

Place: Arden
Community Club
Hall Rd
Arden, WA



Time 7:00 PM
Third Tuesday
April - September
6:00 PM October -
March & August

The Panorama Prospector

November 2017

Panorama Gem and Mineral Club Minutes October 17, 2017

by Anni Sebright

Vice President Bob Bristow opened the meeting. Janice and Bruce Hurley were in the throes of becoming grand-parents at meeting time. Congratulations Hurleys!

Our Winter meeting time of 6 P.M. seemed a good fit for many members. Guests Krisanne Grey, Brian Fahey and Jay and Rene Holaday were welcomed.

Filling an opening for President is remaining a challenge for the nominating committee. Bob Bristow has consented to remain Vice President. Sheilah Stratton has accepted the nomination for Secretary and Dennis Gibbens accepted a nomination for the Trustee position currently held by Gene Fisher. November 21st will be the official election, so there's still time for considering a position. The new officers will begin their term in December.

Bill Allen will be our auctioneer for the November scholarship auction. Donations for auction items are still being accepted. All auction monies go to the scholarship fund so bring checkbooks, piggy banks and folding money.

Thank you to the members with surnames beginning with "B" and "C" for being snack providers for the October meeting. November snacks will be provided by those members with last names beginning with "D," "E" and "F." December, of course, is our potluck dinner Christmas gathering.

Luci Bristow volunteered to talk to scholarship recipients maybe coming to our meeting so we can meet them.

It's not too early to be thinking about our rock show. We'll be selecting a theme and asking for volunteers for before, during and after the show.

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Geology Snapshots - Hwy 395 from Arden to Deer Park

