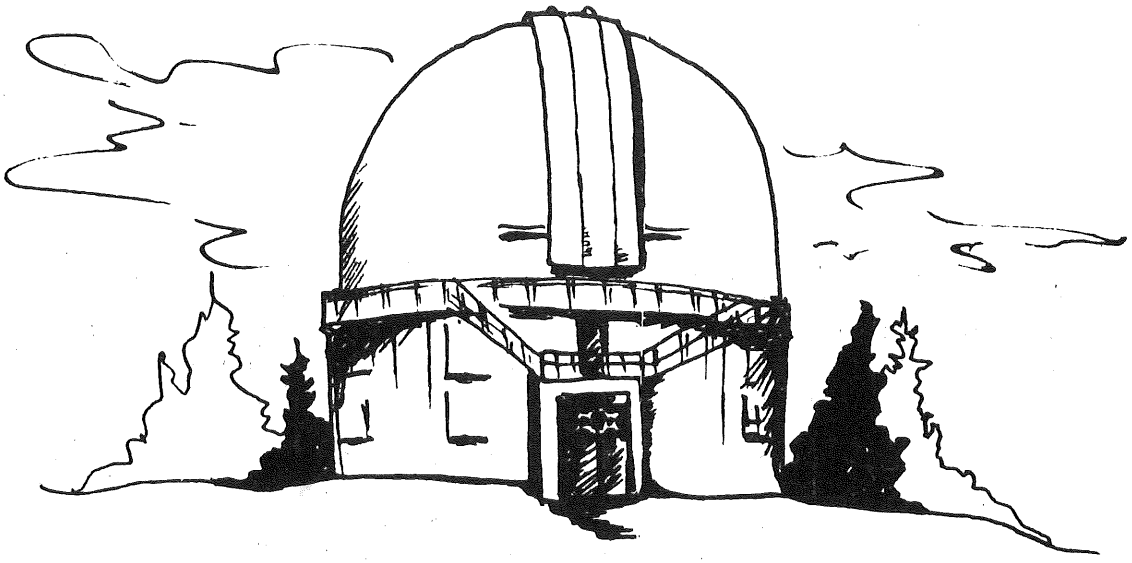

DAVID DUNLAP DOINGS

VOL. 8, NO. 7 SEPT. 30, 1975

1936

Date Thursday June 18-19, Y-MR-L (Hd) Julian Day

received collect telegram about 1:35 by telephone:
"Cambridge, Mass. Pellier reports third magnitude
Nova 2° south preceding delta Cephei". Moved telescope
in that region but were unable to locate it. Summoned
Dr. Heard by telephone. Finally found a likely looking
object & took these plates.
Estimated mag ± 3.3 — Hd M/R.
aurora very brilliant all night

Nova Cygni 1975 Recalls DDO's
First Observations of a Nova
See OBSERVING

EDITORIAL

Readers of Don Fernie's Final Item will recall his interesting April piece about E.E. Barnard and the "comet seeker" hoax perpetrated at his expense in the San Francisco Examiner in 1891. I was reminded of Barnard's 1920 visit to Toronto of which Dr. Chant often used to speak.

In those days Dr. Chant was working tirelessly on his "campaign to obtain a good astronomical observatory for the city", bringing as many visiting speakers on astronomy as he could persuade to come. One of these was Barnard who was famous for his success in astronomical photography. He gave two illustrated talks, one on March 25th to the Empire Club which was (and is) a business men's luncheon club meeting at that time at the King Edward Hotel (now, I believe, at the Royal York), the other an evening lecture sponsored by the University and the R.A.S.C. in the large lecture theatre of the old Physics Building. There were about 500 at the Empire Club talk on"Photographing the Sky" and 600 at the evening lecture on "Astronomical Discovery by Photography". Who could attract such audiences today? Carl Sagan maybe?

Dr. Chant used to take great delight in re-telling Barnard's warm-up story for the evening lecture. Coming from Yerkes, he travelled of course by train, and the routing from Detroit to Toronto was over the old Grand Trunk line which later was incorporated into the Canadian National. About half way along this leg of his long journey Barnard had dozed off and woke up as the train was passing through a small town. Stopping the conductor be asked what the town was. "That was Paris, sir", said the conductor. Happy to enter into the leg-pull, Barnard said, "Ah yes, of course; and I suppose the next station will be London." "No, sir", said the conductor soberly, "we passed London nearly an hour ago".

