

## Radiation Readings in Tucson, Arizona, USA

We used a [Radex RD1212](#) Geiger counter to record [ionizing radiation](#) readings around [Tucson, Arizona, USA](#). For reference, the average background radiation levels are typically 0.09 to 0.11 microsieverts ( $\mu\text{Sv/h}$ ) per hour in the USA. This is what we found with **peak value in red**:

Driving loop from north of the City of Tucson out to [Gates Pass](#) with Geiger counter in shirt pocket.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu\text{Sv/h}$

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5m	12/29/2015 15:19:41	0.10	Start at N. Tucson Boulevard/Prince Road heading west
5m	12/29/2015 15:24:41	0.11	Heading south on N. Campbell Avenue
5m	12/29/2015 15:29:41	0.10	
5m	12/29/2015 15:34:41	0.10	Heading west on 22 <sup>nd</sup> Street
5m	12/29/2015 15:39:41	0.09	
5m	12/29/2015 15:44:41	0.09	Heading south on La Cholla Boulevard
5m	12/29/2015 15:49:41	0.09	Heading west on Ajo Highway
5m	12/29/2015 15:54:41	0.09	Heading northwest on Kinney Road
5m	12/29/2015 15:59:41	0.10	Stopped
<b>5m</b>	<b>12/29/2015 16:04:41</b>	<b>0.12</b>	<b>In Tucson Mountain Sanctuary community</b>
5m	12/29/2015 16:09:41	0.11	
5m	12/29/2015 16:14:41	0.10	Heading northwest on Kinney Road
5m	12/29/2015 16:19:41	0.09	Heading east on Gates Pass Road
5m	12/29/2015 16:24:41	0.10	
5m	12/29/2015 16:29:41	0.10	
5m	12/29/2015 16:34:41	0.08	Heading north on N. Greasewood Road
5m	12/29/2015 16:39:41	0.10	Heading east on Grant Road
5m	12/29/2015 16:44:41	0.10	Heading north on N. Oracle Road
5m	12/29/2015 16:49:41	0.09	
5m	12/29/2015 16:54:41	0.11	Stopped at Home Depot
5m	12/29/2015 16:59:41	0.11	
5m	12/29/2015 17:04:41	0.11	Heading east on E. Limberlost Drive
5m	12/29/2015 17:09:41	0.09	Heading south on N. Campbell Avenue
5m	12/29/2015 17:14:41	0.10	Heading west on E. Prince Road

The highest reading was obtained in Tucson Mountain Sanctuary community where I probably walked past a “biologically hot” radioactive smoke detector that I own.

Trip from the north of the City of Tucson to the [University Medical Center South Campus](#)

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period	From	$\mu\text{Sv/h}$	
5m	12/30/2015 13:06:21	0.10	Start at N. Country Club/E. Prince Road heading south
5m	12/30/2015 13:11:21	0.10	Heading east on Fort Lowell Rd and west on N Swan Rd
5m	12/30/2015 13:16:21	0.09	Heading east on E. Grant Road
5m	12/30/2015 13:21:21	0.09	Heading South on Kolb Road
5m	12/30/2015 13:26:21	0.10	
5m	12/30/2015 13:31:21	0.11	Heading west on E. Golf Links Road
5m	12/30/2015 13:36:21	0.10	
5m	12/30/2015 13:41:21	0.09	Heading west on E. Ajo Way
5m	12/30/2015 13:46:21	0.10	Stopped at UMC South medical campus
5m	12/30/2015 13:51:21	0.11	Checking in at clinic reception
5m	12/30/2015 13:56:21	0.11	
5m	12/30/2015 14:01:21	0.09	Waiting in pulmonary clinic waiting area
5m	12/30/2015 14:06:21	0.11	
5m	12/30/2015 14:11:21	0.10	Inside pulmonary clinic
5m	12/30/2015 14:16:21	0.10	
5m	12/30/2015 14:21:21	0.09	
5m	12/30/2015 14:26:21	0.10	
5m	12/30/2015 14:31:21	0.10	
5m	12/30/2015 14:36:21	0.11	
5m	12/30/2015 14:41:21	0.10	
5m	12/30/2015 14:46:21	0.08	
5m	12/30/2015 14:51:21	0.11	
5m	12/30/2015 14:56:21	0.09	
5m	12/30/2015 15:01:21	0.11	Left clinic and heading west on E. Ajo Way
5m	12/30/2015 15:06:21	0.08	Heading north on S. Kino Parkway
5m	12/30/2015 15:11:21	0.08	
5m	12/30/2015 15:16:21	0.10	
5m	12/30/2015 15:21:21	0.09	Heading West on E. Prince Rd

No abnormally high readings for Tucson were obtained on this route.

