Summary - The PolarDARN Radar for Clyde River

A large international group of scientists have united to use radars to study high-altitude weather ("space weather") and its effects upon satellites, astronauts and humans in space, as well as upon the low-altitude weather and normal human activity at the ground. This international project is known as SuperDARN (Super Dual Auroral Radar Network), with funding and/or participation from 10 countries (Canada, USA, United Kingdom, France, Italy, Japan, Australia, South Africa, China, and Russia). The consortium has constructed 25 radars, 15 in the northern hemisphere (more are planned in the near future) and 10 in the southern hemisphere (including five in Antarctica).

Most of the SuperDARN radars are located so as to examine the "auroral zone" (the zone of bright northern or southern lights). There was, however, a gap in the coverage over regions near the poles. The north magnetic pole lies near Eureka, Nunavut. To view the entire "north polar cap" region centered around this pole, two new SuperDARN radars (the "PolarDARN" radars) were installed, one at Inuvik and one at Rankin Inlet. These radars are operated by a Canadian team (led by Drs. Kathryn McWilliams and Jean-Pierre St.Maurice) with headquarters in the University of Saskatchewan's Institute of Space and Atmospheric Studies (ISAS).

The SuperDARN radars measure the high-altitude "space weather" maps (which are voltage maps, because at high altitudes, the winds are motions of electrically charged particles, and these electrically charged particles are driven into motion by high and low voltage systems, whereas near the Earth the neutral particles in the atmosphere are driven by high and low pressure systems). The voltage maps are available on the internet (http://superdarn.jhuapl.edu/) with only a few minutes delay. Satellites fly in this high altitude weather. Satellites are extremely important to the north because they transmit most communications signals (telephone, TV, internet, navigation). There are about 800 satellites involved in telecommunications of various types (e.g. most international banking is done using satellite links), amounting to an investment of about $160 billion (each satellite is about $200 million). Recently, scientists have found an increasing number of connections between high-altitude "space weather" and low-altitude normal "meteorological" weather. The PolarDARN observations will help greatly in reaching and understanding of such connections.

The PolarDARN and SuperDARN radars measure that part of the Sun's energy that flows to the Earth in the solar wind. Because the solar wind is connected directly along the nearly vertical "open" magnetic field lines to the polar regions, these are very important regions to study for an understanding of the input of energy from the solar wind to the Earth. We are very fortunate that the NWT and Nunavut provide much easier access to the northern polar regions than Antarctica provides to the south polar regions. The Clyde River, Inuvik and Rankin Inlet PolarDARN radars will be the only northern hemisphere SuperDARN radars to look primarily into the high-latitude "polar cap" region, which is a special region around the Earth's magnetic pole, located near Eureka. These radars will also provide strong support for the National Science Foundation $45 M AMISR (Advanced Modular Incoherent Scatter Radar) project, which has seen US radars built both at Poker Flat, Alaska, and at Resolute Bay, Nunavut. In 2012 an Canadian-led radar will be constructed at Resolute Bay. These ISRs (Incoherent Scatter Radars) are $22.5 M radars that are capable of very sensitive measurements of many properties of the ionosphere. The Canadian radar at Resolute Bay is known as RISR-C, and it will be strongly supported by the PolarDARN measurements.

In addition, to the ground-based radars, several upcoming satellite missions, namely ePOP and SWARM will involve close cooperation with the SuperDARN/PolarDARN radars, which are part of the large ground-based Canadian instrument network known as the Canadian Geospace Monitoring (CGSM) Network. CGSM involves three government agencies (Candian Space Agency, Natural Resources Canada (NRCan) Geomagnetics Division, and the Dominion Radio Astronomical Observatory in Penticton), plus five university teams at the Universities of Saskatchewan, Alberta, Calgary, Western Ontario, and New Brunswick.

