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TOTALITY!

THE JOURNAL FOR ECLIPSE CHASERS

eclipse travel adventures

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2008 August 01 TSE: An Unprecedented Success; From Ice Capped Pole to the Desert of the Gobi

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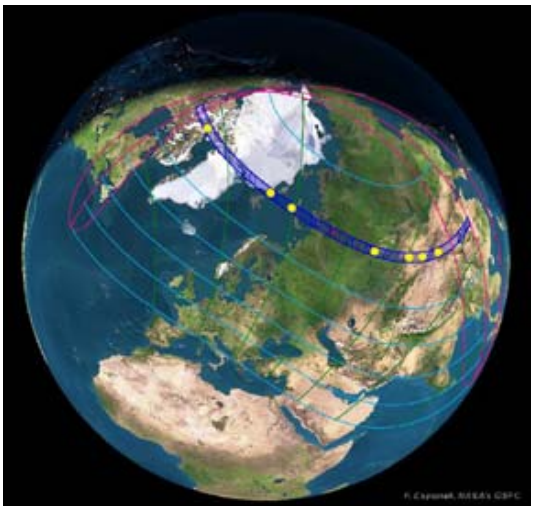
2008 August 01 TSE; An Unprecedented Success, From Ice Capped Pole to the Desert of the Gobi

It almost did not matter where you were along the path of totality in 2008. With only a few isolated exceptions, most observers along the corridor of totality were able to see the eclipse. From Cambridge Bay, Canada, shortly after sunrise, to Jinta, China, close to the end of the path just before sunset. I solicited several reports to incorporate into this issue all along the path, many of them from members of the SEML (Solar Eclipse Mailing List), so if you're an SEMLer, some of these reports may be familiar. Here the eclipse brings us all together, and it looks almost imperceptibly different along its trek, but to get there, each of us has a great adventure along the way, and without a doubt, no other publication has brought them together in one place, and it is those adventures we share with you here.



The first page of this issue showed the list of locations and observers that make up this issue. Some of these trips were hugely extensive (not to mention expensive, oops, I mentioned it didn't I), and others were very brief, but all were most memorable. The illustration of the globe on the left marks the general positions of each of the reports highlighted in this issue with a yellow dot, of which there are seven. The original map is courtesy of Fred Espenak and NASA.

One very important thing that I want to make sure you are aware of, is that these issues were put together with a relatively decent resolution, and you should be sure to use the magnifier for a more detailed view of the photos contained herein, it will make a good picture, remarkable.

Also, when you see a name highlighted in this issue, it is a link to that individuals web site, or more photos of the eclipse/trip by that individual, and often for a more detailed view of the pictures. In some cases there were dozens of great photos, but in TOTALITY! we are a bit limited to sizes and numbers, so please take advantage of these web sites. When the tour group was identified, there is also a link to that groups web site.

If you did not get to this eclipse, consider the next eclipse. And if you cannot afford to travel just now, perhaps there will be one coming your way soon. Seeing a TSE should be at the top of everyone's bucket list.

Some of the locations for this eclipse were expected to have extremely poor weather conditions, and some a higher probability of good weather. A couple of issue ago when I was doing a the next decade of eclipses, I looked at the generalized weather conditions that Jay Anderson shows in his monthly analysis charts, and the weather conditions looked best near the China/Mongolia border for this eclipse. Localized weather may be different when Jay publishes his detailed info closer to the actual eclipse dates, but the general picture pointed to 2008 as being the best chance for good skies for quite some time.

On the runway in Cambridge Bay, we witnessed the final 20 minutes of the eclipse through smoke and thick haze. The group photo shows left to right, Steven Barnes, Joanne Paulson, the pilot, Karen Finstad, the co-pilot, airport staff, Valerie and Alister Ling, Steven Bedingfield, Alan Dyer and Murray Paulson.

Cambridge Bay.Nunavut.Canada by Murray Paulson (CAN)

Murray and a small group climbed aboard a small airplane to get one of the first views of the eclipse above Cambridge Bay, Canada. The Sun was only minutes above the horizon when they as seen from the windows of a Beechcraft King Air aircraft at 27.000 feet, and were able to experience 1m 39s of totality.

We had an amazing eclipse!

A group of 8 of us had come out of various locations across Canada, but most of us were from Alberta. Our intention was to fly out from Cambridge Bay in a float plane and witness the eclipse on land from the eastern side of Victoria Island at Lat 69.07 N, and Longitude 101.41.13 W, where we would get ~1:20 of totality. Our weatherman, Alister Ling, decided from the weather data that the cloud tops would be near 20,000' on eclipse morning, so we had to change plans. Yes, it was 4:24 am where we would see the eclipse from!

Fortunately for us, a twin turboprop King Air was available, and we hired it for the morning of the eclipse. We took off at 2:30 am in fairly bright twilight, here the sun only dips 3 degrees below the horizon in Cambridge Bay. We climbed out of the haze and cloud, and at 3:46 am, we finally saw the crescent sun rising through the cloud deck.

Of the photographers, I had won the seat lottery and got the co-pilot's seat for the time around totality. It was the best seat in the house to shoot the eclipse. I had decided on a Canon 70-200 f4, IS zoom because it would

give me the best chance of getting a decent image from a hand held imaging situation. I hadn't taken into account how much I would be shaking from the adrenalin and excitement for the final run up to totality. We had the plane on a bearing of 300, west north west, and cruised at 130 kts. We could see the moon shadow progressing from right to left, and all of a sudden we were in totality. WOW! The corona was one of the more interesting I have seen, asymmetrical with great streamers, and there was Mercury 3 degrees to the east. The sun ranged from 2 to 3 degrees above the cloud deck. I removed my solar filter from the camera lens about 1 minute before totality, and shot images through both diamond phases, cranking the exposure times up and down to capture as much dynamic range as I could. In mid eclipse, I spent roughly 30 seconds viewing through my binoculars. There was a big prominence right on top of the sun, and another smaller one at 7 o'clock. Glad I took the time.

To quote the eclipse cliche, all too soon it was over! I could still see the corona for 10 to 20 seconds after the diamond ring by blocking out the bright sun. Shortly after the C3 contact, we turned and headed back to Cambridge Bay, with the added bonus of getting to pilot the plane part of the way home.

Totality imaged from the window of the plane at 20,000'

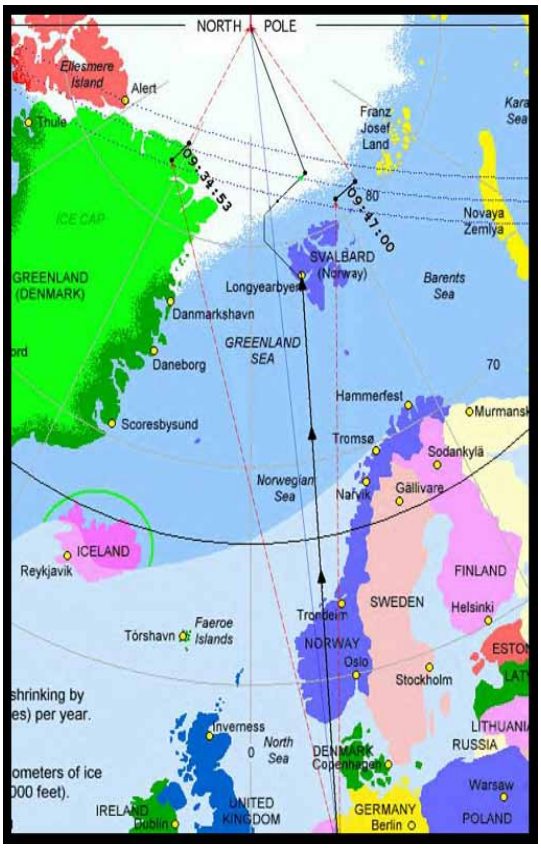
Photos © Murray Paulson

Just after 3rd contact, a blinding starburst effect intensifies the diamond ring

eclipse at the top of the world

by Bill Kramer (USA) Traveling with TravelQuest International

This was Bill's first eclipse flight, but onboard were several others that were on the 2003 eclipse flight over Antarctica. Bill tells me that these people received a special t-shirt that indicated that these individuals were bi-polar. Unfortunately he did not get a photo of these shirts, but we can imagine them. Taking advantage of the low angle of the Sun to the horizon, once again Glenn Schneider had plotted out a path for a flight on the Airbus 330-200 to track the shadow as individuals peer from the small airplane windows as it flies over the polar icepack, but above the low altitude polar clouds. In addition to the ability to be above the clouds, but being in an airplane paralleling the eclipse path, the duration of totality can be extended beyond the earthly duration. I will definitely sign on to every eclipse flight when a transparent hull [maybe made of the transparent aluminium posited by Scotty in Star Trek IV: The Voyage Home] is incorporated into the passenger compartment of airplanes. Where is Wonder Woman when you need her? Now, imagine an SST with the transparent hull, and sit back for a very long eclipse while drinking a nice wine for an hour or two, or even more. Hey, I can dream can't I? But today, eclipse flights can only occur when the Sun is low to the horizon, affording observers a view out the windows of one side of the airplane. [Editor]



I've seen total solar eclipses from many different places, from ships at sea to remote jungles and camps where no other options existed. All were great. The key issue was always the weather. The weather is the one element of an eclipse chase we cannot control, pre-calculate, or predict. But it turns out we can out-smart it through technology. Now that is not to say that weather cannot still win the day, but the chances of successfully seeing the eclipse can be increased in the oddest of places.

For my twelfth total solar eclipse (Denise's eighth) we had studied the climate and we were not convinced we could find a good location from which to view the eclipse in relative comfort. We had almost decided to chance it in Siberia when the notion of a technological solution was put forth. Fly in a jet above the clouds to clear sky in the polar regions, thus affording a view out the side of a jet. Brilliant! And without getting complicated let me just say that is a great idea because it also affords the opportunity to make use of the jet to prolong the eclipse experience adding 10 to 15 seconds to totality.

Okay, the first problem was to find a jet capable of doing such. Most don't fly near the polar regions because it makes navigation a bit difficult and except in a few rare circumstances it is out of way for most flights. The idea was discussed with some detail in 2006 and a search started for an aircraft. Because August was a busy time for polar exploration (oil and so forth) the aircraft were not available. After a long exhaustive search something popped up on the radar - out of Germany.

The company PolarFlug in Germany had been formed to conduct round trip polar flight seeing trips working with LTU, a German airliner company with new Airbus jets. Glenn Schneider (of the University of Arizona, Steward Observatory) made contact with them almost immediately. This novel concept happened to suit the needs perfectly assuming all the details could be threaded together. Glenn, a meticulous scientist and expert eclipse chaser, immediately put together all the technical details to get a flight into the right place at the right time. Coupling up with Sky and Telescope and Travelquest dream became a commercial opportunity and almost overnight a significant portion of the viewing windows were sold to serious eclipse chasers (those of us with over a half hour of eclipse time). The costs varied based on the window view with business class going for over ten grand a row (room for three). Even at that rate the PolarFlug company was forced to sell seats on the non-eclipse side in order to cover the costs of the fuel. But it was a go from the start with enthusiastic members on both sides so the pieces kept falling together.

