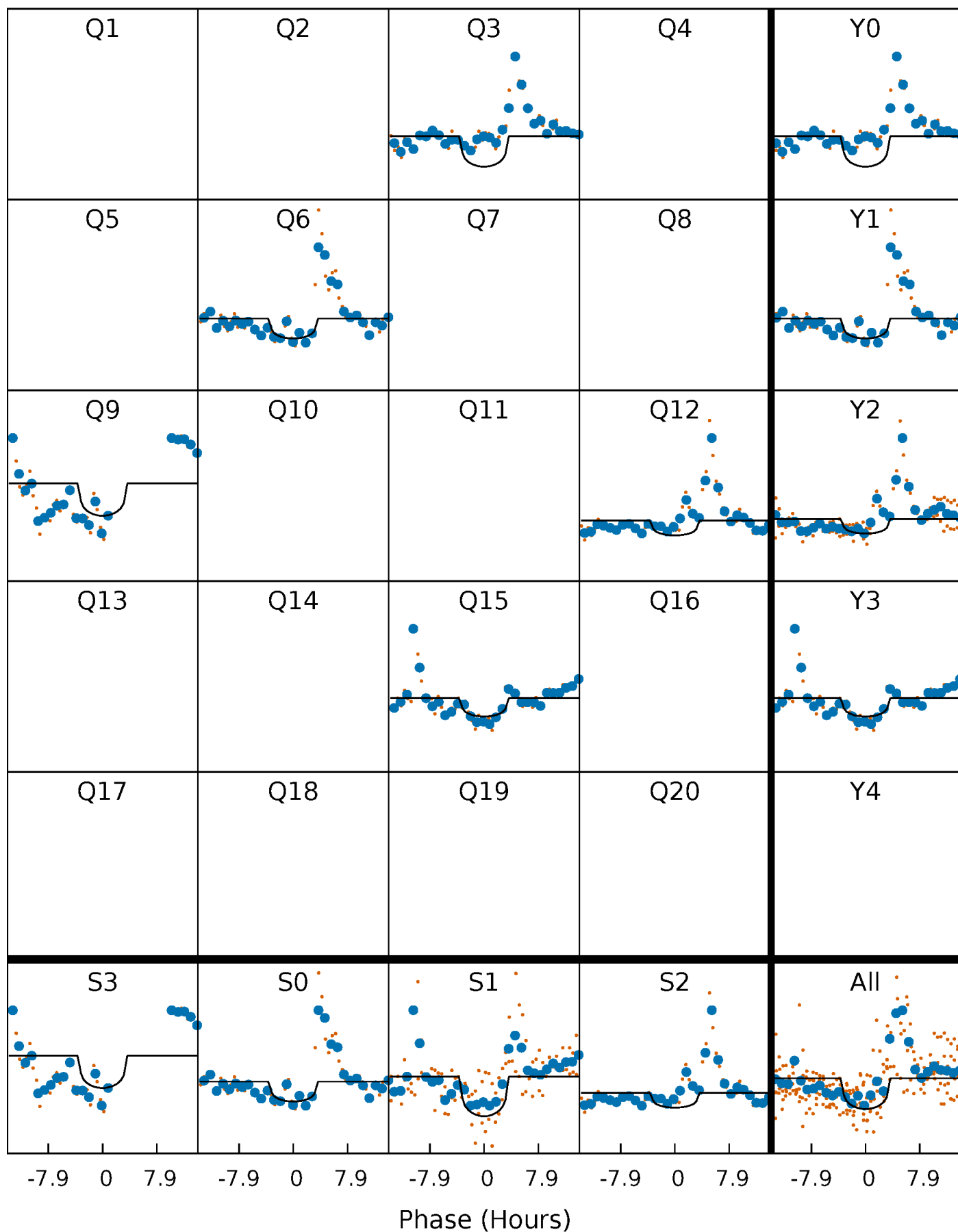
PDC Quarter-Phased Transit Curves

TCE 011081377-03 $P=262.266082$ Days $T_0=327.153610$ (BKJD)



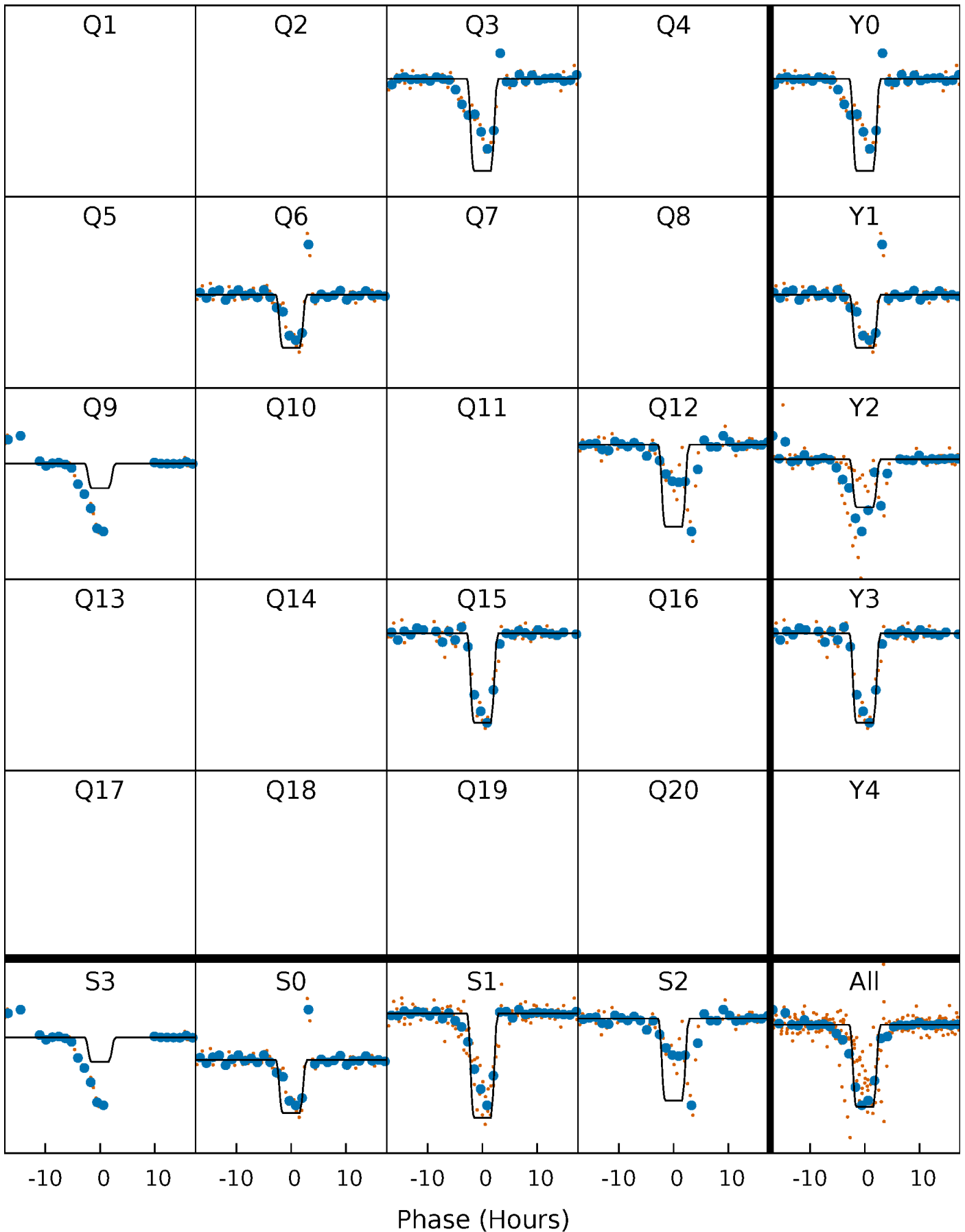
DV Quarter-Phased Transit Curves

TCE 011081377-03 P=262.266082 Days $T_0=327.153610$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

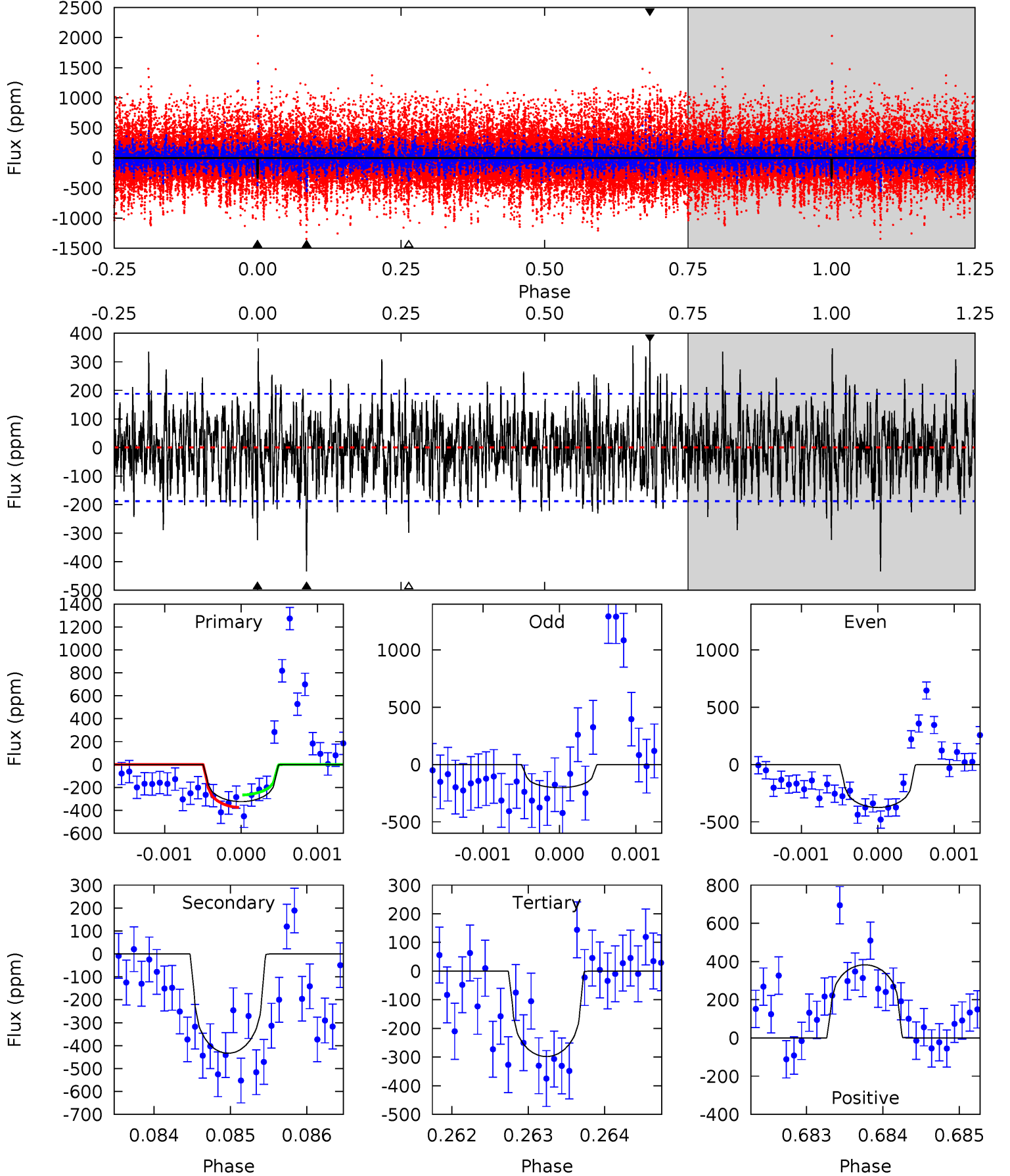
TCE 011081377-03 P=262.251120 Days $T_0=327.200669$ (BKJD)



DV Model-Shift Uniqueness Test

011081377-03, P = 262.266082 Days, E = 64.887528 Days

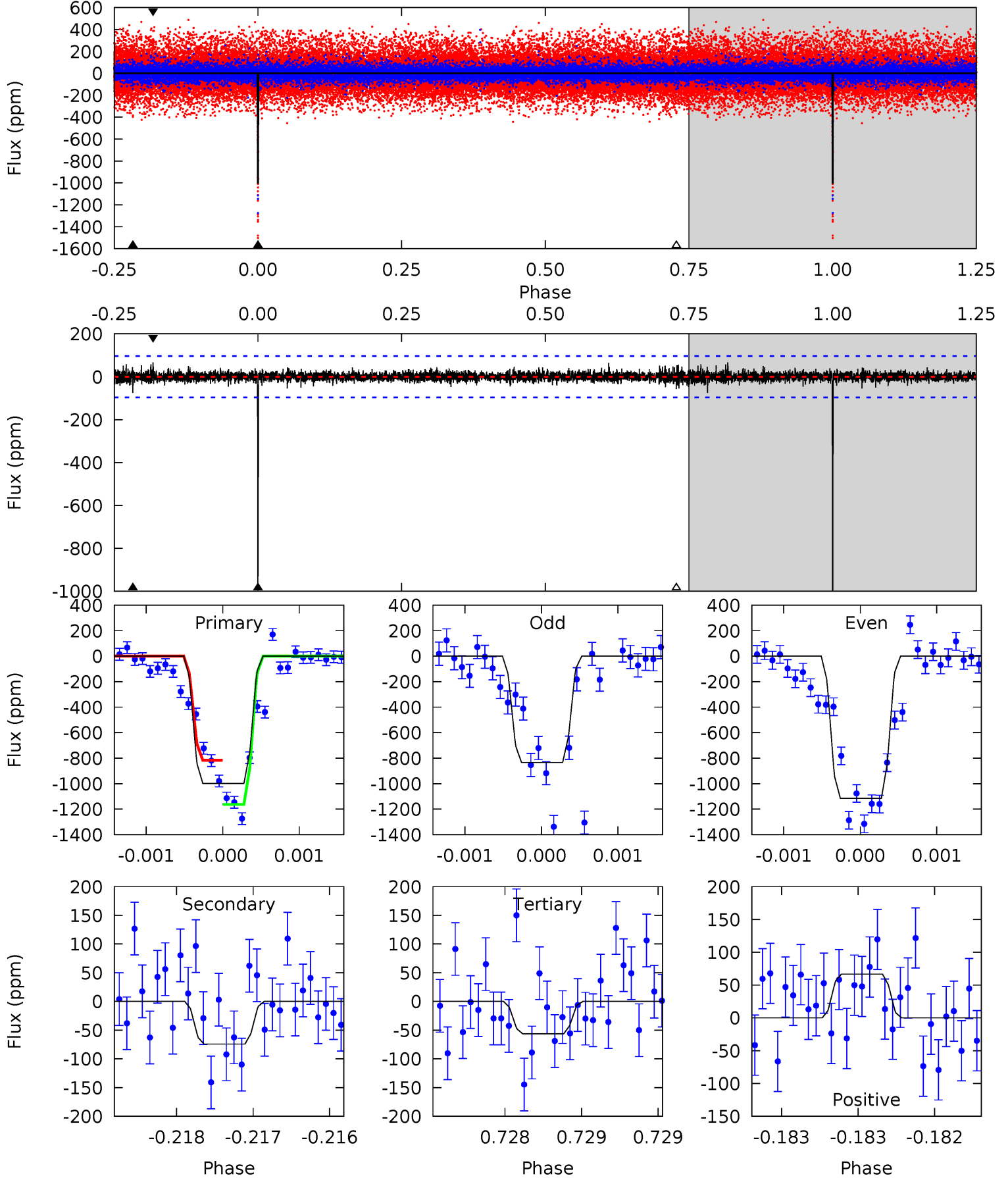
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.34	12.5	8.61	11.1	5.42	3.25	2.66	0.74	-1.71	3.90	1.46	2.40	0.80	0.47	1.59



Alt Model-Shift Uniqueness Test

011081377-03, P = 262.251120 Days, E = 64.949549 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.6	4.21	3.19	3.78	5.47	3.32	0.69	53.4	52.8	1.02	0.43	7.82	1.38	0.06	9.88



Stellar Parameters For KIC 011081377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4056^{+141}_{-155}	$4.648^{+0.060}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.610^{+0.038}_{-0.070}$	$0.604^{+0.057}_{-0.063}$	$3.743^{+1.093}_{-0.389}$
	+3%/-4%	+1%/-0%	+1250%/-1500%	+6%/-11%	+9%/-10%	+29%/-10%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011081377-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-433 ± 35	$1.72^{+1.27}_{-1.12}$	236^{+8}_{-10}	3774^{+1855}_{-638}	$37860^{+261473}_{-25631}$
Alt.	-74 ± 18	$2.58^{+1.48}_{-1.43}$	236^{+9}_{-11}	2583^{+603}_{-274}	2885^{+10967}_{-1764}

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 $A_{obs} \gg 1.0$

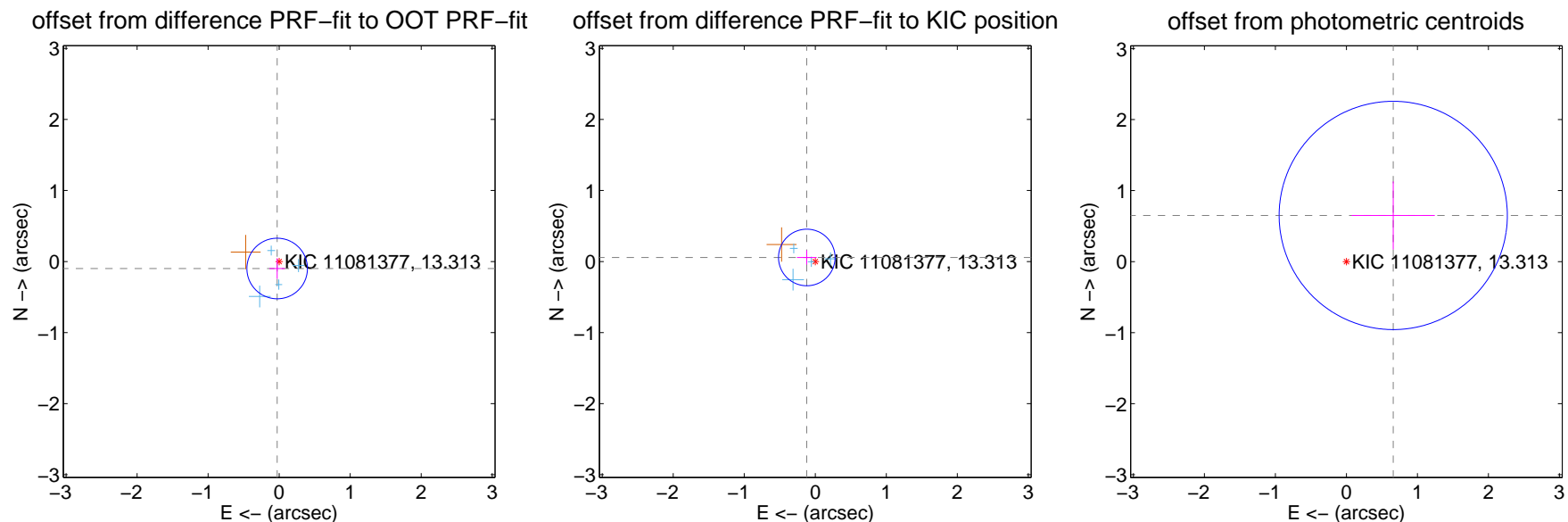
DV Centroid Data

Supplemental centroid analysis for 011081377-03. Kepler magnitude: 13.31. Transit SNR 7.26