J.F.H.

OBSERVING

Nova Cygni 1975

A phone call received by Rene Racine from Brian Marsden late in the afternoon of Friday August 29 was our first word of the discovery of Nova Cygni. This was a few hours after discovery

(on Aug. 29.5 U.T.) and before any confirming observations had been made on this continent. Actually Brian Marsden was just checking to see if we had received the telegram which had already been sent out. - A good thing that he did, because the telegram didn't reach us until Tuesday!

It was raining Friday evening, so it wasn't until Saturday that our observers were able to get onto the nova. Tom Bolton and Jim Thomson spent the whole night on it with the spectrograph of the 74-inch, alternating between 12 A/mm and 16 A/mm dispersions with IIIaJ and IIaF emulsions respectively. Rene Racine attempted to measure the colour of the nova (through thin clouds) with the photometer of the 24-inch, Austin Gulliver obtained a number of spectrograms with the classification spectrograph and, on the campus, Al Irwin took three excellent direct photographs with the 16-inch telescope under conditions of superb seeing (images better than one arcsec). The observers estimated that the brightness of the nova rose during that night by about half a magnitude to about +1.5 which was probably its maximum.

On Monday three independent measures of Al Irwin's plates gave a very precise position from which the conclusion was drawn that the pre-nova did not appear on the Palomar Sky Survey plates and so was fainter than 20th magnitude. This gives nova Cygni the distinction of having the greatest known amplitude - 18.5 magnitudes or better.

Nova Lacertae 1936

By way of contrast we present on our cover an excerpt from the 74-inch observing book page for June 18-19, 1936 when Don MacRae and Gerry Longworth were rudely interrupted in their business of taking spectrograms for the radial velocity program. (Dr. Young had been in the dome earlier but had gone home). Nova Cephei (as it was first called) had such a poor position that it was in the wrong constellation! Maybe it was more by good luck than good management that we got the telescope set on the nova before dawn and got some spectrograms (though they were over-exposed). Our worst mistake was in not calling Dr. Young - as he kindly but firmly told us the next day.

COMINGS AND GOINGS

Ernie Seaquist Returns

After his return last month from a sabbatical year in Sydney, Australia, Ernie Seaquist has contributed the following notes:

It was nice to renew some acquaintances, particularly with Jim Roberts whom many will remember from his visit to our Department in 1967-69.

My research for the year involved observing radio stars with the Parkes 210-foot telescope. I found, among others, radio emission from γ^2 Vel (a Wolf-Rayet binary), RR Tel (a slow nova), RX Pup (a symbiotic star). I also worked on the analysis of NRAO synthesis maps of irregular galaxies made during the year before I left. I still have an observing program on the 210-foot Tidbinbilla tracking antenna near Canberra, the program running between glimpses at the Viking Mars probe.

During the year I had the opportunity to consult with observers at Mount Stromlo on radio stars, and I visited the major observatories in eastern Australia, including the Anglo-Australian telescope.

Sydney is a pleasant place to spend a year. The beaches, the harbour and the weather are all wonderful, and the cost of living is lower than in Toronto - although perhaps not for long with the 17 percent inflation rate! The road conditions (and the drivers) are a bit frightening at first, but one acclimatizes, just as one learns to drive on the left. The pace of life is a bit slower: there are plenty of old cars on the road and colour TV is just starting.

All considered, Gloria and I both consider that it was a profitable year for us, and we look forward to visiting Australia again some day.

Re

Rene Racine vacationed with his family June 28 - July 12 at a cottage near Quebec city and later spent two periods (July 21 - Aug. 1 and Aug. 12-13) at the University of Montreal as a consultant on their observatory project.

vB

Late summer travels of Sidney van den Bergh included: Max Planck Institute for Radio Astronomy, Bonn (talk on "The Classification of Galaxies"); Cambridge University and the Royal Greenwich Observatory (talks on the same topic); the San Diego August 17-20 meeting of the AAS (paper on "Star Formation in NGC 5128"); observing sessions at Cerro Tololo Aug. 22 - Sept. 6 and at Kitt Peak Sept. 8-13.

MR

Don MacRae was in Montreal Aug. 26 at a meeting of the Board of the CFHT.