The **L**uft **T**ransport-**U**nternehmen (LTU) jet and the passengers of the North Pole Total Solar Eclipse flight
Photo © Andres Spaeth

The afternoon before the eclipse flight we all met in Dusseldorf at the Intercity Hotel. Many eclipse chasers greeted each other with warm smiles and handshakes. We had not seen each other since previous eclipses or were finally meeting for the first time after exchanging communications via the Internet news group SEML. A late afternoon briefing brought everyone together in one room with over a dozen of us being in the ten eclipses and more club. The flight crew was introduced and a detailed description of the flight plan was presented. We would be seeing almost three minutes of totality due to our trajectory running somewhat parallel with the shadow. Glenn Schneider and Kelly Beatty of Sky and Telescope presented the scientific and eclipse briefing information followed by a question and answer period. Everyone disbanded to prepare for an early departure to the airport. We wanted to be the first plane to take off at 6 AM when the airport opened for business. The flight was going to last twelve and one half hours. To the pole and back again!

At 3 AM the group gathered slowly. An all night cafe was open next to the hotel and many of us stumbled over there to get coffee. The Turkish proprietor was quite amused to see us all and then astonished to learn where we were going. We smiled and boarded a bus for the airport. At the airport we had special stickers along with our boarding pass. The security people had been forewarned of us. They knew we would be bringing more stuff than normal through the hand check. Waiting in the airport was like any other wait in the airport in the early hours of the morning. There was a quiet buzz of activity as we checked the SOHO images one last time (there was a small comet, about magnitude +2!) and then at last we boarded the plane. Brightly polished as if it had come out of the factory last night each window looked the best I've ever seen in a jet that does commercial service. It was an Airbus 330-200 and the crew had done an excellent job in getting it ready for us. Denise and I had the first row. It was surreal. We were going to fly to an eclipse, leaving German airspace and going to the polar regions - wearing sandals and short sleeves.

Away we went from Dusseldorf passing through a mild area of heavy humidity near 8000 feet and headed north over Hamburg, Denmark, Finland, and then the Spitzbergen - the northern most point of Europe.

Our flight plan included time to drop altitude and view the rugged terrain of the Spitzbergen area. Full of ice flows, glaciers, and rock it had a strange presence about it that was lonely and cold. We could see a ship headed out to sea and many thought it could be another eclipse group. That was good, they were bathed in sunlight.

Back on board the flight there was a problem. The rear windows were frosted over. As we had left the airport we had gone through an area of deep humidity and it was theorized that some had remained on the outer skin of the plane. That humidity had crystallized in the polar region resulting in severely diminished views through numerous windows. The result was a game of "fill in every space possible" and experiments with heating the cabin to try and melt it off.

The heating and cooling of the cabin caused other problems. Between the panes of glass a layer of condensation formed. This would diminish the view for many. One of our windows developed small frost points that are very obvious in the video shot through it. We had expected some problems and ours had held up well until the heat experiments began. From that point we had condensation between the window panels. And there is nothing you can do about that at 36,000 above the Arctic.

Fortunately the large lens I was using compensated for the moisture and I was able to obtain a range of exposures during the eclipse using a Cannon EOS digital camera with a 400mm (82mm diameter) lens. The image stabilizing in the camera and lens allowed for exposures up to 1/25th of a second at ASA 400. A suitable exposure of the mid-corona given the speed of the system.

About a half hour before the eclipse I donned an eye patch to dark adapt one eye. This is the first time I've tried that. Normally I just wear sunglasses until it is almost too dark to see. The eye patch did not fit too well and I don't think there was a significant improvement in the viewing through the foggy window. Next time I will go back to dark sunglasses.

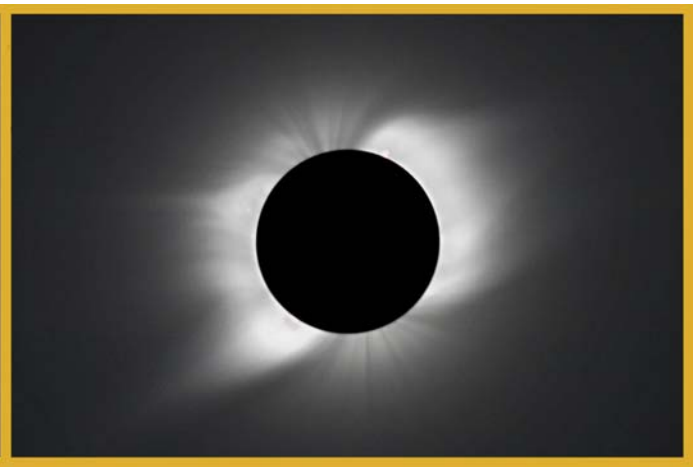
As totality approached we settled into a level flight. Our trajectory would take us along the same path as the shadow was traveling (more or less) so that we would gain a few extra seconds. The shadow would approach from the left side of the aircraft passing over and to the right side. Due to our height above the clouds we would see the shadow passing for several seconds as the eclipse began, and again at the end. Kneeling down in the aisle to control the camera and lens on a small tripod I knew I would miss the start of the show along the clouds but I vowed to catch the end.

At exactly the time predicted we intersected with the shadow above the clouds. I could not see much of the horizon and concentrated on holding the image in the center (or near to it) of the view finder. This was the most challenging way to photograph an eclipse that I have ever tried. I've done land with bad tripods, ships with bad tripods, but this was the worst condition. Cramped into a small spot with people trying to lean over me to look through the small 22x33cm window (those people were instructed to stay in their seats, but let's be realistic, that was like telling someone they could go to an open bar party but only have water.) Firing snap after snap I increased exposures and then back down again. The vibration and slight movement of the aircraft as it sped along at Mach 0.82 above the ground meant I could not run too long an exposure.

2nd Contact / Mid-Eclipse Corona / 3rd Contact from the air. The reflections are from the aircraft window. © Bill Kramer

Glenn Schneider did it right. He brought a gyro stabilized platform and mounted it in the cabin using heavy duty suction cups. The pilots should have been awarded a medal of bravery for allowing the heavy swinging contraption with multiple computers attached into the cockpit. Not only would this be a long flight of over twelve hours, but they would be making multiple altitude changes and flying a very precise course of coordinated check points as designed by Glenn.

Glenn Schneider setting up equipment in the cockpit of the Airbus 330-200



Totality imaged by Bill Kramer and enhanced by Glenn Schneider on the flight back to Germany.

This was not Glenn's first try at this sort of eclipse chasing. One could almost say he invented the modern way of doing it though by establishing a set of unique parameters and carrying through with the development of a computerized tool that calculates flight paths and eclipse intercepts. Because of his work, along with a slew of engineers who mastered how to navigate near the pole, this flight was taking place.

And it went off like clockwork. Looking through the window and the eyepiece of the camera it was like a movie. The atmosphere almost too sterile. The sky around the corona was a deep blue. The eyepatch had enhanced my night vision, or so I thought, as it seemed bright in the cabin and out the windows. Through the lightly fogged window I could see the corona in a winged formation as expected during a time of low sun spot activity. Streams burst out from the equatorial regions (three prominent ones) and prominences danced at both sides of the moon. The view through the camera lens was magnificent and I snapped almost 100 photos during the two minutes and fifty five seconds of totality. Towards third contact I set a fast exposure and then looked without regard to the camera position as I snapped off one after another. I could see the shadow racing away underneath us, and a red ochre color in the clouds. It was magnificent and I wished I had a bigger and clearer window.

It was over again. Dang those things are just too short! Just under three minutes passed too quickly. This time it was different. I didn't feel the eclipse as much. Those that have stood under the shadow know what I'm talking about. The temperature is the most obvious as it drops. But there are other things like the shadow bands, the tension, the winds, the animals, the other people around you. That's really it. While you hear others near you the roar of the jet engine drowns out the clamor of a group of eclipse chasers. Cameras clicking, oohs and ahhs, curses and praises all combine to form a unique eclipse atmosphere that is missing when viewed from an airplane. For some that is more good than bad, not for me, I like the sounds of the group reaction. Now here is the key for anyone who wonders about this form of eclipse chasing. The clouds are below you. The sky is an inky black gradually changing to an iridescent blue at the horizon. The colors of sunset dance along the clouds at the horizon, it is a wonderful site and a great feeling to know that the weather is not a problem.

After the eclipse run the jet veered off towards the North Pole to view the ice pack, swing around twice at 6000' and then zoom back towards Germany.

It was a 12 and a half hour flight. A long time to be stuck in a long metal tube. Our pilots did a marvelous job and the flight crew was great. The only negatives were a few bad windows, the resultant reshuffling, some fogging, and those people from the polar side of the plane bumping into me as they tried to get a look.

Would I recommend such an adventure to see a total solar eclipse? Of course, but I must say that a land or sea based expedition is easier on the wallet, photographically, and provides a wider angle view. It was still a grand adventure to the North Pole and to see a total solar eclipse - in short sleeves and sandals too. I am grateful to be able to do these things and share the good times with others of a similar ilk.

Hope to see you sometime in the hunt for the shadow!

aboard the icebreaker Alexey Maryshev,

daily log by Tora Greve (SWE) traveling with Oceanwide Expeditions

Tora and the rest of the Scandinavian Eclipse Group boarded the Alexey Maryshev and set sail for the arctic in pursuit of the brief merging of the Sun and Moon. The arctic is known as one of the worst areas on Earth to have clear skies. Unfortunately they were not able to find a break in the fog in the eclipse path during totality, but they still had a good trip.

Pic 1: Alexey Maryshev in Bockfjorden – Ship Facts; built in Finland in 1990 and was used by the Russian Academy of Sciences. Contracted by Oceanwide Expeditions. Length: 66 meters,draft: 3.5 meters, top cruising speed: 12.5 knots.

Scandinavian Group

Back Row (l to r); Erik Johansson Tora, Siv Busin, Karl Palm and Göte Pettersson, Front Row (l to r); Iben Klemmed, Stina Busin, Fanny Sundquist and Tora Greve.

Wednesday 23 July. Copenhagen – Oslo. Overnight in Oslo.

Thursday 24 July. Oslo – Tromsö – Longyearbyen. Overnight in Longyearbyen.

Friday 25 July. All day in Longyearbyen, visited local museum, strolling around in the town of 2200 inhabitants. Afternoon, embarked aboard the ice going vessel *Aleksey Maryshev*. Lifeboat drill, heading north along Prins Karls Forland towards Kongsfjorden.