On the international side, the entire SuperDARN community will be involved, because there is a SuperDARN Principal Investigator's agreement that all SuperDARN data are shared. In fact, the

University of Saskatchewan is home to the SuperDARN data Copy and Distribution Facility, which distributes the DVDs of all SuperDARN data to the entire SuperDARN community. Without listing individual scientists, there are SuperDARN teams at the national Institute for Polar Research (Japan), NICT (Japan), University of Alaska Fairbanks (USA), Johns Hopkins University Applied Physics Laboratory (USA), University of Leicester (UK), Virginia Tech (USA), British Antarctic Survey (UK), CNRS Laboratoire pour Physique et Chemie de l'Environment (France), University of Kwazulu-Natal (South Africa), Italian Space Research Institute (Italy), LaTrobe University (Australia), the Finnish Meteorological Institute (Finland), the Polar Research Institute of China (China), and the Russian Academy of Sciences (Russia).

ᐅᓂᒃᑳᑦᓴᐃᑦ ᓇᐃᓈᕐᓯᒪᔪᑦ -ᐳᓗᑖᖕ ᖃᐅᔨᓴᐅᑎᑦᓴᖅ ᑲᖏᖅᑐᒑᐱᒻᒥ

ᐊᒥᓱᑲᓪᓚᐃᑦ ᓄᓇᕐᔪᐊᕐᒥᐅᑕᐃᑦ ᓇᑭᑐᐃᓐᓈᕐᓯᒪᔪᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᑦ ᑲᑐᔾᔨᖃᑎᒌᓐᓂᒃᑯᑦ ᐊᑐᕐᓂᐊᓚᖅᑐᑦ ᖃᐅᔨᓴᐅᑎᓂᑦ ᖃᐅᔨᓴᐅᑎᒥᓂᐊᕐᓗᒥᑦ ᓄᓇᕐᔪᐊᑉ ᓯᓚᑖᓂ ᓯᓚᓐᓂᐊᕈᑎᒥᓗᒥᑦ ("ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑐᒥᑦ ᓯᓚ")ᐊᒻᒪᓗ ᐊᑦᑐᐃᔾᔪᑎᒋᕙᑦ ᑕᖔᓂᑦ ᖃᖓᑕᖅᑎᑕᐅᓯᒪᔪᓂᑦ, ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑐᒨᖅᑎᓄᑦ ᐊᒻᒪᓗ ᑭᒃᑯᑐᐃᓐᓇᕐᓂᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑐᒦᑦᑎᓪᓗᒋᑦ, ᐊᒻᒪᓗᑕᐅᖅ ᐊᑦᑐᐃᔾᔪᑎᐅᕙᑦᑐᓂᑦ ᓄᓇᕐᔪᐊᕐᒥ ᓯᓚᒧᑦ ᐊᒻᒪᓗ ᓄᓇᕐᔪᐊᕐᒥᐅᑕᓄᑦ ᐊᑐᖅᑕᐅᕙᑦᑐᓂ ᓄᓇᒥ. ᑖᓐᓇᓚ ᓄᓇᕐᔪᐊᕐᒥᐅᑕᓄᑦ ᐱᓕᕆᐊᑦ ᓴᐅᓂᐊᖅᑐᖅ ᖃᐅᔨᒪᔭᐅᔪᖅ ᓯᐳᑖᖕᒥᑦ (ᓴᙳᒧᑦ ᓄᓇᕐᔪᐊᑉ ᓯᓚᑖᓂ ᖃᐅᔨᓴᐅᑎ), ᑮᓇᐅᔭᖃᖅᑎᑕᐅᓪᓗᑎᒃ ᐊᒻᒪᓗ/ᐅᕝᕙᓗ ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᖁᓕᓂᑦ ᓄᓇᕐᔪᐊᕐᒥ ᓄᓇᓕᖅᑲᕐᕕᔾᔪᐊᓐᓈᖑᕐᓯᒪᔪᓂᑦ (ᑲᓇᑕ, ᒥᐊᓕᑲᐃᑦ, ᑕᕆᐅᑉ ᐊᑭᐊᓂᒥᐅᑕᐃᑦ, ᐅᐃᕖᑦ ᓄᓇᕐᔪᐊᖑᑦ, ᐃᑕᓕ, ᔭᑉᐸᓐᔫᑦ, ᐋᔅᑐᕋᐃᓕᐊᒥᐅᑦ, ᐳᐊᑎᑭᑦ ᓄᓇᓕᖅᑲᕐᕕᔾᔪᐊᖑᓂᒥᐊᓂᑦ, ᓴᐃᓇᒥᑦ, ᐊᒻᒪᓗ ᐅᑳᓴᒥᐅᑦ). ᑲᑐᔾᔨᖃᑎᒌᖑᔪᑦ ᓴᓇᓯᒪᓕᖅᑐᑦ 25-ᓂᑦ ᖃᐅᔨᓴᐅᑎᓂᑦ, 15-ᖏᑦ ᐅᑭᐅᖅᑕᖅᑐᒦᑦᑐᑎᒃ (ᐊᒥᓱᒃ ᑲᓂᕐᓂᒃ ᓴᓇᒍᓖᖅᑐᑦ ᓯᕗᓂᑦᑎᓐᓂ)ᐊᒻᒪᓗ ᖁᓕᐅᓪᓗᑎᒃ ᓄᓇᕐᔪᐊᑉ ᓂᒋᖅᐸᓯᐊᓂ (ᑕᓪᓚᒪᐅᓪᓗᑎᒃ ᓂᒋᕐᒥ ᓄᓇᕐᔪᐊᑉ ᑲᔾᔮᕐᓂ).