There are 4 quarters with good PRF difference image offsets

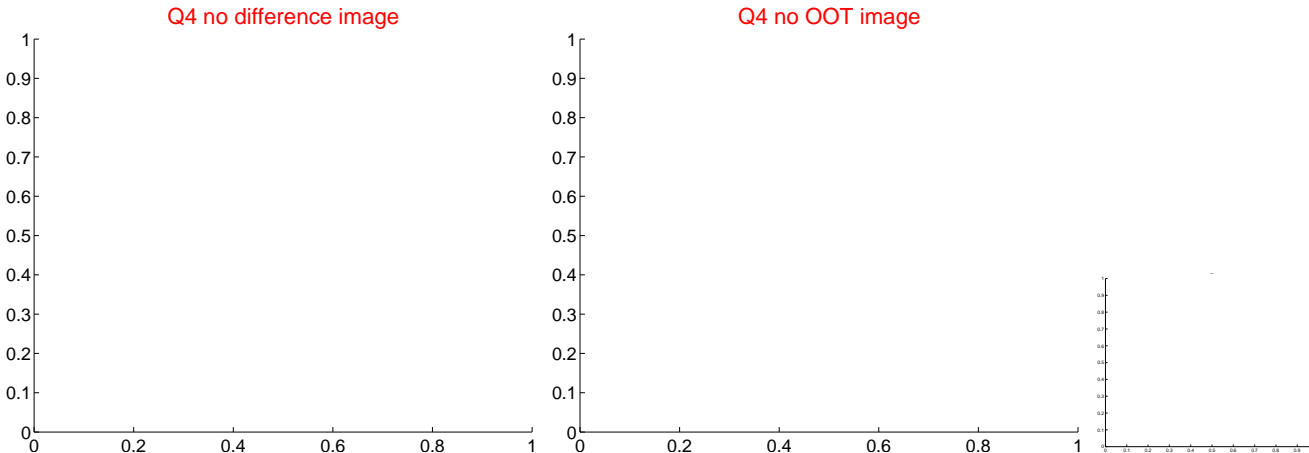
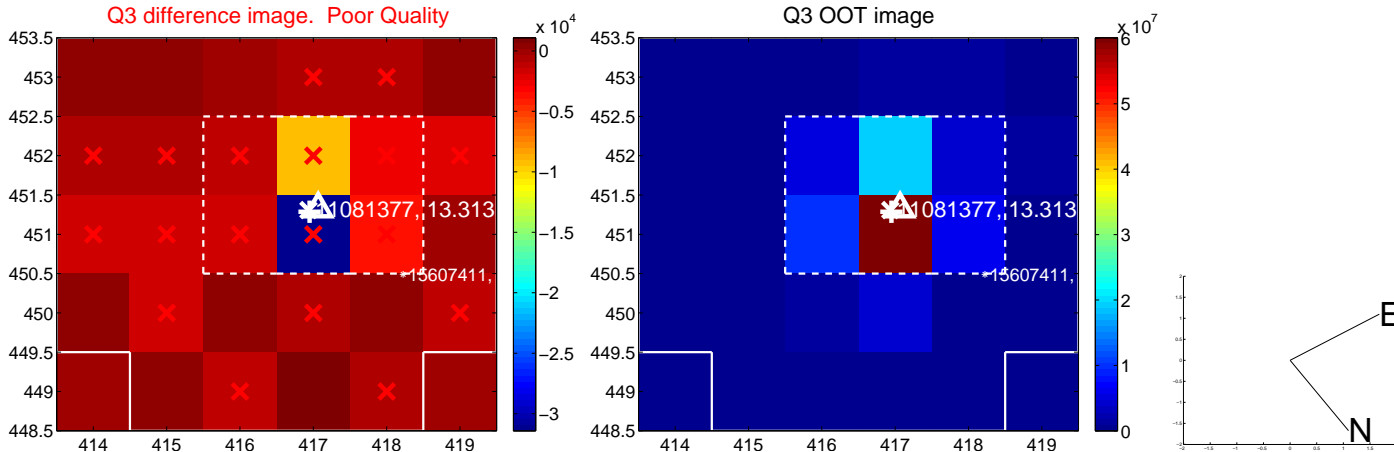
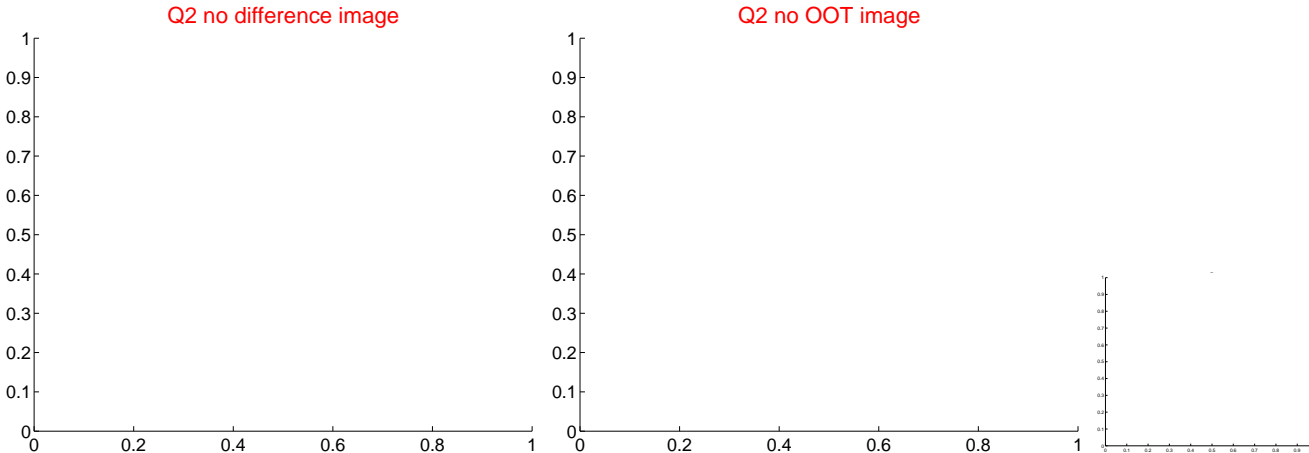
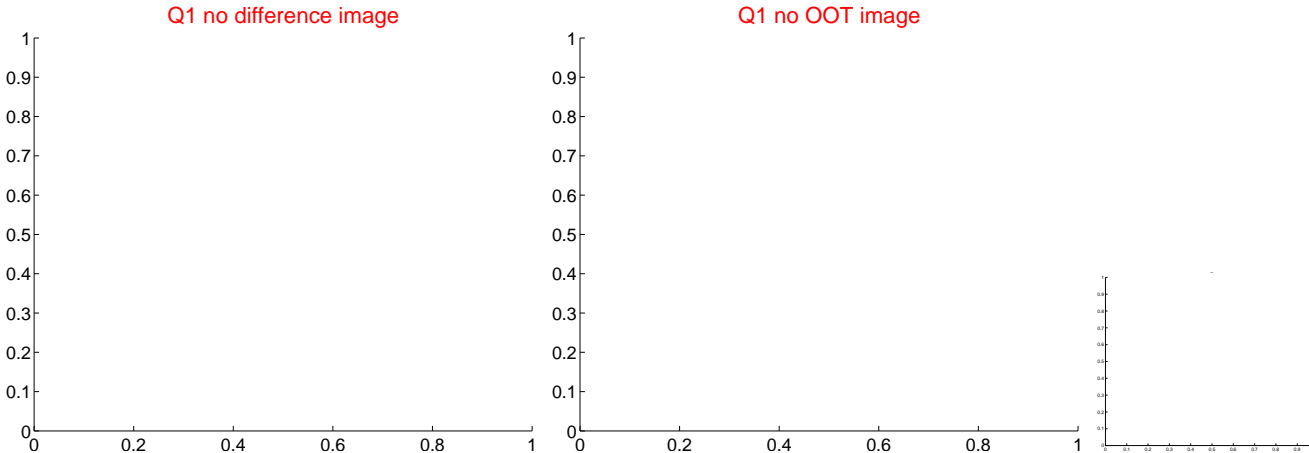
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.102 ± 0.142	0.72	0.028 ± 0.109	-0.098 ± 0.144
PRF-fit source offset from KIC position	0.132 ± 0.133	1.00	0.119 ± 0.139	0.057 ± 0.100
photometric centroid source offset	0.93 ± 0.54	1.73	-0.66 ± 0.59	0.65 ± 0.48

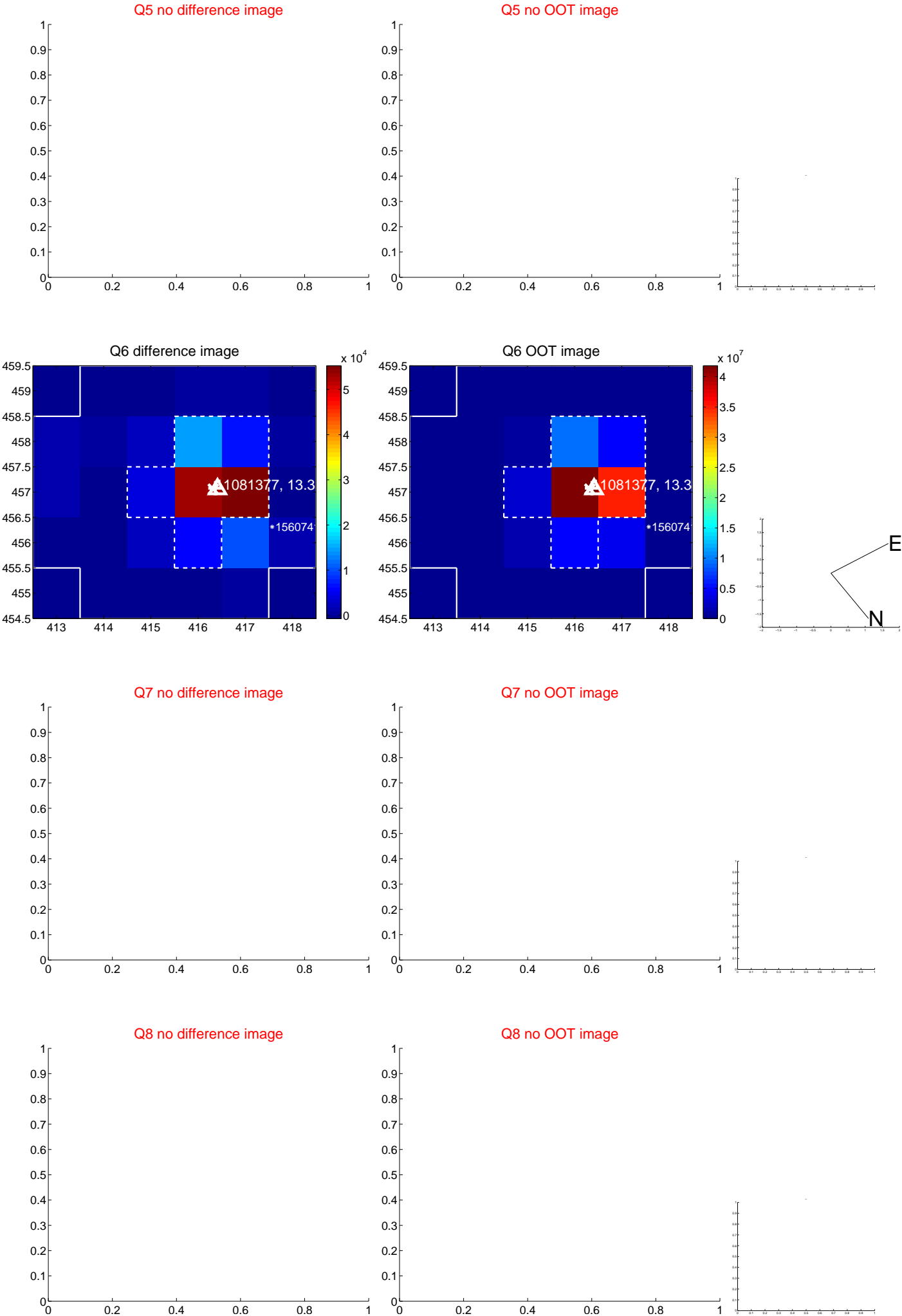


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

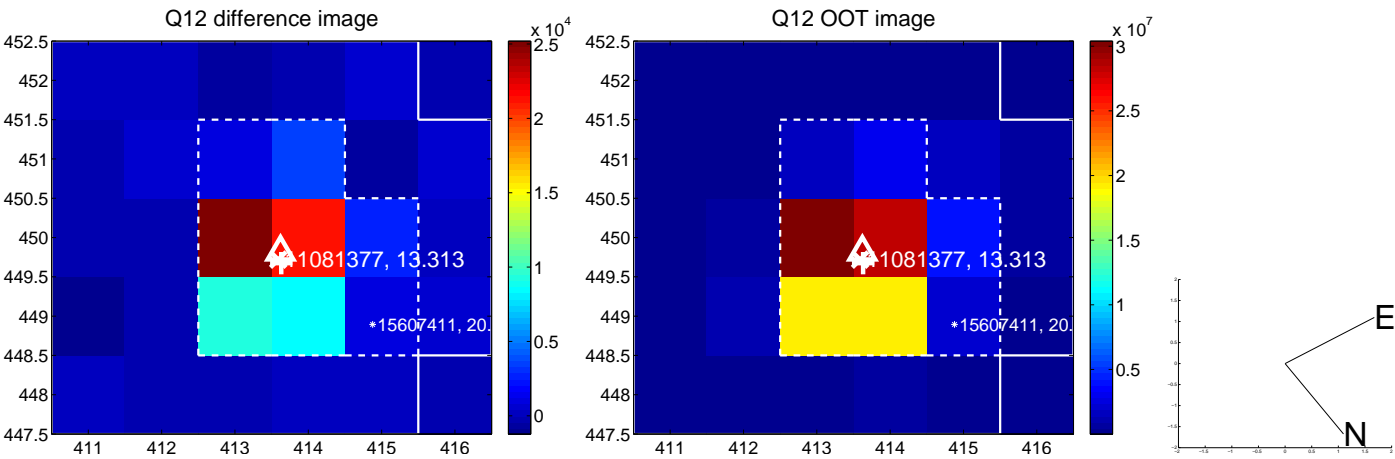
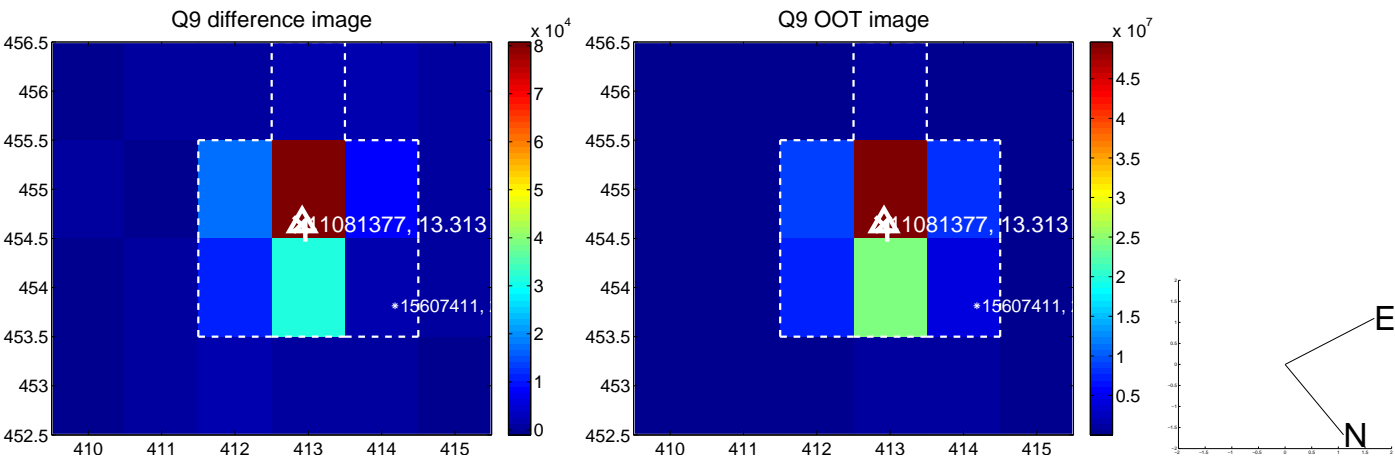
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



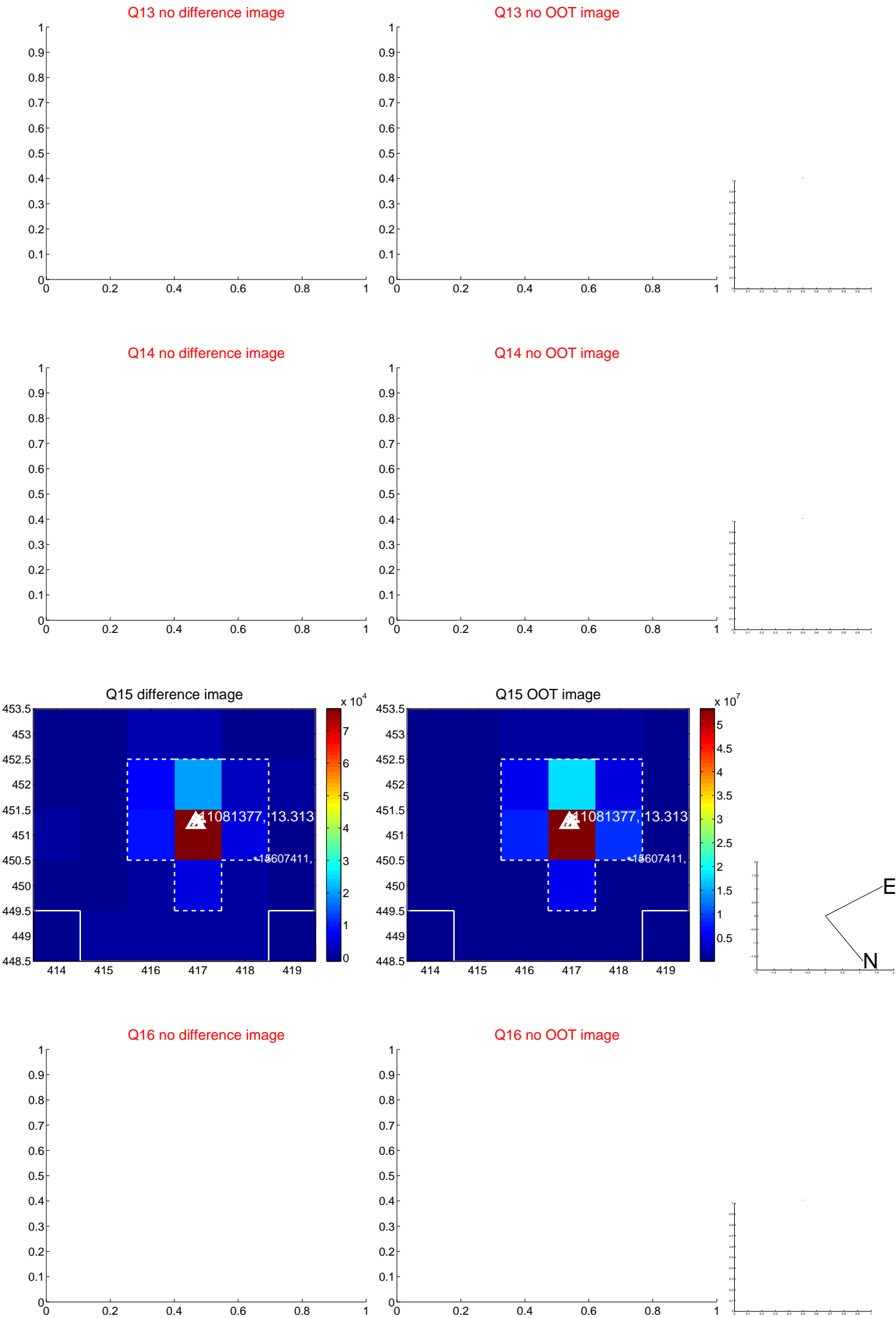
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



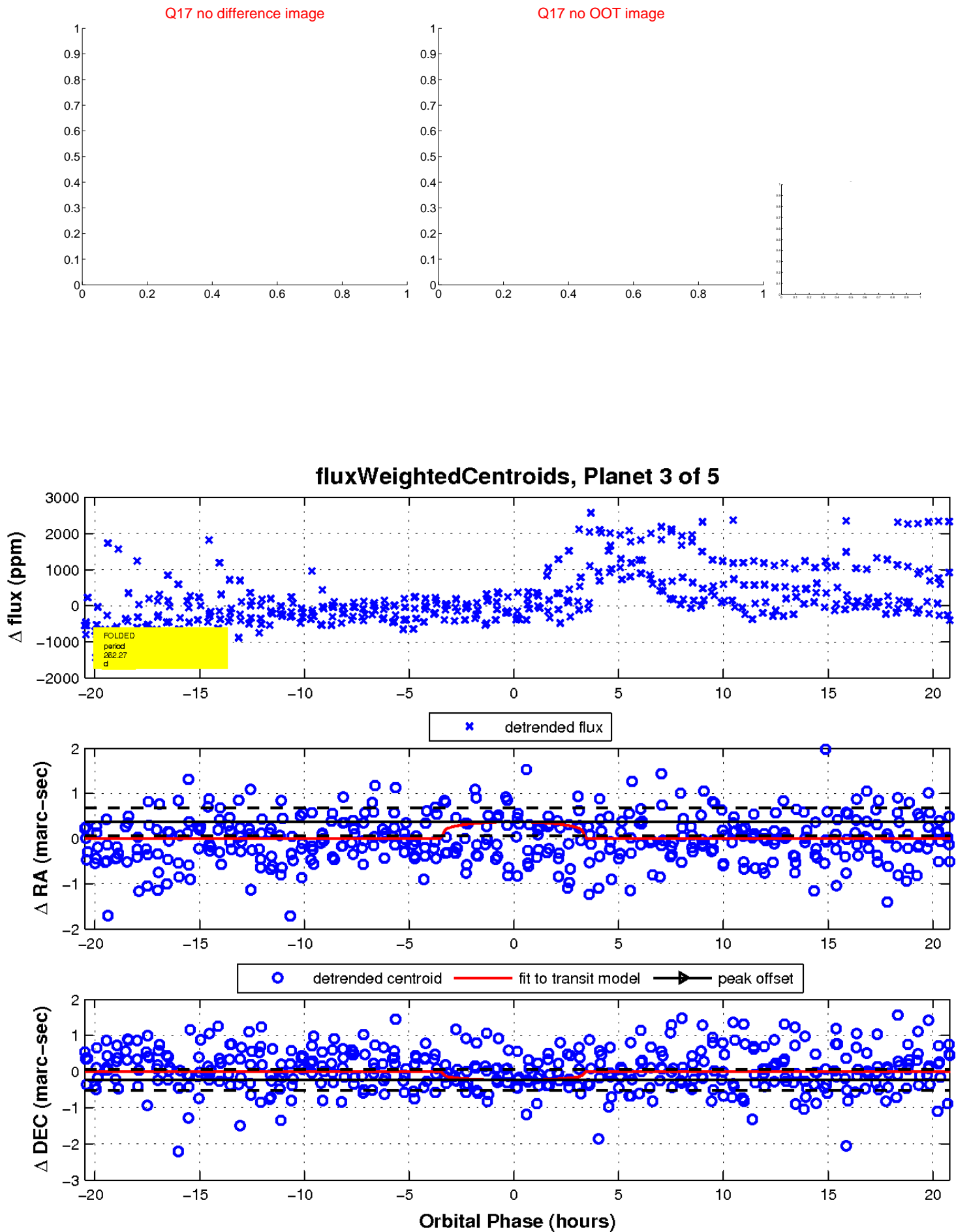
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

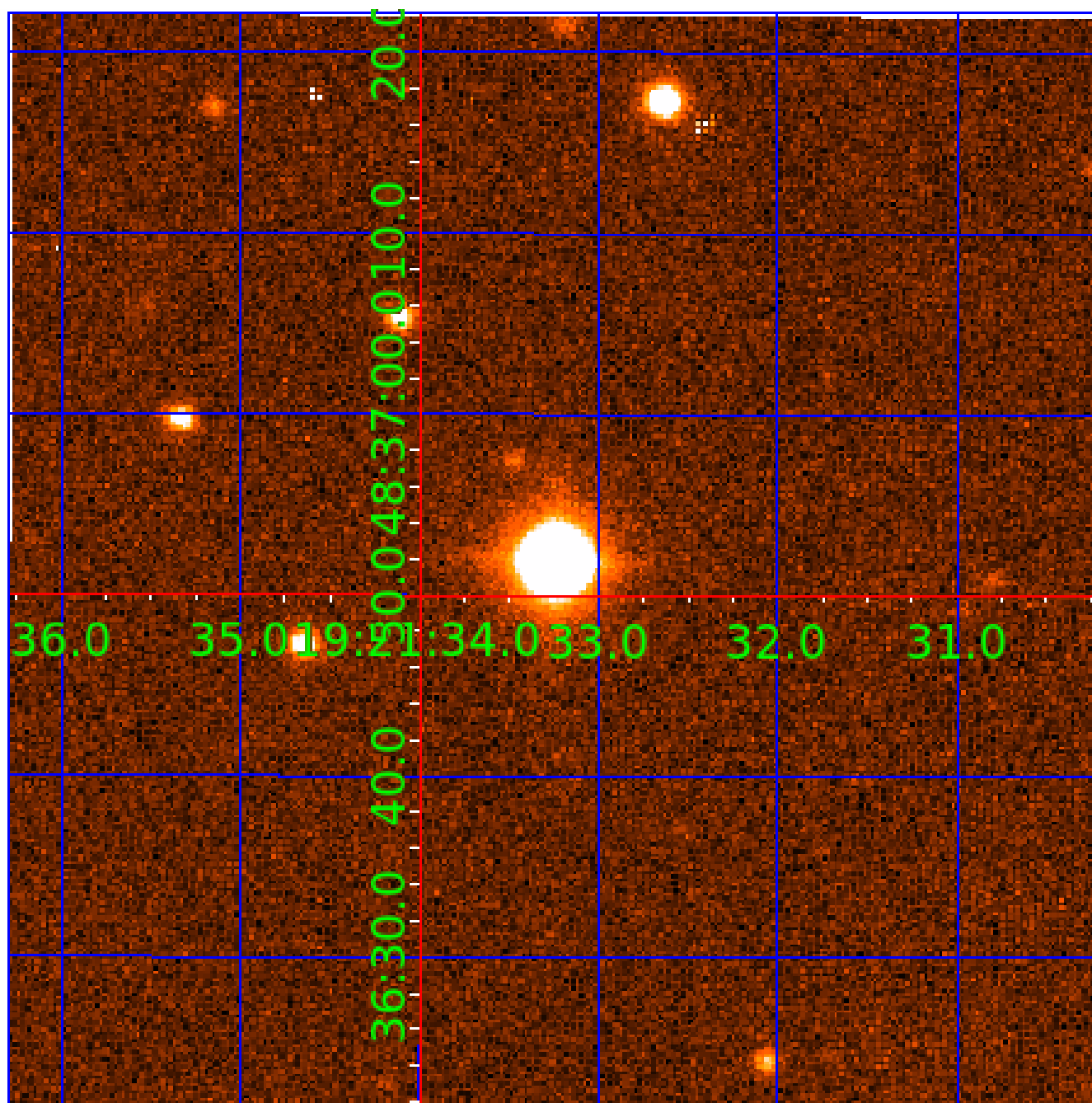


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011081377

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})
011081377-01	OBS	No	322.177819	207.552187	617.5	2.880	12.2	7.8	0.61	4056	1.73	0.15
011081377-03	OBS	No	262.266082	327.153610	477.9	6.941	9.8	7.3	0.61	4056	1.35	0.20
011081377-04	OBS	No	411.842240	192.081518	373.2	6.223	10.9	4.9	0.61	4056	1.32	0.11
011081377-05	OBS	No	449.264705	415.813161	552.0	1.540	13.8	6.9	0.61	4056	1.44	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES
011081377-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—HALO_GHOST
011081377-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011081377-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