Visited Scotland

The Frank McDonald's spent a month this summer in the land of their birth.

Py

John Percy visited UBC and DAO Aug. 7-9. On Sept. 9 he talked to the Mississauga Chapter of the Society of Manufacturing Engineers on "Frontiers of Astronomy".

Symposium on Be Stars

Bob Garrison, Austin Gulliver and Jack Heard attended this symposium at Cape Cod Sept. 15-18.

Joan in Sweden

Observatory Secretary Joan Tryggve is spending three weeks of her annual vacation in Sweden and will return to the job on October 1.

SEMINARS

AUGUST	*None*
SEPTEMBER	
Tues. 16th *DDO 4 p.m.*	*Dr. Robert C. Smith, University of Sussex, "The Curious Tale of 57 Cygni".*
Tues. 23rd *DDO 4 p.m.*	*Dr. Petr Harmanec, Ondrejov Observatory, "Be Stars".*
OCTOBER	
Thurs. 2nd *McL., 102*	*Dr. Pierre Demarque, Yale University Observatory, "Carbon Abundances in Horizontal Branch Stars".*
Tues. 14th *DDO 4 p.m.*	*Mr. Chris Pritchet, "Fourier Transform Spectroscopy of Galaxies".*
Tues. 21st *DDO 4 p.m.*	*Dr. Sandra Faber, Lick Observatory "Title to be announced"*

NOVEMBER

Tues. 4th *DDO 4 p.m.*	*Dr. John Percy, "The Problem of the Beta Cephei Stars".*

PAPERS SUBMITTED IN AUGUST and SEPTEMBER

S. van den Bergh	"The Origin of the Galaxy"
E. Seaquist, J. Pfund & C. Bignell	"High Resolution Studies of Spiral & Irregular Galaxies at 2695 & 8085 MHz.I: Maffei 2"
E. Seaquist & C. Bignell	"High Resolution Studies of Spiral & Irregular Galaxies at 2695 & 8085 MHz.II: NGC 1569"
E. Seaquist & C. Bignell	"High Resolution Studies of Spiral & Irregular Galaxies at 2695 & 8085 MHz.III: NGC 891"
T. Edwards, P.P. Kronberg & G. Menard	"Accurate Radio and Optical Positions for 30 Radio Sources of Small Angular Size"
E. Seaquist	"A Model for the Radio Outbursts of Cygnus X-3"

P O T P O U R R I

Born

To Archie and Ingrid Ridder, on August 16, a daughter, Christina.

To John and Anne Sorvari, on August 29, a daughter Devon Joanne.

Graduated

Congratulations to Cornelia, daughter of Dave and Margaret Blyth who graduated from the School of Nursing of Seneca College on August 16.

Birthday

Sally McDonald was hostess at a birthday party on August 1 for her mother, Helen Hogg, to mark her seventieth birthday at her home in Richmond Hill. Practically all of Helen's immediate family were on hand for the event which saw many friends from Richmond Hill, Toronto and the University dropping in during the afternoon and evening.

Weddings

July 30 was the date of the wedding of Christine Coutts and Maurice Clement as announced in our last number. They are now living in their house at 21 Grenview Blvd. N.

Graduate student Roel Hurkens was married on August 8 to Cheryl Chvala in Waterloo. Cheryl was a student at U. of W. and hopes to transfer to York.

Visible Astronomer

Thinking of "visible" scientists, Helen Hogg has been particularly visible during last month and this: *The IBM New York exhibit on Women Astronomers was shown at the McLaughlin Planetarium Aug. 15 - Sept. 15. *The Canadian National Exhibition staged a special audio-visual exhibit of Canadian women, entitled "Resolute Spirits". In a special geodesic dome a voice, supplemented by four projection screens, told about the work in a variety of fields of 50 women from the 1600's till now. *The National Museum of Science (Ottawa) has continued the display about Canadian Women Scientists (see DDD vol. 8, no. 6, p. 3), and this display is now beginning a three-year across-Canada tour. *Meanwhile Helen's TV series made a few years ago for Educational TV had a 15th running (on Channel 11) this summer.

Graduate Students

Graduate students who have nearly completed their Ph.D. programs include Ted Bednarek (who has left to take up a temporary posting at St. Mary's), Bob Chambers (PDF), Austin Gulliver (PDF Victoria) Dave Hanes (PDF, Cambridge), Serge Pineault (PDF, Cambridge), Chris Pritchet (PDF, UBC).