Saturday 26 July. First trip in zodiaks to Blomstrandhalvöya. We visited the marble quarry of Ernest Mansfield at New London. The marble melted on its way to the UK. We also did some bird watching, and saw a reindeer with calf passing by. After lunch we approached Ny-Ålesund, anchored in the fjord and went ashore in our zodiaks. Ny-Ålesund, a former coal mine, is a scientific society consisting of around 80 persons now. We visited the northernmost shop in the world, the post office, and the statue of the great Norwegian polar explorer Roald Amundsen. We also saw a remnant mast serving airships. We listened to a talk by Maarten Loonen, a Dutch scientist who studied Barnacle Geese, while his student walked the studied geese into town. (see Pic 2). We also saw a polar fox family living under one of the houses. When we returned to the *Maryshev*, we went further into Kongsfjorden to watch Kongsbreen close up.

Pic 2: Geese being walked

Pic 3: Little Auks

Sunday 27 July. We anchored outside Fuglesangen and went ashore in zodiaks. We began to get used to going in and out of zodiaks now. Then we walked up through lichen-covered boulders and small flowers finding crevasses to grow in, and found places to sit quietly and watch Little Auks on a close range (see Pic 3). We also saw a couple of Arctic foxes searching for birds and bird eggs. After lunch we went to Ytre Norsköya to visit the Dutch whaling station from the 17th and 18th centuries. After dinner we gathered on the zodiak deck to raise a toast in vodka on passing 80 degrees North in wonderful sunshine (see Pic 4). When Moffen island disappeared in fog, we saw something called a "fog bow" a whitish version of rainbow. I've seen many polar phenomena in my days, but never this one before.

Pic 4 – Vodka Glasses ready for a toast at 80d N

Pic 5 – Bear perusing dinner at the Arctic Turn nests

Monday 28 July. We went to the bottom of Bockfjorden to see the hot springs that is the only remains of volcanic activity on Svalbard. We walked (that is, climbed) up on the side moraine of Adolfbreen to see Sverrefjellet, which is an old volcano. Afterwards we went to Andöyane in Liefdefjorden, where we saw our first polar bear. We went close to him in our zodiaks, and watched him eat the contents of the nests on the island, while he was attacked by Arctic terns. (see Pic 5)

Pic 6: Monacobreen Glacier with lots of birds feeding in stream under it.

We then sailed to the bottom of Liefdefjorden and watched Monacobreen, an impressive glacier front. Lots of birds fed on the nutrients coming from the melt under the glacier (see Pic 6). Just when we had turned the ship to sail out again, and sat down for dinner, I cast a glance out the window and saw a bear swimming alongside of the ship just outside. At the same time the captain called out about it, and a lot of people ran out to see. Now the polar bears began to come very frequently. When I sat on the upper deck that night, just enjoying the sun and casting an eye now and then through the binoculars on the bears, two belugas suddenly appeared. There were also Harp seals, so first I thought the belugas were just big seals, but when they blew, we could really see they were big whales.

Tuesday 29 July. We had now come into Hinlopen Strait between West Spitsbergen and Nordaustlandet. We were cruising along Alkefjellet in our zodiaks. It was cold, wet and a constant bombardment from thousands of Brunnichs Guillemots and Kittywakes made this event not as amusing for a person not particularly interested in birds. It was however fascinating to see them packed on small shelves in the mountain wall. We also went on to Odinjökulen to watch the huge glacier (see pics 7, 8 & 9). After two hours in a zodiak in choppy sea, I said that the only bird I wanted to observe now was the coffee cuckoo, that's the Scandianavian name for coffee with strong liquor in it.

We then headed into Lomfjorden and bay of Faksevågen. I had now learned that the so called advanced trekking group here was like the leisure trekking group I usually attend, so I went up to the summit of Faksefjellet. On our way we met several reindeer. A lone reindeer was grazing almost on top of the mountain. We also saw lots of flowers. From the summit we could see the whole Lomfjorden and Hinlopen. There was also a big boulder balancing on almost nothing, probably left there by ice thousands of years ago. Well back on *Maryshev*, we had a grill party on hind deck. I had earlier learnt in Brazil how to eat a barbeque in a way that you can eat the

optimum of meat without getting too full. My own solar eclipse group has been training for barbeques all though the summer, like we always do.

Pic 7 & 8: Zodiaks take a closer look at Alkefjellet

Pic 9: Birds on a Shelf

Pic 10: Binne with cubs

Wednesday 30 July. We went ashore on a polar desert usually inhabited by walruses. The ruses were not at home, due to accumulated ice on the shore, but we found a dead polar bear cub. We strolled around the coast and studied its geology. After lunch we landed in a bay called Binnebukta, where at least I expected to see mother bears with cubs. The Norwegian word *Binnebukta* means *bay with mother bears*. We were not disappointed, however, we couldn't climb the mountain we had planned, because it was too close to the *binne* and her cubs. We tried to get closer to her in the zodiaks, but due to ice we returned to *Maryshev*. The *binne* and her cubs were very interested in the *Maryshev*, so they went as far out on the ice as they could to study us (see Pic 10). We could clearly see their noses moving back and forth.

Thursday 31 July. Now the polar bears became quite frequent. We sailed along the south coast of Nordaustlandet watching the longest glacier front in the northern hemisphere. Austfonna and Bråsvellbreen is about 190 km long. We also began to encounter walrus and seals. After lunch we came out into the open sea, which was choppy. We were now heading north into open polar sea. We spent the whole day in open sea, some in bed, some in the bar. This is a harsh environment.

Pic 11: Big Bear reflecting on himself

Pic 12: Dark line approaching

Friday 1 August. Eclipse day. I woke up to the sound of crunching ice. Our small icebreaker was chewing through the first belt of solid packed ice. We were in contact with our sister vessels, and repositioned our ship to the west side of Kvitöya. First contact was noticed in a partly overcast, but still quite clear sky. But we were outside the totality zone. *Maryshev* was still chewing at ice. Captain Pirozhinsky manoeuvred the ship cleverly through several ice sheets. We reached the totality zone around one quarter of an hour before totality, and were in quite clear water right then, so we continued north. High fog drifted before the sun, which could be seen now and then. Second contact appeared at 11.46 AM local time, which is Middle European summer time. We observed totality at 80 degrees 14 minutes 6 seconds North, 31 degrees 46 minutes 9 seconds East. The fog was so high that we could observe the dark line approaching us across the sea and ice (see Pic 12). During totality, the lanterns of the ship were lit. We could see the orange horizon (see Pic 13). The high glacier front of Kvitöya seemed eerily whitish through the darkness.

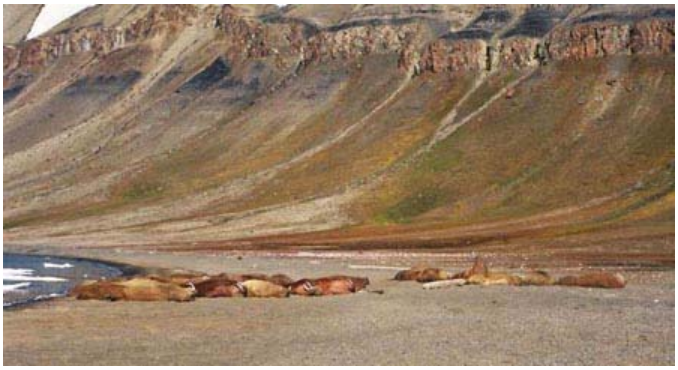
Pic 13: Totality on ship

Pic 14: Walruses on ice floe

Afterwards, we had to head south again. We knew what we had to struggle with on our way: Three ice belts were waiting for us. But then we encountered a big flock of walruses lying on different ice floes. There were big males and mothers with pups. We decided to go into the zodiaks and observe them on a close range (see Pic 14). Somehow one of them got irritated with one of the

zodiaks, went into the water and began chasing it. We all, that is, in the other zodiaks, just laughed at the panicked flight of that zodiak. But it was dangerous to have those fangs in a rubber boat. Then suddenly a whole flock of walruses went into the water and began chasing our zodiaks, so we all returned to *Maryshev*. Well on board, we were met with gluhwein on zodiak deck. The ship hurried southwards, passing astounded polar bears in the ice.

Saturday 2 August. My room was on third floor facing the front, so during the night I woke up several times, and could see how *Maryshev* chewed through the ice by throwing itself upon the ice and pressing it down into the water until it broke. It looked dangerous. Lots of polar bears appeared on the ice around us. The weather was beautiful. It was fantastic just to sit on upper deck watching the animals. Finally we reached Freemansundet, the strait between Barentsöya and Edgeöya. After lunch we zodiaked into a bay on Kapp Lee. A colony of male walruses was lying on the beach enjoying life (see Pic 15). On our walk in the area, we also encountered reindeer. The weather was now excellent, we watched mountains mirrored in the sea, a Bowhead whale and two Fin whales showed themselves and their blow.



Pic 15: Walruses on beach

Pic 16: Reindeer

Sunday 3 August. We were now met by fog, which turned out to have prevailed for several days in that part of Svalbard. After lunch we landed at Kapp Toscana at Ahlstrandshalvöya on the southwest coast of van Keulenfjorden. During the 1930's Beluga whales were hunted there. Now there is a modern cottage reminding us of the huts of the Norwegian Mountaineering Society. It was named *Bamsebu*, which actually means *dwelling of male bears*. But all the long nails and other contraptions showed that bears were not welcome in the hut. The so called advanced trekking group went uphill and we encountered a scattered flock of reindeer. (see Pic 16).

Monday 4 August. We reached Longyearbyen in the morning. The Scandinavian group stayed on a couple of days before going home.

Tuesday 5 August. The group going to Copenhagen succeeded in coming home in one day, but had to switch aeroplanes several times. The others took a day longer.

Eclipse in the High Arctic

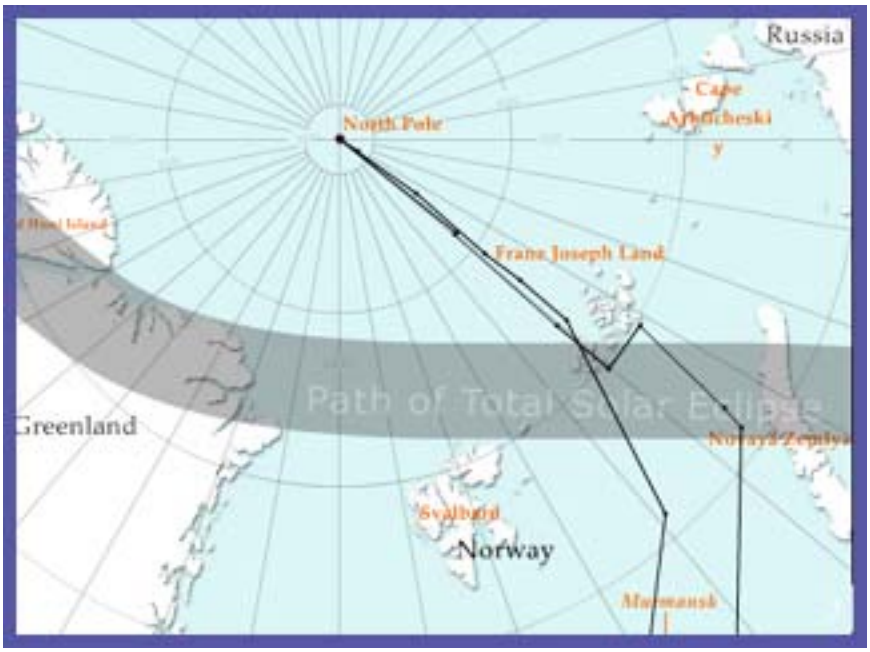
by David Speltz (USA), traveling with TravelQuest International

David posted a daily log as he travelled on a Russian Icebreaker. The log is rather lengthy to include the complete log here, so I include only a few highlights in this article, but I highly recommend that you visit David's web site to explore details about this excellent adventure, after you look over this article, just click on his name above to read his complete log.