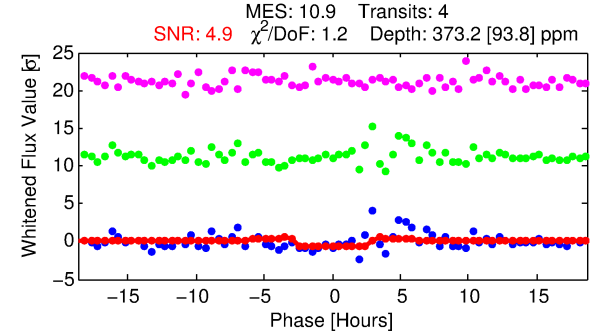
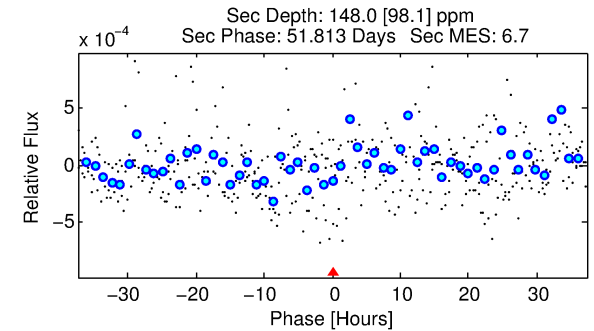
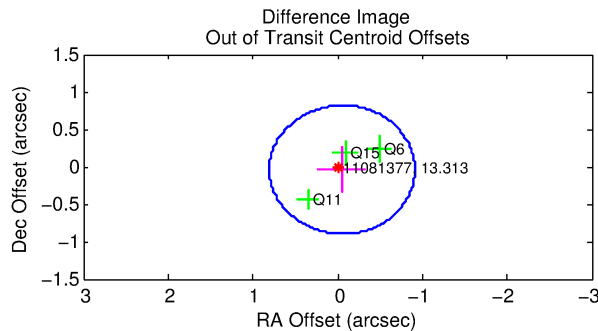
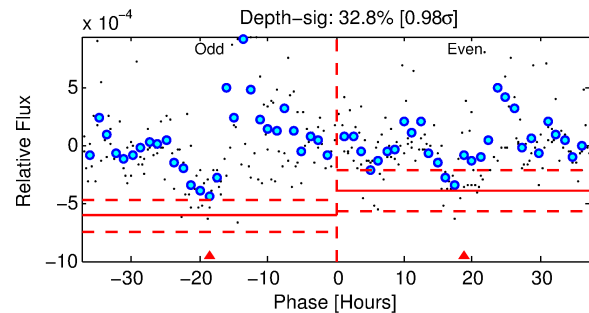
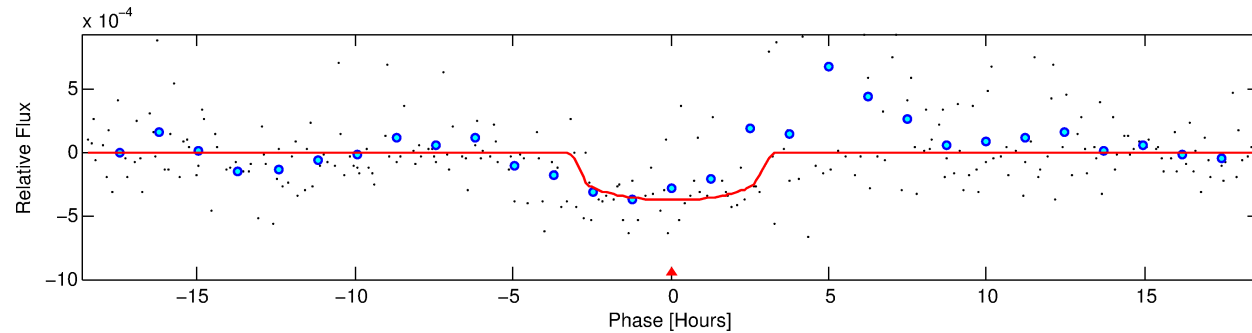
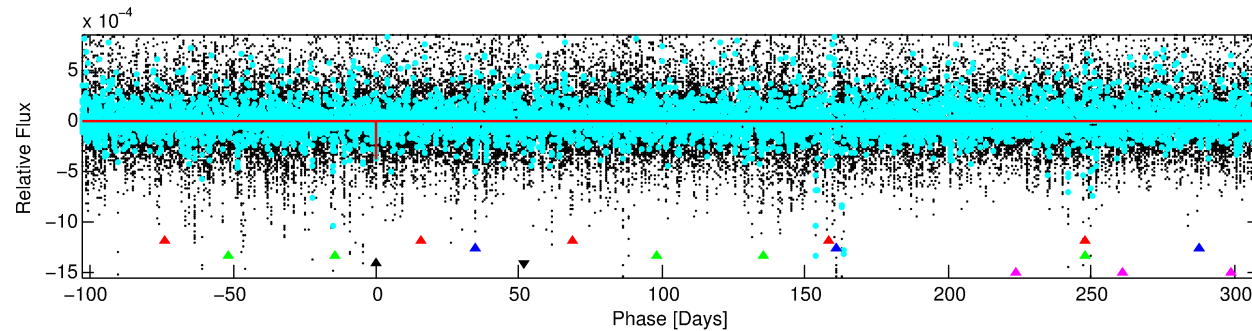
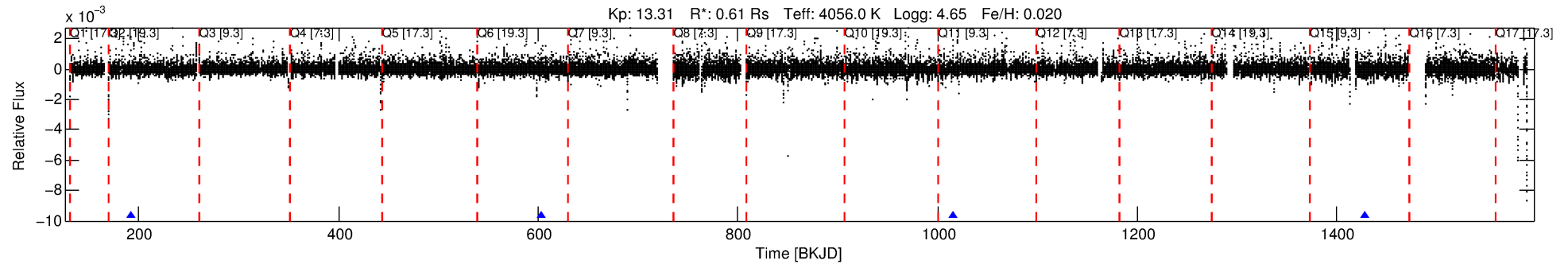
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011081377-04

No Significant Match Found

DV One-Page Summary

KIC: 11081377 Candidate: 4 of 5 Period: 411.842 d



DV Fit Results:

Period = 411.84224 [0.00700] d
Epoch = 192.0815 [0.0114] BKJD
Rp/R* = 0.0198 [0.0142]
a/R* = 318.04 [835.50]
b = 0.80 [1.18]
Seff = 0.11 [0.02]
Teq = 146 [7] K
Rp = 1.32 [0.96] Re
a = 0.9157 [0.0818] AU
Ag = 39162.59 [62112.85] [0.63 σ]
Teffp = 3177 [1262] K [2.40 σ]

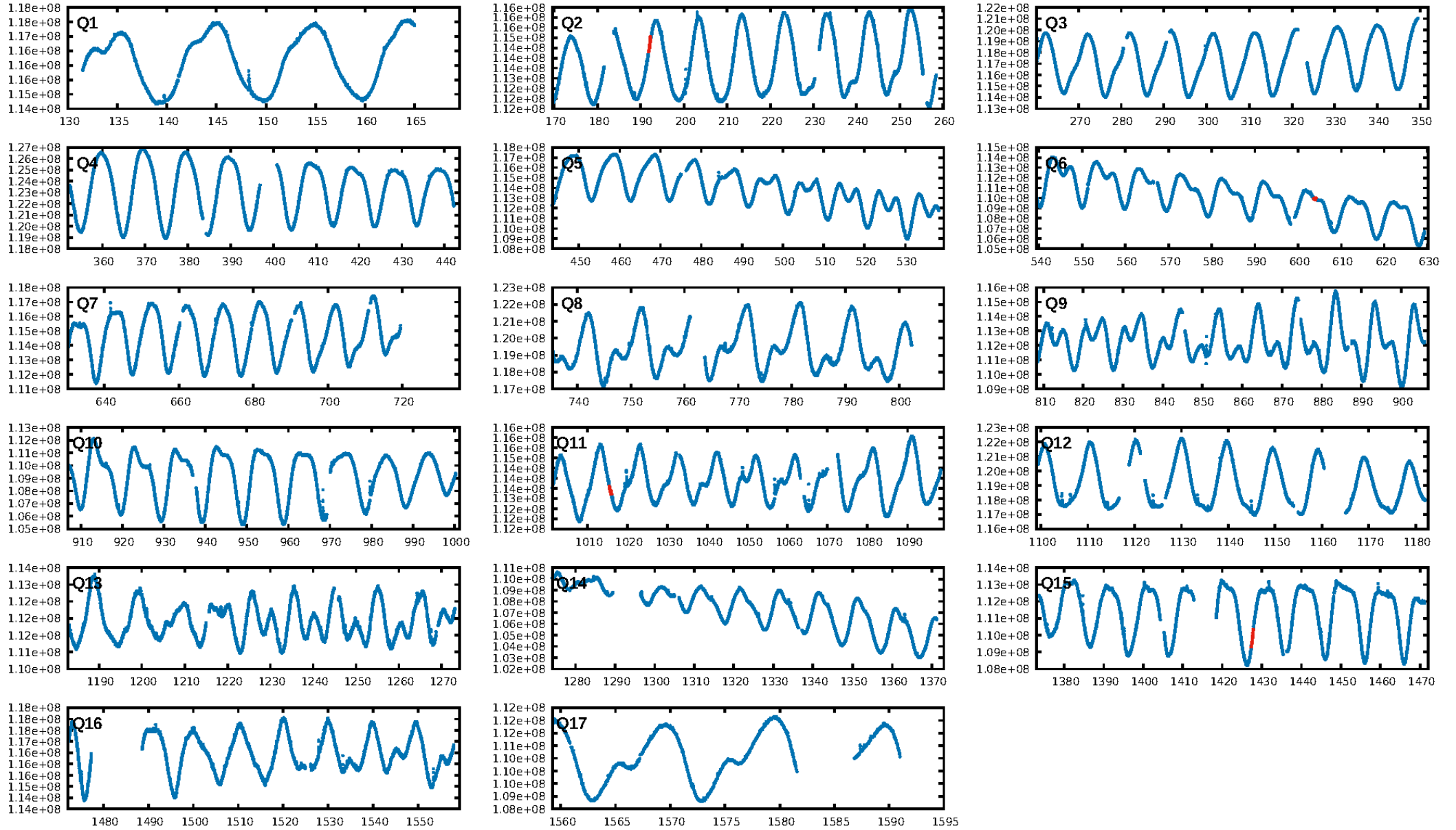
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [313.80 σ]
LongPeriod-sig: 100.0% [140.09 σ]
ModelChiSquare2-sig: 62.0%
ModelChiSquareGof-sig: 97.1%
Bootstrap-pfa: 3.38e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.334
Centroid-sig: 15.0%
Centroid-so: 1.343 arcsec [1.42 σ]
OotOffset-rm: 0.065 arcsec [0.23 σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-rm: 0.050 arcsec [0.19 σ]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

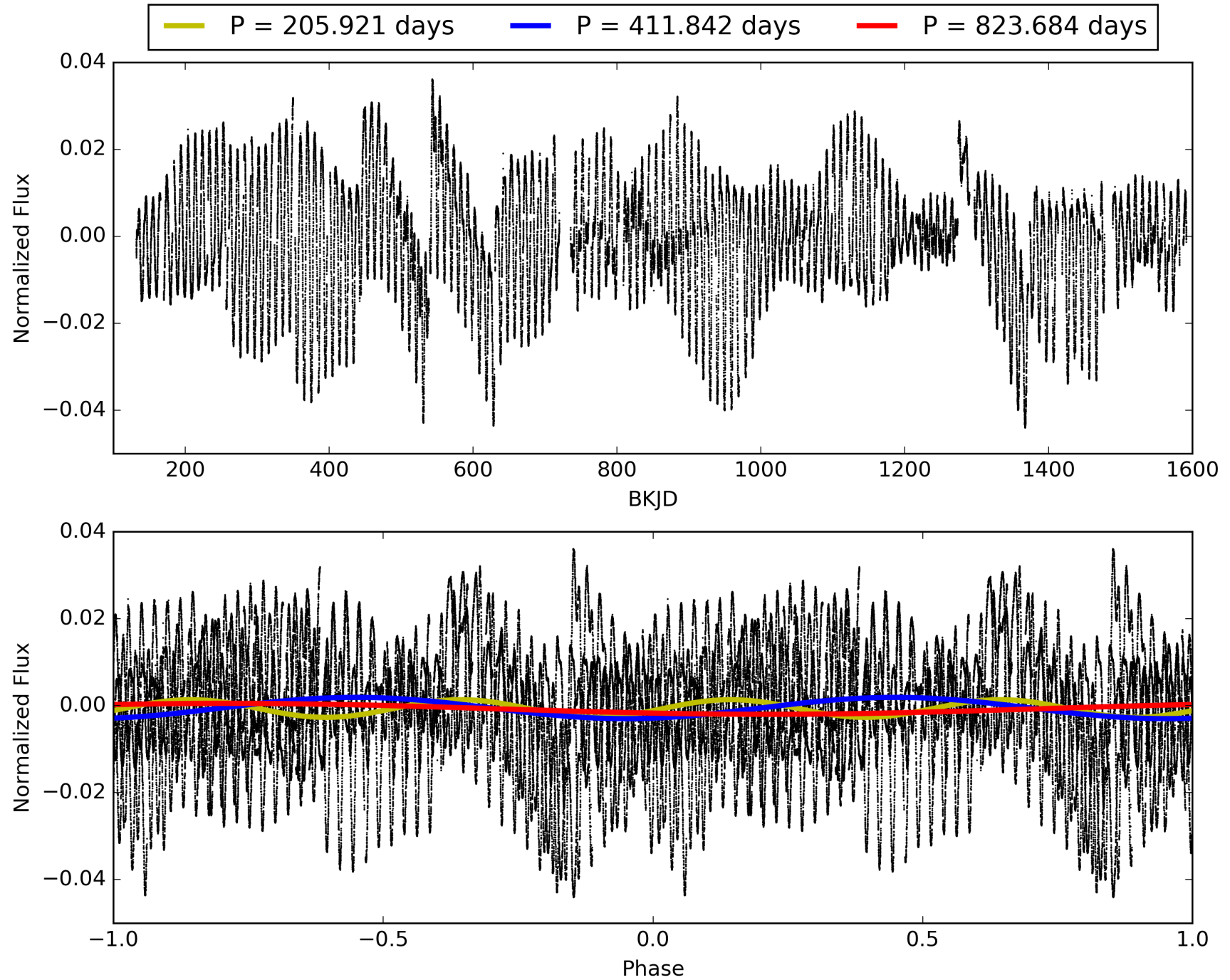
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:11:40 Z