ᐃᓚᖏᑦ ᓱᐳᑖᖕᑯᑦ ᖃᐅᔨᓴᐅᑎᖏᑦ ᓄᓇᕐᔪᐊᕐᒥ ᐃᓂᖃᖅᑎᑕᐅᔪᑦ ᓇᒥᑐᐃᓐᓇᖅ ᖃᐅᔨᓴᐅᑎᐅᔪᒪᓪᓗᑎᒃ "ᐊᖅᓴᕐᓂᖅᑲᕐ ᓂᓇᕙᑦ ᑕᖓᓂᑦ" (ᑕᑯᑦᓴᐅᓯᐊᖅᑐᓂᑦ ᐊᖅᓴᕐᓂᖅᐸᑦᑐᓂᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐅᕝᕙᓗ ᓄᓇᕐᔪᐊᑉ ᓂᒋᐊᓂ). ᑭᓱᐊᓂ ᐊᑯᓐᓂᖅᑯᐊᓚᐅᕐᒪᑕ ᖃᐅᔨᓴᕐᕕᐅᔪᑦ ᓄᓇᕐᔪᐊᑉ ᑲᔾᔮᖓᑕ ᓴᓂᖓᓂ. ᐅᑭᐅᖅᑕᖅᑑᑉ ᓂᐱᖅᑲᕐᓇᖏ ᑲᔾᔮᖏᑕ ᓴᓂᐊᓃᑦᑐᑦ ᔫᕈᑲᐅᑉ, ᓄᓇᕗᒻᒥ. ᕿᒥᕐᕈᐊᕐᓂᐊᕈᒪᓗᒍ ᐃᓘᓐᓇᓂ "ᐅᑭᐅᖅᑕᖅᑐᒥ ᓂᓪᓚᓇᕐᓂᖑ" ᕿᑎᖅᑲᖅᑐᖅ ᐅᑭᐅᖅᑕᖅᑐᒥ ᑲᔾᔮᖕᓂᑦ, ᒪᕐᑰᓐᓂᒃ ᓄᑖᓐᓂᒃ ᓴᓇᕆᐊᖅᑕᓚᐅᖅᑐᑦ ᓯᐳᑖᖕᑯᑦ ᖃᐅᔨᓴᐅᑎᖕᒥᓂᑦ ("ᐳᓗᑖᖕᖑᓂᕋᖅᑕᑦ" ᖃᐅᔨᓴᐅᑎᑦ), ᐊᐃᑉᐸᖓ ᐃᓄᕕᒻᒥ ᐊᒻᒪᓗ ᐊᐃᑉᐸᖓ ᑲᖏᖅᑐᒑᐱᒻᒥ. ᑖᒃᑯᐊᓕ ᖃᐅᔨᓴᕐᕕᐅᔫᒃ ᐊᐅᓚᑕᐅᔫᒃ ᑲᓇᑕᒥᐅᑕᓄᑦ ᐱᓕᕆᔨᓄᑦ (ᓯᕗᓕᖅᑎᖃᖅᑐᑎᒃ ᓗᑦ ᑖᓐᓂᒃ ᑰᑐᕆᓐ ᒪᒃ ᐅᐃᓕᐊᒻᔅ ᐊᒻᒪᓗ ᔫᓐ-ᐱᐅᕐ ᓴᐃᓐ-ᒧᕇᔅ)ᑐᙵᕕᖃᖅᑐᑎᒃ ᓯᓚᑦᑐᓴᕐᕕᔾᔪᐊᖑᓂ ᓵᔅᓯᑳᔅᓯᐅᐋᓐ ᐱᓕᕆᕝᕕᒻᒥ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑐᒥᑦ ᐊᒻᒪᓗ ᓄᓇᕐᔪᐊᑉ ᓯᓚᖓᓂᑦ ᖃᐅᔨᓴᕐᕕᒻᒥᑦ (ISAS).