Two recent masters students, Richard Gray and Gilles Menard, have interrupted their studies to contribute two years service in Africa.

New graduate students this year are Sylvia Alers, Lindsey Davis, Roel Hurkens, Mary Lane, Katie Mackrell, Rick McGonegal.

Planetarium Meeting

The Planetarium Association of Canada met in Toronto during the last week in August and were guests at the Observatory on the evening of the 27th.

Musical Offices

During August there occurred at the Observatory some very moving events. Sidney van den Bergh moved into the north-end office previously shared by Jack Heard and Tom Bolton. Tom moved into Sidney's office and Jack has moved upstairs to share Helen Hogg's office.

Alex Leaves, Ron Comes

Two send-off parties for Alex Hay on August 22: a tea party in the Library with a presentation of a silver pen and a beer and food party in the evening at Tom Bolton's. Alex, who has been the custodian and trainer of the Microdensitometer for the past year, has gone to UBC for a Ph.D. program in Oceanography. His successor is Ron Lyons a 1970 graduate of UWO who has spent the past few years as part-time computer programmer at the London Life and supply teacher and doing a master's program in astronomy at Western.

Visitors

Two visitors from Eastern Europe visited the Observatory this summer and were guests of the Heards. Dr. Jan Smolinski of the Nicholas Copernicus Observatory in Torun was here for the week of August 17th on his way back to Poland (via ARO, Ottawa and Nice) after spending three months collaborating with John Climenhaga at U. Vic. and observing and measuring at DAO.

Dr. Petr Harmanec of the Ondrejov Observatory in Czechoslovakia was making his first visit to North America primarily to attend the IAU Symposium on Be Stars at Cape Cod September 15-18. Arriving from Prague on September 12, he motored with the Heards to Cape Cod and, with them, visited Helen Hogg in Dunstable on the way back. He then spent the following week conferring with Jack Heard, Tom Bolton and others on problems relating to spectroscopic binaries and shell stars. He is to visit DAO also before returning to Czechoslovakia early in October.

FINAL ITEM

The Adams-Leverrier Affair. II.

No, John Couch Adams was not an average undergraduate, anymore than he had been an average child. Born in 1819, the eldest son of a poor but genteel tenant farmer in Cornwall, he had, like Newton before him, seemed destined to become a farmer too. At age eight he attended a country school conducted by a gentleman appropriately named Sleep, who inappropriately billed himself as "Professor of Caligraphy, Stenography, French, Hebrew, etc.... Mr. Sleep Challenges any man in England for Caligraphy, Stenography, or the Mathematics." Fortunately the challenge did not extend to boys, for it soon turned out that 8-year-old John was much the better of the two at mathematics. After further occasions, when John administered a severe mathematical thrashing to his 11-year-old cousin, and then outperformed a much better schoolmaster of mathematics than Mr. Sleep (and this was real mathematics, not mental arithmetic), his parents rescued him from the care of Mr. Sleep and sent him to a bigger school.

But with their strained finances they had not been able to choose the most appropriate school, and the new one turned out to offer training almost exclusively in the classics, so again John was left to teach himself mathematics after school hours in the local library. Here he first came to astronomy via a copy of John Herschel's 'Outlines of Astronomy' given him in 1834, followed by the excitement of systematically observing Halley's comet in 1835.

Eventually, thanks to very great financial efforts on the part of his parents, John found himself at St. John's College, Cambridge in the autumn of 1839. As might be expected, the flower had at last found the soil in which to flourish, and his student career was one of ever-increasing brilliance. The man who was to be his closest friend at Cambridge, A.S. Campbell, very nearly left the first day, when he got into a casual conversation with Adams on mathematics and was so aghast at what he took to be the average Cantabrian undergraduate's abilities he felt there could be no place there for him. But Adams, unlike many people of great intellectual ability, was renowned for his easy-going friendliness and generosity (traits that would be his undoing over Neptune), and soon he and Campbell and others were launched together on their studies.