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

TCE 011081377-04, PDC Light Curves

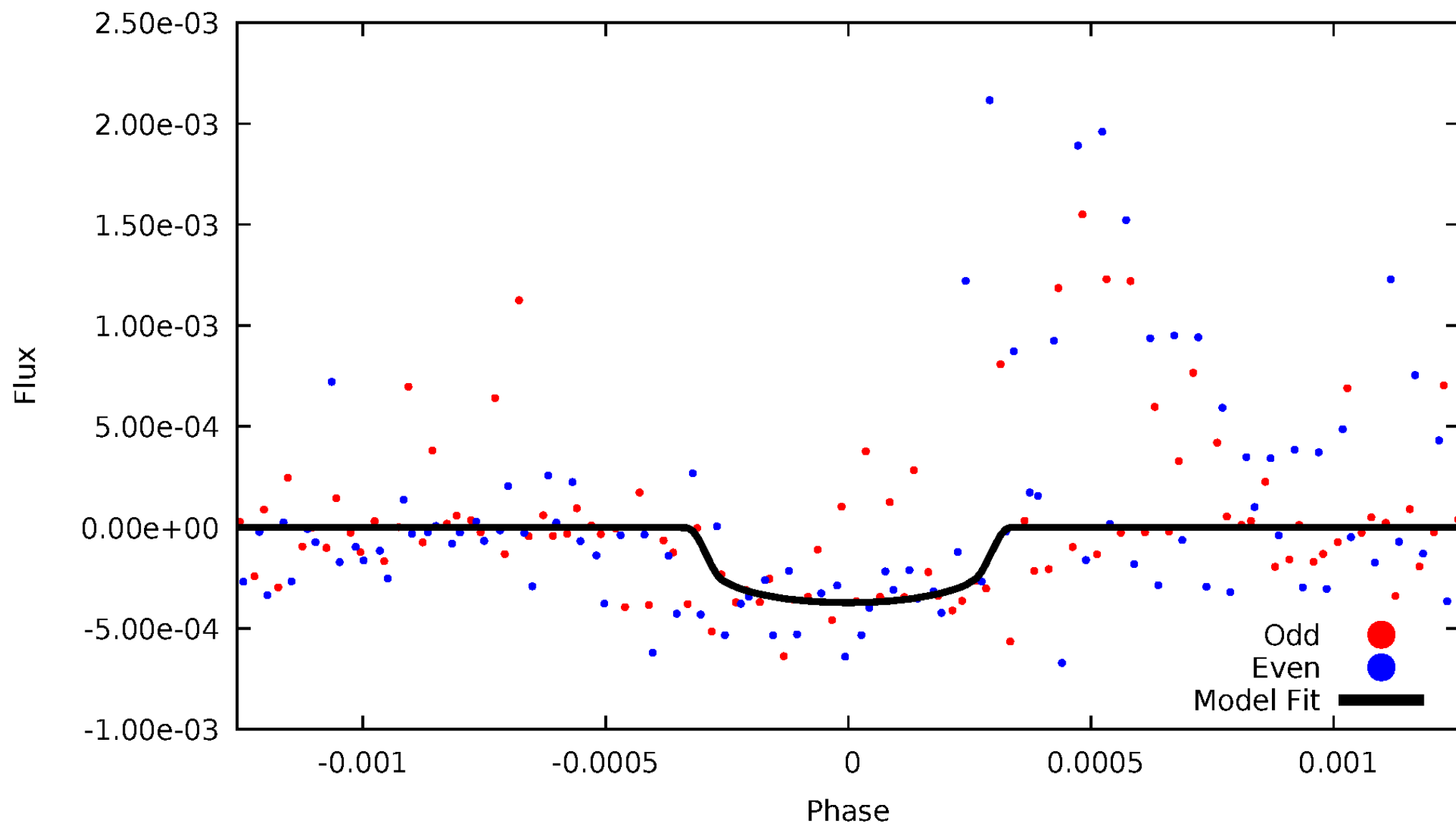


TCE 011081377-04



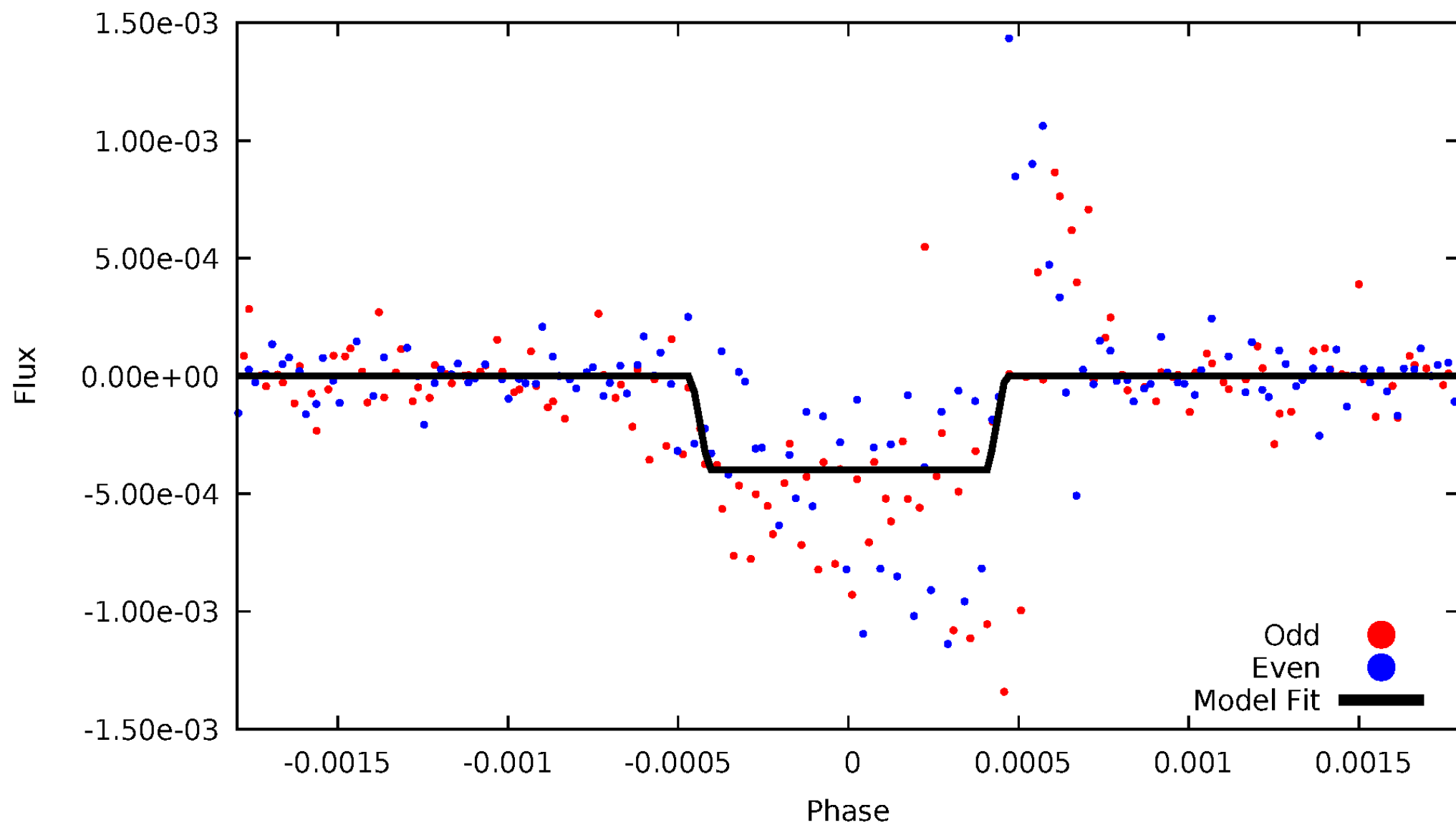
DV Odd/Even

TCE 011081377-04



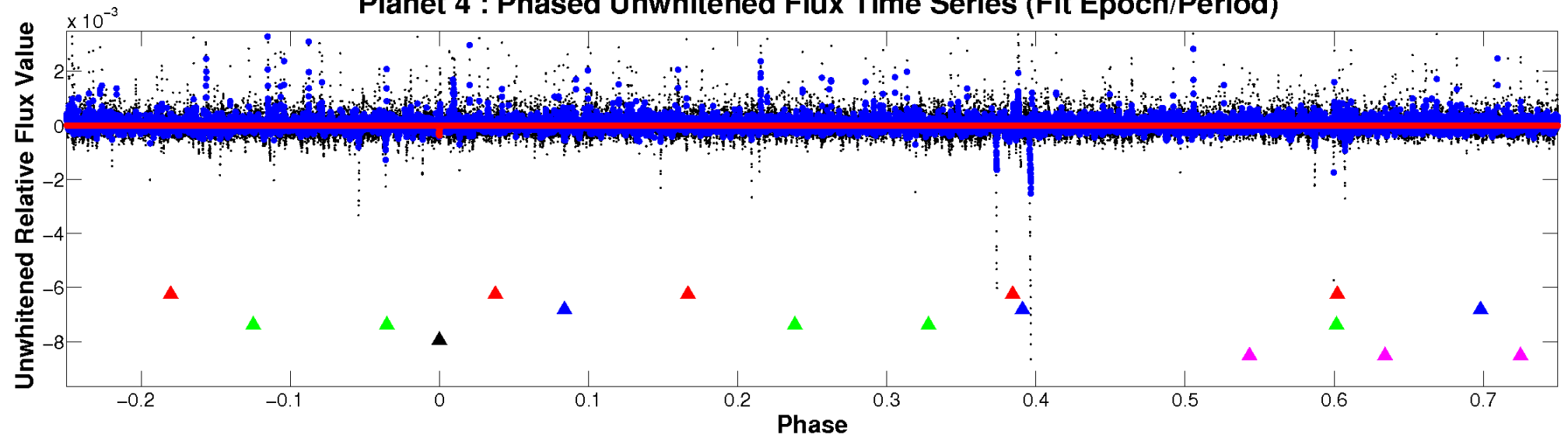
ALT Odd/Even

TCE 011081377-04

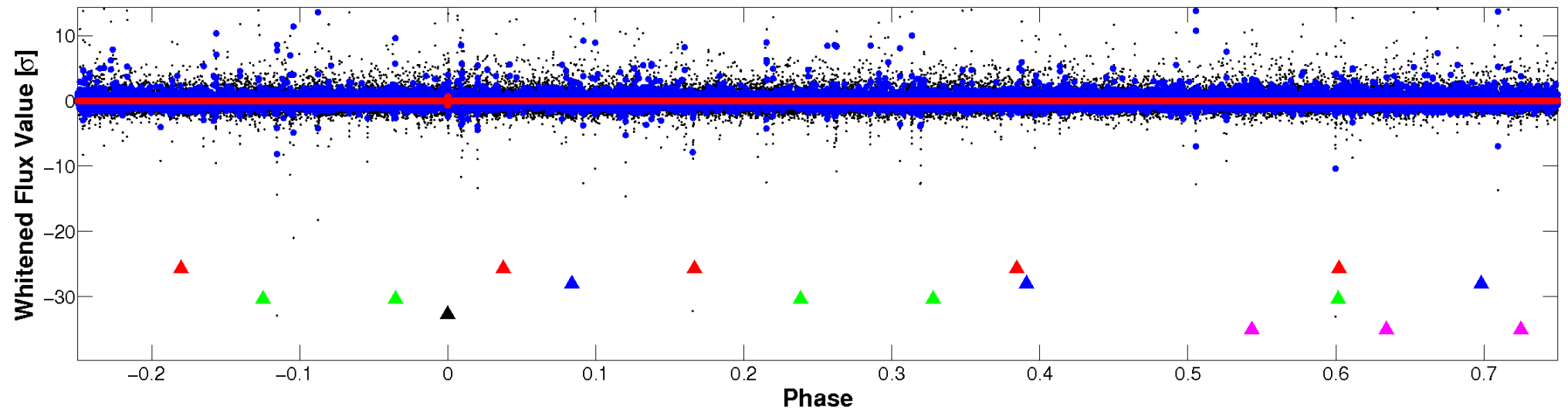


Non-Whitened Vs. Whitened Light Curve

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

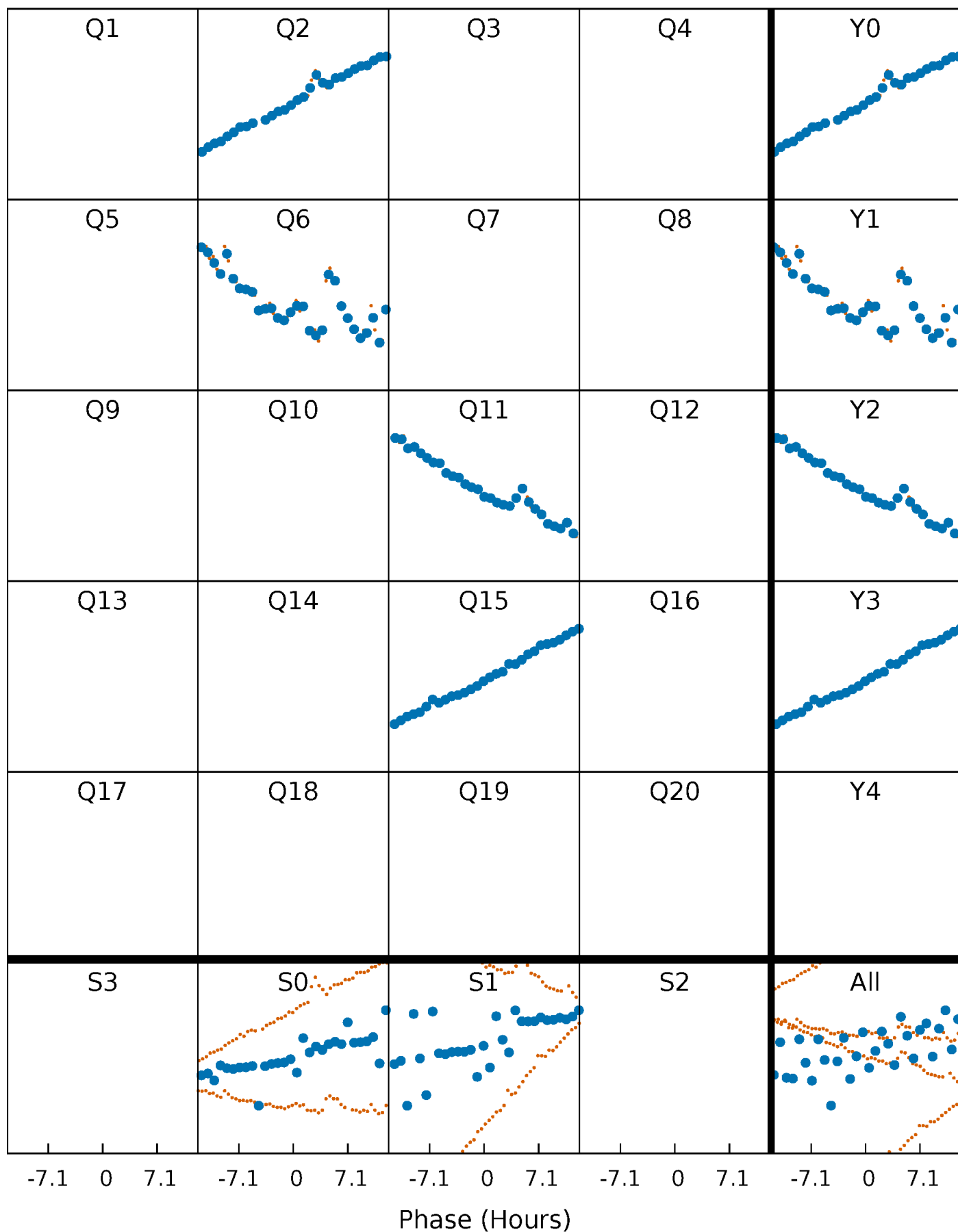


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



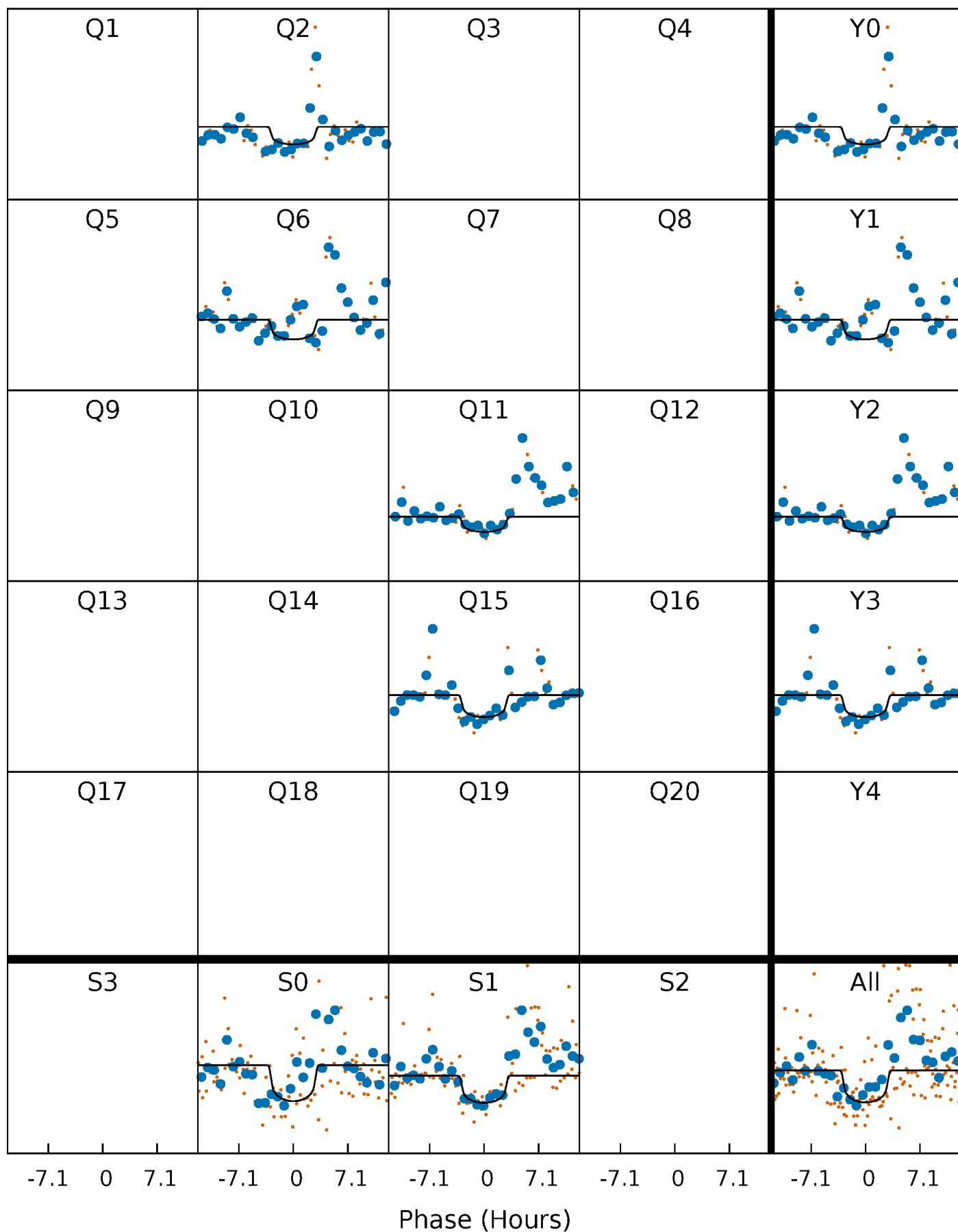
PDC Quarter-Phased Transit Curves

TCE 011081377-04 P=411.842240 Days $T_0=192.081517$ (BKJD)



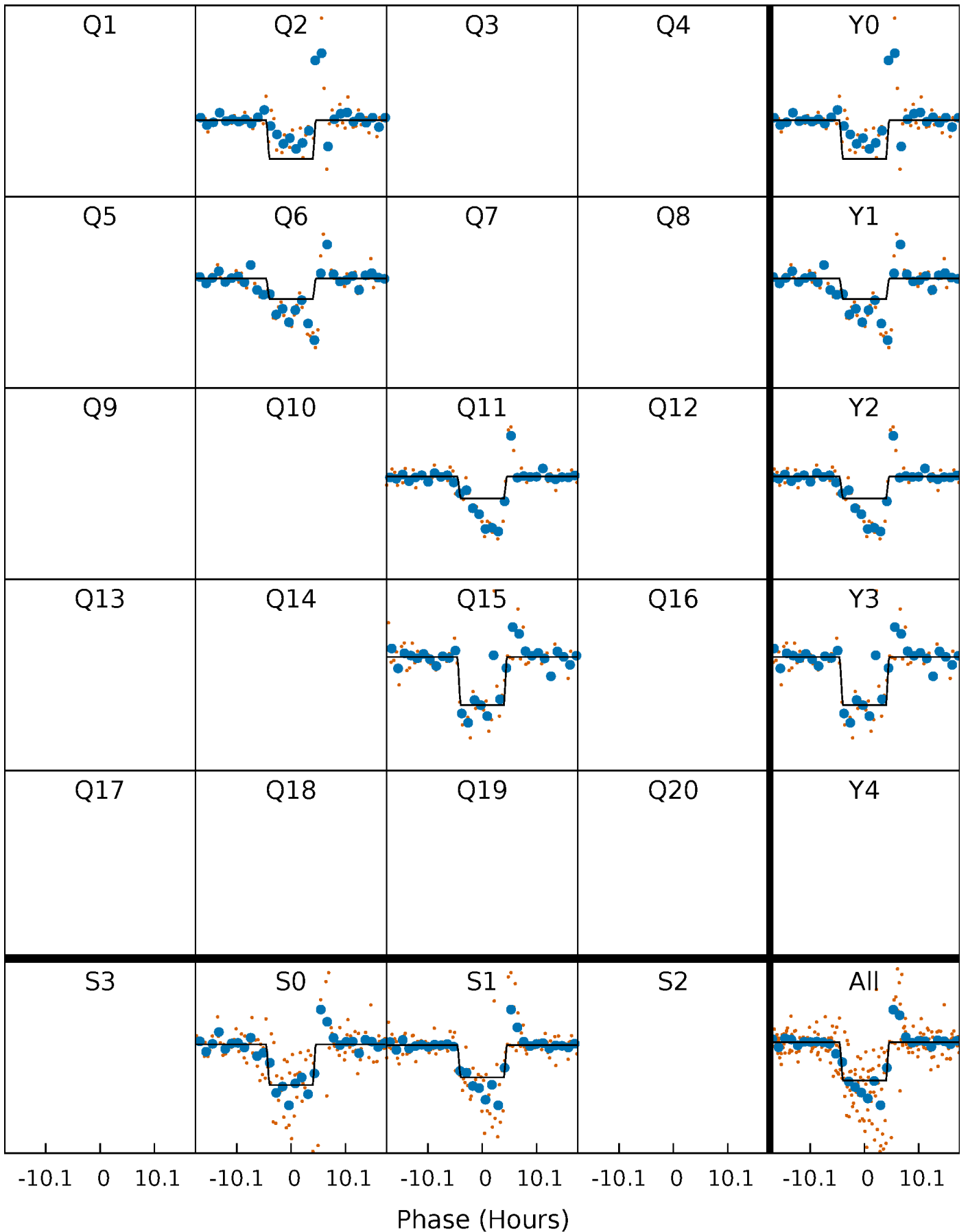
DV Quarter-Phased Transit Curves

TCE 011081377-04 $P=411.842240$ Days $T_0=192.081517$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

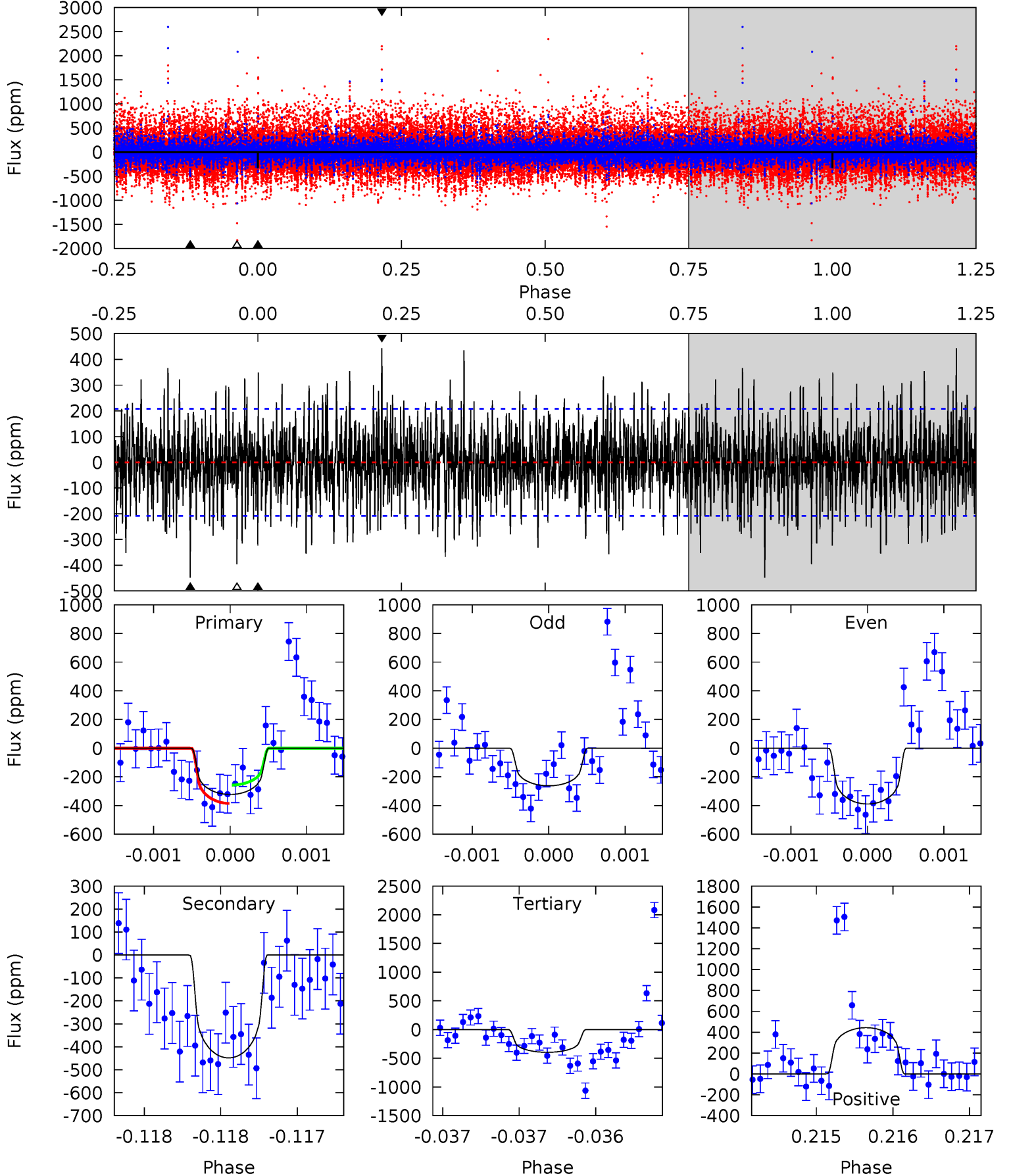
TCE 011081377-04 $P=411.886080$ Days $T_0=191.986711$ (BKJD)