Trip to [Kitt Peak National Observatory](#) with Geiger counter in shirt pocket and on ground.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period	From	$\mu\text{Sv/h}$	
5m	02/10/2016 12:20:02	0.09	Start at Three Points heading west
5m	02/10/2016 12:25:02	0.10	
5m	02/10/2016 12:30:02	0.09	
5m	02/10/2016 12:35:02	0.12	Passed The Coyote Store
5m	02/10/2016 12:40:02	0.09	Turned onto Kitt Peak 386 access road
5m	02/10/2016 12:45:02	0.09	Passed 4,000 feet
5m	02/10/2016 12:50:02	0.11	
5m	02/10/2016 12:55:02	0.12	Passed 5,000 feet
5m	02/10/2016 13:00:02	0.15	Arrived at picnic area
5m	02/10/2016 13:05:02	0.14	
5m	02/10/2016 13:10:02	0.15	
5m	02/10/2016 13:15:02	0.17	
5m	02/10/2016 13:20:02	0.19	
5m	02/10/2016 13:25:02	0.18	
5m	02/10/2016 13:30:02	0.16	Left picnic area
5m	02/10/2016 13:35:02	0.13	Arrived at <a href="#">Kitt Peak Visitor Center</a>
5m	02/10/2016 13:40:02	0.14	Started walking the 6,883 feet high mountain summit
5m	02/10/2016 13:45:02	0.19	
5m	02/10/2016 13:50:02	0.26	Departed 0.9 meter telescope
5m	02/10/2016 13:55:02	0.19	
5m	02/10/2016 14:00:02	0.14	
5m	02/10/2016 14:05:02	0.17	
5m	02/10/2016 14:10:02	0.13	Departed Burrell Schmidt telescope
5m	02/10/2016 14:15:02	0.14	
5m	02/10/2016 14:20:02	0.15	
5m	02/10/2016 14:25:02	0.14	
5m	02/10/2016 14:30:02	0.15	
5m	02/10/2016 14:35:02	0.20	
5m	02/10/2016 14:40:02	0.26	Departed 4 meter telescope
5m	02/10/2016 14:45:02	0.14	
5m	02/10/2016 14:50:02	0.13	At <a href="#">Kitt Peak Visitor Center</a>
5m	02/10/2016 14:55:02	0.11	Departed Kitt Peak
5m	02/10/2016 15:00:02	0.13	
5m	02/10/2016 15:05:02	0.15	
5m	02/10/2016 15:10:02	0.12	
5m	02/10/2016 15:15:02	0.11	Turned onto Ajo Highway 86 towards Tucson
5m	02/10/2016 15:20:02	0.10	
5m	02/10/2016 15:25:02	0.11	Passed The Coyote Store

5m	02/10/2016 15:30:02	0.12	
5m	02/10/2016 15:35:02	0.12	
5m	02/10/2016 15:40:02	0.11	
5m	02/10/2016 15:45:02	0.09	
5m	02/10/2016 15:50:02	0.09	
5m	02/10/2016 15:55:02	0.12	Passed Kinney Road
5m	02/10/2016 16:00:02	0.10	Entered City of Tucson
5m	02/10/2016 16:05:02	0.09	Turned onto I-19/I-10 heading north
5m	02/10/2016 16:10:02	0.11	Turned onto Grant Road heading east
5m	02/10/2016 16:15:02	0.11	
5m	02/10/2016 16:20:02	0.09	Turned onto Tucson Boulevard heading north
5m	02/10/2016 16:25:02	0.10	

Significantly elevated ionizing radiation readings were obtained on the summit of Kitt Peak that were double that of the City of Tucson background radiation levels.

Repeat of [Kitt Peak National Observatory](#) readings that never placed the Geiger counter on the ground. It was kept in the shirt breast pocket.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu$ Sv/h

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5m	05/11/2016 10:50:34	0.10	Start at Three Points heading west
5m	05/11/2016 10:55:34	0.11	
5m	05/11/2016 11:00:34	0.12	
5m	05/11/2016 11:05:34	0.10	
5m	05/11/2016 11:10:34	0.10	Stopped at the Coyote Store
5m	05/11/2016 11:15:34	0.12	Stopped at the roadside rest area
5m	05/11/2016 11:20:34	0.12	Stopped at Pan Tak Sign
5m	05/11/2016 11:25:34	0.11	Stopped at Kitt Peak 386 access road
5m	05/11/2016 11:30:34	0.11	
5m	05/11/2016 11:35:34	0.09	Stopped at Mile Marker 1
5m	05/11/2016 11:40:34	0.13	Stopped at Mile Marker 2
5m	05/11/2016 11:45:34	0.12	Stopped at Mile Marker 3
5m	05/11/2016 11:50:34	0.11	Stopped at Mile Marker 4
5m	05/11/2016 11:55:34	0.12	Stopped at Mile Marker 5 passed 5,000 feet
5m	05/11/2016 12:00:34	0.16	Stopped at Mile Marker 6
5m	05/11/2016 12:05:34	0.12	
5m	05/11/2016 12:10:34	0.15	Stopped at Mile Marker 7
5m	05/11/2016 12:15:34	0.17	Stopped at Mile Marker 8
5m	05/11/2016 12:20:34	0.17	
5m	05/11/2016 12:25:34	0.18	Stopped at Mile Marker 9
5m	05/11/2016 12:30:34	0.14	Stopped at Mile Marker 10 passed 6,000 feet
5m	05/11/2016 12:35:34	0.15	Arrived at picnic area and walked around
5m	05/11/2016 12:40:34	0.19	Highest reading in picnic area
5m	05/11/2016 12:45:34	0.18	
5m	05/11/2016 12:50:34	0.12	
5m	05/11/2016 12:55:34	0.12	Stopped at Mile Marker 11
5m	05/11/2016 13:00:34	0.16	Stopped at Mile Marker 12 passed 6,750 feet
5m	05/11/2016 13:05:34	0.13	
5m	05/11/2016 13:10:34	0.17	Walking around interior of visitor center
5m	05/11/2016 13:15:34	0.15	
5m	05/11/2016 13:20:34	0.16	Left visitor center
5m	05/11/2016 13:25:34	0.16	At solar telescope
5m	05/11/2016 13:30:34	0.13	
5m	05/11/2016 13:35:34	0.16	Walked around interior of solar visitor center
5m	05/11/2016 13:40:34	0.12	Arrived at 2.1 meter telescope
5m	05/11/2016 13:45:34	0.17	Arrived at 0.9 meter telescope
5m	05/11/2016 13:50:34	0.18	

