

1.1 History of “StarLab” -the first BCAS Observatory

The facility we now know as our StarLab originated through an interesting and at times, frustrating series of events. I am certain that many new members of the BAS (formerly BCAS) are curious about the development of that first observatory. What follows is my version of the events and if I have unfairly treated anyone in this rendition please accept my apologies. I would also be glad to hear from anyone who may be able to fill in any of the gaps (especially from the board's perspective) that I may have missed.

In June of 1988, Dr. Herb Coleman contacted the principal of Saugeen District Secondary School (SDSS) with an interesting proposition. He wished to donate to the school an observatory dome, an 8 inch Meade telescope, and related equipment if there was someone there who might be interested in using the equipment as a teaching resource and perhaps developing astronomical education for the general public. Coincidentally, I had just transferred to SDSS from Warton and jumped at the chance to have a working observatory as part of the science resources at our school. The fact that Dr. Coleman had decided to make the donation at that particular time was purely coincidental to my transfer to Saugeen 5 months previously. When he learned that I was at SDSS he was doubly pleased. Several years previously, Doug Cunningham and I had had a tour of Herb's observatory and we had developed a mutual astronomical friendship. (I can still remember sampling one of Herb's alcoholic concoctions aptly called the 'Supernova'. There was definitely nothing nebulous about it and it did leave a ring, but the 'ringing' was in my ears!)

The next task was to find a suitable building to house the dome and telescope. At first, we explored the possibility of getting a portable classroom converted to our use, but since these were in short supply within Bruce County, this idea was abandoned. We finally settled on a suggestion made by Clark Birchard (then in charge of Outdoor Education) that we adapt a 40 foot trailer that was being stored at the Outdoor Education Centre near Boat Lake. It originally had been used as a travelling Industrial Arts facility for senior elementary students but the project had been abandoned due to problems with noise levels and other safety considerations.

In the spring of 1989, I put together a proposal to the board (through Superintendent Don Carroll and Clarke Birchard) that the trailer be converted to an observatory. The Bruce Board agreed to adapt the dome to the roof of the trailer and do some alterations internally to provide a small meeting/display room and a storage/work room. I was never made aware of where or how much money was allocated to do this but one never looks a gift horse in the mouth.

It was also necessary to have a suitable site for the facility and several were examined. Among those considered were a location beside the soccer field at the school, several dark sites on private property and a site in MacGregor Provincial Park. The final choice made was to set up the observatory at MacGregor Park because it was felt that there the building would be easily accessible to the public - one of Herb Coleman's wishes. There would also be access for educational use since the park was frequently used by schools in the area for outdoor education programs. Once the choice had been made, it remained for the administrators at MacGregor and the Bruce Board to sort out the details of the agreement allowing all this to proceed.

Consequently, the dome was removed from the back roof of Dr. Coleman's house in July of 1989 and transported to MacGregor Park where it was to be mated to the trailer after suitable changes had been made to accommodate the dome.

At the board office, where the trailer had been moved to facilitate the renovations, the work seemed to go on quickly for a few months. But, little did we know then that the bureaucracy now had a hold of our project! In the end, it managed to tie up the completion of the project for more than three years!

Still, by the end of that first summer much of the internal work had been completed. The building crew had moved the dome to the board office from the Outdoor Ed Centre to make it easier to take measurements as they worked on the necessary changes for the roof. At the start of school in 1989 I arrived at the board office for a quick inspection and had a look at the changes made. The normal work of renovations was fine but the placement of the stairs in the observatory proper was a problem. They had installed a beautiful circular staircase in the dome end with only half a floor under the dome. The other half was stairwell! I complained about this to the board's head of maintenance and he told me basically that they had ceased work on the project. To this day, I am not sure of the reason why but I suspect that there were some personalities involved. The unofficial reason given to me was that the work was tying up too much time and board personnel. I was never provided with any official communication from the board giving any reasons for the stoppage. I left the meeting with Frank Sharp completely deflated.