Murmansk

20 Jul, 08 - 2100 utc – Entrance to Barents Sea

It appears our original plan of heading a beeline course for the Pole and returning via St. Joseph Land has changed. We are now heading to St. Joseph Land (less ice) and then sailing to the southwestern side of Novaya Zemla to minimize cloud cover and maximize totality for the eclipse. The ship is, for its size, one of, if not, the most powerful ship on earth, and certainly the most powerful icebreaker every built. It serves to keep the northern routes open in the winter for Russian shipping and for a short period during the summer, takes on travelers such as ourselves . . . We expect to encounter ice at about North 80 degrees. That is 11 degrees from us now, about 650 miles or at 24 knots in open water, sometime on Tuesday. From then it slows down.



Barents Sea, Monday

21 Jul, 08 – 2100 utc -75.3993N, 41.1331E - Temp 7C – Bearing 326 degrees – Speed 17.7 k/h

The temperature has been about 10C or 52 degrees F. The wind chill is something else since we are moving at 20 knots into a headwind. Today we did some "housekeeping chores," including fitting for special Arctic parkas and boots, and going through safety demonstrations. The latter included getting into the lifeboats and mostly taking pictures of each other sitting in very tight quarters. The lifeboats hold 60 persons and they are covered. We do not expect to need them, of course. We also prepared for our helicopter trips. We will be both viewing the landscape and landing on various land masses via helicopter to explore.

Also, another icebreaker happened by (in the middle of no-where) and the crews on both ships were happy as clams. The other I/B had not seen another ship in three weeks. It had traveled the Northeast Passage (Murmansk to the Bering Sea -- Alaska). The two ships circled each other hooting their horns. We are told there will be a krill fishing group as we approach St. Josef land around midnight tonight. It is highly unusual to see any other ships on any expedition in the Arctic. If we are up, there will be no problem seeing them, as the sun refuses to set although it does drop fairly close to the horizon at night.

Arctic Ocean and ice!

22 Jul, 08 – 2015 utc – 81.4323N, 51.5574E – Temp 4C - Heading: due north 14 k/h

We hit ice at Franz Josef Land and it feels like riding in the back of the bus. From now on, we are told, it will be similar to being in a permanent earthquake. The ship plows through the ice in a straight line and it is remarkable to watch. And this is just pancake ice (millions of ice pancakes up to 30 meters floating about). The pack ice is yet to come and that is more challenging. We met with the Russian captain today and I asked him how he has seen the ice change since he has been on icebreakers for the last 30 years. He hasn't. He says global warming has not affected the Arctic (yet).

Some of the naturalists on board will disagree with him, but he floats around here more than most anyone else. Go figure.

The change in the water when we hit the ice was dramatic. As we passed from the Barents Sea into the Arctic Ocean at St. Josef Land, around N 80 degrees, the ice appeared suddenly, the ship began rolling (and bouncing) over it, and the open water became still. The sky is overcast but with a glow in the west that is reflected in the still water. It was unreal and beautiful. As I write this the ice has become thicker and there are yellow jackets on the bow using up all their film. Or digital space, I guess.

we could have danced all night

23 Jul, 08 - 19:00 utc – 84.5189N, 51.83E - Temp 4C

About 4am this morning it was clear something had changed. The ship rumbling and bumping became noisier and more violent. We were in pack ice. It feels, as described earlier, like a permanent earthquake. As we watch the ice being broken up and pushed aside, the 'icecubes' are up to 6 feet thick and the size of a large car. Some are deep blue suggesting they are highly compressed with relatively little oxygen. As we approach 88 degrees tomorrow, 120 miles from the Pole, the ice will deepen significantly, slowing us down. Today we averaged 10-12 knots. We expect to arrive at the Pole tomorrow. There is a lottery for a free Coke for whomever picks the closest time of arrival.

Tonight the captain stopped the ship, the barbecue equipment was brought out, we donned our Arctic clothes and picnicked and danced on deck looking at the endless sea ice. It was crazy and hard to believe we were doing this in the Arctic wilderness so close to the North Pole.

Morning flight

24 Jul, 08 - 09:41 - 87.2167N, 55.0029E - Temp 1C

This morning the fog cleared early and we actually saw some sun behind the generally gray skies. The temperature was just above freezing but it now seems warm. We are acclimating to the cold. We are about 150 miles from the Pole, another 12-15 hours of sailing. However it was time to start up the helicopter and take a ride. We flew around the ship watching it crunch the ice (now 3-6 feet thick). Icebreakers are truly awesome machines.

Dateline northpole

25 Jul, 08 - 90.0000N, 50.0000E

We arrived at N90 degrees at 155am this morning shiptime. We made it!

A day on the North Pole icepack

25 Jul, 08 - 20:19 utc - 90.0000, ALL - Temp -3C degrees

At 156 AM last night we slowly passed over the geographic North Pole and then stopped. Everyone had assembled (in broad daylight) at 130am on the ship's bow as the count down started .... Five miles, four miles, one mile, 500 yards ... And then the ship's horn blasts away. There is a group picture taken from the bridge and the champagne flows. Then to bed for a few hours while the captain wedges the ship against an ice ridge to hold it firm for the next 18 hours since tomorrow we are going to play on the ice fields.

To our astonishment we are greeted this morning with a deep blue sky and just enough light fog to create a fog bow ... A rainbow of fog with red, yellow and blue was on display from one side of the bow to the opposite side. For the few of us who saw it, many pictures were taken. It is rare and beautiful.

The day started cold at -3C with the sun at 30 degrees above the horizon. In fact, all day the sun was at 30 degrees above the horizon. It goes in full circle. Behind the ship at 6am, in front of the ship at 6PM . . . The rest of the day included wandering the ice (although rifleman were spotted on the perimeters to protect from bears), photographing each other and the ice formations, a quick heli ride to view the ship encased in ice, , a barbecue, and in general just hanging. Some took a nap on the ice. We re-entered the ship nearly 8 hours later. The temperature hovered around freezing.

day after and six before

26 Jul, 08 -22:00 utc - 85.5900N, 51.3258E

Today, a day after the Pole and six before the eclipse, we head south toward Franz Joseph Land. It was hard to leave the Pole. Many of us were outside on the ice for nearly 8 hours exploring the ice ridges, the 'ponds' of pure blue water that stood on the surface of underlying sea ice, staring at the endless horizon, and not quite believing we were there. At 530P ship time the expedition leaders tried to herd us penguin like people into the ship. Most of us kept looking back at the ice as we moved to the ship, not wanting to leave.

From the time we parked the ship to the time we departed, the ice had drifted 3/4 mile south and east. You cannot plant a flag at the North Pole and expect it to remain. The ice drifts up to 5 km a day in clockwise motion . . . The captain is throwing a party with plenty of Russian vodka tonight. Off to the party.

WILCZEK ISLAND & CAPE TEGETTOFF

30 Jul, 08 - 16:08 utc - 79.5615N, 58.2047E

We woke to cold temperatures and high winds this morning. This is our last day of island exploration within Franz Josef Land's 75 islands. Ice covers 85% of the land mass spitting out little icebergs. All of us were to feel like little icebergs after roaming the islands today.

We spent the afternoon on Cape Tegetthoff (N 80 degrees 05.37 min, E 50 degrees 02.14 min). This island is stunning. The landscape on parts of Franz Josef Land has been described as akin to the USA's Monument Valley, with ice. Perhaps, but the rock formations, although quite beautiful, seemed miniture in size to similar formations in the great western parks of the USA. But the scale of the mountains, the rock formations, the green, orange and red moss, and the sea with icebergs parading by was superb. It continued to be quite windy (20+ knots) with the temperature about +1C or 34F. This was our last landing. Tonight we start the journey toward Novaya Zemlya and our eclipse site Friday.

In position for the eclipse

31 Jul, 08 - 13:55 utc - 76.1830N, 55.0914E

Steaming all night, we are at the target site for the eclipse-- under gray, overcast skies and 3 degrees C. But we have two things in our favor. First, the eclipse is tomorrow, Friday. Maybe it will clear. Second, we have a fast ship. Because of the ship which at full bore can move at 24 knots, we can chase holes in the clouds, provided they are within the path of totality. This is our fourth total eclipse.

Dr Damian, ship doctor, has been busy today. No longer in the ice, and with 20-30 knot winds, the seas are high with the ship listing 2-3 degrees port to starboard and back every 3 seconds or so. Keeping eyes on the horizon helps a great deal. The tour of the engine room and reactor in the bowels of the ship, though fascinating, was not the solution to seasickness. Walking on deck is better than a pill.

It is time to prepare for the eclipse. Perhaps the most important prep is preparing to open our minds to a total [eclipse] under clouds. We have a 35% chance of sun. Under clouds the Arctic will go totally dark. Maybe the birds will head south asap. There is not supposed to be night in the Arctic. We have no idea what to expect under cloud cover.

Eclipse Day in the High Arctic

1 Aug, 08 - 09:56 utc - 75.4543N, 54.4173E

It is eclipse day. For many, of no less importance than North Pole Day. For some who have never seen a total, they don't understand why the big deal.

5AM ship time, 0300 utc

At 5AM the sky was gray fog lay in the sea, and we were moving south at 7 knots. We were searching for the holy grail of a hole in the clouds. Seas had calmed a bit but there were heavy rollers. There must have been a storm south of us. If we find the magic hole, telescopes will be useless. The sun will fly into and out of the viewfinder. Today, binoculars are the best bet. Picture taking will have to be hand held as well, unless aimed at the sun worshipers.

7AM ship time, 0500 utc

We found the hole in the sky. There is a great deal of ground fog, but the sun is shining through it. If it remains that way, we will see the disk, prominences, and inner corona. The outer, wispy, outer corona will not be visible. Since the sun does not rise or set we cannot depend on it to burn off the fog.

9AM ship time, 0700 utc

We have ground fog and blue sky with mostly full sun. The hole in the sky is miles in diameter. The boys on the bridge have done a fine job positioning us. Let's hope it holds. The captain has raised the blue eclipse flag. He has been asked not to blow the horn during the eclipse. It is extremely loud if you are on deck (in fact, body shaking). And it interferes with the sensory rush going on. Same for flash on cameras. Black tape is required for everyone with an exposed flash, especially point and shoots. It becomes very dark at totality, about the brightness under a full moon. However, the few seconds before totality are bright so eyes take a moment to adjust. Flash blinds anyone near it, destroying night sight and the experience.

