

CRD FRIENDS NEWSLETTER



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www.crdfriends.org

NOVEMBER 2014

CRD ANNUAL BIKE-A-THONS RAISE FUNDS AND AWARENESS OF ARMENIA'S TALENT

CRD Bike-a-thon 2015

**Yerevan–Aparan-Gyumri-Vanadzor-Ijevan/Dilijan–
Sevan–Yerevan**

**August 10 through 15, 2015
450 km in 6 days
Including Some Sightseeing**

**Join us by riding and asking your friends to support the CRD
We will be joined by the Armenian Cycling Athletes!**



This year's fifth annual Cosmic Ray Division (CRD) bike-a-thon, under the umbrella of the *Bike for Hope for Armenia* from May 24-30, 2014, was another success. Diaspora riders, joined by cycling athletes and amateur riders from Armenia, raised funds and awareness of the work by the Cosmic Ray Division of Yerevan Physics Institute (YerPhI). Mr. Albert Soloyan, who has trained cycling champions all over the world as well as in Armenia, skillfully led the 20 riders through some of Armenia's most beautiful and difficult terrain. The riders included Mher Mkrtchyan, a two time world silver medalist from Armenia; Rafael Paremuzyan, a physicist from YerPhI; Jamie Kolar, a Los Angeles firefighter medic and founder of *Aid to Armenia* who spent a year on sabbatical teaching the latest first aide techniques to Armenian medics, schools, and village residents; Roffi Petrossian, a young man from Seattle currently living in Armenia and working as the head landscaper of Yerevan's famous Lovers' Park; Anahid Yeremian, a particle accelerator physicist at Stanford and co-founder of the Support Committee for Armenia's Cosmic Ray Division; and cycling youth from Armenia who are training to win medals of their own. This year the rain was relentless. For 7 days the riders braved rain, wind, and hills of the majestic Armenian landscape. Camping by rivers and groves of trees, each morning checking for water in the tents, making soup on camp stoves, singing by the bon fire, and dancing the "shurch-bar" whenever possible were activities bonding the group together. Next year the ride is planned for August. The sun should shine every day.

A portion of the proceeds from the 2015 CRD Bike-a-thon will also benefit Armenian cyclists.

You're Invited! Please join us in 2015 for another spectacular experience and another opportunity to support the scientists of the Cosmic Ray Division (CRD) and the upcoming Armenian cycling champions. Riders need to be in good physical condition, train in advance of the ride, and pay their own way including an entry fee that covers all the expenses associated with the ride. Riders also need to make a good faith effort to raise funds to support the Cosmic Ray Division and our talented Armenian cyclists. Donations are not used for ride expenses.

Visit www.crdfriends.org COMING EVENTS section for ride details and other coming events.

SUPPORT COMMITTEE FOR ARMENIA'S COSMIC RAY DIVISION INVITES YOU TO JOIN

BIKE-A-THON 2015 IN ARMENIA

CELEBRATING CRD'S AND ARMENIAN CYCLISTS' ACHIEVEMENTS

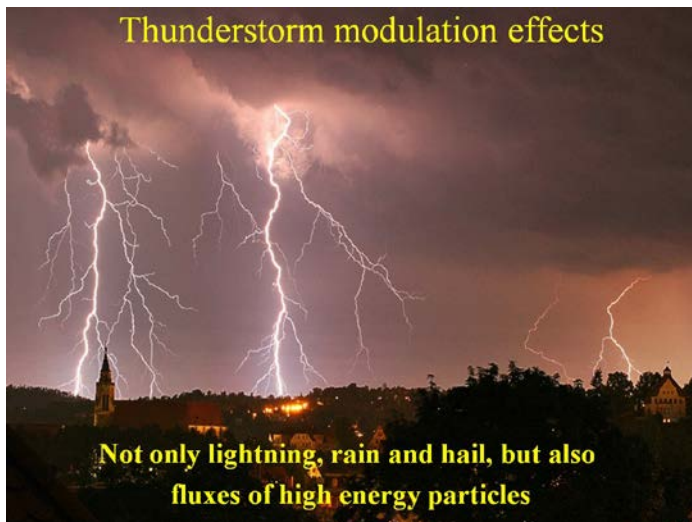
AUGUST 10 - 15, 2015

**You can join by riding and soliciting donations, sponsoring a rider,
or via our website at www.crdfriends.org**



THANK YOU FOR YOUR SUPPORT!