5m	05/11/2016 13:55:34	0.17	
5m	05/11/2016 14:00:34	0.16	
5m	05/11/2016 14:05:34	0.17	Left 0.9 meter telescope
5m	05/11/2016 14:10:34	0.12	At visitor center
5m	05/11/2016 14:15:34	0.15	Left visitor center
5m	05/11/2016 14:20:34	0.16	At 0.6 meter LOTIS telescope
5m	05/11/2016 14:25:34	0.14	At visitor center
5m	05/11/2016 14:30:34	0.14	Left visitor center
5m	05/11/2016 14:35:34	0.14	
5m	05/11/2016 14:40:34	0.16	At 1.8 meter Spacewatch telescope
5m	05/11/2016 14:45:34	0.15	
5m	05/11/2016 14:50:34	0.13	At 4 meter Mayall telescope
5m	05/11/2016 14:55:34	0.09	On 16 <sup>th</sup> story observation deck (lowest summit reading)
5m	05/11/2016 15:00:34	0.10	In telescope viewing area
5m	05/11/2016 15:05:34	0.12	
5m	05/11/2016 15:10:34	0.16	Left 4 meter Mayall telescope
5m	05/11/2016 15:15:34	0.15	
5m	05/11/2016 15:20:34	0.16	
5m	05/11/2016 15:25:34	0.15	At visitor center
5m	05/11/2016 15:30:34	0.15	
5m	05/11/2016 15:35:34	0.13	Left Kitt Peak summit
5m	05/11/2016 15:40:34	0.15	
5m	05/11/2016 15:45:34	0.12	
5m	05/11/2016 15:50:34	0.11	
5m	05/11/2016 15:55:34	0.12	Turned onto Ajo Highway 86 towards Tucson
5m	05/11/2016 16:00:34	0.11	Passed The Coyote Store
5m	05/11/2016 16:05:34	0.10	
5m	05/11/2016 16:10:34	0.09	Passed border patrol check point
5m	05/11/2016 16:15:34	0.10	Passed Three Points
5m	05/11/2016 16:20:34	0.10	
5m	05/11/2016 16:25:34	0.10	
5m	05/11/2016 16:30:34	0.09	Passed Kinney Road
5m	05/11/2016 16:35:34	0.11	Entered City of Tucson
5m	05/11/2016 16:40:34	0.10	Turned onto I-19/I-10 north
5m	05/11/2016 16:45:34	0.11	Turned east on Grant Road
5m	05/11/2016 16:50:34	0.10	Turned north on Tucson Blvd
5m	05/11/2016 16:55:34	0.10	

The high readings were repeatable in the same locations as before. The peak readings were lower and this may be due to the Geiger counter not being placed onto the ground. The lowest reading was obtained on the 16th story Mayall telescope observation deck far above the ground which indicates that the highest radiation readings may be coming from the ground.

Trip from the north of the City of Tucson to [Sabino Canyon recreation area](#) with Geiger counter in shirt pocket.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu$ Sv/h

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5m	10/18/2016 11:05:52	0.10	Country Club Road
5m	10/18/2016 11:10:52	0.10	Fort Lowell Road
5m	10/18/2016 11:15:52	0.09	Swan Road
5m	10/18/2016 11:20:52	0.09	Grant Road
5m	10/18/2016 11:25:52	0.09	Tanque Verde Road
5m	10/18/2016 11:30:52	0.09	Sabino Canyon Road
5m	10/18/2016 11:35:52	0.09	Arrived at Sabino Canyon
5m	10/18/2016 11:40:52	0.13	
5m	10/18/2016 11:45:52	0.11	
5m	10/18/2016 11:50:52	0.11	
5m	10/18/2016 11:55:52	0.11	
5m	10/18/2016 12:00:52	0.10	
5m	10/18/2016 12:05:52	0.10	Sitting on stationary tram
5m	10/18/2016 12:10:52	0.08	
5m	10/18/2016 12:15:52	0.09	
5m	10/18/2016 12:20:52	0.11	
5m	10/18/2016 12:25:52	0.09	Tram driving into Sabino Canyon
5m	10/18/2016 12:30:52	0.10	Passed stop 1
5m	10/18/2016 12:35:52	0.11	Passed stop 2, 3, 4
5m	10/18/2016 12:40:52	0.10	Passed stop 5, 6
5m	10/18/2016 12:45:52	0.12	Passed stop 8 and arrived at 9, walked around
5m	10/18/2016 12:50:52	0.11	Left stop 9 for return journey, passed stop 8
5m	10/18/2016 12:55:52	0.10	Passed stop 7, 6, 5
5m	10/18/2016 13:00:52	0.10	Passed stop 4, 3, 2
5m	10/18/2016 13:05:52	0.10	Passed stop 1
5m	10/18/2016 13:10:52	0.12	Arrived at visitor area & walking around
5m	10/18/2016 13:15:52	0.09	
5m	10/18/2016 13:20:52	0.10	
5m	10/18/2016 13:25:52	0.11	Left Sabino Canyon
5m	10/18/2016 13:30:52	0.10	
5m	10/18/2016 13:35:52	0.08	
5m	10/18/2016 13:40:52	0.11	Arrived at Costco & walking around inside
5m	10/18/2016 13:45:52	0.11	
5m	10/18/2016 13:50:52	0.13	Highest reading inside Costco
5m	10/18/2016 13:55:52	0.12	
5m	10/18/2016 14:00:52	0.12	
5m	10/18/2016 14:05:52	0.13	Highest reading inside Costco