by Sharon Borgford

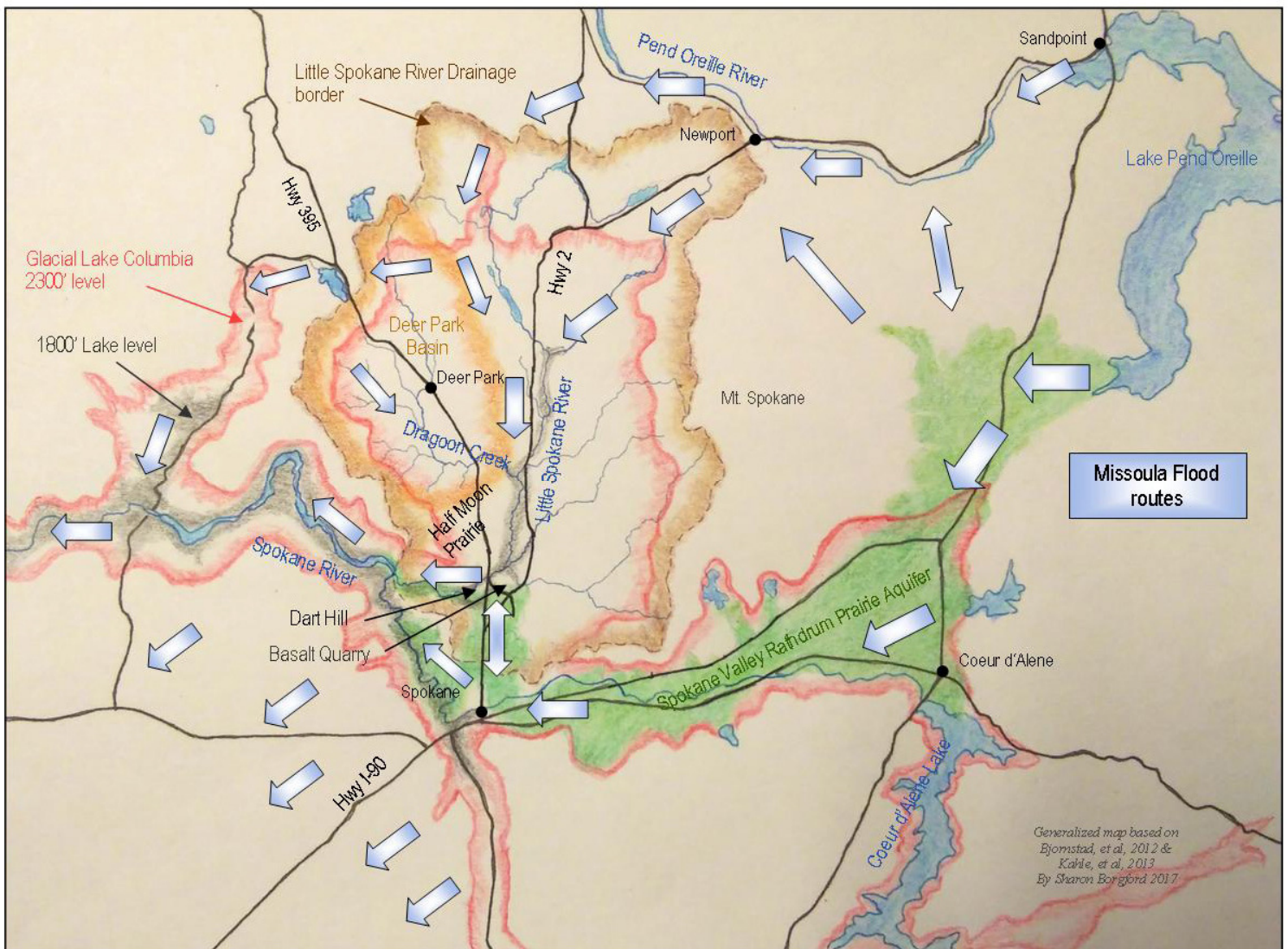
PART 11 Dagoon Creek to Wandermere

Traveling south from the dune field where we ended Part 10, the highway slightly descends and crosses Dagoon Creek. Here we are crossing it as it flows eastward to join the Little Spokane River near Chattaroy. You can tell by the wideness of the channel that much more water flowed through it at a previous time.



The highway leaves the Dagoon channel and ascends to a long, flat area known as Half Moon Prairie. The north side of the prairie drains into Dagoon Creek, and the south and east edges drain into the Little Spokane River, so we are leaving the "Deer Park Basin" portion of the Little Spokane River drainage system as we cross it. It consists of a 300-500 foot depth of glacial lake and flood water deposits over basalt bedrock with a layer of ash and loess on top that provides good quality farm land.

Granite bedrock briefly outcrops at the south end of Half Moon Prairie in the road cut east of the highway, and stretching ahead of you are huge deposits of sand and gravel that continue all the way into the city of Spokane.



Just south of the Hatch road exit on the west side of the highway is a portion of the deposit that has been quarried so that the deposit layers are visible:

For the "rest of the story" it will be helpful to refer to the map. Elevations vary slightly in the numerous writings about the lake levels and time frames, so we will follow those published by Bjornstad & Kiver, 2012.

The popular maps available show the recent glaciers and glacial lakes at their maximum. The arms of ice that funneled down the major rivers did not always advance and retreat simultaneously, so this makes it hard to determine exact sequences and timing of glacial events in northern Washington. When the glaciers were at less than their full extent, the Missoula Flood waters could follow a northern escape route in addition to the main Rathdrum Prairie channel.

The highest level of Lake Columbia that remained for a long time was about 2300 ft., while the Okanogan Lobe blocked the Columbia River northwest of the Grand Coulee Dam. This level was maintained by the spillover elevations at the head of the Grand Coulee and the 2400 ft. divide divide west of Spokane and spilled southwest

Bill Allen was the lucky door prize winner for October.

A presentation on Moon Rocks by Bob Bristow was enjoyed by all.

Bev Bockman's night vision has halted her driving to meetings from Post Falls to Arden. She and Bob will continue their membership, but they will certainly be missed.

Remember our 6 P.M. meeting time on Tuesday, November 21st.

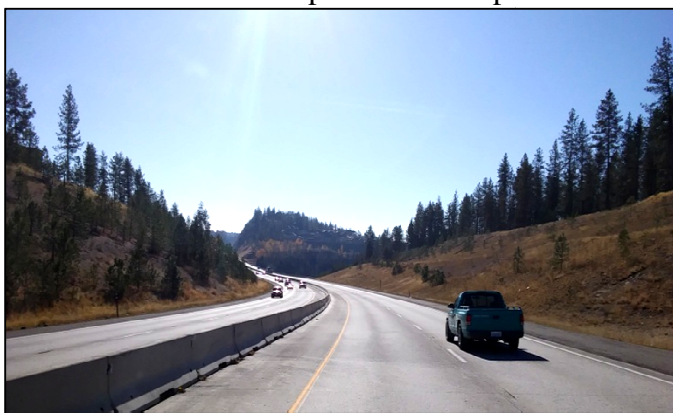
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towards Cheney, Telford-Crab Creek and beyond, creating the Channeled Scablands. "Smaller floods....likely discharged through lower elevation drainages including the Little Spokane River..." (Kahle, et al, 2005).