ARMENIA JOINS THE WORLD-WIDE LIGHTNING LOCATION NETWORK



CRD is discovering previously unknown effects of thunderstorms in our lives.

Thunderstorms, lightning, and hail storms often cause significant economic damage and endanger lives. Recent discoveries also indicate that intense radiation can emanate from thunderclouds. Early during these scientific discoveries CRD's young scientists applied their expertise to study the physics of lightning and thunderclouds.

CRD joined the World Wide Lightning Location Network (WWLLN), which is managed by the Department of Earth and Space Sciences at the University of Washington in Seattle, Washington. The Armenian stations fill a crucial void as there are no other stations for thousands of kilometers to the east or west; the nearest station to the southwest being in Tel-Aviv.

The CRD operates a unique geophysical network of environmental monitors. The network is unusual due to Armenia's numerous climatic zones, high mountains with high altitude lakes, and severe lightning and hail storms. This network is equipped with electric field strength meters, lightning detectors, meteorological stations, and advanced cosmic ray particle detectors designed by young Armenian students and recent graduates.

Research in this field has a number of applications in the scientific, commercial, and government sectors. It could shed light on global warming, atmospheric discharges, and provide warnings of severe thunder and hail storms which frequently devastate Armenian orchards and farms.

Upon joining the WWLLN CRD installed monitoring stations in Yerevan, on the slope of Mt. Aragats, and near Lake Sevan, filling in a crucial gap in the WWLLN's coverage. Integration of Armenia's stations into the WWLLN will provide enhanced research world-wide.

CELEBRATING PROF. CHILINGARIAN'S LIFE-LONG ACHIEVEMENTS



From left to right: Dr. Razmig Mirzoyan, astrophysicist at Max Plank Institute for Physics, Munich Germany; Dr. Hartmut Gemmeke, Prof. Emeritus Karlsruhe Institute of Technology, Germany; Prof. Ashot Chilingarian, Director of Yerevan Physics Institute and CRD; Prof. Johannes Knapp, astrophysicist at DESY national laboratory, Germany

Within the international physics community significant accomplishments of famous scientists are often recognized with symposiums in their honor. On Tuesday, May 20, 2014 a symposium at CRD's Nor Ambert research station on Mt. Aragats applauded Prof. Ashot Chilingarian's decades of achievement. Prof. Chilingarian is the director of the *Yerevan Physics Institute* (YerPhi) and head of its *Cosmic Ray Division* (CRD).

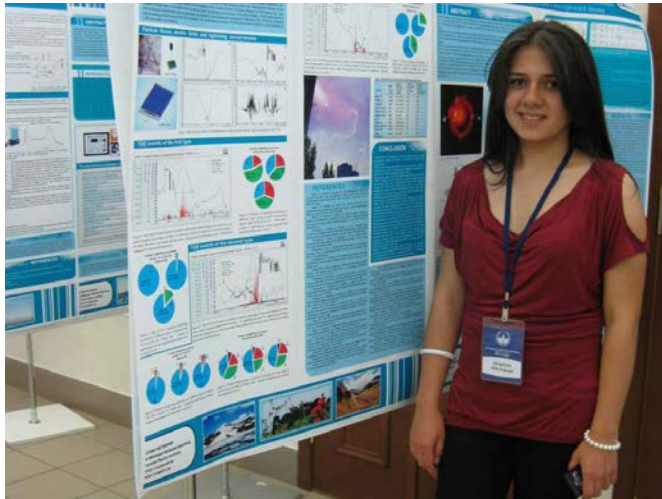
At the symposium, the visiting scientists chronicled Prof. Chilingarian's career from his first publication in 1975 to his appointment as head of CRD in 1993 and, 11 years later, to the directorship of the entire physics institute.