DV Model-Shift Uniqueness Test

011081377-04, P = 411.842240 Days, E = 192.081517 Days

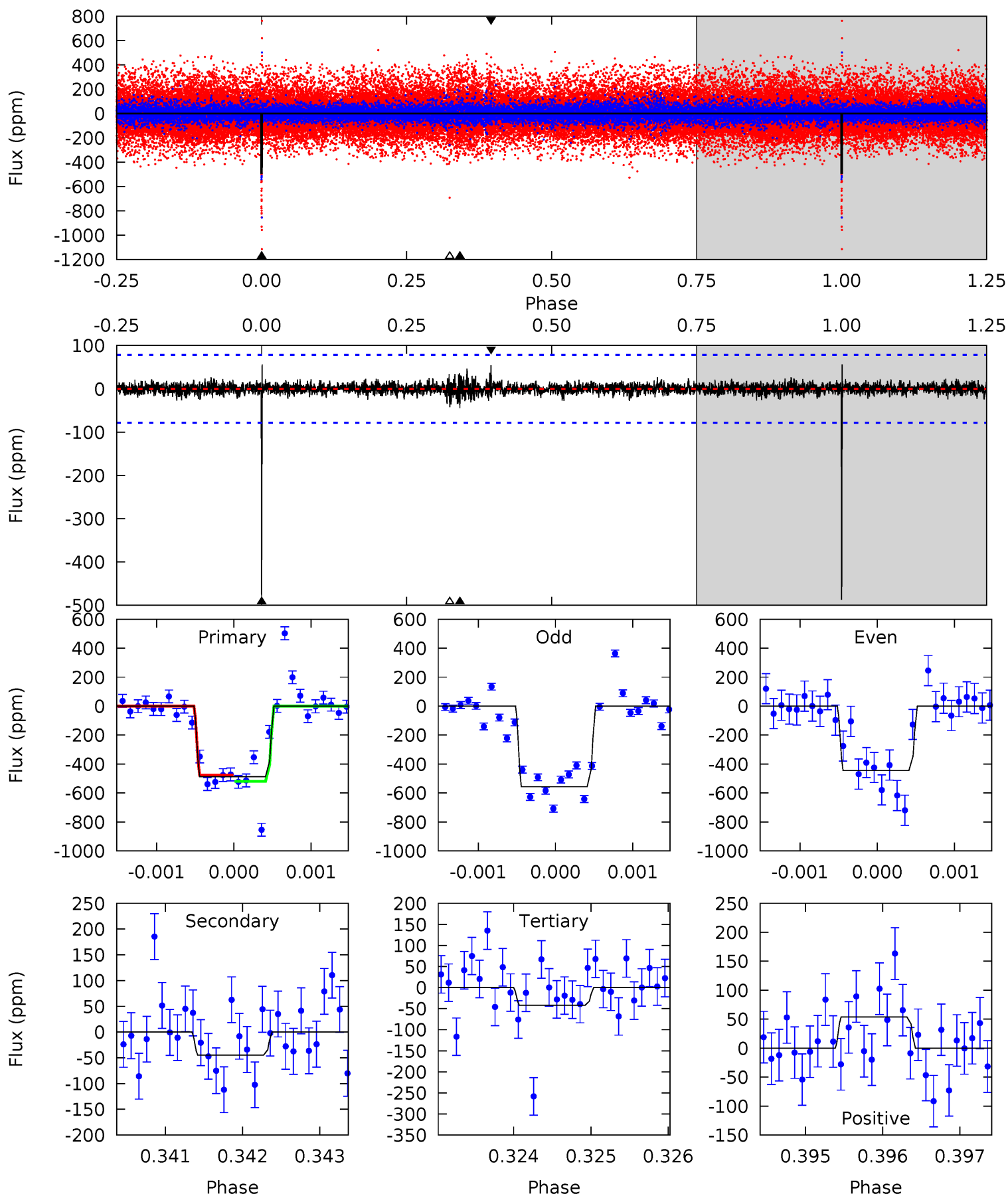
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.58	11.9	10.5	11.8	5.52	3.40	2.77	-1.95	-3.19	1.37	0.14	1.46	0.97	0.50	1.72



Alt Model-Shift Uniqueness Test

011081377-04, P = 411.886080 Days, E = 191.986711 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	3.13	2.93	3.76	5.47	3.32	0.54	31.1	30.3	0.19	-0.63	4.09	0.91	0.10	1.49



Stellar Parameters For KIC 011081377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4056^{+141}_{-155}	$4.648^{+0.060}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.610^{+0.038}_{-0.070}$	$0.604^{+0.057}_{-0.063}$	$3.743^{+1.093}_{-0.389}$
	+3%/-4%	+1%/-0%	+1250%/-1500%	+6%/-11%	+9%/-10%	+29%/-10%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011081377-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-448 ± 38	$1.39^{+0.91}_{-0.77}$	202^{+8}_{-9}	4052^{+1592}_{-633}	$108815^{+433753}_{-69338}$
Alt.	-45 ± 14	$1.44^{+0.84}_{-0.81}$	202^{+8}_{-8}	2806^{+709}_{-353}	9505^{+37165}_{-6053}

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 $A_{\text{obs}} \gg 1.0$

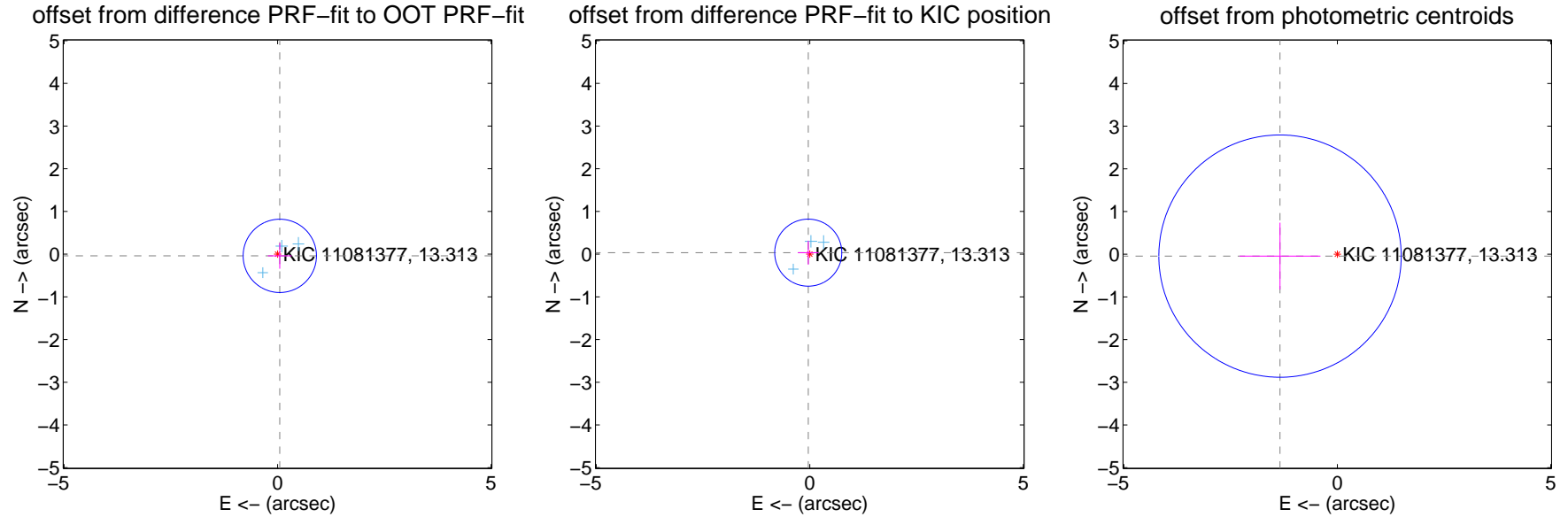
DV Centroid Data

Supplemental centroid analysis for 011081377-04. Kepler magnitude: 13.31. Transit SNR 4.88

There are 3 quarters with good PRF difference image offsets

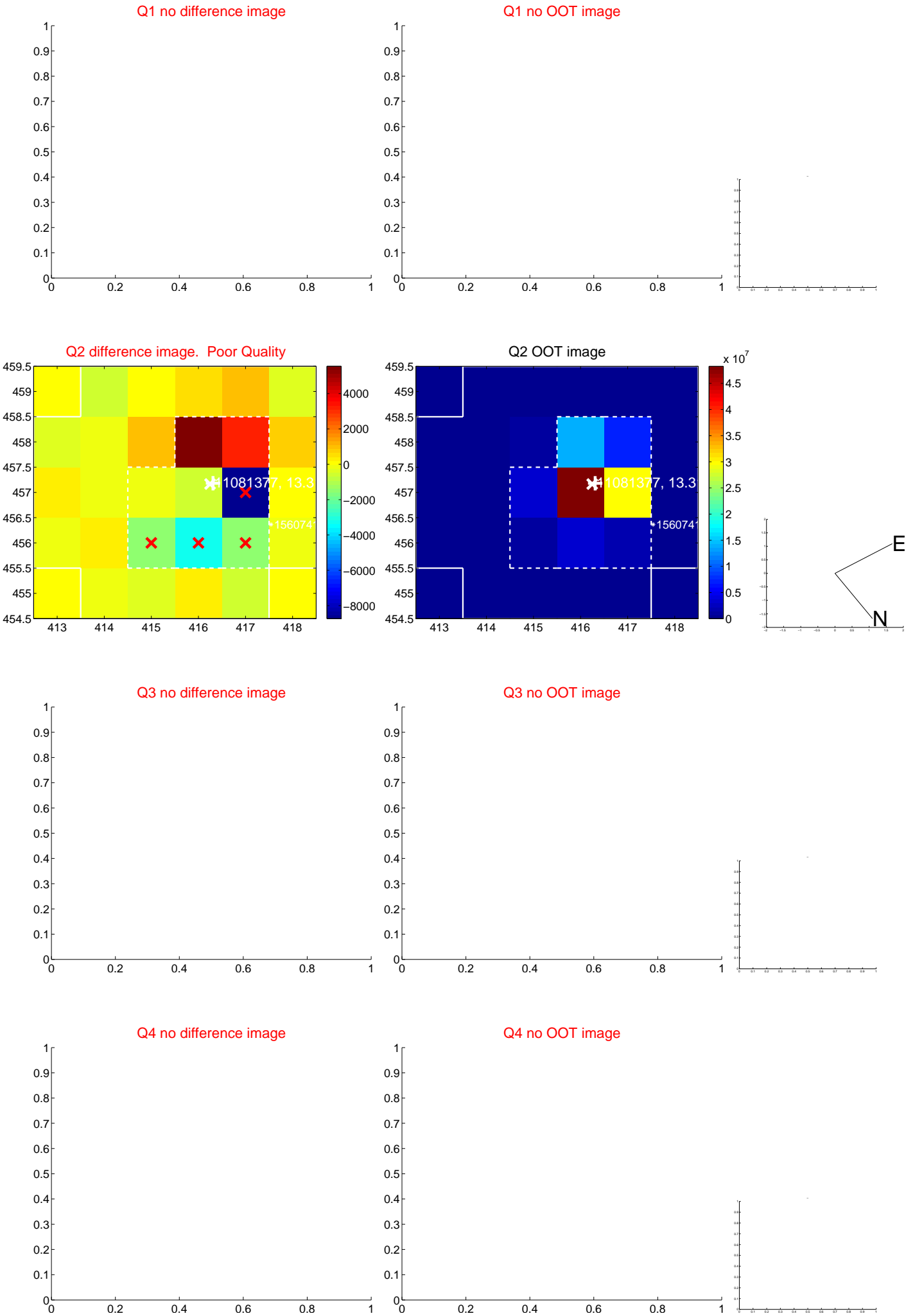
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.065 ± 0.286	0.23	-0.052 ± 0.277	-0.040 ± 0.300
PRF-fit source offset from KIC position	0.050 ± 0.262	0.19	0.035 ± 0.241	0.035 ± 0.280
photometric centroid source offset	1.34 ± 0.95	1.42	1.34 ± 0.95	-0.04 ± 0.78

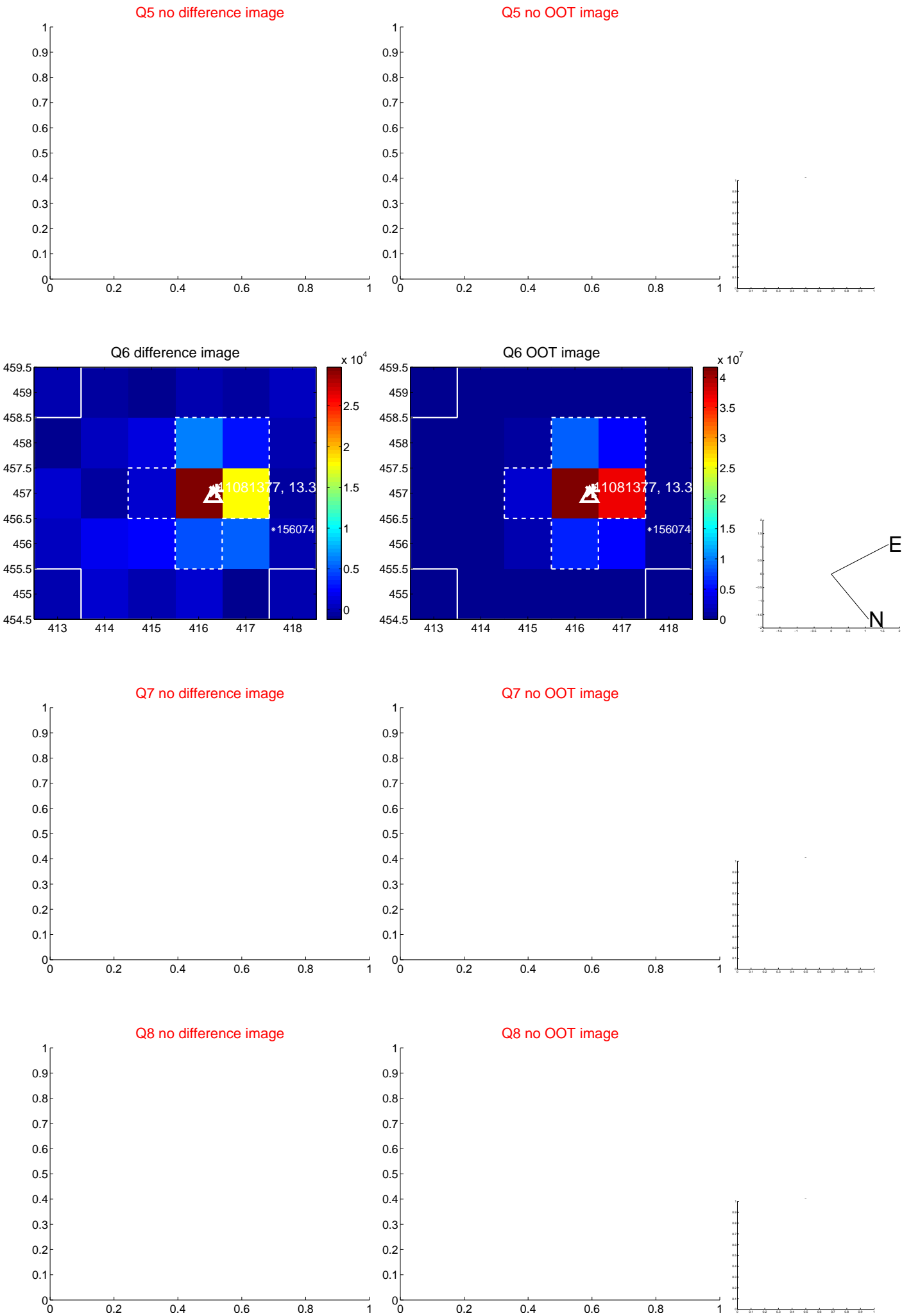


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



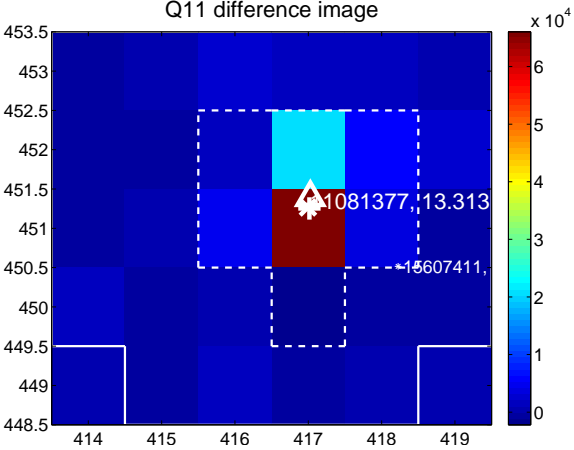
Q10 no difference image



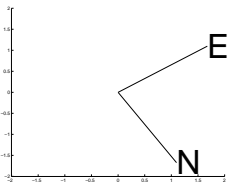
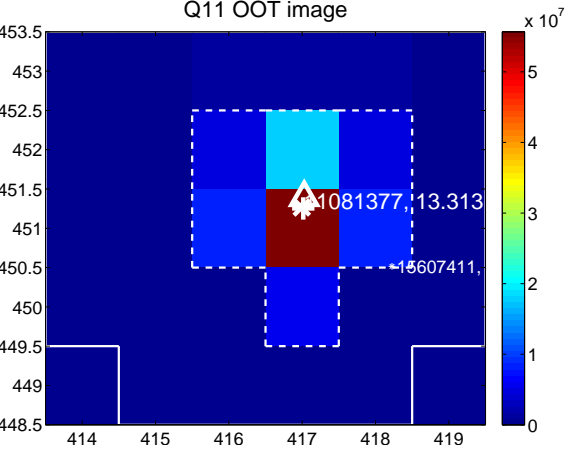
Q10 no OOT image