1055 AM ship time, 0855.07 utc
First contact! The moon is chomping on the sun. Pac man at work! But the sun is barely showing behind high cloudiness and deep gray clouds are racing over to us. 10 minutes go by and ship-board grumbling starts. Why aren't we moving to the clear hole in the sky that has moved miles south of us. Suddenly the ship races off. We are in open water and my GPS says we are doing 28 mph, the ship's maximum. It has risen to 50 degrees F.

1153AM ship time, 0953 utc
One minute to second contact. The sliver of a sun is visible behind the clouds. In fact, no protection is really needed and shadows are sharp as a tack. Colors have gone gray except for the sky which, if not behind clouds, is deep purple. This is our fourth eclipse and we have never heard such silence. We are not going to make it. This will be a cloud obscured eclipse. But the ship races forward literally chasing the sun and open skies.

15 seconds to go. Silence. Suddenly, the sky opens and there is full view of this tiny sliver of a sun. And then it disappears, but not behind clouds. It is behind the moon! The Bailey beads appear, then the diamond, and then the corona reaches out hundreds of thousands if not million of miles into black sky. Venus and Mercury appear doing their bit to entertain us. The horizon, its full circle, is colored red yellow, purple and orange. The sky is beautiful beyond imagination. Black to deep purple to the rainbow colored horizon. It has dropped 9 degrees to 41F.

The ship is full of screaming passengers and crew. The non-believers now understand.

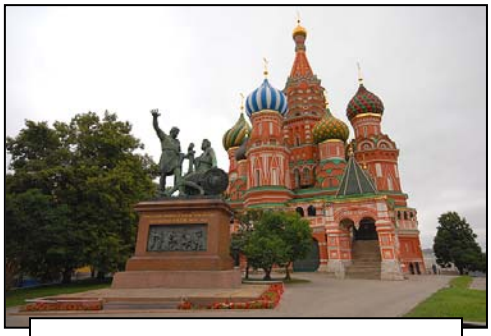
Back to Murmansk

2 Aug, 08 - 11:59 - 69.4677N, 34.4226E **-** Temp 17C - 60 miles to Murmansk
The sun sets at 1015P ship time and rises at 120AM! Our first sunset in two weeks! Today, I am uploading eclipse pictures taken yesterday by Rick Feinberg, the now retired and Emeritus Chief Editor of Sky and Telescope. Rick is still young however. He must be since he is moving into his new career of secondary school educator in astronomy. If not for Rick, we would have been clouded out yesterday. He made the call to chase the sun the last few minutes yesterday, in spite of a reluctant captain.

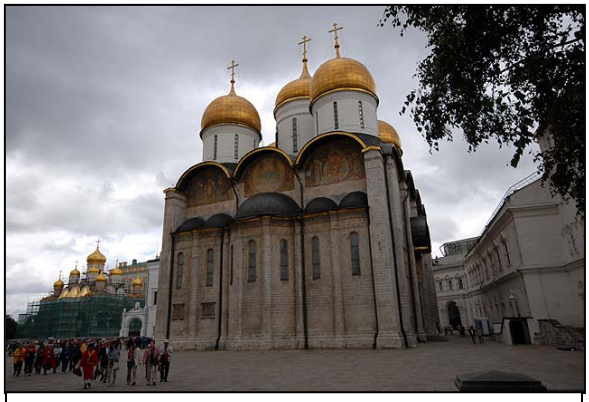
Novosibirsk and the Great Cities of Russia

Photo log from Ben Cooper (USA) traveling with ICSTARS / Astronomical Tours

I came across Ben's photos and immediately was envious of the great excursion he had visiting Moscow, St. Petersburg, Irkutsk, Lake Baikal, Morozovo, Ob Sea and of course Novosibirsk, with travel aboard the Trans-Siberian Railway and air flights. It was a very similar counterpart to my trip through China (see "*planes, trains & busses, our trip across China*"). The Hermitage is one of the greatest museums in the world, and Ben's photos shows much of its grandeur. In this article is a fraction of Ben's pictures from this trip, so be sure to visit his web site and see for yourself these fabulous locations, and Ben's other great shots of the space shuttles and other subjects.



St. Basil's Cathedral - Moscow

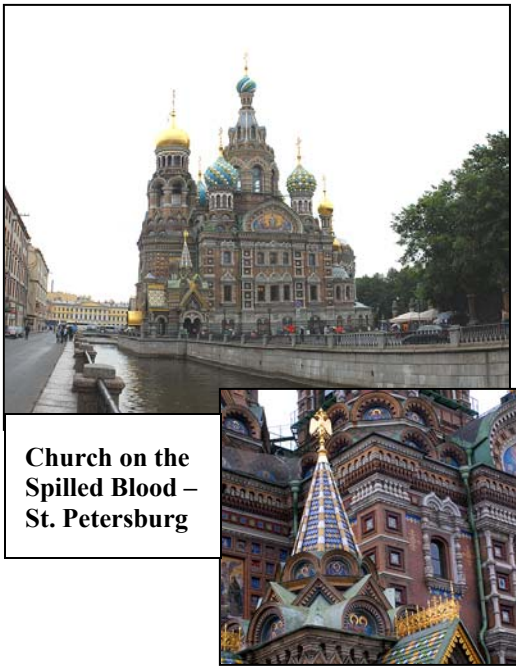


Cathedral of Dormition, Kremlin - Moscow

St. Petersburg

Hermitage - St. Petersburg

Palace Square - Hermitage - St. Petersburg



Church on the Spilled Blood – St. Petersburg

Eclipse Site at Ob Sea

Crescents on a T-shirt

Photos © Ben Cooper/LaunchPhotography.com

Traditional Dancers & Musicians at the Eclipse Site

Peter Paul Cathedral

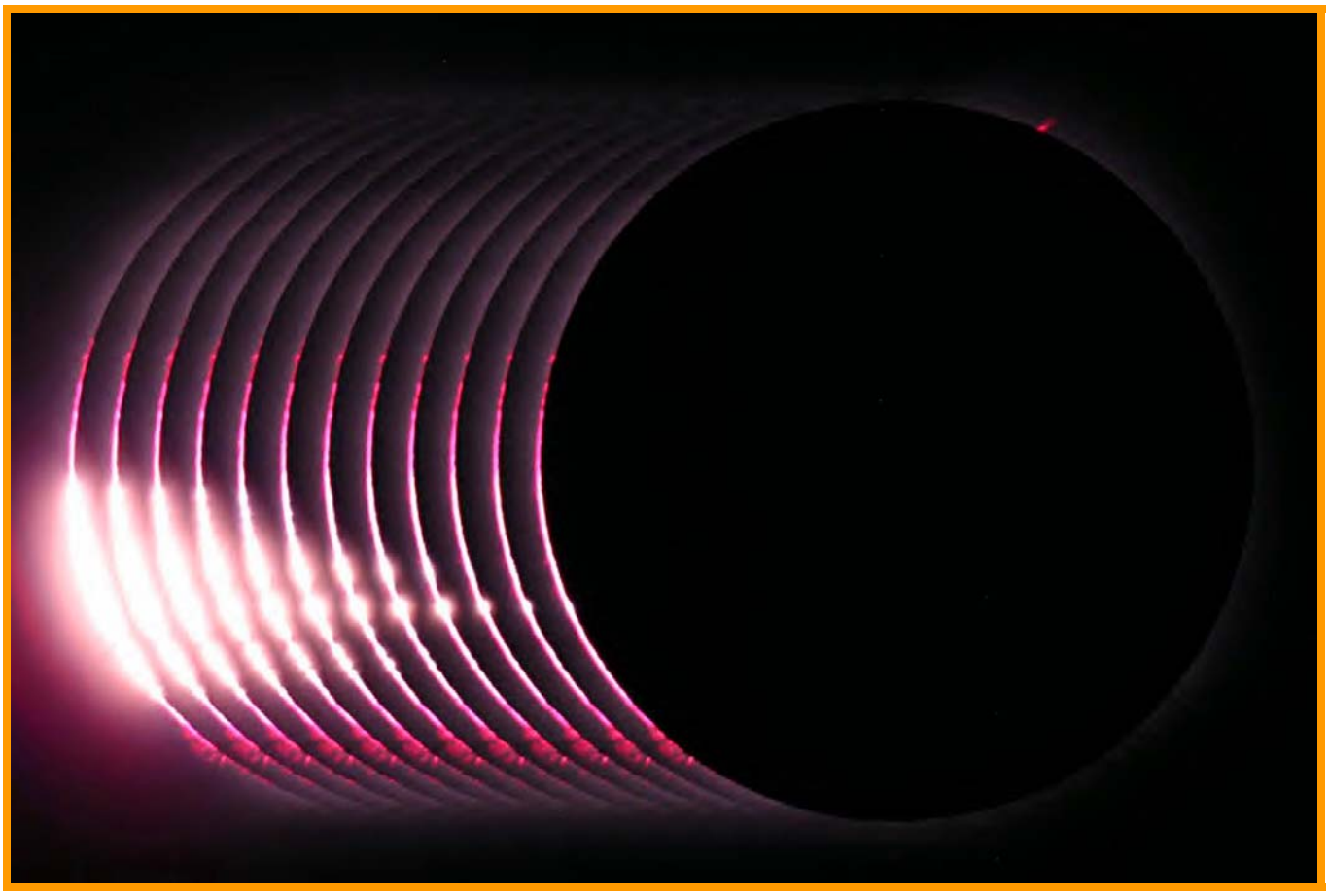
Ben is well known for his composite sequences of eclipses, this one was published in Astronomy Magazine, Nov 2008

Hermitage - Gold Room - St. Petersburg

Totality under a pristine sky

Baily's Beads Sequence from the Ob Sea near Novosibirsk

photo © Tunc Tezel (TUR) and used by permission



This 12 exposure sequence illustrates the very brief and fleeting Baily's Beads that were visible during the 5 seconds leading up to 2nd contact as seen from the Ob Sea near Novosibirsk, Russia. Photo © Tunç Tezel (TUR).

Photo Details: 8" Meade LX10 telescope, Canon EOS 5D camera at ISO 400, all 12 exposures at 1/2000 second each.

trek across Mongolia

by Fred Bruenjes (USA), traveling with ICSTARS / Astronomical Tours

Mongolia is such a unique and isolated country, and a trip here is special, and bathed in heritage and cultural richness.

Wednesday July 23, 2008 - Arrived in Mongolia

We arrived safe and sound with all bags in UlaanBataar today. We go back to the airport in a few hours to catch our onward flight

Thursday July 24, 2008 - UlaanBataar to Olgii

After only a couple hours of sleep we had a flight to Olgii in far western Mongolia on eznis airlines. It was a tiny plane, I had to take my shoes off to fit into the seat. We landed on the rough dirt strip at Olgii. We are now 12 time zones away from home. After changing money at the bank, we toured the fascinating provincial museum, cleaned up, and headed south. Our destination was an eagle trainer and his family - whom are nomadic and so we had to ask around the valley to see where he was.