Several attempts were made to get the project moving again, but none were particularly successful. Furthermore, I started hearing a rumour about the board having decided to change the location of the facility back to the Outdoor Education Centre. This was countered by a letter written by Herb Coleman to the director restating the conditions of the donation, ie: the facility was to remain in the Southampton-Port Elgin area for the primary use of students in the area. This seemed to work. We did not hear more about the change of location but this seemed academic in any case since the project had ground to a halt anyway.

There were other rumours. A few years later, it appeared that the board had intentions to sell the trailer to another board for some unknown purpose. When some representatives of that board arrived unannounced at SDSS looking for a key to the trailer, it appeared that there was something in the works that was not to our liking. But as time went on and nothing happened, we assumed that the deal fell through. The level of communication between us and the board (never voluminous) had by this time virtually ceased - I got no replies to phone calls or letters to the powers that be about the project.

My attempts to get the project going again fell on deaf ears for the better part of two years. It was never any official reason given to me for the project languishing, but even during this period of apparent inactivity, behind the scenes, we did have a champion. The head of the Outdoor Education Centre (also in charge of Science), Clarke Birchard, managed to eventually get the project back on track. First, through our Science Department, we convinced the board to move the partly finished building to SDSS so that the SDSS Tech department could attempt to make the necessary changes to the observing room. This we proceeded to do using manpower from both the Tech and Science department as well as student and adult volunteers using donated or scrounged materials. The staircase was ripped out and we created the trap door entry system, installed a tripod pier (compliments of Hydro scrap yard) and finally attached the dome. At this point the facility was ready for use and several observing sessions occurred with SDSS students as well as members of what eventually became the Bruce County Astronomical Society. Members of the Science and Tech departments contributed time, facilities and materials for much of this and it goes without saying that their assistance was greatly appreciated.

The final move to the present site occurred after successful efforts by Clarke to find the funds necessary to properly complete items that were beyond the resources of volunteers. This included the pouring of the cement pad under the tripod (a 4 foot cube of concrete!), the stairs at the entrances, skirting around the base and the physical move to the final site between the portables (which was no mean feat since when the trailer was jockeyed out of it's corner in the parking lot the tires promptly went flat). About a week of effort by the board's carpenters put the finishing touches on the facility for the September 92/93 school year.

The observatory operated for most of that school year as the focal point for an astronomy course (SOT 4X) before the official opening of StarLab finally happened on May 21 of 1993. Simple arithmetic shows that almost 5 years elapsed from the original donation to the final official opening.

At one time I felt rather disgruntled about this 5 year "pregnancy" and the prolonged birthing pains. The delays, and lack of communication, unannounced changes in plans, constant letter writing, etc. both angered and discouraged those of us who just wanted to see this thing done. It would be easy to blame inadequacies at the board level, but now I think that even this board was rather embarrassed by the delays and lack of commitment that became obvious as the project stumbled along. It is rather hard to say just what was going on in the rarefied atmosphere of the administrator's offices. I shall not indulge in any speculation. (Still, it would have been interesting to be a fly on the wall ...).

I would like to finish by describing the contributions of the many individuals who helped bring this project to a happy conclusion. Many are still active in upgrading the facility and planning for an even better future of the StarLab.

First, Dr. Herb Coleman must be thanked for the original donation and support for the project as it unfolded. It was his generosity that led to a facility that has become a major focal point for astronomy here in Bruce. The growing membership in the BCAS is a good indication of the interest in astronomy in our area.

Additionally, thanks go to the Science Department head at the time, Dr. Keith Jackson, who fully supported the project and through many discussions helped to formulate the eventual proposal to the board.

The contribution of Brad Doll, an SDSS science teacher was especially important to me - his support of the project during the discouraging days was appreciated as was his help in the dome removal and renovations to the trailer.