ᓱᐳᑖᖕᑯᑦ ᖃᐅᔨᓴᐅᑎᖏᑦ ᐆᑦᑐᐃᕙᑦᑐᑦ ᓄᓇᕐᔪᐊᑉ ᓯᓚᑎᒻᒪᓇᐊᓂ "ᓯᓚᖓ" ᓄᓇᙳᐊᓂᑦ (ᑕᒪᒃᑯᐊᓕ ᓄᒃᑭᓇᖅᑐᑎᒃ ᓄᓇᙳᐊᑦ, ᐱᔾᔪᑎᒋᓪᓗᒍ ᐳᖅᑐᔪᒌᓐᓂᖓ, ᐊᓄᓇᖏᑦ ᐊᐅᓚᓂᐅᕙᑦᑐᑦ ᓄᒃᑭᓇᖅᑐᑎᒃ, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᓄᒃᑭᓇᕐᓯᕙᑦᑐᑦ ᐊᐅᓚᓂᖓᓂᑦ ᐳᖅᑐᔪᓃᑦᑐᑦ ᐊᒻᒪᓗ ᐊᑦᓯᓂᖅᓴᓃᑦᑐᑦ ᓄᒃᑭᓇᖅᑐᑦ, ᖃᓂᒋᔭᕐᓂᑦᓴᑦ ᓄᓇᕐᔪᐊᒥᑦ ᓯᓚᑐᐃᓐᓇᕐᒦᑦᑐᑦ ᐊᐅᓚᑎᑕᐅᕙᑦᑎᓪᓗᒋᑦ ᓯᓚᐅᑉ ᓂᕈᒥᓐᓂᖓᓂᑦ). ᓄᒃᑭᓇᖅᑐᒃᑯᑦ ᓄᓇᙳᐊᖑᔪᑦ ᑕᑯᔭᐅᔪᓐᓇᖅᑐᑦ ᖃᕋᑕᐅᔭᒃᑯᑦ ᐅᕙᙵ (http://superdarn.jhuapl.edu/) ᐊᑯᓂᐅᙱᑐᖅ ᐅᑕᖅᑭᒋᐊᖁᓪᓗᓂ. ᖃᖓᑕᖅᑎᑕᐅᓯᒪᔪᑦ ᑕᒪᐅᓈᖅᐸᑦ ᐳᖅᑐᔪᒃᑯᑦ ᓯᓚᒃᑯᑦ. ᖃᖓᑕᖅᑎᑕᐅᓯᒪᔪᑦ ᐱᒪᕆᐅᕗᑦ ᐅᑭᐅᖅᑕᖅᑐᓂ ᐱᔾᔪᑎᒋᓪᓗᒋᑦ ᑐᓴᐅᒪᐅᑎᓕᕆᔾᔪᑎᓄᑦ ᐱᓕᕆᔾᔪᑕᐅᕙᒻᒪᑕ (ᐅᖄᓚᐅᑎᓂᑦ, ᑏᕖᓂᑦ, ᐃᓐᑐᓂᐊᑦᓂᑦ, ᓇᒍᑦ ᐃᖏᕋᓂᒃᑯᑦ ᖃᐅᔨᓴᐅᑎᓂᑦ). 800-ᖓᓃᑦᑐᓂᑦ ᖃᖓᑕᑎᑦᓯᓯᒪᔪᑦ ᐊᑐᖅᑕᐅᕙᑦᑐᓂᑦ ᑐᓴᐅᒪᐅᑎᓕᕆᓂᕐᒧᑦ ᐊᔾᔨᒌᙱᑐᓂᑦ (ᐆᑦᑑᑎᒋᓗᒋᑦ ᐃᓚᖓᓄᑦ ᑮᓇᐅᔭᒃᑯᕕᓕᓇᐳᐅᔭᑦ ᑕᒪᒃᑯᓂᖓᐊᖅᐸᑦ), ᑮᓇᐅᔭᓂᑦ ᐱᓕᕆᔾᔪᑎᖃᕐᓯᒪᓕᖅᑐᑎᒃ $160 ᐱᓕᐊᙵᓃᑦᑐᓂᑦ (ᖃᖓᑕᖅᑎᑕᐅᓯᒪᔪᖅ ᐊᑕᐅᓯᖅ ᐊᑭᖃᖅᐸᑦᑐᖅ $200 ᒥᓕᐊᓂᑦ). ᓖᓐᓇᐸᑑᓚᐅᖅᑐᖅ, ᖃᐅᔨᓴᖅᑎᒻᒪᓇᐅᔪᑦ ᖃᐅᔨᓯᒪᓕᖅᑐᑦ ᐊᒥᓱᕈᖅᐸᓪᓕᐊᑐᐃᓐᓇᕐᓂᖓᓂᑦ ᐊᑦᑐᐊᓂᖃᖅᐸᑦᑐᑦ ᓯᓚᐅᑉ ᐳᖅᑐᓂᖓ "ᓯᓚ" ᐊᒻᒪᓗ ᐊᑦᓯᓂᖅᓴᒦᑦᑑᑉ ᓯᓚᐅᑉ ᐱᐅᓯᕐᒥᓂᒃ ᐊᑐᖅᐸᑦᑐᑦ "ᓯᓚᓐᓂᐊᕈᑕᐅᕙᓐᓂᖑ". ᐳᕐᓗᑖᖕᑯᑦ ᖃᐅᔨᓴᕐᓯᒪᔭᖏᑦ ᐱᕚᓪᓕᐅᑎᔪᒻᒪᓇᐅᓂᐊᖅᑐᑦ ᑐᑭᓯᔭᐅᓇᓯᑦᑎᓪᓗᒋᑦ ᓯᓚᒃᑯᑦ ᐊᑦᑐᐊᓂᐅᔪᑦ ᐱᔾᔪᑎᒋᓪᓗᒋᑦ.