Q11 difference image



Q11 OOT image



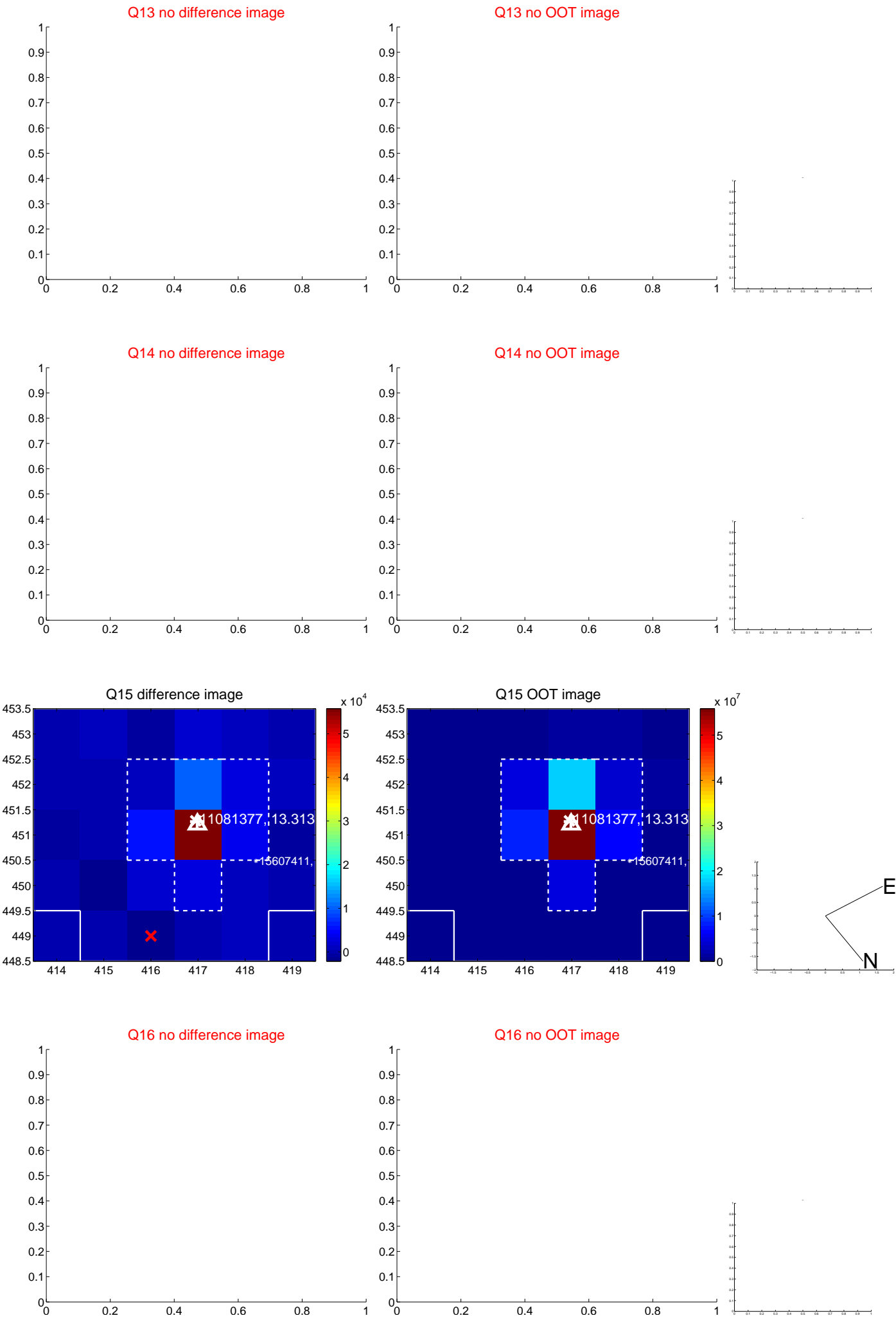
Q12 no difference image



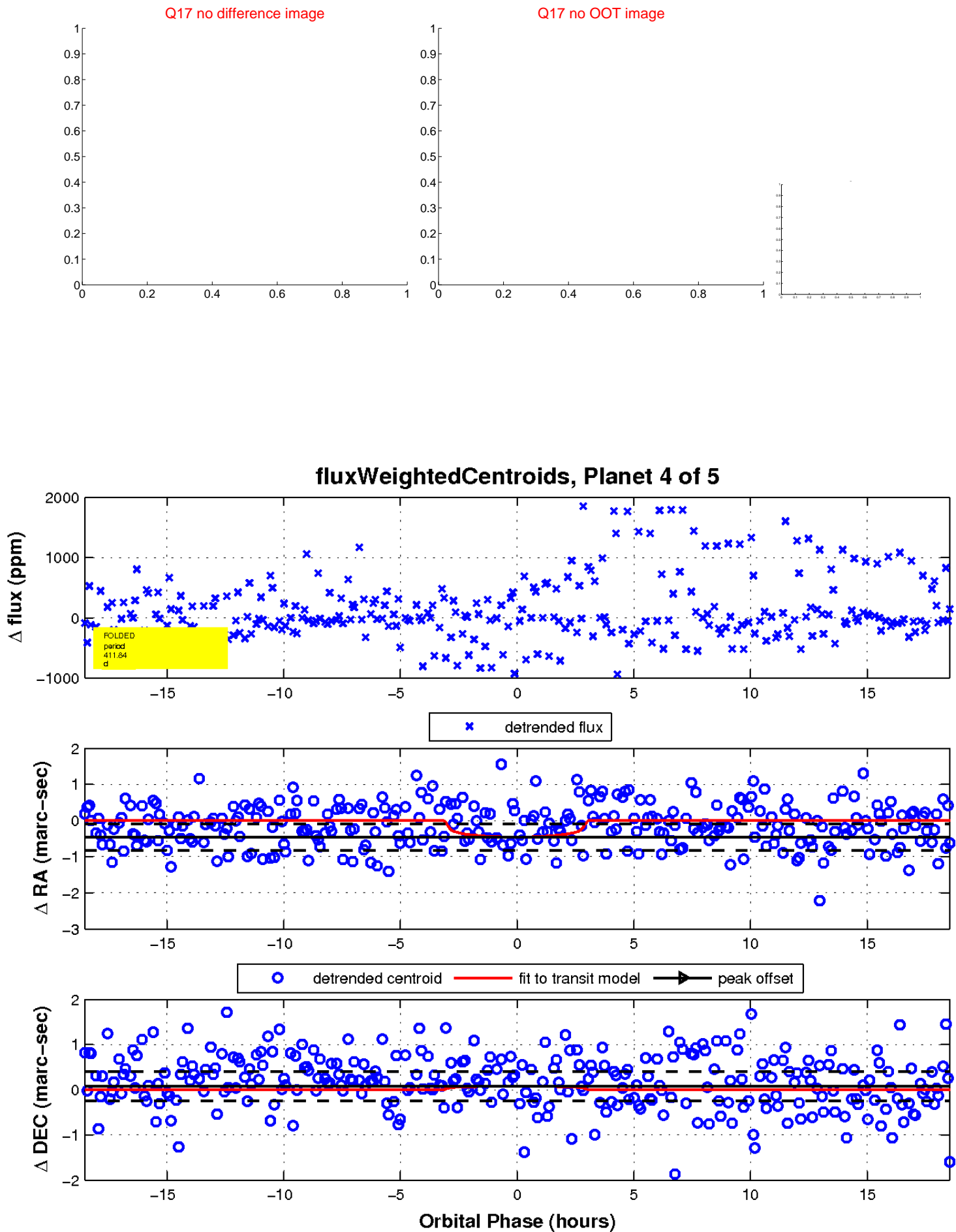
Q12 no OOT image



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

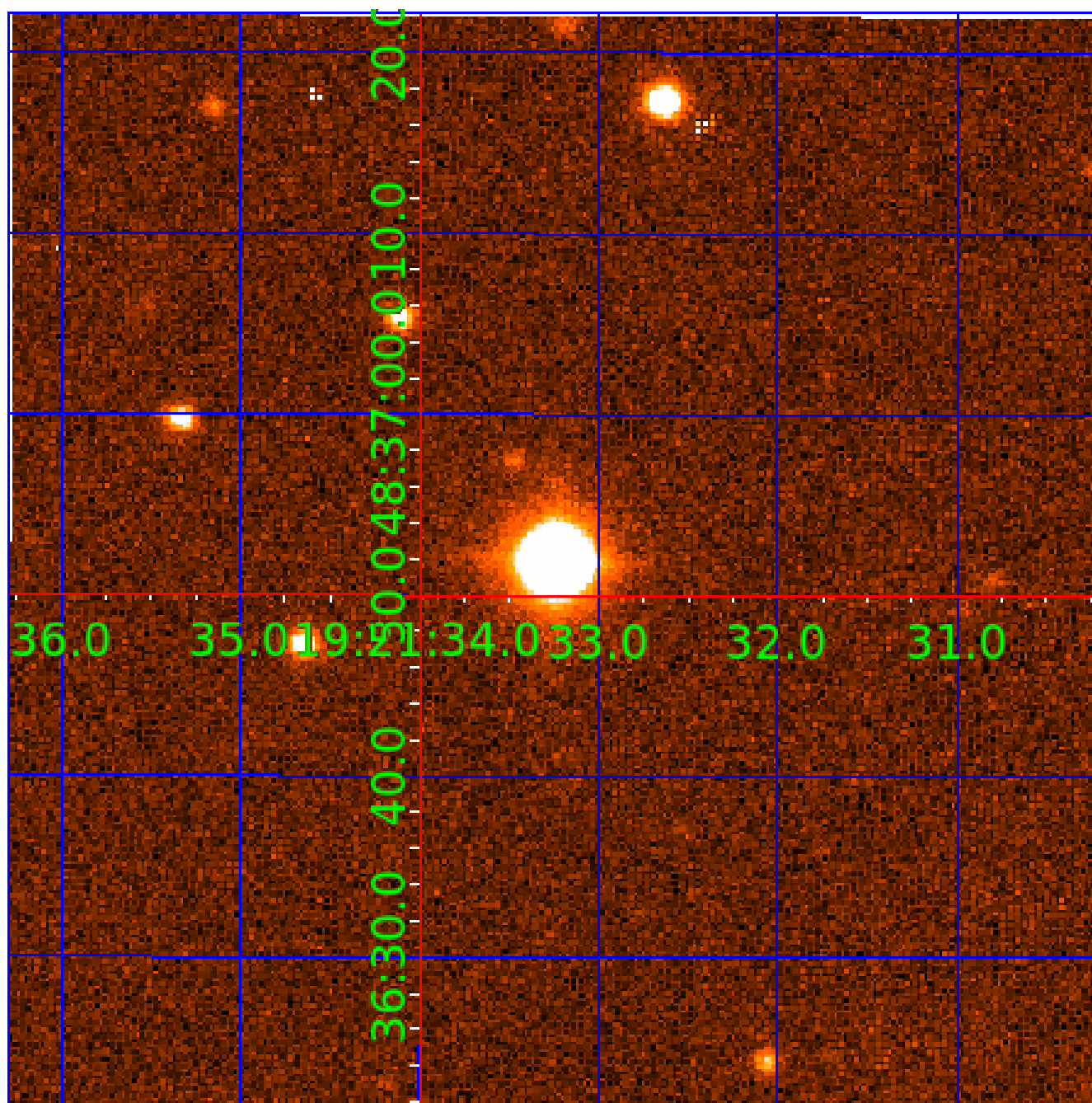


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011081377

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})
011081377-01	OBS	No	322.177819	207.552187	617.5	2.880	12.2	7.8	0.61	4056	1.73	0.15
011081377-03	OBS	No	262.266082	327.153610	477.9	6.941	9.8	7.3	0.61	4056	1.35	0.20
011081377-04	OBS	No	411.842240	192.081518	373.2	6.223	10.9	4.9	0.61	4056	1.32	0.11
011081377-05	OBS	No	449.264705	415.813161	552.0	1.540	13.8	6.9	0.61	4056	1.44	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011081377-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES
011081377-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—HALO_GHOST
011081377-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV
011081377-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—HALO_GHOST

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

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

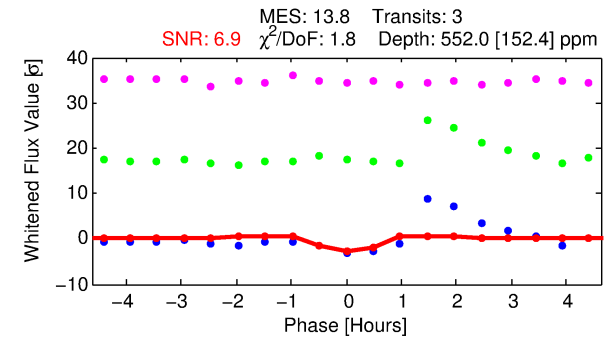
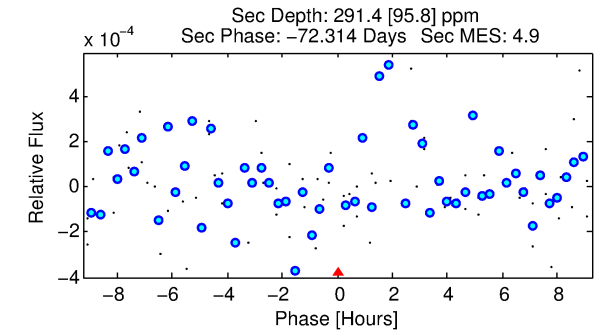
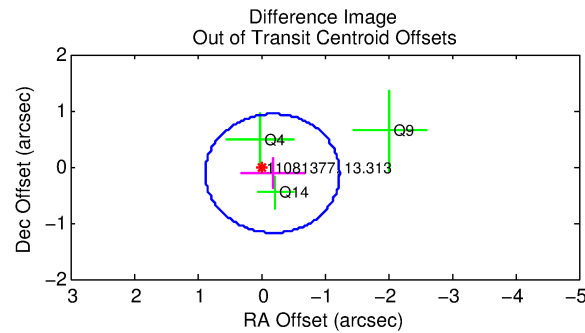
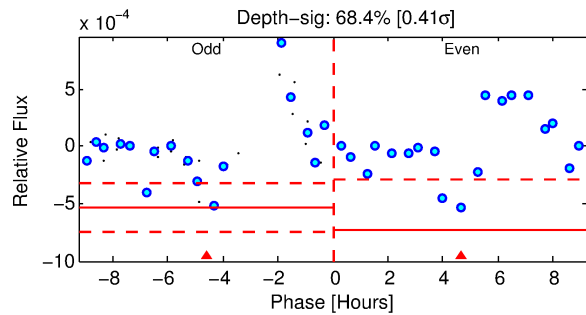
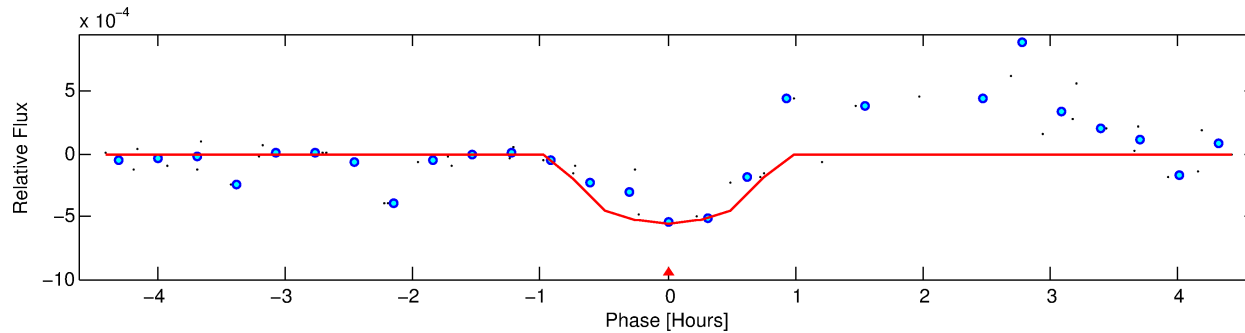
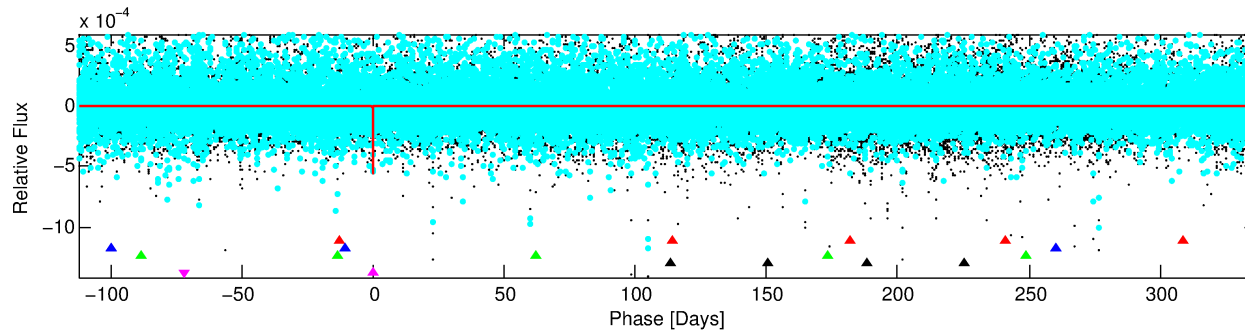
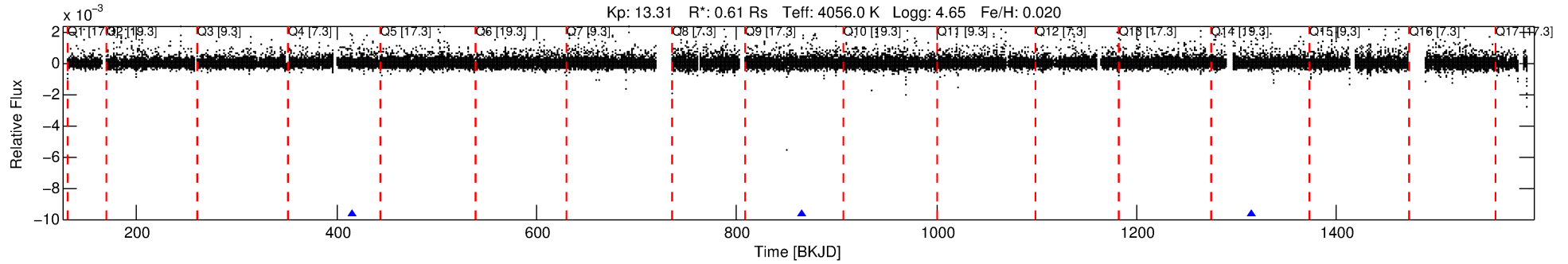
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011081377-05

No Significant Match Found

DV One-Page Summary

KIC: 11081377 Candidate: 5 of 5 Period: 449.265 d



DV Fit Results:

Period = 449.26470 [0.00580] d
Epoch = 415.8132 [0.0074] BKJD
Rp/R* = 0.0216 [0.0909]
a/R* = 2044.42 [28661.42]
b = 0.45 [25.82]
Seff = 0.10 [0.02]
Teq = 142 [7] K
Rp = 1.44 [6.05] Re
a = 0.9703 [0.0866] AU
Ag = 72676.97 [610736.76] [0.12 σ]
Teffp = 3602 [7567] K [0.46 σ]

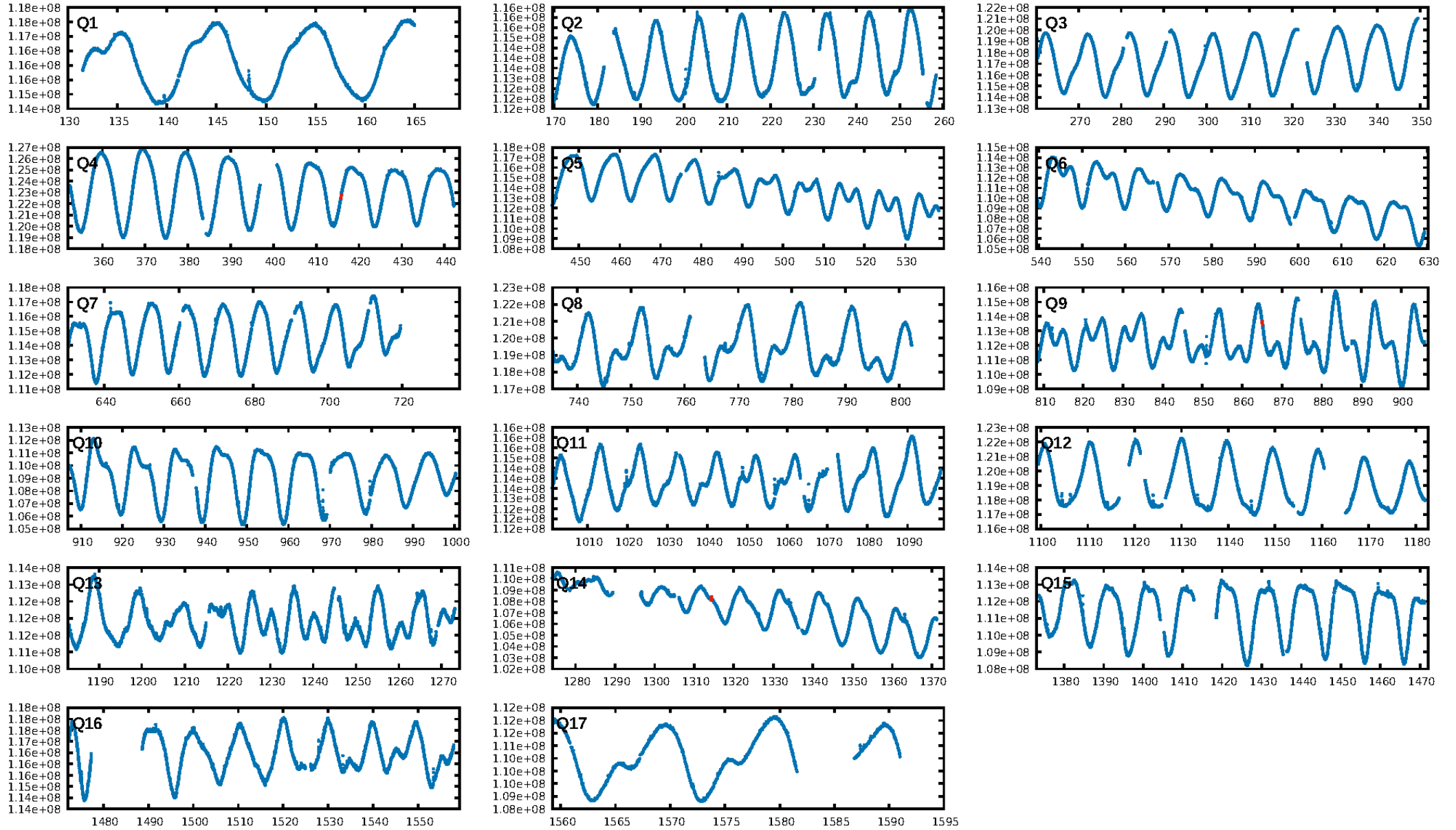
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [140.09 σ]
LongPeriod-sig: 100.0% [341.16 σ]
ModelChiSquare2-sig: 53.8%
ModelChiSquareGof-sig: 69.1%
Bootstrap-pfa: 1.92e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1144
Centroid-sig: 62.7%
Centroid-so: 0.853 arcsec [0.70 σ]
OotOffset-rm: 0.217 arcsec [0.62 σ]
KicOffset-rm: 0.282 arcsec [0.49 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

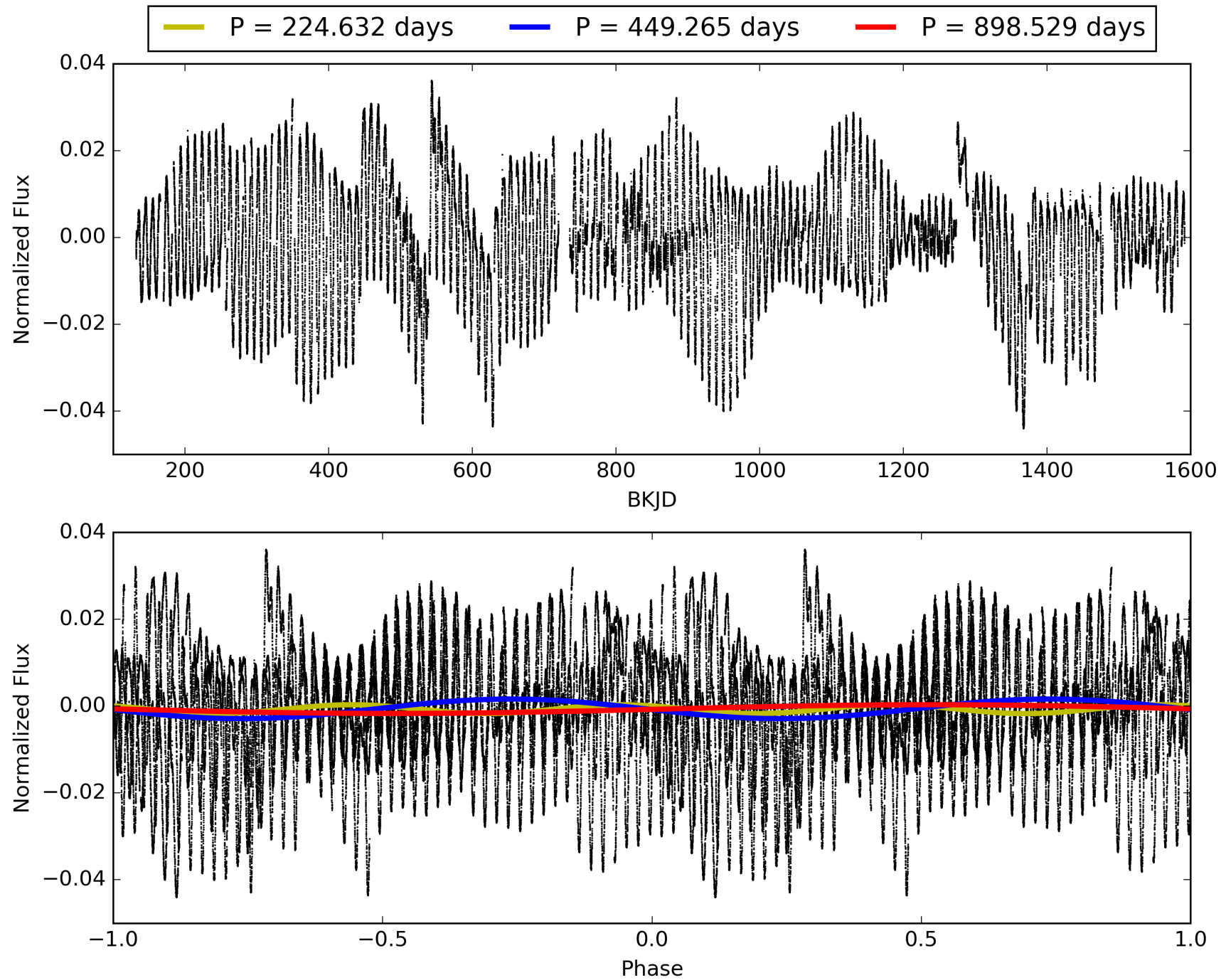
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:12:14 Z