5m	10/18/2016 14:10:52	0.12	
5m	10/18/2016 14:15:52	0.10	
5m	10/18/2016 14:20:52	0.12	
5m	10/18/2016 14:25:52	0.11	
5m	10/18/2016 14:30:52	0.10	
5m	10/18/2016 14:35:52	0.11	
5m	10/18/2016 14:40:52	0.09	
5m	10/18/2016 14:45:52	0.09	
5m	10/18/2016 14:50:52	0.10	
5m	10/18/2016 14:55:52	0.12	
5m	10/18/2016 15:00:52	0.09	At Costco gas station
5m	10/18/2016 15:05:52	0.09	Grant Road
5m	10/18/2016 15:10:52	0.11	Dollar Tree
5m	10/18/2016 15:15:52	0.10	
5m	10/18/2016 15:20:52	0.12	
5m	10/18/2016 15:25:52	0.11	Walmart
5m	10/18/2016 15:30:52	0.12	
5m	10/18/2016 15:35:52	0.10	Grant Road
5m	10/18/2016 15:40:52	0.08	Country Club Road
5m	10/18/2016 15:45:52	0.09	

Sabino Canyon tested slightly elevated for Tucson and Costco gave the highest ionizing radiation readings.



Trip from the north of the City of Tucson to 9,171 feet high altitude [Mount Lemmon](#) recreation [ski area](#) and [astronomical observatory](#) with Geiger counter in shirt pocket.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu$ Sv/h

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5m	10/20/2016 08:35:47	0.12	
5m	10/20/2016 08:40:47	0.10	South on Country Club Road
5m	10/20/2016 08:45:47	0.09	East on Fort Lowell Road
5m	10/20/2016 08:50:47	0.10	South on Swan Road
5m	10/20/2016 08:55:47	0.10	East on Grant Road
5m	10/20/2016 09:00:47	0.11	East on Tanque Verde Road
5m	10/20/2016 09:05:47	0.09	North on Bear Canyon Road
5m	10/20/2016 09:10:47	0.10	East on Snyder Road
5m	10/20/2016 09:15:47	0.10	
5m	10/20/2016 09:20:47	0.10	North on Catalina Highway
5m	10/20/2016 09:25:47	0.11	Passed 4,000 feet
5m	10/20/2016 09:30:47	0.09	
5m	10/20/2016 09:35:47	0.10	Passed 5,000 feet
5m	10/20/2016 09:40:47	0.09	
5m	10/20/2016 09:45:47	0.11	
5m	10/20/2016 09:50:47	0.11	Stopped at Windy Point
5m	10/20/2016 09:55:47	0.13	
5m	10/20/2016 10:00:47	0.11	Driving
5m	10/20/2016 10:05:47	0.14	Stopped
5m	10/20/2016 10:10:47	0.10	Passed 7,000 feet & stopped
5m	10/20/2016 10:15:47	0.10	Stopped at Sycamore View
5m	10/20/2016 10:20:47	0.13	Driving
5m	10/20/2016 10:25:47	0.12	Passed 8,000 feet
5m	10/20/2016 10:30:47	0.12	Stopped at Aspen View
5m	10/20/2016 10:35:47	0.11	
5m	10/20/2016 10:40:47	0.12	Driving
5m	10/20/2016 10:45:47	0.10	
5m	10/20/2016 10:50:47	0.12	
5m	10/20/2016 10:55:47	0.12	Stopped at Skycenter public car park
5m	10/20/2016 11:00:47	0.11	
5m	10/20/2016 11:05:47	0.14	At observatory entrance gate
5m	10/20/2016 11:10:47	0.11	At 9,171 feet
5m	10/20/2016 11:15:47	0.15	
5m	10/20/2016 11:20:47	0.12	Driving to Summerhaven Village
5m	10/20/2016 11:25:47	0.12	
5m	10/20/2016 11:30:47	0.12	At General Store
5m	10/20/2016 11:35:47	0.12	

5m	10/20/2016 11:40:47	0.11	Driving around Summerhaven Village
5m	10/20/2016 11:45:47	0.12	
5m	10/20/2016 11:50:47	0.12	Parked car for lunch
5m	10/20/2016 11:55:47	0.13	At Sawmill Run Restaurant
5m	10/20/2016 12:00:47	0.12	
5m	10/20/2016 12:05:47	0.13	
5m	10/20/2016 12:10:47	0.12	
5m	10/20/2016 12:15:47	0.11	
5m	10/20/2016 12:20:47	0.12	
5m	10/20/2016 12:25:47	0.12	
5m	10/20/2016 12:30:47	0.14	
5m	10/20/2016 12:35:47	0.13	
5m	10/20/2016 12:40:47	0.13	
5m	10/20/2016 12:45:47	0.13	
5m	10/20/2016 12:50:47	0.12	
5m	10/20/2016 12:55:47	0.09	
5m	10/20/2016 13:00:47	0.13	
5m	10/20/2016 13:05:47	0.12	
5m	10/20/2016 13:10:47	0.12	
5m	10/20/2016 13:15:47	0.11	
5m	10/20/2016 13:20:47	0.13	Walking around Summerhaven village
5m	10/20/2016 13:25:47	0.12	Inside Living Rainbow Gift Shop
5m	10/20/2016 13:30:47	0.12	Walking around Summerhaven village
5m	10/20/2016 13:35:47	0.13	
5m	10/20/2016 13:40:47	0.13	
5m	10/20/2016 13:45:47	0.16	Highest reading in Summerhaven Village
5m	10/20/2016 13:50:47	0.14	
5m	10/20/2016 13:55:47	0.14	
5m	10/20/2016 14:00:47	0.14	Driving to Tucson
5m	10/20/2016 14:05:47	0.12	Stopped at Loma Linda View
5m	10/20/2016 14:10:47	0.12	Passed 8,000 feet
5m	10/20/2016 14:15:47	0.12	
5m	10/20/2016 14:20:47	0.11	
5m	10/20/2016 14:25:47	0.12	Passed 6,000 feet
5m	10/20/2016 14:30:47	0.13	
5m	10/20/2016 14:35:47	0.11	Passed 5,000 feet
5m	10/20/2016 14:40:47	0.11	Passed 4,000 feet
5m	10/20/2016 14:45:47	0.10	
5m	10/20/2016 14:50:47	0.12	
5m	10/20/2016 14:55:47	0.09	
5m	10/20/2016 15:00:47	0.09	West on Tanque Verde Road
5m	10/20/2016 15:05:47	0.08	
5m	10/20/2016 15:10:47	0.09	West on Grant Road
5m	10/20/2016 15:15:47	0.10	Inside Costco
5m	10/20/2016 15:20:47	0.11	

5m	10/20/2016 15:25:47	0.11	
5m	10/20/2016 15:30:47	0.09	
5m	10/20/2016 15:35:47	0.11	West on Grant Road
5m	10/20/2016 15:40:47	0.09	
5m	10/20/2016 15:45:47	0.09	
5m	10/20/2016 15:50:47	0.09	North on Country Club Road
5m	10/20/2016 15:55:47	0.09	

It was notable that these ionizing radiation readings were taken at over two thousand feet higher than Kitt Peak National Observatory where the expectation was to obtain higher readings, due to the known effect of ionizing radiation levels increasing with altitude. Instead, the ionizing radiations readings were actually lower than the 6,883 feet (2,098 m) high altitude Kitt Peak National Observatory. The highest reading was obtained in Summerhaven Village.

Trip from the north of the City of Tucson to northeast vacation resorts with Geiger counter in shirt pocket.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu$ Sv/h

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5m	11/03/2016 09:05:24	0.10	
5m	11/03/2016 09:10:24	0.09	
5m	11/03/2016 09:15:24	0.10	N on Campbell Avenue
5m	11/03/2016 09:20:24	0.10	W on River Road
5m	11/03/2016 09:25:24	0.13	Arrived <a href="#">Hacienda Del Sol resort</a>
5m	11/03/2016 09:30:24	0.11	Walking in the resort
5m	11/03/2016 09:35:24	0.11	
5m	11/03/2016 09:40:24	0.12	
5m	11/03/2016 09:45:24	0.12	
5m	11/03/2016 09:50:24	0.11	
5m	11/03/2016 09:55:24	0.10	
5m	11/03/2016 10:00:24	0.11	
5m	11/03/2016 10:05:24	0.10	N on Hacienda Del Sol
5m	11/03/2016 10:10:24	0.10	W on Sunrise
5m	11/03/2016 10:15:24	0.09	Arrived at <a href="#">Westin La Paloma resort</a>
5m	11/03/2016 10:20:24	0.12	Walking in the resort
5m	11/03/2016 10:25:24	0.12	
5m	11/03/2016 10:30:24	0.11	
5m	11/03/2016 10:35:24	0.12	
5m	11/03/2016 10:40:24	0.09	
5m	11/03/2016 10:45:24	0.10	E on Sunrise Drive
5m	11/03/2016 10:50:24	0.11	N on Craycroft
5m	11/03/2016 10:55:24	0.10	Arrived at <a href="#">Loews Ventana Canyon resort</a>
5m	11/03/2016 11:00:24	0.12	Walking in the resort
5m	11/03/2016 11:05:24	0.11	
5m	11/03/2016 11:10:24	0.12	
5m	11/03/2016 11:15:24	0.12	
5m	11/03/2016 11:20:24	0.13	
5m	11/03/2016 11:25:24	0.12	
5m	11/03/2016 11:30:24	0.12	
5m	11/03/2016 11:35:24	0.13	
5m	11/03/2016 11:40:24	0.13	
5m	11/03/2016 11:45:24	0.11	
5m	11/03/2016 11:50:24	0.13	
5m	11/03/2016 11:55:24	0.11	
5m	11/03/2016 12:00:24	0.11	
5m	11/03/2016 12:05:24	0.12	

5m	11/03/2016 12:10:24	0.11	
5m	11/03/2016 12:15:24	0.12	
5m	11/03/2016 12:20:24	0.12	
5m	11/03/2016 12:25:24	0.11	S on Kolb Road
5m	11/03/2016 12:30:24	0.10	
5m	11/03/2016 12:35:24	0.08	W on Tanque Verde Road
5m	11/03/2016 12:40:24	0.10	W on Grant Road
5m	11/03/2016 12:45:24	0.10	Inside Costco
5m	11/03/2016 12:50:24	0.10	
5m	11/03/2016 12:55:24	0.09	
5m	11/03/2016 13:00:24	0.11	
5m	11/03/2016 13:05:24	0.10	
5m	11/03/2016 13:10:24	0.10	
5m	11/03/2016 13:15:24	0.09	
5m	11/03/2016 13:20:24	0.11	
5m	11/03/2016 13:25:24	0.11	
5m	11/03/2016 13:30:24	0.11	
5m	11/03/2016 13:35:24	0.10	
5m	11/03/2016 13:40:24	0.10	
5m	11/03/2016 13:45:24	0.09	
5m	11/03/2016 13:50:24	0.11	W on Grant Road
5m	11/03/2016 13:55:24	0.10	
5m	11/03/2016 14:00:24	0.11	Inside Walmart
5m	11/03/2016 14:05:24	0.10	Inside Dollar Tree
5m	11/03/2016 14:10:24	0.09	
5m	11/03/2016 14:15:24	0.10	
5m	11/03/2016 14:20:24	0.11	N on Alvernon Way
5m	11/03/2016 14:25:24	0.09	W on Fort Lowell

Lowes Ventana Canyon resort consistently produced slightly higher ionizing radiation readings.