Other teachers who contributed time and energy were Art Garrow (along with his tractor 'Davy'), Norm Stoner, Steve Smith, Bill Fair whose Hydro contacts produced useful scrounged materials, Dave Finnis who managed to find some room in his budget for lumber, paint, etc. Also included should be members of the BCAS like Charlie Szaboth for assistance in general interior work and Greg Larivee for his labour and donation of a Telrad. In addition, I must mention the help of students of the astronomy class of 1992/93 who did such a great job of decorating StarLab for the official opening ceremonies.

One final thank you to the man behind the scenes. I am sure Clarke Birchard would have some interesting stories to tell about what went on at the board office. It should be kept in mind that it was only a few short months after StarLab was completed that Clarke retired. It is a tribute to his integrity as an educator that he wished to see the project finished before he left his post as coordinator of Science at the Bruce County Board. In my many years of working with Clarke, I have always admired his dedication and commitment. In spite of the mind-deadening administrative work he was required to do as part of his job, he never lost sight of the best interests of the students of Bruce County. His persistence and ingenuity in working within the bureaucracy to achieve the goal of finally completing StarLab was remarkable. We were fortunate to have Clarke working for us.

When Herb Coleman donated the dome and telescope, he asked only that the facility stay in the Port Elgin-Southampton area and that he be given a statement for the value of the donation that he could use for tax purposes. Since the board at the time did not issue receipts of that sort (it does now), the donation was made to the town of Port Elgin, who issued the receipt to Herb and then donated the dome and equipment to the school board. So the ownership transferred to the Bruce Board and the dome, telescope and other components he provide are still board property. The BCAS has full use of the facility as per the agreement with the board but owns only the additional equipment that the club provided like some eyepieces and the Telrad. Note also that the Wiarton DHS and SDSS also contributed items like a solar filter, spectroscope and the mirror and focuser (for Elvira) through items purchased through school budgets. (The total of these school items is about \$600).

1.2 Disposition of StarLab

From its inception to about 1998, while I was on staff at SDSS, StarLab was used by the BCAS and SDSS classes for astronomical observations of the sun, planets, eclipses, Comet Hale-Bopp, meteor showers, and other activities like meeting space for the BCAS. Right from the start of its operation, there was a semiformal agreement between the Bruce County Board of Education (and its successor, the Bluewater District Board) and the BCAS to maintain the facility in working order for the benefit of both parties. The BCAS would keep the optical components in order while the board did the maintenance of the building. We also were given free meeting space in the physics lab for our indoor activities. This agreement naturally came about as a result of the way in which teaching staff and astronomy enthusiasts (sometimes the same people) worked together to create a unique teaching/community facility. Both groups got benefits from the arrangement and this continued for a decade or so under the original agreement. However, the trailer housing the telescope was not entirely weatherproof and it gradually deteriorated as the moisture seeped into the walls and floors and rotted out the sub-structure. It was eventually so full of mold that it was condemned and locked up with all the equipment inside. Eventually, the board agreed to dismantle the building and rescue all that could be salvaged and a company skilled in toxic waste recycling was hired to do the job. I have no idea what the cost was but by late 2001 the job was done.

The board decided that the salvaged equipment would be transferred to the Outdoor Education Centre near Oliphant for a possible future rebuilding of the observatory. This was done in the fall of 2003 and the dome, telescope and other components necessary for its operation are stored there. The issue of the mold in the observatory had been brought to the attention of the board a year or so earlier by the BCAS and at a meeting with David Armstrong (board director) and BCAS executive, it was decided that the move to the OEC was the best alternative when the StarLab building finally became unusable.

Although at first sight this was against the wishes of Dr. Coleman, it was agreed that there really was no better alternative. Certainly there are many advantages of the OEC site and the aims behind the donation would, it was felt by all, be even better met at a facility that would provide wider access to the future building. Unfortunately Dr. Coleman passed away before all these events transpired and his family could not be located so we were not able to communicate any of these discussions to him or his heirs.