ᐳᕐᓗᑖᖕᑯᑦ ᐊᒻᒪᓗ ᓱᐳᑖᖕᑯᑦ ᖃᐅᔨᓴᐅᑎᖏᑦ ᐆᑦᑑᑎᐅᕙᑦᑐᑦ ᓯᕿᓂᕐᒥᙶᑦᑐᒥᑦ ᓄᓇᕐᔪᐊᕐᒧᑦ ᑎᑭᐸᑉᐸᑦᑐᒥᑦ ᐊᓄᓇᒃᑯᑦ ᐊᓂᕐᓂᖅᑲᕐᓇᖏᑐᒃᑯᐸᑦᑐᒥᑦ. ᐱᔾᔪᑎᒋᓪᓗᒍ ᐊᓄᓇᐅᔫᑉ ᐊᑦᑐᐊᓂᕐᑭᓪᓕᓴᐅᑦ ᑐᑭᒧᐊᑲᓴᑦᓯᐊᖅᑑᑉ "ᒪᑐᐃᖏᐃᑉ" ᓂᐱᖅᑲᕐᓇᖏᒍᑦ ᐅᑭᐅᖅᑕᖅᑐᐃᑦ, ᑕᒪᒃᑯᐊ ᓄᓇᐅᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᒋᐊᖅᓚᒪᓇᑉᐳᑦ ᑐᑭᓯᔭᐅᓂᐊᖅᐸᑦ ᐆᒪᖅᑯᑎᐅᕙᖅ ᓄᓇᓯᐊᖅ ᐊᓄᓇᒃᑯᑦ. ᐊᑲᐅᓈᕐᑎᖅᑲᑦ ᓯᐊᑐᒻᒪᓇᐅᔪᒍᓐᓕ ᓄᓇᓯᐊᖅ ᐊᒻᒪᓗ ᓄᓇᕆᓯᐊᖅ ᓴᓇᕐᓇᕐᒍᑎᖃᕐᓯᐊᖅᑐᒥ ᐱᒋᐊᖅᑲᖅᑐᑦ ᓯᓚᒪᓂᒃᑯᑦ ᐅᐸᑦᑕᐅᔪᓇᓂᓯᐅᓪᒪᑕ ᓄᓇᓯᐊᑉ ᓂᒋᐊᓂ ᑲᔾᔮᕐᓂᑦ ᖃᓂᒋᔾᔪᖅᑐᑦ ᐅᐸᑦᓴᐅᑎᒋᐊᓇᖑᓂᓯᐅᓪᒪᑕ. ᑲᖏᖅᑐᒑᐱᒻᒥ, ᐃᓅᕕᒻᒥ ᐊᒻᒪᓗ ᑲᖏᖅᖠᓂᕐᒥ ᖃᐅᔨᓴᐅᑎᑦ ᓱᐳᑖᖕᑐᓇᐳᓄᑦ ᑕᑯᒋᐊᖅᑕᐅᖃᑦᑕᓂᐊᖅᑐᑎᒃ ᐳᖅᑐᔪᓪᒪᓇᓪᒥᑦ ᖃᐅᔨᓴᐅᑎᐅᕚᓐᓂᐊᕐᑐᑎᒃ ᐅᑭᐅᖅᑕᖅᑑᑉ ᖁᑦᖁᓐᓈᓐᓂᓴᐅᔪᒥᑦ, ᑕᑉᐸᓐᓇᓕ ᐊᔾᔮᐅᕐᒥᑦᑐᖅ ᓄᓇᕐᔪᐊᖅ ᓂᐱᖅᑲᕐᓇᖑ, ᓴᓂᐊᓃᑦᑐᓂ ᔫᕈᑲᐅᑉ. ᑖᒃᑯᐊ ᖃᐅᔨᓴᐅᑎᑦ ᐃᑲᔪᖅᓯᐃᔾᔪᑎᐅᓪᒪᓇᓂᐊᖅᒥᔪᑦ ᑲᓇᑕᒥ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ ᑐᙵᕕᖓ $45 ᒥᓚᓂᐊᖠᖅᑐᖁᑎᖏᑦ ᐱᓕᕆᐊᑦᓴᒥᑦ (ᓯᓚᑐᐃᓐᓇᒦᑦᑐᓂᑦ ᒥᑭᔫᑎᖃᓗᓐᓂᑦ ᖃᐅᔨᓴᐅᑎᑦᓴᖅ), ᓴᓇᓯᒪᓕᖅᑐᑦ ᖃᐅᔨᓴᐅᑎᓂᑦ ᒥᐊᓕᑲᐃᑦ ᓄᓇᓕᖓᓂ ᐳᑯᕐ ᕚᓛᑦᒥ, ᐊᓛᔅᑲᒥ ᐊᒻᒪᓗ ᖃᐅᓯᐃᑦᑐᒥ, ᓄᓇᕗᑦ. 2012-ᒥ ᑲᓇᑕᒥᐅᑕᓂᑦ ᐱᓕᕆᔭᖅᑐᑎᒃ ᖃᐅᔨᓴᐅᑎᑦ ᓴᓕᐅᑖᕐᒥᔪᑦ ᖃᐅᓯᐃᑦᑐᒥ. ᑕᒪᒃᑯᐊᓕ ᖃᐅᔨᓴᐅᑎᑦ ᖃᐅᔨᓴᐅᑎᐅᔪᐊᓇᓯᐊᖅᑐᑦ ᓱᓇᑐᐃᓐᓇᕐᓂᑦ ᓯᓚᒃᑰᓐᓂᑦ ᐊᑭᖃᓚᐅᖅᑐᑦ $22.5 ᒥᓕᐊᓂᑦ. ᑲᓇᑕᒥ