Later in the Missoula Flood sequences the rocks at the head of the Grand Coulee eroded so much that they broke through, allowing the whole Glacial Lake Columbia system to empty down to the 1800' level, where it also remained for a long time. Later yet, the failure of a confining moraine at the south end of the grand coulee and the breakup of the Okanogan Lobe effectively drained the glacial lake.

Hwy 395 descends through the flood outwash gravels and sand down to the Little Spokane River channel. Glacial fill is up to 300 ft deep here.



As you cross the Wandermere bridge, you are over the main channel of the Little Spokane River. Most of the waters of the Missoula Flood's northern routes drained through the Little Spokane River system here, so this spot was significant.

A prominent landmark ahead is the massive wall of intrusive granite known as Dart Hill. The white streaks appearing throughout the outcrop are commonly dikes of Alaskite (a granite of medium

or fine grain composed chiefly of alkali feldspars with some quartz) and/ or pegmatite (granite composition in dikes or veins that cooled slowly enough to form coarse mineral grains). The outcrop is somewhat unique because some areas contain what is known as "graphic granite", formed by a complicated process which results in the quartz being crystallized at the same time as the feldspar. The quartz takes the shape of angular fragments within the larger feldspar crystal that remind one of cuneiform figures, hence the name "graphic".



[Graphic Granite]

As impressive as this hill of granite is, it was but a small blip in the floods of water that came through the area, and was underwater when Glacial Lake Columbia was full.

East of Dart Hill on the east side of the highway, the backdrop for the Wandermere Golf Course and recent housing addition is also a granite hill. On its southeast side is an exposure of Columbia River Basalt, butted up against the granite. The basalt is covered by ash/clay layers of the Latah formation, and is the site of a commercial quarry. Large diameter crushed basalt is visible along the freeway

just east of the Perry Street overpass below the location of the quarry.

South of Dart Hill you are over the Spokane Aquifer, the Missoula Flood-formed source of water for the whole Spokane area. Waters from the north were depositing their loads of sand and gravel here, as well as flood waters from the Rathdrum Prairie flood channel that came from a southerly direction, dumping their loads. This is one of the deeper sections of the aquifer and the fill can be up to 800 feet deep along this route for the next mile or two.



It's hard to know where to stop, but there are many publications available that describe details of the Spokane area geology and so our Hwy 395 series has come to an end. Thank you to everyone for your encouraging remarks and to those who helped proofread the material.

References:

Bjornstad, B., Kiver, E., 2012, *On the Trail of the Ice Age Floods, The Northern Reaches: Sandpoint, Idaho, Koeke Books*, 432 p. ***This book contains extensive information about the glacial lakes and floods and is recommended for further reading.

Derkey, R.E., Hamilton, M.M., Stradling, D.F., 2005, *Geologic Map of the Deer Park 7.5 minute Quadrangle, Spokane, County, Washington, DNR*

Joseph, N.L., 1990, *Geologic Map of the Spokane 1:100,000 Quadrangle, Washington-Idaho*, Washington Division of Geology and Earth Resources Open File Report 90-17.

Kahle, S.C., Olsen, T.D., and Fasser, E.T., 2013, *Hydrogeology of the Little Spokane River Basin, Spokane, Stevens, and Pend Oreille Counties, Washington: U.S. Geological Survey Scientific Investigations Report 2-13-5124*, 52 p., <http://pubs.usgs.gov/sir/2-13/5124/>

Kahle, S.C., Caldwell, R.R., Bartolino, J.R., 2005, *Compilation of Geologic Hydrologic, and Ground-Water Flow Modeling Information for the Spokane Valley-Rathdrum Prairie Aquifer, Spokane, Co., WA, and Bonner and Kootenai Counties, ID., USGS Scientific Investigations Report 2005-5227*.