Trip from the north of the City of Tucson to northwest vacation resorts with Geiger counter in shirt pocket.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu$ Sv/h

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5m	11/08/2016 10:21:31	0.11	
5m	11/08/2016 10:26:31	0.10	W on Prince Road
5m	11/08/2016 10:31:31	0.09	N on Oracle Road
5m	11/08/2016 10:36:31	0.10	
5m	11/08/2016 10:41:31	0.10	
5m	11/08/2016 10:46:31	0.10	E on Ina Road
5m	11/08/2016 10:51:31	0.11	Arrived <a href="#">Westward Look Wyndham Grand Resort</a>
5m	11/08/2016 10:56:31	0.12	Walking resort
5m	11/08/2016 11:01:31	0.11	
5m	11/08/2016 11:06:31	0.11	
5m	11/08/2016 11:11:31	0.12	
5m	11/08/2016 11:16:31	0.13	
5m	11/08/2016 11:21:31	0.12	
5m	11/08/2016 11:26:31	0.10	
5m	11/08/2016 11:31:31	0.10	W on Ina Road
5m	11/08/2016 11:36:31	0.11	N on Oracle Road
5m	11/08/2016 11:41:31	0.11	Arrived <a href="#">Hilton Tucson Conquistador Golf &amp; Tennis Resort</a>
5m	11/08/2016 11:46:31	0.13	Walking resort
5m	11/08/2016 11:51:31	0.13	
5m	11/08/2016 11:56:31	0.12	
5m	11/08/2016 12:01:31	0.11	
5m	11/08/2016 12:06:31	0.13	
5m	11/08/2016 12:11:31	0.12	
5m	11/08/2016 12:16:31	0.12	
5m	11/08/2016 12:21:31	0.10	
5m	11/08/2016 12:26:31	0.10	
5m	11/08/2016 12:31:31	0.12	S on Oracle Road
5m	11/08/2016 12:36:31	0.10	
5m	11/08/2016 12:41:31	0.11	W on Thornydale Road
5m	11/08/2016 12:46:31	0.13	At Costco
5m	11/08/2016 12:51:31	0.11	
5m	11/08/2016 12:56:31	0.13	
5m	11/08/2016 13:01:31	0.12	
5m	11/08/2016 13:06:31	0.14	
5m	11/08/2016 13:11:31	0.13	
5m	11/08/2016 13:16:31	0.12	
5m	11/08/2016 13:21:31	0.14	

5m	11/08/2016 13:26:31	0.11	
5m	11/08/2016 13:31:31	0.12	
5m	11/08/2016 13:36:31	0.12	
5m	11/08/2016 13:41:31	0.11	SE on River Road
5m	11/08/2016 13:46:31	0.10	
5m	11/08/2016 13:51:31	0.10	
5m	11/08/2016 13:56:31	0.10	S on 1 <sup>st</sup> Ave
5m	11/08/2016 14:01:31	0.09	At Walmart
5m	11/08/2016 14:06:31	0.11	
5m	11/08/2016 14:11:31	0.11	
5m	11/08/2016 14:16:31	0.12	
5m	11/08/2016 14:21:31	0.13	
5m	11/08/2016 14:26:31	0.10	
5m	11/08/2016 14:31:31	0.10	S on 1 <sup>st</sup> Ave
5m	11/08/2016 14:36:31	0.11	E on Prince Road

The Hilton Tucson Conquistador Golf & Tennis Resort consistently produced slightly higher ionizing radiation readings. The highest reading was at Costco.

[Tucson International Airport](#) public drop off and pick up areas tested followed by a repeat of [Kitt Peak National Observatory](#) readings that placed the Geiger counter on the ground. It was kept in the shirt breast pocket when not on the ground.

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Product model: Radex 1212 and Radex 2510

Serial number: 04140101003009

File name: DeviceData.txt

Period From  $\mu$ Sv/h

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5m	11/09/2016 11:05:58	0.10	
5m	11/09/2016 11:10:58	0.09	
5m	11/09/2016 11:15:58	0.10	
5m	11/09/2016 11:20:58	0.10	Driving W on Prince Road
5m	11/09/2016 11:25:58	0.10	S on Campbell
5m	11/09/2016 11:30:58	0.10	
5m	11/09/2016 11:35:58	0.10	
5m	11/09/2016 11:40:58	0.11	S on Tucson Boulevard
5m	11/09/2016 11:45:58	0.10	
5m	11/09/2016 11:50:58	0.11	At <a href="#">Tucson International Airport</a>
5m	11/09/2016 11:55:58	0.10	Walking around airport drop off and pick up area
5m	11/09/2016 12:00:58	0.11	
5m	11/09/2016 12:05:58	0.11	
5m	11/09/2016 12:10:58	0.12	
5m	11/09/2016 12:15:58	0.11	
5m	11/09/2016 12:20:58	0.11	
5m	11/09/2016 12:25:58	0.11	
5m	11/09/2016 12:30:58	0.10	
5m	11/09/2016 12:35:58	0.09	
5m	11/09/2016 12:40:58	0.11	
5m	11/09/2016 12:45:58	0.12	
5m	11/09/2016 12:50:58	0.10	
5m	11/09/2016 12:55:58	0.10	N on Tucson Boulevard
5m	11/09/2016 13:00:58	0.12	
5m	11/09/2016 13:05:58	0.10	W on Ajo Highway
5m	11/09/2016 13:10:58	0.10	Passed 12 <sup>th</sup> Avenue
5m	11/09/2016 13:15:58	0.13	Passed La Cholla
5m	11/09/2016 13:20:58	0.11	Passed Camino Verde
5m	11/09/2016 13:25:58	0.09	
5m	11/09/2016 13:30:58	0.11	
5m	11/09/2016 13:35:58	0.09	Passed 3 Points
5m	11/09/2016 13:40:58	0.11	
5m	11/09/2016 13:45:58	0.11	
5m	11/09/2016 13:50:58	0.11	Passed Coyote Store
5m	11/09/2016 13:55:58	0.13	Stopped at junction 86 & 386 Kitt Peak access road
5m	11/09/2016 14:00:58	0.14	Started ground reading