ᖃᐅᔨᓴᐅᑎᐅᔪᖅ ᖃᐅᓯᐃᑦ ᑐᒥ ᑕᐃᔭᐅᓂᖃᖅᑐᖅ RISR-C-ᒥᑦ ᖃᓪ ᓗᓈᑎᑐᑦ, ᐊᒻ ᒪᓗ ᐃᑲᔪᕐ ᓱᐃᑎᖃᑦ ᓱᐊᕆᖅᑐᖅ ᐳᕐ ᓗᑖᕐ ᓐ ᑯᑦ ᖃᐅᔨᓴᐅᑎᖏᑕ ᐆᑦ ᑐᖅᑕᒥᓂᖏ ᓂᑦ.

ᐊᒻ ᒪᓗᑦ ᑕᐅᖅ ᓄᓇᒥ ᖃᐅᔨᓴᐅᑎᐅᕙᑦ ᑐᓂᑦ ᖃᖓᑦ ᑕᖅᑎᑦ ᓱᖃᑦ ᑕᓛᖅᑐᑦ, ᐱᓗᐊᖅᑐᒥ ᐋᐹᑉ ᐊᒻ ᒪᓗ ᓯᐅᐊᕐ ᒻ ᑯᑦ ᑲᑐᔾ ᔨᖃᑎᒌ ᓪ ᓗᑎᒃ ᐱᓕᕆᖃᑎᒌᓛᖅᑐᑦ ᐊᑐᕐ ᓗᑎᒃ ᓯᐳᕐ ᑖᕐ ᓐ/ᐳᕐ ᓗᑖᕐ ᓐ ᑯᑦ ᖃᐅᔨᓴᐅᑎᖏ ᓂᑦ, ᑖᒃ ᑯᐊᓂ ᐃᓚᒋᔭᐅᔪᑦ ᐊᖏᕐ ᐊᓗᒻ ᒧᑦ ᓄᓇᒦᑦ ᑐᒧᑦ ᖃᐅᔨᓴᐅᑎᖓ ᓄᑦ ᑲᓇᑕᒥᐅᑕᐃᑦ ᖃᐅᔨᒪᔭᐅᔪᓄᑦ ᑲᓇᑕᒥᐅᑕᐃᑦ ᖃᐅᔨᓴᖅᑎᑦ ᓄᓇᕐ ᔪᐊᑉ ᖁᓛᓃᑦ ᑐᒥᑦ ᖃᐅᔨᓴᖅᑎᓄ. ᑖᒃ ᑯᐊᓂ ᐱᖓᓯ ᓂᑦ ᒐᕙᒪᓕᕆᔨᓂᑦ ᐱᓕᕆᖃᑎᖃᖅᐸᑦ ᑐᑦ (ᑲᓇᑕᒥ ᐊᓂᕐ ᓂᖃᕐ ᓇᖏᑦ ᑐᒥᑦ ᖃᐅᔨᓴᖅᑎᑦ, ᓄᓇᓕᕆᔨᒻ ᒪᕆᒃ ᑯ ᑲᓇᑕᒥ ᖃᐅᔨᓴᖅᑎᖏᑦ, ᐊᒻ ᒪᓗ ᑐᒥᓂᐊᓐ ᓈᓚᐅᑎᒃ ᑯᑦ ᖃᐅᔨᓴᖅᑎᖏᑦ ᐱᐊᓐ ᑎᒃ ᑕᓐ ᒥ), ᐊᒻ ᒪᓗ ᑕᓪ ᓕᒪᓂᑦ ᓯᓚᑦ ᑐᓴᕐ ᕙᔾ ᔪᐊᕐ ᕙᒻ ᒥ ᐱᓕᕆᔨᓂᑦ ᓅᔅ ᓯᑳᓯᐊᓐ ᒥ, ᐃᐅᓪ ᐴᑕᒥ, ᒋᐅᒍᓇᒥ, ᐱᖓᓐ ᓇᖕᓂ ᐙᓐ ᑎᐅᓇᐅ, ᐊᒻ ᒪᓗ ᓂᐅ ᐳᕋᓐ ᔅ ᐅᐃᒃ.