Spokane Valley Rathdrum Prairie Aquifer Atlas 2015 (www.spokanecounty.org/1227/SVRP-Aquifer-Home)

***This reference contains extensive information about the SVRP aquifer and is available online.

An online virtual tour of the geology of the Spokane area is available at this web address:

<http://users.scc.spokane.edu/ABuddington/vft1/>.

All photographs and illustrations by Sharon Borgford unless otherwise noted.

Johnie's Jabber

by Johnie Pitman

November is the month for officer elections. Nominations will be open from the floor so consider who you would like to nominate for the various offices. The nominating committee has these nominees: President, Johnie Pitman; Vice President, Bob Bristow; Secretary, Sheila Stratton; Treasurer, Frank Stratton; Dennis Gibbens, Maurice McPherson and Jim Peters. are nominated as Trustees.

November is also the month that dues are due. They are \$20 for the year per family.

Think about a theme for our rock show in March. Bill Allen needs to know so he can include the theme with the dealer applications.

November is also the live auction for the scholarship fund. Bring items to be auctioned off if you want to donate, and of course a little bit of cash or check (no credit cards). We prefer rock related items but nothing is written in stone about that.

Here is a list of items that have already been donated:

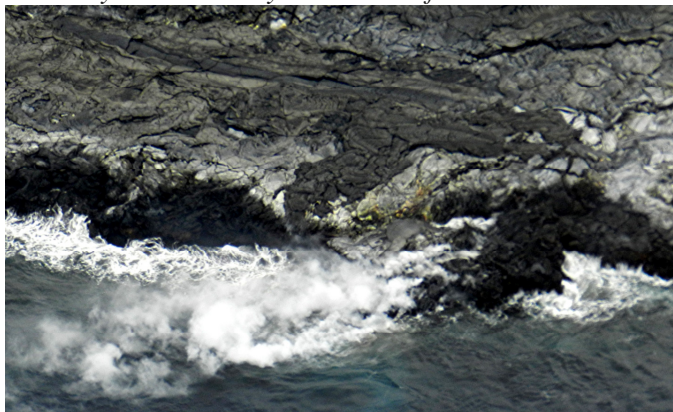
1. Cigar box of small minerals.
2. Fossil fish (2).
3. Onyx plate.
4. Turquoise pendent.
5. Pink cabochon beaded necklace.
6. Highland Park two wheel grinding unit with saw, no blade or motor, needs lots of work but the bearings are free.
7. Several misc. agates, jaspers, minerals, petrified wood, and fossils.
8. Wire wrapped agate slab.

Remember the show is only 3 1/2 months away.

Rockhounding Southeast Utah, a great article sent by Anne Ott is too big for this issue. Wait for it in January.

Volcanos on Hawaii's Big Island

by Bruce Hurley - continued from October



Basalt Lava Entering the Sea at Kalapana

The Pu'u O'o area of Mauna Loa is closed off to ground entry because of the many dangers around an erupting volcanic vent. It is safely approachable at a distance from the air, with particularly good helicopter access. The area of active lava flow is also off-limits from ground approach, except by trail to the site at Kalapana where the lava enters the ocean. At this location visitors can get near enough to see the moving lava, but a strenuous hike of four miles over lava terrain is required to get there. There is good access to the area by small tour boat, but the sea is generally rough on the east side of Hawaii, and the ride is typically quite rough. As at Pu'u O'o, helicopter access is good, at Kalapana.

The main crater of Kilauea is also off-limits to direct access, and part of the road around the crater rim is also closed, for safety concerns. But the crater is easily viewed from the Jaggar Museum, west of the Hawaii Volcanoes National Park Visitor's Center. The



Kilauea Crater Smolders after An Evening Shower day we visited It rained, but we were rewarded with a rainbow just before twilight. On clear nights, Kilauea puts on an evening light show,

with the glow from the lava lake lighting up the sky south of the museum.



Kilauea Crater Glow (Courtesy of www.flickr.com)

\$1 Million in Crystals Stolen in Kellogg, ID (From KREM news)

KELLOGG, Idaho -- One million dollars worth of crystals was stolen from a Bunker Hill Mine family in Kellogg Idaho. The crystals were stolen from a house that Bob Hopper, the current owner of Bunker Hill Mine, was preparing to turn into a museum. Not only were 15,000 crystals stolen, but Bunker Hill family antiques were also



missing.