Prof. Chilingarian is Armenia's spokesperson in several international scientific forums. With over 380 scientific publications, he is a member of many prestigious world-wide scientific societies, and has won numerous international awards for his work.

Not only did the visiting scientists reiterate much of Chilingarian's research in the fields of physics, mathematics, neural networks, astrophysics, space weather and thunderstorms, but they stressed Prof. Chilingarian's organizational ability and his support of bright young Armenian students, some of whom were in the audience.

Prof. Chilingarian in his turn thanked everyone for the honor, and said that his mission in the coming years is to pass the baton to the younger generation. Dr. Artur Reymers, Dr. Levon Vanyan, Dr. Bagrad Mailyan, and Dr. Tigran Karapetyan: CRD's next generation of leaders who are carving their own recognition in the international scientific arena are in training to take the helm and propel CRD and Armenia into the future decades.

**PORTRAIT OF A YOUNG CRD SCIENTIST,
HRIPSIME MKRTCHYAN:
INTERVIEW BY ARSINE ARAKELIANS**



Hripsime Mkrtchyan, presenting her work at the TEPA-2012 Workshop in Moscow

The Cosmic Ray Division of the Yerevan Physics Institute, founded by famous Armenian scientist Artem Alikhanyan, is a major world-renowned scientific research institute. Along with its extremely important scientific research and discoveries, it is also a teaching and research magnet for young scientists. Graduate students, eager to advance their knowledge and gain valuable experience by working in their chosen fields, are recruited to study and work with practicing scientists. They are encouraged and even expected to participate in the scientific endeavors of CRD. One such graduate student is a young lady, Hripsime Mkrtchyan, profiled below. She has agreed to answer a few questions via e mail.

1- Where were you born? Did you attend the primary and secondary schools of your birth place?

I was born in Yerevan in 1990, and from 1997-2007 attended School No.199, named after Henrik Khachatryan in Yerevan, which was my parent’s best choice for me.

2- How large is your family?

My immediate family consists of my parents, younger brother and me. It is relatively small, but my extended family is quite large.

3-Did anyone take a special interest in your education?

My parents took special interest in my education. They gave me freedom and support to choose the profession I was interested in. I hope I have justified my parents’ expectations. I was an honor student and was granted a government sponsored scholarship in the university.

4- At what age and why did you choose physics?

I chose physics as a field of study when I was 17. Back then I did not know what was the real meaning of the word “scientist” and generally speaking, what it took to be a scientist. I strived always to discover answers to questions about life and existence. Personally, I’m very interested in inventing and creating new things. Studying physics has given me this great opportunity. I remember when I met my advisor, Prof. Ashot Chilingarian, for the first time, and told him about my ideas and plans, he advised me to work very hard, experiment, calculate, demonstrate, and try out my ideas first, and not jump to conclusions too fast. I know this is the field where I can try out my ideas and achieve success by working hard.

5- As a scientist, what are your long term goals?

Our team and I are going to explain and enhance the understanding of the electrical structure of thunderclouds and conditions that support lightning initiation. My dream is to become an excellent scientist and contribute to my home country, Armenia. Other countries offer far higher standard of living and lure many of our highly educated people away so we are suffering from a “Brain Drain”. One of my life long goals is to do everything possible within, or even beyond my powers to persuade our scientists and specialists to stay, work and create in Armenia.

This is a portrait of a young, dedicated, upcoming scientist who exudes enthusiasm and love for science and Armenia. It is only due to her involvement in CRD in Armenia, that she is capable of following her dream.

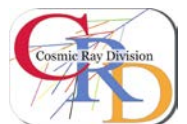
Her earnest desire to remain and work in Armenia is heartwarming. We desperately need her and people like her. For the sake of Hripsime and all future scientists, we must extend our support to ensure a thriving and prosperous CRD.