ᓄᓇᕐ ᔪᐊᒥᓕ, ᓯᐳᑖᕐ ᓐ ᑯᑦ ᐱᓕᕆᔨᓖᑦ ᓯᐊᖏᑦ ᐃᓚᒋᔭᐅᓛᖅᑐᑦ, ᐱᔾ ᔪᑕᐅᓪ ᓗᓂ ᑖᒃ ᑯᐊ ᖃᐅᔨᓴᖅᑎᒻ ᒪᕆᐊᑕ ᐊᖏᖅᑲᑎᒌ ᒍᑎᖓ ᖃᐅᔨᓴᐅᑎᓖᒥᓂᑦ ᑕᑯᔭᐅᖃᑦ ᑕᕆᐊᖃᖅᑐᑎᒃ ᑕᐃᒪ ᐃᑦ ᑐᓂᑦ ᖃᐅᔨᓴᖅᐸᑦ ᑐᓄᑦ. ᓲᖃᐃᒻ ᒪᑦ, ᓯᓚᑦ ᑐᓴᕐ ᕙᔾ ᔪᐊᖓᑦ ᓅᔅ ᓯᑳᓯᐊᓐ ᑐᓐ ᖓᕙᒋᔭᐅᒻ ᒪᑦ ᖃᐅᔨᓴᐅᑎᓄᑦ ᐊᒻ ᒪᓗ ᓇᒍᑐᐃᓐ ᓈᕆᕙᑦ ᑐᓄᑦ ᐱᓕᕆᔾ ᔪᑎᓂᑦ, ᑖᒃ ᑯᐊᓕ ᖃᕋᑕᐅᔭᒃ ᑰᕈᑎᓂᑦ ᕿᓪ ᓕᖅᑐᓂᑦ ᑐᓂᐅᖅᑲᐃᔭᐅᕙᑦ ᑐᑦ ᓯᐳᑖᕐ ᓐ ᑯᑦ ᖃᐅᔨᓴᕐ ᓯᒪᔭᖏ ᓂᑦ ᐱᓕᕆᔨᓖ ᓄᑦ ᓯᐳᑖᕐ ᓐ ᑯᓐ ᓄᑦ. ᖃᐅᔨᓴᖅᑎᐅᔪᑦ ᐊᑎᖏᑦ ᑎᑎᕋᓐ ᖕᒃ ᑲᓗᐊᕐ ᓗᒋᑦ, ᓯᐳᑖᕐ ᓐ ᑯᓐ ᓄᑦ ᐱᓕᕆᖃᐅᖅᑐᑦ ᖃᐅᔨᓴᕐ ᕙᒻ ᒪᕆᒻ ᒥ ᐅᑭᐅᖅᑕᖅᑐᒥᑦ ᔭᐹᓐ ᒥ, ᓯᓚᑦ ᑐᓴᕐ ᕙᔾ ᔪᐊᕐ ᕙᖕᓂ ᐊᓛᔅ ᑲ, ᔫᓐ ᕼᐋᑉ ᑭᓐ ᔅ ᓯᓚᑦ ᑐᓴᕐ ᕙᔾ ᔪᐊᕐ ᒥ, ᓯᓚᑦ ᑐᓴᕐ ᕙᔾ ᔪᐊᕐ ᒥ ᓕᔅ ᔅ ᑐᕐ ᑕᕆᐅᑉ ᐊᑭᐊᓂ, ᐆᕐ ᐲᓂᐊ ᑕᒃ, ᑯᐃᓐ ᓄᓇᖕᓂᕐ ᒥᐅᑕᐃᑦ ᖃᐅᔨᓴᖅᑎᑦ, ᐅᐃᕚᑦ ᖃᐅᔨᓴᖅᑎᑦ, ᐳᐊᑎᑭᑦ ᓄᓇᓕᖅ ᕚᖓ ᓂ ᖃᐅᔨᓴᖅᑎᑦ, ᐃᑕᓕᒥ, ᐋᔅ ᑐᕋᐃᓕᐊᒥ, ᕙᓐ ᓛᓐ ᒥ, ᔅ ᐃᓇᒥ, ᐊᒻ ᒪᓗ ᐅᓛᔅ ᒥ ᓯᓚᑦ ᑐᓴᕐ ᕙᔾ ᔪᐊᕐ ᓂ ᖃᐅᔨᓴᖅᑎᓄᑦ ᐃᓕᓐ ᓂᐊᕐ ᕙᓐ ᓂ.