"We are absolutely devastated and my family is heartbroken," said Bob Hopper. The museum was meant to carry on Robert Hopper's legacy. Robert bought the mine back in the early 1990s and was the soul of the Kellogg community.

"My dad's personal legacy was incredible. He was a giant in the mining world and now it's all gone, it's rough," shared Bob Hopper.

"He was so excited to take you into the crystal room, the secret room where no one gets to see. He was so proud of everything," said Melissa Hopper, Robert's granddaughter.

Membership Dues:

\$20.00 per household per year is due to the club Treasurer

Johnie Pitman (address below) on the third Tuesday of November for regular members.

Webpage: <http://panoramagem.com/>

Contact: Bruce Hurley, President, 509-413-2768.

We, **The Panorama Gem and Mineral Club**, are a multi-faceted group of mineral-minded people. Our proud members include some real gems, a few fossils, and even some diamonds in the rough. A few have lost some of their marbles, but they know where to get more! A few need to polish their coordination because they are always tumbling! And some are miners who use the "silver pick" as their tool of choice! It should be crystal clear, that we all enjoy this unique conglomeration and above all else we strive to **HAVE FUN**. And we never throw stones (away).

Melissa shared that since the reopening of the mine back in 2015, life has been brought back to Kellogg. "This museum was going to be the heart of that," she said.

The Hopper's collection was the biggest pyromorphite crystal collection in the world. The stolen individual pieces range from a couple of dollars to thousands of dollars. Pieces from the collection are displayed in the Smithsonian Museum. (**Pyromorphite** is a [mineral](#) species composed of [lead](#) chlorophosphate: $Pb_5(PO_4)_3Cl$, sometimes occurring in sufficient abundance to be mined as an [ore](#) of lead. [Crystals](#) are common, and have the form of a hexagonal prism terminated by the [basal planes](#), sometimes combined with narrow faces of a hexagonal pyramid. Crystals with a barrel-like curvature are not uncommon. Globular and reniform masses are also found.)

November Meeting 6 PM

November is our annual auction meeting. This is the best deal of the year on getting new rocks. Be there or be square (and bring cash, rocks or both). Dues are also due in November so we can update the subscription list for the NFMS newsletter.

I recently visited the club's rock shop. Both it and Gene Fisher who supports it are in rough shape. More about that in January.

Bob Hopper still hopes to open the museum

with what he has left.

The family received almost half of the crystals back from police, but because of their



condition the crystals have no value. Police have arrested one person in connection with the burglary. They believe that more are involved. The investigation is still active.

Panorama Gem and Mineral Club: Organizational Chart

Officers:			
President:	Bruce Hurley	10617 W. Lakeside Lane, Nine Mile Falls, WA 99026	509-413-2768
Vice-President:	Bob Bristow	PO Box 1165; 2567 Mud Lake Rd. Chewelah WA 99109	509-935-4375
Secretary:	Anni Sebright	POB 293, Clayton, WA 99110	509-276-2693
Treasurer:	Johnie Pitman	701 B Williams Lake Rd, Colville, WA 99114	509-684-8887
Trustee 2:	Gene Fisher	294 Gold Creek Loop Rd, Colville, WA 99114	509-684-8546
Trustee 3:	Bill Allen	2633 Highline Rd, Chewelah, WA 99109	935-8779, 936-2446
Trustee 1:	Sherryl Sinn	725 S. Chester, Colville, WA 99114	509-684-6093
Committee Chairs			
Program Coordinator:	Bev Bockman	1750 N Havichur Loop, Post Falls, ID 83854	208-773-5384
Hospitality:	Sherryl Sinn	725 S. Chester, Colville, WA 99114	509-684-6093
Club Shop:	Gene Fisher	295 Gold Creek Loop Rd, Colville, WA 99114	509-684-8546
Historian:	Carol Price	PO Box 77, Laurier, WA 99146	509-684-2857
Newsletter:	Joseph Barreca	2109 Hwy 25 South, Kettle Falls, WA 99141	509-738-6155
Show Chair	Bill Allen	2633 Highline Rd, Chewelah, WA 99109	935-8779, 936-2446