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

TCE 011081377-05, PDC Light Curves

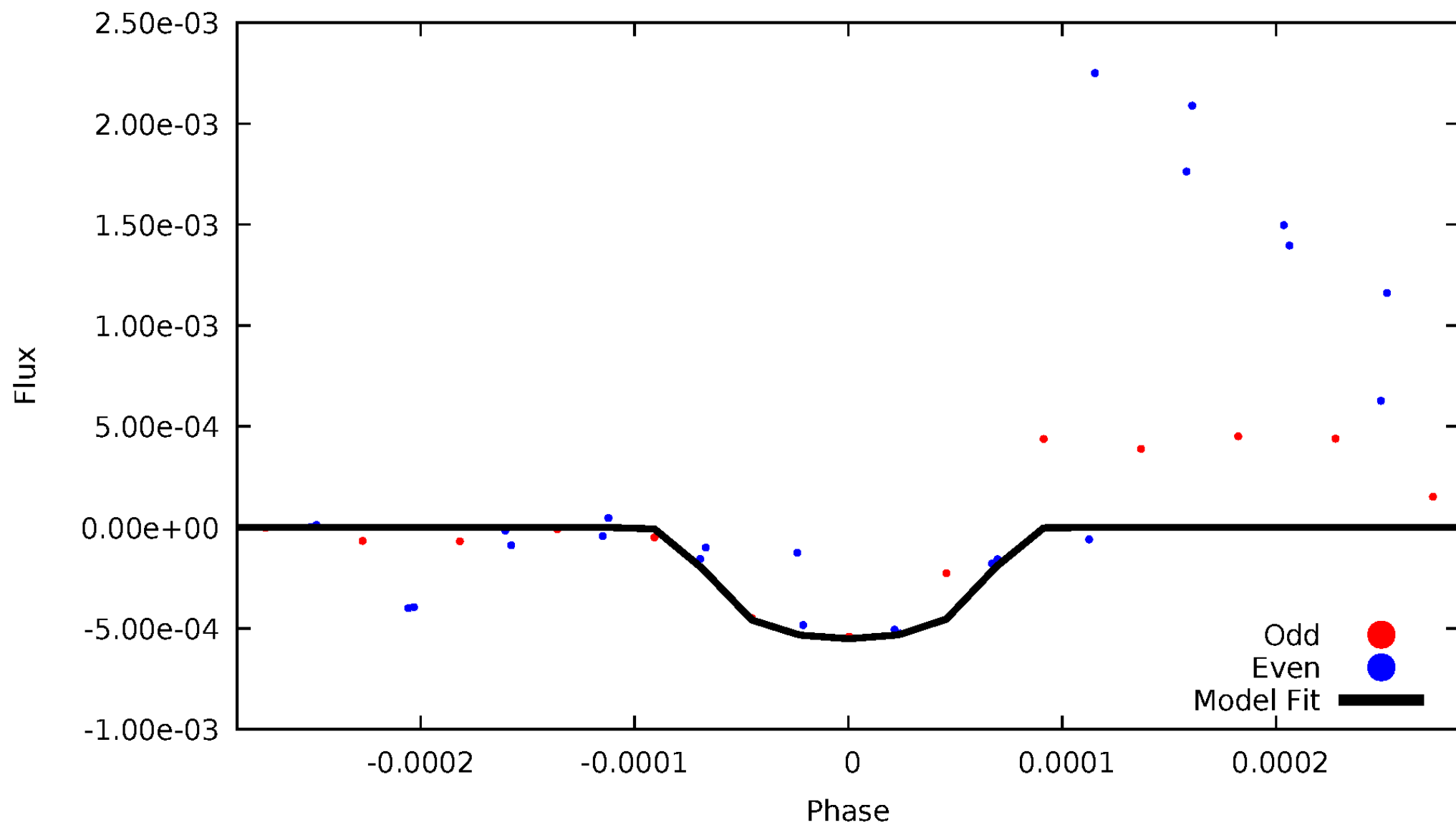


TCE 011081377-05



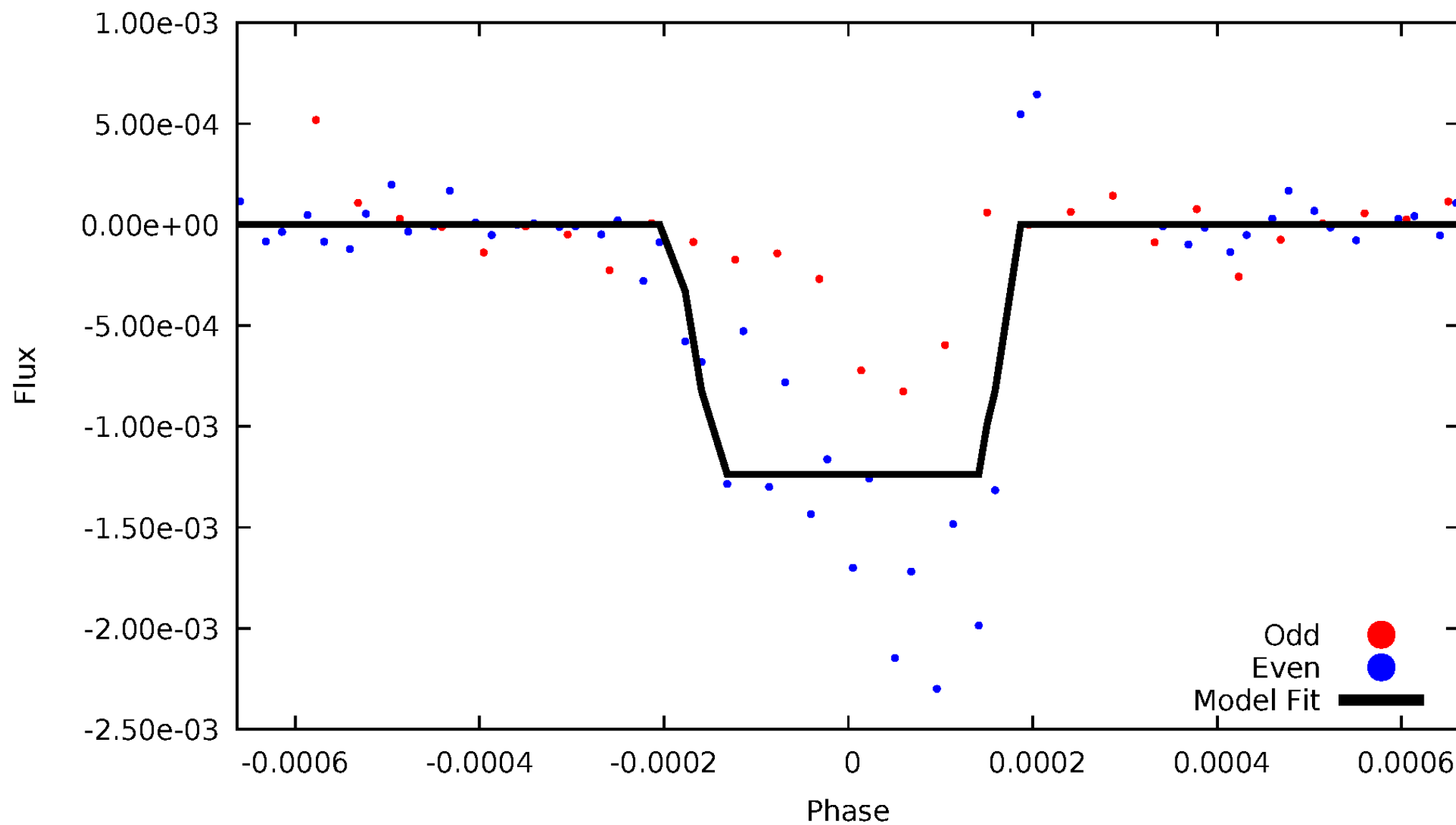
DV Odd/Even

TCE 011081377-05



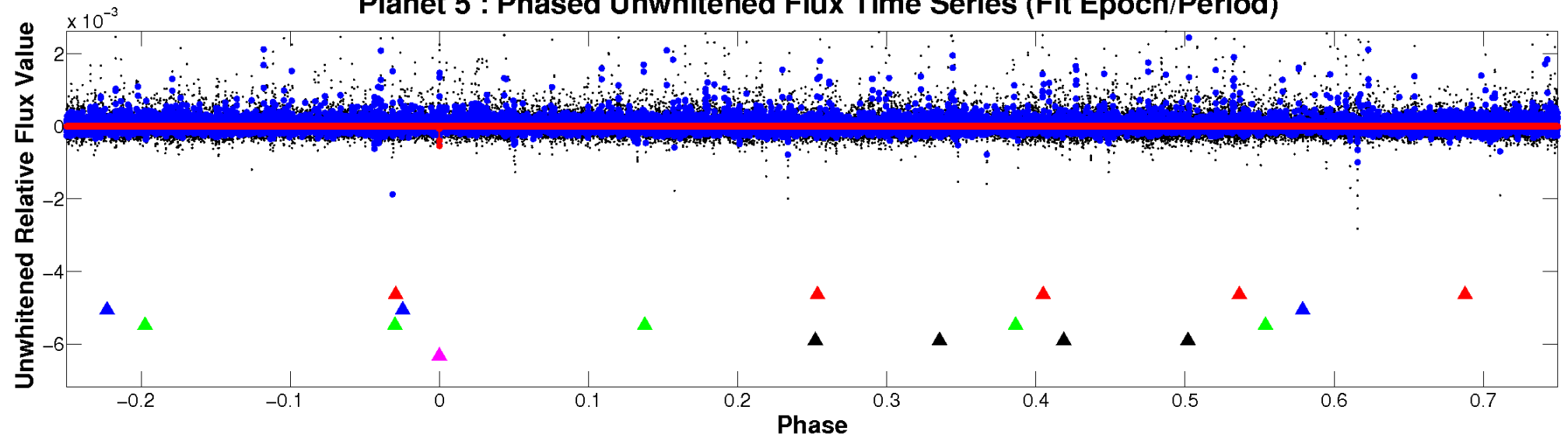
ALT Odd/Even

TCE 011081377-05

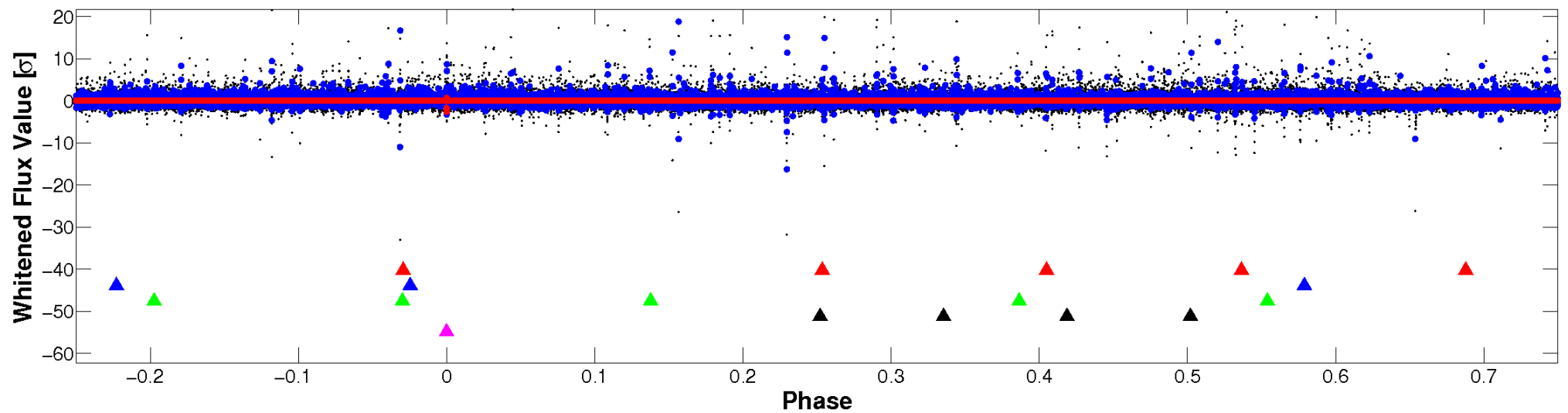


Non-Whitened Vs. Whitened Light Curve

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

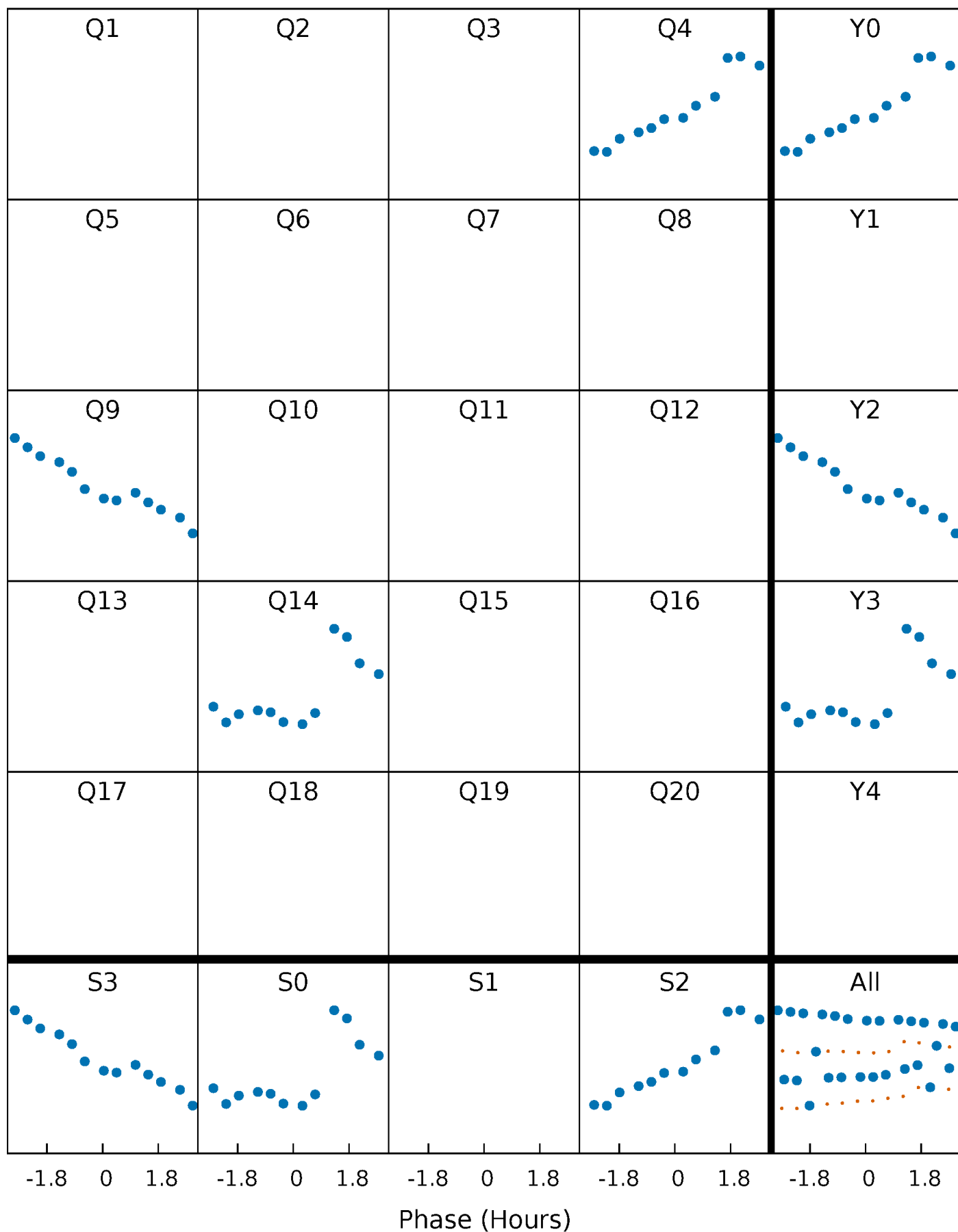


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



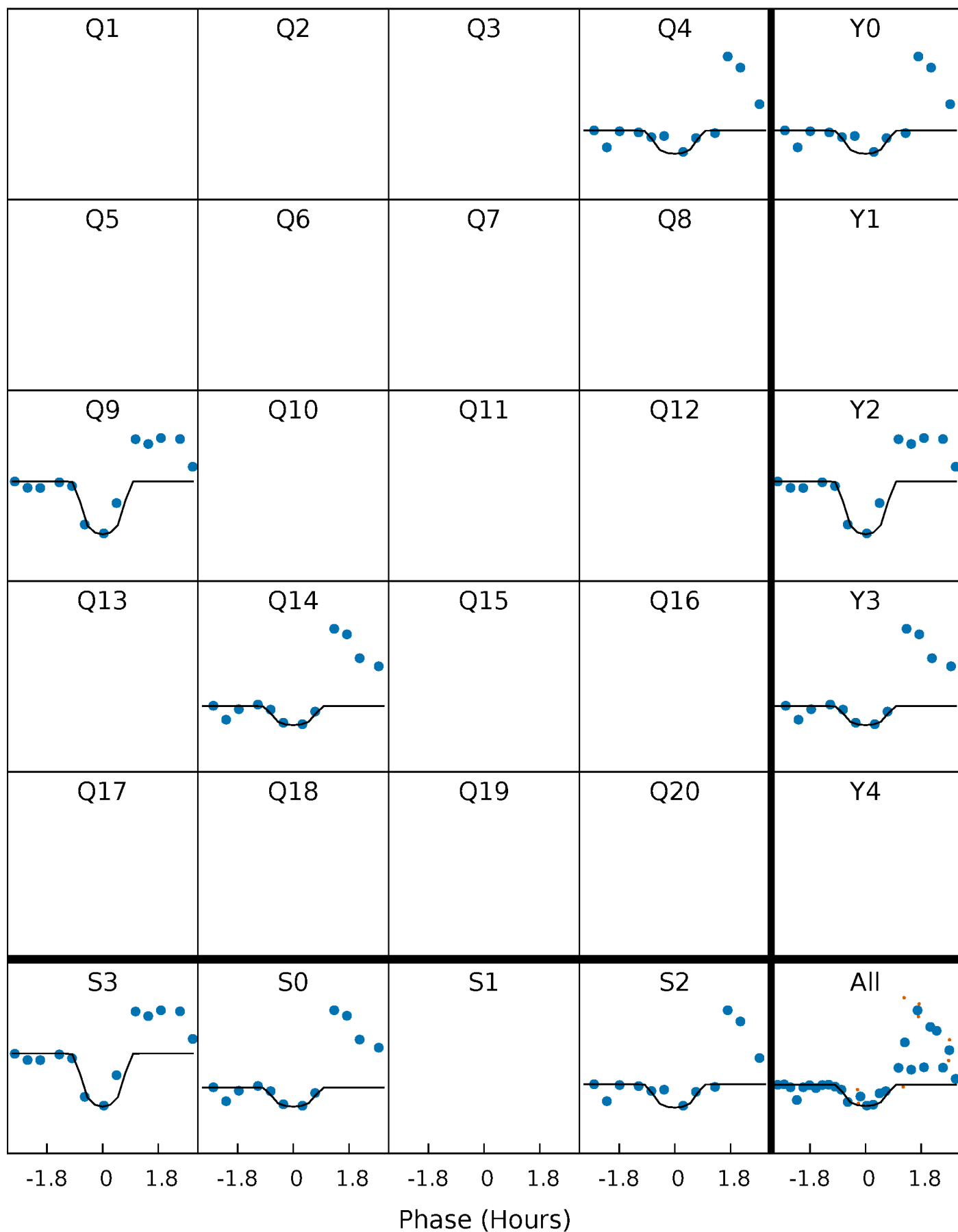
PDC Quarter-Phased Transit Curves

TCE 011081377-05 $P=449.264705$ Days $T_0=415.813161$ (BKJD)



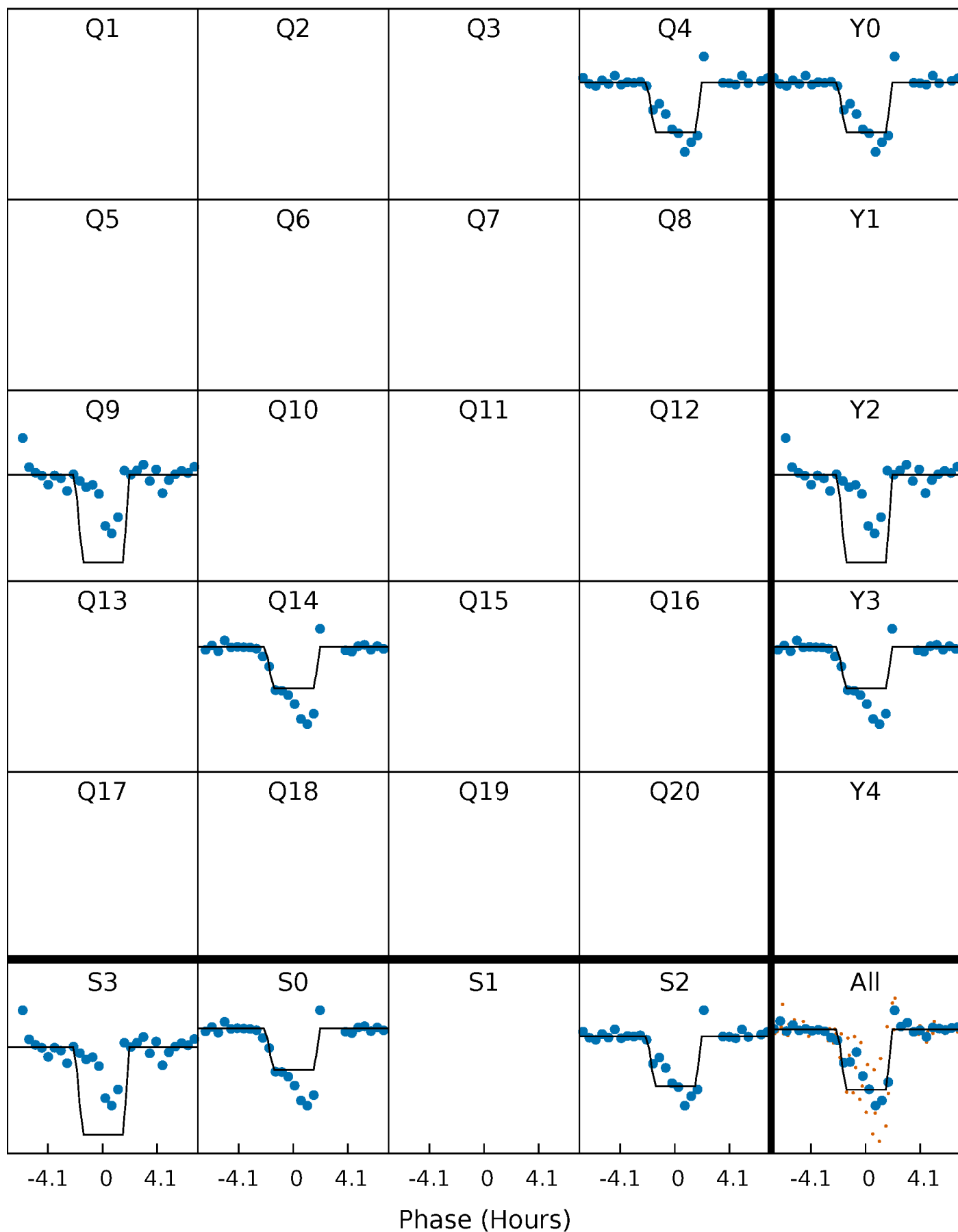
DV Quarter-Phased Transit Curves

TCE 011081377-05 $P=449.264705$ Days $T_0=415.813161$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

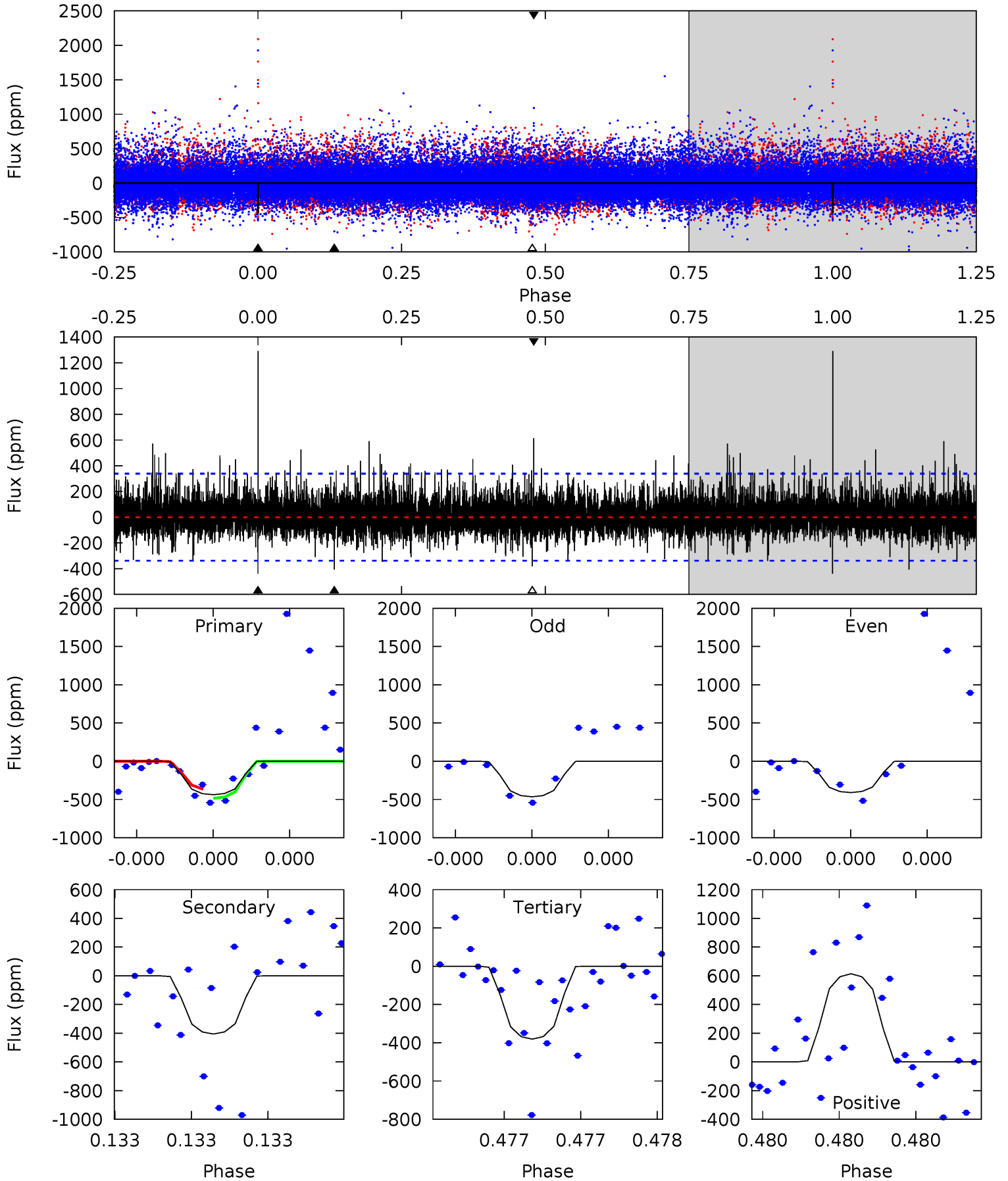
TCE 011081377-05 $P=449.259061$ Days $T_0=415.792257$ (BKJD)