5m	11/09/2016 14:05:58	0.17	Ground reading
5m	11/09/2016 14:10:58	0.16	Ground reading
5m	11/09/2016 14:15:58	0.13	Finished ground reading
5m	11/09/2016 14:20:58	0.11	Driving highway 386 to Kitt Peak
5m	11/09/2016 14:25:58	0.11	
5m	11/09/2016 14:30:58	0.12	Passed 5,000 feet
5m	11/09/2016 14:35:58	0.14	
5m	11/09/2016 14:40:58	0.15	Passed 6,000 feet
5m	11/09/2016 14:45:58	0.19	Started Kitt Peak picnic area ground reading
5m	11/09/2016 14:50:58	0.28	Ground reading
5m	11/09/2016 14:55:58	0.17	Finished Ground reading
5m	11/09/2016 15:00:58	0.12	Driving to summit
5m	11/09/2016 15:05:58	0.15	Arrived at summit visitor car park
5m	11/09/2016 15:10:58	0.13	Walking
5m	11/09/2016 15:15:58	0.23	Started 4 meter Mayall telescope ground reading
5m	11/09/2016 15:20:58	0.23	Ground reading
5m	11/09/2016 15:25:58	0.17	Finished ground reading
5m	11/09/2016 15:30:58	0.10	On 16 <sup>th</sup> story observation deck (lowest summit reading)
5m	11/09/2016 15:35:58	0.10	In telescope viewing area (lowest summit reading)
5m	11/09/2016 15:40:58	0.15	Leaving 4 meter telescope.
5m	11/09/2016 15:45:58	0.13	Started ground reading at radio antenna park
5m	11/09/2016 15:50:58	0.22	Ground reading
5m	11/09/2016 15:55:58	0.22	Ground reading
5m	11/09/2016 16:00:58	0.20	Finished ground reading
5m	11/09/2016 16:05:58	0.13	At summit visitor car park
5m	11/09/2016 16:10:58	0.13	Driving to Tucson
5m	11/09/2016 16:15:58	0.14	Mile marker 7
5m	11/09/2016 16:20:58	0.12	
5m	11/09/2016 16:25:58	0.11	
5m	11/09/2016 16:30:58	0.11	
5m	11/09/2016 16:35:58	0.09	Passing Coyote Store
5m	11/09/2016 16:40:58	0.09	
5m	11/09/2016 16:45:58	0.11	
5m	11/09/2016 16:50:58	0.11	Stopped at 3 points clinic
5m	11/09/2016 16:55:58	0.17	Started ground reading
5m	11/09/2016 17:00:58	0.15	Ground reading
5m	11/09/2016 17:05:58	0.11	Finished ground reading
5m	11/09/2016 17:10:58	0.11	Driving E on Ajo Way
5m	11/09/2016 17:15:58	0.09	
5m	11/09/2016 17:20:58	0.10	
5m	11/09/2016 17:25:58	0.11	
5m	11/09/2016 17:30:58	0.09	NW on Kinney Road
5m	11/09/2016 17:35:58	0.10	
5m	11/09/2016 17:40:58	0.11	Stopped at Gates Pass viewpoint
5m	11/09/2016 17:45:58	0.19	Started ground reading

5m	11/09/2016 17:50:58	0.21	Ground reading
5m	11/09/2016 17:55:58	0.13	Finished ground reading
5m	11/09/2016 18:00:58	0.12	Driving E on Gates Pass road
5m	11/09/2016 18:05:58	0.12	
5m	11/09/2016 18:10:58	0.09	
5m	11/09/2016 18:15:58	0.09	
5m	11/09/2016 18:20:58	0.12	
5m	11/09/2016 18:25:58	0.08	N on Tucson Boulevard
5m	11/09/2016 18:30:58	0.10	
5m	11/09/2016 18:35:58	0.11	
5m	11/09/2016 18:40:58	0.16	Started City of Tucson ground reading
5m	11/09/2016 18:45:58	0.18	Ground reading
5m	11/09/2016 18:50:58	0.15	Ground reading
5m	11/09/2016 18:55:58	0.15	Finished ground reading

Tucson International Airport tested slightly elevated. Ground radiation readings on Kitt Peak Mountain are higher than the air readings and this indicates that the ground either has fallout radiation contamination or is naturally radioactive. Arizona is known for natural radioactivity and radioactive uranium is mined in this state.

## Summary

Kitt Peak National Observatory consistently produced the highest ionizing radiation readings in the areas tested around Tucson, Arizona, USA. Readings obtained did approach those used in the Chernobyl nuclear power plant disaster exclusion zone, as stated on [Wikipedia](#). The highest readings would increase the annual background radiation dose to those exposed to it on a daily basis. The high Kitt Peak radiation readings were reported to the [Arizona Radiation Regulatory Agency \(ARRA\)](#) for further investigation. No response has ever been received from them regarding the radioactive source(s) of the high ionizing radiation readings.