The BCAS pursued the development of a new domed observatory as a replacement for StarLab over the next months. For a time it appeared that the Canadian Wildlife Service (among other groups which were involved in monitoring the population of Northern Shrikes under the leadership of Robert Wenting) might build a Shrike observatory on the property. It was hoped that the Coleman dome could be resurrected as a part of that building. When no Shrikes could be located in our area and West Nile virus started to cause declines in other species, it was decided that the observatory would not go ahead, much to our dismay. For a time the notion of rebuilding the Coleman observatory was shelved.

In early 2004, a small group of club executive and club members, (Charlie Szaboth, Brett Hatton and John Hlynialuk) got together and discussed some ideas about a new observatory. This eventually led to a detailed rationale for a large roll-off roof observatory, ultimately to become the ES Fox Observatory.

1.3 The Development of the ES Fox Observatory

In July of 2006, the Bruce County Astronomical Society members formed a committee (informally called the Observatory Project Committee) to investigate the possibility of replacing the defunct Starlab observatory with a new, larger building that would house a 12-inch aperture reflecting telescope acquired the previous year as a donation from the University of Guelph. The donation spurred on plans that had been explored informally by various BCAS members. There had been some limited discussions with the IOEES and also with two individuals in the Grey-Bruce area (and one club member) who were not adverse to providing a location for BCAS to do stargazing or possibly for an observatory. BCAS also considered working with a local museum or with a specific service group which had a campground that was suitably far from city lights.

Committee members soon realized that a small club like BCAS could not, on its own, take on a project that could possibly cost over \$100 000. Furthermore, the liability issues for a private club hosting public stargazing sessions on private land proved challenging if not daunting. Insurance costs alone would be expensive. Discussions then turned to the possibility of a partnership with a local educational group that had an insurance policy for public use in place and which had a track record of successful fundraising. After some deliberations and a club survey/vote, the committee decided that the best choice was the outdoor ed centre associated with the Bluewater School Board, i.e., the IOEES (Institute for Outdoor Education and Environmental Studies -now called the Bluewater Outdoor Education Centre) and its parent group, the Bluewater Education Foundation. BEF had recently acquired the OEC property from the BWDSB in return for a commitment to preserve the facility in light of shrinking education budgets. BEF had also just completed a successful fundraising campaign that provided new dormitories and a dining hall as well as a set of classrooms. These new facilities replaced all the portables that had housed the IOEES up to that time. After preliminary discussions with IOEES and BEF, agreement was reached to proceed with a partnership to examine building a joint-use observatory on site. A suitable location for the observatory was found that was far enough away from the lights of the main buildings but not too distant for student access after it was built and accessible by vehicles during construction. Fundraising kicked into high gear.

By the summer of 2008, the committee had decided on the design of the building with respect to its astronomical requirements (roll-off roof, warmup/control room, electrical needs, etc.) and the plan was presented to the BEF and its architect for conversion into blueprint-type documents. Then a period of a year or so went by while these were prepared and meetings were held to iron out the details. There were a number of changes required to the BEF design, the most important one being the concrete-poured wall structure that was not acceptable to BCAS. The heat-retention by concrete would not allow proper cool-down of the building. Air turbulence caused by the heat in the walls when the roof was opened would prevent decent images in the telescopes from inside the building. A compromise was reached eventually, although in the process some of the superficial design features like a cupola were dropped to reduce costs. Sadly, so was an interior washroom.

The three-party group (BCAS, BEF, IOEES) complimented each other nicely with BCAS providing the astronomical expertise, BEF the administration, design and legal requirements for the construction project and the IOEES providing the overview with respect to how the facility was to be used and integrated into the overall mission of environmental education at the outdoor ed centre. The partners worked very well together and a final design was formalized by July of 2010 and plans were put out for tender in August, 2010.