DV Model-Shift Uniqueness Test

011081377-05, P = 449.264705 Days, E = 415.813161 Days

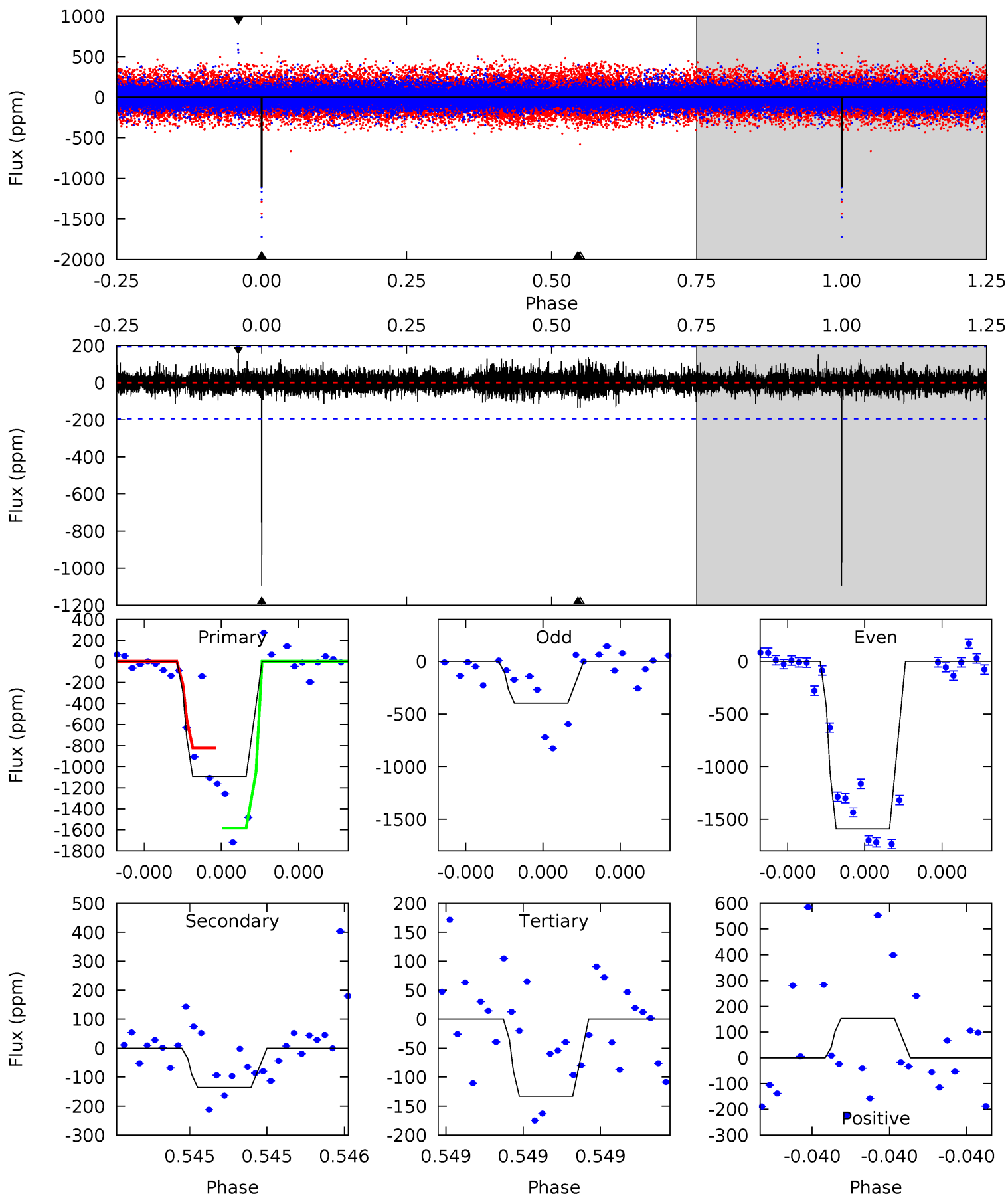
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	6.91	6.50	10.5	5.77	3.77	1.53	0.96	-3.01	0.42	-3.56	0.32	0.94	0.75	1.03



Alt Model-Shift Uniqueness Test

011081377-05, P = 449.259061 Days, E = 415.792257 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.7	3.94	3.87	4.45	5.63	3.57	0.80	27.8	27.3	0.07	-0.51	21.1	0.93	0.12	11.6



Stellar Parameters For KIC 011081377

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4056^{+141}_{-155}	$4.648^{+0.060}_{-0.020}$	$0.020^{+0.250}_{-0.300}$	$0.610^{+0.038}_{-0.070}$	$0.604^{+0.057}_{-0.063}$	$3.743^{+1.093}_{-0.389}$
	+3%/-4%	+1%/-0%	+1250%/-1500%	+6%/-11%	+9%/-10%	+29%/-10%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011081377-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-405 ± 59	$4.71^{+4.74}_{-3.45}$	196^{+8}_{-8}	2747^{+1446}_{-446}	$9582^{+126355}_{-7255}$
Alt.	-136 ± 34	$5.09^{+4.92}_{-3.39}$	197^{+8}_{-8}	2368^{+728}_{-334}	2851^{+20057}_{-2159}

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 $A_{obs} \gg 1.0$

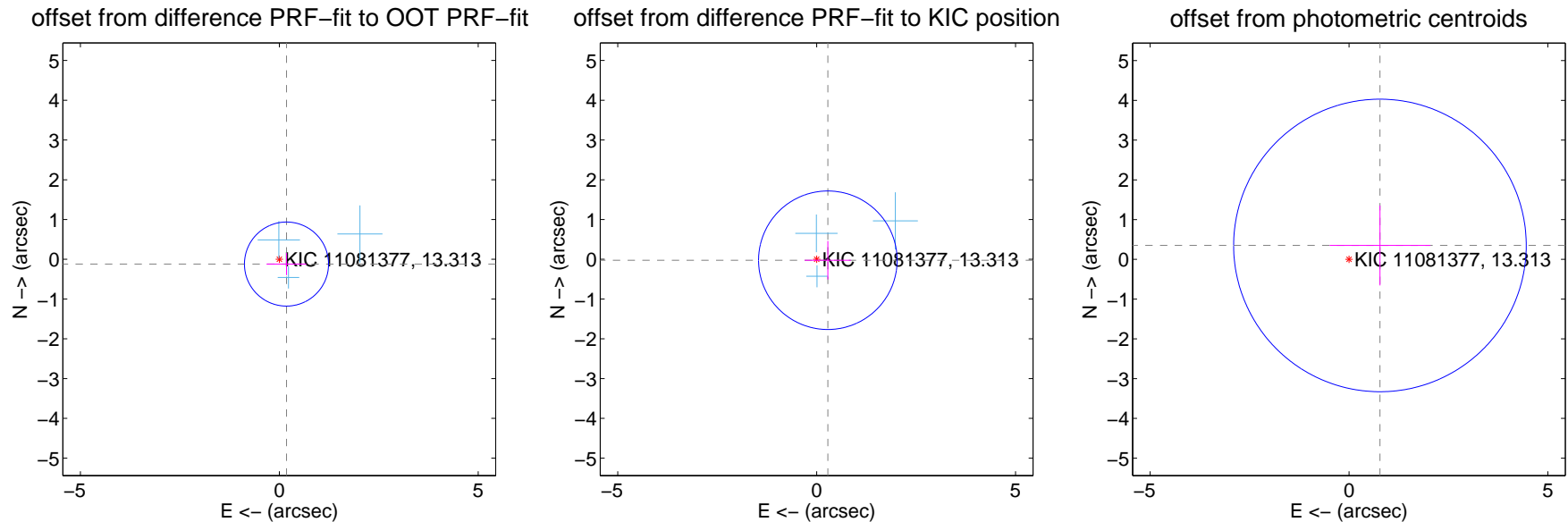
DV Centroid Data

Supplemental centroid analysis for 011081377-05. Kepler magnitude: 13.31. Transit SNR 6.89

There are 3 quarters with good PRF difference image offsets

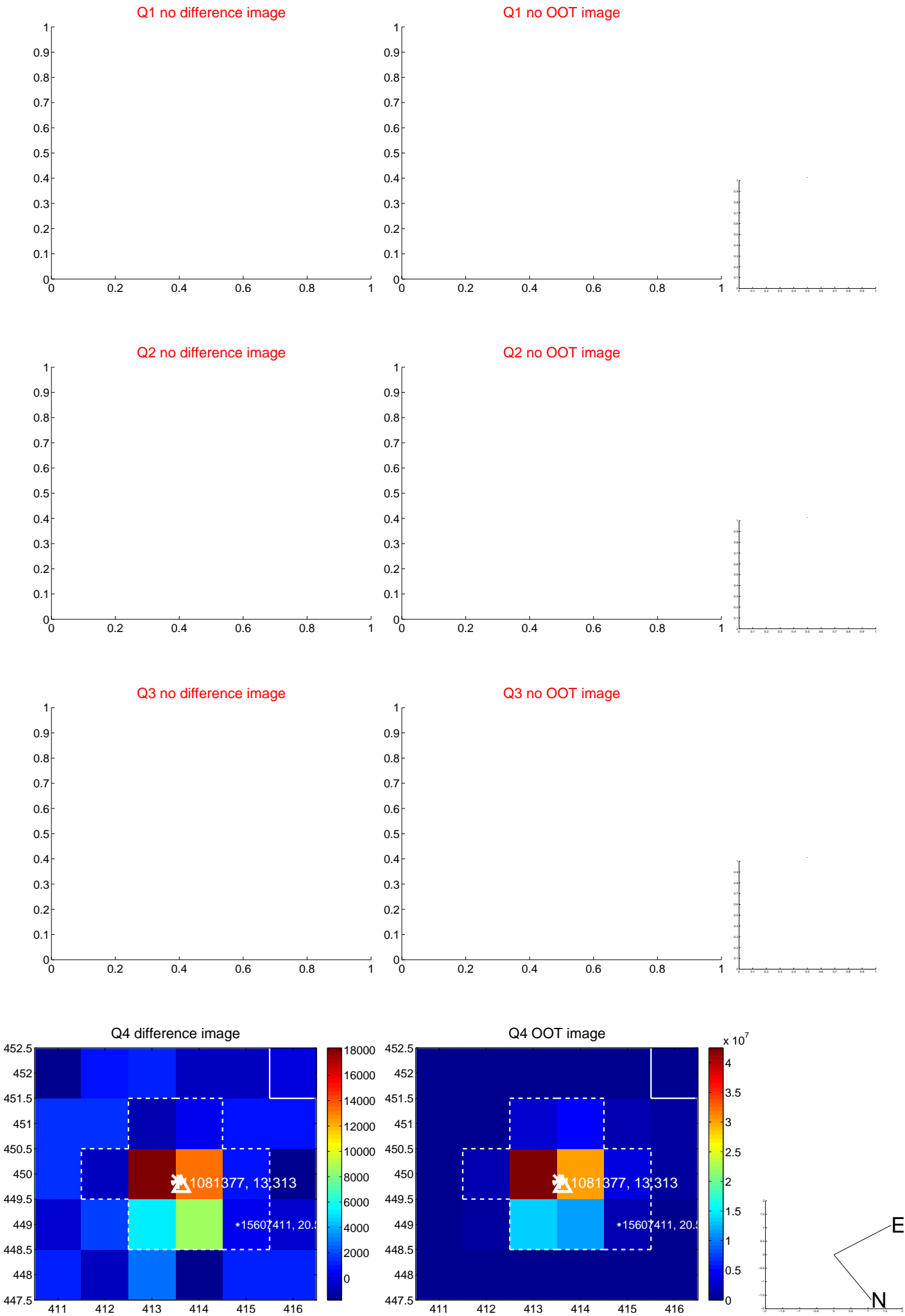
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.217 ± 0.352	0.62	-0.181 ± 0.501	-0.120 ± 0.279
PRF-fit source offset from KIC position	0.282 ± 0.581	0.49	-0.282 ± 0.581	-0.023 ± 0.482
photometric centroid source offset	0.85 ± 1.23	0.70	-0.78 ± 1.27	0.35 ± 1.01



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.

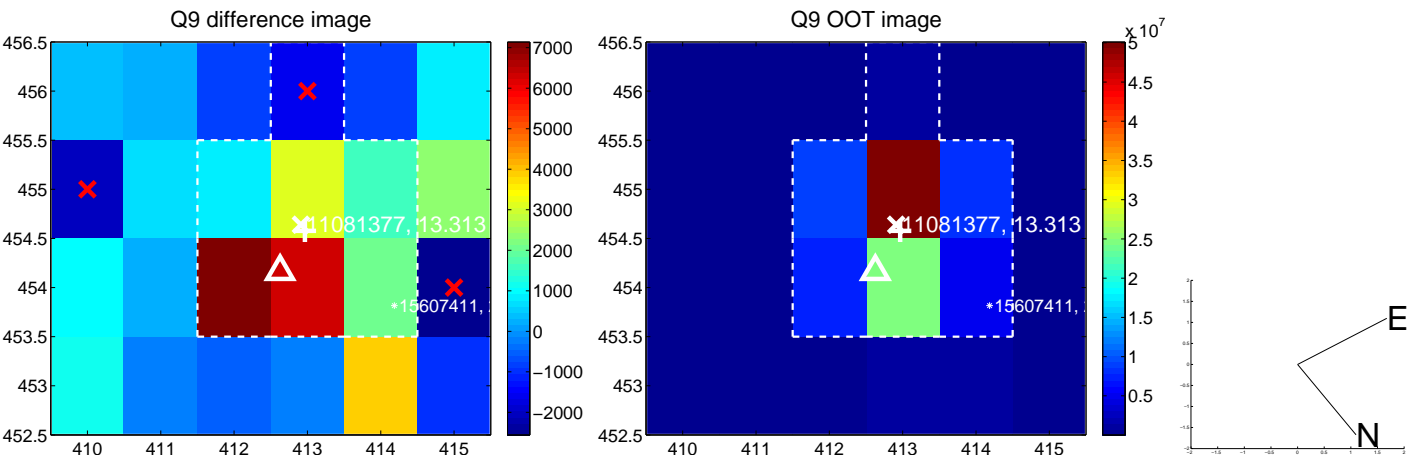
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

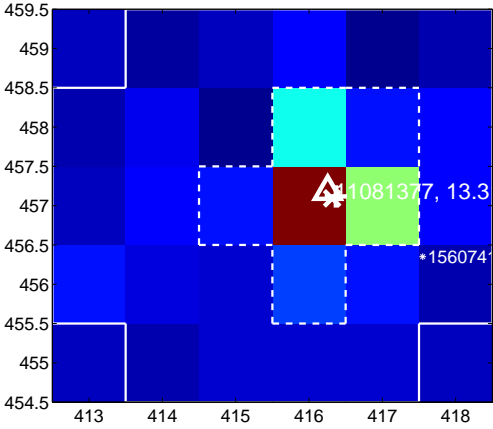
Q13 no difference image



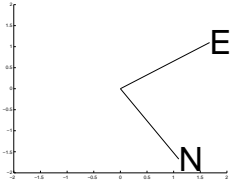
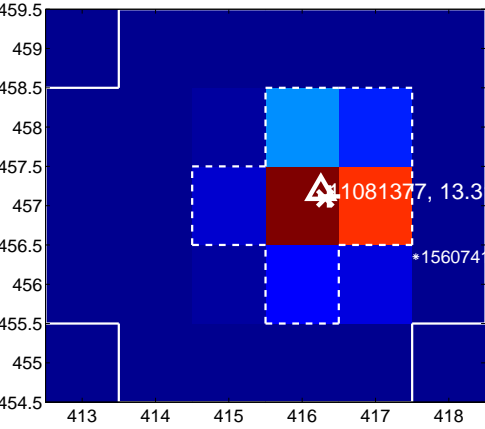
Q13 no OOT image



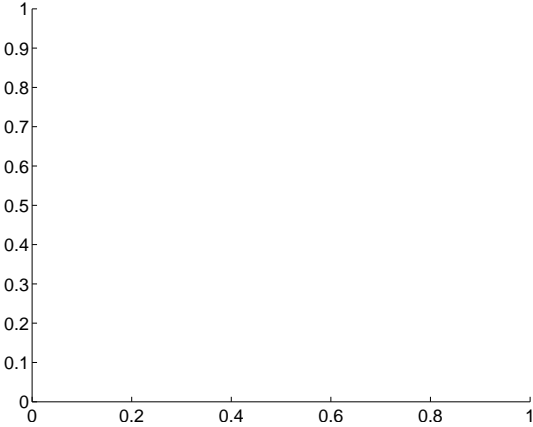
Q14 difference image



Q14 OOT image



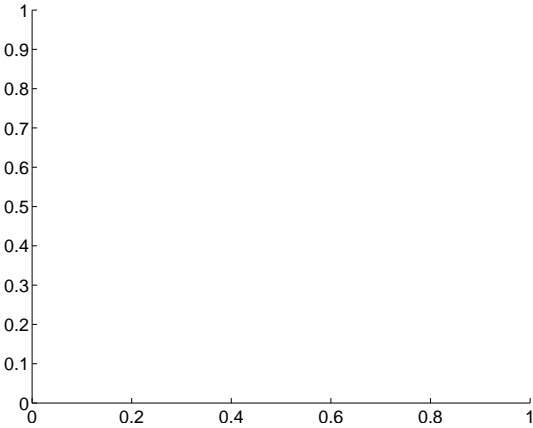
Q15 no difference image



Q15 no OOT image



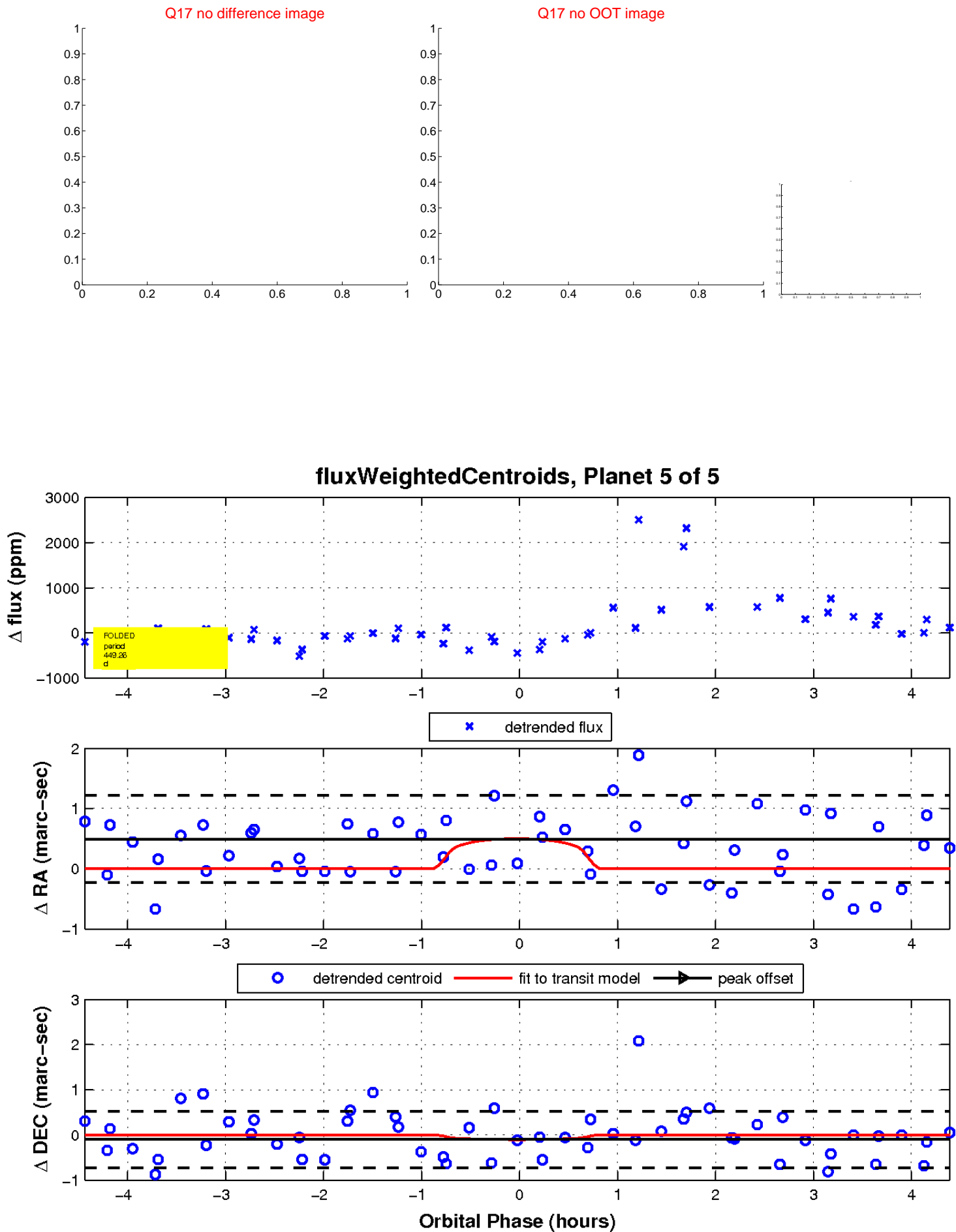
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