Friday July 25, 2008 - Eagle Trainer & Family

Today we had a fantastic day with the Kazakh eagle trainer, first inside his ger (yurt) home where we got to know each other and heard about customs and traditions. Then we headed outside for a demonstration of how to handle the eagle and how it hunts. This two year old

Fred Bruenjes getting a handout

eagle won a medal in a competition - it was the only eagle out of 60 entrants to catch a **wolf**! We had great fun with the family, this will be one of the highlights of the trip we remember forever.

Unfortunately my brand new Sandisk Ducati 8GB CF card failed unreadable and so I only have pictures from my backup camera to show. Hopefully I can recover the photos off the bad card when I get home, but it doesn't look good.

Bronze age deer stones

Saturday July 26, 2008 - Somewhere between Olgii and Hovd

Today we drove from the eagle trainer's house southward towards Hovd. We curved through mountain passes and valleys and camped on a hillside overlooking a large valley.

Monday July 28, 2008 - Hovd to Manhan (Blue) Cave

The Mongolians practice a style of Tibetan Bhuddism >

Friday, August 1, 2008 - Eclipse Day

SUCCESS!!!

We had a fantastic view of totality from our lakeside observing site. There were a few puffy clouds on the horizon which gave us a great view of the approaching and receding shadow. Our equipment worked very well.

Baily's Beads at 2nd contact / Totality / Baily's Beads at 3rd contact

Saturday, August 2, 2008 - Bulgan Eclipse Camp to Most

The bridge we were planning to take over a river was washed out, so we had to make a fairly significant reroute. On our detour, we encountered another road block - a large truck broken down in the middle of a one lane road on the side of a mountain. Since it was lunch time, we stopped and relaxed and had a very peaceful break. They still hadn't fixed the truck by the time lunch was over so we had to detour along the riverbank.

Jen Winter takes a turn cranking the handle to pump gasoline

In the evening we revisited a Mongolian family we had met on the way down. They thanked us for the eclipse viewing glasses we had given them and reported seeing about one minute of totality. Like eclipse chasers the world over, talk was of the effects on animals, the temperature drop, and how people reacted to the otherworldly experience. It was a magical time and we grew to like them very much.

Sunday, August 3, 2008 - Most to Hovd

Today we retraced our route back up towards Hovd. The rough washboard roads turn to smooth asphalt a mile or two outside Hovd. We went the whole trip without a flat tire, and amazingly within a mile of getting onto the asphalt one of our cars got a flat and two of them ran out of gas - within sight of the gas station! It was high adventure today! We re-supplied in Hovd and some folks went shopping in the market.

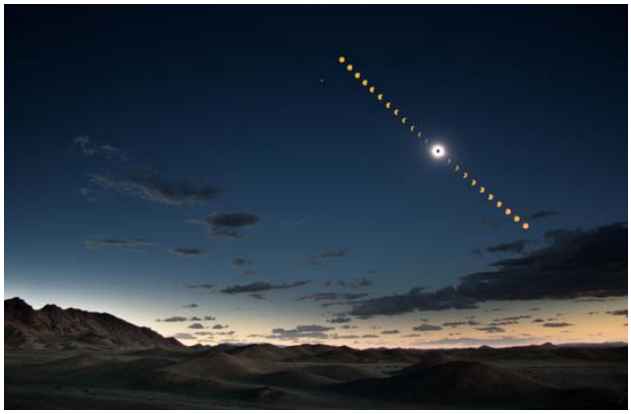
Cultural Festival

Photos © Fred Bruenjes

. . . <u>also in Mongolia</u> . . .
<u>with eclipse photos from</u> Geoff Sims

Geoff travelled with a small group into Mongolia in order to record over 2 minutes of totality. Their location was very isolated in retrospect to those at Eclipse City in China, just a few kilometres away

All photos © by Geoff Sims and used with permission



The image on the left, which graces this month's cover, comes from Geoff Sims as viewed from south-western Mongolia, very close to the Chinese border. At our site, Totality lasted 2m01.4s. Mercury & Venus can also be seen in the photograph.

How did he do it? The photo is a digital composite, taken with a Canon 400D & 17mm lens set at f/4, ISO 100. The exposures are as follows: Partial Phases: 1/1000s (before Totality), 1/500s (after Totality) with Baadar Solar Filter. Totality: Sky - 1 second, Land - 4 seconds, for a total of 24 separate frames. Did you notice? The tail end of the eclipse is missing due to clouds that moved in for the last few minutes. Used with permission and © Geoff Sims.

. . . last and foremost, in Mongolia Eclipse photos

by Miloslav Drukmuller (CZE)

Miloslav's photographs of eclipses has revolutionized eclipse photography and has turned it up on its head. The amazing detail that his work brings out in these photos, and all accomplished with small and affordable off the shelf lenses and cameras, are enhanced through photo software in various forms, including sophisticated programs developed by Miloslav and his daughter Hana.

I observed the total solar eclipse of August 1, 2008 in South-Western Mongolia (N45d 43.251m E92d 06.847m) as a member of the international expedition organized by Vojtech Rušin from Slovakia. The expedition to South-Western Mongolia was a part of the Shadow-tracking expedition project, which was organized by me and my daughter Hana at Faculty of Mechanical Engineering, Brno University of Technology, Czech Republic. The goal of the "Shadow-tracking expeditions" project is to obtain observing data from various places during the total solar eclipse which enable to study changes in the solar corona. The second observing place was near Novosibirsk in Russia. The observing conditions on both observing places were excellent.

The first results of the Shadow-tracking expedition to Mongolia, which observed from Bor Udzuur in Gobi desert.

Corona up to 5 solar radii

About 300 images were used for the creation of this image. 22 images were taken during the eclipse, all others were calibration images (dark frames, flat-field images) taken immediately after the eclipse. Canon EOS 350D digital camera was equipped with my old well-tried Russian Maksutov-Cassegrain 6.3/500 mm. The focal length of 500 mm is equivalent to 800 mm for a full-frame camera. The position of the Moon represents the situation 62 seconds after the second contact i. e. 11:04:37 UT (18:04:37 local time). The display of the solar corona, lunar surface and stars in the resulting image are highly beyond the ability of human vision during the eclipse. The weakest stars visible in the image are of about magnitude 10.

Solar corona, Earth-lit Moon and stars

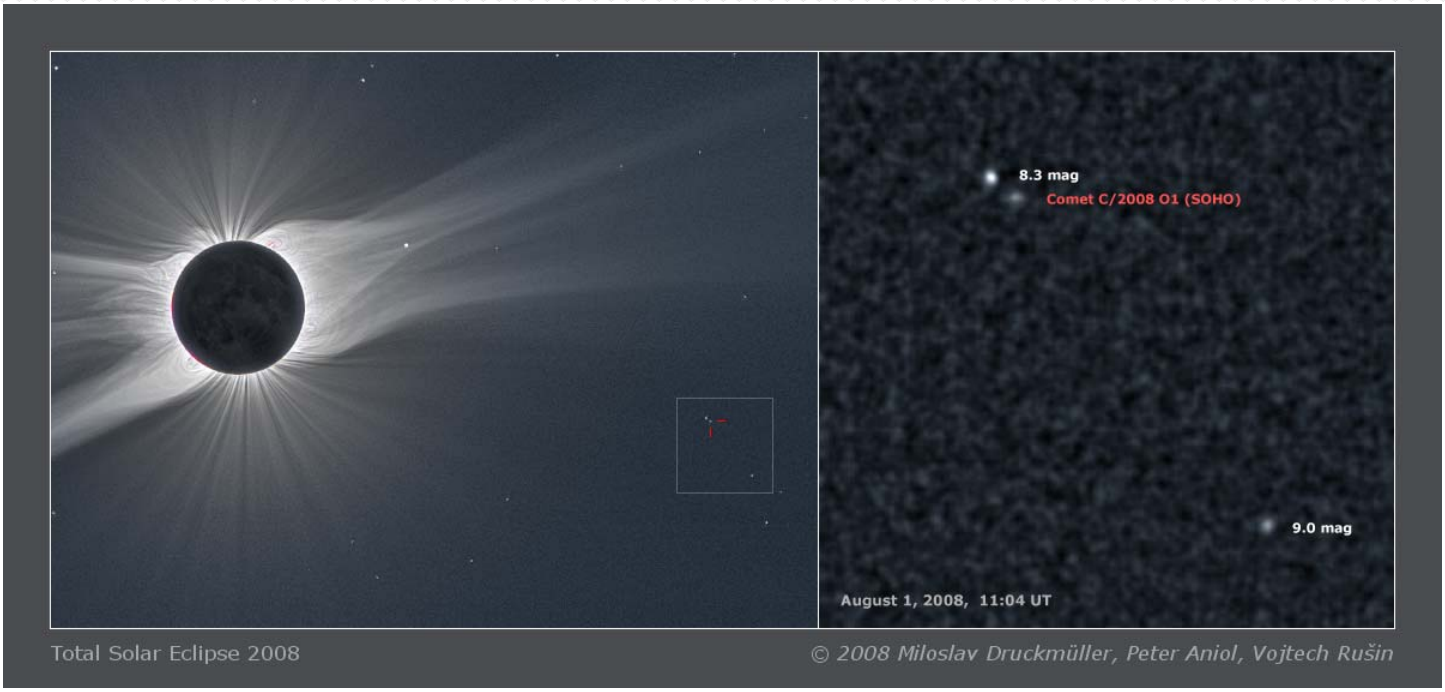
It is a composition of 23 images taken with Canon EOS 5D using Rubinar 10/1000mm (modified Maksutov - Cassegrain). Even though the Sun was only 22° above the horizon, the observing conditions were surprisingly absolutely fantastic. It made possible to visualize not only the solar corona in very high resolution but also the Earth-lit Moon and stars up to 11 magnitude. The brightest star (4 magn.) is slightly blurred by the motion of the Sun during the eclipse. The blurring is not visible on weaker stars because they were recorded only on the longest exposures which were taken in the short time interval near the mid-eclipse. The position of the Moon represents the situation 54 seconds after the second contact i. e. 11:04:29 UT (18:04:29 local time). Both the display of the solar corona and the lunar surface in the resulting image are beyond the ability of human vision during the eclipse.

Praesepae, Mercury, Moon, Comet and Corona up to 20 solar radii

When I finished the wide-angle image of the 2006 eclipse which I made from data taken in Libya, I was sure that I have no chance to surpass this image at least until the 2009 eclipse. The observing conditions in the Libyan desert were excellent during the 2006 eclipse and the altitude of the Sun above the horizon was 62°. On the contrary, the weather prospects for the 2008 eclipse were far from to be perfect and above all, the Sun was very low - only 22° above the horizon in the Mongolian desert. Another negative factor was the length of the total eclipse - only 2 minutes. That is why the image presented on this page is highly over my wildest dreams.