Always there was the pull of astronomy, and in 1841 we find Adams rebuking himself in his diary: "I have badly broken my plan today, chiefly wasting my time with Astronomy. I resolve not to let my astronomical amusements interfere with my regular work." But he

reached a watershed on June 26 of that year, when, browsing in a Cambridge bookstore, he came on a report by the Astronomer Royal outlining the great puzzling problem of the motion of Uranus. A week later he entered in his diary that note reproduced on the cover of our last issue: when once he had his degree he would tackle the problem of Uranus.

But to get his degree he must finally face that horrendous hurdle, the Cambridge Mathematical Tripos. Eighteen three-hour papers, stunning not only in their difficulty but also in their originality. (It was once estimated that if one were to do only the bookwork in the Tripos, albeit perfectly, one would place 23rd in a class of 30.) Campbell noted that during the exams Adams would sit for an hour or more just staring at the paper, and then finally lifting his pen, rapidly write out the answers. The result, of course, was foregone: Adams came out on top, a position known as Senior Wrangler. What was unique, though, was that he had scored over 4000 marks, while the Second Wrangler had scored only 1800. There was thus a greater gap between first and second place than between second and last place.

And so at last to Uranus. But Adams saw as his first duty the repayment of his parents for their sacrifice, and so, now a Fellow of his college, he gave over all his available time to tutoring, sending back the money so earned to Cornwall. Uranus would have to await vacations.

Finally, back in Cornwall in the summer of 1843, "cheerful and happy and thoroughly enjoying the country life", Adams began his work. He had enormous powers of concentration, and soon was the despair of his brother George, who acted as assistant in checking John's arithmetic. They sat up till all hours of the night: "Often I have been tired [writes George] and said to him 'It's time to go to bed, John'. His reply would be 'In a minute', and he would go on unconscious of anything but his calculations. In his walks on Laneast Downs his mind would be fully occupied with his work. I might call his attention to some object and get a reply, but he would again relapse into his calculations."

And so, off and on, it went for two years. He needed more data, and through James Challis, Plumian Professor of Astronomy at Cambridge, obtained the necessary Greenwich records from the Astronomer Royal. At last, in September of 1845 he had a solution, which included a prediction of where the unknown planet beyond Uranus should be in the sky on October 1. This he communicated to Challis.

No doubt we of a modern freewheeling society do not easily see the intricate formalities of the Victorian mind, yet the course of events at this stage seems little more than incomprehensible.

Here was Challis, presented with a definite position and date by a man of undoubted competence, having available a suitable telescope for making the necessary simple observations (which could have been made by an assistant - perhaps even Adams - if Challis couldn't be bothered), with the prize at stake nothing less than one of the greatest triumphs in the history of astronomy. And what did he do? He sat down and wrote Adams a letter of introduction to Airy, the Astronomer Royal, and then went back to his own routine work on cometary orbits. And Adams, cheerful easy-going Adams, apparently accepted the situation without a murmur. After two years in the calculations (and his predicted position was, in fact, good to within two degrees), they threw away the prize for the want of a few hours of observing. But that was only the first time they threw it away.

Off went Adams with his letter to Greenwich. Airy was in France, but hearing of the visit later, wrote a pleasant letter to Challis saying he hoped to hear again from young Mr. Adams. Adams reappeared at Greenwich a couple of weeks later, but Airy was on his way back from London. Adams left his card and said he would call again in a few hours. This time he was met at the door by the butler, who regretted the Astronomer Royal was at dinner (Airy dined each day at precisely 3:30 p.m.) and could not be disturbed. Adams left a manuscript version of his calculations and set off home. I can imagine his thoughts while slogging up and down that damned hill, cheerfulness finally wearing thin.

But Airy was quite impressed by the young man's work. He wrote a long and technical letter, generally approving, and including a question about the new planet's radius vector. And now Adams slipped up badly. He apparently did not know that Airy attached an importance to exactitude and promptitude that bordered on the psychotic. Easy-going Adams treated the question as rhetorical and failed to reply. It was his undoing. Even after Adams had realized his mistake and had written an abject letter of apology, including a completely satisfactory reply to the question, Airy wrote to Challis: "Adams's silence ... was so far unfortunate that it interposed an effectual barrier to all further communication. It was clearly impossible for me to write to him again."

And there, until the next summer, Airy and Challis and Adams let the matter rest. Meanwhile they sat back and watched with interest as Urbain Jean Joseph Leverrier rapidly overtook them in the exact same problem.

J.D.F.