It is safe to say that the project would not have happened (or would have had a longer gestation period) if ES Fox Construction Company had not generously contributed a sizable sum to the fundraising in Sep 2009. Through the efforts of BEF, ES Fox was convinced to celebrate International Astronomy Year (2009) and the 75th anniversary of ES Fox by donating \$75 000 towards the construction costs. The donation put the fundraisers "over the top" in more ways than one and in recognition of their contribution, the facility was named the "ES Fox Observatory". Apart from the ES Fox donation, fundraising for the rest of the final \$144 000 construction cost was mainly accomplished by BCAS who tapped the generosity of local service clubs like Rotary, the Legion, Lion's Clubs and Women's Institutes as well as professional organizations like Ontario Power Generation, Power Workers Unions and teacher's organizations like RTO and OSSTF. Several private individuals also donated -many anonymously.

The local contractor selected to do the building was Domm Construction and work got underway in the fall of 2010. By the pause in construction for winter, the foundation for the observing room and the warmup room had been completed and backfilled. The facility looked like the bridge of a ship that was half-submerged. Meanwhile, indoors at a local metal fabrication shop, the moving roof frame was being constructed and test fitted with the rails on which the roof casters would move. Once the frost had come out of the ground, assembly of the metal roof support structure took place and the frame was correctly aligned and connected to the roof winching mechanism. With a bit of fine-tuning, everything was declared ready for trusses and exterior cladding. The rolling roof structure was designed to support itself plus a snow load for an approximate total of 20 tons or so. The care that went into the design and expertise of our local construction workers paid off as the roof system, now complete with trusses and metal roofing, rolls back in slightly over two minutes using a motor of less than one HP!

The facility was basically complete in the spring of 2011. Members of BCAS, now called the Bluewater Astronomical Society (BCAS incorporated itself in Feb 2011 and changed its name to reflect membership from both Bruce and Grey counties) got to have an informal look at the building on June 4 but it was mostly a daytime event as the roof winch had not been powered up yet and only a manual emergency use system was in place.

The first real viewing session was Saturday, July 30, 2011 when the roof was rolled back, the south wall lowered and the U of G telescope was pointed towards the Milky Way arching overhead. Several other telescopes were also tried out by the two dozen or so observers and guests, -all declared the facility a success and the skies of the OEC to be as dark as any in the Dark Sky Preserve at the Bruce Peninsula National Park further north on the peninsula. There were a lot of happy smiles on the faces lit by the red lights we use to preserve our night vision and celebratory coffee was served in the warmup room.

The official opening ceremonies were held on Sep 17, 2011 when Spencer Fox, owner of ES Fox, and a number of other dignitaries cut the ribbon at the entrance to the observatory. As the roof OPEN switch was pushed by a student, strains of Also Sprach Zarathustra (the Space Odyssey 2001 theme) accompanied the smooth and virtually noiseless roll-back of the roof. The roof opened onto a perfectly cloudless blue sky and thrilled the dignitaries, BAS members and representatives of the outdoor ed centre (now the BOEC). Also present among the 100 or so attendees were BEF and school board representatives, municipal, provincial and federal government officials as well as students and many interested individuals from the general public.

Now after almost two years of use, the ES Fox Observatory continues to operate and is being updated with more telescopes and more modern equipment. Very helpful in this regard was a Trillium grant in Nov 2011 that allowed BAS to purchase new eyepieces, a solar telescope, an astronomical video camera and a large dobsonian telescope. We have it on good authority that this telescope, a 28-inch aperture Webster, is the largest telescope being used in regular public outreach programs in Canada. Also important in the battle to preserve our dark night skies, BAS applied to the Royal Astronomical Society of Canada to have the BOEC declared a Dark Sky Preserve. In Nov 2012, the application was

approved and with it the hope that many future generations of observers will have night skies lit only with bright stars and the celestial wonders of the Milky Way. With its telescopes at the ES Fox Observatory, BAS and its partners, will continue to provide a facility for anyone who wishes to explore the Universe.