Comet C/2008 O1 (SOHO) is another interesting object which is visible in the image. This object belongs to the Kreutz family of sungrazing comets (Kreutz group I). The identification of the C/2008 O1 comet had been somehow uncertain until I identified the comet in images taken by our second expedition group in Russia. Comparison of our images and images taken 19 minutes before showed the fast movement of the comet. [Can't find the comet in this image, check out the next page for higher magnification on this photo – Editor]

It is possible to identify at least 456 stars in the original full resolution image. The open cluster M 44 Praesepae (NGC 2632) dominates the star field. The bright object in the left part of the image is Mercury. The solar corona is traceable up to the distance of 20 solar radii.



Comet C/2008 O1 (SOHO) from Wide Angle Shot

The box to the lower right in the left image is enlarged in the righthand image to show Comet C/2008 O1, and is fainter than the 9th magnitude star to its lower right in the enlarged image. Certainly NOT the naked eye comet that individuals were hoping for during totality, at least 6 magnitudes fainter than possible with the naked eye during a total solar eclipse. (Editor)

Miloslav has recently added more images, some at higher magnification than those shown here, and additional images taken from near Novosibirsk, Russia, by Hana Druckmullerova. Please use the link at the top of this selection to see these.

planes, trains & busses, our trek across China

by larry stevens (USA), traveling with Journey's International

Our flight to Beijing was direct from Chicago, and actually took us over Canada, and well north of Alaska before heading back south over Russia and Mongolia. Polar pack ice was visible for a brief time north of the Bearing Sea as clouds prevailed for much of the flight above the Arctic Ocean and even over the land masses. At no time did the Sun set, it was daylight for the entire 13½ hour flight.

We landed at the new massive international terminal at the Beijing Airport. Our trip with Journey's International came together with other individuals that were either starting their trips when we were, or had already begun their trips with pre-extensions, and others that would have post-extensions, but for 2 weeks we would be as one group all working together. We were 17 individuals and couples, and 3 couples were bona fide eclipse chasers. Ray (11) and Dori (10), fellow SEML & SEC members & attendees, and Marcia (6) and Roger (5), and myself (8) and Michelle (3). Will Weber had also seen one eclipse before in 2006, but a bona-fide eclipse chaser needs to have at least 2 eclipse oar at least eclipse attempts, made, and this would then make 2 for Will.

We all came together in Beijing, a city just 3 weeks away from the start of the summer Olympics. In preparation for the Olympics, the leftmost lanes of all the freeways were reserved exclusively for use by IOC members, and traffic was also reduced to half its normal amount by imposing a temporary regulation allowing cars with license plates ending in even numbers to be used only every other day, and the odd numbers on the next day (taxi cabs, busses and delivery trucks excluded). It still did not help the smog as we did not see even hints of blue skies until 10 days later when we were in the western half of China on our way to the eclipse region. In most cities, at least in eastern China, the Sun would disappear at least an hour or more before sunset. Local forecasts called it fog, but I know fog, and it was not fog.

Even when we visited Tiananmen Square, signs just one city block away, things appeared as in a haze. The next day we visited the Great Wall, and it disappeared into the haze, yet we were told that this was much better than it had been in the not too distant past. They were working hard to attempt to get it under control for the 2008 Olympics. Most of my photos I have adjusted the contrast and saturation on using Photoshop in order to make the photos more viewable, but to be fair I often do that to my photos anyway, just not as much as was needed for some of these photos. Not just Beijing was like this, but most cities we visited were the same. It is true that humidity can add to the haze, but this humidity came as a result of the smog.

We were in China for two weeks, and traveled across much of northern China to see some of the popular ancient relics, some not nearly as old, and others brand spanking new. We visited Tiananmen Square, the largest square in the world, at one end the Chairman Mao Memorial Hall where Mao's body lays for all to see (we did not take advantage of this), and at the other end the entrance to the Forbidden City. As with most tours however, there is just not much time to see everything, and you only hope you can get a sense of the location. In the Forbidden City with 998 existing structures, the impression you take with you is the repetition of structures you pass though to get to the center where the emperor would hold court, It was a great building, separated by a

courtyard, followed by another great building, and another large courtyard, with another great building followed by another large courtyard and . . . OK, you get it!

The Great Wall (pic) was difficult to see very far up the mountainous area due to the smog, however when we returned to Beijing on our last day before our return flight out the next day, and the weather had cleared out much of the smog, and the wall was visible in the distance. Of course what still exists of the Great Wall today is what has been rebuilt. Five of us climbed to the highest point of the west end of the wall near Beijing, where we were at the end of the reconstructed portion, where it was forbidden to continue because of unsafe conditions. The Great Wall is also unofficially known as the longest cemetery in the world, and is estimated that 2 to 3 million people died, and were buried in the wall as it was built. On our way back from the Great Wall we slowly drove past the primary Olympic area and saw the Birds Net stadium (pic), the Water Cube and the Olympic Village, an example of the most modern structures in China today.

We continued on to the Yungang Grottoes, where cave sculptures were created over 1600 years ago. Buddha's from 3/4-inch in size up to 56-feet in height. Then in the Jinlong Valley we visited the Hanging Temple of Wutaishan. On to Pingyao, a city that originated 2700 years ago, and today is still surrounded by original Ming Dynasty walls. Today it is filled with shops, restaurants, hotels and museums.

Leaving Pingyao was a trip itself. Although there were only 17 of us, because this was a solar eclipse trip, we had extra luggage. And since Pingyao is usually a short 4 minute stop for the train, we had to load 64 bags, post haste, and hop aboard before the train pulled away. As a group that were determined to do anything to get to the eclipse with everything intact, we did this with great speed and time to spare.

We arrived in Xian the next morning, and we were graced with looking upon the progress of the reconstruction of the famed Terra Cotta Warriors. The army of pottery statues where once some 8,000 may have stood surrounding the Emperors tomb, is one of the most remarkable wonders of the world. Today they are in 3 individual buildings.

We were then off to Dunhang, where just outside the city we visited the Crescent [Moon] Lake, an oasis on the edge of the desert, where you can climb up the dunes, ride a camel or sled down a dune, and even entering the desert, all for a price, Nearby we visited the Mogao Caves, nearly 500 displays of Buddhist religion, including an awesome reclining Buddha. The unfortunate part is that they did not allow cameras inside to record the 1700+ year old statues and artwork that covers the walls, but understandable to help preserve the old frescoes from repeated flash photography.

Our trip to Hami was closely regulated from our checkpoints as we entered the Autonomous Region. Hami is a city that usually does not get western tourists very often, but the famed Hami melon was fabulous. I had several different varieties on our trip, the one that was quite interesting was one that was orange like cantaloupe, but had the crunch and taste of watermelon, but absolutely no seeds (perhaps it had seeds like cantaloupe, and easily discarded).

Our trip to the eclipse site started very slowly as we climbed the mountains with a bus having overheating problems. On the way we had to go through a couple of security stops where all our passports were checked. On every bridge, no matter how small or large, between Hami and Eclipse

City near Yiwu, there were one or two guards posted, and there must easily have been over 100. Eclipse City's celebrations had already ended by the time we arrived, with lots of time to set up equipment and look over the building that they built there. The astroturf added nice color contrast to the blue skies that was behind the hall. There were dozens of busses, and I can only estimate that there were at least 2000 people viewing the eclipse from Eclipse City, and perhaps more.

After the eclipse (look to pages 36 and 37 to see the eclipse retrospective), we proceeded to Urumqi in a bus that was still suffering from overheating as the driver would throw buckets of water on the engine at at least one particular stop, and the temperature inside hit 101°F as running the air conditioning would certainly overload the engine. At a lunch stop this however was corrected. In one of the lowest locations on Earth, we saw hundreds of structures built to dry grapes into raisons, and also hundreds of wind generators. Our guide claimed there were about 500, but to me it looked closer to 1000, and we saw dozens of new ones going up as we drove for kilometer after kilometer after kilometer of these energy giants in the valley between the mountains.

We returned to Beijing, and some were headed to other locations to continue their trips to Tibet, or Shanghai, and some were headed home. After having exclusively Chinese dishes, a few of us decided to go to Hard Rock Café, where we found an excellent reprieve and western food again gave us a taste for home, quite literally.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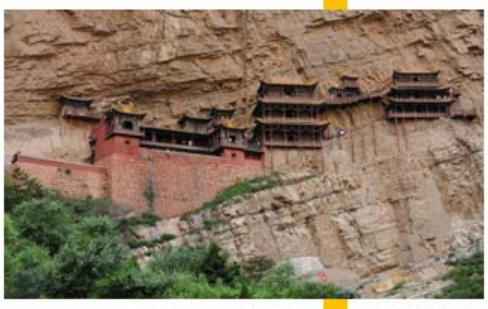
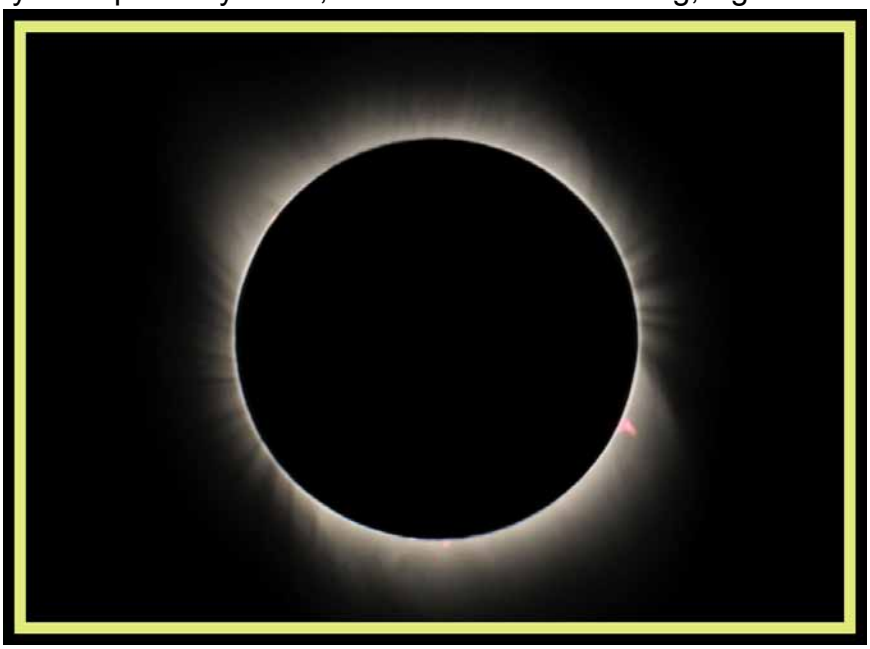
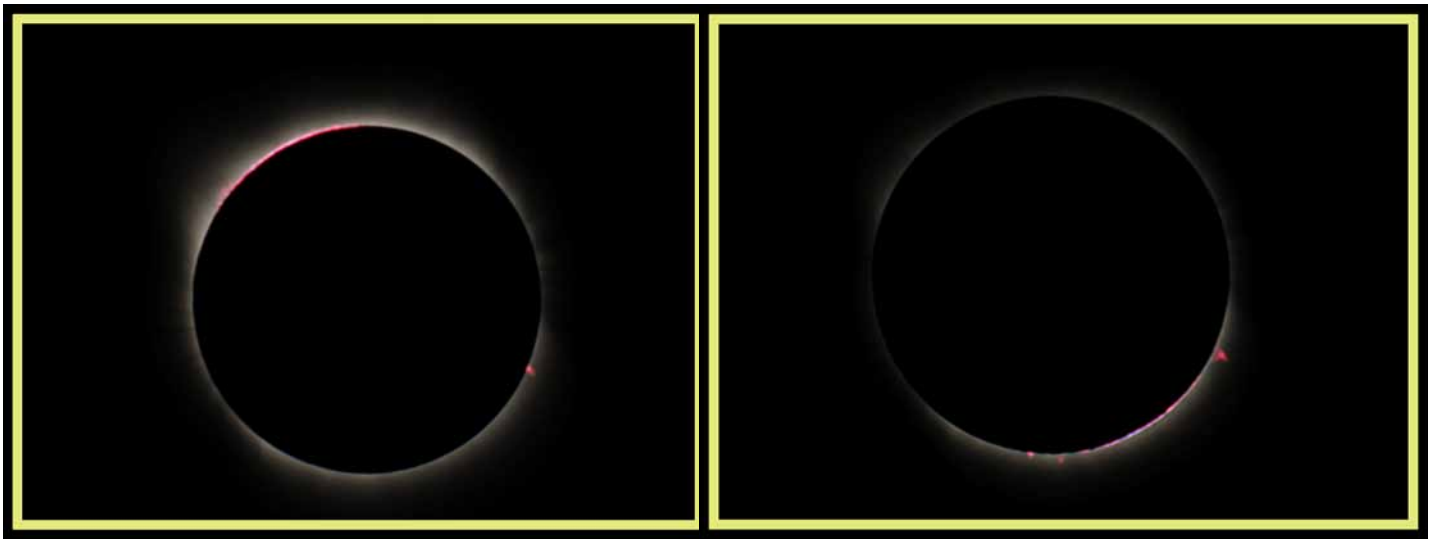