Yes, I want to promote Armenian science and education by supporting the excellent work of the dedicated scientists, engineers, technicians, & students of the Cosmic Ray Division of Artem Alikhanyan National Laboratory (formerly Yerevan Physics Institute).

Name _____ Address _____

My contribution is in the amount of \$2000 \$1000 \$500 \$200 \$100 \$_____

Please send this cut-out with your check, payable to **AESA-CRD** and mail to the Support Committee of Armenia’s Cosmic Ray division at:
AESA-CRD, P.O. Box 655, Menlo Park, CA 94026



VAPORCIYAN FAMILY'S CONTINUED PARTNERSHIP WITH CRD



Harrison Vaporciyan (left) and Dr. Artur Reymers working on a particle detector at CRD's Mt. Aragats research station.

The Vaporciyans have a longstanding and fruitful relationship with the CRD. As respected leaders in their community they engaged the members of the Armenian Engineers and Scientists of America Michigan Section to support the CRD with much needed upgrades to the winter motor fleet which transports the scientists and staff safely to the high altitude research stations on Mt. Aragats.

This summer their grandson, Harrison Vaporciyan, a budding computer science major specializing in robotics at Worcester Polytechnic Institute in Massachusetts, interned at the CRD. He took shifts at the Aragats research station and helped to select a computerized pointing telescope. Harrison wants to return to CRD next year.

Once more this year Mr. and Mrs. Harutyun and Nadia Vaporciyan recognized CRD'S young staff and their mentors with a special bonus for outstanding achievement.

Two of CRD graduate students, Hripsime Mkrtchyan, a physics PhD student, and Ashot Hovhannesian, a physics Masters student, received the Kirakos Vaporciyan Memorial Scholarship.

"The Vaporciyans and many Diaspora friends demonstrate to our scientists that their efforts and achievements in Armenia are valued and appreciated", gratefully acknowledges CRD and YerPhI director Prof. Ashot Chilingarian.

2015 CRD CALENDAR IS HERE!

CRD's calendar, *Spectacular Armenia 2015*, is ready thanks to CRD's graphic designer, Narine Khachatryan, and one of the founders of the Support Committee for Armenia's Cosmic Ray Division, Joseph Dagdigian. The calendar features beautiful scenes from famous and hidden regions of Armenia. We encourage you to visit these sites in person. Meanwhile you can visit Armenia every day by paging through this calendar on your wall. CRD staff and CRD friends visiting Armenia graciously donated the superb photographs. The Tigran Medz printing house in Yerevan printed the calendars.



2015 Spectacular Armenia Calendar
available for purchase on the website and selected stores

The calendar is available from the www.crdfriends.org website; Armenian Vendor armenianvendor.com website; NAASR in Belmont, MA (617 489-1610); ALMA in Watertown, MA (617 926-2562); Artbridge in Yerevan; and at various Armenian events in the USA or by calling Joseph Dagdigian (978 772-9417). Republic of Armenia commemorative stamp books celebrating CRD's achievements and Mt. Ararat and Mt. Aragats post cards are also available on the CRDFRIENDS website. These items make perfect Christmas gifts for your Armenian and non-Armenian friends, while at the same time benefiting the work of the outstanding scientists at the CRD.

Visit www.crdfriends.org for your gift-shopping needs.

The Support Committee for Armenia's Cosmic Ray Division (SCACRD) operates under the umbrella of the Armenian Engineers and Scientists of America Inc. (AESA), a 501 (c) 3, tax-exempt (ID 95-3957498), charitable organization dedicated to promoting scientific and engineering excellence in the United States and Armenia. AESA has chapters in California, Michigan, New York/New Jersey, and the greater Metropolitan Washington DC area (www.aesa.org).

In Armenia, SCACRD operates under the umbrella of the Yerevan Physics Institute (YerPhI) named after Artem Alikhanian. , a non-profit, non-governmental, independent organization dedicated to the promotion and funding of science and education for peace in Armenia (www.yerphi.am).

AESA's and YerPhI's financial integrity are assured by annual audits in accordance with international standards by both the IRS and the independent company Grant Thornton International respectively.