The ground that has been tested on the island of Hawaii was much lower, as were the air readings. The Hawaii test results can be viewed here:

### [Island of Hawaii \(Big Island\) Ionizing Radiation Readings](#)

As such, the conclusion was that Tucson, Arizona, USA and the surrounding area is radioactively hotter than the Island of Hawaii, Hawaii, USA. That elevated radioactivity appears to be coming from an unknown source of radiation on the ground.

It is interesting to note that Kitt Peak is regarded as sacred to the Tohono O'odham nation. They state *"This place is a source of energy, a place of healing. That is why it is important to take care of it. It is the source of our strength."* It appears that the nuclear energy emissions of Kitt Peak have been understood by the locals for hundreds of years prior to its controversial astronomical development.

The [Radex RD1212](#) Geiger counter is able to detect elevated ground radiation sources while walking when carried in the shirt breast pocket approximately 50 inches or 127 centimeters above the ground. This corresponds to the location of the human heart and lungs on an average sized male and the brain when seated. Steven Magee was exposed to these high ionizing radiation sources on a daily basis at Kitt Peak National Observatory for over two years and now has medically diagnosed heart, lung and brain problems. He had noticed during his time there that there seemed to be numerous staff on Kitt Peak that had heart and brain issues. The observed brain issues had been formally reported to his management team. Their response was to threaten to fire him and inform him that his contract would not be renewed.

## Interesting Quotes & Internet Links

- “Absorption (electromagnetic radiation)”  
[https://en.wikipedia.org/wiki/Absorption\\_\(electromagnetic\\_radiation\)](https://en.wikipedia.org/wiki/Absorption_(electromagnetic_radiation))
- “Altitude” <https://en.wikipedia.org/wiki/Altitude>
- “Atmosphere of Earth” [https://en.wikipedia.org/wiki/Atmosphere\\_of\\_Earth](https://en.wikipedia.org/wiki/Atmosphere_of_Earth)
- “Astronomy development on another sacred mountain: Kitt Peak” [http://www.mauna-a-wakea.info/maunakea/H4\\_astrodev.html](http://www.mauna-a-wakea.info/maunakea/H4_astrodev.html)
- “Background radiation” [https://en.wikipedia.org/wiki/Background\\_radiation](https://en.wikipedia.org/wiki/Background_radiation)
- “Chernobyl Exclusion Zone...the "Black Zone" (over 200  $\mu\text{Sv/h}$ ), to which evacuees were never to return; the "Red Zone" (50–200  $\mu\text{Sv/h}$ ) where evacuees might return once radiation levels normalized; the "Blue Zone" (30–50  $\mu\text{Sv/h}$ ) where children and pregnant women were evacuated starting in the summer of 1986”  
[https://en.wikipedia.org/wiki/Chernobyl\\_Exclusion\\_Zone](https://en.wikipedia.org/wiki/Chernobyl_Exclusion_Zone)
- “Information for Radiation Workers” <http://www.nrc.gov/about-nrc/radiation/health-effects/info.html>
- “Ionizing radiation” [https://en.wikipedia.org/wiki/Ionizing\\_radiation](https://en.wikipedia.org/wiki/Ionizing_radiation)
- “Kitt Peak” [https://en.wikipedia.org/wiki/Kitt\\_Peak](https://en.wikipedia.org/wiki/Kitt_Peak)
- “Navajo Uranium Workers and the Effects of Occupational Illnesses”  
<http://faculty.washington.edu/stevehar/Dawson.pdf>
- “Nuclear Witnesses: Insiders Speak Out by Leslie J. Freeman” <https://amzn.com/0393300331>
- “Radiation” <https://en.wikipedia.org/wiki/Radiation>
- “Radiation Exposure Compensation Act (RECA) was passed by the U.S. Congress in 1990 to make partial restitution to individuals harmed by radiation exposure resulting from underground uranium mining and above-ground nuclear tests in Nevada.”  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240251/>
- “Radiation health effects” [https://en.wikipedia.org/wiki/Category:Radiation\\_health\\_effects](https://en.wikipedia.org/wiki/Category:Radiation_health_effects)
- “Radiation: How much is harmful?” [http://quartarad.com/index.php?option=com\\_content&view=article&id=150:radiation-article&catid=36:demo-articles](http://quartarad.com/index.php?option=com_content&view=article&id=150:radiation-article&catid=36:demo-articles)
- “Radiation poisoning (disambiguation)”  
[https://en.wikipedia.org/wiki/Radiation\\_poisoning\\_\(disambiguation\)](https://en.wikipedia.org/wiki/Radiation_poisoning_(disambiguation))
- “Sievert” <https://en.wikipedia.org/wiki/Sievert>
- “Star Struck: The Astronomical Abuse Of Indigenous Sacred Sites”  
<http://www.mountgraham.org/content/star-struck-astronomical-abuse-indigenous-sacred-sites>
- “The dose limit to non-radiation workers and members of the public are two percent of the annual occupational dose limit. Therefore, a non-radiation worker can receive a whole body dose of no more that 0.1 rem/year from industrial ionizing radiation. This exposure would be in

[www.environmentalradiation.com](http://www.environmentalradiation.com)

addition to the 0.3 rem/year from natural background radiation and the 0.05 rem/year from man-made sources such as medical x-rays.” [https://www.nde-ed.org/EducationResources/CommunityCollege/RadiationSafety/safe\\_use/exposure.htm](https://www.nde-ed.org/EducationResources/CommunityCollege/RadiationSafety/safe_use/exposure.htm)

***“Replace fear of radiation with curiosity”***

***Steven Magee CEng MIET – Author of Solar Radiation, Global Warming and Human Disease***