

**Erratum: Observational constraints on the ultrahigh energy cosmic neutrino flux from the second flight of the ANITA experiment**  
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In a recent article [1,2] we reported a limit on a cosmic neutrino flux from the second flight of the ANITA experiment. The limit was based on observing 2 events passing all cuts on a background of  $0.97 \pm 0.42$ . This article corrects the previous article down to 1 surviving event. The limit on cosmic neutrinos becomes correspondingly stronger.

One of the first steps in the analysis procedure was inserting several calibration events at undisclosed random times to mimic a neutrino signal. These events were produced during flight by an antenna buried 97 m below the ice surface and were driven by an autonomous pulser. These inserted events would be removed upon unblinding the analysis. This was one

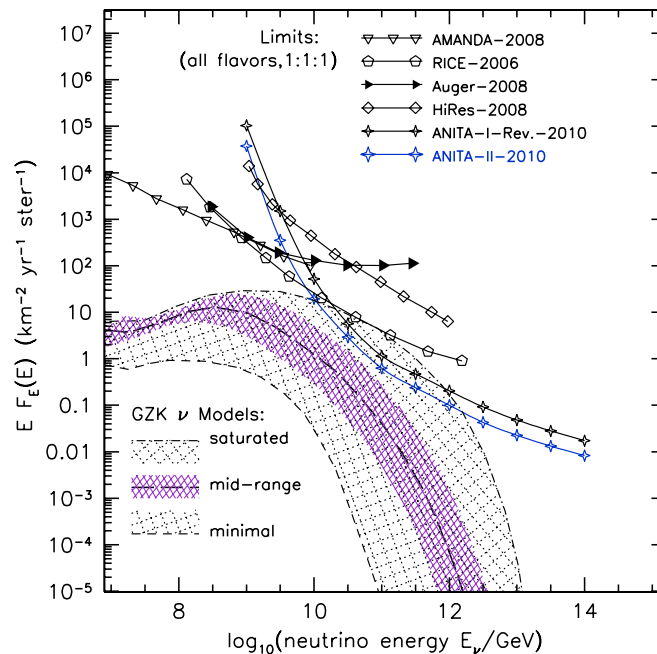


FIG. 1 (color online). ANITA-II limit for 28.5 days livetime. The blue curve is the new limit, based on the one surviving candidate. Other limits are from AMANDA, RICE, Auger, HiRes, and a revised limit from ANITA-I. The Berezhinsky and Zatsepin (Greisen, Zatsepin and Kuzmin) neutrino model range is determined by a variety of models. Full citations for the table and figure are given in the original article.

TABLE I. Expected numbers of events  $N_\nu$  from several cosmogenic neutrino models, and confidence level for exclusion by ANITA-II observations when appropriate. Full citations are given in the original article. Some values of  $N_\nu$  have changed slightly since the original publication due only to small changes in numerical integration.

Model and references	Predicted $N_\nu$	C.L.%
<i>Baseline models:</i>		
Various	0.3–1.1	...
<i>Strong source evolution models:</i>		
Aramo <i>et al.</i> 2005	2.4	85
Berezinsky 2005	5.1	98
Kalashov <i>et al.</i> 2002	5.6	99
Barger, Huber, and Marfatia 2006	3.5	93
Yuksel and Kistler 2007	1.7	74
<i>Models that saturate all bounds:</i>		
Yoshida <i>et al.</i> 1997	32	>99.999
Kalashov <i>et al.</i> 2002	20	>99.999
Aramo <i>et al.</i> 2005	17	99.999
<i>Waxman-Bahcall fluxes:</i>		
Waxman, Bahcall 1999, evolved sources	1.5	...
Waxman, Bahcall 1999, standard	0.52	...

of two procedures we employed to have a blind analysis. After publication, we subsequently determined that due to a clerical error one of the two surviving events, Event 8 381 355, was actually one of the inserted calibration events. The fact that this event survived its subsequent scrutiny we consider as a demonstration that the blinding procedure was truly valid.

The net result is that ANITA-II observed 1 event on a background of  $0.97 \pm 0.42$ . Including systematic uncertainties, that corresponds to reducing the Feldman-Cousins upper bound from 4.95 to 3.41 events. The new, 31% stronger, limit is shown in Fig. 1. Now the actual limit is essentially the same as the expected limit so we no longer show both curves. The ANITA-II 90% confidence level integral flux limit on a pure  $E^{-2}$  spectrum for  $10^{18} \text{ eV} \leq E_\nu \leq 10^{23.5} \text{ eV}$  is  $E_\nu^2 F_\nu \leq 1.4 \times 10^{-7} \text{ GeV cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$ . An updated evaluation of representative models is given in Table I. Citations were given in the original article.

We take this space to note that two additional analyses [3,4] have reached the same conclusions as our published result, but using complementary techniques which hold promise for future analyses.

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- [1] P. Gorham *et al.*, *Phys. Rev. D* **82**, 022004 (2010).  
[2] A. G. Vieregg, Ph.D. dissertation, University of California, 2010, <http://proquest.umi.com/pqdweb?did=2316792181&sid=1&Fmt=2&clientId=48051&RQT=309&VName=PQD>.  
[3] R.-Y. Shang, master's thesis, National Taiwan University, 2011, [http://www.phys.hawaii.edu:8080/anita\\_notes/494](http://www.phys.hawaii.edu:8080/anita_notes/494).  
[4] M. Mottram, Ph.D. dissertation, University College London, 2011, [http://www.phys.hawaii.edu:8080/anita\\_notes/498](http://www.phys.hawaii.edu:8080/anita_notes/498)