ECLIPSE CITY in China

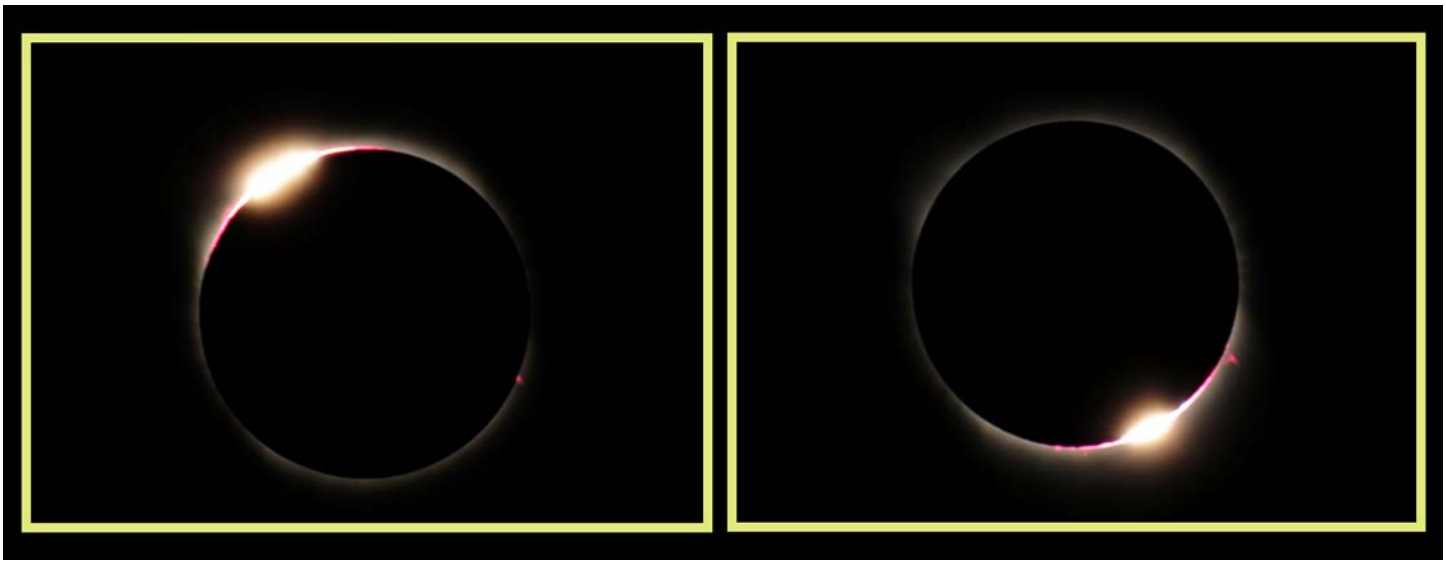
Clouds threatened totality at the viewing location at the Eclipse City location at Weizixia in Xinjiang provience, China, not far from Yiwu. Two-thirds of the sky was perfectly clear, the two thirds to the northeast, but the Sun was in the southwest, a few degrees below the cloud line. The temperature of the day topped out at 100°F, and as the Moon progressed in front of the Sun, the temperature dropped, but only slightly here in the desert. Clouds continued to move across the face of the Sun. Only a minute or so before totality began, the clouds moved out from in front of the crescent disk. The diamond ring was quickly upon us, but there was a lack of distinct and prolonged Baily's Beads. Totality came and the corona was beautiful. Mercury was only a few degrees from the Suns obscured disk and Jupiter was also obvious several degrees eastward as well. Totality went by very quickly, as a nice prominence revealed itself between the pole and the equator, extended some 100,000 kilometers above the Solar surface. Third contact came, and jumped right to the Diamond Ring, again a lack of Baily's Beads, at least from this location. Another cloud was poised to transit in front of the Sun, which it did, less than a minute after totality ended, the timing was impeccable. As far as I know, everyone at Eclipse City was able to view all of totality, but it was very close indeed to being obscured by clouds at just the wrong time, and perhaps totality helped to dissolve the size of the clouds to a smaller size. The temperature recovered only 5°F to 95°F, but the Sun was getting lower in the sky, and was eclipsed by clouds.



This however keeps my personal success rate at 8 for 8, for total eclipses, 10 for 10 if you count the broken ring and annular eclipses of 1984 and 1994 respectively.



Immediately after 2nd contact (above left), and just before 3rd contact (above right), the chromosphere, the lowest layers just above the solar surface, can be seen in each of these two pictures.
Just before 2nd contact (below, left) and just after 3rd contact (below, right)
Photos were made with C90 and a Nikon D300, exposure times 1/125 sec.



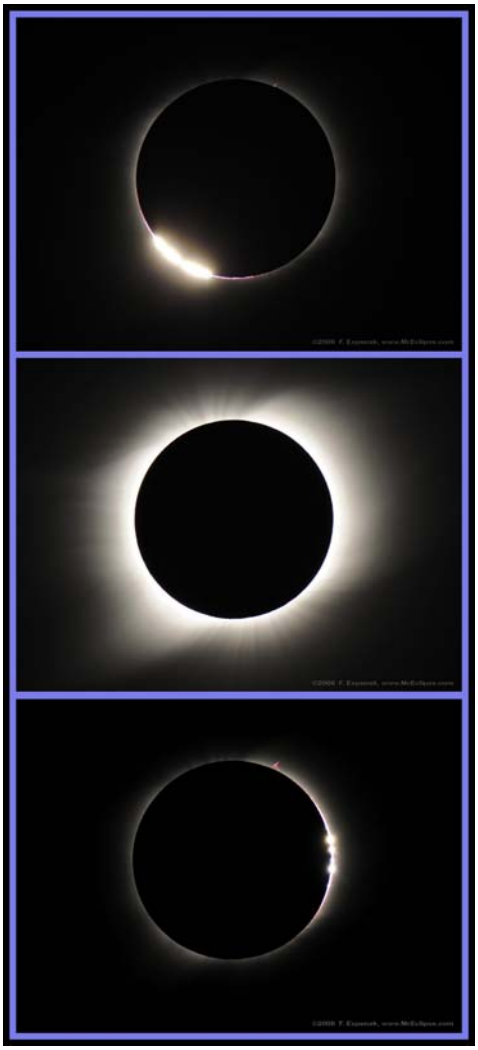
Clouds bear down on the disk of the Sun seconds after 3rd contact, exposure was 1/60th sec.

Jinta, China photos by Fred Espenak (USA), traveling with Spears Travel

Spears Travel Group viewed the eclipse just outside of Jinta, China, with 62 tour member and tour guides

Fred poses with his equipment (above) that he brought to China

Fred Espenak viewed the eclipse near Jinta, China. The sequence of photos here shows Baily's beads just before 2nd contact and just after 3rd contact, in addition to the middle corona during totality.



Fred seen as he is watching the eclipse

Eclipse Specialty Tour Group Web Sites . . .

Eclipse City
http://www.eclipse-city.com/
Far Horizons
http://www.farhorizon.com/2006-solar-eclipse.htm
Mayhugh Travel – Astronomy Vacations
http://astronomyvacations.com/
MWT Associates (Astronomical Tours)
http://www.melitatrips.com/
Ring of Fire Expeditions
http://www.eclipsetours.com
Sirius Travel
http://www.siriustravel.com/
Sita World Tours - Solar Eclipse Tours
http://www.eclipsetours.net/
Spears Travel
http://www.spearstravel.com/astronomy/
TravelQuest International
http://www.tq-international.com/index.htm
Travel Wizard
http://www.travelwizardtravel.com/astro.htm
Winco Eclipse Tours, Inc.
http://www.wincoeclipsetours.com

Other Useful Eclipse Web Sites . . .

NASA Eclipse Home Page
http://eclipse.gsfc.nasa.gov/eclipse.html
Fred Espenak's Web Site
http://www.mreclipse.com/
Jay Anderson – Eclipse Weather Predictions
http://home.cc.umanitoba.ca/~jander/
Xavier Jubier's Google Earth Eclipse Maps
http://xjubier.free.fr/en/site_pages/SolarEclipsesGoogleMaps.html
IAU Solar Eclipse Working Group
http://www.eclipses.info/
Jay Pasachoff – Past Eclipse Expeditions
http://www.williams.edu/Astronomy/eclipse/
Sheridan Williams' Web Site
http://www.clock-tower.com/
Eclipses Online – HMNAO, CCLRC
http://www.eclipse.org.uk/
Glenn Schneider: Umbraphile
http://nicmosis.as.arizona.edu:8000/UMBRAPHILLIA.html
Bill Kramer's – Eclipse Chaser's Site
http://www.eclipse-chasers.com
Bill Kramer's – Where Are the Eclipse Chasers
http://www.eclipse-chasers.com/where.htm
Dan McGlaun's – Eclipse2017.org
http://www.eclipse2017.org/

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Some future issues will occasionally use photos that have been posted to web sites that are saved at 72 dpi, and likely will not be as sharp as others posted at 128 dpi.

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